


# Thermoplastic Centrifugal Pump

## Type NM

chemical centrifugal acc. DIN 24256, EN 22858, ISO 2858



Technical data	
Flow rate (1450 rpm)	up to 450 (m <sup>3</sup> /h)
Flow rate (2900 rpm)	up to 200 (m <sup>3</sup> /h)
Head (1450 rpm)	up to 60 m
Head (2900 rpm)	up to 100 m
Materials limits of use	PE-HD up to 60°C PP up to 80°C PVDF up to 110°C
Pressure socket nominal width	DN 32 up to DN 150
Drive capacity (kW)	up to 150 kW
Explosion protection (ATEX)	on request
	

### Design

- Horizontal, single-stage, non self-priming chemical pump according to DIN 24256, EN 22858, ISO 2858 with single flow spiral casing of modular concept

### Sizes

- NM 32–125 to NM 150–400

### Technical design

- Axial suction socket and radial pressure socket
- Closed radial impeller
- Axial thrust compensation by relief bores
- Impeller mounting independent of the rotational direction
- Corrosion protection by a 2C paint coat

### Drive:

- Three-phase motor up to 150 kW acc. to IEC
- Bend resistant stainless steel shaft
- Shaft protection sleeve of carbon or thermoplastic
- Shaft bearing in an undivided bearing mounting with grease lubricated roller bearing
- Option: oil lubricated shaft bearing

### Options/Accessories:

- ASV pump monitor
- Container for self-priming (non self-priming as standard)
- Steel base plate according to DIN 24259
- Housing drainage
- Circulation
- Smooth starting unit

### Application

- Chemical plants
- Water treatment
- Process engineering

### Utilisation

- For transportation of neutral or aggressive fluids provided that the components coming into contact with the medium are resistant at the operating temperature according to the ASV resistance guide.

### Fluid viscosity

- Maximal up to 160 mPas (cP)

### Examinations

- DIN EN ISO 9906

## Suction

- The pump is not self-priming. The fluid has to run freely into the pump.
- The pump can only selfprime with an additionally installed ASV self-priming tank.
- Documentation of the tanks are available on request.

## 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.

## 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 FPM or CSM, metal parts of stainless steel 1.4571 or Hastelloy as standard execution. This combination offers trouble-free operation

on 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.

