

BAUMALIGHT™

Motor Shaft Seal Replacement Direct Drive Motors

REPAIR MANUAL

Issue Date: June 2022

Introduction

This instruction describes the correct procedure to replace a failed hydraulic motor seal.

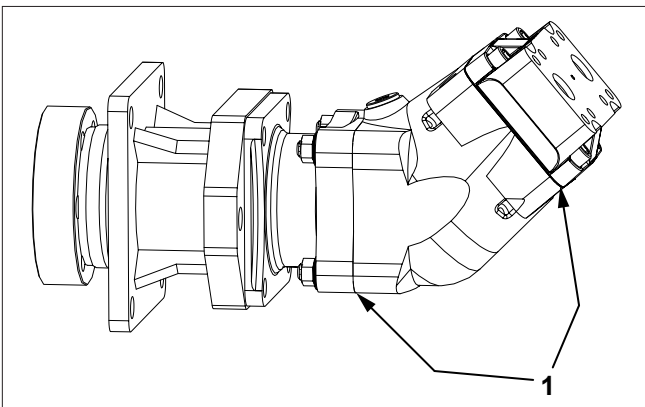
Do not separate motor housing at location (1).

NOTICE

Prevent equipment damage.

Do not separate motor housing at locations (1). Reassembly is nearly impossible without extensive training and special tools.

Separating motor housing at locations (1) will void the warranty.



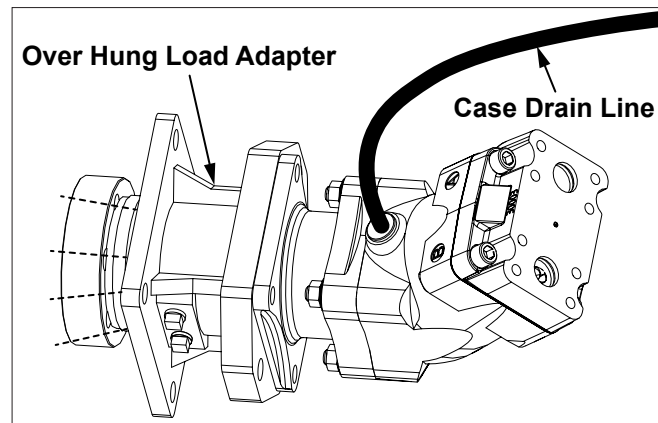
Identify Repairs Needed

Before starting any repairs, you must identify how your machine is equipped to determine what repairs are needed.

Machines Without Vented Adapter Or Zero Leak Relief Valve

If case drain line is not properly connected, is blocked or restricted, motor shaft seal and over hung load adapter seal will fail (this is an intentional safety feature to keep the motor from breaking open). If this happens, oil will typically leak out around over hung load adapter shaft.

Go to Remove Motor And Over Hung Load Adapter on page 5 to begin repair procedure.

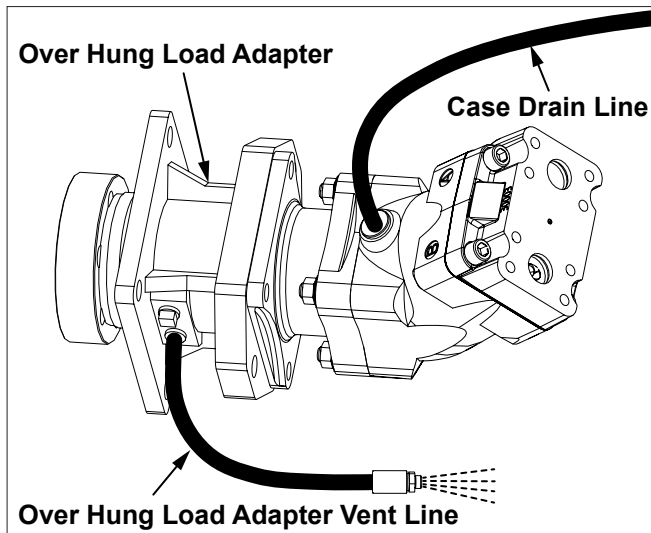


Contact your dealer for information about installing an over hung load adapter vent or zero leak relief valve to help prevent seal failure.

