

Cylinders
High-Tech
Valves
Air treatment
Accessories
Power Clamps
GR8 Tooling

Pneumatic Automation | Automotive

www.univer-group.com



PRODUCT OVERVIEW

BUSINESS PROFILE

PRODUCT HISTORY

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AUTOMOTIVE PRODUCT NEWS

SALES NETWORK

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Cylinders



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High-Tech



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Valves



4

Air Treatment



5

Accessories



6

Power clamps



7

GR8 Tooling



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In light of technical updates, **Univer S.p.A.** reserves the right to modify technical features of their products with no obligation to issue prior notice.

Information contained in the present catalogue is pure indication, for further details about product technical features and related parameter values to be respected for a proper functioning, please refer to the datasheets available at:
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Since 1971 Leader in Industrial Automation



Early stages



UNIVER has started its activity in the field of industrial automation during the 1970s, with the production of its first series of pneumatic valves and poppet valves for vacuum.



Pneumatics



In the following decades, the widening range of technologically advanced and original pneumatic components has allowed the continuous growth and development of the company, which has become one of the major Italian businesses in the production of industrial automation equipment.



Automotive



In 2000, after many years of experience in the supply of pneumatic components to the automotive market, the Automotive Division was created, thus developing numbers of solutions for BIW in the automotive industry.



GR8 Tooling



New entry, the Division of Modular Tooling Systems (GR8) represents the new challenge in the press field and handling of metal sheets in Automotive and Industrial Automation.

Some of our customers



BUSINESS PROFILE



Electronics



Univer Service



Univer Group



The Electronic Division, supporting both Pneumatic Automation and Automotive divisions, is specialized in the study, design and manufacturing of the electric and electronic devices which are integrated in UNIVER products.



In Italy, the commercial company **UNIVER SERVICE S.r.l.** controls the domestic market and guarantees a quick and efficient service, thanks to different operational offices and distributors in the whole country.



The UNIVER Group has many direct branches and an active distribution network covering the most important industrialized areas.



Innovation
Research and Development
Quality
Training
Communication

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First valve series



ISO 6431 Pneumatic Cylinders



10 mm Nanovalve



2/3 stage Telescopic Pneumatic Cylinders

1970

1980

1990



1971	Foundation of UNIVER company	1980	Valves according to ISO 5599 (Industry Award)	1991	10 mm Nanovalve G6 - G7 - G8 series valves
1973	Poppet valves for compressed air and vacuum	1982	UNIVERSAL series valves	1992	Slide units in extruded aluminium profile
		1986	Cylinders and mounting elements according to ISO 6431 (first cylinders on the market with extruded aluminium profile)	1993	Cybrain programmable actuators (patented)
		1988	Cylinders with antirotation piston and octagonal tube Electrically actuated microvalves Rodless cylinders (patented)	1997	Telescopic cylinders (patented)
		1989	Rotating cylinders (patented) Short-stroke cylinders	1998	Locking units (patented)
				1999	Compact cylinders with supplied adjustable cushioning standard (patented)

PRODUCT HISTORY



Pneumatic and Electric Power Clamps



COMPACT Valves



ISO 15552 Pneumatic Cylinders



Modular Tooling System

2000

2010

- | | | | |
|-------------|--|-------------|--|
| 2000 | Combobox valves | 2010 | KL Cylinders according to ISO 15552 |
| 2001 | Pneumatic power clamps and retractable locating pin units | 2011 | Compact cylinders Ø 80-100 according to ISO 21287
HZE Air treatment system
ISO 15552 Pneumatic cylinders |
| 2002 | Oval cylinders | 2012 | 10 mm bistable Nanovalves
Marking unit |
| 2003 | Electric cylinders (patented)
Electric power pivots
Electric power clamps and retractable locating pin units | 2013 | P15E 15 mm COMPACT Valves
GR8 Modular Tooling System |
| 2004 | Valves according to ISO 15407/VDMA 24563
Serial communication control blocks
Pneumatic grippers | 2014 | Short Stroke Cylinders - Tube New Design
Valves with panel operation
Pneumatic Gripper |
| 2005 | Pneumatic power pivots (patented) | | |
| 2006 | 10 mm Nanovalve - 2nd generation | | |
| 2007 | COMPACT 10/15 mm valves | | |
| 2008 | TC Serial communication control system | | |
| 2009 | JL Guided compact cylinders | | |



Since 1971 Leader in Industrial Automation



KL

Ø 32 ÷ 125 mm Pneumatic Cylinders

Clean profile

Easier to clean

Quick installation

Sensors and connections on one side

UNIVER Technology

Strong and Reliable

ISO 15552

Interchangeability



P15E

15 mm COMPACT Valves

G1/8 - Threaded body and for sub-base mounting

High flow rate

Flow rate higher than 800 NI/min

Reduced dimensions

Body width 15 mm

Complete solution

Versions available 5/2 - 5/3 - 3/2+3/2

PNEUMATIC PRODUCT NEWS



B10/B11/B12

ISO 15218 10 mm Nanovalves

Low consumption B10

Standard B11

High flow rate B12



LATCHING
Magnetic memory

B11

Multipolar Sub-base

Compact

For 10 mm Nanovalves - ISO 15218

Multiple Sub-bases

Up to 24 valve places

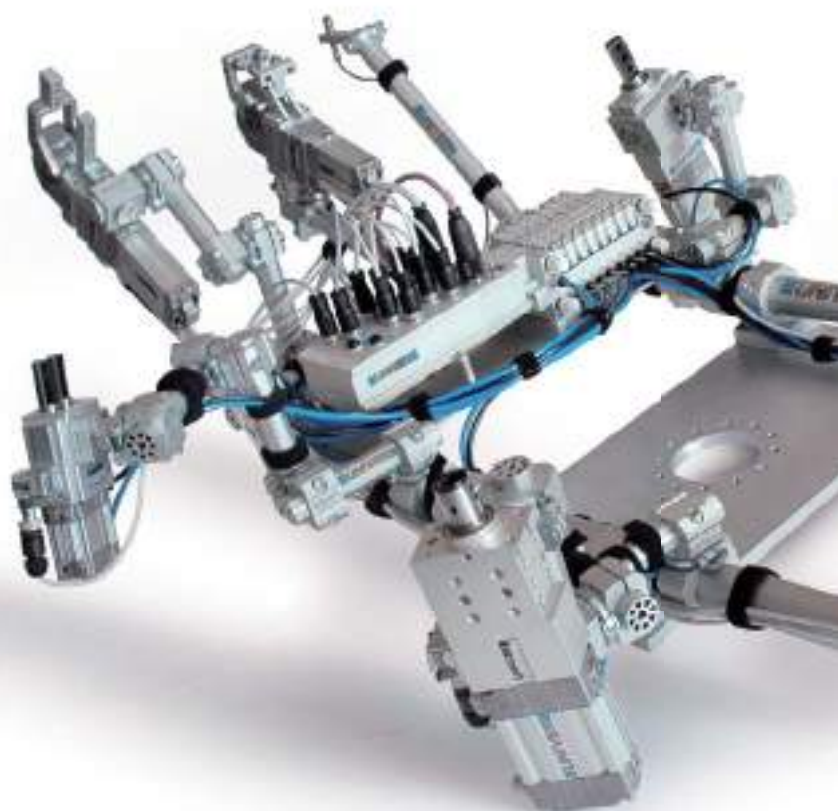
Serial Communication System

TC series Connection





Since 1971 Leader in Industrial Automation



GR8

Modular Tooling System

High precision

High level of positional repeatability;
low deflection

Modular components

Considerable reduction of mounting components

Quick installation and set up

No welding or doweling required, easily
replaceable components

Fully adjustable

Unlimited orientation in space and free
configurations

FULLY CUSTOMIZABLE

Multiple configurations

EFFICIENT SYSTEM

A small range of standardized mounting elements
facilitates the sizing and the design of the tooling

PATENT PENDING



AUTOMOTIVE PRODUCT NEWS



NEW



LGP

Pneumatic Gripper

Stepless adjustable opening angle

From 0° to 160°

Toggle joint mechanism

Irreversible movement- without air supply

Two-sided sensor mounting position

Left and right side

360° Unlimited orbital mounting adjustment

Integrated shock absorber dampening system

- Limited air consumption
- UNIVER original electronic sensor with M12 swivel connector
- Easily field adjustable sans opening
- No maintenance required



Since 1971 Leader in Industrial Automation

Univer Service



In Italy, the commercial company **UNIVER SERVICE S.r.l.** controls the domestic market and guarantees a quick and efficient service, thanks to different operational offices and distributors in the whole country.



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SALES NETWORK

Univer Group



The UNIVER Group has many direct branches and an active distribution network covering the most important industrialized areas.



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1

Cylinders



	Standards-based Cylinders	M KL KE KD K	2 4 6 7 8/9
	Standards-based Compact Cylinders	RP RM RO RN RS RQ	11 12 13 14 16 17
	Oval Cylinders	OV	19
	Short-stroke Cylinders	W	20
	Rotary Cylinders	R YR2 YR3	21 22 23
	Rodless Cylinders	S1 S5 VL1	25 26 27
	Guided Cylinders	J JL JT/JX	29 32 33
	Shock Absorbers	YDA/YDR	34
	Assembly Kits	M/K RP/RM RO/RN RS/RQ S1/S5/VL1	35 36 36 36 37

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	aluminium, crimped on barrel
Barrel	stainless steel
Piston	brass (Ø8÷16), aluminium (Ø20-25)
Guide slide	acetalic resin
Piston rod	stainless steel
Piston seal	NBR
Guide bush for piston rod	standard supplied
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (Ø16÷25)



CODIFICATION KEY

M	1	0	0	0	2	5	0	0	5	0		
1	2	3	4	5	6	7						

1 Series	2 Type	3 Version
M = Ø8÷25 mm - ISO 6432 Microcylinders	1 = Stainless steel piston rod (standard version) 2 = Chromium-plated steel piston rod (to be used only with locking unit) 3 = Reduced version with stainless steel piston rod	00 = D.A. Standard version 01 = D.A. Through piston rod 50 = D.A. With adjustable cushionings (Ø16÷25) 51 = D.A. Through piston rod with adjustable cushionings (Ø16÷25) 60 = S.A. Retracted piston rod (Ø10÷25), Max stroke 50 mm 70 = S.A. Extended piston rod (Ø16÷25), Max stroke 25 mm D.A. = Double acting S.A. = Single acting

4 Bore (mm)	5 Stroke (mm)	6 Option	7 Magnetic
008 = Ø8 010 = Ø10 012 = Ø12 016 = Ø16 020 = Ø20 025 = Ø25	0010 = 10 0020 = 20 0025 = 25 0030 = 30 0040 = 40 0050 = 50 0075 = 75 0080 = 80 0100 = 100 0125 = 125 0150 = 150 0160 = 160 0175 = 175 0200 = 200	0250 = 250 0300 = 300 0320 = 320 0400 = 400 0500 = 500 F = Preset for locking unit reduced protrusion	M = Magnetic version (Ø10÷25)

M190 version with high temperature seals (Max 120°C) available upon request

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Female rear hinge	Angle bracket	Flange	Nut for end-cap	Holder for DF sensor	DF sensor
8	MF-15008	MF-17008	-	-	-	MF-21008	MF-13008	MF-12008	MF-20008	-	
10	MF-15008	MF-17008	-	-	-	MF-21008	MF-13008	MF-12008	MF-20008	DH-M10DF	
12	MF-15012	MF-17012	MF-22016	MF-23012	MF-24012	MF-21012	MF-13012	MF-12012	MF-20012	DH-M12DF	DF
16	MF-15012	MF-17012	MF-22016	MF-23012	MF-24012	MF-21012	MF-13012	MF-12012	MF-20012	DH-M16DF	
20	MF-15020	MF-17020	MF-22020	MF-23020	MF-24020	MF-21020	MF-13020	MF-12020	MF-20020	DH-M20DF	
25	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	MF-21020	MF-13020	MF-12020	MF-20020	DH-M25DF	

Ø	Holder for DH sensor	DH sensor
8	-	
10	DH-M10	
12	DH-M12	
16	DH-M16	DH
20	DH-M20	
25	DH-M25	

Through piston rod



Reduced version with adjustable cushionings



K ISO 15552 Cylinders

KL NEW

CLEAN PROFILE

Easier to clean

QUICK INSTALLATION

Sensors and connections on one side

UNIVER TECHNOLOGY

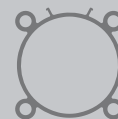
Strong and Reliable

ISO 15552

Interchangeability

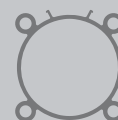
KE

Ø 32 ÷ 125 mm



KL

Ø 32 ÷ 125 mm

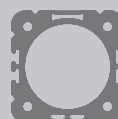


NEW

CLEAN PROFILE

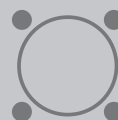
KD

Ø 32 ÷ 125 mm



K 160/200

Ø 160 - 200 mm



KIT

Assembly Kit
available for all series



CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar

End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	UNIVER Original self-lubricating and self-aligning
Shock absorber seals	NBR
Cushionings	pneumatic adjustable
Other available versions	tandem, two-position tandem, opposed, with common piston rod (upon request)



CODIFICATION KEY

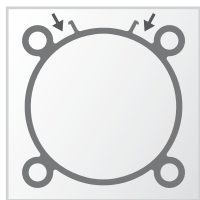
K	L	2	0	0	0	3	2	0	0	5	0		M
1	2	3	4	5	6	7							

1 Series	2 Type	3 Version	4 Bore (mm)
KL = Ø 32÷125 mm - ISO 15552 Pneumatic Cylinders	1 = Stainless steel piston rod 2 = Chromium-plated steel piston rod	00 = D.A. Standard version 01 = D.A. Through piston rod 60 = S.A. Retracted piston rod Max stroke 50 mm 70 = S.A. Extended piston rod Max stroke 50 mm D.A. = Double acting S.A. = Single acting	032 = Ø32 080 = Ø80 040 = Ø40 100 = Ø100 050 = Ø50 125 = Ø125 063 = Ø63
Magnetic version standard supplied			
5 Stroke (mm)	6 Option	7 Magnetic	
0025 = 25 0150 = 150 0320 = 320 0700 = 700 0050 = 50 0160 = 160 0350 = 350 0800 = 800 0075 = 75 0175 = 175 0400 = 400 0900 = 900 0080 = 80 0200 = 200 0450 = 450 1000 = 1000 0100 = 100 0250 = 250 0500 = 500 0125 = 125 0300 = 300 0600 = 600	F = Preset for locking unit reduced protrusion G = Preset for locking unit ISO protrusion	M = Magnetic version standard supplied	

KL190 and KL290 versions with high temperature seals (Max 120°C) and versions with low temperature seals available upon request

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin	Articulated counter hinge
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS	KF-19032SC
40	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS	KF-19040SC
50	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS	KF-19050SC
63	KF-15063	KF-17063	KF-22063	KF-23063	KF-24063	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS	KF-19063SC
80	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10080A	KF-19080CTA	KF-19080	KF-19063080CN	KF-10080AS	KF-19080SC
100	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10100A	KF-19100CTA	KF-19100	KF-19100125CN	KF-10100AS	KF-19100SC
125	KF-15125	KF-17125	-	-	-	KF-10125A	KF-19125CTA	-	KF-19100125CN	KF-10125AS	KF-19125SC
Ø	Articulated rear male hinge	Rear male hinge	Front/rear flange	Angle bracket	Front/rear hinge with floating pin	Hinge support	ISO intermediate hinge	DF sensor and DHF covering strip			
32	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KLF-14032				
40	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	KLF-14040				
50	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	KLF-14050				
63	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	KLF-14063				
80	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KLF-14080				
100	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KLF-14100				
125	KF-11125S	KF-11125	KF-12125	KF-13125	KF-14125AP	KF-41100125	KLF-14125				



Tube profile with integrated sensor grooves
UNIVER Original since 2005



Recessed sensor
DF series



Magnetic piston
standard supplied



Fixing screws integrated in
the end-cap profile



Sensor grooves available
in different positions



Possibility to mount DH
sensors with brackets



Intermediate hinge with locking
system guaranteed by UNIVER
AUTOMOTIVE expertise



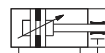
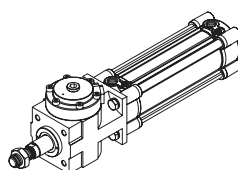
Standard fixing elements
UNIVER Original



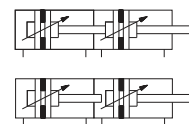
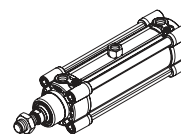
- 1 Die-cast end-caps in aluminium
- 2 Die-cast piston in aluminium
- 3 Guide slide in acetalic resin with integrated magnetic ring
- 4 Wear-resistant shock absorber seals in nitrilic rubber compound
- 5 Lip piston seals in nitrile rubber compound
- 6 **UNIVER Original** self-aligning and self-lubricating guide bush for piston rod

Further available versions

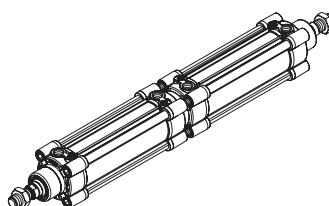
■ Cylinder with L1-N locking unit



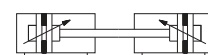
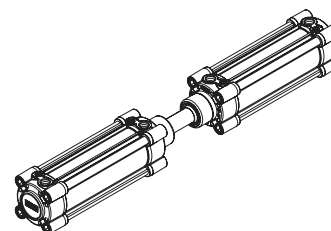
■ Tandem cylinder Two-position tandem cylinder



■ Opposed cylinders



■ Cylinders with common piston rod



CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	UNIVER Original self-lubricating and self-aligning
Shock absorber seals	NBR
Cushionings	pneumatic adjustable
Other available versions	tandem, two-position tandem, opposed, with common piston rod (upon request)



CODIFICATION KEY

K	E	2	0	0	0	3	2	0	0	5	0		
1	2	3	4	5	6	7							

1 Series	2 Type	3 Version	4 Bore (mm)
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K = Ø 32÷125 mm - ISO 15552 Pneumatic Cylinders (former ISO 6431 VDMA 24562) (available upon request)		D.A. = Double acting S.A. = Single acting	
5 Stroke (mm)	6 Option	7 Magnetic	
0025 = 25 0150 = 150 0320 = 320 0700 = 700 0050 = 50 0160 = 160 0350 = 350 0800 = 800 0075 = 75 0175 = 175 0400 = 400 0900 = 900 0080 = 80 0200 = 200 0450 = 450 1000 = 1000 0100 = 100 0250 = 250 0500 = 500 0125 = 125 0300 = 300 0600 = 600	F = Preset for locking unit reduced protrusion G = Preset for locking unit ISO protrusion	M = Magnetic version	

KE190 and KE290 versions with high temperature seals (Max 120°C) and versions with low temperature seals available upon request

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin	Articulated counter hinge
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS	KF-19032SC
40	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS	KF-19040SC
50	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS	KF-19050SC
63	KF-15063	KF-17063	KF-22063	KF-23063	KF-24063	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS	KF-19063SC
80	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10080A	KF-19080CTA	KF-19080	KF-19063080CN	KF-10080AS	KF-19080SC
100	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10100A	KF-19100CTA	KF-19100	KF-19100125CN	KF-10100AS	KF-19100SC
125	KF-15125	KF-17125	-	-	-	KF-10125A	KF-19125CTA	-	KF-19100125CN	KF-10125AS	KF-19125SC
Ø	Articulated rear male hinge	Rear male hinge	Front / rear flange	Angle bracket	Front / rear hinge with floating pin	Hinge support	ISO Intermediate hinge	ISO Intermediate hinge	DF sensor and DHF covering strip	DH sensor	Mounting bracket for DH sensor
32	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KLF-14032	KF-14032			
40	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	KLF-14040	KF-14040			
50	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	KLF-14050	KF-14050			
63	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	KLF-14063	KF-14063			
80	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KLF-14080	KF-14080			
100	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KLF-14100	KF-14100			
125	KF-11125S	KF-11125	KF-12125	KF-13125	KF-14125AP	KF-41100125	KLF-14125	KF-14125			

* = Fixing elements and accessories for K series

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	UNIVER Original self-lubricating and self-aligning
Shock absorber seals	NBR
Cushionings	pneumatic adjustable
Other available versions	tandem, two-position tandem, opposed, with common piston rod (upon request)



CODIFICATION KEY

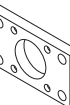
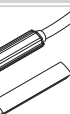
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1 Series	2 Type	3 Version	4 Bore (mm)
KD = Ø 32÷125 mm - ISO 15552 Pneumatic Cylinders (former ISO 6431 and VDMA 24562)	1 = Stainless steel piston rod 2 = Chromium-plated steel piston rod	00 = D.A. Standard version 01 = D.A. Through piston rod 60 = S.A. Retracted piston rod Max stroke 50 mm 70 = S.A. Extended piston rod Max stroke 50 mm D.A. = Double acting S.A. = Single acting	032 = Ø32 080 = Ø80 040 = Ø40 100 = Ø100 050 = Ø50 125 = Ø125 063 = Ø63
Magnetic version standard supplied			
5 Stroke (mm)	6 Option		7 Magnetic
0025 = 25 0150 = 150 0320 = 320 0700 = 700 0050 = 50 0160 = 160 0350 = 350 0800 = 800 0075 = 75 0175 = 175 0400 = 400 0900 = 900 0080 = 80 0200 = 200 0450 = 450 1000 = 1000 0100 = 100 0250 = 250 0500 = 500 0125 = 125 0300 = 300 0600 = 600	F = Preset for locking unit reduced protrusion G = Preset for locking unit ISO protrusion		M = Magnetic version standard supplied

KD190 and KD290 versions with high temperature seals (max 120°C) and versions with low temperature seals available upon request

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin	Articulated counter hinge
											
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS	KF-19032SC
40	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS	KF-19040SC
50	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS	KF-19050SC
63	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS	KF-19063SC
80	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10080A	KF-19080CTA	KF-19080	KF-19063080CN	KF-10080AS	KF-19080SC
100	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10100A	KF-19100CTA	KF-19100	KF-19100125CN	KF-10100AS	KF-19100SC
125	KF-15125	KF-17125	-	-	-	KF-10125A	KF-19125CTA	-	KF-19100125CN	KF-10125AS	KF-19125SC

Ø	Articulated rear male hinge	Rear male hinge	Front / rear flange	Angle bracket	Front / rear hinge with floating pin	Hinge support	ISO Intermediate hinge	DF sensor and DHF covering strip	Cable clamping for DF sensor
									
32	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KDF-14032	DF DHF-0020100	DF-001
40	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	KDF-14040		
50	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	KDF-14050		
63	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	KDF-14063		
80	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KDF-14080		
100	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KDF-14100		
125	KF-11125S	KF-11125	KF-12125	KF-13125	KF-14125AP	KF-41100125	KDF-14125		

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar

End-caps	die-cast aluminium
Barrel	anodized aluminium
Tie-rods	zinc-plated steel
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston rod scraper seals	NBR
Piston seals	polyurethane (Ø160) - NBR (Ø200)
Cushionings	pneumatic adjustable
Other available versions	tandem, two-position tandem, opposed, with common piston rod (upon request)



CODIFICATION KEY

K	2	0	0	1	6	0	0	0	8	0	
1	2	3	4	5	6						

1 Series	2 Type	3 Version	4 Bore (mm)
K = Ø 160/200 mm - ISO 15552 Pneumatic Cylinders	1 = Stainless steel piston rod 2 = Chromium-plated steel piston rod	00 = D.A. Standard version 01 = D.A. Through piston rod	160 = Ø160 200 = Ø200

D.A. = Double acting

5 Stroke (mm)	6 Magnetic
0025 = 25 0150 = 150 0320 = 320 0700 = 700 0050 = 50 0160 = 160 0350 = 350 0800 = 800 0075 = 75 0175 = 175 0400 = 400 0900 = 900 0080 = 80 0200 = 200 0450 = 450 1000 = 1000 0100 = 100 0250 = 250 0500 = 500 0125 = 125 0300 = 300 0600 = 600	M = Magnetic version

K190 and K290 versions with high temperature seals (Max 120°C) and versions with low temperature seals available upon request

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90° (CNOMO)	Narrow female hinge with pin	Articulated rear male hinge	Rear male hinge	Front/rear flange	Angle bracket	Front / rear hinge with floating pin
160	KF-15160	KF-17160	KF-10160A	KF-19160CTA	KF-19160200CN	KF-10160AS	KF-11160S	KF-11160	KF-12160	KF-13160	KF-14160AP
200	KF-15160	KF-17160	KF-10200A	KF-19200CTA	KF-19160200CN	KF-10200AS	KF-11200S	KF-11200	KF-12200	KF-13200	KF-14200AP

Ø	Hinge support	ISO intermediate hinge	DH sensor	Mounting bracket for DH sensor
160	KF-41160200	KF-14160		DH-K160200
200	KF-41160200	KF-14200	DH	DH-K160200

■ Ø160/200 Cylinder with profiled tube (version available upon request)



CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar

End-caps	die-cast aluminium
Barrel	anodized aluminium
Tie-rods	zinc-plated steel
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston rod scraper seals	NBR
Piston seals	NBR
Cushionings	pneumatic adjustable



CODIFICATION KEY

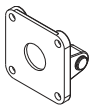
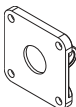
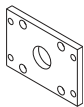
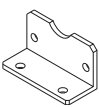
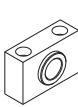
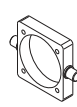
K	2	0	0	2	5	0	0	0	8	0	
1	2	3	4	5	6						

1 Series	2 Type	3 Version	4 Bore (mm)
K = Ø 250/320 mm - ISO 15552 Pneumatic Cylinders	1 = Stainless steel piston rod 2 = Chromium-plated steel piston rod	00 = D.A. Standard version 01 = D.A. Through piston rod	250 = Ø250 320 = Ø320

D.A. = Double acting

5 Stroke (mm)	6 Magnetic
0025 = 25 0150 = 150 0320 = 320 0700 = 700 0050 = 50 0160 = 160 0350 = 350 0800 = 800 0075 = 75 0175 = 175 0400 = 400 0900 = 900 0080 = 80 0200 = 200 0450 = 450 1000 = 1000 0100 = 100 0250 = 250 0500 = 500 0125 = 125 0300 = 300 0600 = 600	M = Magnetic version

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Female rear hinge with pin	Rear male hinge	Front/rear flange	Angle bracket	Hinge support	ISO intermediate hinge
250								
320	KF-15250 KF-15320	KF-17250 KF-17320	KF-10250AC KF-10320AC	KF-11250C KF-11320C	KF-12250 KF-12320	KF-13250 KF-13320	KF-41250 KF-41320	KF-14250 KF-14320

Magnetic sensors upon request



Adjustable pneumatic cushioning

UNIVER Original since 1999

- No change in dimensions comparing to an equivalent cylinder without cushionings
- Standard supplied for all models

STANDARDS-BASED

Available in compliance with UNITOP and ISO 21287 standards

STANDARD AND OCTAGONAL TUBE

Available in standard version and non-rotating version with **UNIVER Original** octagonal tube



Standard



Octagonal



RP/RM



RP (UNITOP RU-2/7)
Ø 16 ÷ 63 mm



RM (ISO 21287)
Ø 16 ÷ 100 mm



RP210



With anti-rotation guides
Ø 16 ÷ 63 mm



RO/RN



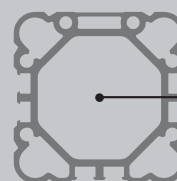
RO (UNITOP RU-2/7)
Ø 16 ÷ 63 mm



RN (ISO 21287)
Ø 16 ÷ 63 mm



Non-rotating (octagonal tube) version
Max load (Nm)



Ø	Nm
16	0,5
20	0,8
25	1
32	2
40	3
50	5
63	8



Assembly Kit
available for all series



CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (UNIVER Original standard supplied)
Magnet	standard supplied
Other available versions	tandem, two-position tandem, opposed, with common piston rod (upon request)



CODIFICATION KEY

R	P	2	0	0	0	3	2	0	0	2	5	
1	2	3	4	5	6							

1 Series	2 Type	3 Version
RP = Ø 16÷63 mm UNITOP Compact Cylinders	1 = Stainless steel female piston rod 2 = Chromium-plated steel female piston rod Upon request 3 = Stainless steel male piston rod (Ø40÷63) 4 = Chromium-plated steel male piston rod (Ø40÷63)	00 = D.A. Standard version 01 = D.A. Through piston rod 10 = D.A. Non-rotating guided piston rod 11 = D.A. Non-rotating guided through piston rod 20 = D.A. Long piston (Ø32÷63) 60 = S.A. Retracted piston rod 70 = S.A. Extended piston rod D.A. = Double acting S.A. = Single acting

4 Bore (mm)	5 Stroke (mm)	6 Option
016 = Ø16 040 = Ø40 020 = Ø20 050 = Ø50 025 = Ø25 063 = Ø63 032 = Ø32	Single acting 0005 - 0010 (Ø16÷25) 0005 - 0010 - 0015 - 0020 - 0025 (Ø32÷63) Double acting 0005 - 0010 - 0015 - 0020 - 0025 - 0030 - 0040 0050 - 0060 - 0080	Max standard stroke 0040 (Ø16) 0050 (Ø20-25) 0080 (Ø32÷63) Max stroke with non-rotating guided piston rod (upon request) 0100 (Ø16) 0200 (Ø20-25) 0400 (Ø32-40) 0500 (Ø50-63) C = With flange for versions: 100-101-120-160-170 200-201-220-260-270 H = Hollow piston rod only for through piston rod versions without flange

For high temperature applications please contact our Sales Office

FIXING ELEMENTS AND ACCESSORIES

Ø	Flange for female piston rod	Rear male hinge	Rear female hinge with pin	Counter hinge 90°	Front/rear flange	Angle bracket	Intermediate hinge	Centering adaptor ring	Hinge support	DF sensor and DHF covering strip	Cable clamping for DF sensor
16			-	-			-	-	-	-	-
20			-	-			-	-	-	-	-
25			-	-			-	-	-	-	-
32		-									
40		-									
50		-									
63		-									

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (UNIVER Original standard supplied)
Magnet	standard supplied
Other available versions	tandem, two-position tandem, opposed tandem, with common piston rod (upon request)



CODIFICATION KEY

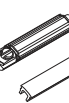
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1	2	3	4	5	6							

1 Series	2 Type	3 Version
RM = Ø 16÷100 mm - ISO 21287 Compact Cylinders	3 = Stainless steel male piston rod 4 = Chromium-plated steel male piston rod Upon request 1 = Stainless steel female piston rod (Ø40÷100) 2 = Chromium-plated steel female piston rod (Ø 40÷100)	00 = D.A. Standard version 01 = D.A. Through piston rod 20 = D.A. Long piston (Ø32÷63) 60 = S.A. Retracted piston rod 70 = S.A. Extended piston rod D.A. = Double acting S.A. = Single acting
4 Bore (mm)	5 Stroke (mm)	6 Option
016 = Ø16 050 = Ø50 020 = Ø20 063 = Ø63 025 = Ø25 080 = Ø80 032 = Ø32 100 = Ø100 040 = Ø40	Single acting 0005 - 0010 (Ø16÷25) 0005 - 0010 - 0015 - 0020 - 0025 (Ø32÷100) Double acting 0005 - 0010 - 0015 - 0020 - 0025 - 0030 - 0040 0050 - 0060 - 0080	Max standard stroke 0040 (Ø16) 0050 (Ø20-25) 0080 (Ø32÷63) H = Hollow piston rod only for through piston rod versions without flange

For high temperature applications please contact our Sales Office

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Centering adaptor ring	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin
											
16	MF-15012	MF-17012	MF-22016	MF-23012	MF-24012	-	-	-	-	-	-
20	MF-15020	MF-17020	MF-22020	MF-23020	MF-24020	-	-	-	-	-	-
25	MF-15020	MF-17020	MF-22020	MF-23020	MF-24020	-	-	-	-	-	-
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	RSF-09032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS
40	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	RSF-09040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS
50	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	RSF-09050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS
63	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	RSF-09063	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS
80	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	RSF-09080	KF-10080A	KF-19080CTA	KF-19080	KF-19063080CN	KF-10080AS
100	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	RSF-09100	KF-10100A	KF-19100CTA	KF-19100	KF-19100125CN	KF-10100AS

Ø	Articulated counter hinge	Articulated rear male hinge	Rear male hinge	Front/rear flange	Angle bracket	Front/rear hinge with floating pin	Hinge support	ISO intermediate hinge	DF sensor and DHF covering strip	Cable clamping for DF sensor
										
16	-	-	-	-	-	-	-	-	DF DHF-0020100	DF-001
20	-	-	-	-	-	-	-	-		
25	-	-	-	-	-	-	-	-		
32	KF-19032SC	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KDF-14032		
40	KF-19040SC	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	RPF-14040		
50	KF-19050SC	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	RPF-14050		
63	KF-19063SC	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	RPF-14063		
80	KF-19080SC	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KDF-14080		
100	KF-19100SC	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KDF-14100		

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast zamak (Ø 16 ÷ 25 mm) die-cast aluminium (Ø 32 ÷ 63 mm)
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (UNIVER Original standard supplied)
Magnet	standard supplied
Other available versions	tandem, two-position tandem, opposed tandem, with common piston rod (upon request)

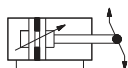


CODIFICATION KEY

R	O	2	0	0	0	3	2	0	0	2	5	
1	2	3	4	5	6							

1 Series	2 Type	3 Version
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RO = Ø 16÷63 mm UNITOP Compact Cylinders
octagonal tube



1 = Stainless steel female piston rod
2 = Chromium-plated steel female piston rod

Male piston rod upon request

00 = D.A. Standard version
01 = D.A. Through piston rod
20 = D.A. Long piston (Ø32÷63)

D.A. = Double acting

4 Bore (mm)	5 Stroke (mm)	6 Option
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016 = Ø16 **040** = Ø40
020 = Ø20 **050** = Ø50
025 = Ø25 **063** = Ø63
032 = Ø32

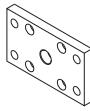
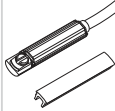
0005 - 0010 - 0015 - 0020 - 0025 - 0030 - 0040
0050 - 0060 - 0080

Max standard stroke

0040 (Ø16)
0050 (Ø20-25)
0080 (Ø32÷63)

H = Hollow piston rod only for through
piston rod versions without flange

FIXING ELEMENTS AND ACCESSORIES

Ø	Rear male hinge	Rear female hinge with pin	Counter hinge 90°	Front/rear flange	Angle bracket	Intermediate hinge	Centering adaptor ring	HInge support	DF sensor and DHF covering strip	Cable clamping for DF sensor
										
16	RPF-11016	-	-	RPF-12016	RPF-13016	-	-	-	DF DHF-0020100	DF-001
20	RPF-11020	-	-	RPF-12020	RPF-13020	-	-	-		
25	RPF-11025	-	-	RPF-12025	RPF-13025	-	-	-		
32	-	KF-10032A	KF-19032	KF-12032	KF-13032	KDF-14032	RSF-09032	KF-41032		
40	-	RPF-10040A	KF-19040	RPF-12040	RPF-13040	RPF-14040	RSF-09040	KF-41040050		
50	-	RPF-10050A	KF-19050	RPF-12050	RPF-13050	RPF-14050	RSF-09050	KF-41040050		
63	-	RPF-10063A	KF-19063	RPF-12063	RPF-13063	RPF-14063	RSF-09063	KF-41063080		

CHARACTERISTICS

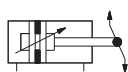
Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast zamak (Ø16÷25) die-cast aluminium (Ø32÷63)
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (UNIVER Original standard supplied)
Magnet	standard supplied
Other available versions	tandem, two-position tandem, opposed tandem, with common piston rod (upon request)



CODIFICATION KEY

R	N	3	0	0	0	3	2	0	0	2	5	
1	2	3	4	5	6							

1 Series	2 Type	3 Version
RN = Ø 16÷63 mm - ISO 21287 Compact Cylinders octagonal tube	3 = Stainless steel male piston rod 4 = Chromium-plated steel male piston rod Female piston rod upon request	00 = D.A. Standard version 01 = D.A. Through piston rod 20 = D.A. Long piston (Ø32÷63) D.A. = Double acting
4 Bore (mm)	5 Stroke (mm)	6 Option
016 = Ø16 040 = Ø40 020 = Ø20 050 = Ø50 025 = Ø25 063 = Ø63 032 = Ø32	0005 - 0010 - 0015 - 0020 - 0025 - 0030 - 0040 0050 - 0060 - 0080 Max standard stroke 0040 (Ø16) 0050 (Ø20-25) 0080 (Ø32÷63)	H = Hollow piston rod only for through piston rod versions without flange



FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Centering adaptor ring	Rear female hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin
16	MF-15012	MF-17012	MF-22016	MF-23012	MF-24012	-	-	-	-	-	-
20	MF-15020	MF-17020	MF-22020	MF-23020	MF-24020	-	-	-	-	-	-
25	MF-15020	MF-17020	MF-22020	MF-23020	MF-24020	-	-	-	-	-	-
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	RSF-09032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS
40	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	RSF-09040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS
50	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	RSF-09050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS
63	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	RSF-09063	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS

Ø	Articulated counter hinge	Articulated rear male hinge	Rear male hinge	Front/rear flange	Angle bracket	Front/rear hinge	Hinge support	ISO Intermediate hinge	DF sensor and DHF covering strip	Cable clamping for DF sensor
16	-	-	-	-	-	-	-	-		
20	-	-	-	-	-	-	-	-		
25	-	-	-	-	-	-	-	-		
32	KF-19032SC	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KDF-14032	DF DHF-0020100	DF-001
40	KF-19040SC	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	KDF-14040		
50	KF-19050SC	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	KDF-14050		
63	KF-19063SC	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	KDF-14063		



Adjustable pneumatic cushioning

UNIVER Original since 1999

- No change in dimensions comparing to an equivalent cylinder without cushionings
- Standard supplied for all models

STRONG

Oversized guide and piston rods

ISO 15552

Interaxes, centering diameters and piston rods complying with ISO 15552 standards



RS



Ø 32 ÷ 100 mm



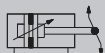
RS210



With anti-rotation guides Ø 32 ÷ 100 mm



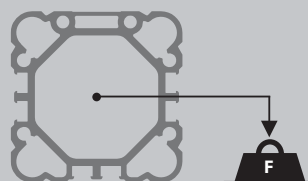
RQ



Ø 32 ÷ 63 mm



Non-rotating version (octagonal tube)
Max load (Nm)



Ø	Nm
32	2
40	3
50	5
63	8



Assembly Kit
available for all series





CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (UNIVER Original standard supplied)
Magnet	standard supplied
Other versions available	tandem, two-position tandem, opposed tandem, with common piston rod (upon request)

CODIFICATION KEY

R	S	2	0	0	0	3	2	0	0	2	5	
1	2	3	4	5	6							

1 Series	2 Type	3 Version
RS = Ø 32÷100 mm - STRONG Compact Cylinders	1 = Stainless steel female piston rod 2 = Chromium-plated steel female piston rod 3 = Stainless steel male piston rod 4 = Chromium-plated steel male piston rod	For type 1 - 2 00 = D.A. Standard version 01 = D.A. Through piston rod 10 = D.A. Non-rotating guided piston rod (Ø32÷63) 11 = D.A. Non-rotating guided through piston rod (Ø32÷63) 20 = D.A. Long piston (Ø32÷63) 60 = S.A. Retracted piston rod 70 = S.A. Extended piston rod For type 3 - 4 00 = D.A. Standard version 01 = D.A. Through piston rod 20 = D.A. Long piston (Ø32÷63) 60 = S.A. Retracted piston rod 70 = S.A. Extended piston rod D.A. = Double acting S.A. = Single acting
4 Bore (mm)	5 Stroke (mm)	6 Option
032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63 080 = Ø80 100 = Ø100	Single acting 0005 - 0010 - 0015 - 0020 - 0025 Double acting 0005 - 0010 - 0015 - 0020 - 0025 0030 - 0040 - 0050 - 0060 - 0080 Max standard stroke 0080 (Ø32÷100)	Max stroke with long piston (upon request) 0800 (Ø32-40) 1000 (Ø50÷63) Max stroke with non-rotating guided piston rod (upon request) 0400 (Ø32-40) 0800 (Ø63) 0500 (Ø50) H = Hollow piston rod only for through piston rod versions without flange G = Preset for locking unit only for D.A. cylinders with chromium-plated steel piston rod C = With flange for versions: 100-101-120-160-170 200-201-220-260-270

For high temperature applications please contact our Sales Office

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Flange for female piston rod	Centering adaptor ring	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	RPF-28032	RSF-09032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN
40	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	RPF-28040	RSF-09040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN
50	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	RPF-28050	RSF-09050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN
63	KF-15063	KF-17063	KF-22063	KF-23063	KF-24063	RPF-28063	RSF-09063	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN
80	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	-	RSF-09080	KF-10080A	KF-19080CTA	KF-19080	KF-19063080CN
100	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	-	RSF-09100	KF-10100A	KF-19100CTA	KF-19100	KF-19100125CN
Ø	Narrow female hinge with pin	Articulated counter hinge	Articulated rear male hinge	Rear male hinge	Front/rear flange	Angle bracket	Front/rear hinge with floating pin	Hinge support	ISO Intermediate hinge	DF sensor and DHF covering strip	Cable clamping for DF sensor
32	KF-10032AS	KF-19032SC	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KDF-14032		
40	KF-10040AS	KF-19040SC	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	RPF-14040		
50	KF-10050AS	KF-19050SC	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	RPF-14050		
63	KF-10063AS	KF-19063SC	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	RPF-14063		
80	KF-10080AS	KF-19080SC	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KDF-14080		
100	KF-10100AS	KF-19100SC	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KDF-14100		

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (UNIVER Original standard supplied)
Magnet	standard supplied
Other available versions	tandem, two-position tandem, opposed tandem, with common piston rod (upon request)



CODIFICATION KEY

R	Q	2	0	0	0	3	2	0	0	2	5	
1	2	3	4	5	6							

1 Series	2 Type	3 Version
RQ = Ø 32÷63 mm - STRONG Compact Cylinders octagonal tube	1 = Stainless steel female piston rod with flange 2 = Chromium-plated steel female piston rod with flange 3 = Stainless steel male piston rod 4 = Chromium-plated steel male piston rod	00 = D.A. Standard version 01 = D.A. Through piston rod 20 = D.A. Long piston
		D.A. = Double acting
4 Bore (mm)	5 Stroke (mm)	6 Option
032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63	Double acting 0005 - 0010 - 0015 - 0020 - 0025 0030 - 0040 - 0050 - 0060 - 0080 Max standard stroke 0080 Max stroke with long piston (upon request) 0400 (Ø32-40) 1000 (Ø50-63)	H = Hollow piston rod only for through piston rod versions without flange G = Preset for locking unit only with chromium-plated steel piston rod

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Centering adaptor ring	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	RSF-09032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS
40	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	RSF-09040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS
50	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	RSF-09050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS
63	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	RSF-09063	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS

Ø	Articulated counter hinge	Articulated rear male hinge	Rear male hinge	Front, rear flange	Angle bracket	Front / rear hinge	Hinge support	ISO Intermediate hinge	DF sensor and DHF covering strip	Cable clamping for DF sensor
32	KF-19032SC	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KDF-14032		
40	KF-19040SC	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	RPF-14040	DF	DF-001
50	KF-19050SC	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	RPF-14050	DHF-0020100	
63	KF-19063SC	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	RPF-14063		

COMPACT

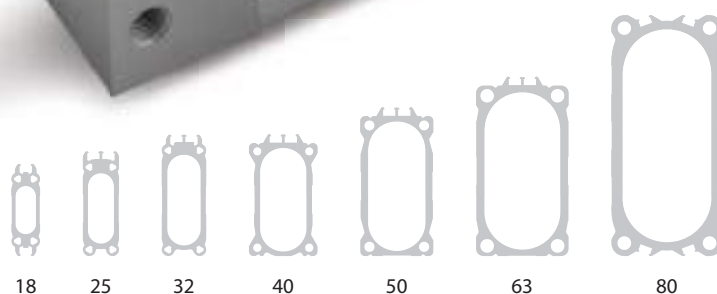
Up to **40%** width reduction if compared to standard cylinders

ANTI-ROTATION

Piston rod max rotation from 0,3° to 0,9°

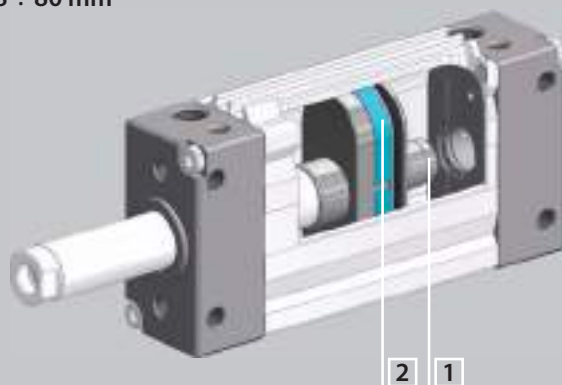
CUSHIONING

Standard supplied $\varnothing 18 \div 80$ mm
(adjustable pneumatic cushionings)



OV

$\varnothing 18 \div 80$ mm



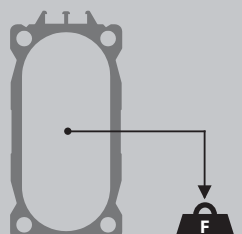
1 Adjustable pneumatic cushioning

- Standard supplied
- No variation in dimensions comparing to an equivalent cylinder without cushionings

2 Oversized piston guide and UNIVER original seal

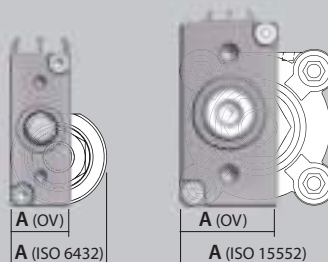
- Suitable for heavy loads (F)
- Piston rod rotation highly reduced

Max applicable torque (Nm) and related Max rotation



$\varnothing$	F (Nm)	Degrees
18	0,80	0,90
25	1,00	0,80
32	1,40	0,60
40	1,70	0,40
50	2,00	0,35
63	2,30	0,30
80	2,60	0,30

Comparison of A dimension: OV cylinder vs ISO standard cylinder



$\varnothing$	A (OV)	A (ISO)	Reduction
18	16	46,5	-42%
25	20	52	-35%
32	24,5	64,5	-45%
40	38	76,5	-30%
50	40	95	-40%
63	50	114	-35%
80	60	140	-38%

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	anodized aluminium
Barrel	anodized aluminium
Piston	aluminium
Guide slide	technopolymer
Piston rod	stainless steel (Ø18-25), chromium-plated steel (Ø32÷80)
Piston seal	NBR
Guide bush for piston rod	standard supplied
Piston rod scraper seals	polyurethane
Cushionings	pneumatic adjustable (standard supplied)
Magnet	standard supplied



CODIFICATION KEY

O	V	2	0	0	0	3	2	0	0	5	0
1	2	3	4	5							

1 Series	2 Type	3 Version
OV = Ø 18÷80 mm - Oval Cylinders 	1 = Stainless steel female piston rod (Ø18÷80) 2 = Chromium-plated steel female piston rod (Ø32÷80) 3 = Stainless steel male piston rod (Ø18÷80) 4 = Chromium-plated steel male piston rod (Ø32÷80)	00 = D.A. Standard version 01 = D.A. Through piston rod 02 = D.A. Hollow through piston rod

D.A. = Double acting

4 Bore (mm)	5 Stroke (mm)
018 = Ø18 050 = Ø50 025 = Ø25 063 = Ø63 032 = Ø32 080 = Ø80 040 = Ø40	0010 - 0025 - 0040 - 0050 - 0080 - 0100 - 0125 - 0160 - 0200 (Ø18-25) 0010 - 0025 - 0040 - 0050 - 0080 - 0100 - 0125 - 0160 - 0200 - 0250 - 0320 (Ø 32÷80)

Theoretical forces (**N**) developed at working pressure (**bar**)

Ø	Working pressure					Working pressure					Cushioning length
	bar					bar					
	Thrust					Traction					
	2	4	6	8	10	2	4	6	8	10	
18	54	108	162	216	270	41	82	122	163	204	8
25	98	196	295	393	491	82	165	247	330	412	10
32	161	322	483	643	804	138	276	415	553	691	10
40	251	502	754	1005	1256	221	422	633	844	1055	14
50	393	785	1178	1570	1963	330	660	990	1320	1650	Front 11/Back 14
63	623	1246	1870	2493	3116	560	1120	1682	2240	2800	Front 11/Back 14
80	1005	2010	3015	4019	5024	942	1884	2826	3770	4711	Front 20/Back 27

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Angle bracket	Male hinge	Flange	DF sensor and DHF covering strip	Cable clamping for DF sensor
18										
25	MF-15020	MF-17020	MF-22020	MF-23020	KF-24020	OVF-13018	OVF-11018	OVF-12018	DF DHF-0020100	DF-001
32	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	OVF-13025	OVF-11025	OVF-12025		
40	KF-15032	KF-17032	KF-22025	KF-23025	KF-24032	OVF-13032	OVF-11032	OVF-12032		
50	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	OVF-13040	OVF-11040	OVF-12040		
63	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	OVF-13050	OVF-11050	OVF-12050		
80	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	OVF-13063	OVF-11063	OVF-12063		
						OVF-13080	OVF-11080	OVF-12080		

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	aluminium
Barrel	aluminium
Piston	aluminium
Guide slide	technopolymer
Piston rod	stainless steel
Piston seal	NBR
Guide bush for piston rod	standard supplied
Piston rod scraper seal	polyurethane
Shock absorber seals	NBR (standard supplied)
Other versions available	tandem, two-position tandem, multiple position tandem



CODIFICATION KEY

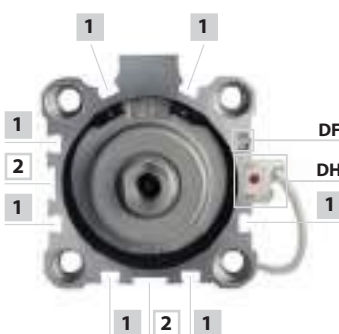
W	1	0	0	0	3	2	0	0	5	0		
1	2	3	4	5	6	7						

1 Series	2 Type	3 Version
W = Ø 12÷100 mm Short Stroke Cylinders	1 = Stainless steel piston rod 7 = Stainless steel piston rod with male rear hinge, versions 00 - 10 - 60 - 70 (except for bore Ø12)	00 = D.A. Standard version 01 = D.A. Through piston rod 10 = D.A. Non-rotating piston rod (except for Ø 12) 11 = D.A. Non-rotating through piston rod (except for Ø 12) 31 = D.A. Hollow through piston rod (except for Ø 12-16) 60 = S.A. Retracted piston rod 70 = S.A. Extended piston rod
		D.A. = Double acting S.A. = Single acting
4 Bore (mm)	5 Stroke (mm)	6 Option
012 = Ø12 040 = Ø40 016 = Ø16 050 = Ø50 020 = Ø20 063 = Ø63 025 = Ø25 080 = Ø80 032 = Ø32 100 = Ø100	Single acting 0005 - 0010 (Ø12÷25) 0005 - 0010 - 0025 (Ø32÷100) Double acting 0005 - 0010 - 0020 - 0025 0030 - 0040 - 0050 (Ø12-16) 0005 - 0010 - 0020 - 0025 0030 - 0040 - 0050 - 0075 (Ø20÷100)	S = Safety distance (only for versions 10 and 11)
		7 Magnetic
		M = Magnetic version (except for Ø 12)

FIXING ELEMENTS AND ACCESSORIES

Ø	Nipple	DF sensor and DHF covering strip	Cable clamping for DF sensor	DH sensor
12	WF-50012	DF DHF-0020100	DF-001	DH
16	WF-50012			
20	WF-50020			
25	WF-50020			
32	WF-50032			
40	WF-50040			
50	WF-50050			
63	WF-50063			
80	WF-50080			
100	WF-50080			

New tube



Traditional tube



- 1 Groove for DF series recessed sensor
2 Groove for DH series traditional sensor



Ø 12 mm



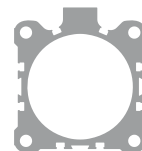
Ø 16-20 mm



Ø 25-32 mm



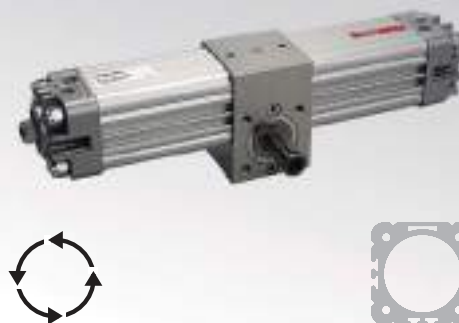
Ø 40 mm



Ø 50-63-80-100 mm

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	aluminium
Barrel	aluminium
Piston	die-cast aluminium
Guide slide	acetalic resin
Rack	stainless steel
Piston seal	NBR
Pinion	nitrided steel
Shock absorber seals	NBR
Cushionings	pneumatic adjustable (standard supplied)



CODIFICATION KEY

R	1	1	0	3	2	1	8	0	
1	2	3	4	5					

1 Series	2 Type	3 Bore (mm)	4 Angle of rotation	5 Magnetic
R = Ø 32÷125 mm Pneumatic rotary actuators	11 = Male pinion without adjustment (degree of accuracy ± 3°) 12 = Male pinion with adjustment ± 5° 13 = Female pinion without adjustment (degree of accuracy ± 3°) 14 = Female pinion with adjustment ± 5°	032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63 080 = Ø80 100 = Ø100 125 = Ø125	090 = 90° 180 = 180° 270 = 270° 360 = 360°	M = Magnetic version



ACCESSORIES

Ø	DF sensor and DHF covering strip	Cable clamping for DF sensor
32 40 50 63 80 100 125	DF DHF-0020100	DF-001

CHARACTERISTICS

Ambient temperature	-20° ÷ 80 °C
Fluid	filtered air, with or without lubrication, neutral gases
Working pressure	4 ÷ 8 bar (single acting) 2 ÷ 8 bar (double acting)
Connections	NAMUR interface (G1/4)
Rotation	0-90°±3° (external adjustment)
Max pressure	10 bar
End-caps	die-cast aluminium
Piston	die-cast aluminium
Guide slide	acetalic resin
Seals	NBR
Body	hard anodized aluminium extrusion
Pinion	nickel-plated steel
Screws and nuts	stainless steel

Connections: bottom hole for ball valve installation in compliance with ISO 5211/DIN 3337 standards.
Solenoid valve interface, shaft top-end and top hole for accessory fixing in compliance with VDI/VDE 3845 NAMUR standards.



CODIFICATION KEY

Y	R	2	0	1	D	A	0
1	2	3					

1 Series	2 Size (mm)	3 Version
YR2 = Rotary Actuators for Process Automation	00 = 32 (DA0 only) 01 = 50 2A = 63 (F04) 2B = 63 (F05) 03 = 75 35 = 85 04 = 100	DA0 = Double acting S12 = Single acting - 12 springs standard (different number of springs upon request)
	45 = 115 05 = 125 55 = 145 06 = 160 08 = 200 10 = 250	

Torque - double acting version (P = 6 bar)

Part No.	Torque (Nm)
YR200DA0	7,3
YR201DA0	17,7
YR22ADA0-YR22BDA0	28,2
YR203DA0	60
YR235DA0	102
YR204DA0	142
YR245DA0	261,6
YR205DA0	333
YR255DA0	473
YR206DA0	680
YR208DA0	1276
YR210DA0	3234

Torque - single acting version (P = 6 bar)

Part No.	Torque (Nm)	
	0°	90°
YR201S12	10,5	7,2
YR22AS12-YR22BS12	16,8	11,4
YR203S12	36	24
YR235S12	64	39
YR204S12	87	56
YR245S12	159,6	101,6
YR205S12	203	130
YR255S12	303	173
YR206S12	429	260
YR208S12	796	520
YR210S12	1909	1254

■ YR series ball valve



■ AC-N series NAMUR valves



■ AC-N series valves with actuator



YR3



Ambient temperature: 0 ÷ 50 °C

Working pressure: 1,5 ÷ 7 bar

Rotation angle: 0° ÷ 180°

Version upon request: with shock absorbers Ø 15 ÷ 63
(add suffix D to part no. e.g. YR3010D)

Part. No	Ø	Torque (Nm)*	Kinetic energy (J)	Sensor
YR3003	10	0,3	0,002	DF-T
YR3007	12	0,6	0,006	
YR3010	15	1,5	0,006	
YR3020	18	2,2	0,025	
YR3030	20	3,2	0,048	
YR3050	25	5,5	0,080	
YR3070	28	7,5	0,24	
YR3100	32	9,8	0,32	
YR3200	40	19	0,56	
YR3300	50	31	1	
YR3500	63	45	1,5	

* = Theoretical torque at 5 bar

Examples of CYLINDER - VALVE assembly

■ RV - STRONG cylinder with integrated VDMA valve

STRONG cylinder with integrated 5/2-5/3 VDMA solenoid valve, side 18 or 26 mm.
Supply and exhaust occur directly from the connection plate between valve and cylinder and exhausts are adjustable.
Electrical connection M12 can be operated also from a PLC.



