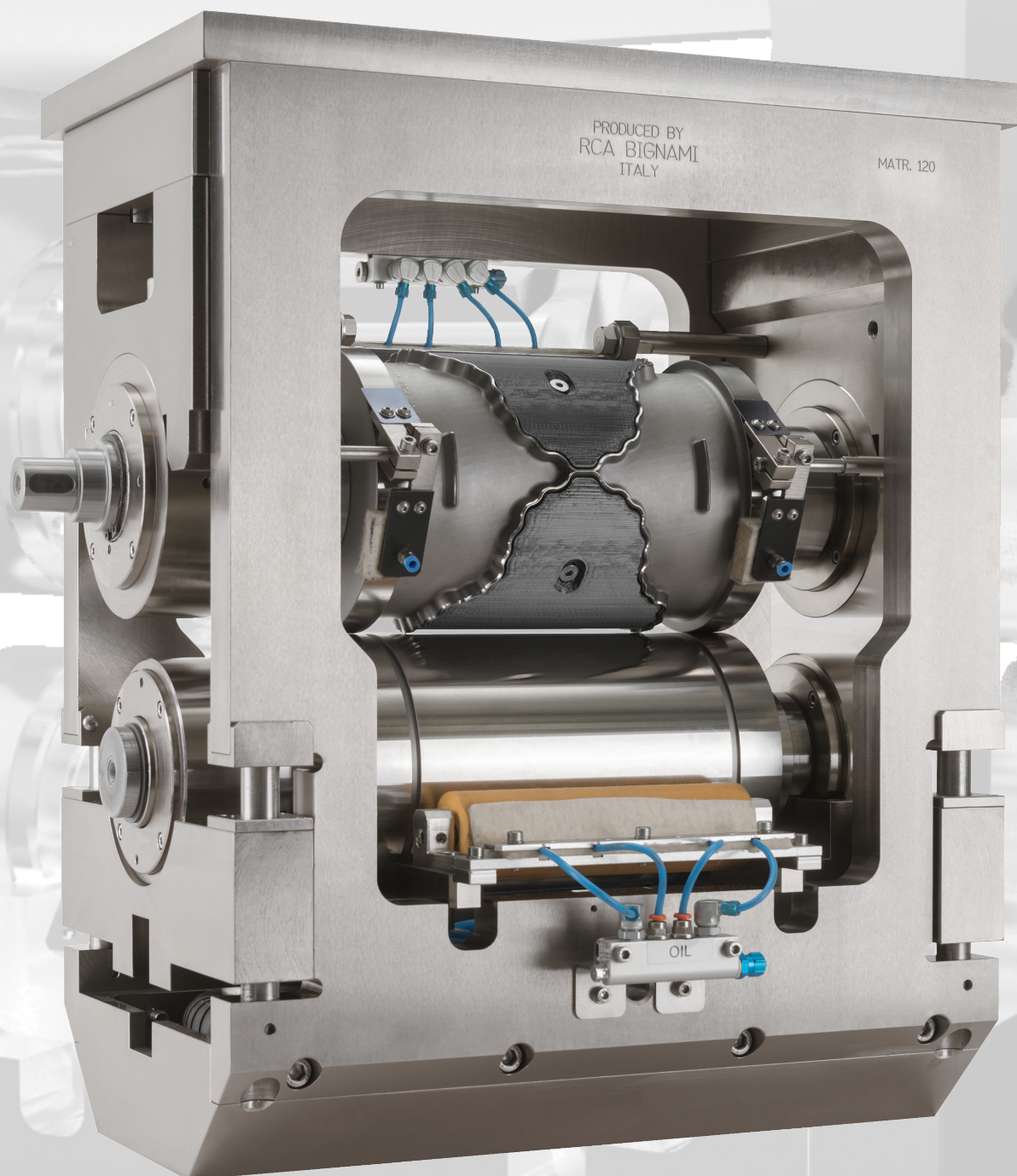


CUTTING UNIT

USE AND MAINTENANCE MANUAL



RCA[®]
BIGNAMI
CUSTOMIZED
FOR YOU

Safety rules

- Read this Instruction Manual carefully before carrying out any operation on the unit: its operation by unqualified people could cause serious damage to people and things.
- During the lifting and transport operations suitable lifting devices and cables or chains with capacity greater than the sum of their weight and the component to be lifted must be used.
- The connection to the various power sources must be made by qualified staff, in compliance with the standards in force.
- The operations which require direct contact with the moving parts of the unit, such as adjustment, assembly and replacement of the cutting blade, must only be carried out when wearing protective gloves to prevent any risk of accident.
- The protective devices have been designed by the Manufacturer to safeguard the operator. During operation the protective devices must not be removed for any reason.
- Tampering with, altering or modifying the unit and the equipment of the command and control system and the interface devices with the operator, as well as the protective devices provided for the safety of people, even partially, is forbidden.
- To avoid any injury it is extremely important that no unauthorised person enters the unit working area or handles one of its components during its operation.
- Before starting the unit make sure that all the protective devices are in the correct position and working properly.
- During the adjustment, maintenance and/or replacement operations, the operator must pay maximum attention to the unit's cutting blade.
- Pay maximum attention in the unit zones where

Contents	
Safety rules	2
General information on the use and maintenance manual	4
Introduction	4
Reference standards	4
Respect of the legislation in force	4
Unpacking	5
Warnings for the installation	5
Knife kit	6
Knife	6
Contra-rotating blade kit	6
Putting into operation	7
Pneumatic connection	7
Driving force	7
Level control	7
General description	8
General view	8
Dimensional data	8
Knife lubrication system	9
Sistema di pulitura delle piste	9
Counter-roller cleaning system	10
Maintenance	11
Replacing the cutting kit	11
Replacing the knife bearings	12
Replacing the knife	13
Replacing the contra-rotating blade	14
Replacing the contra-rotating blade bearings	15
Routine maintenance	16
Technical sheets	17
Torque	17
Spare part catalogue	18

General information on the use and maintenance manual

Introduction

This manual is a valid aid for knowing about your unit and using it correctly: it should thus be read carefully before using the unit.

Each unit is sold with its Instruction Manual. The user is responsible for the management of this Manual throughout the unit life and will only destroy it when the unit itself is disposed of.

