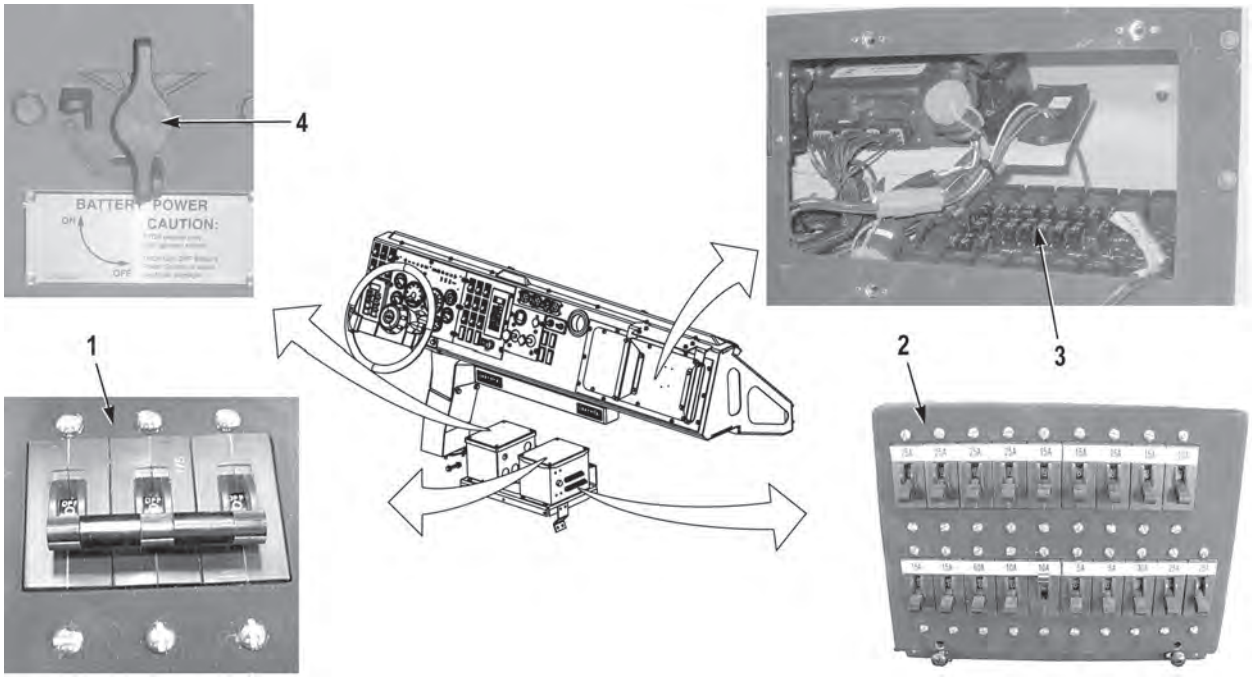


Figure 6. Crew Compartment Controls and Indicators.

Key Fig. 6	Control or Indicator	Function
1	Main Circuit Breakers	Protects main components from electrical overload.
2	Auxiliary Component Circuit Breakers	Protects auxiliary components from electrical overload.
3	M-ATV Engine and Chassis Circuit Breakers	Protects M-ATV engine and chassis components from electrical overload.
4	Battery Disconnect Switch	Turns M-ATV battery power ON and OFF.

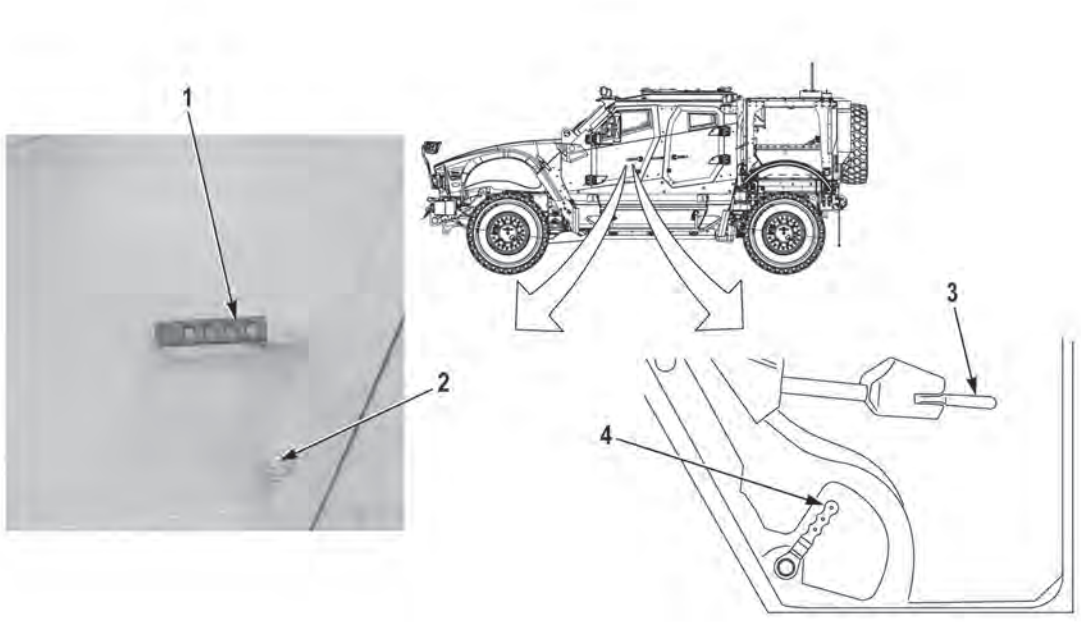


Figure 7. Door Controls.

Key Fig. 7	Control or Indicator	Function
1	Capsule Door Outside Handle	To open door from outside of capsule.
2	Combat Latch Override	Used to unlock combat latch.
3	Capsule Door Inside Handle	Pull handle to open door from inside.
4	Combat Latch	Push handle down to lock capsule door.

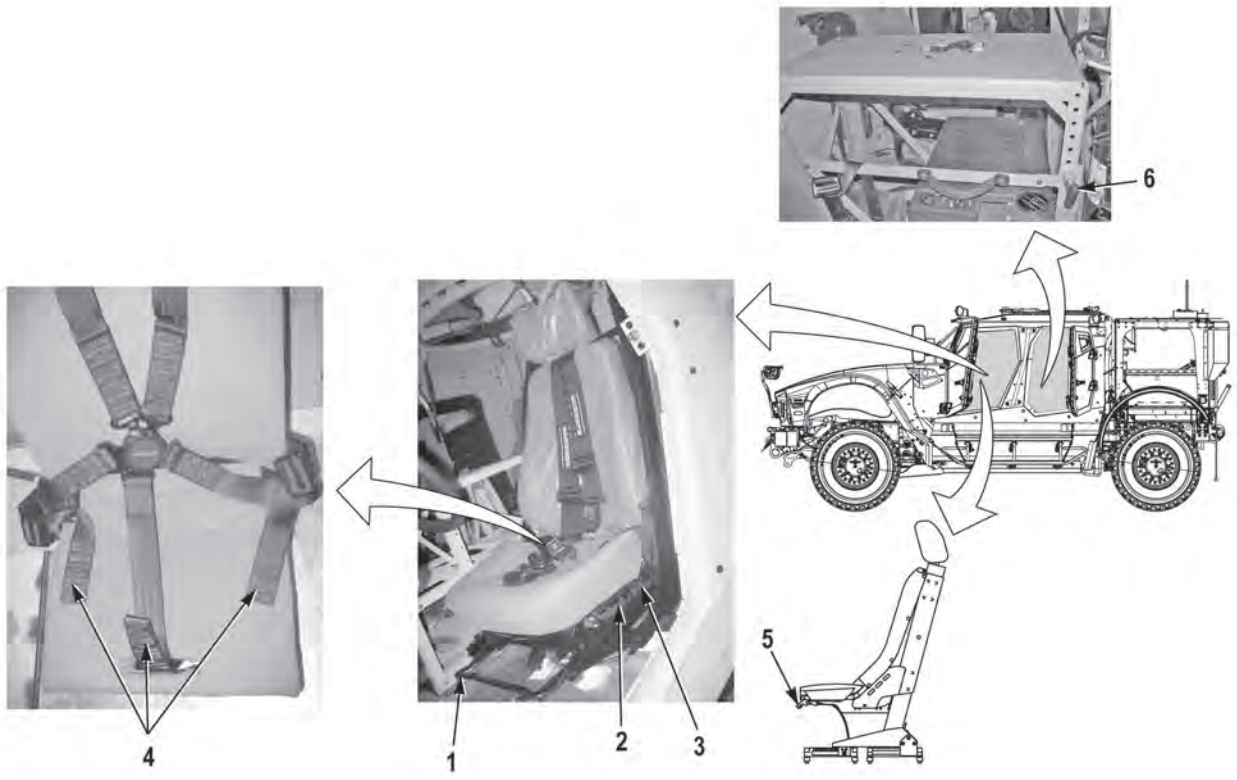


Figure 8. Seat Controls.

Key Fig. 8	Control or Indicator	Function
1	Forward/Backward Adjustment Controls (M1240 and M1245)	Used to move driver seat forward or backward.
2	Front Height Adjustment Control (M1240 and M1245)	Used to raise or lower driver seat.
3	Rear Height Adjustment Control (M1240 and M1245)	Used to raise or lower driver seat.
4	Seat Belt Adjustment Straps	Used to adjust size of seat belts.
5	Forward/Backward Adjustment Control (M1240A1)	Used to move driver and passenger seats forward or backward.
6	Gunners Platform Adjustment Pins (M1240/1240A1)	Used to adjust height of gunners platform.

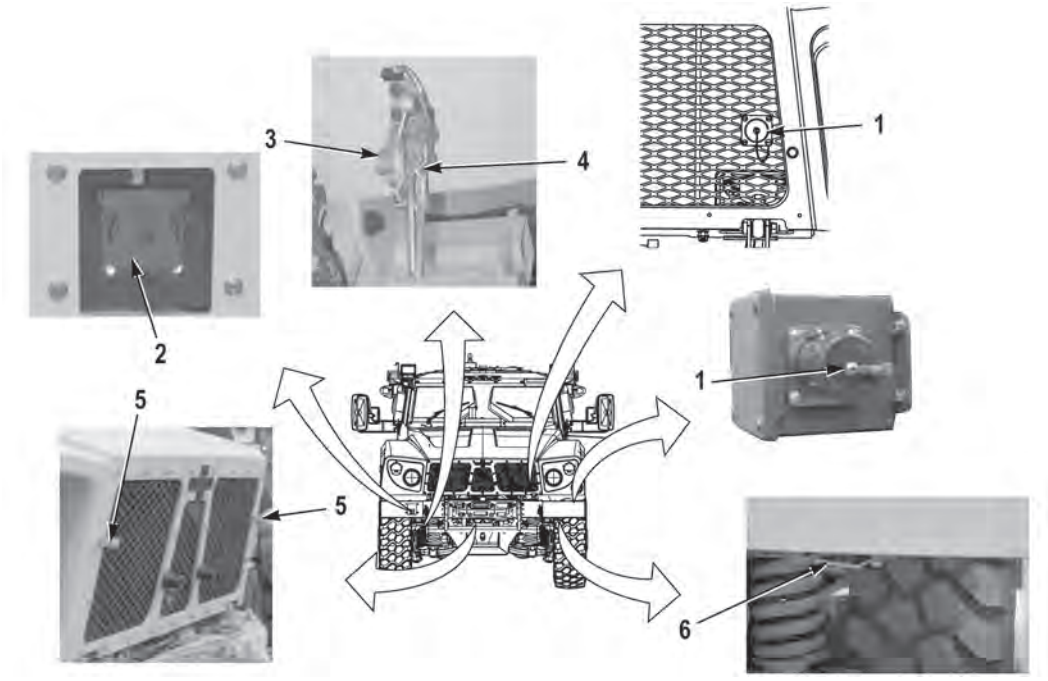


Figure 9. Front Exterior Mounted Controls.

NOTE

Vehicles will have NATO slave connector located under hood on driver side or on driver side bumper.

Key Fig. 9	Control or Indicator	Function
1	NATO Slave Receptacle (on driver side bumper)	Used with NATO slave cable to help start vehicles with dead batteries. Located on driver side bumper.
1	NATO Slave Receptacle (on driver side grill)	Used with NATO slave cable to help start vehicles with dead batteries. Located on driver side grill.
2	Front Intervehiclular 24 VDC Electrical Connector	Connects M-ATV electrical system to electrical system of towing vehicle.
3	Front Gladhands	Allows towing vehicle to feed air into air system of M-ATV when connected. Blue is for service and red is for emergency.
4	Front Gladhand Covers	Attaches to brackets (5) on front of hood to secure hood while in the raised position.
5	Bracket	To secure hood while in the raised position.
6	Transfer Case Neutral Shift Lever	Shift transfer case of M-ATV to neutral so vehicle may be towed.

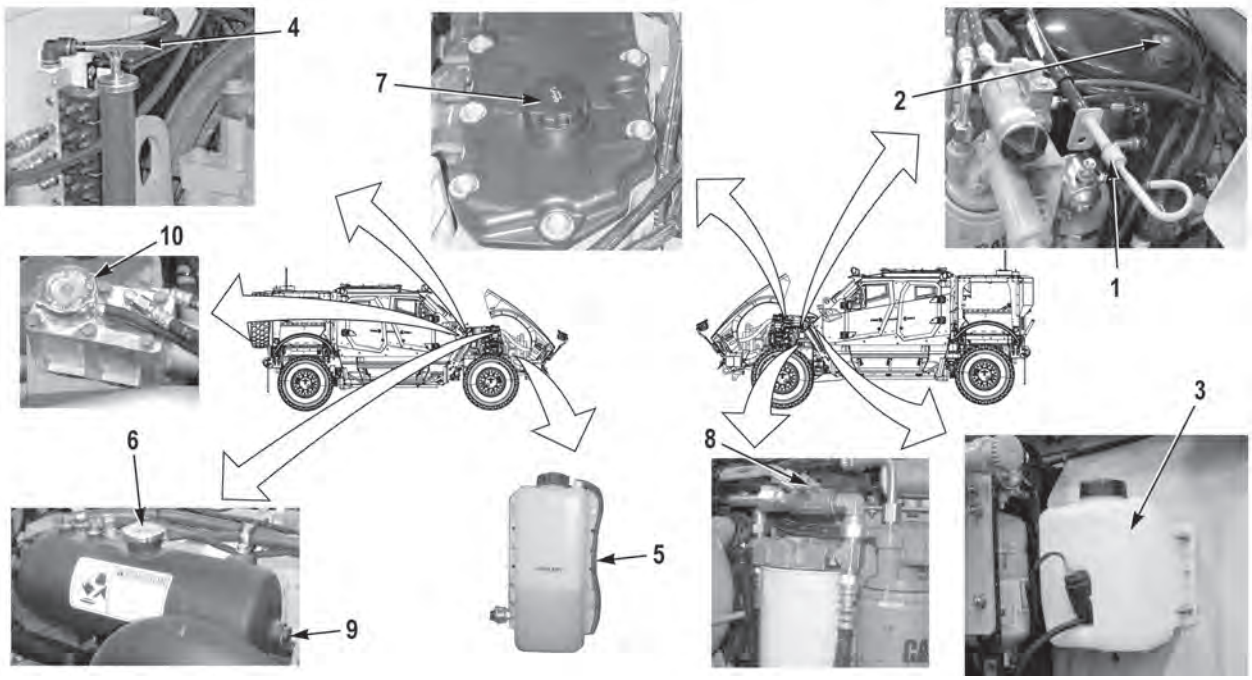


Figure 10. Engine Compartment Controls and Indicators.

NOTE

Vehicles will be equipped with either a coolant reservoir or a coolant surge tank.

Key Fig. 10	Control or Indicator	Function
1	Engine Oil Dipstick	Indicates engine oil level.
2	Power Steering Reservoir Dipstick/ Filler	Indicates power steering reservoir fluid level and provides opening to add power steering fluid to power steering reservoir.
3	Windshield Washer Reservoir	Stores windshield washer fluid.
4	Transmission Oil Dipstick/Filler	Indicates transmission oil level and provides opening to add transmission fluid to transmission.
5	Coolant Overflow Reservoir	Stores excess coolant for cooling system.
6	Coolant Surge Tank	Stores excess coolant for cooling system.
7	Engine Oil Filler	Provides opening to add engine oil to engine.
8	Fuel Shut Off Valve	Shuts off fuel flow to engine.
9	Sight Glass	Indicates coolant level.
10	Cooling System Fill	Provides opening to add coolant when performing cooling system drain/fill.

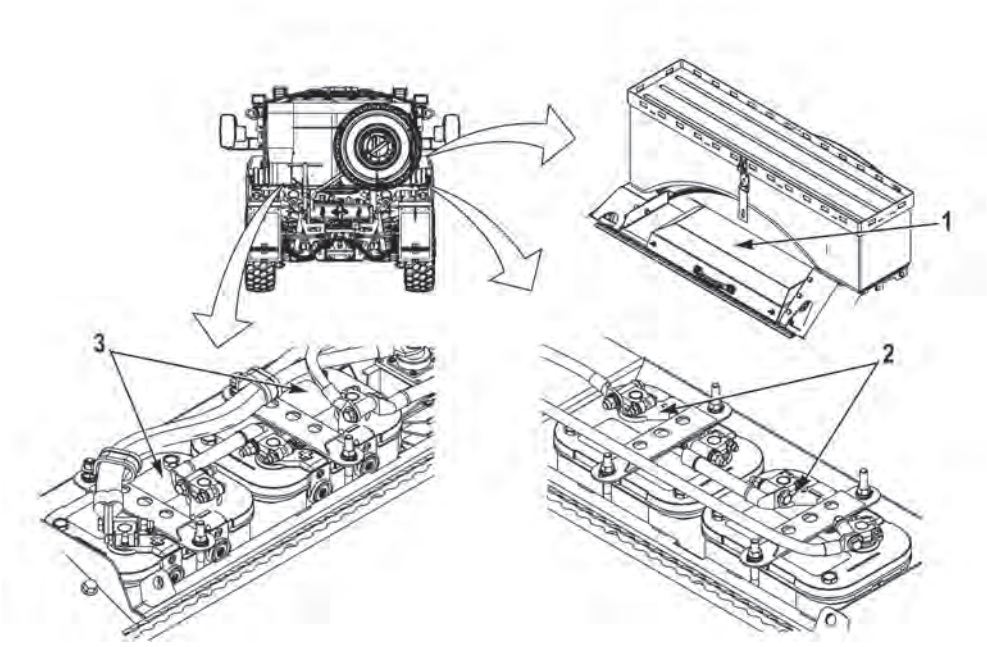


Figure 11. Batteries.

Key Fig. 11	Control or Indicator	Function
1	Battery Cover	Covers passenger side and driver side batteries. Provides protection from dirt, dust, and debris.
2	Passenger Side Batteries	Provides electrical power for GFE.
3	Driver Side Batteries	Provides electrical power for M-ATV.

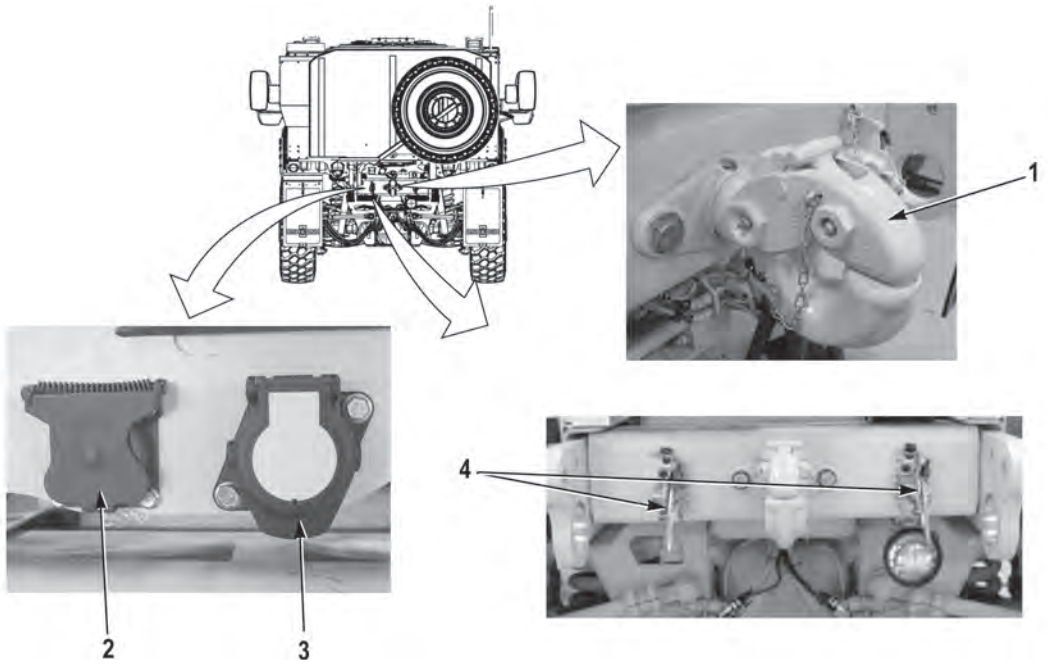


Figure 12. Rear Exterior Mounted Controls.

Key Fig. 12	Control or Indicator	Function
1	Pintle Hook	Used for attaching trailers and towbars.
2	Rear Intervehicular Electrical Connector	Used to connect M-ATV electrical system to electrical system of towed vehicle or trailer.
3	Trailer ABS Connector	Used to connect M-ATV ABS to trailer.
4	Rear Gladhands	Allows M-ATV to supply air to towed vehicle or trailer. Red is for emergency and blue is for service.

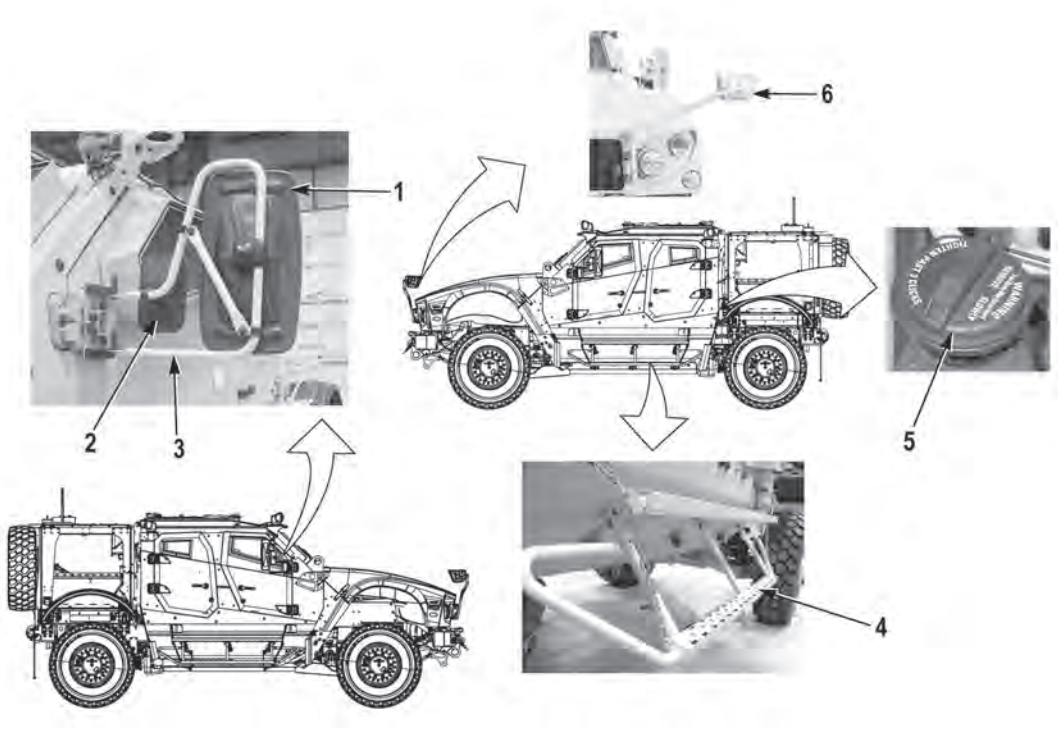


Figure 13. Side Mounted Exterior Control.

Key Fig. 13	Control or Indicator	Function
1	Driver Side and Passenger Side Side Mirror	Permits viewing of side of M-ATV, traffic, and terrain to rear of vehicle.
2	Driver Side and Passenger Side Spotter Mirror	Allows viewing of blind spots along side and lower section of vehicle.
3	Driver Side and Passenger Side Mirror Mount	Provides for mirror mounting and adjustment of mirrors.
4	Driver Side and Passenger Side Crew Capsule Steps	Allows entrance and exit of crew capsule.
5	Fuel Filler	Provides opening for filling fuel tank.
6	Driver Side and Passenger Side Auxiliary Mirror	Provides increased field of vision to sides of vehicle.

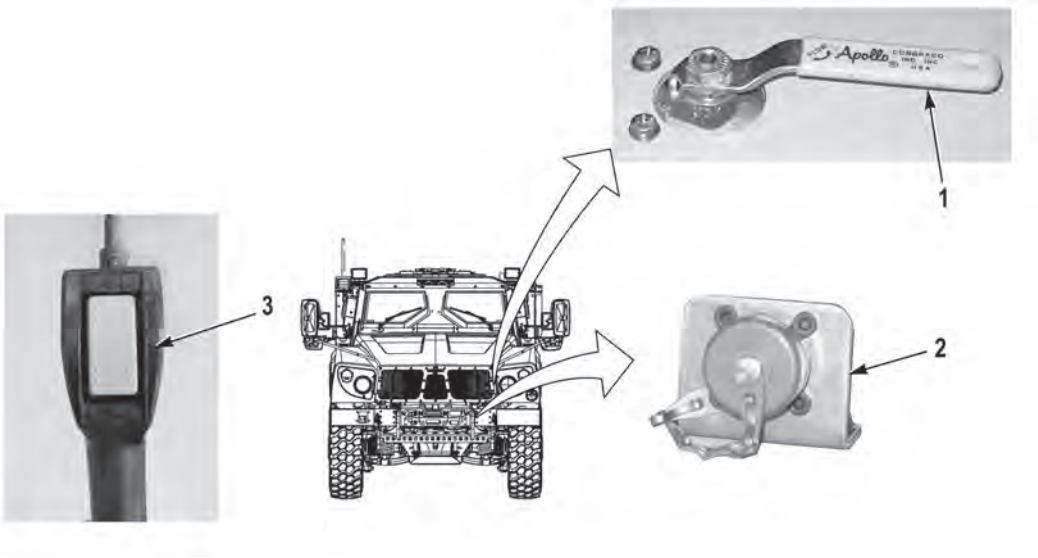


Figure 14. Winch Controls.

Key Fig. 14	Control or Indicator	Function
1	Winch Brake (Winch Free Spool Valve)	Allows winch to be placed in neutral for manual cable payout.
2	Winch Remote Control Connector	Allows winch remote control to connect to winch.
3	Winch Remote Control	Remotely controls winch (located in BII).

