

ATEX SAFETY INSTRUCTIONS

TPWX3GD, TPWX3GDI, TPW20IEX3GD



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1. INTRODUCTION

In thanking you for purchasing this pallet truck scale, we would like you to take into consideration some aspects of this manual:

- this manual gives all the information for the correct functioning and maintenance of the TPWX3GD/TPWX3GDI/TPW20IEX3GD pallet truck which is an integral part of the machine.
- all the information given here is what is available at the time of printing; the manufacturer reserves the right to make changes to the product at any time without prior notice. It is advisable to verify if there are any updates.
- the person responsible for the use of the TPWX3GD/TPWX3GDI/TPW20IEX3GD pallet truck must make sure that all the existing safety norms in the country of use are respected and guarantee that the instrument is used in conformity with the use for which it has been manufactured for.
- Some functions written in the sections regarding the weight indicator might not be available, because these depend on the type of weighing system that has been purchased.

This pallet truck is designed for lifting and transporting loads put on a pallet or containers placed on flat, level surfaces with adequate resistance.




It is also fitted with an electronic weighing system made up of a DFWATEX3GD multifunction digital indicator put on the column and of 4 load cells rigidly fixed **inside the forks**.

The metallic structure parts are electrically connected together and grounded through a sliding metallic chain. With the TPWRAS option (antistatic driving wheels), the metallic structure is grounded through the sliding metallic chain and through the antistatic wheels

2. SYMBOLS

Below are shown the symbols used:

- in the manual to recall the attention of the reader.
- on the instrument to recall the attention of the user.

	!!WARNING!! This operation must be made by specialized personnel
	CE CONFORMITY
	NOTES WHICH PARTICULARLY CONCERN THE USE OF THE INSTRUMENT IN A HAZARDOUS AREA
"TECH.MAN.REF."	Means that an advanced function is being described (therefore for the technical personnel) which will be further explained in the corresponding technical manual.

Normative references

The standards to which this manual refers are essential for its application. For dated standards, only the editions cited apply. For undated standards, the latest editions apply (including any amendment).

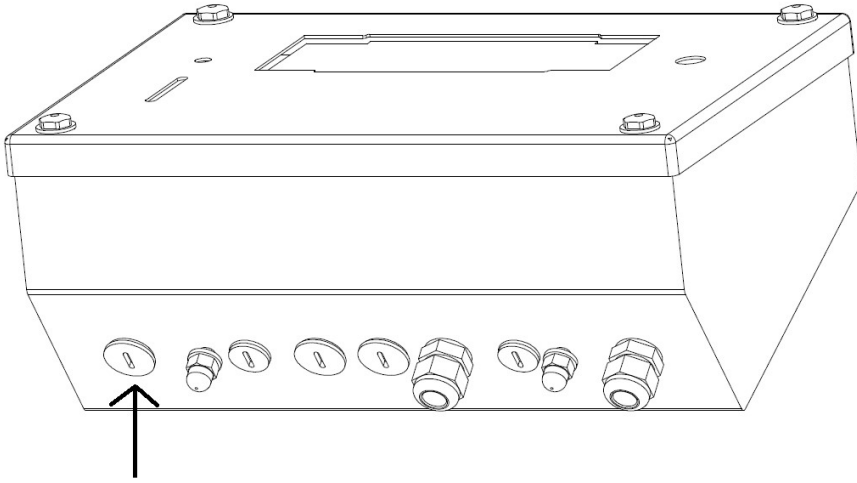


3. !! WARNINGS !!



