

TD End-Suction Pumps

One of the broadest ranges of pumps available from any British manufacturer, with discharge sizes from 32 mm to 250 mm.

Widest choice of materials of construction and options to suit many industrial and building services specific requirements. Stainless steel pumps built from stock components.

Competitively priced and manufactured from components held in stock, with reliable prompt deliveries.

Capable of handling clean water, seawater, solvents, chemicals and other liquids with similar properties.

All pumps are manufactured strictly to **ISO 9001** quality control standards



Applications

- Water supply
- Cooling water
- Air conditioning
- Heating circulation
- Industrial liquids and chemicals
- Seawater
- Oils, solvents and process liquids
- Drinking and potable water
- Aqua-culture
- Electrophoretic paint

Operating data

Flow rates up to 300 l/sec
Head up to 160 metres
Temperature -20°C to $+150^{\circ}\text{C}$

Construction

Horizontal single stage end-suction pump with performance and key dimensions in accordance with DIN 24255 standard. The back-pull-out construction allows the pump to be dismantled without disturbing the suction and discharge pipework. Impellers are fully shrouded closed design, with double curvature vanes for optimum efficiency and good suction performance. Vortex design semi-open impellers are also available on some sizes.

Electric motors

Apex TD pumps are supplied bare shaft or with a TEFC IP55 electric motor. Alternative motors including Eexd flameproof motors are readily available.

Materials

The pump pressure containing parts are cast in a variety of materials, selected to suit the working pressure of the pump, and to be compatible with the liquid being handled. Available materials are:

- Cast iron
- Ductile iron
- Cast 316 Stainless steel
- Cast bronze
- Cast steel
- Specialist steels eg Duplex, Hastalloy

Flanges

Standard flanges are drilled to the British Standard BS4504, with pressure rating to suit the specific application:

BS4504 PN16	16 bar working pressure
BS4504 PN25	25 bar working pressure
BS4504 PN40	40 bar working pressure

ANSI standard flanges drilled to 150 lb or 300 lb ratings and all other standards are available on request.

Seals

A Packed gland seal or single mechanical seal is supplied as standard. Double mechanical seals and cartridge seals can be fitted to suit the application and to meet customers' preferences.

New Features of the TD pump range

Quality Control....

Every pump produced by Apex is manufactured strictly to ISO 9001 quality control procedures, and complies with the most rigorous documentary requirements of demanding customers.

More sizes....

New sizes are continually being added to the range, and with the recent introduction of the 200 mm and 250 mm discharge size pumps, and with motor powers up to 160 kW, the TD pump range is one of the most comprehensive ranges of close coupled pumps available from any pump manufacturer today. Now also available in In-Line Vertical configuration.

Larger stock....

Our policy of stocking large quantities of finished machined component parts, ready for immediate assembly, enables us to provide a fast delivery of complete pumps and spare parts, and has earned the company its good reputation for reliable delivery.

Specialist materials....

Apex carry large stocks of cast stainless steel pump components, and operate fast-track manufacture of specialist materials such as Duplex stainless steel and Hastalloy, backed by full materials certification and traceability.

Higher Pressures....

Pumps required to operate in tall buildings, and in certain industrial processes, need to operate at high working pressures. For these applications, Apex Pumps offer the TD range of close coupled pumps in cast steel, with flanges to BS4504 PN40.

Wide Choice of options....

Virtually any mechanical seal, cartridge seal or packed gland arrangement, with flush, quench or independent circulation system is possible with the Apex TD pump range. Modular construction enables the pump to be engineered using standard stock components wherever possible, and our in-house CNC machining facilities can quickly produce any special parts against tight deadlines.

Competitive Prices....

As a specialist manufacturer of centrifugal pumps, all Apex products are designed to be highly competitive without compromise to quality and good engineering practice.

....Benefit

The in-house engineering capability, attention to quality control and testing facilities make Apex the preferred choice for many high specification projects.

....Benefit

Greater choice results in a better hydraulic selection, optimised operating efficiency and lower power consumption. Now with 42 pump sizes to the Apex TD range, a cost-effective and properly engineered solution can be provided for most industrial pumping applications.

....Benefit

Quick delivery is appreciated by users and pump distributors alike, and makes Apex Pumps the first choice for replacement of existing pumps of other makes.

....Benefit

Industrial applications are increasingly specifying stainless steel pump materials in recognition of the environmental and economic benefits. Apex Pump's investment in stainless steel stock parts, provides users with a standard pump to the highest specifications.

....Benefit

The TD pump in cast steel provides a cost effective solution to what would otherwise be a specialist pump application. Many component parts will be shared with other TD pumps, providing spares interchangeability throughout the site.

