

Technical Data Sheet



Series:

BOOSTER

rev.04 05/05/2020

Types:

BOOSTER MARK 3 4kW – 5,5kW



BOOSTER MARK 3

General	
Type of gas	Air – Nitrogen – Helium - Argon
Intake Pressure	Min 2 bar Max 8 bar
Nominal pressure	250 bar / 330 bar / 360 bar / 390 bar
Filling pressure	232 bar / 300 bar / 330 bar / 420 bar
Max working pressure	420 bar
Permissible ambient temperature range	+5 ÷ +50°C
Permissible altitude	0 ÷ 1,500 m AMSL
Max. permissible tilt	15°
System design	Insonorized cabinet
Operating voltage, standard	400 V; 50 Hz
Other operating voltage	230 V; 60 Hz
Compressor oil	COLTRI OIL ST 755
Oil change interval	every year/ 1,000 h
Frame	Steel 1,5 mm thickness -color RAL 5015 – Powder coating painting – scratch proof

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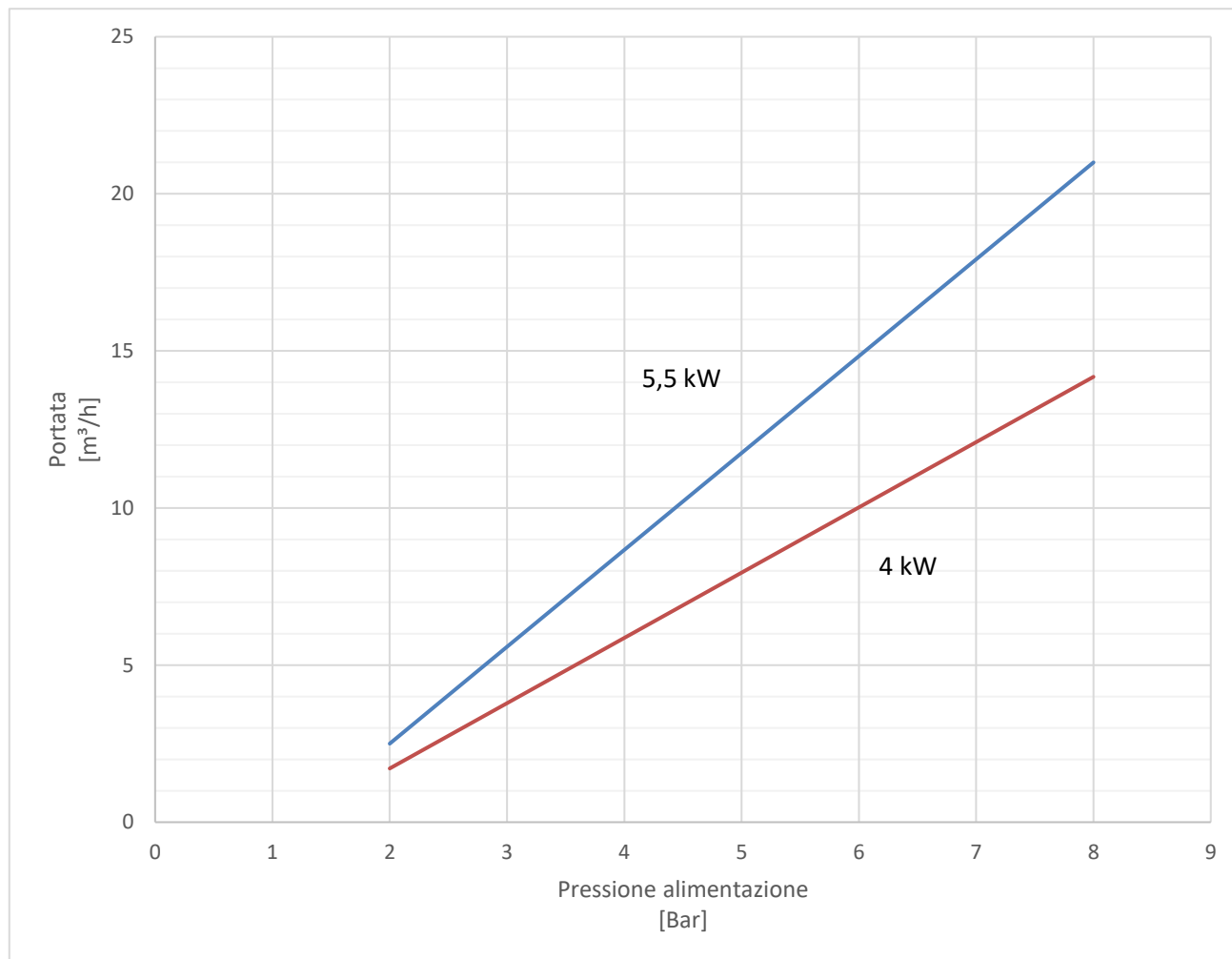
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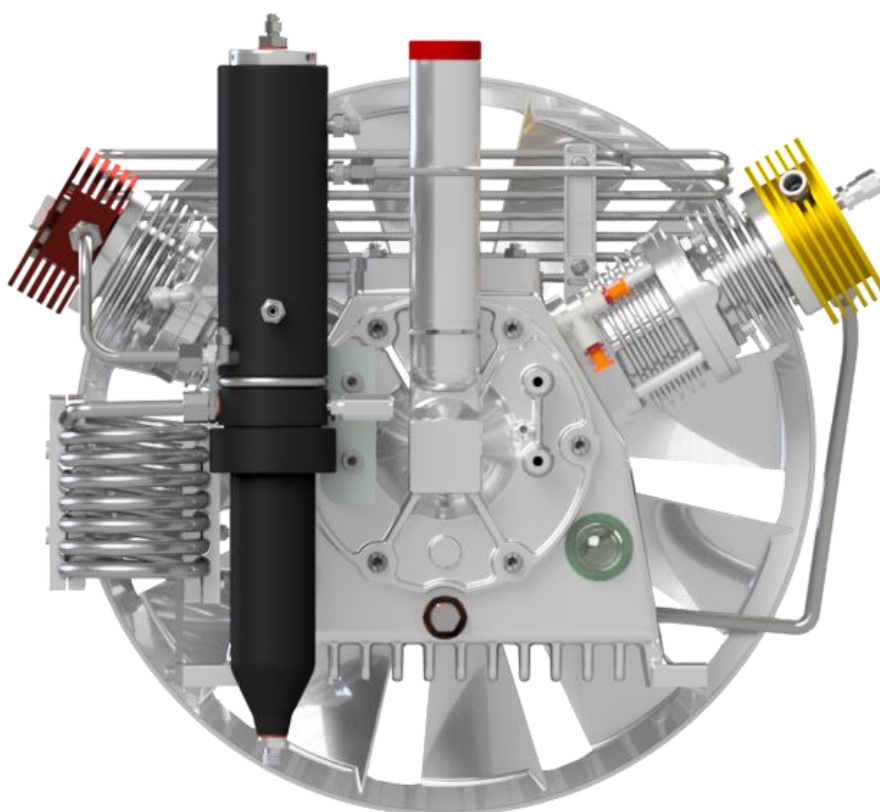


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Delivery rate



Compressor system	M16B
Flow rate	28,5 l/min - 350 l/min
Purification System	HYPERFILTER
Cooling air flow	1,960 m³/h
Weight	163 kg
Dimensions (LxWxH)	920 x 610 x 880 mm



Drive system (Three-phase motor)	BOOSTER MARK 3	
Power	4 kW	5,5 kW
Model	MEC 100	MEC 112
Type of construction	B3	
Type	Three-phase Squirrel-Cage-Motor	
Operating voltage / frequency	400 V, 50 Hz	400 V, 50 Hz
Motor	2815 RPM	2910 RPM
Protection class	IP54	
Pumping group	1200 RPM	1600 RPM
Motor pulley diameter mm	190	250

