GIULIANO
AUTOMOTIVE EQUIPMENT

Use and maintenance instruction manual

S 228

RACING SUPER-AUTOMATIC TILT BACK TYRE CHANGER

S 228 Pro

RACING SUPER-AUTOMATIC TILT BACK TYRE CHANGER WITH DUAL ASSIST ARM

WATCH S228 PRO VIDEO

S 228 Pro Duo

RACING SUPER-AUTOMATIC TILT BACK TYRE CHANGER WITH COMBINED TWO ASSIST ARMS

Original Instructions

Ed.11/19 Cod. 3043455

English

S 228 - S 228 Pro - S228 Pro Duo

EC DECLARATION OF CONFORMITY

GIULIANO INDUSTRIAL S.p.A. - Via Guerrieri, 6 - 42015 Correggio (RE) ITALY

do hereby declare on our responsability that the product:

Passenger Car Tyre Changer

Data Plate

which this statement refers to meets the following directive:

2011/17/CE - 2006/42/CE - 2014/30/UE

as well as the following:

EN ISO 12100 : 2010 - EN 60204-1 :2006+A1:2009 + AC 2010
EN ISO 4414:2010 EN 61000-6-2:2005+AC:2005
EN 61000-6-3:2007+A1:2011+AC:2012
EN 349:1993+A1:2008 - EN 61310-1:2008
EN 61310-2:2008 - EN 61310-3:2008

The signature of this declaration of conformity is the person authorised to provide for the technical literature file

Correggio, 14/07/2016

The model of the present declaration complies with directive EN ISO/IEC 17050-1

GIULIANO INDUSTRIAL S.p.A.
The legal representative
Gianluca Maselli

RoHS DECLARATION OF CONFORMITY

GIULIANO INDUSTRIAL S.p.A. - Via Guerrieri, 6 - 42015 Correggio (RE) ITALY

do hereby declare on our responsability that the product:

Passenger Car Tyre Changer

which this statement refers to meets the following directive:

2011/65/EU (RoHS)

Scrapping must be made in accordance with the following directive:

2012/19/EU (RAEE)

as well as with the nationals laws in force in the Country of Installation.

Correggio, 01/10/2015

GIULIANO INDUSTRIAL S.p.A.
The legal representative
Gianluca Maselli

RAEE DECLARATION OF CONFORMITY

GIULIANO INDUSTRIAL S.p.A. - Via Guerrieri, 6 - 42015 Correggio (RE) ITALY

do hereby declare on our responsability that the product:

Passenger Car Tyre Changer

which this statement refers to meets the following directive:

2012/19/EU (RAEE)

This equipment is subject to the regulations foreseen by Directives 2012/19/EU (RAEE) and therefore it cannot be scrapped as a generic scrap material but through specific collection circuits; the symbol with “barred tank” marked on the product refers to this prescription. Scrapping must be made in accordance with Directives 2012/19/EU (RAEE) as well as with the local Regulations in force in the Country of installation, the non-respect of the Directive is subject to sanctions according to the national Laws of the Country of destination. Abandonment or wrong scrapping of the equipment subject to Directive 2012/19/EU can cause serious damage to the environment.
The manufacturer is available, according to the Directive, to scrap the equipment; for this service, please contact the manufacturer or your dealer.

Correggio, 01/10/2015

GIULIANO INDUSTRIAL S.p.A.
The legal representative
Gianluca Maselli

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1.0 INTRODUCTION

Thanks for choosing this tyre changer. This superautomatic tyre changer is designed for demounting and mounting operations on standard, run flat and UHP tyres.
In order to ensure correct, efficient and safe operation, and to prolong the work life of the machine, please read this manual carefully and follow the instructions.

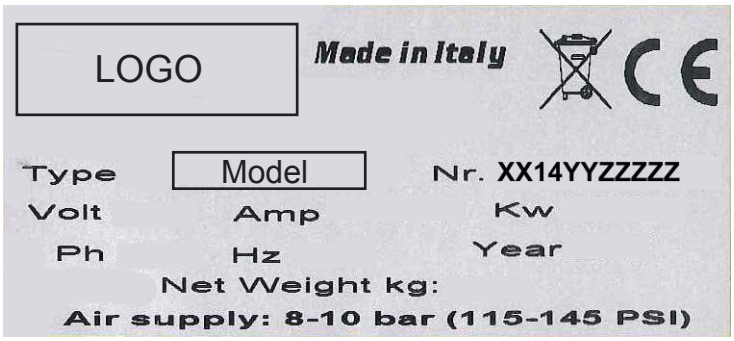
1.1 Tyre-Changer data:

Please refer to "Tyre-Changer Model" and "Serial Number" data on the Data-Plate to provide our Technical Service Dept. with the necessary details for prompt assistance and spare-parts tracking.
These data are found on adhesive labels applied on the machine. For clarity and convenience, we have inserted FAC-SIMILE in the box below.

1.2 Manufacturer data:

Please check the "Declarations of Conformity" at page 2 of this Manual and Tyre-Changer Data-Plate.

1.3 Data plate:



2.0 GENERAL DESCRIPTION

The tyre changer is designed to demount and mount tyres of cars and light commercial vehicles with rims from 10" to 28" and maximum diameter of 1100 mm (43").

The tyre changer is designed to demount and mount conventional tyres of passenger cars, light commercial vehicles, next generation "self-supporting" RUN-FLAT tyres and low profile tyres (UHP) on steel and/or alloy rims, even big-size tyres.

The Tyre-Changer is NOT intended for demounting completely- or partially-inflated tyres, dirty tyres, nor for rim straightening or for demounting industrial wheels with split ring rims. All these operations are **FORBIDDEN.**

This manual is an integral part of the product.
Before using the tyre changer, read carefully the warnings and instructions contained in this manual since they provide important information on operating safety and maintenance.

Keep this Manual in good conditions for further references.

NOTE: Some parts or components of standard production may differ from the illustrations contained in this manual.

3.0 SPECIFICATIONS

Connections:

- **Power supply:**

400V - 3Ph - 50 Hz standard version

Available upon request:

400V - 3Ph - 60 Hz
220V - 1Ph - 50 Hz
220V - 1Ph - 60 Hz
220V - 1Ph - 50/60 Hz 2 speed with motoinverter

Packing details:

Model	*Gross Weight* *(optional accessories excluded)*	*Packing details* *Dimensions AxBxC (in cm.)*
S228	300 Kg.	114 x 114 x 107 h
S228 Pro	400 Kg.	114 x 143 x 186 h
S228 Pro Duo	420 Kg.	114 x 143 x 186 h

- **Air supply:**
- Operating pressure: 8÷10 bar (116÷145 psi)
- Air-feeding pressure regulator set at 10 bar (145 psi) standard included
- Inflating air-pressure regulator set at 3,5 bar (50 psi) standard included

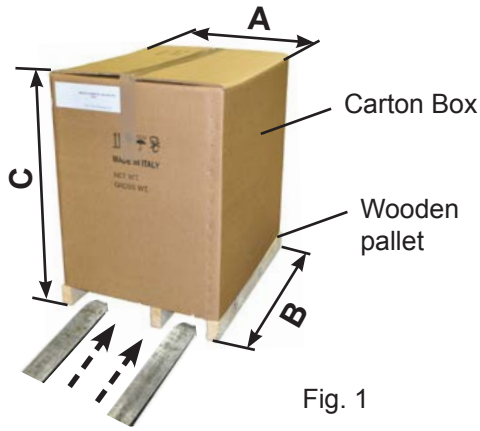


Fig. 1

Working capacity:

- Rim clamping from outside: 10” to 26”
- Rim clamping from inside: 12” to 28”
- Max. tyre width 16” (415 mm)
- Max. tyre diameter 43” (1100 mm)

Turntable data:

- Motor power: 0,8/1,1 Kw standard version
- Maximum torque: 1200 Nm
- Clockwise rotation speed: 7-14 rpm
- Working noise level: < 70 dB

Bead breaker data:

- Maximum bead breaking range: 380 mm (15”)
- Bead breaker cylinder force at 10 bar:30800 N (3140 kg)

Other Details:

- Operating temperature range:
  min +5° C max +50° C (+41°÷+122° F)

Standard accessories (ref. page 33):

- Lube paste bucket and brush
- Bead lifting lever
- Jaw protectors for alloy rims
- Plastic protectors for mounting/demounting tool
- Protectors for bead breaker shovel
- Filter + pressure regulator + lubricator
- Pedal operated inflating device
- HP2 dual assist arm (available on Pro version only).
- Help and Press Arm additional pneumatic helper tower (available on Pro Duo version only).

Main optional accessories (ref. page 35):

- WL 6 Wheel Lifter (Max wheel weight 80 kg)
- QX leverless mount/demount device
- Help, Press Arm or HP2 (only for S228)
- GUN Tubeless inflation external kit (not available for GT version)
- Pressing cone
- Rubber protectors for clamping alloy rims from inside
- WDK Kit

Dimensions (mm):

S228

Net weight 270 kg
standard version
(without optional accessories)

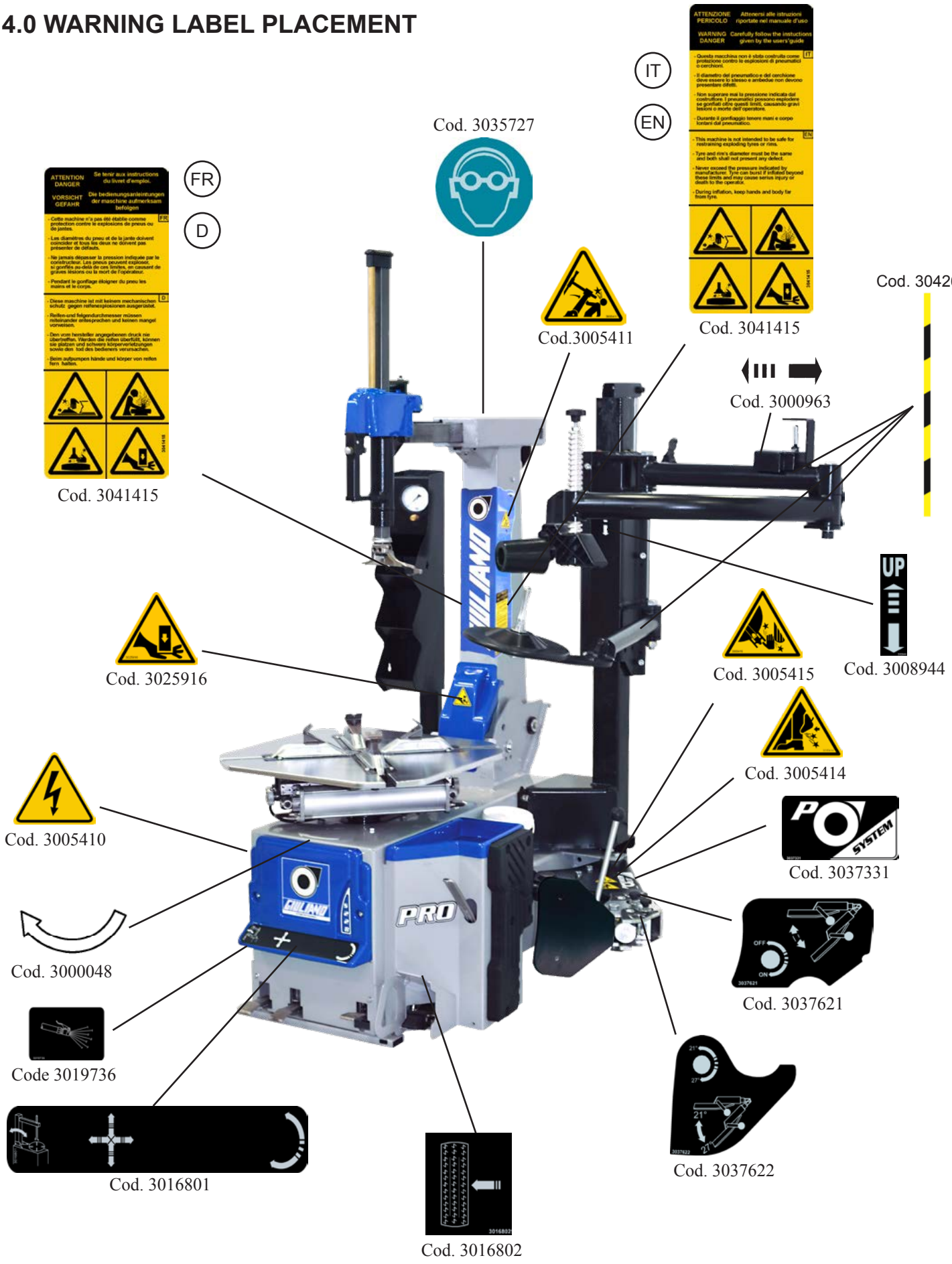
S228 Pro

Net weight 360 kg
standard version
(without optional accessories)

S228 Pro Duo

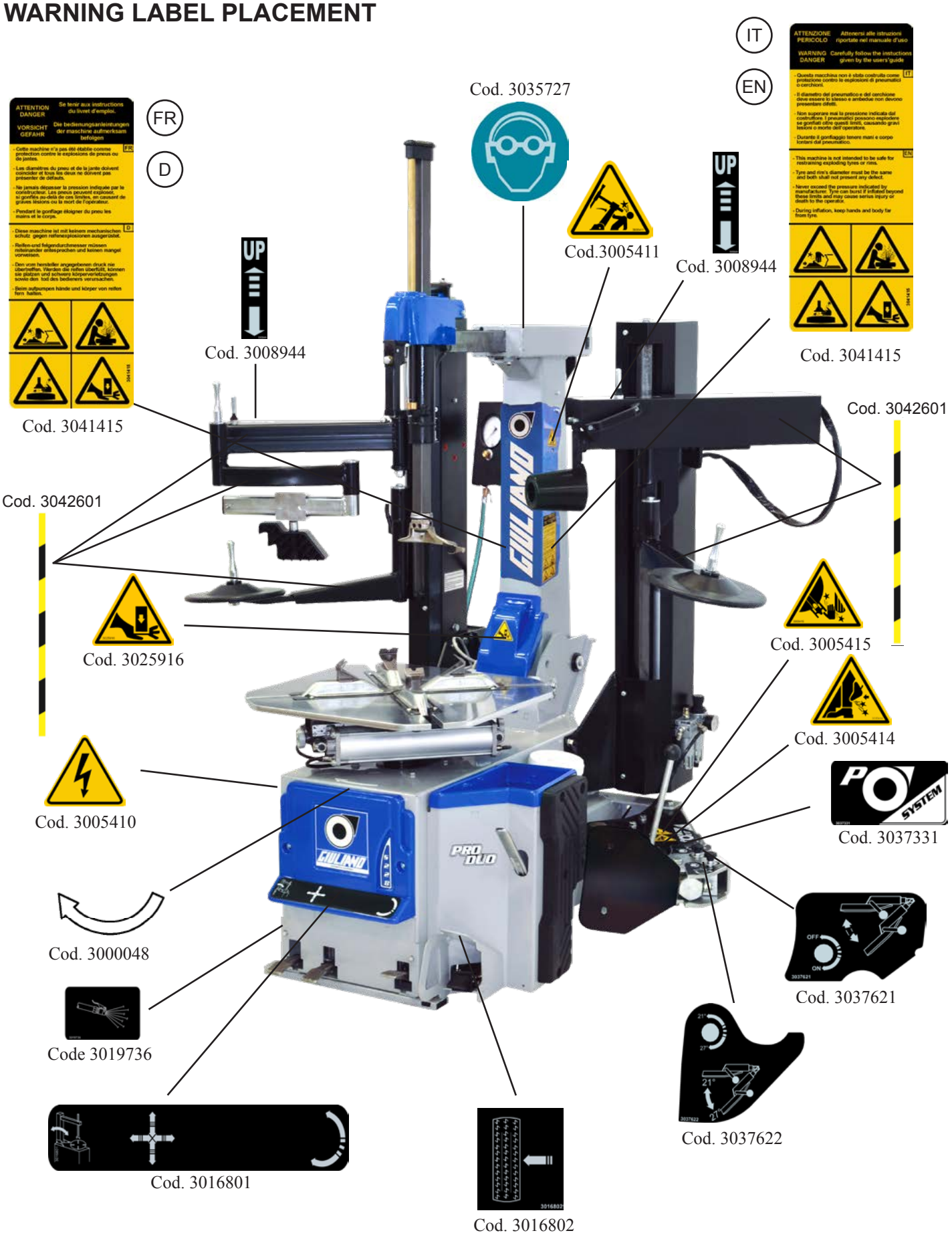
Net weight 390 kg
standard version
(without optional accessories)

4.0 WARNING LABEL PLACEMENT



WARNING:
Replace any warning label immediately in case of damage or loss.
Do not operate the Tyre Changer in case of missing warning labels.
Do not hide any warning label by any means. Do not interpose objects that can obstruct or reduce the visual capability of the operator. Refer to the above mentioned codes for warning labels ordering.

