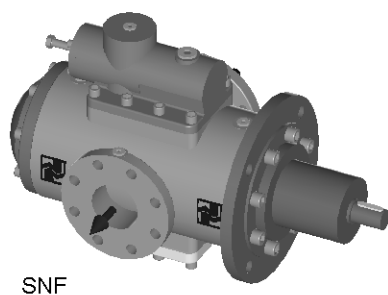
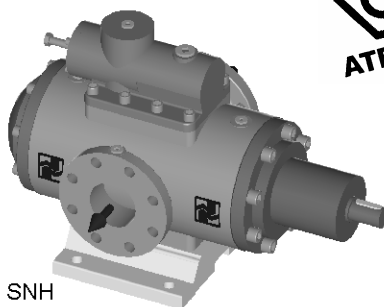


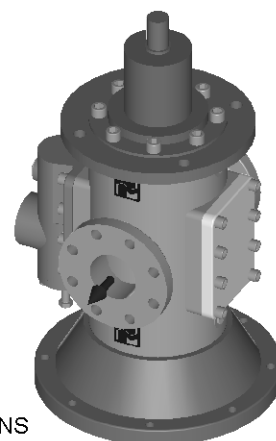
Screw Pumps SN Series



SNF



SNH



SNS

Utilization

The SN series from ALLWEILER is utilized in all segments of industry where lubricating liquids are pumped that do not contain abrasive components and will not chemically attack the pump materials. Pumped liquids include a variety of oils and oil products (including heating, lubricating, hydraulic oils and bitumen), greases, chemical products like polyols, isocyanates, paints, lacquers, adhesives, glycerin, resins, and other lubricating media like paraffin, wax, soap, viscose, cellulose pulp, glucose, syrup, salves, pastes, and more.

Main fields of application

Main fields of application are oil-firing and power engineering; hydraulic, maritime, and offshore engineering; machine tools; the chemical and petrochemical industries, the food industry, and the pulp and paper industry.

Design

The SN series is a three-screw, self-priming screw pump with hardened and ground spindles that rotate in a replaceable casing insert.

The idler screws are hydraulically driven and axial thrust is fully compensated hydrostatically. A groove ball bearing lubricated with the pumped liquid or an external grease-lubricated groove ball bearing holds the drive screw in place.

The shaft is sealed with either shaft seal rings or mechanical seals. A return pipe connects the seal chamber with the suction chamber. As a result, regardless of the current discharge pressure, only the suction/inlet pressure will affect the shaft seal.

Performance data ①②

Capacity	Q	up to	5.300 l/min ③
Discharge pressure	p _d	up to	64 bar ④
Inlet pressure	p _s	up to	10 bar
Liquid temperature	t	up to	+150 °C ⑤

① The performance data overview is based on drive speeds that occur when using three-phase motors in a 50-Hz power grid. Refer to the proposal and order confirmation for exact operation limits.

② The specified operation limits are maximum values that may have to be reduced in individual cases depending on technical variations. Refer to the respective order documentation for binding values.

③ Capacity of 3600 l/min is standard; 5300 l/min in a special version.

④ Pressure limits depend on the casing material.

⑤ Specified temperature limits depend on the seal. Please consult your ALLWEILER representative regarding temperatures above the specified range.

Functionality

Specially-shaped thread flanks cause the three spindles to form sealed chambers; rotation of the spindles then causes the contents of the chambers to move continuously in the axial direction from the pump's suction side to its pressure side.

Despite rotation of the spindles, no turbulence results. Constant chamber volumes eliminate squeezing forces, thereby delivering virtually pulsation-free operation.

Flanges

Suction up to DN 150 according to DIN EN 1092-2 PN 16
branch: up to DN 200 according to DIN EN 1092-2 PN 10

Discharge PN 40 according to DIN EN 1092-2 (pump casing in EN-GJL-250)
branch: PN 64 according to DIN EN 1092-2 (pump casing in EN-GJS-400-15)

Other flanges (such as ANSI-B 16.1 or 16.5, SAE, JIS, BS etc.) are available upon request.

Shaft coupling and safety guarding

When the scope of delivery includes a pump, base plate, and shaft coupling (according to DIN 740), or if a motor bracket or wall-mounted/foot-mounted motor bracket are provided, then safety guarding according to DIN EN 294 will also be included. Compliance with DIN EN 809 safety requirements is ensured.

Shaft sealing

Mechanical seal, uncooled	unbalanced	
Model code	6.7 and 12.1	6.9 and 8.9
Rotating ring	silicon carbide	silicon carbide
Counter ring	hard carbon antimony impregnated	silicon carbide
Metal parts	CrNiMo steel	CrNiMo steel
O-rings	Viton	Viton
Material code DIN EN 12 756	AQ1VGG	Q1Q1VGG
Max. inlet pressure	10 bar ①	
Permissible liquid temperature with bearing version...	...D	80 °C
	...E	150 °C
	...U	150 °C
Other mechanical seals available upon request		
Shaft seal rings	uncooled	
Model code	3.3	(D) 4.2
Shaft seal ring material	Viton	Gylon
Max. inlet pressure	1.5 bar ①	
Permissible liquid temperature	80 °C	

① Maximum permissible inlet pressure is dependent on discharge pressure, the liquid being pumped, viscosity, speed, and pump size. Please consult your ALLWEILER representative.

Bearing and lubrication

Bearing	
Version	Description
U	Internal ball bearing, lubricated by pumped liquid, shaft seal uncooled, unheated
D	External ball bearing, lifetime sealed, cannot be relubricated, shaft seal uncooled, unheated
E	External ball bearing, lubricated through grease nipple with grease regulator, shaft seal uncooled, unheated
Q	Internal ball bearing, lubricated with pumped liquid, no shaft seal
DQ	External ball bearing, lifetime sealed, cannot be relubricated, no shaft seal

Other bearing designs upon request

Heating

Series	electric	with steam or heat transfer liquid		
	Heating element (vers. E)	Heating shell (vers. X)	Heating cartridge (vers. P)	Heating jacket (vers. Y)
SNH/SNGH	X	X		X
SNF/SNGF	X	X		X
SNS/SNGS	X		X	X

Note: Pumps in double jacket only in welded-steel (special) version.

Pressure relief valves

These pumps can be delivered with built-on pressure relief valves (see page 9). This brochure does not provide valve characteristic curves and sectional drawings; these must be requested separately.

If pumps are requested without an installed pressure relief valve, overload protection must be provided in the controller or as a pipeline-mounted valve (see separate technical document).

Drive

The pumps can be coupled to different types of electric motors or to other drive machines either directly (series SNH, SNGH), by way of a motor bracket (series SNS, SNGS), or by way of wall-mounted or foot-mounted brackets (series SNF, SNGF).

In most cases, the pumps are meant for use with surface-cooled three-phase squirrel-cage motors, design type B3 or V1; degree of protection IP 55 according to IEC standard, insulation class B, motor windings for 400 VΔ, 50 or 60 Hz.

Explosion protection

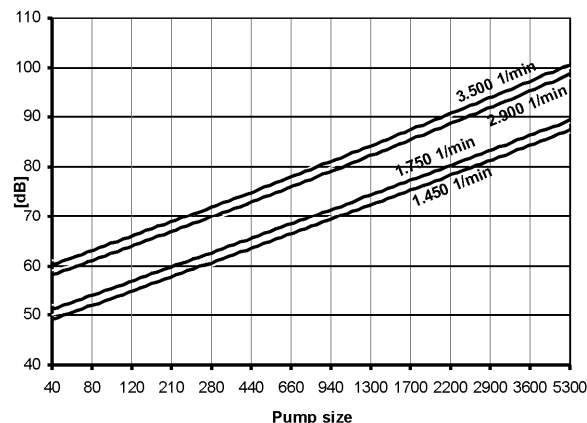


The pump fulfills the requirements according to EU explosion-protection directive 2014/34/EU (ATEX 100a) for devices in device class II, category 2 G. Classification into temperature classes according to EN 13463-1 depends on the temperature of the pumped liquid. Refer to the proposal or order documentation for the maximum permissible liquid temperature for the respective temperature classes.

