

PE PUMPS UK LTD

## END SUCTION PUMP BROCHURE LONG & CLOSE COUPLED



## TD End-Suction Pumps



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

Widest choice of materials of construction and operations 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 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°C

### Construction

Horizontal single stage end-suction pump with performance and key dimensions in accordance with DIN 24255 standards. The back-pull-out construction allows the pump to be dismantled without disturbing the section and discharge pipe work. 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

APE 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 completed with the liquid being handled. Available materials are:

- Cast Iron
- Ductile Iron
- Cast 316 Stainless Steel
- Cast Bronze
- Cast Steel
- Specialist steels e.g., 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 APE is manufactured strictly to ISO 9001 quality control procedures, and complies with the most rigorous documentary requirements of demanding customers.

#### ...Benefit

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

### More sizes . . .

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

#### ...Benefit

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

### 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.

#### ...Benefit

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

### Specialist Materials

APE 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.

#### ...Benefit

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

### Higher Pressures . . .

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

#### ...Benefit

*The TD pumps in cast steel provide 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 interchange ability throughout the site.*

### 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 APE 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.

#### ...Benefit

*Pumps users benefit by the broad engineering experience at APE, and our familiarity with difficult applications and demanding duties.*

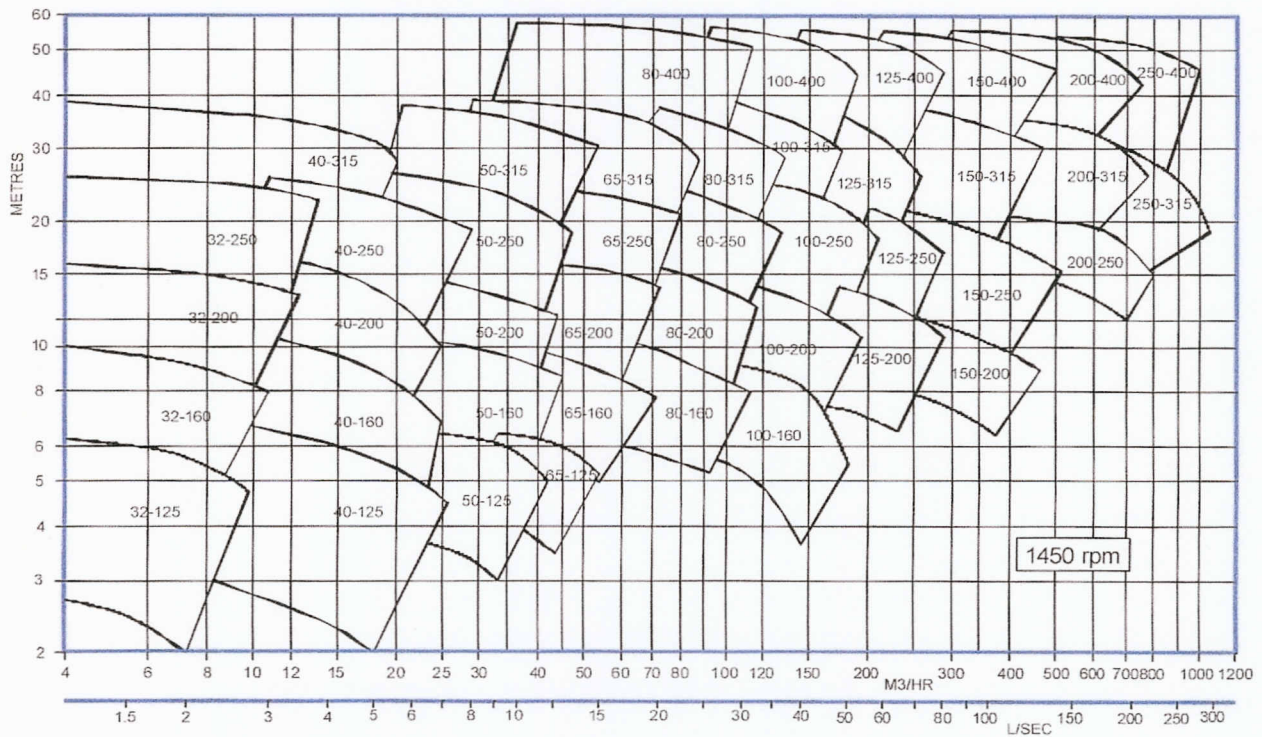
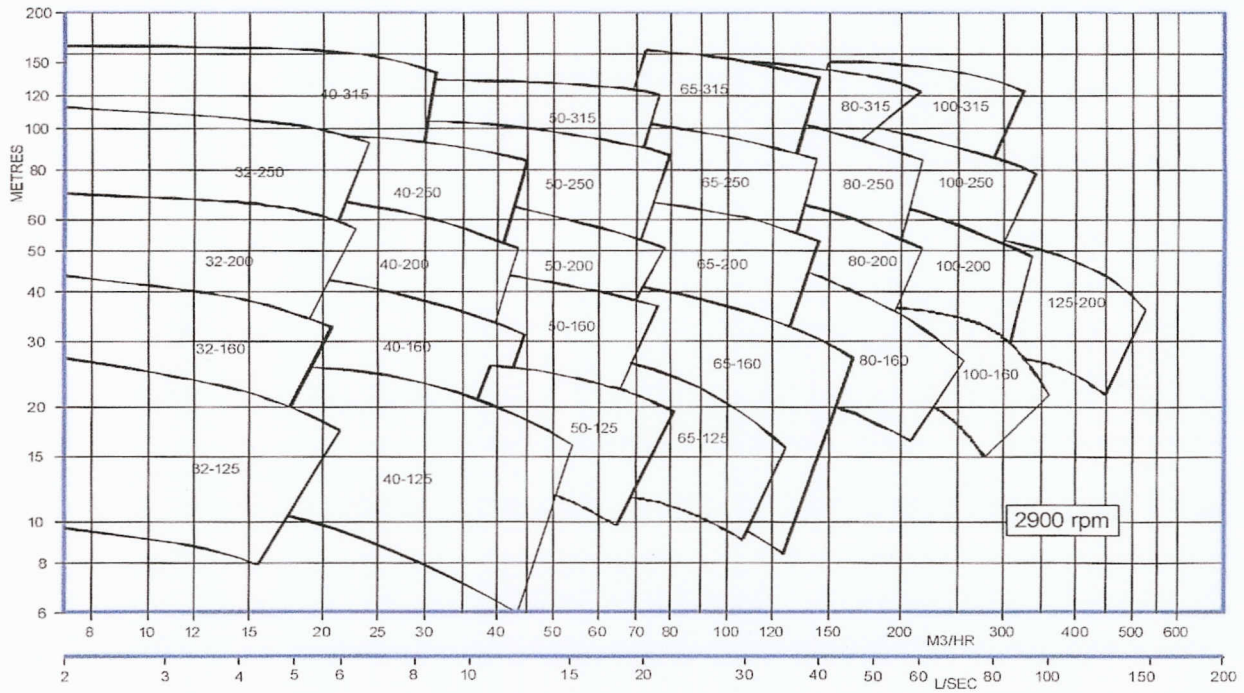
### Competitive prices . . .

