Technical Data Sheet

COLTRI COMPRESSORS

EFFICIENT LINE

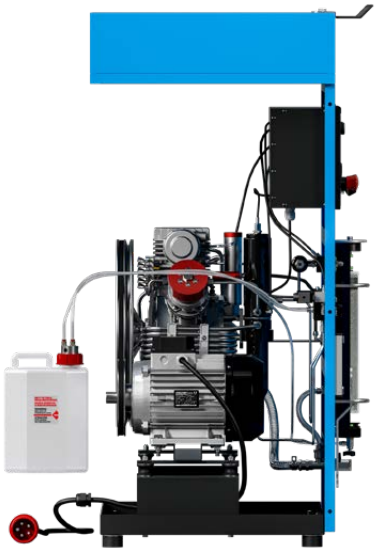
SUPER SILENT

ELECTRIC

Contact

Super, without the noise

The **SUPER SILENT** model stands out for its outstanding noise reduction. Easy to use, it features a high monitoring capability through control systems that track compressor operations. Standard equipment includes: two connections for high pressure hoses, interstage pressure gauge, oil level and internal cabin temperature control, rotation detector, electric motor, automatic condensate drain and autostop. Choose the best pumping group for your needs.



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	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	400 V, 50 Hz
Other operating voltage	230 V, 50 Hz / 440 V, 60 Hz / 230 V, 60 Hz
Oil	Synthetic Coltri Oil ST 755
Oil change interval	1 year / 1.000 h
Frame	Steel - Colour Blue RAL 5015 - Powder coating painting - Scratch proof

Compressor

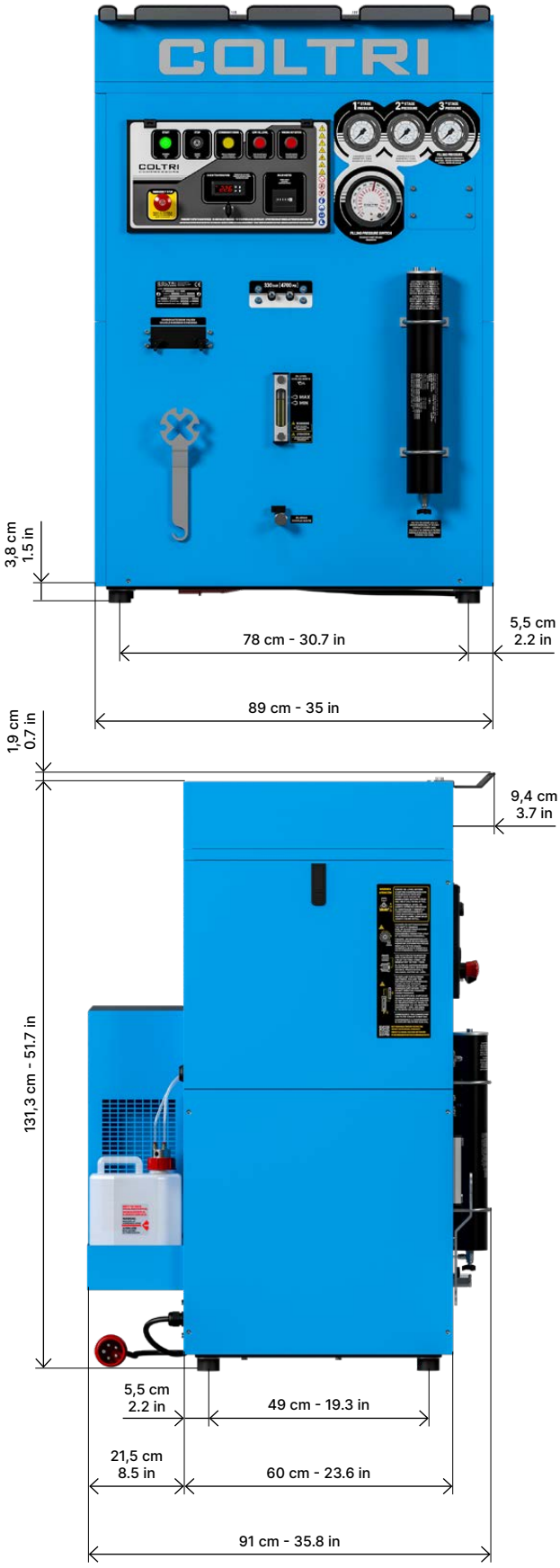
	235 ET	315 ET
Charging rate Measured during 10 liters cylinder filling from 0-200 bar tolerance +/- 5% at + 20 ° C ambient temperature.	235 l/min 14.1 m^3/h 8.3 cfm	315 l/min 18.9 m^3/h 11.1 cfm
Purification System	Maxifilter	
Cooling air flow	1,440 m^3/h	2.180 m^3/h
Weight[1]	162 kg - 357 lb	168 kg - 370 lb
Dimensions (W x D x H)[1]	90 × 91 × 132 cm - 35.4 × 35.8 × 52 in	
Noise	LpA 63,3 dB	

