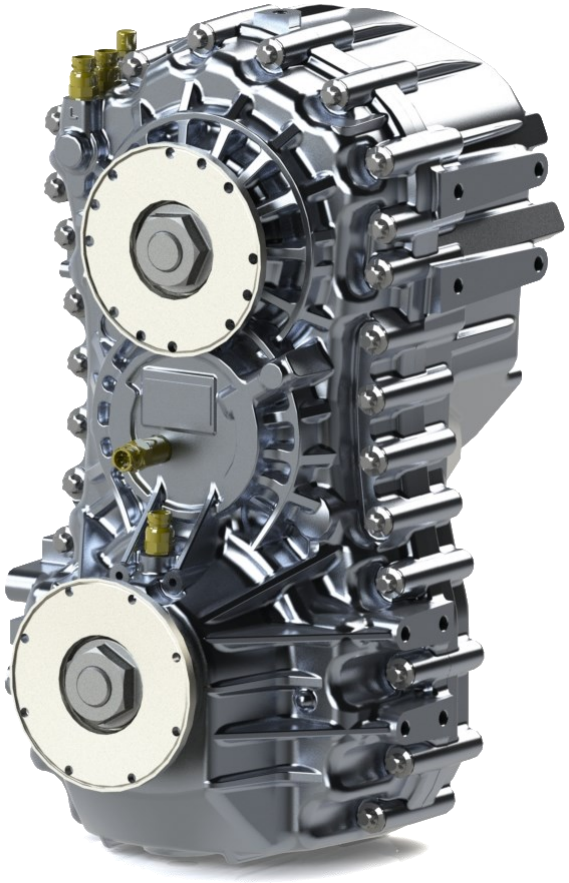


Operation Manual (MM4T65)

MVG1650 (T65)

MARMON-HERRINGTON HYDROMECH

13001 Magisterial Drive • Louisville, KY 40223

(502) 253-0277 • (800) 227-0727 • Fax (502) 253-0317

E-mail: info@marmon-herrington.com

1 Table of Contents

Preface

This manual has been prepared for owners and operators of vehicles equipped with Marmon-Herrington All-Wheel-Drive systems and components. For additional technical assistance, contact Marmon-Herrington Customer Service.

Please observe and follow all procedural and maintenance guidelines to ensure reliable operation and optimum service life. The Marmon-Herrington basic service schedule will integrate seamlessly with most preventative maintenance programs.

Marmon-Herrington shall not be liable for component failures or damages caused by operational abuse or neglect. Please review the Warranty Statement for a detailed explanation of coverage and claim reporting procedures.

We thank you for your investment in Marmon-Herrington equipment and look forward to serving your needs in the tradition of engineering excellence.

General Operation Statement

As close as engineers try to match gear ratios and tires for a given application, the reality is that there will always be some degree of ratio mismatch between front and rear axles. When a vehicle is operated on a hard, dry surface with the front axle engaged (AWD, 4X4, 6X6 modes), the tires are not able to slip and relieve the torsional forces being generated.

As such, Marmon-Herrington equipped vehicles are designed for “as needed” AWD operation only, in “off-road” or poor traction conditions. They are not intended to be driven in AWD mode on hard, dry surfaces.

Note: Seek expert advice when considering tire size or gear ratios changes

Document Overview

The specifications listed in these documents must be observed, as they are a prerequisite for fault-free operation of the product and for the warranty granted by Marmon-Herrington.

Product Designation

The product, MVG1650 (T65) has two different drops (center distance between input and output shaft):

Case	Drop
Long Drop (LD)	396 mm (15.6 inch)
Short Drop (SD)	300 mm (11.8 inch)

2 Safety

2.1 Signal Word and Symbols

Please follow the safety instructions within this document. They are indicated by severity as follows

DANGER

DANGER
This indicates a dangerous situation, that if not prevented, will lead to severe injury or death.
→Information as to how the danger can be prevented.

WARNING

WARNING
This indicates a dangerous situation, that if not prevented, can lead to severe injury or death.
→Information as to how the danger can be prevented.

CAUTION

CAUTION
This indicates a dangerous situation, that if not prevented, can lead to a slight or moderate injury.
→Information as to how the danger can be prevented.

Notice

CAUTION
This indicates a situation, that if not prevented, can lead to property damage.
→Information as to how the danger can be prevented.

2.2 General Safety Instructions

Read all safety instructions and information. Failure to comply with safety instructions and information may lead to property damage, serious injuries or death.

Intended Use

The Marmon-Herrington product is exclusively intended for the application as defined in the contract and as agreed on the time of delivery. Any other or extended form of use does not comply with this definition of intended use. The intended use includes compliance with this documentation and other applicable documents, in order to avoid malfunctions and damage in operation.

The Marmon-Herrington product is designed and produced in line with state-of-the-art technology. The Marmon-Herrington product in its delivery status is safe to operate. However, the Marmon-Herrington product may pose dangers if improperly used by unauthorized, untrained and uninstructed staff or if not used according to its intended use.

Figures might deviate from the Marmon-Herrington product and are not drawn to scale. No conclusions can be drawn with regard to size and weight.

Installation, Commissioning, Maintenance, and Repair

Please perform assembly, commissioning, maintenance and repair work exclusively according to this documentation and other applicable documents. Including observing the following points:’

- Employ authorized, trained, and instructed staff
- Observe technical provisions
- Only use genuine Marmon-Herrington Spare Parts, Accessories, and special tools
- Unauthorized changes and modifications can lead to expiration of warranty.

In case of damage, contact Marmon-Herrington and have the following information on ready:

- Type
- Serial number
- Operating hours
- Description of damage

Observe safety instructions, valid safety regulations and legal conditions to prevent malfunctions and damage.

The country-specific safety regulations, accident prevention regulations and environmental protection provisions apply additionally.

Wear safety-relevant workwear for all work. Depending on the work, also wear personal protective equipment.

After completing the work, check correct function and functional security

Handling of Marmon-Herrington Product

Unauthorized changes and modifications might impair functional security. Changes, modifications, and applications are only permissible upon written approval from Marmon-Herrington.

Observe the following when working on the Marmon-Herrington product:

- Secure workspace.
- Only carry out work at the unit when in a voltage-free state.
- Protect unit against being started accidentally. Attach instruction plate where it is clearly visible.
- Perform work when engine is switched off.
- Protect engine against being started accidentally. Attach instruction plate where it is clearly visible.
- Do not stand beneath a suspended load.
- Do not work on a suspended load.
- Only use permitted means of transport and lifting devices with sufficient load-bearing capacity.
- Close open tubing and hoses and avoid damage.
- Observe tightening torques.
- Protect cables against mechanical damage.

