

turborex

pneumatic brake

TXP 180 | TXP 180 HD

TSP 180 | TSP 180 HD



operating instructions



This product complies with the Directive 2006/42/CE

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MANTXP180ENA4V0425

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introduction

The following manual is intended for installers and users of the product and provides descriptions and explanations on the Turborex brake in its standard version (TXP), in the Selematic version (TSP)) or in its High Dissipation series (TXP/HD – TSP/HD) and on all its parts and/or options that can be supplied by Renova.

Inside you will find:

- Unpacking instructions for our TXP - TXP/HD - TSP - TSP/HD brakes
- Instructions for assembly and storage of our brakes and related maintenance
- Electric/pneumatic connections of our brakes
- Instructions for replacing the component parts of our brakes and various kits
- Assembly instructions for the various optionals that Renova can supply for our Turborex brakes
- Dimensions and technical data of our brakes

Since the product and Renova itself are constantly changing in order to improve the quality and performance of our products, Renova reserves the right to update the manuals without obligation to update products already marketed and/or any previous manuals.

warnings

CAREFULLY READ THE INSTRUCTIONS AND WARNINGS IN THIS MANUAL AND KEEP THEM FOR FURTHER REFERENCE FOR THE ENTIRE LIFE OF THE PRODUCT. IN THIS MANUAL THERE ARE IMPORTANT INSTRUCTIONS RELATED TO OPERATION AND SAFETY FOR INSTALLING, USE AND MAINTENANCE OF THE PRODUCT.

WE STRONGLY RECOMMEND THAT THE DEVICE BE ASSEMBLED AND INSPECTED BY A QUALIFIED TECHNICAL STAFF IN ORDER TO AVOID ANY RISK OF DAMAGE TO PERSONS OR TO THE PRODUCT ITSELF.

IN THE EVENT OF ANY BREAKAGE OF THE PRODUCT, THE OPERATOR SHOULD BE AWARE OF THIS MANUAL AND THE INFORMATION INSIDE IT, KNOWING AND KNOWING TO AVOID ANY RISKS AND / OR DANGERS, BEFORE AN INTERVENTION BY OUR SPECIALIZED TECHNICIAN.

assistance

Renova is worldwide present with Agents and Distributors.

To contact Renova service, please, write to: support@renova-srl.com

description

The Turborex TXP - TXP/HD - TSP – TSP/HD brakes, made entirely by Renova in its factory, are mainly designed for use in the field of tension control of unwinding materials, an application that requires excellent heat dissipation and great sensitivity. Tension control on core, which by varying the diameter, requires a continuous variation of the braking parameters to guarantee the quality of production. A brake with excellent cooling capacity was thus created to ensure constant performance during its work, infinitesimal wear of the friction elements with consequent practically zero emission of fine dust to protect the health of the personnel present next to the machine. Maintenance costs are therefore very low and limited over the years. Particular attention was then paid to the flexibility of the brake in order to offer performance adaptable to the various types of processing. There are thus numerous possibilities to customize the brake by varying the number of pistons that operate it, their size, the number of discs, the material of the friction pads and the adoption of the Selematic system to enhance its sensitivity to low torques.



THIS COMPONENT IS DESIGNED TO BE INCORPORATED IN A MACHINE AND CANNOT WORK INDEPENDENTLY.

IT IS FORBIDDEN TO USE IT IF ITS USE ON THE MACHINE DOES NOT COMPLY WITH THE REGULATIONS IN FORCE.

functioning

The brake is activated by a series of pneumatic actuators (cylinder + piston), mounted uniformly in the cover; the number can vary from 2 to 6 according to the needs of the couple. These actuators (which we will call from now on simply pistons) can be connected all together or even in groups (2 + 4) (2 + 2) (3+3) in order to diversify the torque according to the type of use: voltage control braking and emergency braking, braking of papers with different weights or reel sizes, etc.

The pistons compress the pressure disc, used as a wear indicator, which in turn presses a series of steel discs, which slide on teeth, against brake linings mounted on supports that slide on 4 guides.

A series of springs separates the discs in absence of pressure, eliminating residual torques that can hinder the positioning of the coils or other.

The TS version (Turborex Selematic) is instead the more “flexible” version compared to our normal Turborex. Constructively identical, in this brake the only variant lies in the springs. While the Turborex has 16 identical springs (12 for the HD version), the Selematic springs are designed to have different stiffnesses and resistances, from the hardest located between the first disc and lining plate, to the softer one, located near the last record. This involves a wider use than the standard Turborex, managing to adapt to non-continuous work changes. The Turborex Selematic, therefore, is recommended in particular uses where there are changes in work, pressure, etc... while for continuous and uniform uses, we recommend the standard Turborex.

The heat generated by the action of the brake is disposed of by 2 peripheral fans, one under pressure and the other in suction, which force the air to pass through the disc pack, cool the surfaces and maintain constant working temperatures.

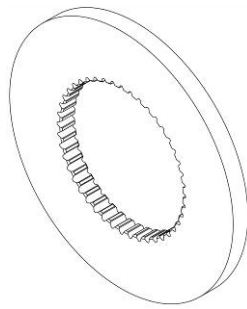


The maximum operating pressure of our TXP - TXP/HD - TSP - TSP/HD brakes is 6 Bar. Renova strongly advises against using a higher pressure in order to avoid breakdowns and malfunctions harmful to the machine and/or to the 'operator. We also remind you that incorrect use of the brake does not fall within our warranty coverage guidelines.

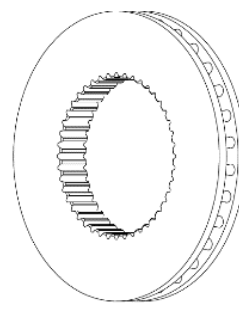
high dissipation series version

The High Dissipation series version (abbreviated to HD) has now become the Renova standard. The operation of these brakes is identical to its standard version, but they differ, as indicated by the name of the brake itself, as they possess a high working heat dissipation thanks to the innovative design of our self-ventilating central discs.

These discs, with a different profile from the standard ones, provide greater heat dissipation, making the brake more performing.



Standard disk TX



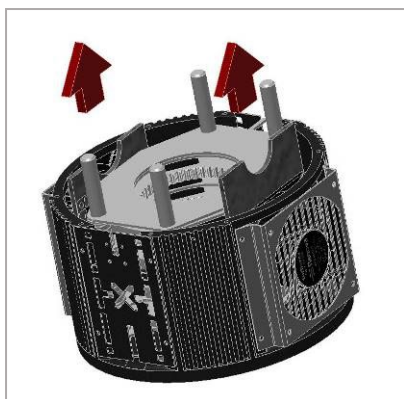
Self-venting disk TX/HD

This innovative design also allows the use of one less disc than the standard version of the brake, making the brake itself lighter and more efficient.

disassembly, inspection, and storage

Check that the packaging has not been damaged during transport.

Check that the following details are included in the package and correspond to the brake ordered whose code is mentioned on the label stuck on the brake casing.



Remove the transport guards from the fans.

Also remove the protection on the sensors in models with tachometer, taking care not to damage the sensor cable.



ATTENTION:

If this requirement is neglected, the ventilation of the brake is compromised and the consequent overheating can damage various components such as brake linings, central discs, electric cables.

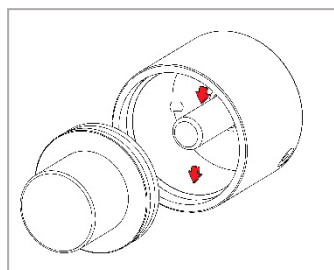


Renova guarantees a detailed dimensional and quality control on all the parts that make up our TX-TX / HD brake. We also guarantee total control over any electrical part present in the chosen brake configuration, 100% tested by our operators during the brake assembly phase.

If the brake is stored in stock, leave the brake in its original packaging. Despite the galvanic protections on the metal parts, very humid or aggressive environments can over time affect the surfaces of the hub, central discs and sliding guides and inflate the friction pads.

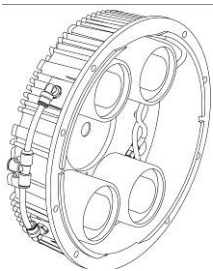
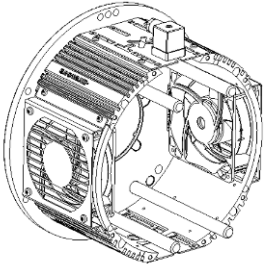
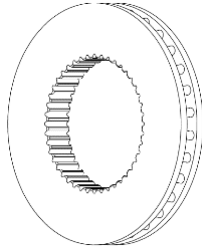
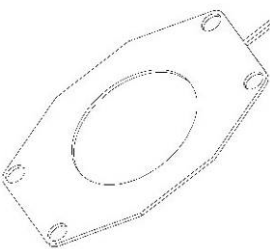
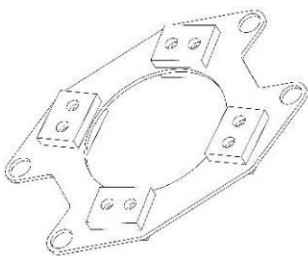
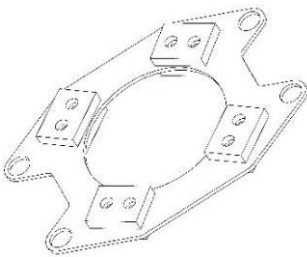
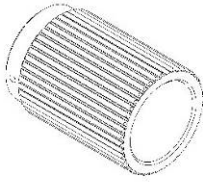
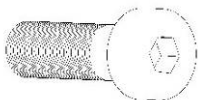
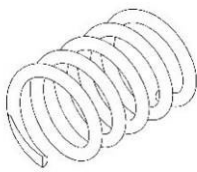
If the brake is stored for a long time, the film of grease that lubricates the movement of the piston can dry out.

