



NT, NSHD, NB & DV

END-SUCTION CENTRIFUGAL PUMPS
TO EN733 (DIN 24255)



Our Head Office

RAPID ALLWEILER PUMPS HEAD OFFICE

WE HAVE ALL THE TICKS

- DEEP APPLICATION KNOWLEDGE
- TAILOR MADE PUMPING SOLUTIONS
- STATE OF THE ART TRAINING CENTRE
- LEADING PROVIDER OF TOP QUALITY PRODUCTS
- LOCAL MANUFACTURE
- FOUNDED IN 1932
- OWN FOUNDRY
- ACCREDITED PUMP REPAIR/SERVICE WORKSHOP
- ISO 9001:2008
- BEE ACCREDITED
- AFTER MARKET SERVICE



FOUNDER A J HINDRY



OWN WORKSHOP



OWN FOUNDRY

Version 1 - NT, NSHD & NB: Rapid Allweiler Pumps

Whilst all care has been taken to ensure the accuracy of the information contained in this brochure was correct at the time of printing, please be advised we cannot be held responsible for any errors contained within and or changes that may have taken place. Dimensions contained within are for reference purpose only and should not be used for construction; certified drawings are available upon request. For confirmation of any information contained herewith please contact a member of our technical sales team.

COLFAX
Fluid Handling

ALLWEILER®

CONTENTS



NT/NSHD

Application	2
Design & Construction	2
Materials of Construction	2
Model Description	2
Interchangeability Guide	3
Shaft Sealing Arrangement	4
Pump Dimensions	4
Two-Stage Centrifugal Pumps	9
Sectional Drawings & Parts List	10
Tombstone Curves	12



NB

Application	13
Design & Construction	13
Materials of Construction	13
Sectional Drawings & Parts List	14
Pump Dimensions	15
Tombstone Curves	19



DV

Application	20
Design & Construction	20
Materials of Construction	20
Model Description	20
Sectional Drawings	21
Parts List	22
Pump Dimensions	23
Tombstone Curves	24



APPLICATION

- Air-Conditioning
- Water Supply
- Irrigation
- Water Treatment
- Circulating and Heating Systems
- Swimming Pools
- Chemical and Petro-Chemical Industries

RA Pump Range	Minimum Flow (m ³ /h)	Maximum Flow (m ³ /h)	Minimum Head (m)	Maximum Head (m)	Maximum Temperature
NT & NSHD	2	1 100	3	140	160°C

DESIGN & CONSTRUCTION

NT & NSHD

- Suitable for clean liquids which are not chemically aggressive.
- Single and two stage options available.
- Balance holes are drilled in the impeller to effect hydraulic balance eliminating undue forces with in the pump.
- Gland Packing or Mechanical Seal options available.
- High interchangeability of parts, allowing for minimal spares holdings.

NT

- Back pull out design for ease of maintenance.
- Shaft is supported by deep groove ball bearings.
- Sealed for life bearings (are standard) offering a long and maintenance free life time.
- Oil lubricated bearing are available and offer a sight glass for ease of maintenance.

NSHD

- Specifically designed for belt drive applications.
- Volute may rotated to facilitate alternate pipework configurations (see diagram on page no. 6).
- Volute is cast without feet (excluding the 530 bearing pedestal size).

- Heavy duty angular contact roller oil lubricated bearings are fitted with sight glass for ease of maintenance.

Flanges

- SANS 1123 PN10(BS 4504 PN10) or ANSI B16.5 (optional).
- NT - Vertical Discharge and Horizontal Suction.
- NSHD - Horizontal suction and the discharge may used in various positions (see page no. 6).

Interchangeability of Components

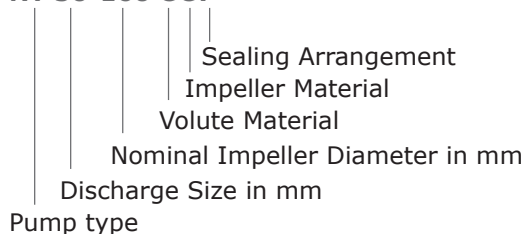
Five drive assemblies cover the entire range of 40 sizes(chart page no.3).

MATERIALS OF CONSTRUCTION




































































Volute:	High grade Cast iron or Bronze
Gland/Seal Plate:	High grade Cast iron or Bronze
Bearing bracket/ pedestal:	High grade Cast iron
Matching Rings:	High grade Cast iron
Lantern Ring:	Nylon
Impeller:	Cast iron, Bronze or Stainless steel
Shaft:	Grade 431 or 316 Stainless steel

MODEL DESCRIPTION

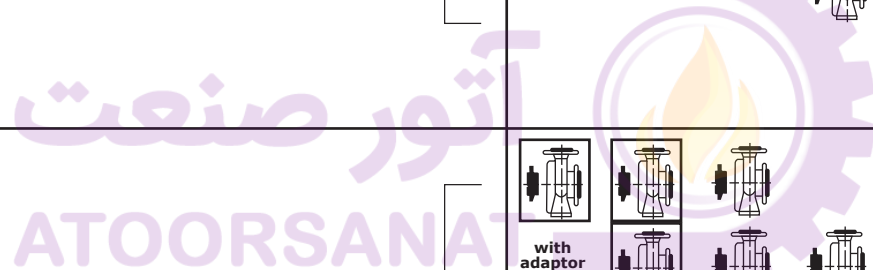
NT 50-160 CCP



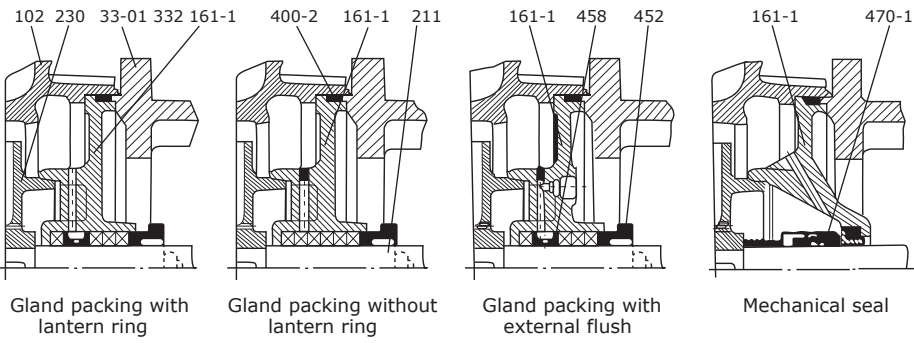
INTERCHANGEABILITY GUIDE

Bearing Bracket Size	Bearing Bracket or Bearing Pedestal	Shaft unit	Casing Cover			Volute - Nominal Impeller Diameter					Delivery Flange ID	
			For Mechanical Seal	For Cooled Stuffing Box	For Uncooled Stuffing Box	400	315	250	200	160		
228	NT 											25
360	NT  NS 							 250	      	     	25 32 40 50 65 80	
470	NT  NS 					 with adaptor ring 470/400	  with adaptor ring 470/315	   	  	65 80 100 125		
530	NT  NS 					 with adaptor ring 530/400	  	   	 	80 100 125 150 200		
585	NT 					 	 			200 250		

NT & NSHD

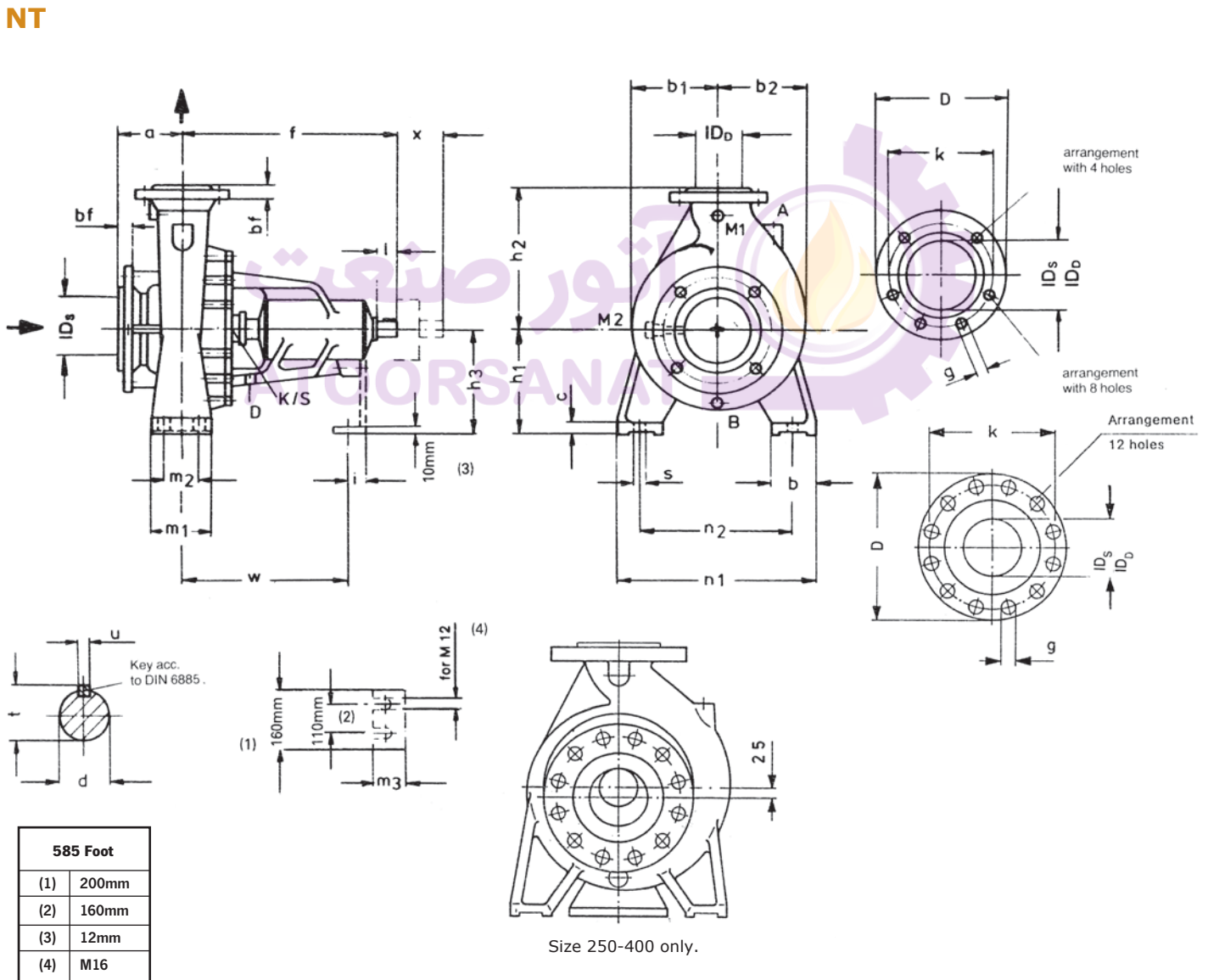


SHAFT SEALING ARRANGEMENT - SINGLE STAGE



DESCRIPTION	PART NO.
VOLUTE CASING	102
GLAND PLATE	161.1
SEAL PLATE	161.2
SHAFT	211
IMPELLER	230
BEARING BRACKET	330
BEARING PEDESTAL	332
GLAND	452
LANTERN RING	458
MECHANICAL SEAL	470.1

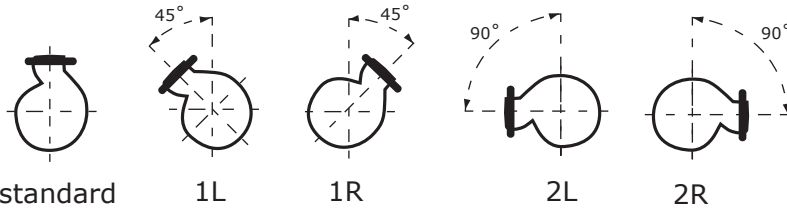
PUMP DIMENSIONS



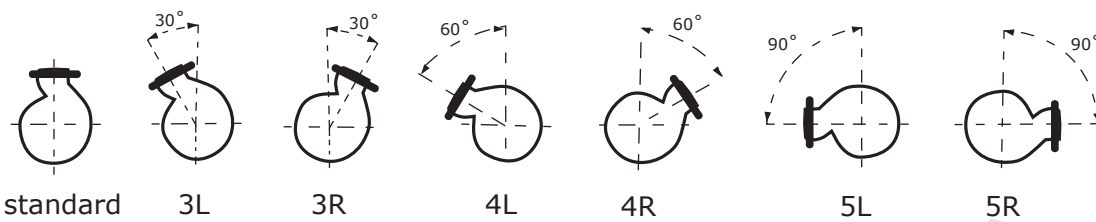
BRANCH POSITION (Seen on suction branch)

