



Bobcat®

Service Manual



Tilt Coupler

MECHANICAL TILT COUPLER

(TC01) B4GT00101 & Above

(TC01WLH) B4GZ00101 & Above

(TC03) B4GU00101 & Above, B4GV00101 & Above

(TC03) B4GW00101 & Above, B4GY00101 & Above

(TC03WLH) B4H100101 & Above, B4H200101 & Above

(TC03WLH) B4H300101 & Above, B4H400101 & Above

(TC08WLH) B4H500101 & Above

HYDRAULIC TILT COUPLER

(TC03) B4HG00101 & Above, B4HH00101 & Above

(TC03) B4HJ00101 & Above, B4HK00101 & Above

(TC03WLH) B4HL00101 & Above, B4HM00101 & Above

(TC03WLH) B4HN00101 & Above, B4HP00101 & Above

(TC08WLH) B4HR00101 & Above



MAINTENANCE SAFETY



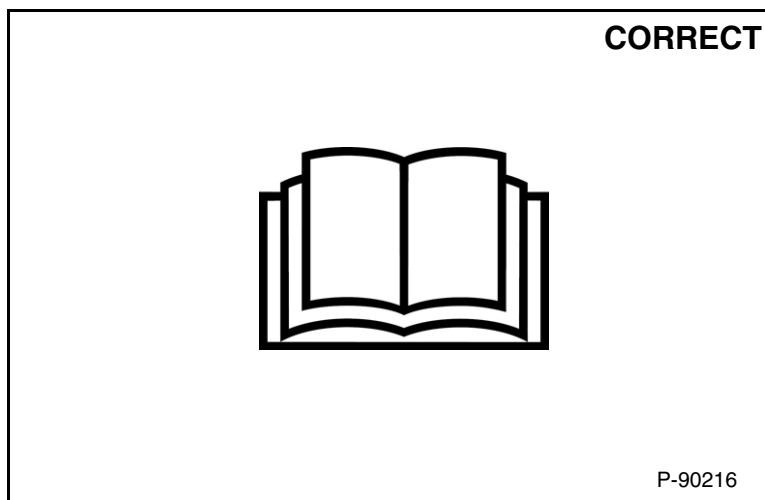
WARNING









Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.

W-2003-0807



Safety Alert Symbol: This symbol with a warning statement, means: "Warning, be alert! Your safety is involved!" Carefully read the message that follows.



-  Never service attachments / implements without instructions. See Operation & Maintenance Manual and Attachment / Implement Service Manual.
-  Cleaning and maintenance are required daily.
-  Never service or adjust attachment / implement with the engine running unless instructed to do so in manual.
-  Always lower the attachment / implement to the ground before lubricating or servicing.
-  Avoid contact with leaking hydraulic fluid or diesel fuel under pressure. It can penetrate skin or eyes.
-  Stop, cool and clean engine of flammable materials before checking fluids.
-  Keep body, loose objects and clothing away from moving parts, electrical contacts, hot parts and exhaust.
-  Safety glasses are needed for eye protection from electrical arcs, battery acid, compressed springs, fluids under pressure and flying debris or when tools are used. Use eye protection approved for type of welding.



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REFERENCE INFORMATION

Write the correct information for YOUR Bobcat attachment in the spaces below. Always use these numbers when referring to your Bobcat attachment.

Attachment Serial Number _____

NOTES:

YOUR BOBCAT DEALER:

ADDRESS:

PHONE:



Bobcat Company
P.O. Box 128
Gwinner, ND 58040-0128
UNITED STATES OF AMERICA

Doosan Bobcat EMEA s.r.o.
U Kodetky 1810
26312 Dobris
Czech Republic

**Thanks very much for your reading,
Want to get more information,
Please click here, Then get the complete
manual**

JustClickHere 

NOTE:

**If there is no response to click on the link above,
please download the PDF document first, and then
click on it.**

**Have any questions please write to me:
admin@servicemanualperfect.com**



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FOREWORD

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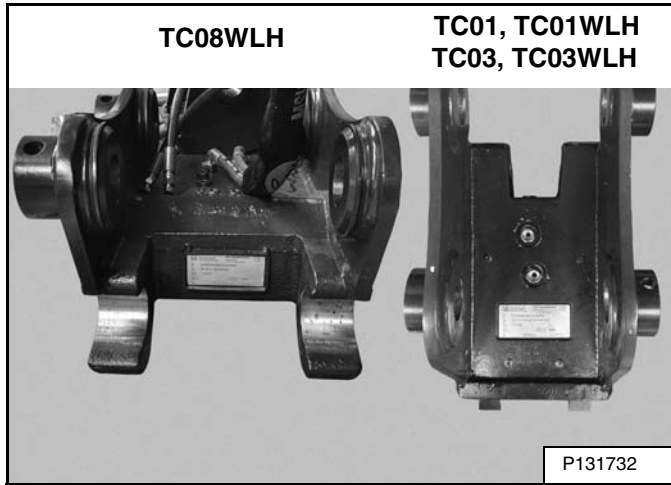


