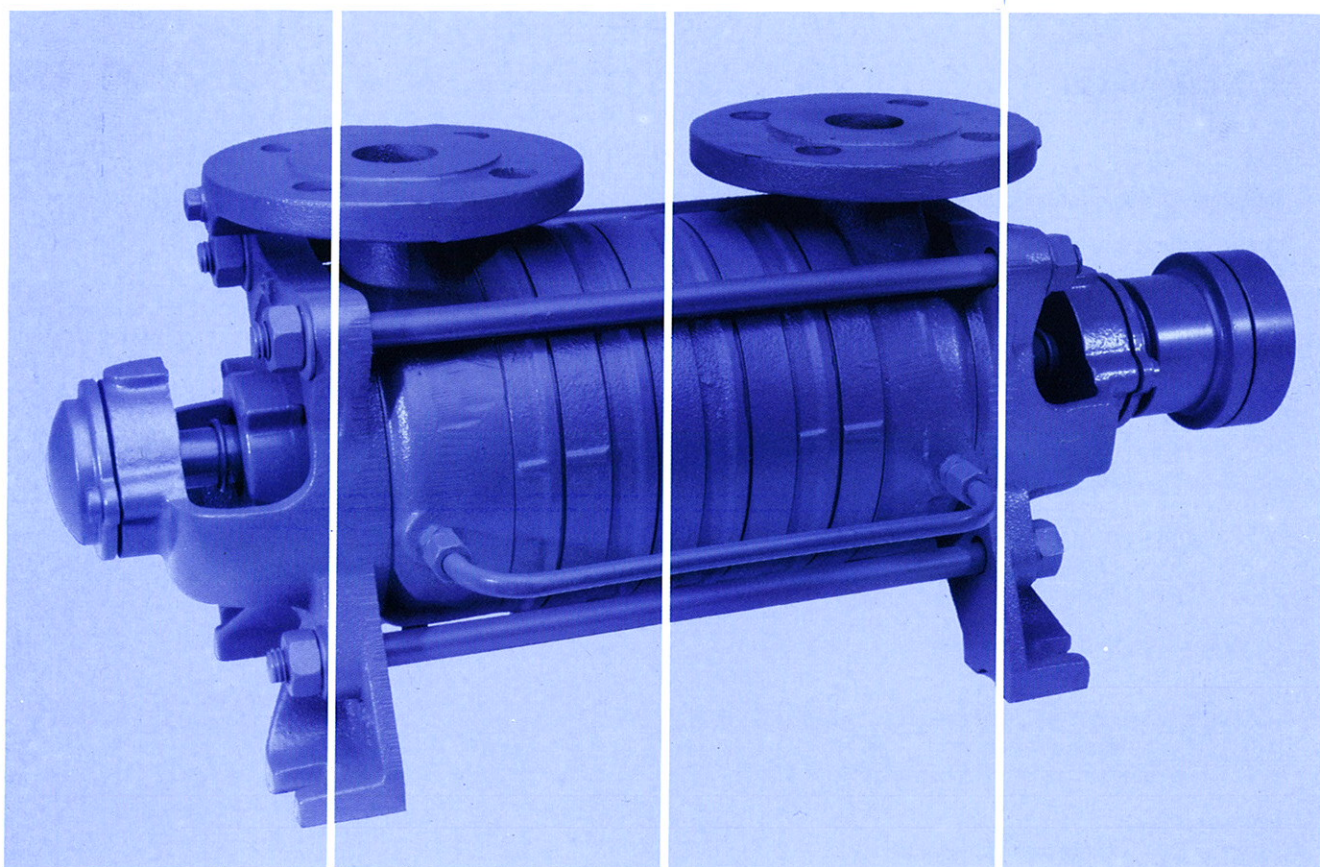


## **Side channel pumps PN 16 - 25**

Selfpriming centrifugal pumps

**SON/SRN - SOB/SRB**



**Technical description**

# 1. Application

Pumps SON/SRN and SOB/SRB are applied in chemical industry, in apparatus engineering and in shipping industry. Due to their characteristics they can also be used in general process engineering, in steel and mechanical construction, in agriculture and for domestic purposes, for sprinkling, water supply and irrigation. They can generally handle clean, slightly contaminated or aerated liquids. The liquids pumped must not crystallize or contain abrasive particles.

# 2. General design

Pumps SON/SRN are side channel pumps for light duties with PN 16. Pumps SOB/SRB are side channel pumps for medium duties with PN 25. All pumps are selfpriming, in horizontal execution and in modular construction. Side channel pumps are recommended for small capacities at high pressures. SON/SRN and SOB/SRB pumps consist of standard components that are interchangeable in all materials. The combination of a minimum number of basic components permits the construction of a large variety of pumps.

## 2.1 Characteristics

Pumps SON/SRN and SOB/SRB have the lowest power demand at the highest capacity!  
 Pumps SON/SRN and SOB/SRB are selfpriming; they are able to handle aerated liquids!  
 Pumps SON/SRN and SOB/SRB must only be used within the indicated performance range!

## 2.2 Advantages

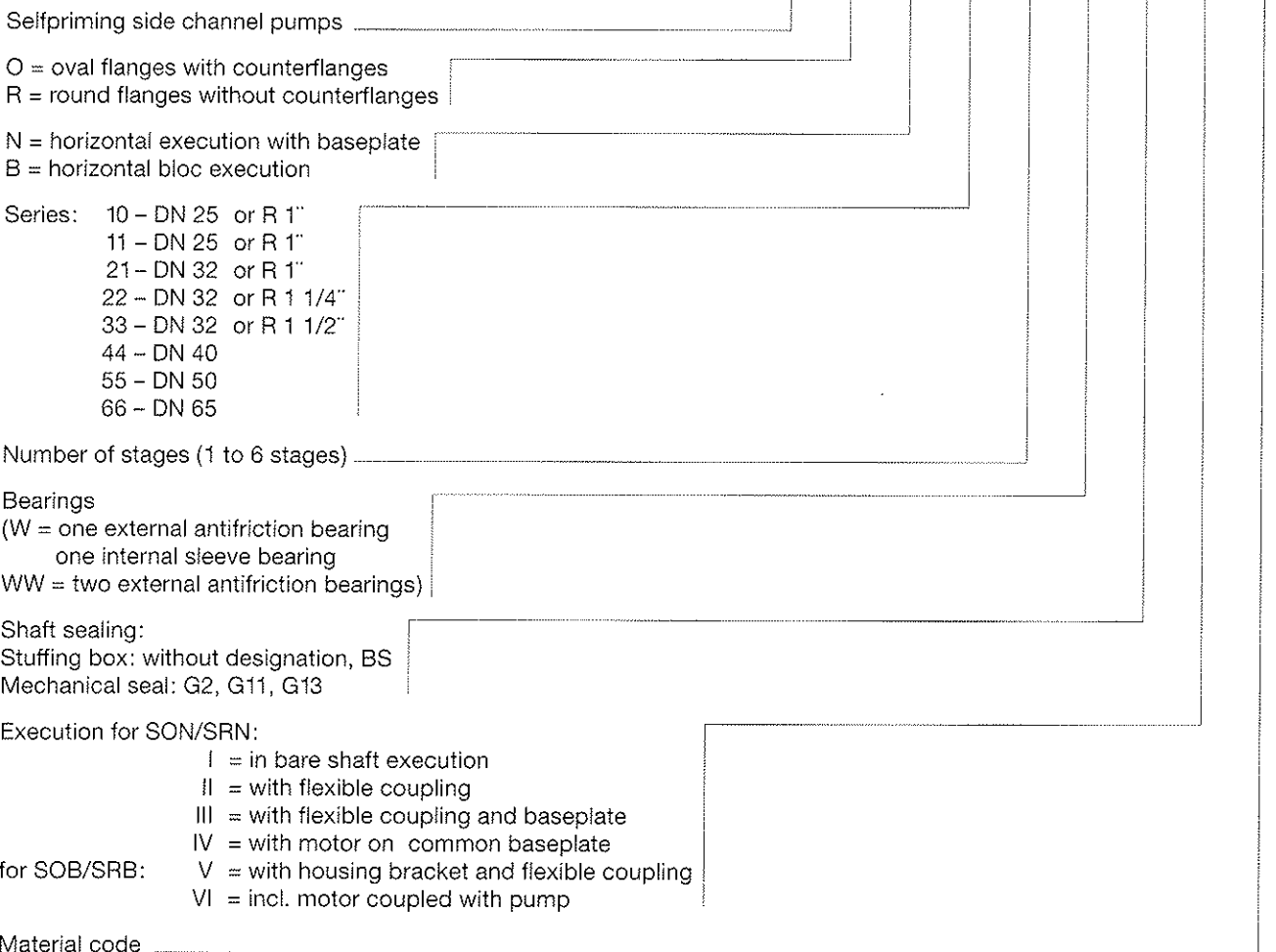
- 1.) High efficiency
- 2.) Low noise level
- 3.) Excellent selfpriming ability and favourable NPSH values.
- 4.) Good safety run and long life due to locked impellers and resistant ball bearings.
- 5.) Dimensions for pumps in different materials or shaft sealing executions are the same.

## 2.3 Pressure

Pumps SON/SRN and SOB/SRB must always be operated against open pressure valve. The maximum allowed head is indicated in the performance curves. Pumps must never be operated against closed pressure piping.

# 3. Designation

S O N 22 3 WW BS / II. 10



## 4. Operating data

### 4.1 Performance range

Capacity: 0,3 to 36 m<sup>3</sup>/h for SRN/SRB; 0,3 to 7,5 m<sup>3</sup>/h for SON/SOB

Head: max. 250 m.

For details see separate performance curves.

