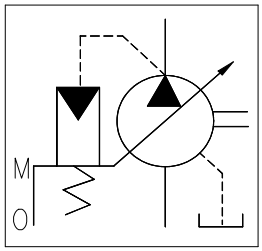
VARIABLE DISPLACEMENT VANE PUMP

RV20 SERIES:

These are variable displacement single vane pumps. They come with inbuilt pressure compensator and flow Cut off, which in turn give good power saving. RV20 series pump is widely used for machine tools.

Graphical Symbol



SPECIFICATIONS:

Model Number	Nominal Capacity (cc/rev)	Operating Pressure Range (kgf/cm^2)	Shaft Speed (rpm)		Max. Operating Pressure (kgf/cm^2)	Max. Drain at Max. Pressure (lpm)	Mass (kg)
			Min.	Max.			
RV20-SF-17-*-10	11.3	10~100	800	1800	100	1.7	5.7
RV20-SA-17-*-10H01							6.7

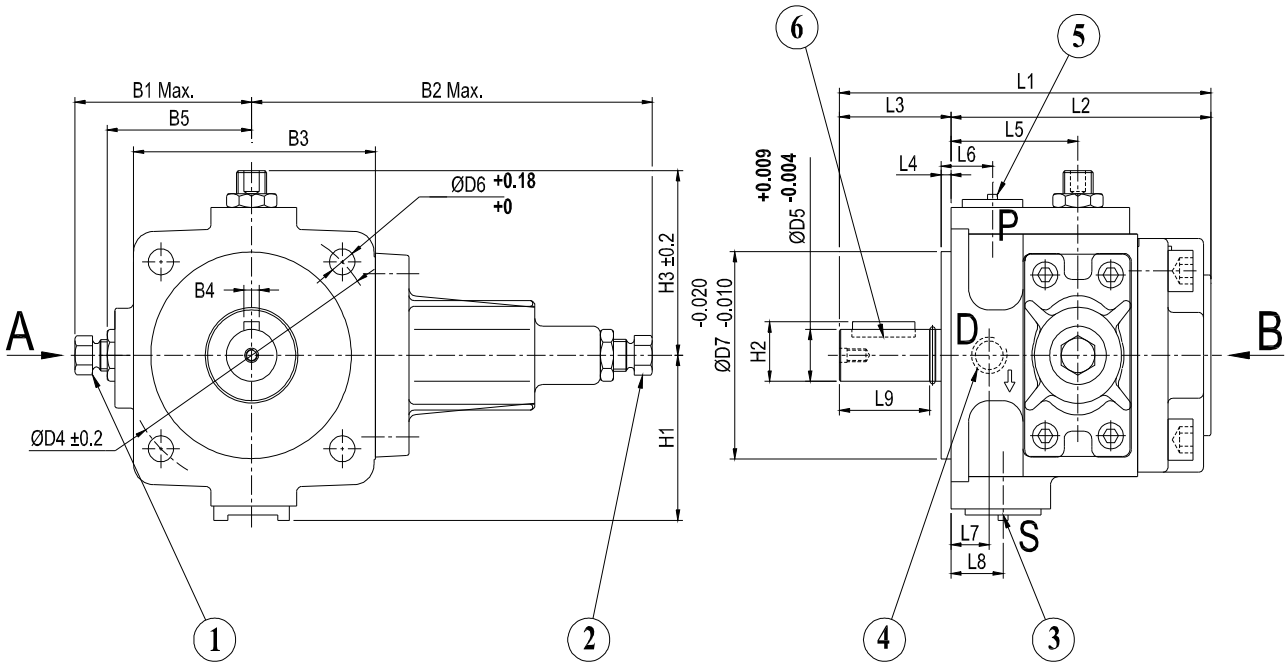
MODEL NUMBER DESIGNATION:

RV20	- S	F	- 17	- D	- 10
Series Number	**Number of Stage**	**Type of Mounting**	**Delivery at Unloading (lpm) @ 1500 rpm**	**Max. Operating Pressure (kgf/cm^2)**	**Design * Number**
RV20	**S:** Single Stage	**F:** Flange Type (4 Bolt Mounting)	**17**	**C:** 50 **D:** 70 **E:** 100	**10**
		A: Adapter Type (2 Bolt Mounting			**10H01**

