

Performance Tips

TM, TS, TL, TN and TV Series Tractors



NEW HOLLAND



TOTAL CONFIDENCE – THE NEW HOLLAND SERVICE SOLUTION

New Holland delivers quality parts and service every time.

At New Holland, we have what it takes to maximize your equipment's power and productivity all season long. Our extensive dealer network means we're always close by. Our resourceful aftersales support team understands your unique needs to help you operate more efficiently. And our wide range of precision-engineered New Holland parts matches your operation's systems for greater productivity and uptime.

It's all the genuine parts and expert support you expect—under one sign. Visit us today.



Flexible revolving account financing with the New Holland Plan is designed to match your unique cash flow requirements and payment schedules.

NEW HOLLAND ORIGINAL PARTS

- Designed to meet stringent New Holland quality, reliability and performance
- Guaranteed by New Holland
- Designed specifically for New Holland equipment
- Made by manufacturers with worldwide reputations

QUALITY SERVICE

- Factory trained technicians
- Genuine New Holland parts
- Documented maintenance
- Increase productivity
- Reduce downtime



Make Farm Safety a Priority

The second most important part of your farming operation is getting the job done right. Farm safety is the most important aspect in all farming operations. None of the things you accomplish on your farm are worth much, if you don't end each day safe and sound.

The National Safety Council or the American Farm Bureau confirms that farming is the most hazardous occupation in the nation today. They will also tell you that most farm accidents are caused when people fail to follow well publicized safety precautions.

New Holland engineers incorporate safety into every machine they design. After your tractor is delivered, Read the Operator's Manual and carefully note all of the safety instructions contained in it. Be alert to all safety suggestions. Farm safety is ultimately your own responsibility and you owe it to your family to work safely. The most important safety device on a tractor is the roll over protective structure (ROPS) with an effective seat belt. More farmers are killed or seriously injured from tractor roll overs than from any other type of farm accident. Read all of the safety instructions in your Operator's Manual and be sure you can give a positive response to all of the following:

- ▶ **Shields** - Is the PTO master shield in place? Are all other shields in place?
- ▶ **Warning Decals** - Are all warning decals in place and readable? Is the slow moving vehicle (SMV) emblem in place and in good condition?
- ▶ **Fuel System** - Is the fuel cap in good condition without fuel leaks?

- ▶ **Lights** - Are the emergency flashing lights (for road travel), turn signals, head lights, and tail lights in working order?
- ▶ **Brakes** - Do the brakes apply evenly when applied together?
- ▶ **Starting** - Start the engine only when properly seated in the operator's seat. When starting in cold weather, the tractor could move as the transmission is engaged, even with the clutch pedal depressed. Use the brakes to prevent tractor movement.
- ▶ **Other People** - Be sure all others are clear of the tractor and equipment. No riders.
- ▶ **Road Travel** - For safe operation on the road, always lock the brake pedals together with the pedal interlock. Do not exceed 20 mph (32 kph) while transporting implements.
- ▶ **Tractor Stability** - Always reduce travel speed on turns, rough ground, and avoid steep slopes. Pull only from the drawbar...never higher.
- ▶ **Fumes** - Be careful about carbon monoxide fumes. Remember that agricultural herbicides and other pesticides can be hazardous. Your tractor cab air filter cannot remove fumes; exhaust or chemical. Follow instructions and precautions from the manufacturers of the equipment and the chemicals regarding inhalation of dust, fumes or spray.
- ▶ **Implement Operation** - Be sure implement reflectors are undamaged and unfaded. Make sure all guards are in place over auger intake areas. Test remote shutoff devices to assure they are working properly.

Let the Specialist Help

Your local New Holland dealer uses the latest technology and training to keep your investment operating profitably, efficiently, and safely.

Do you need service work on a tractor, emergency field service, or parts in a hurry? Your dealer is ready and able to help.

New Holland factory-trained service professionals are experts on the inner workings of your New Holland tractors. The parts department is well stocked with all the parts, belts, filters, lubricants, and engine parts you'll need. You wouldn't expect anything less from a specialist who understands the way you work.



PERFORMANCE TIPS

Take Full Advantage of its Capabilities

- Getting the most from your New Holland tractor is the purpose of this booklet.
- New Holland wants to help owners achieve peak efficiency from all of their equipment.

Have you, or someone you know purchased a new tractor in the last few years and continued to use it in much the same way as the tractor it replaced? Many times we fail to take advantage of the advanced features available on today's modern equipment, such as Custom Headland Management. As a result the owner may not be getting all the value from the money spent.

Many of the items suggested in this booklet can be completed by the owner when preparing for the season or by the operator when starting a new field. Other adjustments, service procedures, or repairs might be more effectively completed by your dealer's trained service technicians.

New Holland Maintenance Inspections — prepare your tractor for peak performance

Ask your New Holland dealer about New Holland Maintenance Inspections. It is a proactive way to be sure your tractor will operate at its best possible performance in demanding conditions.

New Holland Maintenance Inspections include a visual and functional inspection of your tractor. They can be used as a pre-season or as a post-season tune-up. Benefits include:

- ▶ Increased productivity
- ▶ Less downtime during the season
- ▶ Lower operating costs
- ▶ Improved fuel economy
- ▶ Documented maintenance
- ▶ Serviced by New Holland-trained service professionals
- ▶ Serviced with Genuine New Holland lubricants, filters, and parts



The combined advantages of New Holland Maintenance Inspections should result in a lower cost of ownership and higher resale values.

Documented Service Promotes High Resale Value

When you schedule your equipment for annual maintenance inspection services, your New Holland dealership places annual Service Plus Maintenance decals on your equipment after each inspection, distinguishing your commitment to keep your machines running in top condition. Not only does annual maintenance support your productivity in the field, each decal symbolizes completed service—which may increase the resale value of your equipment.

Because New Holland technicians use New Holland Maintenance Inspection Checklists for each inspection, you can rest assured that the service is thorough and nothing is overlooked.



SERVICE INSPECTIONS

Mid-Range Horsepower Tractors

Ask your dealer about performing a New Holland Maintenance Inspection service to keep you up and running!

