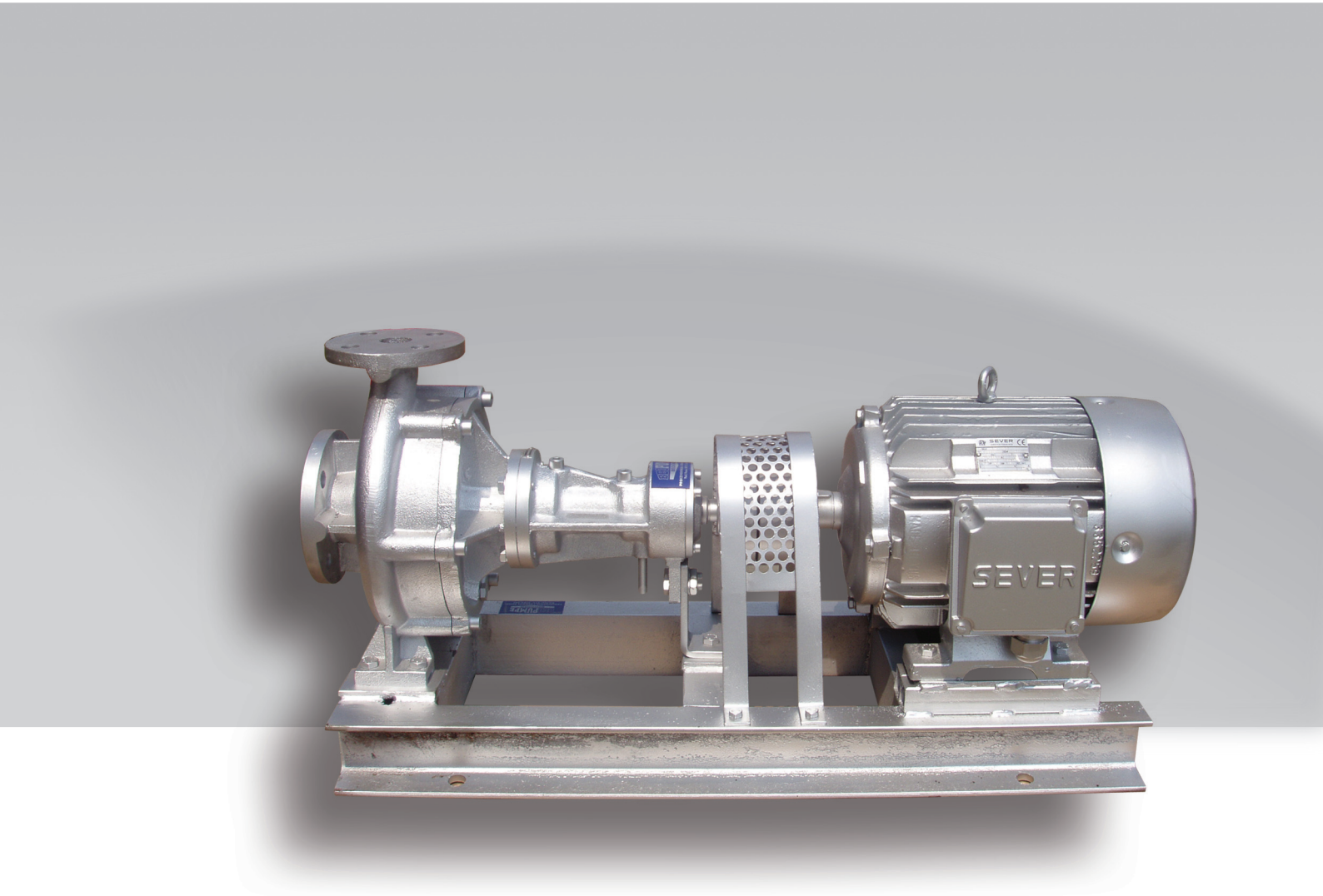
TU

PUMPE TERMALNOG ULJA

prema DIN 24255 (EN733)

THERMAL OIL PUMPS

according to DIN 24255 (EN733)



BEOPUMPE
BEOGRAD

TU

KARAKTERISTIKE
Hidrauličke karakteristike : Q=10-300 m³/h
Visina dizanja : H=max 80 m
Broj obrtaja : n=1450-2900 o/min
Temperatura : t=300°C
Zaptivanje : meki zaptivač ili mehanički zaptivač

PRIMENA
Pumpe su namenjene za transport termalnog ulja koje ima ulogu prenosa toplotne energije. Termička ulja koja se koriste kao radni fluid ne smeju sadržati abrazivne sastojke, niti agresivne komponente koje bi štetno delovale na delove pumpe. Pumpe tremalnog ulja nalaze primenu u hemijskoj i farmaceutskoj industriji, gumarskoj industriji, preradi bitumena (asfaltne baze), industriji boja, za zagrevanje tankova na brodovima, zagrevanje teških boja, industriji mineralnih ulja, za različite industrije za preradu metala i drveta, građevinarstvu i dr.

OPIS IZVOĐENJA
Pumpe za termalna ulja su jednostepene, horizontalne, centrifugalne, izvedene sa spiralnim jednodelnim kućištem, u pogledu dimenzija i karakteristika prema standardu DIN 24255, EN 733.

LEŽAJEVI I PODMAZIVANJE
Vratilo je uležišteno sa dva kuglična ležaja C4 DIN 625. Na strani pumpe ležaj se podmazuje radnim medijem, dok se na strani spojnice podmazuje mašću.

PRIRUBNICE

Ulazna prirubnica: axijalno
Potisna prirubnica: radijalno usmerena na gore
Prirubnice: DIN 2533

ZAPTIVANJE
Zaptivanje vratila je kombinovane izvedbe. Iza radnog kola se zaptiva grafitnom pletenicom, a i za prednjeg ležaja sa radijalnom osovinskom zaptivkom na bazi PTFE koja je za temperature do 260°C i pritisak do 10 bara. Iza ove zaptivke nalazi se otvor za kontrolu curenja. Zadnji ležaj se zaptiva sa dva semeringa od vitona.

NAČIN AGREGATIRANJA
Vratilo pumpe i rukavac elektromotora povezuju se elastičnom spojnicom prema DIN 740 bez ili sa distantnim komadom. Temeljno postolje je varene konstrukcije, a za manje veličine liveno.

PRIKLJUČCI

A4 punjenje
B1 pražnjenje
D2 kontrola curenja
E5 odvazdušenje

POGON

Pumpu pokreće elektromotor hlađen vazduhom, izvedbe B3 zaštite IP55 u skladu sa IEC standardom, klase izolacije F u izvođenju IE1, IE2, IE3 prema zahtevu Naručioca.