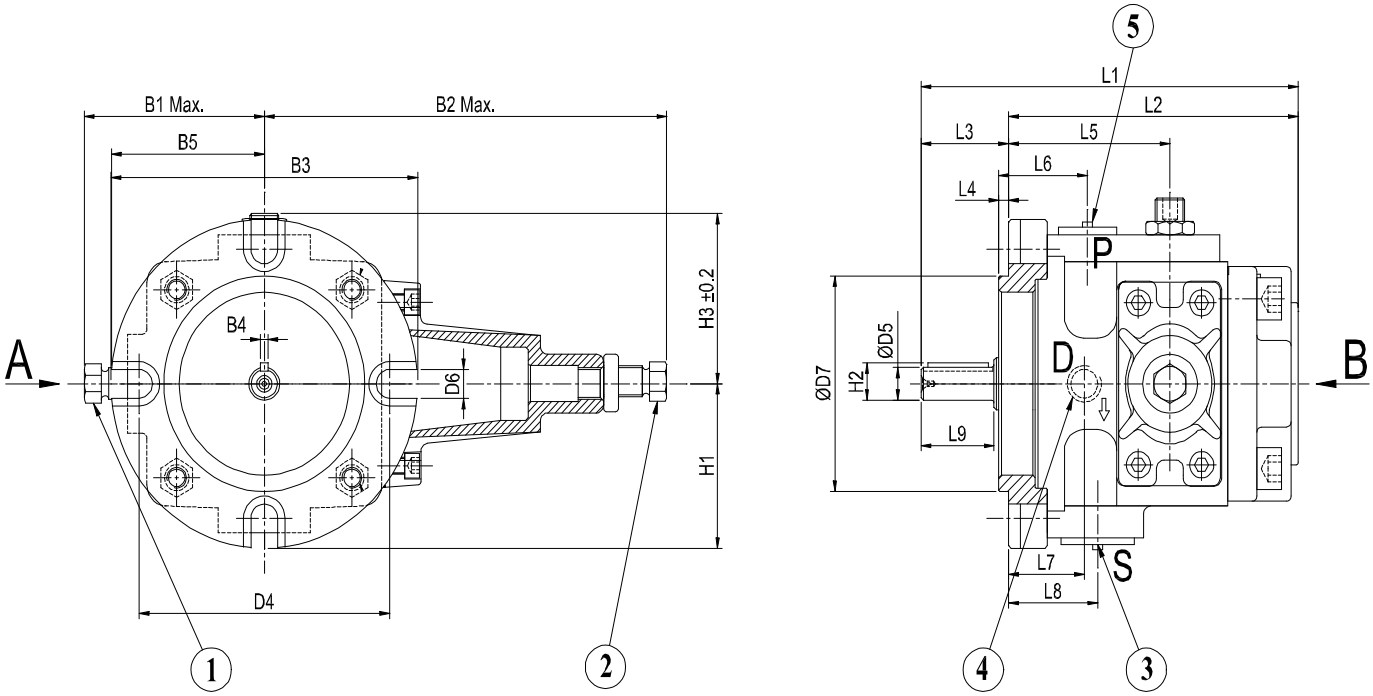
*Design numbers subject to change, but installation dimensions remain as shown below.

MOUNTING DETAILS:

F – Type Mounting (4 Bolts)



A – Adapter Type Mounting (2 Bolts)



1. Flow adjusting screw (A/F 13mm)

- Rotate clockwise (looking in direction A) to reduce the flow.
- Rotate anti-clockwise (looking in direction A) to increase the flow.

2. Pressure adjusting screw (A/F 13mm)

- Rotate clockwise (looking in direction B) to increase the operating pressure.
- Rotate anti-clockwise (looking in direction B) to decrease the operating pressure

3. Suction port (S)

4. Drain port (D)

5. Delivery port (P)

6. Drive shaft

Design No.	B1 max.	B2 max.	B3	B4	B5	P	S	D	D4±0.1	ØD5	D6	D7	H1	H2	H3
10	70	160	115	6	57	G 3/8”	G ½”	PT ¼”	102	20	10	80	63.5	23	71
10H01	70	160	126	3.18	57	G 3/8’	G ½”	PT ¼”	103	12.7	11	82.5	63.5	14.3	71

Design No.	L1	L2	L3	L4	L5	L6	L7	L8	L9
10	149	104	45	4	50	20.5	15	20.5	36
10H01	155	119	36	4	66	36.5	31	36.5	30

Note: All dimensions are in mm.

