

SCROLL COMPRESSORS

MS



MS 115 to MS 185

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are manufactured under license
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a Division of American Standard Inc.,
and are not licensed for use
or sale under patents
in North America."



50 Hz

Maneurop

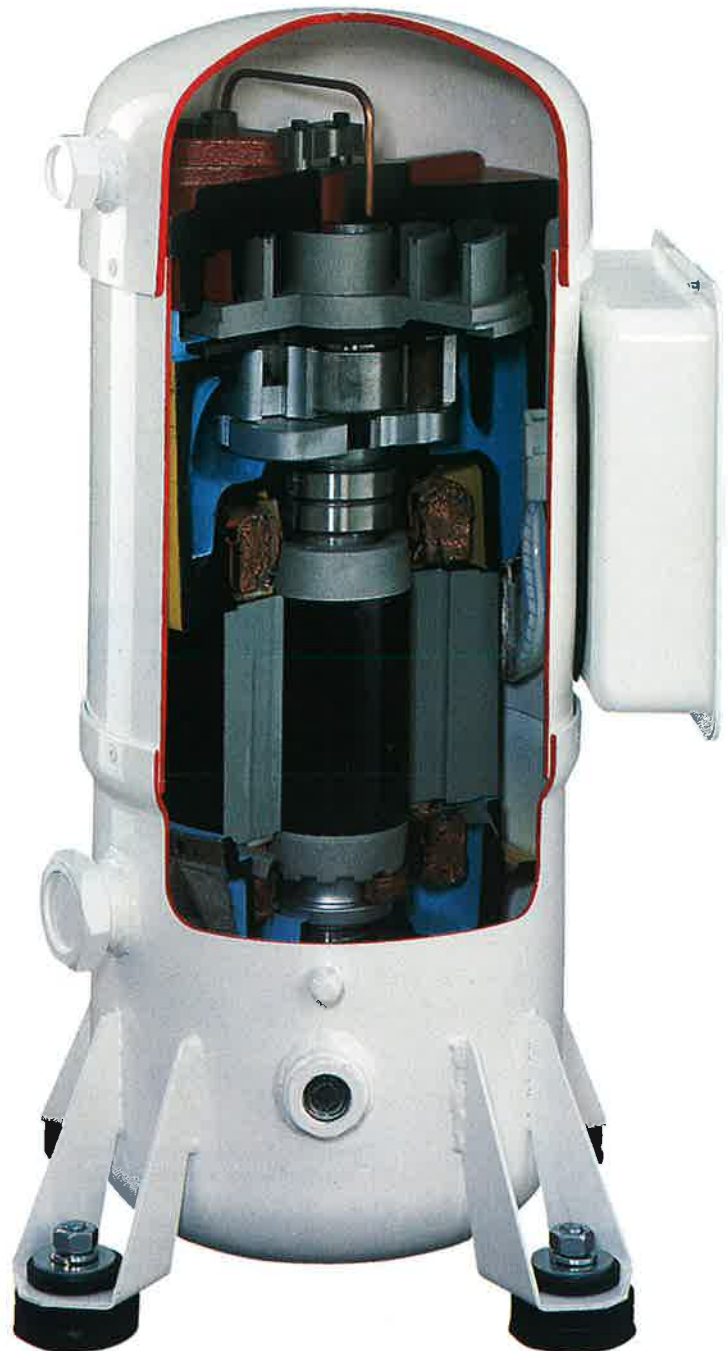
The Maneurop Scroll compressor

The Maneurop Scroll compressor incorporates a carefully designed and sophisticated compression mechanism providing high level of performance and exceptionally smooth operation. This hermetic compressor range using latest technology is engineered to give more performance, more reliability, less noise and vibration.

Maneurop hermetic scroll compressors are readily available in sizes from 15 to 9 HP and the product line will rapidly extend to offer a full range from 15 HP down to 1.5 HP.

