

# 4 Power Components for Machining Centers



## Booster

Patent No.: M353795

◎ Unclamping Booster / **BPF**  
Ratio 11~15



# BPF Technical Information



## Specifications Table:

Specifications	Item	BPF Standard Model (Vertical Model/Horizontal Model)	BPFQ High Speed Model
Working Pressure		0.4MPa~0.6MPa (4kgf/cm <sup>2</sup> ~6kgf/cm <sup>2</sup> ) Clean Compressed Air	
Operating Oil		ISO VG 32 or equivalent	
Temperature Range		0°C~60°C	
Discharge Volume		50C.C., 70C.C., 110C.C.	
Voltage		DV24, AC110, 220	

■ Working Pressure (kgf/cm<sup>2</sup>)

Ensure the operating pressure tolerance is within  $\pm 0.1\text{MPa}$ (1kgf/cm<sup>2</sup>).  
Recommended operating pressure 0.6MPa(6kgf/cm<sup>2</sup>)

■ Hydraulic Cylinder Oil Volume

Please retain 20%~30% additional volume for hydraulic cylinder oil

■ Solenoid Valve Voltage

■ Unclamping cylinder operates with tool carousels  
BT30#, BT40#, BT50#

■ Spindle Unclamp Tip Distance (mm)

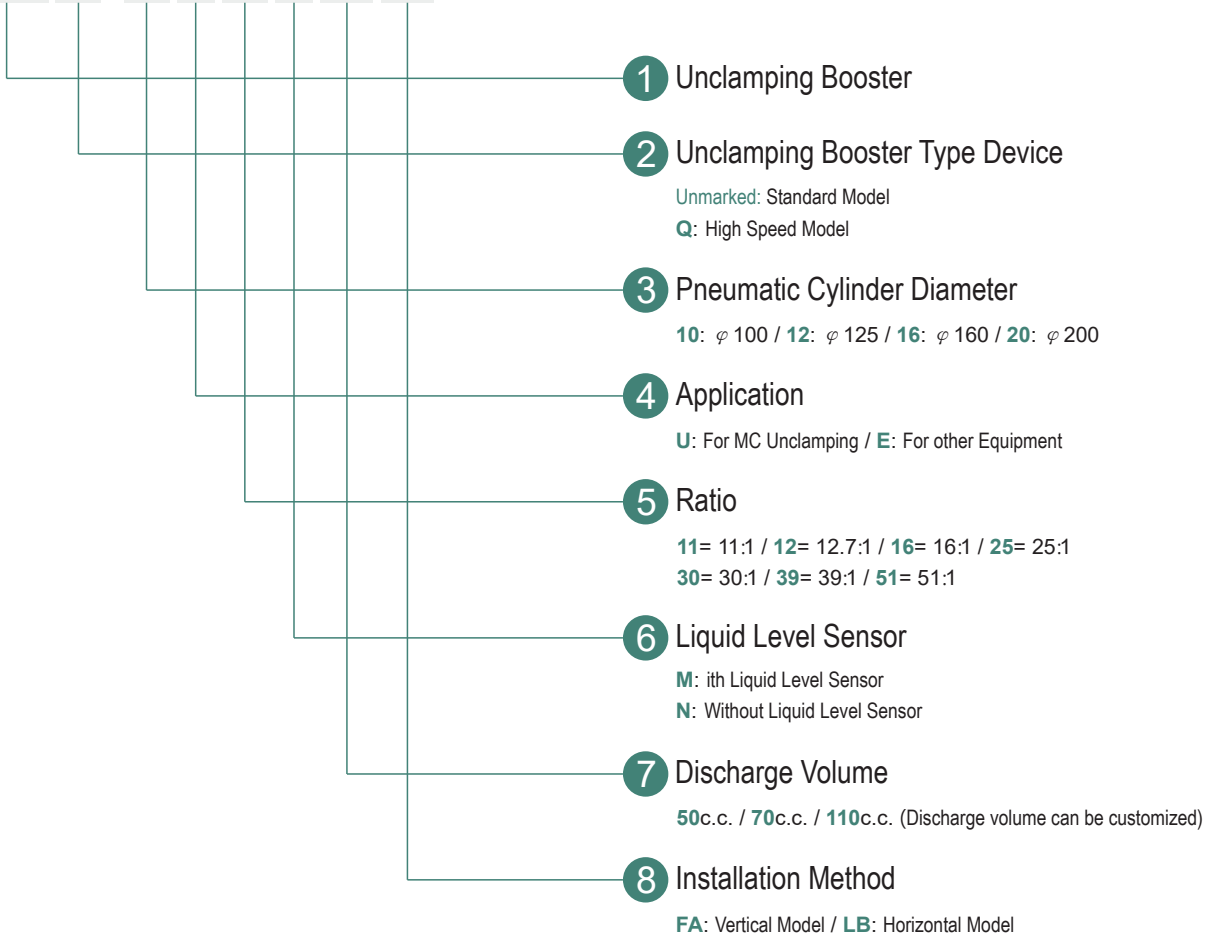
■ Spindle Pulling Force (kgf)

