

5802A0033
English

Maintenance manual

NC processing centre
ROVER 13S

Series nr. _____

Construction year _____

 **BIESSE**

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Updating

Minor modifications: minor changes, additions or corrections relating to this edition shall be supplied to clients by the BIESSE technical department in the form of separate sheets, which the customer can insert in the manual.

Major modifications: when major modifications become necessary, a completely new issue may be released with an updated code reference.

Errata corrige: if any errors are found in this manual, BIESSE will supply the original purchaser with an indication of corrections for a reasonable period of time after the date of purchase. The clauses specified in the paragraph “*Warning regarding restricted information*” shall also apply to any updated technical manuals or documents (see introduction of this manual).

Printing history and changes made to new versions of the manual

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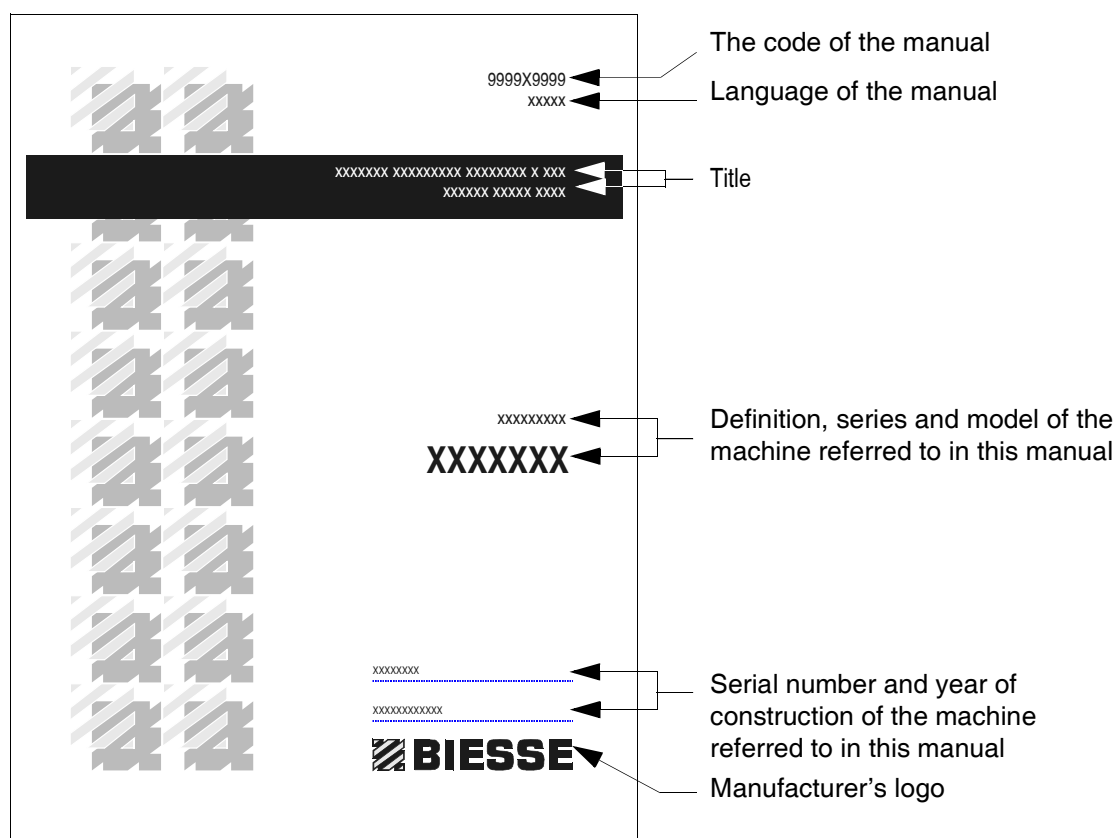
USE OF THE MANUAL

1.1 DOCUMENTATION

BIESSE shall not recognize as valid any documents that have not been produced, issued and distributed by BIESSE unless they are accompanied by a specific written declaration issued by BIESSE itself or an approved representative.

1.1.1 Manual reference data

To find the data which refers to this particular manual turn to the front cover and check the following diagram:



1.1.2 Restrictions on the use of the manual



INFORMATION

Before consulting this manual please read very carefully the “User’s Manual” supplied with this machine.

This manual has been prepared for personnel requested to carry out installation and is to be used during the entire working life of the machine after it has been manufactured and sold.

The information contained in this manual is not intended to replace the knowledge and experience of the BIESSE Technical Support Service, to which all clients are referred for any information regarding maintenance and replacement of machine parts.

1.1.3 Available documents

The complete documentation of the machine includes all the parts listed in the “*User Manual*” of this machine

1.1.4 How to use the documents:

The “*User Manual*” of this machine provides also information on how to use the available documentation.

1.1.5 Conventions

All references made to directions and positions (left, right, rear, front) refer as seen by a person standing and looking at the machine from the location shown in the general view of the machine at “*chapter 3*” of this manual.

Abbreviations:

N.C. = numerical control;

R-H = right;

Fig. = figure;

FRL = main compressed air unit (filter, regulator, lubricator);

M-T-CH assy = motor - transmission - boring chuck assembly;

RH. H. U. = right-hand horizontal unit;

LH. H. U. = left-hand horizontal unit;

IG = main switch;

Max = maximum;

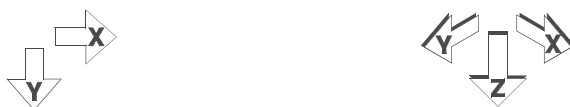
Min. = minimum;

MSW = microswitches;
W.T. = working table;
P.L.C. = programmable controller;
Rg. = origin;
Tab. = table;
H.B.H. = horizontal boring head;
V.H. = vertical head.

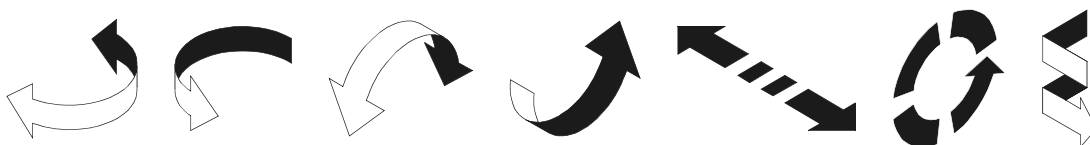
Directional references

These references allow for correct interpretation of the figures. The point of observation is given with respect to the origin of the machine axes.

Examples of references used in the representations of two-dimensional and three-dimensional figures.



Examples of references used to indicate directions of rotation, movements etc.