WARNING LABEL PLACEMENT



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Replace any warning label immediately in case of damage or loss.
Do not operate the Tyre Changer in case of missing warning labels.
Do not hide any warning label by any means. Do not interpose objects that can obstruct or reduce the visual capability of the operator. Refer to the above mentioned codes for warning labels ordering.

5.0 GENERAL SAFETY RULES

The Tyre-Changer is to be operated only by qualified and authorised personnel.

A qualified operator is someone who has fully understood the instructions described in this operation and maintenance manual, has been specifically trained and is aware of safety standards at his work place.

The operators using the machine shall not be under the influence of drugs, alcohol or other intoxicating Substances, as this may interfere with their ability to work safely.

For greater security against on-the-job injuries, the operators shall wear safety footwear, gloves, protection goggles and shall NOT wear any form of loose clothing that could get caught up or restrict the operator's movements.

The operator must be able to:

- read and understand all instructions in the user and maintenance manual so as to be able to use the machine correctly and safely.
- read and understand the danger warnings.
- understand the characteristics of the machine.
- keep unauthorized people away from the working area.
- make sure that the setting in motion of the machine has been carried out in compliance with all applicable rules and regulations.
- make sure all operators are familiar with the machine and know how to use it safely and correctly.
- avoid touching moving parts or pressurised parts without first disconnecting the machine from the electrical and air power supply.
- keep the operation instruction manual with care in an easily accessible place, so that it can be consulted whenever needed.

The Tyre-Changer may only be used by specially trained and authorized expert personnel.

- The use of the machine is forbidden to disabled operators if their disabilities may affect the safety of the working operations.

- Any tampering or modification to the equipment without the manufacturer's express prior authorization will relieve the manufacturer from all responsibility for damage deriving from or referable to such actions.

- Removing or tampering with safety devices immediately invalidate the guarantee and represents a violation of European Safety Legislation.

- The Tyre-Changer is equipped with informative and warning labels, which are designed and produced to last in time. If they should deteriorate, user shall request replacement decals.

IN CASE OF FIRE, USE ONLY DRY CHEMICAL OR CO_2 EXTINGUISHERS TO PUT THE FIRE OUT.

	WATER extinguisher	FOAM extinguisher	POWDER extinguisher	CO_2 extinguisher
DRY materials	**OK**	**OK**	**OK**	**OK**
FLAMMABLE liquids	**NO**	**OK**	**OK**	**OK**
ELECTRICAL equipment	**NO**	**NO**	**OK**	**OK**

6.0 SAFETY DEVICES

The tyre changer is equipped with safety devices that are designed to guarantee the safety of the machine operator:
- Pressure limiting valve, installed inside the machine prevents the pressure from exceeding 3,5 bar (50 psi) during inflation.
- Pressure regulator with air supply pressure gauge limited to maximum working pressure (10 bar (145 psi)).

On Tyre-Changers equipped with "Tubeless tyre bead seating system":
- Maximum pressure valve, installed into the air tank prevents the pressure from exceeding 11 bar (160 psi).

Removing or tampering with safety devices immediately invalidates the guarantee and represents a breach of the European Safety Legislation.

7.0 TRANSPORT

- The Tyre-Changer must be transported in its original packaging and kept in the position indicated on the actual packaging.

-The packaged machine has to be moved by means of a fork lift of suitable capacity. Please, insert the forks as shown in the following picture (fig. 1).

8.0 UNPACKING

Remove the protective cardboard, remove all fixing screw and free the Tyre-Changer from its original pallet.
Check the perfect condition of the machine, making sure that no part is damaged or missing, by referring to the picture at page 14.
If in doubt, please do not use the machine and get in touch with your Distributor for further steps.

Keep packing elements away from children.
All packing elements must be stored in the proper stocking areas.

Note: All the most delicate surfaces of the Tyre-Changer are coated with a special rust-proof oil.
Some oil traces may leak after coating procedure: please, remove them accordingly.

Gross Weight S228
300 Kg.
(without optional accessories)

Gross Weight S228 Pro
400 Kg.
(without optional accessories)

Gross Weight S228 Pro Duo
420 Kg.
(without optional accessories)

Fig. 1

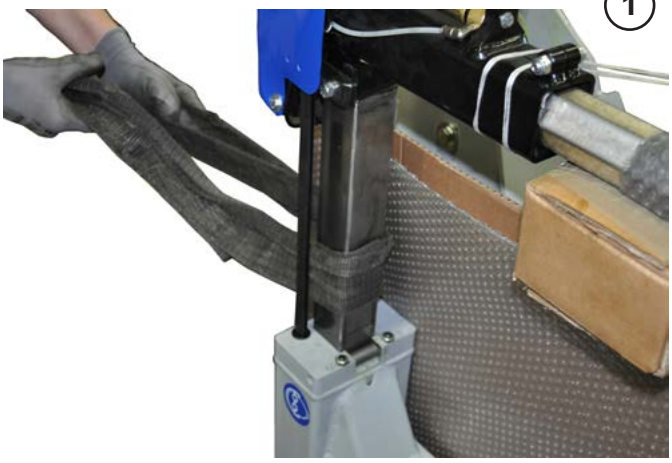
Fig. 2

Use lifting equipment of suitable load-bearing capacity that is able to take the weight of the tyre changer (at least 500 Kg.); to lift the machine, use a transport strap with minimum load-bearing capacity of at least 500 kg.
After tyre-changer positioning, take off the lifting belt.

8.1 Mounting the tilting tower (S228 version only)

After unpacking the machine, mount the tilting vertical tower by following the instructions here below.

1



Lift the tilting vertical tower using a band of adequate capacity. Insert the band as shown in the picture.
.

2

Lift the vertical tower as shown in the picture.

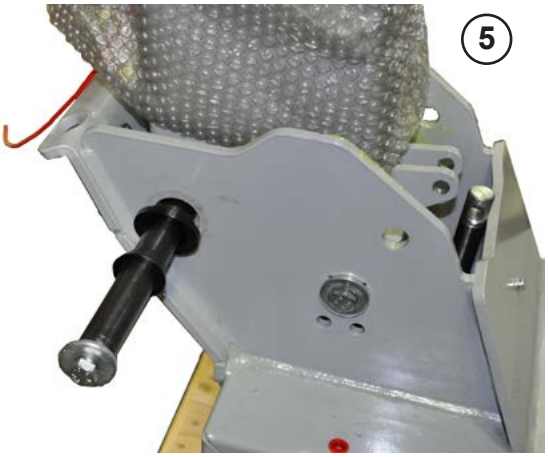
3

Slightly loosen the screw of the tie rod by means of a 17mm spanner to easily position the vertical tower into its seat.

4

Insert the vertical tower in its housing.

5



Connect the bushings to the pin, then, insert it into the hole in order to lock the vertical tower.

6

Connect the other bushings, as in the picture.

7

After having inserted the pin completely, tighten the screw properly.

8

Tighten the screw of the tie rod, previously loosened to easily position the vertical tower into its seat.

9

Pull the tilting system cylinder rod manually so that the hole coincides with the holes in the vertical tower.
Insert the screw and tighten the nut but leave a little slack.

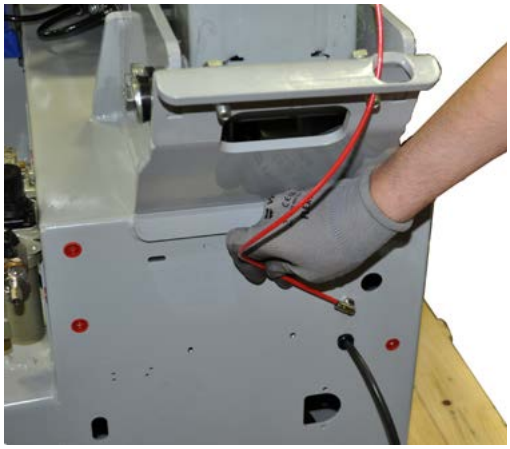
10

Fit the protection of the tilting vertical tower and tighten the screw being careful not to break it.

11

Insert the black pneumatic pipe into of pneumatic cylinder fitting.

12



Insert the red pneumatic pipe into the fitting placed on the rear of the machine to complete the assembly operation of the vertical tower.

8.2 Mounting and connecting the GT-tank (GT version only)

1

1. Connect the pneumatic hoses coming out from the back side of the main chassis to the tank valve.

2

2. Fix the tank on the back side of the machine by tightening the screws.

8.3 Mounting and connecting the pressure gauge

1. Fix the pressure gauge to the vertical tower by tightening the screws.

2. Pass the connection hoses through the hole on the back side of the machine.

3. Connect the rilsan hoses to the junctions of the pressure limiting device and to the inflating pedal.

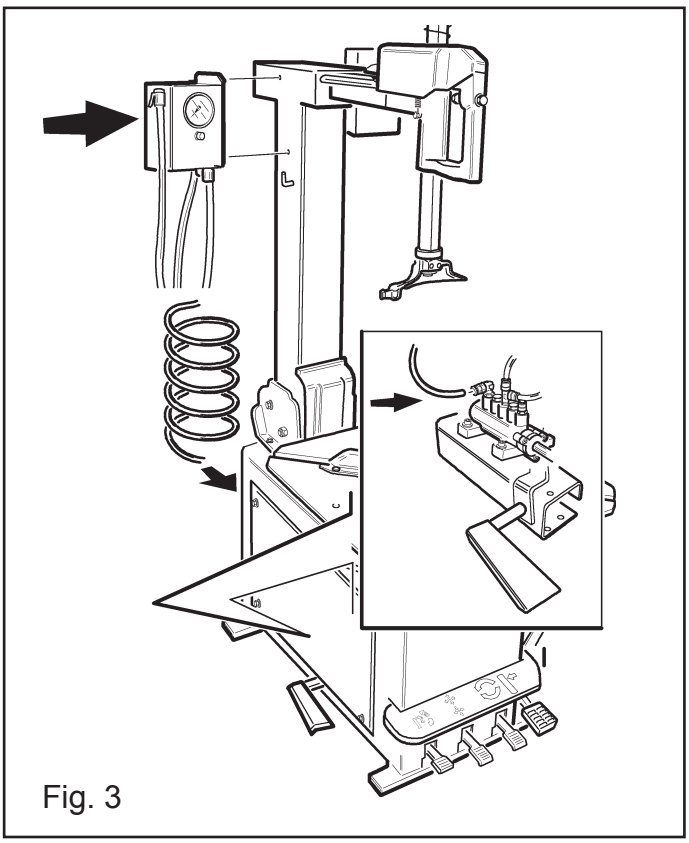


Fig. 3

9.0 INSTALLATION

9.1 Space required for positioning

When choosing the place of installation be sure that it complies with current safety-at-work regulations.
The Tyre-Changer must be connected to the main electric power supply and the compressed air system. It is therefore advisable to install the machine near these power sources.
The installation area must leave at least the room shown in picture (fig. 1), so as to allow all parts of the machine to operate correctly and without any restriction.
Lighting should be adequate to perform safe operations and comply with the current regulations for safety at work.

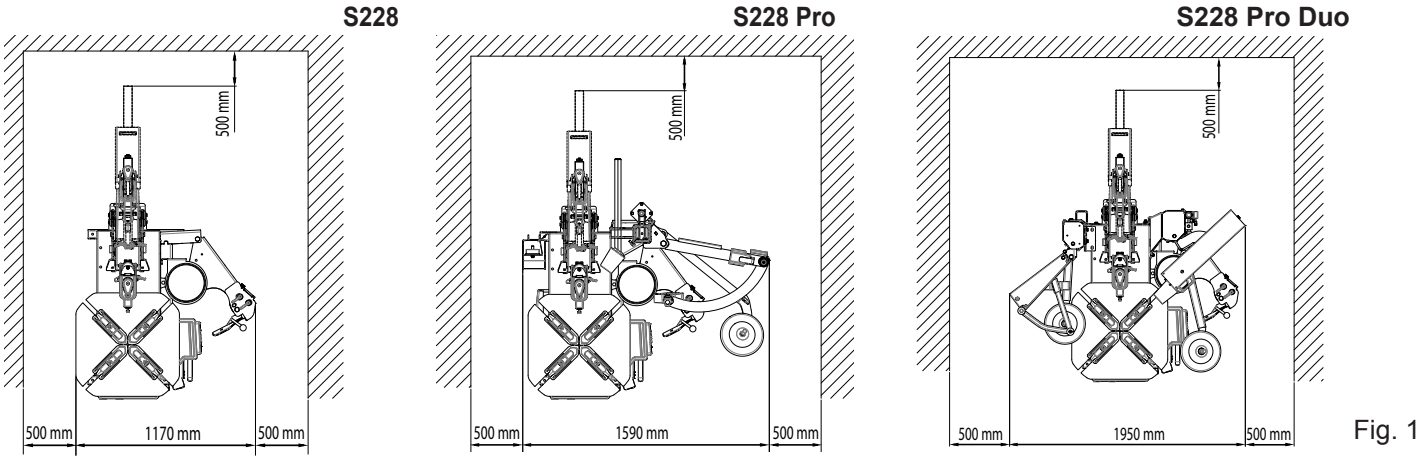


Fig. 1

9.2 Tyre-Changer placement and connections

Place Tyre-Changer onto a flat, smooth and not slippery floor with a suitable load capacity.
The machine need not necessarily be anchored to the ground, but if you prefer to do so, drill 4 (100 mm) deep holes on the ground just at the 4 holes of the machine base by using a 10 mm drill bit for concrete and of suitable length.
Insert suitable metal anchor dowels in the holes drilled and secure firmly.
If the machine is installed outside it must be protected by a appropriate lean-to shed.
The installation site should be equipped with an electrical system with an adequate grounding circuit equipped with an appropriate ground fault circuit – breaker set for 16 A placed in a visible and accessible place by the operator and equipped with power indicator light.

NOTE: If the machine is supplied without the electrical plug, the user shall fit one -at least 16A- that is suitable for the voltage of the machine and complies with current regulations.

Before connecting the machine, please check that the characteristics of your networks correspond to those indicated by machine's data plate.

Even small jobs done on the electrical system must be carried out by professionally qualified personnel.

