

## MA range

### *Single compressor units for medium and low temperature applications*



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## Units for medium temperature applications

### Compressor units with mechanical capacity regulation (454...758 kW @ -10 / 35 °C)

Model		M-KA73-65		M-KA83-65		M-KA93-65		M-KA103-65	
Refrigerant		R717		R717		R717		R717	
Number of compressors		1		1		1		1	
Compressor manufacturer		Bitzer		Bitzer		Bitzer		Bitzer	
Capacity regulation method		Mechanical 25...100%		Mechanical 25...100%		Mechanical 25...100%		Mechanical 25...100%	
Compressor speed		2900 1/min		2900 1/min		2900 1/min		2900 1/min	
Swept volume		700 m <sup>3</sup> /h		805 m <sup>3</sup> /h		910 m <sup>3</sup> /h		1015 m <sup>3</sup> /h	
Rated motor power		160 kW		160 kW		200 kW		250 kW	
Motor efficiency class		IE3		IE3		IE3		IE3	
Power supply voltage		380...415 V		380...415 V		380...415 V		380...415 V	
Power grid frequency		50 Hz		50 Hz		50 Hz		50 Hz	
Combined oil separator manufacturer		Bitzer		Bitzer		Bitzer		Bitzer	
Oil cooling method		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon	
Oil cooler heat exchanger manufacturer		AlfaLaval		AlfaLaval		AlfaLaval		AlfaLaval	
Compressor oil type		Arctic SHC226E		Arctic SHC226E		Arctic SHC226E		Arctic SHC226E	
Oil charge <sup>(1)</sup>		110 L		110 L		120 L		120 L	
Design pressure LP / HP		19 bar / 25 bar		19 bar / 25 bar		19 bar / 25 bar		19 bar / 25 bar	
Dimensions (Length [mm] x Width [mm] x Height [mm]) <sup>(1)</sup>		2460 x 1420 x 2270		2460 x 1420 x 2270		2460 x 1420 x 2300		2660 x 1420 x 2300	
Empty weight <sup>(1)</sup>		3400 kg		3450 kg		3550 kg		4200 kg	
Performance at -10 / 35 °C (1), (2)	Operation	standard	with ECO	standard	with ECO	standard	with ECO	standard	with ECO
	Cooling capacity	454 kW	521 kW	529 kW	606 kW	597 kW	683 kW	669 kW	758 kW
	Shaft power	119 kW	127 kW	134 kW	143 kW	154 kW	163 kW	169 kW	178 kW
	Compressor COP (cooling capacity / shaft power)	3,82	4,19	3,94	4,24	3,89	4,19	3,96	4,27
	Required condenser capacity	523 kW	598 kW	608 kW	694 kW	687 kW	783 kW	769 kW	868 kW
	Oil cooling capacity	51 kW	51 kW	55 kW	55 kW	64 kW	64 kW	68 kW	67 kW

(1) - Tentative data

(2) - Performance data is calculated with 1K liquid subcooling, 1K suction superheat and 80 °C discharge gas temperature

(3) - Glycol / water oil cooling can be used as heat recovery

**Compressor units for VSD operation (626...1046 kW @ -10 / 35 °C)**

Model		M-KA73-65F		M-KA83-65F		M-KA93-65F		M-KA103-65F	
Refrigerant		R717		R717		R717		R717	
Number of compressors		1		1		1		1	
Compressor manufacturer		Bitzer		Bitzer		Bitzer		Bitzer	
Capacity regulation method		VSD		VSD		VSD		VSD	
Compressor speed		1500...4000 1/min		1500...4000 1/min		1500...4000 1/min		1500...4000 1/min	
Swept volume at maximum speed		966 m <sup>3</sup> /h		1110 m <sup>3</sup> /h		1255 m <sup>3</sup> /h		1400 m <sup>3</sup> /h	
Rated motor power		200 kW		250 kW		250 kW		315 kW	
Motor efficiency class		IE3		IE3		IE3		IE3	
Power supply voltage		380...415 V		380...415 V		380...415 V		380...415 V	
Power grid frequency		50 Hz		50 Hz		50 Hz		50 Hz	
Combined oil separator manufacturer		Bitzer		Bitzer		Bitzer		Bitzer	
Oil cooling method		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon	
Oil cooler heat exchanger manufacturer		AlfaLaval		AlfaLaval		AlfaLaval		AlfaLaval	
Compressor oil type		Arctic SHC226E		Arctic SHC226E		Arctic SHC226E		Arctic SHC226E	
Oil charge <sup>(1)</sup>		110 L		110 L		120 L		120 L	
Design pressure LP / HP		19 bar / 25 bar		19 bar / 25 bar		19 bar / 25 bar		19 bar / 25 bar	
Dimensions (Length [mm] x Width [mm] x Height [mm]) <sup>(1)</sup>		2460 x 1420 x 2270		2660 x 1420 x 2270		2660 x 1420 x 2300		2660 x 1420 x 2300	
Empty weight <sup>(1)</sup>		3450 kg		4200 kg		4250 kg		4350 kg	
Performance at -10 / 35 °C <sup>(1), (2)</sup>	Operation	standard	with ECO	standard	with ECO	standard	with ECO	standard	with ECO
	Cooling capacity at maximum speed	626 kW	719 kW	730 kW	836 kW	823 kW	942 kW	923 kW	1046 kW
	Shaft power at maximum speed	164 kW	175 kW	185 kW	197 kW	212 kW	224 kW	233 kW	246 kW
	Compressor COP (cooling capacity / shaft power)	3,82	4,12	3,94	4,24	3,89	4,20	3,96	4,27
	Required condenser capacity	721 kW	825 kW	839 kW	957 kW	948 kW	783 kW	1061 kW	1197 kW
	Oil cooling capacity	70 kW	70 kW	76 kW	76 kW	89 kW	64 kW	94 kW	92 kW

