

# Hydraulic Related Equipment

## Air-Hydro Booster

Made to Order

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

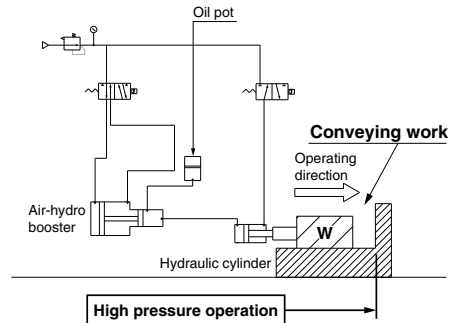


### Pressurization Methods

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

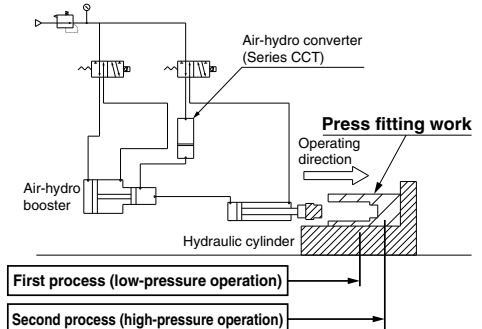
#### 1 Direct Type

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



#### 2 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).



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# Hydraulic Related Equipment / Air-Hydro Booster

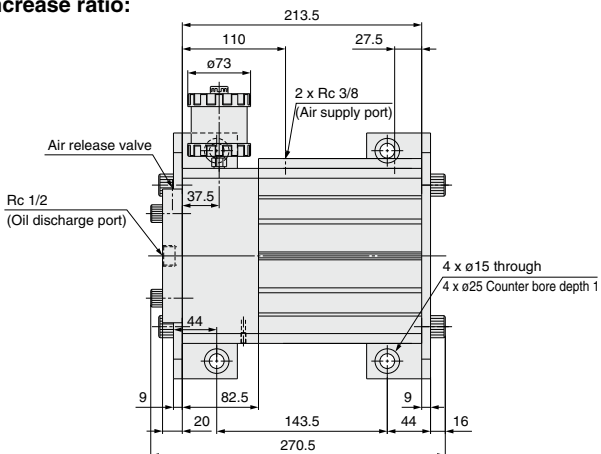
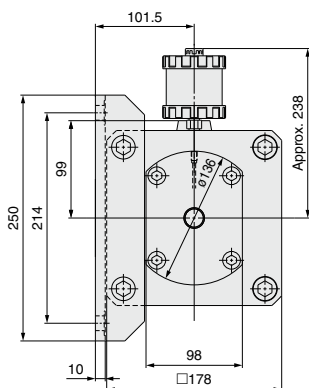
## Specifications

Part number	CQ2L160-DCG5643G-17	CQ2L160-DCG5644G-101	CQ2L100-Z4195-60	CQ2L140-DCG5645G-17	CQ2F100-Z4239-60	CQ2LH160-DCG864AG-105	CQ2LH160-20-DCI9145I
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						
	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

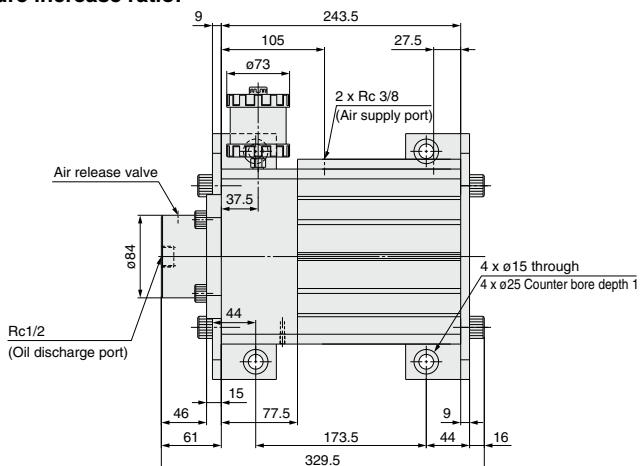
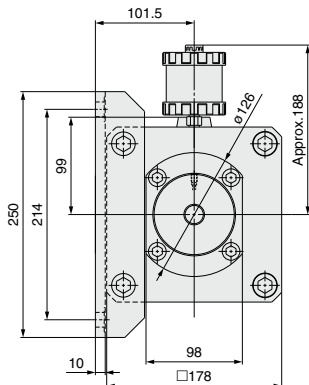
\* The value when the maximum working pressure of 0.43 MPa is applied.

## Dimensions

### CQ2L160-DCG5643G-17 (pressure increase ratio: 1 to 7) / Wall mount type



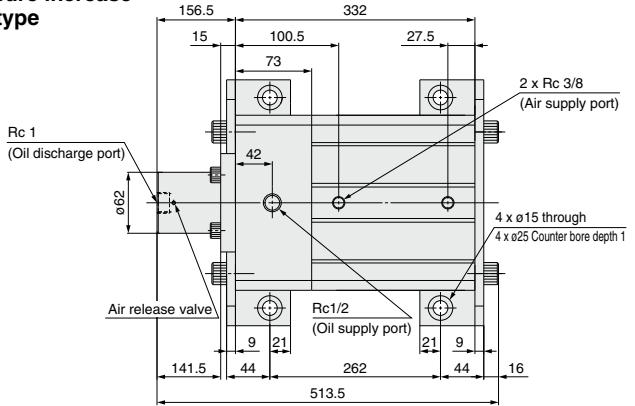
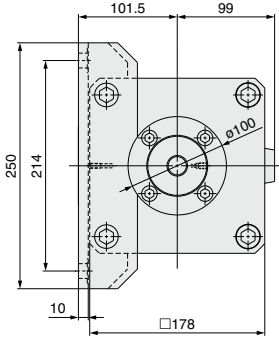
### CQ2L160-DCG5644G-101 (pressure increase ratio: 1 to 10) / Wall mount type