Noise

Noise might cause irreversible damage to hearing. The perception of acoustic signals, warning calls or sounds warning of impending danger is impaired by noise. Observe the following when working on the Marmon-Herrington product:

- Avoid Noise
- Wear Ear Protection

Operating Supplies and Aids

Operating supplies and tools might cause permanent damage to health and environmental damage. Observe the following when selecting operating supplies and aids:

- Health Risks
- Environmental Compatibility
- Material Safety Data Sheets

Observe the following when handling operating supplies and tools:

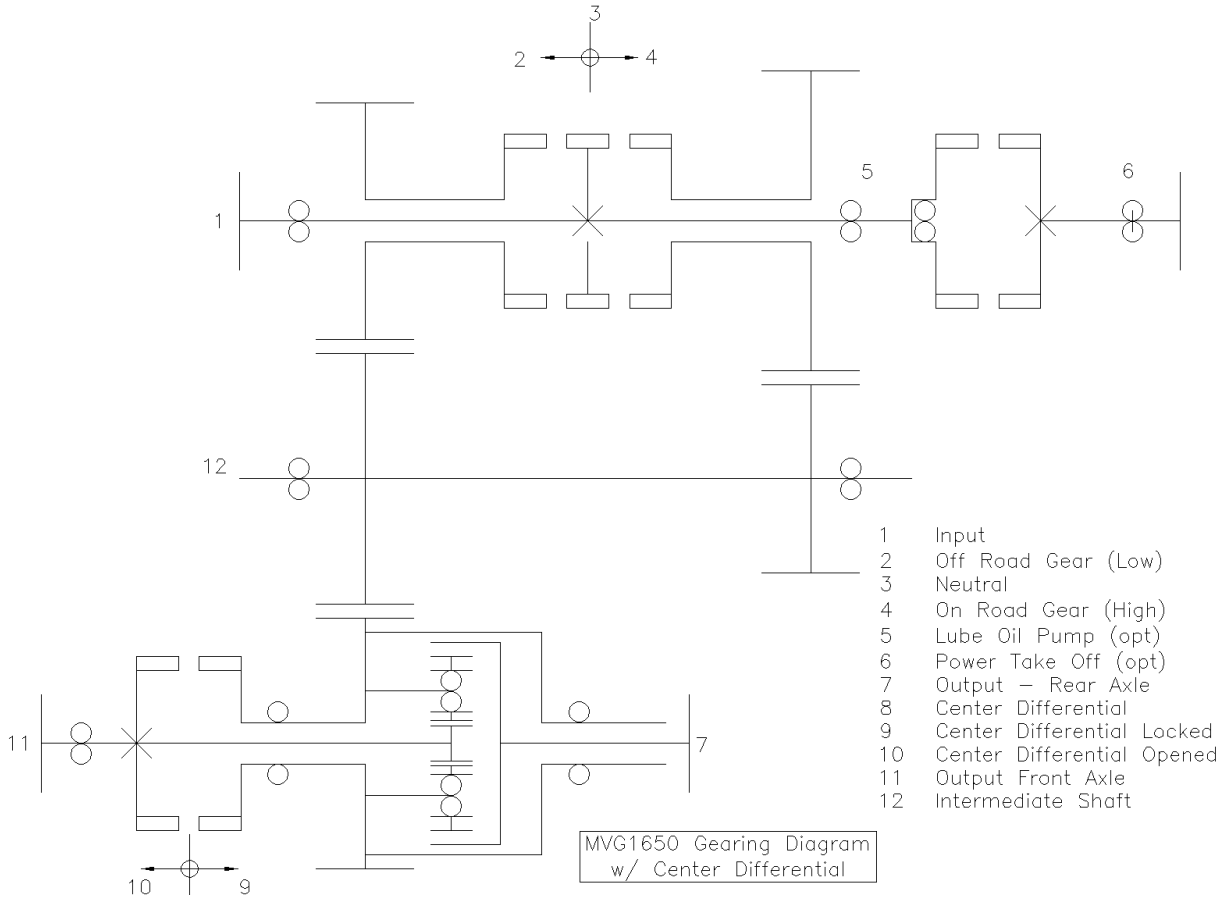
- Store operating supplies and tools in suitable and correctly labeled containers
- Seek medical help in case of injuries due to hot, cold or caustic operating supplies or tools

Observe the following to protect the environment

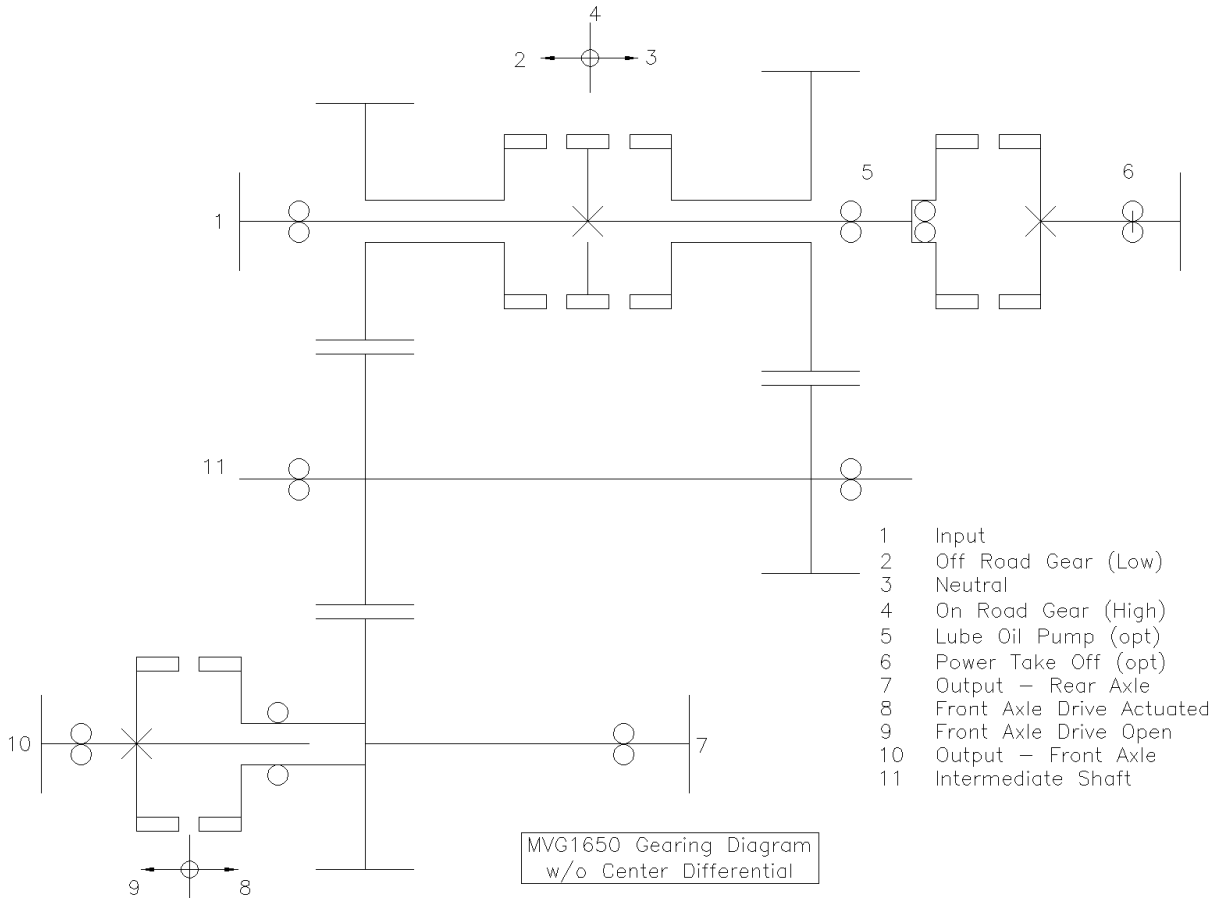
- Collect leaking operating supplies and aids in sufficiently large containers.
- Observe disposal regulations
- Observe material safety data sheets.

