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BLACKOUT LIGHTING (IF EQUIPPED)

If your vehicle is equipped with blackout lighting it will turn off all interior and exterior lighting, regardless of ignition position or if any doors are open.

The switch is mounted on the instrument panel below the radio.

The courtesy/dome/exterior lights are deactivated when the vehicle is turned off regardless of which position the blackout lighting switch is in; these lights are activated when the vehicle's ignition is turned to on/auxiliary.

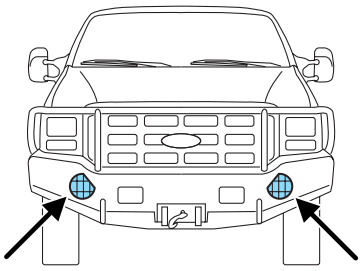
Note: Battery saver mode is enabled when the vehicle is turned off. There is no delayed timer on this feature.

Note: Black-out lighting will conflict with U.S. Federal Motor Vehicle Safety Standards (FMVSS). By selecting this option, the customer/operator has and is exercising Governmental Privilege to exempt vehicles from full FMVSS compliance.

When blackout lighting is enabled, it will turn off ALL interior and exterior lights (i.e.headlamps, stop lamps, backup lamps, interior warning lights, etc). Proceed with caution.

FOG LAMPS

Your vehicle may be equipped with fog lamps in the front bumper.

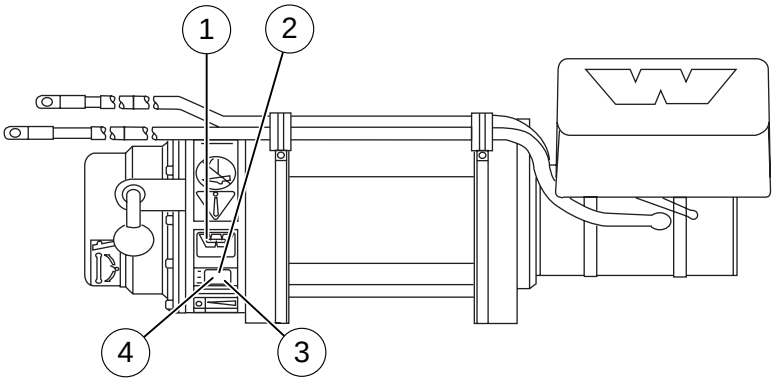


The fog lamps can be activated by using the switch located below the radio.

WINCH (IF EQUIPPED)

Your vehicle may be equipped with a front bumper-mounted winch that has a 12,000 lb. (5,443 kg) pulling capacity.

The winch identification numbers can be found in the following places:



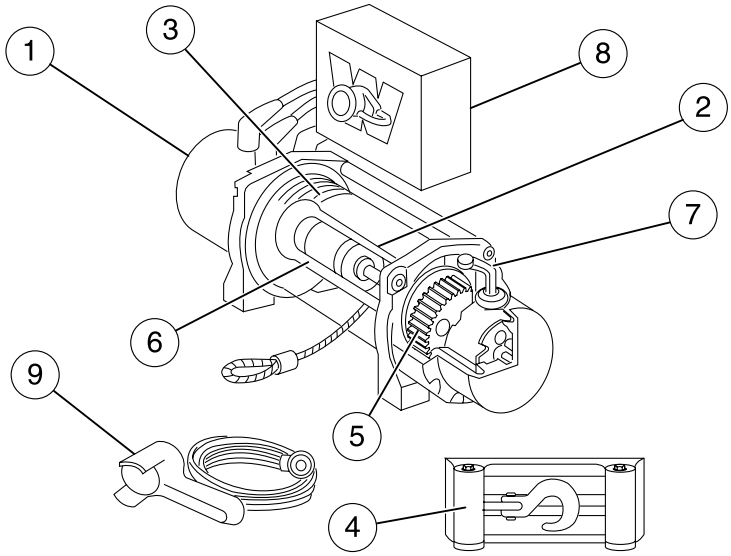
1. Nameplate label - Identifies winch model designation.
2. Part number - Identifies winch configuration.
3. Date code - Identifies manufacture date.
4. Serial number - Individually identifies winch.

Winch basics

Never operate or install a winch without reading or understanding the instructions.

Driver Controls

Familiarize yourself with the winch and each of its components:



1. **Motor:** Typically powered by vehicle's battery. Provides power to the gear mechanism which turns the drum to wind the wire rope.

2. **Winch drum:** Driven by the motor and drive train. Drum direction can be changed by using the remote control.

3. **Wire rope:** Wrapped around the winch drum and fairlead, the wire rope is looped off at the end to accept the hook's clevis pin. When the rope is being reeled in under motor power, it is being "powered in". When the wire rope is being reeled out under motor power, it is being "powered out". "Powering out" is different than "freespooling out" which refers to the wire rope being pulled out by hand with the clutch disengaged.

4. **Fairlead:** Acts as a guide for the wire rope when using the winch at an angle. Minimizes damage to the wire rope while it goes through the winch mount or bumper.

5. **Gear train:** Converts winch motor power into pulling force.