The Manufacturer is not responsible for damages caused by electrical connection different from the original indications on the data plate.

Unplug the machine from electrical power source and compressed air supply before moving and servicing it.

The pneumatic network of the installation area must be provided with min. 8 bar working pressure outlet.

- Connect the machine to the compressed air network by means of the air fitting on the lubricator-filter-pressure regulator unit located at the right side of the machine.

Fig. 2

10.0 EQUIPMENT COMPONENTS

Mounting/demounting tool

Finger tool

"Shoe" shaped part

Inflating device with pressure gauge

Operating arm control

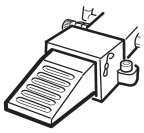
Fitting head designed for both standard and low profiled tyre applications

Tilting tower

Clamping jaw

Filter + pressure regulator + lubricator

Turntable with adjustable jaws (patented)



Bead breaker arm with adjustable bead breaker shovel angle and P.O. System (patented)

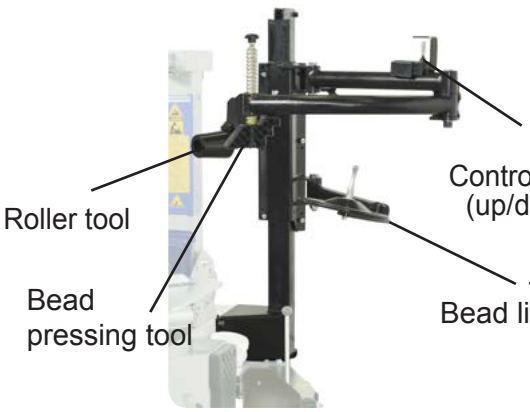
Inflation pedal (GT system inflation and bead seating pedal in GT version)

"Easy Access" extractable pedal box for quick service

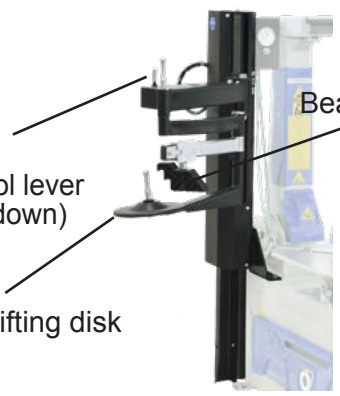
Bead lifting lever

Wheel support

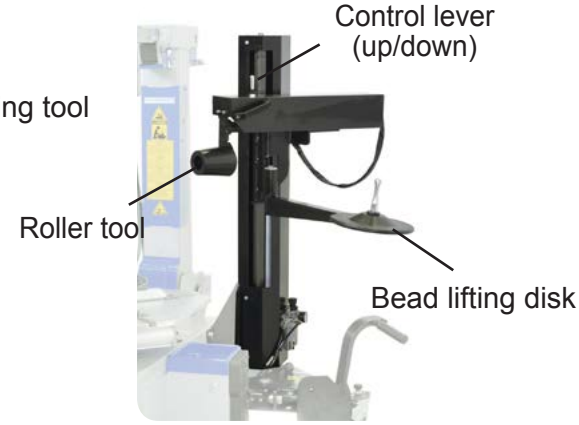
Dual assist arm (available on Pro version only)



Left pneumatic helper tower (available on Pro Duo version only)



Right pneumatic helper tower (available on Pro Duo version only)



11.0 CONTROLS DESCRIPTION AND FUNCTION CONTROL

Fig. 1

1-Tilting tower control pedal
2-Jaws control pedal
3-Turntable control pedal
4-Bead breaker control pedal
5-Operating arm control button (up/down)
6-Deflation button
7-Turntable adjustment knob
8-Inflation pedal (GT system inflation and bead seating pedal in GT version)
9-Bead breaker shovel adjustment selectors

Fig. 2

Any testing must be carried out without any tyre on the machine.
Watch out for any component which could interfere with machine testing operations.

11.1 GT inflation system functional test

During this functional test keep your face as far as possible from the turntable. Possible dirty dust on turntable could hit the operator's eyes. For the same reason, be carefully as not to accidentally push the inflating pedal while working. It is recommended to use appropriate eye protection equipment.

• When the pedal, located on the left side of the main chassis, is pushed down to its intermediate position (B, Fig.3), air is released from the inflating device.
• When the pedal is pushed down completely (C, Fig 3), air is released from the inflating device along with a powerful jet from the nozzles located on the turntable jaws.

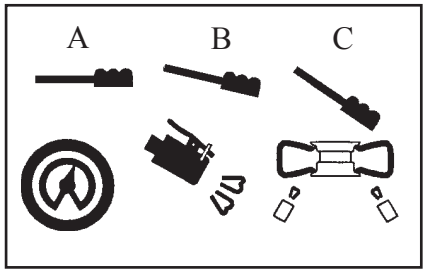


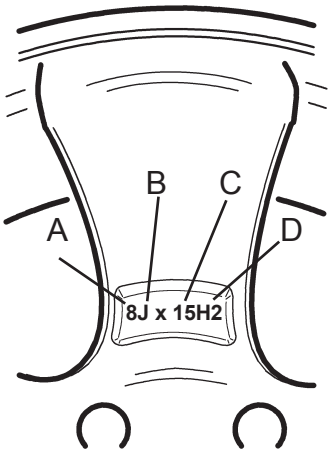
Fig. 3

12.0 RIM AND TYRE IDENTIFICATION

Before starting demounting a tyre, it is of CRUCIAL IMPORTANCE to identify the measurements of the rim and of the tyre, as well as to make sure that neither the rim nor the tyre are damaged.

WARNING: these very important procedures have to be performed correctly to reduce any risks of tyre bursting while re-mounting and inflating the tyre on the rim.

Each rim bears an indication of their diameter, width, number of humps etc.
Example: 8Jx15H2



A= 8 Nominal width of the rim in inches (1 inch= 25.4 mm)

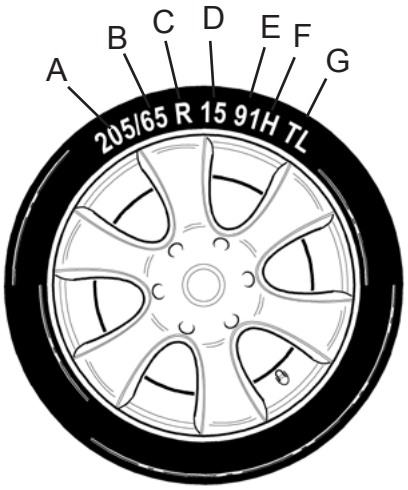
B = J Size of the flange

C = 15 Nominal diameter of the rim in inches

D = H2 Double hump (bead retention system)

Each tyre bears a considerable amount of details, among which are the dimensions, type and maximum speed.

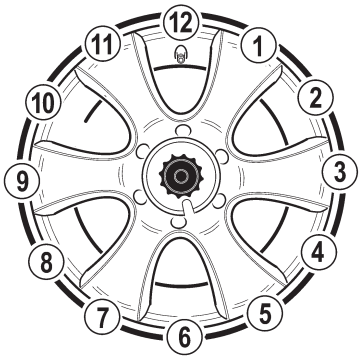
Example: **205/65 R 15 91H TL**



A = 205 Width of the tyre (the distance between tyre sides, expressed in millimetres).
B = 65 Aspect ratio percentage between the height of the section and its width.
C = R Type of tyre (R= radial).
D = 15 Indicates the keying diameter in inches (diameter of wheel), which must be the same as the rim.
E = 91 Index of the maximum load born by each wheel.
F = H Maximum admitted speed of the tyre (H= 210 Km/h)
G = TL Type of tyre (TL= Tubeless)

13.0 VALVE POSITION

The picture on the right side represents a rim as a clock face (view from the top). The valve or the tool position described by the following working steps always refer to the represented clock-face hours-marks.



WARNING :
To avoid damaging the valve or the pressure sensor, if the latter is installed, you must always set the valve into the position indicated, following the instructions during bead breaking, mounting and demounting operations.

WARNING:
It is strictly forbidden to mount tyres on rims with mismatching parameters (diameter and width). It is also forbidden to mount tyres with dimensions which are different from the ones stated in the car logbook.

14.0 WHEELS AND TYRES CLASSIFICATION

14.1 Standard wheels

A “standard wheel” is a car wheel with steel or alloy rim, with center hole, drop centre close to the external border of the rim and a standard tyre (neither RUN-FLAT nor LowProfile).

14.2 Low-profiled tyre (UHP) wheels

Low profile tyres (UHP) are those in which the height (H) and the width (C) have a ratio lower than 0.5 (i.e. low profile series 45 stands for a aspect ratio of H/C = 0.45).
For tyres to be considered as low profile (UHP), they must also have a maximum speed code equal to/or higher than V.

Maximum speed codes:

Q= up to 160 km/h
R= up to 170 km/h
S= up to 180 km/h
T= up to 190 km/h
U= up to 200 km/h
H= up to 210 km/h
V= up to 240 km/h
W= up to 270 km/h
ZR= > 240 km/h
ZR(Y)= > 300 km/h

14.3 RUN-FLAT tyre wheels

RUN-FLAT tyres are those which allow to continue to drive the vehicle for a preset number of miles and at a preset speed, even if they have no internal pressure. These parameters change from one manufacturer to another.

The market currently offers 2 different types of RUN-FLAT tyres:
- Those with REINFORCED SIDEWALL (self -supporting) where, thanks to a different mix and a reinforced structure, the shoulder of the tyre can bear the weight of the vehicle even when the internal pressure of the tyre is zero.

- Those with INTERNAL SUPPORT which have a ring inside the rim that bears the sidewall of the tyre when there is no pressure inside it. The internal support may be made of plastic (Pax-System) or of metal (Support-Ring).

All the tyres which do not correspond to the above mentioned descriptions have to be considered as “standard tyres”.

This Tyre-Changer is designed to handle all types of wheels with “standard” tyres, LowProfile (UHP) and RUN-FLAT tyres with reinforced sidewall.

RUN-FLAT tyres with internal support (PAX System or Support-Ring type) need special accessories and tools for mounting/demounting operations, which are to comply with tyre manufacturer specifications.

The mounting and demounting procedure is similar for “standard” tyre, LowProfile (UHP) tyre or RUN-FLAT tyre with reinforced sidewall (self-supporting).

ATTENTION:
It is of crucial importance to follow the instructions very carefully in order to avoid irreparable damages to the tyre, which could compromise the vehicle’s safety.

15.0 WDK procedures

WDK Bead pressing tool (optional)

WDK Disk tool (optional)

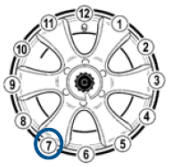
WDK is a German certified body charged with the evaluation of tyre-changers functioning and their capability to perform good and safe operations on RUN-FLAT and UHP tyres correctly, to avoid permanent and potentially dangerous damages to tyres.
In order to perform a correct demounting and mounting process, the following premises are strictly compulsory:
1. Guidelines knowledge - WDK literature provides all necessary guidelines for all tyre brands and models, including all theoretical and practical instructions to avoid any possible damage to tyre, rim and pressure sensor.
2. Certified tyre-changer - This Tyre-Changer is WDK certified and fulfils all WDK requirements.
3. To meet the requirements of the WDK procedure, the pneumatic bead pressing arm must be used with the specific bead pressing tool (shown in the picture beside).
4. Qualified operator – The specific technical courses provide the operators with the necessary WDK guidelines and service instructions. Dedicated WDK official courses are available to get the WDK diploma, when necessary.

16.0 TYRE PRESSURE MONITORING SYSTEM (TPMS)

TPMS, Tyre Pressure Monitoring System is an electronic system designed to monitor the air pressure inside the tyres through special sensors mounted inside the wheels, which provide real-time tyre-pressure information and inside temperature data to the vehicle's electronic control unit. Tyre pressure system alerts the driver when the tyre pressure falls 20% below the recommended pressure, thus increasing your safety on the road.
This chapter describes the correct positioning of TPMS valve during the different working stages, in order to avoid any damage.

Bead breaking
Pressure sensor (which, in most cases, is located on the rim just adjacent to the valve stem) should never be placed close to the bead breaker shovel, but it should be placed at 90° from it, thus at "12 and 6 o'clock" position.

Tyre demounting
Regardless of the tyre changer model, the pressure sensor should be placed as close as possible to the demounting tool. Position opposite to the demounting tool is the most dangerous.

Bead breaking (shovel at "3 o'clock" position)	Tyre demounting (I and II beads)	Tyre mounting (first bead)	Tyre mounting (second bead)
			
"12 o'clock" and "6 o'clock" positions	"12 o'clock" position	"7 o'clock" position	"4 o'clock" and "5 o'clock" positions

Tyre mounting
During tyre mounting, it's important to keep the pressure sensor at a distance of 10-15 cm from the "traction" point, where tyre goes from the inside to the outside of the rim and where tyre is the most stressed.

Lower bead mounting:
Place TPMS valve at "7:00 o'clock" position, in any case at about 10-15 cm from traction point.

Upper bead mounting:
Place TPMS valve at "4:00 / 5:00 o'clock" position, in any case at about 10-15 cm from traction point.

17.0 OPERATION

Before carrying out any operation, deflate the tyre and take off all the wheel balancing weights.

The operation of the tyre changer is divided into three parts:

A) BREAKING THE BEAD **B**) REMOVING THE TYRE **C**) MOUNTING THE TYRE

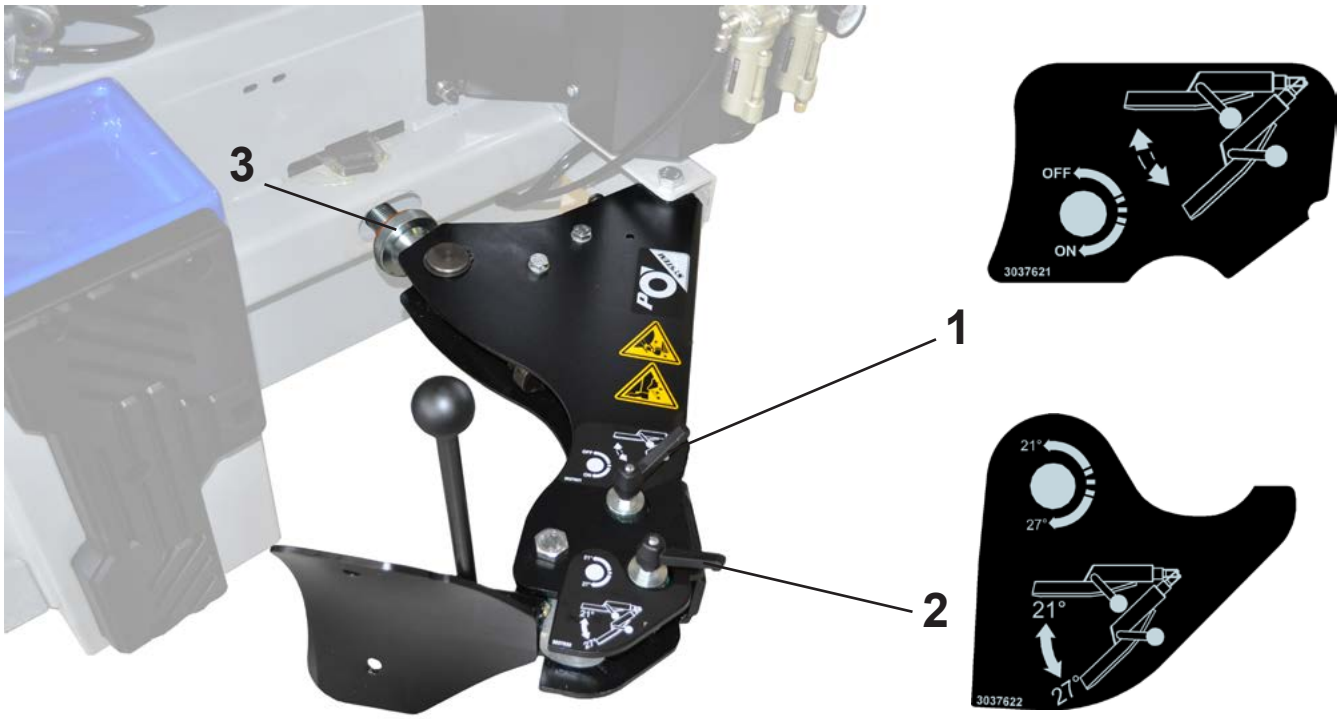
18.0 BEAD BREAKING

Make sure the tyre is completely DEFLATED before starting any operation on the wheel.

