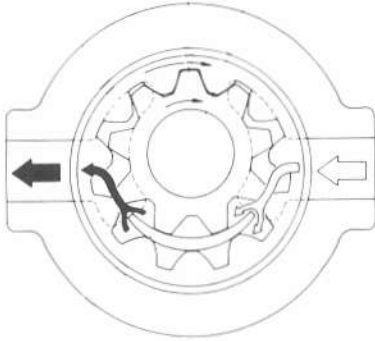


Internal gear pumps



With its two gears eccentric with each other fitted in the casing, this pump serves for the fixed displacement.

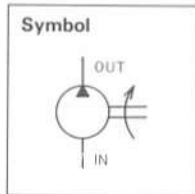
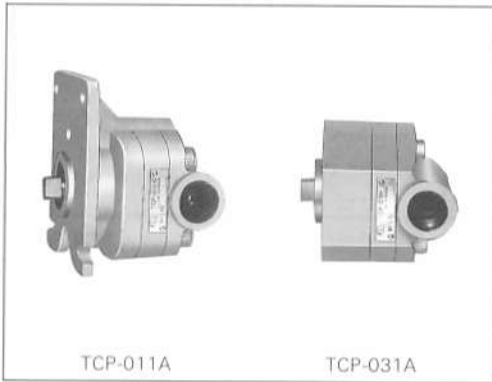
• Features

1. Small pulsation and low frequency sound means low operating noise.
2. Built with a small number of parts in special aluminum alloy casing, this pump is compact and light-weighted.
3. Simple construction. Slide bearing (plain metal) is provided for long service life.
4. For high pressure, and high efficiency.

Series TCP-※※

This pump has been developed as the power steering pump used for battery-operated forklift trucks. It features low noise in operation.

Noise level is 56dB (A) or less when measured at 1 m behind the pump running at 3,600 min⁻¹.



• Model coding

TCP - 011 A

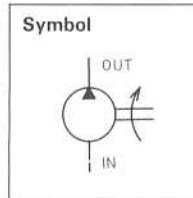
Internal gear pump
Mounting demension
Displacement

A: 3.15 cm³/rev 0.19 in³/rev
B: 3.5 cm³/rev 0.21 in³/rev
C: 4.0 cm³/rev 0.24 in³/rev

• Specifications

Model	Displacement		Pressure				Speed	
	cm ³ /rev	in ³ /rev	Rated		Max.		Max.	Min.
			MPa	psi	MPa	psi		
TCP-011A	3.15	0.19	8	1,143	10.5	1,500	4,000	900
TCP-011B	3.5	0.21						
TCP-011C	4.0	0.24						
TCP-031A	3.15	0.19						
TCP-031B	3.5	0.21						
TCP-031C	4.0	0.24						

Series TCP※

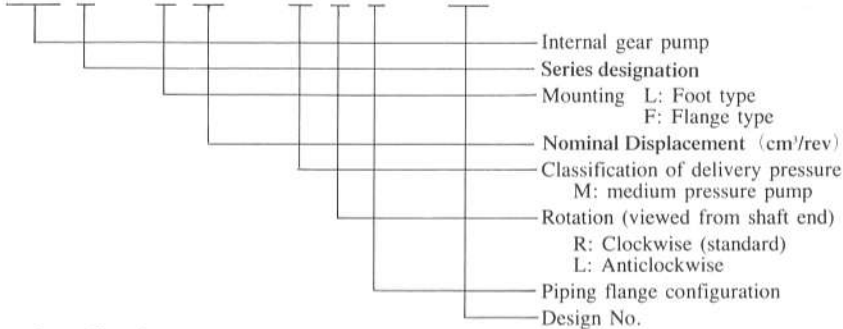


● Features

1. Small pulsation and low-frequency sound means low operating noise.
2. Built with a small number of parts in special aluminum alloy casing, this pump is compact and light-weighted.
3. Simple structure and plain metal slide bearing for long life.
4. For high pressure resistant and high efficiency.