1.1.5.1 Conventional warning signs



INFORMATION

Special notes and useful advice on various topics

The most important information concerning safety is indicated as follows:

**DANGER**

Information referring to procedure or operations, which, if not performed correctly, can cause injury, death or long-term risks for health and the environment.

**CAUTION**

Information referring to procedure or operations, which, if not performed correctly, can cause damage to the product.

MAINTENANCE OPERATIONS

2.1 TYPES OF OPERATION

Maintenance operations on the machine (ordinary, periodical and special) are special operations.

Besides the instructions given in this manual, the special operation procedures require use of the N.C. system. The operator will therefore also have to consult the 'Numerical Control Manual'.

2.1.1 Levels of safety

All operators allowed to work on this machine must be placed in a safety level category for which they shall have received adequate training. Operators must work only within the limits of the category they have been assigned to.

Minimum safety level

This refers to ordinary maintenance. The operator who is permitted to carry out ordinary maintenance shall not carry out periodic maintenance or special maintenance.

Maximum safety level

This refers to special maintenance. The operator permitted to carry out special (extraordinary) maintenance may also perform ordinary and periodic maintenance tasks.

2.1.2 Warnings

- ❑ Before carrying out any maintenance procedure the personnel responsible for such tasks must have read completely and have fully understood all the chapters in this manual on this topic and also the corresponding warnings and advice. Please follow all instructions and observe this rule also during the training period of personnel chosen to carry out maintenance and servicing of the machine. The head, foreman or chief technician of the workshop or factory at which the machine is used must decide which persons are suitable for this kind of work as he is most likely to be aware of the capabilities of his staff or operators. Moreover, the person in charge of maintenance must be able to pass on his knowledge to others in case of absence.
- ❑ For lubrication operations use the same products as those indicated by BIESSE and observe the handling regulations (see chapter 3 LUBRICANTS). If it is difficult to find the indicated lubricants, use only those identified by BIESSE as equivalents. Do not replace or mix the indicated lubricants with other products.
- ❑ If a particular type of lubricant has to be replaced with another equivalent product, it is very important to clean the parts which will be lubricated by this product very carefully to remove any residue of the previous lubricant and avoid the risk of chemical reactions that may damage the machine.
- ❑ Never wear garments or accessories that could get caught up in parts of the machine.
- ❑ Do not leave tools in or on the machine after maintenance or servicing.

2.2 ORDINARY MAINTENANCE

Ordinary maintenance procedures are those performed:

- ☐ without any pre-established schedule but according to the discretion of the user;
- ☐ following the occurrence of normal problems typically connected with regular operation of the machine.



DANGER

Ordinary maintenance procedure may be carried out by authorized personnel only (see paragraph 2.1.1, page 2 - 2).

2.2.1 Cleaning the machine

The working environment will be safer and healthier if the machine is properly cleaned and, in particular, controls and warning notices can be seen clearly without there being any risk of making mistakes. Follow the instructions given below.



DANGER

Chips produced during operation may make the floor surface slippery. Clean at regular intervals.



DANGER

Cable chains can catch and cause risks of injury to the fingers.



CAUTION

An excessive accumulation of chips can impede the movement of mobile parts of the machine. Clean periodically.



CAUTION

Excessive accumulation of chips in the vacuum pump area can cause overheating and may damage the pump itself.

1. TURN THE MACHINE OFF before proceeding with the operations.
2. Proceed with cleaning operations.

2.3 PERIODICAL MAINTENANCE

Periodical maintenance procedures are those performed at regular intervals defined by Biesse Spa.



DANGER

Periodical maintenance procedure may be carried out by authorized personnel only (see paragraph 2.1.1, page 2 - 2).

Hrs of Op'tn	Machine System or Section	Action
Every 8 hrs	Pneumatic system	<ul style="list-style-type: none"> • Drain off condensation (page 2-9).
	Electric circuit	<ul style="list-style-type: none"> • Clean the cooler filter of the electric cabinet (page 2-11).
Every 40 hrs	Operating section	<ul style="list-style-type: none"> • Lubricate sliding blocks and recirculating ball screws (MOBILUX EP0) (page 2 - 5). • Clean slide guides of the axis movement carriages (page 2-5). • Clean slides of units in boring head slots (page 2-5).
	Pneumatic system	<ul style="list-style-type: none"> • Check general pressure level of compressed air (6,5 bar) and adjust if necessary (page 2-11). • Check level of lubricant (MOBIL DTE 24) and top up if necessary (page 2-10). • Check circuit pressure levels (page 2-11); to adjust, call the BIESSE Technical Support Service.
	Depressuriz'tn system	<ul style="list-style-type: none"> • Clean the air filters of the vacuum pumps and replace if necessary; Becker Vt 4.40 (page 2-13), KVT 3.100 (page 2-14) • Clean the cooling slots of the Becker KVT 3.100 vacuum pump (page 2 - 14) • Check the level of vacuum created by the vacuum pumps (250 - 650 mm/Hg for each pump) (page 2-12).
	Centralized lubrication system	<ul style="list-style-type: none"> • Check that no air has formed in the system (page 2 - 16)
Every 100 hrs	Operating section	<ul style="list-style-type: none"> • Clean the racks for movement of X axes (page 2-6). • Lubricate chuck with circular blade tool (KLÜBER ISOFLEX NBU 15) (page 2 - 6).
Every 200 hrs	Operating section	<ul style="list-style-type: none"> • Lubricate boring and milling head (MOBILTEMP SHC 100) (page 2 - 7).
	Working table	<ul style="list-style-type: none"> • Clean suction cups (page 2-7).
Every 500 hrs	Working table	<ul style="list-style-type: none"> • Check panel support strips. Replace if necessary (page 2 - 8).
Every 1000 hrs	Depressuriz'tn system	<ul style="list-style-type: none"> • Check the palette width of the vacuum pumps; replace if necessary; Becker VT 3.40 (page 2-13).
Every 5000 hrs	Depressuriz'tn system	<ul style="list-style-type: none"> • Replace the dust trap of the vacuum pump; Becker KVT 3.100 (page 2 - 15) • Check the palette width of the vacuum pumps; replace if necessary; Becker VT 4.40 (page 2-13).

