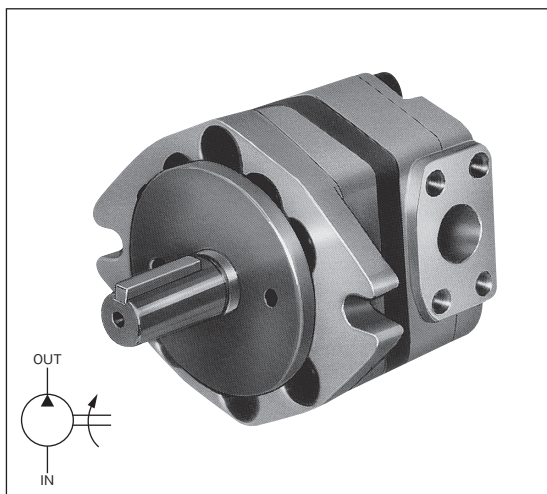


INTERNAL GEAR PUMP (TCP*)

A

PUMPS AND MOTORS



The high-pressure application TC pump has a variety of features including low noise, high output, high efficiency, compact construction and light weight. It is the most suitable for hydraulic units used for marine applications, construction machines and general industrial machinery.

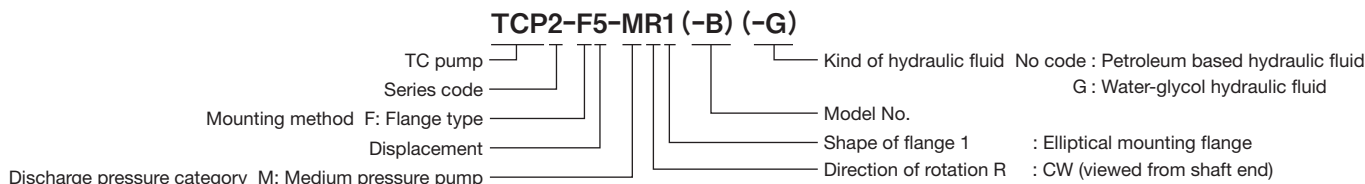
■ Features

1. The pump features minimal pulsation and low noise thanks to low frequency sound.
2. The pump is compact and consists of few moving parts. It is light weight since the pump body is made of special aluminum alloy.
3. Simple construction along with the use of plain bearing (plain metal) ensure long life.
4. High pressure and high efficiency.

⚠ Cautions on use Please read the Operating Manual carefully to ensure correct usage.

- When using water-glycol hydraulic fluid, specify "G" at the end of model designation. The maximum revolving speed, however, becomes 1,200 min⁻¹. For brand names of water-glycol hydraulic fluid, please consult us."
- The standard direction of rotation is to right (CW), viewed from shaft end.
- It cannot change the direction of rotation at the same pump.
- When the discharge pressure exceeds 10 MPa, the hydraulic fluid of ISO VG46 is recommended. Where the ambient temperatures drops below 6°C always in winter, however, replace with the hydraulic fluid of ISO VG32.
- The pump can be used for R&O type and abrasion-resistant type hydraulic fluid applications.
- Drive the pump with the motor directly. Please consult us before using any other drive source.
- It is recommended to install a line filter of 10 -20μm on the return circuit to the reservoir.
- When changing from the flange type to the foot type, use an optional foot kit which is sold as single parts. Refer to "About foot", A-64 page.
- Please read the "Cautions on Using Pumps and Motors", A-2 and A-3 pages.