Checklist

	Replace/			Replace/			Replace/	
	OK	Adjust		OK	Adjust		OK	Adjust
Safety Equipment			Steering System			Loader (where fitted)		
1. Seat Belt(s)	<input type="radio"/>	<input type="radio"/>	1. Hoses	<input type="radio"/>	<input type="radio"/>	1. Frame Condition	<input type="radio"/>	<input type="radio"/>
2. ROPS	<input type="radio"/>	<input type="radio"/>	2. Cylinder/Valves	<input type="radio"/>	<input type="radio"/>	2. Weld Mounts	<input type="radio"/>	<input type="radio"/>
3. Warning/Flashing Lights	<input type="radio"/>	<input type="radio"/>	3. Tie Rods/Knuckles	<input type="radio"/>	<input type="radio"/>	3. Overall Operation	<input type="radio"/>	<input type="radio"/>
4. Decals in Place (SMV)	<input type="radio"/>	<input type="radio"/>	4. Operational	<input type="radio"/>	<input type="radio"/>	4. Cylinder/Hose/Fitting Leaks	<input type="radio"/>	<input type="radio"/>
5. Other Audible Sounds	<input type="radio"/>	<input type="radio"/>	5. Front Wheel Toe In	<input type="radio"/>	<input type="radio"/>	5. Pins/Bushings/Shims - Condition, Minimum Play	<input type="radio"/>	<input type="radio"/>
6. Horn	<input type="radio"/>	<input type="radio"/>	6. Tilt and Telescope	<input type="radio"/>	<input type="radio"/>	6. Pin Retention Hardware - In Place, Tight	<input type="radio"/>	<input type="radio"/>
7. Brake Pedal Interlock	<input type="radio"/>	<input type="radio"/>	Power Train			7. Linkage - Functions, Does Not Bind	<input type="radio"/>	<input type="radio"/>
8. PTO Shield in place	<input type="radio"/>	<input type="radio"/>	1. Planetary Oil	<input type="radio"/>	<input type="radio"/>	8. Control Levers - Ease of Operation, Does Not Bind	<input type="radio"/>	<input type="radio"/>
9. Reflectors	<input type="radio"/>	<input type="radio"/>	2. Diff. Oil	<input type="radio"/>	<input type="radio"/>	9. Lubricate Loader	<input type="radio"/>	<input type="radio"/>
10. Mirrors (if applicable)	<input type="radio"/>	<input type="radio"/>	3. Check for All Gears	<input type="radio"/>	<input type="radio"/>			
			4. Inching Pedal	<input type="radio"/>	<input type="radio"/>	TV Bidirectional only		
Engine			5. Wheel Lugs	<input type="radio"/>	<input type="radio"/>	1. Console Start Interlock	<input type="radio"/>	<input type="radio"/>
1. Engine Oil Filter	<input type="radio"/>	<input type="radio"/>	6. Tires and Pressure	<input type="radio"/>	<input type="radio"/>	2. Neutral Start Interlock - Operator's Console	<input type="radio"/>	<input type="radio"/>
2. Exhaust Smoke	<input type="radio"/>	<input type="radio"/>	7. Hydrostatic Trans.	<input type="radio"/>	<input type="radio"/>	3. Neutral Start Interlock - FNR Control	<input type="radio"/>	<input type="radio"/>
3. Unusual Noise	<input type="radio"/>	<input type="radio"/>	Brake System			4. Neutral Start Interlock - PTO Switch	<input type="radio"/>	<input type="radio"/>
4. Turbo Charger (if applicable)	<input type="radio"/>	<input type="radio"/>	1. Manual & Power	<input type="radio"/>	<input type="radio"/>	5. Neutral Start Interlock - Park Brake	<input type="radio"/>	<input type="radio"/>
5. Intake System	<input type="radio"/>	<input type="radio"/>	2. Linkage/Control	<input type="radio"/>	<input type="radio"/>	6. Aux. Pump Safety Start (if applicable)	<input type="radio"/>	<input type="radio"/>
6. Muffler/Exhaust Systems	<input type="radio"/>	<input type="radio"/>	3. Lines/Hoses	<input type="radio"/>	<input type="radio"/>			
7. High and Low Idle Speed	<input type="radio"/>	<input type="radio"/>	4. Parking Brake/Lock	<input type="radio"/>	<input type="radio"/>	Additional Maintenance		
8. Fuel Pumps	<input type="radio"/>	<input type="radio"/>	Cooling System			1. Lube Grease	<input type="radio"/>	<input type="radio"/>
9. Fuel Lines and Clamps	<input type="radio"/>	<input type="radio"/>	1. Radiator Core	<input type="radio"/>	<input type="radio"/>	2. Engine Air Filters	<input type="radio"/>	<input type="radio"/>
10. Fuel Shut Off System	<input type="radio"/>	<input type="radio"/>	2. Hoses/Clamps/Radiator Cap	<input type="radio"/>	<input type="radio"/>	3. Engine Fuel Filters	<input type="radio"/>	<input type="radio"/>
11. Fuel Throttle Linkage	<input type="radio"/>	<input type="radio"/>	3. Water Pump	<input type="radio"/>	<input type="radio"/>	4. Hydraulic Filters	<input type="radio"/>	<input type="radio"/>
12. Fuel Tank	<input type="radio"/>	<input type="radio"/>	4. Fan Assembly	<input type="radio"/>	<input type="radio"/>	5. Wheel Bearings	<input type="radio"/>	<input type="radio"/>
13. Fuel Cap	<input type="radio"/>	<input type="radio"/>	5. Coolant Protection _____ °C/F	<input type="radio"/>	<input type="radio"/>	6. Engine Valve Lash Adj.	<input type="radio"/>	<input type="radio"/>
14. Belts/Tensioner	<input type="radio"/>	<input type="radio"/>	6. Coolant Recovery	<input type="radio"/>	<input type="radio"/>	7. Fuel Injectors	<input type="radio"/>	<input type="radio"/>
15. Cold Starting Aids	<input type="radio"/>	<input type="radio"/>	Hydraulic System			8. Coolant and Filter	<input type="radio"/>	<input type="radio"/>
16. Block Heater	<input type="radio"/>	<input type="radio"/>	1. Oil Level	<input type="radio"/>	<input type="radio"/>	9. Cab Filters	<input type="radio"/>	<input type="radio"/>
			2. Lines and Hoses	<input type="radio"/>	<input type="radio"/>	10. Clean A/C Condenser	<input type="radio"/>	<input type="radio"/>
Electrical			3. Control Linkage	<input type="radio"/>	<input type="radio"/>	11. A/C System Check	<input type="radio"/>	<input type="radio"/>
1. Neutral Starting Switch	<input type="radio"/>	<input type="radio"/>	4. Oil Cooler	<input type="radio"/>	<input type="radio"/>			
2. Connections	<input type="radio"/>	<input type="radio"/>	5. Cylinders/Valves	<input type="radio"/>	<input type="radio"/>	Miscellaneous Items		
3. Battery Fluid	<input type="radio"/>	<input type="radio"/>	6. Reservoir	<input type="radio"/>	<input type="radio"/>	1. Welds and Frames	<input type="radio"/>	<input type="radio"/>
4. Battery Hold Down	<input type="radio"/>	<input type="radio"/>	7. Operational	<input type="radio"/>	<input type="radio"/>	2. Exterior Condition	<input type="radio"/>	<input type="radio"/>
5. Battery Voltage	<input type="radio"/>	<input type="radio"/>	8. Proper Detent	<input type="radio"/>	<input type="radio"/>	3. Seat Condition and Operation	<input type="radio"/>	<input type="radio"/>
6. Battery Area is Clear & Clean	<input type="radio"/>	<input type="radio"/>	9. Quick Couplers	<input type="radio"/>	<input type="radio"/>	4. Operator's Manual	<input type="radio"/>	<input type="radio"/>
7. Starter	<input type="radio"/>	<input type="radio"/>	Leaks			5. Radio	<input type="radio"/>	<input type="radio"/>
8. Alternator	<input type="radio"/>	<input type="radio"/>	1. Oil	<input type="radio"/>	<input type="radio"/>	6. Fire Extinguisher (if equipped)	<input type="radio"/>	<input type="radio"/>
9. Wipers	<input type="radio"/>	<input type="radio"/>	2. Coolant	<input type="radio"/>	<input type="radio"/>			
10. Heat and A/C Fan (if applicable)	<input type="radio"/>	<input type="radio"/>	3. Fuel	<input type="radio"/>	<input type="radio"/>	Fluid Analysis		
11. Turn Signals	<input type="radio"/>	<input type="radio"/>	Hitch and PTO Area			1. Engine	<input type="radio"/>	<input type="radio"/>
12. Lights	<input type="radio"/>	<input type="radio"/>	1. Inspect Hitch Members	<input type="radio"/>	<input type="radio"/>	2. Hyd./Transmission	<input type="radio"/>	<input type="radio"/>
13. Differential Lock(s)	<input type="radio"/>	<input type="radio"/>	2. Upper Link Operational	<input type="radio"/>	<input type="radio"/>	3. MFD		
14. Instrumentation/Warning Lights	<input type="radio"/>	<input type="radio"/>	3. Proper Height	<input type="radio"/>	<input type="radio"/>	a. Front Diff.	<input type="radio"/>	<input type="radio"/>
15. FWD Switch (if applicable)	<input type="radio"/>	<input type="radio"/>	4. Engagement & Disengagement	<input type="radio"/>	<input type="radio"/>	b. Outboard Planetaries	<input type="radio"/>	<input type="radio"/>
						4. Coolant	<input type="radio"/>	<input type="radio"/>

