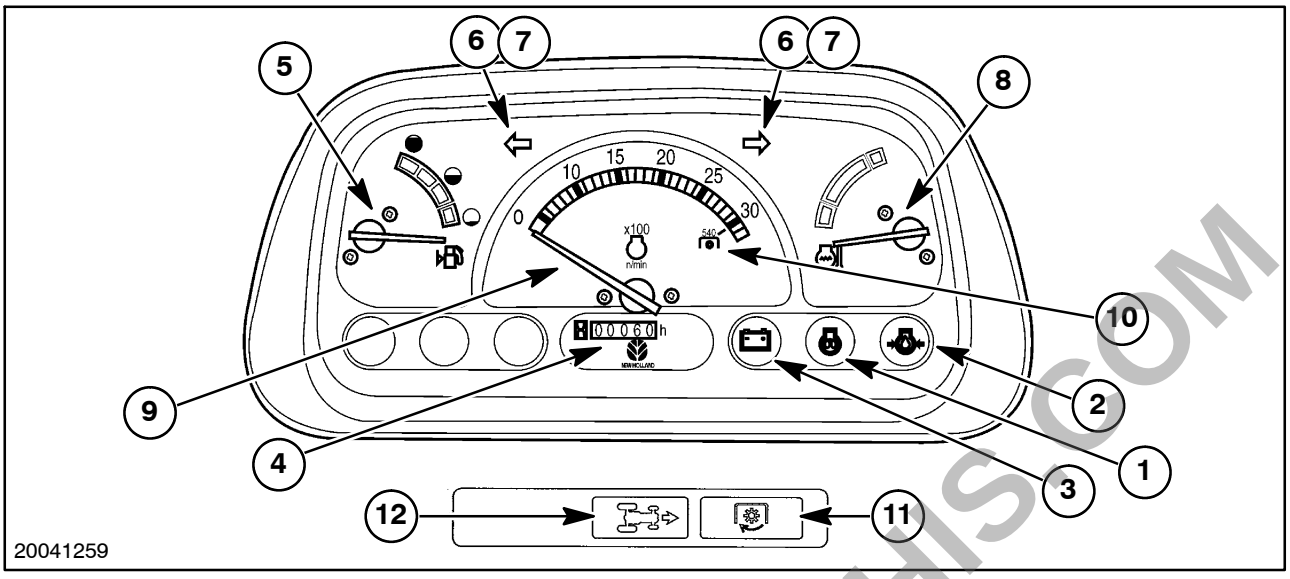


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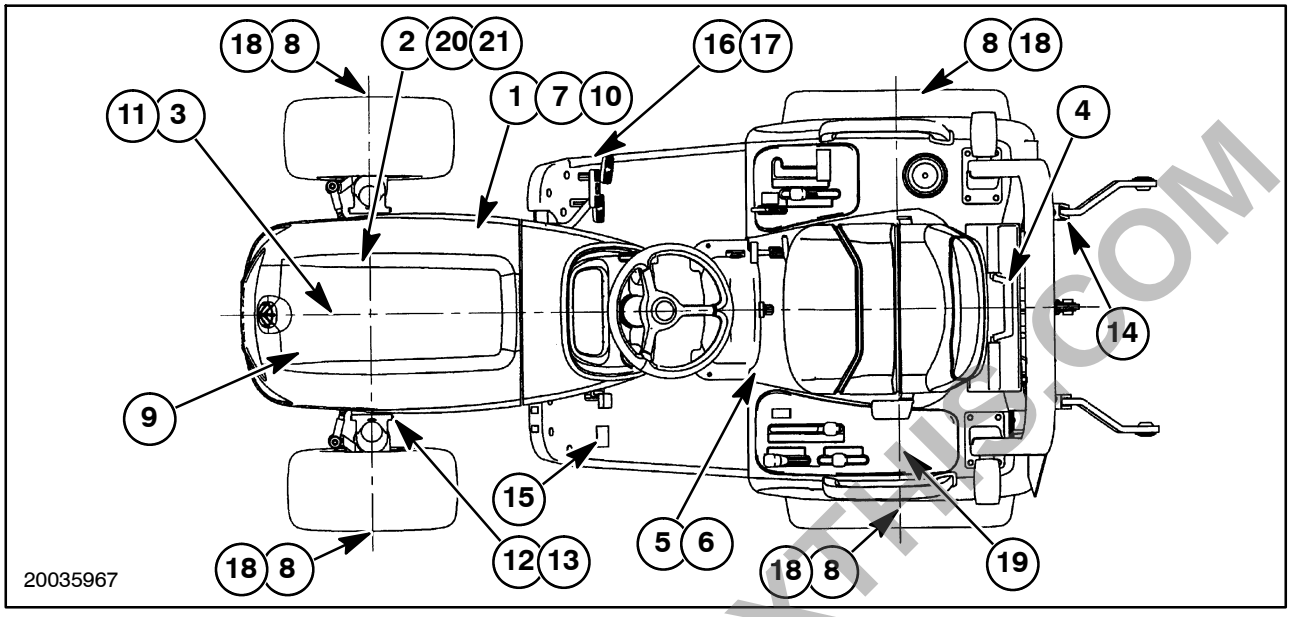
INSTRUMENT PANEL

