

General

The ETA low-pressure centrifugal pump built by KSB considers fully the recommendations of DIN 24255 with regard to main dimensions and rated capacities.

By the adaption to the standardised water pump and utilising the meccano system, the ETA series provides economic advantages for plant designers, plant manufacturers and users.

Fields of Application

General water supply for municipalities, industry and agriculture; for irrigation and drainage or pumping of sea water, brines, lyes and condensate; circulation of hot water, cooling water and oil; for blending and loading duties, etc.

Design

Horizontal single-stage, single-flow centrifugal pump with volute casing flanged onto the bearing pedestal.

Axial suction nozzle and radial discharge nozzle vertically upwards, overhung radial flow impeller, shaft protecting sleeves of 316 stainless steel.

Shaft Seal

Uncooled soft-packed stuffing box up to 110°C, or cooled soft-packed stuffing box over 110°C, up to 160°C. Uncooled mechanical seals up to 140°C max. may be fitted.

Drive

Direct drive by an electric motor, an internal combustion engine or turbine, via a flexible coupling.

In special cases drive is also possible via a gear box, a hydraulic gear coupling, or belt drive (overhung or via a jack-shaft). If a spacer type coupling is used, the complete pump rotor can be withdrawn towards the motor end, without having to remove the motor or to disconnect the piping from the pump casing.

Bearings

Axial and radial location by two oil lubricated deep groove ball bearings in the bearing pedestal. Grease lubricated bearings are available as an optional extra.

Materials of construction

Part No.	Part Designation	Material combinations							
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
102	Volute Casing	JL 1040							
211	Pump Shaft	080M40Q				431S29		080M40Q	431S29
234	Impeller	JL1040	GCuSn 10	JL 1040		GCuSn 10	JL1040	GCuSn 10	
	Shaft seal	Packed gland		Mechanical	Packed gland		Mechanical		
350.1	Bearing housing	JL 1040							
451	Stuffing box housing	JL 1040							
452	Gland	JL 1040		N/a	JL 1040		N/a	N/a	N/a
524	Shaft Protecting sleeve	316SS							

JL 1040 → GG-25

Technical Information

Pump Size	Weight KG	Max Speed Direct Coupled RPM	Max Speed V- Belt Drive RPM	Max Operating Pressure KPA	Bearing Size	GD ² with water filling kg.m ²	Water Filling Litres
ETA 32-160	34	3600	2900	1000	6304/C3	0,02364	0,7
ETA 32-200	42	3600	2500	1000	6304/C3	0,05524	1,0
ETA 32-250	52	3000	2200	1000	6305/C3	0,13464	1,7
ETA 40-125	31	3600	3000	1000	6304/C3	0,01274	0,8
ETA 40-160	36	3600	2400	1000	6304/C3	0,02374	1,0
ETA 40-200	43	3600	2200	1000	6305/C3	0,05444	1,2
ETA 40-250	53	3000	2000	1000	6305/C3	0,12914	1,9
ETA 40-315	88	1800	1600	1000	6307/C3	0,29595	2,7
ETA 50-160	38	3600	2900	1000	6304/C3	0,03134	1,6
ETA 50-200	45	3600	2400	1000	6305/C3	0,06774	1,9
ETA 50-250	55	3000	2500	1000	6305/C3	0,14204	2,5
ETA 50-315	88	1800	1300	1000	6307/C3	0,30595	3,0
ETA 65-125	39	3600	2600	1000	6304/C3	0,01764	2,0
ETA 65-160	46	3600	2600	1000	6304/C3	0,04054	2,5
ETA 65-200	49	3600	1900	1000	6305/C3	0,07334	2,7
ETA 65-250	72	3000	2100	1000	6307/C3	0,16215	3,2
ETA 65-315	94	1800	1100	1000	6307/C3	0,31445	4,6
ETA 80-160	53	3600	2300	1000	6305/C3	0,04534	4,0
ETA 80-200	63	3600	2200	1000	6307/C3	0,07395	4,1
ETA 80-250	78	3000	2000	1000	6307/C3	0,18245	4,7
ETA 80-315	99	1800	1000	1000	6307/C3	0,40545	5,7
ETA 80-400	148	1800	1200	1000	6409/C3	1,03091	7,6
ETA 100-160	71	3600	2400	1000	6307/C3	0,06735	5,5
ETA 100-200	76	3600	1900	1000	6307/C3	0,10545	6,3
ETA 100-250	87	3000	1800	1000	6307/C3	0,27645	6,9
ETA 100-315	108	1800	1200	1000	6307/C3	0,48645	7,9
ETA 100-400	159	1800	1100	1000	6409/C3	1,05391	9,5
ETA 125-200	97	3600	1800	1000	6307/C3	0,12875	9,5
ETA 125-250	99	1800	1300	1000	6307/C3	0,26595	10,3
ETA 125-315	143	1800	1200	1000	6409/C3	0,50891	11,1
ETA 125-400	169	1800	1450	1000	6409/C3	1,13391	12,6
ETA 150-200	144	1800	1600	1000	6307/C3	0,20625	18,5
ETA 150-250	148	1800	1300	1000	6307/C3	0,32245	18,0
ETA 150-315	167	1800	1100	1000	6409/C3	0,64091	19,0
ETA 150-400	213	1800	1200	1000	6409/C3	1,40791	20,0

