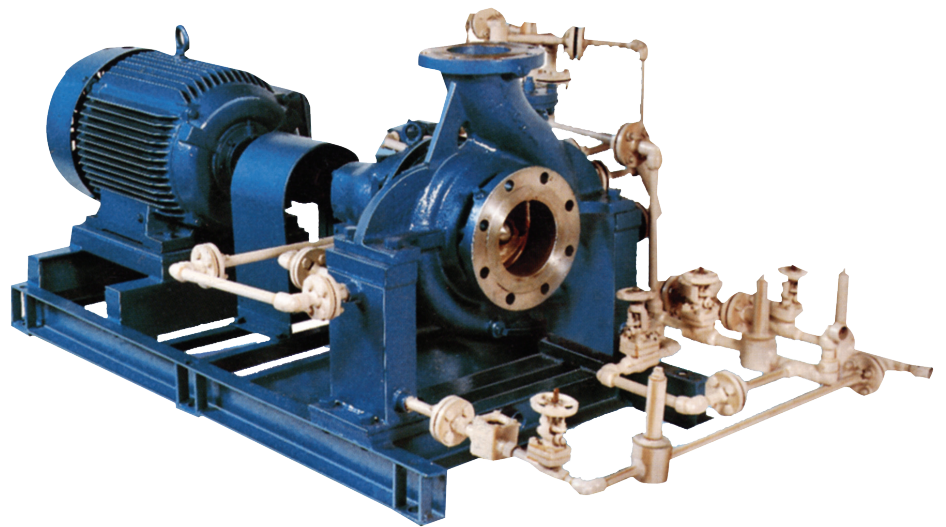


PROCESS PUMPS  
TYPE : KPD/KPD-QF



## KIRLOSKAR PROCESS PUMPS - TYPE KPD / KPD QF

### Description

#### Range :

Delivery size upto 200mm  
Capacity up to 750 m<sup>3</sup>/hr  
Head up to 150 m  
working pressures 16-25 kg/cm<sup>2</sup>

#### Applications :

Chemical Process Industries, Petro Chemical, Nuclear, Refinery, Paper and Power Plants etc. Pumps suitable for handling Corrosive Acides, Alkalies, Salt Solutions, Caustics, Hydro Carbons, Oils, Thermic Fluids, Liquefied Gases, Condensates, Viscous Liquids etc.

#### Constructional Features :

Pumps are as per DIN 24256 and ISO 2858 and generally conform to API 610 (7th Edition) The design is of back pull out type. Large variety of models are available to operate at 1450 rpm and 2900 rpm at 50Hz and 1750 and 3500 rpm at 60Hz.

#### Casing :

The casing has axial suction and top centre line delivery. Smooth hydraulic passages ensure high efficiency. Normal design is for foot mounted pumps. Centre line mounting for special applications are also available.

#### Impeller :

The impellers are of enclosed type and semi-open impellers can also be supplied. Hydraulic balancing of impellers is achieved either by back vanes or by balancing holes. The impellers are statically and dynamically balanced. Reliable fixing of the impeller on shaft is achieved by using helicoil insert under impeller nut. To improve NPSH performance, inducer can be supplied.

#### Shaft :

The shaft is supported by two antifriction bearings to take residual axial thrust and prevent axial float or radial run out. It is fully protected from the liquid handled by means of a shaft sleeve and PTFE gaskets between impeller nut, impeller hub and shaft sleeve.

#### Stuffing Box :

The stuffing box is sealed by gland packing or by mechanical seal, Conversion from gland packing to mechanical seal is achieved by changing some standardised parts. Re-machining of stuffing box is not necessary. Stuffing box cooling is provided for operating temperature 105°C for gland packed and 140°C for mechanical seal fitted pumps.

#### Bearings :

The bearings are oil lubricated. For high temperature (above 180°) application, bearing oil cooling arrangement is provided. All pumps are provided with reinforced bearing arrangement as standard supply.

#### Direction of Rotation :

Clockwise viewed from driving end.

#### Drive :

Pumps can be driven by electric motor or engine.

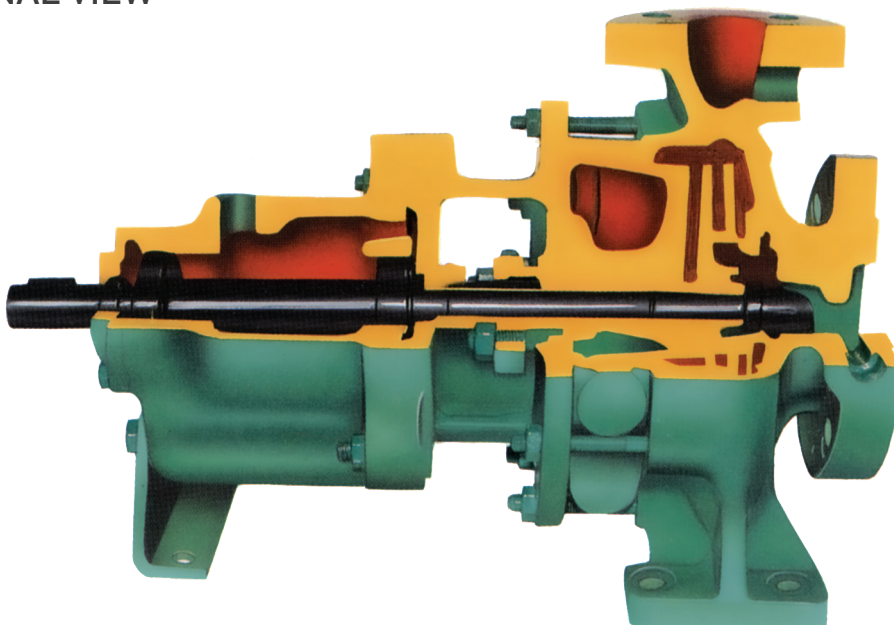
#### Flanges :

