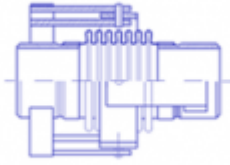


MB master bellows®

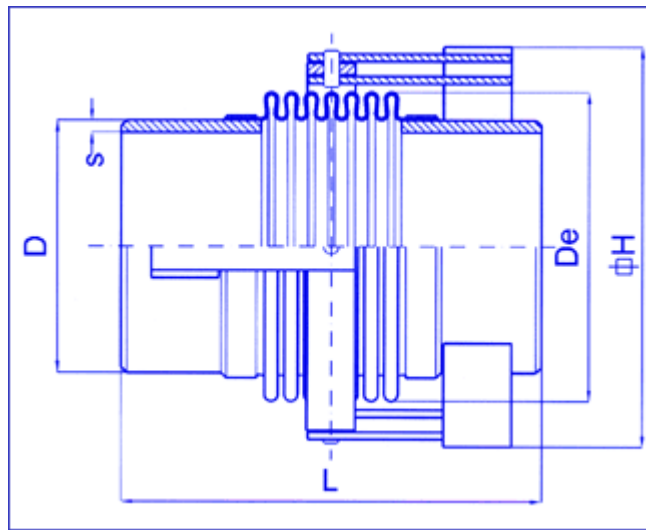
Gimbal expansion joints

N 60

**KC MM PN 6 - KC MM PN 10 - KC MM PN 16 - KC MM PN 25
KC MM PN 40**

	<p>Description: Gimbal expansion joints with weld ends</p>
<p>Characteristics:</p>	<p>Excellent reliability, does not age, absence of permeability, resistant to corrosion, high operating temperature In conformity with EJMA (Expansion Joint Manufacturer Association) standards, movements indicated in the technical tables are calculated for 3000 complete cycles at nominal pressure</p>
<p>Size range:</p>	<p>From DN50 to DN600 Special and large diameters available upon request</p>
<p>Testing:</p>	<ul style="list-style-type: none"> - Pneumatic leak test (standard) - Hydraulic test, specific dimensional controls, non-destructive tests, material certificates of main pressure bearing parts (on request)
<p>Fittings:</p>	<p>Weld ends from seamless or electro-welded pipes</p>
<p>Materials:</p>	<p>Bellows in stainless steel 1.4541 EN10028-7 (AISI 321). Weld ends in carbon steel Hinges in carbon steel Other grades of stainless steel available upon request</p>
<p>Construction:</p>	<ul style="list-style-type: none"> - Single or multi-ply metal corrugated bellows - Ends: weld ends, other types according to customer's specifications <p>The corrugations are formed by a PLC controlled automatic process. The special forming process, free from friction and lamination, allows constancy and accuracy of the corrugation profile with minimal material yielding</p>
<p>Use:</p>	<p>Correction of static offsets and compensation for thermal expansion and movements</p>
<p>Applications:</p>	<p>Superheated water lines, steam, diathermic oil, steam turbines</p>
<p>Working pressure:</p>	<p>From 6 to 40 bar</p>