Note: When operating the pump in category 2, suitable measures must be provided to prevent impermissible warming of the pump surfaces in the event of disturbance.

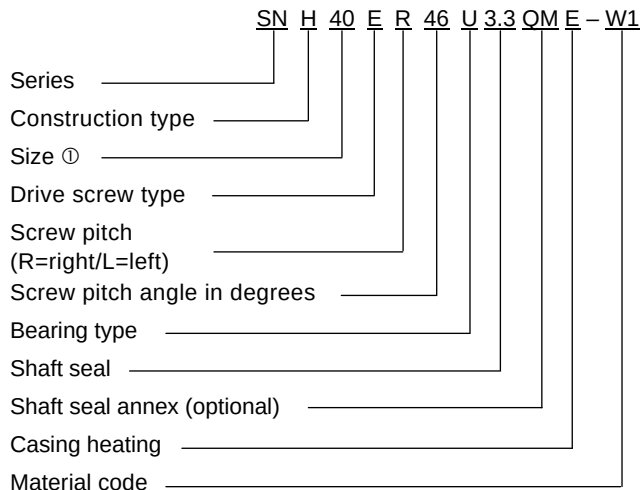
Noise levels

The pump design provides gentle, uniform movement of the liquid with low noise levels. The noise level lies between 50 and 100 dBA, depending on speed, pump size, and installation.



The provided specifications are reference values. Actual airborne sound level depends strongly on the installation conditions!

Model code

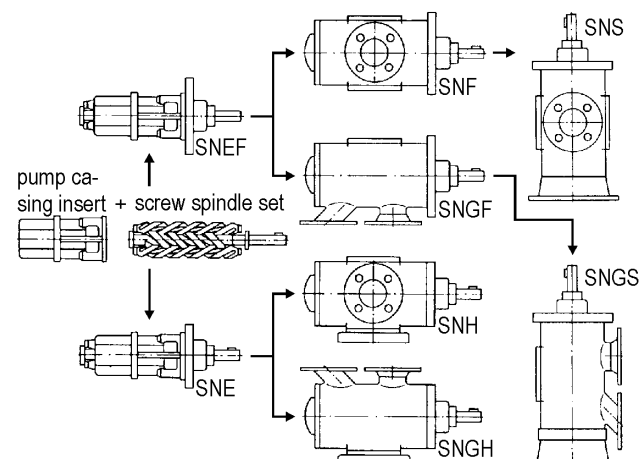


① theoretical capacity expressed in l/min. at normal pitch

Installation types and modular system

Three-screw pumps, SN type series.

Uniform pumping elements with differing types of construction and installation.



Materials

Description	Materials					
	W1	W2	W61	W33	W67	W22 ①
Pump casing	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJS-400-15	EN-GJS-400-15	welded steel
Casing insert	EN-GJL-250	SIL 70 (Silafont)	EN-GJL-250	SIL 70 (Silafont)	EN-GJL-250	EN-GJL-250
Pump cover, non-drive end	EN-GJL-250	EN-GJL-250	EN-GJL-250	EN-GJS-400-15	EN-GJS-400-15	steel
Pump cover, drive end	EN-GJL-250	EN-GJL-250	EN-GJL-250	steel	steel	steel
Drive and idler screws	16MnCrS5 (nitrided steel 1.7139)	16MnCrS5 (nitrided steel 1.7139)	16MnCrS5 (nitrided steel 1.7139)	16MnCrS5 (nitrided steel 1.7139)	16MnCrS5 (nitrided steel 1.7139)	16MnCrS5 (nitrided steel 1.7139)
Balance bushes	AlMgSi1 3.2315	AlMgSi1 3.2315	EN-GJL-250	AlMgSi1 3.2315	EN-GJL-250	AlMgSi1 3.2315

① refer to page 11 for additional information about the welded steel version.

NPSH values

NPSH_{req.} [m] at v = 40 mm²/s incl. 0.5 m safety margin. Values applicable to air-free liquids.

Please consult your ALLWEILER representative about liquids containing undissolved air.

Grid frequency	50 Hz		60 Hz	
	1450 1/min	2900 1/min	1750 1/min	3500 1/min
40-38	3.0	3.0	3.0	3.0
40-46	3.0	3.0	3.0	3.0
40-54	5.4	5.9	5.5	6.4
80-36	3.0	3.0	3.0	3.0
80-42	3.0	3.0	3.0	3.1
80-46	3.0	3.0	3.0	3.8
80-54	5.5	6.5	5.6	7.2
120-42	3.0	3.0	3.0	3.6
120-46	3.0	3.4	3.0	4.5
120-54	5.5	6.9	5.7	8.2
210-40	3.0	3.2	3.0	4.2
210-46	3.0	4.5	3.0	6.0
210-54	5.7	8.1	6.0	①
280-43	3.0	4.3	3.0	5.8
280-46	3.0	5.3	3.0	7.5
280-54	5.8	①	6.2	①
440-40	3.0	4.6	3.0	6.4
440-46	3.0	6.9	3.2	①
440-52	5.9	①	6.4	①
440-54	6.1	①	6.6	①
660-40	3.0	6.1	3.0	8.7
660-44	3.0	7.7	3.6	①
660-46	3.1	①	3.9	①
660-51	6.2	①	6.8	①
660-54	6.5	①	7.3	①
940-42	3.0	8.0	3.6	①
940-46	3.5	①	4.6	①
940-50	6.4	①	7.2	①
940-54	6.9	①	8.1	①
1300-38	3.0	7.4	3.4	①
1300-42	3.3	①	4.2	①
1300-44	3.6	①	4.8	①
1300-46	4.0	①	5.4	①
1300-54	7.5	①	①	①
1700-42	3.8	①	5.0	①
1700-46	4.6	①	6.6	①
2200-42	4.4	①	6.0	①
2200-46	5.3	①	7.6	①
2900-40	4.8	①	6.7	①
3600-46	6.9	①	①	①

① inlet pressure required; consultation required

Note: Exact NPSH_{req.} values depend on the individual viscosity and pump speed. Refer to the NPSH characteristic curves for this information.

Performance table (viscosity $\nu = 40 \text{ mm}^2/\text{s}$)