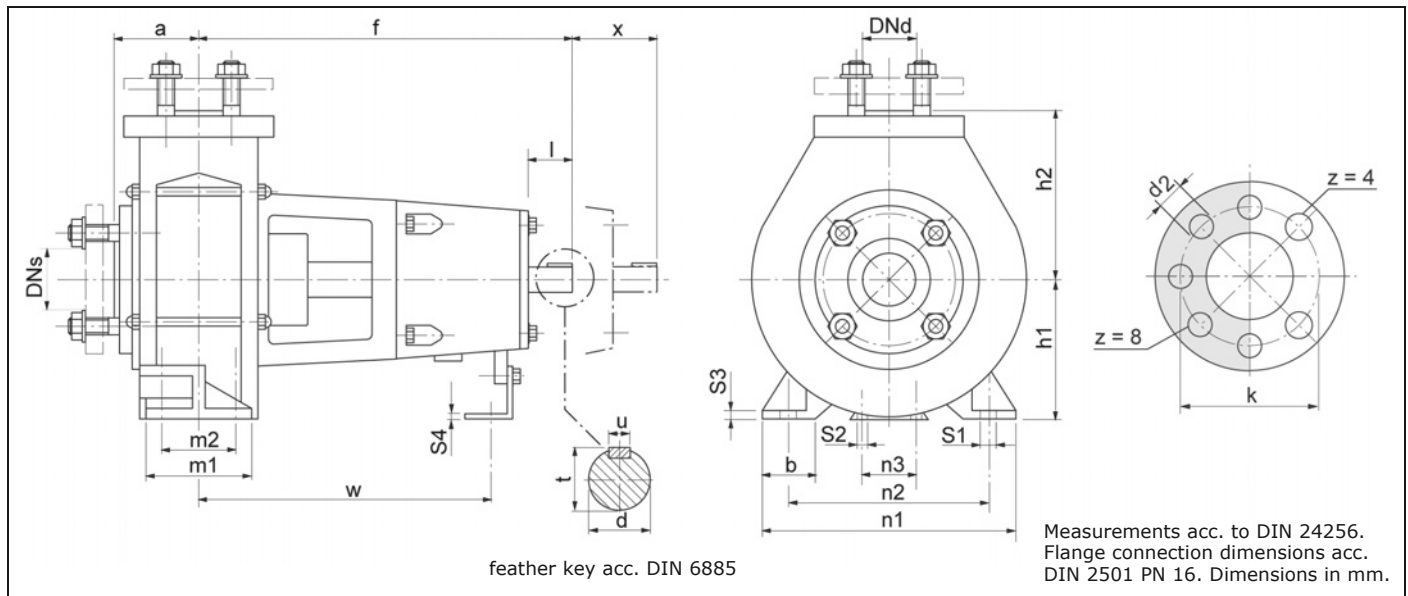
## Screws

- stainless steel as standard (1.4301)

## Painting

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

## Dimensions



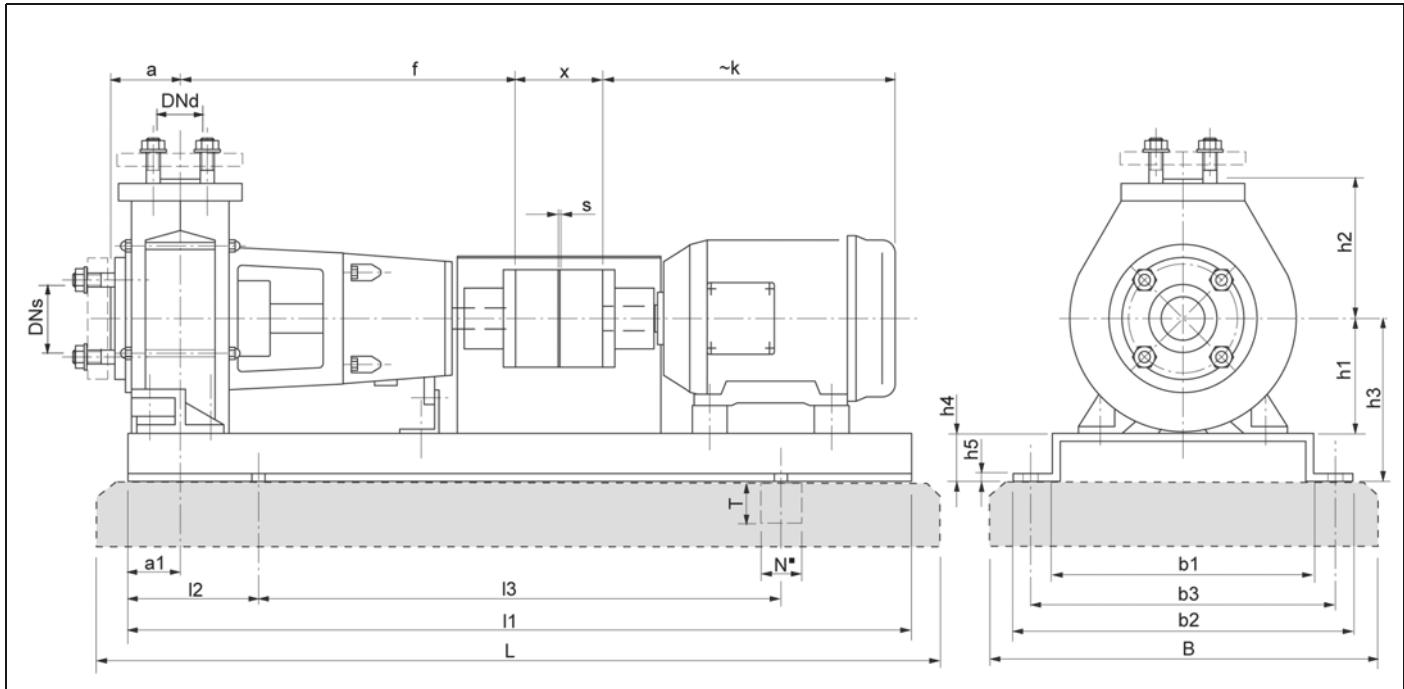
type NM	pump size		foot measure										screws		shaft DIN 748				LG*		
	a	f	h1	h2	b	m1	m2	n1	n2	n3	s3	s4	w	x	s1	s2	d	l		t	u
32-125	80	385	112	140	50	100	70	190	140	110	10	5	285	100	M12	M12	24	50	27	8	1.1
32-160	80	385	132	160	50	100	70	240	190	110	10	5	285	100	M12	M12	24	50	27	8	1.2
32-200	80	385	160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