1. **Cold Starting Indicator Light**— Illuminates when the key switch is turned to the “HEAT” position. It remains lit for approximately 5 seconds when the key is held in position, during which time the glow plugs are heating the precombustion chambers.
2. **Engine Oil Pressure Warning Light**—Illuminates with the key switch in the “ON” or “HEAT” positions and remains lit for a short period of time after the engine is started. The light indicates oil pressure only and goes out when sufficient oil pressure is present at the oil sender. If the bulb becomes lit during operation, stop the tractor engine immediately and investigate the cause.
3. **Battery Charge Warning Light**— Illuminates when the key switch is in the “ON” or “HEAT” positions and goes out when the engine is started. If this bulb becomes lit during operation, it indicates that the charging system is not operating normally. As the battery can become fully discharged under these conditions, the problem should be investigated as soon as possible.
4. **Proof Meter**—Records the hours and portions of hours that your tractor has been operated based on an average engine speed of 3000 RPM. Engine speeds below 3000 RPM accumulate engine hours at a slower rate than clock hours. Engine speeds above 3000 RPM accumulate engine hours faster than clock hours. Use the proof meter as a guide to determine hourly service and maintenance intervals.
5. **Fuel Gauge**—Indicates the amount of diesel fuel remaining in the tank. The gauge is activated when the key switch is in the “ON” or “HEAT” positions. It will register empty with the key switch in the “STOP” position.
6. **Flasher Warning Lights**—Operate when the flasher switch is turned on, regardless of the key switch position. Use the flasher warning lights and the SMV emblem when traveling on public roads, day or night.
7. **Flasher Turn Lights**—Operate when the turn signal switch is activated. Rotate the switch to the right for right turns, the right arrow will flash. Rotate the switch to the left for left turns, the left arrow will flash. The key switch has to be in the “RUN” position.
8. **Temperature Gauge**—Indicates coolant temperature. It is activated when the key switch is turned to the “ON” or “HEAT” positions. The gauge will register cold with the key switch in the “STOP” position. If the needle registers in the green range of the gauge, this indicates a normal operating temperature. If the needle moves to the red portion of the gauge, this indicates an overheated condition. Stop the tractor engine immediately and investigate the cause.
9. **Tachometer**—Registers engine RPM (Revolutions Per Minute). The gauge is marked in increments of 100 and will return to zero when the engine is not running.
10. **Rear PTO Speed**—Determined by the position of the needle on the tachometer. The tachometer is marked to indicate 540 PTO RPM. Engine RPM should remain close to this mark while using the rear PTO; running the engine faster than this results in a dangerous overspeed condition.
11. **PTO Indicator Light**—Illuminates with the key switch in the “ON” position and the PTO clutch lever engaged. This light indicates that the PTO clutch is engaged.
12. **HST Cruise Control Indicator Light**—Illuminates with the key switch in the “ON” position and the cruise control engaged. This light indicates that the HST cruise control is engaged.