(1) - Tentative data

(2) - Performance data is calculated with 1K liquid subcooling, 1K suction superheat and 80 °C discharge gas temperature

(3) - Glycol / water oil cooling can be used as heat recovery

## Units for low temperature applications

### Compressor units with mechanical capacity regulation (157...256 kW @ -35 / 35 °C)

Model		M-NA83-65		M-NA103-65	
Refrigerant		R717		R717	
Number of compressors		1		1	
Compressor manufacturer		Bitzer		Bitzer	
Capacity regulation method		Mechanical 25...100%		Mechanical 25...100%	
Compressor speed		2900 1/min		2900 1/min	
Swept volume		805 m <sup>3</sup> /h		1015 m <sup>3</sup> /h	
Rated motor power		160 kW		200 kW	
Motor efficiency class		IE3		IE3	
Power supply voltage		380...415 V		380...415 V	
Power grid frequency		50 Hz		50 Hz	
Combined oil separator manufacturer		Bitzer		Bitzer	
Oil cooling method		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon	
Oil cooler heat exchanger manufacturer		AlfaLaval		AlfaLaval	
Compressor oil type		Arctic SHC226E		Arctic SHC226E	
Oil charge <sup>(1)</sup>		110 L		120 L	
Design pressure LP / HP		19 bar / 25 bar		19 bar / 25 bar	
Dimensions (Length [mm] x Width [mm] x Height [mm]) <sup>(1)</sup>		2460 x 1420 x 2270		2460 x 1420 x 2300	
Empty weight <sup>(1)</sup>		3400 kg		3450 kg	
Performance at -35 / 35 °C <sup>(1), (2)</sup>	Operation	standard	with ECO	standard	with ECO
	Cooling capacity	157 kW	200 kW	204 kW	256 kW
	Shaft power	95 kW	106 kW	122 kW	135 kW
	Compressor COP (cooling capacity / shaft power)	1,66	1,89	1,67	1,9
	Required condenser capacity	189 kW	236 kW	243 kW	303 kW
	Oil cooling capacity	66 kW	69 kW	84 kW	88 kW

(1) - Tentative data

(2) - Performance data is calculated with 1K liquid subcooling, 1K suction superheat and 80 °C discharge gas temperature

(3) - Glycol / water oil cooling can be used as heat recovery

**Compressor units for VSD operation (217...353 kW @ -35 / 35 °C)**

Model		M-NA83-65F		M-NA103-65F	
Refrigerant		R717		R717	
Number of compressors		1		1	
Compressor manufacturer		Bitzer		Bitzer	
Capacity regulation method		VSD		VSD	
Compressor speed		1500...4000 1/min		1500...4000 1/min	
Swept volume at maximum speed		1110 m <sup>3</sup> /h		1400 m <sup>3</sup> /h	
Rated motor power		200 kW		250 kW	
Motor efficiency class		IE3		IE3	
Power supply voltage		380...415 V		380...415 V	
Power grid frequency		50 Hz		50 Hz	
Combined oil separator manufacturer		Bitzer		Bitzer	
Oil cooling method		Glycol/water <sup>(3)</sup> or thermosyphon		Glycol/water <sup>(3)</sup> or thermosyphon	
Oil cooler heat exchanger manufacturer		AlfaLaval		AlfaLaval	
Compressor oil type		Arctic SHC226E		Arctic SHC226E	
Oil charge <sup>(1)</sup>		110 L		120 L	
Design pressure LP / HP		19 bar / 25 bar		19 bar / 25 bar	
Dimensions (Length [mm] x Width [mm] x Height [mm]) <sup>(1)</sup>		2460 x 1420 x 2270		2660 x 1420 x 2300	
Empty weight <sup>(1)</sup>		3450 kg		4250 kg	
Performance at -35 / 35 °C (1), (2)	Operation	standard	with ECO	standard	with ECO
	Cooling capacity at maximum speed	217 kW	276 kW	281 kW	353 kW
	Shaft power at maximum speed	131 kW	146 kW	168 kW	186,2 kW
	Compressor COP (cooling capacity / shaft power)	1,66	1,89	1,67	1,91
	Required condenser capacity	261 kW	326 kW	335 kW	418 kW
	Oil cooling capacity	91 kW	95 kW	116 kW	121 kW

(1) - Tentative data

(2) - Performance data is calculated with 1K liquid subcooling, 1K suction superheat and 80 °C discharge gas temperature

(3) - Glycol / water oil cooling can be used as heat recovery

## Notes:

Specification shown in this document is subject to change without notification

For further details please contact us.

Customized solutions for different temperatures, configurations are possible, please contact us with your request.