1 Standard model. Dimensions may vary depending on accessories.

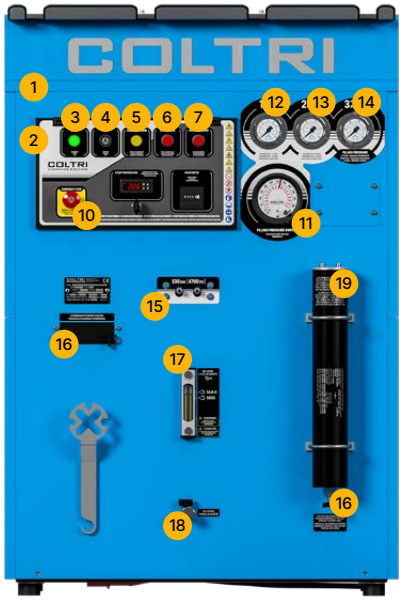
Electric motor

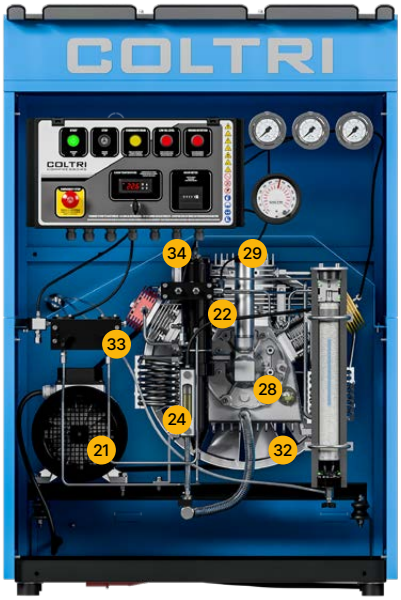
	235 ET	315 ET
Power	4 kW - 5.5 Hp	5,5 kW - 7.5 Hp
Type	Three-phase electric	
Operating voltage/frequency Different voltage / frequency available on request.	400 V, 50 Hz	
Rated current	16,8 A	12,6 A
Speed (RPM)	2.840	2.850
Protection class	IP55	

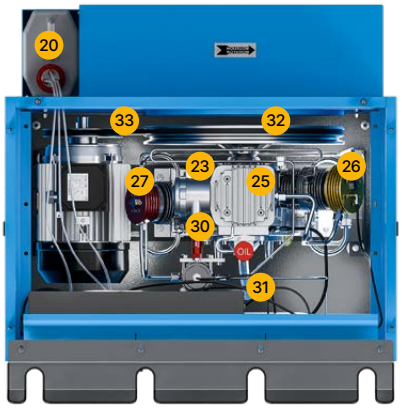
Dimensions


3,8 cm
1.5 in
78 cm - 30.7 in
5,5 cm
2.2 in
89 cm - 35 in
1,9 cm
0.7 in
9,4 cm
3.7 in
131,3 cm - 51.7 in
5,5 cm
2.2 in
49 cm - 19.3 in
21,5 cm
8.5 in
60 cm - 23.6 in
91 cm - 35.8 in

