

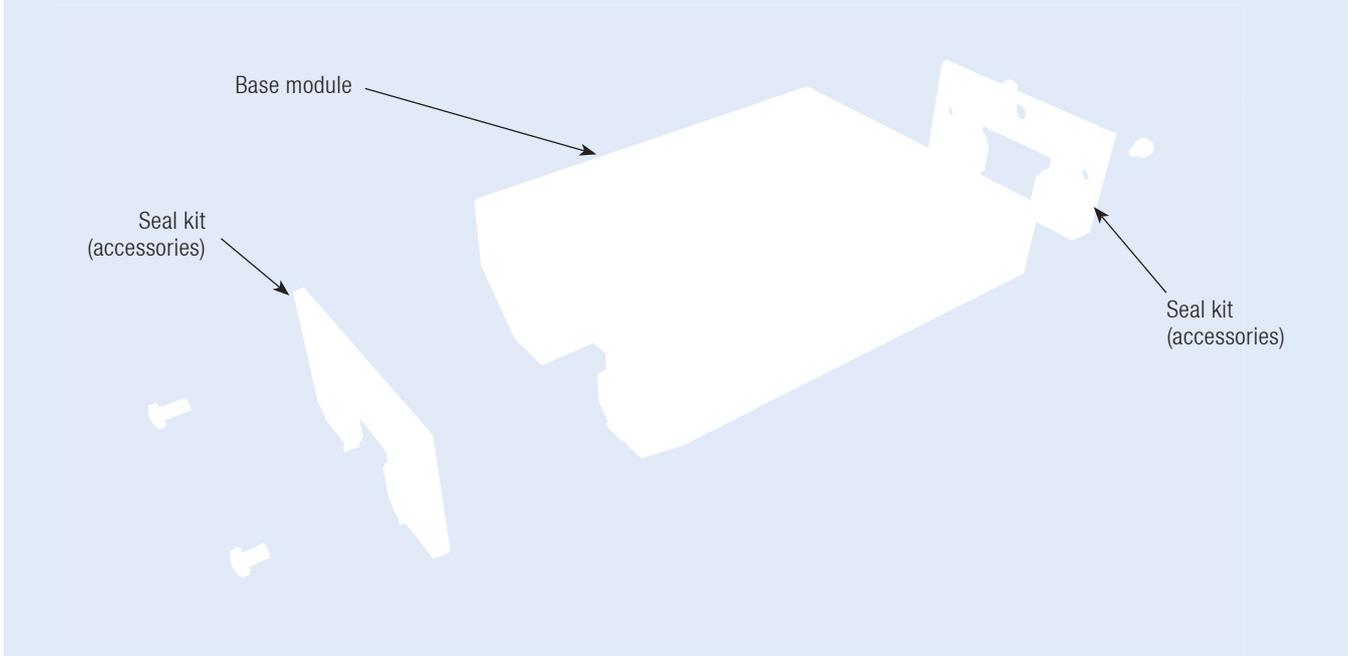
Hydraulic super-heavy load clamping: The Clamping Element with membrane technology KWH

The KWH series is a hydraulically operated heavy load clamping device. The hydraulic oil presses the large-surface contact sections directly onto the section rail guide via a piston mechanism. When used in harsh work environments or with cooling liquid, the elements can be fitted with original seals from the respective linear guide manufacturer and longitudinal seals as accessories. A pre-tensioned reset spring enables short cycle times. The special pressure membrane technology guarantees operational reliability.

The pressure ranges from 20 bar to a 100 bar maximum for sizes 25 and 30. All sizes from 35 to 125 operate in a pressure range from 30 bar to a 150 bar maximum.

The KWH series features zero backlash and extremely low absorption volumes of maximum 7.6 cm³ per clamping operation. For more information visit www.zimmer-gmbh.com.

