

# **Hydraulic heavy load brake: The Braking and Clamping Element with membrane technology KBH.**

The KBH series is a hydraulically operated heavy load brake. The hydraulic oil presses the large-surface contact sections, which are equipped with a special brake lining, directly onto the section rail guide via a piston mechanism.

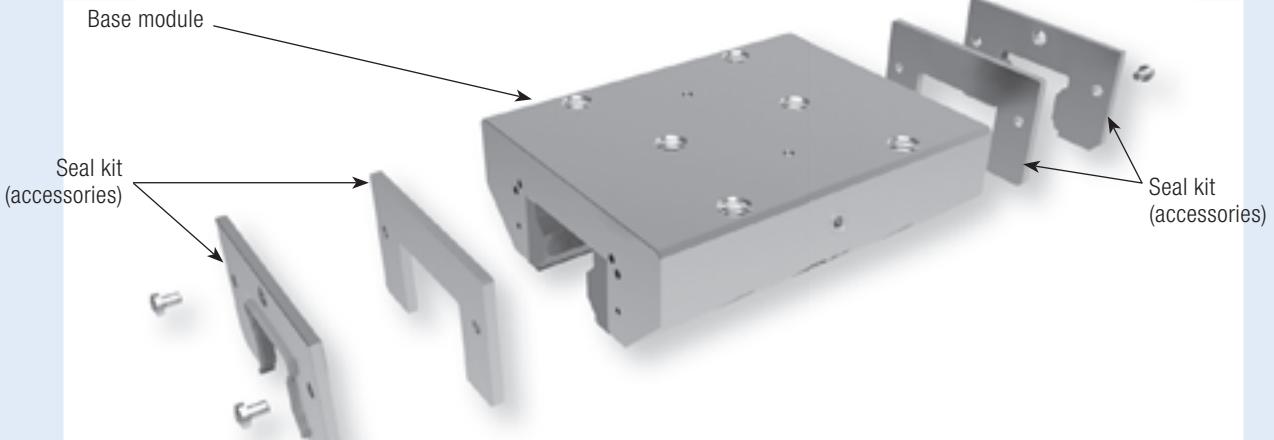
Because of the material combination of the linear guide/contact section, the linear guide won't be damaged by the contact section. In order to prevent damage from chips between the contact section and linear guide, the elements can be fitted with original seals from the respective linear guide manufacturer and longitudinal seals as accessories.

When the braking element is used in harsh work environments or with cooling liquid, seals should be used as well.

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. The KBH series features zero backlash and extremely low absorption volumes of maximum 7.6 cm<sup>3</sup> per clamping operation.

For more information visit [www.zimmer-gmbh.com](http://www.zimmer-gmbh.com).

## KBH Series



### Technical data for KBH series:

Rail size	25–100
Holding forces	2,200 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	2,000

### Application scenarios for KBH:

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

### Connection options for KBH:

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

### Seal kit accessories for KBH:

The KBH series is available with seals (as accessories) which are recommended for harsh work environments.