● Model coding

TCP 3 - F 20 - M R 1 - (A)



● Specification

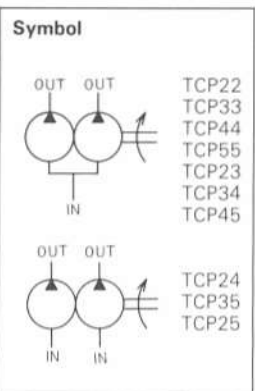
1,800min⁻¹, 37mm³/s

Model	Nominal Displacement cm ³ /rev in ³ /rev		Pressure				Delivery							
			Rated		Max.		0.5MPa	71psi	7MPa	1,000psi	14MPa	2,000psi	17.5MPa	2,500psi
			MPa	psi	MPa	psi	ℓ /min	gpm	ℓ /min	gpm	ℓ /min	gpm	ℓ /min	gpm
TCP2- ※5-MR1-A	5	0.30	17.5	2,500	21	3,000	10.1	2.67	9.9	2.62	9.3	2.46	8.5	2.25
TCP2- ※6.3-MR1-A	6.3	0.38					12.5	3.31	12.2	3.32	11.4	3.01	10.6	2.80
TCP2- ※8-MR1-A	8	0.49					15.9	4.21	15.7	4.15	14.8	3.91	13.6	3.60
TCP2- ※10-MR1-A	10	0.61					19.9	5.62	19.4	5.13	18.4	4.87	17.0	4.50
TCP3- ※12.5-MR1	12.5	0.76	17.5	2,500	21	3,000	24.4	6.45	23.5	6.22	22.0	5.82	20.5	5.42
TCP3- ※16-MR1	16	0.98					31.0	8.20	30.0	7.94	28.3	7.49	26.7	7.06
TCP3- ※20-MR1	20	1.22					39.4	10.4	38.0	10.0	36.0	9.52	34.0	8.99
TCP3- ※25-MR1	25	1.52					48.6	12.8	47.5	12.6	44.7	11.8	41.4	10.9
TCP4- ※31.5-MR1	31.5	1.92	17.5	2,500	21	3,000	61.5	16.3	59.3	15.7	55.5	14.7	51.5	13.6
TCP4- ※40-MR1	50	2.44					78.3	20.7	75.5	20.0	71.8	19.0	66.5	17.6
TCP4- ※50-MR1	50	3.05					95.7	25.3	91.9	24.3	86.2	22.8	80.9	21.4
TCP5- ※63-MR1-A	63	3.84					112.3	29.7	106.6	28.2	98.8	26.1	92.1	24.4
TCP5- ※80-MR1-A	80	4.88	17.5	2,500	21	3,000	142.9	37.8	135.9	35.9	126.3	33.4	117.9	31.2
TCP5- ※100-MR1-A	100	6.10					178.6	47.2	169.9	44.9	157.9	41.8	148.3	39.2
TCP5- ※125-MR1-A	125	7.62					229.7	79.3	218.2	57.7	203.3	53.8	191.8	50.7

Model	Input								Speed min ⁻¹		
	0.5MPa kW	71psi HP	7MPa kW	1,000psi HP	14MPa kW	2,000psi HP	17.5MPa kW	2,500psi HP	Rated	Max.	Min.
TCP2- ※5-MR1-A	0.2	0.3	1.3	1.7	2.4	3.2	3.0	4.0	1,800	4,000	800
TCP2- ※6.3-MR1-A	0.2	0.3	1.6	2.1	3.1	4.1	3.8	5.1			
TCP2- ※8-MR1-A	0.3	0.4	2.0	2.7	3.9	5.2	4.8	6.4			
TCP2- ※10-MR1-A	0.4	0.5	2.5	3.3	4.8	6.4	6.0	8.0			
TCP3- ※12.5-MR1	0.5	0.7	3.2	4.3	6.1	8.1	7.5	10.0	1,800	3,000	800
TCP3- ※16-MR1	0.7	0.9	4.0	5.3	7.6	10.1	9.4	12.5			
TCP3- ※20-MR1	0.9	1.2	5.2	6.9	9.7	12.9	12.0	16.0			
TCP3- ※25-MR1	1.1	1.5	6.2	8.3	12.0	16.0	14.8	19.7			
TCP4- ※31.5-MR1	1.2	1.6	8.0	10.7	15.4	20.5	19.0	25.3	1,800	3,000	800
TCP4- ※40-MR1	1.5	2.0	10.1	13.5	19.7	26.3	24.2	32.3			
TCP4- ※50-MR1	1.8	2.4	12.2	16.3	23.8	31.7	29.4	39.2			
TCP5- ※63-MR1-A	2.1	2.8	14.0	18.7	27.0	36.0	33.5	44.7	1,800	2,400	600
TCP5- ※80-MR1-A	2.5	3.3	17.9	23.9	34.8	46.4	43.2	57.6			
TCP5- ※100-MR1-A	3.0	4.0	22.4	29.9	43.8	58.4	54.5	72.7			
TCP5- ※125-MR1-A	3.4	4.5	28.8	38.4	56.7	75.6	70.7	94.3			

