SEMPA®

HOT OIL PUMP

TKF-K Hot Oil Pump

- Designed for the transfer of hot oil mineral and synthetic oils
- Quite and High Efficiency.

1. Hot Oil Pump

Discharge Flange	: DN 32 ... DN 150 mm
Capacity	: 450 m^3/h
Head	: 110 m
Speed	: 1450-2900 rpm
Operating Temperature	: 320°C
Cooling	: Air cooling
Pressure (Pmax)	: 16 bar

(Pmax= Suction Pressure + Head in Close Valve)

Dischargeable Liquids

All types of organic and synthetic oils which made for heat transfer and not include abrasive components.

Usage Areas

- Chemical and Petrochemical Plants
- Paper Factories
- Sugar Factories
- Food and Medicine Factories
- Plastic, Rubber and Synthetic Fiber Factories
- Cooking and Heating Ovens (Furnaces)
- Textile and Leather Industry
- Iron-Steel Industry
- Paint Industry
- Asphalt and Bitumen Processing Industry
- Woodworking and Furniture Industries
- Heat Transfer Facilities Above 100°C

Approximate Capasity Calculation

$V=Q/(Cp.\rho.\Delta T)$
V: Pump capacity (m^3/h)
Q: Boiler heat capacity (kW or kcal/h)
Cp: Oil avarage specific heat (kJ/kg.K or kcal/kg.K)
ρ : Oil avarage density (kg/m^3)
ΔT: Temperature difference (round-trip)

• Oils, using in hot oil pumps, commonly volumetric specific heat: (Between 200-350°C)
$Cp.\rho = 500$ kcal/m^3.K
◆ In usage of different oils, check the tables.
In this situation;
$V= (Q(kcal/h))/(500.\Delta T)$ or $V= (Q(kW))/(500.\Delta T)$
(1kW=861 kcal/h)

• In practice, the difference between temperatures in round-trip is 18 to 48 ° C. In this situation;
ΔT=18°C $V(m^3/h)= (Q(kcal/h))/9000=(Q(kW))/10,5$
ΔT=30°C $V(m^3/h)= (Q(kcal/h))/15000=(Q(kW))/17,4$
ΔT=42°C $V(m^3/h)= (Q(kcal/h))/21000=(Q(kW))/24,4$

Code of Pump

TKF-K 50-250

- 250 — Impeller Diameter (mm)
- 50 — Discharge Flange (DN)
- TKF-K — Pump Type

2.Materials

	Ductile Cast Iron	Chrome Steel	Cast Iron
Volute	✔	✘	✘
Shaft	✘	✔	✘
Impeller	✘	✘	✔

2.1 Mechanical Seal

1-) N-T01

Application: Clean water, sewage water, oil and other moderately corrosive fluids

- Pressure r 230 PSI
- Temperature Standard
-30° C ⋯ +200° C (-22° F ... +392° F)

A-) Seal Face
- Carbon graphite antimony impregnated
- Carbon graphite resin impregnated
- Silicon carbide
- Tungsten carbide

