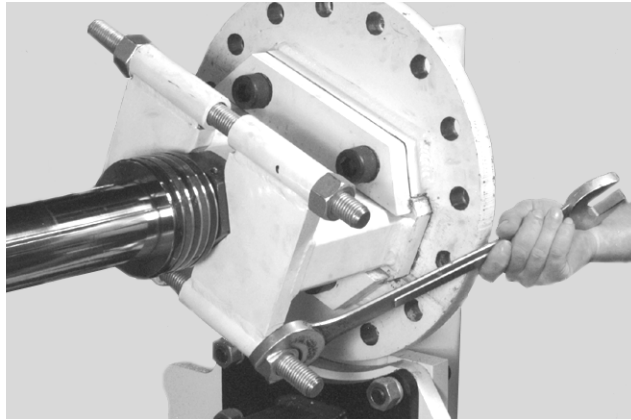


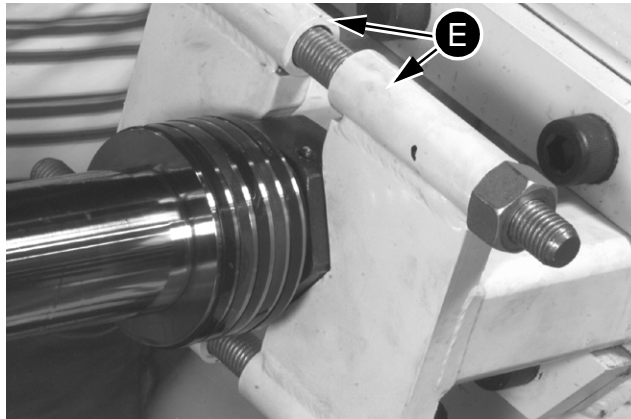
**STEP 12**

Carry out steps 4 to 12 of disassembly to install the cylinder rod in the repair stand.

**STEP 13**



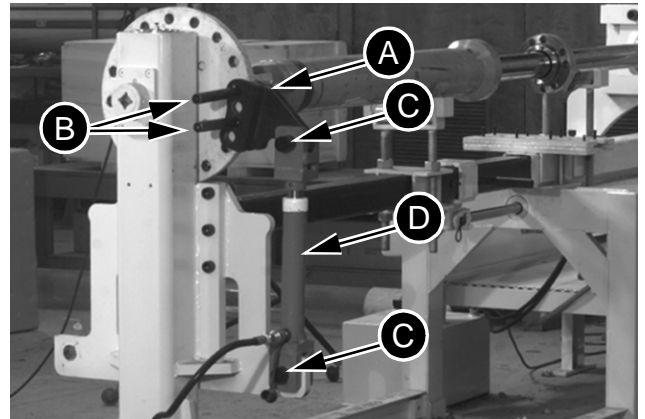
JD00637A



JD00636A

Carry out steps 19 to 21 of disassembly to install wrench (E) on the piston nut (22).