- For weighing objects made up of light metals (aluminium, magnesium and titanium or their alloys, excluding the alloys with less than 10% of aluminium, the varnishes and coatings with less than 25% of aluminium in weight), the use of stainless steel forks is necessary. This scale has been designed to only weigh on pallets.
- The use of the instrument in hazardous areas require a special attention and special precautions during the use and maintenance
- The instrument has been approved for using in zones having precise features: do not install and use the instrument in environments different than those provided for.
- The installation, maintenance and repair of the instrument, must be made by qualified and authorized personnel.
- The safety of the explosion-proof system is guaranteed **only** if the system is installed, used and taken care of following the instructions given in this manual and in the technical manual (**TECH.MAN.REF.**).
- Only spare parts approved by Dini Argeo must be used.
- Check that the pallet truck scale is in good operating conditions.
- Be very careful when using the instrument; any sparks could cause an explosion.
- Close all the holes with caps and/or cable glands for inserting cables in the weight indicator case; close well all the cable glands with the relative appropriate cable section and with the wrench having the relative measurement (see the “Instructions for installation and maintenance in hazardous area” section). **The safety of the instrument depends on the IP protection degree. Do not tamper with or alter with the instrument’s seals (cable passings, i, locking screws tightening)**
- Avoid accumulations of dust. To avoid dust layers, the user must regularly clean the surface of the enclosure, considering that the maximum thickness allowed is < 5mm.
- **WARNING! ELECTROSTATIC HAZARD, CLEAN ONLY WITH DAMP CLOTHES OR ANTISTATIC PRODUCT.**
- Avoid accumulations of electrostatic charges; therefore, when using the instrument in a hazardous zone, the appropriate work clothing must be used by the operator or the maintenance person.
- Do not cover the instrument with coverings made by materials which could have electrostatic charge
- Do not paint
- It is forbidden to modify or repair the instrument with components not conforming to the declaration EU; this action compromises the safety of the instrument (**with a subsequent loss of the Ex approval**) and the nullification of the product warranty.
- It is forbidden to connect the instrument to modules not provided for by the declaration EU; this action compromises the safety of the instrument (**with a subsequent loss of the Ex approval**). Contact Dini Argeo srl for further information.
- Do not expose to sun rays

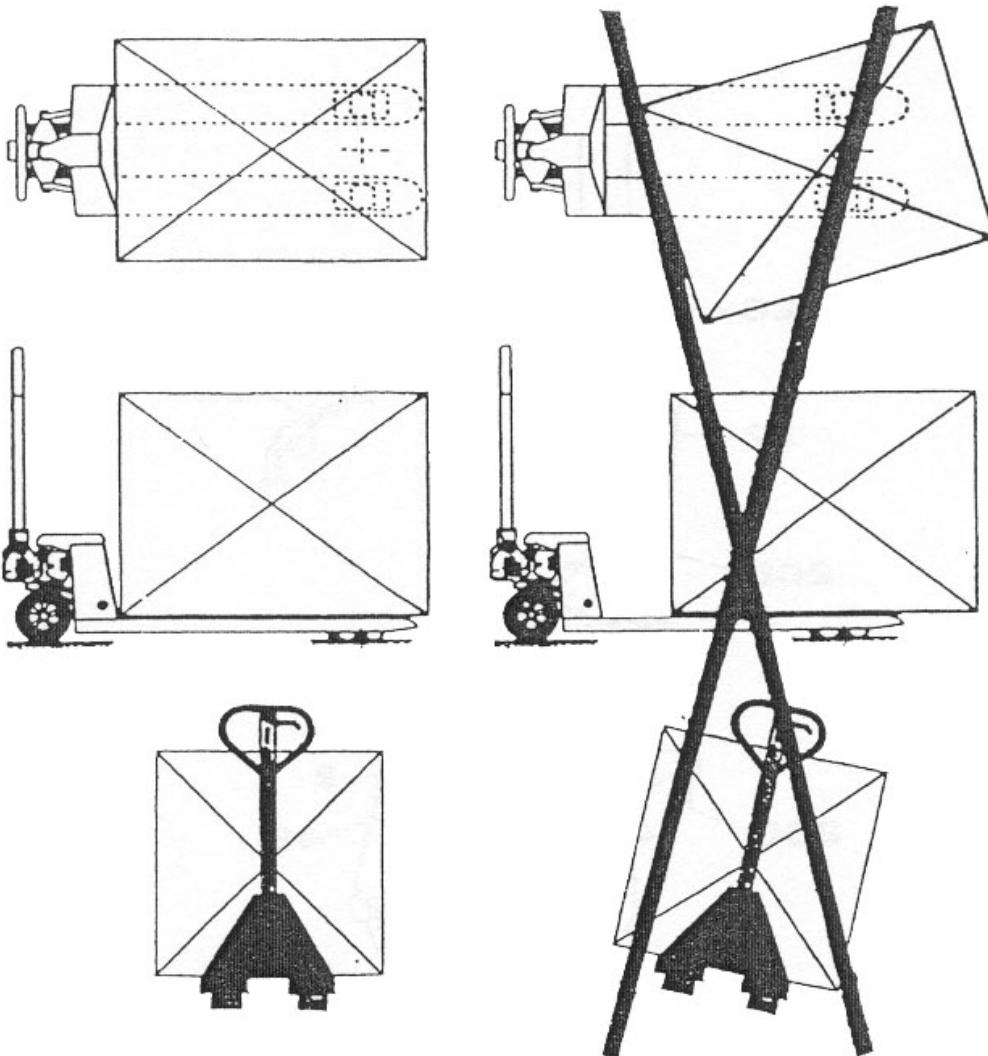
- NEVER load the scale beyond the maximum capacity shown on the weight indicator's plate.
- Use just the provided for battery; Contact Dini Argeo srl for further information.
- Recharge the battery **only** in a safe zone and use **just** the appropriate battery charger.
- Do not open, repair or modify a defective battery; this operation causes the loss of its safety. Dispose of the defective batteries.
- The TPWX3GD Atex pallet truck is an Atex assembly composed of the TPW Atex mechanical part, the DFWATEX3GD Atex weighing indicator and the Atex load cell.
- The TPWX3GDI/TPW20IEX3GD Atex pallet truck is an Atex assembly composed of the TPWX3GDI Atex mechanical part, the DFWATEX3GD Atex weighing indicator and the Atex load cell.
- Read and follow also the Atex manuals of the other parts: DFWATEX3GD Atex weight indicator manual, OBRF3GD radio module (optional), OBWIFI3GD radio module (optional) and the Atex load cell manual.
- Load only when forks are in the lowest position.
- To get the best weighing results, lift up the forks (after loaded) about 5-10 cm.
- It is not allowed to use the brake for slowing down, but only, and exclusively, for parking the already stopped pallet truck.
- Check daily the status of the bearings and the bushings of the cart wheels and if there are problems such as frictions, strange noises, overheating, offsetting of the wheels, etc, do not use the cart and contact the reseller for its repair
- The cart is grounded with a chain, check daily the presence of the grounding chain of the cart. Check daily that the chain is clean, so that it can make the contact for the grounding of the Pallet truck. Do not remove the chain. The grounding of the pallet truck is also possible by using Anti-Static wheels..
- In case of approved scale, the weighing has to be done on a EUR-EPAL 800x1200mm pallet (ref. Norms UIC 435-2 and UIC 435-4).
- The indicator must be controlled every 5 years by technical with experience in Atex standard EN 60079-0, EN 60079-31, EN 60079-15 for verify and restoration of Atex specifications (replacement of the seals and plastic parts, cable, cable glands, etc..)
- The instrument is equipped with a test port to enable testing of restricted breathing properties to be carried out after installation and during maintenance. (see figure 1).
- For information on the operating mode of the weigh indicator DFWATEX, see the operating mode manual's of the indicator DFW downloadable from the website www.diniargeo.com.
- This manual has been prepared with the maximum care, but any advice for improvements is most welcome.