■ RW - Telescopic cylinder with integrated VDMA valve

Telescopic cylinder with integrated 5/2-5/3 VDMA solenoid valve, side 18 or 26 mm.
Supply and exhaust occur directly from the connection plate between valve and cylinder and exhausts are adjustable.
Electrical connection M12 can be operated also from a PLC.



■ KD series ISO 15552 cylinder with integrated valve

Valve mounting by means of a proper plate embedded in one of tube sensor grooves.



■ RS series STRONG cylinder with integrated valve

Valve mounting by means of a proper plate embedded in one of tube sensor grooves.



Plate for mounting valve on sensor groove



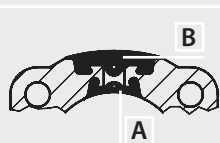
DF-003 (M3)
DF-004 (M4)

S1-S5-VL1

Rodless Cylinders



UNIVER Original since 1988



A - Internal strip (seal)
B - External strip (protection) made of reinforced elastomer with Kevlar fiber



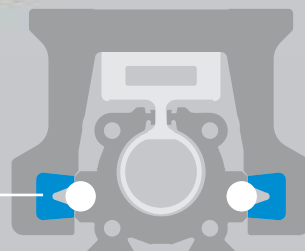
S1

Ø 16 ÷ 50 mm - Standard version



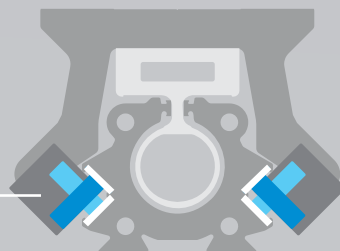
S5

Ø 25 ÷ 50 mm - Version with integrated guides
 Technopolymer sliding guide



VL1

Ø 25 ÷ 50 mm - Version with 90° integrated guides
 Sliding on ball bearings



Assembly Kit
 available for all series



CHARACTERISTICS

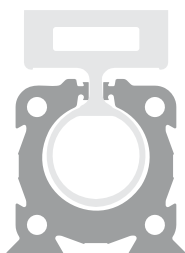
Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	3 ÷ 10 bar
End-caps	die-cast light alloy
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston seal	NBR
Shock absorber seals	mechanical
Cushionings	pneumatic adjustable (standard supplied)
Magnet	upon request



CODIFICATION KEY

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1	2	3	4	5	6	7					

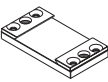
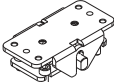
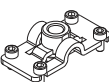
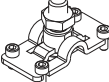
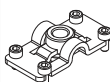
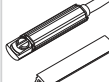
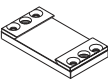
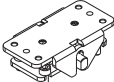
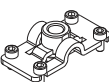
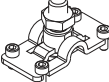
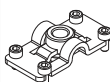
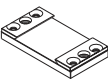
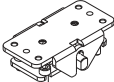
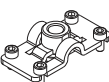
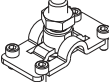
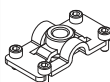
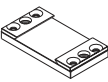
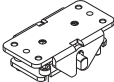
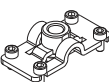
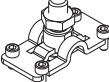
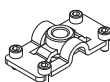
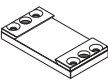
1 Series S1 = Ø 16÷50 mm - Rodless Cylinders standard version	2 Carriage type 0 = Standard carriage 2 = Medium carriage (except for Ø16) 3 = Long carriage (except for Ø16)	3 Left end-cap supply port 0 = No supply port (both chambers are supplied from the right end-cap) 1 = Side supply port (except for Ø16) 2 = Bottom supply port (except for Ø16) 3 = Rear supply port (except for Ø16)	
4 Right end-cap supply port 1 = Side supply port (except for Ø16) 2 = Bottom supply port (except for Ø16) 3 = Rear supply port (except for Ø16) 4 = Rear supply ports for both chambers on the right end-cap 5 = Side supply ports for both chambers on the right end-cap (only for Ø16)	5 Bore (mm) 16 = Ø18 25 = Ø25 32 = Ø32 40 = Ø40 50 = Ø50	6 Stroke (mm) Up to 5000 (Ø 16) Up to 6000 (Ø 25÷50)	7 Magnetic M = Magnetic version standard supplied (Ø 16) upon request (Ø 25÷50)



S1

- Extruded aluminium profile Ø 16 ÷ 50 mm
- Stroke up to 6 m
- Different supply port configurations available
- Different carriage types
- High translation speed 1 ÷ 3 m/s

FIXING ELEMENTS AND ACCESSORIES

Ø	Bracket	Angle bracket	Fixing plate	Oscillating bracket	Female threaded connection	Male threaded pin	Female connection without thread	DF sensor and DHF covering strip	Cable clamping for DF sensor	DH sensor	Bracket for DH sensor
16		-								-	-
25	-							-	-	-	DH-S25
32	-							-	-	-	DH-S32
40		-						-	-	-	DH-S40
50		-		-	-	-	-	-	-	-	DH-S50

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	3 ÷ 10 bar

End-caps	die-cast light alloy
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston seal	NBR
Shock absorber seals	mechanical
Cushionings	pneumatic adjustable (standard supplied)

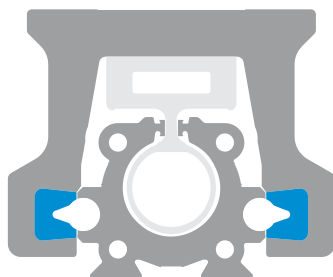


CODIFICATION KEY

S	5	0	1	1	2	5	0	8	5	0
1	2	3	4	5	6					

1 Series	2 Carriage type	3 Left end-cap supply port
S5 = Ø 25÷50 mm - Rodless Cylinders with integrated guides Technopolymer sliding guide	0 = Standard carriage (except Ø 40-50) 2 = Medium carriage 3 = Long carriage	0 = No supply port (both chambers are supplied from the right end-cap) 1 = Side supply port 2 = Bottom supply port 3 = Rear supply port

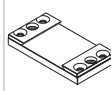
4 Right end-cap supply port	5 Bore (mm)	6 Stroke (mm)
1 = Side supply port 2 = Bottom supply port 3 = Rear supply port 4 = Rear supply ports for both chambers on the right end-cap	25 = Ø25 32 = Ø32 40 = Ø40 50 = Ø50	Up to 6000



S5

- Extruded aluminium profile Ø 25 ÷ 50 mm
- Stroke up to 6 m
- Flexible guide system
- Sliding of the carriage with plastic slide on steel shafts
- Translation speed 0,2 ÷ 1,5 m/sec.
- Version with locking unit available

FIXING ELEMENTS

Ø	Bracket	Angle bracket	Fixing plate
			
25	-	SF-13025	SF-12025
32	-	SF-13032	SF-12032
40	SF-13040	-	SF-12040
50	SF-13050	-	SF-12050

S5 with L6 locking unit



CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	3 ÷ 10 bar
End-caps	die-cast light alloy
Barrel	anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston seals	NBR
Shock absorber seals	mechanical
Cushionings	pneumatic adjustable (standard supplied)

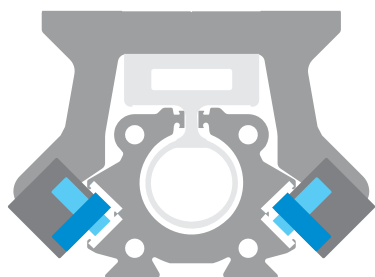


CODIFICATION KEY

V	L	1	2	2	1	1	3	2	0	8	5	0
1	2	3	4	5	6	7						

1 Series	2 Carriage type	3 No. of ball bearing pairs standard supplied
VL1 = Ø 25÷50 mm - Rodless Cylinders with 90° integrated guides Sliding on ball bearings	2 = Medium carriage 3 = Long carriage	Medium carriage 2 = Ø 25÷40 3 = Ø 50 Long carriage 3 = Ø 25÷40 4 = Ø 50

4 Left end-cap supply port	5 Right end-cap supply port	6 Bore (mm)	7 Stroke (mm)
0 = No supply port (both chambers are supplied from the right end-cap) 1 = Side supply port 2 = Bottom supply port 3 = Rear supply port	1 = Side supply port 2 = Bottom supply port 3 = Rear supply port 4 = Rear supply ports for both chambers on the right end-cap	25 = Ø25 32 = Ø32 40 = Ø40 50 = Ø50	Up to 6000



VL1

- Extruded aluminium profile Ø 25 ÷ 50 mm
- Stroke up to 6 m
- Heavy duty precision series
- Rigid guide system
- Sliding of the carriage on ball bearings
- Translation speed 0,2 ÷ 2 m/sec.
- Version with locking unit available

FIXING ELEMENTS

Ø	Bracket	Angle bracket	Fixing plate
25	-	SF-13025	SF-12025
32	-	SF-13032	SF-12032
40	SF-13040	-	SF-12040
50	SF-13050	-	SF-12050

VL1 with L6 locking unit



J Slide Units

STRONG

Extruded aluminium profile structure
UNIVER Original

STURDY

Oversized hollow guiding shafts
made of chromium-plated steel

SMOOTH SLIDING

Self-lubricating guiding bushes
made of special steel

STANDARD

Wide range of standard solutions
for any application requirement



J1

ISO 6432 Cylinders



ISO 15552 Cylinders



J3

Rodless Cylinders



J64RS

STRONG Cylinders



J64RT2

Telescopic Cylinders



Assembly Kit
available for all series



CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	2 ÷ 10 bar

Barrel	extruded anodized aluminium
Guide bush for piston rod	special steel
Shafts	chromium-plated steel
Shaft scraper seals	polyurethane
Flange	steel



Slide Units for M, KE/K, KD series cylinders

J1



CODIFICATION KEY

J	1	0	A	5	5	0	0	5	0	A
1	2	3	4	5	6	7				

1 Series	2 Type	3 Accessories
J = Slide Unit	10 = Protruding shafts and short housing (recommended for strokes up to 50 mm) 11 = Protruding shafts and medium housing 12 = Protruding shafts and long housing 14 = Fully protected cylinder 16 = Central mounting (semi-external cylinder) 17 = Central mounting (fully protected cylinder) 18 = Medium moving housing (external cylinder) 19 = Long moving housing (external cylinder)	A = Shaft scrapers standard supplied

4 Slide unit size	5 Cylinder bore (mm)	6 Cylinder stroke (mm)	7 Cylinder option
0 = 16 for Ø16 cylinders	0 = Ø16	M	A = M150 series Ø16÷25 microcylinders
2 = 25 for Ø25 cylinders	2 = Ø25	0025 - 0030 - 0040 - 0050 - 0075	K200 series Ø32÷100 cylinders
3 = 32 for Ø32 cylinders	3 = Ø32	0100 - 0125 - 0150 - 0160 - 0175	B = M250 series Ø16÷25 microcylinders with
4 = 40 for Ø40 cylinders	4 = Ø40	0200 - 0250 - 0300 - 0400 - 0500	locking unit
5 = 50 for Ø50 cylinders	5 = Ø50	KD - KE/K	K200 series Ø32÷100 cylinders with
6 = 63 for Ø63 cylinders	6 = Ø63	0025 - 0050 - 0075 - 0080 - 0100	locking unit
7 = 80 for Ø80 cylinders	7 = Ø80	0125 - 0150 - 0160 - 0175 - 0200	(only for J12, J14, J16, J17)
8 = 100 for Ø100 cylinders	8 = Ø100	0250 - 0300 - 0320 - 0400 - 0450	C = KE200 series Ø 32÷100 cylinders
		0500 - 0600 - 0700 - 0800 - 0900	D = KE200 series Ø 32÷100 cylinders with
		1000	locking unit (only for J12, J14, J16, J17)
			E = KD200 series Ø32÷100 cylinders
			F = KD200 series Ø32÷100 cylinders
			with locking unit (only for J12 , J14 and J16)

Slide units are supplied with integrated cylinder

1 Slide Units for S1 series rodless cylinders

J3



CODIFICATION KEY

J	3	0	A	5	3	0	1	0	0	A
1	2	3	4	5		6		7		

1 Series	2 Type	3 Accessories
J = Slide Unit	30 = Fully protected cylinder (2 bearings - standard carriage) 31 = Fully protected cylinder (2 bearings - long carriage)	A = Shaft scrapers standard supplied

4 Slide unit size	5 Cylinder bore (mm)	6 Slide unit stroke (mm)	7 Supply port option
4 = 40 for Ø25 cylinders 5 = 50 for Ø32 cylinders 6 = 63 for Ø40 cylinders 7 = 80 for Ø50 cylinders	2 = Ø25 3 = Ø32 4 = Ø40 5 = Ø50	Up to 0800	A = Supply ports on both end-caps B = Supply ports on the right end-cap only

Slide Units for RS series STRONG compact cylinders

J64RS



CODIFICATION KEY

J	6	4	R	S	3	3	0	0	5	0	B
1	2	3	4	5		6		7			

1 Series	2 Slide unit type	3 Cylinder type
J = Slide Unit - Shaft scrapers standard supplied	64 = Fully protected cylinder (stroke longer than 50 mm) 65 = Fully protected cylinder, through opening 66 = Fully protected cylinder, through opening, two plates 67 = Fully protected cylinder, two plates (stroke longer than 50 mm)	RS = STRONG cylinder (RS22J... series) with long piston and tube with sensor grooves on the same side as supply ports to allow mounting of magnetic sensors

4 Slide unit size	5 Cylinder bore (mm)	6 Slide unit stroke (mm)	7 Cylinder option
3 = 32 for Ø32 cylinders 4 = 40 for Ø40 cylinders 5 = 50 for Ø50 cylinders 6 = 63 for Ø63 cylinders	3 = Ø32 4 = Ø40 5 = Ø50 6 = Ø63	0015 ÷ 0800	A = Cylinder with long piston B = Cylinder with long piston and locking unit

Slide units are supplied with integrated cylinder

Slide Units for RT2 series telescopic cylinders

■ J64RT2



CODIFICATION KEY

J	6	4	R	T	2	4	4	0	8	0	0	A
1	2	3	4	5	6	7						

1 Series	2 Slide unit type	3 Cylinder type
J = Slide Unit - Shaft scrapers standard supplied	64 = Fully protected telescopic cylinder	RT2 = 2 stage telescopic cylinders

4 Slide unit size	5 Cylinder bore (mm)	6 Slide unit stroke (mm)	7 Cylinder option
3 = 32 for Ø32 cylinders 4 = 40 for Ø40 cylinders 5 = 50 for Ø50 cylinders 6 = 63 for Ø63 cylinders	3 = Ø32 4 = Ø40 5 = Ø50 6 = Ø63	Standard stroke 0120 - 0160 - 0180 - 0200 - 0300 - 0400 - 0500 0600 - 0700 - 0800 - 0900 - 1000 - 1100 - 1200 Min - Max stroke 0160 ÷ 0400 (Ø32) 0160 ÷ 0600 (Ø40) 0120 ÷ 0900 (Ø50) 0120 ÷ 1200 (Ø63)	A = 2 stage telescopic cylinders

Slide Units for RP series compact cylinders

■ J65



CODIFICATION KEY

J	6	5	R	P	2	2	0	0	5	0	A
1	2	3	4	5	6	7					

1 Series	2 Slide unit type	3 Cylinder type
J = Slide Unit - Shaft scrapers standard supplied	65 = Fully protected cylinder, through opening	RP = UNITOP Ø25 mm compact cylinder

4 Slide unit size	5 Cylinder bore (mm)	6 Slide unit stroke (mm)	7 Cylinder option
2 = 25 for Ø25 cylinders	2 = Ø25	0050 ÷ 0200	A = Cylinder with long piston

Slide units are supplied with integrated cylinder

CHARACTERISTICS

Ambient temperature	-5 ÷ +60 °C
Fluid	filtered air, with or without lubrication
Working pressure	1 ÷ 10 bar
Body	aluminium alloy
Shafts	chromium-plated steel (JLS) hardened and chromium-plated steel (JLV)
Piston	aluminium alloy
Piston rod	chromium-plated stainless steel AISI 303 (Ø12-16-20) chromium-plated steel C45 (Ø25-32-40-50-63)
Guide bearing	bearings (JLS) ball bushing (JLV)
Piston seal	NBR
Cushion seals	NBR
Magnet	standard supplied
Flange	steel



CODIFICATION KEY

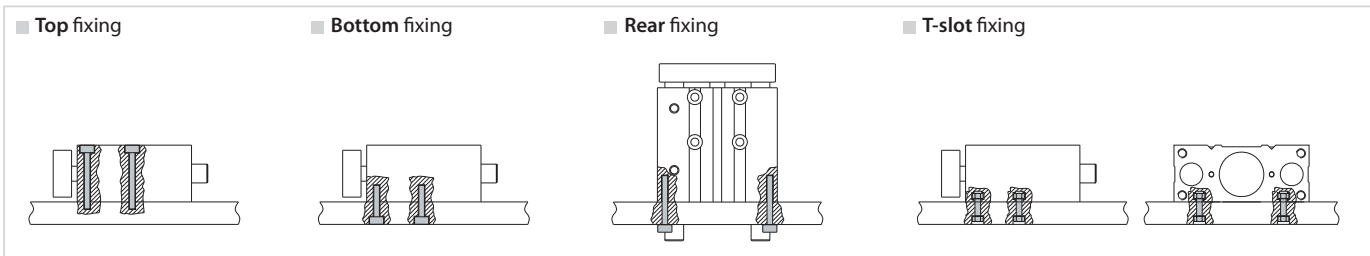
J	L	S	0	1	2	0	0	3	0
1	2	3	4						

1 Series	2 Guide bearing	3 Bore (mm)
JL = Guided Compact Cylinders	S = Bearings V = Ball bushing	012 = Ø12 032 = Ø32 016 = Ø16 040 = Ø40 020 = Ø20 050 = Ø50 025 = Ø25 063 = Ø63

4 Stroke (mm)		
0010 = 10	0075 = 75	0250 = 250
0020 = 20	0100 = 100	0300 = 300
0025 = 25	0125 = 125	0350 = 350
0030 = 30	0150 = 150	0400 = 400
0040 = 40	0175 = 175	
0050 = 50	0200 = 200	

Strokes (mm)																	
Ø	10	20	25	30	40	50	75	100	125	150	175	200	250	300	350	400	
12																	
16																	
20																	
25																	
32																	
40																	
50																	
63																	

Fixing schemes

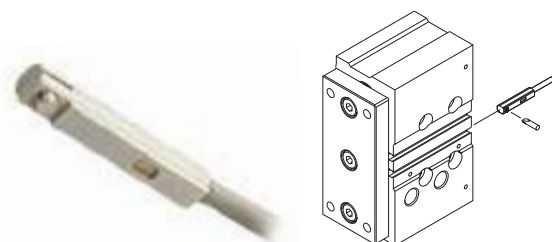


DF-R magnetic sensor

ELECTROMECHANICAL
DF-R200L02
DF-R200M08

ELECTRONIC (PNP)
DF-R700L02
DF-R700M08

■ Mounting scheme



Upon request

■ Version with metallic piston rod scraper



Ø 6 ÷ 32 mm - Twin Rod Guided Cylinder
JT


Ambient temperature: -5 ÷ 60 °C

Stroke adjustment: 0 ÷ 5 mm

Part No.	Ø	Working pressure (bar)	Theoretical thrust force (N)*		Standard stroke (mm)	Max stroke (mm)	Sensor
			Thrust	Traction			
JTS006 JTV006	6	1,5 - 7	28	15,5	10-20-30	50	DF-R200
JTS012 JTV012	12	1 - 7	113	84	10-15-20-25-30 35-40-45-50-60-70	70	
JTS016 JTV016	16	1 - 7	200	150	10-15-20-25 30-35-40-45 50-60-70-75 80-90-100	120	
JTS020 JTV020	20	0,5 - 7	314	236		130	
JTS025 JTV025	25	0,5 - 7	490	378		150	
JTS032 JTV032	32	0,5 - 7	802	603		150	

 S = Bearings
 V = Ball bushing

* = Theoretical thrust force at 5 bar

Ø 6 ÷ 20 mm - Pneumatic Mini Slide Unit
JX1


Ambient temperature: -5 ÷ 60 °C

Embodied linear guide

Part No.	Ø	Working pressure (bar)	Theoretical thrust force (N)*		Standard stroke (mm)	Sensor
			Thrust	Traction		
JX1006	6	1,2 - 7	14,2	10,6	5-10-15-20-25 30-40-50-60	DF-R200
JX1010	10	0,6 - 7	39,3	33		
JX1016	16	0,6 - 7	101	86		
JX1020	20	0,5 - 7	157	132		

* = Theoretical thrust force at 5 bar

Ø 6 ÷ 25 mm - Slide Table Actuator
JX2


Ambient temperature: 0 ÷ 60 °C

Versions upon request:

with stroke adjusting screw (add suffix R to part no. e.g. JX2008R)

with hydraulic shock absorbers Ø 8 ÷ 25 (add suffix D to part no. e.g. JX2008D)

Part No.	Ø	Working pressure (bar)	Theoretical thrust force (N)*		Standard stroke (mm)	Sensor
			Thrust	Traction		
JX2006	6	1,5 ÷ 7	25	20	10-20-30-40-50	DF-T200
JX2008	8		51	38	10-20-30-40-50-75	
JX2012	12		113	85	10-20-30-40-50-75-100	
JX2016	16		201	151	10-20-30-40-50-75-100-125	
JX2020	20		314	236	10-20-30-40-50-75-100-125-150	
JX2025	25		491	380	10-20-30-40-50-75-100-125-150	

* = Theoretical thrust force at 5 bar

Self-compensating

■ YDA



Part No.	Thread	Stroke (mm)	Max energy per cycle (Nm)	Max energy per hour (Nm)	Max effective mass (Kg)	Max impact speed (m/s)	Stop collar
YDA0806	M8 x 1	6	3	7000	6	0,3-2,5	YDG08
YDA1007	M10 x 1	7	6	12400	12	0,3-3,5	YDG10
YDA1210	M12 x 1	10	12	22500	22	0,3-4	YDG12
YDA1412	M14 x 1,5	12	20	33000	40	0,3-5	YDG14
YDA2015	M20 x 1,5	15	59	38000	120	0,3-5	YDG20
YDA2525	M25 x 1,5	25	80	60000	180	0,3-5	YDG25
YDA2725	M27 x 1,5	25	147	72000	270	0,3-5	YDG27

Special strokes upon request

Ambient temperature: -10 ÷ 80 °C

Body: steel

Piston rod: chromium-plated carbon steel

Piston: carbon steel

Adjustable

■ YDR



Part No.	Thread	Stroke (mm)	Max energy per cycle (Nm)	Max energy per hour (Nm)	Max effective mass (Kg)	Max impact speed (m/s)	Stop collars
YDR1415	M14 x 1,5	15	22	26400	80	3	YDG14
YDR2025	M20 x 1,5	25	39	30000	312	3,5	YDG20
YDR2525	M25 x 1,5	25	85	54000	400	3,5	YDG25
YDR2540	M25 x 1,5	40	40	80000	700	3,5	YDG25L
YDR3625	M36 x 1,5	25	25	81000	1400	3,5	YDG36
YDR3650	M36 x 1,5	50	50	100000	1400	3,5	YDG36

Special strokes upon request

Ambient temperature: -10 ÷ 80 °C

Body: steel

Piston rod: chromium-plated carbon steel

Piston: carbon steel

ISO 6432

- **M**
Ø 8 ÷ 25 mm Microcylinders



ISO 15552

- **KL**
Ø 32 ÷ 125 mm Pneumatic Cylinders



- **K/KE/KD**
Ø 32 ÷ 125 mm Pneumatic Cylinders



- **K Ø 160-200**
Ø 160 - 200 mm Pneumatic Cylinders



ISO 21287

■ RP-RM

Ø 16 ÷ 100 mm Compact Cylinders



■ RO-RN

Ø 16 ÷ 63 mm Compact Cylinders



■ RS

Ø 32 ÷ 100 mm STRONG Cylinders



■ RQ

Ø 32 ÷ 63 mm STRONG Cylinders



Rodless cylinders

■ S1

Ø 16 ÷ 50 mm Rodless Cylinders
standard version



■ S5

Ø 25 ÷ 50 mm Rodless Cylinders with integrated guides
tecnopolymer sliding guide



■ VL1

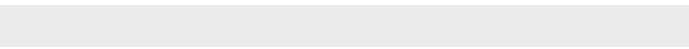
Ø 25 ÷ 50 mm Rodless Cylinders with integrated guides 90°
sliding on ball bearings



2



High-Tech



	Locking Units	L1-N	3
		L6	4
	Telescopic Cylinders	RT	6
	Pneumatic Actuators	NTZ	8
		NQZ	8
		NFZ	9
	Pneumatic Grippers	YMA	10/11
		YMP	10/11

ORIGINAL

Locking system UNIVER Original since 1998

STATIC/DYNAMIC

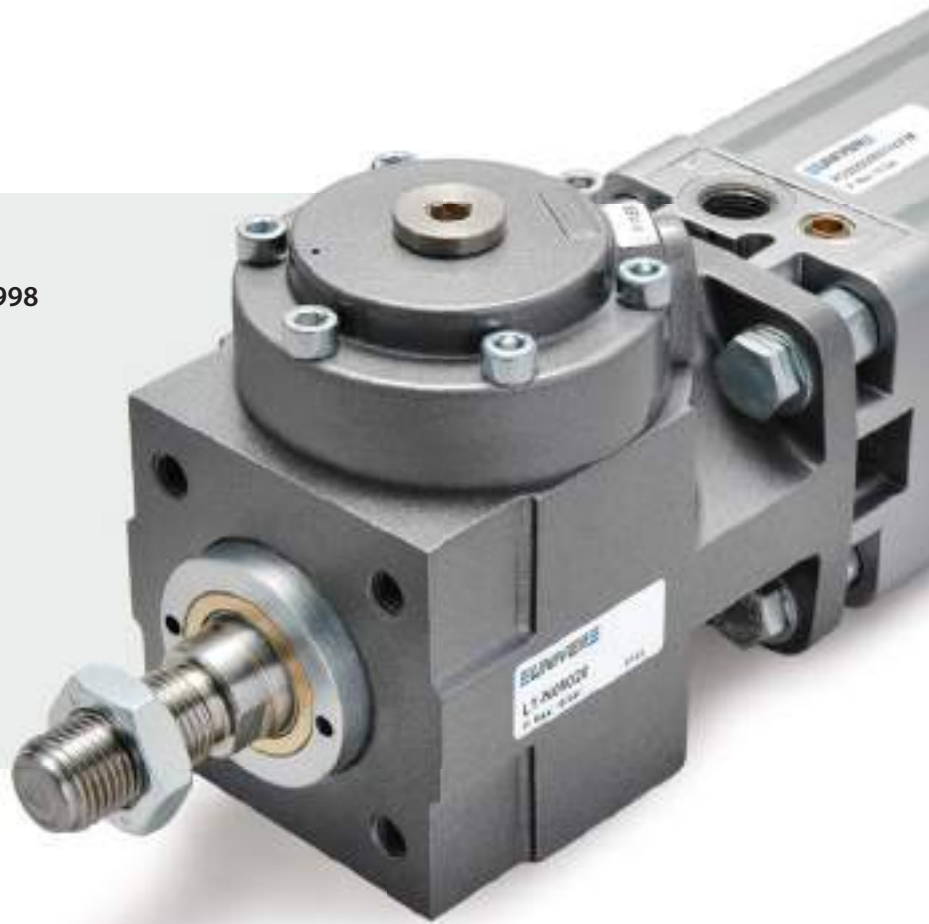
Static locking and dynamic braking in a single device

POWERFUL

The highest locking force among market equivalent devices

SAFE

No rod slipping even if affected by oil and grease



L1-N

For cylinders $\varnothing 16 \div 125$ mm

For piston rods $\varnothing 6 \div 32$ mm

M



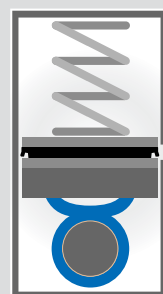
**KL
KE/K
KD**



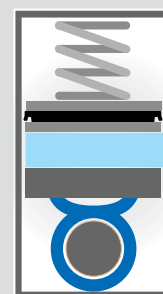
RS



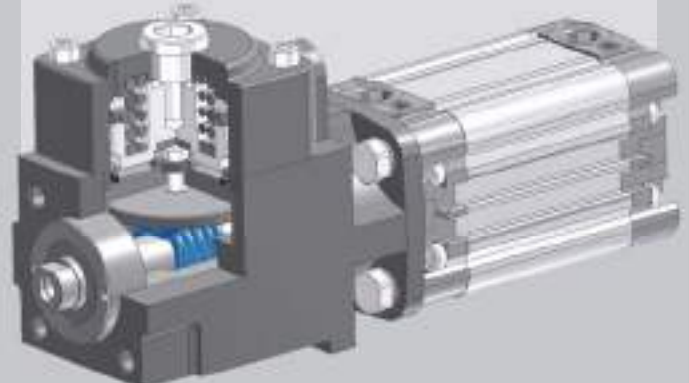
Working principle



Locked piston rod



Free piston rod



CHARACTERISTICS

Ambient temperature	-20 ÷ 30 °C
Fluid	filtered air, with or without lubrication
Working pressure	4 ÷ 10 bar
Body	die-cast aluminium
Cover	die-cast aluminium
Piston	aluminium
Seals	NBR
Springs	special steel

M, KL, KE/K, KD, RS series cylinders



CODIFICATION KEY

L	1	-	N	0	6	3	2	0	
1	2	3	4						

1 Series	2 Cylinder bore (mm)	3 Piston rod bore (mm)	4 Option
L1-N = Locking unit for cylinders and piston rods	016 = Ø16 050 = Ø50 020 = Ø20 063 = Ø63 025 = Ø25 080 = Ø80 032 = Ø32 100 = Ø100 040 = Ø40 125 = Ø125	06 = Ø6 16 = Ø16 08 = Ø8 20 = Ø20 10 = Ø10 25 = Ø25 12 = Ø12 32 = Ø32	K = Metallic piston rod scraper upon request

Core features and performance

Ø	Ø rod (mm)	Static locking force	Pressure on the equivalent cylinder	Dynamic braking force	Response time at 6 bar	Stopping point repeatability	Vibration resistance	Shock resistance	Minimum release pressure
		N	bar	at 1 m/s	ms			J	bar
16	6	200	10	40% of the static locking force	12	< 1 mm at 1 m/s	10 g (10-55 Hz) for 30 minutes on each axis	2	4
20	8	314			12			3	
25	10	490			15			4	
32	12	800			20			5	
40	16	1260			20			8	
50	20	2000			25			11	
63	20	3100			25			15	
80	25	5000			30			21	
100	25	7850			30			29	
125	32	12300			40			40	

■ NFZ 160/200

ISO 15552 cylinders with integrated locking unit



■ Locking unit with optical positional device



CHARACTERISTICS

Ambient temperature	-20 ÷ +80 °C
Fluid	filtered air, with or without lubrication
Working pressure	4,5÷10 bar
Body	die-cast aluminium
Seals	NBR
Internal parts	brass/aluminium

UNIVER Locking Units for rodless cylinders perform the function of keeping the carriage in any intended point of its stroke and allow high locking accuracy.
They can be mounted on both sides of the carriage and the mechanical braking force can be further increased by means of an additional pneumatic override.



CODIFICATION KEY

L	6	-	S	5	0	3	2
1				2			

1 Series

L6-S5 = Locking Units for S5 series rodless cylinder
L6-V1 = Locking Units for VL1 series rodless cylinder

2 Cylinder bore (mm)

025 = Ø25
032 = Ø32
040 = Ø40
050 = Ø50

■ S5 series with locking unit



■ VL1 series with locking unit



- Min. release pressure: 4,5 bar
- Able to keep the carriage in position in both directions
- Easy to be mounted on both sides of the carriage
- Permanent manual release by means of 2 screws M5
- Locking performed by mechanical springs in absence of air
- Preset for additional pneumatic override to increase locking force

ORIGINAL

UNIVER Original design and technology

INDUSTRIALIZED

Industrialized components and advanced technology

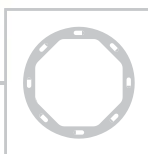
REDUCED DIMENSIONS

60% less than standard cylinders

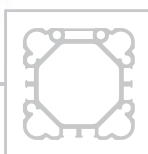
NON-ROTATING

Non-rotation octagonal tube standard supplied

Octagonal



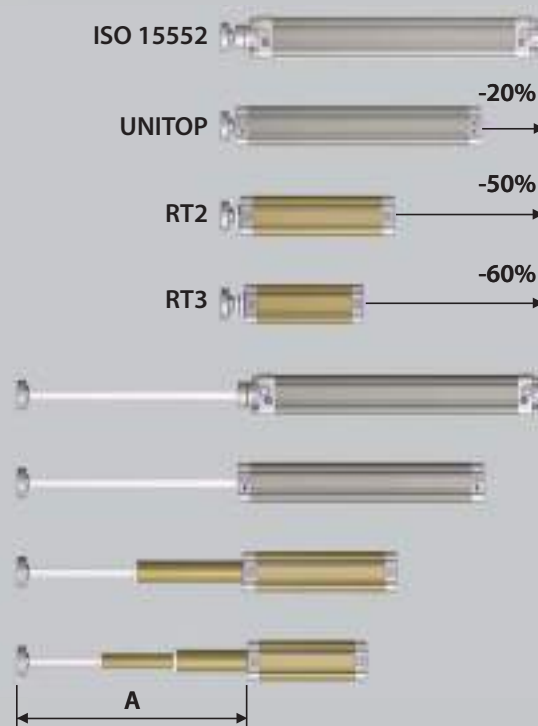
Octagonal


RT2

 2 stages $\varnothing 25 \div 63$ mm

RT3

 3 stages $\varnothing 40 \div 63$ mm

**Comparison of overall dimensions
stroke 300 mm (A)**


CHARACTERISTICS

Ambient temperature	-20 ÷ +80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	internally/externally anodized aluminium
Piston	aluminium
Guide slide	acetalic resin
Piston rod	non-rotating, chromium-plated steel, with flange (female piston rod) stainless steel upon request
Piston seals	NBR
Guide bush for piston rod	acetalic resin
Shock absorber seals	NBR
Magnet	standard supplied (stage 1)

Telescopic cylinders work under optimal conditions when the load is in axial position, i.e. when the cylinder is placed vertically, working either upward or downward. They can obviously work also horizontally and cantilevered, but in this case it is needed to:

- Reduce the maximum stroke by 50% compared to nominal maximum strokes
- Request cylinders with slide units
- Support the radial load by means of other devices such as carriages, slides or sliding guides



CODIFICATION KEY

R	T	2	2	0	0	3	2	0	6	0	0	
1	2	3	4	5	6	7						

1 Series	2 Rod	3 Stages	4 Type
RT = Ø 25÷63 mm - 2/3 Stage Telescopic Pneumatic Cylinders (with non-rotating piston rod and elastic shock absorber seals)	1 = Stainless steel piston rod 2 = Chromium-plated steel piston rod	2 = 2 stages 3 = 3 stages	0 = D.A. Female piston rod 3 = D.A. Male piston rod D.A. = Double acting

5 Bore (mm)	6 Stroke (mm)	7 Option
2 stages 025 = Ø25 040 = Ø40 032 = Ø32 050 = Ø50 040 = Ø40 063 = Ø63 050 = Ø50 063 = Ø63	2 stages 0100 - 0120 - 0160 - 0180 - 0200 - 0300 - 0400 0500 - 0600 - 0700 - 0800 - 0900 - 1000 - 1100 - 1200 Max stroke: 0300 (Ø25) 0900 (Ø50) 0400 (Ø32) 1200 (Ø63) 0600 (Ø40) 3 stages 0150 - 0180 - 0210 - 0240 - 0270 - 0300 - 0360 - 0450 0600 - 0750 - 0900 - 999 - 1101 - 1200 Max stroke: 1200 (Ø40) 1500 (Ø50) 1800 (Ø63)	I = Without flange (only for female piston rod) L = Freely rotating piston rod (without flange) M = With telescopic magnetic shaft (stage 2-3) except for Ø 25, only for female piston rod

Nominal tolerance on stroke (mm) and maximum applicable torque (Nm) for non-rotating piston rod

Ø	Tolerances mm		Applicable torque Nm	
	2 stages	3 stages	2 stages	3 stages
25	+2/0	+4/0	0,5	-
32	+3,2/0	+4/0	0,8	-
40	+3,2/0	+4/0	1	0,5
50	+3,2/0	+4/0	2	0,8
63	+3,2/0	+4/0	3	1

Theoretical forces at 6 bar (N)
(2 stages)

Ø	Available surface mm²		Working pressure bar	
	thrust	traction	thrust	traction
25	201	111	123	65
32	314	201	192	123
40	490	377	300	231
50	804	603	492	369
63	1256	1055	769	649

Theoretical forces at 6 bar (N)
(3 stages)

Ø	Available surface mm²		Working pressure bar	
	thrust	traction	thrust	traction
40	201	111	123	65
50	314	201	192	123
63	490	377	300	231

FIXING ELEMENTS AND ACCESSORIES

Ø	Female hinge with pin	Counter hinge 90° (CETOP)	Male articulated hinge	Rear male hinge	Front / rear flange	Angle bracket	DF sensor and DHF covering strip	Cable clamping for DF sensor
25								
32	KF-10032A	KF-19032	KF-11032S	KF-11032	KF-12032	KF-13032	DF DHF-0020100	DF-001
40	KF-10040A	KF-19040	KF-11040S	KF-11040	KF-12040	KF-13040		
50	KF-10050A	KF-19050	KF-11050S	KF-11050	RTF-12050	RTF-13050		
63	KF-10063A	KF-19063	KF-11063S	KF-11063	RTF-12063	RTF-13063		

NTZ-NQZ-NFZ

Programmable Pneumatic Actuators



Pneumatic piston

Screw

Lock

Encoder



NTZ

Pneumatic actuator with integrated digital measuring detector and safety locking device
Ø 32 ÷ 63 mm



NQZ

Pneumatic actuator with digital measuring system
Ø 32 ÷ 63 mm



NFZ

Pneumatic actuator with integrated safety locking device
Ø 32 ÷ 63 mm



Pneumatic actuator with integrated digital measuring system and safety locking device
2
■ NTZ


The system does not need to be connected to the moving part of the mechanism, as movement is generated by an internal piston with bidirectional pneumatic function. Such piston, operated by a 5-way valve, moves autonomously until it meets the obstacle, thus measuring the stopping position. Position detection is obtained by the transformation of the translation movement of the piston rod into the rotary movement of the screw, by means of screw-female screw coupling. Then the encoder turns the rotation into a sequence of electrical impulses.

The piston and the encoder body need to be fixed, i.e. must not move regardless of screw rotation. This is the reason why the cylinder has been designed with octagonal piston and properly modified non-rotating piston rod.

The speed of the impact against the obstacle is limited by proper calibrated reducers which are embodied in the actuator, while the translation speed can be suitably controlled by means of a standard flow regulator.

For the indicated repeatability of reading to be guaranteed, the translation speed needs to be kept as constant as possible.

Main application fields are: mechanisation, palletization and automation of operating machines.

Max speed: 1 m/s

Repeatability accuracy: ± 0,3 mm

CODIFICATION KEY

N	T	Z	0	3	2	0	3	5	0
1			2			3			

1 Series	2 Bore (mm)	3 Max stroke (mm)
NTZ = Ø 32÷63 mm - Pneumatic actuator with integrated digital measuring system and safety locking device	032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63	0350 (Ø32) 0450 (Ø40) 0600 (Ø50) 0750 (Ø63)

Pneumatic actuator with digital measuring system
■ NQZ


Pneumatic actuators with digital measuring system are particularly suitable for:

- Detection of stopping position
- Anti-collision control in critical sequencing cycles
- Level control in palletization / de-palletization of piled objects
- Identification, classification and dimensional selection of objects (tolerances and rejects)
- Certification stations of machined pieces or tool breaking on machines for chip removal

The device can be used as both digital measuring detector and pneumatic actuator with digital measuring system

Max speed: 0,2 m/sec (detector) 0,8 m/sec (actuator)

Repeatability accuracy: ± 0,02 mm

CODIFICATION KEY

N	Q	Z	0	3	2	0	3	5	0
1			2			3			

1 Series	2 Bore (mm)	3 Max stroke (mm)
NQZ = Ø 32÷63 mm - Pneumatic actuator with integrated digital measuring system	032 = Ø32 040 = Ø40 050 = Ø50 063 = Ø63	0350 (Ø32) 0450 (Ø40) 0600 (Ø50) 0750 (Ø63)

Pneumatic actuator with integrated safety locking device

■ NFZ



Locking device embodied in the cylinder rear part in axial position.
High repeatability and intervention speed (16 ms).

Recommended application:
Emergency braking intervention at the speed allowed by the cylinder; for repeated functioning, as locking unit or braking intervention ≤ 50 mm/s.

Piston rod holding force (without axial backlash): ≥ 3 times the thrust of a cylinder supplied at 6 bar.
Locking force independent from ambient conditions or piston rod maintenance.
Locking device passive functioning, in absence of signal and/or air supply.

Minimum pressure: ≥ 3 bar

CODIFICATION KEY

N	F	Z	0	3	2	0	3	5	0
1			2			3			

1 Series	2 Bore (mm)	3 Max stroke (mm)
NFZ = Ø 32÷63 mm - Pneumatic actuator with integrated safety locking device	032 = Ø32	0350 (Ø32)
	040 = Ø40	0450 (Ø40)
	050 = Ø50	0600 (Ø50)
	063 = Ø63	0750 (Ø63)

Angular Pneumatic Gripper

2

■ YMA10



Part No.	Ø	Gripping force (Nm)*		Max arm length L (mm)	Sensor
		Opening	Closing		
YMA10-12	12	0,25	0,2	30	DF-R 200
YMA10-16	16	0,6	0,45	40	
YMA10-20	20	1,15	0,85	60	
YMA10-25	25	2,25	1,7	70	
YMA10-32	32	4,05	3,05	85	

* = Gripping force at 5 bar

L = Gripping point 30 mm

Working pressure: 1,5 ÷ 7 bar
Ambient temperature: -5 ÷ 60 °C
Max frequency (cycles/min): 180
Opening angle: +30° -10°

Parallel Pneumatic Gripper

■ YMP10



Part No.	Ø	Gripping force (N)*		Max arm length L (mm)	Stroke open/close (mm)	Sensor
		Opening	Closing			
YMP10-12	12	8	5	30	6	DF-R 200
YMP10-16	16	24	17	40	8	
YMP10-20	20	46	33	60	12	
YMP10-25	25	73	57	70	14	
YMP10-32	32	98	81	85	16	

* = Gripping force at 5 bar

L = Gripping point 30 mm

Working pressure: 1,5 ÷ 7 bar
Ambient temperature: -5 ÷ 60 °C
Max frequency (cycles/min): 180

180° Angular Pneumatic Gripper

■ YMA20



Part No.	Ø	Gripping force (N)*	Max arm length L (mm)	Sensor
YMA20-10	10	6	60	DF-T 200
YMA20-16	16	20	70	
YMA20-20	20	36	80	
YMA20-25	25	78	90	

* = Gripping force at 5 bar

L = Gripping point 30 mm

Working pressure: 1 ÷ 6 bar
Ambient temperature: -10 ÷ 60 °C
Max frequency (cycles/min): 60
Repeatability: ± 0,2
Opening angle: +180°~182° / -3°

Parallel Pneumatic Gripper with Linear Guide

■ YMP20



Part No.	Ø	Pressure (bar)	Max frequency (cycles/min)	Repeatability (mm)	Gripping force (N)*		Stroke open/close (mm)	Sensor
					Opening	Closing		
YMP20-10	10	2 ÷ 7	180	0,01	11	16	4	DF-T 200
YMP20-16	16	1 ÷ 7	180	0,01	32	44	6	
YMP20-20	20	1 ÷ 7	180	0,01	42	65	10	
YMP20-25	25	1 ÷ 7	180	0,01	67	110	14	
YMP20-32	32	1 ÷ 7	60	0,02	160	228	22	
YMP20-40	40	1 ÷ 7	60	0,02	260	318	30	

* = Gripping force at 5 bar, gripping point 30 mm

Ambient temperature: -10 ÷ 60 °C

Low Profile Parallel Pneumatic Gripper with Linear Guide

■ YMP30



Part No.	Ø	Max frequency (cycles/min)	Gripping force (N)*		Stroke (mm)	Sensor
			Opening	Closing		
YMP30008	8	180	19	19	8-16-32	DF-T200
YMP30012	12		48	48	12-24-48	
YMP30016	16		91	91	16-32-64	
YMP30020	20		138	138	20-40-80	

* = Gripping force at 5 bar, gripping point 30 mm (for version 15 mm YMP30008)

Working pressure: 1,5 ÷ 7 bar

Ambient temperature: -5 ÷ 60 °C

Wide-type Parallel Pneumatic Gripper

■ YMP40



Part No.	Ø	Max frequency (cycles/min)	Gripping force (N)*		Stroke (mm)	Sensor
			Opening	Closing		
YMP40010	10	40	14	14	20-40-60	DF-...
YMP40016	16	40	44	44	30-60-80	
YMP40020	20	40	77	77	40-80-100	
YMP40025	25	40	128	128	50-100-120	
YMP40032	32	20	227	227	70-120-160	

* = Gripping force at 5 bar, gripping point 30 mm

Working pressure: 1 ÷ 6,1 bar

Ambient temperature: -10 ÷ 60 °C

Repeatability: ±0,1

Self-centering 3 Jaw Pneumatic Gripper

■ YMP50



Part No.	Ø	Pressure (Bar)	Max frequency cycles/min	Gripping force (N)*		Stroke (mm)	Sensor
				Opening	Closing		
YMP50-16	16	2 - 6	120	14	16	4	DF-...
YMP50-25	25	2 - 6	120	41	46	6	
YMP50-32	32	1 - 6	60	73	81	8	
YMP50-40	40	1 - 6	60	117	127	8	
YMP50-50	50	1 - 6	60	180	204	12	
YMP50-63	63	1 - 6	60	332	359	16	
YMP50-80	80	1 - 6	30	495	520	20	
YMP50-100	100	1 - 6	30	745	775	24	
YMP50-125	125	1 - 6	30	1265	1310	32	

* = Gripping force at 5 bar, gripping point 20 mm (Ø16-25) 30 mm (Ø 32÷63) 50 mm (Ø 80 ÷125)

Ambient temperature: -10 ÷ 60 °C

Repeatability: ±0,01

3



Valves

	Electropilots	B11	3
		B10	4
		B12	5
		B	7
		A	8
		AA	9
		AB	10
	Standards-based Valves	BE/BE12	12
		AE	15
		BD	17
		AC-N	22
	Spool Valves	CL/CM	23
		E	30
		F	33
		G6/GL6	34/37
		G7	41
	Poppet Valves	PS	43
		AC	48
		CH	50
		AF/AG	52/54
		AI	56
		AI-JET	57
		AI-JET2	59
	COMPACT Valves	AM	60
		P10	62
		P15	71
	Serial Connections	P15E	80
		TC	84
	Accessories	COILS	86
		OPERATORS	88
	Complementary Valves	YR	90
		AP/AM	92
		HZ9N	94
		YF	95
		YG-6300	96

Standard
B11

1 w
15 NI/min


Low consumption
B10

0,3 w
15 NI/min


High flow rate
B12

0,6 w
30 NI/min



Special version
40 NI/min

Magnetic memory
LATCHING

Energizing through short impulse,
de-energizing through the same
impulse with inverted polarity.



B11 / B10 / B12

ISO 15218 Nanovalves


NEW

Sub-base with
integrated electrical
connection



Manual override
(standard)



ISO 15218
interface



No manual override
(upon request)



LED

90°
connector



In-line
connector



In-line
PIN



90°
cables



In-line
cables



CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid	10 µm filtered air, with or without lubrication
Max pressure	9 bar
Operating frequency	5 Hz
Fixing	2 screws M1,6
Connections	ISO 15218 interface
Nominal bore (mm)	0,8 (3/2 NC) 1,3 (3/2 NO)
Nominal flow rate (NI/min)	15
Valve body	self-extinguishing technopolymer
Seals	VITON/NBR
Voltage	24 V DC (12V DC upon request)
Power consumption	1 W
Electrical connection	D-535U40 (IP65), solder pin (IP00), Molex
Led	yellow (standard)
Manual override	monostable button

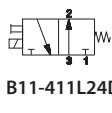
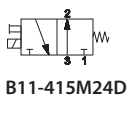
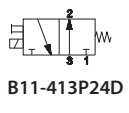


CODIFICATION KEY

B	1	1	-	4	0	1	L	2	4	D
1		2	3	4	5	6				

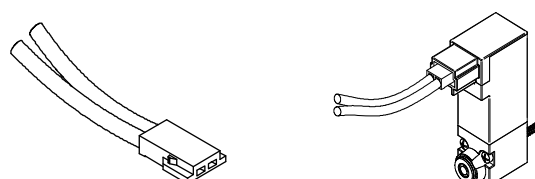
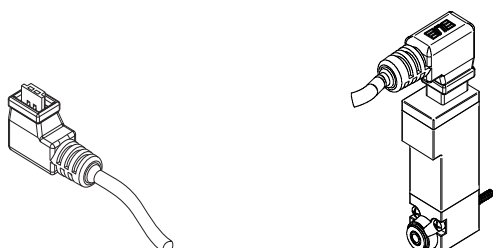
1 Series B11 = ISO 15218 - 10 mm Nanovalves - 1 W standard	2 Model 4 = Monostable	3 Type 0 = 3/2 NC Ø 0,8 mm (1 W) 1 = 3/2 NO Ø 1,3 mm (1 W)
4 Function 1 = Manual override, in-line PIN 2 = No manual override, in-line PIN 3 = Manual override, PIN on interface side 4 = No manual override, PIN on interface side 5 = Manual override, PIN opposed to the interface 6 = No manual override, PIN opposed to the interface	5 Variant L = 90° Connector (protected PIN) M = In-line connector (protected PIN, Molex connection) P = In-line PIN (suitable for mounting on circuit boards)	6 Voltage 24D = 24 V DC 12D = 12 V DC (upon request)

Fixing screws standard supplied. Max tightening torque 0,15 Nm
Other versions upon request: in-line cables and 90° cables

Connector	Pin
■ 90° Connector  B11-401L24D  B11-411L24D	■ In-line connector NEW  B11-405M24D  B11-415M24D ■ In-line PIN  B11-403P24D  B11-413P24D

D-535U40300/500

D-530-30/50/200



Single connector with wire
D-535U40300 = wire length 300 mm
D-535U40500 = wire length 500 mm

Miniature connector with loose cables
D-530-30 = wire length 300 mm
D-530-50 = wire length 500 mm
D-530-200 = wire length 2000 mm

CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid	10 µm filtered air, with or without lubrication
Max pressure	7 bar
Operating frequency	5 Hz
Assembly	2 screws M1,6
Connections	ISO 15218 interface
Nominal bore (mm)	0,8
Nominal flow rate (NI/min)	15
Valve body	self-extinguishing technopolymer
Seals	VITON/NBR
Voltage	24 V DC (12V DC upon request)
Power consumption	0,3 W (speed-up 1 W)
Electrical connection	D-535U40 (IP65), solder pin (IP00), Molex
Led	yellow (standard)
Manual override	monostable button



CODIFICATION KEY

B	1	0	-	4	0	1	L	2	4	D
1		2	3	4	5	6				

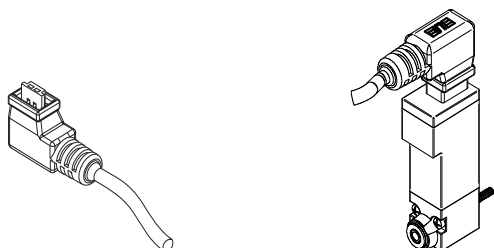
1 Series	2 Model	3 Type
B10 = ISO 15218 - 10 mm Nanovalves - low power consumption	4 = Monostable	0 = 3/2 NC Ø 0,8 mm (0,3 W)
4 Function	5 Variant	6 Voltage
1 = Manual override, in-line PIN 2 = No manual override, in-line PIN 3 = Manual override, PIN on interface side 4 = No manual override, PIN on interface side 5 = Manual override, PIN opposed to the interface 6 = No manual override, PIN opposed to the interface	L = 90° Connector (protected PIN) M = In-line connector (protected PIN, Molex connection) P = In-line PIN (suitable for mounting on circuit boards)	24D = 24 V DC 12D = 12 V DC (upon request)

Fixing screws standard supplied. Max tightening torque 0,15 Nm
Other versions upon request: in-line cables and 90° cables, nominal flow rate 40 NI/min

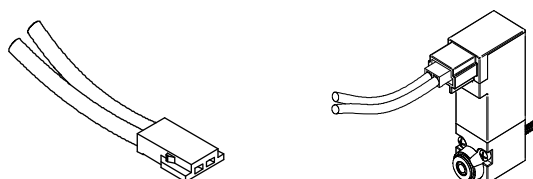
Connector	PIN		
■ 90° Connector	■ In-line connector NEW	■ In-line PIN	■ Latching in-line PIN (with magnetic memory)
 B10-401L24D	 B10-405M24D	 B10-403P24D	 This version is energized by an electrical impulse and de-energized by a similar impulse with inverted polarity. For further information please contact our Sales Office

D-535U40300/500

D-530-30/50/200



Single connector with wire
D-535U40300 = wire length 300 mm
D-535U40500 = wire length 500 mm



Miniature connector with loose cables
D-530-30 = wire length 300 mm
D-530-50 = wire length 500 mm
D-530-200 = wire length 2000 mm

CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid	10 µm filtered air, with or without lubrication
Max pressure	7 bar
Operating frequency	5 Hz
Fixing	2 screws M1,6
Connections	ISO 15218 interface
Nominal bore (mm)	1,3
Nominal flow rate (NI/min)	30
Valve body	self-extinguishing technopolymer
Seals	VITON/NBR
Voltage	24 V DC (12 V DC upon request)
Power consumption	0,6 W (speed-up 1 W)
Electrical connection	D-535U40 (IP65), solder pin (IP00), Molex
Led	yellow (standard)
Manual override	monostable button



CODIFICATION KEY

B	1	2	-	4	0	1	L	2	4	D
1		2	3	4	5	6				

1 Series	2 Model	3 Type
B12 = ISO 15218 - 10 mm Nanovalves - high flow rate	4 = Monostable	0 = 3/2 NC Ø 1,3 mm (0,6 W)

4 Function	5 Variant	6 Voltage
1 = Manual override, in-line PIN 2 = No manual override, in-line PIN 3 = Manual override, PIN on interface side 4 = No manual override, PIN on interface side 5 = Manual override, PIN opposed to the interface 6 = No manual override, PIN opposed to the interface	L = 90° connector (protected PIN) M = In-line connector (protected PIN, Molex connection) P = In-line PIN (suitable for mouting on circuit boards)	24D = 24 V DC 12D = 12 V DC (upon request)

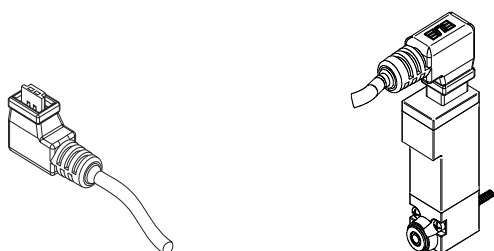
Fixing screws standard supplied. Max tightening torque 0,15 Nm

Other versions (upon request): In-line cables and 90° cables, nominal flow rate 40 NI/min

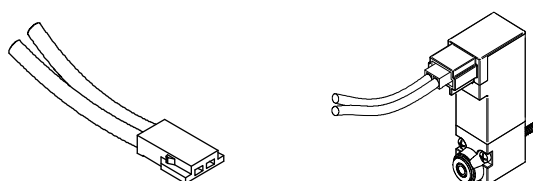
Connector	PIN	
■ 90° Connector	■ In-line connector NEW	■ In-line PIN
 B12-401L24D	 B12-405M24D	 B12-403P24D

D-535U40300/500

D-530-30/50/200



Single connector with wire
D-535U40300 = wire length 300 mm
D-535U40500 = wire length 500 mm



Miniature connector with loose cables
D-530-30 = wire length 300 mm
D-530-50 = wire length 500 mm
D-530-200 = wire length 2000 mm

B 10 mm

1,2 w
12 NI/min

NEW
0,5 w



A 15 mm

2 w
38 NI/min



DETENT SYSTEM UNIVER Original since 1988

B 10 mm

3/2 NC - NO



Revolving coil
180° x 180°



Manual
override



Athmosphere
exhaust



Conveyed
exhaust

A 15 mm

2/2 NC - NO, 3/2 NC - NO



Revolving coil
90° x 90°



Manual
override



ISO 15218
interface



90° connector



In-line connector



Loose cables



Faston



90° connector



In-line connector



Loose cables

CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C	
Fluid	10 µm filtered air, with or without lubrication	
Commutation system	poppet	
Max pressure	8 bar	
Fixing	2 screws M1,6	
Connections	on sub-base	
Nominal bore (mm)	0,5	0,6
Nominal flow rate (NI/min)	9	12
Max frequency	2300 ÷ 3000 cycles/min	
Valve body	technopolymer (aluminium external cover)	
Seals	NBR	
Power consumption	1,2 W (1,35 W with LED) - 0,5 W (speed-up 1,2 W)	
Electrical connection	Molex bipolar connector or loose cables	
Voltage	12 V DC - 24 V DC	
Manual override	recessed button - 1 position	



