Technical Data Sheet

COLTRI COMPRESSORS

EFFICIENT LINE

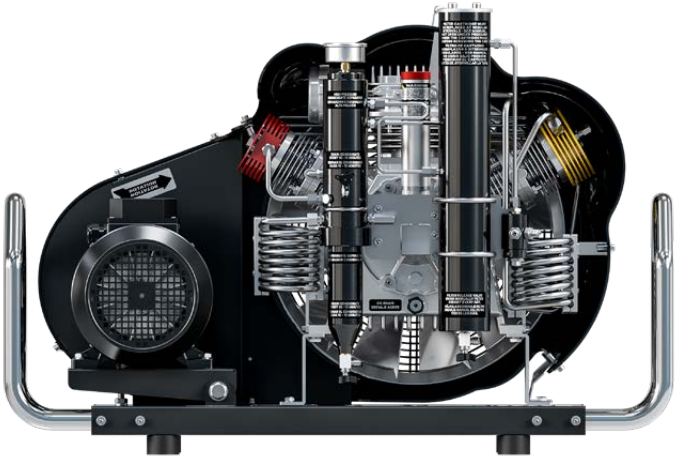
SMART

ELECTRIC

Contact

The evolution of the species

SMART breathing air compressors represent the evolution of the standard, one of the best known and biggest selling models in the world. They are equipped with two connections for high pressure hoses, a single or three phase electric motor, indestructible pumping units and a compact frame with handles for easier transport. Available options: external refilling panels, electrical display with automatic condensate drainage, and autostop pressure gauge.



Technical data

Type of gas	Breathing air EN 12021 - Nitrox 40% max O_2 - Helium - Nitrogen
Intake pressure	Atmospheric max 300 mbar
Nominal pressure	250 bar / 330 bar / 360 bar
Working pressure	232 bar / 300 bar / 330 bar
Max working pressure	232 bar / 420 bar
Permissible ambient temperature range	-10° C ÷ +40° C
Permissible altitude	0 ÷ 1.500 m SLM
Max permissible tilt	6°
Design	Fully protective cage
Operating voltage, standard	230 V, 60 Hz / 400 V, 50 Hz
Other operating voltage	230 V, 50 Hz / 440 V, 60 Hz
Oil	Synthetic Coltri Oil ST 755
Oil change interval	1 year / 1.000 h
Frame	Steel - Colour Black RAL 9005 - Powder coating painting - Scratch proof

Compressor

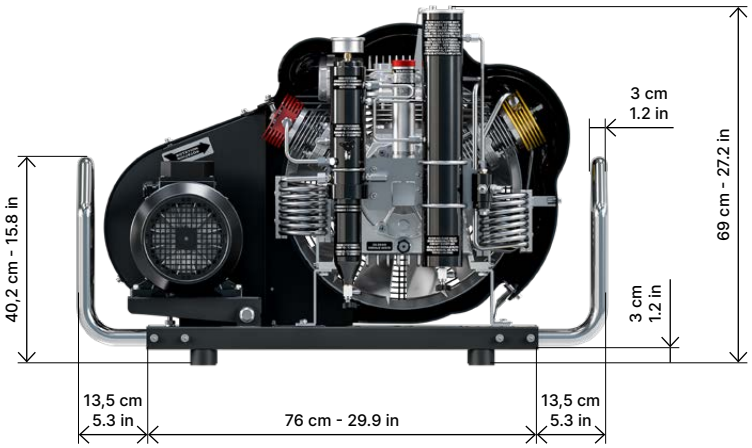
	125 EM	150 EM	210 EM	270 EM	235 ET	315 ET
Charging rate Measured during 10 liters cylinder filling from 0-200 bar tolerance +/- 5% at + 20 ° C ambient temperature.	125 l/min 7.5 m^3/h 4.4 cfm	150 l/min 9 m^3/h 5.3 cfm	210 l/min 12.6 m^3/h 7.4 cfm	270 l/min 16.2 m^3/h 9.5 cfm	235 l/min 14.1 m^3/h 8.3 cfm	315 l/min 18.9 m^3/h 11.1 cfm
Purification System	Maxifilter					
Cooling air flow	1.710 m^3/h	1.710 m^3/h	1.240 m^3/h	2.180 m^3/h	1,440 m^3/h	2.180 m^3/h
Weight[1]	93 kg 205 lb	93 kg 205 lb	100 kg 220.5 lb	105 kg 231.5 lb	95 kg 209.4 lb	105 kg 231.5 lb
Dimensions (W x D x H)[1]	100 × 46 × 70 cm - 39.4 × 18.1 × 27.6 in					
Noise			LpA 74,5 dB			LpA 79,1 dB