ANSI B 16.1, CL 125 Flat Face : for CI/BR

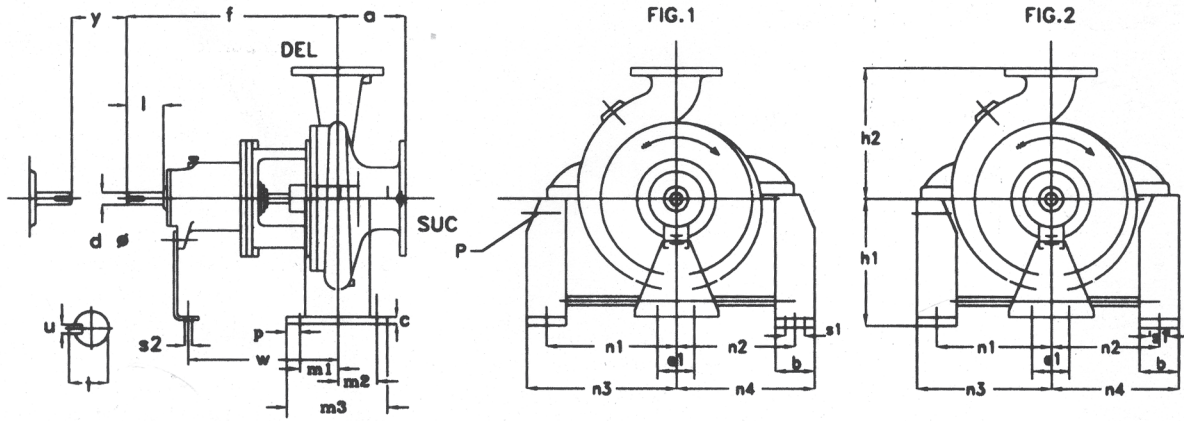
ANSI B 16.5, CL 150 Raised Face - for sp.metals  
Viz. st.steel, cast steel etc.

Drilling as per DIN, ASA, BS ect. (Optional)

## CUT-SECTIONAL VIEW



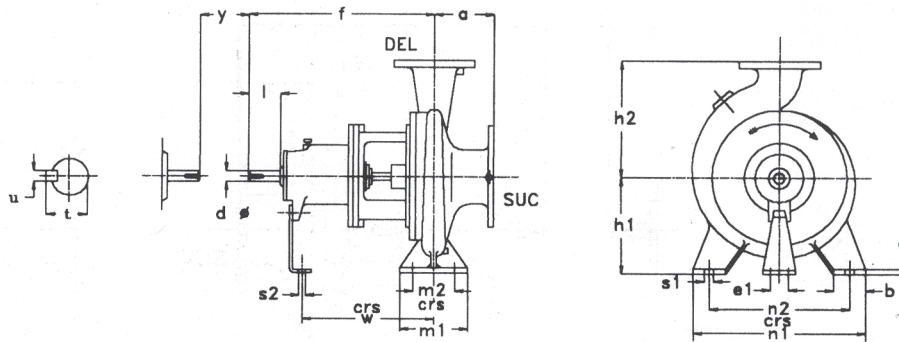
# GENERAL DIMENSION & MOUNTING DETAILS (CLM) PUMP



PUMP TYPE	DRG. UNIT	PUMP DIMENSIONS										FOOT DIMENSIONS										SHAFT END			SPR	FIG.	No.							
		SUC	DEL	a	f	h1	h2	b	c	m1	m2	m3	n1	n2	n3	n4	w	s1	s2	e1	p	d	l	t				u	y					
20/13QF												125	125	157	157																	1		
20/16QF	4	25	20	80								130	130	162	162																	1		
20/20QF												155	155	187	187																	1		
25/16QF		40	25	100								155	145	187	177																	1		
32/13												125	125	157	157																	2		
32/16		50	32									155	145	187	177																	1		
32/20				80	385	200						170	165	202	197	285																2		
40/13												140																					2	
40/16	5	65	40																			24	50	27	8	100						1		
40/20																																	2	
50/13												160																					1	
50/16		80	50	100			64	15	72	88	190	170	165	202	197		14				15											2		
50/20																																	2	
65/13		100	65																														1	
25/26A		50	25												252																		1	
32/26			32												257																		1	
40/26		65	40									220	220	252	252																		1	
40/32																																		2
50/26		80	50	125																														1
50/32					500	250	280	90	89.5	110.5	230	260	230	305	285	370		15	110			32	80	35	10	140						2		
65/16	7						200	64	72	88	190	210	175	242	207																		1	
65/20		100	65	100			225		89.5	110.5	230	260	230	305	275																		2	
65/26							250	90	89.5	110.5	230	260	230	305	275																		1	
80/16							225	64	72	88	190	210	175	242	207																		1	
80/20		125	80				250		89.5	110.5	230	260	230	305	275																		2	
80/26							280		89.5	110.5	230	260	230	305	275		18																1	
100/20		125	100	125			250	280									14																1	
65/32		65	100				280		92.5	107.5				240	285		18																2	
80/32							315	315	18	100	150	300	310	295	355	240					25												1	
80/40			80				365	355									23																	2
100/26		125					280	280	15	02.5	107.5	230	260	230	305	275		18			15												2	
100/32			100				315	315																										1
100/40	9			140			365															42	110	45	12								2	
125/26					530		315	365					310	295	355	340																	1	
125/32		150	125						18	100		300					23				25													2
125/40								400					355	315	400	360																		2
150/32		200	150	160																														1
150/40							365	450			150		385	345	430	390																		1
125/26	11	150	125	140	670	315	365					310	295	355	340	500						48	110	51.5	14	180							1	
200/38M		250	200	200		400	500	100				410	360	465	415	483.5																	2	
200/46	13					425	550		22	120		340					27	19	140	30		60	110	64.4	18								2	
150/52		200	150	200	670	400	550						440	395	495	450																		2