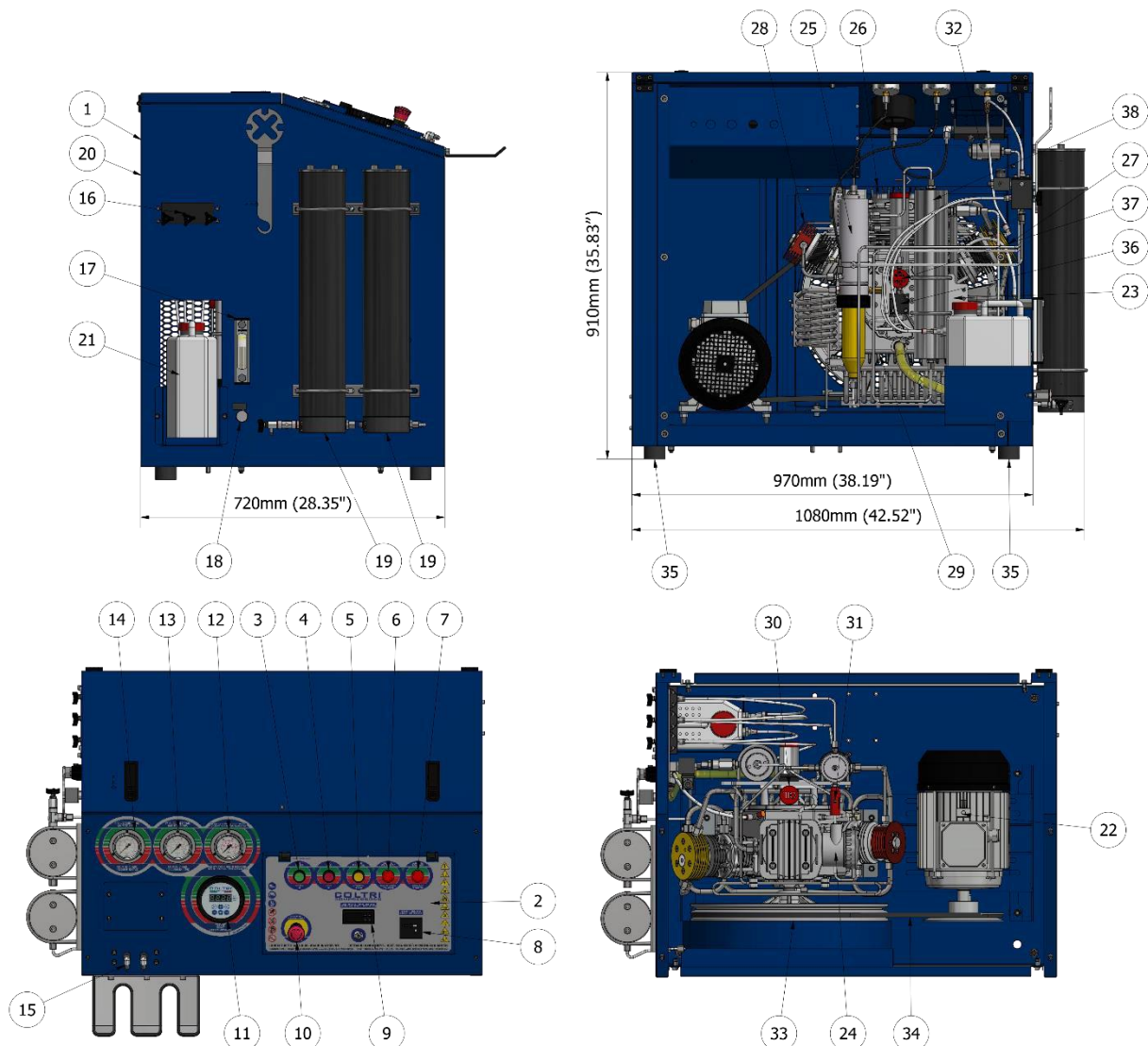
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MACHINE PARTS

