

LHZ type hydraulic cylinder



**Systemtechnik
GmbH**

dual effect
Ø 25 - Ø 200 mm

PN [pmax.] = 160 bar

Connection dimensions in accordance with CETOP R 58 H and ISO/DIS 6020/I

7500671.05.08.05



Symbol



Description

Fitting types	see specifications
Line connection	internal thread per DIN ISO 228/1
Installation position	any
Damping, available options	- none - adjustable at both end positions
Fluid, available options	- hydraulic oil, filtered - water emulsion, filtered
Temperature range [°C]	for hydraulic oil fluid: - 20 to + 80 for water emulsion fluid + 4 to + 50
Operating pressure, static and dynamic [bar]	min. 2 max. 160
Static testing pressure [bar]	max. 240
Viscosity range cSt [mm ² /s]	3 to 300
1) Other seal materials available on request	

Materials	Flange:	Steel (for fluid water emulsion chem. linked.)
	Cylinder tube:	Steel (for fluid water emulsion chem. linked.)
	Piston rod:	
	options	- Stainless steel, 1.4021 - Steel, 1.5217, chrome-plated - Steel, 1.7225, hardened and chrome-plated
	Tie bars, tie bar nuts:	Steel
	seals: ¹⁾	Perbunan/Polyurethane (PU)
The cylinders are supplied with a basic coat of paint:		

Features

- ☐ Tie rod style differential cylinder
- ☐ Stroke length adjusted to customer requirements
- ☐ Low stick-slip movement
- ☐ Adjustable damping, options available
- ☐ Fluid either hydraulic oil or water

- ☐ Piston shaft material - alternatives available
- ☐ For accessories, see document 7501131.
- ☐ Equipment options available
 - Air extraction
 - Servo version
 - Piston seal statically leak-free

Specifications

Base no.		Piston rod material																				
		- Stainless steel, 1.4021						Steel, 1.5217 (20 MnV6) chrome plated				Steel, 1.7225 (52 CrMo4) hardened + chrome plated										
damping on both sides	No damping	Basic model	Base attachment	Middle swivel bearing	Swivel bearing - spherical	Base flange	Cover flange	Swivel bearing	Basic model	Base attachment	Middle swivel bearing	Swivel bearing - spherical	Base flange	Cover flange	Swivel bearing	Basic model	Base attachment	Middle swivel bearing	Swivel bearing - spherical	Base flange	Cover flange	Swivel bearing

Hydraulic oil fluid [160 bar]

25	14	G 1/4	4.91	3.37	23	44 800	44 810	10	11	12	13	14	15	16	50	51	52	53	54	55	56	-	-	-	-	-	-	-
32	16	G 3/8	8.04	6.03	28	44 801	44 811	10	11	12	13	14	15	16	50	51	52	53	54	55	56	80	81	82	83	84	85	86
40	20	G 1/2	12.57	9.42	35	44 802	44 812	10	11	12	13	14	15	16	50	51	52	53	54	55	56	80	81	82	83	84	85	86
50	25	G 1/2	19.63	14.73	35	44 803	44 813	10	11	12	13	14	15	16	50	51	52	53	54	55	56	80	81	82	83	84	85	86
63	32	G 3/4	31.17	23.13	35	44 804	44 814	10	11	12	13	14	15	16	50	51	52	53	54	55	56	80	81	82	83	84	85	86
80	40	G 3/4	50.27	37.70	35	44 805	44 815	-	-	-	-	-	-	-	50	51	52	53	54	55	56	80	81	82	83	84	85	86
100	50	G 1	78.54	58.90	45	44 806	44 816	-	-	-	-	-	-	-	50	51	52	53	54	55	56	80	81	82	83	84	85	86
125	63	G 1	122.52	91.55	45	44 807	44 817	-	-	-	-	-	-	-	50	51	52	53	54	55	56	80	81	82	83	84	85	86
160	80	G 1 1/4	201.06	150.80	45	44 808	44 818	-	-	-	-	-	-	-	50	51	52	53	54	55	56	80	81	82	83	84	85	86
200	100	G 1 1/4	314.16	235.62	51	44 809	44 819	-	-	-	-	-	-	-	50	51	52	53	54	55	56	-	-	-	-	-	-	-

Water emulsion fluid [160 bar]