- Before starting any operation, please check eventual presence of a TPMS pressure sensor. If so, check its efficiency using an appropriate tool.

18.1 Bead breaker shovel adjusting operations (patented system)

Depending on the type of tyre to be demounted, it is possible to lock the shovel swing (**selector 1**) or adjust bead breaker shovel angle (**selector 2**) as well as the stroke of the bead breaker arm (**selector 3**).
The selector **1** in **ON** position allows the shovel to swing, while the selector **1** in **OFF** position locks the shovel to the bead breaker arm. It is advisable to use the swinging shovel for breaking conventional tyres with soft sidewall.



For bead breaking a run flat tyre, turn the selector **2** to **21°** while keeping the selector **1** on **OFF**. For bead breaking a conventional tyre, turn the selector **2** to **27°** with the selector **1** on **ON**.
For wheels having a pressure sensor, it is advisable to limit the stroke by means of the regulator **3**.

During bead breaking operations, check for correct positioning of TPMS pressure sensor (if any), which, in most cases, is located on the rim just adjacent to the valve stem.
Wrong movements of the bead breaker shovel could damage the sensor.
Avoid any contact between the lubricating paste and TPMS pressure sensor, if any.

18.2 Blade stroke adjustment

Standard shovel stroke, factory set: 120 mm., WDK approved. Blade stroke can be reduced or increased if necessary by means of the ring nut shown in the picture. Tighten the ring nut to reduce blade stroke or loosen it to increase stroke and consequently blade penetration in the tyre. However, do not push the bead beyond the drop centre level.

18.3 Bead breaking

- Remove all the weights from the rim by a proper tool, paying attention not to damage the rim.

- Check that the tyre is deflated. If not, deflate it.

- Close the jaws (**13**) of turntable (**14**) completely by pressing the pedal (**2**).
Position the turntable so that one of its flatsides is parallel to the rubber support surface (**6**) of the bead-breaker (fig. 1).

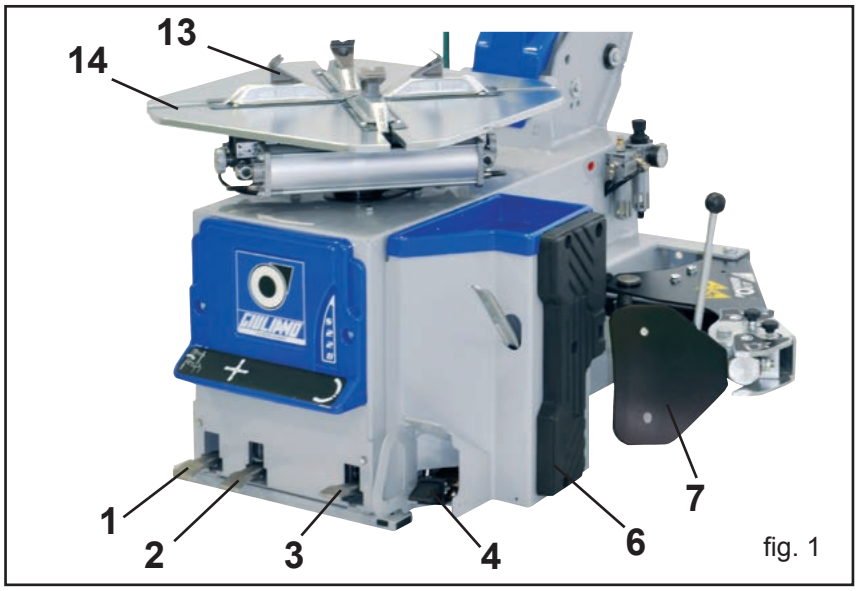


fig. 1

Bead breaking must be done with the utmost care and attention. When the bead breaker pedal is operated the bead breaker arm moves quickly and powerfully. Anything within its range of action can be in danger of being crushed.

Bead breaking with the jaws in open position can be extremly dangerous for operator's hands. Make sure that the jaws are closed and NEVER keep your hands on the sides of the tyre.

- Position the wheel against the rubber wheel support (6, Fig 2) on the right side of the tyre changer.
- Position the bead breaker shovel (**7**) against the tyre bead at aminimum distance from the edge of the rim. Use bead breaker shovel protector for alloy rims. Pay attention to the shovel, which must operate correctly onto the tyre and not onto the rim. (Fig. 2)
- Press down the pedal (**4**) to activate the bead breaker and release it when the shovel has reached the end of its travel or in any case when the bead is broken.
- The PO SYSTEM (patented device) starts automatically after releasing the pedal (**4**), granting no bead breaker shovel stuck between the edge of the rim and the bead of the tyre, pushing it toward the outwards. This avoids difficult manual operations and speeds up the work of the operator.
- Spin the wheel lightly and repeat the procedure on the wholecircumference of the rim and on both sides, until the completedetachment of the bead from the rim.

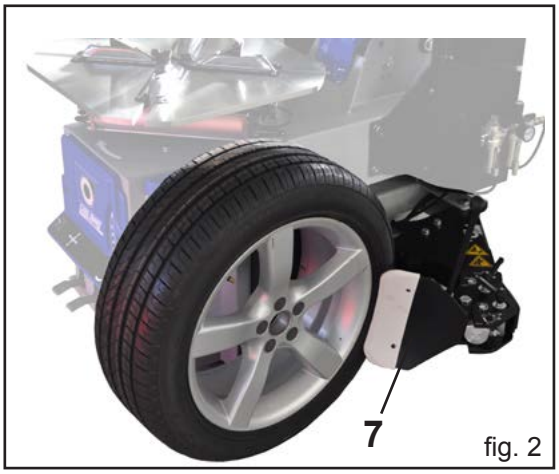


fig. 2

- It is recommended to lubricate the tyre during the bead breaking, thus preventing the bead from seating back to therim and making the demounting operation easier.

Avoid any contact between lubricating paste and pressure sensor, if any.

WARNING:
While breaking the bead, just press on the bead and never on the side of the tyre.

19.0 WHEEL LIFTING AND POSITIONING ONTO CLAMPING TURNTABLE

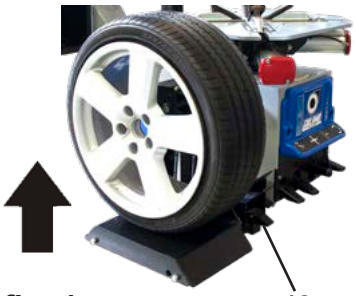


fig. 1

Before lifting and positioning the wheel onto the clamping turntable, please:
- Remove all the counterweights from the rim using an appropriate tool, being careful not to damage the rim itself.
- Remove any object or tool which could interfere with the wheel lifter (optional).
-Put the wheel vertically onto the wheel lifter (rim back facing the Tyre-Changer).
-Press the control pedal ref. **12** (fig. 1) to lift the wheel and position it onto clamping turntable.
-Release the control pedal ref. **12** to lower the wheel lifter.

20.0 WHEEL CLAMPING ON THE TURNTABLE

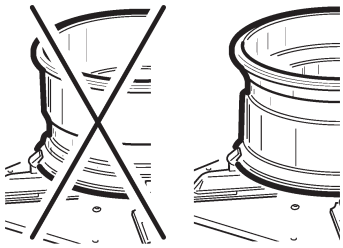


fig. 2

Before positioning and clamping the wheel onto the clamping turntable, remove all the weights from the rim using an appropriate tool, paying attention not to damage the rim. Before starting any operation, it is of CRUCIAL IMPORTANCE to identify measurements of rim and tyre, as well as to make sure that neither the rim nor the tyre are damaged. Please identify the wheel type (standard, RUNFLAT, UHP, reverse mounted wheel) and check the efficiency of TPMS pressure sensor (if present) using an appropriate tool.
Reverse mounted wheels should always be positioned and clamped on the clamping turntable up side down (drop center at the top). When clamping, use jaw protection to avoid damage (fig. 2).
Before wheel clamping, release the working space by tilting back the vertical tower and pressing the pedal (**1,** page 19)**.**

During arm tilting make sure that nobody stays behind the tyre-changer.

20.1 Rim clamping from inside (steel rims)

fig. 3

-Press the pedal ref. **2** (page 19) until the 4 jaws are completely closed.
-Position the wheel, centering it onto the turntable.
-Press down the pedal ref. **2** to open the jaws and thereby clamp the rim from inside.

It is absolutely not advisable to clamp aluminium rims from the inside, as the jaws could damage the rim inner surface.

20.2 Rim clamping from outside (aluminium rims)

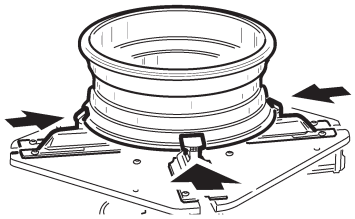


fig. 4

- Press the pedal ref. **2** (page 19) to move the jaws and adjust the clamping diameter range according to the size of the rim to be clamped, so that the 4 jaws are aligned with the reference marking (in inches) on the clamping turntable.
-Place the wheel on the jaws and gradually press the pedal ref. **2** until the jaws touch the rim.
-Make sure jaws are correctly fitted between the rim edge and the tyre bead, then press the pedal ref. **2** all the way down to tighten the clamping jaws and complete the wheel clamping.

To facilitate clamping of RUNFLAT, low-profiled (UHP) tyre assemblies, which are particularly challenging to clamp onto the turntable, it is advisable to use the pneumatic bead pressing arm (optional for S228). Use the bead-pressing tool to keep the rim pressed against the turntable jaws (fig. 5), to ease jaws penetration and rim clamping. If necessary, use the pressing cone for clamping hard sidewall tyres from outside (see optional accessories, page 32). To facilitate this operation, first move the jaws and adjust the clamping diameter range according to the size of the rim to be blocked, so that the 4 jaws are aligned with the reference marking (in inches) on the clamping turntable.

fig. 5

During rim clamping NEVER keep your hands under the tyre. For a correct clamping operation set the tyre exactly in the middle of turntable.
Make sure that the rim is firmly clamped by the jaws.

Never keep your hands onto the wheel: the operating arm recovery to "working position" could set the operator at risk of hand crushing between rim and mounting tool.

21.0 ADJUSTING THE TURNTABLE LOCKING MEASUREMENTS

Before clamping the wheel check the adjustment of the turntable and the dimensions of the wheel to lock. The tyre changer's turntable is adjusted by the manufacturer at an intermediate measurement that goes from 10" to 20" **ext** (in relation to the outside of the rim) and from 12" to 22" **int.** (if the wheel is clamped from the inside).
The adjustment (fig. 3) can be done by turning the two knobs located under the plate, between the two pneumatic cylinders (fig. 1-2). To increase the locking diameter, turn the knob clockwise (+) and, observing the decal (fig. 4), match the pin of cylinders **P** (fig. 2) with the number of inches to increase. For example, if we turn the knob until the reference pin matches 1 we have a 1" increase, and so on (fig. 5).
Each knob can be used separately. If the variation is done on both sides, the references are summed together (e.g. 2" + 1"=3" increase), starting from a 20" base, we can reach a maximum of 24"(rim clamping from outside) or 26" (rim clamping from inside).

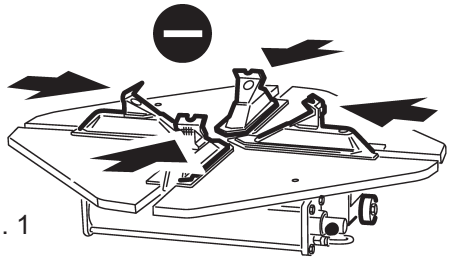


fig. 1

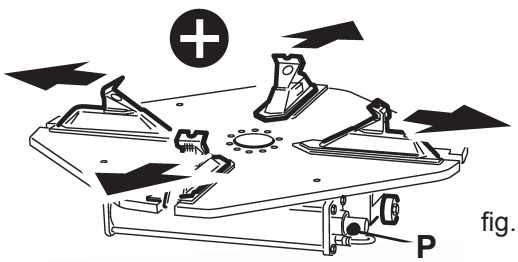


fig. 2

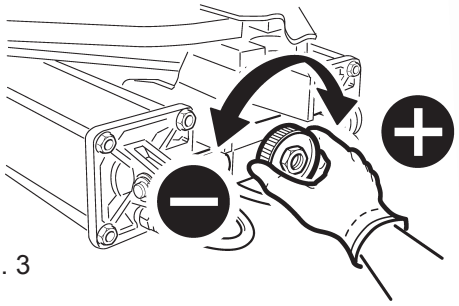


fig. 3

fig. 4

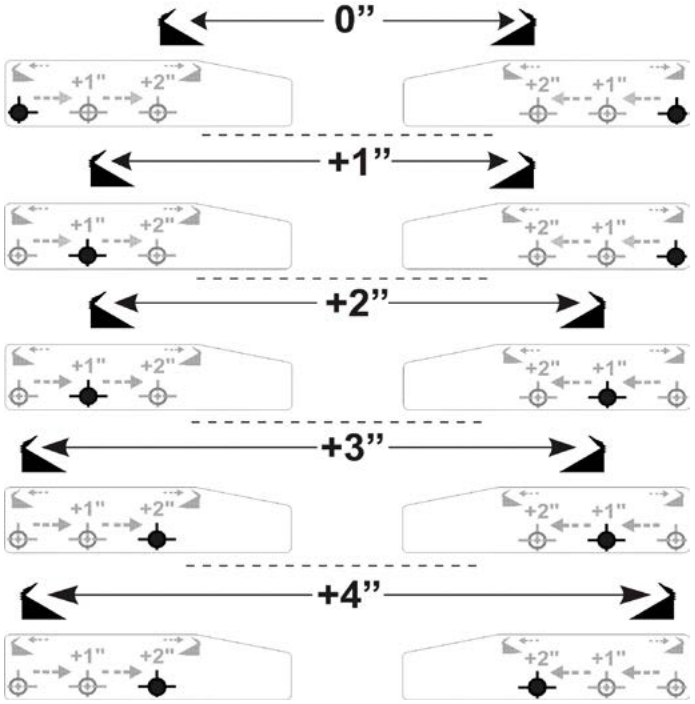


fig. 5

21.1 Additional adjustments of the turntable locking measurements

The values changed previously can be increased further still by moving the position of the 4 jaws as shown in the following figure(fig. 1).
The increase of the clamping diameter ranges from 0” to a maximum of + 2” that shall be added to the increase obtained after the adjustment described in the previous paragraph.
It is possible to reach a maximum of 26 “(rim clamping from outside) or 28” (rim clamping from inside).