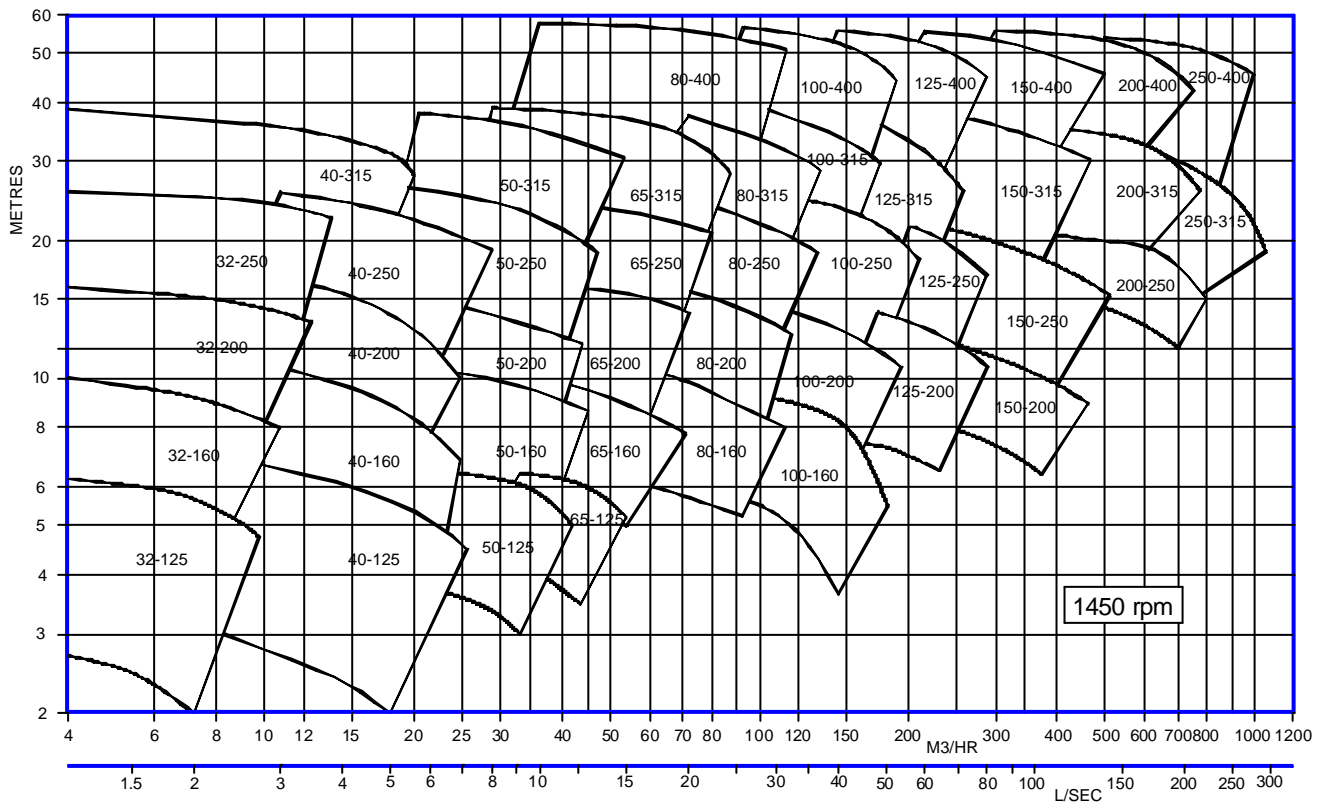
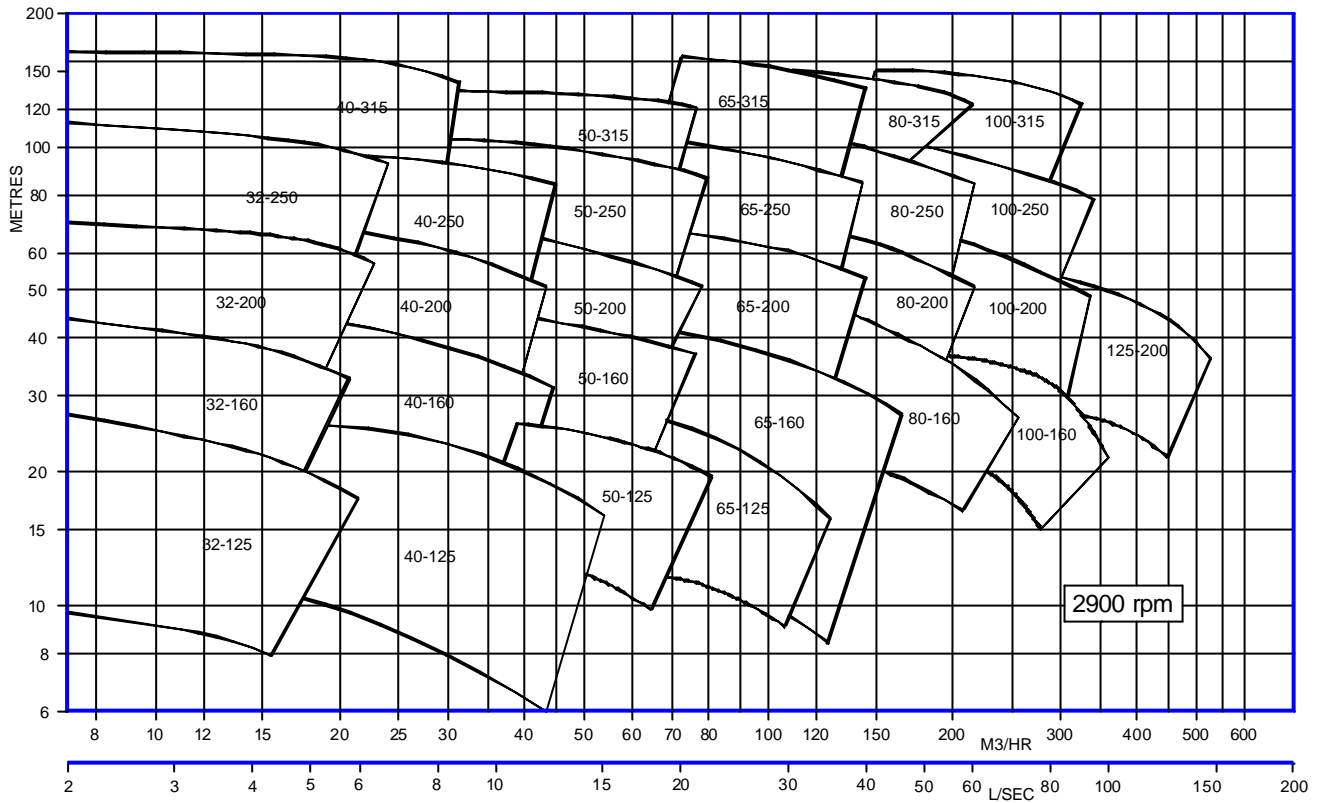
....Benefit

