



**MarelliMotori**  
Inspired solutions



## **MXB GENERATOR SERIES**

**10 - 160 kVA - 50 Hz - 400 V**

**12,5 - 200 kVA - 60 Hz - 480 V**

# STANDARD CONFIGURATION

Main components	160	180	225
Magnetic steel	Low losses. Insulated on both sides		
Housing	Fabricated steel (EN 10025 - S235JR)		
Shield	Aluminium alloy 46100S T6		
Shaft	Carbon steel - hot rolled (EN10025 - S355 JR)		
Fan	PA 6.6 up to MXB 180 SC4 included - Aluminum alloy above		
Terminal board	PF2736 Bakelite		
	7-pins		9-pins
Construction	160	180	225
Enclosure	Open Drip Proof		
Cooling system	IC01 as per IEC 60034-6		
Degree of protection	IP23 as per IEC 60034-5	IP23 as per IEC 60034-5 (up to IP 44)	
Mounting	Horizontal single bearing	Horizontal single bearing - IM 2105 (double bearing available on request)	
Technical data	160	180	225
Insulation system	Class H for stator and rotor		
Impregnation	Epoxy resin through high quality process.		
Winding pitch	2/3		
Bearing data	160	180	225
Bearing type	Permanently greased		
	N-END	6207-2RS-C3	6309-2RS1-C3-WT
Bearing lifetime	≥ 20.000 hours		
Operation at reduced speed	All regulators work to reduce the excitation current in order to protect the excitation system when the generator is used at reduced speed		
Excitation system	160	180	225
Excitation type	Brushless with rotating rectifier (Graetz 6-Diode bridge)		
PMG	Optional		
Auxiliary winding	Optional		Standard
Applicable standards	160	180	225
Standards	IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.32.		
Certifications	UL 1004-1, UL 1004-4, C22.2 No. 100		
AVR	160	180	225
AVR model	AVR model M00FA122A - MARK VX. Dedicated AVR for optional PMG.		
AVR position	On right side viewed from D-end		Front mounted
AVR supply	Mains		Auxiliary winding
Voltage sensing	Single phase		
Accuracy	± 0,5% (@ rated load, balanced and not deforming, P.F. 0,8)		
EMI filter	Included		
Limiters	U/F Under Frequency		
Three phase short circuit current	Generators with auxiliary windings or PMG ensure a three phase short-circuit current (I <sub>cc</sub> ) higher than 3 times the rated current (I <sub>n</sub> ): I <sub>cc</sub> > 3 I <sub>n</sub> for 10 seconds		
Operating conditions	160	180	225
Overload during S1 continuous duty	10% for 1 hour / 15% for 10 minutes / 30% for 4 minutes / 50% for 2 minutes		
Air inlet	Axial and radial		
Damper cage	Rotor is provided with large sized damper cage		
Radio interference	Class B Group 1 as EN 55011		
THD / THF	TDH < 2% at no load / THF < 2%		
Parallel operations	All generators are provided with an amply sized damper cage and are suitable for parallel operations with other generators, when equipped with the paralleling unit (available on 180 and 225 frame size)		

## ALTITUDE

The rated outputs refer to installation up to 1.000 m a.s.l. Above this level the following derating factors must be applied.

Altitude (m asl)	< 1.000	< 1.500	< 2.000	< 2.500	< 3.000
K factor	1,00	0,96	0,93	0,90	0,86

## AMBIENT TEMPERATURE

The rated outputs given in this catalogue are based on a maximum ambient temperature of 40°C.

When operating at different ambient temperatures the output rating can be obtained by applying the factors as in the following table.

Ambient temperature (°C)	30	35	40	45	50	55
K factor	1,04	1,00	1,00	0,96	0,93	0,9

## POWER FACTOR

The nominal power factor is 0,8 lagging. For different power factor values the following derating factors must be applied.

Power factor	1,0	0,8	0,7	0,6	0,5	0,3	0
K factor	1,00	1,00	0,93	0,88	0,84	0,82	0,80

## VOLTAGE AND FREQUENCY

Generators can operate at 50 Hz and 60 Hz with below voltage values. Other voltages are possible with optional adapted windings.