❑ NOTES:

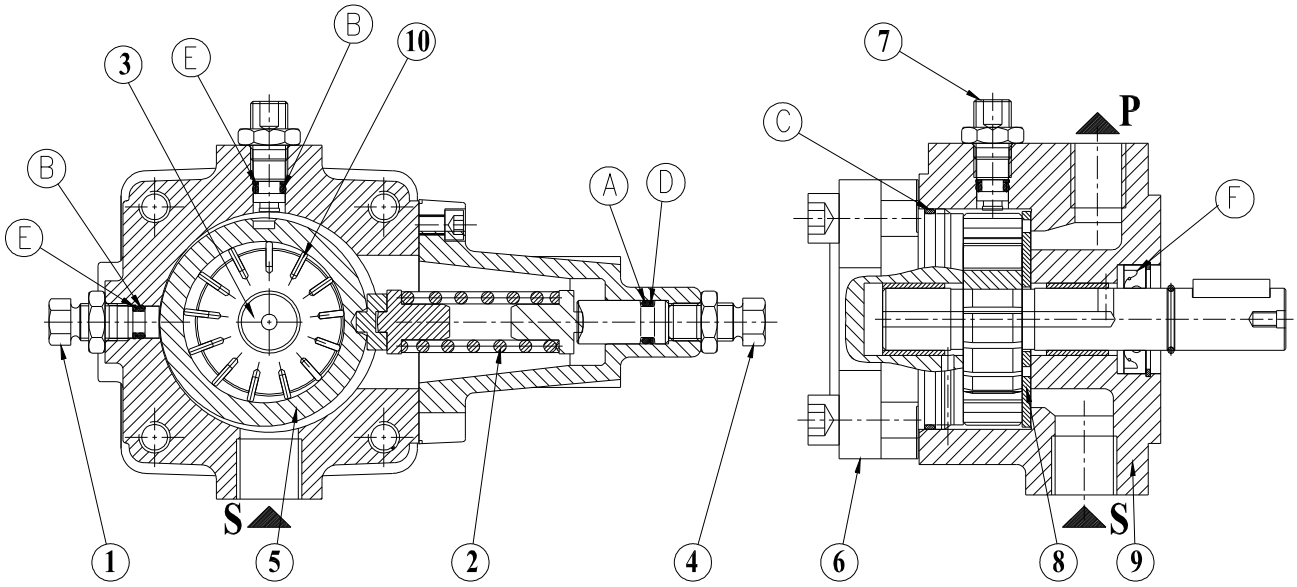
1. Cleanliness: -

Contamination level should be within NAS class 9. Use of 100 µm (150 mesh) reservoir type filter on suction side, more than 50mm away from the tank bottom.

2. Alignment of Shaft: -

Employ a flexible coupling whenever possible & avoid stress from bending or thrust. Maximum permissible misalignment is less than 0.1mm (0.004 inches) TIR & maximum permissible misangular is less than 0.2°.

CONSTRUCTION :



S: Suction Port , **P**: Delivery Port

Parts Description:-
1. Flow adjustment screw
2. Spring
3. Rotor shaft
4. Pressure adjustment screw
5. Camring
6. Cover
7. Stud
8. Port plate
9. Body
10.Vanes

Seal Kit Details			
MODEL CODE: KS-RV20-10			
Sl.No.	**Part Name**	**Description**	**Qty.**
A	O-Ring	SO-NA-P10A	1
B	O-Ring	SO-NA-P7	2
C	O-Ring	SO-FA-A146	1
D	Back-Up Ring	SO-BB-P10A	1
E	Back-Up Ring	SO-BB-P7	2
F	Oil Seal	ISD-20356	1

Note: When ordering the seals, please specify the seal kit number KS-RV20-10

Functional Description:-

Hydraulic pumps of the RV-20 series are direct operated variable displacement pumps.
This mainly consists of body (9), cover (6), vanes (10), cam ring (5), spring (2), pressure adjustment screw (4) and port plate (8). rotor shaft (3).