NSHD SERIES

Bearing pedestal size 360



Bearing pedestal size 470

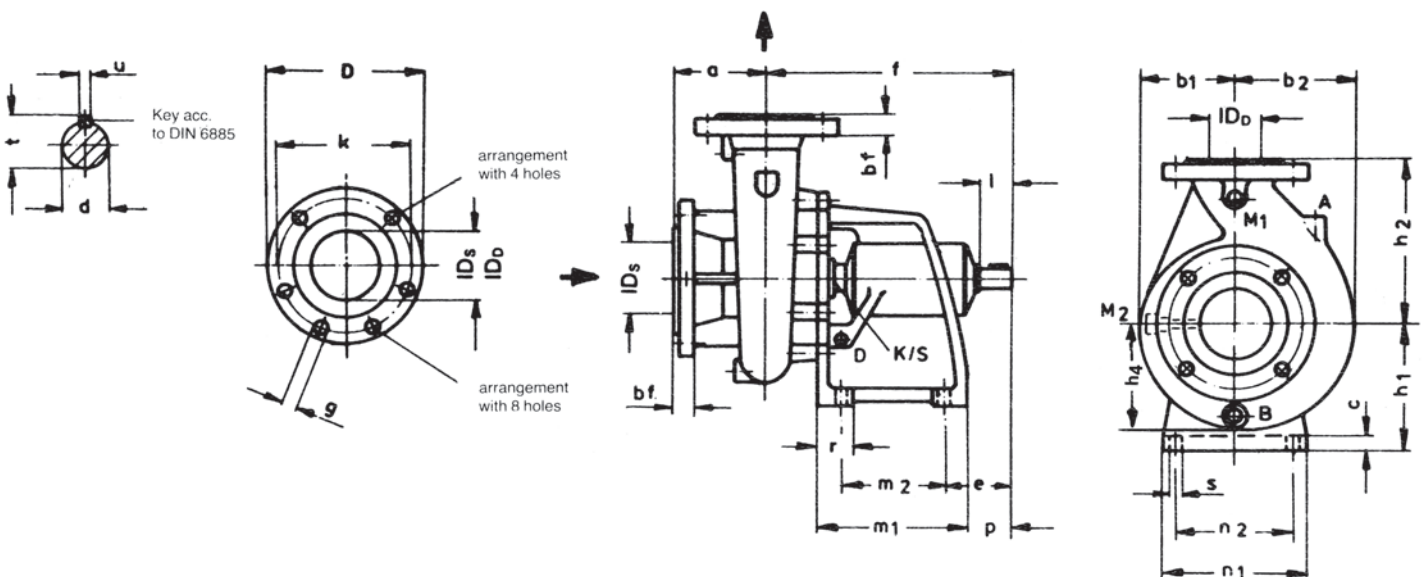


Note:

3L, 3R, 4L and 4R imply an alteration of the bolt hole positions on the suction flange and requires flange on pipe work to be adjusted accordingly.

PUMP DIMENSIONS

NSHD SERIES - WITH BEARING PEDESTAL SIZES 360 & 470



PUMP DIMENSIONS

NSHD SERIES

Size	Discharge Flange		Pump Dimensions					Foot Dimensions					Bolts	Shaft end acc. to DIN 42946				Filling Hole	Drainage	Leakage Water Connection	Gauge Connection	Gauge Connection	Connection for Stuffing Box Cooling	Foreign Sealing Connection	*				
	IDd	IDs	a	f	h1	h2	b1	b2	c	m1	m2	n1		n2	e	p	r									s	d	l	t
32-160	32	50	80	360	180	160	123	123	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
32-200	32	50	80	360	180	180	124	130	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
40-160	40	65	80	360	180	160	123	123	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
40-200	40	65	100	360	180	180	125	135	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
40-250	40	65	100	360	180	225	150	156	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
50-160	50	65	100	360	180	180	125	130	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
50-200	50	65	100	360	180	200	133	145	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
50-250	50	65	100	360	180	225	156	169	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
65-160	65	80	100	360	180	200	133	162	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
65-200	65	80	100	360	180	225	148	170	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
65-250	65	80	100	470	200	250	164	184	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	
65-315	65	80	125	470	200	280	202	219	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	
65-400	65	80	125	470	200	355	239	255	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	250
80-160	80	100	125	360	180	225	136	170	18	210	135	200	170	113	78	60	M12	24	50	27	8	R1/4"	R1/4"	R3/8"	R1/4"	R1/4"	R1/4"	R1/8"	
80-200	80	100	125	470	200	250	163	188	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	
80-250	80	100	125	470	200	280	182	208	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	
80-315	80	100	125	470	200	315	210	231	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	225
100-200	100	125	125	470	200	280	165	203	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	
100-250	100	125	140	470	200	280	189	224	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	210
100-315	100	125	140	470	200	315	220	250	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	235
125-250	125	150	140	470	200	355	212	255	20	280	190	280	212	150	105	90	M16	32	80	35	10	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/8"	235

* Specific sizes where the lowest point of the volute casing is lower than the base of the bearing pedestal.

Size	Shaft end acc. to DIN 42946				Filling Hole	Drainage	Leakage Water Connection	Gauge Connection	Gauge Connection	Connection for Stuffing Box Cooling	Foreign Sealing Connection
	d	l	t	u							
80 400	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
100 400	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
125 315	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
125 400	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
150 250	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
150 315	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
150 400/1	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"
200 250	42	110	45	12	R3/8"	R3/8"	R3/8"	R3/8"	R1/4"	R1/4"	R1/4"

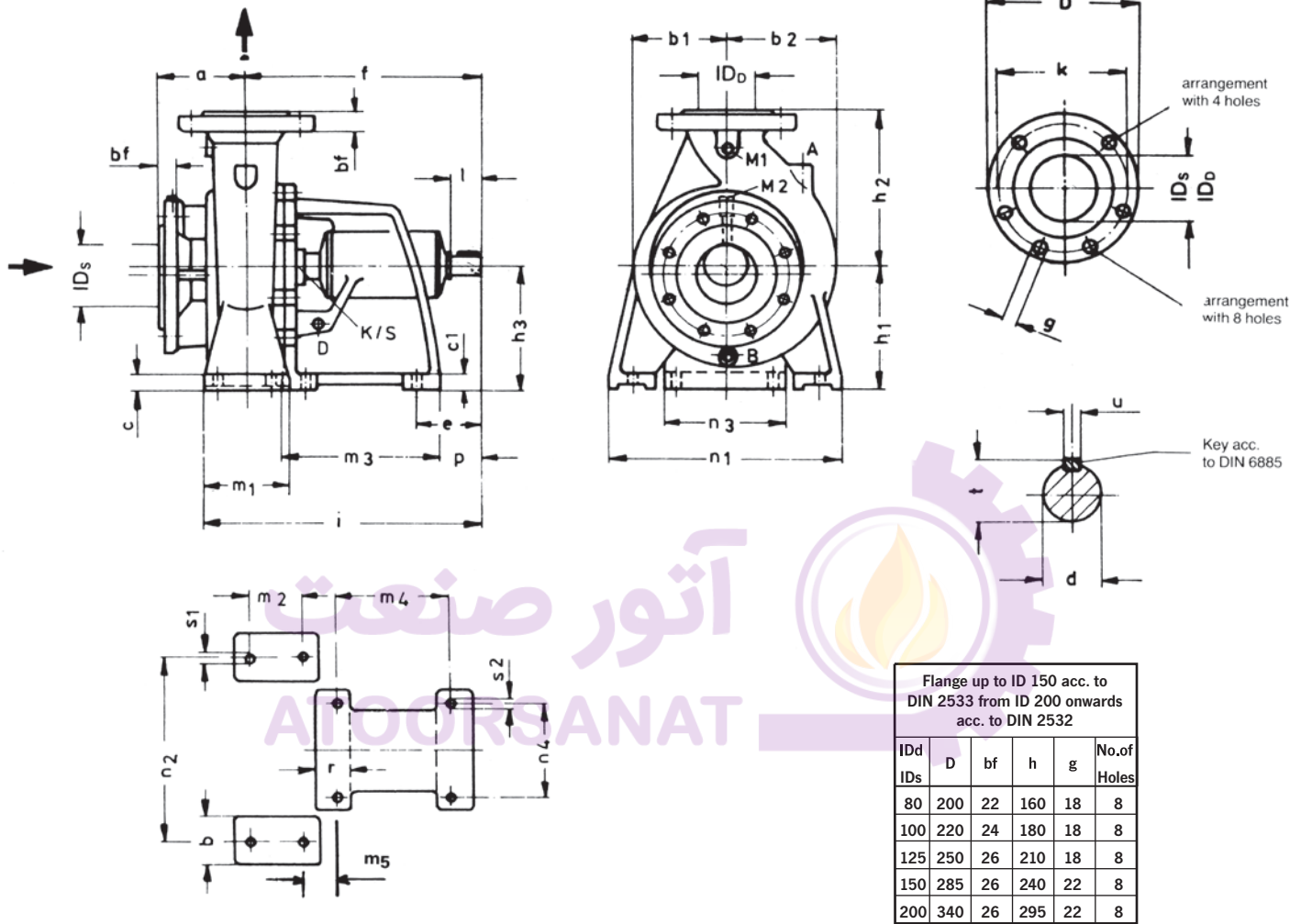
Flange up to ID 150 acc. to DIN 2533 from ID 200 onwards acc. to DIN 2532					
IDd	D	bf	k	g	No. of Holes
32	140	18	100	18	4
40	150	18	110	18	4
50	165	20	125	18	4
65	185	20	145	18	4
80	200	22	160	18	8
100	220	24	180	18	8
125	250	26	210	18	8
150	285	26	240	22	8

PUMP DIMENSIONS

NSHD WITH PEDESTAL SIZE 530

Please note difference in centre heights h_1 and h_3

NT & NSHD



Flange up to ID 150 acc. to DIN 2533 from ID 200 onwards acc. to DIN 2532

IDd	D	bf	h	g	No. of Holes
80	200	22	160	18	8
100	220	24	180	18	8
125	250	26	210	18	8
150	285	26	240	22	8
200	340	26	295	22	8

Size	Discharge Flange		Suction Flange		Pump Dimensions										Foot Dimensions										Bolts		
	IDd	IDs	a	f	h1	h2	b1	b2	b	c	c1	e	h3	i	m1	m2	m3	m4	m5	n1	n2	n3	n4	p	r	s1	s2
80 400	80	100	125	530	280	355	246	265	80	25	22	110	250	610	160	120	325	250	110	435	355	250	200	85	90	M16	M16
100 400	100	125	140	530	280	355	256	272	100	27	22	110	250	630	200	150	325	250	95	500	400	250	200	85	90	M20	M16
125 315	125	150	140	530	280	355	226	252	100	27	22	110	250	630	200	150	325	250	95	500	400	250	200	85	90	M20	M16
125 400	125	150	140	530	315	400	264	283	100	27	22	110	250	630	200	150	325	250	95	500	400	250	200	85	90	M20	M16
150 250	150	200	160	530	280	375	230	280	100	27	22	110	250	630	200	150	325	250	95	500	400	250	200	85	90	M20	M16
150 315	150	200	160	530	280	400	329	271	100	27	22	110	250	630	200	150	325	250	95	550	450	250	200	85	90	M20	M16
150 400	150	200	160	530	315	450	277	305	100	27	22	110	250	630	200	150	325	250	95	550	450	250	200	85	90	M20	M16
200 250	200	200	180	530	355	425	288	330	100	27	22	110	250	630	200	150	325	250	95	550	450	250	200	85	90	M20	M16

TWO-STAGE CENTRIFUGAL PUMPS

Benefits

The two stage pump design applications and dimensions remain the same as the single stage range. The benefits are that the pump is able to achieve much higher pressures and requires substantially lower NPSH. The two stage range is available with our 360 bearing bracket/pedestal size.

The versatility of this design allows for conversion from single stage to two, or vice versa with out the need for machining of the parts. The diagram below indicates the interchangeability of parts.

