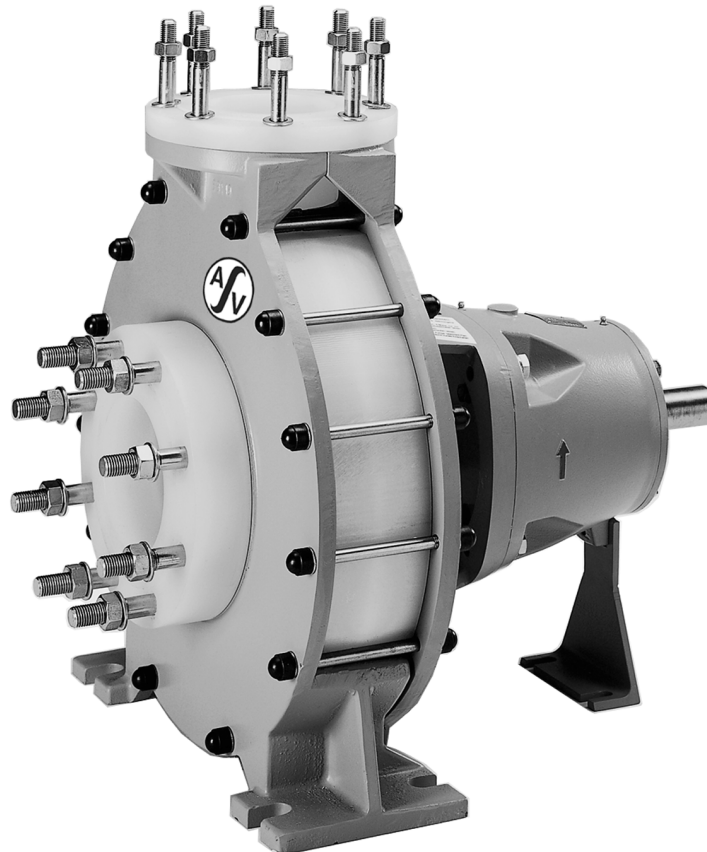


# Thermoplastic Centrifugal Pump, type NM

acc. to DIN 24256, EN 22858 and ISO 2858

Size:	32 - 125 up to 150 - 400	
Capacity Q:	up to 450 m <sup>3</sup> /h	
Head H:	up to 100 m	
Operating temperature t:	PE	up to + 60 °C
	PP	up to + 80 °C
	PVDF	up to +110 °C



## ASV Chemical Centrifugal Pump made of thermoplastic

- for transportation of aggressive fluids like acids, alkalines and solutions
- constructional components highly resistant

## Execution

### Construction

ASV chemical centrifugal pump made of thermoplastic is a single-stage spiral casing pump in horizontal construction with axial suction and radial pressure connection acc. to DIN 24256 and ISO 2858.

The modular concept of ASV thermoplastic pump allows an easy and fast exchange of all wear and tear parts.

Because of the use of a standard coupling it is possible to exchange impeller and mechanical seal without dismounting the motor or the pipeline on the suction side.

The hydraulic of ASV chemical pumps is made of only few thermoplastic parts in order to guarantee high operational reliability for which corrosion and wearing resistant thermoplastics like high molecular weight Polyethylene (PE), ultra high molecular weight low-pressure-Polyethylene (Hostalen GUR), Polypropylene (PP) or Polyvinylidene fluoride (PVDF) are used.

Absorption of external forces by rugged metal casing. Housing outflow on request.

### Suction

ASV pump is not self-priming. The fluid has to run freely into the pump. The pump can only selfprime in connection with a footvalve at the end of the suction-line or with an additionally installed ASV self-priming tank.

Documentation of the tanks are available on request.

### Impeller

- closed radial impeller
- axial-thrust-compensation by relief holes
- impeller mounting independent of direction of rotation because of in-moulded metal insert and groove and key connection between impeller and shaft
- seal of impeller mounting with thermoplastic impeller cap with internal O-ring

### Shaft and bearing carrier

Shaft bedding in an one-piece bearing carrier with greased roller bearing. Oil-lubrication on customer's request. A shaft of highly flexural strength made of special steel guarantees a trouble free operation and optimal conditions for the mechanical seal.

### Shaft protection sleeve

Standard is a resin impregnated carbon or depending on the fluid various materials like PP, PE or PVDF.

### Shaft-seal

- seal of the shaft by single or double mechanical seal of various systems and manufacturers
- circulation, flushing, quenching or flushing fluid depending on operation (see illustration)
- sliding surface combination in silicon carbide against silicon carbide (SiC/SiC). O-rings and liner of Viton (FPM) or Hypalon (CSM), metal parts of stainless steel 1.4571 or Hastelloy as standard execution. This combination offers trouble-free operation and allows a wide range of application.
- materials in other combinations are also possible

