

Document Title: Neutral centring test	Function Group: 660	Information Type: Service Information	Date: 2014/3/19
Profile: SSL, MC80B [GB]			

Neutral centring test

Mechanical controls

Op nbr 643-084

1. Raise and block the machine, see [191 Raising and blocking](#).
2. Put the machine in service position 3, see [191 Service position 3](#).
3. Start the engine. With engine speed at low idle, stroke levers fully forward and release.
4. Stroke levers fully backward and release.
5. Stroke levers halfway forward and release.
6. Stroke levers halfway backward and release.
7. With engine speed at high idle, stroke levers fully forward and release.
8. Stroke levers fully backward and release.
9. Stroke levers halfway forward and release.
10. Stroke levers halfway backward and release.
11. With engine OFF, randomly stroke levers forward and backward. Start engine and check for wheel rotation. If wheels still rotating in either direction when releasing the levers, the steering linkage needs to be adjusted, see [660 Neutral centring and control lever adjustment](#)

NOTE!

If the machine is equipped with shock absorbers it could slow the steering control levers return to neutral position. The additional friction of the shock absorber may result in a slight tire rotation. If this rotation cannot be stopped by a very slight "jiggle" of the steering lever, the shock absorber is most likely defective and should be replaced.

12. Lower the machine from the blocks, see [191 Raising and blocking](#).

Document Title: Neutral centring and control lever adjustment	Function Group: 660	Information Type: Service Information	Date: 2014/3/19
Profile: SSL, MC80B [GB]			

[Go back to Index Page](#)

Neutral centring and control lever adjustment

Mechanical controls

MC80B

Op nbr 643-083

1. Raise and block the machine, see [191 Raising and blocking](#).
2. Put the machine in service position 1, see [191 Service position 1](#).
3. Disconnect control linkage damping cylinder from the hand control crossmember, or rear transmission mount.

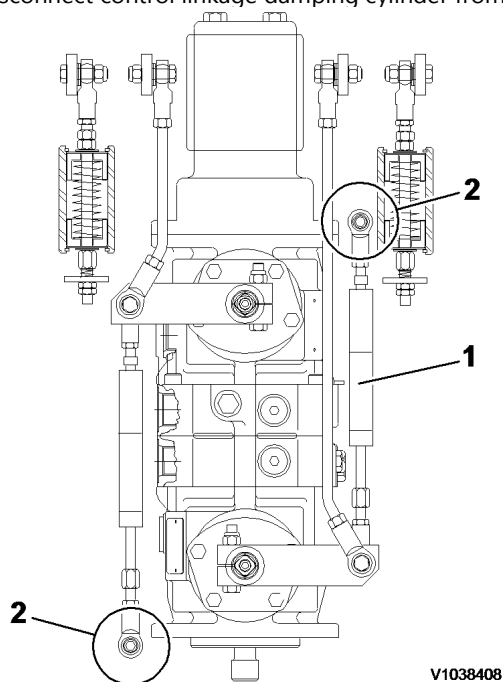


Figure 1

1. Control linkage damping cylinder
 2. Connection point
4. Check for end-play by lightly pushing and pulling on the centring spring assembly ball joint. If end-play is detected, loosen the jam nut, and adjust nut to a position where the spring guides bear against the retaining rings with minimal force. Once end-play has been eliminated, retighten the jam nut.