1 Standard model. Dimensions and weight may vary depending on accessories.

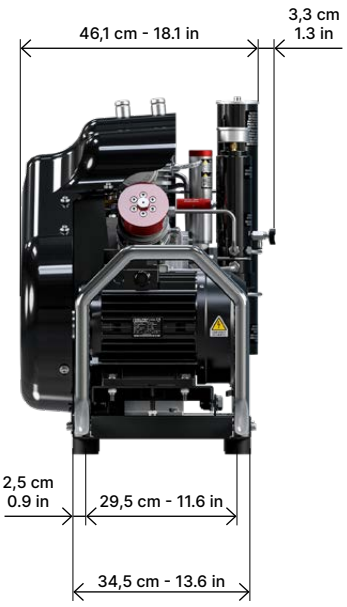
Electric motor

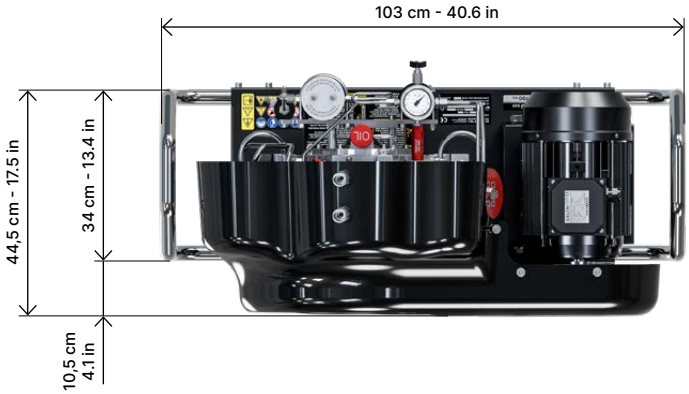
	125 EM	150 EM	210 EM	270 EM	235 ET	315 ET
Power	3 kW - 4 Hp	4 kW - 5.5 Hp		5,5 kW - 7.5 Hp	4 kW - 5.5 Hp	5,5 kW - 7.5 Hp
Type	Single-phase electric				Three-phase electric	
Operating voltage/frequency Different voltage / frequency available on request.	230 V, 60 Hz	220 V, 50 Hz	220 V, 60 Hz	230 V, 60 Hz	400 V, 50 Hz	
Rated current	20 A	25,2 A	25,2 A	29,7 A	16,8 A	12,6 A
Speed (RPM)	2.800	2.850	3.450	3.510	2.840	2.850
Protection class	IP54			IP55	IP54	IP55

Dimensions

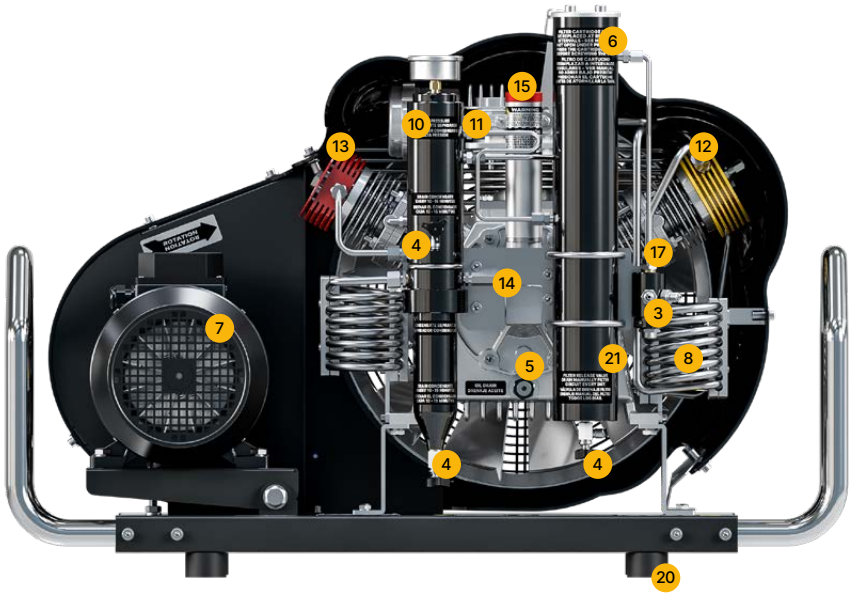

3 cm
1.2 in
69 cm - 27.2 in
40,2 cm - 15.8 in
3 cm
1.2 in
13,5 cm
5.3 in
76 cm - 29.9 in
13,5 cm
5.3 in

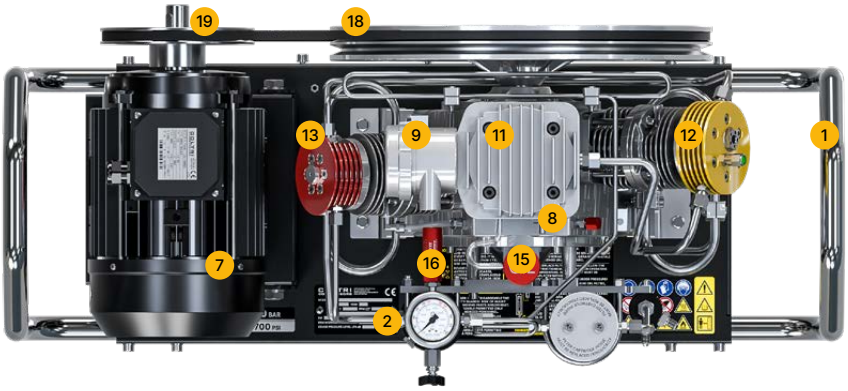
SMART
COLTRI
COMPRESSORS
11 cm
4.3 in
54 cm - 21.3 in
11 cm
4.3 in


46,1 cm - 18.1 in
3,3 cm
1.3 in
2,5 cm
0.9 in
29,5 cm - 11.6 in
34,5 cm - 13.6 in