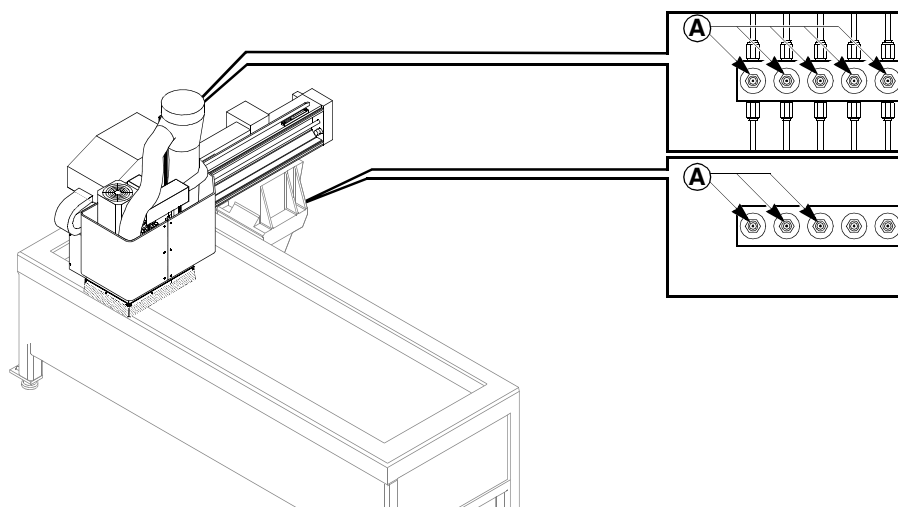
2.3.1 Operating section

2.3.1.1 Lubricating the sliding blocks and recirculating ball screws

Carry out the following operations after every 40 hours of operation.

1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Fill the provided pump with **MOBILUX EP0** lubricant.
3. Apply the pump to greasers **A** (Fig. 2 - 1, page 2 - 5) and insert in each about 3 grams of lubricant (1 or 2 strokes of the pump).

Fig. 2 - 1 Lubricating the sliding blocks and recirculating ball screws



2.3.1.2 Cleaning the slides of the axis movement carriages

Carry out the following operations after every 40 hours of operation.

1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Carefully clean the slides, using clean dry rags. If deposits/encrustation has formed, use a bronze-wire brush.

2.3.1.3 Cleaning the group slide on the slots

Carry out the following operations after every 40 hours of operation.

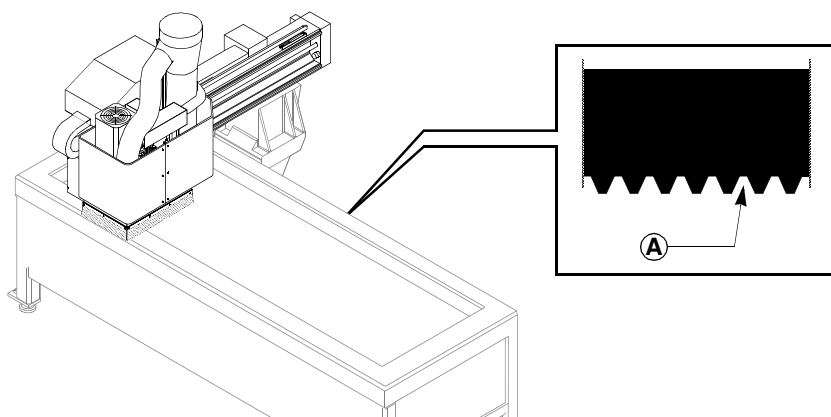
1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Clean carefully the slide points using dry clean rags. If deposits/encrustation has formed, use a bronze-wire brush.

2.3.1.4 Cleaning the racks for the movement of the X axis

Carry out the following operations after every 100 hours of operation.

1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Carefully clean the racks **(A)** (*Fig. 2 - 2, page 2 - 6*), using dry clean rags. If deposits/encrustation have formed, use a bronze-wire brush.
3. Use a brush to spread a fine layer of lubricant **MOBILUX EP0** and remove any drips with a clean dry rag.
4. Move manually the carriage of the X axis and repeat the operations of points 2. and 3. on the section of the racks that was covered by the carriage.

Fig. 2 - 2 Lubricating the rack for the movement of the X axis

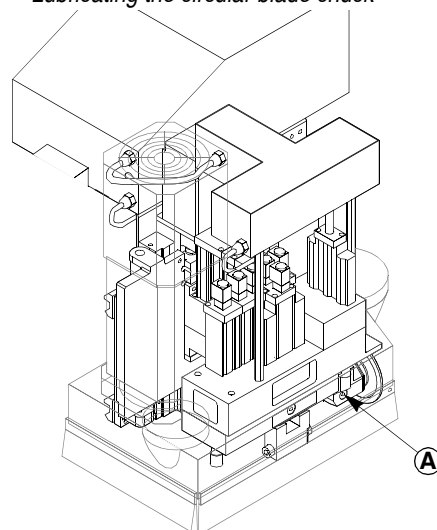


2.3.1.5 Lubricating the circular blade chuck

Fig. 2 - 3 Lubricating the circular blade chuck

Carry out the following operations after every 100 hours of operation.

1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Fill the supplied pump with the lubricant **KLÜBER ISOFLEX NBU 15**.
3. Attach the pump to the greasers **(A)** (*Fig. 2 - 3, page 2 - 6*) and insert about 3 grams into each one (pump 1 or 2 times).



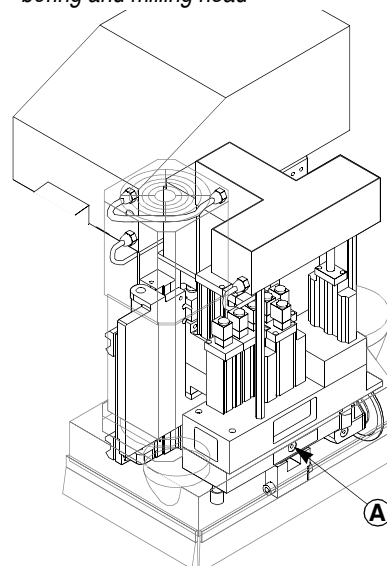
2.3.1.6 Lubricating and cleaning the spindles of the boring and milling head

Fig. 2 - 4 Lubricating and cleaning the spindles of the boring and milling head

Carry out the following operations after every 200 hours of operation.

1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Fill the supplied pump with the lubricant **MOBILTEMP SHC 100**.
3. Attach the pump to the greasers **(A)** (*Fig. 2 - 4, page 2 - 7*) and insert in each one about 8 grams (pump 3 or 4 times).

When lubricating the spindle gears, check for oxidation the external surface of the spindles. Clean if necessary.



1. Lower all the spindles of the boring and milling head through the N.C.
2. Turn the TOOLING **(D15)** selector switch rightwise (on the additional control panel), and pull out the key to prevent tampering (only for "CE" version).



DANGER

Before continuing with the operations, notice the position of the front emergency cord. If accidentally tripped, the cord will cause the immediate raising of all spindles (only for "standard" version).

