

dodson[®]

TECH SUPPORT INSTRUCTIONS

GR6 MAIN AND OIL PUMP VALVE BODY

DMS-00-0062 REV 002

24 APRIL 2023

**PREPARED BY: JAN PISL
DATE: 19APR2023**

**RELEASED BY: 
DATE: 24APR2023**

REVISION UPDATE NOTES:

The following table indicates the changes made in this document since the previous revision. All changes will be indicated by a revision bar in the margin.

If you have any questions email us at technical@dodsonmotorsport.com

Revision	Date	Description
REV.002	24APR2023	- Added main valve body info - Added DMS part numbers for clarity
REV.001	13SEP2021	- Update to new format

SOLENOIDS

LUBRICATION AND LINE PRESSURE

The **lubrication solenoid** is responsible for supplying oil to the clutch unit in order to lubricate the friction material and take heat away from the clutch. When this solenoid fails, the clutch can be completely destroyed. You may have an error code if the solenoid fails completely but if the solenoid leaks or becomes clogged, it can bleed line pressure or not supply enough lubrication to the clutch without throwing error codes.

The **line pressure solenoid** controls the available line pressure in the transmission. When it fails, the line pressure goes to maximum (because this solenoid is a bleed valve). You will see an error code for this, but the car should still be completely driveable. If this solenoid leaks or becomes clogged, you may see decreased line pressure at idle. This will not always throw a code. The car may be unable to select gear or hesitate when the line pressure is low.

The resistance of these solenoids should be: **3.8 - 4.4Ω @ 20°C** or **4.3 - 5.0Ω @ 50°C**
or **4.7 - 5.4Ω @ 80°C**

The part numbers for both the lubrication and line pressure solenoids are **DMS-7140**. When we have transmission apart in-house, we usually change these two solenoids regardless of the reason the transmission is apart. They are the most common solenoids to fail.

CLUTCH A AND B

The **clutch solenoids** are responsible for supplying oil pressure to the A and B clutches. These solenoids are less prone to failure but still an occurrence on the GTR. The most common cause of failure is increased resistance of the circuit inside the solenoid, so the most common way of fault finding is to measure the resistance.

The resistance of these solenoids should be: **4.6 - 5.0Ω @ 20°C** or **5.1 - 5.6Ω @ 50°C**
or **5.6 - 6.2Ω @ 80°C**

You should also check the condition of the gaskets underneath these solenoids, as the o-ring section can blow out the plastic which creates a leak.

The part number for the clutch solenoids is **DMS-7135**. The part number for the gaskets is **DMS-6149** or the can be purchased as part of the Dodson Valve body rebuild kit **DMS-7178**.

AXIS A AND B

The **axis solenoids** control the pressure for their respective halves of the transmission (A and B) that is used to select the gears and activate the clutches. They work in the opposite direction to the lubrication and line pressure solenoids. These two solenoids are located on the main valve body and therefore much simpler to replace. They are also quite common solenoids to fail and can cause both gear selection and clutch issues, such as loss of odds or evens, clutch slip and or pressure codes.

The resistance of these solenoids should be: **3.8 - 4.4Ω @ 20°C** or **4.3 - 5.0Ω @ 50°C**
or **4.7 - 5.4Ω @ 80°C**

The part number for axis solenoids is **DMS-7139**.

SHIFT SOLENOIDS

The **shift solenoids** are used to control the oil pressure supply for the gear selector pistons and are located on the main valve body. They do not commonly fail electrically but can become sticky from internal material build-up/debris. This can lead to harsher gear changes or even to complete loss of control of the corresponding selector. In extreme cases this could lead to unintended gear selection which in terms could lead to catastrophic damage to the transmission.

The resistance of these solenoids should be: **6.6 - 7.4Ω @ 20°C** or **7.3 - 8.3Ω @ 50°C**
or **8.1 - 9.2Ω @ 80°C**

The part number for the shift solenoids is **DMS-7141**.