Connection	50 Hz	60 Hz
Series star	380V - 440V	380V - 480V
Parallel star	190V - 220V	190V - 240V
Series delta	220V - 254V	220V - 277V

## OPTIONS AVAILABLE

	160	180	225
<b>Operating conditions</b>			
Special voltage including 380 V, R3, R6 (LV only)	o	o	o
Provision for parallel operation with similar generators with AVR	n/a	o*	o
<b>Terminal box</b>			
IP55 terminal box	o	o	o
Large terminal box	n/a	o	n/a
<b>Heatings</b>			
Anti-condensation heaters (V=220 V)	o	o	o
<b>Temperature sensors</b>			
N. 3 PTC thermistors	o	o	o
N. 3 PT100 resistance temperature detectors in stator winding	n/a	o	o
N. 1 PT100 on N-end bearing	o	o	o
N. 1 PT100 on D-end bearing (for double bearing configuration)	n/a	o	o
<b>Protection degree</b>			
Inlet filter	n/a	o	o
Inlet + outlet filter (IP43)	n/a	o	o
Inlet + outlet filter (IP44)	n/a	o	o
<b>AVR</b>			
Single-phase sensing AVR (Mark VX), side mounted	s	s	o
Single-phase sensing AVR (Mark VX), front mounted	n/a	o*	s
Three-phase sensing AVR (MEC-20), side mounted	n/a	o*	o
Three-phase sensing AVR (MEC-20), front mounted	n/a	o*	n/a
<b>Painting</b>			
Non standard colour (MM ref. F96831)	o	o	o
Special painting cycle (MM ref. F96819)	o	o	o
Special painting cycle (MM ref. F96826)	o	o	o
<b>Environmental solutions</b>			
Tropicalization (CW1081)	o	o	o
<b>Excitation system</b>			
PMG with single-phase AVR (Mark XX) side mounted	o	o	o
PMG with single-phase AVR (Mark XX) front mounted	n/a	o*	o
PMG with three-phase AVR (MEC-20) side mounted	n/a	o*	o
PMG with three-phase AVR (MEC-20) front mounted	n/a	o*	n/a