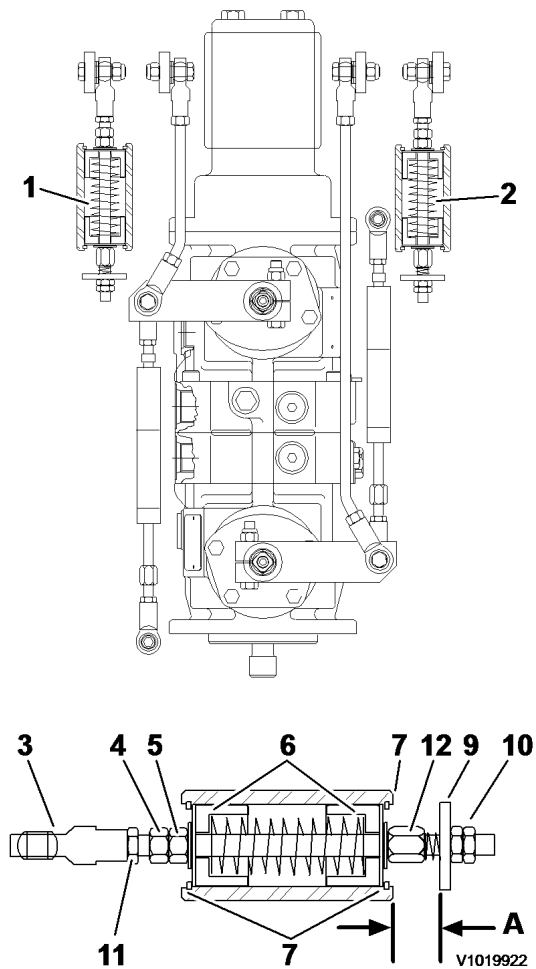


Figure 2
Centring spring assembly

A. 20 mm (13/16")

1. Centring spring assembly
2. Centring spring assembly
3. Centring spring assembly ball joint
4. Jam nut
5. Adjusting nut
6. Spring guides
7. Retaining rings
8. Centring spring assembly bore
9. Washer
10. Adjusting nut, jam nut
11. Ball joint jam nut
12. Adjusting nut

5. Measure the distance between the rear of the centring spring assembly bore on the hand control crossmember and the front face of washer.

Adjust nuts if required to **20 mm (13/16")**.

If the lever are in a vertical position, proceed to Step 9.

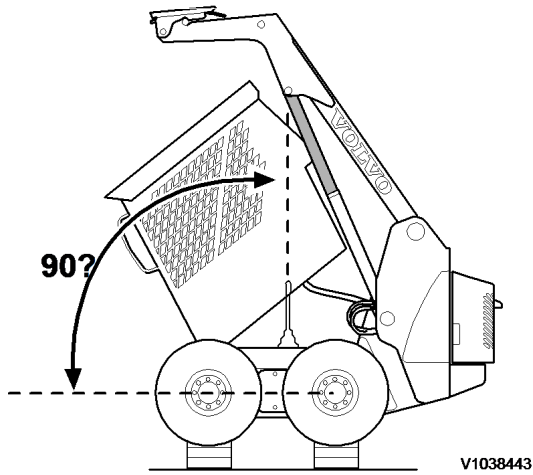


Figure 3

6. Loosen the jam nut on the centring spring assembly ball joints.

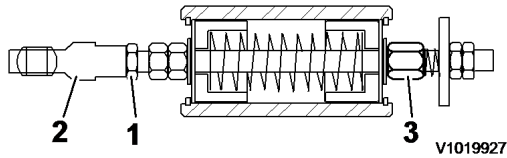
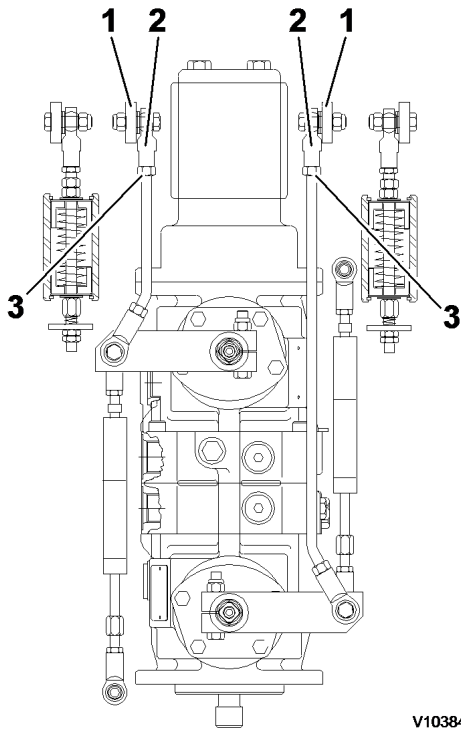