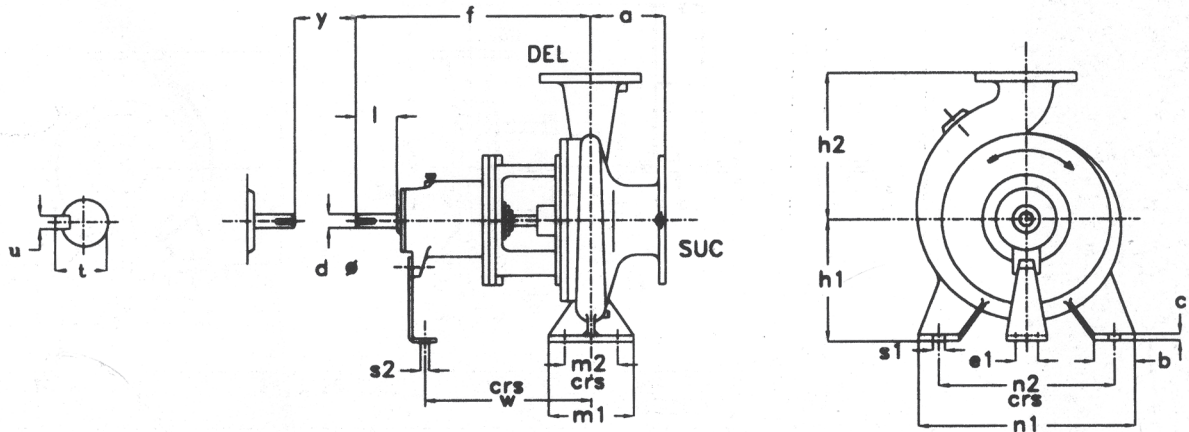


# GENERAL DIMENSION & MOUNTING DETAILS (FM) PUMP



PUMP TYPE	DRG. UNIT	PUMP DIMENSIONS						FOOT DIMENSIONS								SHAFT END						WEIGHT KG.				
		SUC	DEL	a	f	h1	h2	b	c	m1	m2	n1	n2	w	s1	s2	e1	d	l	t	u		y			
20/13 QF #	4	25	20	80	385	100	140	50	10	80	50	190	140	285	14	14	110	18	40	20.5	6	100	31			
20/16 QF #						132	150			210	160	38														
20/20 QF #						160	170			240	190	43														
25/16 QF #	5	40	25	100	385	132	165	50	14	100	70	210	160	285	14	15	110	24	50	27	8	100	36			
25/20 QF #						180	10					80	50										265	212	11.5	44
32/13						112	140					190	140										38			
32/16		50	32	80		132	160	240	190	40																
32/20						160	180	240	190	47																
40/13						112	140	210	160	39																
40/16		65	40	80		132	160	240	190	42																
40/20						160	180	265	212	48																
50/13						132	160	240	190	42																
50/16		80	50	100		160	180	265	212	46																
50/20						200	265	212	53																	
65/13						160	180	65	125	95	280	212	69													
25/26		7	50	25		100	500	180	225	65	125	95	320	250	370	14	15	110	32	80	35	10	140	90		
32/26								180	225	320	250	90														
40/26								200	250	345	280	90														
40/32	65		40	125	180	225		65	14	125	95	320	250	14	90											
50/26					225	280		345	280	120	250	120	250	120	250	14	90									
50/32					225	280		345	280	120	250	120	250	120	250	14	90									
65/16	100		65	100	160	200		280	212	77																
65/20					180	225		320	250	370	15	110	32	80	35	10	140	79								
65/26					200	250		80	16	160	120	360	280	18	96											
80/16	125		80	125	180	225		65	14	125	95	320	250	14	85											
80/20					250	280		345	280	120	250	120	250	120	250	14	86									
80/26					225	280		400	315	18	116															
100/20	125		100	125	200	280		80	16	160	120	400	315	18	106											
65/32					225	280		400	315	140	140															
80/32					250	315		400	315	146																
80/40	125	80	125	280	355	80	16	160	120	435	355	370	18	181												
100/26				225	280	400	315	134																		
100/32				250	315	400	315	157																		
100/40	125	100	140	280	355	100	18	200	150	500	400	23	15	110	42	110	45	12	140	164						
125/26				250	355	80	16	160	120	400	315	18	158													
125/32				280	355	18	200	150	500	400	23	179														
125/40	150	125	140	315	400	100	22	200	150	500	400	23	212													
150/32				315	400	22	200	150	500	400	23	260														
150/40 \$				315	450	100	18	200	150	550	450	23	285													
65/40	125	65	50	280	340	80	18	160	120	435	355	18	10	142												