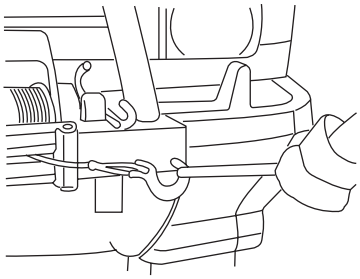
6. **Braking system:** Prevents winch from paying out line, which in turn holds the vehicle in place. The brake is automatically applied to the winch drum when the motor is stopped and there is load on the rope.

7. **Clutch:** Allows the operator to manually disengage the winch drum from the gear train, enabling the drum to freely rotate ("freespooling"). Engaging the clutch "locks" the winch drum back onto the gear train.
Note: Never engage or disengage the clutch if the winch is under load, the wire rope is in tension or the winch drum is moving.
8. **Control box:** Enables the operator to change the direction of the winch drum rotation.
9. **Remote control:** Plugs into the control box allowing the operator to control the winch direction as well as stand clear of the wire rope while operating the winch.

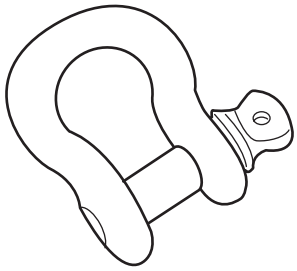
Winch accessories

Some of the following accessories are items you'll want to have with you to ensure safe operation of your winch; some are enhancements to add versatility and convenience to your winch:

- **Gloves:** It is extremely important to wear protective gloves while operating the winch or handling wire rope since the rope will, through normal use, develop sharp barbs which can slice through skin.
- **Hook strap:** This safety item is used to hold the rope wire away from the fairlead as the rope is being powered in. Winches can develop tremendous pulling pressure which can easily remove fingers and limbs that get pinched. Put a hook strap in the loop and hold the strap between the thumb and forefingers.



- **Clevis/D-Shackle:** The D-Shackle is a safe means for connecting the looped ends of cables and straps. The shackle's pin is threaded to allow easy removal.



- **Choker chains:** These can be used to hook-up another vehicle or sharp objects for an anchor point. Chains, however, will damage or kill trees.

- **Tow hooks:** Secured properly to your vehicle's frame, tow hooks provide an attachment point for wire hooks, straps and chains.
- **Tree trunk protector:** Typically made of tough, high-quality nylon a tree trunk protector provides an attachment point for the winch rope to a wide variety of anchor points and objects, as well as protect living trees.
- **Heavy blanket:** In certain situations you may decide to throw a heavy blanket or similar object over the wire rope. A heavy blanket such as a quilted mover's blanket can absorb energy should the wire rope break. Place it on the wire rope midway between the winch and the anchor point. Do this before the wire rope is put under tension. Do not approach or move the blanket once tension is applied. Do not allow it to get pulled into the fairlead. If necessary to move or remove the blanket, slack the tension on the wire rope first.
- **Recovery strap:** Used to "snatch" out a stuck vehicle. Never use a recovery strap in a winching operation. The recovery strap is designed to stretch; because of this, it stores energy and could react like a rubber band should your rigging fail.

Never attach a recovery strap to the winch hook to the increase the length of a pull. Never attempt to tow a vehicle with the recovery strap attached directly to the winch hook. Never use "bungie" straps that develop tremendous and potentially dangerous amounts of force when stretched.

- **Shovels and hand tools (i.e., axe or off-road jack):** These come in handy when additional assistance is needed during winching activities.
- **Backup parts:** Extra items such as an extra clevis/D-shackle or a remote control unit should be carried in case of emergency. For severe and/or continuous winch use, you may want to consider including an extra wire rope and winch hook.
- **Toolbox items:** Always bring along hand wrenches, screwdrivers, pliers and tools to change wire rope.
- **Jumper cables:** It's always a good idea to carry jumper cables in case your battery becomes drained during a winching operation. Also, a dual battery system and a battery isolator kit can be installed to prevent draining the electrical source during winching operation.

A fully charged conventional automotive battery with a minimum of 650 cold cranking amp is recommended to obtain peak performance from your winch. Make sure all electrical connections are clean and tight.

Winch operation

Before you pull

Make sure the new rope is stretched before its first use. Unspool the wire rope, leaving five wraps on the drum. Apply at least 500 lbs. (227 kg) of tension. This can be done by setting up an anchor point and pulling your vehicle to it at a slightly inclined, flat surface and letting the vehicle roll.