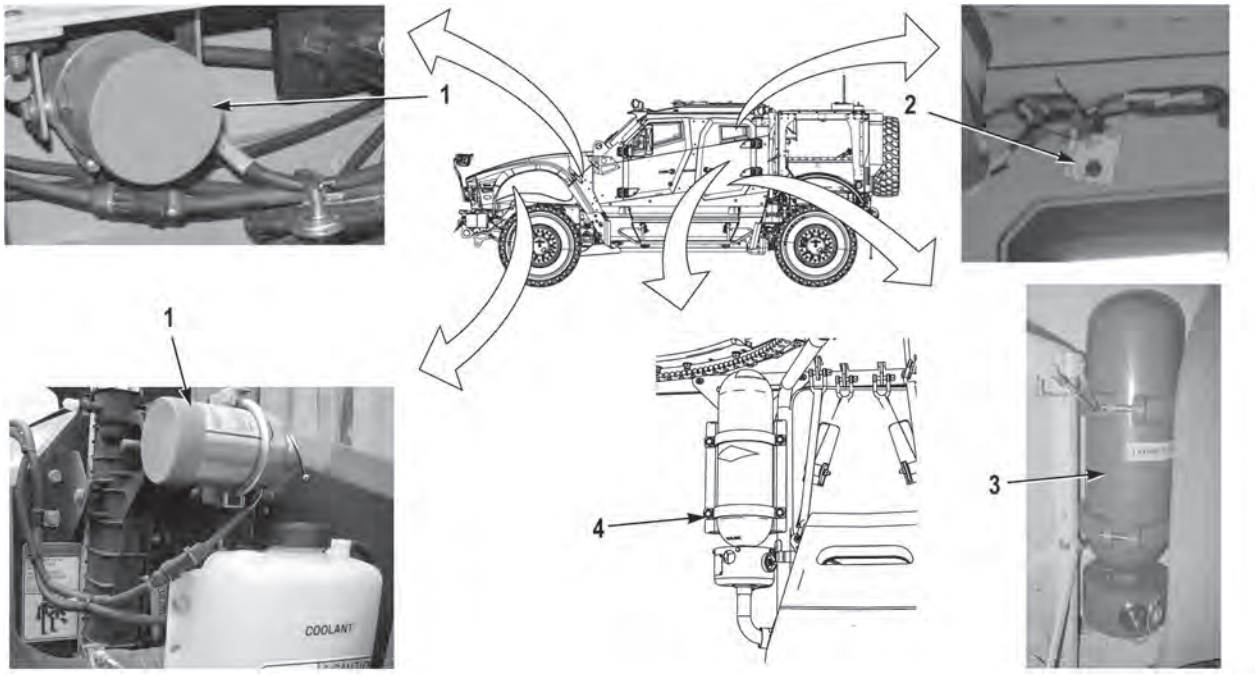


Figure 15. Fire Suppression Controls (Sheet 1 of 4).

NOTE

- Vehicles will be equipped with crew compartment extinguishing cylinder on gunner's platform or rear wall.
- Vehicles will be equipped with four or five aerosol generators. For vehicles with five generators the fifth is located beneath the turbo charger.

Key Fig. 15	Control or Indicator	Function
1	Engine Compartment Fire Suppression Aerosol Generators	When activated, releases fire extinguishing compound into engine compartment.
2	Crew Compartment Fire Sensor	Detect fire in crew compartment located in back, driver side above door.
3	Crew Compartment Extinguishing Cylinder (located on gunner's platform)	When activated, releases fire extinguishing compound into crew compartment.
4	Crew Compartment Extinguishing Cylinder (located on rear wall)	When activated, releases fire extinguishing compound into crew compartment.

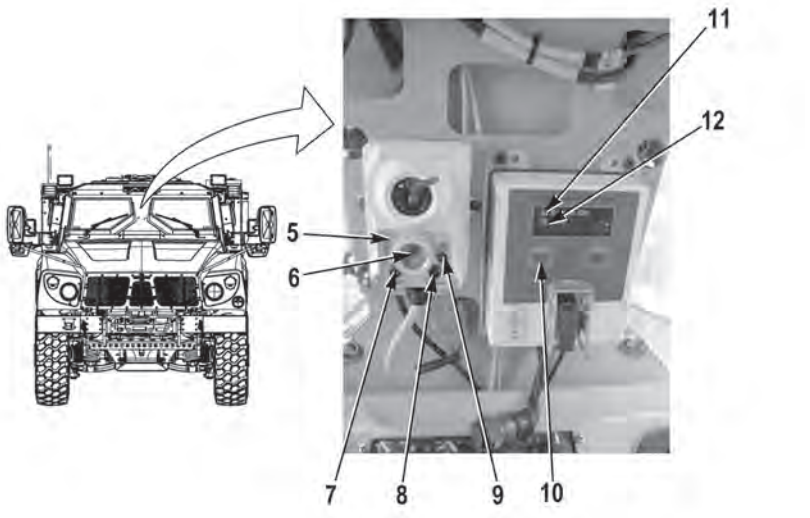


Figure 15. Fire Suppression Controls (Sheet 2 of 4).

Key Fig. 15	Control or Indicator	Function
5	Crew Compartment Fire Sensor With Manual Activation Switch	Detect fire in crew compartment and allows operator to manually activate crew compartment fire suppression system located on front window panel in between windshields.
6	Capsule Crew Compartment Fire Suppression System Manual Activation Button	Manually activates crew compartment fire suppression system.
7	Fault LED	Indicates different types of faults when flashing.
8	Power LED	Indicates proper operation when on and power fault when flashing.
9	Dimmer Switch	Turns off power and fault LEDs for black-out operation.
10	Service System LED	Indicates different types of faults when flashing.
11	System OK LED	Indicates system OK when lit.
12	Fire LED	Indicates system has discharged when lit.

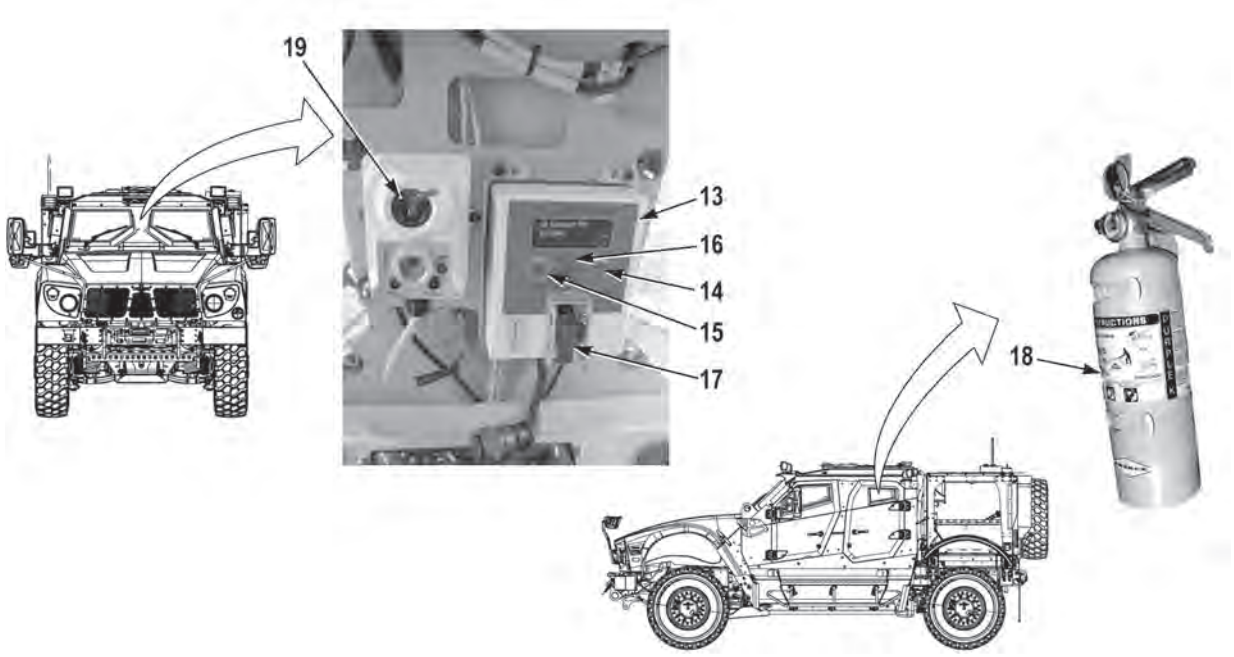


Figure 15. Fire Suppression Controls (Sheet 3 of 4).

Key Fig. 15	Control or Indicator	Function
13	Engine Compartment Fire Suppression System Control Module	Allows for automatic or manual activation of engine compartment fire suppression system.
14	Alarm Silence Button	Press to silence audible alarm.
15	Relay Reset Button	Press to reset relay contacts.
16	Test Button	Press to turn LED's and audible alarm off. Hold to test LED's and audible alarm.
17	Engine Compartment Fire Suppression System Manual Activation Toggle Switch	Manually activates engine compartment fire suppression system.
18	Hand Held Fire Extinguisher	Manually extinguish fires. Located behind driver seat (M1240).
18	Hand Held Fire Extinguisher	Manually extinguish fires. Located under dash (M1240A1).
19	Self Test Indicator	Indicates self test when flashing.

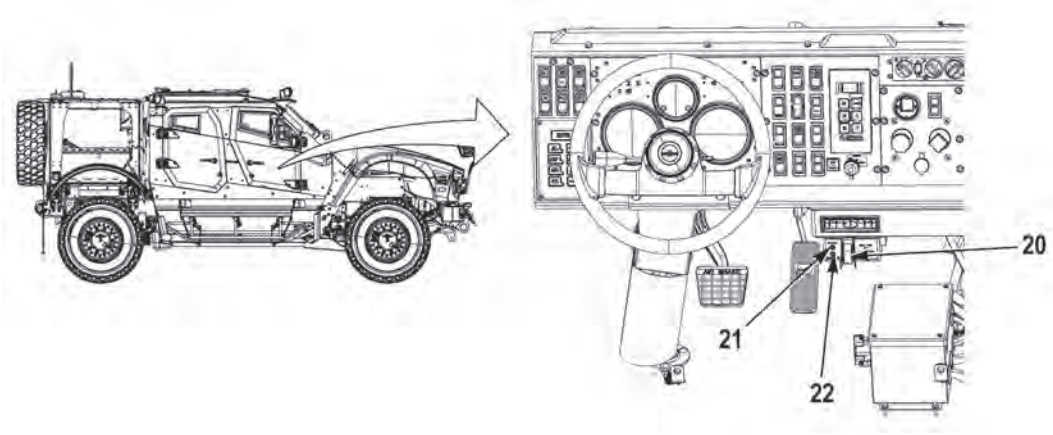


Figure 15. Fire Suppression Controls (Sheet 4 of 4).

Key Fig. 15	Control or Indicator	Function
20	Undercarriage Fire Suppression System Manual Trigger	Manually actuates all undercarriage fire suppression cylinders.
21	Front Tires LED	Indicates system OK when green, system fired when amber and system manually activated when red.
22	Rear Tires/Fuel LED	Indicates system OK when green, system fired when amber and system manually activated when red.

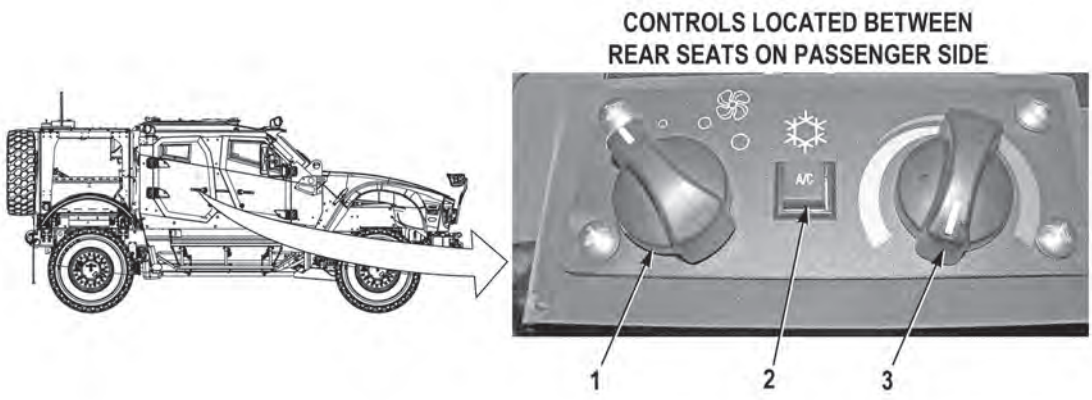


Figure 16. Rear HVAC Controls (M1240 and M1240A1).

Key Fig. 16	Control or Indicator	Function
1	Fan Control Switch	Controls speed of fan (LOW/MED/HIGH). Lowest setting turns fan OFF.
2	Air Conditioning (A/C) Control	Turns rear A/C ON or OFF.
3	Temperature Control Switch	Controls temperature level or amount of heat entering cab.

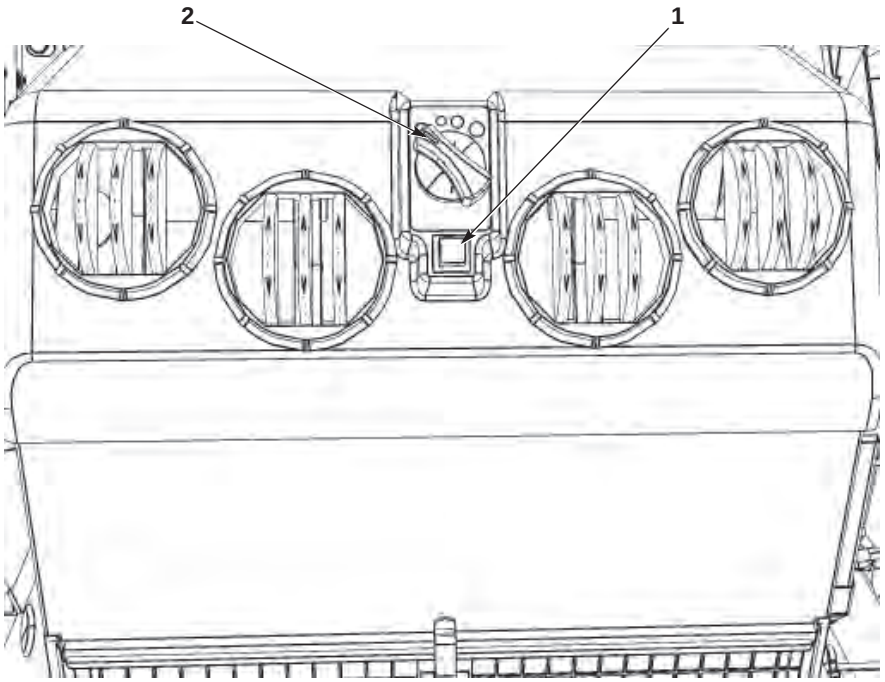


Figure 17. Rear Air Conditioning (A/C) Controls (M1245).

Key Fig. 17	Control or Indicator	Function
1	Rear Air Conditioning (A/C) Control	Turns A/C ON or OFF.
2	Fan Control Switch	Controls speed of fan (LOW/MED/HIGH). Lowest setting turns fan OFF.

END OF WORK PACKAGE

PREPARATION FOR OPERATION

WARNING

- **In extreme temperature environments, follow work-rest schedules as well as the guidance of TB-MED 507 Heat Stress Control and Heat Stress Management and TB-MED 508 Prevention and Management of Cold Weather Injuries. Failure to comply may result in injury to personnel.**
- **Antennae emit radio frequency radiation. Avoid contact with active antennae and maintain proper standoff distances from active antennae. Ensure that radios are powered off before conducting fueling operations or maintenance activities. Failure to comply may result in injury to personnel.**
- **Single hearing protection is required in and around an operating vehicle. Double hearing protection is required during weapons firing. Failure to comply may result in injury to personnel.**
- **The driver is responsible for the safety of the personnel riding on their vehicle. Drivers will refuse to move a vehicle if anyone is in an unsafe position or the vehicle has too many passengers. Failure to comply may result in injury or death to personnel.**
- **Operating vehicle with items on dashboard is dangerous and may result in injury to personnel.**
- **During operations, the ventilation system(s) must remain on to provide adequate ventilation to the vehicle occupants. Failure to comply may result in injury to personnel.**

1. Remove and stow wheel chocks prior to operation (WP 0009).

WARNING

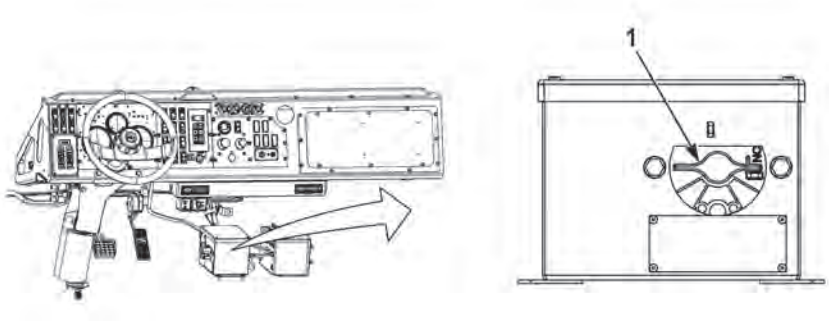
When entering or exiting capsule, use three-point contact system. Doors may cause injury if fingers, hands, or feet are caught between doors and capsule. Failure to comply may result in injury to personnel.

2. Enter capsule using three-point contact.

WARNING

Ensure side view mirrors and auxiliary mirrors are adjusted to allow for full range of view prior to operating vehicle. Failure to comply may result in injury or death to personnel.

3. Adjust side view mirrors (WP 0014).
4. Adjust auxiliary mirrors (WP 0015) if equipped.

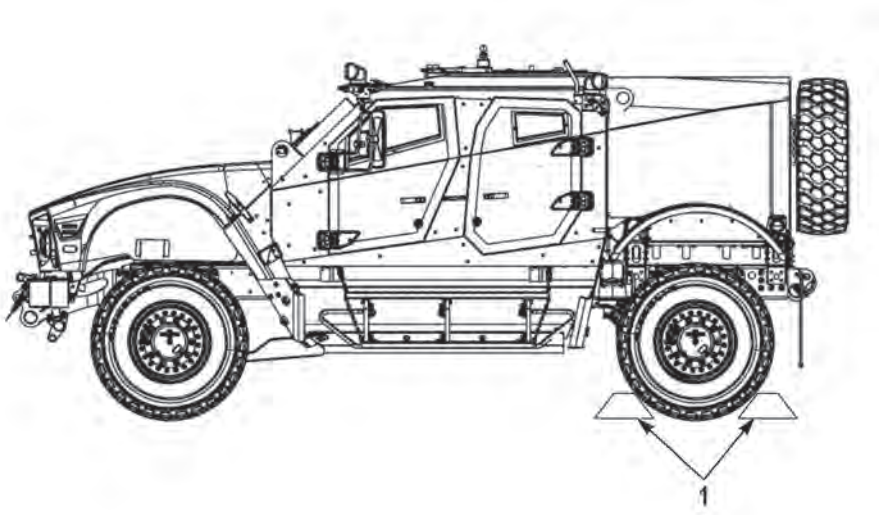


5. Turn battery disconnect switch (1) to ON position.

END OF WORK PACKAGE

CHOCK/UNCHOCK WHEELS

CHOCK WHEELS



NOTE

Ensure to always chock wheels when vehicle is not in operation.

1. Remove two wheel chocks (1) from stowage.
2. Place wheel chocks (1) tight up against front and rear of rear axle tire.
3. Repeat Steps (1) and (2) if more than one wheel is chocked.

END OF TASK

UNCHOCK WHEELS

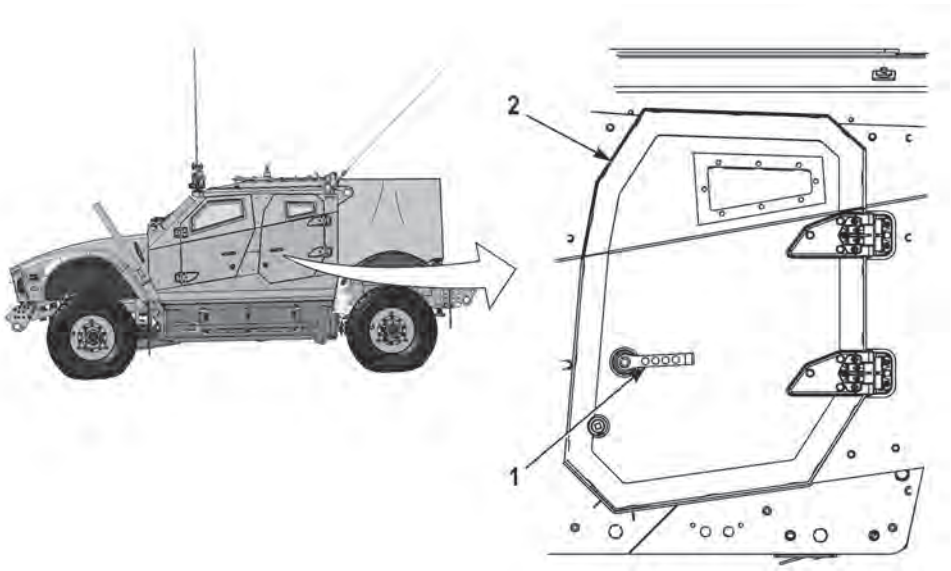
1. Remove wheel chocks (1) from front and rear of tire.
2. Return wheel chocks (1) to stowage.
3. Repeat Steps (1) and (2) if more than one wheel is chocked.

END OF TASK

END OF WORK PACKAGE

CAPSULE DOORS OPEN/CLOSE

OPEN CAPSULE DOORS FROM OUTSIDE CAPSULE



WARNING

- **Doors are heavy. Ensure that no one is standing directly behind the door before opening and closing it. Ensure that hands and feet are clear for the area before closing the door. Use caution when opening or closing doors especially when the vehicle is parked on an incline. Failure to comply may result in injury to personnel.**
- **Care should be taken when operating door. Door may cause injury if fingers, hands, or feet are caught between door and capsule. Failure to comply may result in injury to personnel.**

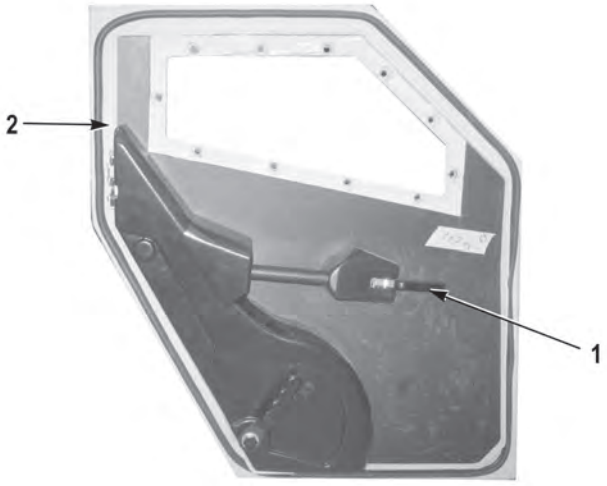
NOTE

All doors are opened the same way. Rear driver side shown.

1. To open, pull door handle (1) down and pull capsule door (2) open.

END OF TASK

OPEN CAPSULE DOORS FROM INSIDE CAPSULE (FRONT DRIVER SIDE AND FRONT PASSENGER SIDE)



WARNING

Care should be taken when operating door. Door may cause injury if fingers, hands, or feet are caught between door and capsule. Failure to comply may result in injury to personnel.

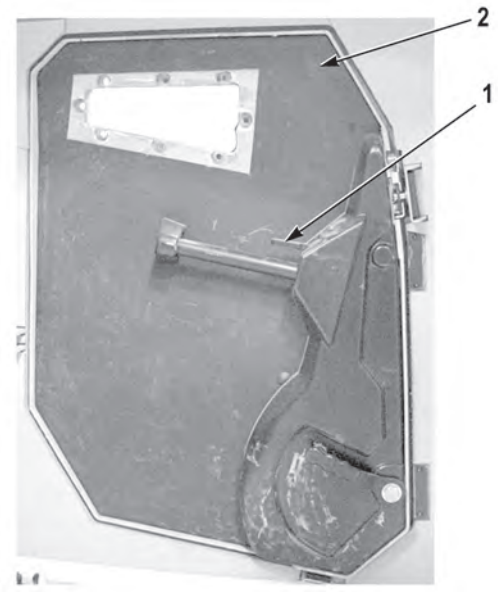
NOTE

Both doors are opened the same way. Driver side shown.

1. To open, pull latch (1). Push capsule door (2) open.

END OF TASK

OPEN CAPSULE DOORS FROM INSIDE CAPSULE (REAR DRIVER SIDE AND REAR PASSENGER SIDE)



WARNING

Care should be taken when operating door. Door may cause injury if fingers, hands, or feet are caught between door and capsule. Failure to comply may result in injury to personnel.

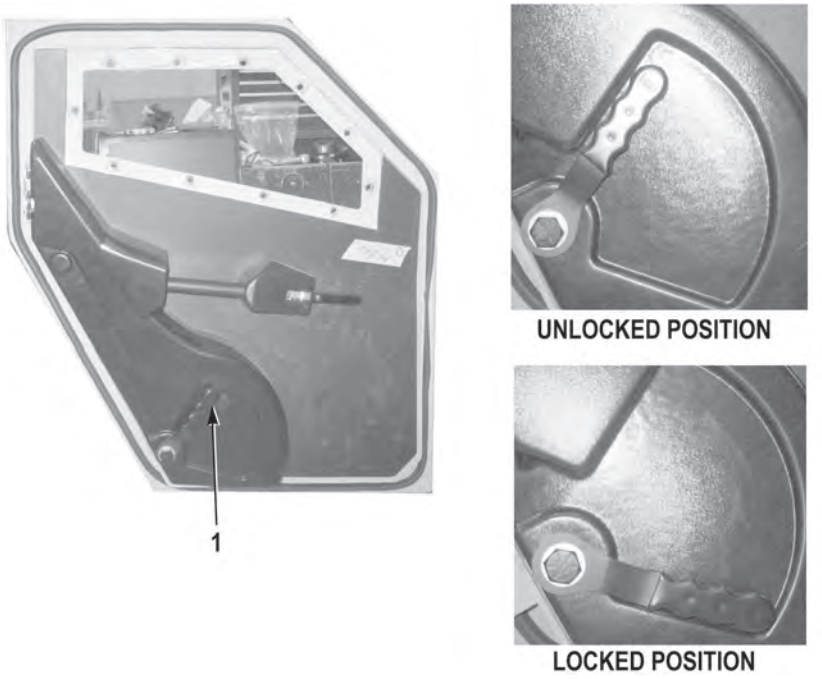
NOTE

Both doors are opened the same way. Driver side shown.