- | | | |
|--|--------------------------------|------------------------------------|
| 1 Frame | 14 Inlet pressure gauge | 28 3rd stage |
| 2 Control panel | 15 Refill hoses connection | 29 Crankcase |
| 3 On pushbutton | 16 Condensate discharge valves | 30 Oil filler plug |
| 4 Off pushbutton | 17 Oil level | 31 Safety valve |
| 5 Condensate discharge pushbutton | 18 Oil discharge valves | 32 Maintenance valve |
| 6 Oil level warning light | 19 Purifier filter | 33 Cooling fan |
| 7 Wrong of rotation direction light | 20 Intake extension hole | 34 Belt |
| 8 Hour counter | 21 Condensate collection tank | 35 Anti-vibration device |
| 9 Cabinet interior/cooling air temperature | 22 Motor | 37 Condensate collection container |
| 10 Emergency pushbutton | 23 Compressor | |
| 11 Automatic shutdown pressure switch | 24 Air filter | |
| 12 3rd stage pressure gauge | 25 Final condensate separator | |
| 13 2nd stage pressure gauge | 27 2nd stage | |

» Compressor block with following features:

- Forced oil lubrication with LP gear pump.
- All coolers and pipes, stainless steel AISI 316 and SS fittings and nuts.
- Outlet temperature approx. 15 °C above cooling air temperature.
- Intermediate separators after 2nd stage and 3rd stage.
- Sealed safety valves after each stage.
- Pressure maintaining and check valve after the final air filter purification.
- Aluminum cylinders with galvanic surface coating.
- Aluminum conrods.
- Forged steel crankshaft.
- Stainless steel last stage valves.
- Heavy duty roller bearing.
- Tempered steel 3rd stage with 5 cast iron piston rings.
- 2nd – 3rd stages with pushing pistons to eliminate side forces.

Compressor block	M16B
Flow rate	Min 28,5 l/min - Max 350 l/min
Speed	1,200 1/min 4 kW 1,600 1/min 5,5 kW
Number of stages	2
Number of cylinder	2
Cylinder bore 1st stage	38 mm
Cylinder bore 2nd stage	14 mm
Stroke	40 mm
Direction of rotation (from flywheel side)	Left – counter clockwise
Drive type	V-belt A type
Amount of oil	1,4 Liters
Intake pressure	2 – 8 bar

Purification system HYPERFILTER

- DOUBLE HYPERFILTER cartridge repackable or disposable



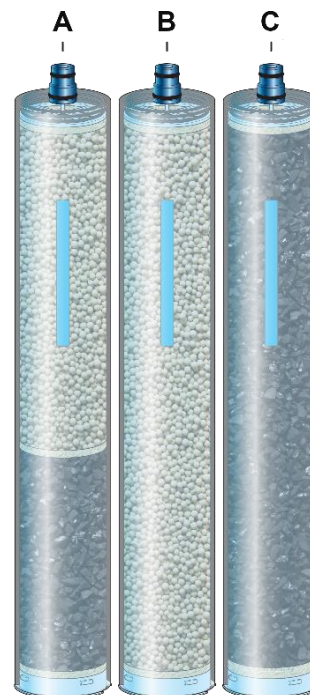
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SC000350



