



Applications

- Clean and contaminated liquid.
- Fibrous and non-fibrous slurries (In pulp sugar mill & palm oil mill)
- Large solids containing liquids (In municipal waste and fertilizer plant)
- Gas containing liquids and self-priming application.
- Petrochemical and Chemical applications
- Desalination

Reliability

The reliability of your pumping system depends on

- a) The product design,
- b) Right hydraulic selection,
- c) Manufacturing and delivery process,
- d) Aftermarket service and support.

We make standardized products for all normal applications and specialty products for applications with particular requirements.

The latest manufacturing technology together with strict quality control procedures assure high levels of efficiency and performance over a wide range of process conditions.

Frequently, ISO-SJ pumps are famous for their innovative, sturdy design and being the leader in bringing new innovations to the market. To our customers, the combination of these factors delivers exceptional pumping performance and creates high lifecycle value.



Market Segments



Pulp & Paper



Sugar Industry



Food Processing



Chemicals Process



Pharmaceuticals



Distilleries



Power & Energy



Oil & Gas downstream



Waste Water



Expanded ISO-SJ Process Pumps – Features and Benefits

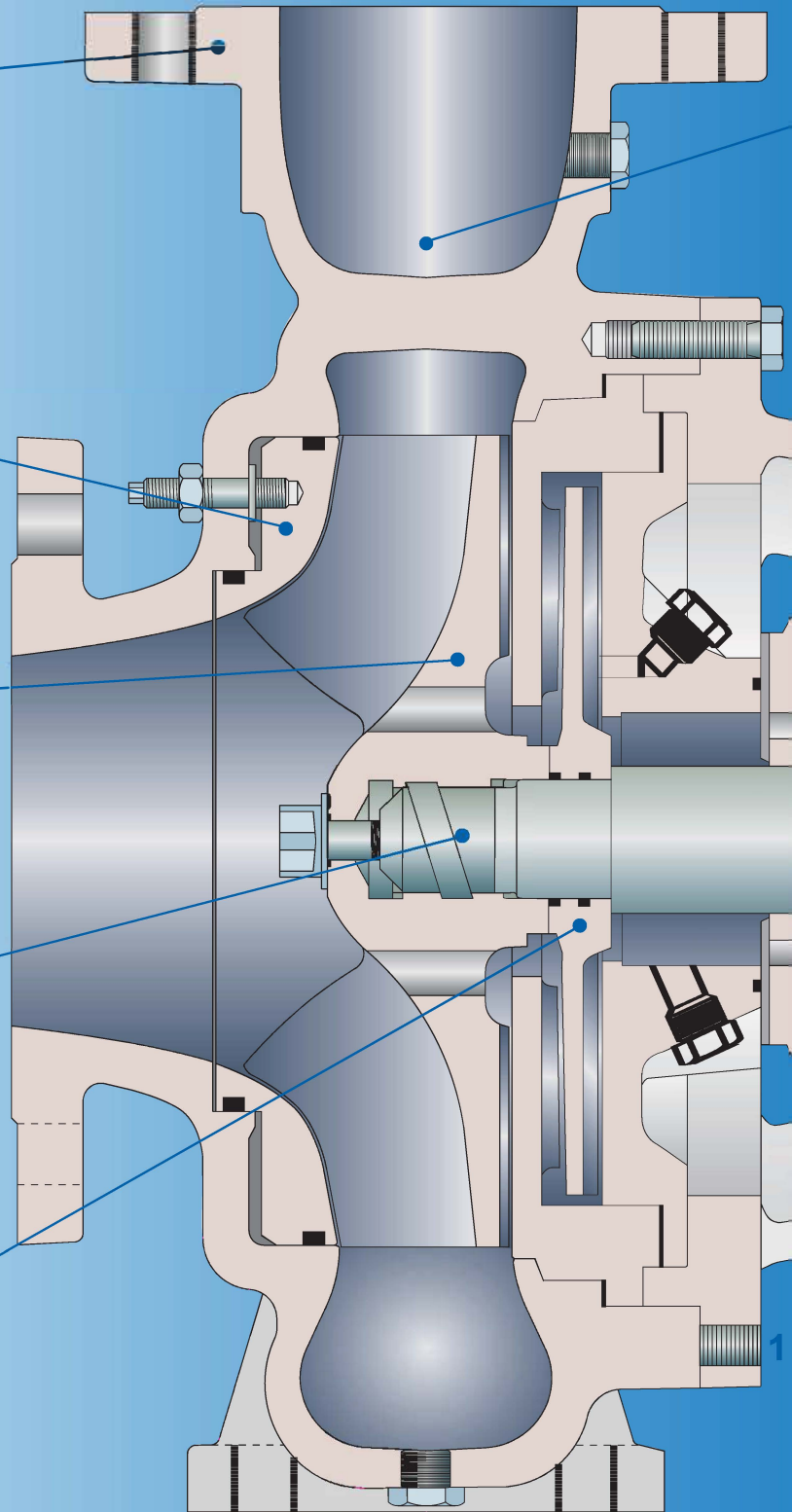
The self-venting, top centerline discharge casing prevents air-lock in top of the casing.