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LUBRICATION AND MAINTENANCE CHART
NEW HOLLAND TZ18DA/TZ22DA/TZ25DA — FRONT-WHEEL DRIVE



1

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
1	Engine Oil Level	X					Every 10 Hours or Daily
2	Air Cleaner	X					
3	Radiator Coolant	X					
4	Transmission Oil Level	X					
5	Hydraulic Filter				X		First 50 Hours
6	H.S.T. Filter				X		
1, 7	Engine Oil & Filter				X		
8	Tire Pressure	X					
10	Fuel Filter				X		
18	Wheel Bolt Torque	X					
—	All Fluid Levels	X					
17	Brake Pedal Free Play	X					
8	Tires	X					Every 50 Hours
9	Battery	X					
10	Fuel Filter	D	R	A	I	N	
11	Fan Belt	X					
12	Front Axle Oil Level	X					
13	Final Reduction Gear Cases Oil Level	X					
17	Brake Pedal Free Play	X					
	Lubrication Fittings:						
14	3-Point Linkage			X			
15	Differential Lock Pedal			X			
16	H.S.T. Pedal Pivot			X			
1, 7	Engine Oil & Filter				X		Every 100 Hours
2	Air Cleaner Element		X				
10	Secondary Fuel Filter		X				

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
17	Brake Pedal Free Play					X	Every 200 Hours
10	Fuel Filter Element				X		
11	Fan Belt					X	
18	Wheel Bolt Torque	X					
	Steering Free Play	X				X	
4	Transmission Oil				X		Every 300 Hours
5	Hydraulic Filter				X		
6	H.S.T. Filter				X		
12	Front Axle Oil				X		
13	Final Reduction Gear Cases Oil				X		
19	Primary Fuel Filter				X		
20	Fuel Injector	X				X	Every 600 Hours
21	Valve Clearance	X				X	
2	Air Cleaner Element				X		Seasonal
3	Radiator Coolant				X		
2	Safety Air Filter Element				X		Every 3rd Primary Element Change or Every **1000** Hours, Whichever Comes First

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SECTION 5
SPECIFICATIONS

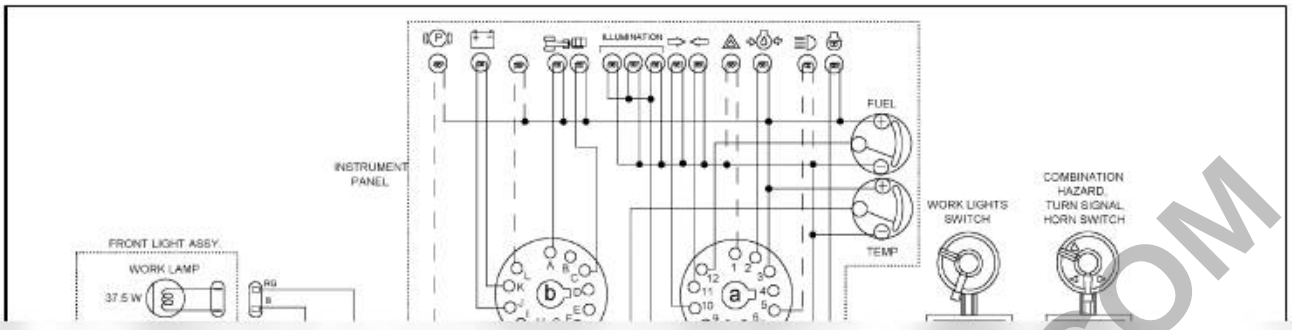
	Model TZ18DA Hydrostatic	Model TZ22DA Hydrostatic	Model TZ25DA Hydrostatic
ENGINE			

