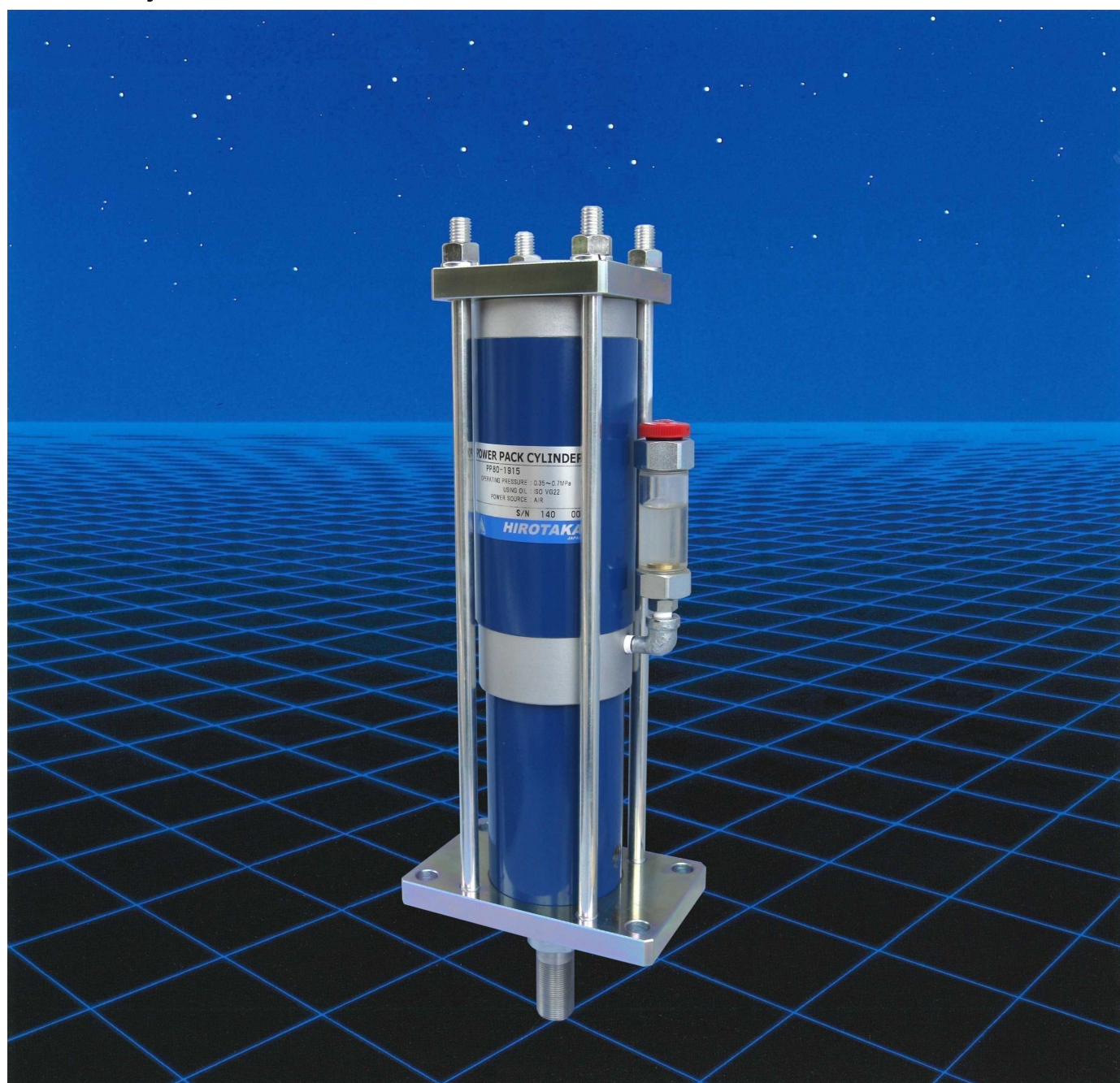




High Thrust Air Cylinder

POWER PACK CYLINDER

Air cylinder that compactly integrates the hydraulic cylinder and the air-hydro booster.



HIROTAKA MFG. CO.,LTD.

Only air pressure

Generates high thrust of 7 tons or more !