\* LG = Bearing support

type NM	flange measure							
	pressure side				suction side			
	DNd	k	d2	z	DNs	k	d2	z
32-125	32	100	M16	4	50	125	M16	4
32-160	32	100	M16	4	50	125	M16	4
32-200	32	100	M16	4	50	125	M16	4
32-250	32	100	M16	4	50	125	M16	4
40-125	40	110	M16	4	65	145	M16	4
40-160	40	110	M16	4	65	145	M16	4
40-200	40	110	M16	4	65	145	M16	4
40-250	40	110	M16	4	65	145	M16	4
40-315	40	110	M16	4	65	145	M16	4
50-125	50	125	M16	4	80	160	M16	8
50-160	50	125	M16	4	80	160	M16	8
50-200	50	125	M16	4	80	160	M16	8

type NM	flange measure							
	pressure side				suction side			
	DNd	k	d2	z	DNs	k	d2	z
50-250	50	125	M16	4	80	160	M16	8
50-315	50	125	M16	4	80	160	M16	8
65-160	65	145	M16	4	100	180	M16	8
65-200	65	145	M16	4	100	180	M16	8
65-250	65	145	M16	4	100	180	M16	8
65-315	65	145	M16	4	100	180	M16	8
80-160	80	160	M16	8	125	210	M16	8
80-200	80	160	M16	8	125	210	M16	8
80-250	80	160	M16	8	125	210	M16	8
80-315	80	160	M16	8	125	210	M16	8
125-315	125	210	M16	8	150	240	M20	8
150-400	150	240	M20	8	200	295	M20	8

## Installation drawing



## Baseplate and basement dimensions / Stone bolts

baseplat 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 and dismounting dimensions X

type	pump dimensions (mm)								
NM	DNs	DNd	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

type	pump dimensions (mm)								
NM	DNs	DNd	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