Before you use your winch, remember these key points:

1. Think safety at all times.

2. Always take your time to assess your situation and plan your pull carefully.

3. Always take your time when using the winch.

4. Use the right equipment for your situation.

5. Always wear leather gloves and do not allow the wire rope to slide through your hands.

6. You and only you should handle the wire rope and operate the remote control switch.

7. Practice. Practice and practice the steps.

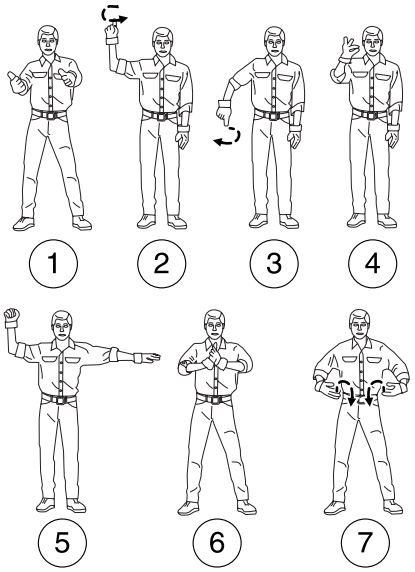
Choosing an anchor point

A secure anchor is critical to winching operations. The anchor must be strong enough to hold while winching. Natural anchors include trees, stumps and rocks. Hook the rope as low as possible. If no natural anchors are available, when recovering another vehicle, your vehicle becomes the anchor point. In this case, be sure to put the transmission in neutral, apply the parking brake and block the wheels to prevent it from moving.

The anchor point should allow you to pull straight in the direction the vehicle will move. This allows the rope to wind tightly and evenly on the winch drum. An anchor point as far away as possible will provide the winch with its greatest pulling power.

Winching hand signals

In some situations, recovery could involve two people. While one person drives, the other person provides navigation assistance and ensures the rope is winding properly. Understanding the right hand signals help provide clear understanding between the driver and the navigator. Also, if the driver controlling the winch can not see both hands of the navigator, the winch should not be activated. The following are some suggested hand signals to review:



1. Hold your arms out with thumbs up and tilt your hands in the direction you advise the driver to steer.

2. Hold your forefinger in the air above your shoulder height and draw small circles in the air to indicate to wind the winch.

3. Point your forefinger down and draw circles in the air about waist height to indicate feeding more wire from the winch.

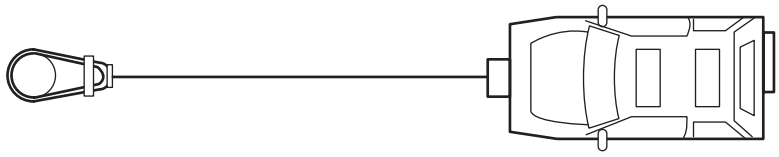
4. Tells the driver to wind the winch in short, quick bursts. Open and close the two fingertips until you want the winch to stop.

5. To signal to stop the winch, clench fist, palm to driver, held high enough for the driver to see and other arm straight out at shoulder height.

6. Cross palms together to tell the driver to apply the foot brake.

7. Tells driver to give the tires more drive force to assist the winch process.

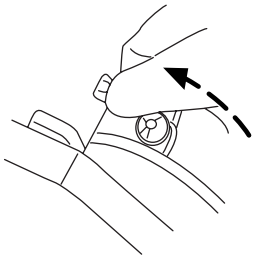
Vehicle recovery (single line)



The following steps outline how to recover your vehicle with a single line; multiple lines follow the same basic steps but use a snatch block to assist the process. Refer to *Rigging Techniques* later in this chapter.

1. Put on leather gloves.

2. Disengage the clutch to allow freespooling of the winch drum. Freespooling conserves the vehicle's battery power.

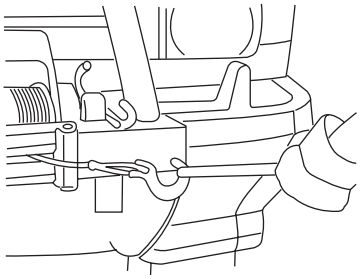


Always use the supplied hook strap to hold the hook when spooling wire rope in or out.

Note: Never attempt to disengage the clutch while the wire rope is under tension. Never engage the clutch while the drum is rotating. Always make sure the clutch is fully engaged or disengaged.

Note: Never leave the remote control plugged into the winch while freespooling, rigging or sitting idle.

3. Free the winch hook from its anchor point and attach the hook strap to the hook (if not already attached).

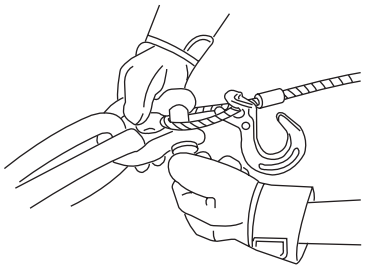


Always keep hands and clothing clear of the wire rope, hook and fairlead opening during operation and when spooling.

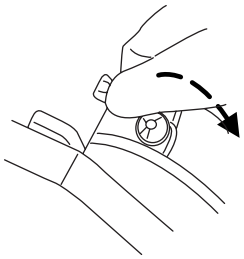
4. Pull the wire rope to the anchor point. Be sure to keep a certain amount of tension in the rope; when slackened, it can become twisted and overwrap leading to rope damage.
Note: Never winch when there are less than five wraps of wire rope around the drum.

5. Secure the rope to the anchor point. (See *Choosing an anchor point* earlier in ths chapter.

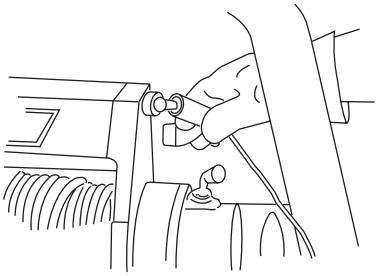
6. Attach the clevis/D-shackle to the two ends of the strap or chain and through the hook loop. Be careful not to overtighten (tighten, then back-off ½ turn).