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

#### ...Benefit

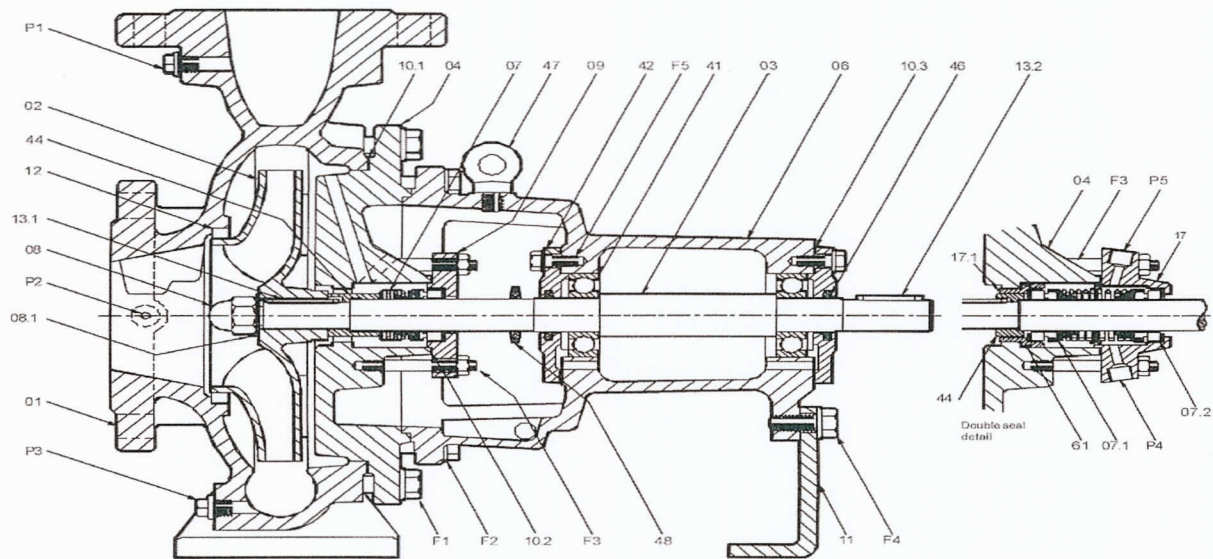
*APE fully supports its pump distributor network and customers by providing effective solutions to pumping problems.*

