



◆ Model number

SD1 - 32 27 E 1 H 1 - L XXX

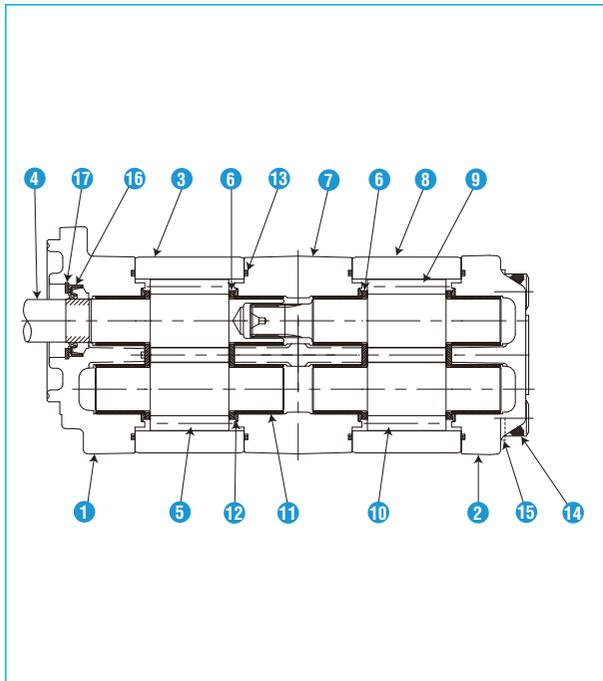
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

- | | | | |
|--|--|---|--|
| <p>① Series number
SD1 series</p> <p>② Mounting spigot diameter
- : $\phi 82_{-0.036}^{-0.090}$
A : $\phi 82.55_{-0.05}$</p> <p>③ No.1 Pump Size</p> <p>④ No.2 Pump Size</p> | <p>⑤ Position of ports
F : side ports (single suction port)
E : side ports (double suction ports)</p> <p>⑥ Port configuration
1 : flange port
2 : G screw thread</p> | <p>⑦ Mounting
H : horizontal 2 bolts</p> <p>⑧ Shaft end
1 : SAE Spline 13 teeth
5 : SAE Spline 10 teeth</p> | <p>⑨ Rotation viewing from shaft end
L = counter clockwise
R = clockwise</p> <p>⑩ Code number in 3 figures</p> |
|--|--|---|--|

◆ Specifications

	Size	Displacement		Rated pressure			Max. peak pressure			Speed min ⁻¹	
		cm ³	in ³	MPa	bar	psi	MPa	bar	psi	min.	max.
No.1 Pump No.2 Pump	16	16.2	0.988	20.6	206	2987	24.5	245	3553	500	4000
	18	18.3	1.116								
	20	20.4	1.244								
	23	23.7	1.446								
	25	24.9	1.519							400	3500
	27	27.8	1.696								
	30	29.9	1.824								
	32	33.2	2.025								
34	34.1	2.080	3000								
36	36.6	2.233									
							22.6	226	3277		

