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ENGLISH

A black and white photograph of a drum cutter attachment mounted on an excavator arm. The attachment is positioned over a deep trench at a construction site. In the background, there are buildings and other construction equipment under a clear sky.

DRUM CUTTER OPERATORS MANUAL

KDC15

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Please complete before commissioning the cutting unit:



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MODEL NUMBER:

SERIAL NUMBER:

DATE OF MANUFACTURE:

SUPPLIER / DEALER:

DATE SOLD TO SUPPLIER / DEALER:

DATE SOLD TO ORIGINAL END USER:

OWNER OR OPERATOR:

PARENT MACHINE MAKE & MODEL:

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2 Foreword

2.1 Concerning these operating instructions

Please read this instruction manual carefully so that you are acquainted with the correct handling and operation.

The operator must also follow the enclosed operating instructions for externally supplied components. Observe the national legal and miscellaneous regulations.

All target groups must have read these Operations Instructions and understood their contents.

Contact our customer service if you have any questions concerning the operator's manuals:

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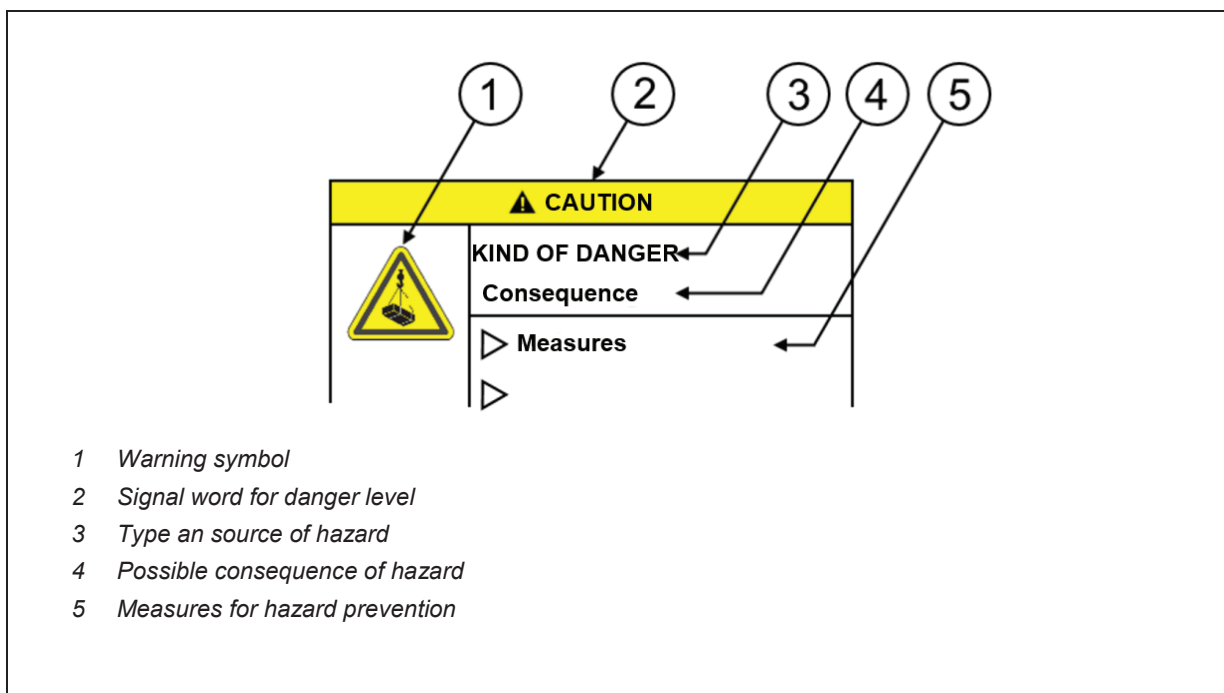
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2.2 Notes on using the Operating Instructions

Structure of safety notes



Pictogram



This symbol is employed for information containing important notes about the correct use and/or how to proceed. Noncompliance may lead to malfunction

2.3 Definition of target groups

The contents of these Operating Instructions are aimed at a diverse target audience. The level of knowledge each target group must have is defined here. All target groups must have read these Operations Instructions and understood their contents.

Operating personnel must

- be of the legal minimum age.
- have been instructed in the use of the machine.
- be familiar with the country-specific accident-prevention regulations.

Maintenance personnel must

- be of the legal minimum age.
- know the maintenance points on the machine.
- know the country-specific environmental regulations for the disposal of lubricants (see chapter **Regulations concerning environmental protection**).

Service personnel must

- be of the legal minimum age.
- have sound school education and vocational training.
- have been instructed by Auger Torque in the performance of service jobs on the machine.
- must have been trained in the rules and procedures related to a case of malfunction.

2.4 Proper use of the transverse cutting unit

The transverse cutting unit is available with a wide range of hydraulic motors and cutting drums featuring different teeth configurations suitable for most applications.

- Ensure that the maintenance schedule has been adhered to before operating the machine.
- The machine must only be run by well-trained operating personnel with competent knowledge.
- The machine must only be maintained by well-trained maintenance personnel with competent knowledge.
- Operate the handles smoothly without jerking. If the cutting head stalls, back off the cutter from the workface. Do not overload the teeth as this may cause damage to the cutting unit.
- Periodically check that the cutting head is clear of debris as this can affect the overall cutting rate and wear and tear of the tool.
- Always ensure that the cutting unit or any part of the unit is correctly attached during any maintenance work.
- Our Technical Service has to be consulted before the cutting unit is used in wet environments or under water. Before the cutting unit can be used in such environments it has to be converted (see chapter Operation under water).


2.5 Improper use of the transverse cutting unit

- Do not operate the cutting unit at the stroke end of a hydraulic cylinder of the attachment carrier.
- Do not use the cutting drum with damaged or missing teeth as this causes vibration and may damage the unit or excavator.
- The cutting unit should never be run in reverse rotation during use, (unless it can be done so hydraulically), as this can cause damage to the motor.
- Never try to cut with the unit when switched off and while tracking the excavator as this may cause damage to the unit.
- Never place the cutting head against the working surface before starting the cutting unit as this may damage the unit. The unit must be running and fed into the working surface at a rate that does not allow stalling.

3 Safety





3.1 General safety

3.1.1 Safety symbol

	The safety symbol is used to warn you of potential personal injury. Observe all instructions that follow this safety symbol in order to avoid potential injuries or death.
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3.1.2 Hazard classification

The precautionary statements are divided into four categories:

	Indicates a hazardous situation which, if not avoided will result in death or serious injury .
	Indicates a hazardous situation which, if not avoided could result in death or serious injury .
	Indicates a hazardous situation which, if not avoided could result in minor or moderate injury .
	Without safety symbol – indicates a situation which, if not avoided could result in property damage .

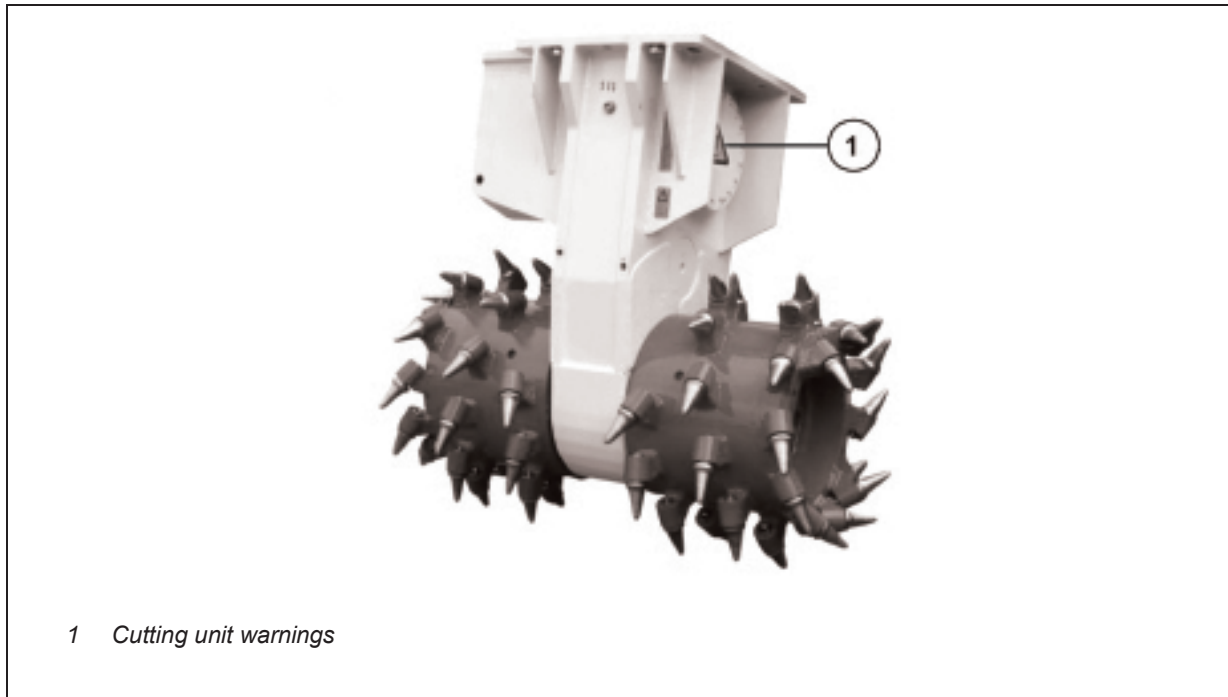
3.1.3 Descriptions of symbols and hazard pictorials

The symbols used in this Manual and on the machine identify the following hazards:

Symbol	Meaning
	<p>WARNING OF PROPERTY DAMAGE Indicates a situation which, if not avoided could result in property damage</p>
	<p>WARNING OF A HAZARDOUS SPOT If the required precautionary measures are not taken, death, personal injury, and substantial property or equipment damage may occur.</p>
	<p>WARNING OF CUTTING UNIT DRUM If the required precautionary measures are not taken, the transverse cutting unit may cause personal injury and substantial property or equipment damage.</p>
	<p>WARNING OF ENVIRONMENTALLY HAZARDOUS SUBSTANCES If the required precautionary measures are not taken, these substances may cause serious environmental damage.</p>
	<p>WARNING OF CRUSHING DANGER If the required precautionary measures are not taken, personal injury due to crushing may occur.</p>
	<p>WARNING OF SUSPENDED LOAD If the required precautionary measures are not taken, death, personal injury, and substantial property or equipment damage may occur due to suspended or falling loads.</p>

3.1.4 Locations of safety signs

The safety signs are located in the following machine positions:



3.1.5 Service and replacement of safety signs

- The safety of the operator always has to come first.
- Replace any safety sign which has been damaged or disappeared.
- Use mild detergents and water to clean the safety signs.
- Do not use detergents containing solvents.

3.2 Personal safety

The Operating Instructions and the symbols described have to be read and understood by all persons working on and with the machine.

3.2.1 Personal safety gear

The following mandatory signs used in this manual and on the machine inform the user that these safety measures are required **at all times on the work site**:

Sign	Meaning
	Wear Protective Clothing
	Wear Protective Gloves
	Wear Protective Goggles
	Wear Hearing Protection
	Wear Safety Shoes
	Wear Safety Helmet
	Wear a Hairnet with Long, Open Hair
	Do not wear loose clothing, which may get entangled in the machine

3.3 Work zone safety

3.3.1 General work zone regulations – safe work practices

Obtain information on routine machine checks and consult the relevant authorities with regard to work regulations.


The cutting unit does not incorporate any feature for dust suppression as standard equipment. The low cutting speed and type of strata generally excavated combine to reduce dust to minimal levels. However, in those circumstances, where excessive dust levels are generated, appropriate counter measures must be adopted, for example water spray systems or mobile/stationary anti-dust systems and the use of personal protective equipment.

3.3.2 Deactivation and protection against re-activation

Ensure all the following safety instructions are read prior to using or servicing the cutting unit, to avoid personal injury.

- Ensure the area is clear of personnel before and during operation of the cutting unit. The cutting unit will produce small fragments that can be forcibly ejected and may cause injuries. Ensure no personnel or equipment are within this area. As soon as someone enters this zone, stop the cutting operation and turn off the engine of the excavator.
- When leaving the excavator, place the cutting head on the ground and turn off the engine.
- Never touch the cutting unit whilst the cutting drums are rotating.
- Always stop the engine and remove the keys when inspecting or servicing the cutting unit.
- Do not adjust hydraulic valves or any part of the hydraulic system while the machine is running.
- Always change frayed, crushed or damaged hoses immediately.
- Always use original **Auger Torque** spare parts and change at once if damaged.

3.4 Vibration

WARNING	
	<p>DANGER CAUSED BY VIBRATION Vibration can damage health.</p>
	<p>▷ Do not exceed the specified labour time per day.</p>

Exposure limits and provocation values acc. to directive 2002/44/EC

For vibration of the whole body

- the daily exposure limit, standardized to a reference time of **8 hours**, is fixed to **1.15 m/s² (3.77 ft/s²)** or, if desired by a member state, to a vibration dose value of **21 m/s^{1.75} (68.90 ft/s²)**.
- the daily provocation value, standardized to a reference time of **8 hours**, is fixed to **0.5 m/s² (1.64 ft/s²)** or, if desired by a member state, to a vibration dose value of **9.1 m/s^{1.75} (29.86 ft/s^{1.75})**.

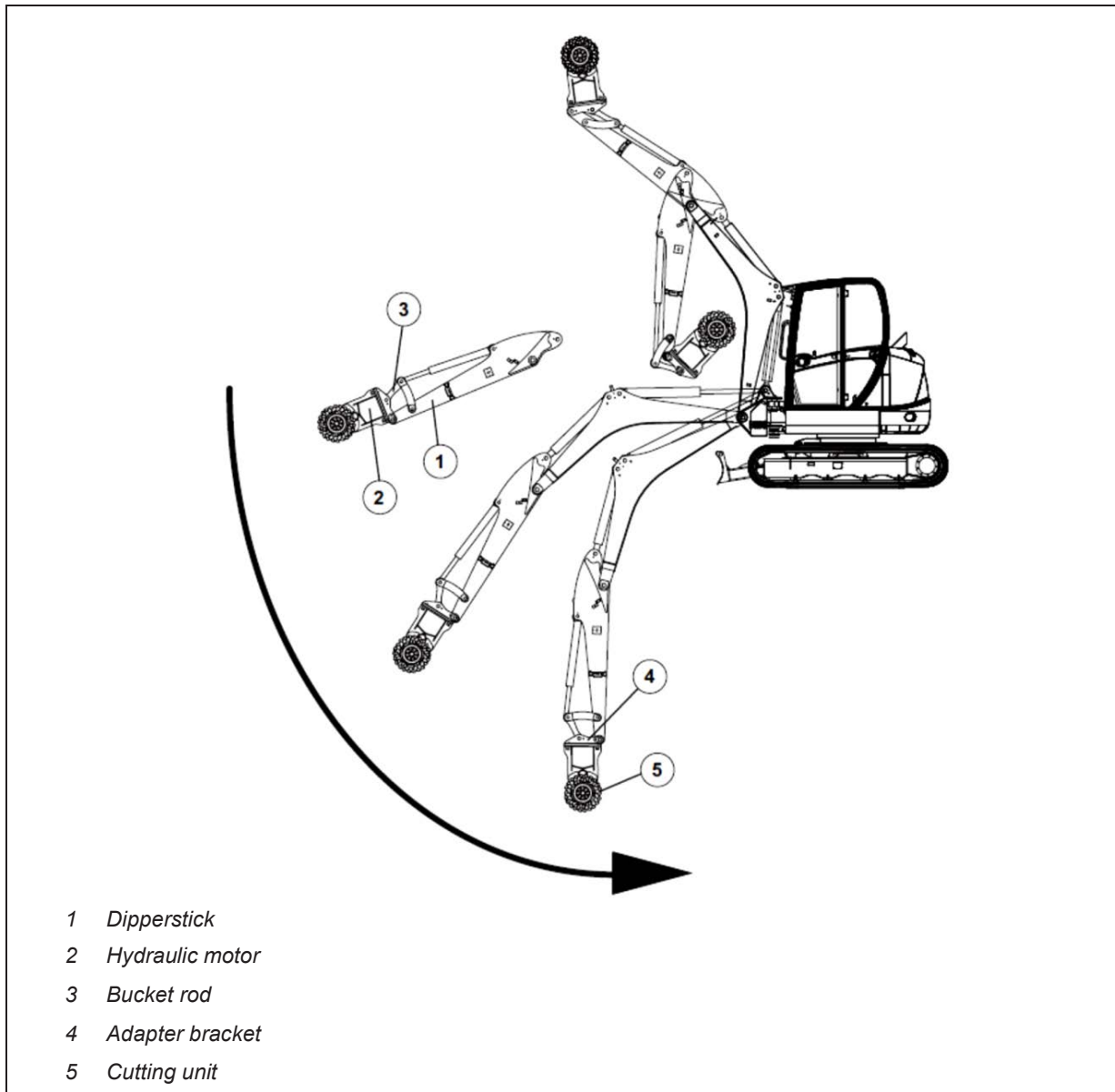
Milling operations generate vibrations, which are transferred to work equipment and operator. The intensity of these vibrations differs in dependence on the material to be processed. The maximum time the operator may be exposed to these vibrations is specified in the following table.

Intensity of vibrations	Material	Labour time in hours per day
light	e.g. soil	8
medium intensity	e.g. sandstone	6
intense	e.g. hard rock	4

4 Installation

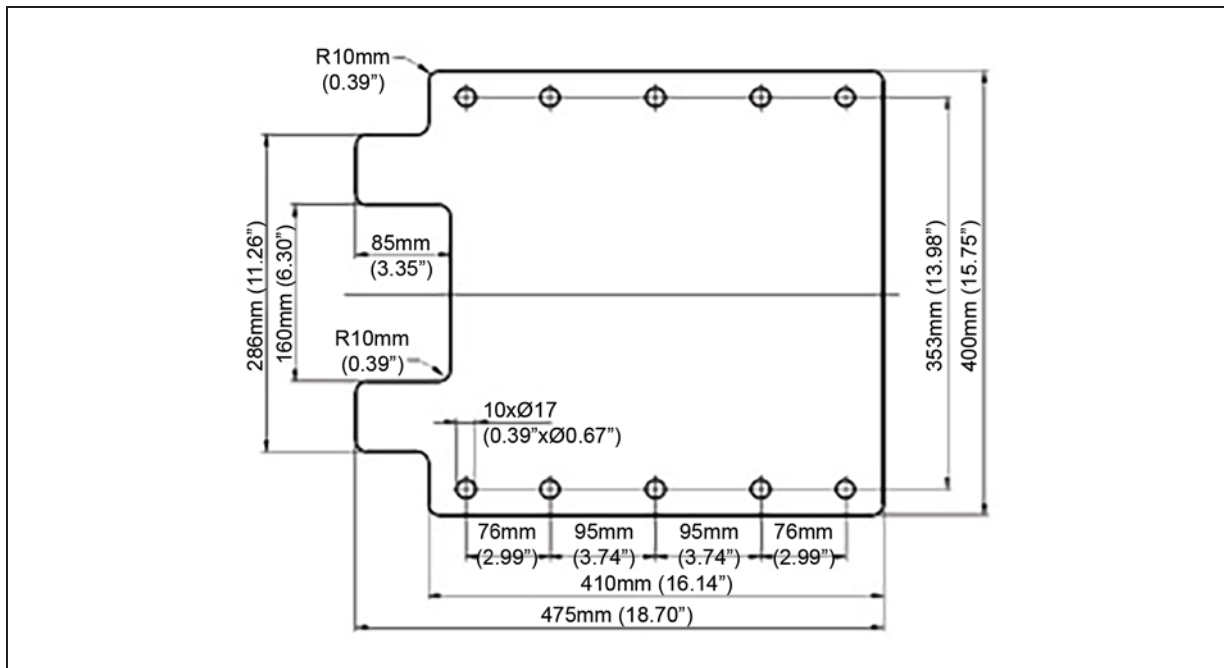
4.1 Adapter bracket

The cutting unit requires an **adapter bracket** in order to fit onto the excavator. The adapter bracket of the cutting unit uses the existing bearing points and pins of the excavator. The cutting drums are designed to rotate clockwise in normal use - counter clockwise, toward the excavator - when looking at the machine as shown below, i.e. the hydraulic motor will be on the right-hand side looking from the driver's cab.



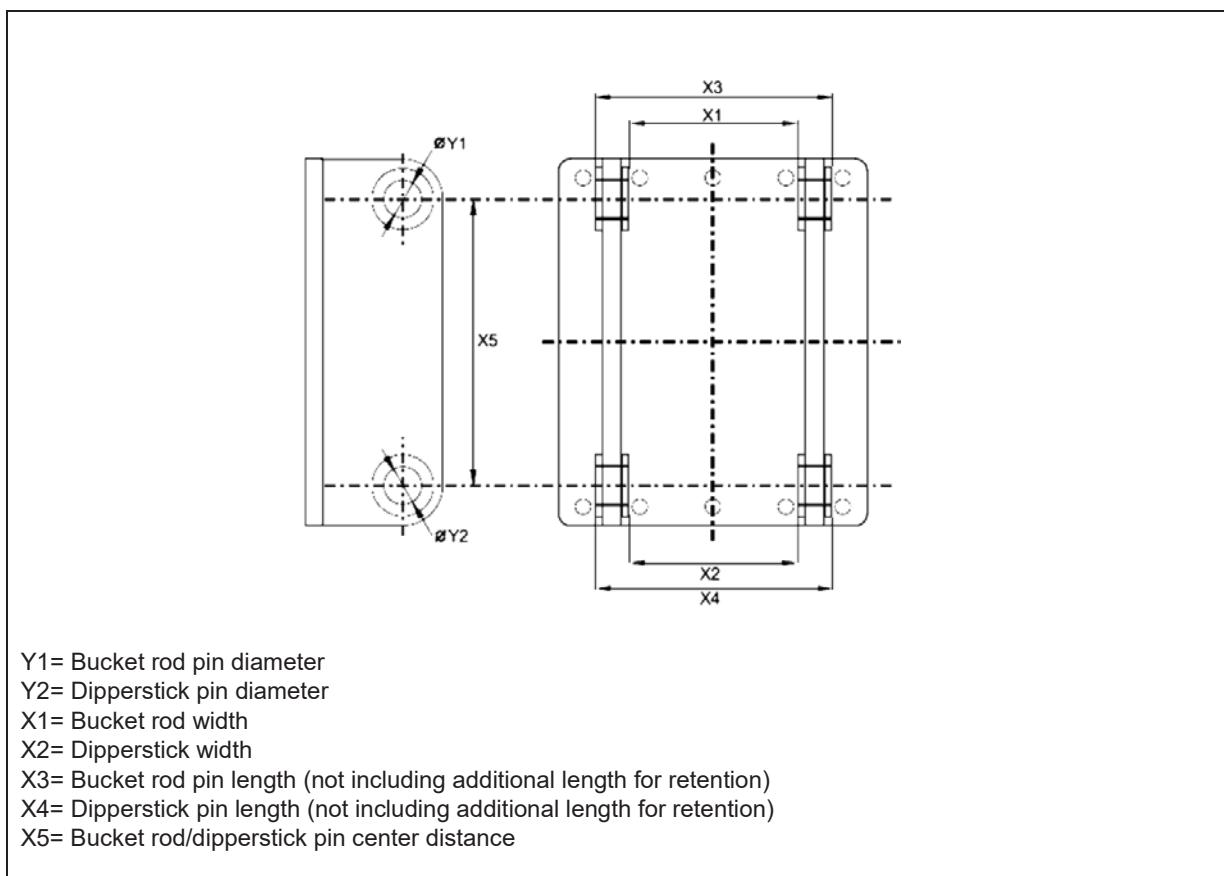
4.1.1 Details of the adapter bracket

The following drawing contains all specifications for the manufacture of an adapter bracket:




The adapter bracket must have a thickness of 20 to 25 mm and be welded by expert personnel.

The following drawing contains all specifications for the manufacture of an adapter bracket:

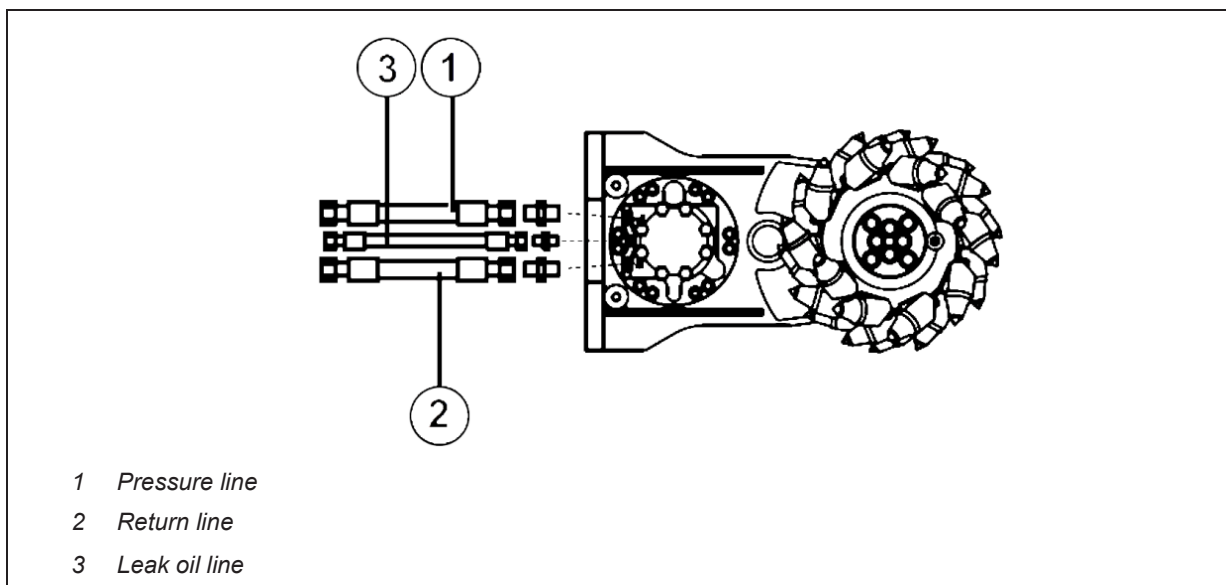


4.2 Standard hydraulic connection

Connect the transverse cutting unit to the hydraulic circuit in the following way:

NOTICE	
	<p>DANGER DUE TO INSUFFICIENT PRESSURE DIFFERENTIAL The hydraulic motor may be damaged.</p> <ul style="list-style-type: none">▷ If the pressure differential between the return line pressure and the leak-oil pressure is insufficient, the transverse cutting unit becomes very noisy during operation (rattling).▷ Call Service Personnel.

- Connect the pressure line to the excavator.
- Connect the return line to the excavator.
- Connect the leak-oil line to the excavator.