To change the position:

Undo the screw (1) with an 8mm Allen wrench.
Move the locking jaw (2) and the slide (3), repositioning them into the hole of the slide just at the guide hole (4) depending on the locking requested dimensions. Refer to the measurements given below.
Reposition the jaw and lock with the screw (1) ensuring that the tightening torque is **72 Nm**.

ATTENTION: it is important that the above steps are performed identically on all 4 tightening jaws to prevent any unbalance when locking.

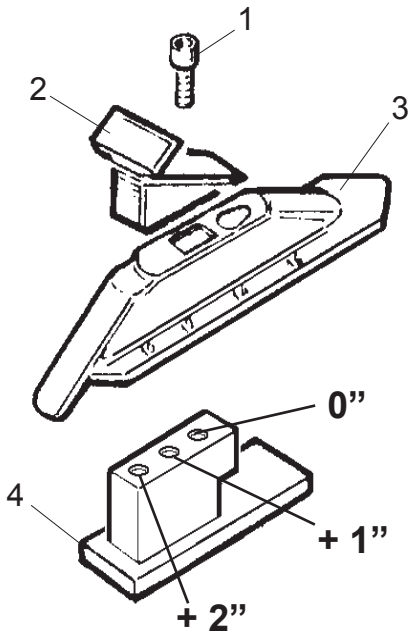


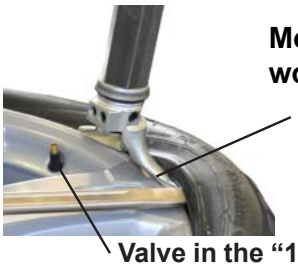
fig. 1

22.0 TYRE DEMOUNTING

- Once the bead breaking process is completed, and the wheel is already positioned onto the clamping turntable, check and make sure it is properly locked and centered. Lubricate tyre sidewalls appropriately, to help demounting process.

22.1 Upper bead demounting

- Spin the clamping turntable by pressing the pedal **3** (fig. 4) until the valve reaches "12 o'clock" position in order to avoid possible damages to the valve and the pressure sensor - if present.



Mounting tool in working position

Valve in the "12 o'clock" position

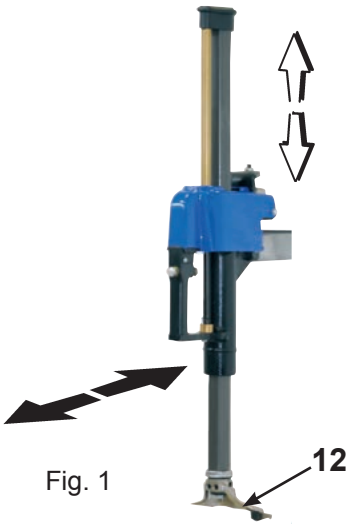
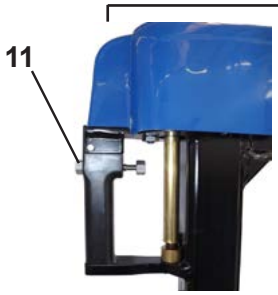


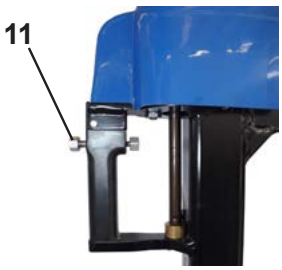
Fig. 1

- Bring the tilting tower close to the wheel by pressing the pedal ref. **1** (Fig. 4), while simultaneously placing the mounting tool over the rim edge using the handle (fig. 1). Set the locking button **11** to position **2** (fig. 2) to lower the operating arm, then lock everything by setting the locking button in position **1.** In this way the mounting tool will automatically move to the right distance from the rim, at about 2 mm.

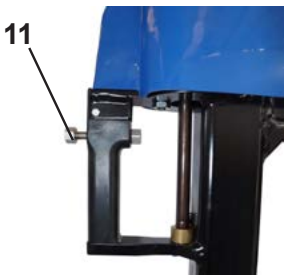
Fig. 2



Pos. 1 LOCKING



Pos. 2 LOWERING



Pos. 3 UNLOCKING AND AUTOMATIC ASCENT

Keep hands and other parts of the body as far as possible from the mounting tool. Operating arm lowering could set the operator at risk of hand crushing between rim and mounting tool.

- With the lever ref. **5** inserted between the bead and the front section of the mounting tool **12**, move the tyre bead over the mounting tool (fig. 3)

Note: In order to avoid damaging the inner tube, if there is one, it is advisable to carry out this operation with the valve at 2 o'clock position.

Chains, bracelets, loose clothing or foreign objects in the vicinity of moving parts can represent a danger for the operator.

• In order to ease bead lifting before the rotation while demounting the tyre, it is necessary to push down on the tyre sidewall at the opposite side of the mounting tool in order to reduce the stress on the bead and let it come off the wheel rim.

• With the lever held in this position, let the turntable rotate in a clockwise direction by pressing pedal ref. **3** down until the upper tyre bead has completely come off the wheel rim.

• In order to remove the inner tube, if there is one, without unlocking the operating arm, tilt back the tower by pushing pedal (1) down.

Fig. 3

During arm tilting make sure that nobody stays behind the tyre-changer.

Fig. 4

22.2 Lower bead demounting

- Rotate the clamping turntable by pressing the pedal ref. **3** until the valve is in the "12 o'clock" position.
- Repeat the operation for the lower bead until the tyre has completely come off the wheel rim.

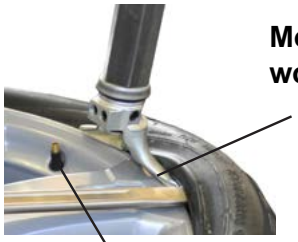
23.0 DEMOUNTING OF RACING AND LOW-PROFILED (UHP) TYRES USING THE ACCESSORIES

- Once the bead breaking process is completed, and the wheel is already positioned onto the clamping turntable, check and make sure it is properly locked and centered. Lubricate tyre sidewalls appropriately, to help demounting process.

23.1 Upper bead demounting

- Spin the clamping turntable by pressing the pedal **3** (fig. 1) until the valve reaches “12 o’clock” position in order to avoid possible damages to the valve and the pressure sensor - if present (fig. 2).

Fig. 1



Mounting tool in working position

Fig. 2

Valve in the “12 o’clock” position

- Bring the tilting tower close to the wheel by pressing the pedal ref. **1** (Fig. 1), while simultaneously placing the mounting tool over the rim edge using the handle (fig. 1, page 24). Set the locking button **11** to position **2** (fig. 2, page 24) to lower the operating arm, then lock everything by setting the locking button in position **1.** In this way the mounting tool will automatically move to the right distance from the rim, at about 2 mm.

- Press the tyre sidewall using the roller tool to facilitate bead lifting lever penetration. A gentle pressure on the tyre sidewall by the roller tool could help the mounting tool positioning.
- With the lever ref. **5** inserted between the bead and the front section of the mounting tool **12**, move the tyre bead over the mounting tool (Fig. 3 e Fig. 2)

Fig. 3

Fig. 4

- As soon as the bead is perfectly hooked, lift the roller tool and move it away from the working position.
- To make the bead lifting easier set the bead pressing arm at “6 o’clock” position and press the tyre sidewall (fig. 4).

- Spin the clamping turntable clockwise by pressing the pedal **3** until the upper tyre bead has completely come off the wheel rim.

23.2 Lower bead demounting

- Before starting demounting the lower bead, spin the clamping turntable until the valve reaches “12 o’clock” position in order to avoid possible damages to the valve and the pressure sensor - if present.

-Insert the lever **5** between the bead and the front section of the mounting tool **12**.
- Spin the wheel clockwise until the tyre complete coming out.

NOTE: rim and tyre must spin together as one.

Fig. 5

- Press the pedal ref. **1** to move the operating arm away from the working position.

- Check the status of the pressure sensor - if any - and replace it if necessary.

24.0 QX LEVERLESS MOUNTING DEVICE **(available upon request)**

QX is a leverless mount/demount device, suitable for conventional, UHP and Run Flat tyres. GIULIANO Patent, it works in the same exact way as your traditional tyre bar, but without operator's manual force.

Activated by an air operated cylinder, and controlled by a simple switch (**17**), allows the finger tool to be inserted step by step into the wheel drop center, to ease demounting operations.

PATENTED

17 QX system control lever

WATCH QX VIDEO

With the same procedure, it can control bead lifting operation, to avoid damaging tyre bead. Tool head is protected by nylon-kevlar inserts, easily replaceable, to avoid damages on alloy wheels.

When combined with bead breaker disk or Help arm roller, it provides additional bead pressing power to mount top bead of most difficult low profiled and stiff sidewall tyres.

Its most innovative feature, though, is the chance to install it in a fast and easy way on all different types of conventional tyre changers, even as a retro-fit kit. You can basically upgrade your conventional tyre changer to a "leverless" model, in just a few minutes.

25.0 DEMOUNTING OF RACING AND LOW-PROFILED TYRES USING THE ACCESSORIES AND QX SYSTEM

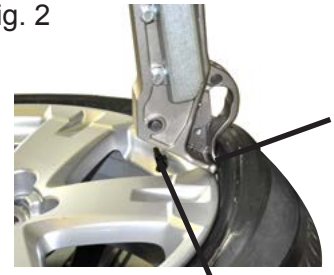
- Once the bead breaking process is completed, and the wheel is already positioned onto the clamping turntable, check and make sure it is properly locked and centered. Lubricate tyre sidewalls appropriately, to help demounting process.

25.1 Upper bead demounting

- Spin the clamping turntable until the valve reaches “12 o’clock” position in order to avoid possible damages to the valve and the pressure sensor - if present.

Fig. 1

Fig. 2



Mounting tool in working position

Valve

- Bring the tilting tower close to the wheel by pressing the pedal ref. **1** (Fig. 1), while simultaneously placing the mounting tool over the rim edge using the handle (fig. 1, page 24). Set the locking button **11** to position **2** (fig. 2, page 24) to lower the operating arm, then lock everything by setting the locking button in position **1.** In this way the mounting tool will automatically move to the right distance from the rim, at about 2 mm.

Keep hands and other parts of the body as far as possible from the mounting tool. Operating arm lowering could set the operator at risk of hand crushing between rim and mounting tool.

- Lower the lever ref. **17** (page 26) to insert the mounting tool between the bead and the rim edge. The mounting tool should penetrate enough to hook the tyre bead to let the operator complete the tyre demounting.
- Spin slowly the turntable until the mounting tool is positioned correctly. This will facilitate mounting tool penetration and tyre hooking.
- Press the tyre sidewall using the roller tool to facilitate mounting tool positioning and penetration. Lower the lever ref. **17** to insert the mounting tool between the bead and the rim edge. Lift the roller tool and move it away from the working position. Spin slowly the clamping turntable to facilitate mounting tool penetration and tyre hooking.

Fig. 3

-To make the bead lifting easier set the bead pressing arm at “6 o’clock” position and press the tyre sidewall (fig. 3).

- Spin the clamping turntable clockwise by pressing the pedal **3** (fig. 1) until the upper tyre bead has completely come off the wheel rim.

Fig. 4

WARNING:
Rim and tyre must spin together as one.

- **NOTE:** Use the plastic tyre lever (WDK approved) to mount/demount RUN-FLAT and low-profiled (UHP) tyre assemblies in order to reduce the risk of damaging the rim or tyre. It is compulsory to follow WDK rules to avoid permanent damages to these tyres (fig. 4).

25.2 Lower bead demounting

- Before pulling out the lower bead, spin the clamping turntable to let the valve reach 12 o'clock position in order to avoid possible damages to the valve and the sensor - if any.

- Lower the lever ref. **17** (page 26) to insert the demounting tool under the lower bead. Raise the lever ref. **17** to lift the demounting tool and the bead.

- Raise the roller to lift the tyre until the lower bead is 1 cm over the upper rim edge (Fig. 1).

- Insert the plastic tyre lever (Fig. 1).

-Spin the wheel clockwise by pressing the pedal **3** until the tyre complete coming out.

Fig. 1

WARNING:
Rim and tyre must spin together as one.

- Press the pedal ref. **1** (fig. 2) to move the operating arm away from the working position. Remove the tyre manually (fig. 3).

- Check the status of the pressure sensor - if any - and replace it if necessary.

Fig. 2

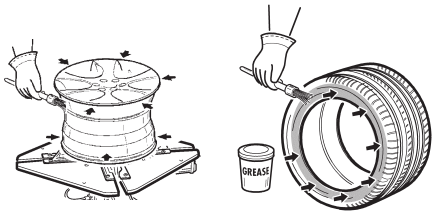
Fig. 3

26.0 STANDARD TYRE MOUNTING

-Check the rim and the tyre carefully, as per instructions at page 16 of this manual.

- If the rim has been removed, lock it again onto the turntable, as described in the paragraph 20.0.

-Carefully lubricate the whole inner surface of the rim and the beads of the tyre, both externally and internally right around the circumference, for a width of at least 3 cm.



Avoid contacts between the lubricating paste and the valve sensor, if any.

26.1 Lower bead mounting

-Spin the clamping turntable by pressing the pedal **3** until the valve reaches “6 o’clock” position in order to avoid possible damages to the valve and the pressure sensor - if present.
-Put the tyre onto the rim tilting the tyre at “12 o’clock” position in order to make both upper and lower beads go under the upper rim edge.
-Press the pedal ref. **1** to approach the operating arm and position the mounting tool onto the rim edge.
-Incline the tyre to the bottom at “3 o’clock” position, driving the lower bead on the mounting tool in order to put the lower bead over its left side and under it on its right side.
- Rotate the wheel clockwise by pressing the pedal ref. **3**, contemporarily press the tyre manually from “5 o’clock” position until the lower bead reaches the drop centre level. Keep the tyre pressed while rotating up to “8 o’clock” position to complete the lower bead mounting.

26.2 Upper bead mounting

-Keep the mounting arm and the mounting tool in working position. Spin the clamping turntable by pressing the pedal **3** until the valve reaches “6 o’clock” position. Proceed with mounting of the upper bead, putting the tyre on the rim slightly tilted down to “3 o’clock” position.
-Make sure the upper bead rests on the left side and under the right side of the mounting tool.

OK

Bead **correctly** positioned over the left side of the mounting tool and under it on its right side.

NO

Bead **incorrectly** positioned and damaged between the left side of the tool and the rim edge.

-Press the pedal ref. **3** to rotate the wheel clockwise, contemporarily press the tyre manually from “5 o’clock” position to force the upper bead at drop-centre position. Keep it pressed while rotating up to “8 o’clock” position to complete the upper bead mounting.

WARNING:
Rim and tyre must spin together as one.

26.3 Upper bead mounting using the accessories

Fig. 1

- It is advisable to use additional auxiliary helper systems to mount the upper bead (optional for S228).
- Keep the operating arm and the mounting tool in working position. Spin the clamping turntable by pressing the pedal **3** until the valve reaches the “6 o’clock” position. Proceed with mounting of the upper bead, putting the tyre on the rim slightly tilted down to “3 o’clock” position (fig. 1).
- Press the tyre bead using the roller tool to fit the bead into the drop-centre.
- Press the tyre bead using the bead pressing tool placed at “3 o’clock” position until it reaches drop-centre level.
-Press the pedal **3** and rotate the tyre clockwise until it is completely mounted (fig. 2).

Fig. 2

WARNING:
Rim and tyre must spin together as one.

-Use the bead pressing clamp (available upon request, see page 35 UHP) together with the proper rubber protection to facilitate upper bead mounting. Bead pressing clamp and rubber protection should be placed at “4-5 o’clock” position before the rotating the clamping turntable.