103 cm - 40.6 in
44,5 cm - 17.5 in
34 cm - 13.4 in
10,5 cm
4.1 in

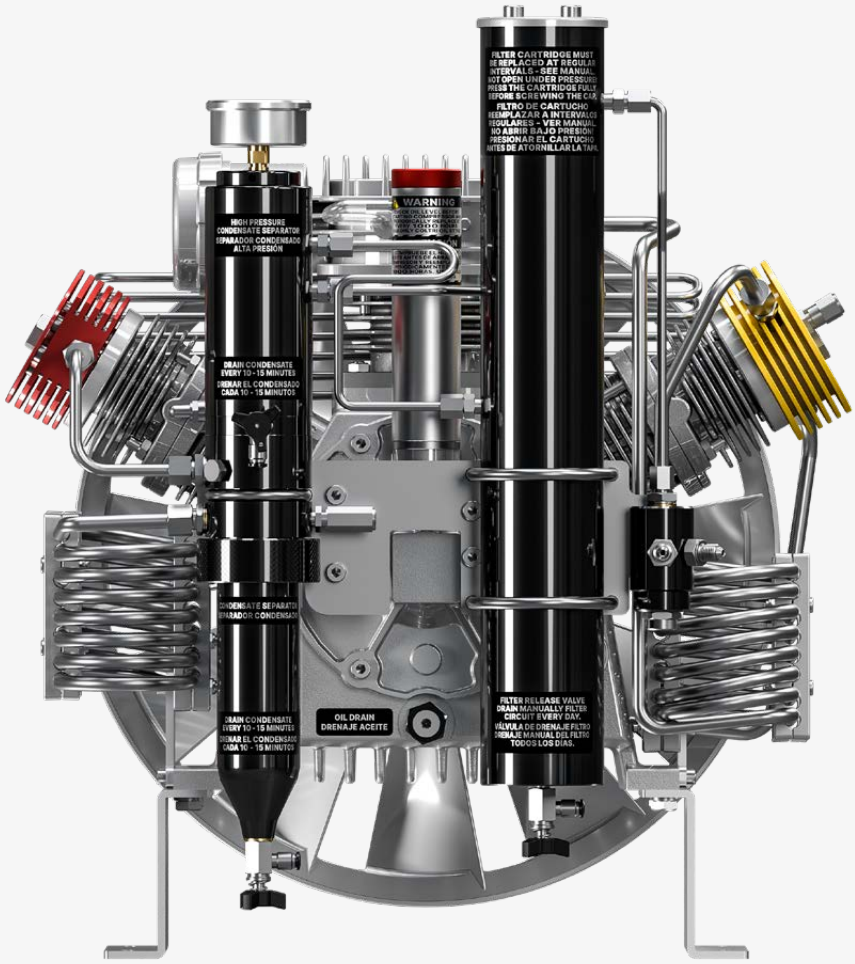
Components





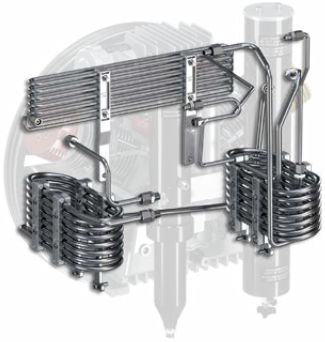
1. Frame
2. Pressure gauge
3. Refill hoses connection
4. Condensate discharge valves
5. Oil discharge valves
6. Purifier filter
7. Electric motor
8. Pumping unit
9. Intake air filter
10. Condensate separator
11. 1st stage
12. 2nd stage
13. 3rd stage
14. Monoblock crankcase
15. Oil filler plug
16. Safety valve
17. Pressure maintenance valve
18. Cooling fan
19. Belt
20. Anti-vibration device
21. Oil level

Pumping unit MCH 8/9/16

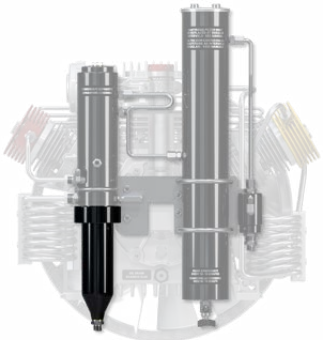


Splash lubrification with conrod pin immersed in oil

Suction filter:
10 µm



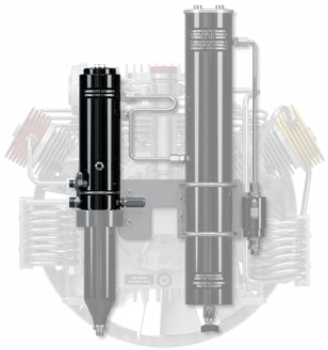
Pipes, fitting and nuts in stainless steel AISI 316



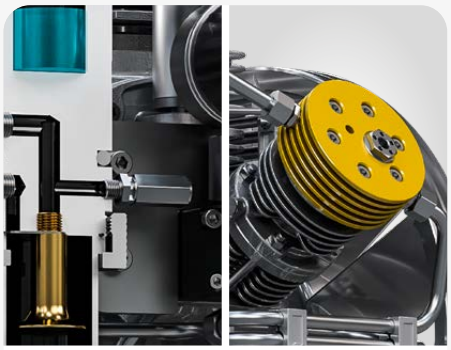
Intermediate condensate separator after the second stage