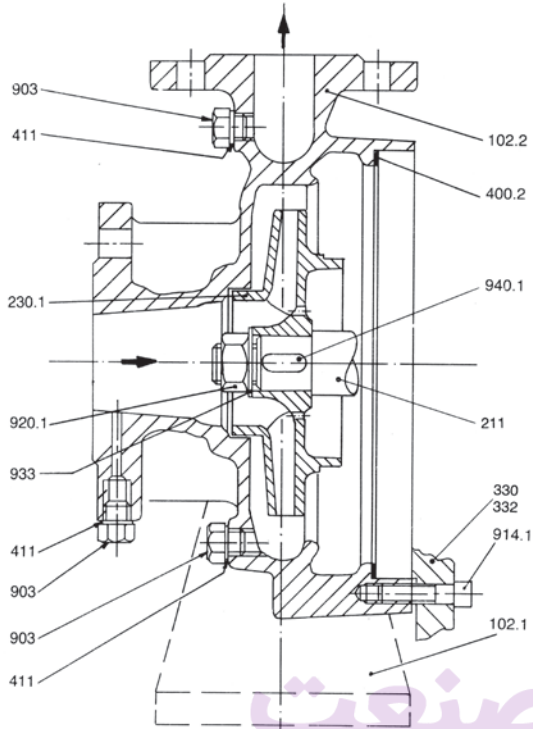
Bearing bracket	Shaft	Casing cover	Stage casing	Diffuser	Volute casing and impeller				Delivery branch DN
		Mechanical seal			Impeller nominal diameter				
		Size 360-200			250		200		
					Impeller		Impeller		
Size 360	Size 360	Size 360-200							
 NT	 Shaft	 Size 360-200	 Stage casing	 Diffuser	 250	 200	 250	 200	25
									32
 NS	 Shaft	 Size 360-250	 Stage casing	 Diffuser	 250	 200	 250	 200	40
									50

NT & NSHD

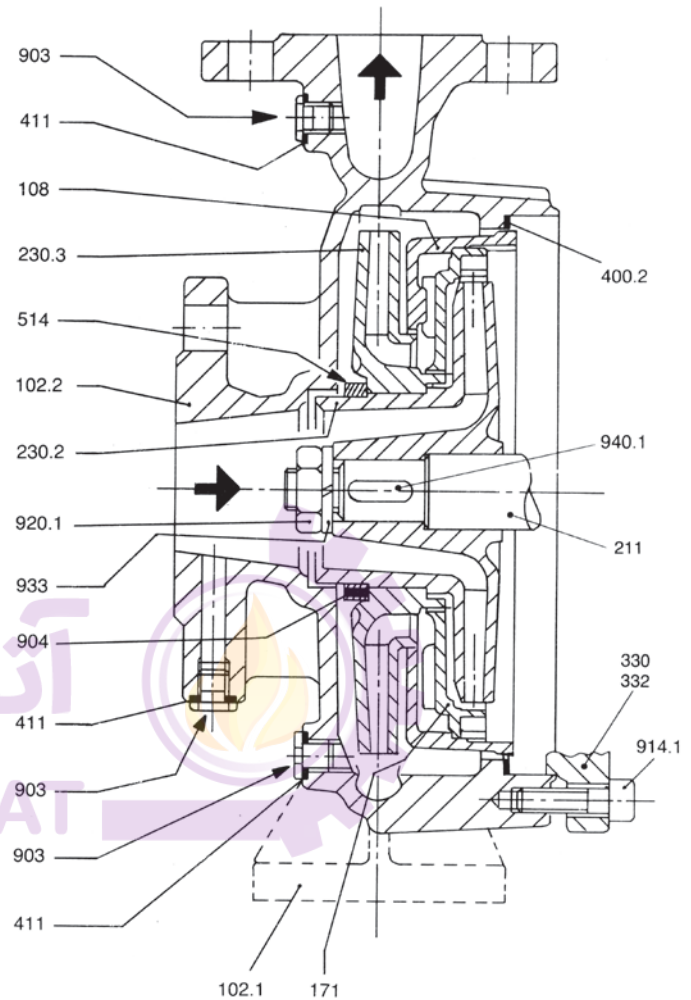
SECTIONAL DRAWINGS & PARTS LIST

HYDRAULIC/LIQUID END

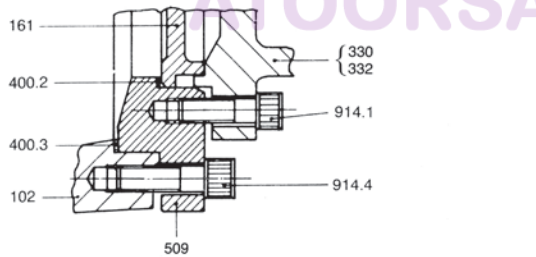
SINGLE-STAGE PUMP



TWO-STAGE PUMP

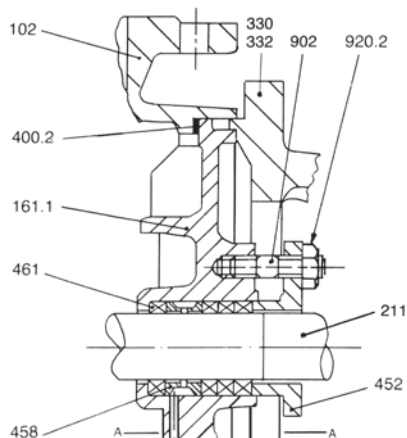


MATCHING RING

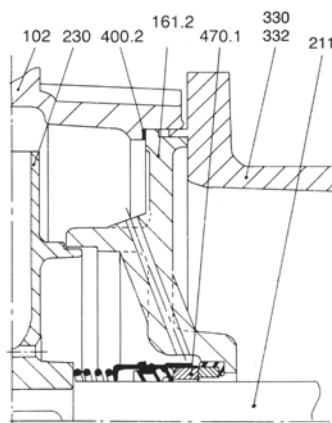


SHAFT SEALING

STUFFING BOX



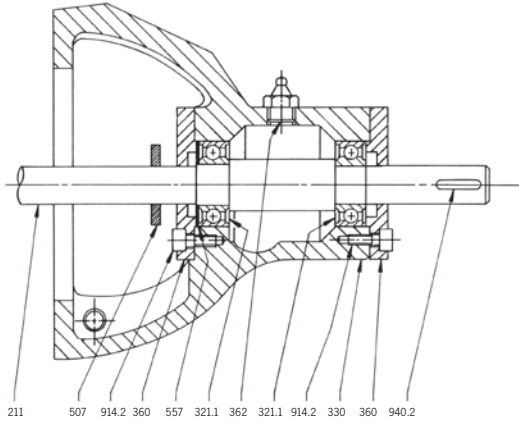
MECHANICAL SEAL



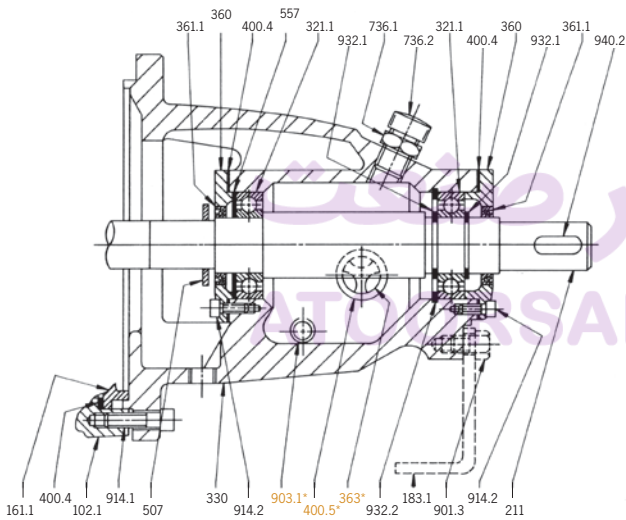
SECTIONAL DRAWINGS & PARTS LIST

BEARING FRAME/POWER END

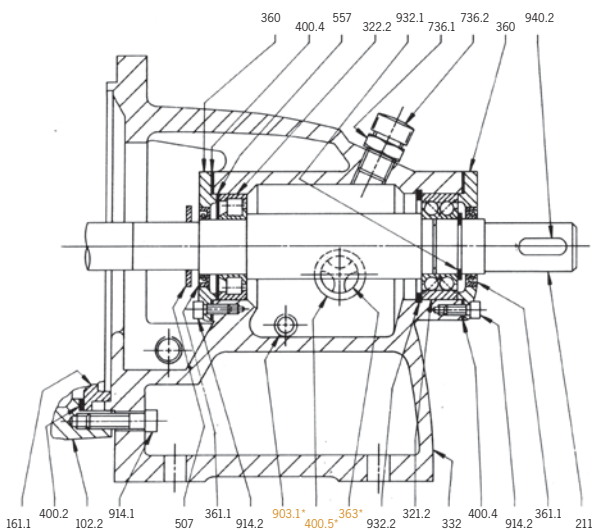
NT 228 BEARING BRACKET (GREASE LUBE)



NT 360 & 470 BEARING BRACKET (OIL LUBE/SEALED BEARINGS)



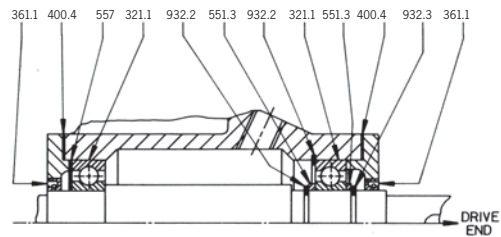
NSHD 360 & 470 BEARING PEDESTAL (OIL LUBE/SEALED BEARINGS)



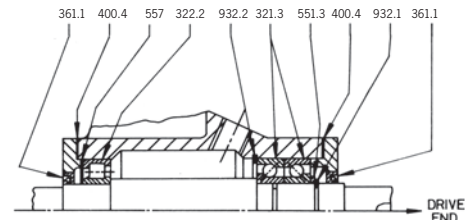
PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
102.1	VOLUTE CASING	458	LANTERN RING
102.2	VOLUTE CASING	461	GLAND PACKING
108	INTERSTAGE CASING	470.1	MECHANICAL SEAL
161.1	GLAND PLATE	507	FLINGER RING
161.2	SEAL PLATE	509	MATCHING RING
171	DIFFUSER	514	LOCKING RING
183.1	SUPPORT FOOT	551.3	SUPPORT DISC
211	SHAFT	551.7	SUPPORT DISC
230.1	IMPELLER	557	WAVE WASHER
230.2	IMPELLER 1ST STAGE	736.1	BREATHER NIPPLE
230.3	IMPELLER 2ND STAGE	736.2	BREATHER CAP
321.1	BALL BEARING	901.3	SET SCREW
321.2	A/C BALL BEARING	902.4	STUD
321.3	A/C BALL BEARING	903	PLUG
322.2	ROLLER BEARING	903.1	OIL DRAIN PLUG*
330	BEARING BRACKET	904	GRUB SCREW
332	BEARING PEDESTAL	914.1	SET SCREW
360	BEARING COVER	914.2	SET SCREW
361.1	LIP SEAL	914.4	SET SCREW
362	GREASE NIPPLE	920.1	IMPELLER NUT
363	OIL SIGHT GLASS*	920.2	HEX NUT
400.2	GASKET	932.1	CIRCLIP
400.3	GASKET	932.2	CIRCLIP
400.4	GASKET	933	SPRING WASHER
400.5	GASKET*	940.1	IMPELLER KEY
452	GLAND	940.2	DRIVE KEY

* OPTIONAL OIL LUBE

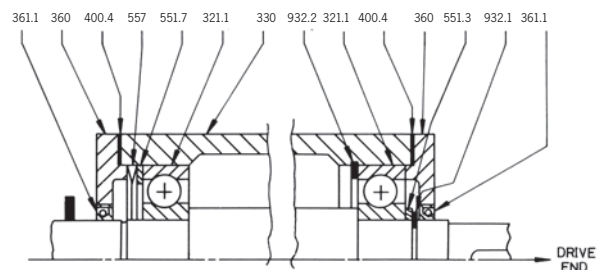
NT 530 BEARING ARRANGEMENT (OIL LUBE)



NSHD 530 BEARING ARRANGEMENT (OIL LUBE)