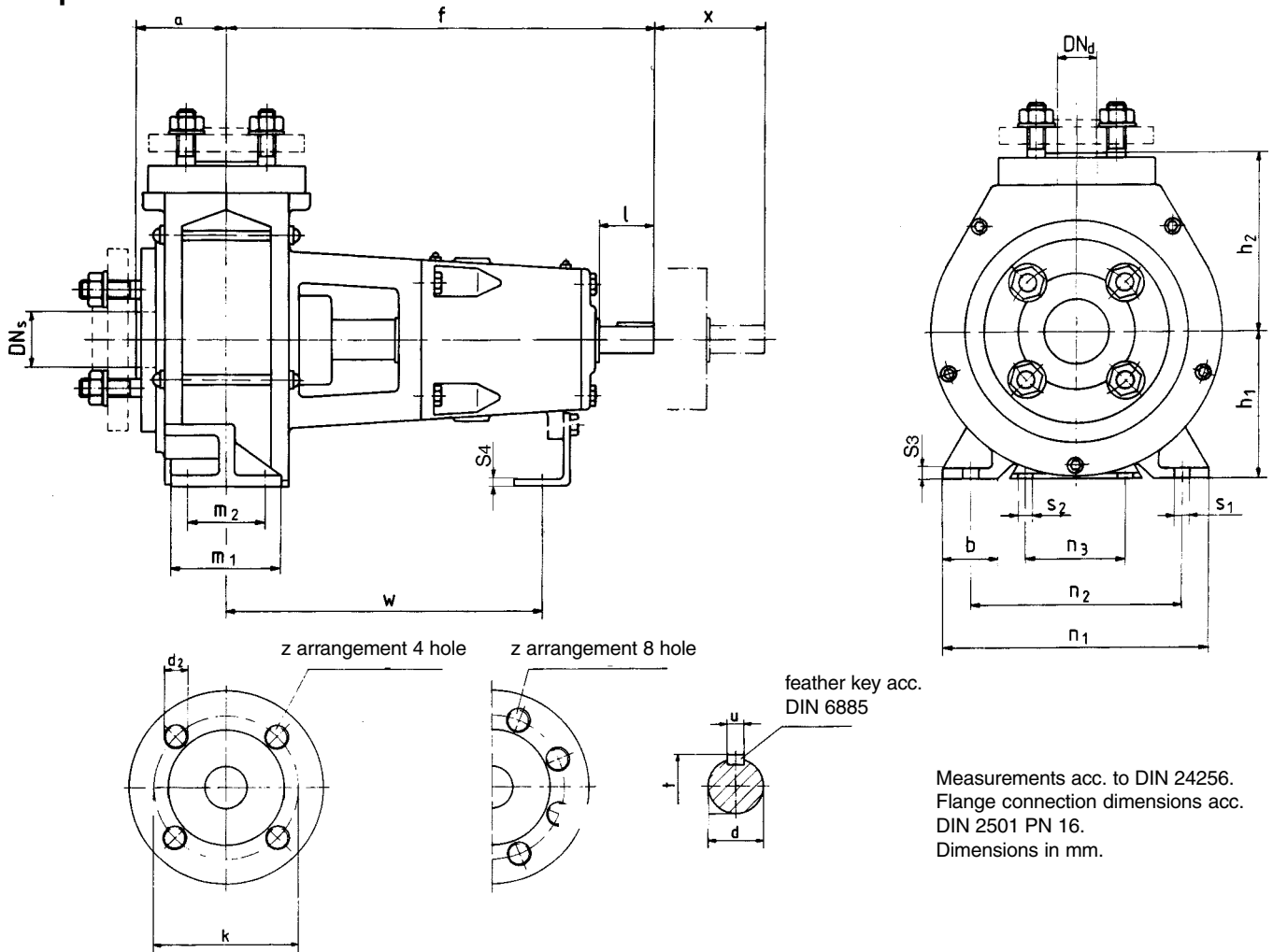
### Base Plate

On customer's request ASV chemical centrifugal pumps made of thermoplastic can be delivered completely mounted on a base plate acc. DIN 24259 made of steel and with a motor acc. IEC-standard. Details see installation drawing.

### Painting

Several coatings with an acid-proof paint protect all metal parts not made of special steel against corrosion.