Heating, Ventilation and Air Conditioning Inspections

How to Make Sure Your A/C Beats the Heat

Summer's hot and muggy days can become down right comfortable with a well-maintained cab air conditioning system. Here are some ways to help your A/C system keep you cool.

- Check the drive belt. Verify proper tension and check for signs of wear.
- Clean the condenser. It's often integrated with the radiator and the oil cooler. All should be free of any debris that can build up between units. Use compressed air or a power washer to remove dust between condenser fins that can reduce cooling efficiency.
- Inspect the compressor and hoses. Oil seepage from the compressor, hoses, connectors or couplings can be a potential problem. Contact your New Holland dealer for suggested repair options if you detect leakage.
- Keep cab filters clean. Frequently clean both the fresh air and recirculating air filters.
- Check the evaporator drain hose. Don't let water collect in the evaporator box. Make sure the drain hose is unobstructed.
- Keep the cab airflow high. Especially in high humidity, holding the cab's fan speed higher will reduce the likelihood of the evaporator core freezing. For non Automatic Temperature Control (ATC) systems, you should change cab temperature by adjusting the temperature setting before decreasing the fan speed.
- Don't repair air conditioning systems yourself. Clean Air Act legislation requires that air conditioning systems be serviced only by personnel certified in refrigerant recovery and recycling.

Checklist

System Type

- ___ 1. HFC134a
- ___ 2. R12
- ___ 3. Retrofitted

Troubleshooting System

- ___ 1. No Heat
- ___ 2. Poor Heat
- ___ 3. No Air Conditioning
- ___ 4. Poor Air Conditioning
- ___ 5. No Defrost
- ___ 6. Air From the Wrong Outlets
- ___ 7. No Temperature Control
- ___ 8. Improper Blower Control
- ___ 9. Interior Noise
- ___ 10. Exterior Noise
- ___ 11. Interior Leak
- ___ 12. Exterior Leak
- ___ 13. Odor
- ___ 14. Error Codes (if applicable)
- ___ 15. Other

When Does Symptom Occur

- ___ 1. Always
- ___ 2. Sometimes
- ___ 3. When Hot
- ___ 4. When Cold
- ___ 5. Battery Voltage
- ___ 6. When Engine Is Started
- ___ 7. When Engine Is Warming Up
- ___ 8. When Idling
- ___ 9. At High Engine RPM
- ___ 10. During Acceleration
- ___ 11. While In Motion
- ___ 12. Other

Component	Replace/	
	OK	Adjust
1. Compressor (leakage, alignment, noise)	<input type="radio"/>	<input type="radio"/>
2. Compressor Clutch (field, coil, bearing, air gap)	<input type="radio"/>	<input type="radio"/>
3. Compressor Belt (condition tension)	<input type="radio"/>	<input type="radio"/>
4. Condenser (clear of dust, debris, and leaks)	<input type="radio"/>	<input type="radio"/>
5. Receiver Dryer	<input type="radio"/>	<input type="radio"/>
6. A/C Hoses	<input type="radio"/>	<input type="radio"/>
a. Suction	<input type="radio"/>	<input type="radio"/>
b. Discharge	<input type="radio"/>	<input type="radio"/>
c. Condenser to Dryer	<input type="radio"/>	<input type="radio"/>
d. Chassis Liquid	<input type="radio"/>	<input type="radio"/>
e. Cab Suction	<input type="radio"/>	<input type="radio"/>
f. Cab Liquid	<input type="radio"/>	<input type="radio"/>
7. A/C Pressure Switches	<input type="radio"/>	<input type="radio"/>
a. Low Pressure Switch	<input type="radio"/>	<input type="radio"/>
b. High Pressure Switch	<input type="radio"/>	<input type="radio"/>
8. Evaporator Box	<input type="radio"/>	<input type="radio"/>
9. Evaporator Seals	<input type="radio"/>	<input type="radio"/>
10. Evaporator Capillary Tube	<input type="radio"/>	<input type="radio"/>
11. Evaporator Condensate Drain Tube	<input type="radio"/>	<input type="radio"/>
12. Odor	<input type="radio"/>	<input type="radio"/>
13. Thermostat Expansion Valve	<input type="radio"/>	<input type="radio"/>
14. Thermostat Switch	<input type="radio"/>	<input type="radio"/>
15. Heater Control Valve	<input type="radio"/>	<input type="radio"/>
16. Heater Hoses and Clamps	<input type="radio"/>	<input type="radio"/>
17. Air Filters	<input type="radio"/>	<input type="radio"/>
a. Fresh	<input type="radio"/>	<input type="radio"/>
b. Recirculation	<input type="radio"/>	<input type="radio"/>
18. Cab Blower	<input type="radio"/>	<input type="radio"/>
19. A/C Fluorescent Dye	<input type="radio"/>	<input type="radio"/>
20. Refrigerant Charge	<input type="radio"/>	<input type="radio"/>
21. Clean and Flush System	<input type="radio"/>	<input type="radio"/>

New Holland dealers offer air conditioning maintenance inspections and a full line of compressors, condensers, and other air conditioning parts to fit your exact need. Use these services and parts to help keep your air conditioning performing at its peak.

