TT 110-Series

IDE Comressors GmbH

IDE-COMPRESSORS „TT 110-SERIES“

Portable high pressure compressor unit for breathing air, air or other gases.

Ideal model for the use on yachts, diving boats, small diving schools, diving safari vehicles and in Emergency Service vehicles

Air delivery achievements of 110 litre/minute

Driven by (depending upon model) 230 V or 400 V electric motor, Robin petrol or Lombardini Diesel engines

200 bar or 300 bar (optionally 200 bar and 300 bar)

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I.D.E GMBH COMPRESSORS

Framework, rack

Sturdy basic frame manufactured from welded stainless steel tube powder-coated for extra protection. The Framework basic colour is RAL 7010 graphite grey.
The Front lining and drive belt cover is plastic. The Colour is delivered standard as silver however other colours are available on request.
The Chassis engine compressor block sits on a 3mm stainless steel sheet with welded reinforcement and sleeved frame bolts for oscillation damping.
The complete framework stands on large rubber-bonded metal feet to prevent transmission of vibrations, oscillations and noises.
An ergonomically designed handle and the compact design of the whole frame makes storage and handling very easy.

Rust protection

Because these compressors are used on boats and in other damp environments one priority in its design was to make it rust proof. This was achieved by:

- A Stainless steel framework and linings, all powder-coated.
- Compressor block made of aluminium, and painted.
- Intermediate coolers and connecting lines made of high-grade steel,
- Electric motor made of aluminium, and painted.
- Filter and separator housing from salt water-resistant and anodized aluminium.

Electrical connections

The electrical connections are located in a switchbox built onto the electrical motor, and are manufactured to IP 65 standard.
The TT 110 series has a 24 V control circuit that provides, protective switchgear of the engine, an hour meter, starting & emergency stop circuits and automatic final pressure disconnection.

Drive

The compressor can be driven by an electric or combustion engine and drive belts are used to transfer the power to the compressor. The V-belt pulleys used in the drive were designed so that during optimal power transmission extremely quiet running is obtained.

The following electrical motors are used in the TT 110 series compressors. .

TT 110 2,2 kW (3HP),
400V, 50Hz asynchronous- three-phase ac motor,
Manufactured to IP 54 standard,
2.850 r.p.m.

TT 110 EM 2,2 kW (3HP),
230V, 50Hz asynchronous– ac motor,
Manufactured to IP 54 standard,
2.850 r.p.m.

All electric motors are equipped with thermal protection

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The following combustion engines are used:

TT 110 HB ROBIN petrol engine TYPE IX 17
automatic low oil cut out
4,2 kW (5,7HP)
approx. 101 dbA

TT 110 HD LOMBARDINI Diesel engine TYPE 15 LD 235,
3,6 kW (5HP)

Compressor block

Performance level of the TT 110 = 110 litres per minute

All Parts are manufactured in Germany.

The 4-cylinder, 4-stage compressor block has oil centrifuge pin lubrication and an aluminium pressure pouring crank case.

The crank gear is manufactured from special hardened steel, with large dimension roller bearings.

Piston rods are aluminium with durable rollers and needle bearings The piston rod of the 2nd stage is equipped with an oil centrifuge pin.

The cylinders in the 1st, and 2nd stages are manufactured from high pressure cast salt water resistant aluminium with cast iron sleeves. The cylinders in the 3rd and 4th stages are manufactured from the same material but have special stainless steel sleeves.

The pistons in the1st and 2nd stages are a high-quality aluminium alloy and those in the 3rd and 4th are hardened steel.

The piston rings and oil wiper rings in the 1st and 2nd stages are special hardened steel, the 3rd Stage rings are Teflon for quiet running and less friction and the 4th stage piston rings are ceramic.

The prefabricated suction and pressure control valves in the individual stages are flow optimized and easy to service, allowing for rapid repairs without long downtimes of the compressor.

All intermediate coolers are made from a special high-grade steel alloy and designed to ensure the compressor produces optimal power ratings with very good air quality and extremely small amounts of residual moisture.

All stages are equipped with a factory sealed relief valve to prevent damage to the unit that could be caused by a malfunctioning suction and pressure control valve. The final pressure relief valve is also factory sealed.

The steam traps are manufactured from a high-quality aluminium alloy and are designed to ensure optimal condensate loss.

The design and materials used ensure the IDE compressors run quietly with less friction. Less heat is produced during use resulting in a highly efficient compression process.

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Air conditioning

The resulting condensate from 3rd and 4th stages are exhausted over hand valves at each separator.

NOTE: CONDENSATE MUST BE DISPOSSED OF IN ACCORDANCE WITH CURRENT REGULATIONS

The condensate separators and the breathing air filter are manufactured from a salt water resistant, anodized aluminium. The Triple-filter cartridges are filled with a molecular sieve, activated charcoal and fine dust filter elements made from carbonised cotton felt. An internal adjustable pressure retaining check valve provides for optimal filter conditions and the greatest possible service life of the filter cartridges.

