ABS

Scanpump series FV

Cantilever Sump Pumps

Highest reliability: can run dry and can handle liquids containing solids.

- ☐ No bearings in the liquid
- ☐ No shaft seal
- ☐ Clogless

Cost-Effective Cantilever Pumps

Cantilever Design means High Reliability

Conventionally sump pumps have bearings and shaft seal in the pumped liquid – often the cause of breakdowns. Scanpump FV pumps have the bearings above the mounting plate – clear at all times of the sump liquid – and the shaft seal is replaced by a restricted annular volume around the shaft sleeve.

When properly installed, a Cantilever pump will operate for many years without maintenance or repair shut-downs. This is the basis for cost-effective pumping.

Clogless

Vortex impellers are used, permitting easy passage of large solids through the pumps without risk of blockage.

Low Power Consumption

Efficiencies of the FV pumps are higher than for other vortex pumps, due to the new impeller design. The result is lower operating costs.

Maintenance = Lubrication only

The only maintenance needed is bearing lubrication. Pump casings, impellers, bearings and impeller fittings are part of the Scanpump Modular System. Stocks of replacement parts are therefore minimized.

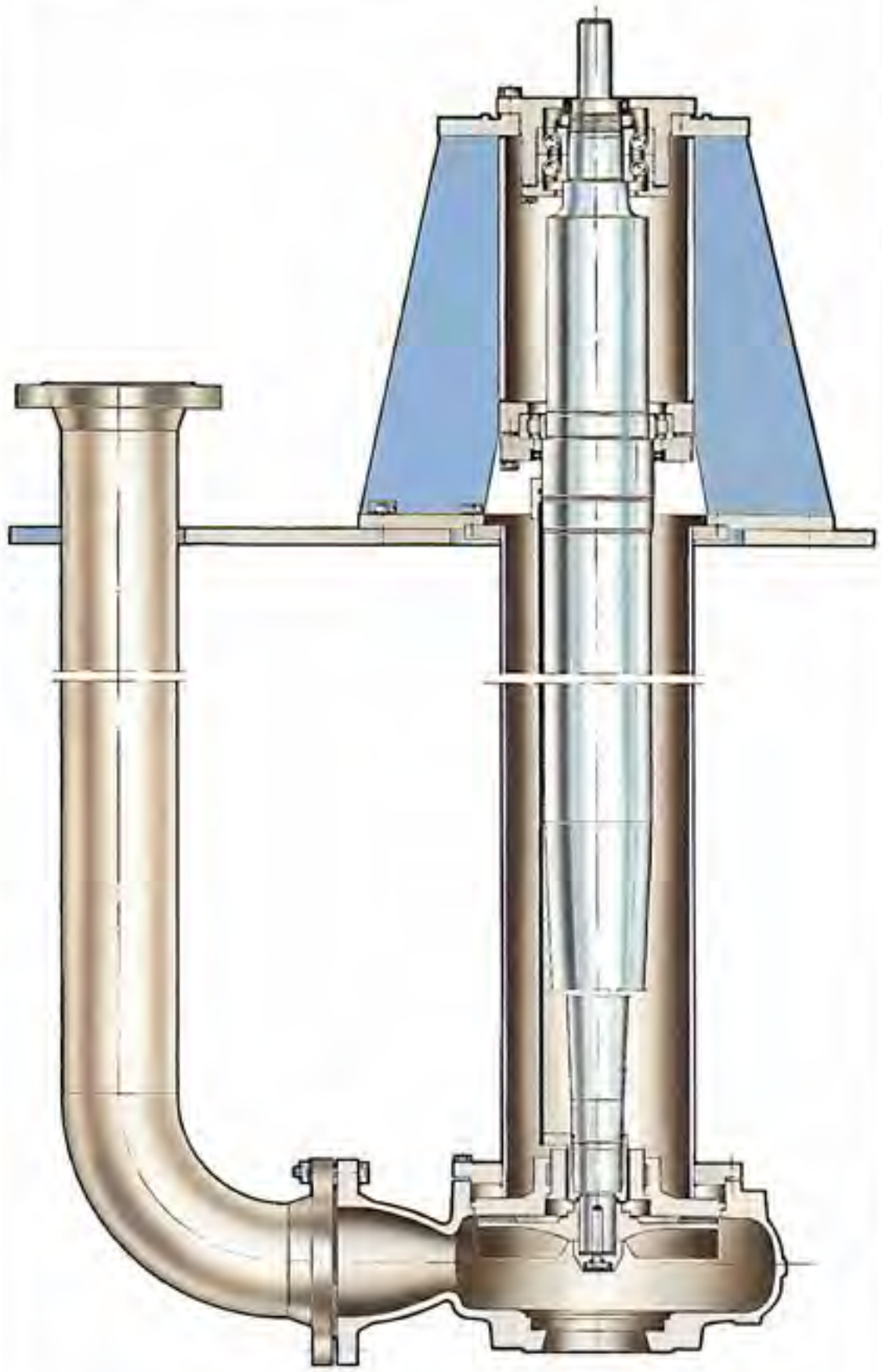
Wide range of Applications

Hot and waste liquids of all kinds. Environmentally harmful liquids. Sludges, slurries and liquids containing large or long solids.

For Highly Aggressive Liquids

The pumps are available in corrosion resistant alloys and the shaft is then protected by a sealed sleeve over its entire length.

All bearings are above the liquid level.



The left side of the figure shows the version with a fully protected shaft.

