Optional Equipment

Service Manual - JCB 8250 Fastrac

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PTO Drive Shaft and Flexible Couplings

Removal and Replacement

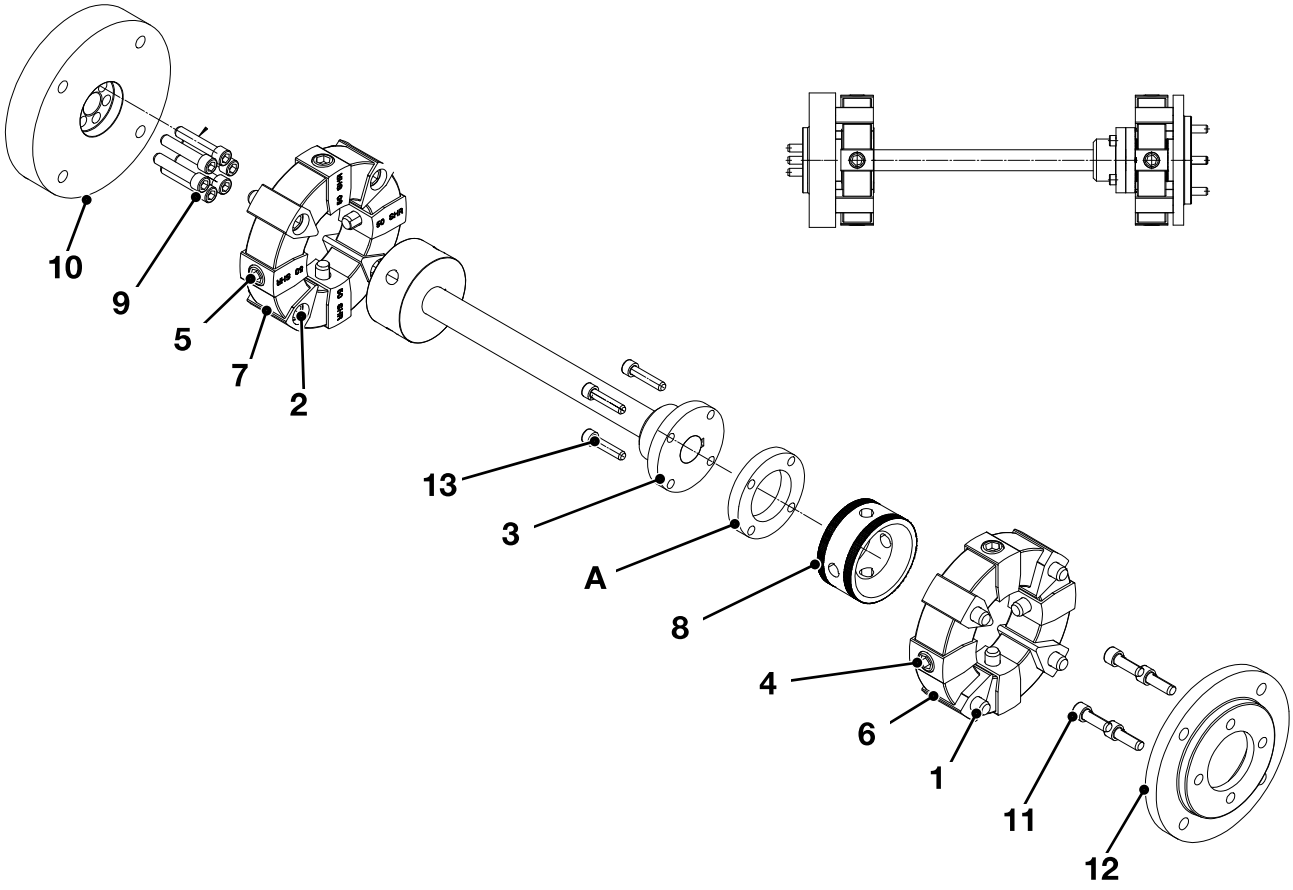

Fig 1.

The numerical sequence shown on the illustration is intended as a guide to removal and dismantling of the complete drive shaft assembly.