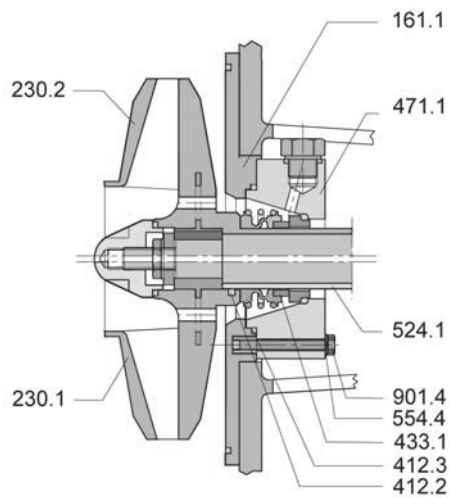
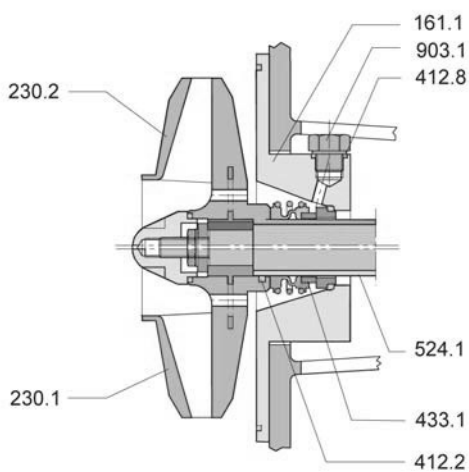
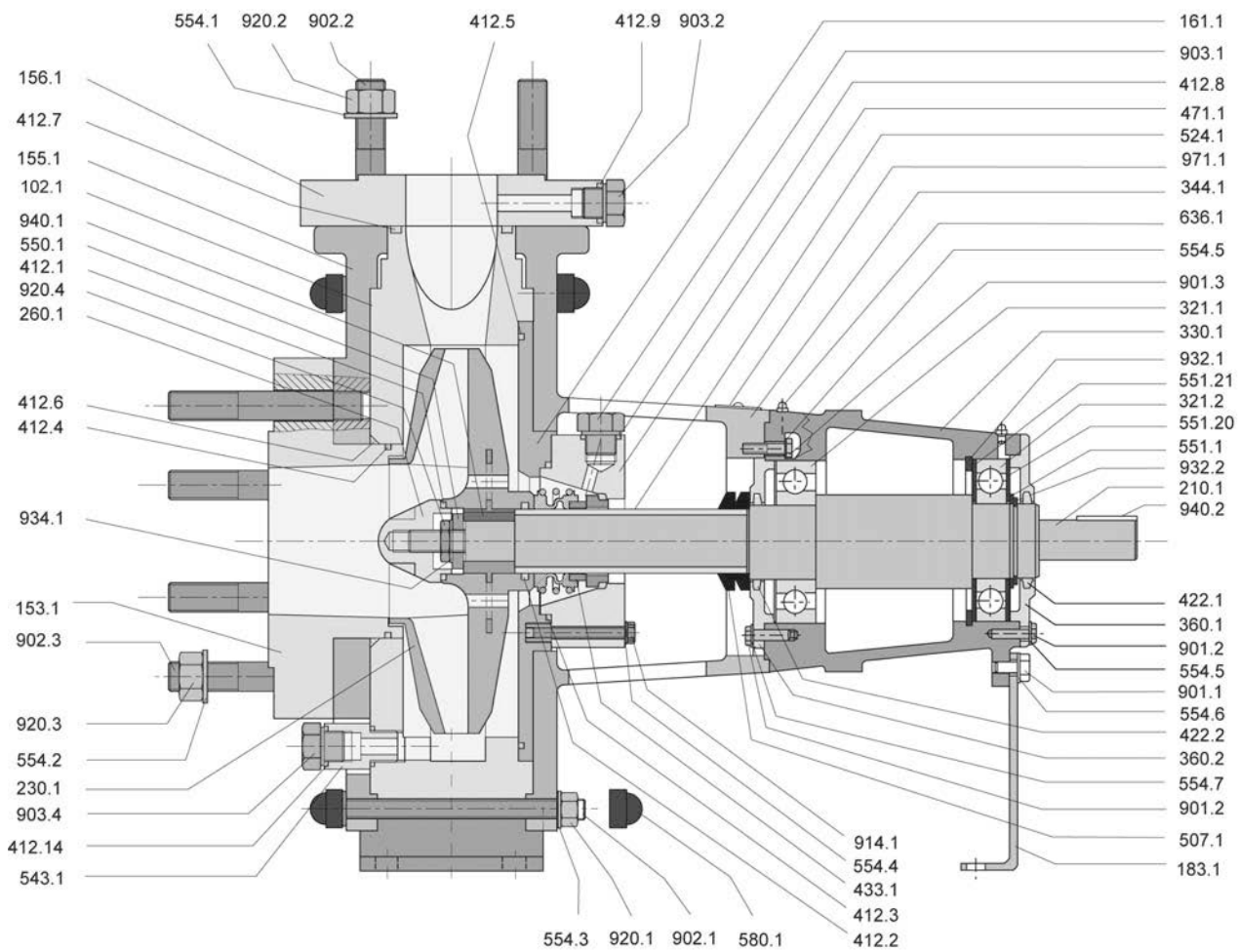
## Coupling dimensions "S"