TEST PORT

Figure 1

FIX THE LOAD ON THE PALLET, AS SHOWN IN THE DRAWING



4. MAIN TECHNICAL SPECIFICATIONS

POWER SUPPLY	With extractable battery (6 V –12 Ah), rechargeable in safe zone.
MAXIMUM POWER	5 VA
OPERATING TEMPERATURE	From -20 to +40 °C (14 to 104 °F) (with even temperature).
DISPLAYED DIVISIONS	10000e, 3X3000e for legal for trade use expandable to 800.000 for internal use (with minimum signal coming from the 1,6mV/V cell).
MAXIMUM INPUT SIGNAL	6 mV/V.
MINIMUM VOLTAGE PER DIVISION	0.3 μV (approved instrument); 0.03 μV (non approved instrument).
RESOLUTION IN CALCULATION	1'500'000 points (with signal in input equal to 3mV/V).
KEYBOARD	water resistant polycarbonate mechanical keys with tactile and acoustic feedback.
TARE FUNCTION	Available on entire range.
AUTO POWER OFF	Programmable from 1 to 255 minutes, or disinserted.
LOW BATTERY WARNING	“Low Batt “ will appear on the display
BATTERY RECHARGE TIME	12 hours (maximum).
LOAD CELL POWER SUPPLY	5Vdc ± 5%, 120Ma (max 8 cells of 350 Ohms)
LOAD CELL CONNECTIONS	1 connection with 6 wires and Remote Sense and 4 connections with 4 wires without Remote Sense.
PROTECTIVE CASE	IP68 Stainless Steel case available in desk or wall mount configurations.
SERIAL OUTPUTS	1 RS232/TTL input/output configurable for connection to PC/PLC or WEIGHT REPEATER. 1 RS232 input/output for connection to printer.

THE PARTS OF THE INSTRUMENT CONTAINING DANGEROUS ELECTRICAL TENSION ARE ISOLATED AND INACCESSIBLE TO THE USER UNLESS IT HAS BEEN DAMAGED, OPENED, OR ALTERED.