KWH Series



Technical data for KWH series:

Rail size	25–125
Holding forces	1,600 N–46,000 N
Maximum permissible operating pressure depending on size	100 bar–150 bar
Maximum permissible peak pressure depending on size	110 bar–160 bar
Spring-loaded energy storage	-
PLUS connection	-
Clamping cycles	10 mil. (B10d-value)
Braking cycles	unsuitable

Application scenarios for KWH:

- Machine table clamping of heavy cutting work centres
- Clamping of heavy handling systems

Connection options for KWH:

The KWH series has a hydraulic supply port on both sides.

Accessories seal kit for KWH:

The KWH series is available with seal kit (as accessories) which are recommended for harsh work environments.



Type of rail	Size	Type of carriage	Item number	Measure table (page 110 and 111)
HSR	25	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	KWH 2501 AS1	5
	30	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	KWH 3001 AS1	12
	35	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	KWH 3501 AS1	19
	45	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KWH 4501 AS1	28
	55	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KWH 5501 AS1	34
	65	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KWH 6501 AS1	42
	85	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KWH 8501 AS1	53
	100	HSR..HA, HSR..HB, HSR..HR	KWH 10001 AS1	54
SHS	25	SHS..C, SHS..LC	KWH 2501 CS1	5
	30	SHS..C, SHS..LC	KWH 3001 CS1	12
	35	SHS..C, SHS..LC	KWH 3501 CS1	19
		SHS..R, SHS..LR	KWH 3501 CS3	50
	45	SHS..C, SHS..LC	KWH 4501 CS1	28
	65	SHS..C, SHS..LC	KWH 6501 CS1	42
SNR, SNS	25	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 2501 IS1	1
	30	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 3001 IS1	9
	35	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 3501 IS1	15
	45	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 4501 IS1	23
	55	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 5501 IS1	31
	65	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 6501 IS1	38
NR, NRS	25	NR..XA, NR..XLA, NR..XB, NR..XLB, NRS..XA, NRS..XLA, NRS..XB, NRS..XLB	KWH 2501 BS1	1
	30	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KWH 3001 BS1	9
	35	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KWH 3501 BS1	15
	45	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KWH 4501 BS1	23
	55	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KWH 5501 BS1	31
	65	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KWH 6501 BS1	38
	85	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	⊗	⊗
	100	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KWH 10001 BS1	56
SRG	25	SRG..C, SRG..LC	KWH 2501 ES1	5
	30	SRG..C, SRG..LC	KWH 3001 ES1	12
	35	SRG..C, SRG..LC	KWH 3501 ES1	19
		SRG..R, SRG..LR	KWH 3501 ES3	50
	45	SRG..C, SRG..LC	KWH 4501 ES1*2	28
		SRG..R, SRG..LR	KWH 4501 ES3	⊗
	55	SRG..C, SRG..LC	KWH 5501 ES1	34
		SRG..R, SRG..LR	KWH 5501 ES3	51
	65	SRG..LC	KWH 6501 ES1	42
	85	SRG..LC	KWH 8501 ES1	53
	100	SRG..LC	KWH 10001 ES1	54



R1605, R1606, R1607, R1608, R1645, R1647, R2045, R2047	25	R1631, R1651, R1653, R1661, R1665, R2001, R2002, R2000	KWH 2505 AS1	3
		R1622, R1623, R1632, R1662, R1666, R2011, R2012, R2010	KWH 2505 AS2	6
		R1621, R1624	KWH 2505 AS3	8
	30	R1631, R1651, R1653, R1661, R1665, R2001, R2002, R2000	KWH 3005 AS1	10
		R1622, R1623, R1632, R1662, R1666, R2011, R2012, R2010	KWH 3005 AS2	13
		R1621, R1624	KWH 3005 AS3	14
	35	R1631, R1651, R1653, R1661, R1665, R2001, R2002, R2000	KWH 3505 AS1	17
		R1622, R1623, R1632, R1662, R1666, R2011, R2012, R2010	KWH 3505 AS2	20
		R1621, R1624	KWH 3505 AS3	22
	45	R1651, R1653	KWH 4505 AS1	25
		R1622, R1623	KWH 4505 AS2	27
		R1621, R1624	KWH 4505 AS3	30
	55	R1651, R1653	KWH 5505 AS1	33
		R1622, R1623	KWH 5505 AS2	35
		R1621, R1624	KWH 5505 AS3	37
	65	R1651, R1653	KWH 6505 AS1	41
		R1622, R1623	KWH 6505 AS2	44
	R1805, R1806, R1807, R1845, R1846, R1847	25	R1851, R1853	KWH 2505 BS1
R1821, R1824			KWH 2505 BS3	7
35		R1851, R1853	KWH 3505 BS1	16
		R1821, R1824	KWH 3505 BS3	21
45		R1851, R1853	KWH 4505 BS1	24
		R1821, R1824	KWH 4505 BS3	29
55	R1851, R1853	KWH 5505 BS1	32	
	R1821, R1824	KWH 5505 BS3	36	
65	R1851, R1853	KWH 6505 BS1	39	
	R1824	KWH 6505 BS2	43	