3 Gear Diagrams

3.1 Gear Diagram without Center Differential



3.2 Gear Diagram with Center Differential



3.3 Transfer Case Description

The transfer case is a transmission in three-shaft design with clockwise direction of drive rotation (view onto the input flange).

Transfer cases have different center distances (drops) between input and output shafts

- Long Drop (LD) Center Distance 396 mm (15.6 inch)
- Short Drop (SD) Center Distance 300 mm (11.8 inch)

Input shaft with two shiftable idler gears and different shift patterns:

- Off-road/Neutral/On-road (three-position shift system)
  - Pneumatic actuation
    - Off-road shift position (Low) pneumatically actuated
    - Neutral shift position (Neutral)pneumatically actuated
    - On road shift position (Hi) pneumatically actuated

Intermediate Shaft with the following options:

- Mounting an emergency steering pump on the transfer case housing side rear
- Electric front speedometer

Output to front axle and rear axle in two different output versions:

- Output with front axle connection
  - Front axle drive pneumatically engageable, compression spring release
- Output with center differential
  - Front axle drive, permanent
  - Center differential pneumatically lockable, compression spring release

Lubrication of the different transfer case versions:

- Splash lubrication without oil pump
- Splash lubrication with oil pump for external oil cooling. The oil pump is mounted onto the rear of the input shaft.

PTO pneumatically engageable and released by compression spring

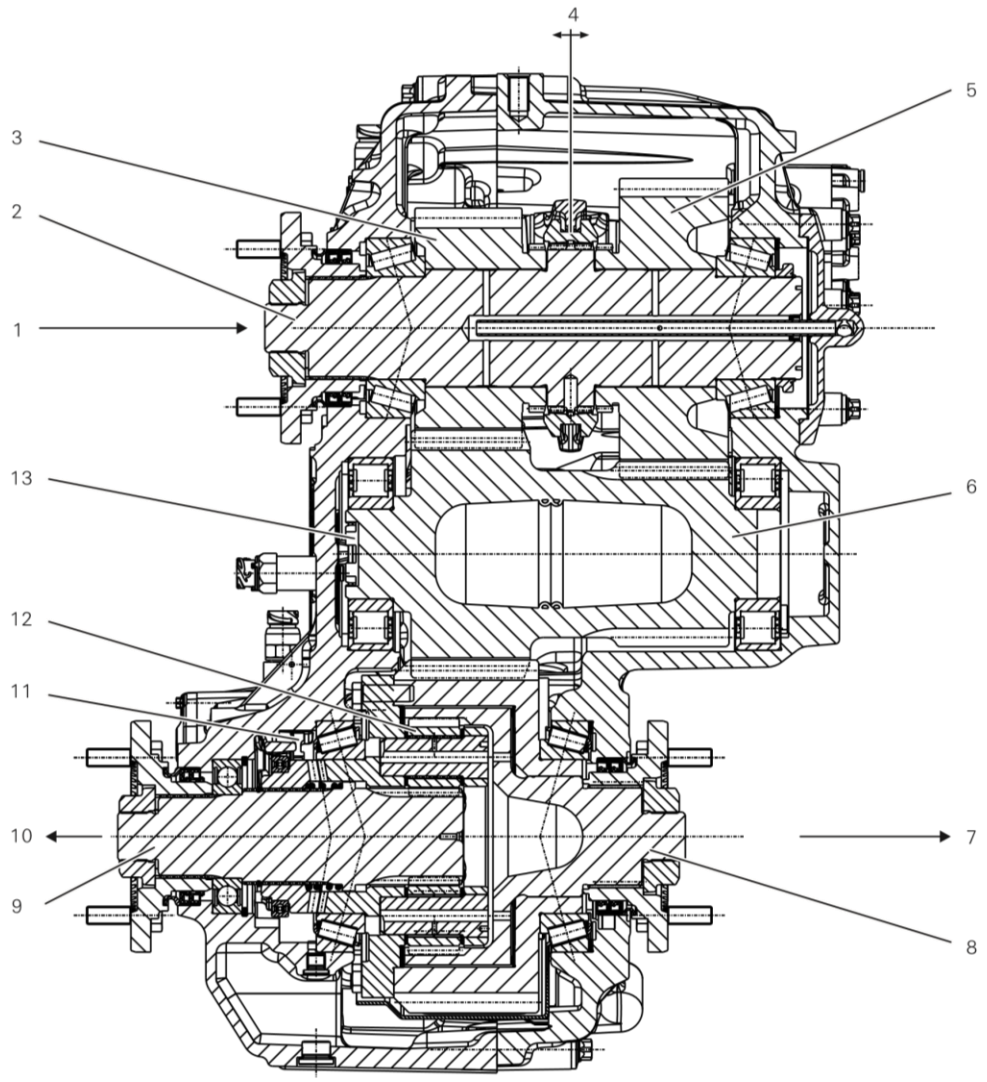


Figure 1: Transfer Case with Center Differential

1	Input	7	Output to Rear Axle
2	Input Shaft	8	Output Shaft – Rear Axle
3	Idler Gear (Low Gear)	9	Output Shaft – Front Axle
4	Shift Positions (High/Neutral/Low)	10	Output to Front Axle
5	Idler Gear (High Gear)	11	Pneumatic Lock of Center Differential
6	Double Gear	12	Center Differential
		13	Tone Ring (Integrated into Double Gear)