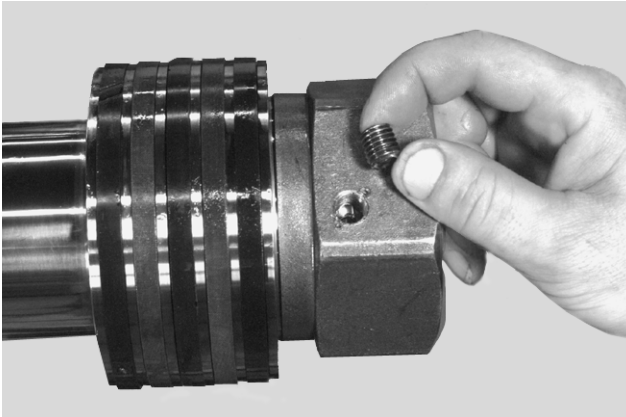
**STEP 14**



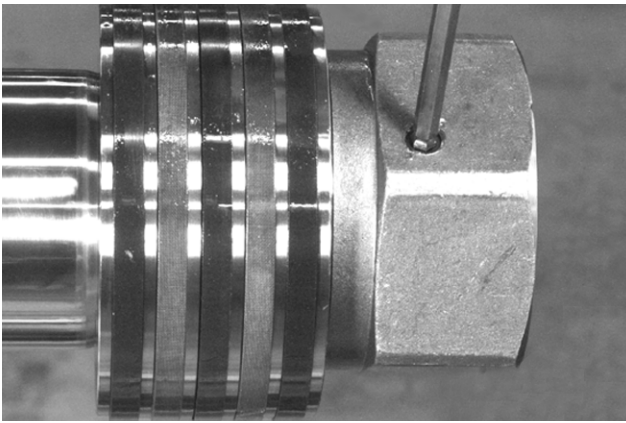
JD00660A

Remove the toggle assembly (A) and the cylinder (D) on the RH side of the repair stand, by removing the stop bars (B) and the pins (C). Install the toggle assembly and cylinder (D) on the left side of the repair stand. Operate the hydraulic pump by depressing the foot pedal to extend the rod end of the hydraulic cylinder to rotate the circular plate clockwise to tighten the piston nut. At the end of the stroke, remove the two stop bars; if necessary, depress the rear of the pedal to retract the cylinder rod just enough to enable removal of the stop bars. Depress the rear of the pedal to retract the cylinder rod to lower the toggle assembly as far as possible then install the stop bars. Repeat this step as required to tighten the piston nut to torque (see "Specifications").

**STEP 15**



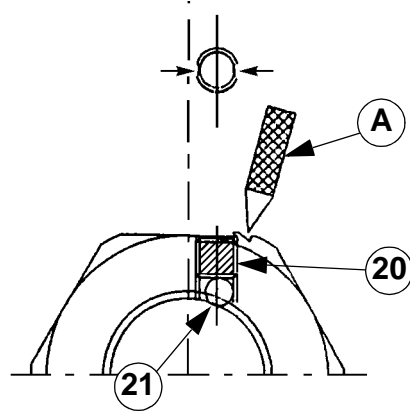
JD00634A



JD00633A

Install the steel ball (21) in the piston nut (22). Install the screw (20) in the nut. Tighten the screw to torque (see "Specifications").

**STEP 16**

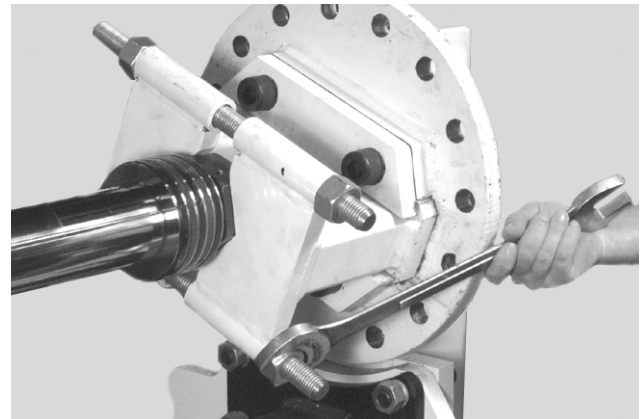


JS00661A

(A) AWL

After tightening the screw (20) to the required torque, caulk the screw at two places.

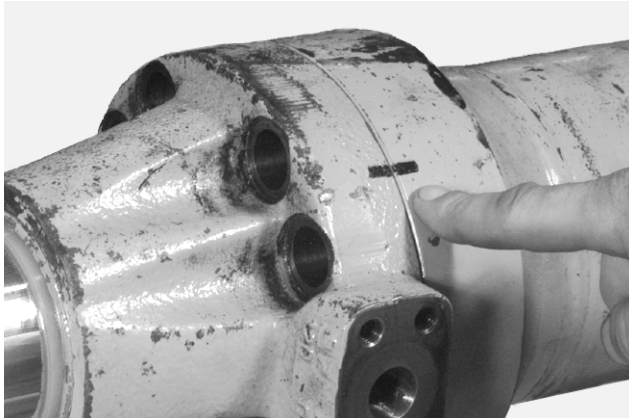
**STEP 17**



JD00637A

Loosen the nuts to remove the wrench from the piston nut (22). Move the repair stand support away from the cylinder rod.

