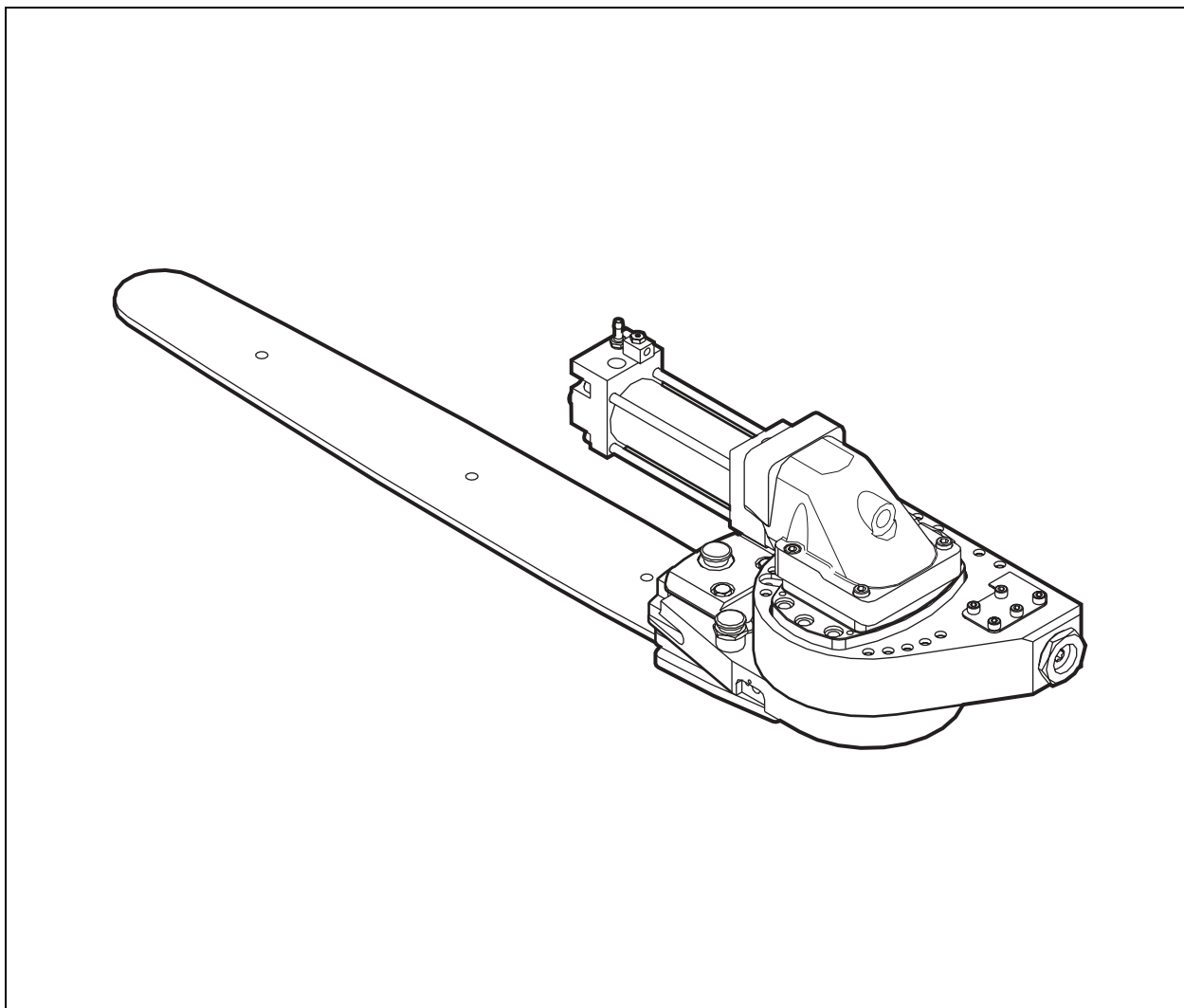


TBS-32
Bar Saw
Service and Parts

HULTDINS *SuperCut*™



SuperCut 300

Service manual
S/N 037-193 and up

This publication contains instructions for the maintenance of the *SuperCut 300* saw units. The instructions cover both general information for all models, and procedures or specifications applicable to individual models. If doubt should arise concerning the validity of the instructions please consult the nearest dealer for more detailed information.

Illustrations, technical information and specifications were, as far as we have been able to judge, correct at the time of print. However, we reserve the right to, without prior notice, revise specifications, instructions, equipment, etc. as a result of ongoing product improvement activities.

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Even if all conceivable measures have been taken to make the contents as complete as possible, HULTDIN SYSTEM AB takes no responsibility for possible damages that may arise as a result of the instructions not being followed or improper use of the product.

 **Important!**

The parts and components used in HULTDIN SYSTEM AB's products are specifically chosen. Therefore original spare parts are always the best alternative in a possible need of repairs or upgrading.

All service and repairs should be carried out by qualified service personnel or an authorized repair shop with suitable tools and lifting devices.

This publication is published by: HULTDIN SYSTEM AB
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SWEDEN

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Safety instructions

This page describes important safety instructions, which the operator's of Hultdins SuperFell, SuperSaw and SuperCut attachments should have a good knowledge of before the equipment is used.

The service manual should be available at all times so that the operator is able to follow safety regulations and the procedures of maintenance activities..

Note! Read carefully and understand the following information with concerns to safe operation practices before operating this equipment.

Important!
The owner and the operator are responsible for following all safety regulations and that the machine is safely equipped.

Important!
Check the machine for damages at the beginning of each shift.

Important!
Inspect and lubricate the unit at the beginning of each shift. Tighten all fasteners regularly.

Important!
All service and repairs should be carried out by qualified personnel or an authorized repair shop with suitable tools and lifting devices.

Important!
When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

Important!
Never adjust any hydraulic pressures without using a pressure gauge.

Important!
Consider the environment. Plug all connections to avoid unnecessary spill of oil.

Warning!
The hydraulic input of the equipment must not exceed the recommended maximum rating as structural failure could occur, resulting in injury and damaged equipment.

Warning!
Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

Warning!
Keep all windows and doors securely closed when operating.

Warning!
Never touch or stand close to the pressurized cylinders and hydraulic hoses.

Warning!
The attachment has sharp edges. Use proper wrenches and protective gloves when working on the attachment.

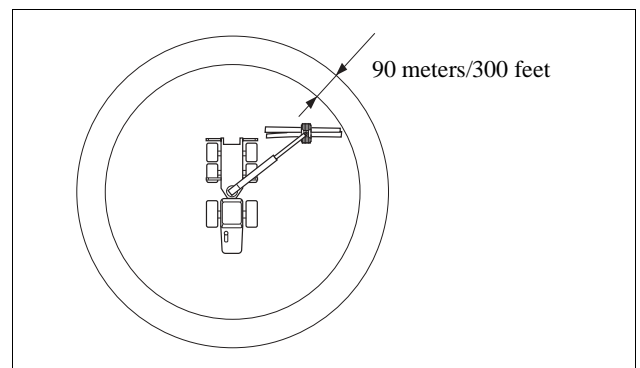


Fig. 1 The operating area of the saw attachment and the recommended safety distance

Warning!
When operating this equipment ensure all other personnel remain at least 300 feet clear of the machine. Turn the machine off immediately if anyone enters this safety zone.

Warning!
Training or demonstration of this equipment should be performed from an operator's cab approved by national regulations. Observers should always remain at least 300 feet away.

Warning!
Always use High Speed saw chains with 3/4" pitch saw units.

Welding

In case of a structural repair of the equipment, when welding may be needed, consult the dealer for recommended instructions.

When welding on the attachment the following steps must be taken:

- Make sure that fire-extinguishing equipment is available.
- Clean the area around the welding area to eliminate any fire hazard.
- Connect the ground wire so the welding current does not pass over any bushings.
- Place the ground wire as close to the welding area as possible.

Modifying the equipment

It is not approved to:

- Modify the equipment without the consent of HULTDIN SYSTEM AB.
- Alter the function of the equipment without the consent of HULTDIN SYSTEM AB.
- Use spare parts other than original HULTDINS parts.

System overview

SuperCut 300

The *SuperCut 300* is made up of the following main parts.
All parts are replaceable.

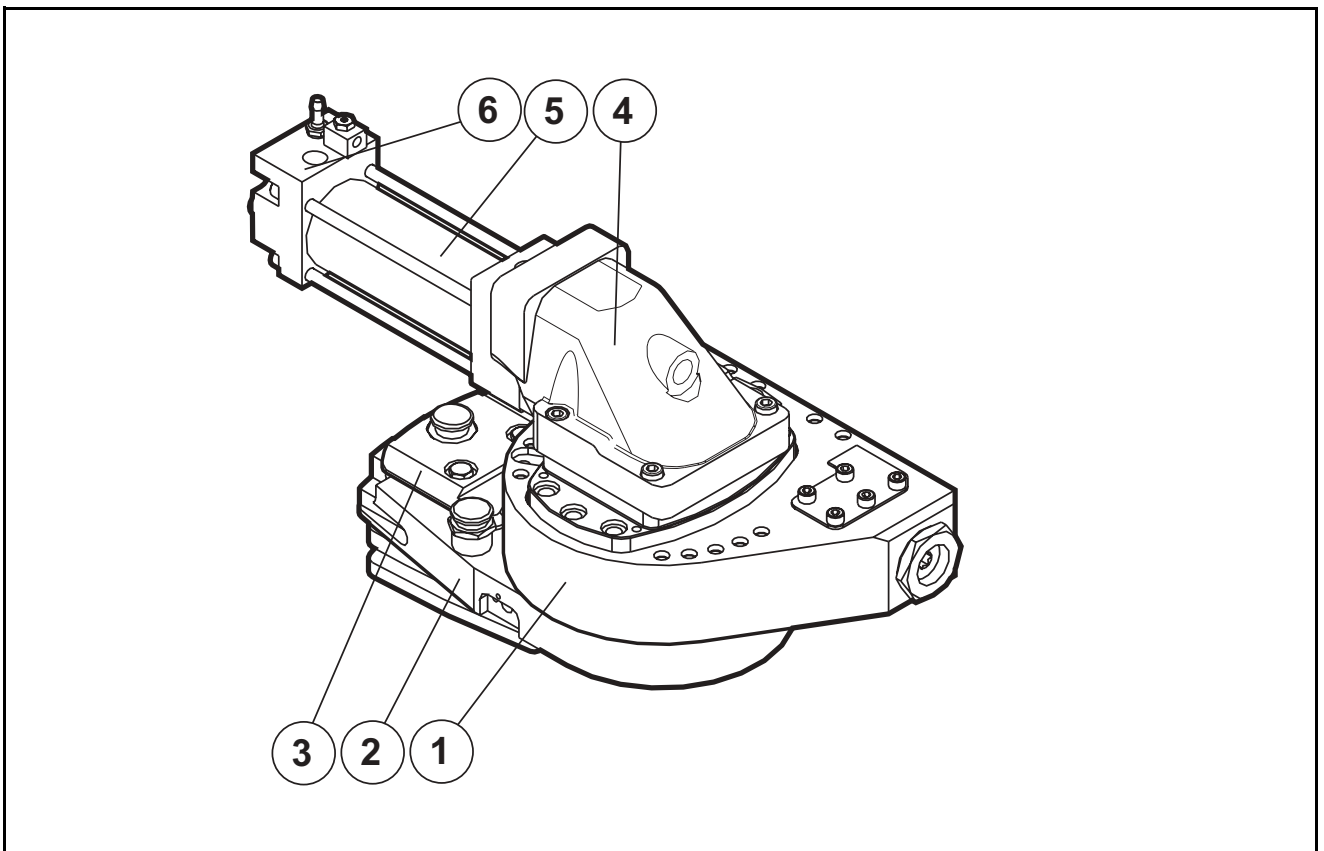


Fig. 2 System overview *SuperCut 300*

- 1 Saw Housing
- 2 Tensioning Device
- 3 Bar Holder
- 4 Saw Motor
- 5 Feed out cylinder with rack
- 6 Integral Lubrication oil pump

Product description

Together with its range of accessories, Hultdins patented *SuperCut 300* saw unit is a comprehensive alternative for many applications with demands on functionality, reliability, service-friendliness, economy and the environment.

SuperCut 300 is a complete unit designed for 3/4" pitch saw chains and saw bars. The saw unit has an integral feed out cylinder, well protected from external damage. It has been designed for use with hydraulic motors of the type Hultins F12 - 40. The saw motor bracket is assembled in ball bearings in the saw unit so that the hydraulic motor is stationary when the saw is fed out. The saw bar can be returned hydraulically with oil or pneumatically with air.

In its standard version, the *SuperCut 300* is equipped with automatic hydraulic chain tensioning and an integral lubrication oil pump that distributes lubricant to the chain during the complete sawing operation.

The lubrication pump delivers a maximum volume of 10ml and the process can easily be adapted to specific lubricating volume requirements with a number of different pumps. All chain saw lubrication oils found on the market can be used.

All this in combination gives good saw bar, chain and oil economy.

With the accessories that are available for the *SuperCut 300*, you can easily design an integrated unit consisting of the saw unit, saw motor manifold, pressure regulating valve kit and colour marking kit.

Air and lubrication oil tanks are available as extra accessories, and the *SuperCut 300* can be equipped with a saw home detector sensor and a cut control kit as options. The cut control kit is used in combination with a computerized bucking device and limits the angle to which the saw bar is fed out in relationship to the diameter of the tree.

Labeling SuperCut 300

The *SuperCut 300* is stamped with a serial number according to the following figure. See Fig. 3.

The lubrication oil pump is stamped on both sides with the lubrication volume according to the following figure. See Fig. 3.

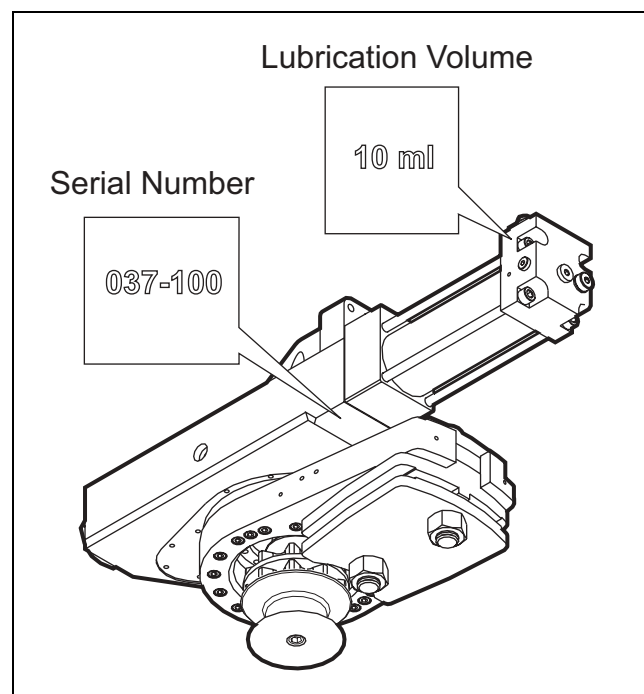


Fig. 3 Labeling *SuperCut 300*

Technical data

SuperCut 300 / F12-40

	SuperCut 300 / F12-40
Total height(B)	13.1 inches (333 mm)
Height without saw motor (A)	8.11 inches (206 mm)
Lenght (D)	18.7 inches (475.5 mm)
Total lenght (C)	25.6 inches (650.5 mm)
Width (E)	10.16 inches (258 mm)
Weight incl. saw motor	179 lbs (81 kg)
Saw bar and chain	3/4" pitch, High Speed
Chain tension	Automatic
Chain lubrication	Proportional
Options	Saw home detector Cut control device Colour marking kit

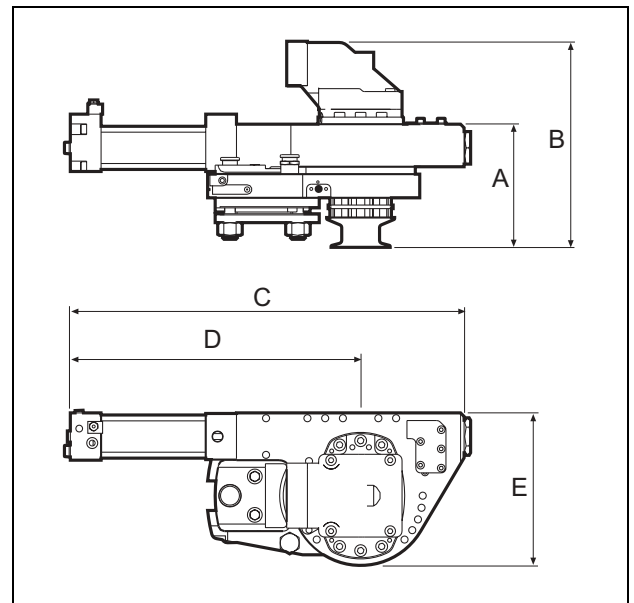


Fig. 4 Dimensions

Hydraulic pressures and flowes

Hydraulic pressure, saw function	2600 to 3900 Psi (18 to 27MPa)
Hydraulic flow, saw function....	45 to 67 GPM (172 to 256 l/min)
Hydraulic pressure, chain tensioning	650 to 826 Psi (4.5 to 5.7 MPa)
Hydraulic pressure, bar feed out	725 to 800 Psi (5.0 to 5.5 MPa)*
Max. saw chain speed	See recommendations from each saw chain manufacturer.
Max. power input for saw chain	See recommendations from each saw chain manufacturer.

* Pressure can in some cases be higher and should be optimized for each specific application.

Torque and socket/wrench sizes

			Torque	Socket size
MC6S	6	12.9	12.5 FT.LB. (17 Nm)	5 mm
MC6S	8	12.9	30 FT.LB. (40 Nm)	6 mm
MC6S	10	12.9	60 FT.LB. (80 Nm)	8 mm
MC6S	12	12.9	102 FT.LB. (136 Nm)	10 mm
MLC6S	8	8.8	18 FT.LB. (24 Nm)	6 mm
Nut M24				36 mm
Piston (M24x1.5).....			500 FT.LB. (665 Nm)	19 mm
Stop screw (M50x1.5).....				27 mm

Grease and Loc-tite

Grease	Use a mineral oil based grease thickened with, or mixable with a lithium soap. The grease should be classified as L-XCCIB2 according to ISO 6743-9. Molybdendisulfid content max 3 %. Base fluid viscosity 170 to 220 cSt at 40°C. NLGI class2.
Thread sealant	Loc-Tite 243 or equivalent.

Greasing intervals

Every 8 to 200 hours of operation.

Special tools SuperCut 300

The following special tools are required when servicing the SuperCut 300 saw unit.

Puller

The Puller is needed when removing or installing the saw motor. The puller is made up of the following parts.

See Fig. 5.

1. Puller bolt
2. Plate
3. Nut
4. Hex hd. screws

Note! Never hammer or pry on the saw motor when assembling or disassembling, always use the puller which is especially designed for this purpose. Bearings in the saw unit and in the saw motor can easily be damaged if care is not taken.

Compression Tool

The compression, P/N 0696163, is required when replacing piston seals in the feed out cylinder. See Fig. 6.

Combi Wrench

The combi wrench, P/N 0704040, has two wrench sizes, 16mm and 7mm. See Fig. 7.

Check Valve Tool

The check valve tool, P/N 0690149, is required when replacing check valve for chain tensioning. See Fig. 8.

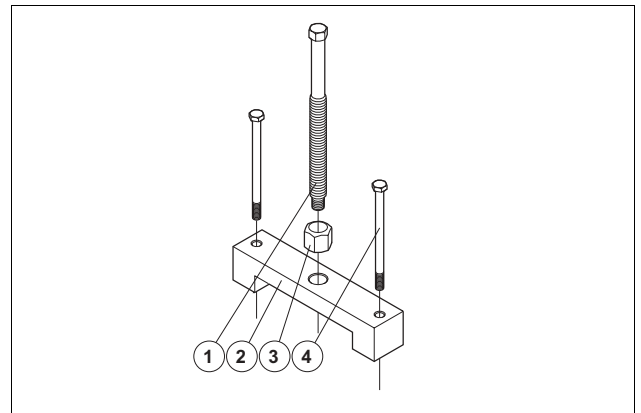


Fig. 5 Puller P/N 0696167

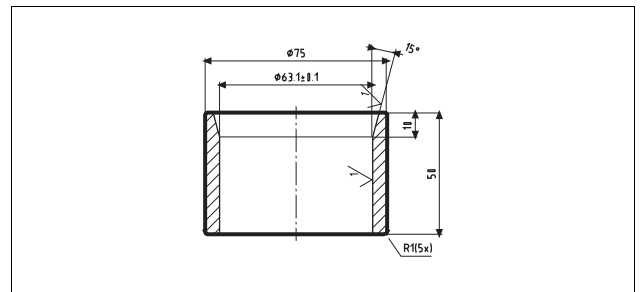


Fig. 6 Compression Tool, P/N 0696163

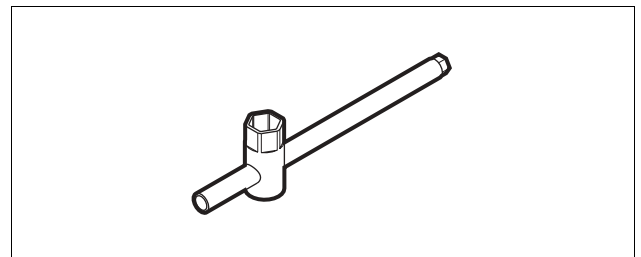


Fig. 7 Combi Wrench, P/N 0704040

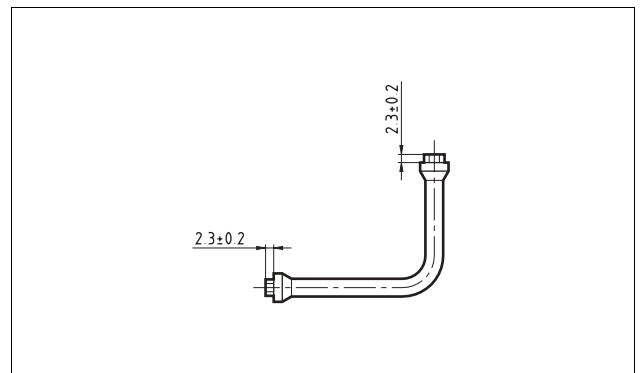


Fig. 8 Check Valve Tool, P/N 0690149

Retraction Tool

The retraction tool, P/N 0696116, is required when replacing the saw chain and saw bar on the SuperCut 300. See Fig. 9.

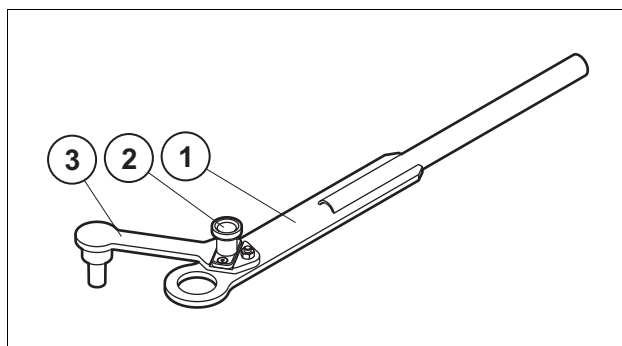


Fig. 9 Retraction Tool, P/N 0696116

1. Lever
2. Locking Device
3. Arm

Check Valve Key

The check valve key, P/N 0696011, is required when replacing the outlet check valve in the lubrication oil pump. See Fig. 10.

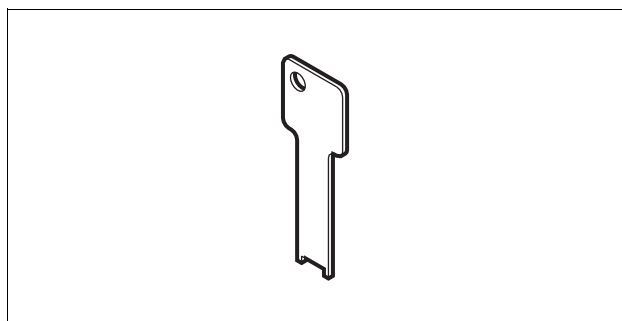


Fig. 10 Check Valve Key, P/N 0696011

Assembly Tool

The assembly tool, P/N 0696168, is required when replacing cylinder seals. See Fig. 11.

Standard tools SuperCut 300

When servicing the SuperCut 300 saw unit, a number of standard tools are required.