25	14	G 1/4	4.91	3.37	23	44 870	44 880	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
32	16	G 3/8	8.04	6.03	28	44 871	44 881	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
40	20	G 1/2	12.57	9.42	35	44 872	44 882	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
50	25	G 1/2	19.63	14.73	35	44 873	44 883	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
63	32	G 3/4	31.17	23.13	35	44 874	44 884	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
80	40	G 3/4	50.27	37.70	35	44 875	44 885	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
100	50	G 1	78.54	58.90	45	44 876	44 886	00	01	02	03	04	05	06	-	-	-	-	-	-	-	-	-	-	-	-	-
125	63	G 1	122.52	91.55	45	44 877	44 887	-	-	-	-	-	-	-	40	41	42	43	44	45	46	-	-	-	-	-	-
160	80	G1 1/4	201.06	150.80	45	44 878	44 888	-	-	-	-	-	-	-	40	41	42	43	44	45	46	-	-	-	-	-	-
200	100	G1 1/4	314.16	235.62	51	44 879	44 889	-	-	-	-	-	-	-	40	41	42	43	44	45	46	-	-	-	-	-	-

Base no.

Piston shaft material / fitting method

Order example:

(see also questionnaire on last page)

Order no.:

44 803

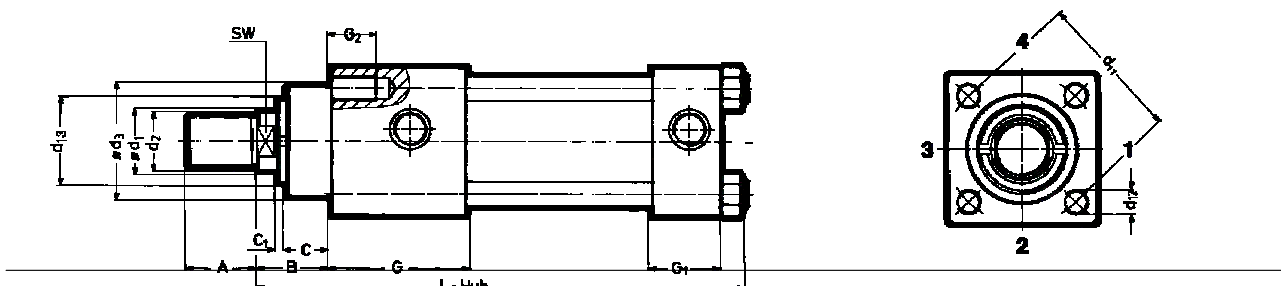
50

.0150

Stroke length [mm]
per customer
requirement

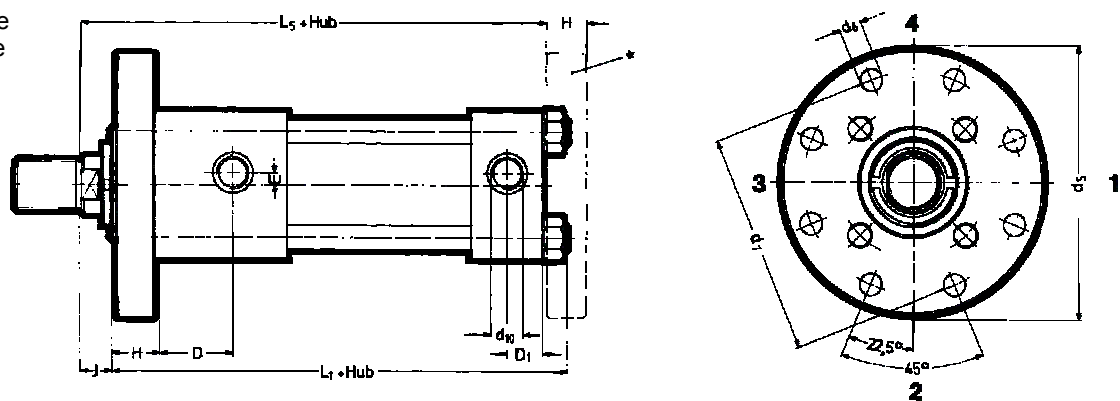
Dimension drawings

Basic model

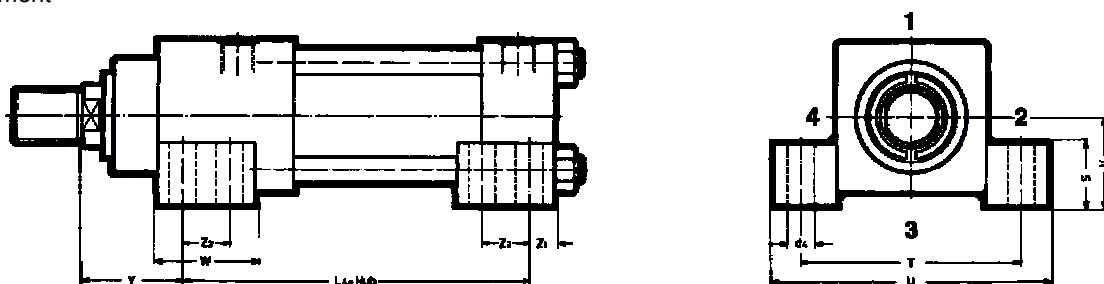


Dimension drawings

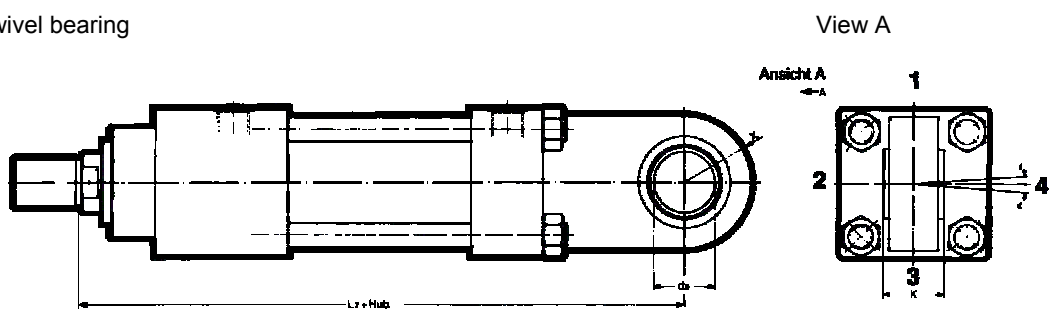
Cover flange
Base flange



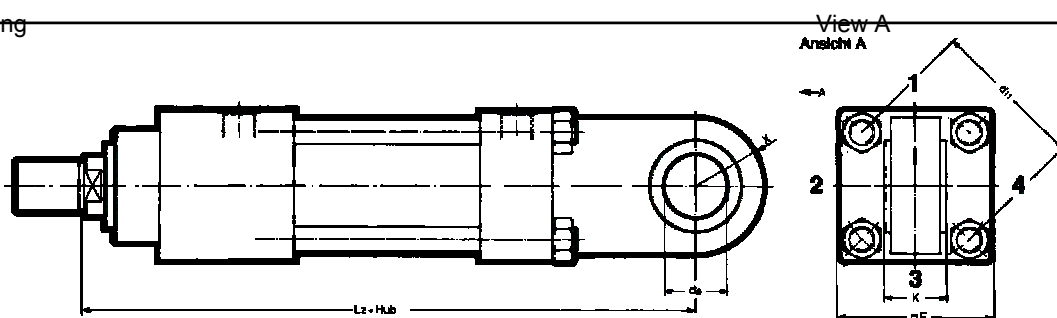
Base attachment



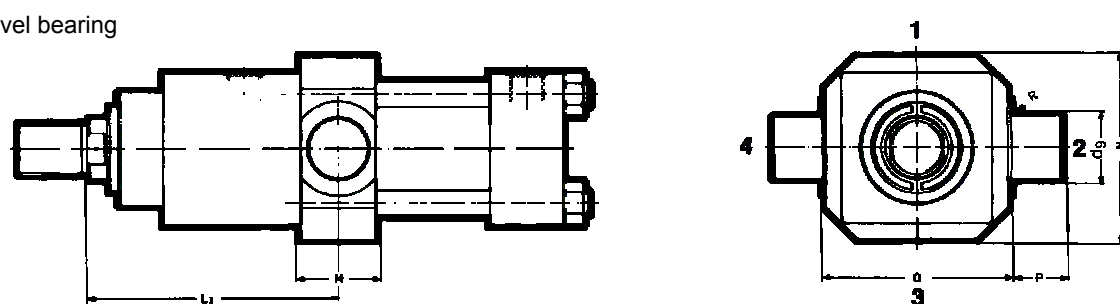
Spherical swivel bearing



Swivel bearing



Middle swivel bearing



Dimension charts

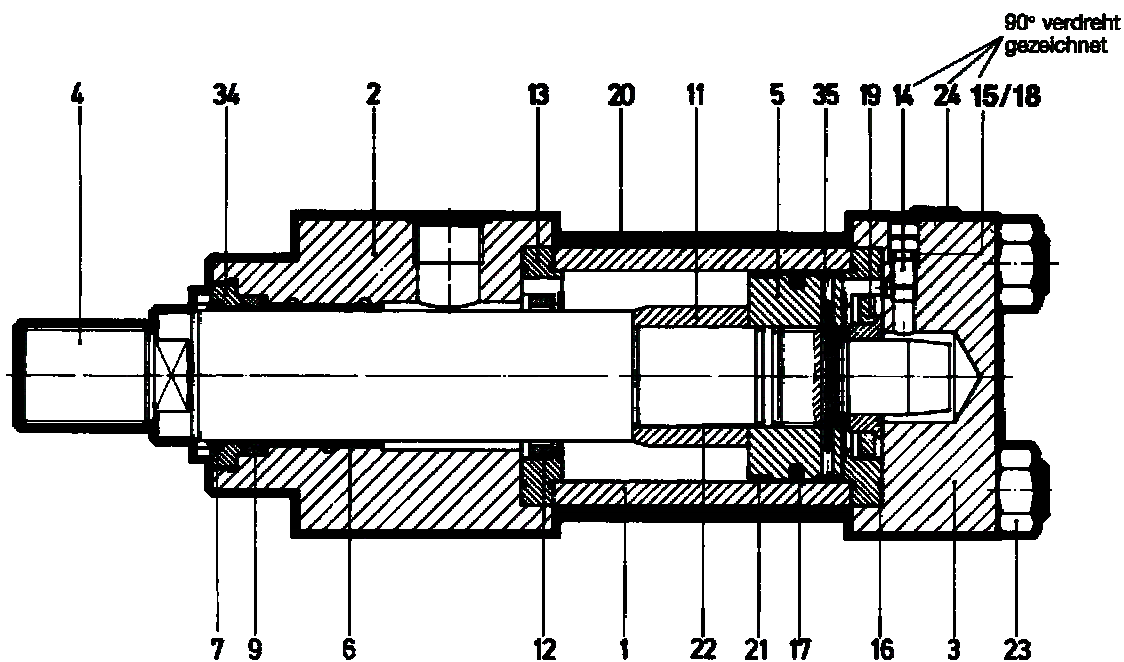
Tolerance			f8				js13	H7	f8	DIN ISO 228/1						
Piston Ø	Ø d ₁	d ₂	Ø d ₃	Ø d ₄	Ø d ₅	Ø d ₆	Ø d ₇	Ø d ₈	Ø d ₉	d ₁₀	Ø d ₁₁	d ₁₂	Ø d ₁₃	A	B	C
25	14	M 12x1.25	32	11	90	6,6	75	12	12	G 1/4	42	M 5	24	16	28	15
32	16	M 12x1.25	40	14	115	9	92	16	16	G 3/8	52	M 6	27	18	32	19
40	20	M 12x1.25	50	18	130	9	106	20	20	G 1/2	65	M 8	37	22	32	19
50	25	M 12x1.25	60	18	154	11	126	25	25	G 1/2	83	M 12x1.25	38	28	38	24
63	32	M 50	70	18	177	14	145	32	32	G 3/4	102	M 12x1.25	49	36	45	29
