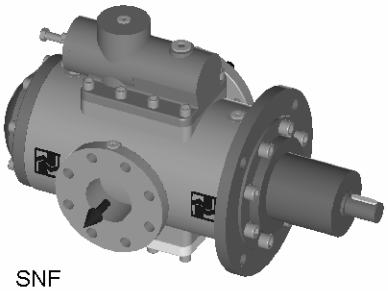
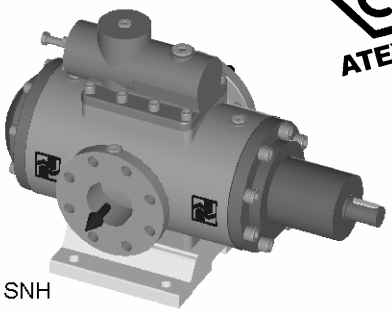
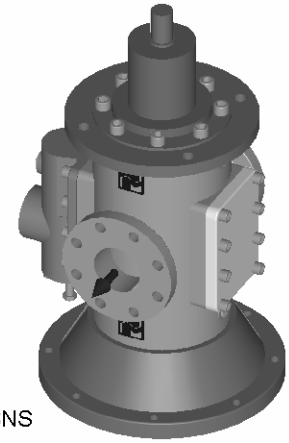
Screw Pumps
SN Series


SNF


SNH


SNS

ATEX 100 a

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 branch:	up to DN 150 according to DIN EN 1092-2 PN 16 up to DN 200 according to DIN EN 1092-2 PN 10
Discharge branch:	PN 40 according to DIN EN 1092-2 (pump casing in EN-GJL-250) 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	120 °C
	…U	150 °C
Other mechanical seals available upon request		
Shaft seal rings	uncooled	
Model code	4	(D) 4.2
Shaft seal ring material	Perbunan (NBR)	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 brochure).

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.

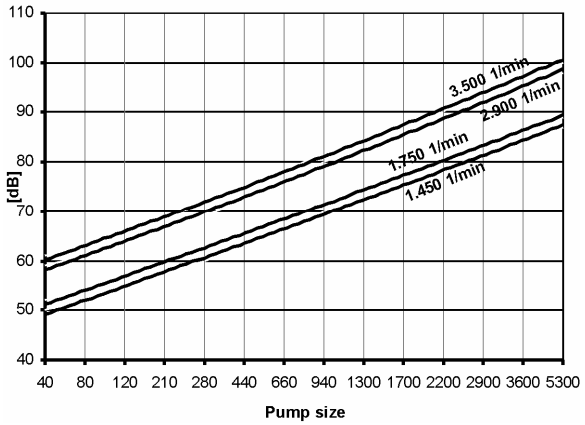
Explosion protection

The pump fulfills the requirements according to EU explosion-protection directive 94/9/EC (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.

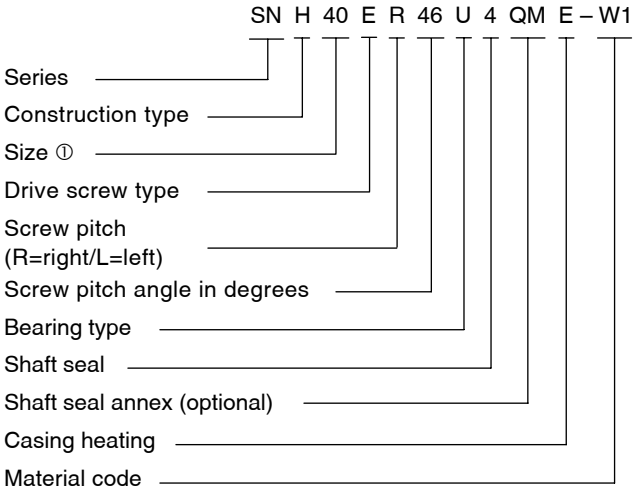
Noise levels

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



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

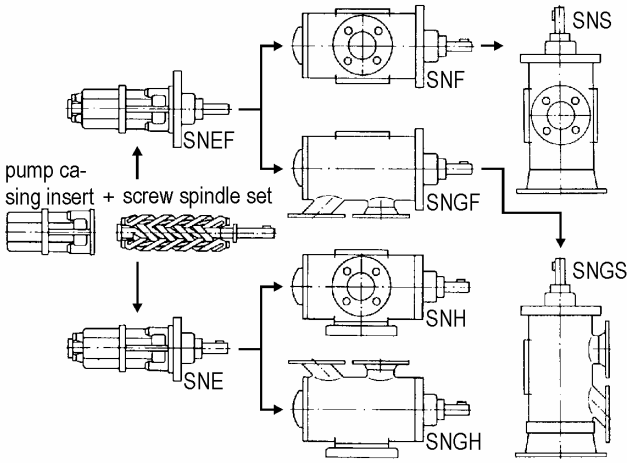
Model code



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	
Motor speed	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	-
280-43	3.0	4.3	3.0	5.8
280-46	3.0	5.3	3.0	7.5
280-54	5.8	-	6.2	-
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	-
440-54	6.1	-	6.6	-
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	-
660-51	6.2	-	6.8	-
660-54	6.5	-	7.3	-
940-42	3.0	8.0	3.6	-
940-46	3.5	①	4.6	-
940-50	6.4	-	7.2	-
940-54	6.9	-	8.1	-
1300-38	3.0	7.4	3.4	-
1300-42	3.3	①	4.2	-
1300-44	3.6	-	4.8	-
1300-46	4.0	-	5.4	-
1300-54	7.5	-	-	-
1700-42	3.8	-	5.0	-
1700-46	4.6	-	6.6	-
2200-42	4.4	-	6.0	-
2200-46	5.3	-	7.6	-
2900-40	4.8	-	6.7	-
3600-46	6.9	-	-	-