Lube Filtration Systems

To meet the performance demands of today's tough off-road environments, your equipment is generating more usable horsepower than ever before. Tighter tolerances, higher temperatures, and severe duty cycles are driving the requirement for high quality filtration and increased durability without sacrificing filter life. Today's low-emission engine designs make engine filtration extremely critical, especially particles in the 5-10 micron range, which are most damaging to modern engines.

While the costs for repairing equipment breakdowns are normally high, they are often miniscule compared to those associated with delayed harvests or missed project completion deadlines. Don't jeopardize productivity by using "will-fit" filtration. New Holland lube filters are designed specifically for your equipment. They're guaranteed to ensure peak performance while providing maximum protection for your investment.

- ▶ **Superior Media** - New Holland filters are designed to trap more of the small contaminants that are most damaging to diesel engines. The media is uniformly resin-impregnated and heat-cured to provide efficient filtration, while resisting the effects of moisture. The media used in many of our newer filters combines microglass and cellulose fibers for doubled efficiency over standard filters.
- ▶ **Plastisol Adhesive** - New Holland filters use plastisol, a high quality adhesive, to uniformly bond the filter element to the end caps. Plastisol adhesive keeps the filter media from bunching and rupturing.
- ▶ **Rubber Seals** - Many filter manufacturers use cardboard seals at the ends of the filters; cardboard seals can deteriorate or leak. New Holland filters use a thin piece of rubber which provides a tight, even seal at the base of the filter. It prevents unfiltered oil from bypassing the filter media and re-entering your system.
- ▶ **Metal End Caps** - Solid metal end caps provide additional strength to the filter element. Metal is superior to the cardboard that many manufacturers use.
- ▶ **OEM Specified** - New Holland filters meet all specifications demanded by our design engineers. When you buy a New Holland filter, you're buying the confidence that New Holland engineers have placed in the filter to protect your engine, and save you repair costs.

■ Custom-designed filtration media

- ✓ Synthetic
- ✓ Cellulose
- ✓ Blends

■ Optimized filtration performance in capacity (life), efficiency (cleanliness), and restriction to flow

- ✓ Minimizes progressive wear
- ✓ Reduces bearing and ring wear
- ✓ Removes sludge
- ✓ Filters oil sooner during cold starts



FLUIDS

Selecting Fluids

MASTERGOLD™ ENGINE OIL

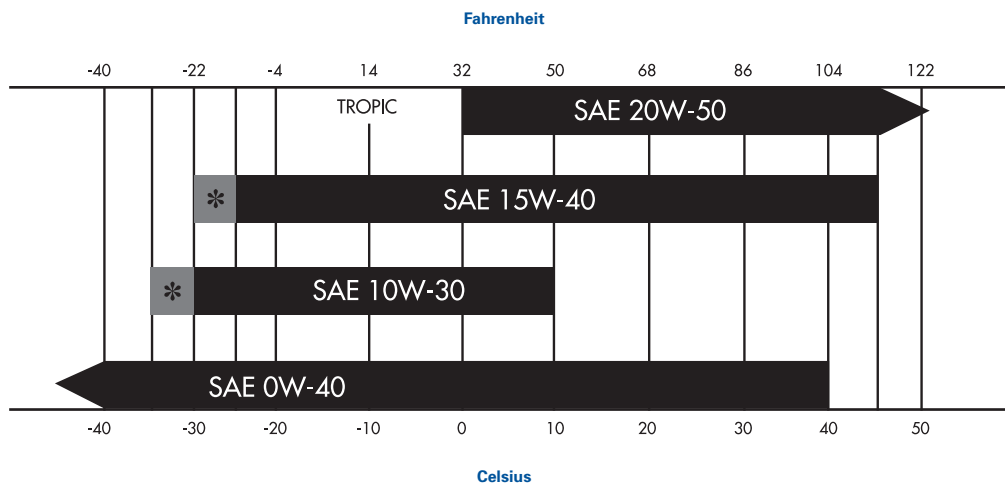
Your engine takes a tremendous pounding day in and day out. But you can protect and preserve it with the best engine oil available — MasterGold.

MasterGold is a premium, high-performance diesel engine oil designed to stand up to the toughest operating conditions. Less susceptible to thermal and chemical breakdown, MasterGold provides excellent oil-consumption control and maximum engine-wear protection.

Compare before you buy. Use the engine oil specifically designed for your equipment and field conditions. Prolong your hard working engine's life with MasterGold heavy-duty engine oil.



Oil Viscosity/Temperature Usage Recommendation



MULTI G 134™ FLUID

Multi G 134 is a multi-purpose fluid that helps ensure the best performance of your transmission, PTO clutches, wet brakes and hydraulic system. Unique friction modifiers suppress wet brake chatter, ensuring maximum stopping power and increased brake life. Superior anti-wear additives reduce pitting on critical gear surfaces. Oxidation inhibitors keep sludge from forming, and keep the oil flowing to critical parts. Multi G 134 is compatible with commonly used seal and gasket materials for longer seal life.

DIESEL FUEL

- Use a good grade of fuel which meets SAE/ASTM EN 590 or equivalent. The use of biodiesel blends is approved for New Holland engines up to B5 (5% blend ratio).





Note: *New Holland mid-range tractors require daily, weekly, and scheduled maintenance intervals to keep equipment in top performing condition. Although service requirements for each New Holland tractor model may be similar, please refer to the equipment's Operator's Manual for lubrication information, service intervals, and component locations.*



Service

Daily Service - Service should be performed every 10 hours or daily (whichever comes first) to keep your New Holland tractor running at its best.

- ▶ Check engine oil level
- ▶ Check fuel level
- ▶ Check radiator, oil cooler, and condenser (where fitted) for debris, clean as necessary
- ▶ Check windshield washer reservoir (where fitted)

Weekly Service - These services should be performed every 50 hours or weekly to keep your New Holland tractor running at its best.

- ▶ Clean cab air filters (where fitted)
- ▶ Check wheels and tires
- ▶ Check engine coolant reservoir level (or as indicated by warning light)
- ▶ Check brake reservoir level (or as indicated by warning light)
- ▶ Drain fuel filters/sediment separator (or as indicated by warning light)
- ▶ Check transmission/hydraulic/rear axle oil level
- ▶ Lubricate all grease fittings

SERVICE POINTS

Scheduled Service

As scheduled service varies between models, be sure to reference your equipment's Operator's Manual for service intervals, and component locations.