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SERIAL NUMBER LOCATION

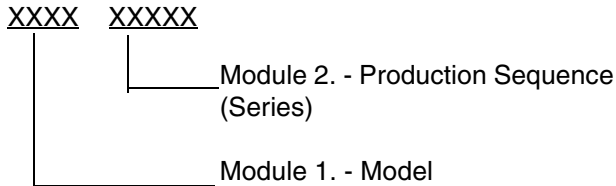
Attachment Serial Number

Figure 1



Always use the serial number [Figure 1] of the tilt coupler when requesting service information or when ordering parts. Early or later models (identification made by serial number) may use different parts, or it may be necessary to use a different procedure in doing a specific service operation.

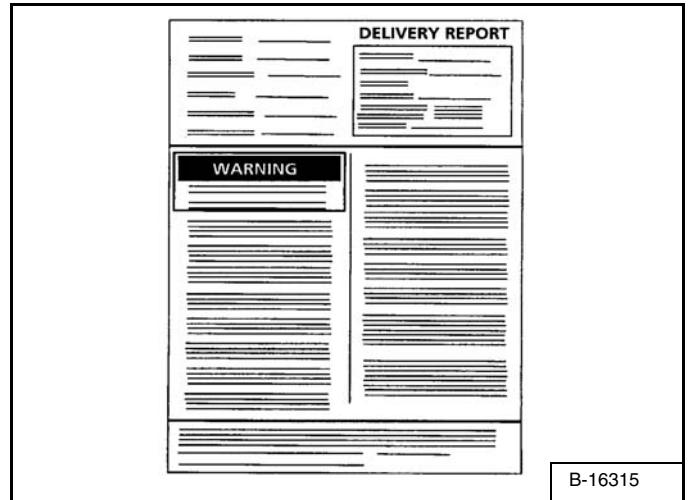
Explanation of tilt coupler serial number:



1. The four digit prefix identifies the tilt coupler model.
2. The five digit Production Sequence Number identifies the order in which the tilt coupler is produced.

