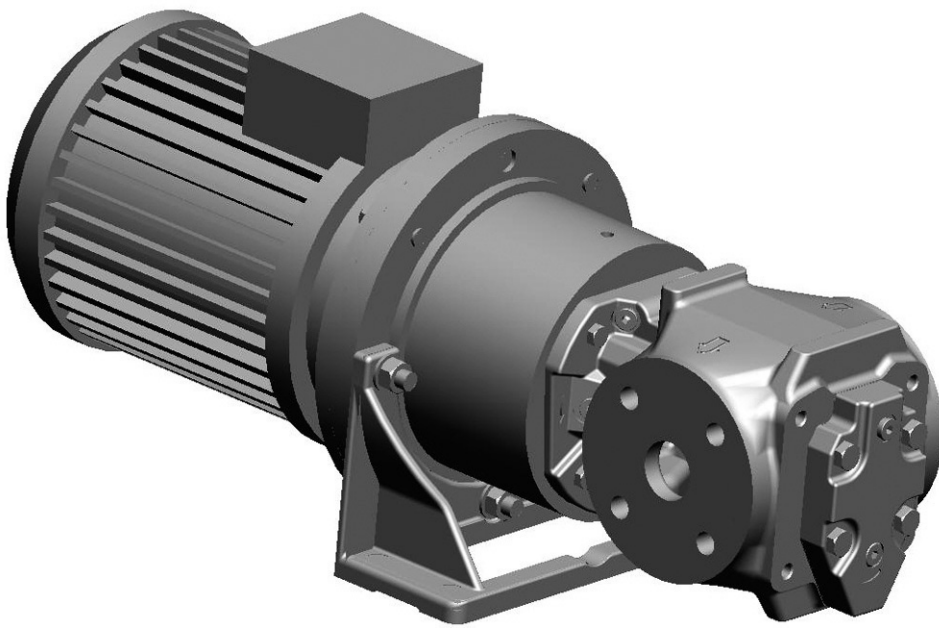


# LPE3 Std Line



## Product Description



Flow volume:	10 - 180 l/min
Max differential pressure:	16 bar
Applications:	Circulation, lubrication and transfer

# 1. Applications

## 1.1 Functionality

The Std Line (standard) LPE pump comes in two executions; Lube Line and Fuel Line. The main difference is the shaft seal design; (V-Seal) - optimized for light duty and (T-Seal) - heavy duty respectively.

The LPE pump is used for a number of different fluids:

Lubrication oil, fuel oil, vegetable oil, hydraulic oil and other hydraulic fluids, polymers, emulsions and any non-aggressive fluid with sufficient lubricating properties.

## 1.2 Applications

Typical applications are:

- Lubrication of diesel engines, gears, gas and steam turbines, hydro turbines and paper machines
- Circulation for cooling and filtration in large machineries, hydraulic systems and transformer oil for insulation in transformers
- As transfer pumps onboard vessels, in power plants, oil factories, refineries, tank farms etc
- Fuel supply duties for engines
- Supply and circulation of fuel oil

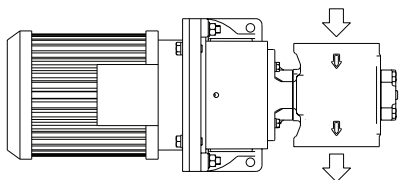
## 1.3 Installation

The pump is designed to be flange-mounted to its electric motor via a connecting frame and a flexible shaft coupling. By the angle bracket, the pump may be mounted horizontally or vertically. For vertical installation, a stand mounted on the rear cover can be supplied (version NxYP).

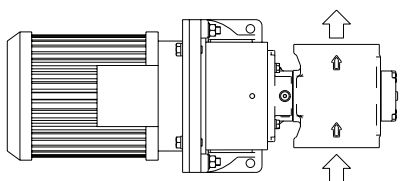
As standard, the pump is delivered excluding counter flanges (DIN type), but can be included if requested.

As standard the pump is delivered with the discharge side to the left when seen from the pump rear end (see below).

For more information about installation, see Installation and Start-up instruction for low pressure pumps.

