PRA/282000/M

Smart cylinders
ISO 6431, VDMA 24562 and NFE 49-003-1
Magnetic piston
Double acting
Ø 32 to 100 mm

Conforms to ISO 6431, VDMA 24562, NFE 49-003-1

Complete functional unit with integrated AS-Interface bus system or multipole connector

Integrated 5/2 or 5/3 valve with different functions

Flow regulator for speed control as standard

Integrated reed or solid state switches

Profile with concealed tie rods

Comprehensive range of standard VDMA mountings

Technical data

Medium:
Compressed air, filtered, lubricated or non-lubricated

Standard:
ISO 6431, VDMA 24562 and NFE 49-003-1

Operation:
Double acting, adjustable cushioning, magnetic piston and flow regulators

Operating pressure:
2 to 8 bar

Operating temperature:
-5°C to +50°C max.
Consult our Technical Service for use below +2°C

Cylinder diameters:
32, 40, 50, 63, 80, 100 mm

Strokes:
Electric variant C and M0: 10 to 1000 mm
Other variants: 25 to 1000 mm

Speed:
Ø 32 to 80 mm 1,5 m/s max.
Ø 100 mm 1,0 m/s max.

Protection class:
IP 65, IP 67 on request

Materials:

Profile barrel: anodised aluminium
End covers: diecast aluminium
Piston rod: stainless steel (martensitic)
Piston rod seals: polyurethane
Piston seals: nitrile rubber
'O'-rings: nitrile rubber
Spool and sleeve: anodised aluminium with special coating

Ordering examples

See page 2

Mountings and accessories

See page 4

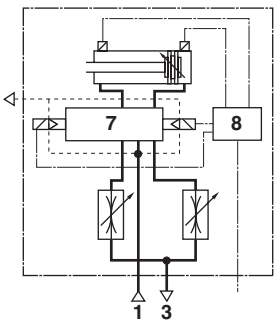
Alternative variants

See page 2

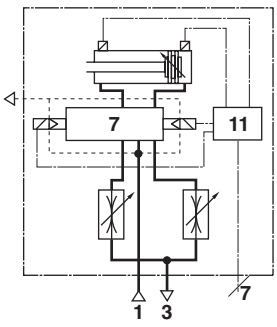
Technical support

Smart-Zylinder@Norgren-Herion.de

Smart cylinder with AS-Interface bus system

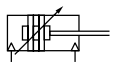
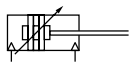
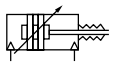
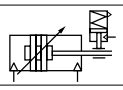


Smart cylinder with Multipole connection



7	Valve
8	AS-Interface
11	Multipol connector

Alternative variants

Symbol	C	S	Model Magnetic piston	Description	Dimensions Page
	•	•	PRA/282000/MI	Standard cylinder	6
	•	•	PRA/282000/MU	Cylinder with extended piston rod	6
	•	•	PRA/282000/MG	Cylinder with piston rod bellows	7
	•	•	PRA/282000/L4	Cylinder with locking unit (passive). Locking is achieved by spring force on removal of the signal to the unit. Operating Pressure for locking unit: 4 to 10 bar	7

For the cylinder variants C*1) and S see options selector
*1) Cylinder style C with the electrical variants A1, A3, B1, B3, C, M0, M1 and M3 (Ø 32 to 50 mm) can not be delivered.

Options selector

P★A/282★★★/★★★/★★/★★★★

Piston rod material	Substitute
Stainless steel (martensitic)	R
Hard chromium plated	C
Stainless steel (austenitic)	S

Cylinder diameters (mm)	Substitute
32	032
40	040
50	050
63	063
80	080
100	100

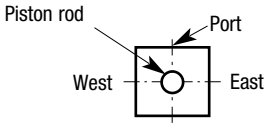
Cylinder variants	Substitute
Standard	MI
Piston rod bellow	MG
Locking unit	L4
Extended piston rod	MU

P*A/282***/MU*/**/Hub/*** → Extension (mm)

Valve variants		Substitute
5/2 solenoid/spring cylinder instroke		R
5/2 solenoid/spring cylinder outstroke		E
5/2 solenoid/solenoid bistable		B
5/3 solenoid/solenoid All ports blocked		A
5/3 solenoid/solenoid Centre open exhaust		C

Strokes
up to 1000 mm max.

Electric variants	Substitute
AS-I bus, reed switch M/50/LSU (east)	A1
AS-I bus, solid state M/50/EAP (east)	A2
AS-I bus, reed switch M/50/LSU (west)	A3
AS-I bus, solid state M/50/EAP (west)	A4
AS-I bus, external power, reed switch M/50/LSU (east)	B1
AS-I bus, external power, solid state M/50/EAP (east)	B2
AS-I bus, external power, reed switch M/50/LSU (west)	B3
AS-I bus, external power, solid state M/50/EAP (west)	B4
Basic version, cable length 5 m (PVC), without switches, without suppressions	C
Basic version, M12x1, 4 pin, without switches, without suppressions	M0
Multipole connector, reed switch M/50/LSU (east)	M1
Multipole connector, solid state M/50/EAP (east)	M2
Multipole connector, reed switch M/50/LSU (west)	M3
Multipole connector, solid state M/50/EAP (west)	M4
Airmotor (oscillator)	P



Note: Disregard options positions not used.
Kombinationen der alternativen Ausführungen auf Anfrage
This options selector explains only the cylinder variants.
Additional variants/options are not possible.

