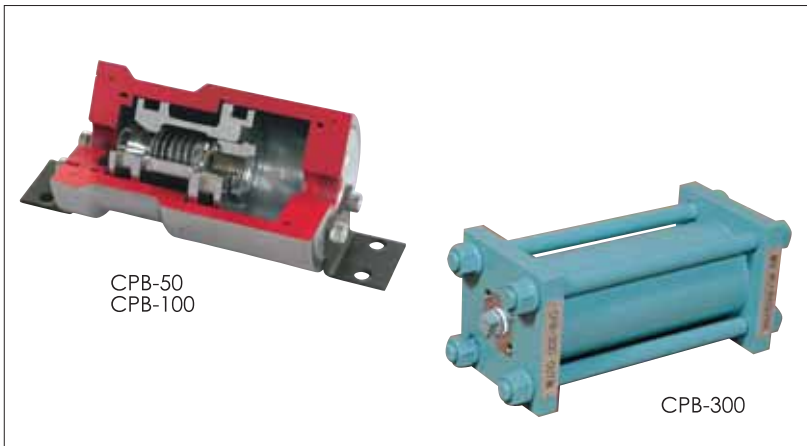


Core Puller Booster (Booster for Core Puller Cylinder)



Use

This Core Puller Booster is a device to temporarily intensify the pressure of the fluid for driving the core pulling cylinder for the moving core. The large size booster (CPB-300) may be used when it is desired to instantaneously provide high power for moving ejector pins or for a special casting process.

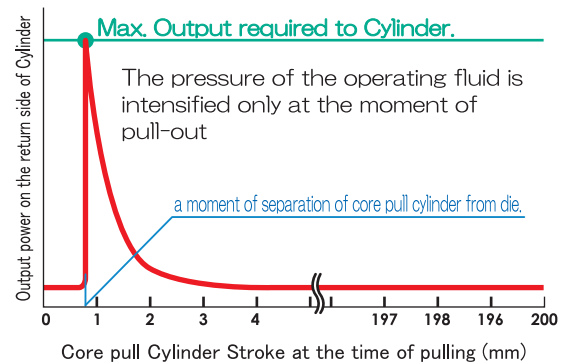
Characteristics

Hydraulic pressure for the cylinder is 150% intensified.

- The maximum power is required only at the moment when the core separates from die. The pressure of the operating fluid is intensified only at this moment.
- The construction is simple with the internal check valve mechanism and application of Pascal's Principle. Adjustment of intensified pressure is therefore not required.

Connection to the hydraulic circuit is simple.

- By using a special coupler (separately sold), connection to the hydraulic circuit is made very easily. Any core moving troubles during the regular casting process can be solved quickly.