### 4.2 Speed

1450 rpm – 50 Hz alt. 1750 rpm – 60 Hz

The data of the performance curve at 1450 rpm can be converted for other speeds as follows:

Capacity:

Head:

Power demand:

$$Q_2 = Q_1 \cdot \left( \frac{n_2}{n_1} \right)$$

$$H_2 = H_1 \cdot \left( \frac{n_2}{n_1} \right)^2$$

$$P_2 = P_1 \cdot \left( \frac{n_2}{n_1} \right)^3$$

### 4.3 Pressure and temperature range

Pump	Pump material	Stuffing box exec.		Mechanical seal exec.	
		max. press. in bar	temp. * °C	max. press in bar	temp. * °C
<b>SON</b> <b>SOB</b>	10, 12	16	-20 to +120 (140)	10 (16)	-20 to +120 (140)
	22	16	-20 to +100	10 (16)	-20 to +100
	32	16	-20 to +120 (140)	10 (16)	-20 to +120 (140)
<b>SRN</b> <b>SRB</b>	10, 12	25	-20 to +120 (140)	16 (25)	-20 to +120 (140)
	22	25	-20 to +100	16 (25)	-20 to +100

\* For other temperatures please refer to our pump type SRZ/SRZS.

#### 4.3.1 Suction head

The pumps are capable of suction lifts of up to 8,5 m (for cold water). However, this will be reduced when pumping liquids with a higher temperature, viscosity or vapour pressure.

The pumps are capable of handling aerated liquids as well as lifting liquids over obstacles.

#### 4.4 Direction of rotation

Clockwise seen from the drive end (also anti-clockwise on special request).

#### 4.5 Test pressure

1,3 x working pressure

#### 4.6 NPSH

The NPSH values are indicated on the performance curves.

#### 4.7 Power requirements

The power requirements indicated on the performance curves have been measured at the pump shafts, and are valid for liquids with densities of 1 kg/dm<sup>3</sup> and viscosities of 1 cSt. For other densities or viscosities the power demands change as follows:

Ex.: density = 1,5 kg/dm<sup>3</sup>

Effective power demand = power demand according to performance curve x 1,5. While the capacity (m<sup>3</sup>/h) and head (mlc) do not change, the pressure must also be multiplied by 1,5.

For viscosities higher than 1 cSt, the power demand will increase while the head decreases (see item 4.8).

#### 4.8 Viscosity

The maximum viscosity of the liquid pumped should not exceed 228 cSt (30 °E). As viscosity increases, the power demand will also increase while the head developed by the pump will decrease.

The performance curves are valid for a density of 1 kg / dm<sup>3</sup>, a maximum viscosity of 21 cSt (3 °E) and a temperature range of -20 to +140 °C. For higher values, please refer to the correction factors indicated on the special curve which is available on request.

#### 4.9 Tolerances

Capacity: ± 5 %

Head: ± 5 %

Power demand: ± 10 %

Performance tests according to DIN 1944/III may be done on request.

## 5. Construction

Pumps SON/SRN and SOB/SRB are selfpriming horizontal pumps in modular construction according to the principle of side channel pumps.

### 5.1 Casing

Suction and discharge casing and also suction and discharge stage casing are transverse pitched. The casings are sealed by flat gaskets resp. by teflon cord for pump material 32 (stainless steel).

### 5.2 Nozzle position

#### 1.) SON/SOB . . . W

The suction cover is directed horizontally in axial direction and the discharge casing in radial direction upwards.

#### 2.) SON/SRN and SOB/SRB . . . WW

The suction and the discharge casing are radially directed upwards. Generally the discharge casing is on the motor-side (for pumps in anti-clockwise direction of rotation the suction casing is on the motorside).

### 5.3 Connections

The suction and the discharge connections are the same.

#### 5.3.1 SON/SOB

The connections are oval flanged with PN 16. The dimensions correspond to our own works norm.

The counterflanges are always delivered with the pump and have a Withworth pipe thread according to DIN 259.

#### 5.3.2 SRN/SRB

The connections have round flanges with PN 25. The dimensions correspond to DIN 2501. The counterflanges are not delivered with the pumps. The delivery of counterflanges according to DIN 2566 is possible. Morecharges according to our pricelist. Other flange executions are not possible (please refer to our pump SRZ with PN 40).

### 5.4 Impellers

Radial vane impellers with axial thrust compensation via relief holes are fitted to all pumps. To compensate for the residual end thrust of pumps in material 10, 12 and 22, impellers are locked on the shaft, and use the antifricition bearing as a locating bearing. For pumps in material 32, axial thrust is absorbed by a ceramics disc inserted in the impeller and suction stage casing.

### 5.5 Shaft

Pumps are fitted with stiff shafts designed to ensure smooth trouble free operation.

### 5.6 Bearing

#### 5.6.1 Execution W

Motor side: Grease lubricated ball bearing according to DIN 625. Maintenance free, with sealed bearing for approximately 10.000 working hours. Suction side: sleeve bearing.

#### 5.6.2 Execution WW

Both sides: Grease lubricated ball bearings, with the motor side bearing locked to absorb axial thrust.

### 5.7 Coupling

Flender-N-Eupex coupling (special execution)

### 5.8 Shaft sealing

#### 5.8.1 Stuffing box

##### 5.8.1.1 Without designation

Standard uncooled, unbalanced stuffing box for SON and SOB. Maximum pressure 10 bar.

##### 5.8.1.2 Execution BS

The stuffing box on the discharge side is connected via a crossover pipe to the suction side stuffing box for SRN and SRB pumps. For pressures between 10 and 25 bar.

#### 5.8.2 Mechanical seal

Mechanical seals may be fitted in place of stuffing boxes if required. Usually single unbalanced mechanical seals are used. The liquid pumped should be free of abrasive particles as these will cause accelerated wear of the seal faces. For material specifications, see item 6.2.2.

##### 5.8.2.1 Execution G2

Standard mechanical seal for pressures up to 10 bar.

##### 5.8.2.2 Execution G 11

Standard mechanical seal for pressures up to 16 bar.

##### 5.8.2.2 Execution G 13

Optional for pressures up to 25 bar.

### 5.9 Special executions

For all other duties, please refer to our PN 40 range of side channel pumps, designed in accordance with DIN 24254. These pumps are designed to handle pressures up to 40 bar, and temperatures up to 220 °C.

## 6. Materials

### 6.1 Pump materials

Part No.	Designation	Material code			
		10	12	22	32
1 - 2 - 3	Casing, suction cover	cast iron	cast iron	G-SnBz 10	1.4408
4 - 5	Discharge/suction stage casing	cast iron	cast iron	G-SnBz 10	1.4470
6	Impeller	Cu Zn 40 Al 2	1.4059	1.4059	1.4581
7	Shaft	1.4021	1.4021	1.4571	1.4571
8 - 9 - 10	Bearing housing, housing bracket	cast iron	cast iron	cast iron	cast iron
11	Antifriction bearing	steel	steel	steel	steel
12	Bearing cover	cast iron	cast iron	cast iron	cast iron
13	Bearing end cover *	plastic	plastic	plastic	plastic
14	Spacer ring	steel	steel	steel	steel
16	Bearing bush long	carbon	carbon	carbon	carbon
17	Bearing bush short	bronze	carbon	bronze	carbon
21	Thrower	plastic	plastic	teflon	teflon
22	Gasket, wide	novapress	novapress	novapress	teflon cord
23	Gasket, narrow	teflon	teflon	teflon	teflon cord
24	Packing ring	thermofl.	thermofl.	thermofl.	thermofl.
26	Stuffing box	brass	brass	brass	1.4581
27	Screwed nut	brass	brass	brass	1.4581
28	Woodruff key	C 45 K	C 45 K	1.4571	1.4571
31	Plug	mall. iron	mall. iron	brass	1.4571
34	Crossover pipe	copper	copper	copper	1.4571
35	Screwed connection	steel	steel	steel	1.4571
36	Lantern ring	brass	brass	brass	1.4571
37	Distance disc	-	-	-	ceramics
40	Bearing bracket	cast iron	cast iron	cast iron	cast iron
51	Mating flange oval	cast iron	cast iron	cast iron	1.4581
52	Flange gasket	universal	universal	universal	universal

\* bearing end cover for pump SRN 550 and 660 in cast iron

Material code specification:

Material code	Designation according to DIN 17006
Cast iron	Cast iron with a tensile strength of 220 N/mm <sup>2</sup> min.
1.4021	X 20 Cr 13
1.4059	G - X 22 Cr Ni 17
1.4408	G - X 6 Cr Ni Mo 18 10
1.4470	G - X 2 Cr Ni Mo N 2253
1.4571	X 10 Cr Ni Mo Ti 18 10
1.4581	G - X Cr Ni Mo Ti 18 10

### 6.2 Materials: Packed gland and mechanical seal

#### 6.2.1 Material specification: packed gland

Graphite/PTFE with lubricant

#### 6.2.2 Material specification: mechanical seals

Mechanical seal execution		G 2	G 11	G 13
part no.	Designation			
61.1	Rotating ring alt.	carbon -	carbon silicon carbide	silicon carbide -
61.2	O-ring alt.	viton TTV EP	viton TTV EP	viton TTV EP
61.3	Spring and spacer	1.4571	1.4571	1.4571
62	Stationary seat alt.	1.4122 -	ceramics silicon carbide	carbon -
63	Gasket	teflon	teflon	teflon
64	Circlip	steel *	steel *	steel *
65	Clamp ring	1.4571	1.4571	1.4571