The sideplate is adjusted externally to maintain a constant impeller clearance and continuous high efficiency.

Hydraulics
Designed for pumping clean, abrasive or corrosive liquids especially stocks of various kinds.

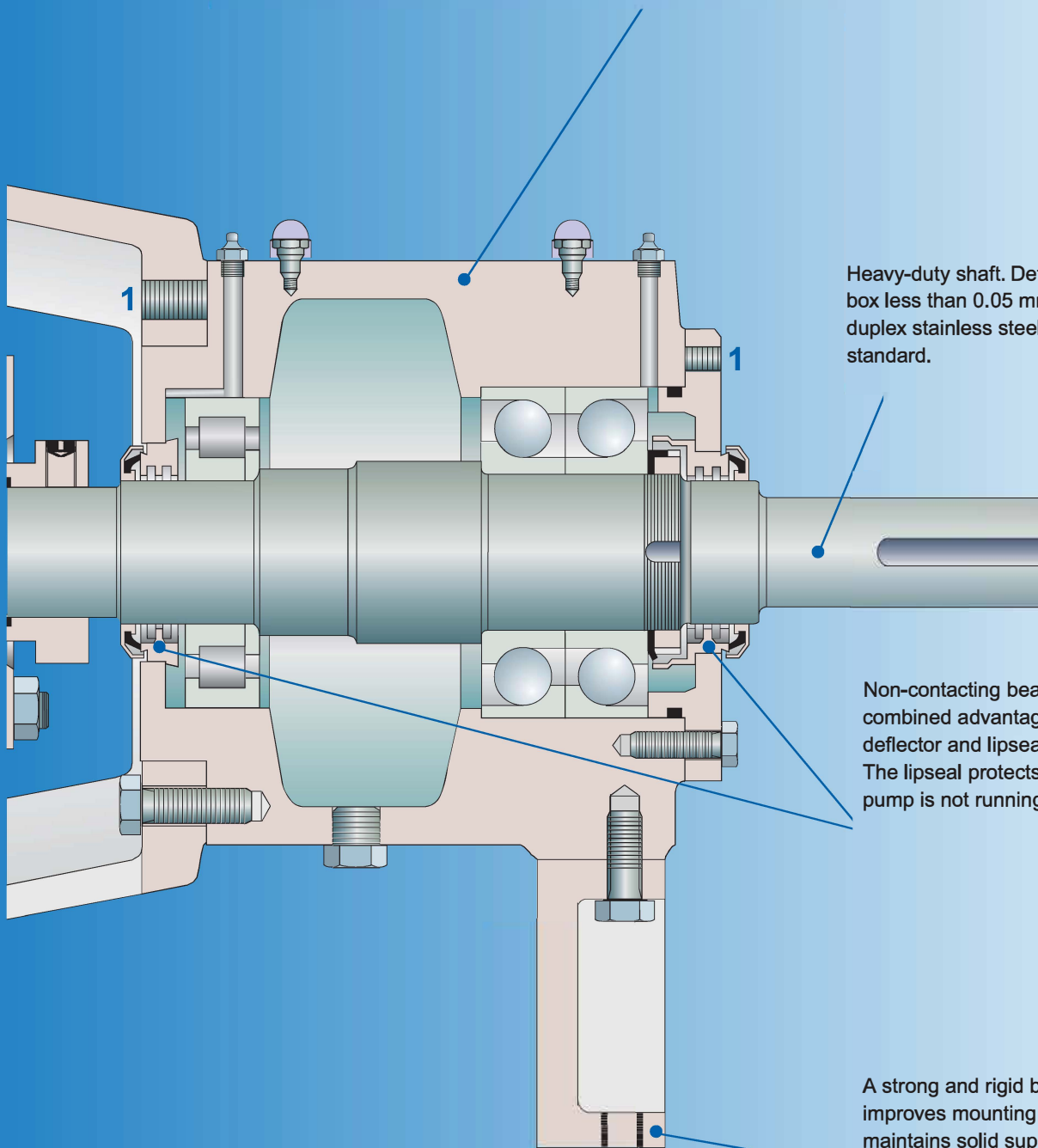
SCREW-KEY impeller mounting provides strong, reliable power transmission. It is self-locking and reverse rotation safe. SCREW-KEY impeller. It is not sensitive to the axial loads generated during pump operation.