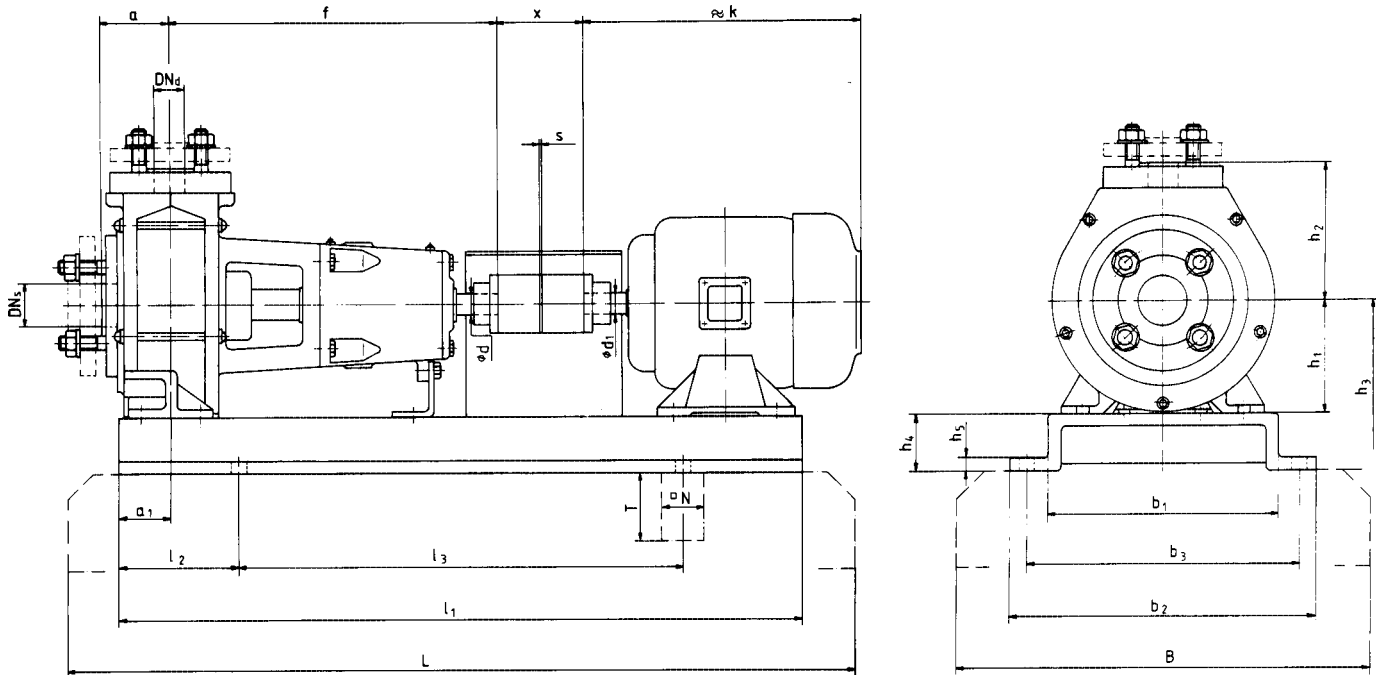
## Pump Dimensions



Measurements acc. to DIN 24256.  
 Flange connection dimensions acc. to DIN 2501 PN 16.  
 Dimensions in mm.

Pump type NM	Pump size		Foot measure												Shaft DIN 748				Flange measure								Bearing support size		
	a	f	h1	h2	b	m1	m2	n1	n2	n3	s3	s4	s1	s2	w	x	d	l	t	u	DNd	k	d2	z	DNs	k		d2	z
32 - 125	80	385	112	140	50	100	70	190	140	110	10	5	M12	M12	285	100	24	50	27	8	32	100	M 16	4	50	125	M 16	4	1.1
32 - 160	80	385	132	160	50	100	70	240	190	110	10	5	M12	M12	285	100	24	50	27	8	32	100	M 16	4	50	125	M 16	4	1.2
32 - 200	80	385	160	180	50	100	70	240	190	110	10	5	M12	M12	285	100	24	50	27	8	32	100	M 16	4	50	125	M 16	4	1.2
32 - 250	100	500	180	225	65	125	95	320	250	110	15	5	M12	M12	370	100	32	80	35	10	32	100	M 16	4	50	125	M 16	4	2.0
40 - 125	80	385	112	140	50	100	70	210	160	110	10	5	M12	M12	285	100	24	50	27	8	40	110	M 16	4	65	145	M 16	4	1.1
40 - 160	80	385	132	160	50	100	70	240	190	110	10	5	M12	M12	285	100	24	50	27	8	40	110	M 16	4	65	145	M 16	4	1.2
40 - 200	100	385	160	180	50	100	70	265	212	110	10	5	M12	M12	285	100	24	50	27	8	40	110	M 16	4	65	145	M 16	4	1.2
40 - 250	100	500	180	225	65	125	95	320	250	110	15	5	M12	M12	370	100	32	80	35	10	40	110	M 16	4	65	145	M 16	4	2.0
40 - 315	125	500	200	250	65	125	95	345	280	110	15	5	M12	M12	370	100	32	80	35	10	40	110	M 16	4	65	145	M 16	4	2.0
50 - 125	100	385	132	160	50	100	70	240	190	110	10	5	M12	M12	285	100	24	50	27	8	50	125	M 16	4	80	160	M 16	8	1.2
50 - 160	100	385	160	180	50	100	70	265	212	110	10	5	M12	M12	285	100	24	50	27	8	50	125	M 16	4	80	160	M 16	8	1.2
50 - 200	100	385	160	200	50	100	70	265	212	110	10	5	M12	M12	285	100	24	50	27	8	50	125	M 16	4	80	160	M 16	8	1.2
50 - 250	125	500	180	225	65	125	95	320	250	110	15	5	M12	M12	370	100	32	80	35	10	50	125	M 16	4	80	160	M 16	8	2.0
50 - 315	125	500	225	280	65	125	95	345	280	110	18	6	M12	M12	370	100	32	80	35	10	50	125	M 16	4	80	160	M 16	8	2.0
65 - 160	100	500	160	200	65	125	95	280	212	110	10	8	M12	M12	370	100	32	80	35	10	65	145	M 16	4	100	180	M 16	8	1.3
65 - 200	100	500	180	225	65	125	95	320	250	110	10	8	M12	M12	370	100	32	80	35	10	65	145	M 16	4	100	180	M 16	8	1.3
65 - 250	125	500	200	250	80	160	120	360	280	110	15	6	M16	M12	370	140	32	80	35	10	65	145	M 16	4	100	180	M 16	8	2.0
65 - 315	125	530	225	280	80	160	120	400	315	110	18	6	M16	M12	370	140	42	110	45	12	65	145	M 16	4	100	180	M 16	8	3.0
80 - 160	125	500	180	225	65	125	95	320	250	110	15	6	M12	M12	370	140	32	80	35	10	80	160	M 16	8	125	210	M 16	8	2.0
80 - 200	125	500	180	250	65	125	95	345	280	110	18	6	M12	M12	370	140	32	80	35	10	80	160	M 16	8	125	210	M 16	8	2.0
80 - 250	125	500	225	280	80	160	120	400	315	110	18	6	M16	M12	370	140	32	80	35	10	80	160	M 16	8	125	210	M 16	8	2.0
80 - 315	125	530	250	315	80	160	120	400	315	110	18	6	M16	M12	370	140	42	110	45	12	80	160	M 16	8	125	210	M 16	8	3.0
125 - 315	140	530	280	355	100	200	150	500	400	110	18	6	M20	M12	370	140	42	110	45	12	125	210	M 16	8	150	240	M 20	8	3.0
150 - 400	160	670	315	450	100	200	150	550	450	140	20	8	M20	M16	500	180	48	110	51	14	150	240	M 20	8	200	295	M 20	8	4.0