*2 This table applies only for rail use without cover sheet!

See page 11 for part number explanation

Type of rail	Size	Type of carriage	Item number	Measure table (page 110 and 111)
R1875, R1873	55	R1872	KWH 5505 BS4	57
	65	R1872	KWH 6505 BS4	52
	85	R1872	⊗	⊗
	100	R1872	⊗	⊗
R1835, R1865	100	R1861, R1863	KWH 10005 BS1	54
	125	R1861, R1863	KWH 12505 BS1	55

Rail manufacturer
Rexroth
Bosch Group

MRS	25	MRW..A, MRW..B	KWH 2503 AS1	4
	35	MRW..A, MRW..B	KWH 3503 AS1	18
		MRW..C, MRW..D	KWH 3503 AS3	46
	45	MRW..A, MRW..B	KWH 4503 AS1	26
		MRW..C, MRW..D	KWH 4503 AS3	48
	55	MRW..A, MRW..B	KWH 5503 AS1	45
		MRW..C, MRW..D	KWH 5503 AS3	49
	65	MRW..B	KWH 6503 AS1	40
		MRW..D	KWH 6503 AS3	43
	100	MRW..B	KWH 10003 AS1	54

Rail manufacturer
SCHNEEBERGER
LINEAR TECHNOLOGY

LWH	25	LWH..B, LWH..SL, LWH..M, LWHG, LWHT..B, LWHT..SL, LWHT..M, LWHTG	KWH 2510 AS1	5
	30	LWH..B, LWH..SL, LWH..M, LWHG, LWHT..B, LWHT..SL, LWHT..M, LWHTG	KWH 3010 AS1	12
	35	LWH..B, LWH..M, LWHG, LWHT..B, LWHT..M, LWHTG	KWH 3510 AS1	19
	45	LWH..B, LWH..M, LWHG, LWHT..B, LWHT..M, LWHTG	KWH 4510 AS1	28
	55	LWH..B, LWHG, LWHT..B, LWHTG	KWH 5510 AS1	34
	65	LWH..B, LWHG, LWHT..B, LWHTG	KWH 6510 AS1	42
	85	LWHG, LWHTG	⊗	⊗
MH	25	MH, MHG, MHT, MHTG	KWH 2510 AS1	5
	30	MH, MHG, MHT, MHTG	KWH 3010 AS1	12
	35	MH, MHG, MHT, MHTG	KWH 3510 AS1	19
	45	MH, MHG, MHT, MHTG	KWH 4510 AS1	28
LRX	25	LRXC, LRX, LRXG	KWH 2510 BS1	5
	30	LRXC, LRX, LRXG	⊗	⊗
	35	LRXC, LRX, LRXG	KWH 3510 BS1	19
		LRXDC, LRXD, LRXDG	KWH 3510 BS3	22
	45	LRXC, LRX, LRXG	KWH 4510 BS1	28
	55	LRXC, LRX, LRXG	KWH 5510 BS1	34
		LRXDC, LRXD, LRXDG	KWH 5510 BS3	51
	65	LRXC, LRX, LRXG	KWH 6510 BS1	42
		LRXDC, LRXD, LRXDG	⊗	⊗
	85	LRX, LRXG	⊗	⊗
100	LRXG	⊗	⊗	
MX	25	MXC, MX, MXG, MXL	KWH 2510 BS1	5
	30	MXC, MX, MXG, MXL	⊗	⊗
	35	MXC, MX, MXG, MXL	KWH 3510 BS1	19
		MXDC, MXD, MXDG, MXDL	KWH 3510 BS3	22
	45	MXC, MX, MXG, MXL	KWH 4510 BS1	28
	55	MXC, MX, MXG	KWH 5510 BS1	34
65	MXC, MX, MXG	KWH 6510 BS1* ²	42	
LWE	25	LWE..Q, LWET..Q, LWEC, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL	KWH 2510 DS1	47
	30	LWE..Q, LWET..Q, LWEC, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL	⊗	⊗
	35	LWE..Q, LWET..Q, LWEC, LWE, LWETC, LWET	⊗	⊗
	45	LWE, LWET	⊗	⊗
ME	25	MH, MHG, MHT, MHTG	⊗	⊗
		MEC, MEC..SL, ME, ME..SL, MEG, MEG..SL, METC, METC..SL, MET, MET..SL, METG, METG..SL	KWH 2510 DS1	47
	30	MEC, MEC..SL, ME, ME..SL, MEG, MEG..SL, METC, METC..SL, MET, MET..SL, METG, METG..SL, MH, MHG, MHT, MHTG	⊗	⊗
	35	MEC, ME, METC, MET, MH, MHG, MHTG	⊗	⊗
45	ME, MET, MH, MHG, MHT, MHTG	⊗	⊗	