# GENERAL OUTLINE DIMENSIONS OF KPD/KPDQF (FM) PUMP



PUMP SIZE	DRIVING UNIT	PUMP DIMENSIONS						FOOT DIMENSIONS										SHAFT END					WEIGHT KG.	
		SUC	DEL	a	f	h1	h2	b	c	m1	m2	m3	n1	n2	w	s1	s2	e1	d*	l	t	u		y
125/45 \$	11A	125	150	160	670	350	450	100	20	180	120	70	550	450	500	23	19	140	48	110	51.4	14	180	290
150/43 \$	11B	150	200	160	685	350	475	100	20	180	120	90	550	450	514	23	19	140	48	110	51.4	14	180	300
65/43 \$	9	65	100	160	530	280	365	80	18	160	120	60	435	355	270	18	15	110	42	110	45	12	140	195

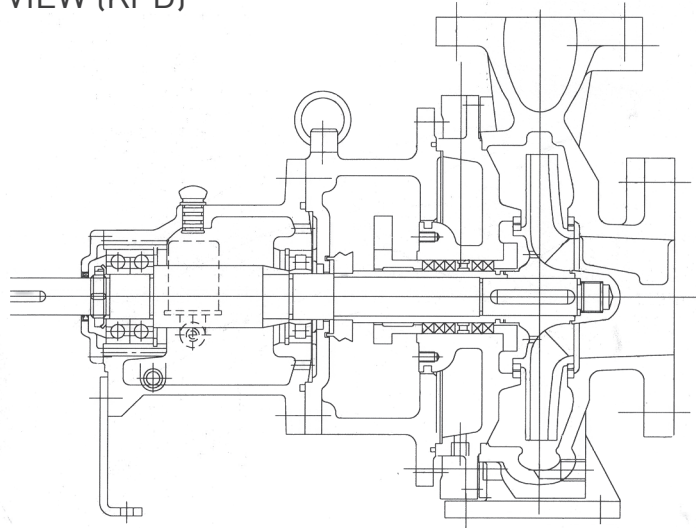
PUMP SIZE	DRIVING UNIT	PUMP DIMENSIONS						FOOT DIMENSIONS										SHAFT END					WEIGHT KG.			
		DEL	SUC	a	f	h1	h2	b	c	m1	m2	n1	n2	w	s1	s2	e1	d∅	l	t	u	y				
100/40*	11	100	125			280	355	100	18	200	150	500	400	500	23									180	198	
125/26*						250	355	80	16	160	120	400	315		18										190	
125/32*		125	150	140	670	280	355	100	18	200	150	500	400	500	23	19	140	48	110	51.5	14				140	214
125/40*						315	400																			200
150/32*		150	200	160		315	400		22		550	450														312
150/26A \$	13	150	200	175	670	280	375	100	20	200	150	500	400	483.5	23	15	140	60	110	64.4	18	180	230			
150/52 \$		150	200	200	670	400	550	150	30	240	180	650	530	483	27	19	140	60	110	64.4	18	180	435			
200/38M \$		200	250	200	670	400	500	120	30	240	180	550	430	483.5	27	19	140	60	110	64.4	18	180	500			
200/46 \$		200	250	200	670	425	550	120	30	240	180	640	540	483.5	27	19	140	60	110	64.4	18	180	560			

**NOTE :**

- # These pumps can be provided with semi open impeller only.
- \$ These pumps cannot be supplied with semi open impeller.
- \* These pumps can be supplied in Unit-II under special requirement