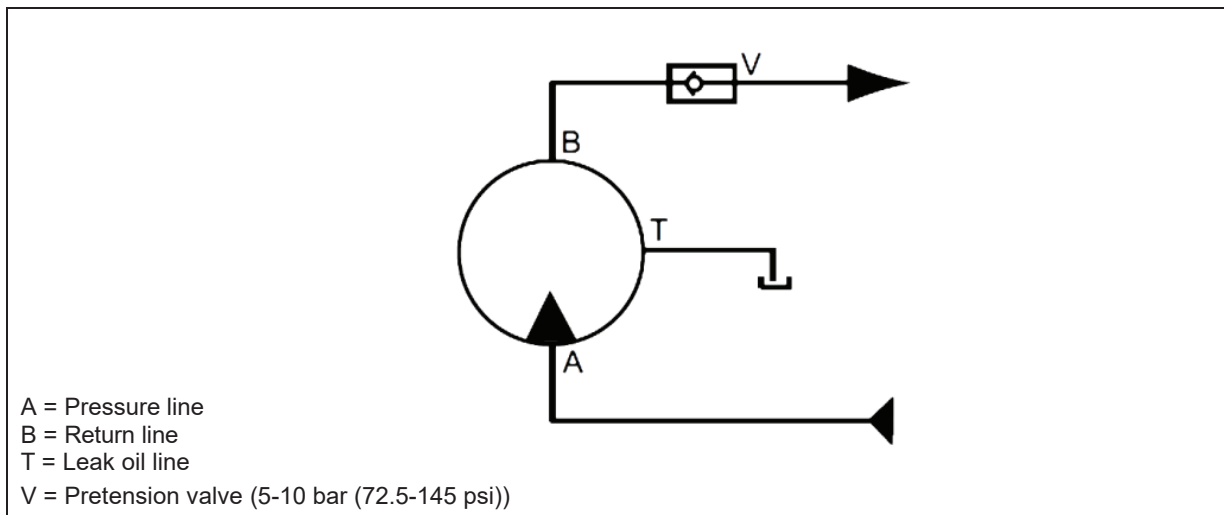
4.2.1 Hydraulic hoses

Pressure and return line connection	
on hydraulic motor	G 3/4"
to the excavator	UM25-L; M36x2
hose inner diameter	Ø20mm (0.8in)
minimum operating pressure	375 bar (5439 psi)
Leak-oil line	
on hydraulic motor	G 3/8"
to the excavator r	UM12-L; M18x1,5
hose inner diameter	Ø10mm (0.4in)



The pressure in the leak-oil line (T) is never to exceed 3 bar (43.5 psi) in continuous operation and temporary pressure peaks of 10 bar (145 psi).

4.2.2 Hydraulic plan Pretension valve



4.2.3 Hydraulic oil

- Oil type **HLP 46** or **68**
- HV mineral oils possessing improved viscosity / temperature properties (**DIN 50524**, Part 3)
- Bio-degradable oil



Please contact Auger Torque before using any other hydraulic oil. Any other hydraulic oils must be approved in writing.

4.3 Contamination and filtration

A low level of contamination of the hydraulic oil will ensure that the moving parts of the hydraulic motor (pistons, distributor) have a longer service life.
A contamination level lower than **Class 9** of **NAS 1638** is recommended.



Failure to maintain the required filtration affects the manufacturer's warranty on the hydraulic motor.

4.4 Priming (filling) the hydraulic motor casing

The hydraulic motor casing must be filled after repairs or in the event of leaks.

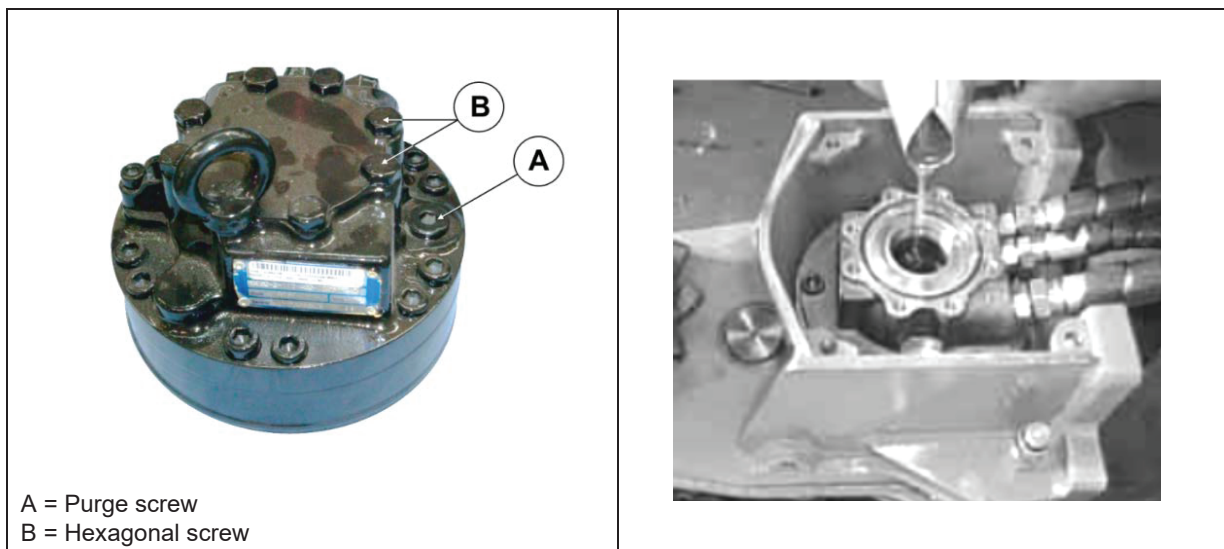


It is IMPERATIVE that this operation be performed before start-up and after a repair job.

- Ensure that the operator is equipped with the appropriate level of personal protective equipment when exposed to the oils used in the hydraulic system before performing this task.
- Disconnect the leak-oil line at the reservoir end (before the filter). Fill the casing via this line.
- Loosen the purge screw.
- When oil comes out of this screw, re-tighten the screw (vent the engine).
- The motor casing capacity is about **2 liters (0.53 gallons)**.
- Reconnect the leak-oil line.

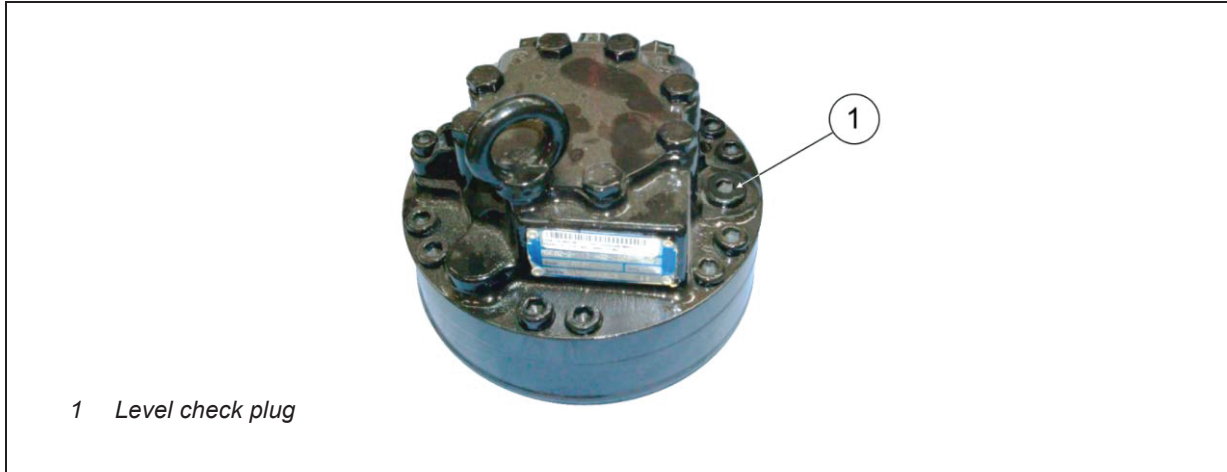
Alternatively it is also possible to fill the engine with the gear box lying on its side and using the crankcase (cover removed):

- Remove the **8xM10** hexagonal screws and the cover.
- Fill the motor up to the upper edge of the casing.
- Make sure that you use clean oil and that no dirt can get into the motor.
- Reattach the motor cover. Ensure that everything is tightened to the correct torque (see Chapter **Screwed connections – tightening torques**).



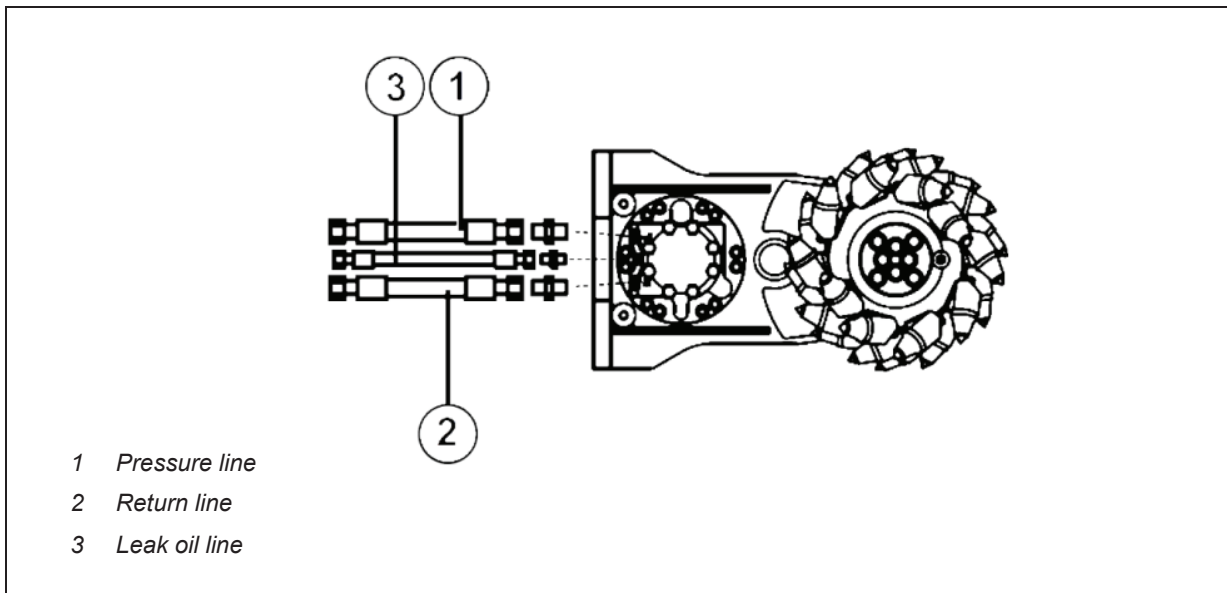
4.5 Checking the oil level

- Make sure that the hydraulic oil cannot run out of the hydraulic motor. The filler opening must be at the top.
- Loosen the level check plug.
- When oil comes out of this hole, re-tighten the screw.



4.5.1 Topping up hydraulic oil

- Disconnect the leak-oil line at the reservoir end (before the filter). Loosen the level check plug. Fill the casing via this line until oil escapes from the hole of the level check plug.
- The motor casing capacity is about **2 liters (0.53 gallons)**.
- Reconnect the leak-oil line.



4.6 Before initial start-up

Before initial start-up, the pre-shift maintenance schedule must be performed and torque settings checked.

- Do not allow the cutting unit to continue running at idle or under full load.
- Ensure that the hydraulic circuit complies with the relevant technical description for the machine.
- No load is to be placed on the gear as long as it is in the running-in period. Therefore, no cutting tasks should be performed before the operating temperature has been reached.
- During the running-in period, the hydraulic oil temperature should be checked, a value between **50°C** and **60°C (122°F and 140°F)** is acceptable. It should under no circumstances exceed **80°C (176°F)**.
If this happens, cooling must be improved or output reduced.
- After the initial operating period, the flow rates and pressures should be checked and reset if necessary.
- The pressure in the hydraulic motor casing is not to exceed **3 bar (43.5 psi)** (corresponds to the pressure in the leak-oil line).

4.7 Hydraulic transverse cutting units installation and commissioning report

Dealer:		Customer:	
Type of cutting unit:		Cutting unit identification no.:	
Type of hydraulic motor:: LD / MD / HD / XHD		.....
Putting into operation Place / Date:	.....	Type of excavator / base vehicle: Vehicle identity no.:	..... .....
Excavator drive power:	.....kW	Oil flow hammer and cutting unit control circuit:	.....l/min (g/min)
Hydr. connection of cutting unit:	<ul style="list-style-type: none"> • Hammer control circuit • Grab control circuit • Other control circuits 	Secondary protection for hammer control circuit:	.....bar (psi)
Motor drain line: (pressureless in hydraulic oil tank)	Yes/No	Combination of return and drain oil lines: (following operat. instructions)	Yes/No (Only permissible in exceptional cases!)
Pressure / flow adjustment for cutting unit control circuit:	Operating pressure	Hydraulic oil flow	
	100 bar (1450 psi)	..... l/min (g/min)	
	150 bar (2175 psi)	..... l/min (g/min)	
	200 bar (2900 psi)	..... l/min (g/min)	
	250 bar (3626 psi)	..... l/min (g/min)	
	300 bar (4351 psi)	..... l/min (g/min)	
	350 bar (5076 psi)	..... l/min (g/min)	
Back pressure in drain line (on cutting unit exit) .....bar (psi)		Back pressure in return line (on cutting unit exit) .....bar (psi)	
Underwater operation: Yes/No		If yes - gear box breather concealed: Yes/No	
Additional information: (range of application, geology etc.)		Verschiedenes:	
The receipt of the cutting unit in perfect condition, the receipt of the operating instructions as well as the instructions obtained for the proper operation and maintenance of the hydraulic cutting unit and correct hydraulic connections and adjustment of the base vehicle (excavator) is confirmed herewith.			
Place / Date:	Name / Signature (dealer customer service):	Name / Signature (customer):	
.....	
Note: In case of conversion / mounting of the cutting unit on a different excavator, a new report must be created!			

4.8 Start-up procedure for cutting unit

4.8.1 Before start-up

1. Check flow in hammer circuit of excavator with a flow meter.
2. Adjust pressure in hammer circuit to suit cutting unit. The combination of flow and pressure must not exceed the nominal power of the cutting unit. You can calculate the required maximum pressure as follows based on the available flow.

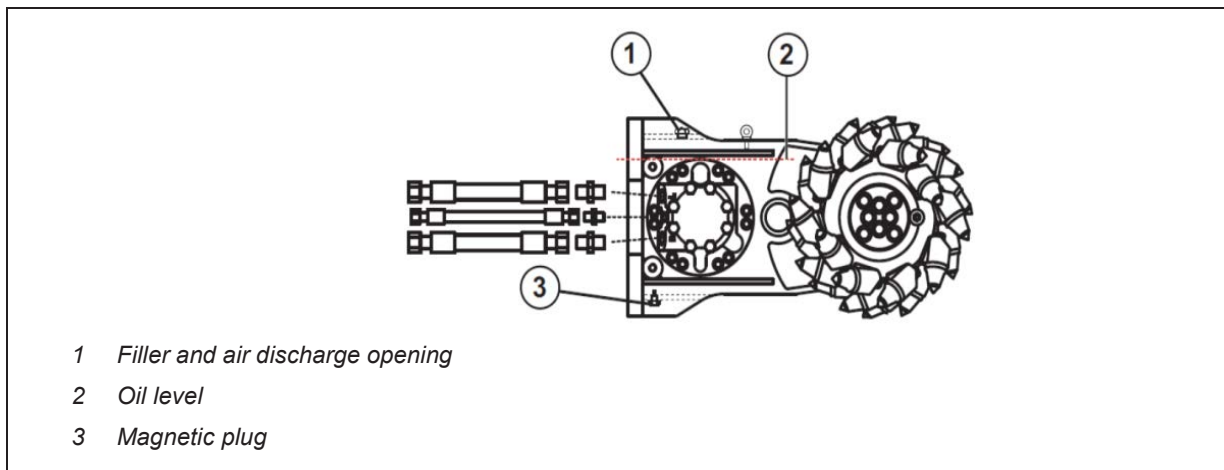
$$\frac{\text{Nominal power of the cutting unit (kW) x 600 (a constant)}}{\text{Flow (liters)}} = \text{max. Pressure (in bar)}$$

Example:

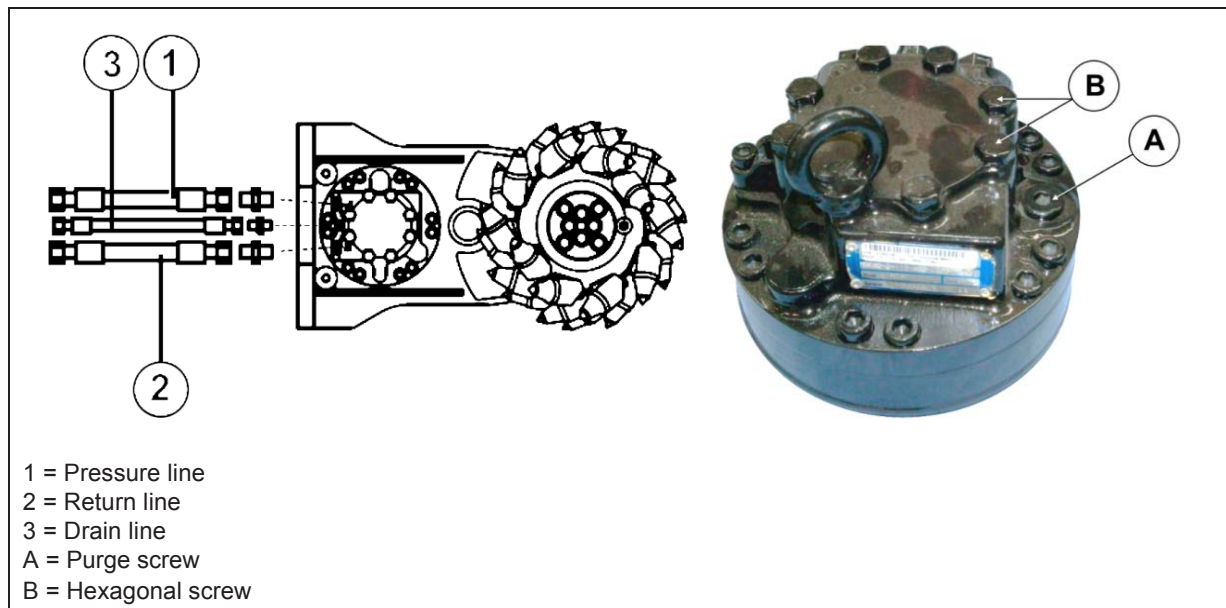
- Cutting Unit type **KDC15** with nominal power **30 kW** and
- Flow in hammer circuit **90 l/min**:

$$\frac{30 \text{ (kW)} \times 600 \text{ (a constant)}}{90 \text{ (liters)}} = \text{max. pressure setting } 220 \text{ bar}$$

3. Check the oil level in the cutter gearbox.



4. Check whether the hydraulic motor of the cutting unit is primed. It is important that the hydraulic motor is filled with hydraulic oil before every start-up, otherwise damage could occur.
 - Fill the casing by disconnecting the drain line at the reservoir end.
 - Pour hydraulic oil into the drain line.
 - Loosen the purge screw (A)
 - When oil comes out of this screw, tighten the screw again.
 - Reconnect the drain line.



5. Check that the motor drain returns directly to tank without restriction. This line must run directly to the hydraulic oil tank of the excavator and not be joined to any other hydraulic line or valve and should have no other restrictions. Please contact our technical department for alternative options if this is not possible.
6. Before starting the cutting unit check the following:
 - that the cutting unit and adapter bracket are properly fastened to the excavator and all hydraulic hoses and fittings are correctly fastened.

With the cutting unit running freely:

7. Check for correct direction of rotation of cutter drums. If incorrect, change over the hydraulic pressure and return hoses at the excavator auxiliary (hammer) circuit connection point.
8. Check pressure in motor return line and drain line.
 - With a pressure gauge fitted at the hammer circuit connection point and the cutting unit running freely:
 - Check the pressure in the drain line. This should be as low as possible but not greater than **3 bar (43.5 psi)**.
 - Check the pressure in the return line. This must be at least **5 - 10 bar (72.5 - 145 psi)** greater than that in the drain line to ensure the correct working of the hydraulic motor.
 - If the hydraulic motor is noisy during operation (rattling), the return line pressure is insufficient and a pretension valve (**5 - 10 bar (72.5 - 145 psi)**) is required in the return line respectively. The pretension pressure must be increased in increments of 5 bar (73 psi).
 - If the back pressure in the return line is increased (**> 15 bar (>218 psi)**), the hydraulic system heats up and the cutting unit performance decreases. If the hydraulic oil temperature is too high (**> 80°C (> 176°C)**), the cutting unit motor will be damaged.
9. Complete and return the installation / commissioning report to **Auger Torque** to comply with the warranty conditions.

5 Operation

5.1 Description

The **Auger Torque** Hydraulic Transverse Cutting Unit ("TCU"; "cutting unit") is suitable for mounting on any type of hydraulic excavator provided the attachments carrier can supply the required power and machine stability is always ensured. It is mounted to the excavator dipperstick to replace the bucket, either through direct attachment or using a quick-attach system.

Their power makes **Auger Torque** cutting units flexible for a wide range of applications. The cutting units are designed to cut most types of rock, brickwork, concrete and asphalt etc.

The **Auger Torque** cutting unit can run at full system pressure. This means there is no need to adjust the secondary pressure lower than the system pressure, thus avoiding overheating of the hydraulic circuit.

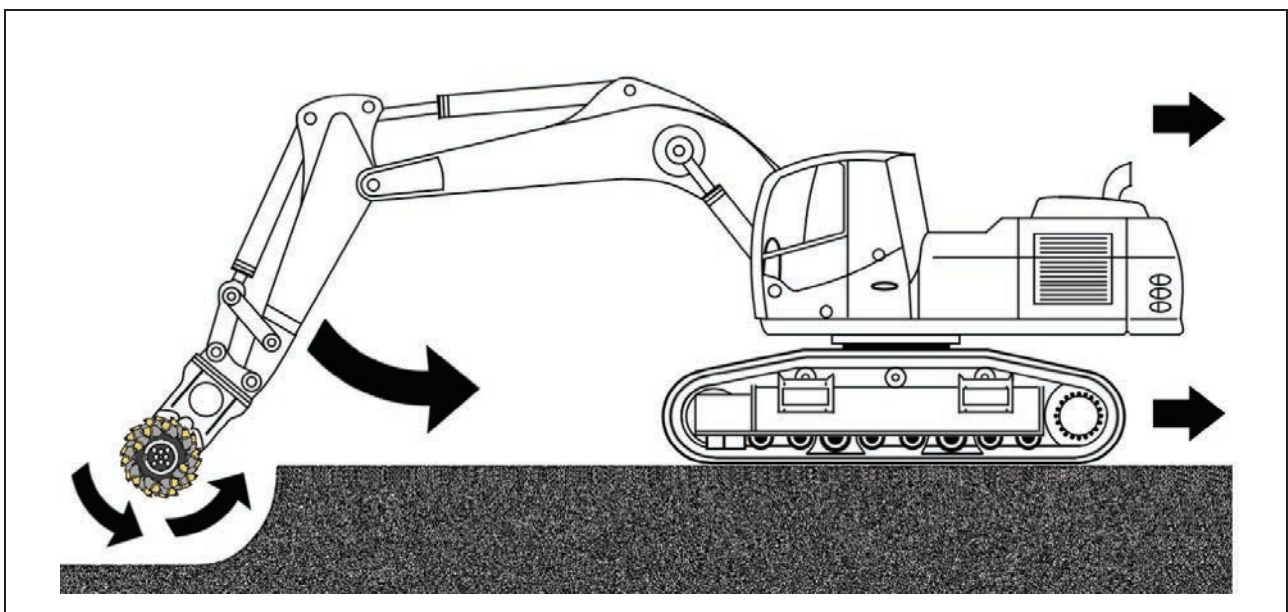
Although generally less noisy than other excavation methods the user must take into consideration the standards for noise protection during operation and carry out a noise measurement if required.

Appropriate protective measures must be taken.

In order to ensure functionality and the safe operation of the equipment, we recommend you handle it properly and regularly perform maintenance and inspection tasks. Improper handling will result not only in problems with the unit, but will also negatively affect operating performance.

The **KDC15 Transverse Cutting Unit** is designed for excavators/attachment carriers with an operating weight between **8 t and 15 t**.

Your **Auger Torque** technical team can advise you on the most appropriate machine configuration and the ideal equipment for your project



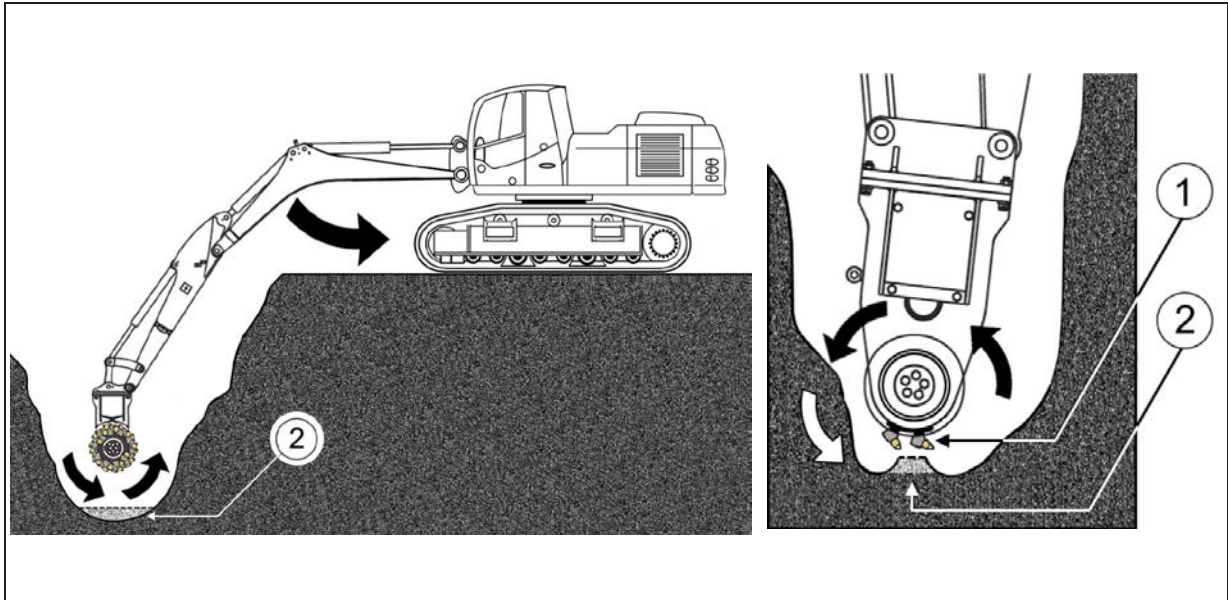
Cutting operations are best if the cutting unit drum moves into the direction of the attachment carrier. If the unit is moved sideways to achieve a larger cutting area, it must be ensured that the pressure on the excavator's boom, arm and cutting drum bearing is not too strong.