Note: *Spacer **A** is removable so that the fan belt can be removed and replaced without removing the complete PTO drive shaft **(see Fan Belt, Section 3)**.*

If only one of the flexible couplings is to be removed and replaced, removal of screws **13**, **4**, **5**, and plate **A** will allow the shaft to be separated from the couplings which can then be disconnected from the engine and/or PTO gearbox.

When Removing

Remove the radiator.

Remove socket head screws **1** and **2** and lift out the drive shaft assembly **3**.

Remove socket head screws **4** and **5** to separate the flexible couplings **6** and **7** from the drive shaft **3** and hub **8**.

Remove socket head screws **9** to separate flywheel **10** from the PTO gearbox.

Remove socket head screws **11** to separate adaptor plate **12** from the engine.

When Replacing

Make sure that the flexible couplings **6** and **7** are not distorted as shown at **X**. Correct alignment as shown at **Y** can be more easily achieved if general purpose grease is applied to socket head screws **1**, **2**, **4** and **5** to reduce friction between screws and couplings.

Note: *Spacer **A** is available in three different thicknesses. Select a suitable thickness of spacer to reduce the axial load on the flexible couplings **6** and **7**.*

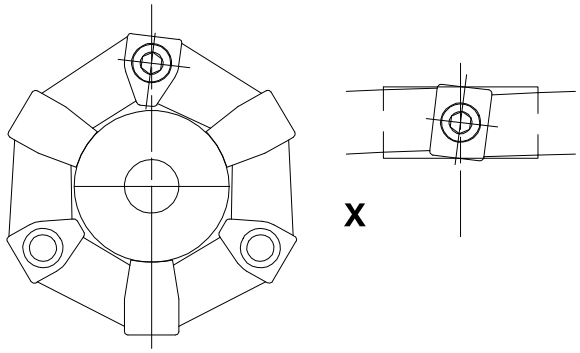

Fig 2.

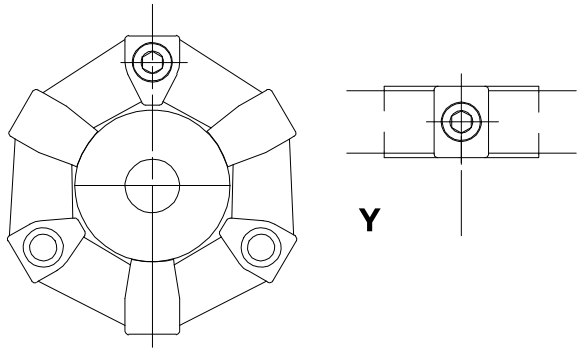

Fig 3.

Apply locking fluid to socket head screws **9** and **11** also to socket head screws **1**, **2**, **4** and **5** if the existing screw are being re-used. (New socket head screws **1, 2**, **4** and **5** are pre-coated with locking fluid.)

Torque Settings

Item	Nm	kgf m	lbf ft
1	220	22	162
2	220	22	162
4	220	22	162
5	220	22	162
9	147	15	108
11	147	15	108
13	85	8.7	63