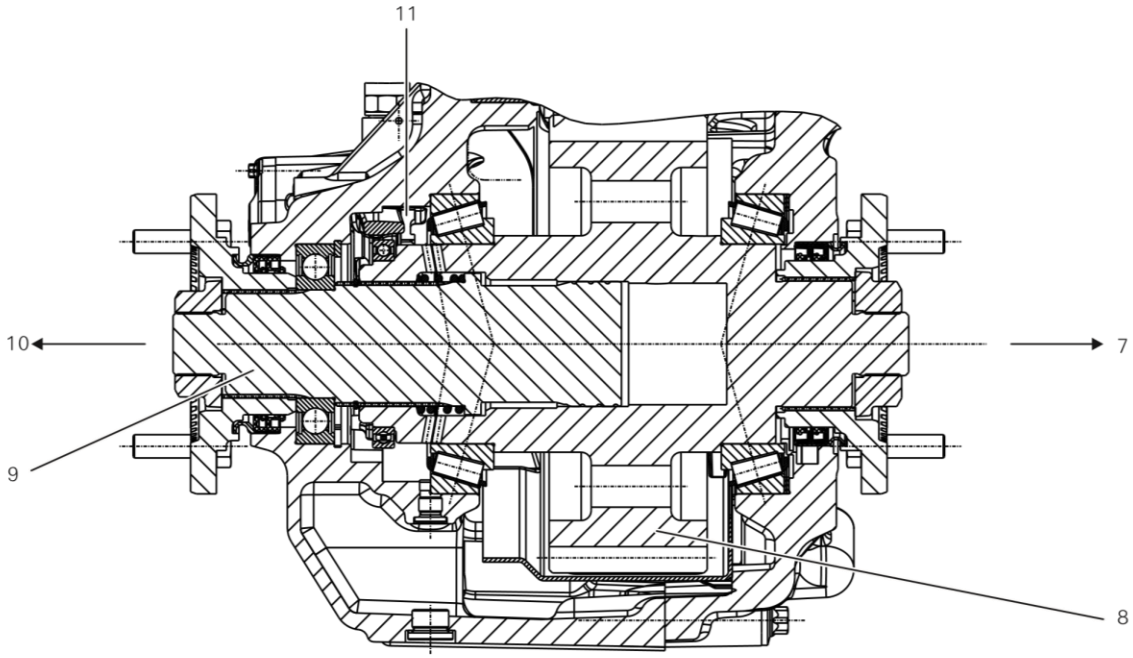


Figure 2: Transfer Case with Front Axle Connection

7	Output to Rear Axle	10	Output to Front Axle
8	Output Shaft – Rear Axle	11	Output to Front Axle
9	Output Shaft – Front Axle		

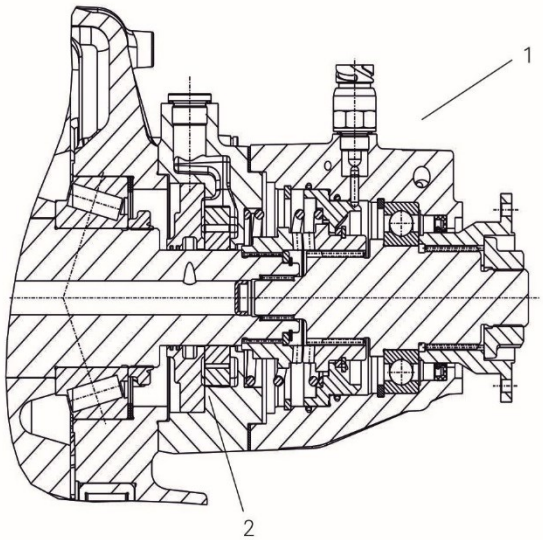


Figure 3: Transfer Case with Lubrication Pump and PTO

1	Power Take Off (PTO)	2	Lubrication Pump for External Oil Cooling

4 Technical Data

4.1 Oil

4.1.1 Oil Grade

Notice
Damage to Marmon-Herrington Product due to incorrect oil possible →Only use oils listed in the valid Marmon-Herrington List of Lubricants EDOC0137

Observe the information on the ID plate and any attached notices. Based on expected operating conditions, oils according to EDOC0137 are approved for used with Marmon-Herrington transfer cases.

4.1.2 Oil Quantity

All oil quantities listed are approximate. Correct oil quantity is determined by oil level plug as found on transfer case. Oil level is correct when oil ceases to run out of level plug after over filling. For more information on oil filling, see EDOC148 (LD) and EDOC149 (SD).

Drop	Differential	Oil Quantity
Long Drop (LD)	Without differential	6.2 liters (13.1 pints)
	With differential	5.6 liters (11.8 pints)
Short Drop (SD)	Without differential	6.7 liters (14.2 pints)
	With differential	6.1 liters (12.9 pints)

4.2 Transfer Case Data

Transfer Case Data	MVG1650 SD		MVG1650 LD	
Max. input torque	27000 Nm (19900 lbft)*		27000 Nm (19900 lbft)*	
Max. input speed	3200 rpm		3200 rpm	
Ratio	High gear 1 : 0.87	Low gear 1 : 1.54	High gear 1 : 0.87	Low gear 1 : 1.54
Weight with differential	approx. 255 kg (562 lbs)**		approx. 255 kg (562 lbs)**	
Weight without differential	approx. 240 kg (530 lbs)**		approx. 240 kg (530 lbs)**	
Shaft distance	300 mm (11.81 inch)		396 mm (15.59 inch)	

*dependent upon vehicle type, vehicle data, and applicable conditions

**depending on the transfer case version

Power Take Off Data	MVG1650 SD
Max. peak output torque	8500 Nm (6269 lbft)*
Max. cont. output torque	5850 Nm (4315 lbft)*
Max. input speed	3200 rpm*
Pneumatically engageable PTO: air pressure 6.5 bar – 8.5 bar	

*dependent upon vehicle type, vehicle data, and applicable conditions

Additional Information

- Pneumatic actuation of the shift positions with an air pressure of 6.5 bar – 8.5 bar (94-123 psi)*
- Shift positions
  - Off-road/on-road (two-position shift system): pneumatic actuation of all gear positions
  - Off-road/Neutral/On-road (three-position shift system)
- Off-road shift position pneumatically actuated
- Neutral shift position pneumatically actuated
  - Pneumatic actuation of all shift positions
- Pneumatically engageable front axle drive: air pressure 6.5 bar – 8.5 bar (94-123psi)
- Pneumatically lockable center differential
  - Front axle/rear axle i = 1:2.636
  - Air pressure 6.5 bar – 8.5 bar (94-123 psi)
- Electric speedometer connection: 8.897 impulse/revolution output

Installation Drawings with installation dimensions can be obtained from Marmon-Herrington.

4.2.1 ID Tag

Please keep below ID TAG information on hand when contacting Marmon-Herrington about questions regarding your Marmon-Herrington Product. Review Installation Drawings for ID Tag position on MH Product.

Figure 4: Transfer Case ID Tag

1	Transfer Case Model	3	Sales Order Number
2	Serial Number	4	Customer Part Number

5 Operation

5.1 Shifting Through Gears

The shift system is designed as dog clutch between High, Neutral and Low.

Notice
Material Damage Possible →Perform the shifting process only with vehicle at standstill and when input shaft has stopped. →During the shifting process, transmission must be in neutral position (power flow between engine and transfer case must be interrupted).

Notice
Material Damage Possible →When using the version without the lubrication pump, do not run the input shaft in neutral position.

