



A Member of the
COLFAX PUMP GROUP

Screw pump

Series D6

D6 1113 GB

Handling of hydraulic oils, seal oils, light fuel oils and fire-resistant hydraulic fluids
Max. working pressure: 250 bar
Flow range: 100 - 900 l/min

HIGH PRESSURE PUMP



The IMO D6 pump is a positive constant displacement rotary three screw pump designed for high pressure and high flow in applications for lubricating oils, hydraulic fluids, fuel oils and fluids with similar lubricating properties.

The IMO pump has only three moving parts - three intermeshing screws. It has no gears, valves or vanes. It is the simplicity of the design that makes it so reliable and efficient. The exactly calculated curve of the screw thread eliminates pulsation and ensures quiet running.

The IMO pump is self-priming even under high suction lift conditions.

D6 Features

- High discharge pressure up to 25 MPa (250 bar)
- Flow range 100-900 l/min
- Wide viscosity range
- Low noise level
- Flange- or foot mounting
- Available in 10 displacement steps
- Designed for as well lubricating and hydraulic oils as fuel oils
- Available in design to meet API requirements
- High suction lift capacity
- Pulsation free flow

SERIES D6 PUMP

Applications

For lubricating oils, hydraulic fluids, fuel oils and fluids with similar lubricating properties.

General Description

Positive constant displacement, rotary, three screw pump.

Flow rate per revolution 9.8 - 307 cm³ in 10 steps.

The three screws, the central driven screw – the power rotor - which meshes with the two sealing screws – the idler rotors - are the only rotating components of the pump.

The axial pressure and friction loads on the pump rotors are hydraulically balanced. The power rotor is positioned axially by the selfcompensated thrust washer arrangement, being part of the hydraulic balancing system of the power rotor. The pump accommodates mechanical shaft seals complying with the DIN 24960 Standard.

The D6 pump is available in the following models:

- **D6 SRBZ** flange mounting pump with radial inlet for horizontal or vertical mounting for lube and hydraulic oils.
- **D6 SVBY** same as SRBZ but intended for fuel oils.
- **D6 SRTZ** flange mounting pump with built-on inlet strainer for tank top mounting for shallow tank operation
- **D6 SRJZ** as SRTZ with extended inlet pipe for deep tank operation.
- **D6 STFZ** designed to meet the API (American Petroleum institute) requirements for lube and hydraulic oils.

Duties

Max Discharge Pressure:

25 MPa D6 xxxZ

12 MPa D6 xxxY

Reduced pressure limits apply due to fluid viscosity, rotor lead and pump speed. Consult the Performance Data Sheet for the individual pump size. The Performance Data Sheet or the corresponding information is available from your local IMO AB representative.

Flow Rate:

1,7 - 15 dm³/s (100 - 900 l/min)

Model Code

Series	D	6					3	S				A			
Size: (Power rotor outer diameter)	038-045-052-060-070														
Rotor lead:	K = Low lead N = Normal lead														
Generation:	3 = Current generation														
Material in pump casing:	S = Steel casing with bronze lining														
Shaft seal design	R = Carbon/Ni-resist; Rubber parts in Nitrile V = Carbon/Ni-resist; Rubber parts in Viton T = Tungsten carbide / Tungsten carbide; Rubber parts in viton														
Mounting	B = Flange mounting F = Foot mounting J = Vertical mounting in tank with suction pipe T = Vertical mounting in tank with strainer														
Other characteristics:	Z = Internal ball bearing (Lub.oil) Y = External ball bearing (Fuel oil)														
Special design:															

Material Specification

Pump rotors - hardened alloy steel.

Rotor housing - steel, bronze-lined.

"O"-rings - Nitrile rubber (standard) or Viton.

Shaft seal - mechanical seal with nitrile (standard) or viton rubber, carbon seal ring, seat in NiResist. Optional choice of materials with seals according to DIN 24960 Standard.

For handling of fire resistant hydraulic fluids on phosphate ester base and fluids which may be aggressive to above material – consult IMO AB.