Ex 5. DESCRIPTION of the SYSTEM Ex

The TPWX3GD/TPW3GDI/TPW20IEX3GD Atex assemblies are devices for hazardous areas having presence of gas, designed and made according to the ATEX 2014/34/EU directive, group II category 3GD according to the EN 60079-0, EN 60079-15, EN 60079-31, EN 61241-1, EN 1127-1, EN 13463-1 e EN 13463-5 standards. The protection mode of the electronic weighing terminal (DFWATEX3GD) is Ex nR “limited breathing” and Ex tc IP68.

The weighing terminal is made up of a stainless steel case, containing various electronic circuits, a CPU central unit, LCD display, mechanical keyboard and power supply with extractable battery, rechargeable in safe zone.

The metallic structure parts are electrically connected and a sliding chain is provided for its grounding.

Ex 6. MARKINGS Ex

The marking of the assembly TPWX3GD/TPW3GDI/TPW20IEX3GD is

Ex II 3GD IIC T6 T130°C X

II	Group II (surface)
3	Category of the pallet truck
G	Explosive atmospheres caused by gas
D	Explosive atmospheres caused by dusts
IIC	Gas group
T6	Class of temperature of the pallet truck scale for gases
T130°C X	Maximum superficial temperature of the case for dusts



Hazardous zones		Category according to the 2014/34/EU directive	Equipment protection level (EPL)
Gases, hazes or vapours	Zone 0	1G	Ga
Gases, hazes or vapours	Zone 1	2G or 1G	Gb or Ga
Gases, hazes or vapours	Zone 2	3G or 2G, 1G	Gc or Gb, Ga
Powders	Zone 20	1D	Da
Powders	Zone 21	2D or 1D	Db or Dc
Powders	Zone 22	3D or 2D, 1D	Dc or Db, Da

7. INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE IN DANGEROUS AREA



The TPWX3GD/TPWX3GDI/TPW20IEX3GD Atex assemblies must be installed and maintained according to the applicable standards regarding the installations and maintenance in hazardous areas (different from the mines) classified for the presence of gas as ZONE 2, and/or the presence of dusts like ZONE 22, for example: EN 60079-14 / IEC 60079-14, EN 60079-17 / IEC 60079-17, EN 1127-1 and all the standards applicable in the zone and in the installation environment. Regarding the Atex protection type of the whole's elements, please refer to the relative manuals. The installation and maintenance must be executed in reference to the modes of protection "Ex nR", "Ex tc" ed "Ex nA".

- BP6ESTATEX3GD battery pack: substitute only with battery pack of the same type. The RECHARGE must be made only in SAFE ZONE and just with the DFWBPAL recharge device.
- The indicator is grounded through a chain. Do not remove the chain.
- Warning plate (JB4QA JUNCTION BOX)

The following warning label is shown on the junction box:

AVOID ACCUMULATION OF ELECTROSTATIC CHARGES.
CLEAN ONLY WITH WET CLOTHS OR ANTISTATIC PRODUCTS.