80	40	M 50	85	22	203	18	165	40	40	G 3/4	122	M 12x1.25	60	45	54	38
100	50	M 50	106	26	245	22	200	50	50	G 1	152	M 12x1.25	67	56	57	37
125	63	M 50	132	26	280	22	235	63	63	G 1	182	M 50	79	63	60	41
160	80	M 50	160	33	325	22	280	80	80	G 1 1/4	224	M 50	95	85	66	41
200	100	M 50	200	39	395	26	340	100	100	G 1 1/4	280	M 50	121	95	75	45

Tolerance										*	± 0,3	*	*	*	*	*	*
Piston Ø	C ₁	R	D ₁	E	Ha	G	G ₁	G ₂	H	J	Ki	S	L1	L2	L3	L4	L5
25	4	33	11	2	45	53.5	30	7	12	16	12	147.5	131.5	178	91.5	85.5	150
32	4	36	14	3	55	60	38	9	16	16	16	169	153	206	104.5	92	170
40	5	40	18	4	70	70.5	45	12	16	16	20	190	174	231	117.5	101.5	190
50	6	47	17	8	80	71	43	15	20	18	25	203	185	257	129	123	205
63	6	49	19	10	100	76	48	18	25	20	32	230	210	289	143.5	139	224
80	7	50.5	18	10	120	82.5	48	24	32	22	40	248.5	226.5	332	161.5	141.5	250
100	7	62	23	10	150	107	58	30	32	25	50	296	271	395	194	177	300
125	8	72	25	13	175	116	63	36	32	28	63	320	292	428	216	193	325
160	8	95	28	13	210	135	68	40	36	30	80	370	340	505	251	226	370
200	10	100	33	13	260	158	90	45	40	35	100	443	408	615	308	278	450