Machines With Vented Over Hung Load Adapter

If case drain line is not properly connected, is blocked or restricted, motor shaft seal will fail. If this happens, oil will leak out through over hung load adapter vent line.

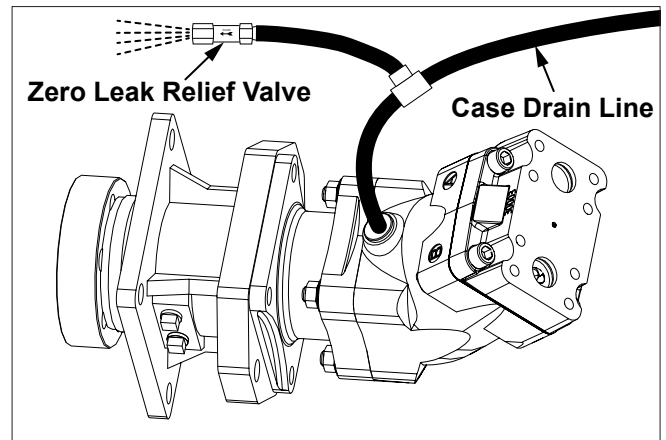
Go to Remove Motor on page 7 to begin repair procedure. Note that over hung load adapter does not need to be removed to replace the motor shaft seal.



Machines With Zero Leak Relief Valve

If case drain line is not properly connected, is blocked or restricted, oil will leak out through the zero leak relief valve to prevent motor shaft seal failure.

The zero link relief valve will self reset after the over pressure in the case drain line is rectified. If the problem persists, replace case drain line if damage, obstructed or pinched.



Prevent Seal Failure

To prevent hydraulic motor damage, the motor shaft seal is designed to fail if case pressure exceeds 100 psi (689 kPa).

If motor shaft seal has failed, case drain line is blocked. Verify case drain line is free flow to sump or reservoir. Also check case drain line for blockage. Correct any problems before replacing shaft seal.

NOTICE

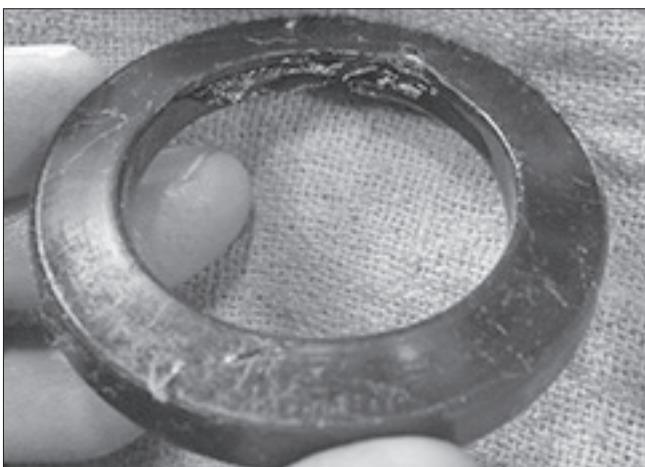
Prevent equipment damage.

Over-pressurizing motor case may result in seal failure and is not covered by warranty.

Seal can fail immediately if hydraulic flow is applied to motor without a properly connected case drain line.



Over-Pressurized Damaged Washer



Over-Pressurized Failed Seal

Remove Motor And Over Hung Load Adapter

1. If equipment is attached to power unit, lower equipment to ground, set parking brake, stop engine and remove key.

⚠ WARNING

Moving parts can crush and cut.