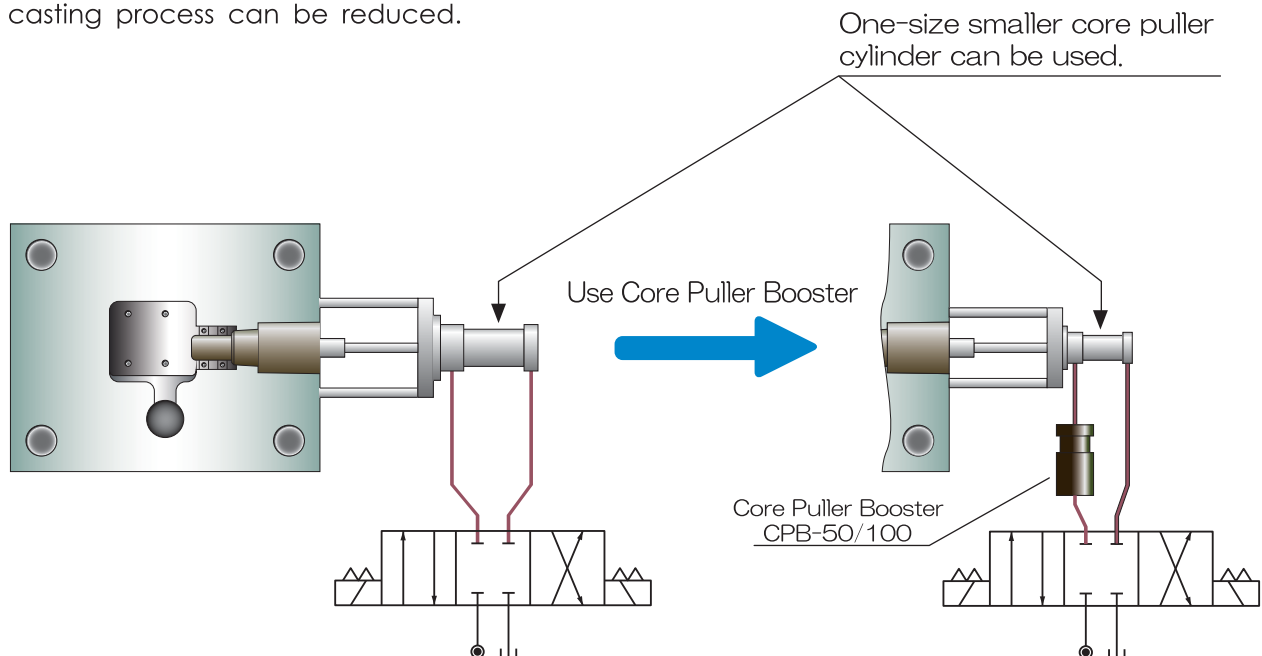
Effect

The use of Core Puller Booster will reduce the production cost.

- It enable the use of a one-size smaller core pull cylinder. This lowers the cylinder cost.

The user of Core Puller Booster will improve production efficiency.

- As it enables the use of smaller cylinder, the time of core movement can be made shorter.
