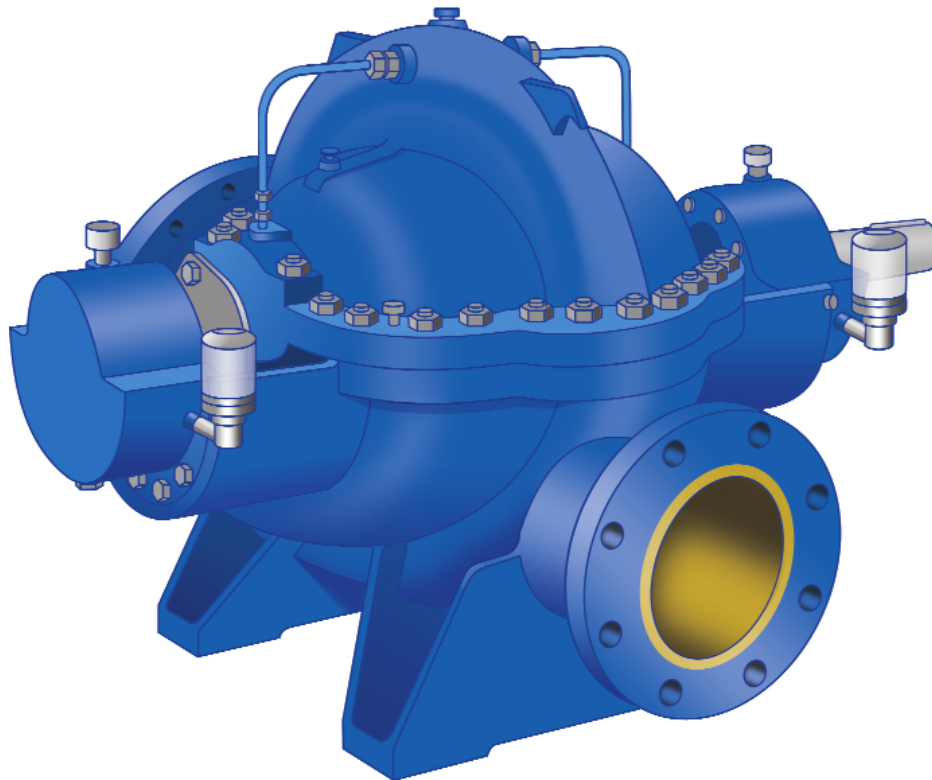


SMN Double-Suction Axially Split Pump



motralec

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX

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Demande de prix / e-mail : service-commercial@motralec.com

www.motralec.com

The **Heart**
of Your
Process

Double-Suction Axially Split Pump Type SMN

Axially Split Casing

- Suction and discharge branches in lower half.
- Provides easy maintenance.
- Complete rotor can be inspected and refurbished without disturbing the main pipework or the driver.

Double Entry Impeller

- Principal axial thrusts are inherently hydraulically balanced.
- Optimum vane geometry provides high efficiency, low NPSH requirement and quiet running over a wide operating range.

Heavy Duty Rotor Bearings

- Designed for long bearing life with assured lubrication.
- Back-to-back angular contact ball thrust bearing.
- Grease or oil lubrication.

Shaft Sealing

- Packed stuffing boxes.
- Mechanical seals are optional.

Heavy Duty Shaft

- Stiff design for hard service conditions.
- Replaceable protection sleeves throughout the waterways
- Dry shaft design.