TTV = viton double coated PTFE

\* for pumps in material 22 in bronze

# Performance table for pump material 10, 12 and 22

SON/SOB = oval flanges - SRN/SRB = round flanges

Speed = 1450 rpm

Pump	l/min.	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	110	125	150	175	200	250	300	350	400	450	500	550	600	
		m <sup>3</sup> /h	0,3	0,6	0,9	1,2	1,5	1,8	2,1	2,4	2,7	3,0	3,6	4,2	4,8	5,4	6,0	6,6	7,5	9,0	10,5	12,0	15,0	18,0	21,0	24,0	27,0	30,0	33,0	36,0
		Connections	Head H [m]													Power absorbed [kW]														
SON 101	R 1"	33 0,30	30 0,25	24 0,19	18 0,16	12 0,14	7 0,12																							
SON 102	R 1"	63 0,55	60 0,45	46 0,37	36 0,32	27 0,28	14 0,25																							
SON 103	R 1"	93 0,90	90 0,75	80 0,55	60 0,48	40 0,42	21 0,39																							
SON 111	R 1"		36 0,34	32 0,31	28 0,29	23 0,26	17 0,23	13 0,21																						
SON 112	R 1"		68 0,7	60 0,65	53 0,6	43 0,55	32 0,5	24 0,43																						
SON 113	R 1"		100 1,05	88 0,95	78 0,9	63 0,8	47 0,75	35 0,67																						
SRN 114	DN 25		132 1,4	116 1,3	102 1,2	83 1,1	63 1,0	45 0,9																						
SRN 115	DN 25		164 1,7	145 1,6	127 1,5	103 1,35	78 1,25	56 1,1																						
SRN 116	DN 25		196 2,1	173 1,95	151 1,8	122 1,65	94 1,5	66 1,35																						
SON 211	R 1"			46 0,7	42 0,6	39 0,55	34 0,45	30 0,4	26 0,35	22 0,3	18 0,3																			
SON 212	R 1"			92 1,3	84 1,2	76 1,1	68 1,0	60 0,9	54 0,8	44 0,7	36 0,65																			
SON 213	R 1"			134 1,95	122 1,8	112 1,7	100 1,5	88 1,4	78 1,3	66 1,1	54 1,0																			
SRN 214	DN 32			174 2,65	160 2,4	144 2,3	130 2,0	114 1,9	100 1,7	84 1,5	68 1,35																			
SRN 215	DN 32			216 3,3	198 3,0	176 2,9	156 2,5	138 2,3	120 2,1	98 1,9	78 1,75																			
SRN 216	DN 32			- 3,6	234 3,6	210 3,3	186 3,0	162 2,75	140 2,5	112 2,3	88 2,05																			
SON 221	R 1 1/4"				50 0,9	46 0,85	42 0,75	40 0,7	36 0,68	32 0,65	26 0,6	18 0,5																		
SON 222	R 1 1/4"				100 1,8	92 1,75	86 1,7	79 1,6	72 1,5	66 1,4	52 1,2	38 0,9																		
SON 223	R 1 1/4"				150 2,8	140 2,7	128 2,5	118 2,4	108 2,3	98 2,1	78 1,7	56 1,4																		
SRN 224	DN 32				195 3,7	180 3,6	168 3,4	154 3,3	140 3,1	128 2,75	102 2,4	76 1,9																		
SRN 225	DN 32				240 4,7	224 4,5	208 4,3	192 4,0	176 3,8	160 3,5	128 3,0	96 2,3																		
SRN 226	DN 32				- 4,7	- 4,5	244 5,2	224 4,75	206 4,6	188 4,2	152 3,6	114 2,9																		
SON 331	R 1 1/2"								44 1,3	40 1,2	35 1,1	31 1,0	26 0,9	22 0,75	18 0,7															
SON 332	R 1 1/2"								82 2,6	74 2,4	66 2,2	58 2,0	50 1,7	42 1,5	35 1,4															
SON 333	R 1 1/2"								116 3,8	106 3,6	96 3,3	84 3,0	74 2,6	62 2,4	52 2,3															
SRN 334	DN 32								154 5,2	140 4,8	126 4,4	112 4,0	98 3,5	84 3,2	72 2,9															
SRN 335	DN 32								188 6,5	172 6,0	156 5,5	138 5,0	124 4,5	106 4,0	90 3,8															
SRN 336	DN 32								226 7,8	206 7,2	186 6,6	168 6,0	150 5,4	130 4,9	110 4,6															
SRN 441	DN 40												45 2,1	42 2,0	36 1,8	28 1,5	18 1,3	10 1,0												
SRN 442	DN 40												86 4,2	79 4,0	69 3,5	53 2,9	36 2,5	20 2,1												
SRN 443	DN 40												125 6,5	116 6,0	102 5,2	78 4,2	54 3,7	29 3,2												
SRN 444	DN 40												166 9,0	152 8,0	134 7,0	102 5,7	70 5,0	38 4,3												
SRN 445	DN 40												205 10,9	189 10,0	166 8,5	126 7,4	86 6,3	47 5,5												
SRN 446	DN 40												240 13,0	223 12,0	198 10,5	152 8,7	104 7,5	56 6,5												
SRN 551	DN 50													51 4,0	43 3,9	37 5,5	27 3,2	19 2,8												
SRN 552	DN 50													96 8,2	85 7,7	73 7,5	54 6,5	37 5,5												
SRN 553	DN 50													141 12,7	125 11,7	108 10,7	79 9,5	51 8,5												
SRN 554	DN 50													188 17,0	165 15,5	142 14,5	104 13	69 11,5												
SRN 555	DN 50													235 21,5	210 19,5	180 18,5	134 16,5	82 14,5												
SRN 661	DN 65																	45 7,0	40 6,5	35 6,0	29 5,5	25 5,0	18 4,5	12 4,0	7 3,5					
SRN 662	DN 65																	90 14,5	80 13	70 12	58 11,2	47 10,0	36 8,5	24 7,5	13 6,5					
SRN 663	DN 65																	130 22	115 20	100 18	85 16	70 14,5	52 12,5	35 11,0	20 10,0					
SRN 664	DN 65																	170 29,5	150 27	130 24	110 21,5	90 19,0	70 16	47 14,5	26 13,5					

Head [m] = total head (geod. suction head + geod. discharge head + friction losses) - Motor power (kW) for liquids with a density of 1 kg / dm<sup>3</sup>  
Tolerance: capacity and head: ± 5 %  
power absorbed: + 10 %