Design

These pumps fulfill the applicable quality requirements in ISO 5199.

Pump Casing
Casings and casing covers are the same as used in Series FB – our horizontal clogless pumps.

The pump casing is fixed to the support tube, which is suspended from the bearing bracket, the latter being supported by the mounting plate.

The vortex impeller ensures a clear flowpath through the casing for solids.

No shaft seal is required behind the impeller, but leakage along the shaft at this position is limited by a "throttling" volume between the shaft sleeve and a bush fitted in the casing cover.

Impeller
As with the casings and covers, the vortex impellers are those used in FB-Series pumps. They are of semi-open design, eliminating all clogging risks, and have backvanes to reduce axial thrust.

Shaft and Bearings
There are three bearings in the rigid bearing arrangement – above the mounting plate. Because none of the bearings are in the liquid and there is no shaft seal, the primary causes of operational failures in submerged cantilever pumps have been eliminated.

The bearing assembly contains a pair of opposed angular contact ball bearings and a roller bearing. Grease lubrication is used and the bearings are protected by an effective sealing arrangement. B10 bearing life exceeds 40,000 hours – equivalent to 5 years continuous service – calculated for the extreme recommended duty, i.e. liquid S.G. 1.8 and pump speed 1800 r/min.

Technical data

Capacity	3–600 m³//h
Head	5–65 m
Temperature	Max. 220°C
Flange	ISO 7005 PN 10
Lubrication	Grease
Setting depth	Max. 2* m

*) Can be increased by 1 m by fitting an extension pipe to the inlet.

