



 **Market Master**

INVERTER CONDENSING UNITS

Market Master



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MARKET MASTER INVERTER CONDENSING UNITS

Market Master series is a new generation of inverter condensing units designed for low and medium temperature applications. Market Master units are most commonly used in: grocery stores, retail, cold stores, hotels, gastronomy and pharmaceutical processes.

Market Master units allow for precise cooling capacity adjustment, which results in significant energy savings. This is possible through capacity regulation of compressor with inverter and stepless speed control of condenser fans, adjusting them to the current demand for cooling and the current ambient temperature. Constant evaporation temperature allows to obtain high quality of stored products.

The standard version of the unit consists of:

- ▶ BITZER semi-hermetic reciprocating compressor, controlled by frequency inverter
- ▶ microchannel condenser
- ▶ EC fan
- ▶ liquid receiver with shut-off valve
- ▶ liquid line with filter and sight glass

▶ It is possible to equip a standard unit with a wide range of options.

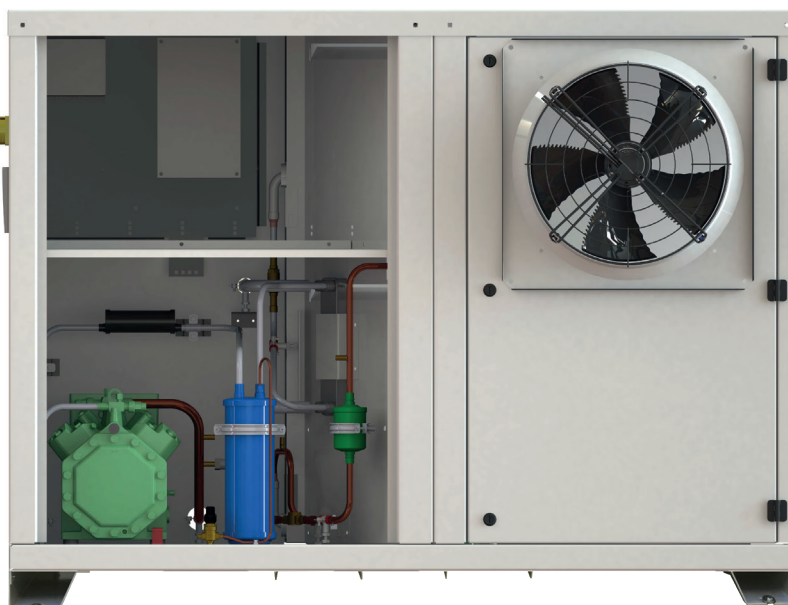


BASIC FEATURES OF THE UNIT

- ▶ Energy savings up to 25-30%.
- ▶ Possibility to supply multiple evaporators.
- ▶ Quiet operation of the unit.
- ▶ Stepless capacity regulation.
- ▶ Start unloader.
- ▶ Maintaining high quality of stored products.



MARKET MASTER CODE EXPLANATION



MM 2 - B K - D45Y H W

▼ ▼ ▼ ▼ ▼
1 2 3 4 5 6

- 1 - condensing unit type range
- 2 - compressor manufacturer (B - Bitzer)
- 3 - version: (K) catalogue / (I) customized / (KI) with additional options not included in this catalogue
- 4 - type of compressor
- 5 - condenser type, version: (V) with fan(s) on top / (H) with fan(s) on the front wall

Selected options:

- 6 - heat recovery [W]

EQUIPMENT RANGE - STANDARD DESIGN

SEMI-HERMETIC PISTON COMPRESSOR	Motor protection device Crankcase heater Ester oil charge
AIR CONDENSER	Microchannel heat exchanger EC fan(s)
REFRIGERANT RECEIVER	Vertical equipped with a shut-off valve on the outlet
MUFFLER	On discharge line of the compressor
FILTER AND SIGHT GLASS	On liquid line
PRESSURE SWITCHES	LP and HP
PRESSURE TRANSDUCERS	LP and HP
TEMPERATURE SENSOR	Ambient temperature
CASING	Resistant to weather conditions Powder coated galvanized steel
CONTROL CABINET	Integrated with the casing Main switch Overcurrent protection circuit breakers Compressor inverter (30 Hz to 80 Hz) Fan speed control Fully wired unit
DOCUMENTATION	User manual CE declaration of conformity