\* This option includes also large terminal box

o: optional

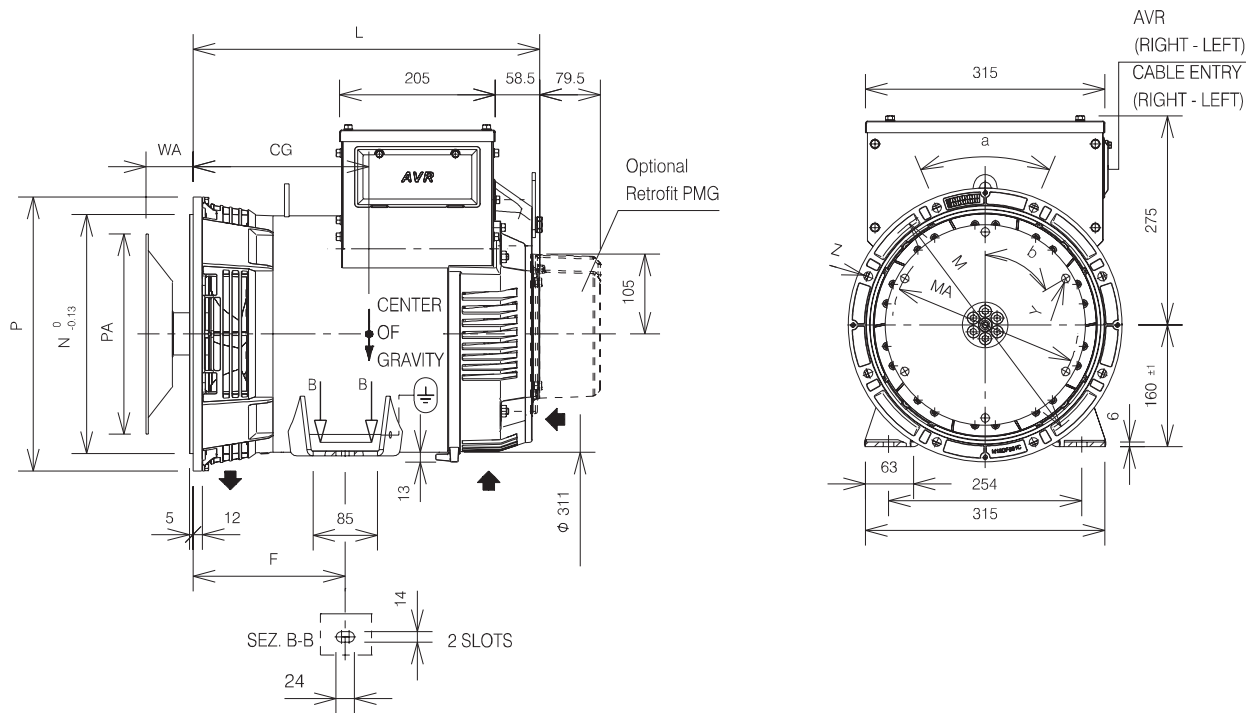
n/a: not available

s: standard

# TECHNICAL DATA

Type	Continuous duty rating (kVA)			Stand by kVA		Single Phase	Efficiency	Weight Kg
	125/40 ΔT Cl.H	105/40 ΔT Cl. F	80/40 ΔT Cl. B	163/27	150/40	Derating factor Zig-zag	P.F. 0,8 4/4 LOAD	
							%	
<b>4 POLES / 1500 rpm</b>	<b>50 Hz - 400 V</b>					<b>230 V</b>		
MXB 160 SA4	10,0	9,2	8,0	11,0	10,5	0,66	81,2	82
MXB 160 SB4	12,5	11,5	10,0	13,8	13,1	0,66	82,6	89
MXB 160 MA4	15,0	13,7	12,0	16,5	15,8	0,66	83,7	97
MXB 160 MB4	17,5	16,0	14,0	19,3	18,4	0,66	84,6	103
<b>4 POLES / 1800 rpm</b>	<b>60 Hz - 480 V</b>					<b>277 V</b>		
MXB 160 SA4	12,5	11,5	10,0	13,8	13,1	0,66	82,4	82
MXB 160 SB4	15,6	14,3	12,5	17,2	16,4	0,66	83,7	89
MXB 160 MA4	18,8	17,2	15,0	20,6	19,7	0,66	84,8	97
MXB 160 MB4	21,9	20,0	17,5	24,1	23,0	0,66	85,6	103
<b>4 POLES / 1500 rpm</b>	<b>50 Hz - 400 V</b>					<b>230 V</b>		
MXB 180 XA4	20,0	18,3	16,0	22,0	21,2	0,66	84,9	110
MXB 180 SA4	25,0	22,9	20,0	27,5	26,5	0,66	87,6	132
MXB 180 SB4	30,0	27,5	24,0	33,0	31,8	0,66	88,4	144
MXB 180 SC4	34,0	31,2	27,2	37,4	36,0	0,66	89,5	157
MXB 180 MA4	40,0	36,7	32,0	44,0	42,4	0,66	89,8	181
MXB 180 MC4	45,0	41,2	36,0	49,5	47,7	0,62	90,3	193
MXB 180 LA4	50,0	45,8	40,0	55,0	53,0	0,55	89,2	206
MXB 180 LB4	63,0	57,7	50,4	69,3	66,8	0,55	90,1	234
<b>4 POLES / 1800 rpm</b>	<b>60 Hz - 480 V</b>					<b>277 V</b>		
MXB 180 XA4	25,0	22,9	20,0	27,5	26,5	0,66	85,7	110
MXB 180 SA4	31,3	28,7	25,0	34,4	33,2	0,66	88,6	132
MXB 180 SB4	37,5	34,4	30,0	41,3	39,8	0,66	89,9	144
MXB 180 SC4	42,5	39,0	34,0	46,8	45,1	0,66	90,0	152
MXB 180 MA4	50,0	45,8	40,0	55,0	53,0	0,66	90,6	181
MXB 180 MC4	56,3	51,6	45,0	61,9	59,7	0,62	91,0	193
MXB 180 LA4	62,5	57,3	50,0	68,8	66,3	0,55	90,4	206
MXB 180 LB4	78,8	72,2	63,0	86,7	83,5	0,55	90,7	234
<b>4 POLES / 1500 rpm</b>	<b>50 Hz - 400 V</b>					<b>230 V</b>		
MXB 225 SA4	75,0	68,7	60,0	82,5	78,8	0,60	90,6	311
MXB 225 SB4	85,0	77,9	68,0	93,5	89,3	0,60	91,6	337
MXB 225 MA4	100,0	91,7	80,0	110,0	105,0	0,60	91,8	382
MXB 225 MB4	120,0	110,0	96,0	132,0	126,0	0,60	92,3	401
MXB 225 LA4	135,0	123,7	108,0	148,5	141,8	0,55	92,4	451
MXB 225 LB4	150,0	137,5	120,0	165,0	157,5	0,55	93,0	483
MXB 225 LC4	160,0	146,0	128,0	176,0	168,0	0,51	92,5	485
<b>4 POLES / 1800 rpm</b>	<b>60 Hz - 480 V</b>					<b>277 V</b>		
MXB 225 SA4	94,0	86,0	75,0	103,0	98,0	0,60	91,2	311
MXB 225 SB4	106,0	97,4	85,0	117,0	112,0	0,60	92,2	337
MXB 225 MA4	125,0	114,6	100,0	137,5	131,0	0,60	92,6	382
MXB 225 MB4	150,0	137,5	120,0	165,0	157,5	0,60	92,8	401
MXB 225 LA4	169,0	154,7	135,0	185,6	177,0	0,55	93,1	451
MXB 225 LB4	187,5	171,8	150,0	206,0	197,0	0,55	93,6	483
MXB 225 LC4	200	182,5	160,0	220,0	210,0	0,51	93,1	485

