- **ø 32 ... 200 mm**
- **High performance adaptive cushioning system "ACS"**
- **High corrosion and acid resistance**
- **These cylinder are applicable in zone 1 &2 (gas), 21 & 22 (dust), ATEX Cat. II 2G and II 2D.**

Technical features

Medium:
Compressed air, filtered, lubricated or non-lubricated
Standard:
ISO 15552
Operation:
Double acting, adjustable cushioning
Operating pressure:
ø 32 ... 200 mm
Cylinder with Round barrel
1 ... 16 bar (14 ... 232 psi)

Ports:
G1/8 ... 3/4
Cylinder diameters:
32, 40, 50, 63, 80, 100, 125, 160, 200 mm
Standard strokes:
25, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 mm
Non-standard strokes:
Available (5 ... 2500 mm)
ATEX marking:
II 2G Ex h IIC T4 Gb
II 2D Ex h IIIC T120°C Db

Operating temperature:
ø 32 ... 200 mm
Standard version
Ambient temperature:
-10 ... +60 °C max. (-4 ... +140 °F)
Operating temperature:
-10 ... +80 °C max. (+14 ... +176 °F)
Air supply must be dry enough to avoid ice formation at temperatures below +2 °C (+35 °F).

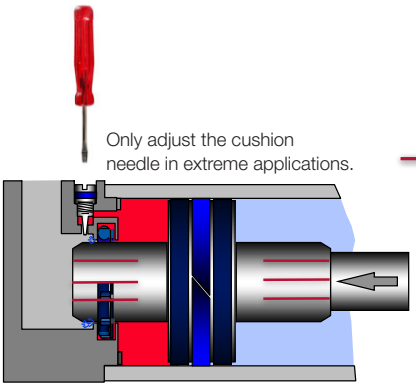
Standard Materials:
Barrel: X5 Cr Ni 18 10 (1.4301; AISI 304)
End covers: X5 Cr Ni 19 10 (1.4308; AISI 304)
Piston rod: X10 Cr Ni S 18 9 (1.4305; AISI 303)
Nuts and screws: X10 Cr Ni S 18 9 (1.4305; AISI 303)
Tie rods: X5 Cr Ni Mo 17 12 2 (1.4401; AISI 316)
Piston rod seals: FPM
Piston seals:
PUR ø 32 ... 100 mm,
NBR ø 125 ... 200 mm
Cushion seals: NBR
O-rings: FPM

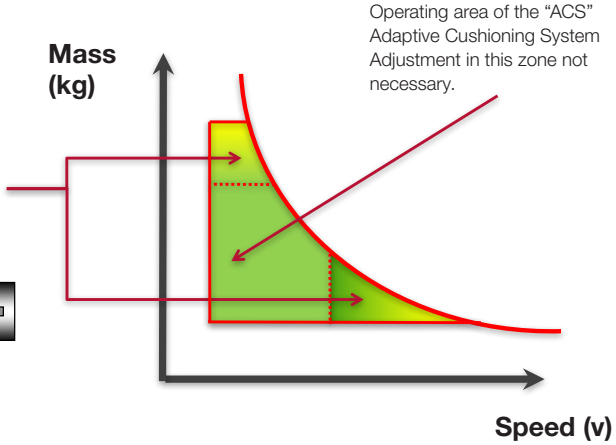
Technical data

Cylinder ø (mm)	32	40	50	63	80	100	125	160	200
Port size	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2	G3/4	G3/4
Piston rod ø (mm)	12	16	20	20	25	25	32	40	40
Piston rod thread	M10 x 1,25	M12 x 1,25	M16 x 1,5	M16 x 1,5	M20 x 1,5	M20 x 1,5	M27 x 2	M36 x 2	M36 x 2
Cushion length (mm)	20	22	24	24	26	33	39	43	43
Cushioning Adaptive cushioning systems "ACS"	•	•	•	•	•	•	•		
Cushioning (adjustable cushion)								•	•
Initial cushion volume (cm^3)	12,8	20,2	36	64	111	235	427	784	1273
Theoretical thrusts at 6 bar outstroke (N)	482	754	1178	1870	3016	4710	7363	12064	18840
Theoretical thrusts at 6 bar instroke (N)	414	633	990	1680	2722	4416	6882	11310	18090
Air consumption at 6 bar outstroke (l/cm)	0,056	0,088	0,137	0,218	0,35	0,55	0,86	1,41	2,2
Air consumption at 6 bar instroke (l/cm)	0,048	0,074	0,114	0,195	0,32	0,51	0,79	1,32	2,1

The function

The new "ACS" Adaptive Cushioning System provides a high performance pneumatic damping function. The system will automatically cushion for a wide range of general applications as delivered. Manual adjustment is still possible for extreme applications.





Design and sizing in pneumatics

Golden rules

Design and sizing in pneumatics is often based upon experience coupled with an element of fear of under specifying crucial equipment. In an attempt to ensure enough power, engineers may select over sized cylinders and then select over sized valves to supply them with enough air. The same uncertainty can also lead to over sized specification of air line equipment, fittings and tubing.
The outcome is components larger than necessary that use too much compressed air and waste energy and money.
However when following some well proven golden rules and a few laws of pneumatics it is easy to achieve correctly sized pneumatic installations.

Basics to consider

The force required, the pressure available, the speed of movement and air consumption. ISO and VDMA standard or compact style also cushioning and sensors. Cylinders are greased on assembly and operate under normal conditions without additional lubrication. However using a lubricator will extend the life of these products.

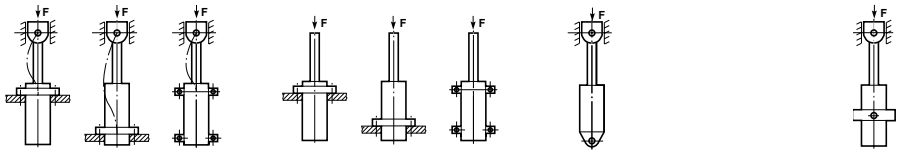
Sizing rule

The theoretical force of the cylinder should be 25% extra for high speed, 50% extra for low speed and 100% extra for ultra low speed (positioning) applications.

The correct sizing is based upon the required force and applied pressure. Go to page 1 for more information on cylinder sizing and air consumption.

Load and buckling

For applications with high side loading, use pneumatic slide actuators or standard cylinders fitted with guide units.
Alternatively external guide bearings should be installed. When a long stroke length is specified, care must be taken to ensure the rod length is within the limits for prevention of buckling. The table shows the maximum stroke length for a variety of installation arrangements.