Design Details

Pump size		038	045	052	060	070	
Max discharge pressure (duty dependent, please contact your IMO AB rep.)		25 MPa (250 bar) Type D6 xxxZ 12 MPa (120 bar) Type D6 xxxY					
Max. inlet pressure		1.0 MPa (10 bar)					
Pumping temperature	SRxx - 20 °C - + 90 °C SVxx - 20 °C - + 130 °C STxx - 20 °C - + 155 °C	-10°C to + 90°C O-ring and shaft seal in nitrile					
		-10°C to + 150°C O-ring and shaft seal in viton					
Viscosity		1.6-400 mm ² /s. Viscosities up to 5000 mm ² /s after approval					
Max speed rpm		3 660 With heavy fuel oil max 1600 rpm is recommended					
	Speed selected must take into account the pump inlet pressure conditions.						
Displacement flow per revolution, cm ³	K-lead	38.8	65.2	103	159	251	
	N-lead	49.1	81.6	126	193	307	
Sound level dB(A) at 2 975 rpm	K-lead	10 Mpa	59	63	66	69	74
		20 Mpa	62	66	69	72	77
	N-lead	10 Mpa	61	65	68	71	76
		20 Mpa	64	68	71	74	79
Moment of inertia, Kgm ²		0.00038	0.00087	0.0016	0.0033	0.0065	

Filtration

In order to protect the D6 pump from foreign matter, such as weld slag, weld beads, pipe scale and rust, nuts, bolts, rags, etc a strainer should be installed in the pump inlet pipe near the pump. Recommended strainer-open-meshwidth for the D6 pump is:

max 800 µm

Max. pressure difference over clean strainer: 10 kPa att full flow rate

Rotation:

Clockwise facing pump shaft.

Drive

Direct drive over flexible shaft coupling which must allow an axial pump shaft movement of min. 0.3 mm. Axial or transverse loads on pump shaft are not allowed.

In this leaflet following units are used:

Quantity	SI-Unit	Other unit	Conversion
Pressure	MPa, kPa	-	1 MPa = 10 bar
Speed	r/s	rpm	-
Viscosity	mm ² /s	-	1 mm ² /s = 1 cSt
Temperature	°C	-	-
Length	m, mm, µm	-	-
Volume	cm ³	-	-
Flow rate	dm ³ /s	l/min	-

The built-on strainer of pumps D6 xxTx and D6 xxJx has an open meshwidth of 500 µm (40 mesh straining cloth). When the D6 pump is used in power hydraulic systems or is used as lube oil or seal oil pump, no extra filling precautions are required other than those prescribed for the remaining components in the system.

If no other filtration is prescribed it is recommended that the hydraulic fluid of a power hydraulic system is pumped through a filter – in the return line to the fluid reservoir or in a separate fluid reconditioning circuit – with an open meshwidth of 25 µm.

Accessories

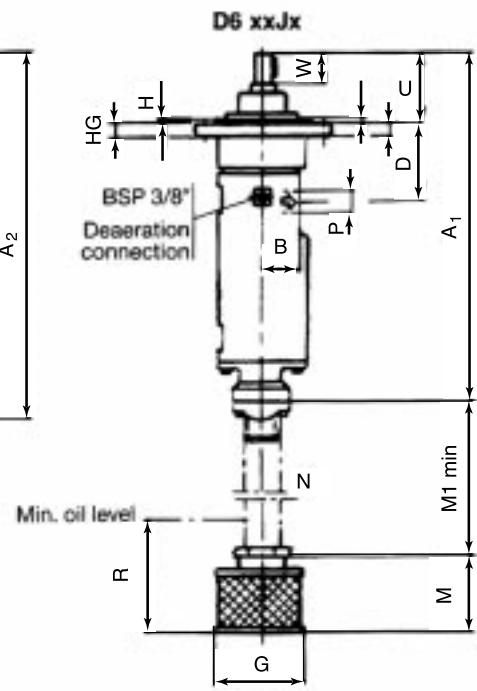
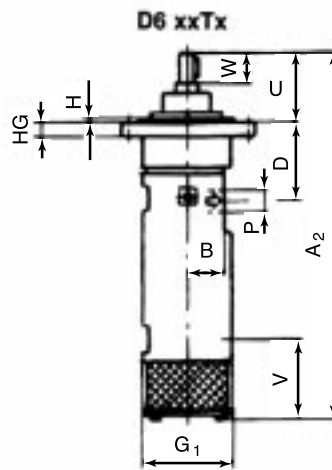
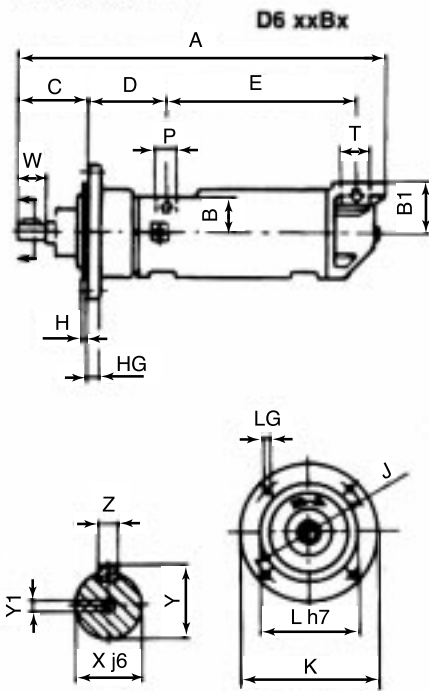
For the D6 xxBx pumps following standard accessories are available:

- Circular frame for connecting the pump to flange/foot mount IM2001 IEC Standard electric motors with or without supporting foot. (D6 xxBx).
- Circular frame for vertical tank mounting to flange mount IM-3011 IEC Standard electric motor (D6 xxJxx xxTx).
- Flexible shaft coupling.
- Inlet outlet counter flange set for pipe weld connection or pipe thread connection.
- Totally enclosed fan cooled squirrel-cage electric motors according to IEC, mounting form IM 2001 and IM 3011.

Dimensions

Pump Series D6 xxBx, xxJx and xxTx

Dimensions in mm



Sizes		038	045	052	060	070	
Main dimensions	A	579	680	743	860	955	
	A ₁	573	678	717	814	901	
	A ₂	586	673	741	850	967	
	B	65	65	77	90	97	
	B ₁	85	85	100	125	125	
	C	117	145	145	180	180	
	D	146	151	158	171	188	
	E	274	334	385	442	511	
	G	142	167	185	205	225	
Flange dimensions	G ₁	150	150	185	210	230	
	H	5	5	5	5	5	
	HG	20	25	25	30	30	
	J	215	240	240	265	265	
	K	250	275	275	300	300	
	L h7	180	205	205	230	230	
Outlet	P	Number Diameter	4	4	4	4	4
			18	18	18	18	18
Inlet	T		32	32	40	50	50
Shaft	W	42	58	58	82	82	
	X j6	28	32	38	42	48	
	Y	31	35	41	45	51.5	
	Y1	M8	M8	M8	M12	M12	
	Z	8	10	10	12	14	
Strainer	M	93	120	147	177	188	
	M 1 min.	80	85	105	120	135	
	N	BSP 1 1/2"	BSP 2"	BSP 2 1/2"	BSP 3"	-	
Min. oil level	R	125	160	190	225	240	
	V	125	125	140	160	200	
Weight kg		≈55	≈75	≈115	≈165	≈210	

Subject to change without notice. Not binding unless certified.