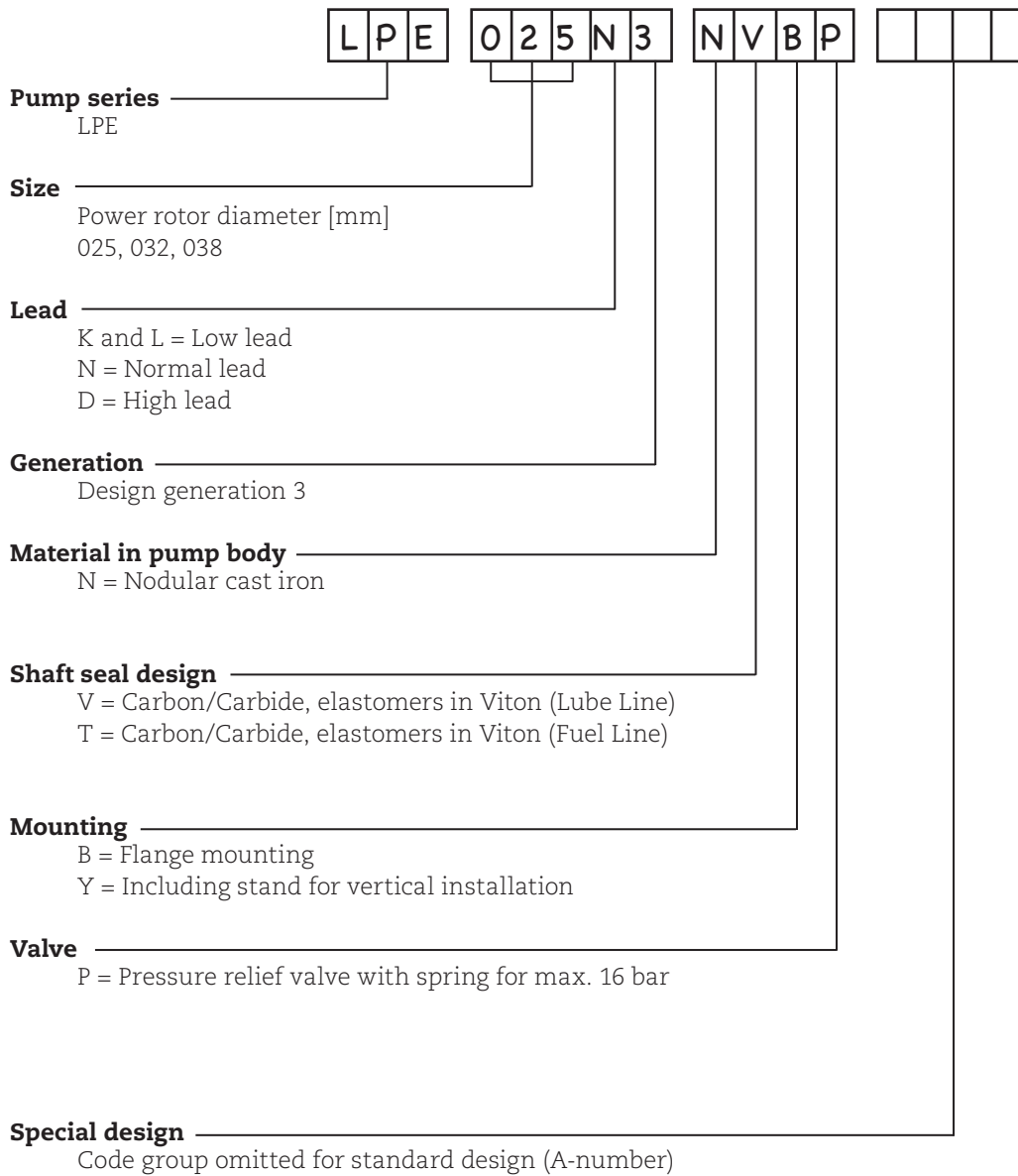


Mounting standard picture M93-0.



On request the pump can be delivered with opposite flow direction, M39-0.

## 2. Pump model code



## 3. Technical Data

### 3.1 Pressure Information

#### Pressure relief valve

The pump is equipped with an integral pressure relief valve with internal return, limiting the differential pressure across the pump and protecting the pump. Should the discharge line be blocked, the relief valve will open by the pressure. The valve is adjustable for different opening pressures.

The value of the pressure limit can be set at the factory and should be adjusted at installation (see Installation & Start-up instruction for low-pressure pumps).

The maximum pressure accumulation varies with pump size, speed and viscosity, but will normally not exceed 4 bar.

The valve has a maximum set pressure of 16 bar.

