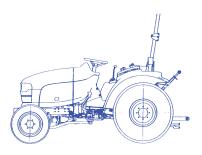
# NEW HOLLAND TC25D TC29D TC33D

(Replaces All Previous Issues)



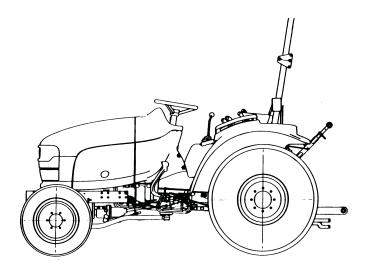


#### TO THE OWNER:

This manual contains information concerning the operation, adjustment, and maintenance of the Models TC25D, TC29D, and TC33D. You have purchased a dependable machine, but only by proper care and operation can you expect to receive the performance and long service built into this tractor. Please have all operators read this manual carefully and keep the manual available for ready reference.

Your New Holland dealer will instruct you in the general operation of your tractor. (Refer to the "Delivery Report" at the back of this manual.) Your dealer's staff of factory-trained service technicians will be glad to answer any questions that may arise regarding the operation of your tractor.

Your New Holland dealer carries a complete line of genuine New Holland parts. These parts are manufactured and carefully inspected to insure high quality and accurate fitting of any necessary replacement parts.





CAUTION: THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER PERSONAL SAFETY IS INVOLVED. TAKE TIME TO READ AND FOLLOW THE INSTRUCTIONS. BE CAREFUL!

CAUTION: PICTURES IN THIS MANUAL MAY SHOW PROTECTIVE SHIELDING OPEN OR REMOVED TO BETTER ILLUSTRATE A PARTICULAR FEATURE OR ADJUSTMENT.

BE CERTAIN, HOWEVER, TO CLOSE OR REPLACE ALL SHIELDING BEFORE OPERATING THE MACHINE.

# **IMPROVEMENTS**

New Holland North America, Inc. is continually striving to improve its products. We reserve the right to make improvements or changes when it becomes practical and possible to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

#### FEDERAL EMISSIONS WARRANTY

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. The address and phone number of each Branch Office is in your vehicle owner's manual. If additional assistance or information is needed, contact:

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 J843 and N843 emission control parts.

Fuel Injection Pump Fuel Injectors Intake Manifold Exhaust Manifold

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# PRECAUTIONARY STATEMENTS

# **PERSONAL SAFETY**

Throughout this manual and on machine decals, you will find precautionary statements ("CAUTION", "WARNING", and "DANGER") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.



CAUTION: THE WORD "CAUTION" IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.



WARNING: THE WORD "WARNING" DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.



DANGER: THE WORD "DANGER" DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.

FAILURE TO FOLLOW THE "CAUTION", "WARNING", AND "DANGER" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

# **MACHINE SAFETY**

Additional precautionary statements ("ATTENTION" and "IMPORTANT") are followed by specific instructions. These statements are intended for machine safety.

ATTENTION: The word "ATTENTION" is used to warn the operator of potential machine damage if a certain procedure is not followed.

IMPORTANT: The word "IMPORTANT" is used to inform the reader of something he needs to know to prevent minor machine damage if a certain procedure is not followed.



## **SAFETY PRECAUTIONS**

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

#### THE TRACTOR

- 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.
- 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.
- If a front end loader is to be installed, always use a FOPS (Falling Object Protective Structure) canopy to avoid injury from falling objects.
- 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.
- 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

- 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.
- Keep any type of open flame away from the tractor and do not smoke while refueling. Wait for the engine to cool before refueling.

- 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.
- 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.
- 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.
- 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.
- 10. Some components of your tractor, such as gaskets and friction surfaces (brake linings, clutch linings, etc.) may contain asbestos. Breathing asbestos dust is dangerous to your health. You are advised to have any maintenance or repair on such components carried out by an authorized New Holland

Dealer. However, if service operations are to be undertaken on parts that contain asbestos, the essential precautions listed below must be observed:

- Work out of doors or in a well ventilated area.
- Dust found on the tractor or produced during work on the tractor should be removed by extraction, not by blowing.
- Dust waste should be dampened, placed in a sealed container, and marked to ensure safe disposal.
- If any cutting, drilling, etc. is attempted on materials containing asbestos, the item should be dampened and only hand tools or low speed power tools used.