3. Check and if necessary free from any oxidation the sliding part of the spindles and subsequently apply a dose of Teflon spray.

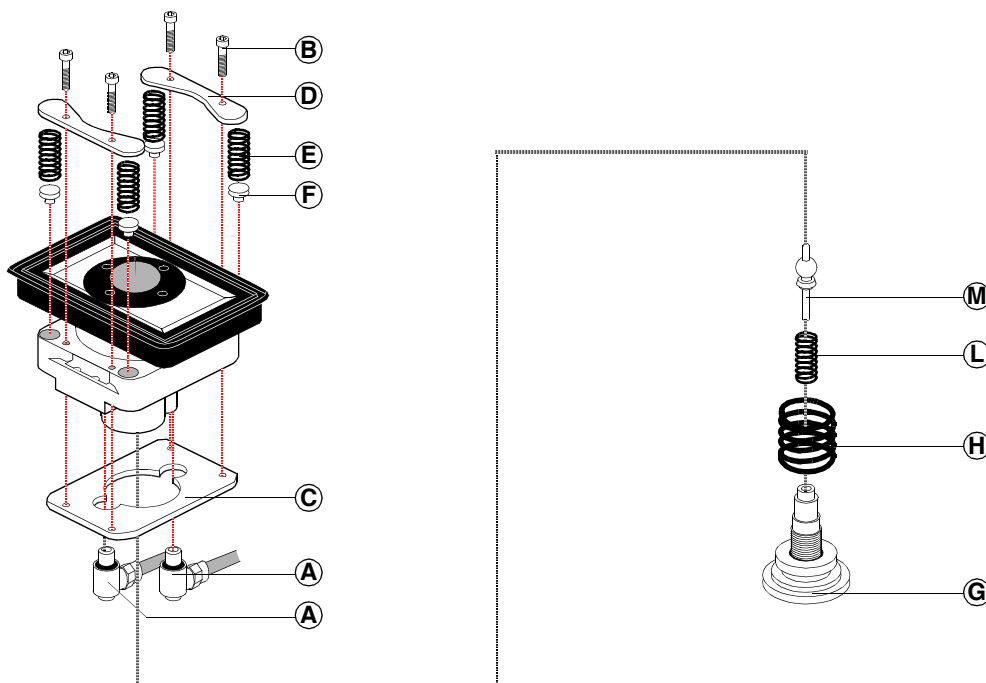
2.3.2 Working table

2.3.2.1 Cleaning the suction cups

Carry out the following operations after every 200 hours of operation.

1. **TURN THE MACHINE OFF** before proceeding with the operations.
2. Disassemble suction-cup components (*Fig. 2 - 5, page 2 - 8*) in the following order: **(A, B, C, D, E, F, G, H, L, M, N)**.
3. Clean the inner part of the cup body and all dismantled parts, using compressed air and a piece of clean dry cloth.
4. After cleaning, assemble everything as before.
5. Clean all suction cups.

Fig. 2 - 5 Disassembly and cleaning of the suction cups



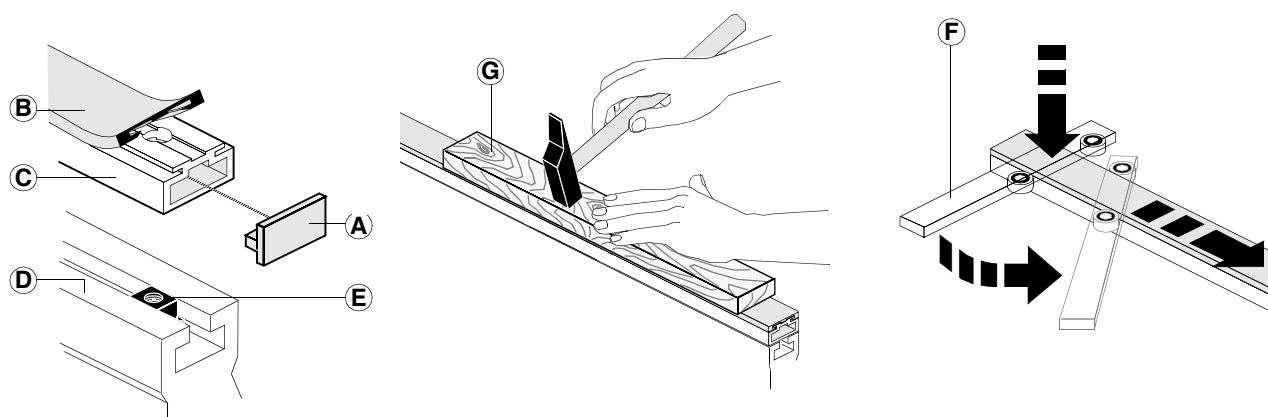
2.3.2.2 Checking and replacing the panel support strips

Carry out the following operations every 500 hours of operation.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Check that the panel support strips on the working table are in good conditions. If necessary, replace them as follows:
3. Remove the plugs (A) and the old strip (B) from the panel support.
4. Disassemble the old strip support (C) and clean the surface (D) with a clean rag.
5. Lean the new strip support on the surface and fix it to the nuts (E) with the corresponding screws.
6. Heat the new strip in an isothermal oven (alternatively, use a container full of water) to a temperature of 45-50 °C, then insert it in the corresponding support, pressing it with the hands.
7. Place a small wooden plank (G) on the strip, and tap it with a hammer to completely insert the strip along its entire length.

8. Lean the tool (F) on the rear end of the strip.
9. Turn the tool until the small wheels touch the strip.
10. While pressing with one hand on the tool pull with the other hand towards the front, to have the strip adhere to the support for its entire length.
11. Ensure that the strip is fully inserted and replace the plugs.
12. Reset the emergency condition; restore the working table surface by contacting BIESSE S.p.A. Service Dept.

Fig. 2 - 6 Replacing the panel support strips



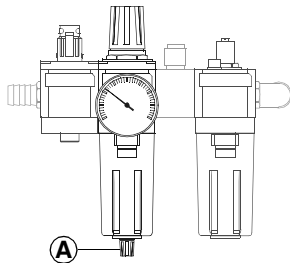
2.3.3 Pneumatic system

2.3.3.1 Draining off condensation in the FRL unit

Carry out the following operations after every 8 hours of operation.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Place a tin/container underneath the draining valve (A) (see Fig. 2 - 7, page 2 - 10) to collect the condensation.
3. Release the valve, by turning the clockwise direction, and press upwards until all condensation has come out.
4. Lock the valve again and reposition the casing.