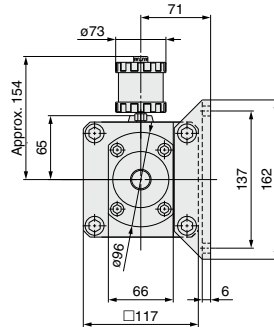
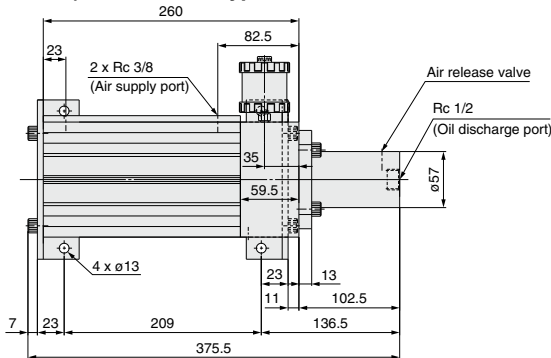
# Hydraulic Related Equipment / Air-Hydro Booster

## Dimensions

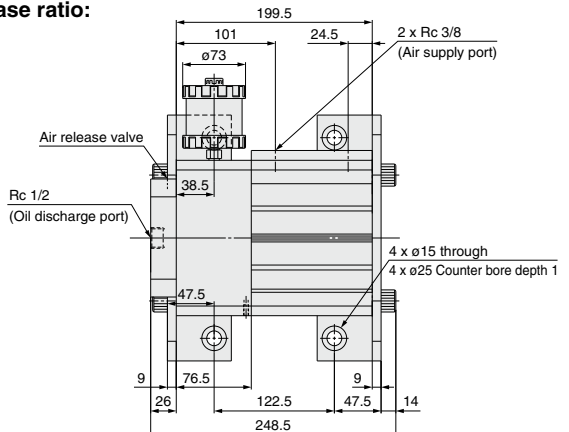
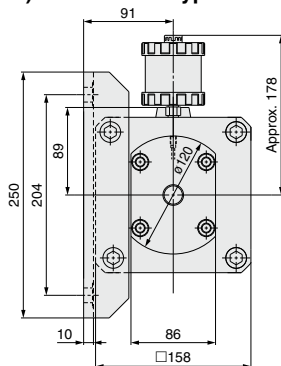
**CQ2LH160-DCG864AG-105 (pressure increase ratio: 1 to 25) / Horizontal mount type**



**CQ2L100-Z4195-60 (pressure increase ratio: 1 to 13) / Wall mount type**



**CQ2L140-DCG5645G-17 (pressure increase ratio: 1 to 15) / Wall mount type**



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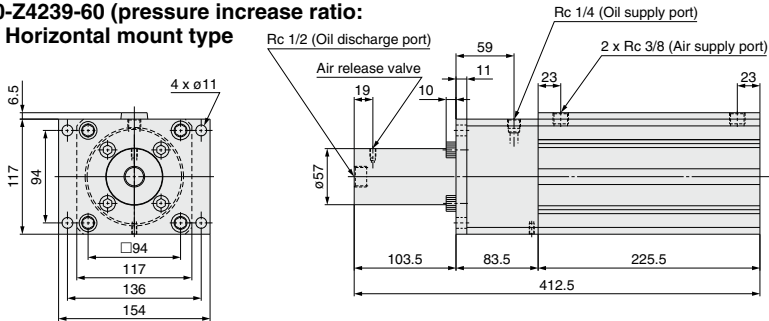
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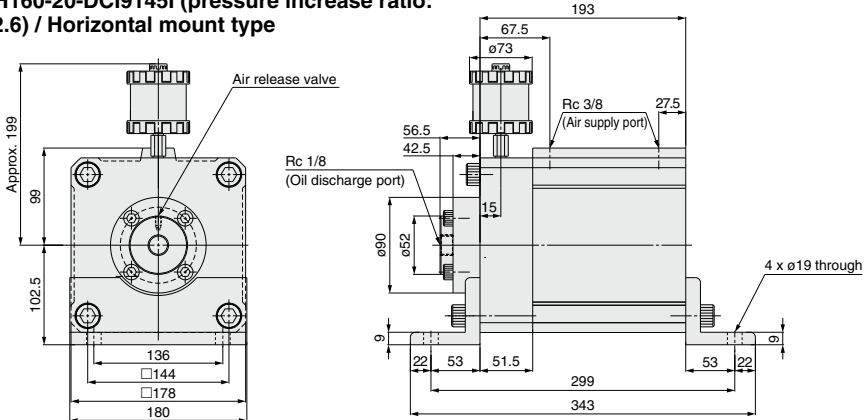
# Hydraulic Related Equipment / Air-Hydro Booster

## Dimensions

### CQ2F100-Z4239-60 (pressure increase ratio: 1 to 16) / Horizontal mount type



### CQ2LH160-20-DCI9145I (pressure increase ratio: 1 to 32.6) / Horizontal mount type



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

## ⚠ Product Specific Precautions

Be sure to read before handling. Refer to front matter 38 for Safety Instructions, and pages 1234 to 1241 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.

# Hydraulic Related Equipment

## Air-Hydro Unit CC

Refer to Best Pneumatics No. 2 for details.



Air-hydro unit



Converter

Type	Series	Nominal diameter (mm)
Air-hydro unit	CC	63, 100, 160
Converter	CCT	40, 63, 100, 160
Valve unit	CCV	—
Features	<ul style="list-style-type: none"> <li>By converting air pressure into hydraulic pressure, functions that are the same as those of a hydraulic unit can be obtained while using pneumatic equipment.</li> </ul>	

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