5.2 Examples of Using Cutting Unit

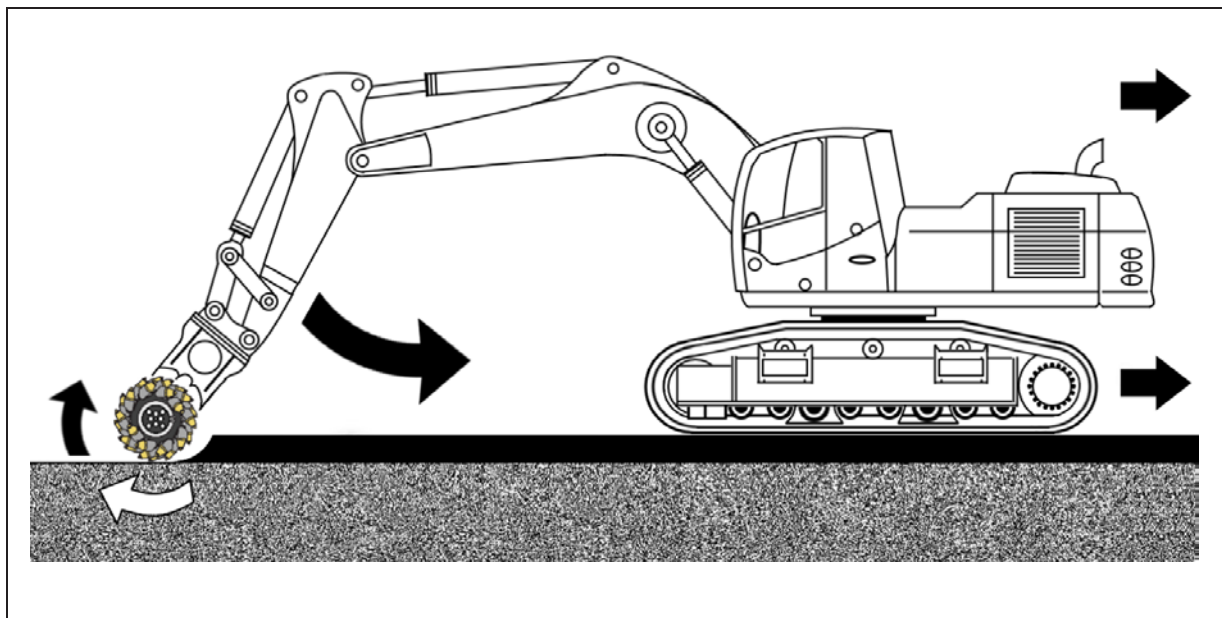
When using the Cutting Unit on vertical surfaces, such as walls, we recommend that the cutting unit is either turned around 180°.

This reduces vibrations and reaction forces while cutting and prevent the cutting unit from trying to climb the vertical surfaces.

5.2.1 Examples of Using Cutting Unit in Ditches

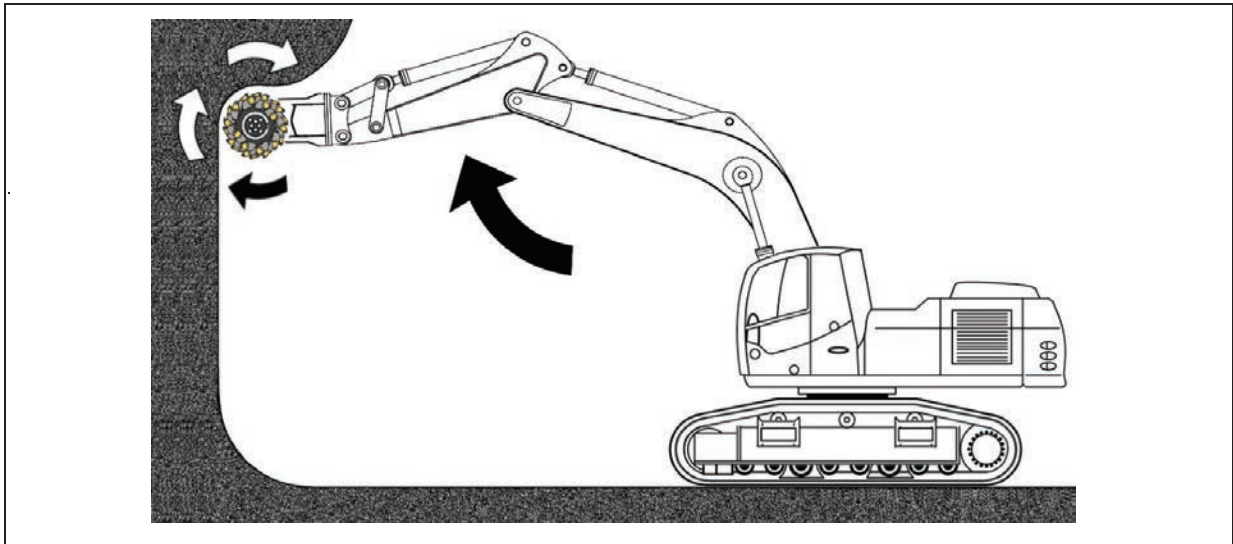


5.2.2 Examples of Using Cutting Unit with Asphalt



This arrangement prevents larger elements from breaking off in an uncontrolled manner.

5.2.3 Example of Using Cutting Unit on Walls

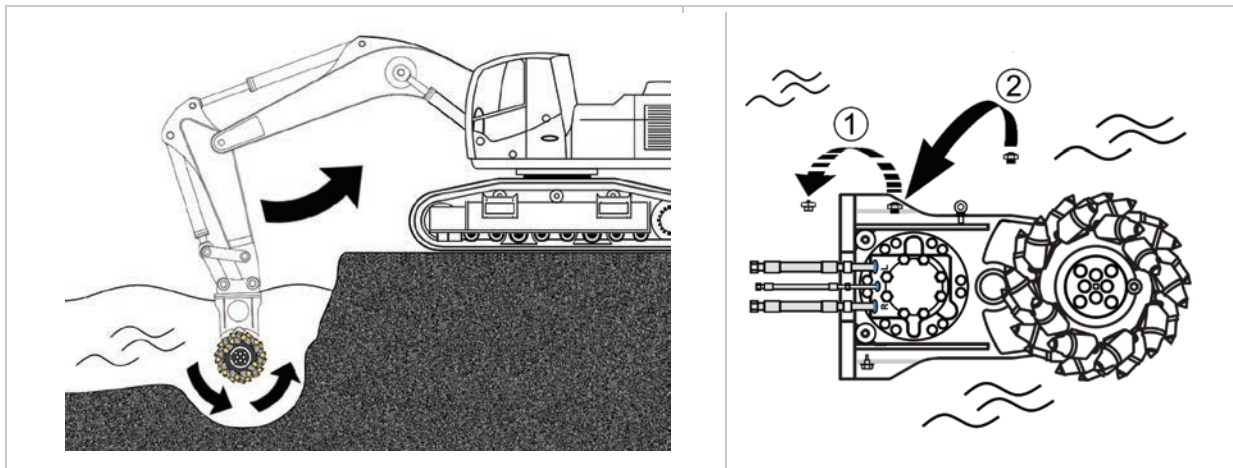


5.2.4 Operation under water

i *Our Technical Service has to be consulted before the cutting unit is used in wet environments or under water up to a depth of 20 metres (65 feet) as the cutting unit has to be converted to this purpose.*

Tripple greasing intervals of the labyrinth sealing system of the drums. (Use bio-degradable grease as water may flush out the grease)

- i** • Replace the air discharge plug by a stop plug (see spare part catalogue).
- Once the underwater operation is completed, re-install the air discharge plug.



Pos.	Description
1	Air discharge plug
2	Stop plug

5.3 Cutting drum selection

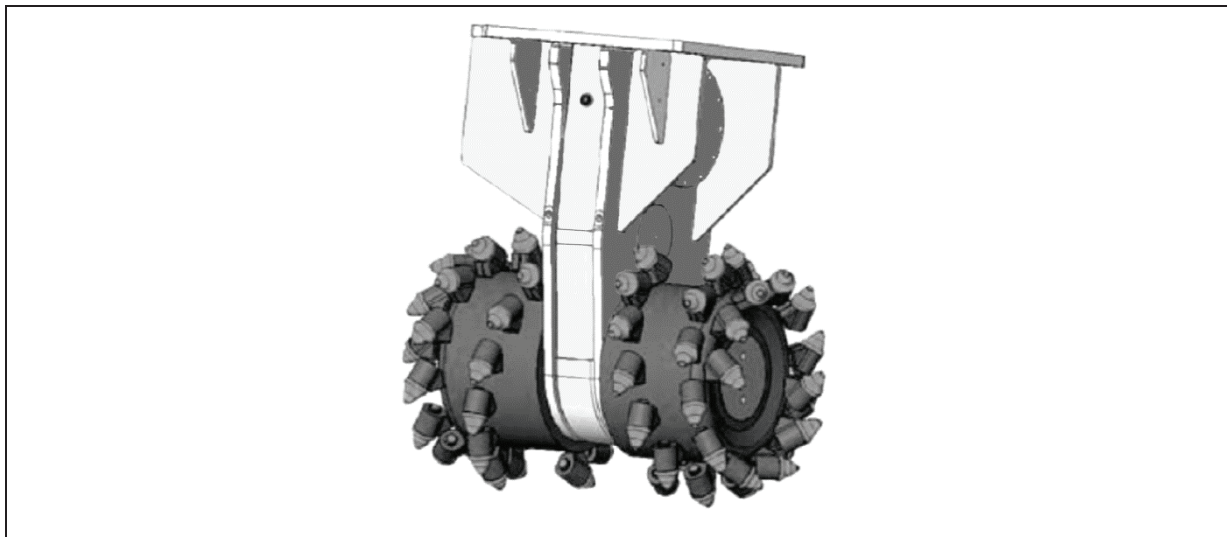
The selection of the cutting drum and tooth configuration depends on the application in question.

- **Excavating drums** are used for excavating soft to medium - hard rock with the teeth placed to give the most efficient cutting rates possible.
- **Profiling drums** are used for scaling and grinding, in other words whenever a precise or relatively smooth surface is required. These drums produce smaller pieces of rocks, so they are not an efficient means of excavation.
- Similar in design to rock drums, **demolition drums** feature an additional spiral serving as cutting depth limit. Demolition drums are used for the toughest cutting applications.

To optimise cutting/ excavating, different cutting drums and tooth configurations are available. Always consult your **Auger Torque** dealer.

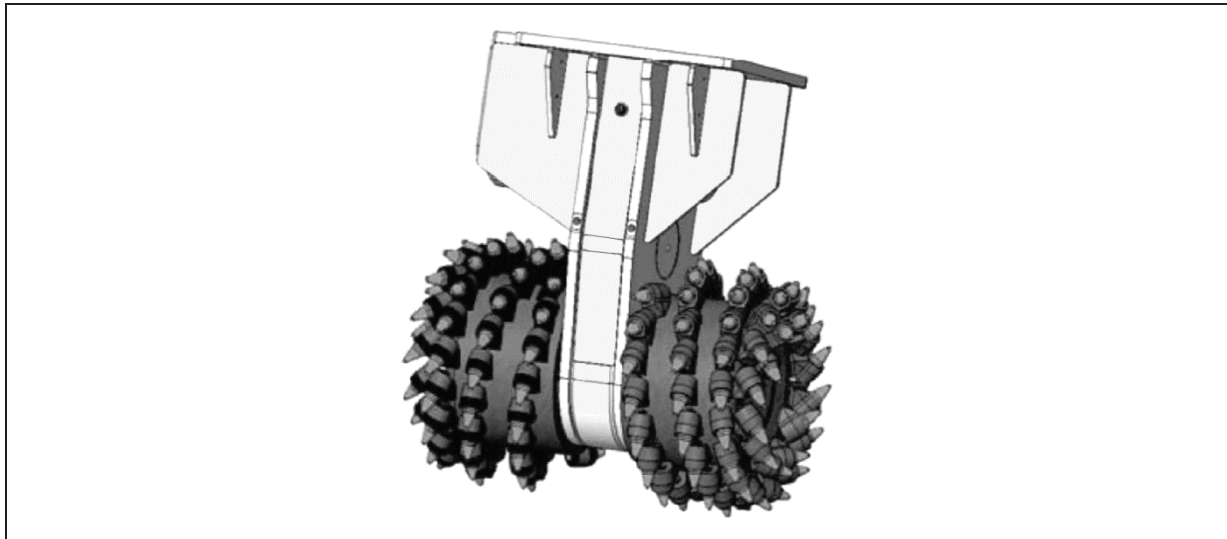
For cutting drum dimensions see chapter **Cutting drums**.

5.3.1 Excavating drum



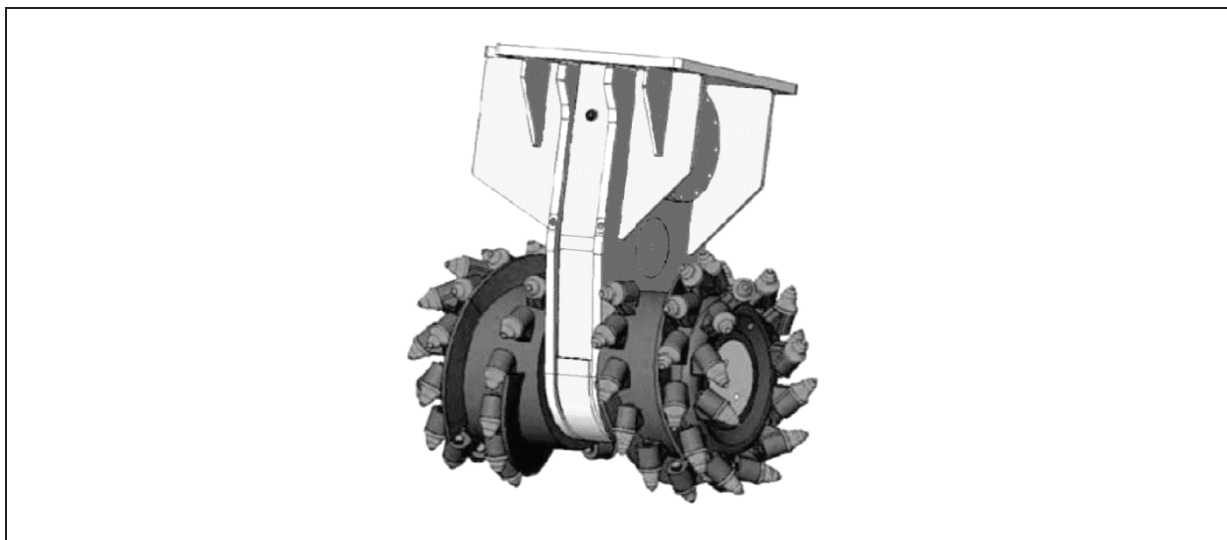
- For soft to medium-hard rock
- Teeth for maximum productivity and cutting performance
- No spiral blade to limit tooth penetration (tooth penetration limitation)

5.3.2 Profiling drum



- For soft to medium-hard rock - whenever a precise or smooth surface is required.
- A higher number of teeth enables accurate surfaces and reduced vibration but lower cutting performance.

5.3.3 Demolition drum

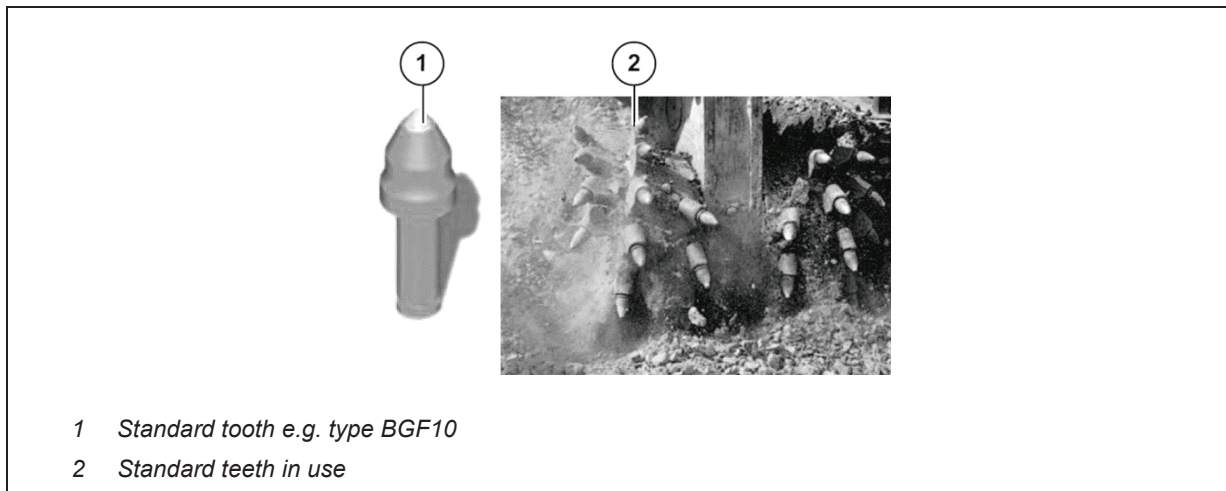


- For medium-hard to hard rock and concrete
- Wear-protected spiral blade for limited tooth penetration, lower vibration and smoother operation

5.4 Examples Tooth Types

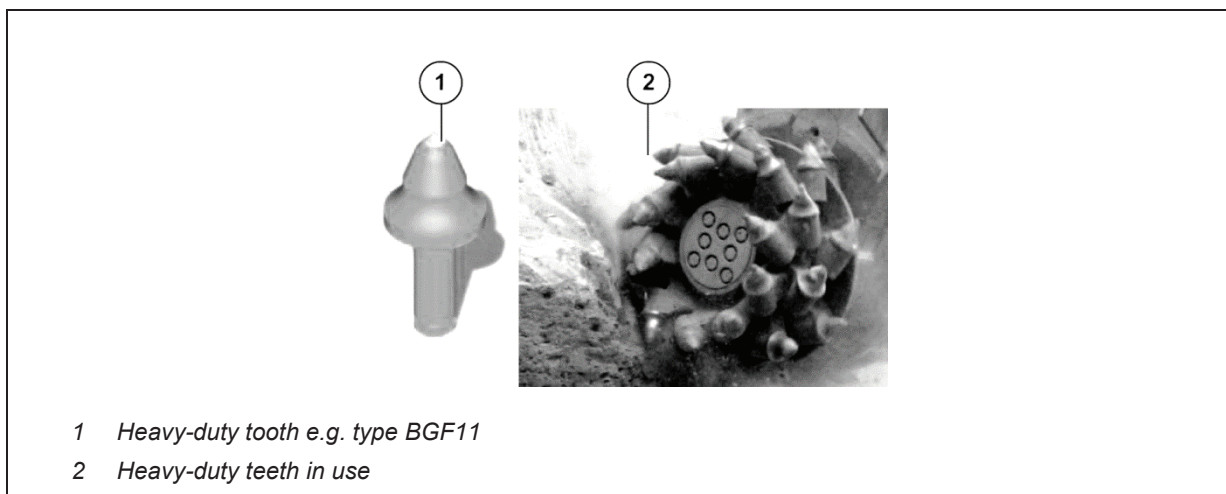
5.4.1 Standard Teeth

For cutting soft to semi-hard stone, i.e. asphalt, salt, clay.



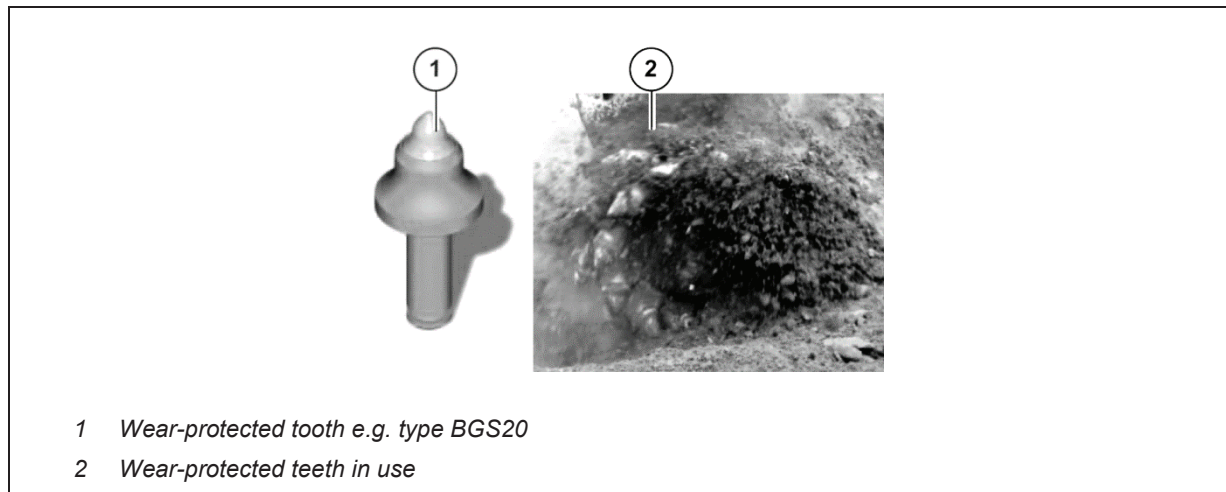
5.4.2 Heavy-duty Teeth

For cutting semi-hard to very hard stone, i.e. limestone, concrete.



5.4.3 Wear-protected Teeth

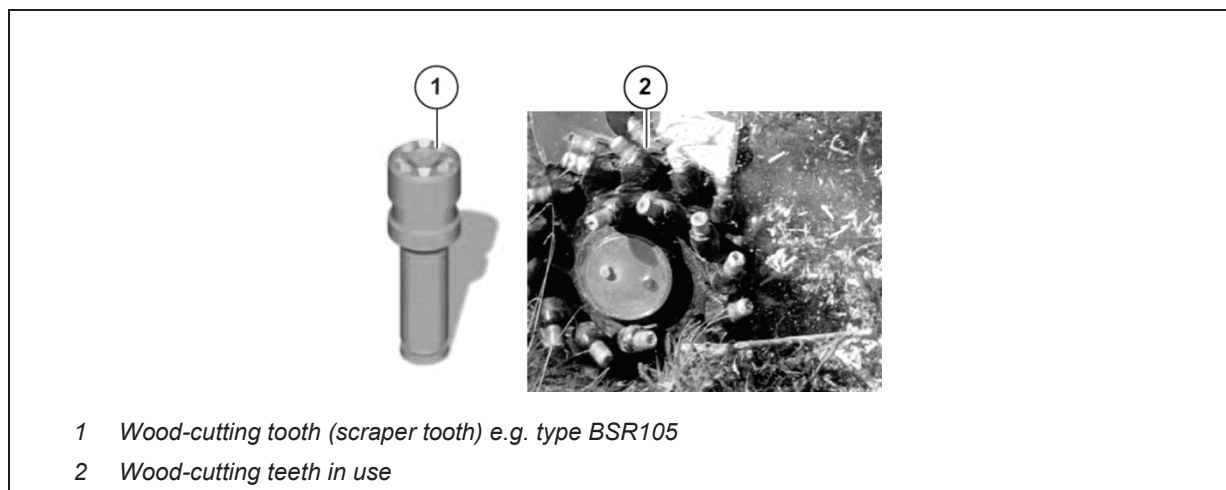
For cutting very abrasive material, i.e. sandstone, blast furnace gravel.



 Other teeth are available for special purposes and materials.

5.4.4 Wood-cutting Teeth

For cutting tree stumps.

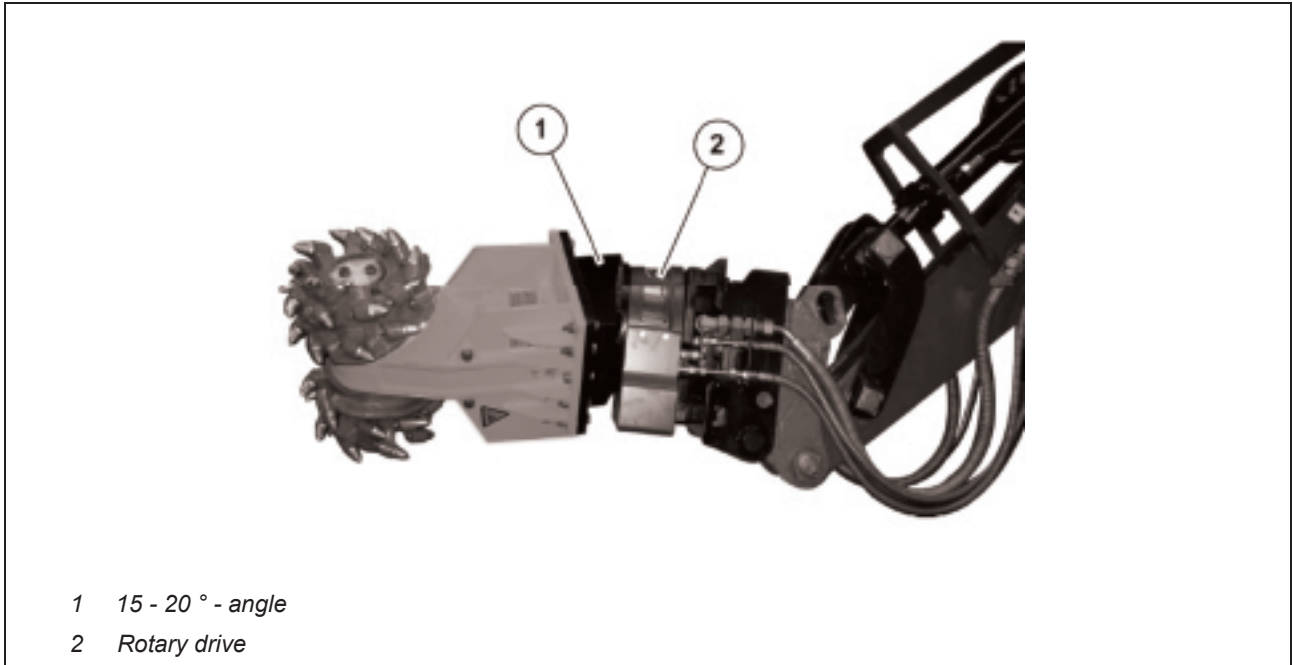


5.5 Rotary drive (optional)

For accurate contouring, a rotary drive can be used.

With the rotary drive, the cutting unit can be rotated endlessly (360 °).

For undercutting, a 15 - 20 ° angle can be installed between the rotary drive and the cutting unit.



i *The rotary drive can also be used without the slant.*

Precise positioning of the cutting unit allows accurate contouring on walls, in corners, and on sloping surfaces.



5.6 Regulations concerning environmental protection

Applicable environmental requirements must be observed for all tasks performed on and with the machine.

During installation, repair and maintenance tasks, particular care must be taken that substances that would damage the environment such as:

- lubricating greases and oils
- hydraulic oils
- fuels
- coolants
- cleaning fluids containing solvents

These substances must be collected, transported, kept and disposed of in suitable containers.

If the substances listed above do reach the soil, the leak or outlet must be stopped immediately and the fluid must be cleaned up with a suitable absorbent material.

If necessary, the soil involved must be removed.

Absorbent materials and removed soil must be disposed of properly.

Applicable environmental requirements must be observed.

6 Maintenance and Care

6.1 Maintenance plan

The maintenance intervals indicated are recommended values and must be adhered to. Local operating conditions may require shorter maintenance intervals.



The maintenance intervals are based on single-shift operation (8h/day, 20 days/month, 12 months/year). In multiple-shift operation the maintenance intervals must be shortened accordingly.