PTO Gearbox

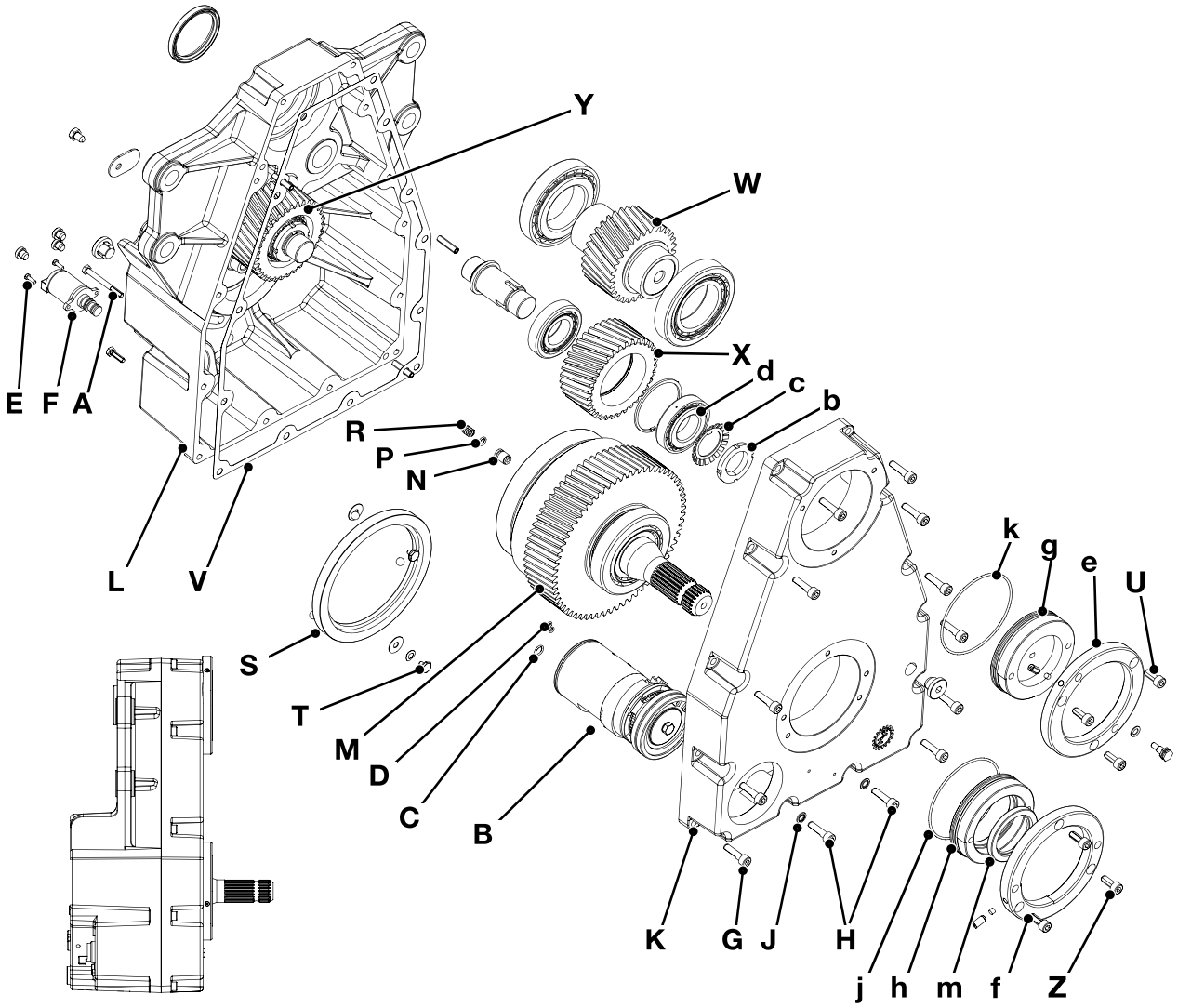

Fig 4.

Dismantling

1 Drain oil and remove filter ***(see Section 3)***.

2 Remove gearbox from machine.

3 Remove M6 bolts **A** and withdraw pump **B** through the front casing **K**. Take care to remove `O' rings **C** and **D** from the PTO casing.

4 Remove M5 bolts **E** and proportional valve **F** complete with `O' ring.

5 Remove M8 screws **G** and the two screws **H** with bonded seals **J**.

6 Hit the output shaft with a soft-faced hammer to separate the front and rear casings **K** and **L**.

7 Prise the clutch assembly **M** away from the rear casing using two levers. To service the clutch ⇨ ***PTO Clutch Dismantling and Assembly (A-6)***

8 Remove bronze bush **N**, `O' ring **P** and spring **R.**

9 Remove input gear and bearings **W**.

10 Release intermediate gear **X** from its shaft by unscrewing nut **b** and removing washer **c** and inner race of bearing **d**.

11 Remove intermediate gear **Y** in the same way as removing intermediate gear **X**.

12 Remove screws **U** and **Z** to release rings **e** and **f** from the front casing.

13 Unscrew the adjusting discs **g** and **h** from the rings and remove `O' rings **j** and **k** also oil seal **m**.

Assembly

1 Make sure that the working surface of bush **N** is in good condition and that length of spring **R** is 13mm (0.51 in). Renew if required.

