

End Power Cylinder

RoHS

Size: $\varnothing 40$, $\varnothing 50$

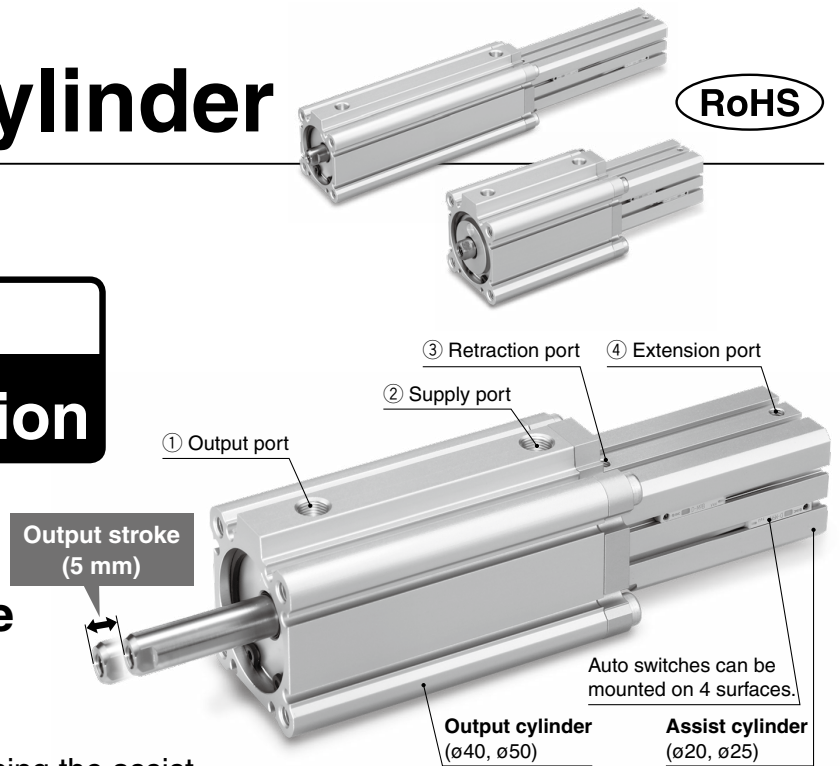
Air consumption
Max. 73% reduction

3.6 L (ANR) → 2.3 L (ANR)
 * Compared with the CQ2 series, $\varnothing 50$, 200 mm stroke

Output is generated from 5 mm in front of the stroke end.

(Extending operation only)

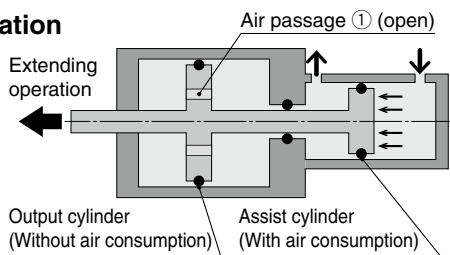
- Energy saving can be achieved by using the assist cylinder to reach the output stroke position.



Output working principle

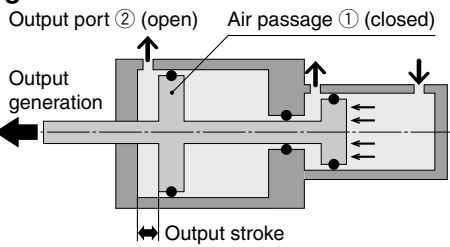
Extending operation in progress

Since the air passage ① is open while the assist cylinder is operating, the output cylinder is acting as a tank. (Air is not being consumed.)



When output is generated

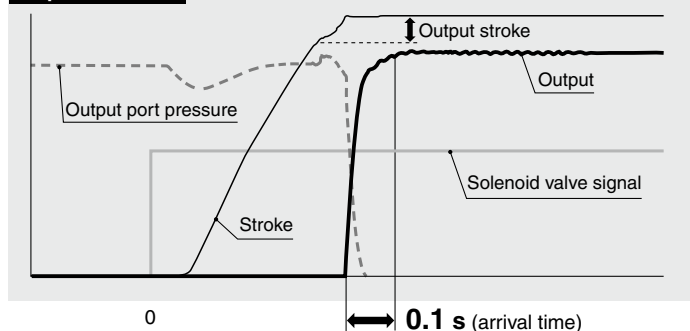
When the piston of the output cylinder reaches the output stroke, the air passage ① is closed, the output port ② opens, causing a pressure differential, and cylinder output force is generated.