# DIMENSIONS - MXB 160 - SINGLE BEARING



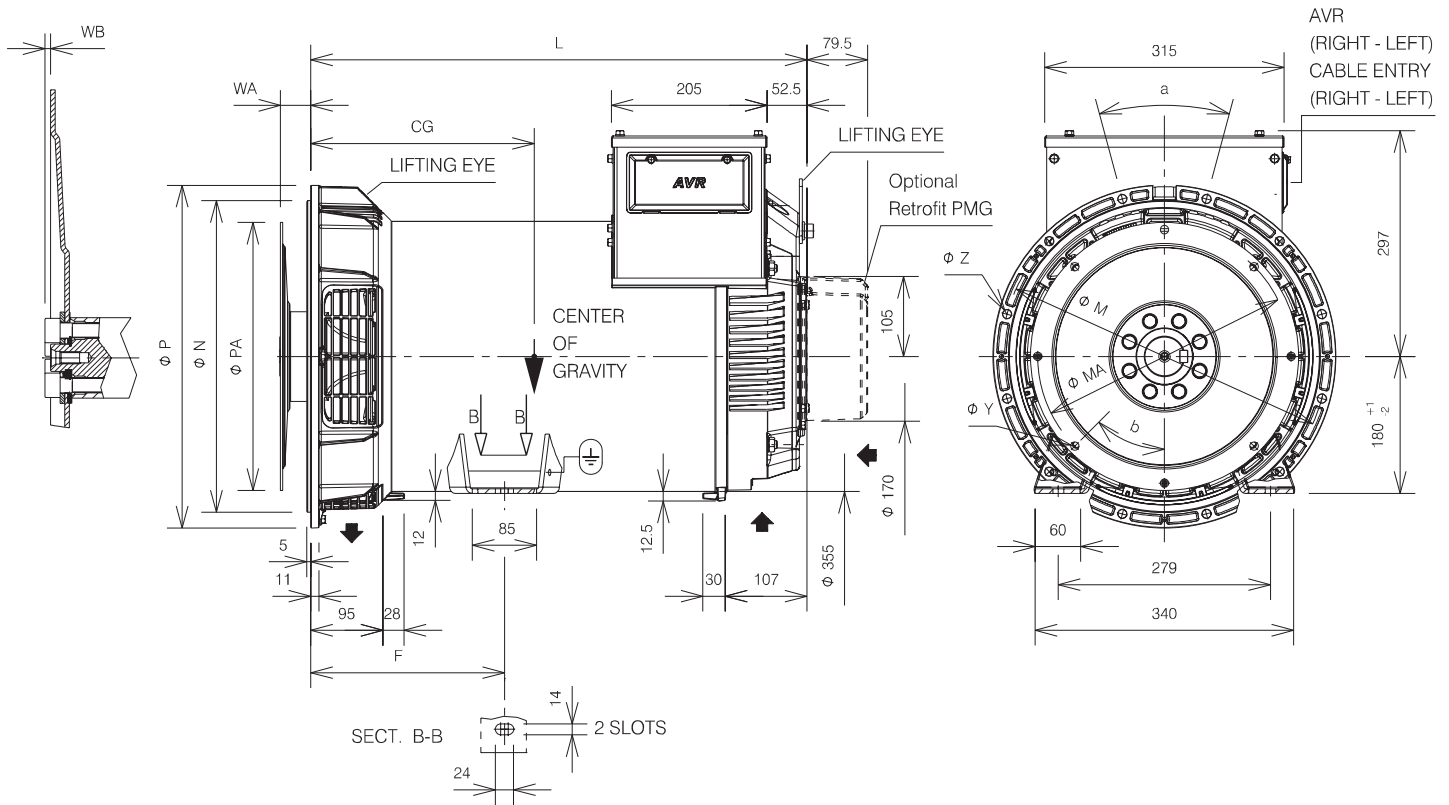
Type	Dimensions [mm]		
	L	F	CG SAE 3-SAE 4-SAE 5
MXB 160 SA	416	200	202
MXB 160 SB			204
MXB 160 MA	441		210
MXB 160 MB		212	

