



Fit for purpose – Maximum efficiency

Compact Cylinder – JCQ Series

Compact Guide Cylinder – JMGP Series

[Quick Overview](#)

J Cylinders

JCQ/JMGP Series



Fit for purpose – Maximum efficiency

J Cylinders: the answer to our customers' need for a rise in efficiency

We are immersed in an era characterised by its high levels of competition and machinery efficiency is one of the “musts” that any industry faces on a daily basis. With that need for efficiency in mind, and as a direct answer to our customers' requirements in this matter, our R&D engineers have designed the J Cylinders.

Fit for purpose – Maximum efficiency

- **Achieve cost-efficient machines** – By downsizing other components
- **Increase your productivity** – Improved cycle times due to cylinder's lightness
- **Reduce the dimensions of your machine** – Highly compact.

Increase your machine efficiency

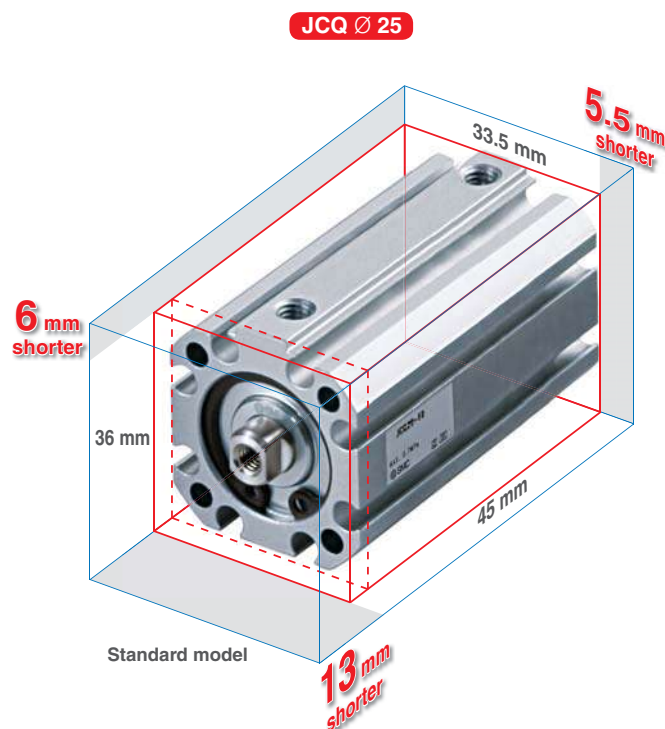
When a traditional compact cylinder is not compact enough, or when you just have a requirement to introduce efficiency in your machines and perform the same job with less, JMGP and JCQ are the cylinders you need: one compact and the other guided to match the specific requirements of your application.

Main features

- **Compact and lightweight** – reduced machine size.

JCQ

- Compact Type Cylinder will give you a **43 %** reduction in volume
(Compared with standard product in the market, Ø 25, 15 mm stroke)
- JCQ up to **48 %** weight reduction
(Compared with standard product in the market, Ø 25, 30 mm stroke: 231 g → 119 g)

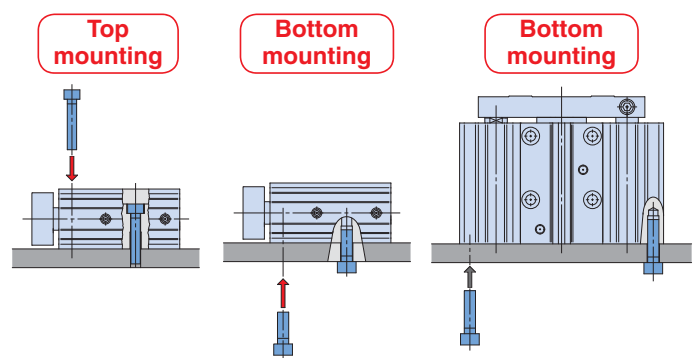
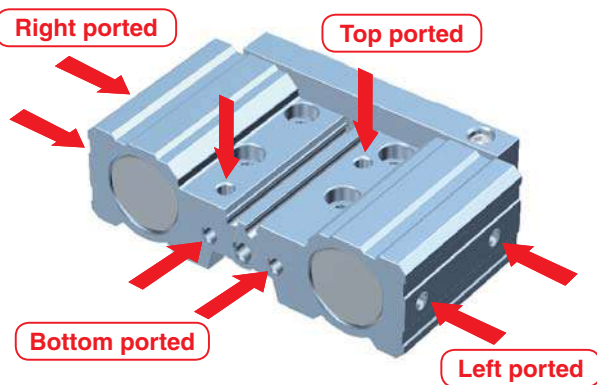