Grid frequency		50 Hz								60 Hz							
Pressure [bar]		5		20		40		64		5		20		40		64	
Motor speed		1450 1/min	2900 1/min	1450 1/min	2900 1/min	1450 1/min	2900 1/min	1450 1/min	2900 1/min	1750 1/min	3500 1/min	1750 1/min	3500 1/min	1750 1/min	3500 1/min	1750 1/min	3500 1/min
40-38	Q [l/min] P [kW]	30.7 0.42	62.6 1.13	28.0 1.21	59.9 2.73	24.8 2.28	56.7 4.86	21.3 3.56	53.2 7.41	37.3 0.54	75.9 1.52	34.6 1.5	73.1 3.44	31.4 2.79	69.9 6.01	27.9 4.33	66.4 9.1
40-46	Q [l/min] P [kW]	40.9 0.5	83.5 1.31	37.2 1.57	79.7 3.44	32.8 2.99	75.4 6.28	28 4.69	70.6 9.68	49.7 0.65	101 1.73	46 1.93	97.3 4.3	41.6 3.64	93 7.72	36.8 5.7	88.2 11.8
40-54	Q [l/min] P [kW]	54.5 0.63	112 1.55	48.6 2.06	106 4.41	41.6 3.96	98.8 8.23	- 12.8	91.2 12.8	66.4 0.79	135 2.02	60.4 2.52	129 5.48	53.5 4.82	122 10.1	- -	115 15.6
80-36	Q [l/min] P [kW]	56.2 0.7	114 1.81	51.7 2.15	110 4.72	46.5 4.09	105 8.6	40.8 6.42	99 13.3	68.2 0.89	138 2.39	63.8 2.65	134 5.91	58.5 4.99	129 10.6	52.8 7.8	123 16.2
80-42	Q [l/min] P [kW]	68 0.8	139 2.02	61.8 2.57	133 5.55	54.8 4.92	125 10.3	46.9 7.75	118 15.9	82.6 1.02	168 2.65	76.5 3.15	162 6.91	69.4 5.99	155 12.6	61.6 9.4	147 19.4
80-46	Q [l/min] P [kW]	80.4 0.9	164 2.23	74.3 2.98	157 6.38	67.2 5.75	150 11.9	59.4 9.08	143 18.6	97.6 1.14	198 2.9	91.5 3.65	192 7.91	84.4 7	185 14.6	76.6 11	177 22.6
80-54	Q [l/min] P [kW]	106 1.13	216 2.68	96.1 3.88	206 8.18	84.8 7.55	195 15.5	- 24.3	183 1.41	129 3.44	262 4.74	119 10.1	252 10.1	108 9.17	241 19	- -	228 29.6
120-42	Q [l/min] P [kW]	96.5 1.19	196 3.11	88.6 3.69	189 8.1	79.5 7.02	179 14.8	69.4 11	169 22.8	117 1.53	238 4.11	109 4.55	230 10.1	100 8.57	221 18.2	90.1 13.4	211 27.8
120-46	Q [l/min] P [kW]	115 1.35	233 3.41	107 4.31	225 9.33	97.9 8.25	216 17.2	87.9 13	206 26.7	139 1.72	282 4.48	132 5.29	274 11.6	122 10.1	265 21.1	112 15.8	255 32.6
120-54	Q [l/min] P [kW]	152 1.68	310 4.07	140 5.62	297 12	125 10.9	283 22.5	- 35.1	267 2.11	185 5.27	375 6.87	172 14.8	363 13.2	158 13.2	348 27.5	- -	332 42.7
210-40	Q [l/min] P [kW]	165 1.97	334 5.06	156 6.19	325 13.5	146 11.8	315 24.8	134 18.6	303 38.3	200 2.52	404 6.66	191 7.61	395 16.9	181 14.4	385 30.5	169 22.6	373 46.8
210-46	Q [l/min] P [kW]	207 2.33	419 5.78	195 7.63	407 16.4	180 14.7	393 30.5	165 23.2	377 47.5	251 2.95	507 7.53	238 9.35	495 20.3	224 17.9	480 37.4	209 28.1	465 57.9
210-54	Q [l/min] P [kW]	274 2.92	557 6.96	255 9.99	538 21.1	232 19.4	515 40	- 62.6	490 3.66	333 8.95	674 12.2	313 26	655 23.6	291 48.8	632 48.8	- -	607 76.1
280-43	Q [l/min] P [kW]	241 2.92	489 7.53	227 9.11	475 19.9	210 17.4	457 36.5	191 27.3	439 56.3	293 3.73	592 9.94	278 11.2	577 24.9	261 21.2	560 44.8	242 33.2	541 68.8
280-46	Q [l/min] P [kW]	274 3.19	555 8.08	259 10.2	540 22.1	242 19.6	523 40.8	223 30.8	504 63.3	332 4.06	671 10.6	317 12.5	656 27.5	300 23.8	639 50.1	282 37.4	620 77.2
280-54	Q [l/min] P [kW]	364 3.97	738 9.64	340 13.3	714 28.3	313 25.8	687 53.3	- 83.2	657 5	441 12.5	893 16.3	418 35.1	869 31.3	390 65.2	842 65.2	- -	812 101
440-40	Q [l/min] P [kW]	343 4.17	694 10.8	328 12.9	678 28.3	311 24.6	661 51.7	292 38.6	642 79.7	416 5.34	838 14.3	401 15.9	823 35.5	383 30	806 63.6	364 46.9	787 97.4
440-46	Q [l/min] P [kW]	436 4.96	882 12.4	416 16.1	861 34.7	392 31	837 64.4	365 48.8	811 100	529 6.3	1066 16.2	508 19.7	1046 43.1	484 37.7	1022 59.2	457 59.2	995 122
440-52	Q [l/min] P [kW]	510 5.63	1036 13.8	477 18.8	1003 40	439 36.3	964 75	- -	922 117	619 7.1	- -	586 22.9	- -	548 44.1	- -	- -	- -
440-54	Q [l/min] P [kW]	571 6.13	- -	538 20.8	- -	500 40.3	- -	- -	- -	692 7.71	- -	659 25.4	- -	621 48.9	- -	- -	- -
660-40	Q [l/min] P [kW]	531 6.3	1072 16.2	511 19.8	1052 43.2	488 37.8	1028 79.3	462 59.5	1002 123	643 8.06	1296 21.4	623 24.4	1275 54	600 46.1	1252 97.5	574 72.2	1226 150
660-44	Q [l/min] P [kW]	603 6.93	1218 17.5	575 22.3	1191 48.2	543 42.8	1159 89.2	- -	1124 138	730 8.81	1473 22.9	703 27.4	1445 60	671 52.1	1413 110	- -	1378 -
660-46	Q [l/min] P [kW]	653 7.34	1318 18.3	625 24	1291 51.5	593 46.1	1259 95.9	- -	1223 149	791 9.31	- -	763 29.4	- -	731 56.1	- -	- -	- -
660-51	Q [l/min] P [kW]	770 8.78	1560 20.4	726 28.1	1516 59.9	675 54.5	1465 113	- -	- -	934 10.6	- -	890 34.4	- -	838 66.2	- -	- -	- -
660-54	Q [l/min] P [kW]	878 9.28	1776 22.2	834 31.7	1732 67.1	- 127	1681 127	- -	- -	1064 11.7	- -	1020 38.7	- -	969 74.9	- -	- -	- -
940-42	Q [l/min] P [kW]	773 9.16	1563 23.5	738 28.9	1527 62.9	696 55.2	1486 116	- -	1440 179	937 11.7	- -	901 35.5	- -	860 67.3	- -	814 105	- -
940-46	Q [l/min] P [kW]	931 10.5	1878 26.1	896 34.2	1843 73.5	854 65.7	1801 137	- -	1756 212	1127 13.3	- -	1092 41.9	- -	1050 80	- -	- -	- -
940-50	Q [l/min] P [kW]	1053 11.6	2132 28.3	996 38.5	2075 82.2	930 74.5	2009 154	- -	1935 240	1276 14.6	- -	1219 47.2	- -	1153 90.5	- -	- -	- -
940-54	Q [l/min] P [kW]	1237 13.1	2500 31.4	1180 44.7	2443 94.5	- -	2377 179	- -	- -	1499 16.5	- -	1442 54.6	- -	1375 105	- -	- -	- -
1300-38	Q [l/min] P [kW]	921 11.3	1856 29.7	888 34.7	1823 76.5	850 65.9	1785 139	808 103	1743 214	1114 14.5	- -	1082 42.8	- -	1044 80.4	- -	1002 126	- -
1300-42	Q [l/min] P [kW]	1097 12.8	2215 32.7	1052 40.8	2170 88.6	1000 78	2118 163	- -	2060 252	1329 16.4	- -	1284 50.1	- -	1232 95	- -	1174 149	- -
1300-44	Q [l/min] P [kW]	1175 13.5	- -	1130 43.4	- -	1078 83.2	- -	- -	- -	1423 17.2	- -	1378 53.2	- -	1326 101	- -	- -	- -
1300-46	Q [l/min] P [kW]	1279 14.4	- -	1234 46.8	- -	1182 90.1	- -	- -	- -	1548 18.2	- -	1503 57.4	- -	1451 110	- -	- -	- -
1300-54	Q [l/min] P [kW]	1696 17.9	- -	1624 61.1	- -	- -	- -	- -	- -	2053 22.5	- -	1982 74.7	- -	1898 144	- -	- -	- -
1700-42	Q [l/min] P [kW]	1469 17.2	- -	1414 54.6	- -	1349 104	- -	- -	- -	1778 22	- -	1723 67	- -	1658 127	- -	1588 199	- -
1700-46	Q [l/min] P [kW]	1705 19.2	- -	1649 62.4	- -	1585 120	- -	- -	- -	2062 24.4	- -	2007 76.5	- -	1943 146	- -	- -	- -
2200-42	Q [l/min] P [kW]	1916 22.5	- -	1849 71.2	- -	1772 136	- -	- -	- -	2318 28.8	- -	2252 87.5	- -	2174 166	- -	2089 260	- -
2200-46	Q [l/min] P [kW]	2215 25	- -	2148 81.2	- -	2071 156	- -	- -	- -	2680 31.8	- -	2613 99.5	- -	2535 190	- -	- -	- -
2900-40	Q [l/min] P [kW]	2823 33.4	- -	2730 105	- -	2621 201	- -	- -	- -	3416 42.8	- -	3322 129	- -	3214 244	- -	- -	- -
3600-46	Q [l/min] P [kW]	3523 39.3	- -	3430 128	- -	3321 247	- -	- -	- -	4261 49.8	- -	4167 157	- -	4059 301	- -	- -	- -