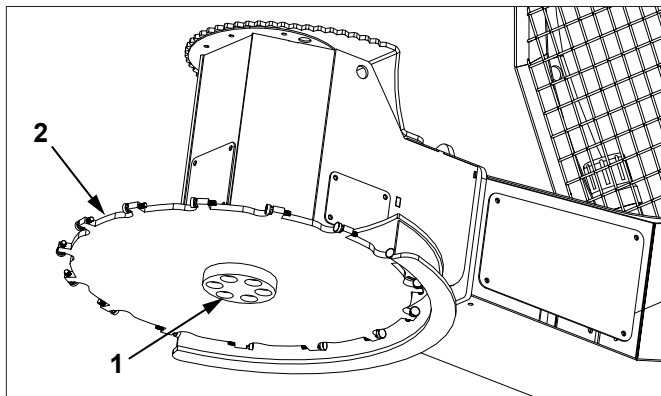
Keep clear of moving components.

Follow lockout procedure before servicing.

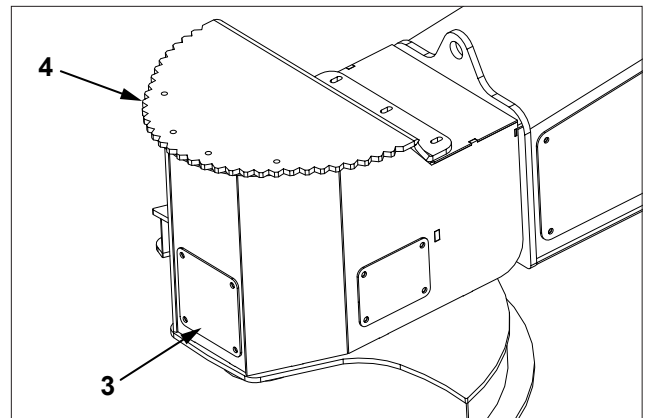
2. Relieve hydraulic pressure. See power unit manual for procedure.
3. Some units may need to be raised slightly to access cutting wheel or rotor. Safely support unit while keeping unit as close to ground as possible.

Note: The DSA530 Tree Saw is illustrated in this procedure. The removal procedure for your machine may be slightly different.

4. Remove mounting hardware (1) and cutting wheel (2).



5. Remove cover (3) and push bar (4).



NOTICE

Prevent equipment damage.

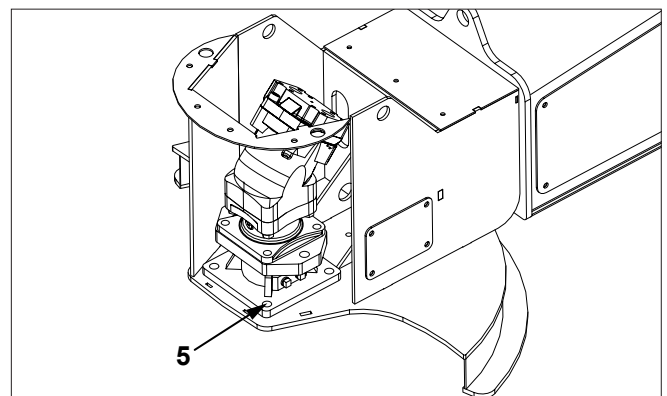
Identify hydraulic hoses for proper re-assembly.

Seal will fail immediately if hydraulic hoses are improperly connected.