DELIVERY REPORT

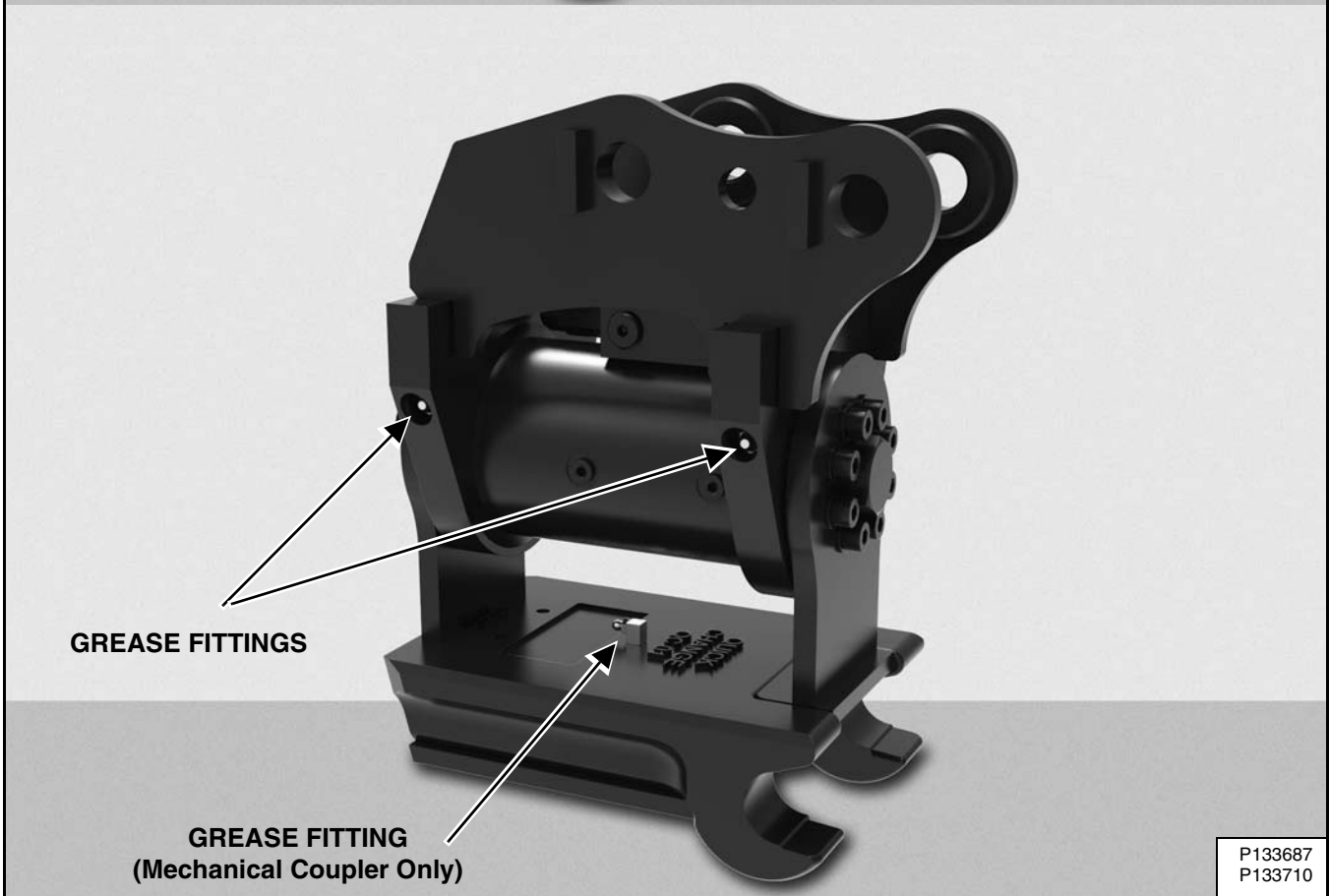
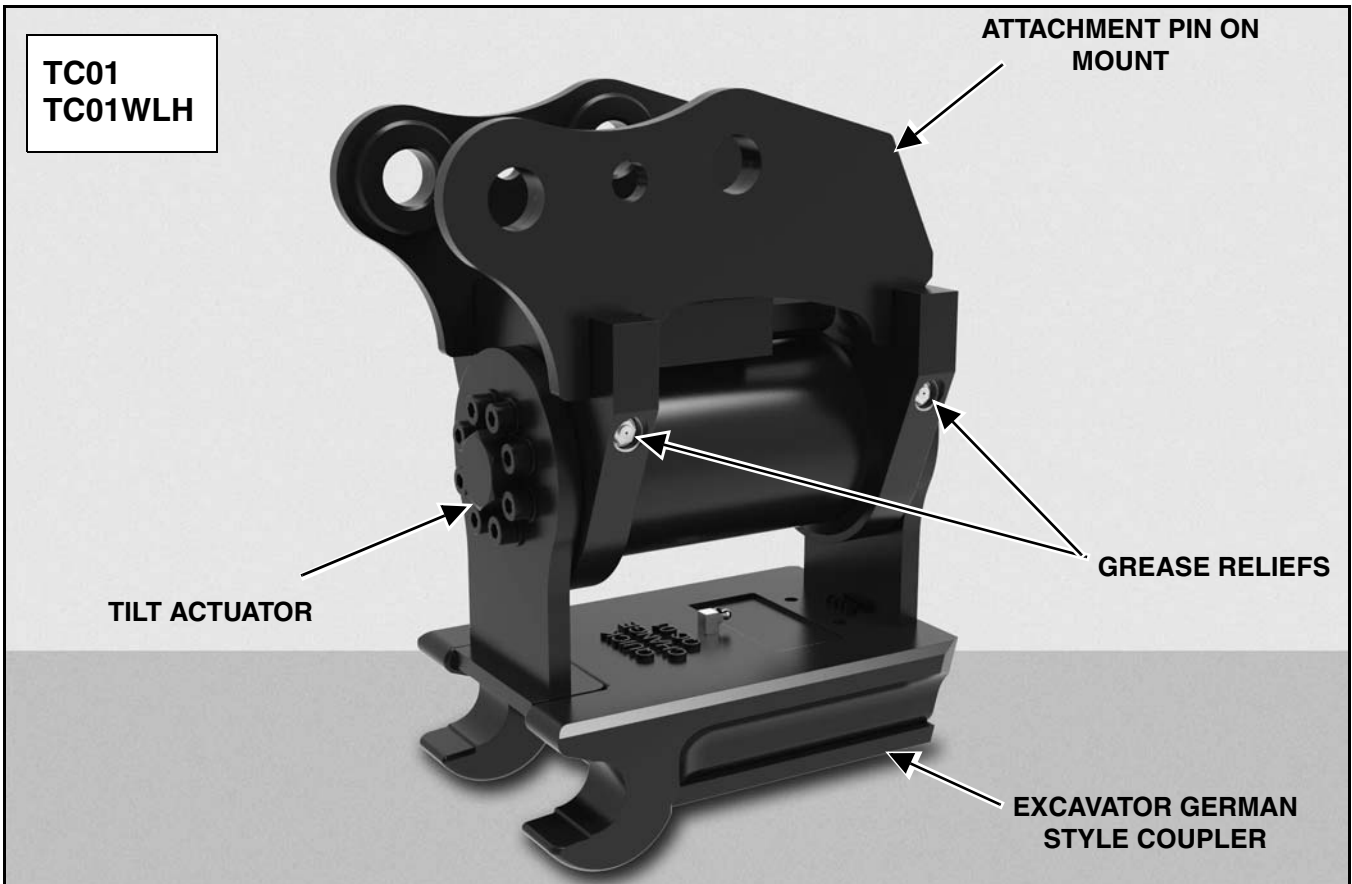
Figure 2