Engine Oil and Filters

When servicing engine oil filters:

- Clean the area around the filter
- Apply clean engine oil around the rubber seal of a new filter prior to installation
- Do not over tighten



Coolant/Antifreeze

New Holland coolant is specially designed to protect the cooling system from contamination and to prevent erosion and cavitation. The coolant contains a chemical inhibitor which increases and extends the protection offered by conventional antifreeze. The inhibitor is designed to prevent rust, reduce scale formation, minimize cylinder wall erosion, and reduce foaming of the coolant. When servicing the coolant and coolant filter:

- Remove the radiator pressure cap only when cool, never when hot
- Once drained, the radiator should be flushed with clean water
- Use only New Holland recommended antifreeze and inhibitors
- Inspect the pressure cap prior to installation. If the cap shows signs of damage or improper seal, obtain a new one from your New Holland dealer

Fuel Filters

Fuel filters protect the fuel system from dirt and water damage. Use clean fuel, keep the fuel tank full to prevent water condensation, and drain the water separator section at regular service intervals.



Radiator/Coolers

During regular service, clean the radiator, hydraulic oil coolers, fuel cooler and air conditioning condenser (where fitted) as conditions warrant.

Use pressurized air or water to remove dust and debris from cooling fins



Transmission & Hydraulic Filters

Current production of mid-range horsepower models utilize a combined sump for transmission and hydraulic systems. Some models utilize a fixed displacement hydraulic pump, while others utilize a variable displacement hydraulic pump. Both types of hydraulic systems utilize a charge filter and a main intake filter.

- Always clean the area around the filter prior to removal
- For horizontally mounted filters, 'crack' open the filter slowly allowing air into the filter and oil to drain back into the hydraulic system
- Some intake filters have replaceable cartridges. To access the cartridge, loosen and remove the retaining nuts on the filter head
- Always clean the face of the filter mounting and apply clean oil around the rubber seal of each new filter during installation



SERVICE POINTS

Engine Air Filters

To maintain engine power and performance, clean the primary filter when notified by tractor instrumentation. Do not clean the secondary (inner) filter element. The secondary (inner) filter element should only be replaced, never cleaned, at specified service intervals. The outer element can be cleaned by one of the following ways:

- Lightly tap the ends of the element against the palm of the hand.
- Use compressed air, not exceeding 30 psi (2 bar), to blow from the inside through the element to the outside to remove dust.

Important – always check an outer air element for damage by placing a light bulb inside and visually inspect for small tears or areas where the paper is too thin. If damage is suspected, discard the element.



Cab Clean Air & Recirculation Filters

Cab clean air and recirculation filters should be replaced every 12 months or 1200 hours, whichever comes first. Clean the filter chambers using a damp lint-free cloth.

Batteries

To prevent the formation of verdigris (corrosion) the terminals should be cleaned and lightly coated with petroleum jelly. On older models without maintenance-free batteries, clean terminals as necessary and check electrolyte levels before and after winter storage.



Loader Maintenance

Proper maintenance is required to keep your loader in prime condition. Be sure to consult your loader's Operator's Manual for all applicable warnings and safe operation.

- Lubrication – Your loader should be lubricated every 8 hours or daily. Consult your loader's Operator's Manual for proper grease and fitting locations.
- Hydraulic Oil Level - When using the tractor hydraulic system to operate the loader, check the hydraulic oil level in the tractor before the start of each day's operation. If necessary, add hydraulic oil as recommended in the tractor's Operator's Manual.
- Hoses - Replace hoses immediately if they are severely damaged by cuts or scrapes, extruded at the fittings, or leaking.
- Hardware - Check all pins and retaining hardware and tighten as required after every 10 hours of operation.
- Operation – Start the tractor and run the engine at idle speed. Move the joystick loader control slowly in each direction. Check for proper loader action. If any control function is not as decal describes, check hoses for proper installation to couplers. Switch hose connections at quick disconnect couplers and re-check loader function.
- Repair – Should you notice a problem with your loader, consult your loader's Operator's Manual or let your New Holland dealer complete the repairs. Improper servicing can cause the loader to collapse, causing serious personal injury or death.



PERFORMANCE ITEMS

PTO

The power take-off (PTO) transfers engine power directly to mounted, semi-mounted, or trailed equipment via a splined shaft at the rear of the tractor. When the PTO is not in use, install the cap to protect the shaft.

The PTO may be engaged or disengaged whether the tractor is moving or stationary. Rotation speed of the shaft is related directly to the speed of the engine and is independent of the transmission clutch or tractor ground speed.

Two interchangeable PTO output shafts of 1.375 in. (34.9 mm) diameter are available. The design of the standard 6-spline shaft and gears ensures that the correct ratio is selected for 540 rpm operation. Similarly, when the optional 21-spline shaft is installed, a ratio for operation at 1000 rpm will be selected. For TS-A models, a reversible PTO output shaft is available – 6-spline / 540 rpm on one side, and large 1000 shaft 21-spline / 1000 rpm. For TM models, 3 shafts are available: 1) 540, 2) 1000 21-spline, and 3) 1000 20-spline.

PTO Operational Warnings:

- Follow the equipment Operator's Manual instructions
- Ensure the PTO guard is installed
- Do not wear loose clothing which may entangle in PTO drive
- Do not approach, clean, or adjust PTO driven equipment while the tractor engine is still running – Shut off tractor engine and wait for the PTO and the equipment to stop before getting off the tractor or working on the PTO or equipment
- Firmly apply parking brake, place all gearshift levers in neutral and block all four wheels before operating stationary PTO equipment

PTO Operational Tips:

- To avoid shock loads to the PTO, never engage PTO at engine speed above 1000 rpm.
- For most PTO operations, the speed of the tractor is controlled by selection of the appropriate gear ratio while maintaining the correct PTO speed by means of the throttle
- Slow down the implement by reducing engine speed below 1000 rpm prior to disengaging the PTO.
- Most models are equipped with an automatic PTO brake to stop shaft rotation quickly when the PTO is disengaged. To avoid overstressing the implement driveline, slow down the implement by reducing engine speed before disengaging the PTO. This is particularly important with implements having a high inertia load such as a large mower without an overrunning clutch. To avoid damage to the implement driveline when operating high inertia implements without an overrunning clutch, hold down the PTO brake override switch to disengage the brake and allow the implement to come to rest naturally.



PERFORMANCE ITEMS

Position Control/Draft Control

Position Control provides accurate and sensitive control of implements such as sprayers, rakes, and mowers that operate above the ground. When in Position Control, the tractor and implement become, in effect, a rigid unit and unevenness in the surface of the land will cause the tractor/implement combination to rise and fall.