Valves with conveyed exhaust

Valves with atmosphere exhaust



Revolving coil 180°x180°

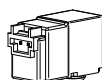
Coils



DE-352 24 V DC 1,2 W
DE-452 24 V DC 1,35 W

DE-355 24 V DC 0,5 W
NEW

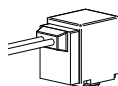
Coil with 90° upward connector
12 V DC upon request



DE-552 24 V DC 1,2 W
DE-652 24 V DC 1,35 W

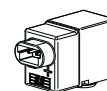
DE-555 24 V DC 0,5 W
NEW

Coil with integrated in-line connector
12 V DC upon request



DE-052L030 24 V DC 1,2 W

Coil with loose cables
12 V DC upon request



DE-642I 12 V DC 1,35 W
DE-652I 24 V DC 1,35 W

DE-655I 24 V DC 0,5 W
NEW

Coil with in-line connector with protection
for a complete tightness

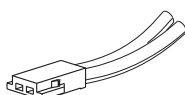
D-500

D-530-30/50/200

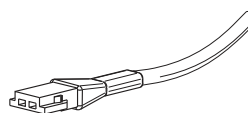
D-535-30/50/200



Miniature connector
without wires



Miniature connector with loose cables
D-530-30 = wire length 300 mm
D-530-50 = wire length 500 mm
D-530-200 = wire length 2000 mm



Miniature connector with cables
D-535-30 = wire length 300 mm
D-535-50 = wire length 500 mm
D-535-200 = wire length 2000 mm

NEW
0,5 W

Low power
consumption



Solenoid valves are supplied without coil and connector

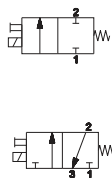
CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C	
Fluid	10 µm filtered air, with or without lubrication	
Commutation system	poppet	
Max pressure	9 bar	
Fixing	nr. 2 screws M3	
Connections	ISO 15218 interface	
Nominal bore (mm)	1,2	1,5
Nominal flow rate (NI/min)	26	38
Max frequency	2700 cycles/min	
Valve body	technopolymer (aluminium external cover)	
Seals	NBR	
Power consumption	2 W DC / 2,3 VA AC (Ø 1,2) - 2,5 W DC / 3,5 VA AC (Ø 1,5)	
Electrical connection	15 mm connector - Molex bipolar connector or loose cables	
Voltage	24 V DC - 12 V DC - 24 V AC - 110 V AC - 230 V AC	
Manual override	recessed button - 1 position (other manual overrides upon request)	
Protection degree with connector	IP65	



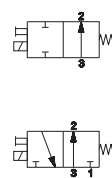
15 mm Microvalves

■ NC



Ø	Voltage
A-141N	1,2 2 W DC
A-142N	1,5 2,5 W DC
A-151N	1,2 V DC/AC 2W/2 VA
A-101N	1,2 2 W DC
A-102N	1,5 2,5 W DC
A-111N	1,2 V DC/AC 2W/2 VA
A-112N	1,5 V DC/AC 2,5W/3,5 VA

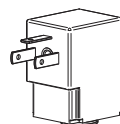
■ NO



Ø	Voltage
A-161N	1,2 2 W DC
A-162N	1,5 2,5 W DC
A-171N	1,2 V DC/AC 2W/2 VA
A-121N	1,2 2 W DC
A-122N	1,5 2,5 W DC
A-131N	1,2 V DC/AC 2W/2 VA

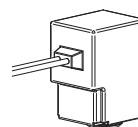
Revolving coil 90°x90°

Coils



DD-011	24 V AC - 50/60 Hz - 3,5 VA
DD-013	230 V AC - 50/60 Hz - 3,5 VA
DD-040	24 V AC - 50/60 Hz - 2,3 VA
DD-041	12 V DC - 2 W
DD-042	12 V DC 2,5 W

DD-050	48 V AC - 50/60 Hz - 2,3 VA
DD-051	24 V DC - 2 W
DD-052	24 V DC - 2,5 W
DD-060	110 V AC - 50/60 Hz - 2,3 VA
DD-070	230 V AC - 50/60 Hz - 2,3 VA



DD-051L030	24 V DC - 2 W
DD-052L030	24 V DC - 2,5 W

24 V DC Faston connector
12 V DC upon request

24 V DC Coil with loose cables
12 V DC upon request

Sub-base for external electrical connection



A - 326A - __ G1/8 (standard)
A - 326B - __ M5 (upon request)
A - 326D - __ tube 4 (upon request)

__ = Number of positions

Sub-base for integrated electrical connection



For further information please
contact our Sales Office

A-299-11

A-301

A-305

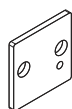
A-350

A-345

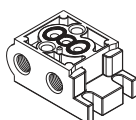
Manual override



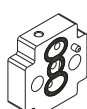
Sealing plate



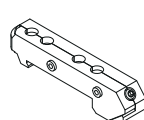
Blank end-plate



Single base

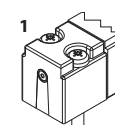


Inverter plate

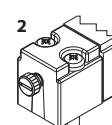


46277/3
(EN50022) DIN
rail adaptor

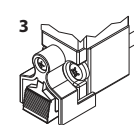
- 1 = Recessed button - 1 position (standard supplied)
- 2 = Impulse screw - 1-2 positions (upon request)
- 3 = Front button - 1 position (upon request)
- 4 = Key button - 1 position (upon request)



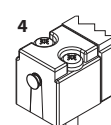
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→

Solenoid valves are supplied without coil and connector

CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C			
Fluid	50 µm filtered air, with or without lubrication; neutral gases (versions for different fluids available upon request)			
Commutation system	direct intervention poppet with cushioned seals			
Pressure	0 ÷ 10 bar (2/2, 3/2 NC), 3 ÷ 10 bar (3/2 NO)			
Connections	on sub-base / threaded on the body			
	sub-base	G 1/8	M5	CNOMO
Nominal bore (mm)	1,2 ÷ 1,5	1 ÷ 1,5	1 ÷ 1,5	1,2 ÷ 1,5
Nominal flow rate (NI/min)	30 ÷ 60	28 ÷ 60	30 ÷ 60	33 ÷ 45
Power consumption	3,5 W (DC) - 5 VA (AC)		2,5 W (DC) - 3,3 VA (AC)	
Connector	AM-5110			AM-5111
Sleeve	U1			
Coil	DA - DC			
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC			
Protection degree	IP65			



U1 Sleeves - with moving core

Coil-sleeve locking nuts



AA-0150 3/2 NO
 AA-0157 3/2 NC
 AA-0170 2/2 NC

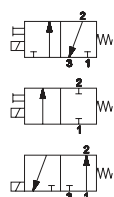


AM-5213A 3/2 NO
 AM-5211A 3/2 NC
 AM-5211B 2/2 NC

2/2 - 3/2 U1 Electropilot

2/2 - 3/2 U1 Electropilot G1/8

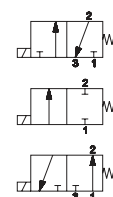
■ For mounting on U1 G1/8 sub-base



AA-0184

AA-0186

AA-0188



AA-0211

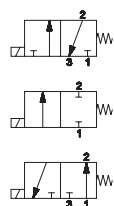
AA-0219

AA-0213

2/2 - 3/2 U1 Electropilot M5

2/2 - 3/2 U1 CNOMO Electropilot

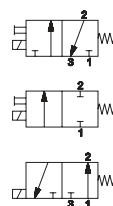
■ For mounting on U2 G1/8 SPEED sub-base



AA-0231

AA-0239

AA-0233



AA-0400
 AA-0400U

AA-0402

AA-0404

SPEED Series modular sub-base

■ U1 sub-base G1/8

■ CNOMO sub-base G1/8



AA-0450



2/2 - 3/2
 U1 Electropilot



AB-0900



2/2 - 3/2
 U1 CNOMO Electropilot

Manual override:

Impulse screw – 2 positions (standard supplied). Recessed button – 1 position, Impulse screw – 1-2 positions, Locking nut with button – 1 position (upon request)

Solenoid valves are supplied without coil and connector

CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C			
Fluid	10 µm filtered air, with or without lubrication; neutral gases (versions for different fluids available upon request)			
Commutation system	direct intervention poppet with cushioned seals			
Pressure	0 ÷ 10 bar (2/2, 3/2 NC), 3 ÷ 10 bar (3/2 NO)			
Connections	on sub-base / threaded on the body			
	sub-base	G 1/8	G1/4	CNOMO
Nominal bore (mm)	2,1 ÷ 2,4	2,1 ÷ 2,4	1,6 ÷ 6	2,1 ÷ 2,4
Nominal flow rate (NI/min)	92 ÷ 150	100 ÷ 155	95 ÷ 650	92 ÷ 110
Power consumption	11W (DC) - 10 VA (AC)			
Connector	AM-5111			
Sleeve	U2			
Coil	DB			
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC			
Protection degree	IP65			



U2 Sleeves - with moving core

Coil-sleeve locking nuts



AB-0600 3/2 NO
 AB-0613 3/2 NC
 AB-0640 2/2 NC (a)
 AB-0643 2/2 NC



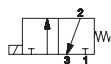
AM-5214A 3/2 NO
 AM-5212A 3/2 NC
 AM-5212B 2/2 NC

(a) = Suitable for bases with diameter 3 ÷ 6 mm

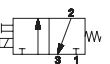
2/2 - 3/2 U2 Electropilot

2/2 - 3/2 U2 Electropilot G1/8

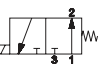
■ For mounting on U2 sub-base G1/8



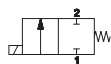
AB-0681



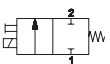
AB-0687



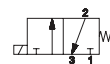
AB-0685



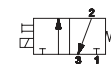
AB-0722



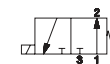
AB-0728



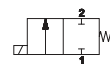
AB-0751



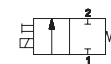
AB-0757



AB-0755



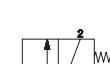
AB-0765



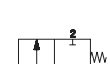
AB-0771

2/2 - 3/2 U2 Electropilot G1/4

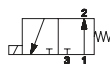
2/2 - 3/2 U2 CNOMO Electropilot



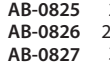
AB-0822



AB-0824



AB-0819



AB-0825

AB-0826

AB-0827

AB-0828

AB-0829

AB-0830

AB-0831

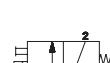
AB-0832

AB-0833

Ø	Max Pressure (bar)
1,6	30
2	20
2,4	15
3	10
3,5	9
4	8
4,5	7
5	6,5
5,5	6
6	5

■ U2 - 17 VA Coil for version 2/2
 DB-0607 24V AC - 50/60 Hz
 DB-0608 110V AC - 50/60 Hz
 DB-0610 220V AC - 50/60 Hz

■ For mounting on U2 G1/8 SPEED sub-base



AB-0885



AB-0886



AB-0888

The bore (mm) indicated on 3/2 valves refers to the exhaust

SPEED Series modular sub-base

■ U2 G1/8 sub-base



AB-0900



2/2 - 3/2
U2 Electropilot



2/2 - 3/2
U2 CNOMO Electropilot

Manual override:

Impulse screw - 2 positions (standard supplied). Recessed button - 1 position, Impulse screw - 1-2 positions, Locking nut with button - 1 position (upon request)

Solenoid valves are supplied without coil and connector

ORIGINAL

Valves and sub-bases UNIVER Original since 1980

MIXED and SPOOL SYSTEM

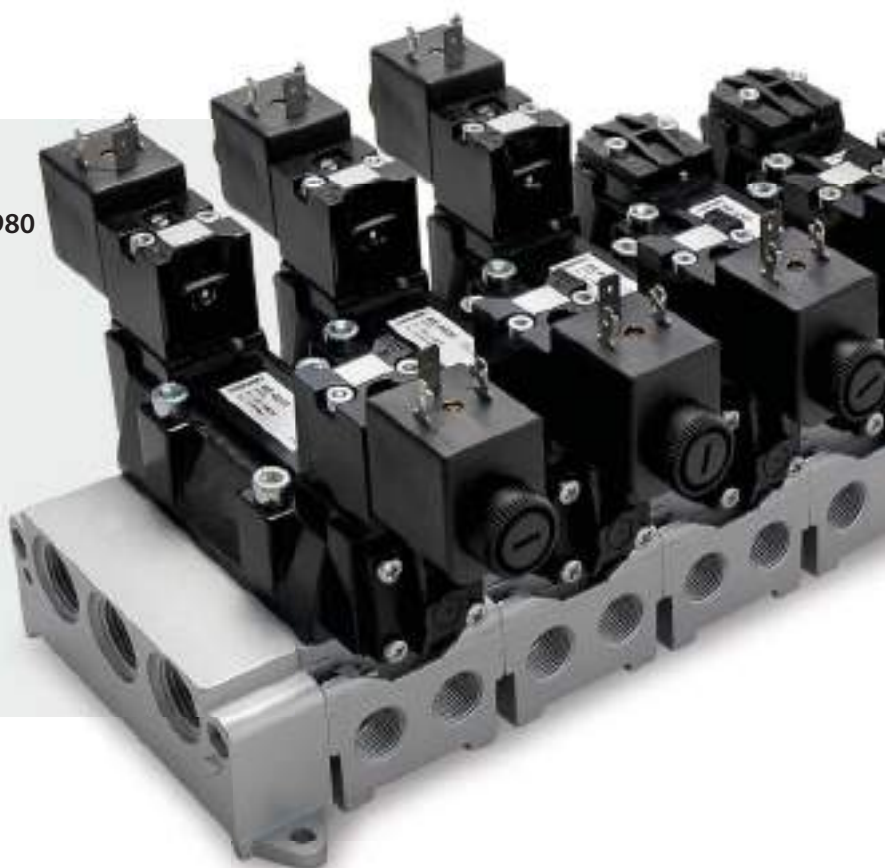
Versions with either mixed or spool system available for all series



MIXED
for heavy applications



SPOOL
for all applications



BE 3

ISO 1



M12

1480
NI/min

BE 4

ISO 2



M12

2300
NI/min

BE 5

ISO 3



M12

4200
NI/min

BE 6

ISO 4



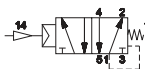
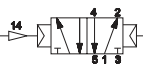
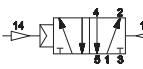
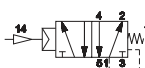
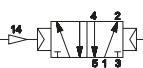
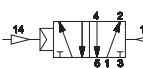
6600
NI/min

CHARACTERISTICS

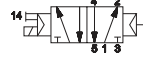
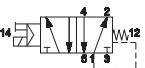
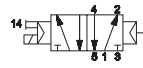
Ambient temperature	-10 ÷ +50 °C			
Fluid	50 µm filtered air (mixed system) 50 µm filtered air, with or without lubrication (spool system)			
Commutation system	mixed and spool			
Max pressure	10 bar			
Connection	ISO 5599/1 interface			
	size 1	size 2	size 3	size 4
Nominal bore (mm)	8	10	15	19
Nominal flow rate (NI/min)	1480	2300	4200	6600
Valve body	acetalic resin with zamak cover			
Seals	NBR and polyurethane (mixed system), NBR (spool system)			
Electropilot/Coil	AA series/U3			
Power consumption	2,5 W (DC) - 5 VA (AC)			
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC			
Manual override	impulse screw - 2 positions (BE), recessed button - 1 position (BE12)			



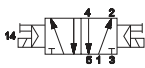
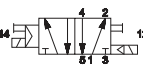
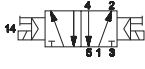
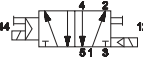
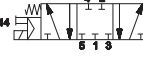
BE Single/double pneumatic impulse

	■ MIXED SYSTEM								
		size	BE-3100	1		size	BE-3150	1	
			BE-4100	2			BE-4150	2	BE-4170
			BE-5100	3			BE-5150	3	BE-5170
			BE-6100	4			BE-6150	4	BE-6170
	■ SPOOL SYSTEM								
		size	BE-3800	1		size	BE-3850	1	
			BE-4800	2			BE-4850	2	BE-4870
			BE-5800	3			BE-5850	3	BE-5870
			BE-6800	4			BE-6850	4	BE-6870

BE Single electrical impulse

	■ MIXED SYSTEM								
		size	BE-3000	1		size	BE-3060	1	
			BE-4000	2			BE-4060	2	
			BE-5000	3			BE-5060	3	
			BE-6000	4			BE-6060	4	
	■ SPOOL SYSTEM								
		size	BE-3700	1		size	BE-3760	1	
			BE-4700	2			BE-4760	2	
			BE-5700	3			BE-5760	3	
			BE-6700	4			BE-6760	4	

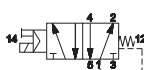
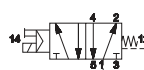
BE Double electrical impulse

	■ MIXED SYSTEM								
		size	BE-3020	1		size	BE-3030	1	
			BE-4020	2			BE-4030	2	
			BE-5020	3			BE-5030	3	
			BE-6020	4			BE-6030	4	
		size	BE-3200*	1		size	BE-3205	1	
			BE-4200*	2			BE-4205	2	
			BE-5200*	3			BE-5205	3	
			BE-6200*	4			BE-6205	4	
	■ SPOOL SYSTEM								
		size	BE-3720	1		size	BE-3730	1	
			BE-4720	2			BE-4730	2	
			BE-5720	3			BE-5730	3	
			BE-6720	4			BE-6730	4	
		size	BE-3900	1		size	BE-3940	1	
			BE-4900	2			BE-4940	2	
			BE-5900	3			BE-5940	3	
			BE-6900	4			BE-6940	4	

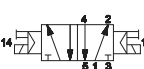
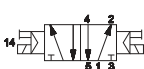
* = For version with manual override contact our Sales Department

For versions with recessed button 1 position, add suffix U to part number
Solenoid valves are supplied without coil and connector

BE12 Single electrical impulse

	■ MIXED SYSTEM		■ SPOOL SYSTEM	
		size		size
		BE12-3000 1	BE12-3700 1	
		BE12-4000 2	BE12-4700 2	
		BE12-5000 3	BE12-5700 3	

BE12 Double electrical impulse

	■ MIXED SYSTEM		■ SPOOL SYSTEM	
		size		size
		BE12-3020 1	BE12-3720 1	BE12-3940 1
		BE12-4020 2	BE12-4720 2	BE12-4940 2
		BE12-5020 3	BE12-5720 3	BE12-5940 3
	■ MIXED SYSTEM		■ SPOOL SYSTEM	
		size		size
		BE12-3205 1	BE12-3900 1	
		BE12-4205 2	BE12-4900 2	
		BE12-5205 3	BE12-5900 3	

Single sub-base, side connections

■ ISO 1	■ ISO 2	■ ISO 3	■ ISO 4
			
BF-1060 G1/8	BF-1150 G1/4	BF-3060 G1/2	BF-4060 G3/4
BF-1061 G1/4	BF-1151 G3/8	BF-3061 G3/4	BF-4061 G1

Single sub-base, bottom connections

■ ISO 1	■ ISO 2
	
BF-1062 G1/8	BF-1152 G1/4
BF-1063 G1/4	BF-1153 G3/8
Single or Manifold with separate exhausts	
■ ISO 3	■ ISO 4
	
BF-3063 G3/4	BF-4062 G3/4
	BF-4063 G1

Manifold universal system sub-base, bottom and side connections, conveyed exhaust

■ ISO 1	■ ISO 2	■ ISO 3
		
BF-1071 G1/8	BF-1160 G1/4	BF-3071 G1/2
BF-1072 G1/4	BF-1161 G3/8	BF-3072 G3/4
BF-1071S G1/8		
BF-1072S G1/4		

Manifold universal system inlet plate

■ ISO 1

BF-1065
G3/8BF-1066
G3/8BF-1068
G3/8

■ ISO 2

BF-1154
G1/2BF-1155
G1/2

■ ISO 3

BF-3064
G1

Manifold universal system diaphragm

■ ISO 1



BF-1070

■ ISO 2



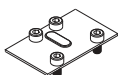
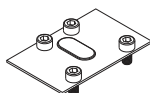
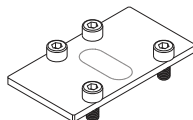
BF-1162

BF-1085

BF-1175

BF-3175

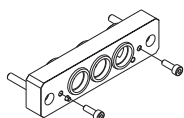
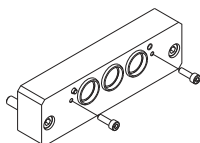
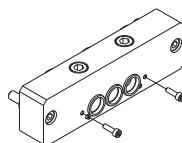
BF-3082

closing plate for
ISO 1 sub-baseclosing plate for
ISO 2 sub-base 2closing plate for
ISO 3 sub-base 3universal system plug for
ISO 3 sub-base

BF-1190

BF-3190

BF-3191

connecting interface for
universal sub-bases
size 1 - 2connecting interface for
universal sub-bases
size 2 - 3connecting interface for
universal sub-bases
size 1 - 3

CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C	
Fluid	50 µm filtered air, with or without lubrication	
Commutation system	mixed	
Max pressure	10 bar	
Connections	ISO 5599/1 interface (BF series sub-bases)	
	size 1	size 2
Nominal bore (mm)	8	10
Nominal flow rate (NI/min)	1480	2300
Valve body	acetalic resin	
Seals	NBR, polyurethane	
Electropilot/Coil	AA series/U1	
Power consumption	3,5 W (DC) - 5 VA (AC)	
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC	
Connector	AM-5110	
Manual override	impulse screw - 2 positions	



Single/double pneumatic impulse



size

AE-1009	1
AE-1120	2

size

AE-1010	1
AE-1121	2

Single electrical impulse

Double electrical impulse



size

AE-1000	1
AE-1100	2



size

AE-1003	1
AE-1103	2

ISO 1 Sub-base and plate



BF-1060
G1/8 **BF-1061**
G1/4



BF-1062
G1/8 **BF-1063**
G1/4



BF-1071
G1/8 **BF-1071S**
G1/8
BF-1072
G1/4 **BF-1072S**
G1/4



BF-1065 On top
BF-1066 Rear
BF-1068 In line
G3/8



BF-1070

ISO 2 Sub-base and plate



BF-1150
G1/4 **BF-1151**
G3/8



BF-1152
G1/4 **BF-1153**
G3/8



BF-1160
G1/4 **BF-1161**
G3/8



BF-1154 In line
BF-1155 Rear
G1/2



BF-1162

Solenoid valves are supplied without coil and connector

BDE

Integrated electrical connection (ISO 15407/2)


BDB

M12 connector (Automotive)


BDA

Single electrical connection (ISO 15407/1)


BDA

Pneumatic connection (ISO 15407/1)



ISO 02

18 mm


ISO Interface


18

OVERSIZED interface (UNIVER original)


18


620
NI/min

800
NI/min

ISO 01

26 mm


ISO Interface


26

OVERSIZED interface (UNIVER original)


26


1250
NI/min

1700
NI/min

CHARACTERISTICS

Ambient temperature	-20 ÷ +50 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	9 bar (electrical) 10 bar (pneumatic)
Connections	ISO 15407-1/2 interface
Nominal bore (mm)	6 (18 mm) 8 (26 mm)
Nominal flow rate (NI/min)	see table below
Valve body	acetalic resin with aluminium cover
Seals	nitrile rubber
Spool	aluminium
Electropilot/Coil	A series/U05
Voltage	12 V DC - 24 V AC/DC - 48 V AC - 110 V AC - 230 V AC
Power consumption	2 W
Manual override	recessed button - 1 position
Protection degree	IP65



CODIFICATION KEY

B	D	E	-	3	3	4	4	2	4	
1				2	3	4	5	6	7	

1 Series	2 Size	3 Type
BDE = Solenoid valves with integrated electrical connection 24 V DC	BDB = Solenoid valves with electrical connection 24 V DC, with connector M12	3 = 18 mm 4 = 26 mm 2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO

Coils and connectors included

4 Control 14	5 Return 12	6 Coil voltage	7 Options
4 = Electrical amplified	0 = Pneumomechanical spring 1 = Mechanical spring 4 = Electrical amplified 7 = Electrical not amplified	24 = 24 V DC (standard) 12 = 12 V DC (upon request)	D = External pilot supply

B	D	A	-	3	3	4	4	
1				2	3	4	5	6

1 Series	2 Size	3 Type
BDA = Valves and solenoid valves	3 = 18 mm 4 = 26 mm	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO

Coils and connectors not included, to be purchased separately

4 Control 14	5 Return 12	6 Options
3 = Pneumatic amplified 4 = Electrical amplified only DC 5 = Electrical amplified DC/AC	0 = Pneumomechanical spring 1 = Mechanical spring 2 = Pneumatic not amplified 3 = Pneumatic amplified	4 = Electrical amplified only DC 5 = Electrical amplified DC/AC 7 = Electrical not amplified only DC 8 = Electrical not amplified DC/AC D = External pilot supply

c.c. = closed centres o.c. = open centres p.c. = pressurized centres

U05 Coils side 15 mm

Part No.	Nominal voltage		Frequency	Power consumption			
				DC W		AC VA	
	V DC	V AC		HZ	hold	speed-up	hold
DD-040	-	24	50/60	-	-	2,3	3,2
DD-041	12	-	-	2	2	-	-
DD-050	-	48	50/60	-	-	2,3	3,2
DD-051	24	-	-	2	2	-	-
DD-060	-	110	50/60	-	-	2,3	3,2
DD-070	-	230	50/60	-	-	2,3	3,2

Nominal flow rate (NI/min)

BD 18 mm	VDMA-ISO			Oversized		
	Ø4	Ø6	Ø8	Ø4	Ø6	Ø8
5/2	200	440	620	200	480	800
5/3	200	440	580	200	460	720
3/2+3/2	200	440	600	200	460	720

BD 26 mm	VDMA-ISO				Oversized			
	Ø6	Ø8	Ø10	Ø12	Ø6	Ø8	Ø10	Ø12
5/2	500	950	1200	1250	500	1050	1500	1700
5/3	500	900	1100	1150	500	1050	1300	1400
3/2+3/2	500	950	1150	1250	500	1050	1450	1650

BDE Electrical impulse - Solenoid valve with integrated electrical connection

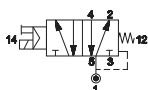
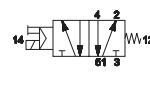
■ Single impulse



18 mm



26 mm

BDE-324024 18 mm
BDE-424024 26 mmBDE-324124 18 mm
BDE-424124 26 mm

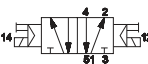
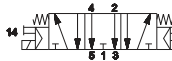
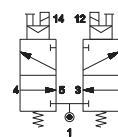
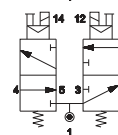
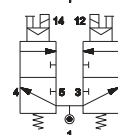
■ Double impulse



18 mm



26 mm

BDE-324424 18 mm
BDE-424424 26 mmBDE-334424 18 mm
BDE-434424 26 mmBDE-344424 18 mm
BDE-444424 26 mmBDE-354424 18 mm
BDE-454424 26 mmBDE-364424 18 mm
BDE-464424 26 mmBDE-374424 18 mm
BDE-474424 26 mmBDE-384424 18 mm
BDE-484424 26 mm

BDB Electrical impulse - Solenoid valve with connector M12

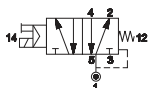
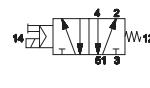
■ Single impulse



18 mm



26 mm

BDB-324024 18 mm
BDB-424024 26 mmBDB-324124 18 mm
BDB-424124 26 mm

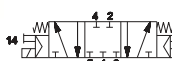
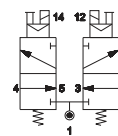
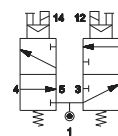
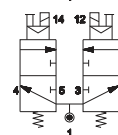
■ Double impulse



18 mm



26 mm

BDB-324424 18 mm
BDB-424424 26 mmBDB-334424 18 mm
BDB-434424 26 mmBDB-344424 18 mm
BDB-444424 26 mmBDB-354424 18 mm
BDB-454424 26 mmBDB-364424 18 mm
BDB-464424 26 mmBDB-374424 18 mm
BDB-474424 26 mmBDB-384424 18 mm
BDB-484424 26 mm

BDA Pneumatic impulse

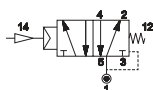
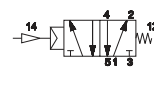
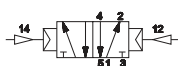
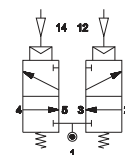
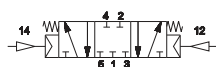
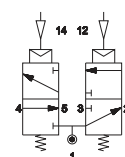
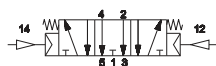
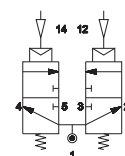
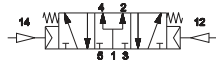
■ Single/double impulse



18 mm



26 mm

BDA-3230 18 mm
BDA-4230 26 mmBDA-3231 18 mm
BDA-4231 26 mmBDA-3233 18 mm
BDA-4233 26 mmBDA-3633 18 mm
BDA-4633 26 mmBDA-3333 18 mm
BDA-4333 26 mmBDA-3733 18 mm
BDA-4733 26 mmBDA-3433 18 mm
BDA-4433 26 mmBDA-3833 18 mm
BDA-4833 26 mmBDA-3533 18 mm
BDA-4533 26 mm

BDA Electrical impulse - External electrical connection

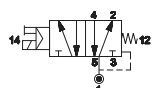
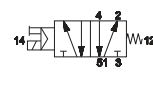
■ Single impulse



18 mm



26 mm

BDA-3240 18 mm
BDA-4240 26 mmBDA-3241 18 mm
BDA-4241 26 mm

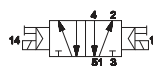
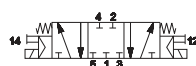
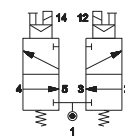
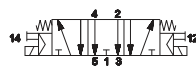
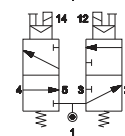
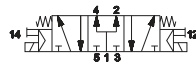
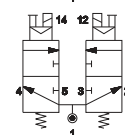
■ Double impulse



18 mm



26 mm

BDA-3244 18 mm
BDA-4244 26 mmBDA-3344 18 mm
BDA-4344 26 mmBDA-3644 18 mm
BDA-4644 26 mmBDA-3444 18 mm
BDA-4444 26 mmBDA-3744 18 mm
BDA-4744 26 mmBDA-3544 18 mm
BDA-4544 26 mmBDA-3844 18 mm
BDA-4844 26 mm

DIN C (8 mm)

For further information please contact
our Sales Office.

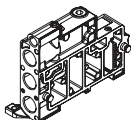
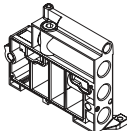
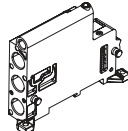
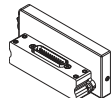
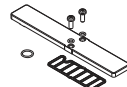
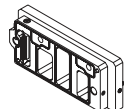
BDE Manifold sub-bases - Integrated electrical connection

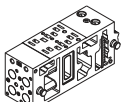
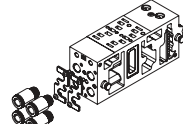
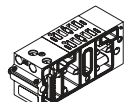
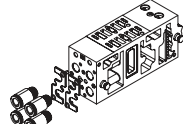
■ 18 mm

■ 26 mm

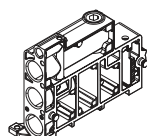
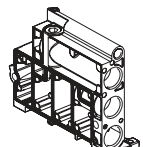
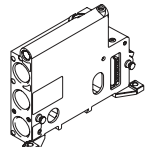
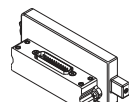
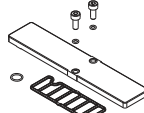


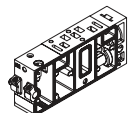
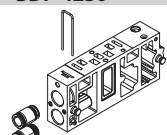
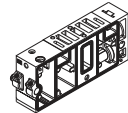
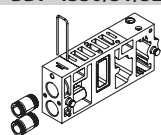
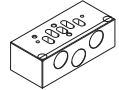
18 mm

BDF-3100	BDF-3115	BDF-3120	BDF-3140TIM	BDF-3180	BDF-3185	BDF-3190
						
left supply plate G3/8	right supply plate G3/8	intermediate supply plate G3/8	multipolar male connection module: 25 poles, type D	pressure separator	closing plate for unused valve place	connecting interface for valves side 18-26 mm

BDF-3210	BDF-3230 (a)	BDF-3310	BDF-3330 (a)	BDF-3400	GZR-100	GZR-V10004/06/08
						
two-place sub-base in compliance with VDMA-ISO flow rate 620 NI/min	two-place sub-base in compliance with VDMA-ISO flow rate 620 NI/min fittings Ø 4-6-8 mm	two-place sub-base with increased flow rate 800 NI/min	two-place sub-base with increased flow rate 800 NI/min fittings Ø 4-6-8 mm	single one-place sub-base with increased flow rate	blanking plug	UNIVER designed fittings GZR-V10004 Ø4 mm GZR-V10006 Ø6 mm GZR-V10008 Ø8 mm

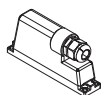
26 mm

BDF-4100	BDF-4115	BDF-4120	BDF-4140TIM	BDF-4180	BDF-4185
					
left supply plate G1/2	right supply plate G1/2	intermediate supply plate G1/2	multipolar male connection module: 25 poles, type D	plate for separating supply pressures	closing plate for unused valve place

BDF-4210/20	BDF-4230 (a)	BDF-4310/20	BDF-4330/31/32 (a)	BDF-4400	GZR-VV1006/08/10
					
one-place sub-base in compliance with VDMA-ISO flow rate 1250 NI/min BDF-4210 G1/4 connections BDF-4220 G3/8 connections	one-place sub-base in compliance with VDMA-ISO flow rate 1250 NI/min fittings Ø 6-8-10 mm	one-place sub-base with increased flow rate 1700 NI/min BDF-4310 G1/4 connections BDF-4320 G3/8 connections	one-place sub-base with increased flow rate 1700 NI/min fittings Ø 6-8-10 mm	single one-place sub-base with increased flow rate	UNIVER designed fittings GZR-VV1006 Ø6 mm GZR-VV1008 Ø8 mm GZR-VV1010 Ø10 mm

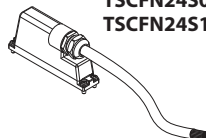
Electrical connections

TSCFN24S000



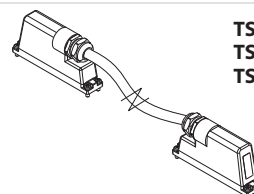
female connector 25 poles sub-D type
no cable - M3x8 fixing screws

TSCFN24S0300
TSCFN24S0500
TSCFN24S1000



female connector: 25 poles, sub-D type,
prewired for 26 coils (3-5-10m length)
M3x8 fixing screws

TSCFN16D0300
TSCFN16D0500
TSCFN16D1000



sub-D type male/female flying connector (upon request)
prewired for 16 coils with cable Ø 8 mm (3-5-10 m length)
suitable for dynamic laying - M3 x 8 fixing screws

(a) = sub-base including fixing plate for fittings (fittings excluded)

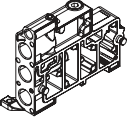
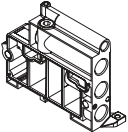
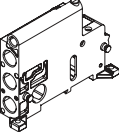
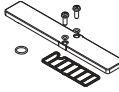
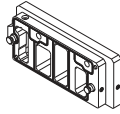
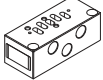
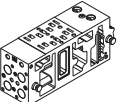
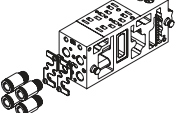
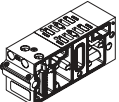
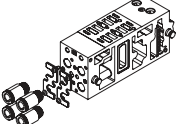
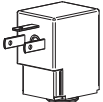
BDA/BDB Manifold sub-bases - Electrical connection with external connector

■ 18 mm

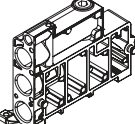
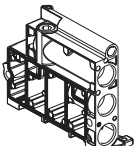
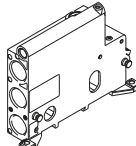
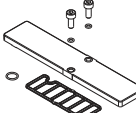
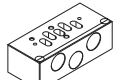
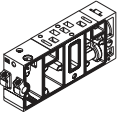
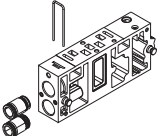
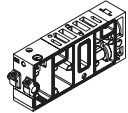
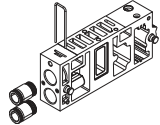
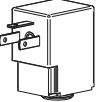
■ 26 mm



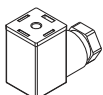
18 mm

BDF-3110	BDF-3115	BDF-3125	BDF-3180	BDF-3185	BDF-3191	BDF-3400
						
left supply plate G3/8	right supply plate G3/8	intermediate supply plate G3/8	pressure separator	closing plate for unused valve place	interface for connecting valves side 18-26 mm	single one-place sub-base with increased flow rate
BDF-3211/2 (b)	BDF-3231/2 (a) - (b)	BDF-3311/2 (b)	BDF-3331/2 (a) - (b)	GZR-100	GZR-V10004/6/8	DD-...
						
two-place sub-base in compliance with VDMA-ISO flow rate 620 NI/min G1/8 connections	two-place sub-base in compliance with VDMA-ISO flow rate 620 NI/min fittings Ø 4-6-8 mm	two-place sub-base with increased flow rate 800 NI/min G1/8 connections	two-place sub-base with increased flow rate 800 NI/min fittings Ø 4-6-8 mm	blanking plug	UNIVER designed fittings GZR-V10004 Ø4 mm GZR-V10006 Ø6 mm GZR-V10008 Ø8 mm	U05 coil side 15 mm

26 mm

BDF-4110	BDF-4115	BDF-4125	BDF-4180	BDF-4185	BDF-4400
					
left supply plate G1/2	right supply plate G1/2	intermediate supply plate G1/2	pressure separator	closing plate for unused valve place	single one-place sub-base with increased flow rate
BDF-4211/.. (b)	BDF-4231/2 (a) - (b)	BDF-4311/.. (b)	BDF-4331/2 (a) - (b)	GZR-VV1006/8/10	DD-...
					
one-place sub-base in compliance with VDMA-ISO flow rate 1250 NI/min G1/4 connect. G3/8 connect. BDF-4211 BDF-4212 BDF-4221 BDF-4222	one-place sub-base in compliance with VDMA-ISO flow rate 1250 NI/min fittings Ø 6-8-10 mm BDF-4231 BDF-4232	one-place sub-base with increased flow rate 1700 NI/min G1/4 connect. G3/8 connect. BDF-4311 BDF-4312 BDF-4321 BDF-4322	one-place sub-base with increased flow rate 1700 NI/min fittings Ø 6-8-10 mm	UNIVER designed fittings GZR-VV1006 Ø6 mm GZR-VV1008 Ø8 mm GZR-VV1010 Ø10 mm	U05 coil side 15 mm

Electrical connections



AM-5109

15 mm connector

(a) = sub-base including fixing plate for fittings (fittings excluded)
 (b) = part no. ending: 1 = electrical non integrated 2 = only pneumatic

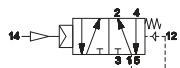
CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	poppet mixed
Max pressure	10 bar
Connections	G1/4 (1-3-5), NAMUR interface (2-4)
Nominal bore (mm)	8
Nominal flow rate (NI/min)	1200
Valve body	zamak
Seals	NBR, polyurethane
Spool	aluminium
Electropilot/Coil	AA series/U1-U3
Power consumption	3,5 W (DC), 5 VA (AC)
Connector	AM-5110
Voltage	2 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC
Manual override	impulse screw - 2 positions



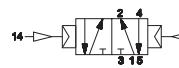
Pneumatic impulse

Single impulse



AC-N8100

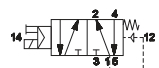
Double impulse



AC-N8120

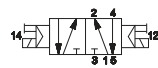
Electrical impulse

Single impulse



AC-N8500

Double impulse



AC-N8520

Version 3/2: valves are supplied with proper flat plug for closing unused way
 Solenoid valves are supplied without coil / connector / locking nut

AC-N8500 with YR2 actuator



CHARACTERISTICS

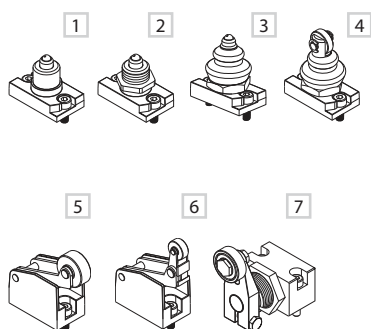
Ambient temperature	-10 ÷ +45 °C	
Fluid	50 µm filtered air, with or without lubrication	
Commutation system	spool	
Max pressure	10 bar	
Connections	G1/8	G1/4
Nominal bore (mm)	6,5	8,5
Nominal flow rate (l/min)	890	1480
Valve body	die-cast zamak (G1/8), aluminium (G1/4)	
Seals	NBR	
Spool	aluminium	
Electropilot/Coil	AA series/U1-U3	
Power consumption	3,5 W (DC) - 5 VA (AC)	
Connector	AM-5110	
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC	
Manual override	impulse screw - 2 positions	

NOTE: some versions with high temperature seals are available upon request
 (for further information please contact our Sales Office)

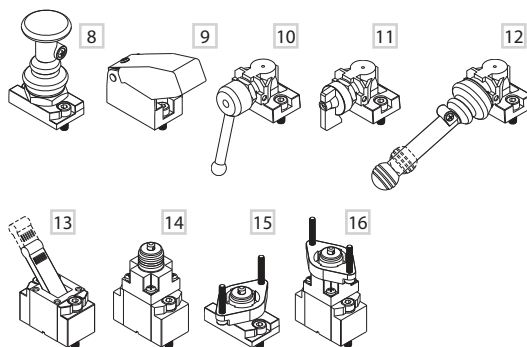


UNIVERSAL Modular System

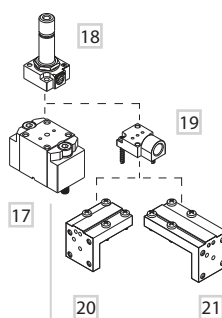
MECHANICAL



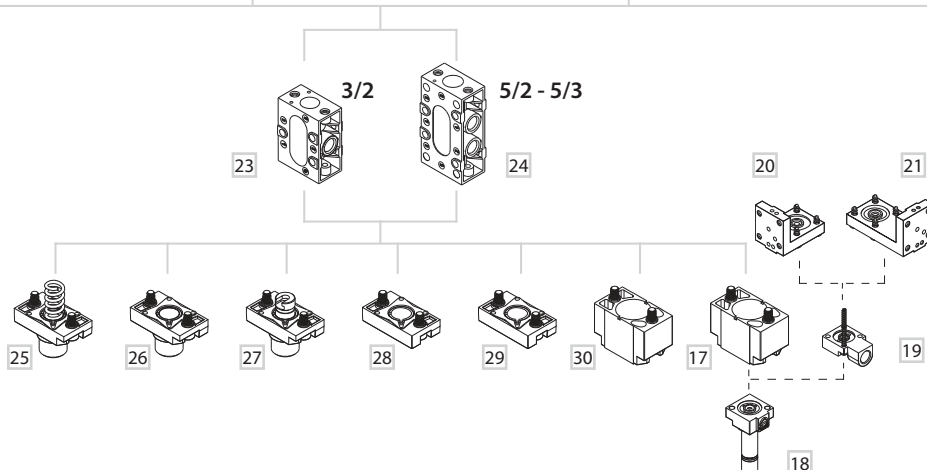
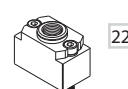
MANUAL



ELECTRICAL



PNEUMATIC



MECHANICAL CONTROL

- 1 Ball push
- 2 Ball push for screw panel mounting
- 3 Ball push with dust protection
- 4 Roller with dust protection
- 5 Roller lever
- 6 One-way roller lever
- 7 Two-way side roller lever

MANUAL CONTROL

- 8 Push-pull
- 9 Push button
- 10 Rotating lever
- 11 Selector

- 12 90° short/long lever
- 13 Short/long lever
- 14 Threaded indirect operation
- 15 Panel direct operation
- 16 Panel indirect operation

ELECTRICAL CONTROL

- 17 Electrical amplified
- 18 U1 electropilot
- 19 Plate for external pilot supply
- 20 Angle plate for "H" solenoid option
- 21 Angle plate for "P" solenoid option

PNEUMATIC CONTROL

- 22 Pneumatic amplified

BODY

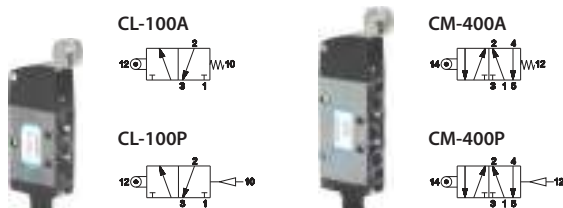
- 23 3/2 body
- 24 5/2 body

RETURN

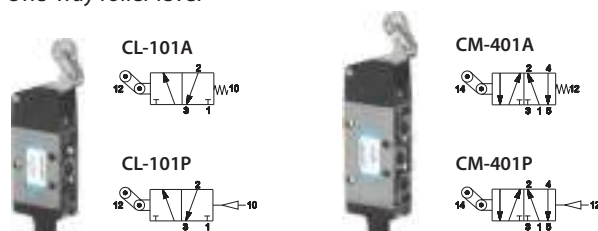
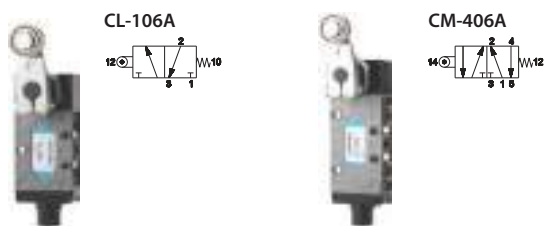
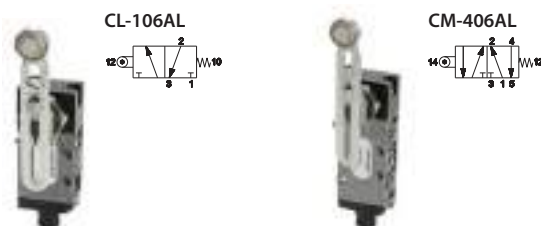
- 25 Mechanical spring
- 26 Pneumatic not amplified
- 27 Bottom plate - 2/3 positions
- 28 Bottom plate
- 29 Pneumatic spring
- 30 Pneumatic amplified

Valves G1/8 with direct mechanical operation

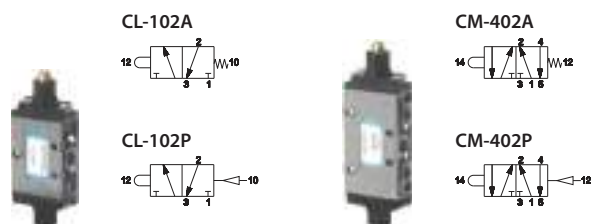
■ Roller lever



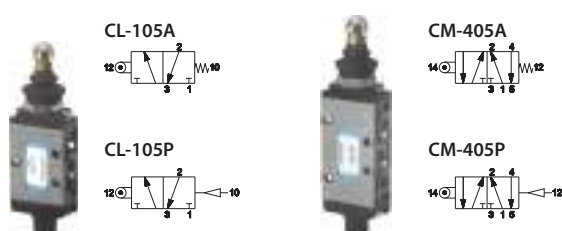
■ One-way roller lever

■ **NEW** - Two-way side roller lever■ **NEW** - Adjustable two-way side roller lever

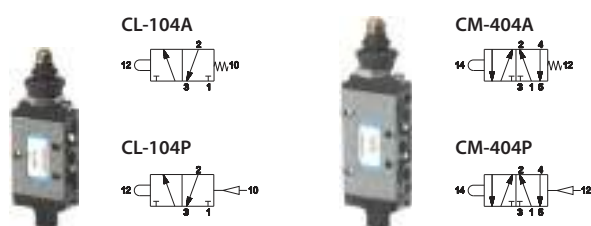
■ Ball-push



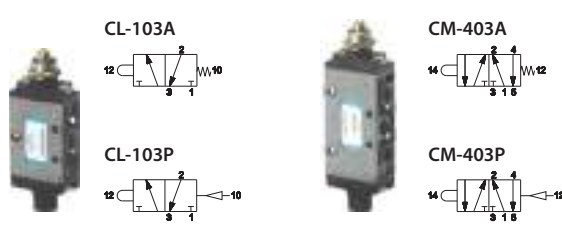
■ Roller with dust protection



■ Ball push with dust protection

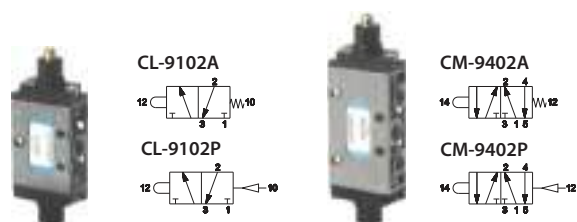


■ Ball push for screw panel mounting

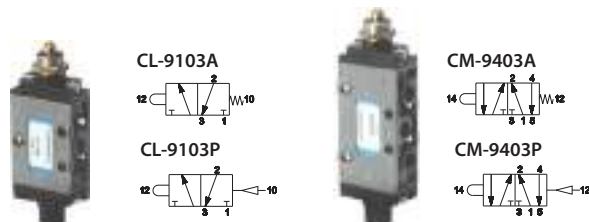


Valves G1/4 with direct mechanical operation

■ Ball push



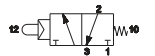
■ Ball push for screw panel mounting



Valves G1/8 - G1/4 with indirect mechanical operation for pneumatic and mechanical operators

■ Ball push

CL-110A G 1/8
CL-9110A G 1/4



CL-110P G 1/8
CL-9110P G 1/4



CM-410A G 1/8
CM-9410A G 1/4

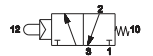


CM-410P G 1/8
CM-9410P G 1/4



■ Sensible ball push

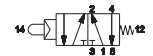
CL-111A G 1/8
CL-9111A G 1/4



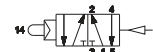
CL-111P G 1/8
CL-9111P G 1/4



CM-411A G 1/8
CM-9411A G 1/4



CM-411P G 1/8
CM-9411P G 1/4

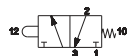


															
AI-3550	AI-3551	AI-3560	AI-3562	AI-3563	AI-3570	AI-3571	AI-3572	AI-3511	AI-3514	AI-3515	AI-3520	AI-3522	AI-3524	AI-3525	AI-3526
								AI-3512	AI-3516	AI-3517	AI-3521	AI-3523			
								AI-3513	AI-3514D	AI-3519					
								AI-3516D							

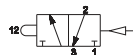
Valves G1/8 - G1/4 with direct and indirect operation for panel operators

■ Ball push (direct operation)

CL-112A



CL-112P



CM-412A



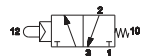
CM-412P



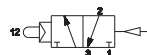
			
AI-3511Q	AI-3514Q	AI-3515Q	AI-3524Q
AI-3512Q	AI-3516Q	AI-3517Q	
AI-3513Q	AI-3514QD	AI-3519Q	
AI-3516QD			

■ Ball push (indirect operation)

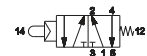
CL-113A G 1/8
CL-9113A G 1/4



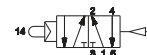
CL-113P G 1/8
CL-9113P G 1/4



CM-413A G 1/8
CM-9413A G 1/4



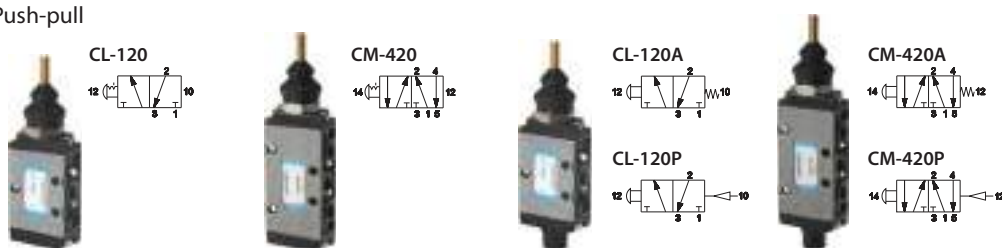
CM-413P G 1/8
CM-9413P G 1/4



							
AI-3511Q	AI-3514Q	AI-3515Q	AI-3520Q	AI-3524Q	AI-3522Q	AI-3525Q	AI-3526Q
AI-3512Q	AI-3516Q	AI-3517Q	AI-3521Q		AI-3523Q		
AI-3513Q	AI-3514QD	AI-3519Q					
AI-3516QD							

Valves G1/8 with manual operation

■ Push-pull

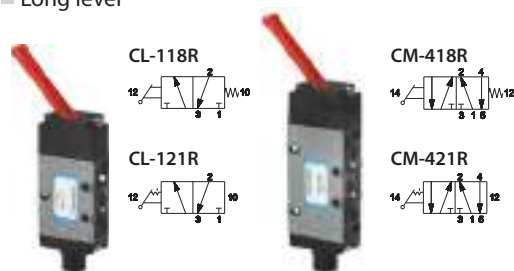


Valves are supplied without operator

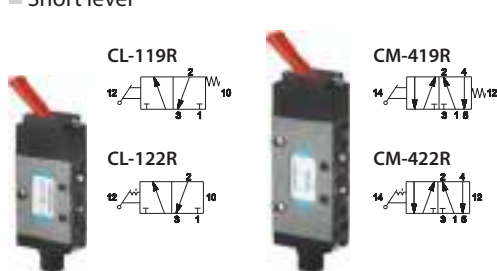


■ YELLOW
CP-911G
■ RED
CP-911R
■ BLACK
CP-911N
■ GREEN
CP-911V

■ Long lever



■ Short lever



LONG LEVER

STANDARD
■ RED

UPON REQUEST
■ YELLOW
■ BLACK

SHORT LEVER

STANDARD
■ RED

UPON REQUEST
■ YELLOW
■ BLACK
■ GREEN

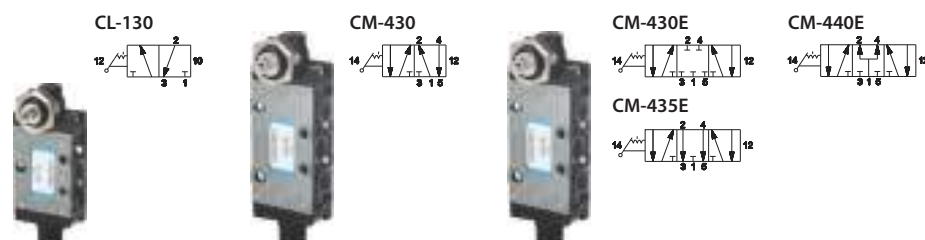
■ Button



STANDARD

■ RED

■ Rotating lever



Valves are supplied without operator

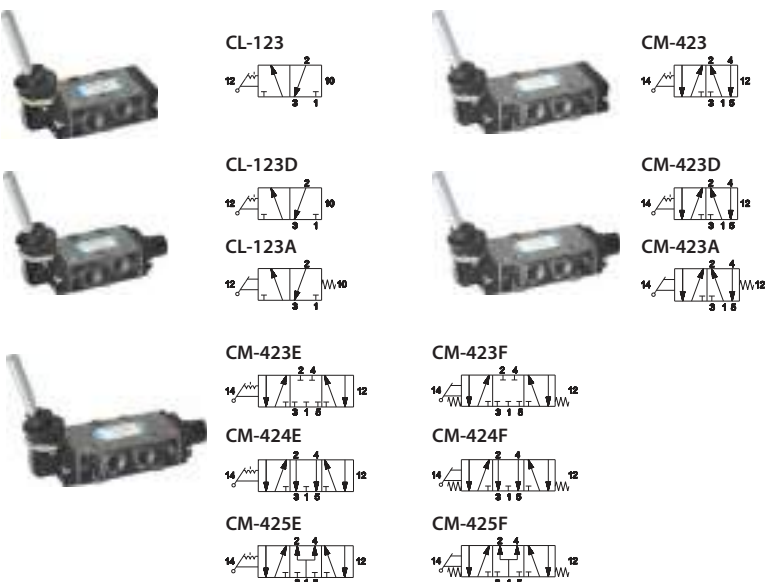


■ RED
CP-915R



■ RED
CP-916R

■ 90° Lever



Valves are supplied without operator

LONG LEVER



■ RED
CP-913R

SHORT LEVER



■ YELLOW
CP-912G
■ RED
CP-912R
■ BLACK
CP-912N

Valves G1/4 with manual operation

■ Push-pull

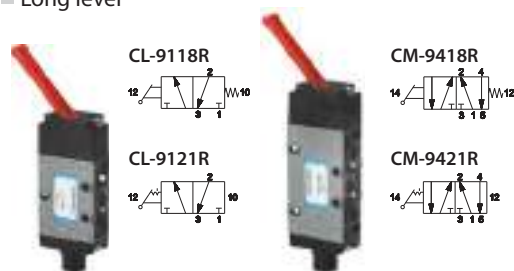


Valves are supplied without operator



■ YELLOW
CP-911G
■ RED
CP-911R
■ BLACK
CP-911N
■ GREEN
CP-911V

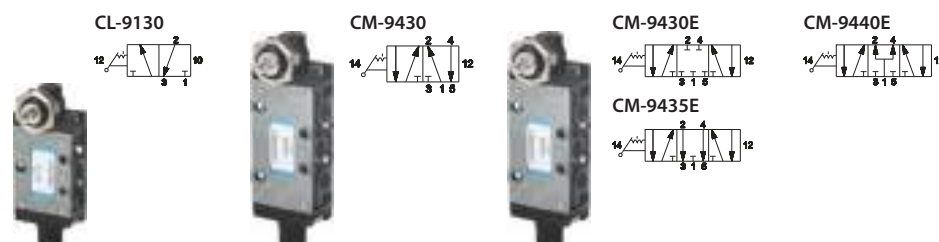
■ Long lever



STANDARD
■ RED

UPON REQUEST
■ YELLOW
■ BLACK

■ Rotating lever



Valves are supplied without operator

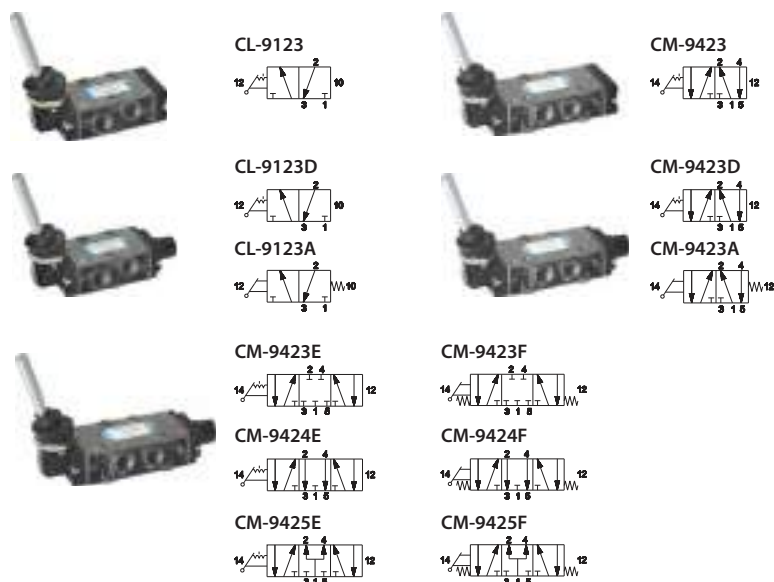


■ RED
CP-915R



■ RED
CP-916R

■ 90° Lever



Valves are supplied without operator

LONG LEVER



■ RED
CP-913R

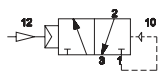
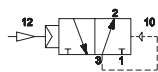
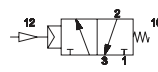
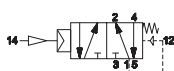
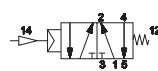
SHORT LEVER