Fig. 2 - 7 Maintenance of the FRL unit and checking circuit pressure levels



2.3.3.2 Topping up the lubricant in the FRL unit

Carry out the following operations after every 40 hours of operation.

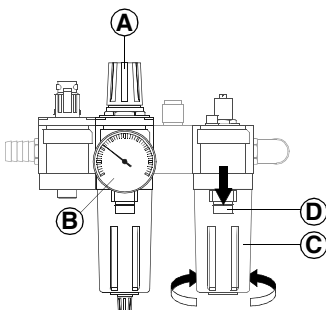
1. **TURN THE MACHINE OFF** before continuing with the operations.



Close the tap upstream with respect to the FRL unit to shut off the flow of compressed air.

2. Pull the knob **A** (Fig. 2 - 8, page 2 - 10) upwards and loosen it completely to eliminate residual pressure. The needle in the pressure gauge **B** must show a value of 0 (zero) bar.
3. Remove the cup of the lubricator **C**. To do this, lower the lever **D** and turn the cap through 45° (to right or left).
4. Top up with lubricant **MOBIL DTE 24** as far as the maximum level.
5. Mount the cup body and screw in completely to return to its original position.
6. Turn the knob until the pressure gauge indicator needle **A** shows the level of 6.5 bar.
7. Press in the knob to stop rotation.

Fig. 2 - 8 Topping up the lubricant in the FRL unit



2.3.3.3 Adjusting the general pressure of compressed air

Carry out the following operations after every 40 hours of operation.

8. Turn the TOOLING (D15) selector switch rightwise (on the additional control panel), and pull out the key to prevent tampering (only for “CE” version).
9. Check whether the circuit pressure levels correspond to the following:
on gauge (B) = 3,5 - 4 bar;
on gauge (C) = 4,5- 5 bar.



CAUTION

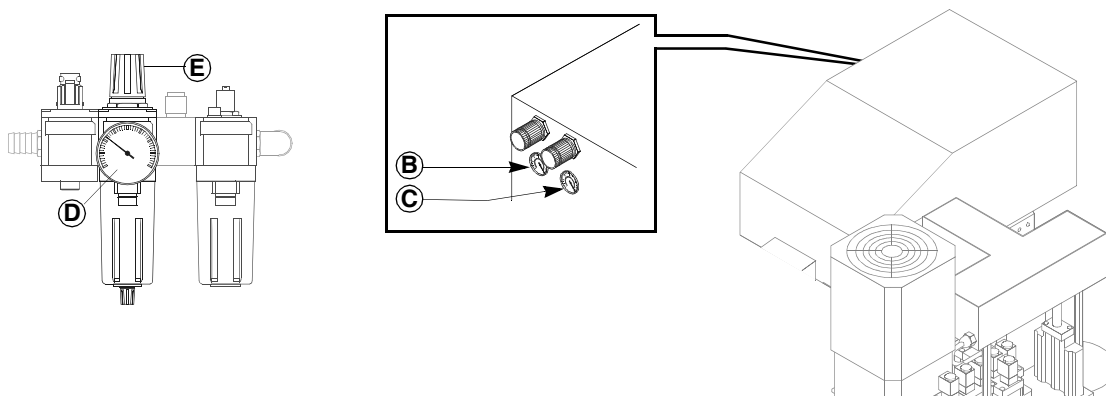
If the circuit pressure levels do not correspond with these values, please contact the BIESSE Technical Support Service.

10. Replace the casing.
11. Check whether the pressure indicated on the pressure gauge (D) is 6,5 bar.

To adjust, proceed as follows.

12. Pull the knob (E) upwards to release it.
13. Adjust the pressure, turning the knob until the needle of the gauge (S) reaches the value of 6,5 bar.
14. Press in the knob to impede rotation.

Fig. 2 - 9 Adjusting the general pressure of compressed air



2.3.4 Electric system

2.3.4.1 Cleaning the cooler filter in the electric cabinet

Carry out the following operations after every 8 hours of operation.

1. Remove the filter covers located at the sides of the electrical cabinet.

2. Verify that the side of the filters in contact with the cover is light in colour and free from dust. If it is not so, blow with compressed air on the part not in contact with the cover of the filter towards the part in contact. Do not blow compressed air in the opposite direction to prevent damaging the filter.
3. After cleaning, replace the filter in its original position with its cover.

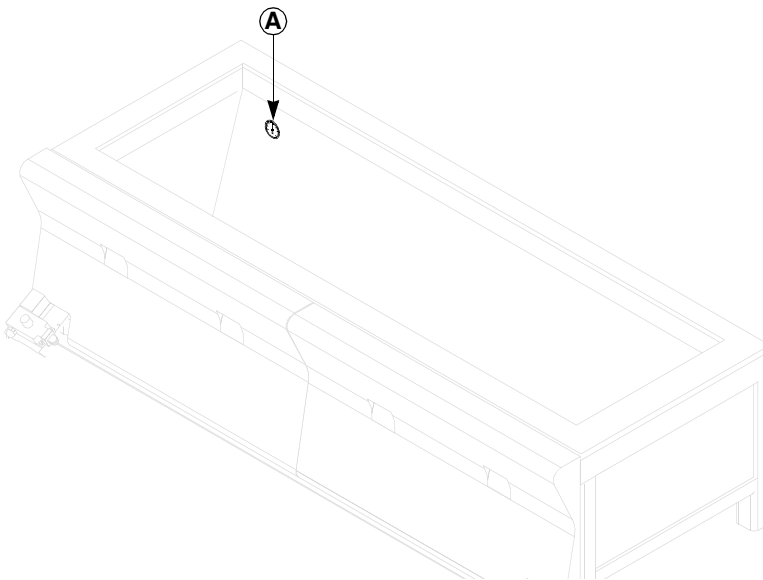
2.3.5 Depressurization system

2.3.5.1 Control and adjustment of the vacuum pressure level

Carry out the following procedure after every 40 hours of operation.