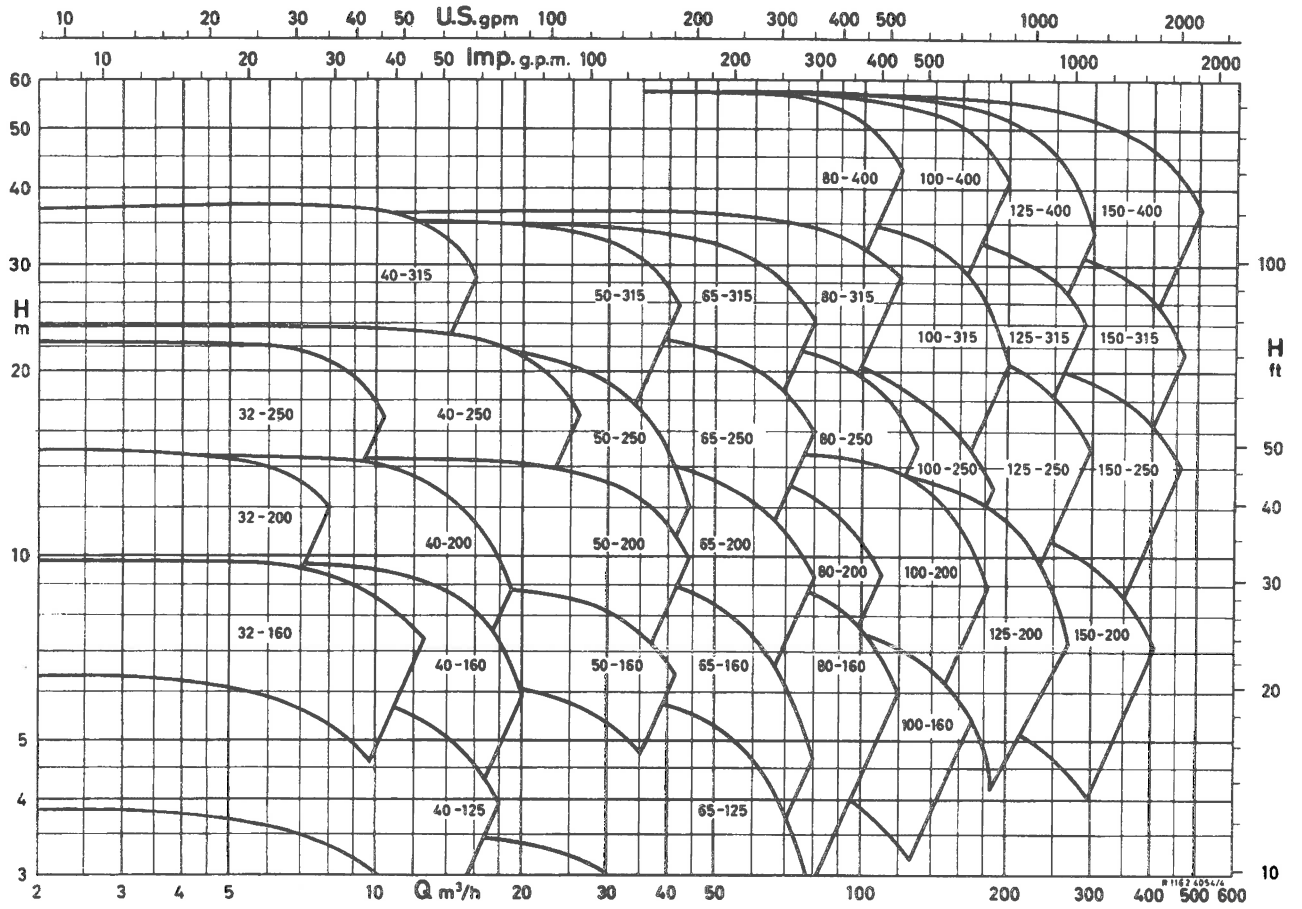


Fig 2 Selection Chart (n = 1450 r.p.m.)