**Maximum casing pressure:**  
SON, SOB 100 ..... 330: 16 bar  
SRN, SRB 100 ..... 550: 25 bar  
SRN 660: 16 bar

# Performance table for pump material 32

SON/SOB = oval flanges - SRN/SRB = round flanges

Speed = 1450 rpm

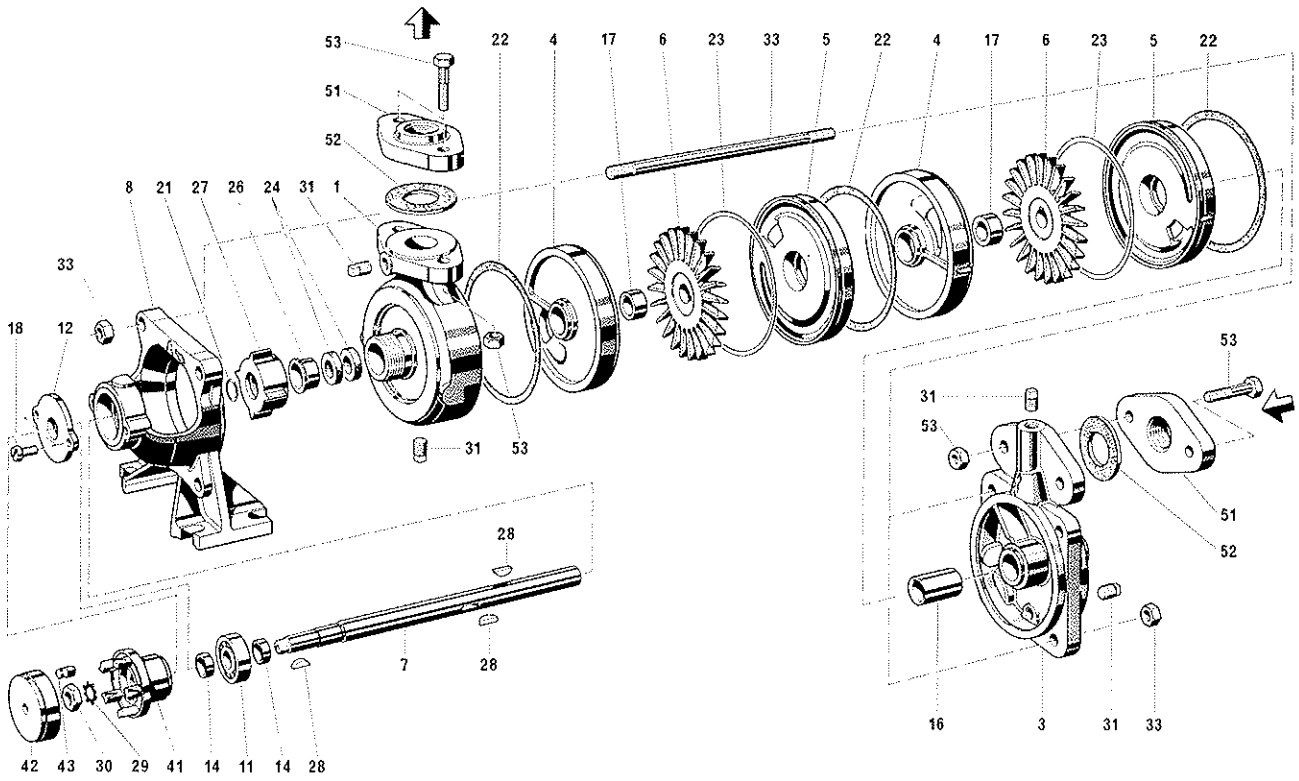
Pump	l/min.	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100	110	125	150	175	200	250	300	350	400	450	500	550	600	
		m <sup>3</sup> /h	0,3	0,6	0,9	1,2	1,5	1,8	2,1	2,4	2,7	3,0	3,6	4,2	4,8	5,4	6,0	6,6	7,5	9,0	10,5	12,0	15,0	18,0	21,0	24,0	27,0	30,0	33,0	36,0
Connections		Head H [m]														Power absorbed [kW]														
SON 101	R 1"	25 0,28	23 0,22	20 0,18	17 0,16	12 0,13	8 0,11																							
SON 102	R 1"	50 0,50	47 0,41	40 0,35	32 0,30	25 0,28	15 0,25																							
SON 103	R 1"	76 0,83	73 0,68	64 0,54	51 0,48	38 0,42	22 0,39																							
SON 111	R 1"	30 0,45	26 0,40	22 0,38	20 0,32	18 0,30	16 0,27	13 0,23	11 0,20																					
SON 112	R 1"	55 0,80	49 0,72	43 0,65	38 0,60	32 0,55	28 0,48	25 0,41	20 0,38																					
SON 113	R 1"	82 1,15	72 1,05	65 0,95	56 0,88	49 0,79	43 0,70	36 0,61	29 0,52																					
SRN 114	DN 25	110 1,50	98 1,37	86 1,23	75 1,12	65 1,00	55 0,90	47 0,80	38 0,70																					
SRN 115	DN 25	137 1,85	121 1,68	106 1,52	93 1,35	82 1,22	70 1,10	58 0,99	47 0,85																					
SRN 116	DN 25	162 2,20	145 2,00	128 1,82	112 1,65	98 1,55	84 1,33	69 1,18	55 1,02																					
SON 211	R 1"				30 0,60	28 0,55	25 0,50	22 0,49	20 0,40	17 0,35	14 0,30																			
SON 212	R 1"				60 1,30	55 1,20	49 1,10	41 1,00	35 0,90	29 0,80	24 0,70																			
SON 213	R 1"				90 1,80	80 1,70	71 1,60	61 1,50	52 1,40	42 1,30	32 1,20																			
SRN 214	DN 32				121 2,50	110 2,30	96 2,10	82 1,95	70 1,80	57 1,60	43 1,50																			
SRN 215	DN 32				154 3,10	138 2,80	120 2,60	105 2,50	89 2,25	70 2,10	55 1,80																			
SRN 216	DN 32				185 3,70	165 3,50	143 3,20	122 2,90	104 2,70	83 2,40	64 2,20																			
SON 221	R 1 1/4"				41 0,95	38 0,90	35 0,86	32 0,83	30 0,80	28 0,75	24 0,70	18 0,65	12 0,55																	
SON 222	R 1 1/4"				80 1,90	75 1,8	70 1,70	65 1,60	59 1,50	55 1,40	50 1,30	38 1,10	28 0,95																	
SON 223	R 1 1/4"				118 2,90	110 2,70	102 2,60	95 2,40	88 2,30	80 2,1	72 1,95	58 1,55	43 1,40																	
SRN 224	DN 32				154 3,80	145 3,60	133 3,40	124 3,20	113 3,00	104 2,80	93 2,60	73 2,20	56 1,90																	
SRN 225	DN 32				192 4,70	179 4,45	167 4,20	155 3,90	142 3,65	130 3,40	117 3,15	92 2,70	69 2,30																	
SRN 226	DN 32				230 5,70	215 5,30	200 4,90	185 4,60	170 4,30	155 4,05	140 3,75	110 3,20	93 2,70																	
SON 331	R 1 1/2"									38 1,10	33 1,00	30 0,90	25 0,80	21 0,75	18 0,70	12 0,60	5 0,50													
SON 332	R 1 1/2"									70 2,20	61 1,90	56 1,80	46 1,60	38 1,40	30 1,30	22 1,10	13 0,90													
SON 333	R 1 1/2"									100 3,20	89 2,90	76 2,70	65 2,40	52 2,20	41 1,90	31 1,70	20 1,30													
SRN 334	DN 32									130 4,30	115 3,90	100 3,60	86 3,20	71 2,80	58 2,50	42 2,20	26 1,80													
SRN 335	DN 32									160 5,30	142 4,90	123 4,40	107 4,00	95 3,60	71 3,20	52 2,70	32 2,20													
SRN 336	DN 32									190 6,35	169 5,80	148 5,30	127 4,80	105 4,30	99 3,80	65 3,30	39 2,65													
SRN 441	DN 40																32 1,90	29 1,70	21 1,50	15 1,20	9 1,00									
SRN 442	DN 40																61 3,50	54 3,20	41 2,70	29 2,20	16 1,80									
SRN 443	DN 40																92 5,20	80 4,60	61 3,90	42 3,20	22 2,60									
SRN 444	DN 40																122 6,80	107 5,90	81 5,10	55 4,20	30 3,40									
SRN 445	DN 40																151 8,40	132 7,30	100 6,20	69 5,20	38 4,20									
SRN 446	DN 40																182 10,1	160 8,60	121 7,20	82 6,10	44 4,90									
SRN 551	DN 50																				40 3,90	35 3,70	26 3,00	17 2,40						
SRN 552	DN 50																				77 7,60	68 7,00	50 5,90	32 4,80						
SRN 553	DN 50																				112 11,3	99 10,5	74 8,90	48 7,20						
SRN 554	DN 50																				148 15,1	132 14,0	98 11,8	64 9,50						
SRN 555	DN 50																				184 18,7	153 17,3	121 14,5	80 11,9						
SRN 661	DN 65																						32 6,50	30 6,00	26 5,30	21 4,80	17 4,50	11 3,80	7 3,20	
SRN 662	DN 65																						62 13,3	57 12,0	48 10,8	39 9,50	30 8,30	20 7,20	10 6,80	
SRN 663	DN 65																						92 19,8	84 18,0	71 16,2	57 14,5	44 12,7	30 11,2	17 9,90	
SRN 664	DN 65																						121 27,0	111 24,0	93 21,8	76 19,4	58 17,0	40 15,0	22 13,0	

Head [m] = total head (geod. suction head + geod. discharge head + friction losses) - Motor power (kW) for liquids with a density of 1 kg / dm<sup>3</sup>  
Tolerance: capacity and head: ± 5 %  
power absorbed: + 10 %

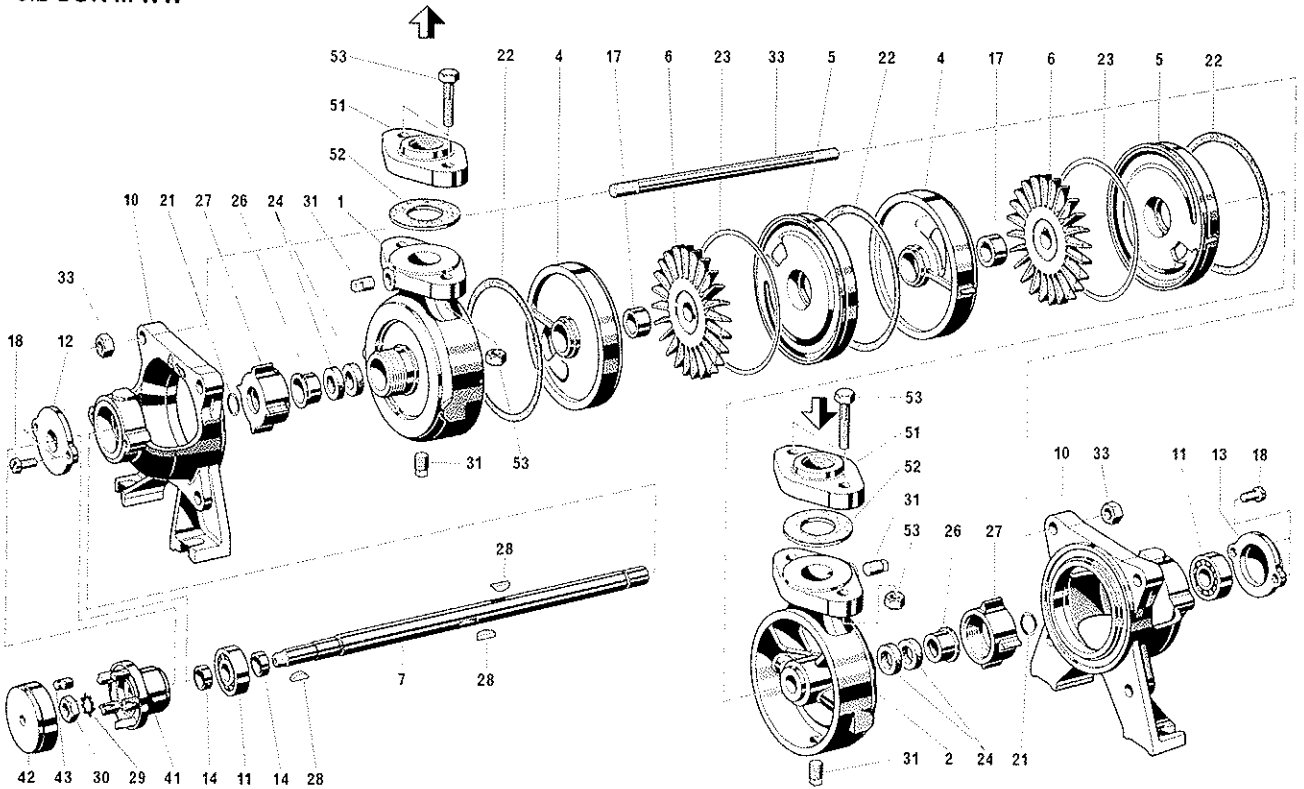
Maximum casing pressure:  
SON, SOB 100 ..... 330: 16 bar  
SRN, SRB 100 ..... 550: 25 bar  
SRN 660: 16 bar