B-)Seat
- Silicon carbide
- Ceramic
- Tungsten carbide

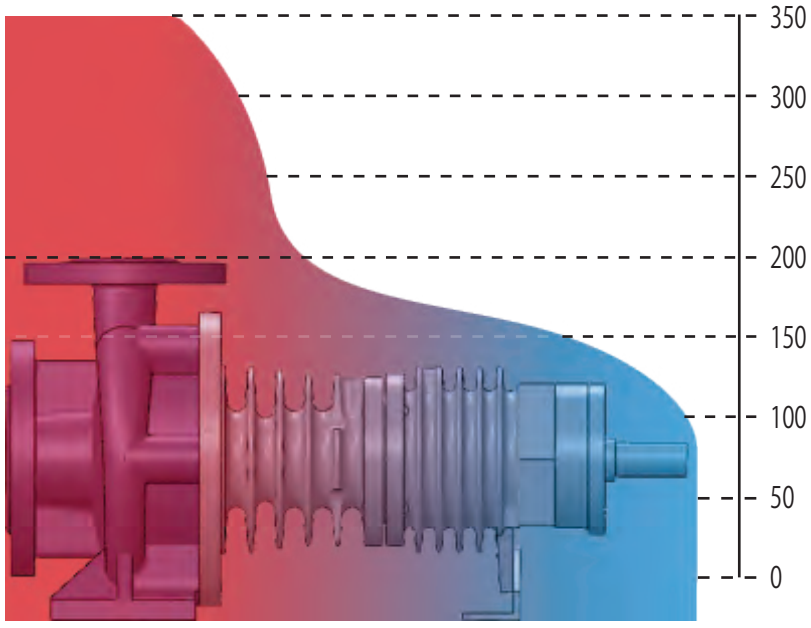
C-) Elastomer
- NBR
- EPDM
- FKM
- HNBR

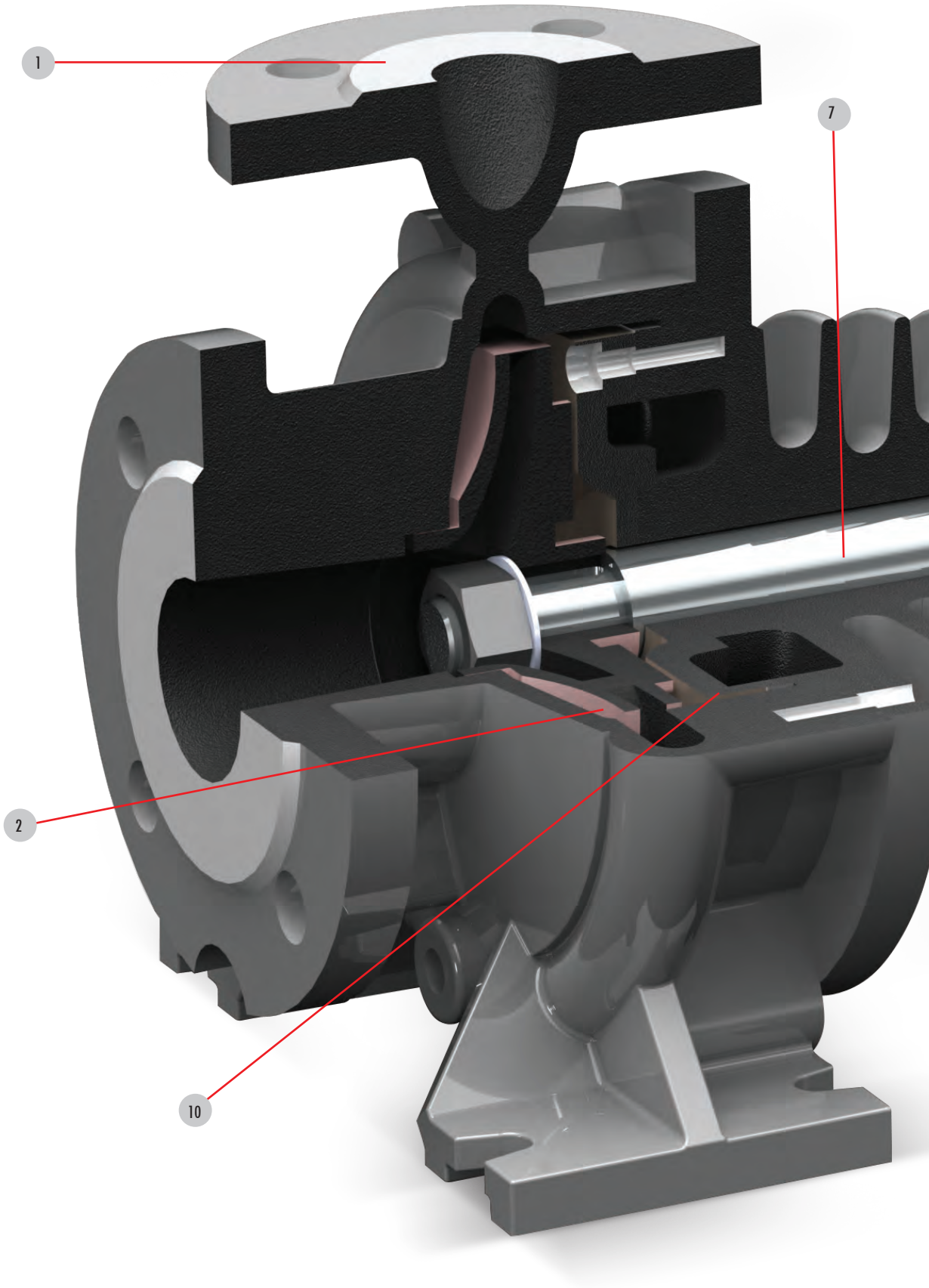
D-)Metal Parts
- CrNiMo steel,
- Hastelloy® C-4