# CROSS SECTIONAL VIEW (KPD)

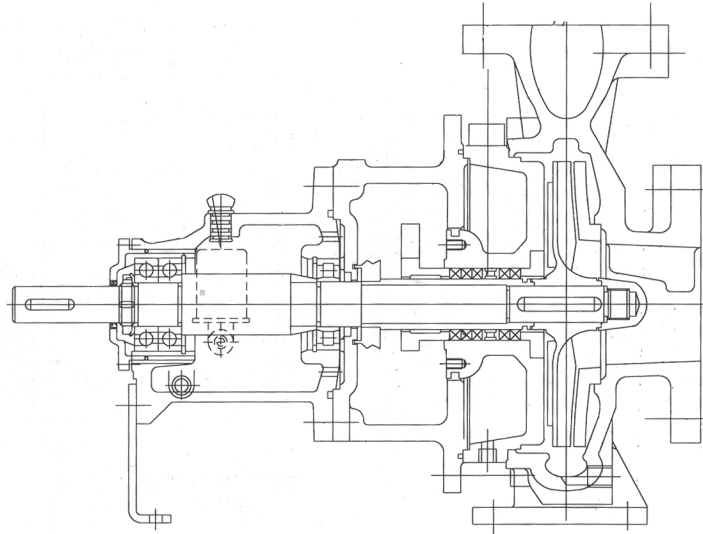


Typical Drawing

Pump Unit	Size	Casing	Impeller	Casing Cover	Bearing Housing
5	32/13	1	1	1	1
	40/13	2	2		
	50/13	3	3		
	65/13	4	4	2	
	32/16	5	5		
	32/16A	6	6		
	40/16	7	7		
	50/16	8	8		
	50/16A	9	11	3	
	32/20		12	4	
	32/20A	10	13		
	40/20	11	14		
	40/20A	12	15		
50/20	13	16	5		
65/16	14	17			
80/16	15	18			
65/20	16	19		6	
80/20	17	20			
100/20	18	21			
25/26	19	22		7	
32/26	20	23		8	
40/26	21	24			
50/26	22	25			
65/26		26			
65/26N	23	27			
80/26	24	28			
40/32	25	29	9		
50/32	26	30	10		
100/26	27	31	11		
125/26	28	32	12		
65/32 (1450 RPM)	29	33			
65/32 (2900 RPM)		34			
80/32	30	35		13	
100/32	31	36		14	
125/32	32	37			
125/32M	36	38			
150/32		39			
150/32N	37	40		15	
65/40	38	41		16	
80/40	39	42			
80/40N		43			
100/40	40	44			
125/40		45			
125/40N	41	46			
125/40M	42	46	17		
150/40	43	47	18		
65/43	48	51	24		
11	125/26 (2900 RPM)	44	33	20	4
11/A	125/45	49	52	25	6
11/B	150/43	50	53	26	7
13	150/52	45	48	21	5
	200/38M	46	49	22	
	200/46	47	50	23	



## CROSS SECTIONAL VIEW (KPD QF)



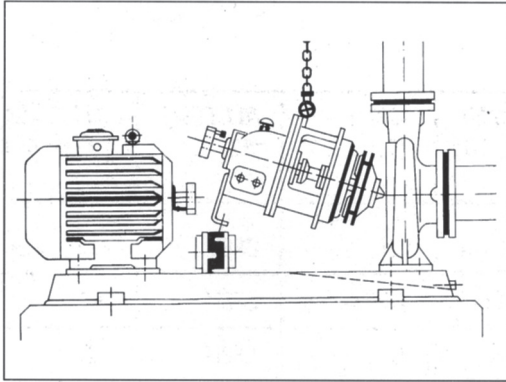
Typical Drawing

## INTERCHANGEABILITY OF COMPONENTS

Pump Unit	Size	Casing	Impeller	Casing Cover	Bearing Housing
4	20/13	1	1	1	1
	20/16	2	2	2	
	20/20	3	3	3	
5	32/13	4	4	4	2
	40/13	5	5		
	50/13	6	6		
	65/13	7	7		
	25/16	8	8	5	
	32/16	9	9	6	
	40/16	10	10	7	
	50/16	11	11	8	
	32/20	12	12		
	40/20	13	13		
50/20	14	14	9		
7	65/16	15	15	10	3
	80/16	16	16		
	65/20	17	17	11	
	80/20	18	18		
	100/20	19	19	12	
	32/26	20	20	13	
	40/26	21	21	14	
	50/26	22	22		
	65/26	23	23		
	80/26	24	24	15	
	40/32	25	25	16	
50/32	26	26	17		
100/26	27	27			
125/26	28	28			
65/32	29	29		18	
80/32	30	30			
100/32	31	31			
125/32	32	32			
150/32	33	33			19
80/40	34	34			20
100/40	35	35			21
125/40	36	36	22		

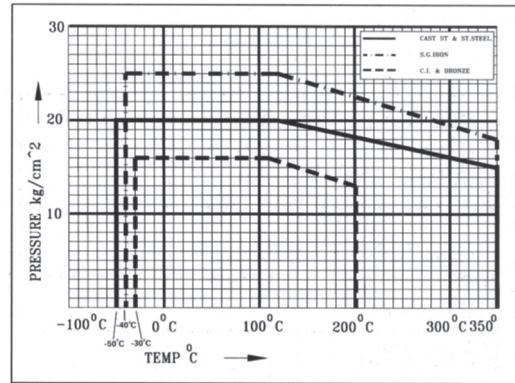


## BACK PULL OUT ARRANGEMENT



Using spacer type coupling, back-pullout design enables the pump rotating unit to be removed without disturbing the pipe connections. The prime mover is also undisturbed. This reduce servicing time, resulting in lower maintenance costs and reduction in production losses.