## 8. Cross sectional drawing and designation

### 8.1 SON ... W

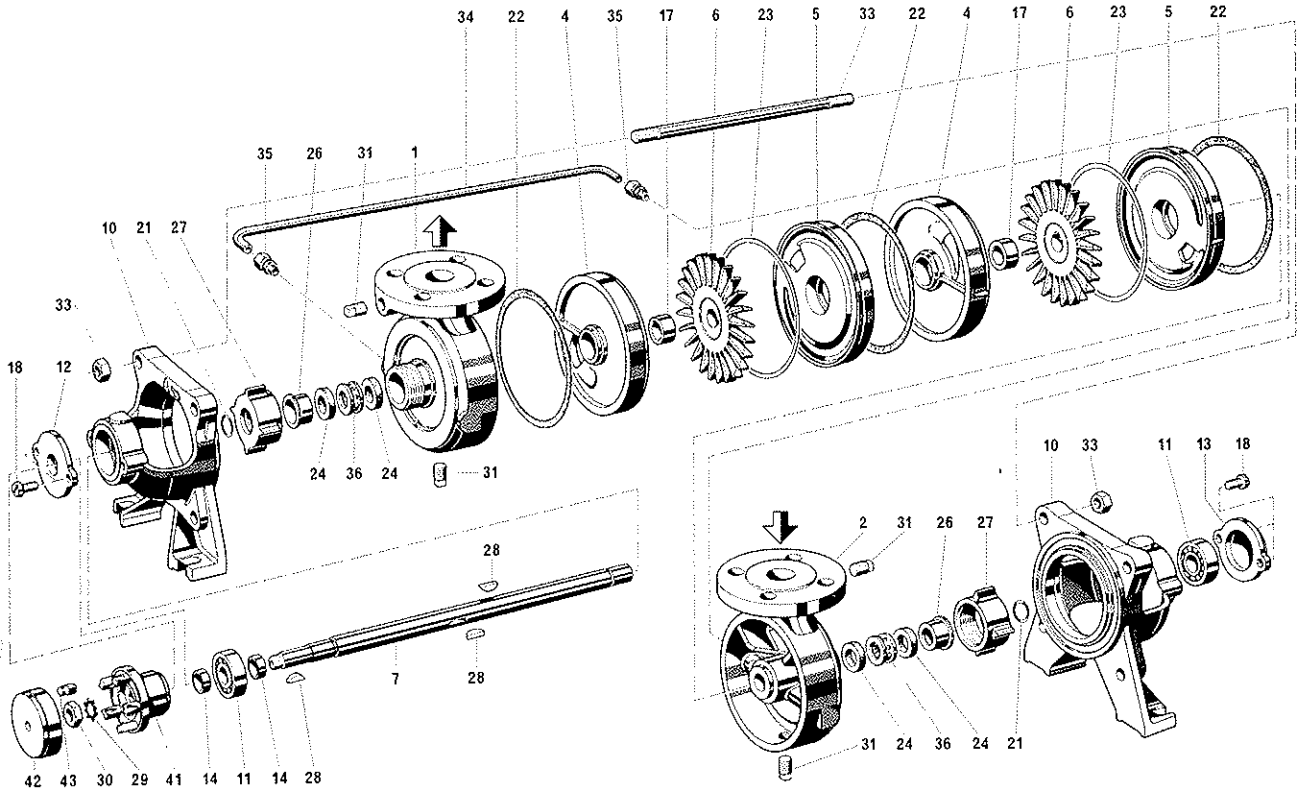


### 8.2 SON ... WW

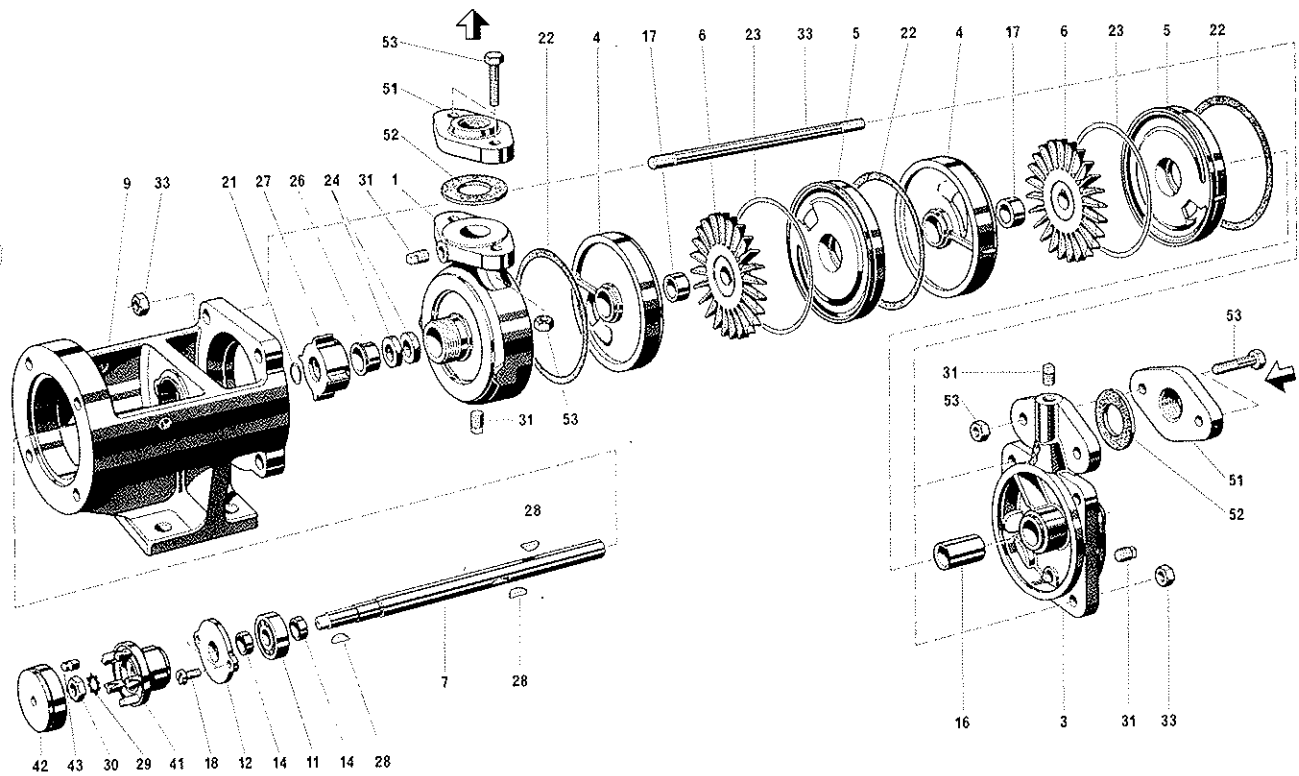




8.3 SRN ... WW

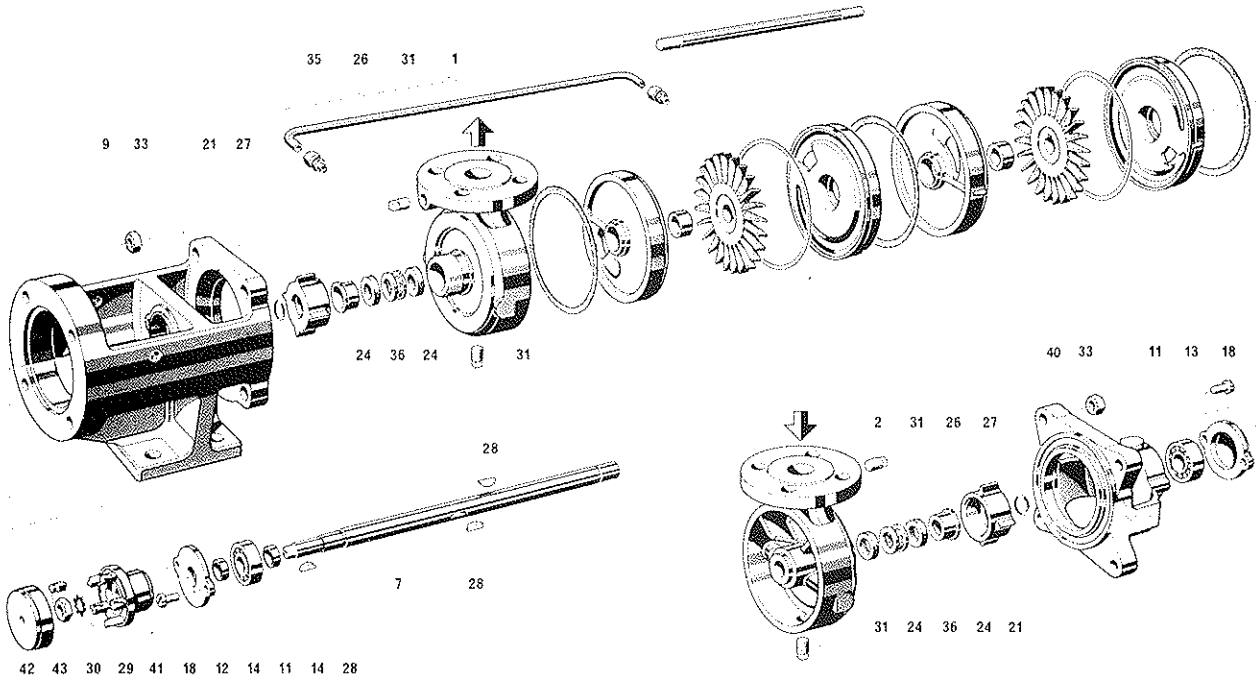


8.4 SOB ... W

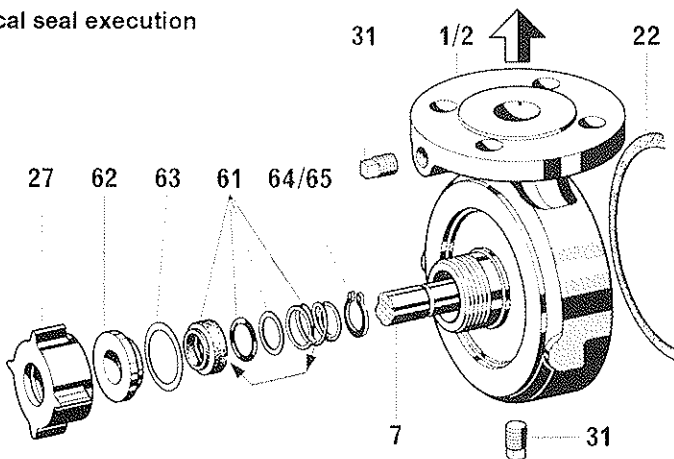


## 8.5 SRB ... WW

34 22 4 35 17 6 23 5 33 22 4 17 6 23 5 22



## 8.6 Mechanical seal execution

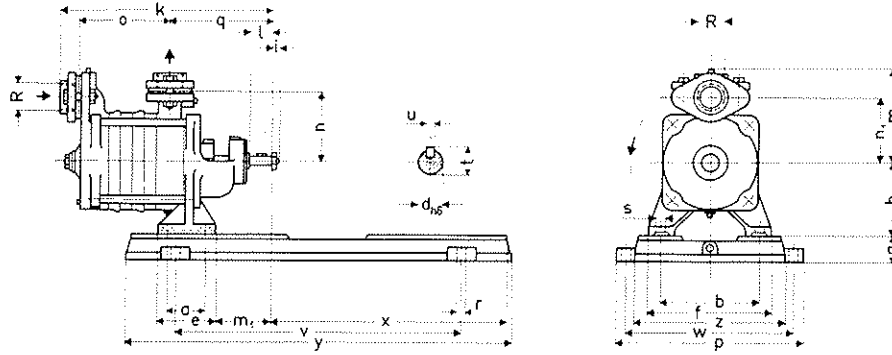


## 8.7 Spare part list

No.	Designation	No.	Designation	No.	Designation
1	Discharge casing	18	Sockethead cap screw	37	Distance disc
2	Suction casing	21	Thrower	40	Bearing bracket
3	Suction cover	22	Gasket, wide	41	Coupling half, pumpside
4	Discharge stage casing	23	Gasket, narrow	42	Coupling half, motorside
5	Suction stage casing	24	Packing ring	43	Coupling insert
6	Impeller	26	Stuffing box	51	Mating flange
7	Shaft	27	Screwed nut	52	Flange seal
8	Bearing housing	28	Woodruff key	53	Hexagon head screw
9	Housing bracket	29	Disc	61	Mechanical seal
10	Bearing housing	30	Shaft nut	62	Stationary seat
11	Antifriction bearing	31	Plug	63	Gasket
12	Bearing cover	32	Plug	64	Seeger ring
13	Bearing end cover	33	Connection bolt with nut	65	Clamp ring
14	Spacer ring	34	Crossover pipe		
16	Bearing bush, long	35	Screwed connection		
17	Bearing bush, short	36	Lantern ring		

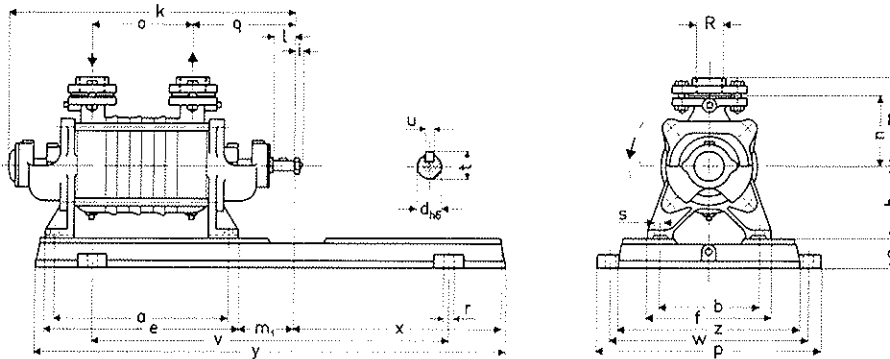
# 9. Dimensions in mm

## 9.1 SON ... W



Pump dimensions		Coupling size																		max. IEC motor size (for 1450 rpm) DIN 42673															
Typ	a	b	e	f	h	k	m	m <sub>1</sub>	n	n <sub>1</sub>	o	q	s	d	i	l	t	u	R	D	K	L	Baseplate dimensions										Mod	KW	Nr.
																							g	p	r	v	w	x	y	z					
101	56	110	80	140	90	229	120	67	90	75	82	125	115	14	10	30	16	5	R1"	-	-	-	30	245	12	285	220	246	405	200	159	0,75	1		
102	56	110	80	140	90	262	120	67	90	75	115	125	115	14	10	30	16	5	R1"	-	-	-	30	245	12	285	220	246	405	200	159	0,75	1		
103	56	110	80	140	90	294	120	67	90	75	147	125	115	14	10	30	16	5	R1"	-	-	-	30	245	12	285	220	246	405	200	159	1,1	2		
111	56	110	80	140	90	229	120	67	90	75	82	125	115	14	10	30	16	5	R1"	-	-	-	30	245	12	285	220	246	405	200	159	0,75	1		
112	56	110	80	140	90	262	120	67	90	75	115	125	115	14	10	30	16	5	R1"	-	-	-	30	245	12	285	220	246	405	200	159	1,1	2		
113	56	110	80	140	90	294	120	67	90	75	147	125	115	14	10	30	16	5	R1"	-	-	-	30	245	12	285	220	246	405	200	159	1,5	2		
211	60	155	90	190	112	280	150	80	110	100	105	151	14	16	10	30	18	5	R1 1/2"	-	-	-	40	274	15	355	245	296	500	220	179	1,5	2c		
212	60	155	90	190	112	317	150	80	110	100	142	151	14	16	10	30	18	5	R1"	-	-	-	40	274	15	355	245	296	500	220	179	3	3		
213	60	155	90	190	112	361	150	87	110	100	179	158	14	16	10	37	18	5	R1"	-	-	-	40	274	15	355	245	296	500	220	179	3	3		
221	60	155	90	190	112	284	150	80	110	100	105	151	14	16	10	30	18	5	R1 1/2"	-	-	-	30	245	12	285	220	223	405	200	159	0,75	2c		
222	60	155	90	190	112	321	150	80	110	100	142	151	14	16	10	30	18	5	R1 1/2"	-	-	-	40	274	15	355	245	296	500	220	179	1,5	2c		
