



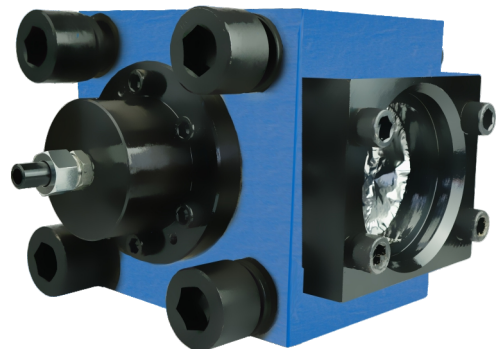
VALVOLE DI RIEMPIMENTO

TCF

PILOT-OPERATED HYDRAULIC PREFILL VALVE

THE TCF SERIES IS USED IN HYDRAULIC SYSTEMS WHERE LARGE VOLUMES OF OIL MUST ENTER OR LEAVE A CYLINDER QUICKLY. IT IS TYPICALLY MOUNTED AT THE CYLINDER BOTTOM AND CONNECTED TO THE OIL TANK THROUGH AN EXTERNAL FLANGE AND PIPELINE.

THE VALVE OPERATES SIMILARLY TO A PILOT-OPERATED CHECK VALVE (HYDROLOCK). FLOW FROM PORT A TO PORT B IS FREE. FLOW FROM PORT B TO PORT A IS BLOCKED UNTIL PILOT PRESSURE IS APPLIED TO PORT X. WHEN PRESSURE IS APPLIED TO PORT X, THE VALVE OPENS AND FLOW FROM B TO A IS ALLOWED.

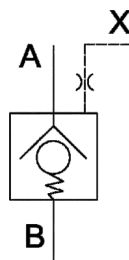


TECHNICAL DATA

SIZE	40, 50, 63, 80, 100		
FLUID	MINERAL HYDRAULIC OIL		
FLUID TEMPERATURE RANGE	°C	-20 TO +60	
VISCOSITY RANGE	MM ² /S	2.8 TO 380	
WORKING PRESSURE	A	BAR	16
	B	BAR	320
	X	BAR	200
OPENING PRESSURE	BAR	0.2	
X-PORT PRESSURE WITH PILOT PRESSURE APPLIED	BAR	$P_X = 0.05P_B + 5^*$	
DEGREE OF CONTAMINATION	MAXIMUM PERMISSIBLE CONTAMINATION LEVEL ACCORDING TO NAS 1638 CLASS 9. RECOMMENDED FILTER MINIMUM FILTRATION RATIO: $\beta_{10} \geq 75$		

NOTICE: P_B = PRESSURE AT PORT B, P_X = PRESSURE AT PORT X.

SYMBOL



FLOW RATE

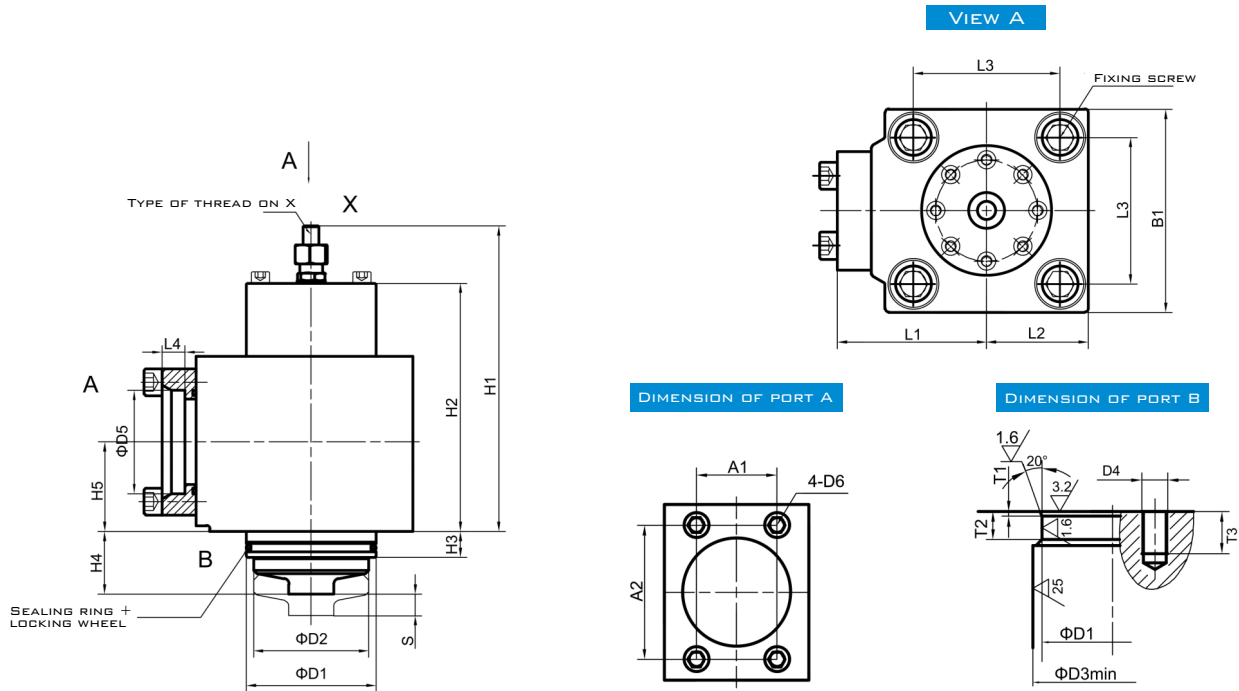
NOMINAL FLOW RATE Q IS SHOWN IN L/MIN FOR THE TCF NOMINAL SIZES. THE VALUES ARE BASED ON THE CATALOG TABLE BY NOMINAL DIAMETER AND FLOW VELOCITY.