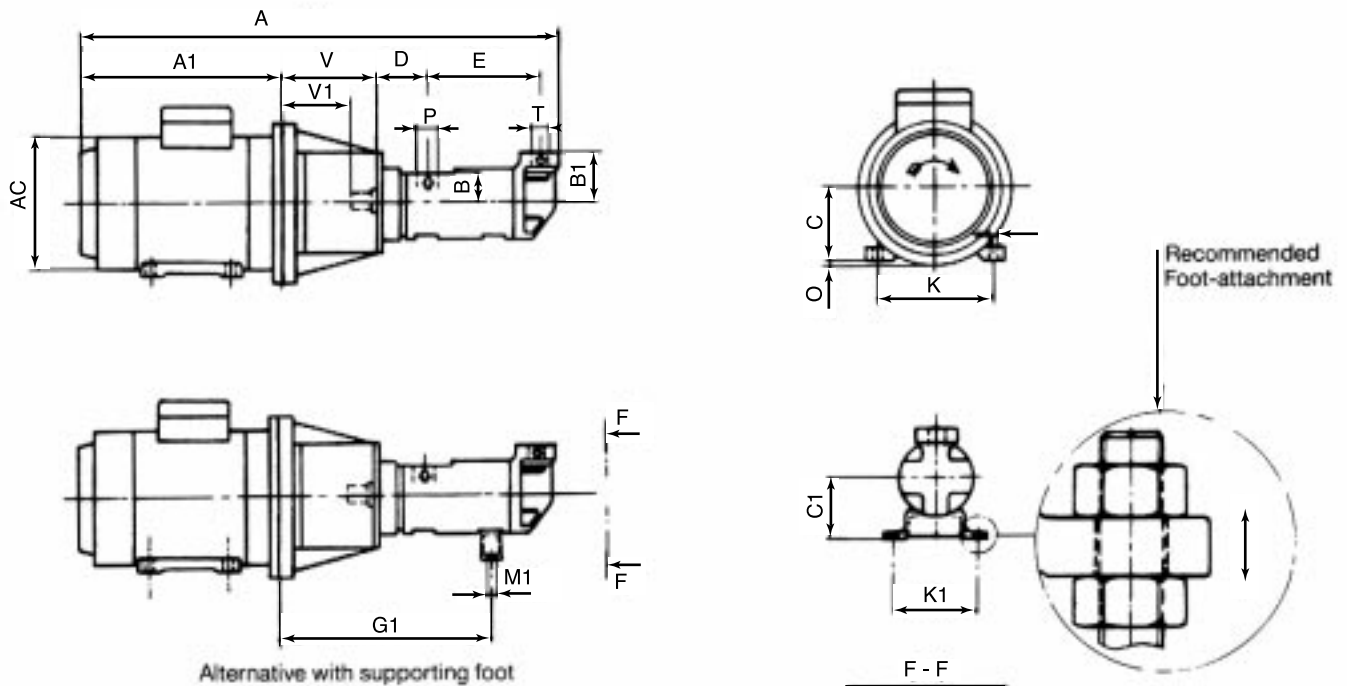
Dimensions

Pump Unit Type D6 xxBx

with flange mounted IEC Standard electric motors.

For complete pump unit dimensions, consult the Dimensions Prints for the individual unit mount.

Dimensions in mm.



Pump Sizes	Connecting frame type	Motor poles	A	A1	ACAC	B	B1	D	E	P	T	V	V1	G1	M1	C1	K1
038	F300	2 - 4	1287	585	375	65	85	146	274	32	38	240	123	558	14	140	210
	F350		1341	639	392							240	123	558			
	F400	2	1396	694	460							240	123	558			
	F400-140	4	1392	655	275							158	593				
	F500	2-4	1667	930	557							275	158	593			
045	F300	2-4	1385	585	375	65	85	151	334	32	48	265	120	630	14	140	210
	F350		1439	639	392							265	120	630			
	F400	2	1494	694	460							265	120	630			
	F400-140	4	1490	655	300							155	665				
	F500	2-4	1765	930	557							300	155	665			
	F600	2	1660	1045	630							300	155	665			
052	F350	2-4	1502	639	392	77	100	158	385	40	58	265	120	685	14	155	210
	F400	2	1557	694	460							265	120	685			
	F400-140	4	1553	655	300							155	720				
	F500	2 - 4	1828	930	557							300	155	720			
	F600	2	1943	1045	630							300	155	720			
060	F500	2-4	1945	930	557	90	125	171	442	50	73	335	155	790	18	170	260
	F600	2	2060	1045	630							335	155	790			
	F600-170	4	2097	372	192							827					
	F740	2	2282	1260	728							342	162	797			
070	F500	2-4	2040	930	557	97	125	188	511	50	98	335	155	865	18	180	260
	F600	2	2155	1045	630							335	155	865			
	F600-170	4	2192	372	192							902					
	F740	2	2377	1260	728							342	162	872			

Remarks

- Dimensions A and A1 may vary with make of electric motor.
- For certain motor sizes the motor mounting flange projects (max 25 mm) below the motor foot.