■ Booster Ratio (BPF)



## Ordering Guidelines

**BPF Q - 10 U 39 M 70 FA**

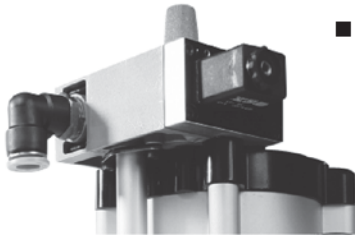


BPT
DJ2A
<b>BPF</b>
HUC
ZB



# BPF Features / Circuit Diagram

## Feature Description:



### ■ Designed to Supply Hydraulic Power to Direct and Built-in Spindles

For use with hydraulic unclamping cylinder.

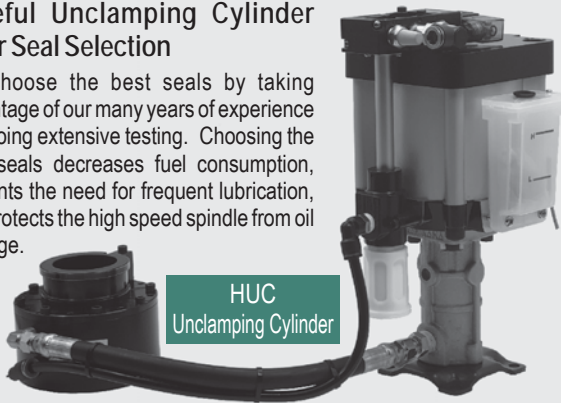
### ■ Modular Design

Control valve connected by outer wall mount, interior cylinder and tubing allows for larger gas flow with a simple and pleasant appearance; significantly lowers installation and tubing costs.