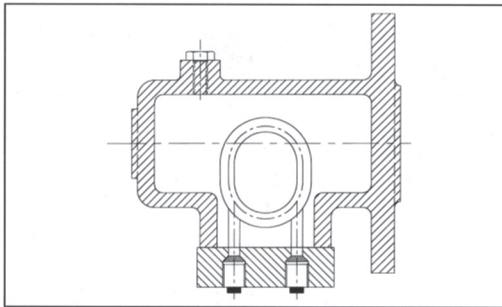
## WORKING TEMPERATURE AND PRESSURE



NOTE :

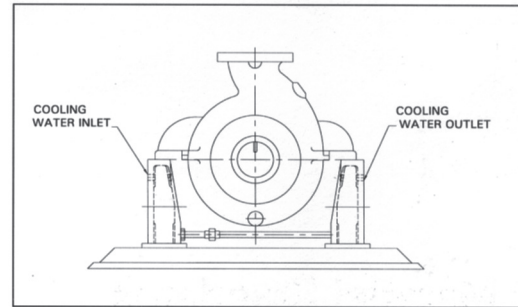
The pressure and temperature data holds good only if flanges are suitable to a particular operating pressure and temperature.

## ALTERNATIVES AVAILABLE



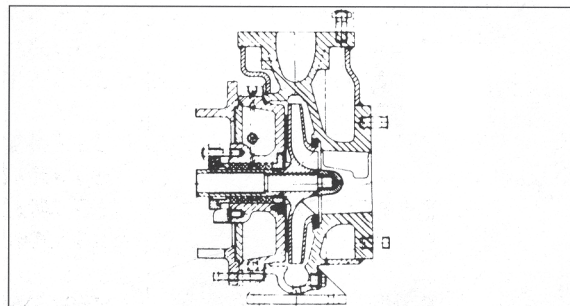
**Bearing Oil Cooling Arrangement**

For high temperature applications above 180°C bearing oil cooling arrangement is provided.



**Centre line Mounting**

For high temperature applications between 180°C to 350°C, pumps are offered with centreline mounting.



**Steam Jacket Arrangement**

This special design can be offered for handling liquids that cannot be pumped when cold. Except for pump casing, casing cover and gland, all parts are of standard design.



## MATERIAL OF CONSTRUCTION

MOC CODE COMPONENT	ALL CI (01)	BR. FITTED (02)	ALL CAST STEEL (10)	CF8M (11)	ALL CF8M (13)	ALL C AST STEEL WITH BR. IMP (12)	ALL ALLOY 20 (CN7M) (30)
PUMP CASING	CI	CI	Cast Steel	CI	CF8M	Cast Steel	CN7M
IMPELLER	CI	BR.	Cast Steel	CF8M	CF8M	BR.	CN7M
CASING RING	CI	CI	CA 15H	CI	CF8M	BR.	CN7M
IMPELLER RING	CI	BR.	CA 15H	CF8M	CF8M	BR.	CN7M
SHAFT	AISI 4140	AISI 4140	AISI 4140	AISI 4140	AISI 410	AISI 4140	SS410
SHAFT SLEEVE	SS410H	SS410H	SS410H	SS316	SS316	SS316	ALLOY 20
LANTERN RING	CI	CI	SS410	CI	SS316	SS410	CN7M
GLAND	CI	CI	Cast Steel	CI	CF8M	Cast Steel	CN7M

Note : Other material of Construction also available  
H denotes hardened.

