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SERVICE BULLETIN

Kohler KD Series Diesel Engine – Fuel Valve Replacement

Doc. No.: 601066-01

Rev No.:	Date:	Author:	Description:
-	04/10/2022	B.Carlson	Original issue (for lockout of bypass valve tap)
A	28/10/2022	B.Carlson	Changed procedure to replace fuel valve with different part as some original units were found to leak internally at the bypass tap

Applicable Machines:	Redmond Gary Australia Cable Handling Equipment fitted with Kohler KD225, KD350 or KD500 air cooled diesel engines: • 4.4kW Power Unit • 2kN Fibre Optic Winch Skid • 5kN Fibre Optic Winch Skid • 1.7t Self Loading Cable Trailer (SLCT) • 2.5t Self Loading Cable Trailer (SLCT) • 5kN Recovery Winch Skid • 10kN Recovery Winch Skid
Criticality:	Highly recommended to be performed before the machine is operated again
Issue Date:	28 October 2022
Overview:	This procedure outlines the actions required to correctly replace the fuel valve on the engine

Ensure all of this work is carried out in a safe working environment. All work is to be carried out by a competent tradesperson.

Parts & Equipment Required:	- Replacement Kohler fuel valve (part no. 3587138)
	- Safety Glasses & relevant PPE
	- Tools and materials required:
	  o 8mm & 14mm spanners
	  o Pliers and snips
	  o Hex/Allen keys
	  o M8 bolt (clean)
	  o Small drain pan

	○ Rags ○ Spill/enviro mats if required

Please read and understand the following instructions prior to starting work.

1 Introduction

The fuel valve is used to control fuel supply (on or off) from the fuel tank to the engine. The primary function of this valve is to shut the engine down when the engine is switched off or an emergency stop button is pressed.

The engine manufacturer (Kohler) supplies these engines with a fuel valve that includes a bypass tap covered by a locking tab. The tap is intended for use when pull starting the engine, as it bypasses the fuel on/off solenoid meaning the engine can run without electric power supply. Unfortunately rotating the tap into the bypass position results in the emergency stop buttons being bypassed and as such they will no longer work.

Some operators have mistaken the fuel bypass tap for a fuel on/off tap, and ran the machine only to find out the Emergency Stop buttons no longer function. The original solution was to lock wire the tap into the correct position. Unfortunately, it was later found that some units had faulty bypass taps that leaked internally. On occasion, even with the tap in the correct orientation, small vibrations or movements would allow fuel to flow internally when the key was switched off or emergency stop button was pressed.

Due to the potential for a safety incident, the original fuel valve is not fit for purpose. Kohler have recognised this and provided replacement fuel valves that do not have bypass taps fitted. Note that this does mean that the pull start function will no longer work. However, removing the pull start function is also a safety control measure to ensure the emergency stop buttons always function correctly.

The following procedure outlines the steps required to replace the fuel valve and remove the pull start cord.

2 Kohler KD Series Fuel Valve Overview

The fuel valve is located below the air filter housing, near the rear of the engine as per Figure 1 and Figure 2.