Draft Control is most suitable for mounted implements operating in the ground. Changes in the working depth or changes in soil resistance cause the draft loading on the implement to increase or decrease.

Mechanical Draft Control (MDC)

For mechanical draft control units, the change in draft loading is sensed through the lower links of the 3-point linkage and the hydraulic system responds by raising or lowering the implement to restore the original draft load setting.

The MDC system is controlled by the lift control lever and system selector operating in a quadrant to the right of the seat.

- The system selector is used to select Draft Control, Position Control or a combination of the two in order to make the system more or less sensitive to changes in the draft loading. The Draft Control and Position Control settings are clearly identified by a decal adjacent to the system selector.
- The lift control lever is used to raise or lower the 3-point linkage (and implement) to the required height or working depth.
- An adjustable stop is provided to enable the lift control lever to be returned to the selected setting during use.
- The raise/lower switch enables the operator to rapidly raise the implement to the position set by the height limiter cam and to lower the implement back down to the position set by the position control lever, without disturbing the settings.



Electronic Draft Control (EDC)

For units with EDC, the change in draft loading is sensed by the special pins connecting the lower links to the rear axle housing. These pins send an electrical signal to the micro-processor which, in turn, signals the hydraulic system to respond by raising or lowering the implement to restore the original draft load setting.

- The Position/Draft sensitivity knob is used to select Draft Control, Position Control, or a combination of the two in order to make the system more or less sensitive to changes in the draft loading.
- Units with EDC are fitted with knobs for drop rate control and height limit control. Check your Operator's Manual for details.
- Units fitted with EDC are equipped with fender mounted external hitch controls. The switches are of a three-position design, spring-loaded to return to the center off position. Be sure to consult your Operator's Manual for safe operation of the external hitch controls.



PERFORMANCE ITEMS

Three-Point Linkage

Each lower link has two holes for attachment of the lift rods. When the tractor leaves the factory, the lift rods are connected to the rear hole in each lower link to give maximum lift capacity. If required, attach the lift rods to the front hole (nearest the tractor) for maximum lift height. To increase or decrease lift rod length during adjustments, rotate the upper part of the lift rod by means of the handles on the turnbuckle.



Drawbars and Towing Attachments

Regulations in some areas require brakes on towed equipment when operating on the public highway. Before traveling on public roads, make sure you comply with legal requirements.

- Do not exceed 20 mph (32 kpm) while transporting implements.
- Do not exceed 10 mph (16 km/h) if towed equipment weighs more than the tractor.

Sliding Drawbar

The sliding drawbar pivots about a single pin at the front end so as to allow the rear of the drawbar to swing the full width of the hanger. By inserting the swing limiter pins in the appropriate holes, restricted movement of the drawbar is permitted. Alternatively, the drawbar can be pinned in any one of the three positions by insertion of the pins in the appropriate holes.

- Pin the drawbar to prevent swinging when pulling equipment which requires accurate positioning and when transporting equipment.
- Allow the drawbar to swing when pulling ground engaging equipment which does not require accurate positioning. This will make steering and turning easier.
- Optional straight drawbars and hamerstraps are available.

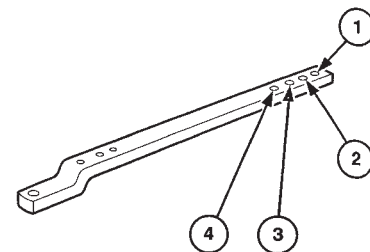


Drawbar Positioning

The front securing pin may be inserted in one of four holes in the drawbar to vary the PTO shaft to hitch point distance. Refer to the following table:

Hole	PTO Shaft to Drawbar Hitch Point	Maximum Static Downward Load
1	406 mm (16 in.)	1140 kg (2510 lb.)*
2	356 mm (14 in.)	1680 kg (3700 lb.)*
3	304 mm (12 in.)	1935 kg (4265 lb.)*
4	228 mm (9 in.)	2575 kg (5675 lb.)*

*TM and TS-A only.



Use of hole 1 is required for 1000 rpm PTO operations and hole 2 for 540 rpm PTO operations.

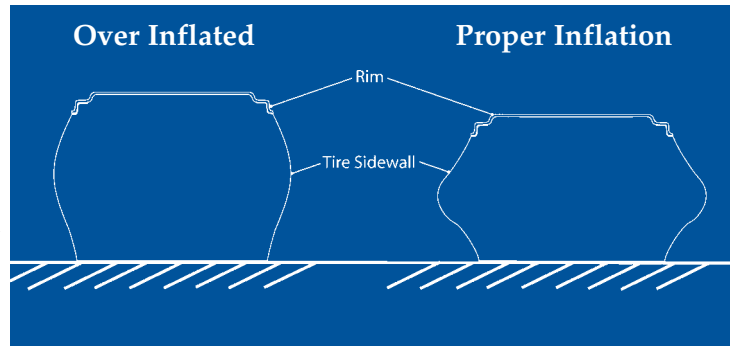
When towing equipment exerting high static downward forces, such as two-wheel trailers, etc., use the close-coupled positions – holes 3 or 4.

PERFORMANCE ITEMS

Ballasting and Tires

Maximum tractor performance is dependent upon proper ballasting and tire selection. Maximum efficiency will be achieved when tractor weight is correct for the application.

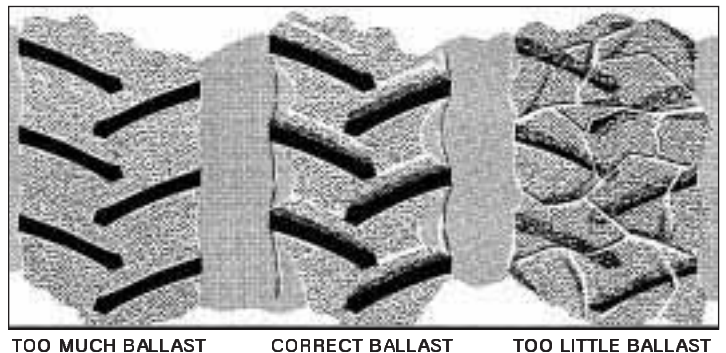
Radial tires produce superior performance over similar size cross ply tires. You will have to adjust the ballast, tire pressure, tractor weight, and the split between the front and rear axles for various loads and conditions to achieve the best ride and performance. Radial tires will work with lower air pressures and will show up to 20% sidewall deflection or bulge when correctly inflated.



Factors Affecting Tire Performance:

- Correct air pressure for the load
- Correct sidewall deflection
- Correct tire size for expected load
- Correct ballast added by cast iron weights or liquid calcium chloride

Ballast can be added by bolting on cast iron weights or by adding liquid calcium chloride in the tires. Bolt-on cast iron weights are recommended because they can easily be removed when not needed. Refer to your Operator's Manual or visit your New Holland dealer to select the best wheel weight, suitcase weight, or liquid ballast to optimize your performance in the field.