The delivery report [Figure 2] contains a list of items that must be explained or shown to the owner or operator by the dealer when the Bobcat tilt coupler is delivered.

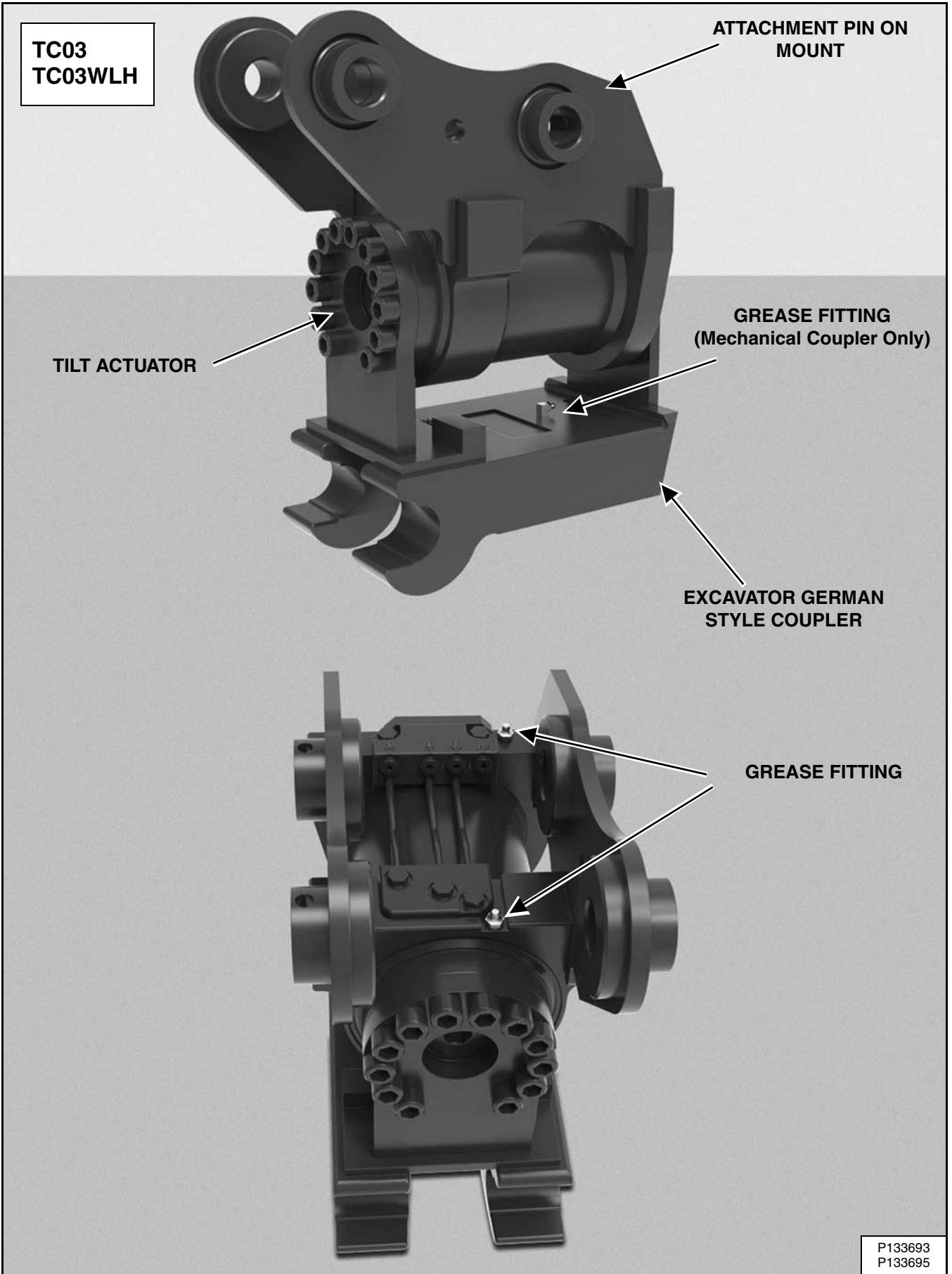
The delivery report must be reviewed and signed by the owner or operator and the dealer.