## Installation drawing



### Baseplate and basement dimensions / Stone bolts

Baseplate Size	Baseplate dimensions mm										Weight kg	Basement dimensions mm				Stonebolts
	l1	l2	l3	b1	b2	b3	h3*	h4	h5	a1*		L	B	T	N	
2	800	130	540	270	360	320		55	5		16	920	470	140	70	M 16 x 160
3	900	150	600	300	390	350		55	5		19	1020	500	140	70	M 16 x 160
4	1000	170	660	340	450	400		75	9		48	1130	580	180	85	M 20 x 200
5	1120	190	740	380	490	440		75	9		58	1250	620	180	85	M 20 x 200
6	1250	205	840	430	540	490		75	9		73	1380	670	180	85	M 20 x 200
7	1400	230	940	480	610	550		85	10		96	1540	750	230	100	M 24 x 250
8	1600	270	1060	530	660	600		92	14		148	1740	800	230	100	M 24 x 250
9	1800	300	1200	600	730	670		92	14		183	1940	870	230	100	M 24 x 250

\*a1 see table "Pump dimensions"

\*h3 see table "Mounting height h3 / Motor dimensions / Baseplate and coupling allocation"

Baseplate execution according to DIN 24259, for motors IP 55 and (EX)e.

### Pump dimensions / Dismounting dimensions X

Pump type NM	Pump dimensions mm									
	DN <sub>s</sub>	DN <sub>d</sub>	a	f	Ød	x	h1	h2	a1	
32 - 125	50	32	80	385	24	100	112	140	60	
32 - 160	50	32	80	385	24	100	132	160	60	
32 - 200	50	32	80	385	24	100	160	180	60	
32 - 250	50	32	100	500	32	100	180	225	75	
40 - 125	65	40	80	385	24	100	112	140	60	
40 - 160	65	40	80	385	24	100	132	160	60	
40 - 200	65	40	100	385	24	100	160	180	60	
40 - 250	65	40	100	500	32	100	180	225	75	
40 - 315	65	40	125	500	32	100	200	250	75	
50 - 125	80	50	100	385	24	100	132	160	60	
50 - 160	80	50	100	385	24	100	160	180	60	
50 - 200	80	50	100	385	24	100	160	200	60	

Pump type NM	Pump dimensions mm									
	DN <sub>s</sub>	DN <sub>d</sub>	a	f	Ød	x	h1	h2	a1	
50 - 250	80	50	125	500	32	100	180	225	75	
50 - 315	80	50	125	500	32	100	225	280	75	
65 - 160	100	65	100	500	32	100	160	200	75	
65 - 200	100	65	100	500	32	100	180	225	75	
65 - 250	100	65	125	500	32	140	200	250	90	
65 - 315	100	65	125	530	42	140	225	280	90	
80 - 160	125	80	125	500	32	140	180	225	75	
80 - 200	125	80	125	500	32	140	180	250	75	
80 - 250	125	80	125	500	32	140	225	280	90	
80 - 315	125	80	125	530	42	140	250	315	90	
125 - 315	150	125	140	530	42	140	280	355	110	
150 - 400	200	150	160	670	48	180	315	450	110	

Technical alterations excepted.