2 Renew bearings if worn and all seals and `O' rings.

3 Check that rotation ring **S** turns without restriction. Tighten M5 bolts **T** to 5 Nm (44 lbf in).

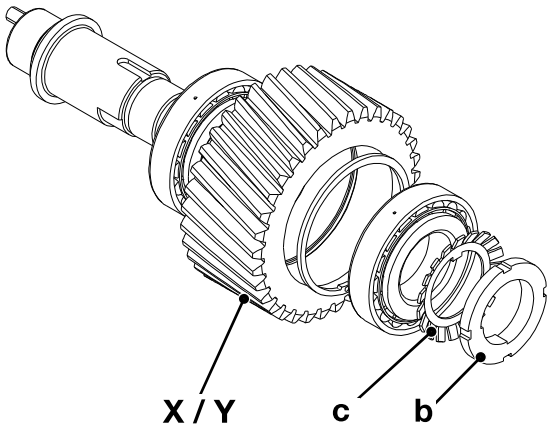

Fig 5.

4 Pre-assemble the intermediate gears **X** and **Y** onto their shafts. Tighten nut **b** to 40 Nm whilst rotating the gear to seat the bearings. If they do not seat correctly apply more torque. Then release the nut, rotate the gear a few turns and re tighten to 10Nm. Lock the nut with washer **c**.

5 Lay the rear casing on its back face and refit the clutch assembly and gears into rear casing **L**.

6 Grease gasket **V** to keep it in position and place the front casing in position, using a soft-faced hammer to bring the casings together.

7 Fit bolts **G** and **H**, making sure the two `O' rings are fitted to bolts **H**. Tighten bolts to specified setting.

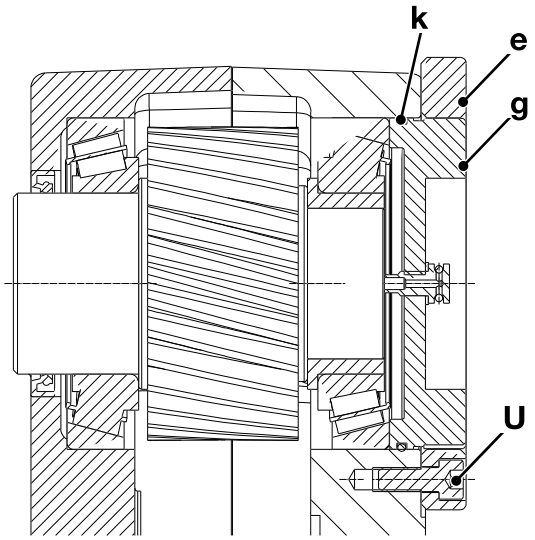

Fig 6.

8 Fit new `O' ring **k** to the input shaft adjusting disc **g**. Grease the threads and screw the adjusting disc **g** into the ring **e**. Fit the ring to the front casing and tighten screws **U** to the specified torque setting.

9 Tighten adjusting disc **g** to 120 Nm whilst rotating the input shaft, then release the disc.

10 Repeat step **9** twice then tighten the disc to 40 Nm.

11 Fit new `O' ring **j** and oil seal **m** to the output shaft adjusting disc **h**. Grease the threads and screw the adjusting disc **h** into the ring **f**. Fit the ring to the front casing and tighten screws **Z** to the specified torque setting.

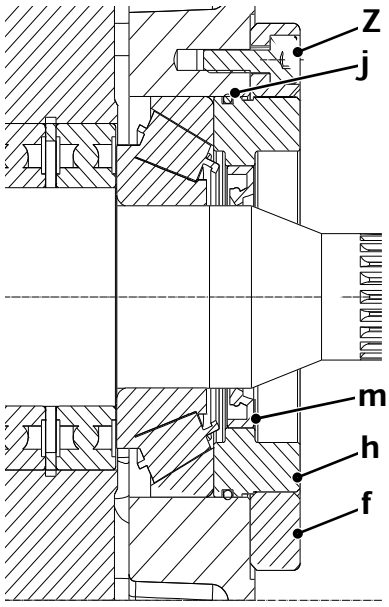

Fig 7.

12 Tighten adjusting disc **h** to 120 Nm whilst rotating the output shaft , then release the disc.

13 Repeat step **12** twice then tighten the disc to 60 Nm.

14 Make sure that it is possible to rotate the output shaft by hand. If not, decrease the torque of disc **h** and/or **g**.