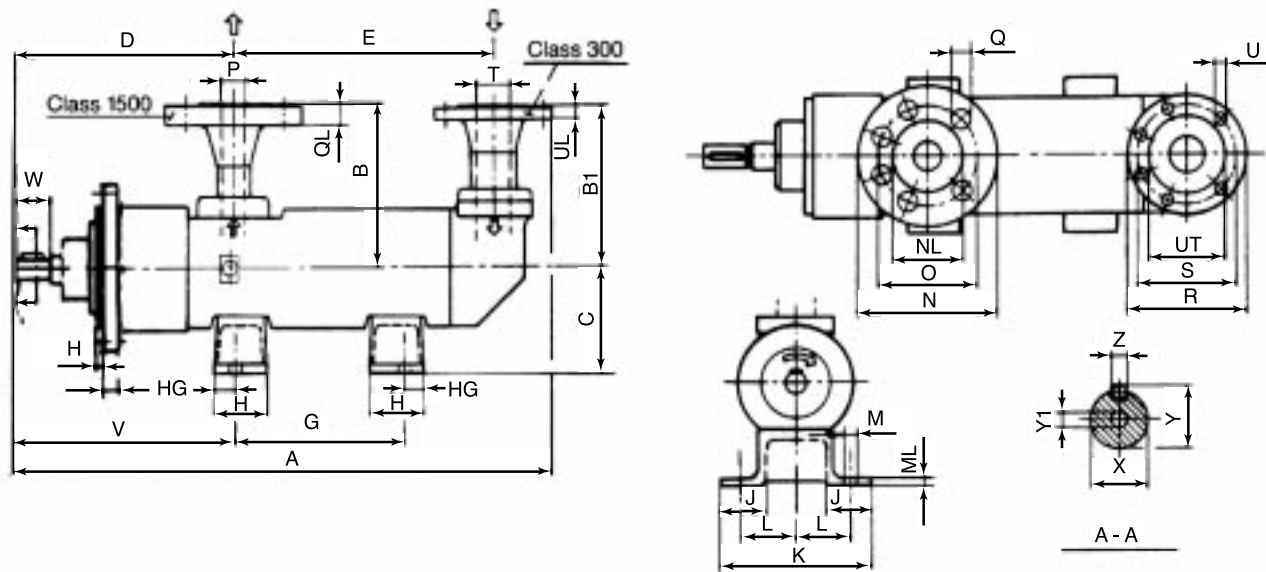
Dimensions Pump D6 xxFx

Designed to meet the requirements as per API 676-standards norms.

For complete pump unit dimensions consult the Dimensional Prints for the individual unit mount.

Flange according to ANSI (ASA) B 16.5.

Dimensions in mm



Sizes		038	045	052	060	070
Main Dimensions	A	615	713	783	898	1006
	B	225	225	260	300	307
	B1	225	225	260	300	307
	C	140	140	155	175	180
	D	263	296	303	351	368
Foot Dimensions	E	274	334	385	442	511
	V	265	300	305	355	360
	G	170	210	260	280	350
	H	75	75	75	85	85
	HG	27	27	27	32	32
	K	245	245	245	310	310
	L	105	105	105	130	130
	J	65	65	65	80	80
	ML	12	12	12	15	15
M	Number Diameter	4	4	4	4	4
		14	14	14	18	18
Outlet	P	31,8	31,8	38,1	50,8	50,8
	QL	35	35	38	44,5	44,5
	NL	63,5	63,5	73	92,1	92,1
	O	111,1	111,1	123,8	165,1	165,1
	N	158,7	158,7	177,8	215,9	215,9
Q	Number Diameter	4	4	4	8	8
		25,4	25,4	28,6	25,4	25,4
Inlet	T	40,9	52,6	62,7	78	102,4
	UL	20,6	22,2	25,4	28,6	31,7
	UT	73	92,1	104,8	127	157,2
	S	114,3	127	149,2	168,3	200
	R	155,6	165,1	190,5	209,5	254
	U	Number Diameter	4	8	8	8
22,2	19		22,2	22,2	22,2	
Shaft	W	42	58	58	82	82
	X 150 J6	28	32	38	42	48
	Y	31	35	41	45	51,5
	Y1	M8	M8	M8	M12	M12
	Z	8	10	10	12	14
Weight	Kg	≈ 73	≈ 93	≈ 136	≈ 195	≈ 245
	Lbs	≈ 160	≈ 205	≈ 300	≈ 430	≈ 540