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ELECTRICAL WIRING DIAGRAM



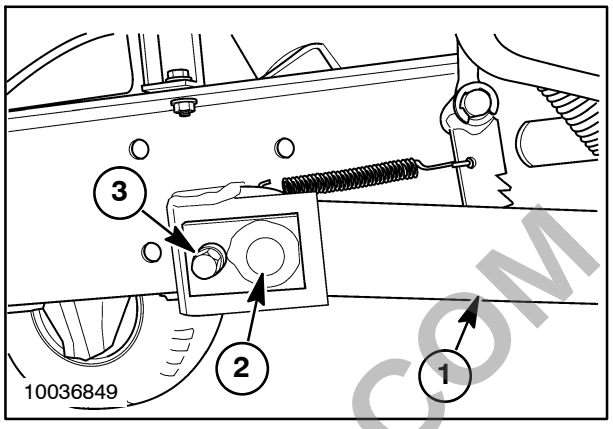
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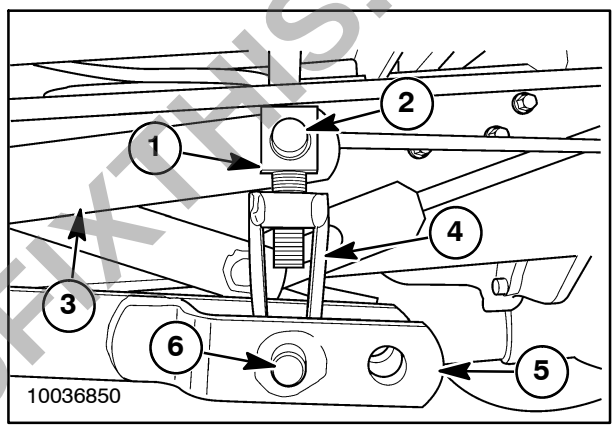
TRACTOR PREPARATION

1. Install the left rear link, 1, on the left side of the tractor.
2. Install the pin, 2, through the frame and rear link. Secure pin with the M8 x 1.25 x 20 bolt, 3.



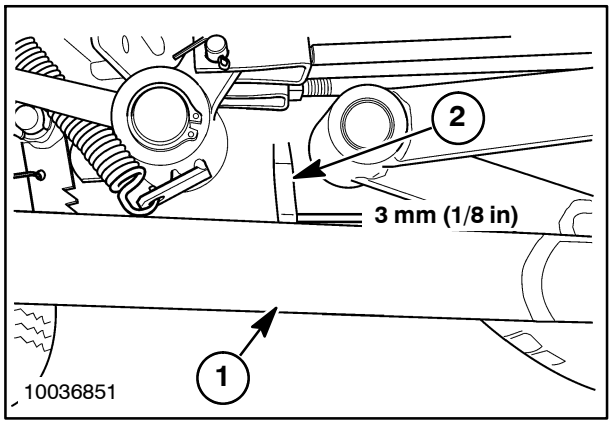
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3. Place the adjuster, 1, over the pin, 2, on the PTO lift arm, 3.
4. Position the lower part of the adjuster, 4, in the rear of the lift link, 5, and secure with the pin, 6, from the inside towards the outside.



4

5. With the 3 PT control lever in the full “UP” position, the clearance between the link, 1, and stop, 2, should be 3 mm (1/8 in).



5

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MINIMUM HARDWARE TIGHTENING TORQUES

IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

METRIC NON-FLANGED HARDWARE AND LOCKNUTS

NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	

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TROUBLESHOOTING

The following troubleshooting guide is for the mower and its drive. This assumes the tractor engine is running to prescribed specifications and the tractor hydraulics are working properly. Consult the applicable Tractor Repair Manual for all tractor system checks.

Before attempting any repair or test, observe the general condition of the tractor and mower. Make certain the tractor is operating properly and the mower is setup correctly. The following charts may give you some hints in solving a problem with the mower. If the problem cannot be easily solved, contact your New Holland Service Repair Dealer.

SYMPTOM	PROBLEM	CORRECTION
Excessive Vibration	Loose gearbox bolts.	Re-torque or replace as necessary.
	Loose spindle/blade fasteners.	Re-torque or replace as necessary.
	Damaged gearbox.	Rebuild gearbox as necessary.
	Worn or damaged driveline U-joints.	Rebuild driveline as necessary.
	Blade interference with grass buildup.	Clean the underside of the deck.
	Blades unbalanced.	Balance blades.
	Blade broken.	Replace mowing blades in sets.
Gearbox Overheating	Low on lubricant.	Fill to oil level plug.
	Debris buildup on top of deck around gearbox.	Clean deck top and remove debris.
Gearbox Noisy	Worn or rough bearings.	Replace bearings.
	Worn or rough gears.	Run-in gears, or rebuild gearbox.
Gearbox Leaking	Damaged oil seal.	Replace oil seal.
	Damaged shaft in seal area.	Replace shaft and oil seal.
	Oil seal installed wrong, or upside down.	Replace oil seal.
	Oil level too high in housing.	Drain oil to correct level.
	Cracked or broken housings.	Replace housings or gearbox assembly.
	Gasket damaged.	Replace liquid gasket.
	Bolts loose.	Re-torque bolts.
Blades Wear Too Fast	Cutting in sandy conditions.	Increase deck cutting height.
	Cutting in rocky conditions.	Increase deck cutting height.
	Heat treat removed by sharpening with grinder.	Replace blades in sets.
Not Cutting Clean	Blades dull.	Sharpen or replace blades.
	Blades installed upside down.	Install blades correctly.
	Blade RPM too low.	Use full throttle position.
	Mower not level.	See cutting height adjustments, Tires under inflated.
	Tractor tires mashing grass.	Too wet or lush to cut. Reverse direction of cut and re-mow the area.
	Ground speed too fast.	Reduce ground speed.
	Excessive grass buildup under mower deck.	Clean underside of deck.