Synthetic Oil Coltri ST 755 with special formulation for HP compressors

Discover more on Coltri Oil ST 755



High pressure final condensate separator

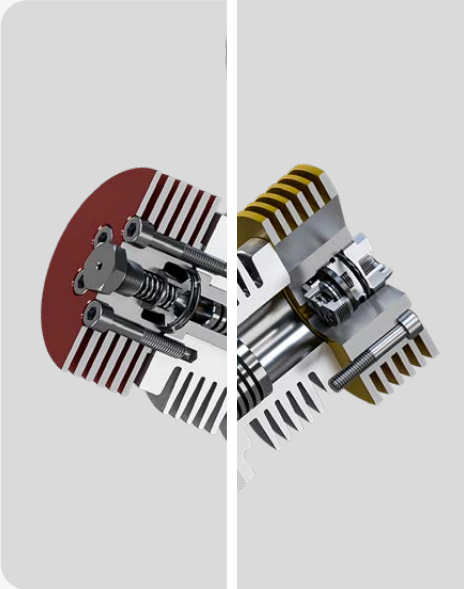


Safety valves after each stage of compression

Die-cast aluminium cylinders with barrel coating in nicasil

Forged aluminum connecting rods

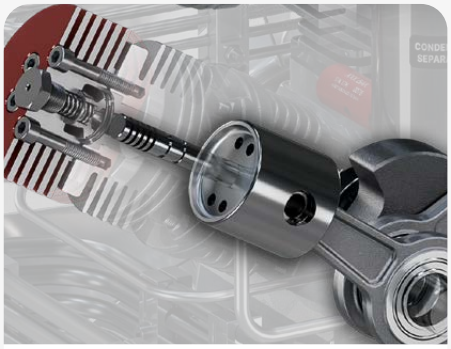
Forged steel crankshaft



Stainless steel second and third stage valves

Roller Bearings for intensive work load

Third stage in tempered steel with 5 piston rings in special cast iron

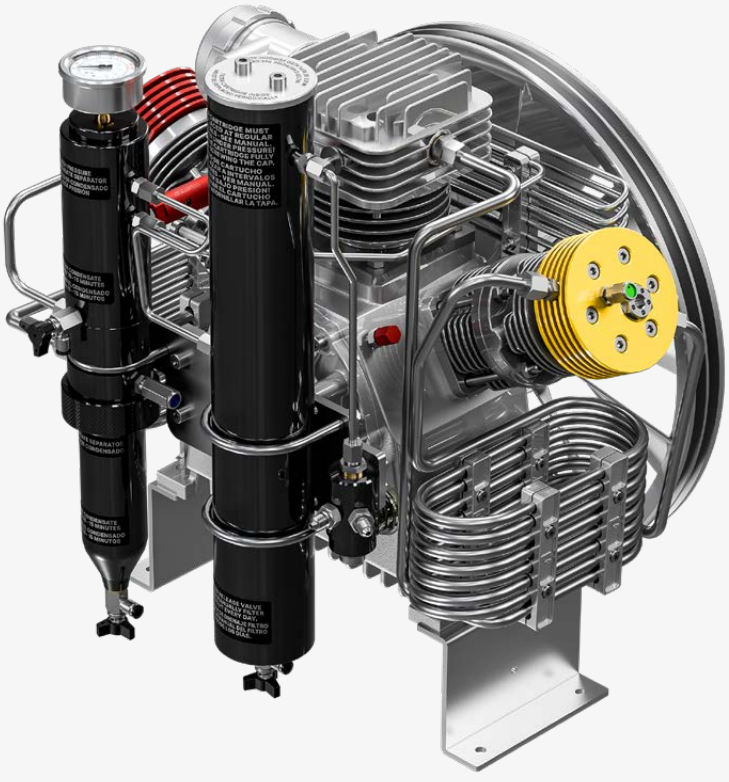


Second and third stage with pushing pistons to eliminate lateral forces on the pistons

