



General characteristics of Hydraulic Equipment

Listing of characteristics	in accordance with VDI 3267 ... 3284		
Terms and symbols	as per DIN ISO 1219		
Units	SI units, as per the "regulation regarding the law relating to units of measurement" dated June 26, 1970		
Dimensions without tolerances	General tolerances as per DIN ISO 2768-mH Deviating from this, the following apply: cast parts, dimensional variation GTB 16 as per DIN 1686 forged pieces, forge quality F as per DIN 7526		
Dimensional drawings	Unless otherwise stated, hydraulic elements are shown in off-position, i.e. without energy supply or in the case of clamping elements in the unclamped position.		
Mounting position	Any, if not otherwise stated		
Ambient temperature	t _{u min.} = - 10 °C t _{u max.} = + 50 °C		
Temperature range of fluid	t _{m min.} = + 10 °C t _{m max.} = + 60 °C		
Oil recommendation	Oil temperature [°C]	Hydraulic oil as per DIN 51524-2	Application
	10 – 40	HLP 22	Short-time operation (poppet valves)
	15 – 50	HLP 32	Clamping fixtures (poppet valves)
	20 – 60	HLP 46	Industrial hydraulics (spool valves)
	Power units and systems: Observe operating manuals and hydraulic circuit diagrams. Please contact us for other operating conditions.		
Oil filtering	Max. degree of pollution of the pressure fluid class 20/17/13 as per ISO 4406 The need for a fine filtration is indicated on the corresponding data sheet		
Seals	Material	Trade name	Temperature range** Hydraulic fluid
	NBR * (nitrile butadiene rubber)	e.g. perbunan	-30... + 80°C (100°C) *** HLP -10... + 55°C HFA, HFB, HFC ****
	FKM (fluor caoutchouc)	e.g. VITON ®	-20...+ 80°C (100°C) *** HLP -20...+150°C (200°C) *** HFDU ****
	FFKM (perfluoroelastomer)	ISOLAST ® e.g. HTJ 8325	-10...+150°C (250°C) *** HFDR, HFDU ****
	* Standard, unless otherwise stated on the data sheet. ** Generally applicable, unless otherwise stated on the data sheet. *** The temperature in brackets is a maximum value that must not be achieved simultaneously with the maximum operating pressure or the admissible lifting speed. Please contact us. **** Highly inflammable hydraulic fluids as per ISO 12922 When using these liquids, the respective manufacturer should be consulted, above all with regard to the maximum operating pressure and the sealing compatibility.		
Connecting thread	British standard pipe thread (Withworth form) with screw hole form X as per DIN 3852 sheet 2 (for cylindrical screwed plugs)		
Fittings	as per DIN 2353, screwed plugs form B as per DIN 3852 sheet 2 (sealing by knife edge) or form E as per DIN 3852 page 11 (sealing by soft seal). Do not use additional sealing materials such as Teflon ribbon!		
Hydraulic cylinders, hydraulic block cylinders	Data sheets B 1.2811, B 1.282, B 1.590, B 1.7385		
Connecting dimensions	Cylinders without stroke end cushioning: Flange mounting dimensions as per DIN ISO 6020 Cylinders with stroke end cushioning: As per DIN ISO 6020, however with the exception of the shorter overall length		
Adm. stroke speed	v _{max.} = 0.50 m/s		
Piston stroke	according to the standard strokes as per DIN 323 R 10		
Leakage rate	When extending the piston rod, the double sealing lets pass only a micro-oil film to ensure the required lubrication of the seals and thus a high service life. Please note: The wiper avoids the entry of dirt and liquids in the hydraulic system. When retracting the piston rod, a part of the previously extended oil film will be wiped off by the pre- stressed wiper lip what can cause a small leakage over time. A visible leakage in the form of oil drops indicates a necessary replacement of wear parts. Static under pressure, all cylinders are leakage-free.		