A wide selection of shaft seals is available to meet the needs of each specific application. Dynamic seal, mechanical seals and packing provides seal options to fit all requirements.



A double volute casing in larger pumps reduces radial forces and shaft deflection.

Simplified heavy-duty bearing unit design ensures reliability.
Grease lubrication: temperature of pumped liquid max. 120° C.
Oil lubrication: temperature of pumped liquid max. 180° C.



Heavy-duty shaft. Deflection at stuffing box less than 0.05 mm. High strength duplex stainless steel shaft material as standard.

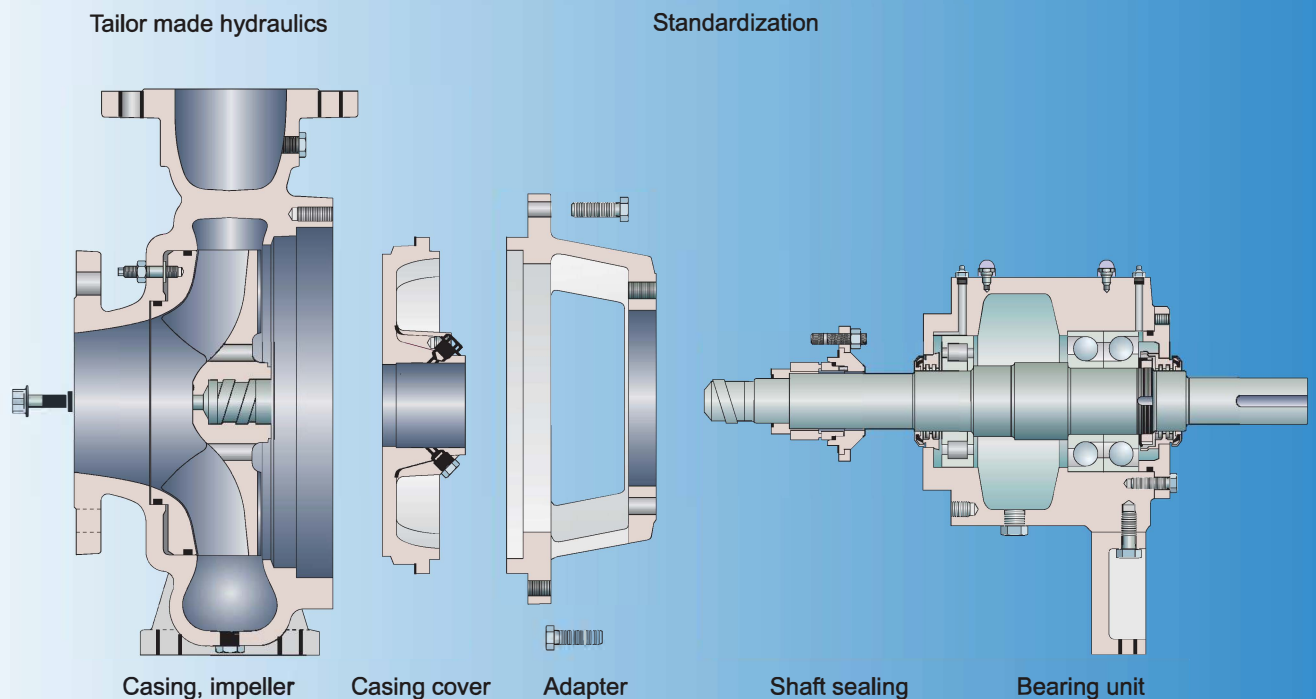
Non-contacting bearing protection for the combined advantages of labyrinth ring, deflector and lipseal. The lipseal protects the bearing when the pump is not running.