(Note) Piping flange should be separately ordered.

Series TCP ※※

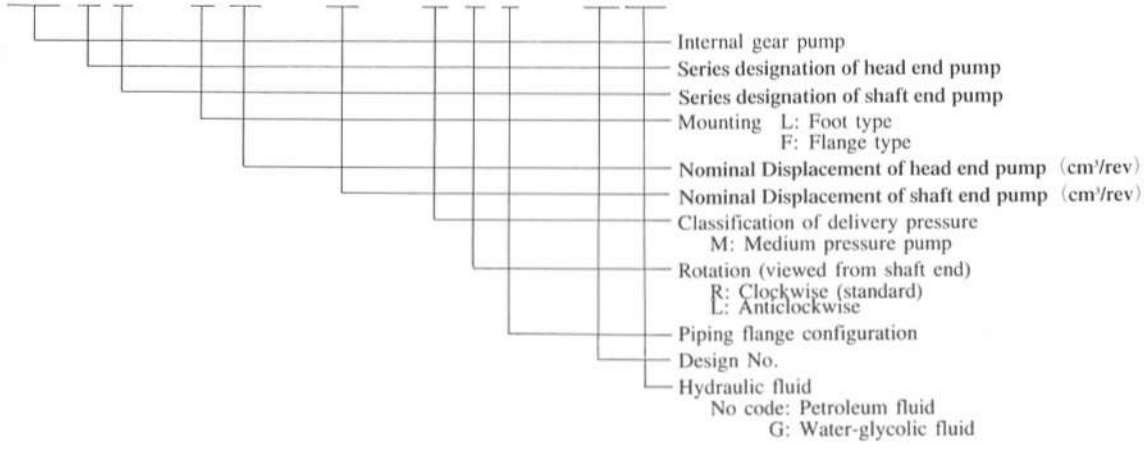


This pump, consisting of two single pumps assembled in tandem in a single unit driven by a single shaft, serves to send its discharges separately to two independent circuits or combined for larger displacement.

- Direction of rotation cannot be varied.
- Mounting configuration can be changed from flange type to foot type with the addition of a foot.
- Maximum available speed is 1,200 min⁻¹ when water-glycolic fluid is used. Please consult us for types of water glycolic fluid available
- Anti-clockwise rotation is available only for the TCP24, TCP25, and TCP35 two-way pumps.

• Model coding

TCP 3 3 - F 20 - 25 - M R 1 - (A)(※)



Note: 1. Water-glycolic fluid is applicable to the standard pumps. Max speed is limited to 1,200 rpm. Piping flanges should be separately ordered.
2. Double pumps of anticlockwise rotation can be manufactured only for models TCP24, TCP25, and TCP35.