SC000380



A 36-07-034/PP/B-AC

B 36-07-034/PP/A-MS

C 36-07-034/PP/CAR

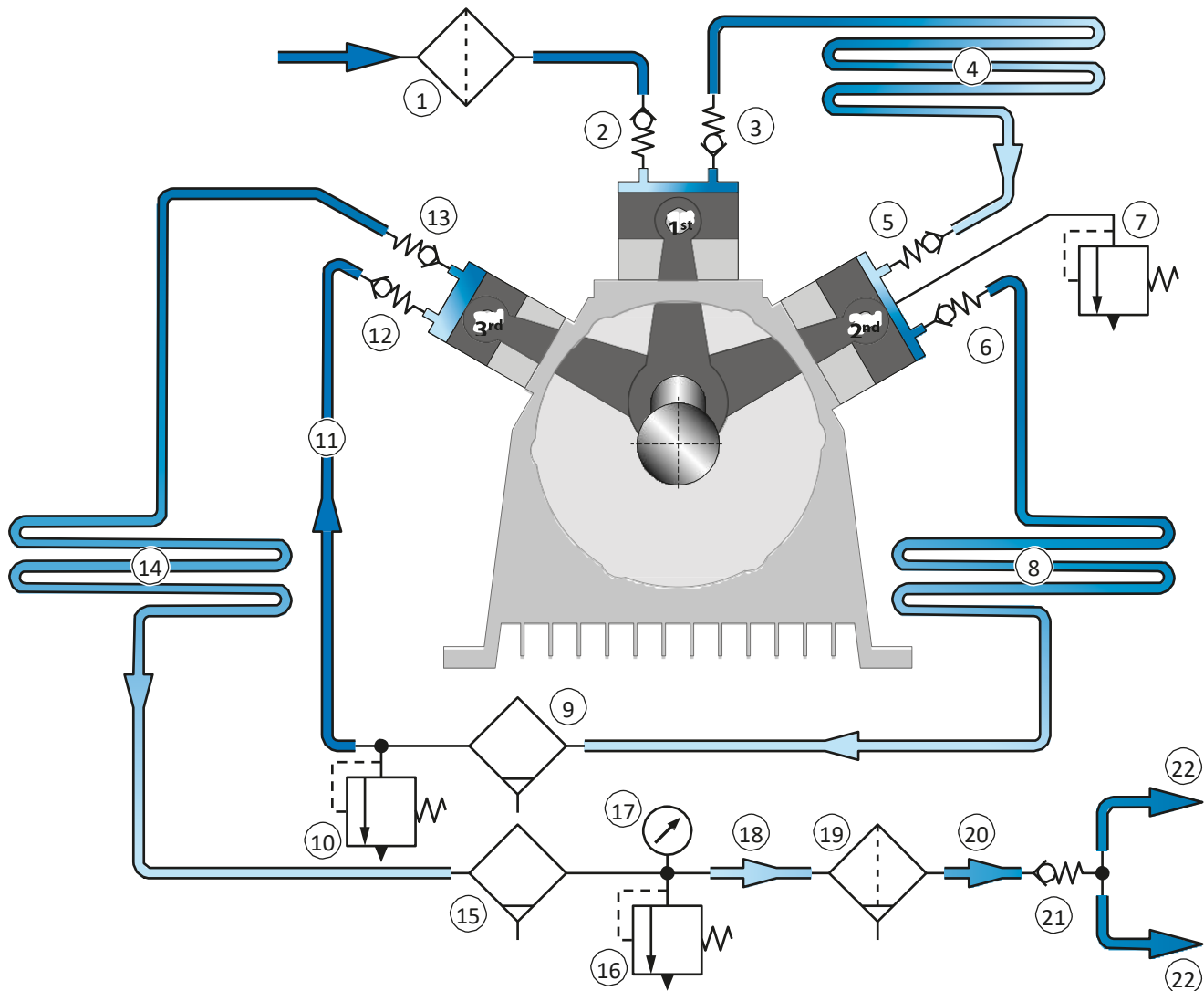
Purification System	HYPERFILTER
Operating pressure (Standard)	250 bar / 330 bar / 360 bar
Operating pressure max. (PS)	420 bar
Processable breathing air capacity (at ambient temperature 20°C and 200 bar)	880 m ³

➤ Separator system

- Interstage separator after 2nd and 3rd 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.