Too little ballast will result in:

- Rough ride
- Excessive wheel slip
- Tire wear
- Excessive fuel consumption
- Lower productivity

Too much ballast will result in:

- Higher maintenance costs
- Increased driveline wear
- Power loss
- Increased soil compaction
- Excessive fuel consumption
- Lower productivity

PERFORMANCE ITEMS

Monitor Brackets

The Universal monitor bracket kit (part number 86624618) mounts on the right hand rear console where the two nuts stick up from the console. The part number for the monitor bracket only is 86622259.

An additional monitor mounting bar kit (part number 710686024) can be added on the inner face of the right-hand “A” pillar.

Both kits listed above include installation instructions and hardware for mounting the brackets.

Detent Removal Kits

For TM, TS-A and TL-A tractors with mechanical remote valves, the detents are set to kickout at 137.9 Bar (2200 psi) and are not adjustable. If the detent is kicking out too soon replace the detent assembly, part number 5191762.

The detents are threaded into the end of the remote valve control spool. To remove the detent:

1. Remove the cable
2. Remove the detent cover
3. Hold the end of the spool with a 8mm wrench
4. Turn the detent with a 5mm hex key
5. Remove washer and spring
6. Reinstall new components in reverse order. Torque the new detent assembly to 19 Nm (14 lbs ft)

If the detent kickout at 137.9 Bar (2200 psi) psi is not practical for the application use one of the following detent removal kits:

1. 718362010 Detent Removal Kit (bucket for loader): Converts from a 4 position detent kickout to a 3 position valve without detents in raise and lower. There is no float position with this valve. The valve will return to neutral when the lever is released.

2. 719362010 Raise/Lower Detent Removal Kit (boom for loader): Converts from a 4 position detent kickout to a 4 position with detent in float only. The valve will return to neutral when the lever is released in raise or lower. Detent will hold in float and not kickout.

3. 710362010 Manual Detent Kit (constant pressure and orbital motor): Converts from a 4 position detent kickout to a 4 position with detents in all positions. This valve will not return to neutral under pressure. Use this kit when operating a hydraulic motor or constant pressure circuit so that the detents will not kickout when under load.

Wheel Track Adjustment (2WD)

Certain applications may require you to adjust the front wheel track. This is accomplished by loosening the retention screws on each side and releasing the sliding ends, then adjusting the steering struts accordingly.

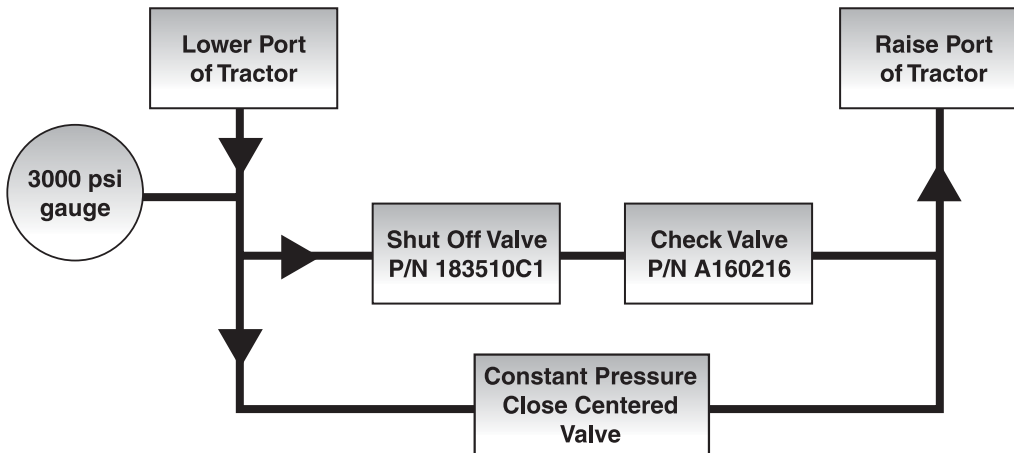
- A larger track (maximum track) can be obtained by reversing the wheels on their hubs
- Only use the maximum track when absolutely necessary
- Refer to your equipment’s Operator’s Manual for detailed instructions and wheel track charts.



PERFORMANCE ITEMS

Remote Valve Bank Hooked to a Closed Center Low Flow Implement Valve Bank

The tractor mechanical remote valves 1 through 4 can be hooked directly to closed center implement valves without affecting flow out of the other tractor remotes. The Pressure-Flow Compensated (PFC) pump will go to high pressure whenever a closed center implement valve is not being operated. NOTE: TM and TS-A with Electro Hydraulic Remote (EHR) valves are set with #1 as priority. Please see your dealer to change.



Reduced hydraulic pump pressure (constant down pressure circuit)

The close center implement valve can be plumbed with a loop to allow the operator to set the working pressure which is less than high pressure standby.

1. Route the components as shown below. This set-up will allow the tractor hydraulic system to operate at a pressure below high pressure standby during constant down pressure.
2. Connect the supply and return line to a remote valve.
3. Set the tractor's flow control to an acceptable flow rate to satisfy the implement raise circuit and adjust the shut off valve until the desired working pressure is obtained for the constant down pressure circuit.
4. Set the remote detent to hold lever in run position (no bungee cords allowed).

Remote Valve Hooked to a Closed Center High Flow Implement Valve Bank

The tractor mechanical remote valves 1 through 4 can be hooked directly to closed center implement valves without affecting flow out of the other tractor remotes. The PFC pump will go to high pressure whenever a closed center implement remote valve is not being operated.

Note: If a closed center implement valve is hooked to the priority remote valve (if equipped with EHR's) and the tractor's PFC pump is at high pressure stand-by, there will be no flow available to remote valves 2 through 4 and the hitch.

Do not plumb a hydraulic loop into a high flow closed center valve.