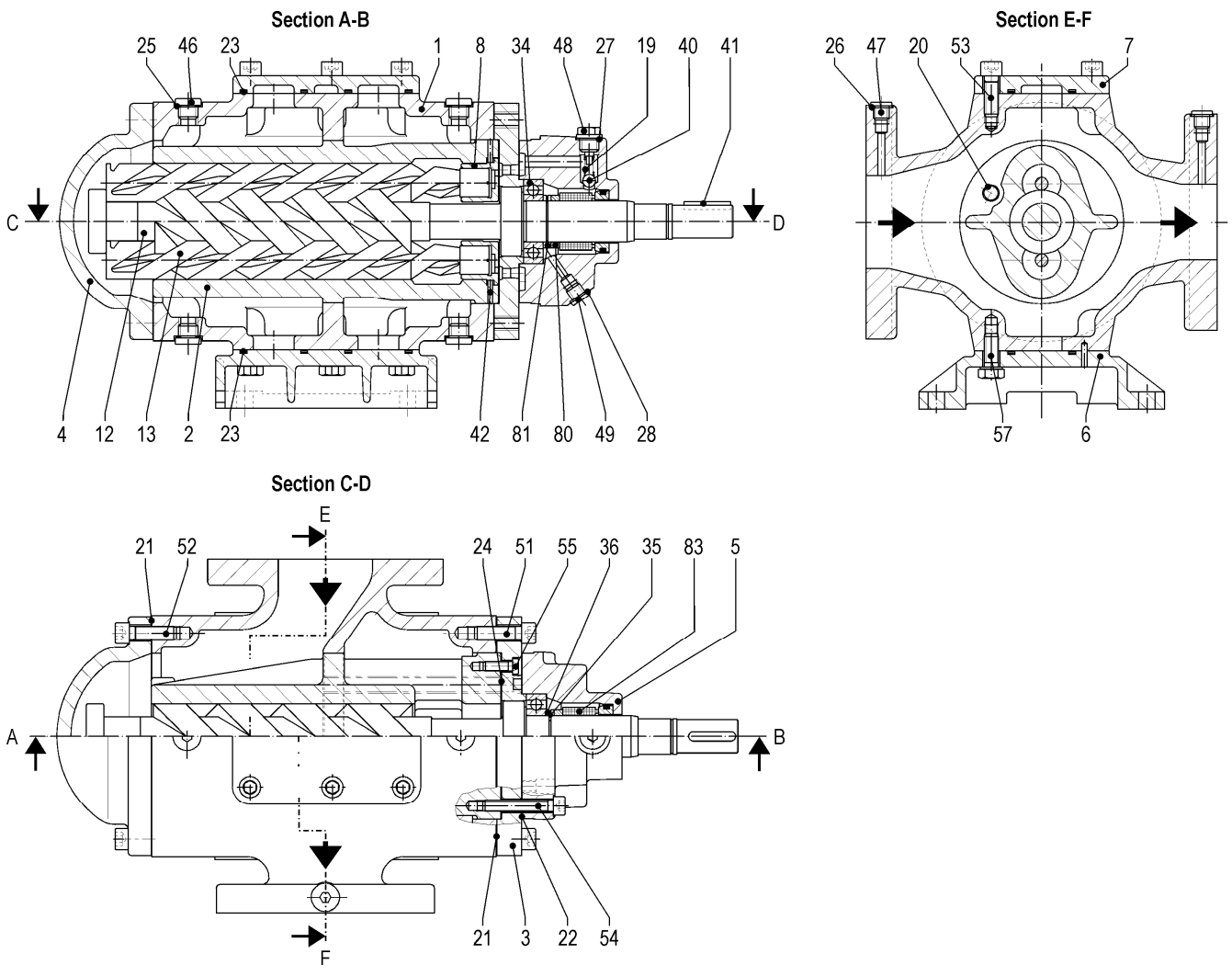
Note: Refer to proposal or contract documentation for exact performance data at individual operating points.

List of components

Description	Part No.	Description	Part No.	Description	Part No.
Pump casing	1	Gasket ①	26	Cheese head screw	79
Casing insert ①	2	Seal ring ①	27	Spacer ring	80
Pump cover, drive end	3	Seal ring ①	28	Supporting washer	81
Pump cover, non-drive end or round foot (on SNS/SNG)	4	Groove ball bearing ①	34	Mechanical seal ①	83
Stuffing box casing/bearing cover	5	Circlip	35	Shaft seal ring ①	107
Pump foot	6	Supporting washer	36	Support ring	108
Cover plate	7	Circlip	37	Spacer bush	109
Balance bush ①	8	Ball	40	Hexagon screw	110
Seal cover/gland	9	Key	41	Heating chamber/heating shell	120
Greasing chamber disc	10	Spring dowel	42	Gasket ①	121
Drive screw ①	12	Screw plug	46	Cheese head screw	122
Idler screw ①	13	Screw plug	47	Screw plug	123
Spacer bush	16	Stop screw	48	Seal ring ①	124
Pressure spring	19	Screw plug	49	Gasket	125
Pipe	20	Grease nipple	50	Heating element	126
Gasket ①	21	Cheese head screw	51	Cheese head screw ①	127
Gasket ①	22	Cheese head screw	52	Thermostat	129
Round seal ring	23	Cheese head screw	53	Seal ring	130
Gasket ①	24	Cheese head screw	54	Shaft seal ring ①	140
Gasket ①	25	Hexagon head screw	57		