ATTACHMENT IDENTIFICATION

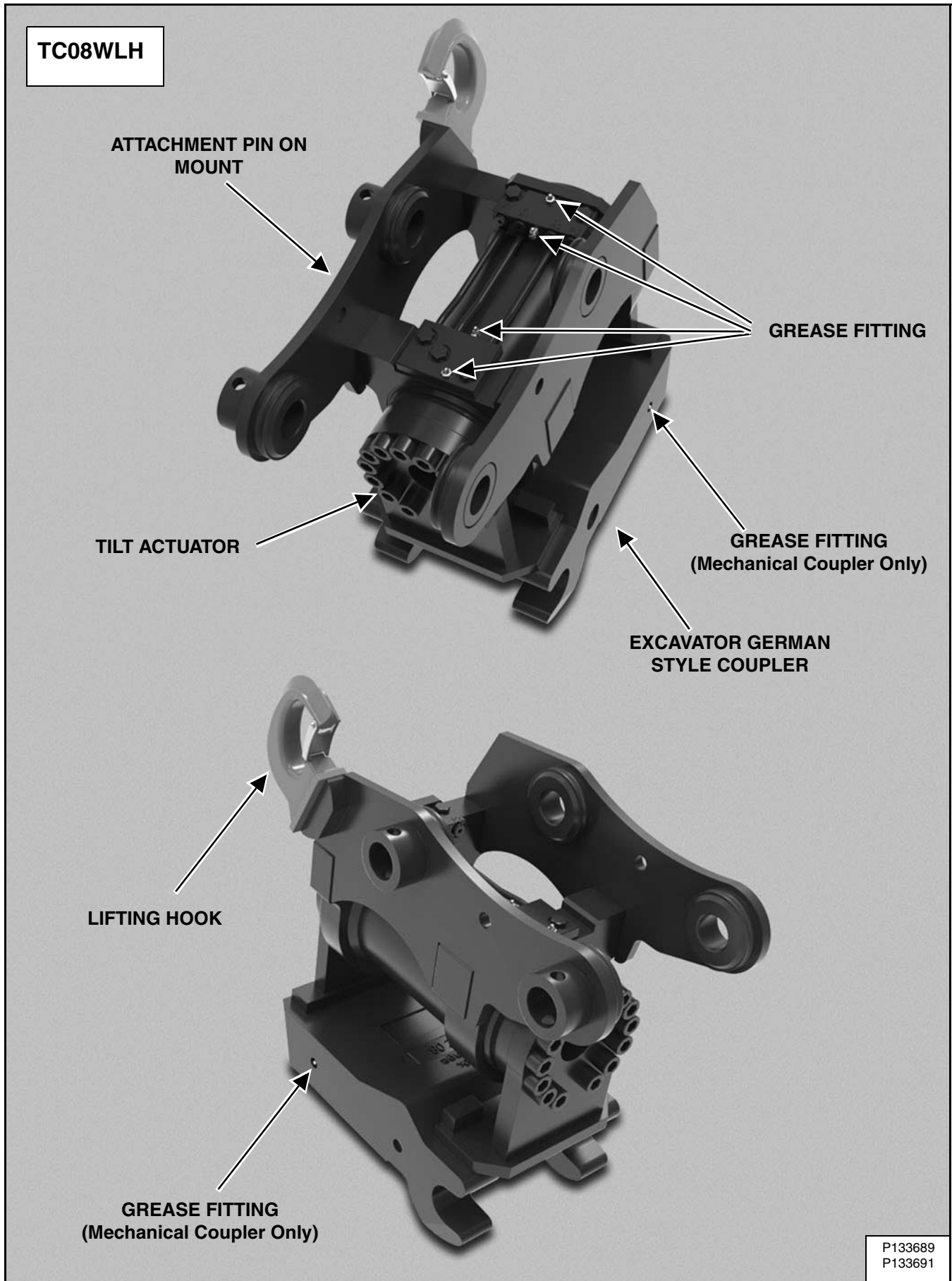


P133687
P133710

ATTACHMENT IDENTIFICATION (CONT'D)