7. Lock (Engage) the clutch using the lever on the winch.



8. Connect the remote control. Be careful not to let the remote control cord dangle in front of the winch. **Always disconnect the remote control when not in use.**



9. Slowly wind the wire rope until no slack remains by using the winch switch. Once the wire rope is under tension, stand clear and never step over it.

10. Check the anchor point. Make sure all connections are secured and free of debris before continuing with the winching procedure.

Never use the winch as a hoist. Never use the winch's wire rope to tow another vehicle.

11. Check the wire rope. It should be neatly wound around the drum. Improper winding can cause damage to the wire rope.

12. Lay something over the wire rope to absorb energy should the rope snap. Tree limbs, heavy jackets, chain and the like may be used for this purpose.
Note: Always avoid continuous side pulls which can pile up wire rope at one end of the drum. This pile can damage the wire rope or the winch.

13. Make sure everyone in the immediate area is aware of the winching operation. Tell them where they shouldn't stand; never behind or in front of the vehicle and never near the wire rope.

14. With the vehicle's engine on and light tension on the wire rope, begin winching slowly and steadily. Be sure the wire rope is winding evenly and tightly around the drum. For assistance, the winched vehicle can be slowly driven while being pulled by the winch.
Note: Avoid overheating of the winch motor. For extended winching, stop at reasonable intervals to allow the winch motor to cool down.

What to look for under load

The wire rope must always spool onto the drum as indicated by the drum rotation decal on the winch. As you power in, make sure the rope winds evenly and tightly on the drum. This prevents the outer wrap from drawing into the inner wraps, binding and damaging the rope. Avoid shock loads by using the control switch intermittently to take up wire rope slack. During side pulls, the wire rope tends to stack up at one end of the drum. This stack can become large enough to cause serious damage to the winch. Line up pulls as straight as possible and stop winching if the wire rope comes close to the tie rods or mounting plate.

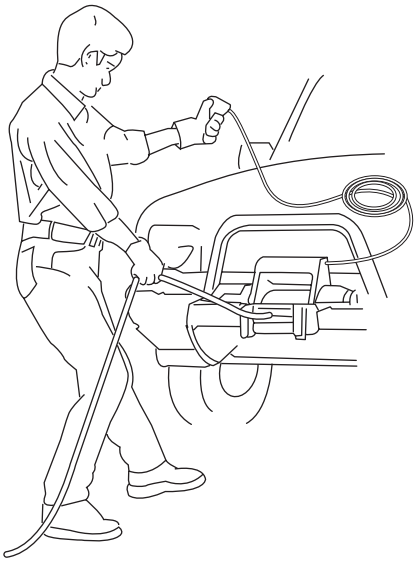
Note: To fix an uneven stack, spool out that section of the rope and reposition it to the opposite end of the drum; this will free up space for continued winching.

15. For vehicle recovery, continue pulling until the vehicle is on stable ground. If the vehicle is able to be driven, the winching operation is complete.

16. Once recovery of the vehicle is complete, be sure to secure the vehicle's brakes and put the transmission in P (Park) (automatic transmission) or 1 (First) (manual transmission). Release tension in the wire rope.

17. Disconnect the wire rope from the anchor.

18. Rewind the wire rope. Control the winch at all times and walk the rope in without letting it slide through your hands.



19. Disconnect the remote control from the control box and store it in a clean dry place. Install the cap on the solenoid plug.

How to spool under no load

Arrange the remote control lead so it cannot be caught in the winch. Arrange the wire rope so it will not kink or tangle when spooled. Be sure any wire rope already on the spooling drum is wound tightly and evenly layered (unspool and tighten and layer evenly, if necessary). Keep the wire rope under light tension and spool the wire rope back onto the winch drum in even layers. Stop frequently to tighten and straighten the layers as necessary. Repeat this process until the winch hook is the same distance as the full length of the remote control from the winch. Attach the hook strap, then walk the wire rope toward the fairlead, carefully spooling in the remaining rope by pulsing the remote control switch. Store the hook at the fairlead or tensioned to a suitable location to the side.

If you do not have the hook strap, use a length of cord or something similar.

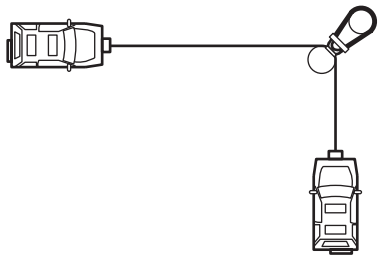
To help prevent serious injury, **never** put your fingers inside the hook area as you are powering in.

Rigging techniques

Various winching situations will require unique winching techniques. These could range from too little distance to achieve maximum pull using straight line rigging, simply increasing pulling power or maintaining a straight-line pulling situation.

How to change the pulling direction

All winching operations should have a straight line from the winch to the object being pulled. This minimizes the wire rope collecting on one side of the drum which will affect pulling efficiency and may damage the wire rope. A snatch block, secured to a point directly in front of the vehicle, enables you to change the pulling direction while allowing the wire rope to be at 90° to wind properly onto the drum.