EQUIPMENT RANGE - ADDITIONAL OPTIONS

OIL LEVEL SENSOR	OLC-K1
SECOND FAN	For R449A/R448A, R404A etc.: possibility to add a second fan to F45YH and E46YH to lower the condensing pressure (Tropic) or to further reduce the condenser sound level For R134a, R513A etc.: possibility to add a second fan for F43YH and E44YH to lower the condensing pressure (Tropic) or to further reduce the condenser sound level
VIBRATION ELIMINATOR	On compressor suction line On compressor discharge line
OIL SEPARATOR WITH OIL LINE	Oil separator Oil separator insulation Heater 45 W Shut-off valve on oil line
SAFETY VALVE	With shut-off valve for safety valve
CHECK VALVE	On discharge line
HEAT RECOVERY (SUPERHEAT)	Plate heat exchanger Heat exchanger insulation
COMPRESSOR CHAMBER FAN (FREEZER ROOMS APPLICATION)	Installed in the unit casing
INSULATION	Compressor chamber with soundproof insulation
CONTROL PANEL	Integrated with the control cabinet
VIBRATION ISOLATORS	Delivered unmounted

COOLING CAPACITY AND POWER CONSUMPTION FOR R449A/R448A

TYPE	t _a	Q _o COOLING CAPACITY [kW]		P _e POWER CONSUMPTION [kW]				
		EVAPORATION TEMPERATURE						
		-10°C			-35°C			
		30 Hz	50 Hz	80 Hz	30 Hz	50 Hz	80 Hz	
MM2-BK-D23YV	27	Q _o	4,53	7,56	11,19	1,25	2,09	3,09
		P _e	1,63	2,60	3,77	0,92	1,43	2,03
	32	Q _o	4,20	7,01	10,37	1,14	1,90	2,81
		P _e	1,71	2,74	3,97	0,92	1,43	2,03
	37	Q _o	3,90	6,51	9,63	1,02	1,71	2,53
		P _e	1,78	2,86	4,15	0,92	1,42	2,02
MM2-BK-C24YV	27	Q _o	5,60	9,36	13,85	1,64	2,74	4,06
		P _e	2,05	3,31	4,82	1,15	1,81	2,60
	32	Q _o	5,22	8,72	12,91	1,50	2,50	3,70
		P _e	2,16	3,49	5,08	1,16	1,83	2,63
	37	Q _o	4,84	8,08	11,96	1,35	2,26	3,34
		P _e	2,25	3,65	5,32	1,16	1,83	2,63
MM2-BK-F45YH	27	Q _o	6,23	10,41	15,41	1,79	2,99	4,43
		P _e	2,19	3,55	5,17	1,23	1,94	2,79
	32	Q _o	5,78	9,66	14,30	1,62	2,70	4,00
		P _e	2,31	3,74	5,45	1,24	1,95	2,80
	37	Q _o	5,34	8,92	13,20	1,45	2,42	3,58
		P _e	2,41	3,92	5,72	1,24	1,96	2,82
MM2-BK-E46YH	27	Q _o	7,54	12,59	18,63	2,19	3,65	5,40
		P _e	2,78	4,53	6,62	1,46	2,33	3,37
	32	Q _o	6,92	11,56	17,11	1,99	3,33	4,92
		P _e	2,94	4,79	7,01	1,47	2,34	3,39
	37	Q _o	6,31	10,53	15,58	1,80	3,01	4,45
		P _e	3,07	5,02	7,35	1,48	2,35	3,40
MM2-BK-D47YH	27	Q _o	8,72	14,56	21,55	2,50	4,18	6,19
		P _e	3,27	5,24	7,59	1,83	2,82	4,01
	32	Q _o	8,22	13,72	20,31	2,26	3,78	5,59
		P _e	3,39	5,44	7,89	1,83	2,82	4,01
	37	Q _o	7,75	12,94	19,15	2,03	3,39	5,02
		P _e	3,50	5,61	8,14	1,81	2,80	3,98
MM2-BK-C49YH	27	Q _o	10,84	18,10	26,79	3,28	5,47	8,10
		P _e	4,16	6,72	9,78	2,26	3,55	5,09
	32	Q _o	10,08	16,84	24,92	2,99	5,00	7,40
		P _e	4,36	7,05	10,27	2,28	3,58	5,14
	37	Q _o	9,33	15,58	23,06	2,72	4,55	6,73
		P _e	4,54	7,35	10,71	2,29	3,59	5,15
MM2-BK-B49YH	27	Q _o	11,81	19,72	29,19	3,58	5,98	8,85
		P _e	4,62	7,49	10,92	2,48	3,91	5,62
	32	Q _o	10,96	18,30	27,08	3,26	5,44	8,05
		P _e	4,84	7,86	11,47	2,50	3,94	5,67
	37	Q _o	10,11	16,89	25,00	2,93	4,90	7,25
		P _e	5,04	8,19	11,96	2,50	3,95	5,68