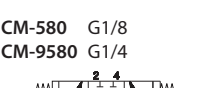
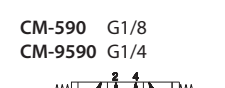
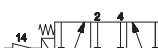
■ YELLOW
CP-912G
■ RED
CP-912R
■ BLACK
CP-912N

Valves G1/8 - G1/4 with pneumatic operation

■ Single impulse

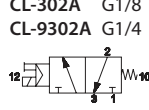
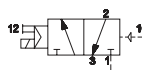
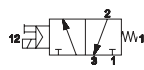
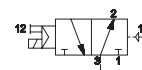
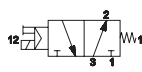
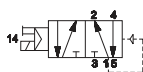
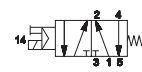
CL-200 G1/8
CL-9200 G1/4CL-203 G1/8
CL-9203 G1/4CL-200A G1/8
CL-9200A G1/4CM-500 G1/8
CM-9500 G1/4CM-500A G1/8
CM-9500A G1/4

■ Double impulse

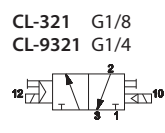
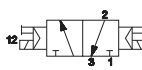
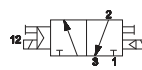
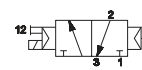
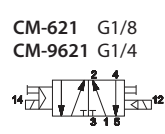
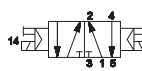
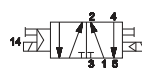
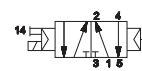
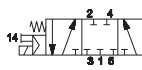
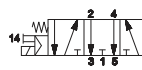
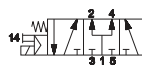
CL-220 G1/8
CL-9220 G1/4CL-221 G1/8
CL-9221 G1/4CL-224 G1/8
CL-9224 G1/4CM-521 G1/8
CM-9521 G1/4CM-524 G1/8
CM-9524 G1/4CM-520 G1/8
CM-9520 G1/4CM-580 G1/8
CM-9580 G1/4CM-585 G1/8
CM-9585 G1/4CM-590 G1/8
CM-9590 G1/4

Valves G1/8 - G1/4 with electrical operation

■ Single impulse

CL-300 G1/8
CL-9300 G1/4CL-302A G1/8
CL-9302A G1/4CL-301 G1/8
CL-9301 G1/4CL-303A G1/8
CL-9303A G1/4CM-600 G1/8
CM-9600 G1/4CM-602A G1/8
CM-9602A G1/4

■ Double impulse

CL-320 G1/8
CL-9320 G1/4CL-321 G1/8
CL-9321 G1/4CL-322 G1/8
CL-9322 G1/4CM-620 G1/8
CM-9620 G1/4CM-621 G1/8
CM-9621 G1/4CM-622 G1/8
CM-9622 G1/4CM-680 G1/8
CM-9680 G1/4CM-685 G1/8
CM-9685 G1/4CM-690 G1/8
CM-9690 G1/4

Solenoid valves are supplied without coil, connector and locking nut

AM-5148

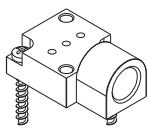
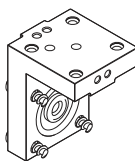


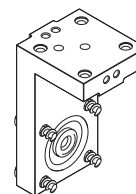
Plate for external pilot supply

AM-5151



Angle plate for "H" solenoid option

AM-5152



Angle plate for "P" solenoid option

CLIPS Modular sub-base G1/8 - G1/4 for 3/2 - 5/2 - 5/3 valves

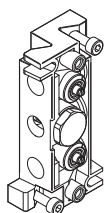


G1/8



G1/4

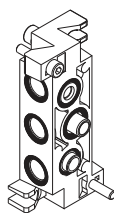
CP-100/CP-9100



modular sub-base with adjustable and conveyed exhausts
CP-100 for G1/8, **CP-9100** for G1/4
 material: zamak

standard supplied: screws, seals, exhaust regulator
 and coupling for valve fixing

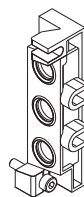
CP-101/CP-9101



modular sub-base without adjustable exhausts
CP-101 for G1/8, **CP-9101** for G1/4
 material: zamak

standard supplied: screws, seals and
 coupling for valve fixing

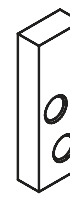
CP-105/CP-9105



side connection inlet plate
CP-105 G1/4, **CP-9105** G3/8
 material: zamak

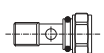
standard supplied: screws and seals

CP-106



closing plate for unused place
 material: aluminium

CP-110/CP-9110



coupling
 connections: **CP-110** G1/8, **CP-9110** G1/4
 material: brass

CP-111/CP-9111



pressure separator
CP-111 for G1/8, **CP-9111** for G1/4
 material: aluminium

CP-112/CP-9112



plug for 3/2 valve mounting
CP-112 for G1/8, **CP-9112** for G1/4
 material: aluminium

CP-113/CP-9113



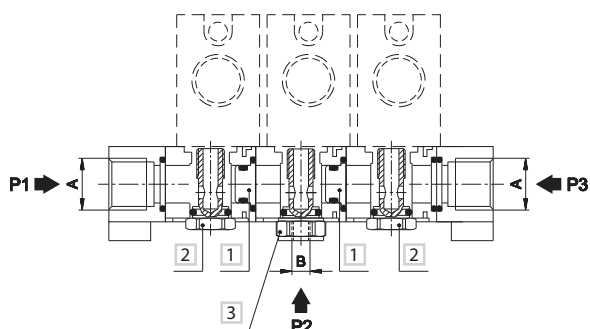
adjustment needle
CP-113 for G1/8, **CP-9113** for G1/4
 material: brass

For each additional pressure, one coupling and two separators are required

Plug for mounting 3/2 NC-NO valves on "CLIPS" sub-base to close unused way.
 Sub-base with adjustment screw (screwdriver slot) standard supplied.
 Upon request: adjustment needle with milled handle

Assembly Example

Manifold supplied by three different pressures



	A	B
G1/8	G1/4	G1/8
G1/4	G3/8	G1/4

- 1 Pressure separator CP-111/CP-9111
- 2 Fixing coupling for valve embodied in the sub-base
- 3 Coupling CP-110/CP-9110

CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid	10 µm filtered air
Commutation system	spool
Max pressure	10 bar
Connections	M5, for sub-base
Nominal bore (mm)	2
Nominal flow rate (NI/min)	150
Valve body	zamak
Seals	NBR
Electropilot/Coil	A series/U05
Voltage	24 V DC - 12 V DC - 24 V AC - 110 V AC - 230 V AC



CODIFICATION KEY

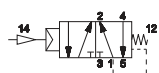
E	-	0	2	2	4
1		2	3	4	

1 Series	2 Type	3 Control 14	4 Return 12
E = COMPA 2 Miniature Valves	02 = 5/2 Sub-base mounting 04 = 5/2 Threaded body M5 05 = 5/3 c.c. Sub-base mounting 06 = 5/3 o.c. Sub-base mounting 07 = 5/3 p.c. Sub-base mounting 08 = 5/3 c.c. Threaded body M5 09 = 5/3 o.c. Threaded body M5 10 = 5/3 p.c. Threaded body M5	2 = Electrical DC 4 = Pneumatic 7 = Electrical DC/AC	0 = Pneumomechanical spring 2 = Electrical DC 4 = Pneumatic impulse 7 = Electrical DC/AC

c.c. = closed centres o.c. = open centres p.c. = pressurized centres

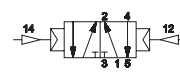
Pneumatic impulse

Single impulse



E-0240

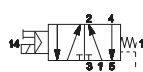
Double impulse



E-0244

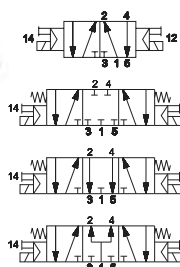
Electrical impulse

Single impulse



E-0220
E-0270

Double impulse



E-0222
E-0277

E-0522

E-0622

E-0722

Inlet plate G1/8

Manifold sub-base, side connections M5



E-4500

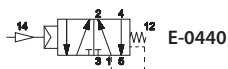


E-4505

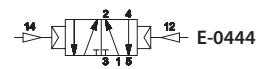
Solenoid valves are supplied without coil and connector

Pneumatic impulse - 5/2 Valves M5

■ Single impulse

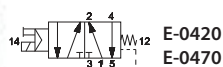


■ Double impulse

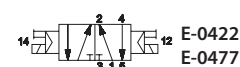


Electrical impulse - 5/2 Valves M5

■ Single impulse

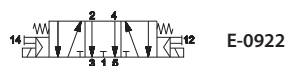


■ Double impulse



Electrical impulse - 5/3 Valves M5

■ Double impulse

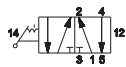


DIN C (8 mm)

For further information please
contact our Sales Office

5/2 Valves M5 - Mechanical and manual operation

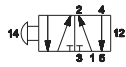
■ Lever valve



LEVER

E-15422G ■ YELLOW
E-15422N ■ BLACK
E-15422R ■ RED

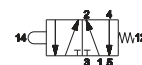
■ Push-pull valve



E-15420

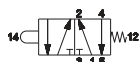
E-15420A

■ Ball push valve



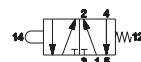
E-15402A

■ Ball push valve for mechanical screw operation



E-15403A

■ Ball push valve for mechanical panel operation



E-15412A

															
AI-3550	AI-3551	AI-3560	AI-3562	AI-3563	AI-3570	AI-3571	AI-3572	AI-3511Q ■	AI-3514Q ■	AI-3515Q ■	AI-3520Q ■	AI-3524Q ■	AI-3522Q ■	AI-3525Q ■	AI-3526Q ■
								AI-3512Q ■	AI-3516Q ■	AI-3517Q ■	AI-3521Q ■				
								AI-3513Q ■	AI-3514QD ■	AI-3519Q ■					
								AI-3516QD ■							
															
AI-3511 ■	AI-3514 ■	AI-3515 ■	AI-3520 ■	AI-3522 ■	AI-3524 ■	AI-3525 ■	AI-3526 ■								
AI-3512 ■	AI-3516 ■	AI-3517 ■	AI-3521 ■	AI-3523 ■											
AI-3513 ■	AI-3514D ■	AI-3519 ■													
	AI-3516D ■														

CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid	10 µm filtered air
Commutation system	spool
Max pressure	10 bar
Connections	for sub-base
Nominal bore (mm)	4
Nominal flow rate (NI/min)	390
Valve body	acetalic resin
Seals	NBR
Electropilot/Coil	A series/U05
Voltage	24 V DC - 12 V DC - 24 V AC - 110 V AC - 230 V AC



CODIFICATION KEY

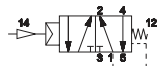
F	-	0	2	2	4
1		2	3	4	

1 Series	2 Type	3 Control 14	4 Return 12
F = COMPA 4 Miniature Valves	02 = 5/2 Sub-base mounting 05 = 5/3 c.c. Sub-base mounting 06 = 5/3 o.c. Sub-base mounting 07 = 5/3 p.c. Sub-base mounting	2 = Electrical DC 4 = Pneumatic 7 = Electrical DC/AC	0 = Pneumomechanical spring 2 = Electrical DC 4 = Pneumatic impulse 7 = Electrical DC/AC

c.c. = closed centres o.c. = open centres p.c. = pressurized centres

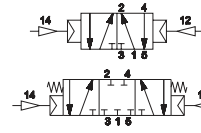
Pneumatic impulse

Single impulse

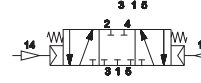


F-0240

Double impulse



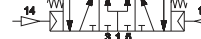
F-0244



F-0544



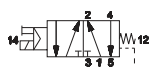
F-0644



F-0744

Electrical impulse

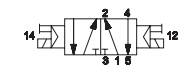
Single impulse



F-0220

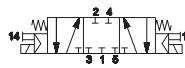
F-0270

Double impulse



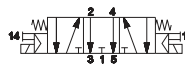
F-0222

F-0277



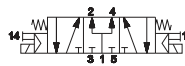
F-0522

F-0577



F-0622

F-0677



F-0722

F-0777



DIN C (8 mm)

For further information please contact our Sales Office

Inlet plate G1/8

Manifold sub-base, threaded connections G1/8



F-4500



F-4505

Solenoid valves are supplied without coil and connector

CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	spool
Pressure	1,5 ÷ 9 bar
Nominal bore (mm)	5
Nominal flow rate (NI/min)	770 (5/2) 700 (5/3) 670 (3/2+3/2)
Connections	G1/8
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot/Coil	A series/U05 - B series/U04
Voltage	24 V DC - 12 V DC - 24 V AC - 110 V AC - 230 V AC (only for version with integrated electrical connection)
Power consumption	U05 = 2 W (DC) 2,3 VA (AC) U04 = 1,2 W (DC)
Manual override	recessed button - 1 position



CODIFICATION KEY

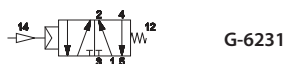
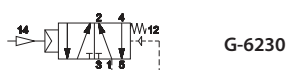
G	-	6	6	4	4	
1	2	3	4	5		

1 Series	2 Type	3 Control 14
G-6 = 20 mm - Valves and solenoid valves threaded body G1/8	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c.	3 = Pneumatic amplified 4 = Electrical amplified DC 5 = Electrical amplified DC/AC 6 = Electrical amplified DC - B series 10 mm electropilot
4 Return 12	5 Option	
0 = Pneumomechanical spring 1 = Mechanical spring 3 = Pneumatic amplified	4 = Electrical amplified DC 5 = Electrical amplified DC/AC 6 = Electrical amplified DC - B series 10 mm electropilot	D = External pilot supply

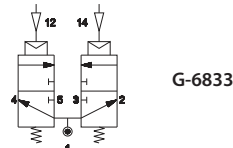
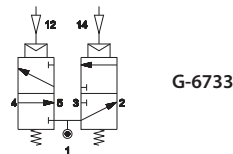
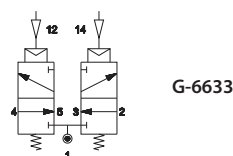
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Pneumatic impulse

Single impulse



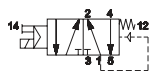
Double impulse



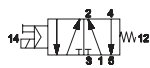
Solenoid valves are supplied without coil and connector

Electrical impulse - A series 15 mm Electropilot

■ Single impulse



G-6240 DC
G-6250 AC/DC



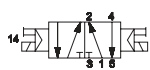
G-6241 DC
G-6251 AC/DC



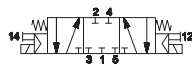
Coil with integrated connector
for multipolar version
DD-051-2C 24 V DC
DD-040-2C 24 V AC

Single/double impulse

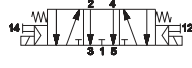
■ Double impulse



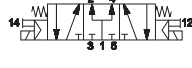
G-6244 DC
G-6255 AC/DC



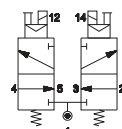
G-6344 DC
G-6355 AC/DC



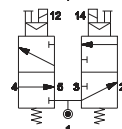
G-6444 DC
G-6455 AC/DC



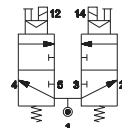
G-6544 DC
G-6555 AC/DC



G-6644 DC
G-6655 AC/DC



G-6744 DC
G-6755 AC/DC



G-6844 DC
G-6855 AC/DC

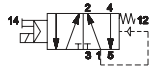


DIN C (8 mm)

For further information please
contact our Sales Office

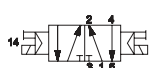
Electrical impulse - B series 10 mm Electropilot

■ Single impulse

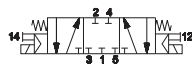


G-6260
G-6261

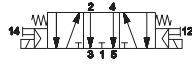
■ Double impulse



G-6266



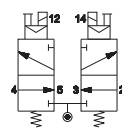
G-6366



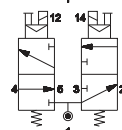
G-6466



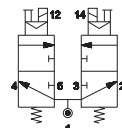
G-6566



G-6666



G-6766



G-6866

Solenoid valves are supplied without coil and connector

Electrical sub-base

■ Multipolar connection

■ External connection

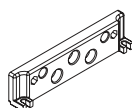
■ Connector with loose cables

3



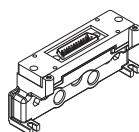
GP-6100

GP-6110

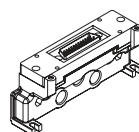


blank end plate

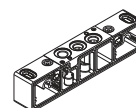
GP-611212

threaded end plate with male connector
25 poles
12+12 coils control 12-14

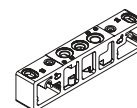
GP-611806

threaded end plate with male connector
25 poles
18 coils control 14
6 coils control 12

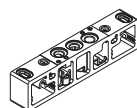
GP-6310/1/2

sub-base with open diaphragms
GP-6310 without electrical connection
GP-6311 monostable
GP-6312 bistable

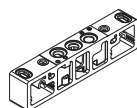
GP-6320/1/2

sub-base with closed diaphragms
GP-6320 without electrical connection
GP-6321 monostable
GP-6322 bistable

GP-6330/1/2

sub-base with closed air supply and open exhausts
GP-6330 without electrical connection
GP-6331 monostable
GP-6332 bistable

GP-6340/1/2

sub-base with open air supply and closed exhausts
GP-6340 without electrical connection
GP-6341 monostable
GP-6342 bistable

GP-6380

intermediate supply plate
(to be used only with GP-63... sub-base)

GP-6385



closing plate for unused valve place

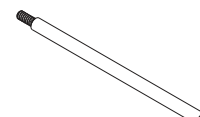
GP-6400-1

modular tie-rod
1 valve place

GP-6400-2

modular tie-rod
2 valve places

GP-6400-5

modular tie-rod
5 valve places

AZ4-SN004A

No. 100 hexagonal nuts M4

AZ4-VN0416

No. 100 allen screws M4x16 for tie rods

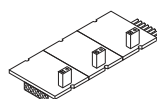
GP-6512-01/..MF

BUS connection card control side 12 with 12 pins
GP-6512-01MF 1 place
GP-6512-02MF 2 places
GP-6512-03MF 3 places
GP-6512-05MF 5 places
GP-6512-06MF 6 places

GP-6514-01/..MF

BUS connection card control side 14 with 12 pins
GP-6514-01MF 1 place
GP-6514-02MF 2 places
GP-6514-03MF 3 places
GP-6514-05MF 5 places
GP-6514-06MF 6 places

GP-651418



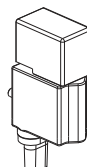
BUS connection card control side 14 with 18 pins (only 12 places) for manifolds with control 14 and more than 12 coils (up to 18) use GP-651418 card 12 places and then GP-6514-...

DD-...

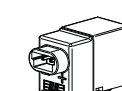


24 V DC 2 W coil for single connection

DD-051-2C/DD-040-2C



24 V DC 2 W coil with integrated connector for multipolar version

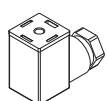


24 V DC 1,35 W coil with in-line connector with protection for a complete tightness

D-530-30/50/200

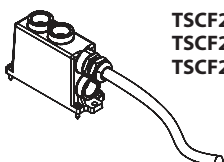
Customized solutions up to 12 places available upon request

Electrical connections

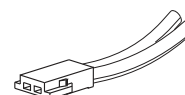


AM-5109

15 mm connector

TSCF24S0300
TSCF24S0500
TSCF24S1000

sub-D flying female connector in compliance with CEI 20-22 O.R. II prewired for 24 coils (3-5-10 length) M3x12 fixing screws



Miniature connector with loose cables

D-530-30 = wire length 300 mm
D-530-50 = wire length 500 mm
D-530-200 = wire length 2000 mm

CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	spool
Pressure	1,5 ÷ 9 bar
Connections	sub-base interface
Nominal bore (mm)	5
Nominal flow rate (NI/min)	140 ÷ 740 (depending on the type of fittings)
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot/Coil	A series/U05 - B series/U04
Voltage	24 V DC - 12 V DC - 24 V AC - 110 V AC - 230 V AC (only version with external connection)
Power consumption	U05 = 2 W (DC) 2,3 VA (AC) U04 = 1,2 W (DC)
Manual override	recessed button - 1 position



CODIFICATION KEY

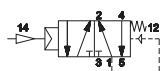
G	L	-	6	6	4	4	
1	2	3	4	5			

1 Series	2 Type	3 Control 14	4 Return 12	5 Option
GL-6 = 20 mm - Valves and Solenoid Valves for sub-base mounting	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO	3 = Pneumatic amplified 4 = Electrical amplified DC 5 = Electrical amplified DC/AC 6 = Electrical amplified DC B series 10 mm electropilot	0 = Pneumomechanical spring 1 = Mechanical spring 3 = Pneumatic amplified 4 = Electrical amplified DC 5 = Electrical amplified DC/AC 6 = Electrical amplified DC B series 10 mm electropilot	D = External pilot supply

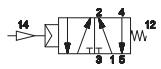
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Pneumatic impulse

Single impulse

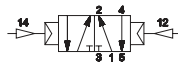


GL-6230

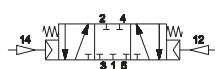


GL-6231

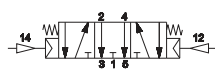
Double impulse



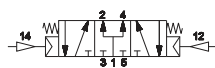
GL-6233



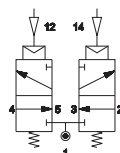
GL-6333



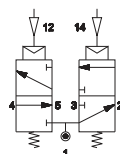
GL-6433



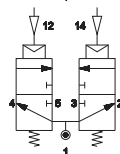
GL-6533



GL-6633



GL-6733

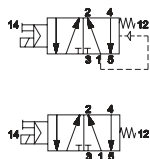


GL-6833

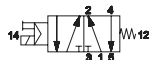
Solenoid valves are supplied without coil and connector

Electrical impulse - A series 15 mm Electropilot

■ Single impulse



GL-6240 DC
GL-6250 AC/DC



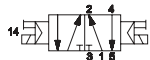
GL-6241 DC
GL-6251 AC/DC



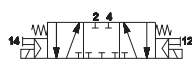
Coil with integrated connector
for multipolar version
DD-051-2C 24 V DC
DD-040-2C 24 V AC

Single/double impulse

■ Double impulse



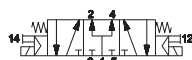
GL-6244 DC
GL-6255 AC/DC



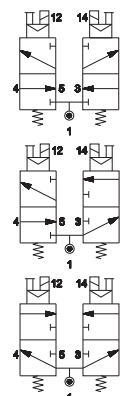
GL-6344 DC
GL-6355 AC/DC



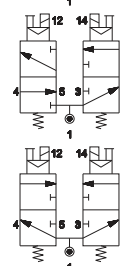
GL-6444 DC
GL-6455 AC/DC



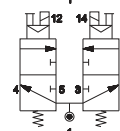
GL-6544 DC
GL-6555 AC/DC



GL-6644 DC
GL-6655 AC/DC



GL-6744 DC
GL-6755 AC/DC



GL-6844 DC
GL-6855 AC/DC

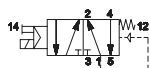


DIN C (8 mm)

For further information please
contact our Sales Office

Electrical impulse - B series 10 mm Electropilot

■ Single impulse

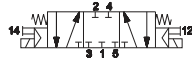


GL-6260
GL-6261

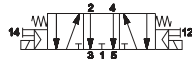
■ Double impulse



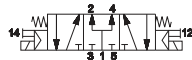
GL-6266



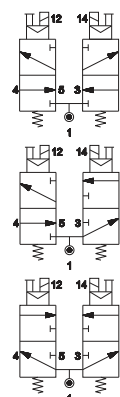
GL-6366



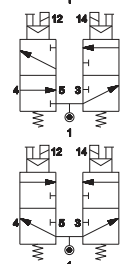
GL-6466



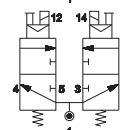
GL-6566



GL-6666



GL-6766



GL-6866

Solenoid valves are supplied without coil and connector

Electrical sub-base

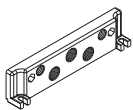
■ Multipolar connection

■ External connection

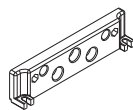
■ Connector with loose cables



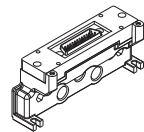
GP-6100



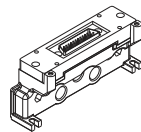
GP-6110



GP-611212



GP-611806



GP-6210/1/2

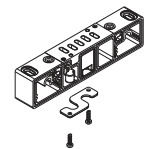
sub-base with open diaphragms
GP-6210 without electrical connection
GP-6211 monostable
GP-6212 bistable



GP-6220/1/2

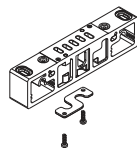
sub-base with closed diaphragms
GP-6220 without electrical connection
GP-6221 monostable
GP-6222 bistable

GP-6230/1/2



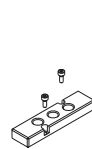
sub-base with closed air supply and open exhausts
GP-6230 without electrical connection
GP-6231 monostable
GP-6232 bistable

GP-6240/1/2



sub-base with open air supply and closed exhausts
GP-6240 without electrical connection
GP-6241 monostable
GP-6242 bistable

GP-6380



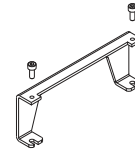
intermediate supply plate
(to be used only with GP-63... sub-bases)

GP-6285



closing plate for unused valve place

GP-6411



lifting bracket

GP-6400-1



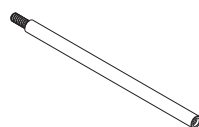
modular tie-rod
1 valve place

GP-6400-2



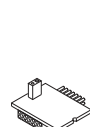
modular tie-rod
2 valve places

GP-6400-5



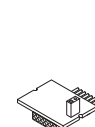
modular tie-rod
5 valve places

GP-6512-01/..MF



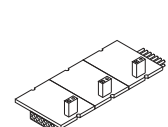
BUS connection card control side 12 with 12 pins
GP-6512-01MF 1 place
GP-6512-02MF 2 places
GP-6512-03MF 3 places
GP-6512-05MF 5 places
GP-6512-06MF 6 places

GP-6514-01/..MF



BUS connection card control side 14 with 12 pins
GP-6514-01MF 1 place
GP-6514-02MF 2 places
GP-6514-03MF 3 places
GP-6514-05MF 5 places
GP-6514-06MF 6 places

GP-651418



BUS connection card control side 14 with 18 pins (only 12 places) for manifolds with control 14 with more than 12 coils (up to 18) use GP-651418 card 12 places and then GP-6514-...

AZ4-SN004A

No. 100 nuts M4 for tie-rods

AZ4-VN0416

No. 100 screws M4x16 for tie-rods

customized solutions up to 12 places available upon request

GZR-100



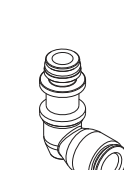
blanking plug

GZR-V10004/6/8



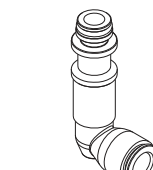
straight fitting
GZR-V10004 tube: 4 mm
GZR-V10006 tube: 6 mm
GZR-V10008 tube: 8 mm

GZR-V20004/6/8



low elbow fitting
GZR-V20004 tube: 4 mm
GZR-V20006 tube: 6 mm
GZR-V20008 tube: 8 mm

GZR-V20L004/6/8



high elbow fitting
GZR-V20L004 tube: 4 mm
GZR-V20L006 tube: 6 mm
GZR-V20L008 tube: 8 mm

For sub-bases preset for external pilot supply, add suffix S to part number (e.g. GP-6210S)

DD-...	DD-051-2C/DD-040-2C	DE-652I	D-530-30/50/200
24 V DC 2 W coil for single connection	24 V DC 2 W coil with integrated connector for multipolar version	24 V DC 1,35 W coil with in-line connector with protection for a complete tightness	Miniature connector with loose cables D-530-30 = wire length 300 mm D-530-50 = wire length 500 mm D-530-200 = wire length 2000 mm

Electrical connections

AM-5109	TSCF24S0300 TSCF24S0500 TSCF24S1000
15 mm connector	sub-D flying female connector in compliance with CEI 20-22 O.R. II prewired for 24 coils (3-5-10 m length) M3x12 fixing screws

■ Example of panel mounting



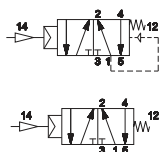
CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	10 bar
Nominal bore (mm)	6
Nominal flow rate (NI/min)	860
Connector	G1/8
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot/Coil	AA series/U1-U3
Power consumption	3,5 W (DC), 5 VA (AC)
Connector	AM-5110
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC
Manual override	impulse screw – 2 positions



Pneumatic impulse

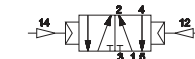
Single impulse



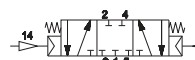
G-7230

G-7231

Double impulse



G-7233



G-7333



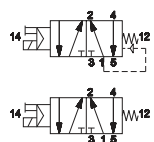
G-7433



G-7533

Electrical impulse

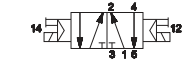
Single impulse



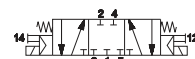
G-7290

G-7291

Double impulse



G-7299



G-7399



G-7499



G-7599

The valve is supplied with two plugs to be fixed with sealants on unused connections 2-4
Solenoid valves are supplied without coil/connector/locking nut

Multiple sub-base G1/8



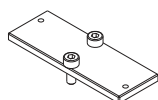
	Places
G-7900-02	2
G-7900-03	3
G-7900-04	4
G-7900-05	5
G-7900-06	6
G-7900-07	7

	Places
G-7900-08	8
G-7900-09	9
G-7900-10	10
G-7900-11	11
G-7900-12	12

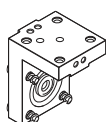
G-7885

AM-5151

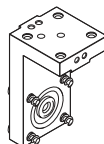
AM-5152



Closing plate for sub-base place

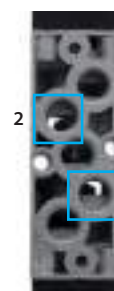


Angle plate for "H" solenoid option



Angle plate for "P" solenoid option

Threaded connections 2 - 4 on both sides of the valve



PS

COMBOBOX Valves

INTEGRATED SUB-BASE

MANIFOLD valve with no sub-base

REDUCED DIMENSIONS

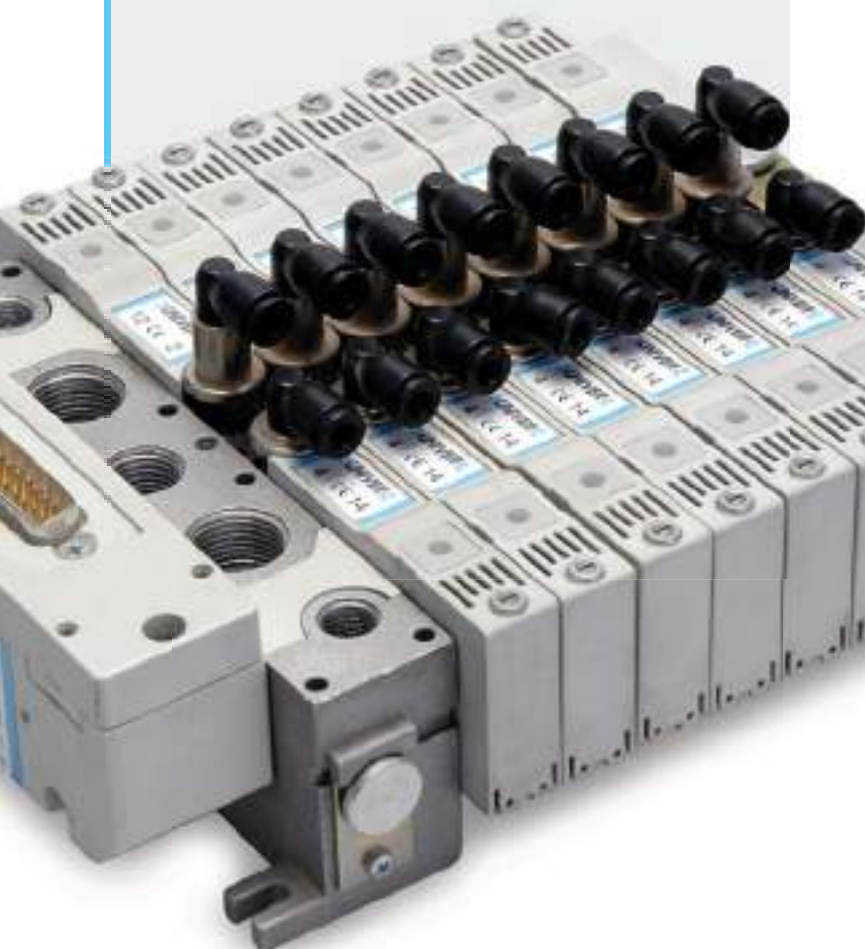
Space saving up to 30% in comparison with standard valve MANIFOLDS

HIGH FLOW RATE

830 NI/min spool system UNIVER Original

READY TO USE

Prewired configurations of 2 to 20 valves for a quick installation



PSC

Single electrical connection



PSP

Multipolar connection

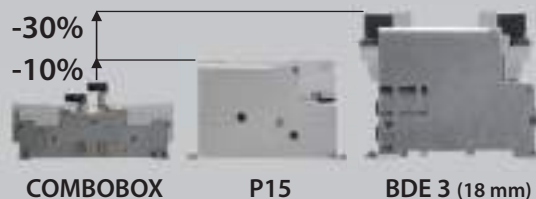


PSR

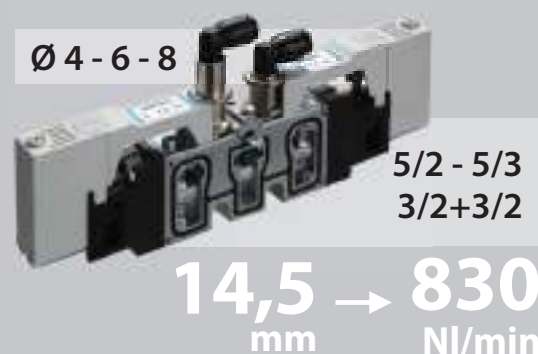
Pneumatic operation connection



REDUCED DIMENSIONS



MANIFOLD VALVE without sub-base



CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C (PSC-PSP), -15 ÷ +50 °C (PSR)
Fluid	10 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	9 bar (electrical control), 10 bar (pneumatic control)
Nominal bore (mm)	6
Nominal flow rate (NI/min)	depending on the type of fittings (see table)
Connections	tube Ø 4, 6, 8
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot/Coil	B series/U04
Power consumption	1,35 W
Voltage	24 V DC (12 V DC upon request)
Protection degree	IP65
Manual override	recessed button - 1 position (PSC), impulse screw - 1-2 positions (PSP)



Nominal flow rate (NI/min)

	Ø4	Ø6	Ø8
Straight fitting	200	510	830
Elbow fitting	140	370	700

CODIFICATION KEY

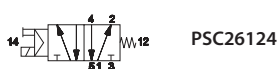
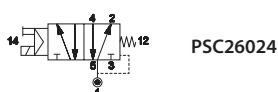
P	S	C	2	6	0	2	4
1	2	3	4	5			

1 Series	2 Type	3 Control 14	4 Return 12	5 Voltage and coil
PSC = Separate wires PSP = Plug-in PSR = Pneumatic	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO	2 = Pneumatic amplified 6 = Electrical amplified	0 = Pneumatic spring 1 = Mechanical spring 2 = Pneumatic amplified 3 = Pneumatic not amplified 6 = Electrical amplified 7 = Electrical not amplified	Only for PSC and PSP series, assembled coils with standard supplied led 24 = 24 V (standard) 12 = 12 V (upon request)

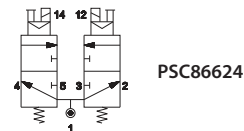
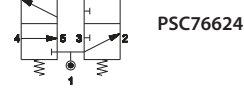
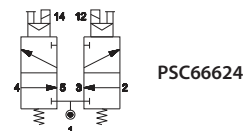
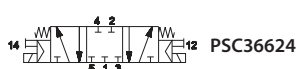
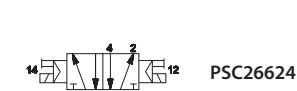
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

PSC Electrical impulse - Electrical connection with separate wires

Single impulse

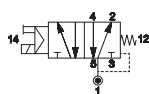


Double impulse

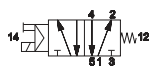


PSP Electrical impulse - Plug-in integrated electrical connection

■ Single impulse



PSP26024

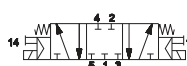


PSP26124

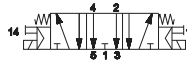
■ Double impulse



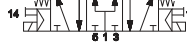
PSP26624



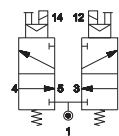
PSP36624



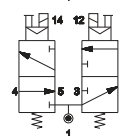
PSP46624



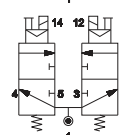
PSP56624



PSP66624



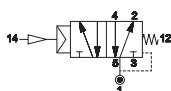
PSP76624



PSP86624

PSR Pneumatic impulse - Pneumatic operation

■ Single impulse

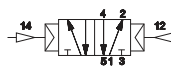


PSR220



PSR221

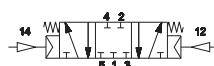
■ Double impulse



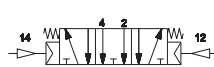
PSR222



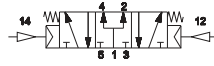
PSR223



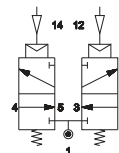
PSR322



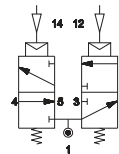
PSR422



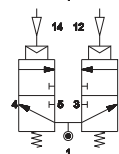
PSR522



PSR622



PSR722



PSR822

PSC Manifold with single electrical connection

- With 26 mm inlet plate and 14,5 mm end plate with DIN rail (EN50022)



- With 14,5 mm inlet and end plate



PSP Manifold with multipolar connection

- With 26 mm inlet plate and 14,5 mm end plate with multipolar connector



- With 26 mm inlet plate and 14,5 mm end plate with multipolar connector and intermediate plate



PSR Manifold with pneumatic operation

- With 26 mm inlet plate and 14,5 mm end plate



PS14100

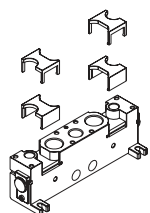
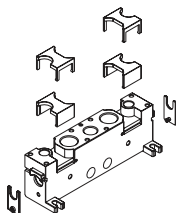
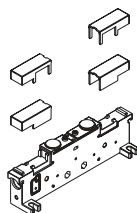
PS14200

PS15000

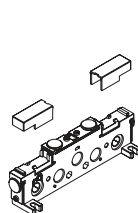
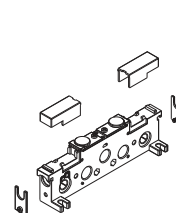
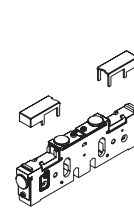
PS15100

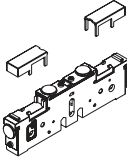
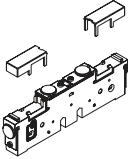
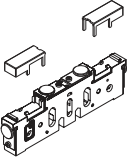
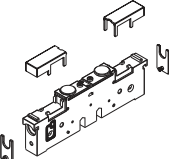
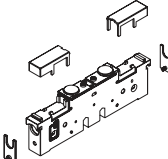
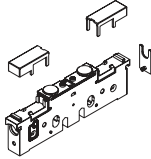
PS15200

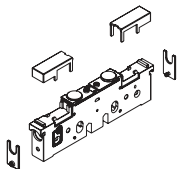
PS15300*

26 mm inlet plate
internal pilot supply26 mm inlet plate
external pilot supply

blank plate

14,5 mm inlet plate
internal pilot supply14,5 mm inlet plate
external pilot supply14,5 mm intermediate
plate, closed air supply,
open exhausts

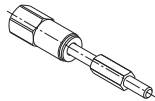
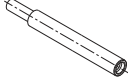
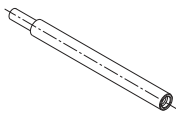
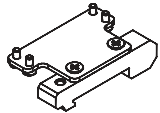
PS15310*	PS15320*	PS15330*	PS15340	PS15350	PS15360
					
14,5 mm intermediate plate, open supply, closed exhausts	14,5 mm intermediate blank plate	14,5 mm intermediate open plate	intermediate supply plate with closed exhausts and internal pilot supply	intermediate supply plate with closed exhausts and external pilot supply	intermediate supply plate with open exhausts and internal pilot supply

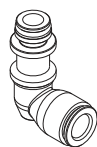
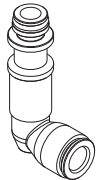
PS15370

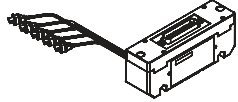
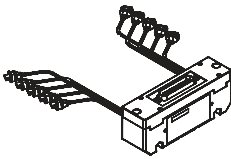
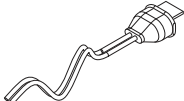
intermediate supply plate with open exhausts and external pilot supply

* = For intermediate plate with closed pilot supply ports add suffix 1 to part number.
The intermediate plate takes one valve place. This needs to be considered for a proper purchase of modular tie rods.

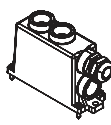
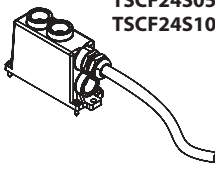
Electropilots are supplied through end plates for internal as well as external supply.
In case two different working pressures are applied to the end plates, it is possible to supply either all pilots with one of the two pressures (in general the higher one) or the pilots of each valve group with the working pressure of the same. This is made possible by means of a proper pressure separator.
This same principle applies also in presence of more than two different pressures: in this case it is necessary to use intermediate supply plates suitably coupled with pressure separators.

PSK100145	PSK200145	PSK200290	PSK200725	PSK300145	PSK401
					
tie-rod with hexagonal ends	modular tie-rod L1 = 14,5 mm for each place	modular tie-rod L2 = 29 mm for 2 places	modular tie-rod L5 = 72,5 mm for 5 places	counter tie-rod	Fixing plate for DIN rail connection; with screws

GZR-100	GZR-101	GZR-102	GZR-V10004/6/8	GZR-V20004/6/8	GZR-V20L004/6/8
					
blanking plug	G1/8 Fitting seat reduction - gas thread for silencer mounting	G1/4 Fitting seat reduction - gas thread for silencer mounting	straight fitting GZR-V10004 tube: 4 mm GZR-V10006 tube: 6 mm GZR-V10008 tube: 8 mm	swivel low elbow fitting GZR-V20004 tube: 4 mm GZR-V20006 tube: 6 mm GZR-V20008 tube: 8 mm	swivel high elbow fitting GZR-V20L004 tube: 4 mm GZR-V20L006 tube: 6 mm GZR-V20L008 tube: 8 mm

TIM06M/10M/20M	TIM06B/10B	D-530C-100/200
		
male connector 25 poles, prewired for monostable valves (M) TIM06M (Max 6M) TIM10M (Max 10M) TIM20M (Max 20M)	male connector 25 poles, prewired for bistable valves (B) TIM06B (Max 6B) TIM10B (Max 10B)	miniature bipolar flying connector: stripped and tinned for protection D-530C-100 (wire length 1000 mm) D-530C-200 (wire length 2000 mm)

Electrical connections

TSCF000	TSCF24S0300 TSCF24S0500 TSCF24S1000
	
sub-D female connector 25 poles without cable	sub-D flying female connector in compliance with CEI 20-22 O.R. II prewired for 24 coils (3-5-10 m length) M3x12 fixing screws

MIXED SYSTEM



For heavy applications
Fast commutation
Large number of cycles
High flow rate



AC 7

G1/8



1080
NI/min

AC 8

G1/4



1600
NI/min

AC 9

G1/2



4600
NI/min

Angle plate for "H"
solenoid option



Angle plate for "P"
solenoid option



Plate for external pilot
supply



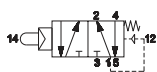
CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C		
Fluid	50 µm filtered air, with or without lubrication		
Commutation system	poppet mixed system		
Max pressure	10 bar		
Connections	G1/8	G1/4	G1/2
Nominal bore (mm)	6	8	15
Nominal flow rate (NI/min)	1080	1600	4600
Valve body	zamak	zamak	die-cast aluminium
Seals	NBR, polyurethane		
Spool	aluminium		
Electropilot	U1	U1	U2
Coil	DA	DA	DB
Power consumption	3,5 W (DC) - 5 VA (AC)	3,5 W (DC) - 5 VA (AC)	11 W (DC) - 10 VA (AC)
Connector	AM-5110	AM-5110	AM-5111
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC		
Manual override	impulse screw - 2 positions		



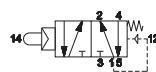
Indirect mechanical operation

■ Preset for pneumatic, mechanical and manual operators



AC-7010 G1/8
AC-8010 G1/4
AC-9010 G1/2

■ Preset for panel operators Ø22



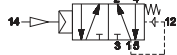
AC-7013 G1/8
AC-8013 G1/4
AC-9013 G1/2

AC-7013P G1/8
AC-8013P G1/4
AC-9013P G1/2

AI-3550	AI-3551	AI-3560	AI-3562	AI-3563	AI-3570	AI-3571	AI-3572	AI-3511Q	AI-3514Q	AI-3515Q	AI-3520Q	AI-3522Q	AI-3524Q	AI-3525Q	AI-3526Q
								AI-3512Q	AI-3516Q	AI-3517Q	AI-3521Q	AI-3523Q			
								AI-3513Q	AI-3514QD	AI-3519Q					
								AI-3516QD							

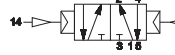
Pneumatic impulse

■ Single impulse



AC-7100 G1/8
AC-8100 G1/4
AC-9100 G1/2

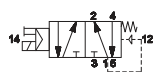
■ Double impulse



AC-7120 G1/8
AC-8120 G1/4
AC-9120 G1/2

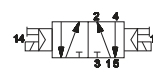
Electrical impulse

■ Single impulse



AC-7500 G1/8
AC-8500 G1/4
AC-9500 G1/2

■ Double impulse



AC-7520 G1/8
AC-8520 G1/4
AC-9520 G1/2

Solenoid valves are supplied without coil/connector/locking nut

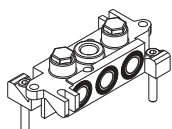
Modular sub-base

■ G1/8

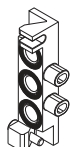


AC-7900

AC-7905



Sub-base with connections
G1/8



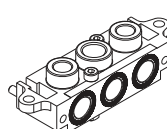
5/2 MIXED system inlet
plate - G1/8

Sub-bases are supplied with fixing screws

■ G1/4



AC-8900



Sub-base with threaded
connections G1/4

AM-5148

AM-5151

AM-5152

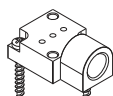
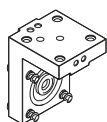
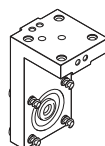


plate for external pilot supply
G1/8 - G1/4



Angle plate for "H" solenoid
option G1/8 - G1/4



Angle plate for "P" solenoid
option G1/8 - G1/4

CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	poppet
Max pressure	10 bar
Connections	G1/8
Nominal bore (mm)	5
Nominal flow rate (NI/min)	600 (NC), 550 (NO)
Valve body	zamak
Seals	NBR
Spool	nickel-plated brass

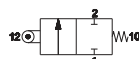


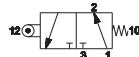
Roller lever - spring

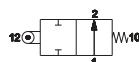
One-way roller lever - spring



 **CH-250**

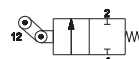
 **CH-252**

 **CH-254**

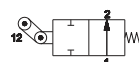
 **CH-256**



 **CH-260**

 **CH-262**

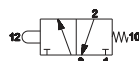
 **CH-264**

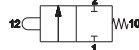
 **CH-266**

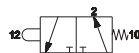
Ball push - spring

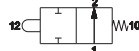
Button lever - spring



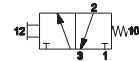
 **CH-270**

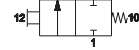
 **CH-272**

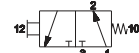
 **CH-274**

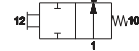
 **CH-276**



 **CH-280**

 **CH-282**

 **CH-284**

 **CH-286**

AF-AG

Poppet Valves G1/8 ÷ G1 1/2

WIDE RANGE

G1/8 ÷ G1 1/2
2/2 - 3/2 NC-NO

COMPRESSED AIR VERSION

VACUUM VERSION

Available also with external pilot
vacuum supply

HIGH FLOW RATE

Up to **35000 NI/min**
(G1 1/2)



		AF NI/min Compressed air	AG m ³ /h Vacuum
	G1/8 (Ø 5,5)	580	1,5
	G1/4 (Ø 8)	1100	4
	G3/8 (Ø 10)	1500	10
	G1/2 (Ø 15)	5400	20
	G3/4 (Ø 19)	6500	35
	G1 (Ø 25)	13500	90
	G1 1/2 (Ø 39)	35000	180

Poppet system

UNIVER Original since 1973

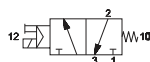


CHARACTERISTICS

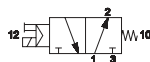
Ambient temperature	Max +50 °C						
Fluid	50 µm filtered air, with or without lubrication						
Commutation system	poppet						
Max pressure	10 bar						
Connections	G1/8	G1/4	G3/8	G1/2	G3/4	G1	G1 1/2
Nominal bore (mm)	5,5	8	10	15	19	25	39
Nominal flow rate (l/min)	580	1100	1500	5400	6500	13500	35000
Valve body	zamak (G1/8 ÷ G1), aluminium (G1 1/2)						
Seals	polyurethane conical poppets and Vulkollan diaphragm						
Spool	aluminium (G1/8 ÷ G3/8), steel + plastic (G1/2 ÷ G1 1/2)						
	G1/8 ÷ G3/8				G1/4 ÷ G1 1/2		
Electropilot	U1				U2		
Coil	DA				DB		
Power consumption	3,5 W (DC) - 5 VA (AC)				11 W (DC) - 10 VA (AC)		
Connector	AM-5110				AM-5111		
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC						
Manual override	impulse screw - 2 positions						



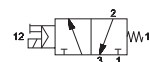
Solenoid valves G1/8 ÷ G3/8



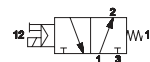
3/2 NC
AF-2500 G1/8 U1



3/2 NO
AF-2501 G1/8 U1

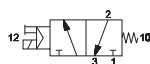


3/2 NC
AF-2510 G1/4 U1
AF-2517 G1/4 U2
AF-2520 G3/8 U1
AF-2524 G3/8 U2

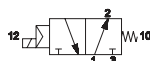


3/2 NO
AF-2511 G1/4 U1
AF-2518 G1/4 U2
AF-2521 G3/8 U1
AF-2525 G3/8 U2

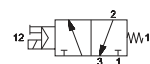
Solenoid valves G1/2 ÷ G1 1/2



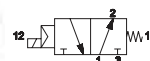
3/2 NC
AF-2530 G1/2 U2
AF-2540 G3/4 U2
AF-2545 G1 U2



3/2 NO
AF-2531 G1/2 U2
AF-2541 G3/4 U2
AF-2546 G1 U2

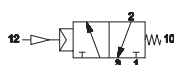


3/2 NC
AF-2565 G1 1/2 U2

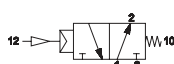


3/2 NO
AF-2561 G1 1/2 U2

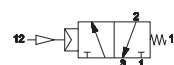
Pneumatic valves with external operation G1/8 ÷ G3/8



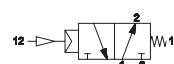
3/2 NC
AF-2600 G1/8



3/2 NO
AF-2700 G1/8



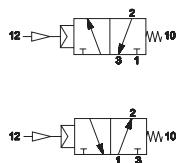
3/2 NC
AF-2601 G1/4
AF-2606 G3/8



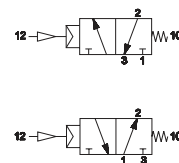
3/2 NO
AF-2701 G1/4
AF-2706 G3/8

Solenoid valves are supplied without coil/connector/locking nut

Pneumatic valves with external operation G1/2 ÷ G1 1/2



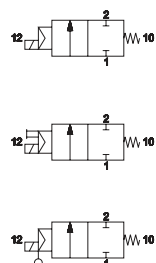
3/2 NC-NO
AF-2603 G1/2
AF-2610 G3/4
AF-2615 G1



3/2 NC-NO
AF-2620 G1 1/2

2/2 Solenoid valve for blowing G1

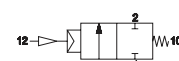
2/2 Pneumatic valve for blowing with ext. operation G1



2/2 NC
AF-2550 G1

2/2 NC
AF-2551 G1

2/2 NC
AF-2552 G1



2/2 NC
AF-2617 G1

CHARACTERISTICS

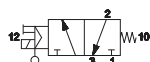
Ambient temperature	Max +50 °C						
Fluid	50 µm filtered air, with or without lubrication - vacuum						
Commutation system	poppet						
Max vacuum	759,5 mm Hg						
Connections	G1/8	G1/4	G3/8	G1/2	G3/4	G1	G1 1/2
Nominal bore (mm)	5,5	8	10	15	19	25	39
Valve body	zamak (G1/8 ÷ G1), aluminium (G1 1/2)						
Seals	polyurethane conical poppets and Vulkollan diaphragm ^(a) ; silicon poppets ^(b)						
Spool	aluminium (G1/8 ÷ G3/8), steel + plastic (G1/2 ÷ G1 1/2)						
	G1/8 ÷ G3/8			G1/4 ÷ G1 1/2			
Electropilot	U1			U2			
Coil	DA			DB			
Power consumption	3,5 W (DC) - 5 VA (AC)			11 W (DC) - 10 VA (AC)			
Connector	AM-5110			AM-5111			
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC						
Manual override	impulse screw - 2 positions						

(a) = valve for vacuum with external air operation

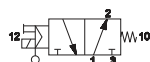
(b) = valve for direct vacuum with external vacuum operation



3/3 Solenoid valve for vacuum with external pilot air supply G1/8 ÷ G3/8



3/2 NC
AG-3001 G1/8



3/2 NO
AG-3002 G1/8

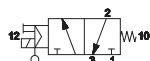


3/2 NC
AG-3009 G1/4
AG-3011 G3/8

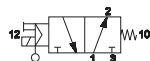


3/2 NO
AG-3010 G1/4
AG-3012 G3/8

3/2 Solenoid valve for vacuum with external pilot air supply G1/2 ÷ G1 1/2



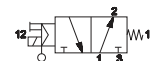
3/2 NC
AG-3020 G1/2
AG-3040 G3/4
AG-3050 G1



3/2 NO
AG-3021 G1/2
AG-3041 G3/4
AG-3051 G1

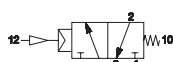


3/2 NC
AG-3062 G1 1/2

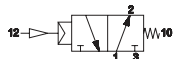


3/2 NO
AG-3063 G1 1/2

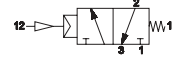
3/2 Pneumatic valve for vacuum with external air operation G1/8 ÷ G3/8



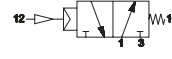
3/2 NC
AG-3071 G1/8



3/2 NO
AG-3072 G1/8



3/2 NC
AG-3073 G1/4
AG-3075 G3/8

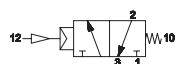


3/2 NO
AG-3074 G1/4
AG-3076 G3/8

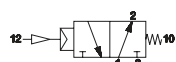
2/2 NC-NO version available upon request

Solenoid valves are supplied without coil/connector/locking nut

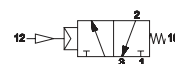
3/2 Pneumatic valve for vacuum with external air operation G1/2 ÷ G1 1/2



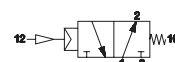
3/2 NC
AG-3081 G1/2
AG-3091 G3/4
AG-3100 G1



3/2 NO
AG-3082 G1/2
AG-3092 G3/4
AG-3101 G1

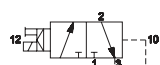


3/2 NC
AG-3110 G1 1/2

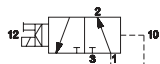


3/2 NO
AG-3111 G1 1/2

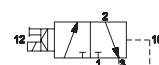
3/2 Solenoid valve for direct vacuum with pilot vacuum supply G1/4 ÷ G1 1/2



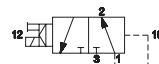
3/2 NC
AG-3210 G1/4
AG-3214 G3/8



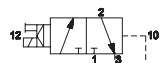
3/2 NO
AG-3211 G1/4
AG-3215 G3/8



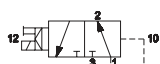
3/2 NC
AG-3222 G1/2
AG-3232 G3/4
AG-3242 G1



3/2 NO
AG-3223 G1/2
AG-3233 G3/4
AG-3243 G1

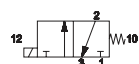


3/2 NC
AG-3256 G1 1/2

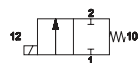


3/2 NO
AG-3257 G1 1/2

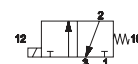
2/2 - 3/2 Solenoid valve for vacuum with direct operation G1/4 - G1/2



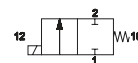
3/2 NC
AG-3310 G1/4
AG-3311 G1/4
AG-3312 G1/4
AG-3313 G1/4



2/2 NC
AG-3300 G1/4
AG-3301 G1/4
AG-3302 G1/4
AG-3303 G1/4



3/2 NC
AG-3330 G1/2
AG-3331 G1/2
AG-3332 G1/2



2/2 NC
AG-3320 G1/2
AG-3321 G1/2
AG-3322 G1/2

■ U2 - 17 VA coil



DB-0607 24V AC - 50/60 Hz
DB-0608 110V AC - 50/60 Hz
DB-0610 220V AC - 50/60 Hz

Solenoid valves are supplied without coil/connector/locking nut

CHARACTERISTICS

Ambient temperature	-10 ÷ +90 °C	
Fluid	50 µm filtered air, with or without lubrication	
Commutation system	poppet	
Max pressure	10 bar	
Connections	interface for sub-base	
	standard	sensible
Nominal bore (mm)	2,3	1,5
Nominal flow rate (l/min)	110	55
Force (N)	5	4
Valve body	zamak	
Seals	NBR	
Spool	nickel-plated brass	



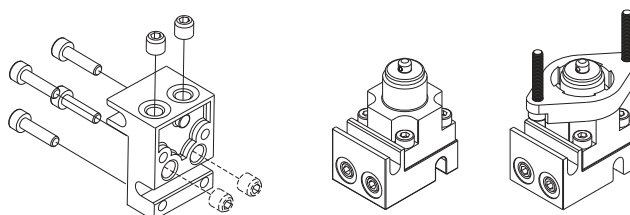
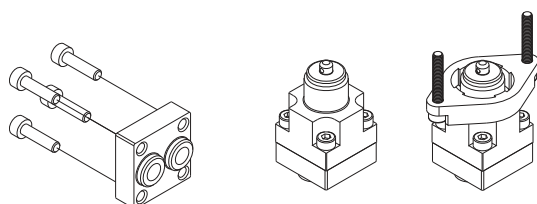
Mechanical push button - spring

Mechanical push button for panel operation - spring

 AI-3500 standard AI-3500S sensible AI-3501 standard AI-3501S sensible AI-3502 standard AI-3503 2/2 NO Available upon request								 AI-3500Q standard AI-3500SQ sensible AI-3501Q standard AI-3501SQ sensible AI-3502Q standard AI-3503Q 2/2 NO Available upon request							
AI-3550	AI-3551	AI-3560	AI-3562	AI-3563	AI-3570	AI-3571	AI-3572	AI-3511Q	AI-3514Q	AI-3515Q	AI-3520Q	AI-3524Q	AI-3522Q	AI-3525Q	AI-3526Q
								AI-3512Q	AI-3516Q	AI-3517Q	AI-3521Q		AI-3523Q		
								AI-3513Q	AI-3514QD	AI-3519Q					
								AI-3516QD							
AI-3511	AI-3514	AI-3515	AI-3520	AI-3522	AI-3524	AI-3525	AI-3526								
AI-3512	AI-3516	AI-3517	AI-3521	AI-3523											
AI-3513	AI-3514D	AI-3519													
AI-3516D															

AI-3610

AI-3612



Sub-base with bottom connections M5

Sub-base with side or bottom connections M5

Sub-bases are supplied with M3x12 fixing screws (4 pcs) and M5x5 grub screws (2pcs) to close the unused ways.