Figure 4

1. Jam nut
 2. Ball joint
 3. Adjusting nut
7. Turn the adjusting nut on the opposite side of the spring assembly to adjust the vertical position of the steering lever.
 8. Tighten the ball joint jam nut against the ball joint once the steering lever has been adjusted.
 9. Start the machine and observe the wheels for rotation. If the wheels are moving, make note of the direction of rotation.
 10. Disconnect the ball joint at the steering lever. Adjust the ball joints in the appropriate direction, and ensure adequate thread engagement on both ends.
 - If the wheels are rotating in a reverse direction, the overall length of the rod will need to be shortened by adjusting the ball joints closer together.
 - If the wheels are rotating in a forward direction, the overall length of the rod will need to be lengthened by adjusting the ball joints further apart.

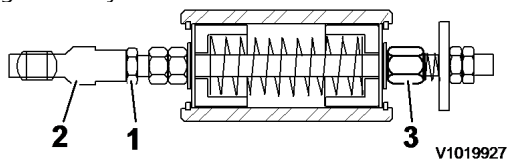


V1038429

Figure 5

1. Steering lever
2. Ball joint
3. Jam nut

11. Reconnect and tighten the ball joint and jam nut.
12. Start the engine. If the wheels still rotate a fine adjustment is necessary. Loosen the jam nut on the centering spring housing assembly ball joint. Turn the adjusting nut on centering spring assembly until the wheels stop rotating. Tighten the jam nut.



V1019927

Figure 6
Centering spring fine adjustment MC80

1. Jam nut
2. Centering spring housing assembly ball joint
3. Adjusting nut

13. Loosen the jam nut on the rear damping cylinder ball joint

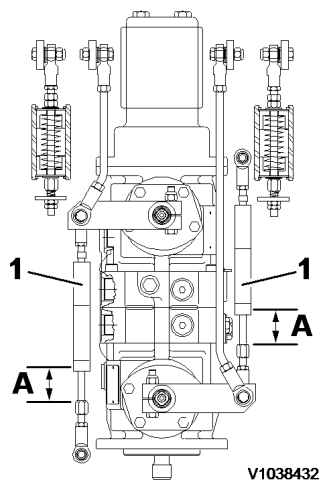


Figure 7

14. Remove the damping cylinder from its rear mounting.
15. Adjust the exposed length of the damping cylinder rod. Measure from the damping cylinder body to the inside face of the nut on the rod, with the front ball joint aligned with its mounting.
Correct measure: **36 mm (1-7/16")**
16. Reconnect the damping cylinder.
17. Perform a neutral centring test, see [660 Neutral centring test](#).
18. Lower the cab from the service position, see [191 Service position 1](#).
19. Lower the machine from the blocking, see [191 Raising and blocking](#).

Document Title: Neutral centring and control lever adjustment	Function Group: 660	Information Type: Service Information	Date: 2014/3/19
Profile: SSL, MC80B [GB]			

[Go back to Index Page](#)

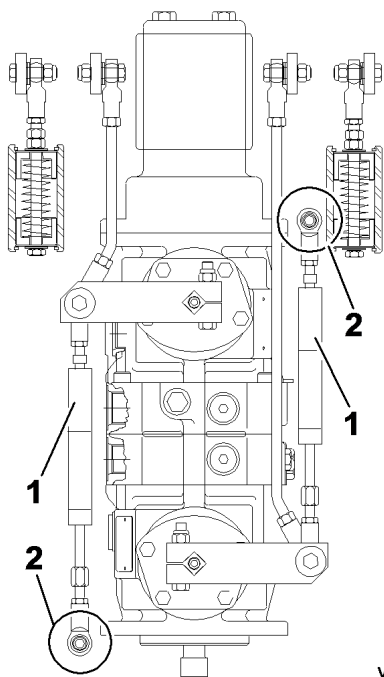
Neutral centring and control lever adjustment

Mechanical controls

Op nbr 643-083

This operation also includes required tools and times for applicable parts of the following operations:

- [191 Raising and blocking](#)
 - [191 Service position 1](#)
1. Raise and block the machine, see [191 Raising and blocking](#).
 2. Put the machine in service position 1, see [191 Service position 1](#).
 3. Disconnect the damping cylinder rod from its mounting.