1. To open, press latch (1) down and push capsule door (2) open.

END OF TASK

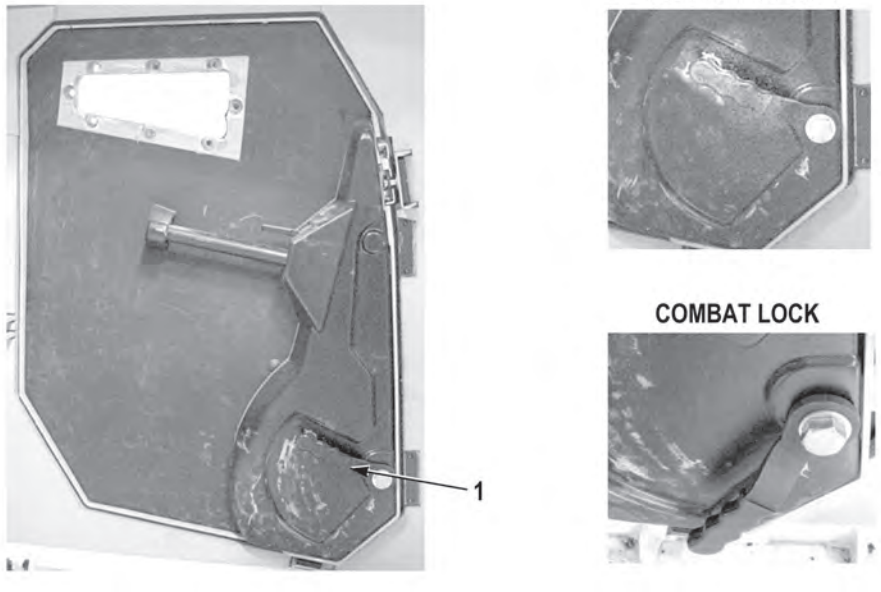
ENGAGE/DISENGAGE COMBAT LOCK (FRONT DRIVER SIDE AND FRONT PASSENGER SIDE)



1. To engage, push handle (1) down to combat lock position.
2. To disengage, pull handle (1) up to unlock position.

END OF TASK

ENGAGE/DISENGAGE COMBAT LOCK (REAR DRIVER SIDE AND REAR PASSENGER SIDE)



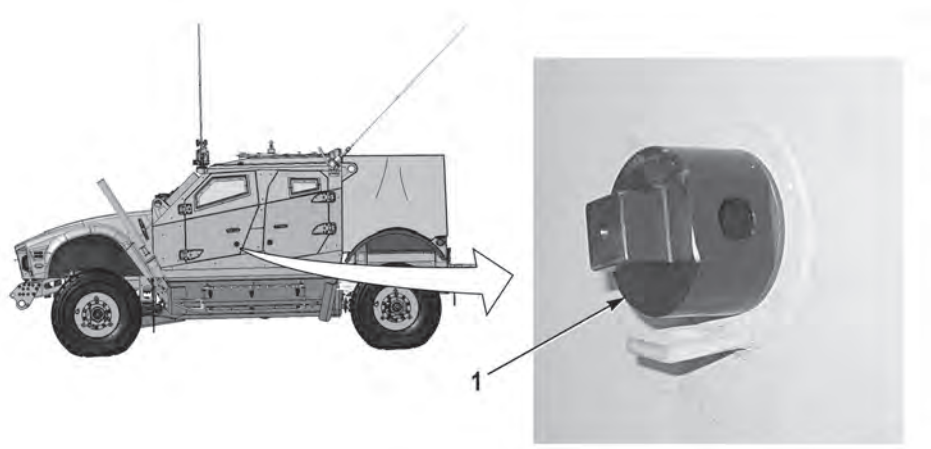
NOTE

Both combat locks are engaged and disengaged the same way. Driver side shown.

1. To engage, push handle (1) down to combat lock position.
2. To disengage, pull handle (1) up to unlock position.

END OF TASK

COMBAT LOCK OVERRIDE (M1240/M1240A1)



NOTE

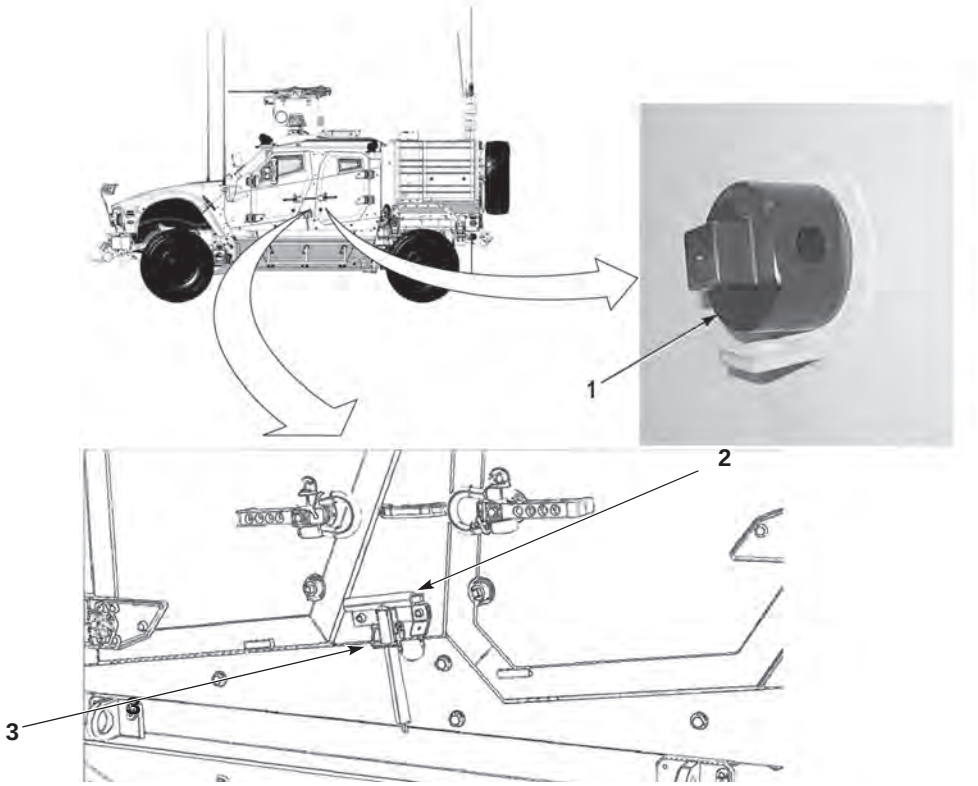
- For front driver side door and rear passenger side door, perform Step (1).
- For front passenger side door and rear driver side door, perform Step (2).
- 4-Way from BII or any tool that will turn combat OVERRIDE knob may be used in emergency situation.

1. Rotate combat lock OVERRIDE knob (1) counterclockwise.
2. Rotate combat locK OVERRIDE knob (1) clockwise.

END OF TASK

END OF WORK PACKAGE

COMBAT LOCK KEY OPERATION (M1245)



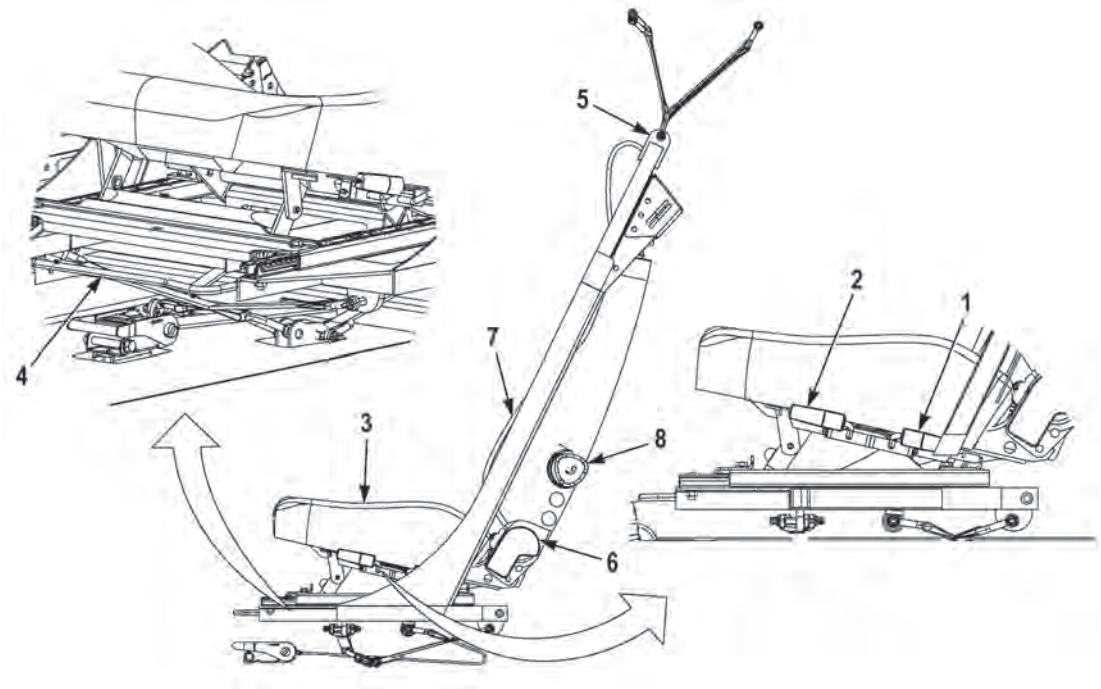
NOTE

- For front passenger side door and rear driver side door, perform Step (1).
- For front driver side door and rear passenger side door, perform Step (2).
- Emergency ingress tool or any tool that will turn combat OVERRIDE knob may be used in emergency situation.
- The emergency ingress tool (2), is secured with a link pin (3), and must be removed first.

1. Remove link pin (3), and use the emergency ingress tool (2) to rotate combat lock OVERRIDE knob (1) counterclockwise to unlock.
2. Remove link pin (3), and use the emergency ingress tool (2) to rotate combat lock OVERRIDE knob (1) clockwise to unlock.

END OF WORK PACKAGE

DRIVER SEAT ADJUSTMENT



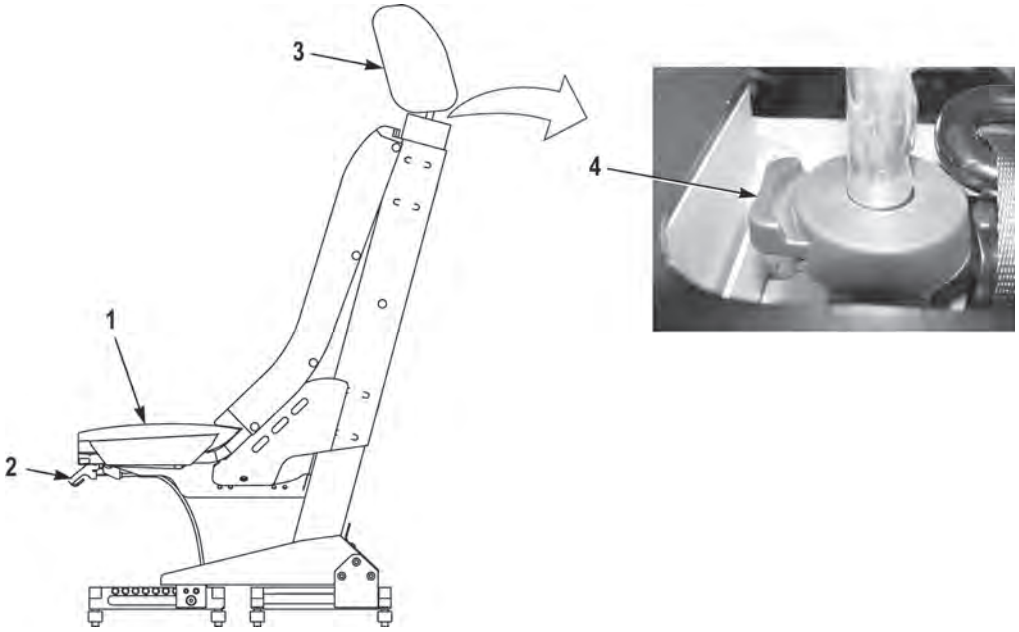
NOTE

- For M1240A1 driver and passenger seats adjustment, refer to (WP 0013).
- Prior to adjusting seat height, seat must be in forward position.
- Operator must be able to easily reach brake pedal, throttle pedal, and dash controls with seat adjusted and seat belt and shoulder harness on.

1. Adjust rear seat height, as required, with height adjustment lever (1).
2. Adjust front seat height, as required, with height adjustment lever (2).
3. Adjust seat (3) forward or backward, as required, using adjustment lever (4).
4. Adjust back of seat (5) using adjustment lever (6).
5. Adjust lumbar of seat (7), as required, using adjustment knob (8).

END OF WORK PACKAGE

FRONT SEAT ADJUSTMENT (M1240A1)



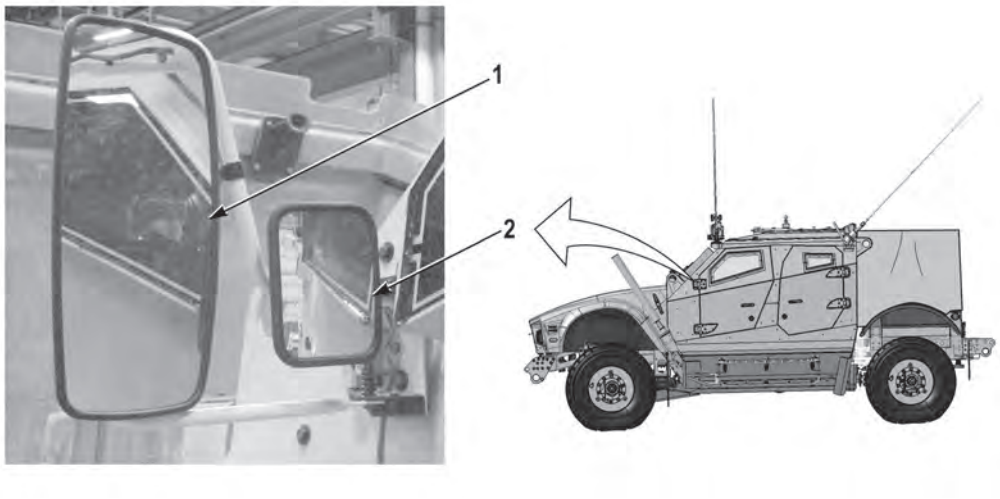
NOTE

- Task applies to driver and passenger seats.
- Operator must be able to easily reach brake pedal, throttle pedal, and dash controls with seat adjusted and seat belt and shoulder harness on.

1. Adjust seat (1) forward or backward, as required, using adjustment lever (2).
2. Adjust headrest (3) by pulling up to desired position. To lower headrest push tab (4) on left hand side of headrest (3) and lower headrest to desired position.
3. To remove headrest (3), push tab (4) and pull headrest (3) up from seat (1).
4. Install headrest (3) on seat (1) and adjust as required.

END OF WORK PACKAGE

SIDE VIEW MIRROR ADJUSTMENT



WARNING

Ensure side view mirrors are adjusted to allow for full range of view prior to operating vehicle. Failure to comply may result in injury or death to personnel.

NOTE

- Both side view mirrors are adjusted the same. Driver side, side view mirror shown.
- During adjustment of side view mirrors and spotter mirrors driver must be sitting in driver's seat in driving position while assistant adjusts the side view mirrors according to driver's instructions.

1. With the aid of an assistant, adjust side view mirrors (1) and spotter mirrors (2) by pivoting them until back of vehicle and road can be seen.

END OF WORK PACKAGE

AUXILIARY MIRROR ADJUSTMENT

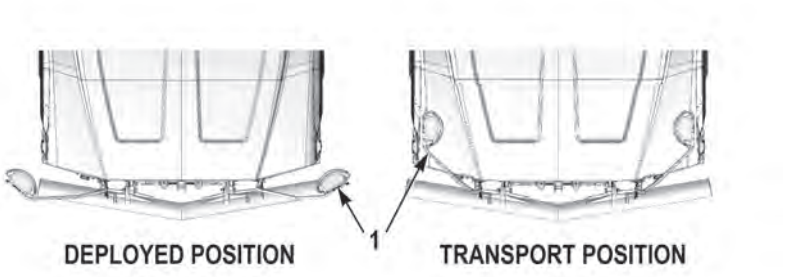
WARNING

Ensure auxiliary mirrors are adjusted to allow for full range of view prior to operating vehicle. Failure to comply may result in injury or death to personnel.

NOTE

- Both auxiliary mirrors are adjusted the same.
- During adjustment of auxiliary mirrors, driver must be sitting in driver seat in driving position while assistant adjusts the auxiliary mirrors according to driver instructions.

1. With the aid of an assistant, adjust vehicle auxiliary mirrors (1) by pivoting them until mirrors are in desired position.



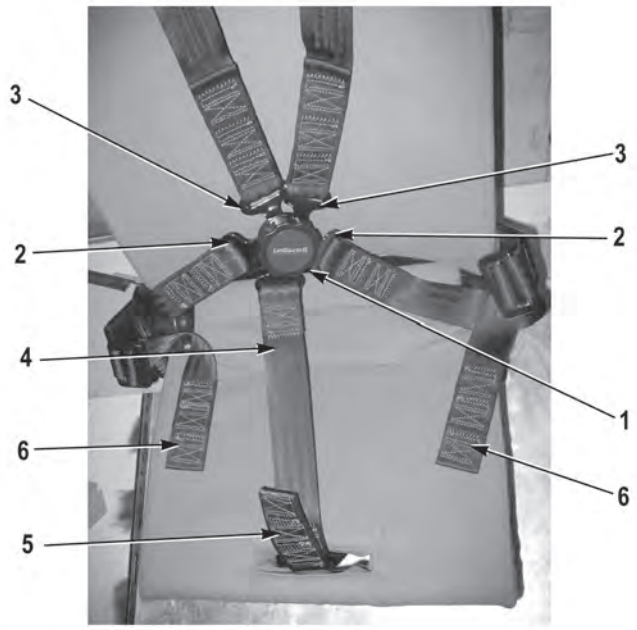
CAUTION

- **For transport, auxiliary mirrors should be rotated to the transport position. Do not transport vehicle with auxiliary mirrors in deployed position. Failure to comply may result in damage to equipment.**
- **When positioning auxiliary mirrors for operation or transportation, apply pressure to attachment arm, not mirror assembly. Failure to comply may result in damage to equipment.**

2. Position auxiliary mirrors (1) in deployed or transport position as necessary.

END OF WORK PACKAGE

FIVE-POINT SEAT BELT OPERATION (M1240/M1240A1)



WARNING

Always use seat belts when vehicle is in operation. Failure to comply may result in injury or death to personnel.

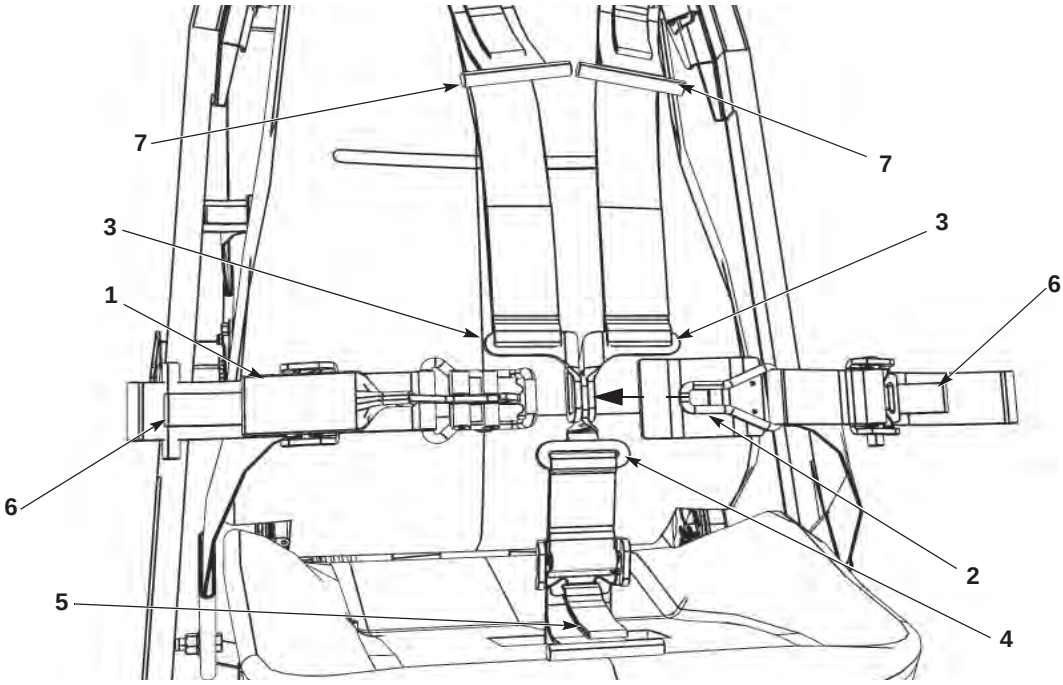
NOTE

- Shoulder harness is the two belts that come through the top of the back of the seat and attach to the top of the buckle.
- Seat belt is the two belts that wrap around from the side of the seat and attach to the sides of the buckle.
- Center belt comes through front center of seat with buckle attached to the top.

1. Turn buckle (1) to center position.
2. Insert two seat belt latches (2) and shoulder harness latches (3) into buckle (1) on center belt (4).
3. Adjust center belt (4) by pulling forward and up on strap (5).
4. Adjust seat belt (2) by pulling on straps (6) until seat belt fits snug at hips.
5. To release seat belt (2) and shoulder harness (3), rotate buckle (1) clockwise or counterclockwise.

END OF WORK PACKAGE

FIVE-POINT SEAT BELT OPERATION (M1245)



WARNING

The seat belts must be worn during driving operation. Avoid twisting the straps when putting the seatbelt on and be sure to remove slack. Failure to comply may result may result in serious death or injury to personnel.

NOTE

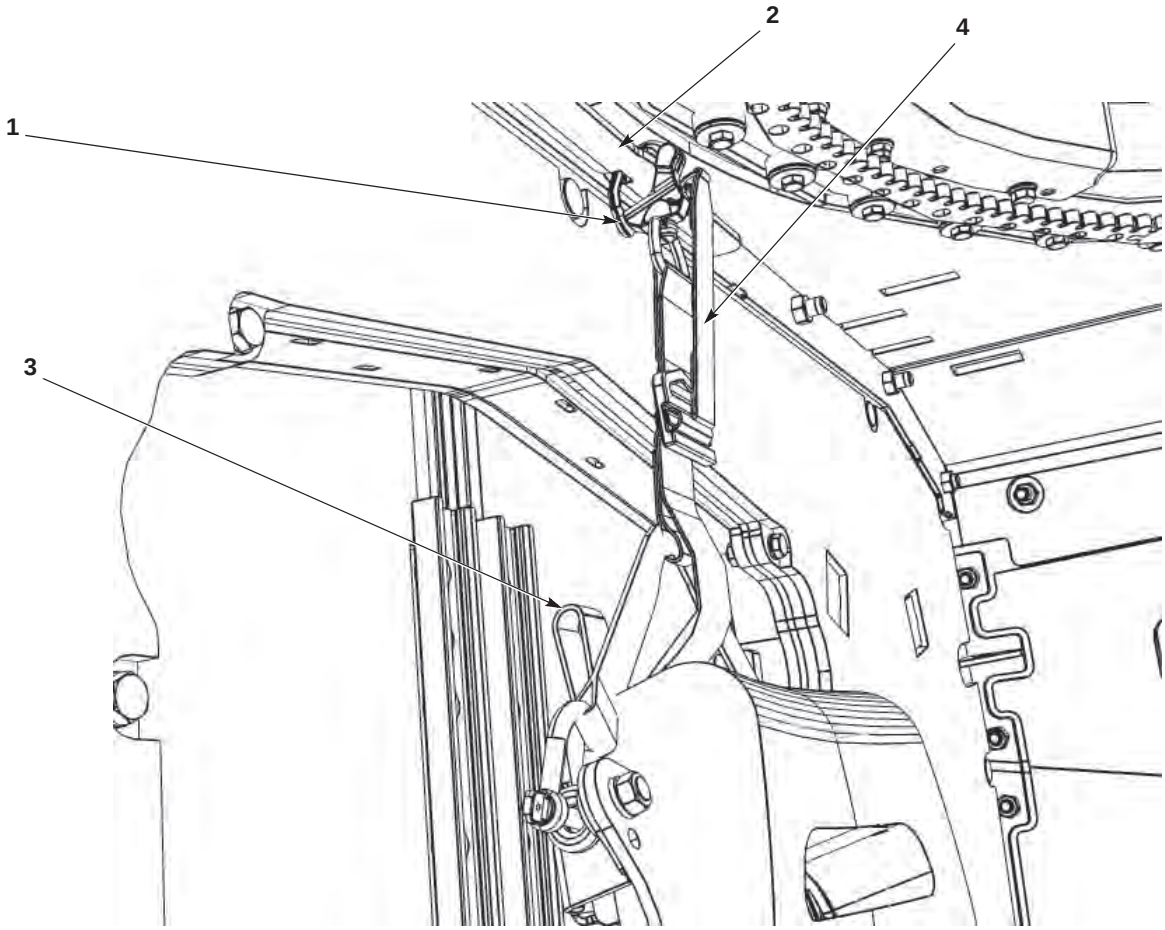
- Shoulder harness has two belts that come through the top of the back of the seat and attach to the top of the buckle.
- Seat belt is the two belts that wrap around from each side of the seat.
- Center belt comes through front center of seat with buckle attached to the top.

1. Lift the latch on seat belt buckle (1).
2. Place each shoulder harness link (3) on each side of the center belt link (4).
3. Insert the link of seat belt (2) through the shoulder harness links (3) and center belt link (4).
4. Insert the seat belt buckle (1) into the link of seat belt (2) and close the latch on seat belt buckle (1).
5. Adjust center belt (4) by pulling forward and up on strap (5).
6. Adjust seat belt (2) and seat belt buckle (1) by pulling on straps (6) until seat belt fits snug at hips.
7. Adjust shoulder harness straps (3) by pulling on straps (7).
8. To release, lift the latch on seatbelt buckle (1).

END OF WORK PACKAGE

5TH SEAT OPERATION (M1245)

LOWERING THE 5TH SEAT



WARNING

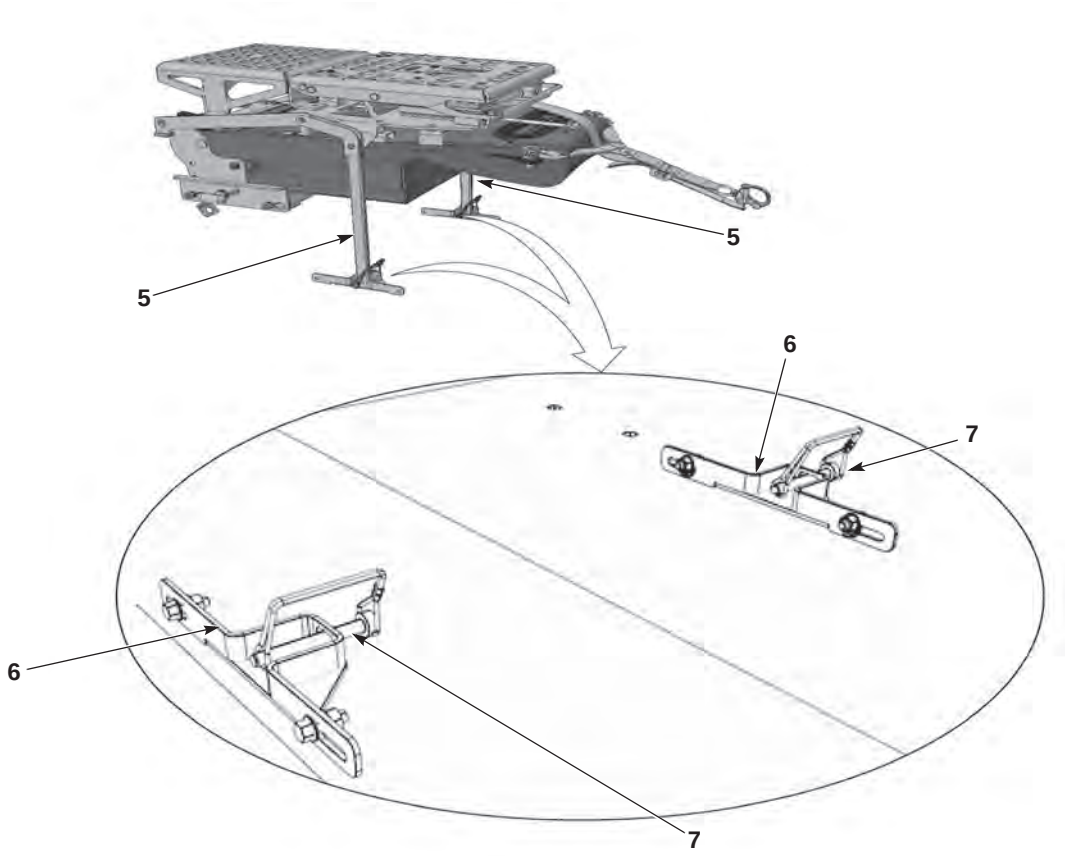
Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.