Components

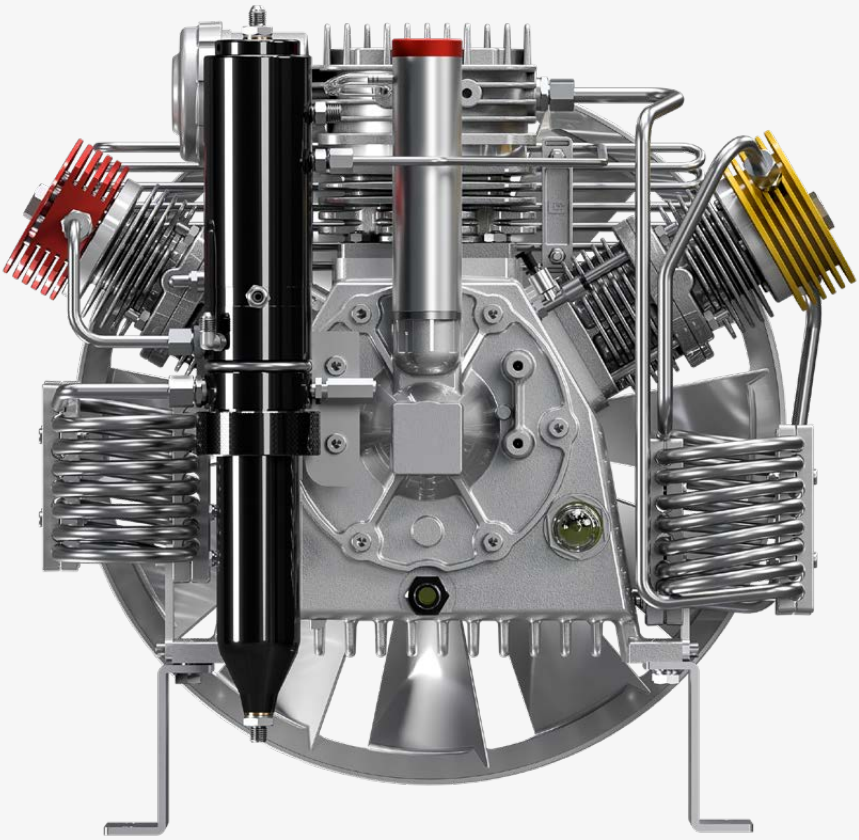






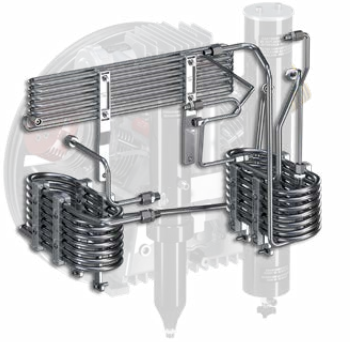
1. Frame
2. Control panel
3. ON pushbutton
4. Stop pushbutton
5. Condensate discharge pushbutton
6. Oil level warning light
7. Direction of rotation indicator light
8. Hour counter
9. Cabinet interior / cooling air temperature
10. Emergency pushbutton
11. Automatic shut off pressure switch
12. 3rd stage pressure gauge
13. 2nd stage pressure gauge
14. 1st stage pressure gauge
15. Refill hoses connection
16. Condensate discharge valves
17. Oil level
18. Oil discharge valves
19. Purifier filter
20. Condensate collection can
21. Motor
22. Compressor
23. Intake air filter
24. LP condensate separator
25. HP condensate separator
26. 1st stage
27. 2nd stage
28. 3rd stage
29. Monoblock crankcase
30. Oil filler plug
31. Safety valve
32. Pressure maintenance valve
33. Cooling fan
34. Belt