Construction Materials

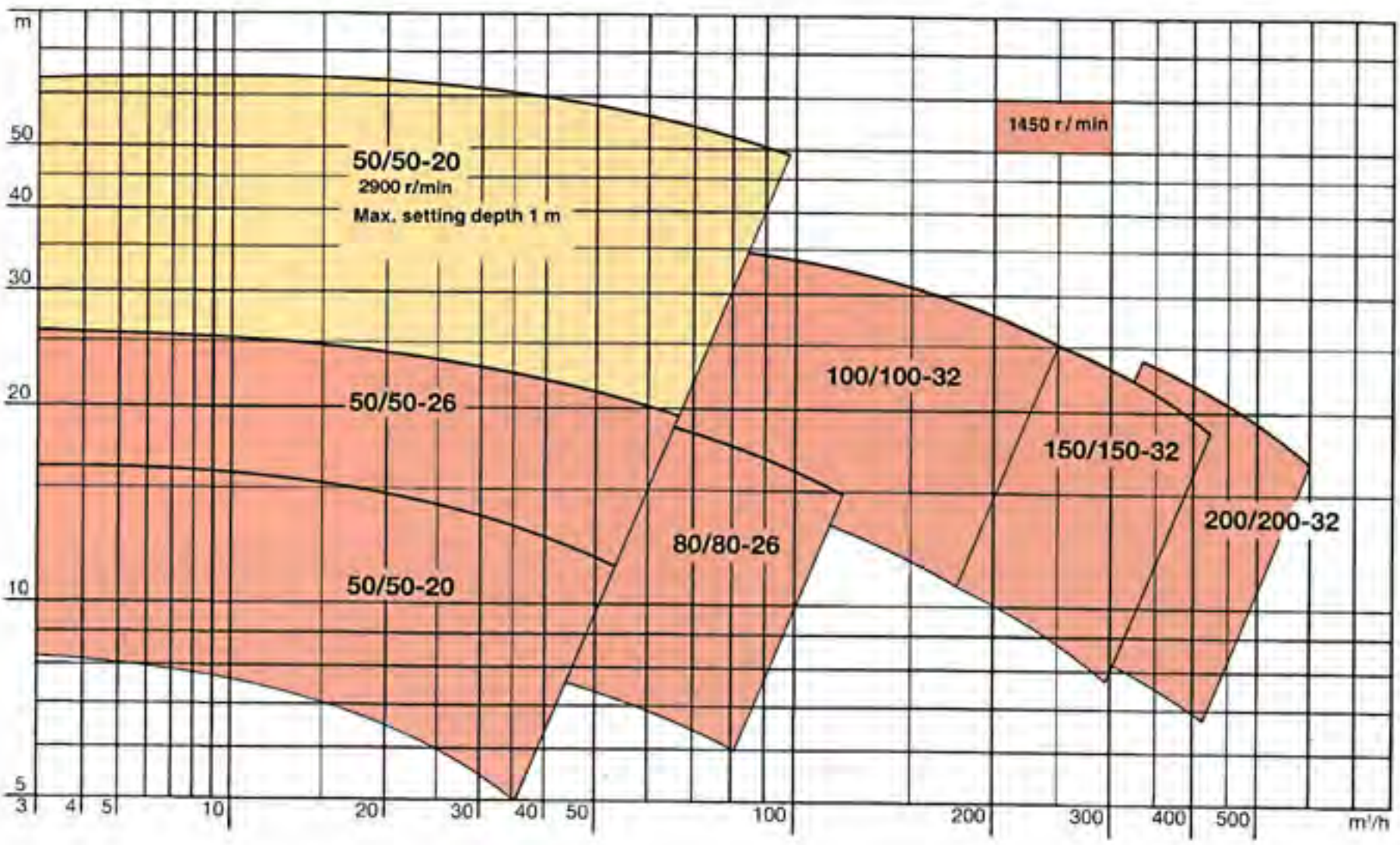
Material Code	03	24
Pump Casing	Cast Iron 0120	Stainless Steel 2324
Impeller	Stainless Steel 2324*	Stainless Steel 2324
Shaft	Steel 2172	Stainless Steel 2321
Shaft End Sleeve	Stainless Steel 2324	Stainless Steel 2324