MAINTENANCE PARTS

Models TN60A/TN60DA/TN60SA/TN70A/ TN70DA/TN70SA/TN75A/TN75DA/ TN75FA/TN75SA

Qty.	Filter Number	Description
1	1931018	Engine Oil
1	1930010	Fuel
1	47131194	Hydraulic
1	47128161(power shuttle)	
1	47135972	Air (outer)
1	47135975	Air (inner)
	<u>Standard</u>	Cab
1	47135038	
	<u>Deluxe (VAR .577)</u>	
1	47135041	
1	47135053	
1	47135047	
1	47131888	
		Coolant

Model TN85FA

Qty.	Filter Number	Description
1	1931018	Engine Oil
1	1930010	Fuel
1	47131194	Hydraulic
1	47128161(power shuttle)	
1	47135972	Air (outer)
1	47135975	Air (inner)
1	47135041	Cab
1	47135053	
1	47135047	
1	47131888	
		Coolant

Model TN95FA

Qty.	Filter Number	Description
1	1931018	Engine Oil
1	1930010	Fuel
1	47131194	Hydraulic
1	47128161(power shuttle)	
1	1909117	Air (outer)
1	1931027	Air (inner)
1	47135041	Cab
1	47135053	
1	47135047	
1	47131888	
		Coolant

Model TL80A/TL90A/TL100A

Qty.	Filter Number	Description
1	87803205	Engine Oil
1	87803187	Fuel
1	47131194	Hydraulic
1	47128161(power shuttle)	
1	47132343	Air (outer)
1	47132346	Air (inner)
1	5196842	Cab
		Coolant

Model TS100A

Qty.	Filter Number	Description
1	87803205	Engine Oil
1	87803192	Fuel
1	86018758	Hydraulic
1	47127431 (cartridge) (CCLS/PFC)	
1	82005016 (open center)	
	<u>Standard</u>	
1	82034604	Air (outer)
1	82034607	Air (inner)
	<u>Pre-cleaner (var.197-198)</u>	
1	82034613	Air (outer)
1	82034607	Air (inner)
1	82034664	Cab
1	82034690	
		Coolant

Model TS115A

Qty.	Filter Number	Description
1	87803205	Engine Oil
1	87803192	Fuel
1	86018758	Hydraulic
1	47127431 (cartridge) (CCLS/PFC)	
1	82005016 (open center)	
	<u>Standard</u>	
1	82034619	Air (outer)
1	82034622	Air (inner)
	<u>Pre-cleaner (var.198)</u>	
1	82034628	Air (outer)
1	82034622	Air (inner)
1	82034664	Cab
1	82034690	

Models TS125A/TS135A

Qty.	Filter Number	Description
1	87803205	Engine Oil
1	87803180	Fuel
1	87803197	
1	86018758	Hydraulic
1	47127431 (cartridge) (CCLS/PFC)	
1	82005016 (open center)	
	<u>Standard</u>	
1	82034619	Air (outer)
1	82034622	Air (inner)
	<u>Pre-cleaner (var.198)</u>	
1	82034628	Air (outer)
1	82034622	Air (inner)
1	82034664	Cab
1	82034690	

Models TV140

Qty.	Filter Number	Description
1	86605897	Engine Oil
1	primary 87802332	Fuel
1	secondary 87840590	
	<u>In-Line</u>	
1	86597473	
2	86016760	Hydraulic
	<u>Units w/swather head</u>	
3	86016760	
1	82008606	Air (outer)
1	82034441	Air (inner)
2	82014790	Cab
2	F0NN18N405AA	Cab
1	9705907 (recirculating)	Cab
1	E8NN8A424DA	Coolant

Models TM120/TM130/TM140/TM155

Qty.	Filter Number	Description
1	86605897	Engine Oil
	<u>Prior to engine S/N HD091599</u>	Fuel
1	87802728	
	<u>Engine S/N HD091599 to FA097480</u>	
1	87840590 & 87802332	
	<u>After Engine S/N FA097480 (PIN ACM218236)</u>	
1	87803441 & 87803444	
1	82005016	Hydraulic
	AND	
1	9821387	
1	82034445	Air (outer)
1	82034441	Air (inner)
1	82033107	Cab
	AND	
1	82034660	

Models TV145

Qty.	Filter Number	Description
1	86605897	Engine Oil
	<u>Before S/N RVS022159</u>	Fuel
1	primary 87802332	
1	secondary 87840590	
	<u>After S/N RVS022158</u>	
1	87802728	
	<u>In-Line (all)</u>	
1	86597473	
1	86016760	Hydraulic
1	9842392	
1	87414003 (auxiliary)	
1	82034445	Air (outer)
1	82034441	Air (inner)
2	82014790	Cab
2	82033107	Cab
1	87424875 (recirculating RH)	Cab
1	87424874 (recirculating LH)	Cab
1	E8NN8A424DA	Coolant

Models TM175/TM190

Qty.	Filter Number	Description
1	86605897	Engine Oil
	<u>Prior to engine S/N HD091599</u>	Fuel
1	primary 87802728	
	<u>Engine S/N HD091599 to FA097480</u>	
1	87840590 & 87802332	
	<u>After Engine S/N FA097480 (PIN ACM218236)</u>	
1	87803441 & 87803444	
1	86018758	Hydraulic
	AND	
1	47127431	
1	82027573	Air (outer)
1	82027574	Air (inner)
1	82033107	Cab
	AND	
1	82034660	

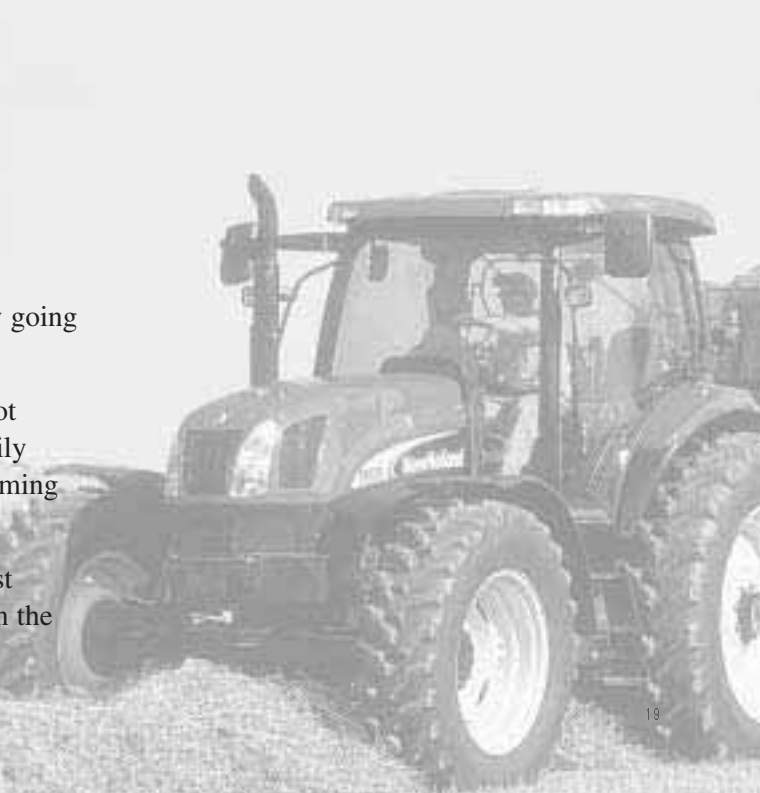
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Safety begins with a thorough understanding of the equipment. Always make sure you and your operators read the Operator's Manual before using the equipment. Pay close attention to all safety and operating decals and never operate machinery without all shields, protective devices and structures in place.

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