223	60	155	90	190	112	365	150	87	110	100	179	158	14	16	10	37	18	5	R1 1/2"	-	-	-	40	274	15	355	245	296	500	220	179	3	3		
331	60	155	90	190	112	300	150	87	110	100	111	158	14	16	10	37	18	5	R1 1/2"	-	-	-	30	245	12	285	220	216	405	200	159	0,75	3		
332	60	155	90	190	112	343	150	87	110	100	154	158	14	16	10	37	18	5	R1 1/2"	-	-	-	40	274	15	355	245	296	500	220	179	3	3		
333	60	155	90	190	112	386	150	87	110	100	197	158	14	16	10	37	18	5	R1 1/2"	-	-	-	40	274	15	355	245	296	500	220	179	3	3		
																								45	345	15	550	305	380	730	280	181	4	3	

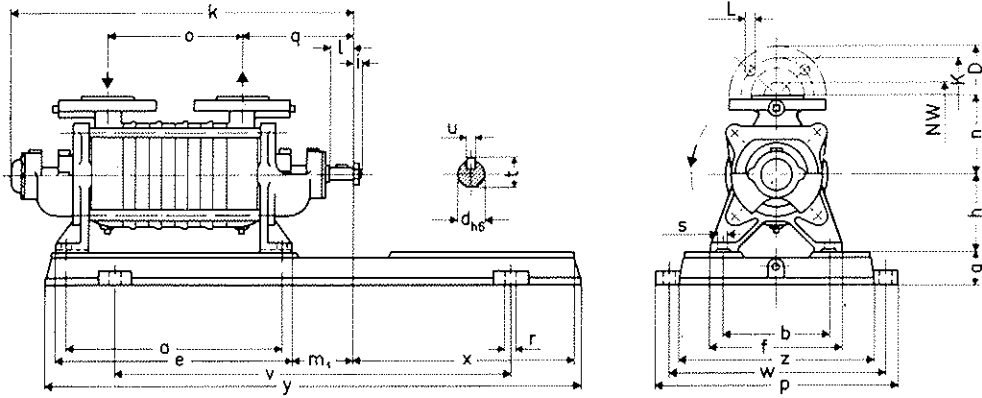
## 9.2 SON ... WW



Pump dimensions		Coupling size																		max. IEC motor size (for 1450 rpm) DIN 42673															
Typ	a	b	e	f	h	k	m	m <sub>1</sub>	n	n <sub>1</sub>	o	q	s	d	i	l	t	u	R	D	K	L	Baseplate dimensions										Mod	KW	Nr.
																							g	p	r	v	w	x	y	z					
101	161	110	185	140	90	296	112	67	90	70	125	115	14	10	30	16	5	R1"	-	-	-	40	274	15	355	245	227	500	220	179	0,75	1			
102	193	110	217	140	90	328	112	67	90	102	125	115	14	10	30	16	5	R1"	-	-	-	40	274	15	355	245	193	500	220	179	0,37	1			
																								40	290	15	445	255	280	600	235	180	0,75	1	
103	225	110	250	140	90	361	112	67	90	135	125	115	14	10	30	16	5	R1"	-	-	-	40	290	15	445	255	267	600	235	180	1,5	2			
111	161	110	185	140	90	296	112	67	90	70	125	115	14	10	30	16	5	R1"	-	-	-	40	274	15	355	245	227	500	220	179	0,75	1			
112	183	110	217	140	90	328	112	67	90	102	125	115	14	10	30	16	5	R1"	-	-	-	40	290	15	445	255	280	600	235	180	1,5	2			
113	225	110	250	140	90	361	112	67	90	135	125	115	14	10	30	16	5	R1"	-	-	-	40	290	15	445	255	267	600	235	180	1,5	2			
211	193	155	223	190	112	362	134	80	110	81	151	14	16	10	30	18	5	R1"	-	-	-	40	290	15	445	255	281	600	235	180	1,5	2c			
212	230	155	260	190	112	399	134	80	110	118	151	14	16	10	30	18	5	R1"	-	-	-	40	290	15	445	255	239	600	235	180	1,1	2c			
																								40	290	15	485	255	284	640	235	180	1,5	2c	
213	267	155	297	190	112	443	134	87	110	155	158	14	16	10	37	18	5	R1"	-	-	-	45	345	15	550	305	320	730	280	181	4	3			
221	193	155	223	190	112	362	138	80	110	81	151	14	16	10	30	18	5	R1 1/2"	-	-	-	40	290	15	445	255	281	600	235	180	1,5	2c			
222	230	155	260	190	112	399	138	80	110	118	151	14	16	10	30	18	5	R1 1/2"	-	-	-	40	290	15	485	255	284	640	235	180	1,5	3c			
																								45	345	15	550	305	350	730	280	181	4	3c	
223	267	155	297	190	112	443	138	87	110	155	158	14	16	10	37	18	5	R1 1/2"	-	-	-	45	345	15	550	305	320	730	280	181	4	3			
331	189	155	229	190	112	375	141	87	110	87	158	14	16	10	37	18	5	R1 1/2"	-	-	-	40	290	15	445	255	268	600	235	180	1,5	3			
332	242	155	272	180	112	418	141	87	110	130	158	14	16	10	37	18	5	R1 1/2"	-	-	-	45	345	15	550	305	355	730	280	181	4	3			
333	285	155	315	190	112	461	141	87	110	173	158	14	16	10	37	18	5	R1 1/2"	-	-	-	45	345	15	550	305	312	730	280	181	4	3			