Pump users benefit by the broad engineering experience at Apex, and our familiarity with difficult applications and demanding duties.

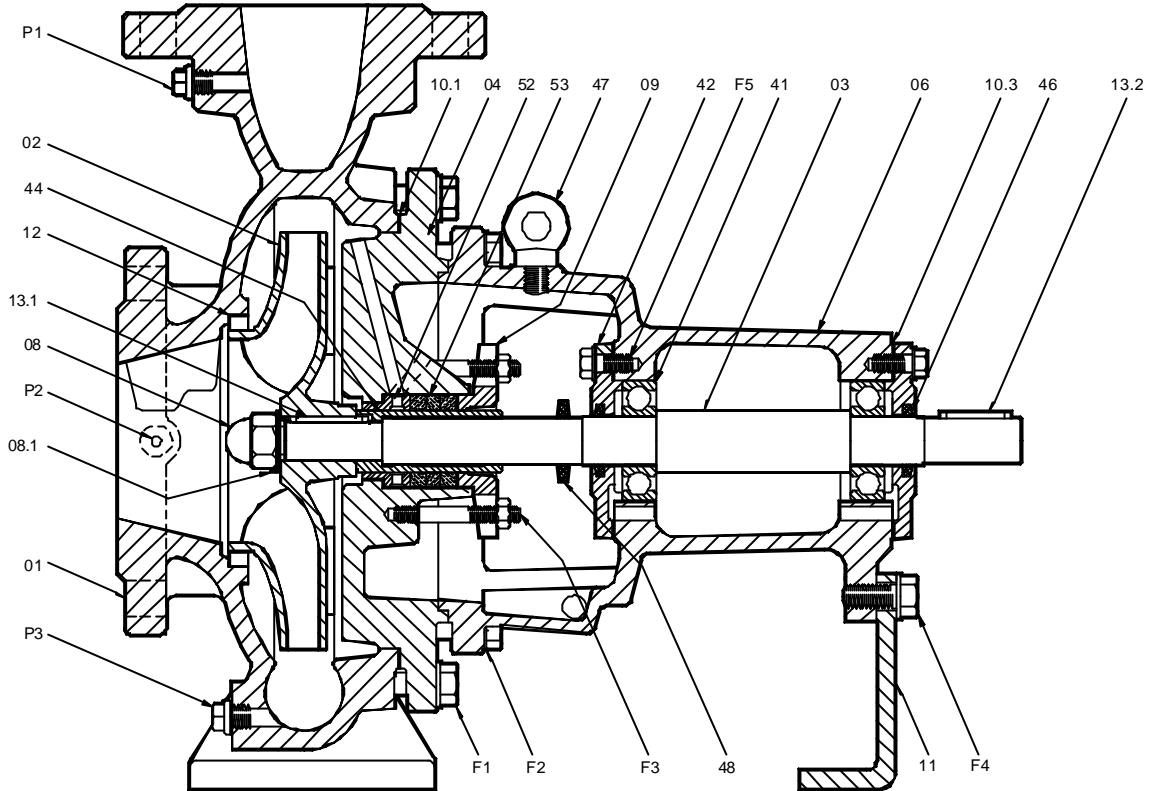
....Benefit

Apex fully supports its pump distributor network and customers by providing cost effective solutions to pumping problems.