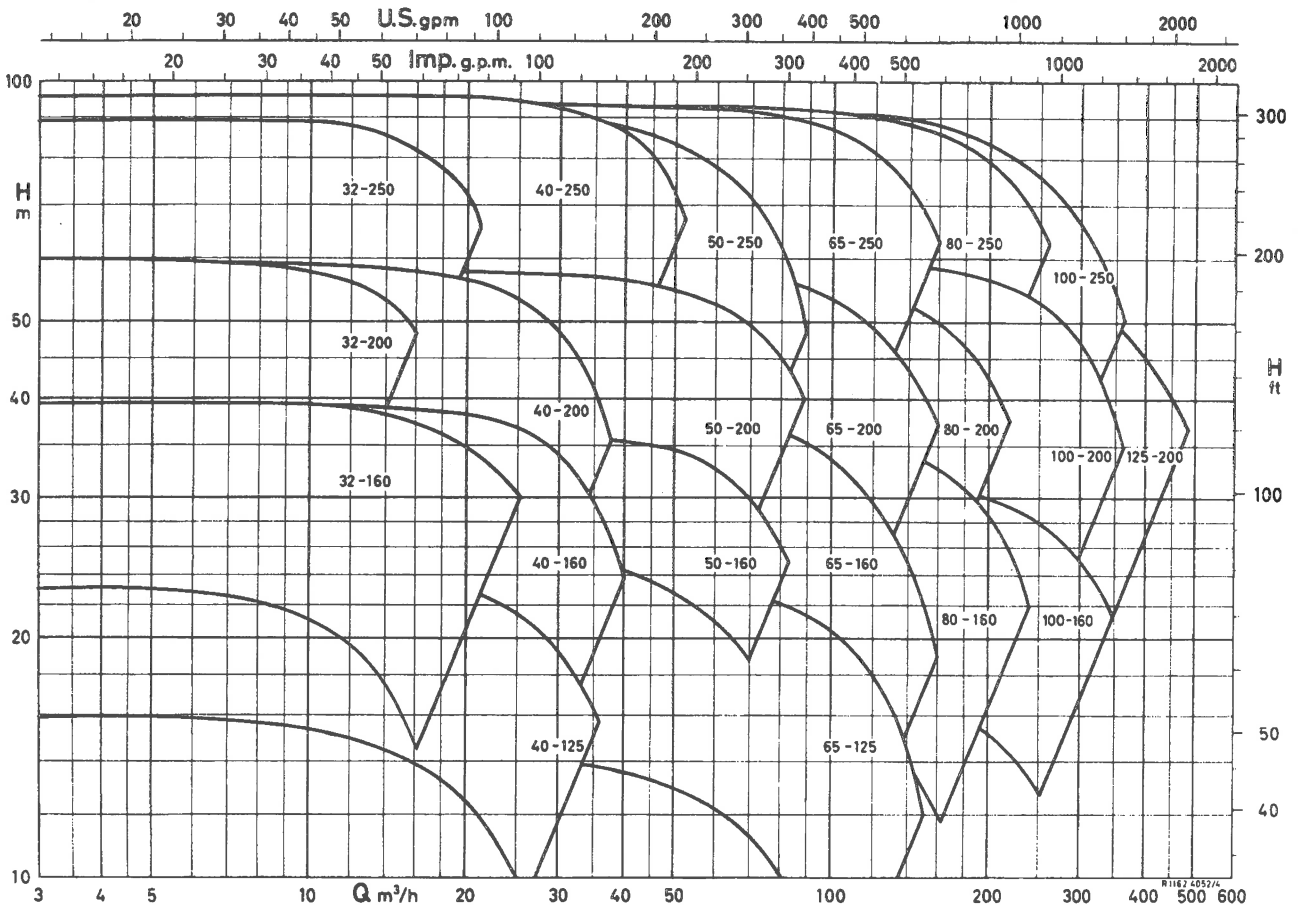
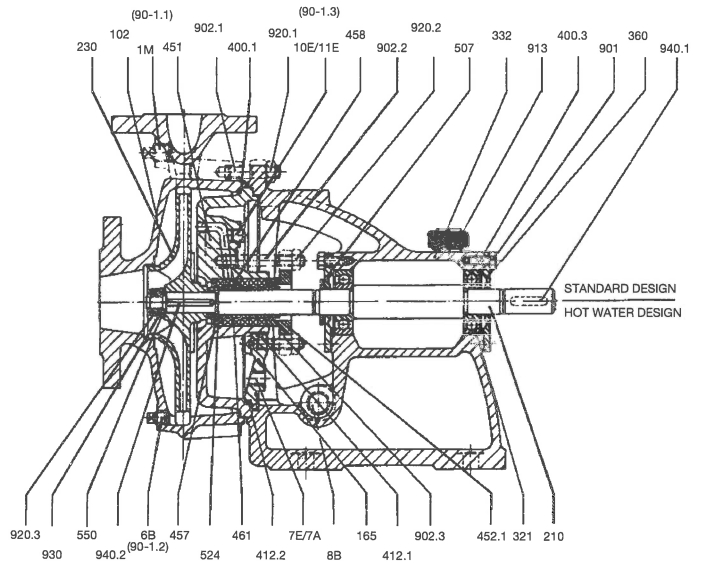


Fig 1 Selection Chart (n = 2900 r.p.m.)