26.4 UHP and RUN-FLAT tyres mounting (WDK procedures)

-Some precise and careful operations are necessary to mount UHP and RUNFLAT tyres. It is compulsory to follow WDK rules to avoid permanent damages to these tyres, see WDK procedures, page 18.
-Lower bead mounting of UHP or Run flat tyres can be performed as per standard instruction for standard tyres.
-Once the lower bead is mounted, keep the mounting arm and tool at working position and start WDK upper bead mounting procedure putting the tyre on the rim slightly tilted down to “3 o’clock” position.
- Use the bead pressing clamp together with the proper rubber protection (• steel rim, • • aluminium rim, • • • aluminium rims with arched spokes). Lock it onto the rim edge with the valve at “3 o’clock” position. If necessary, press the tyre sidewall by the disk tool to help the correct positioning and locking of the clamp (fig. 3).
-Keep the disk tool at drop-centre level, spin slightly to insert the bead pressing tool between the disk and the clamp and pressing onto the tyre sidewall until the upper bead reaches drop-centre level.
-Make sure that the upper bead of the tyre rests on the left side and under the right side of the mounting tool.
-Start spinning the wheel paying attention to the upper bead not going between the rim edge and the disk tool.
- While spinning, when clamp is roughly at “6 o’clock” position make sure that the whole bead within this section is right inside the drop-centre.
- If this necessary condition for a correct mounting is not accomplished, use the pneumatic bead pressing arm and push the tyre sidewall to fit the upper bead into the drop-centre (fig. 4).

Fig. 3

Fig. 4

WARNING:
In these last phases, work very carefully to avoid straining the side of the tyre excessively.

-Go on spinning the wheel until the upper bead is completely mounted.
-Press the pedal ref. **1** to push the operating arm up and move additional auxiliary helper systems away from working position.

WARNING:
Before inflating the tyre, remove the wheel from the clamping turntable and read the inflating instructions carefully.

27.0 INFLATION

Tyres must be inflated with the utmost caution. The instructions below have to be read and followed strictly.
This Tyre-Changer is NOT designed to protect operators and objects from accidental tyres explosions.

WARNING: If tyre bead fails to fit in place at 3.5 bar pressure, it is necessary to repeat the bead loosening and lubricating procedures before trying again to inflate the tyre.

DANGER

- **If tyre had to burst or rim had to break under pressure, operators could be seriously injured or even killed.**
- **During inflation use personal protective equipment to protect hearing and sight.**
- **Make sure the rim and tyre are the same size.**
- **Also check the conditions of the tyre and rim to make sure there are no defects before starting to inflate.**
- **Inflate the tyre with brief jets of air checking the pressure on the gauge frequently.**
- **This Tyre-Changer is automatically limited to an inflation pressure of 3,5 bar (50 psi). NEVER EXCEED THE PRESSURE RECOMMENDED BY THE TYRE MANUFACTURER.**
- **Keep hands and body as far away as possible from the tyre during inflation.**

Pedal operated inflating device

Fig. 1

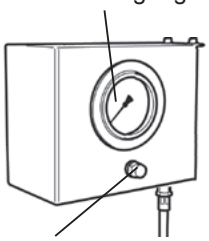
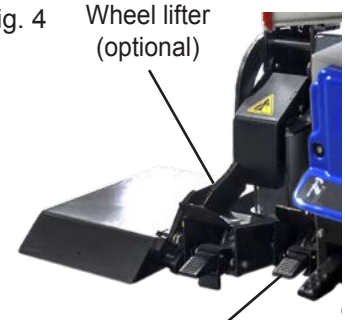


Fig. 2

Fig. 3

Inflation pedal (GT system inflation and bead seating pedal in GT version)

Fig. 4



8 - Inflation pedal (only in combination with wheel lifter, available upon request)

- Connect the inflation hose of the inflation system to the valve of the tyre (Fig. 2)
- Make sure the rim and the tyre have the same diameter.
- Make sure the rim and tyre are sufficiently lubricated; lubricate if necessary.
- Press and release the inflation pedal ref. **8** (Fig. 3 and Fig.4) frequently, checking the pressure on the pressure gauge until the tyre bead fits completely onto the rim.
- Continue inflating to reach the pressure recommended by the tyre manufacturer. Always inflate in short blasts and constantly check the pressure in the process.

NOTE: Sometimes, regular inflation may not be enough to seat the bead of tubeless tyres. This problem may be solved by using the optional accessory TUBELESS INFLATION EXTERNAL KIT (optional)

- Press the deflation button to deflate the tyre in case the pressure exceeds the value recommended by the tyre manufacturer.

27.1 Tubeless tyre inflation (optional), not available for GT version.

Tubeless inflation external kit helps seating the bead properly during inflation operations, when servicing low profiled tyres.

- Unlock the wheel. In order to properly use the optional Tubeless Inflating Device:
- Press the safety valve against the rim edge, push the activating button onto the handle to blast air and press the inflating pedal ref. **8** in order to feed the wheel valve.

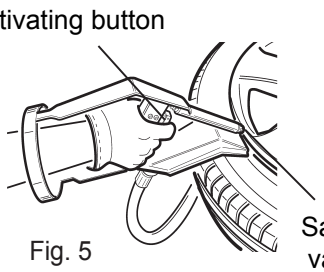


Fig. 5

- During the inflation stages (and especially during the bead seating operation), it is recommended to wear an appropriate personal protective equipment to protect the auditory apparatus from possible blast injuries and from noise levels that sometimes exceed the permitted threshold.
- Use also appropriate eye protections equipment to shade your eyes from any possible debris that might fly due to the high pressure involved in tyre bead seating.
- The jet of air that comes out when the inflating device is on has a very high pressure: hold the handle firmly with your hand to avoid any sort of backlash.

27.2 Inflating tyres with GT system (upon request, factory mounted only)

The GT inflation system facilitates inflation of tubeless tyres thanks to a powerful jet of air from the nozzles positioned on the jaws.

During this phase of work the level of noise can reach 85db (A).
It is advisable to use a noise protection.

• Clamp the wheel from inside on the turntable and connect the inflation hose of the inflation system to the valve of the tyre. During inflation with GT system, it is recommended to use rubber protectors for clamping alloy rims from inside to avoid any damage to alloy rim (available upon request, see page 35, **ORJP**)
• Make sure the rim and the tyre have the same diameter.
• Make sure the rim and tyre are sufficiently lubricated; lubricate if necessary.
• Press the pedal (**8**, page 31) down to intermediate position (B - Fig. 1), frequently checking the pressure on the pressure gauge until the tyre bead fits completely onto the rim.
• Continue inflating to reach the pressure recommended by the tyre manufacturer. Always inflate in short blasts and constantly check pressure in the process.
• Press the deflation button (Fig. 1, page 31) to deflate the tyre in case the pressure exceeds the value recommended by the tyre manufacturer.
• If the bead of tyre is not well seated, due to a strong bead, lift tyre manually until the upper bead seals against the rim, then press pedal all the way down (C - Fig, 1). A strong jet of air will be released through the nozzles in the slides and this will help the bead seal.
• Release the tyre; set the pedal in the intermediate position (B - Fig. 1) and continue to inflate the tyre with short jets of air and constantly checking the pressure between air jets until the required pressure has been reached.

⚠ DANGER

EXPLOSION HAZARD!

- **This Tyre-Changer is automatically limited to an inflation pressure of 3,5 bar (50 psi). NEVER EXCEED THE PRESSURE RECOMMENDED BY THE TYRE MANUFACTURER.**
- **If a higher inflating pressure is required remove the wheel from turntable and continue the inflation procedure inside a special protection cage (available upon request)**
- **Keep hands and body as far away as possible from the tyre during inflation.**
- **ONLY specially trained personnel are allowed to perform these operations.**
- **Do not allow other persons to operate or to stay near the tyre changer.**

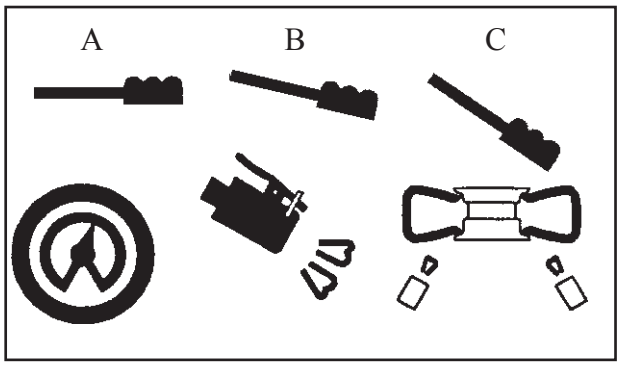
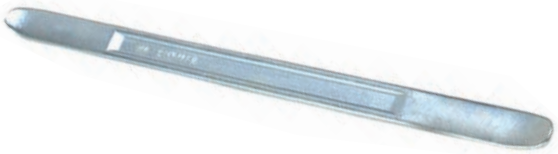


Fig. 1

28.0 STANDARD ACCESSORIES (STANDARD SUPPLIED)

- Lube paste bucket and brush



- Bead lifting lever

- Jaw protectors for alloy rims

- Plastic protectors for mounting/demounting tool (3 front + 3 rear)

- 2 Protectors for bead breaker shovel

- Filter + pressure regulator + lubricator

(STANDARD SUPPLIED)

- Pedal operated inflating device

- HP2 additional double arm to ease mounting operations of low profiled and UHP tyres (available on Pro version only).

- HELP additional arm to ease mounting operations of low profiled and UHP tyres (available on Pro Duo version only).

- PRESS ARM additional arm to ease mounting operations of low profiled and UHP tyres (available on Pro Duo version only).

29.0 OPTIONAL ACCESSORIES

WL 6
Wheel Lifter (Max wheel weight 80 kg)

QX
Leverless mounting device for low profiled and UHP tyres

GUN 1
Tubeless inflation external kit (not available for GT version)

ROLL
Fixed roller plate, to ease bead breaking of heavy wheels

QCK
Quick release kit for mounting tools (includes one plastic tool and one hub for connecting the tool delivered with the tyre-changer)

CPC
Pressing cone for clamping hard sidewall tyres from outside

ORJP
Kit of rubber protectors for clamping alloy rims from inside using conventional jaws during inflation with GT system

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UHP1
Wdk Kit for S228 Pro Duo

UHP 2
Wdk Kit for S228 Pro

30.0 RE-POSITIONING

To re-position the Tyre-Changer in a new workplace: secure the moving parts (i.e. the bead pressing arms, etc.) disconnect all the power sources and install it again following all the instruction per chapter 9.0 (INSTALLATION) of this manual.
Connections to power sources and connection & inspections of the safety systems must be carried out by trained personnel.

31.0 STORAGE

If the tyre changer has to be stored away for extended periods of time:

- Disconnect the power sources.
- Empty the tanks containing operational fluids.
- Protect parts that could be damaged if dust should settle on them.
- Grease parts that could damage if they should dry out.

When re-commissioning the tyre changer:
- Follow the instructions given in chapter 9.0 (INSTALLATION) of this manual.
- Replace any damaged parts, referring to the spare parts list - this to be carried out by skilled personnel.

32.0 SCRAPPING AND DISPOSAL

If you decide that the tyre changer can no longer be used, you are recommended to make it unusable by removing the power supply connections, emptying the tanks and disposing of the fluids according to current state and National regulation. The tyre changer is considered as heterogeneous waste and must consequently be split-up into parts made of similar material (electrical parts, plastic parts and ferrous parts), which must be disposed of properly, according to current National regulation.

WARNING: follow RAEE and ROHS Conformity Declaration rules for a correct disposal (where applicable).

33.0 OIL TREATMENT

OIL IS POLLUTANT! DO NOT THROW AWAY OUTDOORS OR POUR ON THE GROUND.
Clean up the oil and send to special disposal centres according to current national laws.

33.1 General precautions
- Avoid direct and prolonged contact with skin.
- Avoid the formation of oil mists in the air.
- Avoid splashing.
- Wear appropriate clothing, gloves and goggles to protect against oil splashes.
- Do not use greasy rags.
- Do not eat or smoke if your hands are soiled with oil.

33.2 First Aid instructions
- If oil is swallowed, do NOT induce vomiting but go immediately to the nearest medical centre with information on the type of oil swallowed.
- If oil gets in eyes, rinse abundantly with water until irritation ceases, then go to the nearest medical centre.
- If oil comes into contact with skin, rinse abundantly with neutral soap and water. do not use solvents or irritant products.

33.3 Disposing of used oil
Do not throw used oil away outdoors or pour it on the ground.
Drain into a suitable container and forward to specialised oil disposal centres, or hand it over to authorised collection companies.

33.4 Oil spillages or leakages
Eliminate the cause of the leakage and stop the oil spillage from spreading using absorbent material. Clean the area where the oil has spilled using degreasing detergents to prevent slipping and dispose of the waste according to current state and Federal regulations. Clean up the oil and send to special disposal centres according to current National regulations.

34.0 MAINTENANCE

34.1 Standard Maintenance

Routine maintenance according to the following instructions is of crucial importance to ensure the correct operation and lasting life of the Tyre-Changer.

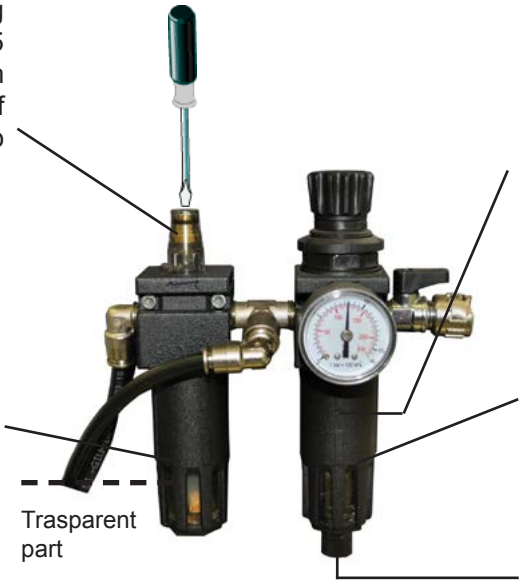
Unplug the unit from electrical power source and compressed air supply before servicing it.
Release the compressed air from the circuit.

- On daily basis, keep the machine clean eliminating any mould and dirt to ensure the perfect movement of slides, carriages and tools and to grant the correct functioning of clamping turntable and locking systems.

- On daily basis, check for worn or damaged plastic mounting tool inserts and plastic and rubber protections in order to protect alloy rims.
In case of wear or damage, replace them with new inserts and new protections.

- Every 7 days, check the oil dropping into the cup (1 drop every 4/5 activations of the bead pressing arm or of the bead breaker system). If necessary, turn the screw on the top of the cup by a screwdriver.

- Periodically check the oil level which should always keep above the container trasparent part.
Release the compressed air from the circuit. If necessary, unscrew the cup and top-up by adding oil for pneumatic systems in class ISO HG (i.e. ESSO Febis K32; MOBIL Vacouline Oil 1405; KLUBER Airpress 32).



- For a long lasting correct functioning of the 10 bar pressure limit device, check on regular basis and discharge the condensation when needed.

- If necessary, drain the condensation by turning clockwise the drain tap (keep the pneumatic feeding on to perform this adjustment).

- On monthly basis, unplug the machine from pneumatic feeding and remove the filter cup to clean it from possible solid impurities.

- On periodical basis, clean the sliding guides of the clamping turntable and additional auxiliary helper systems by naphtha, after that lube them by oil or proper grease. Perform the same cleaning and lubricating actions on every junction and mechanical sliding.