Wrenches

- 9 mm
- 14 mm
- 36 mm
- 55 mm

Allen keys

- 4 mm
- 5 mm
- 6 mm
- 10 mm
- 12 mm
- 19 mm

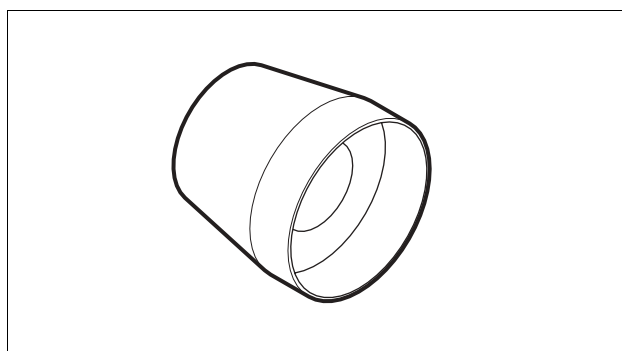


Fig. 11 Cylinder Seal Assembly Tool, P/N 0696168

Functional Description

SuperCut 300

The *SuperCut 300* is made up of one Saw Housing (1) which contains a 4-point bearing with a gear drive (8), a feed out cylinder (5) with integrated rack and proportional chain oil pump (6). The hydraulic cylinder (5) is equipped with hydraulic dampening for “Soft Stop” to eliminate shock loads. The piston stops the hydraulic flow by passing the inlet hole in the contact flange (7). The *SuperCut 300* is supplied with a Hultdins F12-40 saw motor (4). The *SuperCut 300* is equipped with a patented automatic chain tension system, made up of a Tensioning device (2) on which the bar holder (3) is attached. Optional accessories such as cut-control device and colour marking kits are easy to install.

The saw bar can return either by air or hydraulics. Feed out cylinder (5) and Bar holder (3) are not on the same level, which eliminates problems with snow packing or other debris. The saw bar feed out angle (9) is 90°. The tension device(2) can easily be rotated in 7.83° steps for various “saw bar starting” angles to accommodate specific attachment design requirements. The *SuperCut 300* is designed for 3/4” pitch High Speed chains and can be supplied with rim sprockets of 8 or 9 tooth count and corresponding saw bars.

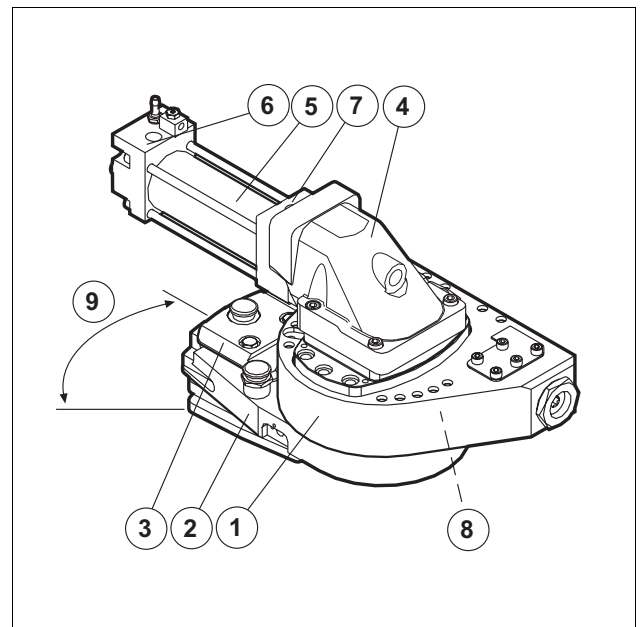


Fig. 12 Design SuperCut 300

1. Saw Housing
2. Tensioning device
3. Bar holder
4. Saw motor
5. Cylinder with rack
6. Lubrication oil pump
7. Contact flange
8. Gear drive with bearing

Chain lubrication system

The *SuperCut 300* is equipped with a lubrication oil pump integrated with the feed out cylinder. The lubrication oil pump supplies oil via a piston operation to the saw chain during the entire feed out process.

The lubrication oil pump is fed with oil from the oil tank (1), through the inlet check valve (2) and to a reservoir in the piston rod (3).

When the saw bar (8) is fed out, the oil goes through the outlet check valve (4), via a hydraulic hose (5) to the

swivel in the saw motor (6) and finally through the bar holder to the saw bar (8).

The supply of oil is proportional, which means that the volume of oil supplied depends on how much the saw bar is fed out.

By using different lubrication oil pumps, the amount of oil supplied to the saw bar can be varied depending on different lubrication requirements.

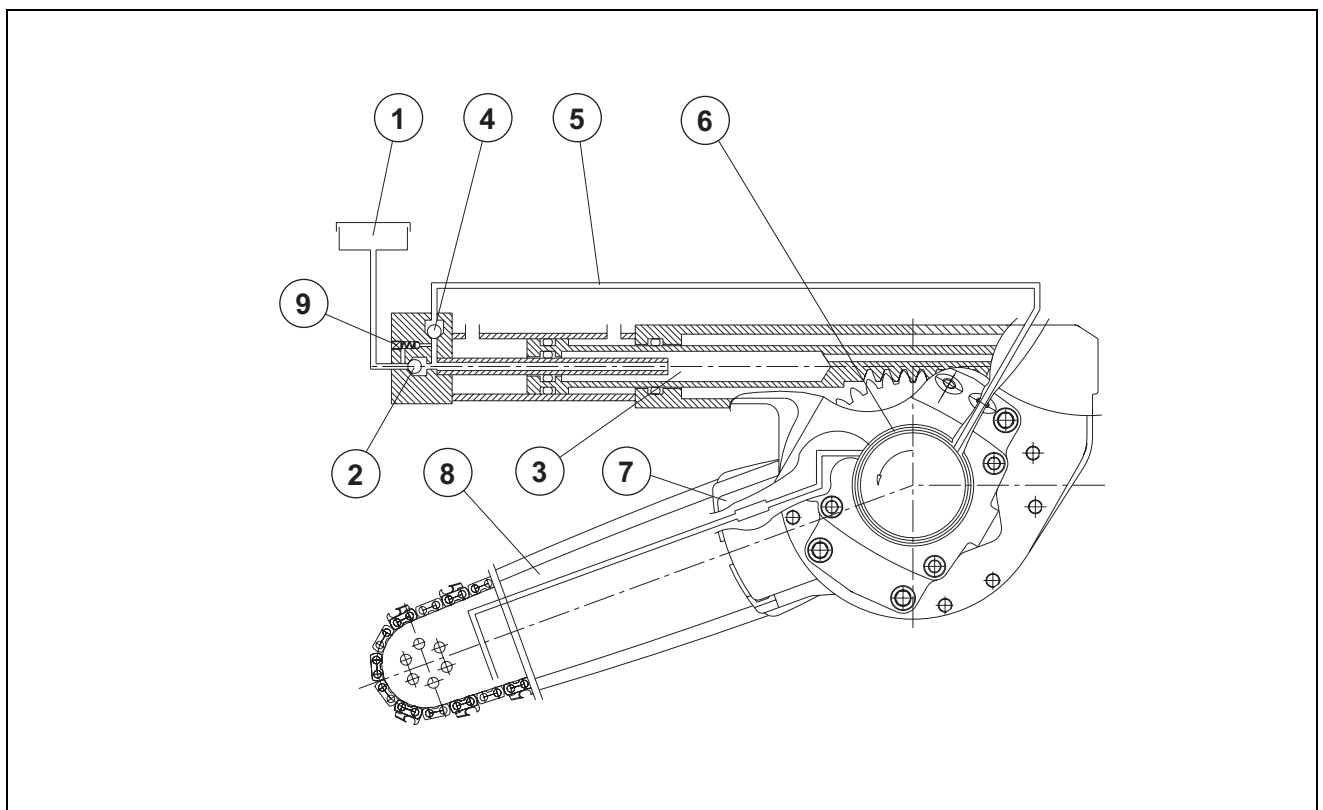


Fig. 13 Chain lubrication system

- 1 Lubrication oil tank
- 2 Inlet check valve
- 3 Piston rod
- 4 Outlet check valve
- 5 Hydraulic hose
- 6 Swivel in saw motor
- 7 Bar holder
- 8 Saw bar

Functional description

Saw activated chain tensioning

When the feed line (P) is pressurised from the saw function, a reduced pressure from the pressure regulating valve (3) acts on the pistons (1) and (2). (*refer to Technical Data for a proper pressure range*) The piston (1) keeps the chain tight while the pistons (2) hold the bar holder to the tensioning device when sawing is in process. The spring (4) delivers auxiliary tension during the first sawing operation after replacing the chain. The check valve (5) prevents the chain from becoming slack from external obstructions e.g. undergrowth

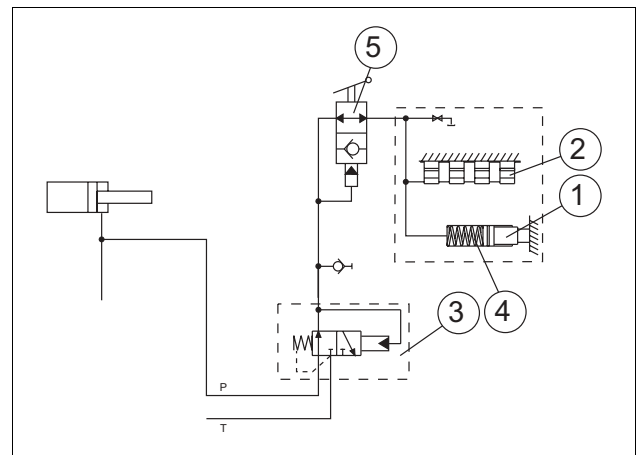


Fig. 14 Saw activated tensioning

- 1 Piston
- 2 Piston
- 3 Pressure regulating valve
- 4 Spring
- 5 Check valve / alt. restrictor check valve

Functional description

Constant pressure activated chain tensioning

When the machine is started the feed line (P) is pressurised. The pressure on the feed line have to be constant and should not range more than 0.5 MPa (7.25 Psi) from the pre-set pressure and should not cease until the machine is shut down. A reduced pressure from the pressure regulating valve (3) then acts on the pistons (1) and (2). (*refer to Technical Data for a proper pressure range*) The piston (1) keeps the chain tight while the pistons (2) hold the bar holder to the tensioning device when sawing is in process. The spring (4) delivers auxiliary tension during the first sawing operation after replacing the chain. The check valve (5) prevents the chain from becoming slack from external obstructions e.g. undergrowth

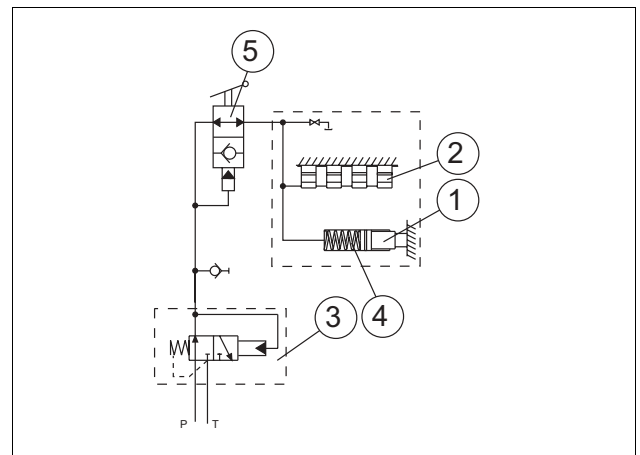


Fig. 15 Constant pressure activated tensioning

- 1 Piston
- 2 Piston
- 3 Pressure regulating valve
- 4 Spring
- 5 Check valve / alt. restrictor check valve

Assembly and disassembly

Installation SuperCut 300

Hydraulic Ports

The hydraulic installation ports are located according to the following figure.

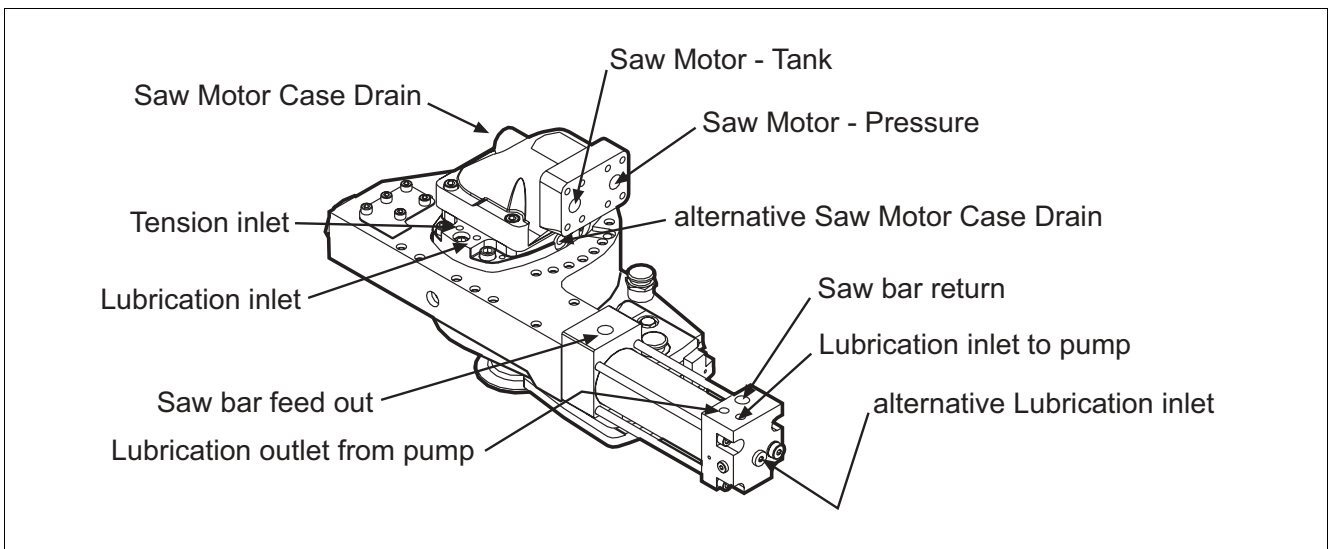


Fig. 16 Hydraulic Installation Ports

Ports threads

Port	Thread
Saw Motor Pressure	ISO 6162-size 19, or BSPP 3/4"
Saw Motor Tank	ISO 6162-size 19, or BSPP 3/4"
Saw Motor Case Drain, F12-40	M18x1.5
Saw Motor Case Drain, F12-60	M22x1.5
Alt. Saw Motor Case Drain	M22x1.5
Lubrication Inlet	BSPP 1/8"
Tension Inlet	BSPP 1/8"
Saw Bar Feed Out	BSPP 1/2"
Saw Bar Return	BSPP 1/2"
Lubrication Inlet To Pump	BSPP 1/4"
Alt. Lubrication Inlet To Pump	BSPP 1/4"
Lubrication Outlet From Pump	BSPP 1/4"

Bleeding Chain Tension System

⚠ Important!

All service and repairs should be carried out by qualified personnel or an authorized repair shop with suitable tools and lifting devices.

1. Make sure that the unit is resting securely on the ground.
2. Tip the unit backwards if possible so that the bleeder valve (1) is as high as possible in relation to the tension pistons (2). See Fig. 17.
3. Remove the saw chain. See *Replacing Saw Chain*

⚠ Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

4. Open the bleeder valve (1) 1- 2 turns.
Use the tool P/N 0704040, (3) See Fig. 17.
5. Start the machine and run the sawing operation several times until the oil coming from the bleeder valve is free from air.
6. Close the bleeder valve (1). As there is no saw chain installed, the bar holder will move to the outer position and stay there.
7. Install the saw chain. See *Replacing Saw Chain*
8. Repeat this process after about 30 minutes of operation.

⚠ Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

Note! Always bleed the system if there is any suspicion of air having entered the system, e.g. after replacing a hose or other components

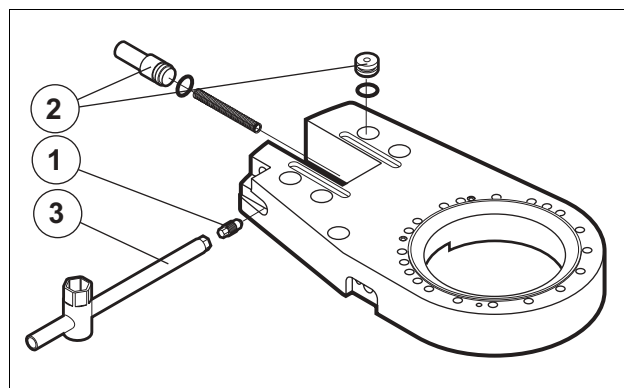


Fig. 17 Bleeding chain tensioning system

Adjusting Chain Tension Pressure

If the chain jumps off the bar while sawing, the problem might be either air in the tensioning system, or that the tensioning pressure is too low.

To rectify that problem, start with bleeding the system.

See *Bleeding Chain Tension System*

If the problem still occurs, the tensioning pressure might have to be adjusted. Tensioning pressure is measured at the pressure test point for the pressure regulating valve, See Fig. 18.

If adjustment is required, do as described below.

Important!

All service and repairs should be carried out by qualified personnel or an authorized repair shop with suitable tools and lifting devices.

1. Remove the saw chain. See *Replacing Saw Chain*

Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

2. Connect a pressure gauge to the test point for the chain tension circuit. See Fig. 18.
3. Check the tension pressure while running the sawing operation.
4. Adjust the tension pressure at the pressure regulating valve (1). See Fig. 18.

For a suitable pressure, See *Technical data*

Important!

Never adjust any hydraulic pressures without using a pressure gauge.

5. Remove the pressure gauge.
6. Install the saw chain. See *Replacing Saw Chain*

Adjusting Saw Bar Retraction

The saw bar retraction speed has to be adjusted to a time between 1 to 1.5 seconds.

Important!

If the saw bar return speed is too high, structural cracking or other damage to the saw unit may occur.



Fig. 18 Hydraulic schedule

Replacing Saw Chain

Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

1. Place the unit steady on the ground with the SuperCut 300 unit facing up.(Where possible)
2. Depressurize the chain tension system by pressing the button on the pilot valve (4), *See Fig. 19.*
3. Connect the Tool (*See Fig. 20.*) to the Tension Device and to the Bar Holder as follows.
 - 1 Connect the ring on the Lever to Pin (1).
 - 2 Connect the Arm to the Sleeve (3).
4. Pull the Lever to compress the tensioning device. When the Bar Holder is in the right position, the Locking Device will automatically engage.
5. Remove the saw chain.

Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

6. Install the new saw chain and slowly pull the lever until the locking device on the tool disengages.

Warning!

Always use High Speed saw chains with 3/4" pitch saw units.

7. Remove the tool.
8. Operate the saw carefully a few times to secure the pressure in the chain tensioning device. If after replacing a chain it repeatedly jumps off the saw bar, you may have to bleed the system.

See Bleeding Chain Tension System

9. Problems to replace the saw chain can appear depending on saw dust or other debris in the grooves in the tension device. The movement of the bar holder (2) can be limited due to debris, and if so, the holder must be disassembled and cleaned.

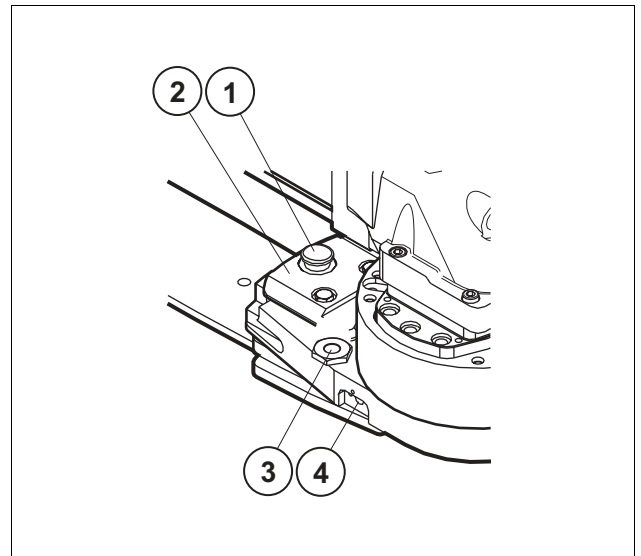


Fig. 19 Replacing Saw Chain

1. Pin
2. Bar Holder
3. Sleeve
4. Pilot Valve

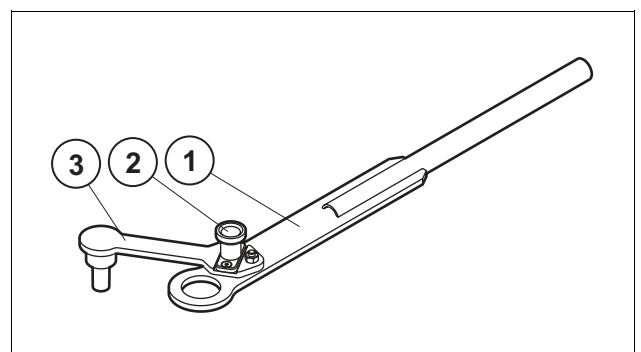


Fig. 20 Tool

1. Lever
2. Locking Device
3. Arm

Replacing Saw Bar

**Warning!**

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

**Important!**

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

1. Place the unit steady on the ground with the SuperCut unit facing up. (Where possible)
2. Remove the saw chain. *See Replacing Saw Chain*
3. Loosen the Hex Nuts, use a 36 mm wrench, until you are able to pull out the saw bar. *See Fig. 21.*
4. Install the new saw bar and tighten the Hex Nuts.
5. Install the saw chain. *See Replacing Saw Chain*

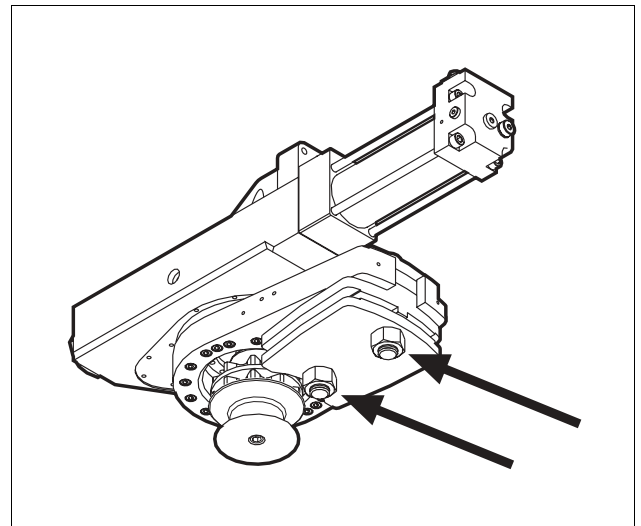


Fig. 21 Replacing Saw Bar

Replacing Bar Holder



Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.



Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

When replacing the bar holder, do as described below.

1. Stop the machine and rest the unit securely on the ground.
2. Remove the saw chain. *See Replacing Saw Chain.*
3. Remove the saw bar. *See Replacing Saw Bar.*
4. Loosen the guide screws (2), use wrench size 16mm or the tool P/N 0704040, so that the bar holder (1) can be removed from the tensioning device (3).



Important!

- Never start the machine with the bar holder removed.
5. Inspect and clean the grooves (4).
6. Assemble the new bar holder (1) into the tensioning device (3). Position the guide screws (2) into the grooves (4) and tighten.
7. Install the saw bar. *See Replacing Saw Bar.*
8. Install the saw chain. *See Replacing Saw Chain.*

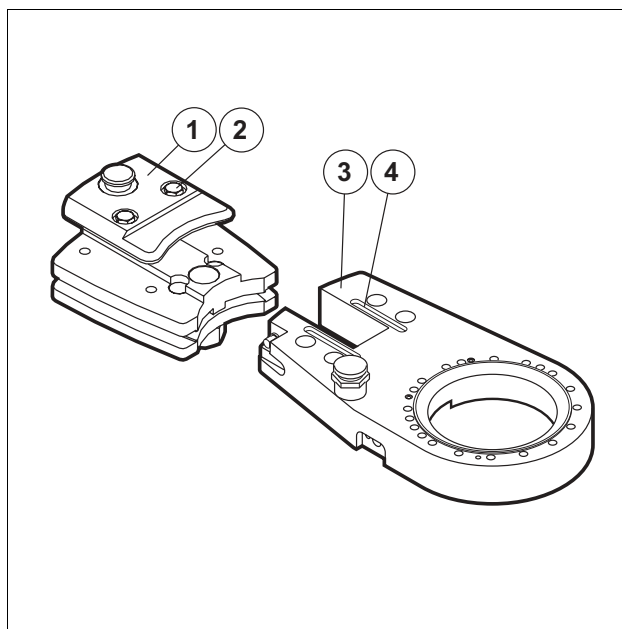


Fig. 22 Replacing Bar Holder

1. Bar Holder
2. Guide Screws, 2 pcs.
3. Tension Device
4. Grooves

Replacing Rim Sprocket

The rim sprocket requires the same attention and maintenance as the other parts of the saw unit.

A worn rim sprocket may cause damage to the saw bar or to the saw chain. If the rim sprocket has been damaged, it can not be repaired, it can only be replaced.

Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

When replacing the rim sprocket, do as described below.

1. Remove the saw chain, *See Replacing Saw Chain*

Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

2. Remove the rim sprocket.
 - 1 Remove the Socket head cap screw (5), use a 10 mm Allen key.
 - 2 Remove the Chain Catcher (4).
 - 3 Remove the Rim Sprocket (3).
 - 4 Remove the shim
 - 5 Make sure that the spacer is not worn or damaged, replace if necessary.
3. Install the rim sprocket.
 - 1 Make sure that the key is not worn or damaged, replace if necessary.
 - 2 Install the new rim sprocket. Make sure that the rim sprocket align with the saw bar, install a shim (2) if necessary.
 - 3 Make sure that the chain catcher is not worn or damaged, replace if necessary
4. Carefully clean the socket head cap screw (6), and apply Loc-Tite 243 on the thread. *See Fig. 24.*
5. Tighten the cap screw (6), use a 10 mm Allen key.
6. Install the saw chain. *See Replacing Saw Chain.*

Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

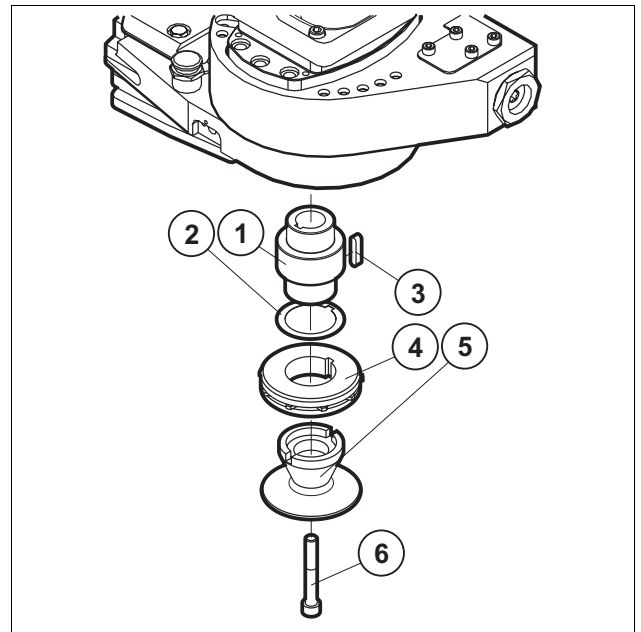


Fig. 23 Replacing Rim Sprocket

1. Spacer
2. Shim
3. Key
4. Rim Sprocket
5. Chain Catcher
6. Socket hd. cap screw, M12x80

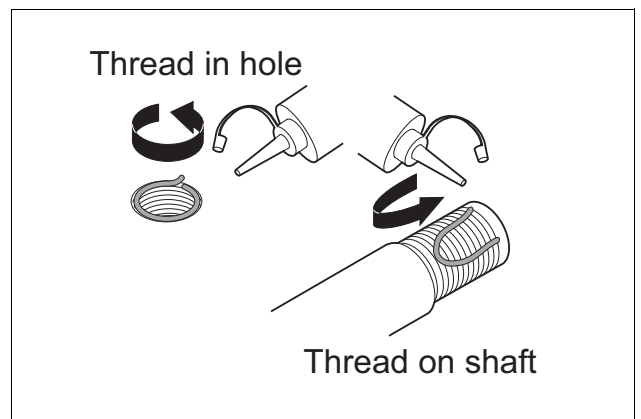


Fig. 24 Applying Loc-Tite 243

Replacing Lubrication Check Valves

Inlet Check Valve

The inlet check valve is placed in the center hole on the back side of the lubrication oil pump. See Fig. 25.

The purpose of the check valve (2) is to prevent the lubrication oil from going back to the oil reservoir when the saw bar is fed out. If this happens, the check valve (2) may have to be replaced or disassembled and cleaned. To replace the check valve, do as described below.



Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

1. Remove the plug (3). Use a 6mm Allen key.
2. Remove the check valve (2) by using a 4mm Allen key.
3. Inspect and clean the check valve if required.
4. Install the check valve (2) by using a 4mm Allen key.
5. Install the plug.

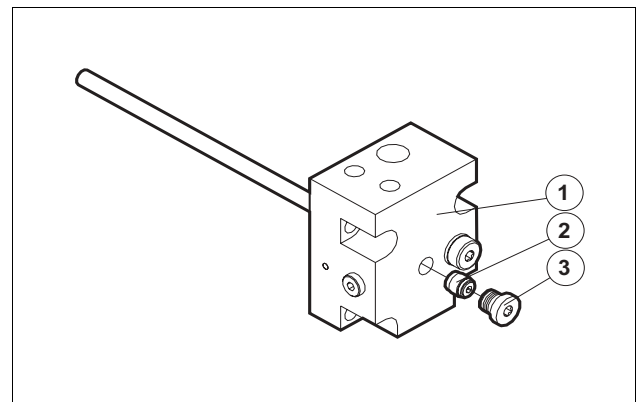


Fig. 25 Replacing Lubrication Inlet Check Valve

1. Lubrication Oil Pump
2. Inlet Check Valve
3. Plug

Outlet Check Valve

The outlet check valve is placed on the top side of the lubrication oil pump. See Fig. 26.

The purpose of the check valve (2) is to prevent the lubrication oil from going back to the oil pump when the saw bar is fed out. If this happens, the check valve (2) may have to be replaced or disassembled and cleaned. To replace the check valve, do as described below.



Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

1. Remove all hydraulic connections from the port.
2. Remove the check valve (2) by using the Check Valve Key, P/N 0696011. See *Technical data*
3. Inspect and clean the check valve if required.
4. Install the check valve (2) by using the Check Valve Key.
5. Install all hydraulic connections.

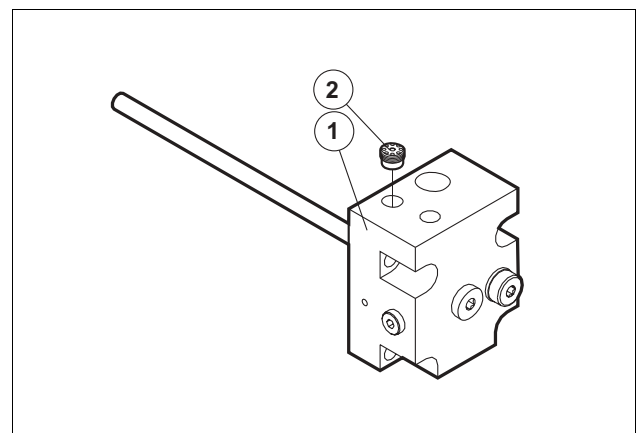


Fig. 26 Replacing Lubrication Outlet Check Valve

1. Lubrication Oil Pump
2. Outlet Check Valve

Replacing Tensioning Check Valve

The purpose of the check valve (2) is to prevent the saw chain from becoming slack from external obstructions e.g. undergrowth. If this function fail, the check valve (2) or the spring (3) may have to be replaced or disassembled and cleaned. To replace the check valve and the spring, do as described below.

Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

1. Remove the saw chain. *See Replacing Saw Chain*

Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

2. Loosen the fasteners (1) and pull out the Pilot Valve (2) *See Fig. 27.*
 3. Remove the check valve (2) by using the installation tool, P/N 0690149. *See Technical data*
 4. Remove the spring (4). *See Fig. 27.*
 5. Install a new spring if required.
 6. Install the check valve by using the installation tool, P/N 0690149. *See Technical data.*
- Note!** If using a normal hex key to install the check valve, this may cause the washer on the back side of the check valve to fall off and disfunction the check valve. If this happens, make sure that the machined surface of the washer is facing the check valve when reassembling. If a little grease is applied to the washer, it will stick to the check valve when reassembling. *See Fig. 29.*
7. Test the function of the check valve by pushing it with e.g a small screw driver. The washer on the check valve must be able to move approx. 0.5mm
 8. Install the pilot valve (2) and tighten the fasteners (1)
 9. Install the saw chain. *See Replacing Saw Chain*

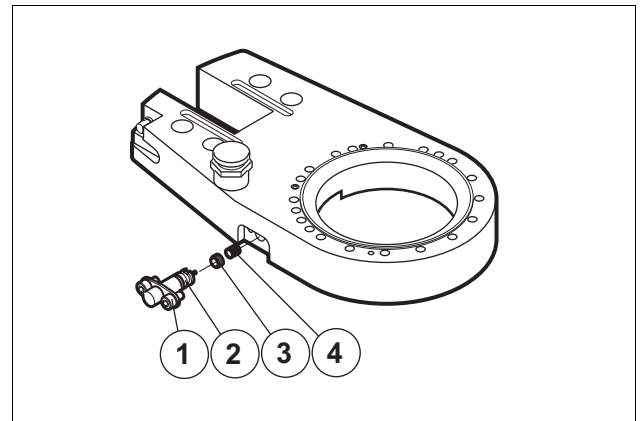


Fig. 27 Replacing check valve - Saw activated tensioning

1. Fasteners, 2 pcs.
2. Pilot Valve
3. Check Valve
4. Spring

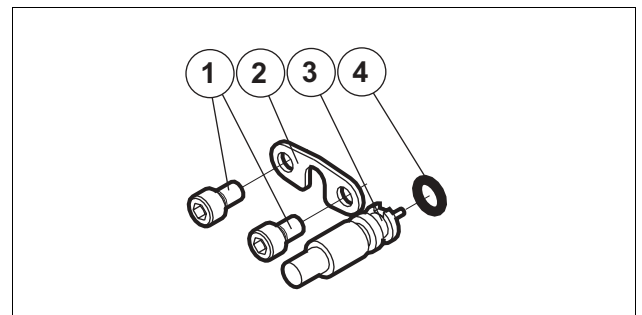


Fig. 28 Pilot Valve - Saw activated tensioning

1. Fasteners
2. Washer
3. Plunge
4. O-ring

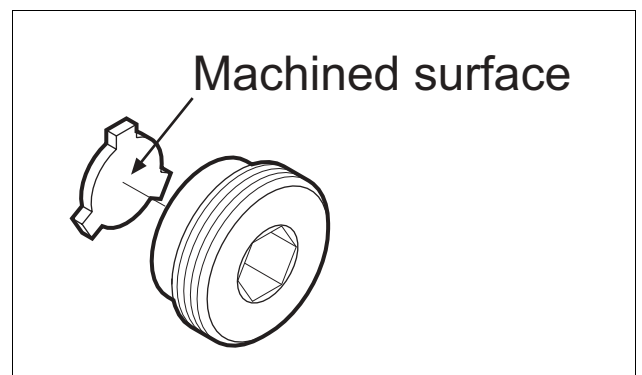


Fig. 29 Check Valve Assembly

Replacing Lubrication Oil Pump

If the oil pipe on the lubrication pump for some reason has been damaged, or if an alternative lubricating volume is required, the lubrication pump has to be replaced.

Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

When replacing the lubrication pump, do as described below.

1. Disassemble all connections and hose fittings from the old lubrication pump to be used with the new pump.
 2. Remove the fasteners(1), 4 pcs. from the cylinder.
See Fig. 30. Use a 8mm Allen key.
 3. Gently pull out the lubrication pump(2) from the barrel (3). *See Fig. 30.*
 4. Remove the barrel (3).
 5. Remove the gland screw (1). Use a 19mm Allen key, *See Fig. 31.*
 6. Carefully clean the gland screw (1), and apply Loc-Tite 243 on the thread.
 7. Install the gland screw. Make sure that the size of the gland screw matches the size of the oil pipe on the replacement pump.
 8. Install the barrel.
- Note!** Make sure that the inlet hole in the barrel alligns with the inlet hole in the contact flange.
9. Install the lubrication oil pump. *See Fig. 30.*
 10. Tighten the fasteners(1), 4 pcs. *See Fig. 30.*
 11. Assemble all connections and hose fittings to the new lubrication oil pump.

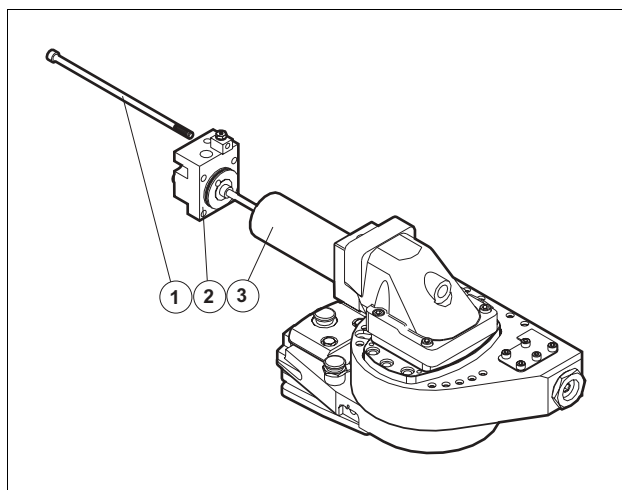


Fig. 30 Replacing Lubrication Oil Pump

1. Fasteners, 4 pcs.
2. Lubrication Oil Pump
3. Barrel

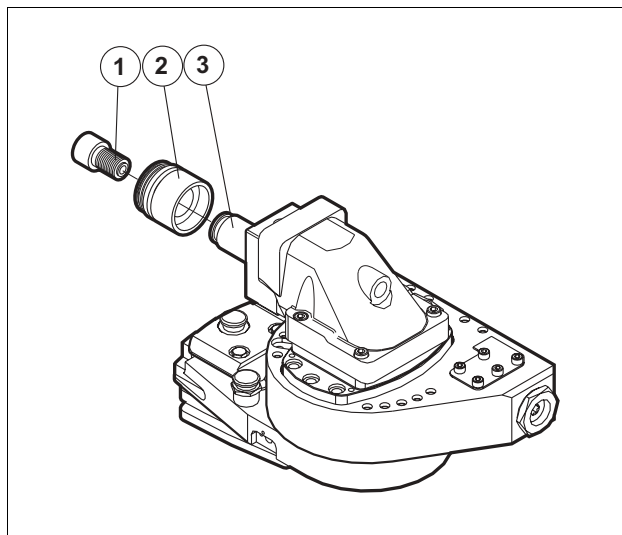


Fig. 31 Replacing Lubrication Gland

1. Gland Screw
2. Piston
3. Piston Rod

Replacing Saw Motor

⚠ Important!

All service and repairs should be carried out by qualified personnel or an authorized repair shop with suitable tools and lifting devices.

⚠ Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

Note! Never hammer or pry on saw motor when assembling or disassembling, always use Puller P/N 0696167 (See Fig. 32.) which is designed especially for this purpose. Bearings in the saw unit and the saw motor can easily be damaged if care is not taken.

Removing Saw Motor

1. Remove the saw chain. See *Replacing Saw Chain*

⚠ Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

2. Remove the chain catcher and the rim sprocket, See *Replacing Rim Sprocket*.
3. Assemble the puller according to the following figure. See Fig. 32.
4. Remove and plug all hydraulic connections from the saw motor.

⚠ Important!

Consider the environment. Plug all connections to avoid unnecessary spill of oil.

5. Remove the fasteners (3), 16 pcs. use a 6 mm Allen key.
6. Remove the fasteners (5), 6 pcs. use a 10 mm Allen key.
7. Remove two of the fasteners (4) for the tension device (1), and assemble the hex hd. screws on the puller to these holes.
8. Connect the puller bolt to the threaded hole in the saw motor shaft.
9. Use tool P/N 0704040 to hold the puller bolt (2) still, while turning the nut (3) counter clock wise with a wrench size 24mm to remove the saw motor. See Fig. 32.

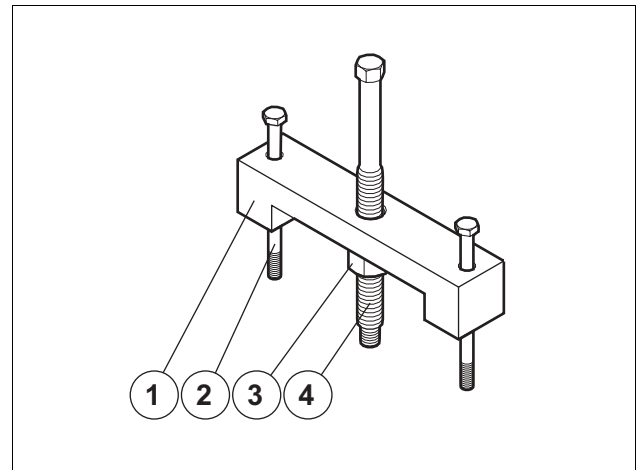


Fig. 32 Puller P/N 0696167

1. Girder
2. Hex hd. screw, 2 pcs.
3. Nut
4. Puller Bolt

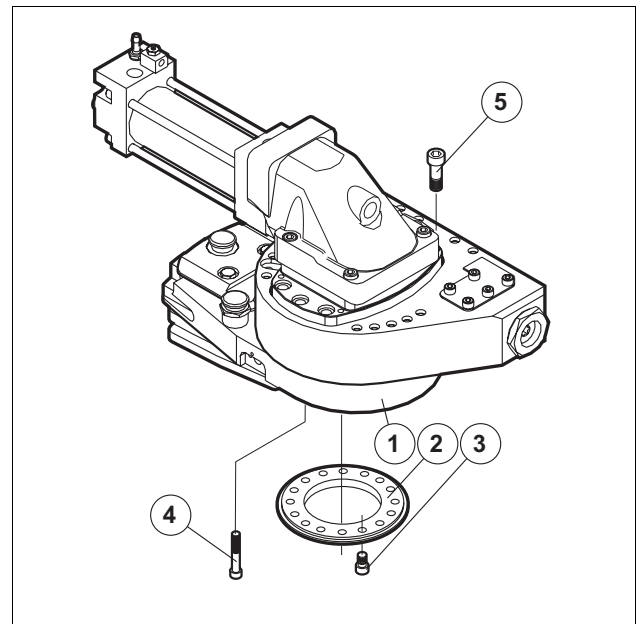


Fig. 33 Removing Saw Motor

1. Tension Device
2. Washer
3. Fasteners for washer, 16 pcs.
4. Fasteners for tension device
5. Fasteners for saw motor, 6 pcs.

Installing saw motor

Note! Never hammer or pry on saw motor when assembling or disassembling, always use Puller P/N 0696167 (See Fig. 34.) which is designed especially for this purpose. Bearings in the saw unit and the saw motor can easily be damaged if care is not taken.

1. Carefully clean both the saw motor and the saw unit bearing to keep dirt out of the swivel.
2. Assemble the puller according to the following figure. See Fig. 34.
3. Connect the puller bolt to the threaded hole in the saw motor shaft.
4. Use tool P/N 0704040 to hold the puller bolt still, while turning the nut clockwise with a wrench size 24mm to pull the saw motor into the saw unit.
5. Remove the puller.
6. Replace the two fasteners (4) for the tension device (1). See Fig. 35.
7. Install the fasteners (5) for the saw motor. See Fig. 35.
8. Install the fasteners for the washer (2). See Fig. 35.
9. Install all hydraulic connections to the new saw motor.
10. Install the drive sprocket and the chain catcher. See *Replacing Rim Sprocket*
11. Install the saw chain. See *Replacing Saw Chain*

Important!

When working on the saw chain always ensure the engine is shut off and wear safety gloves to prevent injuries. Remove the saw chain when making any adjustments or servicing the saw unit.

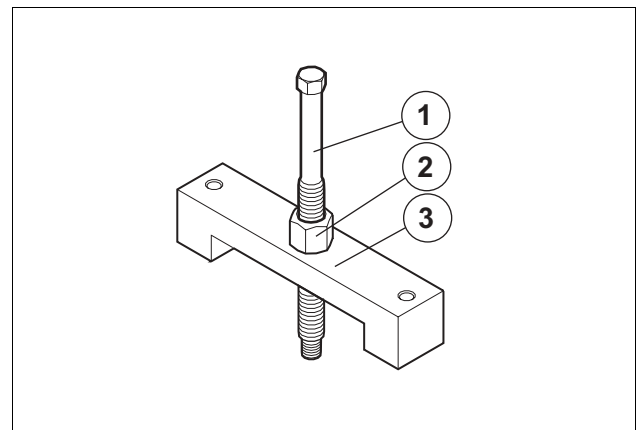


Fig. 34 Puller P/N 0696167

1. Puller Bolt
2. Nut
3. Girder

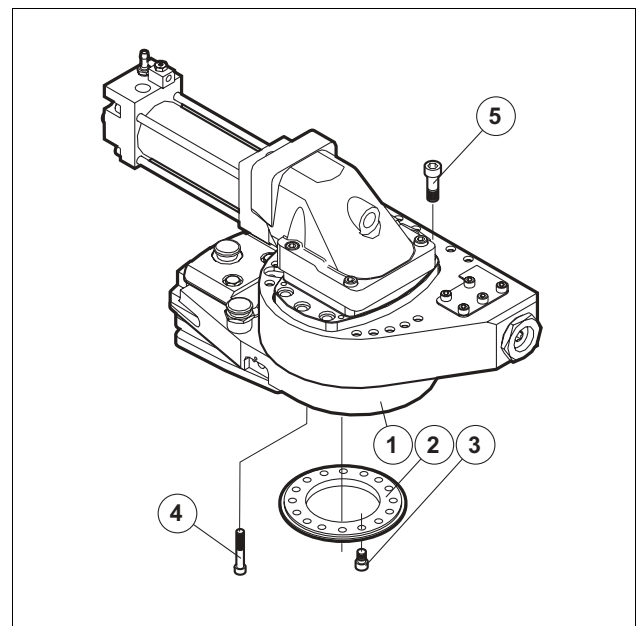


Fig. 35 Installing Saw Motor

1. Tension Device
2. Washer
3. Fasteners for washer, 16 pcs.
4. Fasteners for tension device
5. Fasteners for saw motor, 6 pcs.

Replacing Cylinder Seals

1. Remove the lubrication pump and the barrel. *See Replacing Lubrication Oil Pump.*
2. Remove the old cylinder seals.
3. The piston seal is made of three parts. *See Fig. 36.* Separate all three parts.
4. Apply oil to the piston.
5. Connect the Assembly Tool to the piston. *See Fig. 37.*
6. Assemble the O-ring to the piston.
Assemble the "Seal-Ring" by pushing it over the assembly tool.
Assemble the "Quad-Ring" to the "Seal-Ring".
7. Remove the Assembly Tool and assemble the Guide Ring to the piston.
8. Lubricate the assembly tool (*See Technical data*) and press it on the piston to compress the piston seal ring. Let it hold for a couple of minutes.
9. Remove the assembly tool.
10. Apply oil to the inside of the barrel and press the piston into the barrel.
Note! Make sure that the inlet hole in the barrel alligns with the inlet hole in the contact flange.
11. Install the lubrication pump. *See Replacing Lubrication Oil Pump.*

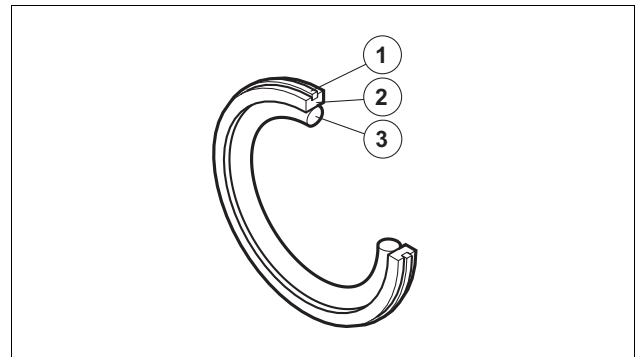


Fig. 36 Cylinder Seal Assembly

1. Quad-Ring
2. Seal-Ring
3. O-Ring

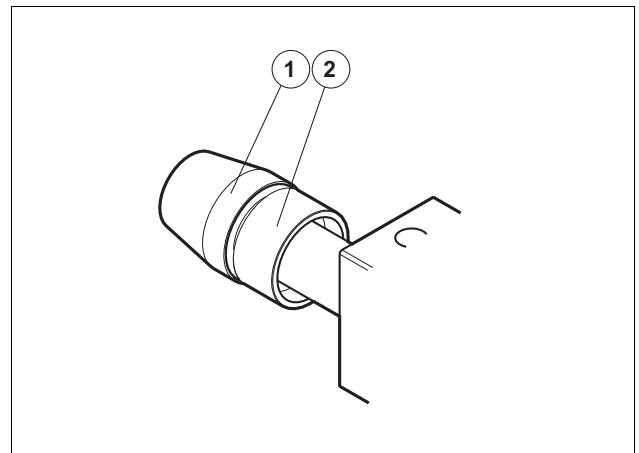


Fig. 37 Replacing Cylinder Seals

1. Assembly Tool
2. Piston

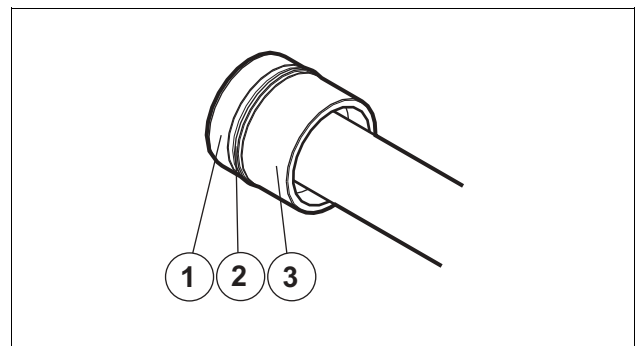


Fig. 38 Cylinder Seals

1. Guide Ring
2. Piston Seal
3. Piston

Replacing Gland Seals

⚠ Important!