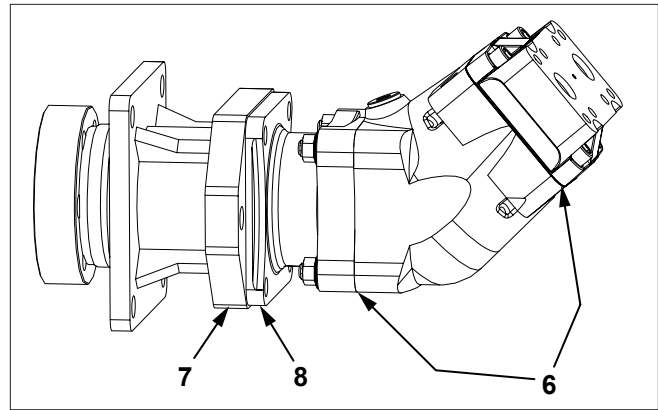
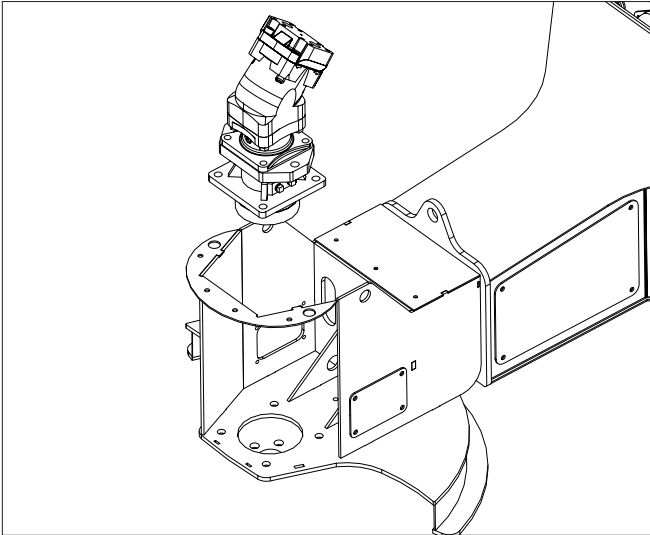
6. Identify hydraulic hoses for reassembly. Disconnect hydraulic hoses from motor.

Note: Front and side panel are removed for clarity.

7. Mark over hung load adapter and mounting plate for proper orientation during reassembly.
8. Remove four mounting bolts (5) connecting over hung load adapter to mounting plate.



9. Remove motor assembly.



NOTICE

Prevent equipment damage.

Do not separate motor housing at locations (6). Reassembly is nearly impossible without extensive training and special tools.

Separating motor housing at locations (10) will void the warranty.

⚠ Do not disassemble motor housing at locations (6)!

10. Mark over hung load adapter (7) and motor (8) for proper orientation during reassembly.

11. Remove four bolts and separate over hung load adapter (7) from motor (8). Silicon sealant has been applied to mating surfaces, it may be necessary to strike housing with a rubber mallet to separate parts (7) and (8).

Remove Motor

1. If equipment is attached to power unit, lower equipment to ground, set parking brake, stop engine and remove key.

⚠ WARNING

Moving parts can crush and cut.

Keep clear of moving components.

Follow lockout procedure before servicing.

2. Relieve hydraulic pressure. See power unit manual for procedure.

NOTICE

Prevent equipment damage.

Carefully identify hydraulic hoses for proper re-assembly.

Seal will fail immediately if hydraulic hoses are improperly connected.

Note: The DSA530 Tree Saw is illustrated in this procedure. The removal procedure for your machine may be slightly different.

3. Remove covers or panels necessary to access motor.
4. Identify hydraulic hoses for reassembly. Disconnect hydraulic hoses from motor.
5. Mark over hung load adapter (1) and motor (2) for proper orientation during reassembly.

NOTICE

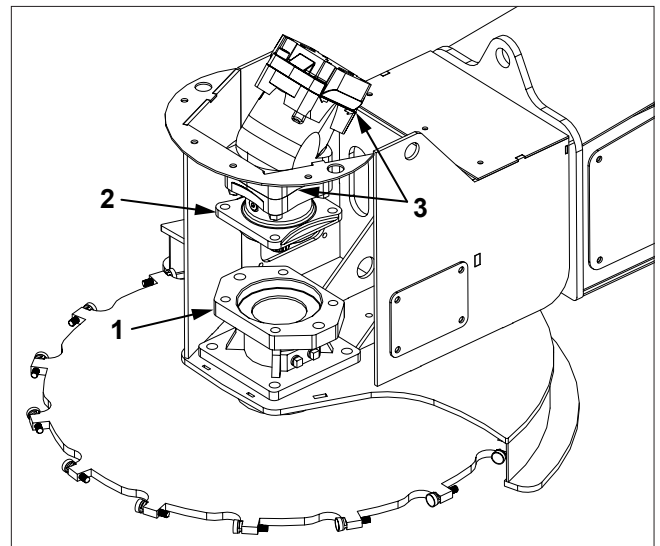
Prevent equipment damage.