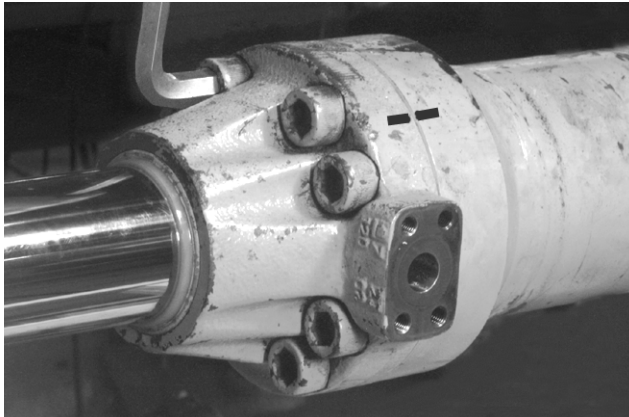
**STEP 18**



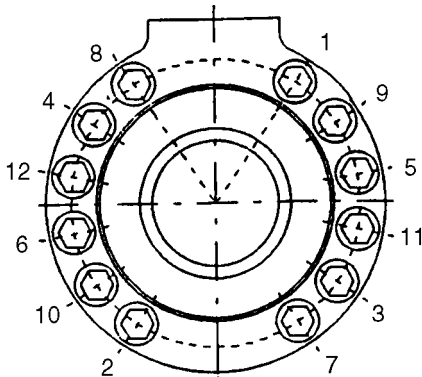
JD00662A

Using suitable means of lifting, install the tube on the repair stand in order to align the cylinder rod (45) and the bearing. Install the tube and the bearing (19) by aligning the markers.

**STEP 19**



JD00630A



JS00663A

Start the pump on the machine to bring the tube into contact with the bearing. Install 12 screws (18) and tighten the screws to torques (see "Specifications").

**STEP 20**

Attach a suitable lifting device to the cylinder. Remove the screws and chuck wings to free the cylinder from the repair stand.

**STEP 21**

**Boom cylinder**

**NOTE:** The numbers within brackets in the following steps refer to the boom cylinder schematic on page 6.

1. Install the circlip (17) on the cylinder, using washers (16) and screws (15). Tighten the screws to torque (see "Specifications").
2. Install the two hydraulic tubes (8) on the circlip (17), using clamps (7), washers (6) and screws (8). Tighten the screws to torque (see "Specifications").
3. Install two new O-rings (9) on the cylinder. Connect the hydraulic tubes (8) to the cylinders. Fasten the pipes using screws (4). Tighten the screws to torque (see "Specifications").
4. Install two new O-rings (3) on the pipes. Install two plugs (2) and tighten the plugs to torque (see "Specifications").
5. Install the grease gun (1) in the cylinder.

**STEP 22**

**Dipper cylinder**

**NOTE:** The numbers within brackets in the following steps refer to the dipper cylinder schematic on page 8.

1. Install the circlips (17) on the cylinder, using washers (16) and screws (15). Tighten the screws to torque (see "Specifications").
2. Install the hydraulic clamp (13) using screws (12), insert a new O-ring (14).
3. Install the new O-ring (11) on the cylinder. Connect the hydraulic clamp (13) with the screws (4). Tighten the screws to torque (see "Specifications").
4. Install the grease gun (1) in the cylinder.

## **STEP 23**

### **Bucket cylinder**

**NOTE:** *The numbers within brackets in the following steps refer to the bucket cylinder schematic on page 10.*

1. Install the circlip (17) on the cylinder barrel, using washers (16) and screws (15). Tighten the screws to torque (see "Specifications").
2. Install the hydraulic pipes (8) and (10) on the circlip (17), using clamps (7), washers (6) and screws (5). Tighten the screws to torque (see "Specifications").
3. Install the two new O-rings (9) and (11). Connect the hydraulic pipes (8) and (10) to the cylinder and fasten the pipes with screws (4). Tighten the screws to torque (see "Specifications").
4. Install the grease fittings (1) in the cylinder.