15 Refit pump **B** making sure that new `O' rings **C** and **D** are held in position with grease. Tighten bolts **A** to specified setting.

Torque Settings

Item	Nm	kgf m	lbf ft
A	10	1.0	7
G	42	4.3	31
H	42	4.3	31
U	42	4.3	31
Z	42	4.3	31

PTO Clutch Dismantling and Assembly

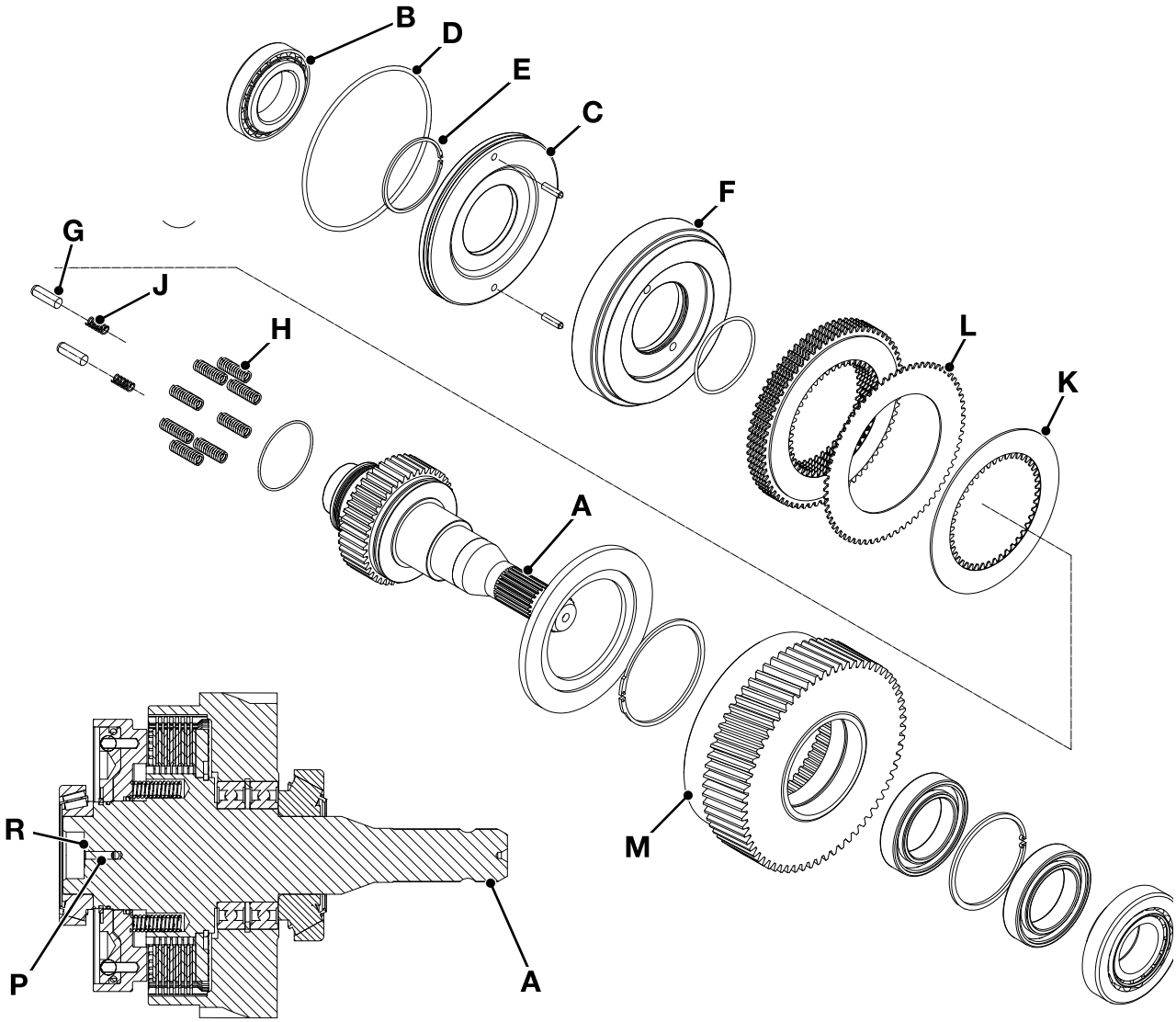

Fig 8.