Replaceable Wearing Rings

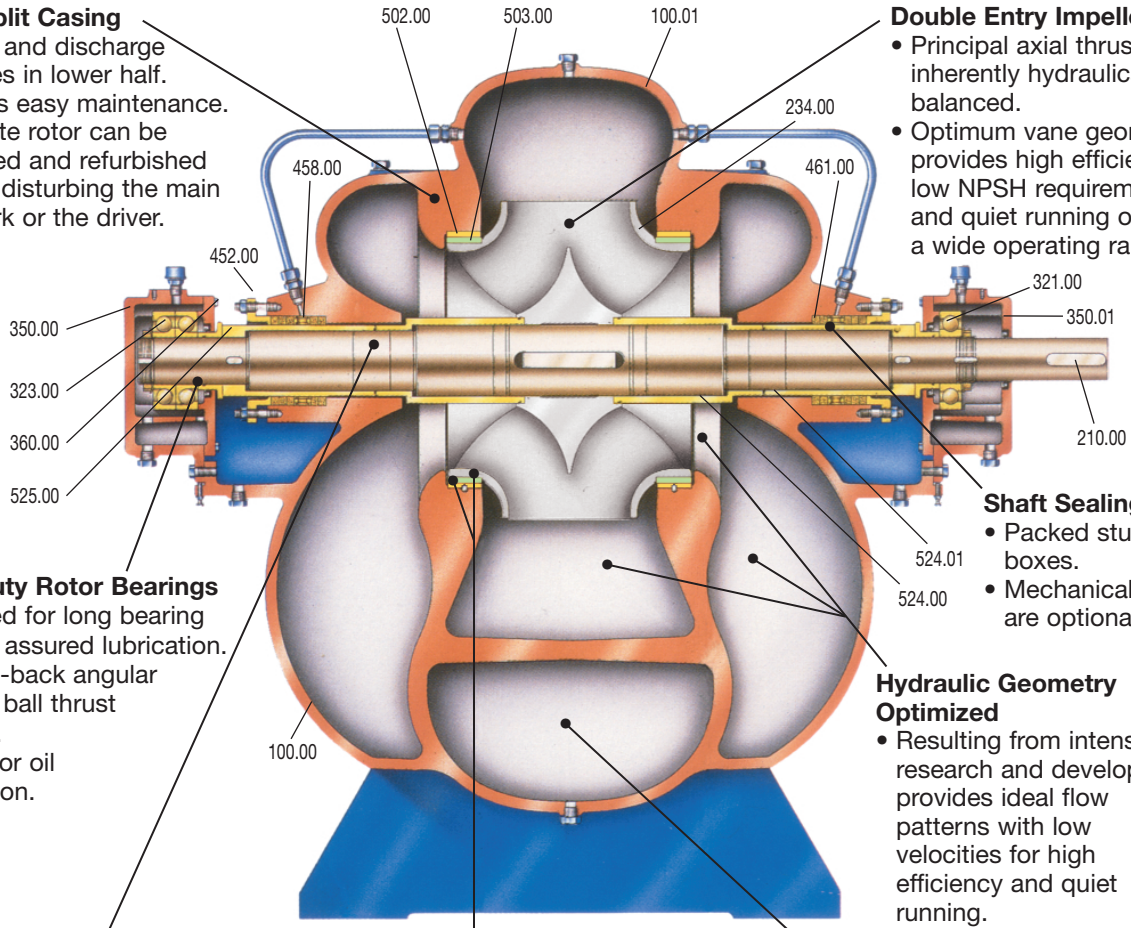
- Casing wear rings are normally provided and optionally impeller wear rings.
- Designed to optimize the hydraulic performance.
- Lower maintenance costs.

Hydraulic Geometry Optimized

- Resulting from intensive research and development provides ideal flow patterns with low velocities for high efficiency and quiet running.

Volute

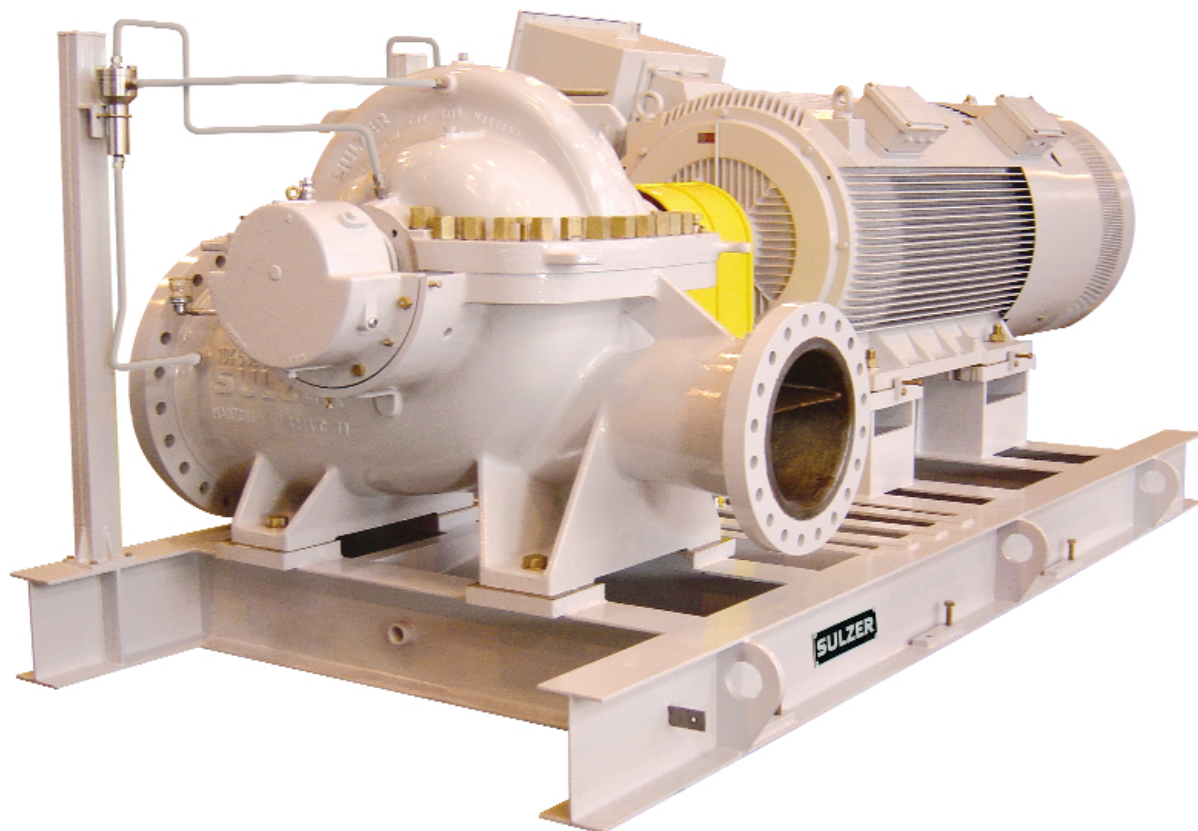
- Single or double volute to all sizes, reducing this way radial thrusts.