Grub screws must be fixed with sealing loctite (243 type), being sure that loctite does not obstruct the ports or sink inside the valve.
Grub screws must be screwed until reaching the base surface. Avoid screwing them completely.

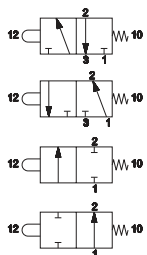
CHARACTERISTICS

Ambient temperature	-10 ÷ +90 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	poppet
Max pressure	10 bar
Connections	M5, tube Ø4
Nominal bore (mm)	2,5
Nominal flow rate (NI/min)	70
Valve body	zamak
Seals	NBR
Spool	nickel-plated brass



Ball push - spring

■ Tube Ø4



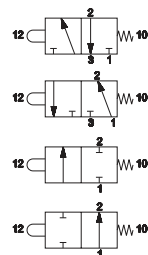
AI-9000

AI-9010

AI-9020

AI-9030

■ M5



AI-9000M

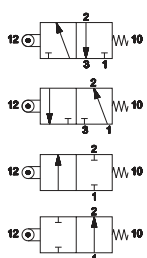
AI-9010M

AI-9020M

AI-9030M

Roller lever - spring

■ Tube Ø4



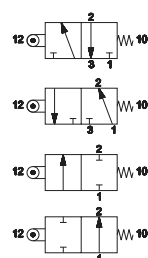
AI-9100

AI-9110

AI-9120

AI-9130

■ M5



AI-9100M

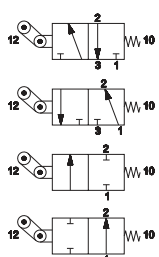
AI-9110M

AI-9120M

AI-9130M

One-way roller lever - spring

■ Tube Ø4



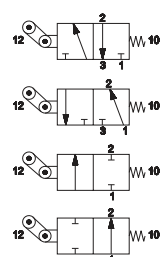
AI-9200

AI-9210

AI-9220

AI-9230

■ M5



AI-9200M

AI-9210M

AI-9220M

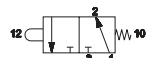
AI-9230M

Bulkhead mechanical push button - spring

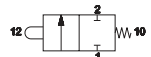
■ Tube Ø4



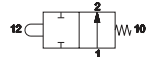
AI-9300



AI-9310

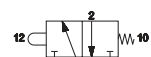


AI-9320

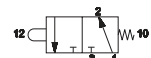


AI-9330

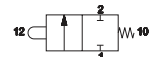
■ M5



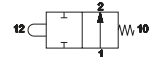
AI-9300M



AI-9310M



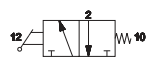
AI-9320M



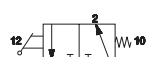
AI-9330M

Button lever - spring

■ Tube Ø4



AI-9350



AI-9360

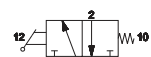


AI-9370



AI-9380

■ M5



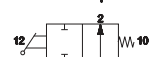
AI-9350M



AI-9360M



AI-9370M



AI-9380M

Mechanical push button for panel operation - spring

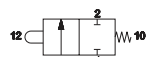
■ Tube Ø4



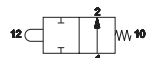
AI-9400



AI-9410



AI-9420

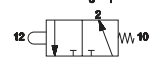


AI-9430

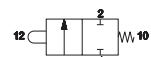
■ M5



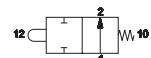
AI-9400M



AI-9410M



AI-9420M



AI-9430M

							
AI-3511Q ■	AI-3514Q ■	AI-3515Q ■	AI-3520Q ■	AI-3524Q ■	AI-3522Q ■	AI-3525Q ■	AI-3526Q ■
AI-3512Q ■	AI-3516Q ■	AI-3517Q ■	AI-3521Q ■		AI-3523Q ■		
AI-3513Q ■	AI-3514QD ■	AI-3519Q ■					
	AI-3516QD ■						

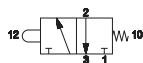
CHARACTERISTICS

Ambient temperature	-10 ÷ +90 °C
Fluid	50 µm filtered air, with or without lubrication
Commutation system	poppet
Max pressure	10 bar
Connections	M5, tube Ø4
Nominal bore (mm)	2,5
Nominal flow rate (l/min)	70
Valve body	zamak
Seals	NBR
Spool	nickel-plated brass

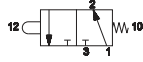


Mechanical push button for panel mounting

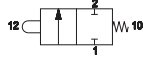
■ Tube Ø4



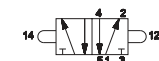
AI-9500B 3/2 NC



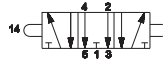
AI-9510B 3/2 NO



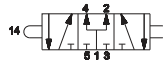
AI-9520B 2/2 NC



AI-9550B 5/2

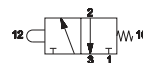


AI-9560B 5/3 o.c.

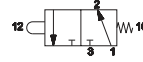


AI-9570B 5/3 p.c.

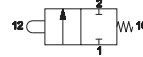
■ M5



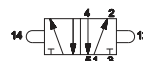
AI-9500BM 3/2 NC



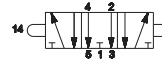
AI-9510BM 3/2 NO



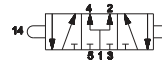
AI-9520BM 2/2 NC



AI-9550BM 5/2



AI-9560BM 5/3 o.c.



AI-9570BM 5/3 p.c.

o.c. = open centres p.c. = pressurized centres

Recessed button	Protruding button	Two-position head button	Short lever selector	Long lever selector	Key selector
AI-35B10N ■ AI-35B10R ■ AI-35B10V ■	AI-35B11N ■ AI-35B11R ■ AI-35B11V ■	AI-35B13N ■ AI-35B13R ■	AI-35B20 2 steady positions AI-35B21 3 unsteady positions AI-35B22 3 steady positions	AI-35B25 2 steady positions AI-35B26 3 unsteady positions AI-35B27 3 steady positions	AI-35B30 2 steady positions AI-35B31 3 unsteady positions AI-35B32 3 steady positions

CHARACTERISTICS

Ambient temperature	-10 ÷ +70 °C	
Fluid	filtered air 50 µm, with or without lubrication	
Commutation system	poppet	
Max pressure	10 bar	
Connections	G1/8	G1/4
Nominal bore (mm)	2,3	8
Nominal flow rate (NI/min)	98	800
PNEUMATIC FOOT VALVE:		
Valve body	zamak	
Foot valve lever	aluminium	
Pedal body and protection	plastic material with reinforcing steel plate	
Seals	oil and wear resistant compound	
Spool	aluminium	
SOLENOID FOOT VALVE		
Valve body, foot valve lever, protection	dielectric plastic material	



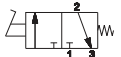
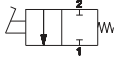
Pneumatic foot valve G1/4 with protection

	■ Spring return	■ Bistable	■ With safety control
	AM-5000	AM-5003	AM-5015
	AM-5001	AM-5004	AM-5011
	AM-5002	AM-5005	AM-5012
	■ External operation - Spring return	■ External operation - bistable	■ External operation with safety control
	AM-5021	AM-5031	AM-5041

Pneumatic foot valve G1/4 without protection

	■ Spring return	■ Bistable
	AM-5000A	AM-5003A
	AM-5001A	AM-5004A

Pneumatic foot valve G1/8 with protection

	■ Spring return			AM-5050 No electrical microswitch	
				AM-5043	AM-5051 Electrical microswitch
				AM-5043B	AM-5052 Double electrical microswitch
				AM-5043C	
				AM-5043D	
Version without protection available upon request					

HIGH FLOW RATE

310 NI/min (UNIVER traditional spool technology)

COMPACT SIZE: 10 mm

Highest reduction of overall dimensions

EASY INSTALLATION

All pneumatic connections on the same side

COMPLETE SOLUTION

Threaded body and body for sub-base mounting

5/2 - 5/3 - 3/2+3/2

1 w

Standard

0,3 w

Low
consumption


P10F



P10B



P10F

Threaded ports (M5)

Electrical connection with
external connector



Integrated electrical connection



P10B

For sub-base (M5-M7-Tube 4)

Integrated electrical connection



Version with in-line
connector



TC Series

Connection to modular serial
communication system



CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C	
Fluid	10 µm filtered air, with or without lubrication	
Commutation system	spool	
Max pressure	9 bar (electrical control) *	
	10 bar (pneumatic control)	
Connections	M5 (P10F) - M5, M7, tube Ø 4 (P10B)	
Nominal flow rate (NI/min)	310 (5/2) 230 (5/3) 250 (3/2+3/2)	
Valve body	zamak	
Seals	NBR	
Electropilot	B10 (0,3W) - B11 (1 W)	
Spool	aluminium	
Voltage	24 V DC (± 10%)	
Power consumption	B10 = 0,3 W, Speed-up 1 W (25 ms) B11 = 1 W	
Protection degree	IP65	
Manual override	recessed button - 1 position	

* = At pressure higher than 7bar with B10 pilot (0.3W) it is recommended to use solenoid valves with external pilot supply



CODIFICATION KEY

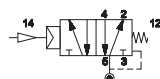
P	1	0	F	2	4	4	2	4	
1	2	3	4	5	6				

1 Series	2 Type	3 Control 14	4 Return 12
P10F = Threaded body P10B = Body for sub-base	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c.	6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO	3 = Pneumatic amplified 4 = Electrical amplified 90° (0,3W) 6 = Electrical amplified 90° (1W)
5 Voltage	6 Option		0 = Pneumomechanical spring 1 = Mechanical spring 3 = Pneumatic amplified 4 = Electrical amplified 90° (0,3W) 6 = Electrical amplified 90° (1W)
24 = 24 V DC	D = External pilot supply on valve body (P10 = M3)		

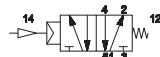
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Pneumatic impulse - Threaded connections M5

Single impulse

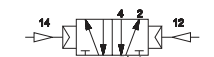


P10F230

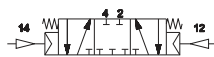


P10F231

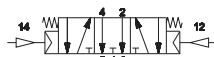
Double impulse



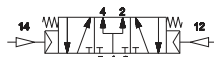
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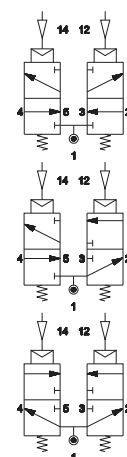
P10F333



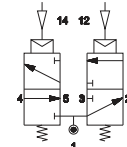
P10F433



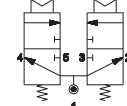
P10F533



P10F633



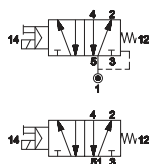
P10F733



P10F833

Electrical impulse - Threaded connections M5

Single impulse



P10F24024 0,3 W
P10F26024 1 W

P10F24124 0,3 W
P10F26124 1 W

B10



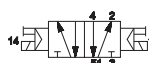
Low power consumption 0,3 W

NEW - B11

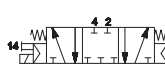


Standard 1 W

Double impulse



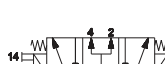
P10F24424 0,3 W
P10F26624 1 W



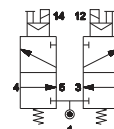
P10F34424 0,3 W
P10F36624 1 W



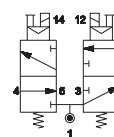
P10F44424 0,3 W
P10F46624 1 W



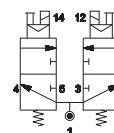
P10F54424 0,3 W
P10F56624 1 W



P10F64424 0,3 W
P10F66624 1 W



P10F74424 0,3 W
P10F76624 1 W



P10F84424 0,3 W
P10F86624 1 W

Integrated electrical connection



TIM1024	P10SF100	P10SF110	P10SF200	P10SF210	P10SF500
male connection module 25 poles, type sub-D	sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed	left supply plate G1/8 for TIM module
P10SF505	P10SF550	P10SF560	P10SF570	P10SS14**M	P10SS12**M
right supply plate G1/8	pressure separator	closing plate for unused valve place	intermediate supply plate for threaded version	bus connection card, side 14 ** = 04, 06, 08, 10, 12 places	bus connection card, side 12 ** = 04, 06, 08, 10, 12 places
P10STR01	P10STR02	P10STR05			
modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places			

AZ4-SN003A

No. 100 nuts M3 for tie-rods

AZ4-VN0310

No. 100 screws M3x10 for tie-rods

Electrical connection with external connector

3



P10SF300	P10SF310	P10SF400	P10SF410	P10SF515	P10SF550
sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed	right/left supply place G1/8	pressure separator

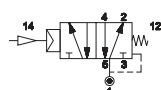
P10SF560	P10SF570	P10STR01	P10STR02	P10STR05	
closing plate for unused valve place	intermediate supply plate for threaded version	modular tie-rod 1 valve place	modular tie-rod 2 valve places	modular tie-rod 5 valve places	

AZ4-SN003A
No. 100 nuts M3
for tie-rods

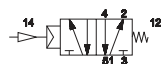
AZ4-VN0310
No. 100 screws M3x10
for tie-rods

Pneumatic impulse - Body for sub-base mounting

Single impulse

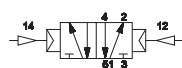


P10B230

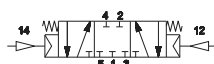


P10B231

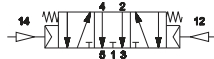
Double impulse



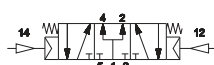
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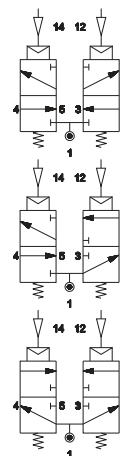
P10B333



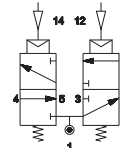
P10B433



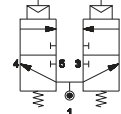
P10B533



P10B633



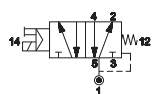
P10B733



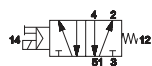
P10B833

Electrical impulse - Body for sub-base mounting

Single impulse



P10B24024 0,3 W
P10B26024 1 W



P10B24124 0,3 W
P10B26124 1 W

B10



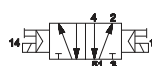
Low power
consumption 0,3 W

NEW - B11

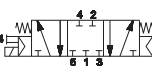


Standard 1 W

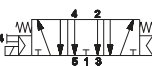
Double impulse



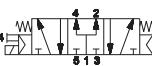
P10B24424 0,3 W
P10B26624 1 W



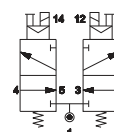
P10B34424 0,3 W
P10B36624 1 W



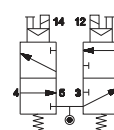
P10B44424 0,3 W
P10B46624 1 W



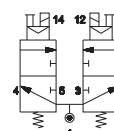
P10B54424 0,3 W
P10B56624 1 W



P10B64424 0,3 W
P10B66624 1 W



P10B74424 0,3 W
P10B76624 1 W



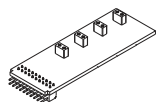
P10B84424 0,3 W
P10B86624 1 W

Integrated electrical connection



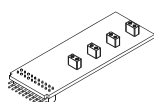
TIM1024	P10SB100/107	P10SB110/117	P10SB200/207	P10SB210/217	P10SB304	P10SB314
male connection module 25 poles, type sub-D	sub-base 1 place side outlets M5, M7	sub-base 1 place side outlets M5, M7 1-3-5 closed	sub-base 2 places side outlets M5, M7	sub-base 2 places side outlets M5, M7 1-3-5 closed	sub-base 1 place side outlets with push-in connections tube 4	sub-base 1 place side outlets with push-in connections tube 4 1-3-5 closed
P10SB404	P10SB414	P10SB500	P10SB505	P10SB550	P10SB560	P10SB570
sub-base 2 places side outlets with push-in connections tube 4	sub-base 2 places side outlets with push-in connections tube 4 1-3-5 closed	supply plate G1/8 for TIM module	right supply plate G1/8	pressure separator	closing plate for unused valve place	intermediate supply plate for sub-base version

P10SS14**M



bus connection card, side 14
** = 04, 06, 08, 10, 12 places

P10SS12**M



bus connection card, side 12
** = 04, 06, 08, 10, 12 places

P10STR01



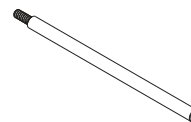
modular tie-rods
1 valve place

P10STR02



modular tie-rods
2 valve places

P10STR05



modular tie-rods
5 valve places

AZ4-SN003A

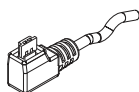
No. 100 nuts M3 for tie-rods

AZ4-VN0310

No. 100 screws M3x10 for tie-rods

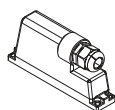
Electrical connections

D-535U40300 D-535U40500



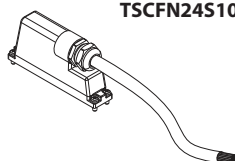
single connector cable 3-5 m

TSCFN24S000



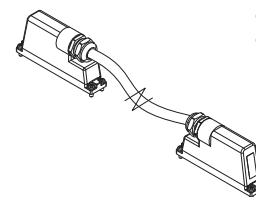
female connector
25 poles, type sub-D, no cable
M3x8 fixing screws

TSCFN24S0300 TSCFN24S0500 TSCFN24S1000



female connector
25 poles, type sub-D, prewired for 24
coils (3-5-10 m length)
M3x8 fixing screws

TSCFN16D0300 TSCFN16D0500 TSCFN16D1000



sub-D male/female flying connector (upon request)
prewired for 16 coils with cable Ø 8 mm (3-5-10 m length)
suitable for dynamic laying - M3x8 fixing screws

TC series Serial Communication System



CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C	
Fluid	10 µm filtered air, with or without lubrication	
Commutation system	spool	
Max pressure	9 bar (electrical control) *	
	10 bar (pneumatic control)	
Connections	M5 (P10F) - M5, M7, tube Ø 4 (P10B)	
Nominal flow rate (NI/min)	310 (5/2) 230 (5/3) 250 (3/2+3/2)	
Valve body	zamak	
Seals	NBR	
Electropilot	B10 (0,3W) - B11 (1 W)	
Spool	aluminium	
Voltage	24 V DC (± 10%)	
Power consumption	B10 = 0,3 W, speed -up 1 W (25 ms) B11 = 1 W	
Protection degree	IP65	
Manual override	recessed button - 1 position	

* = At pressure higher than 7bar with B10 pilot (0.3W) it is recommended to use solenoid valves with external pilot supply



CODIFICATION KEY

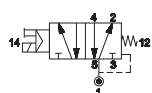
P	1	0	F	2	8	0	2	4	
	1	2	3	4	5	6			

1 Series	2 Type	3 Control 14	4 Return 12
P10F = Threaded body P10B = Body for sub-base	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c.	6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO 8 = Electrical amplified in-line (0,3W) 9 = Electrical amplified in-line (1W)	0 = Pneumomechanical spring 1 = Mechanical spring 8 = Electrical amplified in-line (0,3W) 9 = Electrical amplified in-line (1W)
5 Voltage	6 Option		
24 = 24 V DC	D = External pilot supply on valve body (P10 = M3)		

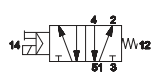
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Electrical impulse - Threaded connections M5

Single impulse



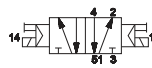
P10F28024 0,3 W
P10F29024 1 W



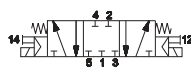
P10F28124 0,3 W
P10F29124 1 W



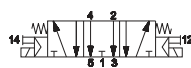
Double impulse



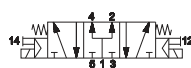
P10F28824 0,3 W
P10F29924 1 W



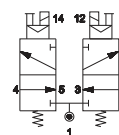
P10F38824 0,3 W
P10F39924 1 W



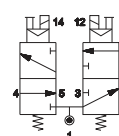
P10F48824 0,3 W
P10F49924 1 W



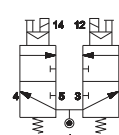
P10F58824 0,3 W
P10F59924 1 W



P10F68824 0,3 W
P10F69924 1 W



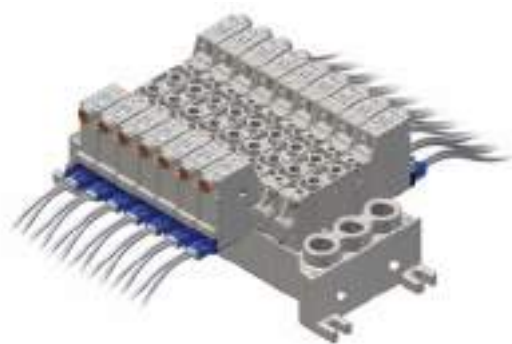
P10F78824 0,3 W
P10F79924 1 W



P10F88824 0,3 W
P10F89924 1 W

Electrical connection with external connector

3



P10SF300	P10SF310	P10SF400	P10SF410	P10SF515	P10SF550
sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed	right/left supply plate G1/8	pressure separator
P10SF560	P10SF570	P10STR01	P10STR02	P10STR05	
closing plate for unused valve place	intermediate supply plate for threaded version	modular tie-rod 1 valve place	modular tie-rod 2 valve places	modular tie-rod 5 valve places	

AZ4-SN003A

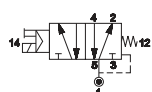
No. 100 nuts M3
for tie-rods

AZ4-VN0310

No. 100 screws M3x10
for tie-rods

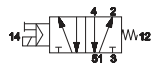
Electrical impulse - Body for sub-base mounting

Single impulse



P10B28024 0,3 W

P10B29024 1 W



P10B28124 0,3 W

P10B29124 1 W

B10



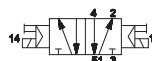
Low power
consumption 0,3 W

NEW - B11



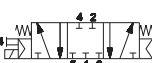
Standard 1 W

Double impulse



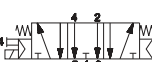
P10B28824 0,3 W

P10B29924 1 W



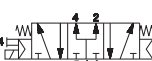
P10B38824 0,3 W

P10B39924 1 W



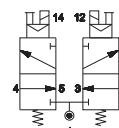
P10B48824 0,3 W

P10B49924 1 W



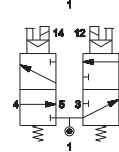
P10B58824 0,3 W

P10B59924 1 W



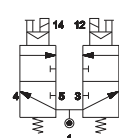
P10B68824 0,3 W

P10B69924 1 W



P10B78824 0,3 W

P10B79924 1 W



P10B88824 0,3 W

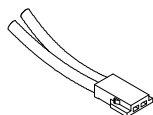
P10B89924 1 W

Electrical connection with external connector



P10SB100/107	P10SB110/117	P10SB200/207	P10SB210/217	P10SB304	P10SB314
sub-base 1 place side outlets M5, M7	sub-base 1 place side outlets M5, M7 1-3-5 closed	sub-base 2 places side outlets M5, M7	sub-base 2 places side outlets M5, M7 1-3-5 closed	sub-base 1 place side outlets with push-in connections tube 4	sub-base 1 place side outlets with push-in connections tube 4 1-3-5 closed
P10SB404	P10SB414	P10SB502	P10SB505	P10SB550	P10SB560
sub-base 2 places side outlets with push-in connections tube 4	sub-base 2 places side outlets with push-in connections tube 4 1-3-5 closed	supply plate G1/8	right supply plate G1/8	pressure separator	closing plate for unused valve place
P10SB570	P10STR01	P10STR02	P10STR05	AZ4-SN003A No. 100 nuts M3 for tie-rods AZ4-VN0310 No. 100 screws M3x10 for tie-rods	
intermediate supply plate for sub-base	modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places		

D-530-30/50/200



Miniature connector with loose cables
D-530-30 = wire length 300 mm
D-530-50 = wire length 500 mm
D-530-200 = wire length 2000 mm

HIGH FLOW RATE

800 NI/min (UNIVER traditional spool technology)

COMPACT SIZE: 15 mm

Highest reduction of overall dimensions

EASY INSTALLATION

All pneumatic connections on the same side

COMPLETE SOLUTION

Threaded body and body for sub-base mounting

5/2 - 5/3 - 3/2+3/2

1 w

Standard

0,3 w

Low
consumption

P15F



P15B



P15F

Threaded ports (G1/8)

Electrical connection with
external connector



Integrated electrical connection



P15B

For sub-base (G1/8 - Tube 4-6-8)

Integrated electrical connection



Version with in-line
connector



TC Series

Connection to modular serial
communication system



CHARACTERISTICS

Ambient temperature	-5 ÷ 50 °C
Fluid	10 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	9 bar (electrical control) * 10 bar (pneumatic control)
Connections	G1/8 (P15F) - G1/8 - tube Ø 4-6-8 (P15B)
Nominal flow rate (NI/min)	800 (5/2) 720 (5/3) 720 (3/2+3/2)
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot	B10 (0,3W) - B11 (1 W)
Voltage	24 V DC (± 10%)
Power consumption	B10 = 0,3 W, speed -up 1 W (25 ms) B11 = 1 W
Protection degree	IP65
Manual override	recessed button - 1 position

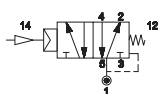
* = At pressure higher than 7bar with B10 pilot (0.3W) it is recommended to use solenoid valves with external pilot supply

CODIFICATION KEY

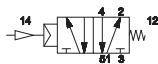
P	1	5	F	2	4	4	2	4	
	1	2	3	4	5	6			

1 Series	2 Type	3 Control 14	4 Return 12
P15F = Threaded body P15B = Body for sub-base P15D = Threaded body 15 mm connector	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c.	3 = Pneumatic amplified 4 = Electrical amplified 90° (0,3W) 6 = Electrical amplified 90° (1W)	0 = Pneumomechanical spring 1 = Mechanical spring 3 = Pneumatic amplified 4 = Electrical amplified 90° (0,3W) 6 = Electrical amplified 90° (1W)
5 Voltage	6 Option		
24 = 24 V DC	D = External pilot supply on valve body (P15 = M5)		

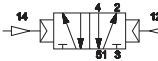
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Pneumatic impulse - Threaded connections G1/8
Single impulse


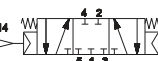
P15F230



P15F231

Double impulse


P15F233



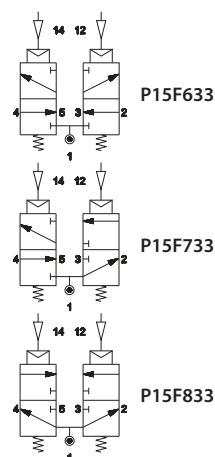
P15F333



P15F433



P15F533



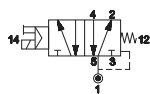
P15F633

P15F733

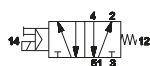
P15F833

Electrical impulse - Threaded connections G1/8

■ Single impulse



P15F24024 0,3 W
P15F26024 1 W



P15F24124 0,3 W
P15F26124 1 W

■ B10



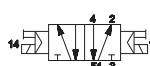
Low power
consumption 0,3 W

■ NEW - B11

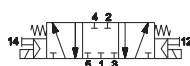


Standard 1 W

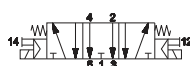
■ Double impulse



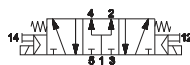
P15F24424 0,3 W
P15F26624 1 W



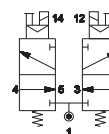
P15F34424 0,3 W
P15F36624 1 W



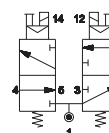
P15F44424 0,3 W
P15F46624 1 W



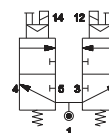
P15F54424 0,3 W
P15F56624 1 W



P15F64424 0,3 W
P15F66624 1 W



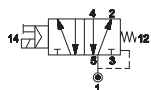
P15F74424 0,3 W
P15F76624 1 W



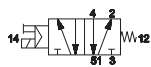
P15F84424 0,3 W
P15F86624 1 W

Electrical impulse - Threaded connections G1/8 - 15 mm connector

■ Single impulse

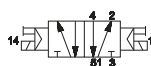


P15D24024 0,3 W
P15D26024 1 W

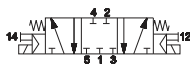


P15D24124 0,3 W
P15D26124 1 W

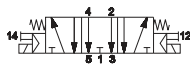
■ Double impulse



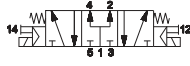
P15D24424 0,3 W
P15D26624 1 W



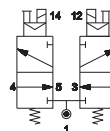
P15D34424 0,3 W
P15D36624 1 W



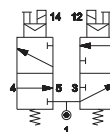
P15D44424 0,3 W
P15D46624 1 W



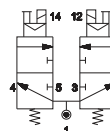
P15D54424 0,3 W
P15D56624 1 W



P15D64424 0,3 W
P15D66624 1 W



P15D74424 0,3 W
P15D76624 1 W



P15D84424 0,3 W
P15D86624 1 W

Integrated electrical connection



TIM1524	TIM151806	TIM1536	P15SF100	P15SF110	P15SF200	P15SF210
male connection module 25 poles 12+12 coils type sub-D	male connection module 25 poles 18 coils, side 14 6 coils, side 12 type sub-D	male connection module 37 poles 16+16 coils type sub-D	sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed
P15SF500	P15SF505	P15SF550	P15SF560	P15SF570	P15SS**..M	
left supply plate G1/4 for TIM module	right supply plate G1/4	pressure separator	closing plate for unused valve place	intermediate supply plate for threaded version	male bus connection card, ** = side 14 or 12 .. = 04, 06, 08 places	
P15SS**08MF	P15SS**04MFP	P15SS**04MP	P15STR01	P15STR02	P15STR05	
male/female bus connection card ** = side 14 or 12 8 places	male/female bus connection card extension ** = side 14 o 12 4 places	bus card extension ** = side 14 o 12 4 places	modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	AZ4-SN004A No. 100 nuts M4 for tie-rods AZ4-VN0414 No. 100 screws M4x14 for tie-rods

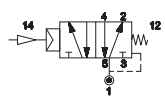
Electrical connection with external connector



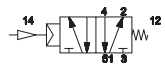
P15SF300	P15SF310	P15SF400	P15SF410	P15SF515	P15SF550	P15SF560
sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed	right/left supply plate G1/4	pressure separator	closing plate for unused valve place
P15SF570	P15STR01	P15STR02	P15STR05			
intermediate supply plate for threaded version	modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	AZ4-SN004A No. 100 nuts M4 for tie-rods AZ4-VN0414 No. 100 screws M4x14 for tie-rods		

Pneumatic impulse - Body for sub-base mounting

Single impulse

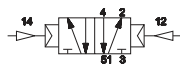


P15B230

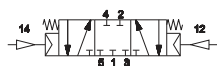


P15B231

Double impulse



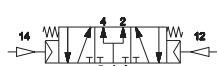
P15B233



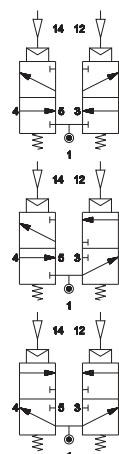
P15B333



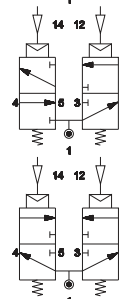
P15B433



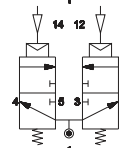
P15B533



P15B633



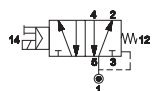
P15B733



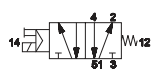
P15B833

Electrical impulse - Body for sub-base mounting

Single impulse

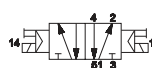


P15B24024 0,3 W
P15B26024 1 W

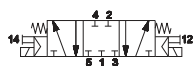


P15B24124 0,3 W
P15B26124 1 W

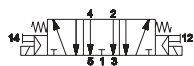
Double impulse



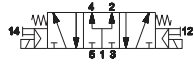
P15B24424 0,3 W
P15B26624 1 W



P15B34424 0,3 W
P15B36624 1 W



P15B44424 0,3 W
P15B46624 1 W



P15B54424 0,3 W
P15B56624 1 W

B10

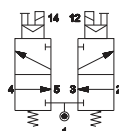


Low power
consumption 0,3 W

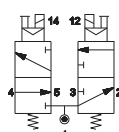
NEW - B11



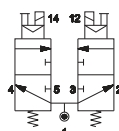
Standard 1 W



P15B64424 0,3 W
P15B66624 1 W



P15B74424 0,3 W
P15B76624 1 W



P15B84424 0,3 W
P15B86624 1 W

Integrated electrical connection



TIM1524	TIM151806	TIM1536	P15SB100	P15SB110	P15SB200	P15SB210
male connection module 25 poles 12+12 coils type sub-D	male connection module 25 poles 18 coils side 14 6 coils side 12 type sub-D	male connection module 37 poles 16+16 coils type sub-D	sub-base 1 place side outlets G1/8	sub-base 1 place side outlets G1/8 1-3-5 closed	sub-base 2 places side outlets G1/8	sub-base 2 places side outlets G1/8 1-3-5 closed
P15SB300	P15SB310	P15SB400	P15SB410	P15SB500	P15SB505	P15SB550
sub-base 1 place side outlets for push-in fittings	sub-base 1 place side outlets for push-in fittings 1-3-5 closed	sub-base 2 places side outlets for push-in fittings	sub-base 2 places side outlets for push-in fittings 1-3-5 closed	supply plate G1/4 for TIM module	right supply plate G1/4	pressure separator
P15SB560	P15SB570	P15SS**..M	P15SS**08MF	P15SS**04MFP	P15SS**04MP	
closing plate for unused valve place	intermediate supply plate for sub-base	male bus connection card ** = side 14 or 12 .. = 04, 06, 08 places	male/female bus connection card ** = side 14 or 12 8 places	male/female bus connection card extension ** = side 14 or 12 4 places	bus card connection extension ** = side 14 or 12 4 places	
P15STR01	P15STR02	P15STR05	GZR-V10004/06/08	AZ4-SN004A No. 100 nuts M4 for tie-rods AZ4-VN0414 No. 100 screws M4x14 for tie-rods		
modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	straight fitting GZR-V10004 = tube Ø4 mm GZR-V10006 = tube Ø6 mm GZR-V10008 = tube Ø8 mm			

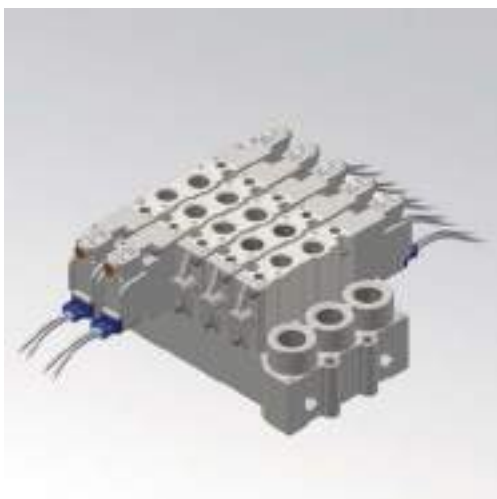
Electrical connections

D-535U40300 D-535U40500	AM-5109	TSCFN24S000 TSCFN36S000	TSCFN24S0300 TSCFN24S0500 TSCFN24S1000 TSCFN32S0300 TSCFN32S0500 TSCFN32S1000	TSCFN16D0300 TSCFN16D0500 TSCFN16D1000
single connector with cable 3-5 m	15 mm connector	female connector 25/37 poles, type sub-D, no cable M3x8 fixing screws	female connector 25/37 poles, type sub-D with cable 3-5-10 m M3x8 fixing screws	sub-D male/female flying connector prewired for 16 coils with cable Ø 8 mm (3-5-10 m length) suitable for dynamic laying M3x8 fixing screws

CHARACTERISTICS

Ambient temperature	-5 ÷ 50 °C
Fluid	10 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	9 bar (electrical control) * 10 bar (pneumatic control)
Connections	G1/8 (P15F) - G1/8 - tube Ø 4-6-8 (P15B)
Nominal flow rate (NI/min)	800 (5/2) 720 (5/3) 720 (3/2+3/2)
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot	B10 (0,3W) - B11 (1 W)
Voltage	24 V DC (± 10%)
Power consumption	B10 = 0,3 W, speed-up 1 W (25 ms) B11 = 1 W
Protection degree	IP65
Manual override	recessed button - 1 position

* = At pressure higher than 7bar with B10 pilot (0.3W) it is recommended to use solenoid valves with external pilot supply



CODIFICATION KEY

P	1	5	F	2	8	0	2	4	
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1	2	3	4	5	6
---	---	---	---	---	---

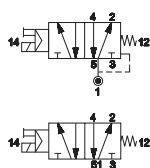
1 Series	2 Type	3 Control 14	4 Return 12
P15F = Threaded body P15B = Body for sub-base	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c.	6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO 8 = Electrical amplified in-line (0,3W) 9 = Electrical amplified in-line (1W)	0 = Pneumomechanical spring 1 = Mechanical spring 8 = Electrical amplified in-line (0,3W) 9 = Electrical amplified in-line (1W)

5 Voltage	6 Option
24 = 24 V DC	D = External pilot supply on valve body (P15 = M5)

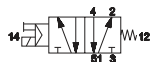
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Electrical impulse - Threaded connections G1/8

Single impulse



P15F28024 0,3 W
P15F29024 1 W



P15F28124 0,3 W
P15F29124 1 W

B10



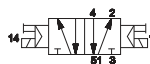
Low power
consumption 0,3 W

NEW - B11

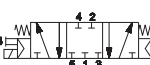


Standard 1 W

Double impulse



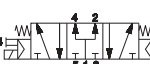
P15F28824 0,3 W
P15F29924 1 W



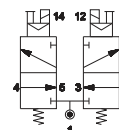
P15F38824 0,3 W
P15F39924 1 W



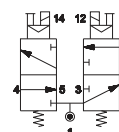
P15F48824 0,3 W
P15F49924 1 W



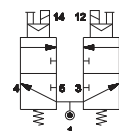
P15F58824 0,3 W
P15F59924 1 W



P15F68824 0,3 W
P15F69924 1 W



P15F78824 0,3 W
P15F79924 1 W



P15F88824 0,3 W
P15F89924 1 W

Electrical connection with external connector

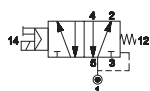


P15SF300	P15SF310	P15SF400	P15SF410	P15SF515	P15SF550	P15SF560
sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed	right/left supply plate G1/4	pressure separator	closing plate for unused valve place

P15SF570	P15STR01	P15STR02	P15STR05	
				AZ4-SN004A No. 100 nuts M4 for tie-rods AZ4-VN0414 No. 100 screws M4x14 for tie-rods
intermediate supply plate for threaded version	modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	

Electrical impulse - Body for sub-base mounting

Single impulse



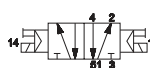
P15B28024 0,3 W
P15B29024 1 W



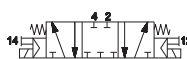
P15B28124 0,3 W
P15B29124 1 W

B10	NEW - B11
Low power consumption 0,3 W	Standard 1 W

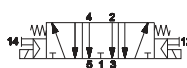
Double impulse



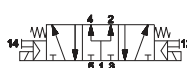
P15B28824 0,3 W
P15B29924 1 W



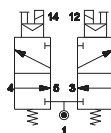
P15B38824 0,3 W
P15B39924 1 W



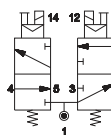
P15B48824 0,3 W
P15B49924 1 W



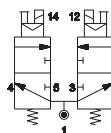
P15B58824 0,3 W
P15B59924 1 W



P15B68824 0,3 W
P15B69924 1 W



P15B78824 0,3 W
P15B79924 1 W

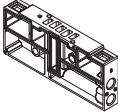
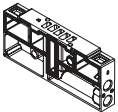
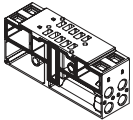
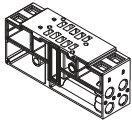
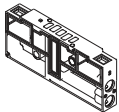
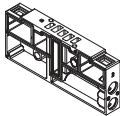
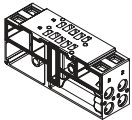
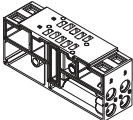
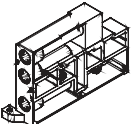
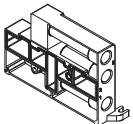
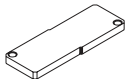
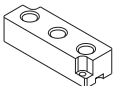
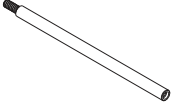
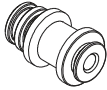


P15B88824 0,3 W
P15B89924 1 W

Electrical connection with external connector

3



P15SB100	P15SB110	P15SB200	P15SB210	P15SB300	P15SB310	P15SB400
						
sub-base 1 place side outlets G1/8	sub-base 1 place side outlets G1/8 1-3-5 closed	sub-base 2 places side outlets G1/8	sub-base 2 places side outlets G1/8 1-3-5 closed	sub-base 1 place side outlets for GZR push-in fittings	sub-base 1 place side outlets for GZR push-in fittings 1-3-5 closed	sub-base 2 places side outlets for GZR push-in fittings
P15SB410	P15SB502	P15SB505	P15SB550	P15SB560	P15SB570	
						
sub-base 2 places side outlets for GZR push-in fittings 1-3-5 closed	left supply plate G1/4	right supply plate G1/4	pressure separator	closing plate for unused valve place	intermediate supply plate for sub-base	
P15STR01	P15STR02	P15STR05	GZR-V10004/06/08			
						
modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	straight fitting GZR-V10004 = tube Ø4 mm GZR-V10006 = tube Ø6 mm GZR-V10008 = tube Ø8 mm			

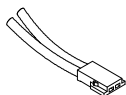
AZ4-SN004A

No. 100 nuts M4 for tie-rods

AZ4-VN0414

No. 100 screws M4x14 for tie-rods

D-530-30/50/200



Miniature connector with loose cables

D-530-30 = cable length 300 mm

D-530-50 = cable length 500 mm

D-530-200 = cable length 2000 mm

HIGH FLOW RATE

Flow rate higher than **800 NI/min**

REDUCED DIMENSIONS

Body width 15 mm

COMPLETE SOLUTION

Versions available 5/2 - 5/3 - 3/2+3/2



P15EF



P15EB



P15EF

Threaded ports (G1/8)



P15EB

For sub-base (G1/8 - Tube 4-6-8)



15 mm Electropilot - A series
UNIVER Original



Interchangeable coil - U05 type
90° x 90° revolvable
(12 - 24 V DC, 24 - 48 - 110 - 230 V AC)



Manual override (upon request)
Monostable + 2 positions



Sub-base mounting
Easy installation by means of 2 screws



Single mounting
Side holes on valve body

CHARACTERISTICS

Ambient temperature	-5 ÷ 50 °C
Fluid	10 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	9 bar
Connections	G1/8
Nominal flow rate (NI/min)	800 (5/2) 720 (5/3) 720 (3/2+3/2)
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot	A series (15 mm)
Coil	U05 series
Voltage	12 V DC - 24 V DC - 24 V AC - 48 V AC - 110 V AC - 230 V AC
Power consumption	2 W (DC) 2,3 VA (AC)
Protection degree	IP65
Manual override	impulse screw - 1-2 positions



CODIFICATION KEY

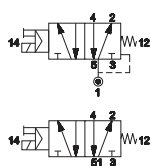
P	1	5	E	F	2	5	5	2	4	
1	2	3	4	5	6					

1 Series P15EF = COMPACT Valves - Threaded body G1/8 A series electropilot (15 mm)	2 Type 2 = 5/2 6 = 3/2+3/2 NC-NC 3 = 5/3 c.c. 7 = 3/2+3/2 NC-NO 4 = 5/3 o.c. 8 = 3/2+3/2 NO-NO 5 = 5/3 p.c.	3 Control 14 5 = Electrical amplified 15 mm
4 Return 12 0 = Pneumomechanical spring 1 = Mechanical spring 5 = Electrical amplified 15 mm	5 Voltage 12 = 12 V DC 48 = 48 V AC 24 = 24 V DC 11 = 110 V AC 34 = 24 V AC 23 = 230 V AC	6 Option C = 2-position manual override (upon request) D = External pilot supply

c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Electrical impulse - Threaded connection G1/8

Single impulse



P15EF250**

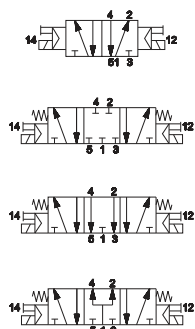
P15EF251**



DIN C (8 mm)

For further information please contact
our Sales Office

Double impulse

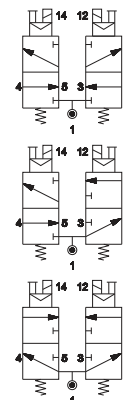


P15EF255**

P15EF355**

P15EF455**

P15EF555**



P15EF655**

P15EF755**

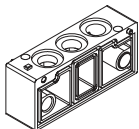
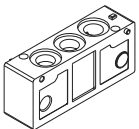
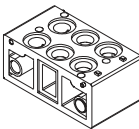
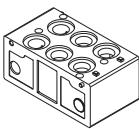
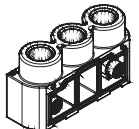
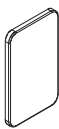
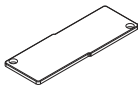
P15EF855**

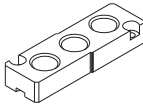
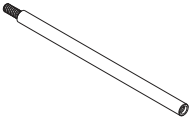
** = Voltage 12 V DC - 24 V DC - 24 V AC - 48 V AC - 110 V AC - 230 V AC (Example: P15EF25024)

Solenoid valves are supplied with coils, without connectors

Electrical connection with external connector



P15SF300	P15SF310	P15SF400	P15SF410	P15SF515	P15SF550	P15SF560
						
sub-base 1 place	sub-base 1 place 1-3-5 closed	sub-base 2 places	sub-base 2 places 1-3-5 closed	right/left supply plate G1/4	pressure separator	closing plate for unused valve place

P15SF570	P15STR01	P15STR02	P15STR05	
				AZ4-SN004A No. 100 nuts M4 for tie-rods AZ4-VN0414 No. 100 screws M4x14 for tie-rods
intermediate supply plate for threaded version	modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	

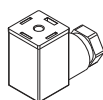
Pre-assembled sub-base



Part No.	Positions
P15SF499-02	2
P15SF499-03	3
P15SF499-04	4
P15SF499-05	5
P15SF499-06	6
P15SF499-07	7
P15SF499-08	8
P15SF499-09	9
P15SF499-10	10

Pre-assembled sub-bases include seals and screws for valve assembly

Electrical connections



AM-5109

15 mm connector

CHARACTERISTICS

Ambient temperature	-5 ÷ 50 °C
Fluid	10 µm filtered air, with or without lubrication
Commutation system	spool
Max pressure	9 bar
Connections	G1/8
Nominal flow rate (NI/min)	800 (5/2) 720 (5/3) 720 (3/2+3/2)
Valve body	zamak
Seals	NBR
Spool	aluminium
Electropilot	A series (15 mm)
Coil	U05 series
Voltage	12 V DC - 24 V DC - 24 V AC - 48 V AC - 110 V AC - 230 V AC
Power consumption	2 W (DC) 2,3 VA (AC)
Protection degree	IP65
Manual override	impulse screw - 1-2 positions



CODIFICATION KEY

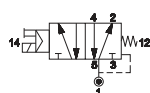
P	1	5	E	B	2	5	5	2	4	
1	2	3	4	5	6					

1 Series P15EB = COMPACT Valves for sub-base mounting A series electropilot (15 mm)	2 Type 2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO	3 Control 14 5 = Electrical amplified 15 mm
4 Return 12 0 = Pneumomechanical spring 1 = Mechanical spring 5 = Electrical amplified 15 mm	5 Voltage 12 = 12 V DC 48 = 48 V AC 24 = 24 V DC 11 = 110 V AC 54 = 24 V AC 23 = 230 V AC	6 Variant C = 2-position manual override (upon request) D = External pilot supply

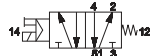
c.c. = closed centres o.c. = open centres p.c. = pressurized centres

Electrical impulse - Body for sub-base mounting - 15 mm connector

Single impulse



P15EB250**



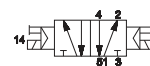
P15EB251**



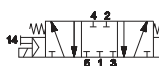
DIN C (8 mm)

For further information please
contact our Sales Office

Double impulse



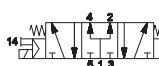
P15EB255**



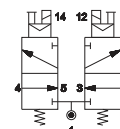
P15EB355**



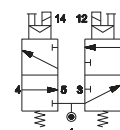
P15EB455**



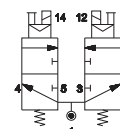
P15EB555**



P15EB655**



P15EB755**



P15EB855**

** = Voltage 12 V DC - 24 V DC - 24 V AC - 48 V AC - 110 V AC - 230 V AC (Example: P15EB25024)

Solenoid valves are supplied with coils, without connectors

Electrical connection with external connector



P15SB100	P15SB110	P15SB200	P15SB210	P15SB300	P15SB310	P15SB400
sub-base 1 place side outlets G1/8	sub-base 1 place side outlets G1/8 1-3-5 closed	sub-base 2 places side outlets G1/8	sub-base 2 places side outlets G1/8 1-3-5 closed	sub-base 1 place side outlets for GZR push-in fittings	sub-base 1 place side outlets for GZR push-in fittings 1-3-5 closed	sub-base 2 places side outlets for GZR push-in fittings
P15SB410	P15SB502	P15SB505	P15SB550	P15SB560	P15SB570	
sub-base 2 places side outlets for GZR push-in fittings 1-3-5 closed	left supply plate G1/4	right supply plate G1/4	pressure separator	closing plate for unused valve place	intermediate supply plate for sub-base	
P15STR01	P15STR02	P15STR05	GZR-V10004/06/08			
modular tie-rods 1 valve place	modular tie-rods 2 valve places	modular tie-rods 5 valve places	straight fitting GZR-V10004 = tube Ø4 mm GZR-V10006 = tube Ø6 mm GZR-V10008 = tube Ø8 mm			
				AZ4-SN004A No. 100 nuts M4 for tie-rods AZ4-VN0414 No. 100 screws M4x14 for tie-rods		

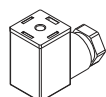
Pre-assembled sub-base



Part No.	Positions
P15SB499-02	2
P15SB499-03	3
P15SB499-04	4
P15SB499-05	5
P15SB499-06	6
P15SB499-07	7
P15SB499-08	8
P15SB499-09	9
P15SB499-10	10

Pre-assembled sub-bases include seals and screws for valve assembly

Electrical connections



AM-5109

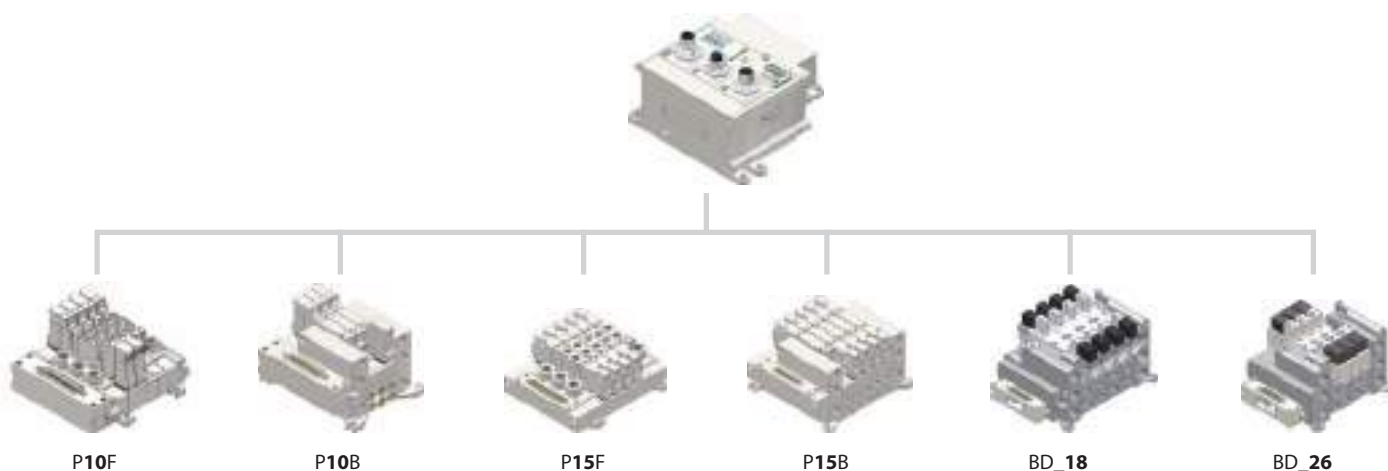
15 mm connector

CHARACTERISTICS

Controlled devices	Manifolds, Digital input M12/M8, Output M12
Handling capacity	Max 64 inputs + 64 outputs (PROFIBUS-DP, CANopen, DeviceNet) Max 64 inputs + 88 outputs (PROFINET, EtherNet/IP, EtherCAT)
Integrated configuration	BD series (VDMA) 18 - 26 mm P10 - P15 series (COMPACT)
Distributed configuration	Remote expansion modules for valve manifolds with sub-D 25 plug-in
FieldBus protocols	CANopen, DeviceNet, PROFINET, PROFIBUS-DP, EtherNet/IP, EtherCAT