V1064707

Figure 1

1. Damping cylinder
2. Mounting point

4. Check for play on the steering levers by lightly pushing and pulling the lever. If play is detected, loosen the hex jam nut on the centring spring assembly, and adjust nut to position until there is no play. Retighten the hex jam nut.

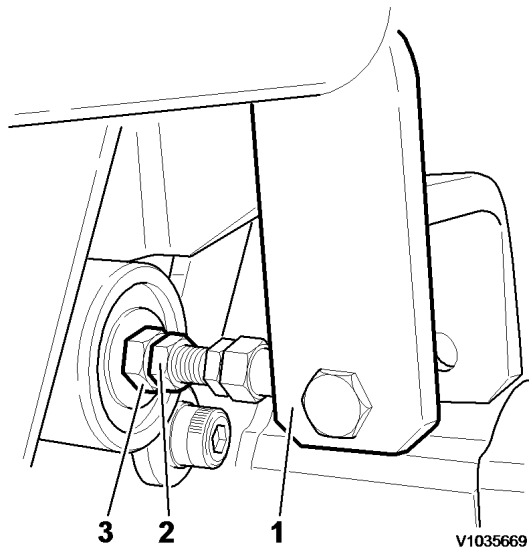


Figure 2

1. Steering lever
2. Hex jam nut
3. Adjust nut

5. If the angle of the control levers needs to be adjusted, follow instructions below or skip to Step 10.
6. Loosen the hex jam nut on the front linkage rod ball joint.

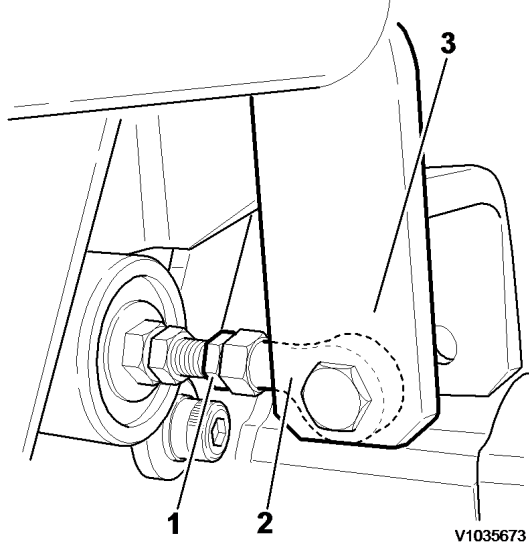
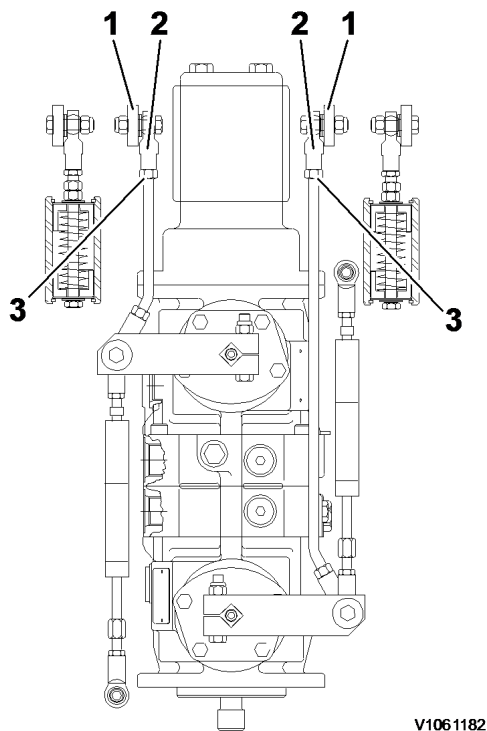


Figure 3

1. Hex jam nut
2. Rod ball joint
3. Steering lever

7. Disconnect the link rod ball joint from the steering lever.
8. With the steering lever held in a vertical position, adjust the linkage rod ball joint as required.
9. Fit the ball joint to the steering lever. Tighten the ball joint hex jam nut.
10. Start the engine, and set the throttle at low idle.
If the tires on either side of the machine do turn (creep), the neutral position for the control requires readjustment.