Pumping unit MCH 16

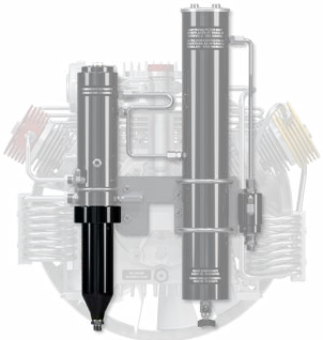


Splash lubrification with conrod pin immersed in oil

Suction filter:
10 µ micron



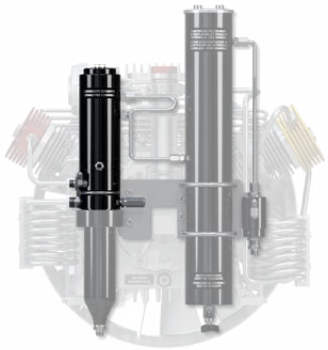
Pipes, fitting and nuts in stainless steel AISI 316



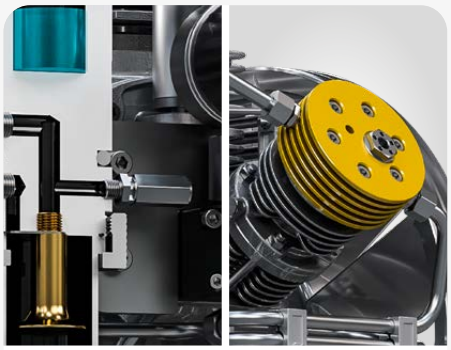
Intermediate condensate separator after the second stage

Synthetic Oil Coltri ST 755 with special formulation for HP compressors

Discover more on Coltri Oil ST 755



High pressure final condensate separator

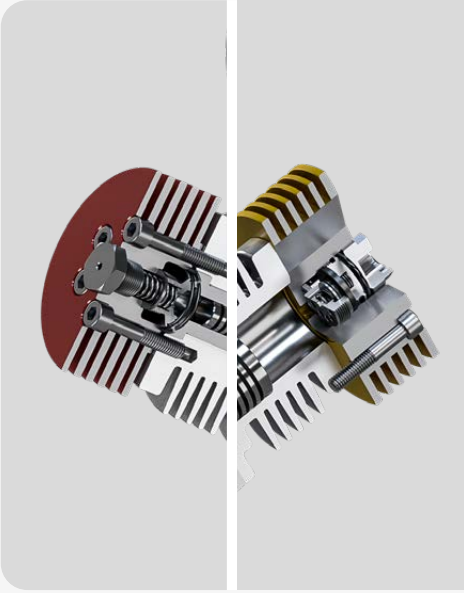


Safety valves after each stage of compression

Die-cast aluminium cylinders with barrel coating in nicasil

Forged aluminum connecting rods

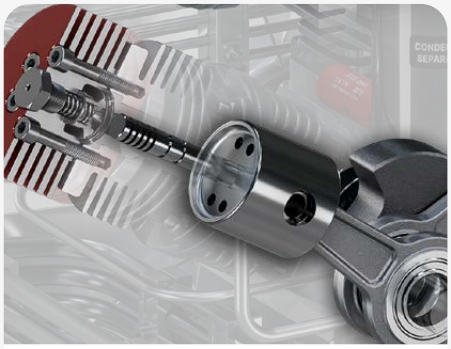
Forged steel crankshaft



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

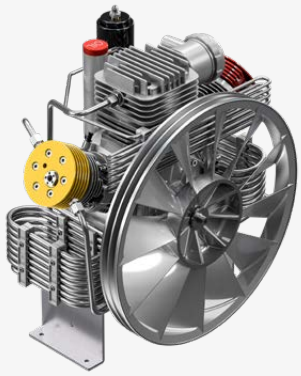


Second and third stage with pushing pistons to eliminate lateral forces on the pistons