① inlet pressure 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 v = 40 mm²/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]	30.7	62.6	28.0	59.9	24.8	56.7	21.3	53.2	37.3	75.9	34.6	73.1	31.4	69.9	27.9	66.4
	P [kW]	0.42	1.13	1.21	2.73	2.28	4.86	3.56	7.41	0.54	1.52	1.5	3.44	2.79	6.01	4.33	9.1
40-46	Q [l/min]	40.9	83.5	37.2	79.7	32.8	75.4	28	70.6	49.7	101	46	97.3	41.6	93	36.8	88.2
	P [kW]	0.5	1.31	1.57	3.44	2.99	6.28	4.69	9.68	0.65	1.73	1.93	4.3	3.64	7.72	5.7	11.8
40-54	Q [l/min]	54.5	112	48.6	106	41.6	98.8	-	91.2	66.4	135	60.4	129	53.5	122	-	115
	P [kW]	0.63	1.55	2.06	4.41	3.96	8.23	-	12.8	0.79	2.02	2.52	5.48	4.82	10.1	-	15.6
80-36	Q [l/min]	56.2	114	51.7	110	46.5	105	40.8	99	68.2	138	63.8	134	58.5	129	52.8	123
	P [kW]	0.7	1.81	2.15	4.72	4.09	8.6	6.42	13.3	0.89	2.39	2.65	5.91	4.99	10.6	7.8	16.2
80-42	Q [l/min]	68	139	61.8	133	54.8	125	46.9	118	82.6	168	76.5	162	69.4	155	61.6	147
	P [kW]	0.8	2.02	2.57	5.55	4.92	10.3	7.75	15.9	1.02	2.65	3.15	6.91	5.99	12.6	9.4	19.4
80-46	Q [l/min]	80.4	164	74.3	157	67.2	150	59.4	143	97.6	198	91.5	192	84.4	185	76.6	177
	P [kW]	0.9	2.23	2.98	6.38	5.75	11.9	9.08	18.6	1.14	2.9	3.65	7.91	7	14.6	11	22.6
80-54	Q [l/min]	106	216	96.1	206	84.8	195	-	183	129	262	119	252	108	241	-	228
	P [kW]	1.13	2.68	3.88	8.18	7.55	15.5	-	24.3	1.41	3.44	4.74	10.1	9.17	19	-	29.6
120-42	Q [l/min]	96.5	196	88.6	189	79.5	179	69.4	169	117	238	109	230	100	221	90.1	211
	P [kW]	1.19	3.11	3.69	8.1	7.02	14.8	11	22.8	1.53	4.11	4.55	10.1	8.57	18.2	13.4	27.8
120-46	Q [l/min]	115	233	107	225	97.9	216	87.9	206	139	282	132	274	122	265	112	255
	P [kW]	1.35	3.41	4.31	9.33	8.25	17.2	13	26.7	1.72	4.48	5.29	11.6	10.1	21.1	15.8	32.6
120-54	Q [l/min]	152	310	140	297	125	283	-	267	185	375	172	363	158	348	-	332
	P [kW]	1.68	4.07	5.62	12	10.9	22.5	-	35.1	2.11	5.27	6.87	14.8	13.2	27.5	-	42.7
210-40	Q [l/min]	165	334	156	325	146	315	134	303	200	404	191	395	181	385	169	373
	P [kW]	1.97	5.06	6.19	13.5	11.8	24.8	18.6	38.3	2.52	6.66	7.61	16.9	14.4	30.5	22.6	46.8
210-46	Q [l/min]	207	419	195	407	180	393	165	377	251	507	238	495	224	480	209	465
	P [kW]	2.33	5.78	7.63	16.4	14.7	30.5	23.2	47.5	2.95	7.53	9.35	20.3	17.9	37.4	28.1	57.9
210-54	Q [l/min]	274	557	255	538	232	515	-	490	333	674	313	655	291	632	-	607
	P [kW]	2.92	6.96	9.99	21.1	19.4	40	-	62.6	3.66	8.95	12.2	26	23.6	48.8	-	76.1
280-43	Q [l/min]	241	489	227	475	210	457	191	439	293	592	278	577	261	560	242	541
	P [kW]	2.92	7.53	9.11	19.9	17.4	36.5	27.3	56.3	3.73	9.94	11.2	24.9	21.2	44.8	33.2	68.8
280-46	Q [l/min]	274	555	259	540	242	523	223	504	332	671	317	656	300	639	282	620
	P [kW]	3.19	8.08	10.2	22.1	19.6	40.8	30.8	63.3	4.06	10.6	12.5	27.5	23.8	50.1	37.4	77.2
280-54	Q [l/min]	364	738	340	714	313	687	-	657	441	893	418	869	390	842	-	812
	P [kW]	3.97	9.64	13.3	28.3	25.8	53.3	-	83.2	5	12.5	16.3	35.1	31.3	65.2	-	101
440-40	Q [l/min]	343	694	328	678	311	661	292	642	416	838	401	823	383	806	364	787
	P [kW]	4.17	10.8	12.9	28.3	24.6	51.7	38.6	79.7	5.34	14.3	15.9	35.5	30	63.6	46.9	97.4
440-46	Q [l/min]	436	882	416	861	392	837	365	811	529	1066	508	1046	484	1022	457	995