The Manufacturer is not responsible for any tampering with this Manual or any modifications made to the User unit, after it has been delivered, which have not been laid down in this document. The Manufacturer reserves the intellectual property rights of this Manual and forbids its disclosure, wholly or in part, in any form (print, photocopies, microfilms, or other means) and therefore the processing, copying or transmission by means of electronic systems, to legal or physical persons without its approval and recording.

Reference standards

The indications in the documents have been used in drawing up the Manual:

- DIRECTIVE 2006/42/CE OF 17/05/2006 – LGS. D. 17 OF 27/01/2010 concerning:
- HEALTH AND SAFETY AT WORK – Prevention of accidents at work – Systems and means of Lifting and movement.
- HEALTH AND SAFETY AT WORK – Prevention of work-related accidents – Machine Tools.
- DIRECTIVE 2006/95/CE of 12/12/2006 concerning the drawing together of the Member states relating to electrical material to be used within certain voltage limits.
- DIRECTIVE 2004/108/CE of 15/12/2004 concerning the drawing together of the legislation of the Member states relating to electromagnetic compatibility and which abrogates directive 89/336/CE.
- Harmonised reference standards:
- UNI EN ISO 4414:2012 concerning:
- Pneumatic – General rules and safety requirements for the systems and their components
- UNI EN 12100 – 2010 Safety of machinery – General principles for design – Risk assessment and risk reduction.
- CEI EN 60204 – 1st EDITION 2006 Electrical equipment of machines.

Respect of the legislation in force

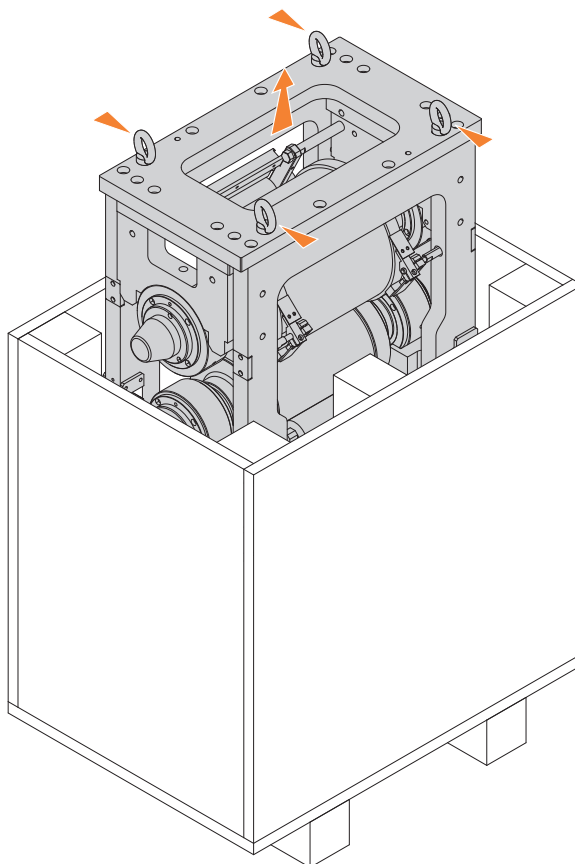
As well as the rules of this Manual, the specific legislative provisions in the field of the prevention of accidents at work must be respected

Unpacking

The cutting unit is supplied with specially made packaging so that the contents are adequately protected. Remove the cutting unit from its packaging respecting the indications which follow:

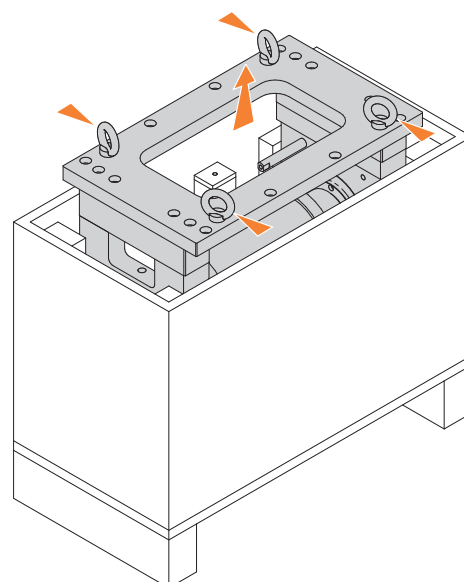
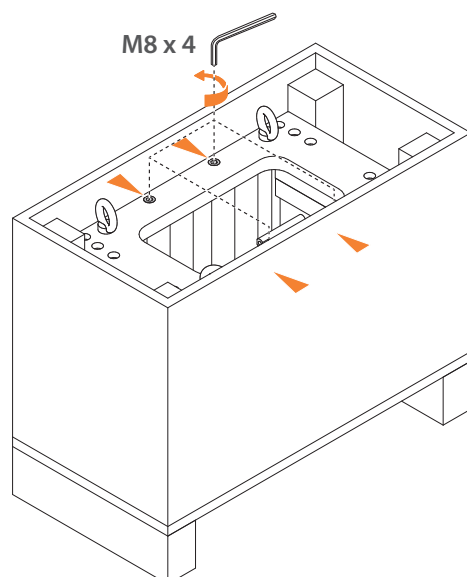
Warnings for the installation

After freeing the cutting unit from its safety stops, use suitable equipment (bridge crane or other) which can bear the weight of the whole unit (see dimensional data table) to take it out of its packaging. Use the eye bolts supplied with the cutting unit to lift it.