11. Loosen the hex jam nut on the linkage rod ball joint.



V1061182

Figure 4

1. Transmission lever
2. Linkage rod ball joint
3. Hex jam nut

12. Disconnect the linkage rod from the lever.

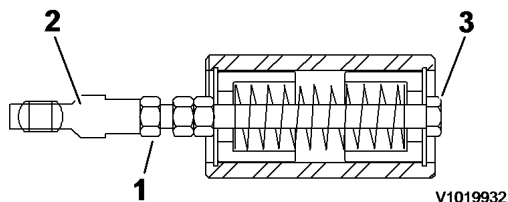
13. Adjust the ball joint as follow:

- If the tires turn rearward the ball joint should be rotated counter clockwise
- If the tires turn forward the the ball joint should be rotated clockwise

14. Reconnect the linkage rod to the lever. Tighten the jam nut against the ball joint.

15. Run the engine in varying rpm, check to see if the tires will turn in either direction. If the tires still tend to turn, the steering linkage needs to be fine adjusted.

16. Loosen the jam nut on the centring spring assembly ball joint. Turn the adjusting cap screw on centring spring assembly until the wheels stop rotating. Tighten the jam nut.



V1019932

Figure 5

1. Ball joint jam nut
2. Ball joint
3. Adjusting cap screw

17. Reconnect the damping cylinder to its mounting.

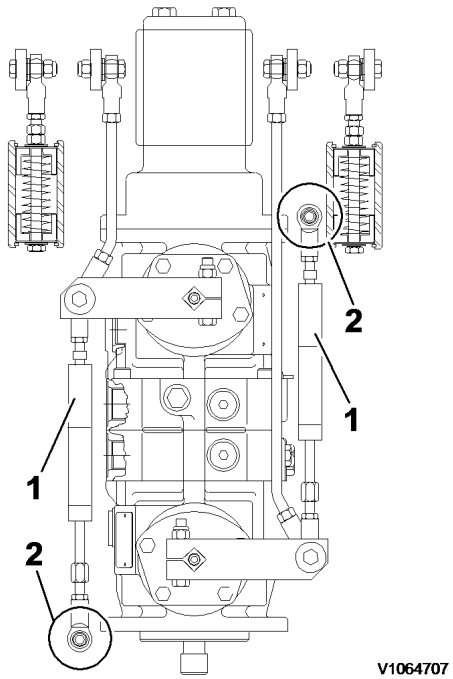


Figure 6

- 1. Damping cylinder
- 2. Mounting point

18. Lower the machine from the service position, see [191 Service position 1](#).

19. Lower the machine from the blocking, see [191 Raising and blocking](#).

Document Title: Transmission pump neutral centering, checking and adjusting	Function Group: 660	Information Type: Service Information	Date: 2014/3/19
Profile: SSL, MC80B [GB]			

Transmission pump neutral centering, checking and adjusting

Pilot controls

Op nbr 660-020

[11666051 Pressure gauge](#)

[14290266 Hose](#)

[14290266 Hose](#)

[936446 Testing nipple](#)

[936446 Testing nipple](#)

This operation also includes required tools and times for applicable parts of the following operations:

- [914 Servo pressure, check](#)
- [191 Raising and blocking](#)
- [191 Service position 1](#)
- [900 Hydraulic system, relieve pressure](#)

NOTE!

The hydraulic oil should be at operating temperature 40-60 °C (104–140 °F).

1. Check the functionality of the control lever, see [914 Servo pressure, check](#) (output pressure).
If the functionality of the control lever is correct, continue the operation.
2. Raise and block the machine, see [191 Raising and blocking](#).
3. Put the machine in service position 1, see [191 Service position 1](#).
4. Relieve the pressure in the hydraulic system, see [900 Hydraulic system, relieve pressure](#).