# Section

# 8013

## DISASSEMBLY AND ASSEMBLY OF THE CONTROL LEVERS

8013

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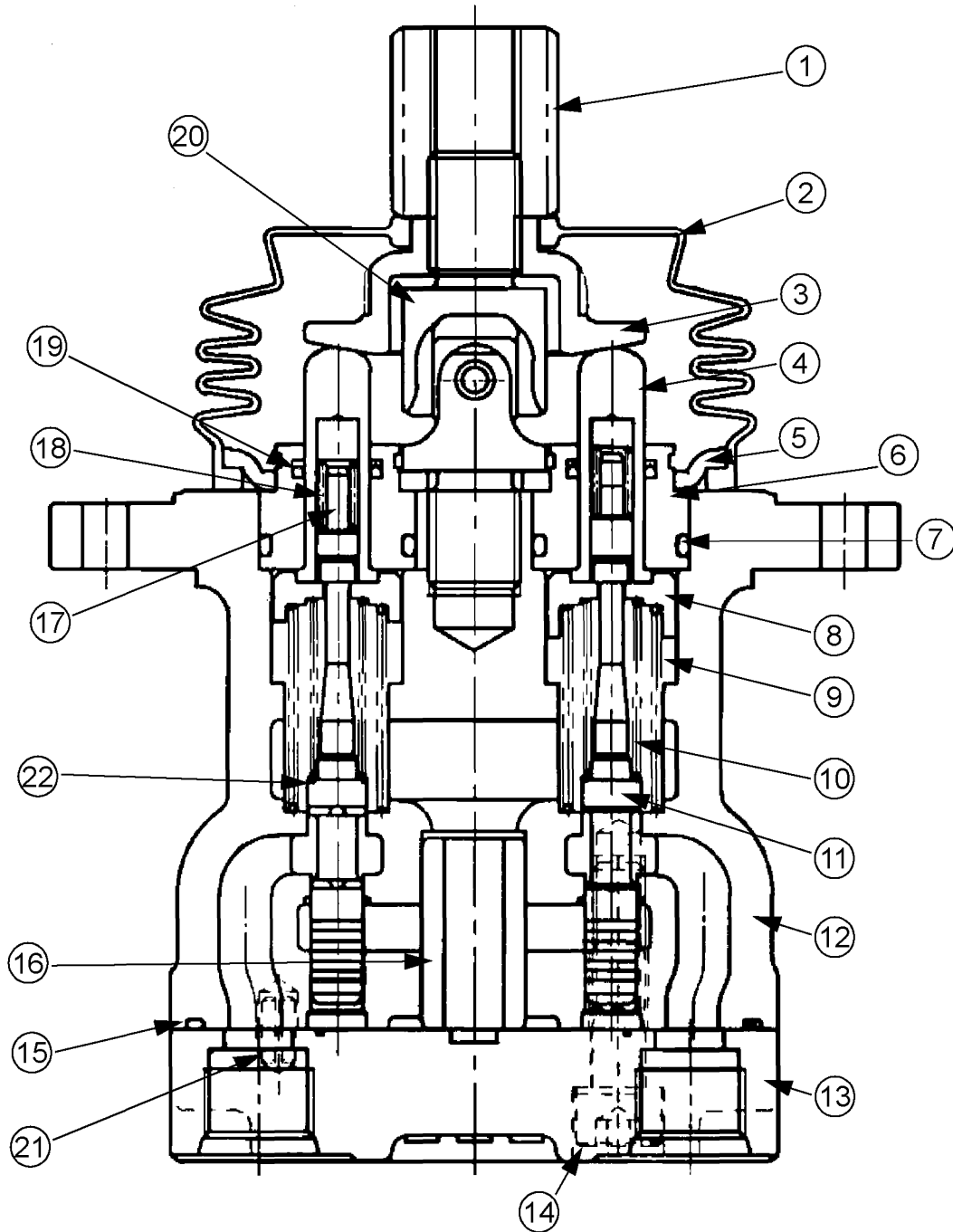
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## SPECIFICATIONS

Torque settings	
Orifice plate retaining screws .....	21.6 ± 1.1 lb-ft
Universal joint on control lever .....	34.7 ± 2.1 lb-ft
Lock-nut on universal joint .....	50.5 ± 3.6 lb-ft

# CONTROL LEVER

## Description



- |    |                  |    |                            |
|----|------------------|----|----------------------------|
| 1  | LOCK-NUT         | 12 | CONTROL LEVER BODY         |
| 2  | PROTECTIVE BOOT  | 13 | ORIFICE PLATE              |
| 3  | DISC             | 14 | HEXAGONAL ALLEN-TYPE SCREW |
| 4  | PUSH-ROD         | 15 | O-RING                     |
| 5  | PLATE            | 16 | BUSHING                    |
| 6  | PLUNGER ASSEMBLY | 17 | SPOOL                      |
| 7  | O-RING           | 18 | SPRING                     |
| 8  | SPRING SEAT      | 19 | LIP-SEAL                   |
| 9  | SPRING           | 20 | UNIVERSAL JOINT            |
| 10 | SPRING           | 21 | PLASTIC PIN                |
| 11 | SPOOL            | 22 | WASHER                     |