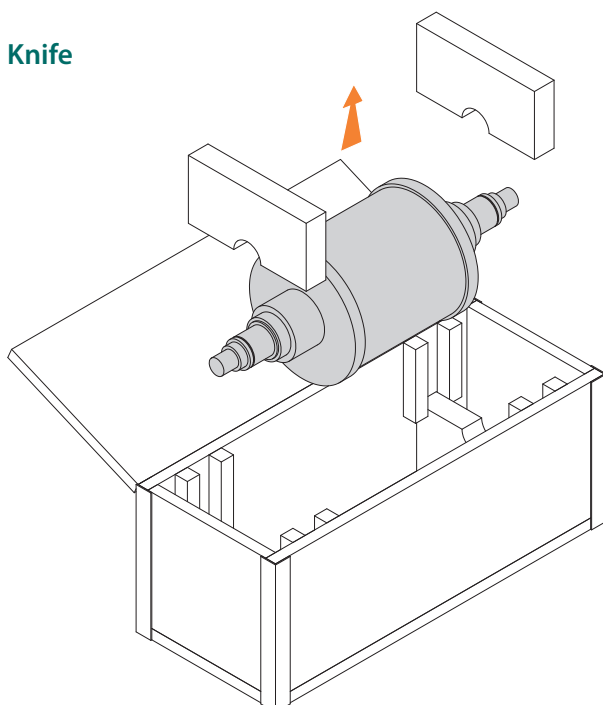


After positioning the unit make sure that it is in a perfectly horizontal position (use a spirit level to check).
Check the correct alignment with respect to the working line.
Check that the direction of work is correct.

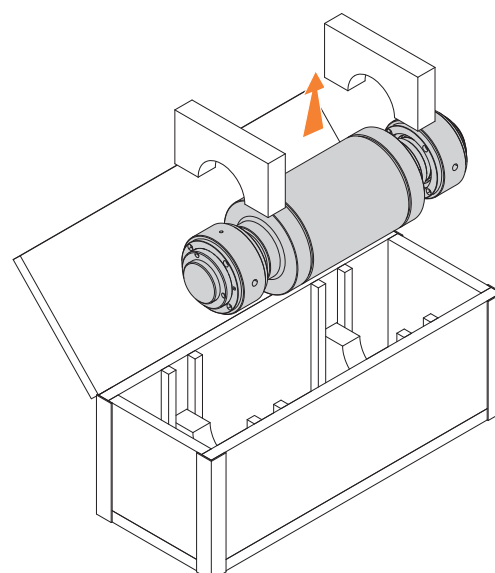
Knife kit



Knife



Contra-rotating blade kit



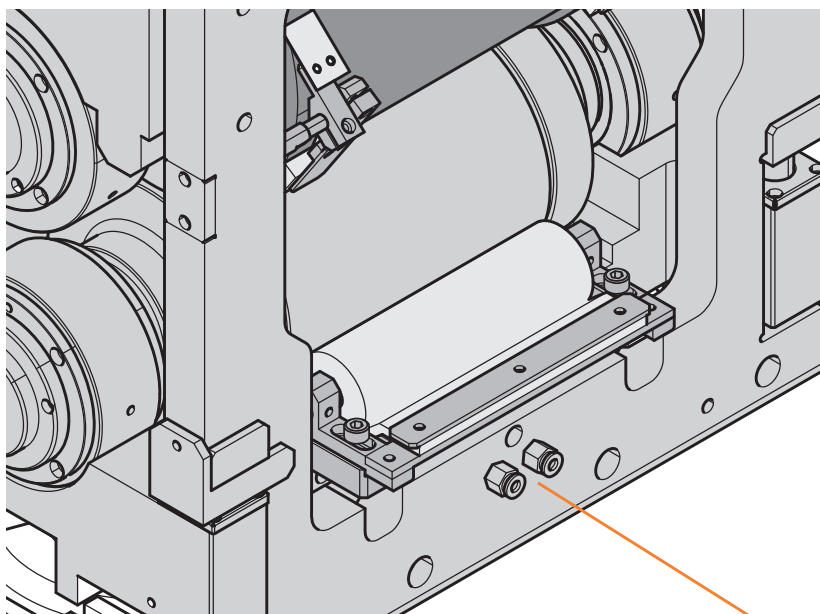
Always use the containers supplied originally for movement, storage, delivery etc...

Putting into operation

Pneumatic connection

The cutting pressure is adjusted and controlled by a pneumatic system; connect it to the line in the factory by means of two independent regulators.

The cutting unit is tested to perform a perfect cut starting from a pressure of 1.3 bar; depending on needs this pressure can be progressively increased up to a maximum of 6.0 bar.



Air connections

Driving force

The cutting unit must be connected to a driving source socket supplied by the machinery of which it is a part; for correct operation use constant-velocity joints with H7 tolerance lower than 0.05 mm.

Level control

Before starting the cutting unit check that the levels of the lubricant liquid and detergent are correct and operate the small pumps to activate the flow of the liquids.

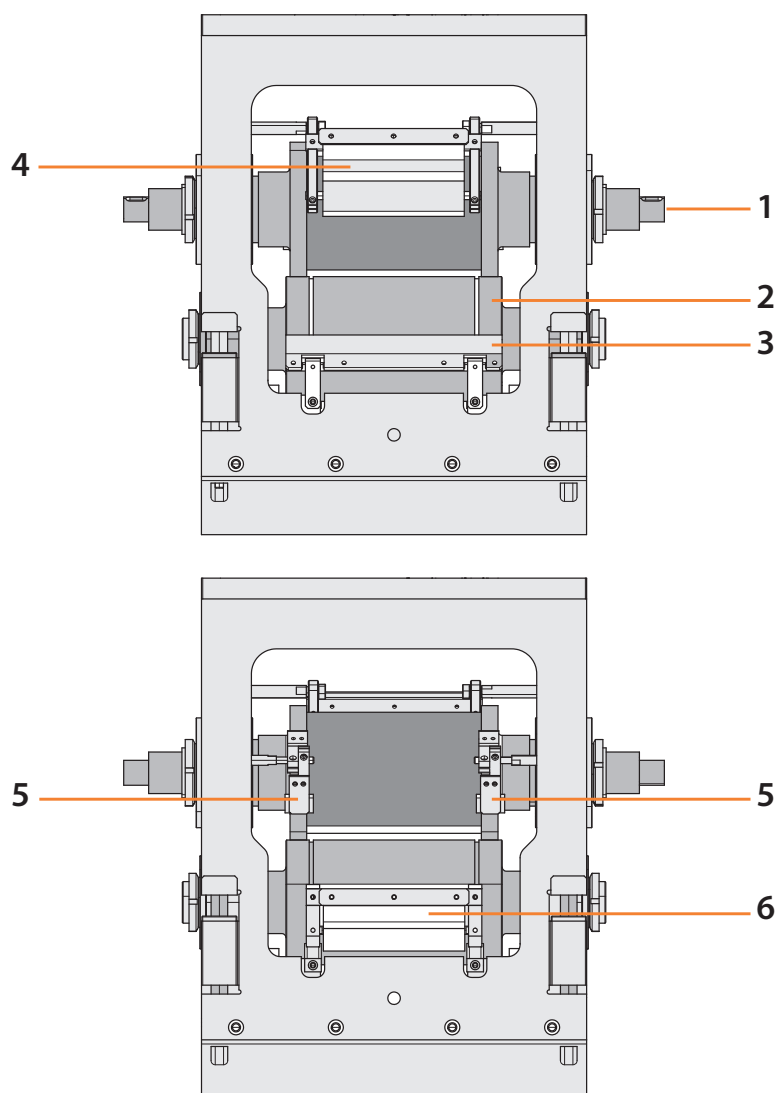
Operate the small pumps at least once during each work shift (see maintenance).