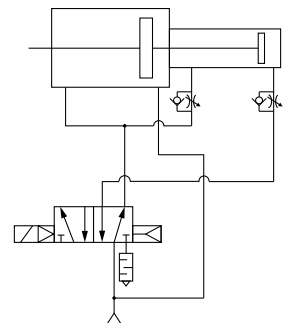
Output that instantaneously rises

Set output reached in 0.1 s

Output wave form

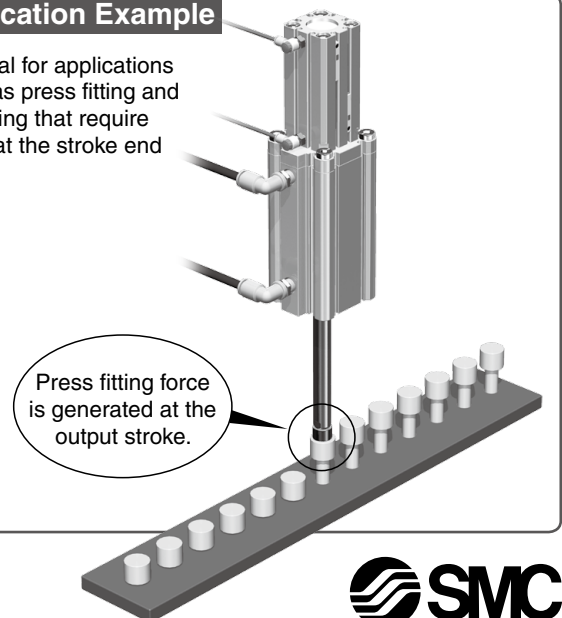


- Smooth operation even when output is generated
- The CQ2 series rod flange type is mountable
- Controllable by a single solenoid valve in the same way as a conventional cylinder



Application Example

Optimal for applications such as press fitting and clamping that require force at the stroke end



CDQ2A-X3260



20-E755

CDQ2A-X3260

How to Order

CDQ2A 40 - 100 DCZ - M9BW - X3260

With auto switch
(Built-in magnet)

Mounting

A	Rod end tapped
F	Rod flange

* The mounting bracket is shipped together with the product but does not come assembled.

Bore size

40	40 mm x 20 mm
50	50 mm x 25 mm

With rubber bumper
(Head end only)

Cylinder stroke

Bore size	Standard stroke [mm]
40, 50	50, 100, 150, 200

End power type

Number of auto switches

Nil	2
S	1
n	n

Auto switch

Nil	Without auto switch
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* Auto switch models are the same as those for the CQS series compact cylinder. For details, refer to the **Web Catalog**.

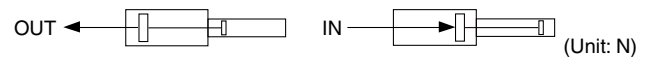
Specifications

Bore size [mm]	Output cylinder	40	50
	Assist cylinder	20	25
Action		Double acting, Single rod	
Fluid		Air	
Proof pressure		1.0 MPa	
Max. operating pressure		0.7 MPa	
Min. operating pressure*1		0.2 MPa	
Ambient and fluid temperatures		-10°C to 60°C (No freezing)	
Lubrication		Not required (Non-lube)	
Piston speed		50 to 300 mm/s	
Stroke		50, 100, 150, 200	
Stroke length tolerance*2		0 to +1.4 mm	
Cushion		Rubber bumper (Head end only)	
Port size	Output cylinder	Rc1/8	
	Assist cylinder	M5	
Allowable kinetic energy		0.09 J	0.15 J
Mounting		Tap mounting type (Rod end only)	
Mounting bracket		Rod flange	
Output stroke		5 mm (Extending operation only)	

*1 Refer to "Handling 6."

*2 The stroke length tolerance does not include the amount of bumper change.