TD range charts 50 hz

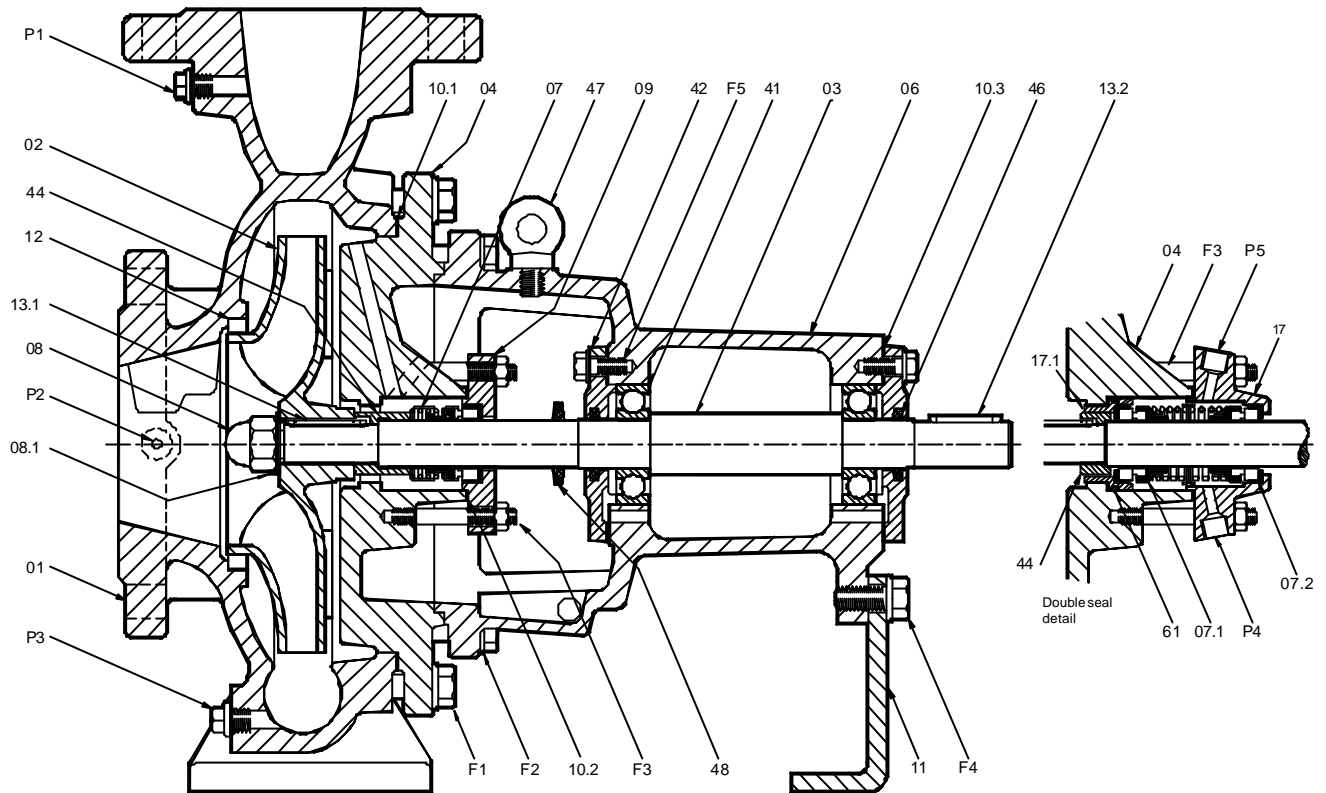


Typical cross section with packed gland



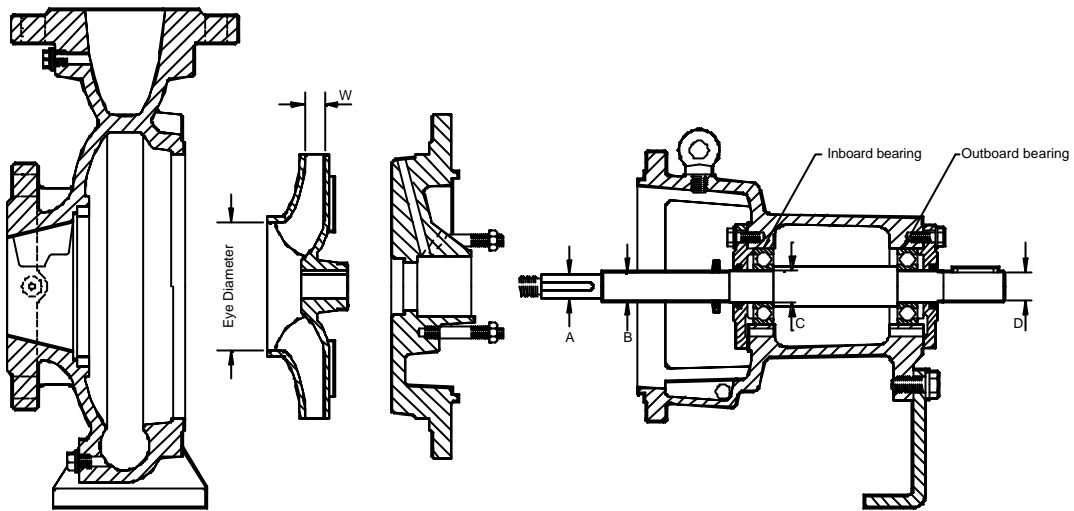
Ref	Item	Standard	Alternative materials
01	Volute casing	Cast iron	Ductile iron, bronze, 316 stainless steel
02	Impeller	Cast iron	Bronze, 316 stainless steel
03	Shaft	420 SS	316 stainless steel, Duplex stainless steel
04	Backcover	Cast iron	Ductile iron, bronze, 316 stainless steel
06	Bearing housing	Cast iron	
08	Impeller nut	Steel	Bronze, 316 stainless steel
08.1	Impeller nut washer	Steel	Bronze, 316 stainless steel
09	Gland	Cast iron	316 stainless steel
10.1	Casing gasket	Gasket paper	Specialist gasket materials
10.3	End cover gasket	Gasket paper	
11	Support foot	Steel	
12	Wear ring	Cast iron	Cast iron, bronze, 316 stainless steel
13.1	Impeller key	Key steel	316 stainless steel
13.2	Coupling key	Key steel	
41	Ball bearing	Steel	
42	Bearing end cover	Cast iron	
44	Shaft sleeve	420 SS	316 stainless steel, Nitride hardened stainless steel
46	Grease seal	Felt	Nitrile rubber lip seal
47	Lifting eye	Steel	
48	Flinger	Nitrile rubber	
52	Lantern ring	LG4 Bronze	Cast iron, 316 stainless steel
53	Gland packing	Cotton/graphite	PTFE, specialist packing materials
F1	Casing bolts	Steel	316 stainless steel
F2	Housing bolts	Steel	316 stainless steel
F3	Gland studs	Steel	316 stainless steel
F4	Support foot bolt	Steel	
F5	End cover bolts	Steel	
P1	Casing vent plug	Steel	316 stainless steel
P2	Suction gauge plug	Steel	316 stainless steel
P3	Casing drain plug	Steel	316 stainless steel

Typical cross section with mechanical seal



Ref	Item	Standard	Alternative materials
01	Volute casing	Cast iron	Ductile iron, bronze, 316 stainless steel