Material Class

Part n°	Item	Classe de Materiais				
		312	332	342	352	372
100.00/01	Casing	Nodular cast iron	Nodular cast iron	Nodular cast iron	Nodular cast iron	Nodular cast iron
210.00	Shaft	Carbon steel 4140	Carbon steel 4140	Carbon steel 4140	Carbon steel 4140	Carbon steel 4140
234.00	Double suction impeller	Grey cast iron	Nodular cast iron	Bronze	12% - Chrome steel	Stainless steel
321.00	Radial ball bearing	Chrome steel	Chrome steel	Chrome steel	Chrome steel	Chrome steel
323.00	Axial ball bearing	Chrome steel	Chrome steel	Chrome steel	Chrome steel	Chrome steel
350.00/01	Bearing housing	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron
360.00	Bearing cover	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron
452.00	Gland	Grey cast iron	Grey cast iron	Bronze	Grey cast iron	Stainless steel
458.00	Lantern ring	Bronze	Bronze	Bronze	Bronze	Bronze
461.00	Packing ring	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite	PTFE/Graphite
502.00	Casing wear ring	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron	Grey cast iron
503.00	Impeller wear ring (Optional)	12% - Chrome steel	12% - Chrome steel	12% - Chrome steel	12% - Chrome steel	Duplex iron
524.00	Shaft sleeve	Grey cast iron	Grey cast iron	Bronze	12% - Chrome steel	12% - Chrome steel
524.01	Shaft protection sleeve	Grey cast iron	Grey cast iron	Bronze	12% - Chrome steel	12% - Chrome steel
525.00	Sleeve	Grey cast iron	Grey cast iron	Bronze	12% - Chrome steel	12% - Chrome steel

SMN Technical Characteristics and Applications



The **SMN** series of centrifugal pumps have single stage double entry impellers arranged either horizontally or vertically (SMNV).

Main Applications:

- For water treatment and supply
- In irrigation and drainage systems
- In power stations, heating systems and district heating plants
- In fire fighting
- As marine ballast and cooling water pumps
- Fan pump for pulp and paper industry

SMN pumps can also be used as energy recovery turbines.

Operating Range: (*)

- Capacities to 15000 m³/h
- Heads to 300 m
- Temperatures to 50°C

(*) Equipments are available beyond the above limits under previous consult.

Design Features:

The casing is axially split with the suction and discharge branches located in the lower half, this allows the complete pump rotor with bearings to be removed for maintenance without disturbing the main pipework and valves.

The pump shaft runs in either grease or oil lubricated rolling bearings.

Pump shaft is totally protected (dry shaft design) avoiding this way any contact with the pumped liquid.

The shaft can be reversed to allow the pump to be driven from either side (clockwise and counter clockwise rotation).

Casing wear rings are normally supplied and optionally impeller wear rings.

The shaft protection sleeves fully protect the wear areas.