CE certification

Technical data pumping unit MCH 8/9/16

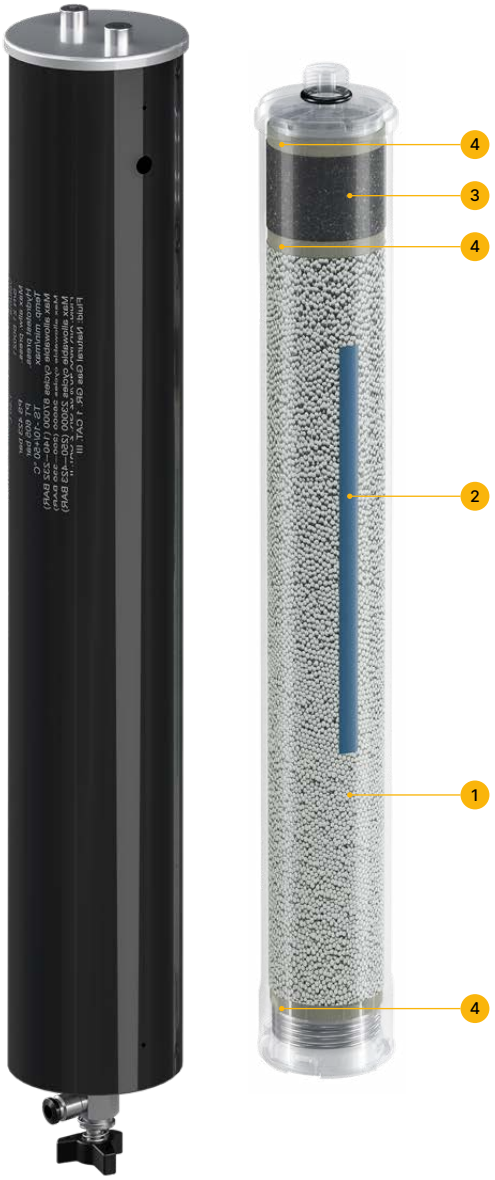
	125 EM	150 EM	210 EM	270 EM	235 ET	315 ET
Charging rate Measured during 10 liters cylinder filling from 0-200 bar tolerance +/- 5% at + 20 ° C ambient temperature.	125 l/min 7.5 m^3/h 4.4 cfm	150 l/min 9 m^3/h 5.3 cfm	210 l/min 12.6 m^3/h 7.4 cfm	270 l/min 16.2 m^3/h 9.5 cfm	235 l/min 14.1 m^3/h 8.3 cfm	315 l/min 18.9 m^3/h 11.1 cfm
Speed (RPM)	1.500	1.440	1.040	1.600	1.270	1.600
Number of stages	3					
Number of cylinders	3					
Cylinder bore 1st stage	60 mm	70 mm	95 mm			
Cylinder bore 2nd stage	38 mm					
Cylinder bore 3rd stage	14 mm					
Stroke	40 mm					
Direction of rotation from flywheel side	Counter clockwise (left)					
Drive type	V-belt A type					
Intermediate pressure 1st stage	~ 6 bar					
Intermediate pressure 2nd stage	~ 45 bar					
Oil sump capacity	1,8 liters					
Max intake pressure	1,3 bar_a – 300 mbar					



Standard equipment

Purification system Maxifilter

MAXIFILTER polypropylene cartridge repackable or disposable



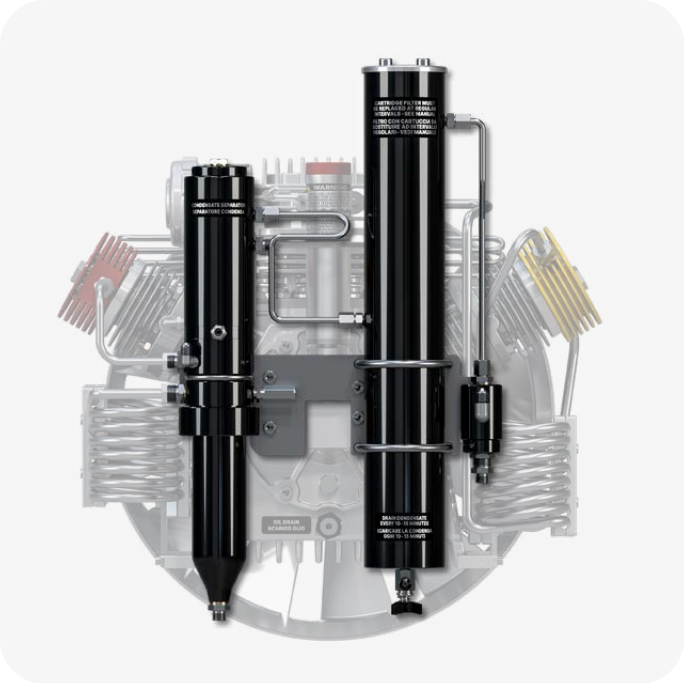
1. Moisture saturation indicator stripe
2. Molecular sieve
3. Activated carbon
4. Felt disc

Purification system	Maxifilter
Operating pressure (Standard)	250 bar / 330 bar / 360 bar
Operating pressure max. (PS)	420 bar
Processable air capacity (air inlet temperature in the filter 20° C at 300 bar)[1]	890 m^3

1 When using a cartridge with CO-removal, the processable air capacity is reduced by ca. 20%.

Separator system

- Interstage separator after 2nd stage ,stainless steel AISI 316.
- Final separator for the removal of oil/water condensate.
- Final safety valve, fitted to separator housing.
- Pressure maintaining/non return valve, fitted to filter bracket.



Contamination	Maximum content as per DIN EN 12021:2014	Air quality*
H_2O	25 mg/m³	≤ 10 mg/m³
CO	5 ppm(v)	≤ 4
CO_2	500 ppm(v)	≤ 500
Oil	0,5 mg/m³	≤ 0,5 mg/m³

* Measured at our facility using ASCO HORA 160 ANALYZER.
1 Only with special filter cartridge with HOPCALITE CO CATALYST. and up to a maximum concentration of 25 ppm CO in intake air.
The compressed clean breathing air then contains a maximum of 5 ppm CO.
2 The level of CO2 in the intake air must not exceed the maximum level of CO2 as per EN 12021:2014
3 Reported values exceed ISO 8573-1 standards.

Filling connection

2 Filling connection to choose from: DRV DIN 232 bar and DRV DIN 300 bar.

Filling connection DRV DIN 232 bar

COD. DRV232

Filling connection DRV DIN 300 bar

COD. DRV300

Filling connection DRV INT/YOKE 232 bar

COD. DRVINT

Filling device	DRV DIN 232	DRV DIN 300
Nominal pressure (PN)	250 bar	330 bar
Technical Specifications	Filling valve with integrated ventilation, with connection for G 5/8" cylinders to EN 144-2 and 477 PN232	Filling valve with integrated ventilation, with cylinder connector G 5/8” according to EN 144-2 and 477 PN300

Filling hoes

1200 mm stainless steel fittings.
Max working pressure 40 bar.