Characteristics:

- **High E.E.R.**
3.18 ARI conditions.
- **Axial and radial compliance**
Swing link mechanism (radial).
Scroll tip seals (axial).
- **Liquid tolerant design**
The compressor may ingest more than 10kg of liquid refrigerant without damage.
- **High volumetric efficiency**
No clearance volume.
No valve.
- **Low vibration level**
Continuous compression process
(3 rotations).
Vibration amplitude less than 0.1 mm.
- **Low noise level**
- **High reliability**
Suction gas cooled motor.
Light load start, smooth starting torque.
Low motor torque variation.
Few moving parts.
No internal suspension springs.
- **Large capacity range**
Parallel compressor mounting, cooling
capacity up to 100 kW.
- **Capacity control**
Two speed compressor models.



Compressor code

MS 125 S - 4 -

Scroll compressor

Motor (HP×12)

Motor type S=standard T=two speed

Evolution index

Motor code

Characteristics

	Model	Displacement m ³ /h	Oil charge dm ³	Weight kg	Rated performance*		
					Capacity W	Mot. power kW	E.E.R. W/W
Standard	MS 115 S	27,8	3,8	74	28400	8,9	3,18
	MS 125 S	29,5	3,8	74	30200	9,5	3,18
	MS 175 S	40,8	6,6	132	42600	13,4	3,18
	MS 185 S	43,6	6,6	132	45300	14,2	3,18
2 speed	MS 125 T	29,5	3,8	74	29600	9,8	3,02
	MS 185 T	43,6	6,6	132	43400	14,8	2,93

* R22 + 7,2 + 54,4°C ARI CONDITIONS

Technical Specifications

Model	Motor 4 (400 V 3~)		Motor 6 (220 V 3~)		Refrigerant line connections				
	LRA	MCC	LRA	MCC	Solder sleeves		Shut off valves (accessories)		
	A	A	A	A	suction	discharge	suction	discharge	
Standard	MS 115 S	104	24,9	178	41,2	1 1/8''-P02	3/4''-P04	1 1/8''-V02	3/4''-V04
	MS 125 S	104	24,9	178	41,2	1 1/8''-P02	3/4''-P04	1 1/8''-V02	3/4''-V04
	MS 175 S	153	35,6	275	61,4	1 3/8''-P05	7/8''-P07	1 3/8''-V10	7/8''-V05
	MS 185 S	153	35,6	275	61,4	1 3/8''-P05	7/8''-P07	1 3/8''-V10	7/8''-V05
2 speed	MS 125 T	106	23,5	-	-	1 1/8''-P02	3/4''-P04	1 1/8''-V02	3/4''-V04
	MS 185 T	155	36,1	-	-	1 3/8''-P05	7/8''-P07	1 3/8''-V05	7/8''-V05

* Current protection: external overcurrent protection shall be selected and set to trip line power within 2.0 seconds at lock rotor current (L.R.A.) and 10 seconds at 110% of maximum must trip current (MCC). The overcurrent protection must be of a manual reset type.

Available voltages

50 Hz	Motor code	Nominal voltage	Voltage limits	60 Hz	Motor code	Nominal voltage	Voltage limits
	6	220 V 3~	198/253 V		3	230 V 3~	208/254 V
4	400 V 3~	340/460 V	4	460 V 3~	416/508 V		
			9	380 V 3~	342/418 V		