► Piping and instrumentation diagram



- | | |
|---|---|
| 1. Intake filter | 13. Outlet valve 3rd stage |
| 2. Intake valve 1st stage | 14. Aftercooler |
| 3. Outlet valve 1st stage | 15. Condensate separator HP |
| 4. Cooling pipe 1st-2nd stage | 16. Safety valve |
| 5. Intake valve 2nd stage | 17. Pressure gauge |
| 6. Outlet valve 2nd stage | 18. Pipe separator/filter |
| 7. Safety valve 1st stage | 19. Purifier filter |
| 8. Cooling pipe 2nd/condensate separator LP | 20. Pipe filter/ pressure maintenance valve |
| 9. Condensate separator LP | 21. Pressure maintenance valve |
| 10. Safety valve 2nd stage | 22. Flex hoses |
| 11. Pipe separator/3rd stage | |
| 12. Intake valve 3rd stage | |

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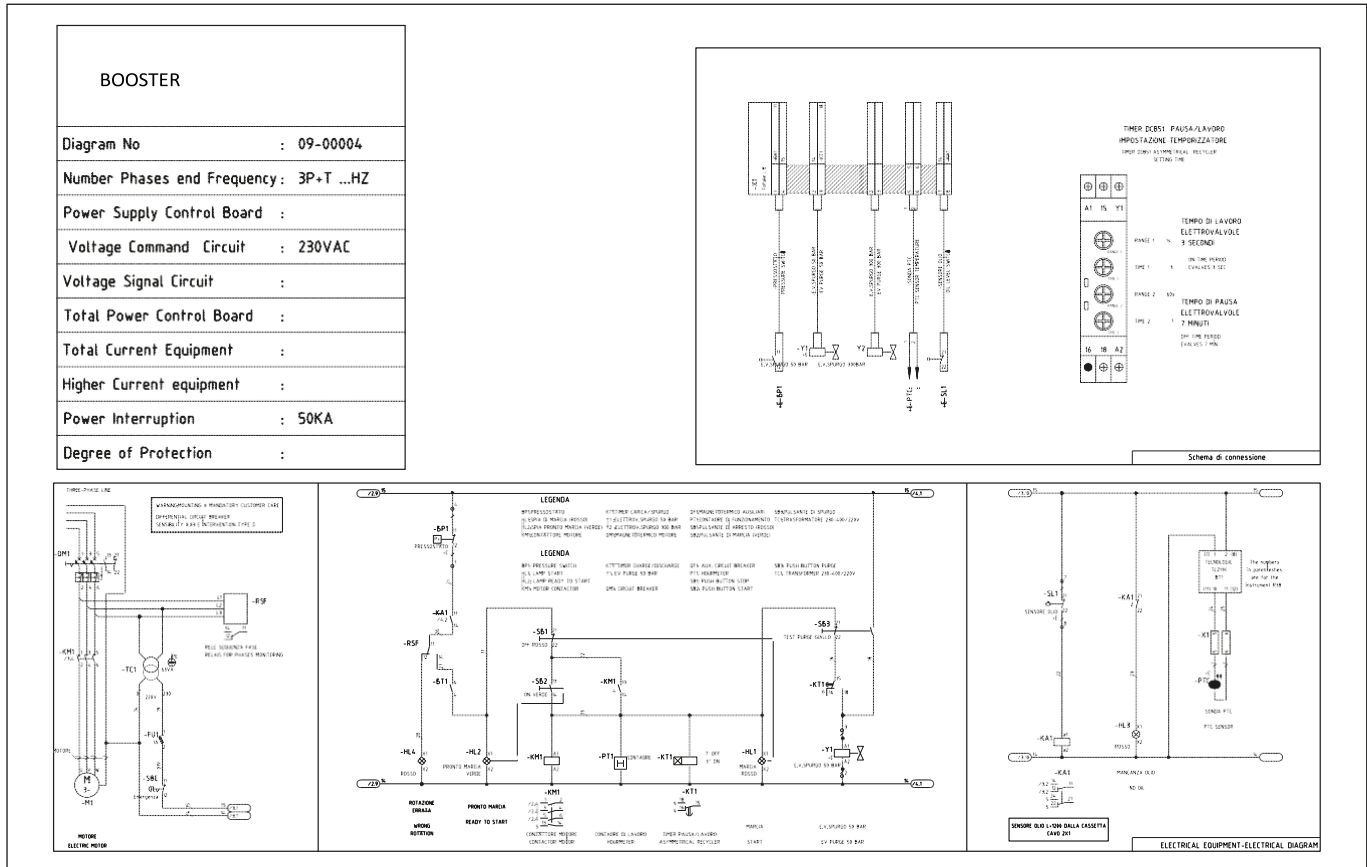
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» **Wiring Diagram**



