





https://youtu.be/ovlYgdqCxro

# REMOVING THE ROUGH GRINDING BELT

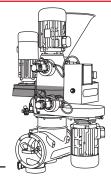


## **WARNING!**

The operations described in this technical data sheet and those contained in the relative video tutorials which can be captured via QR CODE must only be performed by qualified technicians and only after having read the safety information contained in sections 2 and 6 of the Use and maintenance manual.

When in doubt, do not interpret! Instead directly contact the Colombini Srl technical assistance service at +39 011 8211407

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To remove/reinstall the rough grinding belt, the following are required:

- a) Allen wrenches 3 mm, 4 mm, 5 mm, 6 mm, 8 mm and 10 mm
- b) socket wrench 7 mm
- c) wrenches 8 mm, 10 mm, 13 mm, 14 mm and 27 mm
- d) socket screwdriver 10 mm
- e) supplied service wrench (code E0.0345).
- f) wrench 17 mm
- g) Phillips screwdriver





## **WARNING!**

From the operator panel, move away the lower fine grinding discs to a value of 0.600 mm.



## **WARNING!**

Disconnect the machine electric power supply.



# **WARNING!**

Use cut-resistant gloves.



- Using a 5 mm Allen wrench, unscrew and remove the screw securing the sealing ring and remove it from its seat.
- Turn the extractor unit fully outwards.
- Using a 13 mm wrench, loosen the six blind nuts securing the duct.
- Turn the duct slightly to the right and withdraw it by pulling downwards.



- Insert the supplied service wrench (Code: E0.0345) into the arranged hole and turn the disc leftward all the way to the stop.
- Release the central nut using a 27 mm wrench.
- Turn the disc to the right and remove the service wrench.





 Unscrew the central nut while supporting and removing the assembly consisting of the lower fine grinding and rough grinding discs.



## **WARNING!**

We recommend that a second person support the grinding discs throughout removal operations.



• Using a 5 mm Allen wrench, unscrew the six screws securing the upper fine grinding disc; then support the disc and withdraw it from its seat.



- Using a special wrench, insert two 5 mm Allen screws into two free threaded holes at the opposite sides of the bearing protection ring (if present). Do not tighten the screws, just insert them into the threaded holes.
- Unscrew the six Allen screws securing the ring in its seat. However, once freed from the securing screws, the ring will remain stuck in its position since interference with the machine body forces it into its seat. To unscrew, use a 5 mm Allen wrench.
- Slowly tighten the two inserted screws so as to progressively force the ring to detach from the body of the machine. Support the ring and withdraw it from its seat.



- Locate the Allen screws supporting the upper rough grinding disc.
- Using a 4 mm Allen wrench, unscrew the three screws supporting the upper rough grinding disc; then support the disc and withdraw it from its seat.



- Remove the blue nitrogen/air supply hose from the coupling on the pressure switch on the side of the machine body. This is done using a wrench.
- Unscrew and remove the coil controlling the pressure switch.
- Using a Phillips screwdriver, unscrew the IP valve supply connector (if present).
- Unscrew the screw connector on the front thermocouple located beside the pressure switch.
- Using a 13 mm wrench, unscrew the nut locking the probe in place, remove it from its threaded seat and gently pull the probe out of its housing on the side.
- Using a wrench, remove the lubrication feed hose from its quick coupling on the side of the machine body.
- Using a 17 mm wrench, unscrew the greasing nozzle and remove it from its seat. Pull it out carefully.



# **WARNING!**

The threaded hole on the nozzle and body of the machine have coloured marks indicating their position where they line up; identify these marks as these will be useful when repositioning the parts during reassembly.

- Using a 13 mm wrench, unscrew the nut locking the second thermocouple probe in place beside the greasing nozzle.
- Carefully withdraw the probe.
- Remove the cover for the upper fine grinding motor belt. Using an 8 mm wrench, unscrew and remove the three screws.
- Using a 4 mm Allen wrench, unscrew and remove the three screws securing the gear wheel guard disc. Remove the guard disc.



• Using a 6 mm Allen wrench, loosen the four Allen screws securing the motor support to the timing belt frame.



- The position of the motor support vs. the timing belt frame is fixed by the locking position of a worm screw located under the frame. Using a 13 mm wrench, loosen the worm screw locking nut and loosen the two securing nuts that prevent the screw from moving longitudinally in its seat.
- Push the motor block towards the body of the machine, loosening the timing belt tensioned on the gear wheel inside the frame just enough so that it acquires some play.



The motor weighs approximately 60 kg. Be careful when handling it.