	Type of rail	Size	Type of carriage	Item number	Measure table [page 118 and 119]
HSR	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	©	©
		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	©	©
		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	KBH 3501 AS1	8
		45	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KBH 4501 AS1	14
		55	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KBH 5501 AS1	19
		65	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KBH 6501 AS1	25
		85	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	KWH 8501 AS1	35
		100	HSR..HA, HSR..HB, HSR..HR	KWH 10001 AS1	36
		25	SHS..C, SHS..LC	KBH 2501 CS1	2
		30	SHS..C, SHS..LC	KBH 3001 CS1	3
SNR, SNS	SNR, SNS	35	SHS..C, SHS..LC	KBH 3501 CS1	8
		45	SHS..C, SHS..LC	KBH 4501 CS1	14
		55	SHS..C, SHS..LC	KBH 5501 CS1	19
		65	SHS..C, SHS..LC	KBH 6501 CS1	25
		25	SNR..C, SNR..LC, SNS..C, SNS..LC	©	©
		30	SNR..C, SNR..LC, SNS..C, SNS..LC	©	©
NR, NRS	NR, NRS	35	SNR..C, SNR..LC, SNS..C, SNS..LC	KBH 3501 IS1	4
		45	SNR..C, SNR..LC, SNS..C, SNS..LC	KBH 4501 IS1	10
		55	SNR..C, SNR..LC, SNS..C, SNS..LC	KBH 5501 IS1	16
		65	SNR..C, SNR..LC, SNS..C, SNS..LC	KBH 6501 IS1	21
		85	SNR..C, SNR..LC, SNS..C, SNS..LC	KWH 8501 IS1	37
		25	NR..XA, NR..XLA, NR..XB, NR..XLB, NRS..XA, NRS..XLA, NRS..XB, NRS..XLB	©	©
		30	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	©	©
		35	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KBH 3501 BS1	4
		45	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KBH 4501 BS1	10
		55	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KBH 5501 BS1	16
SRG	SRG	65	NR..A, NR..LA, NR..B, NR..LB, NRS..A, NRS..LA, NRS..B, NRS..LB	KBH 6501 BS1	21
		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	34
		25	SRG..C, SRG..LC	KBH 2501 ES1	2
		30	SRG..C, SRG..LC	KBH 3001 ES1	3
		35	SRG..C, SRG..LC	KBH 3501 ES1	8
			SRG..L, SRG..LR	KBH 3501 ES3	29
		45	SRG..C, SRG..LC	KBH 4501 ES1* <sup>2</sup>	14

Rexroth Bosch Group	R1605, R1606, R1607, R1608, R1645, R1647, R2045, R2047	25	R1631, R1651, R1653, R1661, R1665, R2001, R2002, R2000 R1622, R1623 , R1632, R1662, R1666 , R2011, R2012, R2010 R1621, R1624	KBH 2505 AS1	1
		30	R1631, R1651, R1653, R1661, R1665, R2001, R2002, R2000 R1622, R1623 , R1632, R1662, R1666 , R2011, R2012, R2010 R1621, R1624	©	©
		35	R1631, R1651, R1653, R1661, R1665, R2001, R2002, R2000 R1622, R1623 , R1632, R1662, R1666 , R2011, R2012, R2010 R1621, R1624	KBH 3505 AS1	6
		45	R1651, R1653 R1622, R1623 R1621, R1624	KBH 4505 AS1	12
		55	R1651, R1653 R1622, R1623 R1621, R1624	KBH 5505 AS1	18
		65	R1651, R1653 R1622, R1623	KBH 6505 AS1	24
				KBH 6505 AS2	26
		25	R1851, R1853	KBH 2505 BS1	1
			R1821, R1824	©	©
		35	R1851, R1853 R1821, R1824	KBH 3505 BS1	5
R1805, R1806 R1807, R1845 R1846, R1847	R1805, R1806 R1807, R1845 R1846, R1847	45	R1851, R1853 R1821, R1824	KBH 3505 BS3	9
		55	R1851, R1853 R1821, R1824	KBH 4505 BS1	11
		65	R1851, R1853 R1821, R1824	KBH 4505 BS3	15
				KBH 5505 BS1	17
				KBH 5505 BS3	20
				KBH 6505 BS1	22

\*<sup>2</sup>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 118 and 119)
R1875, R1873	55	R1872	© KBH 6505 BS4	© 28
	65	R1872	©	©
	85	R1872	©	©
	100	R1872	©	©
R1835, R1865	100	R1861, R1863	KWH 10005 BS1*	36
	125	R1861, R1863	KWH 12505 BS1	38

Rail manufacturer  
**Rexroth**  
Bosch Group

MRS	25	MRW..A, MRW..B	©	©	Rail manufacturer
	35	MRW..A, MRW..B MRW..C, MRW..D	KBH 3503 AS1 KBH 3503 AS3	7 30	
	45	MRW..A, MRW..B MRW..C, MRW..D	KBH 4503 AS1 KBH 4503 AS3	13 31	
	55	MRW..A, MRW..B MRW..C, MRW..D	KBH 5503 AS1 KBH 5503 AS3	27 32	
	65	MRW..B MRW..D	KBH 6503 AS1 KBH 6503 AS3	23 33	
	100	MRW..B	KWH 10003 AS1	36	