Rail manufacturer
IKO

*² This table applies only for rail use without cover sheet!

See page 11 for part number explanation

Rail manufacturer



Type of rail	Size	Type of carriage	Item number	Measure table (page 110 and 111)
TKD (KUE)	25	KWE	⊗	⊗
	30	KWE	⊗	⊗
	35	KWE	⊗	⊗
TKVD (KUVE)	25	KWVE..-B, KWVE..-B-L, KWVE..-B-EC, KWVE..-B-HS, KWVE..-BS-HS	KWH 2502 BS1	4
	30	KWVE..-B, KWVE..-B-EC, KWVE..-B-L	KWH 3002 BS1	11
		KWVE..-B-ECSC, KWVE..-B-S, KWVE..-B-SL,	KWH 3002 BS2	58
	35	KWVE..-B, KWVE..-B-EC, KWVE..-B-L	KWH 3502 BS1	18
	45	KWVE..-B, KWVE..-B-EC, KWVE..-B-L	KWH 4502 BS1	26
	55	KWVE..-B, KWVE..-B-L	⊗	⊗
TKSD (KUSE)	25	KWSE, KWSE..-L	KWH 2502 AS1	4
	30	KWSE, KWSE..-L	KWH 3002 AS1	11
	35	KWSE, KWSE..-L	KWH 3502 AS1	18
	45	KWSE, KWSE..-L	KWH 4502 AS1	26
	55	KWSE, KWSE..-L	KWH 5502 AS1	45
TSX..E (RUE)	25	RWU..-D-FE, RWU..-D-OE, RWU..-D-L-FE, RWU..-D-L-OE	KWH 2502 DS1	4
	35	RWU..-E, RWU..-E-L	KWH 3502 DS1	18
		RWU..-E-H, RWU..-E-HL	KWH 3502 DS3	50
	45	RWU..-E, RWU..-E-L	KWH 4502 DS1	26
	55	RWU..-E, RWU..-E-L	KWH 5502 DS1	45
		RWU..-E-H, RWU..-E-HL	KWH 5502 DS3	51
	65	RWU..-E, RWU..-E-L	KWH 6502 DS1	40
100	RWU..-E-L	KWH 10002 DS1	54	