Ordering Examples

Cylinder
To order a standard 80 mm bore magnetic piston cylinder with a 50 mm stroke, 5/2 valve solenoid/spring, cylinder instroke, with multipole connector and reed switches M/50/LSU, position east
Quote: PRA/282080/MIR/M1/50

Mounting
To order a front flange mounting style ‘G’ for 80 mm bore
Quote: QA/8080/22

Cylinder
To order a standard 50 mm bore magnetic piston cylinder with a 150 mm stroke, 5/2 solenoid/solenoid, bistable with AS-I Bus and reed switch M/50/LSU, position east
Quote: PRA/282050/MIB/A1/150

Mounting
To order a foot mounting style ‘C’ for 50 mm bore
Quote: QA/8050/21

Example: PRA/282000/MIR/A. AS-Interface bus system

Quick and easy installation:
Only 1 pneumatic and
1 electric connection
Complete electro-pneumatic
functional unit with:
integrated AS-Interface Bus System,
flexible open system,
Handheld function available

Technical data

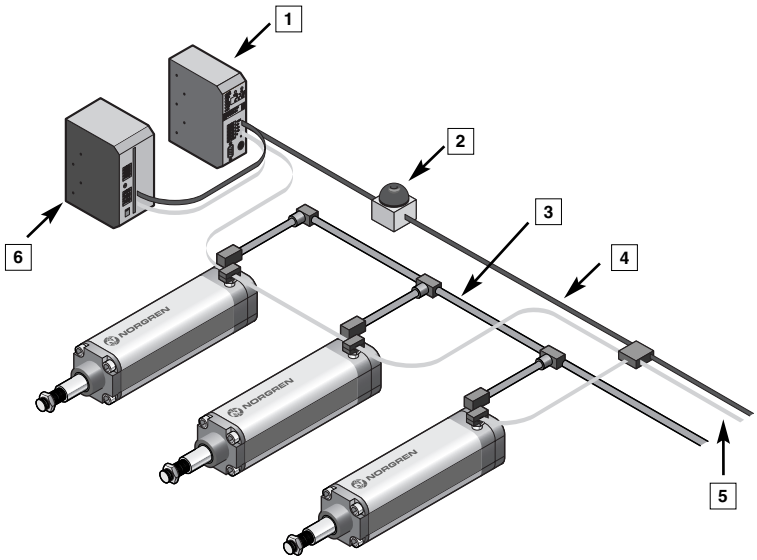
Supply voltage:
24 V d.c.

Connection AS-Interface:
M12 male 4 pin

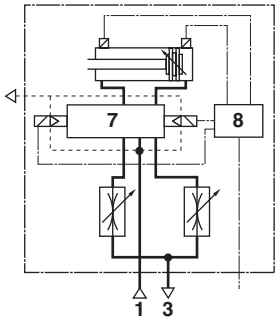
ID-Code AS-Interface:
F

IO-Code AS-Interface:
3

Cables:
AS-Interface standard cables
»Yellow« communications
»Black« external power (optional)



1	AS-Interface controller
2	Emergency button
3	Air tube
4	AS-Interface Black cable: External power
5	AS-Interface Yellow cable: Communications
6	AS-Interface supply for 29,6 V d.c.
7	Valve
8	AS-Interface



Example: PRA/282000/MIR/M. Multipole connection

Quick and easy installation:
Only 1 pneumatic and
1 electric connection
Complete functional unit with:
multipole connection,
Fieldbus compatible 24 V d.c.,
Handheld function available

Technical data

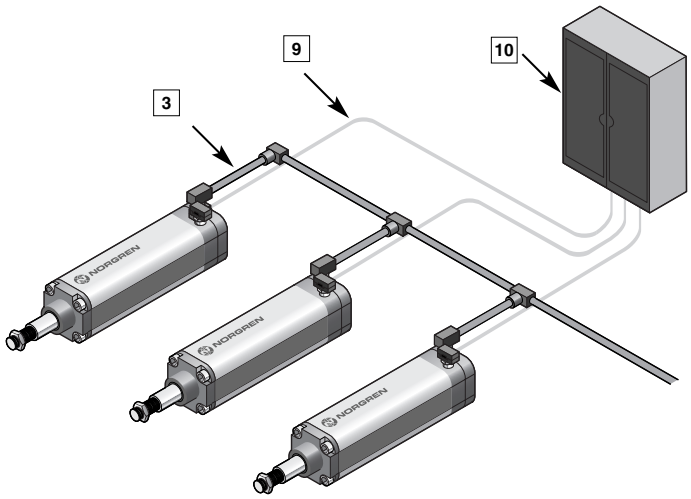
Supply voltage:
24 V d.c.

Multipole connection:
M12 male 8 pin

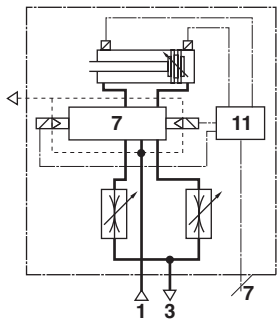
Max. power consumption:
1 W per coil

Rating:
100% E.D

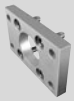
Electrical protection:
Fly-wheel diode

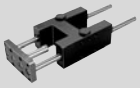


3	Air tube
7	Valve
9	Communications cable
10	Control cabinet
11	Multipole connection



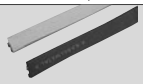
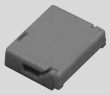
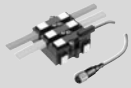
Mountings