02	Impeller	Cast iron	Bronze, 316 stainless steel
03	Shaft	420 SS	316 stainless steel, Duplex stainless steel
04	Backcover	Cast iron	Ductile iron, bronze, 316 stainless steel
06	Bearing housing	Cast iron	
07	Mechanical seal	As specified	Any commercially available specification
08	Impeller nut	Steel	Bronze, 316 stainless steel
08.1	Impeller nut washer	Steel	Bronze, 316 stainless steel
09	Glandplate	Cast iron	316 stainless steel
10.1	Casing gasket	Gasket paper	Specialist gasket materials
10.2	Glandplate gasket	Gasket paper	Specialist gasket materials
10.3	End cover gasket	Gasket paper	
11	Support foot	Steel	Key steel, 316 stainless steel
12	Wear ring	Cast iron	Bronze, 316 stainless steel
13.1	Impeller key	Key steel	Key steel, 316 stainless steel
13.2	Coupling key	Key steel	
41	Ball bearing	Steel	
42	Bearing end cover	Cast iron	
44	Spacer sleeve	420 SS	316 stainless steel
46	Grease seal	Felt	Nitrile rubber lip seal
47	Lifting eye	Steel	
48	Flinger	Nitrile rubber	
F1	Casing bolts	Steel	316 stainless steel
F2	Housing bolts	Steel	316 stainless steel
F3	Glandplate studs	Steel	316 stainless steel
F4	Support foot bolt	Steel	
F5	End cover bolts	Steel	
P1	Casing vent plug	Steel	316 stainless steel
P2	Suction gauge plug	Steel	316 stainless steel
P3	Casing drain plug	Steel	316 stainless steel
07.1	Primary Mechanical seal	As specified	Any commercially available specification
07.2	Secondary mechanical seal	As specified	Any commercially available specification
17	Double seal glandplate	316 stainless steel	
17.1	Primary seal carrier	316 stainless steel	
61	O ring	Viton	
P4	Seal flush inlet connection		
P5	Seal flush outlet connection		

