General Technical Information for HAFNER Valves

Temperature range:

Solenoid valves

MH, MNH with DC coils	-10°C ... +60°C
MH, MNH with AC coils	-10°C ... +50°C
TT series	-50°C ... +50°C
MD, MK	-10°C ... +50°C

BV, BR, BL, BA

Series 201/301	-20°C ... +50°C
Series 501/701	-10°C ... +60°C
TT series	-50°C ... +50°C

BG, BH, HV_, P

Standard	-10°C ... +60°C
TT series 500/700	-50°C ... +50°C
TT series 121	-50°C ... +80°C

DRN, DR, D, ES, VA

Standard	-10°C ... +50°C
TT series	-50°C ... +50°C

UB, SENR

Standard	-10°C ... +50°C
TT series	-40°C ... +50°C

Several customer-specific items have been catered for an enlarged temperature range.

Leakage rate at 6 bar pressure:
All (100 % of) the HAFNER valves leaving the factory are individually tested on function and leakage.
The following leakage rate is allowed and a valve is still rated as good with the following:

Port size	Valve series	Allowed leaked rate in cm³/min	
		Internal	External
M5 - G 1/4"	Direct acting	4	2
M5	201	4	2
M5	301	4	2
G 1/8"	401	4	2
G 1/8"	501	4	2
G 1/4"	701	6	3
G 1/4"	801	7	3,5
G 3/8"	101	11	5,5
G 1/2"	121	15	7,5
G 3/4"	181	30	15
Low temperature valves of the "TT-series" below -40°C			
G 1/8"	501 TT	10	5
G 1/4"	701 TT	15	5
G 1/2"	121 TT	25	5

standard materials used for HAFNER-valves		standard valves		stainless steel			low temperature	
		M5 - G1/8" - G1/4"	G3/8" - G1/2" - G3/4"	G1/4"		G1/2"	G1/4"	G1/2"
				VES	KES			
valve body		anodised aluminum, 5 - 8 µm	anodised aluminum, 5 - 8 µm	stainless steel 1.4404	stainless steel 1.4404	stainless steel 1.4404	anodised aluminum, 5 - 8 µm	anodised aluminum, 5 - 8 µm
pilot-head	body	PA 6.6 30% glass filled	anodised aluminum, 5 - 8 µm	stainless steel 1.4404	PA 6.6 30% glass filled	stainless steel 1.4404	anodised aluminum, 5 - 8 µm	anodised aluminum, 5 - 8 µm
	inner parts	brass NBR	brass NBR	stainless steel 1.4404 FPM	stainless steel 1.4404 FPM	stainless steel 1.4404 FPM	brass NBR	brass NBR
	operator	brass magnetic stainless steel FPM	brass magnetic stainless steel FPM	stainless steel 1.4305 magnetic stainless steel FPM	stainless steel 1.4305 magnetic stainless steel FPM	stainless steel 1.4305 magnetic stainless steel FPM	brass magnetic stainless steel NBR	brass magnetic stainless steel NBR
spool		stainless steel 1.4104	stainless steel 1.4104	stainless steel 1.4404	stainless steel 1.4404	stainless steel 1.4404	stainless steel 1.4104	stainless steel 1.4104
sealing system		brass NBR	brass NBR	stainless steel 1.4404 PUR	stainless steel 1.4404 PUR	stainless steel 1.4404 FKM	brass PUR	brass PUR
other inner parts		brass NBR POM	brass NBR POM	stainless steel 1.4404 FPM POM	stainless steel 1.4404 FPM POM	stainless steel 1.4404 FPM POM	brass NBR POM	brass NBR POM

	BA-valves	HV-valves	BH-valves	BHP-valves
actuating elements	PA 6.6 30% glass filled	duroplast FP 31 P/PA	duroplast FP 31 P/PA	ABS-plastic

springs	stainless steel 1.4310

General Warranty:
The general warranty is 12 months from delivery. Warranty expires when valves have been opened.

Recommended signal length:
The recommended signal length to reach full flow is 50 msek.

Voltage tolerance:
The general voltage tolerance of all solenoid systems is +/- 10%.

In accordance to CETOP position paper „PP07 Machine Directive 2006/42/EC": Single valves placed on the market are not ... within the meaning of Annex V, point 4 of Machine Directive 2006/42/EC.
The HAFNER company policy is one of a continuous improvement process. We therefore reserve the right to amend, enhance and change specifications of the products presented in this document without notice.

Operation and required air-quality:
The valves are designed for being used with cleaned and lubricated or cleaned and unlubricated compressed air.
Required Air-quality-level in accordance to
ISO 8573-1:2010: 7 – 4 – 4 for particles – water – oil
Please dimension the valves according to the required orifice size. Significant overdimensioning, equivalent to a significantly larger orifice size of the valve in relation to the air supply, can lead to switching problems and pressure drops.

Lubrication:
Valves do not require any lubrication but lubrication in general increases the life-time of the products. Please avoid to lubricate the valves during a certain period of time and let them run dry later. For low-temperature-items: Do not lubricate as most kinds of oil and grease do not properly operate below - 25°C.