Carrying handles

Convenient handles for easy transport of the compressor.

Plugs available according to electric motor

230 V single-phase electric motor

6h/200 - 250V~

50÷60 Hz

32 A

2P+⏚

230 V three-phase electric motor

9h/200 - 250V~

50÷60 Hz

32 A

3P+⏚

400 V three-phase electric motor

6h/380 - 415V~

50÷60 Hz

16 A

3P+⏚

400 V three-phase electric motor

6h/380 - 415V~

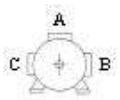
50÷60 Hz

32 A

3P+⏚

Data sheet single-phase electric motor 3 kW

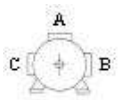
soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **3**	**Poli/** Poles **2**
		Data 16/05/2018	Rev. 0

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	169637			
2	**Modello /** *Motor type*	MME1 100LB/2			
3	**Descrizione** / *Description*	Single-phase motor with starting capacitor 3kW 2 Poles 230V 50Hz			
4	**Carcassa motore** / *Framesize*	100L			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3L DX			
7	**Potenza nominale** / *Rated output*	3			[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S1			
10	**Tensione** / *Rated voltage*	230			[V]
11	**Frequenza** / *Rated frequency*	50			[Hz]
12	**Corrente nominale** / *Rated current*	20			[A]
13	**Velocità nominale** / *Rated speed*	2800			[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,92			
15	**Coppia nominale motore**/ *Rated motor torque*	10,2			[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	3,6			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	1,6			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP54			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	CAVO/ *CABLE*			
23	**Peso /** Weight	22,4			[kg]
24	**Cuscinetti** /bearings	Drive end	6206-2Z		
		Non drive end	6206-2Z		

Note/remarks:
Motore con condensatore permanente 60μF e disgiuntore elettronico con condensatore di spunto 150μF.
Motor with 60μF permanent capacitor and electronic switch with 150μF starting capacitor.
Targa con logo Coltri Compressors.

Data sheet single-phase electric motor 4 kW / 220 V, 50 Hz

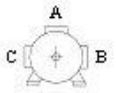
soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **4**	**Poli/** Poles **2**
		Data 25/06/2015	Rev. 0

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	125413			
2	**Modello /** *Motor type*	MM1 100LC/2			
3	**Descrizione** / *Description*	Single-phase motor with starting capacitor 4kW 2 Poles 220V 50Hz			
4	**Carcassa motore** / *Framesize*	100L			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3			
7	**Potenza nominale** / *Rated output*	4			[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S1			
10	**Tensione** / *Rated voltage*	220			[V]
11	**Frequenza** / *Rated frequency*	50			[Hz]
12	**Corrente nominale** / *Rated current*	25,2			[A]
13	**Velocità nominale** / *Rated speed*	2850			[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,92			
15	**Coppia nominale motore**/ *Rated motor torque*	13,4			[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	3,9			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	1,9			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP54			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	CAVO/ *CABLE*			
23	**Peso /** Weight	18			[kg]
24	**Cuscinetti** /bearings	Drive end	6206		
		Non drive end	6203		

Note/remarks:
Motore con condensatore permanente 80μF e disgiuntore elettromeccanico e condensatore di spunto 160μF.
Motor with 80μF permanent capacitor and centrifugal switch plus 160μF starting capacitor.
Targa con logo Coltri Compressors.

Data sheet single-phase electric motor 4 kW / 220 V, 60 Hz

soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **4**	**Poli/** Poles **2**
		Data 25/06/2015	Rev. 0

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	154760			
2	**Modello /** *Motor type*	MM1 100LC/2			
3	**Descrizione** / *Description*	Single-phase motor with starting capacitor 4kW 2 Poles 220V 60Hz			
4	**Carcassa motore** / *Framesize*	100L			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3			
7	**Potenza nominale** / *Rated output*	4			[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S1			
10	**Tensione** / *Rated voltage*	220			[V]
11	**Frequenza** / *Rated frequency*	60			[Hz]
12	**Corrente nominale** / *Rated current*	25,2			[A]
13	**Velocità nominale** / *Rated speed*	3450			[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,94			
15	**Coppia nominale motore**/ *Rated motor torque*	11,1			[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	3,9			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	1,8			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP54			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	CAVO/ *CABLE*			
23	**Peso /** Weight	18			[kg]
24	**Cuscinetti** /bearings	Drive end	6206		
		Non drive end	6203		

Note/remarks:
Motore con condensatore permanente 80μF e disgiuntore elettromeccanico e condensatore di spunto 160μF. Il motore è anche provvisto di interruttore con bobina di minima tensione.
Motor with 80μF permanent capacitor and centrifugal switch plus 160μF starting capacitor. The motor is also provided with switch with minimum voltage coil.
Targa con logo Coltri Compressors.