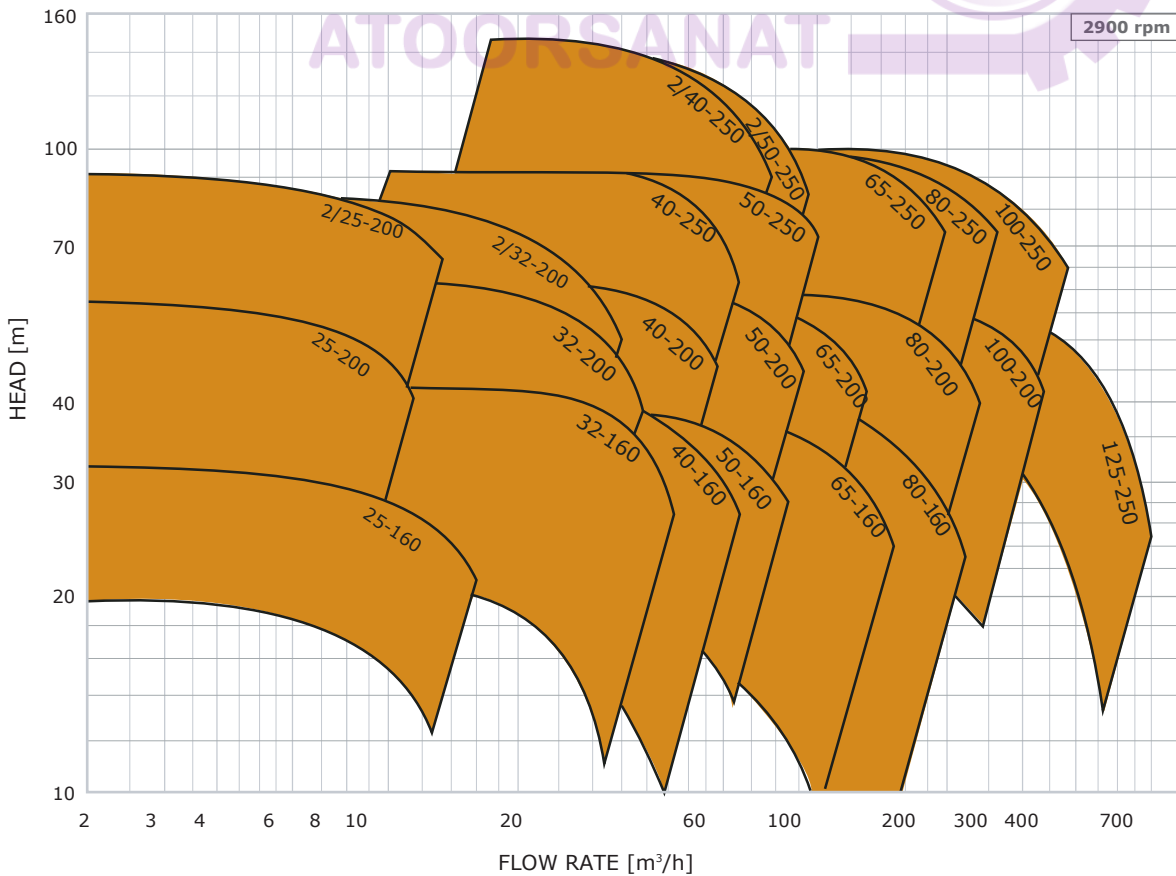
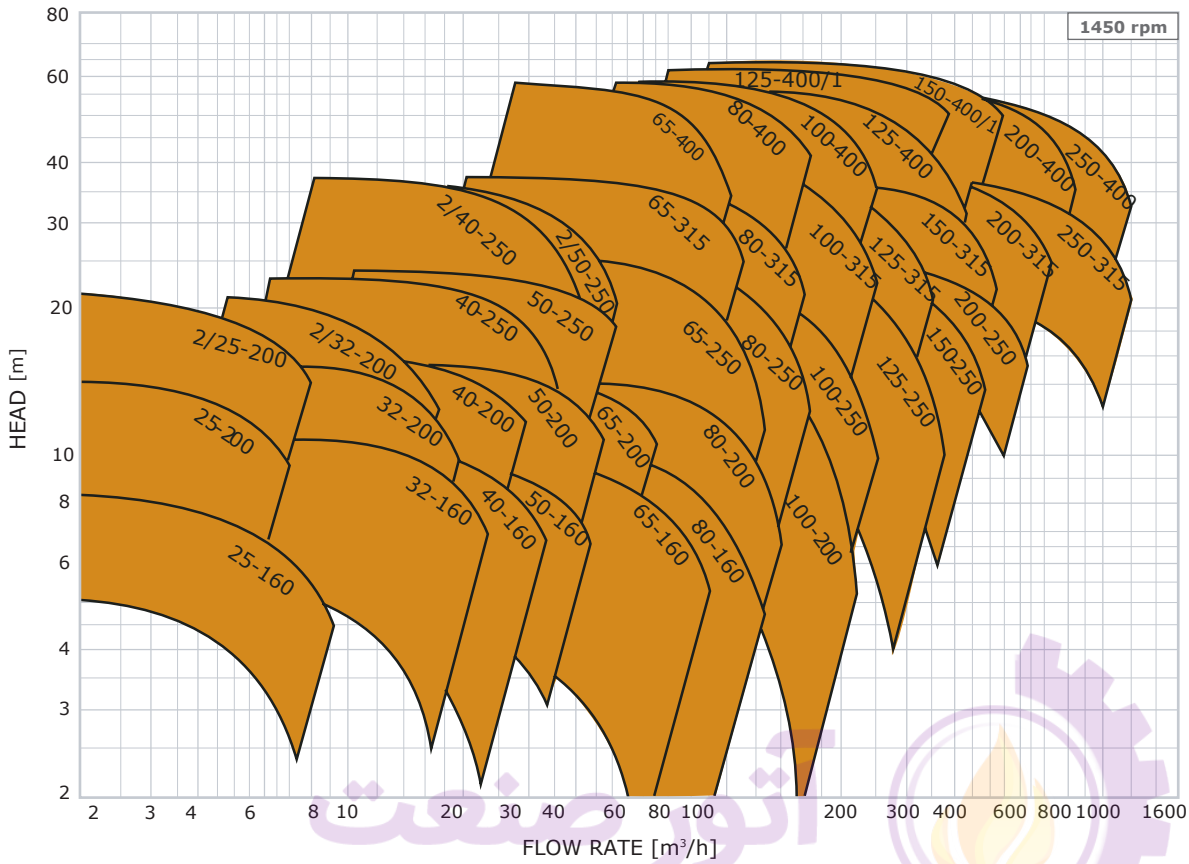


NT 585 BEARING ARRANGEMENT (OIL LUBE)



TOMBSTONE CURVES

NT & NSHD



Size*	Pg. no.	
	1450	2900
25-160	2	42
25-200	3	43
2/25-200	4	44
32-160	5	45
32-200	6	46
2/32-200	7	47
40-160	8	48
40-200	9	49
40-250	10	50
2/40-250	11	51
50-160	12	52
50-200	13	53
50-250	14	54
2/50-250	15	55
65-160	16	56
65-200	17	57
65-250	18	58
65-315	19	
65-400	20	
80-160	21	59
80-200	22	60
80-250	23	61
80-315	24	
80-400	25	
100-200	26	62
100-250	27	63
100-315	28	
100-400	29	
125-250	30	64
125-315	31	
125-400	32	
125-400/1	33	
150-250	34	
150-315	35	
150-400/1	36	
200-250	37	
200-315	38	
200-400	39	
250-315	40	
250-400	41	

* FOR INDIVIDUAL PUMP PERFORMANCE CURVES, REFER TO OUR EN733 (DIN 24255) CURVES BOOK.



APPLICATION

- Air-Conditioning
- Water Supply
- Irrigation
- Water Treatment
- Circulating and Heating Systems
- Swimming Pools
- Chemical and Petro-Chemical Industries

RA Pump Range	Minimum Flow (m ³ /h)	Maximum Flow (m ³ /h)	Minimum Head (m)	Maximum Head (m)	Maximum Temperature
NB	2	530	3	140	160°C

DESIGN & CONSTRUCTION

- Suitable for clean liquids which are not chemically aggressive.
- Single and two stage options available.
- Balance holes are drilled in the impeller to effect hydraulic balance eliminating undue forces with in the pump.
- Gland Packing or Mechanical Seal options available.
- High interchange ability of parts allowing for minimal spares holdings.
- Space saving design compared to long coupled pump sets.
- More cost economical option compared to long coupled pump sets.
- Designed for horizontal installation with vertical optional.
- Drive Coupling and Stub Shaft design which utilizes standard IEC flange mounted electric motors.
- The Stub Shaft is attached directly to the motor shaft and runs on the grease lubricated motor bearings.

Flanges

- SANS 1123 PN10(BS 4504 PN10) or ANSI B16.5 (optional).
- Horizontal suction and the discharge may used in various positions (per the Branch Position diagram see page no. 6)

MATERIALS OF CONSTRUCTION

Pump Shaft:	Grade 431 or 316 Stainless steel
Volute Casing:	High Grade Cast Iron, Bronze
Impeller:	Cast Iron, Stainless Steel or Bronze
Shaft Sealing:	Stuffing box or Mechanical seal (Cooled or Uncooled) to suit application
Motor Bearings:	Grease lubricated ball bearings

Motor

Standard I.E.C flange mounted or foot and flange mounted, three phase 380 or 525 volt, totally enclosed fan cooled motors are used with either cast iron or aluminum bodies. Non standard motors can be supplied upon request.

MODEL DESCRIPTION

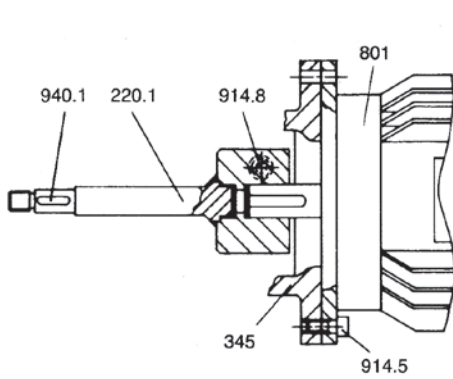
NB 50-250 CCP 120

						Motor Frame Size
						Seal Arrangement
						Impeller
						Volute Material
						Nominal Impeller Diameter in mm
						Discharge Size in mm
						Pump Type