General description

The T120 Cutting Unit is designed and manufactured by the R.C.A. BIGNAMI S.R.L. company and can make the shaping in nappies.

The material is supplied on the cutting unit by means of another machine inside the working line where the cutting unit is used.

General view



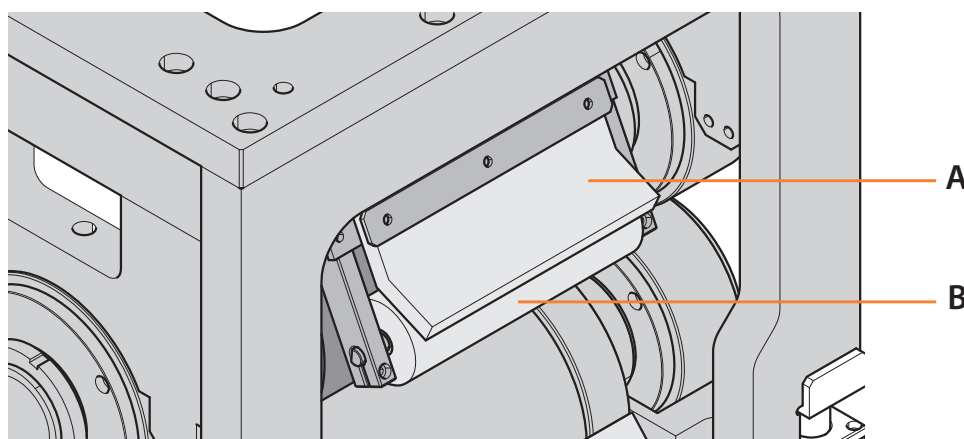
- | | |
|----------------------------------|---------------------------------|
| 1. Cutting roller | 4. Knife lubrication system |
| 2. Counter-roller | 5. Track cleaning system |
| 3. Counter-roller cleaning brush | 6. Counter-roller cleaning felt |

Dimensional data

Height	600 mm
Width	300 mm
Depth	610 mm
Overall weight	350 Kg

Knife lubrication system

The cutting unit has a lubrication system connected to a small pump which keeps the knife lubricated. On the cutting roller a felt cloth (A) soaked in lubricant comes into contact with a rubberised roller (B) which in turn transfers part of the lubricant to the knife.

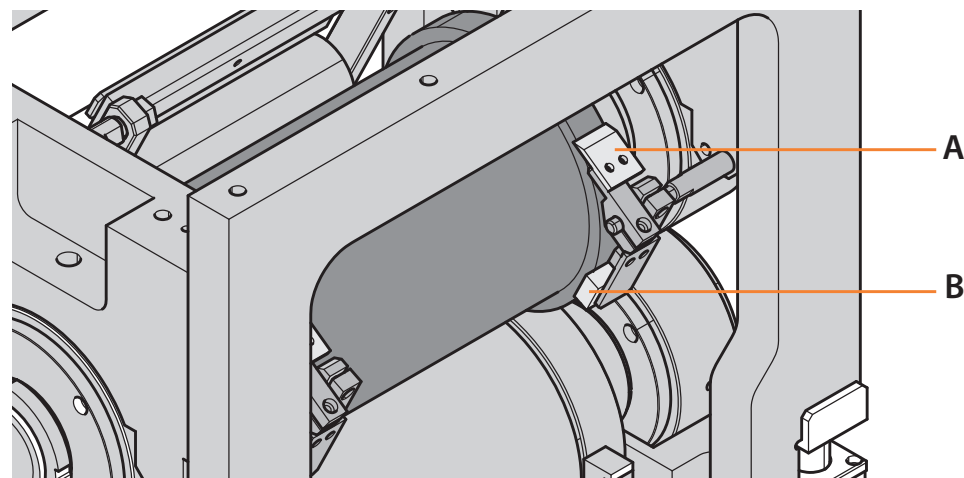


Caution!

Only use "H21 silicone oil" which can be ordered from RCA Bignami for lubrication.

Track cleaning system

The cutting system has a cleaning and scraping system which keeps the knife tracks clean. There are scrapers and cleaners on each of the tracks. The scraper is a brush (A) which removes the impurities from the roller, while the cleaner (B) is a felt which applies the liquid detergent on the guide. The liquid is applied by means of a small manual pump.