Cylinder ø (mm)	Piston rod ø (mm)	Load case 1 Pressure (bar)				Load case 2 Pressure (bar)				Load case 3 Pressure (bar)				Load case 4 Pressure (bar)			
		4	6	10	16	4	6	10	16	4	6	10	16	4	6	10	16
32	12	1100	860	650	500	500	390	290	210	650	520	380	290	760	600	450	340
40	16	1600	1200	950	730	730	580	430	320	940	750	560	430	1100	880	660	500
50	20	2000	1600	1200	930	930	740	550	420	1200	960	720	550	1400	1100	840	640
63	20	1500	1200	930	720	720	570	420	310	930	740	550	420	1100	860	650	490
80	25	1900	1500	1100	880	880	700	510	380	1100	910	680	510	1300	1100	800	600
100	25	1500	1200	880	670	670	520	380	270	880	690	510	370	1000	820	600	450
125	32	2000	1600	1200	910	910	710	520	380	1200	940	690	520	1400	1100	820	620
160	40	2400	1900	1500	1100	1100	880	640	480	1400	1200	860	640	1700	1400	1000	760
200	40	1900	1500	1100	860	860	670	480	350	1100	890	650	480	1300	1000	770	580

Explosion protection according ATEX directive 2014/34/EU
EN ISO 80079 Non-electrical equipment for potentally explosive atmospheres

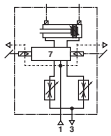
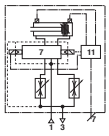
Range of application		**All range of application other than mines**		
Equipment group		**II**		
Potentially explosive atmosphere		Mixture of air and gases, vapours, mists → G (gas)		
(compustible materials)		Dust/air - mixture → D (dust)		
Proability risk for a potentially explosive atmosphere		**Continuous or long-term or frequent**	**Occasional**	**Rarely and briefly**
Equipment categories		**1**	**2**	**3**
Equipment safety		**very high**	**high**	**normal**
Gas	Equipment-identification Ex…	Ex II 1G	Ex II 2G	Ex II 3G
	ATEX-zone	Zone 0	Zone 1	Zone 2
Dust	Equipment-identification Ex…	Ex II 1D	Ex II 2D	Ex II 3D
	ATEX-zone	Zone 20	Zone 21	Zone 22

Equipment identification for IMI Norgren pneumatic cylinder: (Example for standard cylinder)

II 2G Ex h IIC T4 Gb
II 2D Ex h IIIC T120°C Db

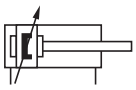
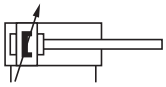
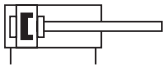
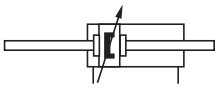
Equipment group:	II	All application other than mines
Equipment categorie:	2	High level of equipment safety
Usability for zones:	G and D	Gas and dust
Explosions groups	IIC and IIIC	Max. ignitability gas- and dust groups
Temperature class for gas:	T4	Max. surface temperature 135°C
Temperature data for dust:	120°C	Max. surface temperature
Equipment Protection Level (EPL)	Gb and Db	Gas and dust, save by normal operation and expected equipment fault

Additional ISO 15552 Cylinder ranges (Cylinder ranges in the red frame are shown in this data sheet.)

Symbols		Profile barrel	Round Barel	Industrial Automation	Food & Beverage	Automotive	ATEX	Rail *1)	CE-marked	ø (mm)	Range	Description	Datasheet
		•		•	•	•	•	•	•	32 ... 125	PRA/802000 LPRA/802000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M 1_5_225_PRA_802000_M_EX 1_5_220_LPRA_802000_M_LRA_8000_M
		•	•		•	•	•	•	•	32 ... 125	RA/802000 LPRA/802000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M 1_5_225_PRA_802000_M_EX 1_5_220_LPRA_802000_M_LRA_8000_M
		•	•		•	•	•	•	•	160 ... 320	RA/8000 LRA/8000	Double Acting Cylinder	1_5_220_PRA_802000_M_RA_8000_M 1_5_126_RA_8000_M_EX 1_5_220_LPRA_802000_M_LRA_8000_M
		•	•	•	•		•		•	32 ... 200	KA/802000/M KA/802000/M/EX	Stainless steel Cylinder	1_5_222_KA_802000_M 1_5_228_KA_802000_M_EX
		•		•	•		•		•	32 ... 100	PRA/822000	Smooth Line Cylinder	1_5_230_PRA_822000_M 1_5_235_PRA_822000_M_EX
		•		•	•		•		•	32 ... 100	PRA/842000	Clean Line Cylinder	1_5_240_PRA_842000_M 1_5_245_PRA_842000_M_EX
		•		•		•	•		•	32 ... 100	PRA/862000	IVAC Industrial Cylinder	1_5_250_PRA_862000_M 1_5_255_PRA_862000_M_EX
		•		•	•	•	•		•	32 ... 100	PRA/882000	IVAC Clean Line Cylinder	1_5_260_PRA_882000_M 1_5_265_PRA_882000_M_EX
		•		•	•	•	•		•	40 ... 125	PSA/182000/F1	Cylinder with position sensor	1_9_051_PSA_182000_F1 1_9_052_PSA_182000_F1_EX
		•	•			•	•		•	160 ... 320	SA/8000/F1	Cylinder with position sensor	Datasheet (standard) 1_9_062_SA_8000_F1_EX
		•		•	•	•		•		32 ... 100	PRA/801000, PRA/803000	Standard Single Acting Cylinder	1_4_101_PRA_801000_803000 -
		•	•			•		•		32 ... 100	RA/801000, RA/803000	Standard Single Acting Cylinder	1_4_101_PRA_801000_803000 -

• Range available. For additional information please contact the technical service or http://www.imi-precision.com
*1) Rail Cylinder Shock and vibaration tested to EN 61373 Category 1; Class A + B