- Using a 5 mm Allen wrench, loosen the six Allen screws on the gear wheel and remove the gear wheel from its seat.
- Make certain that the transmission timing belt on the upper fine grinding discs is free to move in its seat.



- Using a 3 mm Allen wrench, unscrew the two screws securing the black gear wheel side ventilation grille. Remove the grille.
- Using a 3 mm Allen wrench, also unscrew the screws securing the second side ventilation grille and remove it.
- Using an 8 mm Allen wrench, unscrew the ten Allen screws securing bearing assembly ZKLDF180 to the machine body.



### WARNING!

The grinding disc bearing assembly is heavy. Before unscrewing the screws, to ensure safe handling during removal, place a mobile support compliant with the standards under the assembly; to this purpose, we recommend using the blades of a forklift truck as this permits both vertical movement and general handling.

- Completely remove the Allen screws, making certain that the bearing assembly rests gently on the forklift truck blades.
- Remove the assembly.



- Using 4, 6 and 10 mm Allen wrenches, unscrew the four Allen screws securing the positioning block. Remove the block.
- Remove the timing belt.



 Using a Phillips screwdriver, unscrew the four screws and remove the cover of the electrical box on the upper fine grinding motor.



## WARNING!

Save/photograph the position and colour of the three power supply cables for subsequent reassembly.

- Using a 10 mm socket screwdriver, unscrew and remove the three nuts, with their washers, and withdraw the three power supply cables.
- Unscrew the upper screw and remove it with its washer and then withdraw the yellow-green earth cable.
- Using a Phillips screwdriver, unscrew the four screws securing the motor cooling fan.
- Remove the fan.



## **WARNING!**

Secure the fan with a suitable support or with the aid of another person so that it cannot fall and be damaged.

- Completely unscrew the previously loosened nuts securing the worm screw located under the transmission belt block.
- Using a 5 mm Allen wrench, unscrew the two screws securing the worm screw support flange. Remove the two Allen screws and the two related washers.
- Unscrew the nut still present on the worm screw, manually accompanying the flange that intercepts the screw until both nut and flange are completely removed from the screw.



Free the worm screw from all constraints.



#### WARNING!

The motor is heavy. To remove it, make certain that it is supported by an adequate device compliant with current safety regulations.

- Move the motor so that the upper part can pass through the hole in the transmission belt frame.
- Using a forklift, position the blades under the motor so that it is properly supported when the screws securing it to the grinder are loosened.



• Unscrew the four screws holding the motor support suspended from the transmission belt frame. Use a 6 mm Allen wrench.



#### **WARNING!**

The motor is heavy and must be unscrewed carefully. During the operation, make certain that the motor rests firmly on the forklift blades which must bear the full weight of the motor.

- Unscrew the four Allen screws and remove them completely.
- Once freed from all constraints, the motor rests solely on the forklift blades.
- Save/photograph the correct position of the motor for subsequent reassembly.
- Lower the forklift blades so that the upper part of the motor is lowered, passing through the hole in the transmission belt support frame, and can be moved freely.
- Remove the upper fine grinding motor in compliance with the safety standards.



- Unscrew the pressure switch assembly. Use a 14 mm wrench.
- Using a 10 mm Allen wrench, unscrew the three screws supporting the frame.



## WARNING!

Secure the frame with a suitable support or with the aid of another person so that it cannot fall and be damaged.

• Unscrew the micrometric adjustment wheel and and remove it.



### WARNING!

See sheet no. 15 for removal of the fine grinding micrometric adjustment wheel.

• Using a 10 mm Allen wrench, unscrew the four screws securing the rough grinding assembly and get help in handling it.



- Unscrew and remove the filter.
- Unscrew the four Allen screws securing the lower protection grille for the rough grinding timing belt. Use a 4 mm wrench.



- Unscrew the power supply screw connector for the bearing lubrication control unit.
- Using a 5 mm Allen wrench, unscrew the two screws securing the lubrication control unit and remove the component.
- Using a Phillips screwdriver, unscrew the four screws and open the cover of the electrical box for the rough grinding motor.



### **WARNING!**

Save/photograph the position and colour of the power supply cables for subsequent reassembly.



- Using a 7 mm socket screwdriver, unscrew and remove the nuts with their washers, and then withdraw the power supply cables.
- Unscrew the upper screw and remove it with its washer and then withdraw the yellow-green earth cable.
- Using a 10 mm wrench, unscrew the eight bolts securing the motor to the machine and remove them with their washers.
- Save/photograph the correct position of the motor for subsequent reassembly.