ATTACHMENT IDENTIFICATION (CONT'D)



SAFETY AND MAINTENANCE


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TROUBLESHOOTING

Chart

 <b style="font-size: 24pt; margin-left: 10px;">WARNING	<p>Instructions are necessary before operating or servicing machine. Read and understand the Operation & Maintenance Manual, Operator's Handbook and signs (decals) on machine. Follow warnings and instructions in the manuals when making repairs, adjustments or servicing. Check for correct function after adjustments, repairs or service. Untrained operators and failure to follow instructions can cause injury or death.</p> <p style="text-align: right; font-size: 10pt;">W-2003-0807</p>
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If the attachment is not working correctly, check the hydraulic system of the machine thoroughly before making any repairs on the attachment. Attachment problems can be affected by a hydraulic system that is not operating to specifications. Connect a flow meter to the machine to check the hydraulic pump output, relief valve setting and tube lines to check flow and pressure. (See the machine's Service Manual for the correct procedure to connect the flow meter.)

Use the following troubleshooting chart to locate and correct problems which most often occur with the attachment.

TROUBLESHOOTING THE TILT COUPLER		
PROBLEM	CAUSE	CORRECTION
Tilt coupler does not hold position.	Excessive down pressure being applied by excavator causing buildup of pressure in the tilt coupler and opening the work port relief valves.	Check pressure setting of work port relief valves.
	Control valve leaking oil.	Repair or replace as needed.
	Seals leaking oil.	Replace seals.
Tilt coupler has spongy feel side to side.	Air in tilt coupler or hydraulic circuit.	Bleed air.
Tilt coupler swings one direction only.	Tilt coupler is connected to an auxiliary hydraulic circuit that is not 2-way.	Ensure that the tilt coupler is connected to a 2-way hydraulic circuit.
Tilt coupler does not swing.	No hydraulic flow.	Check quick couplers for proper connection.
Tilt coupler swings the opposite direction than expected.	Hoses are reversed.	Swap the male and female couplers and reroute hoses as necessary.
Tilt coupler swings slower or faster than expected.	The machine's direct to tank valve is in the wrong position.	Turn the direct to tank valve to the proper position.
Hydraulic fluid is leaking.	Hoses or fittings are loose or damaged.	Tighten or replace loose or damaged fittings and hoses as necessary.
Forward and backward movement of shaft (axial play).	Worn or missing thrust bearings.	Repair or replace thrust bearings.
Side to side bucket movement.	Some movement is normal due to clearance required between internal spline teeth.	Normal movement is 1° to 1-1/2°. If greater than normal, check axial play; excessive axial play can contribute to side to side movement. If axial play is within acceptable limits, consult your dealer.

TROUBLESHOOTING (CONT'D)

Chart (Cont'd)

Use the following troubleshooting chart to locate and correct problems which most often occur with the hydraulic quick coupler (if equipped).

TROUBLESHOOTING THE HYDRAULIC QUICK COUPLER		
PROBLEM	CAUSE	CORRECTION
Coupler will not lock.	Damaged hydraulic hose(s).	Check for leaks. Repair or replace hydraulic hose(s).
	No hydraulic flow / pressure.	Check excavator hydraulic system. Make sure auxiliary hydraulics are engaged.
	Hydraulic cylinder in quick coupler damaged.	See your Bobcat dealer for service.
	Electrical fault.	Switches in left console faulty. Repair or replace. Make sure the left console switches are engaged in correct sequence to properly install and / or remove attachment.
Quick coupler will not stay locked.	Damaged or missing die spring.	See your Bobcat dealer for service.
	Hydraulic cylinder in quick coupler damaged.	See your Bobcat dealer for service.
	Damaged cylinder locking bushing or spring.	See your Bobcat dealer for service.