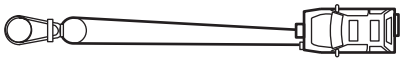


Increasing pulling power

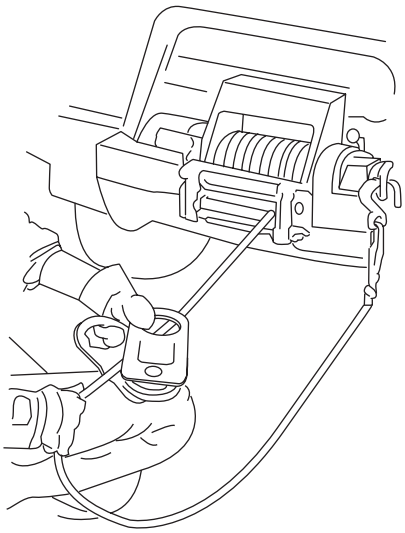
Using snatch blocks increases the pulling power of your winch.

Double line

Pulling power decreases with the number of layers of rope on the drum; using a snatch block to double line out more wire rope. This decreases the number of layers of wire rope on the drum which increases pulling power.



Disengage the clutch and, using the snatch block, pull out enough rope to reach your anchor point. Do not attach the hook to the mounting kit.



Secure to the anchor point with a tree protector or choker chain. Attach the clevis/D-shackle. Attach the shackle to the two ends of the protector/chain being careful not to overtighten (tighten and back off ½ turn).

Triple line

Use the same techniques as a double line.

Select a strong mounting location on your vehicle for the snatch block and the clevis/D-shackle. Keep at a 90° angle between the winch and run the wire rope to the first anchor point and through the snatch block. Secure the rope back to the vehicle. Put the rope through the snatch block and secure it with the clevis/D-shackle on the vehicle as close to the winch as possible. Run the rope to the final anchor point.

Secure to the anchor point with a tree protector or choker chain. Attach the clevis/D-shackle. Attach the clevis/D-shackle to the two ends of the protector/chain, being careful not to overtighten (tighten and back off ½ turn).

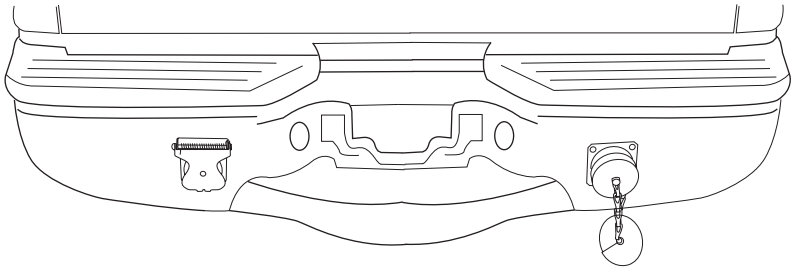
Secure the winch hook. While keeping the line near the ground, insert the winch hook through the clevis/D-shackle. Check the anchor. Make sure all connections are secured and free of debris before continuing with the winching procedure.

Maintenance

- Inspect the wire rope before and after each winching operation. If the wire rope has become kinked or frayed, it needs to be replaced. Be sure to also inspect the winch hook and hook pin for signs of wear or damage. Replace as necessary.
- Keep winch, wire rope and switch control free from contaminants. Use a clean rag or towel to remove any dirt and debris. If necessary, unwind the winch completely (leaving a minimum of five wraps of rope on the drum) and wipe it clean before rewinding it. Using a light oil on the rope and winch hook can keep rust and corrosion from forming.
- Operating the winch for an extended period of time places an additional load on your vehicle battery. Be sure to check and maintain your battery and battery cables according to manufacturer guidelines. Also, inspect the switch control and all electrical connections to be certain they are clean and tight fitting.
- Inspect the remote control, if so equipped, for damage. Be sure to cap the remote socket to prevent dirt and debris from entering the connections. Store the remote control in a dry, protected area.
- No lubrication is required for the life of the winch.

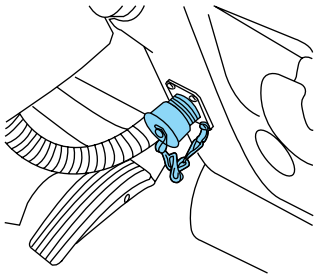
24–VOLT CONVERTER (IF EQUIPPED)

Your vehicle may be equipped with a 24–volt converter. The converter allows accessories that use more than 12 volts to be plugged into the vehicle without damaging the vehicle's electrical system. There are three connection points:



Two on the rear bumper

One on the instrument panel.



To activate the converter, use the switch mounted on the instrument panel, below the radio.

AIRBAGS

Refer to the label on the front of the sun visors regarding airbag and seatbelt usage.

This vehicle is not equipped with airbags. Always wear your seatbelt.

ANTI-LOCK BRAKE SYSTEM (ABS) DEACTIVATION IN 4WD (IF EQUIPPED)

Refer to the label on the back of the sun visor mirror regarding Anti-lock Brake System (ABS) operation.

