



TI-Series

PT Hydraulics Aus Pty Ltd

"TI-SERIES" COMPRESSORS FROM IDE"

Portable and stationary high pressure compressor systems for breathing air, air and other gases. Preferred range of models for use in diving schools and by emergency fire services

Air delivery output from 140 to 325 litres/minute
Motorised (depending on model) with 230 V, 400 V
Petrol engine or Diesel engine. 200 bar or 300 bar

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Frame, support

Stable base frame made from welded profiled pipe, sand blasted and plastic-coated. Basic frame colour RAL 5012 Light Blue.

Front panelling made from tough plastic

Standard colour RAL 5012 Light Blue.

As an option, the frame is also available in stainless steel V4A.

Chassis motor compressor block made from 4 mm steel plate with welded reinforcement for vibration damping and with 3-6 silencer blocks screwed to the base frame. Colour RAL 7016 Anthracite Grey.

The entire frame stands on generously dimensioned rubber/metal connection feet to transfer vibrations and oscillation, and to prevent noise.

Electrics

All the electrics are installed in an electrical control box to protection rating IP 65 with a stainless steel shutter.

The TI series offers the following as standard:

- Automatic limit pressure shut-down
- Automatic condensate diversion
- Thermal overload protection switch
- Operating hours meter
- Start/Stop switch with raised Stop button
- Illuminated operating controls

All of the installed components are obtained exclusively from well-known German manufacturers to ensure a consistently high quality standard.

The connection cable is 3 m long; fitted as standard with a plug for three phase or single phase operation, depending on model

Drive unit

The drive unit comprises an electric or combustion motor with power transmission via a V-belt. The TAPER type V-belt pulleys are designed to achieve maximum smooth running with optimum power transmission.

For the different power stages, the following German-manufactured electric motors are used in the TI series. All motors are fitted with a thermal protection element.

TI 160 EM 3.0 kW (4 HP), 230V, 50 Hz asynchronous, AC electric motor, design B 3, protection rating IP 54, 2.865 rpm.

TI 160 ET 3.0 kW (4 HP), 400V, 50 Hz asynchronous three-phase current electric motor, design B 3, protection rating IP 54, 2.865 rpm or alternatively:

TI 210 ET 4.0 kW (5.5 HP), 400V, 50 Hz asynchronous three-phase current electric motor, design B 3, protection rating IP 54, 2.865 rpm



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- TI 260 ET** 5.5 kW (7.5 HP), 400V, 50 Hz asynchronous three-phase current electric motor, design B 3, protection rating IP 54, 2.865 rpm
- TI 325 ET** 7.5 kW (10 HP), 400V, 50 Hz asynchronous three-phase current electric motor, design B 3, protection rating IP 54, 2.865 rpm

For Units fitted with combustion motors, the following are used:

- TI 160 HB** IDE combustion engine (petrol) TYP IX 200 with automatic low oil shut-down 4.8 kW (6.5 HP), approx. 102 dbA
- TI 160 LD** LOMBARDINI combustion engine 3.5 kW (5 HP), (diesel motor) TYP LD 15- 235 ccm with additional equalising shaft for exceptionally quiet running.
- TI 210 HB** IDE combustion motor (petrol) TYP IX 240 with automatic low oil shut-down 6.0 kW (8 HP), approx. 102 dbA
- TI 210 LD** LOMBARDINI combustion motor 5.5 kW (7.5 HP), (diesel motor) TYP LD 15-350 ccm with additional equalising shaft for exceptionally quiet running.
- TI 260 HB** IDE combustion motor (petrol) TYP IX 270 with automatic low oil shut-down 6.6 kW (9 HP), approx. 102 dbA
- TI 260 LD** LOMBARDINI combustion motor 6.7 kW (9.1 HP), (diesel motor) TYP LD 15-400 ccm with additional equalising shaft for exceptionally quiet running.
- TI 325 HB** IDE combustion motor (petrol) TYP IX 340 with automatic low oil shut-down 8.1 kW (11 HP), approx. 103 dbA
- TI 325 LD** LOMBARDINI combustion motor 7.4 kW (10.06 HP), (diesel motor) TYP LD 15-440 ccm with additional equalising shaft for exceptionally quiet running.

Compressor block

Currently the world's most advanced compressor block only from IDE COMPRESSORS

Power stages: TI 160 = 140–160 litres, TI 210 = 170–210 litres, TI 260 = 210–260 litres. TI 325 = 290-325 litres.

Three-cylinder, 3-stage compressor block (TFI 325 4-cylinder, 4-stage) with low-pressure oil pump, aluminium die cast crank case, anodised for salt water resistance, for exceptionally quiet operation.

Crank drive made from reinforced special steel, 2 support points with large roller bearings (Made in Germany).