Impeller and bearing housing data



Pump size	Shaft group	Shaft diameter at:				Bearing type		Impeller data				
		Impeller A	Seal B	Bearings C	Coupling D	Inboard	Outboard	No of Vanes	Eye dia mm	Width W	Max solids mm	M of I Kgm ²
32-125	1	20	24	25	24	6305	6305	6	62	6.5	3.3	0.003
32-160	1	20	24	25	24	6305	6305	6	63	7.0	3.5	0.005
32-200	1	20	24	25	24	6305	6305	4	68	6.0	3.0	0.012
32-250	1	20	24	25	24	6305	6305	6	71	6.0	3.0	0.034
40-125	1	20	24	25	24	6305	6305	6	72	10.5	5.3	0.003
40-160	1	20	24	25	24	6305	6305	6	68	6.0	3.0	0.005
40-200	1	20	24	25	24	6305	6305	6	67	8.0	4.0	0.015
40-250	1	20	24	25	24	6305	6305	6	84	5.5	2.8	0.038
40-315	2	28	32	35	32	6307	6307	6	77	7.0	3.5	0.087
50-125	1	20	24	25	24	6305	6305	6	89	16.5	8.3	0.004
50-160	1	20	24	25	24	6305	6305	6	85	13.5	6.8	0.006
50-200	1	20	24	25	24	6305	6305	6	87	10.0	5.0	0.015
50-250	1	20	24	25	24	6305	6305	7	95	8.0	4.0	0.040
50-315	2	28	32	35	32	6307	6307	6	101	8.0	4.0	0.091
65-125	1	20	24	25	24	6305	6305	7	101	23.0	11.5	0.005
65-160	1	20	24	25	24	6305	6305	6	99	18.5	9.3	0.008
65-200	1	20	24	25	24	6305	6305	6	107	16.0	8.0	0.015
65-250	2	28	32	35	32	6307	6307	6	108	13.5	6.8	0.042
65-315	2	28	32	35	32	6307	6307	7	114	11.5	5.8	0.102
80-160	1	20	24	25	24	6305	6305	7	117	25.0	12.5	0.010
80-200	2	28	32	35	32	6307	6307	7	121	21.5	10.8	0.019
80-250	2	28	32	35	32	6307	6307	7	120	15.0	7.5	0.040
80-315	2	28	32	35	32	6307	6307	7	120	13.0	6.5	0.089
80-400	3	38	44	45	42	6309	6309	6	128	10.0	5.0	0.325
100-160	2	28	32	35	32	6307	6307	7	148	32.0	16.0	0.020
100-200	2	28	32	35	32	6307	6307	7	142	26.5	13.3	0.024
100-250	2	28	32	35	32	6307	6307	7	143	30.5	15.3	0.055
100-315	2	28	32	35	32	6307	6307	7	144	19.5	9.8	0.128
100-400	3	38	44	45	42	6309	6309	7	148	14.5	7.3	0.295
125-200	2	28	32	35	32	6307	6307	7	169	36.0	18.0	0.055
125-250	2	28	32	35	32	6307	6307	6	168	31.5	15.8	0.063
125-315	3	38	44	45	42	6309	6309	6	167	24.5	12.3	0.136
125-400	3	38	44	45	42	6309	6309	6	167	22.0	11.0	0.310
150-200	2a	28	32	35	32	6307	6307	6	169	56.0	28.0	0.090
150-250	3	38	44	45	42	6309	6309	7	185	40.0	20.0	0.100
150-315	3	38	44	45	42	6309	6309	6	184	32.0	16.0	0.150
150-400	3	38	44	45	42	6309	6309	7	188	26.5	13.3	0.330
200-250	3	38	44	45	42	6309	6309	6	230	62	31	0.202
200-315	4	45	53	55	48	6311	6311	6	232.5	50	25	0.236
200-400	4	45	53	55	48	6311	6311	7	222	37.5	19	0.654
250-315	4	45	53	55	48	6311	6311	6	242	72	36	0.939
250-400	4	45	53	55	48	6311	6311	6	235	52	26	0.725

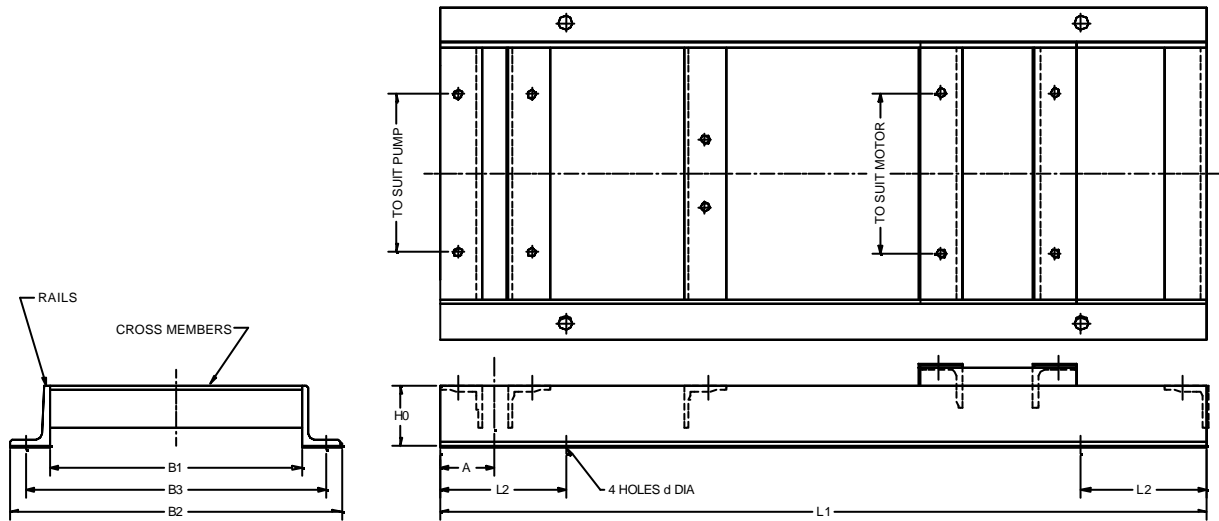
Fabricated bedplate selection and size

Standard bedplates are fabricated from rolled steel sections, and are intended to be grouted into position on a suitable concrete plinth. The tables below indicate which bedplate size is required for a particular pump and motor

combination, and give the general dimensions. Alternative skid-type bedplates and drain-rim bedplates are also available, either following the general dimensions below, or fabricated to customer's specification.