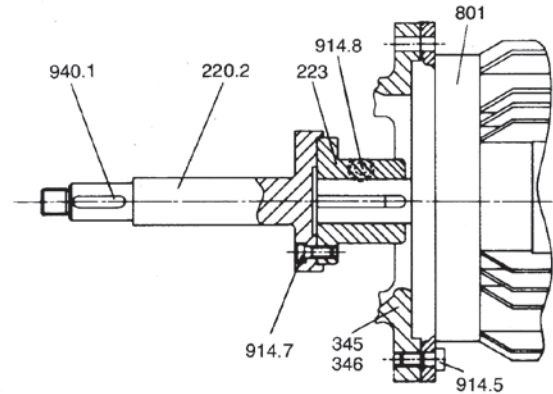
SECTIONAL DRAWINGS & PARTS LIST

POWER/MOTOR END

SHAFT SIZE 25-160

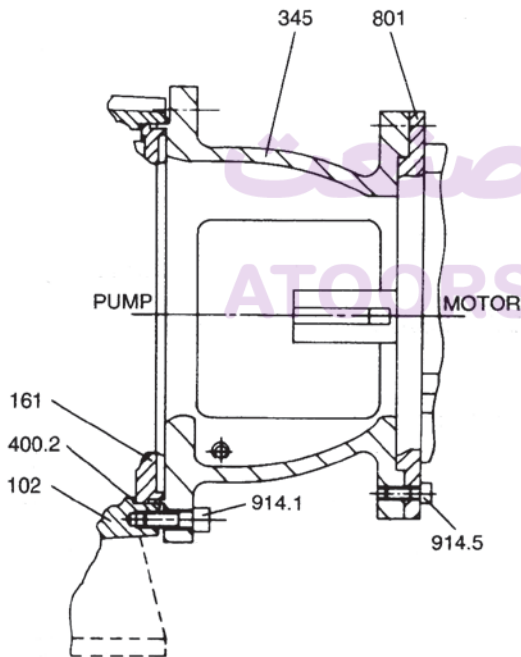


SHAFT SIZE 360 & 470



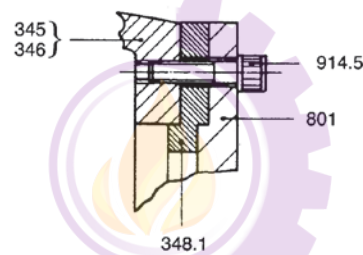
PUMP/MOTOR BRACKET

SIZE 25-160, 360/4, 360/11 & 470/22

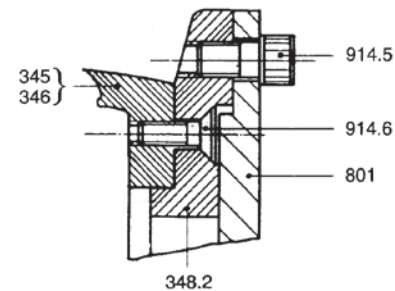


MOTOR ADAPTOR PLATES

FRAME 90S & 90L MOTORS



FRAME 100L, 112M, 160M, 160L, 180M - 180L MOTORS



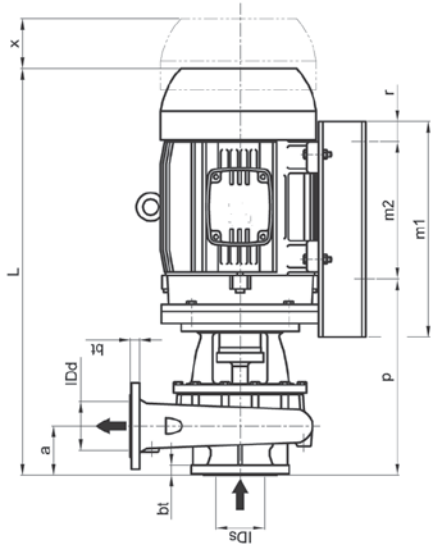
PARTS LIST

*2 Stage Pumps Only

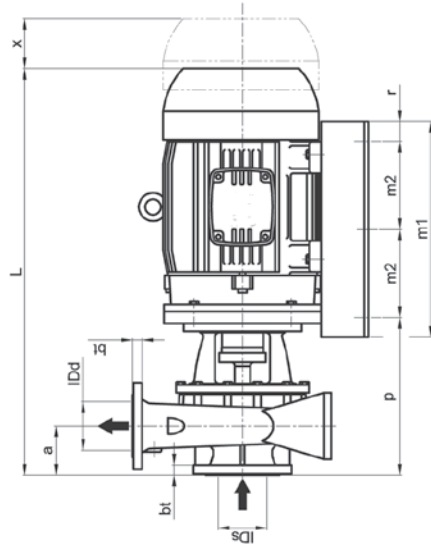
**360 '250' series & 470 '315' & '400' series

DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.
VOLUTE CASING NT (WITH FEET)	102.1	BRACKET - PUMP/MOTOR (WITH FOOT)	346	STUD	902
VOLUTE CASING NS (WITHOUT FEET)	102.2	ADAPTOR PLATE	348.1	PLUG	903
INTERSTAGE CASING*	108	ADAPTOR PLATE	348.2	GRUB SCREW*	904
GLAND PLATE	161.1	GASKET	400.2	SET SCREW	914.1
SEAL PLATE	161.2	GASKET**	400.3	SET SCREW	914.4
DIFFUSER	171	WASHER	411	SET SCREW	914.5
STUB SHAFT 25-160	220.1	GLAND	452	COUNTERSUNK CAP SCREW	914.6
STUB SHAFT 360 & 470	220.2	LANTERN RING	458	CAP SCREW	914.8
DRIVE COUPLING	223	GLAND PACKING RING	461	CAP SCREW	917.7
IMPELLER	230.1	MECHANICAL SEAL	470.1	IMPELLER NUT - HEX	920.1
IMPELLER - 1ST STAGE*	230.2	MATCHING RING**	509	NUT - HEX	920.2
IMPELLER - 2ND STAGE	230.3	LOCKING RING ¹	514	SPRING WASHER	933
BRACKET - PUMP/MOTOR (WITHOUT FOOT)	345	MOTOR	801	KEY - IMPELLER	940.1

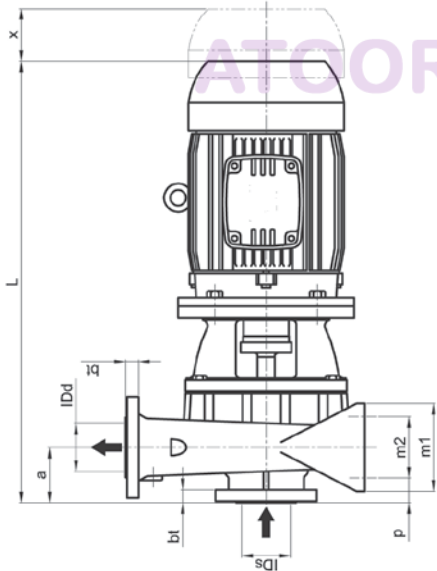
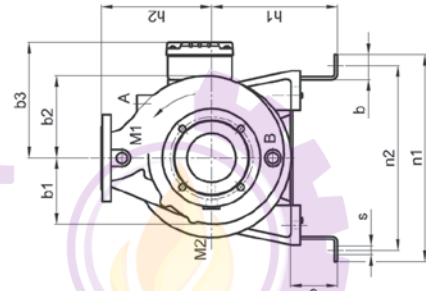
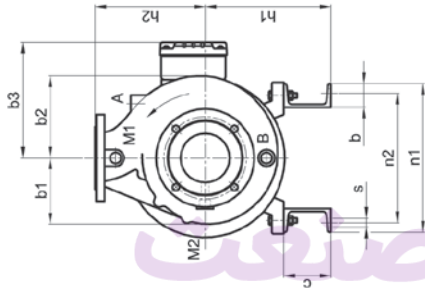
DIMENSIONS



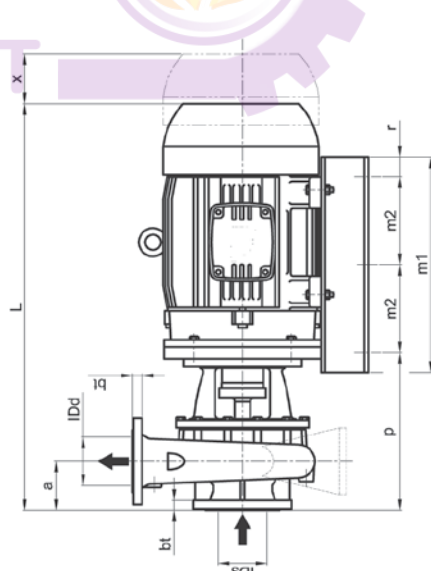
ARRANGEMENT TYPE : 2
360/11F



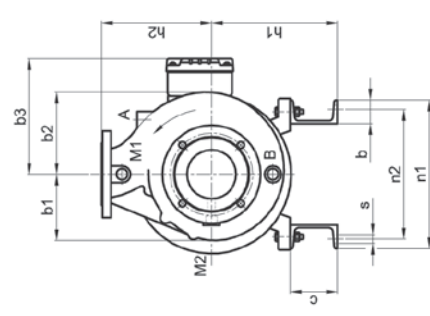
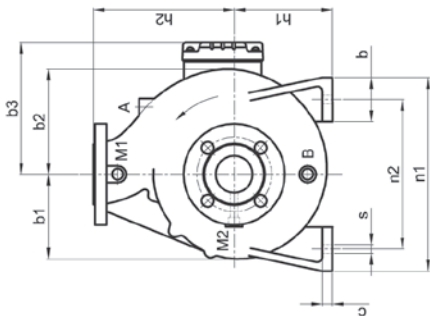
ARRANGEMENT TYPE : 4
530/1F/2F



ARRANGEMENT TYPE : 1
360/4



ARRANGEMENT TYPE : 3
470/22F



DIMENSIONS

Pump	Bracket	Arrangement	Motor	Motor frame Size	Pole	Suction Flange	Discharge Flange	Pump Dimensions														Foot Dimensions											Bolts	Dismantling Space	Priming Hole	Drainage Hole	Gauge Connection	Mass kg Approx.
								IDs	IDd	a	b1	b2	±b3	h1	h2	±L	b	c	m1	m2	r	n1	n2	p	S	X	A	B	M1/M2	Kg								
25-160	25-160	1	0.55 1.1 1.5 2.2	80 90S 90L	4 2	25	25	63	100	108	155	112	160	437	50	12	100	70	-	220	180	28	10	60	R1/4"	R1/4"	R1/4"	29 31 35 37										
25-200	360/4	1	0.55 0.75 1.1 1.5 2.2	80 90S 100L 112M	4 2	40	25	80	132	132	145	160	180	494	50	15	100	70	-	240	190	45	12	80	R1/4"	R1/4"	R1/4"	33 35 38 47 54										
2/25-200	360/4	1	0.75 1.1 1.5 2.2	80 90S 112M	4	40	25	80	132	132	145	160	180	494	50	15	100	70	-	240	190	45	12	80	R1/4"	R1/4"	R1/4"	36 42 58										
	360/11F	2	5.5 7.5 11 15	132S 160M	2						218	232		671	50	100	330	145	40	248	220	404	12					70 80 100										
32-160	360/4	1	0.55 0.75 1.1 1.5 2.2	80 90S 100L 112M	4 2	50	32	80	123	123	155	160	180	494	50	15	100	70	-	240	190	45	12	80	R1/4"	R1/4"	R1/4"	34 35 39 49 56										
	360/11F	2	5.5 7.5 11 15	132S	2						218	232		671	50	100	330	145	40	248	220	404	12					65 75										
32-200	360/4	1	0.75 1.1 1.5 2.2	80 90S 90L	4	50	32	80	124	130	145	160	180	494	50	15	100	70	-	240	190	45	12	80	R1/4"	R1/4"	R1/4"	40 44 47										
	360/11F	2	5.5 7.5 11 15	132S 160M	2						218	232		671	50	100	330	145	40	248	220	404	12					70 80 105										
2/32-200	360/4	1	0.75 1.1 1.5 2.2	80 90S 90L	4	50	32	80	124	130	145	160	180	494	50	15	100	70	-	240	190	45	12	80	R1/4"	R1/4"	R1/4"	40 44 47										
	360/11F	2	5.5 7.5 11 15	132S 160M	2						218	232		671	50	100	330	145	40	248	220	404	12					70 85 105 120										
40-160	360/4	1	0.75 1.1 1.5 2.2	80 90S 90L 100L 112M	4 2	65	40	80	123	123	145	155	160	494	50	15	100	70	-	240	190	45	12	80	R1/4"	R1/4"	R1/4"	40 42 46 52 59										
	360/11F	2	5.5 7.5 11 15	132S 160M	2						218	232		671	50	100	330	145	40	248	220	404	12					70 80 105										
40-200	360/4	1	1.1 1.5 2.2	90S 90L 100L	4	65	40	100	125	135	155	160	180	542	50	15	100	70	-	265	212	65	12	80	R1/4"	R1/4"	R1/4"	49 52 59										
	360/11F	2	5.5 7.5 11 15	132S 160M	2						218	232		691	50	100	330	145	40	248	220	424	12					80 90 110 125										
40-250	360/4	1	1.5 2.2 3	90L	4	65	40	100	150	156	155	165	180	569	50	15	125	95	-	320	250	53	12	80	R1/4"	R1/4"	R1/4"	56 63 65										
	360/11F	2	11 15 18.5 22	160M 160L 180M	2						256	260		839	65	100	400	300	50	308	250	344	16					115 125 145 210										
2/40-250	360/4	1	2.2	100L	4	65	40	100	150	156	165	180	225	616	65	15	125	95	-	320	250	53	12	80	R1/4"	R1/4"	R1/4"	67 69 74										
	360/11F	2	5.5 15 18.5 22 30 37 45	132S 160M 160L 180M 200L 225S	4 2						190			633		100	400	300	50	308	250	300 344 388 340	12					85 130 150 220 290 310 445										
50-160	360/4	1	0.75 1.1 1.5	80 90S 90L	4	65	50	100	125	130	145	155	160	180	514	50	15	100	70	-	265	212	65	12	80	R1/4"	R1/4"	R1/4"	41 45 48									
	360/11F	2	5.5 7.5 11	132S 160M	2						218	232		691	50	100	330	145	40	248	220	424	12					70 80 105										
50-200	360/4	1	1.5 2.2 3	90L 100L	4	65	50	100	133	145	155	165	160	200	567	50	15	100	70	-	265	212	65	12	80	R1/4"	R1/4"	R1/4"	59 67 49									
	360/11F	2	7.5 11 15 18.5	132S 160M 160L	2						218	232		691	50	100	330	145	40	248	220	424	12					95 115 130 145										