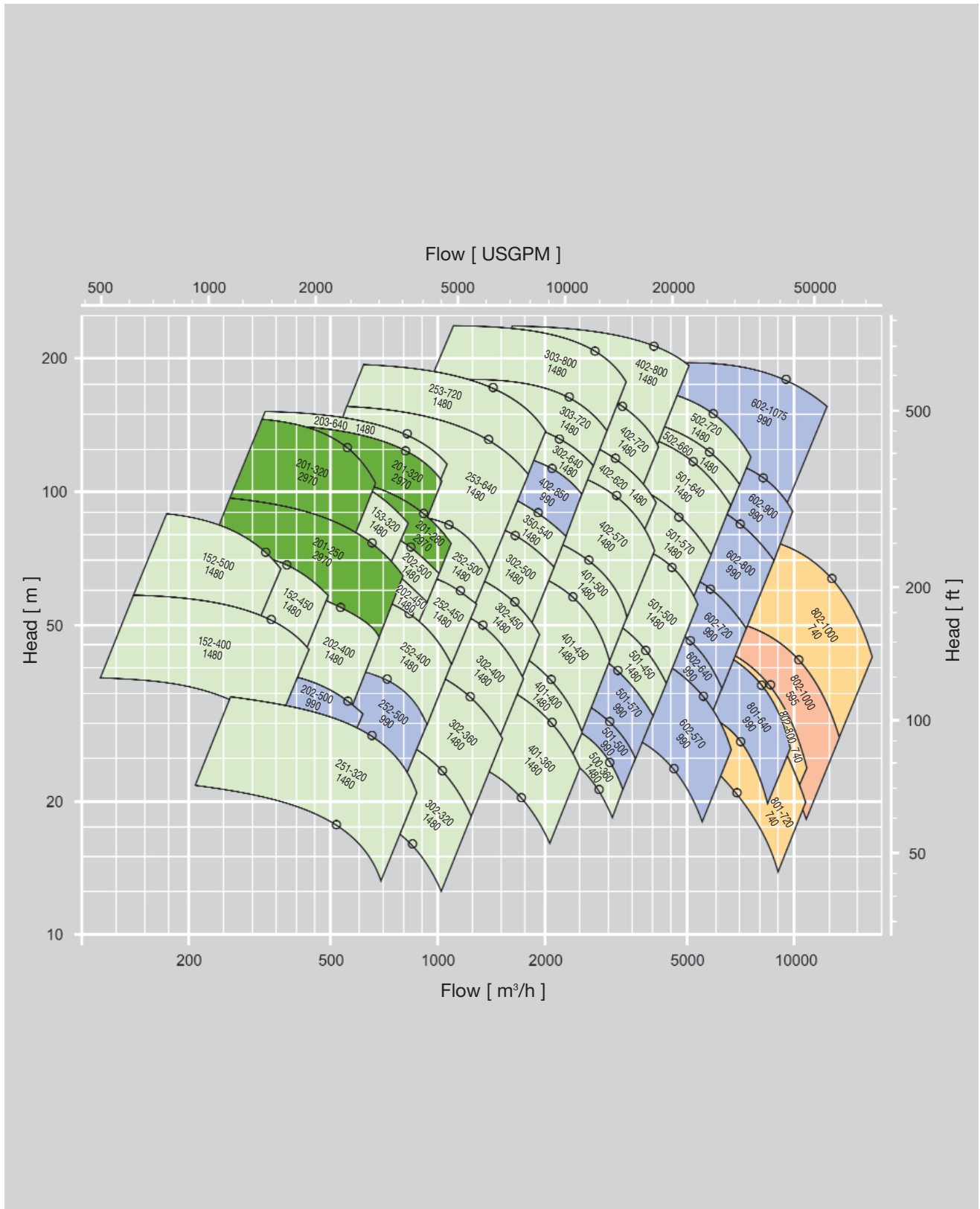
Closed type, double suction impeller hydraulically balanced with steady characteristic curve.

Shaft sealing is performed by packed stuffing boxes or optionally mechanical seals.

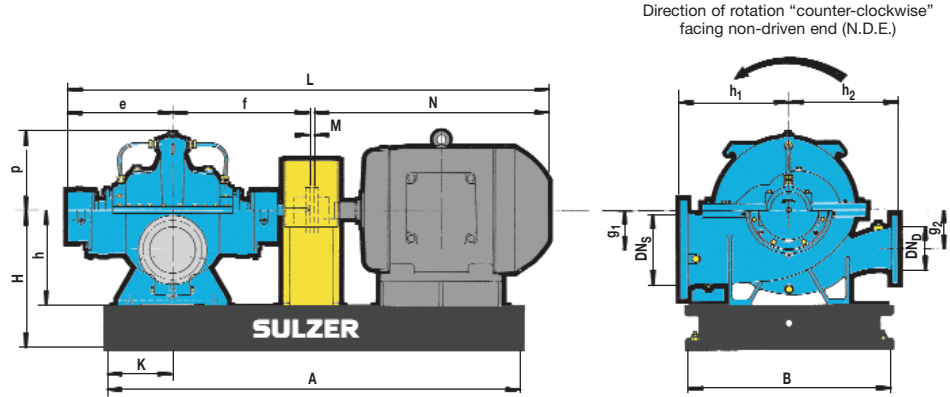
In horizontal arrangement, pump and driver can be mounted on common baseplate or separately.