It is therefore advisable to relubricate the internal surfaces of the cylinder and the central guide with a very thin film of lubricating, water-repellent, anti-adhesive silicone grease specific for metal-rubber. Be careful not to use excessive amounts of grease which, reaching the brake linings, affect their performance.



package contents

Turborex HD version (no optional)

Cover with assembled and wired pistons	1		Housing with 4 guides and two carters with fans assembled and connected to the connector	1	
Central discs design HD	3		Pressure disk	1	
Double plate holder	2		Single plate holder	2	
Hub If purchased by the customer	1		Allen screw M6	8	
Soft wire $\varnothing$ same if in standard TX version. Soft wire $\varnothing$ different if Selematic version	12				

assembly procedures

Hub mounting on the machine shoulder

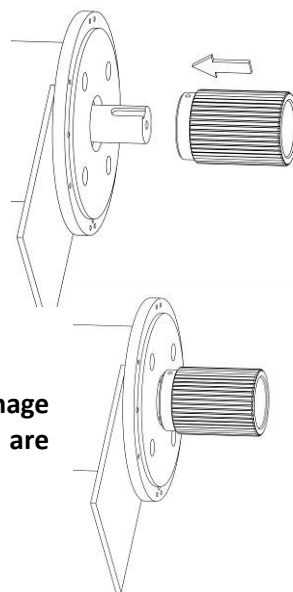
Check that the mounting dimensions on the frame and shaft match those of the brake.

- Check that there is no grease or oil from faulty shaft bearing seals.
- Fit the hub up to the support surface of the brake body.
- Axially block the hub with a screw threaded ring nut or Seeger or screw/washer in the shaft head.



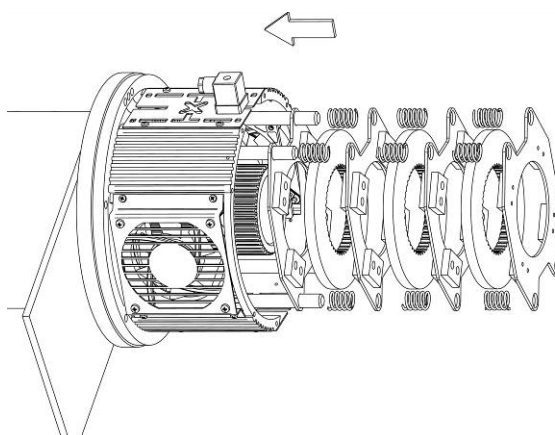
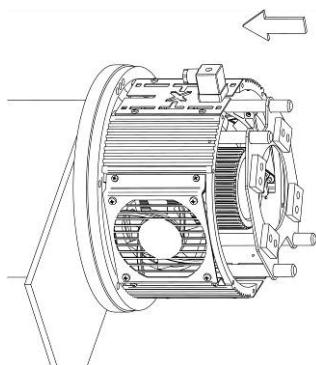
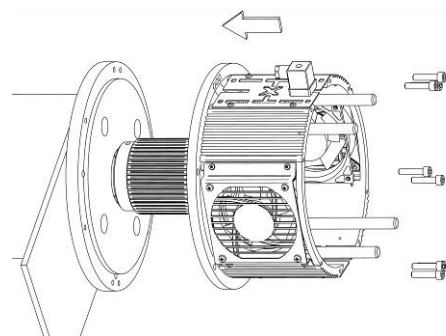
ATTENTION:

A badly locked hub can slide on the shaft and by rotating damage the pistons with consequent detachment of fragments that are thrown.

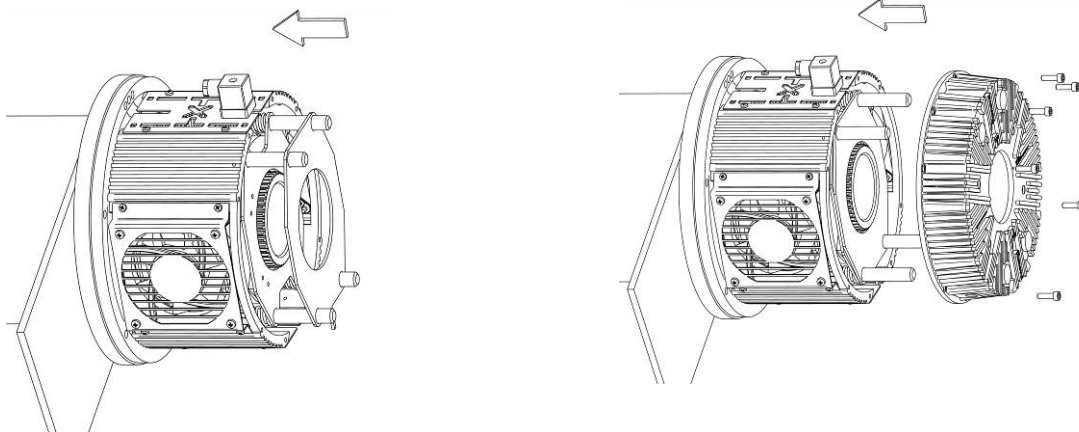


Brake mounting:

- Open the brake by unscrewing the 8 screws on the cover and remove the discs and springs.
- Fit the brake body centering it on its seat and positioning the fans horizontally to prevent them sucking dirt from the floor
- Secure it firmly with screws with tightening torque suitable for aluminum alloys (M8>15Nm, M10>20Nm).
- Insert the first single shoe holder plate onto the guides with the pads facing the operator.
- Mount the first set of 4 springs on the guides, the central disk, the double shoe holder disk.
- Continue with the other springs, central discs and staple holder plates in sequence, then mount the last single staple holder disk with the pads facing inside of the brake.

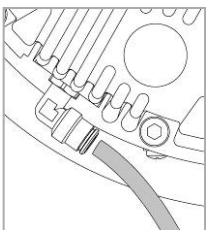


- Fit the pressure disk.
- Press the disk pack to check that it moves freely and with a springy motion.
- Fit the cover by aligning the holes with the guides and close it with a slight pressure.
Then tighten the 8 screws that connect it to the brake body with a tightening torque suitable for the aluminium alloy.

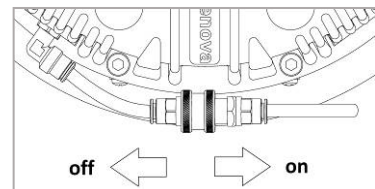


Once all the steps listed have been completed, the mechanical assembly is complete and the pneumatic and electrical connections must be made to make the brake operational.

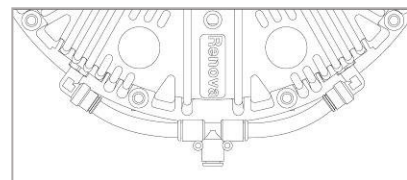
pneumatic connection procedures



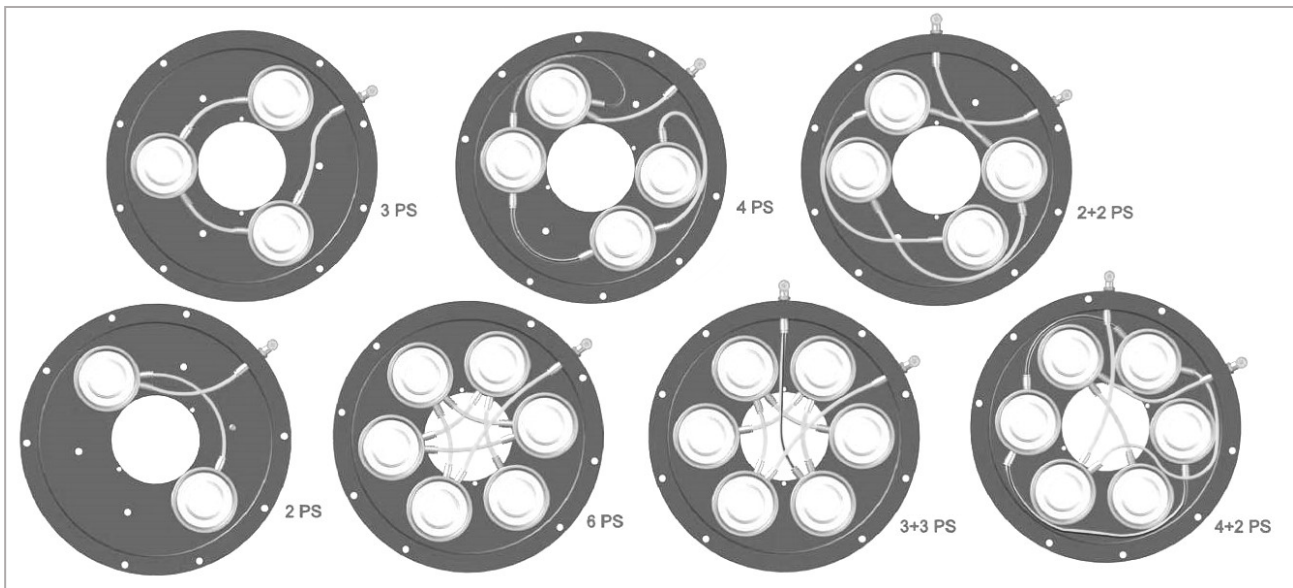
- Connect the air supply hose to the fitting or fittings in the brake cover.
Depending on the number of pistons mounted on the brake and the connection system, there may be several entries which connect separately groups of pistons.