Cylinder variants

Symbol Please see the description below	Versions H	L	Piston Rod Material K	S	C	D	Standard Model with Male Piston Rod Thread	Female Piston Rod Thread	ø (mm)	Description	Page
			X				KA/802000/M/EX	KA/802000/MX/EX	32 ... 125	Standard Cylinder	8/9
			X				KA/802000/M/EX	-	160 ... 200	Standard Cylinder	8
			X				KA/802000/W2/EX	KA/802000/W2X/EX	32 ... 125	Cylinder with Special Wiper - Seal (suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice)	8/9
			X				KA/802000/W2/EX		160 ... 200		
			X				KA/802000/MU/EX	KA/802000/MUX/EX	32 ... 125	Cylinder with Extended Piston Rod Maximum stroke: 2000 Maximum extention: 800	8/9
			X				KA/802000/MU/EX	-	160 ... 200		
			X				KA/802000/W6/EX	KA/802000/W6X/EX	32 ... 125	Cylinder with Extended Piston Rod and Special Wiper - Seal Maximum stroke: 2000 suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice	8/9
			X				KA/802000/W6/EX	-	160 ... 200		
			X				KA/802000/MW/EX	KA/802000/MWX/EX	32 ... 125	Cylinder without Cushioning	8/9
			X				KA/802000/MW/EX	-	160 ... 200		
			X				KA/802000/JM/EX	KA/802000/JMX/EX	32 ... 125	Cylinder with Double Ended Piston Rod	9
			X				KA/802000/JM/EX	-	160 ... 200		
			X				KA/802000/W4/EX	KA/802000/W4X/EX	32 ... 125	Cylinder with Double Ended Piston Rod and Special Wiper - Seal without Magnet (suitable for appl. with cement, plaster (stucco), arizona sand, hoar-frost or ice)	8/9
			X				KA/802000/W4/EX	-	160 ... 200		

Note: K, S = Stainless steel austenitic; X = Standard;

Option selector

KA/802★★★/★★★★/EX/★★★★

Piston rod material	Substitute
Stainless steel austenitic	**K**

Cylinder ø (mm)	Substitute
032, 040, 050, 063, 080, 100, 125, 160, 200	

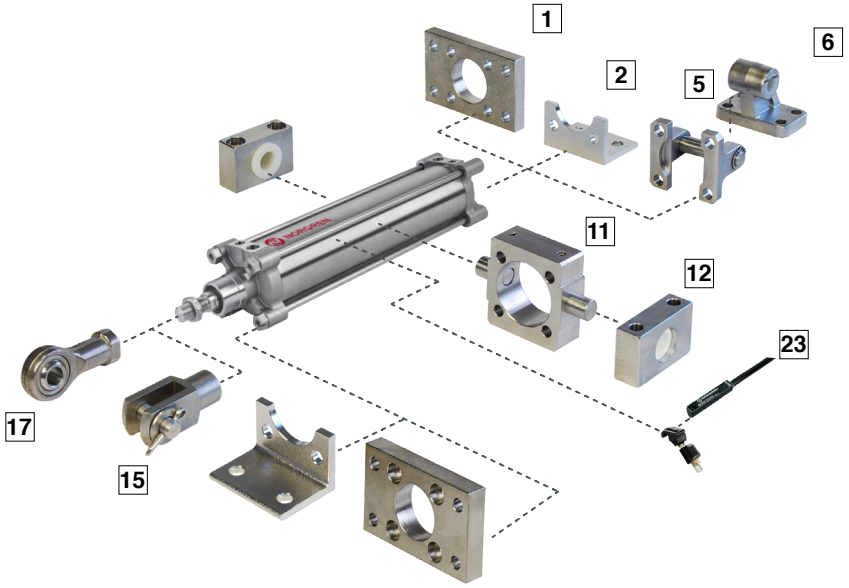
Variants ø 32 ... 200 mm (magnetic piston)	Substitute
Standard	**M**
Special wiper/seal	**W2**
Without cushion	**MW**
Double ended piston rod	**JM**
Double ended piston rod, special wiper/seal	**W4**
Extended piston rod	**MU**
A/8***/MU/EX/****/*** →	**Extension (mm)**
Extended piston rod, special wiper/seal	**W6**
A/8***/W6/EX/****/*** →	**Extension (mm)**

Strokes (mm)	Substitute
5 ... 2500	

Piston rod thread	Substitute
Male	**None**
Female (Ø32 ... 125 mm)	**X**

Note: If position is not required, disregard option position within part number e.g. KA/802100/M/EX/100.
For combinations of cylinder variants consult our technical service.
This option selector explains only the cylinder variants.
Additional variants/options are not possible.
Details see table above.

Cylinder with Round barrel ø 32 ... 200 mm



Mountings

Cyl. Ø	B, G  1 Page 10	C  2 Page 10	D  5 Page 10	F  15 Page 10	S  12 Page 11	SW  6 Page 11	UF  17 Page 11	UH  11 Page 11
32	KQA/8032/22	KQA/8032/21	KQA/8032/23	KQM/55433/25	KQA/8032/41	M/P72288	KQM/8032/32	KQA/8032/40
40	KQA/8040/22	KQA/8040/21	KQA/8040/23	KQM/55441/25	KQA/8040/41	M/P72289	KQM/8040/32	KQA/8040/40
50	KQA/8050/22	KQA/8050/21	KQA/8050/23	KQM/55451/25	KQA/8040/41	M/P72290	KQM/8050/32	KQA/8050/40
63	KQA/8063/22	KQA/8063/21	KQA/8063/23	KQM/55451/25	KQA/8063/41	M/P72291	KQM/8050/32	KQA/8063/40
80	KQA/8080/22	KQA/8080/21	KQA/8080/23	KQA/8080/25	KQA/8063/41	M/P72292	KQM/8080/32	KQA/8080/40
100	KQA/8100/22	KQA/8100/21	KQA/8100/23	KQA/8080/25	KQA/8100/41	M/P72293	KQM/8080/32	KQA/8100/40
125	KQA/8125/22	KQA/8125/21	KQA/8125/23	KQA/8125/25	KQA/8100/41	–	KQM/8125/32	KQA/8125/40
160	–	–	–	–	–	–	–	–
200	–	–	–	–	–	–	–	–