A strong and rigid bearing support foot improves mounting stability and maintains solid support.

(1) Jackscrews for simple disassembly.

Standardization

All ISO-SJ pumps have the same basic design using common components. The hydraulics (casing and impeller) are tailor made according to the pumped liquid and pumping application. Casing cover, adapter, sealing parts, bearing unit, coupling and coupling guard as well as the common baseplate are highly standardized. Only 5 bearing units for the whole SJ series are needed to cover the pumping applications in most industries. High modular interchangeability gives lower spare inventory costs.



Hydraulic Design

The ISO-SJ product line offers a wide range of hydraulic sizes to guarantee minimum power consumption. Pump hydraulics, casings and impellers are designed to optimize fluid handling capabilities. Paper stocks are pumped like water. Particles in sludges do not accumulate in the pump; slurries are effectively channelled so as not to cause internal wear.

The back vanes of the impeller keep the area between the impeller and the casing cover clean, and reduce axial loading on the bearings.

Balance holes in the impeller are used to stabilize the pressure in the seal chamber. The balance holes can be plugged to optimize the shaft seal environment, should the application demand it.

The impeller hub design ensures smooth liquid flow and helps to avoid spinning and plugging.

Impellers Tailored for Different Liquids



Closed impeller

is used for pumping clean liquids or liquids containing some impurities.



Open impeller

is designed for liquids containing solid particles, abrasive liquids or paper stock up to 8 % consistency.



Special open impeller

is suitable for liquids containing bigger solid particles and long fibers, abrasive liquids or paper stock up to 8 % consistency.

Shaft Sealing

Dynamic seal

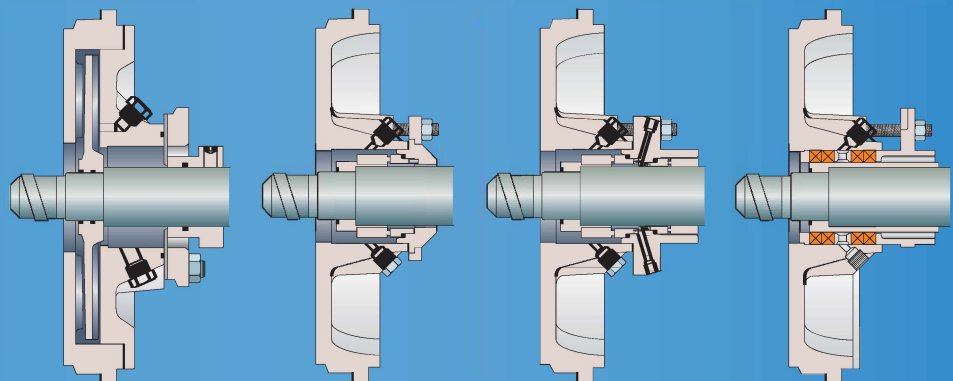
Dynamic Seal is specially designed for fibrous liquids such as paper stock and other difficult but commonly pumped liquids. The Dynamic Seal requires no external sealing water. It is essentially maintenance-free and offers outstanding reliability.

Mechanical seals

Various mechanical seal configurations are available. A single mechanical seal is used for many applications with no circulation liquid, flushing with internal/external circulation liquid or with grease is available. For extremely demanding liquids and application, double mechanical seals can be selected. Sealing liquid from an external source is required.

Gland packing

Gland packing with external flushing prevents the pumped liquid from penetrating into the seal housing. The pressurised flushing liquid causes it to flow into the pumped liquid. Alternatively the external flushing liquid can have a separate outlet connection.