Tolerance			h13	js16				± 2	-0,3							
Piston Ø	T	N	O	P	R	S	T	U	V	Cu	X	Y	Z ₁	Z ₂	⟨ [°] ⟩	SW
25	20	53	63	10	0.6	22	70	90	28	30	16	43	15	-	4	11
32	25	65	75	12	1.0	25	80	105	32	40	20	52	20	-	4	13
40	30	82	90	16	1.6	32	105	135	40	50	25	57	25	-	4	16
50	40	100	105	20	1.6	40	125	160	50	65	31	55	17	31	4	21
63	45	120	120	25	2.5	40	145	180	63	72	38	63	18	36	4	27
80	50	145	135	32	2.5	50	177	220	71	78	49	74	20	38	4	32
100	60	170	160	40	3.0	60	220	270	90	91	59	80	23	45	4	41
125	80	205	195	50	5.0	60	245	295	112	140	71	84	24	2x26	4	50
160	100	240	240	63	5.0	70	290	350	125	160	90	94	28	2x52	4	65
200	150	295	295	80	6.0	80	348	420	150	188	112	108	33	2x61	4	80

* Construction length / stroke tolerances [mm]

	Stroke tolerance	Construction length tolerance						
		L. + stroke	L ₁ + J + stroke	L ₂ + stroke	L ₅ + stroke	J	L ₃	L ₄ + Y+ stroke
Stroke ≤ 500	± 1	± 1.5				±2.0		
Stroke > 500 to 1250	± 1.5	± 2.0				±2.8		
Stroke > 1250 to 2000	± 2.5	± 3.0				±4.0		
Stroke > 2000 on request								



drawn rotated by 90°

1 Cylinder tube	* 7 Deflector	*15 O-ring	*21 Guide belt
2 Front flange	* 9 Seal	*16 O-ring	*22 O-ring
3 Rear flange	11 Damping bush	* 17 Seal	23 Nut
4 Piston rod	12 Damping ring	*18 Back ring	24 Screw
5 Piston	13 Damping ring	19 Damping ring	34 Threaded part
6 Bush	14 Choke	20 Tie bar	35 Locking sleeve

All parts marked with * are included in the relevant range of wear parts.

If ordering other parts, please quote all "Rating Plate Information" (order no. and delivery date).

Range of wear parts

Piston Ø [mm]	Order number for LHZ type (160 bar)	
	Fluid hydraulic oil Seals Perbunan / PU	Fluid water emulsion Seals Perbunan / PU
25	11 013 94	11 017 81
32	11 013 95	11 017 82
40	11 013 96	11 017 83
50	11 013 97	11 017 84
63	11 013 98	11 017 85
80	11 013 99	11 017 86
100	11 014 00	11 017 87
125	11 014 01	11 017 88
160	11 014 02	11 017 89
200	11 014 03	11 017 90

Torque [Nm]
Pos. 23 ³⁾ (oiled or greased)
5
8.5
21
38
70
150
300
500
660
1350

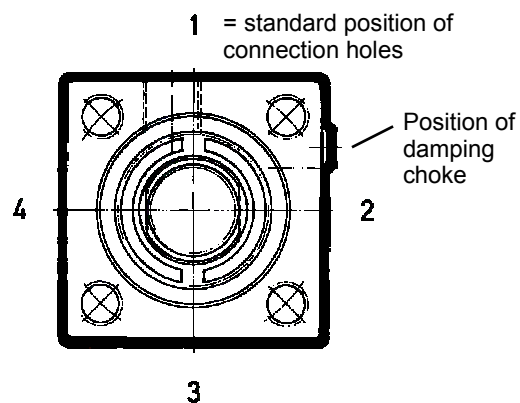
³⁾ For large strokes, ensure that the distances between the cylinder tube / tie rods are the same.
Tighten alternately on opposite sides from clamp origin.

Ordering notes

Information required when selecting an air extraction system

1. Extraction required in
 - Front flange
 - Rear flange
 - Front and rear flange
2. Position of air extraction screw (position 1 to 4)
3. Installation position of cylinder

View of piston rod



If you are ordering converted production cylinders or special hydraulic cylinders, please fill in and enclose the questionnaire (7501387).