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SAFETY

⚠ PRECAUTIONARY STATEMENTS ⚠

A careful operator is the best operator. Most accidents can be avoided by observing certain precautions. To help prevent accidents, read the following precautions before operating this equipment. Equipment should be operated only by those who are responsible and instructed to do so.

Carefully review the procedures given in this manual with all operators. It is important that all operators be familiar with and follow safety precautions.

THE TRACTOR

1. **Read the Operator's Manual carefully before using the tractor. Lack of operating knowledge can lead to accidents.**
2. **Use an approved roll bar and seat belt for safe operation. Overturning a tractor without a roll bar can result in death or injury. If your tractor is not equipped with a roll bar and seat belt, see your New Holland Dealer.**
3. **Always use the seat belt. The only instance when the seat belt should not be used is if the roll bar has been removed from the tractor.**
4. **If a front end loader is to be installed, always use a FOPS (Falling Object Protective Structure) canopy to avoid injury from falling objects.**
5. **Use the handholds and step plates when getting on and off the tractor to prevent falls. Keep steps and platform cleared of mud and debris.**
6. **Do not permit anyone but the operator to ride on the tractor. There is no safe place for extra riders.**
7. **Keep all safety decals clean of dirt and grime, and replace all missing, illegible, or damaged safety decals. See the list of decals in the Decal section of this manual.**

SERVICING THE TRACTOR

1. **The cooling system operates under pressure which is controlled by the radiator cap. It is dangerous to remove the cap while the system is hot. Always turn the cap slowly to the first stop and allow pressure to escape before removing the cap entirely.**
2. **Keep any type of open flame away from the tractor and do not smoke while refueling. Wait for the engine to cool before refueling.**
3. **Keep the tractor and equipment, particularly brakes and steering, maintained in a reliable and satisfactory condition to ensure your safety and comply with legal requirements.**
4. **Keep open flame or cold weather starting aids away from the battery to prevent fires or explosions. Use jumper cables according to instructions to prevent sparks which could cause explosion.**
5. **Stop the engine before performing any service on the tractor.**
6. **Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury. If fluid is injected into the skin, obtain medical attention immediately or gangrene may result.**
   - **DO NOT use your hand to check for leaks. Use a piece of cardboard or paper to search for leaks.**
   - **Stop the engine and relieve pressure before connecting or disconnecting lines.**
   - **Tighten all connections before starting the engine or pressurizing lines.**
7. **Do not modify or permit anyone else to modify or alter this tractor or any of its components or functions without first consulting a New Holland Dealer.**
8. **The fuel oil in the injection system is under high pressure and can penetrate the skin. Unqualified persons should not remove or attempt to adjust a pump, injector, nozzle, or any other part of the fuel injection system. Failure to follow these instructions can result in serious injury.**
9. **Continuous long-term contact with used engine oil may cause skin cancer. Avoid prolonged contact with used engine oil. Wash skin promptly with soap and water.**

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FEDERAL EMISSIONS WARRANTY

(California owner's emissions warranty is covered elsewhere)

New Holland warrants that your new 1996 and later heavy-duty off-road diesel engine was designed, built, and equipped to conform to applicable U.S. Environmental Protection Agency regulations for a period of use of five years or 3,000 hours of operation, whichever occurs first.

The new model year, class of diesel engine, and emission application determination for your engine are identified on the emission control information label affixed to the top of your engine's rocker arm cover. The warranty period begins on the date the new equipment is sold to the first retail purchaser.