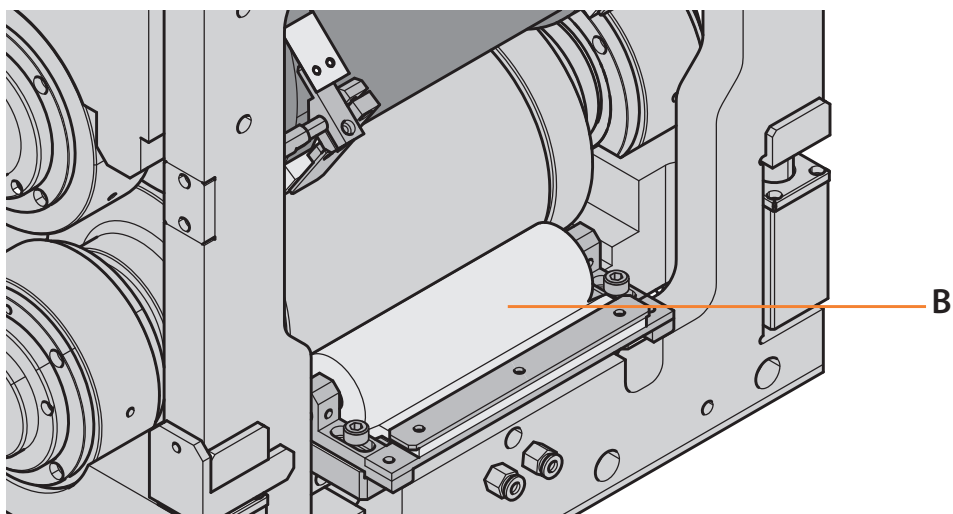
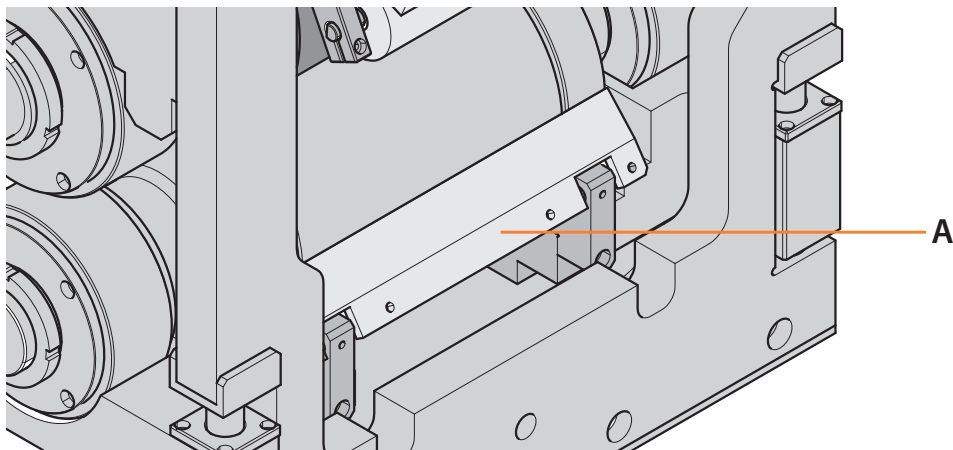


Caution!

Only use "Sicur_Solv" detergent for cleaning. It is a solvent-based odourless fluid for cleaning which can be ordered from RCA Bignami.

Counter-roller cleaning system

On one side of the counter-roller there is a brush (A) which removes the impurities and the working residues from the roller. On the other side there is a cleaner felt (B) which applies the liquid detergent on the counter-roller. The liquid is applied by means of a small manual pump.

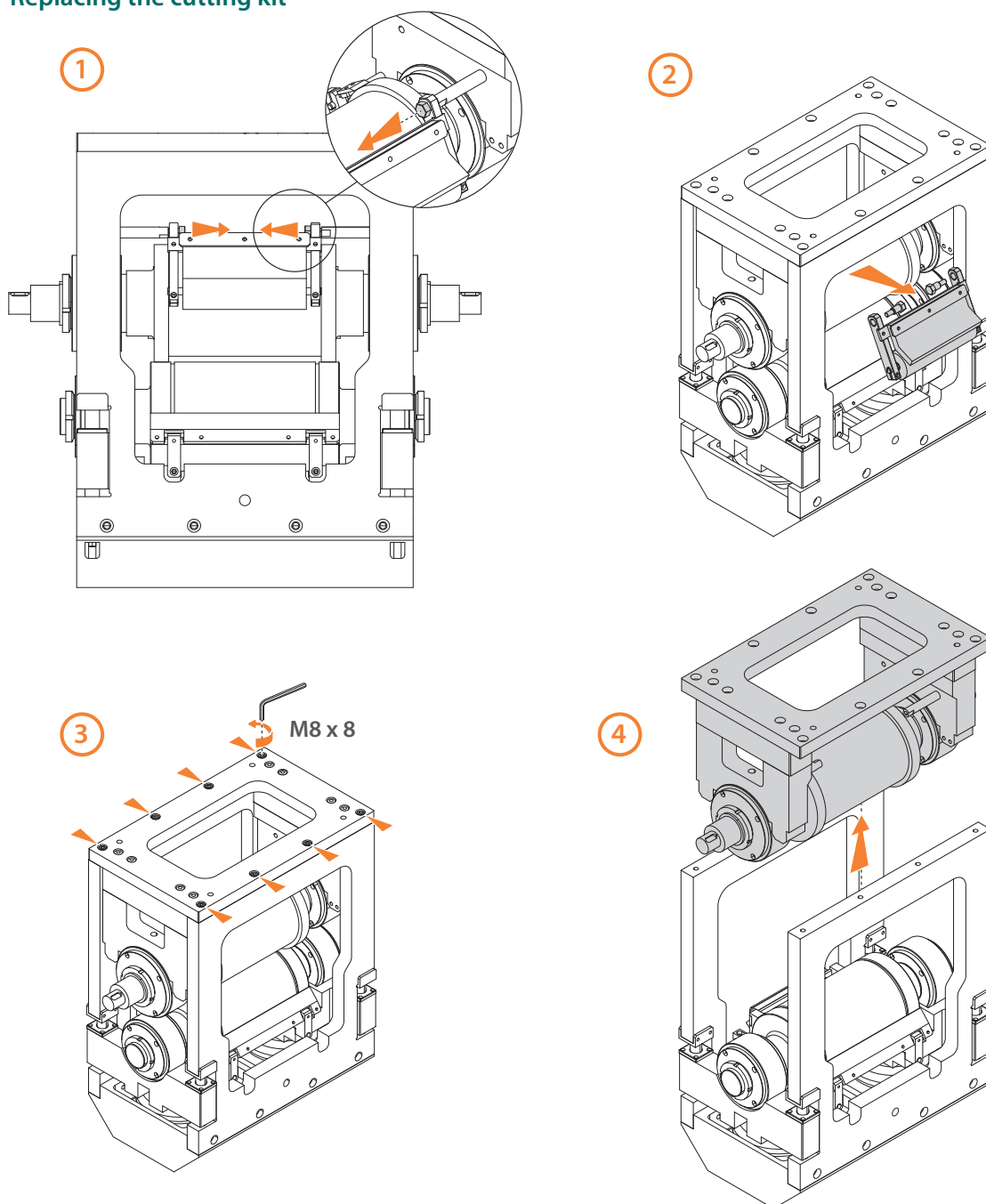


Caution!