Pump model	D80/90	D100/12	D132	D160	D180M	D180L	D200	D225	D250S
32-125	2a								
32-160	2a	3a							
32-200	2a	3a	4a						
32-250	4b	4b	4b	5b	5b	5b			
40-125	2a	3a							
40-160	2a	3a	4a						
40-200	3a	3a	4a	5a	5a	5a			
40-250	4b	4b	4b	5b	5b	5b			
40-315		5b	5b	6b	6b	6b	7b	7b	
50-125	2a	3a	3a						
50-160	3a	3a	4a	5a	5a	5a			
50-200	3a	3a	4a	5a	5a	5a			
50-250		4b	4b	5b	5b	5b			
50-315		5b	5b	6b	6b	6b	7b	7b	8b
65-125	3b	3b	4b	5b	5b	5b			
65-160	3b	3b	4b	5b	5b	5b			
65-200	4b	4b	4b	5b	5b	5b	6b		
65-250		6c	6c	6c	6c	6c	6c	7c	8c
65-315		6c	6c	6c	6c	6c	6c	7c	8c
80-160	4b	4b	4b	5b	5b	5b	6b		
80-200	5b	5b	5b	6b	6b	6b	7b	7b	

Pump model	D100/12	D132	D160	D180M	D180L	D200	D225	D250S	D250M	D280S/M	D315S/M
80-250	6c	6c	6c	6c	6c	7c	7c	8c	9c		
80-315		6c	6c	6c	6c	7c	7c	8c	9c	9c	
80-400		7c	7c	7c	7c	7c	7c				
100-160	5c	5c	6c	6c	6c	7c	7c				
100-200	5c	5c	6c	6c	6c	7c	7c	8c	9c		
100-250		6c	6c	6c	6c	7c	7c	8c			
100-315		6c	6c	6c	7c	7c	7c	8c	9c	9c	11e
100-400			8d	8d	8d	8d	8d				
125-200		6c	6c	6c	6c	7c	7c	8c	9c	9c	
125-250		6c	6c	6c	7c						
125-315			8d	8d	8d	8d	8d				
125-400			8d	8d	8d	8d	8d	8d			
150-200			7d	7d	7d	7d					
150-250			7d	7d	7d	8d	8d				
150-315			9d	9d	9d	9d	9d	9d			
150-400						9d	9d	9d	9d	9d	
200-250							9d	9d	9d		
200-315								10e	10e	10e	
200-400								10e	10e	10e	11e
250-315								10e	10e	10e	
250-400									10e	11e	



Ref	H0	A	L1	L2	B1	B2	B3	d	Rails	Cross members	kg
2a	75	60	800	130	260	360	320	18	75x50x8 angle	50x50x6 angle	25
3a	75	60	900	150	290	390	350	18	75x50x8 angle	50x50x6 angle	27
3b	75	75	900	150	290	390	350	18	75x50x8 angle	70x70x8 angle	36
4a	75	60	1000	170	350	450	400	22	75x50x8 angle	50x50x6 angle	32
4b	75	75	1000	170	350	450	400	22	75x50x8 angle	70x70x8 angle	42
5a	100	60	1120	190	360	490	440	22	100x65x10 angle	50x50x6 angle	49
5b	100	75	1120	190	360	490	440	22	100x65x10 angle	70x70x8 angle	60
6b	100	75	1250	205	410	540	490	22	100x65x10 angle	70x70x8 angle	67
6c	100	90	1250	205	410	540	490	22	100x65x10 angle	80x80x10 angle	78
7b	100	75	1400	230	480	610	550	25	100x65x10 angle	70x70x8 angle	76
7c	100	90	1400	230	480	610	550	25	100x65x10 angle	80x80x10 angle	89
7d	100	110	1400	230	480	610	550	25	100x65x10 angle	100x100x10 angle	101
8c	152	90	1600	270	508	660	600	25	152x76 channel	80x80x10 angle	122
8d	152	110	1600	270	508	660	600	25	152x76 channel	100x100x10 angle	134
9c	152	90	1800	300	578	730	670	25	152x76 channel	80x80x10 angle	137
9d	152	110	1800	300	578	730	670	25	152x76 channel	100x100x10 angle	152
10e	152	140	1900	315	698	850	780	28	152x76 channel	100x100x10 angle	156
11e	203	140	2000	330	772	950	870	28	203x89 channel	100x100x10 angle	207