■ Description of the model designation



■ Specifications

Model	Capacity (Nominal)	Displacement (cm ³ /rev)	Pressure (MPa)		Discharge rate (L/min)						Input (kW)						Rotating speed (min ⁻¹)		
			Rated	Max.	0.5MPa	3.5MPa	7MPa	10.5MPa	14MPa	17.5MPa	0.5MPa	3.5MPa	7MPa	10.5MPa	14MPa	17.5MPa	Rated	Max.	Lowest
TCP2-F5-MR1-B	5	5.5	17.5	21	10.1	10.0	9.9	9.6	9.3	8.5	0.2	0.7	1.3	1.9	2.4	1,800	4,000	800	
TCP2-F6.3-MR1-B	6.3	6.9			12.5	12.4	12.2	11.9	11.4	10.6	0.2	0.9	1.6	2.4	3.1				3.8
TCP2-F8-MR1-B	8	8.8			15.9	15.8	15.7	15.4	14.8	13.6	0.3	1.1	2.0	3.0	3.9				4.8
TCP2-F10-MR1-B	10	11.0			19.9	19.7	19.4	19.0	18.4	17.0	0.4	1.4	2.5	3.7	4.8				6.0
TCP3-F12.5-MR1-B	12.5	13.7	17.5	21	24.4	24.0	23.5	22.9	22.0	20.5	0.5	1.8	3.2	4.7	6.1	1,800	3,000	800	
TCP3-F16-MR1-B	16	17.3			31.0	30.6	30.0	29.3	28.3	26.7	0.7	2.3	4.0	5.8	7.6				9.4
TCP3-F20-MR1-B	20	22.1			39.4	38.7	38.0	37.2	36.0	34.0	0.9	2.9	5.2	7.4	9.7				12.0
TCP3-F25-MR1-B	25	27.4			48.6	48.0	47.5	46.4	44.7	41.4	1.1	3.4	6.2	9.1	12.0				14.8
TCP4-F31.5-MR1	31.5	35.2	17.5	21	61.5	60.5	59.3	57.8	55.5	51.5	1.2	4.3	8.0	11.7	15.4	1,800	3,000	800	
TCP4-F40-MR1	40	44.9			78.3	77.0	75.5	73.5	71.8	66.5	1.5	5.5	10.1	14.9	19.7				24.2
TCP4-F50-MR1	50	54.6			95.7	93.9	91.9	89.5	86.2	80.9	1.8	6.6	12.2	18.1	23.8				29.4
TCP5-F63-MR1-A	63	62.2	17.5	21	112.3	109.1	106.6	103.1	98.8	92.1	2.1	7.7	14.0	20.6	27.0	1,800	2,400	800	
TCP5-F80-MR1-A	80	79.3			142.9	139.7	135.9	131.8	126.3	117.9	2.5	9.7	17.9	26.3	34.8				43.2
TCP5-F100-MR1-A	100	99.1			178.6	174.9	169.9	164.6	157.9	148.3	3.0	12.0	22.4	33.1	43.8				54.5
TCP5-F125-MR1-A	125	127.5			229.7	224.6	218.2	211.6	203.3	191.8	3.4	15.3	28.8	42.8	56.7				70.7

■ Pipe flange Specify by selecting from this table.

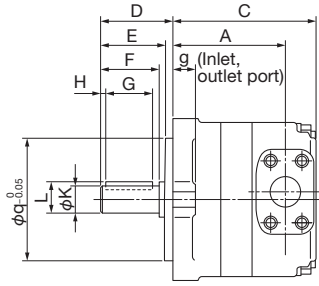
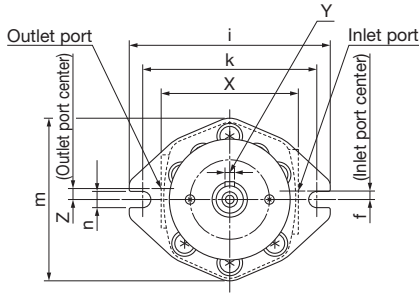
Model	Name	For TCP2	For TCP3	For TCP4	For TCP5
		For screw	OUT side	FTCP-04PT	FTCP-06PT
For welding	IN side	FHPP-06PT	FTCP-08PT	FTCP-12PT	FTCP-16PT
	OUT side	FTCP-04WE	FTCP-06WE	FTCP-08WE	FTCP-12WE
	IN side	FHPP-06WE	FTCP-08WE	FTCP-12WE	FTCP-16WE

(Note)

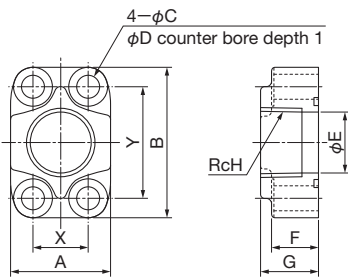
1. This flange comes with mounting bolts and O-ring.
2. Bolts of strength capacity according to JIS B 1176 are used.
3. The applicable O-ring is JIS B 2401 standard.