Performance data - R22

Model	te tc	+15		+10		+5		0		-5		-10		-15		
		P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	P.F.	P.A.	
MS115S	30	45000	5.7	38500	5.8	33000	5.8	27500	5.7	22500	5.7	18500	5.6	15000	5.5	
	40	41500	6.7	35500	6.7	30000	6.7	25000	6.7	20500	6.6	17000	6.5	13500	6.4	
	50	37600	8.2	32000	8.2	27000	8.1	22500	8.1	18500	8	15000	7.8			
	60	33000	10	28000	10	23500	10	19500	9.9	16000	9.8					
MS125S	30	48000	5.3	41000	5.5	35000	5.6	29000	5.7	24000	5.7	20000	5.7	16000	5.6	
	40	44000	6.8	38000	6.9	32000	7	27000	7	22000	7	18000	6.9	14800	6.9	
	50	40000	8.5	34000	8.6	28500	8.6	24000	8.6	19500	8.5	16000	8.4			
	60	35500	10.6	30000	10.6	25000	10.6	20500	10.5	16500	10.4					
MS175S	30	67000	8.4	57000	8.4	49000	8.4	41000	8.3	34000	8.2	28000	8.1	22000	7.9	
	40	62000	10.2	53000	10.1	44000	10.1	37000	10	31000	9.7	25000	9.7	20000	9.5	
	50	56000	12.4	48000	12.3	40000	12.2	33000	12.1	27000	11.9	22000	11.7			
	60	50000	15.1	42000	15	36000	14.8	29000	14.7	24000	14.5					
MS185S	30	71000	9	61000	9	52000	9	43000	8.9	36000	8.8	29000	8.6	24000	8.5	
	40	66000	10.9	56000	10.8	47000	10.8	39000	10.7	33000	10.5	27000	10.3	21000	10.1	
	50	60000	13.2	51000	13.1	43000	13	36000	12.9	29000	12.7	24000	12.5			
	60	53000	16	45000	15.9	38000	15.7	31000	15.6	25000	15.4					
MS125T	G.V.	30	46600	5.4	39800	5.5	34000	5.6	28200	5.7	23300	5.7	19400	5.7	15600	5.6
		40	42700	7	36900	7.1	31100	7.1	26200	7.1	21400	7.1	17500	7.1	14400	6.9
		50	38800	8.7	33000	8.8	27700	8.8	23300	8.8	19000	8.7	15600	8.6		
		60	34500	10.9	29100	10.9	24300	10.9	19900	10.8	16000	10.6				
	P.V.	30			19800	2.6	16800	2.6	14200	2.7	11800	2.7	9450	2.7	7600	2.7
		40	21100	3.4	18000	3.4	15200	3.4	12500	3.4	10500	3.4	8300	3.5	6600	3.5
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MS185T	G.V.	30	68900	9	59200	9	50500	9	41800	8.9	35000	8.8	28200	8.6	23300	8.5
		40	64000	11	54400	10.9	45600	10.8	37900	10.7	32100	10.6	26200	10.4	20400	10.2
		50	58200	13.7	49500	13.6	41800	13.4	35000	13.3	28200	13.2	23300	13		
		60	51500	16.7	43700	16.5	36900	16.3	30100	16.2	24300	16				
	P.V.	30	34000	4.2	28800	4.1	24600	4	20800	4	17000	4	14200	4	11400	4.1
		40	31200	5.1	26700	5	22500	5	18900	5	15400	5.1	12500	5.1	9690	5.1
	50															

The duties indicated are based on following conditions:

- Superheat: 10K.
- Subcooling: 5K.
- Condenser duty = P.F. + (P.A. × 1000 × 0,95).
- for 60 Hz, multiply capacity and power by 1,2.

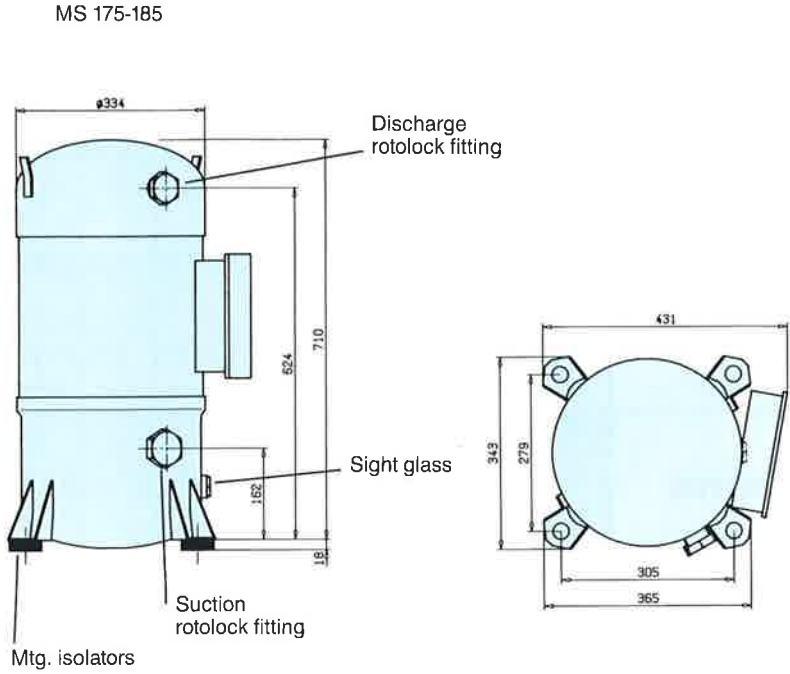
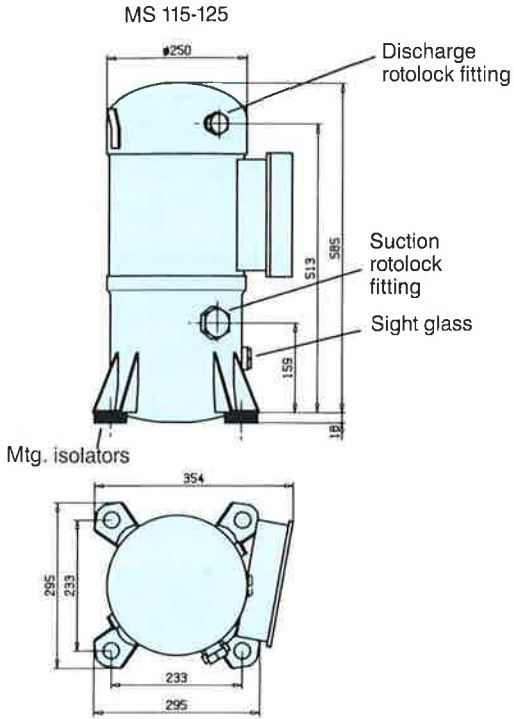
Legend:

- te : evaporating temperature °C.
- tc : condensing temperature °C.
- P.F. : cooling capacity in W.
- P.A. : motor power in kW.
- GV/PV : high/low speed.

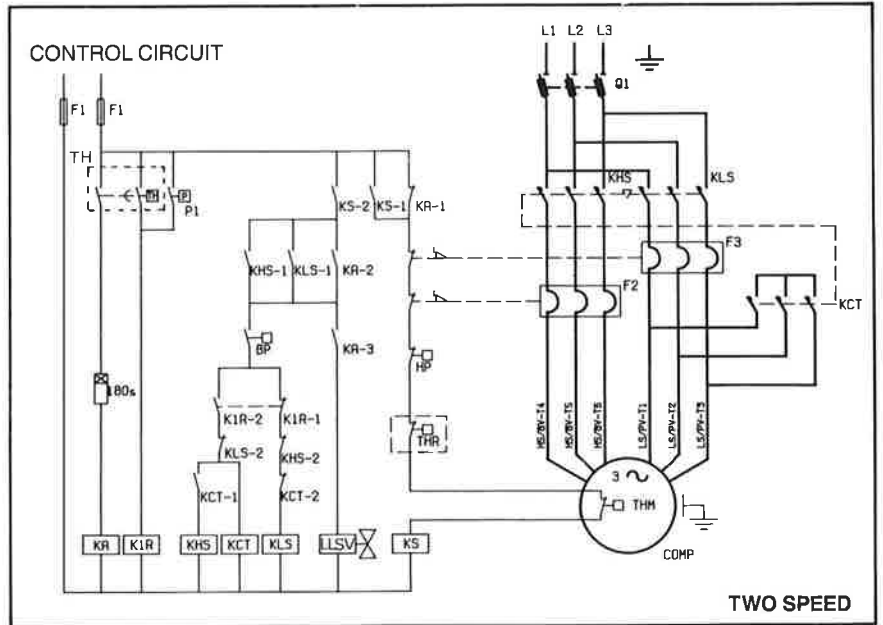
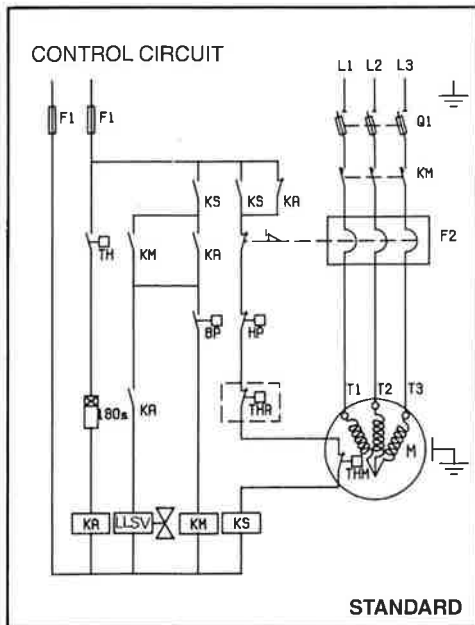
Application limits