Vertical arrangement are also available.

Performance Chart (50 Hz)



Main Dimensions

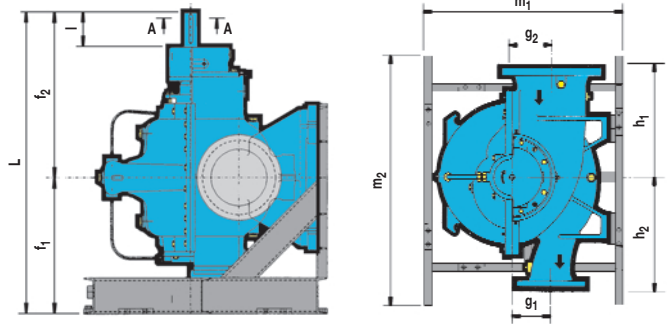


Size	Moment of inertia J (kgm ²)	Branches		Dimensions in mm										E-Motor Frame IEC (IP-54)	Dimensions in mm					Total Weight Pump & Motor (kg)	E-Motor Frame IEC (IP-54)	Dimensions in mm					Total Weight Pump & Motor (kg)
		DN _s	DN _d	e	f	g ₁	g ₂	h	h ₁	h ₂	p	K	M		B	H	A	N	L			B	H	A	N	L	
152-320	0,26	150	250	402	520	175	175	385	375	340	234	345	5	180 M	455	585	1525	664	1591	497	225 S	505	565	1625	847	1774	697
152-400	0,60	150	250	370	451	175	175	375	450	550	262	370	5	225 S	625	555	1665	847	1673	735	280 S	625	555	1765	1038	1864	1145
152-450	0,88	150	250	430	545,5	160	160	390	450	450	300	345	5	280 S	625	570	1825	1038	2018,5	1248	315 S	695	570	1925	1158	2138,5	1838
152-500	1,15	150	250	422	532	190	190	400	450	450	322,5	345	5	280 S	625	580	1825	1038	1997	1295	280 S	625	580	1825	1038	1997	1295
153-570	3,24	150	300	485	605	200	200	465	535	490	363	365	5	315 S	695	700	2025	1158	2253	2097	355 L	820	700	2325	1565	2660	2577
201-250	0,20	200	250	380	467	190	190	400	350	400	210	370	5	160 M	475	580	1425	598	1450	468	225 S	505	580	1625	847	1699	714
201-280	0,22	200	250	426	545	196	196	421	400	400	245	370	5	160 M	475	605	1565	598	1574	637	225 S	525	605	1765	847	1823	883
201-320	0,40	200	250	432	540	200	200	425	400	450	242	370	5	200 L	475	605	1625	767	1744	688	280 S	625	605	1925	1038	2015	1223
202-400	0,80	200	300	407	517	225	225	450	450	500	281	370	5	250 S	625	630	1725	923	1852	880	315 S	695	630	1925	1158	2087	1805
202-450	1,06	200	300	436	576	225	225	450	500	570	314	370	5	315 C	695	685	2425	1950	2967	2379	355 D	820	685	2725	2180	3197	3619
202-500	1,70	200	300	450	560	225	225	500	625	500	351	395	5	315 S	695	735	2025	1158	2173	2045	355 B	820	735	2525	1880	2895	3060
203-640	4,50	200	350	506	622	225	225	525	600	550	408	395	5	315 B	720	765	2325	1535	2668	2337	400 C	910	815	2825	2100	3233	5037
251-320	0,50	250	300	427	537	240	240	475	450	505	256	395	5	225 S	595	655	1725	847	1816	784	280 S	625	655	1925	1038	2007	1194
252-400	0,96	250	350	432	550	215,5	215,5	525	480	450	312	370	5	280 S	645	705	1925	1038	2025	1386	355 B	820	760	2425	1880	2867	2991
252-450	1,53	250	350	481	621	225	225	520	550	500	337	420	5	315 B	715	755	2255	1535	2642	2242	355 a	820	755	2555	1780	2887	3092
252-500	2,00	250	350	471	611	255	255	520	550	650	342,5	370	5	315 B	795	755	2225	1535	2622	2174	400 A	910	755	2625	2100	3187	4974
253-640	4,42	250	400	552	776	325	325	650	650	600	412	420	5	280 S	885	840	2125	1038	2371	1899	400 D	930	940	3025	2100	3433	5354
253-720	8,10	250	400	610,5	782,5	250	250	600	650	700	461	470	5	315 D	800	840	2755	1950	3348	3256	400 A	910	890	2855	2100	3498	5606
302-320	0,70	300	400	460	572	300	300	600	580	350	310	420	5	250 S	595	785	1825	923	1960	1031	315 S	715	785	2025	1158	2195	1956
302-360	1,00	300	400	490	631	280	280	570	500	500	311	420	5	280 S	645	760	2025	1038	2164	1498	315 D	715	810	2525	1950	3076	2603
302-400	1,50	300	400	502	635	300	300	600	600	450	338	420	5	315 S	715	840	2125	1158	2300	2114	355 B	840	840	2625	1880	3022	3129
302-450	2,20	300	400	523	640	280	280	600	600	600	347	420	5	225 S	785	790	1855	847	2015	1281	315 B	800	840	2355	1535	2703	2346
302-500	3,20	300	400	535	656	280	280	570	600	700	370	420	5	280 S	785	760	2055	1038	2234	1941	315 D	800	810	2555	1950	3146	3046