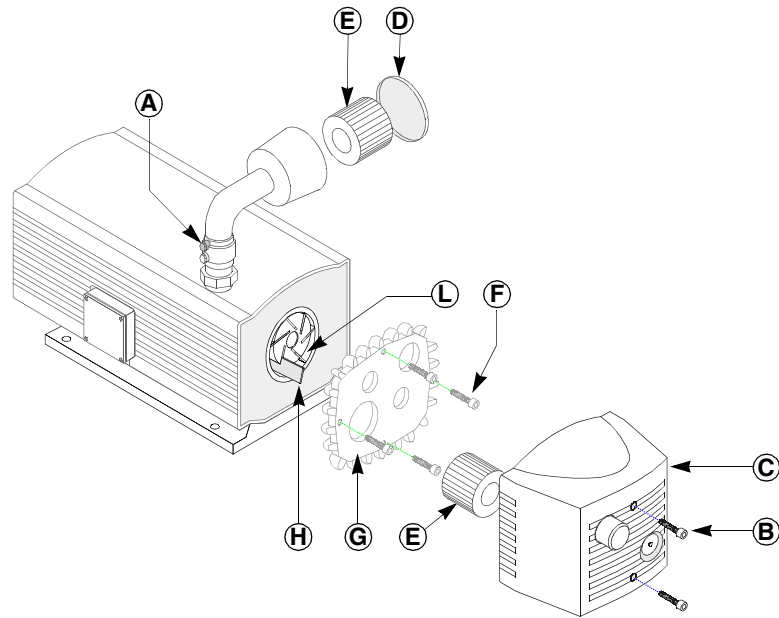
1. Make sure that when all suction cups are free, the level of vacuum pressure shown on the gauge **A** (Fig. 2 - 10, page 2 - 12) is a value between 250 - 650 mm/Hg. For adjustment please contact the BIESSE Technical Support Service.

Fig. 2 - 10 Control of the level of vacuum pressure



2.3.5.2 Becker VT 4.40 vacuum pump

Fig. 2 - 11 Becker VT 4.40 vacuum pump



Cleaning the air filters

Carry out the following operations after every 40 hours of operation.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Loosen screw (A) (Fig. 2 - 11, page 2 - 13) to eliminate residual pressure inside the pump.
3. Loosen screws (B).
4. Remove cover (C) first and then cover (D).
5. Remove the air filters (E).
6. Clean each filter from the inside outwards with compressed air. Replace the filter if dirty with oil or grease.
7. After cleaning replace everything in its original position.

Checking and replacing the blades

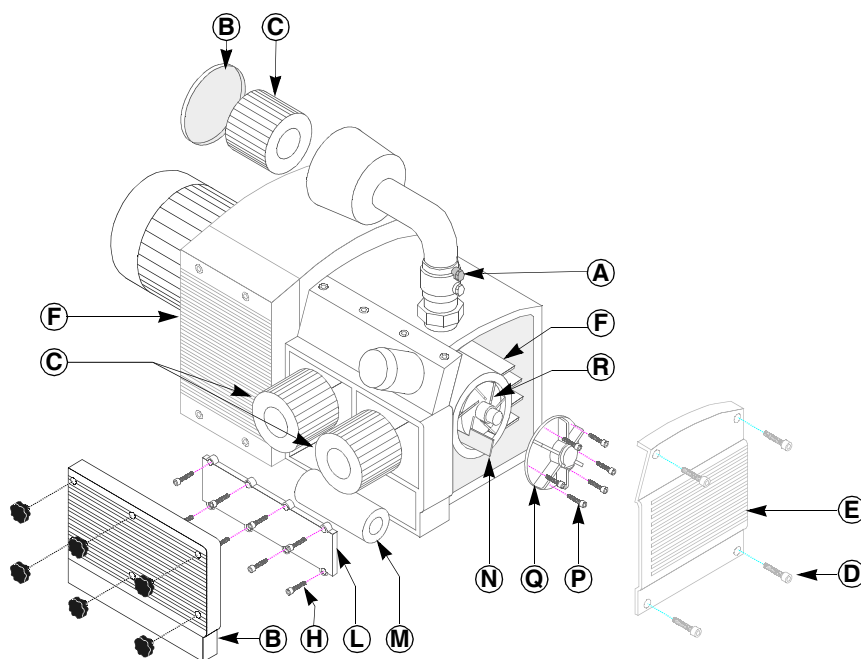
The first check must be made after 5000 working hours. Remove any blades less than **34 mm** wide.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Loosen the screws (B) (Fig. 2 - 11, page 2 - 13).
3. Remove cover (C), then air filter (E).
4. Loosen the screws (F).

5. Remove cover ⑥ and pull out blades ⑨.
6. Check the width of the blades.
7. When replacing the blades, blow dry compressed air inside the cylinder ⑬.
8. After replacement, return everything to its original position.

2.3.5.3 Becker KVT 3.100 vacuum pump

Fig. 2 - 12 Becker KVT 3.100 vacuum pump



Cleaning the air filters

Carry out the following operations after every 40 hours of operation.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Loosen screw ① (see Fig. 2 - 12, page 2 - 14) using a flat 17mm spanner, to release all residual vacuum inside the pump.
3. Remove the filter covers ②.
4. Remove each air filter ③ and clean it from the inside to the outside with compressed air. Replace all filters soiled with oil or grease.
5. After cleaning replace everything in its original position.

Cleaning the cooling slots

Carry out the following operations after every 200 hours of operation.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Loosen the 2 screws **(D)** (see *Fig. 2 - 12*, page 2 - 14) with an 8 mm hexagonal spanner.
3. Remove the protection **(E)**.
4. Clean the cooling slots **(F)** with compressed air.
5. After cleaning replace everything in its original position.

Replacing the dust trap

Carry out the following operations after every 5000 hours of operation.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Loosen the 10 screws **(H)** (see *Fig. 2 - 12*, page 2 - 14) with an 5 mm hexagonal spanner.
3. Remove the cover **(L)**.
4. Replace the dust trap **(M)**.
5. After cleaning replace everything in its original position.

Checking and replacing the blades

The first check must be made after 5000 working hours. Remove any blades less than 26 mm wide.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Loosen the 2 screws **(D)** (see *Fig. 2 - 12*, page 2 - 14) with an 8 mm hexagonal spanner.
3. Remove the lid **(E)**.
4. Loosen the 6 screws **(P)** with an 10 mm hexagonal spanner.
5. Remove cover **(Q)** and pull out blades **(N)**.
6. Check the width of the blades.



CAUTION

When replacing the blades, blow dry compressed air inside the cylinder **(R)**.

7. After replacement, return everything to its original position.

During servicing, also check the conditions of the bearing on the inside of the lid **(Q)**. If it is dry, lubricate with **KLÜBER AMBLYGON TA 15/2** grease.

2.3.6 Centralized lubrication system

2.3.6.1 Eliminating the air trapped in the lines of the system

Carry out the following operations after every 40 hours of operation.