CAUTION	
	<p>DANGER DUE TO ENVIRONMENTALLY HAZARDOUS SUBSTANCES Escaping oil may pollute the environment.</p> <ul style="list-style-type: none"> ▷ Wear protective clothing when dealing with oil. ▷ Collect the waste oil and dispose of according to regulations.

Maintenance interval for single-shift operation	Activity	To be performed by
Daily before start-up	<ul style="list-style-type: none"> • Check the correct installation of the cutting unit on the adapter bracket and on the attachment carrier, (see Chapter Screwed connections – tightening torques) • Check for leaks on the gearbox. • Check the gearbox oil level. • Check for leaks on the hydraulic motor. • Check for leaks and damage on the hoses. • Ensure the gearbox breather is clear. • Check all teeth and tooth boxes for wear. Replace worn teeth immediately. • Grease the cutting drum sealings. 	Operating personnel
Daily after work	<ul style="list-style-type: none"> • Clean the cutting unit thoroughly. • Check that all teeth are free moving. 	Operating personnel
Every 100 hours / 2 weeks	<ul style="list-style-type: none"> • Check the condition of the hydraulic motor. • Clean the magnetic plug. • Check the tightening torques (see Chapter Screwed connections – tightening torques). 	Operating personnel
Every 500 hours / once yearly	<ul style="list-style-type: none"> • Replace transmission oil. • Check the tightening torques (see Chapter Screwed connections – tightening torques). 	Service Personnel
Temporary shutdown	<ul style="list-style-type: none"> • Clean the cutting unit thoroughly. Keep it in storage, in a dry place. If necessary, dismantle the teeth due to danger of corrosion. • Ensure that hydraulic oil cannot escape from the hydraulic motor after dismantling the cutting unit from the hydraulic motor after dismantling the cutting unit from the excavator. Gearbox breather on top. 	Operating personnel

6.2 Gearbox oil level

Fill the gearbox using the filling hole
Position the gearbox as shown in the Figure.

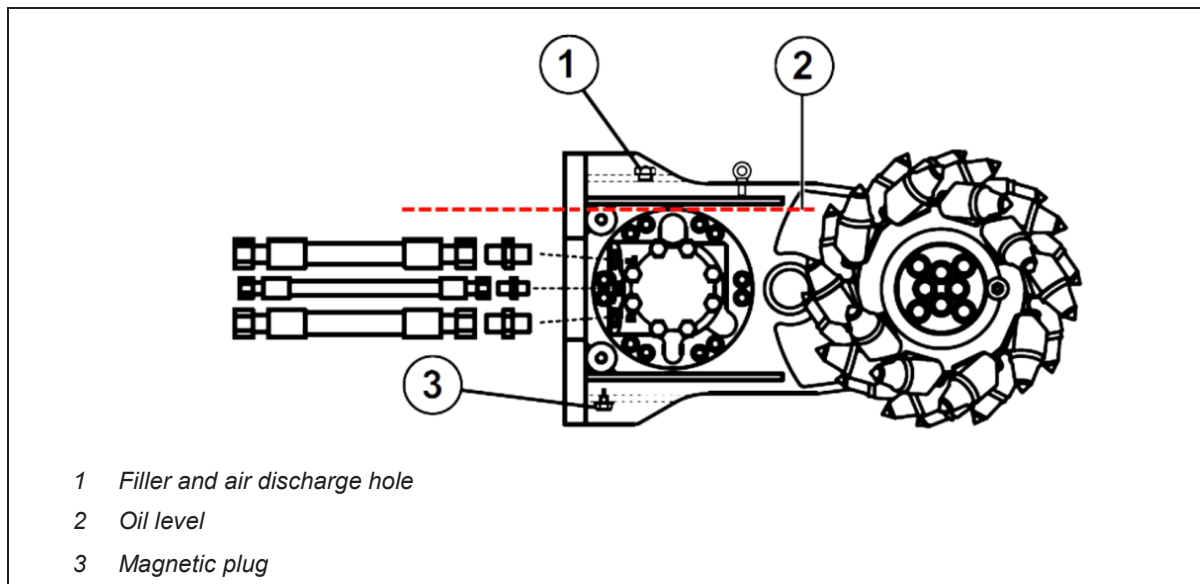
- The gearbox capacity is approximately **5 liters**.

NOTICE	
	<p>DANGER DUE TO INSUFFICIENT FLUID LEVEL The gearbox may be damaged; warranty expires.</p>
	<p>▷ Check the oil level regularly.</p>

Oil specification

Use heavy-duty industrial gear oil SAE 105 grade (or) use heavy-duty industrial gear oil basis complying with the minimum requirements, CLP lubricating oils according to DIN 51517-3 and CKD lubricating oils according to ISO 12925-1.

BP	ESSO	CASTROL	MOBIL
GRXP 320	SPARTA N EP320	ALPHAS P 320	MOBIL GEAR SHC 320
SHELL	TEXACO	TOTAL	FUCHS
SHELL Omala Oil 320	MEROPA 320	TRANS-GATE	POWER GEAR

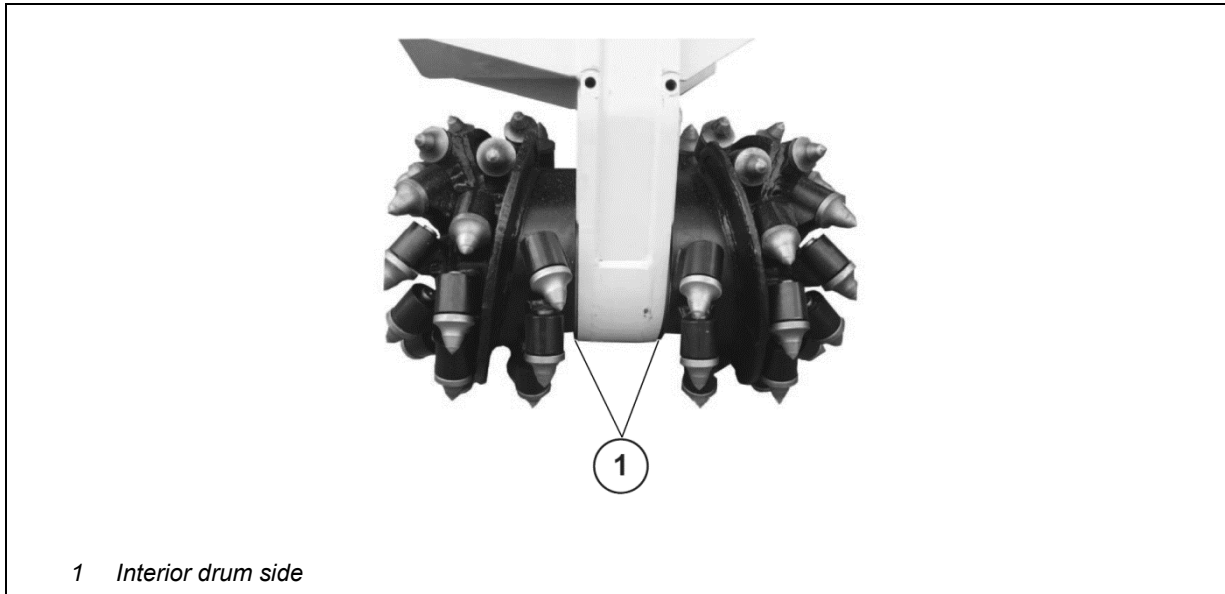


6.3 Lubrication



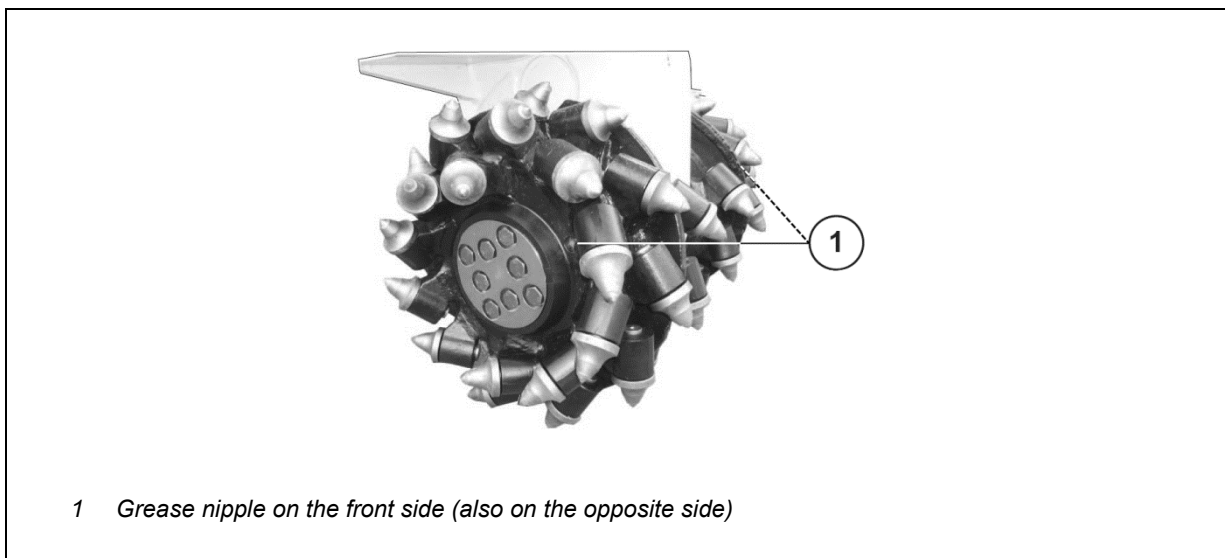
Lubrication prevents contamination or demolition material from penetrating the housing sealing system and thereby prevents damage.

- Lubricate labyrinth seal of the cutting drum via lubrication nipple until grease escapes on the interior drum side



6.3.1 Grease nipple

The cutting drums have a grease nipple on the face, from where the lubrication is pressed into the Labyrinth seal system

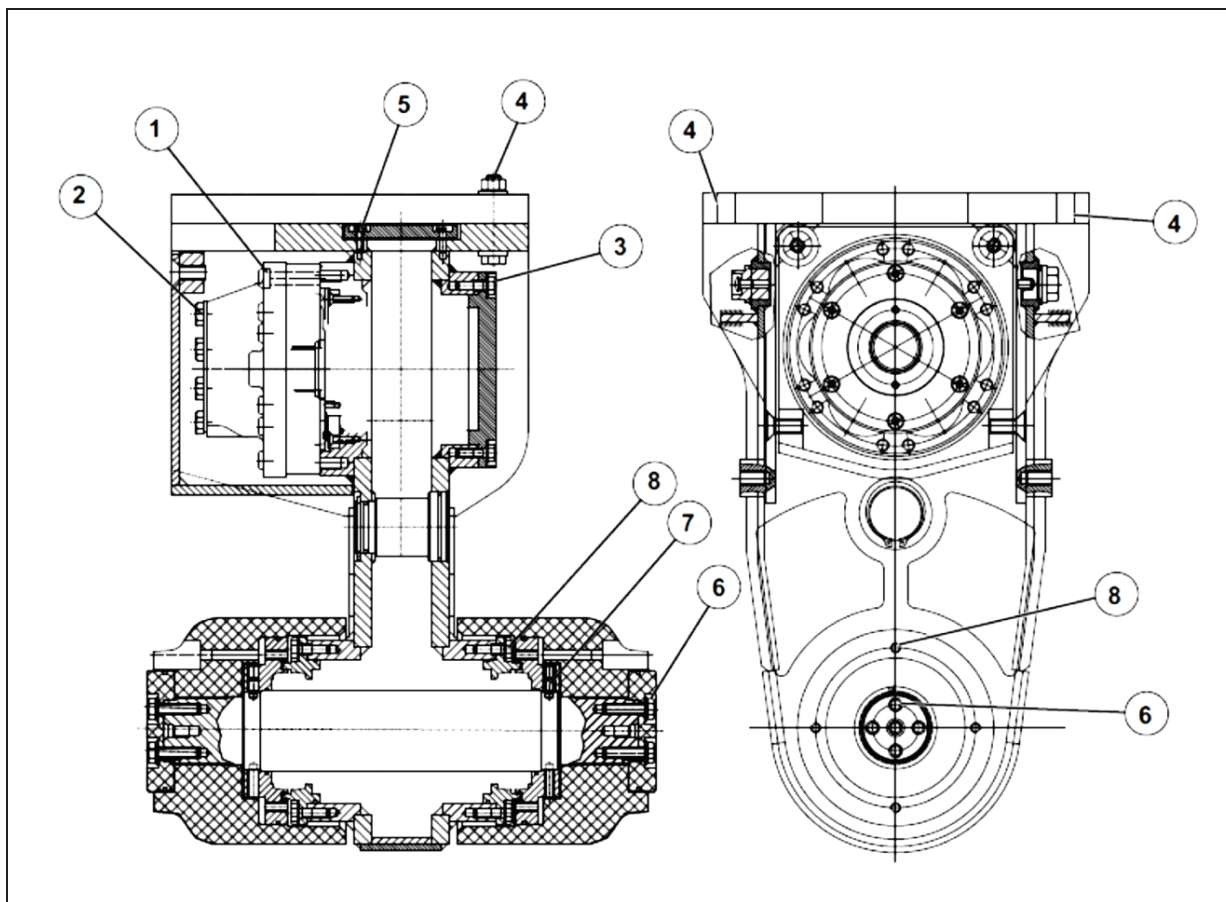


6.4 Screwed connections – tightening torques

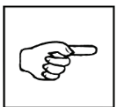


Replace the nuts and bolts with new ones after dismantling.
 Use “medium strength threadlocker” to glue the bolts.
 At the check marks in the table below, use of threadlocker is mandatory.
 At all other bolted connections, its use is recommended for additional safety.

Pos.	Description	Maintenance intervals (hours)	Dimension	Tightening torque Nm (ft-lb)	Thread-locker	Number
1	Hydraulic motor to casing	100	M12-12.9	79 (58)	-	12
2	Motor cover	100	M10-10.9	67 (49)	-	6
3	Cover	100	M8-10.9	34 (25)	-	
4	Fastening to attachment carrier	Daily	M16-10.9	115 (85)	-	10
5	Casing cover	500	M6-8.8	10 (7)	-	8
6	Dust cover/Drum attachment	100	M12-10.9	67 (49)	-	8
7	Seal carrier on drive shaft	500	M10-10.9	60 (44)	-	8
8	Seal carrier to casing	500	M10-10.9	34 (25)		4



6.5 Checking the condition of the hydraulic motor

NOTICE	
	MATERIAL DAMAGE ON HYDRAULIC MOTOR Damage of hydraulic motor
	▷ Have repairs carried out by trained service personnel.

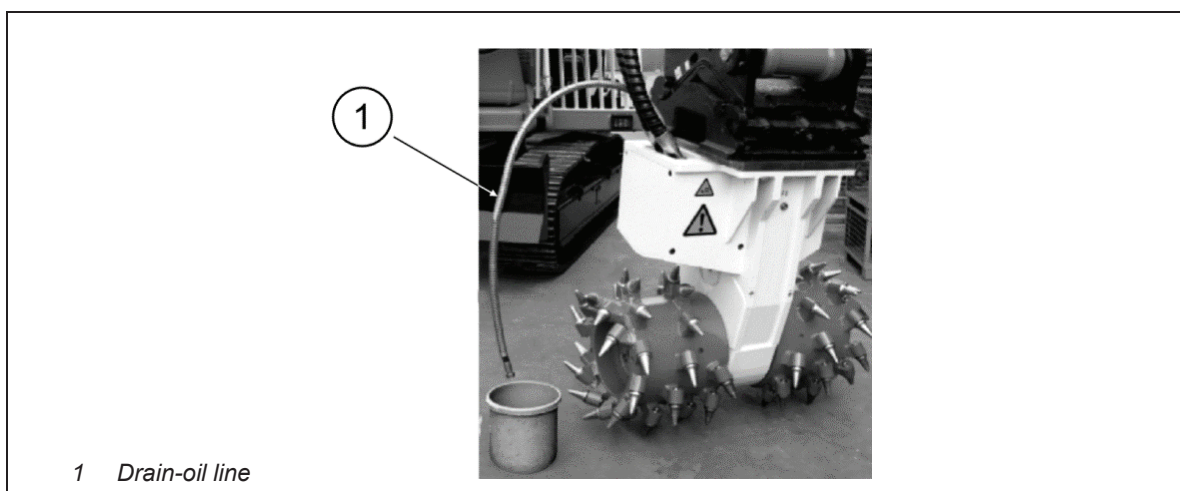
The following procedure is only to be carried out by a responsible person familiar with the functional principle of hydraulic systems.

- Switch off the engine of the attachment carrier.
- Ensure the hydraulic oil is not too hot.
- Disconnect the drain-oil line hose from the attachment carrier.
- Place the end of the hose coming from the hydraulic motor into a receptacle of known capacity.



If there is tank pressurisation in the attachment carrier, oil may escape before implementing.

Make sure the tank is vented.



- Start the engine and keep it running at low speed.
- If the oil flow is less than **0.05 l/min (0.013 g/min)**, increase the motor speed up to full speed noting any increase in oil flow.
- At full speed the oil flow must be no more than **0.4 l/min (0.11 g/min)** .(WS 15N)



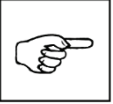
If more oil flows, the motor must be inspected, and, if needed, replaced.



A precise inspection of the engine is made by the manufacturer.

6.6 Removal of the Hydraulic Motor

It is recommended to contact the **Auger Torque** Technical Department before carrying out the following, as this can affect your warranty.

NOTICE	
	MATERIAL DAMAGE ON HYDRAULIC MOTOR Damage of hydraulic motor
	▷ Have repairs carried out by trained service personnel.

- Make sure that the hydraulic oil is not too hot.
- Loosen the hose couplings of the hydraulic cutting unit hoses from the carrier vehicle.
- Remove the cutting unit from the carrier vehicle and lay the cutting unit in a stable, vertical position, so that the hydraulic motor of the cutting unit points upward.



Clean the cutting unit thoroughly before beginning to work on removing the hydraulic motor.

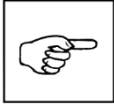
CAUTION



DANGER DUE TO ENVIRONMENTALLY HAZARDOUS SUBSTANCES
Escaping oil may pollute the environment.

- ▷ Place a sufficiently sized oil collection pan under the cutting unit.

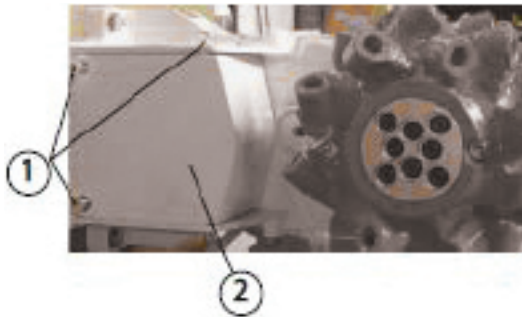
NOTICE



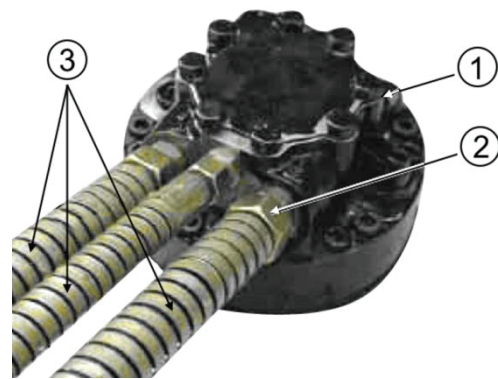
DAMAGE TO HYDRAULIC MOTOR

- ▷ The hydraulic motor cannot be removed as one part.

- Unscrew the 6 bolts and remove the cover plate of the hydraulic motor
- Unscrew the hoses from the hydraulic motor.
- Remove hydraulic motor from cutting unit.



- 1 Bolt
- 2 Cover plate



- 1 Hydraulic motor
- 2 Screw
- 3 Hoses

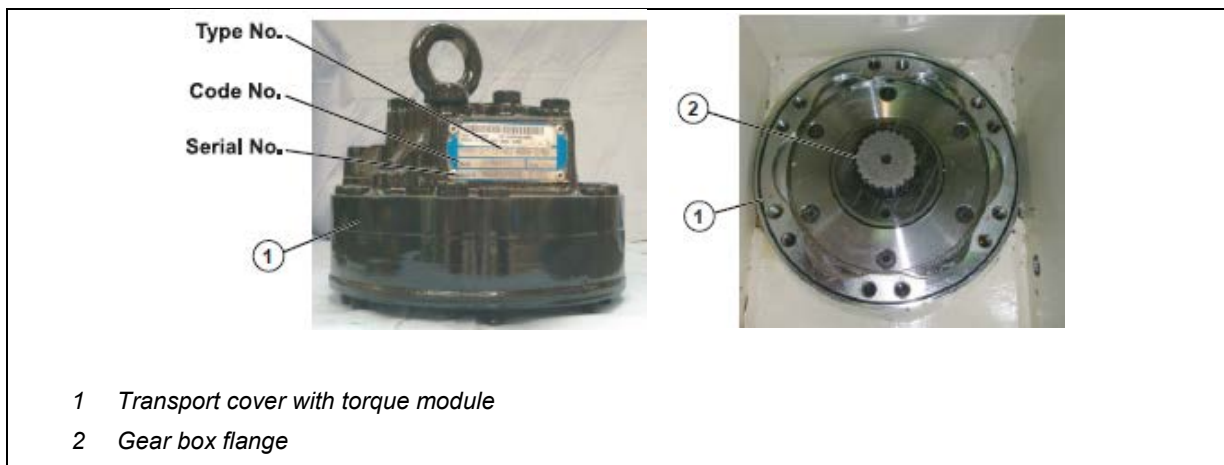
6.7 Removal and Installation of Torque Modules

6.7.1 Removal of the Torque Modules

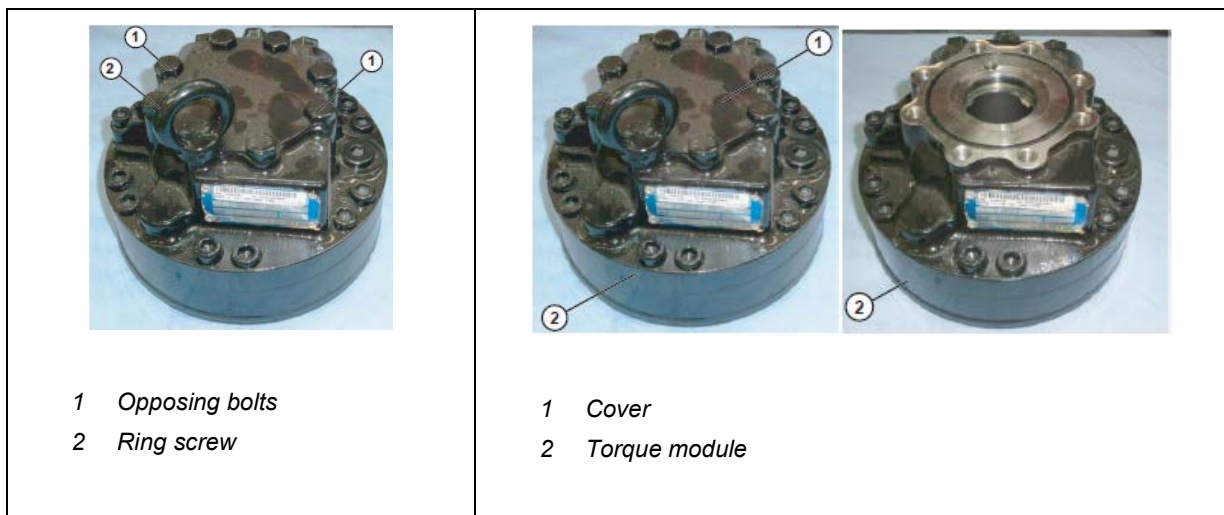


Clean the workstation thoroughly before starting to work on disassembly of the torque module.

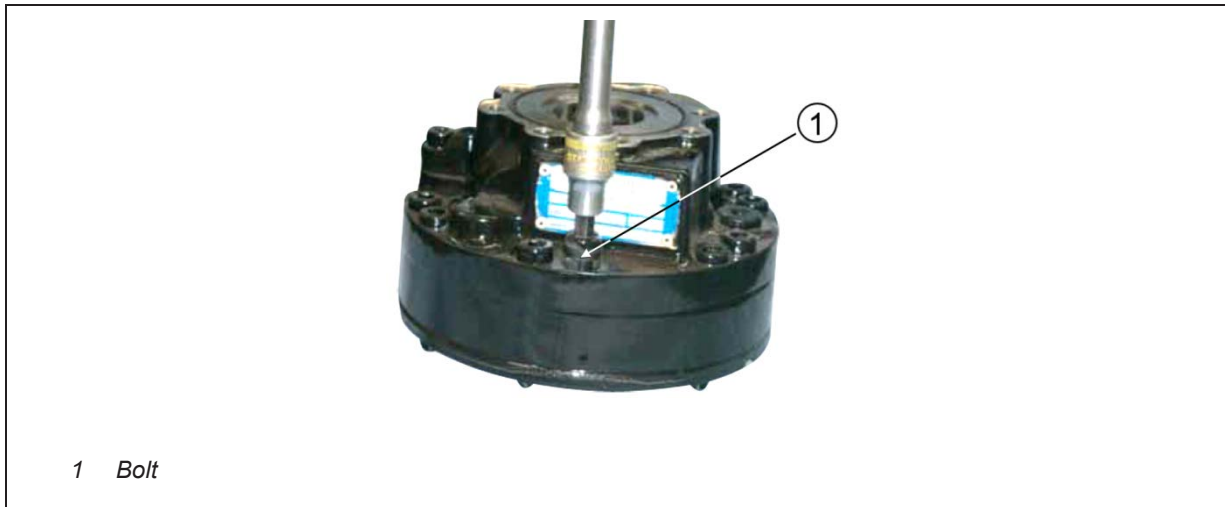
- Torque module with transport cover.
- The transport cover corresponds with the gearbox flange when installed.



- Loosen the two opposing bolts on the cover and install compatible ring screws.
- In the version with continuous shaft, the cover must be completely removed.
- Torque module without cover.

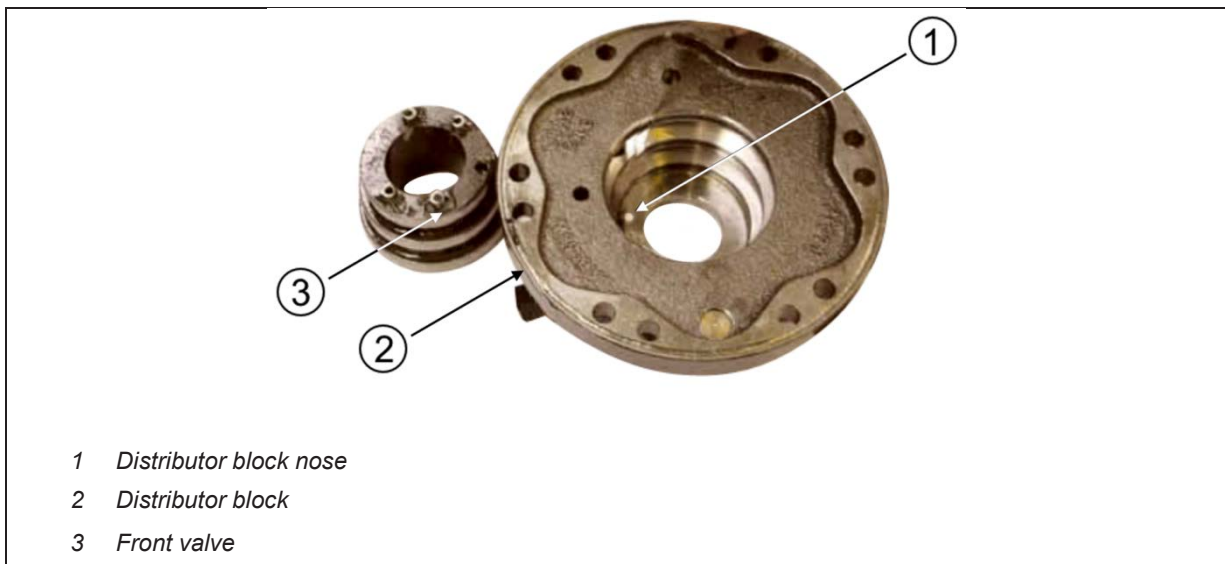


- Unscrew the **12 bolts**.