#### Inlet pressure

Minimum inlet pressure (suction capability) is dependent on fluid viscosity and rotation speed. It increases with decreasing viscosity and decreasing speed. Information about minimum inlet pressure for each individual duty case can be obtained from IMO AB or pump selection software WinPump.

Maximum inlet pressure is 7 bar.

#### Discharge pressure

Maximum discharge pressure is 16 bar.

#### Differential pressure

Maximum differential pressure is 16 bar but reduced at low viscosities according to table below

Viscosity [cSt]	1,4	2	6	10	>12
Max. diff. pressure [bar]	6,9	8	12,4	15	16

Refer to your IMO representative or use the pump selection software WinPump to determine the exact operating limits.

### 3.2 Driver information

#### Driver type

The pump is designed to be connected to an electrical motor by a flexible shaft coupling.

#### Speed

The maximum speed is 3600 rpm. For higher speeds, contact IMO AB.

#### Rotation

The pump is designed to operate in one rotational direction only, as standard clockwise when facing the shaft end. Pumps for CCW rotation can be delivered on special request.

For shorter periods of time, a few minutes for emptying a discharge line, the pump may be operated in reverse direction, provided the back pressure is limited to 3 bar.

## 3. Technical Data

### 3.3 Sound level

Typical pump sound levels refer to free field conditions at a distance of 1 m from the pump. Noise of driver excluded in the quoted figures. The sound levels are measured at a discharge pressure of 5 bar, speed 2940 rpm and viscosity 40 cSt, according to ISO-3741.

Size	025	032	038
Sound level dB [A]	58	58	58

### 3.4 Moment of Inertia

Moment of inertia [ $10^{-6}$  kgm<sup>2</sup>]

Size	025	032	038
Value	49	72	194

### 3.5 Fluid viscosity

Lube Line seal (Seal version code V):  
1,4 – 800 cSt for Lube and hydraulic oil

Fuel Line seal (Seal version code T):  
1,4 – 3500 cSt for Fuel oil

For higher viscosity, contact IMO AB.

### 3.6 Fluid temperature

Lube Line (Seal version code V): -20 – +90 °C

Fuel Line (Seal version code T): -20 – +155 °C

## 4. Design

### 4.1 Ball bearing

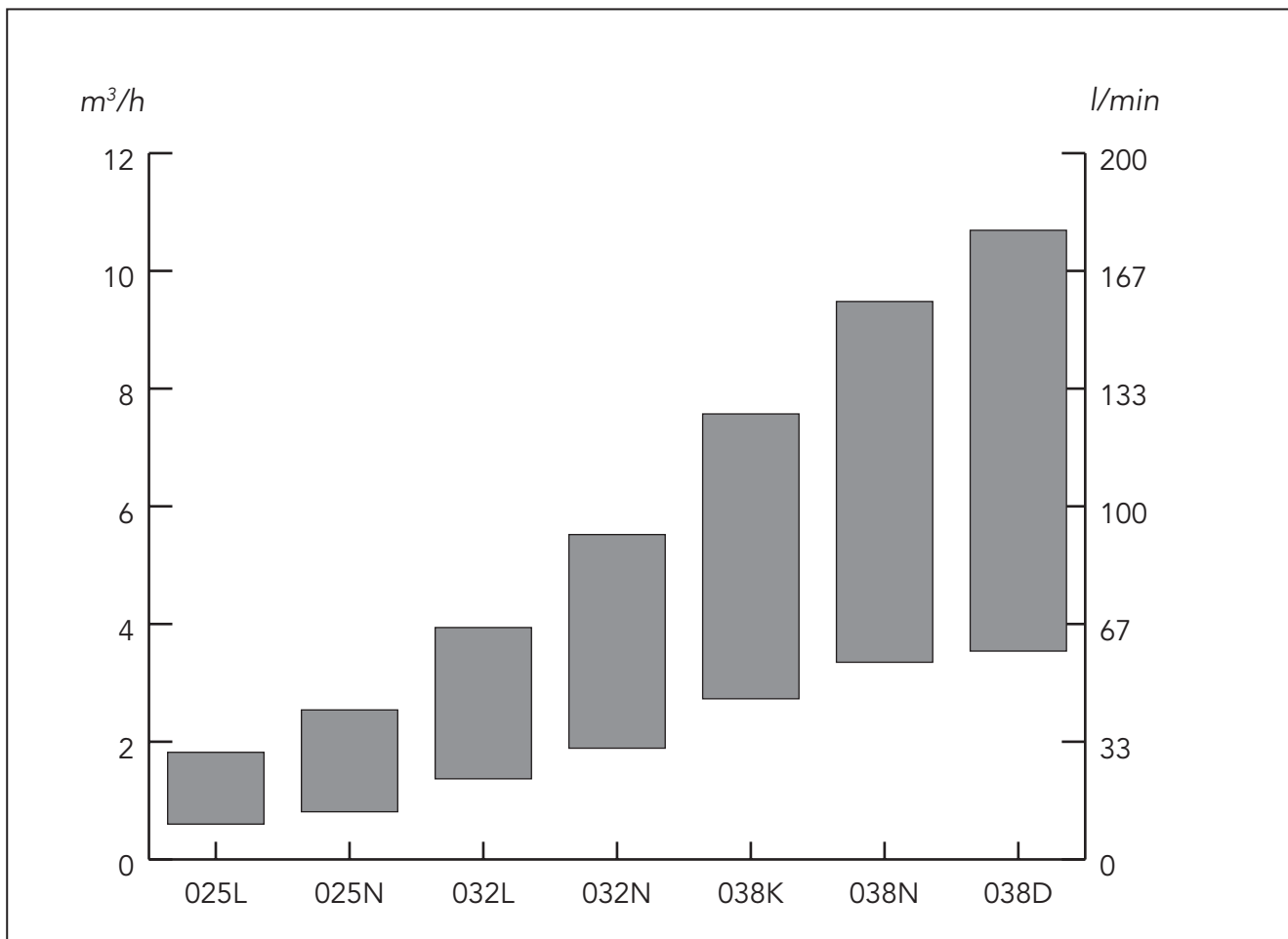
The pump is fitted with an internal ball bearing which continuously is being greased by the handling media.