Only use "Sicur_Solv" detergent for cleaning. It is a solvent-based odourless fluid for cleaning which can be ordered from RCA Bignami.

Maintenance

Replacing the cutting kit



For reassembly follow the same operations in reverse, from 4 to 1.



The screws must be tightened with a torque wrench respecting the values given in the table (see page 17)

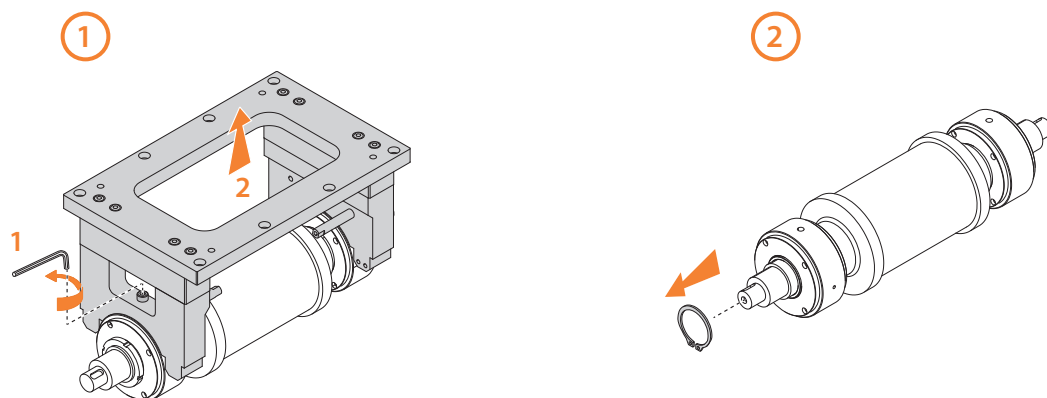


Caution!

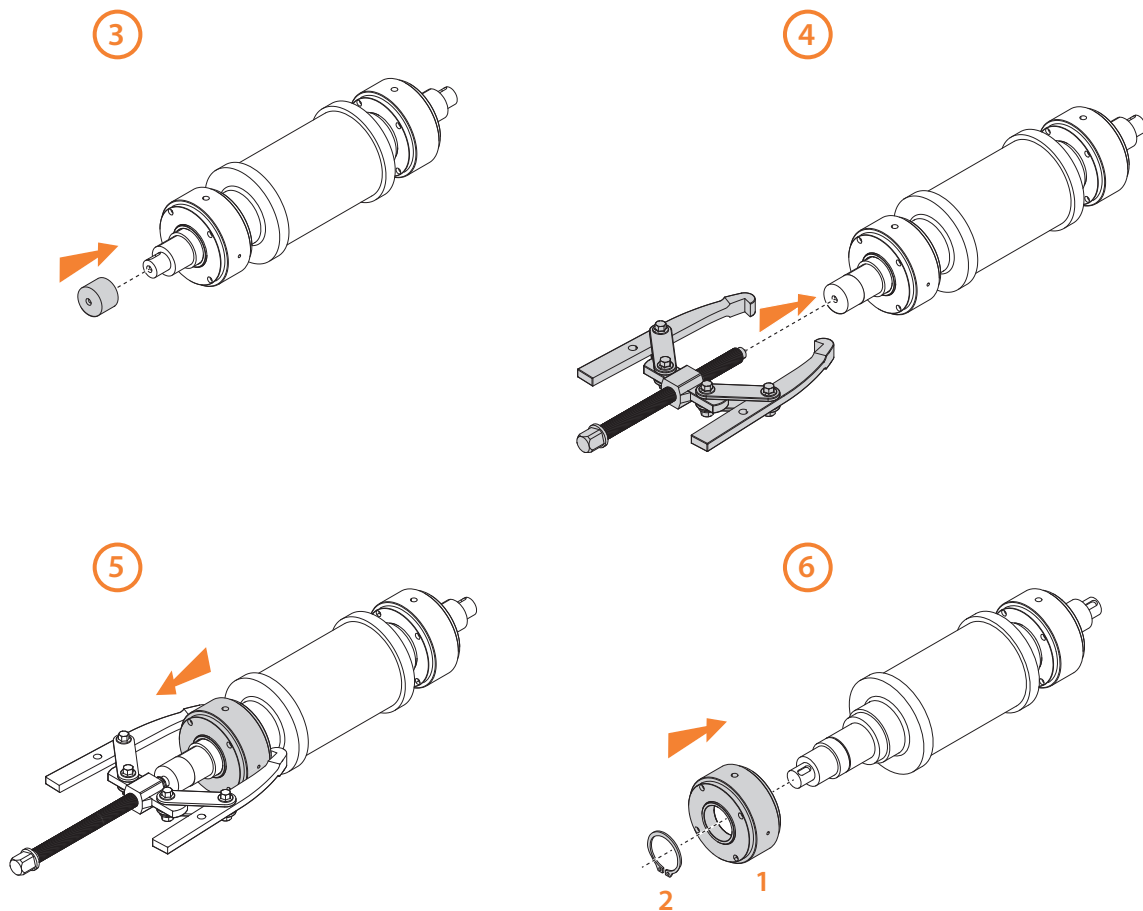
The knife must only be replaced by qualified personnel; wear protective gloves when carrying out all the operations; throughout the procedure be very careful not to damage the knife.

Replacing the knife bearings

The knife ball bearings must be replaced after no more than 50 million revs (unless there are previous problems due to lack of lubrication or other); only use bearings with the same features as the original. During normal operation lubricate the bearings, through the greasers, at least every 6 months of use using LGHT2 SKF grease (common grease for bearings) which can be ordered from RCA Bignami.