• Specifications

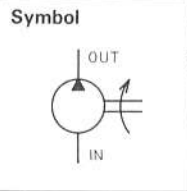
Model		Nominal Displacement (*1)				Pressure				Speed min ⁻¹		
Foot type	Flange type	Min.		Max.		Rsted		Max.		Rated	Max.	Min.
		cm ³ /rev	in ³ /rev	cm ³ /rev	in ³ /rev	MPa	psi	MPa	psi			
TCP22-L ※ ※-MR1-A	TCP22-F ※ ※-MR1-A	5	0.30	10	0.61	17.5	2,500	21	3,000	1,800	3,000	800
TCP33-L ※ ※-MR1	TCP33-F ※ ※-MR1	12.5	0.76	25	1.52							
TCP44-L ※ ※-MR1	TCP44-F ※ ※-MR1	31.5	1.92	50	3.05							
TCP55-L ※ ※-MR1-A	TCP55-F ※ ※-MR1-A	63	3.84	125	7.62							
TCP23-L ※ ※-MR1	TCP23-F ※ ※-MR1	5	0.30	10	0.61							
TCP34-L ※ ※-MR1	TCP34-F ※ ※-MR1	12.5	0.76	25	1.52							
TCP45-L ※ ※-MR1-A	TCP45-F ※ ※-MR1-A	31.5	1.92	50	3.05						2,400	800
TCP24-L ※ ※-MR1-A	TCP24-F ※ ※-MR1-A	5	0.30	10	0.61							
TCP35-L ※ ※-MR1-A	TCP35-F ※ ※-MR1-A	12.5	0.76	25	1.52							
TCP25-L ※ ※-MR1-A	TCP25-F ※ ※-MR1-A	5	0.30	10	0.61							
		63	3.84	125	7.62							
		31.5	1.92	50	3.05							

(*1) The value in the upper side is the Nominal Displacement of head end pump. The value in the lower side is the Nominal Displacement of shaft end pump.

Series TCP※T



TCP3T-L20-HR1



This two-stage TC pump is composed of direct in-line single pump, with a maximum discharge pressure of 30MPa (4,300 psi).

- Direction of rotation cannot be varied.
- Mounting configuration can be changed from flange type to foot type with the addition of a foot.
- Maximum available speed for Water-glycolic fluid is limited to 1,200 rpm. Please consult us for types of water-glycolic fluid available.

• Model coding

TCP 3 T - L 20 - H R 1 - (A) (※)

- Internal gear pump
- Series designation
- 2-stage type
- Mounting L: Foot type
F: Flange type
- Nominal Displacement of head end pump (cm³/rev)
- Classification of delivery pressure
H: High pressure pump
- Rotation (viewed from shaft end)
R: Clockwise
L: Anticlockwise
- Piping flange configuration
- Design No.
- Hydraulic fluid
No code: Petroleum fluid
G: Water-glycolic fluid

• Specifications

1,800min⁻¹, 37mm³/s

Model	Nominal Displacement cm ³ /rev in ³ /rev		Pressure				Delivery									
			Rsted		Max.		0.5MPa 71psi		3.5MPa 500 psi		10.5MPa 1,500psi		17.5MPa 2,500psi		25MPa 3,571psi	
			MPa	psi	MPa	psi	ℓ /min	gpm	ℓ /min	gpm	ℓ /min	gpm	ℓ /min	gpm	ℓ /min	gpm
TCP2T-※5 -HR1-A	5	0.30	25	3,571	30	4,285	10.2	2.70	10	2.64	9.6	2.54	9.1	2.41	7.6	2.01
TCP2T-※6.3-HR1-A	6.3	0.38					12.7	3.36	12.5	3.31	12	3.17	11.4	3.01	9.8	2.59
TCP2T-※8 -HR1-A	8	0.49					16	4.23	15.8	4.18	15.4	4.07	14.6	3.86	12.6	3.33
TCP2T-※10 -HR1-A	10	0.61					19.8	5.24	19.7	5.21	19	5.03	18.5	4.89	16.5	4.65
TCP3T-※12.5-HR1	12.5	0.76	25	3,571	30	4,285	24.3	6.43	24	6.35	23	6.08	21.9	5.79	19.6	5.18
TCP3T-※16 -HR1	16	0.98					31	8.20	30.8	8.15	29.8	7.88	28.5	7.54	25	6.61
TCP3T-※20 -HR1	20	1.22					39.5	10.4	39.2	10.4	38.2	10.1	36.9	9.76	33.4	8.83
TCP3T-※25 -HR1	25	1.52					48.5	12.8	48.3	12.8	47	12.4	45.7	12.1	41.5	11.0
TCP4T-※31.5-HR1	31.5	1.92	25	3,571	30	4,285	61.5	16.3	61	16.1	58.2	15.4	55.6	14.7	49	13.0
TCP4T-※40 -HR1	40	2.44					78	20.6	77	20.4	74.5	19.7	71.8	19.0	63	16.7
TCP4T-※50 -HR1	50	3.05					96	25.4	95	25.1	92.5	24.7	89	23.5	81	21.4
TCP3T-※63 -HR1-A	63	3.84					112.3	29.7	110.3	29.1	106.1	28.1	101.4	26.8	92.1	24.3
TCP5T-※80 -HR1-A	80	4.88	25	3,571	30	4,285	143.0	37.8	140.8	37.2	135.9	35.9	130.1	34.4	117.9	31.2
TCP5T-※100 -HR1-A	100	6.10					178.6	47.2	176.8	46.8	170.2	45.0	163.0	43.1	148.3	39.2
TCP5T-※125 -HR1-A	125	7.62					229.7	60.8	226.8	60.0	218.9	57.9	209.8	55.5	191.8	50.7

