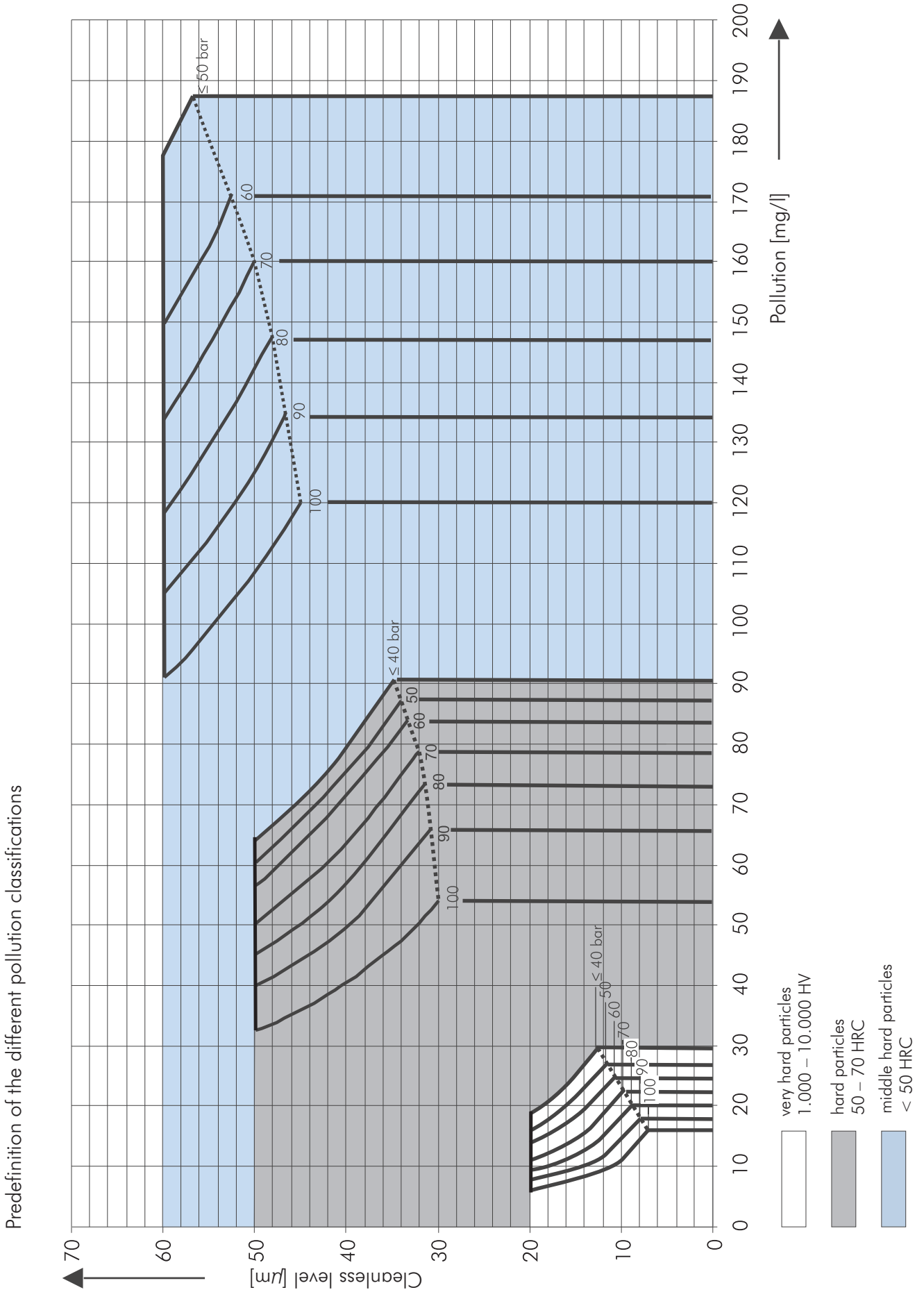
Models and Applications for High Pressure Screw Pumps



Models and Applications for High Pressure Screw Pumps

with silicon carbide spindle housings

Screw spindle pumps with **silicon carbide spindle housing** and highly wear resistant spindles are capable of achieving extremely **high pressures**.

Design -H: Pressure outlet is located above mounting plate; this provides convenient options for connection pipework.

Brinkmann high pressure screw pumps are designed for pumping filtered and **lubricating** fluids such as coolant oils and watersoluble coolants.
High pressure screw pumps are NOT designed for dry-running.

Applications

Types of fluid
oils, cooling/ cutting oils, coolants
Kinematic viscosity
1...45 mm²/s (45 cSt)
over 45 mm²/s on request
Pumping temperature
max. 60 °C * (* over 60 °C on request)
max. Air content 3–5 vol. %
Recommended filtration levels
General Machining (Turning, milling, drilling) < 50 µm
Grinding and machining of aluminum (CBN etc.) < 20 µm
For additional information please refer to page 13.