Check that lubricant is expelled by the greasing nipples. If no lubricant is expelled, air may have been trapped in the lines. To eliminate trapped air, proceed as follows:

- 1. TURN THE MACHINE OFF before continuing with the operations.**
- 2. Separate the lines near the greasing nipples.**
- 3. Reset the emergency status and re-start the machine.**
- 4. Open the rear door of the electrical cabinet and press the push-button marked “S29451” until lubricant is completely expelled from the disassembled pipes.**
- 5. Turn the machine OFF again.**
- 6. Clean and re-assemble the lines.**
- 7. Close the door of the electrical cabinet.**

2.4 SPECIAL MAINTENANCE

Special maintenance is that which becomes necessary following breakdown or on account of foreseeable technical modification and upgrading.



DANGER

Special maintenance must be carried out only by authorized personnel (see paragraph 2.1.1, page 2 - 2).



CAUTION

Do not replace any components in the machine before you have contacted Biesse Spa Assistance Service.



INFORMATION

Biesse declines any liability with regard to damage to persons or things as may derive from execution of operations included in the special maintenance procedures by an unqualified operator and/or during which the safety precautions described for any such intervention were not observed. Biesse moreover declines all liability for modifications not deemed as being possible by Biesse during the design of the machine



INFORMATION

At the end of any special maintenance procedure Biesse advises users to record the type of action taken, the date of intervention and the name of the technician who performed the tasks. These notes should be recorded in the machine log, which is normally in the custody of the person responsible for the machine.



INFORMATION

For spare parts and standard industrial components (which, if necessary, can be substituted by others with equal characteristics) contact Biesse Assistance Service.

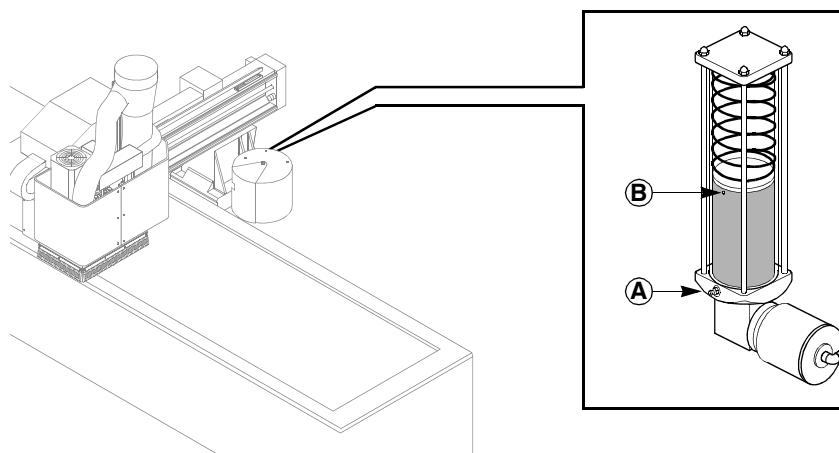
2.4.1 Centralized lubrication system

2.4.1.1 Adding more lubricant

The following operations should be carried out only if the corresponding error message is displayed by the PLC.

1. **TURN THE MACHINE OFF** before continuing with the operations.
2. Connect the lever pump (supplied) to greaser **(A)** (see *Fig. 2 - 13*, page 2 - 18).
3. Add **MOBILUX EP0** lubricant to fill up the system, as shown by lubricant being expelled from the overflow hole **(B)**.

Fig. 2 - 13 *Topping up the lubricant in the centralized lubrication system*



2.5 DISASTERS

The following notes give advice and instructions for use in the case of:

- ☐ fire
- ☐ flood.

If a disaster occurs, users are advised to intervene as quickly as possible in the ways described below.

2.5.1 Emergency procedure for operators

- ☐ In the case of an imminent disaster, shut down the machine according to normal procedure.
- ☐ In the case of a limited fire, which can be controlled with extinguishers available locally, act as indicated below (page 2-20).
- ☐ In the case of a large fire set off the nearest fire-alarm.
- ☐ In the case of flooding disconnect the connectors in the electric cabinet and, if possible, remove the cabinet to a safe place.
- ☐ Inform the person responsible for the machine and/or persons responsible for safety as quickly as possible.

2.5.2 Emergency procedure for person(s) in charge of machine

- ☐ If a fire occurs, make sure the fire has been controlled completely and that there is no residual burning in parts of the machine itself
- ☐ Check for any damage to the machine.
- ☐ Determine a plan for re-establishment of safe operating conditions of the machine.
- ☐ Make a note in the machine log of any events that occur and their possible consequences.
- ☐ If the machine has been damaged, place a notice on it stating clearly that it must not be used.
- ☐ Perform the technical tasks required to return the machine to proper working order
- ☐ Remove the notice and authorize normal use of the machine.
- ☐ Make a note in the machine log of any intervention.

2.5.3 **Extinguishers**

If a fire occurs, the following types of extinguishers are recommended:

- ☐ If the fire starts to burn the panels being worked: Class A extinguisher (21 A).
- ☐ If the fire starts to burn the electric circuits of the machine: Class E extinguishers.



DANGER

If a fire is damaging the electric components of the machine, do not use water to put out the fire.

2.6 NOTES ON MAINTENANCE AND REPAIR



CAUTION

If the axis motor mechanisms are damaged, contact the Biesse Assistance Service without delay and do not attempt to repair the machine before receiving advice.

Thermo-magnetic switches

1. If one of these switches is triggered, press the appropriate push-button to reset.
2. If the switch continues to be triggered, proceed as follows:
 - a) If the triggering occurs instantaneously during resetting or when the START button is pressed, there is a short-circuit on the line or in the device protected by the switch in question. Remove the cause of the short-circuit.
 - b) If the switch triggers some time after resetting (from a few seconds to a few minutes), it means that the device protected by the switch is absorbing more current than the value. Check for correspondence between the detected current value and the value indicated on the rating-plate of the device or in the circuit diagram. If the set current value is correct, contact Biesse Assistance Service.



CAUTION

Do not tamper with or attempt to modify the setting of the thermo-magnetic switches.

2.6.1 Fuses

1. Fuses must be replaced with new fuses of the same type i.e. same caliber/form, current value and type of intervention.
2. Make sure all electric screw bases are properly tightened after checking/servicing any part of the electric cabinet.



CAUTION

The timers and I/O modules of the PLC or NC system and any other component besides those already mentioned must not be tampered with. If a breakdown occurs, ask the Biesse Assistance Service for help or contact an authorized dealer.

2.7 **SPARE PARTS**

Requesting spare parts

Each machine is supplied with its own “Spare Parts Catalogue”, which is prepared for each version. In the introductory section of the catalogue the user will find the procedure for consultation, the instructions for ordering parts and the necessary forms.