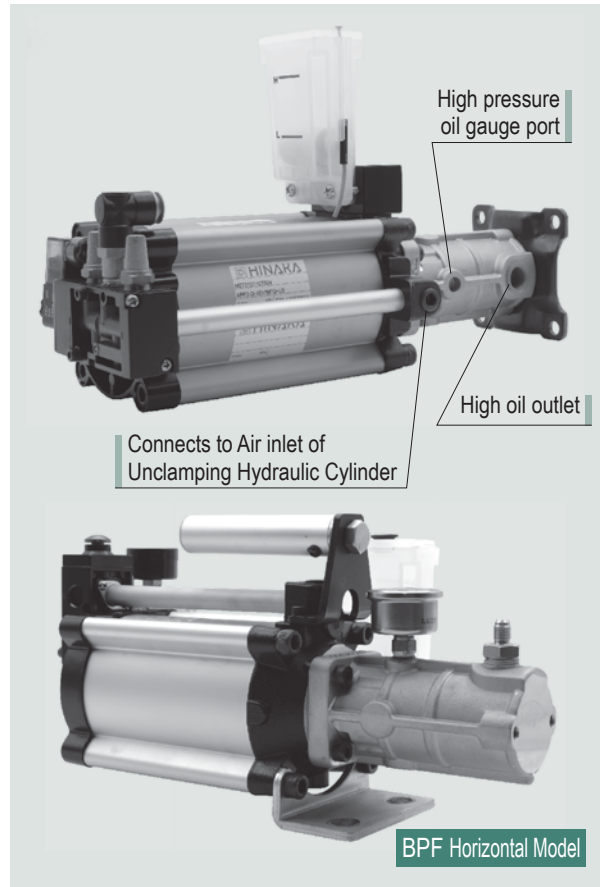
BPF Vertical Model

### ■ Careful Unclamping Cylinder Inner Seal Selection

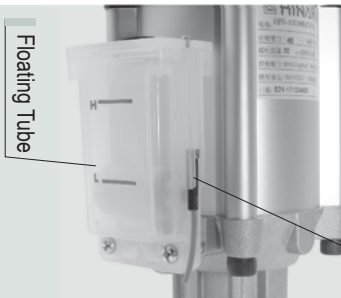
We choose the best seals by taking advantage of our many years of experience and doing extensive testing. Choosing the right seals decreases fuel consumption, prevents the need for frequent lubrication, and protects the high speed spindle from oil damage.



HUC Unclamping Cylinder



BPF Horizontal Model



Floating Tube

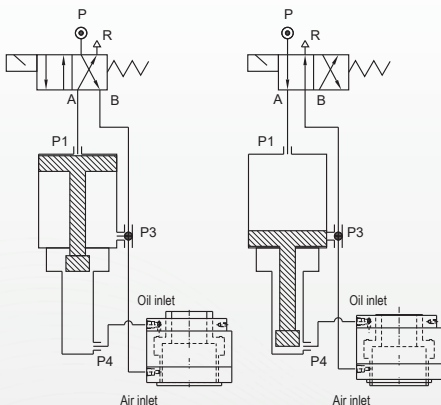
### ■ Oil Cup Liquid Level Sensor

Flat oil replenishing dispenser fits flush on the on outer wall making it stable, leak proof, doesn't occupy extra space, and won't twist. External sensor linked to inner float detects oil level and can specify advanced computer settings to prevent clamp impact or unnecessary shutdown. Elegant sturdy oil proof assembly, impact resistant; transparent materials increase visibility.

Oil Cup Liquid Level Sensor

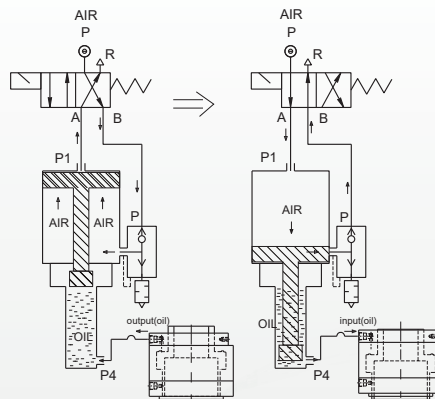
## Circuit Diagram:

### BPF



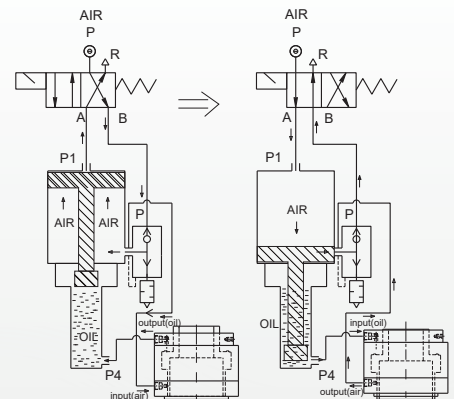
### BPFQ

#### Single A Model

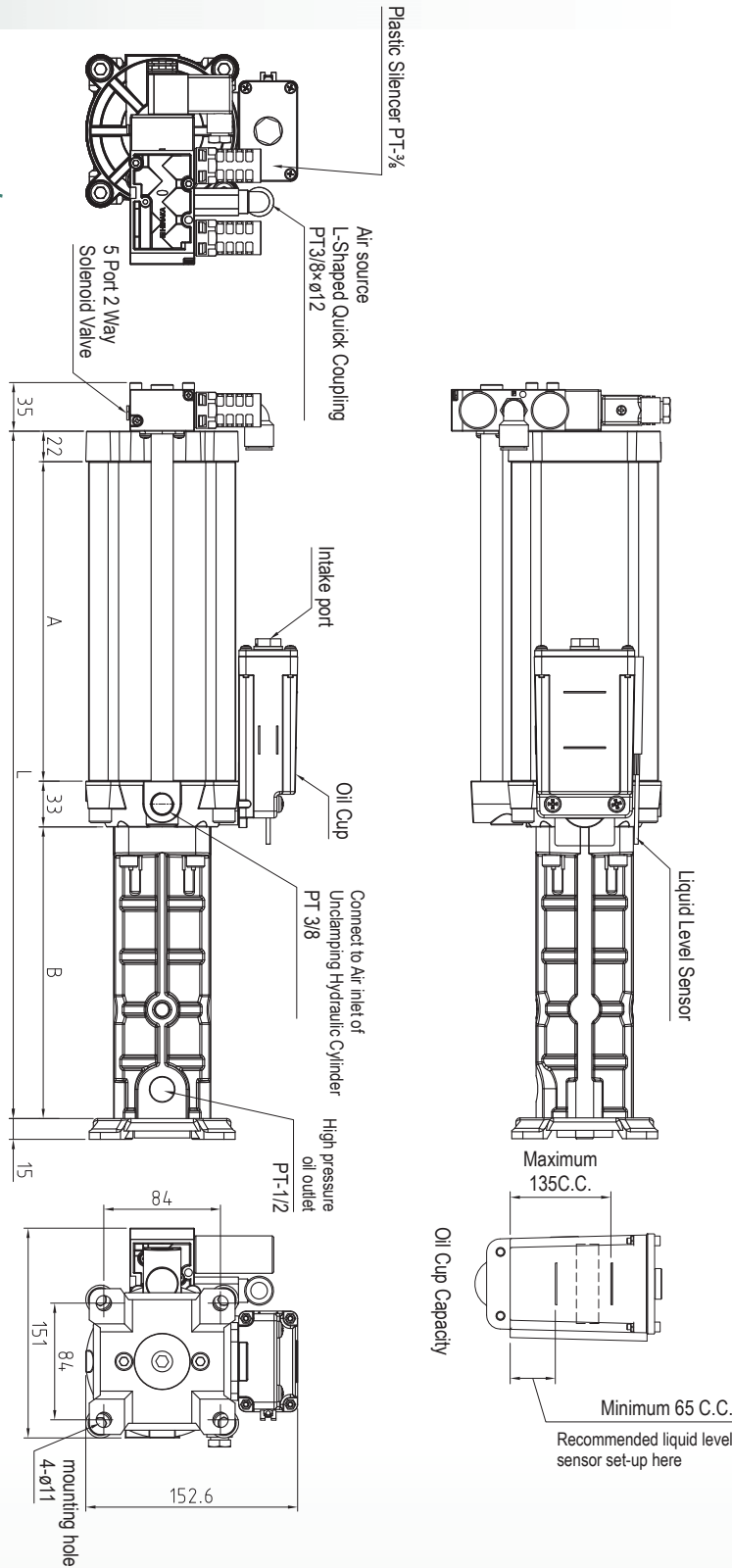


### BPFQ

#### Double A Model



## BPF Standard Unclamping Booster -Vertical Model



- BPT
- DJ2A
- BPF**
- HUC
- ZB

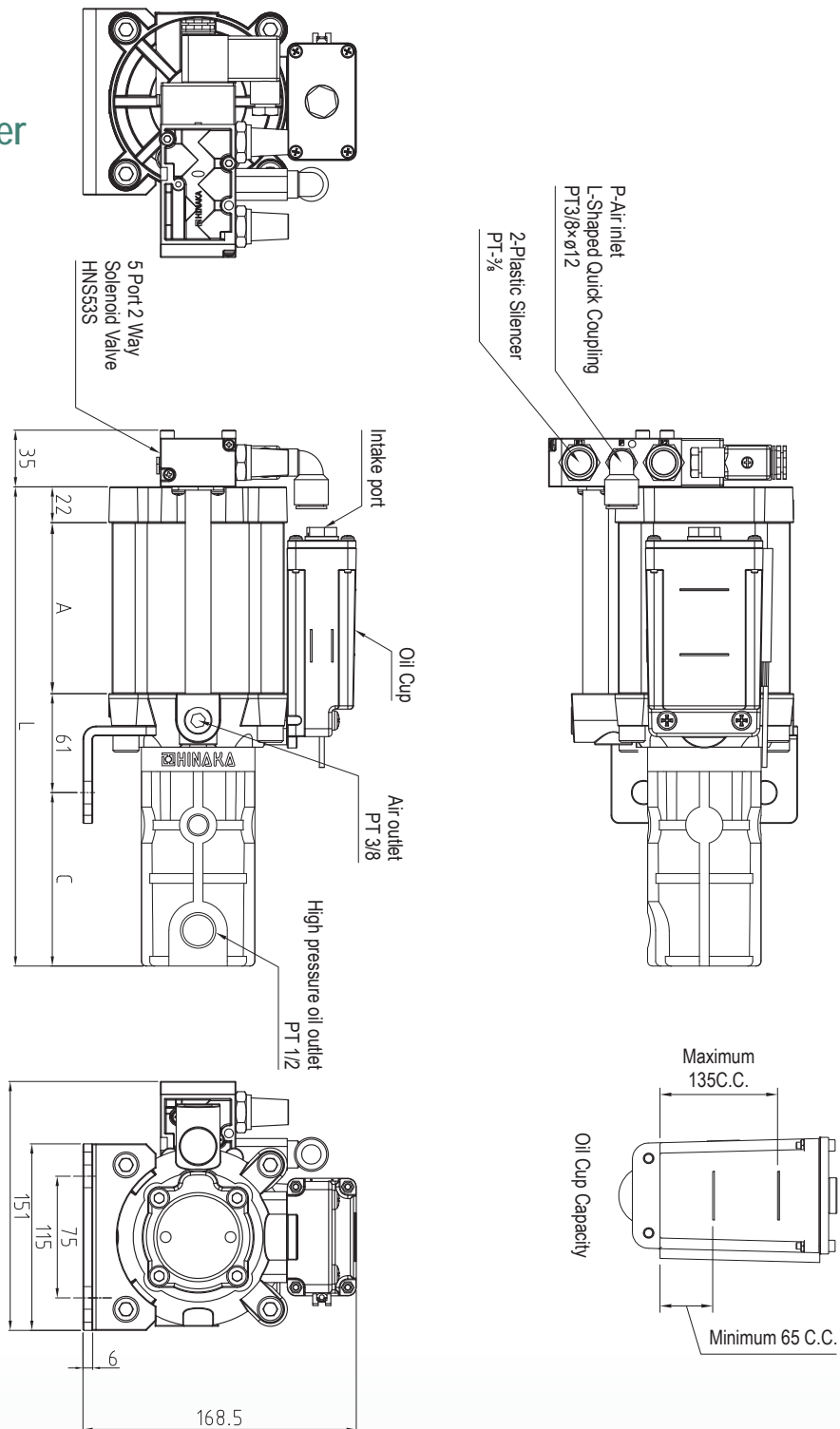
Unit: mm

Discharge Volume Ratio	A			B			L			High Pressure Oil Output (kgf/cm <sup>2</sup> )		
	50C.C.	70C.C.	110C.C.	50C.C.	70C.C.	110C.C.	50C.C.	70C.C.	110C.C.	4	5	6
1006	85	101	133	83	83	135	223	239	323	25	31	37
1008	97	118	159	83	83	135	235	256	349	32	40	48
1011	122	150	207	135	135	210	312	325	472	44	55	66
1012	132	165	230	135	135	210	322	355	495	51	63	76
1016	153	194	275	135	210	284	343	459	675	64	80	96
1025	213	276	404	219	283	410	485	612	930	100	125	150