FEATURES
Hydraulic characteristics: Q=10-300 m³/h
Total head: H=max 80 m
Speed: n=1450-2900 r.p.m.
Temperature: t=300°C
Sealing: packing or by mechanical seal

USES
TU pumps are designed for transport of thermal oil, which is used for the transfer of heat. The thermal oil used as a heating medium must not contain abrasive or aggressive components that could harm the pump parts.TU pumps are used in chemical and pharmaceutical industry, rubber industry, bitumen processing (asphalt base), color industry, for tanks heating on ships, heating of heavy colors, industry of mineral oils, in various industries for metal and wood processing, construction industry etc.

PERFORMANCE
Pumps for thermal oils are single-stage, horizontal centrifugal, made with volute one-piece casing, in terms of dimensions and characteristics according to DIN 24255, EN 733.

BEARING
Shaft is supported with two ball bearings C4 DIN 625 . On the side of the pump the bearing is lubricated by the working media, while on the side of the coupling it is lubricated with grease.

FLANGES

Suction flange: axial
Delivery flange: radial directed upward
Flanges: DIN 2533

SEALING
Sealing of shaft has combined performance. Behind the impeller it is sealed with a graphite packing, and after the front bearing with a radial shaft seal on the basis of PTFE which is for temperatures up to 260 ° C and pressure up to 10 bar. Behind this seal is an opening for leakage control. Rear bearing is sealed with two seals of Viton.

METHOD OF AGGREGATING
Pump shaft and sleeve of electric motors are connected with flexible coupling according to DIN 740, with or without a spacer. Baseplate is welded construction, and for smaller size it is casted.

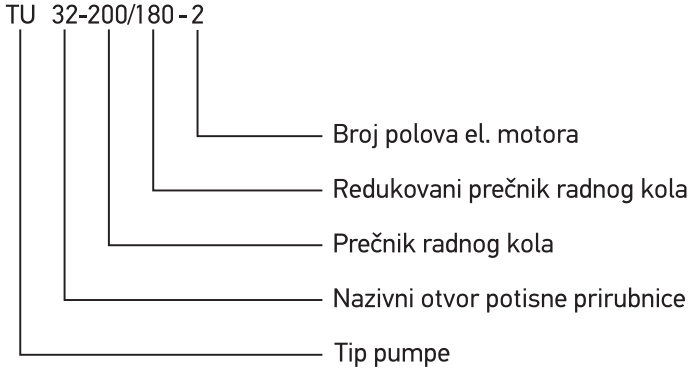
CONNECTION

A4 charging
B1 discharging
D2 leakage control
E5 air outlet

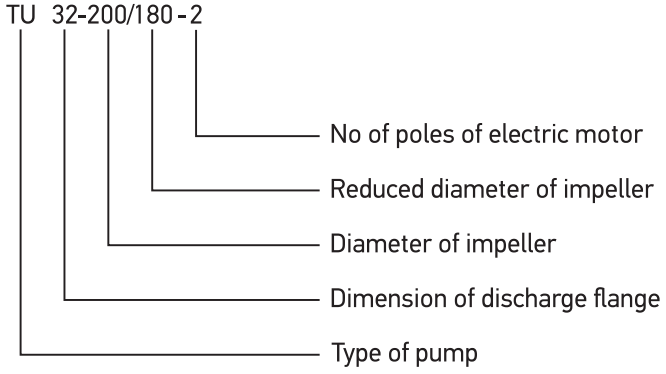
DRIVE

The pump is powered by electric motor, air-cooled, performance B3 protection IP55 in accordance with the IEC standard, insulation class F in the performance of the IE1, IE2, IE3 according to the customer's requirements.