PRESSURE SENSOR

LINE AND CLUTCH PRESSURE SENSORS

The **pressure sensors** are one of the most common failures to occur on the GTR. With the car in the ON position but the engine not running, they should all sit at around 500mV. This value can vary slightly depending on age of the sensor and variance. The car will still operate somewhat normally as this number drops, and will typically fault at around 280mV. The sensors can also increase this base voltage with temperature, and you may find a car that drives perfectly fine for 5 minutes and then faults. You can watch this steady increase on the data whilst warming the car up stationary. It is a good idea to change both clutch sensors if one has failed, as the other will be in similar condition.

The Dodson sensor is a direct plug n play sensor which is a lot more robust, has increased accuracy and a much finer resolution than the factory sensor. We also recommend the use of a shield that protects the clutch sensors from the clutch unit.

The Dodson pressure sensors are available as:

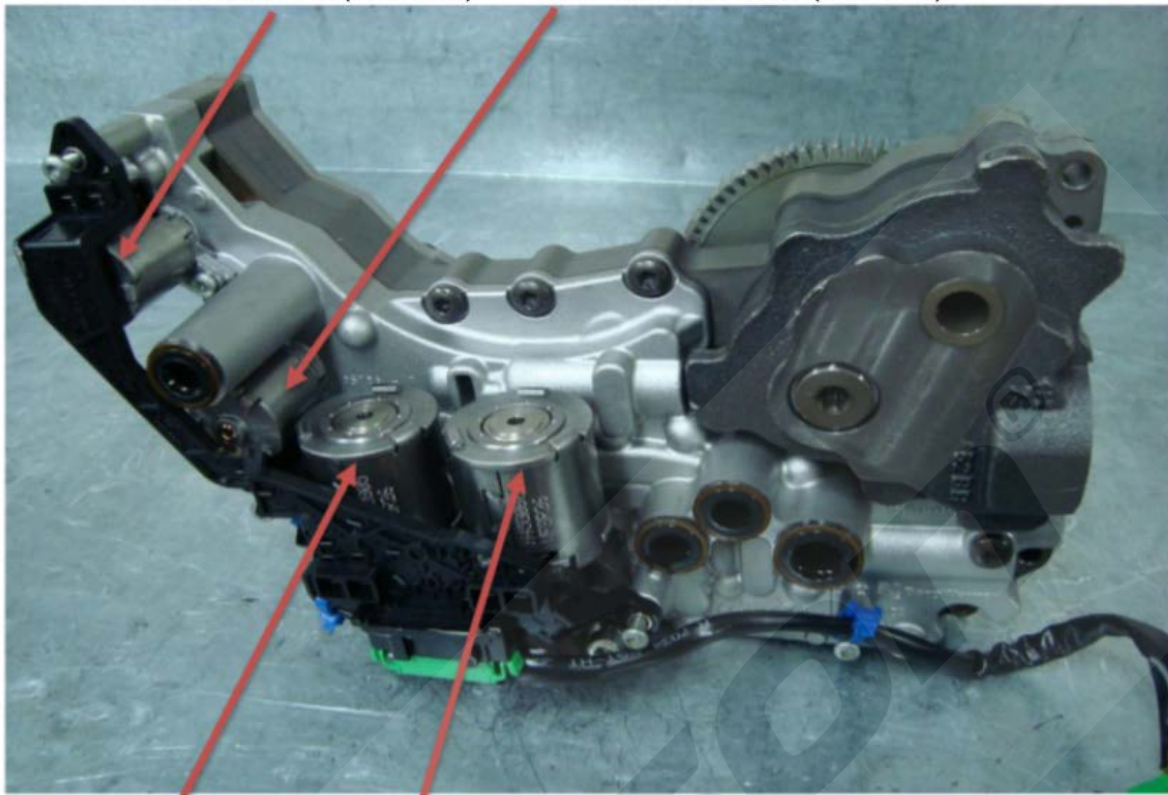
- Individual sensor - part number **DMS-7203**, or
- Line pressure kit - part number **DMS-7222**; which includes a shield/bracket **DMS-6221**, or
- Clutch pressure kit - part number: **DMS-7223**; which includes the sensor shield **DMS-6220**, or
- Line and Clutch pressure kit - part number: **DMS-7224**; which includes all three line pressure sensors and both of the shields/brackets