① available as spare part

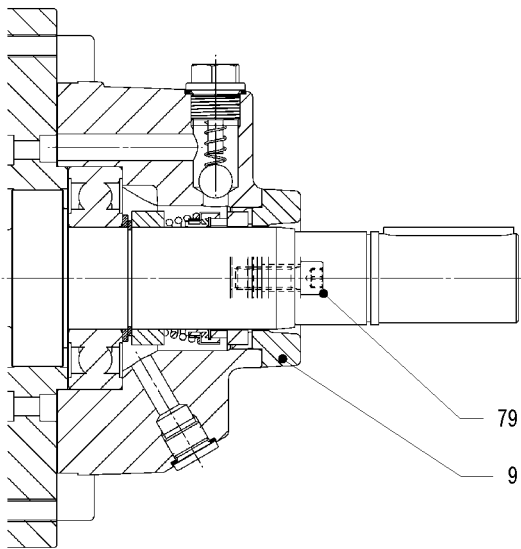
Pump sectional drawing



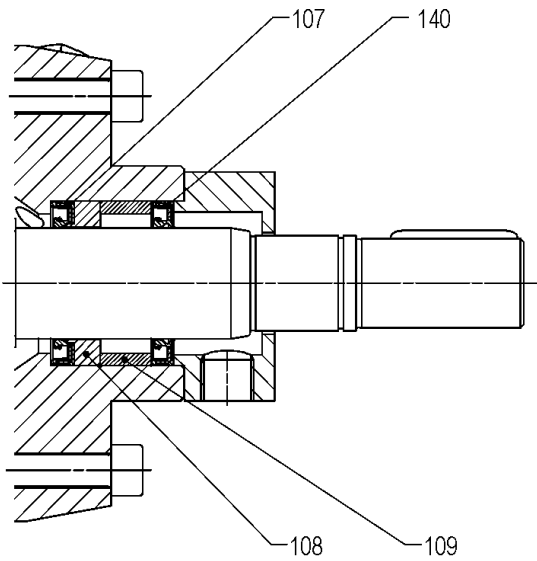
SNH, U version, internal bearing, mechanical seal, size 40-660

Note: Series SNE, SNEF, SNGH, SNF, SNGF, SNS and SNGS are not shown explicitly because they differ only in how they are installed.

Sectional drawings, internal bearing

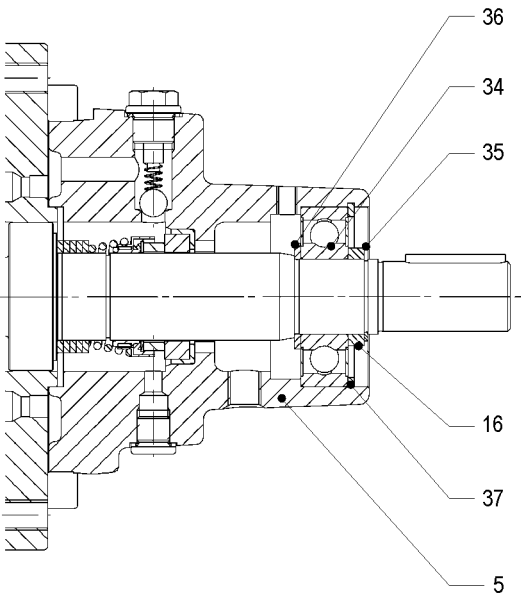


SN..ER..U, internal bearing, mech. seal, sizes 940-3600

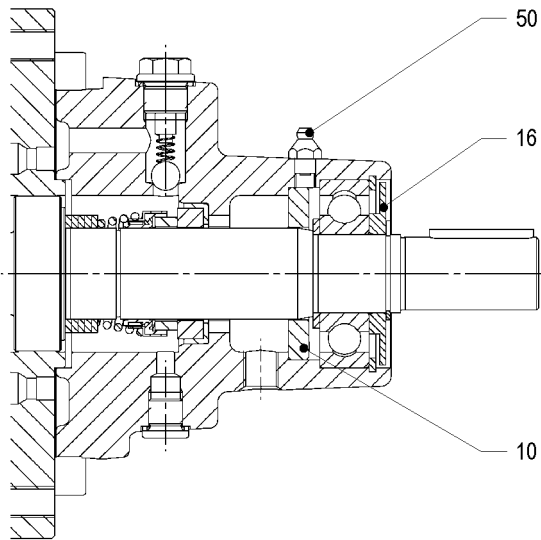


SN..ER..U3.3, internal bearing, 2 shaft seal rings

Sectional drawing of external bearing

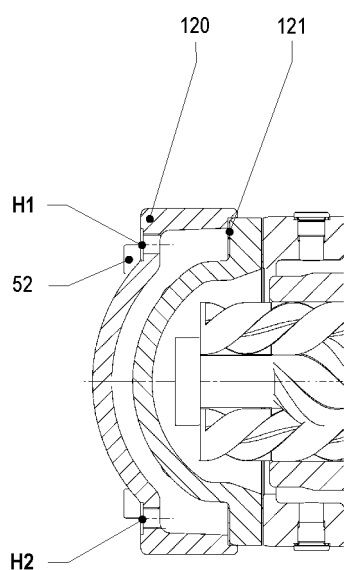


SN..ER..D, external bearing, cannot be relubricated, mech. seal

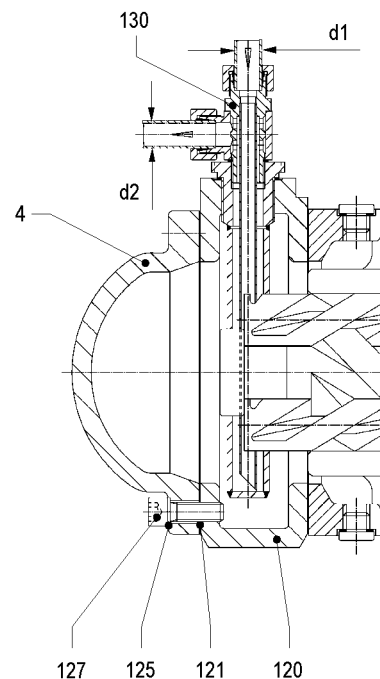


SN..ER..E, external bearing, can be relubricated, mech. seal

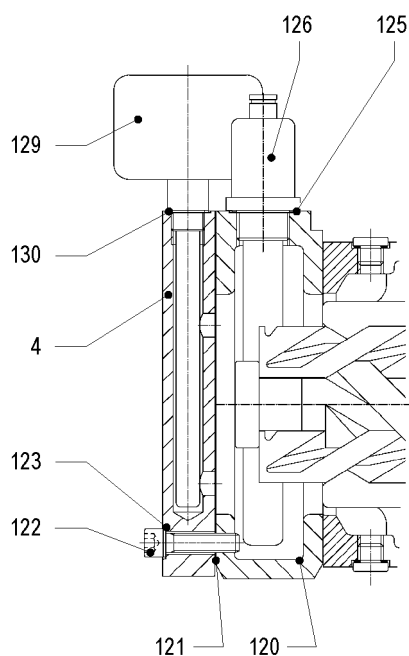
Sectional drawing of heating



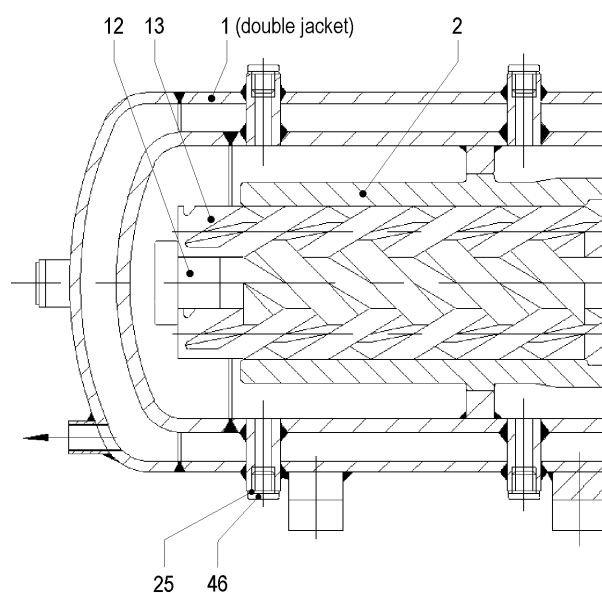
SN..ER., heating version X (heating shell)



SN..ER., heating version P (heating cartridge)



SN..ER., heating version E (electric heating elements)



SN..ER., heating version Y (double jacket, only for welded steel version)

Pump dimensions and installation plan

Pump and unit dimensions of all series can be generated and retrieved individually through ALL2CAD. ALL2CAD is available online at the ALLWEILER service portal at <http://service.allweiler.de>.