- If there is a manual selection valve for feeding to the piston group, position it open.
- If there is a different differentiated power supply system, such as two solenoid valves that feed groups of pistons, position it in the opening position.
- Bring the brake to maximum pressure (6 bar) and check that there are no load drops or hisses that signal air leaks.
- In the case of drives connected to regulation system with electro pneumatic transducers or proportional valves, etc. controlled by PLC or computer, check that at signal "0" there is 0 bar of pressure and the internal brake discs are completely free to turn.
- The maximum recommended pressure is 6 bar.

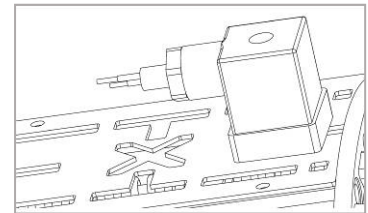


Possible configurations of the pistons present in the cover:



electrical connection procedures

- Connect the power supply wires of the fans and the rev counter (if present) to the connector in the side brake casing, taking care of the polarity. The electronic card that controls the fans requires this prescription. The same attention also applies to the connections of the tachometer sensor in the models that provide it; in addition to the power contacts, there is also the pulsating signal that will be processed by the PLC.



- Some types of double-pole or multi-pole connectors are used which are mounted according to the brake equipment or customer specifications.

tripolar code CNTH100P3

EN17530-803 three-pole connector

Cable diameter 2,5 mm

Rated voltage max 300 V AC

Maximum range 16 A

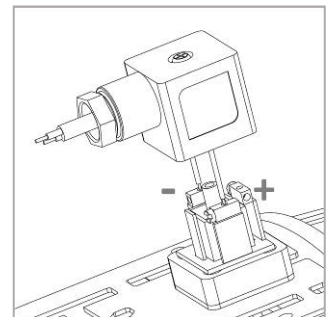
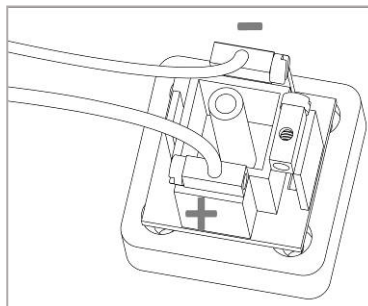
C-VDE insulation

Degree of protection IP 65

Screw connection

Used for fans connection

- Connect positive pole 90° times from neutral
- Connect negative pole opposite connector



Box/mammut code CNTH100F0

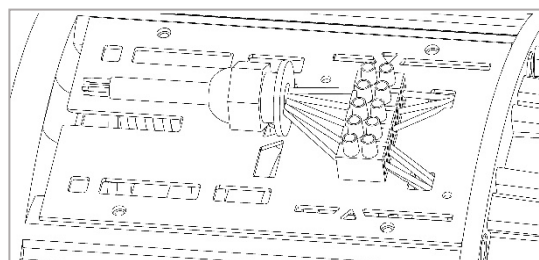
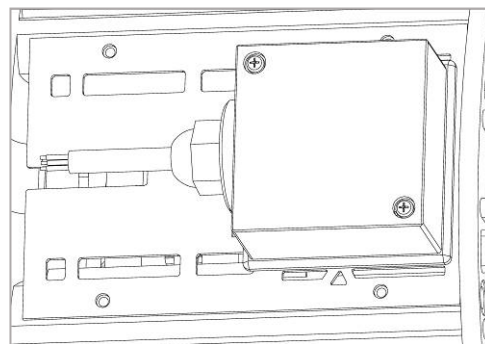
Multipole connector
Cable diameter 2,5 mm
Max rated voltage 380 V AC
Maximum range 2 A
Screw connection
Degree of protection IP 54

Used to connect fans, tachometer sensor (in some applications even double) and other sensors such as the temperature sensor.

Diagram 1 shows the inlet connections from the fans and the rev counter; out to the wires of the multipolar cable.
Diagram 2 shows the inlet connections from the fans and 2 rev counter sensors; out to wires of the multipolar cable.

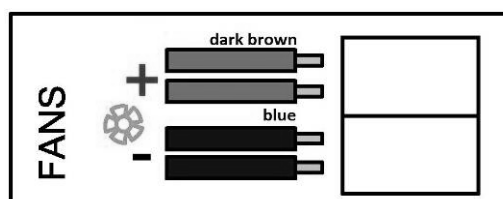
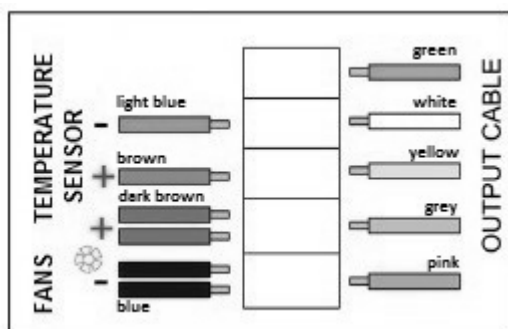
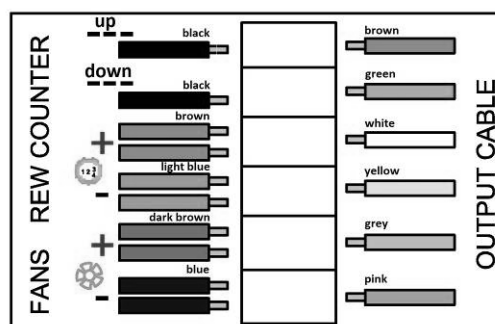
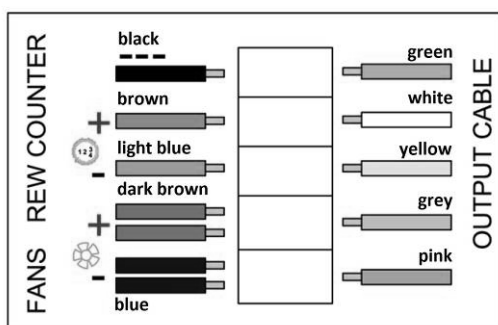
Diagram 3 shows the incoming connections from the fans and the temperature sensor; out to the wires of the multipolar cable.

Diagram 4 shows the connections to the fans only.



The advantage of this type of connector is the absence, in case of failure and therefore replacement of the fans or the tachometer sensor, of welded contacts that are more complicated to make and which can give to cold welding.

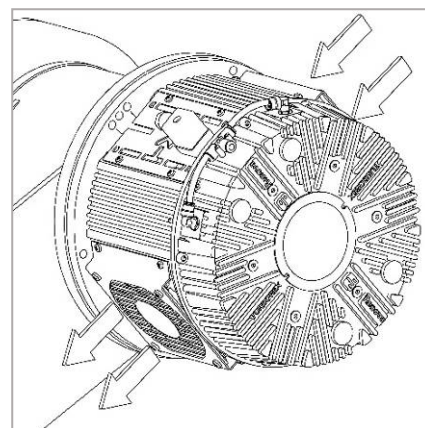
electrical connection diagrams



fans

- After making the various connections, turn on the fans.
The voltage of the standards fans is 24 VDC.

At the request of customers, we sometimes mount voltage of 110 VAC and 220 VAC which we do not recommended because they are potentially dangerous for the people working on the brake.
It is preferable to use a transformer that we can supply as an option.
The fans normally used are divided into *standard* and *hp (high power)* with enhanced cooling characteristics.



Type	Voltage	Power	Sound level	Renova code
Standard	24 V CC	11 W	57 dB(A)	VT12038024
High performance HP4	24 V CC	30 W	67 dB(A)	VT120380H4
High performance HP6	24 V CC	65 W	73 dB(A)	VT120380H6
Standard 110 V	110 V AC	20 W	51 dB(A)	VT12038110
Standard 220 V	220 V AC	19 W	47 dB(A)	VT12038220

Fans dimensions: 120mm x 120mm x 38mm.