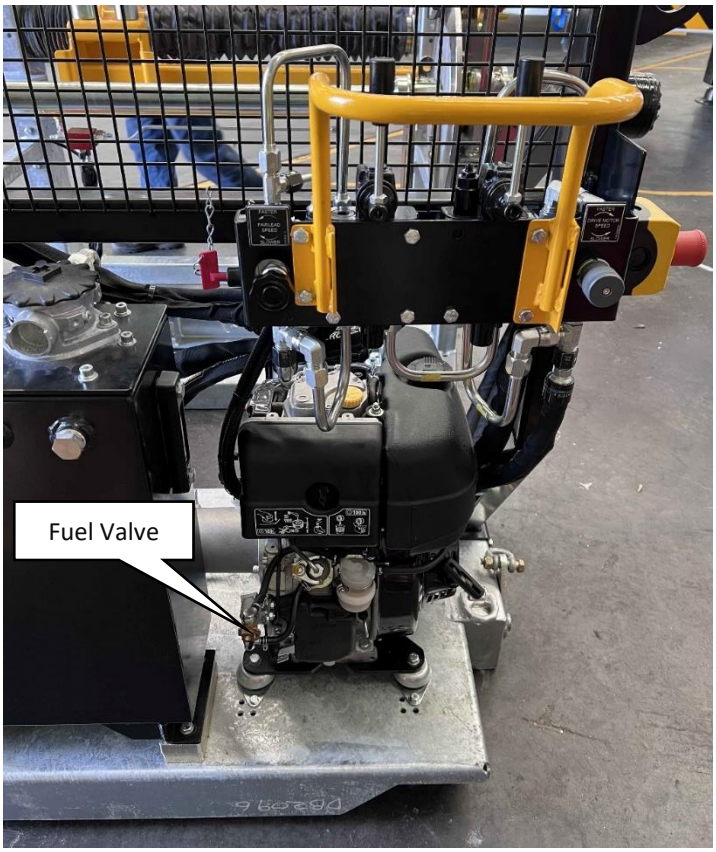

Figure 1: Location of the fuel valve

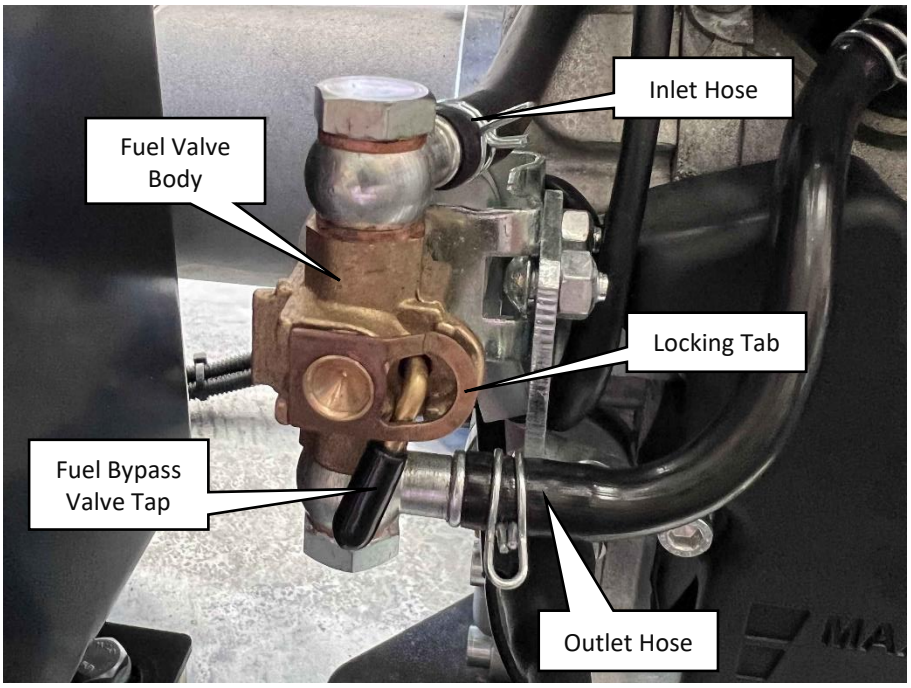

Figure 2: Fuel valve details

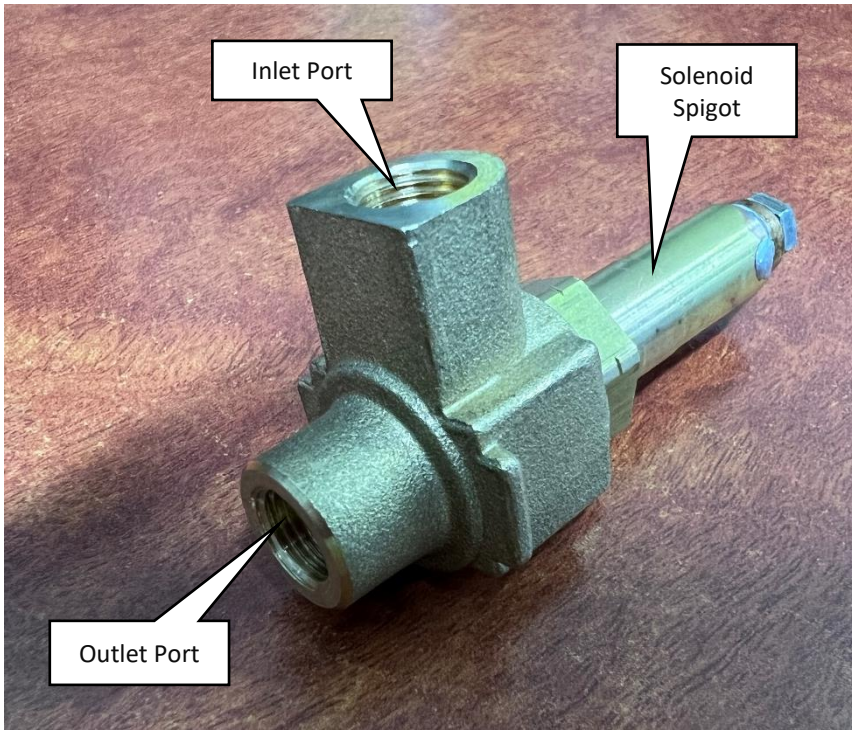

Figure 3: Replacement fuel valve

3 Procedure to replace the Fuel Valve

1. Set up and position the machine to provide suitable access to the engine
2. Turn the engine key switch off and isolate the battery
3. Check area is safe from ignition sources while working with diesel fuel
4. Place the drain pan underneath the fuel filter area