Do not separate motor housing at locations (3). Reassembly is nearly impossible without extensive training and special tools.

Separating motor housing at locations (3) will void the warranty.

⚠ Do not disassemble motor housing at locations (3)!

6. Remove four bolts connecting over hung load adapter (1) to motor (2).
7. Remove motor (2).



8. Go to Replace Seals on page 8.

Replace Seals

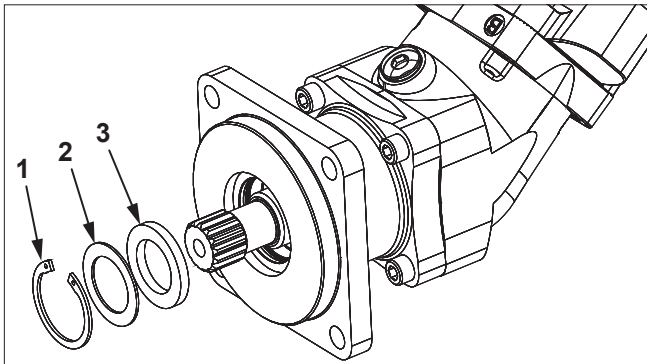
NOTICE

Prevent equipment damage.

Do not disassemble motor any further than instructed.

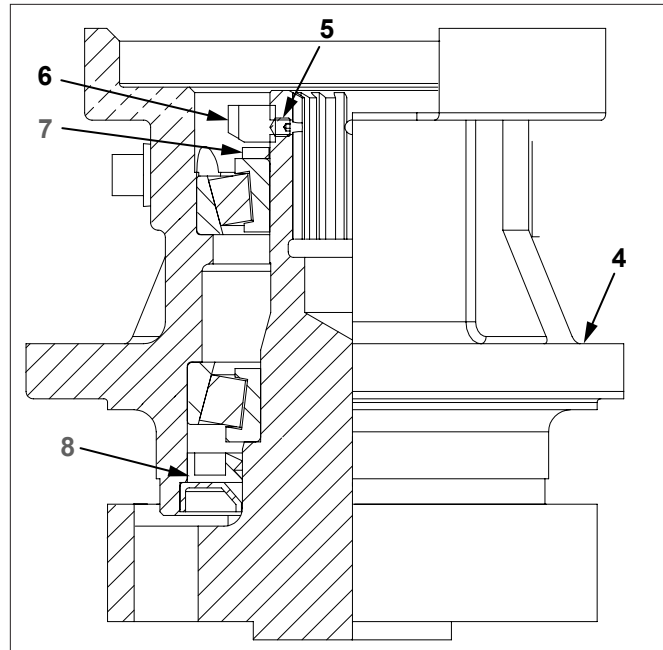
1. Remove snap ring (1) and washer (2) from motor. Save for reuse.
2. Remove motor seal (3). If seal is difficult to remove, drill a small hole through the seal and insert a wood screw into hole. Pull screw and seal out with a vise grip or pliers.

Note: It is important not to plunge too deep with the drill or internal damage might happen inside the motor. Also make sure no metal shavings go inside the motor.



3. **If oil was leaking around over hung load adapter (4) shaft:** Loosen setscrew (5), remove locknut (6), washer (7) and shaft assembly from over hung load adapter. Remove seal (8).

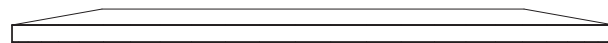
Note: If over hung load adapter seal (8) is damaged, contact your dealer for information on inspecting the adapter housing and motor housing for damage.