#### **OPERATING THE TRACTOR**

- Before starting the tractor, apply the parking brake, place the PTO lever in the "OFF" position, the lift control lever in the down position, the remote control valve levers in the neutral position, and the transmission in neutral.
- 2. Always sit in the tractor seat when starting the engine or operating controls. Do not start the engine or operate controls while standing beside the tractor.
- Do not bypass the neutral start switches. Consult your New Holland Dealer if your neutral start controls malfunction. Use jumper cables only in the recommended manner. Improper use can result in tractor runaway.
- 4. Avoid accidental contact with the gear shift lever while the engine is running, as this can cause unexpected tractor movement.
- Before getting off the tractor, disengage the PTO, turn the engine off, and apply the parking brake. Never get off the tractor while it is in motion.
- 6. Do not park the tractor on a steep incline.
- Do not operate the tractor engine in an enclosed building without adequate ventilation. Exhaust fumes can cause death or illness.
- 8. If the power steering or engine ceases operating, stop the tractor immediately.

- Pull only from the drawbar or the lower link drawbar in the down position. Use only a drawbar pin that locks in place. Pulling from the tractor rear axle or any point above the axle may cause the tractor to upset.
- 10. If the front end of the tractor tends to rise when heavy implements are attached to the three-point hitch, install front end or front wheel weights. Do not operate the tractor with a light front end.
- 11. Always set the hydraulic selector lever in position control when attaching or transporting equipment. Ensure hydraulic couplers are properly mounted and will disconnect safely in case of accidental detachment of implement.
- 12. Do not leave equipment in the raised position.
- 13. Use the flasher/turn signal lights and SMV signs when traveling on public roads both day and night (unless prohibited by law).
- 14. When operating at night, adjust lights to prevent blinding oncoming drivers.

#### DRIVING THE TRACTOR

- 1. Watch where you are going, especially at row ends, on roads, around trees and low hanging obstacles.
- To avoid upsets, drive the tractor with care and at a safe speed. Use extra caution when operating over rough ground, when crossing ditches or slopes, and when turning corners.
- To provide two-wheel braking, lock tractor brake pedals together when transporting on roads.
- 4. Do not coast or free wheel down hills. Use the same gear when going downhill as is used when going uphill.
- 5. Any towed vehicle with a total weight exceeding that of the towing tractor should be equipped with brakes for safe operation.
- If the tractor becomes stuck or the tires become frozen to the ground, back up the tractor to prevent upset.
- 7. Always check overhead clearance, especially when transporting the tractor.

8. When operating at night, adjust lights to prevent blinding oncoming drivers.

#### **OPERATING THE PTO**

- When operating PTO driven equipment, shut off the engine and wait until the PTO stops before getting off the tractor and disconnecting the equipment.
- Do not wear loose clothing when operating the power take-off or when near rotating equipment.
- When operating stationary PTO driven equipment, always place both gear shift levers in neutral, apply the tractor parking brake, and block the rear wheels front and back.
- To avoid injury, do not clean, adjust, unclog, or service PTO driven equipment when the tractor engine is running.
- 5. Ensure the PTO master shield is installed at all times. Always replace the PTO shield cap when the PTO is not in use.

#### **DIESEL FUEL**

- UNDER NO CIRCUMSTANCES should gasoline, alcohol, or blended fuels be added to diesel fuel. These combinations can create an increased fire or explosive hazard. Such blends are more explosive than pure gasoline in a closed container such as a fuel tank. DO NOT USE THESE BLENDS.
- 2. Never remove the fuel cap or refuel with the engine running or hot.
- 3. Do not smoke while refueling or when standing near fuel.
- 4. Maintain control of the fuel filler pipe nozzle when filling the tank.
- 5. Do not fill the fuel tank to capacity. Allow room for expansion.

- 6. Wipe up spilled fuel immediately.
- 7. Always tighten the fuel tank cap securely.
- If the original fuel tank cap is lost, replace it with a New Holland approved cap. A non-approved, proprietary cap may not be safe.
- 9. Keep equipment clean and properly maintained.
- 10. Do not drive equipment near open fires.
- 11. Never use fuel for cleaning purposes.
- 12. Arrange fuel purchases so that winter grade fuels are not held over and used in the spring.

#### **SAFETY FRAME (ROPS)**

Your New Holland tractor is equipped with a safety frame. It must be maintained in a serviceable condition. Be careful when driving through doorways or working in confined spaces with low headroom.