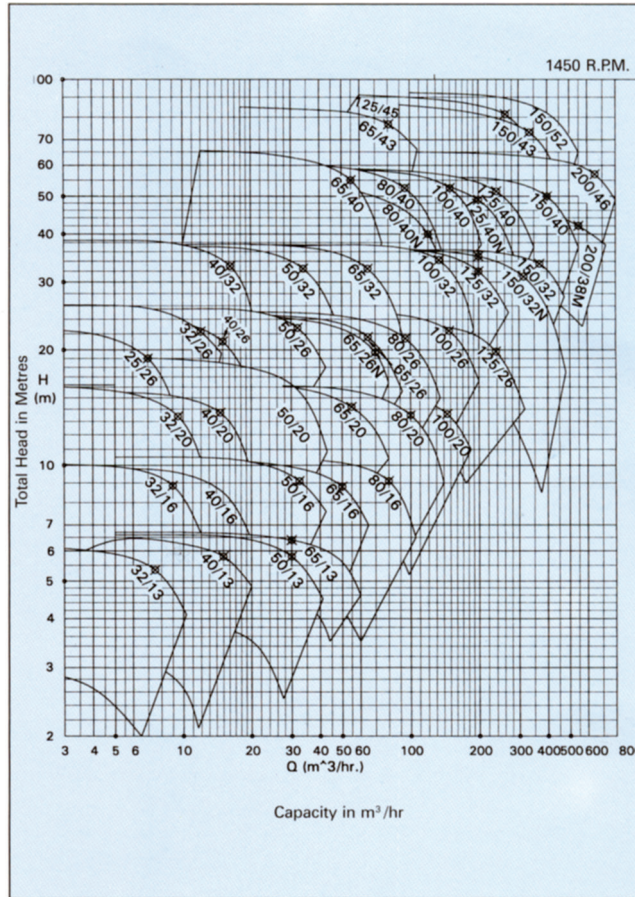
## MATERIAL STANDARDS

Material	IS	BS	ASTM
Cast Iron (CI)	IS 210 (1978) Gr. FG 260	B.S. 2789 SNG 500/7	ASTM-A 536 60-40-18
			& 65-45-12
Austenitic	IS 2749 Gr. AFG Ni 15	B.S. 3468 AUS 101 Gr. B	ASTM-A 436 Type 1
Iron (ACI)	Cu 6 Cr 3		
Carbon Steel (CS)	IS 1570 Gr. 40 C-8	B.S. 970 080 M 40	ASTM-A 107 Gr. 1040
CF8M	IS 3444 Gr. 9	B.S. 1632 Gr. B	ASTM-A 351 Gr. CF8M
SS316	IS 1570 Gr. 05 Cr 18	B.S. 970 316 S16	ASTM-A 276 Type 316
	Ni 11 Mo3		
		B.S. 970 304 S 15	ASTM-A 276 Type 304
SS 410		B.S. 3 100 410 S 21	ASTM-A 276 Type 410
Bronze (BR)	IS 318 Gr. LTB2	B.S. 1400 LG2C	ASTM-B 62, B 145 Alloy 4A
Cast Steel		B.S. 1504-101A	ASTM-A 216 74 d Gr. WCB
CA 15	-	-	ST.ST.ASTM A 217 GR CA 15
AISI 4140	IS 1570	BS 97 ENIG	AISI 4140