Your vehicle may be equipped with a feature that deactivates the Anti-lock Brake System (ABS) when 4WD Low is engaged. The ABS indicator ((ABS)) illuminates, to indicate that ABS is deactivated, and stays on as long as 4WD Low is engaged.

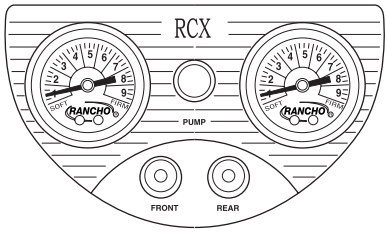
When 4WD Low is disengaged, the ABS light turns off and the system is active again.

SUSPENSION UPGRADE PACKAGE

Your vehicle is equipped with a special suspension package that will enhance the vehicle's off-road performance. The vehicle will handle differently, both on and off-road, from a factory-equipped passenger car or truck.

Vehicles with a higher center of gravity such as utility and four-wheel drive vehicles handle differently than vehicles with a lower center of gravity. Utility and four-wheel drive vehicles are not designed for cornering at speeds as high as passenger cars any more than low-slung sports cars are designed to perform satisfactorily under off-road conditions. Avoid sharp turns, excessive speed and abrupt maneuvers in these vehicles. Failure to drive cautiously could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death.

Dual action remote control suspension



To operate the system:

1. Push the red button to pressurize the system for a firmer ride.

2. Push the black buttons on the bleed valves for a softer ride. Separate bleed valves allow independent adjustment of front and rear shocks.

Note: Do not operate the compressor for more than 30 seconds at a time. Allow the compressor to cool down for one minute between operations.

Note: Stop compressor operation when the arrow on the gauge reaches maximum. Continuing to supply pressure will not make the shocks any firmer and damage to the system will occur.

The following table is an example of typical settings for the suspension.

Setting	Front	Rear
High-speed firm ride	8	6
Slow-speed soft ride	2	2
Towing	5	8

LOCKING REAR DIFFERENTIAL

General information

Your vehicle may be equipped with a locking rear differential; vehicles equipped with this differential should be identified by a “Caution” label mounted on the instrument panel. Vehicle handling characteristcs will be different than a conventional differential. Examples of this would be:

- When turning a corner, the sound of component disengagement and re-engagement may be audible, and the transfer of driving torque from both wheels to one wheel may be noticeable.
- When going from drive (acceleration) to coast (deceleration) in a turn, a “metallic” sound may be heard as torque flow is reversed (inside wheel engaged during acceleration; outside wheel engaged during deceleration).
- When negotiating a turn (outside wheel disengaged), the inside wheel under conditions of poor traction may receive excessive torque, which could cause it to break traction momentarily until its speed is equal to the outside wheel. This will result in re-engagement of the outside wheel thus allowing both wheels to be driven. This condition is most noticeable with lightly loaded axles.

Use extreme caution when accelerating or decelerating on slippery or unstable surfaces. Vehicles/axles equipped with traction differentials are inherently more sensitive to side-slip than vehicles equipped with conventional differentials. Stability can be retained if side-slip occurs by decelerating (letting off the accelerator). Do not apply the brake. To do so may result in loss of vehicle control.

The vehicle's braking capacity is reduced when a turn is made while coasting downhill because the inside wheel is then disconnected from the driveline. Operating in low gear will allow the engine to act as a retarder and will improve braking capacity.

Inspection and lubrication

When servicing any driveline components on a vehicle equipped with a locking rear differential, ensure that the engine is off and all wheels are off the ground to prevent the vehicle from moving. Axles equipped with a locking rear differential deliver power to both wheels, even when only one wheel is on the ground. Failure to observe these cautionary measures may cause the vehicle to move which can result in property damage, personal injury, even death.

This differential is designed to operate in the lubricant recommended by the vehicle/axle manufacturer; no special lubricant is needed. Refer to the *Lubricant Specifications* in your *Owner's Guide* for the proper axle lubricant. For very cold weather applications, use the lightest oil the axle manufacturer will allow to overcome possible sluggish reengagement of the driven clutch assemblies.

No adjustments or alterations should be made to the differential. Refer to the vehicle/axle manufacturer's instructions for adjustments to other components in the axle.

SAND INGESTION

When driving through sand, traction or brake capability may be limited. Also, sand may enter your engine's air intake and severely damage your engine or your vehicle may stall. Driving through sand where the transmission vent tube or external breather kit is submerged may allow sand into the transmission and cause internal transmission damage.

WHEELS

Your vehicle may be equipped with two-piece bolt-together beadlock rims. Beadlock rims allow the tires to survive operating at lower air pressure which provide greater traction due to the larger tire-to-ground contact area during slow, off-road operation. Always reinflate the tires to the tire manufacturer's recommendations when no longer in slow, off-road driving conditions. The beadlock also acts as a safety device ensuring that the tire does not unseat from the rim or rotate on the wheel when tire pressure is reduced, while also preventing the entry of foreign objects, debris or water into the tire's air chamber.