Serial module for all manifold models



Serial module

■ CANopen  <table> <tr> <td>Part No.</td><td>TCXC</td></tr> <tr> <td>Auxiliary power supply</td><td>1 x M12 - 4 pins male</td></tr> <tr> <td>Fieldbus</td><td>1 x M12 - 5 pins male</td></tr> <tr> <td>Connectors</td><td>1 x M12 - 5 pins female</td></tr> <tr> <td>Diagnostics</td><td>Optical, Primary, Extended</td></tr> <tr> <td>Capacity max I/O</td><td>64 In - 40 Out 24 coils</td></tr> <tr> <td>LSS Slave</td><td>supported</td></tr> </table>	Part No.	TCXC	Auxiliary power supply	1 x M12 - 4 pins male	Fieldbus	1 x M12 - 5 pins male	Connectors	1 x M12 - 5 pins female	Diagnostics	Optical, Primary, Extended	Capacity max I/O	64 In - 40 Out 24 coils	LSS Slave	supported	■ PROFIBUS-DP  <table> <tr> <td>Part No.</td><td>TCXP</td></tr> <tr> <td>Auxiliary power supply</td><td>1 x M12 - 4 pins male</td></tr> <tr> <td>Fieldbus</td><td>1 x M12 - 4 pins male B code</td></tr> <tr> <td>Connectors</td><td>1 x M12 - 4 pins female B code</td></tr> <tr> <td>Diagnostics</td><td>Optical, Primary, Extended</td></tr> <tr> <td>Capacity max I/O</td><td>64 In - 40 Out 24 coils</td></tr> </table>	Part No.	TCXP	Auxiliary power supply	1 x M12 - 4 pins male	Fieldbus	1 x M12 - 4 pins male B code	Connectors	1 x M12 - 4 pins female B code	Diagnostics	Optical, Primary, Extended	Capacity max I/O	64 In - 40 Out 24 coils
Part No.	TCXC																										
Auxiliary power supply	1 x M12 - 4 pins male																										
Fieldbus	1 x M12 - 5 pins male																										
Connectors	1 x M12 - 5 pins female																										
Diagnostics	Optical, Primary, Extended																										
Capacity max I/O	64 In - 40 Out 24 coils																										
LSS Slave	supported																										
Part No.	TCXP																										
Auxiliary power supply	1 x M12 - 4 pins male																										
Fieldbus	1 x M12 - 4 pins male B code																										
Connectors	1 x M12 - 4 pins female B code																										
Diagnostics	Optical, Primary, Extended																										
Capacity max I/O	64 In - 40 Out 24 coils																										
■ DeviceNet  <table> <tr> <td>Part No.</td><td>TCXD</td></tr> <tr> <td>Auxiliary power supply</td><td>1 x 7/8" - 4 pins male</td></tr> <tr> <td>Fieldbus</td><td>1 x 7/8" - 5 pins male</td></tr> <tr> <td>Connectors</td><td>1 x 7/8" - 5 pins female</td></tr> <tr> <td>Diagnostics</td><td>Optical, Primary, Extended</td></tr> <tr> <td>Capacity max I/O</td><td>64 In - 40 Out 24 coils</td></tr> </table>	Part No.	TCXD	Auxiliary power supply	1 x 7/8" - 4 pins male	Fieldbus	1 x 7/8" - 5 pins male	Connectors	1 x 7/8" - 5 pins female	Diagnostics	Optical, Primary, Extended	Capacity max I/O	64 In - 40 Out 24 coils	■ EtherNet/IP  <table> <tr> <td>Part No.</td><td>TCXEN</td></tr> <tr> <td>Auxiliary power supply</td><td>1 x M12 - 4 pins male</td></tr> <tr> <td>Fieldbus</td><td>2 x M12 - 4 pins female D code</td></tr> <tr> <td>Connectors</td><td></td></tr> <tr> <td>Diagnostics</td><td>Optical, Primary, Extended</td></tr> <tr> <td>Capacity max I/O</td><td>64 In - 64 Out 24 coils</td></tr> </table>	Part No.	TCXEN	Auxiliary power supply	1 x M12 - 4 pins male	Fieldbus	2 x M12 - 4 pins female D code	Connectors		Diagnostics	Optical, Primary, Extended	Capacity max I/O	64 In - 64 Out 24 coils		
Part No.	TCXD																										
Auxiliary power supply	1 x 7/8" - 4 pins male																										
Fieldbus	1 x 7/8" - 5 pins male																										
Connectors	1 x 7/8" - 5 pins female																										
Diagnostics	Optical, Primary, Extended																										
Capacity max I/O	64 In - 40 Out 24 coils																										
Part No.	TCXEN																										
Auxiliary power supply	1 x M12 - 4 pins male																										
Fieldbus	2 x M12 - 4 pins female D code																										
Connectors																											
Diagnostics	Optical, Primary, Extended																										
Capacity max I/O	64 In - 64 Out 24 coils																										
■ PROFINET  <table> <tr> <td>Part No.</td><td>TCXPN</td></tr> <tr> <td>Auxiliary power supply</td><td>1 x M12 - 4 pins male</td></tr> <tr> <td>Fieldbus</td><td>2 x M12 - 4 pins female</td></tr> <tr> <td>Connectors</td><td>D code</td></tr> <tr> <td>Diagnostics</td><td>Optical, Primary, Extended</td></tr> <tr> <td>Capacity max I/O</td><td>64 In - 72 Out 24 coils</td></tr> </table>	Part No.	TCXPN	Auxiliary power supply	1 x M12 - 4 pins male	Fieldbus	2 x M12 - 4 pins female	Connectors	D code	Diagnostics	Optical, Primary, Extended	Capacity max I/O	64 In - 72 Out 24 coils	■ EtherCAT  <table> <tr> <td>Part No.</td><td>TCXEC</td></tr> <tr> <td>Auxiliary power supply</td><td>1 x M12 - 4 pins male</td></tr> <tr> <td>Fieldbus</td><td>2 x M12 - 4 pins female D code</td></tr> <tr> <td>Connectors</td><td></td></tr> <tr> <td>Diagnostics</td><td>Optical, Primary, Extended</td></tr> <tr> <td>Capacity max I/O</td><td>64 In - 64 Out 24 coils</td></tr> </table>	Part No.	TCXEC	Auxiliary power supply	1 x M12 - 4 pins male	Fieldbus	2 x M12 - 4 pins female D code	Connectors		Diagnostics	Optical, Primary, Extended	Capacity max I/O	64 In - 64 Out 24 coils		
Part No.	TCXPN																										
Auxiliary power supply	1 x M12 - 4 pins male																										
Fieldbus	2 x M12 - 4 pins female																										
Connectors	D code																										
Diagnostics	Optical, Primary, Extended																										
Capacity max I/O	64 In - 72 Out 24 coils																										
Part No.	TCXEC																										
Auxiliary power supply	1 x M12 - 4 pins male																										
Fieldbus	2 x M12 - 4 pins female D code																										
Connectors																											
Diagnostics	Optical, Primary, Extended																										
Capacity max I/O	64 In - 64 Out 24 coils																										

Configurable expansion modules

				
■ TC8I412 No. 8 Digital inputs M12	■ TC16I812 No. 16 Digital inputs M12	■ TC8U412 No. 8 Digital outputs M12	■ TC8I808 No. 8 Digital inputs M8	■ TCR32ID No. 16+16 Digital inputs
				■ TCR32UD No. 16+16 Digital outputs
				■ TCR1616 No. 16 Digital inputs + No. 16 Digital outputs

TZ-F4M12	TZ-F5M12	TZ-M5M12/T	TZ-F478	TZ-F578
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CANopen, ProfiBus, ProfiNet EtherNet/IP, EtherCat Power Supply Connector M12 female 4 poles	CanOpen Input Bus M12 female 5 poles	CanOpen Output Bus M12 male 5 poles TZ-M5M12-T ProfiBus, Bus terminating connector M12 male 5 poles	DeviceNet Power Supply Connector 7/8 female 4 poles	DeviceNet Input Bus 7/8 female 5 poles

TZ-M578/T	TZ-F5M12-B	TZ-M4M12-B/BT	TZ-M4M12-D	TSCFN16...
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TZ-M578 DeviceNet Input Bus 7/8 male 5 poles TZ-M578T DeviceNet Bus terminating connector 7/8 male 5 poles	ProfiBus Input Bus M12 female 5 poles B-code	TZ-M4M12-B ProfiBus Output Bus M12 male 4 poles B-code TZ-M4M12-BT ProfiBus, Bus terminating connector M12 male 4 poles B-code	ProfiNet, EtherNet/IP, EtherCat Input/Output Bus M12 male 4 poles D-code	TSCFN16D0300 Prewired cable, sub-D, 25 poles, 16 signals 3 m TSCFN16D0500 Prewired cable, sub-D 25 poles, 16 signals 5 m TSCFN16D1000 Prewired cable, sub-D 25 poles, 16 signals 10 m

Assembly scheme

	1 FieldBus Module 2 Auxiliary Module - Inputs 8 x M8 3 Auxiliary Module - Inputs 4 x M12 4 Auxiliary Module - Outputs 4 x M12 5 TCXX end cover included (1 pc) 6 TCXX cover screws included (4 pcs.) 7 I/O tie-rods included (4 pcs.) 8 Support foot for modules 9 Adaptor for 18-26 mm VDMA Manifold
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MATCHING TABLE
- COILS/ELECTROPILOTS
- ELECTROPILOTS/SOLENOID VALVES

Electropilots

A (U05)	B (U04)	AA (U1)	AA (U3)		AB (U2)	

Coils	U04	10 mm							
	U05	15 mm							
	U1	22 mm							
	U2	30 mm							
	U3	30 mm							
Solenoid valves	BE	ISO 1 - ISO 2 ISO 3 - ISO 4							
	AE	ISO 1 - ISO 2							
	BD	ISO 01 26 mm ISO 02 18 mm							
	AC-N	Interface NAMUR							
	CL	G1/8							
	CM	G1/4							
	COMPA 2/4								
	G6	G1/8							
	GL6	sub-base							
	G7	G1/8							
	PS	tube Ø 4 tube Ø 6 tube Ø 8							
	AC	G1/8 - G1/4							
		G1/2							
	AF	G1/8							
		G1/4 - G3/8							
		G1/2 ÷ G1							
		G1 1/2							
	AG	G1/8							
		G1/4 ÷ G1							
		G1 1/2							
	P15E	G1/8							

■ = Standard

R = Upon request

(a) = Connector M12

10 mm U04 Coils for B series electropilots

■ With integrated 90° upward connector


DE-352 24 V DC 1,2 W
DE-452 24 V DC 1,35 W
(with led)
DE-355 24 V DC 0,5 W
NEW

Connector:
D-500
D-530-...
D-535-...

■ With in-line connector


DE-552 24 V DC 1,2 W
DE-652 24 V DC 1,35 W
(with led)
DE-555 24 V DC 0,5 W
NEW

Connector:
D-500
D-530-...
D-535-...

■ With loose cables (length 300 mm)



DE-052L030 24 V DC 1,2 W

■ With in-line connector with protecting cover for complete tightness


DE-642I 12 V DC 1,35 W
DE-652I 24 V DC 1,35 W
(with led)
DE-655I 24 V DC 0,5 W
NEW

Connector:
D-530C-100
D-530C-200

15 mm U05 Coils for A series electropilot

■ with integrated 90° upward connector



DD-351 24 V DC 2 W

Connector:
D-500
D-530-...
D-535-...

■ with integrated 90° downward connector



DD-151 24 V DC 2 W

Connector:
D-500
D-530-...
D-535-...

■ with in-line connector



DD-551 24 V DC 2 W

Connector:
D-500
D-530-...
D-535-...

■ with loose cables



DD-051L030 12 V DC 2 W
DD-052L030 24 V DC 2,5 W

■ 15 mm - Faston



DD-013 230 V AC 50/60 Hz 3,5 VA
DD-040 24 V AC 50/60 Hz 2,3 VA
DD-041 12 V DC 2 W
DD-042 12 V DC 2,5 W
DD-050 48 V AC 50/60 Hz 2,3 VA

Connector:
AM-5109

DD-051 24 V DC 2 W
DD-052 24 V DC 2,5 W
DD-060 110 V AC 50/60 Hz 2,3 VA
DD-070 230 V AC 50/60 Hz 2,3 VA

U1 - U2 - U3 Coil

■ 22 mm (U1)



DA-0050 12 V DC 3,5 W
DA-0051 24 V DC 3,5 W
DA-0106 24 V AC 50/60 Hz 5 VA
DA-0108 110 V AC 50/60 Hz 5 VA
DA-0124 230 V AC 50/60 Hz 5 VA

■ 30 mm (U2)



DB-0501 12 V DC 11 W
DB-0502 24 V DC 11 W
DB-0507 24 V AC 50/60 Hz 10 VA
DB-0509 110 V AC 50/60 Hz 10 VA
DB-0510 230 V AC 50/60 Hz 10 VA

■ 30 mm (U3)



DC-0301 12 V DC 2,5 W
DC-0302 24 V DC 2,5 W
DC-0307 24 V AC 50/60 Hz 3,3 VA
DC-0309 110 V AC 50/60 Hz 3,3 VA
DC-0310 230 V AC 50/60 Hz 3,3 VA



U1-U2-U3 coils are certified in compliance with
CSA regulation, certificate n. LR 113373-1.

For coils certified in compliance with UL regulation, please contact
our Sales Office

Connectors

■ Miniature connector
without wires

D-500

Coil:
U04/U05

■ Miniature connector with
loose cables

D-530-30
D-530-50
D-530-200

Coil:
U04/U05

■ Miniature connector with cable



D-535-30
D-535-50
D-535-200

Coil:
U04/U05

■ 15 mm Connector



AM-5109

Coil:
U05

■ 20 mm Connector



AM-5110

Coil:
U1

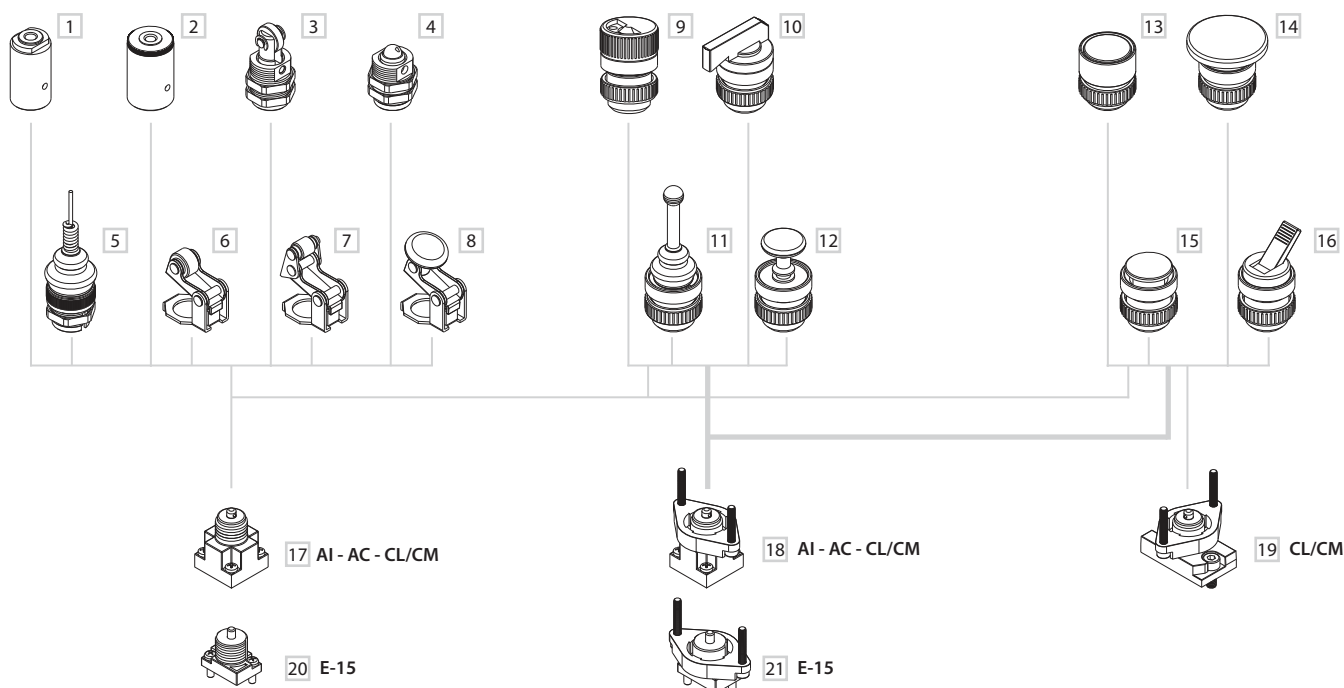
■ 30 mm Connector



AM-5111

Coil:
U2/U3

Operator/button modularity



PNEUMATIC / MECHANICAL OPERATORS

- 1 Pneumatic operator
- 2 Amplified pneumatic operator
- 3 Roller operator 1 position
- 4 Ball-push operator 1 position
- 5 Omni-directional antenna 1 position
- 6 Roller lever operator 1 position
- 7 Articulated roller lever operator 1 position
- 8 Key operator 1 position

MANUAL OPERATORS

- 9 Rotating selector
- 10 Rotating lever selector
- 11 Omni-directional operator
- 12 Push-pull operator
- 13 Recessed button
- 14 Head button
- 15 Button
- 16 Lever

OVERRIDE

- 17 Threaded indirect operation
- 18 Indirect panel operation
- 19 Direct panel operation
- 20 Ball-push direct operation
- 21 Ball-push direct panel operation

Recessed button

Head button

■ 1 Position AI-3511 black ■ AI-3512 red ■ AI-3513 green ■ ■ For panel mounting 1 Position AI-3511Q black ■ AI-3512Q red ■ AI-3513Q green ■	■ 1 Position AI-3514 red ■ AI-3516 black ■ ■ 2 Positions AI-3514D red ■ AI-3516D black ■ ■ For panel mounting 1 Position AI-3514Q red ■ AI-3516Q black ■ ■ For panel mounting 2 Positions AI-3514QD red ■ AI-3516QD black ■
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Button

Lever

■ 1 Position AI-3515 green ■ AI-3517 red ■ AI-3519 black ■ ■ For panel mounting 1 Position AI-3515Q green ■ AI-3517Q red ■ AI-3519Q black ■	■ 2 Positions AI-3524 black ■ ■ For panel mounting 2 Positions AI-3524Q black ■
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Rotating selector for accident prevention



■ With light 1 position

 AI-3521 black ■

■ For panel mounting with light 1 position

 AI-3521Q black ■

■ With light 2 positions

 AI-3520 black ■

■ For panel mounting with light 2 positions

 AI-3520Q black ■

Rotating lever selector



■ With light 1 position

 AI-3523 black ■

■ For panel mounting with light 1 position

 AI-3523Q black ■

■ With light 2 positions

 AI-3522 black ■

■ For panel mounting with light 2 positions

 AI-3522Q black ■

Omni-directional lever

Push-pull operator



■ With centre return 1 position

 AI-3525 black ■

■ For panel mounting with centre return 1 position

 AI-3525Q black ■


■ 2 positions

 AI-3526 black ■

■ For panel mounting 2 positions

 AI-3526Q black ■

AI-3529



reducer for Ø 30,5 to Ø 22,5, to be used with AI-35..Q limit switches

Pneumatic and mechanical operators

■ Pneumatic operator


 AI-3550

■ Roller operator with dust protection


 AI-3560

■ Omni-directional antenna 1 position with centre return


 AI-3563

■ Roller lever 1 position


 AI-3570

■ Articulated one-way roller lever 1 position


 AI-3571

■ Push button 1 position


 AI-3572

■ Amplified pneumatic operator


 AI-3551

■ Ball operator with dust protection


 AI-3562

YR240 Brass ball valve 2/2 with rotary actuator

■ Double/single acting



Temperature: -20 ÷ 120 °C
Fluid: air, water, etc.
Working pressure: Max 40 bar
(based on working temperature)

Double acting

Part No.	Ø	DN
YR240008DA	8	G1/4
YR240010DA	10	G3/8
YR240015DA	15	G1/2
YR240020DA	20	G3/4
YR240025DA	25	G1
YR240032DA	32	G1 1/4
YR240040DA	40	G1 1/2
YR240050DA	50	G2
YR240065DA	65	G2 1/2
YR240080DA	80	G3
YR240100DA	100	G4

Single acting

Part No.	Ø	DN
YR240008SR	8	G1/4
YR240010SR	10	G3/8
YR240015SR	15	G1/2
YR240020SR	20	G3/4
YR240025SR	25	G1
YR240032SR	32	G1 1/4
YR240040SR	40	G1 1/2
YR240050SR	50	G2
YR240065SR	65	G2 1/2
YR240080SR	80	G3
YR240100SR	100	G4

YR250 Ball valve 2/2 AISI 316 with manual lever or rotary actuator

■ With manual lever



Part No.	Ø	DN
YR250008LM	8	G1/4
YR250010LM	10	G3/8
YR250015LM	15	G1/2
YR250020LM	20	G3/4
YR250025LM	25	G1
YR250032LM	32	G1 1/4
YR250040LM	40	G1 1/2
YR250050LM	50	G2
YR250065LM	65	G2 1/2
YR250080LM	80	G3

■ Double/single acting



Temperature: -25 ÷ 200 °C
Fluid: air, water, chemical agents, etc.
Working pressure: Max 63 bar
(based on working temperature)

Double acting

Part No.	Ø	DN
YR250008DA	8	G1/4
YR250010DA	10	G3/8
YR250015DA	15	G1/2
YR250020DA	20	G3/4
YR250025DA	25	G1
YR250032DA	32	G1 1/4
YR250040DA	40	G1 1/2
YR250050DA	50	G2
YR250065DA	65	G2 1/2
YR250080DA	80	G3

Single acting

Part No.	Ø	DN
YR250008SR	8	G1/4
YR250010SR	10	G3/8
YR250015SR	15	G1/2
YR250020SR	20	G3/4
YR250025SR	25	G1
YR250032SR	32	G1 1/4
YR250040SR	40	G1 1/2
YR250050SR	50	G2
YR250065SR	65	G2 1/2
YR250080SR	80	G3

YR260 Ball valve 2/2 AISI 316 (3 pieces) with manual lever or rotary actuator

■ With manual lever



Part No.	Ø	DN
YR260008LM	8	G1/4
YR260010LM	10	G3/8
YR260015LM	15	G1/2
YR260020LM	20	G3/4
YR260025LM	25	G1
YR260032LM	32	G1 1/4
YR260040LM	40	G1 1/2
YR260050LM	50	G2
YR260065LM	65	G2 1/2
YR260080LM	80	G3

■ Double/single acting



Temperature: -25 ÷ 200 °C
Fluid: air, water, chemical agents, etc.
Working pressure: Max 63 bar
(based on working temperature)

Double acting

Part No.	Ø	DN
YR260008DA	8	G1/4
YR260010DA	10	G3/8
YR260015DA	15	G1/2
YR260020DA	20	G3/4
YR260025DA	25	G1
YR260032DA	32	G1 1/4
YR260040DA	40	G1 1/2
YR260050DA	50	G2
YR260065DA	65	G2 1/2
YR260080DA	80	G3

Single acting

Part No.	Ø	DN
YR260008SR	8	G1/4
YR260010SR	10	G3/8
YR260015SR	15	G1/2
YR260020SR	20	G3/4
YR260025SR	25	G1
YR260032SR	32	G1 1/4
YR260040SR	40	G1 1/2
YR260050SR	50	G2
YR260065SR	65	G2 1/2
YR260080SR	80	G3

YR270 L-shaped ball valve 3/2 AISI 316 with manual lever or rotary actuator

■ With manual lever



Part. No	Ø	DN
YR270008LM	8	G1/4
YR270010LM	10	G3/8
YR270015LM	15	G1/2
YR270020LM	20	G3/4
YR270025LM	25	G1
YR270032LM	32	G1 1/4
YR270040LM	40	G1 1/2
YR270050LM	50	G2

■ Double/single acting



Temperature: -15 ÷ 230 °C
Fluid: air, water, chemical agents, etc.
Working pressure: Max 64 bar
 (based on working temperature)

Double acting			Single acting		
Part. No	Ø	DN	Part. No	Ø	DN
YR270008DA	8	G1/4	YR270008SR	8	G1/4
YR270010DA	10	G3/8	YR270010SR	10	G3/8
YR270015DA	15	G1/2	YR270015SR	15	G1/2
YR270020DA	20	G3/4	YR270020SR	20	G3/4
YR270025DA	25	G1	YR270025SR	25	G1
YR270032DA	32	G1 1/4	YR270032SR	32	G1 1/4
YR270040DA	40	G1 1/2	YR270040SR	40	G1 1/2
YR270050DA	50	G2	YR270050SR	50	G2

YR280 Brass L-shaped ball valve 3/2 with manual lever or rotary actuator

■ With manual lever



Part. No	Ø	DN
YR280008LM	8	G1/4
YR280010LM	10	G3/8
YR280015LM	15	G1/2
YR280020LM	20	G3/4
YR280025LM	25	G1
YR280032LM	32	G1 1/4
YR280040LM	40	G1 1/2
YR280050LM	50	G2

■ Double/single acting



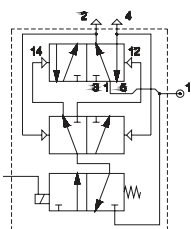
Temperature: -20 ÷ 160 °C
Fluid: air, water, chemical agents, etc.
Working pressure: DN 1/4" ÷ DN 3/4" PN30
 DN 1" PN16 - DN 1 1/4" ÷ DN 2" PN10

Double acting			Single acting		
Part. No	Ø	DN	Part. No	Ø	DN
YR280008DA	8	G1/4	YR280008SR	8	G1/4
YR280010DA	10	G3/8	YR280010SR	10	G3/8
YR280015DA	15	G1/2	YR280015SR	15	G1/2
YR280020DA	20	G3/4	YR280020SR	20	G3/4
YR280025DA	25	G1	YR280025SR	25	G1
YR280032DA	32	G1 1/4	YR280032SR	32	G1 1/4
YR280040DA	40	G1 1/2	YR280040SR	40	G1 1/2
YR280050DA	50	G2	YR280050SR	50	G2

Binary Counter (Flip Flop)

■ AP-500

Electrical override



Working pressure: 10 bar

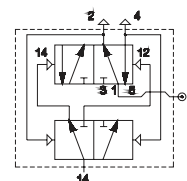
Energizing pressure: 1,5 bar

Ambient temperature: -30 ÷ +80 °C

Coil: U1 - DA series

■ AP-520

Pneumatic override

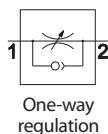


Solenoid valves are supplied without coil/connector/locking nut

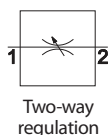
Flow control valve - metallic body

■ AM-50

One-way and two-way flow control valve
M5 - G1/8 - G1/4 - G3/8 - G1/2



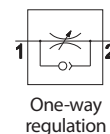
		Ø mm
AM-5060	M5	1
AM-5061	G1/8	1
AM-5062	G1/8	2,25
AM-5063	G1/8	3,5
AM-5064	G1/4	5
AM-5065	G1/4	6
AM-5066	G3/8	6
AM-5067	G1/2	9



AM-5070	M5	1
AM-5071	G1/8	1
AM-5072	G1/8	2,25
AM-5074	G1/4	5
AM-5076	G3/8	6
AM-5077	G1/2	9

■ AM-50

One-way flow control valve G1/2 - G3/4 - G1

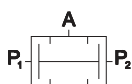


		Ø mm
AM-5090	G1/2	9
AM-5091	G3/4	9
AM-5092	G1	12

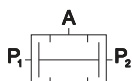
Signal processing valve

■ AM-51

Two-pressure valve "AND"



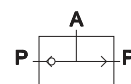
AM-5160
threaded body G1/8



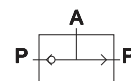
AM-5161
push-in fittings Ø4x2

■ AM-51

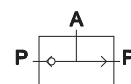
Selector valve "OR"



AM-5162
threaded body G1/8



AM-5163
push-in fittings Ø4x2



AM-5164
threaded body G1/4

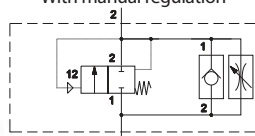
Gradual starter

■ AM-52

Gradual starter G1/8 ÷ G1



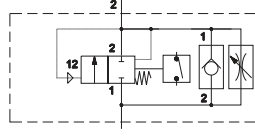
With manual regulation



		Ø mm
AM-5240	G1/8	6,5
AM-5241	G1/4	6,5
AM-5242	G1/4	9,5
AM-5243	G3/8	9,5



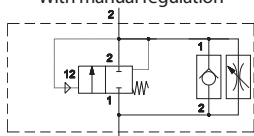
With electrical switch



		Ø mm
AM-5242E	G1/8	9,5
AM-5243E	G3/8	9,5



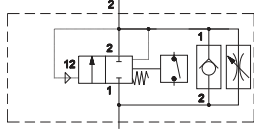
With manual regulation



		Ø mm
AM-5254	G1/2	15
AM-5255	G3/4	15
AM-5256	G 1	24



With electrical switch



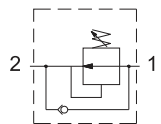
		Ø mm
AM-5259	G1/2	15
AM-5260	G3/4	15
AM-5261	G 1	24

Economizer

■ AM-53

Economizer G1/8 ÷ G1





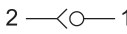
		Ø mm
AM-5350	G1/8	6,5
AM-5351	G1/4	6,5
AM-5352	G1/4	9,5
AM-5353	G3/8	9,5
AM-5354	G1/2	15
AM-5355	G3/4	15
AM-5356	G 1	24

Check valve

■ AM-54

Check valve G1/2 - G3/4 - G1





		Ø mm
AM-5400	G1/2	15
AM-5401	G3/4	15
AM-5402	G 1	24

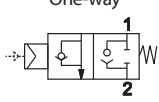
Blocking valve

■ AM-55

Blocking valve



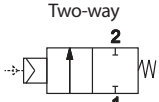
One-way



		Ø mm
AM-5500	G1/8	6,5
AM-5501	G1/4	6,5
AM-5502	G1/4	9,5
AM-5503	G3/8	9,5
AM-5504	G1/2	15



Two-way



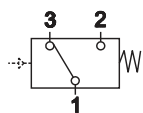
		Ø mm
AM-5510	G1/8	6,5
AM-5511	G1/4	6,5
AM-5512	G1/4	9,5
AM-5513	G3/8	9,5
AM-5514	G1/2	15

Transducer and pressure switch

■ AM-5200

Pneumoelectrical transducer



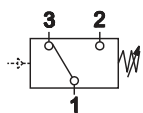


AM-5200

■ AM-5220

Adjustable pressure switch





AM-5220

Digital pressure switch

■ HZ9N ...



Working temperature: 0 ÷ 60 °C

Voltage: 12 - 24 V DC

Repeatability: ≤ ± 2% F.S. ± 1 digit

Analog output: 1 ÷ 5 V 4 - 20 mA (upon request)

Connection: connector M8 and cable (upon request)

Part No.	Working pressure (bar)	Output	Min. adjustable unit (bar)	Cable length (m)	Thread
HZ9NC04	-1 +1	2xPNP	0,001	2 m	G1/8 - M5
HZ9NC02	-1 +1	2xNPN	0,001	2 m	G1/8 - M5
HZ9NP04	0 -10	2xPNP	0,01	2 m	G1/8 - M5
HZ9NP02	0 -10	2xNPN	0,01	2 m	G1/8 - M5

HZ9N1F



Adaptor for panel mounting + protection cover

HZ9N2F



Supports - 2 pcs

HZ9NM08-0200



M8 Extensions
2 m Cable

Adjustable diaphragm pressure switch

■ HZ9N12



Max pressure: 80 bar

Max temperature: -10 ÷ 120 °C

Max voltage: 250 V AC

Max current: 0,5 A

Body: brass

Version with NC - NC/NO contact upon request

Part No.	Adjustable range (bar)	Tolerance 20° C (bar)	Contact	Thread
HZ9N12110060	1 - 10	± 0,5	NO	R1/8
HZ9N12110080	1 - 10	± 0,5	NO	R1/4
HZ9N12111060	0,1 - 1	± 0,1	NO	R1/8
HZ9N12111080	0,1 - 1	± 0,1	NO	R1/4

ATEX



ATEX version available

For further information please contact our Sales Office

HZ9N12A



Protection cap
IP54

HZ9N12B



Protection connector
IP65

HZ9N12C



Protection connector
IP65 DIN

CHARACTERISTICS

Ambient temperature	-20 ÷ +50 °C
Fluid temperature	-10 ÷ +95 °C
Fluid	water, air, non-corrosive gases
Valve body	brass
Seals	NBR
Coil	U1
	U2
Power consumption	see coil section
Voltage	24 V DC, 24 V AC, 110 V AC, 220 V AC 50/60 Hz

Other versions available upon request

- VITON, EPDM seals; EPM seals for food industry
- Nickel-plated brass or AISI 316 stainless steel body
- NO version
- G1 1/4 - G1 1/2 - G2



2 ways NC direct action



Part No.	Connections	Nom. bore (mm)	Pressure (bar)				Coil	KV (l/min)
			Nominal	Min	Max AC	Max DC		
YF210061D (a)	G1/8	2	25	0	12	10	U1	1,5
YF210062D (b)	G1/8	2	25	0	22	20	U2	1,7
YF210082D (b)	G1/4	3,5	100	0	10	8	U2	5,4

2 ways NC servo-assisted diaphragm



Part No.	Connections	Nom. bore (mm)	Pressure (bar)				Coil	KV (l/min)
			Nominal	Min	Max AC	Max DC		
YF210151S	G1/2	12,7	25	0,15	18	16	U1	40
YF210201S	G3/4	19	25	0,15	16	13	U1	90
YF210251S	G1	25	25	0,15	12	10	U1	176

3 ways NC direct action



Part No.	Connections	Nom. bore (mm)	Pressure (bar)				Coil	KV (l/min)
			Nominal	Min	Max AC	Max DC		
YF310061D (c)	G1/8	1,5	10	0	10	10	U1	1
YF310082D (d)	G1/4	2,4	10	0	10	10	U2	2,3

Coils



U1

YFDA-0224	24 V AC - 50/60 Hz - 8 VA
YFDA-0211	110 V AC - 50/60 Hz - 8 VA
YFDA-0223	230 V AC - 50/60 Hz - 8 VA
DA-0102	24 V DC - 6 W



U2

YFDB-0224	24 V AC - 50/60 Hz - 13 VA
YFDB-0211	110 V AC - 50/60 Hz - 13 VA
YFDB-0223	230 V AC - 50/60 Hz - 13 VA
DB-0502	24 V DC - 11 W

Solenoid valves are supplied with locking nut, without coil and connector

CHARACTERISTICS

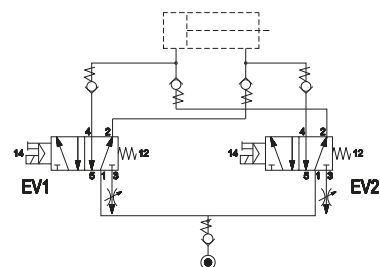
Ambient temperature	-20 ÷ +50 °C
Fluid	50 µm filtered air, with or without lubrication
Pressure	1,5 ÷ 9 bar
Connections	G1/4
Pace regulators	embodied
Function	it allows cylinders to stop with highly precise position repeatability
Solenoid Valves	GL series
Commutation system	spool
Electropilot/Coil	A series/U05 series
Voltage	24 V DC - 12 V DC - 24 V AC - 110 V AC - 230 V AC (only version with external electrical connection)
Power consumption	U05 = 2 W (DC) 2,3 VA (AC)
Manual override	recessed button - 1 position



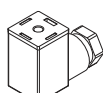
■ Embodied pace regulators



For further information please contact our Sales Office


DD- ...
AM-5109


DD-040 24 V AC
 DD-041 12 V DC
 DD-051 24 V DC
 DD-060 110 V AC
 DD-070 230 V AC



15 mm U05 Coil - Faston

15 mm Connectors

4



Air Treatment

	Air Treatment Units	HZE	3
	Pressure Gauges	HZ9	10
	Regulators and Transducers	HZRP HZRE	11 11
	Microregulators	HZRM	12

MODULAR

40 mm (HZE0) 63 mm (HZE1) 80 mm (HZE2)

INTEGRATED GAUGE

Standard supplied

COMPLETE SOLUTION

Possibility of assembling combinations complete with accessories



G1/4

Size 0



FR+L

600
NI/min

G3/8 - G1/2

Size 1



FR+L

2800
NI/min

G1/2

Size 2



FR+L

4300
NI/min



HZE-Y

Gradual starter



HZE-N

Diverter block



HZE-P

Lockable valve



HZE-S

Shut-off valve



HZE-RL

Lockable regulator

CHARACTERISTICS

Ambient temperature	0 ÷ +60 °C
Fluid	filtered air, with or without lubrication
Working pressure	10 bar
Max pressure	15 bar
Size	0 - 1 - 2
Body	tecopolymer with metal threaded elements (size 0) die-cast aluminium (size 1 - 2)
Knob	tecopolymer
Ring nut	tecopolymer
Bowl	polycarbonate
Bowl guard	tecopolymer (size 1-2)
Filter element	polyethylene
Seals	NBR
Springs	steel
Diaphragm	fabric reinforced rubber



For round gauge mounting (HZ9P):

Size 0 = Replace HZ9464G gauge with HZE7Z480 square adaptor G1/8, to be ordered separately

Size 1-2 = Replace HZ9464G gauge with HZE7Z480 square adaptor G1/8 placed on the rear side of the regulator or filter regulator

CODIFICATION KEY

H	Z	E	0	B	0	8	G		M
1	2	3	4	5	6				

1 Series	2 Size	3 Model
HZE = Air treatment units with standard manual drain	0 = Small (G1/4) 1 = Medium (G3/8 - G1/2) 2 = Large (G1/2)	F = Filter R = Regulator L = Lubricator B = Filter regulator D = Filter regulator+Lubricator (FR+L) C = Filter+Regulator+Lubricator (F+R+L)
4 Thread	5 Option	6 Pressure gauge
08G = G1/4 (size 0) 10G = G3/8 (size 1) 15G = G1/2 (size 1-2) 20G = G3/4 (size 2) * 25G = G1 (size 2) *	A = Automatic drain (except for size 0) S = Semi-automatic drain	M = Integrated square pressure gauge (standard supplied) Square adaptor G1/8 upon request

* = with threaded ends

Filter

				
Size	0	1		2
Part No.	HZE0F08G	HZE1F10G	HZE1F15G	HZE2F15G
Connections	G1/4	G3/8	G1/2	G1/2
Filtration rate (µm)	5	5		5
Nominal flow rate (NI/min) ^(A)	1100	3500		6500
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145		10 - 1 - 145
Condensation drain capacity (cm ³)	12	45		80
Condensation drain	manual	manual		manual

(A) = Inlet pressure 7 bar, Δp 0,5 bar

Regulator

				
	Size	0	1	2
Part No.	HZE0R08GM	HZE1R10GM	HZE1R15GM	HZE2R15GM
Connections	G1/4	G3/8	G1/2	G1/2
Nominal flow rate (NI/min) ^(A)	1000	2100		4300
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145		10 - 1 - 145
Pressure adjustment-relieving version (bar)	0,5 ÷ 8,5	0,5 ÷ 8,5		0,5 ÷ 8,5
Pressure gauge (standard supplied)	HZ9464G	HZ9464G		HZ9464G
Pressure gauge adaptor	G1/8 ^(B)	G1/8 ^(C)		G1/8 ^(C)

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

(B) = Upon request (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8, to be ordered separately)

(C) = Standard supplied (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8 placed on the rear side)

Other available versions

Without manometer size 0



Size	Part No.
0	HZE0R08G

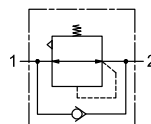
Lockable knob size 1-2



Size	Part No.
1	HZE1RL10GM - HZE1RL15GM
2	HZE2RL15GM

Check valve size 0-1-2

The check valve inside the regulator allows to relieve downstream pressure in a quick and effective way.



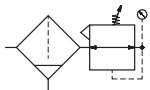
Size	Part No.
0	HZE0R08GMV
1	HZE1R10GMV-HZE1R15GMV
2	HZE2R15GMV

Lubricator

				
	Size	0	1	2
Part No.	HZE0L08G	HZE1L10G	HZE1L15G	HZE2L15G
Connections	G1/4	G3/8	G1/2	G1/2
Nominal flow rate (NI/min) ^(A)	1400	4400		7000
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145		10 - 1 - 145
Bowl capacity (cm ³)	20	85		170
Recommended oil	ISO VG 32	ISO VG 32		ISO VG 32
Min. working flow rate (NI/min)	25	30		65

(A) = Inlet pressure 7 bar - Δp 0,5 bar

Filter regulator

				
	0	1	2	
Part No.	HZE0B08GM	HZE1B10GM	HZE1B15GM	HZE2B15GM
Connections	G1/4	G3/8	G1/2	G1/2
Filtration rate (µm)	5	5	5	5
Nominal flow rate (NI/min) ^(A)	600	2300	4500	4500
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	10 - 1 - 145	10 - 1 - 145
Pressure adjustment - relieving version (bar)	0,5 ÷ 8,5	0,5 ÷ 8,5	0,5 ÷ 8,5	0,5 ÷ 8,5
Pressure gauge (standard supplied)	HZ9464G	HZ9464G	HZ9464G	HZ9464G
Pressure gauge adaptor	G1/8 ^(B)	G1/8 ^(C)	G1/8 ^(C)	G1/8 ^(C)
Condensation drain capacity (cm ³)	12	45	80	80
Condensation drain	manual	manual	manual	manual

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

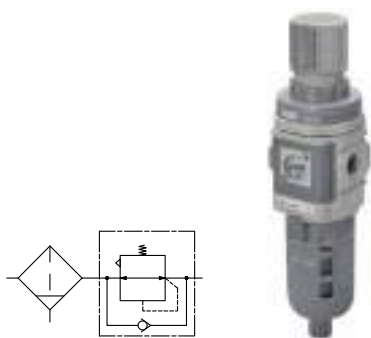
(B) = Upon request (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8, to be ordered separately)

(C) = Standard supplied (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8 placed on the rear side)

Other available versions

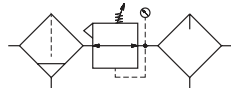
■ Check valve size 0-1-2

The check valve inside the filter regulator allows to relieve downstream pressure in a quick and effective way.



Size	Part No.
0	HZE0B08GMV
1	HZE1B10GMV-HZE1B15GMV
2	HZE2B15GMV

Filter regulator + Lubricator



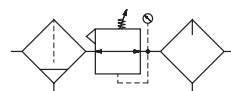
Size	0	1	2
Part No.	HZE0D08GM	HZE1D10GM	HZE1D15GM
Connections	G1/4	G3/8	G1/2
Filtration rate (µm)	5	5	5
Nominal flow rate (NI/min) ^(A)	600	2800	4300
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	10 - 1 - 145
Fluid	compressed air	compressed air	compressed air
Pressure adjustment - relieving version (bar)	0,5 ÷ 8,5	0,5 ÷ 8,5	0,5 ÷ 8,5
Pressure gauge (standard supplied)	HZ9464G	HZ9464G	HZ9464G
Pressure gauge adaptor	G1/8 ^(B)	G1/8 ^(C)	G1/8 ^(C)
Condensation drain capacity (cm ³)	12	45	80
Condensation drain	manual	manual	manual
Recommended oil	ISO VG 32	ISO VG 32	ISO VG 32
Min. working flow rate (NI/min)	25	30	65

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

(B) = Upon request (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8, to be ordered separately)

(C) = Standard supplied (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8 placed on the rear side)

Filter + Regulator + Lubricator



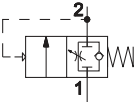
Size	0	1	2
Part No.	HZE0C08GM	HZE1C10GM	HZE1C15GM
Connections	G1/4	G3/8	G1/2
Filtration rate (µm)	5	5	5
Nominal flow rate (NI/min) ^(A)	550	1700	2500
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	10 - 1 - 145
Fluid	compressed air	compressed air	compressed air
Pressure adjustment - relieving version (bar)	0,5 ÷ 8,5	0,5 ÷ 8,5	0,5 ÷ 8,5
Pressure gauge (standard supplied)	HZ9464G	HZ9464G	HZ9464G
Pressure gauge adaptor	G1/8 ^(B)	G1/8 ^(C)	G1/8 ^(C)
Condensation drain capacity (cm ³)	12	45	80
Condensation drain	manual	manual	manual
Recommended oil	ISO VG 32	ISO VG 32	ISO VG 32
Min. working flow rate (NI/min)	25	30	65

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

(B) = Upon request (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8, to be ordered separately)

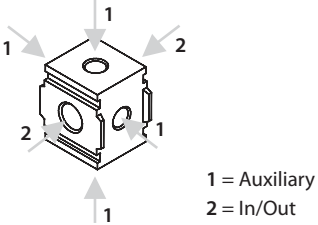
(C) = Standard supplied (replace HZ9464G gauge with HZE7Z480 square adaptor G1/8 placed on the rear side)

Gradual Starter

			
Size	0	1	
Part No.	HZE0Y08G	HZE1Y10G	HZE1Y15G
Connections	G1/4	G3/8	G1/2
Nominal flow rate (NI/min) ^(A)	900	2200	
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	
Min. pressure (bar)	2	3,5	
Fluid	compressed air	compressed air	

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

Diverter Block

			
Size	0	1	
Part No.	HZE0N08G	HZE1N10G	HZE1N15G
Connections	In/Out G1/4 Auxiliary G1/8	In/Out G3/8 Auxiliary G1/4	In/Out G1/2
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	
Fluid	compressed air	compressed air	

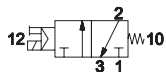
Use blanking plugs to close unused ways (not included)

Lockable Valve

Size	0	1	
Part No.	HZE0P08G	HZE1P10G	HZE1P15G
Connections	G1/4	G3/8	G1/2
Nominal flow rate (NI/min) ^(A)	900	5000	
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	
Fluid	compressed air	compressed air	

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

Shut-off valve



Size	0	1	
Part No.	HZE0508G	HZE1S10G	HZE1S15G
Connections	G1/4	G3/8	G1/2
Nominal flow rate (l/min) ^(A)	900	2800	
Max inlet pressure (bar-MPa-psi)	10 - 1 - 145	10 - 1 - 145	
Min. pressure (bar-MPa-psi)	2 - 0,16 - 23	2 - 0,2 - 29	
Fluid	compressed air	compressed air	
Commutation system	poppet	poppet	
Ways/Positions	3/2 NC	3/2 NC	
Control	indirect electropneumatic	indirect electropneumatic	
Nominal diameter (mm)	8	10	
Electropilot	U1 AA series	U1 AA series	
Coil	DA/DC	DA/DC	
Manual Override	two-position screw	two-position screw	

(A) = Inlet pressure 7 bar, outlet pressure 5 bar - Δp 1 bar

Coils



■ U1

DA-0050 12 V DC
DA-0051 24 V DC
DA-0106 24 V AC/50-60 Hz
DA-0108 110 V AC/50-60 Hz
DA-0124 230 V AC/50-60 Hz



■ U3

DC-0301 12 V DC
DC-0302 24 V DC
DC-0307 24 V AC/50-60 Hz
DC-0309 110 V AC/50-60 Hz
DC-0310 230 V AC/50-60 Hz

Other available versions

■ Size 0 U05



■ Size 1 U05



■ Size 1 U3 CNOMO



Solenoid valves are supplied with locking nut, without coil

HZE0/1Z200	HZE0/1/2Z210	HZE0/1/2Z300	HZE0/1/2Z310	HZE7Z480/90	HZE2Z500/501
					
Assembly kit Size 0 HZE0Z200 Size 1-2 HZE1Z200	T-bracket assembly kit Size 0 HZE0Z210 Size 1 HZE1Z210 Size 2 HZE2Z210	C-bracket Size 0 HZE0Z300 Size 1 HZE1Z300 Size 2 HZE2Z300	Regulator L-bracket Size 0 HZE0Z310 Size 1 HZE1Z310 Size 2 HZE2Z310	Threaded adaptor for pressure gauge Size 0-1-2 G1/8 HZE7Z480 G1/4 HZE7Z490 Screw torque: Max 0,6 Nm	Threaded ends Size 2 G3/4 HZE2Z500 G1 HZE2Z501

Filter and filter regulator accessories

HZE0/1/2Z600	HZE0/1/2Z600SS	HZE7Z400	HZE0/1Z401	HZE0/1Z402
				
Standard bowl with manual drain Size 0 HZE0Z600 Size 1 HZE1Z600 Size 2 HZE2Z600	Bowl with semi-automatic drain Size 0 HZE0Z600SS Size 1 HZE1Z600SS Size 2 HZE2Z600SS	Automatic drain Size 1-2 HZE7Z400	Semi-automatic drain Size 0 HZE0Z401 Size 1-2 HZE1Z401	Manual drain Size 0 HZE0Z402 Size 1-2 HZE1Z402

HZE0/1/2Z660	HZE1/2Z670
	
Filter elements 5 µm Size 0 HZE0Z660 Size 1 HZE1Z660 Size 2 HZE2Z660	Coalescing filter 0,3 µm Size 1 HZE1Z670 Size 2 HZE2Z670

Other filter elements upon request

Regulator and filter regulator accessories

HZE0/1/2Z602	HZE1/2Z652/4/8	HZE0/1/2Z603	HZE0/1/2Z610/1
			
Knob Size 0 HZE0Z602 Size 1 HZE1Z602 Size 2 HZE2Z602	Regulator spring Size 1 Pressure adjustment HZE1Z652 0,5 ÷ 1,7 HZE1Z654 0,5 ÷ 3,5 HZE1Z658 0,5 ÷ 8,5 Size 2 HZE2Z652 0,5 ÷ 1,7 HZE2Z654 0,5 ÷ 3,5 HZE2Z658 0,5 ÷ 8,5	Ring nut for panel Size 0 HZE0Z603 Size 1 HZE1Z603 Size 2 HZE2Z603	Diaphragm kit Size 0 HZE0Z610 relieving HZE0Z611 non-relieving Size 1 HZE1Z610 relieving HZE1Z611 non-relieving Size 2 HZE2Z610 relieving HZE2Z611 non-relieving

Lubricator accessories

HZE0/1/2Z601	HZE7Z470
	
Standard bowl Size 0 HZE0Z601 Size 1 HZE1Z601 Size 2 HZE2Z601	Lubricator transparent dome Size 0-1-2 HZE7Z470

Pressure gauge

■ HZ9P



Thread: brass, copper alloy
Body: technopolymer
Movement: brass
Indicator: aluminium, black painted
Dial: acrylic pressure mounted
Accuracy: EN 837 class 1,6 - 2,5. ASME B40.1 grade B
Protection: IP 43

Part No.	Ø	Scale		Thread
		Bar	MPa	
HZ9P400318	40	0 - 2,5	0 - 0,25	R1/8
HZ9P400618	40	0 - 6	0 - 0,6	R1/8
HZ9P401018	40	0 - 10	0 - 1	R1/8
HZ9P500314	50	0 - 2,5	0 - 0,25	R1/4
HZ9P500614	50	0 - 6	0 - 0,6	R1/4
HZ9P501014	50	0 - 10	0 - 1	R1/4
HZ9P630314	63	0 - 2,5	0 - 0,25	R1/4
HZ9P630614	63	0 - 6	0 - 0,6	R1/4
HZ9P631014	63	0 - 10	0 - 1	R1/4

Pressure gauge with flange for panel mounting

■ HZ9PB



Thread: brass, copper alloy
Body: metal, black painted
Assembly: chromium plated front flange with 3 holes
Movement: brass
Indicator: aluminium, black painted
Dial: acrylic
Accuracy: EN 837 class 1,6 - 2,5. ASME B40.1 grade B
Protection: IP 43

Part No.	Ø	Scale		Thread
		Bar	MPa	
HZ9PB400318	40	0 - 2,5	0 - 0,25	R1/8
HZ9PB400618	40	0 - 6	0 - 0,6	R1/8
HZ9PB401018	40	0 - 10	0 - 1	R1/8
HZ9PB500314	50	0 - 2,5	0 - 0,25	R1/4
HZ9PB500614	50	0 - 6	0 - 0,6	R1/4
HZ9PB501014	50	0 - 10	0 - 1	R1/4
HZ9PB630314	63	0 - 2,5	0 - 0,25	R1/4
HZ9PB630614	63	0 - 6	0 - 0,6	R1/4
HZ9PB631014	63	0 - 10	0 - 1	R1/4

Pressure gauge with bracket for panel mounting

■ HZ9PBS



Thread: brass, copper alloy
Body: metal, black painted
Assembly: border with rear bracket
Movement: brass
Indicator: aluminium, black painted
Dial: acrylic
Accuracy: EN 837 class 1,6 - 2,5. ASME B40.1 grade B
Protection: IP 43

Part No.	Ø	Scale		Thread
		Bar	MPa	
HZ9PBS400318	40	0 - 2,5	0 - 0,25	R1/8
HZ9PBS400618	40	0 - 6	0 - 0,6	R1/8
HZ9PBS401018	40	0 - 10	0 - 1	R1/8
HZ9PBS500314	50	0 - 2,5	0 - 0,25	R1/4
HZ9PBS500614	50	0 - 6	0 - 0,6	R1/4
HZ9PBS501014	50	0 - 10	0 - 1	R1/4
HZ9PBS630314	63	0 - 2,5	0 - 0,25	R1/4
HZ9PBS630614	63	0 - 6	0 - 0,6	R1/4
HZ9PBS631014	63	0 - 10	0 - 1	R1/4

Recessed pressure gauge

■ HZ9464G



Body: tecnopolymer
Assembly: HZE series regulator and filter regulator size 0-1-2
Scale: 0 ÷ 12 bar
Dial: polycarbonate
Accuracy: ± 3% full scale

Precision regulators

■ HZRP10



Adjusting range

HZRP1008GA 0,1 ÷ 3 bar
 HZRP1008GB 0,1 ÷ 4 bar
 HZRP1008GC 0,1 ÷ 8 bar

HZRP12: version with oversized exhaust

■ HZRP20



Adjusting range

HZRP2008GA 0 ÷ 0,1 bar
 HZRP2008GB 0 ÷ 1 bar
 HZRP2008GC 0 ÷ 2 bar
 HZRP2008GD 0 ÷ 4 bar
 HZRP2008GE 0 ÷ 10 bar

Part No.	HZRP10	HZRP20
Fluid	filtered compressed air, not lubricated	
Connections	G1/4	
Max pressure	10 bar	17 bar
Ambient temperature	-17 ÷ +55 °C	-40 ÷ +70 °C
Nominal flow rate	420 NI/min ^(B)	1600 NI/min ^(B)
Consumption	3 NI/min	30 ÷ 375 NI/min (based on outlet pressure)
Exhaust capacity	HZRP10 = 90 NI/min HZRP12 = 330 NI/min	
Pressure variation	less than 0,4 mbar ^(A)	
Sensitivity	0,3 mbar	
Body	zamak	die-cast aluminium
Diaphragms	NBR	NBR
Capsule and adjusting screw	stainless steel	stainless steel, brass
Knob	technopolymer	technopolymer

(A) = HZRP10 With supply pressure variation 2 bar

(A) = HZRP20 With supply pressure variation 7 bar

(B) = HZRP10 Inlet pressure 7 bar, outlet pressure 1,4 bar

(B) = HZRP20 Inlet pressure 7 bar, outlet pressure 5 bar, Δp 1 bar

HZRP1310



Fixing bracket
for HZRP10

HZRP2310



Fixing bracket
for HZRP20

HZ9P...



Gauges Ø50 - R1/4
 HZ9P500314 0 - 2,5 bar
 HZ9P500614 0 - 6 bar
 HZ9P501014 0 - 10 bar

Electro-pneumatic transducers



■ HZRE10

Adjusting range
 0,2 ÷ 1 bar
 0,14 ÷ 4 bar
 0,2 ÷ 8 bar

■ HZRE20

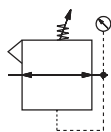
Adjusting range
 0,2 ÷ 1 bar
 0,14 ÷ 4 bar
 0,14 ÷ 7 bar

Part No.	HZRE10	HZRE20
Fluid	filtered compressed air, not lubricated	
Connections	G1/4	
Max pressure	7 ÷ 10 bar	7 ÷ 9 bar
Temperature	-30 ÷ +65 °C	-40 ÷ +70 °C
Flow rate	350 ÷ 600 NI/min	
Control Signal	0-10 V / 4-20 mA	
Voltage	-	7-30 V DC
Control System	Piezoelectric open ring	Piezoelectric closed ring
Hysteresis	< 0,5% F.S.	± 0,10% F.S.
Repeatability		

Values of pressure and flow rate vary according to the model of transducer.