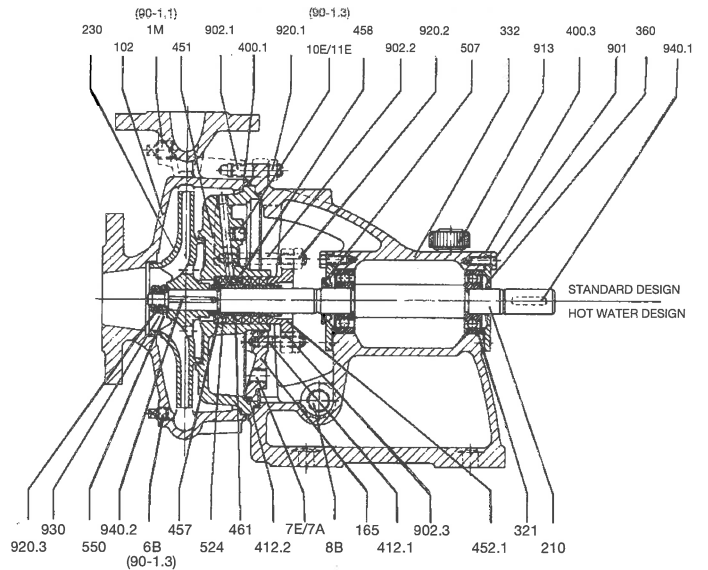
Part No.	Part Designation
102	Volute casing
165	Cooling cover
183	Foot
210	Shaft
230	Impeller
321	Deep groove ball bearing
330	Bearing bracket
332	Bearing pedestal
360	Bearing cover
400.1/2	Flat gasket
412.1/2	O-ring
451	Stuffing box housing
452.1	Stuffing box gland
454	Stuffing box ring
457	Throat ring
458	Split lantern ring
461	Stuffing box packing
502	Casing wear ring
507	Thrower
524	Shaft protecting sleeve
550	Washer
920.3	Hexagonal nut
930	Spring washer
1 M	Pressure gauge
6 B	Draining
7 A	Cooling liquid outlet
7 E	Cooling liquid inlet
8 B	Leakage drain
10 E	Sealing liquid inlet
11 E	Flushing liquid inlet

Pump size	Shaft unit
40-200	25



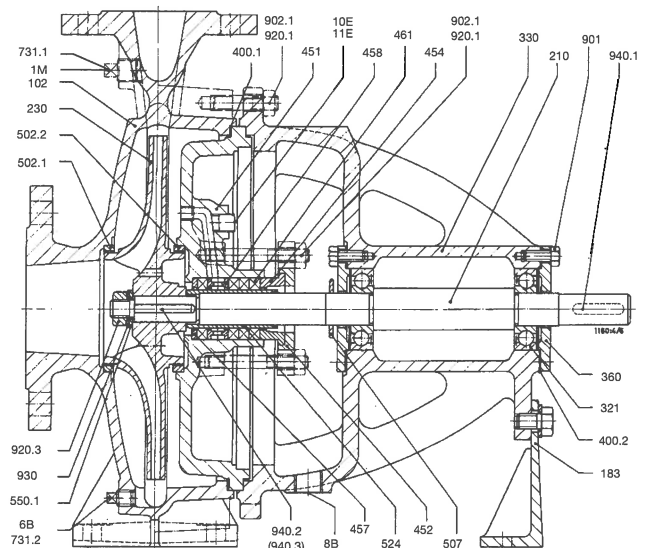
Impeller with back vanes for hydraulic balancing