302-640	7,00	300	500	624	812	330	330	700	700	800	437	470	5	315 B	900	940	2555	1535	2976	2787	450 D	1040	990	3355	2800	4241	7987
303-720	10,50	300	500	714	922	328	328	710	800	700	494	470	5	355 B	1000	950	2955	1880	3521	4526	400 D	1020	1000	3255	2100	3741	6376
303-800	16,60	300	500	685	892	350	350	700	800	1100	518	470	5	355 B	1000	940	2855	1880	3462	4300	450 D	1040	990	3455	2800	4382	8550
350-540	0,40	350	500	716	925	425	325	825	900	650	420	570	5	280 S	1050	1065	2455	1038	2684	2706	315 D	1050	1065	2955	1950	3596	3811
401-360	1,10	400	500	550,5	675,5	300	300	650	550	500	340	470	10	315 B	715	885	2460	1535	2771	2273	315 B	715	885	2460	1535	2771	2273
401-400	1,80	400	500	529	670	350	350	700	700	600	390	470	10	315 B	795	935	2360	1535	2744	2410	355 B	840	935	2660	1880	3089	3360
401-450	2,70	400	500	600	740	350	350	700	650	700	388	445	10	315 B	850	940	2430	1535	2885	2658	400 D	930	990	3030	2100	3450	5458
401-500	3,70	400	500	657,5	827,5	350	350	730	700	700	414	520	10	315 B	900	970	2660	1535	3030	2947	450 B	1040	1020	3160	2800	4295	7547
402-570	6,00	400	600	674	864	425	425	850	800	800	443	520	10	355 D	905	1095	3160	2180	3728	4864	400 A	980	1145	2960	2100	3648	6114
402-620	7,78	400	600	740	937	350	350	775	800	800	466	620	10	315 B	1005	1015	2860	1535	3222	3858	400 D	1020	1070	3460	2100	3787	6658
402-720	14,50	400	600	751	961	350	350	775	800	800	505	620	10	355 B	1005	1015	3160	1880	3602	4715	450 D	1040	1070	3660	2800	4522	8965
402-800	21,50	400	600	861	1071	400	400	875	850	800	563	520	10	400 D	1025	1170	3510	2100	4042	7279	560 B	1440	1230	4210	3680	5622	12.029
402-850	23,80	400	600	756	991	400	400	825	900	1050	561	520	10	400 D	1075	1120	3360	2100	3857	7788	500 C	1410	1180	3960	3420	5177	10.738
500-360	1,24	500	500	666	805	295	295	680	708	590	415	520	10	280 S	795	915	2260	1038	2519	2214	315 B	795	915	2560	1535	3016	2869
501-450	4,50	500	600	662	802	450	450	825	800	800	497	520	10	315 C	1100	1065	2760	1950	3424	3786	355 C	1100	1065	3060	2080	3554	4776
501-500	6,00	500	600	700	865	410	410	800	800	760	460	570	10	355 B	1105	1040	2960	1880	3455	4680	400 B	1120	1095	3060	2100	3675	6230
501-570	9,50	500	600	803	1010	425	425	850	850	800	484	620	10	355 C	1075	1145	3360	2080	3903	5653	560 b	1440	1205	4160	3680	5503	11.903
501-640	14,00	500	600	799	1006	410	410	825	850	1060	504	620	10	400 B	1175	1120	3260	2100	3915	6683	500 B	1410	1120	4060	3420	5235	9933
502-660	16,00	500	700	864	1096	455	455	925	950	950	542	670	10	400 B	1130	1225	3700	2100	4070	8459	500 B	1460	1285	4400	3420	5390	12.783
502-720	22,00	500	700	821,5	1000	450	450	1025	900	800	561	670	10	450 D	1130	1325	3760	2800	4631,5	9883	560 b	1490	1385	4260	3680	5511,5	12.233
502-800	31,00	500	700	841,5	1141,5	425	425	950	900	900	608	620	10	450 D	1425	1305	3860	2800	4793	10.696	560 b	1440	1305	4360	3680	5673	13.046
602-570	14,00	600	800	822	996	525	525	1030	900	900	548	620	10	355 B	1225	1325	3160	1880	3708	5427	400 C	1225	1325	3460	2100	3928	7177
602-640	20,00	600	800	850	1020	525	525	1050	900	900	578	620	10	400 C	1230	1350	3460	2100	3980	7902	450 D	1430	1410	3760	2800	4680	10.402
602-720	30,00	600	800	920	1100	541,5	541,5	1100	1145	1110	648	720	10	400 C	1275	1395	3610	2100	4130	8632	560 B	1490	1455	4410	3680	5710	13.482
602-800	28,75	600	800	931,5	1194,5	525	525	1100	1050	1150	641	670	10	500 D	1530	1460	4460	3580	5716	13.163	630 C	1670	1460	4860	4030	6166	18.263
602-900	61,																										