Position	Style	Stainless steel	Position	Style	Standard
1	B, G	X 5 Cr Ni 18 10 (1.4301; AISI 304). Screws: A2	**12**	S	Swivel bearing: X 5 Cr Ni 18 10 (1.4301; AISI 304), bearing: PA
2	C	X 5 Cr Ni 18 10 (1.4301; AISI 304). Screws: A2	**15**	F	Clevis mounting: X 10 Cr Ni S 18 9 (1.4305; AISI 303), Bolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303), Circlip: X 10 Cr Ni S 18 9 (1.4305; AISI 303)
5	D	X 5 Cr Ni 18 10 (1.4301; AISI 304). Screws: A2 Bolt: X 10 Cr Ni S 18 9 (1.4305; AISI 303)	**17**	UF	X 10 Cr Ni S 18 9 (1.4305; AISI 303), Inner ring X 105 Cr Co Mo 18-2 (1.4528), Outer ring X 5 Cr Ni 18 10 (1.4301; AISI 304)
6	SW	X 6 Cr Ni 18 9 (1.4308; AISI 304)		Bracket for switches	Body: PA/PP, screw and holding strap A2
11	UH	Adjustable intermediate mounting: X 10 Cr Ni S 18 9 (1.4305; AISI 303), Bolts: X 10 Cr Ni S 18 9 (1.4305; AISI 303), screws: A2			

Accessories Round barrel (ø 32 ... 200 mm)

Model	ø	Port size	Straight fitting 	Elbow fitting 
KA/802032/M/EX/*	32	G1/8	S02250618	C02470618
KA/802040/M/EX/*	40	G1/4	S02250628	C02470628
KA/802050/M/EX/*	50	G1/4	S02250828	C02470828
KA/802063/M/EX/*	63	G3/8	S02250838	C02470838
KA/802080/M/EX/*	80	G3/8	S02251038	C02471038
KA/802100/M/EX/*	100	G1/2	S02251248	C02471248
KA/802125/M/EX/*	125	G1/2	S02251248	C02471248
KA/802160/M/EX/*	160	G3/4	-	-
KA/802200/M/EX/*	200	G3/4	-	-

For alternative fitting types please contact the technical service.

Service kit

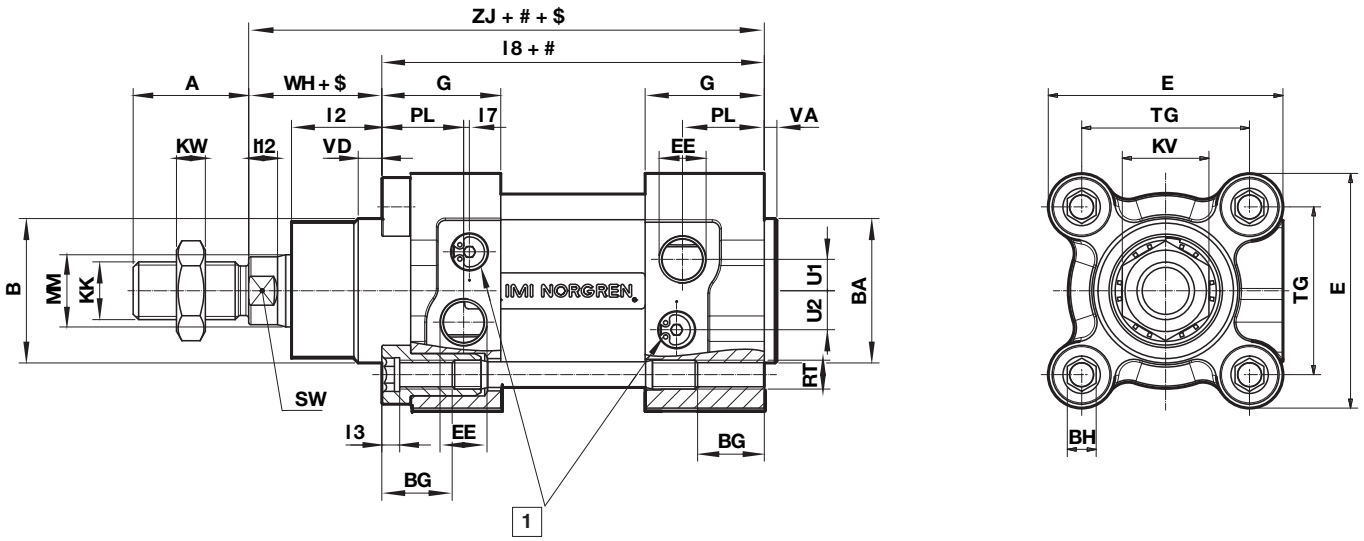
ø	Service kit for Round and Profile barrel 
32	KQA/8032/00
40	KQA/8040/00
50	KQA/8050/00
63	KQA/8063/00
80	KQA/8080/00
100	KQA/8100/00
125	KQA/802125/00
160	KQA/8160/00
200	KQA/8200/00

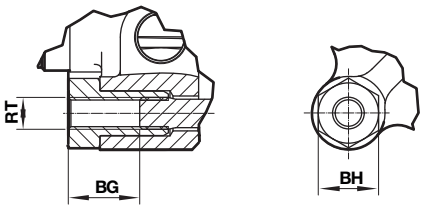
Magnetically operated switches

ø	M/50/** 	Switch mounting brackets for M/50 
	Page 12-15	Page 15
32		QM/27/2/1
40		QM/27/2/1
50		QM/27/2/1
63		QM/27/2/1
80		QM/27/2/1
100		QM/27/2/1
125		QM/27/2/1
160		QM/27/2/1
200		QM/27/2/1

Basic dimensions
KA/802000/M/EX
Standard Cylinder
ø 32 - 200 mm

Dimensions in mm
Projection/First angle





Stroke
$ Piston rod extension
1 Cushion screw

For additional information please contact the technical service or http://www.imi-precision.com