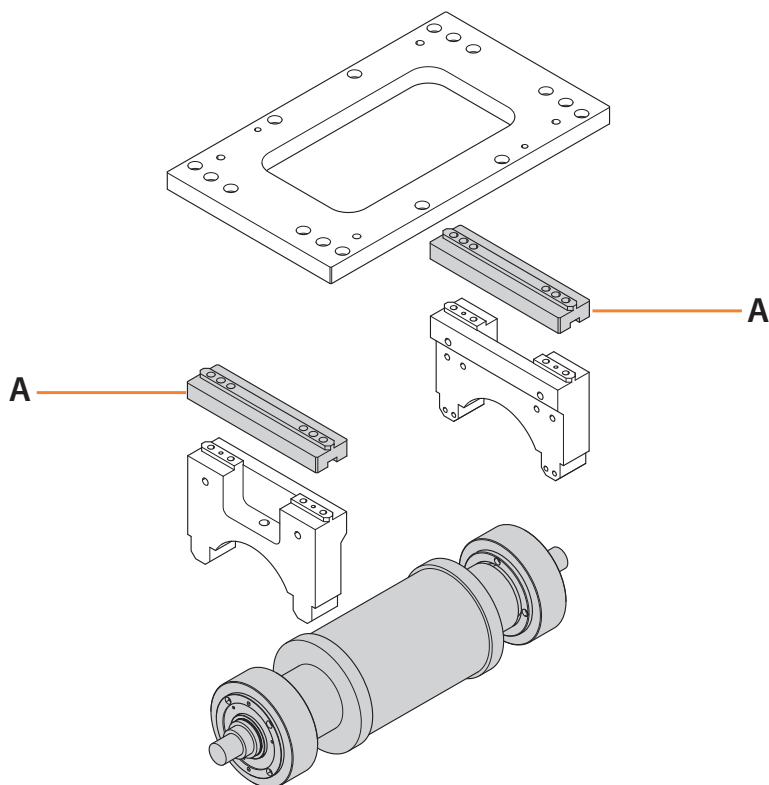


To avoid damaging the knife pin, put a protective device (3) on it before applying the extractor.

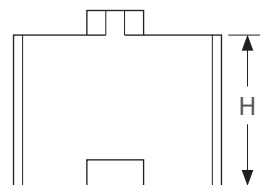


Replacing the knife

When replacing the knife with one of a different diameter the spacers **A** must also be replaced, using those of correct thickness as indicated in the table below.



Knife diameter	Spacer shims (height H)
148	57.60
161.7	50.75
182	40.60
196	33.60
203	30.10
216	23.60

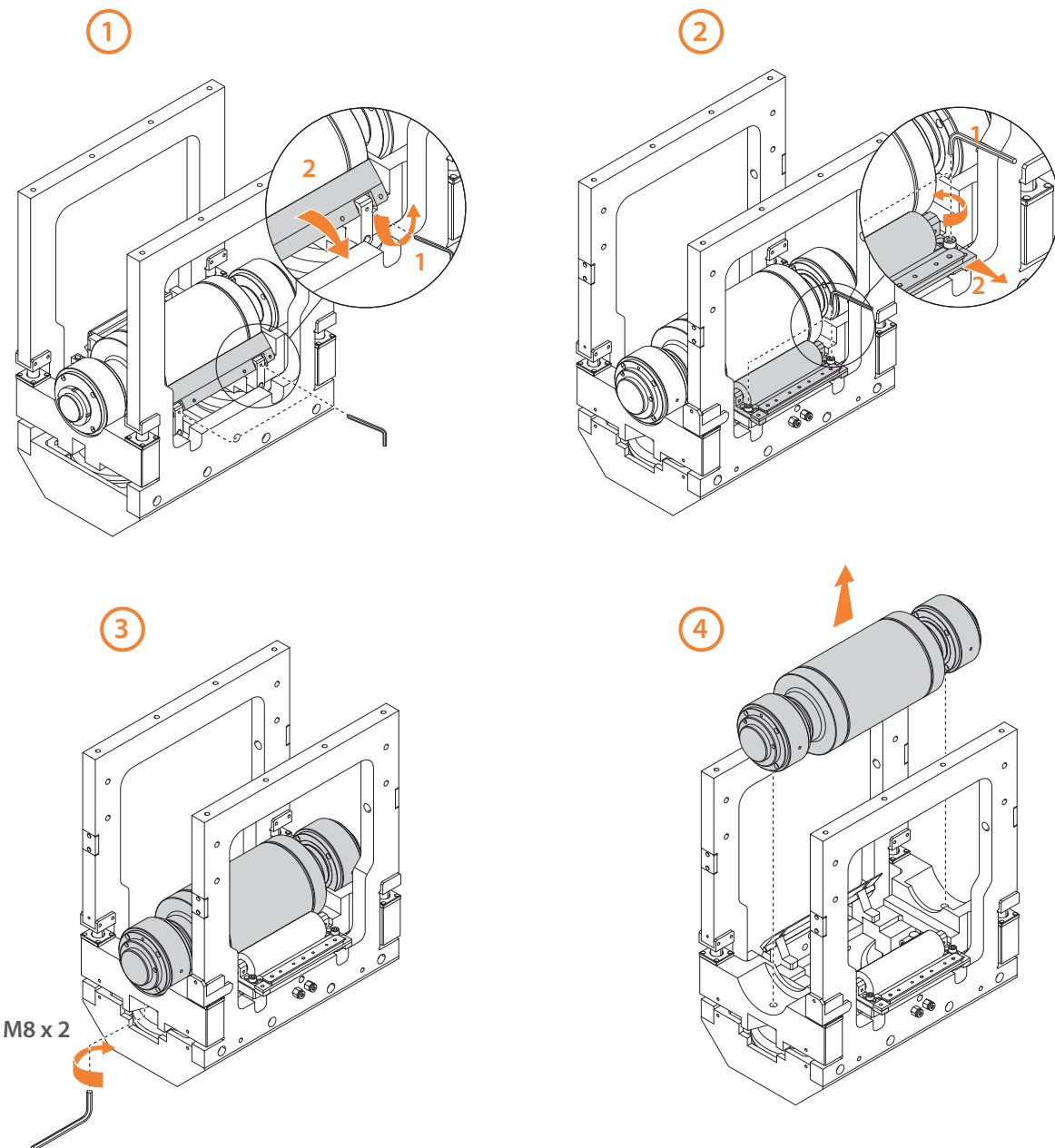


Replacing the contra-rotating blade

To guarantee correct operation, every time the cutting kit is replaced the contra-rotating blade should be replaced or overhauled as well.