### 4.2 Design material

Model	Material pump	Material rotor	Material idler	Material seal	Material Elastomers
LPE NV	Nodular cast iron	Steel, surface treated	Cast iron, surface treated	Carbon/Silicon carbide	Viton
LPE NT	Nodular cast iron	Steel, surface treated	Cast iron, surface treated	Silicon carbide / Silicon carbide	Viton

## 5. Performance

Typical performance values at 5 bar  
Flow calculated at 26 cSt, power at 260 cSt.

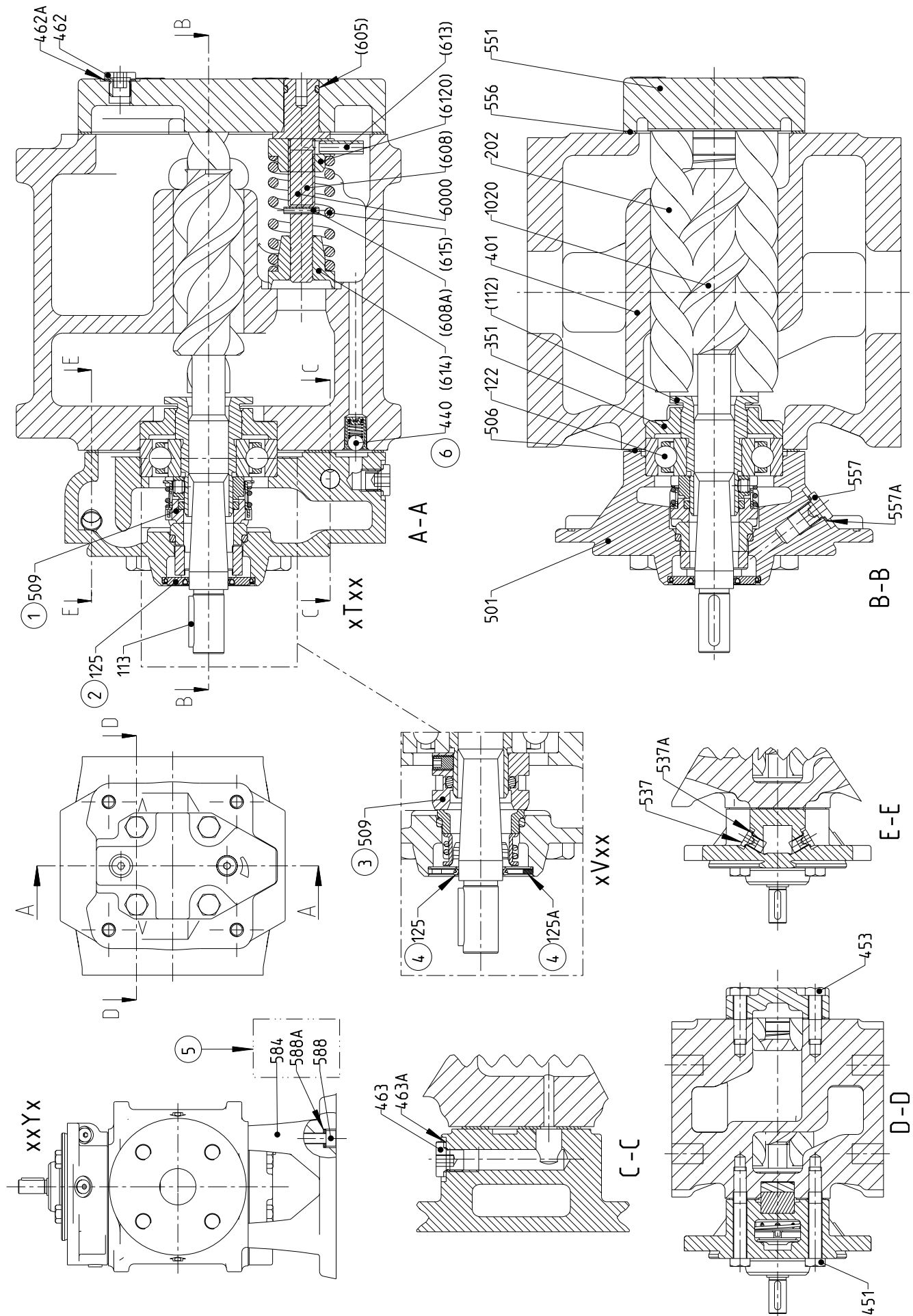


025L			025N		
rpm	l/min	kW	l/min	kW	
1470	10,0	0,3	13,5	0,4	
1770	12,9	0,4	17,7	0,5	
2950	24,5	0,9	34,1	1,0	
3550	30,4	1,1	42,5	1,3	

032L			032N		
rpm	l/min	kW	l/min	kW	
1470	22,8	0,5	35,9	0,8	
1770	29,0	0,7	44,6	1,0	
2950	53,3	1,3	79,0	1,9	
3550	65,6	1,7	96,4	2,4	

038K			038N			038D		
rpm	l/min	kW	l/min	kW	l/min	kW		
1470	45,5	1,0	55,8	1,3	59,1	1,2		
1770	57,1	1,3	70,5	1,7	76,2	1,5		
2950	102,9	2,5	128,4	3,2	143,9	2,9		
3550	126,2	3,2	157,9	4,1	178,2	3,6		

# 6. Sectional view





## 7. List of components

Pos No	Denomination	Pos No	Denomination	Pos No	Denomination
1020	Complete power rotor	462	Plug	557A	Sealing washer
(112)	Balancing piston	462A	Sealing washer	584	Vertical stand
113	Key	463	Plug	588	Screw
122	Ball bearing	463A	Sealing washer	588A	Washer
125	Secondary seal	501	Front cover	6000	Complete valve element
125A	Retaining ring	506	Gasket	(605)	O-ring
202	Idler rotor	509	Shaft seal	(608)	Valve spindle
351	Balancing bush	537	Deaeration plug	(608A)	Tension pin
401	Pump body	537A	Sealing washer	(6120)	Complete regulating nut
440	Return valve	551	Rear cover	(613)	Pin
451	Screw	556	Gasket	(614)	Valve piston
453	Screw	557	Plug	(615)	Valve spring