	P [kW]	4.96	12.4	16.1	34.7	31	64.4	48.8	100	6.3	16.2	19.7	43.1	37.7	79	59.2	122
440-52	Q [l/min]	510	1036	477	1003	439	964	-	922	619	-	586	-	548	-	-	-
	P [kW]	5.63	13.8	18.8	40	36.3	75	-	117	7.1	-	22.9	-	44.1	-	-	-
440-54	Q [l/min]	571	-	538	-	500	-	-	-	692	-	659	-	621	-	-	-
	P [kW]	6.13	-	20.8	-	40.3	-	-	-	7.71	-	25.4	-	48.9	-	-	-
660-40	Q [l/min]	531	1072	511	1052	488	1028	462	1002	643	1296	623	1275	600	1252	574	1226
	P [kW]	6.3	16.2	19.8	43.2	37.8	79.3	59.5	123	8.06	21.4	24.4	54	46.1	97.5	72.2	150
660-44	Q [l/min]	603	1218	575	1191	543	1159	-	1124	730	1473	703	1445	671	1413	-	1378
	P [kW]	6.93	17.5	22.3	48.2	42.8	89.2	-	138	8.81	22.9	27.4	60	52.1	110	-	
660-46	Q [l/min]	653	1318	625	1291	593	1259	-	1223	791	-	763	-	731	-	-	-
	P [kW]	7.34	18.3	24	51.5	46.1	95.9	-	149	9.31	-	29.4	-	56.1	-	-	-
660-51	Q [l/min]	770	1560	726	1516	675	1465	-	-	934	-	890	-	838	-	-	-
	P [kW]	8.38	20.4	28.1	59.9	54.5	113	-	-	10.6	-	34.4	-	66.2	-	-	-
660-54	Q [l/min]	878	1776	834	1732	-	1681	-	-	1064	-	1020	-	969	-	-	-
	P [kW]	9.28	22.2	31.7	67.1	-	127	-	-	11.7	-	38.7	-	74.9	-	-	-
940-42	Q [l/min]	773	1563	738	1527	696	1486	-	1440	937	-	901	-	860	-	814	-
	P [kW]	9.16	23.5	28.9	62.9	55.2	116	-	179	11.7	-	35.5	-	67.3	-	105	-
940-46	Q [l/min]	931	1878	896	1843	854	1801	-	1756	1127	-	1092	-	1050	-	-	-
	P [kW]	10.5	26.1	34.2	73.5	65.7	137	-	212	13.3	-	41.9	-	80	-	-	-
940-50	Q [l/min]	1053	2132	996	2075	930	2009	-	1935	1276	-	1219	-	1153	-	-	-
	P [kW]	11.6	28.3	38.5	82.2	74.5	154	-	240	14.6	-	47.2	-	90.5	-	-	-
940-54	Q [l/min]	1237	2500	1180	2443	-	2377	-	-	1499	-	1442	-	1375	-	-	-
	P [kW]	13.1	31.4	44.7	94.5	-	179	-	-	16.5	-	54.6	-	105	-	-	-
1300-38	Q [l/min]	921	1856	888	1823	850	1785	808	1743	1114	-	1082	-	1044	-	1002	-
	P [kW]	11.3	29.7	34.7	76.5	65.9	139	103	214	14.5	-	42.8	-	80.4	-	126	-
1300-42	Q [l/min]	1097	2215	1052	2170	1000	2118	-	2060	1329	-	1284	-	1232	-	1174	-
	P [kW]	12.8	32.7	40.8	88.6	78	163	-	252	16.4	-	50.1	-	95	-	149	-
1300-44	Q [l/min]	1175	-	1130	-	1078	-	-	-	1423	-	1378	-	1326	-	-	-
	P [kW]	13.5	-	43.4	-	83.2	-	-	-	17.2	-	53.2	-	101	-	-	-
1300-46	Q [l/min]	1279	-	1234	-	1182	-	-	-	1548	-	1503	-	1451	-	-	-
	P [kW]	14.4	-	46.8	-	90.1	-	-	-	18.2	-	57.4	-	110	-	-	-
1300-54	Q [l/min]	1696	-	1624	-	-	-	-	-	2053	-	1982	-	1898	-	-	-
	P [kW]	17.9	-	61.1	-	-	-	-	-	22.5	-	74.7	-	144	-	-	-
1700-42	Q [l/min]	1469	-	1414	-	1349	-	-	-	1778	-	1723	-	1658	-	1588	-
	P [kW]	17.2	-	54.6	-	104	-	-	-	22	-	67	-	127	-	199	-
1700-46	Q [l/min]	1705	-	1649	-	1585	-	-	-	2062	-	2007	-	1943	-	-	-
	P [kW]	19.2	-	62.4	-	120	-	-	-	24.4	-	76.5	-	146	-	-	-
2200-42	Q [l/min]	1916	-	1849	-	1772	-	-	-	2318	-	2252	-	2174	-	2089	-
	P [kW]	22.5	-	71.2	-	136	-	-	-	28.8	-	87.5	-	166	-	260	-
2200-46	Q [l/min]	2215	-	2148	-	2071	-	-	-	2680	-	2613	-	2535	-	-	-
	P [kW]	25	-	81.2	-	156	-	-	-	31.8	-	99.5	-	190	-	-	-
2900-40	Q [l/min]	2823	-	2730	-	2621	-	-	-	3416	-	3322	-	3214	-	-	-
	P [kW]	33.4	-	105	-	201	-	-	-	42.8	-	129	-	244	-	-	-
3600-46	Q [l/min]	3523	-	3430	-	3321	-	-	-	4261	-	4167	-	4059	-	-	-
	P [kW]	39.3	-	128	-	247	-	-	-	49.8	-	157	-	301	-	-	-