SERVICE SCHEDULE

Description

Maintenance work must be done at regular intervals. Failure to do so will result in excessive wear and early failures. The service schedule is a guide for correct maintenance of the Bobcat product.



WARNING

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W-2975-0413

Every 8 Hours

- **Bearings** - Lubricate all tilt coupler grease fittings. (See page 10-50-1.)
- **Inspection** - Inspect the tilt coupler. (See page 10-30-1.)

Every 1000 Hours

- **Hydraulic Fluid** - Flush the tilt coupler after 100 hours, then as scheduled. (See page 10-40-1.)

Maintenance



WARNING

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W-2003-0807

Monthly or Every 100 Hours

For model TC01, check shaft end play. When the end play exceeds 0,38 mm (0.015 in), the end cap must be tightened. (See TC01 TESTING AND LUBRICATING on Page 20-20-1.)



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REGULAR MAINTENANCE

Cleaning The Tilt Coupler

WARNING

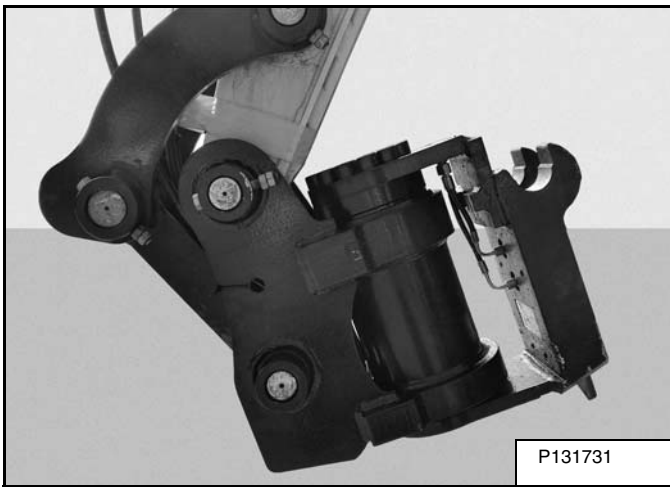
AVOID INJURY OR DEATH

Wear safety glasses to prevent eye injury when any of the following conditions exist:

- When fluids are under pressure.
- Flying debris or loose material is present.
- Engine is running.
- Tools are being used.

W-2019-0907

Figure 10-30-1



Position the tilt coupler as shown **[Figure 10-30-1]** to gain easy access while cleaning the tilt coupler.

Fully lower the tilt coupler to the ground.

Stop the engine.

Exit the excavator. (See the excavator Operation & Maintenance Manual.)

Use water or air pressure to clean debris from the tilt coupler.

Inspection

Inspect the tilt coupler for loose, worn or damaged components and replace or repair immediately.



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FLUSHING AND AIR PURGING PROCEDURE

Purpose And Interval

Since the tilt coupler uses a low fluid volume, working fluid normally does not return to the hydraulic supply tank. The flushing procedure should be performed at approximately 100 hours of operation and at approximately 1000 hour intervals thereafter to remove accumulated wear products and to refresh the working fluid. The air purging procedure should be performed if there is any indication that air has entered the actuator.

NOTE: Remove the bucket or working tool from the coupler prior to servicing the rotary actuator.

NOTE: Shut down the excavator prior to loosening or removing hydraulic lines.

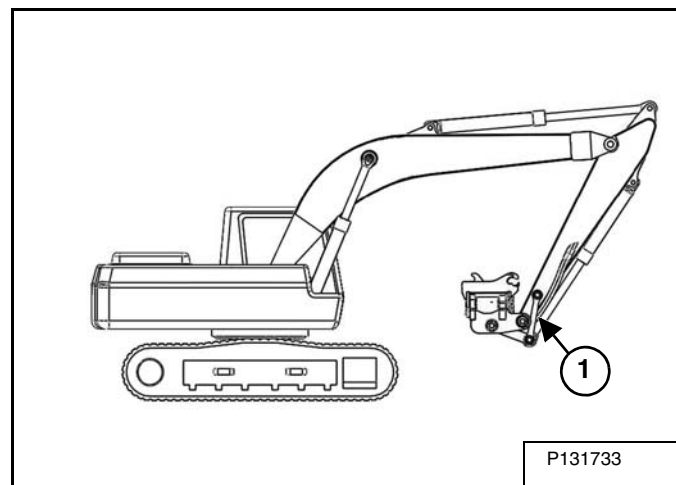
NOTE: This procedure requires the removal of hoses which will contain hydraulic fluid. A means should be provided for containing spilling hydraulic fluid. See the chart below to determine the approximate amount of fluid which will be ejected per flushing rotation. (See Fluid Capacities For Full Stroke on Page 3.)