5. Release the hose clamp on the inlet side of the fuel filter and remove the hose from the filter body. Insert the clean M8 bolt into the hose to plug the line and check it does not leak

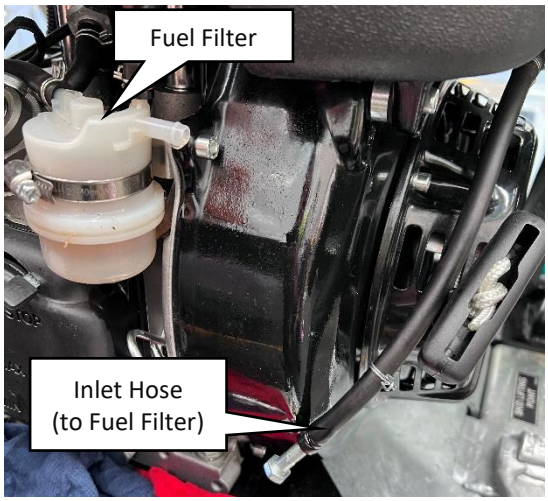

Figure 4: Fuel line removal

6. Move the drain pan to underneath the fuel valve area
7. Remove the fuel line bolts from the valve body

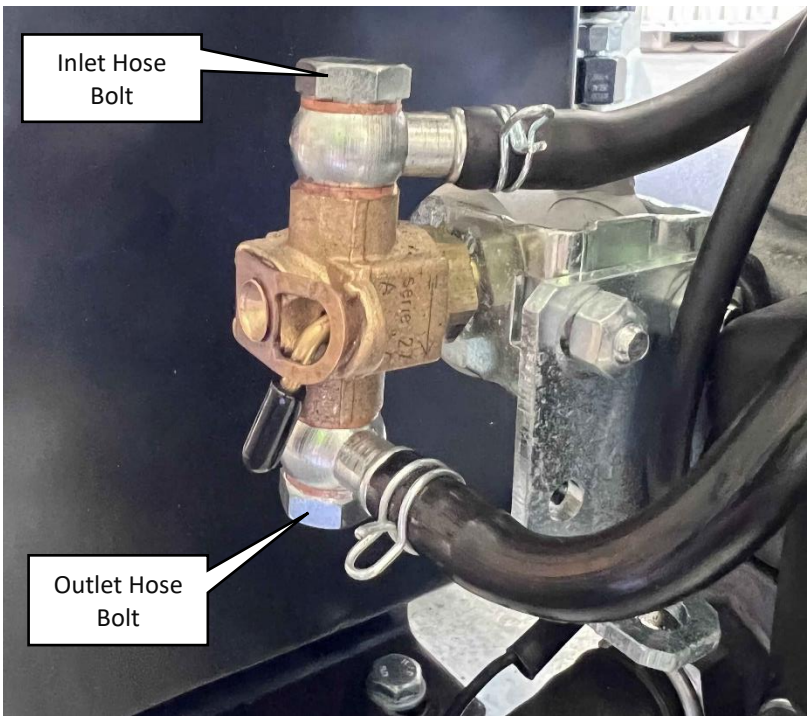

Figure 5: Fuel line bolt removal

8. Remove the small bolt at the rear of the fuel solenoid and slide the fuel valve out of the solenoid housing. Rotate the valve while pulling if it is stuck