DIMENSIONS

Pump	Bracket	Arrangement	Motor	Motor frame Size	Pole	Suction Flange	Discharge Flange	Pump Dimensions														Foot Dimensions											Bolts	Dismantling Space	Priming Hole	Drainage Hole	Gauge Connection	Mass kg Approx.
								ID _s	ID _d	a	b1	b2	±b3	h1	h2	±L	b	c	m1	m2	r	n1	n2	p	S	X	A	B	M1/M2	Kg								
50-250	360/4	1	2.2 3 4	100L 100L 112M	4	65	50	100	156	169	165	180	225	616	65	15	125	95	-	320	250	53	12	80	R1/4"	R1/4"	R1/4"	69 71 76 130 150 215 285 305										
	360/11F	2	15 18.5 22 30 37	160M 160L 180M 200L	2						190 218 276 292	260		633 839 883 905 1008 1008	65	100	400	300	50	308	250	344 388 340 372	16															
2/50-250	360/4	1	3 4	100L 112M	4	65	50	100	156	169	165	180	225	616	65	15	125	95	-	320	250	53	12	80	R1/4"	R1/4"	R1/4"	74 79 80 90 155 220 290 310 445										
	360/11F	2	5.5 7.5 18.5 22 30 37 45	132S 132M 160L 200L 200L 225S	4						190 218 256 276 292	232	260	633 693 731 883 905 1008	50	100	330	145	40	248	220	426 388 340 372	12															
65-160	360/4	1	0.75 1.1 1.5 2.2	80 90S 90L 100L	4	80	65	100	133	162	145	160	200	514	65	15	125	95	-	280	212	63	12	80	R1/4"	R1/4"	R1/4"	48 52 55 62 80 90 110										
	360/1 F	2	7.5 11 15	132S 160M	2						165 218 256	232	260	514 542 567 614	50	100	330	145	40	248	220	424 342	12 16															
65-200	360/4	1	1.5 2.2 3	90L 100L	4	80	65	100	148	170	155 165	180	225	567 614	65	15	155	95	-	320	250	53	12	80	R1/4"	R1/4"	R1/4"	58 65 67 115 130 145 210										
	360/11F	2	11 15 18.5 22	160M 160L 180M	2						256 260	260		837 881 903	65	100	400	300	50	308	250	342 386 338	16															
65-250	470/22f	2	5.5 7.5 11 22 30 37 45 55 75	132s 132M 160M 180M 200L 225S 250S	4 2/4 2	80	65	100	164	184	218	232	250	730	50	100	330	145	40	248	220	463	12 16	100	R3/8"	R3/8"	R3/8"	125 135 160 240 310 300 465 628 725										
			256 276 292	260							260	768 876 942 1045	65	80								400 450 500						300 350 400	50	308 349 386	250 279 320	381 377 409	24	24	381 381 551			
65-315	470/22F	2	7.5 11 15	132M 160M 160L	4	80	65	125	202	219	218 256	232	280	779 887 931	50	100	330 400	145 300	40 50	248 308	220 250	474 392 436	12 16	100	R3/8"	R3/8"	R3/8"	150 170 185										
65-400	470/22F	2	11 15 18.5 22	160M 160L 180M 180L	4	80	65	125	239	255	256	60	355	887 931 953 991	65	100	400 80	300 350	50	308 349	250 279	392 436 388 426	16	100	R3/8"	R3/8"	R3/8"	180 200 275 290										
80-160	360/4	1	1.1 1.5 2.2 3	90S 90L 100L	4	100	80	125	136	170	155 165	180	225	567 592 639 639	65	15	125	95	-	320	250	78	12	80	R3/8"	R3/8"	R3/8"	54 57 64 67 90 115 125 145 210										
	360/11F	2	7.5 11 15 18.5 22	132S 160M 160L 180M	2						218 256	232	260	716 862	50	100	330 400	145 300	40 20	248 308	220 250	449 367	12 16															
80-200	470/22F	2	5.5 11/15 18.5 22 30 37	132S 160L 160L 180M 200L	4 2 2	100	80	125	163	188	218	232	250	755	50	100	330	145	40	248	220	488	12	100	R3/8"	R3/8"	R3/8"	125 210 245 315										
			256 256 276 292	280							280	945 945 967 1070	65	80								400 400 450 500						300 300 350 400	50	308 349 386	250 279 320	450 450 402 434						
80-250	470/22F	2	5.5 7.5 11 15 18.5 22 30 37 45	132S 132M 160M 160L 180M 200L 225S	4 2/4 2	100	80	125	182	208	218	232	280	755	50	100	330	145	40	248	220	488	12	100	R3/8"	R3/8"	R3/8"	135 145 165 180 200 235 305 325 465										
			256	280							280	793 901	65	80								400 400						300 350	50	308 349	250 279	406 402 434						
		3	55 75	250S							349	350		1120	110	100	520	210	50	506	420	576	24						630 730									
80-315	470/22F	2	11 15 18.5	160M 160L 180M	4	100	80	125	210	231	256	260	315	887 931 953	80	80	400	300	50	308	250	392 436 388	16	100	R3/8"	R3/8"	R3/8"	180 190 270										
80-400	530/1F	4	11 15 18.5 22 30	160M 160L 180L 200L	4	125	100	140	256	272	256	360	919	78	200	520	210	50	490	420	373	16						185 205 225 257 325										

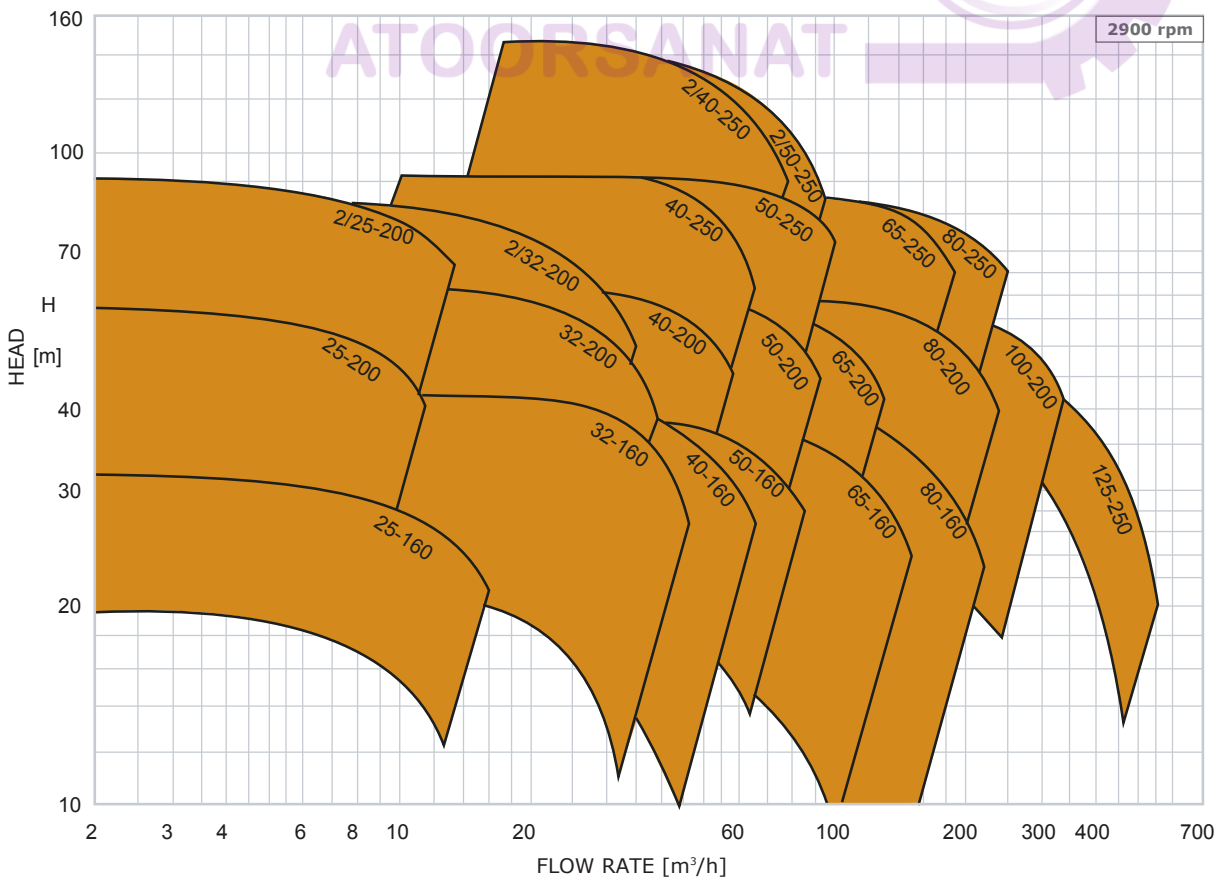
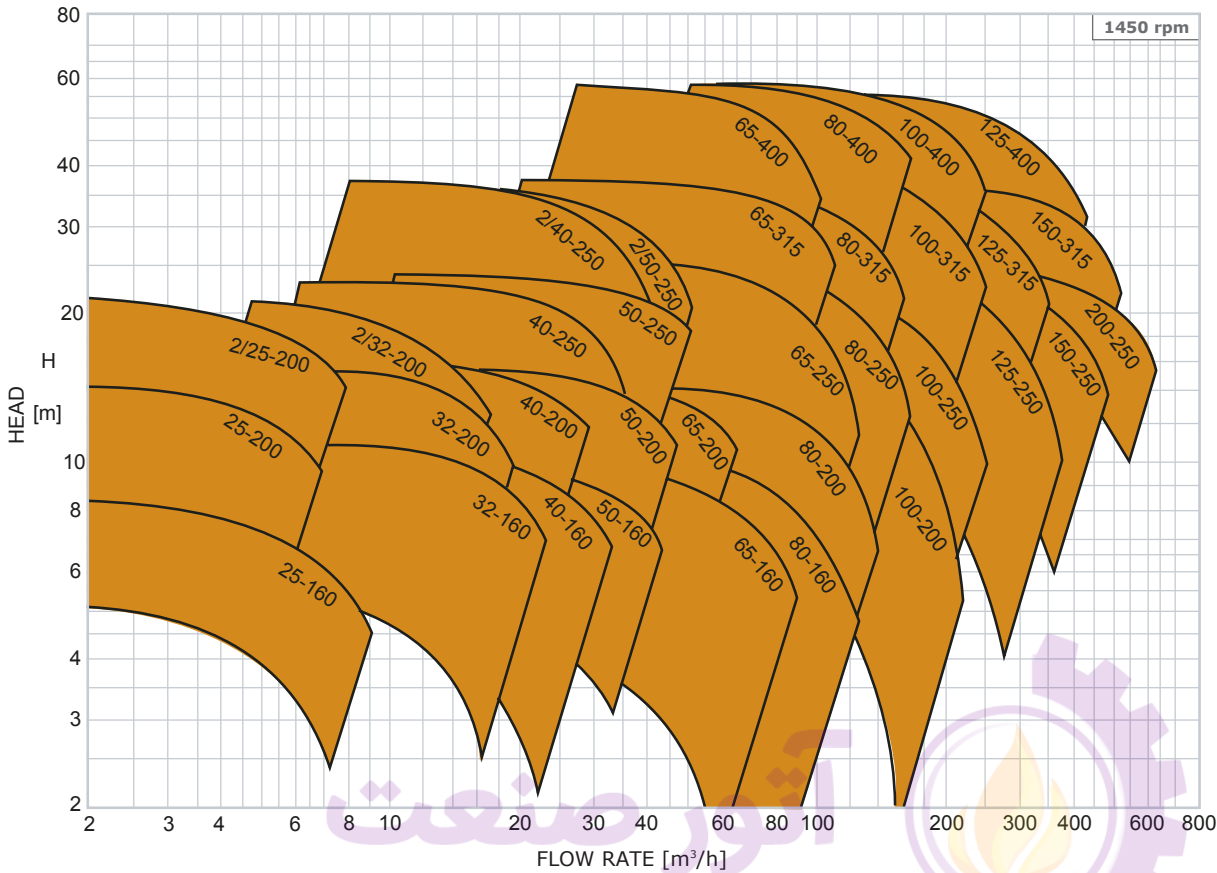
NB