## TD Range Charts 50 hz



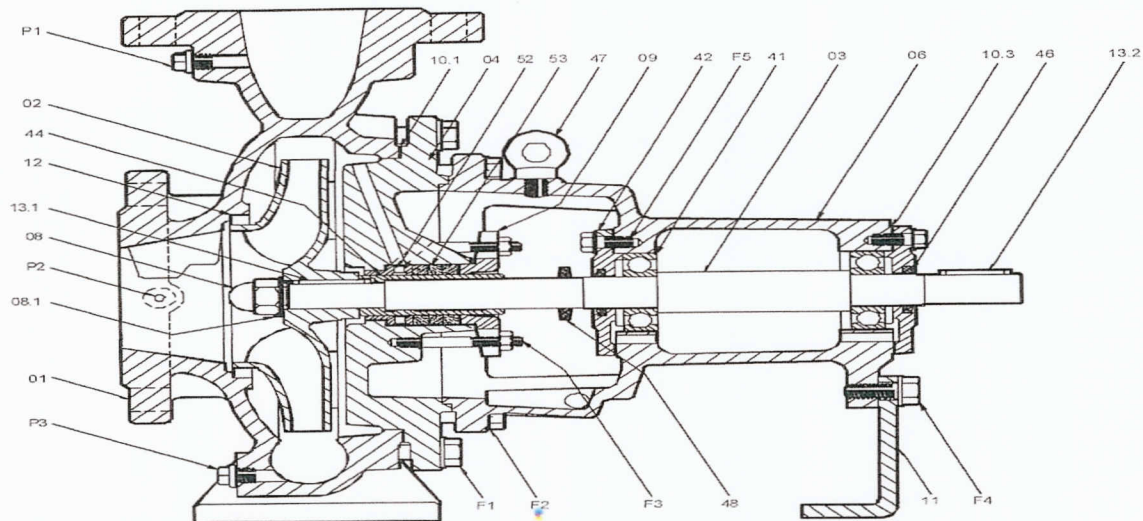


## Typical cross section with mechanical seal



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		

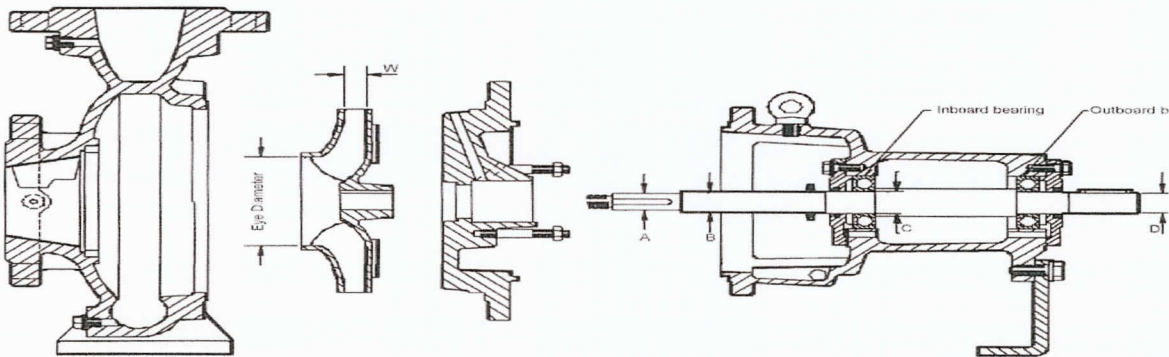
## Typical cross section with packed gland



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

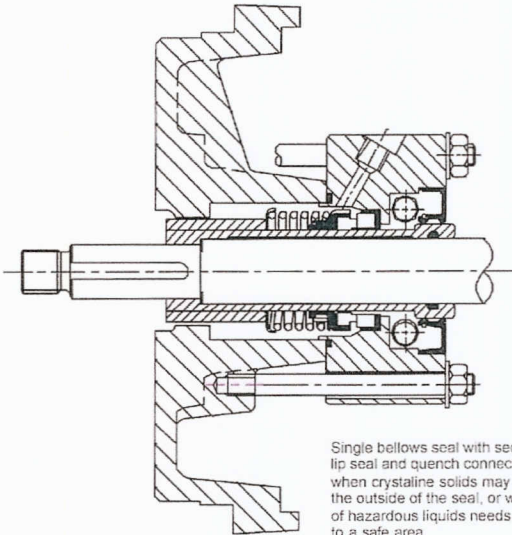


## Impeller and bearing housing data

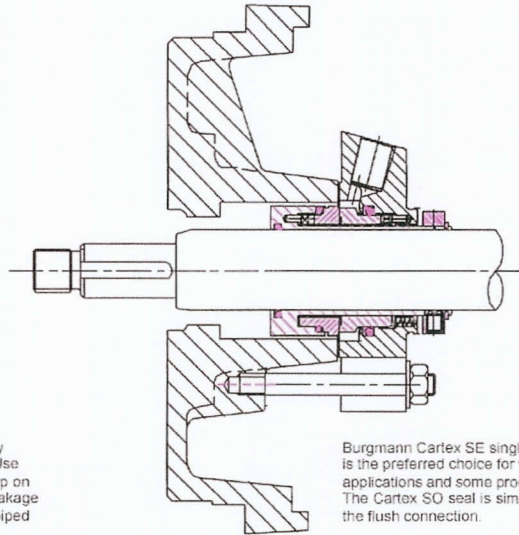


Pump size	Shaft group	Shaft diameter at:				Bearing type		Impeller data				
		Impeller A	Seal B	Bearings C	Coupling D	Inboard	Outboard	No of Vanes	Eye dia mm	Width W	Max solids mm	M of I Kg/m²
32-125	1	20	24	25	24	6305	6305	6	62	6.5	3.3	0.003
32-160	1	20	24	25	24	6305	6305	6	63	7.0	3.5	0.005
32-200	1	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

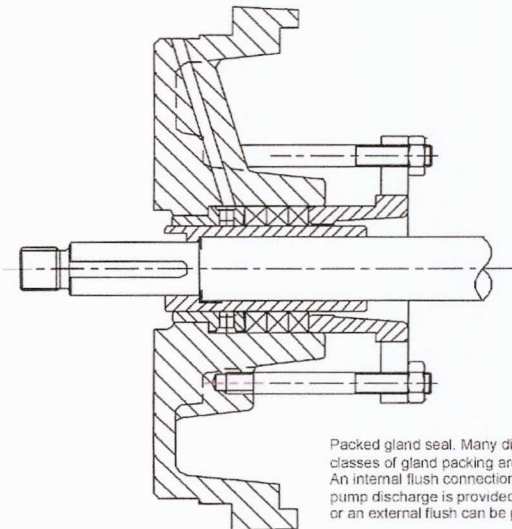
## Examples of alternative sealing arrangements