The connecting rods and the pistons, including the free piston, are manufactured from special aluminium and fitted with robust rollers and needle roller

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bearings (Made in Germany). The cylinders in the 1st, 2nd, 3rd and 4th stages are made from a special aluminium alloy with grey cast iron sleeves.

This yet again reinforces IDE's technological expertise and capacity for innovation. This design achieves maximum dissipation of the heat produced during compression. This ensures a significant extension of the service life, as well as a considerable reduction in the level of noise generated. To obtain maximum performance, the free piston has been fitted with 7 special piston rings.

The piston and oil scraper rings are manufactured in Germany especially for the unit to a high level of manufacturing accuracy and precision.

In IDE compressors this ensures that the units provide optimum performance with the lowest possible degree of friction and noise generation. This means less heat is produced, providing increased performance.

The suction and pressure valves in the individual stages (most of which are also "Made In Germany") are produced for optimum flow and ease of servicing for rapid replacement without extended system downtimes.

All intermediate coolers are produced in a special stainless steel alloy to the optimum dimensions. This ensures that the compressor provides optimum performance values with excellent air quality, whilst producing exceptionally low levels of residual humidity.

Each compressor stage is fitted with a factory-sealed safety valve to prevent damage to the system in the event of one of the suction or pressure valves malfunctioning. The limit pressure safety valve is also factory-sealed and can be supplied with a TÜV adjustment certificate attached, on request.

The condensate separators are manufactured from a high quality aluminium alloy to dimensions which ensure optimum condensate loss.

Air preparation

The TI model series standard filter system is the FT 310. An integrated, adjustable pressure holding return valve ensures that optimum filter conditions are maintained at all times and provides the longest possible service life of the filter cartridges.

The FT 310 can provide a volume of air of 768 m³. The filter housing is manufactured from a high quality, seawater-proof, anodised aluminium alloy and is designed for 225 and/or 330 bar of ultimate pressure. The filter cartridge is made from plastic.

Filling panel

The filling panel has 2 vented filling valves with 1 m filling hoses and safety fill connections. (TI 325 has 4 filling connections)

These safety fill connections with mechanical flow stops prevent the filling hoses from whipping uncontrollably and possibly causing injury. A filling hose holder is also fitted. The filling hoses are special filling hoses for breathing air designed for a maximum working pressure of 400 bar.

THE HOSES ARE APPROVED FOR USE WITH BREATHING AIR

The stainless steel manometers installed display up to max. 400 bar and are filled with glycerine to dampen movements of the indicator caused by vibration. All pressure-conveying lines in the filling ramp and the entire system are made from stainless steel to DIN 14571 (V4A). All screw connections to pressure-conveying lines installed in IDE systems all have at least x 1.5 – 4 safety.



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Certificates and documentation

Comprehensive operating manual
Detailed parts manual with diagrams
Declaration of Conformity
Parts list for all technical components, including the electrics
Circuit diagram
Compressor logbook
Filling book

Scope of delivery

The systems are supplied with a ready-filled High Solution breathing air compressor special synthetic oil.
Breathing air fine filter cartridges for the original type ordered, vacuum-packed, Small tool kit, condensate collecting vessel with 2nd lid

Packaging

All systems are packed in wooden transport boxes manufactured specifically to the size of the system and are then approved for transportation.

Technical data

See data sheet enclosed

Optional equipment

See list enclosed



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Equipment

Type	Output L/Min. *	Motor	Motor output	Filtersystem **	Fillingconnections	Weight Kg
TI 160 EM	140	1x230 V 50 Hz	3,0 kW	FT 310	2	98
TI 160 ET	160	3x400 V 50 Hz	4,0 kW	FT 310	2	98
TI 160 HB	160	IDE IX 200	4,8 kW	FT 310	2	96
TI 210 ET	210	3x400 V 50 Hz	4,0 kW	FT 310	2	98
TI 210 HB	210	IDE IX 240	5,9 kW	FT 310	2	96
TI 260 ET	260	3x400 V 50 Hz	5,5 kW	FT 310	2	105
TI 260 HB	260	IDE IX 270	6,6 kW	FT 310	2	102
TI 325 ET	325	3x400 V 50 Hz	7,5 kW	FT 310	4	105
TI 325 HB	325	IDE IX 340	8,1 kW	FT 310	4	110

Filling unit with G 5/8" DIN safety connection for 225 or 330 bar

2-4 x 1 metre filling hose with filling valve (self-venting)

FT 310 filter system for 768 m³ breathing air conforming to DIN EN 12021 at 20° ambient temperature

Automatic condensate drain device for all electric motors, models with combustion engines have manual condensate drain devices.

Systems with electric motors feature automatic limit pressure shut-down, operating hours counter and plug with phase inverter.