The intake air filter is designed to have a long life span and to achieve optimal filtration.

Filler connectors

The TT 110 – filling units has an inflation valve 200 or 300 bar with handwheel and exhaust at a 2 m extremely flexible, thin (6 mm) and durable 1200 bar kevlar hose.
A DIN/INT handle adapter is in such a way installed at an holder that he serves at the same time as admission and holder for the inflating tube.
The inflating tubes are special inflating tubes for breathing air appropriate for a maximum operating pressure of 600 bar.
The inserted manometer goes to max. 400 bar and is glycerin-filled, to be absorb vibration-conditioned pointer movements.
All pressure conducting lines in the unit are made of high-grade steel DIN 14571.
All into the IDE units blocked screw connections at the pressure conducting lines have all at least 1.5 – quadruple security.

Certificates and documentations

Detailed operating manual
Parts list including electrical connection
Connection diagram
Compressor log
Filling book

Scope of supply

The units are delivered with high performance breathing air mineral oil
A Vacuum packed breathing air pure filter cartridge and a service Tool kit

Technical data

See enclosed data sheet

Optional equipment

See enclosed list

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Equipment

Type	Delivery L/Min. *	Motor	Motorpower	Filtersystem **	Filling device	Netweight
TT 110	110	3x400V	2,2 kW	FT 100	1	**47**
TT 110	110	1x230V	2,2 kW	FT 100	1	**49**
TT 110	110	Petrol	4,2 kW	FT 100	1	**45**
TT 110	110	Lombardini Diesel	3,6 kW	FT 100	1	58

Powdercoated stainless steel frame

1,5 meter filling hose with filling valve (integrated vent)

Filling unit with DIN connections G 5/8“ for 225 or 330 bar

Filtersystem FT 100 for 224 m³ breathing air acc. DIN EN 12021 at 20°C

Manual condensate drain

Automatic endpressure stop

Units with E-Motor are equiped with On/Off switch, power cord and CEE-connector

* Cylinder filling from 0-200 bar +/- 5%

** acc. to DIN EN 12021 breathing air quality

Additional options	Prod.-Code	Description
Filling device 200 bar	FÜ 225	Max. 2 connections possible
Filling device 300 bar	FÜ 330	Max. 2 connections possible
2. Pressure range	2DB	Filling 200 and 300 bar incl. safety valve
Auto condenswater drain	TI-KDA	Only for units with E-Motor
Suction pipe for CO	AFR	To reduce risk of intaking CO contaminated air

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Medium	Air
Filling capacity at 2.300 r.p.m.	Bottle filling from 0 to 200 bar (10 Litre PTG) 110 L/Min. (6,6 m³/h, 3.88 c.f.m.)
Intake pressure	Atmospheric (1-1,2 bar)
Operating pressure	70 to 300 bar
Pressure setting, final pressure valve	Setting is acc. to order but max. 320 bar
Number of stages	4
Number of cylinders	4
Cylinder bore 1st stage	78 mm
Cylinder bore 2nd stage	38 mm
Cylinder bore 3rd stage	19 mm
Cylinder bore 4th stage	9,5 mm
Piston stroke	23
Required drive input	1,8 kW
Intermediate pressure 1st stage	4 to 4,5 bar
Intermediate pressure 2nd stage	15 to 20 bar
Intermediate pressure 3rd stage	55 to 70 bar
Safety valve setting 3rd stage	85 bar
Intermediate pressure 4th stage	300 to 310 bar
Direction of rotation	Counterclockwise
Cooling	Aircooling
Lubrication	Splash lubrication with oil whizzer pin
Compressor block oil capacity	Approx. 0,4 Litre
Oil capacity between min./max. oillevel	Approx. 0,05 Litre
Oil type	Synthetic oil
Max. ambient temperature	+5°C...+45°C (+43°F...+113°F)
Max. permissible inclination of compressor	5° (Only if the oil level is normal)
Condensate drain automatic (Option)	Approx. 10 to 15 minutes
Engine	
Electric three-phase squirrel cage motor	2,2 kW, 400/660V, 50 Hz, 2.850 r.p.m.
Electric single-phase motor	2,2 kW, 230V, 50 Hz, 2850 r.p.m.
ROBIN Motor IX 17	4,0 kW, 3.600 r.p.m.
Lombardini Diesel	3,6 kW, 3.600 r.p.m.
Size and Weight electric	WxLxH 56x40x39,5, ET 47 kg , EM 49 kg
Size and Weight Robin Gasoline	WxLxH 71x35x42, 45 kg
Size and Weight Lombardini Diesel	WxLxH 74x35x43, 58 kg

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