CAUTION

When lowering and raising the 5th seat, ensure the wire harness attached to the arm rest is clear, to avoid rubbing.

1. Pull the top yellow release strap (4) to remove the shackle (1) from the bracket (2).
2. Pull the release strap up (3), and fold the 5th seat down.

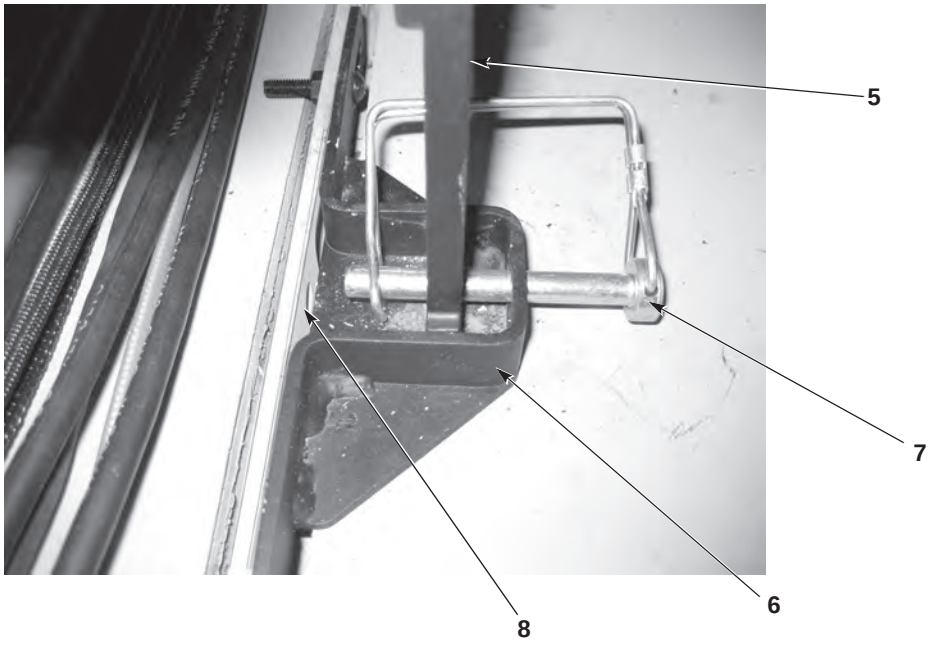
LOWERING THE 5TH SEAT – CONTINUED



WARNING

- **Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.**
- **Keep hands and fingers away from any pinch point areas of the 5th seat assembly and gunner's platform, hands and fingers could get pinched. Failure to comply may result in injury to personnel.**

LOWERING THE 5TH SEAT – CONTINUED



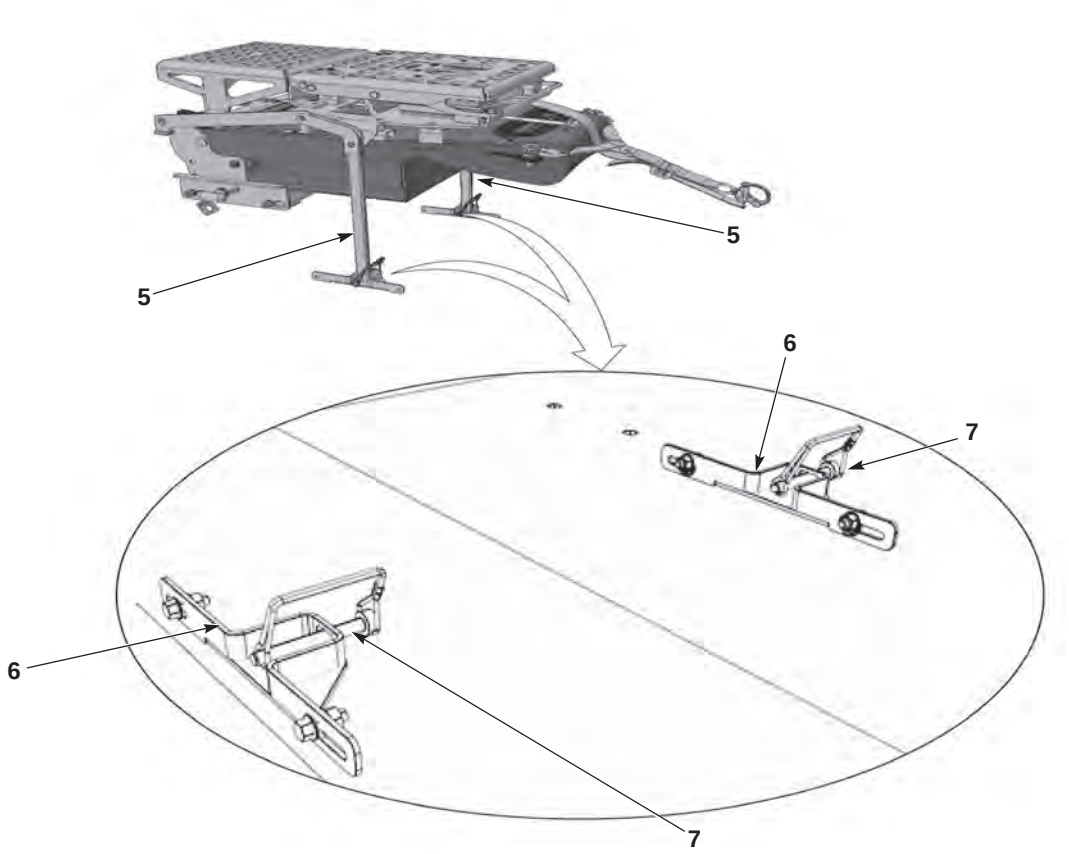
NOTE

- Before folding the 5th seat down, ensure pins (7) are pulled from each support bracket (6).
- When the 5th seat is folded, automatic vertical supports will simultaneously unfold from each side of the seat.
- Pins can only be inserted through the 5th seat support bracket (6) and the vertical support (5), they will not pass through the 3rd hole on the capsule floor (8).

3. Secure each vertical support (5) to their respective 5th seat support bracket (6) using pins (7).

END OF TASK

RAISING THE 5TH SEAT



WARNING

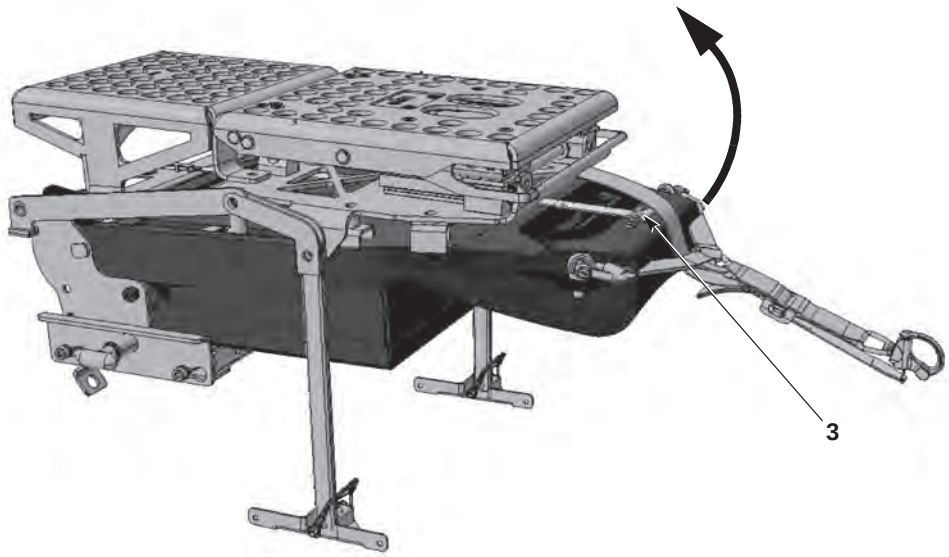
- **Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.**
- **Keep hands and fingers away from any pinch point areas of the 5th seat assembly and gunner's platform, hands and fingers could get pinched. Failure to comply may result in injury to personnel.**

NOTE

- When the 5th seat is unfolded, automatic vertical supports (5) will simultaneously fold along each side of the seat.
- Gunner's platform MUST be adjusted to the lowest position before raising and securing 5th seat.

1. Remove each pin (7) from their respective 5th seat support bracket (6).

RAISING THE 5TH SEAT – CONTINUED

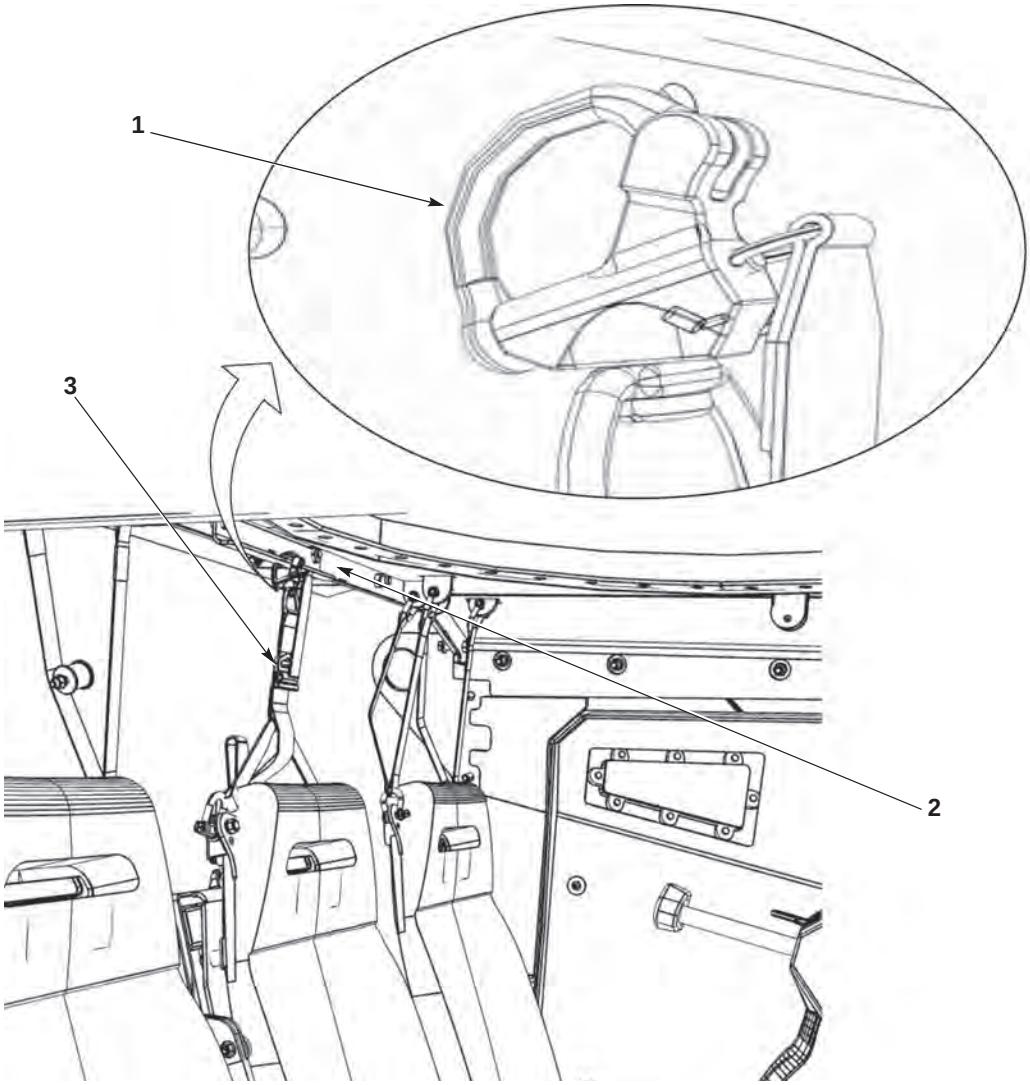


WARNING

- **Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.**
- **Keep hands and fingers away from any pinch point areas of the 5th seat assembly and gunner's platform, hands and fingers could get pinched. Failure to comply may result in injury to personnel.**

2. Pull the release strap (3), and lift upward on the 5th seat.

RAISING THE 5TH SEAT – CONTINUED



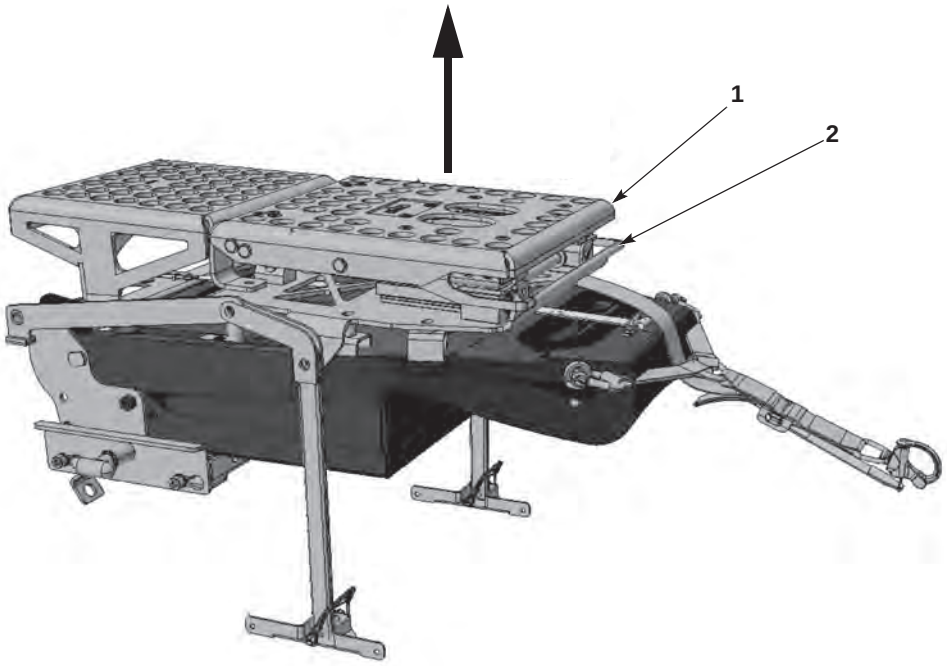
WARNING

Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.

3. Attach the shackle (1) to the bracket (2), securing the 5th seat in the upright position.
4. Verify that shackle (1) is locked into position.
5. Ensure that the adjustment strap (3) is pulled tight on the 5th seat.

END OF TASK

RAISE GUNNER'S PLATFORM HEIGHT



WARNING

- **Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.**
- **Keep hands and fingers away from any pinch point areas of the 5th seat assembly and gunner's platform, hands and fingers could get pinched. Failure to comply may result in injury to personnel.**

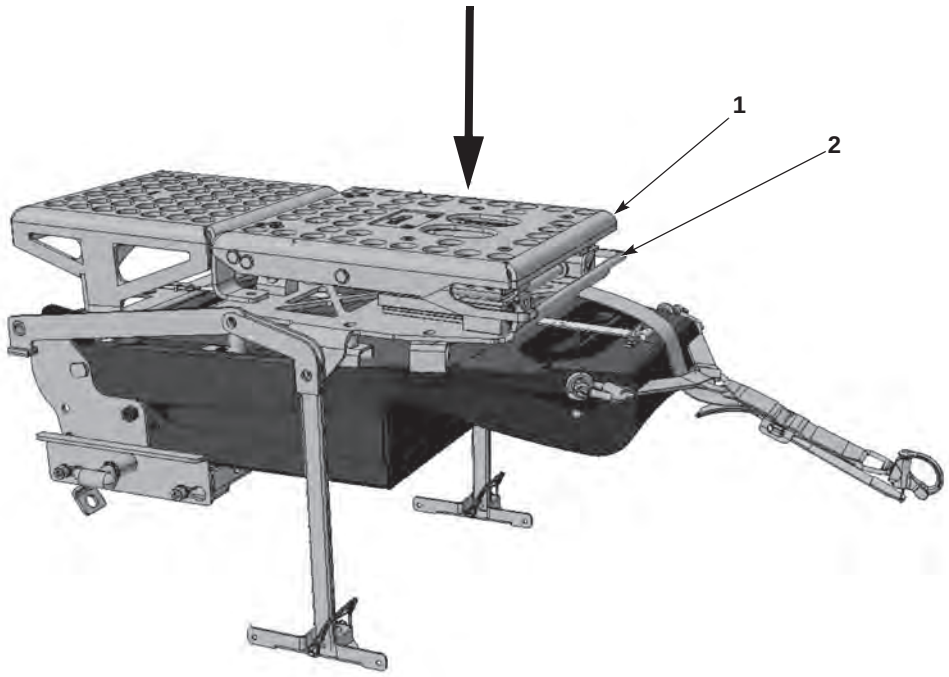
NOTE

5th seat MUST be in the folded position to use the gunner's platform.

1. Pull the gunner's platform adjustment handle (2) and lift the gunner's platform (1) up to raise.

END OF TASK

LOWER GUNNER'S PLATFORM HEIGHT



WARNING

- **Always have top securing shackle or securing pins in place when using the 5th seat and gunner's platform. Failure to comply may result in injury to personnel.**
- **Keep hands and fingers away from any pinch point areas of the 5th seat assembly. Hands and fingers could get pinched. Failure to comply may result in injury to personnel.**

NOTE

Gunner's platform MUST be adjusted to the lowest position before raising and securing 5th seat.

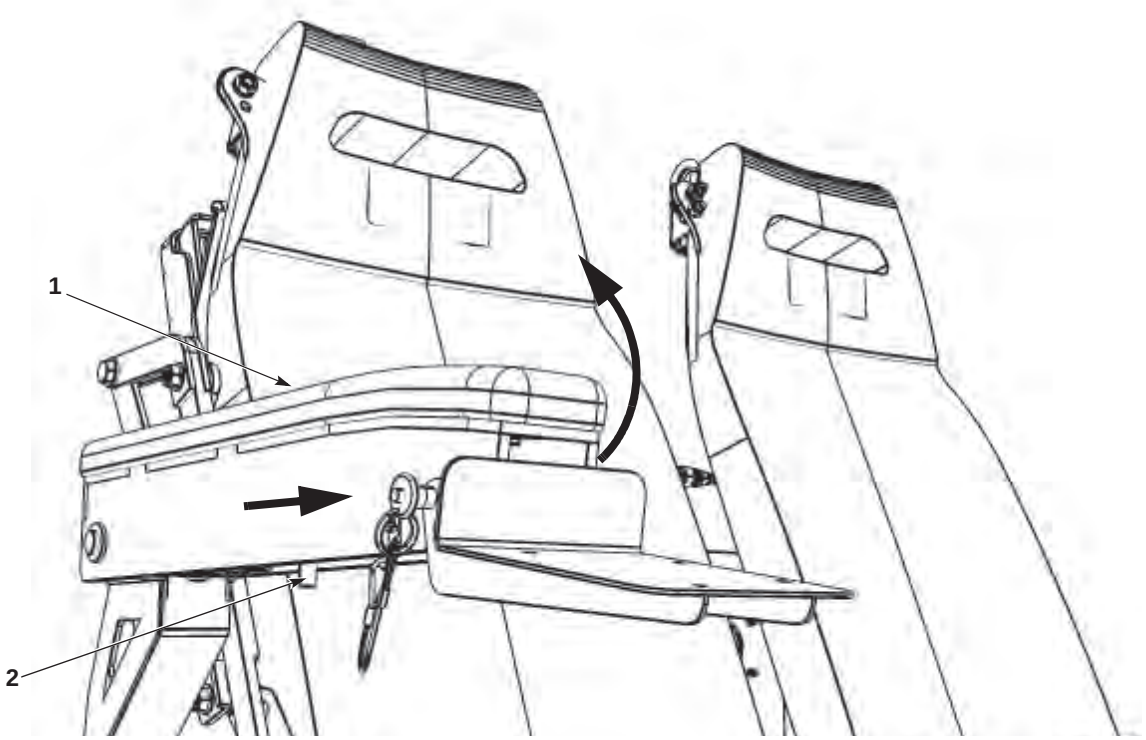
1. Pull the gunner's platform adjustment handle (2) and push the gunner's platform (1) down to lower.

END OF TASK

END OF WORK PACKAGE

ARM REST - 5TH SEAT OPERATION (M1245)

RAISE ARM REST



WARNING

Keep hands and fingers away from pinch point area of the arm rest assembly. Hands and fingers could get pinched. Failure to comply may result in injury to personnel.

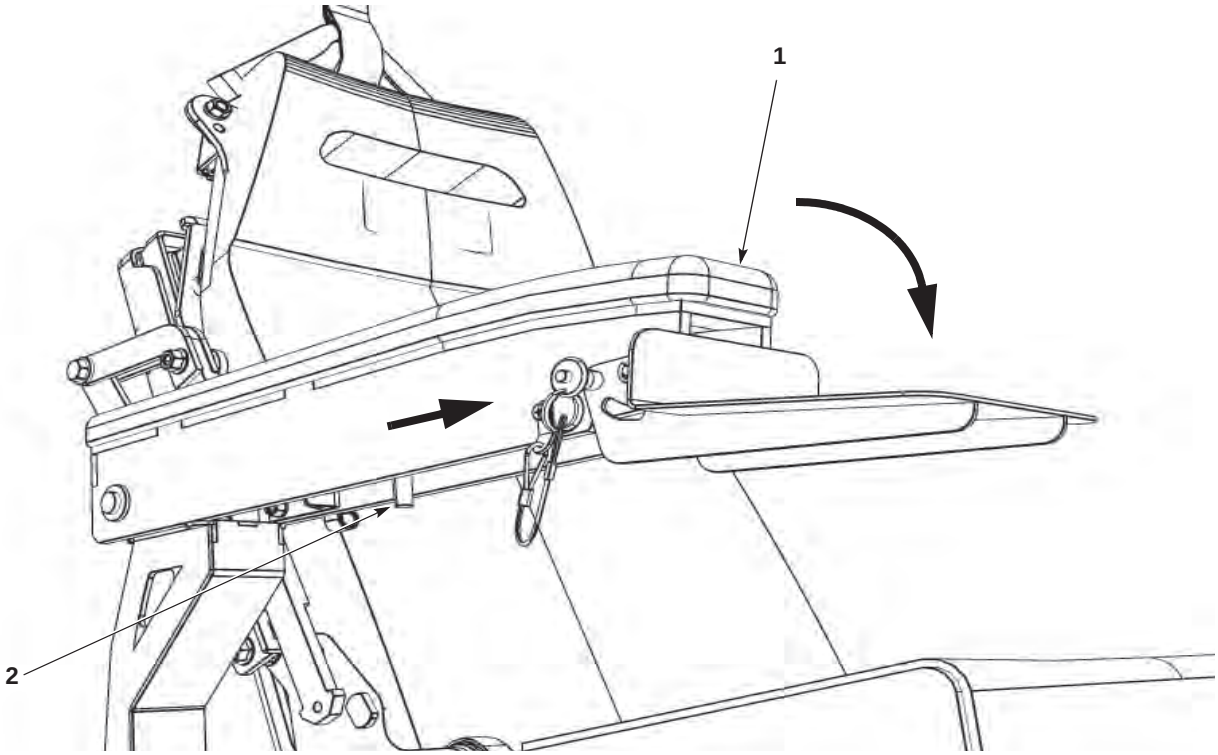
NOTE

Latch is located underneath arm rest.

1. Move the arm rest latch (2) forward, and raise the arm rest (1) upward to the locked position.
2. Confirm arm rest latch (2) returns to the locked position.

END OF TASK

LOWER ARM REST



WARNING

Keep hands and fingers away from pinch point area of the arm rest assembly. Hands and fingers could get pinched. Failure to comply may result in injury to personnel.

NOTE

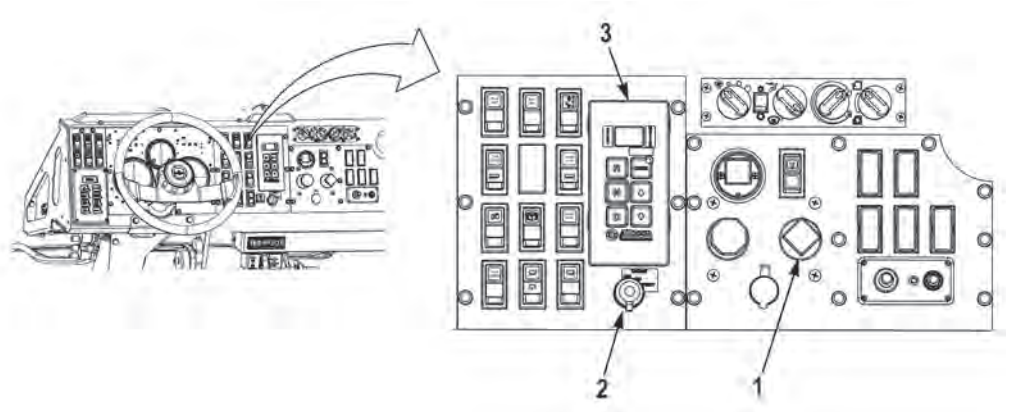
Latch is located underneath arm rest

1. Move the arm rest latch (2) forward, and lower the arm rest (1) down to the locked position.
2. Confirm arm rest latch (2) returns to the locked position.

END OF TASK

END OF WORK PACKAGE

NORMAL START - ABOVE 32°F (0°C)



WARNING

Ensure all personnel are clear of vehicle before engine start is attempted. Operator must visually check to see that all areas of vehicle are clear of personnel prior to attempting to start engine. Failure to comply may result in injury or death to personnel.