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 x mm	100	100	100	140	100	140	140	140	140	140	180
allowance s	5 <sup>+0,5</sup>	5 <sup>+1</sup>	5 <sup>+1</sup>	5 <sup>+1</sup>	7 <sup>+1</sup>	7 <sup>+1</sup>	7 <sup>+1</sup>	7 <sup>+1</sup>	7 <sup>+1,5</sup>	7 <sup>+1,5</sup>	7 <sup>+1,5</sup>

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

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

## Sectional drawing and component part register

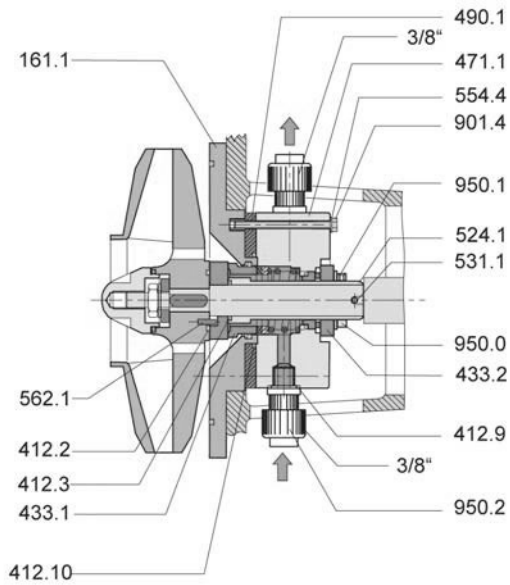
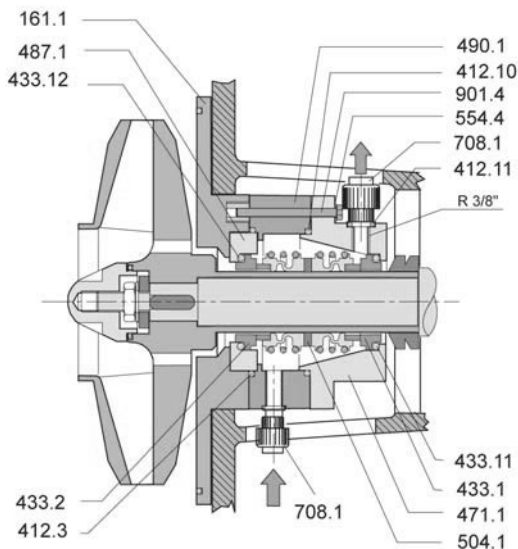
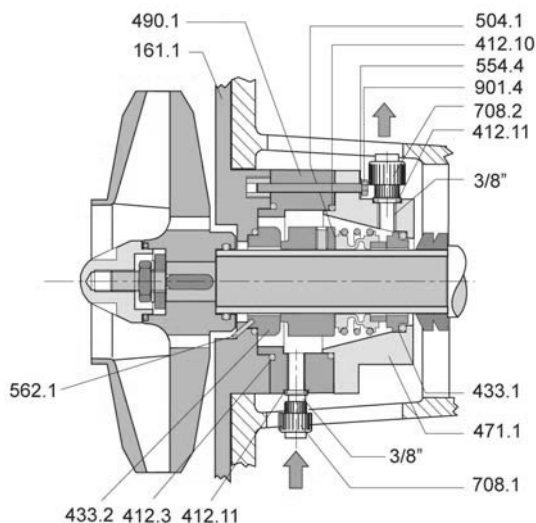