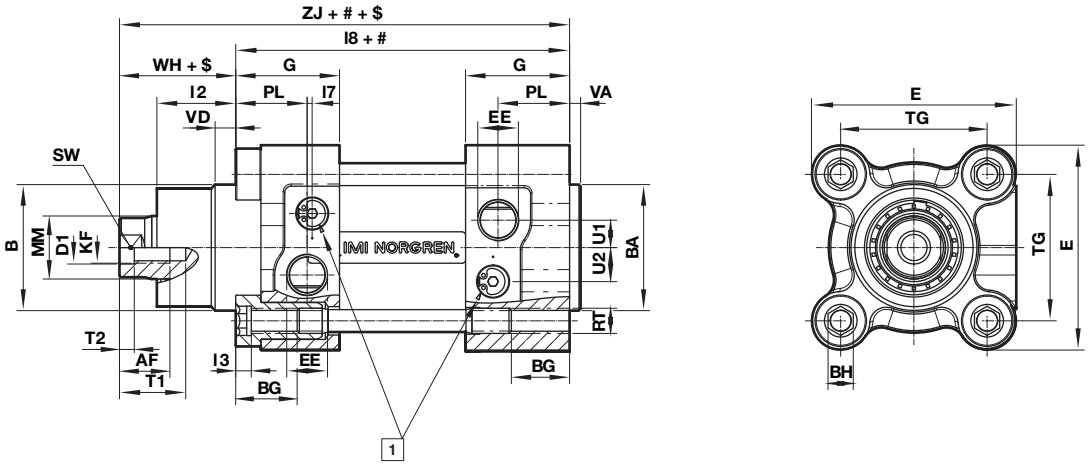
ø	A -0,5	ø B d11	ø BA d11	BG min	BH	□ E	EE	G	KK	KV	KW	L2	L3	L7	L8	L12	ø MM h9	PL	TG
32	22	30	30	16	6	47	G1/8	29	M10 x 1,25	17	5	19,5	4	6,6	94	5,5	12	15	32,5
40	24	35	35	16	6	53	G1/4	34,5	M12 x 1,25	19	6	22	4	5,6	105	6,5	16	21,5	38
50	32	40	40	16	8	65	G1/4	33	M16 x 1,5	24	8	25	5	1,6	106	8	20	22,7	46,5
63	32	45	45	16	8	75	G3/8	36,5	M16 x 1,5	24	8	25	5	3,6	121	8	20	24,2	56,5
80	40	45	45	17	19	95	G3/8	42	M20 x 1,5	30	10	33	-	1,8	128	10	25	29,7	72
100	40	55	55	17	19	113	G1/2	42	M20 x 1,5	30	10	35	-	3,8	138	10	25	27,7	89
125	54	60	60	20	24	140	G1/2	54	M27 x 2	41	13,5	44	-	1,8	160	13	32	39,7	110
160	72	65	65	28,5	32	180	G3/4	55	M36 x 2	55	18	58	-	-	180	16	40	31,5	140
200	72	75	75	28,5	32	220	G3/4	52,5	M36 x 2	55	18	67	-	-	180	16	40	26,5	175

ø	RT	SW	U1	U2	VA	VD	WH	ZJ	Model Round barrel	at 0 mm	per 25 mm
32	M 6	10	4,6	6,3	3,5	6	26	120	KA/802032/M/EX/*	0,9 (kg)	0,06 (kg)
40	M 6	13	5,8	9,2	3,5	6	30	135	KA/802040/M/EX/*	1,3 (kg)	0,08 (kg)
50	M 8	17	8,7	10,8	3,5	6	37	143	KA/802050/M/EX/*	2,0 (kg)	0,13 (kg)
63	M 8	17	10	12,8	3,5	6	37	158	KA/802063/M/EX/*	3,0 (kg)	0,14 (kg)
80	M 10	22	12	14,5	3,5	6	46	174	KA/802080/M/EX/*	5,0 (kg)	0,30 (kg)
100	M 10	22	9	14,5	3,5	6	51	189	KA/802100/M/EX/*	7,3 (kg)	0,34 (kg)
125	M 12	27	12	17	5,5	8	65	225	KA/802125/M/EX/*	12,2 (kg)	0,51 (kg)
160	M 16	36	15	17	6	10	80	260	KA/802160/M/EX/*	23,4 (kg)	0,88 (kg)
200	M 16	36	19	14	6	10	95	275	KA/802200/M/EX/*	34,4 (kg)	1,14 (kg)

* Please insert stroke length.
Basic Dimension are also for cylinder variants or for different piston rod material
KA/802000/W2/EX - Cylinder with Special Wiper - Seal
KA/802000/MU/EX - Cylinder with Extended Piston Rod
KA/802000/W6/EX - Cylinder with Extended Piston Rod and Special Wiper - Seal
KA/802000/MW/EX - Cylinder without Cushioning

Cylinder variants
KA/802000/MX/EX; /MUX/EX; /MWX/EX; /W2X/EX; /W6X/EX
Cylinder with Female Piston Rod Thread

Dimensions in mm
Projection/First angle

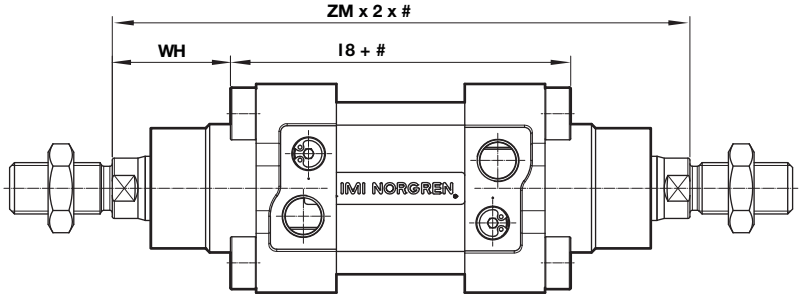


Stroke

ø	AF	ø D1	KF	I12	ø MM h9	SW	T1	T2
32	12	6,4	M6	5,5	12	10	16	2,6
40	12	8,4	M8	6,5	16	13	16	3,3
50	16	10,5	M10	8	20	17	21	4,7
63	16	10,5	M10	8	20	17	21	4,7
80	20	13	M12	10	25	22	25	6,1
100	20	13	M12	10	25	22	25	6,1
125	32	17	M16	13	32	27	38	8

For missing dimensions please see page 8.

KA/802000/JM/EX, KA/802000/W4/EX – Cylinder with Double Ended Piston Rod
KA/802000/JMX/EX, KA/802000/W4X/EX – Cylinder with Double Ended Piston Rod and Female Piston Rod Thread



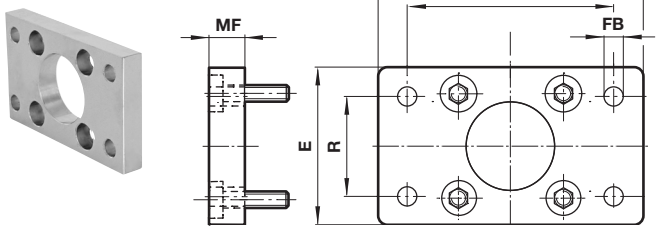
Stroke

ø	L8	WH	ZM	Model Round barrel
32	94	26	146	KA/802032/JM/EX/*
40	105	30	165	KA/802040/JM/EX/*
50	106	37	180	KA/802050/JM/EX/*
63	121	37	195	KA/802063/JM/EX/*
80	128	46	220	KA/802080/JM/EX/*
100	138	51	240	KA/802100/JM/EX/*
125	160	65	290	KA/802125/JM/EX/*
160	180	80	340	KA/802160/JM/EX/*
200	180	95	370	KA/802200/JM/EX/*

* Please insert stroke length; For missing dimensions please see page 8.