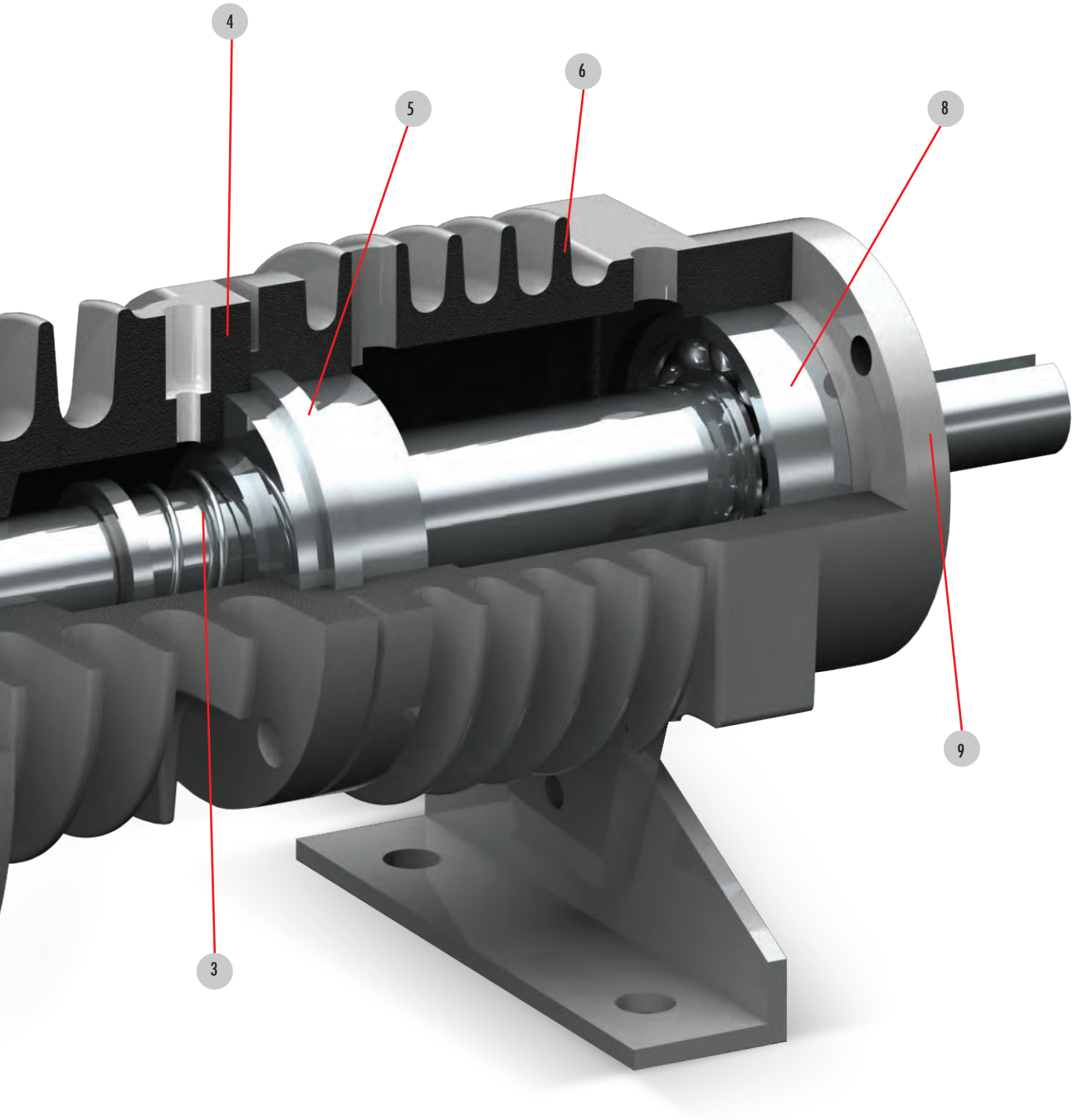
Pumps Dimensions

Pump Type	Mechanical Seal	Bearing
32-125	T01	6306
32-160	T01	6306
32-200	T01	6306
32-250	T01	6306
40-125	T01	6306
40-160	T01	6306
40-200	T01	6306
40-250	T01	6306
50-125	T01	6306
50-160	T01	6306
50-200	T01	6306
50-250	T01	6306
65-125	T01	6306
65-160	T01	6306
65-200	T01	6306
65-250	T01	6308
80-160	T01	6306
80-200	T01	6308
80-250	T01	6308
100-160	T01	6306
100-200	T01	6308
100-250	T01	6308
125-200	T01	6308
150-200	T01	6308