Način označavanja tipa pumpe

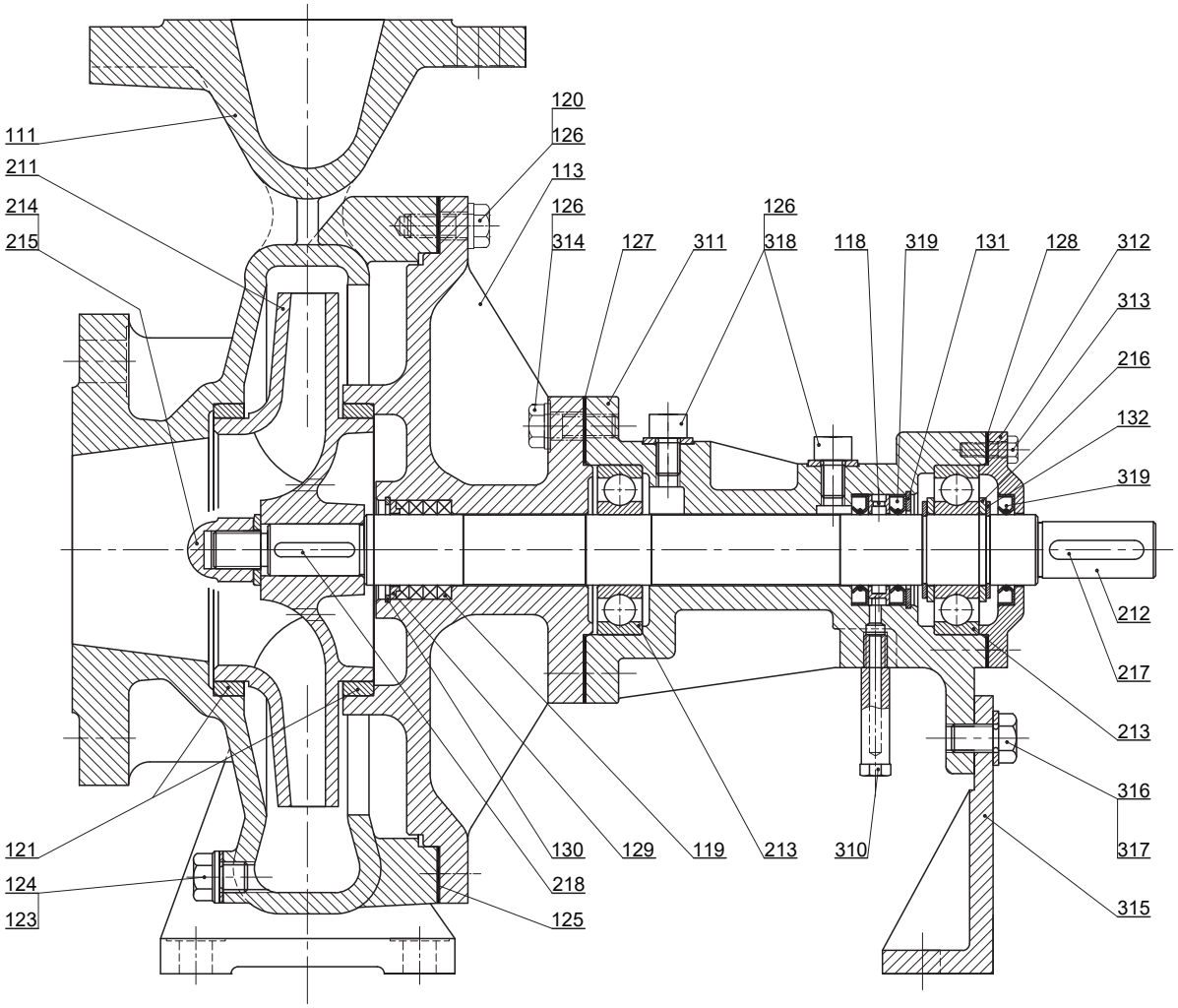


Method of marking type of pump



PRESEK PUMPE

PUMP CROSS SECTION

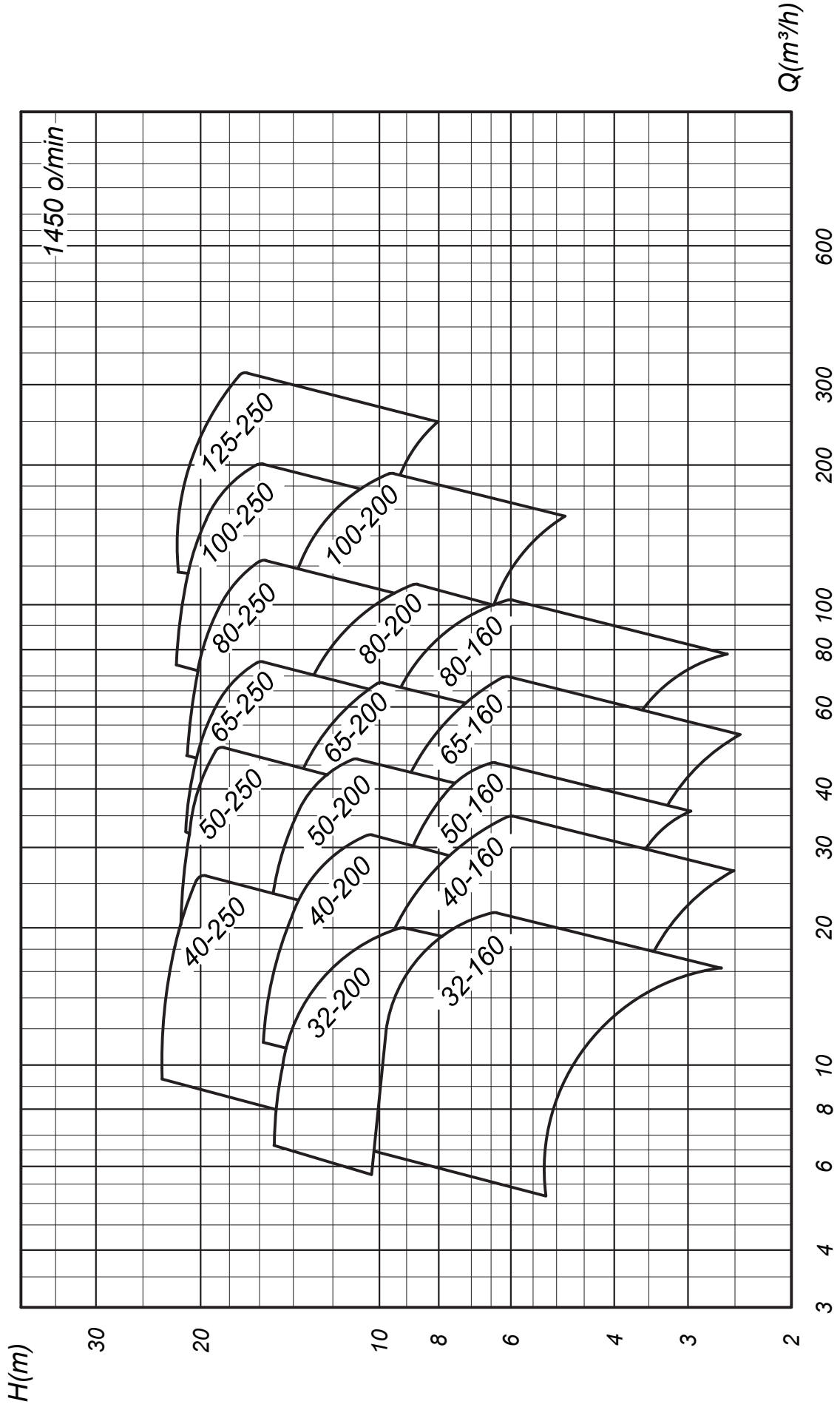


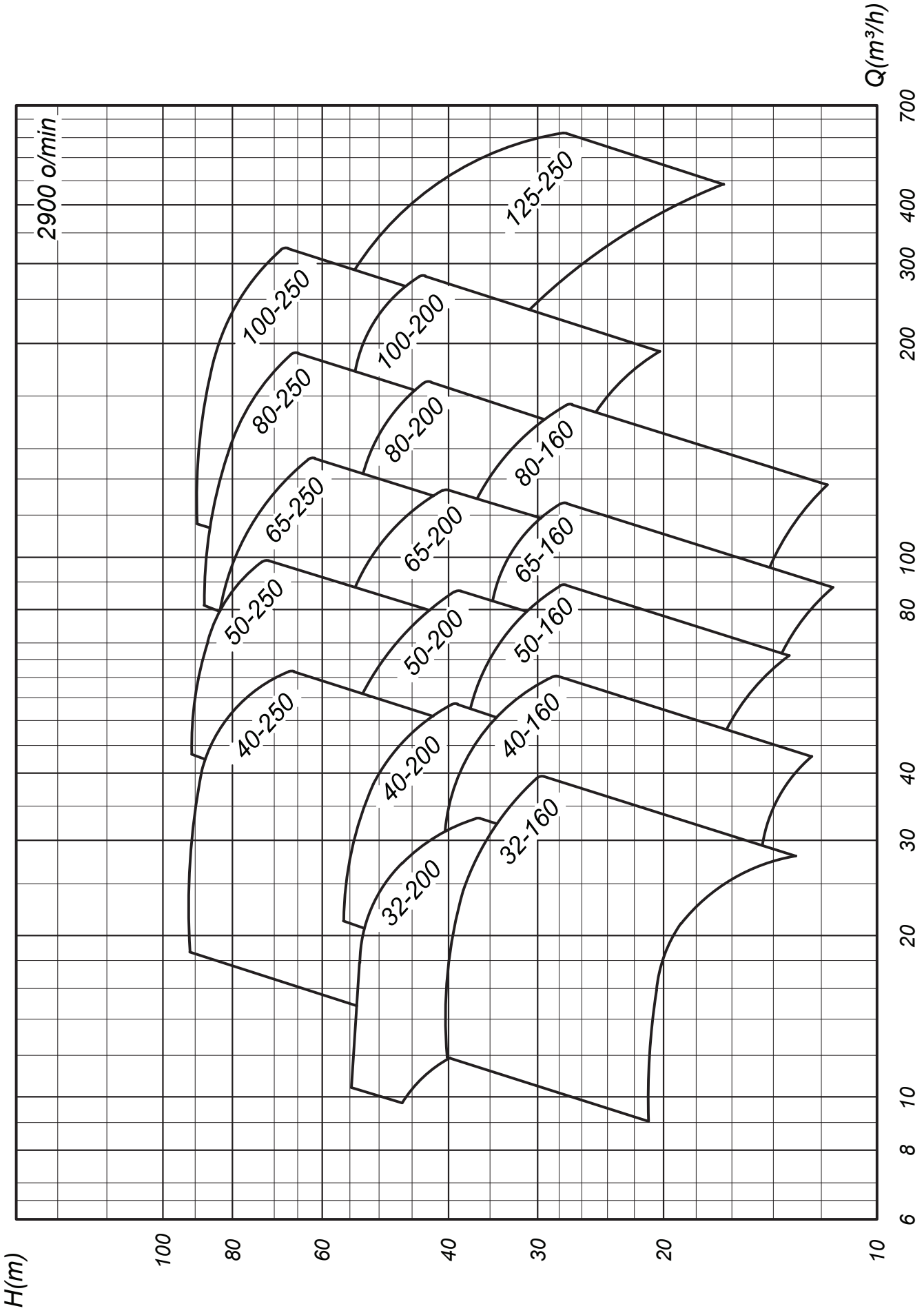
Poz	Naziv
111	Spiralno kućište
113	Poklopac kućišta
118	H-prsten
119	Pletenica
120	Vijak
121	Zaptivni prsten
123	Čep
124	Zaptivni prsten
125	Zaptivni prsten
126	Podloška
127	Zaptivni prsten
128	Zaptivni prsten
129	Pritezač pletenice
130	Seger unutrašnji
131	Seger unutrašnji
132	Seger spoljašnji
211	Radno kolo
212	Vratilo
213	Ležaj
214	Podloška
215	Navrtka radnog kola
216	Distantni prsten
217	Klin
218	Klin
310	Ispust ulja
311	Nosač ležaja
312	Poklopac ležaja
313	Vijak
314	Vijak
315	Noga
316	Vijak
317	Podloška
318	Vijak
319	Semering

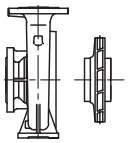
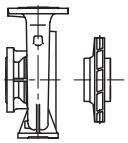
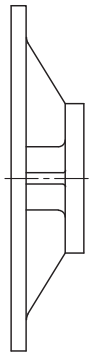
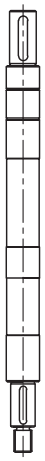
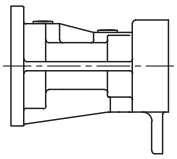
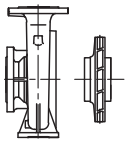
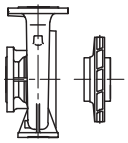
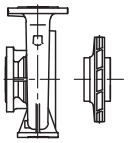
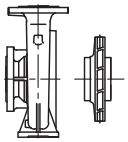
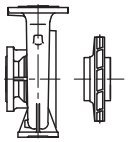
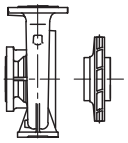
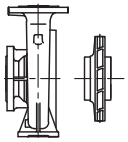
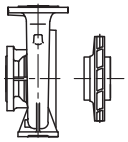
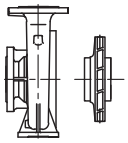
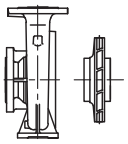
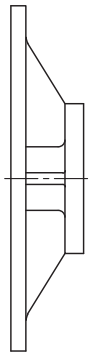
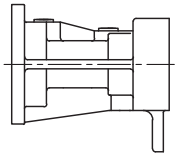