9.3 SRN ... WW

9.3.1 SRN pumps multistage

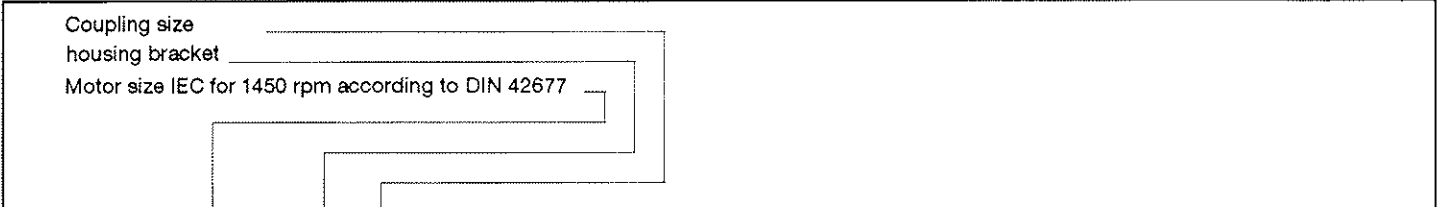
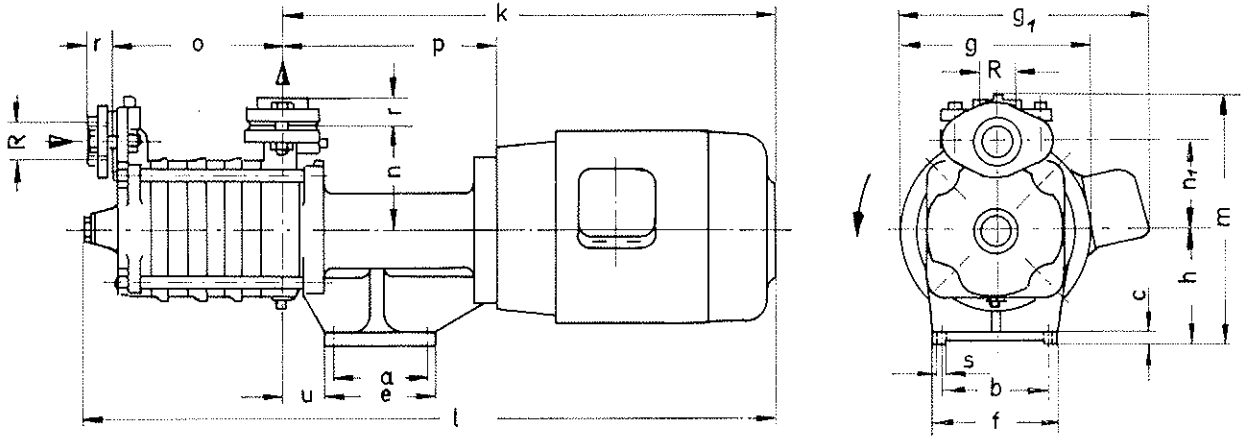


Pump dimensions		Coupling size														max. IEC motor size (for 1450 rpm) DIN 42673																
																Baseplate dimensions																
Type	a	b	e	f	h <sup>1)</sup>	k	m	n	o	q	s	d	i	l	t	u	DN	D	K	L	g	p	r	v	w	x	y	z	Mod	Kw	Nr.	
SRN WW	114	258	110	282	140	90	393	67	90	167	125	115	14	10	30	16	5	25	115	85	14	40	290	15	485	255	275	640	235	180a	1.5	3b
	115	291	110	315	140	90	426	67	90	200	125	115	14	10	30	16	5	25	115	85	14	45	345	15	550	305	304	730	280	181	4	3b
	116	324	110	348	140	90	458	67	90	232	125	115	14	10	30	16	5	25	115	85	14	45	345	15	650	308	410	850	285	182	4	3b
	214	304	155	334	190	112	480	89	110	192	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	380	850	285	182	4	3a
	215	341	155	371	190	112	517	89	110	229	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	376	850	285	182	4	3a
	216	378	155	408	190	112	554	89	110	266	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	342	850	285	182	4	4
	224	304	155	334	190	112	480	89	110	192	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	380	850	285	182	5.5	4
	225	341	155	371	190	112	517	89	110	229	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	376	850	285	182	5.5	4
	226	378	155	408	190	112	554	89	110	266	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	342	850	285	182	4	4
	334	328	155	358	190	112	504	89	110	216	160	14	19	13	37	214	6	32	140	100	18	48	430	18	730	385	490	1030	360	183	11	4
	335	371	155	401	190	112	547	89	110	259	160	14	19	13	37	214	6	32	140	100	18	45	345	15	650	308	389	850	285	182	7.5	4
	336	414	155	444	190	112	590	89	110	302	160	14	19	13	37	214	6	32	140	100	18	48	430	18	730	385	500	1030	360	183	11	4
	441	245	160	278	200	132	465	104	128	159	164	15	19	13	37	214	6	40	150	110	18	45	345	15	550	305	330	730	280	181	4	3a
	442	297	160	331	200	132	517	104	128	211	164	15	19	13	37	214	6	40	150	110	18	45	345	15	650	308	394	850	285	182	7.5	4
	443	350	160	383	200	132	570	104	128	264	164	15	19	13	37	214	6	40	150	110	18	45	345	15	650	308	346	850	285	182	5.5	4
	444	402	160	436	200	132	622	104	128	316	164	15	19	13	37	214	6	40	150	110	18	48	430	18	730	385	445	1030	360	183	11	4
445	455	160	488	200	132	675	104	128	369	164	15	19	13	37	214	6	40	150	110	18	55	455	20	930	400	650	1230	380	184	11	4	
446	507	160	540	200	132	727	104	128	421	164	15	19	13	37	214	6	40	150	110	18	48	430	18	730	385	395	1030	360	183	7.5	5	
551	293	175	327	220	150	521	112	140	187	182	15	24	17	44	268	8	50	165	125	18	45	345	15	650	308	385	850	285	182	5.5	4a	
552	369	175	403	220	150	597	112	140	263	182	15	24	17	44	268	8	50	165	125	18	48	430	18	730	385	480	1030	360	183	11	4a	
553	446	175	480	220	150	674	112	140	340	182	15	24	17	44	268	8	50	165	125	18	55	455	20	930	400	588	1230	380	184	15	5a	
554	522	175	556	220	150	750	112	140	416	182	15	24	17	44	268	8	50	165	125	18	55	455	20	930	400	525	1230	380	184	15	6	
555	598	175	632	220	150	826	112	140	492	182	15	24	17	44	268	8	50	165	125	18	100	610	28	940	550	645	1400	480	7	22	6	
661	346	200	372	250	150	593	124	150	192	214	15	28	18	43	308	8	65	185	145	18	48	430	18	730	385	465	1030	360	183	7.5	5b	
662	437	200	463	250	150	684	124	150	283	214	15	28	18	43	308	8	65	185	145	18	55	455	20	930	400	595	1230	380	184	15	5b	
663	528	200	554	250	150	775	124	150	374	214	15	28	18	43	308	8	65	185	145	18	55	455	20	930	400	520	1230	380	184	15	6a	
664	619	200	645	250	150	866	124	150	465	214	15	28	18	43	308	8	65	185	145	18	100	610	28	940	550	645	1400	480	7	30	6	

\* Flange connection dimensions according to DIN 2501

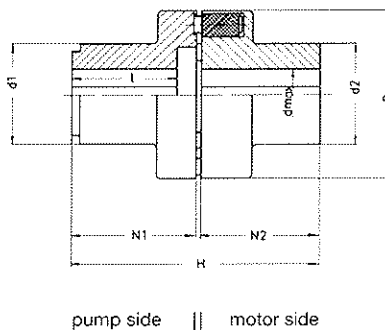
1) If motor size is indicated in case of order we adjust the height of the pump to the height of the motor.