Thermal Oil Temperature Capability Curve

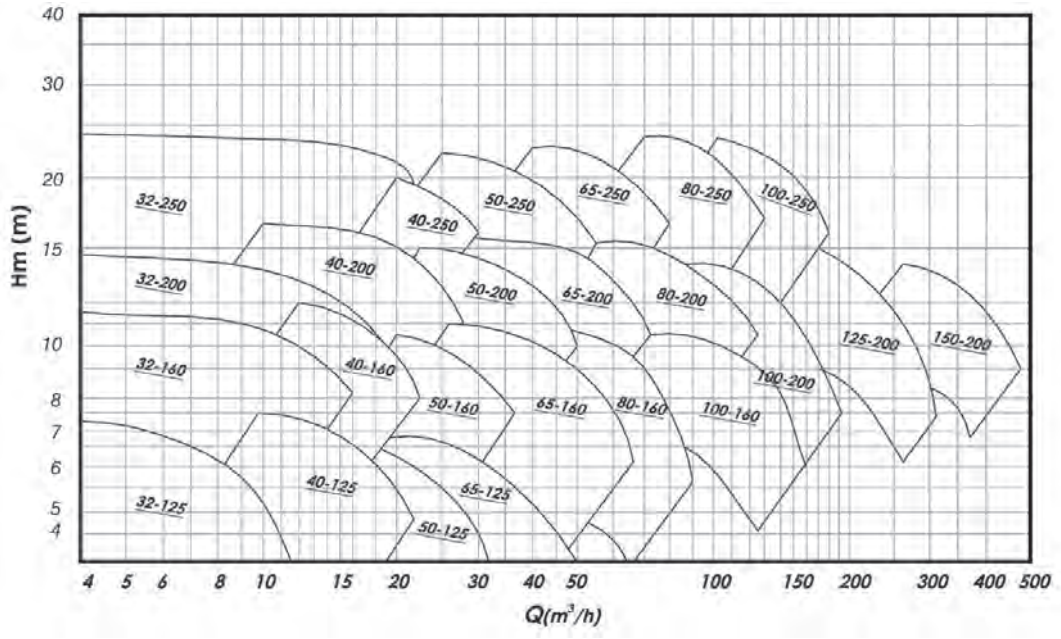



1
7
2
10



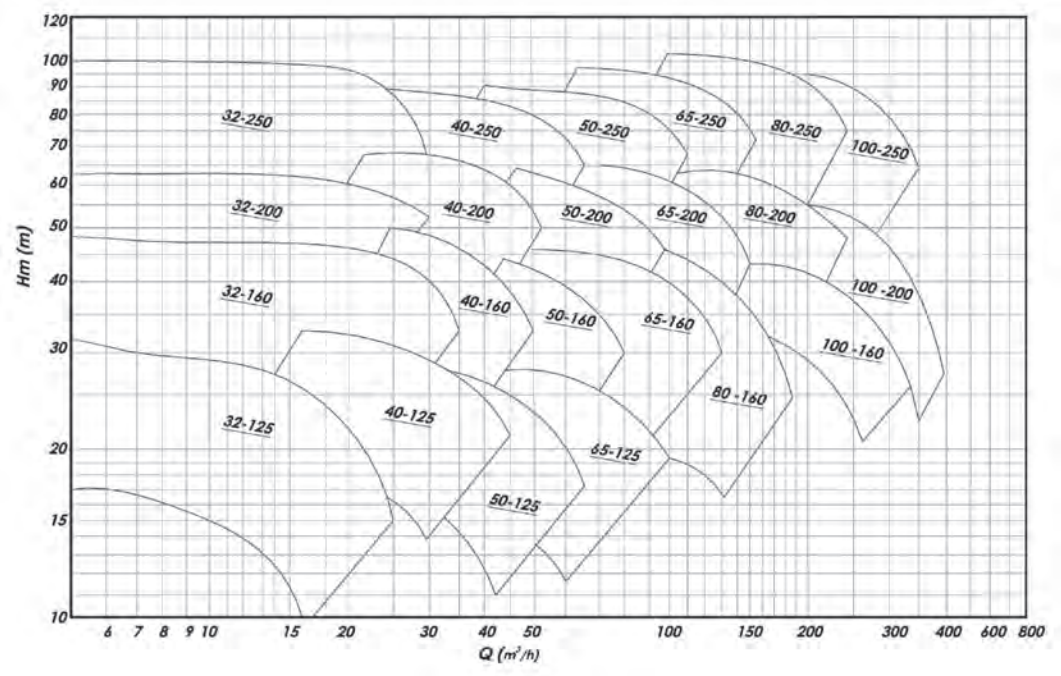
1 - Volute Casing
2 - Impeller
3 - Seal (Mechanical Seal)
4 - 1/4 NPT Casing Drain Plug
5 - Stuffing Box Cover
6 - Bearing Box
7 - Shaft
8 - Bearing
9 - Bearing Cover
10 - Corrosion Plate

TKF-K Series 1800 RPM Performance Table