- Check that the fans are working correctly, one in suction and the opposite in pressure

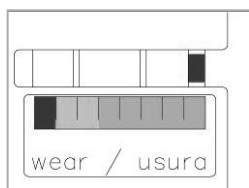
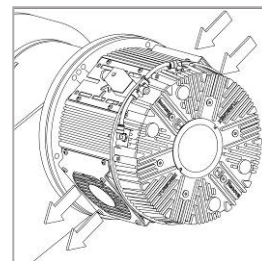
Once all the mechanical, pneumatic and electrical steps have been carried out, the brake is ready for use.

maintenance instructions

Our TX - TX HD brakes require periodic maintenance as they have parts subject to wear. In order to avoid problems on the brake and to corrupt its operation, below you will find the checks to be carried out on our brakes and the replacement procedures if something should be changed.

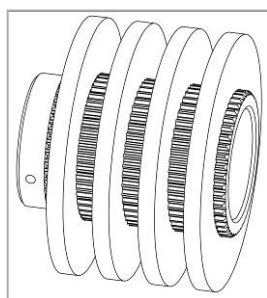
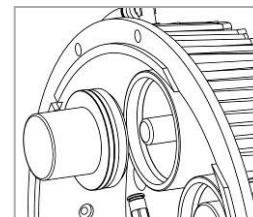
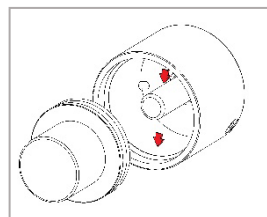
maintenance

- Check when the systems are switched on or in any case on a daily basis that the suction and pressure fans are working correctly. Operation of the brake without sufficient ventilation can lead to excessive overheating which seriously damages brake linings, fans and other components.



- Check the wear indicator on the side casing every month. If the indicator is positioned in the yellow area, check the state of the linings and if some are more worn than others, swap their position. If the indicator is positioned in the red area it is necessary to replace them.

- Check every 3 months that the pistons are not full of dust or dirt. Clean the sliding surface with compressed air. Check that the pistons slide freely. If not, spread a thin film of lubricating, water-repellent, anti-adhesive silicone grease specific for metal-rubber, the internal surfaces of the cylinder and the guide. Also check the good condition of the lip seals. If not, replace them.



- Check every 3 months that there are no lumps of dirt between the tothing of the hub and the discs that could obstruct their free sliding. If not, clean them with a wire brush.



ATTENTION:

Before working on the brake, always disconnect the power supply to the fans. The moving blades can be dangerous for the operator's fingers.

spare kit (replacements)

replacement of the ferrodic plate

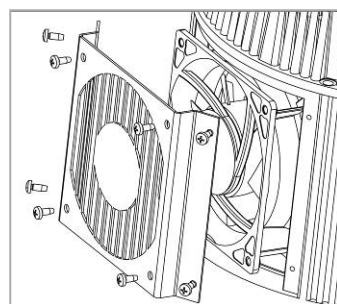
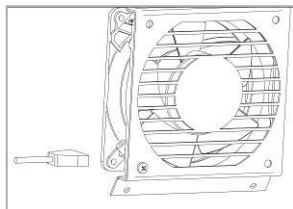
- Remove the power supply to the fans because the moving blades can be dangerous for the operator's fingers.
- Remove the pneumatic power supply.
- Open the brake and remove the old brake pads.
- Check that the 4 shoe-holder plates do not show any lesions that could affect the sliding of the brake lining discs. If necessary, replace the guides
- Fit the new plates on the brake according to the assembly instructions described above (ref. Pag. 9/10)

replacement of the central discs

- Remove the power supply to the fans because the moving blades can be dangerous for the operator's fingers.
- Remove the air supply.
- Open the brake and remove the old central discs.
- Check that the hub toothing does not show any cracks that could affect the free sliding of the discs. If necessary, replace the hub. If there is dirt, clean with a wire brush
- Fit the new central discs on the brake according to the assembly instructions described above (ref. Pag. 9/10)

replacement of the fans

- Remove the power supply to the fans because the moving blades can be dangerous for the operator's fingers.
- Remove the pneumatic power supply.
- Disassemble the carter of the fan to be replaced and then the fan **taking note of the direction of assembly** that characterizes the function of air suction or compression.
- Disconnect the plug located on the side of the fan.
- Mount the new fan on the carter and connect it to the flying socket.
- Secure the carter with the screws on the brake body.
- Power up the fan and check that it is working properly

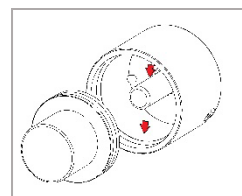
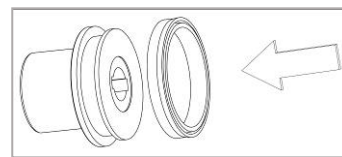


Note: some types of fans do not have a flying socket that cuts the connection wire. In this case, removing the fan, remove the wire up to the electrical connector and then reinsert that of the new fan. It is then necessary to reconnect the wire to the connector with locking

replacement of the pistons

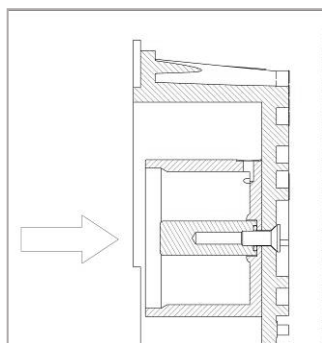
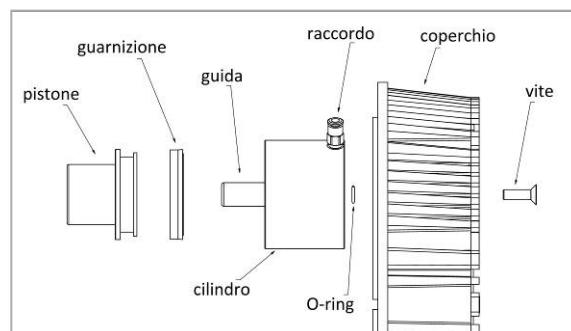
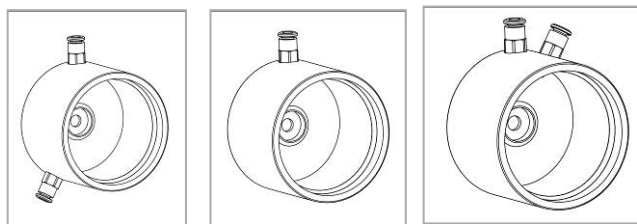
Piston lip seal replacement

- Remove the piston from the cylinder, if it is stuck, feed the brake at very low pressure until the piston comes out of its seat
- Remove the damaged gasket and replace it carefully so as not to cut it on the edge of the groove.
- Check that the internal surface of the cylinder is regular without marks or scoring.
- Spread a thin film of lubricating, **water-repellent, anti-adhesive silicone grease specific for metal-rubber**, on the internal surfaces cylinder and guide.
- Put the piston back in its seat.
- Check the piston seal at maximum pressure.

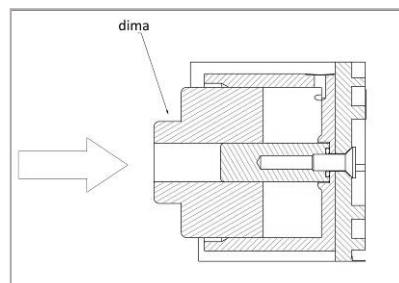


Piston and cylinder replacement

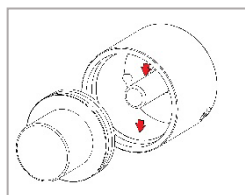
- Disconnect the air hose from the connector or connectors. Depending on the position inside the cover, there may be three types of cylinder.
- Unscrew the corresponding screw on the brake cover and remove the piston.



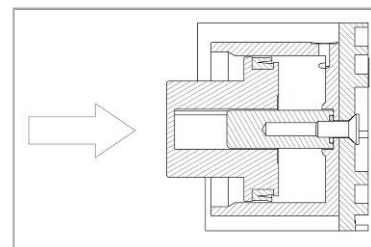
- Insert the new cylinder, the O-ring, the piston guide and tighten the screw without tightening.
- Insert the template (available as an option) for centering the piston guide and tighten the screw on the cover.
- Spread a thin film of lubricating, **water-repellent, anti-adhesive silicone grease specific for metal-rubber**, on the internal surfaces cylinder and guide.



- Insert the piston inside the cylinder, taking care not to damage the gasket on the inner edge of the cylinder
- Connect the air pipes to the connectors.
- Check the piston seal at a pressure of 6 bar.



If present, check your configuration of pistons on the label on the cover.

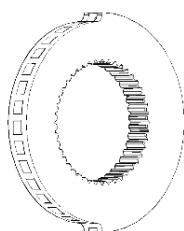


accessories

Our TX - TX / HD brakes can have, on customer request, some accessories that are not present in our standard versions.