Dynamic seal

Single mechanical seal

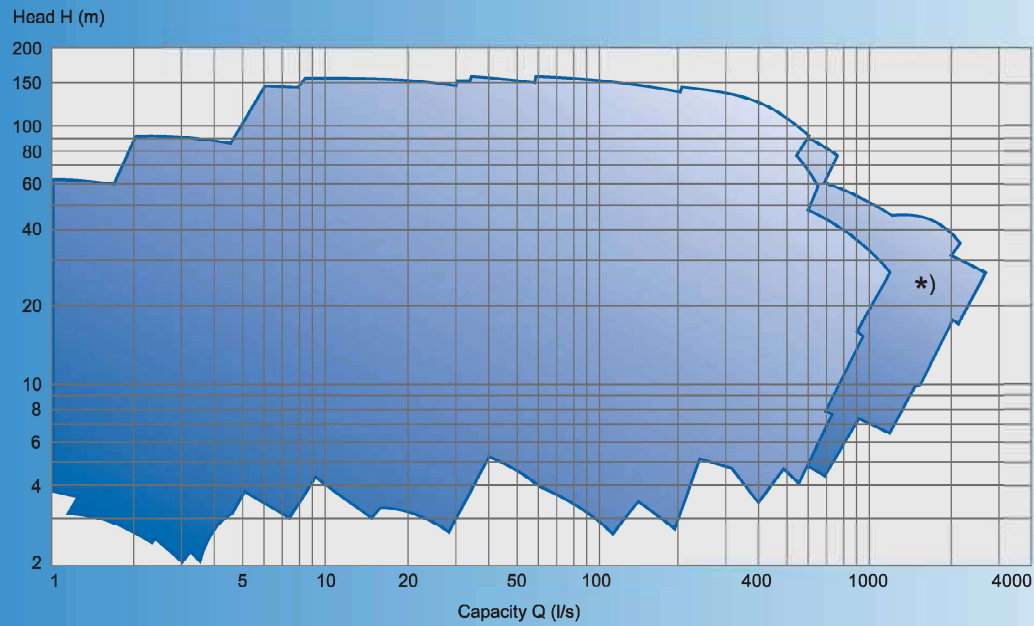
Double mechanical seal

Gland packing

Wide Hydraulic Coverage

ISO-SJ Performance

Head up to 160 m.
Temperature max. 180° C
Capacity up to 1200 l/s
Operating frequencies 50 Hz
Pressure up to 1.6 MPa,
depending on material and size



*) Pumps within this range
(bearing unit 6)

Standard Materials Combination

Material mechanical properties

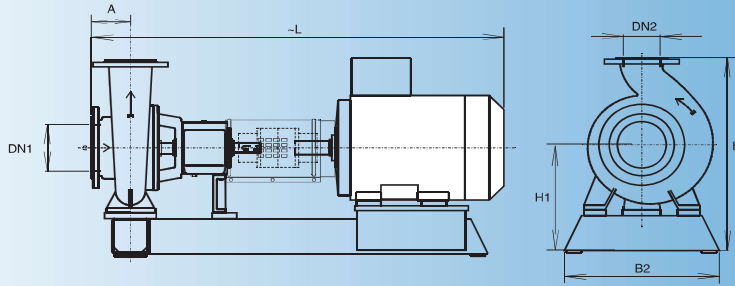
Common Name	ASTM	Mechanical properties			
		Tensile	Yield	Elong %	Hardness
Cast iron	A278 CL200	29			170-220
CD6MN	A890-3A	95	65	25	180-260
2205	A890-4A	90	60	25	180-260
5A	A890-5A	100	75	18	180-260
CD4MCuN	A890-1B	100	70	16	160-200
Ductile iron	A395	60	40	18	160
329SS	AISI329	87-116	58	18	180-260
316SS	A743 CF-8M	70	30	30	150-190
317SS	A743 CG-8M	75	35	25	150-190
Alloy 20	A743-CN-7M	62	25	35	130-170
654 SMO*	"A240,480,358"	109	62	40	190-220