LWH	25	LWH..B, LWH..SL, LWH..M, LWHG, LWHT..B, LWHT..SL, LWHT..M, LWHTG	©	©	Rail manufacturer
	30	LWH..B, LWH..SL, LWH..M, LWHG, LWHT..B, LWHT..SL, LWHT..M, LWHTG	©	©	
	35	LWH..B, LWH..M, LWHG, LWHT..B, LWHT..M, LWHTG	KBH 3510 AS1	8	
	45	LWH..B, LWH..M, LWHG, LWHT..B, LWHT..M, LWHTG	KBH 4510 AS1	14	
	55	LWH..B, LWHG, LWHT..B, LWHTG	©	©	
	65	LWH..B, LWHG, LWHT..B, LWHTG	©	©	
	85	LWLG, LWHTG	©	©	

MH	25	MH, MHG, MHT, MHTG	©	©	
	30	MH, MHG, MHT, MHTG	©	©	
	35	MH, MHG, MHT, MHTG	KBH 3510 AS1	8	
	45	MH, MHG, MHT, MHTG	KBH 4510 AS1	14	

LRX	25	LRXC, LRX, LRXG	KBH 2510 BS1	2	
	30	LRXC, LRX, LRXG	KBH 3010 BS1	3	
	35	LRXC, LRX, LRXG LRXDC, LRXD, LRXDG	KBH 3510 BS1 KBH 3510 BS3	8 30	
	45	LRXC, LRX, LRXG	KBH 4510 BS1	14	
	55	LRXC, LRX, LRXG LRXDC, LRXD, LRXDG	KBH 5510 BS1 KBH 5510 BS3	19 39	
	65	LRXC, LRX, LRXG LRXDC, LRXD, LRXDG	KBH 6510 BS1 KBH 6510 BS3	25 26	
	85	LRX, LRXG	©	©	
	100	LRXG	©	©	

MX	25	MXC, MX, MXG, MXL	KBH 2510 BS1	2	
	30	MXC, MX, MXG, MXL	KBH 3010 BS1	3	
	35	MXC, MX, MXG, MXL	KBH 3510 BS1	8	
	45	MXC, MX, MXG, MXL	KBH 4510 BS1*	14	
	55	MXC, MX, MXG	KBH 5510 BS1	19	
	65	MXC, MX, MXG	KBH 6510 BS1	25	

LWE	25	LWE..Q, LWET..Q, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL	©	©	
	30	LWE..Q, LWET..Q, 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	©	©	
	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	©	©	

\*<sup>2</sup>This table applies only for rail use without cover sheet!

See page 11 for part number explanation

KBH

Rail manufacturer



	Type of rail	Size	Type of carriage	Item number	Measure table [page 118 and 119]
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		©	©
	30	KWVE..-B, KWVE..-B-EC, KWVE..-B-L		©	©
	35	KWVE..-B, KWVE..-B-EC, KWVE..-B-L		KBH 3502 BS1	7
	45	KWVE..-B, KWVE..-B-EC, KWVE..-B-L		KBH 4502 BS1	13
	55	KWVE..-B, KWVE..-B-L		©	©
TKSD (KUSE)	25	KWSE, KWSE..-L		©	©
	30	KWSE, KWSE..-L		©	©
	35	KWSE, KWSE..-L		KBH 3502 AS1	7
	45	KWSE, KWSE..-L		KBH 4502 AS1	13
	55	KWSE, KWSE..-L		©	©
TSX..E (RUE)	25	RWU..-D-FE, RWU..-D-OE, RWU..-D-L-FE, RWU..-D-L-OE	X		X
	35	RWU..-E, RWU..-E-L	X		X
	45	RWU..-E, RWU..-E-L		KBH 4502 DS1	13
	55	RWU..-E, RWU..-E-L		KBH 5502 DS1	27
	65	RWU..-E, RWU..-E-L		KBH 6502 DS1	23
	100	RWU..-E-L		KWH 10002 DS1	36