Note: The wheel/tire assemblies should be serviced only by trained personnel who have read and understand the wheel assembly/disassembly information contained within the *Workshop Manual*.

TIRES

Each tire is equipped with a Variable Function Insert (VFI) which is mounted into the tire. The VFI insert and tire are then fitted around the beadlock rim assembly, providing a higher level of tire protection due to the dense rubber material in the tire assembly and maximum all-terrain mobility.

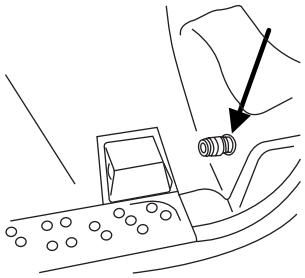
SNOW CHAINS

Tire chains cannot be used on vehicles equipped with M/TR tires.

ON-BOARD AIR SYSTEM (IF EQUIPPED)

Your vehicle may be equipped with an on-board air system which has been designed to provide compressed air for multiple uses, including the addition of air to the vehicle's tires. The system uses a 25 ft. (7.6m) length of air hose equipped with a clamp-on style air chuck. When not in use, this hose is secured to the floor of the truck. A compressor, mounted to the frame under the truck on the passenger side frame rail, is included along with an air reservoir on the driver side. When the compressor is on, the output pressure at the air tank is limited to 80 psi (552 kPa).

The air coupling, to which the hose is to be connected, is located just above the floor behind the driver's seat.



The compressor is controlled by an instrument panel mounted switch below the radio. The compressor cannot be turned on unless the vehicle ignition is in the ON position

Note: The air compressor uses significant electrical current when operating. It is recommended that the engine be running when the compressor is in use to avoid discharging the battery.

When the compressor is switched to the on position, a light in the switch will be illuminated and the reservoir pressure will increase until it reaches the pre-set limit. The light will remain on even when the pre-set pressure limit is reached and the compressor turns off. With the switch turned on, the compressor may start at any time the ignition switch is in the ON position. You should turn the compressor switch off until you plan on using compressed air to avoid possible injuries and minimize wear on the compressor and system.

Note: When the system is pressurized, all air lines from the compressor to the outlet chuck are pressurized as well. Do not attempt to work on the system or loosen any fittings unless you have drained all pressure from the system by opening the drain on the air reservoir.

Whenever the air compressor has been used, be sure to drain the air system of all pressure by opening the drain valve at the front of the reservoir until air no longer escapes. **Do not leave the system pressurized when the vehicle is not in use.** This will help to assure the safety of those who may need to work on the truck and prevent the condensation of water in the reservoir, extending the life of air system components.

The air compressor inlet is equipped with a filter to prevent the ingestion of contamination into the compressor and air system. This filter

is located underneath the truck, by the forward stake pocket on the left side of the bed. If operating the air system in dusty areas, periodically inspect this filter and replace it if found to be clogged or damaged, or if the time needed to pressurize the system starts to become extended.

Using the air system to fill tires

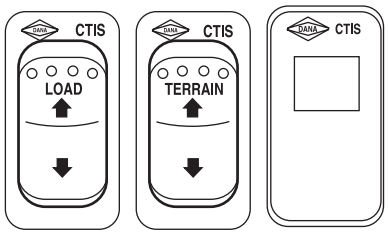
To fill your tires, first be sure to stop the truck in a safe place. You should be far enough off the road that passing traffic will not be a danger to you. You should have an accurate tire pressure gauge to measure the pressure in the tires and inflate them to the settings on the tire pressure placard, which is usually inside the door on the truck.

Remove the air hose from under the clamp on the floor of the truck. Attach the connector end of the hose to the coupling in the trim panel behind the driver's seat by using one hand to slide the coupling collar toward the trim panel and the other to insert the fitting on the end of the hose into the coupling. When the fitting is seated in the coupling, slide the collar back to its original position.

Extend the hose to reach the tire needing air. Remove the cap from the tire valve stem and attach the clamp-on air chuck by squeezing the locking mechanism while placing the chuck over the valve stem. Release the locking mechanism when the air chuck is seated on the stem. Air will flow from the system to the tire until you remove the chuck. Be sure to use your gauge to set the pressure according to the placard. When the tire pressure is correct, disconnect the hose and re-stow it under the clamp on the floor behind the passenger seat. Do not forget to re-install the cap on the valve stem.

CENTRAL TIRE INFLATION SYSTEM (CTIS) (IF EQUIPPED)

Your vehicle may be equipped with a Central Tire Inflation System (CTIS). The CTIS adjusts and maintains tire pressure for enhanced vehicle traction, reduced vehicle maintenance and improved driver comfort. The system is operated through instrument panel-mounted controls.

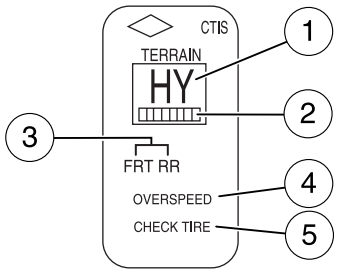


Operating the CTIS

The CTIS is operated and observed through the Driver Display Module (DDM) and the LOAD AND TERRAIN controls.

DDM

Displays current CTIS status and alerts.