NOTE

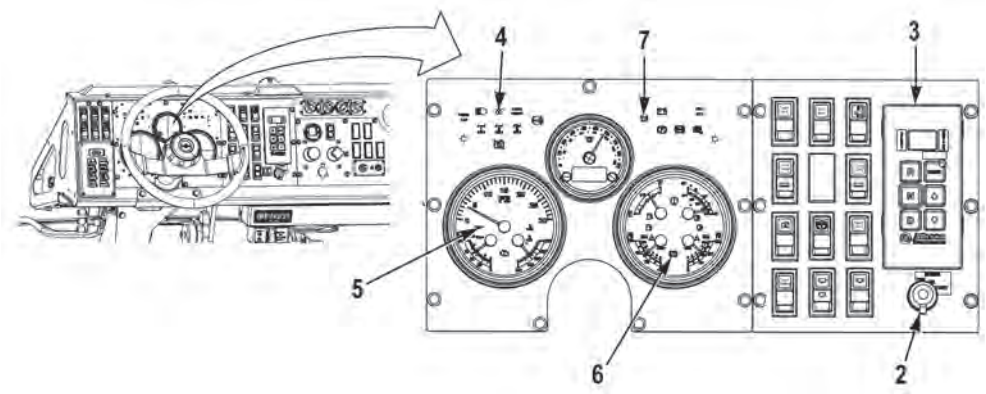
Before attempting to operate vehicle, be sure to perform PMCS. Also, be familiar with all controls and indicators (WP 0007).

1. Turn on battery disconnect switch (WP 0007).
2. Apply parking brake by pulling out on PARKING BRAKE valve (1).

NOTE

Transmission range selector will automatically be set in N (neutral). Reset to neutral if engine stops or if power is interrupted.

3. Turn ignition switch (2) to ON position and ensure transmission range selector (3) is in N (neutral).



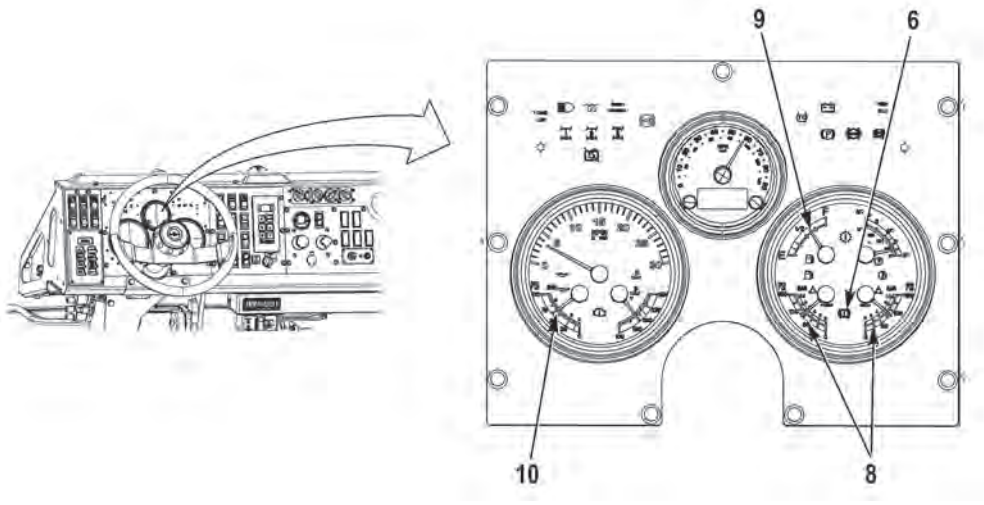
CAUTION

- **If engine fails to start after five start attempts, refer to Troubleshooting. Failure to comply may result in damage to equipment.**
- **Do not turn ignition switch to START position while engine is rotating. Failure to comply may result in damage to equipment.**
- **If engine fails to start, wait 15 seconds prior to next start attempt to allow starter to cool. Failure to comply may result in damage to equipment.**
- **Do not crank engine for longer than 10 seconds. Failure to comply may result in damage to equipment.**

NOTE

- Ensure air pressure gauge is in operating range.
- If air pressure in the brake system is low, a warning buzzer and LOW AIR warning lights in capsule will activate. This is normal for initial starts. Buzzer and lights will shut off once air pressure builds up to 64 to 76 psi (441 to 524 kPa).
- If engine fails to start, ignition switch must be returned to OFF position prior to next start attempt.
- LOW AIR warning light may illuminate.

4. When WAIT TO START light (4) goes out, turn ignition switch (2) to START position until engine starts. Release ignition switch (2). Ignition switch (2) will spring back to ON position. Low oil pressure light (5) and LOW AIR warning light (6) may illuminate. ATC light (7) will illuminate.



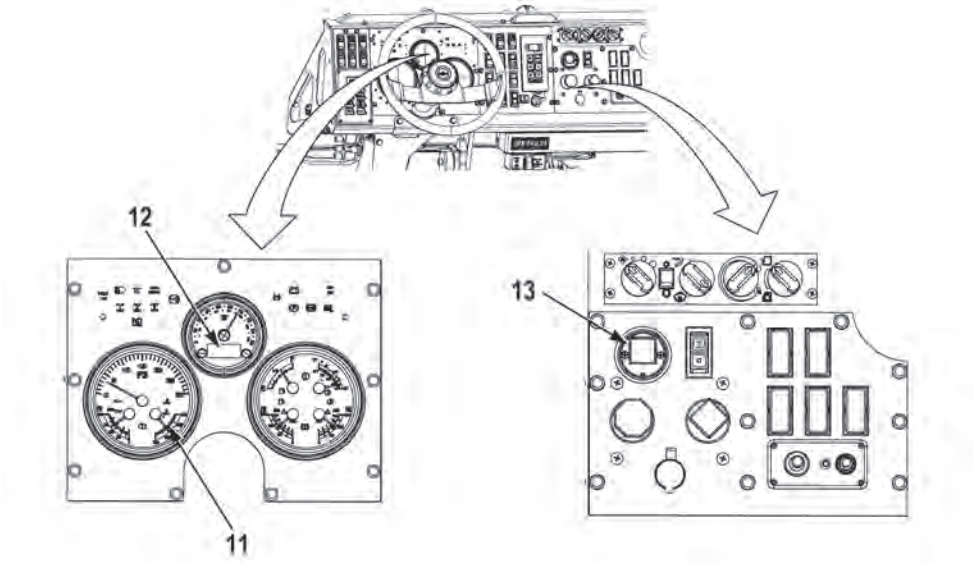
CAUTION

If oil pressure gauge does not show engine oil pressure within 10 to 15 seconds after starting engine, shut off engine immediately and refer to Troubleshooting Symptoms. Lack of lubrication will damage engine.

NOTE

- Engine warning light will illuminate for 10 to 15 seconds after startup. Check that oil pressure gauge reads in safe operating range and low oil pressure warning light is not lit.
- If both air pressure gauges do not read 100 to 125 psi (689 to 862 kPa) after warm-up, shut off engine and notify Field Maintenance.

5. Run engine at 800 to 1000 rpm for three minutes.
6. Check that both needles on air pressure gauges (8) read 100 to 125 psi (689 to 862 kPa).
7. Check that LOW AIR warning light (6) remains illuminated until gauges reach 64 to 76 psi (441 to 524 kPa).
8. Check that FUEL gauge (9) shows sufficient fuel to complete mission.
9. Check that oil pressure gauge (10) reads in safe operating range.



NOTE

WATER TEMP gauge may not show reading at engine idle.

10. Check that WATER TEMP gauge (11) does not read over 220°F (104°C).
11. Check LCD screen (12) for voltage reading of between 24 and 30 volts (WP 0027).
12. Check that air filter restriction indicator (13) shows green and less than 15 in.h20 (3.74 kPa).

NOTE

To complete a mission, vehicle may be operated until air filter restriction indicator reads up to a maximum of 20 in.h20 (5.0 kPa).

13. If air filter restriction indicator (13) reads 15 in.h20 (3.74 kPa) or more, notify Field Maintenance.
14. Check that fire suppression power loss alarm is unsilenced (WP 0007).

END OF WORK PACKAGE

OPERATE SERVICE BRAKES

ANTILOCK BRAKE SYSTEM (ABS) LIGHT THEORY OF OPERATION

1. The ABS light (WP 0007) on the dash will illuminate steadily for a two second bulb check whenever the ignition switch is turned ON. The ABS light turns OFF after the two second bulb check if there are no ABS malfunctions. If the light remains ON after the two second bulb check, or if the light comes ON and illuminates steadily while operating the vehicle, there is a malfunction with the ABS. Notify Field Maintenance if ABS light indicates a malfunction in the ABS.

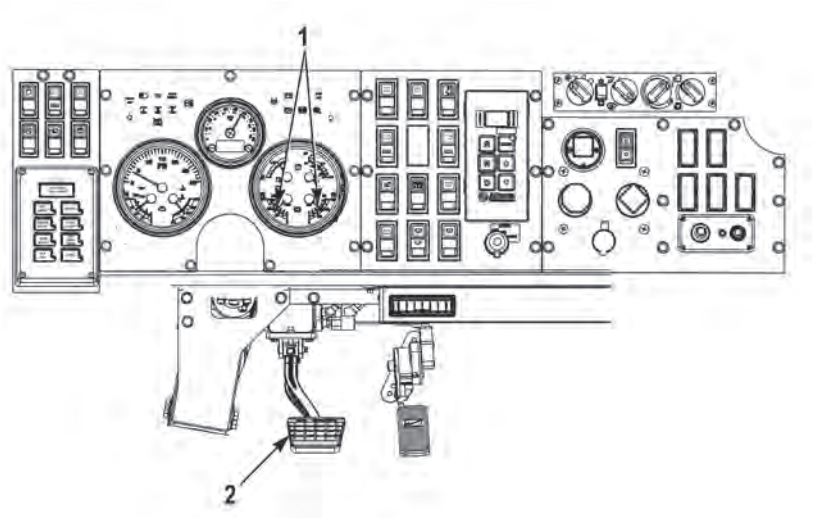
NOTE

If the ABS light indicates a malfunction, the ABS and possibly the ATC system may be disabled. If the ABS and/or ATC is disabled, the emergency and service brake systems remain functional.

2. The ABS light will flash slowly when CTIS is set to CC, MSS, or EMER terrain settings (WP 0031) to indicate that the ABS is disabled. This indication is normal and does not indicate a malfunction in the ABS.

END OF TASK

OPERATION OF SERVICE BRAKES FOR M1240 AND M1240A1



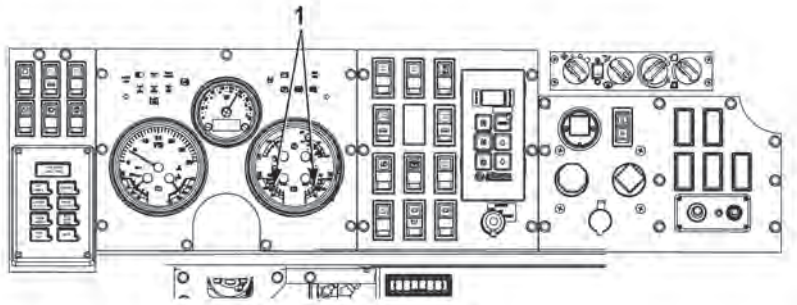
WARNING

- **Rapid operation of service brakes will consume compressed air supply. If red needle of air pressure gauge reads approximately 45 psi (310 kPa) or less, spring brakes will be applied automatically, causing vehicle to stop rapidly. Always observe air pressure gauge. Failure to comply may result in damage to equipment or injury to personnel.**
- **Maximum braking requires 85 psi (586 kPa) or more air pressure for service brakes, as indicated by red needle of air pressure gauge. If air pressure drops below 100 psi (690 kPa), braking ability will be reduced. If air pressure continues to drop, air system is malfunctioning. Operating vehicle with reduced air pressure may result in injury or death to personnel.**

1. Prior to operating vehicle, ensure both air pressure gauges (1) read at least 120 psi (827 kPa).
2. Push down and hold service brake pedal (2) as required to slow or stop vehicle.

END OF TASK

OPERATION OF SERVICE BRAKES FOR M1245



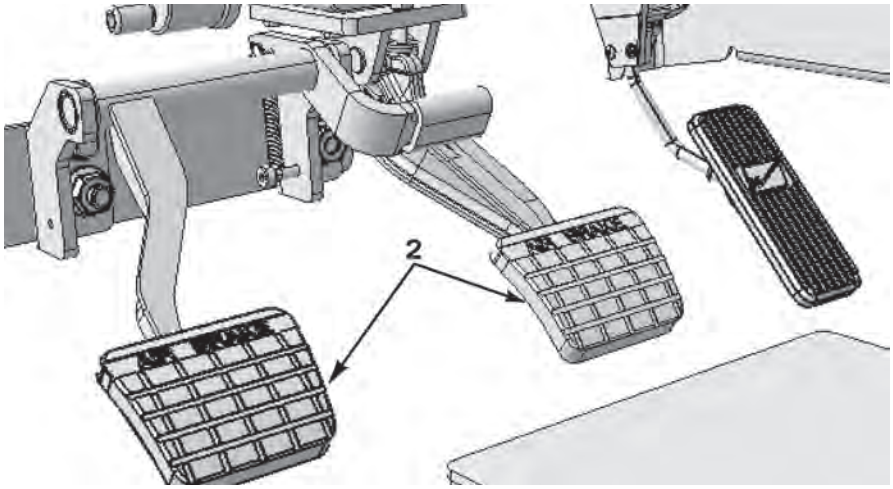
WARNING

- **Rapid operation of service brakes will consume compressed air supply. If red needle of air pressure gauge reads approximately 45 psi (310 kPa) or less, spring brakes will be applied automatically, causing vehicle to stop rapidly. Always observe air pressure gauge. Failure to comply may result in damage to equipment or injury to personnel.**
- **Maximum braking requires 85 psi (586 kPa) or more air pressure for service brakes, as indicated by red needle of air pressure gauge. If air pressure drops below 100 psi (690 kPa), braking ability will be reduced. If air pressure continues to drop, air system is malfunctioning. Operating vehicle with reduced air pressure may result in injury or death to personnel.**

NOTE

- Both brake pedals operate the same way.
- Any instruction given in this manual for operating the right brake pedal applies to the left brake pedal as well.

1. Prior to operating vehicle, ensure both air pressure gauges (1) read at least 120 psi (827 kPa).

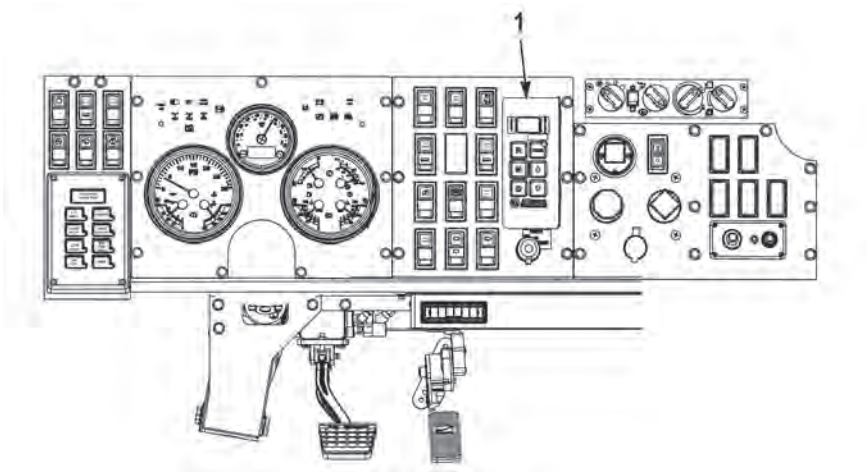


2. Push down and hold either service brake pedal (2) as required to slow or stop vehicle.

END OF TASK

END OF WORK PACKAGE

OPERATE TRANSMISSION



1. Start engine (WP 0020).

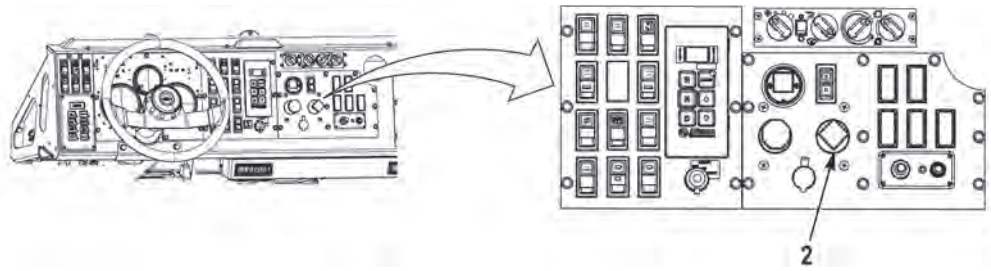
WARNING

- **The driver's field of view is limited. Ground guides must be used when operating in congested areas or when operating in reverse. Ground guides must stand clear of the vehicle and remain within view of the driver. Failure to comply may result in injury or death to personnel and damage to equipment.**
- **The vehicle has a high center of gravity. Slow down for turns and other maneuvers. Approach slopes head on and avoids side slopes when possible. Failure to comply may result in injury or death to personnel and damage to equipment.**
- **Single hearing protection is required in and around an operating vehicle. Double hearing protection is required during weapons firing. Failure to comply may result in injury to personnel.**

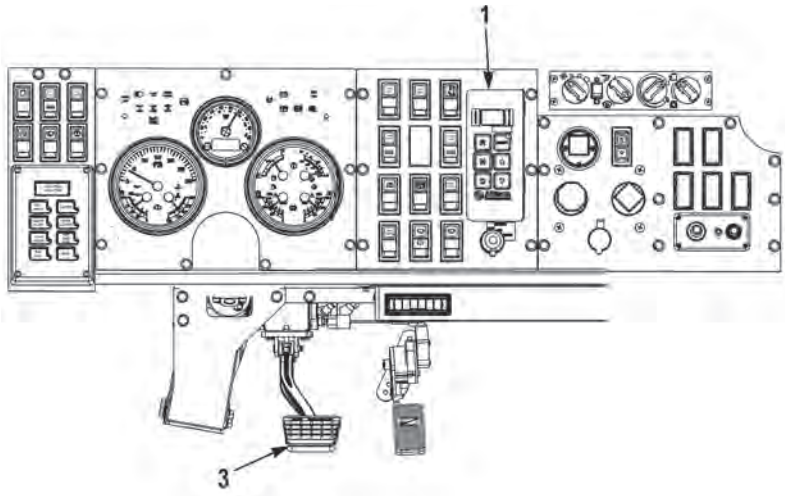
NOTE

- Transmission range selector has six buttons and a digital display. The six buttons are R (reverse), N (neutral), D (drive), ^ (up), v (down), and MODE. The vehicle has six forward gears. Maximum forward gear available is gear six.
- When vehicle is positioned in D (drive), gear six is automatically chosen and displayed in digital display window. The transmission automatically upshifts and downshifts within the selected range during vehicle operation.
- Digital display at the top left of the transmission range selector displays the top forward gear of gear range selected and can be changed by using ^ (up), v (down) buttons. The digital display at the top right of the transmission range selector displays what gear the vehicle is currently in.

2. Ensure transmission range selector (1) is set to N (neutral).



3. Push in PARKING BRAKE control (2) to release parking brake.



CAUTION

Service brake pedal must be applied and vehicle stopped when shifting among D-N-R shift selections. Failure to comply may result in damage to equipment.

4. Apply service brake pedal (3) and push appropriate buttons on transmission range selector (1) to set transmission range to desired position.

WARNING

Do not back up without a ground guide. Failure to comply may result in damage to vehicle or injury or death to personnel.

5. To move vehicle backward, select R (reverse).

WARNING

If the operator leaves the vehicle, even momentarily, when engine is running, the transmission MUST be in N (neutral), PARKING BRAKE must be engaged, and wheel MUST be chocked. Unexpected and sudden vehicle movement may occur causing injury or death to personnel.

6. To start or park vehicle, select N (neutral).

7. To drive in normal conditions or move forward from a stopped position, select D (drive).

END OF TASK

TRANSMISSION LIMP HOME PROCEDURE

1. Select R (reverse) on the transmission range selector and note if the vehicle does shift.
2. If vehicle does shift into R (reverse), set transmission range selector to appropriate position, continue with mission, and notify Field Maintenance when mission is completed.
3. If vehicle does not shift into R (reverse), the transmission may be locked into a specific gear and may not come out of that gear until the engine is turned OFF. The operator must be aware that once the engine is turned OFF, the vehicle will not be operable until the problem is corrected.

WARNING

When operating the vehicle in the transmission limp home mode, the operator must not rely on the parking brake to hold the vehicle in place. The service brakes must also be applied. Failure to comply may result in injury or death to personnel.

4. No additional damage to the transmission will occur, so the operator can continue to operate the vehicle in the limp home mode and complete the mission. However, the operator must be aware of a few guidelines:
   a. The engine must not be turned OFF until the operator deadlines the vehicle. Once the engine is turned OFF, the vehicle will not be operable until the problem is corrected.
   b. As the engine cannot be turned OFF and the transmission is locked into gear, the operator will not be able to leave the cab until the vehicle is deadlined.
   c. The vehicle will not be able to operate in reverse.
   d. Depending on the gear the transmission is locked into, the vehicle may not be able to drive up steep grades.
   e. The brakes may need to be applied slightly earlier than normal when stopping the vehicle.
   f. Depending upon the gear the transmission is locked into and the terrain the vehicle is operating in, the engine or transmission may overheat. The operator must closely monitor the Water Temperature Gauge and the Transmission Oil Temperature Gauge (WP 0007).

CAUTION

If overheating occurs when operating in the transmission limp home mode, the operator should stop the vehicle (do not turn off the engine) and allow the transmission and engine to cool down to normal operating levels. If the engine and transmission do not cool down or overheating reoccurs, the operator should turn off the engine and notify Field Maintenance. Failure to comply may result in damage to equipment.

5. Once vehicle is deadlined, the operator must notify Field Maintenance.

END OF TASK

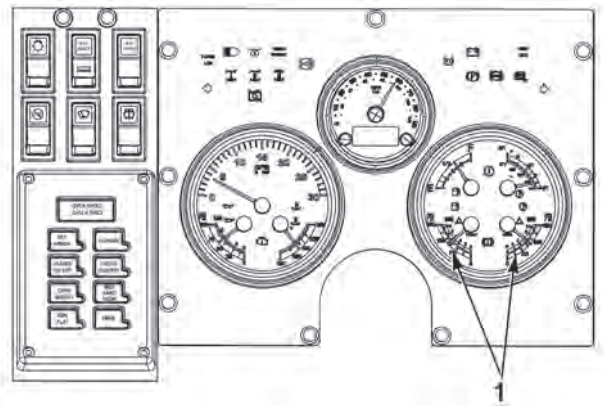
END OF WORK PACKAGE

NORMAL DRIVING PROCEDURES

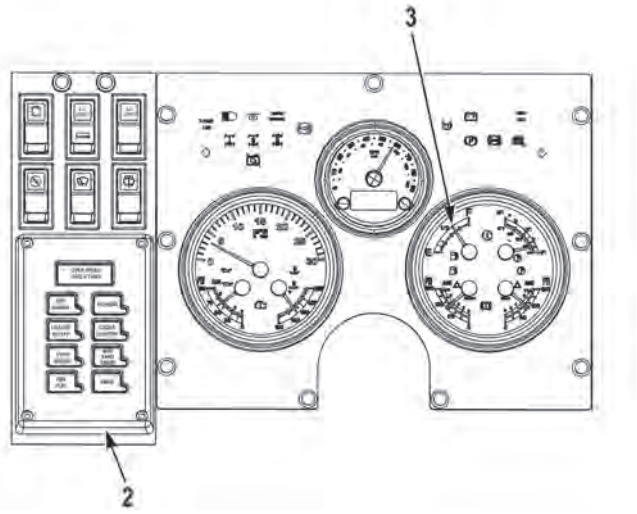
WARNING

- **If the operator leaves the vehicle, even momentarily, when engine is running, the transmission MUST be in N (neutral), PARKING BRAKE must be engaged, and wheel MUST be chocked. Unexpected and sudden vehicle movement may occur causing injury or death to personnel.**
- **Increased effort will be required to turn steering wheel if there is a failure of hydraulic steering system or engine stops running. Stop vehicle as soon as road conditions permit. Operating vehicle with impaired steering could result in injury or death to personnel.**
- **Be alert at all times for the smell of fuel. Hot engines and components can ignite fuel. If fuel smell is detected while operating vehicle, shut down vehicle immediately and notify Field Maintenance. Failure to comply may result in injury or death to personnel and/or damage to equipment.**
- **Diesel fuel is flammable. Do not fill the fuel tank while the engine is running, while smoking, or near open flames. Avoid overfilling the fuel tank and immediately clean up spilled fuel. Avoid operating electrical equipment, such as radios and personnel heaters, while refueling. Failure to comply may cause explosions and fire, and may result in injury or death to personnel and damage to equipment.**

1. Drive forward.
   a. Remove and stow wheel chocks (WP 0009).
   b. Adjust seat as required (WP 0012) M1240/M1245 or (WP 0013) M1240A1.
   c. Adjust each side view mirror (WP 0014).
   d. Adjust auxiliary mirrors (if equipped) (WP 0015).
   e. Secure any items located in cargo deck.
   f. Adjust and fasten seatbelt (WP 0016) M1240/M1240A1 or (WP 0017) M1245.
   g. Start engine (WP 0020).
   h. Turn on lights as required (WP 0028).



i. Make sure both air pressure gauges (1) read at least 120 psi (827 kPa) before driving vehicle.



WARNING

- **Rapid operation of service brakes will consume compressed air supply. If red needle of air pressure gauge reads approximately 45 psi (310 kPa) or less, spring brakes will be applied automatically, causing vehicle to stop rapidly. Always observe air pressure gauge. Failure to comply may result in damage to equipment or injury to personnel.**
- **Make sure both air pressure gauge needles read at least 120 psi (827 kPa) and that LOW AIR indicator lights have gone out and warning alarm has quit sounding before pushing in PARKING BRAKE control valve and driving vehicle. If LOW AIR indicator light comes back on and warning alarm sounds when PARKING BRAKE control valve is pushed in, pull PARKING BRAKE control valve out and allow more air to build up in system. Do NOT drive vehicle until PARKING BRAKE control valve can be pushed in without LOW AIR indicator light coming on and warning alarm sounding. Failure to comply may result in damage to equipment or injury to personnel.**

CAUTION

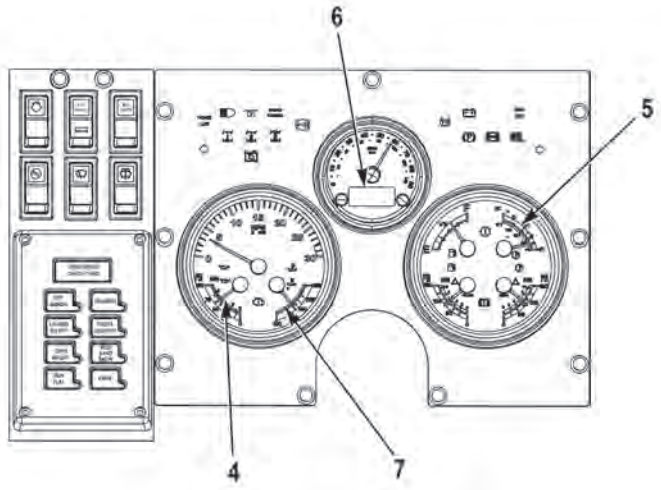
Do not change CTIS controller or driveline lock settings while vehicle is turning or wheels are slipping. Damage to equipment may occur.