All service and repairs should be carried out by qualified personnel or an authorized repair shop with suitable tools and lifting devices.

⚠ Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

1. Remove the lubrication pump. *See Replacing Lubrication Oil Pump*
2. Remove the barrel.
3. Remove the piston(2) from the piston rod(5) by loosening the gland screw (1). Use a 19mm Allen key. *See Fig. 39.*
4. Remove Connection flange(3) and Gland(4) from piston rod. *See Fig. 39.*
5. Remove damaged gland seal(3) and o-ring(1) from the gland(2). *See Fig. 40.*
6. Assemble the gland seal in the gland by hand or by using a blunt tool.
7. Install the o-ring.
8. Install gland and connection flange to the piston rod.
9. Assemble the piston to the piston rod.
10. Install the barrel.
11. Install the lubrication pump.

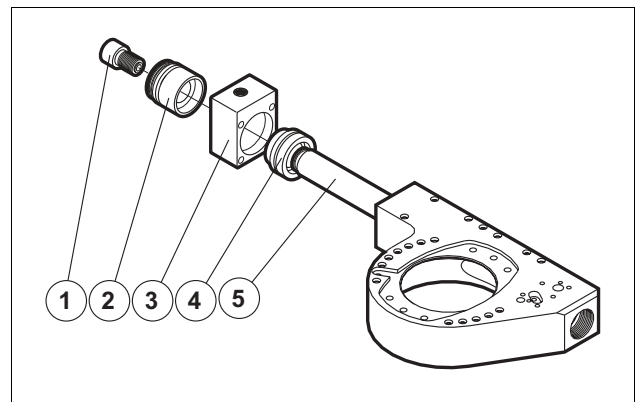


Fig. 39 Replacing Gland Seals

1. Gland Screw
2. Piston
3. Connection Flange
4. Gland
5. Piston Rod

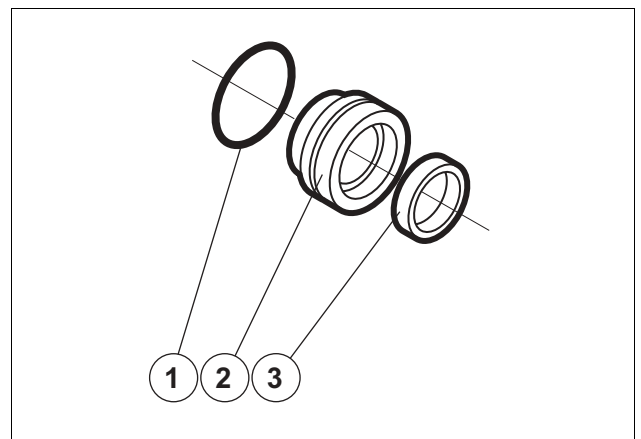


Fig. 40 Gland Seals

1. O-ring
2. Gland
3. Gland Seal

Replacing Swivel Seal Rings



Important!

All service and repairs should be carried out by qualified personnel or an authorized repair shop with suitable tools and lifting devices.



Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

1. Remove the saw motor. *See Replacing Saw Motor*
2. Remove the old seal rings using e.g a small screw driver. Be sure to remove both the green seal rings and the o-rings.
3. Carefully clean the grooves for the seal rings.
4. Assemble the o-rings
5. Apply a little oil to the green seal rings before assembling.
6. Compress the seal rings. *See Fig. 42.*
7. Assemble the seal rings into the grooves by hand or by using a blunt tool. Be careful not to harm the seal rings as they are delicate and can easily be damaged.
8. Carefully clean the saw motor and install it into the saw unit. *See Replacing Saw Motor*

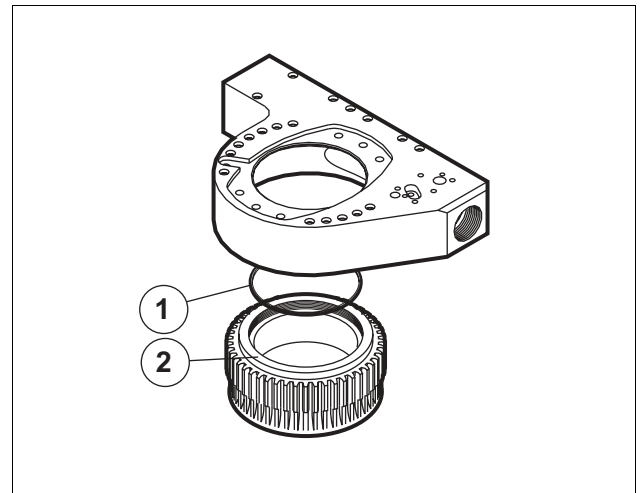


Fig. 41 Replacing Swivel Seal Rings

1. Swivel Seal Rings, 3 pcs.
2. Bearing

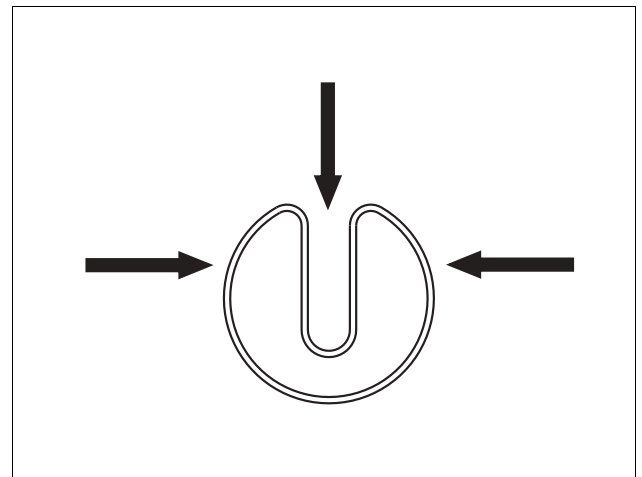


Fig. 42 Compressing Swivel Seal Ring

Adjusting sensors

To work satisfactorily, the sensors for the cut-control device and saw home detector, must be placed approx. 0.5 mm from the target area.

To achieve that, do as described below.

1. For better access to sensors, always remove the housing for the sensors when working on the sensors.
2. Remove the Electric wire connector from the sensor.
3. Gently screw the sensor(3) by hand through the plate(1) until it reaches the target area.
4. Unscrew the sensor 1/2 turn. The sensor should now be approx. 0.5 mm from the target area.

If the connector pins are being used as aims, it should be easy to adjust the sensor within the $\pm 5^\circ$ degrees necessary to make the sensor work properly. See Fig. 44.

Note!The sensor has to be unscrewed 1/2 turn $\pm 5^\circ$ as the function of the cut control device is depending on the proper adjustment of the sensor.

5. Lock the sensor with the nut(2). See Fig. 43.

Note!Do not use glue when locking the sensor, as this will make it hard to readjust or remove the sensor.

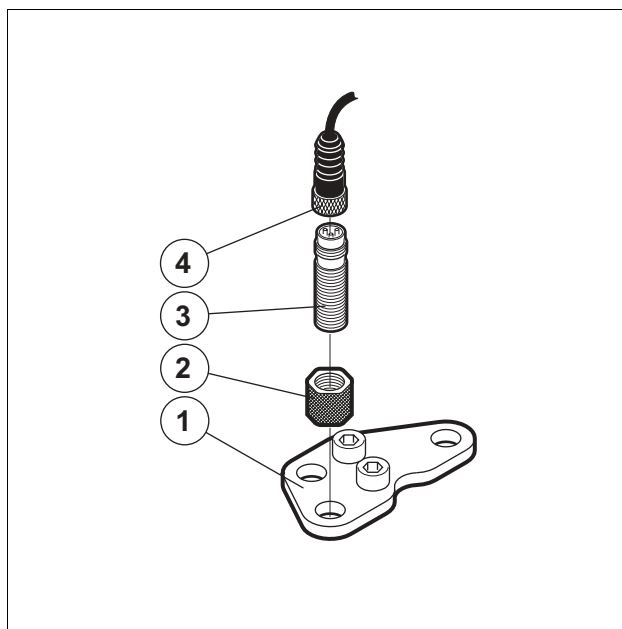


Fig. 43 Adjusting Sensors

1. Plate
2. Nut
3. Sensor
4. Electric Wire Connector

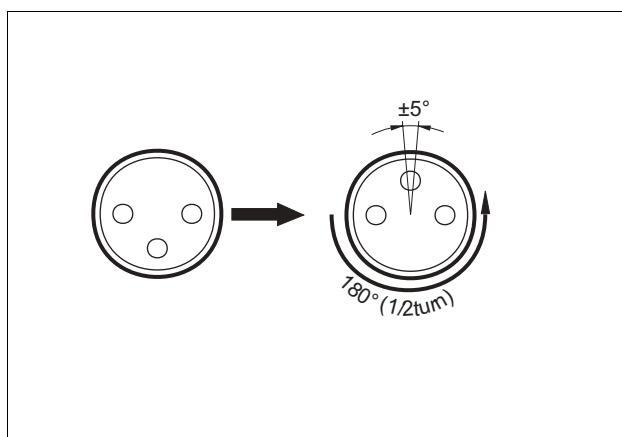


Fig. 44 Unscrewing Sensor

Maintenance instructions

**Warning!**

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

**Warning!**

Never touch or stand close to the pressurized cylinders and hydraulic hoses.

**Warning!**

The attachment has sharp edges. Use proper wrenches and protective gloves when working on the attachment.

Regular maintenance

Daily maintenance

Make sure that:

- Nothing abnormal has happened to the saw unit regarding fastener joints and hydraulic hoses.
- No damages or cracking have occurred on the saw unit.
- There is no leakage on the saw unit.
- At the beginning of each shift, always start with a sharp saw chain!

Tighten any loose items and repair any damages.

Every 250 hours of operation

Make sure that:

- No fasteners are loose.
- The hydraulic hoses are not damaged.
- No damages or cracking have occurred on the saw unit.
- There is no leakage on the saw unit

Repair or replace any damaged or worn components.

Lubrication

The saw unit should be lubricated every 8 to 200 hours of operation depending on the conditions that the unit is working under. The unit has 2 lubrication points as shown here. See Fig. 45.

Note! Use a mineral oil based grease thickened with, or mixable with a lithium soap. The grease should be classified as L-XCCIB2 according to ISO 6743-9. Molybdenisulfid content max 3 %. Base fluid viscosity 170 to 220 cSt at 40°C. NLGI class2.

Fastener joints and hydraulic hoses

Make sure at daily maintenance of the saw attachment that nothing abnormal has occurred with the saw unit regarding fastener joints and hydraulic hoses.

The first month of operation

Fasteners

Tightening of the saw unit fastners should be made once a week during the first month of operation.

See *Technical data* regarding wrench sizes and torque.

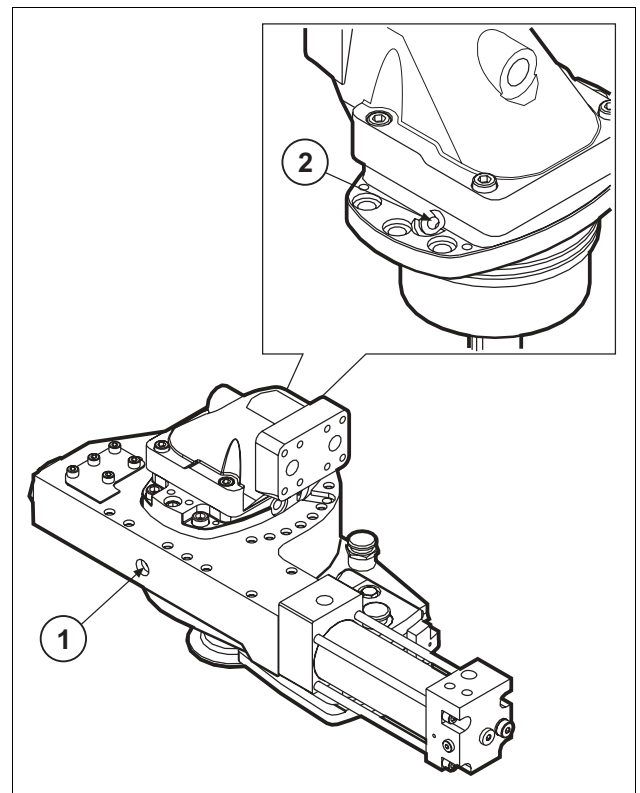


Fig. 45 Lubrication points

- 1 Feed out rack
- 2 Bearing

Troubleshooting

Warning!

Before performing any maintenance or service work, lower the attachment to the ground and shut off the engine. Turn off any master shut-offs and do not allow personnel in the cab.

Symptom	Probable cause	Action
Saw bar wears abnormally quick or top roller failure.	Chain tension pressure is too high	Adjust chain tension pressure
	Chain lubrication malfunction	Check lubrication system
	Air in the tensioner system	Bleed the tensioner system
Chain jumps off	Chain tension pressure is too low	Adjust chain tension pressure
	Air in the tensioner system	Bleed the tensioner system
	Leaking check valve	Test check valve - clean or replace if necessary
	Swivel seal rings are damaged	Replace all seal rings
Chain lubrication system malfunction	Lubrication oil tank is empty	Refill lubrication oil
	Check valves on lub. oil pump are leaking	Test check valves - clean or replace if necessary
	Hydraulic hose for lub. system is broken.	Replace the hose.
	Pressure relief valve on lub. oil pump is leaking	Test valve - clean or replace if necessary
	Swivel seal rings are damaged	Replace all seal rings
Oil leakage from saw unit	Saw unit is damaged	Replace any damaged parts.
	Swivel seal rings are damaged	Replace all seal rings
	O-rings on pistons in tensioning device are damaged	Replace o-rings
Saw bar feed out malfunction	Feed out pressure is too low	Adjust feed out pressure
	Piston seals in feed out cylinder are damaged	Replace piston seals
	Saw bar feed out is jammed by too long fasteners for saw motor.	Use fasteners with the correct dimension.

HULTDINS SuperCut™



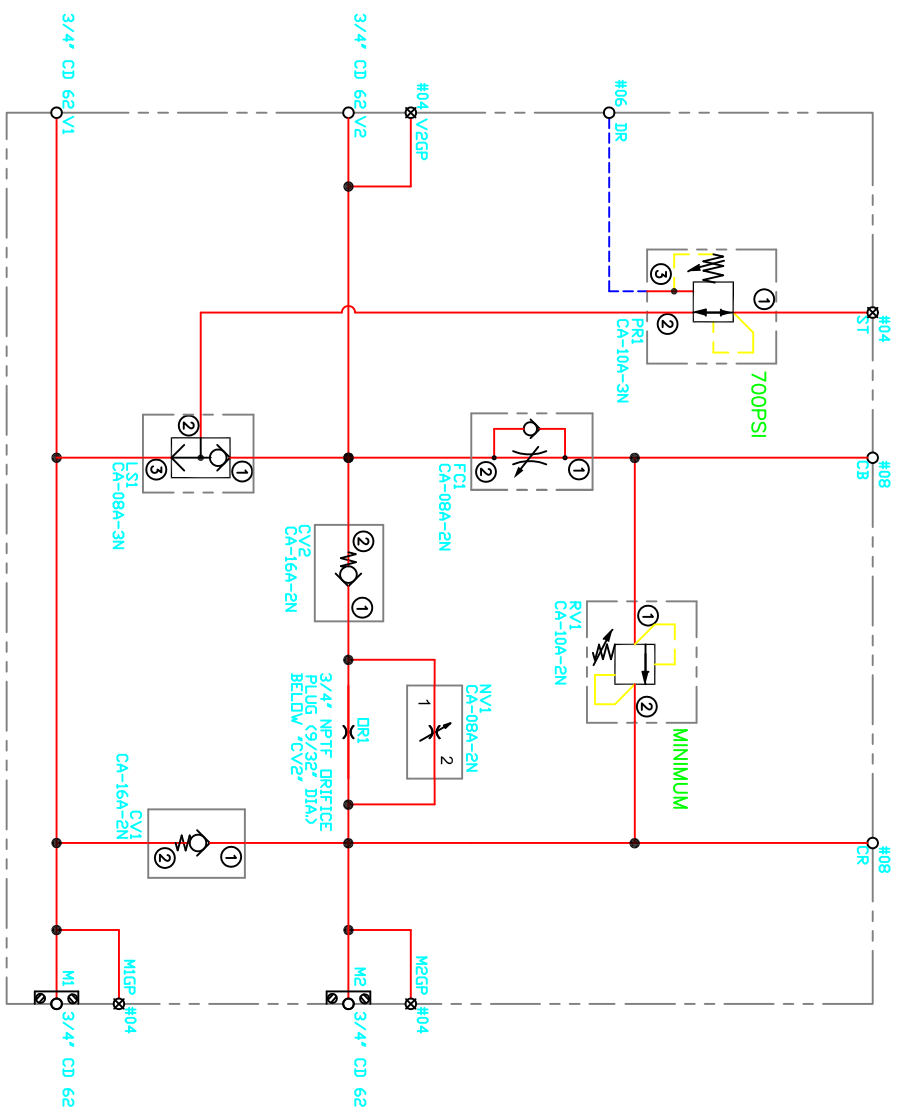
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Item	Ref	Qty	Manufacture	Model	Description
1	ST	1	FSC	209051401-10	Custom manifold
2	CV1, CV2	2	Bosch Rexroth Oil Control	04 31 23 00 27-00	Check valve cartridge
3	FC1	1	Bosch Rexroth Oil Control	04 01 02-03-55-00	Flow control valve
4	LS1	1	Bosch Rexroth Oil Control	04 94 05 00 56 00	Shuttle valve
5	NV1	1	Bosch Rexroth Oil Control	OD 21 01-03-56	Needle valve cartridge
6	PR1	1	Bosch Rexroth Oil Control	04 95 04 03 85 04	Pressure reducing valve
7	RV1	1	Bosch Rexroth Oil Control	04 11 55-03-55-05	Relief valve cartridge



Rev	Date	Description	By	Appr
C	09/03/09	REMOVED CD AND STOP, CHANGED PORT SIZES, ADDED SETTINGS	PV	
B	7/22/09	UPDATED CV1, CV2	TDN	
A	07/13/09	UPDATED MULTIPLE VALVES PORT LOGIC, INCLUDED ORIFICE INFO	TDN	
		DATE	INT	APPRO

CUSTOMER & PART NUMBER INFORMATION

Customer: THIBERPRO
 Customer Part#: N/A
 Schematic DWG#: 209051401-10
 Assembly DWG#: 209051401-50
 Block DWG#: 209051401-40
 Replaces DWG#: N/A
 Material: DUCTILE
 Finish: NICKEL PLATING
 Material Size: N/A

Fluid System Components
FSC Inc.
 GREEN BAY, WI
 NEW BERLIN, WI

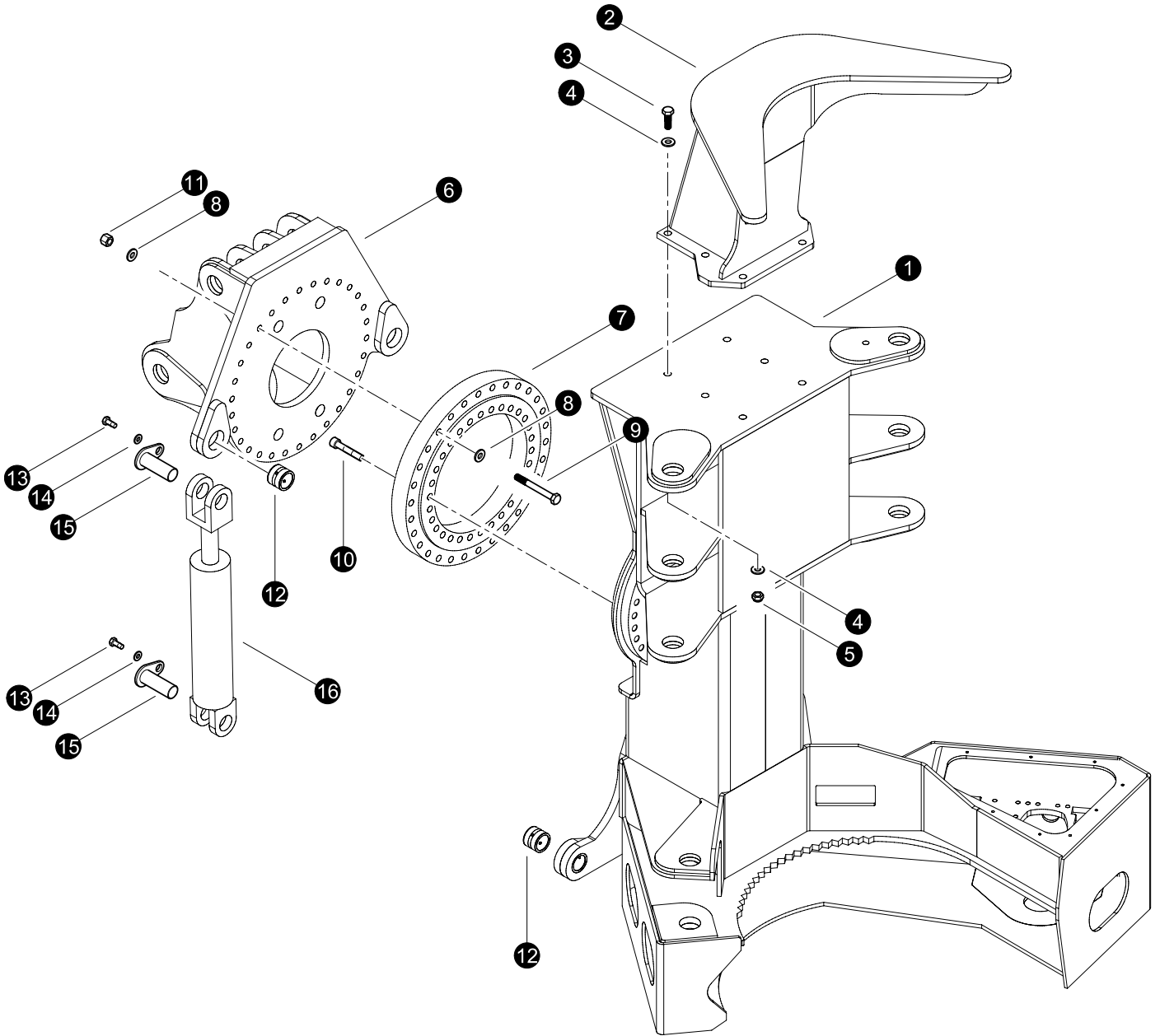
TITLE
 BAR SAW MANIFOLD
 SCHEMATIC

DRAWN	TDW	7/22/09	JOB#	-
CHECK	-	-	SCALE	-
APPROV.	-	-	SHEET	1 OF 1
DWG NO	209051401-10			REV
				C

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Section BS-1

32" Bar Saw - Parts Breakdown



T3811 100909

BAR SAW (Top Post and Boom Mount)