Rail manufacturer



LH	25	LAH..EMZ, LAH..GMZ	©	©
	30	LAH..EMZ, LAH..GMZ	©	©
	35	LAH..EMZ, LAH..GMZ	KBH 3504 BS1	8
	45	LAH..EMZ, LAH..GMZ	KBH 4504 BS1	14
	55	LAH..EMZ, LAH..GMZ	KBH 5504 BS1	19
	65	LAH..EMZ, LAH..GMZ	KBH 6504 BS1	25
SH	25	SAH..EMZ, SAH..GMZ	©	©
	30	SAH..EMZ, SAH..GMZ	©	©
	35	SAH..EMZ, SAH..GMZ	KBH 3504 BS1	8
LS	25	LAS..JMZ, LAS..EMZ	©	©
	30	LAS..JMZ, LAS..EMZ	©	©
	35	LAS..JMZ, LAS..EMZ	KBH 3504 AS1	8
SS	25	SAS..JMZ, SAS..EMZ	©	©
	30	SAS..JMZ, SAS..EMZ	©	©
	35	SAS..JMZ, SAS..EMZ	KBH 3504 AS1	8
RA	25	RA..EM, RA..GM	©	©
	30	RA..EM, RA..GM	©	©
	35	RA..EM, RA..GM	KBH 3504 FS1	8
		RA..AN, RA..BN	KBH 3504 FS3	30
	45	RA..EM, RA..GM	©	©
	55	RA..EM, RA..GM	KBH 5504 FS1	19
	65	RA..EM, RA..GM	©	©