Heating ①

Series SNH, SNF, SNS, SNGS:

Version E = with heating elements, electric

Version P = with heating cartridge for steam or heat transfer liquids

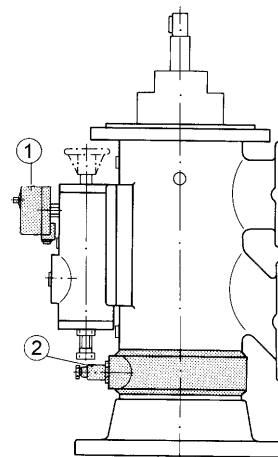
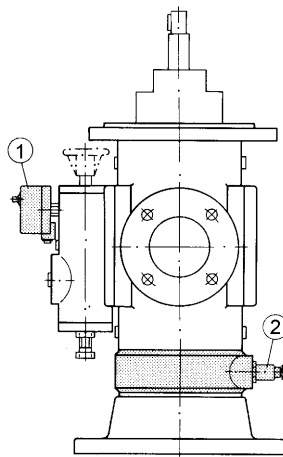
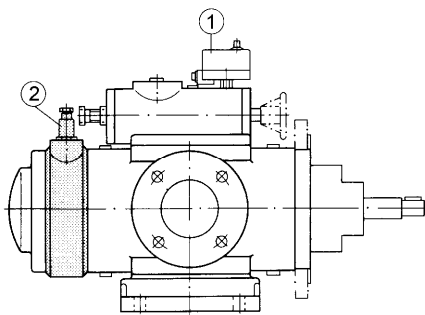
Version X = with heating shell for steam or heat transfer liquids

Version E (with 2 heating cartridges, electric)

SNH/SNF 40 to 3600

SNS 40 to 3600

SNGS 40 to 1300



① thermostat (control range 0 up to 150 °C)

② heating elements (230 V, 50 Hz)

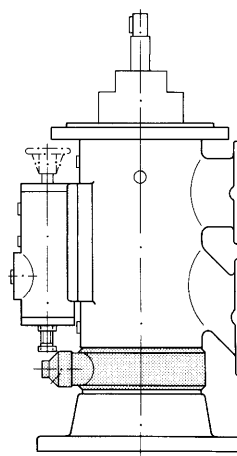
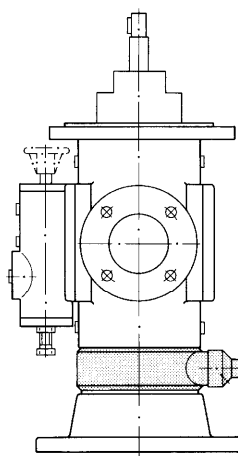
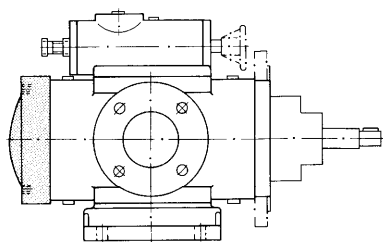
Version X (with heating shell)

SNH/SNF 40 to 3600

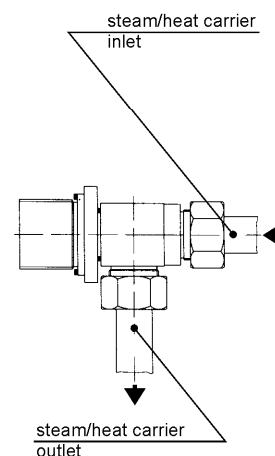
Version P (with 2 heating cartridges, steam/heat carrier)

SNS 40 to 3600

SNGS 40 to 1300



Cartridge connection

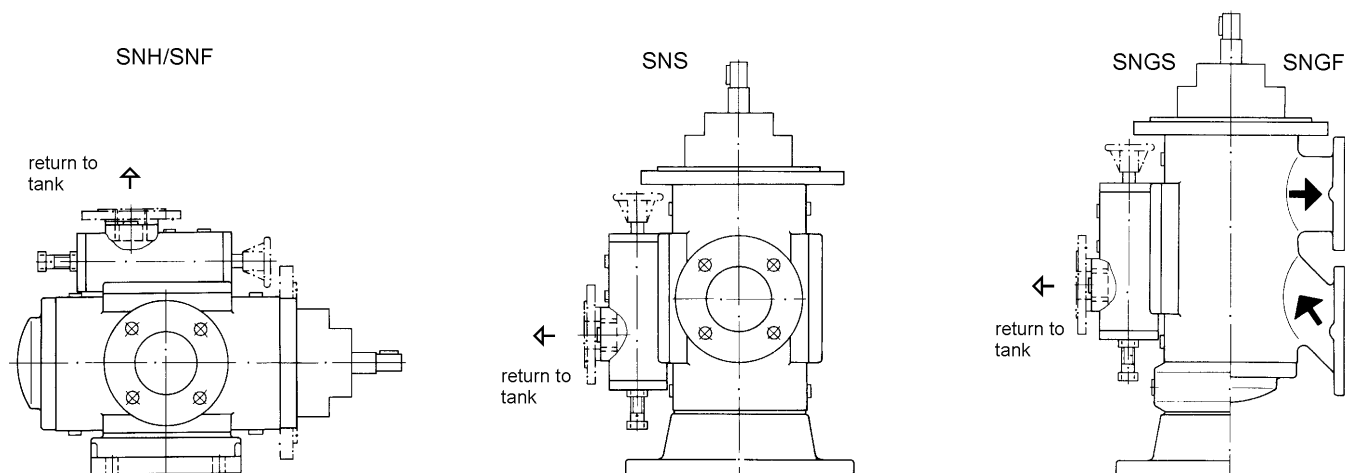


Pump size	Version X (heating shell)	Version P (heating cartridge)	Version E (with heating elements, electric)					
	Connection (Ø in inches)	Connection (Ø in mm)	Heating output [W] (2 heating elements)	Connection (Ø in inches)	Heat-up time of the pump in minutes, for ΔT =			
					25 °C	50 °C	75 °C	100 °C
40	G 1/4	18	240	G 3/4	60	120	240	320
80	G 1/4	18	260	G 3/4				
120	G 1/4	18	300	G 3/4				
210	G 1/4	18	420	G 1				
280	G 3/8	18	460	G 1				
440	G 3/8	18	460	G 1				
660	G 3/8	22	680	G 1 1/4				
940	G 3/8	22	880	G 1 1/2				
1300	G 1/2	22	1000	G 1 1/2				
1700	G 1/2	22	1340	G 2				
2200	G 1/2	22	1340	G 2				
2900	G 1/2	22	1600	G 2				
3600	G 1/2	22	1600	G 2				

① not applicable for welded version

Pressure relief valves

Pressure relief valves, installed on SNH, SNF, SNS, SNGS, SNGF series pumps (not welded versions), valve versions in materials EN-GJL-250 and EN-GJS-400-15; see dimension drawings from ALL2CAD (<http://service.allweiler.de>) for valve dimensions.