COUPLING	Connectings		
	FLANGE		
	SAE J617		
SAE J620	5	4	3
6 1/2	●		
7 1/2	○	●	
8	●	●	●
10		●	●
11 1/2			●

● Available      ○ Most common

Dimensions [mm]												
FLANGE						COUPLING						
SAE J617	N	P	Z		a	SAE J620	PA	MA	Y		b	WA
			NR	Ø					NR	Ø		
5	314,32	360	8	11,5	45°	6 1/2	215,9	200	6	9	60°	30,2
4	361,95	407	12	11,5	30°	7 1/2	241,3	222,3	8	9	45°	30,2
3	409,58	455	12	11,5	30°	8	263,52	244,48	6	11	60°	62
						10	314,3	295,3	8	11	45°	53,8
						11 1/2	352,4	333,4	8	11	45°	39,6

# DIMENSIONS - MXB 180 - SINGLE BEARING



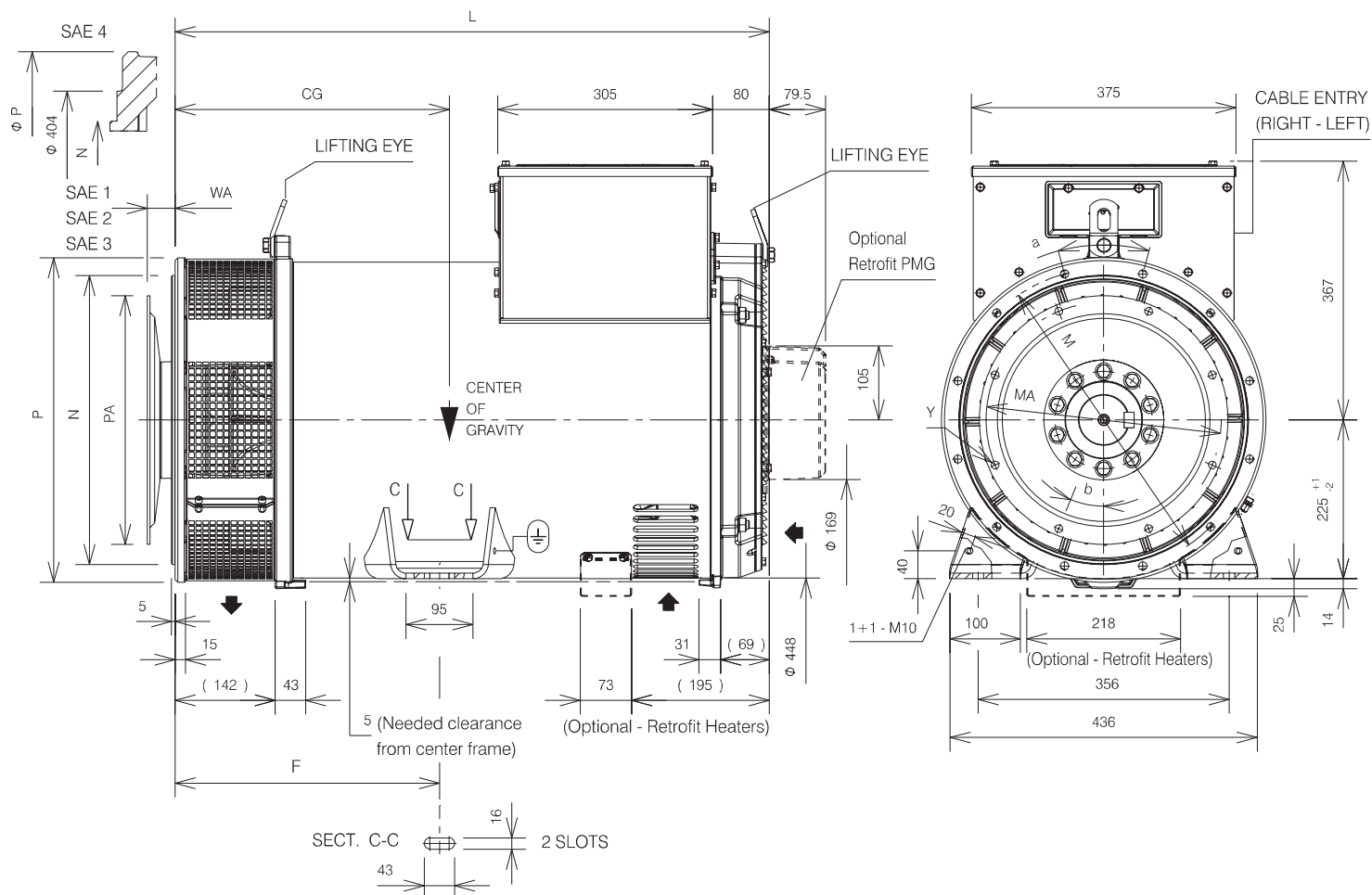
Type	Dimensions [mm]			
	L	F	CG SAE 4-SAE 5	CG SAE 2-SAE 3
MXB 180 XA 4	426	205	201	206
MXB 180 SA 4			223	228
MXB 180 SB 4			233	238
MXB 180 SC 4			245	250
MXB 180 MA 4	546	255	250	254
MXB 180 MC 4			260	264
MXB 180 LA 4			289	294
MXB 180 LB 4	651		314	319