COOLING CAPACITY AND POWER CONSUMPTION FOR R404A

TYPE	t _a	Q _o COOLING CAPACITY [kW]			P _e POWER CONSUMPTION [kW]			
		EVAPORATION TEMPERATURE						
		-10°C			-35°C			
		30 Hz	50 Hz	80 Hz	30 Hz	50 Hz	80 Hz	
MM2-BK-D23YV	27	Q _o	4,99	8,28	12,23	1,57	2,61	3,85
		P _e	1,78	2,85	4,13	1,09	1,69	2,41
	32	Q _o	4,58	7,60	11,22	1,51	2,51	3,71
		P _e	1,87	3,00	4,35	1,09	1,70	2,43
	37	Q _o	4,16	6,90	10,19	1,26	2,09	3,09
		P _e	1,95	3,13	4,54	1,10	1,71	2,44
MM2-BK-C24YV	27	Q _o	5,87	9,74	14,38	1,96	3,25	4,80
		P _e	2,27	3,66	5,32	1,36	2,15	3,09
	32	Q _o	5,41	8,98	13,26	1,79	2,97	4,39
		P _e	2,37	3,83	5,57	1,38	2,18	3,14
	37	Q _o	4,95	8,21	12,12	1,61	2,68	3,96
		P _e	2,47	3,98	5,80	1,39	2,20	3,17
MM2-BK-F45YH	27	Q _o	6,69	11,11	16,41	2,20	3,66	5,40
		P _e	2,42	3,90	5,68	1,48	2,35	3,39
	32	Q _o	6,19	10,27	15,16	2,03	3,37	4,98
		P _e	2,54	4,10	5,97	1,51	2,40	3,46
	37	Q _o	5,66	9,40	13,88	1,84	3,06	4,52
		P _e	2,64	4,27	6,22	1,53	2,43	3,51
MM2-BK-E46YH	27	Q _o	8,05	13,37	19,74	2,72	4,52	6,67
		P _e	3,08	5,00	7,30	1,76	2,81	4,07
	32	Q _o	7,43	12,34	18,22	2,49	4,13	6,10
		P _e	3,21	5,22	7,63	1,79	2,86	4,14
	37	Q _o	6,80	11,28	16,66	2,25	3,73	5,51
		P _e	3,33	5,42	7,92	1,80	2,88	4,17
MM2-BK-D47YH	27	Q _o	9,83	16,31	24,08	3,27	5,42	8,00
		P _e	3,61	5,77	8,36	2,21	3,45	4,93
	32	Q _o	9,07	15,05	22,22	2,98	4,95	7,31
		P _e	3,80	6,08	8,82	2,26	3,52	5,04
	37	Q _o	8,30	13,78	20,35	2,70	4,49	6,63
		P _e	3,96	6,35	9,21	2,29	3,57	5,11
MM2-BK-C49YH	27	Q _o	11,73	19,48	28,76	3,99	6,62	9,78
		P _e	4,58	7,38	10,74	2,61	4,11	5,91
	32	Q _o	10,83	17,98	26,56	3,65	6,06	8,95
		P _e	4,79	7,72	11,24	2,65	4,17	6,00
	37	Q _o	9,93	16,48	24,33	3,31	5,50	8,12
		P _e	4,97	8,03	11,70	2,67	4,21	6,05
MM2-BK-B49YH	27	Q _o	12,19	20,23	29,87	4,30	7,13	10,53
		P _e	5,12	8,27	12,05	2,86	4,52	6,51
	32	Q _o	11,24	18,66	27,55	3,88	6,44	9,51
		P _e	5,33	8,62	12,57	2,91	4,60	6,63
	37	Q _o	10,30	17,10	25,25	3,46	5,75	8,49
		P _e	5,52	8,94	13,04	2,93	4,64	6,69