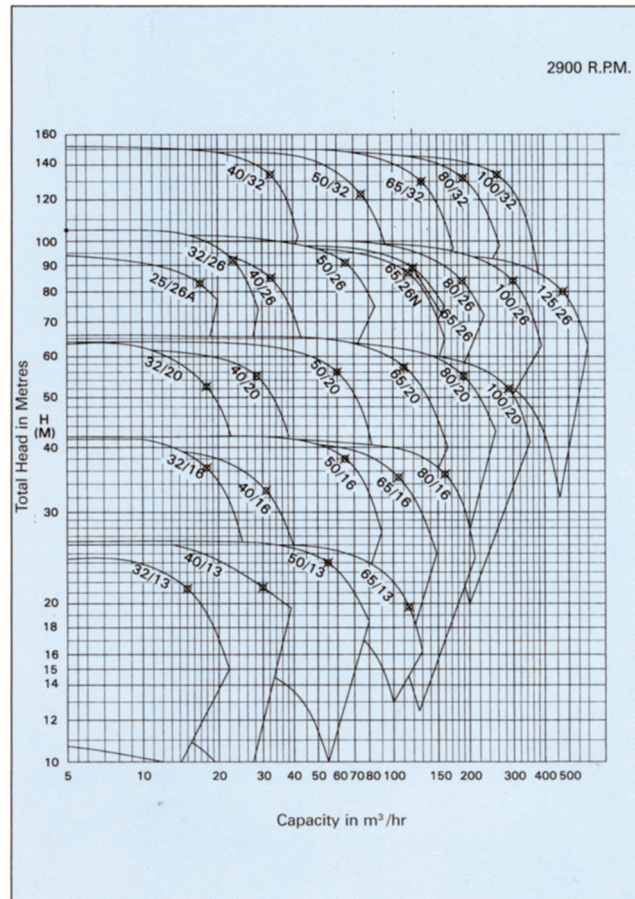


# PERFORMANCE CHARACTERISTICS

Family curve of KPD Process pump at 1450 rpm-50Hz

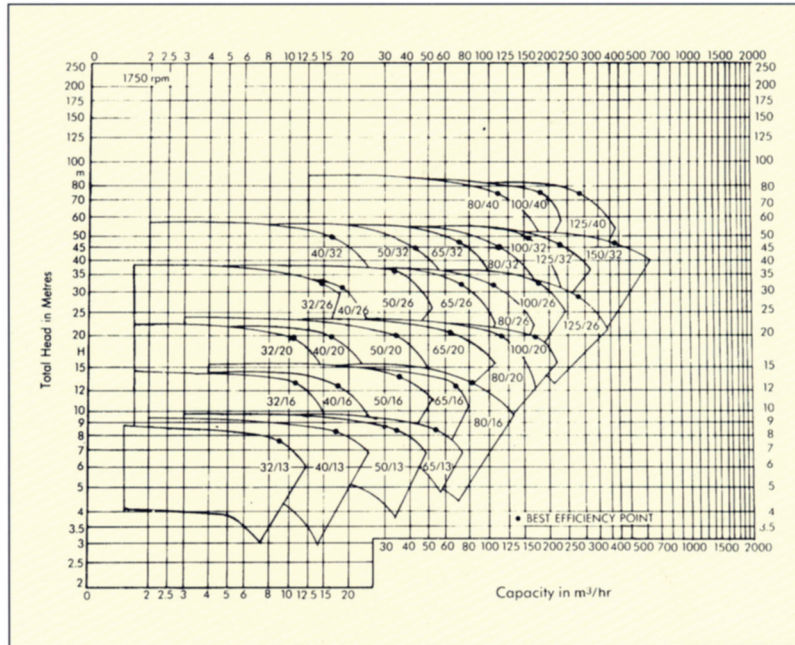


Family curve of KPD Process pump at 2900 rpm-50Hz

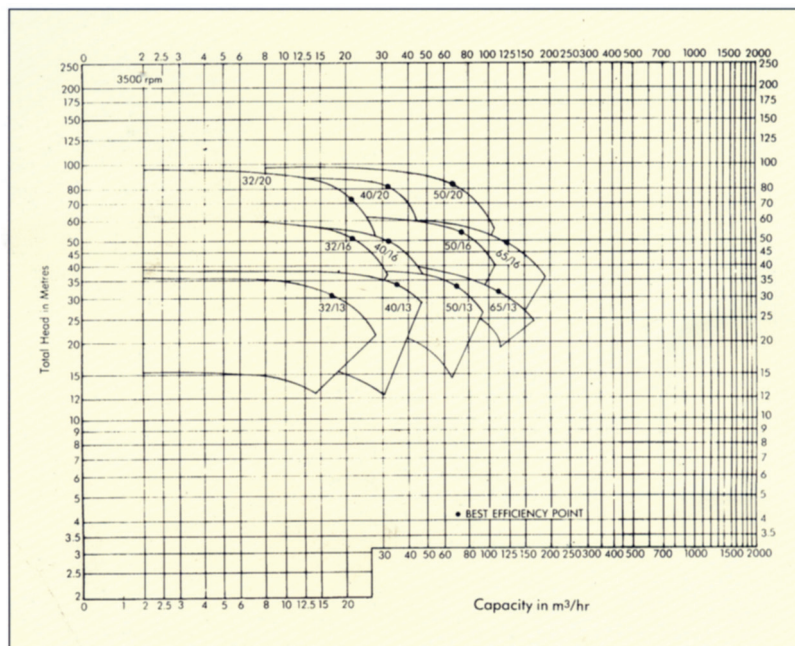


# PERFORMANCE CHARACTERISTICS

Family curve of KPD Process pump at 1750 rpm-60Hz

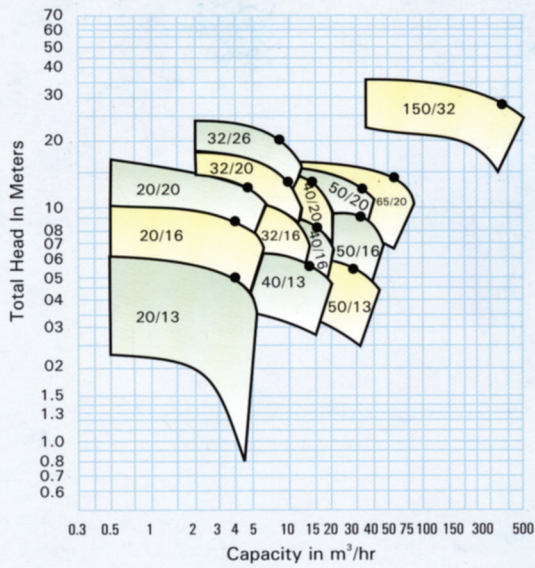


Family curve of KPD Process pump at 3500 rpm-60Hz

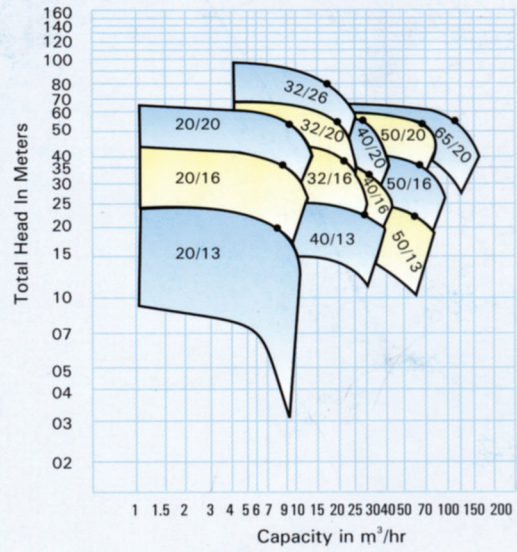




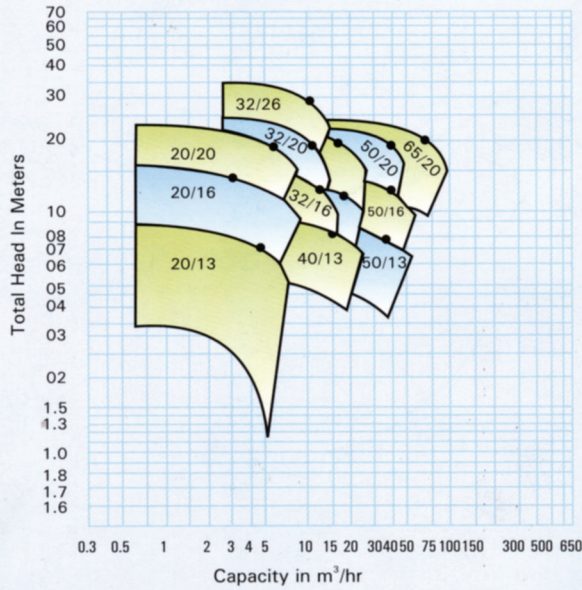
**Family Curve of KPD-QF process pump at 1450 rpm 50 Hz**



**Family Curve of KPD-QF process pump at 2900 rpm 50 Hz**



**Family Curve of KPD-QF process pump at 1750 rpm 60 Hz**



As we are constantly endeavouring to improve the performance of our products/equipment, we reserve the right to make alterations from time to time and as such our product equipment may differ from that detailed in this publication. For latest information you may get in touch with our Regional Sales Offices.