NOTE

For a detailed explanation of the CTIS refer to (WP 0031).

j. Set CTIS controller (2) to appropriate settings.

k. Check that fuel gauge (3) indicates enough fuel to complete mission.

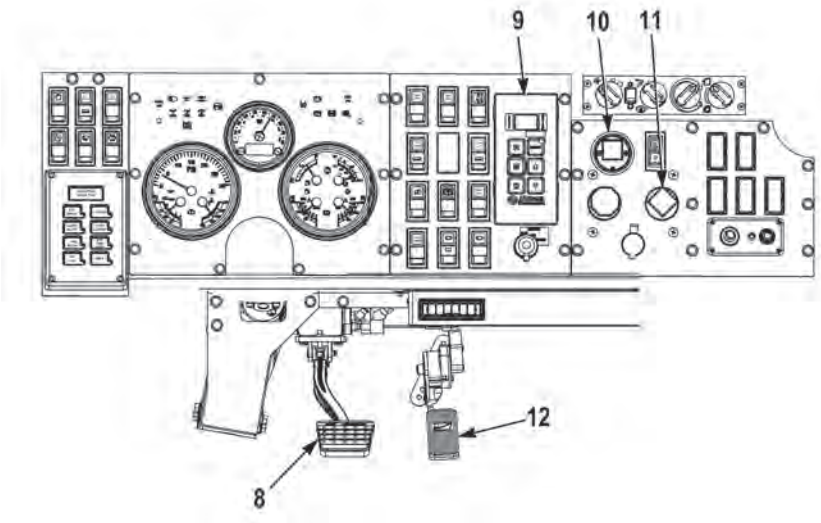


l. Check that oil pressure gauge (4) indicates safe range at idle and increases as engine speed increases.

m. After transmission warms up, check that transmission oil temperature gauge (5) reads below 250°F (121°C).

n. Check LCD screen (6) for voltage reading of 24 to 30 volts (WP 0027).

o. Check that water temperature gauge (7) reads below 220°F (104°C).

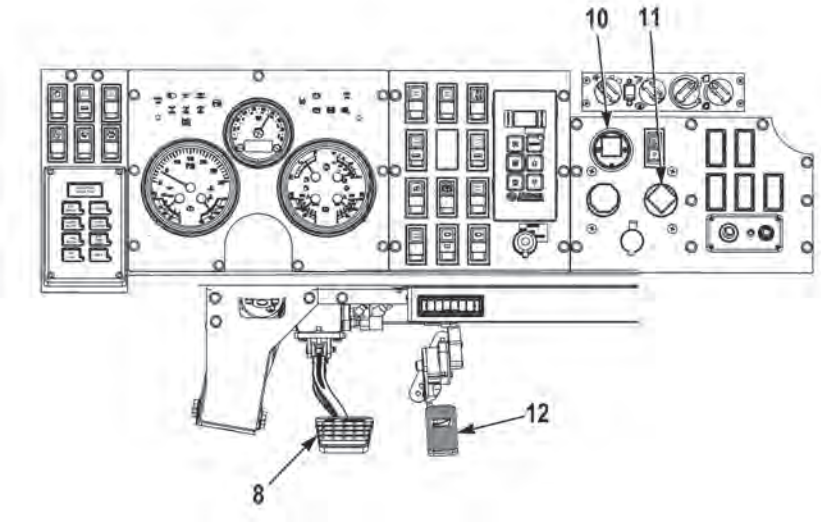


WARNING

Do not back up without a ground guide. Failure to comply may result in damage to vehicle or injury or death to personnel.

p. Apply service brake pedal (8) and set transmission range selector (9) to appropriate range.

q. Check that air filter restriction indicator (10) shows green and less than 15 inches.



NOTE

To complete a mission, vehicle may be operated until air filter restriction indicator reads up to a maximum of 20 inches.

r. If air filter restriction indicator (10) reads 15 inches or more, notify Field Maintenance.

s. Push in PARKING BRAKE control valve (11).

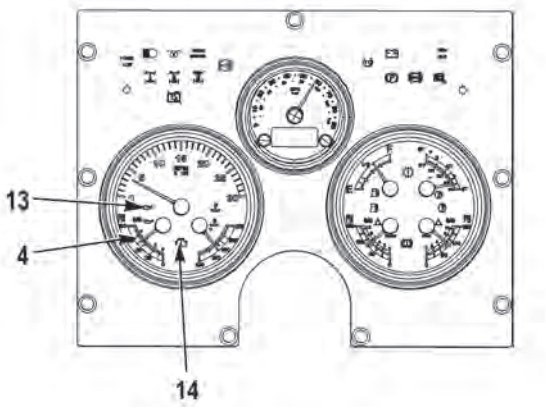
t. Release service brake pedal (8) and slowly press down on throttle pedal (12).

CAUTION

- **Do not hold steering wheel at full left or full right for longer than 10 seconds. Oil overheating and pump damage can result. Failure to comply may result in damage to equipment.**
- **CTIS increases tire pressure when vehicle speed exceeds the allowable speed for each setting. When an increase in speed is required, maintain the lower speed until tires are inflated to correct pressure (WP 0031). Failure to comply may result in damage to equipment.**
- **Do not allow vehicle to coast in N (neutral). This can result in severe transmission damage and unsafe operation.**
- **Maximum governed engine speed with transmission in N (neutral) is approximately 2600 rpm. Never allow engine speed to exceed this figure. Under load, governed speed is approximately 2600 rpm. If engine is allowed to go over governed speed, engine damage can result.**

u. Accelerate, brake, and steer as required.

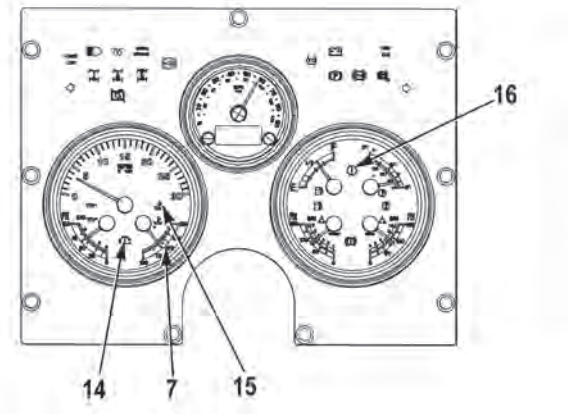
v. Check system gauges often.



NOTE

Engine oil pressure has three monitoring systems: low oil pressure light, check engine light, and oil pressure gauge. If two of the three systems indicate a problem, park vehicle, shut off engine, and notify Field Maintenance. If only one system indicates a problem, and the other two indicate normal, proceed with mission and then notify Field Maintenance.

w. Check engine oil pressure by monitoring oil pressure gauge (4), oil pressure light (13), and check engine light (14).

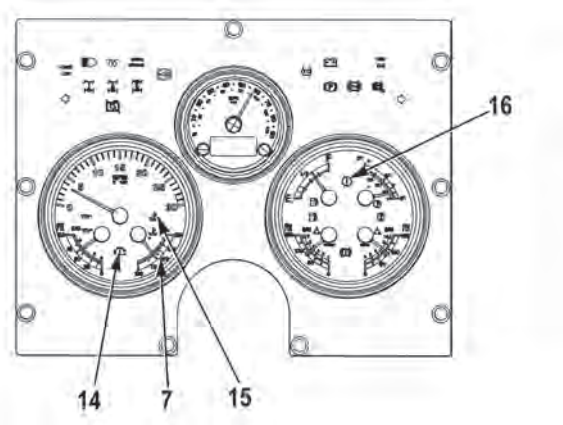


NOTE

- Engine coolant temperature has three monitoring systems: water temperature light, check engine light, and water temperature gauge. If two of the three systems indicate a problem, park vehicle and idle engine at 800 to 1000 rpm until water temperature cools down. If water temperature does not cool down, notify Field Maintenance.
- If only one system indicates a problem, and the other two indicate normal, proceed with mission and then notify Field Maintenance.

x. Check engine coolant temperature by monitoring water temperature gauge (7), check engine light (14), and water temperature light (15).

y. If the check engine light (14) illuminates other than at startup, there is a problem in the engine that could cause damage to the engine. Check for low oil pressure or high water temperature. If indications are normal, continue the mission. Notify Field Maintenance at completion of mission.



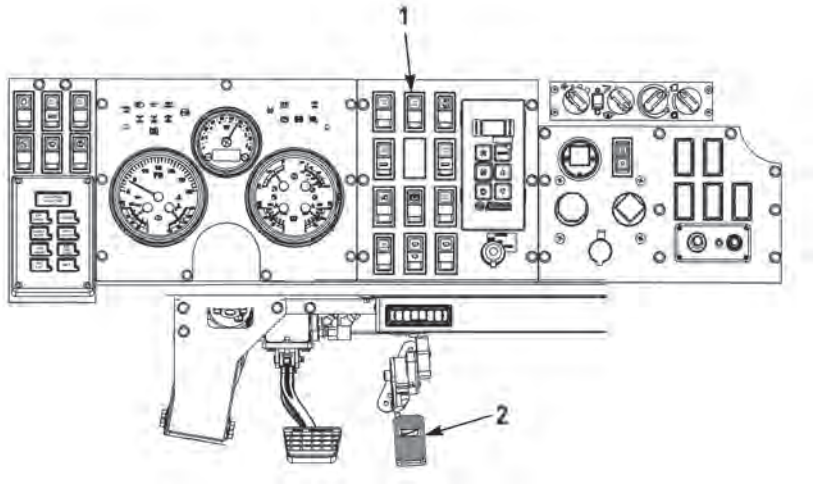
NOTE

If transmission check light illuminates at any time other than startup, do NOT turn off engine or shift transmission to neutral (N).

z. If the transmission check light (16) illuminates other than at startup, there is a potential problem in the transmission and transmission may need to be serviced. Check for correct oil level and high transmission oil temperature. If indications are normal, continue the mission. Notify Field Maintenance at completion of mission.

END OF WORK PACKAGE

OPERATE EXHAUST BRAKE/RETARDER



WARNING

Use exhaust brake/retarder only when vehicle tires have good traction. Use of exhaust brake/retarder on slick or loose surfaces can cause vehicle to skid and cause injury or death to personnel.

NOTE

- Service brakes may be used in addition to exhaust brake/retarder to obtain maximum braking.
- Use exhaust brake/retarder when long application of service brakes are not desired (i.e., long downgrades).
- Exhaust brake/retarder will not engage when transmission is in first gear.
- Exhaust brake/retarder disengages when engine speed drops below 1200 rpm or when accelerator is reengaged.

1. Set exhaust brake/retarder ON/OFF switch (1) to ON (up).

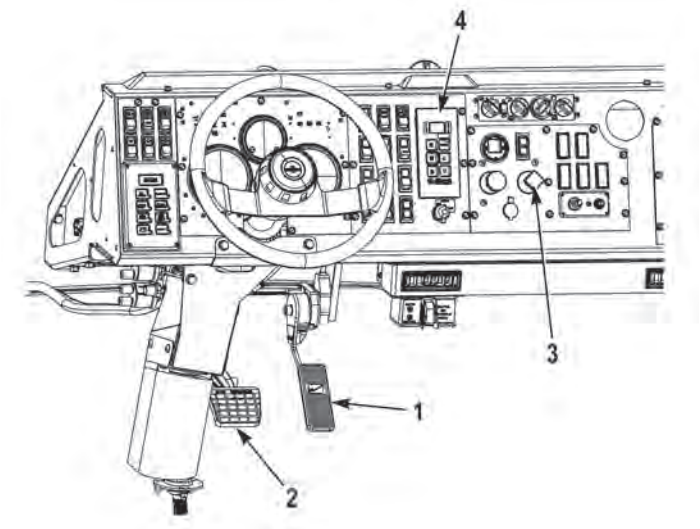
NOTE

- When exhaust brake/retarder is engaged and vehicle is decelerating, the No. 2 will be displayed on the transmission digital display showing the gear that the transmission is down shifting to, while the right side will continue to show the current gear the vehicle is in.
- Optimum braking occurs with engine between 1650 and 2600 rpm. Select appropriate transmission range to maintain desired effect.

2. Lift foot off throttle pedal (2). Exhaust brake/retarder will automatically slow vehicle.
3. When no engine braking is required, turn exhaust brake/retarder switch (1) to OFF.

END OF WORK PACKAGE

PARK VEHICLE



WARNING

- **Perform this task with the aid of an assistant while ground guiding. Failure to comply may result in injury or death to personnel.**
- **When parking on steep grades, the CTIS must be in MSS or EMER setting in order to lock transfer case and create more stability. Driveline must be in full lock condition prior to shutting off engine. Failure to comply may result in injury or death to personnel.**

1. Lift foot off of throttle pedal (1). Allow automatic downshifting of transmission to slow vehicle.

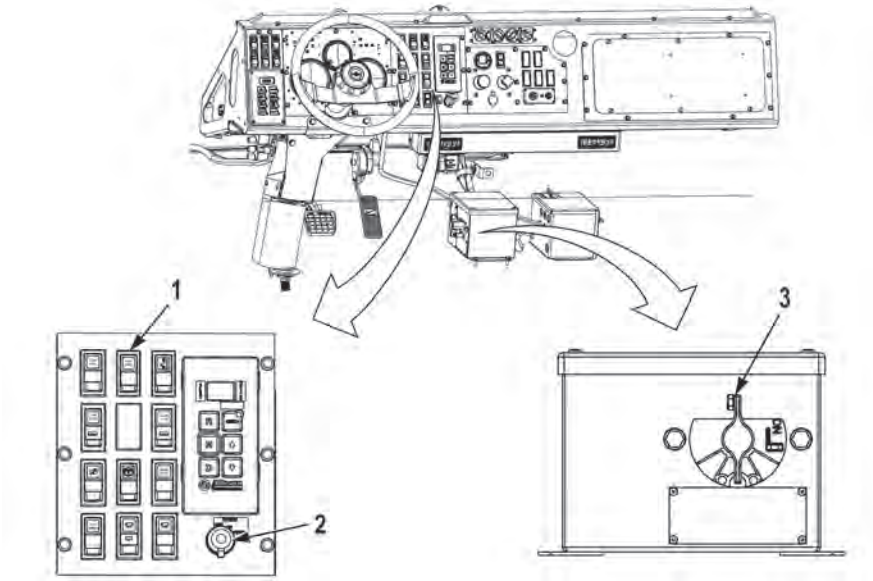
WARNING

Rapid operation of service brakes will consume compressed air supply and cause automatic spring brake application. Always observe air pressure gauges. Failure to comply may result in damage to equipment or injury to personnel.

2. Push down on service brake pedal (2) until vehicle comes to complete stop.
3. Pull out PARKING BRAKE control valve (3).
4. Position transmission range selector (4) to N (neutral) mode.
5. Align front tires in straight-ahead position.
6. Chock wheels (WP 0009).

END OF WORK PACKAGE

SHUT OFF ENGINE



1. Park vehicle (WP 0025).
2. Shut off exhaust brake (1) (if activated).
3. Shut off all lights and switches.

CAUTION

Prior to shutting off engine, run engine at 800 to 1000 rpm with transmission in N (neutral) for three minutes to allow turbocharger to slow down and cool off. Engine components may be damaged if not allowed to cool off. Failure to comply may result in damage to equipment.

4. Run engine at 800 to 1000 rpm for 3 minutes.
5. Turn engine ignition switch (2) to OFF.
6. Turn battery disconnect switch (3) to OFF.

END OF WORK PACKAGE

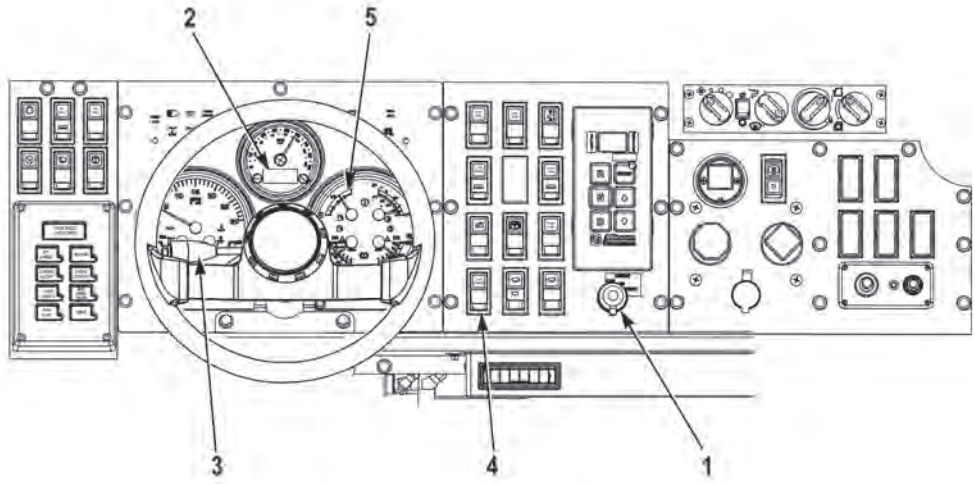
INSTRUMENT PANEL OPERATION

GENERAL

The instrument panel on the M-ATV incorporates electronic gauges, indicator lights, and a Liquid Crystal Display (LCD) to communicate information to the operator. The LCD has multiple modes and functions.

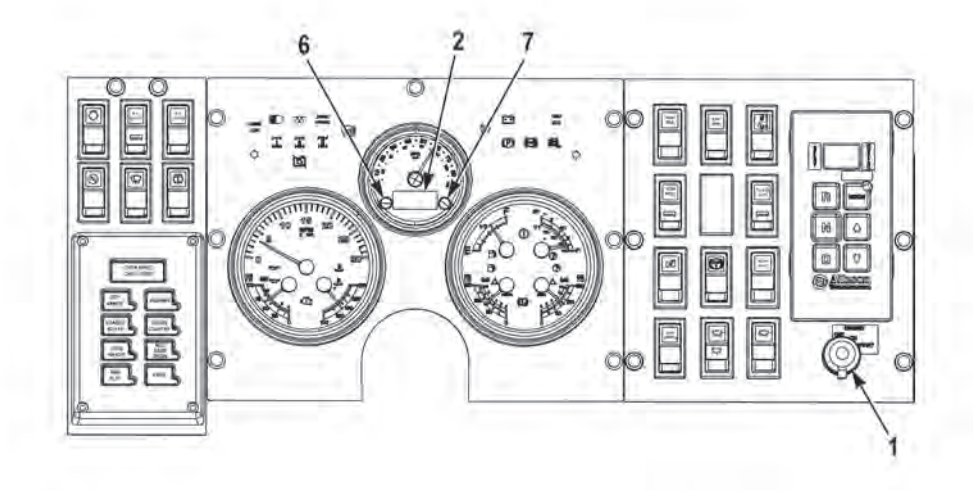
The LCD can display the odometer reading as well as test gauges and indicator lights. The LCD can also be set to display measured units in English or Metric.

INSTRUMENT PANEL MODES



Sleep Mode: The instrument panel is normally in sleep mode when the ignition switch (1) is turned off. The gauges, indicator lights or LCD (2) do not operate in this mode.

Limited Mode: If the turn signal lever (3) or dimmer switch (4) is actuated, the instrument panel goes into limited mode. In limited mode, the turn signals, odometer (2) and fuel gauge (5) are active. The remaining gauges go to zero.



Start-Up Mode: The instrument panel enters start-up mode when the ignition is switched on. After key-on, an optional gauge Start-Up Self Test (SST) may be performed. The operator can enable or disable the SST by pressing and holding both the mode (m) button (6) and trip (t) button (7) while placing the ignition switch (1) in ON position. The LCD displays a screen that allows the operator to enable SST (Yes) or disable SST (No).

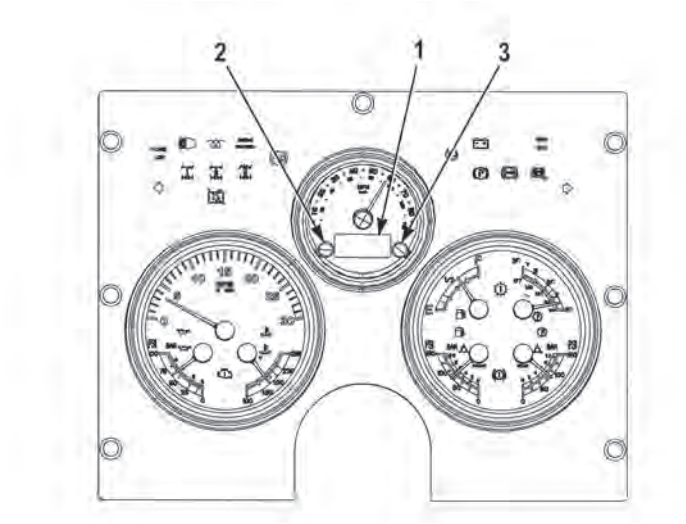
During Start-Up Mode:

- With SST disabled, the gauges will move to zero, and then move to their current status positions. With SST enabled, the gauges move up-scale, pausing at half-scale before going to full-scale. The gauges then go to zero before moving to their current status positions.
- The LCD (2) displays any warning messages and then displays the odometer, trip odometer, engine hour meter and battery voltage. The LCD (2) then reverts to normal drive mode screen. If SST is enabled, the LCD (2) will also turn on and off, followed by the OSHKOSH logo, and software information before going to the normal drive mode screen.
- The warning lights turn on and off, followed by the active warning lights (if any) coming back on.
- With SST disabled, there is no sound at start-up. With SST enabled, there is a one-second alarm at start-up.

Ignition Mode: The instrument panel is in ignition mode whenever the ignition switch (1) is on. The instrument panel is fully active in this mode.

Diagnostics Mode: From ignition mode, with vehicle speed at zero, pressing the mode (m) button (6) for more than two seconds allows the instrument panel to enter diagnostics mode. This provides three functions: set units, adjust contrast, and instrument diagnostics.

LCD MESSAGE CENTER



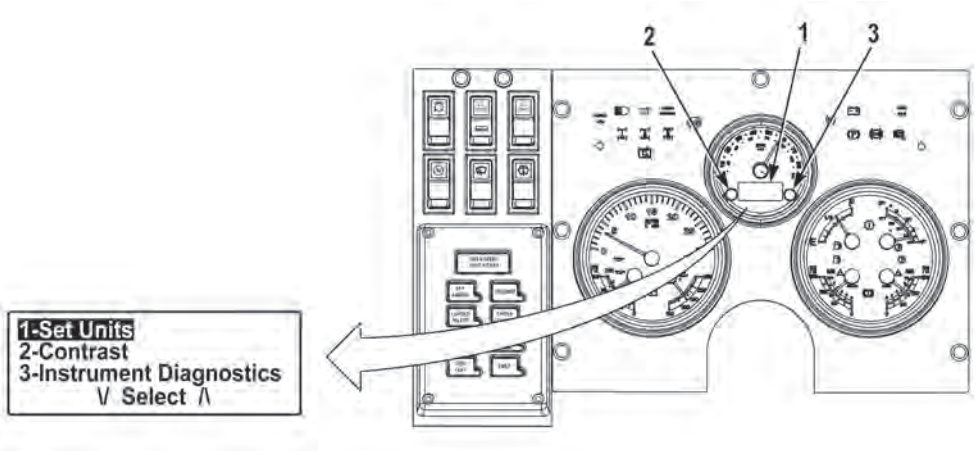
NOTE

The LCD displays warnings as dictated by the various control systems on the vehicle. The warning will remain on the screen until it is no longer valid or until the operator pushes the (t) button.

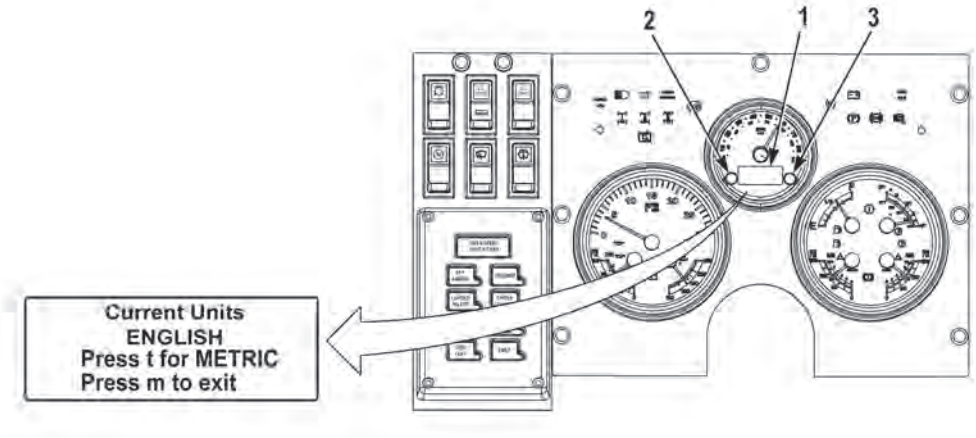
Drive Mode Screen: This is the normal display screen when operating the vehicle. In drive mode, the LCD (1) displays the odometer reading, system voltage reading and trip odometer reading.

Settings and Diagnostics: From drive mode, with engine running and vehicle parked, pressing the mode (m) button (2) for more than two seconds places the instrument panel in settings and diagnostics mode. Once in settings and diagnostics mode, pressing either the (t) button (3) or (m) button (2) individually scrolls through the various selections. Pressing the (t) button (3) and (m) button (2) at the same time selects the highlighted item.

CHANGING MEASUREMENT UNITS

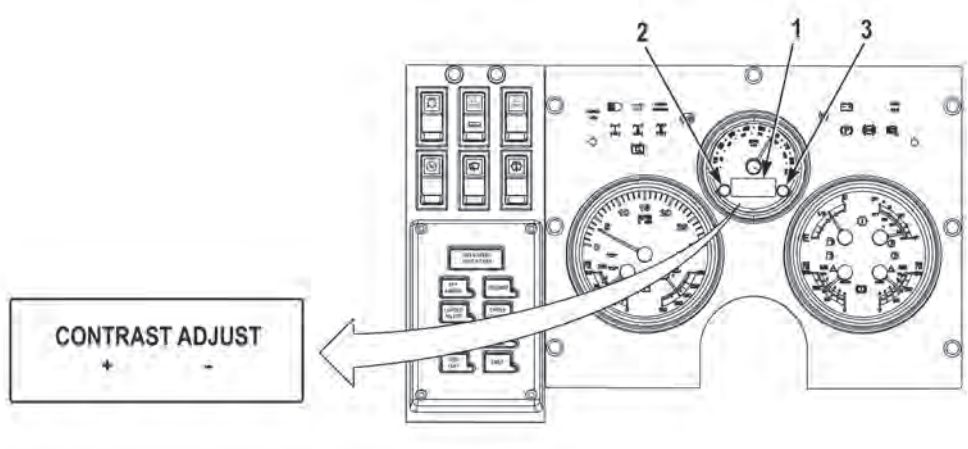


1. From drive mode, with engine running and vehicle parked, press (m) button (2) for more than two seconds to enter LCD (1) settings and diagnostics screen.
2. Use (m) button (2) or (t) button (3) to scroll through selections until "1 - Set Units" is highlighted.
3. Press (m) button (2) and (t) button (3) at the same time to select "1 - Set Units".