CE certification

Technical data pumping unit MCH 16

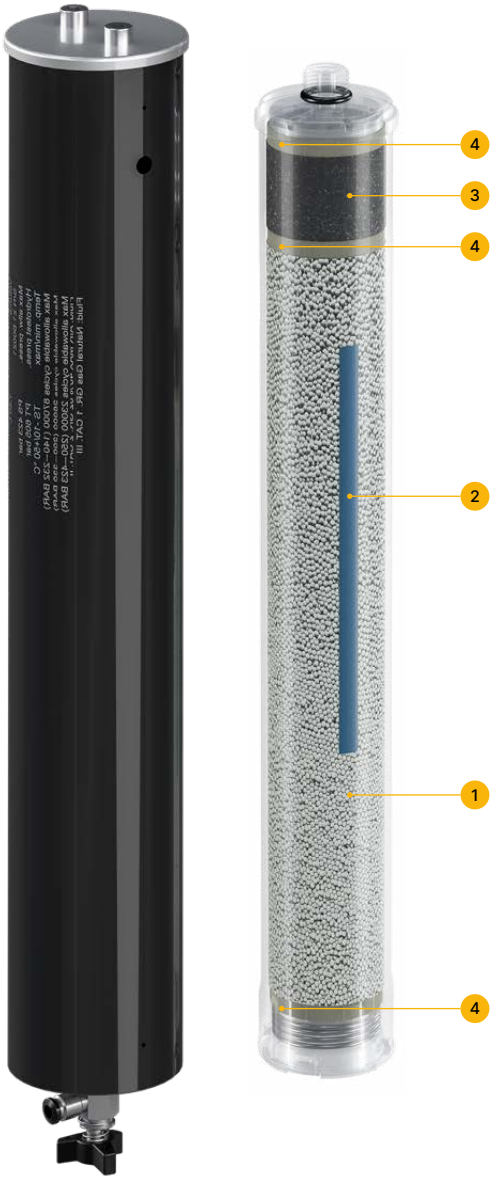
	235 ET	315 ET
Charging rate Measured during 10 liters cylinder filling from 0-200 bar tolerance +/- 5% at + 20 ° C ambient temperature.	235 l/min 14.1 m^3/h 8.3 cfm	315 l/min 18.9 m^3/h 11.1 cfm
Speed (RPM)	1.270	1.600
Number of stages	3	
Number of cylinders	3	
Cylinder bore 1st stage	95 mm	
Cylinder 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	0,3 bar_a – 300 mbar	



Standard equipment

Purification system Maxifilter

MAXIFILTER polypropylene cartridge repackable or disposable



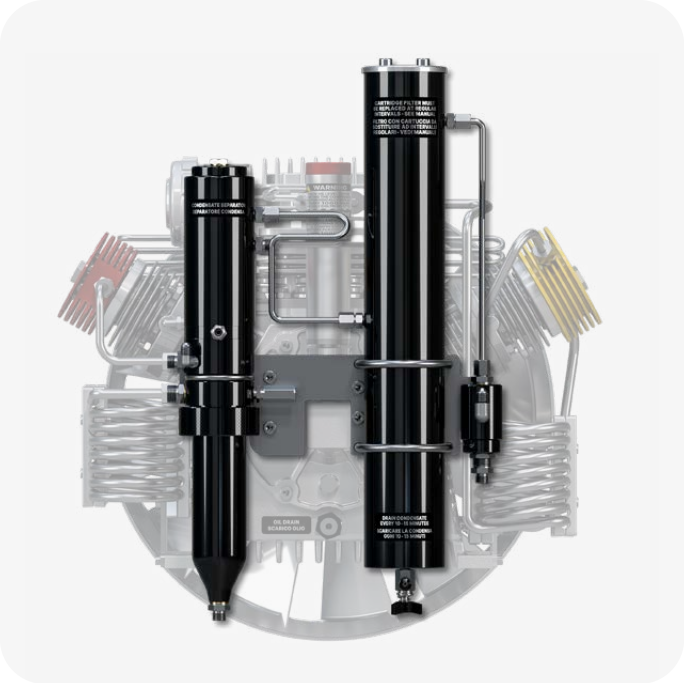
1. Moisture saturation indicator stripe
2. Molecular sieve
3. Activated carbon
4. Felt disc

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

Compressor control and automatic condensate drain system

- ON/OFF switch with motor protection switch.
- Optional: autostart at 60 bar hysteresis.
- Transformer.
- Pressure switch stops compressor at final pressure.
- Drainage of all separators between the individual stages and also of the final separator during compressor operation (standard drain interval every 15 minutes for a period of 6 seconds).
- Timer for automatic condensate drainage device.
- Integrated vacuum start-up (automatic drain when the unit is switched off).
- Condensate collection tank 5 liters, with silencer; capacity approx. 3 liters, for environmentally friendly disposal of condensate.
- Interstage pressure gauges display the operating pressure for the individual compression stages. This pressure information allows you to check the tightness of the valves (inlet and outlet) of each stage and quickly identify potential sources of failure.