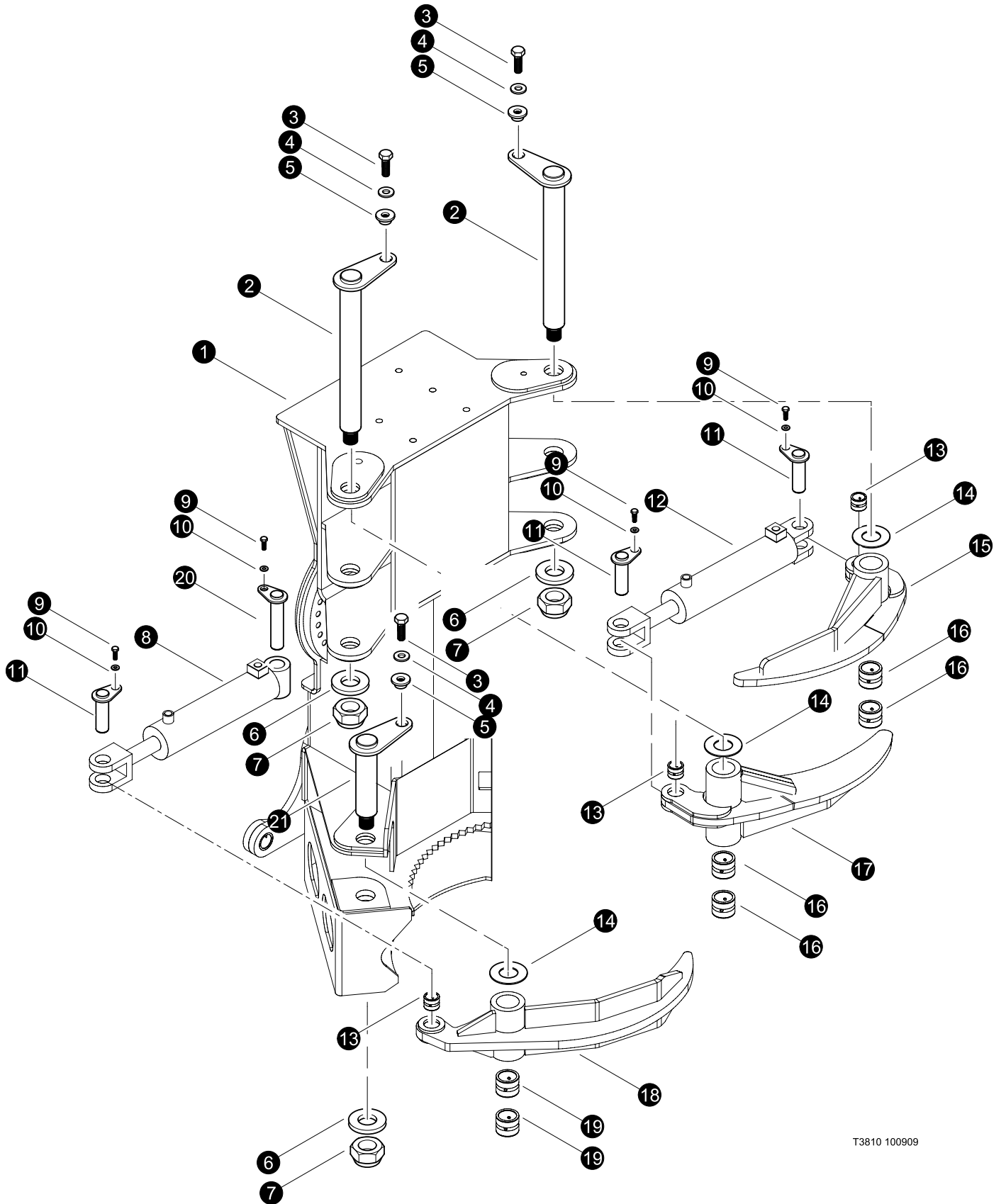
REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	53843-BS	1	FRAME, BAR SAW	
2	53872-BS	2	ASSEMBLY, TOP - BAR SAW	
3	10775-BS	6	BOLT - .75" X 2.5"	
4	15550-BS	12	WASHER, SAE FLAT - .75"	
5	10817-BS	6	NUT, LOCK - .75"	
6	53940-BS	1	BASE, SAW 40 DEG TILT DUAL CYL-53883 BRG	
7	53883-BS	1	BEARING, LATERAL TILT DISC/BAR SAW	
8	15550-BS	60	WASHER, SAE FLAT - .75"	
9	10843-BS	30	BOLT - .75" X 4.5" (Torque to 420 ft.lbs (570 Nm))	
10	53996-BS	30	BOLT, ALLEN HEAD - .75" X 4" (Torque to 377 ft.lbs (512 Nm)) (See Note: 1)	
11	10776-BS	30	NUT, HEX - .75" (See Note: 1)	
12	52795-BS	4	BUSHING - 2" X 2"	
13	10783-BS	4	BOLT - .5" X 1"	
14	15534-BS	4	WASHER, SAE FLAT - .5"	
15	53775-BS	4	PIN ASSEMBLY,	
16	52814-BS	2	CYLINDER, DISC SAW HEAD TILT - JARP	



See referenced page for component or assembly breakdown.


Note: 1

Use Loctite 272 (blue) during installation.

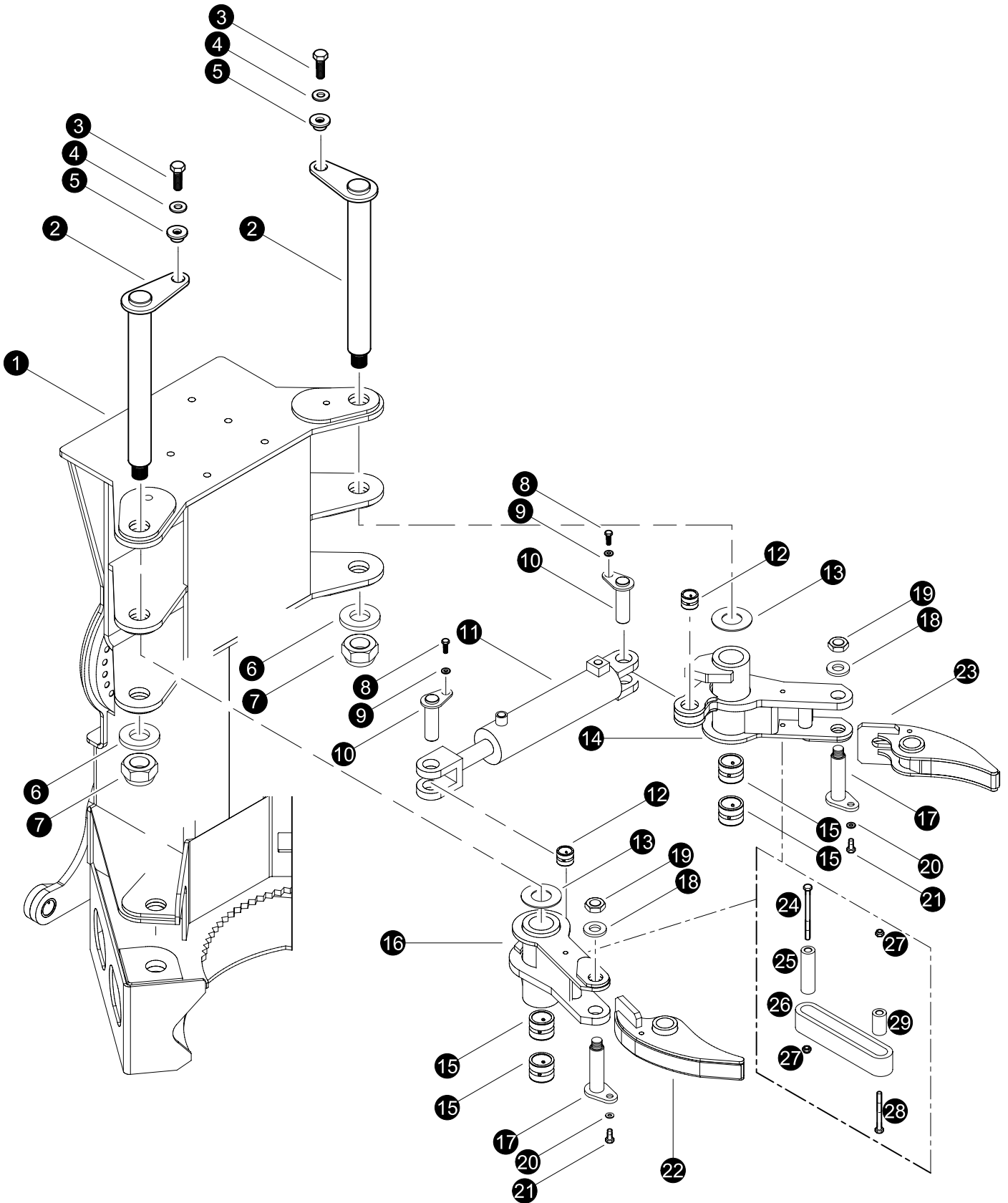


T3810 100909

BAR SAW (Clamp Arms)


REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF.	1	 BAR SAW FRAME.	BS-1
2	53999-BS	2	PIN ASSEMBLY, Bar Saw Top Arms	
3	15549-BS	3	BOLT - .75" X 2.0	
4	15550-BS	6	WASHER, SAE FLAT - .75"	
5	18570-BS	3	WASHER, PIN RETAINING (BRAATZ)	
6	12021-BS	3	WASHER, BURNED 2 X	
7	10728-BS	1	NUT, nylock - 2"	
8	REF	1	CYLINDER, LOWER CLAMP	BS-3
9	10783-BS	4	BOLT - .5" X 1"	
10	15534-BS	4	WASHER, SAE FLAT - .5"	
11	54002-BS	3	PIN ASSEMBLY, Bar Saw Top Arm Cyl	
12	REF	1	CYLINDER, UPPER CLAMP.	BS-3
13	53633-BS	3	BUSHING,	
14	16266-BS	3	SHIM - 2.51" ID X 3.88" OD X .075" THK	
-	16267-BS		SHIM - 2.51" ID X 3.88" OD X .135" THK	
-	16268-BS		SHIM - 2.51" ID X 3.88" OD X .179" THK	
15	53830-BS	1	ARM, TOP CLAMP	
16	11704-BS	4	BUSHING - 2.5" X 4.25"	
17	53830-BS	1	ARM, TOP CLAMP	
18	53841-BS	1	ARM, BOTTOM CLAMP	
19	14241-BS	2	BUSHING - 2.5" X 3"	
20	54000-BS	1	PIN ASSEMBLY, Bar Saw Bottom Arm Cyl Base	
21	54001-BS	1	PIN ASSEMBLY, Bar Saw Bottom Arm	

 See referenced page for component or assembly breakdown.

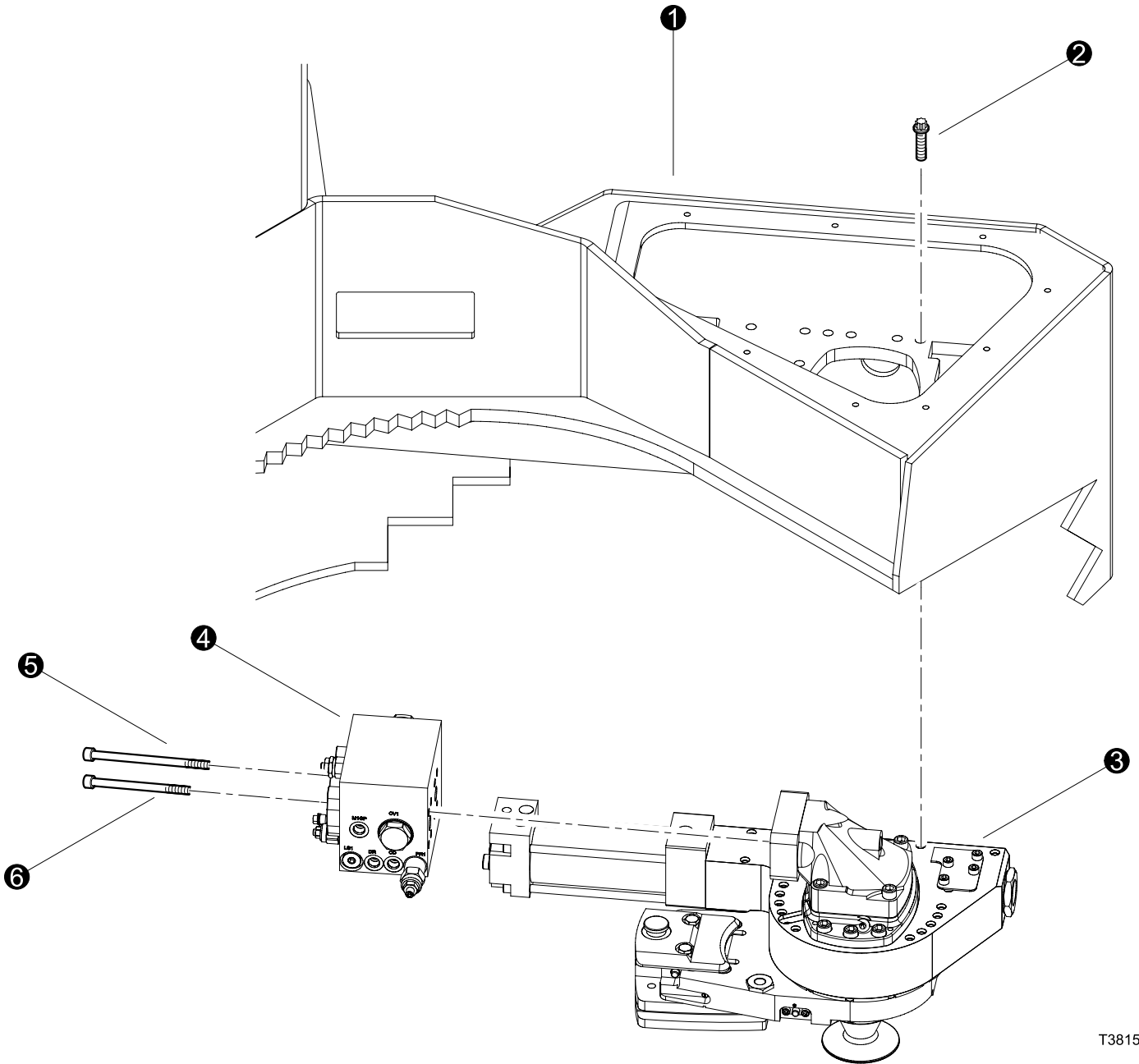


T3814 100909

BAR SAW (Accumulator Arms)


REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF.	1	 BAR SAW FRAME.	BS-1
2	53999-BS	2	PIN ASSEMBLY, Bar Saw Top Arms - 2.5" x 28.5"	
3	15549-BS	2	BOLT - .75" X 2.0	
4	15550-BS	4	WASHER, SAE FLAT - .75"	
5	18570-BS	2	WASHER, PIN RETAINING (BRAATZ)	
6	12021-BS	3	WASHER, BURNED 2 X	
7	10728-BS	1	NUT, nylock - 2"	
8	10783-BS	4	BOLT - .5" X 1"	
9	15534-BS	4	WASHER, SAE FLAT - .5"	
10	54002-BS	2	PIN ASSEMBLY, Bar Saw Top Arm Cyl	
11	REF	1	CYLINDER, UPPER CLAMP.	BS-3
12	53894-BS	2	BUSHING - 2" X 2.25"	
13	16266-BS	3	SHIM - 2.51" ID X 3.88" OD X .075" THK	
-	16267-BS		SHIM - 2.51" ID X 3.88" OD X .135" THK	
-	16268-BS		SHIM - 2.51" ID X 3.88" OD X .179" THK	
14	53834-BS	1	ARM, ACCUMULATOR BASE	
15	11704-BS	4	BUSHING - 2.5" X 4.25"	
16	53834-BS	1	ARM, ACCUMULATOR BASE	
17	54003-BS	2	PIN ASSEMBLY, Bar Saw Acc Arms - 1.75 x 7"	
18	19613-BS	1	WASHER, SAE FLAT - 1.5" (EXTRA THICK)	
19	20811-BS	2	NUT, NYLOCK - 1.5" NF (JAM)	
20	15534-BS	2	WASHER, SAE FLAT - .5"	
21	10783-BS	2	BOLT - .5" X 1"	
22	53838-BS	1	ARM, ACCUMULATOR END	
23	53838-BS	1	ARM, ACCUMULATOR END	
24	10837-BS	2	BOLT - .5" X 6"	
25	-BS	2	SPACER,	
26	53997-BS	2	RUBER BAND, ACCUMULATOR ARM	
27	10815-BS	4	NUT, LOCK - .5"	
28	15553-BS	2	BOLT - .5" X 3.5"	
29	-BS	2	SPACER,	

 See referenced page for component or assembly breakdown.

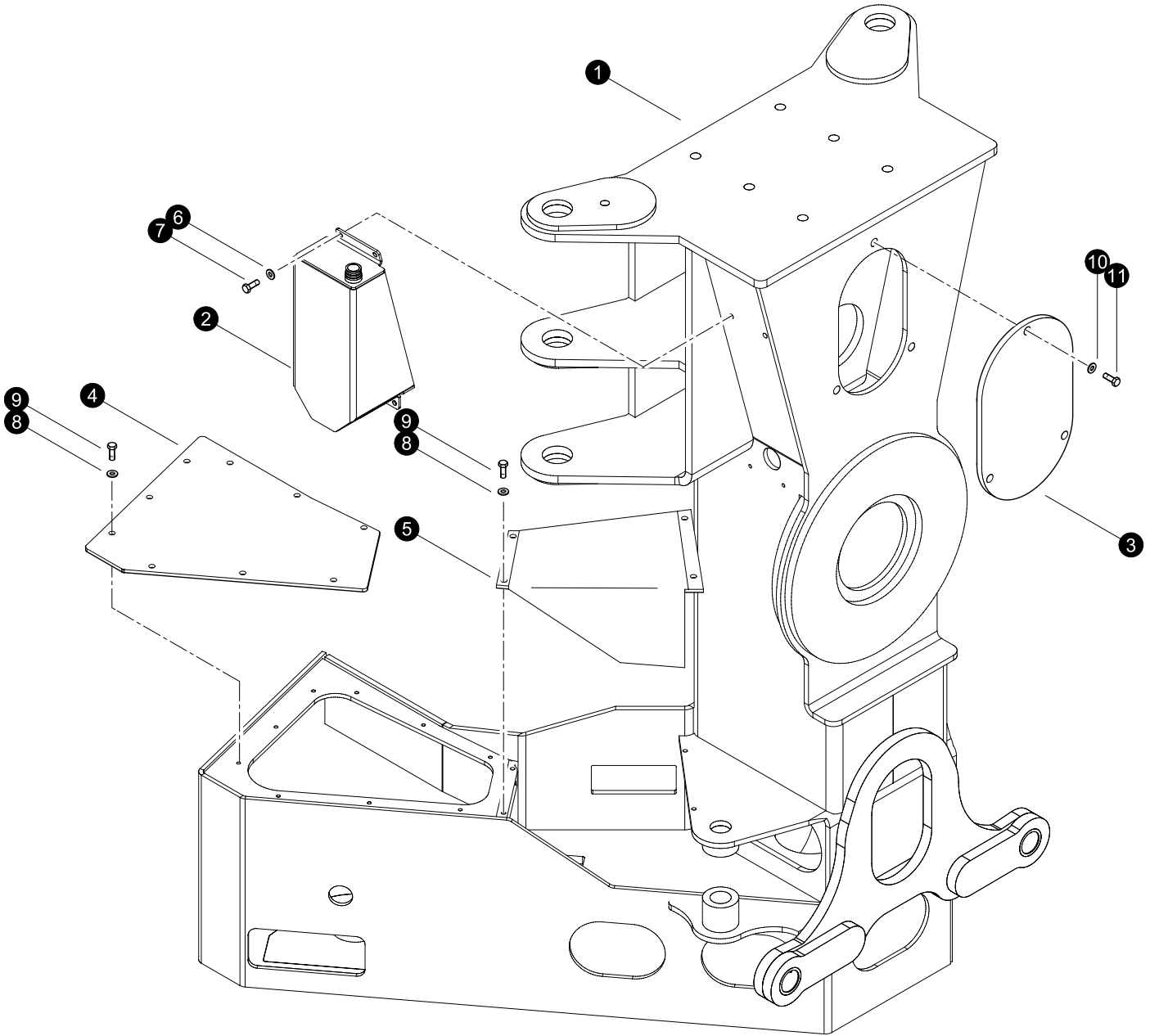


T3815

BAR SAW (Saw Base Install)


REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF.	1	 BAR SAW FRAME.....	BS-1
2	50261-BS	20	BOLT, 12 POINT - 12MM-1.75P X 35MM	
3	REF	1	SAW BASE	BS-4
4	REF	1	SAW MANIFOLD	BS-3
5	-BS	4	BOLT, Allen - M10 1.5 x 150mm	
6	-BS	4	BOLT, Allen - M10 1.5 x 120mm	


 See referenced page for component or assembly breakdown.



T3816 100909

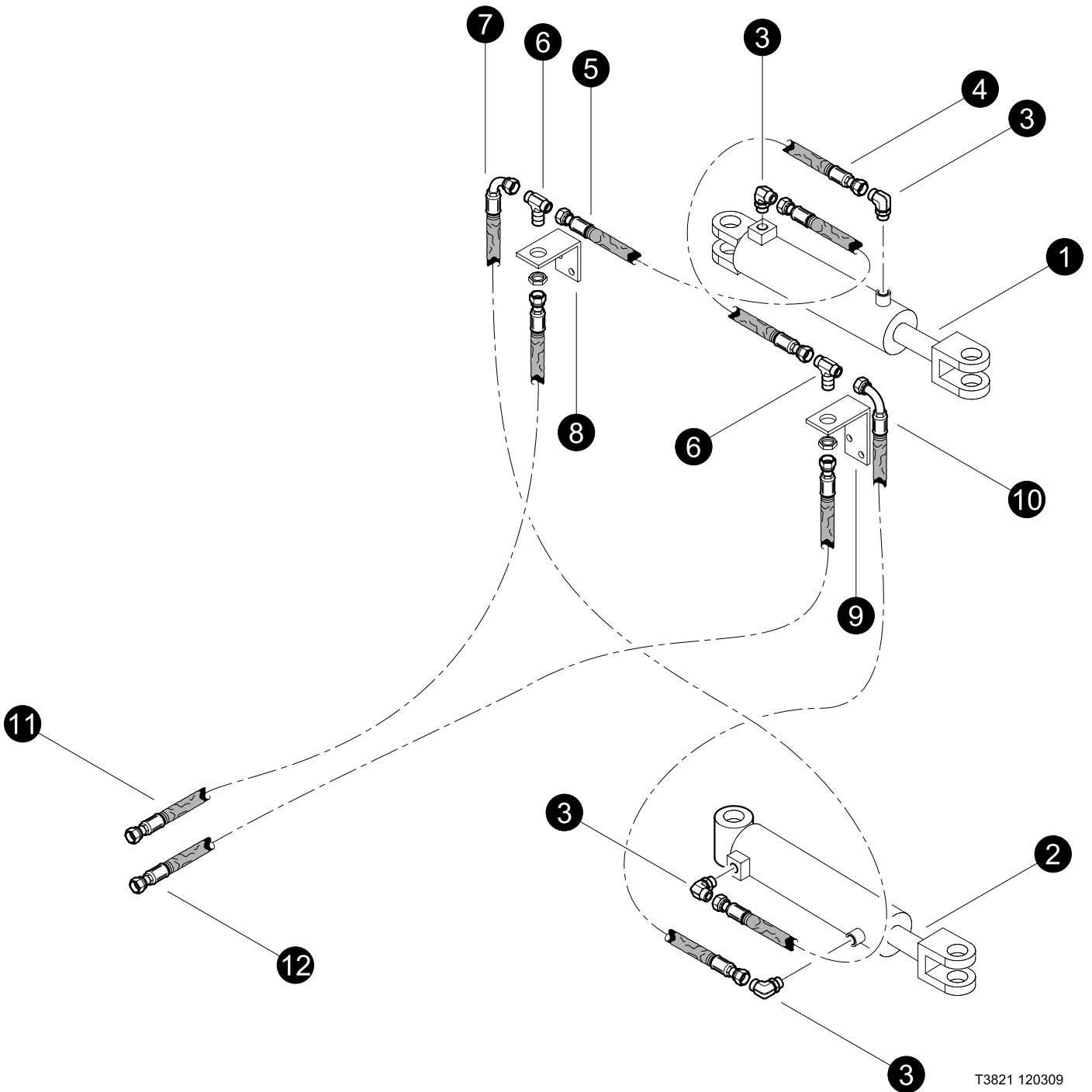
BAR SAW (Oil Tank and Covers)

REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF.	1	 BAR SAW FRAME.	BS-1
2	53954-BS	1	TANK, BAR SAW OIL	
3	53951-BS	1	COVER, BAR SAW TOP	
4	53952-BS	1	COVER, BAR SAW VALVE	
5	53953-BS	1	COVER, BAR SAW MID	
6	15528-BS	4	WASHER, SAE FLAT - .375"	
7	15542-BS	4	BOLT - .375" X .75"	
8	15528-BS	13	WASHER, SAE FLAT - .375"	
9	15542-BS	13	BOLT - .375" X .75"	
10	15528-BS	3	WASHER, SAE FLAT - .375"	
11	15542-BS	3	BOLT - .375" X .75"	

 See referenced page for component or assembly breakdown.