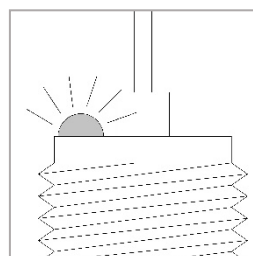
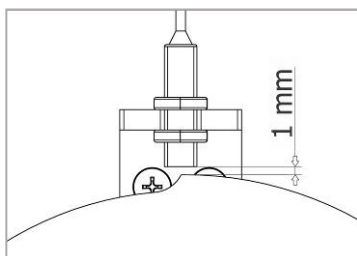
RPM counter

One of the most used and requested accessories not present in our standard is the tachometer with its sensor. These brakes will be supplied in the same composition as the standard brakes, except that a central disc (the last in the assembly phase) will be replaced by a specially built central disc with one or more "notches" for the tachometer.



Disc with notches for tachometer HD

- position the sensor at a distance of about one millimeter from the central disk, shaped with notches whose number and shape depend on the type of PLC management.
- then power up the sensor and check by turning the shaped central disk that the warning light on its upper end flashes.

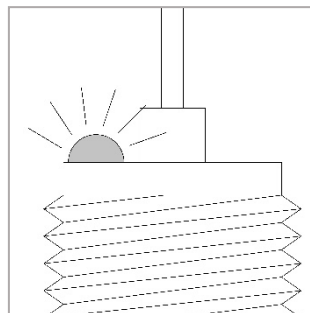
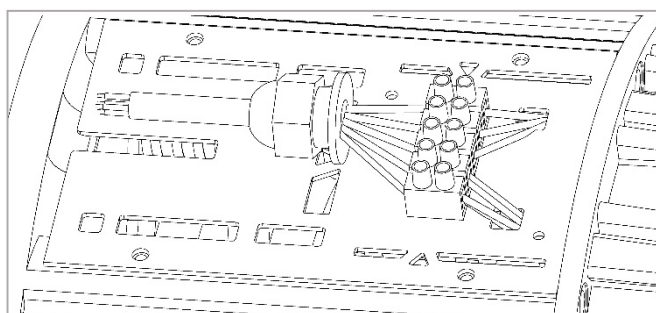
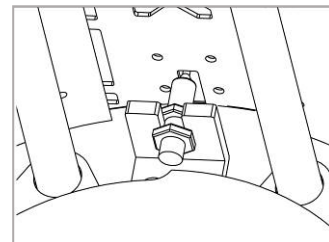


Below is the list of our available tachometers. By default, Renova supplies on its brakes a tachometer with PNP connection normally open (NO), but on request the PNP versions normally closed (NC) and the NPN versions both normally closed and normally open are also available.

Type	Voltage	Current	Signal distance	Wiring	Renova Code
Standard	10 - 30 V CC	<200 mA	1,5mm	PNP (NO)	CG00000000
Su richiesta	10 - 30 V CC	<200 mA	1,5mm	NPN (NO)	CG00000NPN
Su richiesta	10 - 30 V CC	<200 mA	1,5mm	PNP (NC)	CG00000000-NC
Su richiesta	10 - 30 V CC	<200 mA	1,5mm	NPN (NC)	CG00000NPN-NC

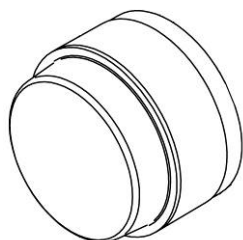
replacement of RPM counter

- Remove the power supply to the fans because the moving blades can be dangerous for the operator's fingers.
- Remove the pneumatic power supply.
- Disconnect the sensor from the connector.
- Remove the sensor by unscrewing the nut that locks it on the bracket.
- Remove it from the eyelets and from the thermal protection sheath.
- Mount the new sensor on the bracket and adjust the distance from the central disc to about 1mm.
- Insert the cable into the eyelets and into the thermal protection sheath.
- Connect the 3 poles to the connector contacts according to the previously shown diagram (ref page 12).
- Power up the tachometer and check for proper operation by turning the central cam disc and observing the light on the sensor head turning on.

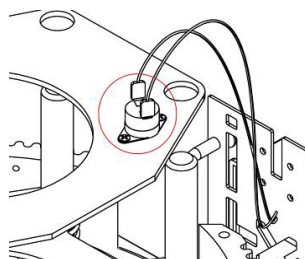


kit temperature sensor - lamp (KT000000000)

Another optional that Renova provides concerns the kit including the temperature sensor and signaling lamp. Thanks to these options it is possible to monitor that the brake temperature does not rise above the threshold and if this happens it will be signaled by a light signal emitted by the lamp.



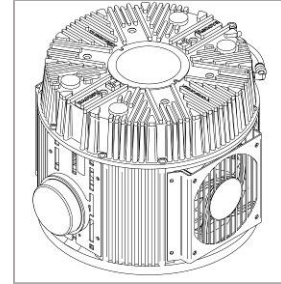
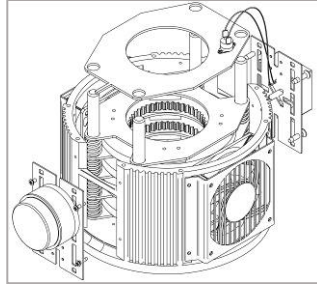
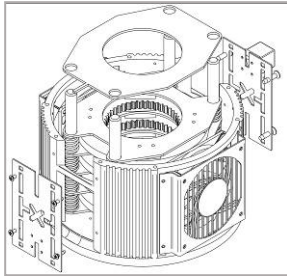
Signaling lamp



Temperature sensor

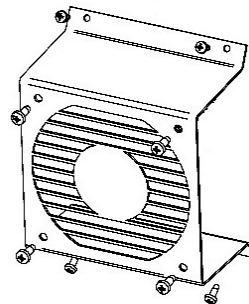
installation

- Disconnect the fans from the power supply; moving blades can be dangerous for the operator's fingers.
- Remove the pneumatic power supply.
- Remove the cover and the pressure discs.
- Remove the two-side carter, being careful, if there is a 3-pole socket to cut the fan power supply wires near the connector.
- Place the new kit and store the pressure disc with the bimetal thermostat facing the cover.
- Reassemble the brake.
- Power up the fans and check that they are working properly.



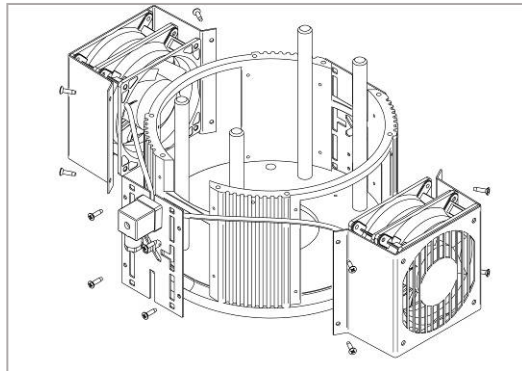
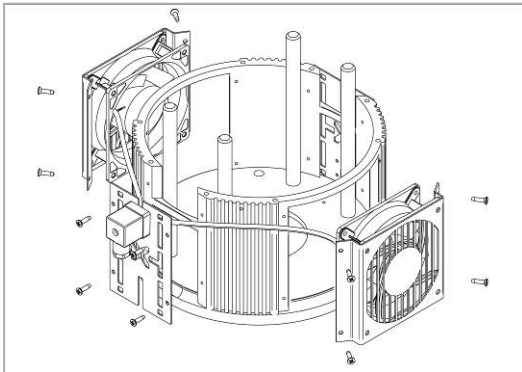
kit for 4 fans brake

For those applications where more heat dissipation is required, you can switch from 2 fans to 4 fans thanks to the use of a special casing that allows the assembly of 2 fans one above the other.

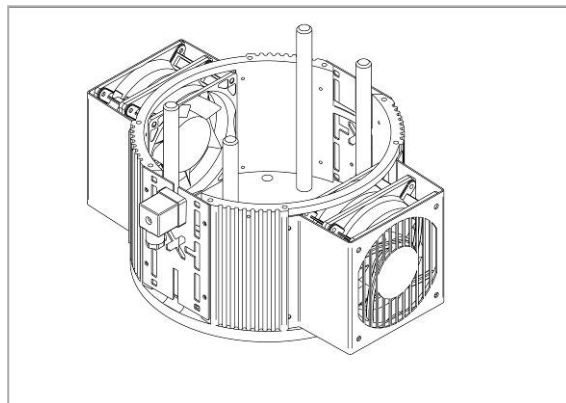
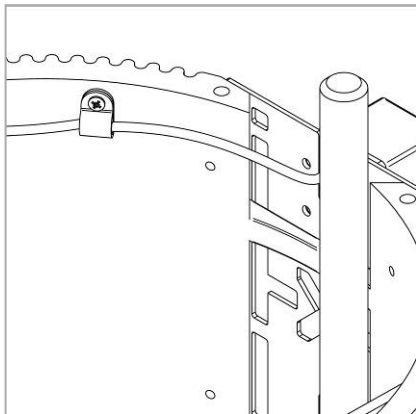


Installation of fan kit

- Disconnect the fans from the power supply; moving blades can be dangerous for the operator's fingers.
- Remove the pneumatic power supply.
- Disconnect the flying plug located on the side of the fan.
- Remove the cover and all the components inside the brake.
- Remove the fan carter and the cover where the electrical connector is located.
- Place the new kit.