**Mounting height h3 / Motor dimensions / Baseplate and coupling allocation**

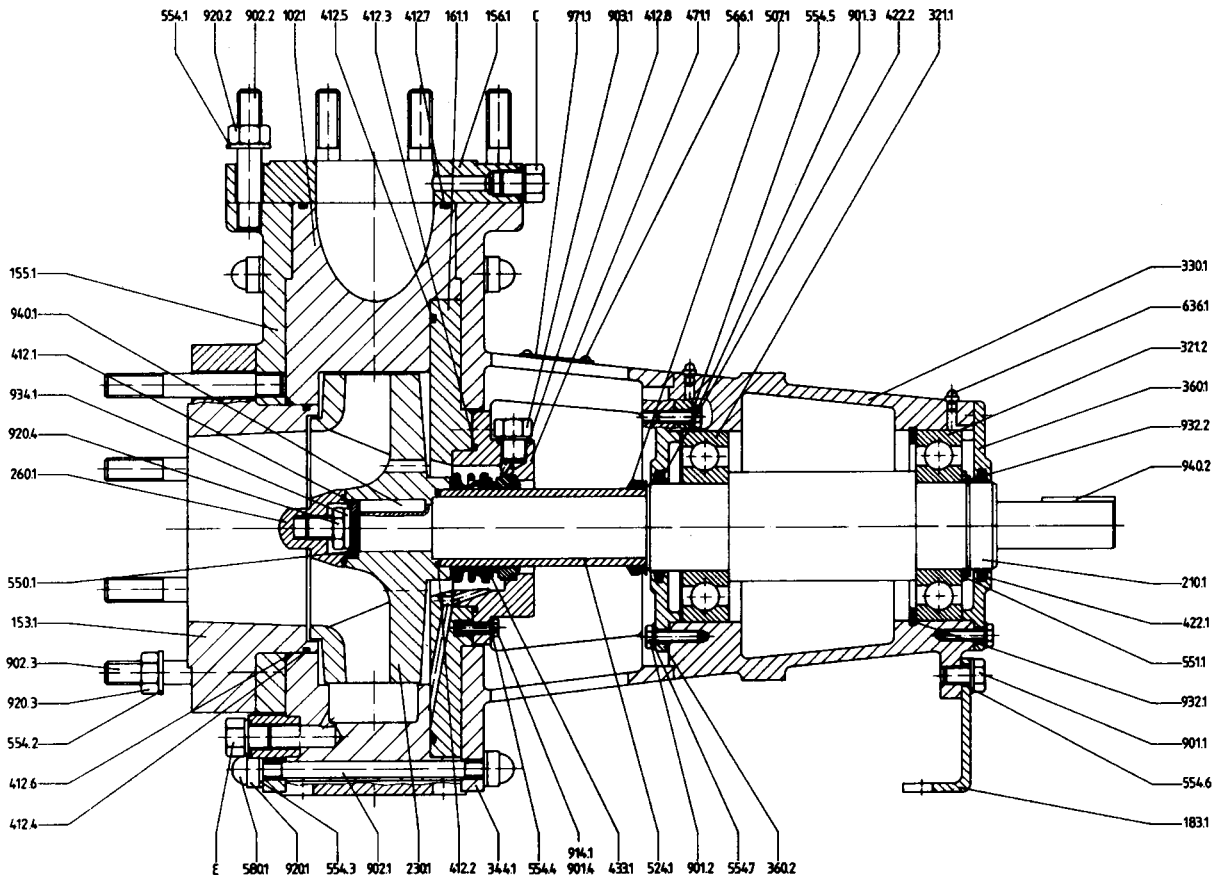
Motor size IEC	80	90 S	90 L	100 L	112 M	132 S	132 M	160 M	160 L	180 M	180 L	200 L	225 S	225 M	250 M	280 S	280 M	315 S	315 M	
kW	1450 min <sup>-1</sup> 2900 min <sup>-1</sup>	0,55+0,75 1,1	1,1 1,5	1,5 2,2	2,2+3 3,0	4,0 4,0	5,5 7,5	11,0 15,0	18,5 22,0	22,0 -	30+37 -	45,0 55,0	55,0 75,0	75,0 90,0	90,0 110,0	132-200 132-200				
∅ d1	1450 min <sup>-1</sup> 2900 min <sup>-1</sup>	19,0 19,0	24,0 24,0	24,0 24,0	28,0 28,0	28,0 28,0	38,0 38,0	42,0 42,0	48,0 48,0	48,0 -	55,0 -	60,0 60,0	60,0 65,0	65,0 75,0	75,0 75,0	80,0 80,0				
k ca.		267	294	319	363	380	447	485	583	627	650	688	738	770	825	863	985	1046	1095	1176
Cupling size	1450 min <sup>-1</sup> 2900 min <sup>-1</sup>	H-67 H-67	H-67 H-67	H-67 H-67	H-82 H-82	H-82 H-82	H-97 H-97	H-97 -	H-112 H-97	H-112 H-97	H-128 -	H-128 -	H-148 -	H-148 -	H-168 H-168	H-168 H-148	H-194 H-148	H-194 H-168	H-194 H-168	H-214 H-194
Pumptype																				
32 - 125 h3	167	167	167	167	167	207	207													
Baseplate size	2	2	3	3	3	4	4													
32 - 160 h3	187	187	187	187	187	207	207	235												
Baseplate size	2	3	3	3	3	4	4	5												
32 - 200 h3	215	215	215	215	215	235	235	235												
Baseplate size	2	3	3	3	3	4	4	5												
32 - 250 h3	255	255	255	255	255	255	255	255	255	255	255	285	310	310						
Baseplate size	4	4	4	4	4	5	5	6	6	6	6	7	7	7						
40 - 125 h3	167	167	167	167	167	207	207													
Baseplate size	2	3	3	3	3	4	4													
40 - 160 h3	187	187	187	187	187	207	207	235	235											
Baseplate size	2	3	3	3	3	4	4	5	5											
40 - 200 h3	215	215	215	215	215	235	235	235	235	255										
Baseplate size	3	3	3	3	3	4	4	5	5	5										
40 - 250 h3	255	255	255	255	255	255	255	255	255	255	255	285	310	310						
Baseplate size	4	4	4	4	4	5	5	6	6	6	6	7	7	7						
40 - 315 h3	275	275	275	275	275	275	275	275	275	275	275	275	310	310	342	372	372			
Baseplate size	5	5	5	5	5	5	5	6	6	6	6	7	7	7	8	9	9			
50 - 125 h3	187	187	187	187	187	207	207	235												
Baseplate size	2	3	3	3	3	4	4	5												
50 - 160 h3	215	215	215	215	215	235	235	235	235	255										
Baseplate size	3	3	3	3	3	4	4	5	5	5										
50 - 200 h3	215	215	215	215	215	235	235	235	235	255	255	275								
Baseplate size	3	3	3	3	3	4	4	5	5	5	6	6								
50 - 250 h3	255	255	255	255	255	255	255	255	255	255	255	285	310	310	342					
Baseplate size	4	4	4	4	4	5	5	6	6	6	6	7	7	7	8					
50 - 315 h3	300	300	300	300	300	300	300	300	300	300	300	310	310	310	342	372	372	407	407	
Baseplate size	5	5	5	5	5	5	5	6	6	6	6	7	7	7	8	9	9	9	9	9
65 - 160 h3	235	235	235	235	235	235	235	235	235	255	255	285	310	310						
Baseplate size	4	4	4	4	4	5	5	6	6	6	6	7	7	7						
65 - 200 h3	255	255	255	255	255	255	255	255	255	255	265	285	310	310	342	372	372			
Baseplate size	4	4	5	5	5	5	5	6	6	6	7	7	7	7	8	9	9			
65 - 250 h3	275	275	275	275	275	275	275	275	275	275	285	285	310	310	342	372	372	407	407	
Baseplate size	5	5	5	5	5	5	5	6	6	6	7	7	7	7	8	9	9	9	9	9
65 - 315 h3				300	300	300	300	300	310	310	310	310	310	317	342	372	372	407	407	
Baseplate size				6	6	6	6	6	7	7	7	7	7	8	8	9	9	9	9	9
80 - 160 h3	255	255	255	255	255	255	255	255	255	255	265	285	310	310	342	372	372			
Baseplate size	4	4	5	5	5	5	5	6	6	6	7	7	7	7	8	9	9			
80 - 200 h3	255	255	255	255	255	255	255	255	255	255	265	285	310	310	342	372	372			
Baseplate size	5	5	5	5	5	5	5	6	6	6	7	7	7	7	8	9	9			
80 - 250 h3	300	300	300	300	300	300	300	300	300	300	310	310	310	310	342	372	372	407	407	
Baseplate size	6	6	6	6	6	6	6	6	6	6	7	7	7	7	8	9	9	9	9	9
80 - 315 h3				325	325	325	325	325	335	335	335	335	335	342	342	372	372	407	407	
Baseplate size				6	6	6	6	6	7	7	7	7	7	8	8	9	9	9	9	9
125 - 315 h3								372	372	372	372	372	372	372	372	372	372			
Baseplate size								8	8	8	8	8	8	8	8	9	9			
150 - 400 h3												407	407	407	407	407	407			
Baseplate size												9	9	9	9	9	9			