Any emission control system parts which are proven defective during normal use will be repaired or replaced during the warranty period. The warranty repairs and service will be performed by any authorized New Holland dealer at the dealer's place of business, with no charge for parts or labor (including diagnosis).

As the engine owner, you are responsible to perform all the required maintenance listed in your owner's manual. New Holland will not deny an emission warranty claim solely because you have no record of maintenance; however, a claim may be denied if your failure to perform maintenance resulted in the failure of a warranted part. Receipts covering regular maintenance should be retained in the event of questions and these receipts should be passed on to each subsequent owner of the engine.

It is recommended replacement parts used for maintenance or repairs be New Holland Service Parts to maintain the quality originally designed into your emission certified engine. The use of non-New Holland parts does not invalidate the warranty on other components unless the use of such parts causes damage to warranted parts.

New Holland wishes to assure the emission control systems warranty is being properly administered. If you believe you have not received the service entitled to under this warranty, you should contact the nearest New Holland Branch Office for assistance.

Service Department
New Holland North America, Inc.
500 Diller Avenue
New Holland, PA 17557
(717) 355-1121

Please note that the Emission Warranty does not cover:

1. Systems and parts that were not first installed on the new equipment or engine as original equipment by New Holland.
2. Part malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of non-recommended fuels and lubricating oils.
3. Accident caused damage, acts of nature, or other events beyond New Holland's control.
4. Replacement of expendable items made in connection with scheduled maintenance.
5. Parts requiring replacement, inspection or adjustment maintenance intervals for reasons other than being defective.
6. Parts which are not New Holland Service Parts.
7. Loss of time, inconvenience, loss of use of equipment/engine or commercial loss.
8. Equipment with altered or disconnected hourmeter where the hours cannot be determined.
9. Equipment normally operated outside the United States.
10. Non-defective parts replaced by other than New Holland dealers.

Coverage

This emission control system warranty applies to the following emission control parts.

Fuel Injection Pump
Fuel Injectors
Turbocharger
Intake Manifold
Exhaust Manifold
Boost Pressure Tubing-connection to Aneroid Device ON F.I.P.

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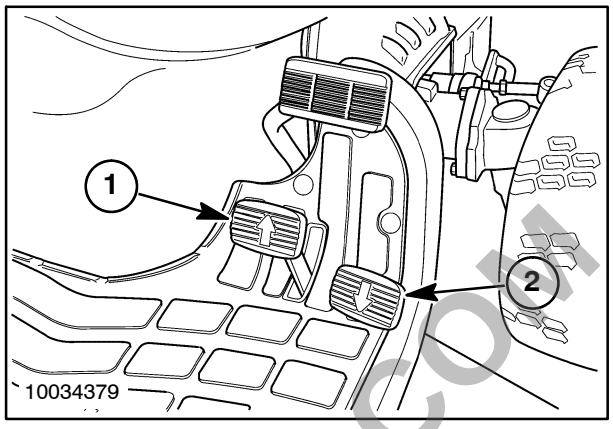
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HYDROSTATIC TRANSMISSION (H.S.T.) MODEL

H.S.T. FOOT PEDAL

The ground speed of tractors equipped with a hydrostatic transmission is continuously variable, from zero to full rated speed in each range. Speed is controlled by the H.S.T. forward, 1, and reverse, 2, pedals, located on the RH side of the foot platform.

For forward travel, depress the forward pedal until the desired ground speed is reached. For reverse travel, depress the reverse pedal. Unless the H.S.T. speed cruise control switch (see description following) is in the engaged position, the transmission returns to neutral and the tractor stops when either pedal is released.



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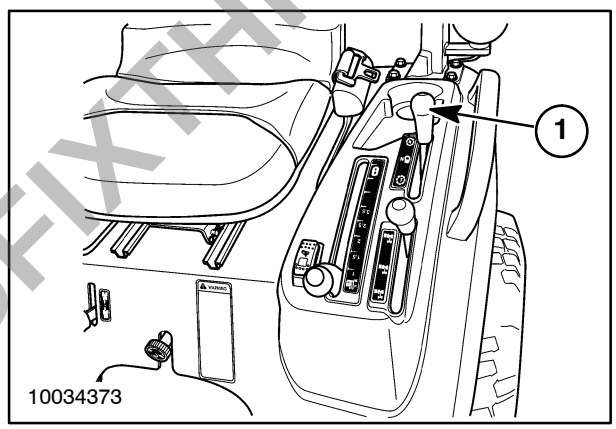
H.S.T. RANGE LEVER

The range selector lever, 1, is located on the LH control pod. It has two speed ranges (H– high and L– low) and one neutral (N) position.