Cylinder Ø	A  10 Page 8	AK  18 Page 8	B, G  1 Page 8	C  2 Page 8	D  5 Page 8	D2  7 Page 8	F  15 Page 9	FH  9 Page 9	R  3 Page 9
32	QM/8032/35	QM/8025/38	QA/8032/22	QA/8032/21	QA/8032/23	QA/8032/42	QM/8025/25	QA/8032/34	QA/8032/27
40	QM/8032/35	QM/8040/38	QA/8040/22	QA/8040/21	QA/8040/23	QA/8040/42	QM/8040/25	QA/8040/34	QA/8040/27
50	QM/8050/35	QM/8050/38	QA/8050/22	QA/8050/21	QA/8050/23	QA/8050/42	QM/8050/25	QA/8050/34	QA/8050/27
63	QM/8050/35	QM/8050/38	QA/8063/22	QA/8063/21	QA/8063/23	QA/8063/42	QM/8050/25	QA/8063/34	QA/8063/27
80	QM/8080/35	QM/8080/38	QA/8080/22	QA/8080/21	QA/8080/23	QA/8080/42	QM/8080/25	QA/8080/34	QA/8080/27
100	QM/8080/35	QM/8080/38	QA/8100/22	QA/8100/21	QA/8100/23	QA/8100/42	QM/8080/25	QA/8100/34	QA/8100/27

Cylinder Ø	Style S  12 Page 10	Style SS  16 Page 10	Style SW  6 Page 10	Style UF  17 Page 11	Style UR  4 Page 11	Typ US  8 Page 10	Guide Blocks  19 Data sheet 1.10.021
32	QA/8032/41	M/P19931	M/P19493	QM/8025/32	QA/8032/33	M/P40310	
40	QA/8040/41	M/P19932	M/P19494	QM/8040/32	QA/8040/33	M/P40311	
50	QA/8040/41	M/P19933	M/P19495	QM/8050/32	QA/8050/33	M/P40312	
63	QA/8063/41	M/P19934	M/P19496	QM/8050/32	QA/8063/33	M/P40313	
80	QA/8063/41	M/P19935	M/P19497	QM/8080/32	QA/8080/33	M/P40314	
100	QA/8100/41	M/P19936	M/P19498	QM/8080/32	QA/8100/33	M/P40315	

Accessories for AS-Interface bus system

 **AS-I Power Supply for 29,6 V DC**		 **AS-I Master controller**		 **Software, Handbook**
115/230 V AC ' 29,6 V DC (85 W)	VE1ASPS1-08519	1 Master (31 Slaves)	VE1ASCT1-RS232	VE1ASMA1-G0000
24 V DC ' 29,6 V DC (85 W)	VE1ASPS1-08513	2 Master (62 Slaves)	VE1ASCT2-RS232	
115/230 VAC ' 29,6 V DC (180 W)	VE1ASPS1-18109			
115/230 VAC ' 29,6 V DC + 24 V DC (180 W combined)	VE1ASPS3-18019			

 **Installation cables for AS-Interface systems**	 **Cable clip**	 **AS-Interface module for installation cables**	 **AS-Interface module for installation cable (yellow)**	 **Hand held function**	 **Programming cable**
VE1ASCAY-YMXXX (yellow)	VE1ASAC1-CL001	M/P73202	VE1ASCN-M1200	01 020 07 0000 000 00	VE1ASPRG-PCETL
VE1ASCAB-YMXXX (black)					

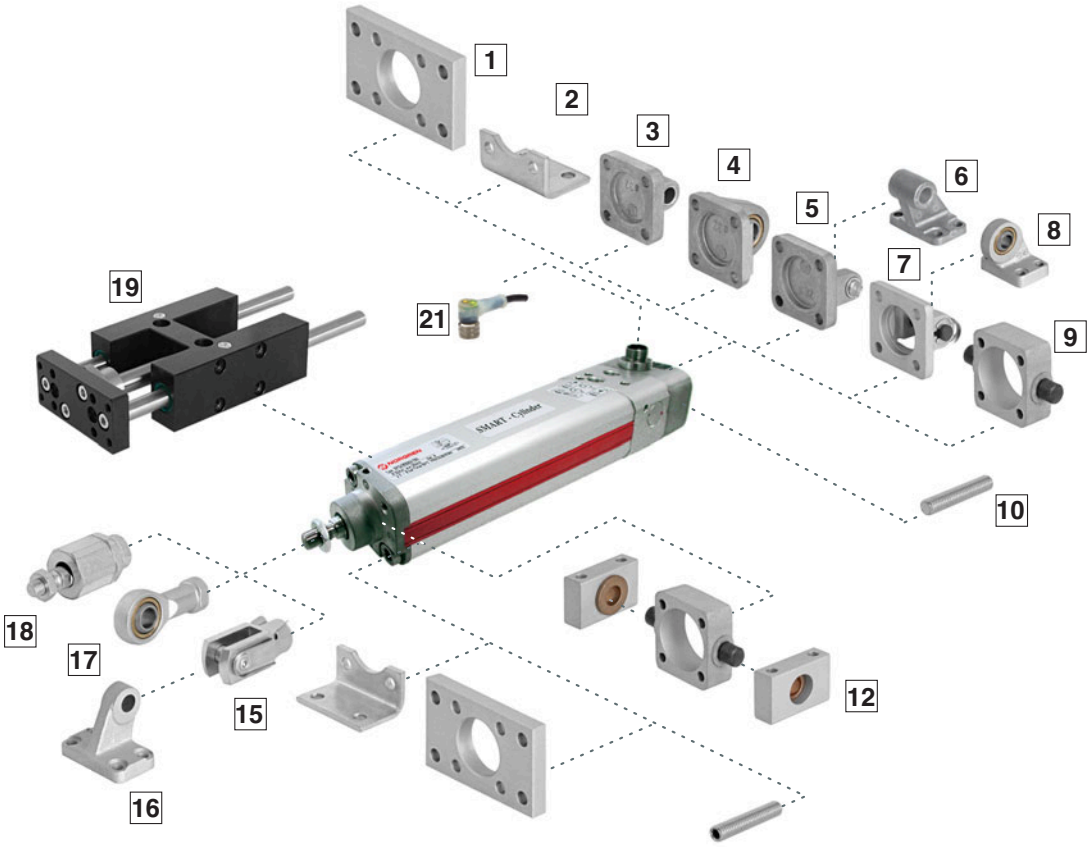
Full information (technical data, materials, dimensions etc.) please refer to relevant catalogue pages N/UK **6.4.**010
XXX Insert cable length 25 m = 025, 50 m = 050, 100 m = 100