Section BS-2

32" Bar Saw - Hydraulics



T3821 120309

BAR SAW HYDRAULICS (Clamp Arm Cylinders)

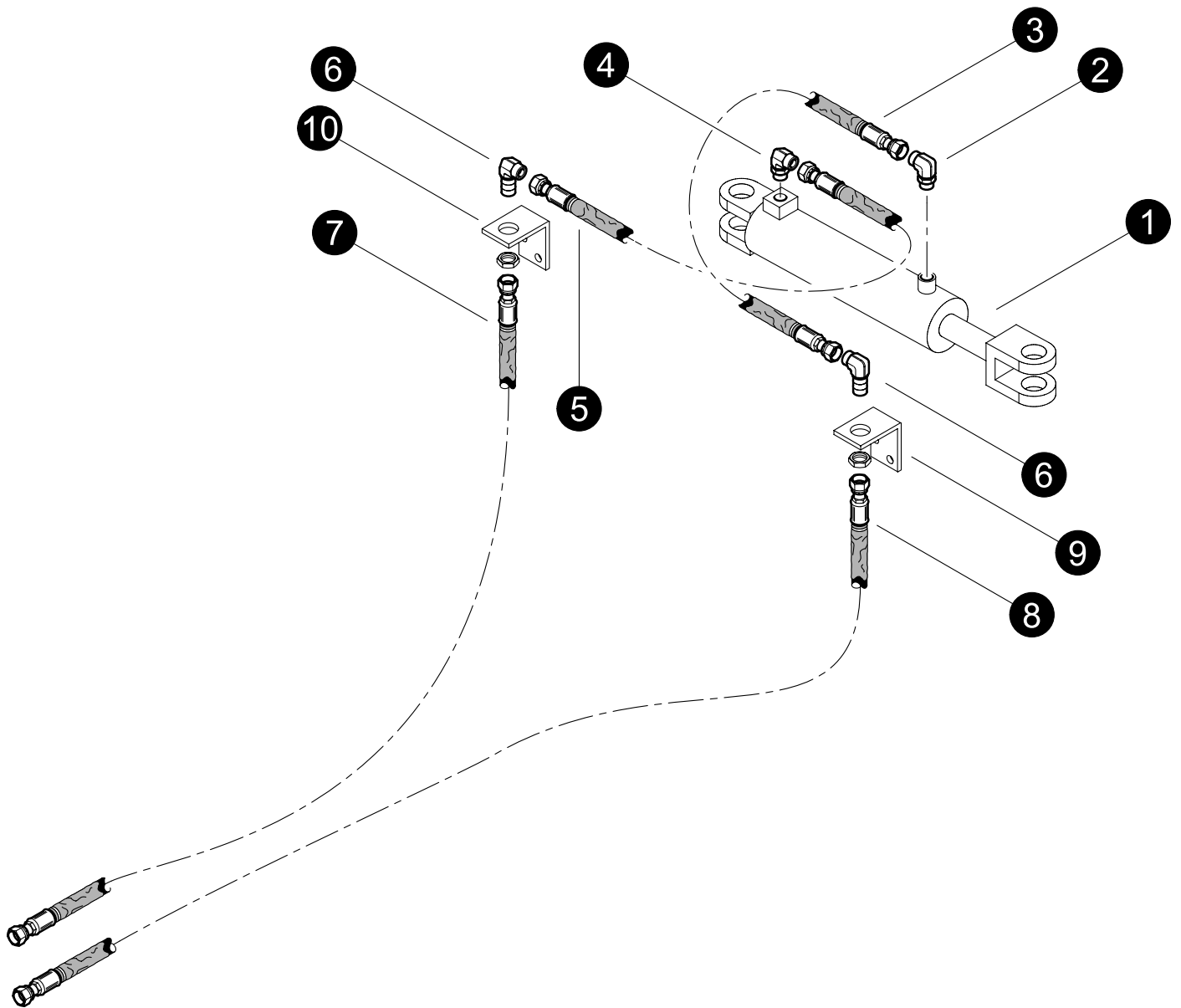
REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF	1	CYLINDER, SAW HEAD UPPER CLAMP.	BS-3
2	REF	1	CYLINDER, SAW HEAD LOWER CLAMP	BS-3
3	16360-BS	4	ELBOW, 90° - FF1868T-0808S	
4	-BS	1	HOSE ASSEMBLY - 4021-08-080S-080S <i>(Right bulkhead tee to clamp cylinder rod port)</i>	
5	-BS	1	HOSE ASSEMBLY - 4027-08-080S-080S <i>(Left bulkhead tee to clamp cylinder base port)</i>	
6	52930-BS	2	TEE, BULKHEAD BRANCH - 8	
7	-BS	1	HOSE ASSEMBLY - 4064-08-080S-0809 <i>(Left bulkhead tee to lower clamp cylinder base port)</i>	
8	54043-BS	1	BRACKET, LEFT CLAMPS	
9	54042-BS	1	BRACKET, RIGHT CLAMPS	
10	-BS	1	HOSE ASSEMBLY - 4064-08-080S-0809 <i>(Right bulkhead tee to lower clamp cylinder rod port)</i>	
11	-BS	1	HOSE ASSEMBLY - 4103-10-100S-080S <i>(Left bulkhead tee to stick boom clamp A)</i>	
12	-BS	1	HOSE ASSEMBLY - 4104-10-100S-080S <i>(Right bulkhead tee to stick boom clamp B)</i>	



See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



T3822 120309

BAR SAW HYDRAULICS (Accumulator Cylinder)

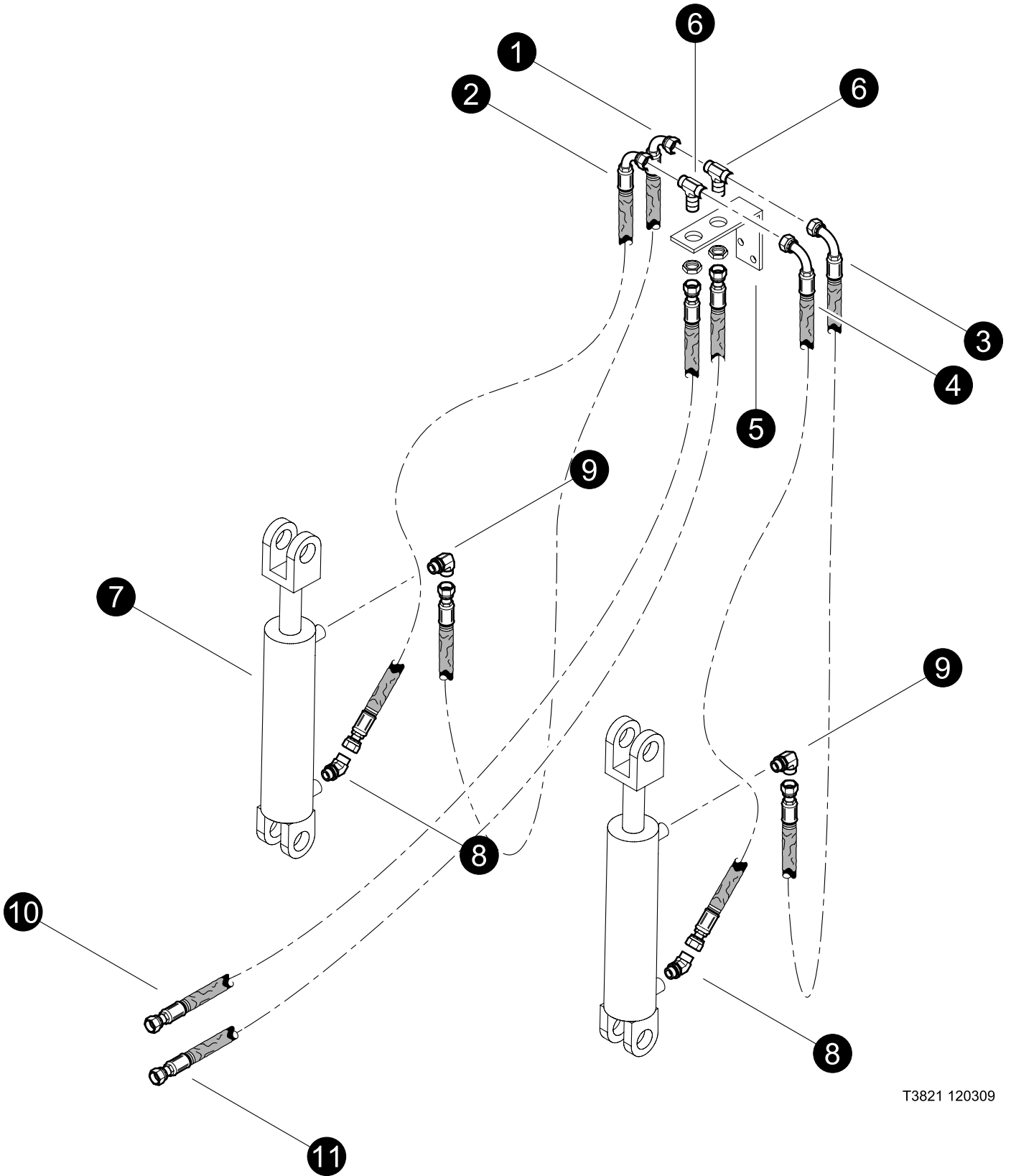
REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF	1	CYLINDER, SAW HEAD UPPER CLAMP.	BS-3
2	16360-BS	1	ELBOW, 90° - FF1868T-0808S	
3	-BS	1	HOSE ASSEMBLY - 4021-08-080S-080S (<i>Right bulkhead tee to acc cylinder rod port</i>)	
4	16360-BS	1	ELBOW, 90° - FF1868T-0808S	
5	-BS	1	HOSE ASSEMBLY - 4027-08-080S-080S (<i>Left bulkhead tee to acc cylinder base port</i>)	
6	24187-BS	2	ELBOW, 90 BULKHEAD - 855BH-TT-08	
7	-BS	1	HOSE ASSEMBLY - 4094-08-080S-080S (<i>Left bulkhead tee to stick boom clamp A</i>)	
8	-BS	1	HOSE ASSEMBLY - 4094-08-080S-080S (<i>Right bulkhead tee to stick boom clamp B</i>)	
9	54042-BS	1	BRACKET, RIGHT CLAMPS	
10	54043-BS	1	BRACKET, LEFT CLAMPS	



See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



T3821 120309

BAR SAW HYDRAULICS (Tilt Cylinder)

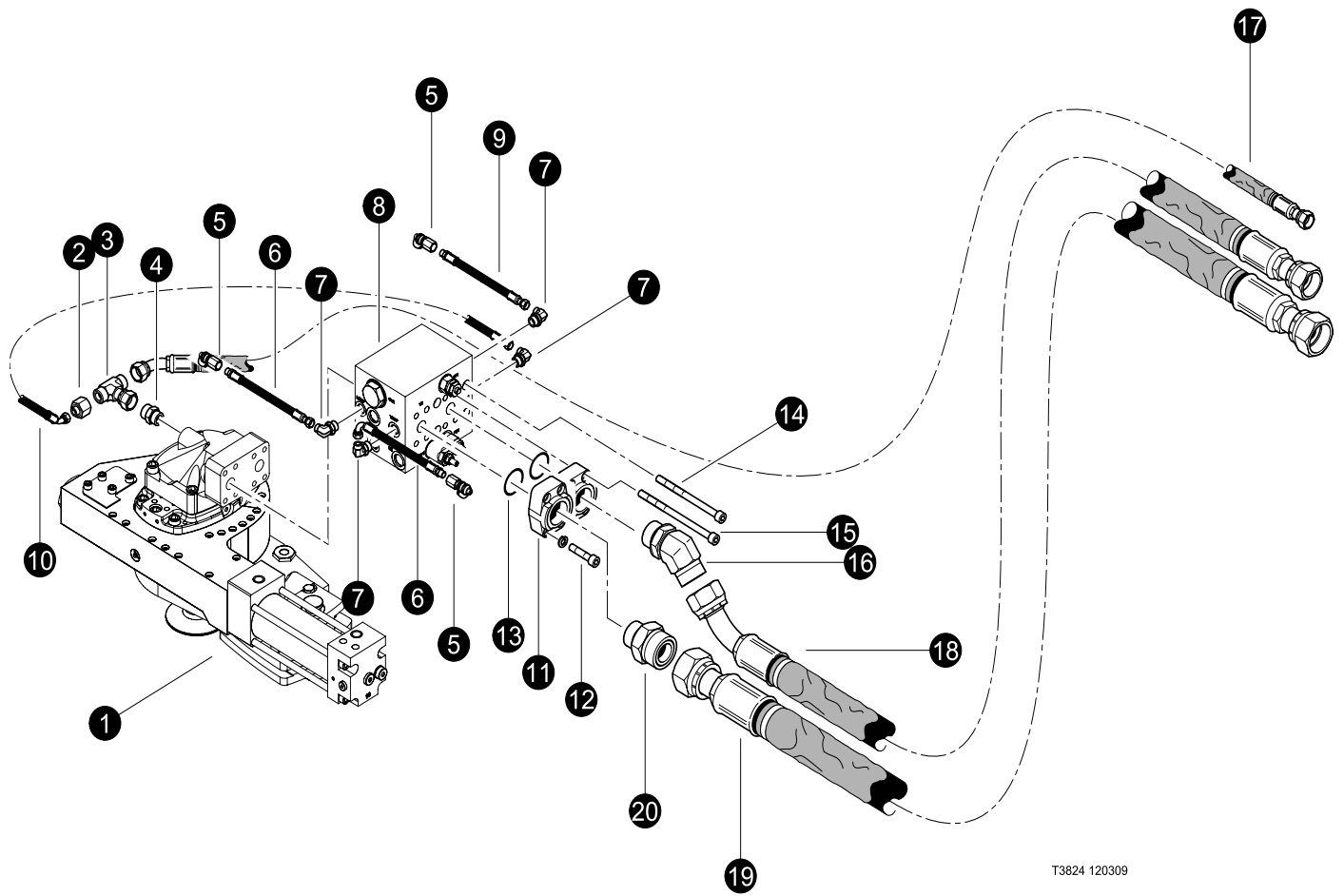
REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	-BS	1	HOSE ASSEMBLY - 4082-08-080S-0809 (<i>Left bulkhead tee to tilt cylinder rod port</i>)	
2	-BS	1	HOSE ASSEMBLY - 4064-08-080S-0809 (<i>Left bulkhead tee to tilt cylinder base port</i>)	
3	-BS	1	HOSE ASSEMBLY - 4073-08-080S-0809 (<i>Right bulkhead tee to tilt cylinder rod port</i>)	
4	-BS	1	HOSE ASSEMBLY - 4068-08-080S-0809 (<i>Right bulkhead tee to tilt cylinder base port</i>)	
5	54041-BS	1	BRACKET, bulkhead	
6	52930-BS	2	TEE, BULKHEAD BRANCH - 8	
7	REF	1	CYLINDER, SAW HEAD UPPER CLAMP.	BS-3
8				
9	24187-BS	2	ELBOW, 90 BULKHEAD - 855BH-TT-08	
10	-BS	1	HOSE ASSEMBLY - 4102-08-080S-0809 (<i>Rear bulkhead tee to stick boom Tilt B</i>)	
11	-BS	1	HOSE ASSEMBLY - 4102-08-080S-080S (<i>Front bulkhead tee to stick boom Tilt A</i>)	



See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



T3824 120309

BAR SAW HYDRAULICS (Saw Manifold)

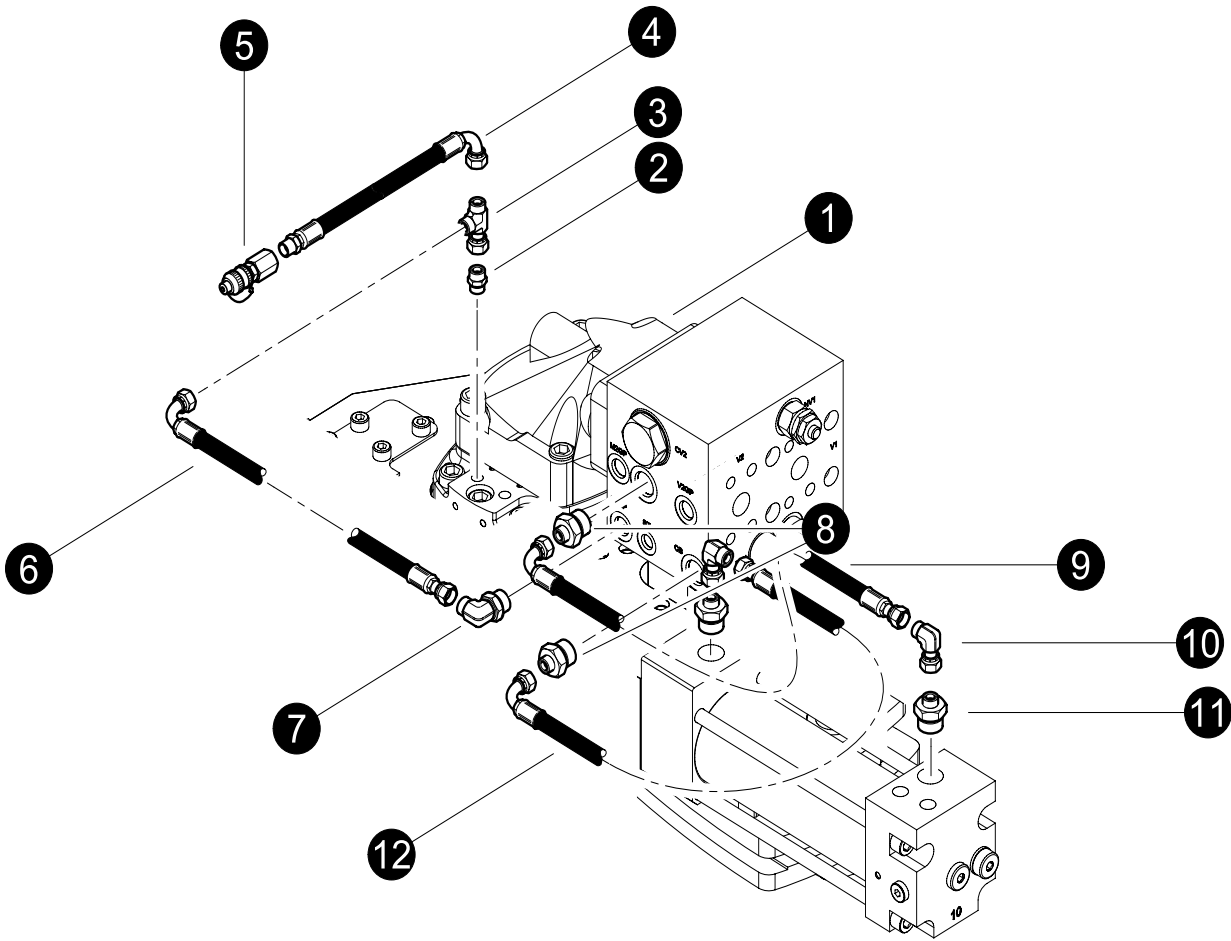
REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF	1	SAW ASSEMBLY	BS-4
2	19221-BS	1	CONNECTOR, REDUCER - ORS FF2281T-0408S	
3	51611-BS	1	TEE - 8S6L0-S - BRANCH	
4	24182-BS	1	CONNECTOR, STR - 6002-08-8BSPP	
5	15118-BS	1	TAP, GAUGE PORT - .25" NPT	
6	-BS	1	HOSE ASSEMBLY - 2009 -04-04FF-0409	
7	16540-BS	3	ELBOW, 90 - FF1868T-0404S	
8	REF	1	MANIFOLD, SAW	BS-3
9	-BS	1	HOSE ASSEMBLY - 2009 -04-04FF-0409	
10	-BS	1	HOSE ASSEMBLY - 2028 -04-040S-0404 (<i>Saw Manifold Drain to Case Tee</i>)	
11	19808-BS	2	☐ CONNECTOR, FLANGE PAD -FP62-12-12ORB-MK	
12	-BS	8	BOLT, Allen - M10 1.5 x	
13	16918-BS	2	O-RING - .75" SF (CODE 62)	
14	-BS	4	BOLT, Allen - M10 1.5 x 120mm	
15	-BS	4	BOLT, Allen - M10 1.5 x 150mm	
16	19127-BS	1	ELBOW, 45 - FF2068T-1212S	
17	-BS	1	HOSE ASSEMBLY - 4148-08-080S-0804 (<i>Saw Motor "Case Drain" to Boom</i>)	
18	-BS	1	HOSE ASSEMBLY - 4136-12-120S-1204 (<i>Saw Motor "Pressure" to Boom</i>)	
19	-BS	1	HOSE ASSEMBLY - 4138-16-160S-160S (<i>Saw Motor "Tank" to Boom</i>)	
20	18406-BS	1	CONNECTOR, STR - FF1852T-1612S	



See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



T3825 120309

BAR SAW HYDRAULICS (Saw Cylinder)

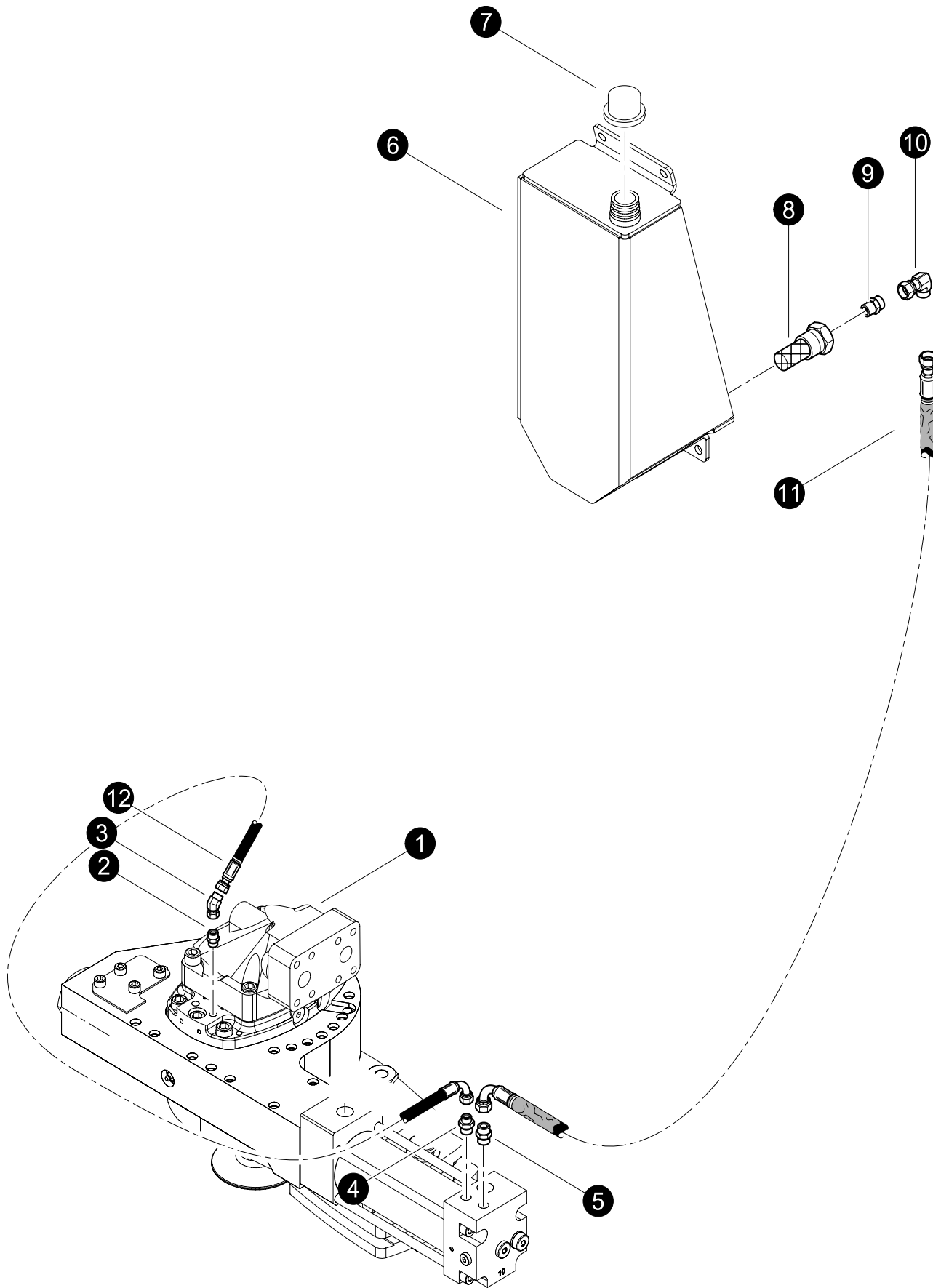
REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF	1	SAW ASSEMBLY	BS-4
2	52074-BS	1	CONNECTOR, STR - 4F42EDML0S	
3	15176-BS	1	TEE - FF2114T-0404S	
4	-BS	1	HOSE ASSEMBLY - 2009 -04-04FF-0409	
5	15118-BS	1	TAP, GAUGE PORT - .25" NPT	
6	-BS	1	HOSE ASSEMBLY - 2024 -04-04OS-0409 (ST port to Saw Tensioner)	
7	16540-BS	1	ELBOW, 90 - FF1868T-0404S	
8	22901-BS	2	CONNECTOR, STR - 6-8 F5OLO-S	
9	-BS	1	HOSE ASSEMBLY - 2010.5 -06-06OS-0609 (CR port to Saw In)	
10	20035-BS	2	ELBOW, 90 SWIVEL - 6 C6LO-S	
11	-BS	2	CONNECTOR, STR - 6-8F42EDMLOS	
12	-BS	1	HOSE ASSEMBLY - 2029.5 -06-06OS-0609 (CB port to Saw Feed Out)	