DIMENSIONS

Pump	Bracket	Arrangement	Motor	Motor frame Size	Pole	Suction Flange	Discharge Flange	Pump Dimensions															Foot Dimensions										Bolts	Dismantling Space	Priming Hole	Drainage Hole	Gauge Connection	Mass kg Approx.
								IDs	IDd	a	b1	b2	±b3	h1	h2	±L	b	c	m1	m2	r	n1	n2	p	S	X	A	B	M1/M2	Kg								
100-200	470/22F	2	5.5	132S	4	125	100	125	165	203	218	201	280	755	50	100	330	145	50	248	220	488	12	120	R3/8"	R3/8"	R3/8"	140										
			7.5	132M										793														65	400	300	308	250	406	16	150			
100-250	470/22F	2	11	160M	4	125	100	140	189	224	218	232	280	901	50	100	330	145	50	248	220	503	12	120	R3/8"	R3/8"	R3/8"	155										
			15	160M										945														80	450	350	308	250	421	16	175			
100-315	470/22F	2	18.5	180M	4	125	100	140	220	250	256	260	315	960	65	100	400	300	50	308	250	451	16	120	R3/8"	R3/8"	R3/8"	190										
			22	180L										1006														80	450	350	349	279	390	205				
100-400	530/1F	4	30	200L	4	125	100	140	256	272	292	280	355	1071	78	180	570	235	50	520	450	387	16	120	R3/8"	R3/8"	R3/8"	290										
			37	225M										1136														80	600	250	560	490	417	350				
125-250	470/22F	2	45	160M	4	150	125	140	212	255	256	260	355	1049	65	100	400	300	50	386	320	421	16	120	R3/8"	R3/8"	R3/8"	190										
			55	160L										1020														80	450	350	349	279	417	205				
125-315	530/1F	4	18.5	180M	4	150	125	140	226	252	276	360	355	1011	78	180	570	235	50	520	450	387	16	120	R3/8"	R3/8"	R3/8"	290										
			30	200L										1136														80	600	250	560	490	417	300				
125-400	530/1F	4	37	225M	4	150	125	140	264	283	366	360	400	1194	78	135	470	185	50	620	550	577	24	120	R3/8"	R3/8"	R3/8"	362										
			45	250M										1383														80	110	520	210	690	620	584	375			
150-250	530/1F	4	15	160L	4	200	150	160	231	283	256	360	375	1009	78	200	520	210	50	490	420	419	16	120	R3/8"	R3/8"	R3/8"	220										
			18.5	180M										1031														80	180	570	235	520	450	407	295			
150-315	530/1F	4	22	180L	4	200	150	160	239	271	276	360	400	1069	78	180	570	235	50	520	450	407	16	120	R3/8"	R3/8"	R3/8"	320										
			30	200L										1156														80	160	600	250	560	490	437	373			
150-400/1	530/2F	4	37	225M	4	200	150	160	277	305	366	360	450	1244	78	135	470	185	50	620	550	597	24	120	R3/8"	R3/8"	R3/8"	395										
			45	250M										1403														80	110	52	210	690	620	604	600			
200-250	530/1F	4	55	280M	4	200	200	180	262	330	276	360	245	1089	78	180	570	235	50	520	450	427	16	120	R3/8"	R3/8"	R3/8"	340										
			75	250M										1176														80	160	600	250	560	490	457	392			
200-250	530/2F	4	90	280M	4	200	200	180	262	330	366	360	245	1264	78	135	470	185	50	620	550	617	24	120	R3/8"	R3/8"	R3/8"	384										
			110	280M										1435														80	160	600	250	560	490	457	384			

Flange up to ID 150 acc. to DIN 2533 from ID 200 onwards acc. to DIN 2532					
IDs	Df	bf	kf	g	No. of Holes
25	115	16	85	14	4
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
200	340	26	295	22	12
250	395	28	350	22	12
300	445	28	400	22	12

TOMBSTONE CURVES



Size*	Pg. no.	
	1450	2900
25-160	2	42
25-200	3	43
2/25-200	4	44
32-160	5	45
32-200	6	46
2/32-200	7	47
40-160	8	48
40-200	9	49
40-250	10	50
2/40-250	11	51
50-160	12	52
50-200	13	53
50-250	14	54
2/50-250	15	55
65-160	16	56
65-200	17	57
65-250	18	58
65-315	19	
65-400	20	
80-160	21	59
80-200	22	60
80-250	23	61
80-315	24	
80-400	25	
100-200	26	62
100-250	27	63
100-315	28	
100-400	29	
125-250	30	64
125-315	31	
125-400	32	
125-400/1	33	
150-250	34	
150-315	35	
150-400/1	36	
200-250	37	

NB

* FOR INDIVIDUAL PUMP PERFORMANCE CURVES, REFER TO OUR EN733 (DIN 24255) CURVES BOOK.



APPLICATION

- Industrial
- Agricultural
- Refinery
- Mining Industries
- Lubrication System

DV

RA Pump Range	Minimum Flow (m ³ /h)	Maximum Flow (m ³ /h)	Minimum Head (m)	Maximum Head (m)	Maximum Temperature
DV	4	400	3	90	120°C

DESIGN & CONSTRUCTION

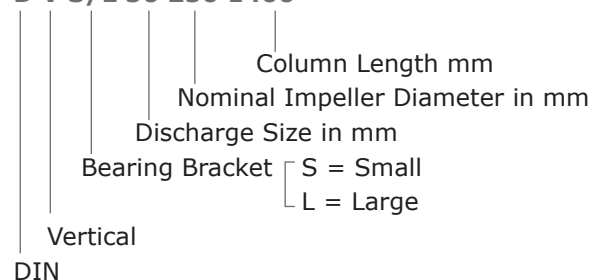
- Vertical spindle design with electric motor on top and liquid end below.
- Suitable for pumping a variety of liquids and can handle solids in suspension and also run dry for short periods.
- Balance holes are drilled in the impeller to effect hydraulic balance eliminating undue forces with in the pump.
- Double Mechanical Seal that run in an oil bath.
- High interchangeability of parts, allowing for minimal spares holdings.
- Suitable for wet and dry pit installations.
- Replaceable shaft sleeves are fitted as standard.
- Heavy duty shaft supported by bearings in the column.
- Parts are easily removed for inspection, service and maintenance.
- Column lengths available from 400mm to 2400mm.

MATERIALS OF CONSTRUCTION

Volute Casing:	High Grade Cast Iron, Bronze or Stainless Steel
Impeller:	Cast Iron or Bronze
Column:	Mild Steel/Stainless Steel
Mounting Flange:	Mild Steel/Stainless Steel
Motor:	Standard IEC
Motor Stool:	Mild Steel/Stainless Steel
Ball Bearings:	Grease Lubrication
Lower shaft sleeve:	Stainless Steel
Upper shaft sleeve:	Mild Steel
Discharge pipe:	Mild Steel
Mechanical seal:	Double arrangement
Shaft:	EN8/316

MODEL DESCRIPTION

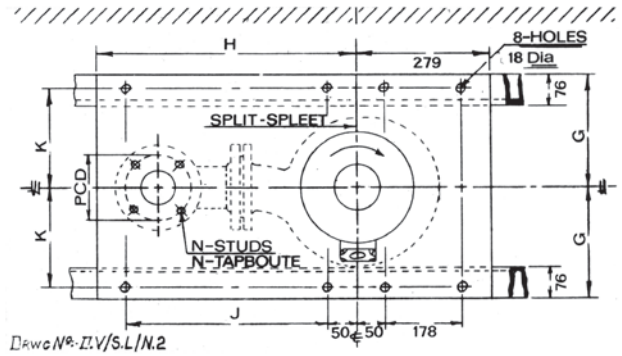
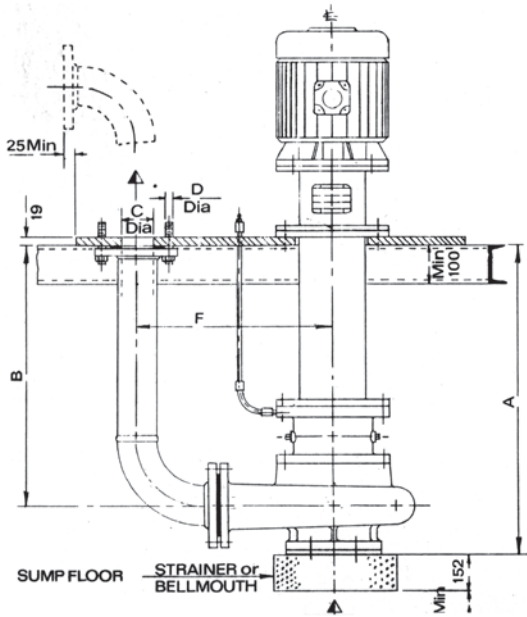
D V S/L 50 250 1400



Flanges

- SANS 1123 PN10(BS 4504 PN10) or ANSI B16.5.

DIMENSIONS



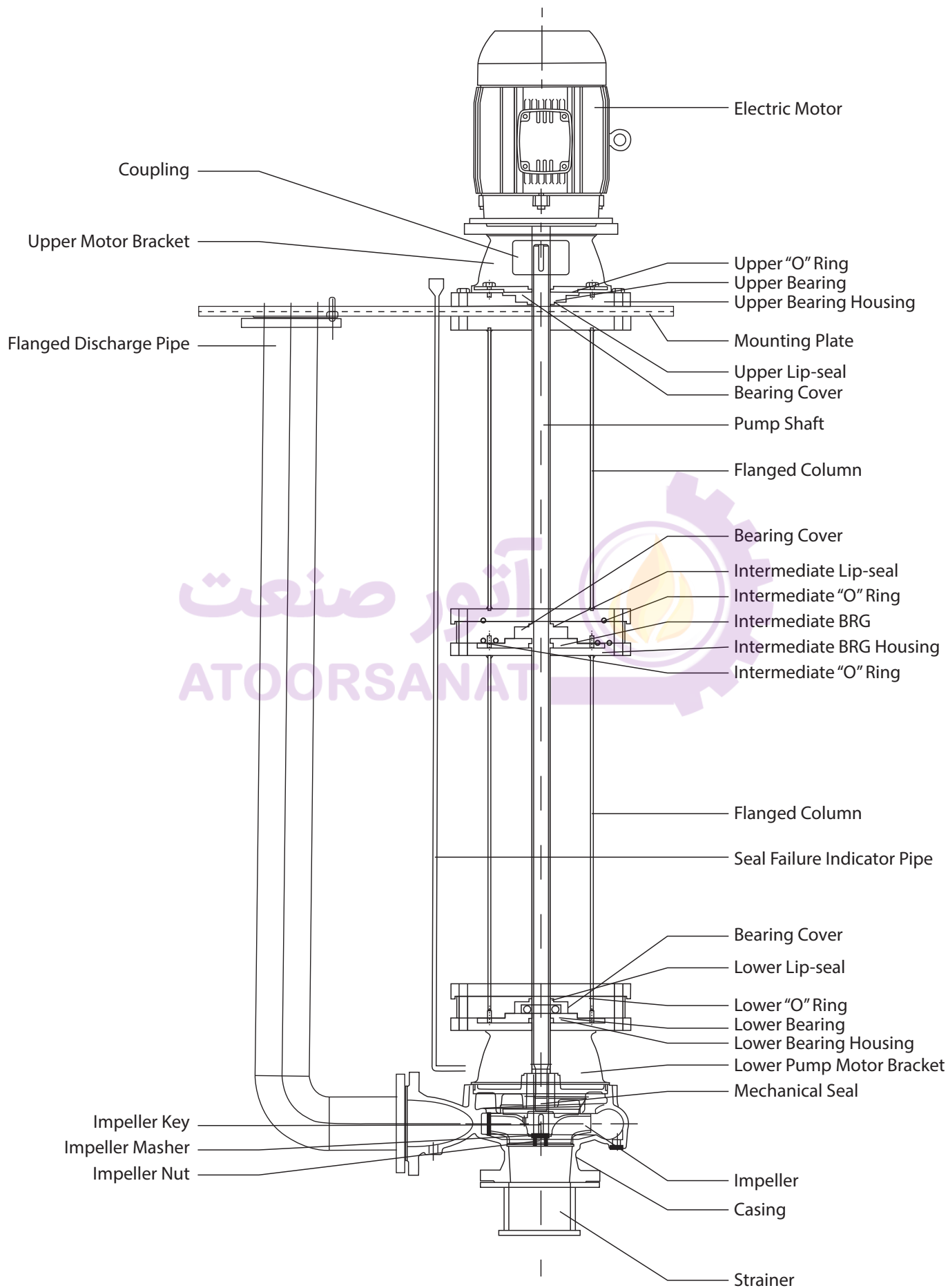
DRAWING: ZV/S.L/N.2

DV

Pump Model	Column Length										Discharge Flange DIN 2532 PN10*				Mounting Plate																				
	A	B	A	B	A	B	A	B	A	B	C	D	PCD	N	F	G	H	J	K																
DVS	32-160	506	426	1006	1506	2506	1926	2426	2526	2426	32	100	4	356	279	483	381	247	247																
	32-200										16																								
	40-160										40	110																							
	40-200											125																							
	40-250	526	926	1426	1926	2426	2526	2426	2526	2426	50	125	16	356	279	483	381	247	247																
	50-160										65	145																							
	50-200										80	160																							
	50-250	551	1051	1551	2051	2551	2551	2551	2551	2551	2551	65	145	8	356	660	559	324	324																
	65-160											80	160																						
	65-200	563	438	1063	938	1563	1438	2063	1938	2563	2438	65	145	4	527	356	660	559	324	324															
80-160	80											160																							
80-200	100											180																							
80-250													125								210														
80-315	578											1078	1578								2078	2578	2578	2578	2578	2578	2578	100	180	8	356	660	559	324	324
100-200																												125	210						
100-250																												125	210						
100-315	578											1078	1578								2078	2578	2578	2578	2578	2578	2578	125	210	8	356	660	559	324	324
125-250		125	210																																