Pump size	Max. permissible capacity	Max. permissible working pressure①	Valve type	Valve construction	Return connection
40	200	0-38 38-58	DS 35 ② DT 35 ②	A B ② C D ②	Pipe thread G 1
80	200	0-38 38-58	DS 35 ② DT 35 ②	A B ② C D ②	Pipe thread G 1
120	210 550	0-38 0-44 0-98	DS 41 DS 38 ③ DVI 38 ③	A B C D	Pipe thread G 1 Pipe thread G 1 1/2
210	210 550	0-38 0-44 0-98	DS 41 DS 38 DVI 38 ④	A B C D	Pipe thread G1 Pipe thread G 1 1/2
280	900	0-13.5 13.5-38 0-98	DS 44 DT 44 DVI 44 DVS 44	A B C D - B - D	PN 16 DIN EN 1092-2 DN65
440	900	0-13.5 13.5-38 0-98	DS 44 DT 44 DVI 44 DVS 44	A B C D - B - D	PN 16 DIN EN 1092-2 DN65
660	900 1800	0-13.5 13.5-38 0-98	DS 44 DT 44 DV 44 DVI 44 DVS 44	A B C D - B - D	PN 16 DIN EN 1092-2 DN65
	1800	0-18 0-98	DS 47 DV 47 DVI 47	A B C D - B - D	PN 16 DIN EN 1092-2 DN80
940	900 1800	0-13.5 13.5-38 0-98	DS 44 DT 44 DV 44 DVI 44 DVS 44	A B C D - B - D	PN 16 DIN EN 1092-2 DN65
	1800	0-18 0-98	DS 47 DV 47 DVI 47	A B C D - B - D	PN 16 DIN EN 1092-2 DN80
1300	2500	0-16 0-98	DS 50 DV 50 DVI 50 DVS 50	A B C D - B - D	PN 16 DIN EN 1092-2 DN100
1700	2500	0-16 0-98	DS 50 DV 50 DVI 50 DVS 50	A B C D - B - D	PN 16 DIN EN 1092-2 DN100
2200	2500	0-16 0-98	DS 50 DV 50 DVI 50 DVS 50	A B C D - B - D	PN 16 DIN EN 1092-2 DN100
2900	3600	0-9 0-98	DS 56 DV 56 DVS 56	A B C D - B - D	PN 16 DIN EN 1092-2 DN125
3600	3600	0-9 0-98	DS 56 DV 56 DVS 56	A B C D - B - D	PN 16 DIN EN 1092-2 DN125

DS = Pressure relief valve with helical spring, directly controlled.

DT = Pressure relief valve with cup springs, directly controlled.

DV = Pressure relief valve, directly pilot-operated

DVI = Pressure relief valve, indirectly pilot-operated

DVS = Pressure relief valve, pilot-operated, ship version for vertically installed pumps

A = Circulating valve

B = Circulating valve with manual regulation

C = Return valve

D = Return valve with manual regulation

① only return valve (type C or D) allowed for differential pressure more than 40 bar

② valve types DS 35 and DT 35 with manual regulation (types B and D) cannot be used with pump types SNS 40 and SNS 80

③ on pump type SNS 120, valve types DS 38 and DVI 38 can be used only with intermediate piece (between pump casing and round foot)

④ on pump type SNS 210, valve type DVI 38 can be used only with intermediate piece (between pump casing and round foot)

Benefits of SN series

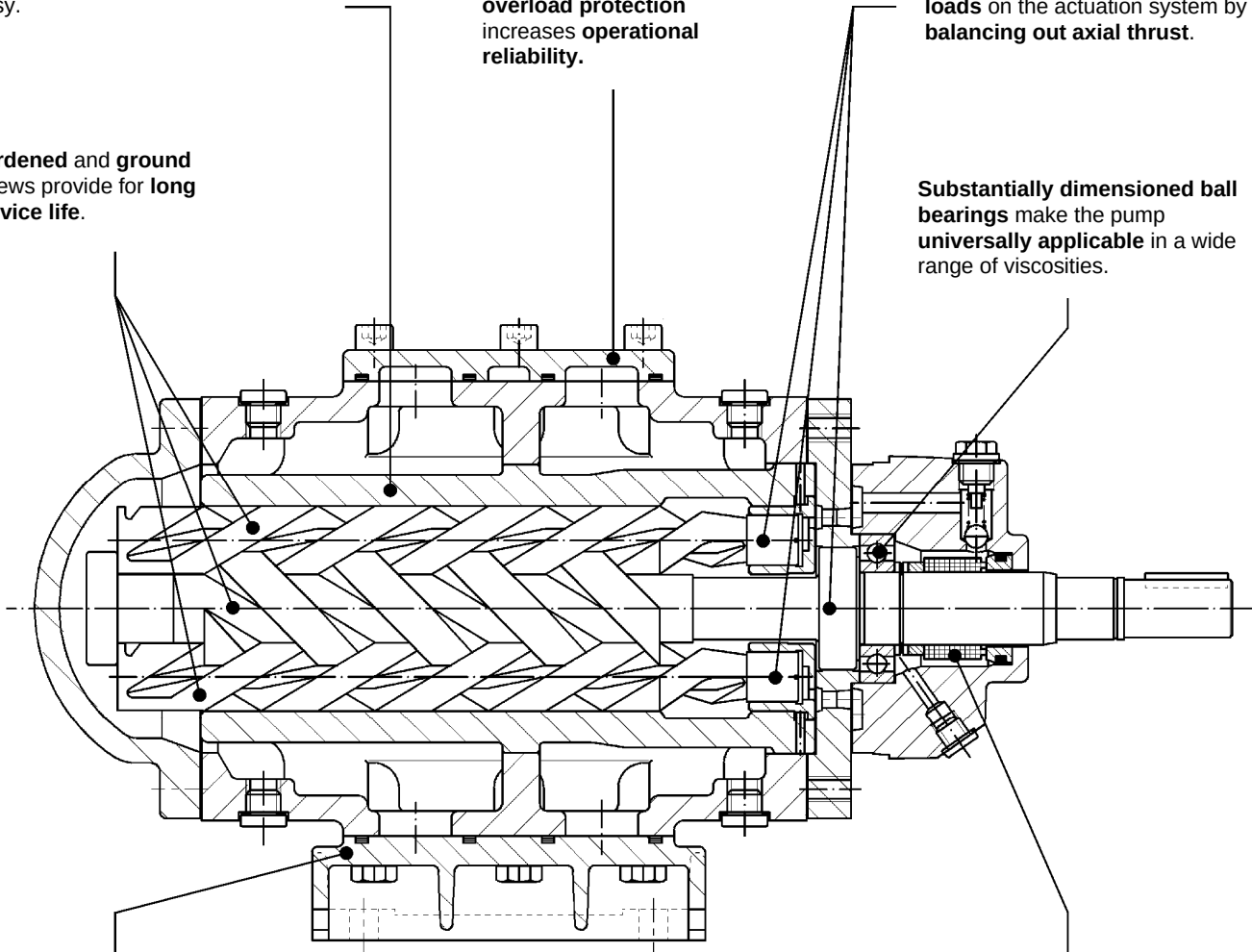
Replacing insert unit while pump casing is installed is quick and easy.

Optional direct attachment of a pressure relief valve as overload protection increases operational reliability.

Balance pistons on the screws reduce wear and ensure minimal loads on the actuation system by balancing out axial thrust.

Hardened and ground screws provide for long service life.

Substantially dimensioned ball bearings make the pump universally applicable in a wide range of viscosities.



Modular system enables lower spare parts stocks and other design types.

Application-specific shaft seals (shaft sealing rings, various mechanical seals, or magnetic coupling) increase flexibility.

A variety of material combinations enable variable adaptation to special operating conditions.

The SN series fulfills the requirements according to EU explosion protection directive 2014/34/EU (ATEX 100a).



A variety of sizes and screw pitch angles provides for fine capacity gradation and optimized efficiency across the entire performance range.

Other versions of the SN series

In addition to the versions described above, other application types, materials, shaft seals, bearings, quenches and special spindle versions are available.

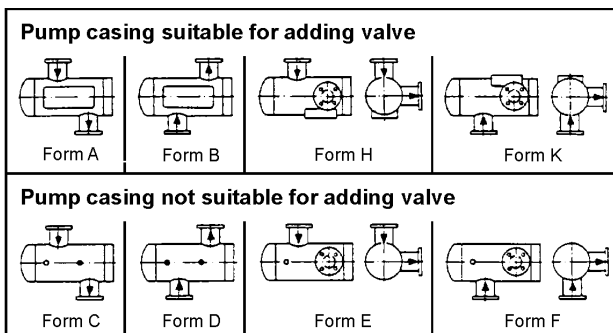
The most common variations are described briefly below. More extensive information about this and all other variations is available upon request.