COOLING CAPACITY AND POWER CONSUMPTION FOR R134a AND R513A

TYPE	t _a	▼	Q _o COOLING CAPACITY [kW]			P _e POWER CONSUMPTION [kW]		
			EVAPORATION TEMPERATURE t ₀ = -10°C					
			R134a			R513A		
			30 Hz	50 Hz	80 Hz	30 Hz	50 Hz	80 Hz
MM2-BK-D22YV	27	Q _o	2,89	4,83	7,39	3,15	5,20	7,90
		P _e	1,07	1,68	2,48	1,14	1,77	2,60
	32	Q _o	2,71	4,52	6,92	2,95	4,87	7,40
		P _e	1,12	1,76	2,60	1,19	1,85	2,72
	37	Q _o	2,53	4,23	6,47	2,75	4,53	6,89
		P _e	1,16	1,83	2,71	1,23	1,92	2,83
MM2-BK-C23YV	27	Q _o	3,53	5,90	9,03	3,85	6,35	9,65
		P _e	1,29	2,04	3,03	1,36	2,14	3,16
	32	Q _o	3,31	5,53	8,46	3,59	5,93	9,01
		P _e	1,35	2,14	3,18	1,43	2,25	3,33
	37	Q _o	3,10	5,17	7,91	3,35	5,52	8,39
		P _e	1,40	2,23	3,32	1,49	2,35	3,48
MM2-BK-F43YH	27	Q _o	3,73	6,23	9,53	4,08	6,73	10,23
		P _e	1,33	2,10	3,12	1,41	2,21	3,27
	32	Q _o	3,49	5,82	8,90	3,80	6,27	9,53
		P _e	1,38	2,19	3,26	1,47	2,31	3,42
	37	Q _o	3,23	5,39	8,25	3,51	5,79	8,80
		P _e	1,43	2,27	3,38	1,52	2,40	3,56
MM2-BK-E44YH	27	Q _o	4,81	8,03	12,29	5,23	8,63	13,12
		P _e	1,67	2,68	4,01	1,78	2,83	4,21
	32	Q _o	4,51	7,54	11,54	4,89	8,07	12,27
		P _e	1,76	2,82	4,22	1,87	2,97	4,43
	37	Q _o	4,22	7,05	10,79	4,56	7,52	11,43
		P _e	1,83	2,94	4,41	1,95	3,10	4,62
MM2-BK-D45YH	27	Q _o	5,70	9,52	14,57	6,23	10,28	15,63
		P _e	2,06	3,22	4,75	2,19	3,39	4,98
	32	Q _o	5,34	8,92	13,65	5,81	9,59	14,58
		P _e	2,16	3,38	4,99	2,29	3,55	5,22
	37	Q _o	4,97	8,30	12,70	5,39	8,90	13,53
		P _e	2,24	3,52	5,21	2,38	3,70	5,45
MM2-BK-C46YH	27	Q _o	6,90	11,53	17,64	7,52	12,41	18,86
		P _e	2,50	3,94	5,85	2,65	4,15	6,13
	32	Q _o	6,49	10,83	16,57	7,04	11,62	17,66
		P _e	2,61	4,13	6,14	2,77	4,35	6,44
	37	Q _o	6,07	10,13	15,50	6,56	10,83	16,46
		P _e	2,71	4,30	6,40	2,89	4,54	6,72
MM2-BK-B49YH	27	Q _o	7,53	12,58	19,25	8,21	13,55	20,6
		P _e	2,75	4,37	6,51	2,92	4,60	6,82
	32	Q _o	7,05	11,78	18,02	7,66	12,64	19,21
		P _e	2,88	4,59	6,84	3,07	4,84	7,18
	37	Q _o	6,57	10,97	16,78	7,10	11,72	17,81
		P _e	3,00	4,79	7,15	3,19	5,05	7,50