- As die designing with reserved core pulling force is possible, moving core troubles during the casting process can be reduced.



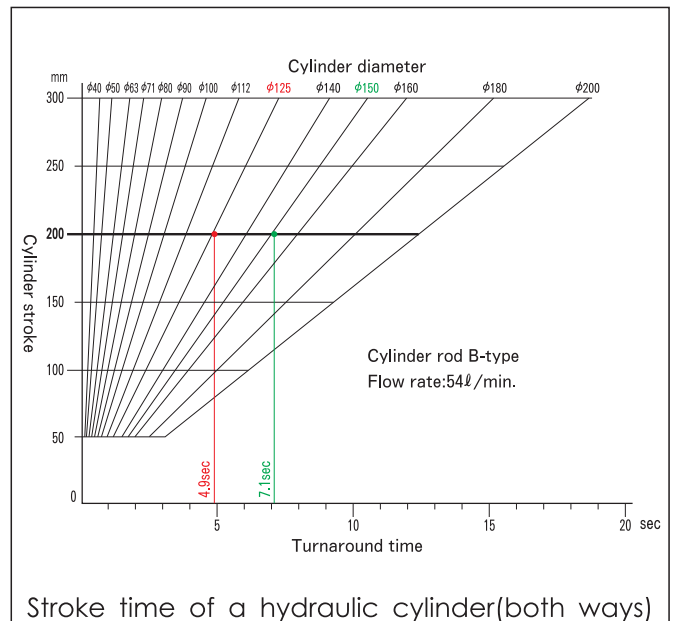
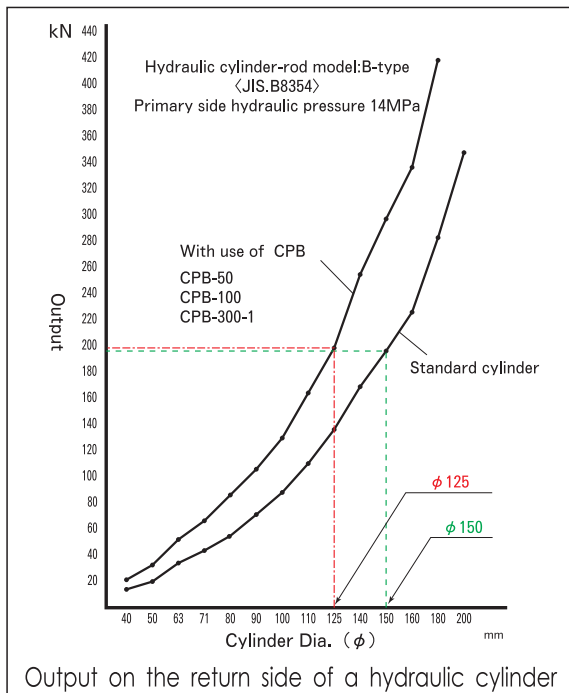
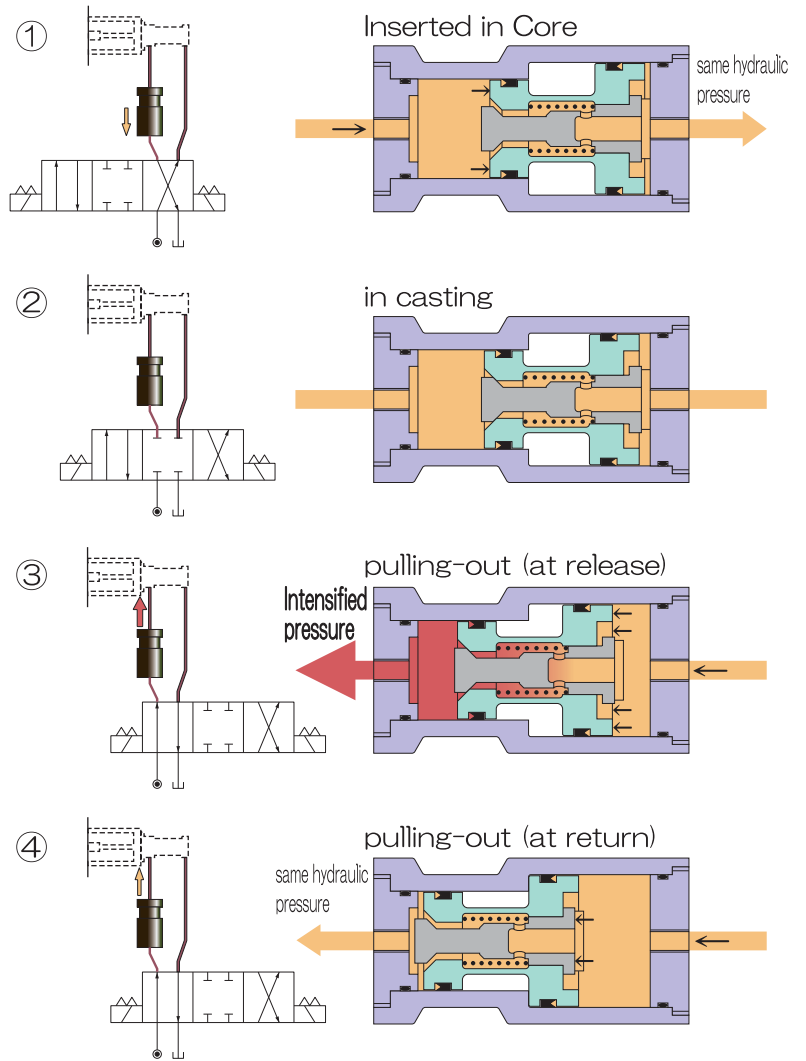
Pressure intensification