See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



T3826 120309

BAR SAW HYDRAULICS (Saw Oiler)

REF	PART #	QTY	DESCRIPTION	SEE SECTION
1	REF	1	SAW ASSEMBLY	BS-4
2	52074-BS	1	CONNECTOR, STR - 4F42EDML0S	
3	-BS	1	ELBOW, 45 SWIVEL - 04 ORS	
4	-BS	1	CONNECTOR, STR - 4-4F42EDMLOS	
5	-BS	1	CONNECTOR, STR - 6F42EDMLOS	
6	53954-BS	1	TANK, BAR SAW OIL	
7	53988-BS	1	VENT, PIPE CAP 1.25" NPT (must drill hole 1/8" hole in cap)	
8	54004-BS	1	SCREEN, FILTER - T-PRO BAR SAW 100MESH	
9	22902-BS	1	CONNECTOR, STR - 848-TT-08X06	
10	20035-BS	2	ELBOW, 90 SWIVEL - 6 C6LO-S	
11	-BS	1	HOSE ASSEMBLY - 2058 -06-06OS-0609 (Oiler Tank to Oiler Inlet)	
12	-BS	1	HOSE ASSEMBLY - 2017 -04-04OS-0409 (Oiler pump to saw oiler)	



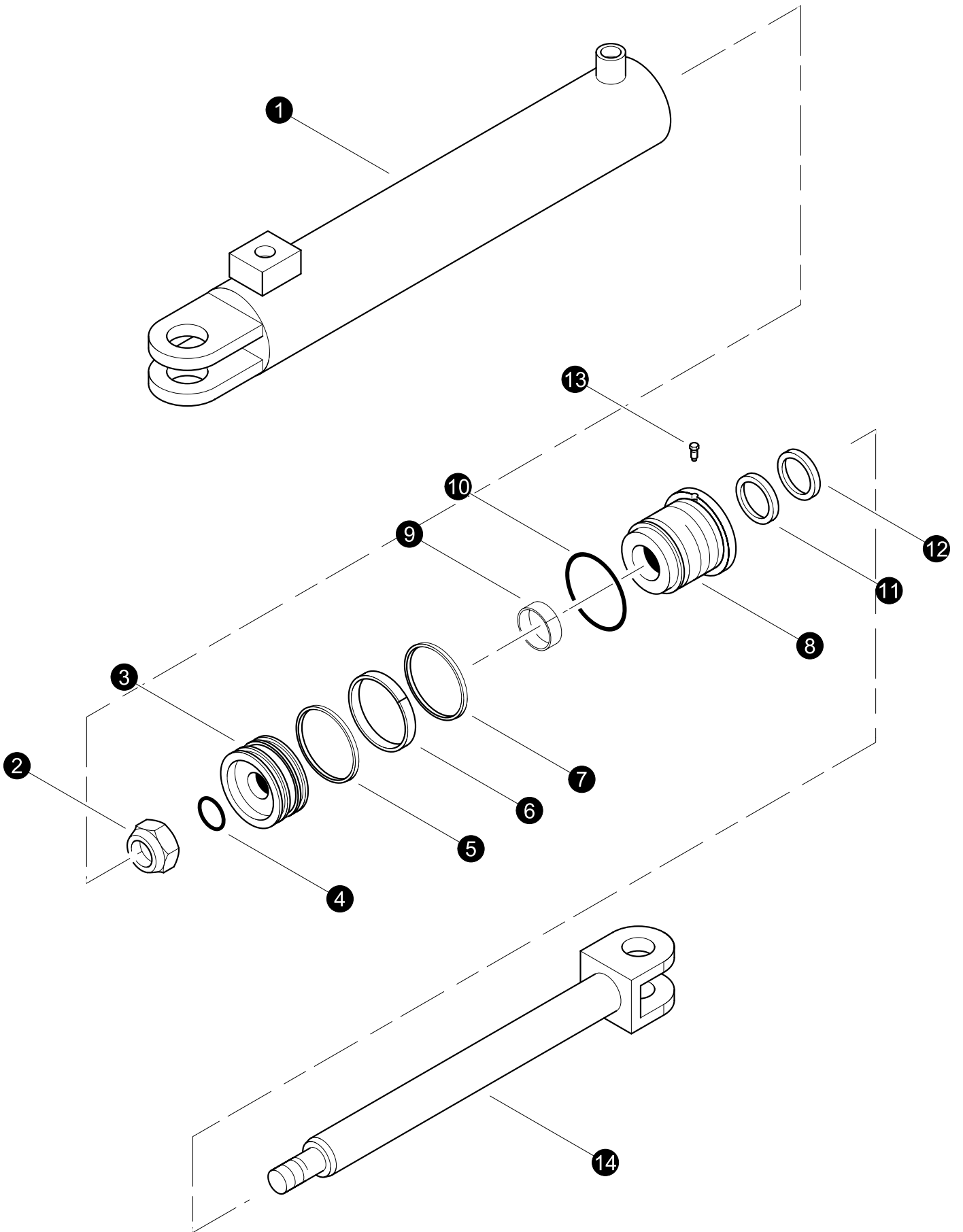
See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.

Section BS-3

32" Bar Saw - Hydraulic Components



T3818 100909

BAR SAW (Upper Clamp Arm Cylinder)

REF	PART #	QTY		DESCRIPTION	SEE SECTION
-	53809-BS	1	☐	CYLINDER, SAW HEAD CLAMP	
1	-BS	1		BARREL ASSEMBLY (203580B)	
2	-BS	1		NUT, SELF LOCKING (712046A)	
3	54159-BS	1	☐	PISTION ASSEMBLY (401087B)	
4	-BS	1	✂	O-RING	
5	-BS	1	✂	SEAL	
6	-BS	1	✂	RING, piston wear	
7	-BS	1	✂	SEAL	
8	54160-BS	1	☐	ROD BEARING ASSEMBLY (500285B)	
9	-BS	1	✂	RING, rod bearing wear	
10	-BS	1	✂	O-RING	
11	-BS	1	✂	SEAL	
12	-BS	1	✂	DUST SEAL	
13	-BS	1		SCREW - LOCKING (711127A)	
14	54158-BS	1		ROD ASSEMBLY (302236B)	



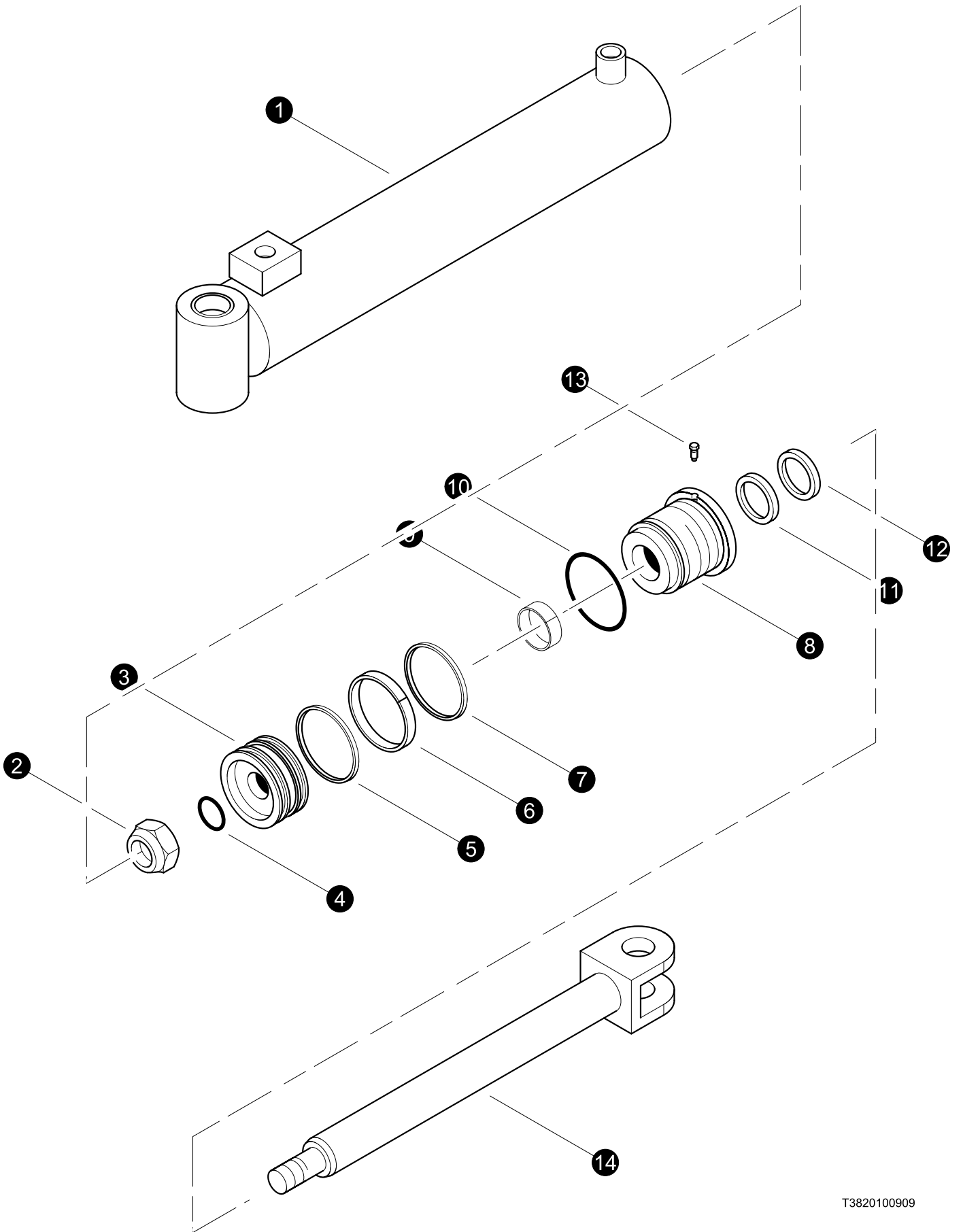
See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



Included seal kit # 54161.



T3820100909

BAR SAW (Lower Clamp Cylinder)

REF	PART #	QTY		DESCRIPTION	SEE SECTION
-	54031-BS	1	□	CYLINDER, SAW LOWER CLAMP	
1	-BS	1		BARREL ASSEMBLY ()	
2	-BS	1		NUT, SELF LOCKING (712046A)	
3	54159-BS	1	□	PISTON ASSEMBLY (401087B)	
4	-BS	1	✕	O-RING	
5	-BS	1	✕	SEAL	
6	-BS	1	✕	RING, piston wear	
7	-BS	1	✕	SEAL	
8	54160-BS	1	□	ROD BEARING ASSEMBLY (500285B)	
9	-BS	1	✕	RING, rod bearing wear	
10	-BS	1	✕	O-RING	
11	-BS	1	✕	SEAL	
12	-BS	1	✕	DUST SEAL	
13	-BS	1		SCREW - LOCKING (711127A)	
14	54158-BS	1		ROD ASSEMBLY (302236B)	



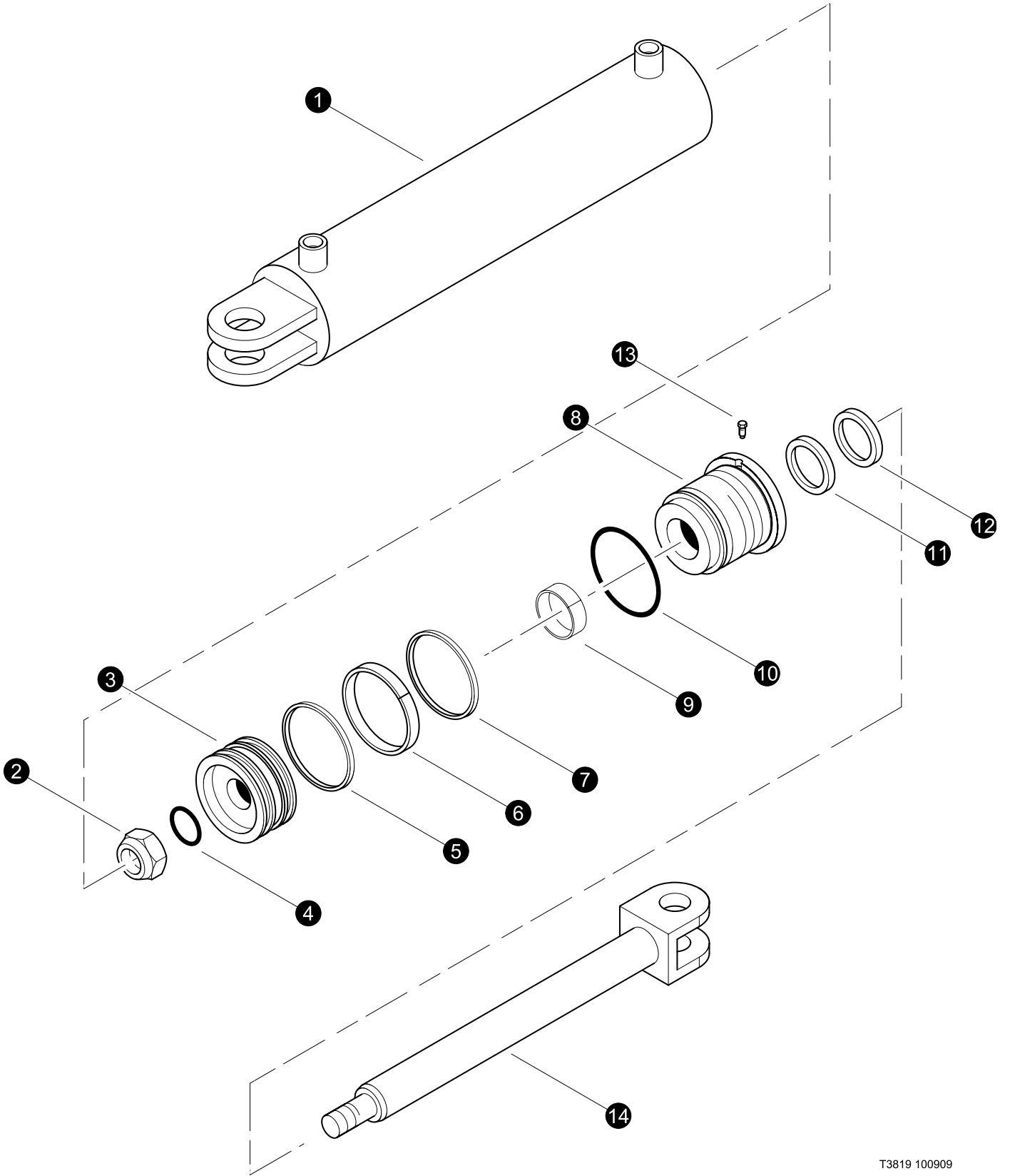
See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



Included seal kit # 54161.



T3819 100909

BAR SAW (Tilt Cylinder)

REF	PART #	QTY		DESCRIPTION	SEE SECTION
-	52814-BS	1	□	CYLINDER, SAW HEAD TILT	
1	-BS	1		BARREL ASSEMBLY (203512B)	
2	52659-BS	1		NUT, SELF LOCKING (712025A)	
3	54155-BS	1	□	PISTON ASSEMBLY (400844B)	
4	-BS	1	✘	O-RING	
5	-BS	1	✘	SEAL	
6	-BS	1	✘	RING, piston wear	
7	-BS	1	✘	SEAL	
8	54156-BS	1	□	ROD BEARING ASSEMBLY (501024B)	
9	-BS	1	✘	RING, rod bearing wear	
10	-BS	1	✘	O-RING	
11	-BS	1	✘	SEAL	
12	-BS	1	✘	DUST SEAL	
13	-BS	1		SCREW - LOCKING (711127A)	
14	54154-BS	1		ROD ASSEMBLY (302180B)	



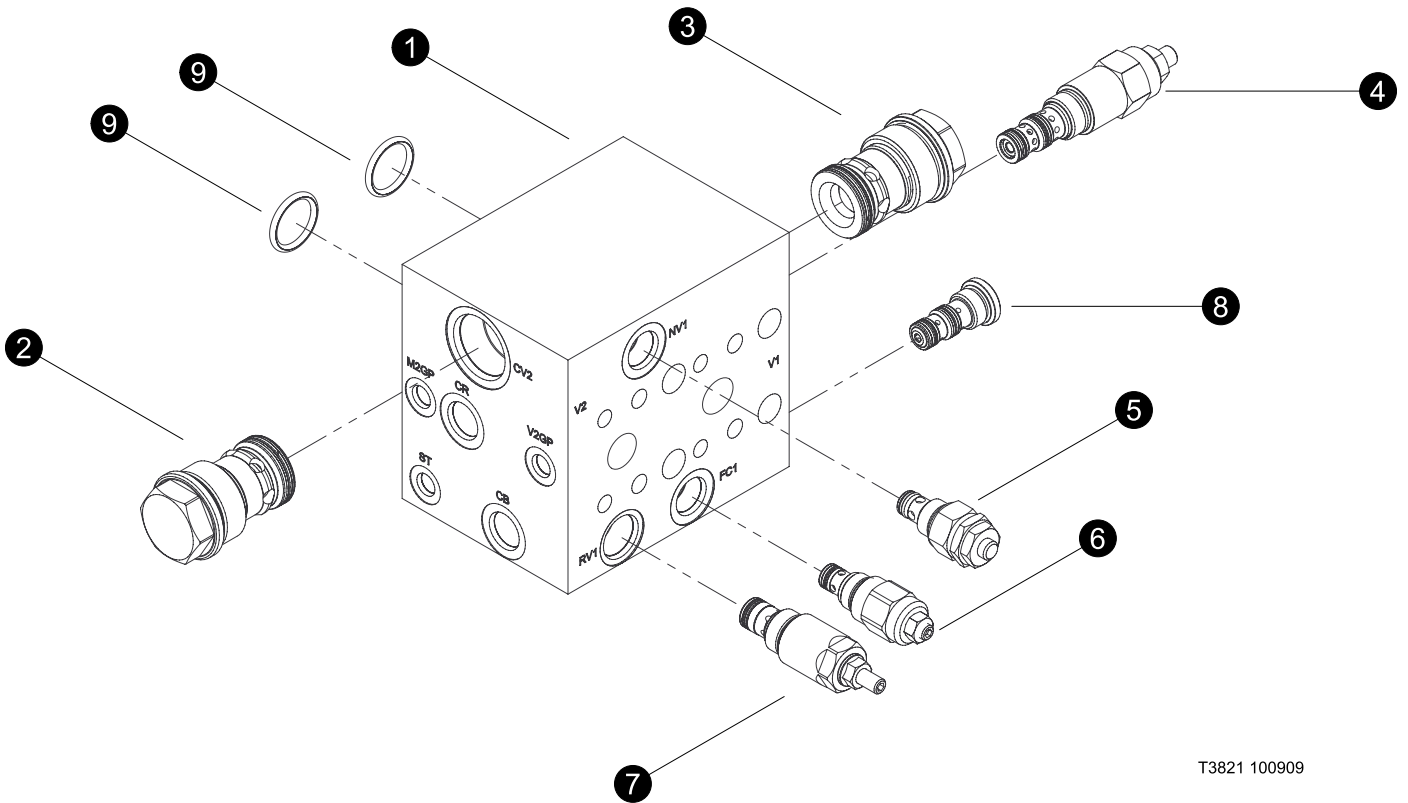
See referenced page for component or assembly breakdown.



Kit or Assembly - includes all items indented underneath.



Included seal kit # 54157.



T3821 100909

BAR SAW (Saw Manifold)

REF	PART #	QTY		DESCRIPTION	SEE SECTION
1	53935-BS	1	<input type="checkbox"/>	MANIFOLD, BAR SAW CONTROL	
2	-BS	1		VALVE, CHECK - CV2 (04.31.25.00.58-00) SEAL KIT = RG16A2010520100	
3	-BS	1		VALVE, CHECK - CV1 (04.31.25.00.58-00) SEAL KIT = RG16A2010520100	
4	-BS	1		VALVE, PRESSURE REDUCING - PR1 (04.95.04.03.85.04) SEAL KIT = RG10A3010520100	
5	-BS	1		VALVE, NEEDLE CARTRIDGE - NV1 (OD.21.01-03-56) SEAL KIT = RG08A2010530100	
6	-BS	1		VALVE, FLOW CONTROL - FC1 (04.01.02-03-56.00) SEAL KIT = RG08A2010520100	
7	-BS	1		VALVE, RELIEF - RV1 (04.11.55-03-85-05) SEAL KIT = RG10A2010520100	
8	-BS	1		VALVE, SHUTTLE - LS1 (04.94.05.00.56.00) SEAL KIT = RG08A3010520100	
9	-BS	2		O-RING, (-214)	



See referenced page for component or assembly breakdown.

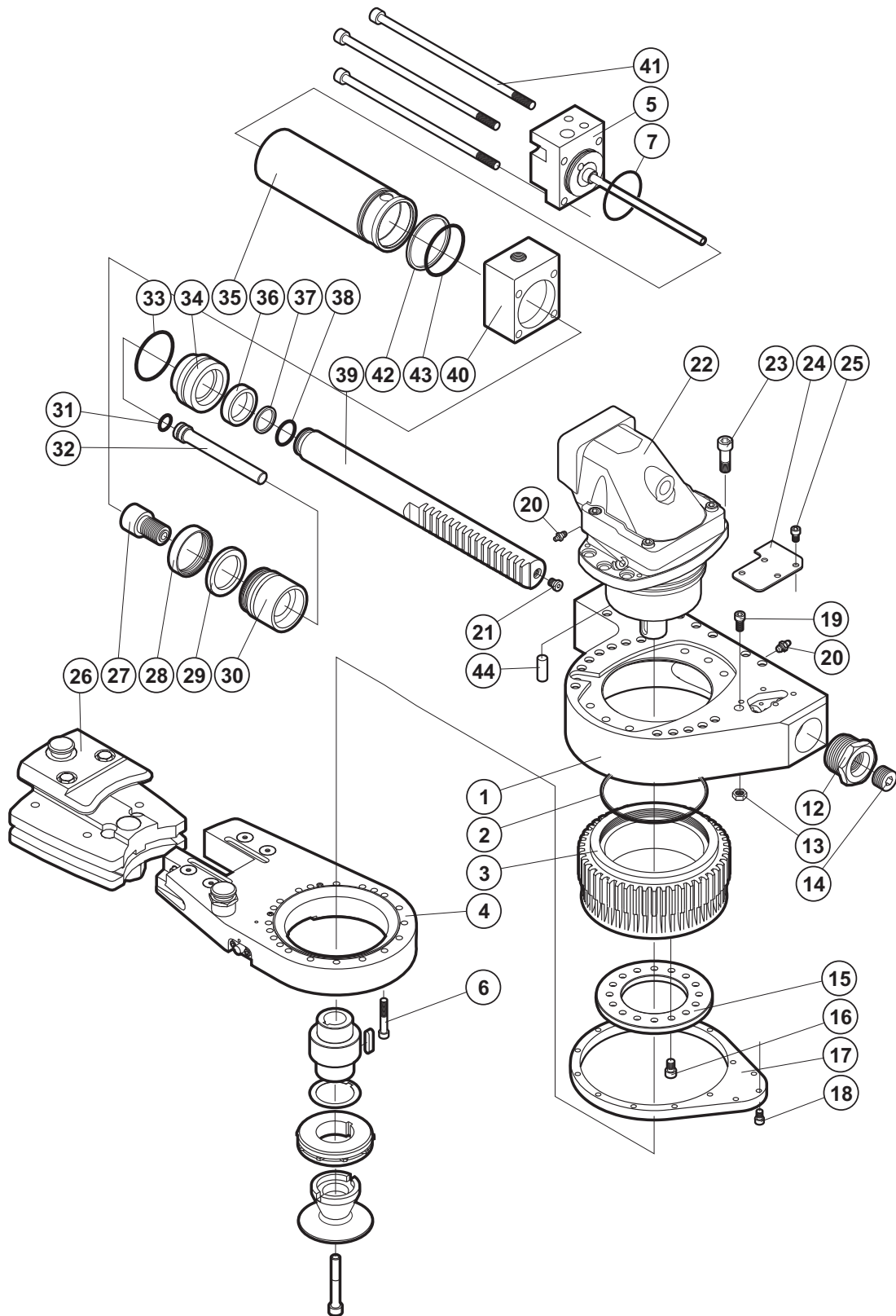


Kit or Assembly - includes all items indented underneath.