4. Clean and inspect all parts.
5. Inspect washer (2). Washer must be flat. If washer is concave, discard washer and install new washer.



Normal Flat Washer

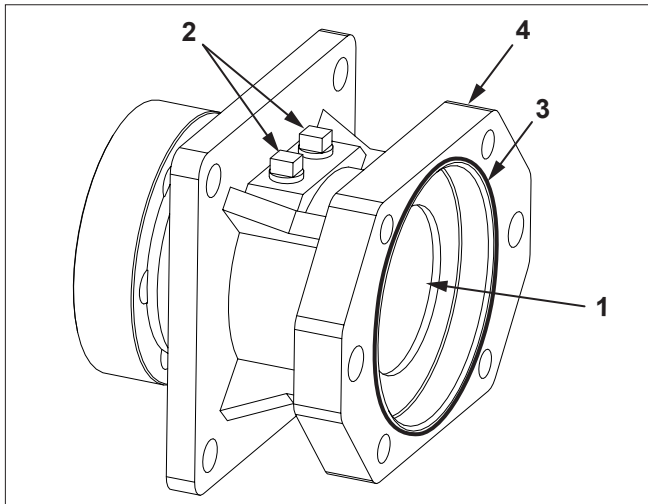


Damaged Concave Washer

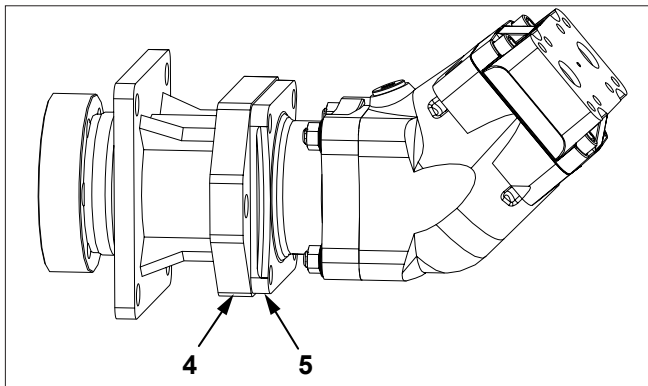
6. Discard parts (3) and (8).
Go to Baumalight.com to see the hydraulic motor parts breakdown.
7. **If over hung load adapter seal was removed:** Using the proper seal driver, install new seal (8) in over hung load adapter. Install hub/shaft assembly, washer (7) and locknut (6). Tighten setscrew (5).
8. Using the proper seal driver, install new seal (3). Install washer (2) and snap ring (1) in motor.

Install Motor And Over Hung Load Adapter

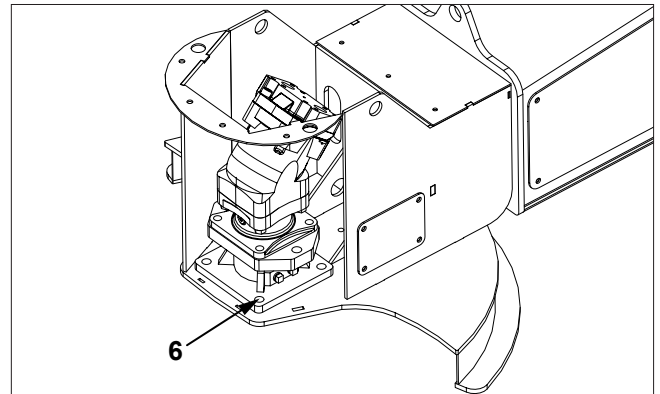
1. Add 0.08 qt (0.08 L) of gear oil to the over hung load adapter through motor shaft opening at (1). Any type of gear oil will work. Gear oil can be added after assembly through one of the fill plugs (2).
2. Apply a bead of silicon sealant (3) as shown to mounting flange on over hung load adapter (4).