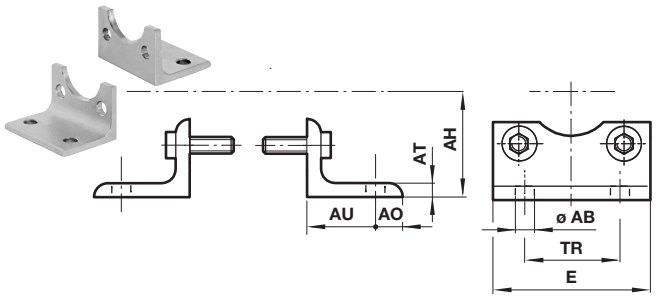
Mountings
Front flange B, G
Conforms to ISO 15552, type MF1 and MF2

Dimensions in mm
Projection/First angle



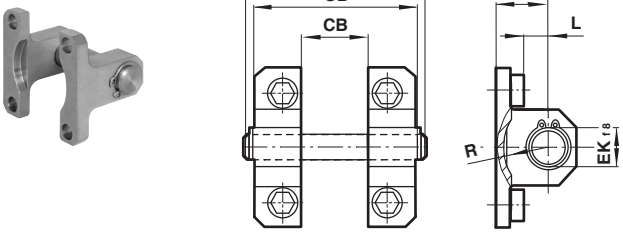
Ø	E	Ø FB	MF	R	TF	UF	kg	Model (B, G)
32	50	7	10	32	64	80	0,26	KQA/8032/22
40	55	9	10	36	72	90	0,31	KQA/8040/22
50	65	9	12	45	90	110	0,56	KQA/8050/22
63	75	9	12	50	100	125	0,73	KQA/8063/22
80	100	12	16	63	126	154	1,73	KQA/8080/22
100	120	14	16	75	150	186	2,51	KQA/8100/22

Foot mounting C
Conforms to ISO 15552, type MS1



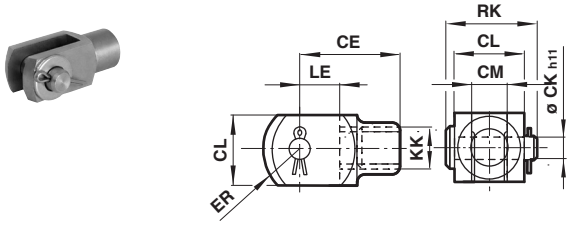
Ø	Ø AB	AH	AO	AT	AU	E	TR	kg	Model (C)
32	7	32	11	4	24	48	32	0,16	KQA/8032/21
40	9	36	12	5	28	53	36	0,19	KQA/8040/21
50	9	45	13	5	32	64	45	0,32	KQA/8050/21
63	9	50	13	5	32	74	50	0,41	KQA/8063/21
80	12	63	19	6	41	98	63	0,83	KQA/8080/21
100	14	71	19	6	41	115	75	0,98	KQA/8100/21

Rear clevis D
Conforms to ISO 15552, type MP2



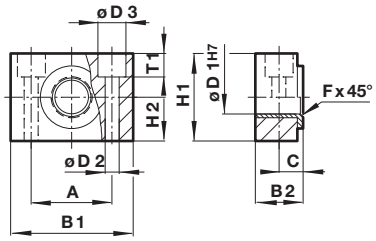
Ø	CB H14	Ø EK f8	FL	L	LH	R	UB	kg	Model (D)
32	26	10	22	13	52	9	45	0,11	KQA/8032/23
40	28	12	25	16	60	12	52	0,16	KQA/8040/23
50	32	12	27	17	68	12	60	0,22	KQA/8050/23
63	40	16	32	22	79	15	70	0,34	KQA/8063/23
80	50	16	36	22	99	15	90	0,54	KQA/8080/23
100	60	20	41	27	119	20	110	0,9	KQA/8100/23

Piston rod clevis F
Conforms to DIN ISO 8140



Ø	KK	CE	Ø CK h11	CL	CM	ER	LE	RK	kg	Model (F)
32	M10x1,25	40	10	20	10	16	20	28	0,09	KQM/55433/25
40	M12x1,25	48	12	24	12	19	24	32	0,13	KQM/55441/25
50/63	M16x1,5	64	16	32	16	25	32	41,5	0,33	KQM/55451/25
80/100	M20x1,5	80	20	40	20	32	40	50	0,67	KQM/8080/25

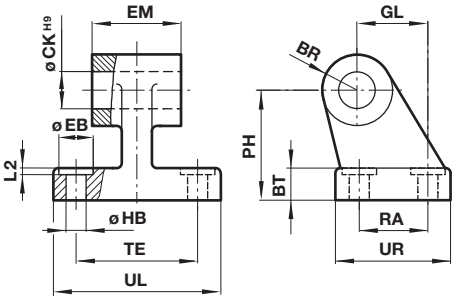
Trunnion support S
Conforms to ISO 15552, type AT4



Ø	A	B 1	2	C	ØD 1 H7	2	3	F x 45°	H 1	2	T1	kg	Model (S)
32	32	46	18	10,5	12	6,6	11	1	30	15	6,8	0,1	KQA/8032/41
40/50	36	55	21	12	16	9	15	1,6	36	18	9	0,14	KQA/8040/41
63/80	42	65	23	13	20	11	18	1,6	40	20	11	0,18	KQA/8063/41
100/125	50	75	28,5	16	25	14	20	2	50	25	13	0,34	KQA/8100/41

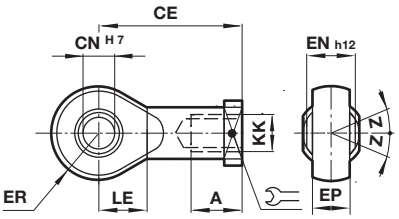
Wide hinge SW
Conforms to ISO 15552, type AB7