Accessories for Multipole connection

 **Hand held function**	 21 **Connector cable M12 female 8 pin**	 **Y-cable M12 female 8 pin 2 x M12 male 4 pin**
01 020 07 0000 000 00	M/P73200/2 = 2 m	M/P73201 = 0,45 m
	M/P73200/5 = 5 m	
	M/P73200/10 = 10 m	

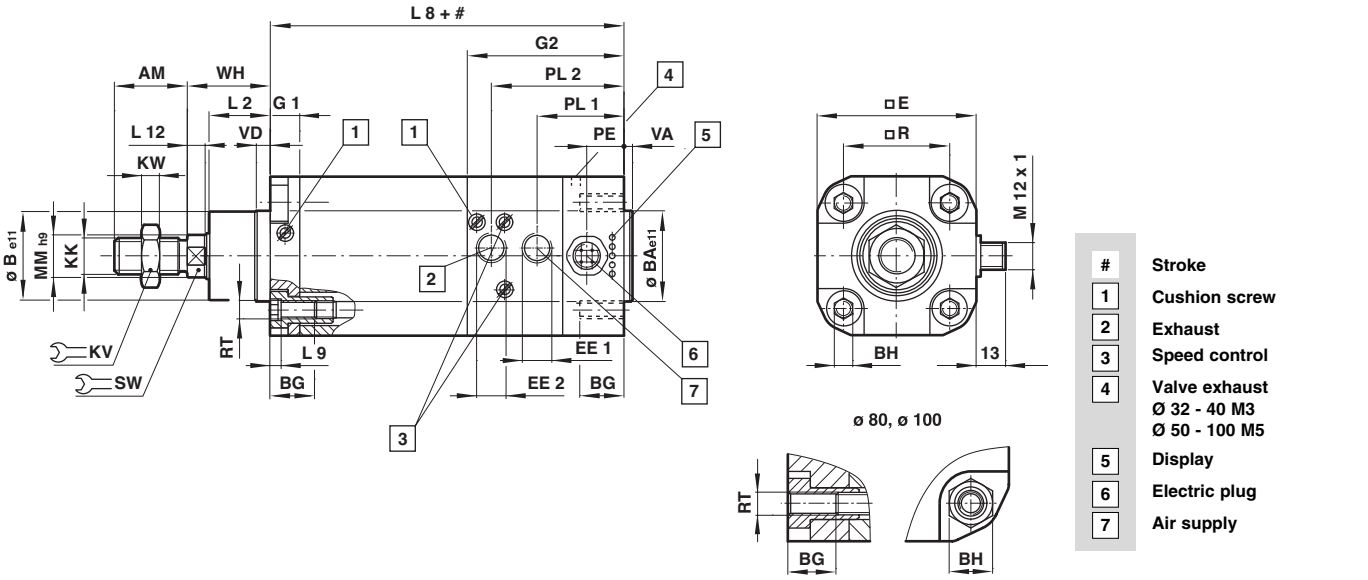
Theoretical forces, cushioning, air consumption

Theoretical forces (N) at 6 bar			Cushion length	Initial cushion volume	Air consumption (l/cm stroke) at 6 bar	
Cylinder Ø	Outstroke	Instroke	(mm)	(cm^3)	Outstroke	Instroke
32	482	414	13	8,5	0,056	0,048
40	754	633	17	16	0,088	0,074
50	1178	990	17	25,5	0,137	0,114
63	1870	1680	22	58	0,218	0,195
80	3016	2722	22	95	0,350	0,320
100	4710	4416	30	214	0,550	0,510



Basic dimensions

PRA/282000/M – standard cylinders

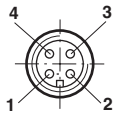


Type	Ø	AM	Ø Be 11	Ø BAe 11	BG min.	⌲ BH	❑ E	EE 1	EE 2	G 1	G 2	KK	⌲ KV	KW	L2
PRA/282032/M/.	32	22	30	30	16	6	50	G 1/8	G 1/8	10,5	61	M10x1,25	17	5	20
PRA/282040/M/.	40	24	35	35	16	6	58	G 1/4	G 1/8	12	67	M12x1,25	19	6	22
PRA/282050/M/.	50	32	40	40	16	8	70	G 1/4	G 1/4	13	69	M16x1,5	24	8	28
PRA/282063/M/.	63	32	45	45	16	8	85	G 3/8	G 3/8	13,5	76,5	M16x1,5	24	8	28
PRA/282080/M/.	80	40	45	45	16	19	105	G 3/8	G 3/8	15	82	M20x1,5	30	10	33
PRA/282100/M/.	100	40	55	55	16	19	130	G 1/2	G 3/8	19	88	M20x1,5	30	10	36