1 Remove clutch from gearbox. ⇒ *Dismantling (A-4)*

2 Clamp the clutch assembly in a press with the shaft **A** pointing downwards.

3 Lever off rear bearing **B**.

4 Check the condition of surface **R** which contacts bronze bush **N** ⇒ *Fig 4. (A-3)* If this surface is damaged, renew the complete clutch assembly.

5 Using the press, apply light pressure to clutch piston **C** and remove circlip **E**, `O' ring **D** and cylinder **F**.

6 Check that dowel pins **G** are free and not damaged.

7 Check length of springs **H** is 42.4 mm (1.67 in).

8 Check length of springs **J** is 22.5 mm (0.89 in).

9 Remove clutch from press and with shaft **A** pointing upwards, tip plates **K** and **L** out of the housing **M**.

10 Press shaft **A** out of the housing.

11 Clean and check all parts and sealing surfaces for wear or damage, especially dowel pins and mating surfaces of piston **C** and cylinder **F**. Renew all seals.

12 Check thickness of clutch pack and renew if worn, warped or damaged. Total thickness of new clutch pack is 28 mm (1.1 in). Minimum acceptable thickness of worn clutch pack for re-use is 24.2 mm (0.95 in).

13 Assemble paper plates **K** and metal plates **L** alternately, starting and finishing with a paper plate.

14 Refit springs **H** and **J** and dowel pins **G**, making sure that the rounded end of each dowel pin is pointing upwards.

15 Fit new `O' ring **D**. Locate the piston and cylinder in the housing, apply pressure with the press and fit circlip **E**.

16 Check operation of the clutch by means of compressed air at **P**.

17 Refit bearings. ⇒ *Dismantling (A-4)*

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Front Hitch

Position Sensor Calibration

Introduction

It is necessary to define the limits of front hitch movement so the position sensor values are related to ECU1.

Accessing the Calibration Mode

Important: *Be aware that this process is time critical - read all the following steps before commencing.*

1 Ensure the transport lock **T** is not engaged, the green spool lever **1** is in its neutral position **N**, and the touch screen is powered `Off'.

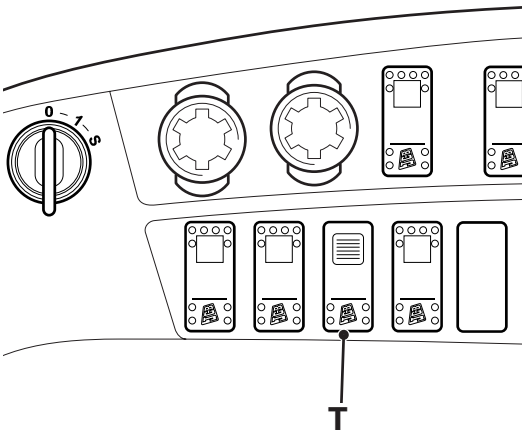

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Fig 9.

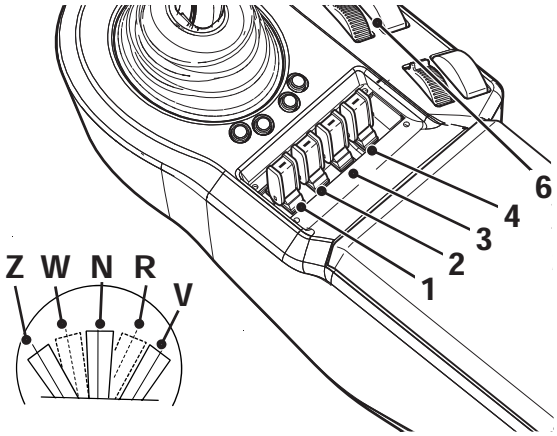

Fig 10.

2 Switch the Ignition `On'.

3 As the first instrument panel buzzer has finished sounding, engage the transport lock **T**.

4 Before the second instrument panel buzzer has finished sounding, slowly cycle the green spool lever **1** from its central neutral position to extend **V**, then to retract **W**, and back to neutral **N**. ⇨ *Fig 10. (A-9)*

The instrument panel will display a code and begin to count down from 25 seconds.