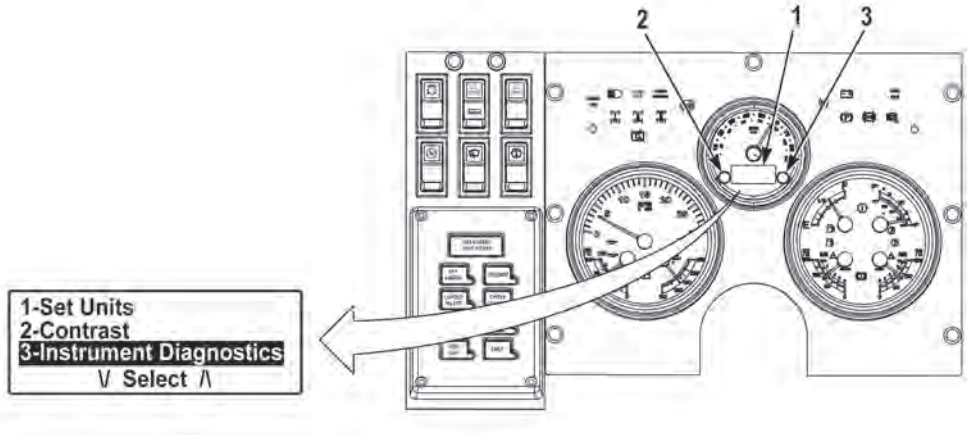
4. Press (t) button (3) to change measurement units to ENGLISH or METRIC, as desired.
5. Press (m) button (2) to return to drive mode.

CHANGING LCD SCREEN CONTRAST SETTING

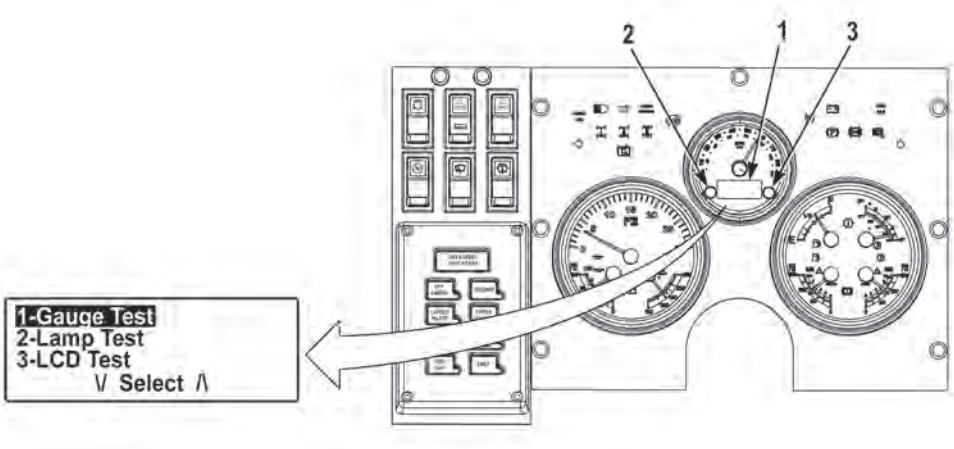


1. From drive mode, with engine running and vehicle parked, press (m) button (2) for more than two seconds to enter LCD (1) settings and diagnostics mode.
2. Use (m) button (2) or (t) button (3) to scroll through selections until "2 - Contrast" is highlighted.
3. Press (m) button (2) and (t) button (3) at the same time to select "2 - Contrast".
4. Press (m) button (2) to increase contrast, or press (t) button (3) to decrease contrast.
5. LCD (1) will automatically return to drive mode.

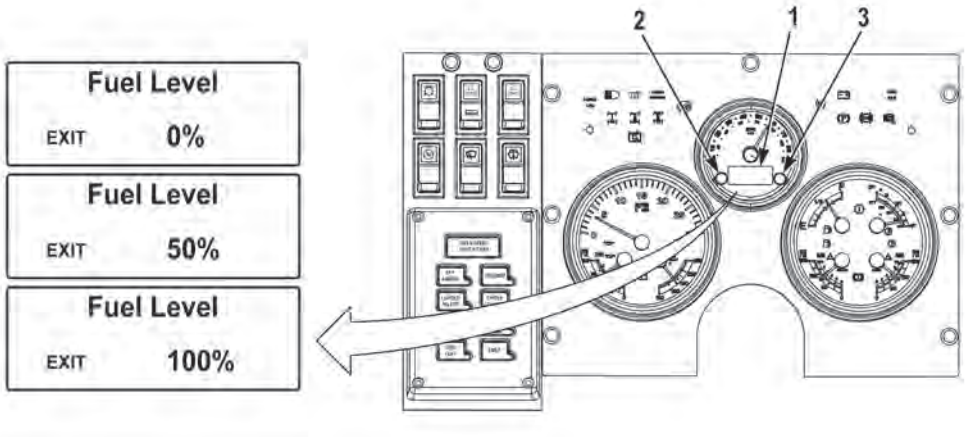
INSTRUMENT PANEL GAUGES TESTING



1. From drive mode, with engine running and vehicle speed at zero, press (m) button (2) for more than two seconds to enter settings and diagnostics mode.
2. Use (m) button (2) or (t) button (3) to scroll through selections until "3 - Instrument Diagnostics" is highlighted.
3. Press (m) button (2) and (t) button (3) at the same time to display instrument diagnostics menu.

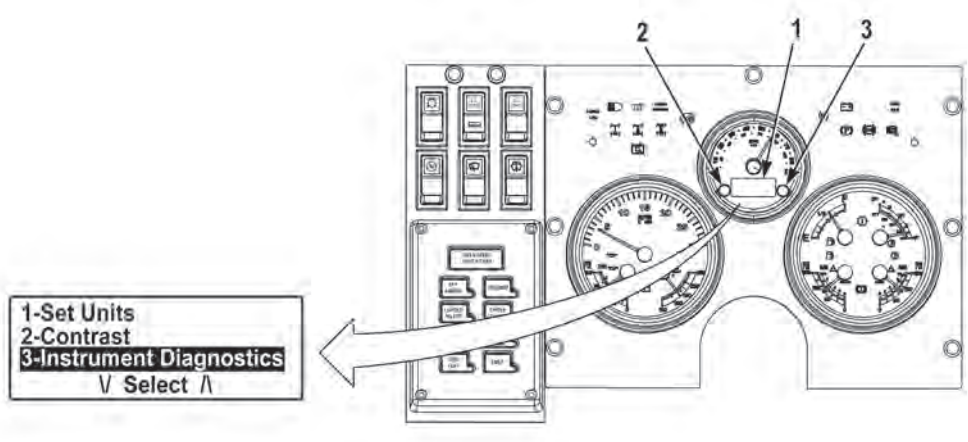


4. Use (m) button (2) or (t) button (3) to scroll through selections until "1 - Gauge Test" is highlighted.

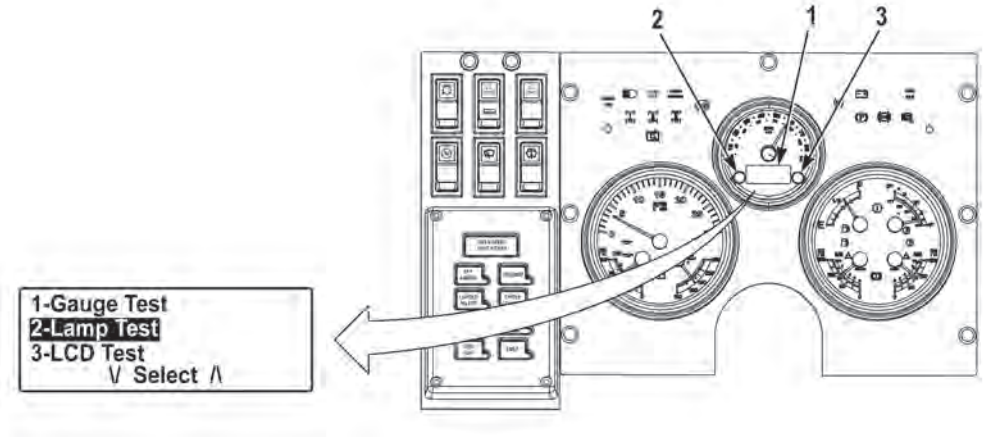


5. Press (m) button (2) and (t) button (3) at the same time to begin testing gauges (fuel gauge test shown). Each gauge is tested, in turn, at 0%, 50%, and 100%. The LCD (1) displays the corresponding percentage.
6. Press (m) button (2) to end test and return to drive mode screen.
7. Contact Field Maintenance to replace main gauge/instrument panel if corresponding gauge does not reflect LCD (1) percentage indication.

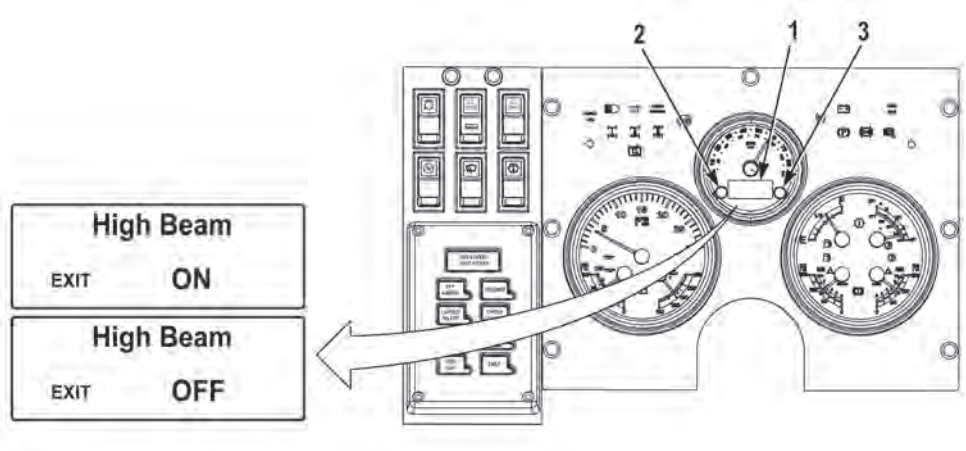
INSTRUMENT PANEL INDICATOR LAMPS TESTING



1. From drive mode, with engine running and vehicle parked, press (m) button (2) for more than two seconds to enter settings and diagnostics mode.
2. Use (m) button (2) or (t) button (3) to scroll through selections until "3 - Instrument Diagnostics" is highlighted.

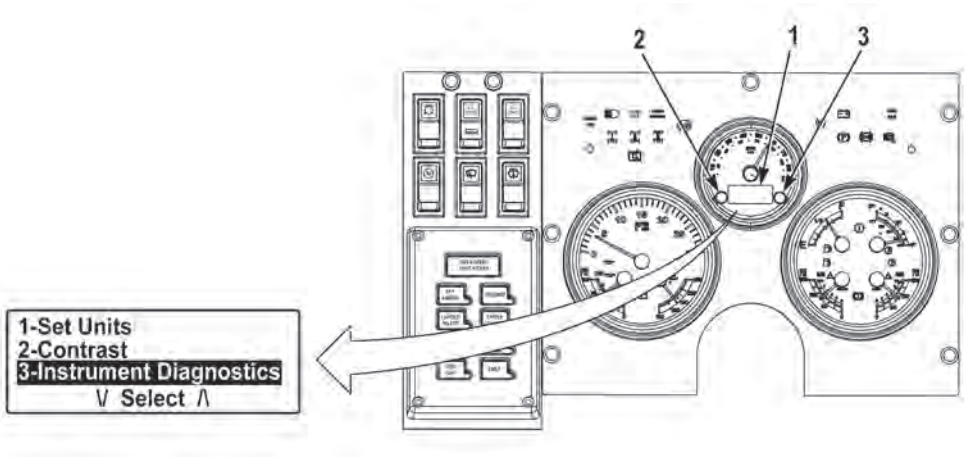


3. Press (m) button (2) and (t) button (3) at the same time to display instrument diagnostics menu.
4. Use (m) button (2) or (t) button (3) to scroll through selections until "2 - Lamp Test" is highlighted.



5. Press (m) button (2) and (t) button (3) at the same time to begin testing warning lamps. Each indicator lamp on main gauge/instrument panel is turned on and off in turn. The LCD (1) displays the corresponding warning lamp under test (high beam indicator test shown).
6. Press (m) button (2) to end test and return to drive mode screen.
7. Contact Field Maintenance to replace main gauge/instrument panel if an indicator fails to illuminate as indicated by the LCD (1).

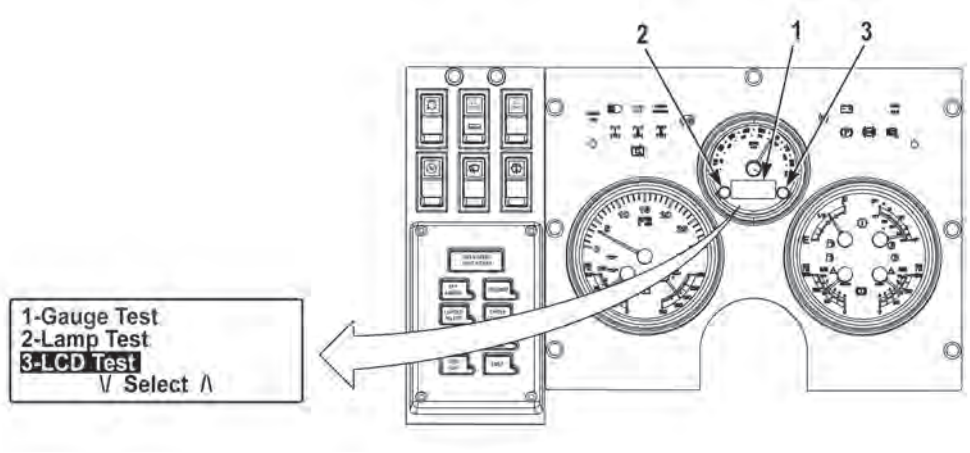
INSTRUMENT PANEL LCD TESTING



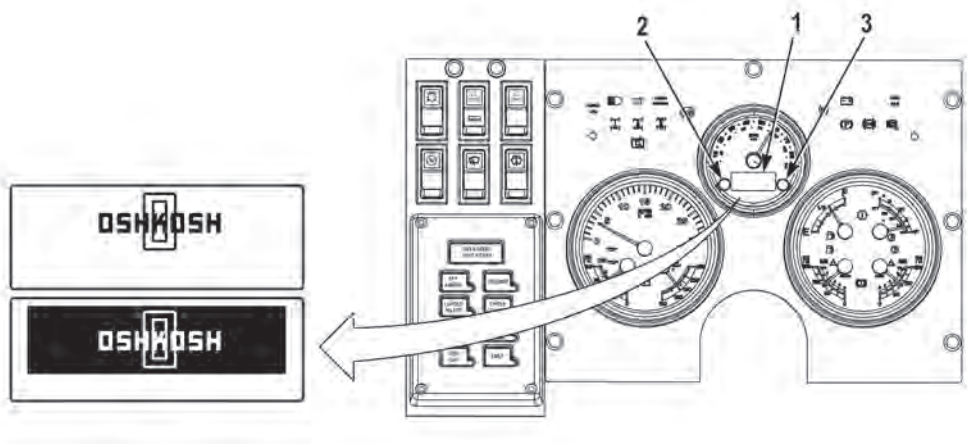
NOTE

The instrument panel LCD is used as part of the test procedure. If the LCD is unreadable during any part of the test, it should be considered defective and replaced.

1. From drive mode, with engine running and vehicle parked, press (m) button (2) for more than two seconds to enter settings and diagnostics mode.
2. Use (m) button (2) or (t) button (3) to scroll through selections until "3 - Instrument Diagnostics" is highlighted.



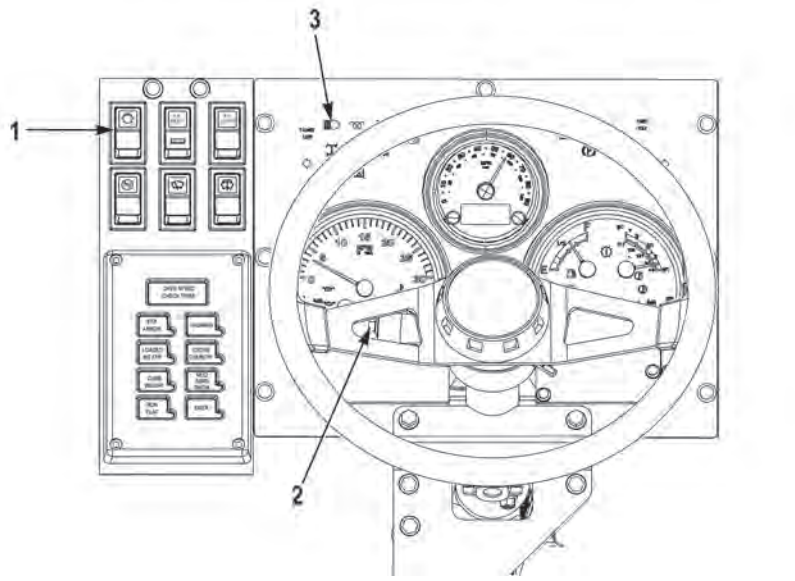
3. Press (m) button (2) and (t) button (3) at the same time to display instrument diagnostics menu.
4. Use (m) button (2) or (t) button (3) to scroll through selections until "3 - LCD Test" is highlighted.



5. Press (m) button (2) and (t) button (3) at the same time to begin testing LCD (1). The logo display should appear in normal and reverse modes three times before returning to drive mode screen.
6. Contact Field Maintenance to replace main gauge/instrument panel if LCD (1) fails to illuminate as shown.

END OF WORK PACKAGE

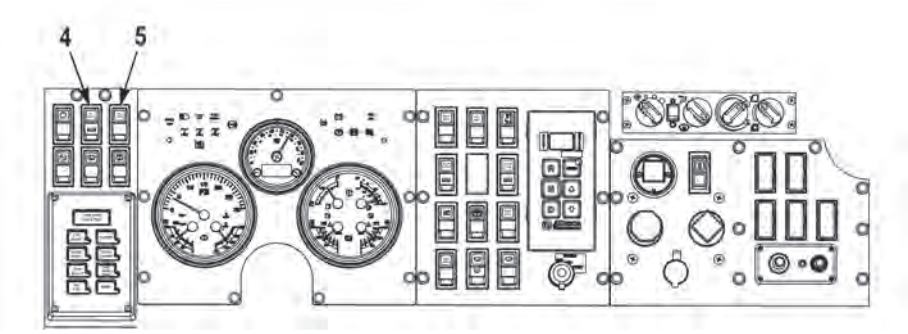
OPERATE SERVICE LIGHTS/BLACKOUT LIGHTS (M1240/M1240A1)



NOTE

- Use rocker switches on instrument panel to check operation of the following lights.
- The headlight/clearance light switch has three positions: OFF (down), CLEARANCE/ MARKER LIGHTS and PARKING LIGHTS (middle), and HEADLIGHTS WITH CLEARANCE/MARKER LIGHTS and PARKING LIGHTS (up).
- Headlights/clearance lights and blackout lights will operate only when ignition switch is in ON position.

1. Push headlight/clearance light switch (1) to UP position.
2. With headlights on, press dimmer switch (2) to select HIGH or LOW beam. High beam indicator (3) will light when HIGH beam is on.



NOTE

- Push switch lock on lower part of switch up to operate blackout select switch.
- Panel dimmer switch is a three-position switch. Down position is OFF, center position is LOW, and up position is HIGH.

3. Push blackout selector switch (4) up to position lighting system in BLACKOUT mode.

NOTE

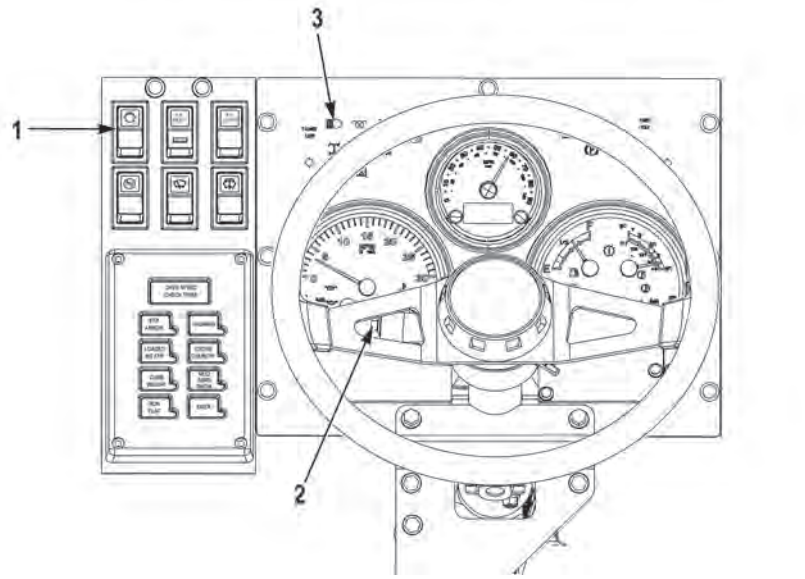
Blackout light switch has three positions: OFF (down), COMPOSITE LIGHTS (middle), and COMPOSITE LIGHTS and HEADLIGHT (up).

4. Push blackout drive lights (5) to UP position.

END OF WORK PACKAGE

BLACKOUT SWITCH/SERVICE LIGHT OPERATION (M1245)

SERVICE LIGHT OPERATION



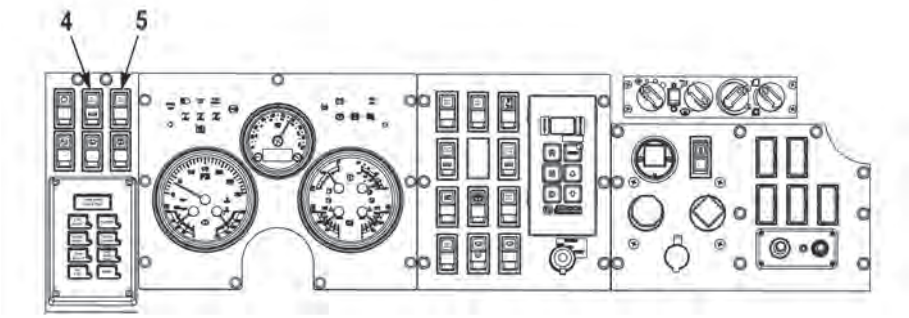
NOTE

- Use rocker switches on instrument panel to check operation of the following lights.
- The headlight/clearance light switch has three positions: OFF (down), CLEARANCE/ MARKER LIGHTS and PARKING LIGHTS (middle), and HEADLIGHTS WITH CLEARANCE/MARKER LIGHTS and PARKING LIGHTS (up).
- Headlights/clearance lights and blackout lights will operate only when ignition switch is in ON position.
- When driving in Blackout Mode and returning to service drive mode, HEADLIGHT/ CLEARANCE LIGHT SWITCH must be first pressed DOWN, and then pressed back UP.

1. Push headlight/clearance light switch (1) to UP position.
2. With headlights on, press dimmer switch (2) to select HIGH or LOW beam. High beam indicator (3) will light when HIGH beam is on.

END OF TASK

BLACKOUT SWITCH OPERATION



NOTE

- Push switch lock on lower part of switch up to operate blackout select switch.
- When the blackout selector switch is ON (up position), the CTIS Panel Lights, Transmission Selector Panel Lights, and Dash Panel Lights are not illuminated.
- Blackout light switch has three positions: OFF (down), COMPOSITE LIGHTS (middle), and COMPOSITE LIGHTS and HEADLIGHT (up).
- When driving in Blackout Mode and returning to service drive mode, HEADLIGHT/ CLEARANCE LIGHT SWITCH must be first pressed DOWN, and then pressed back UP.

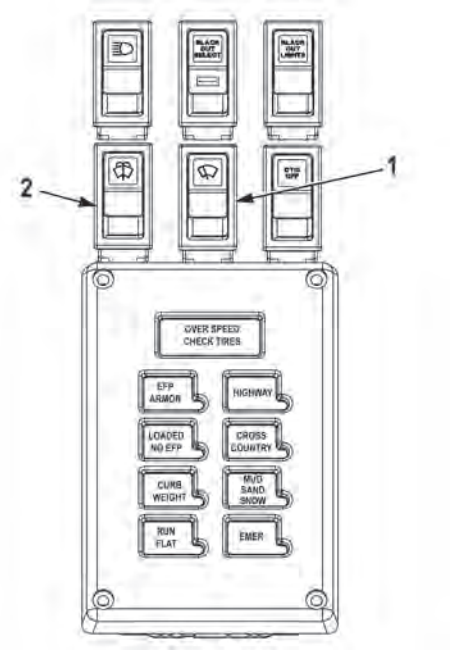
1. Push blackout selector switch (4) up to position lighting system in BLACKOUT mode.
2. Push blackout drive lights (5) to UP position.

END OF TASK

END OF WORK PACKAGE

WINDSHIELD WIPER/WASHER FUNCTIONS

WIPER SWITCH FUNCTION



1. Press wiper switch (1) to middle position for low speed and up for high speed.
2. Press wiper switch (1) to down position to stop windshield wipers.

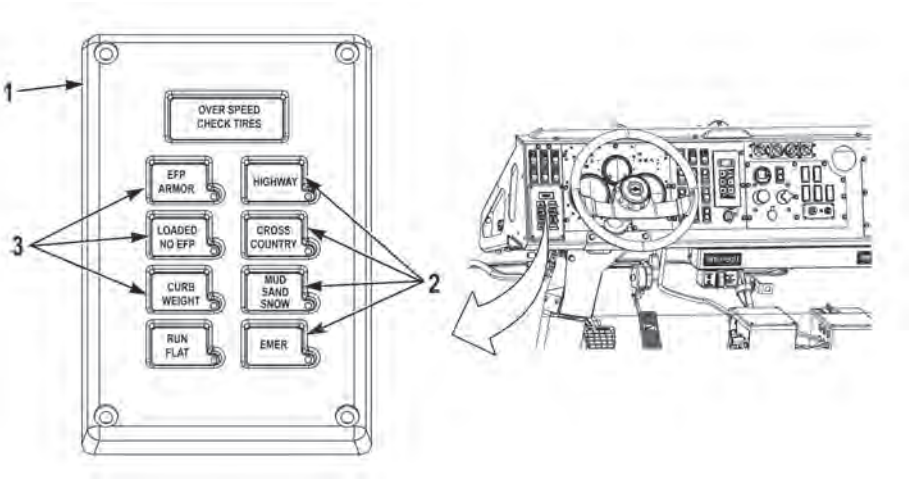
WASHER SWITCH FUNCTION

1. Press and hold the washer switch (2) to spray cleaning fluid on windshield.
2. Press wiper switch (1) to middle position for low speed.
3. Release washer switch (2) to stop washer spray. Wipers will automatically stop.
4. Press wiper switch (1) to down position to stop windshield wipers.