Type	Ø	L8	L9	L12	Ø MMh9	PE	PL1	PL2	❑ R	RT	⌲ SW	VA	VD	WH	at 0 mm	per 25 mm
PRA/282032/M/.	32	94	4	5	12	16,5	36,5	53,5	32,5	M 6	10	3	6	26	0,66 kg	0,07 kg
PRA/282040/M/.	40	105	4	5	16	16,5	36,5	53,5	38	M 6	13	3,5	6	30	1,03 kg	0,11 kg
PRA/282050/M/.	50	106	5	6,5	20	16,5	38,5	59	46,5	M 8	17	3,5	6	37	1,58 kg	0,18 kg
PRA/282063/M/.	63	121	5	6,5	20	16,5	39,5	64,5	56,5	M 8	17	4	6	37	2,42 kg	0,19 kg
PRA/282080/M/.	80	128	-	10	25	16,5	39	67	72	M 10	22	4	6	46	4,12 kg	0,29 kg
PRA/282100/M/.	100	138	-	10	25	16,5	43,5	73,5	89	M 10	22	4	6	51	6,34 kg	0,35 kg

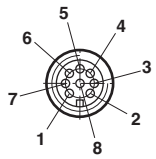
Wiring diagram for electric plug

AS-Interface



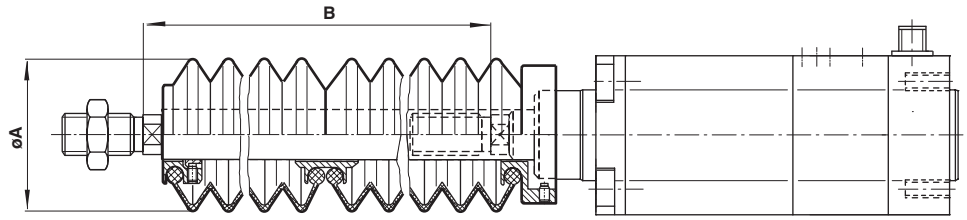
Pin 1	AS-Interface	+
Pin 2	External power	-
Pin 3	AS-Interface	-
Pin 4	External power	+

Multipole



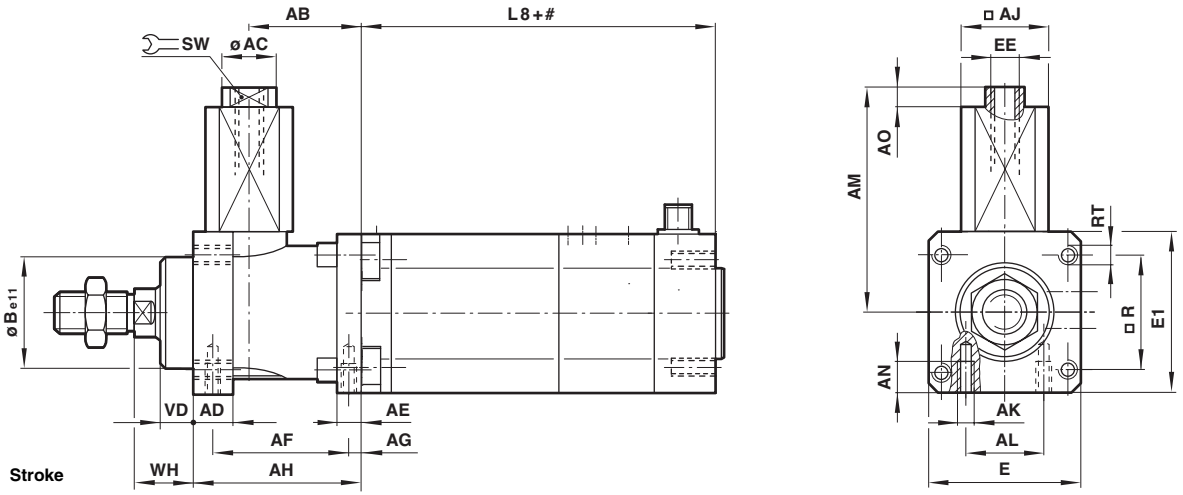
Plug Valves	Kabelbelegung für Anschlusskabel M/P73200/.	Plug Switches	Wiring diagram for connector cable M/P73200/
Pin 1 Not used	white	Pin 5 + 24 V dc	grey
Pin 2 Solenoid 2 (instroke)	brown	Pin 6 Switch 2 (rear end)	pink
Pin 3 0 V	green	Pin 7 0 V	blue
Pin 4 Solenoid 1 (outstroke)	yellow	Pin 8 Switch 1 (front end)	red

PRA/282000/MG – cylinders with piston rod bellows



Cylinder Ø	Ø A	Maximum stroke per bellow	Piston rod extension B first bellow	further bellows
32	40	60	30	25
40	63	145	50	32
50	63	145	40	32
63	63	145	40	32
80	80	250	50	45
100	80	250	50	45

PRA/282000/L4 – cylinders with locking unit (passive)