Temperature:	Stainless steel -200° ÷ 550°C For expansion joints with weld ends in carbon steel -20° ÷ 350°C For a temperature range 50° ÷ 550°C performances (movements, working pressure, n° of cycles) must be reduced by applying the relevant coefficients (See document "N205 Derating factors" available in the attachments in the Technical Data section of this product) For a temperature range higher than 550°C, please contact our Technical Department
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KC MM PN 6										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
Mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
150	± 14.0	333	168.3	4.5	198	311	4	3.9	22	MB.EJ.KC00.yy.150.06.CMMA2
	± 20.5	373			199		4		23	MB.EJ.KC00.yy.150.06.MMMA2
200	± 11.0	353	219.1	6.3	254	363	12	6.5	31	MB.EJ.KC00.yy.200.06.CMMA2
	± 17.5	393			254		7		32	MB.EJ.KC00.yy.200.06.MMMA2
250	± 9.0	353	273	6.3	314	418	25	10	42	MB.EJ.KC00.yy.250.06.CMMA2
	± 16.0	403			314		14		43	MB.EJ.KC00.yy.250.06.MMMA2
	± 21.5	443			315		14		46	MB.EJ.KC00.yy.250.06.LMMA2
300	± 9.0	343	323.9	7.1	369	478	33	18.5	57	MB.EJ.KC00.yy.300.06.CMMA2
	± 13.5	378			369		22		59	MB.EJ.KC00.yy.300.06.MMMA2
	± 21.5	443			370		18		63	MB.EJ.KC00.yy.300.06.LMMA2
350	± 8.0	343	355.6	8	402	510	52	22	62	MB.EJ.KC00.yy.350.06.CMMA2
	± 13.0	383			402		35		64	MB.EJ.KC00.yy.350.06.MMMA2
	± 19.5	443			402		23		68	MB.EJ.KC00.yy.350.06.LMMA2
400	± 7.5	463	406.4	8.8	452	584	73	43	113	MB.EJ.KC00.yy.400.06.CMMA2
	± 12.0	473			452		49		111	MB.EJ.KC00.yy.400.06.MMMA2
	± 17.5	538			452		33		115	MB.EJ.KC00.yy.400.06.LMMA2
450	± 4.0	473	457.2	9.5	508	636	244	54	130	MB.EJ.KC00.yy.450.06.CMMA2
	± 7.0	468			508		122		125	MB.EJ.KC00.yy.450.06.MMMA2
	± 10.0	508			508		92		128	MB.EJ.KC00.yy.450.06.LMMA2
500	± 3.5	473	508	9.5	559	688	329	66	152	MB.EJ.KC00.yy.500.06.CMMA2
	± 6.5	468			559		164		144	MB.EJ.KC00.yy.500.06.MMMA2
	± 9.0	508			559		123		148	MB.EJ.KC00.yy.500.06.LMMA2

KC MM PN 6										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
Mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
600	± 5.5	588	609.6	9.5	661	811	550	110	222	MB.EJ.KC00.yy.600.06.MMMA2
	± 7.5	568			661		208		214	MB.EJ.KC00.yy.600.06.LMMA2
	± 12.0	663			661		128		225	MB.EJ.KC00.yy.600.06.XMMA2

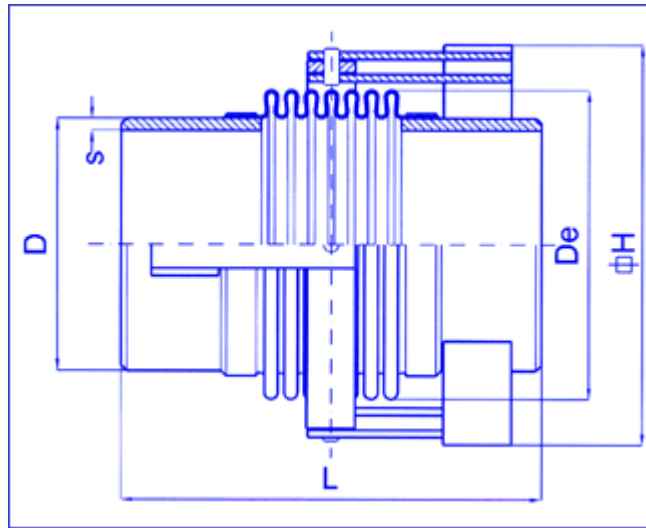
In the product code:

- replace yy, with bellows material : 27 = X6CrNiTi 18-10 N° 1.4541 EN 10028-7
24 = X2CrNiMo 17-12-2 N° 1.4404 EN 10028-7

Other materials upon request.

For example:

Gimbal hinged expansion joint DN 400 with bellows in AISI 321, standard series =
product code MB.EJ.KC00.27.400.06.MMMA2.