END OF WORK PACKAGE

CENTRAL TIRE INFLATION SYSTEM (CTIS)

GENERAL

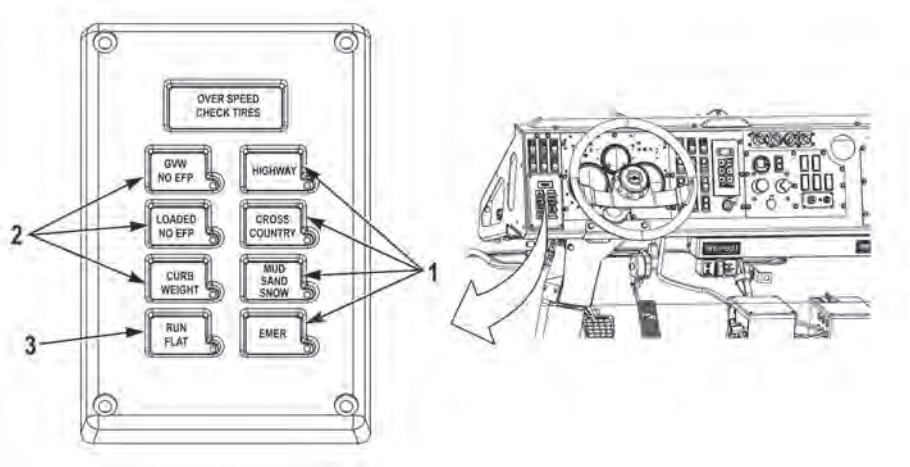


1. The Central Tire Inflation System (CTIS) is designed to maximize traction, mobility, and ride quality. It will adjust the air pressure in all tires to correspond to the cargo setting and the terrain setting selected by the operator.

2. The CTIS controller (1) has four terrain settings (2) and three cargo settings (3). These settings will affect the tire inflation pressure on both the front and rear tires. Refer to the following tire pressures listed in Table 1.

Table 1. Tire Pressures (M1240 and M1245).

LOAD		TERRAIN			
		HWY	**CC**	**MSS**	**EMER**
CURB WEIGHT	Front Rear	61 psi (421 kPa) 57 psi (393 kPa)	42 psi (290 kPa) 40 psi (276 kPa)	23 psi (159 kPa) 21 psi (145 kPa)	18 psi (124 kPa) 16 psi (110 kPa)
LOADED NO EFP	Front Rear	71 psi (490 kPa) 91 psi (627 kPa)	50 psi (345 kPa) 65 psi (448 kPa)	27 psi (186 kPa) 36 psi (248 kPa)	21 psi (145 kPa) 28 psi (193 kPa)
EFP ARMOR	Front Rear	84 psi (579 kPa) 96 psi (662 kPa)	59 psi (407 kPa) 71 psi (490 kPa)	33 psi (228 kPa) 40 psi (276 kPa)	26 psi (179 kPa) 32 psi (221 kPa)
	MAX. SPD. (MPH)	65 (105 km/h)	40* (64 km/h)	15 (24 km/h)	5 (8 km/h)
NOTE: All tire pressures are ± 3 psi (± 21 kPa).					
*When CTIS setting is CROSS COUNTRY and CURB WEIGHT, MAX. SPD. is 45 mph (72 km/h).					



NOTE

For M1240A1 the EFP armor button is replaced by GVW NO EFP button.

Table 2. Tire Pressures (M1240A1).

LOAD		TERRAIN			
		HWY	**CC**	**MSS**	**EMER**
CURB WEIGHT	Front Rear	48 psi (331 kPa) 50 psi (345 kPa)	32 psi (221 kPa) 33 psi (228 kPa)	16 psi (110 kPa) 17 psi (117 kPa)	13 psi (90 kPa) 14 psi (97 kPa)
LOADED NO EFP	Front Rear	50 psi (345 kPa) 64 psi (441 kPa)	33 psi (228 kPa) 45 psi (310 kPa)	16 psi (110 kPa) 24 psi (165 kPa)	14 psi (97 kPa) 18 psi (124 kPa)
GVW NO EFP	Front Rear	51 psi (352 kPa) 72 psi (496 kPa)	34 psi (234 kPa) 51 psi (352 kPa)	17 psi (117 kPa) 28 psi (193 kPa)	14 psi (97 kPa) 20 psi (138 kPa)
	MAX. SPD. (MPH)	65 (105 km/h)	40* (64 km/h)	15 (24 km/h)	5 (8 km/h)
NOTE: All tire pressures are ± 3 psi (± 21 kPa).					
*When CTIS setting is CROSS COUNTRY and CURB WEIGHT, MAX. SPD. is 45 mph (72 km/h).					

3. Tire pressure is immediately checked and adjusted, if necessary, upon pushing one of the terrain or cargo setting buttons (1) or (2). The CTIS automatically checks tire pressure every 15 minutes and adjusts the pressure if needed.

4. If RUN FLAT (3) is selected, the CTIS will check tire pressures every 15 seconds instead of every 15 minutes. If the CTIS detects a significantly low tire pressure, “CHECK TIRES” will be displayed.

5. The CTIS is operational whenever the vehicle is running, unless the CTIS is partially disabled by the CTIS OFF switch (WP 0007).

6. If air system pressure drops below 85 psi (586 kPa), the CTIS will automatically stop tire pressure increase adjustments. The CTIS will automatically resume operation when air system pressure rises above 112 psi (772 kPa).

OPERATING PROCEDURES

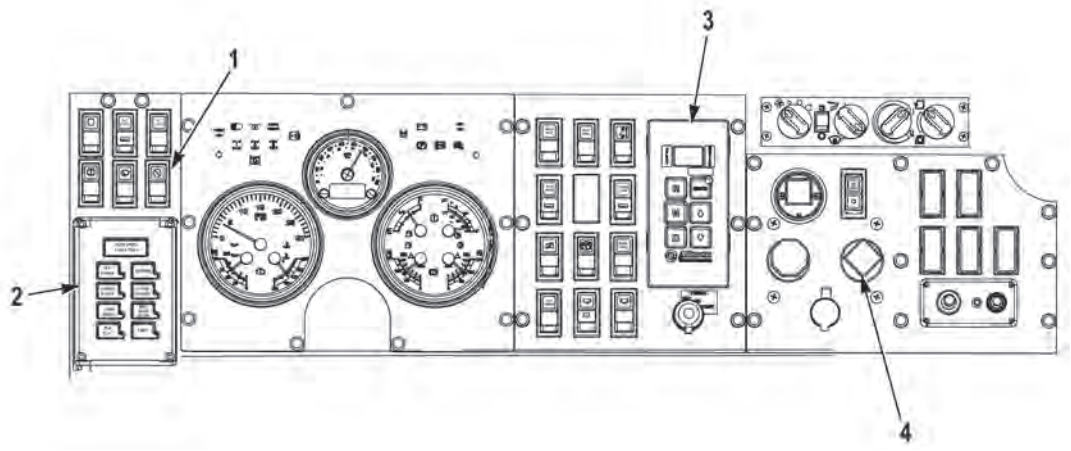
WARNING

- **Operator MUST fully understand how to use the CTIS system. Misuse of CTIS system can result in loss of control of vehicle. Failure to comply may result in injury or death to personnel.**
- **Do not drive the vehicle further than 30 mi (48 km) or exceed speeds of 30 mph (48 km/h) while operating on the run-flat inserts. Failure to comply may cause a tire fire and/or loss of vehicle control, which may result in injury or death to personnel and damage to equipment.**

CAUTION

- **When operating vehicle, there are two speed limitations imposed. One limitation comes from the CTIS terrain setting. The other comes from the driveline lock setting. The lower speed limitation of the two must be adhered to. Failure to comply may result in damage to vehicle.**
- **Do not change the CTIS controller terrain settings while turning a corner or wheels are slipping. Damage to driveline may result.**
- **The EMER (Emergency) button is for extreme conditions only and should not be used for normal driving. Damage to driveline may result.**
- **Select the appropriate CTIS controller settings before entering an area where poor traction conditions are likely to occur. Failure to comply may result in damage to equipment.**
- **Adequate air pressure is required to begin or continue any pressure-changing sequence. Failure to comply may result in damage to equipment.**
- **If the OVER SPEED indicator blinks, and the operator has not selected the EMER (Emergency) setting, the operator should reduce vehicle speed and/or shift the CTIS controller to an appropriate terrain setting for the vehicle speed. Failure to comply may result in damage to equipment.**
- **If the operator has selected the EMER (Emergency) setting and the audible over speed alarm comes on, the operator should reduce vehicle speed and/or shift the CTIS controller to an appropriate terrain setting for the vehicle speed. Failure to comply may result in damage to equipment.**
- **If the OVER SPEED indicator comes on solid without audible alarm, the operator must assume that the automatic Overspeed Protection feature is no longer operable, and caution must be used to not exceed speed parameters. Continue with mission and notify Field Maintenance when mission is completed. Failure to comply may result in damage to vehicle.**
- **If the RUN FLAT indicator light comes on, the operator should be aware that tire damage may be present and that the CTIS is attempting to compensate for this damage. Perform troubleshooting. Failure to comply may result in damage to equipment.**
- **Prior to operating the CTIS in temperatures below 0°F (-18°C), the CTIS will need to be disabled (refer to WP 0046). Failure to comply may result in damage to equipment.**

1. Start vehicle (WP 0020).



NOTE

Perform Steps (2) through (5) only when starting a vehicle in 0°F (-18°C) temperatures or lower.

2. Position CTIS OFF switch (1) in the up (or ON) position.
3. Select appropriate terrain and cargo load setting on CTIS controller (2).

CAUTION

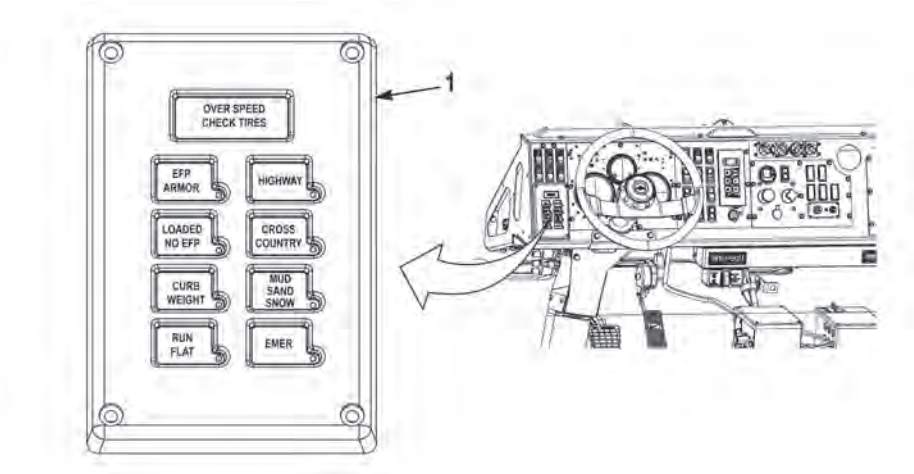
- **During first five miles of driving operation, all cornering should be performed slowly and carefully. Failure to comply may result in damage to driveline components.**
- **Do not use first gear to move M-ATV if tires are frozen to ground or brakes are frozen to drums. Failure to comply may result in damage to driveline.**

NOTE

If transmission fluid temperatures is below 19°F (-7°C), the following will occur:

- Transmission will operate in N (neutral), R (reverse), and 3 (third gear) only.
- Above 19°F (-7°C), transmission will operate in all ranges.

4. Set transmission range selector (3) to 3 (third gear), release parking brake (4), and slowly drive M-ATV three to five miles to warm up CTIS components and tires.
5. Position CTIS OFF switch (1) in the down (or OFF) position.



CAUTION

- **If the OVER SPEED CHECK TIRES indicator comes on, the operator should stop the vehicle and refer to OVER SPEED CHECK TIRES LIGHT section of this work package. Failure to comply may result in damage to equipment.**
- **If two terrain setting indicators turn on solid, the operator should stop the vehicle and refer to the troubleshooting section of this work package. Failure to comply may result in damage to equipment.**
- **If the CTIS controller flashes the four terrain setting indicators as well as the run flat indicator, the operator should stop the vehicle and refer to sections Run Flat Feature and OVER SPEED CHECK TIRES LIGHT of this work package. Failure to comply may result in damage to equipment.**

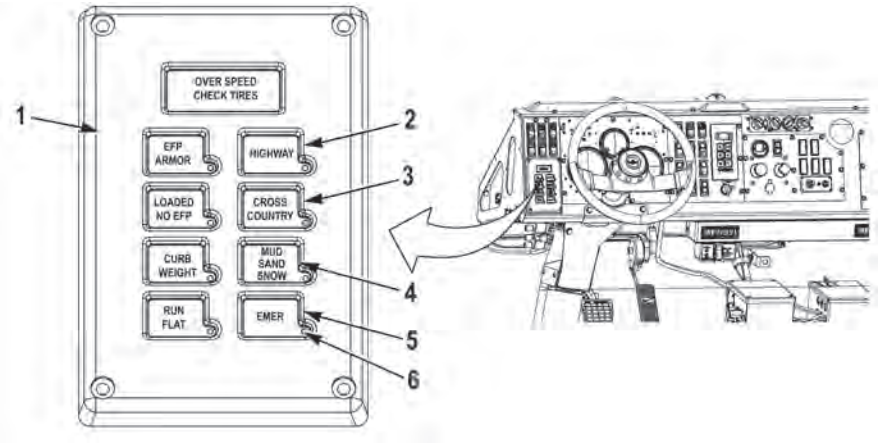
6. With vehicle running, select appropriate terrain setting on CTIS controller (1).

CAUTION

The CTIS controller cargo load setting must be changed as required immediately upon adding or removing cargo from the vehicle. Failure to comply may result in damage to equipment.

7. Select appropriate cargo load setting on CTIS controller (1) and drive vehicle.

TERRAIN SETTINGS



1. The CTIS controller (1) has four terrain settings: HIGHWAY (2), CROSS COUNTRY (3), MUD SAND SNOW (4), and EMER (5). The terrain setting needed for the conditions the vehicle is operating in can be determined by using Table 3. The terrain settings can be changed while the vehicle is moving.

CAUTION

The Emergency mode is for extreme conditions only and should not be used for normal driving conditions. Failure to comply may result in damage to equipment.

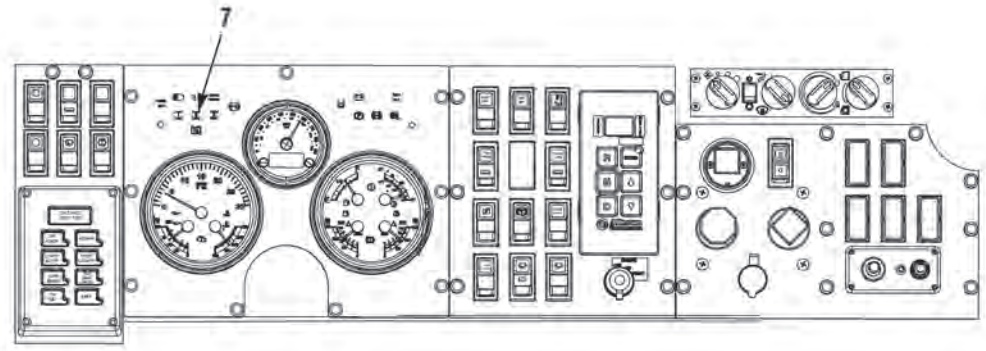
NOTE

Prior to selecting EMER (Emergency) setting, the vehicle must be traveling below the 5 mph (8 km/h), maximum allowable speed for that setting.

2. During normal operation, when a terrain setting button is pushed, the indicator light (6) next to the selected button will blink to indicate that the specific terrain button has been pushed. The indicator (6) will continue to blink until the tire pressure has been adjusted to this setting. It will then stop blinking and will stay on steady. The indicator will then blink briefly every 15 minutes when the CTIS checks and adjusts tire pressure.

Table 3. CTIS Settings and Terrain Conditions.

CTIS Setting	Terrain Conditions
HIGHWAY (2)	For operation on improved paved surfaces.
CROSS COUNTRY (3)	For operation on nonpaved secondary roads and hard-packed trails.
MUD SAND SNOW (4)	For operation on soft-surface trails and other unimproved surfaces.
EMER (5)	For selection of extremely low tire pressure to help free a mired vehicle or to traverse a short distance over a terrain known to require very low tire pressure.



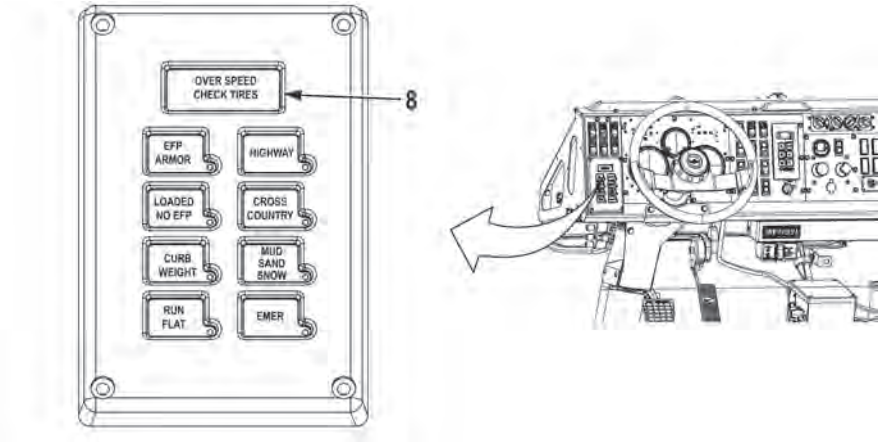
NOTE

An automatic upshift in the CTIS terrain mode does not automatically dictate a driveline lock change. The driveline lock setting will not change until the parameters listed in Table 3 are exceeded.

3. Each terrain setting has a maximum allowable speed (refer to Table 4). Each setting also dictates a default driveline lock configuration which will be displayed with icons (7) on the instrument panel (refer to Driveline Lock section of this work package).

Table 4. Maximum Allowable Speed.

Terrain Setting	Maximum Allowable Speed	Driveline Lock Configuration
Highway	65 mph (113 km/h)	No Driveline Lock
Cross-Country	45 mph (72 km/h)	No Driveline Lock
Mud Sand Snow	20 mph (32 km/h)	Transfer Case Lock
EMER	10 mph (16 km/h)	Transfer Case and Rear Side-To-Side Lock



CAUTION

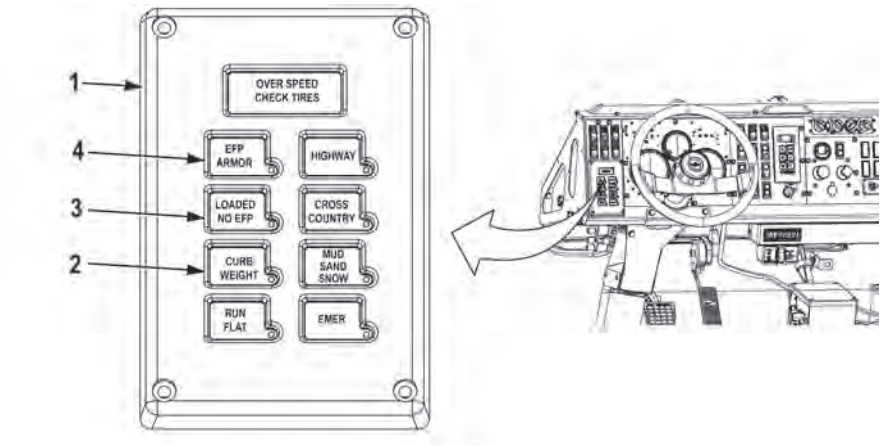
- **If the OVER SPEED indicator comes on solid without audible alarm, the operator must assume that the automatic Over Speed Protection feature is no longer operable and caution must be used to not exceed speed parameters. Continue with mission and notify Field Maintenance when mission is completed. Failure to comply may result in damage to vehicle.**
- **If the audible alarm comes on when operating the vehicle in the EMER (Emergency) position, the operator should reduce vehicle speed and/or shift the CTIS controller to an appropriate terrain setting for the vehicle speed. Failure to comply may result in damage to vehicle.**

NOTE

When EMER (Emergency) position is selected by the operator, the OVER SPEED indicator will blink when tire pressure has reached the pressure setting appropriate for the EMER (Emergency) position.

4. **Tire Over speed Protection.** The CTIS includes an automatic feature called Over speed Protection used to prevent damage to tires. If the maximum allowable speed for a specific terrain setting is exceeded, the CTIS will monitor the over speed situation for a predetermined time (15 to 90 seconds, depending on terrain setting). If vehicle speed does not decrease to an allowable level during this predetermined time, an alarm will sound and the OVER SPEED indicator (8) will blink. Once the alarm sounds, the operator has 30 seconds to adjust vehicle speed or upshift to a new CTIS terrain setting. If the operator does not adjust vehicle speed or terrain setting, the CTIS will automatically upshift the terrain setting to the next setting appropriate for the speed of the vehicle.

CARGO LOAD SETTINGS



1. The CTIS controller (1) has three cargo load settings:
   (a) CURB WEIGHT (2)
   (b) LOADED NO EFP (3)
   (c) EFP ARMOR (4)
   (d) GVW NO EFP (4) (M1240A1)

Table 5. CTIS Cargo Load/Setting.

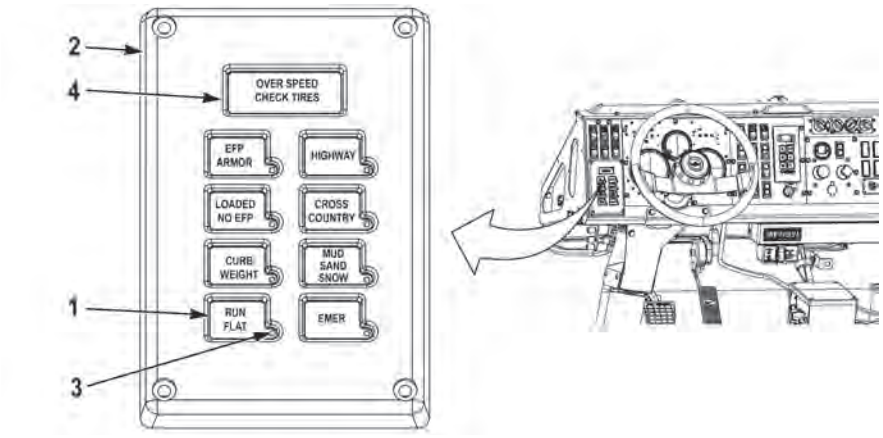
Load Setting	Description
CURB WEIGHT (2)	Vehicle with no cargo, no armor, and no personnel except for the driver.
LOADED NO EFP (3)	Vehicle with cargo and/or more personnel than just the driver. Vehicle has no EFP Kit installed.
EFP ARMOR (4)	Vehicle has EFP Kit installed. Vehicle has any size load and has any number of personnel.
GVW NO EFP (4) (M1240A1)	Vehicle has any size load and has any number of personnel.

CAUTION

The CTIS controller cargo load setting must be changed as required immediately upon adding or removing load from the vehicle. Failure to comply may result in damage to equipment.

2. Switching the cargo load setting will result in a tire pressure check and a possible adjustment in tire pressure, as determined by the CTIS.

RUN FLAT FEATURE



WARNING

Do not drive the vehicle further than 30 mi (48 km) or exceed speeds of 30 mph (48 km/h) while operating on the run-flat inserts. Failure to comply may cause a tire fire and/or loss of vehicle control, which may result in injury or death to personnel and damage to equipment.

CAUTION

The Run Flat feature should not be used in an attempt to inflate tires with substantial damage. Using the Run Flat feature in these circumstances may result in other tires losing pressure, resulting in damage to equipment.

1. The RUN FLAT button (1) on the CTIS Controller (2) should be engaged whenever the operator knows the vehicle has sustained minor tire damage so the operator can continue the mission, or as a preventive measure when operator is traveling in conditions where tire damage is likely.

2. By pushing the RUN FLAT button (1), the intervals between tire pressure checks and adjustments are reduced from 15 minutes to 15 seconds. The indicator (3) next to the RUN FLAT button will blink to indicate that it is engaged. The Run Flat feature will then stay engaged until the CTIS has inflated the low tire to appropriate pressure or for 10 minutes. If needed, the Run Flat feature can be reactivated by pushing the RUN FLAT button again.

NOTE

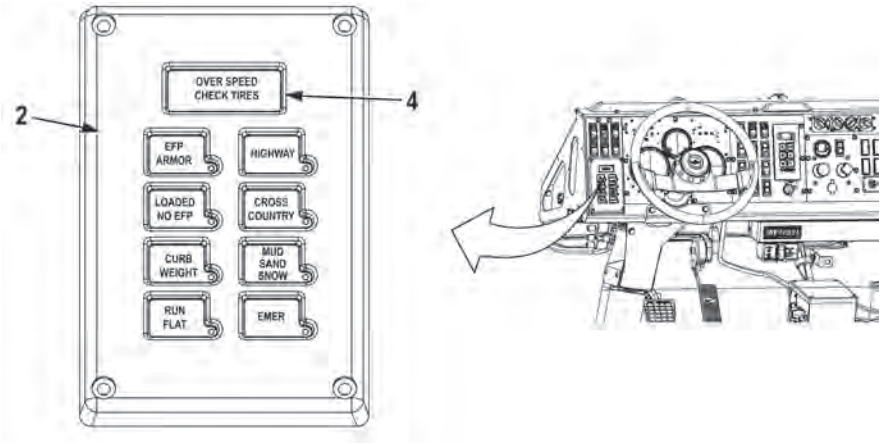
The CTIS in the M-ATV operates two channels. One channel monitors and adjusts the two tires on the front axle. The other channel monitors and adjusts the two tires on the back axle.

3. The Run Flat feature will be automatically engaged by the CTIS if, during a normal tire pressure check/adjust cycle, the CTIS notices a substantial tire pressure imbalance between tires on a specific channel. The Run Flat feature will then stay engaged until the CTIS has inflated the low tire to appropriate pressure.

4. If the Run Flat feature was automatically engaged by the CTIS, the operator should be aware that tire damage may be present and that the CTIS is attempting to compensate for this damage. The operator should inspect for tire damage at the earliest convenience.

5. If the damage becomes too great for the Run Flat feature to compensate for, the OVER SPEED CHECK TIRES indicator (4) will illuminate.

OVER SPEED CHECK TIRES LIGHT



1. The OVER SPEED CHECK TIRES indicator (4) on the CTIS Controller (2) automatically illuminates when a consistent and/or substantial leak develops in a tire or air line.

NOTE

- If the RUN FLAT button is pushed to allow the CTIS to compensate for minor tire damage, the OVER SPEED CHECK TIRES indicator may go out, depending on the severity and type of damage. The OVER SPEED CHECK TIRES indicator may come on again once the Run Flat system disengages.
- Excessive air seal leakage on cold weather startup may result in the OVER SPEED CHECK TIRES indicator coming on. If upon inspection, no tire damage exists, the operator may continue to operate the vehicle. This condition should correct itself as the seals warm up with use. To help prevent this situation from occurring, use the CTIS OFF switch (refer to Operating Procedures). If the condition continues to exist, contact Field Maintenance.

2. When the OVER SPEED CHECK TIRES indicator (4) comes on, the operator should stop the vehicle and assess the situation. If minor tire damage is found, the operator should push the RUN FLAT button and reassess the situation. If no tire damage is found, or the CTIS is able to compensate for the damage, the operator should continue with the mission and contact Field Maintenance when mission is completed. If major tire damage is found or the CTIS is not able to compensate for the damage, the operator should contact Field Maintenance.