Data sheet single-phase electric motor 5,5 kW

DATA SHEET

Single Phase Induction Motor - Squirrel Cage

Customer	: FERRARI SRL
Sales document	: 21112150
Product line	:

Frame	: 112M	Locked rotor time	: 6 s (hot)
Output	: 5.5 kW (7.5 HP)	Duty cycle	: S1
Poles	: 2	Ambient temperature	: -20 °C to +40 °C
Frequency	: 60 Hz	Altitude	: 1000 m.a.s.l
Rated voltage	: 230 V	Degree of protection	: IP55
Rated current	: 29.7 A	Cooling method	: TEFC
L. R. Amperes	: 223 A	Mounting	: B3L(D)
LRC (p.u.)	: 7.5	Direct of rotation¹	: Both
No load current	: 10.5 A		
Rated speed	: 3510 rpm	Starting method	: Direct On Line
Slip	: 2.50 %	Approx. weight³	: 50.5 kg
Rated torque	: 15.0 Nm		
Locked rotor torque	: 220 %		
Pull up torque	: 185 %		
Breakdown torque	: 260 %		
Insulation class	: F		
Service factor	: 1.15		
Moment of inertia (J)	: 0.0095 kgm²		

Output	50%	75%	100%
Efficiency (%)	81.5	85.5	86.5
Power factor	0.83	0.90	0.93

Load type: -
Load torque: -
Load inertia (J=GD²/4): -

	Drive end	Non drive end
Bearing type	6207-ZZ	6206-ZZ
Lubrication interval	-	-
Lubricant amount	-	-
Lubricant type	MOBIL POLYREX EM	

Foundation loads
Maximum traction : -
Maximum compression : -

Notes:
W22 Single Phase - Start and Run Capacitor

CERTIFIED
WEG MOTORES
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Not subject to changes.

Standards

Specification	: IEC 60034-1	Vibration	: -
Tests	: IEC 60034-2	Tolerance	: IEC 60034-1
Noise	: IEC 60034-9		

This revision replaces and cancels the previous one, which must be eliminated.

(1) When viewed from the drive end.

(2) Measured at 1m and with tolerance of +3dB(A).

(3) Approximate weight subject to changes after manufacturing process.

(4) At the rated point.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in IEC 60034-1.

Rev.	Summary of changes	Performed	Checked	Date

Performed by	rjunior	196649/2021	
Checked by	giovanin	Page	Revision
Date	23/07/2021	1/2	1

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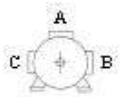
Data sheet three-phase electric motor 4 kW

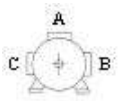
soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **4**	**Poli/** Poles **2**
		Data 07/09/2015	Rev. 1

No	Descrizione/*Description*		Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*		124341			
2	**Modello /** *Motor type*		MT1 100LB/2			
3	**Descrizione** / *Description*		Three-phase asynchronous motor 4kW 2 Poles 230/400V 50Hz			
4	**Carcassa motore** / *Framesize*		100L			
5	**Poli** / *Poles*		2			
6	**Forma di costruzione** / *Mounting type*		IM B3			
7	**Potenza nominale** / *Rated output*		4	4	4,8	[kW]
8	**Fattore di servizio** / *Service factor*		1.0			
9	**Tipo di servizio** / *Duty type*		S3-75%			
10	**Tensione** / *Rated voltage*		230/400	230/400	440-480 Y	[V]
11	**Frequenza** / *Rated frequency*		50	60	60	[Hz]
12	**Corrente nominale** / *Rated current*		16,8/9,7	16,8/9,7	9,7	[A]
13	**Velocità nominale** / *Rated speed*		2840	3410	3410	[min^{-1}]
14	**Fattore di potenza** / *Power factor*		0,85	0,85	0,85	
15	**Coppia nominale motore**/ *Rated motor torque*		13,5	11,2	13,4	[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*		5,5			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*		2,8			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*		F			
20	**Grado di protezione** / *Enclosure*		IP54			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 		A			
22	**Terminali potenza** / *Power leads terminal*		M5			
23	**Peso /** Weight		22			[kg]
24	**Cuscinetti** /bearings	Drive end	6206			
		Non drive end	6206			

Note/remarks:
Targa con logo Coltri Compressors.

Data sheet three-phase electric motor 5,5 kW

soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **5,5**	**Poli/** Poles **2**
		Data 24/06/2015	Rev. 0

No	Descrizione/*Description*	Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*	124421			
2	**Modello /** *Motor type*	MT1 112MB/2			
3	**Descrizione** / *Description*	Three-phase asynchronous motor 5,5kW 2 Poles 400/690V 50Hz			
4	**Carcassa motore** / *Framesize*	112M			
5	**Poli** / *Poles*	2			
6	**Forma di costruzione** / *Mounting type*	IM B3			
7	**Potenza nominale** / *Rated output*	5,5	5,5	6,5	[kW]
8	**Fattore di servizio** / *Service factor*	1.0			
9	**Tipo di servizio** / *Duty type*	S3-75%			
10	**Tensione** / *Rated voltage*	400/690	400/690	Δ 440-480	[V]
11	**Frequenza** / *Rated frequency*	50	60	60	[Hz]
12	**Corrente nominale** / *Rated current*	12,6/7,3	12,6/7,3	12,6	[A]
13	**Velocità nominale** / *Rated speed*	2850	3420	3420	[min^{-1}]
14	**Fattore di potenza** / *Power factor*	0,86	0,86	0,86	
15	**Coppia nominale motore**/ *Rated motor torque*	18,4	15,4	18,2	[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*	7,6			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*	3,1			Msp/Mn
19	**Classe d'isolamento** / *Insulation class*	F			
20	**Grado di protezione** / *Enclosure*	IP55			
21	**Posizione scatola morsettiera** (motore con piedini) *Terminal box position (motor with feet)* 	A			
22	**Terminali potenza** / *Power leads terminal*	M5			
23	**Peso /** Weight	28			[kg]
24	**Cuscinetti** /bearings — Drive end	6206			
	Cuscinetti /bearings — Non drive end	6206			