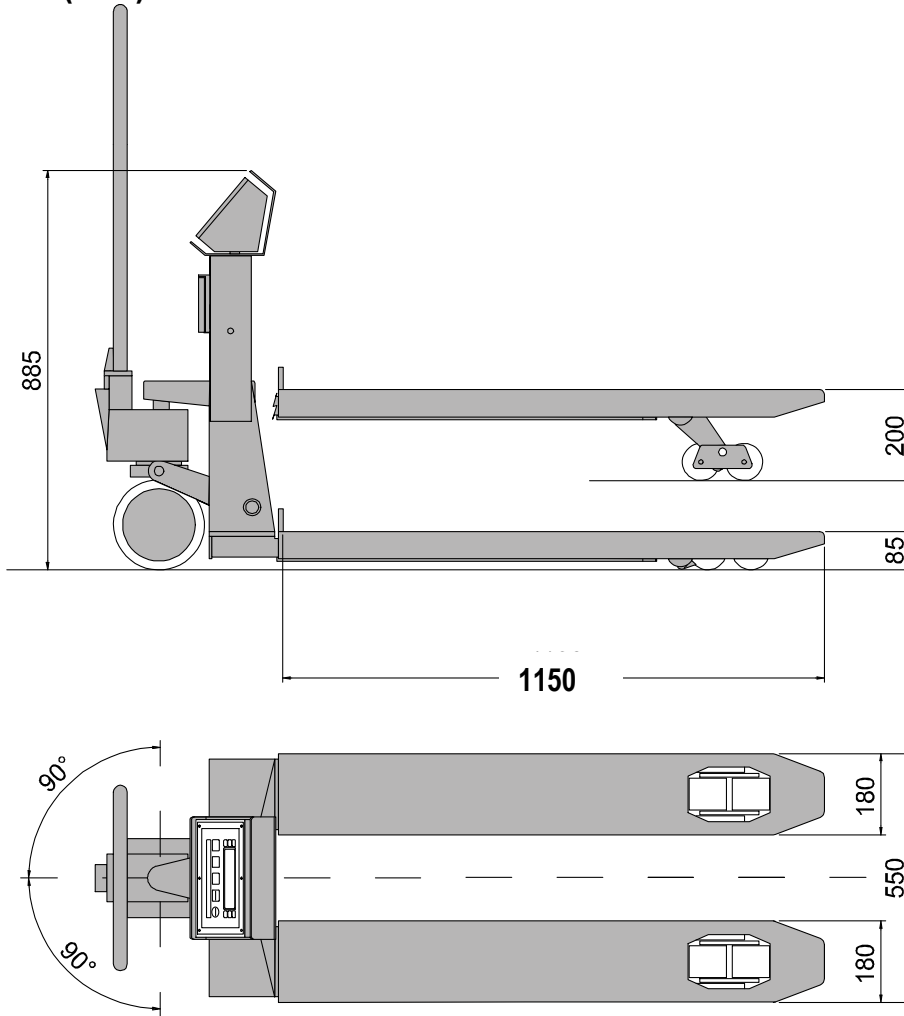
WARNING! :

- The maintenance must be made after removing the voltage/power supply of the instrument.

ANY RESPONSIBILITY FOR DAMAGES DERIVING BY THE UNOBSERVANCE OF THESE WARNINGS IS DECLINED

PALLET TRUCK

8. DIMENSIONS (mm)



9. OPERATING INSTRUCTIONS

A pallet truck scale is an electronic weighing system directly installed on a pallet truck.

Must be used on even solid surfaces and driven always in the normal position.

Before loading, check the maximum load allowed by the pallet truck scale in use.

(refer to instruction plate X on the side of the pallet truck – reference drawing B).

The rudder has a double function, direction control and hydraulic lifting.

N.B. Lift up or pull down only when the pallet truck scale is in a standing still position.

N.B. Load only when forks are in the lowest position.

CONTROLS

The lever on the right side of the rudder can be put in 3 positions, like it shows on the plate "Y" in figure B.

POS. 1 – centre = **TRANSPORT** The rudder is completely free to allow driving control.

POS. 2 – down = **LIFT UP** By moving the lever downward the lifting mechanism is activated.

Pushing down the rudder will cause the load to lift up.

POS. 3 – up = **PULL DOWN** By moving the lever upward the load will descend. When the lever is quickly moved upward, a special valve controls the descending speed of the load.

RUDDER ASSEMBLY (figure C)

1. Lock rudder (228) to hydraulic pump (200) with screws (27) that you can find in the box.

2. Lock chain (208) to lift down pedal (50). Rotate pedal to simplify the connection.

DESCENDING SPEED REGULATION (figure C)

1. Lift up forks to maximum height.
2. Set right lever to POS. 1 (centre).
3. Make sure the rudder (200) is in a vertical position.
4. Unscrew bolt (2) and turn clockwise the adjustable screw (48) until the forks **start** to descend.
5. Turn adjustable screw 1 ½ turn counter clockwise, then screw bolt (2).
6. You should be able to obtain a descending movement from every position of the rudder.

PARKING BRAKE (OPTIONAL)

If provided for, the rear wheel brake system can be fitted with a parking brake.

CAREFUL: use the brake only for parking the pallet truck and not to slow it down.

MAINTENANCE WARNINGS

Before you perform any service, make sure the pallet truck is in a condition of safety.

Never discharge any residue without taking the necessary environmental precautions.

Only perform the service described in this manual. Maintenance and repair jobs not included in this manual must be performed by authorised personnel only.

Serious injury could result from service or maintenance performed by unqualified personnel.

Never alter the safety level of the machine. Always use identical replacement parts.

Never remove or hide in anyway instruction plates and stickers.

Do not modify the pallet truck.

Do not use inflammable cleaners. Do not use direct jets of water. Do not pour liquids on the indicator.