Petrol-driven models also have automatic limit pressure shut-down.

Key

* measured according to the standard for bottle-filling of 0-200 bar +/- 5%
** conforming to DIN EN 12021 on the Quality of Breathing Air

Note

Subject to technical modifications and printing errors, some diagrams may show optional extras.



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Additional optional equipment	Prod.-Code	Description
2nd pressure range	2DB	Filling 200 and 300 bar incl. safety valve
Transportwheels	1520-5	4 pieces selfadjusting and with locking device
Deduction per filling device		Standard 2 filling devices DIN G 5/8"
Electrical ignition for petrol motors	E-Start GH	Electrical ignition with dynamo, battery and control, incl. automatic condens- water drain
Electrical ignition for diesel motors	E-Start-DL	Electrical ignition with dynamo, battery and control, incl. automatic conden- sawter drain
Limit pressure shut-down for diesel motors	Auto-stop-DL	Only for models with diesel motors and electrical ignition and battery
Frame made from stainless steel	Stainless steel	Complete support frame with base frame made from stainless steel V4A

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Medium	Air
Fillingcapacity at: TI 160 1.050 U/Min. TI 210 1.350 U/Min. TI 260 1.550 U/Min. TI 325 1.550 U/Min.	Tank filling from 0 to 200 bar (10 L-tank) TI 160=160 L/Min. 9,6 m ³ /h, 5,6 c.f.m. TI 210=210 L/Min. 12,6 m ³ /h, 7,3 c.f.m. TI 260=260 L/Min. 15,6 m ³ /h, 9,1 c.f.m. TI 325=325 L/Min. 19,5 m ³ /h, 11,3 c.f.m.
Intake pressure	Atmospheric (1-1,2 bar)
Operating pressure	90 bis 350 bar
Set pressure of limit pressure safety valve	Set value as per job, max. 365 bar
Number of stages	3 (TI 325 4 stages)
Number of cylinders	3
Cylinder bore 1. stage	TI 160-260 =88 mm TI 325 = 105 mm
Cylinder bore 2. stage	TI 160-260 =28 mm TI 325 = 88 mm
Cylinder bore 3. stage	TI 160-260 =12 mm TI 325 = 28 mm
Cylinder bore 4. stage	TI 325 = 12 mm
Piston stroke	40 mm
Required drive input	3,0 kW; 3,0 kW; 4,0 kW; 5,5 kW
Intermediate pressure 1st stage	12 bar TI 325 = 5 bar
Safety valves setting 1st stage	20 bar TI 325 = 8 bar
Intermediate pressure 2nd stage	60 bar TI 325 = 15 bar
Safety valves setting 2nd stage	60 bar TI 325 = 24 bar
Intermediate pressure 3rd stage (325)	TI 325 = 60 bar
Safety valves setting 3rd stage (325)	TI 325 = 85 bar
Direction of rotation	Anticlockwise
Cooling	Air cooling
Lubrication	Low pressure oilpump 6 bar
Compressorblock oil capacity	Approx. 3,5 Litre
Oil type	IDE High Solution synthetic
Max. ambient temperature	+5°C...+45°C (+43°F...+113°F)
Max. permissible inclination of compressor	5° (only if the oil level is normal)
Weight compressorblock	Approx.. 60 Kg
Condensate drain automatic (Option)	Approx. 10 to 15 minutes
Electric single-phase asynchron motor Safety class IP 54, Form B3, 2.850 r.p.m.	(140) 3,0 kW, 230V, 50 Hz. (160) 3,0 kW, 400V, 50 Hz. (160) IX 200- 4,8 kW, 6,5 PS Benzin (160) LD 235- 3,5 kW, 5,0 PS Diesel
Electric three-phase squirrel cage motor, Safety class IP 54, Form B3, 2.850 r.p.m.	(210) 4,0 kW, 400V, 50 Hz. (210) IX 240- 6 kW, 8 PS Benzin (210) LD 350- 5,5 kW, 7,5 PS Diesel
IDE Benzin combustionengine 4 cycle IX 200, IX 240, IX 270, IX 340 mit Spule.	(260) 5,5 kW, 400V, 50 Hz. (260) IX 270- 6,6 kW, 9,0 PS Benzin (260) LD 400- 6,7 kW, 9,1 PS Diesel
Lombardini Dieselmotor TYP: LD 15-235, LD15-350, LD15-350, LD15-400, LD15-440.	(325) 7,5 kW, 400V, 50 Hz. (325) IX 340- 8,1 kW, 11,0 PS Benzin (325) LD 440- 7,4 kW, 10,6 PS Diesel
Sizes: l x w x h Electric / Combustion	1006 x 550 x 670 / 1350 x 550 x 670
Weight	app. 96—130 kg

Until further notice and subject to typing errors and alterations