**Coupling dimensions**

Coupling size	H - 67	H - 82	H - 97	H - 97	H - 112	H - 112	H - 128	H - 148	H - 168	H - 194	H - 214
Lengths mm	100	100	100	140	100	140	140	140	140	140	180
s	5 <sup>+0,5</sup>	5 <sup>+</sup>	5 <sup>+</sup>	5 <sup>+</sup>	7 <sup>+</sup>	7 <sup>+</sup>	7 <sup>+</sup>	7 <sup>+</sup>	7 <sup>+1,5</sup>	7 <sup>+1,5</sup>	7 <sup>+1,5</sup>
Weight kg	2,1	3,3	4,9	6,3	7,2	9,5	12,9	17,8	26,7	37,0	52,0

Other coupling types on request.

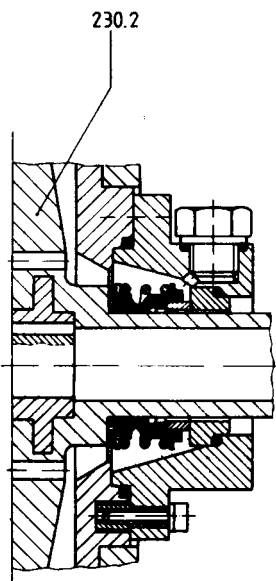
## Sectional drawing and component part register



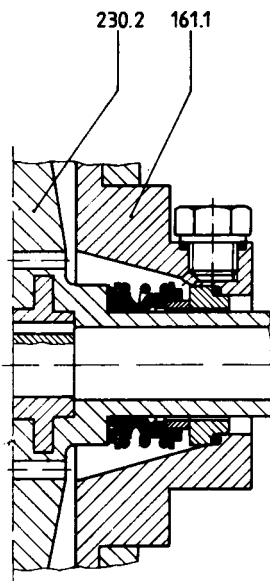
Mechanical seal: single acting, internal