Vertical Option SMNV

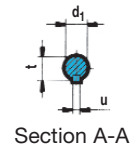
Vertical position assembly

The **SMN** series can also be manufactured on vertical assembly, reducing the installation space and keeping the positions of suction and discharge branches on line.

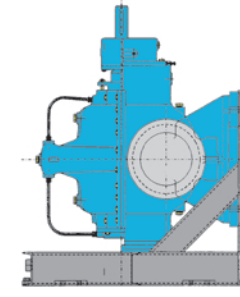


Dimensions

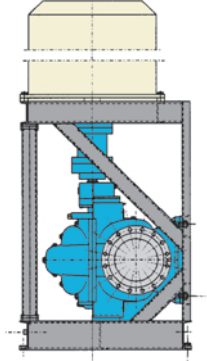
Size	Branches		Dimensions in mm											Shaft Dimensions in mm			
	DN _s	DN _d	f ₁	f ₂	f ₂ *	g ₁	g ₂	h ₁	h ₂	m ₁	m ₂	L	L*	d ₁	l	t	u
152-320	150	250	583	512	582	175	175	375	340	685	1000	1095	1165	45	118	48,5	14
152-400	150	250	530	465	530	175	175	450	550	800	1180	995	1060	38	80	41	10
152-450	150	250	570	545,5	615	160	160	450	450	820	1050	1115,5	1185	45	116	48,5	14
152-500	150	250	565	560,5	630	190	190	450	450	840	1100	1125,5	1195	45	110	48,5	14
153-570	150	300	605	605	693	200	200	535	490	935	1170	1210	1298	70	120	74,5	20
201-250	200	250	540	477	542	190	190	350	400	770	1015	1017	1082	38	85	41	10
201-280	200	250	550	545	614,5	196	196	400	400	820	1050	1095	1164,5	45	119	48,5	14
201-320	200	250	550	540	640	200	200	400	450	825	1000	1090	1190	50	115	53,5	14
202-400	200	300	545	517,5	587	225	225	450	500	930	1200	1062,5	1132	45	110	48,5	14
202-450	200	300	565	575,5	620,5	225	225	500	570	920	1170	1140,5	1185,5	60	140	64	18
202-500	200	300	580	559	659	225	225	625	500	970	1170	1139	1239	55	110	59	16
203-640	200	350	677,5	631,5	721,5	225	225	600	550	1109	1336	1309	1399	75	115	79,5	20
251-320	250	300	568	537,5	607	240	240	450	505	955	1200	1105,5	1175	45	110	48,5	14
252-400	250	350	575	542,5	612	212,5	212,5	480	450	925	1120	1117,5	1187	48	118	51,5	14
252-450	250	350	665	621,5	666,5	225	225	550	500	1104	1336	1286,5	1331,5	60	140	64	18
252-500	250	350	600	613	658	255	255	550	650	990	1330	1213	1258	60	141	64	18
253-640	250	400	702	776,5	861,5	325	325	650	600	1234	1526	1478,5	1563,5	85	224	90	22
253-720	250	400	760,5	782,5	872,5	250	250	650	700	1184	1526	1543	1633	80	172	85	22
302-320	300	400	640	572	641,5	300	300	580	350	1050	1200	1212	1281,5	45	120	48,5	14
302-360	300	400	622	641	741	280	280	500	500	1040	1170	1263	1363	50	139	53,5	14
302-400	300	400	680	630	675	300	300	600	450	1100	1250	1310	1355	60	139	64	18
302-450	300	400	710	644	744	280	280	600	600	1184	1526	1354	1454	55	109	59	16
302-500	300	400	760	656	744	280	280	600	700	1100	1550	1416	1504	70	121	74,5	20
302-640	300	500	760	812	897	330	330	700	800	1300	1500	1572	1657	85	188	90	25
303-720	300	500	890	922	1047	328	328	800	700	1360	1750	1812	1937	105	207	111	28
303-800	300	500	790	892	1017	350	350	800	1100	1400	2150	1682	1807	105	207	111	28
350-540	350	500	830	925	1010	325	425	900	650	1400	1800	1755	1840	85	214	90	22
401-360	400	500	735,5	685,5	785,5	300	300	550	500	1234	1376	1421	1521	55	125	59	16
401-400	400	500	720	670	715	350	350	700	600	1240	1550	1390	1435	60	141	64	18
401-450	400	500	775	720	808	350	350	650	700	1284	1526	1495	1583	70	140	74,5	20
401-500	400	500	800	827,5	917,5	350	350	700	700	1350	1630	1627,5	1717,5	80	170	85	22
402-570	400	600	830	864	949	425	425	800	800	1500	1850	1694	1779	85	190	90	22
402-620	400	600	900	937	1062	350	350	800	800	1450	1850	1837	1962	100	210	106	28
402-720	400	600	855	961	1061	350	350	800	800	1360	1726	1816	1916	110	197,5	116	28
402-800	400	600	890	996	1096	400	400	850	800	1459	1726	1886	1986	125	210	132	32
402-850	400	600	890	991	1091	400	400	900	1050	1550	2200	1881	1981	125	235	132	32
500-360	500	500	825	780	825	295	295	708	590	1264	1526	1605	1650	60	139	64	18
501-450	500	600	837	802	890	450	450	800	800	1409	1826	1639	1727	70	140	74,5	20
501-500	500	600	845	865	950	410	410	800	760	1384	1726	1710	1795	85	170	90	22
501-570	500	600	985	1060	1185	425	425	850	800	1795	1800	2045	2170	105	210	111	28
501-640	500	600	900	1006	1106	410	410	850	1060	1409	1876	1906	2006	125	210	132	32
502-660	500	700	1030	1096	1196	455	455	950	950	1560	2000	2126	2226	125	229	132	32
502-720	500	700	985	1030	1130	450	450	900	800	1465	1810	2015	2115	125	181,5	132	32