Compact air cylinder

POWER PACK CYLINDER

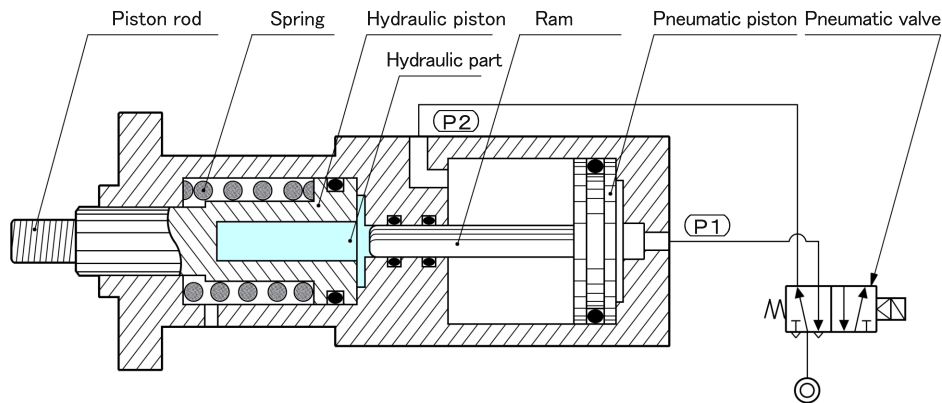
Overview

The power pack cylinder is a high thrust air cylinder that compactly integrates an air-hydro booster and a hydraulic cylinder.

Feature

- 1 High thrust of 0.5 to 7.9 tons is generated only by air pressure.
- 2 It can output 1 ton with the same inner diameter as a $\phi 50$ air cylinder.
- 3 As with pneumatic cylinders, control can be done with an one pneumatic valve.
- 4 The thrust can be changed steplessly by changing the air pressure.
- 5 It can reciprocate more than 50 times per minute.

Operating principle



When the pneumatic valve is energized, the pneumatic piston advances, the oil in the hydraulic part becomes high pressure, and the piston rod advances with high thrust. When the pneumatic valve is de-energized, the pneumatic piston return and the piston rod return due to the built-in spring.

Specification

Model		PP50-0510	PP50-1005	PP80-1324	PP80-1915	PP80-2910	PP100-2135	PP100-2727	PP100-3620	PP100-5514	PP100-7908	
Pneumati cylinder diameter		ϕ 50		ϕ 80			ϕ 100					
Ram diameter		ϕ 20	ϕ 14	ϕ 30	ϕ 25	ϕ 20	ϕ 40	ϕ 35	ϕ 30	ϕ 25	ϕ 20	
Pressure intensifying ratio		1:6.2	1:12.7	1:7.1	1:10.2	1:16	1:6.2	1:8.1	1:11.1	1:16	1:25	
Hydraulic cylinder diameter		ϕ 40		ϕ 60			ϕ 80					
Nominal thrust (kN)		05	10	13	19	29	21	27	36	55	79	
Stroke (mm)		10	5	24	15	10	35	27	20	14	8	
Forward thrust (kN)	Air pressure (MPa)	0.4	2.6	6.0	7.0	10.5	17.0	12.0	15.3	21.0	31.0	49.0
		0.5	3.4	7.6	9.0	13.5	21.0	15.0	19.3	26.0	39.0	59.0
		0.6	4.2	9.2	11.0	16.5	25.0	18.0	23.3	31.0	47.0	69.0
		0.7	5.0	10.8	13.0	19.5	29.0	21.0	27.3	36.0	55.0	79.0
Backward thrust (N)		340		670			670					
Fluid		Air										
Hydraulic fluid		Standard mineral hydraulic fluid ISO viscosity grade : VG22 or 32										
Proof pressure		1.5MPa										
Operating pressure		0.35 to 0.7MPa										
Mass (kg)		6.0		14.5			19.5					

How to order

PP 80 - 13 24 - B - G

Example for model number

PP 80 - 1324 - B - G

Bore size: $\phi 80$, Nominal thrust: 1.3 ton, Stroke: 24 mm

Type with oil film removal specification for rod, With oil pressure gauge

Series
Power Pack Cylinder

Symbol	Bore size
50	$\phi 50$
80	$\phi 80$
100	$\phi 100$

Symbol	Nominal thrust
05	0.5 ton
10	1.0 ton
13	1.3 ton
19	1.9 ton
21	2.1 ton
27	2.7 ton
29	2.9 ton
36	3.6 ton
55	5.5 ton
79	7.9 ton

Symbol	Stroke
05	5 mm
08	8 mm
10	10 mm
14	14 mm
15	15 mm
20	20 mm
24	24 mm
27	27 mm
35	35 mm