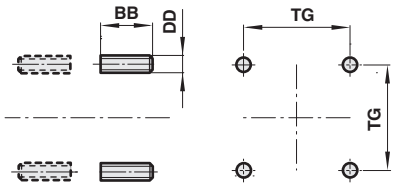
Typ	Ø	AB	Ø AC	AD	AE	AF	AG	AH	❑ AJ	AK	AL	AM	AN
PRA/282032/L4/.	32	32	10	12	8	40	4,2	48	22,7	M 5	16	70,5	8
PRA/282040/L4/.	40	35,5	10	12	10	46	4,5	55	27,7	M 5	21	74,5	10
PRA/282050/L4/.	50	49	15	16	15	54	11,5	70	32,7	M 6	24	91,5	12
PRA/282063/L4/.	63	49	15	15	15	55	7,5	70	41	M 8	32	108,5	12
PRA/282080/L4/.	80	62	19	16	16	70	10	90	53	M 8	44	141,5	16
PRA/282100/L4/.	100	65	19	18	16	70	10	92	53	M 8	60	141,5	16
Zylinder	**Ø**	**AO**	**Ø B e11**	**E**	**E 1**	**EE**	**L 8**	**❑ R**	**RT**	**SW**	**VD**	**WH**	**Kräfte*1)**
PRA/282032/L4/.	32	4	30	48	50	M 5	94	32,5	M 6	8	10	16	600 N
PRA/282040/L4/.	40	4	35	56	58	M 5	105	38	M 6	8	10	18	1000 N
PRA/282050/L4/.	50	4	40	68	70	G 1/8	106	46,5	M 8	13	12	22	1500 N
PRA/282063/L4/.	63	4	45	82	85	G 1/8	121	56,5	M 8	13	12	20	2200 N
PRA/282080/L4/.	80	4	45	100	105	G 1/8	128	72	M 10	17	20	33	5000 N
PRA/282100/L4/.	100	4	55	120	130	G 1/8	138	89	M 10	17	23	38	5000 N

* Retention forces

Mountings

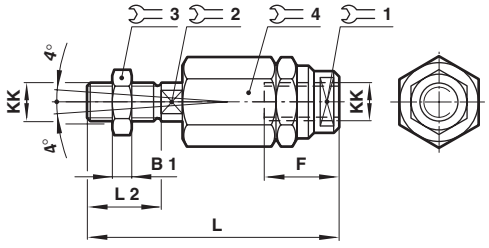
Front or rear stud A

Corresponds to DIN ISO 6431, Style MX1



Type	Ø	BB	DD	TG	kg
QM/8032/35	32/40	17	M6	32,5/38	0,02
QM/8050/35	50/63	23	M8	46,5/56,5	0,05
QM/8080/35	80/100	28	M10	72/89	0,08

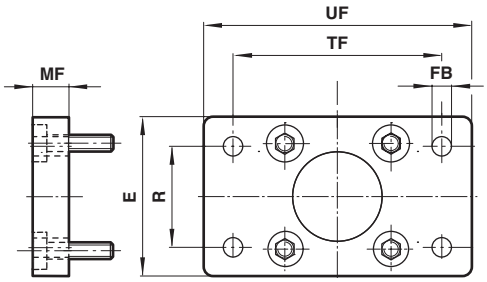
Piston rod swivel AK



Type	Ø	KK	B1	F	L	L2	1	2	3	4	kg
QM/8025/38	32	M10x1,25	5	26	73	20	19	12	17	30	0,20
QM/8040/38	40	M12x1,25	6	26	77	24	19	12	19	30	0,20
QM/8050/38	50/63	M16x1,5	8	34	106	32	30	19	24	42	0,65
QM/8080/38	80/100	M20x1,5	10	42	122	40	30	19	30	42	0,72

Rear flange B, front flange G

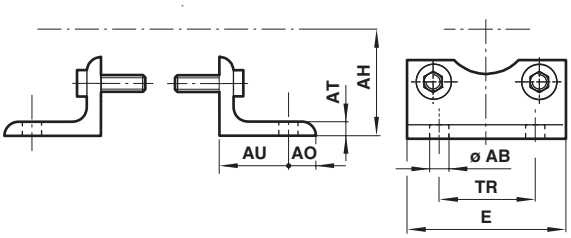
Corresponds to DIN ISO 6431 and VDMA 24562 Part 2, Style MF1 and MF2



Type	Ø	E	Ø FB	MF	R	TF	UF	kg
QA/8032/22	32	50	7	10	32	64	80	0,25
QA/8040/22	40	55	9	10	36	72	90	0,35
QA/8050/22	50	65	9	12	45	90	110	0,70
QA/8063/22	63	75	9	12	50	100	125	0,80
QA/8080/22	80	100	12	16	63	126	154	1,35
QA/8100/22	100	120	14	16	75	150	186	2,20

Foot C

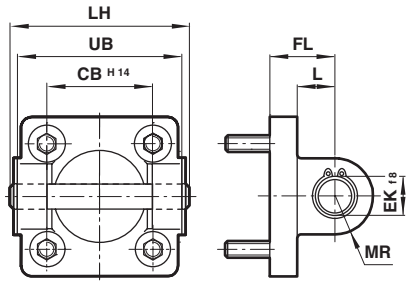
Corresponds to DIN ISO 6431 and VDMA 24562 Part 2, Style MS1



Type	Ø	Ø AB	AH	AO	AT	AU	E	TR	kg
QA/8032/21	32	7	32	8	4	24	48	32	0,15
QA/8040/21	40	9	386	9	4	28	53	36	0,18
QA/8050/21	50	9	45	10	5	32	64	45	0,30
QA/8063/21	63	9	50	12	5	32	74	50	0,39
QA/8080/21	80	12	63	19	5	41	98	63	0,80
QA/8100/21	100	14	71	19	5	41	115	75	0,95

Rear clevis D

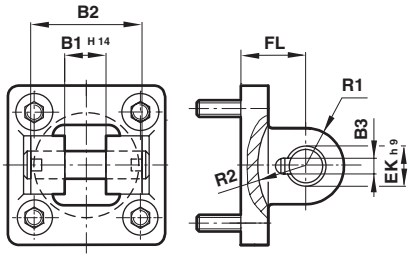
Corresponds to DIN ISO 6431 and VDMA 24562, Part 2, Style MP2



