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# **Hydraulic Related Products** Air-Hydro Booster

# Converts air pressure to hydraulic pressure for high pressure hydraulic cylinder actuation.

■ Generates 3.5 to 14 MPa hydraulic pressure with 0.5 MPa air pressure.

■ No hydraulic pump is required. High hydraulic pressure can easily be obtained.

■ Hydraulic pressure can be steplessly controlled by only adjusting the air pressure using the regulator.

■ There is no trouble due to temperature rise even under the condition of continuous pressurization.

■ You can select from two types of pressurization methods (direct type and pre-load type) according to the application.

#### **Applications**

- · For lifting work pieces
- · For automatic clamping devices
- Hydraulic pressure source for low profile hydraulic cylinders



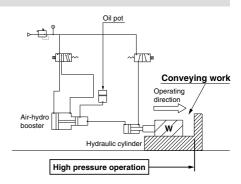
# Pressurization Methods

There are two types of air-hydro boosters: direct type and pre-load type.

### Direct Type

This is suitable when high power is required over the entire stroke, such as moving a work piece in a short





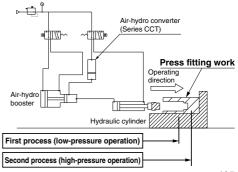
### **Pre-load Type**

This is suitable when pressurizing a work piece after moving it in position using a hydraulic cylinder.

The pre-load type requires an air-hydro converter

(Series CCT).





## **Hydraulic Related Products / Air-Hydro Booster**

#### **Specifications**

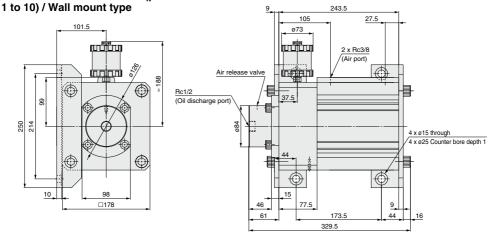
Part number		CQ2LH160- 17Z-DCN640HN	CQ2LH160- 101Z-DCP8253P	CQ2LH100- 60Z-DCN5997N	CQ2LH140- 17Z-DCQ223CQ	CDQ2FH100- 60Z-DCQ9625Q	CDQ2LH160- 105Z-DCP8230P	CQ2LH160- 20Z-DCQ236FQ
Air pressure cylinder diameter		ø160	ø160	ø100	ø140	ø100	ø160	ø160
Pressure increase ratio		1:7	1:10	1:13	1:15	1:16	1:25	1:32.6
Amount of discharged oil		17 cm <sup>3</sup>	101 cm <sup>3</sup>	60 cm <sup>3</sup>	17 cm <sup>3</sup>	60 cm <sup>3</sup>	105 cm <sup>3</sup>	20 cm <sup>3</sup>
Maximum working pressure (air pressure)		1.0 MPa				0.87 MPa	0.56 MPa	0.43 MPa
Generated hydraulic pressure (with 0.5 MPa air pressure)		3.5 MPa	5.0 MPa	6.5 MPa	7.5 MPa	8.0 MPa	12.5 MPa	14 MPa*
Fluid	Air pressure	Air						
	Hydraulic pressure	Turbine oil class 1 (ISO VG32)						
Ambient and fluid temperature		5 to 60°C						
Oil pot		With oil pot	With oil pot	With oil pot	With oil pot	Without oil pot	Without oil pot	With oil pot

<sup>\*</sup> The value when the maximum working pressure of 0.43 MPa is applied.

#### **Dimensions**

CQ2LH160-17Z-DCN640HN (pressure increase ratio: 213.5 1 to 7) / Wall mount type 110 27.5 101.5 ø73 نحجيريمن 2 x Rc3/8 (Air port) Air release valve نمطيمين  $\bigoplus$ 37.5 (Oil discharge port) 66 250 214 4 x ø15 through 4 x ø25 Counter bore depth 1 10 9 □178 20 143.5 44 16 270.5

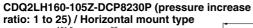
### CQ2LH160-101Z-DCP8253P (pressure increase ratio:

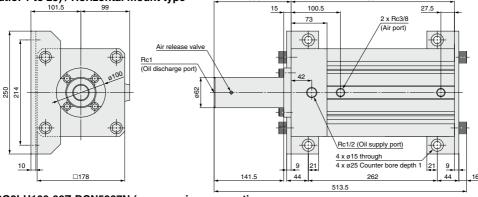


**SMC** 

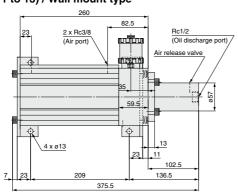
# **Hydraulic Related Products / Air-Hydro Booster**

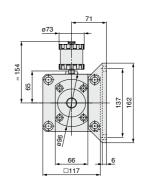
#### **Dimensions**



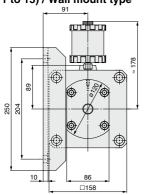


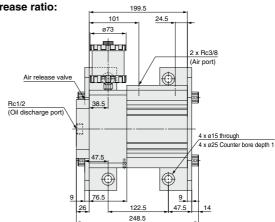
CQ2LH100-60Z-DCN5997N (pressure increase ratio: 1 to 13) / Wall mount type





CQ2LH140-17Z-DCQ223CQ (pressure increase ratio: 1 to 15) / Wall mount type





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Related Products

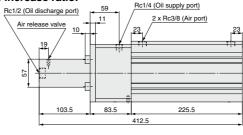
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## Hydraulic Related Products / Air-Hydro Booster

#### **Dimensions**

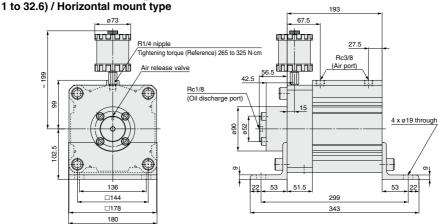
#### CDQ2FH100-60Z-DCQ9625Q (pressure increase ratio:

1 to 16) / Horizontal mount type



CQ2LH160-20Z-DCQ236FQ (pressure increase ratio:

136 154



Special order products other than those listed here are available. Please contact SMC for details.

# Product Specific Precautions

Be sure to read this before handling the Products. Refer to back page 50 for Safety Instructions and pages 214 to 221 I for Hydraulic Cylinders and Auto Switches Precautions.

1. The hydraulic fluid in the oil pot or the air-hydro converter of the air-hydro booster (hereafter referred to as "the booster") may become black and cloudy. This is caused by the mixing in of powder from the initial abrasion of the seals in the booster (minimal abrasion that does not affect the performance of the seals), and a phenomenon that cannot be avoided. The performance of the booster is not compromised with the hydraulic fluid black and cloudy.

### **⚠** Caution

1. The oil level in the oil pot and the air-hydro converter may become higher than the initial level when the booster is stopped for a long period of time after a long period of operation. This is caused because air is accumulated in the piping between the booster and the hydraulic cylinder and the volume of the entire piping is increased. In this case, please release the air from the hydraulic piping. Otherwise, oil may spout from the breathing hole of the oil supply plug when the booster is started.

### **⚠** Caution

- 2. It is recommended that the booster is installed in a location higher than that of the hydraulic cylinder. If it is necessary to install the booster in a location lower than that of the hydraulic cylinder, or if you install piping with many bends, install an air release valve at the uppermost location in the piping. Then, please release the air periodically.
- 3. If your air-hydro booster is one with an oil pot, the oil supply plug of the oil pot has a breathing hole and oil may leak from the hole depending on the mounting orientation. If such oil leakage is assumed due to the mounting orientation of the air-hydro booster, reconnect the oil pot using a pipe or fitting so that the oil pot is vertical and facing up. Then, please release the air periodically.

**SMC** 

# **Hydraulic Related Products**

### Air-Hydro Unit CC

Refer to Best Pneumatics No. 2-1 for details.



150	Corc (i)	Converte
Air-hydro	unit	

Туре	Series	Nominal diameter (mm)
Air-hydro unit	CC	63, 100, 160
Converter	ССТ	40, 63, 100, 160
Valve unit	CCV	_

	<ul> <li>By converting air pressure into hydraulic pressure, functions that are</li> </ul>
Features	the same as those of a hydraulic unit can be obtained while using
	pneumatic equipment.

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