Rail manufacturer



LH	25	LAH..EMZ, LAH..GMZ	KWH 2504 BS1	5
	30	LAH..EMZ, LAH..GMZ	KWH 3004 BS1	12
	35	LAH..EMZ, LAH..GMZ	KWH 3504 BS1	19
	45	LAH..EMZ, LAH..GMZ	KWH 4504 BS1	28
	55	LAH..EMZ, LAH..GMZ	KWH 5504 BS1	34
	65	LAH..EMZ, LAH..GMZ	KWH 6504 BS1	42
SH	25	SAH..EMZ, SAH..GMZ	KWH 2504 BS1	5
	30	SAH..EMZ, SAH..GMZ	KWH 3004 BS1	12
	35	SAH..EMZ, SAH..GMZ	KWH 3504 BS1	19
LS	25	LAS..JMZ, LAS..EMZ	⊗	⊗
	30	LAS..JMZ, LAS..EMZ	KWH 3004 AS1	12
	35	LAS..JMZ, LAS..EMZ	KWH 3504 AS1	19
SS	25	SAS..JMZ, SAS..EMZ	⊗	⊗
	30	SAS..JMZ, SAS..EMZ	KWH 3004 AS1	12
	35	SAS..JMZ, SAS..EMZ	KWH 3504 AS1	19
RA	25	RA..EM, RA..GM	⊗	⊗
	30	RA..EM, RA..GM	KWH 3004 FS1	12
	35	RA..EM, RA..GM	KWH 3504 FS1	19
		RA..AN, RA..BN	KWH 3504 FS3	22
	45	RA..EM, RA..GM	KWH 4504 FS1	28
	55	RA..EM, RA..GM	KWH 5504 FS1	34
	65	RA..EM, RA..GM	KWH 6504 FS1	42
		RA..AN, RA..BN	KWH 6504 FS3	44