5.1.1 Pneumatic Shift System

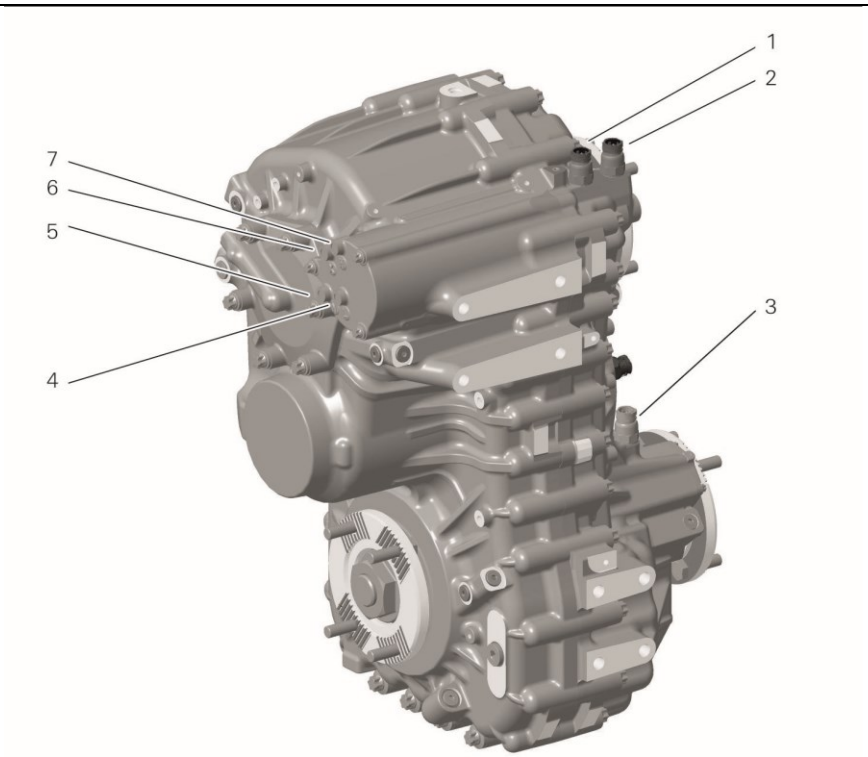


Figure 5: Transfer Case

1	Indicator Switch for High Gear	5	Air Port Neutral
2	Indicator Switch for Low Gear	6	Air Port Diff Lock/FAE
3	Indicator Switch for Diff Lock/FAE	7	Air Port High Gear
4	Air Port Low Gear		

5.1.1.1 Shift Positions High/Neutral/Low (Three Position Shift System)

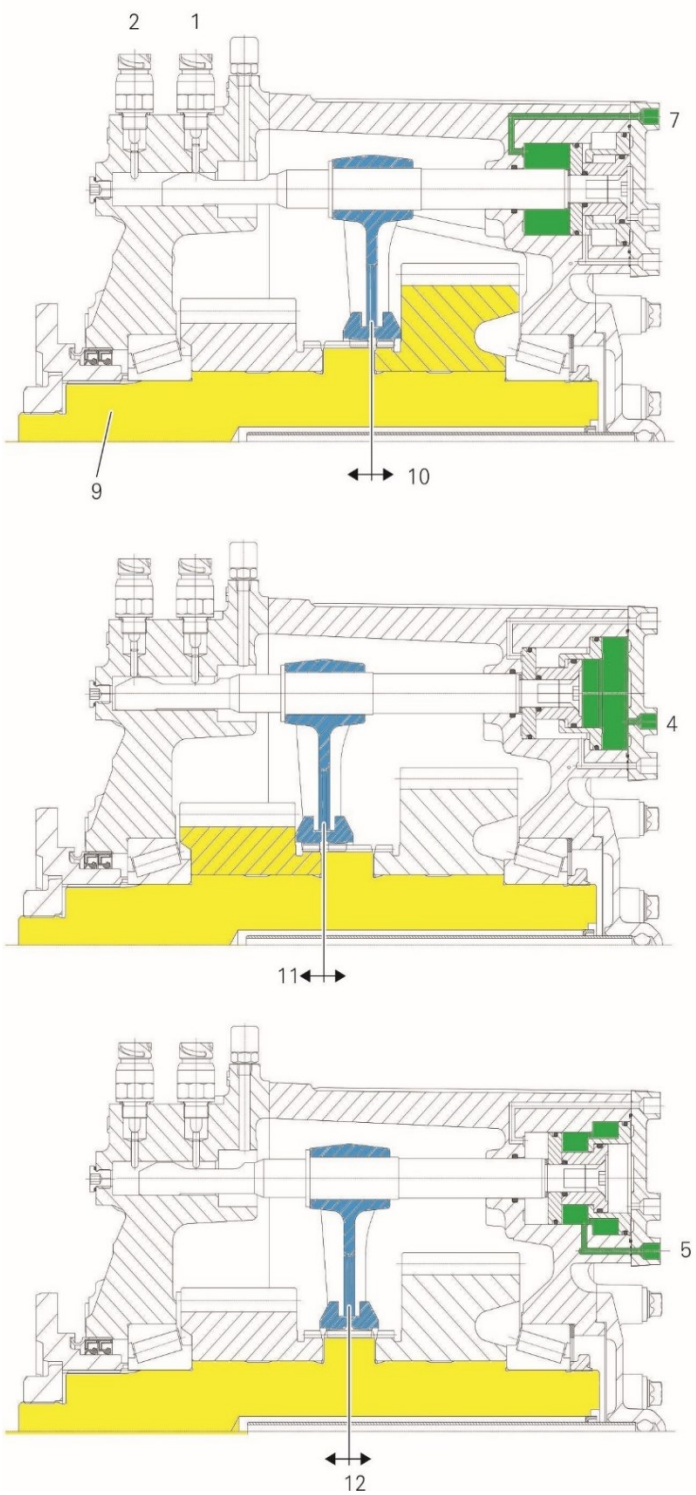


Figure 6: Three Position Shift System

1	Indicator for High Gear	9	Input Shaft
2	Indicator for Low Gear	10	High Gear
4	Air Port Low Gear	11	Low Gear
5	Air Port Neutral	12	Neutral
7	Air Port High Gear		

3 Position Chart			
	Air Port Connection		
	N	L	H
High Gear	-	-	X
Low Gear	-	X	-
Neutral	X	-	-
X = pressurized		- =vented	

5.2 Center Differential

When using transfer cases with center differential, the latter keeps the front axle drive constantly engaged. A disconnection of the front axle is not possible. If one or several wheels slip, the center differential must be locked. The lock is actuated pneumatically with an integrated shift cylinder and released by a compression spring.

The lock can be actuated during driving, however, with a short interruption of the power flow by actuating the clutch (for automatic transmissions release accelerator pedal).