■ Outside dimensions

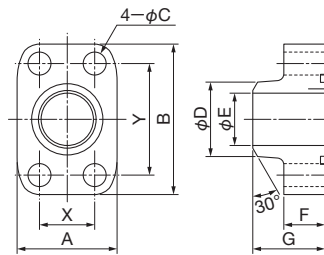
TCP*-F*-MR1(-*)



Screw joint pipe flange



Welding pipe flange



■ Dimension table

Model	TCP2				TCP3				TCP4				TCP5			
Capacity (cm ³ /rev)	5	6.3	8	10	12.5	16	20	25	31.5	40	50	63	80	100	125	
A	64	66.5	70	74	81	84.5	89	94	109	114.5	120	123	129	136	146	
C	85	87.5	91	95	106	109.5	114	119	146	151.5	157	162	168	175	185	

Model	TCP2	TCP3	TCP4	TCP5
D	46	61.5	86	94
E	38.5	53.5	76	82
F	(41)	51.5	73	80
G	30	40	61	61
H	0	0	5	8
K	19.05 ⁰ _{-0.021}	24 ^{+0.009} _{-0.004}	32 ^{+0.011} _{-0.005}	38 ^{+0.011} _{-0.005}
L	21.25	27	35	41

Model	TCP2	TCP3	TCP4	TCP5
X	87	115	155	200
Y	4.76 ^{+0.024} _{+0.012}	8 ⁰ _{-0.036}	10 ⁰ _{-0.036}	10 ⁰ _{-0.036}
Z	10	8	8	0
f	6	6	0	0
g	14.5	18.5	20	34
i	125	168	205	268
k	106	146	181	229
m	106	136	186	233
n	11	14	18	22
q	82.55	101.6	126.95	152.35

■ Mass table

Model	Mass (kg)
TCP2-F5-MR1-B	2.4
TCP2-F6.3-MR1-B	2.5
TCP2-F8-MR1-B	2.6
TCP2-F10-MR1-B	2.8
TCP3-F12.5-MR1-B	4.9
TCP3-F16-MR1-B	5.2
TCP3-F20-MR1-B	5.5
TCP3-F25-MR1-B	5.9
TCP4-F31.5-MR1	12.3
TCP4-F40-MR1	13.1
TCP4-F50-MR1	13.9
TCP5-F63-MR1-A	22.2
TCP5-F80-MR1-A	23.9
TCP5-F100-MR1-A	25.6
TCP5-F125-MR1-A	27.8

Bolts of strength capacity according to JIS B 1176 are used.
The applicable O-ring is JIS B 2401.

■ List of screw-joint pipe flange dimensions

	FTCP-04PT	FHPP-06PT	FTCP-06PT	FTCP-08PT	FTCP-12PT	FTCP-16PT
A	38	46	46	46	64	76
B	54	65	65	70	95	110.8
C	9	11	11	11	13	13
D	14	17.5	17.5	17.5	20	20
E	18	23.5	23.5	29.5	43.5	55.5
F	21	22	22	22	24	27
G	25	27	27	27	30	33
H	1/2	3/4	3/4	1	1 1/2	2
X	17.5	22.2	22.2	26.2	35.7	42.9
Y	38.1	47.6	47.6	52.4	69.8	77.8
Bolt	M8x35	M10x35	M10x40	M10x40	M12x45	M12x50
O-ring	1AG25	1BG30	1AG30	1AG35	1AG50	1AG63

■ List of welding pipe flange dimensions

	FTCP-04WE	FHPP-06WE	FTCP-06WE	FTCP-08WE	FTCP-12WE	FTCP-16WE
A	38	46	46	46	64	76
B	54	65	65	70	95	110.8
C	9	11	11	11	13	13
D	21.7	27.2	27.2	34	48.6	60.5
E	12.7	19	19	25	38	51
F	20	21	21	21	23	25
G	33	36	36	36	40	42
X	17.5	22.2	22.2	26.2	35.7	42.9
Y	38.1	47.6	47.6	52.4	69.8	77.8
Bolt	M8x35	M10x35	M10x40	M10x40	M12x45	M12x50
O-ring	1BG25	1BG30	1BG25	1BG35	1BG45	1BG58