Flushing Procedure

NOTE: Follow the steps of this procedure exactly to minimize the entry of air into the hydraulic system.

1. Note the location of tilt coupler ports P1 and P2 and the corresponding connections to the excavator auxiliary hydraulic system hoses or pipes on the stick boom.

Figure 10-40-1



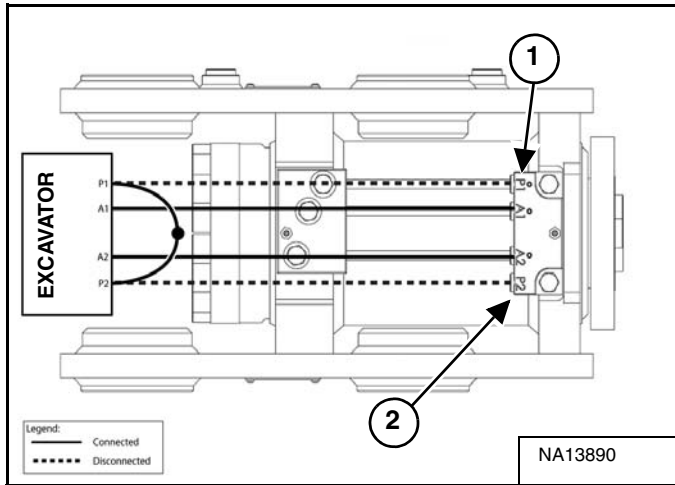
2. Curl the tilt coupler (extend the stick cylinder) and position the stick boom and main boom until the tilt coupler is in the approximate position shown in [Figure 10-40-1] below (fully inverted, tilt coupler ports facing down) and at a convenient distance from the ground.
3. Cycle the tilt coupler fully in both directions about 10 times. This will tend to move accumulated particles near the port locations.
4. Viewed from the cab of the excavator, rotate the tilt coupler fully clockwise against the stop and leave it there.
5. Carefully note the switch position for clockwise rotation.

FLUSHING AND AIR PURGING PROCEDURE (CONT'D)

Flushing Procedure (Cont'd)

Tilt Actuator Line Flushing

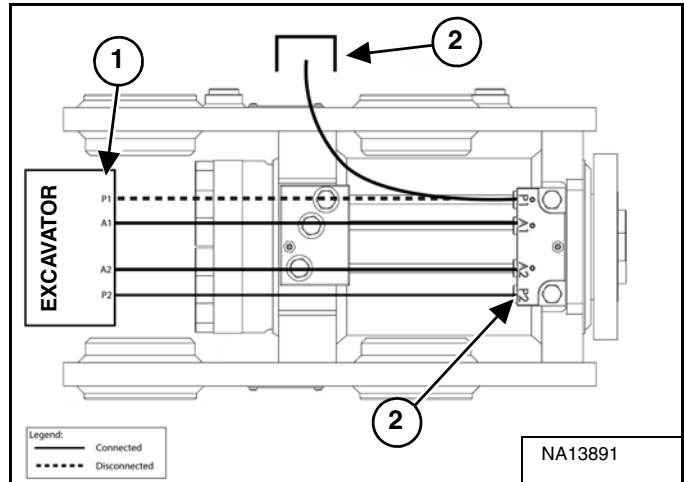
Figure 10-40-2



6. Locate the hose connected to port P1 (Item 1) [Figure 10-40-2]. Prepare for leakage. Slightly loosen the hose to relieve residual pressure. Then disconnect the hose.
7. Repeat the procedure in step 6 for the hose connected to P2 (Item 2) [Figure 10-40-2].
8. Connect the hoses together with a fitting.
9. Activate the Tilt Actuator line for 10 seconds to flush the line.
10. This completes the flushing procedure of the Tilt Actuator line.

Tilt Coupler Flushing

Figure 10-40-3



11. Prepare for leakage and slightly loosen the hose connected to P1 port (Item 1) [Figure 10-40-3] on the excavator side. Disconnect the hose.
12. Plug the open P1 port on the excavator to prevent leakage.
13. Place the free end of the P1 hose into a container (Item 2) [Figure 10-40-3].
14. Pressurize the hose connected to the P2 port (Item 2) [Figure 10-40-3] to rotate the coupler counterclockwise. Drain the hydraulic fluid from the Tilt Actuator into the container.
15. Connect the hose to the P1 port (Item 1) [Figure 10-40-3] of the excavator.