# Wear suitable slip-resistant gloves.

- Manually lift and handle the motor in compliance with the standards.
- Unscrew the four 8 mm Allen screws and washers securing the motor base to the box of the rough grinding timing helt
- Loosen the nuts and worm screw tightening bolt determining the position of the base. This is done while keeping the timing belt taut. Use a 13 mm wrench.
- Move the base of the motor a few millimetres towards the body of the machine which will loosen tension on the timing belt.
- Remove the base from its seat.
- Locate the timing belt and make certain that it is free to move in its seat.
- Using a 10 mm Allen wrench, unscrew the four Allen screws supporting the rough grinding frame.



### **WARNING!**

Remove the frame. As the frame is quite bulky, this operation requires the help of another person to ensure support and safe handling.

• Remove the belt from its seat.

## REINSTALLING THE ROUGH GRINDING TIMING BELT



- Position the belt correctly in the rough grinding frame. Make certain that it is correctly connected to the gear wheel present in the seat.
- Insert the timing belt frame in its seat.



# **WARNING!**

Be careful when inserting the frame.

It is advisable to obtain assistance so as to handle the piece safely.



## **WARNING!**

Wear protective gloves and crush-resistant footwear during the operation.

- Tighten the four Allen screws on the rough grinding frame.
- · Make certain that the timing belt turns freely and transmits movement to the rough grinding drive shaft.
- Insert the rough grinding motor support and the base of the motor into their seats over the box.





- Adjust the timing belt so that it engages correctly with the gear wheel located under the base of the rough grinding motor
- Turn the nut on the worm screw attached to the base of the motor to adjust the position of the component. The position must be such that it ensures correct belt tension, which must correctly transmit motion to the rough grinding drive shaft.
- Tighten the four 8 mm Allen screws and secure the base of the motor.
- Insert and tighten the lock nuts securing the worm screw that adjusts the position of the motor. Use a 13 mm wrench.
- Correctly position the motor on the machine (motor code E1.0140).



Be careful when inserting the motor.

The tab on the shaft must line up with its seat on the support unit.



### WARNING!

If a new motor is to be installed, we recommend lubricating the end of the shaft.

- Tighten the eight bolts with their washers and secure the motor. Use the 10 mm wrench.
- Make the electrical connections on the motor and reinstall the cover on the electrical box. Use the 7 mm wrench.
- Reinstall the lubrication control unit and secure it with the two Allen screws. Use the 5 mm wrench.
- Retighten the control unit power supply hose.
- Reinsert the black grille closing the bottom of the rough grinding frame and tighten it. Use the 4 mm Allen wrench.
- Screw the filter back into place.





### **WARNING!**

Under the rough grinding frame, locate the two pins used to position the rough grinding assembly. Locate the respective holes on the assembly.

- Insert the rough grinding assembly and tighten the four Allen securing screws. Use the 10 mm wrench.
- See sheet no. 15 for reinstallation and securing of the rough grinding micrometric adjustment wheel.





## **WARNING!**

Under the rough grinding assembly, locate the two pins used to position the fine grinding belt frame Locate the respective holes on the fine grinding frame.

- Insert the box for the fine grinding belt and and tighten it using a 10 mm wrench.
- Insert the fine grinding belt in its seat.
- Reinsert the belt positioning block and tighten it using the 4, 6 and 10 mm Allen wrenches.



• Correctly position the upper fine grinding motor under the transmission belt support frame, making certain that the motor shaft is coaxial to the circular passageway and the motor support flanges are correctly positioned in relation to the machine. Make reference to the position saved during removal.



## **WARNING!**

Be careful when inserting the motor.

Observe the safety standards for handling: the motor is heavy.

The motor shaft must enter the transmission frame.





If a new motor is to be installed, we recommend greasing the end of the shaft.

- Using the forklift, lift the motor, making sure that the shaft passes through the hole.
- Tighten the four bolts and washers securing the motor support to the transmission frame. Use an 8 mm Allen wrench.
- Without tightening the four Allen screws, make certain that the motor is supported and the forklift truck can be removed.
- · Remove the forklift truck.
- Insert the worm screw locking flange that adjusts the position of the motor so that the nut present is located between the two sides of the component. Adjusting the nut as needed, position the flange so that the position lines up with the transmission frame securing holes.
- Using a 5 mm wrench, tighten the two Allen screws with washers to secure the flange.
- Make the electrical connections on the motor and reinstall the cover on the electrical box.
- Secure the lower motor fan, making certain that the openings and threaded holes line up. Tighten with four Phillips screws
- Hook up the fan power supply connector and secure it with its screw.





### **WARNING!**

Make certain that the timing belt does not get pinched under the gear wheel but is, instead, arranged correctly around it.