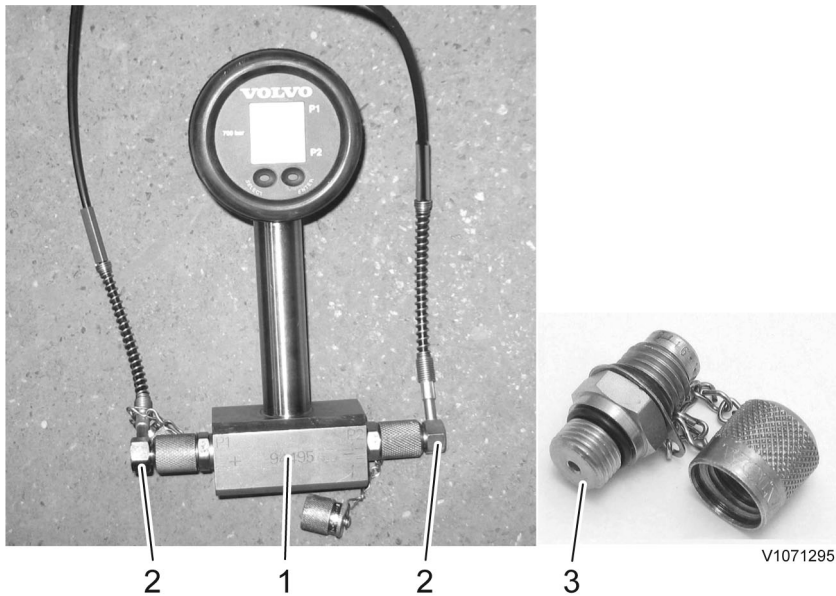


Figure 1

1. 11666051 Pressure gauge
2. 14290266 Hose
3. 936446 Testing nipple x 2



5.

Maintain greatest possible cleanliness during all work on the hydraulic system.

Install 11666051 Pressure gauge, 14290266 Hose x 2 and 936446 Testing nipple x 2 to the test locations.

- Front pump: test location B and D
- Rear pump: test location A and C

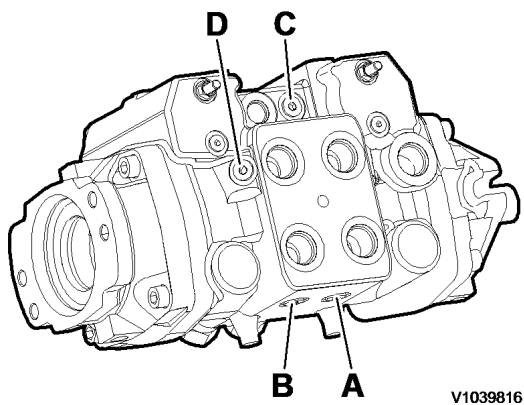


Figure 2

- A. Right, reward
- B. Left, reward
- C. Right, forward
- D. Left, forward

6. Start the engine at low idle. Keep the seat bar raised.
7. Loosen the lock nut. Turn the adjusting screw in one direction until one of the systems measures 70 bar (1015 psi).

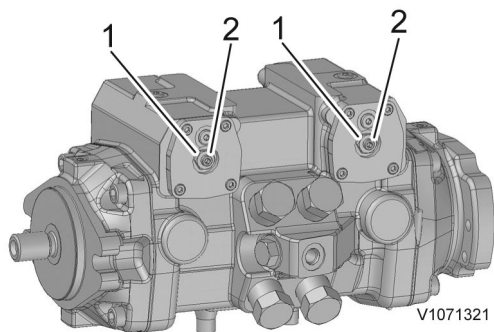


Figure 3

1. Lock nut
 2. Adjusting screw
8. Now turn the screw in opposite direction and note the amount of rotations when turning the adjustment screw until the other system pressure measures 70 bar (1015 psi).
 9. Turn the adjusting screw half the amount of rotation noted above. Torque the lock nut.
 10. Stop the engine, relieve pressure and remove the measuring equipment.
 11. Repeat the procedure on the other transmission pump.
 12. Lower the cab from the service position, see [191 Service position 1](#)
 13. Lower the machine from the blocking, see [191 Raising and blocking](#).

Thank you very much for reading.

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