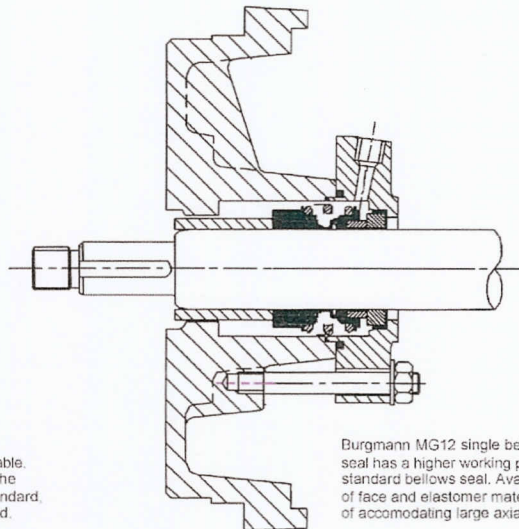
Single bellows seal with secondary lip seal and quench connections. Use when crystalline solids may build up on the outside of the seal, or when leakage of hazardous liquids needs to be piped to a safe area.



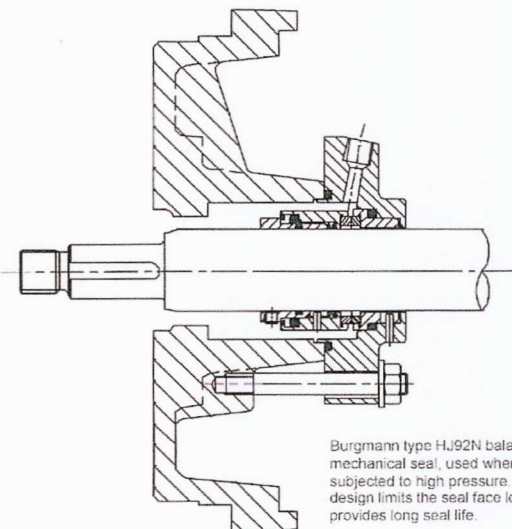
Burgmann Carlex SE single cartridge seal is the preferred choice for water authority applications and some process installations. The Carlex SO seal is similar, but without the flush connection.



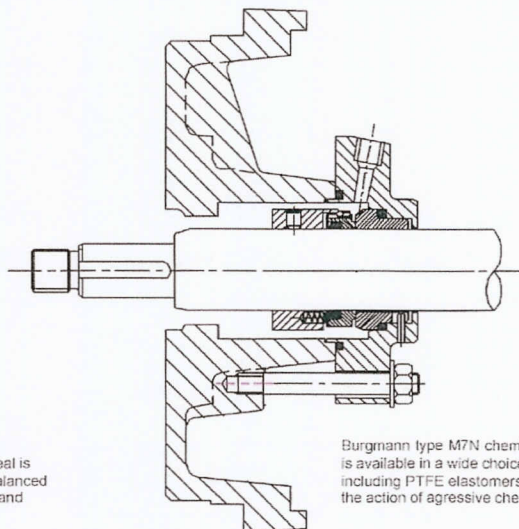
Packed gland seal. Many different classes of gland packing are available. An internal flush connection from the pump discharge is provided as standard, or an external flush can be provided.



Burgmann MG12 single bellows mechanical seal has a higher working pressure than the standard bellows seal. Available in a range of face and elastomer materials, and capable of accommodating large axial movement.



Burgmann type HJ92N balanced mechanical seal, used when the seal is subjected to high pressure. The balanced design limits the seal face loading and provides long seal life.



Burgmann type M7N chemical seal is available in a wide choice of materials including PTFE elastomers, to withstand the action of aggressive chemicals.