E = Outflow on request

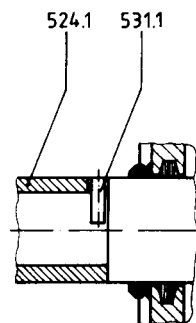
C = Circulation on request



Execution: with welded shaft protection sleeve

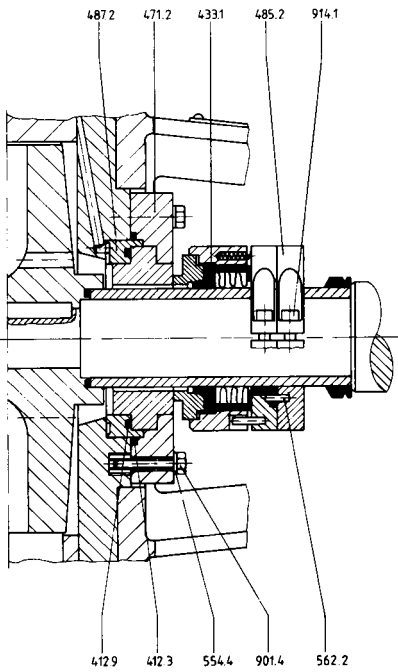


Execution: 32 - 125, 40 - 125

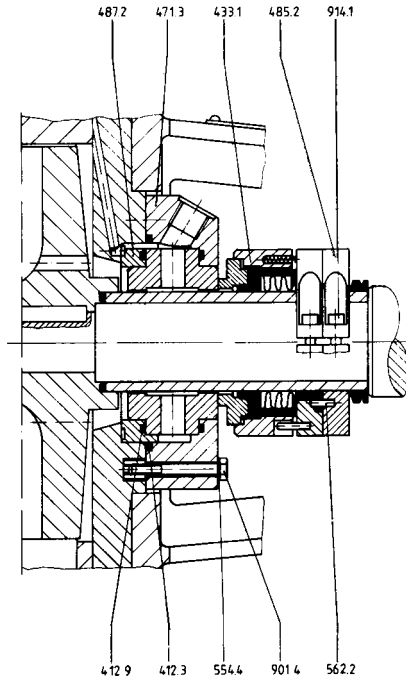


Execution: shaft protection sleeve with tension safety device by clamping sleeve

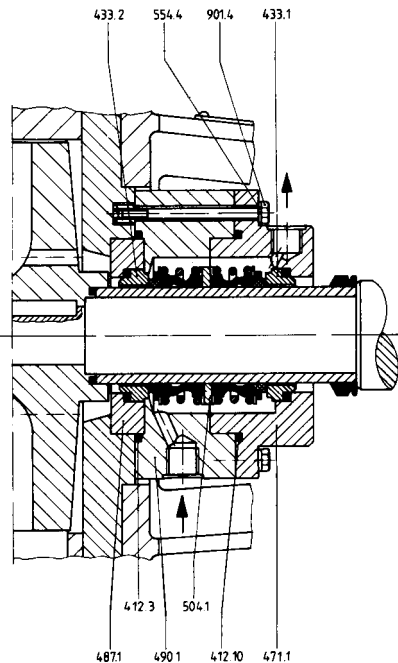
The illustrations generally correspond to the executions. Construction alterations excepted.



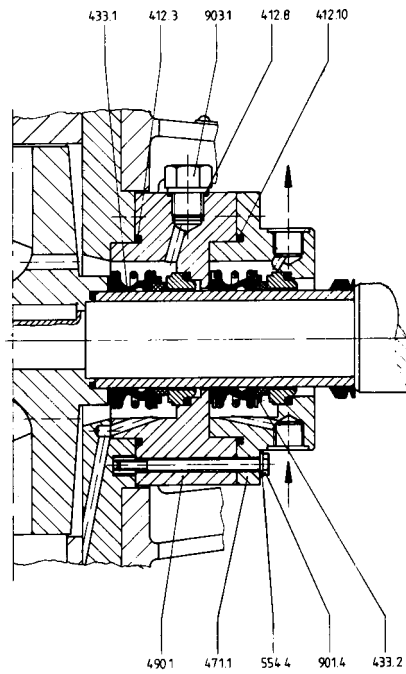
**Mechanical seal:**  
single acting external



**Mechanical seal:**  
single acting, external with internal or external circulating or rising



**Mechanical seal:**  
double acting flushing chamber



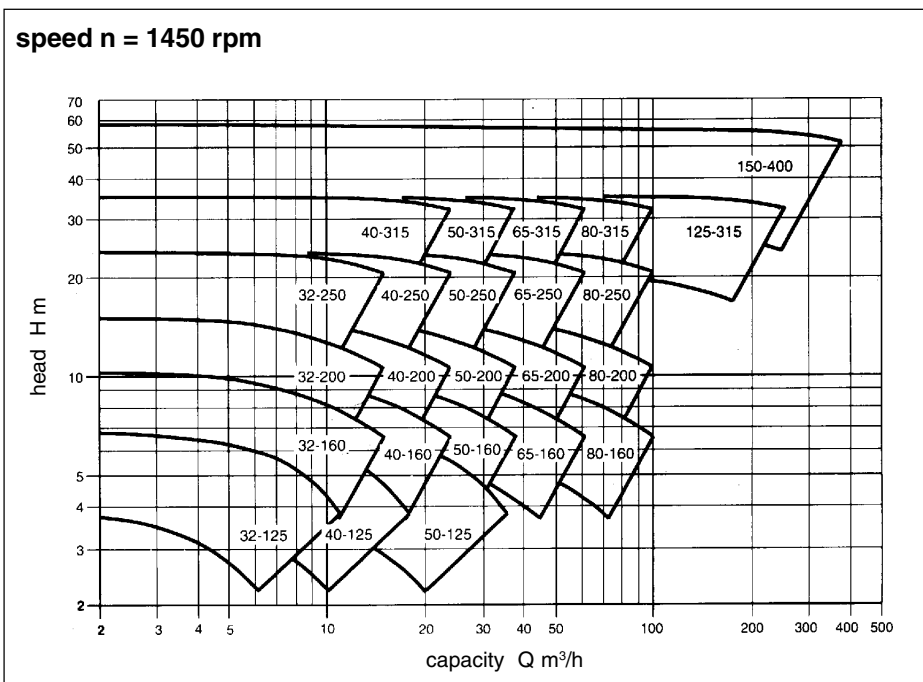
**Mechanical seal:**  
single acting in tandem-arrangement