● Specifications

1,800min⁻¹, 37mm³/s

Model	Input										Speed min ⁻¹		
	0.5MPa ℓ /min	71psi gpm	3.5MPa ℓ /min	500psi gpm	10.5MPa ℓ /min	1,500psi gpm	17.5MPa ℓ /min	2,500psi gpm	25MPa ℓ /min	3,571psi gpm	Rated	Max.	Min.
TCP2T-φ5 -HR1-A	0.22	0.29	0.74	1.0	2	2.7	3.23	4.3	4.57	6.1	1,800	4,000	800
TCP2T-φ6.3-HR1-A	0.31	0.41	1	1.3	2.55	3.4	4.11	5.5	5.8	7.7			
TCP2T-φ8 -HR1-A	0.39	0.52	1.2	1.6	3.2	4.3	5.2	6.9	7.3	9.7			
TCP2T-φ10 -HR1-A	0.5	0.67	1.6	2.1	4	5.3	6.4	8.5	9	12.0			
TCP3T-φ12.5-HR1	0.6	0.8	1.9	2.5	5	6.7	8.1	10.8	11.4	15.2	1,800	3,000	800
TCP3T-φ16 -HR1	0.8	1.0	2.5	3.3	6.4	8.5	10.3	13.7	14.6	19.5			
TCP3T-φ20 -HR1	1.1	1.5	3.1	4.1	8	10.7	12.8	17.1	18.1	24.1			
TCP3T-φ25 -HR1	1.3	1.7	3.7	4.9	9.8	13.1	15.8	21.1	22.4	29.9			
TCP4T-φ31.5-HR1	1.5	2.0	4.7	6.3	12.5	16.7	20.3	27.1	28.6	38.1	1,800	3,000	800
TCP4T-φ40 -HR1	2.3	3.1	6.4	8.5	16.1	21.5	26	24.7	36.2	48.3		2,800	
TCP4T-φ50 -HR1	2.6	3.5	7.5	10.0	19.5	26.0	31.2	41.6	44.1	58.8		2,500	
TCP5T-φ63 -HR1-A	2.1	2.8	7.7	10.3	20.6	27.5	33.5	44.7	47.4	63.2		1,800	
TCP5T-φ80 -HR1-A	2.5	3.3	9.7	12.9	26.3	35.1	43.2	57.6	61.3	81.7	2,100		
TCP5T-φ100 -HR1-A	3.0	4.0	12.0	16.0	33.1	44.1	54.5	72.7	77.5	103.3	1,800		
TCP5T-φ125 -HR1-A	3.4	4.5	15.3	20.4	42.8	57.1	70.7	94.3	100.7	134.3	1,800		

● Piping flanges

Please select from the table below and order separately.

Model			For the TCP2 For the TCP2T	For the TCP3 For the TCP3T	For the TCP4 For the TCP4T	For the TCP3 For the TCP3T
Configuration	Threaded type	OUT	FTCP-04PT	FTCP-06PT	FTCP-08PT	FTCP-12PT
		IN	FTCP-06PT	FTCP-08PT	FTCP-12PT	FTCP-16PT
	Welded type	OUT	FTCP-04WE	FTCP-06WE	FTCP-08WE	FTCP-12WE
		IN	FTCP-06WE	FTCP-08WE	FTCP-12WE	FTCP-16WE

(Note) These flanges include installation bolt and O-ring.