OIL LEVEL (figure D)

Check oil level every 6 months. Only use hydraulic oil. No engine oil or brake oil.

Oil viscosity 30 Cst at 40°C . Quantity 0.3 lt.

With the fork in the lower position follow these steps:

1. Remove cover (204), o-ring (11) and cap (202).
2. If necessary add oil. Maximum filling level is 200mm below top of tank.
3. Turn on the pump to get air out of the hydraulic circuit.
4. Put cap (202), o-ring (11) and cover (204) back.

DAILY MAINTENANCE

To keep the pallet truck scale in good operating condition, **the operator must** perform daily these checkpoints:

- Check overall conditions.
- Check weighing scale.
- Check printer (if installed).
- Check pump.
- Check rollers and wheels.

SCHEDULED MAINTENANCE (MAINTENANCE PERFORMED BY QUALIFIED PERSONNEL ONLY)

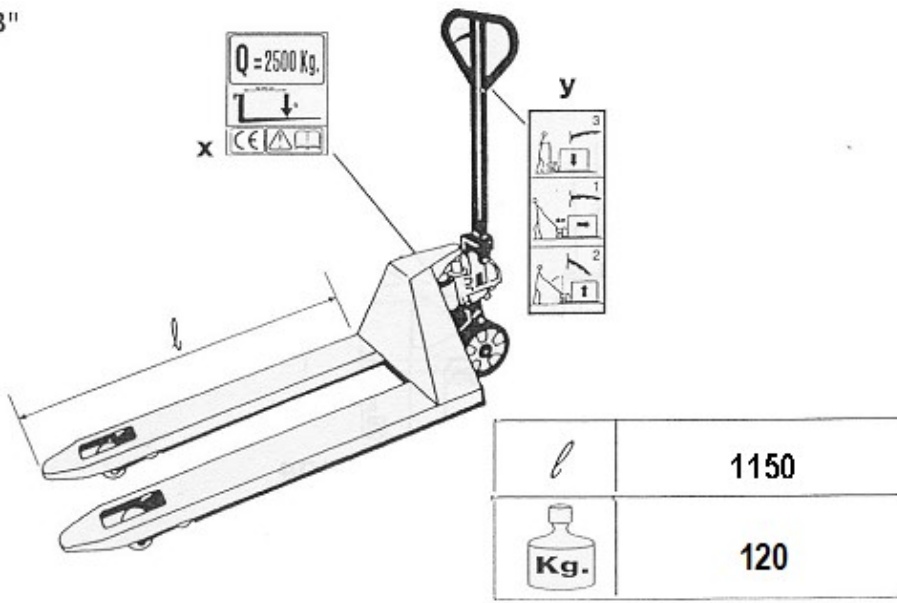
Please find below the programmed maintenance operations to be made by specialised personnel. Remember that before starting the maintenance one should place the cart on a flat surface.

- Make sure to put the pallet truck scale on a flat and solid surface.
- Check that nothing is blocking the rollers.
- Grease rollers and wheels bearings: the lubrication with lithium grease is foreseen for every 6 months.
- Grease control lever on rudder.
- Check oil every six months. Fill up if necessary with IP46 hydraulic oil.
N.B. If oil needs to be replaced, follow the necessary precaution and law requirements for the disposal of the exhausted oil.
Replace rollers and wheels when necessary.
- The foreseen life of the bearings is the following:
 - For applications with a single roller: 900 hours of use;
 - For applications with double roller: 9000 hours of use;Once reached this time period one should substitute these with bearing of the same model (SKF6204Z).

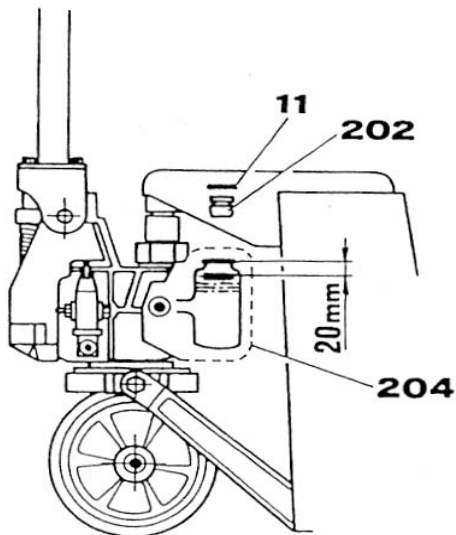
For any questions or problems check with an Authorised service Centre.