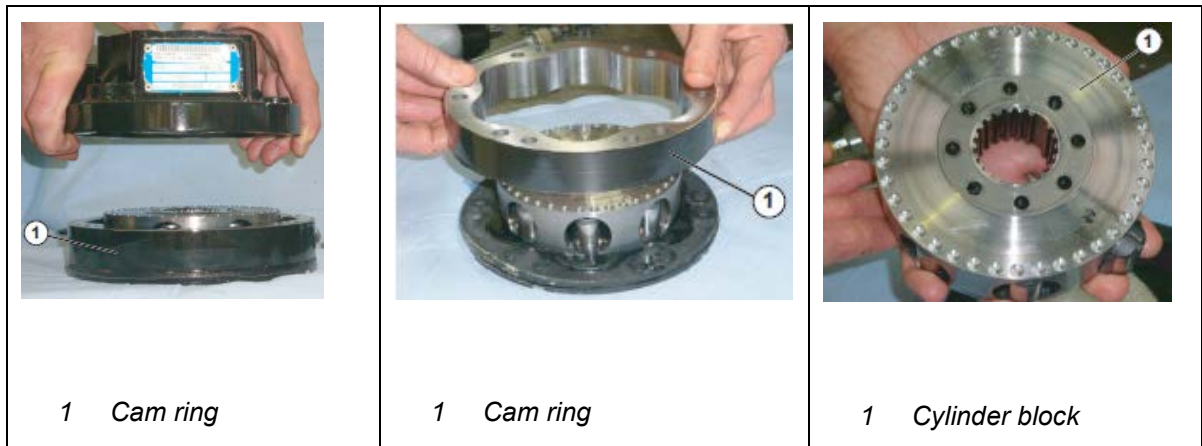


- Raise the distributor.

NOTICE	
	<p>DAMAGE TO THE FRONT VALVE Damage due to improper handling</p>
	<p>▷ The front valve can fall out when raising the distributor.</p>



- The cam ring remains in its position. Proceed carefully with the O-ring seal.
- Lift the cam ring.
- Cylinder block without cam ring.

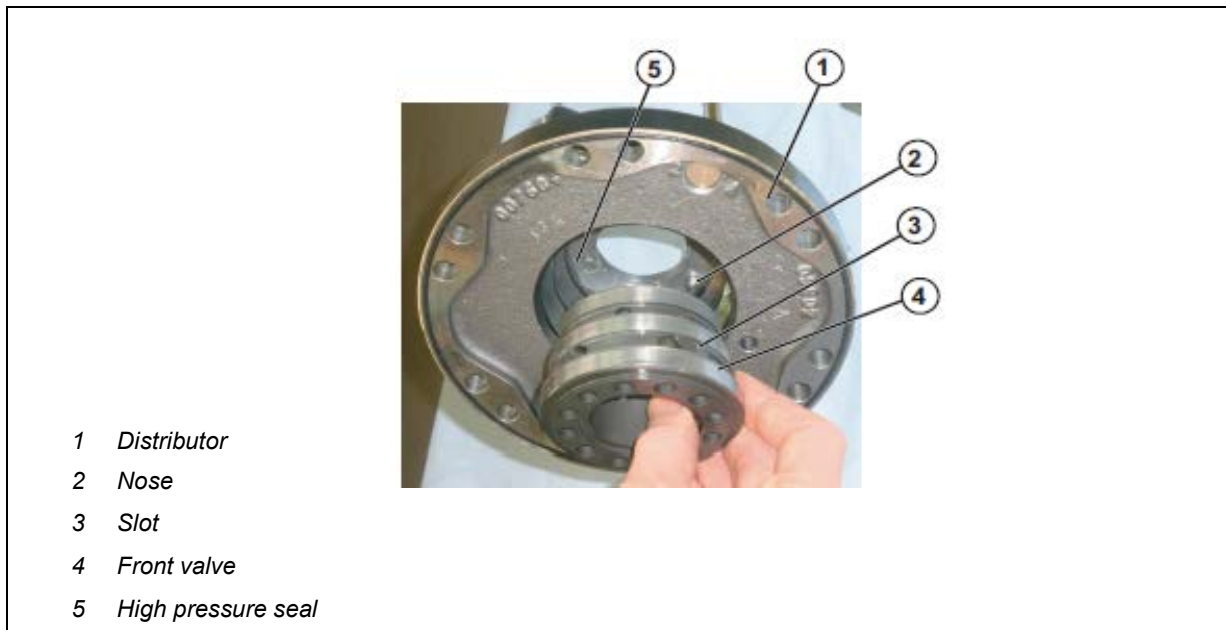


- Raise the cylinder block and remove the transport cover.
- If the front valve falls out, ensure that all pre-loaded springs are set back in their positions.



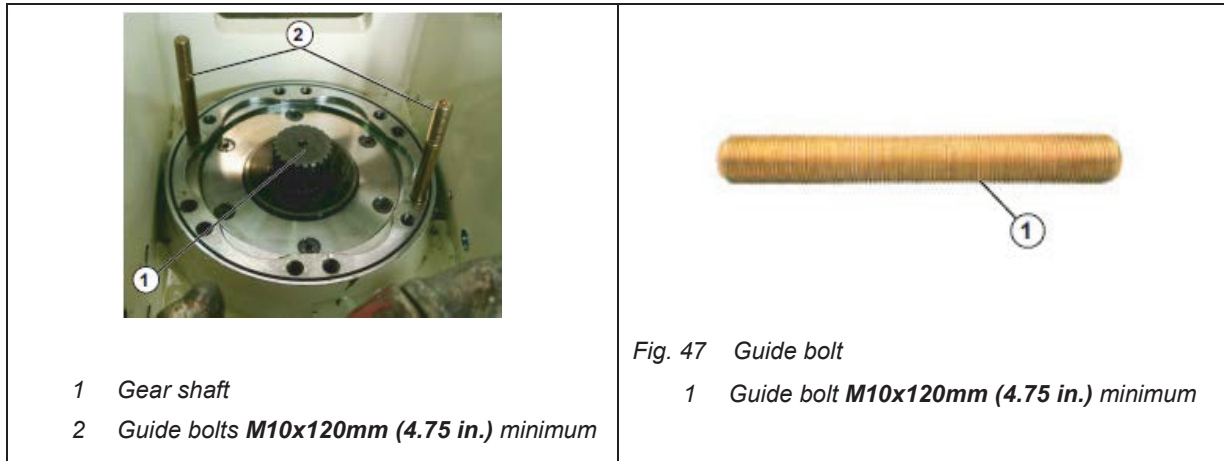
Use grease to install the springs. This prevents them from falling out again.


- Reinstall the front valve in the distributor. Push it in by hand or use a plastic hammer.
- Ensure that the slots on the front valve and the distributor are aligned correctly to one another.



6.7.2 Installation of the Torque Modules

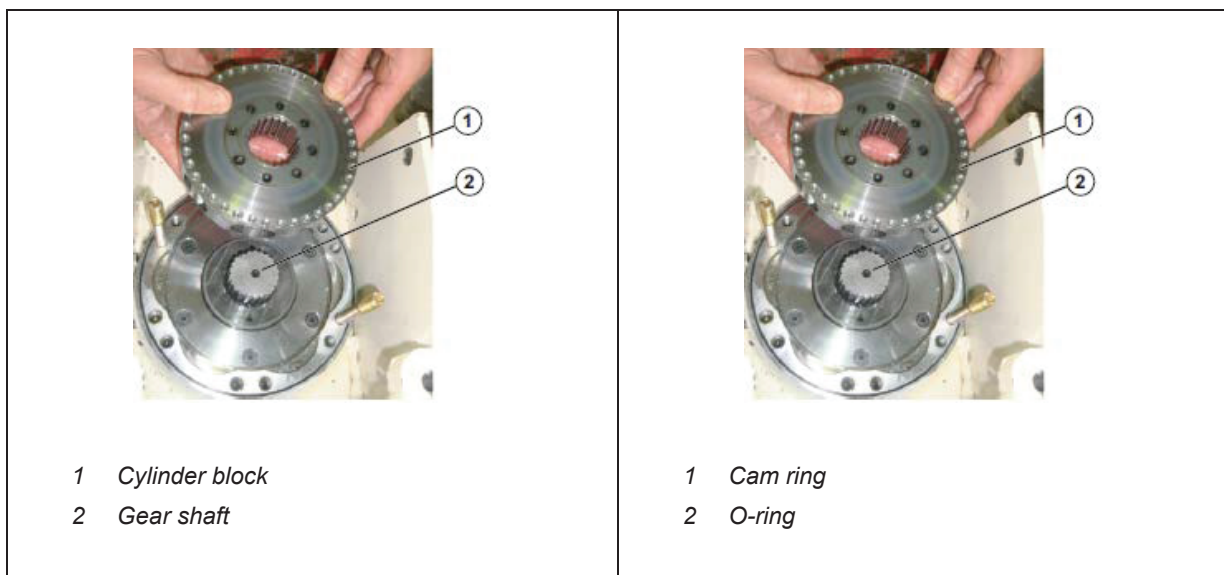
- Screw 2 guide bolts **M10x120mm (4.75 in.)** in 2 opposing thread holes near the gear shaft



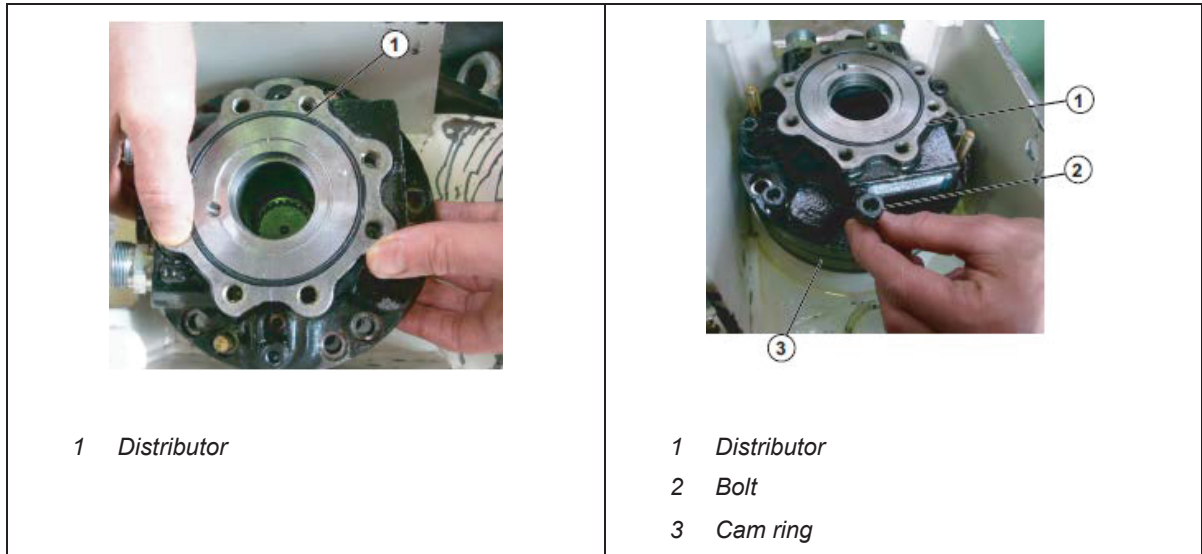
CAUTION	
	<p>DANGER OF INJURY</p>
	<p>▷ Have repairs carried out by trained service personnel.</p>

i *The gearing of the gear shaft and the gearing of the cylinder block must interlock one another completely.*

- Place the cylinder block on the gear shaft.
- Set the cam ring over the cylinder block on the gear flange. Ensure that the holes in the cam ring are correctly aligned and that the O-ring is positioned correctly.



- Replace the distributor carefully on the cam ring.
- Reinstall the 14 fastening bolts in the distributor and cam ring.



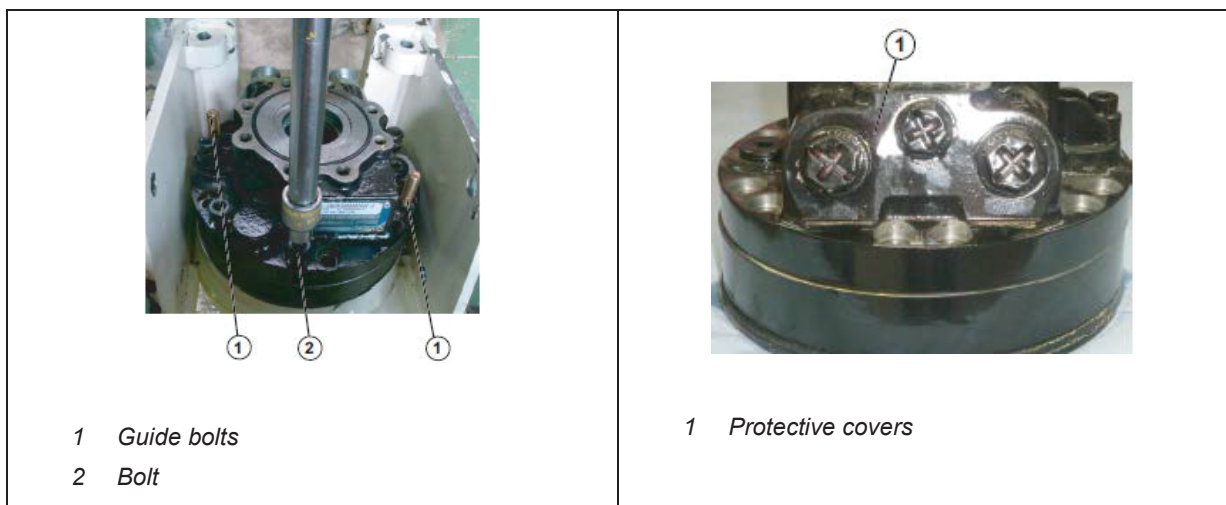
i **Make sure that the holes of the guide pins are aligned correctly and the O-rings are positioned correctly.**

i **Don't forget to unscrew the 2 guide bolts. Replace 2 fastening bolts in that position.**

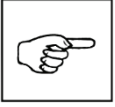
- Tighten all the screws.
- Loosen the 2 ring screws and replace them with the 2 screws.

i **Use a torque wrench in order to reach the correct tightening torque of 83 Nm (61 ft-lb).**

- First remove the protective covers from the main connections and drain immediately before connecting to the system.



6.7.3 Hydraulic Connections

NOTICE	
	DAMAGE TO THE HYDRAULIC MOTOR
	▷ It is very important that the motor housing be completely filled with the specified oil in all operating conditions and working positions.

- Connection "A" and "B" (main supply lines):


Set up the circuit so that one of these two connections always has a pressure between **20 and 75 bar (290 and 1088 psi)**.

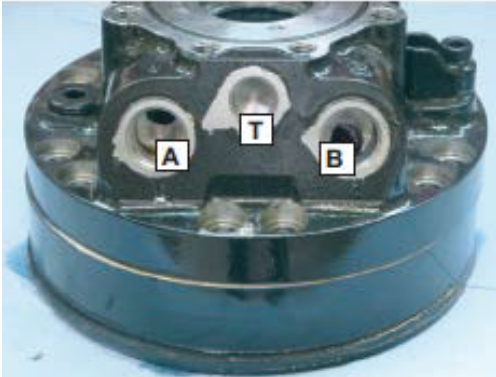
For a clockwise running direction, the pressure line must be connected to connection "A" and to connection "B" for a counter-clockwise running direction.

- Connection "T" (drain-oil connection):

This connection must be positioned at the highest point. If this is not practical, choose the pipelines so that the required fill level of the housing is ensured and oil is prevented from escaping from the motor housing. Diameter and length must be selected so that the housing interior pressure does not exceed a value of **3 bar (43.5 psi)** under normal operating conditions.

A discharge line leading directly into the tank should be connected to connection "T." The discharge line should be large enough so that all of the draining fluid can run out without creating too much counter-pressure.

NOTICE	
	DAMAGE TO THE DRAIN-OIL LINE "T"
	▷ The pressure in the drain-oil line "T" may not exceed 3 bar (43.5 psi) in continuous operation.

<p>A = Pressure line B = Return line T = Drain line</p>	
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6.8 Removal and installation of the cutting drums

- **KDC04-06-08**: from chassis serial number **WS15/0900**
- **KDC15**: from chassis serial number **WS30/0700**

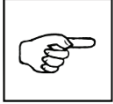
6.8.1 Removal of the cutting drums

- Please read the following instructions carefully. Your warranty may become void if you do not comply with them.
Please contact the technical department at **Auger Torque** if you are in any doubt.

NOTICE	
	MATERIAL DAMAGE OF THE CUTTING UNIT Damage due to improper repairs
	▷ Have repairs carried out by -trained service personnel.



Clean the cutting unit thoroughly and make sure the workstation is clean before you begin with removal of the cutting drums.

NOTICE	
	DAMAGE TO THE CUTTING UNIT Damage due to improper handling
	▷ Park the cutting drum in a horizontal position. ▷ Secure the cutting unit against slipping and falling over.

The torque between the cutting drum and the drive shaft is transmitted through a cone terminal. The cone terminal consists of two inner rings (1) and (2) with outer cone and the outer ring (4) with inner cone, along with several tensioning bolts (3).

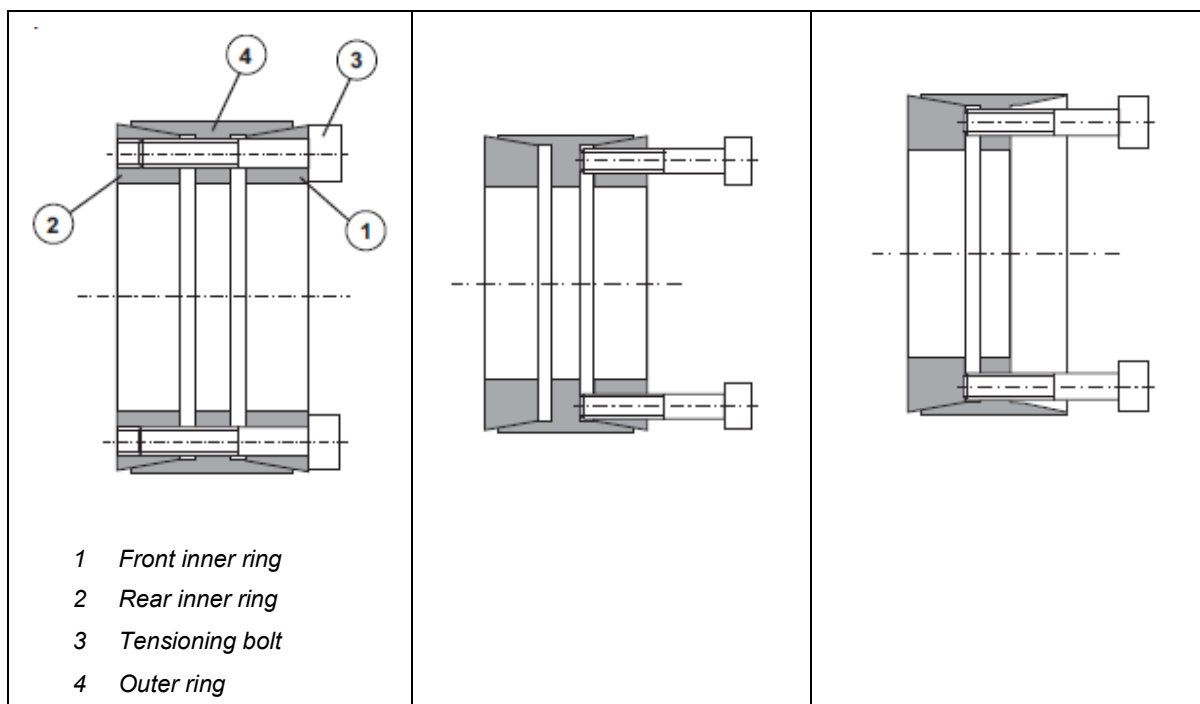
The inner rings are drawn against each other by tightening the tensioning bolts. Radial tensioning forces arise through the tapered surfaces. The radial tensioning forces press the outer ring into the hub bore of the cutting drum and the inner rings onto the drive shaft. This enables the torque and/or an axial force to be transmitted through the shaft and the hub.

- Unscrew all tensioning bolts from the cone terminal.
- Turn the tensioning bolts into the press-off threaded holes until they touch the flange of the outer ring.

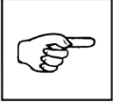


The front faces can be ground flat and greased at the threaded ends of the press-off screws for easier dismantling. This also reduces friction loss.


- Cross tighten the bolts in the press-off threaded holes evenly in multiple stages until the front inner ring becomes loose.
- Dismantle the inner ring completely.
- Turn the tensioning bolts into the threaded holes until they touch the rear inner ring.
- Cross tighten the bolts in the press-off threaded holes **evenly** in multiple stages until the rear inner ring becomes loose.
- Remove the cutting drum together with the individual parts of the shaft clamping element.



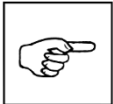
6.8.2 Installation of the cutting drums

NOTICE	
	DAMAGE TO PROPERTY Damage due to improper assembly
	▷ Only replace missing or damaged tensioning bolts with the same bolts of grade 12.9!


- Carefully clean contact surfaces on the shaft and hub (free from oil and grease).
- Apply a light coat of grease to the clamping element.

NOTICE	
	DAMAGE TO PROPERTY Damage caused by inappropriate lubricant
	▷ Do not use oil with molybdenum disulphide or high-pressure additives and do not use grease!


- Insert the clamping element into the hub of the cutting drum and push onto the drive shaft. For this purpose, apply pressure only to the heads of the tensioning bolts lying on the front inner ring.

NOTICE	
	DAMAGE TO PROPERTY Damage due to improper assembly
	▷ When used in blind holes or at shaft shoulders, adequate axial clearance must be available for dismantling the rear inner ring.

- Cross tighten the tightening bolts manually, in doing so align the hub.

NOTICE	
	DAMAGE TO PROPERTY Damage due to improper assembly
	▷ When tightening the tensioning bolts do not begin with the bolts directly to the right or left of the slot.

- Cross tighten the tensioning bolts with the torque key **once** with half the tightening torque (full torque $M_s = 73 \text{ Nm}$ (54 ft-lb)). After this tighten **once** clockwise with half the torque.
- Tighten tensioning bolts in sequence **2 - 3 times** with full torque **$M_s = 73 \text{ Nm}$ (54 ft-lb)**.

NOTICE	
	<p>DAMAGE TO PROPERTY Damage due to improper assembly</p> <hr/> <p>▷ When re-tightening the tensioning bolts do not begin with the bolts directly to the right or left of the slot.</p>

6.8.3 Maintenance

The cone clamping elements are maintenance-free.

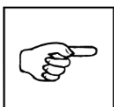


It is possible for settling to occur in the connection during operation. We therefore recommend checking the torque of the tensioning bolts as part of the maintenance intervals for the machine.

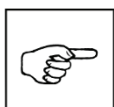
6.9 Removal and Installation of the Cutting drums

6.9.1 Removal of the Cutting drums

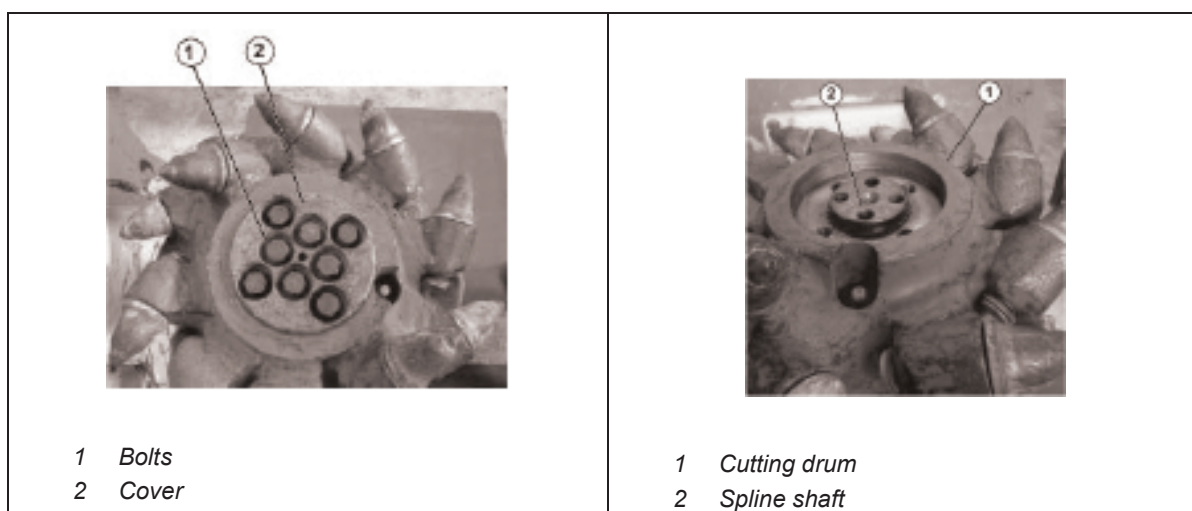
- Please read the following instructions carefully. Failure to observe them can void your warranty.
- In case of doubt, please contact the Technical Department at **Auger Torque**.

NOTICE	
	<p>MATERIAL DAMAGE OF THE CUTTING UNIT Damage due to improper repairs</p> <hr/> <p>▷ Have repairs carried out by trained service personnel.</p>

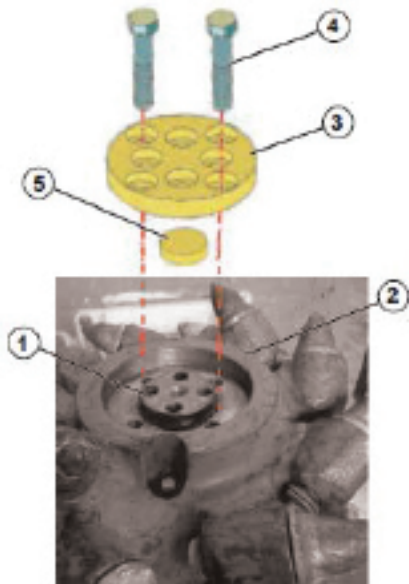
- i** *Clean the cutting unit thoroughly and make sure the workstation is clean before you begin with removal of the cutting drums.*

NOTICE	
	<p>DAMAGE TO THE CUTTING UNIT Damage due to improper handling</p> <hr/> <p>▷ Secure the cutting unit against slipping and falling over.</p>

- Disengage the motor of the carrier vehicle.
- Loosen the bolts (8 on each cutting drum). Now you can remove the cover
- Now you can pull the cutting drum from the spline shaft of the cutting unit gear with the help of a lifting device.