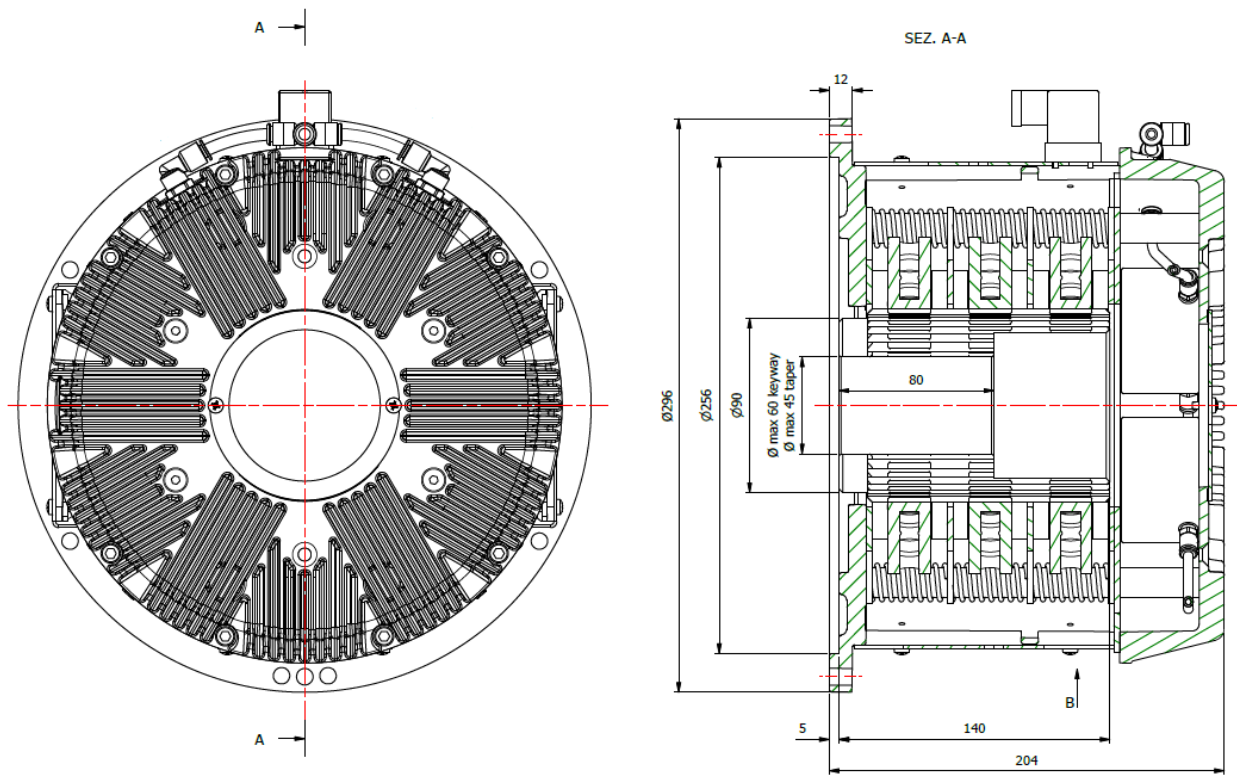


- Insert the electrical wiring into the appropriate cable holder.
- Secure the fan carter and the electrical connector carter with the screws on the brake body.
- Reassemble the brake.
- Power up the fans and check that they are working properly.

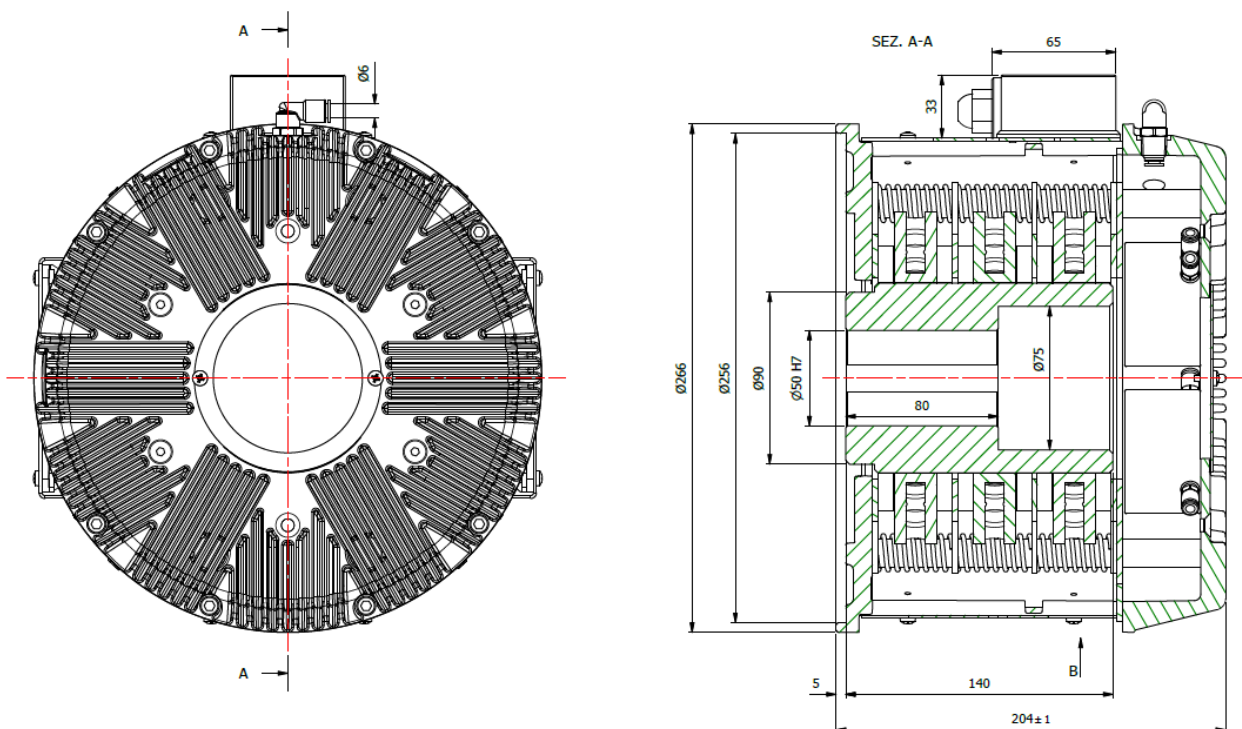


dimensions

- C Flange ($\varnothing 296\text{mm}$) → drawings with maximum overall dimensions



- K Flange ($\varnothing 266\text{mm}$) → drawings with maximum overall dimensions



technical data

Performance

Torque	Dependent on cover configuration. For more technical information, consult the brake drawing which presents more detailed and specific data of the brake selected
Speed	max 2500 rpm
Dissipable heat	4,5 kW – 7 kW
Max pressure	6 bar

Materials

Housing and brake cover	aluminum alloy
Central discs	high carbon index steel
Ferods	compound for continuous high temperature slip
Pistons	aluminum alloy
Pistons seal	viton
Hub	steel with induction hardened teeth

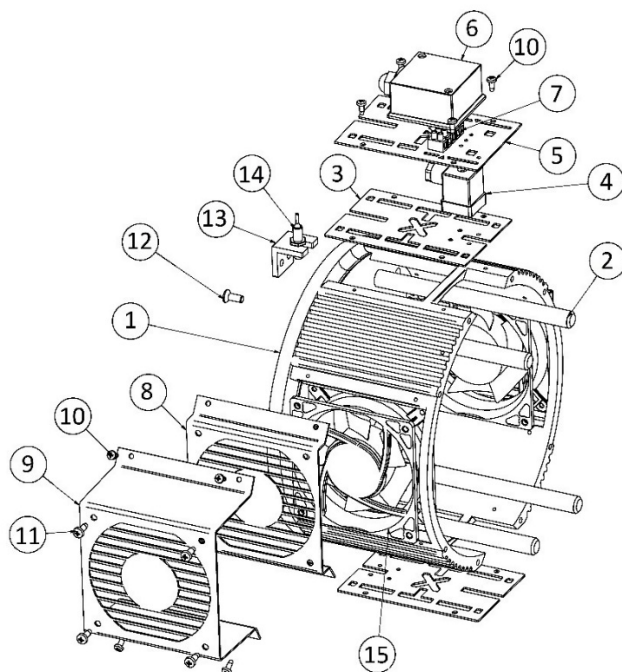
Weights

Brake weight (without hub)	about 19,7*
Hub weight	4,8 kg*
Central discs weight	5,9 Kg
J central discs	0,0288 kgm^2