Note however that the spare parts catalogue and also this manual are updated until the date of manufacture of the model they are supplied with. BIESSE Spa is dedicated to constant development and improvement of all its products and therefore reserves the right to modify, partially or totally, all publications mentioned above.

2.8 TECHNICAL SUPPORT SERVICE FOR CLIENTS

The manufacturer BIESSE S.p.A. provides clients with a Technical Support Service based at its main offices in Pesaro (Italy). In turn this department also sets up liaison with local customer assistance branches around the world (authorized BIESSE Technical Support Centers).

The entire structure forms a highly efficient integrated network which clients can turn to for any requirement, information or advice.

The Support Service places at the disposal of clients a team of technicians, who have acquired experience and know-how in the use and maintenance of BIESSE machines and have been trained at BIESSE centers. Technicians can also be sent to the user's site if necessary.



INFORMATION

For further information on costs and times, please contact the BIESSE Technical Support Service or the nearest Authorized BIESSE Technical Support Centre.



INFORMATION

To find out more about the Authorized BIESSE Technical Support Centers, see the introductory section in the “*Spare Parts Catalogue*” issued with this machine.

LUBRICANTS

3.1 REGULATIONS FOR THE MANIPULATION OF LUBRICANTS



DANGER

When handling lubricants, do not drink, eat or smoke. Observe all current regulations on the manipulation of mineral oils and grease.

3.1.1 Protective equipment

So as to prevent any risk of irritation or allergic reaction always wear glasses or anti-spray protection mask, special gloves for use with oil and protective overalls when manipulating these materials.

3.1.2 Regulations for storing lubricants

Keep lubricants at a safe distance from sources of heat, electric switchboards and flames. Store in an area with natural ventilation.

3.1.2.1 Incompatibility with other products

Avoid any direct contact with pure oxygen and acids.

3.1.3 Method for disposal of used oil and lubricants

Lubricants may be disposed of with the assistance of local government authorities entrusted with this specific task.

3.1.3.1 Cleaning-up operations after oil leaks or spilling

Wear suitable garments. Absorb the spilled product with sand or use a spatula. Wash soiled surfaces with solvent (chlorine-based or aliphatic), making sure the surrounding working environment does not remain saturated with any released vapors. Send the materials used for cleansing operations to an authorized incineration department as "SPECIAL WASTE PRODUCTS". The appropriate local government authority or public hygiene department should be informed of the occurrence.

3.1.4 Toxic or harmful effects of lubricants

In the case of persons who are particularly sensitive to lubricants and similar substances contact with these materials may lead to an allergic reaction and also forms of acne, especially if the skin has been harmed previously by an abrasive attack e.g. with pastes for cleansing hands,

laceration or cuts etc. or by chemical substances e.g. solvents, strong alkaline and surface-active heavy-duty detergents. Contact with the eyes can cause irritation.

Note also that prolonged exposure to these substances can cause effects such as a slight irritation of the eyes and a moderate degree of irritation of the skin due to incorrect handling. If these effects occur, avoid contact and seek medical help.

3.1.4.1 First aid and emergency situations

In case of contact on the skin wash with soap and water.

In case of contact in the eyes wash with water only.

If a lubricant in the 'oil' category is inadvertently swallowed, do not induce vomiting and contact a doctor immediately.

If a small quantity of lubricant in the 'grease' category is swallowed, contact a doctor immediately. If the quantity swallowed is more than 500 ml (1/2 liter), administer 1 or 2 glasses of water and call for a doctor without delay. Do not induce vomiting if the subject has fainted and do not administer anything orally.

3.2 TECHNICAL CHARACTERISTICS OF LUBRICANTS

Lubricant used by BIESSE S.p.A.		Equivalent products
name	chemical/physical properties	
MOBIL DTE 24	category: OIL volumetric mass: 0,869 kg/dmc a 15 °C vapor tension: <0,1 mm Hg, a 20 °C viscosity: 32,5 cSt, a 40 °C 5,5 cSt, a 100 °C sliding point: -27 °C boiling point: >315 °C	AGIP OSO 32 BP ENERGOL HLP 32 CASTROL HYPIN AWS 32 ELF ELFOLNA 32 ESSO NUTO H 32 KLÜBER LAMORA 32 Q8 HAYDN 32 ROL LI 32 SHELL TELLUS OIL 32 TAMOIL HYDRAULIC OIL 32 TEXACO RANDO OIL HD 32 TOTAL AZOLLA ZS 32
MOBILTEMP SHC 100	category: GREASE volumetric mass: 1,0 kg/dmc a 15 °C vapor tension: <0,1 mm Hg, a 20 °C viscosity: 87 cSt, a 40 °C 13 cSt, a 100 °C drip point: >260 °C boiling point: >315 °C	MOBILTEMP SHC 32
MOBILUX EP 0	category: GREASE volumetric mass: 0,879 kg/dmc a 15 °C vapor tension: <0,1 mm Hg, a 20 °C viscosity: 150 cSt, a 40 °C 11,8 cSt, a 100 °C drip point: 190 °C boiling point: >315 °C	ESSO BEACON EP 0 KLÜBER TRIBOSTAR 0 EP ^(a) KLÜBER CENTOPLEX 0 EP ^(b)

Lubricant used by BIESSE S.p.A.		Equivalent products
name	chemical/physical properties	
MOBILUX EP 1	category: GREASE volumetric mass: 0,879 kg/dmc a 15 °C vapor tension: <0,1 mm Hg, a 20 °C viscosity: 150 cSt, a 40 °C 11,8 cSt, a 100 °C drip point: 190 °C boiling point: >315 °C	AGIP GR LP 1 BP GREASE LTX EP1 ESSO BEACON EP 1 SHELL EP 1 TAMOIL TAMLITH GR EP 1 TOTAL MULTIS EP 1
MOBIL RUBREX 100	category: OIL volumetric mass: 0,869 kg/dmc a 15 °C vapor tension: <0,1 mm Hg, a 20 °C viscosity: 32,5 cSt, a 40 °C 5,5 cSt, a 100 °C sliding point: -27 °C boiling point: >315 °C	AGIP MAG 22 ROL LEMANIA 22 SHELL CARNEA 21 TAMOIL TAMLUBE OIL 22
KLÜBER AMBLYGON - TA 15/2	category: GREASE flammability: COC - ASTM D92 °C: sup. 220	no equivalent product
KLÜBER ISOFLEX NBU 15	category: GREASE density with respect to water: 0,9 g/cm ³ a 20 °C melting temp.: over. 200 °C	no equivalent product

^(a). Limited to Italian market.

^(b). International market.



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