9.4 SOB ... W



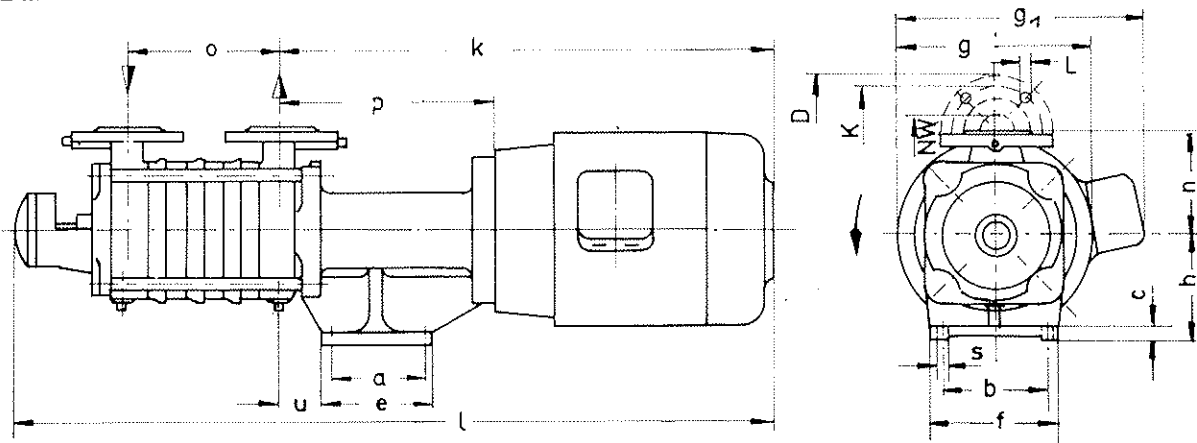
Pump	KW	Typ	Model	Nr.	g	g <sub>1</sub>	h	k	l	m	n	n <sub>1</sub>	o	p	r	u	R	D	K	L	a	b	c	e	f	s
SOB 101	0,37	71	1564 A	1	143	183	97	371	486	217	90	75	82	166	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 102	0,37	71	1564 A	1	143	183	97	371	519	217	90	75	115	166	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 102	0,55/0,75	80	1564 B	1	160	199	97	403	551	217	90	75	115	176	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 103	0,55/0,75	80	1564 B	2	160	199	97	403	583	217	90	75	147	176	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 111	0,37	71	1564 A	1	143	183	97	371	486	217	90	75	82	166	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 111	0,55	80	1564 B	1	160	199	97	403	518	217	90	75	82	176	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 112	0,55/0,75	80	1564 B	2	160	199	97	403	551	217	90	75	115	176	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 112	1,1	90 S	1565 A	2	178	228	97	429	577	217	90	75	115	186	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 113	0,75	80	1564 B	2	160	199	97	403	583	217	90	75	147	176	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 113	1,1	90 S	1565 A	2	178	228	97	429	609	217	90	75	147	186	22	25	R 1"	-	-	-	70	70	12	110	100	14
SOB 211	0,55/0,75	80	1566 A	2a	160	199	124	430	563	274	110	100	105	203	24	42	R 1"	-	-	-	90	90	14	120	120	14
SOB 212	1,1	90 S	1566 B	2a	178	228	124	456	626	274	110	100	142	213	24	42	R 1"	-	-	-	90	90	14	120	120	14
SOB 212	1,5	90 L	1566 B	2a	178	228	124	481	651	274	110	100	142	213	24	42	R 1"	-	-	-	90	90	14	120	120	14
SOB 213	1,5	90 L	1567 B	3	178	228	124	488	695	274	110	100	179	220	24	42	R 1"	-	-	-	90	90	14	120	120	14
SOB 213	2,2	100 L	1567 D	3	198	253	124	535	742	274	110	100	179	230	24	42	R 1"	-	-	-	90	90	14	120	120	14
SOB 221	0,55/0,75	80	1566 A	2a	160	199	124	430	563	274	110	100	105	203	28	42	R 1 1/4"	-	-	-	90	90	14	120	120	14
SOB 221	1,1	90 S	1566 B	2a	178	228	124	456	589	274	110	100	105	213	28	42	R 1 1/4"	-	-	-	90	90	14	120	120	14
SOB 222	1,5	90 L	1566 B	3c	178	228	124	481	651	274	110	100	142	213	28	42	R 1 1/4"	-	-	-	90	90	14	120	120	14
SOB 222	2,2	100 L	1567 B	3c	198	253	124	528	698	274	110	100	142	223	28	42	R 1 1/4"	-	-	-	90	90	14	120	120	14
SOB 223	2,2/3	100 L	1567 D	3	198	253	124	535	742	274	110	100	179	230	28	42	R 1 1/4"	-	-	-	90	90	14	120	120	14
SOB 223	4	112 M	1567 D	3	211	259	124	559	766	274	110	100	179	235	28	42	R 1 1/4"	-	-	-	90	90	14	120	120	14
SOB 331	1,1	90 S	1567 B	3	178	228	124	463	602	274	110	100	111	220	31	42	R 1 1/2"	-	-	-	90	90	14	120	120	14
SOB 331	1,5	90 L	1567 B	3	178	228	124	488	627	274	110	100	111	220	31	42	R 1 1/2"	-	-	-	90	90	14	120	120	14
SOB 332	2,2/3	100 L	1567 D	3	198	253	124	535	717	274	110	100	154	230	31	42	R 1 1/2"	-	-	-	90	90	14	120	120	14
SOB 333	3	100 L	1567 D	3	198	253	124	535	760	274	110	100	197	230	31	42	R 1 1/2"	-	-	-	90	90	14	120	120	14

9.5 Coupling



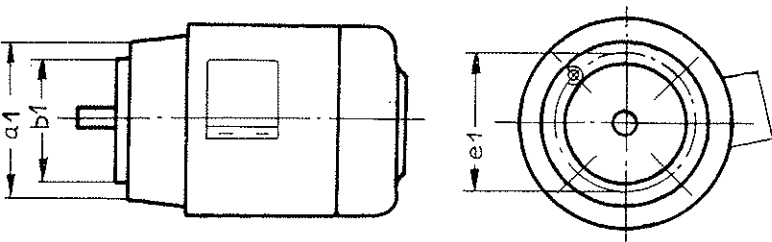
No.	model	p max for rpm in kW			D	d <sub>1</sub>	d <sub>2</sub>	d <sub>max</sub>	H	N <sub>1</sub>	N <sub>2</sub>	i
		1450	1750									
1	58	1,9	2,3	58	40	-	19	62	39	20	31	
2	68	3,5	4,2	68	46	-	24	62	39	20	31	
2a	68	3,5	4,2	68	46	-	24	62	39	20	31	
3	80	6,1	7,3	80	62	50	30	79	46	30	38	
3a	80	6,1	7,3	80	62	50	30	82	49	30	38	
3b	80	6,1	7,3	80	62	50	30	72	39	30	31	
3c	80	6,1	7,3	80	62	50	30	72	39	30	31	
4	95	10,6	12,8	95	70	68	42	87	49	35	38	
4a	95	10,6	12,8	95	70	68	42	98	60	35	45	
5	110	16,4	19,8	110	80	78	48	92	49	40	38	
5a	110	16,4	19,8	110	80	78	48	103	60	40	45	
5b	110	16,4	19,8	110	80	78	48	103	60	40	45	
6	125	24,2	29,2	125	90	90	55	113	60	50	45	
6a	125	24,2	29,2	125	90	90	55	113	60	50	45	

9.6 SRB ... WW



pump	KW	Type <sup>1</sup>	model <sup>2</sup>	No. <sup>3</sup>	<sup>2</sup> housing bracket										<sup>3</sup> coupling size											
					g	g <sub>1</sub>	h	k	l	m	n	n <sub>1</sub>	o	p	r	u	DN*	D	K	L	a	b	c	e	f	s
SRB 114	1.1	90 S	1565 A	3b	178	228	97	429	697	-	90	-	167	186	-	25	DN 25	115	85	14	70	70	12	110	100	14
SRB 114	1.5	90 L	1565 A	3b	178	228	97	454	722	-	90	-	167	186	-	25	DN 25	115	85	14	70	70	12	110	100	14
SRB 214	2.2/3	100 L	1567 D	3a	198	253	124	540	860	-	110	-	192	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 215	3	100 L	1567 D	3a	198	253	124	540	897	-	110	-	229	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 215	4	112 M	1567 D	3a	211	259	124	559	916	-	110	-	229	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 216	3	100 L	1567 D	4	198	253	124	540	934	-	110	-	266	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 216	4	112 M	1567 D	4	211	259	124	559	953	-	110	-	266	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 216	5.5	132 S	1568	4	265	333	150	617	1011	-	110	-	266	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 224	3	100 L	1567 D	4	198	253	124	540	860	-	110	-	192	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 224	4	112 M	1567 D	4	211	259	124	559	879	-	110	-	192	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 224	5.5	132 S	1568	4	265	333	150	617	961	-	110	-	192	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 225	4	112 M	1567 D	4	211	259	124	559	916	-	110	-	229	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 225	5.5	132 S	1568	4	265	333	150	617	974	-	110	-	229	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 226	4	112 M	1567 D	4	211	259	124	559	953	-	110	-	266	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 226	5.5	132 S	1568	4	265	333	150	617	1011	-	110	-	266	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 226	7.5	132 M	1568	4	265	333	150	658	1052	-	110	-	266	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 334	4	112 M	1567 D	4	211	259	124	559	903	-	110	-	216	235	-	42	DN 32	140	100	18	90	90	14	120	120	14
SRB 334	5.5	132 S	1568	4	265	333	150	617	961	-	110	-	216	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 335	5.5	132 S	1568	4	265	333	150	617	1004	-	110	-	259	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 335	7.5	132 M	1568	4	265	333	150	658	1045	-	110	-	259	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 336	5.5	132 S	1568	4	265	333	150	617	1047	-	110	-	302	255	-	42	DN 32	140	100	18	160	120	20	190	150	14
SRB 336	7.5	132 M	1568	4	265	333	150	658	1088	-	110	-	302	255	-	42	DN 32	140	100	18	160	120	20	190	150	14

\* Flange connection dimensions according to DIN 2501



Housing bracket	Flange dimensions		
	a1	b1	e1
1564 u. 1565	140	95	115
1566 u. 1567	160	110	130
1568	200	130	165



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