Rail manufacturer

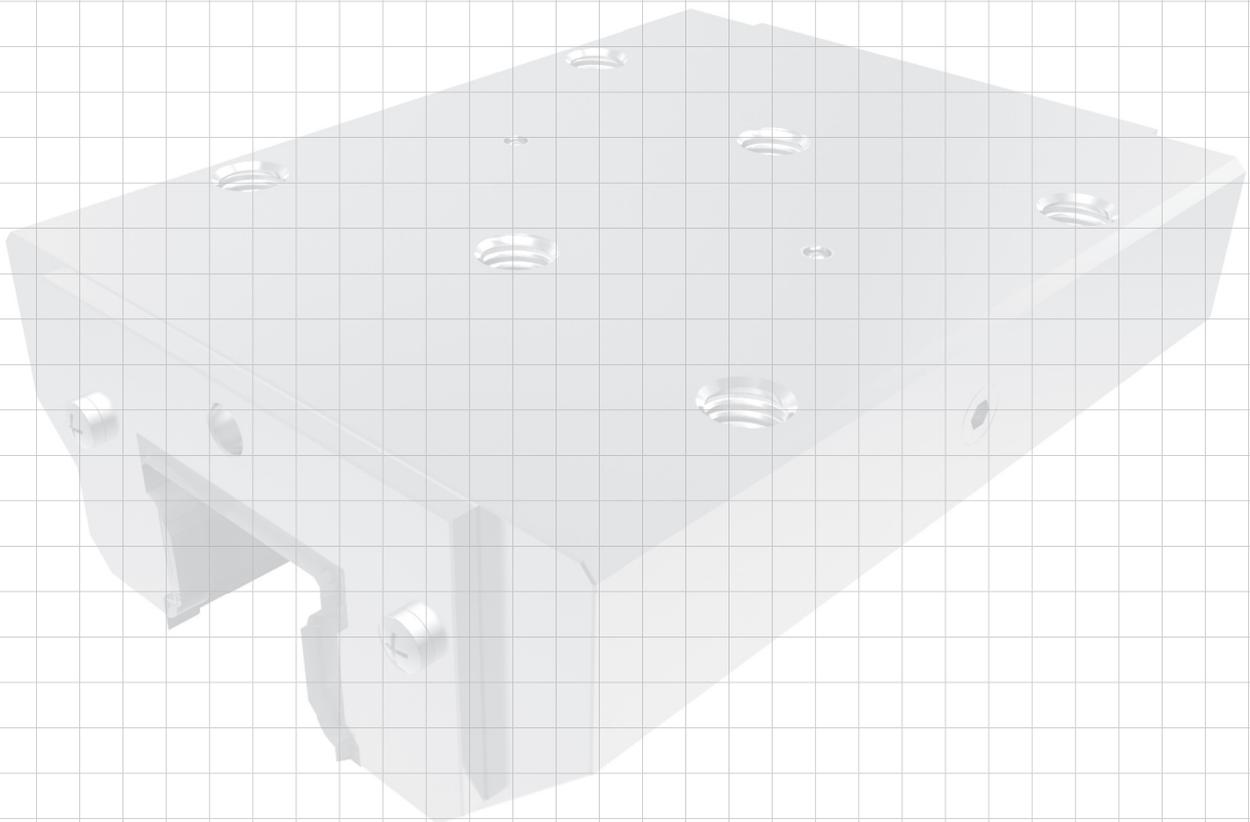


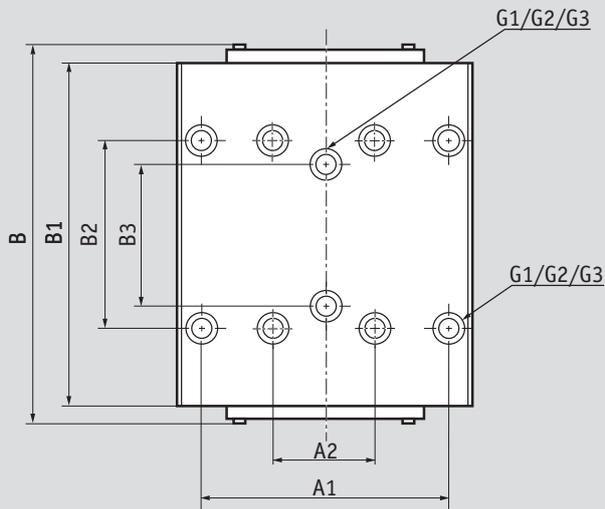
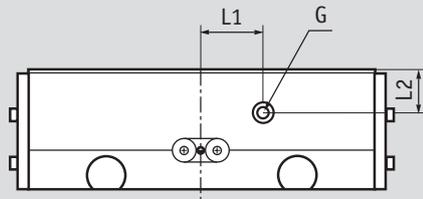
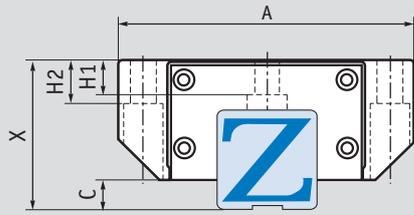
Lineartechnologie

HGR..R, HGR..T	25	HGW..CC, HGW..HC, QHW..CC, QHW..HC	KWH 2512 ES1	4
	30	HGW..CC, HGW..HC, QHW..CC, QHW..HC	KWH 3012 ES1	11
	35	HGW..CC, HGW..HC, QHW..CC, QHW..HC	KWH 3512 ES1	19
	45	HGW..CC, HGW..HC, QHW..CC, QHW..HC	KWH 4512 ES1	26
	55	HGW..CC, HGW..HC	⊗	⊗
	65	HGW..CC, HGW..HC	⊗	⊗
EGR..R, EGR..U, EGR..T	25	EGW..SC, EGW..CC, QEW..SC, QEW..CC	X	X
	30	EGW..SC, EGW..CC, QEW..SC, QEW..CC	⊗	⊗
	35	EGW..SC, EGW..CC	⊗	⊗
RGR..T	25	RGW..CC, RGW..HC	⊗	⊗
	30	RGW..CC, RGW..HC	KWH 3012 FS1	11
	35	RGW..CC, RGW..HC	KWH 3512 FS1	18
	45	RGW..CC, RGW..HC	KWH 4512 FS1*2	26
	55	RGW..CC, RGW..HC	KWH 5512 FS1	33
		RGH..CA, RGH..HA	KWH 5512 FS3	51
	65	RGW..CC, RGW..HC	KWH 6512 FS1*2	40

*2 This table applies only for rail use without cover sheet!
X: not feasible

See page 11 for part number explanation





Note: Consider measurement C/Interfering contour!