Item	Description
102.1	Spiral casing
153.1	Suction connection
155.1	Housing flanges
156.1	Pressure connection
161.1	Casing cover
183.1	Support foot
210.1	Shaft
230.1	Impeller
230.2	Impeller
260.1	Impeller cap
321.1	Radial ball bearing
321.2	Radial ball bearing
330.1	Bearing carrier
344.1	Bearing carrier lantern
360.1	Bearing cover
360.2	Bearing cover
412.1	O-ring sealing
412.2	O-ring sealing
412.3	O-ring sealing
412.4	O-ring sealing
412.5	O-ring sealing
412.6	O-ring sealing
412.7	O-ring sealing
412.8	O-ring sealing
412.9	O-ring sealing
412.10	O-ring sealing
422.1	Felt Ring
422.2	Felt Ring
433.1	Mechanical seal
433.2	Mechanical seal
471.1	Seal cover
471.2	Seal cover
485.2	Driver
487.1	Counterring feeder
487.2	Counterring feeder
490.1	Seal Flange
504.1	Distance ring
507.1	V-ring
524.1	Shaft protection sleeve
531.1	Clamping sleeve
550.1	Washer
554.1	U-washer
554.2	U-washer
554.3	U-washer
554.4	U-washer
554.5	U-washer
554.6	U-washer
554.7	U-washer
562.2	Straight pin
566.1	Round-head notched nail
580.1	Hexagonal protection cap
636.1	Ball type lubrication nipple
901.1	Hexagonal screw
901.2	Hexagonal screw
901.3	Hexagonal screw
901.4	Hexagonal screw
902.1	Stud bolt
902.2	Stud bolt
902.3	Stud bolt
903.1	Plug screw
914.1	Socket head cap screw
920.1	Hexagonal nut
920.2	Hexagonal nut
920.3	Hexagonal nut
920.4	Hexagonal nut
932.1	Circlip for a bore
932.2	Circlip for a bore
934.1	Spring ring
940.1	Feather key
940.2	Feather key
971.1	Identification plate

### Weight<sup>1)</sup> of pumps without motor

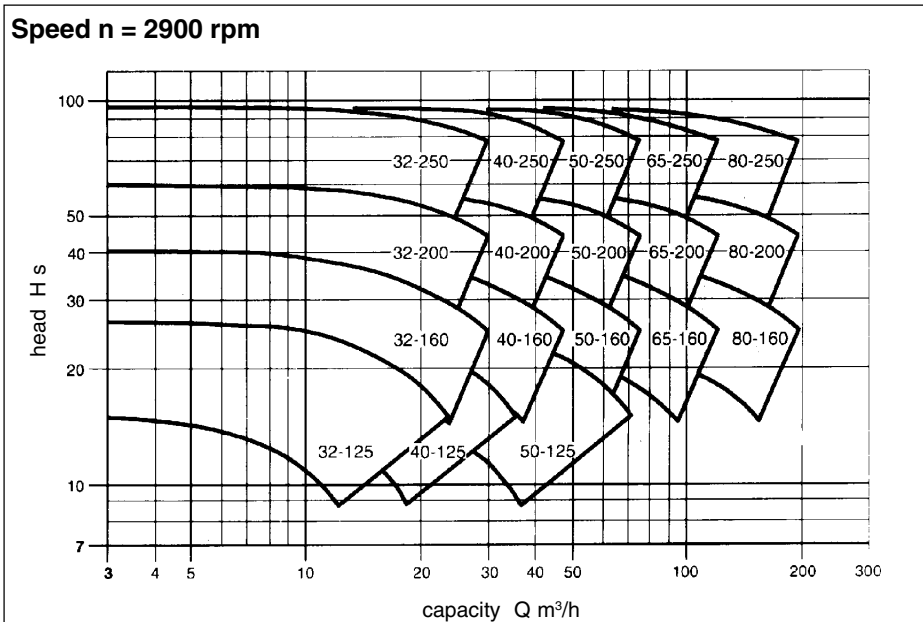
pump type	weight kg	
	NM	PE / PP PVDF
32 - 125	32	37
32 - 160	35	40
32 - 200	41	47
32 - 250	51	59
40 - 125	32	37
40 - 160	46	53
40 - 200	47	54
40 - 250	56	65
40 - 315	88	102
50 - 125	36	42
50 - 160	47	54
50 - 200	48	55
50 - 250	68	79
50 - 315	95	110
65 - 160	48	55
65 - 200	48	55
65 - 250	94	108
65 - 315	123	141
80 - 160	56	65
80 - 200	95	110
80 - 250	100	115
80 - 315	141	162
125 - 315	152	175
150 - 400	217	252

### Characteristic fields acc. DIN 24256



### Weight<sup>1)</sup> of motors (kg)

motor	power kW	weight (kg)	
		2900 rpm	1450 rpm
80	0.55	-	8
80	0.75	8	10
80	1.1	9	-
90 S	1.1	-	12
90 S	1.5	12	-
90 L	1.5	-	14
90 L	2.2	15	-
100 L	2.2	-	18
100 L	3.0	20	20
112 M	4.0	25	28
132 S	5.5	45	45
132 S	7.5	48	-
132 M	7.5	-	50
160 M	11	75	77
160 M	15	91	-
160 L	15	-	96
160 L	18.5	107	-
180 M	18.5	-	154
180 M	22	129	-
180 L	22	170	170
200 L	30	208	215
200 L	37	227	-
225 S	37	309	309
225 M	45	330	340
250 M	55	445	445
280 S	75	560	580
280 M	90	620	650
315 S	110	850	900
315 M	132	910	940



<sup>1)</sup>standard values

Technical alterations excepted