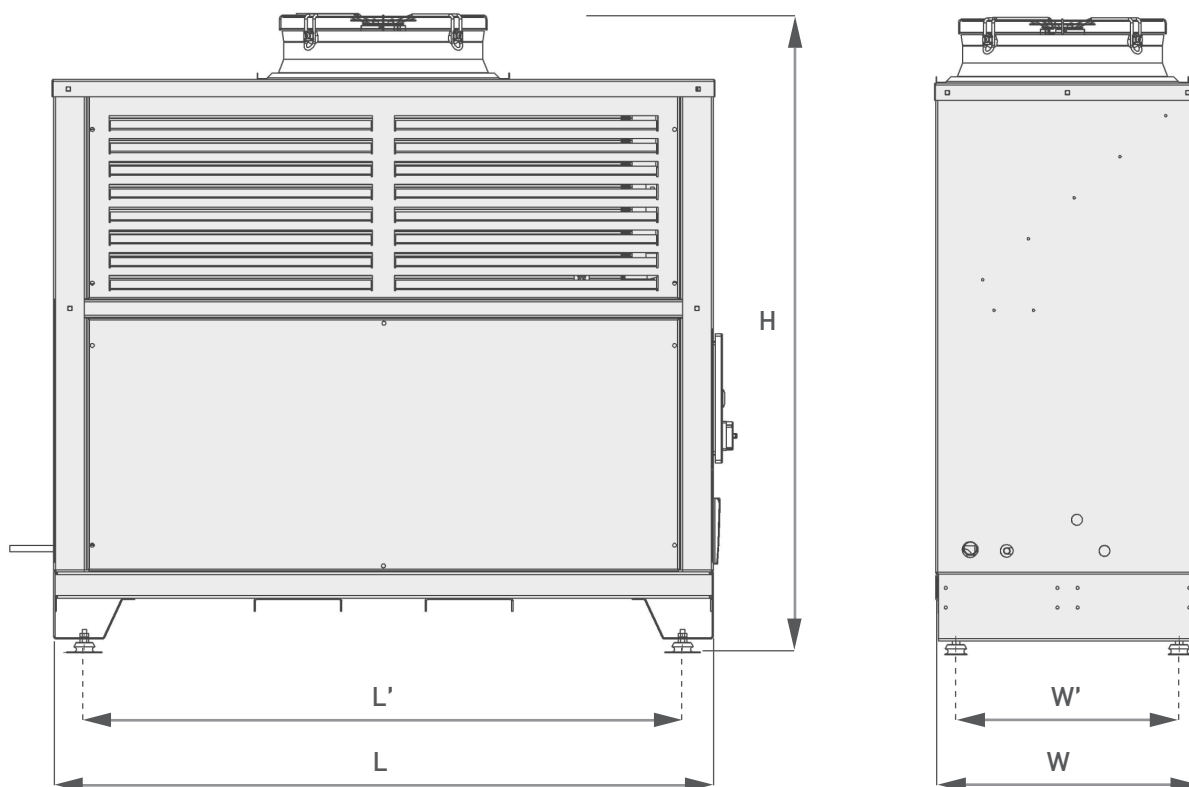
TECHNICAL DATA

TYPE	UNIT		COMPRESSOR Power supply [V/Ph/Hz]	FAN		RECEIVER Volume [dm ³]	Sound pressure level ¹⁾ [dB(A)]	Weight [kg]
	Max. power input [kW]	Max. current [A]		Number of fans [pc.]	Max. air flow [m ³ /h]			
	MM2-BK-D22YV	4,17		9,2	380-420 V / 3 Ph / 50 Hz			
MM2-BK-D23YV	4,77	10,3	1	4200		14	37,1	267
MM2-BK-C23YV	5,17	10,8	1	4200		14	37,6	266
MM2-BK-C24YV	5,77	11,7	1	4200		14	37,6	266
MM2-BK-F43YH	5,47	11,2	1	4800		14,5	39,0	313
MM2-BK-F45YH	5,97	12,5	1	4800		14,5	39,0	318
MM2-BK-E44YH	7,07	13,9	1	4800		14,5	41,8	316
MM2-BK-E46YH	7,77	15,3	1	4800		14,5	41,8	318
MM2-BK-D45YH	8,44	17,9	2	7200		14,5	43,9	326
MM2-BK-D47YH	9,24	19,9	2	7200		14,5	43,9	332
MM2-BK-C46YH	10,04	21,1	2	7200		14,5	44,3	331
MM2-BK-C49YH	11,64	23,6	2	7200		14,5	44,3	331
MM2-BK-B49YH	12,64	21,4	2	7200		14,5	44,3	331

¹⁾ Values refer to operation with R449A/R448A refrigerant at **80 Hz** from **10 m** distance, with soundproof compressor chamber, tolerance **±2 dB(A)**.