• Position bearing assembly ZKLDF180 in its housing inside the transmission frame and make certain that it is correctly positioned above the motor shaft and that the screw through-holes and threaded holes on the motor line up.



#### **WARNING!**

Be careful when inserting the assembly into its seat. There are two pins on the machine body. Locate the corresponding holes on the bearing assembly, i.e. those smaller than the ones for the ten securing screws.



- Using the forklift truck, position the bearing assembly under the body of the machine. Line up the pins with the holes identified on the disc.
- Lay out the belt in its place.
- Insert the assembly.



## **WARNING!**

The correct position of the assembly in its seat is the one where the yellow mark on the side lines up with the mark on the threaded hole on the lubrication injector.

- Use an 8 mm Allen wrench to tighten the ten bearing assembly securing screws.
- Make certain that the screws are secured and then remove the forklift truck.
- Make certain that the belt is inserted in the gear wheel and can slide freely in its seat.



- Insert the second gear wheel.
- Position the gear wheel in its housing inside the transmission frame, making certain that it is correctly positioned above the motor shaft and that the screw through-holes and threaded holes on the motor line up.





Make certain that the timing belt does not get pinched under the gear wheel but is, instead, arranged correctly around it.

- Using a 5 mm Allen wrench, tighten the six Allen screws securing the gear wheel.
- Adjust the belt so that the belt teeth and gear wheel cogs are aligned correctly.



Tighten the worm screw stud nut so that the entire motor block shifts in its seat, correctly tensioning the transmission timing belt.



### WARNING!

While tensioning the belt, move the gear wheel to ensure that the transmission shows no slippage and that, on the contrary, the tension is not so high as to compromise correct transmission of the movement.

- Insert the gear wheel guard disc and secure it with its three Allen screws. Use a 4 mm Allen wrench.
- Reinstall the cover grille and secure it with its three screws.



- Replace the second nut and securing bolt on the worm screw. Tighten the securing bolt using a 13 mm wrench.
- Fully tighten the four Allen screws supporting the motor to the transmission frame.
- Replace the black belt ventilation grille in its seat and tighten its securing screws. Use a 3 mm Allen wrench.
- Using a 14 mm wrench, screw the pressure switch assembly back in its seat.
- Insert the IP electrical connector into its seat and tighten.
- Insert the power supply valve coil and tighten.
- Insert the blue nitrogen/air hose into the quick-coupling.
- Insert the probe into its seat and secure it using a 13 mm wrench to tighten the special nut.
- Screw the electrical connector back onto the probe.
- Tighten the six nuts on the screws located under the bearing assembly.
- Reposition and secure the second black belt ventilation grille, tightening its two screws using a 3 mm Allen wrench.
- Insert the second probe into its seat and secure it by tightening the locking nut.
- Screw the electrical connector back onto the second probe.
- Insert the lubrication injector into its seat, tightening it with a 17 mm wrench.
- Insert the lubrication hose into the quick coupling at the end of the hose.
- Replace the upper rough grinding disc in its seat and secure it with its own Allen screws.



• Position the cover disc (if present) in its seat in the lower portion of the machine.



## WARNING!

## Be careful when inserting the disc.

- Tighten the six 5 mm Allen screws securing the disc in its seat.
- The disc must be forced into its seat because the coupling involves some slight interference.



- Make certain that the seat of the upper fine grinding disc is clean. If necessary, use a soft cloth to remove any residues
- Remove the upper fine grinding disc.
- Make certain that the surface of the disc is clean, using a soft cloth if necessary.
- Using a 5 mm Allen wrench, loosen the six Allen screws securing the upper fine grinding disc to its seat.





We recommend that a second person support the upper fine grinding disc throughout positioning and securing operations





### WARNING!

Pay attention to the toothed contour on the transmission shaft. When reinstalling the group composed of the lower rough grinding and fine grinding discs, make certain that the contour on the unit lines up with the contour on the shaft.

- · Insert the lower rough grinding and fine grinding assembly.
- Tighten the central nut, holding the unit in the correct position.
- Insert the supplied service wrench (Code: E0.0345) into the arranged hole and turn the disc rightward all the way to the stop.
- Lock the central nut in place using a 27 mm wrench.
- Move the duct located above the extractor unit closer to the unit and fit it into the six supporting blind nuts.
- Turn the duct to the left as far as necessary so that it remains suspended on the blind nuts.
- Using a 13 mm wrench, tighten the six blind nuts and secure the duct onto the machine.
- Turn the extractor unit inward all the way.
- Position the extractor unit sealing ring in its seat and lock it in place by tightening the special screw.

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