## TC Close coupled Pumps



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

Widest choice of materials of construction and operations 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 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°C

### Construction

Close coupled horizontal single stage end-suction pump with performance and key dimensions in accordance with DIN 24255 standards. The back-pull-out construction allows the pump to be dismantled without disturbing the section and discharge pipe work. 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

APE TC pumps are supplied with a TEFC IP55 electric motor. Alternative motors including Exd 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 completed with the liquid being handled. Available materials are:

- Cast Iron
- Ductile Iron
- Cast 316 Stainless Steel
- Cast Bronze
- Cast Steel
- Specialist steels e.g., Duplex, Hastalloy

### Flanges

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

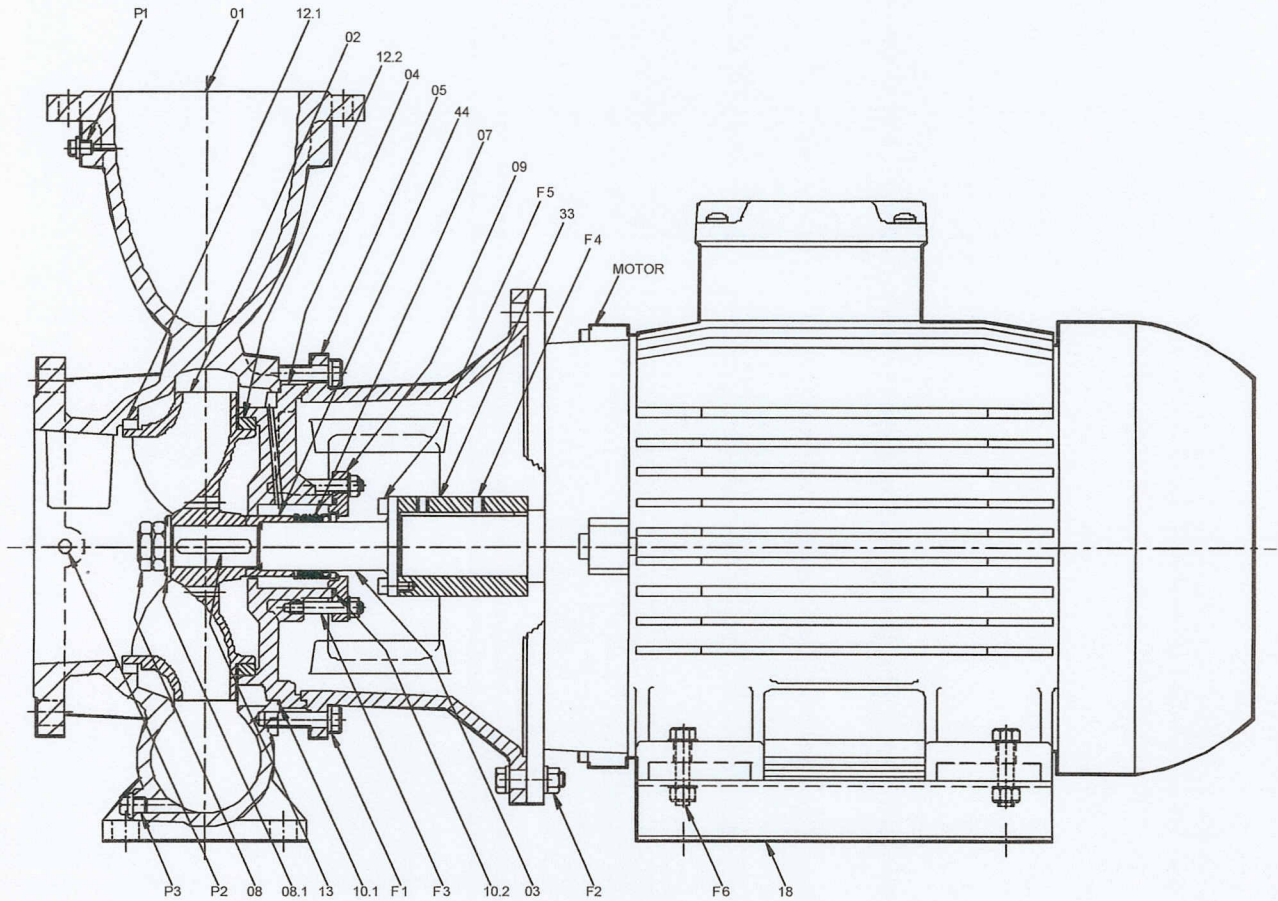
BS4504 PN16	16 bar working pressure
BS4504 PN25	25 bar working pressure
BS4504 PN40	40 bar working pressure

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

### Seals

The standard arrangement is a single mechanical seal. Double mechanical seals and cartridge seals can be fitted to suit the application and to meet customers' preferences.