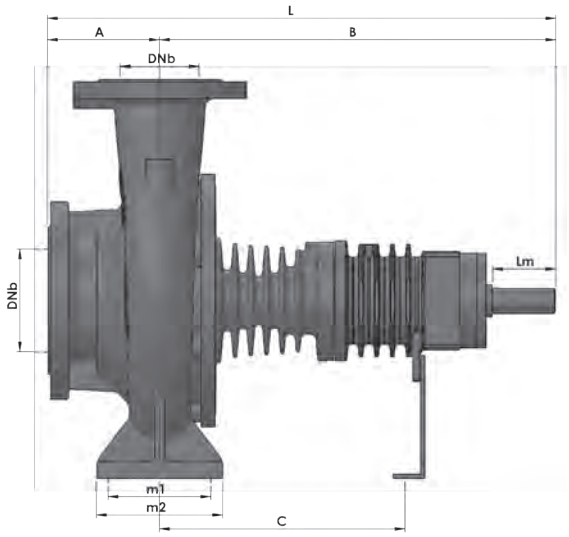


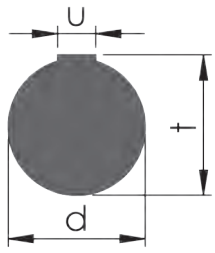
- SEMPOMP TKF-K Series pumps are testing with TSE EN ISO 9906 grades 2.
- This standart doesn't include mechanical properties, just include hydrolic properties.
- This standart has tolerance ± %8 flow rate, ± %5 pressure and -%5 efficiency.
- Sempa can supply their special customers to test reports for all pump if required.