- If the cutting drum does not loosen from the spline shaft of the cutting unit gear, place a disc between the spline shaft of the cutting unit gear and the cover. Screw two bolts into the opposing holes of the cutting drum.
- Now you can pull the cutting drum as described above.
- Spline shaft of the cutting unit gear without cutting drum.



- 1 Spline shaft
- 2 Cutting drum
- 3 Cover
- 4 Bolts
- 5 Disc

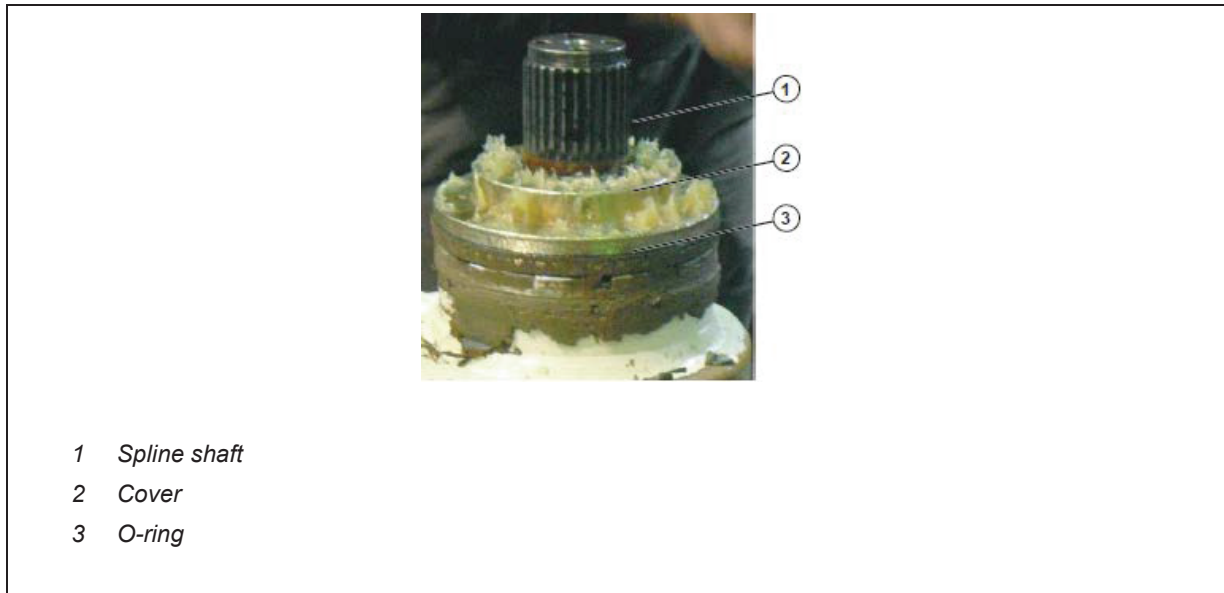


- 1 Spline shaft

6.9.2 Installation of the Cutting drums

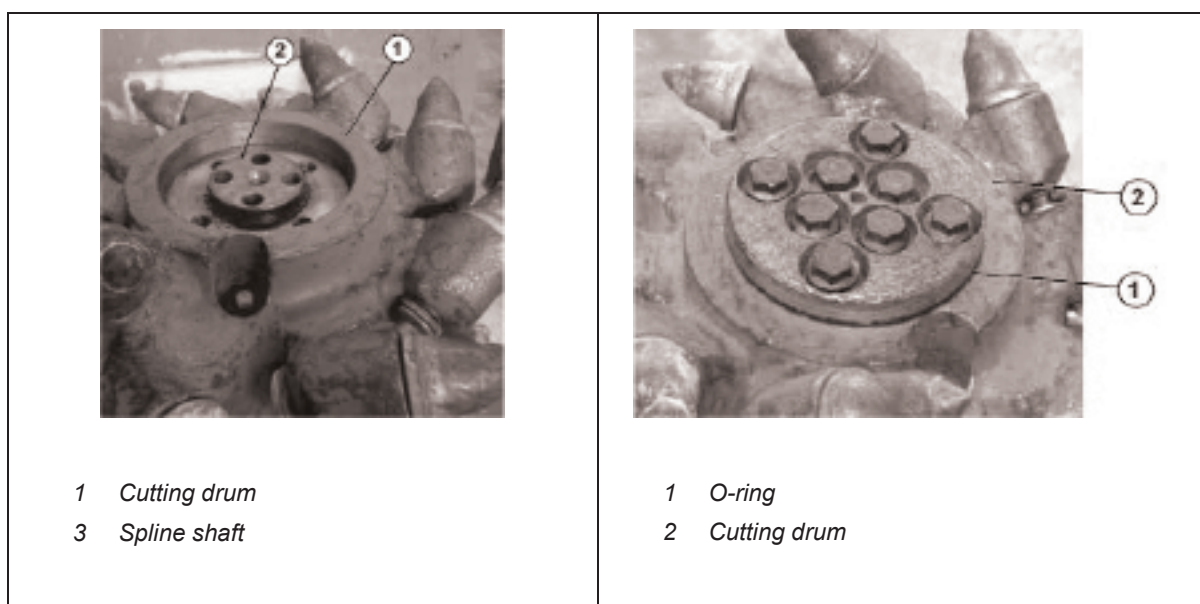
- Grease the spline shaft and the cover of the cutting unit gear thoroughly.

i Ensure that the O-ring is undamaged and sits in the groove of the cover correctly.



- Now you can slide the cutting drum onto the spline shaft of the cutting unit gear with the help of a crane.
- Then place the O-ring in the groove of the cutting drum.

i Ensure that the O-ring is undamaged and sits correctly in the groove of the cutting drum.



- Slide the cover into the opening of the cutting drum.



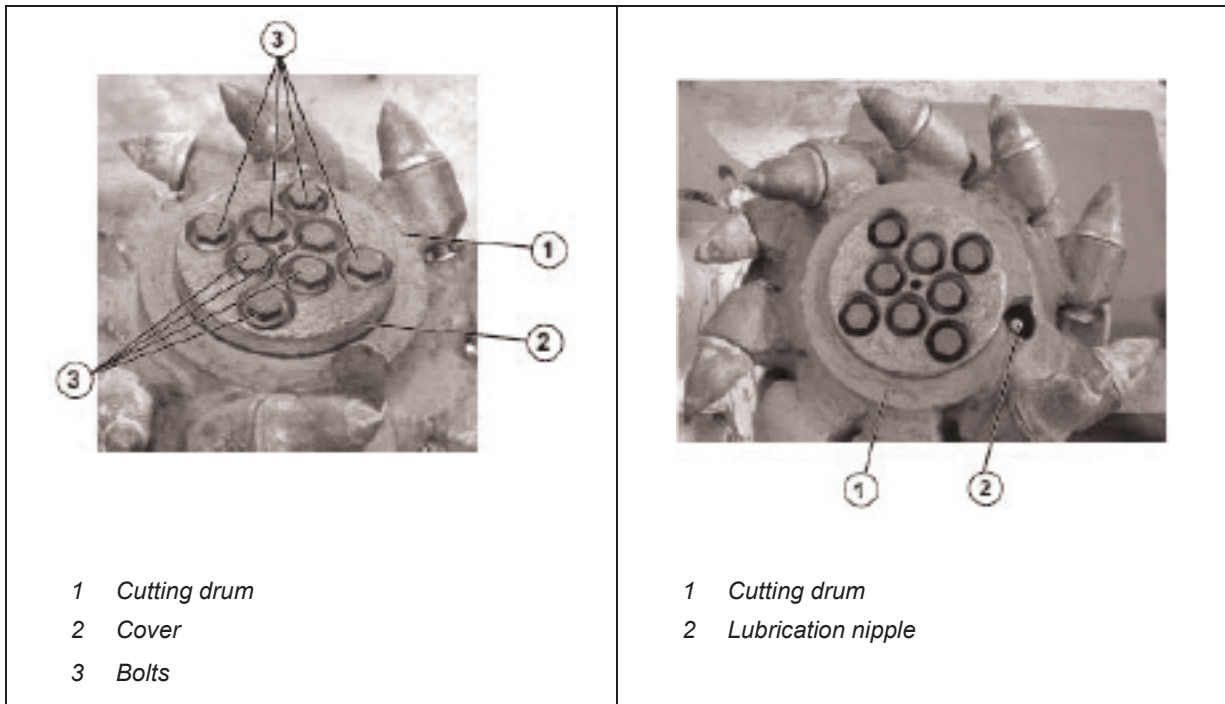
Ensure that the hole pattern of the cover corresponds with the thread hole pattern of the cutting drum.

- Position the 8 bolts. Cross tighten them securely.



Use a torque wrench in order to reach the correct tightening torque of 67 Nm (49 ft-lb).

- Lubricate the cutting drums via the lubrication nipples.



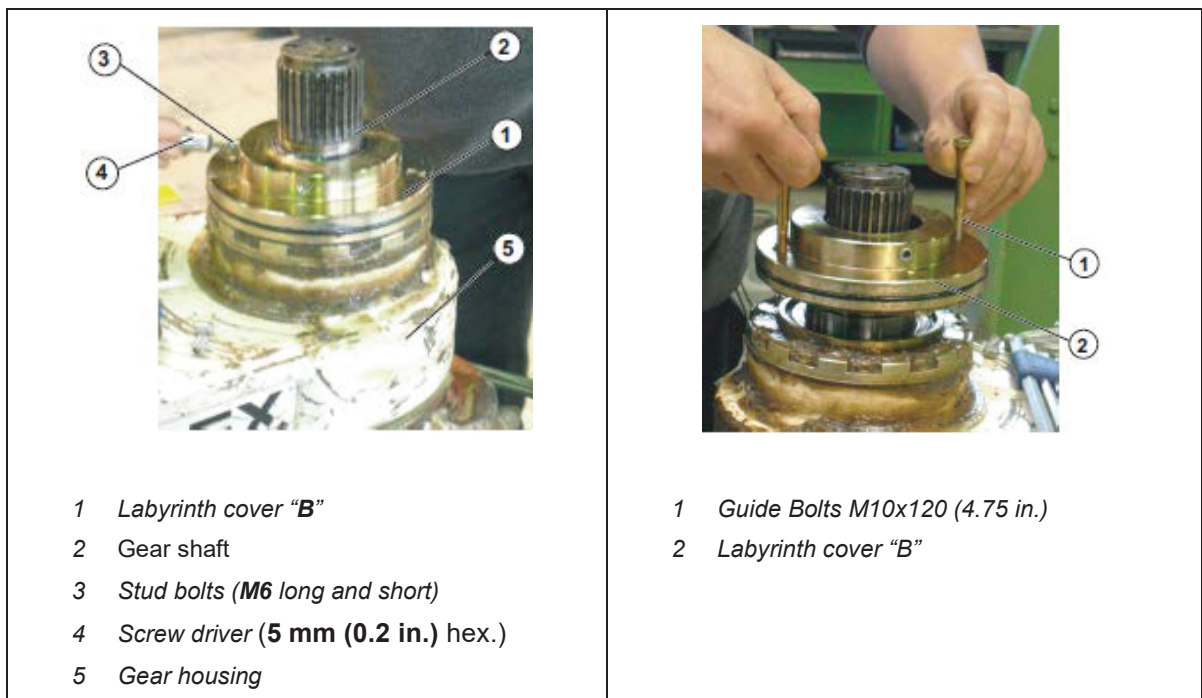
6.10 Disassemble and assemble of gear Labyrinth covers (A and B)

 **Before removing the labyrinth cover, mark the labyrinth covers “A” and “B” for easy assemble.**

6.10.1 Disassembly procedure

 **Remove cutting drum from gear housing before proceeding with disassembly and assembly procedures of labyrinth covers.**

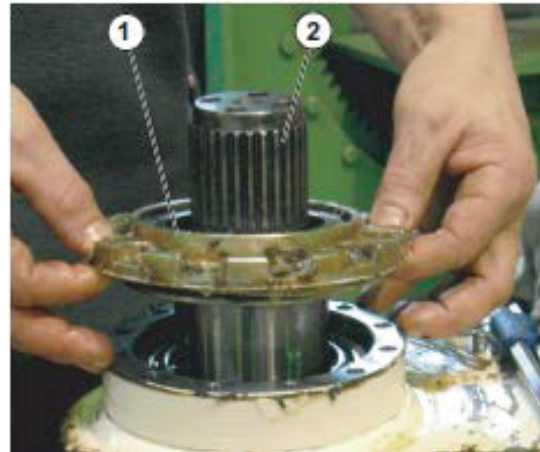
- Unscrew the 4 stud bolts from the labyrinth cover “B” with an Allen key (5 mm (0.2 in.) hex.)
- Screw 2 guide bolts in 2 opposing thread holes and pull the labyrinth cover “B” from the gear shaft.



- Remove spacer disc from assembly of gear shaft and labyrinth cover “A”.
- Remove spacer sleeve from labyrinth cover “A”.
- Unscrew the 12 bolts on the labyrinth cover “A” with ratchet and a socket (17 mm (0.67 in.) hex) from the gear housing.
- Then push the labyrinth cover “A” out of the gear housing.



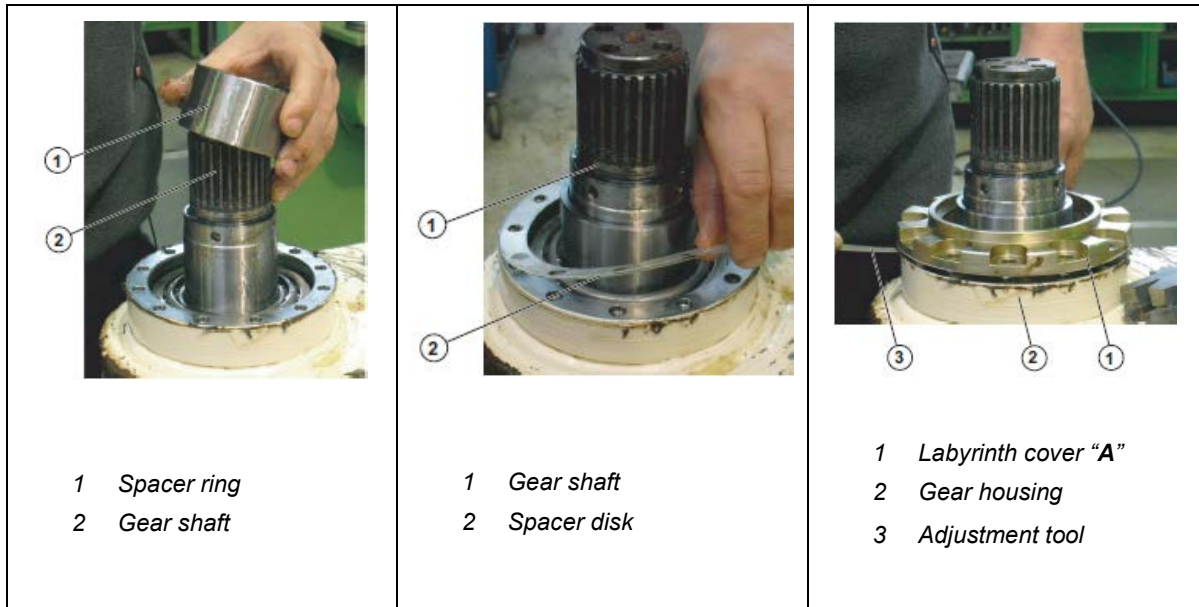
- 1 Labyrinth cover “A”
- 2 Bolt
- 3 Face Seal
- 4 Spacer sleeve



- 1 Labyrinth cover “A”
- 2 Gear shaft

6.10.2 Assembly procedure

- Slide the spacer ring over the gear shaft assembly.
- Slide the spacer disk through gear shaft and place it over gear housing.
- Slide the labyrinth cover “A” over gear shaft assembly and rotate the cover with an adjustment tool so that it exactly sits in 12 holes of gear housing.

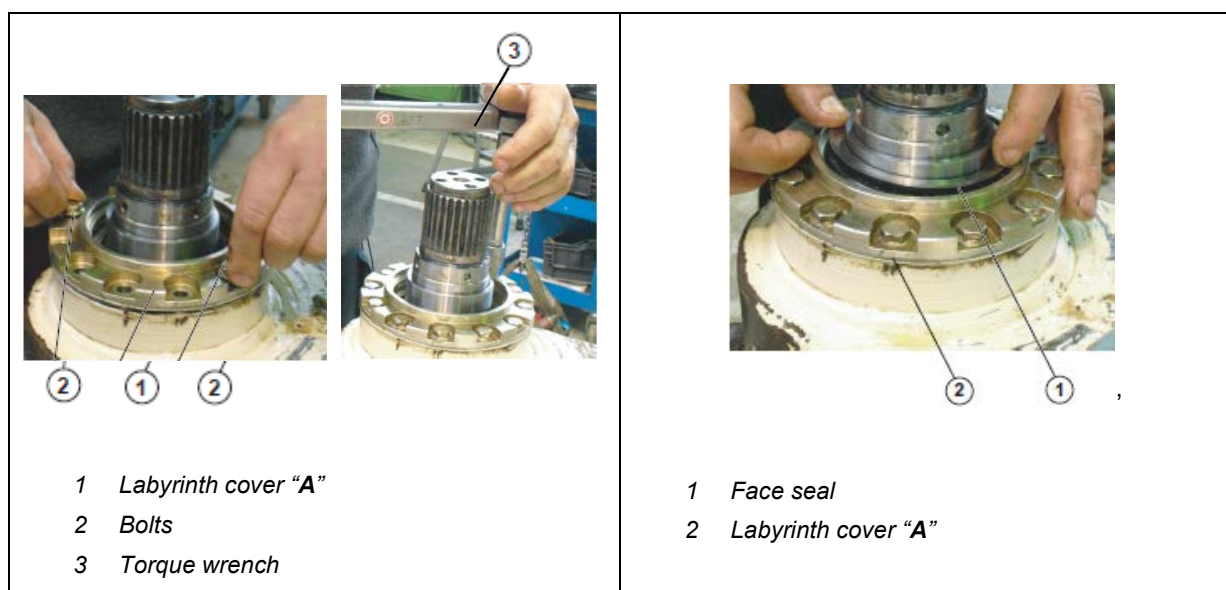


- Screw the assembled labyrinth cover “A” and tighten the 12 bolts.



Tighten the 12 bolts with torque wrench.

- Slide the spacer disc on the assembly of gear shaft and labyrinth cover “A”.



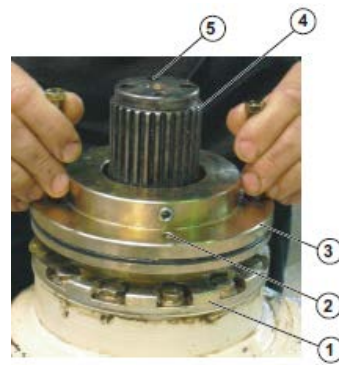
- Fill the grooves of labyrinth cover “A” with multipurpose lubricating grease.
- Slide the labyrinth cover “B” over the gear shaft to the assembled labyrinth cover “A” on the gear housing.

NOTICE



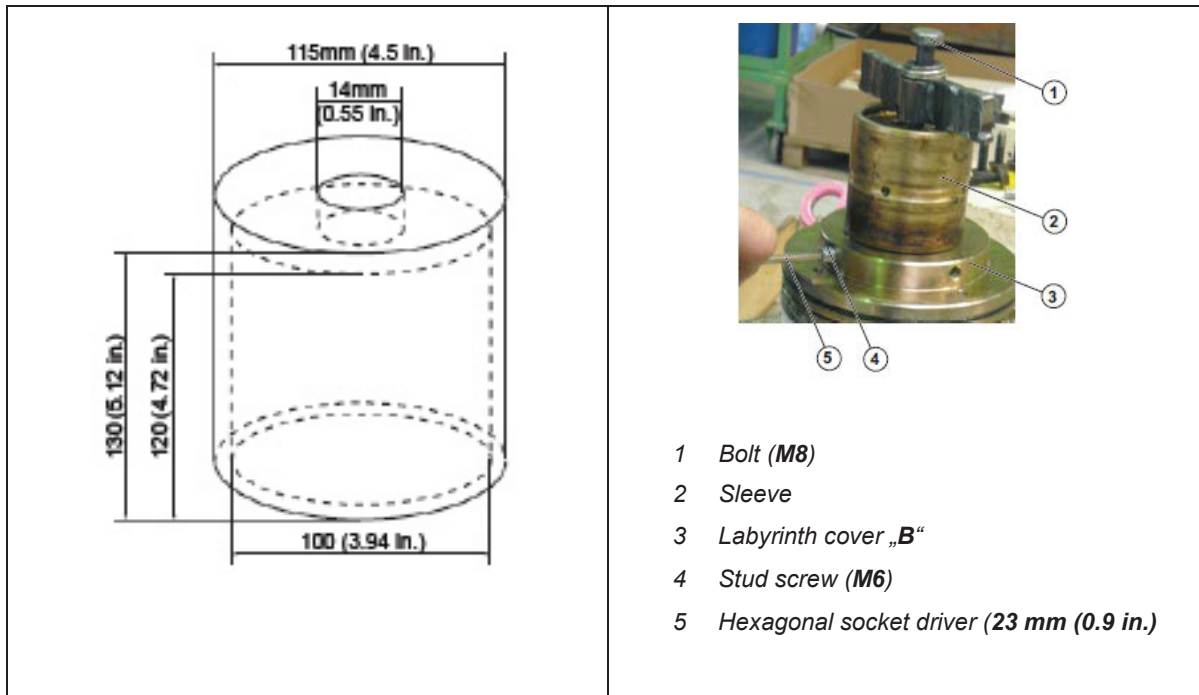
DAMAGE TO PROPERTY THROUGH INCORRECT INSTALLATION

- ▷ Ensure the correct installation position of the assembled labyrinth cover “B”
- ▷ Ensure that the 4 threaded holes on the labyrinth cover “B” are in alignment with the 4 bores on the gear shaft.



- 1 Labyrinth cover “A”
- 2 Threaded holes
- 3 Labyrinth cover “B”
- 4 Gear shaft
- 5 Bores of drive shaft

- Next, slide the assembly sleeve over the gear shaft.
- Screw the bolt (**M8**) into the center threaded hole of the gear shaft and push the labyrinth cover "B" down with a wrench or a ratchet until the 4 threaded holes on the labyrinth cover "B" align with the 4 bores on the gear shaft.

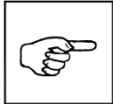


- 1 Bolt (**M8**)
- 2 Sleeve
- 3 Labyrinth cover „B“
- 4 Stud screw (**M6**)
- 5 Hexagonal socket driver (**23 mm (0.9 in.)**)

- Screw the 4 stud screws (**M6**) into the 4 threaded holes in the labyrinth cover “**B**” with a hexagonal socket driver (**23mm (0.9 in.)** hex.) until they contact the end of the bore in the 4 provided bores in the gear shaft.
- Additionally secure the stud bolts by screwing the 4 stud screws (**M6**) into the 4 threaded holes of labyrinth cover “**B**” with the hexagon socket driver, thereby locking the stud screws.

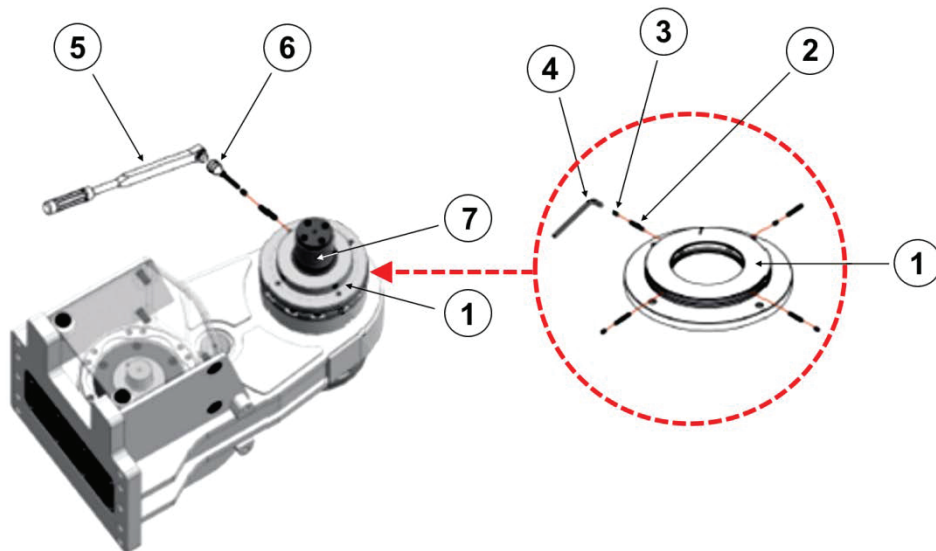
i The stud screws are tightened with a torque wrench and a hex bit socket (3mm (0.12 in.)) (torque= 14 Nm (10.3 ft-lb)).

NOTICE



DAMAGE TO PROPERTY THROUGH INCORRECT TOOLS

- ▷ Secure that the hex bit socket is long enough.




- 1 Labyrinth cover “A”
- 2 Stud bolt
- 3 Stud screw (M6)
- 4 Hexagon socket driver
- 5 Torque wrench
- 6 Hexagon bit socket (3mm (0.12 in.))
- 7 Gear shaft


6.11 Replacing the teeth on the cutting drums

Please read through the following instructions carefully. Failure to observe them may void the warranty. If you are in doubt, contact your responsible dealer.


6.11.1 Removing teeth

NOTICE	
	MATERIAL DAMAGE OF THE CUTTING UNIT Damage due to improper repairs
	▷ Have repairs carried out by trained service personnel.