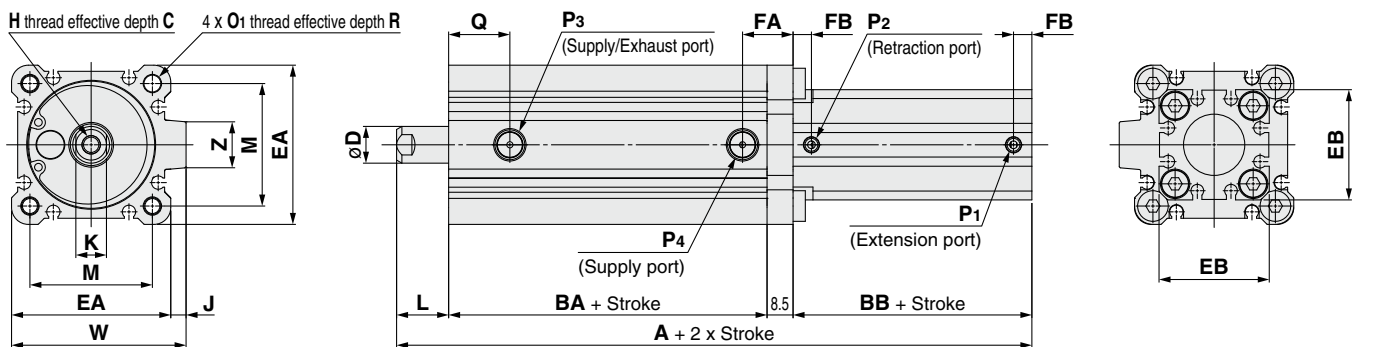
Theoretical Output



Size	Bore size [mm]		Operating direction	Operating pressure [MPa]			
	Output cylinder	Assist cylinder		0.3	0.5	0.7	
40	40	20	IN	66	107	147	
			OUT	Assist stroke	94	157	220
				Output stroke*1	425	723	1,021
50	50	25	IN	107	174	242	
			OUT	Assist stroke	147	245	344
				Output stroke*1	679	1,148	1,616

*1 Output stroke: output is only generated 5 mm in front of the stroke end.

Dimensions

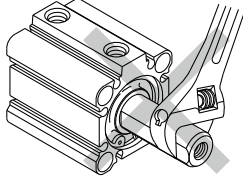


Bore size	A	BA	BB	C	D	EA	EB	FA	FB	H	J	K	L	M	P1	P2	P3	P4	O1	R	W	Z
40	97.5	54	28	12	12	52	36	16.5	6	M6 x 1	5	10	17	40	M5 x 0.8	M5 x 0.8	Rc1/8	Rc1/8	M6 x 1	10	57	15
50	96.5	49	31	13	14	64	40	16.5	6	M8 x 1.25	7	12	18	50	M5 x 0.8	M5 x 0.8	Rc1/8	Rc1/8	M8 x 1.25	14	71	19

Handling

⚠ Caution

1. When installing or removing load, be sure to secure the piston rod width across flats part with the piston rod in a fully retracted state.



2. Avoid using the air cylinder in such a way that rotational torque would be applied to the piston rod. Failure to do so may result in the loosening of the joint screw part inside the cylinder, leading to unexpected failure.

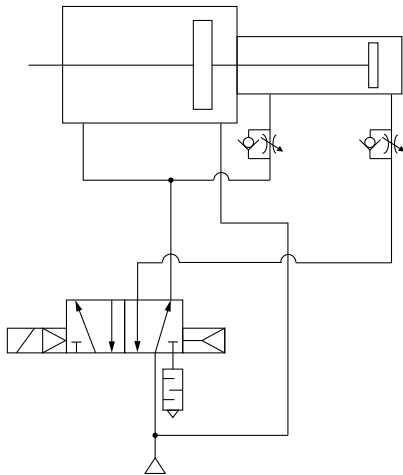
Use the table below as a guide for the allowable rotational torque ranges.

Allowable rotational torque	40	50
N·m or less	0.2	0.25

Operate the cylinder so that the load to the piston rod is always applied in the axial direction.

3. Pipe according to the circuit diagram shown below when using this cylinder.

Circuit diagram



4. Supply the same amount of air pressure to both the assist cylinder and the supply port at all times. If the supply pressure differs, a malfunction may result.
5. Be aware that the cylinder's retraction output is the retraction output of the assist cylinder.
6. When using at the min. operating pressure, if the stopping time is increased, a sticking phenomenon may occur when restarting, preventing operation. If this happens, raise the supply pressure and perform several pre-conditioning interim operation cycles to solve the problem. Be aware of how to perform this operation beforehand.
7. When the cylinder's operating speed is to be controlled, a speed controller should be installed at the top of the assist cylinder's piping.
8. When mounting an auto switch, attach it to the assist cylinder.

⚠ Safety Instructions Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and the "CQ2 Series Specific Product Precautions" before use.

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