Pump size	Shaft unit
40-250	25
50-200	25
50-250	25
65-200	25



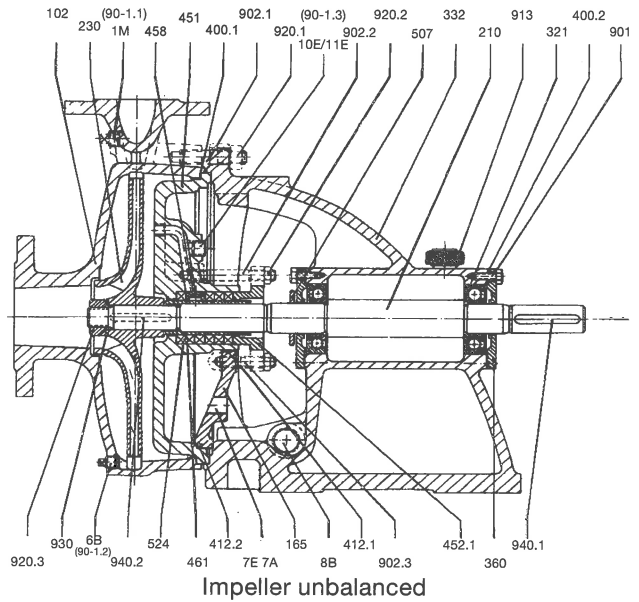
Impeller with balance holes for hydraulic balancing

Pump size	Shaft unit
32-160	20
32-200	20
32-250	25
40-125	20
40-160	20
50-160	20
65-125	20
65-160	25
80-160	25
100-160	35



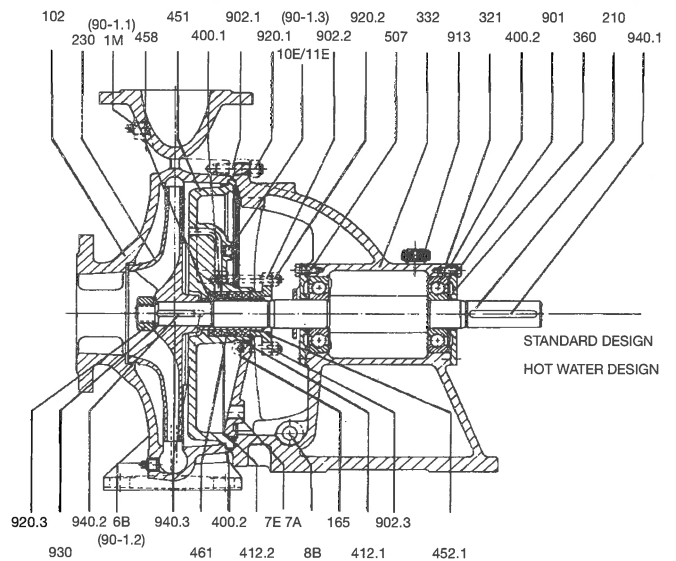
Part No.	Designation
102	Volute casing 1)
165	Cooling cover
210	Shaft
230	Impeller
321	Deep groove ball bearing
332	Bearing pedestal
360	Bearing cover
400.1/2	Flat gasket
412.1/2	O-ring
451	Stuffing box housing
452	Stuffing box gland
457	Neck ring
458	Split lantern ring
461	Stuffing box packing
507	Thrower
524	Shaft protecting sleeve
550	Washer
901	Hex bolt
902	Stud
913	Vent plug
920.3	Hexagonal nut
930	Spring washer
940	Key
1 M	Pressure gauge
6 B	Draining
7 A	Cooling liquid outlet
7 E	Cooling liquid inlet
8 B	Leakage drain
10 E	Sealing liquid inlet
11 E	Flushing liquid inlet

Pump size	Shaft unit
40-315	35
50-315	35
65-315	35



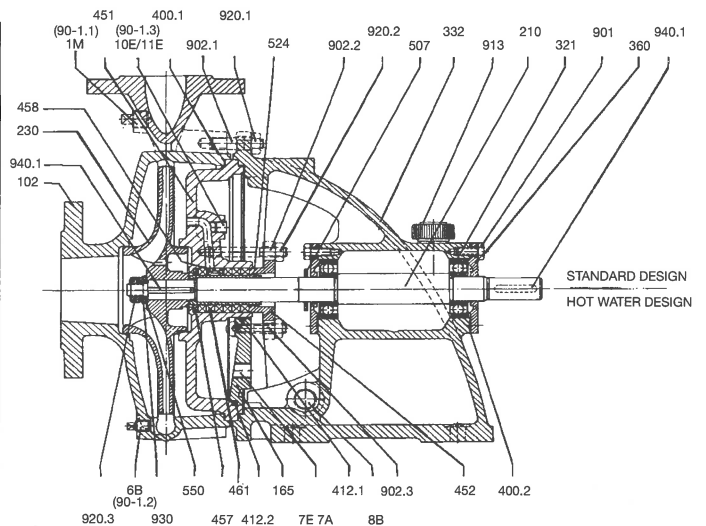
1) Feet are integrally cast to the volute casing of sizes 80-400, 100-400, 125-315, 125-400, 150-200, 150-250, 150-315 and 150-400.