### Drawing remarks:

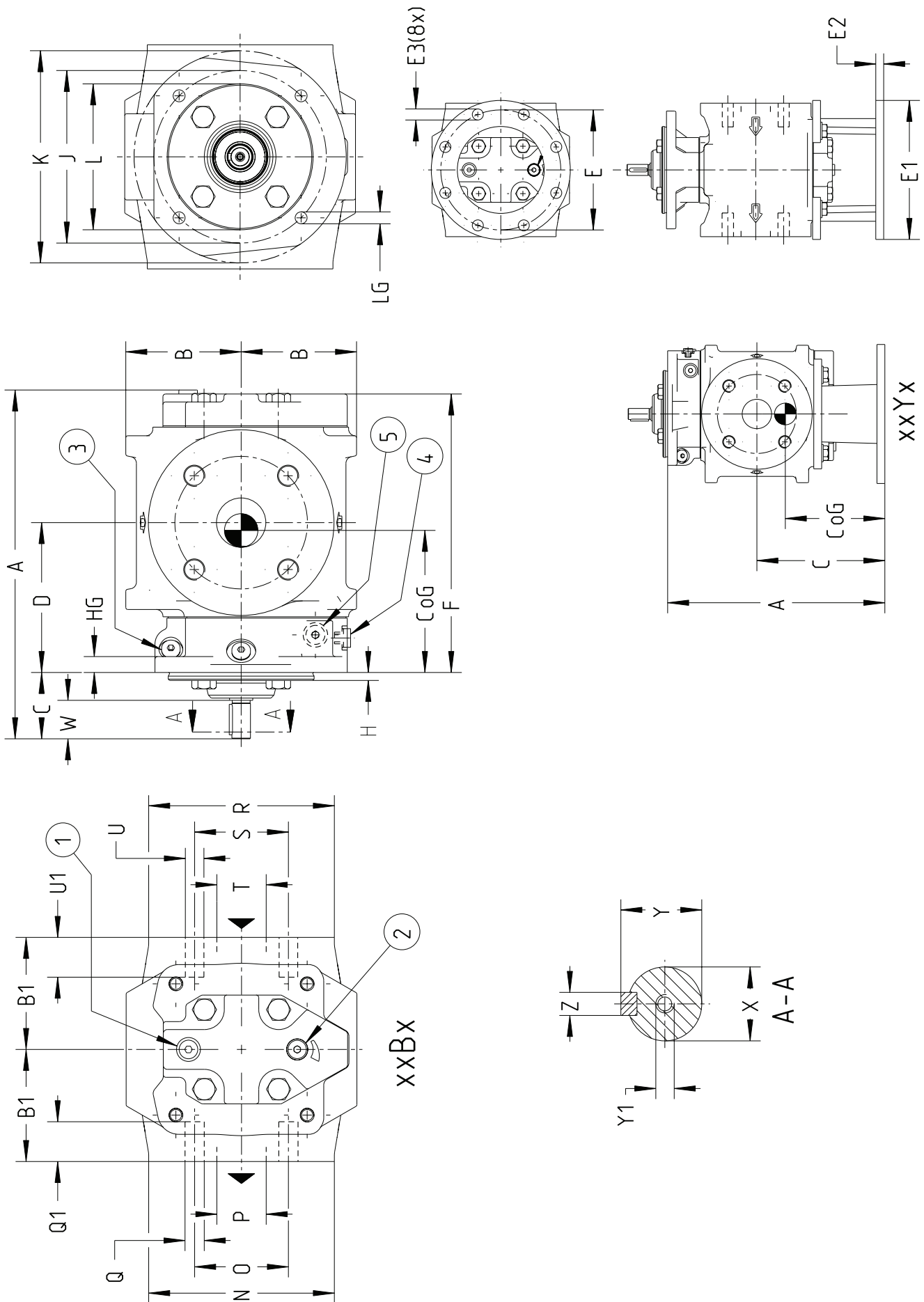
- (1) Shaft seal. Execution code xTxx
- (2) Applicable for shaft seal execution code xTxx
- (3) Shaft seal. Execution code xVxx
- (4) Applicable for shaft seal execution code xVxx

- (5) Applicable for vertical mounted execution code xxYx
- (6) Removed from August 2011