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

List of components

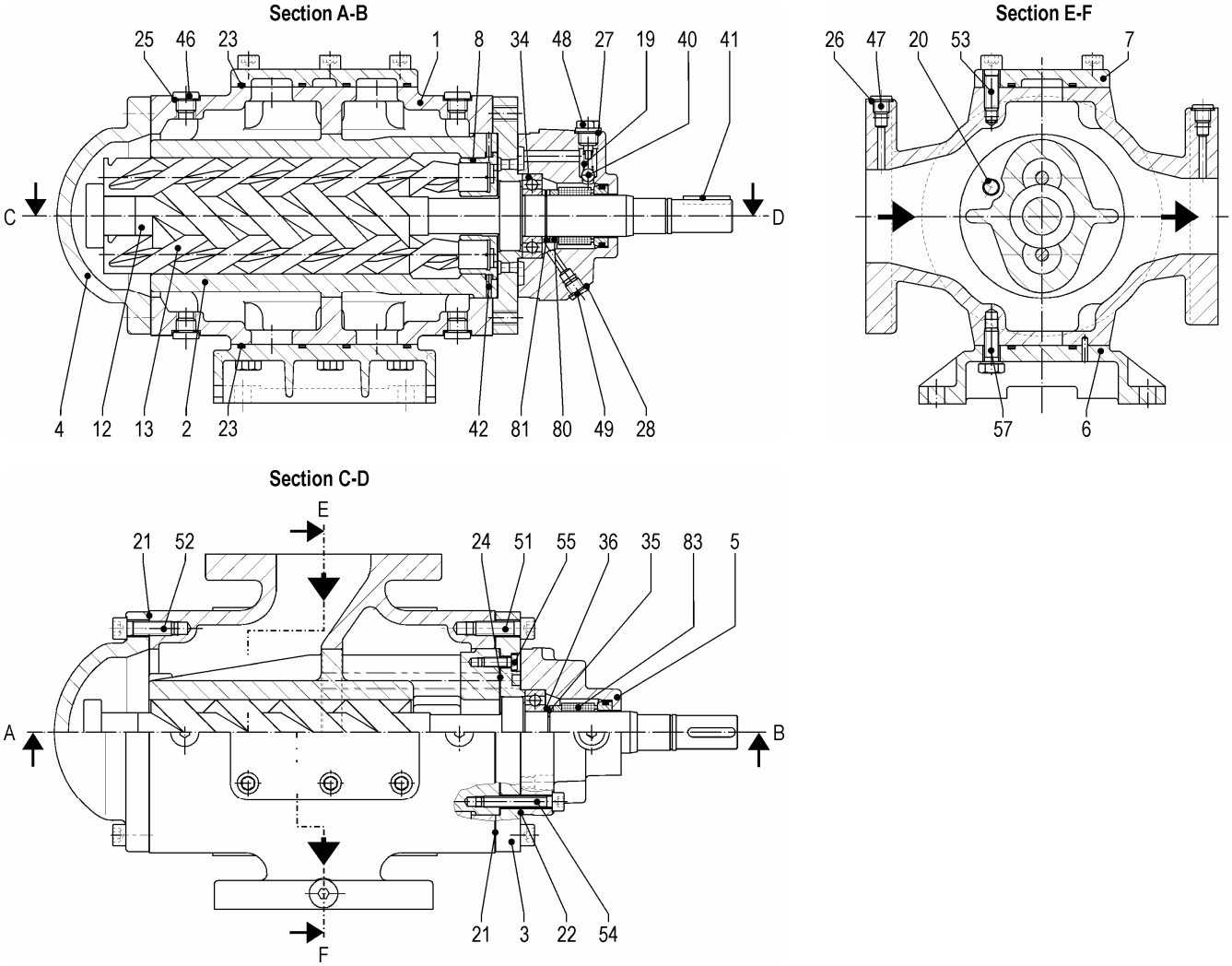
Description	Part No.
Pump casing	1
Casing insert ①	2
Pump cover, drive end	3
Pump cover, non-drive end or round foot (on SNS/SNG)	4
Stuffing box casing/bearing cover	5
Pump foot	6
Cover plate	7
Balance bush ①	8
Seal cover/gland	9
Greasing chamber disc	10
Drive screw ①	12
Idler screw ①	13
Spacer bush	16
Pressure spring	19
Pipe	20
Gasket ①	21
Gasket ①	22
Round seal ring	23
Gasket ①	24
Gasket ①	25

Description	Part No.
Gasket ①	26
Seal ring ①	27
Seal ring ①	28
Groove ball bearing ①	34
Circlip	35
Supporting washer	36
Circlip	37
Ball	40
Key	41
Spring dowel	42
Screw plug	46
Screw plug	47
Stop screw	48
Screw plug	49
Grease nipple	50
Cheese head screw	51
Cheese head screw	52
Cheese head screw	53
Cheese head screw	54
Cheese head screw	55
Hexagon head screw	57

Description	Part No.
Cheese head screw	79
Spacer ring	80
Supporting washer	81
Mechanical seal ①	83
Shaft seal ring ①	107
Support ring	108
Spacer bush	109
Hexagon screw	110
Heating chamber/heating shell	120
Gasket ①	121
Cheese head screw	122
Screw plug	123
Seal ring ①	124
Gasket	125
Heating element	126
Cheese head screw ①	127
Thermostat	129
Seal ring	130

① available as spare part

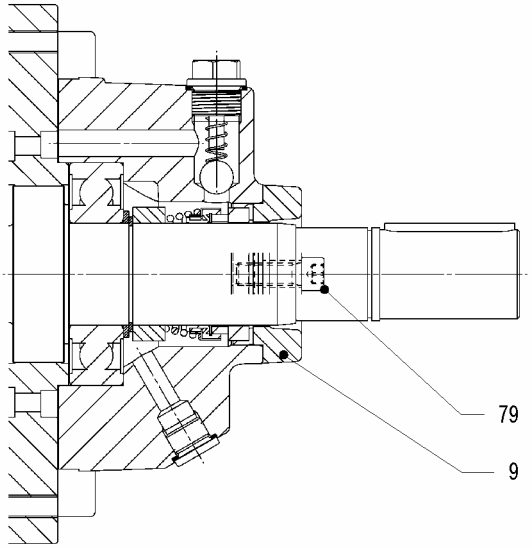
Pump sectional drawing



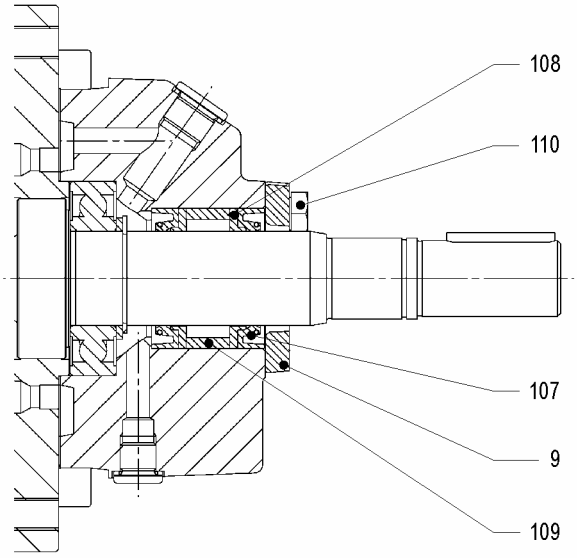
SNH, U version, internal bearing, mechanical seal, size 40-660
Note: Series SNE, SNEF, SNGH, SNF, SNGF, SNS and SNGS are not shown explicitly because they differ only in how they are installed.