Pump size	Shaft unit
80-315	35
80-400	45
100-400	45
125-315	45
150-315	45



Impeller with back vanes for hydraulic balancing

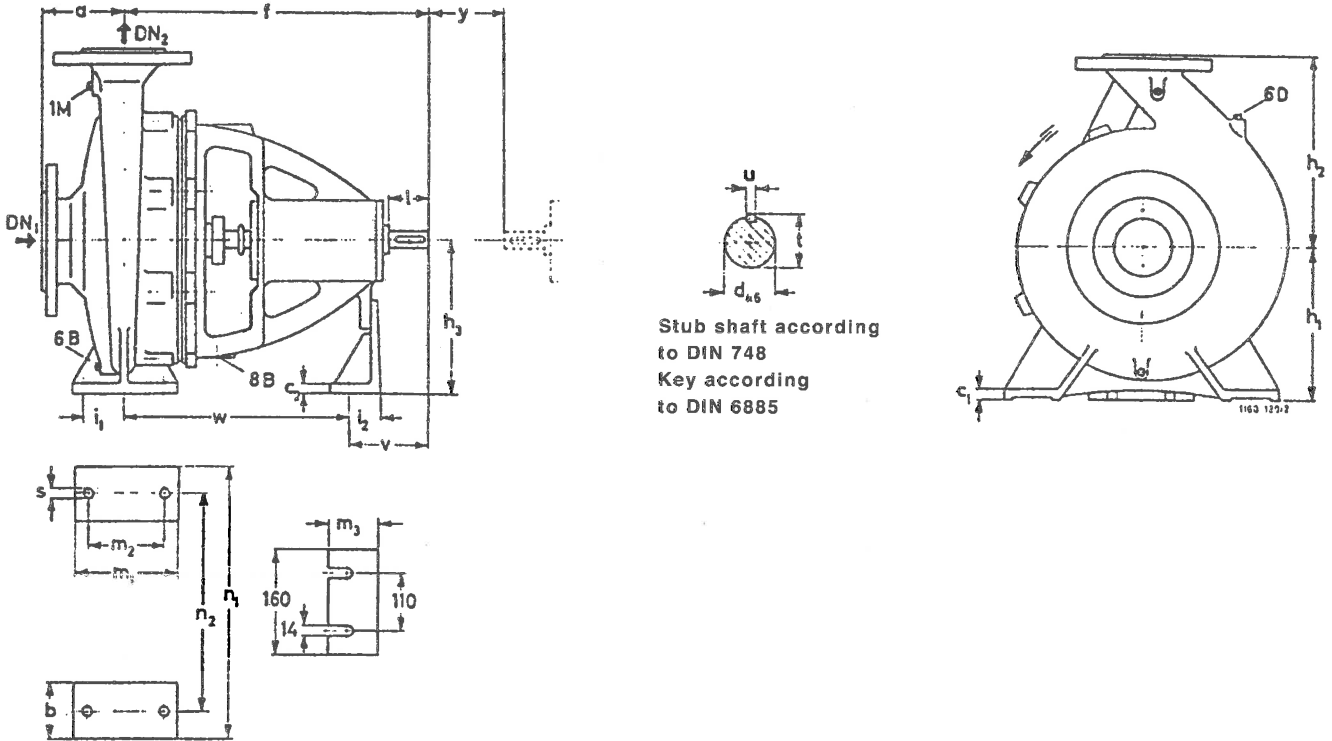
Pump size	Shaft unit
65-250	35
80-200	35
80-250	35
100-200	35
100-250	35
100-315	35
125-200	35
125-250	35
125-400	45
150-200	35
150-250	35
150-400	45



Impeller with balance holes for hydraulic balancing

Dimensions

Pumps with bearing bracket



Stub shaft according to DIN 748
Key according to DIN 6885

Pump Size	Pump Dimensions						Foot Dimensions												Stub Shaft				
	a	f	h ₁	h ₂	h ₃	y ₂	b	m ₁	m ₂	m ₃	s	n ₁	n ₂	i ₁	i ₂	c ₁	c ₂	v	w	dk ₆	l	u	t
32-160	80	360	132	160	132	100	50	100	70	45	14	240	190	35	28	15	8	100	260	24	50	8	26,9
32-200	80	360	160	180	160	100	50	100	70	45	14	240	190	35	28	15	8	100	260	24	50	8	26,9
32-250	100	360	180	225	180	100	65	125	95	45	14	320	250	47,5	30	17	8	95	265	24	50	8	26,9
40-125	80	360	112	140	112	100	50	100	70	45	14	210	160	35	28	15	8	100	260	24	50	8	26,9
40-160	80	360	132	160	132	100	50	100	70	45	14	240	190	35	28	15	8	100	260	24	50	8	26,9
50-160	100	360	160	180	160	100	55	100	70	45	14	265	212	35	28	15	8	100	260	24	50	8	26,9
65-125	100	360	160	180	160	100	65	125	95	45	14	280	212	47,5	28	17	8	100	260	24	50	8	26,9
65-160	100	360	160	200	160	100	65	125	95	45	14	280	212	47,5	28	17	8	95	265	24	50	8	26,9
80-160	125	360	180	225	180	100	65	125	95	47	14	320	250	47,5	30	17	8	95	265	24	50	8	26,9
100-160	125	470	200	280	200	140	80	160	120	47	18	360	280	60	30	18	8	130	340	32	80	10	35,3