### Notes:

- Components with Pos No within parenthesis are parts of subassembly

# 8. Pump dimensions



# 8. Pump dimensions

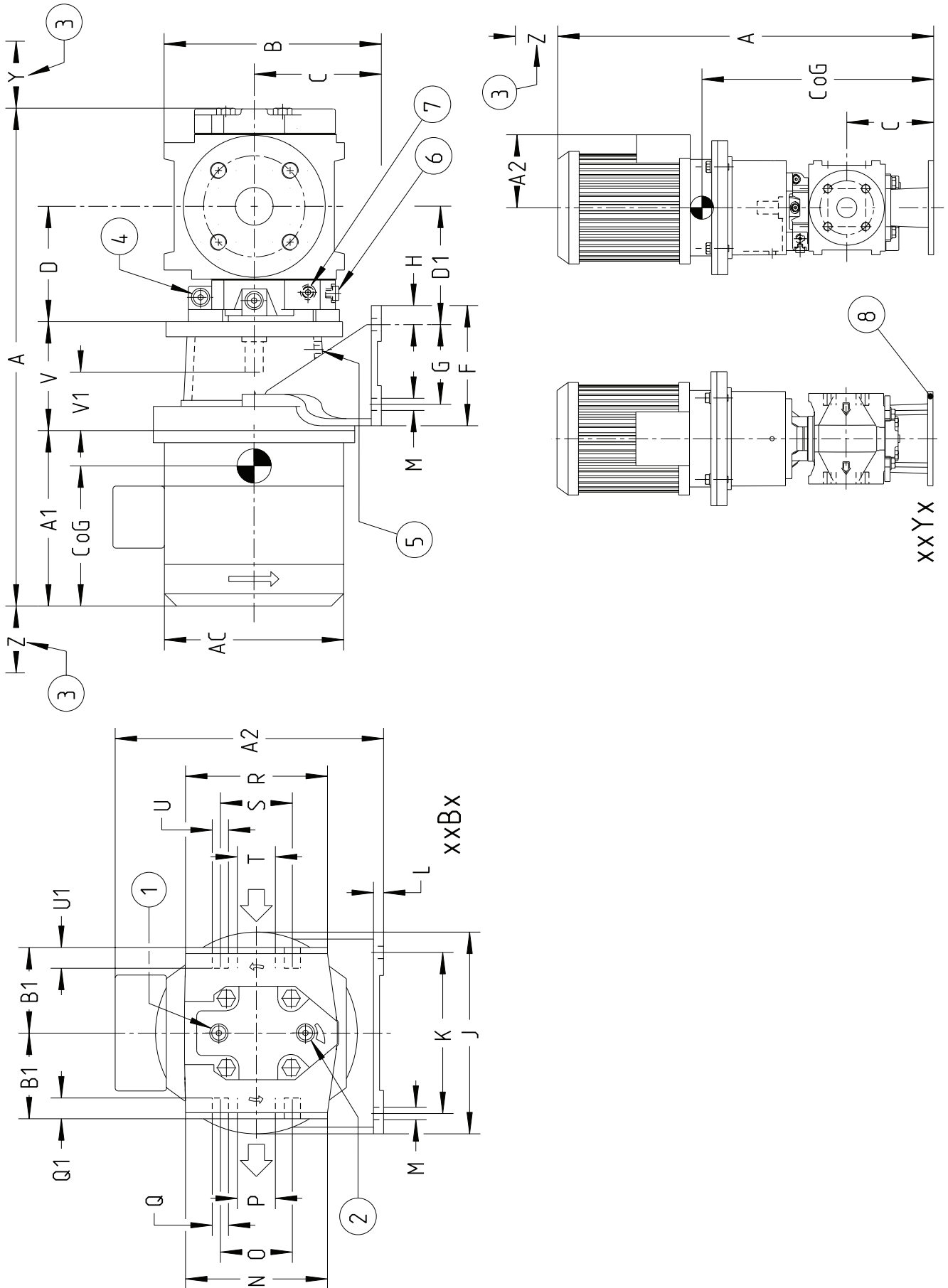
Pump size	Main dim.					Foot dim.			Flange dim.					Outlet					Inlet					Shaft					Weight							
	A	B	B1	C	C	D	F	E	E1	E2	E3	H	HG	J	K	L <sup>1)</sup>	LG	N	O	P	Q	Q1	R	S	T	U	U1	W	X <sup>2)</sup>	Y	Y1	Z	CoG	CoG	kg	kg
025	225	240	81	75	140	100	175	138	190	17	11.5	12	130	160	110	9	115	85	25	M12	20	20	115	85	25	M12	20	29	14	16	M5	5	82	122	14	18
032	261	275	87	85	162	113	211	152	190	17	6	15	140	100	32	140	100	32	M16	25	M16	25	140	100	32	M16	25	34	19	21.5	6	103	145	20	24	
038	273	305	89	110	191	114	223	153	190	17	13.5	15	145	170	120	11	165	125	50				165	125	50							110	169	28	32	
Execution code	xxBx	xxYx			xxBx	xxYx			xxYx																						xxBx	xxYx	xxBx	xxYx		

Drawing remarks:  
 (1) Inlet gauge. ISO G1/8  
 (2) Relief valve. Turn clockwise to increase opening pressure  
 (3) Deaeration (2x)