Materials of construction

Pressure and Suction Housing	Cast iron
Spindle Housing	Silicon Carbide one-piece, highly wear resistant and precision machined.
Screw spindles	Hardened tool steel, specially treated alloy; highly wear resistant and precision ground.
Seal	Viton

Standard design	Model Index	Immersion Style						Inline Style for inline installation – horizontal or vertical with mechanical seal; positive suction pressure of up to 7 bar					
Version		BFS1	BFS2	TFS3	TFS4	TFS5	TFS6	FFS1	FFS2	FFS3	FFS4	FFS5	FFS6
Highly wear resistant SIC-bushing around labyrinth seal and coated driving male spindle	-KBT5	❍	❍	❍	●	●	–	❍	❍	❍	●	●	–
Highly wear resistant SIC-bushing around labyrinth seal, specially coated driving male spindle and outer female spindles	-KBT5N	❍	❍	❍	❍	❍	●	❍	❍	❍	❍	❍	●
Specially coated driving male spindle and outer female spindles	-T5N	❍	❍	❍	–	–	–	❍	❍	❍	–	–	–
Axial thrust compensation through radial slide bushing inside the suction cover	-A	❍	❍	●	●	●	●	❍	❍	●	●	●	●
Inline installation – vertical; Mechanical seal and internal leakage return; positive suction pressure of up to 7 bar	-G	❍	❍	❍	❍	❍	●	●	●	●	●	●	●
Positive suction pressure of 7 – 20 bar (with leakage port, please see page 51)	-G4	❍	❍	❍	❍	–	–	❍	❍	❍	❍	–	–
Viscosity > 45 mm²/s		❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Order code for Inline style for vertical installation (without footmount bracket):
BFS1...2 / Pressure-G, TFS3...6 / Pressure-G: e.g. TFS376/40-G

Order code for Inline style for horizontal or vertical installation (with footmount bracket):
FFS1...6 / Pressure: e.g. FFS260/40

With an operating pressures of 120 bar and higher the pumps are supplied in special -KBT5NA execution (P, P2).

-H design	Model Index	Immersion Style up to 120 bar		
Version		BFS1-H	BFS2-H	TFS3-H
Highly wear resistant SIC-bushing around labyrinth seal and coated driving male spindle	-KBT5	❍	❍	❍
Highly wear resistant SIC-bushing around labyrinth seal, specially coated driving male spindle and outer female spindles	-KBT5N	❍	❍	❍
Specially coated driving male spindle and outer female spindles	-T5N	❍	❍	❍
Axial thrust compensation through radial slide bushing inside the suction cover	-A	❍	❍	●
Inline installation – vertical, Mechanical seal and internal leakage return; positive suction pressure of up to 7 bar	-G	❑	❑	❑
Viscosity > 45 mm²/s		❍	❍	❍

❍ available at extra charge ● standard ❑ upon request – not available

The power consumption of the pumps increases with higher discharge pressures. Depending on the actual installation conditions it is possible that pressures can occur which exceed the target design pressure. The motor must be sized in a way that the maximum pressure occuring in the application can be satisfied without overloading the motor. The listed pump / motor combination are for **standard systems (pump + pressure relief valve)**.
In individual cases custom pump / motor combinations are feasable upon request.

Models and Applications for High Pressure Screw Pumps

with cast iron spindle housing

Screw spindle pumps with **cast iron spindle housings** and highly wear resistant spindles can generate **pressures of up to 80 bar**.
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High pressure screw pumps are NOT designed for dry-running.

Applications

Types of fluid
oils, cooling/ cutting oils, coolants
Kinematic viscosity
1...45 mm^2/s (45 cSt)
over 45 mm^2/s on request
Pumping temperature
max. 60 °C * (* over 60 °C on request)
max. Air content 3–5 vol. %
Recommended filtration levels
General Machining (Turning, milling, drilling) < 50 µm
Machining of materials of limited hardness (not for grinding applications).
For additional information please refer to page 13.

Materials of construction

Pressure and Suction Housing	Cast iron
Spindle Housing	Cast iron, hardened
Screw spindles	Hardened tool steel, specially treated alloy; highly wear resistant and precision ground.
Seal	Viton

	Model Index	Immersion Style	Inline Style for inline installation – horizontal or vertical with mechanical seal; positive suction pressure of up to 7 bar
Version		BFG2	FFG2
Inline installation – vertical Mechanical seal and internal leakage return; positive suction pressure of up to 7 bar	-G	❍	●
Viscosity > 45 mm^2/s		❍	❍
4-pole motor	-4	❍	❍

❍ available at extra charge ● Standard

Dimensional data for screw spindle pumps with cast iron spindle housings are identical to those with silicon carbide housings.
The **flow rates** of screw spindle pumps equipped with cast iron housings are **up to 10% below** those flow rates of the screw spindle with silicon carbide housings which are shown on the following pages.

The maximum operating pressure is 80 bar.