1. **TERRAIN display:**

- HY (Highway) for operation on improved surfaces
- CC (Cross Country) for operation on secondary roads
- SS (Sand) for operation on sand, trails and unimproved surfaces
- E (Emergency) for selection of extremely low tire pressures to help free stuck vehicle or to traverse bad terrain

Dashes displayed in DDM Terrain display

- CTIS system fault
- CTIS has shut off at least one channel due to fault tolerance
- System may periodically check to see if fault still exists
- Operation may be allowed on unaffected channels
- Check tires for proper pressure and get service at earliest opportunity

2. **LOAD bar graph display:**

- Off: Unloaded
- On: Loaded

3. **Channel display:**

- FRT: Front axle
- RR: Rear axle

When the terrain channel is flashing, the CTIS is working to achieve pressures that are appropriate with the indicated terrain or checking pressure.

When the terrain channel is solid, the tires are at the appropriate pressure, the CTIS is in maintenance mode and the wheel valves are closed.

4. **OVERSPEED**

- **Flashing or buzzer activated:** Vehicle speed has exceeded the programmed speed limit for the current tire pressure.

Note: If the vehicle does not slow down to below the programmed speed limit, the tires will automatically inflate to the appropriate higher terrain setting. Once the higher terrain setting has been achieved, the OVERSPEED light will stop flashing and the buzzer will stop.

- **Solid:** The CTIS is not receiving any speed signals.

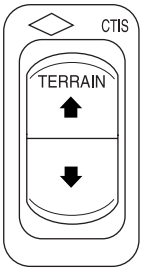
5. **CHECK TIRES** Flashes and a buzzer activates when a low tire or a significant air system leak is detected.

No display lights

- Power out of range

TERRAIN

Allows the driver to select different tire pressures and vehicle parameters for unique driving surfaces/conditions by adjusting tire pressure. Selecting a terrain setting will cause the system to run a pressure check and adjust tire pressure appropriately. Any terrain may be selected at any time (within speed limitations).



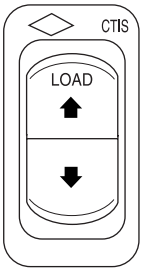
Note: When in "HY" mode, additional increments do not change tire pressures, but do cause a pressure check.

Note: When in "E" mode, additional decrements do not change tire pressures, but do cause a pressure check.

	Maximum Speed - mph (km/h)	Load	Front Pressure	Rear Pressure
Highway	65 (105) +	Unloaded*	55 psi @ 2500 lbs	37 psi @1550 lbs
		Maximum Load	57 psi @ 2600 lbs	65 psi @ 3195 lbs
Cross Country	30 (48)	Unloaded*	37 psi @ 2500 lbs	21 psi @ 1550 lbs
		Maximum Load	40 psi @ 2600 lbs	35 psi @ 3195 lbs
Mud, Sand and Snow	10 (16)	Unloaded*	24 psi @ 2500 lbs	15 psi @ 1550 lbs
		Maximum Load	27 psi @ 2600 lbs	29 psi @ 3195 lbs
Emergency	5 (8)	Unloaded*	17 psi @ 2500 lbs	12 psi @ 1550 lbs
		Maximum Load	20 psi @ 2600 lbs	23 psi @ 3195 lbs
* Under 800 lbs (363 kg) people plus cargo				

LOAD

Allows the driver to select loaded or unloaded tire pressures under specified conditions. Selecting the load setting will cause the system to run a pressure check and adjust tire pressure appropriately. The LOAD setting can be changed any time (within specified speed/load limitations).



Automatic load sensing

- Vehicle load condition will be automatically sensed and tire pressure adjusted, if necessary, when starting the engine and when the vehicle is at a complete stop.
- Unloaded/Loaded tire pressures are available for each terrain selection.
- Anytime the load can't be accurately sensed, the system will default to the loaded tire pressure.
- Load settings are indicated by the bar graph on the DDM.

Tire pressure maintenance

The CTIS is set to check tire pressure every 15 minutes. The wheel valves will automatically isolate the tires from the rest of the system; this prevents a decrease in tire pressure due to fitting and seal leaks.

Some clicking may be heard as the system activates to achieve a new tire pressure. Adequate supply system air pressure is required to begin or continue any pressure change.

The system is designed to allow tire pressure increases due to heat build-up during vehicle use. The system will not deflate the pressure build-ups, a lower pressure mode selection must be made to decrease the tire pressure.

Flat tire/Tire leak detection

If the CTIS detects a significantly low tire, the system will display a "CHECK TIRE" message, sound a buzzer and automatically attempt to inflate the tire(s) to the selected mode pressure. The "CHECK TIRE" message and buzzer will stay on until the tire is inflated to the selected mode pressure.

Roadside emergencies

CHANGING A FLAT TIRE

Refer to your *Owner's Guide* for the tire changing procedure. Follow the F-350 Dual Rear Wheel (DRW) jacking instructions.

FUSING

Note: Fuse 29 in the instrument panel box, located below and to the left of the steering wheel, should be a 15A mini fuse. Always replace the fuse you removed with a fuse with the same amperage rating.