Suction & Pumping process

The vanes (10), rotor (3), cam ring (5), port plate (8) and the cover (6) form the chambers, which are necessary to transport the fluid.
As the rotor rotates the chambers increase in size and due to the pressure difference fluid is sucked in the suction port. As the rotor continues to rotate the fluid is pushed into a region with a smaller volume as a result giving pressurized fluid, which is then delivered, through the pressure port.

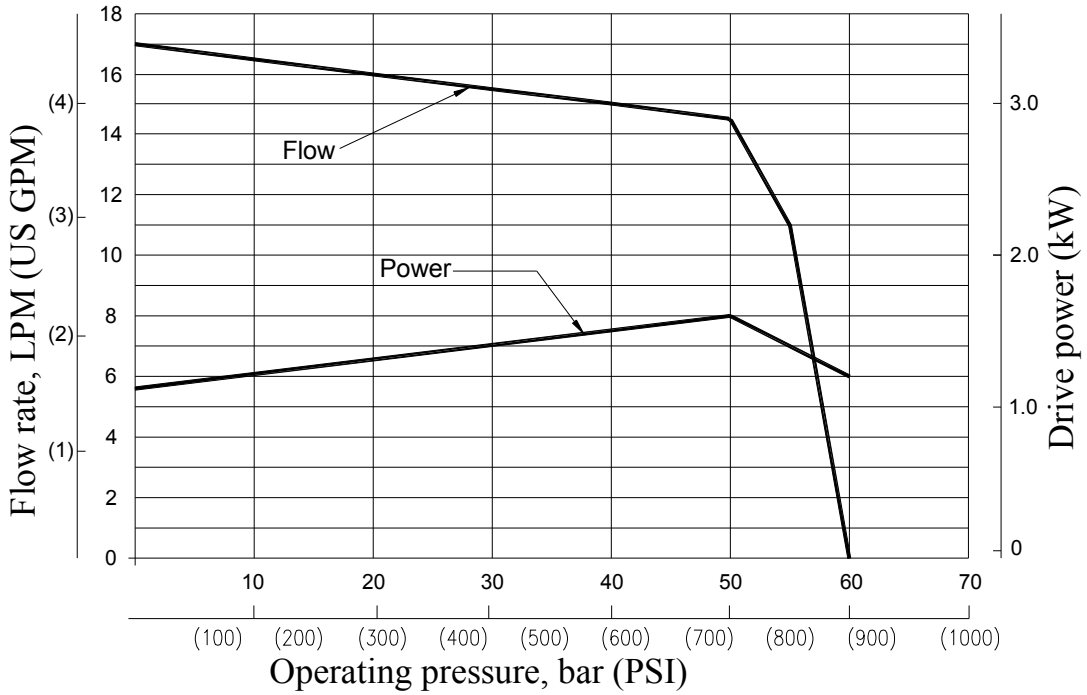
Pressure and Flow control

By means of the spring (2), the cam ring (5) will be held in an eccentric position at the start-up position. The maximum operating pressure required in the system is set using the pressure adjustment screw (4) via spring.
The cam ring will be pushed against the force of the spring due to pressure produced by the operation of the pump. The cam ring (5) is pushed to zero position from its eccentric position, if the pressure produced by the pump equals the spring force.
The flow can be adjusted using the flow adjustment screw (1). If the maximum pressure set at the spring has been reached, the pump virtually reduces the flow to zero. Hence operating pressure is maintained and only the leakage fluid is replaced. Therefore losses and heating of the fluid is kept to the minimal.