Type	Ø	CB H14	Ø EK f8	FL	L	LH	MR	UB	kg
QA/8032/23	32	26	10	22	13	52	9	45	0,11
QA/8040/23	40	28	12	25	16	60	12	52	0,16
QA/8050/23	50	32	12	27	17	68	12	60	0,22
QA/8063/23	63	40	16	32	22	79	15	70	0,34
QA/8080/23	80	50	16	36	22	99	15	90	0,54
QA/8100/23	100	60	20	41	27	119	20	110	0,90

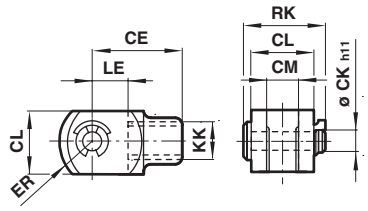
Rear clevis D2

Corresponds to VDMA 24562 Part 2



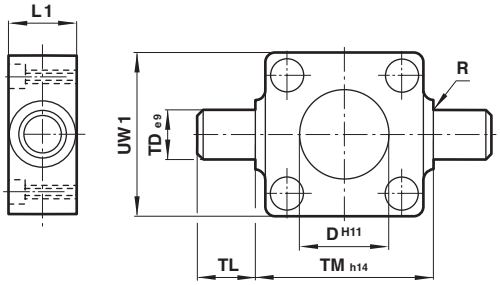
Type	Ø	B1 H14	B2	B3	Ø EK h9	FL	R1	R2	kg
QA/8032/42	32	14	34	3,3	10	22	11	17	0,20
QA/8040/42	40	16	40	4,3	12	25	12	20	0,23
QA/8050/42	50	21	45	4,3	16	27	14,5	22	0,36
QA/8063/42	63	21	51	4,3	16	32	18	25	0,55
QA/8080/42	80	25	65	4,3	20	36	22	30	0,90
QA/8100/42	100	25	75	4,3	20	41	22	32	1,45

Piston rod clevis F
Corresponds to DIN ISO 8140



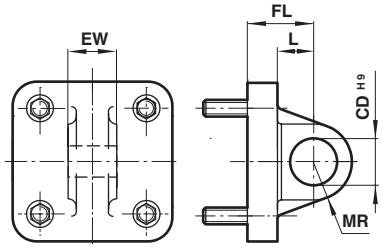
Type	Ø	KK	CE	Ø CK$_{h11}$	CL	CM	ER	LE	RK	kg
QM/8025/25	32	M10x1,25	40	10	20	10	16	20	28	0,09
QM/8040/25	40	M12x1,25	48	12	24	12	19	24	32	0,13
QM/8050/25	50/63	M16x1,5	64	16	32	16	25	32	41,5	0,33
QM/8080/25	80/100	M20x1,5	80	20	40	20	32	40	50	0,67

Front or rear detachable trunnion FH
Corresponds to VDMA 24562 Part 2, style MT 5/6



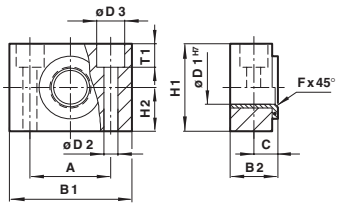
Type	Ø	Ø D$_{h11}$	L1	R	Ø TD$_{e9}$	TL	TM^{h14}	UW1	kg
QA/8032/34	32	30	16	1	12	12	50	50	0,20
QA/8040/34	40	35	20	1,6	16	16	63	55	0,38
QA/8050/34	50	40	24	1,6	16	16	75	65	0,60
QA/8063/34	63	45	24	1,6	20	20	90	75	1,10
QA/8080/34	80	45	28	1,6	20	20	110	100	1,90
QA/8100/34	100	55	38	2	25	25	132	120	3,50

Rear eye R
Corresponds to ISO 21 287 (ø 20 and 25 mm) and DIN ISO 6431 or VDMA 24562 Part 2 (ø 32 to 125 mm), style MP4



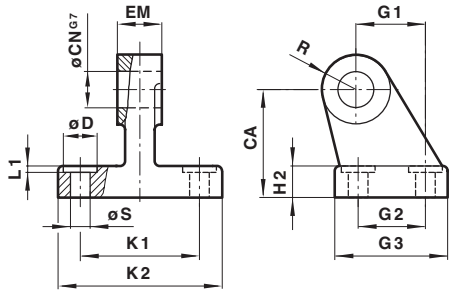
Type	Ø	Ø CD^{H9}	EW	FL	L	MR	kg
QA/8032/27	32	10	25,8	22	13	9	0,09
QA/8040/27	40	12	27,8	25	16	12	0,11
QA/8050/27	50	12	31,7	27	17	12	0,17
QA/8063/27	63	16	39,7	32	22	15	0,24
QA/8080/27	80	16	49,7	36	22	15	0,37

Trunnion support S
Corresponds to VDMA 24562 Part 2



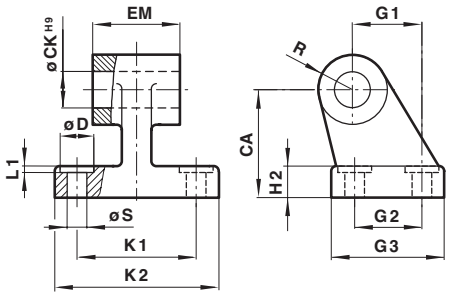
Type	Ø	A	B1	B2	C	Ø D1^{H7}	Ø D2	Ø D3	Fx 45°	H1	H2	T1	kg
QA/8032/41	32	32	46	18	10,5	12	6,6	11	1	30	15	6,8	0,10
QA/8040/41	40/50	36	55	21	12	16	9	15	1,6	36	18	9	0,14
QA/8063/41	63/80	42	65	23	13	20	11	18	1,6	40	20	11	0,18
QA/8100/41	100	50	75	28,5	16	25	14	20	2	50	25	13	0,34

