ROEMHELD
HILMA ▪ STARK

Issue 6-11 E

A 0.100

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 meassurement“ 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
Mounting position	Any, if not otherwise stated
Environmental temperature	$t_{u\,min.}$ = – 10 °C $t_{u\,max.}$ = + 50 °C
Temperature 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	Power units with poppet valves
15 – 50	HLP 32	Mechanical pumps
20 – 60	HLP 46	Power units with spool valves

Please contact us for other operating conditions.

Oil filtering	Max. degree of pollution of the hydraulic fluid class 20/17/13 as per ISO 4406. Necessity of micro-filtering is indicated on the corresponding data sheet

Sealings Material

Trade name	Temperature range		Hydraulic fluid
NBR* (Nitril-Butadien-Rubber)	e.g. Perbunan	-30 ... +100 °C -10 ... + 55 °C	HLP HFA, HFB, HFC
FKM (fluor caoutchouc)	e.g. VITON®	-20 ... +100 °C -20 ... +200 °C	HLP HFD
Perfluor elastomer	e.g. ISOLAST®	-25 ... +240 °C	HFD

* Standard, if not otherwise indicated

Connecting threads	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 (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 sheet 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	up to piston rod diameter 32 mm ≤ 0.35 cm^3 per 1000 double strokes and 100 mm stroke (HLP 46) from 40 mm piston rod diameter ≤ 0.7 cm^3 per 1000 double strokes and 100 mm stroke (HLP 46)

General Characteristics of Hydraulic Equipment

Clamping cylinders, short-stroke cylinders

Adm. stroke speed	$v_{min.}$ = 0.01 m/s $v_{max.}$ = 0.25 m/s
Piston stroke	relatively short stroke, corresponding to the usage as clamping cylinder
Stroke reserve	include at least 20% to guarantee safe clamping even with large workpiece tolerances and deformations.
Spring return force	generates an oil pressure between 1.5 and 5 bar, depending on the piston position. The back pressure in the return line must not exceed 0.5 bar.
Life of the spring	To obtain an overall length as short as possible of the clamping cylinder, the return springs are not designed fatigue endurable for the maximum stroke and not for vibrating charges. Fatigue endurance can be expected for a stroke utilisation of 70 to 80%.
Piston side load	The admissible piston side load depends on the operating conditions. 3% of the nominal cylinder force must not be exceeded by no means (up to 50 mm stroke). Please contact us for the use of single-acting elements.
Leakage rate	dynamic: up to piston rod diameter 32 mm: ≤ 0.3 cm^3 per 1000 double strokes and 10 mm stroke (HLP 22) from 40 mm sealing diameter: ≤ 0.6 cm^3 per 1000 double strokes and 10 mm stroke (HLP 22) static: no leakage rate

Clamping elements, work supports, hydraulic valves, power units and other hydraulic elements	indicated on the data sheets