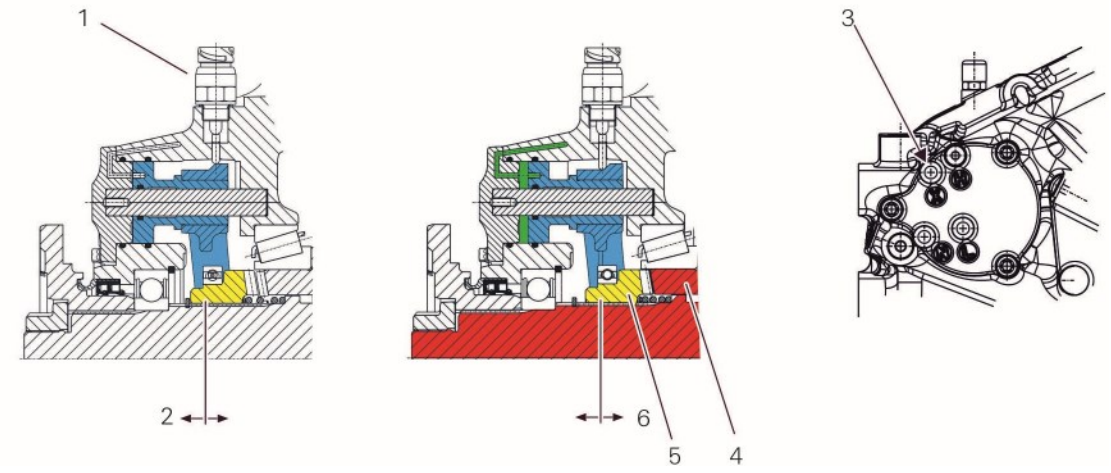


Figure 7: Center Diff Diagram

1	Indicator Switch for Diff Lock/FAE	4	Planetary Carrier
2	Output Opened	5	Gearshift Sleeve
3	Air Port for Diff Lock/FAE	6	Output Activated

Notice
Material Damage Possible →Do not engage the center differential lock if wheels are slipping.

Do not operate vehicle with locked center differential on firm, non-slip ground. Exceptions: up and down gradients.

It is possible to deactivate the lock while driving without clutch actuation. Switch off the lock again after operation.

A lit control lamp after switching off the front axle drive/the lock does not constitute an error. It is caused by a normal strain of the driveline, which unblocks after some load cycles or steering movements thus releasing the dog clutches.

5.3 Engageable Front Axle Drive

The front axle drive is pneumatically connected via an integrated shift cylinder and released by a compression spring.

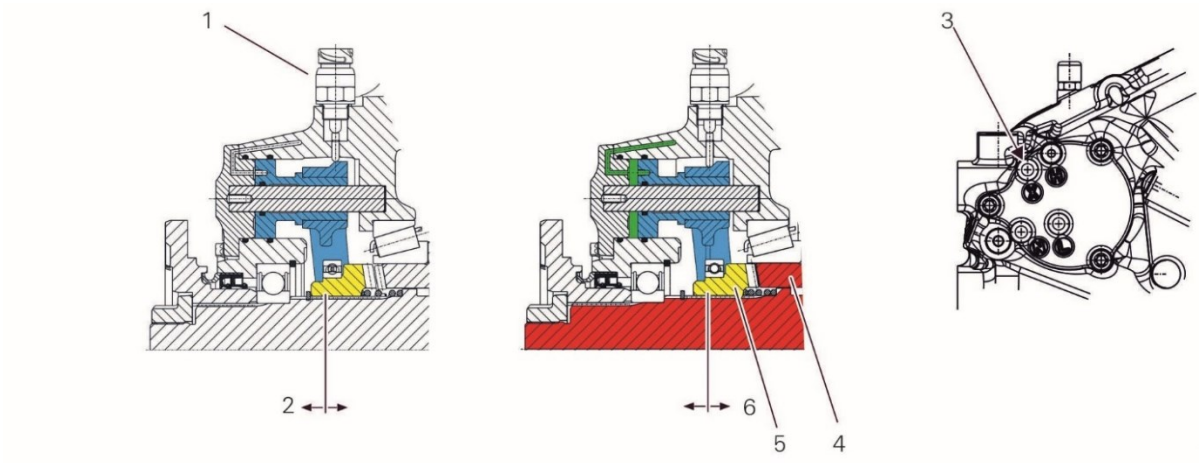


Figure 8: Front Axle Engage Diagram

1	Indicator Switch for Diff Lock/FAE	4	Planetary Carrier
2	Output Opened	5	Gearshift Sleeve
3	Air Port for Diff Lock/FAE	6	Output Activated

The shifting process can take place while driving, however, with a short interruption of the power flow by actuating the clutch (for automatic transmissions, the accelerator pedal must be released).

Notice
Material Damage Possible →Do not engage the front axle drive if wheels are slipping.

The front axle drive should be used:

- Off-road
- On poor traction condition ground
- On steep up and down gradients

Do not operate vehicle with front axle drive on firm, non-slip ground. Exceptions: up and down gradients. It is possible to switch off the front axle drive while driving without clutch actuation. Switch off front axle drive again after operation. A lit control lamp after switching off the front axle drive/the lock does not constitute an error. It is caused by a normal strain of the driveline, which unblocks after some load cycles or steering movements thus releasing the dog clutches.

5.4 Power Take Off (PTO)

Notice
Non-observance may result in transmission damage →For low temperature applications, observe the specifications in the list of lubricants EDOC0137

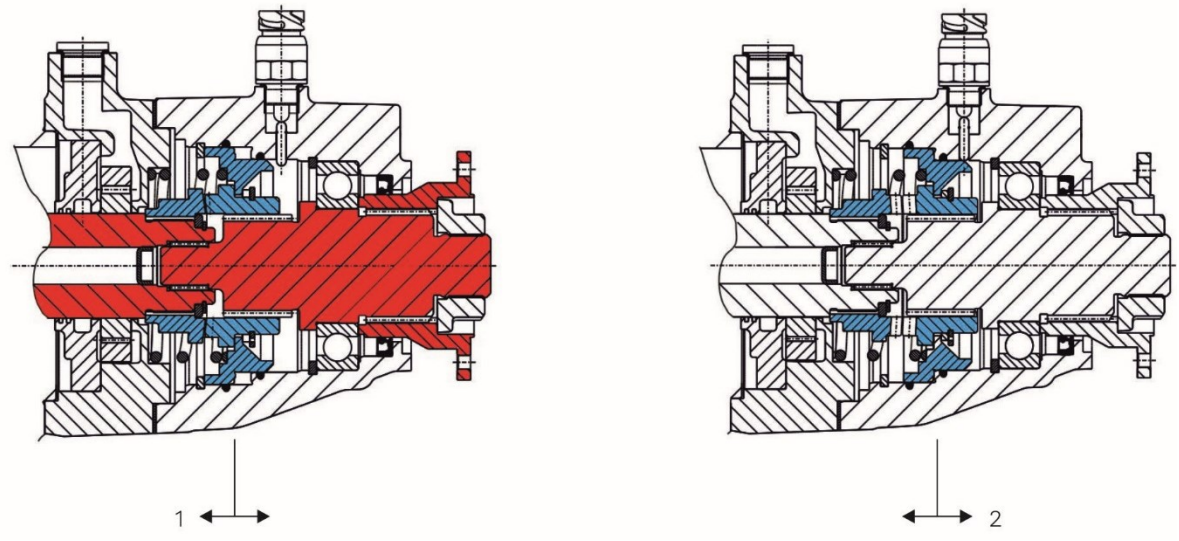


Figure 9: PTO Diagram

1 PTO Engaged 2 PTO Disengaged

The power take-off (PTO 8.5) is engaged pneumatically and released again by compression spring. **The engagement must be carried out with vehicle at standstill:**

Manual Transmission Engagement

- Depress the clutch and wait for at least 5 seconds until the input shaft is not moving anymore.
- Slowly engage the clutch to prevent the dog clutch from damage if the PTO is not fully engaged.