.

Sectional drawings, internal bearing

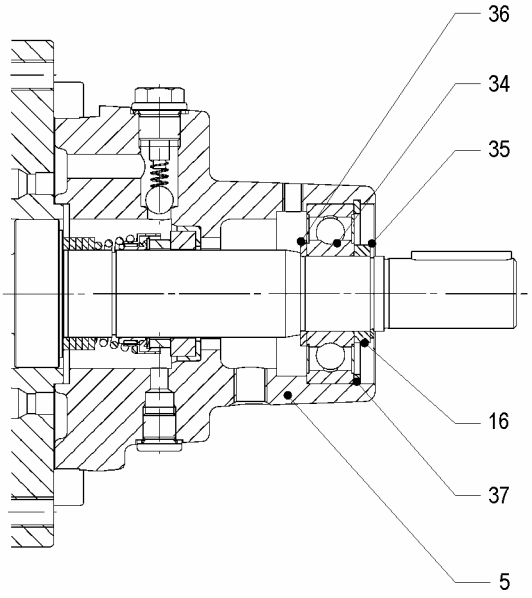


SN..ER..U, internal bearing, mech. seal, sizes 940-3600

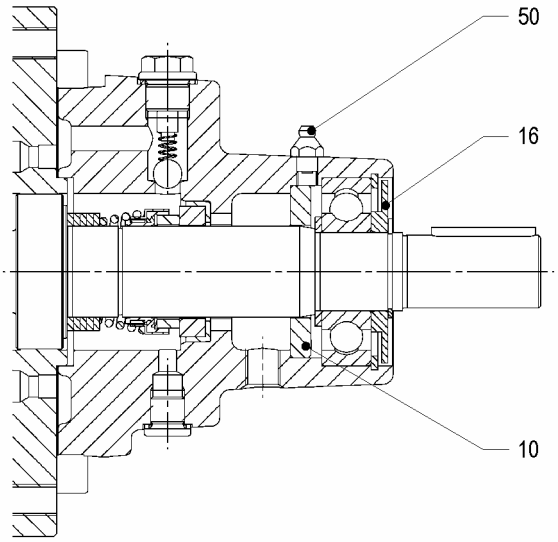


SN..ER..U3, internal bearing, 2 shaft seal rings

Sectional drawing of external bearing

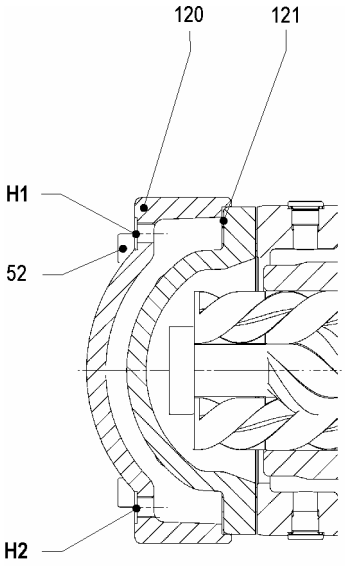


SN..ER..D, external bearing, cannot be relubricated, mech. seal

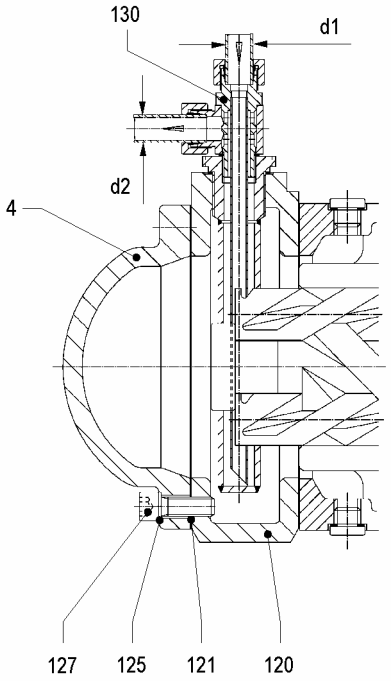


SN..ER..E, external bearing, can be relubricated, mech. seal

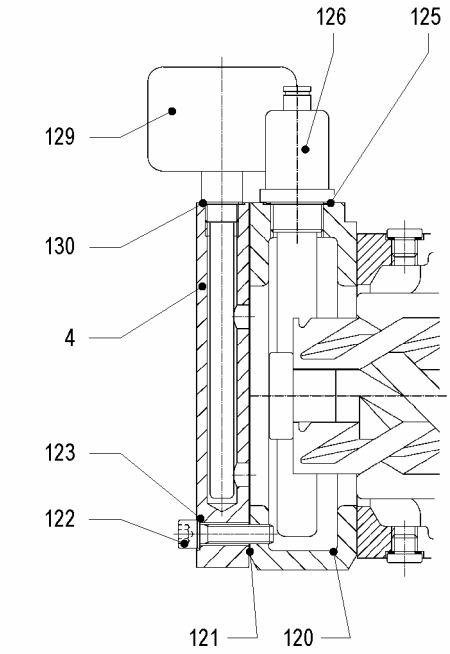
Sectional drawing of heating



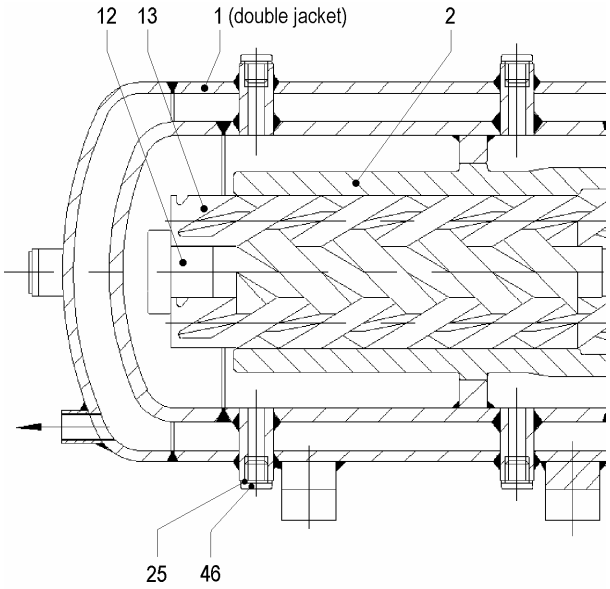
SN..ER.., heating version X (heating shell)