The interstage pressure gauges are mounted in the compressor frame.

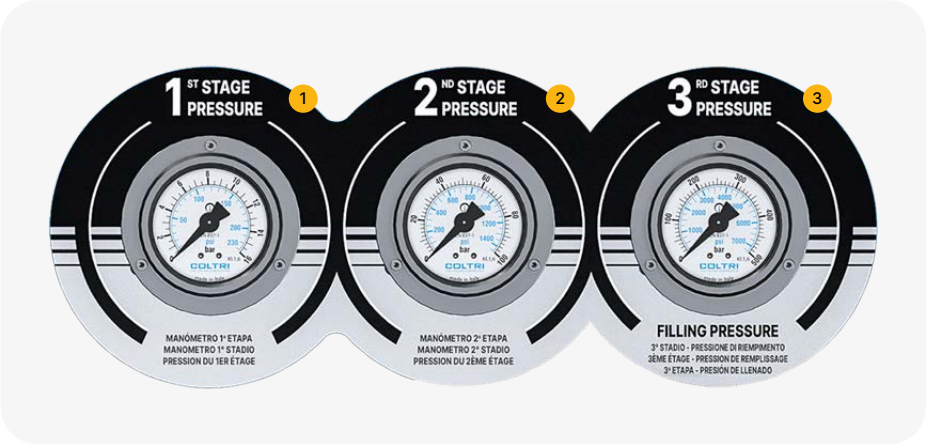
1. Power button
2. Stop button
3. Condensate drain button
4. Oil level warning light
5. Wrong direction indicator light
6. Emergency button
7. Inside temperature cabin/cooled air
8. Operating hour meter

Electromechanical pressure switch

The instrument allows to display the pressure expressed in bar/ psi. Through the adjustment knob it allows to set the maximum pressure of automatic switch-off.

Interstage pressure gauges

The function of the interstage pressure gauges is to show the operating pressure of the individual compression levels. This information is indispensable because it allows to quickly recognize a possible error by checking the tightness of the respective level valves (inlet and outlet). The interstage pressure gauges are mounted on the control panel of the compressor.



2 1st stage pressure gauge

3 2nd stage pressure gauge

4 3rd stage pressure gauge

Soundproof frame

Polyether-based expanded polyurethane impregnated with halogen and CFC-free flame retardant substances. Soundproofing useful in any environment that requires a strong reduction of high frequencies.

		Certifications
Color	Black	
Thermal conductivity	W/mk 0,040 40° C	
Temperature resistance	-70° C - 100° C	
Density	75 / 110 Kg/m3	ISO 1855
Hardness	> 300 N	ISO 2439 (ILD% 40)
Tensile hardness	> 85 Kpa	ISO 1798
Resistance to de-tensioning	> 85 %	ISO 1798
Self-extinguishing	Class 0 / Class 1	BS 476 Part 6 / BS 476 Part 7

Plugs available according to electric motor

400 V three-phase electric motor

6h/380 - 415V~

50÷60 Hz

16 A

3P+⏚

400 V three-phase electric motor

6h/380 - 415V~

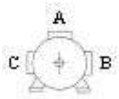
50÷60 Hz

32 A

3P+⏚

Data sheet three-phase electric motor 4 kW

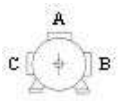
soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **4**	**Poli/** Poles **2**
		Data 07/09/2015	Rev. 1

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			
	Cuscinetti /bearings — Non drive end	6206			

Note/remarks:
Targa con logo Coltri Compressors.

Data sheet three-phase electric motor 5,5 kW

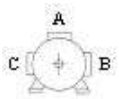
soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **5,5**	**Poli/** Poles **2**
		Data 24/06/2015	Rev. 0

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			
		Non drive end	6206			

Note/remarks:
Targa con logo Soga.