DN (MM)	40	50	63	80	100
V (M/S)					
1.5	114	177	279	456	706
2.0	152	236	372	608	942
2.5	190	295	465	760	1178
3.0	228	354	558	912	1413
3.5	266	413	651	1064	1649
4.0	304	472	744	1216	1884

NOTICE: FOR FAST APPROACH AND RETURN MOVEMENT, SELECT THE VALVE SIZE BY THE REQUIRED OIL VOLUME, PISTON AREA AND TARGET CYLINDER SPEED. ALWAYS VERIFY PRESSURE LOSSES AND TANK LINE LAYOUT IN THE COMPLETE HYDRAULIC CIRCUIT.

UNIT DIMENSIONS

SIZES 40-100



TYPE	WEIGHT (KG)	D1 H7/f7	D2	D3MIN	D4	D5	D6	L1	L2	L3	L4	TYPE OF THREAD ON X	FIXING SCREW
40	18	62	56	66	M16	52	M12	91	50	75	14	10/M14*1.5	M16*130
50	25	80	67	84	M20	64	M12	94	65	90	10	10/M14*1.5	M20*150
63	32	95	82	104	M24	77	M16	109.5	72.5	105	16	10/M14*1.5	M24*170
80	55	115	102	130	M30	92	M16	126	90	130	14	14/M18*1.5	M30*200
100B	65	150	120	170	M36	116	M16	150	110	165	15	14/M18*1.5	M36*230
100C	67	150	120	170	M30	116	M16	140	100	155	15	14/M18*1.5	M30*220

TYPE	A1	A2	H1	H2	H3	H4	H5	T1	T2	T3	S	B1	O-RING SEALS	LOCKING WHEEL
40	43	78	196	152	15	34	56	3	18	32	10	100	56.82*2.62	62*57.8*1.5
50	51	89	222	180	20	57	58	3	23	35	15	125	69.22*5.33	80*71.6*1.5
63	62	106.5	265	215	23	56	71.5	4	23	40	16	145	85.09*5.33	95*86.6*1.5
80	62	106.5	267	220	23	55	79.5	4	23	50	18.5	180	104.14*5.33	115*106.6*1.5
100B	78	130	297	250	23	70	90	4	25	60	24	220	139.07*5.33	150*141.6*1.5
100C	78	130	297	250	23	70	90	4	25	50	24	200	139.07*5.33	150*141.6*1.5

THREAD DIAMETER	16	20	24	30	36	42	52	64
STRENGTH GRADE	10.9	10.9	10.9	10.9	10.9	10.9	10.9	10.9
TIGHTENING TORQUE (NM)	250	500	900	1800	3100	5000	10000	20000



NOTICE:

- DN100 PLATE STRUCTURE HAS TWO CONNECTION OPTIONS: 100B AND 100C. SELECT ACCORDING TO SYSTEM LAYOUT REQUIREMENTS. THE 100C TYPE IS RECOMMENDED FOR SYSTEMS OPERATING BELOW 25 MPA.
- VERTICAL INSTALLATION IS RECOMMENDED.
- THE STANDARD FIXING SCREWS ARE HIGH-STRENGTH GRADE 10.9 SCREWS AND SHOULD BE USED WITH O-RINGS AND BACKUP RINGS.
- TIGHTEN FIXING SCREWS EVENLY WITH A TORQUE WRENCH. USE THE TORQUE REFERENCE TABLE AS A GUIDE AND FOLLOW THE FINAL MACHINE DESIGN REQUIREMENTS.
- ENSURE THAT THE TANK LINE IS CORRECTLY SIZED AND ROUTED TO PREVENT FLOW RESTRICTION, CAVITATION OR PRESSURE SPIKES DURING FAST CYLINDER FILLING.
- MAINTAIN HYDRAULIC OIL CLEANLINESS AND FILTRATION ACCORDING TO THE TECHNICAL DATA TABLE.



VALVOLE DI RIEMPIMENTO

TCF

PILOT-OPERATED HYDRAULIC PREFILL VALVE

ORDER CODE

TCF 1 - H ** B

PREFILL VALVE

WITH PILOT FUNCTION = 1
WITHOUT PILOT FUNCTION = 2

PRESSURE CLASS: 320 BAR =H

SUBPLATE MOUNTING AT
CYLINDER BASE WITH HOUSING
AND PIPE CONNECTIONS
B = FOR CHARGING/DISCHARGING

NOMINAL SIZE:
DN40 = 40
DN50 = 50
DN63 = 63
DN80 = 80
DN100 = 100