KC MM PN 10										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment Ka $\pm 20\%$	Frictional Moment Ma $\pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
150	± 10.5	328	168.3	4.5	199	311	11	3.9	22	MB.EJ.KC00.yy.150.10.CMMA2
	± 19.5	378			199		6		24	MB.EJ.KC00.yy.150.10.MMMA2
200	± 10.5	358	219.1	6.3	254	368	16	8.6	42	MB.EJ.KC00.yy.200.10.CMMA2
	± 16.0	398			254		10		43	MB.EJ.KC00.yy.200.10.MMMA2
	± 19.5	418			255		12		45	MB.EJ.KC00.yy.200.10.LMMA2
250	± 5.5	348	273	6.3	315	424	77	13.3	52	MB.EJ.KC00.yy.250.10.CMMA2
	± 10.0	393			315		44		55	MB.EJ.KC00.yy.250.10.MMMA2
	± 13.5	443			315		31		57	MB.EJ.KC00.yy.250.10.LMMA2
300	± 5.5	423	323.9	7.1	370	498	98	28	83	MB.EJ.KC00.yy.300.10.CMMA2
	± 8.5	458			370		65		86	MB.EJ.KC00.yy.300.10.MMMA2
	± 12.5	513			370		43		89	MB.EJ.KC00.yy.300.10.LMMA2
350	± 5.0	423	355.6	8	402	531	126	33	93	MB.EJ.KC00.yy.350.10.CMMA2
	± 7.5	458			402		84		96	MB.EJ.KC00.yy.350.10.MMMA2
	± 11.0	513			402		56		100	MB.EJ.KC00.yy.350.10.LMMA2
400	± 4.5	503	406.4	8.8	452	604	183	50	144	MB.EJ.KC00.yy.400.10.CMMA2
	± 6.5	498			452		122		140	MB.EJ.KC00.yy.400.10.MMMA2
	± 9.5	553			452		81		144	MB.EJ.KC00.yy.400.10.LMMA2
450	± 4.0	513	457.2	9.5	509	654	326	63	167	MB.EJ.KC00.yy.450.10.CMMA2
	± 6.5	513			509		196		164	MB.EJ.KC00.yy.450.10.MMMA2
	± 10.0	573			509		122		171	MB.EJ.KC00.yy.450.10.LMMA2

KC MM PN 10										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment Ka $\pm 20\%$	Frictional Moment Ma $\pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
500	± 3.5	523	508	9.5	560	734	438	88	225	MB.EJ.KC00.yy.500.10.CMMA2
	± 5.5	563			560		263		231	MB.EJ.KC00.yy.500.10.MMMA2
	± 9.0	623			560		164		238	MB.EJ.KC00.yy.500.10.LMMA2
600	± 4.5	633	609.6	9.5	662	842	438	125	341	MB.EJ.KC00.yy.600.10.CMMA2
	± 7.5	653			662		275		338	MB.EJ.KC00.yy.600.10.MMMA2
	± 11.0	733			662		184		350	MB.EJ.KC00.yy.600.10.LMMA2

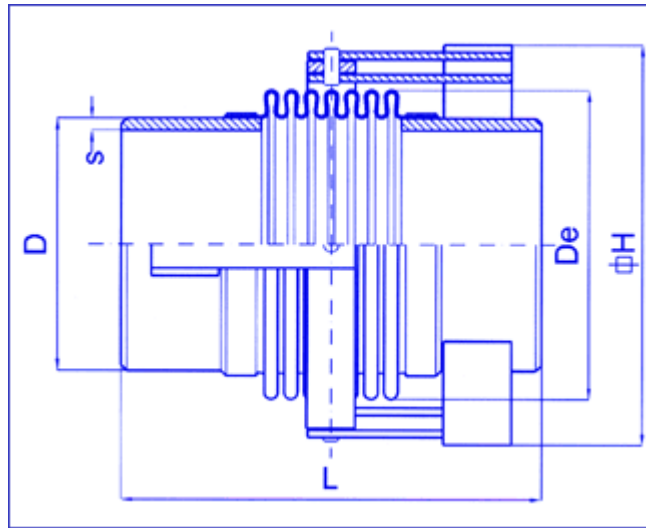
In the product code:

- replace yy, with bellows material : 27 = X6CrNiTi 18-10 N° 1.4541 EN 10028-7
24 = X2CrNiMo 17-12-2 N° 1.4404 EN 10028-7

Other materials upon request.

For example:

Gimbal hinged expansion joint DN 400 with bellows in AISI 321, standard series =
product code MB.EJ.KC00.27.400.10.MMMA2.