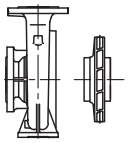
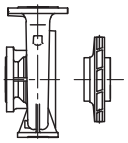
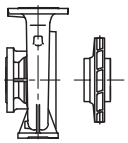
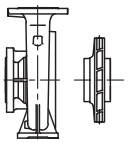
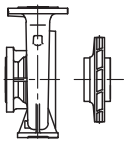
Item	Part Name
111	*Volute casing*
113	*Casing cover*
118	*H-ring*
119	*Packing*
120	*Bolt*
121	*Packing ring*
123	*Plug*
124	*Packing ring*
125	*Packing ring*
126	*Washer*
127	*Packing ring*
128	*Packing ring*
129	*Gland*
130	*Snap ring*
131	*Snap ring*
132	*Snap ring*
211	*Impeller*
212	*Shaft*
213	*Bearing*
214	*Washer*
215	*Impeller nut*
216	*Distant ring*
217	*Insert spring*
218	*Insert spring*
310	*Oil drainage pipe*
311	*Bearing bracket*
312	*Bearing cover*
313	*Bolt*
314	*Bolt*
315	*Foot*
316	*Bolt*
317	*Washer*
318	*Bolt*
319	*Seal*

DIJAGRAM PUMPE

PUMP CHART




2900 o/min
125-250
100-250
100-200
80-250
80-200
80-160
65-250
65-200
65-160
50-250
50-200
50-160
40-250
40-200
40-160
32-200
32-160
H(m)
100
80
60
40
30
20
10
Q(m³/h)
6
8
10
20
30
40
80
100
200
300
400
700

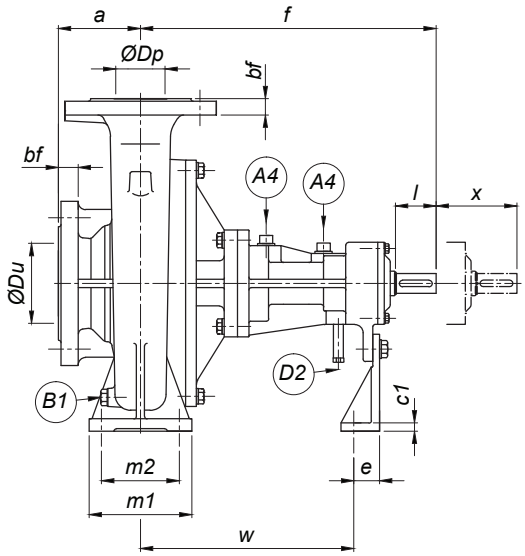
ØDP Potis *Discharge*	Spiralno kućište i radno kolo *Volute casing and impeller*			Poklopac kućišta *Casing cover*	Vratilo *Shaft*	Nosač ležaja *Bearing bracket*
	Veličina radnog kola *Size of impeller*					
	160	*200*	*250*	Veličina / *Size* *360-200*	Veličina / *Size* *360*	Veličina / *Size* *360*
32						
40						
50						
65						
80						
				Veličina / *Size* *470-250*	Veličina / *Size* *470*	Veličina / *Size* *470*
65						
80						
100						
125						