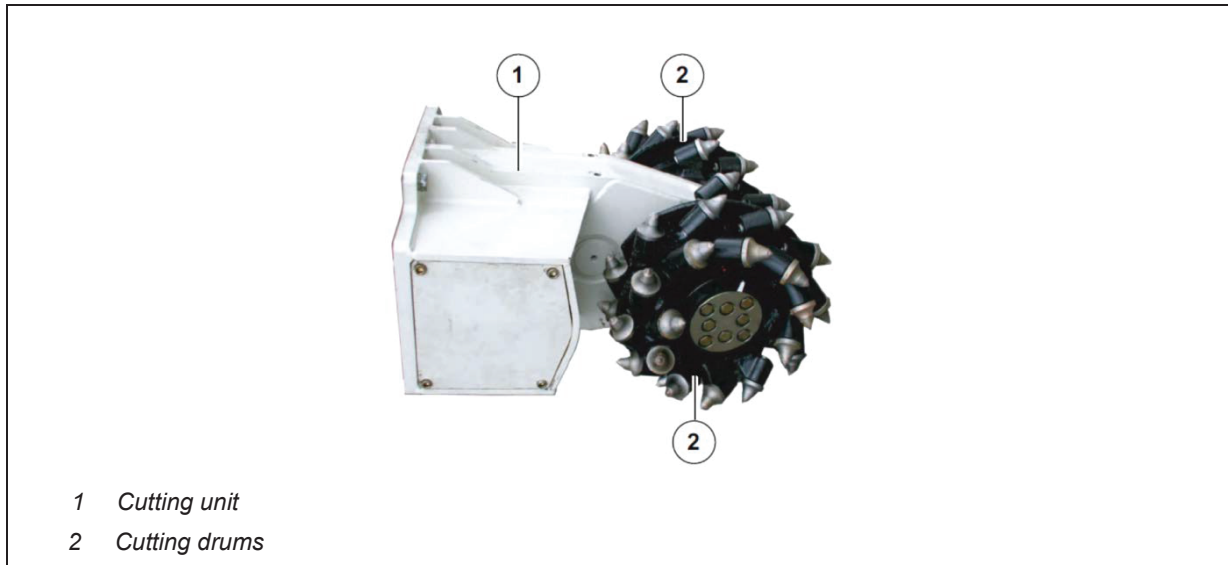
- Clean the cutting unit and the jobsite thoroughly.

WARNING	
	DANGER OF CRUSHING Danger of crushing due to cutting unit
	▷ Secure the cutting unit against slipping and toppling down.

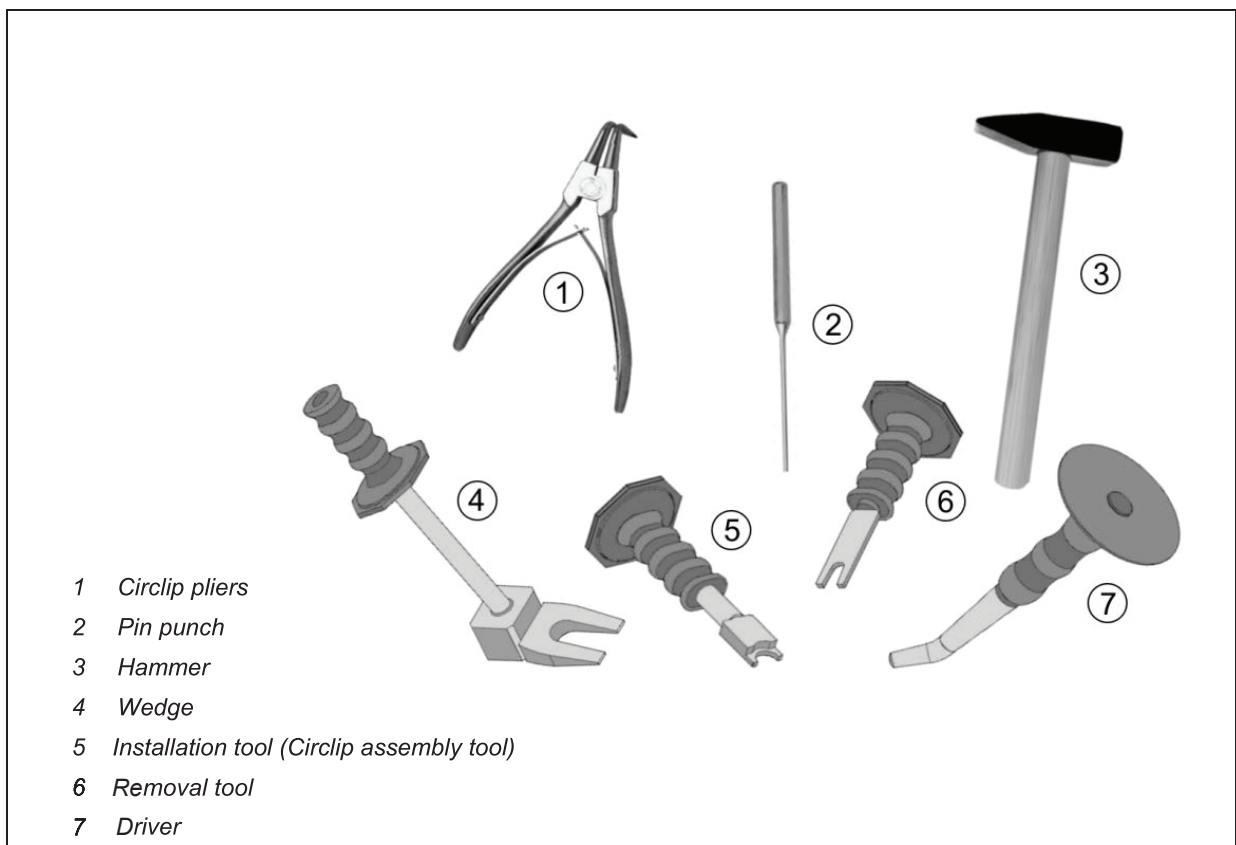
- Set down the cutting unit in a position that will allow the cutting drums to rotate freely.
- Switch off the engine of the attachment carrier.

WARNING	
	DANGER CAUSED BY PARTS FLYING AROUND. Parts flying around during repair work can cause severe eye injury or the loss of eyesight
	▷ Use goggles or another kind of eye protection.

Setting down the cutting unit

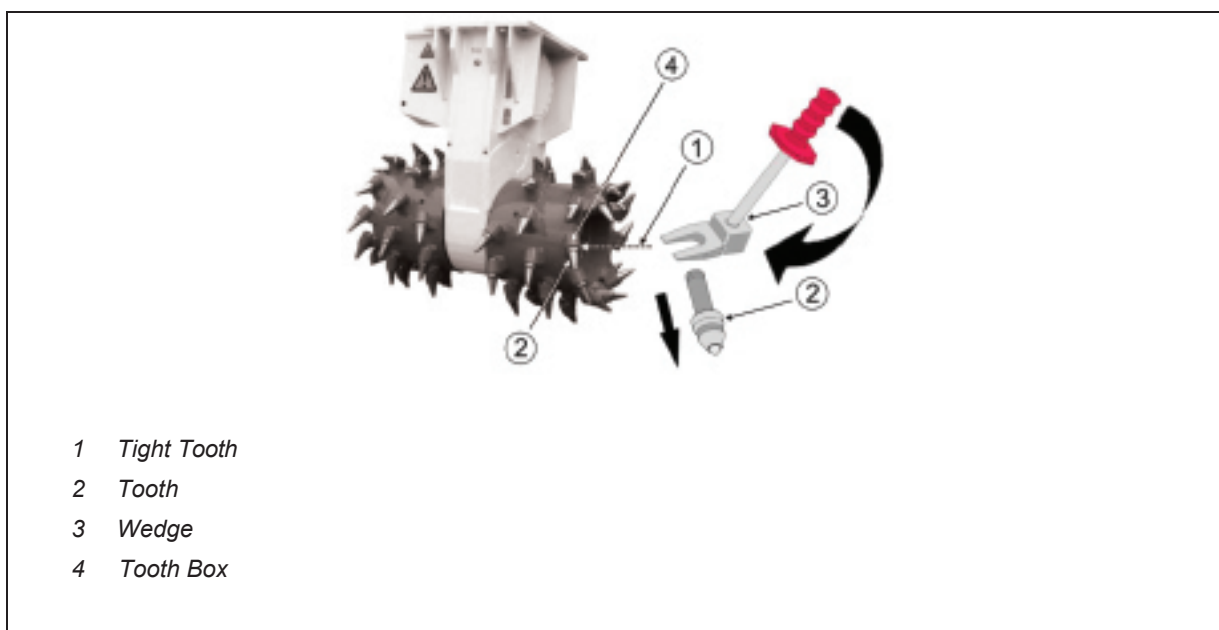
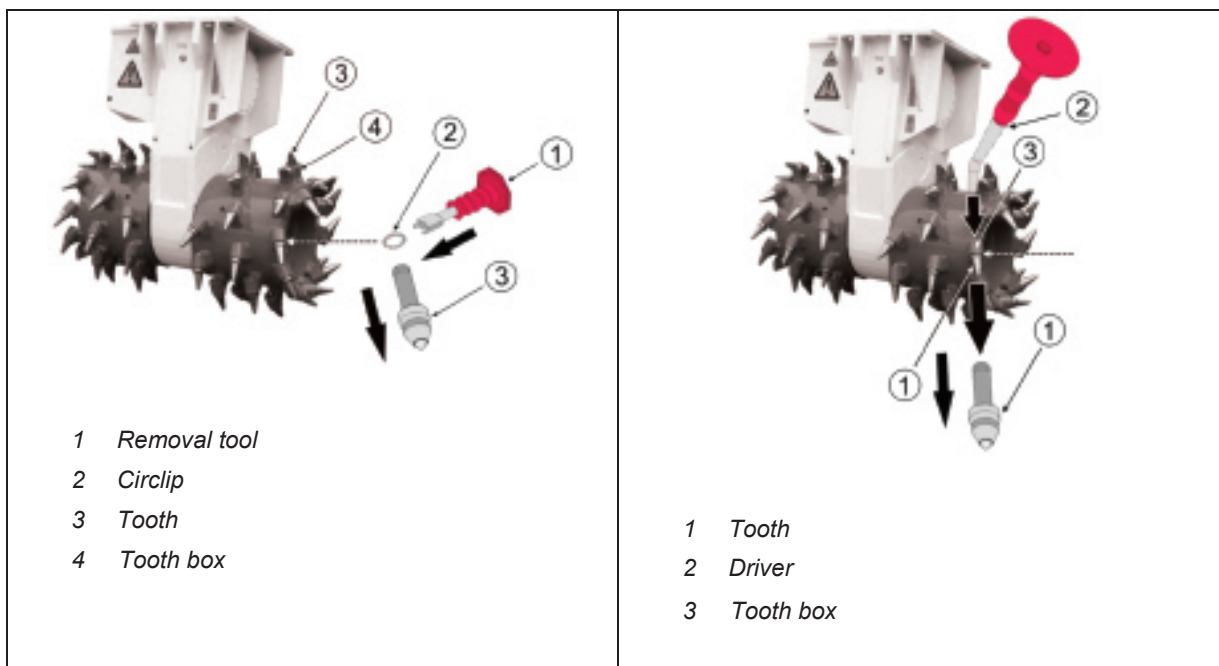


Tools for installation and removal of teeth with C-clipping



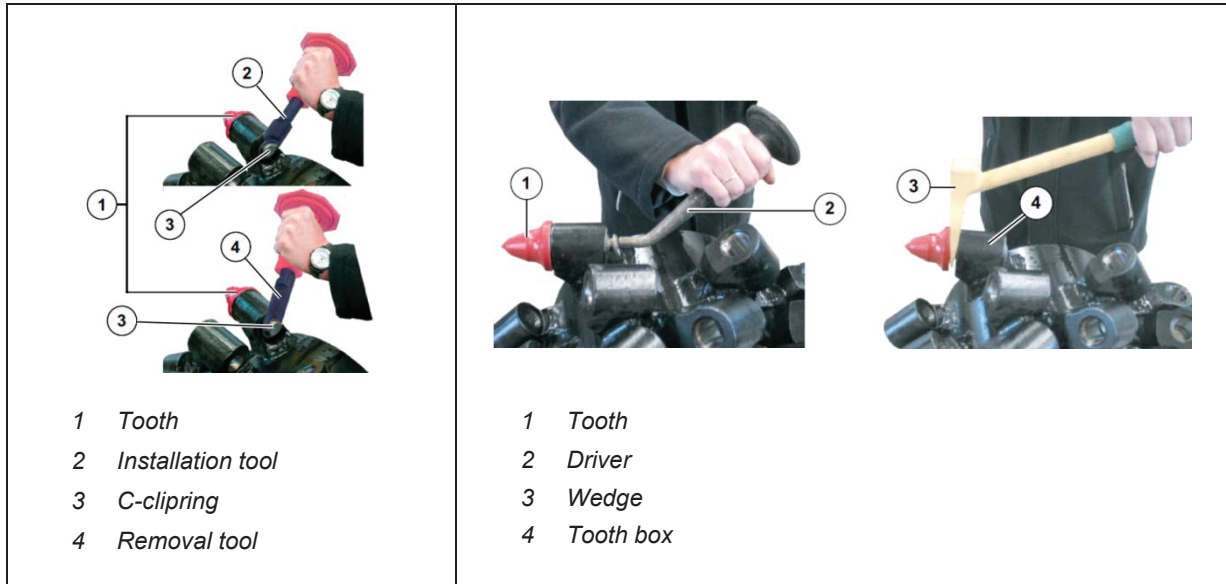
Removing teeth with circlip

- Using a circlip remover, remove the circlip from the shaft of the tooth.
- Using a hammer and a drift, knock out the tooth from the tooth box.
- Loosen tight teeth by hitting the extractor wedge between the tooth and the box with a hammer.
- Remove any other teeth.



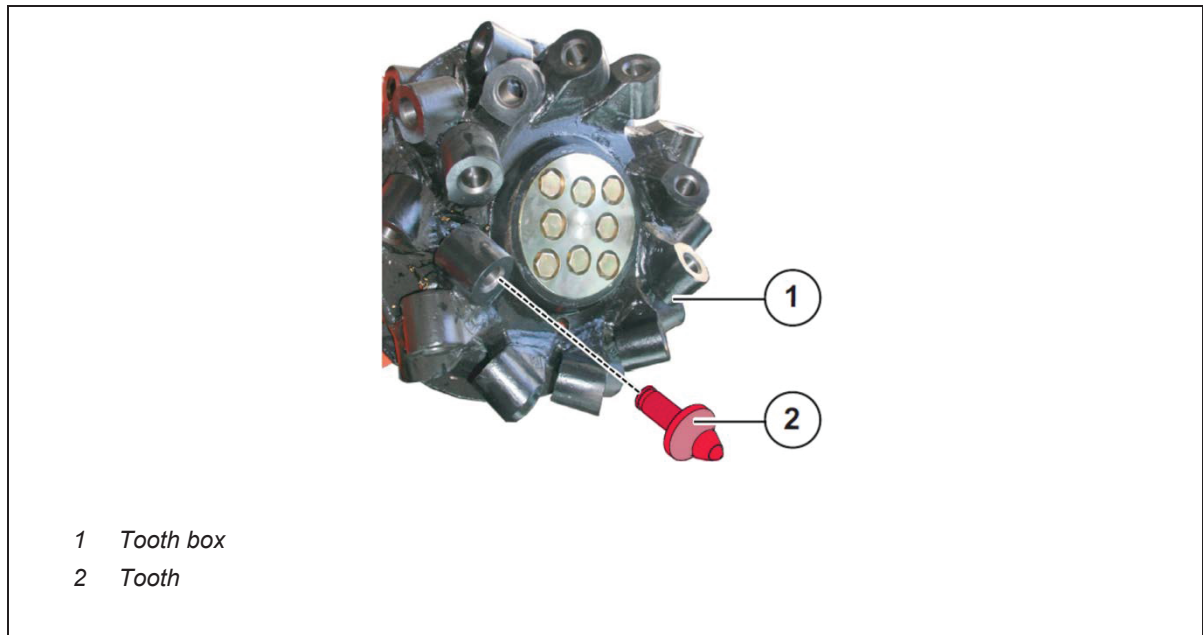
Removing teeth with C-clipping

- Hit the C-clipping in with the hammer.
For this purpose, use the installation tool for the circlip
- Remove the tooth from its box using a hammer and drift.
- Loosen tight teeth by hitting the extractor wedge between the tooth and the box with a hammer.
- Remove the remaining teeth.



6.11.2 Installing Teeth

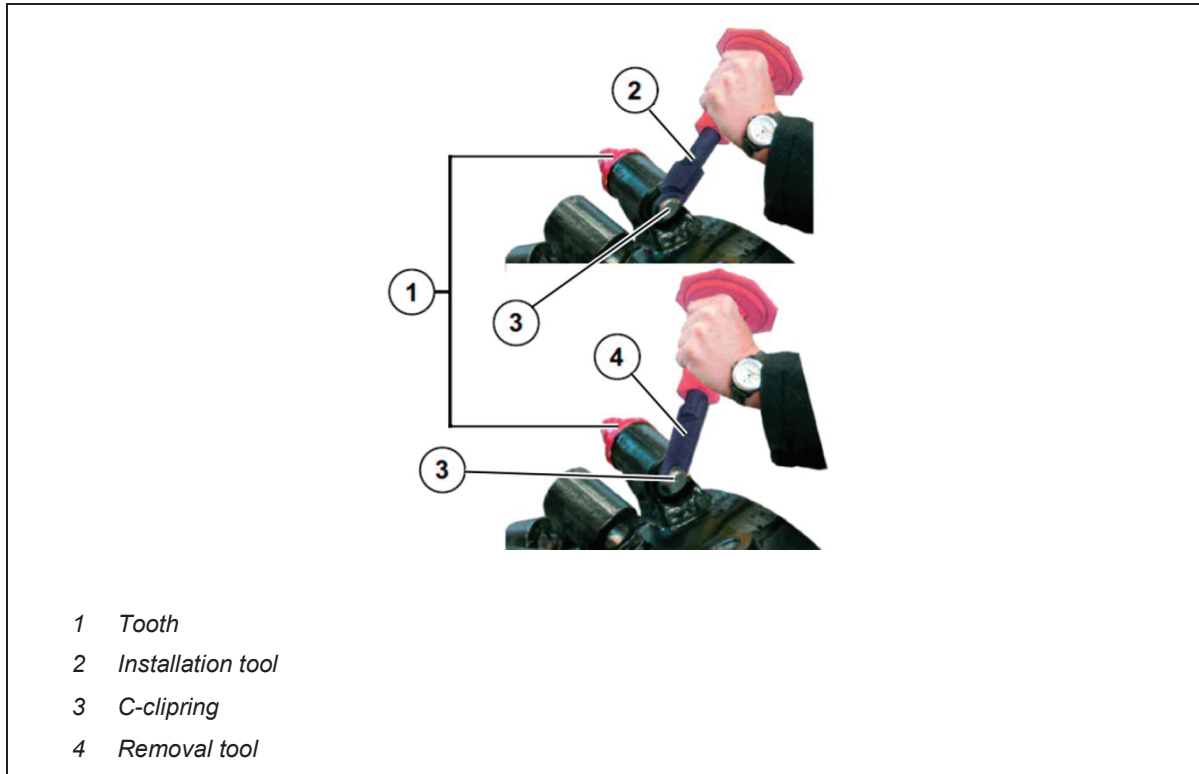
- Clean tool hole in the tooth box before installation of new tooth.
- Push the tooth into the tooth box of the cutting drum.



- i** *Clean the tooth shank before installation of used teeth.*
- i** *Install teeth without any lubrication (no grease or oil etc).*
- i** *Before carrying out cutting operations, ensure that all teeth and circlips are correctly seated. It must be possible for the tooth to rotate freely in the tooth box.*

Inserting teeth with C-Clipping

- Place the C-clipping in the tooth slot.
- Use a hammer, with the correct safety ring mounting tool, to place the C-clipping into the slot until firmly seated.
- Insert all other teeth.



i Before carrying out cutting operations, ensure that all teeth and C-clips are correctly seated. It must be possible for the teeth to rotate freely in the tooth box.

6.12 Removal and Installation of assemblies



- *Removal of the hydraulic motor*
- *Removal and Installation of torque modules*
- *Removal and Installation of gear labyrinth covers (A and B)*

→see separate installation instructions for Hydraulic-Cutting Unit KDC15

7 Transport

7.1 Delivery

The delivery is thoroughly checked and packed before shipment, however, damage caused by transport cannot be ruled out.

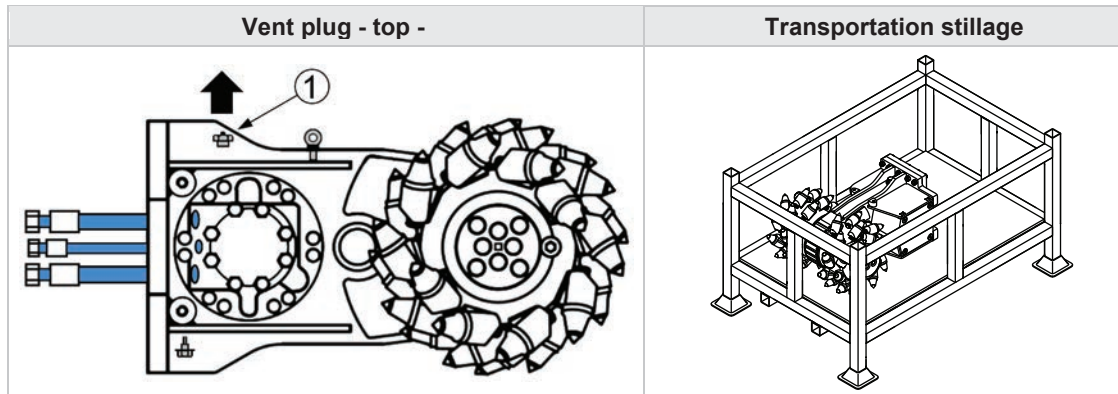
- Check against the packing list for completeness.
- Check the delivery for damage (visual inspection).
- If the delivery was damaged in transport:
Contact the forwarding agent immediately.

7.2 Packing

The cutter heads are attached to a metal transportation stillage and protected with plastic film.


Secure the cutter head

- Make sure the cutter head is set down so that the vent plug (1) is at the top.
- Make sure that no hydraulic oil leaks out of the hydraulic motor.
- Lash the cutter head down tightly with tension straps.

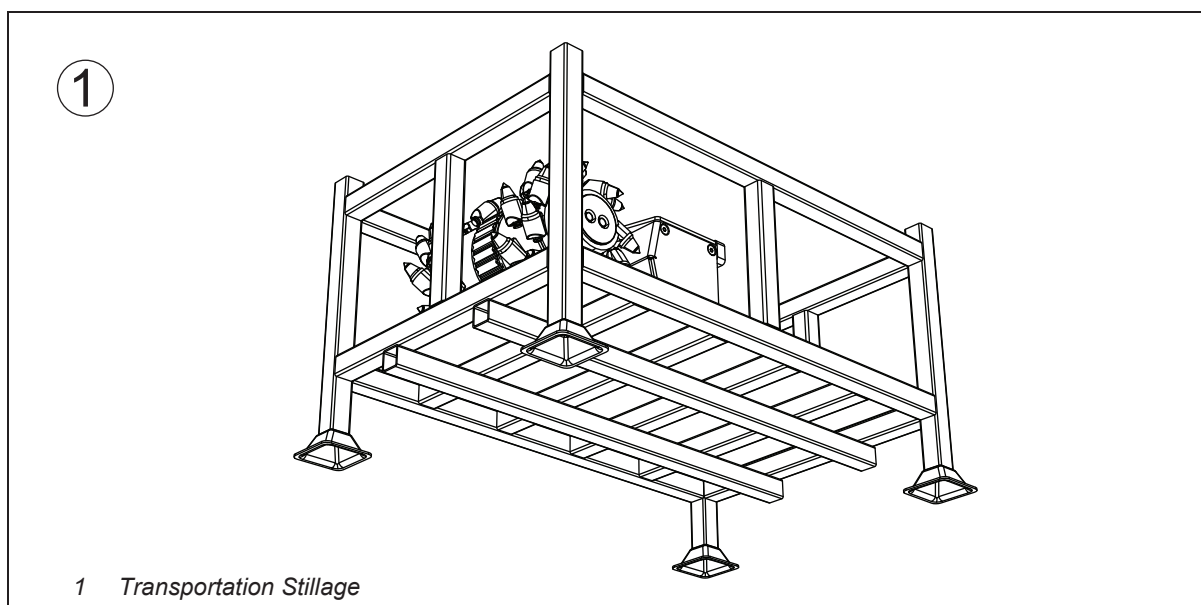


7.3 Transport of the packed cutting unit

The packed cutting unit is to be transported by forklift truck.


WARNING	
	DANGER DUE TO SUSPENDED LOADS If the cutting unit falls down, it may cause serious injury.
	<ul style="list-style-type: none">▷ Ensure sufficient load bearing capacity of the forklift truck. Weight of the cutting unit: 430 - 450 kg (948 - 992 lb).▷ The operator must be authorized to drive the forklift truck.

- Drive the forks of the forklift to the underside of the metal stillage (1).
- For unloading and transporting, the position of the centre of gravity must be determined by technically instructed safety personnel.
- Lift the box by max. **10 cm (0.4 in.)** and check the stability.
- Transport the stillage slowly and carefully to the installation place.
- Lower the stillage carefully and evenly.

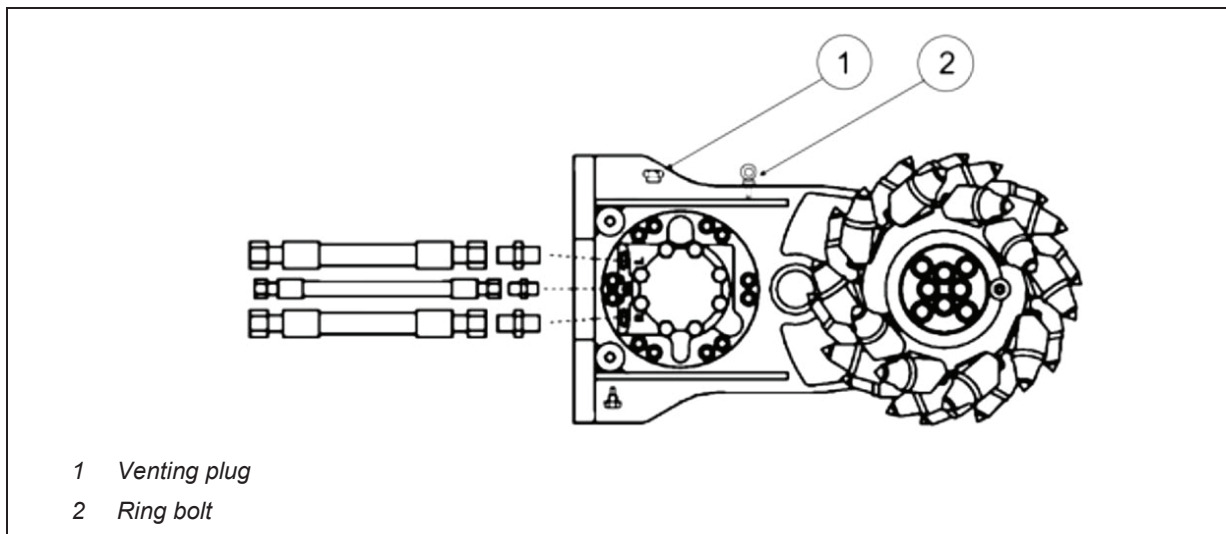


7.4 Transport of the unpacked cutting unit

7.4.1 Transport by crane

WARNING	
	DANGER DUE TO SUSPENDED LOADS If the cutting unit falls down, it may cause serious injury.
	<ul style="list-style-type: none">▷ An M16 DIN 580 ring screw should be used for lifting the transverse cutting unit with a crane.▷ Use adequate lifting gear; weight of cutting unit: 430 - 450 kg (948 - 992 lb).▷ The operator must be authorized to operate the lifting gear.▷ Observe the accident-prevention regulations.