JMGP

- Guided Type Cylinder is nearly **50 mm** shorter than standard model
(Compared with standard product in the market, Ø 32, 25 mm stroke)
- JMGP up to **58 %** weight reduction
(Compared with standard product in the market, Ø 25, 20 mm stroke)



- **Piping is possible in 4 directions** (only for JMGP Series).
- **Mountable on 3 surfaces** (only for JMGP Series).



- **Strokes up to 200 mm for JMGP Series and up to 50 mm for JCQ Series.**
- **Bore sizes (Ø): 12 mm to 100 mm.**
- **Auto switches can be mounted directly.**
- **The auto switch does not protrude beyond the body of the cylinder.**
- **Auto switches can be mounted on 4 surfaces** (only for JCQ Series).
- **Rubber bumper cushion.**

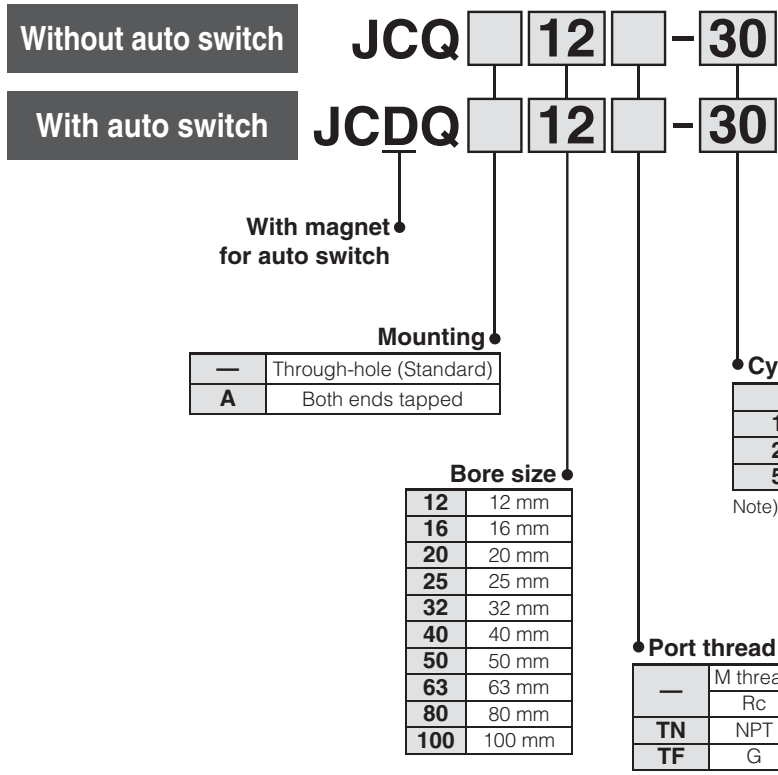
J Cylinders

JCQ/JMGP Series



How to Order

JCQ Series



Standard Specifications

Bore size [mm]	12	16	20	25	32	40	50	63	80	100
Action	Double acting, Single rod									
Fluid	Air									
Proof pressure	1.0 MPa									
Maximum operating pressure	0.7 MPa									
Minimum operating pressure	0.07 MPa	0.05 MPa								
Ambient and fluid temperature	5 to 60 °C									
Lubrication	Not required (Non-lube)									
Piston speed ¹⁾	50 to 500 mm/s					50 to 300 mm/s				
Cushion	Rubber bumper									
Allowable kinetic energy [J]	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
Rod end thread	Female thread									
Stroke length tolerance	+ ^{1.3} ₀ mm ²⁾									

Note 1) Depending on the system configuration selected, the specified speed may not be satisfied.

Note 2) Stroke length tolerance does not include the deflection of the bumper.