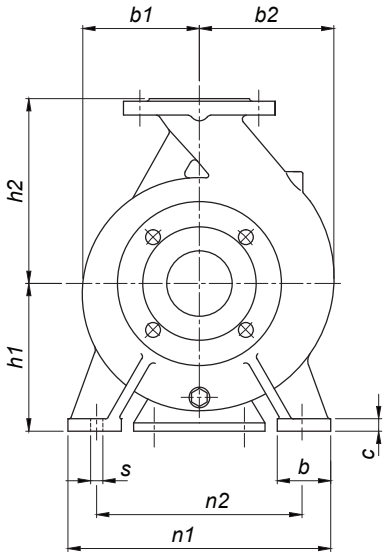
Veličine 360 i 470 su usklađene sa dimenzijom kote f prema DIN 24255 odnosno EN733

Size 360 and 470 are aligned with the dimension f in accordance with DIN 24255 or EN733

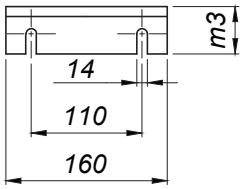
DIMENZIJE PUMPE

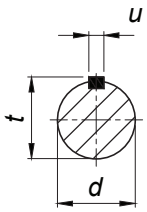
DIMENSIONS OF PUMP

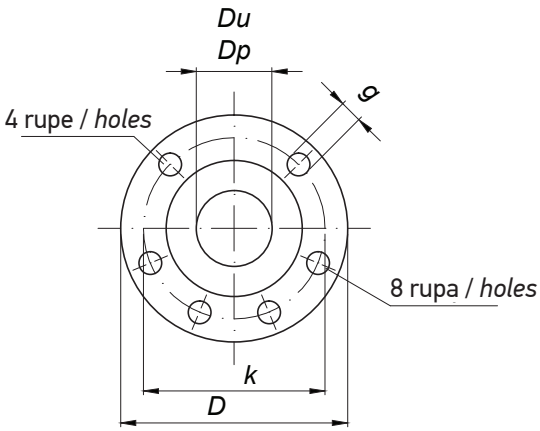




	Tip pumpe *Type of pump*	32-160	32-200	40-160	40-200	40-250	50-160	50-200	50-250	65-160	65-200	65-250	80-160	80-200	80-250	100-200	100-250	125-250
	ØDu Usis *ØDu Suction*	50		65						80			100			125		150
	ØDu Potis *ØDu Discharge*	32		40			50			65			80			100		125
Dimenzije pumpi *Dimension of pumps*	a	80			100								125				140	
	f	360										470	360	470				
	w	260										340	260	340				
	h1	132	160	132	160	180	160	160	180	160	180	200	180	180	00	200	225	250
	h2	160	180	160	180	225	180	200	225	200	225	250	225	250	280	280	280	355
	n1	240			265	320	265		320	280	320	360	320	345	400	360	400	
	n2	190			212	250	212		250	212	250	280	250	280	315	280	315	
	m1	100				125	100		125			160	125		160			
	m2	70				95	70		95			120	95		120			
	m3	45															47	
	b	50				65	50		65			80	65		80			
	b1	123	124	123	125	150	125	133	156	133	148	164	136	163	182	165	189	212
	b2	123	130	123	135	156	130	145	169	162	170	184	170	188	208	203	224	255
	c	15										18	15	18				
	c1	10																
	e	30																
	s	14										18	14	18				
	x	80								100					120			
Vratilo *Shaft*	d	24										32	24	32				
	l	50										80	50	80				
	t	27										35	27	35				
	u	8										10	8	10				
Priključci *Connections*	A4	Punjenje *Charging*										M10						
	B1	Pražnjenje *Discharging*										R ¼"			R ½ "			
	D2	Kontrola *Control*										M10						
	E5	Odvazdušenje *Air outlet*										M10						



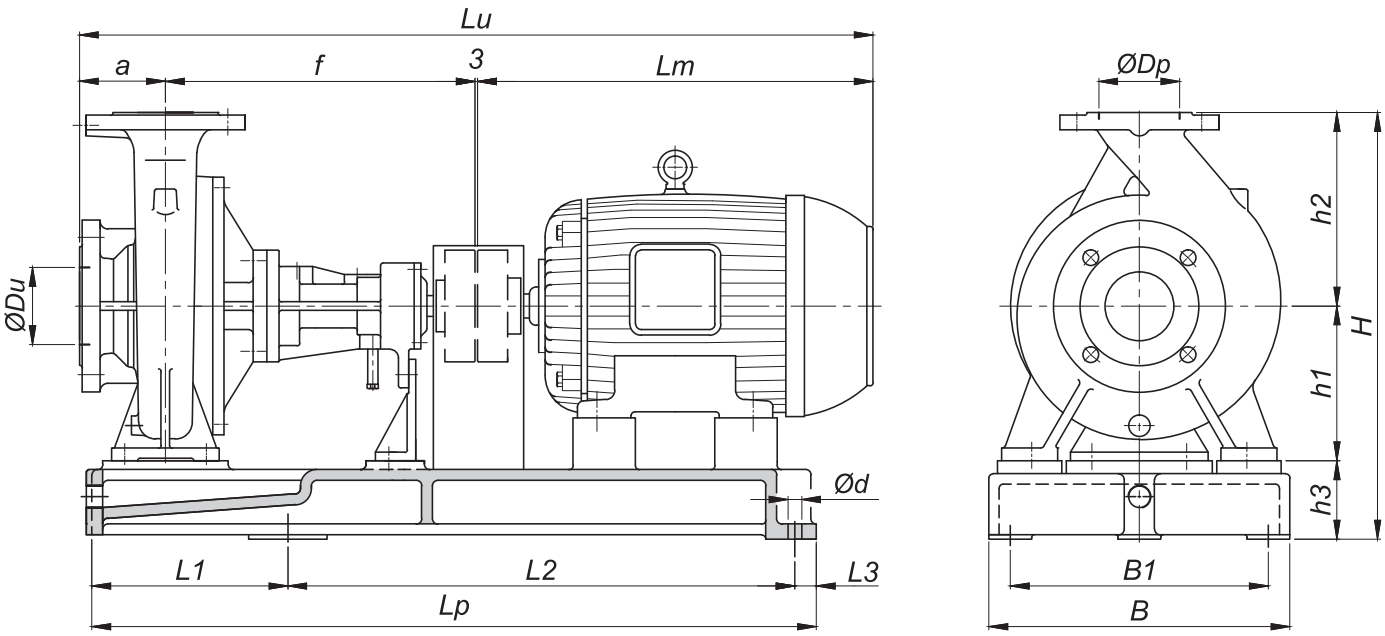




Prirubnice / *Flanges* DIN2533					
Du / Dp	D	b_f	k	g	Br.rupa *No.of holes*
32	140	18	100	18	4
40	150	18	110	18	4
50	165	20	125	18	4
65	185	20	145	18	4
80	200	22	160	18	8
100	220	24	180	18	8
125	250	26	210	18	8
150	285	26	240	22	8