▶ DIMENSIONS AND DRAWINGS

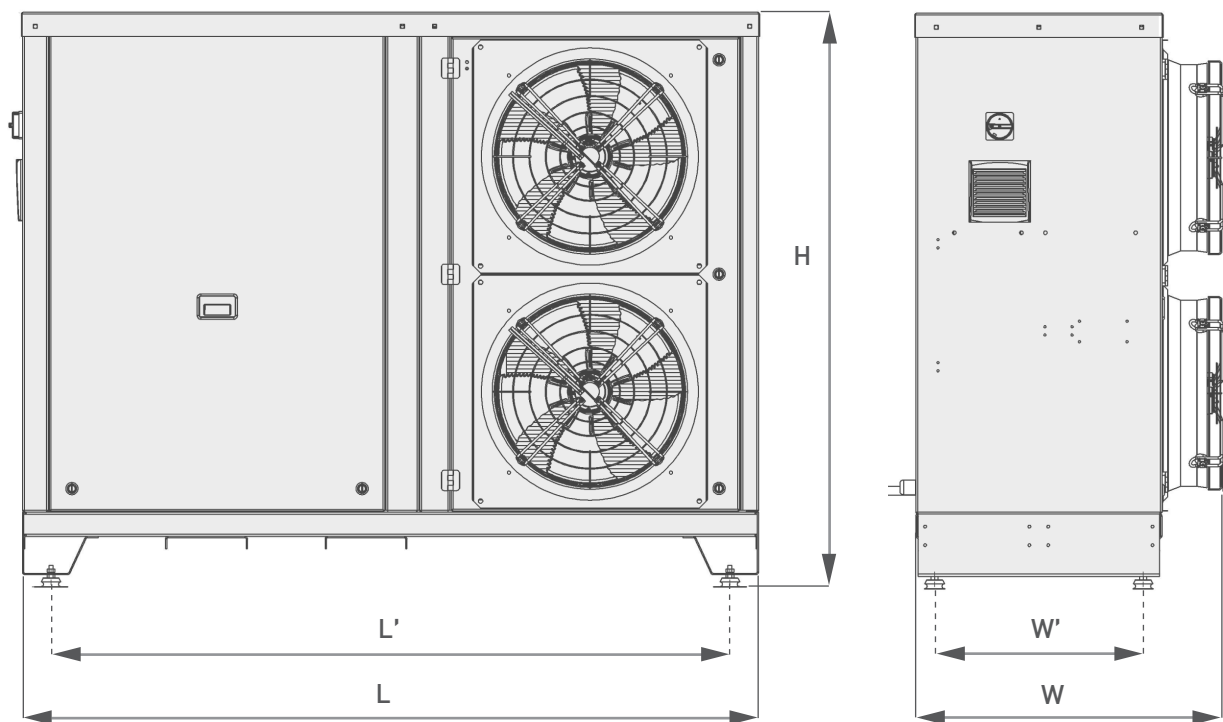
TYPE	DIMENSIONS					CONNECTIONS			
	L	L'	H	W	W'	Suction line		Liquid line	
			[mm]			[mm]	[inch]	[mm]	[inch]
MM2-BK-D22YV	1500	1360	1460	600	510	Cu22	7/8	Cu15	5/8
MM2-BK-D23YV	1500	1360	1460	600	510	Cu22	7/8	Cu15	5/8
MM2-BK-C23YV	1500	1360	1460	600	510	Cu22	7/8	Cu15	5/8
MM2-BK-C24YV	1500	1360	1460	600	510	Cu22	7/8	Cu15	5/8



▶ Market Master version V

► DIMENSIONS AND DRAWINGS

TYPE	DIMENSIONS					CONNECTIONS			
	L	L'	H	W	W'	Suction line		Liquid line	
			[mm]			[mm]	[inch]	[mm]	[inch]
MM2-BK-F43YH	1800	1660	1410	750	510	Cu22	7/8	Cu15	5/8
MM2-BK-F45YH	1800	1660	1410	750	510	Cu22	7/8	Cu15	5/8
MM2-BK-E44YH	1800	1660	1410	750	510	Cu22	7/8	Cu15	5/8
MM2-BK-E46YH	1800	1660	1410	750	510	Cu28	1 1/8	Cu15	5/8
MM2-BK-D45YH	1800	1660	1410	750	510	Cu28	1 1/8	Cu22	7/8
MM2-BK-D47YH	1800	1660	1410	750	510	Cu28	1 1/8	Cu22	7/8
MM2-BK-C46YH	1800	1660	1410	750	510	Cu28	1 1/8	Cu22	7/8
MM2-BK-C49YH	1800	1660	1410	750	510	Cu28	1 1/8	Cu22	7/8
MM2-BK-B49YH	1800	1660	1410	750	510	Cu28	1 1/8	Cu22	7/8



► Market Master version H

AUTHORIZED SERVICE



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We reserve the right to make changes to the data contained in the catalogue.

Information about changes will be published without delay.