KC MM PN 16										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
50	± 20.0	292	60.3	3.2	77	159	1.1	0.5	5.6	MB.EJ.KC00.yy.050.16.CMMA2
65	± 17.5	282	76.1	3.32	96	159	1.7	0.7	5.7	MB.EJ.KC00.yy.065.16.CMMC1
80	± 14.5	269	88.9	3.2	115	202	2.2	1.2	10.5	MB.EJ.KC00.yy.080.16.CMMA2
	± 22.5	314			116		2.6		11	MB.EJ.KC00.yy.080.16.MMMA2
100	± 17.5	314	114.3	4.0	139	247	4	1.8	17.5	MB.EJ.KC00.yy.100.16.CMMA2
	± 20.5	334			140		5		18	MB.EJ.KC00.yy.100.16.MMMA2
125	± 12.5	294	139.7	4.0	171	247	9	2.7	18.5	MB.EJ.KC00.yy.125.16.CMMA2
	± 17.5	319			171		6		19.5	MB.EJ.KC00.yy.125.16.MMMA2
150	± 10.5	328	168.3	4.5	200	312	14	5.2	29.5	MB.EJ.KC00.yy.150.16.CMMA2
	± 15.0	353			200		10		30.5	MB.EJ.KC00.yy.150.16.MMMA2
200	± 6.5	353	219.1	6.3	255	368	50	8.6	42	MB.EJ.KC00.yy.200.16.CMMA2
	± 10.0	398			255		31		44	MB.EJ.KC00.yy.200.16.MMMA2
	± 14.0	438			255		23		46	MB.EJ.KC00.yy.200.16.LMMA2
250	± 5.5	423	273	6.3	316	444	103	20	75	MB.EJ.KC00.yy.250.16.CMMA2
	± 10.0	473			316		59		78	MB.EJ.KC00.yy.250.16.MMMA2
	± 14.5	523			316		41		82	MB.EJ.KC00.yy.250.16.LMMA2
300	± 5.5	463	323.9	7.1	371	518	131	32	110	MB.EJ.KC00.yy.300.16.CMMA2
	± 8.5	493			371		87		113	MB.EJ.KC00.yy.300.16.MMMA2
	± 12.5	548			371		58		117	MB.EJ.KC00.yy.300.16.LMMA2
350	± 5.5	513	355.6	8	404	551	213	39	128	MB.EJ.KC00.yy.350.16.CMMA2
	± 8.0	498			404		142		125	MB.EJ.KC00.yy.350.16.MMMA2
	± 12.0	558			404		95		129	MB.EJ.KC00.yy.350.16.LMMA2

KC MM PN 16										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
400	± 4.5	543	406.4	8.8	454	628	305	57	187	MB.EJ.KC00.yy.400.16.CMMA2
	± 7.0	578			454		203		192	MB.EJ.KC00.yy.400.16.MMMA2
	± 10.5	638			454		136		199	MB.EJ.KC00.yy.400.16.LMMA2
450	± 4.5	563	457.2	9.5	509	681	385	72	222	MB.EJ.KC00.yy.450.16.MMMA2
	± 7.0	618			509		241		230	MB.EJ.KC00.yy.450.16.LMMA2
	± 12.0	733			511		196		249	MB.EJ.KC00.yy.450.16.XMMA2
500	± 4.0	638	508	9.5	562	738	688	99	285	MB.EJ.KC00.yy.500.16.MMMA2
	± 6.5	698			562		430		294	MB.EJ.KC00.yy.500.16.LMMA2
	± 10.0	803			562		265		312	MB.EJ.KC00.yy.500.16.XMMA2
600	± 3.5	718	609.6	9.5	664	898	1154	172	480	MB.EJ.KC00.yy.600.16.MMMA2
	± 5.5	718			664		726		474	MB.EJ.KC00.yy.600.16.LMMA2
	± 9.0	803			664		447		489	MB.EJ.KC00.yy.600.16.XMMA2

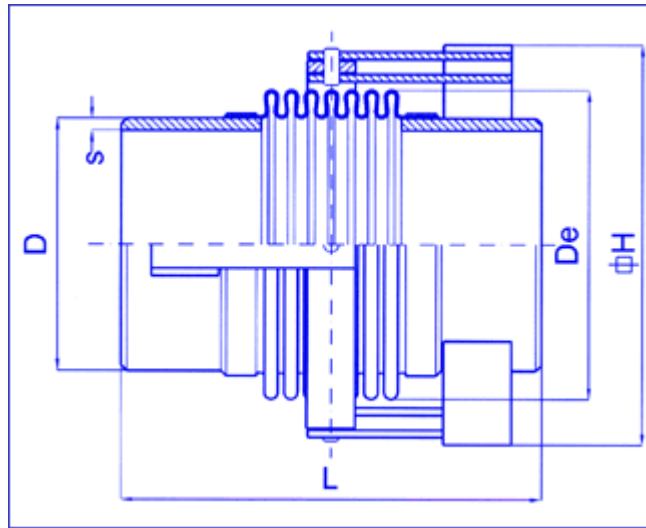
In the product code:

- replace yy, with bellows material : 27 = X6CrNiTi 18-10 N° 1.4541 EN 10028-7
24 = X2CrNiMo 17-12-2 N° 1.4404 EN 10028-7

Other materials upon request.