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

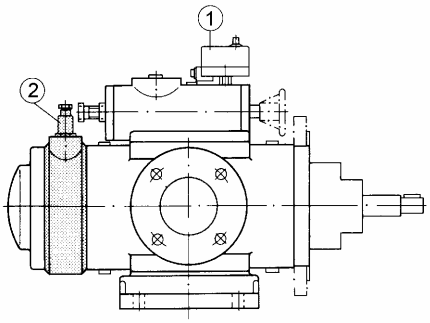
Pump and unit dimensions of all series can be generated and retrieved individually through ALL2CAD.
ALL2CAD is available online at the ALLWEILER service portal at http://service.allweiler.de .

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

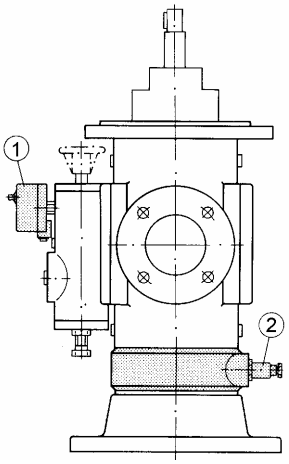
Version E (with 2 heating cartridges, electric)

SNH/SNF 40 to 3600

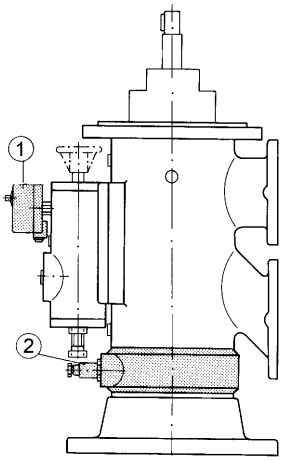


① thermostat (control range 0 up to 150 °C)
② heating elements (230 V, 50 Hz)

SNS 40 to 3600

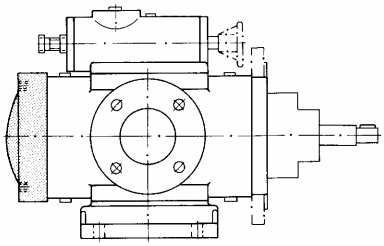


SNGS 40 to 1300



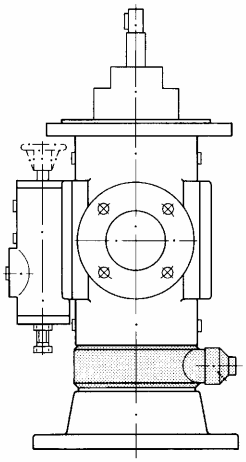
Version X (with heating shell)

SNH/SNF 40 to 3600

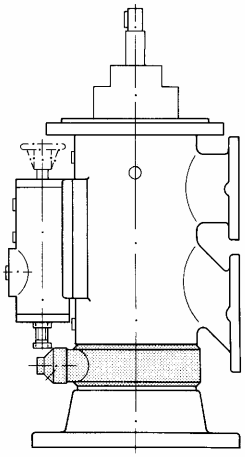


Version P (with 2 heating cartridges, steam/heat carrier)