For the overhaul respect the following features:

The table must have a surface finish of $Ra\ 0.2$ and a concentricity with respect to the centres of 0.005 .



For reassembly follow the same operations in reverse, from 4 to 1.



The screws must be tightened with a torque wrench respecting the values given in the table (see page 17)



Caution!

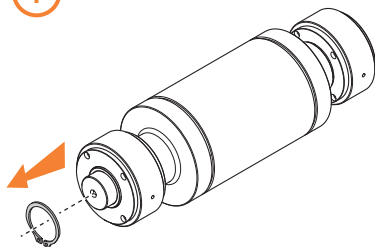
The contra-rotating blade must only be replaced by qualified personnel; wear protective gloves when carrying out all the operations; throughout the procedure be very careful not to damage the contra-rotating blade.

Replacing the contra-rotating blade bearings

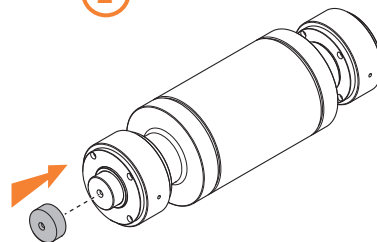
The contra-rotating blade ball bearings must be replaced after no more than 50 million revs (unless there are previous problems due to lack of lubrication or other); only use bearings with the same features as the original.

During normal operation lubricate the bearings at least every 6 months of use using LGHT2 SKF grease (common grease for bearings) which can be ordered from RCA Bignami.

1

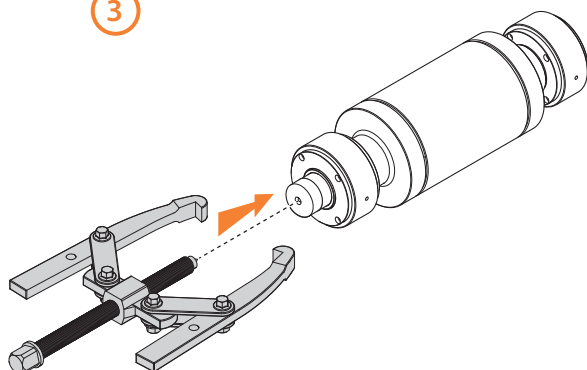


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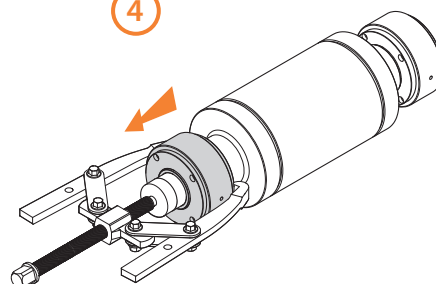


To avoid damaging the contra-rotating blade pin, put a protective device (2) on it before applying the extractor.

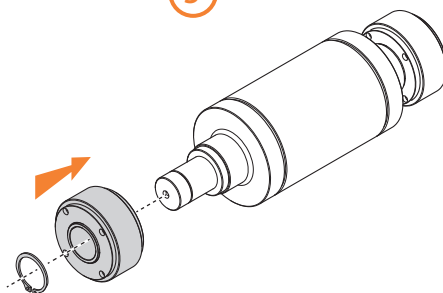
3



4



5



Routine maintenance

Adequate maintenance is a determining factor for longer unit lifetime in optimum operating and yield conditions.

Also remember that all the maintenance, adjustment and replacement operations which have not been covered in this Instruction Manual should only be carried out by qualified personnel.

DAILY MAINTENANCE

- Remove any residues left by the products being worked which could affect correct unit operation.
- Operate the small pumps which supply the lubricant liquid and the detergent.

WEEKLY MAINTENANCE

- Check the liquid level.
- Careful cleaning of the whole unit.

FORTNIGHTLY CLEANING

- Carefully check the torque of all the fastening bolts and the state of each unit component (see the Torque table).
- Grease the bearings every 50 million revs with LGHT2 SKF grease (common grease for bearings).
- Check the efficiency of the scraping, cleaning and lubrication systems.

QUARTERLY MAINTENANCE

- Check the free vertical movement of the contra-rotating blade and the correct operation of the cylinders.
- Check the state of wear of the lubrication and washing systems.



*The maintenance operations described in this chapter must **ONLY** be carried out by qualified and authorised personnel.*



Wear the personal protection equipment during maintenance operations.

Technical sheets

Torque

When using automatic screwdrivers respect the torques for stainless steel.

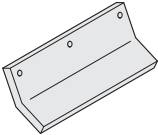
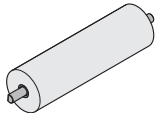


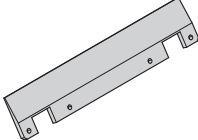
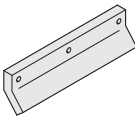
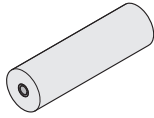
Often one has screwdrivers adjusted for galvanised screws; stainless steel screws require different torques, thus the screwdrivers should be adjusted; the correct values to use are indicated in the following table.

Guidance values for corrosion and A2 / A4 acid-resistant steel screws

Thread	Class of resistance 70		Class of resistance 80	
	Preload in N	Torque in Nm	Preload in N	Torque in Nm
M 5	3.000	3.5	4.750	4.7
M 6	6.200	6	6.700	8
M 8	12.200	16	13.700	22
M 10	16.300	32	22.000	43
M 12	24.200	56	32.000	75
M 16	45.000	135	60.000	180
M 20	71.000	280	95.000	370
M 24	105.000	455	140.000	605
M 30	191.000	1050	255.000	1400

Material	A2 / A4
Friction value	>0.12
Elasticity limit	Rp 0.2 - A2 / A4 70 - 450 N/mm ² 80 - 600 N/mm ²
MA values	Table x 0.9 - MA - max

Spare part catalogue

	Description	Item
	Lubricant felt	
	Lubricant roller	T120 - E032
	Track cleaning brush	T120 - E032
	Track cleaning felt	
	Contra-rotating blade cleaning scraper	T120 - E024
	Contra-rotating blade cleaning felt	
	Contra-rotating blade cleaning roller	T120 - E026
	Lubricant for cutting knife: H21 silicone oil	
	Liquid detergent for contra-rotating blade: Sicur Solv	



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