# BPF

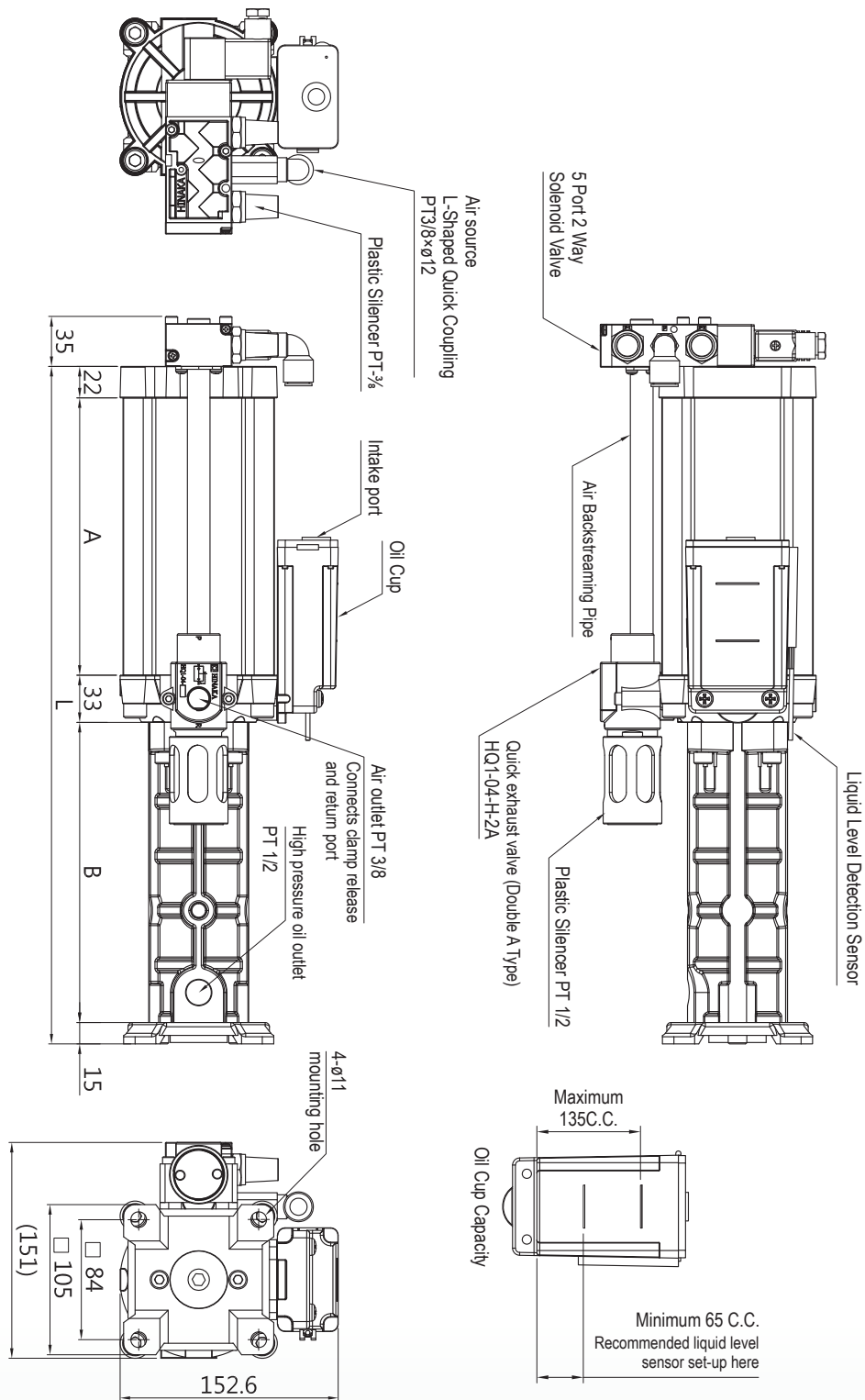
## BPF Standard Unclamping Booster -Horizontal Model



Unit: mm

Discharge Volume	A			C			L			High Pressure Oil Output (kgf/cm <sup>2</sup> )		
	50C.C.	70C.C.	110C.C.	50C.C.	70C.C.	110C.C.	50C.C.	70C.C.	110C.C.	4	5	6
1006	85	101	133	55	55	107	223	239	323	25	31	37
1008	97	118	159	55	55	107	235	256	349	32	40	48
1011	122	150	207	107	107	182	312	340	472	44	55	66
1012	132	165	230	107	107	182	322	355	495	51	63	76
1016	153	194	275	107	182	257	343	459	675	64	80	96
1025	210	274	402	192	256	383	485	612	870	100	125	150

## BPFQ High Speed Unclamping Booster



- BPT
- DJ2A
- BPF**
- HUC
- ZB

Unit: mm

Discharge Volume	A			B			L			High Pressure Oil Output (kgf/cm <sup>2</sup> )		
	50C.C.	70C.C.	110C.C.	50C.C.	70C.C.	110C.C.	50C.C.	70C.C.	110C.C.	4	5	6
1006	85	101	133	83	83	135	223	239	323	25	31	37
1008	97	118	159	83	83	135	235	256	349	32	40	48
1011	122	150	207	135	135	210	312	325	472	44	55	66
1012	132	165	230	135	135	210	322	355	495	51	63	76
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