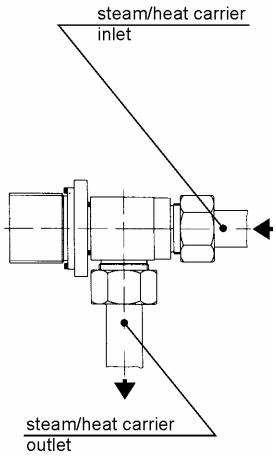
SNS 40 to 3600



SNGS 40 to 1300



Cartridge connection

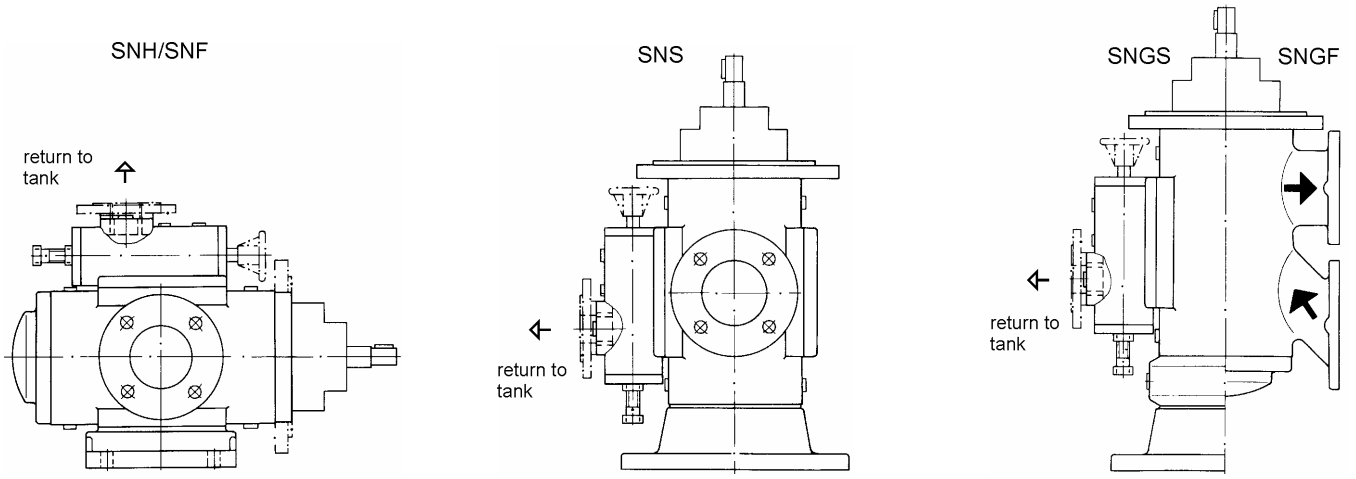


Pump size	Version X (heating shell)	Version P (heating cartridge)	Version E (with heating elements, electric)					
	Connection (Ø in inches)	Connection (Ø in mm)	Heating output [W] (2 heating elements)	Connection (Ø in inches)	Heat-up time of the pump in minutes, for ΔT =			
					25 °C	50 °C	75 °C	100 °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	DS 35②	A B② C D②	Pipe thread G 1
		38-58	DT 35②		
80	200	0-38	DS 35②	A B② C D②	Pipe thread G 1
		38-58	DT 35②		
120	210	0-38	DS 41	A B C D	Pipe thread G 1
	550	0-44	DS 38③		Pipe thread G 1 1/2
		0-98	DVI 38③		
210	210	0-38	DS 41	A B C D	Pipe thread G1
	550	0-44	DS 38		Pipe thread G 1 1/2
		0-98	DVI 38④		
280	900	0-13.5	DS 44	A B C D	PN 16 DIN EN 1092-2 DN65
		13.5-38	DT 44		
		0-98	DV 44	- B - D	
			DVI 44		
			DVS 44		
440	900	0-13.5	DS 44	A B C D	PN 16 DIN EN 1092-2 DN65
		13.5-38	DT 44		
		0-98	DV 44	- B - D	
			DVI 44		
			DVS 44		
660	900	0-13.5	DS 44	A B C D	PN 16 DIN EN 1092-2 DN65
		13.5-38	DT 44		
		0-98	DV 44	- B - D	
			DVI 44		
			DVS 44		
	1800	0-18	DS 47	A B C D	PN 16 DIN EN 1092-2 DN80
		0-98	DV 47	- B - D	
			DVI 47		
940	900	0-13.5	DS 44	A B C D	PN 16 DIN EN 1092-2 DN65
		13.5-38	DT 44		
		0-98	DV 44	- B - D	
			DVI 44		
			DVS 44		
	1800	0-18	DS 47	A B C D	PN 16 DIN EN 1092-2 DN80
		0-98	DV 47	- B - D	
			DVI 47		
1300	2500	0-16	DS 50	A B C D	PN 16 DIN EN 1092-2 DN100
		0-98	DV 50	- B - D	
			DVI 50		
			DVS 50		
1700	2500	0-16	DS 50	A B C D	PN 16 DIN EN 1092-2 DN100
		0-98	DV 50	- B - D	
			DVI 50		
			DVS 50		
2200	2500	0-16	DS 50	A B C D	PN 16 DIN EN 1092-2 DN100
		0-98	DV 50	- B - D	
			DVI 50		
			DVS 50		
2900	3600	0-9	DS 56	A B C D	PN 16 DIN EN 1092-2 DN125
		0-98	DV 56	- B - D	
			DVS 56		
3600	3600	0-9	DS 56	A B C D	PN 16 DIN EN 1092-2 DN125
		0-98	DV 56	- B - D	
			DVS 56		

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

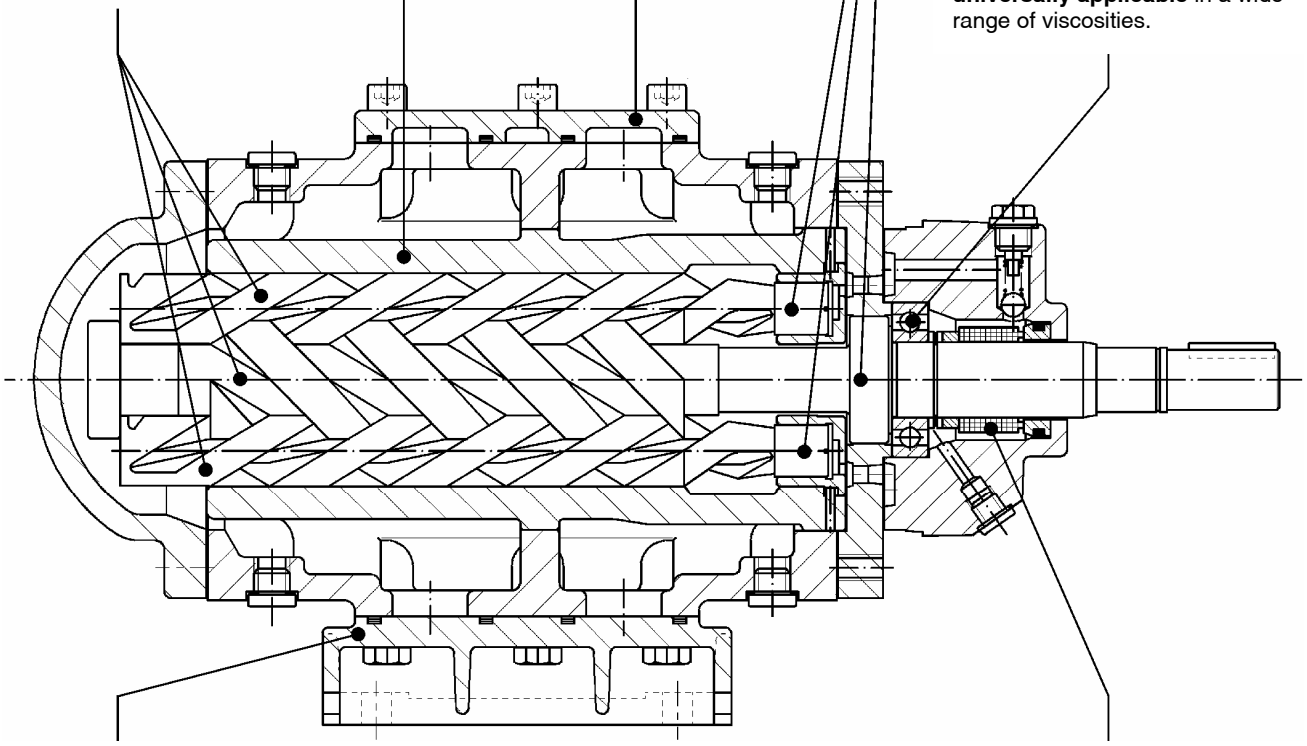
Replacing insert unit **while pump casing is installed** is quick and easy.