- On periodical basis, check the tensioning of clamping turntable rotation driving belt. If necessary, use a 13mm wrench to loosen the fixing bolts of the motor support plate, then adjust the belt tension by acting on the tensioning screw and tight the fixing bolts.

34.2 Extraordinary maintenance

- Extraordinary maintenance must be carried out by factory authorized personnel ONLY.

- Defective parts should be exclusively replaced with genuine spare parts by factory authorized service personnel.

- After 5 years from installation date, the Tyre-Changer must be serviced in all its main components to grant its correct functioning and the operators safety.

The Manufacturer is not responsible for claims due to non-original spare parts or for damages caused by removal and tampering to the safety devices.
Removal or tampering with the safety devices (max. pressure valve – pressure regulator) represents a breach of European Regulations for Workplace Safety.

35.0 TROUBLESHOOTING CHART

Always disconnect the electrical power and air supply from the machine before servicing and removing any parts.

PROBLEM	CAUSE	SOLUTION
The clamping turntable does not rotate	1) The power supply is missing; 2) Machine has not plugged correctly; 3) The fuses have blown; 4) The belt is loosened or broken; 5) The motor pulley is unscrewed; 6) The motor drive is not working properly; 7) The motor is defective or damaged	1) Check the wall socket; 2) Check the machine plug is connect properly or if the plug wires are well connected. 3) Replace the fuses; 4) Tension or replace the belt; 5) Tighten the pulley screw; 6) Re-connect; 7) Replace the motor
The clamping turntable motor rotates at one speed only **(3ph 400V version 2 speed motor, pedal control)**	1) The inverter is damaged; 2) The inverter wires are not connected; 3) The motor is damaged; 4) The motor wires are not connected.	1) Replace the inverter; 2) Check the inverter wires are connected properly; 3) Check the motor short-circuit and replace it; 4) Check the motor is wired correctly.
Motor hums, but does not run when pedal is depressed/lifted.	1) Obstruction on turntable or drive belt. 2) Transmission damaged. 3) Motor capacitor failure (for single-phase versions). 4) Improper wiring of motor or switch. 5) Inverter damaged	1) Check for obstructions under turntable or drive belt 2) Replace. 3) Check for loose wire or replace. 4) Verify proper wiring scheme. 5) Replace Inverter
The clamping turntable rotates, but will not mount or demount tyres.	1) Mounting/demounting tool or operating arm needs adjustment. Operator using incorrect procedures: 2) Failure to use rubber lubricant. 3) Attempting to mount badly bent or rusted wheels. 4) Mismatch size of tyre and wheel	1) Adjust as required Refer to operating instructions.
The clamping turntable rotates in direction opposite of pedal decal.	Switch or motor wired wrong.	Refer to the electrical system diagram.
The clamping turntable rotates continuously	1) The spring is damaged.	1) Replace the spring.
Bead breaker does not move or it does but very slowly	1) The air supply is missing; 2) The control valve is damaged; 3) The silencers are blocked; 4) The cylinder seal is damaged; 5) The pilot valve is damaged or defective.	1) Check or restore pneumatic supply; 2) Replace the valve; 3) Clean up the silencers or replace them; 4) Replace the seals; 5) Replace the valve.
Bead breaker does not operate	1) Inadequate air supply. 2) Piston attaching nut is loose. 3) Bead breaker arm binding or damaged. 4) Bead breaker blade binding or damaged or missing hardware. 5) Bead breaker cylinder damaged. 6) Valve/valves obstructed or damaged. 7) Pedal or linkage damaged.	1) Verify minimum 10 BAR (150 PSI). Check air source lines for kinks, leaks, or blockage. 2) Tighten nut at the piston. 3) Check for binding, replace if needed. 4) Check for binding, replace if needed. 5) Inspect, repair/replace. 6) Inspect, repair/replace. 7) Inspect, repair/ replace.

Always disconnect the electrical power and air supply from the machine before servicing and removing any parts.

PROBLEM	CAUSE	SOLUTION
Bead breaker operates, but will not loosen beads.	1) Inadequate air supply. 2) Operator using incorrect procedure. 3) Bead breaker blade binding or damaged. 4) Bead breaker blade damaged or missing hardware. 5) Valve/valves obstructed or damaged. 6) Tyre is inflated	1) Verify minimum 10 BAR (150 PSI). Check air lines for leaks, blockage, or kinks. 2) Refer to operating instructions. 3) Check for binding, replace as needed. 4) Check, replace as needed. 5) Check operating & control valves. Repair or replace as needed. 6) Deflate the tyre
Clamping jaws do not move.	1) Foot pedal in intermediate position. 2) Inadequate air supply. 3) Clamp carriers binding. 4) Linkage binding/damaged. 5) Valve obstructed or damaged. 6) Rotary coupler damaged or leaking. 7) Linkage binding. 8) Cylinder(s) leaking/damaged.	1) See foot pedal decal. 2) Check air lines for leaks, debris, or kinks. Verify minimum 10 BAR (150 PSI). 3) Inspect, repair/replace. 4) Inspect, repair/replace. 5) Inspect, repair/replace. 6) Inspect, repair/replace. 7) Inspect, repair/replace. 8) Inspect, repair/replace.
Clamping jaws move slowly or do not move smoothly.	1) Inadequate lubrication of clamp slides or linkage. 2) Worn parts or linkage. 3) Air lines pinched or obstructed. 4) Cylinder fittings leaking or damaged. 5) Inadequate air supply. 6) The silencers are blocked.	1) Lubricate 2) Inspect, repair/replace worn parts. 3) Check air lines for debris or kinked hoses. Repair or replace. 4) Rebuild or replace. 5) Check air lines for leaks, debris, or kinks. Verify minimum 10 BAR (150 PSI). 6) Clean up the silencers or replace them
Clamping jaws do not hold.	1) Inadequate air supply. 2) Clamp cylinder(s) leaking or damaged. 3) Valve leaking or damaged. 4) Worn or damaged wheel clamps. 5) Leaking rotary coupling. 6) Foot pedal in intermediate position.	1) Check air source for line debris or kinked hoses. 2) Repair or replace. 3) Repair or replace. 4) Replace. 5) Inspect, repair/replace. 6) See foot pedal decal.
Tyre inflating device does not work	1) The air supply is missing; 2) The control valve is damaged; 3) The pressure limiter valve is damaged.	1) Check the net pressure; 2) Replace the valve; 3) Replace the valve.
Pedals do not actuate or return properly.	1) Misaligned, damaged or worn pedal linkage. 2) Obstruction in air valves. 3) Objects under foot pedals. 4) Return spring broken or misaligned. 5) Inadequate lubrication	1) Repair or replace. 2) Remove, clean valves, & reinstall. 3) Remove foreign objects from under machine. 4) Repair, replace or realign. 5) Lubricate
The mounting tool touches the rim during mounting operations	1) The clamping plate has not been adjusted properly or is defective; 2) The unlocking plate springs are damaged. 3) The air supply is missing	1) Adjust or replace the locking plate; 2) Replace the plate unlocking springs. 3) Check or restore pneumatic supply

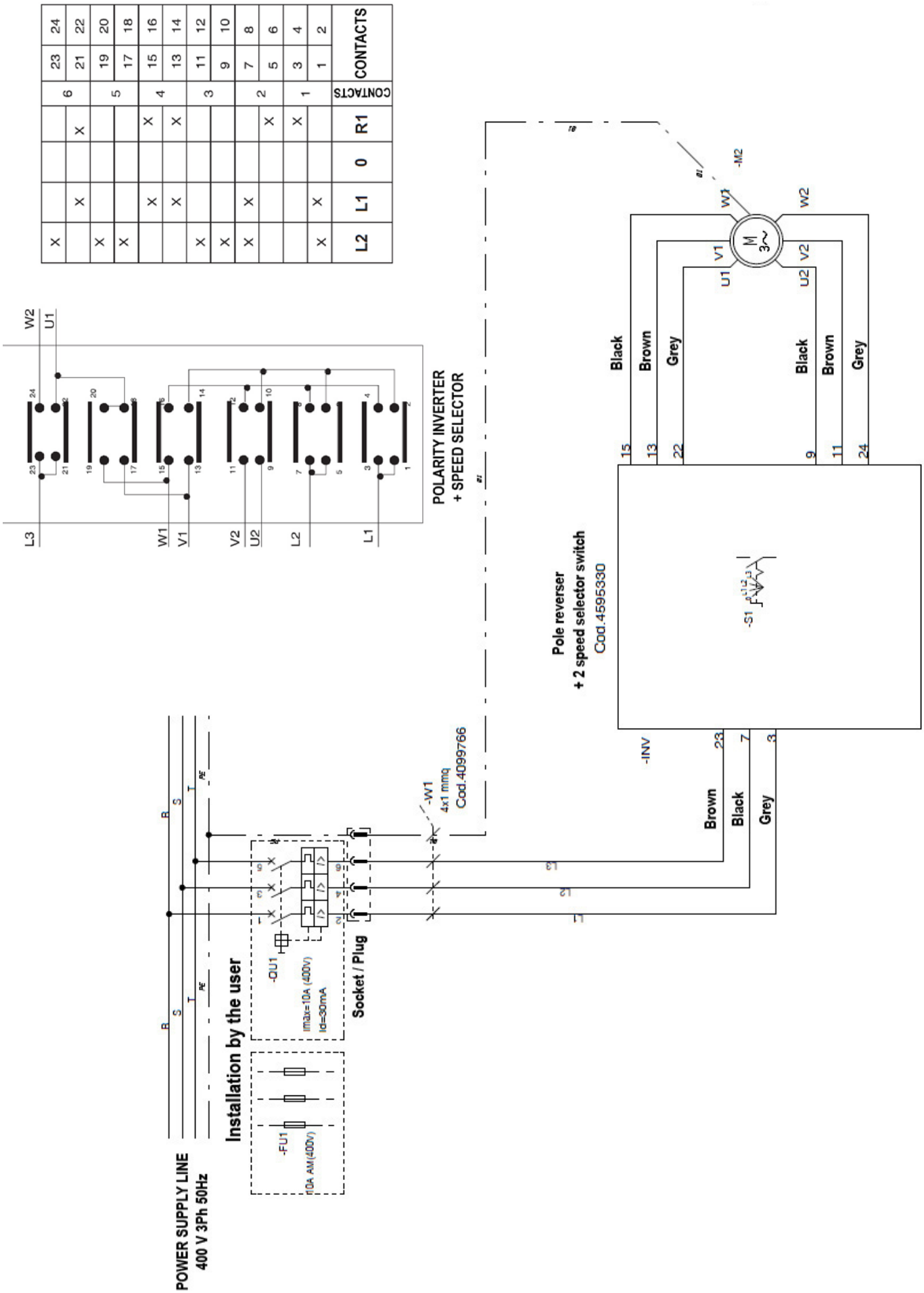
Always disconnect the electrical power and air supply from the machine before servicing and removing any parts.

PROBLEM	CAUSE	SOLUTION
The mounting tool does not move vertically	1) The air supply is missing; 2) Pneumatic supply hoses broken or squeezed; 3) Control valve is damaged; 4) Mufflers obstructed; 5) Cylinder seals are damaged.	1) Check net pressure; 2) Replace pneumatic supply hoses; 3) Replace the valve; 4) Clean or replace mufflers; 5) Replace the seals.
Tilting tower does not move or it moves slowly or too fast	1) The silencers are blocked; 2) The silencers have not been adjusted; 3) Foot control release spring is damaged; 4) The compressed air supply is missing; 5) Column sleeve too loosened or too tighten	1) Clean up or replace the silencers; 2) Adjust silencers; 3) Replace foot control release spring; 4) Check or restore pneumatic supply; 5) Adjust column sleeve.
Tilting tower moves too quickly forward/backward.	1) Tower valve flow control muffler not adjusted properly. 2) Tilt tower valve or flow control muffler defective. 3) Flow control muffler missing 4) Tilting tower control pedall is worn.	1) Adjust muffler 2) Repair or replace. 3) Replace. 4) Replace the pedal
Tilt tower does not move at all.	1) Restriction in one or both air lines. 2) Defective tilt tower cylinder. 3) Defective tower valve. 4) Check valve defective or installed backwards. 5) Inadequate air pressure.	1) Check air lines for kinks, leaks or debris. 2) Repair or replace 3) Check, repair or replace. 4) Check, repair or replace. Refer to pneumatic diagram. 5) Check for minimum 10BAR (150PSI). Check air lines for kinks, leaks or debris.
Tilting tower does not move smoothly.	1) Tower arm pivot binding or obstructed. 2) Inadequate lubrication of tower pivot points. 3) Worn pivot pin/bushing. 4) Leaking or defective tower tilt cylinder. 5) Restriction in one or both air lines. 6) Side play tension not adjusted properly. 7) Inadequate air supply	1) Check for foreign objects in & around tower arm pivot area. 2) Lubricate (see maintenance.) 3) Replace as needed. 4) Repair or replace. 5) Check for kinked hoses, clogged fittings, & debris in valve. 6) Adjust nut (see adjustments). 7) Check for minimum 10BAR (150PSI).
QX finger tool does not move up/down (optional)	1) No pneumatic supply 2) The supply fitting is not connected correctly 3) Supply tubes broken or squashed 4) Control valve broken 5) Muffler obstructed 6) Finger tool activating cylinder damaged	1) Check the line pressure 2) Insert the fitting correctly in the supply socket or check the pipe route 3) Replace the supply tubes 4) Replace the valve 5) Clean the muffler or replace it 6) Check cylinder, repair or replace
The wheel lifter (optional) does not move or move slowly	1) The air supply is missing; 2) The control valve is damaged; 3) The silencers are blocked; 4) The cylinder seals are damaged.	1) Check net pressure; 2) Replace the valve; 3) Clean up the silencers or replace them; 4) Replace the seals.