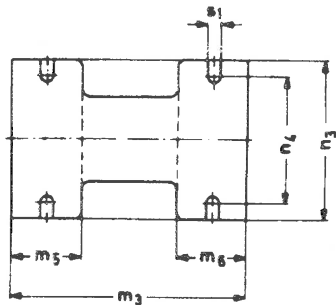
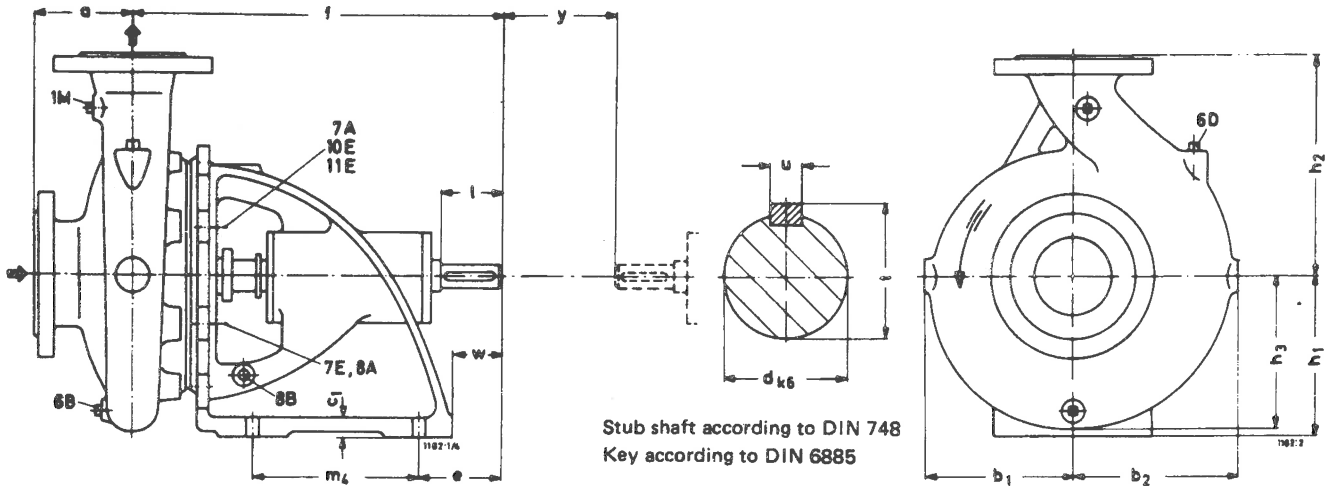
Pump Size	Connections (R = B.S.P.)							Suction Flange (machined acc. to DIN 2533, NP* 16)					Discharge flange (machined acc. to DIN 2533, NP* 16)						
	1 M	6 B	6 D	7 A/7 E	8 B	8 A/10 E ⁵⁾	10E ⁶⁾ /11 E	N.B.	Flange- ø	Bolt-Circle ø	Raised Face ø	Bolts- Number	Bolts- Bolt- ø	N.B.	Flange- ø	Bolt-Circle ø	Raised Face ø	Bolts- Number	Bolts- Bolt- ø
32-160	R3/8"	R1/4"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"												
32-200	R3/8"	R1/4"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"	50	165	125	102	4	18	32	140	100	78	4	18
32-250	R3/8"	R1/4"	R3/8"	R3/8"	R1/2"	R3/8"	R3/8"												
40-125	R3/8"	R1/4"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"	65	185	145	122	4	18	40	150	110	88	4	18
40-160	R3/8"	R1/4"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"												
50-160	R3/8"	R1/4"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"	65	185	145	122	4	18	50	165	125	102	4	18
65-125	R3/8"	R3/8"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"												
65-160	R3/8"	R3/8"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"	80	200	160	138	4	18	65	185	145	122	4	18
80-160	R3/8"	R3/8"	R3/8"	R1/4"	R1/2"	R1/4"	R1/4"	100	220	180	158	8	18	80	200	160	138	4	18
100-160	R1/2"	R1/2"	R1/2"	R1/4"	R3/4"	R1/4"	R1/4"	125	250	210	188	8	18	100	220	180	158	8	18