NOTE: *The range selector lever must be in the neutral position to activate the safety start system and allow the engine to start.*

To select the desired operating range, the H.S.T. pedals must both be in their neutral positions.

IMPORTANT: *Never attempt to engage or disengage the range lever when the tractor is in motion.*

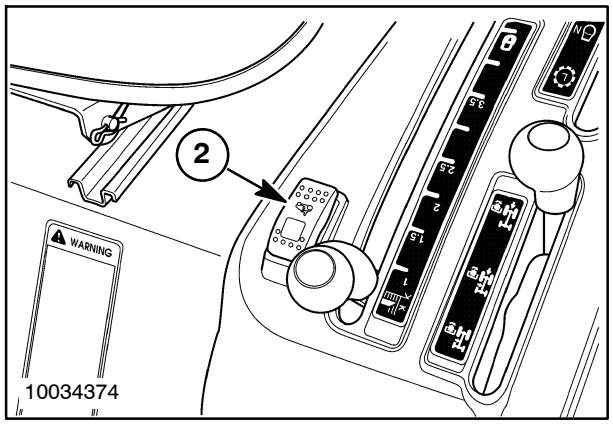


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H.S.T. SPEED CONTROL (OPTIONAL) (CRUISE CONTROL)

The H.S.T. speed control rocker switch, 2, is located on the LH control pod, inboard of the mower height adjustment lever. It is used to maintain a constant forward or reverse speed.

When the desired travel speed is reached, depress and release the forward half of the speed control switch. A green light will illuminate inside the switch, indicating that the speed control is engaged. To disengage the speed control, depress the rear half of the switch, or depress the brake pedal. The green light will go out, indicating that the speed control is disengaged.



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GENERAL MAINTENANCE

COOLING SYSTEM

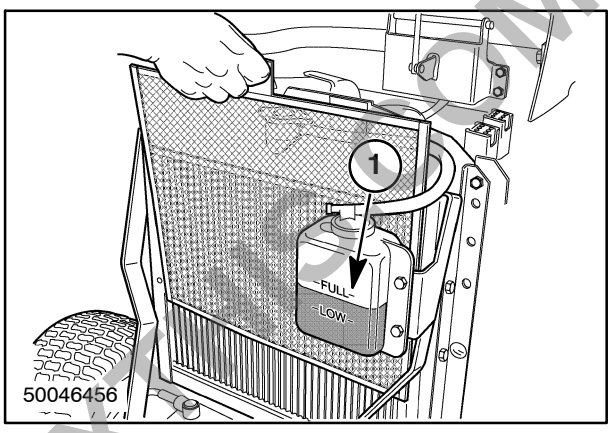
The tractor engine must operate at the correct temperature to obtain maximum efficiency and service life. This is dependent on the cooling system.

Always fill the system with a 50/50 solution of permanent antifreeze and clear water.

Checking the Coolant Level

NOTE: *Check the coolant level daily or after every 10 hours of operation. The engine should be cold when coolant level is checked.*

Open the hood, and check the coolant recovery reservoir, mounted to the LH side of the radiator frame. The fluid level should be between the 'low' and 'full' marks on the reservoir, 1.

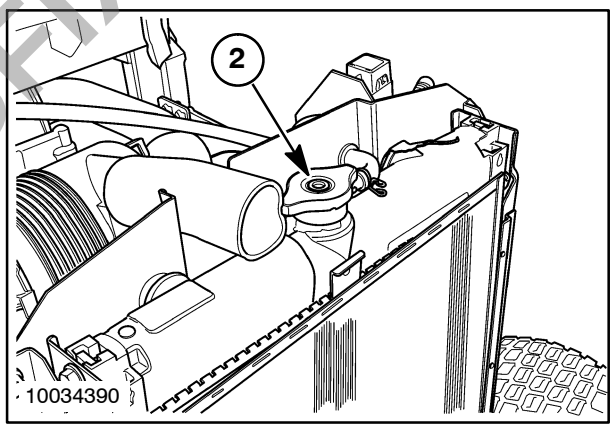


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If the coolant recovery reservoir is empty, carefully remove the radiator cap, 2, and add the antifreeze/water solution directly into the radiator until the radiator is full. Then cap the radiator and add the solution to the recovery reservoir to bring the level up to the 'full' mark.