For further information please contact our Sales Office

Microregulators for air



Part No.	HZRM08G
Ambient temperature	-10 ÷ 50 °C
Max working pressure	20 bar
Fluid-relieving version	filtered air, with or without lubrication, neutral gases
Pressure adjustment ^(A)	0,8 ÷ 8 bar
Connections	G1/4
Pressure gauge connections	G1/8
Nominal flow rate ^(B)	320 NI/min
Body	alluminium
Knob	technopolymer
Bonnet	technopolymer
Spring	steel C85
Diaphragm	nitrile rubber (NBR)

(A) = Different adjustment range upon request

(B) = Nitrogen flow rate inlet pressure 15 bar, outlet pressure 5 bar, Δp 1 bar

Ring nut for panel mounting not included

HZRM603

HZRM310

HZRM652/4/8

HZRM610/1

AZ-0200



Ring nut for panel
HZRM603 Technopolymer

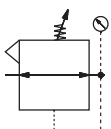
Regulator L-bracket
HZRM310 Nickel-plated steel

Regulator spring
Pressure adjustment:
HZRM652 0,2÷1,5 bar
HZRM654 0,3÷3 bar
HZRM658 1,5÷15 bar

Diaphragm kit
HZRM610 relieving
HZRM611 non-relieving

Grub screw G1/8
AZ-0200

Microregulators for air and water



	Brass	Stainless steel
Part No.	Upon request	
Ambient temperature	-10 ÷ 50 °C	-20 ÷ 80 °C
Max working pressure	20 bar	30 bar
Fluid relieving version	filtered air, with or without lubrication, neutral gases	
non-relieving version	water and compatible fluids	
Pressure adjustment ^(A)	0,8 ÷ 8 bar	
Connections	G1/4	
Pressure gauge connections	G1/8	
Nominal flow rate ^(B)	320 NI/min	
Body	brass	stainless steel AISI 316
Knob	technopolymer	-
Bonnet	technopolymer	stainless steel AISI 316
Bonnet upon request	brass	technopolymer
Spring	steel C85	stainless steel AISI 302
Diaphragm	NBR	stainless steel AISI 316

(A) = Different adjustment range upon request

(B) = Nitrogen flow rate Inlet pressure 15 bar, outlet pressure 5 bar, Δp 1 bar

Ring nut for panel mounting not included

HZRM603/603A

HZRM310/310A



Ring nut for panel
HZRM603 Technopolymer
HZRM603A Stainless steel AISI 316L

Regulator L-bracket
HZRM310 Nickel-plated steel
HZRM310A Stainless steel AISI 316L

5



Accessories

	Push-in Fittings	HA HAR HB	2 5 6
	Fittings with pneumatic functions	HC	9
	Standard Fittings	HD	13
	Push-on Fittings	HGC	16
	Olive Fittings	HGO	18
	Quick Couplings	HGU	19
	Tubes	HE/HF	20
	Magnetic and Electronic Sensors	DF DH/KM DF-R/DF-T	21 22 22

CHARACTERISTICS

Temperature	-20 ÷ 80 °C (based on the type of tube)
Fluid	compressed air, vacuum
Max pressure	15 bar
Working pressure	-0,99 ÷ 10 bar
Body	technopolymer
Fixing elements	nickel-plated brass with O-ring in NBR for parallel thread version (standard) teflon coating for taper thread version (upon request)
Clamp	stainless steel
Release ring	technopolymer
Application fields	pneumatic circuits
Recommended hoses	polyamide PA 10.12, polyurethane Sh.A98, co-polyurethane Sh.55D

HA02

Smooth body straight parallel male



Ø	connection
HA0204M5	4 M5
HA0206M5	6 M5
HA020418	4 G1/8
HA020618	6 G1/8
HA020818	8 G1/8
HA020414	4 G1/4
HA020614	6 G1/4
HA020814	8 G1/4
HA021014	10 G1/4
HA020838	8 G3/8
HA021038	10 G3/8
HA021238	12 G3/8
HA021012	10 G1/2
HA021212	12 G1/2

HA04

Straight parallel male



Ø	connection
HA0404M5	4 M5
HA0406M5	6 M5
HA040418	4 G1/8
HA040618	6 G1/8
HA040818	8 G1/8
HA040414	4 G1/4
HA040614	6 G1/4
HA040814	8 G1/4
HA041014	10 G1/4
HA040838	8 G3/8
HA041038	10 G3/8
HA041238	12 G3/8
HA041012	10 G1/2
HA041212	12 G1/2

HA06

Plastic straight parallel male



Ø	connection
HA060618	6 G1/8
HA060818	8 G1/8
HA060614	6 G1/4
HA060814	8 G1/4
HA061014	10 G1/4
HA060838	8 G3/8
HA061038	10 G3/8
HA061238	12 G3/8
HA061012	10 G1/2
HA061212	12 G1/2

HA07

Straight female



Ø	connection
HA070418	4 G1/8
HA070618	6 G1/8
HA070818	8 G1/8
HA070614	6 G1/4
HA070814	8 G1/4
HA071014	10 G1/4
HA070838	8 G3/8
HA071038	10 G3/8
HA071238	12 G3/8
HA071212	12 G1/2

HA08

Swivel elbow female



Ø	connection
HA080418	4 G1/8
HA080618	6 G1/8
HA080818	8 G1/8
HA080614	4 G1/4
HA080814	8 G1/4
HA081014	10 G1/4
HA080838	8 G3/8
HA081038	10 G3/8
HA081238	12 G3/8
HA081212	12 G1/2

HA10B

Low elbow



NEW

Ø	connection
HA10B04M5	4 M5
HA10B06M5	6 M5
HA10B0418	4 G1/8
HA10B0618	6 G1/8
HA10B0818	8 G1/8
HA10B0414	4 G1/4
HA10B0614	6 G1/4
HA10B0814	8 G1/4
HA10B1014	10 G1/4
HA10B0838	8 G3/8
HA10B1038	10 G3/8
HA10B1238	12 G3/8
HA10B1012	10 G1/2
HA10B1212	12 G1/2

HA12

Extended swivel elbow parallel male



Ø	connection
HA1204M5	4 M5
HA1206M5	6 M5
HA120418	4 G1/8
HA120618	6 G1/8
HA120818	8 G1/8
HA120414	4 G1/4
HA120614	6 G1/4
HA120814	8 G1/4
HA121014	10 G1/4
HA120638	6 G3/8
HA120838	8 G3/8
HA121038	10 G3/8
HA121238	12 G3/8
HA121012	10 G1/2
HA121212	12 G1/2

HA12B

Extended swivel low elbow parallel male



NEW

Ø	connection
HA12B04M5	4 M5
HA12B06M5	6 M5
HA12B0418	4 G1/8
HA12B0618	6 G1/8
HA12B0818	8 G1/8
HA12B0414	4 G1/4
HA12B0614	6 G1/4
HA12B0814	8 G1/4
HA12B1014	10 G1/4
HA12B0638	6 G3/8
HA12B0838	8 G3/8
HA12B1038	10 G3/8
HA12B1238	12 G3/8
HA12B1012	10 G1/2
HA12B1212	12 G1/2

HA14

Lateral Tee male



Ø	connection
HA1404M5	4 M5
HA1406M5	6 M5
HA140418	4 G1/8
HA140618	6 G1/8
HA140818	8 G1/8
HA140614	6 G1/4
HA140814	8 G1/4
HA141014	10 G1/4
HA140838	8 G3/8
HA141038	10 G3/8
HA141238	12 G3/8
HA141012	10 G1/2
HA141212	12 G1/2

HA14B

Low lateral Tee male



NEW

Ø	connection
HA14B04M5	4 M5
HA14B06M5	6 M5
HA14B0418	4 G1/8
HA14B0618	6 G1/8
HA14B0818	8 G1/8
HA14B0614	6 G1/4
HA14B0814	8 G1/4
HA14B1014	10 G1/4
HA14B0838	8 G3/8
HA14B1038	10 G3/8
HA14B1238	12 G3/8
HA14B1012	10 G1/2
HA14B1212	12 G1/2

HA16

Central Tee male



Ø	connection
HA1604M5	4 M5
HA1606M5	6 M5
HA160418	4 G1/8
HA160618	6 G1/8
HA160818	8 G1/8
HA160614	6 G1/4
HA160814	8 G1/4
HA161014	10 G1/4
HA160838	8 G3/8
HA161038	10 G3/8
HA161238	12 G3/8
HA161012	10 G1/2
HA161212	12 G1/2

HA16B

Low central Tee male



NEW

Ø	connection
HA16B04M5	4 M5
HA16B06M5	6 M5
HA16B0418	4 G1/8
HA16B0618	6 G1/8
HA16B0818	8 G1/8
HA16B0614	6 G1/4
HA16B0814	8 G1/4
HA16B1014	10 G1/4
HA16B0838	8 G3/8
HA16B1038	10 G3/8
HA16B1238	12 G3/8
HA16B1012	10 G1/2
HA16B1212	12 G1/2

■ HA18

Y parallel male



	Ø	connection
HA1804M5	4	M5
HA1806M5	6	M5
HA180418	4	G1/8
HA180618	6	G1/8
HA180818	8	G1/8
HA180614	6	G1/4
HA180814	8	G1/4
HA181014	10	G1/4
HA180838	8	G3/8
HA181038	10	G3/8
HA181238	12	G3/8
HA181012	10	G1/2
HA181212	12	G1/2

■ HA19

Intermediate straight



	Ø1	Ø2
HA190400	4	4
HA190600	6	6
HA190604	6	4
HA190800	8	8
HA190806	8	6
HA191000	10	10
HA191008	10	8
HA191200	12	12
HA191210	12	10

■ HA20

Intermediate elbow



	Ø
HA200400	4
HA200600	6
HA200800	8
HA201000	10
HA201200	12

■ HA21

Intermediate lateral Tee



	Ø
HA210400	4
HA210600	6
HA210800	8
HA211000	10
HA211200	12

■ HA22

Intermediate cross



	Ø
HA220400	4
HA220600	6
HA220800	8
HA221000	10
HA221200	12

■ HA23

Intermediate Y connector



	Ø1	Ø2
HA230404	4	4
HA230604	6	4
HA230606	6	6
HA230806	8	6
HA230808	8	8
HA231008	10	8
HA231010	10	10
HA231210	12	10
HA231212	12	12

■ HA24

Reducing stem



	Ø1	Ø2
HA240406	4	6
HA240408	4	8
HA240608	6	8
HA240610	6	10
HA240810	8	10
HA240812	8	12
HA241012	10	12

■ HA25

Y connector with male stem



	Ø
HA250400	4
HA250600	6
HA250800	8
HA251000	10
HA251200	12

■ HA26

Plug



	Ø
HA260400	4
HA260600	6
HA260800	8
HA261000	10
HA261200	12

■ HA27

Swivel banjo connector (parallel male thread) with wrench head



	Ø	connection
HA2704M5	4	M5
HA2706M5	6	M5
HA270418	4	G1/8
HA270618	6	G1/8
HA270818	8	G1/8
HA270614	6	G1/4
HA270814	8	G1/4
HA271014	10	G1/4
HA270838	8	G3/8
HA271038	10	G3/8
HA271238	12	G3/8
HA271012	10	G1/2
HA271212	12	G1/2

■ HA28

Swivel banjo connector parallel male-female



	Ø	connection
HA2804M5	4	M5
HA2806M5	6	M5
HA280418	4	G1/8
HA280618	6	G1/8
HA280818	8	G1/8
HA280614	6	G1/4
HA280814	8	G1/4
HA281014	10	G1/4
HA280838	8	G3/8
HA281038	10	G3/8
HA281238	12	G3/8
HA281012	10	G1/2
HA281212	12	G1/2

■ HA29

Triple branch lateral Tee



	Ø
HA290400	4
HA290600	6
HA290800	8

■ HA30

Triple branch lateral Tee



	Ø1	Ø2
HA300604	6	4
HA300804	8	4
HA300806	8	6
HA301006	10	6
HA301008	10	8

■ HA31

Triple branch lateral Tee male thread



	Ø1	Ø2	connection
HA314618	6	4	G1/8
HA314814	8	4	G1/4
HA316814	8	6	G1/4
HA318138	10	8	G3/8
HA318112	10	8	G1/2

■ HA32

Triple branch lateral Tee male thread



	Ø	connection
HA320418	4	G1/8
HA320618	6	G1/8
HA320818	8	G1/8
HA320414	4	G1/4
HA320614	6	G1/4
HA320814	8	G1/4
HA320638	6	G3/8
HA320838	8	G3/8

HA33

Bulkhead connector



Ø	
4	HA330004
6	HA330006
8	HA330008
10	HA330010
12	HA330012

HA34

Threaded bulkhead connector



Ø	connection	
4	G1/8	HA340418
6	G1/8	HA340618
8	G1/8	HA340818
4	G1/4	HA340414
6	G1/4	HA340614
8	G1/4	HA340814
10	G1/4	HA341014
8	G3/8	HA340838
10	G3/8	HA341038
12	G3/8	HA341238
10	G1/2	HA341012
12	G1/2	HA341212

HA35

Elbow bulkhead connector



Ø	
4	HA350004
6	HA350006
8	HA350008
10	HA350010
12	HA350012

HA38

Stem elbow



Ø	
4	HA380400
6	HA380600
8	HA380800
10	HA381000
12	HA381200

HA39

Intermediate double Y



Ø1	Ø2	
6	4	HA390604
8	4	HA390804
8	6	HA390806
8	8	HA390808

NEW

HA40

Double Y parallel male



Ø	connection	
4	G1/8	HA400418
6	G1/8	HA400618
8	G1/8	HA400818
6	G1/4	HA400614
8	G1/4	HA400814
10	G1/4	HA401014
6	G3/8	HA400638
8	G3/8	HA400838
6	G1/2	HA400612
8	G1/2	HA400812

NEW

HA41

Swivel banjo connector (parallel thread) with allen head



Ø	connection	
4	G1/8	HA410418
6	G1/8	HA410618
8	G1/8	HA410818
4	G1/4	HA410414
6	G1/4	HA410614
8	G1/4	HA410814
10	G1/4	HA411014
12	G1/4	HA411214
4	G3/8	HA410438
6	G3/8	HA410638
8	G3/8	HA410838
10	G3/8	HA411038
12	G3/8	HA411238
8	G1/2	HA410812
10	G1/2	HA411012
12	G1/2	HA411212

NEW

HA42

Double banjo connector (parallel thread) with allen head



Ø	connection	
4	G1/8	HA420418
6	G1/8	HA420618
8	G1/8	HA420818
4	G1/4	HA420414
6	G1/4	HA420614
8	G1/4	HA420814
10	G1/4	HA421014
12	G1/4	HA421214
4	G3/8	HA420438
6	G3/8	HA420638
8	G3/8	HA420838
10	G3/8	HA421038
12	G3/8	HA421238
8	G1/2	HA420812
10	G1/2	HA421012
12	G1/2	HA421212

NEW

HA43

Triple banjo connector (parallel thread) with allen head



Ø	connection	
4	G1/8	HA430418
6	G1/8	HA430618
8	G1/8	HA430818
4	G1/4	HA430414
6	G1/4	HA430614
8	G1/4	HA430814
10	G1/4	HA431014
12	G1/4	HA431214
4	G3/8	HA430438
6	G3/8	HA430638
8	G3/8	HA430838
10	G3/8	HA431038
12	G3/8	HA431238
8	G1/2	HA430812
10	G1/2	HA431012
12	G1/2	HA431212

NEW

■ Teflon coated taper thread
(available upon request
for all HA models)



HC01/HC02



HC04



HC01T/HC02T



HC01L/HC02L



CHARACTERISTICS

Temperature	0 ÷ 60 °C
Fluid	compressed air, vacuum
Working pressure	-0,99 ÷ 9 bar
Body	technopolymer
Fixing elements	nickel-plated brass with O-ring in NBR
Clamp	stainless steel
Release ring	technopolymer
Application fields	pneumatic circuits
Recommended hoses	polyamide PA 10.12, polyurethane Sh.A98, co-polyurethane Sh.55D

■ HAR04 Miniature straight male



	Ø	connection
HAR0403M3	3	M3
HAR0404M3	4	M3
HAR0404M5	4	M5

■ HAR10B Miniature swivel elbow male



	Ø	connection
HAR10B03M3	3	M3
HAR10B04M3	4	M3
HAR10B04M5	4	M5

■ HAR12B Miniature extended swivel elbow male



	Ø	connection
HAR12B03M3	3	M3
HAR12B04M3	4	M3
HAR12B04M5	4	M5

■ HAR14B Miniature low lateral Tee male



	Ø	connection
HAR14B03M3	3	M3
HAR14B04M3	4	M3
HAR14B04M5	4	M5

■ HAR16B Miniature low central Tee male



	Ø	connection
HAR16B03M3	3	M3
HAR16B04M3	4	M3
HAR16B04M5	4	M5

■ HAR19 Miniature intermediate straight



	Ø
HAR190300	3
HAR190400	4

■ HAR20 Miniature intermediate elbow



	Ø
HAR200300	3
HAR200400	4

■ HAR21 Miniature intermediate Tee



	Ø
HAR210300	3
HAR210400	4

■ HAR23 Miniature intermediate Y



	Ø
HAR230300	3
HAR230400	4

CHARACTERISTICS

Temperature	-20 ÷ 70 °C (based on the type of tube)
Fluid	compressed air, vacuum
Max pressure	16 bar
Working pressure	-0,99 ÷ 10 bar
Body	nickel-plated brass
Fixing elements	nickel-plated brass with O-ring in NBR for parallel thread version (standard) Teflon coating for taper thread version (upon request)
Clamp	stainless steel AISI 316
Release ring	nickel-plated brass
Application fields	pneumatic circuits
Recommended hoses	polyamide PA 10.12, polyurethane Sh.A98, co-polyurethane Sh.55D

HB04

Straight parallel male



	Ø	connection		Ø	connection
HB0403M3	3	M3	HB040514	5	G1/4
HB0403M5	3	M5	HB040414	4	G1/4
HB0404M5	4	M5	HB041438	14	G3/8
HB0405M5	5	M5	HB041238	12	G3/8
HB0406M5	6	M5	HB041038	10	G3/8
HB041018	10	G1/8	HB040838	8	G3/8
HB040818	8	G1/8	HB040638	6	G3/8
HB040618	6	G1/8	HB041412	14	G1/2
HB040518	5	G1/8	HB041212	12	G1/2
HB040418	4	G1/8	HB041012	10	G1/2
HB041214	12	G1/4	HB040812	8	G1/2
HB041014	10	G1/4			
HB040814	8	G1/4			
HB040614	6	G1/4			

HB07

Straight female



	Ø	connection
HB0704M5	4	M5
HB070418	4	G1/8
HB070518	5	G1/8
HB070618	6	G1/8
HB070818	8	G1/8
HB071038	10	G3/8
HB070414	4	G1/4
HB070514	5	G1/4
HB070614	6	G1/4
HB070814	8	G1/4
HB071014	10	G1/4

HB08

Swivel elbow female



	Ø	connection
HB080418	4	G1/8
HB080618	6	G1/8
HB080818	8	G1/8
HB080414	4	G1/4
HB080614	6	G1/4
HB080814	8	G1/4

HB10

Swivel elbow male



	Ø	connection		Ø	connection
HB1004M5	4	M5	HB100838	8	G3/8
HB1005M5	5	M5	HB101038	10	G3/8
HB1006M5	6	M5	HB101238	12	G3/8
HB100418	4	G1/8	HB101438	14	G3/8
HB100518	5	G1/8	HB101012	10	G1/2
HB100618	6	G1/8	HB101212	12	G1/2
HB100818	8	G1/8	HB101412	14	G1/2
HB100414	4	G1/4			
HB100514	5	G1/4			
HB100614	6	G1/4			
HB100814	8	G1/4			
HB101014	10	G1/4			
HB101214	12	G1/4			
HB100638	6	G3/8			

HB12

Extended swivel elbow male



	Ø	connection
HB1204M5	4	M5
HB1206M5	6	M5
HB120418	4	G1/8
HB120618	6	G1/8
HB120818	8	G1/8
HB120414	4	G1/4
HB120614	6	G1/4
HB120814	8	G1/4
HB121014	10	G1/4
HB120838	8	G3/8
HB121038	10	G3/8

HB14

Lateral Tee parallel male



	Ø	connection
HB1404M5	4	M5
HB140418	4	G1/8
HB140618	6	G1/8
HB140818	8	G1/8
HB140414	4	G1/4
HB140614	6	G1/4
HB140814	8	G1/4
HB141014	10	G1/4
HB141214	12	G1/4
HB140838	8	G3/8
HB141038	10	G3/8
HB141238	12	G3/8
HB141412	14	G1/2

HB16

Central Tee male



	Ø	connection
HB1604M5	4	M5
HB160418	4	G1/8
HB160618	6	G1/8
HB160818	8	G1/8
HB160414	4	G1/4
HB160614	6	G1/4
HB160814	8	G1/4
HB161014	10	G1/4
HB161214	12	G1/4
HB160838	8	G3/8
HB161038	10	G3/8
HB161238	12	G3/8
HB161412	14	G1/2

HB19

Straight



	Ø1	Ø2
HB190303	3	3
HB190404	4	4
HB190505	5	5
HB190604	6	4
HB190606	6	6
HB190806	8	6
HB190808	8	8
HB191008	10	8
HB191010	10	10
HB191210	12	10
HB191212	12	12
HB191412	14	12
HB191414	14	14

■ HB20

Intermediate elbow

	Ø
	
HB200300	3
HB200400	4
HB200500	5
HB200600	6
HB200800	8
HB201000	10
HB201200	12
HB201400	14

■ HB21

Intermediate Tee

	Ø1	Ø2
		
HB210300	3	3
HB210400	4	4
HB210500	5	5
HB210600	6	6
HB210604	6	4
HB210800	8	8
HB210806	8	6
HB211000	10	10
HB211008	10	8
HB211200	12	12
HB211400	14	14

■ HB24

Reducing stem

	Ø1	Ø2		Ø1	Ø2
					
HB240405	4	5	HB240612	6	12
HB240406	4	6	HB240614	6	14
HB240408	4	8	HB240806	8	6
HB240412	4	12	HB240810	8	10
HB240414	4	14	HB240812	8	12
HB240506	5	6	HB240814	8	14
HB240508	5	8	HB241012	10	12
HB240604	6	4	HB241014	10	14
HB240608	6	8	HB241214	12	14
HB240610	6	10			

■ HB26

Plug

	Ø
	
HB260400	4
HB260500	5
HB260600	6
HB260800	8
HB261000	10
HB261200	12
HB261400	14

■ HB27

Swivel banjo connector (parallel thread) with allen head

	Ø	connection		Ø	connection
					
HB2703M3	3	M3	HB270614	6	G1/4
HB2703M5	3	M5	HB270814	8	G1/4
HB2704M5	4	M5	HB271014	10	G1/4
HB2705M5	5	M5	HB271214	12	G1/4
HB270418	4	G1/8	HB270838	8	G3/8
HB270518	5	G1/8	HB271038	10	G3/8
HB270618	6	G1/8	HB271238	12	G3/8
HB270818	8	G1/8			

■ HB33

Bulkhead connector

	Ø
	
HB330004	4
HB330005	5
HB330006	6
HB330008	8
HB330010	10
HB330012	12
HB330014	14

■ HB34

Threaded bulkhead connector

	Ø	connection
		
HB340418	4	G1/8
HB340618	6	G1/8
HB340818	8	G1/8
HB340614	6	G1/4
HB340814	8	G1/4

■ HB35

Elbow bulkhead connector

	Ø
	
HB350004	4
HB350006	6
HB350008	8
HB350010	10

■ HB38

Stem elbow

	Ø1	Ø2
		
HB380400	4	4
HB380406	4	6
HB380600	6	6
HB380608	6	8
HB380800	8	8
HB381000	10	10
HB381200	12	12

■ HB39

Extended stem elbow

	Ø1	Ø2
		
HB390400	4	4
HB390406	4	6
HB390600	6	6
HB390608	6	8
HB390800	8	8

HB40

Single banjo (without bolt)



	Ø	bolt
HB4004M5	4	M5
HB4005M5	5	M5
HB4006M5	6	M5
HB400418	4	G1/8
HB400518	5	G1/8
HB400618	6	G1/8
HB400818	8	G1/8
HB400614	6	G1/4
HB400814	8	G1/4
HB401014	10	G1/4
HB401214	12	G1/4
HB400838	8	G3/8
HB401038	10	G3/8
HB401238	12	G3/8

HB41

Double banjo (without bolt)



	Ø	bolt
HB4104M5	4	M5
HB4105M5	5	M5
HB410418	4	G1/8
HB410518	5	G1/8
HB410618	6	G1/8
HB410818	8	G1/8
HB410614	6	G1/4
HB410814	8	G1/4
HB411014	10	G1/4
HB410838	8	G3/8
HB411038	10	G3/8
HB411238	12	G3/8

HB42

Single banjo bolt



	connection
HB4200M5	M5
HB420018	G1/8
HB420014	G1/4
HB420038	G3/8

HB43

Double banjo bolt



	connection
HB430018	G1/8
HB430014	G1/4
HB430038	G3/8

HB44

Triple banjo bolt



	connection
HB440018	G1/8
HB440014	G1/4
HB440038	G3/8

HB45

Swivel banjo central Tee (parallel male) with allen head



	Ø	connection
HB4504M5	4	M5
HB4505M5	5	M5
HB450418	4	G1/8
HB450518	5	G1/8
HB450618	6	G1/8
HB450818	8	G1/8
HB450614	6	G1/4
HB450814	8	G1/4
HB451014	10	G1/4
HB450838	8	G3/8
HB451038	10	G3/8
HB451238	12	G3/8

HB47

Double swivel banjo connector (male thread) with allen head



	Ø	connection
HB470418	4	G1/8
HB470618	6	G1/8
HB470818	8	G1/8
HB470614	6	G1/4
HB470814	8	G1/4
HB471014	10	G1/4
HB471214	12	G1/4

HB48

Triple swivel banjo connector (parallel thread) with allen head



	Ø	connection
HB480418	4	G1/8
HB480618	6	G1/8
HB480818	8	G1/8
HB480614	6	G1/4
HB480814	8	G1/4
HB481014	10	G1/4
HB481214	12	G1/4

HB49

Double stem



	Ø
HB490400	4
HB490500	5
HB490600	6
HB490800	8
HB491000	10
HB491200	12
HB491400	14

HB51

Adaptor parallel male



	Ø	connection		Ø	connection
HB5104M5	4	M5	HB510614	6	G1/4
HB5105M5	5	M5	HB510814	8	G1/4
HB5106M5	6	M5	HB511014	10	G1/4
HB510418	4	G1/8	HB511214	12	G1/4
HB510518	5	G1/8	HB510838	8	G3/8
HB510618	6	G1/8	HB511038	10	G3/8
HB510818	8	G1/8	HB511238	12	G3/8
HB511018	10	G1/8	HB511438	14	G3/8
HB510414	4	G1/4	HB511212	12	G1/2
HB510514	5	G1/4	HB511412	14	G1/2

HB53

Fixed elbow taper male



	Ø	connection
HB530418	4	R1/8
HB530518	5	R1/8
HB530618	6	R1/8
HB530818	8	R1/8
HB530614	6	R1/4
HB530814	8	R1/4
HB531014	10	R1/4

CHARACTERISTICS

Temperature	-20 ÷ 80 °C (based on the type of tube)
Fluid	compressed air, vacuum
Max pressure	15 bar
Working pressure	-0,99 ÷ 10 bar
Body	technopolymer
Fixing elements	nickel-plated brass with O-ring in NBR for parallel thread version (standard) Teflon coating for taper thread version (upon request)
Clamp	stainless steel
Release ring	technopolymer
Application fields	pneumatic circuits
Recommended hoses	polyamide PA 10.12, polyurethane Sh.A98, co-polyurethane Sh.55D

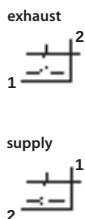
Flow regulators in technopolymer

■ HC01/HC02

One-way banjo flow regulator



exhaust	supply	Ø	connection
HC0104M5	HC0204M5	4	M5
HC0106M5	HC0206M5	6	M5
HC010418	HC020418	4	G1/8
HC010618	HC020618	6	G1/8
HC010818	HC020818	8	G1/8
HC010414	HC020414	4	G1/4
HC010614	HC020614	6	G1/4
HC010814	HC020814	8	G1/4
HC011014	HC021014	10	G1/4
HC010838	HC020838	8	G3/8
HC011038	HC021038	10	G3/8
HC011238	HC021238	12	G3/8
HC011012	HC021012	10	G1/2
HC011212	HC021212	12	G1/2



■ HC01L /HC02L

One-way in-line swivel banjo flow regulator



NEW

exhaust	supply	Ø	connection
HC01L0418	HC02L0418	4	G1/8
HC01L0618	HC02L0618	6	G1/8
HC01L0818	HC02L0818	8	G1/8
HC01L0414	HC02L0414	4	G1/4
HC01L0614	HC02L0614	6	G1/4
HC01L0814	HC02L0814	8	G1/4
HC01L1014	HC02L1014	10	G1/4
HC01L1214	HC02L1214	12	G1/4
HC01L1038	HC02L1038	10	G3/8
HC01L1238	HC02L1238	12	G3/8



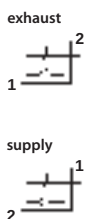
■ HC01T/HC02T

One-way swivel banjo flow regulator - screwdriver slot



NEW

exhaust	supply	Ø	connection
HC01T0418	HC02T0418	4	G1/8
HC01T0618	HC02T0618	6	G1/8
HC01T0818	HC02T0818	8	G1/8
HC01T1018	HC02T1018	10	G1/8
HC01T1218	HC02T1218	12	G1/8
HC01T0614	HC02T0614	6	G1/4
HC01T0814	HC02T0814	8	G1/4
HC01T1014	HC02T1014	10	G1/4
HC01T1214	HC02T1214	12	G1/4
HC01T0638	HC02T0638	6	G3/8
HC01T0838	HC02T0838	8	G3/8
HC01T1038	HC02T1038	10	G3/8
HC01T1238	HC02T1238	12	G3/8



■ HC04

One-way in-line intermediate flow regulator



	Ø1
HC040404	4
HC040606	6
HC040808	8
HC041010	10
HC041212	12



CHARACTERISTICS

Temperature	0 ÷ 70 °C
Fluid	compressed air
Max pressure	10 bar
Working pressure	0,3 ÷ 10 bar

Flow regulators with metallic body

HC21/HC22

One-way banjo flow regulator



	exhaust	supply	Ø	connection
1	HC2104M5	HC2204M5	4	M5
2	HC210418	HC220418	4	G1/8
	HC210618	HC220618	6	G1/8
	HC210818	HC220818	8	G1/8
	HC210614	HC220614	6	G1/4
	HC210814	HC220814	8	G1/4
	HC211014	HC221014	10	G1/4

HC18/HC19

One-way banjo flow regulator - screwdriver slot



	exhaust	supply	Ø	connection
1	HC1804M5	HC1904M5	4	M5
2	HC180418	HC190418	4	G1/8
	HC180618	HC190618	6	G1/8
	HC180818	HC190818	8	G1/8
	HC180614	HC190614	6	G1/4
	HC180814	HC190814	8	G1/4
	HC181014	HC191014	10	G1/4

HC27/HC28

One-way threaded flow regulator male/female



	exhaust	supply	connection
1	HC27M5M5	HC28M5M5	M5
2	HC271818	HC281818	G1/8
	HC271414	HC281414	G1/4
	HC273838	HC283838	G3/8
	HC271212	HC281212	G1/2

Non-return valve

HC13

Non-return valve F-F



	connection
1	HC1300M5
2	HC130018
	HC130014
	HC130038
	HC130012

High temperature seals upon request

HC14

Non-return valve F-M



	connection
1	HC140018
2	HC140014

High temperature seals upon request

HC15

Non-return valve with push-in tube connections



	Ø
1	HC150004
2	HC150006
	HC150008

HC16

Non-return valve with push-in tube connections



	Ø
1	HC160404
2	HC160606
	HC160808
	HC161010
	HC161212

NEW

HC17

Non-return valve threaded connection



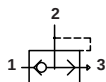
	Ø	connection
1	HC170418	4 G1/8
2	HC170618	6 G1/8
	HC170818	8 G1/8
	HC170614	6 G1/4
	HC170814	8 G1/4
	HC171038	10 G3/8
	HC171238	12 G3/8
	HC171012	10 G1/2
	HC171212	12 G1/2

NEW

Quick exhaust valves

HC06

Quick exhaust valve

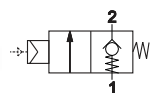


flow rate at 6 bar (l/min)

	connection	1 → 2	2 → 3
HC0600M5	M5	220	300
HC060018	G1/8	680	1100
HC060014	G1/4	1200	2100
HC060038	G3/8	2300	4800
HC060012	G1/2	3400	6100
HC060034	G3/4	3200	8750
HC060001	G1	2900	10.750

Blocking valve

HC34



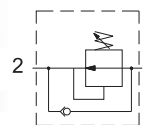
	M	F	flow rate at 6 bar (l/min)
HC3418M5	G1/8	M5	400
HC3414M5	G1/4	M5	850
HC343818	G3/8	G1/8	1250

HB40 Single banjo
(without bolt)



Miniature pressure regulator

HC35



	connection	flow rate at 6 bar (l/min)
HC350018	G1/8	580
HC350014	G1/4	750

HB40 Single banjo
(without bolt)



CHARACTERISTICS

Temperature

0 ÷ 70 °C

Fluid

0 ÷ 60 °C (technopolymer HC11-12)

Max pressure

compressed air, vacuum

Working pressure

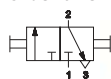
15 bar

-0,99 ÷ 10 bar

Line manual valve

HC05

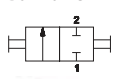
Slide valve



	connection
HC0500M5	M5
HC050018	G1/8
HC050014	G1/4
HC050038	G3/8
HC050012	G1/2
HC050034	G3/4

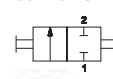
HC07

Ball valve F-F



HC08

Ball valve M-F

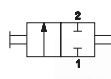


	connection
HC070018	G1/8
HC070014	G1/4
HC070038	G3/8
HC070012	G1/2
HC070034	G3/4

	connection
HC080018	G1/8
HC080014	G1/4
HC080038	G3/8
HC080012	G1/2
HC080034	G3/4

HC09

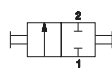
Miniature ball valve F-F with black handle



	connection
HC090018	G1/8
HC090014	G1/4

HC10

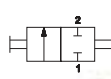
Miniature ball valve M-F with black handle



	connection
HC100018	G1/8
HC100014	G1/4

HC11

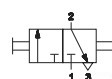
Manual 2/2 minivalve



	Ø
HC110606	6
HC110808	8
HC111010	10
HC111212	12

HC12

Manual 3/2 minivalve



	Ø
HC120606	6
HC120808	8
HC121010	10
HC121212	12

Silencers

■ HC51

Sintered bronze flat silencer



	connection
HC5100M5	M5
HC510018	G1/8
HC510014	G1/4
HC510038	G3/8
HC510012	G1/2
HC510034	G3/4
HC510001	G1
HC510112	G1 1/2

■ HC52

Sintered bronze cone silencer



	connection
HC5200M5	M5
HC520018	G1/8
HC520014	G1/4
HC520038	G3/8
HC520012	G1/2
HC520034	G3/4
HC520001	G1

■ HC53

Sintered bronze cone silencer
(with square wrench head)



	connection
HC5300M5	M5
HC530018	G1/8
HC530014	G1/4
HC530038	G3/8
HC530012	G1/2
HC530034	G3/4
HC530001	G1

■ HC54

Silencer with exhaust flow regulator (narrow)



	connection
HC5400M5	M5
HC540018	G1/8
HC540014	G1/4
HC540038	G3/8
HC540012	G1/2
HC540034	G3/4
HC540001	G1

■ HC55

Silencer with exhaust flow regulator



	connection
HC5500M5	M5
HC550018	G1/8
HC550014	G1/4
HC550038	G3/8
HC550012	G1/2
HC550034	G3/4
HC550001	G1

■ HC56

Technopolymer dynamic silencer



	connection
HC560018	G1/8
HC560014	G1/4
HC560038	G3/8
HC560012	G1/2
HC560034	G3/4
HC560001	G1

■ HC57

Polyethylene plastic silencer



	connection
HC5700M5	M5
HC570018	G1/8
HC570014	G1/4
HC570038	G3/8
HC570012	G1/2
HC570034	G3/4
HC570001	G1

■ HC58

Technopolymer silencer



	connection
HC580018	G1/8
HC580014	G1/4
HC580038	G3/8
HC580012	G1/2
HC580034	G3/4
HC580001	G1

■ HC59

Silencer with dome-shaped steel head



	connection
HC5900M5	M5
HC590018	G1/8
HC590014	G1/4
HC590038	G3/8
HC590012	G1/2
HC590034	G3/4
HC590001	G1

■ HC60

Cone silencer with hexagon nipple



	connection
HC6000M5	M5
HC600018	G1/8
HC600014	G1/4
HC600038	G3/8
HC600012	G1/2
HC600034	G3/4
HC600001	G1
HC600112	G1 1/2

■ HC61

Recessed silencer



	connection
HC6100M5	M5
HC610018	G1/8
HC610014	G1/4
HC610038	G3/8
HC610012	G1/2
HC610034	G3/4
HC610001	G1

CHARACTERISTICS

Temperature	-15 ÷ +80 °C
Max pressure	50 bar
Body	nickel-plated brass, aluminium, zinc-plated steel
Application fields	pneumatic circuits, low-pressure oleodynamic and hydraulic circuits, vacuum

HD01

Parallel nipple



	connection 1	connection 2	key
HD01M5M5	M5	M5	8
HD01M518	M5	G1/8	14
HD011818	G1/8	G1/8	14
HD011814	G1/8	G1/4	17
HD011838	G1/8	G3/8	19
HD011414	G1/4	G1/4	17
HD011438	G1/4	G3/8	19
HD011412	G1/4	G1/2	24
HD013838	G3/8	G3/8	19
HD013812	G3/8	G1/2	24
HD011212	G1/2	G1/2	24
HD011234	G1/2	G3/4	30
HD013434	G3/4	G3/4	30

HD02

Taper nipple



	connection 1	connection 2	key
HD021818	R1/8	R1/8	12
HD021814	R1/8	R1/4	14
HD021838	R1/8	R3/8	17
HD021414	R1/4	R1/4	14
HD021438	R1/4	R3/8	17
HD021412	R1/4	R1/2	22
HD023838	R3/8	R3/8	17
HD023812	R3/8	R1/2	22
HD021212	R1/2	R1/2	22
HD021234	R1/2	R3/4	27
HD023434	R3/4	R3/4	27
HD023401	R3/4	R1	34
HD020101	R1	R1	34

HD03

Female socket



	connection	key
HD0300M5	M5	8
HD030018	G1/8	14
HD030014	G1/4	17
HD030038	G3/8	22
HD030012	G1/2	26
HD030034	G3/4	32

HD04

Reduction M-F taper thread



	connection M	connection F	key
HD041814	R1/4	G1/8	14
HD041838	R3/8	G1/8	17
HD041812	R1/2	G1/8	22
HD041438	R3/8	G1/4	17
HD041412	R1/2	G1/4	22
HD043812	R1/2	G3/8	22
HD043834	R3/4	G3/8	27
HD041234	R3/4	G1/2	27

HD05

Reduction M-F parallel thread



	connection M	connection F	key
HD05M518	G1/8	M5	14
HD051814	G1/4	G1/8	17
HD051838	G3/8	G1/8	19
HD051812	G1/2	G1/8	24
HD051438	G3/8	G1/4	19
HD051412	G1/2	G1/4	24
HD053812	G1/2	G3/8	24
HD053834	G3/4	G3/8	30
HD051234	G3/4	G1/2	30

HD06

Extension M-F taper thread



	connection M	connection F	key
HD061818	R1/8	G1/8	14
HD061814	R1/8	G1/4	17
HD061838	R1/8	G3/8	22
HD061414	R1/4	G1/4	17
HD061438	R1/4	G3/8	22
HD061412	R1/4	G1/2	24
HD063838	R3/8	G3/8	22
HD063812	R3/8	G1/2	24
HD061212	R1/2	G1/2	26
HD061234	R1/2	G3/4	32

HD07

Extension M-F parallel thread



	connection M	connection F	key
HD07M518	M5	G1/8	14
HD071818	G1/8	G1/8	14
HD071814	G1/8	G1/4	17
HD071838	G1/8	G3/8	22
HD071414	G1/4	G1/4	17
HD071438	G1/4	G3/8	22
HD071412	G1/4	G1/2	24
HD073838	G3/8	G3/8	22
HD073812	G3/8	G1/2	24
HD071212	G1/2	G1/2	26

HD08

Extension M-F parallel thread



	connection M-F	key
HD081822	G1/8	14
HD081435	G1/4	17
HD081451	G1/4	17
HD081842	G1/8	14
HD081851	G1/8	14

HD09

Extension F-F



	connection 1	connection 2	key
HD091814	G1/8	G1/4	17
HD091838	G1/8	G3/8	22
HD091812	G1/8	G1/2	24
HD091438	G1/4	G3/8	22
HD091412	G1/4	G1/2	24
HD093812	G3/8	G1/2	24
HD091234	G1/2	G3/4	32

HD10

Male plug with hexagon wrench head



	connection	key
HD1000M5	M5	8
HD100018	G1/8	14
HD100014	G1/4	17
HD100038	G3/8	19
HD100012	G1/2	24
HD100034	G3/4	30
HD100001	G1	38

HD11

Male plug (taper thread) with allen head



	connection	key
HD110018	R1/8	5
HD110014	R1/4	6
HD110038	R3/8	8
HD110012	R1/2	10

HD12

Male plug with O-ring (allen head)



	connection	key
HD1200M5	M5	2,5
HD120018	G1/8	5
HD120014	G1/4	6
HD120038	G3/8	8
HD120012	G1/2	10

HD13

Female plug



	connection	key
HD130018	G1/8	14
HD130014	G1/4	17
HD130038	G3/8	20
HD130012	G1/2	24

HD14

Elbow connector F-F



	connection	key
HD1400M5	M5	8
HD140018	G1/8	10
HD140014	G1/4	13
HD140038	G3/8	17
HD140012	G1/2	21
HD140034	G3/4	25
HD140001	G1	30

HD15

Elbow connector M-F



	connection 1	connection 2	key
HD1500M5	M5	M5	9
HD150018	R1/8	G1/8	10
HD151814	R1/4	G1/8	10
HD150014	R1/4	G1/4	13
HD150038	R3/8	G3/8	17
HD150012	R1/2	G1/2	21
HD150034	R3/4	G3/4	25
HD150001	R1	G1	30

HD16

Elbow connector M-M (taper thread)

	connection 1	connection 2	key
HD1600M5	M5	M5	9
HD160018	R1/8	R1/8	10
HD161814	R1/8	R1/4	10
HD160014	R1/4	R1/4	13
HD160038	R3/8	R3/8	17
HD160012	R1/2	R1/2	21
HD160034	R3/4	R3/4	25
HD160001	R1	R1	30



HD17

Intermediate Tee F-F-F (parallel thread)

	connection	key
HD1700M5	M5	9
HD170018	G1/8	10
HD170014	G1/4	13
HD170038	G3/8	17
HD170012	G1/2	21
HD170034	G3/4	25
HD170001	G1	30



HD18

Central Tee M-F-F

	connection M	connection F	key
HD1800M5	M5	M5	9
HD180018	R1/8	G1/8	10
HD180014	R1/4	G1/4	13
HD180038	R3/8	G3/8	17
HD180012	R1/2	G1/2	21
HD180034	R3/4	G3/4	25
HD180001	R1	G1	30



HD19

Lateral Tee M-F-F

	connection M	connection F	key
HD1900M5	M5	M5	9
HD190018	R1/8	G1/8	10
HD190014	R1/4	G1/4	13
HD190038	R3/8	G3/8	17
HD190012	R1/2	G1/2	21
HD190034	R3/4	G3/4	25
HD190001	R1	G1	30



HD20

Intermediate Tee M-M-M (taper thread)

	connection	key
HD200018	R1/8	10
HD200014	R1/4	13
HD200038	R3/8	17
HD200012	R1/2	21
HD200034	R3/4	25
HD200001	R1	30



HD21

Lateral Tee M-F-M

	connection M	connection F	key
HD210018	R1/8	G1/8	10
HD210014	R1/4	G1/4	13
HD210038	R3/8	G3/8	17
HD210012	R1/2	G1/2	21
HD210034	R3/4	G3/4	25
HD210001	R1	G1	30



HD22

Cross F-F-F-F

	connection	key
HD220018	G1/8	10
HD220014	G1/4	13
HD220038	G3/8	17
HD220012	G1/2	21



HD24

Tube adaptor (parallel thread)

Ø	connection	key
HD2404M5	4 M5	8
HD240618	6 G1/8	14
HD240718	7 G1/8	14
HD240818	8 G1/8	14
HD240918	9 G1/8	14
HD241018	10 G1/8	14
HD240614	6 G1/4	17
HD240714	7 G1/4	17
HD240814	8 G1/4	17
HD240914	9 G1/4	17
HD241014	10 G1/4	17
HD241214	12 G1/4	17
HD240938	9 G3/8	19
HD241038	10 G3/8	19



Ø	connection	key
HD241238	12 G3/8	19
HD241438	14 G3/8	19
HD241738	17 G3/8	19
HD241212	12 G1/2	24
HD241412	14 G1/2	24
HD241712	17 G1/2	24
HD242012	20 G1/2	30
HD242034	20 G3/4	30

HD25

Y connector F-F-F

	connection	key
HD250018	G1/8	10
HD250014	G1/4	13
HD250038	G3/8	17
HD250012	G1/2	21



HD26

Y connector M-F-F

	connection M	connection F	key
HD260018	R1/8	G1/8	13
HD260014	R1/4	G1/4	17
HD260038	R3/8	G3/8	20
HD260012	R1/2	G1/2	25



HD27

Threaded bulkhead connector

	connection	key
HD2700M5	M5	14
HD270018	G1/8	19
HD270014	G1/4	24
HD270038	G3/8	30
HD270012	G1/2	32



HD32

Female single banjo

	connection
HD3200M5	M5
HD320018	G1/8
HD320014	G1/4



HD33

Taper nipple - 3 pieces

	connection	key
HD330018	R1/8	15
HD330014	R1/4	19
HD330038	R3/8	22
HD330012	R1/2	27
HD330034	R3/4	36
HD330001	R1	46



HD34

Female nipple - 3 pieces

	connection	key
HD340018	G1/8	14
HD340014	G1/4	17
HD340038	G3/8	21
HD340012	G1/2	25



HD42

Single banjo bolt

	connection	key
HD4200M5	M5	8
HD420018	R1/8	14
HD420014	R1/4	17
HD420038	R3/8	19
HD420012	R1/2	24



Washer to be used
HD46 2 pcs

HD43

Double banjo bolt

	connection	key
HD430018	R1/8	14
HD430014	R1/4	17
HD430038	R3/8	19
HD430012	R1/2	24



Washer to be used
HD46 3 pcs

HD44

Triple banjo bolt

	connection	key
HD440018	R1/8	14
HD440014	R1/4	17



Washer to be used
HD46 4 pcs

HD45

Aluminium washer



	connection	thickness (mm)
HD4500M5	M5	1
HD450018	G1/8	1,5
HD450014	G1/4	1,5
HD450038	G3/8	1,5
HD450012	G1/2	1,5

HD46

Indented nylon washer



	connection	thickness (mm)
HD4600M5	M5	1
HD460018	G1/8	1,6
HD460014	G1/4	1,6
HD460038	G3/8	1,8
HD460012	G1/2	2

Accessories

HD23

Cross block F-F-F-F



	connection
HD230018	G1/8
HD230014	G1/4
HD230038	G3/8
HD230012	G1/2

HD30

Distribution manifold (single outlets)



	In	Out	nr.
HD301803	G1/4	G1/8	3
HD301804	G1/4	G1/8	4
HD301805	G1/4	G1/8	5
HD301806	G1/4	G1/8	6
HD301403	G3/8	G1/4	3
HD301404	G3/8	G1/4	4
HD301405	G3/8	G1/4	5
HD301406	G3/8	G1/4	6
HD303803	G1/2	G3/8	3
HD303804	G1/2	G3/8	4
HD303805	G1/2	G3/8	5
HD303806	G1/2	G3/8	6

HD31

Distributors manifold (double outlets)



	In	Out	nr.
HD311803	G1/4	G1/8	3+3
HD311804	G1/4	G1/8	4+4
HD311805	G1/4	G1/8	5+5
HD311403	G3/8	G1/4	3+3
HD311404	G3/8	G1/4	4+4
HD311405	G3/8	G1/4	5+5

HD40

Reservoir (Max pressure 10 bar)



HD400100	lt 1
HD400250	lt 2,5
HD400500	lt 5
HD400700	lt 7
HD401200	lt 12

HD410000A

Stainless steel AISI 301 bracket



HD410000B

Reservoir extension



AM50



AM51



AM52



AM53



AM54



AM5200



AM5220



AM55



AM series (p. 3.92/93)

CHARACTERISTICS

Temperature	-15 ÷ 80 °C
Fluid	compressed air, vacuum, liquid
Working pressure	-0,99 ÷ 10 bar
Max pressure	16 bar
Body	nickel-plated brass
Nut	nickel-plated brass
Seal	NBR
Application fields	pneumatic circuits
Recommended tube	polyamide PA 10.12, polyurethane Sh.A98, co-polyurethane Sh.55D

HGC03

Male straight taper thread



Ø connection	Ø connection
HGC030418 4 - 2,7 R1/8	HGC030838 8 - 6 R3/8
HGC030518 5 - 3 R1/8	HGC031038 10 - 8 R3/8
HGC030618 6 - 4 R1/8	HGC031238 12 - 10 R3/8
HGC030818 8 - 6 R1/8	HGC030812 8 - 6 R1/2
HGC031018 10 - 8 R1/8	HGC031012 10 - 8 R1/2
HGC030614 6 - 4 R1/4	HGC031212 12 - 10 R1/2
HGC030814 8 - 6 R1/4	HGC031512 15 - 12,5 R1/2
HGC031014 10 - 8 R1/4	
HGC030638 6 - 4 R3/8	

HGC04

Male straight parallel thread with O-Ring



Ø connection	Ø connection
HGC0404M5 4 - 2,7 M5	HGC041038 10 - 8 G3/8
HGC0405M5 5 - 3 M5	HGC041238 12 - 10 G3/8
HGC0406M5 6 - 4 M5	HGC041012 10 - 8 G1/2
HGC040418 4 - 2,7 G1/8	HGC041212 12 - 10 G1/2
HGC040618 6 - 4 G1/8	
HGC040818 8 - 6 G1/8	
HGC041018 10 - 8 G1/8	
HGC040614 6 - 4 G1/4	
HGC040814 8 - 6 G1/4	
HGC041014 10 - 8 G1/4	
HGC040838 8 - 6 G3/8	

HGC07

Female straight



Ø connection
HGC070618 6 - 4 G1/8
HGC070818 8 - 6 G1/8
HGC070614 6 - 4 G1/4
HGC070814 8 - 6 G1/4
HGC071014 10 - 8 G1/4
HGC070838 8 - 6 G3/8
HGC071038 10 - 8 G3/8
HGC071238 12 - 10 G3/8

HGC08

Female elbow



Ø connection
HGC080618 6 - 4 G1/8
HGC080614 6 - 4 G1/4
HGC080818 8 - 6 G1/8
HGC080814 8 - 6 G1/4
HGC080838 8 - 6 G3/8
HGC081014 10 - 8 G1/4
HGC081038 10 - 8 G3/8
HGC081238 12 - 10 G3/8

HGC09

Taper elbow connection male



Ø connection
HGC090418 4 - 2,7 R1/8
HGC090518 5 - 3 R1/8
HGC090618 6 - 4 R1/8
HGC090818 8 - 6 R1/8
HGC091018 10 - 8 R1/8
HGC090614 6 - 4 R1/4
HGC090814 8 - 6 R1/4
HGC091014 10 - 8 R1/4
HGC090638 6 - 4 R3/8
HGC090838 8 - 6 R3/8
HGC091038 10 - 8 R3/8
HGC091238 12 - 10 R3/8
HGC090812 8 - 6 R1/2
HGC091012 10 - 8 R1/2
HGC091212 12 - 10 R1/2
HGC091512 15 - 12,5 R1/2

HGC10

Swivel elbow with OR



Ø connection
HGC100618 6 - 4 G1/8
HGC100818 8 - 6 G1/8
HGC100614 6 - 4 G1/4
HGC100814 8 - 6 G1/4
HGC101014 10 - 8 G1/4
HGC100838 8 - 6 G3/8
HGC101038 10 - 8 G3/8
HGC101238 12 - 10 G3/8

HGC14

Male lateral Tee taper thread



Ø connection
HGC140618 6 - 4 R1/8
HGC140614 6 - 4 R1/4
HGC140818 8 - 6 R1/8
HGC140814 8 - 6 R1/4
HGC140838 8 - 6 R3/8
HGC141014 10 - 8 R1/4
HGC141038 10 - 8 R3/8
HGC141012 10 - 8 R1/2
HGC141238 12 - 10 R3/8
HGC141212 12 - 10 R1/2
HGC141512 15 - 12,5 R1/2

HGC16

Male central Tee taper thread



Ø connection
HGC160618 6 - 4 R1/8
HGC160614 6 - 4 R1/4
HGC160818 8 - 6 R1/8
HGC160814 8 - 6 R1/4
HGC160838 8 - 6 R3/8
HGC161014 10 - 8 R1/4
HGC161038 10 - 8 R3/8
HGC161012 10 - 8 R1/2
HGC161238 12 - 10 R3/8
HGC161212 12 - 10 R1/2
HGC161512 15 - 12,5 R1/2

HGC19

Intermediate straight



Ø
HGC190600 6 - 4
HGC190800 8 - 6
HGC191000 10 - 8
HGC191200 12 - 10
HGC191500 15 - 12,5

HGC20

Intermediate elbow



Ø
HGC200400 4 - 2,7
HGC200600 6 - 4
HGC200800 8 - 6
HGC201000 10 - 8
HGC201200 12 - 10
HGC201500 15 - 12,5

HGC21

Intermediate Tee



Ø
HGC210400 4 - 2,7
HGC210600 6 - 4
HGC210800 8 - 6
HGC211000 10 - 8
HGC211200 12 - 10
HGC211500 15 - 12,5

■ HGC22

Intermediate cross



	Ø
HGC220600	6 - 4
HGC220800	8 - 6
HGC221000	10 - 8

■ HGC30

Nut



	Ø	thread
HGC300400	4 - 2	M7x0,75
HGC300600	6 - 4	M10x1
HGC300800	8 - 6	M12x1
HGC301000	10 - 8	M14x1
HGC301200	12 - 10	M16x1
HGC301500	15 - 12,5	M20x1

■ HGC33

Intermediate straight bulkhead connector



	Ø
HGC330610	6 - 4
HGC330812	8 - 6
HGC331014	10 - 8
HGC331216	12 - 10
HGC331520	15 - 12,5

■ HGC40

Single banjo



	Ø	connection
HGC4004M5	4 - 2	M5
HGC4005M5	5 - 3	M5
HGC4006M5	6 - 4	M5
HGC400618	6 - 4	G1/8
HGC400818	8 - 6	G1/8
HGC400614	6 - 4	G1/4
HGC400814	8 - 6	G1/4
HGC401014	10 - 8	G1/4
HGC400838	8 - 6	G3/8
HGC401038	10 - 8	G3/8

Bolt to be used:
HD42 - HD43 - HD44

CHARACTERISTICS

Temperature	-15 ÷ 80 °C
Fluid	compressed air, water, oil
Working pressure	130 bar (Ø4), 180 bar (Ø6), 150 bar (Ø8), 110 bar (Ø10), 75 bar (Ø12), 70 bar (Ø15)
Body	nickel-plated brass
Nut	nickel-plated brass
Seals	NBR
Application fields	pneumatic circuits
Recommended tube	copper alloy, brass, stainless steel, plastic (reinforcing core)

HGO03

Male straight taper thread



	Ø	connection
HGO030418	4	R1/8
HGO030618	6	R1/8
HGO030818	8	R1/8
HGO030614	6	R1/4
HGO030814	8	R1/4
HGO031014	10	R1/4
HGO030838	8	R3/8
HGO031038	10	R3/8
HGO031238	12	R3/8
HGO031212	12	R1/2
HGO031512	15	R1/2

HGO04

Male straight parallel thread



	Ø	connection
HGO040418	4	G1/8
HGO040618	6	G1/8
HGO040818	8	G1/8
HGO040614	6	G1/4
HGO040814	8	G1/4
HGO041014	10	G1/4
HGO040838	8	G3/8
HGO041038	10	G3/8

HGO09

Male elbow taper thread



	Ø	connection
HGO090418	4	R1/8
HGO090618	6	R1/8
HGO090818	8	R1/8
HGO090614	6	R1/4
HGO090814	8	R1/4
HGO091014	10	R1/4
HGO090838	8	R3/8
HGO091038	10	R3/8
HGO091238	12	R3/8
HGO091212	12	R1/2
HGO091512	15	R1/2