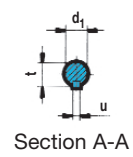
Standard Arrangement Types



Separately mounted motor (valid for all sizes)

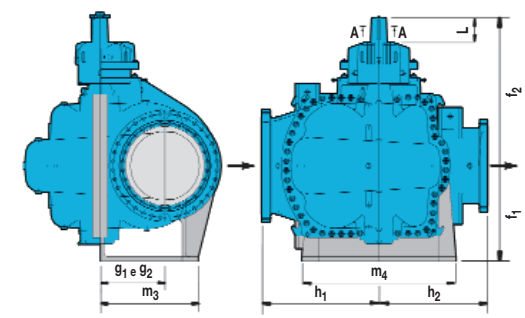


Directly mounted motor (valid for sizes 152-320 up to 502-720)



Size	Branches		Dimensions in mm											Shaft Dimensions in mm			
	DN _s	DN _d	f ₁	f ₂	f ₂ *	g ₁	g ₂	h ₁	h ₂	m ₃	m ₄	L	L*	d ₁	l	t	u
502-800	500	700	710	1141,5	1292	425	425	900	900	850	1500	1851,5	2001,5	140	300	148	36
602-570	600	800	800	996	1086	525	525	900	900	850	1300	1796	1886	80	179	85	22
602-640	600	800	820	1020	1105	525	525	900	900	850	1300	1840	1925	85	175	90	22
602-720	600	800	830	1100	1225	541,5	541,5	1145	1110	850	1400	1930	2055	105	180	111	28
602-800	600	800	850	1194,5	1345	525	525	1050	1150	850	1400	2044,5	2194,5	140	263	148	36
602-900	600	800	840	1286	1466	500	500	1100	1300	850	1400	2126	2316	180	300	190	45
602-1075	600	800	Under request														
801-640	800	900	948	1237	1362	575	575	1100	1000	1000	1450	2185	2310	100	210	106	28
801-720	800	900	950	1260	1360	575	575	1050	1000	1000	1450	2210	2310	125	183	132	32
802-800	800	1000	1025	1345	1495	625	625	1100	1300	1100	1600	2370	2520	140	210	148	36
802-1000	800	1000	1100	1561	1740	750	750	1350	1250	1130	1700	2561	2751	180	310	190	40

Note: - *Dimensions suitable for pumps with oily lubricating bearings.



Standard pumps from size 502-800 on

SULZER

motralec

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