Dimensions in mm
Projection/First angle



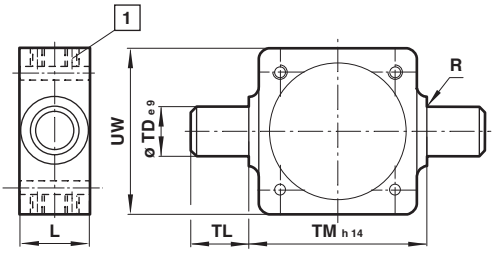
Ø	CA	Ø CK H9	Ø D	EM	G 1	2	3	H2	K 1	2	L1	R	Ø S	kg	Model (SW)
32	32	10	11	26	21	18	31	8	38	51	1,6	10	6,6	0,15	M/P72288
40	36	12	11	28	24	22	35	10	41	53	1,6	11	6,6	0,21	M/P72289
50	45	12	15	32	33	30	45	12	50	65	1,6	13	9	0,41	M/P72290
63	50	16	15	40	37	35	50	12	52	67	1,6	15	9	0,53	M/P72291
80	63	16	18	50	47	40	60	14	66	86	2,5	15	11	0,82	M/P72292
100	71	20	18	60	55	50	70	15	76	96	2,5	19	11	1,22	M/P72293

Universal piston rod eye UF
Conforms to DIN ISO 8139



Ø	Thread KK	AX	CE	Ø CN H7	EN -0,1	ER	LE	Z	kg	Model (UF)
32	M10x1,25	20	43	10	14	14,5	14	13°	0,07	KQM/8032/32
40	M12x1,25	22	50	12	16	16,5	16	13°	0,11	KQM/8040/32
50/63	M16x1,5	28	64	16	21	21,5	21	15°	0,21	KQM/8050/32
80/100	M20x1,5	33	77	20	25	25,5	25	15°	0,38	KQM/8080/32

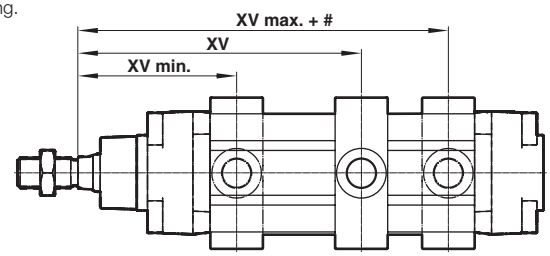
Adjustable trunnion mounting UH
Conforms to ISO 15552, type MT4



1 Locking screws
Torque max: Ø 32 & 40 mm = 6 Nm; Ø 50 & 63 mm = 10 Nm;
Ø 80 & 100 mm = 15 Nm; Ø 125 mm = 25 Nm

Ø	L	R	Ø TD e9	TL	TM h14	UW	XV min.	XV max.	kg	Model (UH)
32	20	1	12	12	50	53	67,5	78,5	0,24	KQA/8032/40
40	24	1,6	16	16	63	65	78,5	86,5	0,48	KQA/8040/40
50	28	1,6	16	16	75	75	84	96	0,7	KQA/8050/40
63	28	1,6	20	20	90	95	91,5	103,5	1,35	KQA/8063/40
80	28	1,6	20	20	110	115	106	114	1,46	KQA/8080/40
100	38	2	25	25	132	140	117	123	2,76	KQA/8100/40
125	50	2	25	25	160	143	144	146	3,28	KQA/8125/40

Style 'UH': It is most important that the locking screws which secure the mounting to the tie rod are tightened to the torque figures shown in the table below.
For maximum energy input, consult our Technical Service.
Unless otherwise specified, units will be supplied with dimension 'XV' plus half the stroke length. 'XV' = Distance from the piston rod shoulder to the centre of the mounting.



- **ATEX - Magnetically operated switch, reed contact**
- **Suitable for all cylinder ranges with magnetic piston**
- **LED indicator**
- **CE verificated**

Technical features

Operation:
Normal open with LED (yellow)
Switching voltage (Ub):
10 ... 240 V a.c./170 V d.c.
Switching voltage output:
Ub - 2,7 V
Switching current (see graph overleaf):
0,18 A max.
Switching power:
10 W/10 VA max.

Contact resistance:
150 mΩ
Response time:
1,8 ms
Operating temperatur:
-20 ... +50°C (-4 ... +122°F)
Ex-Identification:
II 3G Ex nC IIC T5 Gc X
II 3D Ex tc IIIC T120°C Dc X
Protection rating (EN 60529):
IP67

Cable type:
PVC 2 x 0,25 mm²
Cable length:
5 m
Electromagnetic compatibility according to:
EN 60947-5-2

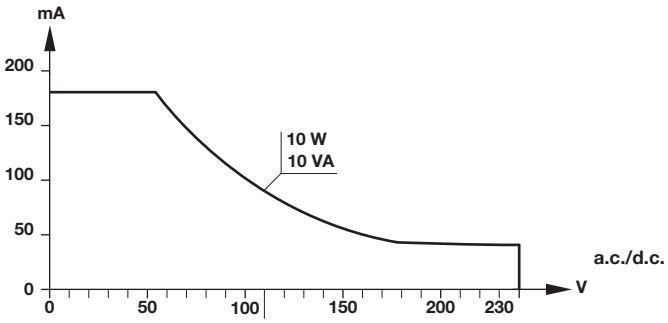
Materials:
Body: plastic
Cable: see table below

Technical data - Reed switches - additional information see data sheet en 4.3.015

Symbol	Voltage (V a.c.)	(V d.c.)	Current maximum (mA)	Function	Operating temperature (°C)	LED	Protection class	Cable length (m)	Cable type	Weight (g)	Model
± BN ~ BU	10 ... 240	10 ... 170	180	Closer	-20 ... +50	•	IP67	5	PVC 2 x 0,25	40	M/50/LXU/5V

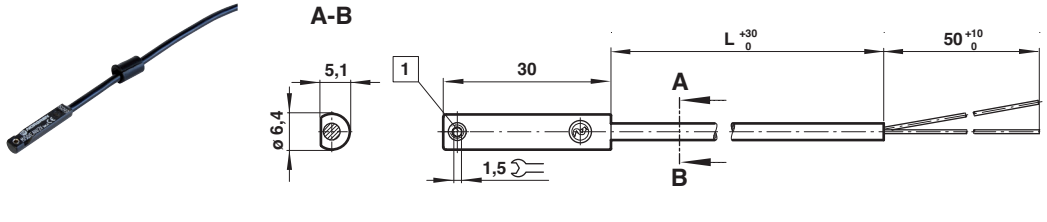
Color code: BN = brown, BU = blue

Switching current and switching voltage



Dimensions
Cable length L = 5 m

Dimensions in mm
Projection/First angle



1 Fixing screw

- > **ATEX - Magnetically operated switch, solid state**
- > **Suitable for all cylinder ranges with magnetic piston**
- > **LED indicator**
- > **Resistant, reliable switching with a very fast response time**
- > **Particularly suited for use in high levels of vibration**
- > **CE verificated**
- > **UL certificated**

Technical features

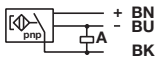
Operation:
PNP-output with LED (yellow)
Switching voltage (Ub):
10 ... 30 V d.c.
Switching voltage output:
Ub - 2 V
Switching current (see graph):
150 mA max.
Switching power:
4,5 W max.