Section BS-4

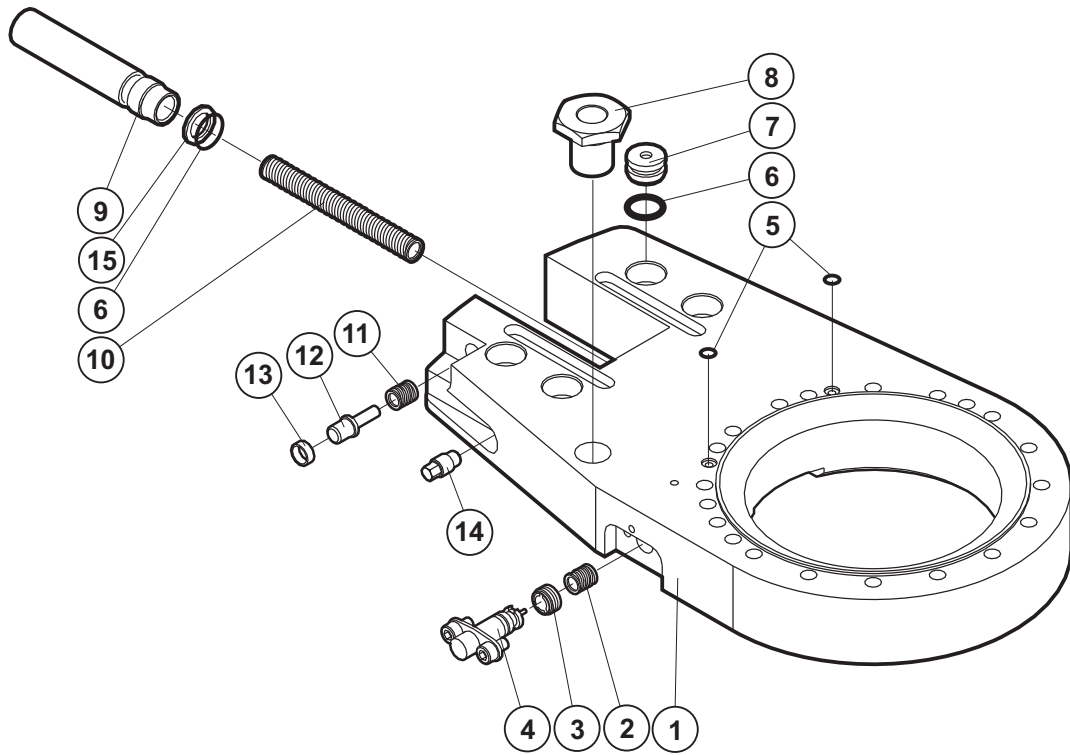
32" Bar Saw - Saw Assembly Breakdown

Saw Unit Assy.



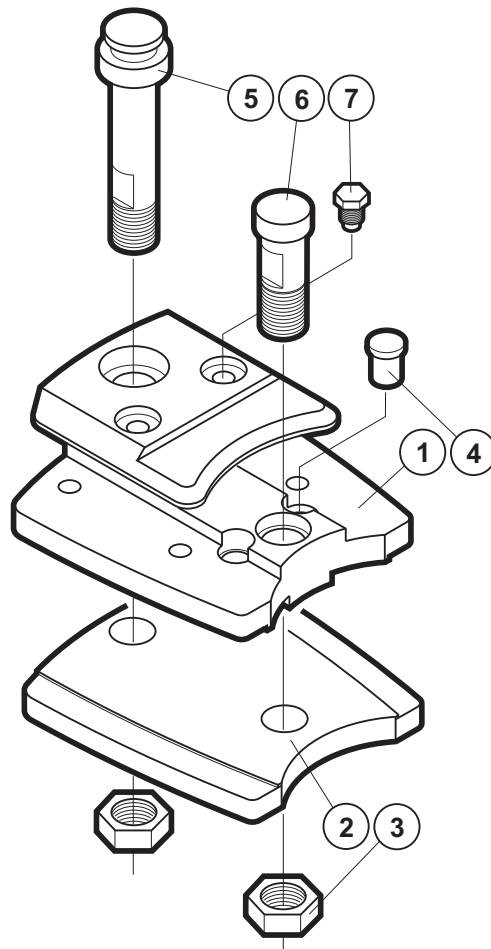
Item #	Qty	Part No.	Description	Notes
1	1	0696 104	Saw Housing	
2	3	0120 057	Swivel Seal Ring	1)
3	1	0126 054	Bearing	
4	1	0696 055	Tension Device	
5	1	-	Lubrication Oil Pump	refer to lubrication system for P/N
6a	18	0104 397	Socket hd. Cap Screw	M8 x 40 (12.9)
6b	2	0104 334	Socket hd. Cap Screw	M8 x 35 - DIN 7984 (8.8)
7	1	-	O-ring	refer to lubrication system for P/N ¹⁾
12	1	0696 096	Stop Plug	
13	1	0106 098	Lock Nut	M6
14	1	0130 154	Plug	VSTI 3/4"
15	1	0696 007	Washer	
16	16	0104 438	Socket hd. Cap Screw	M8 x 14 (12.9)
17	1	0696 196	Washer	
18	14	0104 759	Socket hd. Cap Screw	M6 x 16 (12.9)
19	1	0104 179	Socket hd. Cap Screw	M6 x 12 - DIN 7984 (8.8)
20	2	0114 023	Grease Fitting	M10 x 1
21	1	0130 284	Plug	BSPT 1/8"
22	1	0696 060	Saw Motor	F12-40
23	6	0104 472	Socket hd. Cap Screw	M12 x 25 (12.9)
24	1	0696 062	Cover	
25	4	0104 436	Socket hd. Cap Screw	M8 x 10 (12.9)
26	1	0696 003	Bar Holder Assy.	
27	1	-	Gland Screw	refer to lubrication system for P/N
28	1	0118 508	Bearing Ring	1)
29	1	0120 058	Piston Seal	1)
30	1	0696 169	Piston	
31	1	-	O-ring	refer to lubrication system for P/N ¹⁾
32	1	-	Bushing	refer to lubrication system for P/N
33	1	0118 099	O-ring	59,5 x 3,0 ¹⁾
34	1	0696 103	Gland	
35	1	0696 100	Barrel	
36	1	0120 049	Gland Seal	40/50 x 11 ¹⁾
37	1	0118 540	Backup Ring	30/35 x 1.3 ¹⁾
38	1	0118 003	O-ring	29.2 x 3.0 ¹⁾
39	1	0696 009	Piston Rod	
40	1	0696 098	Connection Flange	
41	4	0104 353	Socket hd. Cap Screw	M10 x 280 (12.9)
42	1	0118 515	Backup Ring	65/70 x 1.3 ¹⁾
43	1	0118 117	O-ring	65,0 x 3,0
44	2	0108 027	Dowel Pin	CPK 8x20
1)	1	0121 074	Seal Kit	

Tension Device Assy.



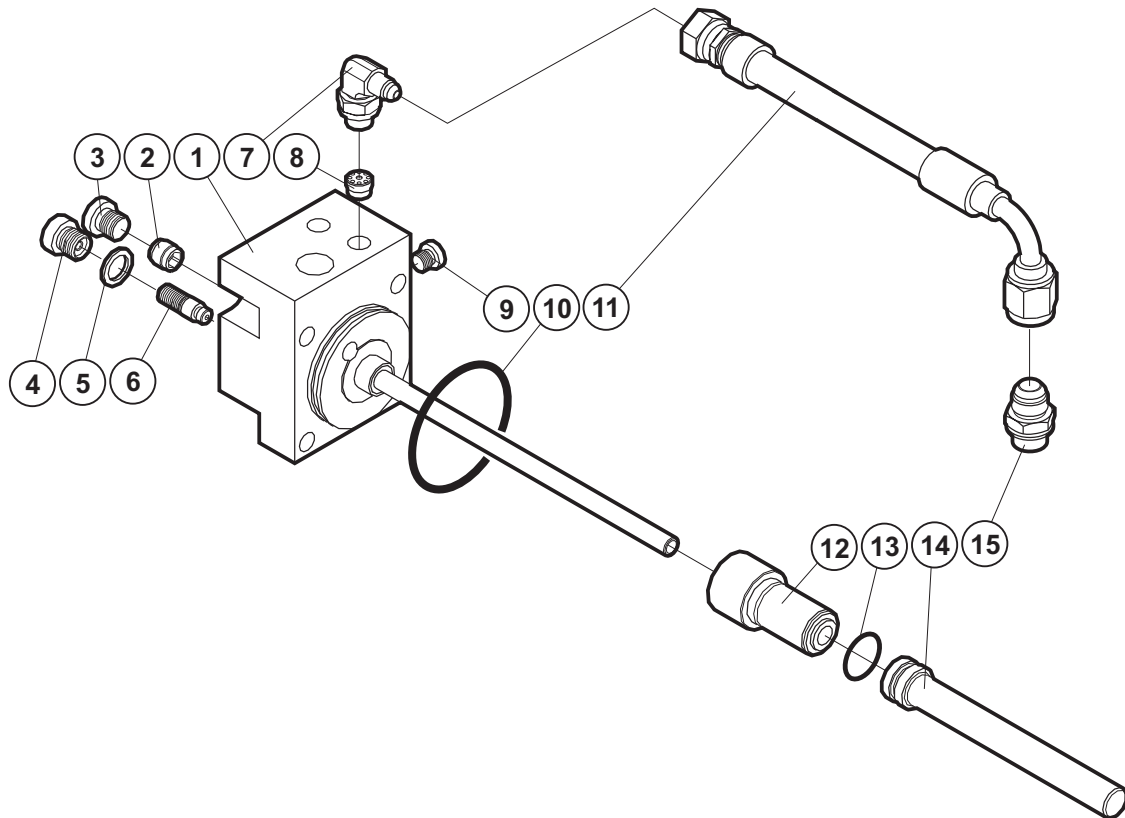
Item #	Qty	Part No.	Description	Notes
1	1	0696 055	Tension Device Assy.	incl. item #2 - 15
2	1	0114 553	Compression Spring	
3	1	0136 026	Check Valve	RE 0
4	1	0690 185	Pilot Valve	
5	2	0118 070	O-ring	4.76 x 1.78 ¹⁾
6	5	0118 072	O-ring	15.3 x 2.4 ¹⁾
7	4	0696 022	Piston	
8	1	0696 114	Sleeve	
9	1	0696 053	Piston	
10	1	0114 555	Compression Spring	
11	1	0114 529	Compression Spring	
12	1	0704 028	Locking Pin	
13	1	0685 028	Sleeve	
14	1	0690 003	Bleeder Screw	
15	1	0118 511	Backup Ring	16/20 x 1.3 ¹⁾
				¹⁾ Kit, see Saw Unit Assy.

Bar Holder Assy.



Item #	Qty	Part No.	Description	Notes
-	-	0696 003	Bar Holder Assy.	incl item #1 - 7
1	1	0696 047	Holder	
2	1	0696 051	Plate	
3	2	0106 146	Locking Nut	M24 - DIN 980
4	2	0696 054	Guide Pin	
5	1	0696 078	Bolt	
6	1	0696 046	Bolt	
7	2	0688 003	Guide Screw	

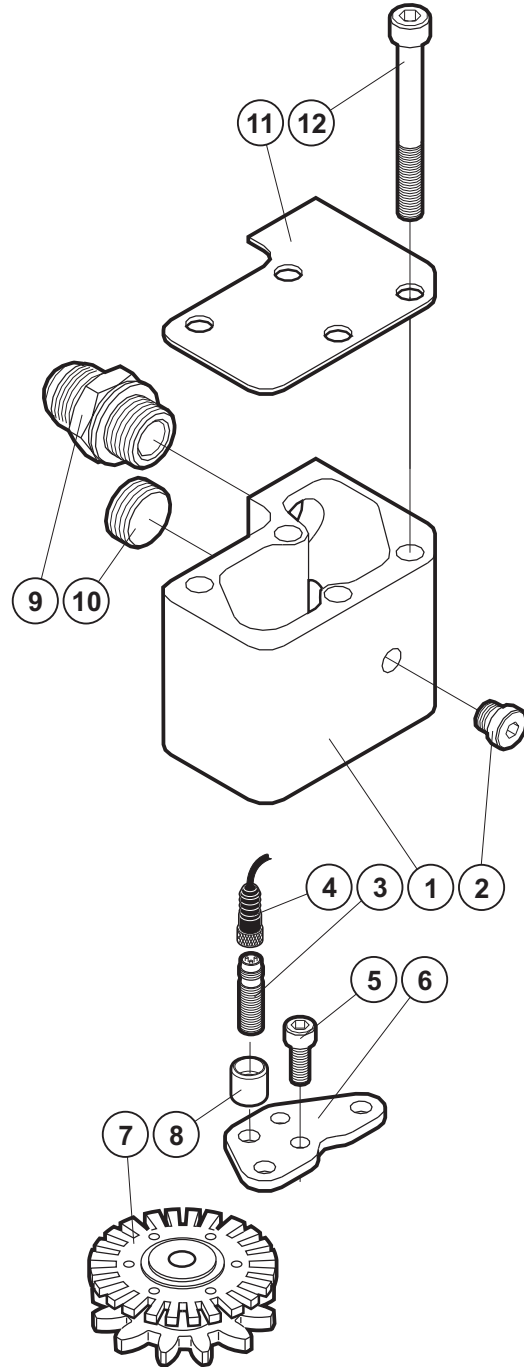
Lubrication System



Item #	Qty	Part No.	Description	Notes
1a	1	0696 099	Lubrication Oil Pump 10ml	incl. item # 1-6, 8-10
1b	1	0696 028	Lubrication Oil Pump 25ml	incl. item # 1-6, 8-10
2	1	0136 036	Check Valve	RC1
3	1	0130 178	Plug	VSTI 1/4"
4	1	0704 130	Plug	
5	1	0106 576	Bonded Seal	M14
6	1	0136 027	Pressure Relief Valve	
7	1	0130 105	Elbow Nipple	MBSP #4 - MJIC #4
8	1	0136 798	Check Valve	RK1
9	1	0130 112	Plug	VSTI 1/8"
10	1	0118 129	O-ring	57.0 x 3.0 ¹⁾
11	1	0696 012	Hose Assy.	#04 FJIC str. - #04 FJIC 90° cut length =17" (430 mm)
12a	1	0696 066	Gland Screw 10ml	
12b	1	0696 031	Gland Screw 25ml	
13	1	0118 133	O-ring	17.5 x 3.0 ¹⁾ only required for 10ml pump
14	1	0696 186	Bushing 10ml	only required for 10ml pump
15	1	0130 339	Nipple	MBSP #02 - MJIC #04

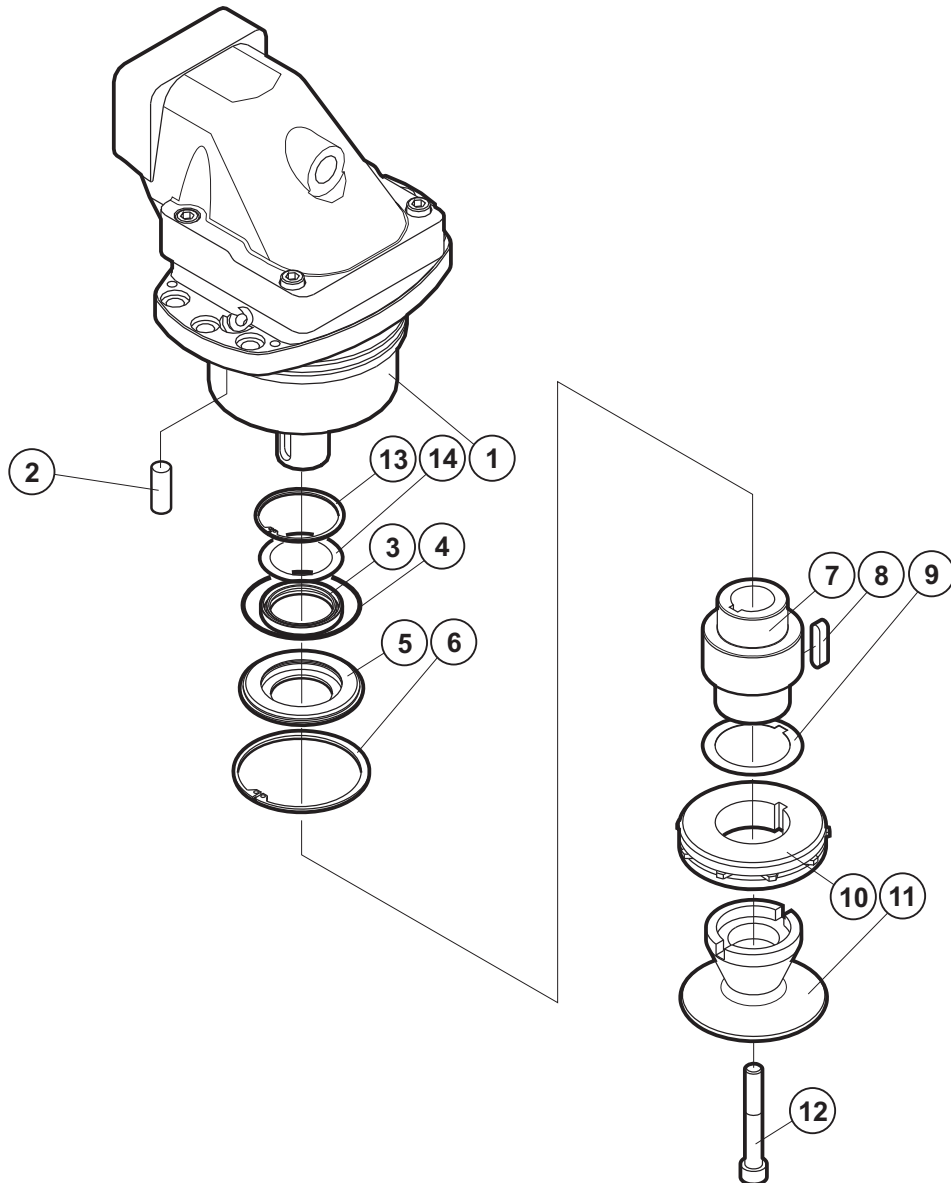
1) Seal Kit, refer to Saw Unit Assy.

Cut Control



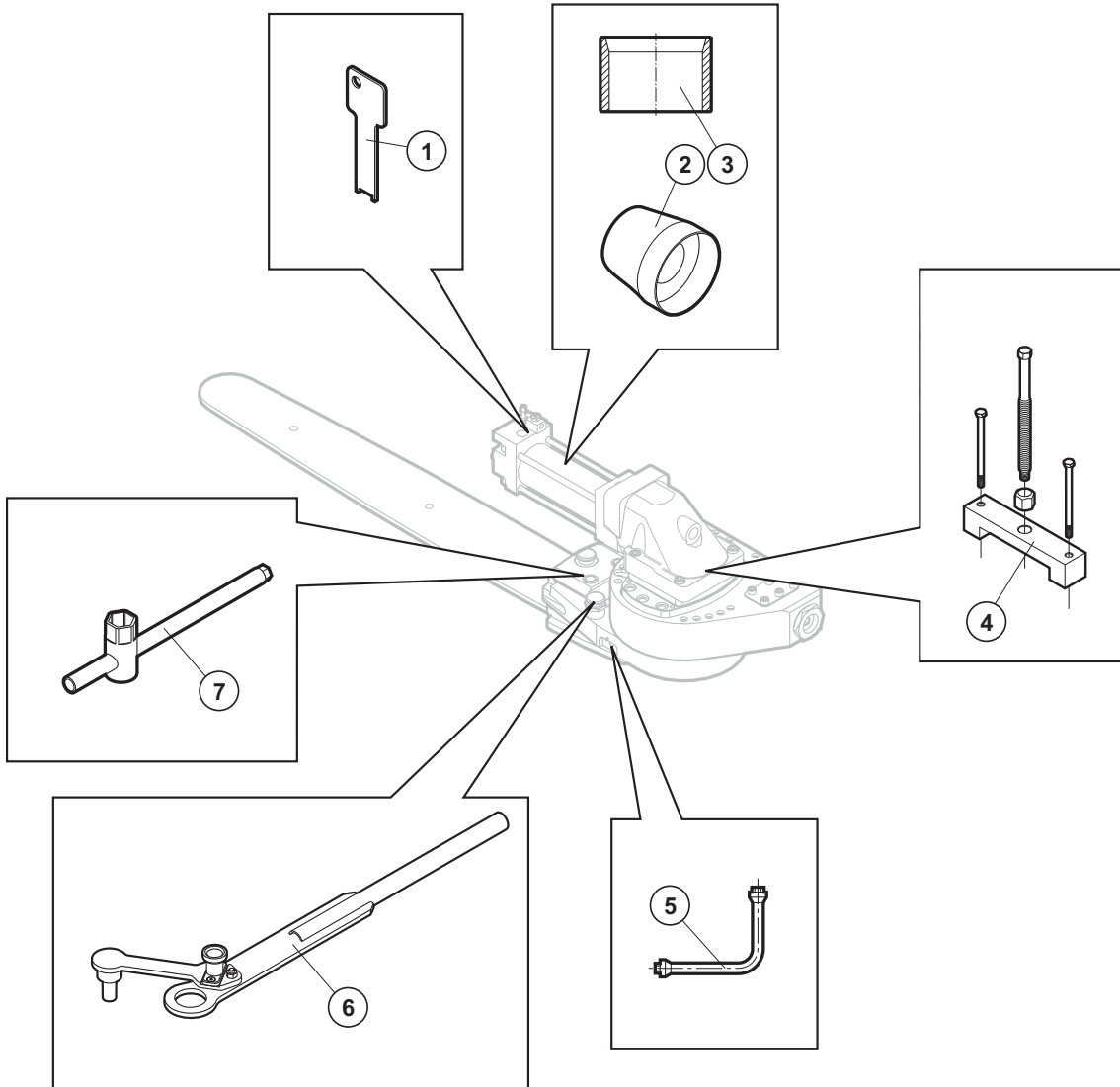
Item #	Qty	Part No.	Description	Notes
1	1	0696 063	Housing	
2	1	0130 112	Plug	VSTI 1/8"
3a	3	0156 021	Sensor	NPN
3b	3	0156 032	Sensor	PNP
4	3	0156 023	Electric Wire Connector	
5	2	0104 424	Socket Hd. Cap Screw	M6 x 14 (12.9)
6	1	0696 106	Plate	
7a	1	0690 176	Sensor Wheel	12 tooth count
7b	1	0690 116	Sensor Wheel	24 tooth count
8	3	0696 115	Nut	
9	1	0130 107	Nipple	MBSP #08 - MJIC #10
10	1	0130 295	Plug	BSPT #08
11	1	0696 062	Cover	
12	4	0104 450	Socket Hd. Cap Screw	M8 x 70 (12.9)

Saw Motor Assy. - F12-40



Item #	Qty	Part No.	Description	Notes
1	1	0696 060	Saw Motor	F12-40
2	2	0108 027	Dowel Pin	8 x 50
3	1	0120 516	Seal Ring	ATDSL 45 x 65 x 6
4	1	0118 110	O-ring	74,5 x 3,0
5	1	0136 525	Seal Carrier	
6	1	0112 026	Retaining Ring	SGH 100
7	1	0696 193	Spacer	
8	1	0108 505	Flat Key	8x7x35
9	1	0662 783	Shim	0.5mm
10a	1	0109 028	Rim Sprocket	8 tooth count
10b	1	0109 029	Rim Sprocket	9 tooth count
11	1	0696 192	Chain Catcher	
12	1	0104 483	Socket hd. Cap Screw	M12 x 80, 12.9
13	1	0112 007	Retaining Ring	SGH 065
14	1	0136 540	Spacer	

Special Tools - SuperCut 300



Item #	Qty	Part No.	Description	Notes
1	1	0696 011	Check Valve Key	
2	1	0696 168	Assembly Tool	
3	1	0696 163	Compression Tool	
4	1	0696 167	Saw Motor Puller	
5	1	0690 149	Installation Tool	
6	1	0696 116	Retraction Tool	
7	1	0704 040	Combi Wrench	