Comment:

G: The hydraulic connection is available on either side.

Only one connection is necessary for function.
Return line pressure < 1.5 bar.

Measure table	Holding power [N] KWH	max. operating pressure [bar]		A [mm]	A1/A2 [mm]	B max. [mm]	B1 [mm]	B2 [mm]	B3 [mm]	C [mm]	X [mm]	G	G1	G2 [mm]	G3	H1 [mm]	H2 [mm]	L1 [mm]	L2 [mm]
1	1600	100	70	57	116	92	45	45	5,5	31	1/8"	M8	6,8	M6	7,7	9	10	9,5	
2	2200	100	70	57	105	92	45	40	6	36	1/8"	M8	6,8	M6	7	9	0	8	
3	2200	100	70	57	102	92	45	40	6,5	36	1/8"	M8	6,8	M6	7	9	0	8	
4	2200	100	70	57	116	92	45	40	6,5	36	1/8"	M8	6,8	M6	5,8	9	10	9	
5	2200	100	70	57	106	92	45	45	6,5	36	1/8"	M8	6,8	M6	6,5	9	10	9	
6	1600	100	48	35	102	92	50	50	6,5	36	1/8"	M6	-	-	8	8	10	8	
7	1600	100	48	35	100	92	50	50	6,5	40	1/8"	M6	-	-	12	12	10	12	
8	1600	100	48	35	102	92	50	50	6,5	40	1/8"	M6	-	-	12	12	10	12	
9	2100	100	90	72	119	103,5	52	52	7	38	1/8"	M10	8,6	M8	7	10	0	10,5	
10	3000	100	90	72	115	103,5	52	44	7	42	1/8"	M10	8,6	M8	8	11	0	10,5	
11	3000	100	90	72	124	103,5	52	44	7	42	1/8"	M10	8,6	M8	7	10	0	10,5	
12	3000	100	90	72	120	103,5	52	52	7	42	1/8"	M10	8,6	M8	7	10	0	10,5	
13	3000	100	60	40	115	103,5	60	60	7	42	1/8"	M8	-	-	8	8	10	9	
14	3000	100	60	40	115	103,5	60	60	7	45	1/8"	M8	-	-	11	11	10	12	
15	4300	150	100	82	130	120,5	62	62	8	44	1/8"	M10	8,6	M8	7	12	0	12	
16	5700	150	100	82	128	120,5	62	52	7	48	1/8"	M10	8,6	M8	11	12	0	12	
17	5700	150	100	82	133	120,5	62	52	8	48	1/8"	M10	8,6	M8	10,2	12	0	12	
18	5700	150	100	82	147	120,5	62	52	8	48	1/8"	M10	8,6	M8	6,4	12	0	12	
19	5700	150	100	82	144	120,5	62	62	8	48	1/8"	M10	8,6	M8	6,4	12	0	12	
20	3500	100	70	50	133	120,5	72	72	8	48	1/8"	M8	-	-	13	13	0	12	
21	3500	100	70	50	130	120,5	72	72	7	55	1/8"	M8	-	-	13	13	0	18	
22	3500	100	70	50	136	120,5	72	72	8	55	1/8"	M8	-	-	13	13	0	18	
23	7400	150	120	100	166	155	80	80	10	52	1/8"	M12	10,5	M10	10,4	15	0	12	
24	9900	150	120	100	166	155	80	60	9	60	1/8"	M12	10,5	M10	12,4	15	0	15	
25	9900	150	120	100	170	155	80	60	10	60	1/8"	M12	10,5	M10	12,4	15	0	15	
26	9900	150	120	100	184	155	80	60	10	60	1/8"	M12	10,5	M10	11,9	15	0	15	
27	7400	100	86	60	170	155	80	80	10	60	1/8"	M10	-	-	15	15	0	15	