Data sheet three-phase electric motor 7,5 kW

soga®	**SPECIFICA TECNICA MOTORE EL.** *Electric motor technical data sheet*	**Potenza/** *Power* (kW) **7,5**	**Poli/** Poles **2**
		Data 25/06/2015	Rev. 0

No	Descrizione/*Description*		Dati/Data			*U.d.m.*
1	**Codice Soga** / *ref.code*		150777			
2	**Modello /** *Motor type*		MT1 112MC/2			
3	**Descrizione** / *Description*		Three-phase asynchronous motor 7,5kW 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*		7,5	7,5	9	[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	Δ440-480	[V]
11	**Frequenza** / *Rated frequency*		50	60	60	[Hz]
12	**Corrente nominale** / *Rated current*		16,8/9,7	16,8/9,7	16,8	[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*		25,1	21	25,1	[Nm]
17	**Corrente avviamento / Corrente nominale** *Starting current / Rated current*		8,0			Isp/In
18	**Coppia avviamento / Coppia nominale** *Starting torque/Rated torque*		4,0			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		33			[kg]
24	**Cuscinetti** /bearings	Drive end	6206			
		Non drive end	6206			

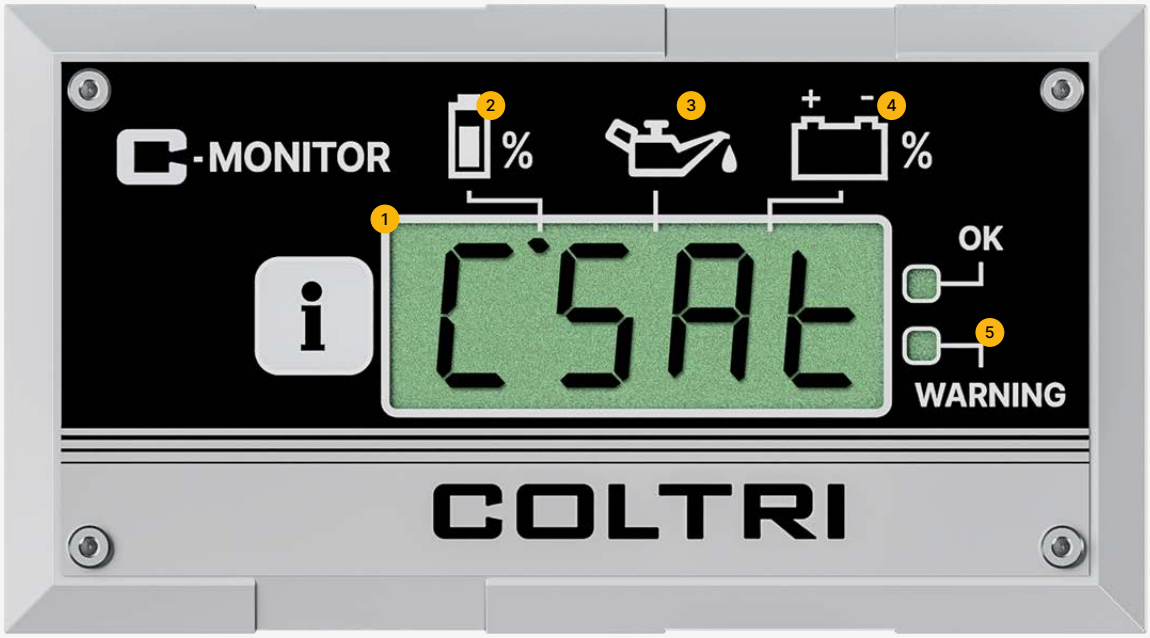
Note/remarks:
Targa con logo Coltri Compressors.

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

Multi-Gas Analysis System (SAM)

The Coltri Multi-Gas Analysis System is a measuring instrument capable of monitoring air quality. Its application includes continuous monitoring of environmental gases, hyperbaric chambers, safety, medical, air quality.

If you choose the SAM system, you cannot also install the CO SafeGuard system.