⚠ WARNING ⚠

The cooling system operates under pressure controlled by the radiator cap. It is dangerous to remove the cap while the system is hot. Always cover the cap with a thick cloth and turn it slowly counterclockwise to the first stop. Allow all pressure to escape before removing the cap completely.



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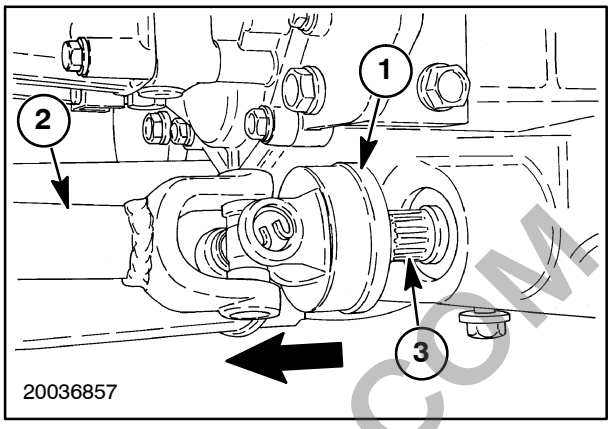
If the coolant level is below the low mark on the reservoir, add a 50/50 solution of water and antifreeze to the coolant recovery reservoir bringing the level to the full mark.

Be sure that the radiator fins are clear of chaff and dirt to allow free air movement.

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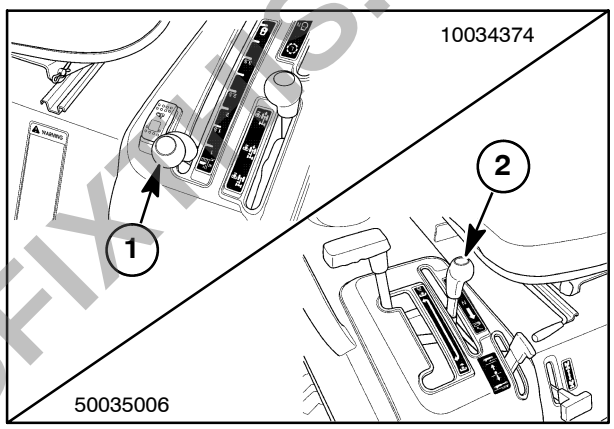
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3. Pull the driveshaft locking collar, 1, towards the front of the tractor and slide the driveshaft, 2, off the PTO shaft, 3.
4. Install the PTO cap on the PTO shaft.



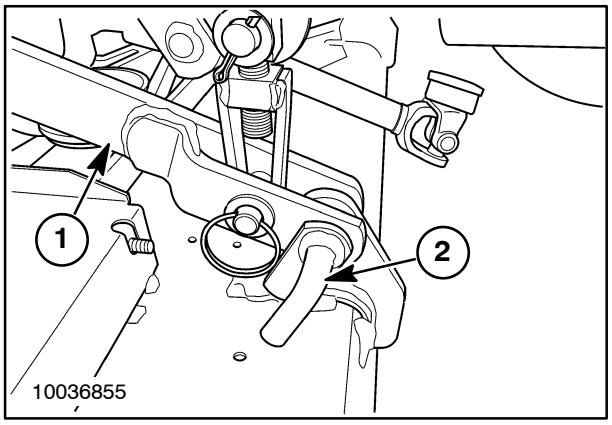
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5. Place the mower height adjustment lever, 1, in the 1″ cutting height position.
6. Start the engine on the tractor.
7. Shift the 3 PT lever, 2, to the “lower” position.
8. Turn the engine off.



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9. Disconnect the rear linkage, 1, from the deck using the spring-loaded handle, 2.
10. Repeat for the opposite side.



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