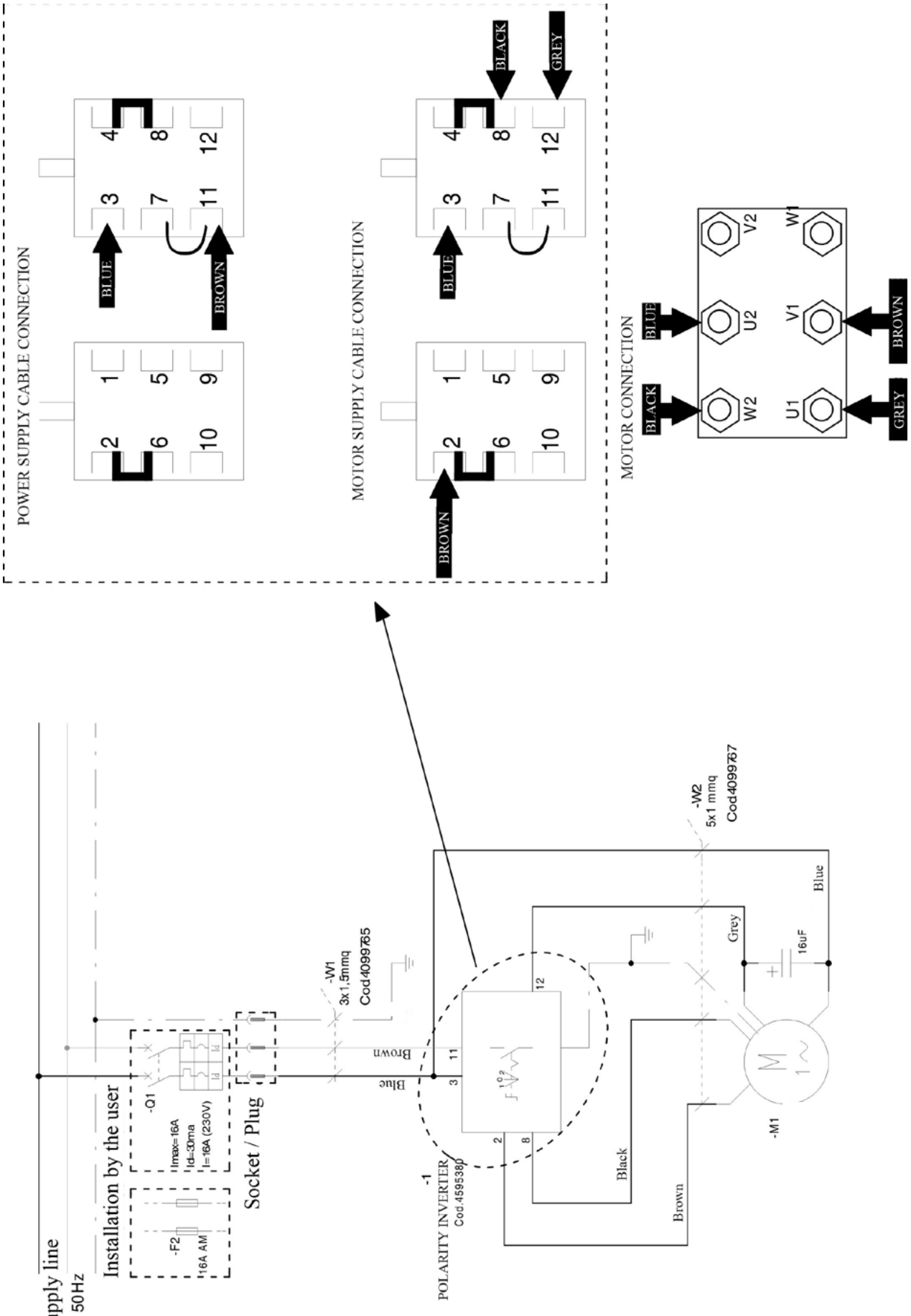
Always disconnect the electrical power and air supply from the machine before servicing and removing any parts.

PROBLEM	CAUSE	SOLUTION
The wheel lifter (optional) does not stop	1) The control valve is damaged; 2) The foot control spring is damaged	1) Replace the valve; 2) Replace the spring.
Gauge not accurate.	1) Air line kinked or obstructed. 2) Needle stuck or broken. 3) Inlet side or snubber of gauge blocked. 4) Gauge out of calibration.	1) Remove and clean debris, straighten hose. 2) Replace gauge. 3) Replace gauge. 4) Replace gauge
Bead pressing tool or roller tool (optional for S228) does not rise/lower smoothly or does not move at all.	1) Pneumatic supply missing 2) Leaking air lines or fittings or valve. 3) The control valve is damaged; 4) Defective cylinder. 5) Slide bar binding. 6) Inadequate lubrication	1) Check the line pressure 2) Check for kinks, leaks or debris in air line or valves. 3) Replace 4) Repair or replace. 5) Adjust tension nut(s) 6) Lubricate
Will not inflate tyres or seal beads. (GT version)	1) Inadequate air supply. 2) Defective air flate hose or nozzle. 3) Defective or leaking air flate valve. 4) Restricted or no air flow or leaking pressure limiter. 5) Rotary coupler damaged or leaking. 6) Inflation valve leaking or defective. 7) Inflation pedal spring not adjusted properly.	1) Check net pressure 2) Check inflation hoses for kinks, clogged fittings, &/or debris in valve. 3) Replace as needed. 4) Repair or replace. 5) Repair or replace. 6) Repair or replace. 7) Adjust inflation spring

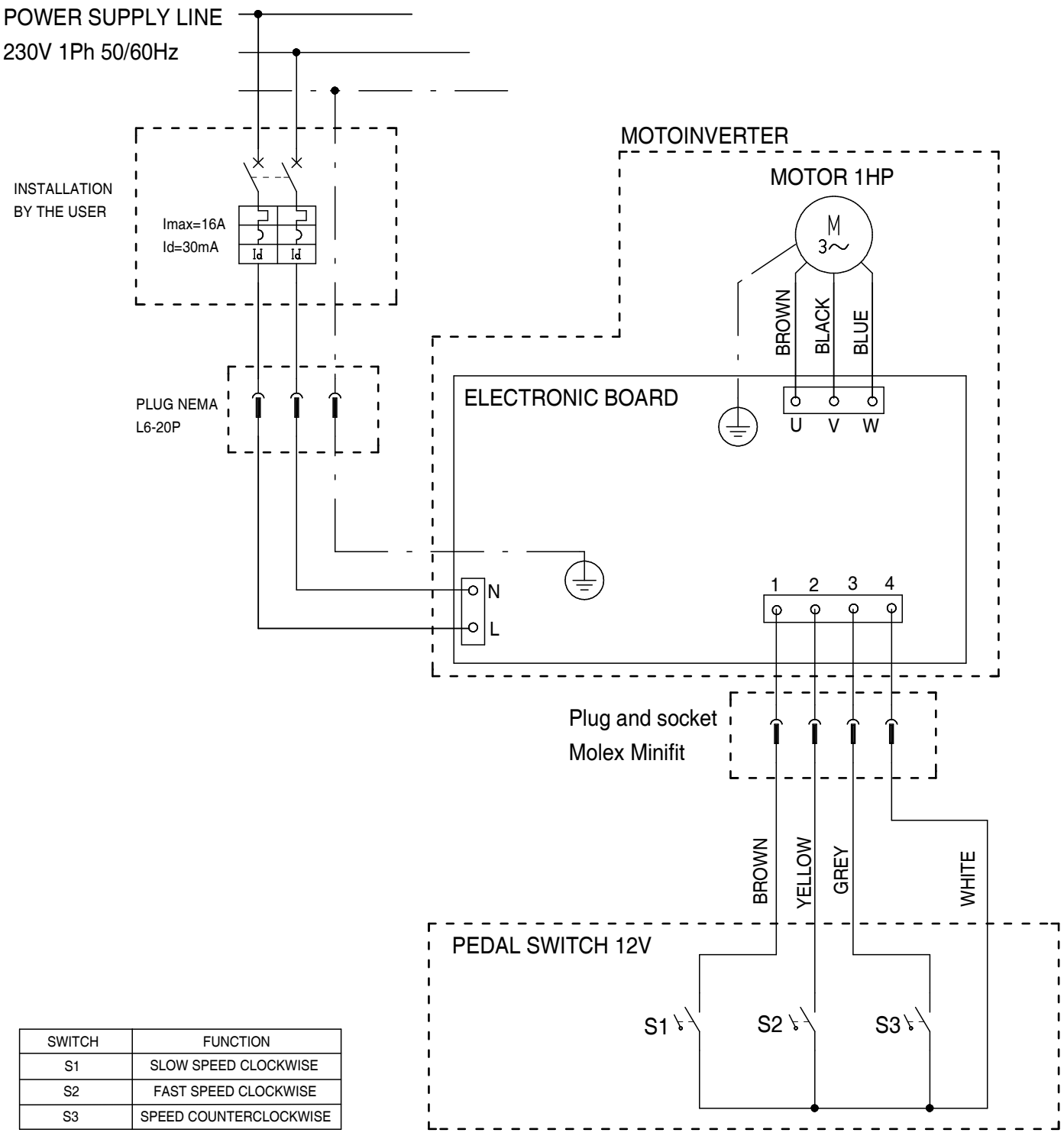
36.0 WIRING DIAGRAM 400V 3Ph 50Hz/60 HZ 2 speed motor, pedal control



WIRING DIAGRAM 230V 1Ph 50Hz/60 Hz

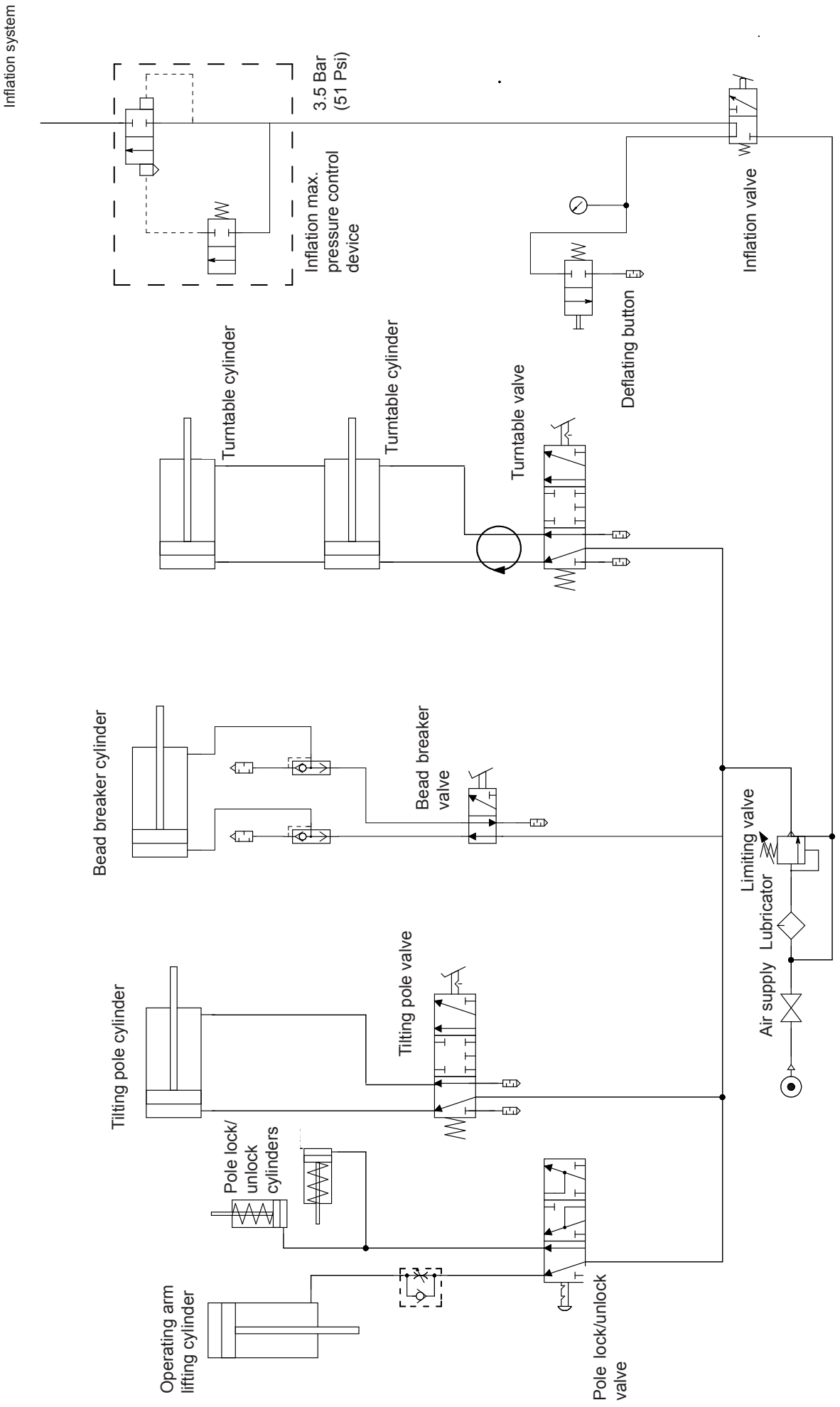


Motoinverter

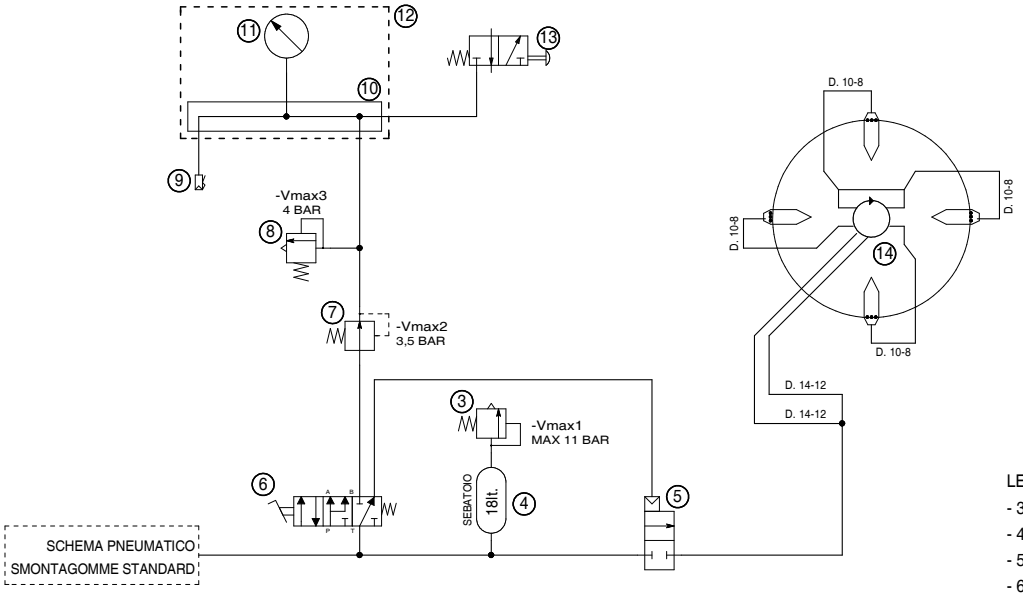


SWITCH	FUNCTION
S1	SLOW SPEED CLOCKWISE
S2	FAST SPEED CLOCKWISE
S3	SPEED COUNTERCLOCKWISE

37.0 PNEUMATIC DIAGRAM



GT PNEUMATIC SYSTEM DIAGRAM



LEGENDA:

- 3 Valvola di sicurezza
- 4 Serbatoio aria
- 5 Valvola intallonamento
- 6 Valvola pedale GT
- 7 Regolatore di pressione
- 8 Valvola di sicurezza
- 9 Testina di gonfiaggio
- 10 Ripartitore
- 11 Manometro
- 12 Unità di gonfiaggio
- 13 Valvola di sgonfiaggio
- 14 Raccordo girevole

3. Safety valve	3. Soupape de sécurité	3. Sicherheitsventil
4. Tank	4. Réservoir	4. Tank
5. Setting solenoid valve	5. Soupape de talonnage	5. Einstellmagnetventil
6. GT pedal valve	6. Soupape pédale GT	6. GT-Pedalventil
7. Pressure regulator	7. Régulateur de pression	7. Druckregler
8. Safety valve	8. Soupape de sécurité	8. Sicherheitsventil
9. Inflating head	9. Tête de gonflage	9. Aufpumpknopf
10. Divider	10. Repartiteur	10. Verteiler
11. Pressure gauge	11. Manomètre	11. Manometer
12. Inflating unit	12. Unité de gonflage	12. Aufpumpenaggregat
13. Deflating valve	13. Soupape de dégonflage	13. Luftablaßventil
14. Rotating union	14. Raccord pivotant	14. Drehanschluß

38.0 SERVICE REPORTS

All the operations made on the machine in the course of time must be reported herebelow so as to have an updated situation of the efficiency of the machine.
The user must carry out both cleaning and greasing operations according to the instructions given in this manual.
Any operation concerning the replacement of parts is strictly reserved to authorized and trained staff.

Date	Signature
Intervention	
Replacements	
Notes	

Date	Signature
Intervention	
Replacements	
Notes	

Date	Signature
Intervention	
Replacements	
Notes	

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