◆ Typical assembly

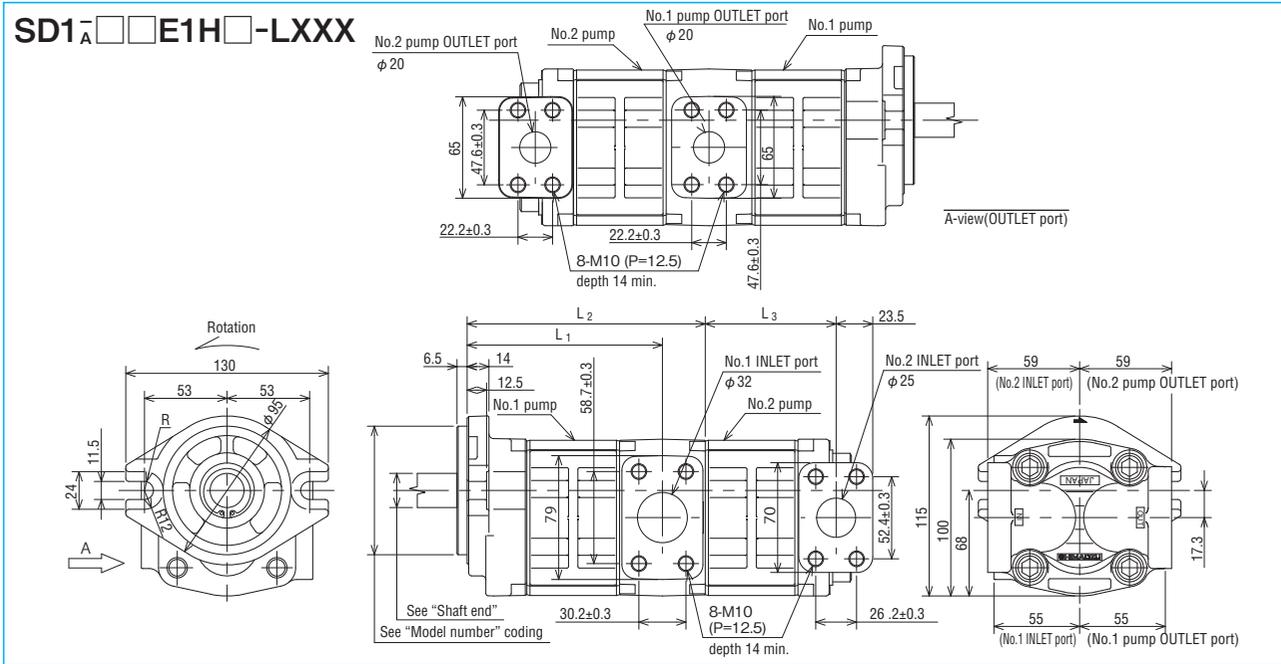


Item No.	Name	QTY	Material
①	Front cover	1	Aluminum alloy
②	Rear cover	1	Aluminum alloy
③	Body	1	Cast iron
④	Drive gear	1	Alloy steel
⑤	Driven gear	1	Alloy steel
⑥	Side plate	4	Special alloy steel
⑦	Adapter plate	1	Aluminum alloy
⑧	Body	1	Cast iron
⑨	Drive gear	1	Alloy steel
⑩	Driven gear	1	Alloy steel
⑪	Bush	8	Special alloy steel
⑫	Gasket	4	Nitril rubber
⑬	Gasket	4	Nitril rubber
⑭	Bolt	4	Alloy steel
⑮	Washer	4	Carbon steel
⑯	Oil seal	1	Nitril rubber
⑰	Retainer ring	1	Carbon steel

NOTES : "QTY" shows the amount per one

◆ Outline dimensions

dimensions in mm



NOTE 1. Figure shown indicated counter clockwise rotation "L" viewing from shaft end. Clockwise rotation "R" is mirror image of this.
2. Unless otherwise specified, tolerance on dimension are ±1.0 mm.

Size	L ₁	L ₂	L ₃
16	100.8	128.3	59.5
18	103.3	130.8	62.0
20	105.8	133.3	64.5
23	109.8	137.3	68.5
25	111.3	138.8	70.0
27	114.8	142.3	73.5
30	117.3	144.8	76.0
32	121.3	148.8	80.0
34	122.3	149.8	81.0
36	125.8	152.8	84.0

◆ Combination of double pump

1. **Limitation in maximum delivery pressure due to PQ value.**
Calculate the PQ value, using the following equation, and use the pump at the pressure range lower than the value shown in Table-1.

Input shaft	$PQ1 > P1 \times Q1 + P2 \times Q2$
Intermediate joint	$PQ2 > P2 \times Q2$

P1, P2 : Delivery pressure (MPa) of No.1, No.2 pump.
Pr1, Pr2 : Rated pressure (MPa) of No.1, No.2 pump.
Q1, Q2 : Displacement volume (cm³) of No.1, No.2 pump.
• P1 < Pr1 • P2 < Pr2

Table-1 Allowable PQ value

	PQ1 Input shaft	PQ2 Intermediate joint
SAE spline 13T	1472	638

2. **Limitation in maximum rotating speed due to suction pressure.**
It is advised to use the pump at the rotating speed lower than the value, which is satisfied with the equation in Table-2.

Table-2 Limitation in maximum rotating speed

For single suction port	$\phi 32$: $N \times (Q1 + Q2) \div 1000 < 143$ (L/min)
For double suction port	Lower value of the max. speed.

N: Maximum allowable rotating speed (min⁻¹).

● Shaft end

SAE Spline (Some dimensions are different form SAE standard.)	
SAE Spline 13 teeth	SAE Spline 10 teeth
<p>No. of tooth : 13 D.P. : 16/32 Pressure angle : 30° Over pin dia. : φ24.891~φ24.819 Pin dia. : φ3.048</p>	<p>No. of tooth : 10 D.P. : 16/32 Pressure angle : 30° Over pin dia. : φ20.263~φ20.193 Pin dia. : φ3.048</p>