Rail manufacturer

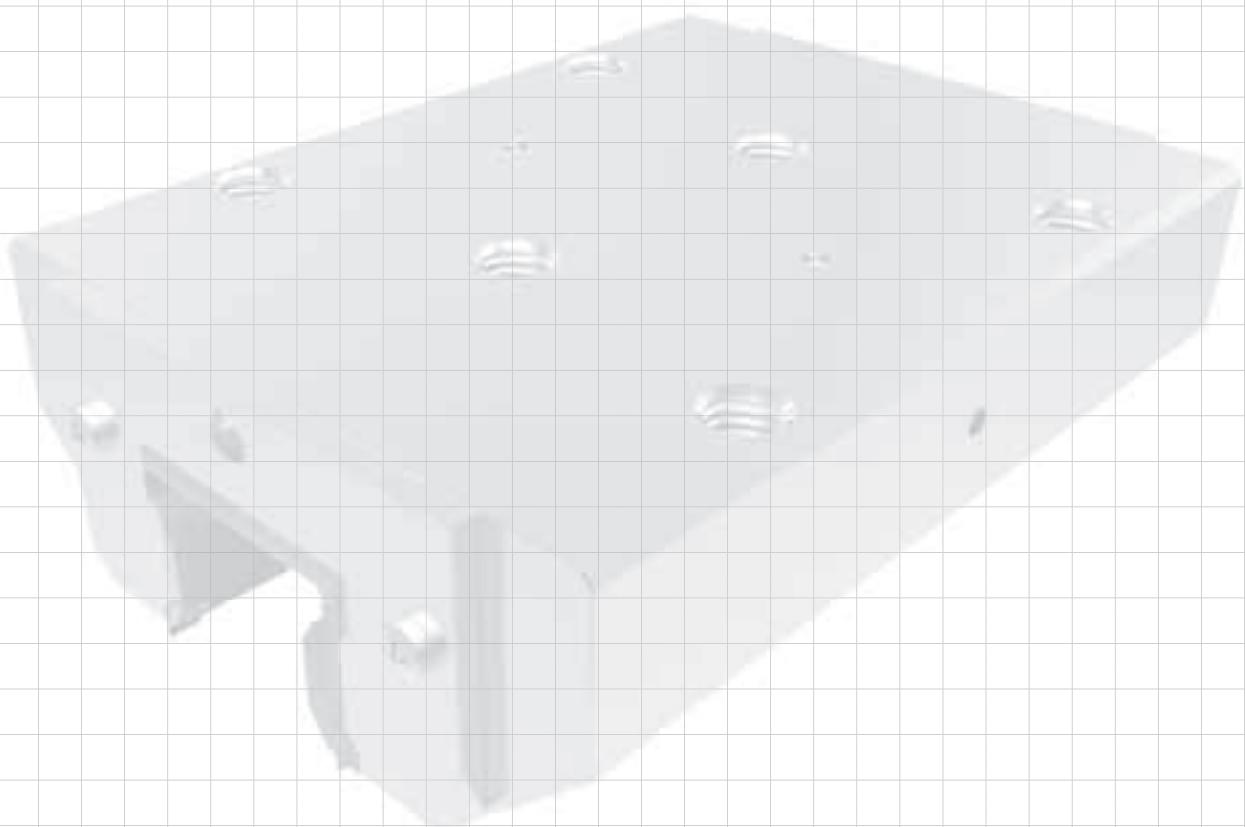


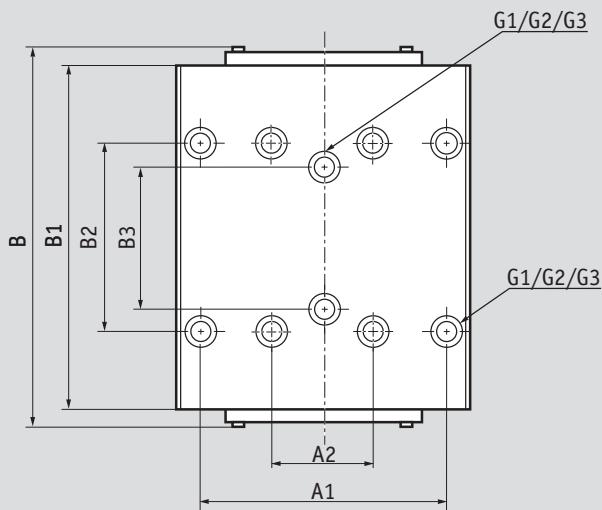
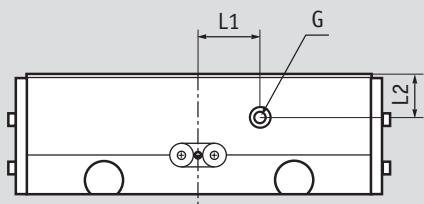
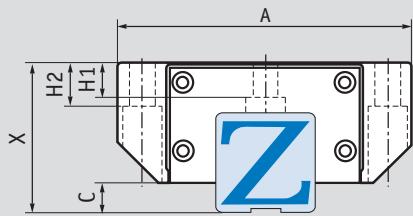
HGR..R, HGR..T	25	HGW..CC, HGW..HC, QHW..CC, QHW..HC	KBH 2512 ES1	40
	30	HGW..CC, HGW..HC, QHW..CC, QHW..HC	©	©
	35	HGW..CC, HGW..HC, QHW..CC, QHW..HC	©	©
	45	HGW..CC, HGW..HC, QHW..CC, QHW..HC	©	©
	55	HGW..CC, HGW..HC	©	©
	65	HGW..CC, HGW..HC	©	©
EGR..R, EGR..U, EGR..T	25	EGW..SC, EGW..CC, QEW..SC, QEW..CC	X	X
	30	EGW..SC, EGW..CC, QEW..SC, QEW..CC	KBH 3012 CS1	3
	35	EGW..SC, EGW..CC	©	©
RG..T	25	RGW..CC, RGW..HC	©	©
	30	RGW..CC, RGW..HC	©	©
	35	RGW..CC, RGW..HC	KBH 3512 FS1* <sup>2</sup>	7
	45	RGW..CC, RGW..HC	KBH 4512 FS1* <sup>2</sup>	13
		RGH..CA, RGH..HA	©	©
	55	RGW..CC, RGW..HC	KBH 5512 FS1* <sup>2</sup>	18
	65	RGW..CC, RGW..HC	KBH 6512 FS1* <sup>2</sup>	23

X: not feasible

\*<sup>2</sup>This table applies only for rail use without cover sheet!