SN series in welded steel version

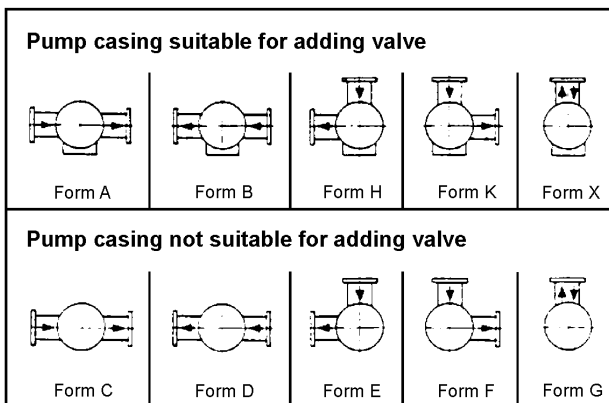
Special features:

- ▶ flanges according to DIN and ANSI are available
- ▶ API 676 version is available
- ▶ heating with double jacket is available
- ▶ Only pressure relief valves for installation in a pipe (see separate brochure) are possible for pumps in welded-steel version with double jacket and pumps in welded-steel version with flanges according to API 676.
- ▶ Please observe the following diagram with installed pressure limiting valves.

The following diagram is applicable for the welded-steel versions (without double mantle) of series SNH and SNF with flanges according to DIN:



The following diagram applies to the SNS series in the welded-steel version with flanges according to DIN:



- ▶ Additional information in brochures VM 677 and VM 679.

SNC(X), SNG(X), SNFG(X) for installation on gear box

Special features:

- ▶ External pump for fast-running gear box for pumping lubrication and gear-box oils. The pumps are driven directly by the external gear box by way of a pinion pulled onto the drive screw.
- ▶ Series SNCX, SNGX, and SNFGX can maintain pumping for up to an hour in the opposite rotational direction.
- ▶ The pumps do not have a shaft seal.
- ▶ Maximum viscosity is 75 mm²/s.
- ▶ Refer to technical document VM 645 for more information.

SN series in SN..AR..M version with magnetic coupling

Special features:

- ▶ For applications that require the use of pumps without shaft seals (such as moving heavy fuel oil in Marine applications or pumping poisonous, harmful, and odorous media).
- ▶ The magnetic coupling's containment can hermetically seal the pump. Magnetic forces transfer torque from the motor to the pump within the magnetic coupling.
- ▶ Also available with pump casing in EN-GJS-400-15 (material combination W5).
- ▶ Maximum liquid temperature of 250 °C, maximum viscosity 2000 mm²/s.
- ▶ Refer to technical document VM 687 for more information.

SN series in SN..AR..D 14 BS-W61 version for pumping refrigerator oil

Special features:

- ▶ For pumping lubrication oils with traces of refrigerants (such as ammonia, Freon, etc.).
- ▶ Version without non-ferrous metals in material combination W61.
- ▶ Available in sizes 40 to 1300.
- ▶ Maximum capacity of 1700 l/min. (in size 1300-54 at 1450 1/min).
- ▶ Standard balanced bellow mechanical seal.
- ▶ Also available in hermetically sealed version with magnetic drive.
- ▶ Refer to technical document VM 771 for more information.

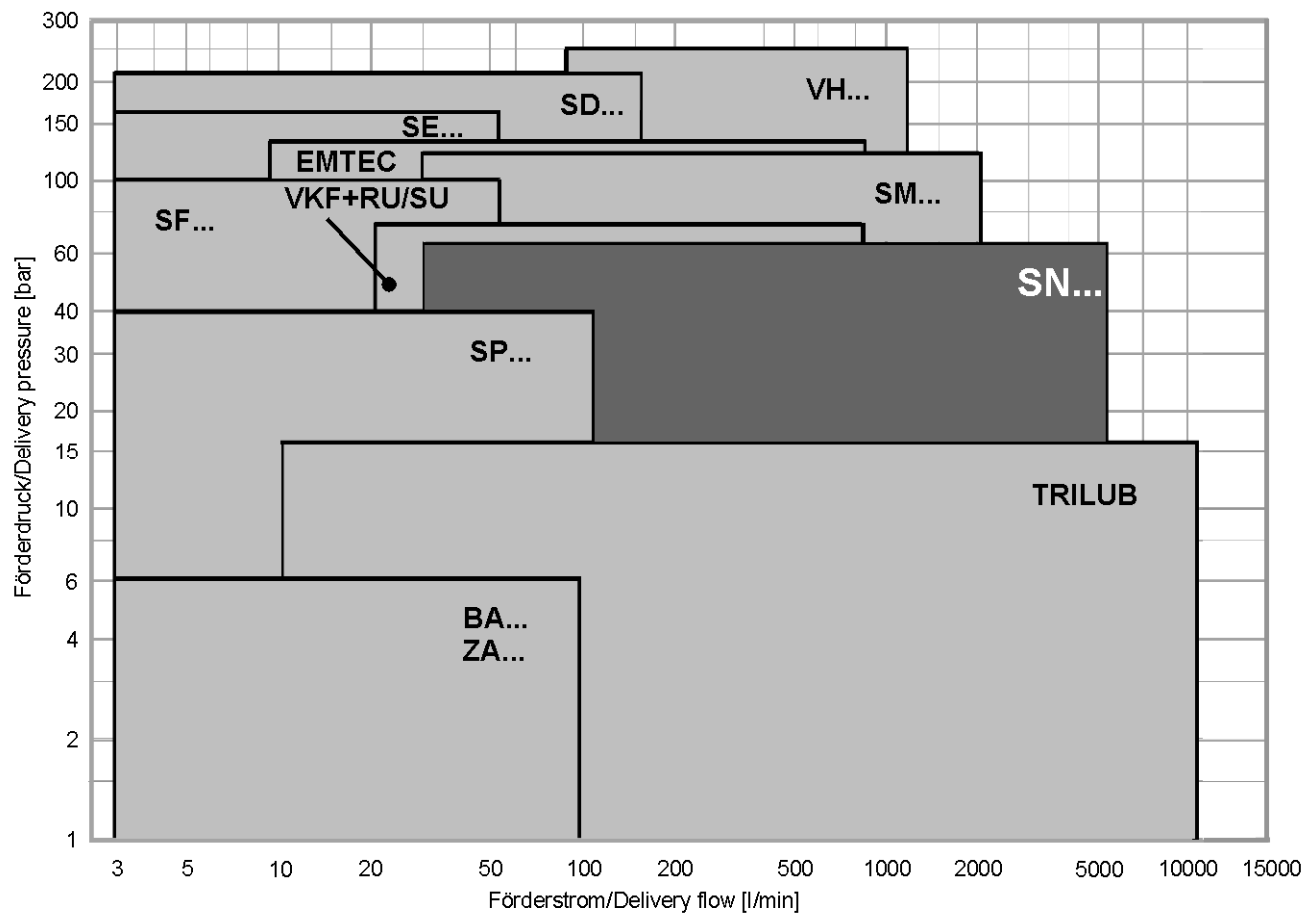
SN series in SN..AR..D4.2 QM-W61 version for pumping isocyanates and polyols

Special features:

- ▶ For pumping isocyanates and polyols that tend to crystallize when released into the atmosphere.
- ▶ Version without non-ferrous metals in material combination W61.
- ▶ Available in sizes 40 to 1300.
- ▶ Maximum capacity of 1700 l/min. (in size 1300-54 at 1450 1/min).
- ▶ Maximum viscosity is 6000 mm²/s.
- ▶ Shaft seal rings teflonized, with quench.
- ▶ Refer to technical document VM 740 for more information.

Performance overview for three-screw pumps

Other series of three-screw, single-channel screw pumps are available for pumping performance outside of the SN series. Refer to the following overview (specified performance based on 50-Hz speeds).



Subject to technical changes.



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The specified performance data and all standard references are intended to provide only an overview of the product and its performance! Refer to the respective proposal and order confirmation for exact operation limits.