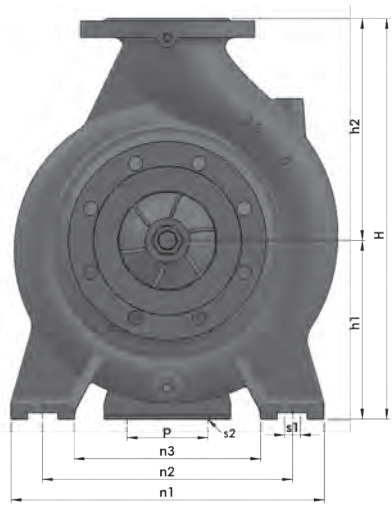
TKF-K Series 3600 RPM Performance Table



Pumps Dimensions

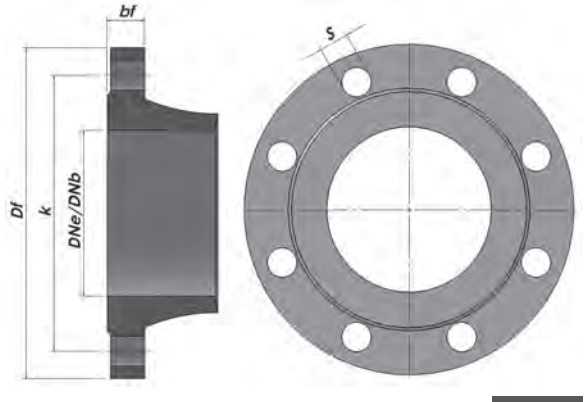






Pump Type Pompa Tipi	DIMENSIONS (mm)																				Weight (kg
	Main Dimensions								Foot Dimensions									Shaft Dimensions			
	DNe	DNb	A	B	L	H	h1	h2	m1	m2	n1	n2	n3	s1	p	s2	C	d	Lm	t	u	
32-125	50	32	82	391	473	252	112	140	105	81	220	160	110	12	110	14	252	24	50	27	8	30
32-160			79	392	471	292	132	160	103	79	240	190	140				253					34
32-200			80	386	466	340	160	180	102		244		135				248					39
32-250			102	389	491	405	180	225	126	100	320	260	188	14			251					49
40-125	65	40	80	391	471	252	112	140	100	79	208	160	110	13			252					32
40-160			90	389	479	292	132	160	103	78	246	190	132	12			250					35
40-200			100	388	488	340	160	180	102	77	270	214	158									40
40-250			114	384	498	405	180	225	128	99	320	255	186	14			246					53
50-125		50	100	390	490	292	132	160	100	77	240	190	140	12			251					35
50-160			110	385	495	340	160	180		75	268	214	160				245					38
50-200				383	493	360		200	108	80	269	216	147				244					43
50-250			101	387	488	405	180	225	124	97	316	248	176				249					56
65-125	80	65	100	391	491	340	160	180	125	102	280	215	150	14			252					39
65-160			108	383		360		200	127	100	282	214	144	12			245					42
65-200			104	384	488	405	180	225	136	109	323	255	186				246					47
65-250			100	502	602	450	200	250	160	125	365	278	195	18			314	32	80	35	10	76
80-160	100	80	126	390	516	405	180	225	126	99	331	263	194	12			252	24	50	27	8	47
80-200			130	499	629	430		250		102	345	280	201	16			312	32	80	35	10	73
80-250			127	501	628	480	200	280	160	125	405	317	235	18			313					80
100-160	125	100	120	399	519						363	278	193	18			261	24	50	27	8	68
100-200			127	506	633				163	130	360	285	206	20			318	32	80	35	10	72
100-250			142	502	644	505	225	280	160	126	395	315	235	18			314					85
125-200	150	125	143	511	654	565	250	315		130	400	315	244	18			323					89
150-200	200	150	162	513	675	635	280	355	204	158	513	403	293	20								135

Pump Type	FLANGE DIMENSIONS (mm)											
	SUCTION						DISCHARGE					
	DNe	Df	k	s	n	bf	DNb	Df	k	s	n	bf
32	50	165	125	18	4	20	32	140	100	18	4	18
40	65	185	145	18	4	20	40	150	110	18	4	18
50	65	185	145	18	4	20	50	165	125	18	4	20
65	80	200	160	18	8	22	65	185	145	18	4	20
80	100	220	180	18	ß	24	80	200	160	18	8	22
100	125	250	210	18	8	26	100	220	180	18	8	24
125	150	285	240	23	8	26	125	250	210	18	8	26
150	200	340	295	23	12	30	150	285	240	23	8	26



n = Hole Number

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