Calibration

The first screen displayed on the instrument panel is spool valve slices configuration. ⇨ *Fig 11. (A-10)*

A configured front hitch slice is always position 6. Position 5 is for the optional yellow slice (in this example not fitted).

Note: *If the slices are configured then DO NOT alter this spool valve configuration screen. Continue Front Hitch Position Sensor Calibration:*

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Fig 11.

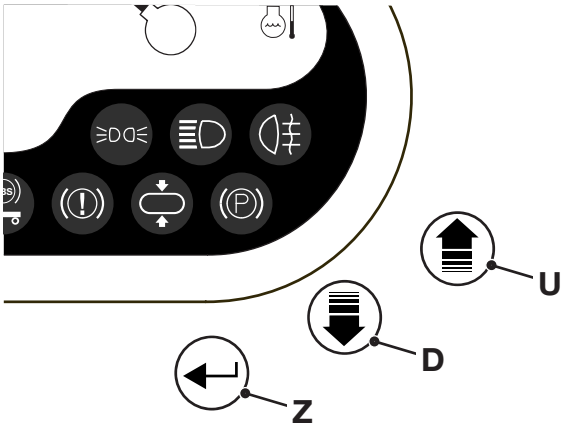

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Fig 12.

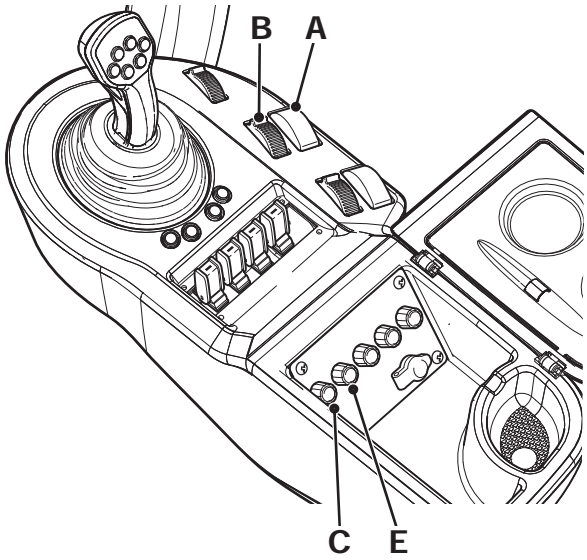
Using button **D**:

1 Scroll down to ‘START’

Start the engine and run at idle.

2 Scroll down to ‘Tx OFF’.

Disengage the transport lock.



T015250-B2

Fig 13.

3 Scroll down to ‘SHi’

Check lift height control **C** is set to maximum (turned fully clockwise).

Using the front hitch control **A**, raise the front linkage to the highest position. Typical value approximately 750 to 850.

Note: *If the value is outside these limits, an error code will be generated when the hitch is operated.*

Press the column switch end button **F** to Save – ‘OK’ displayed.

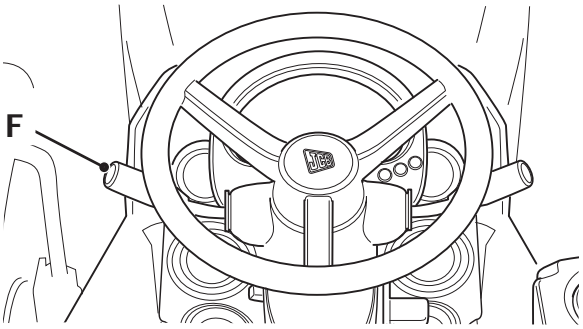


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Fig 14.

4 Scroll down to ‘SLo’

Check hitch depth wheel **B** is at lowest setting (turned fully forwards).

Using the front hitch control **A**, lower the front linkage to the lowest position. Typical value approximately 150 to 250.

Note: *If the value is outside these limits, an error code will be generated when the hitch is operated.*

Press the column switch end button **F** to save – ‘OK’ displayed

5 Scroll down to ‘Save’, using the down arrow **D**.

Press the column switch end button **F** to save changes and exit calibration mode.

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