Automatic Transmission Engagement

- Shift into neutral position
- Engage PTO only with the transfer case input shaft at standstill.
- Pay attention to the following if the PTO is used with vehicle at standstill.
    - Shift transfer case into neutral position
    - The neutral position is secured by indicator switch.
- Deactivate PTO when vehicle is parked.

Disengaging the PTO

- Disengage clutch and thus interrupt power flow between engine and transfer case
- Deactivate the PTO
- The compression spring in PTO now pushes the dog clutch back to its initial position

PTO Warm UP

- If temperature is below -10° C (15° F), please allow at transfer case to sit at neutral for 5 minutes at 500 rpm (or engine idle).
    - See EDOC0137 for more information.

5.5 Emergency Steer Pump Operation

The emergency steering pump is used in hydraulic steering systems of heavy-duty motor vehicles to maintain steering characteristics for a short while if the engine-dependent steering pump fails.

During normal operation of the engine-driven pump the emergency steering pump delivers directly into the return line without having any supporting influence on the steering.

In case of an engine failure and, as a result, failure of the first pump (engine-driven pump), the oil flow of the emergency steering pump mounted to the transfer case is automatically redirected, e. g. by a separate sequence valve, into the pressure line leading to the steering system.

For emergency steering pump mounting, the max. permissible input speed on the transfer case input in normal steering operation is 2,950 rpm.

For emergency steering operation, input speed at the input of the transfer case is to be limited to 1,800 rpm.

Notice
Material Damage Possible →Observe the specified input speed in the emergency steering operation

5.6 Towing

5.6.1 Towing with Gear Engaged

Towing the vehicle is possible in all equipped shiftable positions (On-road gear, Neutral position, Off-road gear).

Notice
Material Damage Possible →Protect the transfer case against overspeed by choosing the right vehicle speed.

- The vehicle may be towed in On-road gear or Off-road gear with a maximum of 85% of the speed that is permitted for the vehicle in normal operation with the currently engaged transfer case gear.
- The vehicle may be towed in neutral position with a maximum of 85% of the permitted maximum vehicle speed.

In such a case the prop shafts between transfer case and shift transmission and transfer case and axles are also running.

Observe the vehicle manufacturer's towing instructions.

5.6.2 Towing with Lifted Front Wheels

When towing with lifted front wheels, the drive shaft between transfer case and rear axle must be disassembled

5.6.3 Towing with Emergency Gear Shift

5.6.3.1 Off Road Gear Position When Shifting Pneumatically

The procedure described here refers to a unit with pneumatic shifting for two-position shifting and three-position shifting.

The gearshift position is in off-road gear (LOW).

Shift position Neutral should be achieved for towing.

1. Remove Screw Plug (1)
2. Insert an M12x1.5x35 screw into tapped hole (2) that has now become accessible until the screw is 4mm above the support surface
3. Shift position changes to neutral

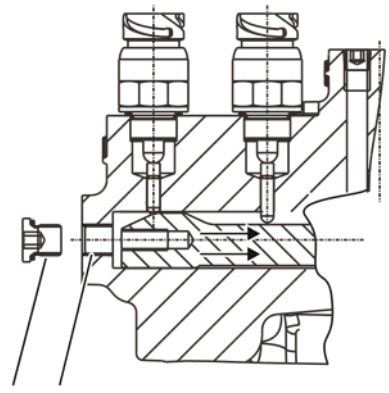


Figure 10: Shift Adjustment Cutaway

5.6.3.2 On-road gear shift position for pneumatic

The procedure described here refers to a unit with pneumatic shifting for two-position and three-position shift system.

The shift position is in on-road gear.

Shift position Neutral should be achieved for towing.

1. Remove Screw Plug (1)
2. Insert an M8x50 screw to the bottom of the tapped hole (3) of the gear shift rail.
3. Shift position changes to neutral

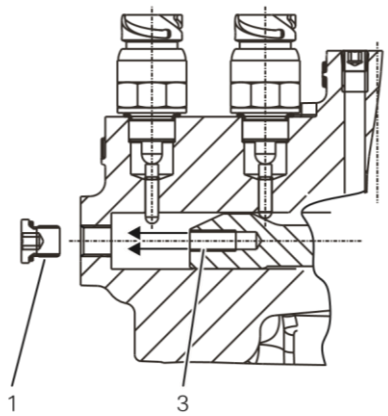


Figure 11: Gear Shift Cutaway

6 Transport and Storage

Marmon-Herrington would advise storage inside a hall or garage, with moderate ventilation, relative air humidity of max. 60%, and a temperature of 15 °C to 20 °C. Marmon-Herrington would recommend creating a conservation master card, and to renew conservation as required on the basis of this card.

Should storage be planned for a period longer than 4 months, please following the conservation guide below:

1. Remove transfer case breather and close the breather port on the housing by means of a screw plug.
2. Fill oil into transfer case.
3. Rotate transfer case around its center to ensure that the complete interior is wetted with oil.
4. Ensure installation position for storage.

In case of optimum conditions (internal storage at max. 60 % air humidity) repeat items 3 and 4 every 6 months.

Under extreme conditions, arctic or tropic, high contents of salt in the air (near the sea) repeat items 3 and 4 every 4 months.

Make sure to install the breather before the operation of the unit after removing from storage.

7 Maintenance

7.1 Draining the oil MVG1650 LD

Requirements:

- The vehicle is parked level in all directions
- The engine is switched off
- Transfer case has reached operating temperature

CAUTION

Risk of Burn injuries due to contact with hot surfaces. Slight to moderate injury possible
→Wear protective gloves

CAUTION

Risk of Burn injuries due to contact with hot oil. Slight to moderate injury possible
→Wear protective gloves
→Wear protective goggles

Observe the environmental safety regulations in your area

1. Clean Oil Drain Plug (2) thoroughly
2. Place a suitable container underneath the oil drain plug (2)
3. Remove oil drain plug (2) and sealing ring
4. Completely drain oil into container
5. Another oil drain plug with a magnet becomes visible. Remove oil drain plug including magnet
6. Clean oil drain plug and the magnet
7. Insert oil drain plug with magnet and tighten to 25 Nm
8. Clean oil drain plug (2)
9. Replace the sealing Ring on the oil drain plug (2)
10. Screw in oil drain plug (2) and tighten to 60 Nm

Figure 12: Long Drop Drain Plug

7.2 Filling in Oil and Checking the Oil Level MVG1650 LD.

Requirements:

- The vehicle is parked level in all directions
- The engine is switched off

Notice
Insufficient oil quantity causes a lack of lubrication and reduces service life of the transfer case. **Excessive oil quantity leads to overheating of the transfer case.** →Check oil level and correct oil quantity if necessary.