### Execution:

Size: 32-125 and 40-125  
 Casing cover and seal housing as unit

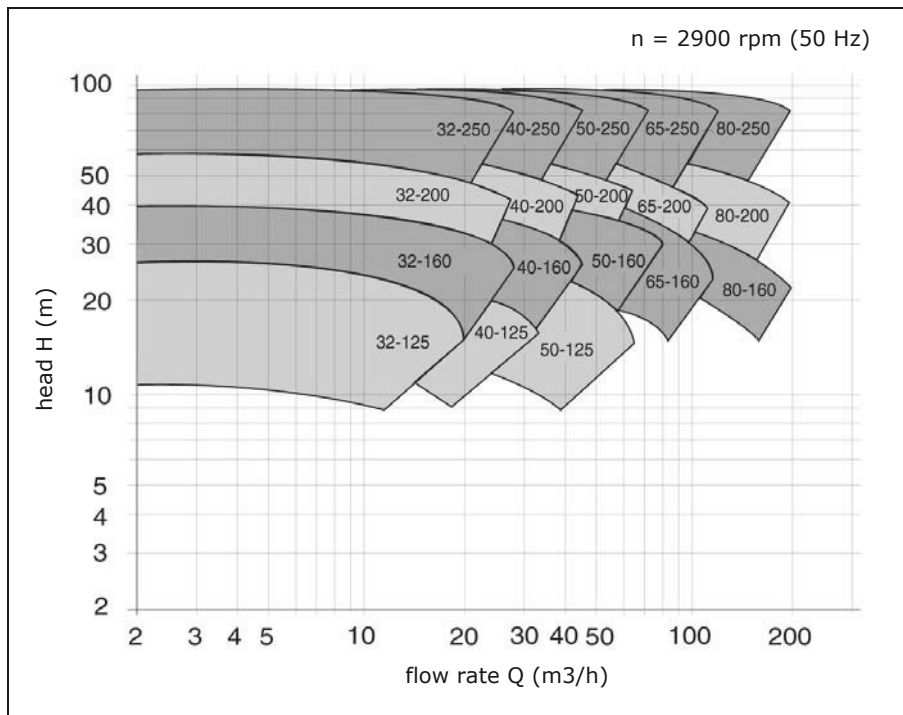
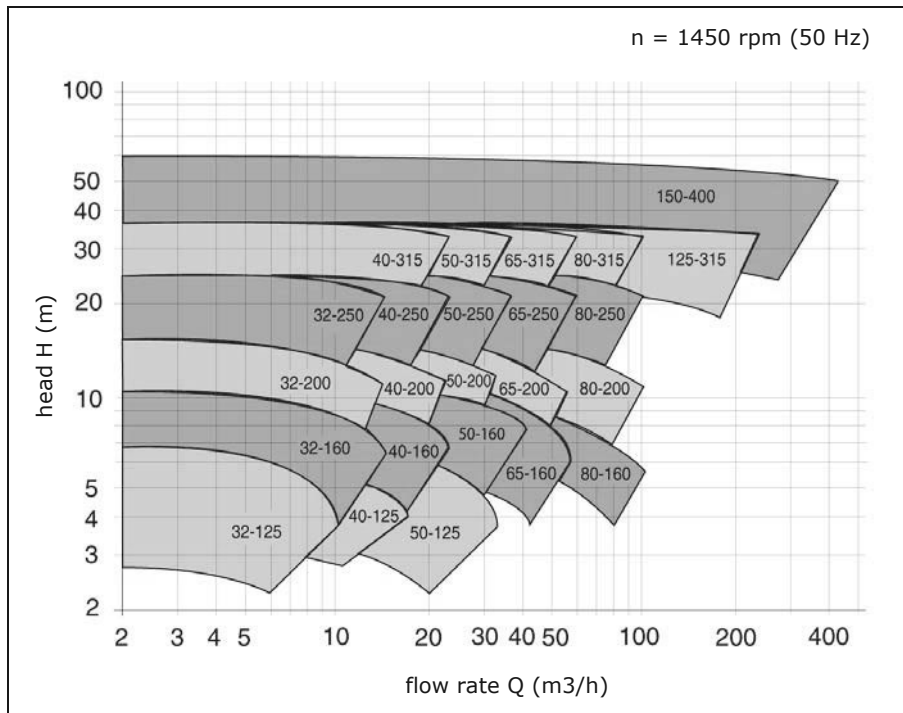
### Execution:

Casing cover and seal housing as separated unit;  
 Impeller and shaft protection sleeve as unit (specified above)  
 Impeller and shaft protection sleeve as separated unit (as stated below)

**Mechanical seal (GLRD):  
 single acting type UV with quench**

**Mechanical seal (GLRD):  
 double acting type MG1/MG1 with flushing chamber**

**Mechanical seal (GLRD):  
 double acting type M7N/MG1 with flushing chamber**


item	designation
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 with shaft protection sleeve (unit)
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
412.2	O-ring
412.3	O-ring
412.4	O-ring
412.5	O-ring
412.6	O-ring
412.7	O-ring
412.8	O-ring
412.9	O-ring
412.10	O-ring
412.11	o-ring
412.12	O-ring
412.14	o-ring
422.1	felt ring
422.2	felt ring
433.1	mechanical seal (GLRD)
433.2	mechanical seal (GLRD)
471.1	seal cover
487.1	counterring feeder
490.1	seal flange
504.1	distance ring
507.1	V-ring
524.1	shaft protection sleeve
531.1	clamping sleeve
534.1	adaper
550.1	washer
551.1	supporting disk
551.20	spacer
551.21	spacer
554.1	washer
554.2	washer
554.3	washer
554.4	washer
554.5	washer
554.6	washer
554.7	washer
562.1	straight pin
580.1	hexagonal protection cap
636.1	ball type lubrication nipple
708.1	quench connection
708.2	quench connection
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
903.2	plug screw (circulation optional)
903.4	plug screw (housing drainage optional)
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 bore
932.2	circlip for bore
934.1	spring ring
940.1	feather key
940.2	feather key
950.0	clamp ring
950.1	set screw
950.2	quench connection
971.1	identification plate

### Characteristic fields acc. DIN 24256



### Weight without motor \*

pump type	weight (kg)	
	PE / PP	PVDF
NM		
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

### Weight of motor and coupling\*

motor size	power kW	motor (kg)		coupling (kg)	
		1450	2900	1450	2900
80	0.55	8	-	2,1	-
80	0.75	10	8	2,1	2,1
80	1.1	-	9	-	2,1
90 S	1.1	12	-	2,1	-
90 S	1.5	-	12	-	2,1
90 L	1.5	14	-	2,1	-
90 L	2.2	-	15	-	2,1
100 L	2.2	18	-	3,3	-
100 L	3.0	20	20	3,3	2,1
112 M	4.0	28	25	3,3	3,3
132 S	5.5	45	45	6,3	6,3
132 S	7.5	-	48	-	6,3
132 M	7.5	50	-	6,3	-
160 M	11	77	75	7,2	6,3
160 M	15	-	91	-	6,3
160 L	15	96	-	7,2	-
160 L	18.5	-	107	-	6,3
180 M	18.5	154	-	12,9	-
180 M	22	-	129	-	9,5
180 L	22	170	-	12,9	-
200 L	30	215	208	17,8	12,9
200 L	37	-	227	-	12,9
225 S	37	309	-	17,8	-
225 M	45	340	330	26,7	12,9
250 M	55	445	445	26,7	17,8
280 S	75	580	560	37,0	17,8
280 M	90	650	620	37,0	26,7
315 S	110	900	850	37,0	26,7
315 M	132	940	910	52,0	37,0

\* standard values

Subject to technical modifications