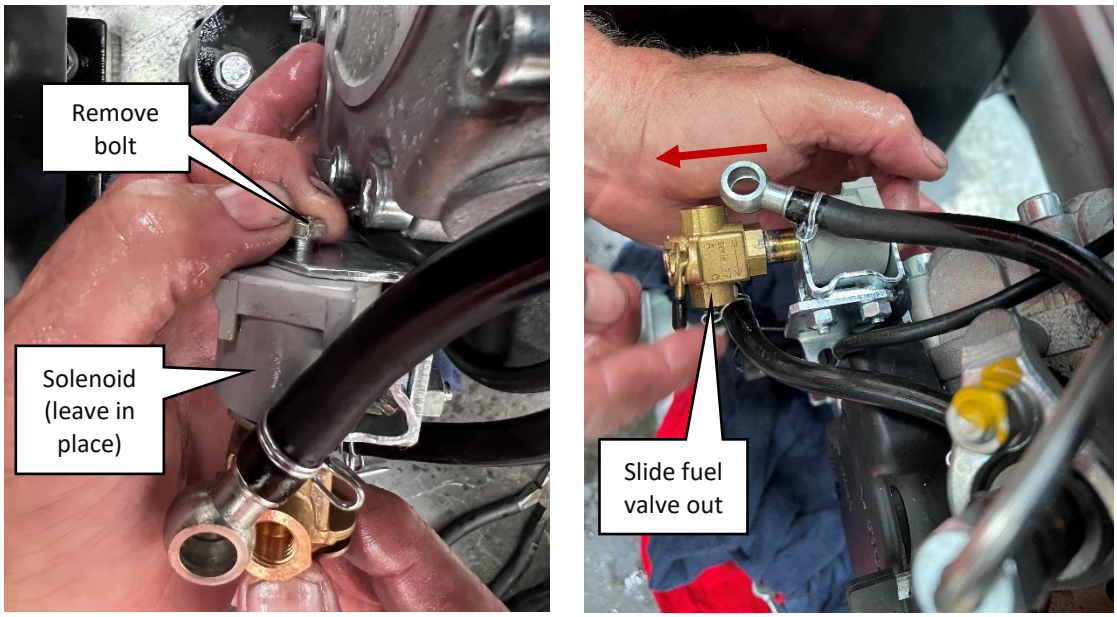

Figure 6: Fuel valve removal

9. Check the new replacement fuel valve is clean
10. Install the new fuel valve into the solenoid housing

11. Install the fuel line bolts into the valve body. Check the original copper washers are in good condition and installed above and below each fuel line fitting. Note the outlet port is located horizontally on the new replacement valve. If the fuel hose is tight when fitting (due to twisting), loosen the hose clamp at the engine side and rotate the hose, then secure the hose clamps again