For example:

Gimbal hinged expansion joint DN 400 with bellows in AISI 321, standard series =
product code MB.EJ.KC00.27.400.16.MMMA2.



KC MM PN 25										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
50	± 19.5	287	60.3	3.2	77	159	1.7	0.5	6	MB.EJ.KC00.yy.050.25.CMMA2
65	± 20.0	302	76.1	3.2	97	177	2.8	0.8	9	MB.EJ.KC00.yy.065.25.CMMC1
80	± 17.0	289	88.9	3.2	116	202	3.4	1.2	11	MB.EJ.KC00.yy.080.25.CMMA2
100	± 15.0	309	114.3	4.0	140	247	6	1.8	17	MB.EJ.KC00.yy.100.25.CMMA2
125	± 7.5	294	139.7	4.0	171	255	20	4.0	20	MB.EJ.KC00.yy.125.25.CMMA2
	± 14.0	344			171		11		21	MB.EJ.KC00.yy.125.25.MMMA2
150	± 6.5	328	168.3	4.5	200	312	33	5.1	32	MB.EJ.KC00.yy.150.25.CMMA2
	± 11.5	378			200		18		34	MB.EJ.KC00.yy.150.25.MMMA2
200	± 6.5	428	219.1	6.3	256	385	67	13	65	MB.EJ.KC00.yy.200.25.CMMA2
	± 10.0	473			256		42		68	MB.EJ.KC00.yy.200.25.MMMA2
	± 13.0	503			256		34		70	MB.EJ.KC00.yy.200.25.LMMA2
250	± 4.0	478	273	6.3	316	464	201	23	101	MB.EJ.KC00.yy.250.25.CMMA2
	± 6.5	528			316		115		104	MB.EJ.KC00.yy.250.25.MMMA2
	± 8.5	558			316		89		107	MB.EJ.KC00.yy.250.25.LMMA2
300	± 4.0	543	323.9	7.1	373	541	338	37	152	MB.EJ.KC00.yy.300.25.CMMA2
	± 6.0	578			373		225		158	MB.EJ.KC00.yy.300.25.MMMA2
	± 9.0	633			373		151		164	MB.EJ.KC00.yy.300.25.LMMA2
350	± 5.5	578	355.6	8	405	575	294	44	175	MB.EJ.KC00.yy.350.25.MMMA2
	± 8.5	633			405		196		182	MB.EJ.KC00.yy.350.25.LMMA2
	± 11.5	693			405		147		190	MB.EJ.KC00.yy.350.25.XMMA2

KC MM PN 25										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
400	± 5.0	648	406.4	8.8	455	634	424	64	234	MB.EJ.KC00.yy.400.25.MMMA2
	± 7.0	703			455		282		242	MB.EJ.KC00.yy.400.25.LMMA2
	± 12.0	813			456		226		262	MB.EJ.KC00.yy.400.25.XMMA2
450	± 4.5	643	457.2	9.5	512	744	636	90	327	MB.EJ.KC00.yy.450.25.MMMA2
	± 6.5	688			512		397		335	MB.EJ.KC00.yy.450.25.LMMA2
	± 11	773			512		268		352	MB.EJ.KC00.yy.450.25.XMMA2
500	± 4.0	763	508	9.5	563	790	855	132	423	MB.EJ.KC00.yy.500.25.MMMA2
	± 6.5	758			563		534		421	MB.EJ.KC00.yy.500.25.LMMA2
	± 10.0	823			563		356		435	MB.EJ.KC00.yy.500.25.XMMA2
600	± 3.5	823	609.6	9.5	665	922	1427	204	655	MB.EJ.KC00.yy.600.25.MMMA2
	± 5.5	828			665		898		651	MB.EJ.KC00.yy.600.25.LMMA2
	± 8.0	863			665		599		657	MB.EJ.KC00.yy.600.25.XMMA2