*the exact weight depends on the required configuration

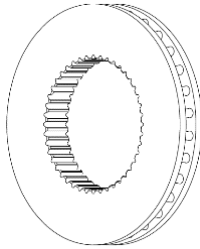
parts replacement

exploded view of the housing

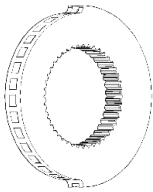
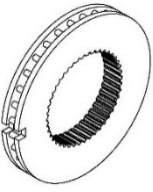


POSITION	CODE	DESCRIPTION
1	CPTXP180C00	Housing TX180 flange C, mounting CX250 (External flange diameter 296mm)
	CPTXP180K00	Housing TX180 flange K (External flange diameter 266mm)
2	GUTXP180000	Rods TX180
3	CATX1800000-R21	Lateral carter for 3 pin connector
4	CNTH100P3	3 pin connector
5	MAMMUT	mammut
6	CNTH100FO	Terminal cover
7	MAMMUT2RPM	Terminal block
8	CVTX180038-R20	Fan carter standard
9	CVTX18004V	Fan carter double
10	VITBM4012A	Button head screw - carter
11	VITBM5016A	Button head screw - fan
12	V53-0035	Countersunk head screw - rods
13	STCG000000	RPM counter bracket
14	STCG00000B	RPM counter bracket - TXHD
	CG00000000	RPM counter PNP – Normally open
	CG00000NPN	RPM counter NPN – Normally open
	CG00000000-NC	RPM counter PNP – Normally closed
	CG00000NPN-NC	RPM counter NPN – Normally closed
15	VT12038024	Fan 120x120x38 - 24V - DC 0.46A - 11W
	VT120380H4	Fan 120x120x38 - 24V - DC 1.25A - 30W - H4
	VT120380H6	Fan 120x120x38 - 24V - DC 2.70A - 65W - H6
	VT12038110	Fan 120x120x38 - 110VDC - 50Hz - 235mA - 20W
	VT12038220	Fan 120x120x38 - 220VDC - 50Hz - 120mA - 19W

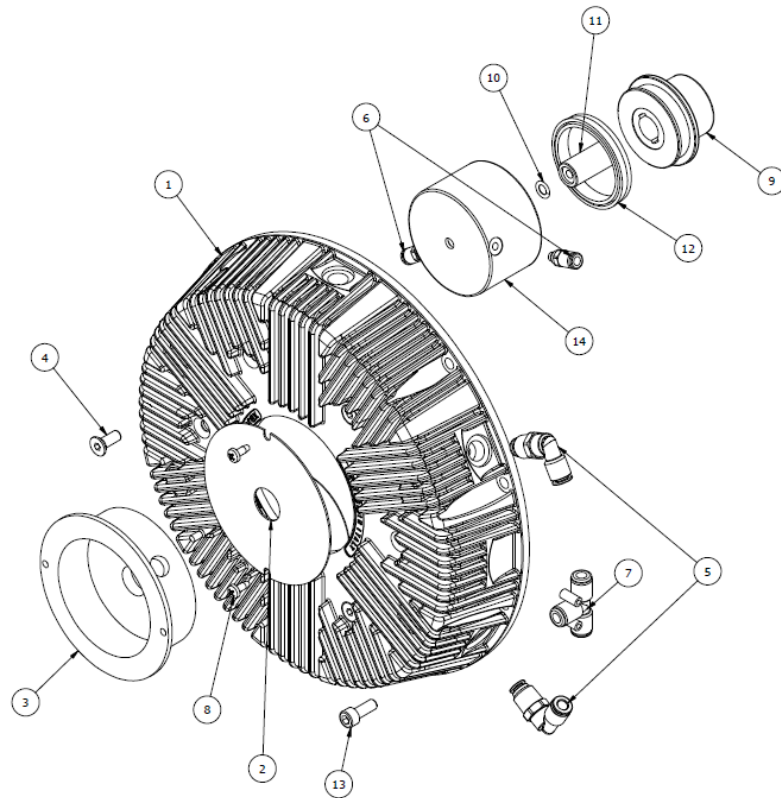
DISCS

Central discs design HD	3		
Code: TXP0018			

RPM discs for HD series

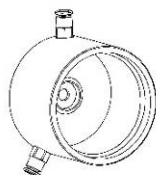
Illustration	Code	Description
	DCTXHD1800FS	Disc with cam design
	TXP001801	Disc TXHD180 RPM - 1 notch
	TXP001802	Disc TXHD180 RPM - 2 notches
	TXP001804	Disc TXHD180 RPM - 4 notches
	TXP001824	Disc TXHD180 RPM - 24 notches
	TXP001805	Disc TXHD180 RPM - 5 notches
	TXP001808	Disc TXHD180 RPM - 8 notches
	TXP001809	Disc TXHD180 RPM - 9 notches
	TXP001812	Disc TXHD180 RPM - 12 notches

exploded view of the cover

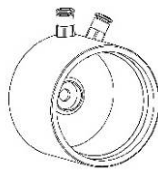


POSITION	CODE	DESCRIPTION
1	COTXP180000	Cover
2	TPTX180002	Cover TX180
3	SFTX180018	Photocell support
4	V53-0035	Countersunk head screw M6 – cylinder
5	I40-0047	Elbow fitting - pipe 6 mm
6	RAM505ARM5	Pipe fitting 5mm – M5
7	TU108PLA	Fitting T form - pipe 6mm
8	VITBM4012A	Cap fixing screws
9	PSTXP180060	Piston diameter 60mm
	PSTXP180050	Piston diameter 50mm
	PSTXP180040	Piston diameter 40mm
	PSTXP180030-R20	Piston diameter 30mm
10	ORTX180	O-ring cylinder
11	GPTXP180000-R20	Piston guide
12	DEM060050V	Lip seal for piston diameter 60mm
	DEM055045V	Lip seal for piston diameter 50mm
	DEM040045V	Lip seal for piston diameter 40mm
	DEM030045V	Lip seal for piston diameter 30mm
13	VITCM60300	M6 screw - cover
14	CLTXP180L60-R20	Cylinder diameter 60mm with two opposed holes
	CLTXP180F60-R20	Cylinder diameter 60mm with two paired holes
	CLTXP180M60-R20	Cylinder diameter 60mm with one hole
	CLTXP180L50-R20	Cylinder diameter 50mm with two opposed holes
	CLTXP180F50-R20	Cylinder diameter 50mm with two paired holes
	CLTXP180M50-R20	Cylinder diameter 50mm with one hole
	CLTXP180L40-R20	Cylinder diameter 40mm with two opposed holes

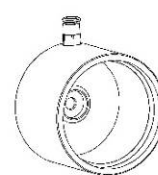
	CLTXP180F40-R20	Cylinder diameter 40mm with two paired holes
	CLTXP180M40-R20	Cylinder diameter 40mm with one hole
	CLTXP180L30-R20	Cylinder diameter 30mm with two opposed holes
	CLTXP180F30-R20	Cylinder diameter 30mm with two paired holes
	CLTXP180M30-R20	Cylinder diameter 30mm with one hole



2 opposed holes

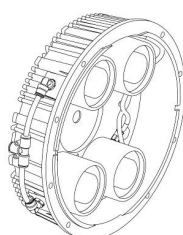


2 paired holes



one hole

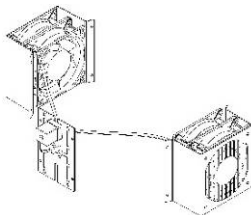
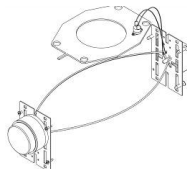
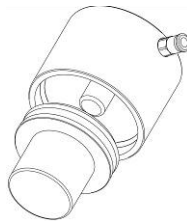
Assembled cover (example kit for replacement)



TXA0010-P	Turborex Cap Assembly - 2 ps 50 + 2 ps 50
TXA0011-P	Turborex Cap Assembly - 2 ps 40 + 2 ps 40
TXA0013-P	Turborex Cap Assembly - 4 ps 50 + 2 ps 50
TXA0014-P	Turborex Cap Assembly - 4 ps 40 + 2 ps 40
TXA0019-P	Turborex Cap Assembly - 3 ps 50 + 3 ps 50
TXA0024-P	Turborex Cap Assembly - 4 ps 40 + 2 ps 50
TXA0028-P	Turborex Cap Assembly - 2 ps 50 + 2 ps 50 + 2 ps 50
TXA0060-P	Turborex Cap Assembly - 4 ps 50 + 2 ps 50 – with 2 selectors
TXA0079-P	Turborex Cap Assembly - 4 ps 60 + 2 ps 60
TXA0082-P	Turborex Cap Assembly - 2 ps 60 + 2 ps 60
TXA0100-P	Turborex Cap Assembly – 2 ps 50 + 2 ps 50 + 2 ps 50 – with 3 selectors
TXA0109-P	Turborex Cap Assembly - 3 ps 60 + 3 ps 60
TXA0112-P	Turborex Cap Assembly - 2 ps 60 + 2 ps 60 + 2 ps 60
TXA0113-P	Turborex Cap Assembly – 4 ps 40 + 2 ps 40 – with 2 selectors
TXA0114-P	Turborex Cap Assembly - 3 ps 50 + 3 ps 60
TXA0119-P	Turborex Cap Assembly – 2 ps 60 + 2 ps 60 + 2 ps 60 – with 3 selectors
TXA0132-P	Turborex Cap Assembly – 2 ps 40 + 2 ps 40 + 2 ps 40 – with 3 selectors