(4) Deaeration  
 (5) Other side: Outlet gauge. ISO G1/8

Notes:  
 - Dimensions in mm  
 - Counter flanges according to DIN2633/ND16  
 1) Tolerances ISO h7  
 2) Tolerances ISO j6

# 9. Pump Unit dimensions



# 9. Pump Unit Dimensions

Pump size	IEC Frame No	Frame size	Main dim.										Foot dim.							Outlet				Inlet				Dism.		Weight							
			A	A1	A2	A2	AC	B	B1	C	C	D	D1	V	V1	F	G	H	J	K	L	M	N	O	P	Q	Q1	R	S	T	U	U1	Y	Z	CoG	CoG	kg
025	71	F130	483	584	210	214	114	140	181	100		128	98	48	80	50	160	140	10	Ø9													48	298	222	22	26
	80	F165	533	598	250	249	137	156	193	112	140	100	108	58	90	15	210	180	12	Ø11												58	315	248	25	29	
	90		578	643	285	256	144	176	75			138	118	68	60																68	319	292	30	34		
	100	F215	611	676	308	288	156	198	213	132		128	128	78	110	29	250	220	15	Ø14											78	299	347	41	44		
112		638	703	335	306	174	221																												50		
032	71	F130	519	583	210	214	114	140	187	100		141	98	48	80	50	160	140	10	Ø9												48	332	226	28	32	
	80	F165	569	633	250	249	137	156	199	112	162	113	108	58	90	15	210	180	12	Ø11												58	351	260	32	36	
	90		614	678	285	256	144	176	85			151	118	68	60																68	357	290	37	40		
	100	F215	647	711	308	288	156	198	219	132		141	128	78	110	29	250	220	15	Ø14												78	336	352	47	51	
112		674	738	335	306	174	221																												57		
038	80	F165	581	663	250	249	137	156	201	112		142	108	58	90	15	210	180	12	Ø11												58	376	263	40	43	
	90		626	708	285	256	144	176	201			152	118	68	60																68	387	300	45	48		
	100	F215	659	741	308	288	156	198	221	110	191	114	142	128	110	29	250	220	15	Ø14												78	368	351	56	58	
	112		686	768	335	306	174	221	160			144	150	100	120	80	290	260	18																	84	
132	F265	767	849	394	352	192	258	249	160		144	150	100	120	80	290	260	18													100	373	459	80	84		
Exe-cution code			xxBx	xxYx		xxBx	xxYx		xxBx	xxYx		xxBx																						xxBx	xxYx	xxBx	xxYx

Notes:  
 - Dimensions in mm  
 - Dimensions A, A1, AC, A2 and weight are approximate values for Busck motors type MS  
 - Foot VDMA 24 561 PTFLL appli-cable for xxBx

Drawing remarks:  
 (1) Inlet gauge. ISO G1/8  
 (2) Relief valve. Turn clockwise to increase opening pressure  
 (3) Space for dismantling  
 (4) Deaeration (2x)  
 (5) Connecting frame drainage. ISO G3/8  
 (6) Deaeration  
 (7) Other side: Outlet gauge. ISO G1/8  
 (8) For vertical stand dimensions see Pump dimensions page 10

## 10. Accessories

A bare shaft pump (Fig. 1) can be ordered with the accessories in fig. 2-8.

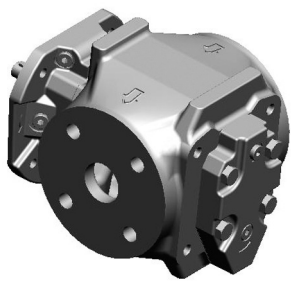


Fig. 1 Bare shaft pump



Fig. 2 Set of counter flanges

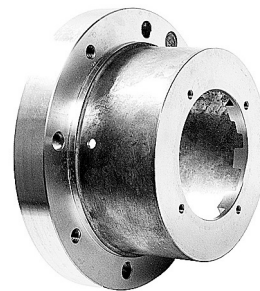


Fig. 3 Connecting frame



Fig. 4 Electric motor



Fig. 5 Angle bracket



Fig. 6 Vertical stand



Fig. 7 Shaft coupling



Fig. 8 Gauge panel

## 11. Maintenance

Spare parts for these pumps are easily available from stock. For detailed information and know-how about service, see the Maintenance & Service Instruction for LPE3 pumps or contact IMO AB.



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