The working principle of Core Puller Booster is the sequence of movement as shown on the right. Inside the booster, the pressure is intensified by the difference in the areas of the bore according to Pascal's Principle.

Effect of the use of Core Puller Booster

Graph 1 shows the output power on the return side of a hydraulic cylinder. It is clear that for a moving core that usually requires $\phi 150$ cylinder, $\phi 125$ cylinder will provide an equal power with the use of Core Puller Booster. Thus it is possible to use a cylinder which is one size smaller.

Graph 2 shows the stroke time of a hydraulic cylinder. There is a difference of approximately two seconds for the same travel distance (eg. 200mm) between when Booster is used and when it is not used. As a result of downsizing the cylinder, it becomes possible to reduce the operating time.



Core Puller Booster (Booster for Core Puller Cylinder)

● Pulling stroke for which Core Puller Booster can intensify pressure.

There is idle between Core Puller Booster and Core Pull Cylinder, depending on connecting method.

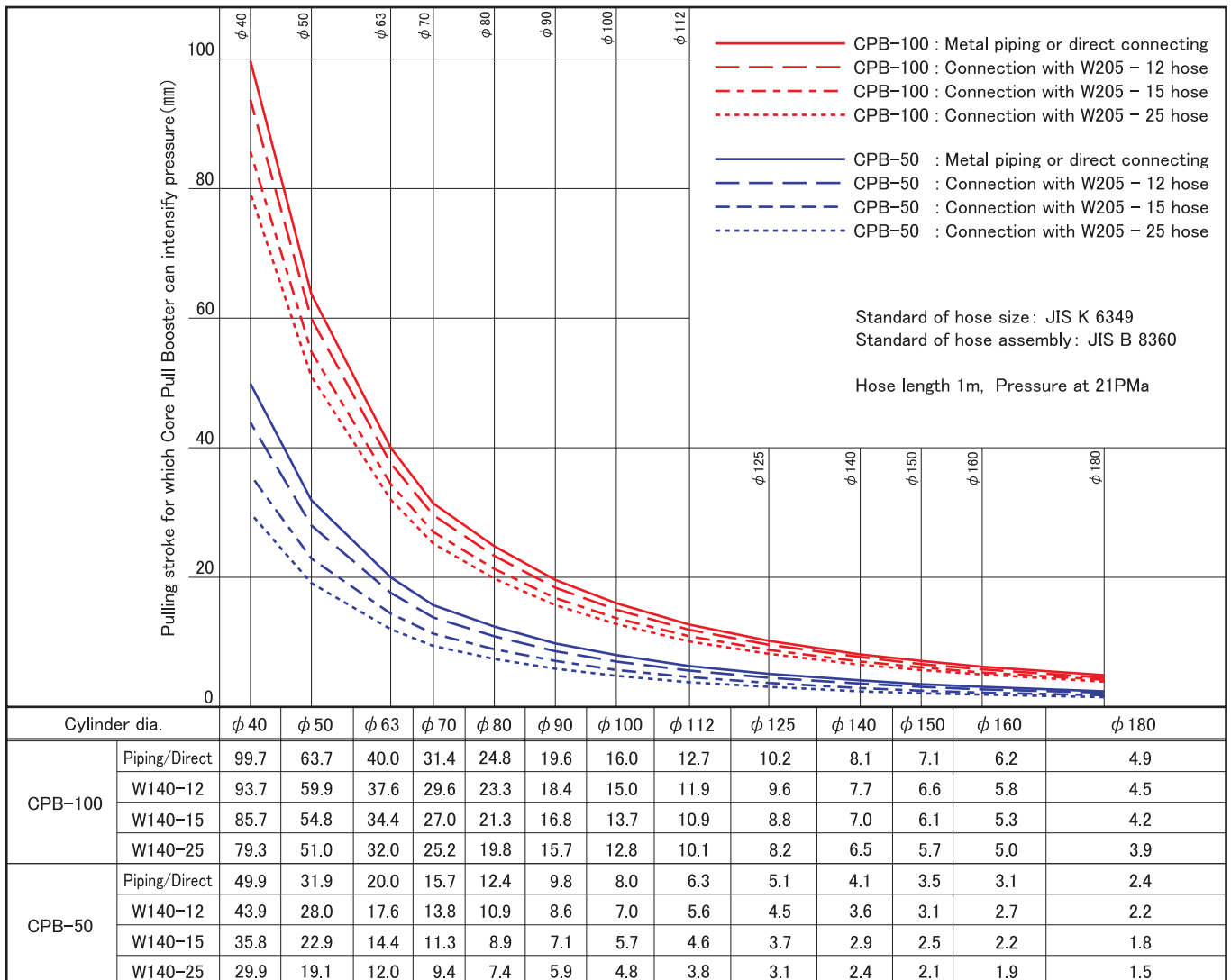
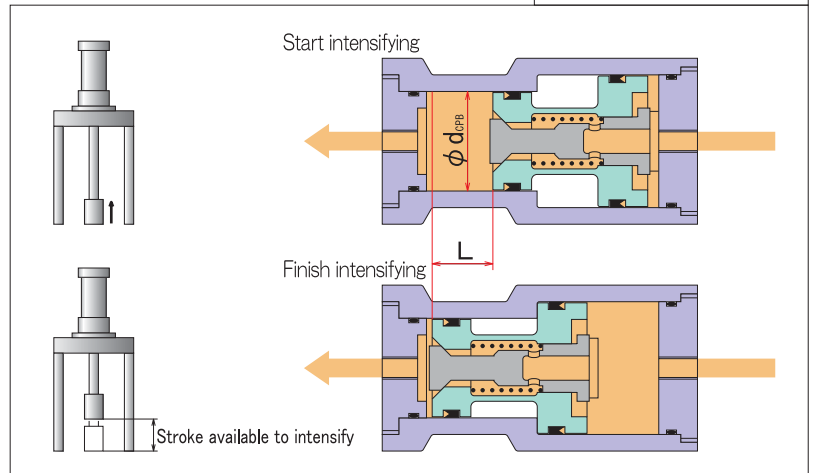
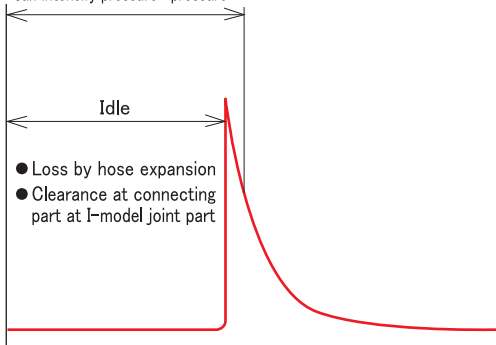
Graph shows the stroke for which Core Puller Booster can intensify pressure, and relations between boost volume and cylinder diameter.