All dimensions in mm

SECTIONAL DRAWING



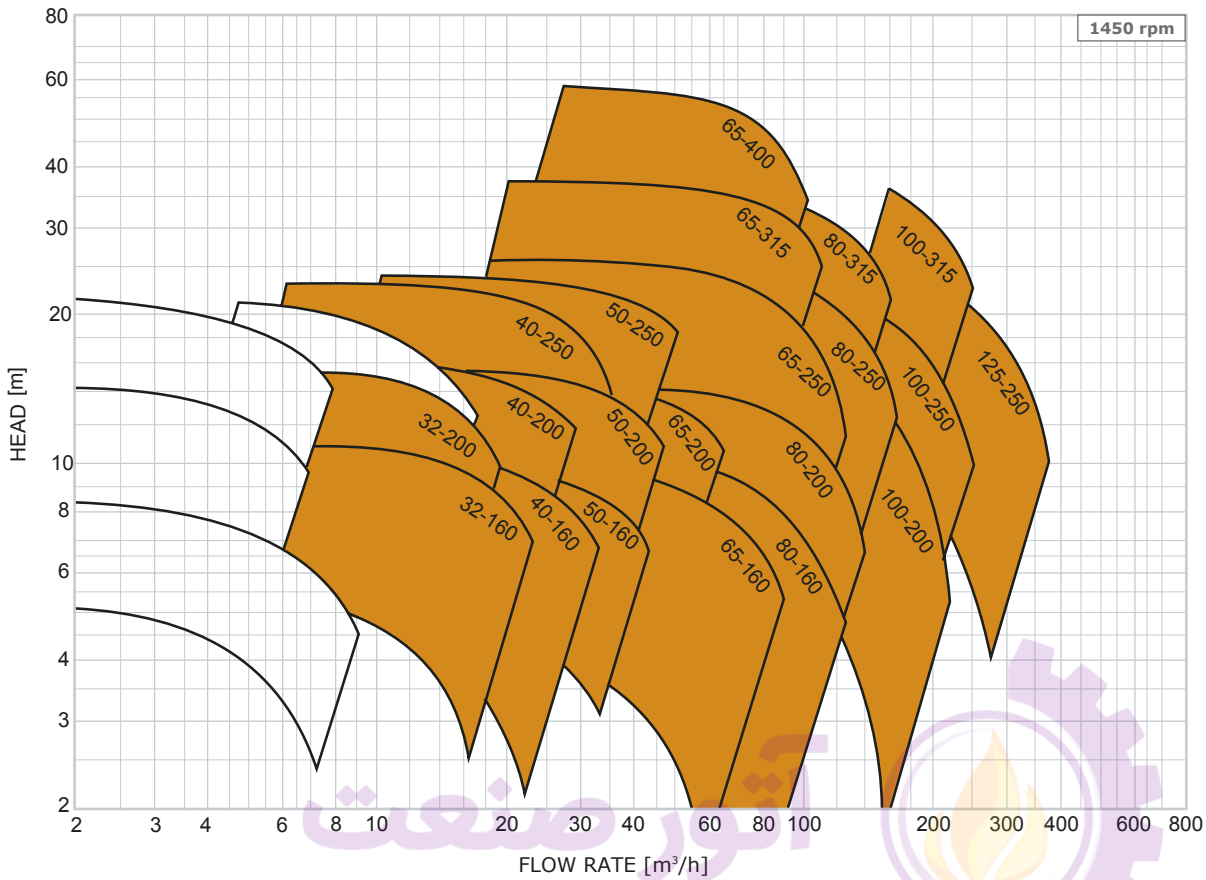
DV

PARTS LIST

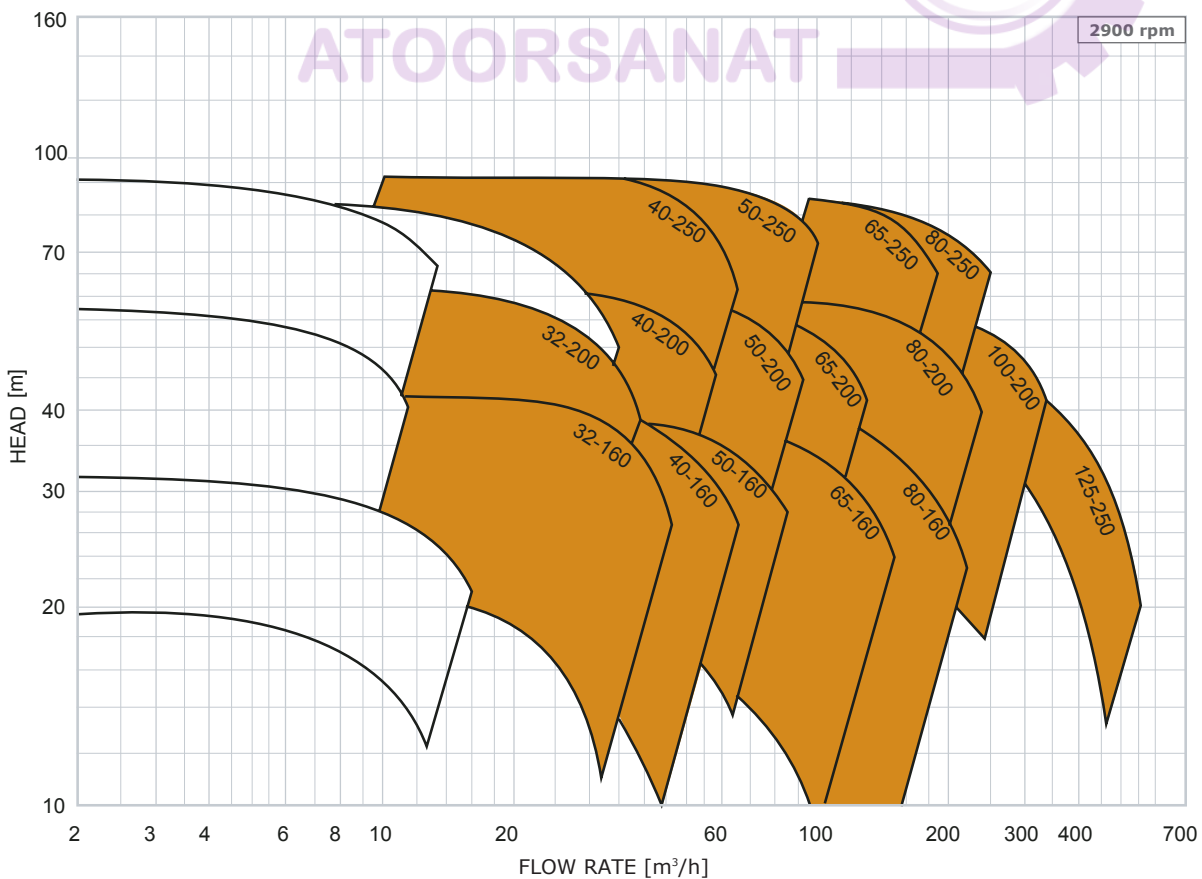
Part	Description
223	Coupling
346.2	Upper Motor Bracket
211	Flanged Discharge Pipe
230	Impeller
940.1	Impeller Key
933	Impeller Masher
920.1	Impeller Nut
801	Electric Motor
496	Upper, Intermediate & Lower "O" Ring
321.1	Upper, Intermediate & Lower Bearing
134.B	Upper, Intermediate & Lower Bearing Housing
203	Mounting Plate
361.1	Upper, Intermediate & Lower Lip-Seal
360	Bearing Cover
211	Pump Shaft
200.1	Flanged Column
202.1	Seal Failure Indicator Pipe
470.1	Mechanical Seal
102.3	Casing
202.2	Strainer



TOMBSTONE CUVES



Size*	Pg. no.	
	1450	2900
32-160	5	45
32-200	6	46
40-160	8	48
40-200	9	49
40-250	10	50
50-160	12	52
50-200	13	53
50-250	14	54
65-160	16	56
65-200	17	57
65-250	18	58
65-315	19	
65-400	20	
80-160	21	59
80-200	22	60
80-250	23	61
80-315	24	
100-200	26	62
100-250	27	63
100-315	28	
125-250	30	64



BASIC FORMULAS

H= Head(m)

Q = Flow(m³/h)

Eff = Pump Eff%

Density = SG

Capacity

$$l/sec \times 3.6 = m^3/h$$

$$m^3/h \div 3.6 = l/sec$$

$$Imp \text{ gpm} \times 0.2271 = m^3/h \quad m^3/h \times 4.403 = Imp \text{ gpm}$$

$$US \text{ gpm} \div 0.246 = l/min \quad l/min \times 0.246 = US \text{ gpm}$$

$$10000 \text{ kg/hr} = \frac{10m^3h}{\text{Density}(SG)}$$

Head/Pressure

$$Ft \div 3.28 = m$$

$$m \times 3.28048 = Ft$$

$$Bar \times 100 = kpa$$

$$m \times 9.805 = kpa$$

$$kpa \times 0.102 = m$$

$$m \times 0.098 = Bar$$

$$Bar \times 10.19 = m$$

$$m \times 1.45 = psi$$

$$psi \times 6.895 = kpa$$

Power

$$hp \times 0.746 = kw$$

$$kw \times 1.340483 = hp$$

$$kw \text{ abs} = \frac{Q \times H \times SG}{367 \times \text{Eff}(\%)}$$

$$kw = \frac{\text{Amps} \times \text{Volts} \times \text{Power Factor} \times 1.732}{1000}$$

$$RPM = \frac{Hz \times 120}{\text{No of Poles}}$$

$$Hz = \frac{RPM \times \text{No Of Poles}}{120}$$

$$\text{Velocity m/sec} = \frac{Q \times 353.63}{(\text{Pipe Dia})^2}$$

Efficiency

$$\text{EFF}(\%) = \frac{Q \times H \times SG}{367 \times kw(\text{abs})}$$

Temperature

$$\text{Deg.C} = (\text{deg.F} - 32) \times 0.556$$

$$\text{Deg.F} = (1.8 \times \text{deg.C}) + 32$$

Peripheral Speed

$$\text{Peripheral Speed(Impeller)} = \frac{\text{imp.dia.}(mm) \times \pi \times N(\text{Rpm})}{60 \ 000}$$

Viscosity

vis Viscous Liquid

w Water

Given: Q_{vis} in m³/h kinematic viscosity v in mm²/s

H_{vis} in m p_{vis} in kg/dm³

$$Q_w = \frac{Q_{vis}}{CQ}$$

$$H_w = \frac{H_{vis}}{CH}$$

$$Q_w = C\% \times \%w$$

$$P_{vis} = \frac{Q_{vis} \times H_{vis} \times P_{vis}}{367 \times \text{Eff}(\%) \text{ vis}}$$

Centrifugal and Axial Flow Pump Affinity Laws:

Speed changes & impeller diameter remains the same:

$$Q_1/Q_2 = N_1/N_2$$

$$H_1/H_2 = (N_1/N_2)^2$$

$$P_1/P_2 = (N_1/N_2)^3$$

Impeller diameter changes and speed remains the same:

$$Q_1/Q_2 = D_1/D_2$$

$$H_1/H_2 = (D_1/D_2)^2$$

$$P_1/P_2 = (D_1/D_2)^3$$



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