10. REFERENCE DRAWINGS

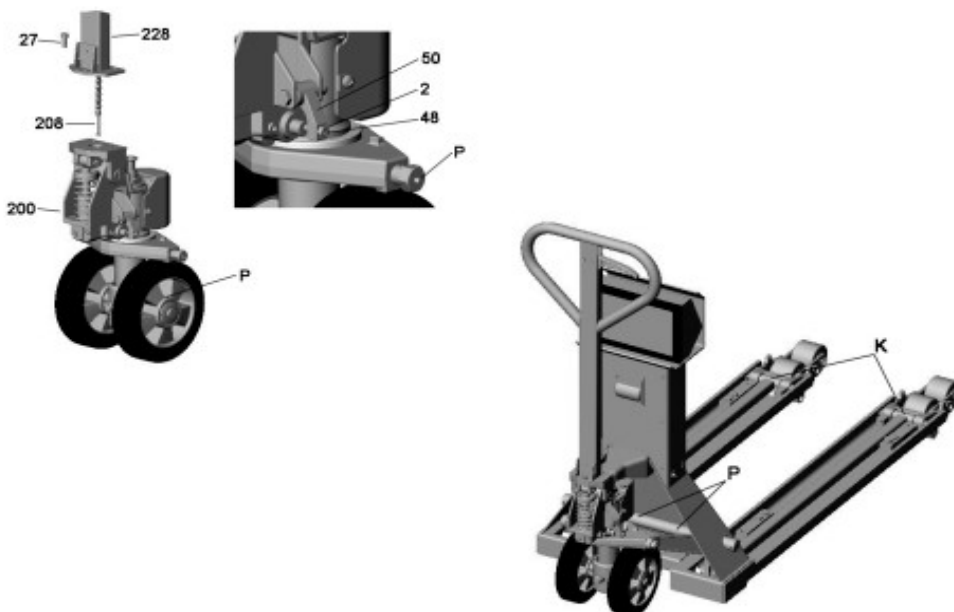
B''



C''



D''



LUBRIFICATION POINTS

Ref. "K" fig. D needs silicon oil for food industry, expiry of 1 month.

Ref. "P" fig. D needs silicon grease for food industry, expiry of 2 months.



11. INSTRUMENT POWER SUPPLY



The instruments are powered with a 6Vdc extractable battery, rechargeable in safe zone.

NOTE: *It is advisable to completely recharge the battery (12 hours) in the first installation of the instrument; we RECOMMEND disconnecting the battery if the instrument is not going to be used for more than 30 days.*

BATTERY CHARACTERISTICS

Material	LEAD
Power	12 Ah
Output	6 V

THE BATTERY MUST ONLY BE REPLACED WITH AN ORIGINAL FROM THE MANUFACTURER.