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] KBH		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	2200	100	70	57	109	98	45	40	6,5	36	1/8"	M8	6,8	M6	7	9
2	2200	100	70	57	108	98	45	45	6,5	36	1/8"	M8	6,8	M6	5,8	9
3	3000	100	90	72	120	111,5	52	52	7	42	1/8"	M10	8,6	M8	7	10
4	4300	150	100	82	137	128,5	62	62	8	44	1/8"	M10	8,6	M8	7	12
5	5700	150	100	82	137	128,5	62	52	7	48	1/8"	M10	8,6	M8	11	12
6	5700	150	100	82	141	128,5	62	52	8	48	1/8"	M10	8,6	M8	10,2	12
7	5700	150	100	82	148	128,5	62	52	8	48	1/8"	M10	8,6	M8	6,4	12
8	5700	150	100	82	145	128,5	62	62	8	48	1/8"	M10	8,6	M8	6,4	12
9	3500	100	70	50	137	128,5	72	72	7	55	1/8"	M8	-	-	13	13
10	7400	150	120	100	176	163	80	80	10	52	1/8"	M12	10,5	M10	10,4	15
11	9900	150	120	100	175	163	80	60	9	60	1/8"	M12	10,5	M10	12,4	15
12	9900	150	120	100	170	163	80	60	10	60	1/8"	M12	10,5	M10	12,4	15
13	9900	150	120	100	185	163	80	60	10	60	1/8"	M12	10,5	M10	11,9	15
14	9900	150	120	100	176	163	80	80	10	60	1/8"	M12	10,5	M10	11,9	15
15	7400	100	86	60	171	163	80	80	9	70	1/8"	M10	-	-	18	18
16	10200	150	140	116	202	192	95	95	12	63	1/8"	M14	12,5	M12	13,7	16
17	13700	150	140	116	205	192	95	70	12	70	1/8"	M14	12,5	M12	13,7	18
18	13700	150	140	116	209	192	95	70	13	70	1/8"	M14	12,5	M12	13,5	18
19	13700	150	140	116	209	192	95	95	13	70	1/8"	M14	12,5	M12	13,5	18
20	13700	150	100	75	205	192	95	95	12	80	1/8"	M12	-	-	19	19
21	17000	150	170	142	219	208	110	110	11	75	1/4"	M16	14,5	M14	21	25
22	22700	150	170	142	246	235	110	82	14	90	1/4"	M16	14,5	M14	21,5	23
23	22700	150	170	142	258	235	110	82	14	90	1/4"	M16	14,5	M14	14,5	22
24	22700	150	170	142	264	235	110	82	14	90	1/4"	M16	14,5	M14	14	23
25	22700	150	170	142	250	235	110	110	14	90	1/4"	M16	14,5	M14	14,5	22
26	22700	150	126	76	264	235	120	120	14	90	1/4"	M16	-	-	21	21
27	13700	150	140	116	215	192	95	70	13	70	1/8"	M14	12,5	M12	13,5	18
28	22700	150	200	172/50	250	235	110	110	14	100	1/4"	M14	20	M12	20	20
29	3500	100	70	50	139	128,5	72	72	6	55	1/8"	M8	-	-	13	13
30	3500	100	70	50	150	128,5	72	72	8	55	1/8"	M8	-	-	13	13
31	7400	100	86	60	185	163	80	80	10	70	1/8"	M10	-	-	18	18
32	13700	150	100	75	215	192	95	95	13	80	1/8"	M12	-	-	19	19
33	22700	150	126	76	258	235	120	120	14	90	1/4"	M16	-	-	21	21
34	34000	150	250	200	226	208	150	150	7	105	1/4"	M20	17,5	M16	24	30
35	27400	150	215	185	210	192	140	140	16	110	1/4"	M20	17,5	M16	19,8	35
36	34000	150	250	200	231	208	150	150	15	120	1/4"	M20	17,5	M16	17,5	30
37	13700	150	165	140/40	200	192	95	95	12	80	1/4"	M12	-	-	19	19
38	46000	150	320	270	245	227	102,5	102,5	25	160	1/4"	M27	24	M24	29	45
39	13700	150	100	75	203	192	95	95	9	80	1/8"	M12	-	-	19	19
40	2200	100	70	57	108	98	45	40	6,5	36	1/8"	M8	6,8	M6	5,8	9