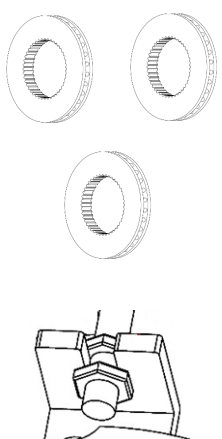
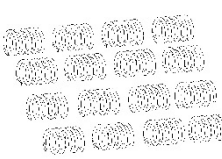
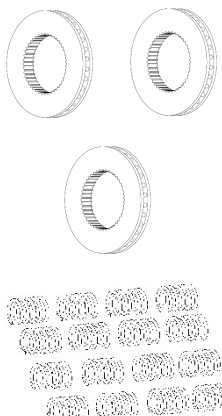
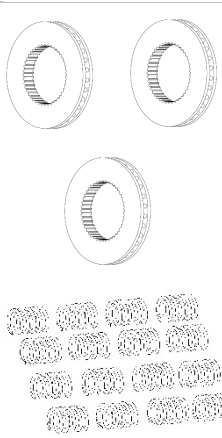
Replacement kit for Turborex standard

Illustration	Code	Description
		Kit pastiglie
	KPTX180HD	including: - 2 double plate holder -2 single plate holder

	Kit Fans pre-wired compound by carter fan and 3 pole sockets		
	KVTX180024	Kit with 2 fan standard 24 V CC 11 W	STANDARD
	KVTX1800H6	Kit with 2 fan HP06 24 V CC 65 W	
	KVTX1804H4	Kit with 4 fan HP04 24 V CC 30 W	
	KVTX1804H6	Kit with 4 fan HP06 24 V CC 65 W	
	KVTX1804H4E00	Kit with 4 fan HP04 24 V CC 30 W for E+L	
	KT000000000	Kit lamp and bimetallic thermostat for overheating alarm upon 100°C	
	Complete pneumatic actuator kit including cylinder, piston, gasket, guide, O-rings, fittings and screw		
	KPSTXP180F30	Piston diameter 30mm with two paired fittings	
	KPSTXP180L30	Piston diameter 30mm with two opposed fittings	
	KPSTXP180M30	Piston diameter 30mm with one fitting	
	KPSTXP180F40	Piston diameter 40mm with two paired fittings	
	KPSTXP180L40	Piston diameter 40mm with two opposed fittings	
	KPSTXP180M40	Piston diameter 40mm with one fitting	
	KPSTXP180F50	Piston diameter 50mm with two paired fittings	
	KPSTXP180L50	Piston diameter 50mm with two opposed fittings	
	KPSTXP180M50	Piston diameter 50mm with one fitting	
	KPSTXP180F60	Piston diameter 60mm with two paired fittings	
	KPSTXP180L60	Piston diameter 60mm with two opposed fittings	
	KPSTXP180M60	Piston diameter 60mm with one fitting	
 Code: KPSTX180M50 Code: KPSTX180L50 Code: KPSTX180F50 Code: KPSTX180M40 Code: KPSTX180L40 Code: KPSTX180F40			

replacement kit and spare parts for Turborex High dissipation series

Illustration	Code	Description	
	Springs kit		
	KMTX180HDF18	Kit TXHD180 springs Ø1.8mm – Orange	
	KMTX180HDF22	Kit TXHD180 springs Ø2.2mm – White	STANDARD
	KMTX180HDF25	Kit TXHD180 springs Ø2.5mm – Black	
	KMTX180HDF28	Kit TXHD180 springs Ø2.8mm – Black	
	KMTX180HDF30	Kit TXHD180 springs Ø3.0mm – Black	

	KTXHD0000	Kit upgrade TXHD180 – 3 Self-venting discs
	KTXHD0001	Kit upgrade TXHD180 – 3 Self-venting discs – 12 springs Ø2.2mm
	KTXHD0002	Kit upgrade TXHD180 – 3 Self-venting discs – 12 springs Ø2.8mm
	KTXHD0003	Kit upgrade TXHD180 – 3 Self-venting discs – 12 springs Ø1.8mm
	KTXHD0004	Kit upgrade TXHD180 – 2 Self-venting discs – 1 Self-venting disc cam design - 12 springs Ø1.8mm – RPM bracket and screws
	KTXHD0005	Kit upgrade TXHD180 – 2 Self-venting discs – 1 Self-venting disc with 1 notch – 12 springs Ø1.8mm – RPM bracket and screws
	KTXHD0006	Kit upgrade TXHD180 – 2 Self-venting discs – 1 Self-venting disc with 2 notches - 12 springs Ø1.8mm – RPM bracket and screws
	KTXHD0010	Kit upgrade TXHD180 – 2 Self-venting discs – 1 Self-venting disc cam design - 12 springs Ø2.2mm – RPM bracket and screws
	KTXHD0011	Kit upgrade TXHD180 – 2 Self-venting discs – 1 Self-venting disc with 4 notches – 12 springs Ø2.2mm – RPM bracket and screws
	Selectors Kit	
	KSELP0002	Upgrade kit selectors TXP 2 stages - 2 air selectors – 2 elbow fittings (6 mm tube) – 2 fittings (5 mm tube) – M5 – 2 reducers M. 1/4G F. 1/8G
	KSELP0003	Upgrade kit selectors TXP 3 stages – 3 air selectors – 1 elbow fitting (6 mm tube)– 2 fittings “T” (6 mm tube) - 3 fittings (5 mm tube) – M5 – 3 reducers M. 1/4G F. 1/8G

warranty

Renova srl guarantees this device from any defects relating to materials and manufacturing for a period of 12 months from the date of delivery of the brake itself.

In the event that, during the period covered by the guarantee, the device exhibits malfunctions, please contact the representative of the Company in the country of origin, or, in the absence of these, Renova srl directly.

The warranty includes spare parts and labor, but the shipping costs for delivery or collection of the device are exempt.

The warranty becomes invalid in the following cases:

- Improper use of the product
- Incorrect installation
- Lack of maintenance
- Modifications or interventions with non-original components or with personnel not authorized by Renova srl
- Total or partial non-compliance with the instructions
- Exceptional events

Once the warranty period has expired, technical support will be carried out by the assistance network which will carry out repairs according to the rates in force



UKCA / EU DECLARATION OF CONFORMITY DICHIARAZIONE DI CONFORMITÀ UE / UKCA

Manufacturer / Ragione sociale: **RENOVA SRL A SOCIO UNICO**
Declares that / Dichiaro che

Product name / Nome prodotto: **TURBOREX**
Description / Descrizione: **PNEUMATIC BRAKE / FRENO PNEUMATICO**

Fulfills / È conforme: **The Supply of Machinery (Safety) Regulations 2008 S.I. No. 1597 as amended / alla Direttiva 2006/42/CE relativa alle macchine (procedura di valutazione in accordo all'allegato VIII)**

Designated standard(s) / Norme applicate: **EN ISO 12100**

Other applicable directives / Altre direttive applicabili:
Electrical Equipment (Safety) Regulation 2016 [Directive 2014/35 / EU (low voltage)] concerning the harmonization of the legislation of the Member States relating to the availability on the market of electrical equipment intended to be used within certain voltage limits. (S.I. 2016:1101) Electromagnetic Compatibility Regulations 2016 [Directive 2014/30 / EU (electromagnetic compatibility)] concerning the harmonization of the Member States relating to electromagnetic compatibility (S.I. 2016:1091)
Direttiva relativa alla bassa tensione 2014/35/UE
Direttiva relativa alla compatibilità elettromagnetica 2014/30/UE

Internal Fabrication Control according to ISO 9001:2015
Controllo interno della fabbricazione in accordo alla ISO 9001:2015

The manufacturer, by using the **CE / UKCA** marking, guarantees that design, construction of equipment mentioned above fulfil the requirements of the Directive **2006/42/EC and UK Regulations 2008 S.I. No. 1597** as amended

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Il dichiarante, applicando il marchio **CE / UKCA**, garantisce che il progetto, la costruzione delle attrezzature sopra menzionate rispondono ai requisiti della Direttiva **2006/42/CE e regolamentazione UK del 2008 in accordo allo strumento legislativo n° 1597 e s.m.i.**

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.

Sesto S. G., 19/01/2023

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