LIVENA TEMELJNA POSTOLJA n=1450 o/min

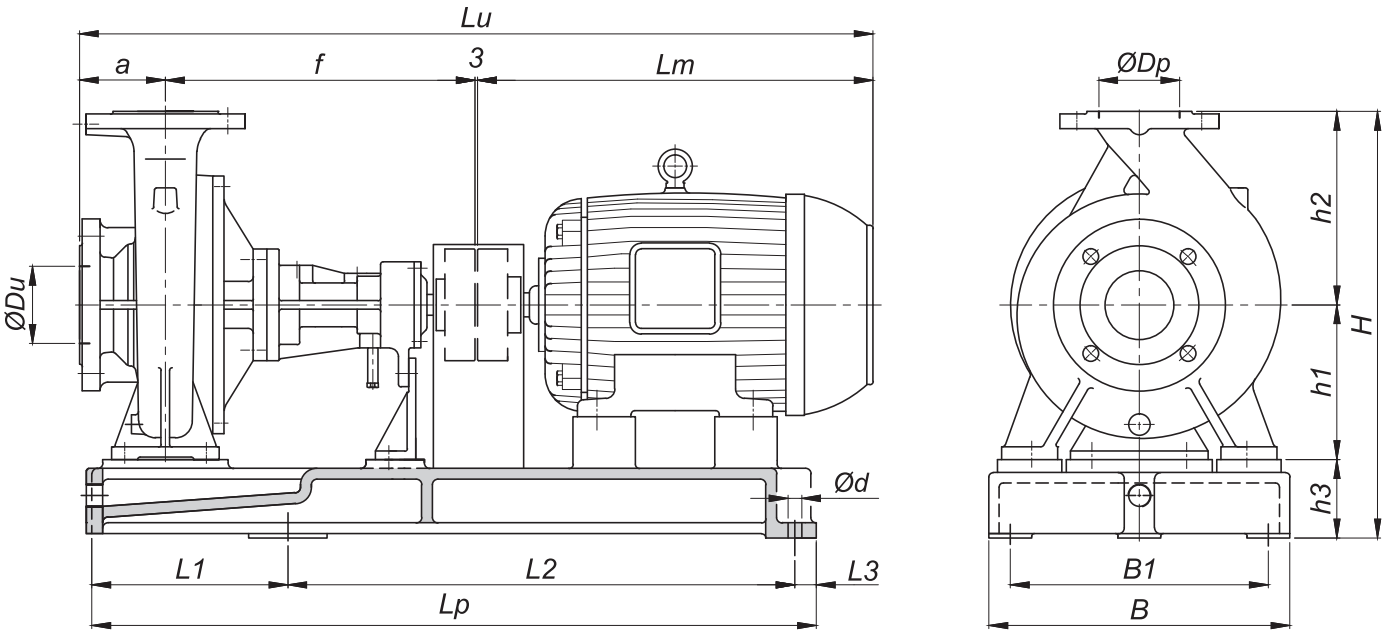
CAST BASE PLATES n=1450 r.p.m.



Tip agregata / *Type of pump set*				Dimenzije agregata / *Dimensions of pump set*																	
Tip pumpe *Type of pump*	Elektromotor *Electric motor* n=1450o/min (r.p.m.)			Dimenzije pumpe *Dimensions of pump*						Dimenzije postolja *Dimensions of base plate*											
	Tip	P [kW]	Lm	ØDu	ØDp	a	f	h1	h2	h3	H	T.P.	Lu	L1	L2	L3	Lp	B	B1	Ød	n
32-160	71b	0.37	212	50	32	80	360	132	160	75	367	1	655	195	470	25	690	270	220	15	3
	80 b	0.55/0.75	244										687								
	90 S	1.1	270										713								
32-200	80 b	0.55/0.75	244					160	180		415		687								
	90 S	1.1	270										713								
	90 La	1.5	295										738								
40-160	71b	0.37	212	65	40			132	160		367		655								
	80 b	0.55/0.75	244										687								
	90 S	1.1	270										713								
	90 La	1.5	295										738								
40-200	90 S	1.1	270			100		160	180		415		733								
	90 La	1.5	295										758								
	100 L	2.2	338										801								
40-250	90 La	1.5	295					180	225		480	3	758		580		800	350	300		
	100 L	2.2/3.0	338										801								
	112 Ma	4.0	341										804								
50-160	80 b	0.55/0.75	244	65	50			160	180		415	1	707		470		690	270	220		
	90 S	1.1	270										733								
	90 La	1.5	295										758								
50-200	90 S	1.1	270					160	200		435		733								
	90 La	1.5	295										758								
	100 L	2.2/3.0	338										801								
50-250	90 La	1.5	295					180	225		480	3	758		580		800	350	300		
	100 L	2.2/3.0	338										801								
	112 Ma	4.0	341										804								
	132 Sa	5.5	395										858								
65-160	80 b	0.75	244	80	65			160	200		435	1	707		470		690	270	220		
	90 S	1.1	270										733								
	90 La	1.5	295										758								
	100 L	2.2	338										801								
65-200	90 La	1.5	295					180	225		480	3	758		580		800	350	300		
	100 L	2.2/3.0	338										801								
	112 Ma	4.0	341										804								