HGO14

Male lateral Tee



	Ø	connection
HGO140418	4	R1/8
HGO140618	6	R1/8
HGO140818	8	R1/8
HGO140614	6	R1/4
HGO140814	8	R1/4
HGO141014	10	R1/4
HGO141038	10	R3/8
HGO141238	12	R3/8
HGO141212	12	R1/2

HGO16

Male central Tee taper thread



	Ø	connection
HGO160418	4	R1/8
HGO160618	6	R1/8
HGO160818	8	R1/8
HGO160614	6	R1/4
HGO160814	8	R1/4
HGO161014	10	R1/4
HGO161038	10	R3/8
HGO161238	12	R3/8
HGO161212	12	R1/2
HGO161512	15	R1/2

HGO19

Intermediate straight



	Ø
HGO190400	4
HGO190600	6
HGO190800	8
HGO191000	10
HGO191200	12
HGO191500	15

HGO20

Intermediate elbow



	Ø
HGO200400	4
HGO200600	6
HGO200800	8
HGO201000	10
HGO201200	12

HGO21

Intermediate Tee



	Ø
HGO210400	4
HGO210600	6
HGO210800	8
HGO211000	10
HGO211200	12
HGO211500	15

HGO30

Nut



	Ø	thread	key
HGO300400	4	8x1	10
HGO300600	6	10x1	12
HGO300800	8	12x1	14
HGO301000	10	16x1	19
HGO301200	12	18x1	22
HGO301500	15	30x1	27

HGO31

Olive



	Ø
HGO310400	4
HGO310600	6
HGO310800	8
HGO311000	10
HGO311200	12
HGO311500	15

HGO32

Reinforcing core



	Ø1
HGO320600	4
HGO320800	6
HGO321000	8
HGO321200	10
HGO321500	12,5

HGO33

Bulkhead connector



	Ø
HGO330600	6
HGO330800	8
HGO331000	10
HGO331200	12

HGO40

Single banjo



	Ø	connection
HGO400618	6	G1/8
HGO400818	8	G1/8
HGO400614	6	G1/4
HGO400814	8	G1/4

Bolt to be used:
HD42 - HD43 - HD44

CHARACTERISTICS

Temperature	-10 ÷ 80 °C
Fluid	compressed air
Max working pressure	12 bar
Body	nickel-plated brass, zinc-plated steel
Ferrule	nickel-plated brass, zinc-plated steel
Seals	NBR
Spring	nickel-plated brass, zinc-plated steel

■ HGU2001M Universal male socket  connection HGU2001M14 G1/4 HGU2001M38 G3/8 HGU2001M12 G1/2	■ HGU2001F Universal female socket  connection HGU2001F14 G1/4 HGU2001F38 G3/8 HGU2001F12 G1/2	■ HGU2002M Universal male plug  connection HGU2002M14 G1/4 HGU2002M38 G3/8
■ HGU2002F Universal female plug  connection HGU2002F14 G1/4 HGU2002F38 G3/8	■ HGU1001M Male mini socket  connection HGU1001M18 G1/8 HGU1001M14 G1/4	■ HGU1001F Female mini socket  connection HGU1001F18 G1/8 HGU1001F14 G1/4
■ HGU1002M Male mini plug  connection HGU1002M18 G1/8 HGU1002M14 G1/4	■ HGU1002F Female mini plug  connection HGU1002F18 G1/8 HGU1002F14 G1/4	

For further technical information contact our Sales Office

HE

HEA

Polyamide tubes PA10.12
Colors: neutral, black, blue, sky-blue

Part No.	Tube		
	Ø E	Ø I	R
HEA0420...	4	2	15
HEA0425...	4	2,5	20
HEA0604...	6	4	35
HEA0806...	8	6	40
HEA1008...	10	8	60
HEA1210...	12	10	85
HEA1412...	14	12	90

HED

Co-polyurethane tubes Sh. 55D
Colors: neutral, black, blue, sky-blue

Part No.	Tube		
	Ø E	Ø I	R
HED0420...	4	2,5	10
HED0604...	6	4	15
HED0806...	8	6	25
HED1008...	10	8	35
HED1209...	12	9	45

HEC

Polyurethane tubes Sh. A98
Colors: neutral, black, sky-blue

Part No.	Tube		
	Ø E	Ø I	R
HEC0420...	4	2	15
HEC0604...	6	4	20
HEC0806...	8	6	25
HEC1008...	10	8	35
HEC1209...	12	9	45

Ø E = External diameter (mm) Ø I = Internal diameter (mm) R = Bending radius (mm)

For color options, add the following suffixes to part no.:

NEU = Neutral **NER** = Black **BLU** = Blue **AZZ** = Sky-blue (example HEA0420NEU)

Min. package: 100 m coil

HF


HFA121015... and HFA121030...
available only blue and orange

HFA Rilsan® Spiral tubes

Polyamide Spiral Tubes PA10.12
Colors: neutral, blue, sky-blue, orange

Part No.	Tube			Spiral		
	Ø E	Ø I	Linear (mt)	Rest (mm)	Max Lenght (mt)	Ø I (mm)
HFA042010...	4	2	10	360	6	30
HFA042015...	4	2	15	550	9	30
HFA060415...	6	4	15	430	9	60
HFA060430...	6	4	30	870	17	60
HFA080615...	8	6	15	455	9	80
HFA080630...	8	6	30	910	17	80
HFA100815...	10	8	15	490	9	90
HFA100830...	10	8	30	990	17	90
HFA121015...	12	10	15	430	9	120
HFA121030...	12	10	30	870	17	120

HFC Elastollan® Spiral tubes with straight ends

Polyurethane Spiral Tubes (Sh.A98) with ends parallelling the spiral axis
Colors: neutral, sky-blue

Part No.	Tube			Spiral		
	Ø E	Ø I	Linear (mt)	Rest (mm)	Max Lenght (mt)	Ø I (mm)
HFC64C06...	6	4	6	380	4	25
HFC64C12...	6	4	12	760	8	25
HFC855C06...	8	5,5	6	310	4	40
HFC855C12...	8	5,5	12	640	8	40
HFC107C06...	10	7	6	330	4	50
HFC107C12...	10	7	12	680	8	50
HFC128C06...	12	8	6	320	4	60
HFC128C12...	12	8	12	660	8	60

Ø E = External diameter (mm) Ø I = Internal diameter (mm) End length 150 mm

For color options, add the following suffixes to part no.:

NEU = Neutral **BLU** = Blue **AZZ** = Sky-blue **ARA** = Orange

HD28

Tube cutter



Tube
HD280012 2÷12
HD280025 12÷25

DF


 Other available versions
 (M08-M12)

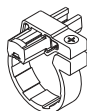
DF-220M08	DF-220M12
DF-330M08	DF-330M12
DF-440M08	DF-440M12
DF-770M08	DF-770M12

Cable extensions

DHF-033 M08 = 3 m M08
 DHF-033 M12 = 3 m M12
 DHF-053 M08 = 5 m M08
 DHF-053 M12 = 5 m M12

Type	ELECTROMECHANICAL			ELECTRONIC PNP
Part No.	DF-220	DF-330	DF-440	DF-770
Working voltage (V AC/DC)	5÷30 V AC/DC	5÷30 V AC/DC	5÷30 V AC/DC	5÷30 V DC
Max switching voltage (mA)	100	100	100	100
Max switching power (W/VA)	3	3	3	3
Max voltage drop (V AC/DC)	<3,5	0,1	0,1	0,7
Minimum magnetic field (gauss)	60	60	60	30
Opening response time (ms)	< 0,5	< 0,5	< 0,5	0,08
Closing response time (ms)	< 1	< 1	< 1	0,03
Electric life with resistive load (cycles)	>10 ⁷	>10 ⁷	>10 ⁷	>10 ⁹
State indicator (LED)	red	red	red	red
Cable number and section (mmq)	2x0,14	3x0,14	3x0,14	3x0,14
Cable length (mm)	3000	3000	3000	3000
Electric circuit	A	C	D	C
Protection degree (EN60529)	IP67			
Working temperature (°C)	-20 ÷ +80			

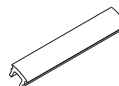
■ Fixing elements



DH-M10DF DH-M20DF
DH-M12DF DH-M25DF
DH-M16DF
 Fixing bracket for
 M series cylinders



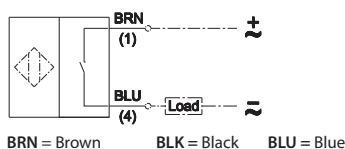
DF-001
 Cable clamping



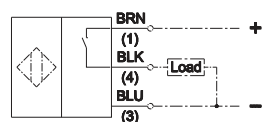
DHF-0020100
 Covering strip

■ Electrical Circuit

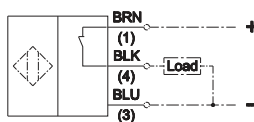
A AC/DC 2 wires NO



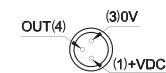
C DC 3 wires PNP NO



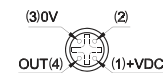
D DC 3 wires PNP NC



M08

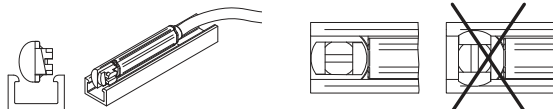


M12



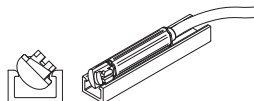
ASSEMBLY SCHEME

1



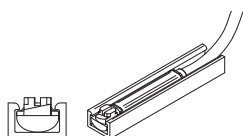
Put the sensor in the proper groove and make sure that the fastening plate has the slot for screwdriver along the sensor axis.

2



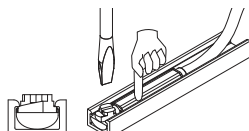
Put the sensor inside its groove and make sure that the fastening plate is on the open part of the groove.

3



Check the correct position of the sensor in the groove.
Turn it to the wished position for detection.

4



Keep the sensor in its position and screw the fastening plate to fix the sensor in the groove.
Max torque: 0,5 ÷ 1 Nm

DH



Other available versions
(M08-M12)

DH-200M08 DH-200M12
DH-500M08 DH-500M12
DH-700M08 DH-700M12

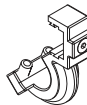
Cable extensions

DHF-033 M08 = 3 m M08
DHF-033 M12 = 3 m M12
DHF-053 M08 = 5 m M08
DHF-053 M12 = 5 m M12

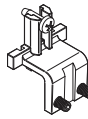
■ Fixing elements



DH-M10 DH-M20
DH-M12 DH-M25
DH-M16
Fixing bracket for
M series cylinders



DH-K032050
DH-K063125
DH-K160200
Fixing bracket for
KE-K-KL series cylinders



KM-032050-1
KM-063100-1
KM-125000-1
Fixing bracket for KM
sensors on ISO cylinders
(upon request)



DH-S25
DH-S32
DH-S40
DH-S50
Fixing bracket for S1 series
rodless cylinders

Type	ELECTROMECHANICAL			ELECTRONIC PNP
Part No.	KM-032000	DH-200	DH-500	DH-700
Working voltage (V AC/DC)	5÷250 V AC/DC	5÷250 V AC/DC	5÷250 V AC/DC	10÷30 V DC
Max switching voltage (mA)	1000	200	200	100
Max switching power (W/VA)	30	10	10	5
Max voltage drop (V AC/DC)	< 3,5	< 3,5	< 3,5	0,7
Minimum magnetic field (gauss)	85	85	60	30
Opening response time (ms)	< 0,5	< 0,5	< 0,5	0,08
Closing response time (ms)	< 1	< 1	< 1	0,03
Electric life with resistive load (cycles)	>10 ⁷	>10 ⁷	>10 ⁷	>10 ⁹
State indicator (LED)	red	red	red	red
Cable number and section (mmq)	2x0,25	2x0,25	2x0,25	3x0,25
Cable length (mm)	3000	3000	3000	3000
Electric circuit	A	A	A	C
Protection degree (EN60529)	IP65			
Working temperature (°C)	-20 ÷ +80			

DF-R/DF-T

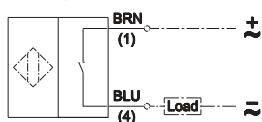


Type	ELECTROMECHANICAL		ELECTRONIC PNP	
Part No.	DF-R200L02	DF-R200M08	DF-R700L02	DF-R700M08
Working voltage (V AC/DC)	5÷120 V AC/DC	5÷120 V AC/DC	5÷30 V DC	5÷30 V DC
Max switching voltage (mA)	100	100	50	50
Max switching power (W/VA)	10	10	1,5	1,5
Shock resistance (G)	30	30	50	50
Max voltage drop (V AC/DC)	2,5	2,5	1,5	1,5
Cable number and section (mmq)	2 x 2,8 (PUR)	2 x 2,8 (PUR)	3x3 (PUR)	3x3 (PUR)
Cable length (mm)	2000	150	2000	150
Contact	NO	NO	NO	NO
Max response time (ms)	1	1	1	1
State indicator (LED)	red	red	green	green
Electric circuit	A	-	C	-
Protection degree (NEMA 6)	IP67			
Working temperature (°C)	-10 ÷ +70			

Type	ELECTROMECHANICAL		ELECTRONIC PNP	
Part No.	DF-T200L03	DF-T200M08	DF-T700L03	DF-T700M08
Working voltage (V AC/DC)	5÷120 V AC/DC	5÷120 V AC/DC	5÷30 V DC	5÷30 V DC
Max switching voltage (mA)	100	100	200	200
Max switching power (W/VA)	10	10	6	6
Shock resistance (G)	30	30	50	50
Max voltage drop (V AC/DC)	2,5	2,5 V	1	1
Cable number and section (mmq)	2 x 2,8 (PUR)	2 x 2,8 (PUR)	3 x 2,8 (PUR)	3 x 2,8 (PUR)
Cable length (mm)	3000	150	3000	150
Contact	NO	NO	NO	NO
Max response time (ms)	1	1	1	1
Protection degree (NEMA 6)	red	red	green	green
Electric circuit	A	-	C	-
State indicator (LED)	IP67			
Working temperature (°C)	-10 ÷ +70			

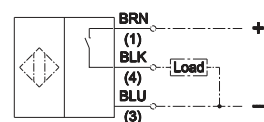
■ Electrical Circuit

A AC/DC 2 wires NO



BRN = Brown BLK = Black BLU = Blue

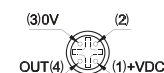
C DC 3 wires PNP NO



M8



M12



6



Power Clamps

	Pneumatic Power clamps	UBP/UBH IBP/IBM UBS UDP UBM/UBQ UBT UFL/UHL UNP/UNM DMS	4/5
	Retractable locating pin units	LCP/LCM LCG LCZ/LCY LCT/LCX LCA/LCO LCL	5/6
	Pin clamps	LSP LTP LUP LSL	6
	Gripper units	UGP UGM LGP	7
	Power pivots	DMA LAGP	7
	Marking units	PRP	7
	Electrical units	LAE LNE LGE LCE LAGE	8
	Accessories	CLAMPING ARMS UBK UBF DF Electronic sensor	8



STEPLESS ADJUSTMENT

Opening angle adjustment $0 \div 135^\circ$

LIGHT-WEIGHT

Clamping arm and clamp housing in aluminium alloy

UNIVER ORIGINAL LINKAGE DESIGN

Ensures positional repeatability

UNIVER ORIGINAL METAL SENSOR

Metal case
M12 swivel connector

UNIVER power clamps meet the requirements of the Automotive and sheet metal industries; they are mostly used for sheet metal handling, BIW applications and welding fixtures production.



CNOMO clamps' applications





Pneumatic power clamps' applications



Electric power pivots' applications



Our customers

Pneumatic power clamps

■ UBP

UNIVERSAL Pneumatic power clamp

Ø32
NEW



Ø Cylinder mm: 32 - 40 - 50 - 63 - 80
Fully adjustable opening angle

■ UBH

UNIVERSAL Pneumatic power clamp



Ø Cylinder mm: 40 - 63
Fully adjustable opening angle

■ IBP

Pneumatic power clamp interchangeable with size 50/63 mm



Ø Cylinder mm: 40
Fully adjustable opening angle

■ UBS

Safety pneumatic power clamp



Ø Cylinder mm: 40
In case of emergency (= no air) the safety clamp closes automatically

■ UDP

Pneumatic power clamp with 2 arms



Ø Cylinder mm: 40
Fully adjustable opening angle



Ø Cylinder mm: 63
Fully adjustable opening angle

■ UBM

UNIVERSAL Pneumatic power clamp with handlever



Ø Cylinder mm: 40 - 50 - 63 - 80
Fully adjustable opening angle

■ IBM

Pneumatic power clamp with handlever interchangeable with size 50/63 mm



Ø Cylinder mm: 40
Fully adjustable opening angle

■ UBQ

Pneumatic power clamp with handlever



Ø Cylinder mm: 40 - 63
Fully adjustable opening angle

■ UBT

Pneumatic power clamp with central handlever



Ø Cylinder mm: 40
Fully adjustable opening angle

■ UFL - UHL

Manual power clamps



Without pneumatic cylinders

Clamps conforming to the NAAMS and CNOMO standard

■ UNP

UNIVERSAL Pneumatic power clamps conforming to the N.A.A.M.S. Standard



Ø Cylinder mm: 50 - 63 - 80
Fully adjustable opening angle

■ UNM

UNIVERSAL Pneumatic power clamps with handlever conforming to the N.A.A.M.S. Standard



Ø Cylinder mm: 50 - 63
Fully adjustable opening angle

■ DMS

Pneumatic power clamps conforming to the CNOMO Standard



Ø Cylinder mm: 32 - 40 - 50 - 63
Fully adjustable opening angle

Retractable locating pin units, single and double rod

■ LCP

Pneumatic retractable locating pin units with single rod



LCP32
Ø Cylinder mm: 32
Stroke mm: 20 - 40



LCP50
Ø Cylinder mm: 50
Stroke mm: 15 - 25 - 40 - 50 - 60 - 75 - 100 - 110



LCP63
Ø Cylinder mm: 63
Versions: 15 - 25 - 40 - 50 - 60

■ LCG

Pneumatic retractable locating pin units, conforming to the CNOMO Standard, with single rod



Ø Cylinder mm: 50 - 63
Stroke mm: 25 - 50

■ LCZ

Pneumatic retractable locating pin units with single rod and toggle-joint mechanism



Ø Cylinder mm: 40
Stroke mm: 40

■ LCJ

Pneumatic retractable locating pin units, with improved pull force



Ø Cylinder mm: 50
Stroke mm: 25 - 40 - 60

NEW

■ LCA

Pneumatic retractable locating pin units with double rod



Ø Cylinder mm: 40
Stroke mm: 20 - 40



Ø Cylinder mm: 63
Stroke mm: 25 - 40 - 50 - 60

■ LCT

Pneumatic retractable locating pin units with double rod and toggle-joint mechanism



Ø Cylinder mm: 32 - 50
Stroke mm: 40

Retractable locating pin units with handlever

■ **LCM**

Pneumatic retractable locating pin unit with hand lever



Ø Cylinder mm: 50
Stroke mm: 25 - 40 - 50 - 60

■ **LCL**

Manual retractable locating pin unit



Stroke mm: 15 - 25 - 40 - 50 - 60
Without pneumatic cylinders

■ **LCO**

Pneumatic retractable locating pin unit with two rods and hand lever



Ø Cylinder mm: 50
Stroke mm: 40

■ **LCY**

Pneumatic retractable locating pin unit with hand lever and toggle-joint mechanism



Ø Cylinder mm: 40
Stroke mm: 40

■ **LCX**

Pneumatic retractable locating pin unit with two rods and hand lever and toggle-joint mechanism



Ø Cylinder mm: 50
Stroke mm: 40

Pneumatic pin clamps

■ **LSP**

Pneumatic pin clamp



Ø Cylinder mm: 32 - 50

■ **LSP50U**

Pneumatic pin clamp- horizontal shape



Ø Cylinder mm: 40

■ **LTP**

Pneumatic pin clamp with vanishing hook



Ø Cylinder mm: 50

■ **LUP**

Pneumatic pin clamp with vanishing hook and pin



Ø Cylinder mm: 63

■ **LSL**

Manual pin clamp



Multiple pin sizes available

Gripper units

■ UGP

Pneumatic gripper units



Ø Cylinder mm: 40

Versions: single and double jaws movement
Fully adjustable opening angle

■ UGM

Pneumatic gripper unit with hand lever



Ø Cylinder mm: 40

Versions: single and double jaws movement
Fully adjustable opening angle

■ LGP

Pneumatic gripper



NEW

Ø Cylinder mm: 32 - 40

Versions: single and double jaws movement

Power pivots

■ DMA

Pneumatic power pivots, CNOMO mounting



Ø Cylinder mm: 63

Fully adjustable opening angle

■ LAGP

Pneumatic power pivots



Ø Cylinder mm: 63 - 80 - 100 - 125 - 160 - 200

Size: 63-75-80-120-155-150-170-210-300

350 - 600 - 605

Brake system

Marking unit

■ PRP

Pneumatic marking unit



PRP025 - PRP050

Ø Cylinder mm: 63

Versions: single letter/number



PRP500

Ø Cylinder mm: 100

Versions: up to 7 letters/numbers marking
The marking head can be mounted on the lower
mounting surface or on the upper moving arms

NEW

PRP1100

Ø Cylinder mm: 160

Versions: up to 8 letters/numbers marking
The marking head can be mounted on the lower
mounting surface or on the upper moving arms

Electric unit with modular electronics

■ LAE

Electric power clamps



Size: 140 - 225 - 350 - 950
Adjustable opening angle
Built in "obstruction" detection

■ LNE

Electric power clamps, fixing conforming to the N.A.A.M.S. Standard



Size: 225 - 350
Adjustable opening angle
Built in "obstruction" detection

■ LGE

Electric gripper units



Size: 140
Adjustable opening angle
Built in "obstruction" detection

■ LCE

Electric retractable locating pin unit



Size: 350
Adjustable stroke

■ LAGE

Electric power pivots



Size: 500 - 1000
Control module can be mounted remotely
The Integrated brake maintains the position any time power is lost

Accessories

■ Clamping arms

Wishbone/Blade Arms conforming to the DIN or N.A.A.M.S. Standard



Offset mm: 0 - 15 - 25 - 45 - 50 - 70 - 75 - 105 - 120

■ UBK

Self-holding spring for open position



■ UBF

Ergonomic Handlevers



■ DF Electronic sensor



7



GR8 Tooling



Modular Tooling System GR8



GR8 Modular Tooling System



KIT

Considerable reduction of mounting elements

Ø 30 - 45 - 70 mm booms

Maximum stiffness and minimum weight

30



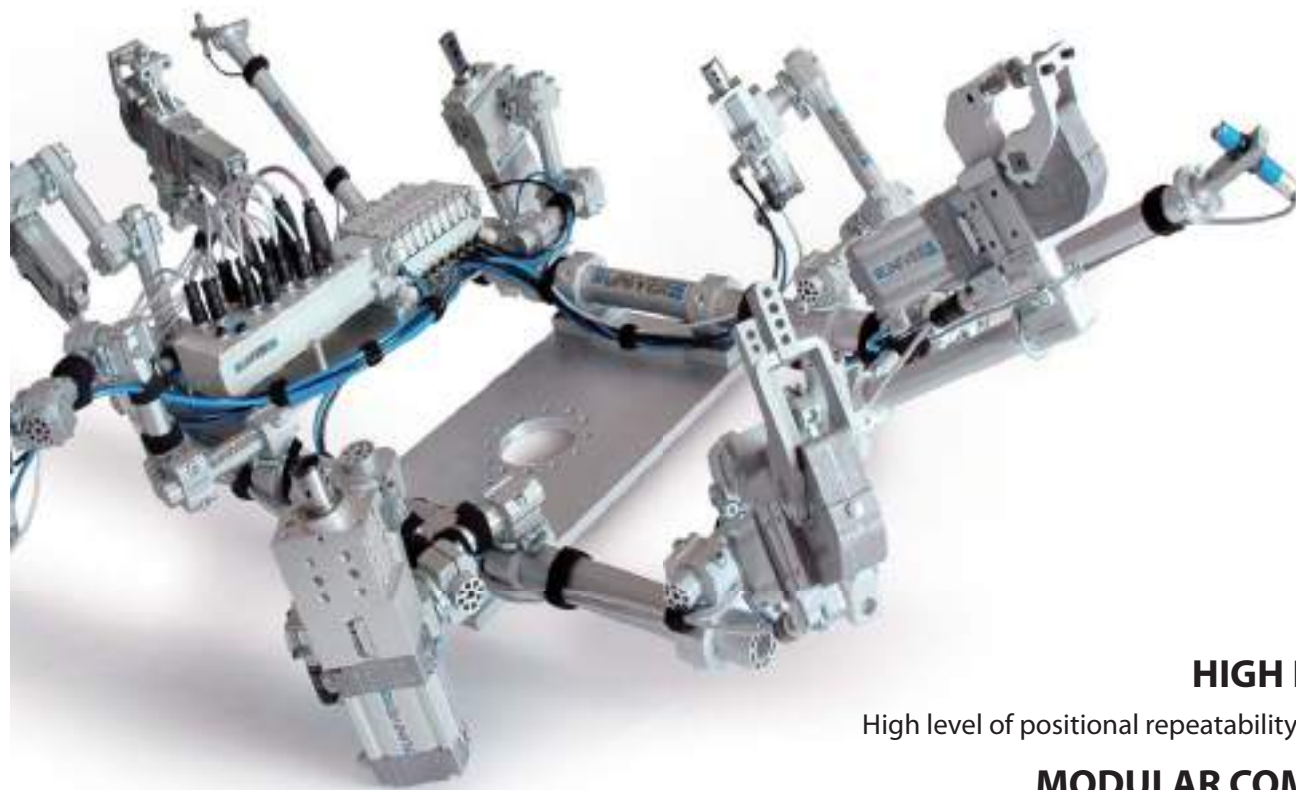
45



70



PATENT PENDING

**HIGH PRECISION**

High level of positional repeatability; low deflection

MODULAR COMPONENTS

Considerable reduction of mounting components

QUICK INSTALLATION AND SET UP

No welding or doweling required,
easily replaceable components

FULLY ADJUSTABLE

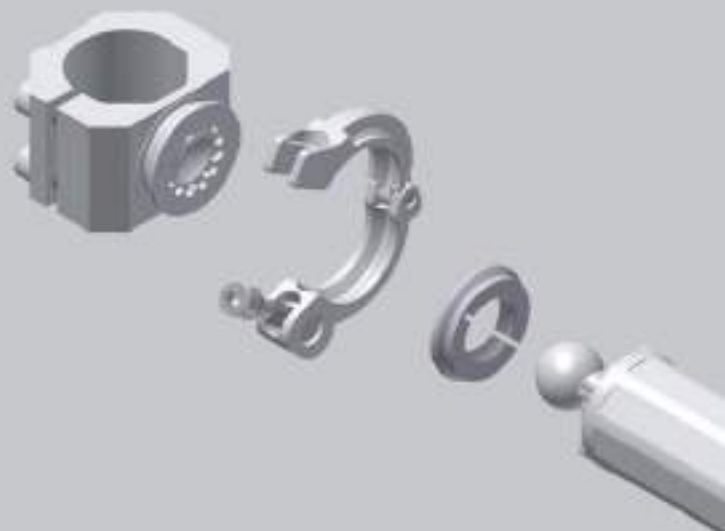
Unlimited orientation in space and free configuration

Locking ring

Precise and efficient system to guarantee a high level of positional accuracy

**Ball mounting**

Unlimited swivel rotation



Booms			Inserts	Locking ring
■ GR8B30S6000 Ø 30 mm Octagonal boom 	■ GR8B456000 Ø 45 mm Octagonal boom 	■ GR8B706000 Ø 70 mm Octagonal boom 	■ GR8IK Interlocking key insert 	■ GR8LHD Locking ring 

7

Booms end caps		
■ GR8C30 30 mm boom end cap 	■ GR8C45 45 mm boom end cap 	■ GR8C70 70 mm boom end cap 

Mounts			
■ GR8CJ30D Octagonal Joint 30 	■ GR8RJ30D Round Joint 30 	■ GR8CJ45D Octagonal Joint 45 	■ GR8RJ45D Round Joint 45 
■ GR8CJ70D Octagonal Joint 70 	■ GR8RJ70 Round Joint 70 	■ GR8HD4530V Cross Joint 45-30 	■ GR8HD4545V Cross Joint 45-45 
■ GR8HD7045 Cross Joint 70-45 	■ GR8HD7070 Cross Joint 70-70 	■ GR8CM4530 Coplanar Mount 45-30 	■ GR8CM4545 Coplanar Mount 45-45 

■ GR8CM7045 Coplanar Mount 70-45	■ GR8CM7070 Coplanar Mount 70-70	■ GR8SCI30D Interlocking adapter 30	■ GR8ECI45D Interlocking adapter 45
			

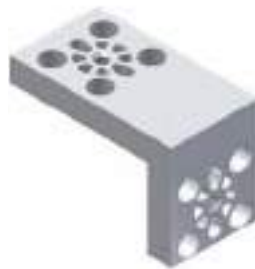
Angular Mounts

■ GR8EOAD Orientable angle adapter	■ GR8EOAD45 Orientable angle adapter	■ GR8SM3030 Edge mounting element 30-30	■ GR8SM4545 Edge mounting element 45-45
			
■ GR8A30 Edge mount with an orientable side for 30 mm booms	■ GR8A45 Edge mount with an orientable side for 45 booms	■ GR8A3045 45° Mounting element male-female for 30 mm booms	■ GR8SM3045 Mounting element for 30 mm booms
			

Base Mounts

■ GR8BB30D Base plate bracket 30	■ GR8BB45D Base plate bracket 45	■ GR8BB70 Base plate bracket 70	■ GR8BL45 Base linear plate 45
			
■ GR8BC30 Base connector 30	■ GR8BC45 Base connector 45	■ GR8BC70 Base connector 70	■ GR8BL70 Base linear plate 70
			

Mounting adapters

■ GR8SR40 Rear mount plate for 40 clamps 	■ GR8SR50 Rear mount plate for retractable locating pin units LCP50 	■ GR8SR50M8 Rear mount plate with M8 threads 	■ GR8SS50 Side mount plate for retractable locating pin units LCP50 
■ GR8SR40D Mount plate for size 40 clamps 	■ GR8SR50D Rear mount plate for retractable locating pin units LCP50 	■ GR8SR50M8D Rear mount plate with M8 threads 	■ GR8SS50D Side mount plate for retractable locating pin units LCP50 
■ GR8MF40AD Interlocking adapter 	■ GR8MF40D Front mount plate for size 40 clamps 	■ GR8MF50D Front mount plate for size 50 clamps 	■ GR8MFGLD Front mount plate for UGP40VL 
■ GR8MP12D Proximity mount with 12 mm inner Ø 	■ GR8MP18D Proximity mount with 18 mm inner Ø 	■ GR8MP19D Vacuum cup adapter with 19 mm inner Ø 	■ GR8MP30D Proximity mount with 30 mm inner Ø 

■ **GR8SCB30D**
Ball mount - 30



■ **GR8SCB45D**
Ball mount - 45



Mounts for LGP32-40

■ **GR8LGP32MO25**
Orbital mount - 360° unlimited
rotation - Ball Ø 25 mm



■ **GR8LGP32MO30**
Orbital mount - 360° unlimited
rotation - Ball Ø 30 mm



■ **GR8LGP32MP**
Middle flange mount Ø 32



■ **GR8LGP40MO25**
Orbital mount - 360° unlimited
rotation - Ball Ø 25 mm



■ **GR8LGP40MO30**
Orbital mount - 360° unlimited
rotation - Ball Ø 30 mm



■ **GR8LGP40MO45**
Orbital mount - 360° unlimited
rotation - Ball Ø 45 mm



■ **GR8LGP40MP**
Middle flange mount Ø 40



■ **GR8LGP40AF**
Middle angular mount



■ **GR8LGP40A025**
Ø 25 angular mount



■ **GR8LGP40A030**
Ø 30 angular mount



■ **GR8LGP40A045**
Ø 45 angular mount



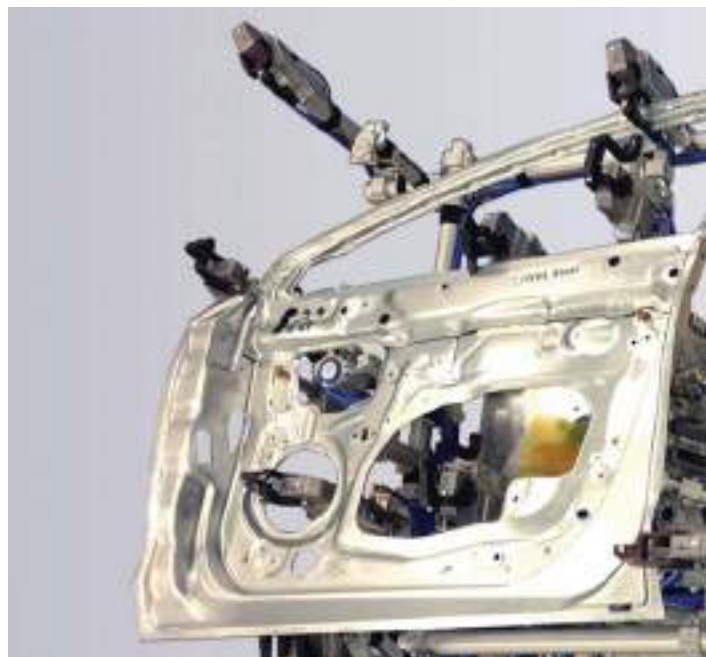
GR8

GR8 applications and details
of the components



Unlimited and complex configurations
Weight-optimized standard components and brackets
Quick installation and adjustment

COMPLETE SOLUTION
WITH **UNIVER** COMPONENTS



Compliance with International Standards

DIRECTIVE 94/9/CE "ATEX"	Directive that specifies the safety requirements for equipment/components for use in potentially explosive atmospheres
PRODUCT CERTIFICATION "CSA"	Product Safety certification for the North American market
DIRECTIVE 2011/65/CE "RoHS"	Directive which regulates the use and disposal of hazardous substances in electrical and electronic equipment and their waste disposal.
DIRECTIVE 2012/19/UE "WEEE"	Directive on waste electrical and electronic equipment.
DIRECTIVE "REACH"	CE 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
DIRECTIVE 97/23/CE "PED"	Directive which applies to the design, manufacture and conformity assessment of pressure equipment and assemblies with a maximum allowable pressure greater than 0.5 bar.
DIRECTIVE 2006/42/CE "MACHINERY"	Directive defining essential health and safety requirements for the design, construction, installation and maintenance of machinery.
ISO 9001:2012 "QUALITY MANAGEMENT SYSTEM"	Standard specifying Quality Management System requirements.



For further information contact our Sales Office or visit our website
www.univer-group.com

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AM-5060	3.92	AM-5514	3.93	BDB-384424	3.18	BDF-4232	3.21	BE-4940	3.12
AM-5061	3.92	AP-500	3.92	BDB-424024	3.18	BDF-4310	3.20	BE-5000	3.12
AM-5062	3.92	AP-520	3.92	BDB-424124	3.18	BDF-4311	3.21	BE-5020	3.12
AM-5063	3.92	AZ-0200	4.12	BDB-424424	3.18	BDF-4312	3.21	BE-5030	3.12
AM-5064	3.92	AZ4-SN003A	3.63	BDB-434424	3.18	BDF-4320	3.20	BE-5060	3.12
AM-5065	3.92	AZ4-SN004A	3.39	BDB-444424	3.18	BDF-4321	3.21	BE-5100	3.12
AM-5066	3.92	AZ4-VN0310	3.63	BDB-454424	3.18	BDF-4322	3.21	BE-5150	3.12
AM-5067	3.92	AZ4-VN0414	3.73	BDB-464424	3.18	BDF-4330	3.20	BE-5170	3.12
AM-5070	3.92	B-101N	3.7	BDB-474424	3.18	BDF-4331	3.20	BE-5200	3.12
AM-5071	3.92	B-102N	3.7	BDB-484424	3.18	BDF-4332	3.20	BE-5205	3.12
AM-5072	3.92	B10-401L24D	3.4	BDE-324024	3.18	BDF-4400	3.20	BE-5700	3.12
AM-5074	3.92	B10-403P24D	3.4	BDE-324124	3.18	BE12-3000	3.13	BE-5720	3.12
AM-5076	3.92	B10-405M24D	3.4	BDE-324424	3.18	BE12-3020	3.13	BE-5730	3.12
AM-5077	3.92	B11-401L24D	3.3	BDE-334424	3.18	BE12-3205	3.13	BE-5760	3.12
AM-5090	3.92	B11-403P24D	3.3	BDE-344424	3.18	BE12-3700	3.13	BE-5800	3.12
AM-5091	3.92	B11-405M24D	3.3	BDE-354424	3.18	BE12-3720	3.13	BE-5850	3.12
AM-5092	3.92	B11-411L24D	3.3	BDE-364424	3.18	BE12-3900	3.13	BE-5870	3.12
AM-5109	3.87	B11-413P24D	3.3	BDE-374424	3.18	BE12-3940	3.13	BE-5900	3.12
AM-5110	3.87	B11-415M24D	3.3	BDE-384424	3.18	BE12-4000	3.13	BE-5940	3.12
AM-5111	3.87	B-121N	3.7	BDE-424024	3.18	BE12-4020	3.13	BE-6000	3.12
AM-5148	3.29	B12-401L24D	3.5	BDE-424124	3.18	BE12-4205	3.13	BE-6020	3.12
AM-5151	3.29	B12-403P24D	3.5	BDE-424424	3.18	BE12-4700	3.13	BE-6030	3.12
AM-5152	3.29	B12-405M24D	3.5	BDE-434424	3.18	BE12-4720	3.13	BE-6060	3.12
AM-5160	3.92	BDA-3230	3.19	BDE-444424	3.18	BE12-4900	3.13	BE-6100	3.12
AM-5161	3.92	BDA-3231	3.19	BDE-454424	3.18	BE12-4940	3.13	BE-6150	3.12
AM-5162	3.92	BDA-3233	3.19	BDE-464424	3.18	BE12-5000	3.13	BE-6170	3.12
AM-5163	3.92	BDA-3240	3.19	BDE-474424	3.18	BE12-5020	3.13	BE-6200	3.12
AM-5164	3.92	BDA-3241	3.19	BDE-484424	3.18	BE12-5205	3.13	BE-6205	3.12
AM-5200	3.93	BDA-3244	3.19	BDF-3100	3.20	BE12-5700	3.13	BE-6700	3.12
AM-5211A	3.9	BDA-3333	3.19	BDF-3110	3.21	BE12-5720	3.13	BE-6720	3.12
AM-5211B	3.9	BDA-3344	3.19	BDF-3115	3.20	BE12-5900	3.13	BE-6730	3.12
AM-5212A	3.10	BDA-3433	3.19	BDF-3120	3.20	BE12-5940	3.13	BE-6760	3.12
AM-5212B	3.10	BDA-3444	3.19	BDF-3125	3.21	BE-3000	3.12	BE-6800	3.12
AM-5213A	3.9	BDA-3533	3.19	BDF-3140TIM	3.20	BE-3020	3.12	BE-6850	3.12
AM-5214A	3.10	BDA-3544	3.19	BDF-3180	3.20	BE-3030	3.12	BE-6870	3.12
AM-5220	3.93	BDA-3633	3.19	BDF-3185	3.20	BE-3060	3.12	BE-6900	3.12
AM-5240	3.93	BDA-3644	3.19	BDF-3190	3.20	BE-3100	3.12	BE-6940	3.12
AM-5241	3.93	BDA-3733	3.19	BDF-3191	3.21	BE-3150	3.12	BF-1060	3.13
AM-5242	3.93	BDA-3744	3.19	BDF-3210	3.20	BE-3170	3.12	BF-1061	3.13
AM-5242E	3.93	BDA-3833	3.19	BDF-3211	3.21	BE-3200	3.12	BF-1062	3.13
AM-5243	3.93	BDA-3844	3.19	BDF-3212	3.21	BE-3205	3.12	BF-1063	3.13
AM-5243E	3.93	BDA-4230	3.19	BDF-3230	3.20	BE-3700	3.12	BF-1065	3.14
AM-5254	3.93	BDA-4231	3.19	BDF-3231	3.21	BE-3720	3.12	BF-1066	3.14
AM-5255	3.93	BDA-4233	3.19	BDF-3232	3.21	BE-3730	3.12	BF-1068	3.14
AM-5256	3.93	BDA-4240	3.19	BDF-3310	3.20	BE-3760	3.12	BF-1070	3.14
AM-5259	3.93	BDA-4241	3.19	BDF-3311	3.21	BE-3800	3.12	BF-1071	3.13
AM-5260	3.93	BDA-4244	3.19	BDF-3312	3.21	BE-3850	3.12	BF-1071S	3.13
AM-5261	3.93	BDA-4333	3.19	BDF-3330	3.20	BE-3870	3.12	BF-1072	3.13
AM-5350	3.93	BDA-4344	3.19	BDF-3331	3.21	BE-3900	3.12	BF-1072S	3.13
AM-5351	3.93	BDA-4433	3.19	BDF-3332	3.21	BE-3940	3.12	BF-1085	3.14
AM-5352	3.93	BDA-4444	3.19	BDF-3400	3.20	BE-4000	3.12	BF-1150	3.13
AM-5353	3.93	BDA-4533	3.19	BDF-4100	3.20	BE-4020	3.12	BF-1151	3.13
AM-5354	3.93	BDA-4544	3.19	BDF-4110	3.21	BE-4030	3.12	BF-1152	3.13
AM-5355	3.93	BDA-4633	3.19	BDF-4115	3.20	BE-4060	3.12	BF-1153	3.13
AM-5356	3.93	BDA-4644	3.19	BDF-4120	3.20	BE-4100	3.12	BF-1154	3.14
AM-5400	3.93	BDA-4733	3.19	BDF-4125	3.21	BE-4150	3.12	BF-1155	3.14
AM-5401	3.93	BDA-4744	3.19	BDF-4140 TIM	3.20	BE-4170	3.12	BF-1160	3.13



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BF-1162	3.14	CL-200	3.28	CM-418R	3.26	CM-9520	3.28	DC-0310	3.87
BF-1175	3.14	CL-200A	3.28	CM-419R	3.26	CM-9521	3.28	DD-011	3.87
BF-1190	3.14	CL-203	3.28	CM-420	3.26	CM-9524	3.28	DD-013	3.87
BF-3060	3.13	CL-220	3.28	CM-420A	3.26	CM-9580	3.28	DD-040	3.87
BF-3061	3.13	CL-221	3.28	CM-420P	3.26	CM-9585	3.28	DD-040-2C	3.36
BF-3063	3.13	CL-224	3.28	CM-421R	3.26	CM-9590	3.28	DD-041	3.87
BF-3064	3.14	CL-300	3.28	CM-422R	3.26	CM-9600	3.28	DD-042	3.87
BF-3071	3.13	CL-301	3.28	CM-423	3.26	CM-9602A	3.28	DD-050	3.87
BF-3072	3.13	CL-302A	3.28	CM-423A	3.26	CM-9620	3.28	DD-051	3.87
BF-3082	3.14	CL-303A	3.28	CM-423D	3.26	CM-9621	3.28	DD-051-2C	3.36
BF-3175	3.14	CL-320	3.28	CM-423E	3.26	CM-9622	3.28	DD-051L030	3.87
BF-3190	3.14	CL-321	3.28	CM-423F	3.26	CM-9680	3.28	DD-052	3.87
BF-3191	3.14	CL-322	3.28	CM-424E	3.26	CM-9685	3.28	DD-052L030	3.87
BF-4060	3.13	CL-9102A	3.24	CM-424F	3.26	CM-9690	3.28	DD-060	3.87
BF-4061	3.13	CL-9102P	3.24	CM-425E	3.26	CP-100	3.29	DD-070	3.87
BF-4062	3.13	CL-9103A	3.24	CM-425F	3.26	CP-101	3.29	DD-151	3.87
BF-4063	3.13	CL-9103P	3.24	CM-426A	3.26	CP-105	3.29	DD-351	3.87
CH-250	3.50	CL-9110A	3.25	CM-430	3.26	CP-106	3.29	DD-551	3.87
CH-252	3.50	CL-9110P	3.25	CM-430E	3.26	CP-110	3.29	DE-052L030	3.86
CH-254	3.50	CL-9111A	3.25	CM-435E	3.26	CP-111	3.29	DE-352	3.86
CH-256	3.50	CL-9111P	3.25	CM-440E	3.26	CP-112	3.29	DE-355	3.86
CH-260	3.50	CL-9113A	3.25	CM-500	3.28	CP-113	3.29	DE-452	3.86
CH-262	3.50	CL-9113P	3.25	CM-500A	3.28	CP-9100	3.29	DE-552	3.86
CH-264	3.50	CL-9118R	3.27	CM-520	3.28	CP-9101	3.29	DE-555	3.86
CH-266	3.50	CL-9120	3.27	CM-521	3.28	CP-9105	3.29	DE-642I	3.86
CH-270	3.50	CL-9120A	3.27	CM-524	3.28	CP-9110	3.29	DE-652	3.86
CH-272	3.50	CL-9120P	3.27	CM-580	3.28	CP-9111	3.29	DE-652I	3.86
CH-274	3.50	CL-9121R	3.27	CM-585	3.28	CP-9112	3.29	DE-655I	3.86
CH-276	3.50	CL-9123	3.27	CM-590	3.28	CP-9113	3.29	DF-001	5.21
CH-280	3.50	CL-9123A	3.27	CM-600	3.28	CP-911G	3.26	DF-003	1.23
CH-282	3.50	CL-9123D	3.27	CM-602A	3.28	CP-911N	3.26	DF-004	1.23
CH-284	3.50	CL-9130	3.27	CM-620	3.28	CP-911R	3.26	DF-220	5.21
CH-286	3.50	CL-9200	3.28	CM-621	3.28	CP-911V	3.26	DF-220M08	5.21
CL-100A	3.24	CL-9200A	3.28	CM-622	3.28	CP-912G	3.26	DF-220M12	5.21
CL-100P	3.24	CL-9203	3.28	CM-680	3.28	CP-912N	3.26	DF-330	5.21
CL-101A	3.24	CL-9220	3.28	CM-685	3.28	CP-912R	3.26	DF-330M08	5.21
CL-101P	3.24	CL-9221	3.28	CM-690	3.28	CP-913R	3.26	DF-330M12	5.21
CL-102A	3.24	CL-9224	3.28	CM-9402A	3.24	CP-915R	3.26	DF-440	5.21
CL-102P	3.24	CL-9300	3.28	CM-9402P	3.24	CP-916R	3.26	DF-440M08	5.21
CL-103A	3.24	CL-9301	3.28	CM-9403A	3.24	D-500	3.87	DF-440M12	5.21
CL-103P	3.24	CL-9302A	3.28	CM-9403P	3.24	D-530-200	3.87	DF-770	5.21
CL-104A	3.24	CL-9303A	3.28	CM-9410A	3.25	D-530-30	3.87	DF-770M08	5.21
CL-104P	3.24	CL-9320	3.28	CM-9410P	3.25	D-530-50	3.87	DF-770M12	5.22
CL-105A	3.24	CL-9321	3.28	CM-9411A	3.25	D-530C-100	3.46	DF-R200L02	5.22
CL-105P	3.24	CL-9322	3.28	CM-9411P	3.25	D-530C-200	3.46	DF-R200M08	5.22
CL-106A	3.24	CM-400A	3.24	CM-9413A	3.25	D-535-200	3.87	DF-T200L03	5.22
CL-106AL	3.24	CM-400P	3.24	CM-9413P	3.25	D-535-30	3.87	DF-T200M08	5.22
CL-110A	3.25	CM-401A	3.24	CM-9418R	3.27	D-535-50	3.87	DH-200	5.22
CL-110P	3.25	CM-401P	3.24	CM-9420	3.27	D-535U40300	3.3	DH-200M08	5.22
CL-111A	3.25	CM-402A	3.24	CM-9420A	3.27	D-535U40500	3.3	DH-200M12	5.22
CL-111P	3.25	CM-402P	3.24	CM-9420P	3.27	DA-0050	3.87	DH-500	5.22
CL-112A	3.25	CM-403A	3.24	CM-9421R	3.27	DA-0051	3.87	DH-500M08	5.22
CL-112P	3.25	CM-403P	3.24	CM-9423	3.27	DA-0106	3.87	DH-500M12	5.22
CL-113A	3.25	CM-404A	3.24	CM-9423A	3.27	DA-0108	3.87	DH-700	5.22
CL-113P	3.25	CM-404P	3.24	CM-9423D	3.27	DA-0124	3.87	DH-700M08	5.22
CL-118R	3.26	CM-405A	3.24	CM-9423E	3.27	DB-0501	3.87	DH-700M12	5.22
CL-119R	3.26	CM-405P	3.24	CM-9423F	3.27	DB-0502	3.87	DHF-0020100	5.21
CL-120	3.26	CM-406A	3.24	CM-9424E	3.27	DB-0507	3.87	DHF-033M08	5.22
CL-120A	3.26	CM-406AL	3.24	CM-9424F	3.27	DB-0509	3.87	DHF-033M12	5.22
CL-120P	3.26	CM-410A	3.25	CM-9425E	3.27	DB-0510	3.87	DHF-053M08	5.22
CL-121R	3.26	CM-410P	3.25	CM-9425F	3.27	DB-0607	3.55	DHF-053M12	5.22
CL-122R	3.26	CM-411A	3.25	CM-9430	3.27	DB-0608	3.55	DH-K032050	5.22
CL-123	3.26	CM-411P	3.25	CM-9430E	3.27	DB-0610	3.55	DH-K063125	5.22
CL-123A	3.26	CM-412A	3.25	CM-9435E	3.27	DC-0301	3.87	DH-K160200	5.22
CL-123D	3.26	CM-412P	3.25	CM-9440E	3.27	DC-0302	3.87	DH-M10	5.22
CL-126A	3.26	CM-413A	3.25	CM-9500	3.28	DC-0307	3.87	DH-M10DF	5.21



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DH-M12DF	5.21	G-6260	3.35	GL-6433	3.37	GR8B456000	7.4	HZ9N12110080	3.94
DH-M16	5.22	G-6261	3.35	GL-6444	3.38	GR8B706000	7.4	HZ9N12150060	3.94
DH-M16DF	5.21	G-6266	3.35	GL-6455	3.38	GR8BB30	7.5	HZ9N12150080	3.94
DH-M20	5.22	G-6333	3.34	GL-6466	3.38	GR8BB45	7.5	HZ9N12A	3.94
DH-M20DF	5.21	G-6344	3.35	GL-6533	3.37	GR8BB70	7.5	HZ9N12B	3.94
DH-M25	5.22	G-6355	3.35	GL-6544	3.38	GR8BC30	7.5	HZ9N12C	3.94
DH-M25DF	5.21	G-6366	3.35	GL-6555	3.38	GR8BC45	7.5	HZ9N1F	3.94
DH-S025	5.22	G-6433	3.34	GL-6566	3.38	GR8CJ30	7.4	HZ9N2F	3.94
DH-S032	5.22	G-6444	3.35	GL-6633	3.37	GR8CJ45	7.4	HZ9NC02	3.94
DH-S040	5.22	G-6455	3.35	GL-6644	3.38	GR8CJ70	7.4	HZ9NC04	3.94
DH-S050	3.22	G-6466	3.35	GL-6655	3.38	GR8CJD30	7.4	HZ9NM08-0200	3.94
DMA	6.7	G-6533	3.34	GL-6666	3.38	GR8CJD45	7.4	HZ9NP02	3.94
DMS	6.5	G-6544	3.35	GL-6733	3.37	GR8CM4545	7.4	HZ9NP04	3.94
E-0220	3.30	G-6555	3.35	GL-6744	3.38	GR8CM7045	7.4	HZ9P400318	4.10
E-0222	3.30	G-6566	3.35	GL-6755	3.38	GR8ECI45	7.4	HZ9P400618	4.10
E-0240	3.30	G-6633	3.34	GL-6766	3.38	GR8EOA	7.4	HZ9P401018	4.10
E-0244	3.30	G-6644	3.35	GL-6833	3.37	GR8HD4545	7.4	HZ9P500314	4.10
E-0270	3.30	G-6655	3.35	GL-6844	3.38	GR8HD7070	7.4	HZ9P500614	4.10
E-0277	3.30	G-6666	3.35	GL-6855	3.38	GR8IK	7.4	HZ9P501014	4.10
E-0420	3.31	G-6733	3.34	GL-6866	3.38	GR8LH	7.4	HZ9P630314	4.10
E-0422	3.31	G-6744	3.35	GP-6100	3.36	GR8MF40	7.5	HZ9P630614	4.10
E-0440	3.31	G-6755	3.35	GP-6110	3.36	GR8MF50	7.5	HZ9P631014	4.10
E-0444	3.31	G-6766	3.35	GP-611212	3.36	GR8MFGL	7.5	HZ9PB400318	4.10
E-0470	3.31	G-6833	3.34	GP-611806	3.36	GR8MP12	7.5	HZ9PB400618	4.10
E-0477	3.31	G-6844	3.35	GP-6210	3.39	GR8MP18	7.5	HZ9PB401018	4.10
E-0522	3.30	G-6855	3.35	GP-6211	3.39	GR8MP19	7.5	HZ9PB500314	4.10
E-0622	3.30	G-6866	3.35	GP-6212	3.39	GR8MP30	7.5	HZ9PB500614	4.10
E-0722	3.30	G-7230	3.41	GP-6220	3.39	GR8RJ30	7.4	HZ9PB501014	4.10
E-0822	3.31	G-7231	3.41	GP-6221	3.39	GR8RJ45	7.4	HZ9PB630314	4.10
E-0922	3.31	G-7233	3.41	GP-6222	3.39	GR8SCB30	7.4	HZ9PB630614	4.10
E-1022	3.31	G-7290	3.41	GP-6230	3.39	GR8SCI30	7.4	HZ9PB631014	4.10
E-15402A	3.32	G-7291	3.41	GP-6231	3.39	GR8SM3030	7.4	HZ9PBS400318	4.10
E-15403A	3.32	G-7299	3.41	GP-6232	3.39	GR8SR40	7.5	HZ9PBS400618	4.10
E-15412A	3.32	G-7333	3.41	GP-6240	3.39	GR8SR50	7.5	HZ9PBS401018	4.10
E-15420	3.32	G-7399	3.41	GP-6241	3.39	GR8SR50M8	7.5	HZ9PBS500314	4.10
E-15420A	3.32	G-7433	3.41	GP-6242	3.39	GR8SS50	7.5	HZ9PBS500614	4.10
E-15422G	3.32	G-7499	3.41	GP-6285	3.39	GR8SV	7.5	HZ9PBS501014	4.10
E-15422N	3.32	G-7533	3.41	GP-6310	3.36	GZR-100	3.46	HZ9PBS630314	4.10
E-15422R	3.32	G-7599	3.41	GP-6311	3.36	GZR-101	3.46	HZ9PBS630614	4.10
E-4500	3.30	G-7885	3.41	GP-6312	3.36	GZR-102	3.46	HZ9PBS631014	4.10
E-4505	3.30	G-7900-02	3.41	GP-6320	3.36	GZR-V10004	3.39	HZE0B08GM	4.5
F-0220	3.33	G-7900-03	3.41	GP-6321	3.36	GZR-V10006	3.39	HZE0B08GMV	4.5
F-0222	3.33	G-7900-04	3.41	GP-6322	3.36	GZR-V10008	3.39	HZE0C08GM	4.6
F-0240	3.33	G-7900-05	3.41	GP-6330	3.36	GZR-V20004	3.39	HZE0D08GM	4.6
F-0244	3.33	G-7900-06	3.41	GP-6331	3.36	GZR-V20006	3.39	HZE0F08G	4.3
F-0270	3.33	G-7900-07	3.41	GP-6332	3.36	GZR-V20008	3.39	HZE0L08G	4.4
F-0277	3.33	G-7900-08	3.41	GP-6340	3.36	GZR-V20L004	3.39	HZE0N08G	4.7
F-0522	3.33	G-7900-09	3.41	GP-6341	3.36	GZR-V20L006	3.39	HZE0P08G	4.7
F-0544	3.33	G-7900-10	3.41	GP-6342	3.36	GZR-V20L008	3.39	HZE0R08G	4.4
F-0577	3.33	G-7900-11	3.41	GP-6380	3.36	GZR-VV1006	3.20	HZE0R08GM	4.4
F-0622	3.33	G-7900-12	3.41	GP-6385	3.36	GZR-VV1008	3.20	HZE0R08GMV	4.4
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F-0777	3.33	GL-6241	3.38	GP-6512-01MF	3.36	HC ...	5.9	HZE0Z300	4.9
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PS15370	3.46	RPF-28063	1.11	TSCFN32S1000	3.75				
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PSC46624	3.43	RSF-09050	1.11	TZ-F5M12	3.85				
PSC56624	3.43	RSF-09063	1.11	TZ-F5M12-B	3.85				
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RPF-11020	1.11	TCXC	3.84	YFDB-0211	3.95				
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RPF-13040	1.11-1.13	TIM1536	3.73	YR280...	3.91				
RPF-13050	1.11-1.13	TIM20M	3.46	YR3...	1.23				
RPF-13063	1.11-1.13	TSCF000	3.46						
RPF-14040	1.11	TSCFN16D0300	3.20						



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