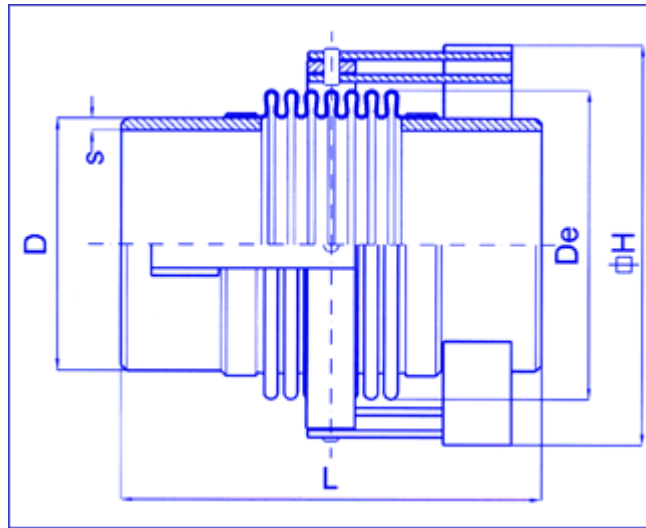
In the product code:

- replace yy, with bellows material : 27 = X6CrNiTi 18-10 N° 1.4541 EN 10028-7
24 = X2CrNiMo 17-12-2 N° 1.4404 EN 10028-7

Other materials upon request.

For example:

Gimbal hinged expansion joint DN 400 with bellows in AISI 321, standard series =
product code MB.EJ.KC00.27.400.25.MMMA2.



KC MM PN 40										
DN	Angular movement $\pm \alpha$	L	D	s	OD	H	Bending Moment $K\alpha \pm 20\%$	Frictional Moment $Ma \pm 20\%$	Weight	Product Code
mm	deg	mm	mm	mm	mm	mm	Nm/deg	Nm/bar	kg	n°
50	± 15.0	272	60.3	3.2	77	177	2.1	0.5	8	MB.EJ.KC00.yy.050.40.CMMA2
65	± 15.5	287	76.1	3.2	97	177	3.5	0.8	9	MB.EJ.KC00.yy.065.40.CMMC1
80	± 11.5	289	88.9	3.2	116	202	7.5	1.2	11	MB.EJ.KC00.yy.080.40.CMMA2
	± 15.0	314			117		8		11.5	MB.EJ.KC00.yy.080.40.MMMA2
100	± 8.5	309	114.3	4.0	140	255	14	2.6	14	MB.EJ.KC00.yy.100.40.CMMA2
	± 13.5	349			141		13		15	MB.EJ.KC00.yy.100.40.MMMA2
125	± 8.0	304	139.7	4.0	173	255	35	4.0	19	MB.EJ.KC00.yy.125.40.CMMA2
	± 13.0	344			173		22		20	MB.EJ.KC00.yy.125.40.MMMA2
150	± 7.0	428	168.3	4.5	202	325	56	7.7	51	MB.EJ.KC00.yy.150.40.CMMA2
	± 12.5	483			202		31		54	MB.EJ.KC00.yy.150.40.MMMA2
200	± 5.0	463	219.1	6.3	258	405	174	15	87	MB.EJ.KC00.yy.200.40.CMMA2
	± 7.5	508			258		108		91	MB.EJ.KC00.yy.200.40.MMMA2
	± 10.5	558			258		79		95	MB.EJ.KC00.yy.200.40.LMMA2
250	± 4.5	538	273	6.3	319	485	336	26	138	MB.EJ.KC00.yy.250.40.CMMA2
	± 7.5	593			319		192		145	MB.EJ.KC00.yy.250.40.MMMA2
	± 9.5	633			319		149		150	MB.EJ.KC00.yy.250.40.LMMA2
300	± 4.0	633	323.9	7.1	374	548	425	42	191	MB.EJ.KC00.yy.300.40.CMMA2
	± 6.0	633			374		284		192	MB.EJ.KC00.yy.300.40.MMMA2
	± 8.0	673			374		213		196	MB.EJ.KC00.yy.300.40.LMMA2