LIVENA TEMELJNA POSTOLJA n=2900 o/min

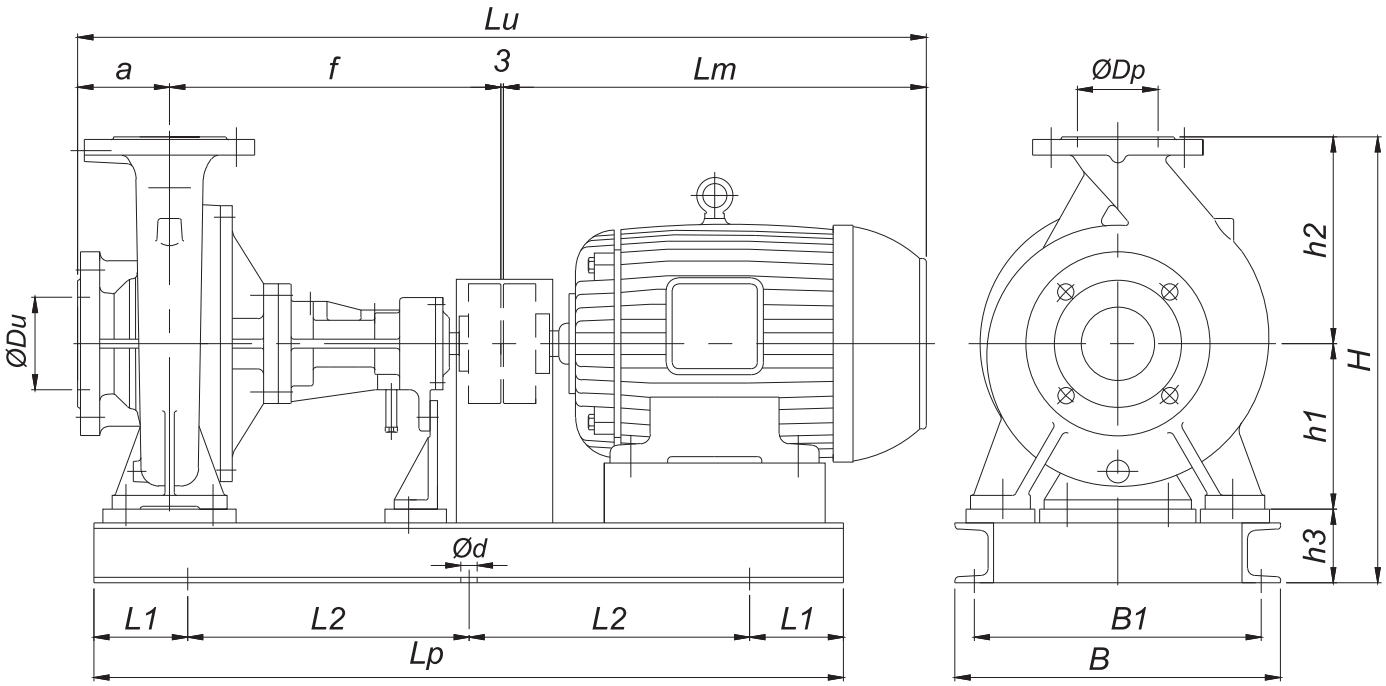
CAST BASE PLATES n=2900 r.p.m.



Tip agregata / *Type of pump set*				Dimenzije agregata / *Dimensions of pump set*																		
Tip pumpe *Type of pump*	Elektromotor *Electric motor* n=2900o/min (r.p.m.)			Dimenzije pumpe *Dimensions of pump*						Dimenzije postolja *Dimensions of base plate*												
	Tip	P [kW]	Lm	ØDu	ØDp	a	f	h1	h2	h3	H	T.P.	Lu	L1	L2	L3	Lp	B	B1	Ød	n
32-160	90 S	1.5	270	50	32	80	360	132	160	75	367	1	713	195	470	25	690	270	220	15	3
	90 La	2.2	295										738								
	100 La	3.0	338									2	781		600		820	295	245		
	112 Ma	4.0	341										784								
	132 S	5.5/7.5	395										838								
32-200	90 La	2.2	295					160	180		415	1	738		470		690	270	220		
	100 La	3.0	338									2	781		600		820	295	245		
	112 Ma	4.0	341										784								
	132 S	5.5/7.5	395										838								
40-160	90 La	2.2	295	65	40			132	160		367	1	738		470		690	270	220		
	100 La	3.0	338									2	781		600		820	295	245		
	112 Ma	4.0	341										784								
	132 S	5.5/7.5	395										838								
40-200	132 S	5.5/7.5	395			100		160	180		415		858								
50-160	100 La	3.0	338	65	50								801								
	112 Ma	4.0	341										804								
	132 S	5.5/7.5	395										858								
50-200	112 Ma	4.0	341					160	200		435		804								
	132 S	5.5/7.5	395										858								
65-160	112 Ma	4.0	341	80	65								804								
	132 S	5.5/7.5	395										858								

ZAVARENA TEMELJNA POSTOLJA n=1450 o/min

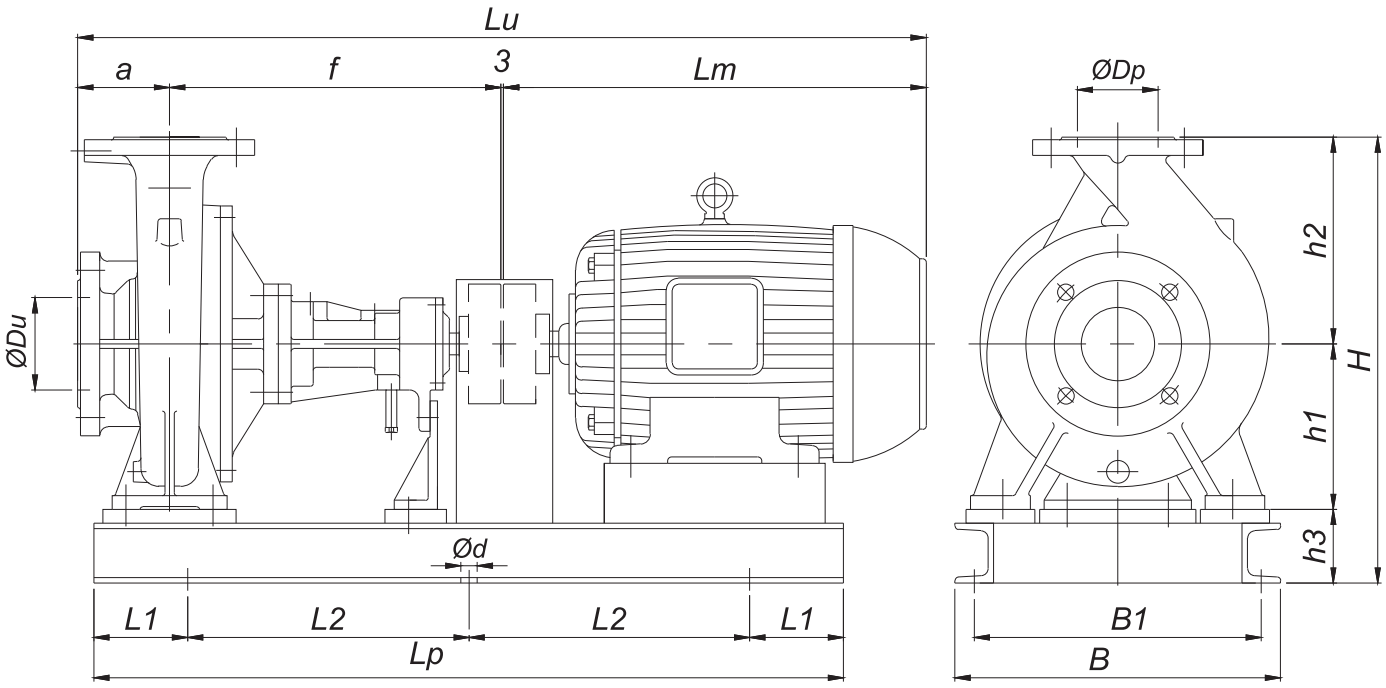
WELDED BASE PLATES n=1450 r.p.m.