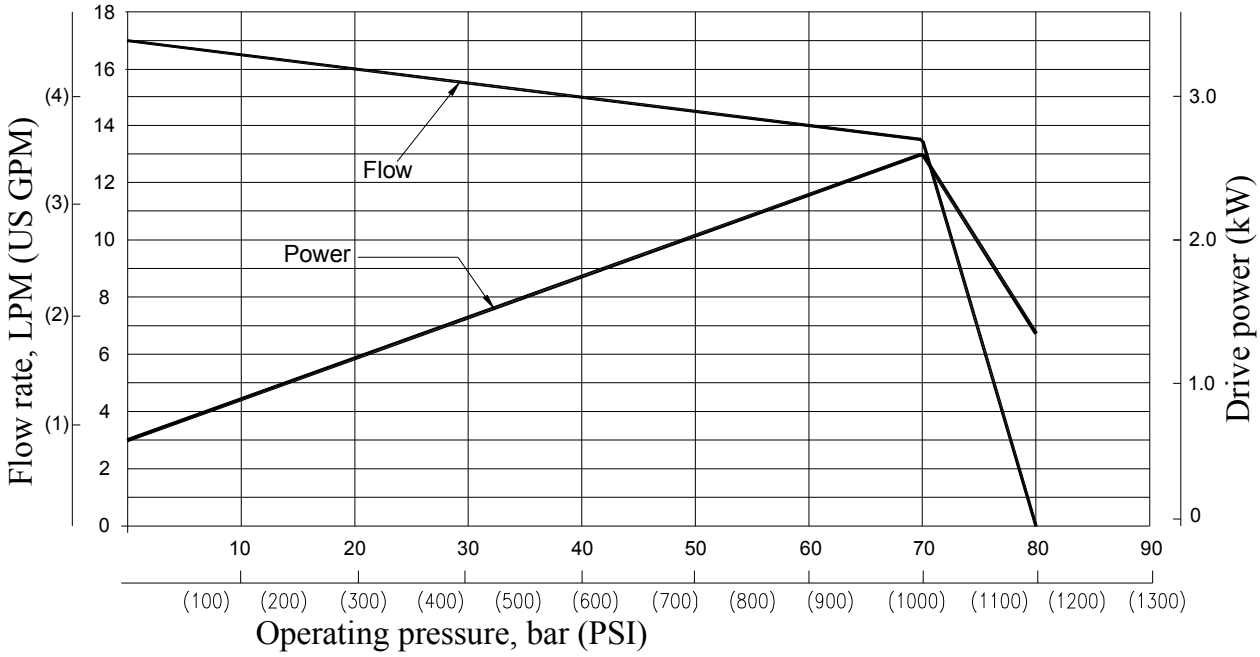
OPERATING CHARACTERISTICS:

At 1500 RPM, viscosity = 41cSt & Temp. = 50ºC

RV20-SF-17-C-* (50 bar)



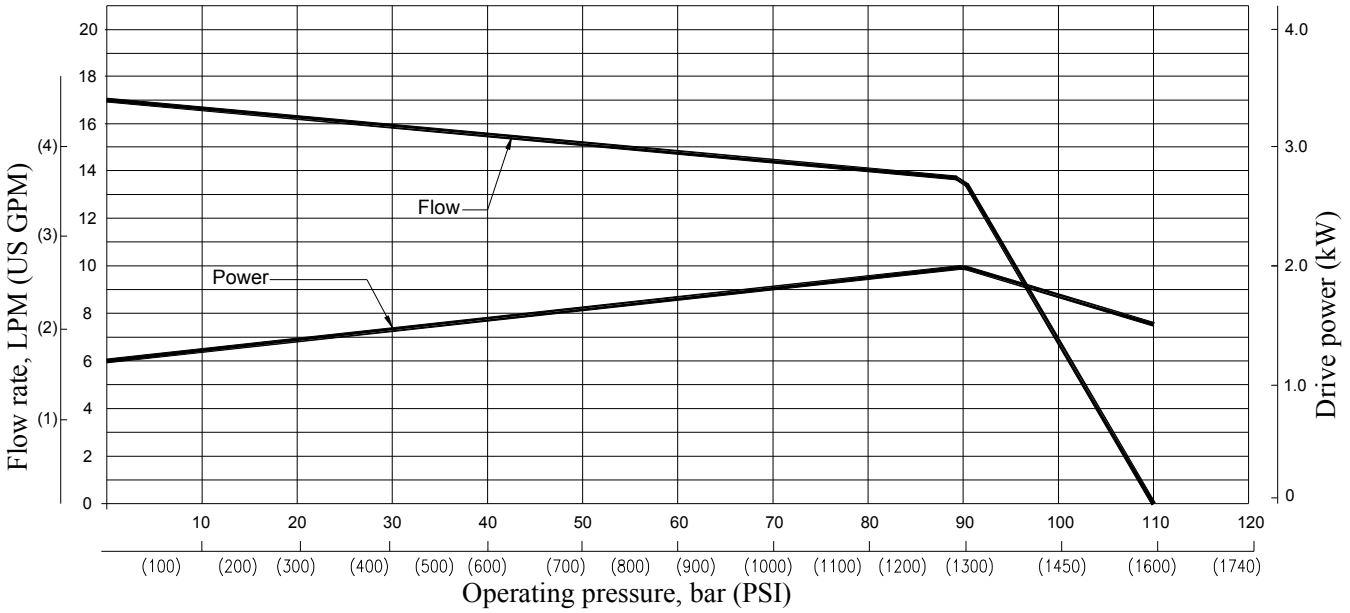
RV20-SF-17-D-* (70 bar)