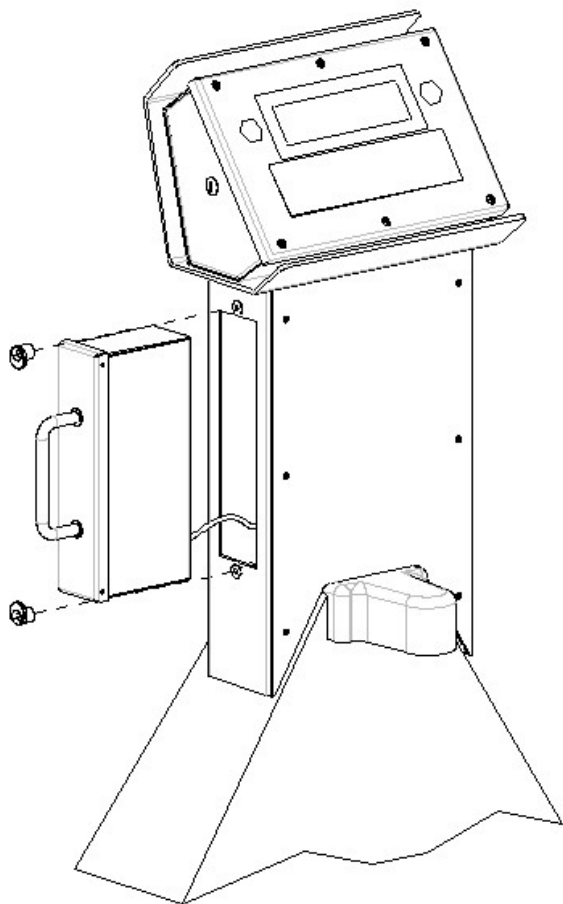
WARNINGS



- THE BATTERY MUST BE CONNECTED, DISCONNECTED, AND RECHARGED ONLY IN A SAFE ZONE
- WE ADVISED TO COMPLETELY CHARGE THE BATTERY BEFORE INSTALLING IT IN THE INSTRUMENT.
- THE BATTERY CHARGER MUST ALWAYS BE USED IN A SAFE AREA.
- THE BATTERY CHARGER MUST ONLY BY POWERED BY THE SUPPLIED MAINS ADAPTER.
- CHECK THE STATUS OF THE INDICATOR/BATTERY CONNECTOR EVERY TIME ONE DISCONNECT/CONNECT IT AND, IF NECESSARY, REPLACE IT TO REQUIRE AT DINI ARGEO
- IN THE CONNECTION / DISCONNECTION OF THE BATTERY, BE CAREFUL NOT TO DROP THE BATTERY TO THE GROUND WITH THE CONNECTOR ATTACHED.
- USE ONLY WITH DINI ARGEO ATEX 3GD PALLET TRUCK SCALE
- REPLACE ONLY WITH THE SAME TYPE OF BATTERY PACK TO REQUIRE AT DINI ARGEO

ANY RESPONSIBILITY FOR DAMAGES DERIVING BY THE UNOBSERVANCE OF THESE WARNINGS IS DECLINED

11.1 BATTERY INSTALLATION



To remove the battery from the column one should:

- 1) Turn and loosen the battery stops indicated in the figure
- 2) remove the battery connector from the power supply cable

To install the battery in the column one should:

- 1) connect the battery connector to the power supply cable
- 2) Install and turn the battery stops indicated in the figure

DECLARATION OF EU CONFORMITY

We **DINI ARGEO Srl,**
Via della Fisica, 20
41042 Spezzano di Fiorano - MODENA

Declare under our responsibility that the **TPWX3GD/TPWX3GDI/TPW20IEX3GD** product is made up of:

DFWATEX3GD electronic weighing terminal (AI3GD01 Tech. File)
and relative **BP6ESTATEX3GD** battery (AI3GD01 Tech. File)
ATEX 3GD OBRF3GD or **OBWIFI3GD** radio frequency module (optional) (AI3GD01 Tech. File)
Mechanical part TPW 3GD series pallet truck scale (Tech. File AETF01)
Dini Argeo Atex load cells (CEC 07 ATEX 093 X rev2 CE type certificate nr)
TPWRAS Antistatic Wheels for steering (optional)

Described in this declaration conform to the following directives:

- **EMC 2014/30/EU Directive**
- **ATEX 2014/34/EU Directive**
- **2014/35/EU Directive**
- **2014/31/EU Directive** (MODULE B: EN 45501 / 1998 – MODULE D: EN 45501 / 2015) (*)

The conformity is confirmed by the observance of the following standards:

IEC 60079-0:2011+IS1:2013 / EN 60079-0:2012+A11:2013 EN 61000-6-2:2005, EN 61000-6-4:2007+A1:2011,
IEC 60079-15:2010 / EN 60079-15:2010 EN 61326-1:2013, EN 55011:2009+:2010
IEC 60079-31:2013 / EN 60079-31:2014 EN 61010-1:2010
EN 1127-1:2011
EN 13463-1:2009
EN 13463-5:2011

(*) if "M" mark is applied.

Markings:

CE  **II 3GD IIC T6 T130°C X**

Spezzano di Fiorano, 04/12/2017

Signature
Marco Bertoni
President



WARRANTY

The TWO YEARS warranty period begins on the day the instrument is delivered. It includes spare parts and labour repair at no charge if the INSTRUMENT IS RETURNED prepaid to the DEALER'S PLACE OF BUSINESS. Warranty covers all defects NOT attributable to the Customer (so are not included in the warranty, failures resulting from improper use) and NOT caused during transport.

If on site service is requested (or necessary), for any reason, where the instrument is used, the Customer will pay for all of the service technician's costs: travel time and expenses plus room and board (if any).

the Customer pays for the transport costs (both ways), if the instrument is shipped to DEALER or manufacturer for repair.

The WARRANTY is VOIDED if any of the following occurs: repairs or attempted repairs are made by unauthorised personnel, connected to equipment installed by others, or is incorrectly connected to the power supply, or instrument has defects or damage due to carelessness or failure to follow the guidelines in this instruction manual.

This warranty DOES NOT provide for any compensation for losses or damages incurred by the Customer due to complete or partial failure of instruments, even during the warranty period.

AUTHORIZED SERVICE CENTRE STAMP