Tip agregata / *Type of pump set*				Dimenzije agregata / *Dimensions of pump set*															
Tip pumpe *Type of pump*	Elektromotor *Electric motor* n=1450o/min (r.p.m.)			Dimenzije pumpe *Dimensions of pump*						Dimenzije postolja *Dimensions of base plate*									
	Tip	P [kW]	Lm	ØDu	ØDp	a	f	h1	h2	h3	H	Lu	L1	L2	Lp	B	B1	Ød	n
65-250	112 Ma	4.0	341	80	65	100	470	200	250	100	550	914	120	630	870	330	290	15	4
	132 Sa	5.5	395									968		680	920				
	132 Ma	7.5	433									1006		720	960				
80-160	90 S	1.1	270	100	80	125	360	180	225		505	758		440	680	300	260		
	90 La	1.5	295									783		460	700				
	100 L	2.2/3.0	338									826		500	740				
80-200	100 L	3.0	338				470		250		530	936		590	830	320	280		
	112 Ma	4.0	341									939		630	870				
	132 Sa	5.5	395									993		680	920				
80-250	132 Sa	5.5	395					200	280		580	993		680	920	370	330		
	132 Ma	7.5	433									1031		720	960				
	160 Ma	11.0	500									1098	150	370	1040				6
100-200	100 L	2.2/3.0	338	125	100			200			480	936	120	630	870	330	290		4
	112 Ma	4.0	341								580	939		630	870				
	132 Sa	5.5	395									993		680	920				
	132 Ma	7.5	433									1031		720	960				
100-250	132 Ma	7.5	433			140		225			605	1046		720	960	370	330		
	160 Ma	11.0	500									1113	150	370	1040				6
	160 La	15.0	545									1158		390	1080				
125-250	132 Ma	7.5	433	150	125			250	355		605	1046	120	720	960	370	330		4
	160 Ma	11.0	500									1113	150	370	1040				6
	160 La	15.0	545									1158		390	1080				
	180 Ma	18.5	578									1191		395	1090				

ZAVARENA TEMELJNA POSTOLJA n=2900 o/min

WELDED BASE PLATES n=2900 r.p.m.



Tip agregata / *Type of pump set*				Dimenzije agregata / *Dimensions of pump set*															
Tip pumpe *Type of pump*	Elektromotor *Electric motor* n=2900o/min (r.p.m.)			Dimenzije pumpe *Dimensions of pump*						Dimenzije postolja *Dimensions of base plate*									
	Tip	P [kW]	Lm	ØDu	ØDp	a	f	h1	h2	h3	H	Lu	L1	L2	Lp	B	B1	Ød	n
32-200	160 M	11.0	498	50	32	80	360	160	180	100	440	941	120	660	900	300	260	15	4
40-160	160 M	11.0	498	65	40			132	160	148									
40-200	160 M	11.0/15.0	498			100		160	180	100		961							
40-250	160 M	11.0/15.0	498					180	225		505	1005		720	960				
	160 La	18.5	542																
	180 M	22.0	578									1041		730	970	320	280		
	200 L	30.0/37.0	669							140	545	1132	150	380	1060	370	330		
50-160	160 M	11.0	498		50			160	180	100	440	961	120	660	900	300	260		
50-200	160 M	11.0/15.0	498						200		460								
	160 La	18.5	542									1005		700	940				
50-250	160 M	11.0/15.0	498					180	225		505	961		660	900				
	160 La	18.5	542									1005		720	960				
	180 M	22.0	578							120	525	1041		730	970	320	280		
	200 L	30.0/37.0	669							140	545	1132	150	380	1060	370	330		
65-160	160 M	11.0/15.0	498	80	65			160	200	100	460	961	120	660	900	300	260		
65-200	160 M	11.0/15.0	498					180	225		505								
	160 La	18.5	542									1005		720	960				
	180 M	22.0	578									1041		730	970	320	280		
65-250	180 M	22.0	578				470	200	250	120	570	1151	150	425	1150	330	290	18	6
	200 L	30.0/37.0	669							140	590	1242		435	1170	370	330		
80-160	160 M	11.0/15.0	498	100	80	125	360	180	225	100	505	986	120	670	910	300	260	15	4
	160 La	18.5	542									1030		720	960				
	180 M	22.0	578							120		1066		730	970	320	280		
80-200	160 M	15.0	498				470		250	100	530	1096	150	365	1030				6
	160 La	18.5	542									1140		385	1070				
	180 M	22.0	578							120	550	1176		390	1080				
	200 L	30.0/37.0	669							140	570	1267		425	1150	370	330	18	
80-250	200 L	30.0/37.0	669					200	280	120	600			435	1170				
	225 M	45.0	684									1282		465	1230	410	370		
	250 M	55.0	770							165	645	1368		500	1300	460	410		
100-200	160 La	18.5	542	125	100					100	580	1140		395	1090	330	290	15	
	180 M	22.0	578							120	600	1176							
	200 L	30.0/37.0	669									1267		435	1170	370	330		
	225 M	45.0	684							145	625	1282		465	1230	410	370		
	250 M	55.0	770							190	670	1368		495	1290	460	410	18	
100-250	200 L	37.0	669			140		225		120	625	1282		435	1170	370	330	15	
	225 M	45.0	684									1297		465	1230	410	370		
	250 M	55.0	770							165	670	1383		495	1290	460	410	18	
	280 S	75.0	842							195	700	1455		520	1340	520	470		
	280 M	90.0	893									1506		555	1410				
	315 S	110.0	1054							210	715	1667		565	1430	600	550		
125-250	200 L	37.0	669	150	125			250	355	120	725	1282		435	1170	370	330	15	
	225 M	45.0	684									1297		465	1230	410	370		
	250 M	55.0	770									1383		495	1290	460	410	18	
	280 S	75.0	842							170	775	1455		520	1340	520	470		

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