Connectings				
COUPLING SAE J620	FLANGE SAE J617			
	5 <sup>(*)</sup>	4	3	2
6 1/2	•			
7 1/2	•	•		
8	•	•	•	•
10		•	•	•
11 1/2			○	•

• Available      ○ Most common  
 (\*) Not available for frame size MA4, MC4, LA4 and LB4

Dimensions [mm]														
FLANGE							COUPLING							
SAE J617	N	P	M	Z		a	SAE J620	PA	MA	Y		b	WA	WB
				NR	Ø					NR	Ø			
5	314,32	355,6	333,38	8	11	45°	6 1/2	215,90	200,02	6	9	60°	30,2	13
4	361,95	403,4	381,00	12	11	30°	7 1/2	241,30	222,25	8	9	45°	30,2	13
3	409,58	450,8	428,62	12	11	30°	8	263,52	244,48	6	11	60°	62,0	-
2	447,68	489,0	466,72	12	11	30°	10	314,32	295,28	8	11	45°	53,8	-
							11 1/2	352,42	333,38	8	11	45°	39,6	-

# DIMENSIONS - MXB 225 - SINGLE BEARING



Type	Dimensions [mm]			
	L	F	CG SAE4-SAE3	CG SAE2-SAE1
MXB 225 SA 4	708	325	303	310
MXB 225 SB 4			352	348
MXB 225 MA 4	778	375	344	331
MXB 225 MB 4			386	372
MXB 225 LA 4	843	375	389	377
MXB 225 LB 4			436	423
MXB 225 LC 4				

Connectings				
COUPLING SAE J620	FLANGE SAE J617			
	4	3	2	1
10	●	●		
11 1/2		○	●	●
14				●

● Available ○ Most common

Dimensions [mm]													
FLANGE							COUPLING						
SAE J617	N	P	M	Z		a	SAE J620	PA	MA	Y		b	WA
				NR	∅					NR	∅		
4	361,95	460	381,00	12	11	30°	10	314,32	295,28	8	11	45°	53,8
3	409,58	460	428,62	12	11	30°	11 1/2	352,42	333,38	8	11	45°	39,6
2	447,68	495	466,72	12	11	30°	14	466,72	438,15	8	14	45°	25,4
1	511,18	552,5	530,22	12	11	30°							

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