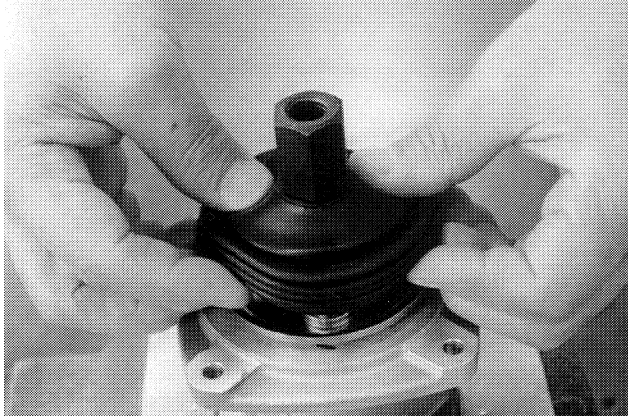
C100G508

## Disassembly

**NOTE:** *The numbers in brackets in the following steps refer to the schematic on page 3.*

Always handle high precision parts with the greatest care to prevent them being damaged by being knocked or dropped. The components of the control lever may rust due to contamination and humidity if they are left without protection after disassembly. If work has to be stopped, the components must be protected against contamination or corrosion.

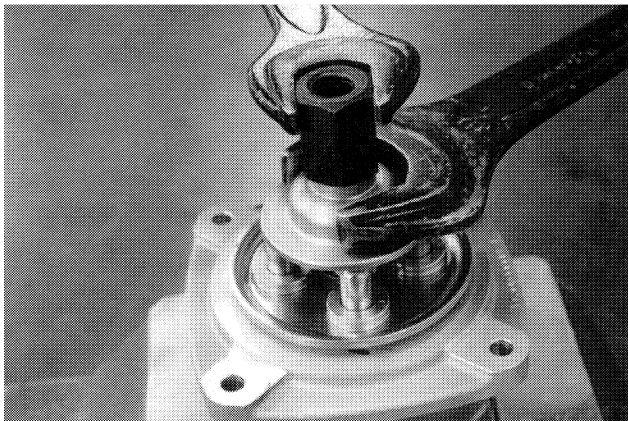
### STEP 1



CD00G087

Install the control lever in a soft-jawed vice. Remove the protective boot.

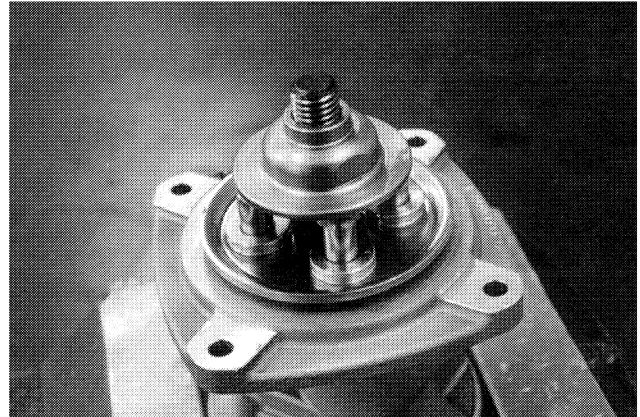
### STEP 2



CD00G088

Remove the lock-nut from the control lever.

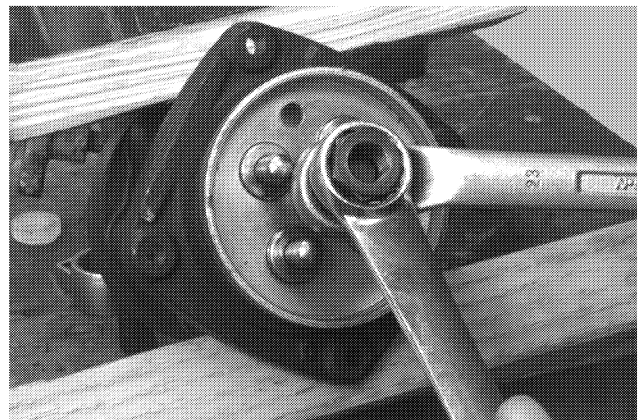
### STEP 3



CD00G089

Remove the disc from the control lever.

### STEP 4



JD00767A

Install two nuts on the universal joint and tighten them fully. While holding the upper nut, turn the lower nut anti-clockwise to unscrew the universal joint. Remove the universal joint from the control lever.

**NOTE:** *Carefully remove the universal joint to prevent the plate and the push-rods, which are under pressure from the springs, from flying out too quickly.*