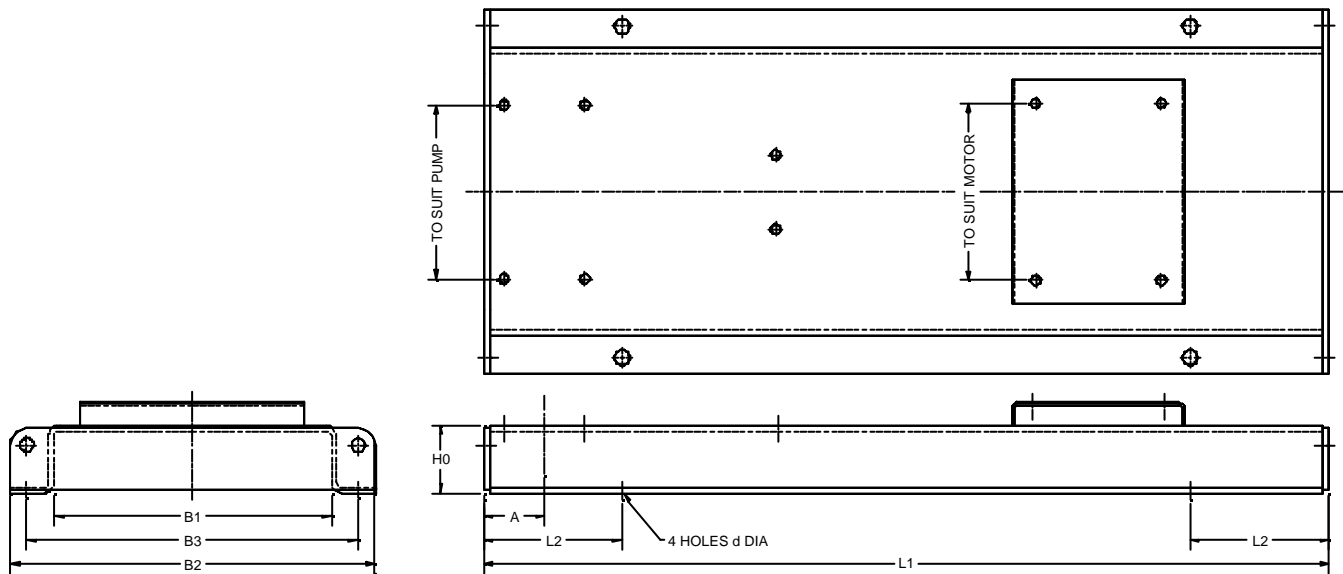
Folded steel bedplate selection and size

Folded steel bedplates are fabricated from mild steel sheet, with welded ends which incorporate lifting eyes. Folded steel bedplates may be secured to concrete foundations without the need for grouting.

Folded steel bedplates are only available for motors up to framesize D180 (22 kW motor output). For larger pump and motor sizes, use the fabricated steel style of bedplate on the previous page.

Pump model	D80 D90	D100 D112	D132	D160	D180M	D180L
32-125	2a					
32-160	2a	3a				
32-200	2a	3a	4a			
32-250	4b	4b	4b	5b	5b	5b
40-125	2a	3a				
40-160	2a	3a	4a			
40-200	3a	3a	4a	5a	5a	5a
40-250	4b	4b	4b	5b	5b	5b
40-315		5b	5b	6b	6b	6b
50-125	2a	3a	3a			
50-160	3a	3a	4a	5a	5a	5a
50-200	3a	3a	4a	5a	5a	5a
50-250		4b	4b	5b	5b	5b
50-315		5b	5b	6b	6b	6b

Pump model	D80 D90	D100 D112	D132	D160	D180M	D180L
65-125	3b	3b	4b	5b	5b	5b
65-160	3b	3b	4b	5b	5b	5b
65-200	4b	4b	4b	5b	5b	5b
65-250		6c	6c	6c	6c	6c
65-315		6c	6c	6c	6c	6c
80-160	4b	4b	4b	5b	5b	5b
80-200	5b	5b	5b	6b	6b	6b
80-250		6c	6c	6c	6c	6c
80-315			6c	6c	6c	6c
100-160		5c	5c	6c	6c	6c
100-200		5c	5c	6c	6c	6c
100-250			6c	6c	6c	6c
100-315			6c	6c	6c	6c



Bedplate ref	H0	A	L1	L2	B1	B2	B3	d	Bedplate steel	End sections	Mass kg
2a	75	60	800	130	260	360	320	18	6 mm steel plate	10 mm steel plate	23
3a	75	60	900	150	290	390	350	18	6 mm steel plate	10 mm steel plate	27
3b	75	75	900	150	290	390	350	18	6 mm steel plate	10 mm steel plate	27
4a	75	60	1000	170	350	450	400	22	6 mm steel plate	10 mm steel plate	33
4b	75	75	1000	170	350	450	400	22	6 mm steel plate	10 mm steel plate	33
5a	100	60	1120	190	360	490	440	22	6 mm steel plate	10 mm steel plate	44
5b	100	75	1120	190	360	490	440	22	6 mm steel plate	10 mm steel plate	44
6b	100	75	1250	205	410	540	490	22	6 mm steel plate	10 mm steel plate	52
6c	100	90	1250	205	410	540	490	22	6 mm steel plate	10 mm steel plate	52