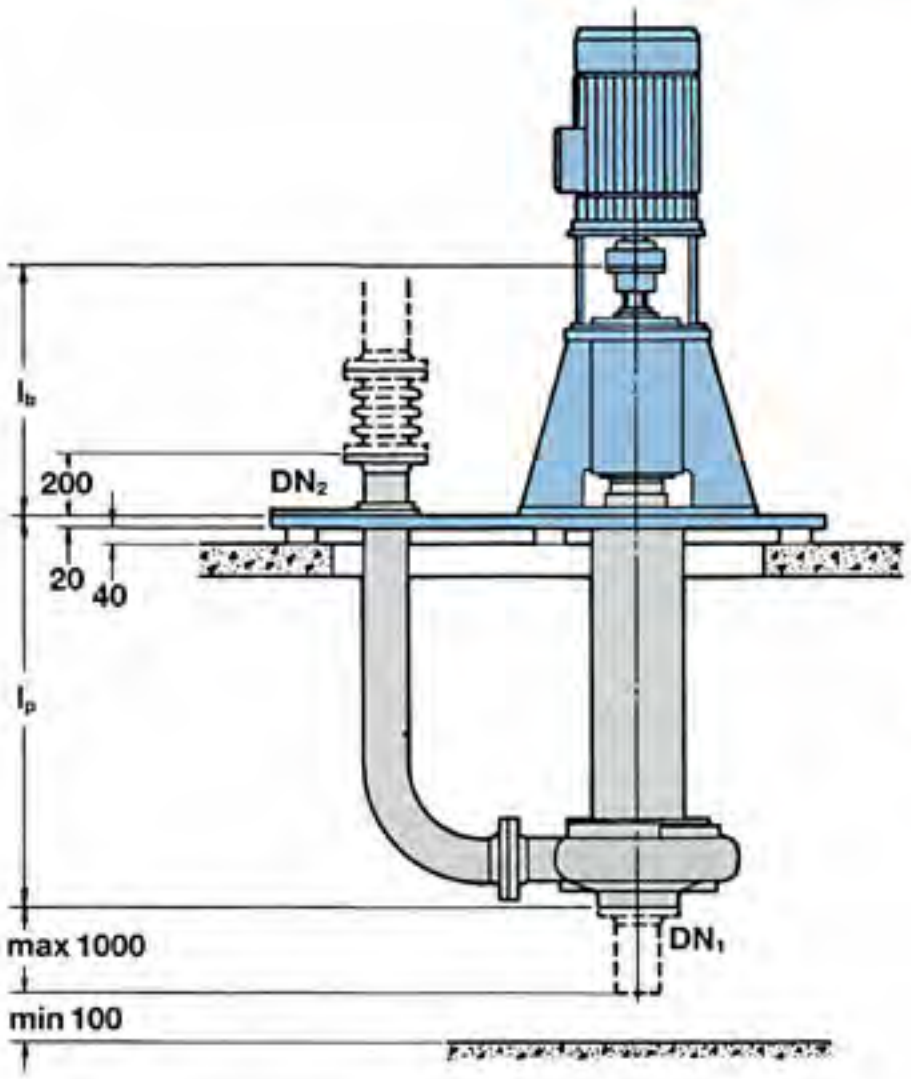
* FV 100/100–32 and larger sizes are also available with impeller of cast iron 0120.

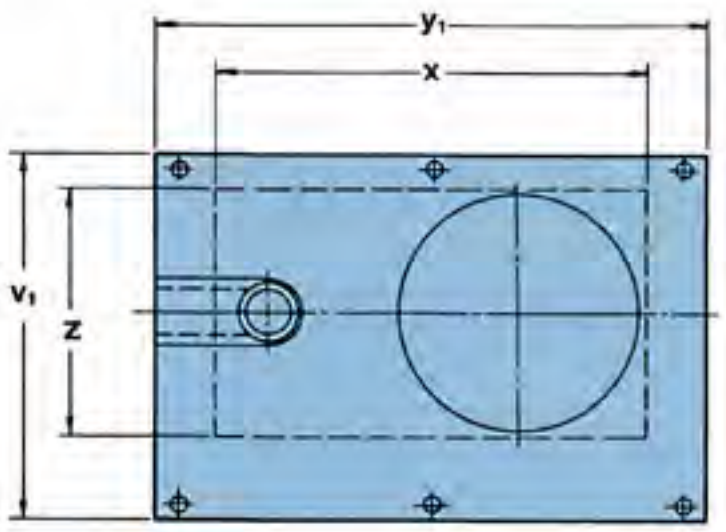
The finite element method has been used to check that the adequate rigidity has been achieved in the design.

The table shows the standard material codes. In addition, the pumps can also be delivered in other materials upon request to ABS.

For the more specialised material constructions, a sleeved steel shaft design is used, the sealed sleeve being of the same material as the pump casing and impeller. All wetted parts are therefore of the same high quality corrosion resistant material.







Type	$DN_{1,2}$	l_b	l_p alt. 1	alt. 2	alt. 3	v_1	x	y_1	z
FV 50/50-20	50	580	1133*	1633*	2133*	540	650	750	420
FV 50/50-26	50	580	1133*	1633*	2133*	570	800	900	470
FV 80/80-26	80	580	1153*	1653*	2153*	570	800	900	470
FV 100/100-32	100	709	1130*	1630*	2130*	700	1020	1120	600
FV 150/150-32	150	709	985	1485	1985	760	1120	1220	660
FV 200/200-32	200	709	1020	1520	2020	750	1280	1380	650

*) The height of an inlet funnel, 150 mm, is included in the dimension.

Lindgren & Söner, Mölndal