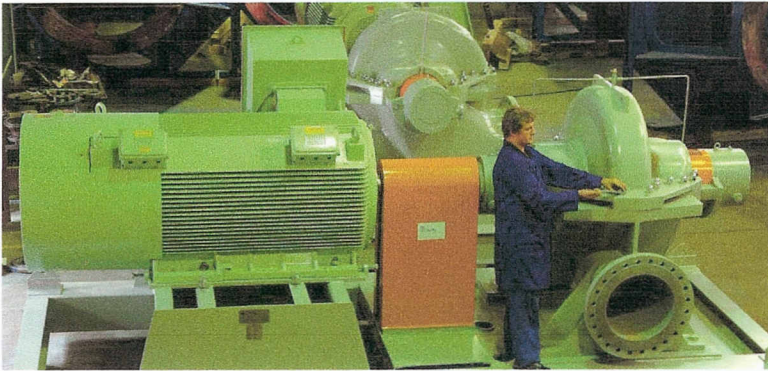
# Typical cross section – large TC Pump



Ref	Item	Standard material	Alternative materials
01	Volute casing	Cast iron	Ductile iron, bronze, 316 stainless steel
02	Impeller	Cast iron	Bronze, 316 stainless steel
03	Stubshaft	303 SS	316 stainless steel, Duplex stainless steel
04	Backcover	Cast iron	Ductile iron, bronze, 316 stainless steel
05	Adaptor	Cast iron or Fabricated steel	
07	Mechanical seal	Carbon/Ceramic/Nitrile	Any commercial combination
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 O ring	Nitrile	Viton
10.2	Glandplate O ring	Nitrile	Viton
12.1	Casing wear ring	Cast iron	Bronze, 316 stainless steel
12.2	Backcover wear ring	Cast iron	Bronze, 316 stainless steel
13	Impeller key	Key steel	316 stainless steel
18	Motor foot	Steel	
33	Motor sleeve	Steel	
44	Seal spacer sleeve	303 SS	316 stainless steel
F1	Casing bolts	Steel	316 stainless steel
F2	Motor flange bolts	Steel	
F3	Gland studs	Steel	316 stainless steel
F4	Motor sleeve set screws	Steel	
F5	Stubshaft socket set screws	Steel	316 stainless steel
F6	Motor foot 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



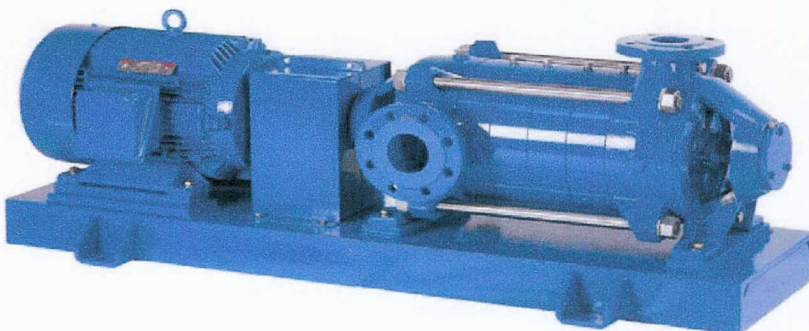
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AND THESE BROCHURES ARE AVAILABLE ON OUR  
WEBSITE: [www.apepumps.co.uk](http://www.apepumps.co.uk)



Double entry split case pumps.  
Flowrates up to 20,000m<sup>3</sup>/hr.  
Head up to 150 metres



Vertical Industrial Turbine Pumps  
Flowrates up to 50,000m<sup>3</sup>/hr  
Head up to 350 metres



Multistage Pumps  
Flows up to 600m<sup>3</sup>/hr  
Head up to 450 metres

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