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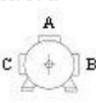
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		SPECIFICA TECNICA MOTORE EL. <i>Electric motor technical data sheet</i>			Potenza/ Power (kW) 4	Poli/ Poles 2
					Data 07/09/2015	Rev. 1
No	Descrizione/Description	Dati/Data			U.d.m.	
1	Codice / ref.code	124341				
2	Modello / Motor type	MT1 100LB/2				
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			

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		SPECIFICA TECNICA MOTORE EL. <i>Electric motor technical data sheet</i>			Potenza/ Power (kW) 5,5	Poli/ Poles 2
					Data 24/06/2015	Rev. 0
No	Descrizione/Description	Dati/Data			U.d.m.	
1	Codice / ref.code	124403				
2	Modello / Motor type	MT1 112MB/2				
3	Descrizione / Description	Three-phase asynchronous motor 5,5kW 2 Poles 230/400V 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	230/400	230/400	440-480 Y	[V]	
11	Frequenza / Rated frequency	50	60	60	[Hz]	
12	Corrente nominale / Rated current	21,8/12,6	21,8/12,6	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			

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EC DECLARATION OF CONFORMITY

According to Annex II point A of Directive 2006/42/EC,
Annex IV Directive 2014/30/EU,
Annex II Directive 2000/14/EC (adopted in Italy with D.Lgvo 4/9/02 n. 262)

The firm **AEROTECNICA COLTRI S.p.A.**, as the manufacturer of the HIGH PRESSURE COMPRESSOR FOR Air – Nitrogen – Helium – Argon

Model	BOOSTER		
Type	MARK 3		
Code			
Serial number			
Year	2020	Lwa guaranteed	dB(A)
Engine	THREE PHASE	Lwa measured	dB(A)
Power		Lpa measured	dB(A)

Hereby declares under its sole responsibility that it complies with all the relevant provisions of the Directives:

- **2006/42/EC** (machinery Directive);
- **2014/30/EU** (electromagnetic compatibility Directive);
- **2000/14/EC** (Directive on noise emission in the environment by equipment for use outdoors).

further, declares that the compressor complies with the relevant requirements described in the technical standards:

**EN ISO 12100:2010, EN 1012-1:2010, EN ISO 13857:2008, CEI EN 60204-1:2006,
CEI EN 61000-6-4:2007/A1:2013, CEI EN 61000-6-2:2006**

finally, declares that:

- any modification made to the compressor without written authorization from AEROTECNICA COLTRI S.p.A. shall void this declaration;
- extraordinary maintenance operations and supply of spare parts must always be requested to the manufacturer;
- the user's manual is an integral part of the machine, and a full knowledge and understanding of it are essential for a safe use.

Person authorized to compile the technical file according to the above mentioned Directives: eng. Marco Corsini near Aerotecnica Coltri S.p.A.



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