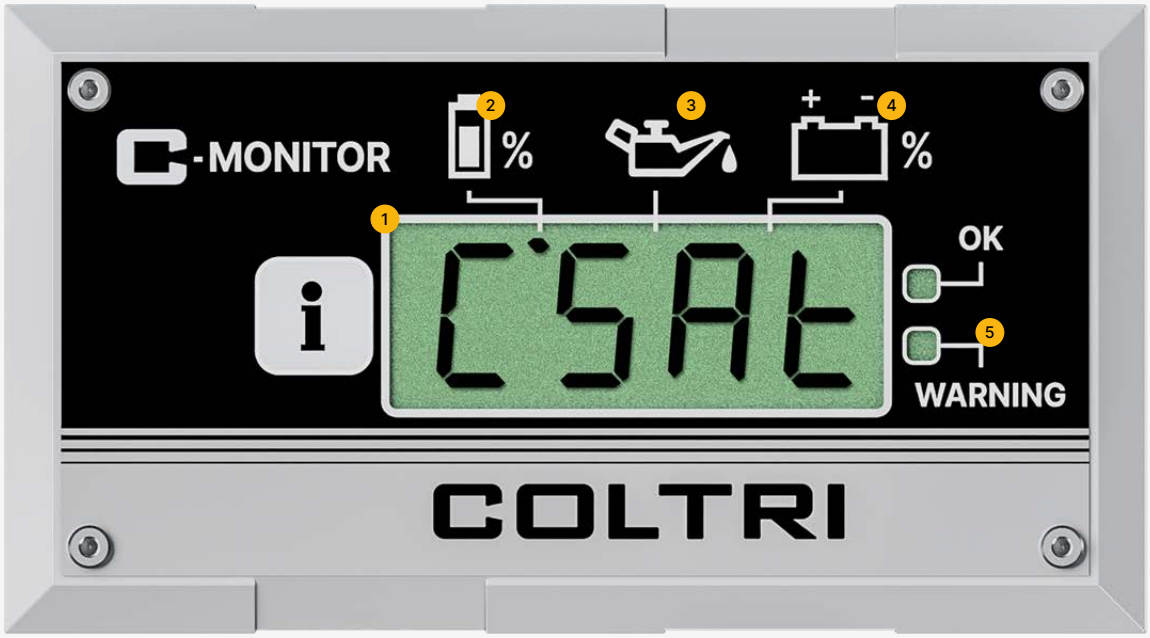
Note/remarks:
Targa con logo Soga.

Optional

C - Monitor

Final filter monitoring system, oil change and technical interface.

The interface consists of an LCD display, a button and two indicators (O,●). The decimal points next to the digits are indicator lights to indicate alarms or warnings in progress. Each dot is associated with an explanatory icon (, ,). The icon ● indicates an alarm condition while the symbol O indicates normal operation. Press the button to scroll through the different functions of the menu. When pressed, the function is displayed the function and after two 2 seconds the related data.



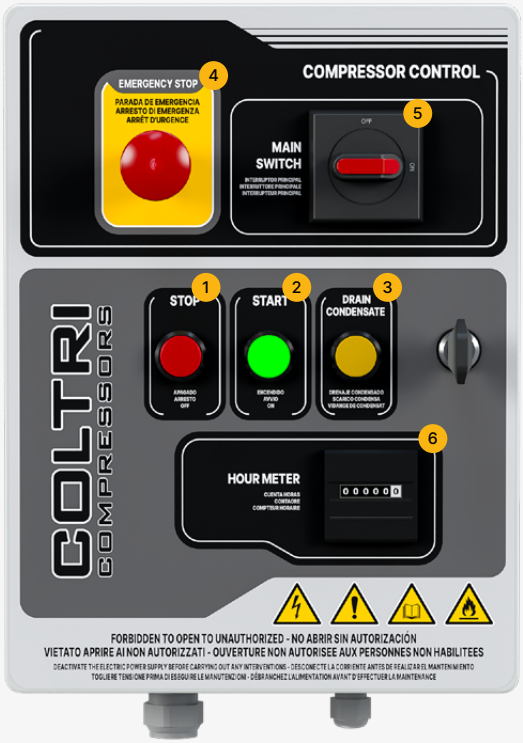
COD. SC001200

1. Display
2. Cartridge saturation
3. Service indication
4. Battery charge level
5. Operation indicator

Automatic condensate drain system with timer

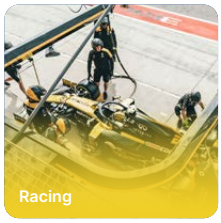
The automatic condensate drain removes water from the intermediate separator and the final separator automatically during operation (every 7 minutes).

Consists of:
- 1 x timer
- 1 x solenoid valve



1. Stop button
2. Power button
3. Condensate drain button
4. Emergency button
5. Main switch
6. Operating hour meter

Application fields



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DT-TDS-SMART-25-V3

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

SAFETY SYSTEM CERTIFICATION DNV ISO 45001

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