Weight

Without Magnet for Auto Switch [g]

Bore size [mm]	Cylinder stroke [mm]									
	5	10	15	20	25	30	35	40	45	50
12	21	25	30	35	39	44	—	—	—	—
16	28	33	38	43	49	54	—	—	—	—
20	40	47	55	62	69	77	84	91	99	106
25	55	64	73	83	92	101	110	119	128	138
32	94	108	121	135	148	162	175	189	202	215
40	145	161	177	194	210	226	243	259	275	292
50	—	284	309	334	359	384	410	435	460	485
63	—	452	483	514	545	576	606	637	668	699
80	—	850	899	948	997	1046	1095	1144	1193	1242
100	—	1348	1407	1465	1524	1582	1641	1700	1758	1817

With Magnet for Auto Switch [g]

Bore size [mm]	Cylinder stroke [mm]									
	5	10	15	20	25	30	35	40	45	50
12	25	29	34	38	43	48	—	—	—	—
16	32	37	43	48	53	58	—	—	—	—
20	53	61	68	75	83	90	98	105	112	120
25	73	82	91	100	109	119	128	137	146	155
32	122	135	149	162	176	189	203	216	230	243
40	184	201	217	233	250	266	282	299	315	331
50	—	332	357	383	408	433	458	483	508	533
63	—	513	544	575	606	637	667	698	729	760
80	—	961	1010	1059	1109	1158	1207	1256	1305	1354
100	—	1490	1549	1608	1666	1725	1783	1842	1901	1959

How to Order

JMGP Series

JMGPM **25** **—** **30**

● **Bearing type**

M	Slide bearing
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● **Bore size**

12	10 mm x 2
16	12 mm x 2
20	16 mm x 2
25	20 mm x 2
32	25 mm x 2
40	32 mm x 2
50	40 mm x 2
63	45 mm x 2
80	56 mm x 2
100	71 mm x 2

● **Cylinder stroke [mm]**

Bore size [mm]	Standard stroke [mm]
Ø 12 (Ø 10 x 2) Ø 16 (Ø 12 x 2)	10, 20, 30, 50, 100
Ø 20 (Ø 16 x 2) Ø 25 (Ø 20 x 2)	20, 30, 50, 100, 150
Ø 32 (Ø 25 x 2) Ø 40 (Ø 32 x 2) Ø 50 (Ø 40 x 2) Ø 63 (Ø 45 x 2) Ø 80 (Ø 56 x 2) Ø 100 (Ø 71 x 2)	25, 50, 100, 150, 200

Note) Intermediate strokes are available as a special order.

● **Port thread type**

—	M thread	Ø 12 to Ø 32
	Rc	
TN	NPT	Ø 40 to Ø 100
TF	G	

Standard Specifications

Bore size [mm]	Ø 12 (Ø 10 x 2)	Ø 16 (Ø 12 x 2)	Ø 20 (Ø 16 x 2)	Ø 25 (Ø 20 x 2)	Ø 32 (Ø 25 x 2)	Ø 40 (Ø 32 x 2)	Ø 50 (Ø 40 x 2)	Ø 63 (Ø 45 x 2)	Ø 80 (Ø 56 x 2)	Ø 100 (Ø 71 x 2)
Action	Double acting									
Fluid	Air									
Proof pressure	1.05 MPa									
Maximum operating pressure	0.7 MPa									
Minimum operating pressure	0.15 MPa									
Ambient and fluid temperature	5 to 60 °C									
Piston speed ^{1), 2)}	50 to 300 mm/s								50 to 250 mm/s	
Cushion	Rubber bumper on both ends									
Lubrication	Not required (Non-lube)									
Stroke length tolerance	^{+1.5} ₀ mm									

Note 1) Maximum speed with no load.

Note 2) Depending on the system configuration selected, the specified speed may not be satisfied.

Weight

[kg]

Bore size [mm]	Stroke [mm]							
	10	20	25	30	50	100	150	200
Ø 12 (Ø 10 x 2)	0.09	0.12	—	0.14	0.19	0.30	—	—
Ø 16 (Ø 12 x 2)	0.10	0.13	—	0.15	0.20	0.32	—	—
Ø 20 (Ø 16 x 2)	—	0.21	—	0.25	0.33	0.53	0.72	—
Ø 25 (Ø 20 x 2)	—	0.28	—	0.33	0.43	0.68	0.92	—
Ø 32 (Ø 25 x 2)	—	—	0.60	—	0.77	1.11	1.44	1.78
Ø 40 (Ø 32 x 2)	—	—	0.80	—	1.07	1.62	2.16	2.70
Ø 50 (Ø 40 x 2)	—	—	1.27	—	1.63	2.36	3.09	3.82
Ø 63 (Ø 45 x 2)	—	—	1.60	—	2.03	2.89	3.74	4.60
Ø 80 (Ø 56 x 2)	—	—	2.81	—	3.47	4.79	6.12	7.44
Ø 100 (Ø 71 x 2)	—	—	4.48	—	5.40	7.22	9.05	10.87