Narrow hinge SS



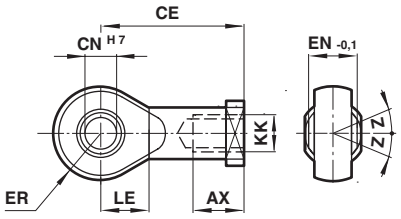
Type	Ø	CA	Ø CN^{G7}	Ø D	H2	EM	G1	G2	G3	K1	K2	L1	R	Ø S	kg
M/P19931	32	32	10	11	8	10	21	18	31	38	51	1,6	10	6,6	0,15
M/P19932	40	36	12	11	10	12	24	22	35	41	54	1,6	11	6,6	0,20
M/P19933	50	45	10	15	12	16	33	30	45	50	65	1,6	13	9	0,48
M/P19934	63	50	16	15	12	16	37	35	50	52	67	1,6	15	9	0,50
M/P19935	80	63	20	18	14	20	47	40	60	66	86	2,5	15	11	0,75
M/P19936	100	71	20	18	15	20	55	50	70	76	96	2,5	19	11	1,20

Wide hinge SW
Corresponds to VDMA 24562 Part 2



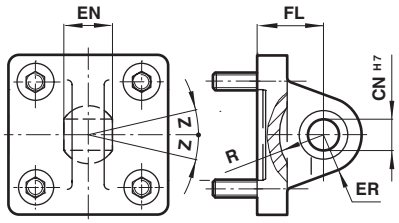
Typ	Ø	CA	Ø CK^{H9}	Ø D	H2	EM	G1	G2	G3	K1	K2	L1	R	Ø S	kg
M/P19493	32	32	10	11	8	26,5	21	18	31	38	51	1,6	10	6,6	0,05
M/P19494	40	36	12	11	10	28,5	24	22	35	41	54	1,6	11	6,6	0,07
M/P19495	50	45	12	15	12	32,5	33	30	45	50	65	1,6	13	9	0,14
M/P19496	63	50	16	15	12	40,5	37	35	50	52	67	1,6	15	9	0,18
M/P19497	80	63	16	18	14	50,5	47	40	60	66	86	2,5	15	11	0,28
M/P19498	100	71	20	18	15	60,5	55	50	70	76	96	2,5	19	11	0,42

Universal piston rod eye UF
Corresponds to DIN ISO 8139



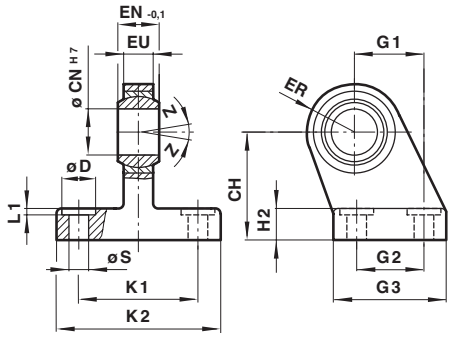
Type	Ø	Gewinde KK	AX	CE	Ø CN^{H7}	EN$_{-0,1}$	ER	LE	Z	kg
QM/8025/32	32	M10x1,25	20	43	10	14	14	15	13°	0,09
QM/8040/32	40	M12x1,25	22	50	12	16	16	17	13°	0,13
QM/8050/32	50/63	M16x1,5	28	64	16	21	21	22	15°	0,33
QM/8080/32	80/100	M20x1,5	33	77	20	25	25	26	15°	0,67

Universal rear eye UR
Corresponds to VDMA 24562 Part 2



Type	Ø	Ø CN^{H7}	EN	ER	FL	R	Z	kg
QA/8032/33	32	10	14	16	22	14,5	13°	0,15
QA/8040/33	40	12	16	19	25	18	13°	0,25
QA/8050/33	50	16	21	21	27	19	13°	0,40
QA/8063/33	63	16	21	24	32	24	15°	0,55
QA/8080/33	80	20	25	28	36	24	15°	0,90
QA/8100/33	100	20	25	30	41	29	15°	1,50

Swivel hinge US
Corresponds to VDMA 24562 Part 2



Type	Ø	CH	Ø CN^{H7}	Ø D	EN$_{-0,1}$	ER	EU	G1	G2	G3	H2	K1	K2	L1	Ø S	Z	kg
M/P40310	32	32	10	11	14	16	10,5	21	18	31	8	38	51	1,6	6,6	13°	0,19
M/P40311	40	36	12	11	16	19	12	24	22	35	10	41	54	1,6	6,6	13°	0,24
M/P40312	50	45	16	15	21	21	15	33	30	45	12	50	65	1,6	9	13°	0,46
M/P40313	63	50	16	15	21	24	15	37	35	50	12	52	67	1,6	9	15°	0,59
M/P40314	80	63	20	18	25	28	18	47	40	60	14	66	86	2,5	11	15°	1,03
M/P40315	100	71	20	18	25	30	18	55	50	70	15	76	96	2,5	11	15°	1,40

Spare kits for cylinders

Ø	Model	Spares kit
32	PRA/282032/MI	QA/282032/00
40	PRA/282040/MI	QA/282040/00
50	PRA/282050/MI	QA/282050/00
63	PRA/282063/MI	QA/282063/00
80	PRA/282080/MI	QA/282080/00
100	PRA/282100/MI	QA/282100/00

Warning
These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under '**Technical Data**'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN. Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.