Notice
The use of a non-approved lubricant can lead to property damage. →Only use lubricant form the currently valid EDOC0137.

Observe the environmental safety regulations in your area

1. Clean oil level plug outside (1)
2. Remove oil level check plug (1) and sealing ring
3. Fill oil into oil fill hope. The oil level must reach bore edge, fill up if required.
4. Clean oil level plug (1)
5. Replace the sealing ring on the oil level plug (1)
6. Insert the oil level plug (1) and tighten to 60 Nm

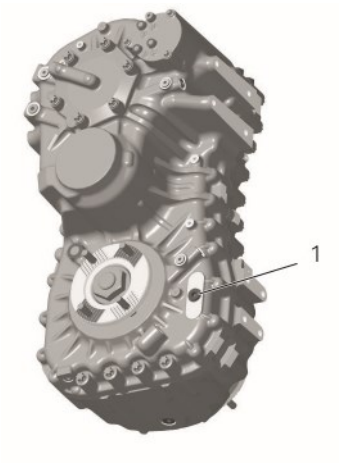


Figure 13: Long Drop Oil Level Plug

7.3 Draining the oil MVG1650 SD

Requirements:

- The vehicle is parked horizontally in any direction
- The engine is switched off
- Transfer case has reached operating temperature

CAUTION

Risk of Burn injuries due to contact with hot surfaces. Slight to moderate injury possible
→Wear protective gloves

CAUTION

Risk of Burn injuries due to contact with hot oil. Slight to moderate injury possible
→Wear protective gloves
→Wear protective goggles

Observe the environmental safety regulations in your area

1. Clean Oil Drain Plug (2) thoroughly
2. Place a suitable container underneath the oil drain plug (2)
3. Remove oil drain plug (2) and sealing ring
4. Completely drain oil into container
5. Another oil drain plug with a magnet becomes visible. Remove oil drain plug including magnet
6. Clean oil drain plug and the magnet
7. Insert oil drain plug with magnet and tighten to 25 Nm
8. Clean oil drain plug (2)
9. Replace the sealing Ring on the oil drain plug (2)
10. Screw in oil drain plug (2) and tighten to 60 Nm

Figure 14: Short Drop Drain Plug

7.4 Filling in Oil and Checking the Oil Level MVG1650 SD

Requirements:

- The vehicle is parked level in all directions
- The engine is switched off

Notice
Insufficient oil quantity causes a lack of lubrication and reduces service life of the transfer case. **Excessive oil quantity leads to overheating of the transfer case.** →Check oil level and correct oil quantity if necessary.

Notice
The use of a non-approved lubricant can lead to property damage. →Only use lubricant form the currently valid EDOC0137.

Observe the environmental safety regulations in your area

7. Clean oil level plug outside (1)
8. Remove oil level check plug (1) and sealing ring
9. Fill oil into oil fill hope. The oil level must reach bore edge, fill up if required.
10. Clean oil level plug (1)
11. Replace the sealing ring on the oil level plug (1)
12. Insert the oil level plug (1) and tighten to 60 Nm

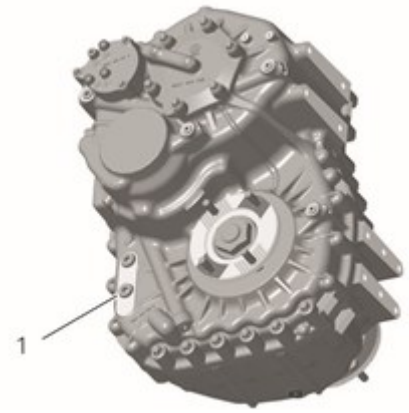


Figure 15: Short Drop Oil Level Port

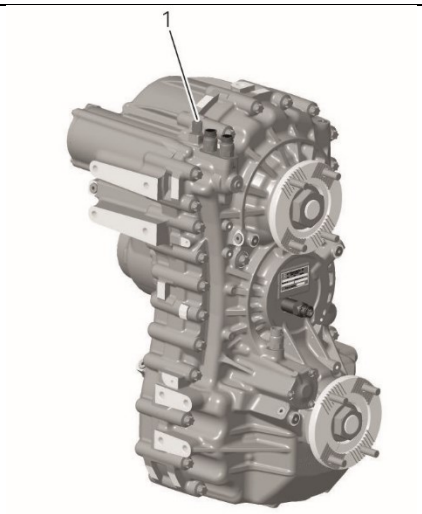
7.5 Oil Change Interval

	Standard Operation*	**Heavy Duty Application***
Oil Level Check	10,000 km (6,000 miles)	10,000 km (6,000 miles)
Oil Change	60,000 km (36,000 miles) or 1 year	20,000 km (12,000 miles) or 1 year
Cleaning of Breather	60,000 km or 1 year	20,000 km or 1 year

*This is recommendation only. Depending on application and duty cycle, more frequent changes may be necessary.

7.6 Breather

Clean and check proper function of breather during initial operation and within the oil change intervals.



1 Breather

7.7 Checking Compressed Air System

It is recommended to check the compressed air system to the transfer case shift system in connection with an oil change. Features include:

- Check On-road gear shift systems and Off-road gear shift systems for leak-tightness of the shift cylinder and the pressure lines. Check solenoid valve for rapid venting (clean if necessary).
- Check PTO output shift system for leak-tightness of shift cylinder and pressure lines. Check solenoid valve for rapid venting (clean if necessary).
- Check pressure lines for absence of abrasion.
- Check function of indicator switches.

7.8 Clearning

Soften dirt on unit with water jet and rinse off

Notice
Material Damage on unit due to ingress of water → Never use a high pressure cleaner or steam cleaner in order to spray the breather directly from underneath.

7.9 Visual Inspection

The transfer case is difficult to access for certain applications and it could thus possibly be overlooked during maintenance works. For this reason, visual control of the transfer case should also be carried out during vehicle inspections. Observe the following points:

- Check tightness of housing screws and shafts
- Stability of suspension elements
- Breather Function
- Condition of air tubes and electronic cables and their connections.

8 Supplemental Information

8.1 Additional Manuals

Manual	Manual #
Parts Manual	MM1T65
Service Manual	MM2T65
Installation Manual	MM3T65

8.2 Contact Information

Parts Department:

Phone:	(502) 253 0277 ext 1 / (800) 227 0727 ext 1
Email:	partsales@marmon-herrington.com
Website	marmon-herrington.com/contact-parts

Service and Warranty Department

Phone:	(502) 253 0277 ext 3 / (800) 227 0727 ext 3
Email:	warranty@marmon-herrington.com
Website	marmon-herrington.com/contact-service-warranty