Symbol	Oil pressure gauge
NIL	Without pressure gauge
G	With pressure gauge

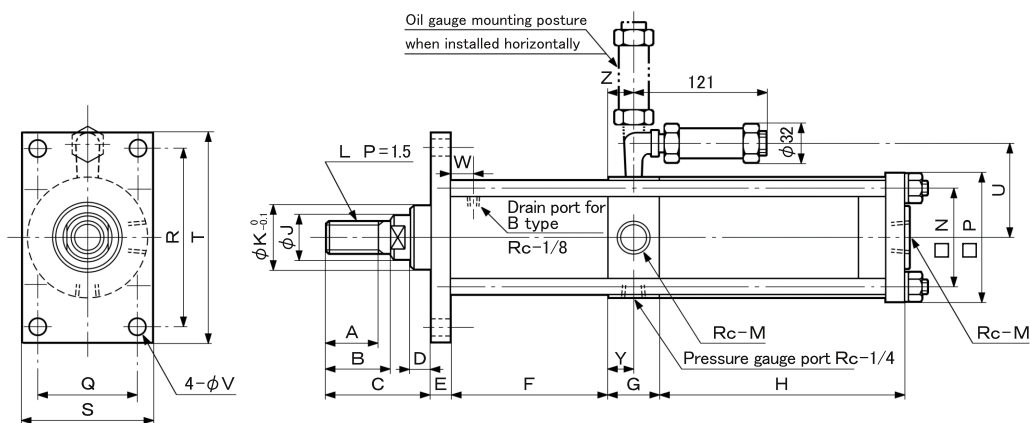
Symbol	Oil film removal specification for rod
Nil	Without measures
B	With measures

Standard model

The following combinations of bore size, nominal thrust, and stroke are standard models.

Bore size	Standard models
$\phi 50$	PP 50 - 0510 - 1005 - 1324
$\phi 80$	PP 80 - 1915 - 2910 - 2135 - 2727
$\phi 100$	PP100 - 3620 - 5514 - 7908

Dimension



Unit: mm

Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	Y	Z
PP 50	30	35	55	10	12	71	38	107	$\phi 25$	$\phi 35$	M20	1/4	53	75	53	110	75	135	60	11	18	26	26
PP 80	40	50	80	15	16	120	38	192	$\phi 35$	$\phi 50$	M24	1/2	75	100	75	135	100	160	65	13	22	25	27
PP100	50	55	95	20	22	139	45	250	$\phi 55$	$\phi 70$	M30	1/2	95	130	90	180	130	220	75	19	30	25	31

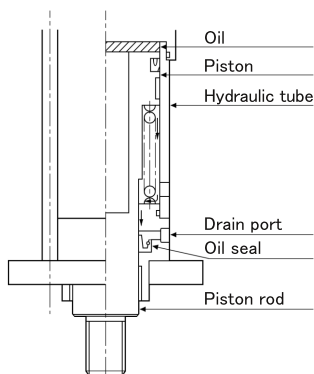
※ Only PP100-7908 has a F value of 137.

Oil film removal specification for rod

The rod oil film removal specification protects parts from oil by minimizing oil discharge from the sliding parts of the piston rod.

Internal structure

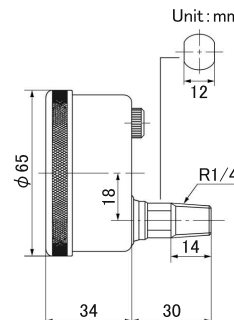
As the piston slides, the oil adhering to the inner surface of the hydraulic tube becomes a thin oil film and exits from the piston rod surface. Before this oil exit, the oil film is removed by the oil seal and discharged from the drain port.



Oil pressure gauge

Model No.	2315 - 63 - 25B
Pressure range	0 to 25MPa
Accuracy	$\pm 1.6\%$ or less of full scale
Heat resistance temperature	- 5 to + 45°C
Glycerine filling	This pressure gauge is filled with pure glycerine.
Temperature characteristic	Accuracy change of +0.3 % for each +10°C rise based on +20°C, and - 0.3 % for every - 10°C.

Unit: mm





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●LINE UP●

PNEUMATIC POWER CYLINDER

PNEUMATIC BOOSTER

POWER PACK CYLINDER

RUSH BOOSTER

HYDRAULIC CYLINDER

FREE LOCK PAD

SELLOCK CYLINDER

FLOATING CONNECTOR

AUTO CLAMPER

SEL NUT

LINEA BRAKE

**PNEUMATIC AND HYDRAULIC
EQUIPMENT**