Available sensors:
- Oxygen O_2
- Carbon dioxide CO_2
- Carbon Monoxide CO
- Humidity H_2O
- Gas Temperature
- VOC (Volatile Organic Compound)
- Helium in Air

Sensor CO + CO_2 + H_2O

COD. SC000727/A

Sensor CO + CO_2 + H_2O with VOC

COD. SC000727/B

General specifications

Input voltage requirement	10-35 Vdc
Internal Battery	Rechargeable lithium-ion battery. One cell 1400 mAh Li ion 3.7 V
Sensors	Up to 6 sensors
Output	Acoustic alarm
Serial Connection	1 RS232 interface. Transmission speed up to 115000 baud, on request RS485 interface
Measurement resolution	Bipolar 24-bit A/D converter. Drift in automatic temperature compensation.
Conversion rate	10 ms
Sampling time	100 ms (min) for each channel
Signal measurement accuracy	0.1% Full scale +/- ½ LSB
Input device	Rotary knob with central push
Color Display	TFT 320 × 240 dot resolution, LED backlighting
Display light intensity	600 nits (cd/m2)
Memory	Micro SD card writer/reader
Microprocessor	Cortex M4

Buzzee Alarm	There is an audible warning alarm on board.
Serial Interface	Standard RS232 interface for connection to PC. it is possible to read measurements remotely and to program the instrument, software is available on request.
Non-volatile Memory	SAM features non-volatile memory that retains configuration data and settings for 10 years without power.

CO SafeGuard - Safe personal Carbon monoxide analyzer

Carbon monoxide (CO) is a colourless and odourless toxic gas, that could be yielded from engine exhalation or from bad maintained compressor filters. If breathed it bonds with blood haemoglobin affecting the oxygen transport to the body tissues.

Carbon Monoxide poisoning is extremely dangerous, could be only treated with immediate medical cares and could even lead to death. Carbon monoxide (CO) can be produced within a compressor as a result of breakdown of the lubricating oil caused by pyrolysis (chemical decomposition by heat). Pyrolysis can occur when the system is hot, but not necessarily overheating and the resulting short term high levels of CO would not necessarily be identified during periodic sampling. To minimise this hazard should be considered to easily put CO SAFEGUARD online for monitoring for CO content.

Before diving, CO SAFEGUARD is able to analyze the carbon monoxide content in every breathable gas mix, including air. It can be connected to the gas compressor for continuous reading too.

CO SAFEGUARD can be also used for safety reason in checking carbon monoxide content into any environment (in diffusion mode). It alerts the operators in case of dangerous concentration.

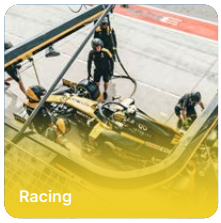
CO SAFEGUARD assures safe diving also with air. It is really easy to use and allow the user to personally check if gas mix or air is carbon monoxide free. Really essential for diving centre for checking the compressor air inlet, and for divers during abroad dive trips.

CO SAFEGUARD is a full digital measurement instrument with two visible and audible alarms if carbon monoxide value is over the set values. It is based on a state-of-theart carbon monoxide electrochemical sensor with long term stability and virtually calibration-free. It is possible to replace and calibrate the carbon monoxide sensor without any factory assistance. The instrument is able to read 5 ppm (parts per million), in compliancy with the EN 12021 norm.

Components

1. Display
2. On/off button
3. Configuration buttons
4. Fixing screws
5. Electronic board

Application fields



Aerotecnica Coltri S.p.A.

Via dei Colli Storici, 177
25015 Desenzano del Garda - Brescia - Italy

Tel. +39 030 9910301
+39 030 9910297

info@coltri.com

DT-TDS-SUPERSILENT-25-V2

QUALITY SYSTEM CERTIFICATION DNV ISO 9001

ENVIRONMENTAL SYSTEM CERTIFICATION DNV ISO 14001

SAFETY SYSTEM CERTIFICATION DNV ISO 45001

Printed on paper from
sustainably managed forests

Visit our showroom in Virtual Reality

coltri.com

coltri.com/showroom

COLTRI® COMPRESSORS