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Applicable Auto Switches

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model		Lead wire length [m]				Pre-wired connector	Applicable load			
					DC	AC	Perpendicular	In-line	0.5 (—)	1 (M)	3 (L)	5 (Z)		IC circuit	Relay, PLC		
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	—	M9NV	M9N	●	●	●	○	○	○	IC circuit	Relay, PLC	
				3-wire (PNP)					●	●	●	○					○
	2-wire			●					●	●	○	○					—
	3-wire (NPN)			●					●	●	○	○					IC circuit
	3-wire (PNP)			●					●	●	○	○					IC circuit
	2-wire			●					●	●	○	○					—
	3-wire (NPN)			○					○	●	○	○					IC circuit
	3-wire (PNP)			○					○	●	○	○					IC circuit
	2-wire			○					○	●	○	○					—
	Water resistant (2-colour indicator)																

** Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Please contact SMC regarding water resistant types with the above model numbers.

* Lead wire length symbols: 0.5 m..... — (Example) M9NW
 1 m..... M (Example) M9NWM
 3 m..... L (Example) M9NWL
 5 m..... Z (Example) M9NWZ

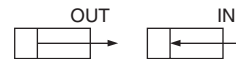
* For details about auto switches with pre-wired connector, refer to the **Auto Switch Guide**.

* Auto switches are shipped together, (but not assembled).

Theoretical Output

JCQ

Bore size [mm]	Rod size [mm]	Operating direction	Piston area [mm ²]	Operating pressure [MPa]					
				0.2	0.3	0.4	0.5	0.6	0.7
12	6	OUT	113	23	34	45	57	68	79
		IN	85	17	25	34	42	51	59
16	6	OUT	201	40	60	80	101	121	141
		IN	173	35	52	69	86	104	121
20	8	OUT	314	63	94	126	157	188	220
		IN	264	53	79	106	132	158	185
25	10	OUT	491	98	147	196	245	295	344
		IN	412	82	124	165	206	247	289
32	12	OUT	804	161	241	322	402	483	563
		IN	691	138	207	276	346	415	484
40	14	OUT	1257	251	377	503	628	754	880
		IN	1103	221	331	441	551	662	772
50	18	OUT	1963	393	589	785	982	1178	1374
		IN	1709	342	513	684	855	1025	1196
63	18	OUT	3117	623	935	1247	1559	1870	2182
		IN	2863	573	859	1145	1431	1718	2004
80	22	OUT	5027	1005	1508	2011	2513	3016	3519
		IN	4646	929	1394	1859	2323	2788	3252
100	26	OUT	7854	1571	2356	3142	3927	4712	5498
		IN	7323	1465	2197	2929	3662	4394	5126



JMGP

Bore size [mm]	Rod size [mm]	Operating direction	Piston area [mm ²]	Operating pressure [MPa]					
				0.2	0.3	0.4	0.5	0.6	0.7
Ø 12 (Ø 10 x 2)	6	OUT	157	31	47	63	79	94	110
		IN	101	20	30	40	50	60	70
Ø 16 (Ø 12 x 2)	6	OUT	226	45	68	90	113	136	158
		IN	170	34	51	68	85	102	119
Ø 20 (Ø 16 x 2)	8	OUT	402	80	121	161	201	241	281
		IN	302	60	90	121	151	181	211
Ø 25 (Ø 20 x 2)	10	OUT	628	126	188	251	314	377	440
		IN	471	94	141	188	236	283	330
Ø 32 (Ø 25 x 2)	12	OUT	982	196	295	393	491	589	687
		IN	756	151	227	302	378	453	529
Ø 40 (Ø 32 x 2)	16	OUT	1608	322	483	643	804	965	1126
		IN	1206	241	362	483	603	724	844
Ø 50 (Ø 40 x 2)	18	OUT	2513	503	754	1005	1257	1508	1759
		IN	2004	401	601	802	1002	1203	1403
Ø 63 (Ø 45 x 2)	20	OUT	3181	636	954	1272	1590	1909	2227
		IN	2553	511	766	1021	1276	1532	1787
Ø 80 (Ø 56 x 2)	25	OUT	4926	985	1478	1970	2463	2956	3448
		IN	3944	789	1183	1578	1972	2367	2761
Ø 100 (Ø 71 x 2)	30	OUT	7918	1584	2376	3167	3959	4751	5543
		IN	6505	1301	1951	2602	3252	3903	4553