Please check hydraulic circuit of your cylinder, and choose most effective Core Pull Booster.

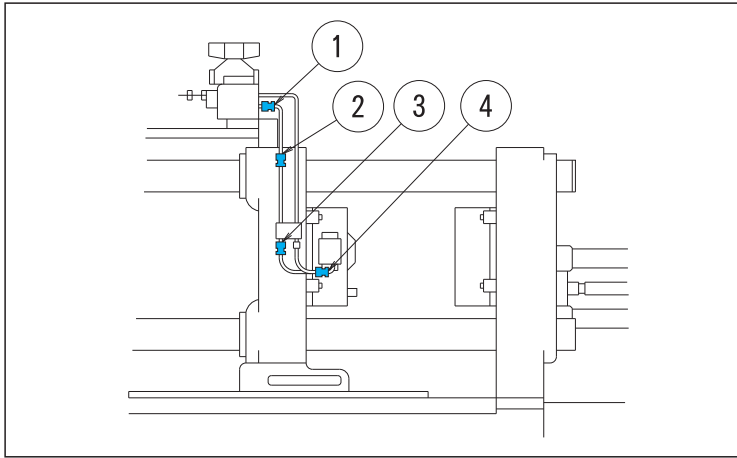
$$\frac{\pi d_{CPB}^2}{4} \times L = \text{Boost volume}$$

CPB-100 : 100ml
CPB-50 : 50ml

Stroke for which Core Pull Booster can intensify pressure.



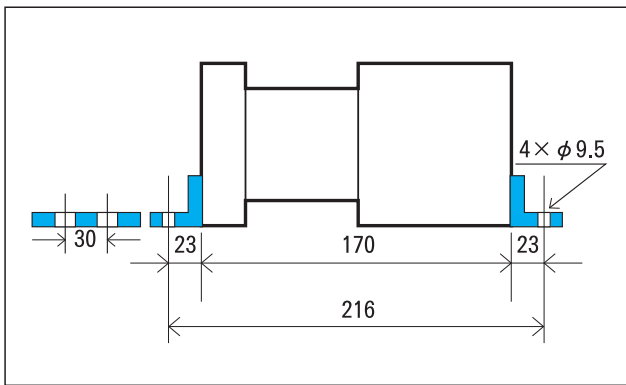
● Example of installation



As shown in the figure, mount CPB on any of the following positions on the secondary outlet side of the solenoid valve.

- ① Next to the solenoid valve
- ② Half way between the solenoid valve and the manifold
- ③ Next to the manifold
- ④ By the core pull cylinder

● Dimension for installation (CPB-50•CPB-100 Common)



■ Notes :

- The inlet side hydraulic pressure should be under 14MPa
- Use petroleum fluid JIS k 2213-1,2, or equivalent
- If water glycol fluid is used, use fluid of the same viscosity as petroleum fluid.
- Confirm the pressure resistance of the core puller.

● Specification

Model	CPB			
	50	100	300-1 (Produced on order)	300-2 (Produced on order)
Type.				
Max. working pressure*	14MPa	14MPa	14MPa	14MPa
Boost ratio	1 : 1.5	1 : 1.5	1 : 1.5	1 : 2.0
Boost volume	50ml	100ml	300ml	300ml
Connecting thread	Rc1/2	Rc1/2	Rc3/4	Rc3/4
Max. flow rate	100 l /min	100 l /min	200 l /min	200 l /min
Body dimension	φ 70×170mm	φ 96×170mm	140×140×350mm	140×140×350mm
Mass	3.5kg	6.0kg	21kg	21kg
Accessories	Fitting bracket : 2pcs Bolt for bracket : 4pcs			

※Pressure from DCM

● Example of order code designation

Model — Type

CPB — 100