Material chemical properties

Common name	Chemical analysis									
	Cr	Ni	Mo	Cu	Si	Mn	C	N	PRE	ASTM
Cast iron					1.7-2.4	0.4-0.09	3.2-3.7		NA	A278 CL200
CD6MN	24.0-27.0	4.0-6.0	1.75-2.5		0.04	1	0.06	0.15-0.25	35.60	A890-3A
2205	21.0-23.5	4.5-6.5	2.5-3.5	1.0 max	0.02	1.5	0.03	0.1-0.3	35.10	A890-4A
5A	24.0-26.0	6.0-8.0	4.0-5.0		1.0	1.5	0.03	0.1-0.3	43.00	A890-5A
CD4MCuN	24.5-26.5	4.6-6.0	1.75-2.25	2.75-3.25	1.0	1.0	0.4	0.15	35.30	A890-1B
Ductile iron					2.0-2.8	0.2-0.7	3.1-3.7		NA	A395
329SS	24.0-27.0	4.5-7.0	2.5-3.0		1.0				34.08	AISI329
316SS	18.0-21.0	9.0-12.0	2.0-3.0		2.0		0.08		27.50	A743 CF-8M
317SS	18.0-21.0	9.0-13.0	3.0-4.0		1.5		0.08		30.90	A743 CG-8M
Alloy 20	19.0-21.0	27.5-30.5	2.0-3.0	3.0-4.0	1.0	1.7	0.07		30.00	A743 CN-7M
654 SMO*	24.0-25.0	21.0-23.0	"7.0-8.0"	0.30-0.60	0.5	2.0-4.0	0.02	0.45-0.55	56.1	A240.480,358

*AVESTA 654 SMO is a trademark owned by Outokumpu Stainless I.

Main Dimensions



ISO-SJ Series

Dimensions EN 22858:1993
(ISO 2858:2858:1975)
(up to size 44-200)

Design EN ISO 5199:2002

Stuffing box ISO 3069

Flange drilling Several flange drilling options
according to valid standards.

Size	DN1	DN2	B2 ¹⁾	H ¹⁾	L ¹⁾	A	H1	Weight kg ²⁾
11-32	50	32	500	480	1240	80	300	125
11-40	65	40	500	480	1260	100	300	125
11-50	80	50	630	540	1330	100	340	160
21-65	100	65	630	640	1580	100	415	230
21-80	125	80	630	665	1600	125	415	240
22-32	50	32	630	620	1490	100	395	230
22-40	65	40	630	670	1710	100	445	250
22-50	80	50	630	640	1600	125	415	235
22-65	100	65	720	730	1820	125	480	275
22-80	125	80	720	760	1820	125	480	280
23-40	65	40	630	740	1700	125	460	280
23-50	80	50	720	800	2020	125	520	350
31-100	125	100	730	835	2290	140	555	420
31-125	150	125	730	910	2290	140	555	430
31-150	200	150	630	840	1670	160	465	340
32-65	100	65	730	835	2270	125	555	420
32-80	125	80	730	870	2270	125	555	410
32-100	125	100	730	915	2400	140	600	480
32-125	150	125	730	955	2400	140	600	500
33-100	125	100	720	820	1780	140	465	370
33-125	150	125	720	900	1860	140	500	400
41-200	250	200	730	980	2100	200	530	510
41-300	300	300	730	1175	2150	225	615	630
42-150	200	150	730	930	2100	160	530	460
42-200	250	200	730	980	2100	180	530	500
43-250	300	250	830	1175	2600	225	615	660
43-300	350	300	880	1365	2700	250	735	870
44-150	200	150	830	1005	2350	160	555	570
44-200	250	200	880	1175	2650	180	675	740
51-250	300	250	880	1295	2850	200	735	840
51-300	350	300	1160	1440	2900	250	770	1060
52-350	400	350	880	1645	2900	280	845	1190
52-400	400	400	1160	1770	2900	280	920	1420
53-100	200	100	880	1185	2700	180	685	740
53-150	250	150	880	1185	2800	180	685	780
53-200	250	200	1160	1330	2800	180	770	1000
53-250	300	250	1160	1400	2850	200	770	1060
53-300	350	300	1160	1590	3100	250	920	1110
54-400	500	400	1160	1850	3000	355	1000	1600
54-500	500	500	1160	2000	3000	355	1000	1780
55-100	200	100	1160	1330	2850	250	770	1130
55-200	300	200	1160	1415	2820	200	785	1250
55-250	300	250	1160	1495	2850	225	785	1330
55-300	400	300	1160	1645	2870	250	845	1410

¹⁾ Max. dimensions for largest IEC-motor required in standard operation

²⁾ With largest steel baseplate and coupling but without motor.

NOTE! Dimensions not to be used for construction.