28	9900	150	120	100	175	155	80	80	10	60	1/8"	M12	10,5	M10	11,9	15	0	15	
29	7400	100	86	60	166	155	80	80	9	70	1/8"	M10	-	-	18	18	0	24	
30	7400	100	86	60	170	155	80	80	10	70	1/8"	M10	-	-	18	18	0	24	
31	10200	150	140	116	201	184	95	95	12	63	1/8"	M14	12,5	M12	13,7	16	0	16	
32	13700	150	140	116	197	184	95	70	12	70	1/8"	M14	12,5	M12	13,7	18	0	16	
33	13700	150	140	116	203	184	95	70	13	70	1/8"	M14	12,5	M12	13,5	18	0	16	
34	13700	150	140	116	206	184	95	95	13	70	1/8"	M14	12,5	M12	13,5	18	0	16	
35	13700	150	100	75	200	184	95	95	13	70	1/8"	M12	-	-	20,8	18	0	16	
36	13700	150	100	75	197	184	95	95	12	80	1/8"	M12	-	-	19	19	0	26	
37	13700	150	100	75	200	184	95	95	13	80	1/8"	M12	-	-	19	19	0	26	
38	17000	150	170	142	219	200	110	110	11	75	1/4"	M16	14,5	M14	21	25	0	20	
39	22700	150	170	142	238	227	110	82	14	90	1/4"	M16	14,5	M14	21,5	23	0	20	
40	22700	150	170	142	257	227	110	82	14	90	1/4"	M16	14,5	M14	14,5	22	0	20	
41	22700	150	170	142	240	227	110	82	14	90	1/4"	M16	14,5	M14	14	23	0	20	
42	22700	150	170	142	253	227	110	110	14	90	1/4"	M16	14,5	M14	14,5	22	0	20	
43	22700	150	126	76	238	227	120	120	14	90	1/4"	M16	-	-	21	21	0	20	
44	22700	150	126	76	255	227	120	120	14	90	1/4"	M16	-	-	21	21	0	20	
45	13700	150	140	116	214	184	95	70	13	70	1/8"	M14	12,5	M12	13,5	18	0	16	
46	3500	100	70	50	140	120,5	72	72	8	55	1/8"	M8	-	-	13	13	0	18	
47	2200	100	70	57	106	92	45	45	3,5	33	1/8"	M8	6,8	M6	5,8	9	10	9	
48	7400	100	86	60	190	155	80	80	10	70	1/8"	M10	-	-	18	18	0	24	
49	13700	150	100	75	215	184	95	95	13	80	1/8"	M12	-	-	19	19	0	26	
50	3500	100	70	50	138	120,5	72	72	6	55	1/8"	M8	-	-	13	13	0	18	
51	13700	150	100	75	210	184	95	95	9	80	1/8"	M12	-	-	19	19	0	26	
52	22700	150	200	172/50	250	227	110	110	14	100	1/4"	M14	12,5	M12	20	20	0	20	
53	27400	150	215	140	210	192	140	140	16	110	1/4"	M20	17,5	M16	19,8	35	0	20	
54	34000	150	250	200	230	208	150	150	15	120	1/4"	M20	17,5	M16	17,5	30	0	20	
55	46000	150	320	270	245	233	102,5	102,5	25	160	1/4"	M27	24	M24	29	45	0	50	
56	34000	150	250	200	226	208	150	150	7	105	1/4"	M20	17,5	M16	24	30	0	20	
57	13700	150	165	140/40	200	192	95	95	12	80	1/4"	M8	-	-	19	19	0	16	
58	3000	100	60	40	108	130,5	60	60	4	42	1/8"	M8	-	-	11	11	10	12	