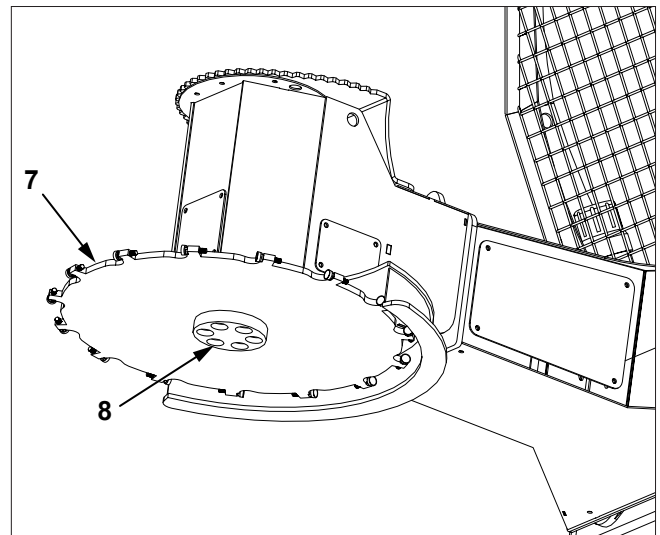
3. Assemble over hung load adapter (4) and motor (5). Install four bolts. Tighten bolts evenly.



4. Position motor assembly on mounting plate and install four bolts (6) connecting over hung load adapter to mounting plate. Tighten bolts evenly.



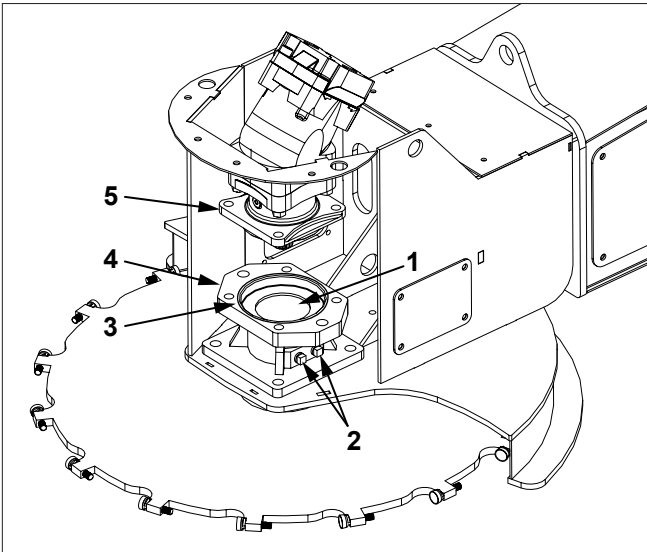
5. Install cutting wheel (7) and mounting hardware (8).



6. Go to Connect Hoses on page 11.

Install Motor

1. Drain any oil in over hung load adapter.
2. Add 0.08 qt (0.08 L) of gear oil to the over hung load adapter through motor shaft opening at (1). Any type of gear oil will work. Gear oil can be added after assembly through one of the fill plugs (2).
3. Apply a bead of silicon sealant (3) as shown to mounting flange on over hung load adapter (4).
4. Install motor (5) on over hung load adapter (4). Install four bolts. Tighten bolts evenly.