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 94/9/EG (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

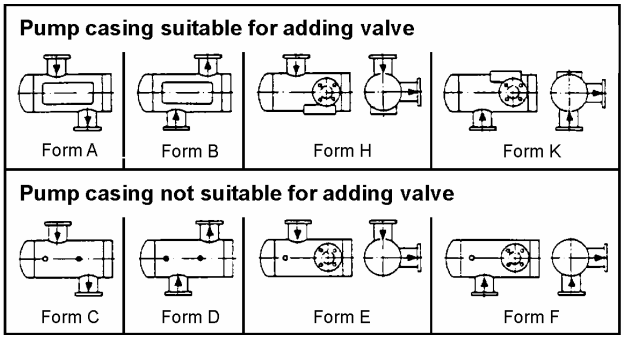
In addition to the versions described above, other application types, materials, shaft seals, bearings, quenches and special spindle versions are available.

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

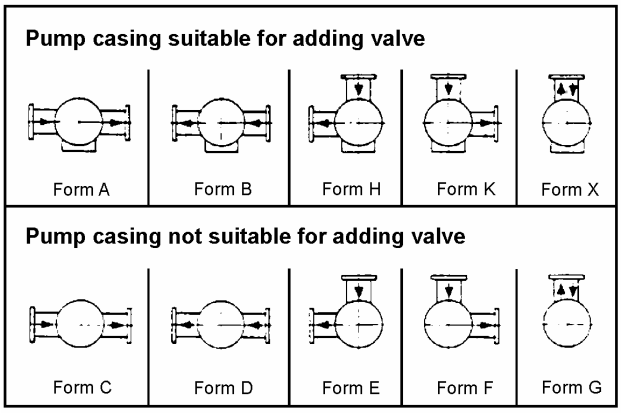
SN series in welded steel version

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 brochure 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 brochure 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 brochure VM 771 for more information.

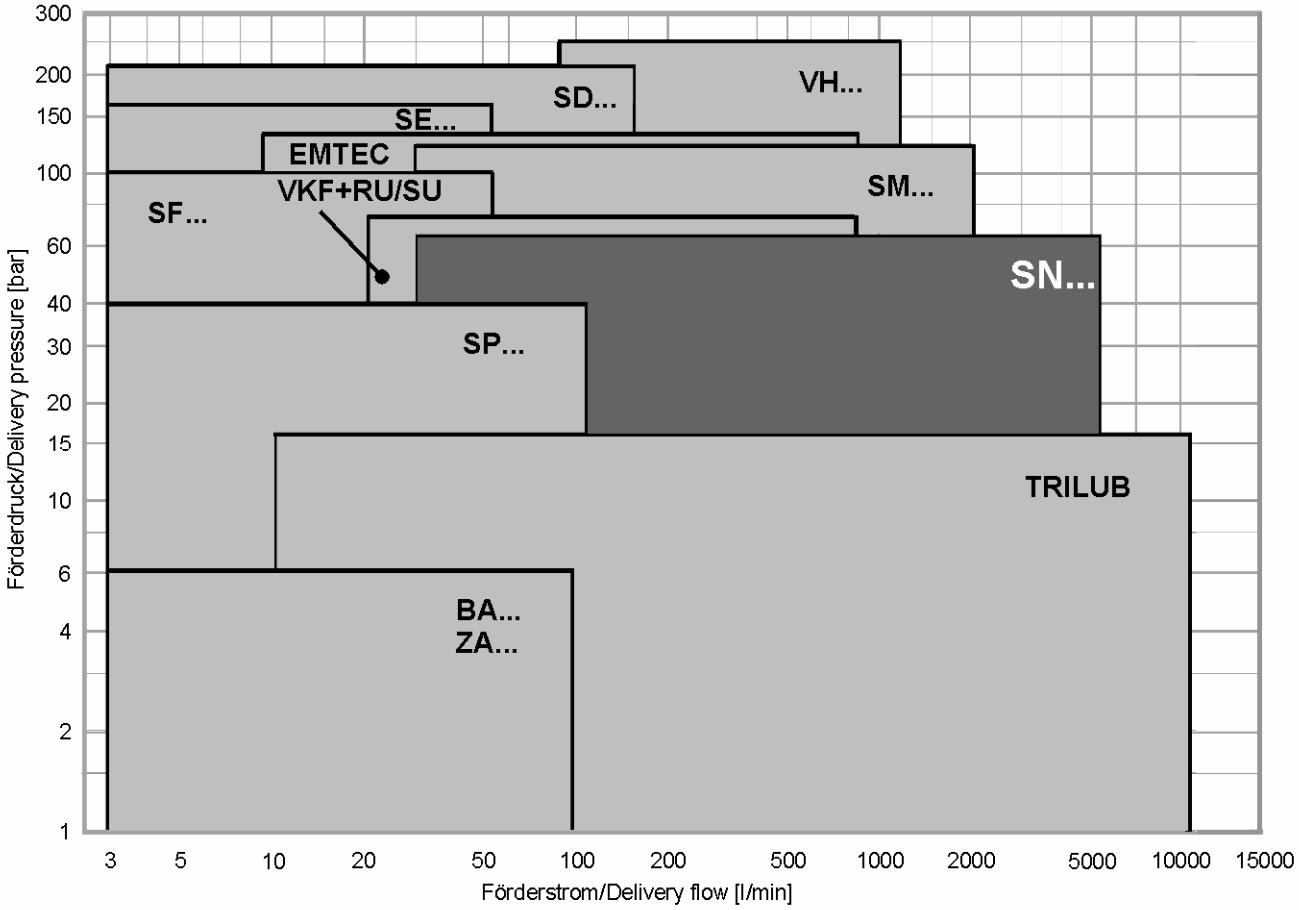
SN series in SN..AR..D4.2 QM-W61 version for pumping isocyanates and polyols

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 mm^2/s.
- Shaft seal rings teflonized, with quench.
- Refer to brochure 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.

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.

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