PLEASE SEE IMAGES ON NEXT TWO PAGES FOR:

- **CLARIFIED SENSOR AND SOLENOID LOCATIONS**
- **FURTHER VALVE BODY CONTROL/OPERATIONAL INFO**

Lubrication Solenoid (DMS-7140)

Line Pressure Solenoid (DMS-7140)

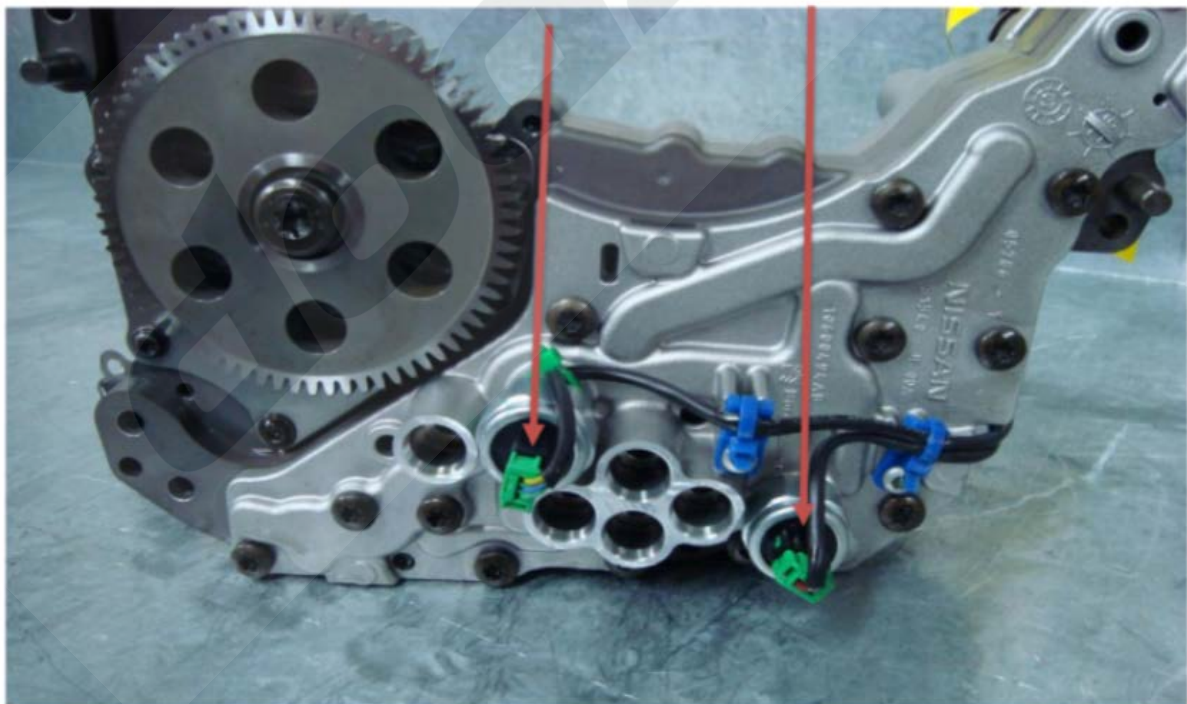


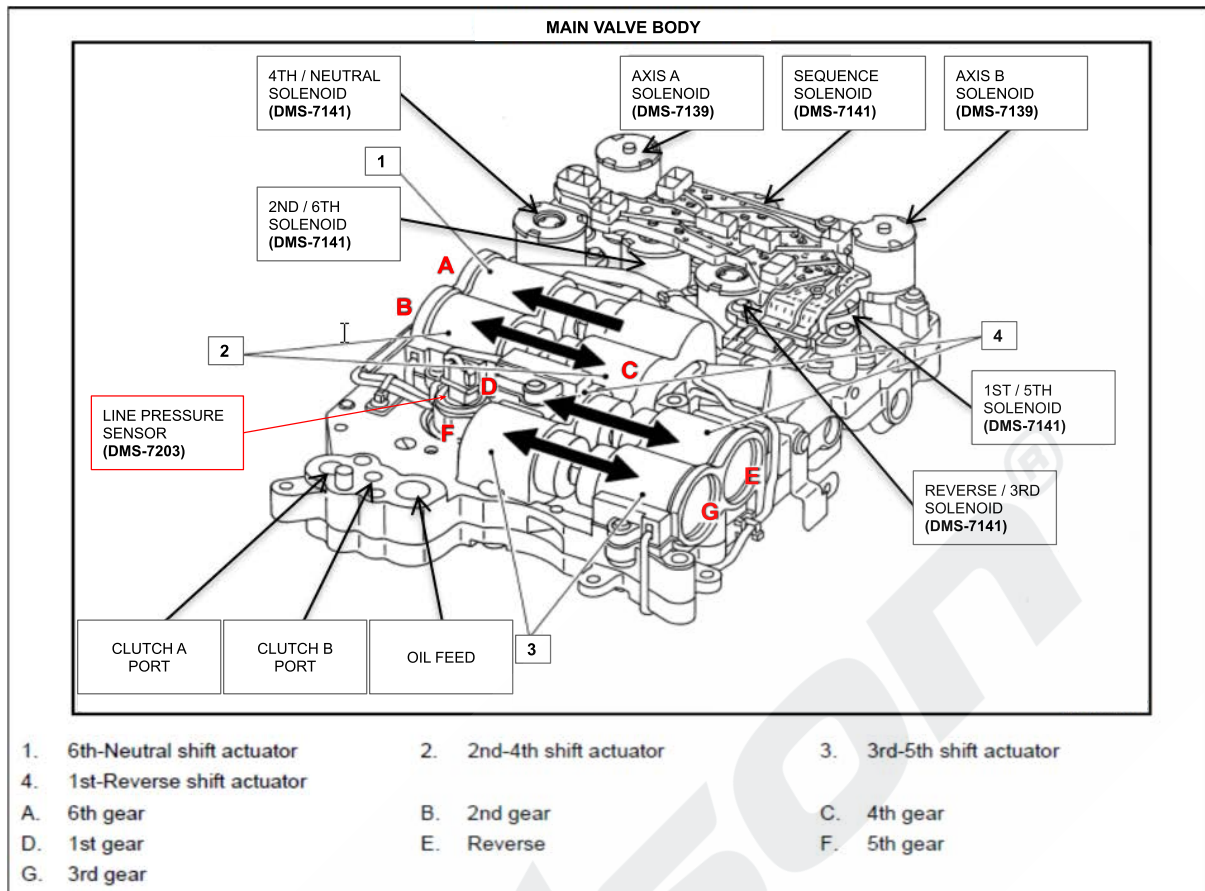
Clutch A Solenoid (DMS-7135)

Clutch B Solenoid (DMS-7135)

Clutch B Pressure Sensor (DMS-7203)

Clutch A Pressure Sensor (DMS-7203)





GEAR	ACTIVATED SOLENOIDS	
1	1ST / 5TH	
2	2ND / 6TH	
3	R / 3RD	SEQUENCE
4	4TH / N	
5	1ST / 5TH	SEQUENCE
6	2ND / 6TH	SEQUENCE
R	R / 3RD	

(For the selection of 1st, Reverse, 2nd, or 4th, the corresponding shift solenoid must be activated. For the selection of 3rd, 5th, or 6th, the corresponding shift solenoid must be activated along with the sequence solenoid.)

If you have any questions email us at technical@dodsonmotorsport.com