- Make sure that the hydraulic oil cannot run out of the hydraulic motor. The venting plug must be at the top.
- Screw the ring bolt completely into the cutting unit.
- Attach the lifting gear.
- Carefully lift the cutting unit.
- Transport the cutting unit carefully and slowly.
- Lower the cutting unit carefully and evenly to the ground.



8 Technical Data

The hydraulic cutting unit **KDC15** made by Auger Torque can be supplied with Excavating, Profiling or demolition drums. (If different teeth are required, contact your responsible **Auger Torque** dealer). Different motor displacements are available for different pump capacities.

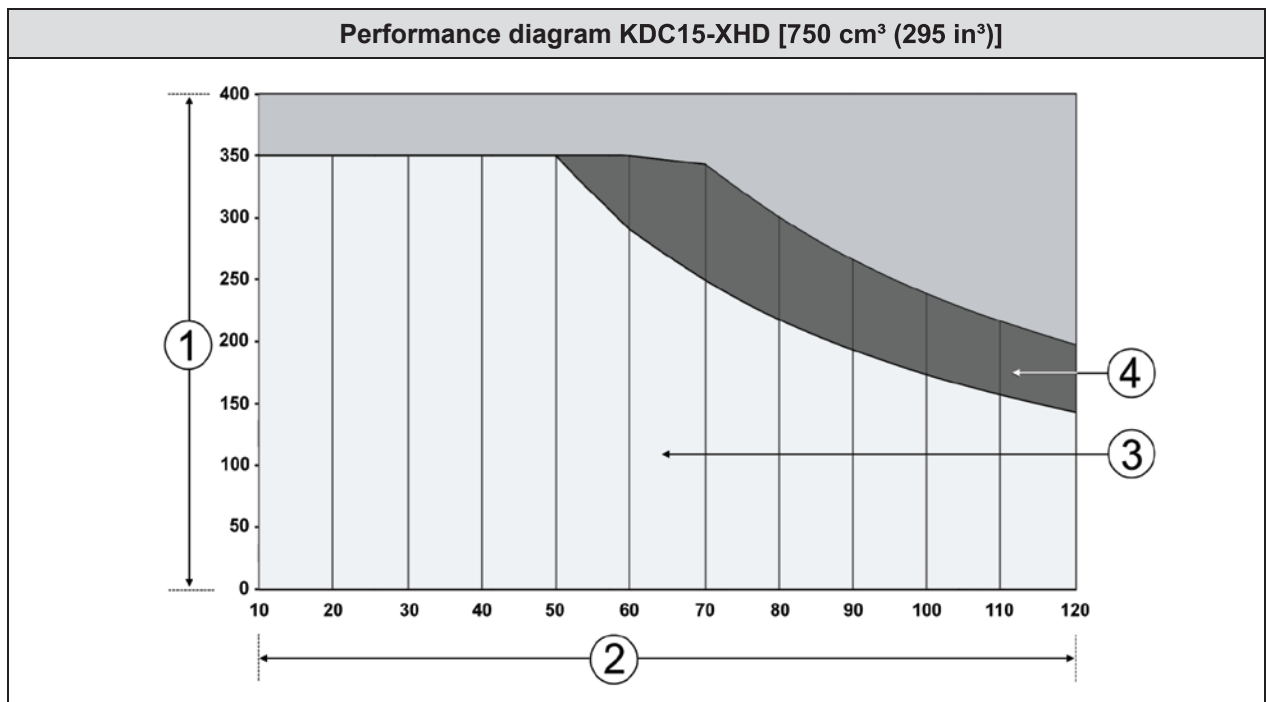
8.1 KDC15-XHD specifications (extra high displacement – 750 cm³ (295 in³))

Nominal output	30 kW
Required flow rate	min. 70 l/min. (18.5 g/min.) to max. 120 l/min. (31.7 g/min.)
Recommended flow rate	min. 110 l/min. (29.1 g/min.) at 160 bar (2321 psi)
Max. pressure	375 bar (5439 psi) - see output graph
Gearbox ratio	1.76
Output shaft torque	7.35 kNm at 359 bar (5532 ft-lb at 5207 psi)
Output shaft speed	90 rpm. at 120 l/min. (90 rpm at 31.7 g/min.)
Tooth speed	1.85 m/s at 100 l/min. (6.07 ft/sec. at 26.4 g/min.)
Tooth force	40 kN at 350 bar (29,502 ft-lb at 5076 psi)
Weight (without adapter)	430 to 450 kg (948 to 992 lb)



Observe that the cutting unit must never be operated at maximum pressure and maximum flow rate at the same time as this would exceed the admissible nominal output. The cutting unit is to be used in the nominal output range. Pay attention to the output graph.

If in doubt, contact our Technical Sales.



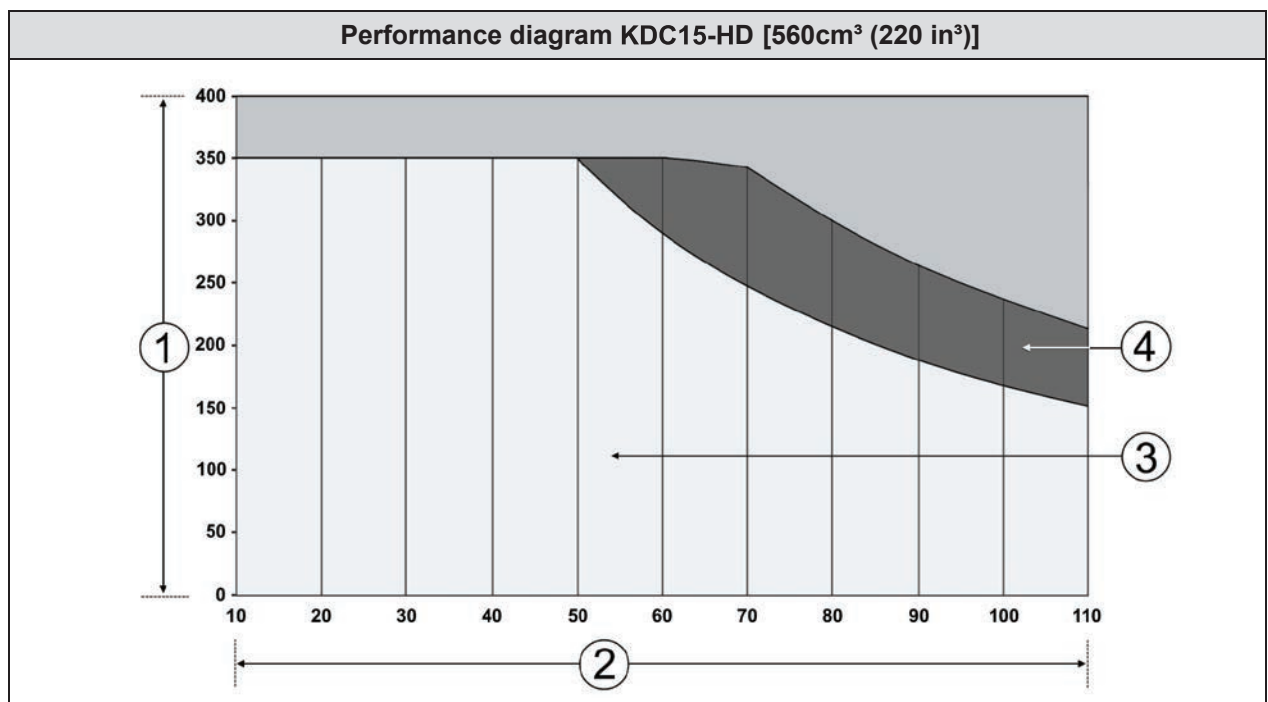
Pos.	Description
1	Operating pressure [bar]
2	Flow rate [l/min.]
3	Nominal rate
4	Power output [max.]

8.2 KDC15-HD specifications (high displacement – 560 cm³ (220 in³))

Nominal output	30 kW
Required flow rate	min. 90 l/min. (23.8 g/min.) to max. 115 l/min. (30.4 g/min.)
Recommended flow rate	115 l/min. (30.4 g/min.) at 155 bar (2248 psi)
Max. pressure	375 bar (5439 psi) - see output graph
Gearbox ratio	1.76
Output shaft torque	2.8 kNm at 350 bar (2065 ft-lb at 5076 psi)
Output shaft speed	114 rpm. at 115 l/min. (114 rpm at 30.4 g/min.)
Tooth speed	2.4 m/s at 120 l/min. (7.9 ft/sec. at 31.7 g/min.)
Tooth force	28 kN at 350 bar (20,652 ft-lb at 5076 psi)
Weight (without adapter)	430 to 450 kg (948 to 992 lb)

i Observe that the cutting unit must never be operated at maximum pressure and maximum flow rate at the same time as this would exceed the admissible nominal output. The cutting unit is to be used in the nominal output range. Pay attention to the output graph.

If in doubt, contact our Technical Sales.



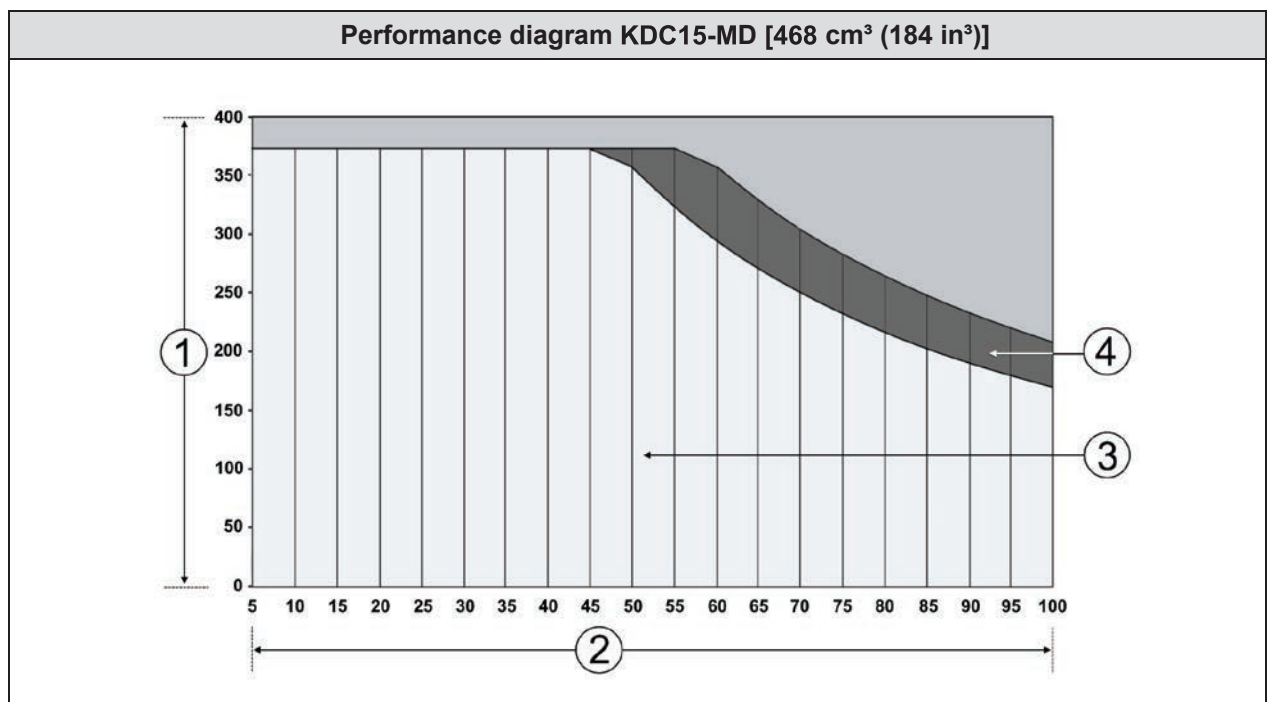
Pos.	Description
1	Operating pressure [bar]
2	Flow rate [l/min.]
3	Nominal rate
4	Power output [max.]

8.3 KDC15-MD specifications (medium displacement – 468 cm³ (184 in³))

Nominal output	30kW
Required flow rate	min. 70 l/min. (18.5 g/min.) to max. 120 l/min. (32 g/min.)
Recommended flow rate e	100 l/min. (26.5 g/min.) at 180 bar (2611 psi)
Max. pressure	375 bar (5439 psi) - see output graph
Gearbox ratio	1.76
Output shaft torque	4.6 kNm at 350 bar (3393 ft-lb at 5076 psi)
Output shaft speed	122 rpm. at 100 l/min. (122 rpm at 26.5 g/min.)
Tooth speed	2.4 m/s at 100 l/min. (7.87 ft/sec. at 26.5 g/min.)
Tooth force	23 kN at 350 bar (16964 ft-lb at 5076 psi)
Weight (without adapter)	430 to 450 kg (948 to 992 lb) (depending on drum size)

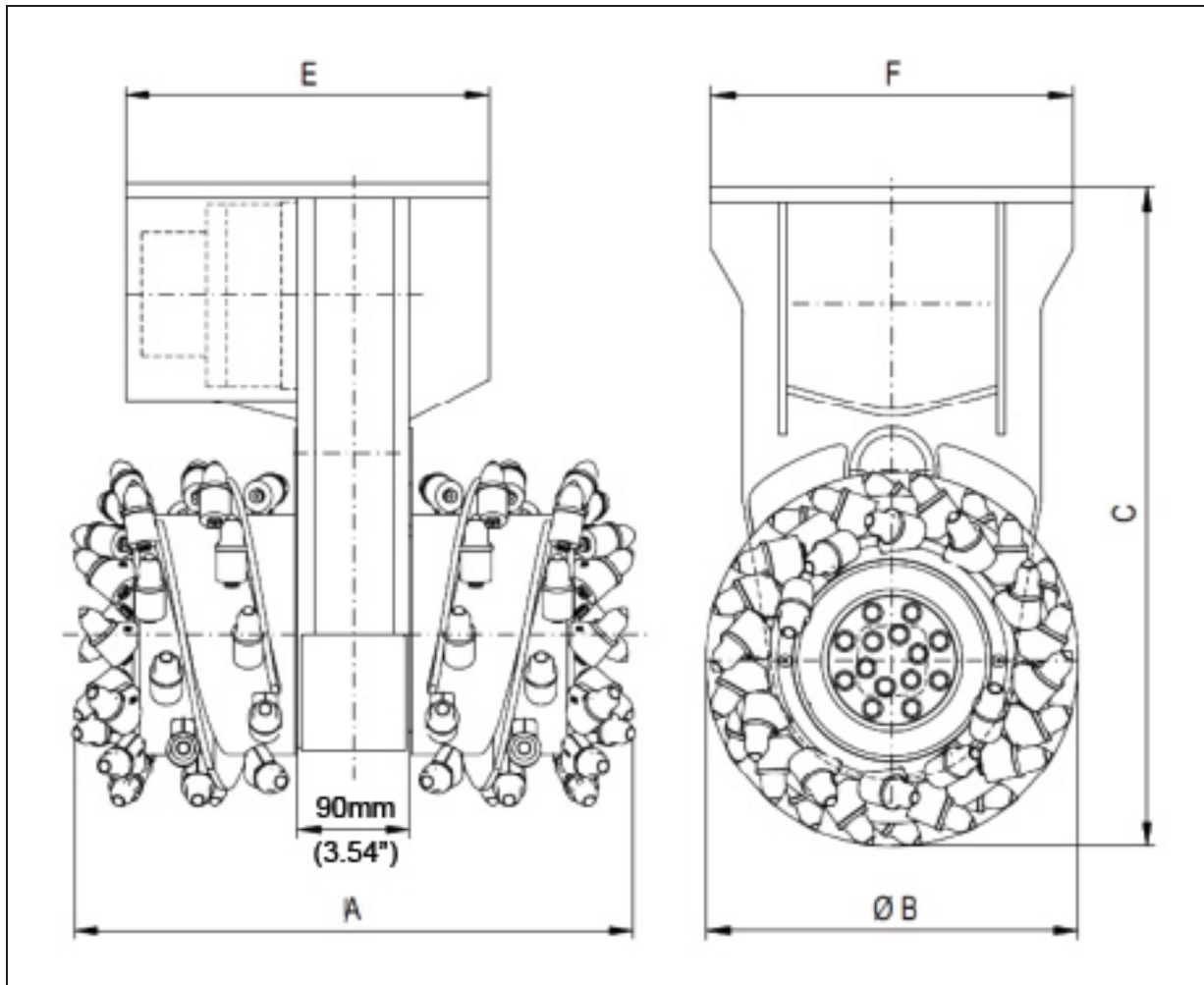
i Observe that the cutting unit must never be operated at maximum pressure and maximum flow rate at the same time as this would exceed the admissible nominal output. The cutting unit is to be used in the nominal output range. Pay attention to the output graph.

If in doubt, contact our Technical Sales.



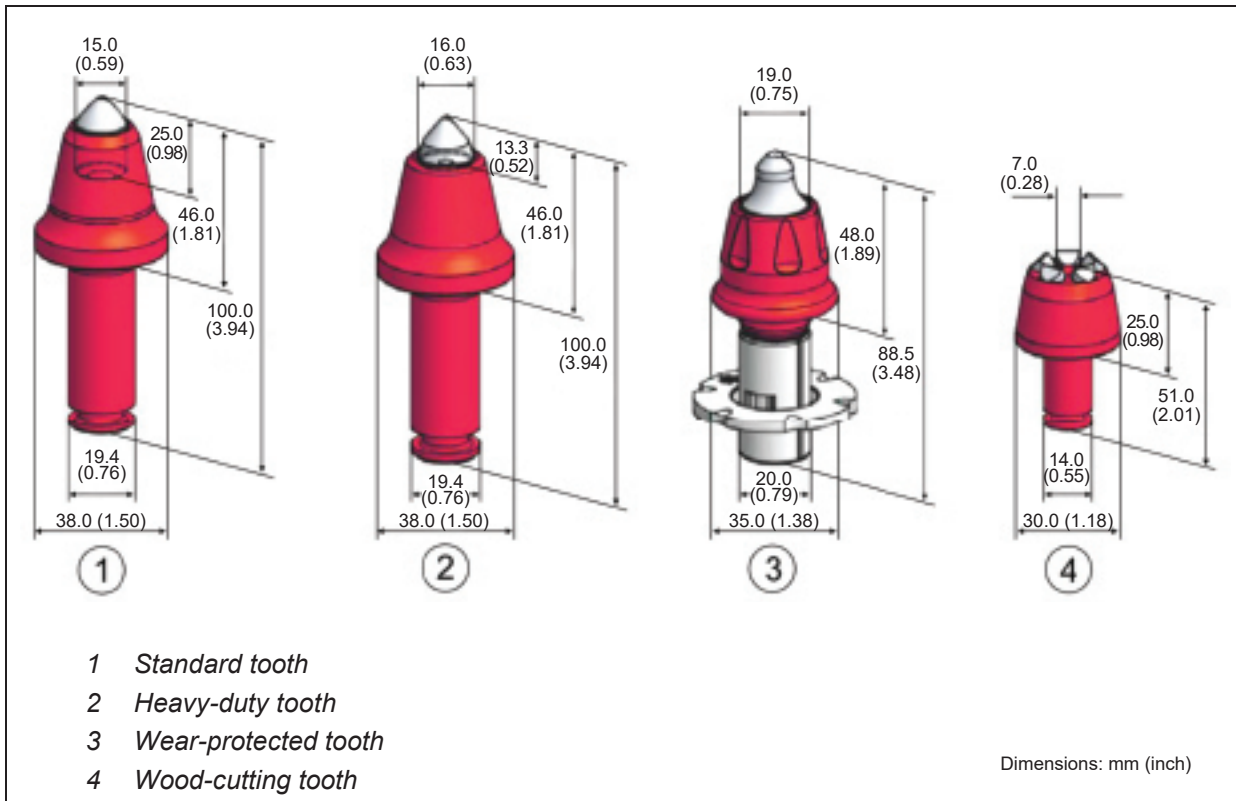
Pos.	Description
1	Operating pressure [bar]
2	Flow rate [l/min.]
3	Nominal rate
4	Power output [max.]

8.4 Cutting drums



Type of drum	Width of drum A mm (inch)	Drum diameter B Ø mm (inch)	Mounting height C mm (inch)
Excavating drum	630 (24.8)	405 (15.9)	740 (29.1)
Profiling drum	630 (24.8)	405 (15.9)	740 (29.1)
Demolition drum	630 (24.8)	405 (15.9)	740 (29.1)

8.5 Teeth (cutting tools)



Type of tooth	Cutting material	Type
Standard tooth	Asphalt, salt, clay	BC26
Heavy-duty tooth	Limestone, concrete	BC68
Wear-protected tooth	Sandstone, blast furnace gravel	BSH188
Wood-cutting tooth	Tree stumps	BM69

9 Trouble-shooting

Malfunction	Measure	To be performed by
Cutting performance deteriorates	<ul style="list-style-type: none"> • Check all teeth and tooth boxes for damage and wear. • Check the hydraulic motor (see Maintenance chapter: Checking the condition of the hydraulic motor).). 	Operating personnel
Cutting performance deteriorates	<ul style="list-style-type: none"> • Ensure that excavator hydraulic circuit is working correctly. 	Service Personnel
Cutting drums stop turning	<ul style="list-style-type: none"> • Check the correct connection of quick couplings. • Check if anything is trapped around the cutting drums and is blocking them. • With the excavator switched off, disconnect the hydraulic hoses and see if the cutting drums will turn by hand. 	Operating personnel
Cutting drums stop turning	<ul style="list-style-type: none"> • Ensure the excavator hydraulic circuit is working correctly. • If the cutting drums will not turn, remove the hydraulic motor (see Service Manual, Removing the hydraulic motor). If the cutting drums now turn, then the hydraulic motor is damaged and should be replaced. • If the cutting drums still do not turn, once the hydraulic motor has been removed, remove the cutting drums (see Service Manual, Removing the cutting drums) to see if anything is trapped inside the drums. 	Service Personnel
Gearbox oil leaks on the cutting drums	<ul style="list-style-type: none"> • If oil leaks from the cutting drums, the cutting drum seals are damaged and must be replaced (see Service Manual, Replacing the cutting drum seals and O-rings). 	Service Personnel

Malfunction	Measure	To be performed by
Hydraulic oil is leaking out of the gearbox breather	<ul style="list-style-type: none"> The gearbox breather will leak a small amount of oil as the gearbox oil temperature increases. If a steady stream of oil leaks from the breather then the hydraulic motor to gearbox seal is damaged and must be replaced (see Service Manual, Changing the hydraulic motor and the gearbox seal and the O-ring between the seal carrier and the gearbox). In this case, the gear oil must be replaced after the repair is finished. 	Service Personnel
Hydraulic oil is leaking from the area of the hydraulic motor	<ul style="list-style-type: none"> Check if the hose fittings are tight. Check if the screws on the hydraulic motor are securely fastened. 	Operating personnel
Hydraulic oil is leaking from the area of the hydraulic motor	<ul style="list-style-type: none"> If oil is leaking from the bottom of the hydraulic motor, then the hydraulic motor to gearbox casing O-ring seal is damaged and must be replaced (see Service Manual, Changing the O-ring between the hydraulic motor and the casing). If oil is leaking from the upper area of the hydraulic motor, then the O-ring between the motor cover and the hydraulic motor is damaged and must be replaced (see Maintenance, Replacing the O-ring of the motor cover). <i>A leak in this spot can be caused by a damaged motor cover. If there is excessive pressure from the casing, the plate may be bowed as a result. If this is the case, the condition of the motor leak-oil line and the hydraulic circuit should be checked to make sure that the motor has been correctly installed (see Installation of hydraulic connection).</i> 	Service Personnel
Hydraulic motor rattling	<ul style="list-style-type: none"> If there is a rattling noise from the hydraulic motor, there is insufficient pressure difference between the hydraulic motor return line and the hydraulic motor leak-oil line. This must be rectified (see Service Manual Installation, Hydraulic circuit). 	Service Personnel
Damage / wear on the tooth boxes	<ul style="list-style-type: none"> Wear on the tooth box increases if worn teeth are not replaced. You should therefore check the teeth regularly. 	Operating personnel

10. Warranty Statement

All Drum Cutter products are warranted to be free from defects in materials or workmanship for the periods summarised below:

- Gearbox - 18 Months
- Hydraulic Motor - 18 Months
- All Other Parts / Products (excluding wear parts) - 12 Months

The warranty periods will commence from Date of Sale by an authorised Auger Torque Dealer. Evidence of the date of sale may be required and for Gearbox and Hydraulic Motor warranties to be valid the product must be registered with Auger Torque within 4 weeks of the date of sale. Extended Warranty (>12 months) Products can be registered by returning the Registration Card or completing the form on page 7. This warranty is not transferable beyond the initial purchaser of the product.

A warranty claim should be reported to the Auger Torque Dealer who supplied the unit. The Dealer, with the technical backup of Auger Torque, will make an initial assessment.

The customer is responsible for returning the product for warranty inspection to the original supplying dealer's facility. Parts should not be delivered without the prior agreement of the dealer or Auger Torque.

During the warranty period Auger Torque, at its option, will repair or replace any parts free of charge determined as defective by Auger Torque. Such repairs will be undertaken by Auger Torque or its nominated representative at an Auger Torque facility or a location deemed suitable by Auger Torque. Auger Torque are not liable for any associated costs relating to a warranty failure.

Parts repaired or replaced by Auger Torque are then covered by this warranty for the remainder of the original warranty as if such parts were original parts.

Products or parts which, as determined by Auger Torques examination, show wear from normal use, have been improperly operated, damaged by accident or negligence, altered or modified are not considered defective and are not covered by this warranty.

This warranty is void if any attempt is made to make field repairs unless these have been pre-approved in writing by Auger Torque. This includes, but is not limited to, disassembly, modifications to internal components, or any physical changes to the product.

This warranty is void if any third-party products or accessories are used that are not certified or recommended by Auger Torque. This includes the installation of any components, peripherals, or attachments that have not been expressly approved by Auger Torque.

This warranty is void if the products are not serviced in-line with the instructions in the Operators Manual. Particular care should be taken to perform regular oil changes in gearboxes.

This warranty is exclusive and in-lieu of any other expressed warranties. There are no warranties of merchantability or fitness for a particular purpose. Auger Torque shall not be liable for any consequential, incidental or punitive damages, losses or expenses, including those resulting from or caused by any defects.

As you would expect from Auger Torque, with our extensive experience and product reliability we'll always go the extra mile to keep you working.

11. EC Declaration of conformity



Manufactured by Auger Torque Europe Limited

EU Declaration of Conformity

The responsible person:

Name	
Position	
Company Name	<i>Auger Torque Europe Ltd.</i>
Address	<i>Hazelton, Cheltenham, GL54 4DX, England</i>
Telephone	<i>++44 (0) 1451 861652</i>
Fax	<i>++44 (0) 1451 861660</i>

Declares that the product described:

Manufacturer	<i>Auger Torque Europe Ltd.</i>
Model	
Serial Number	

Conforms to the Machinery Directive 2006/42/EC.

It also complies with the essential health and safety requirements, national standards and the transposed harmonised standards appropriate for this product.

Signed by:
(The responsible person)

Dated



YOUR DEALER IS

Auger Torque Europe Ltd

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England

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www.augertorque.com



Products and specifications subject to change without prior notice.

Some products may not be available in your country or region.

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