Response time:
< 0,5 ms
Switching frequency:
1 kHz
Operating temperatur:
-20 ... +50°C (-4 ... +122°F)
Ex-Identification:
II 3G Ex nA IIC T4 Gc X
II 3D Ex tc IIIC T110°C Dc X
Protection rating (EN 60529):
IP67

Cable type:
PVC 3 x 0,25 mm²
Cable length:
5 m
Electromagnetic compatibility according to:
EN 60947-5-2

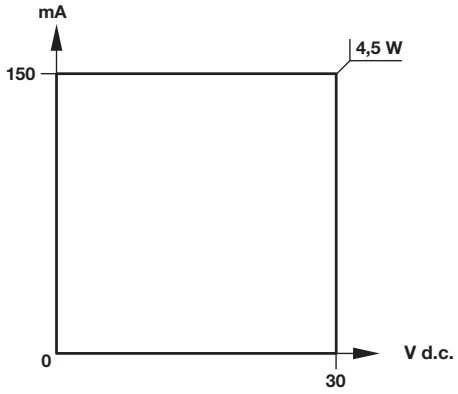
Materials:
Body: plastic
Cable: see table below

Technical data - Reed switches - additional information see data sheet en 4.3.017

Symbol	Voltage (V d.c.)	Current maximum (mA)	Function	Operating temperature (°C)	LED	Protection class	Cable length (m)	Cable type	Weight (g)	Model
	10 ... 30	150	PNP	-20 ... +50	•	IP67	5	PVC 3 x 0,25	40	M/50/EXP/5V

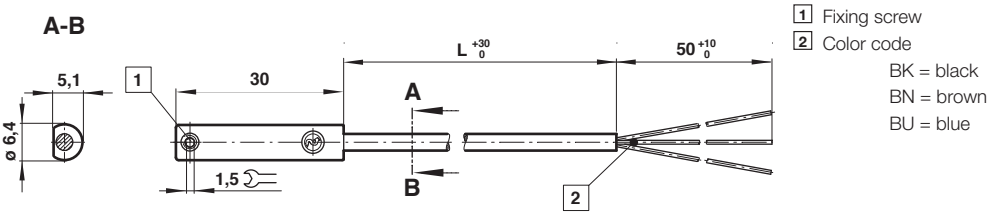
Color code: BK = black, BN = brown, BU = blue

Switching current and switching voltage



Dimensions
Cable length L = 5 m

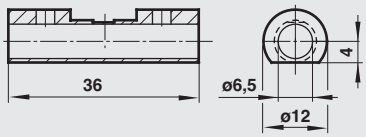
Dimensions in mm
Projection/First angle



1 Fixing screw
2 Color code
BK = black
BN = brown
BU = blue

Protection of the magnetic switch

1. Install the switch in a way that ensures to protect the switch against mechanical damage, shock or impact from any direction.
2. For an open installation of a magnetic switch onto a cylinder barrel with external tie rods, an additional protection element for the magnetic switch and its cable has to be installed with the mounting element. For the protection element of the housing a separate order for M/P73668 is required.

Cylinder with external tie rods	Mounting element for magnetic switch	Protection unit ATEX	
			
Cylinder Ø (mm)	**Model**	**Model**	
32 ... 200	QM/27/2/1	M/P735463	

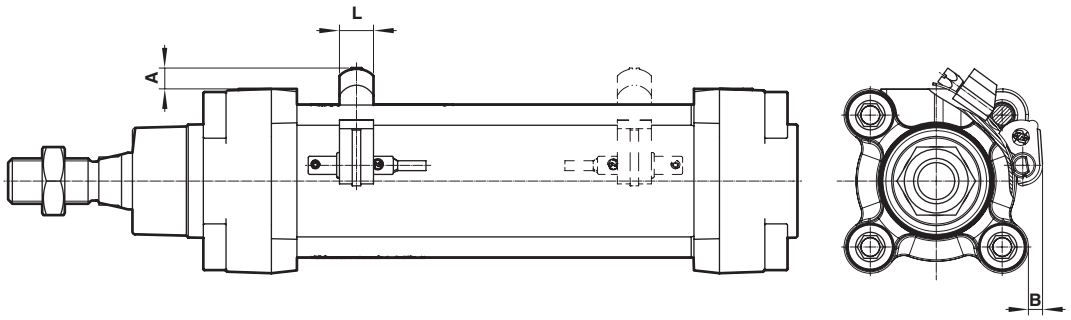
QM/27/2/1 – Switch mounting brackets for Round barrel

Switch: M/50

ø	A	B	L	Weight (kg)	Model
32	9	6	12	0,010	QM/27/2/1
40	9	7	12	0,010	QM/27/2/1
50	7	5	12	0,010	QM/27/2/1

ø	A	B	L	Weight (kg)	Model
63	7	6	12	0,010	QM/27/2/1
80	4	4	12	0,010	QM/27/2/1
100	3	2	12	0,010	QM/27/2/1

ø	A	B	L	Weight (kg)	Model
125	-2	-2	12	0,010	QM/27/2/1
160	-10	-9	12	0,010	QM/27/2/1
200	-17	-16	12	0,010	QM/27/2/1



Recommended Valves

					Recommended Valve Range	
Cylinder		**Tubing**	**Valve**		**Inline Valve 26230**	**ISO Star**
						
ø	**Port size**	**ø**	**Flow (l/min)**	**Valve port size**		
32	G1/8	6/4	1200	1/4"	26230	ISO Star
40	G1/4	6/4	1200	1/4"	26230	ISO Star
50	G1/4	6/4	1200	1/4"	26230	ISO Star
63	G3/8	8/6	1200	1/4"	26230	ISO Star
80	G3/8	10/7	1200	1/4"	26230	ISO Star
100	G1/2	10/7	1200	1/4"	26230	ISO Star
125	G1/2	12/8,5	3000	1/2 "	26230	ISO Star

Customer Solution Cylinder valve unit
For additional information please contact the technical service

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 features/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
IMI Precision Engineering, Norgren GmbH.

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.