Max. evaporating temperature.	Max. condensing temperature.	Max. ambient temperature.
+16°C	+68°C	+65°C

► Dimensions (mm)



► Typical wiring diagrams



- TH : control device
- 180S : short cycle timer 3 mn
- KA : single speed control relay/low speed control relay (LS)
- K1R : high speed control relay (HS)
- LLSV : liquid line solenoid valve
- KM : compressor contactor
- KHS : compressor high speed contactor (HS)
- F1 : control circuit fuse
- Q1 : fused disconnect

- KCT : shunt high speed contactor
- KLS : compressor low speed contactor (LS)
- KS : safety line lockout relay
- BP : "pump down" control and LP switch
- P1 : low speed high pressure control
- HP : HP switch high pressure switch
- THM : internal winding thermostat
- THR : discharge gas thermostat
- F2-F3 : overcurrent protection (required)

► Installation

Please refer to the installation instruction documentation DI n° 8510018 for detailed information.

- MS scroll compressors are qualified for operation with R22 refrigerant only.
- MS scroll shall be installed on the resilient mountings supplied with the compressor.
- Scroll compressors are designed to operate in only one direction. Observe proper phase sequence as shown on warning sticker affixed to the compressor.
- Discharge gas thermostat if used shall be set at $130\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$.
- If oil is to be added to the factory charge use only Maneurop 300S oil.
- Pump-down control shall be used if refrigerant charge is in excess of 11.0 kg for MS 115 and 125 and 13.5 kg for MS 175 and 185.
- Safety pressurestat setting: HP : 28 bar max.
LP : 0.2 bar mini.
- Number of start : max. 20 per hour.
- MS compressors have internal pressure relief valves placed between high and low side (open at 31 bar diff., close at 15 bar diff.)
- Maximum test pressure low side 25 bar, high side 41 bar.

Note: Pressure differential between high side and low side shall not exceed 24 bar differential.

► Manifolding

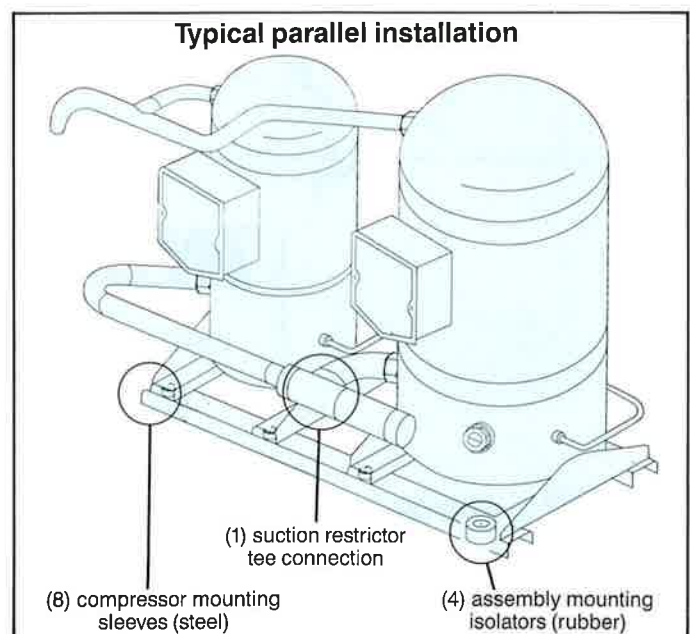
Maneurop's hermetic scroll compressors can be installed in parallel as shown.

Compressors can be of the same or different sizes.

Parallel mounting accessory kits are available from Maneurop, they include:

- 8 compressor mounting sleeves,
- 4 resilient suspensions,
- 1 suction tee connection.

For further details please refer to Maneurop scroll application documentation.



Maneurop reserves the right to modify the details shown herein without prior notification