5. Go to Connect Hoses on page 11.

Connect Hoses

NOTICE

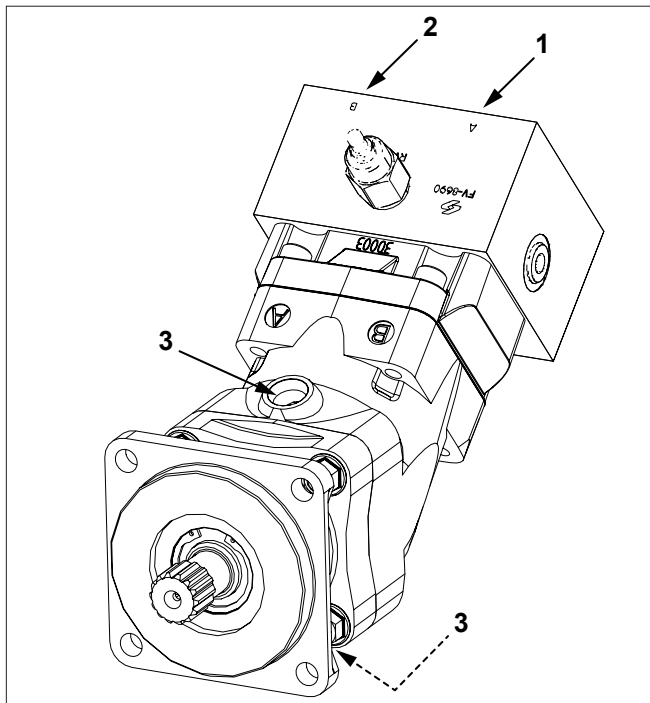
Prevent equipment damage.

Motor shaft seal will fail immediately if hydraulic hoses are improperly connected.

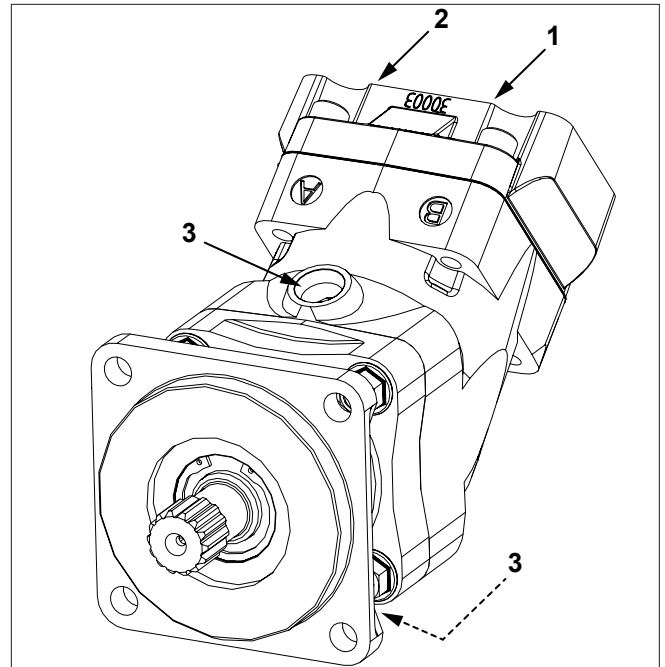
Case drain hose must be connected to port (3) on motor housing.

Improper connection of hoses is not covered by warranty.

1. **Motor With Anti-Cavitation Block On Motor:** Connect pressure hose to port (1) and return hose to port (2). Connect case drain hose to one of the case drain ports (3). The unused port (3) must be plugged.



Motor With Remote Anti-Cavitation Block: Connect pressure hose to port (1) and return hose to port (2). Connect case drain hose to one of the case drain ports (3). The unused port (3) must be plugged.



⚠ WARNING

Pressurized fluids can penetrate the skin.

Use body and face protection while searching for leaks. A tiny, almost invisible leak can penetrate the skin, thereby requiring immediate medical attention. Use wood or cardboard to detect hydraulic leaks, never use your hands.

2. Check hydraulic pressure on case drain line. Maximum pressure on case drain line is 100 psi (689 kPa). Exceeding maximum pressure may result in motor seal and over hung load adapter seal failure.
3. Install covers and panels that were removed or opened for access.
4. Check operation and verify there are no leaks.

MTB MFG INC.
CORPORATE HEADQUARTERS
4575 Powell Rd.,
Wallenstein, Ontario Canada
N0B 2S0
Phone - 519.698.9864
Toll Free - 866.820.7603
Fax - 519.698.1087
www.baumalight.com