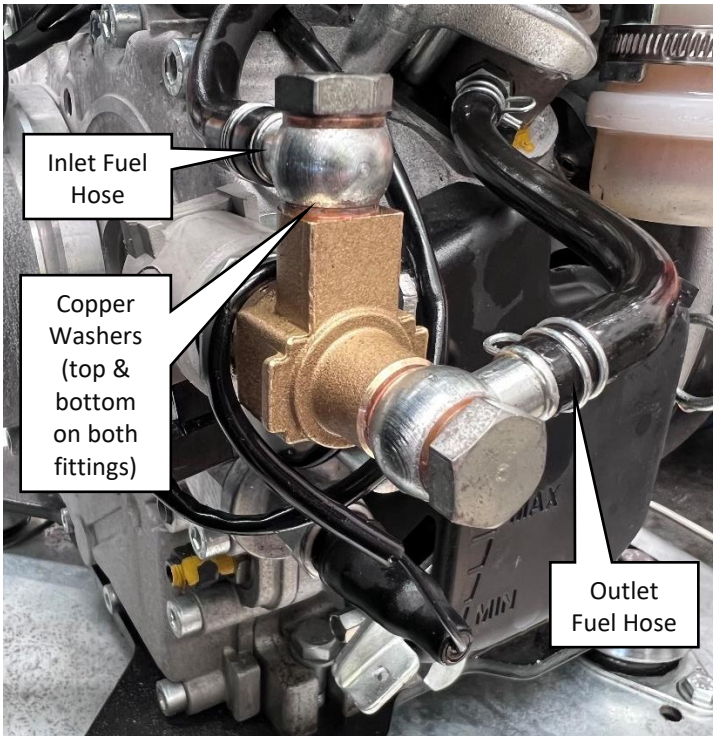

Figure 7: Install fuel lines on replacement valve

12. Install the small bolt at the rear of the fuel solenoid
13. Reconnect the fuel line to the fuel filter, ensuring the hose clamp is correctly positioned
14. Clean area and check for leaks

4 Procedure to remove the Pull Start Cord

15. Remove the engine cover for the pull start assembly

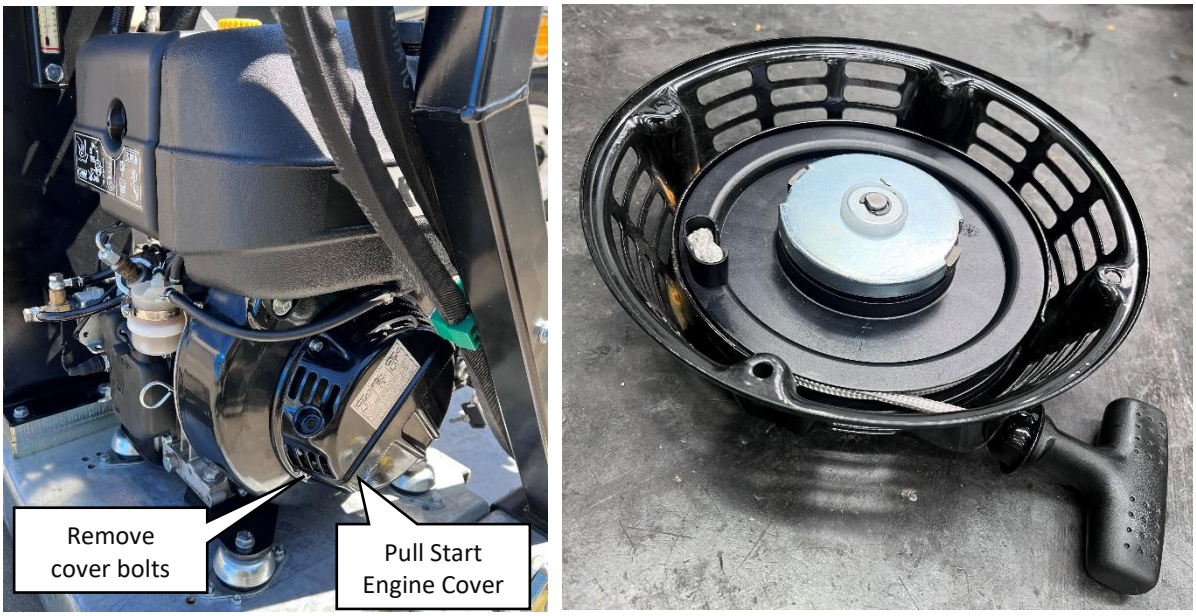

Figure 8: Pull start engine cover removal

16. Place the pull start assembly upside down, and pull the cord by the handle outward, then cut the cord with snips or pliers to remove the handle

Figure 9: Removing the pull start handle

17. Grab the cord knot on the rotor (use pliers if necessary), and pull the cord all the way out until it is fully removed from the pull start rotor

Figure 10: Pull cord removal

18. Discard the pull start cord and handle
19. Install the pull start engine cover back onto the engine

5 Procedure to check correct operation

20. Re-check there are no fuel leaks, all bolts are tight and tools and equipment are cleared away
21. De-isolate the battery and start the engine
22. Activate the Emergency Stop button. Check the engine shuts down
23. For each additional Emergency Stop button (if fitted), restart the engine, and activate the button. Check the engine shuts down
24. If the engine has shut down when each Emergency Stop button has been activated, the system is operating correctly

Note: All new machines manufactured will have this valve fitted before delivery.

Please contact Redmond Gary Australia if you are unsure of any instruction