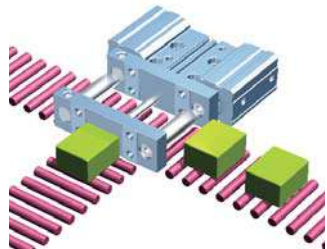


Note) Theoretical output [N] = Pressure [MPa] x Piston area [mm²]

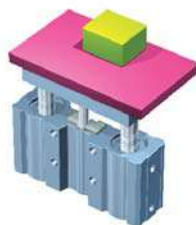
Applications

These products are suitable for pushing, lifting or clamping in a transport line.

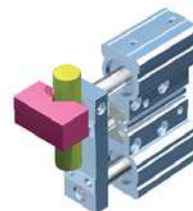
Pushing



Lifting



Clamping



Transfer system or handling



Robotic manipulation/handling



Big movable tools



Related products

Speed Controller with One-touch Fitting, Push Lock, Elbow/Universal Type
AS□2/3□1F-A Series



Speed Controller with Indicator, Elbow & Universal Types
AS□2/3□1FS Series



Speed Controller, In-line
AS□2FS Series



Solid State Auto switch
D-M9□W Series



Shock Absorber
RJ Series



Shock Absorber
RB Series



Floating Joint
JB Series (only for JCQ Series)





SMC CORPORATION (Europe)

Austria	☎ +43 (0)2262622800	www.smc.at	office@smc.at	Lithuania	☎ +370 5 2308118	www.smclt.lt	info@smclt.lt
Belgium	☎ +32 (0)33551464	www.smc Pneumatics.be	info@smc Pneumatics.be	Netherlands	☎ +31 (0)205318888	www.smc Pneumatics.nl	info@smc Pneumatics.nl
Bulgaria	☎ +359 (0)2807670	www.smc.bg	office@smc.bg	Norway	☎ +47 67129020	www.smc-norge.no	post@smc-norge.no
Croatia	☎ +385 (0)13707288	www.smc.hr	office@smc.hr	Poland	☎ +48 222119600	www.smc.pl	office@smc.pl
Czech Republic	☎ +420 541424611	www.smc.cz	office@smc.cz	Portugal	☎ +351 226166570	www.smc.eu	postpt@smc.smces.es
Denmark	☎ +45 70252900	www.smc.dk.com	smc@smc.dk.com	Romania	☎ +40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Estonia	☎ +372 6510370	www.smc Pneumatics.ee	smc@smc Pneumatics.ee	Russia	☎ +7 8127185445	www.smc-pneumatik.ru	info@smc-pneumatik.ru
Finland	☎ +358 207513513	www.smc.fi	smc.fi@smc.fi	Slovakia	☎ +421 (0)413213212	www.smc.sk	office@smc.sk
France	☎ +33 (0)164761000	www.smc-france.fr	info@smc-france.fr	Slovenia	☎ +386 (0)73885412	www.smc.si	office@smc.si
Germany	☎ +49 (0)61034020	www.smc.de	info@smc.de	Spain	☎ +34 902184100	www.smc.eu	post@smc.smces.es
Greece	☎ +30 210 2717265	www.smc Hellas.gr	sales@smc Hellas.gr	Sweden	☎ +46 (0)86031200	www.smc.nu	post@smc.nu
Hungary	☎ +36 23511390	www.smc.hu	office@smc.hu	Switzerland	☎ +41 (0)523963131	www.smc.ch	info@smc.ch
Ireland	☎ +353 (0)14039000	www.smc Pneumatics.ie	sales@smc Pneumatics.ie	Turkey	☎ +90 212 489 0 440	www.smc Pneumatik.com.tr	info@smc Pneumatik.com.tr
Italy	☎ +39 0292711	www.smc Italy.it	mailbox@smc Italy.it	UK	☎ +44 (0)845 121 5122	www.smc Pneumatics.co.uk	sales@smc Pneumatics.co.uk
Latvia	☎ +371 67817700	www.smc.lv	info@smc.lv				

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