5) Stuffing box construction VSM/a

6) Stuffing box construction N/c

Dimensions

Pumps with bearing pedestal

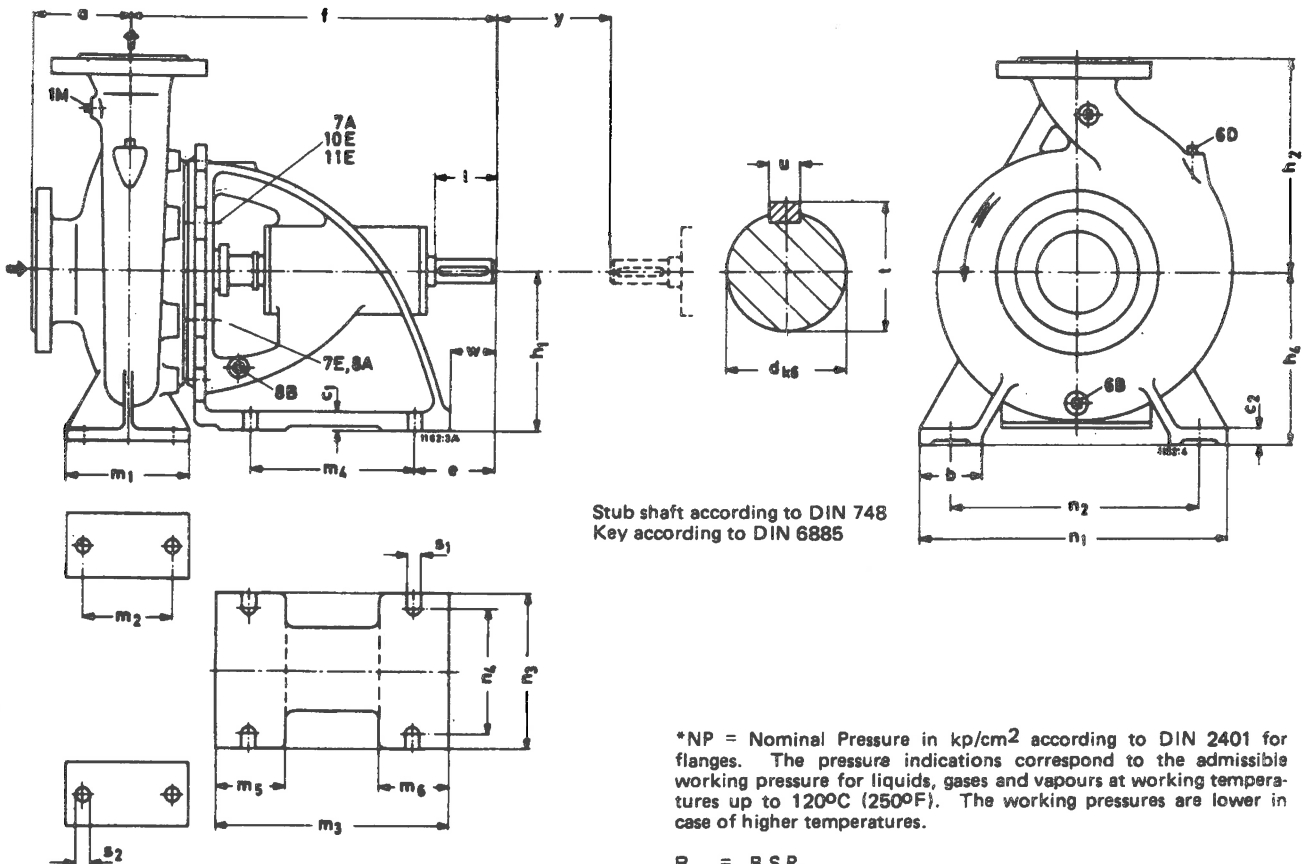


Connections provided for:

- 1 M Pressure gauge
- 6 B Drain
- 6 D Priming and venting
- 7 A Cooling fluid outlet (HW-construction)
- 7 E Cooling fluid inlet (HW-construction)
- 8 A Leakage fluid evacuation (VSM/b construction)
- 8 B Leakage fluid drain
- 10 E Sealing fluid inlet (N/c and VSM/a construction)
- 11 E Flushing fluid inlet (VSH-construction)

Dimensions

Pumps with volute feet



*NP = Nominal Pressure in kp/cm^2 according to DIN 2401 for flanges. The pressure indications correspond to the admissible working pressure for liquids, gases and vapours at working temperatures up to $120^\circ C$ ($250^\circ F$). The working pressures are lower in case of higher temperatures.

R = B.S.P.

NB = Nominal Bore of Nozzle