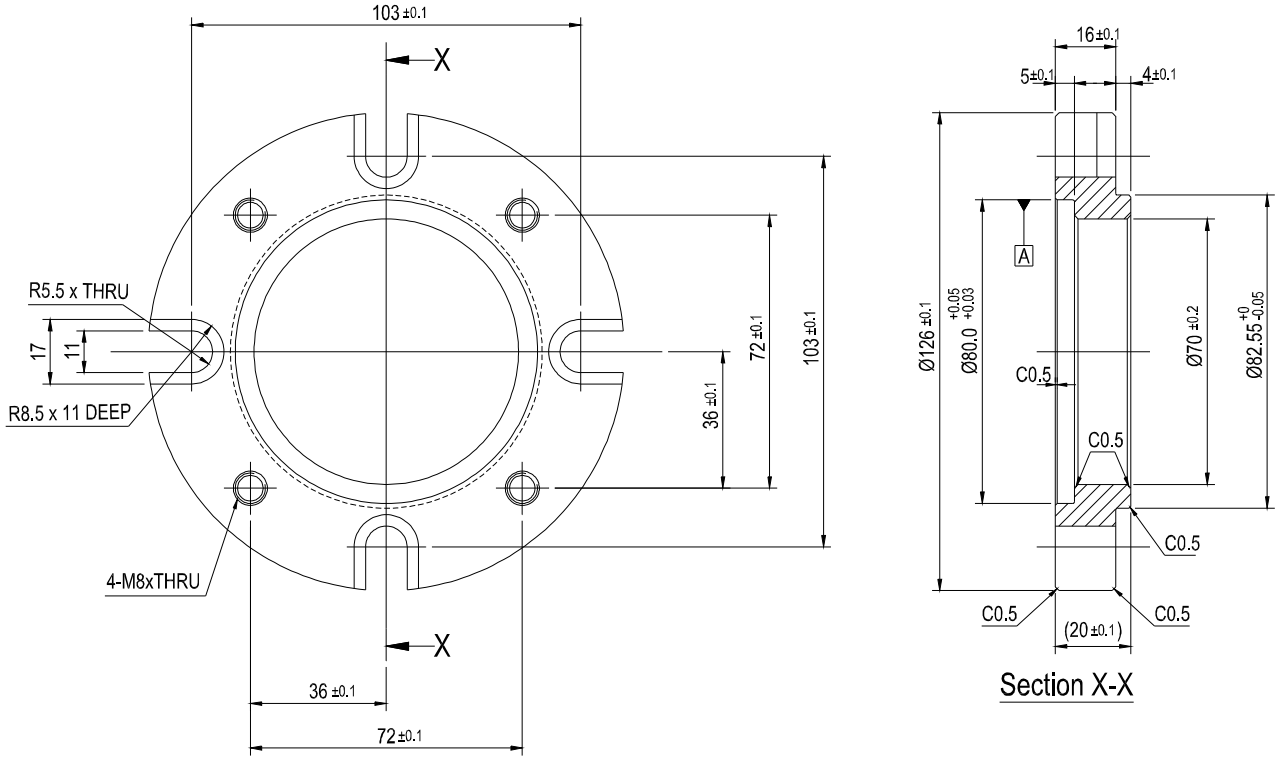
VARIABLE DISPLACEMENT VANE PUMP

RV20-SF-17-E-* (100 bar)

B



ADAPTER FLANGE DETAILS:



- Included in the H01 model by default.