#### UNDER NO CIRCUMSTANCES should you:

- modify, drill, or alter the safety frame in any way. Doing so may render you liable to legal prosecution.
- attempt to straighten or weld any part of the main frame or retaining brackets which have suffered damage. Doing so may weaken the structure and endanger your safety.
- secure any parts on the main frame or attach your safety frame with anything other than the special high tensile bolts and nuts specified.
- attach chains or ropes to the main frame for pulling purposes.
- take unnecessary risks even though your safety frame affords you the maximum protection possible.



WHEN YOU SEE THIS SYMBOL

IT MEANS:

ATTENTION!

**BECOME ALERT!** 

YOUR SAFETY IS INVOLVED!

#### **DECALS**

If safety or instruction decals become damaged or illegible, new decals should be obtained from your New Holland Dealer and placed at their original positions.

#### SAFETY DECALS



WARNING: Pull Only From Drawbar

86532904 PART NO: PTO Shield LOCATION:



WARNING: To Jump Start PART NO: 86532905

LOCATION: Battery Hold Down



- Know the operating and safety instructions in the operator's instructions in the operator manual and on the tractor.
- Clear the area of bystanders.
- Locate and know the operation or controls.
- Fasten your seat belt.
- Start engine only from operator's seat with transmission in neutral, PTO disengaged and hydraulic controls in lowered position.
- Avoid accidental contact with gear shift lever while engine is running. Unexpected tractor movement can
- Slow down on turns, rough ground and slopes to avoid upset.
- Do not permit anyone but the operator to ride on the tractor. There is no safe place for riders.
- Lock brakes together, use warning lights and SMV emblem while driving on roads.
- Lower equipment, place gear shift levers in neutral, stop engine and apply parking brake before leaving

FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR OR OTHER PERSONS.

uals are available from your local dealer



Keep hands and clothing away from rotating fan and belts.

Contact with moving parts may cause loss of fingers or a hand.

WARNING: Rotating Fan

and Belts

PART NO: 86532907 **Both Sides** LOCATION:

of Radiator

DANGER Use full time (n) FWD on steep slopes or when four-wheel braking is required Failure to follow any of the instructions can cause serious bodily injury Failure to use full time FWD under these conditions may result in loss of control of tractor.

Before Starting WARNING: and Operating

PART NO: 86532909

LOCATION: Inside Left-Hand Fender

WARNING: Front-Wheel Drive Usage

(Super Steer only)

PART NO: 86532902

LOCATION: Inside Left-Hand Fender

> To prevent serious injury, LOCK Park Brake and put Range Lever in "N" when dismounting. Hydraulic transmission may not prevent tractor movement.

WARNING: Lock Park Brake

PART NO: 86576391

LOCATION: Right Side Rear Console

Below Light Switch

# WARNING

- Start engine only from operator's seat, if safety switch is bypassed engine can start with transmission in gear.
- Do not connect or short across terminals on starter solenoid.
- Attach booster cables as shown on battery decal.

Starting in gear causing runaway can result in serious injury.

T4512717

WARNING: Start Engine Only From

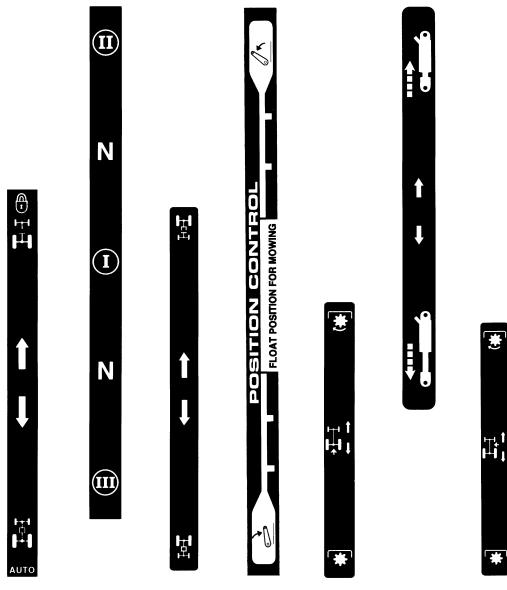
Operator's Seat

PART NO: 86532906

LOCATION: Firewall Above Starter Motor

#### **INSTRUCTION DECALS**

Range Selector Lever (Hydrostatic) PART NO: 86532896 LOCATION: Left-Hand POD Top Position Control Lever PART NO: 86571897 LOCATION: Right-Hand POD Top Operating Remote Control Valve-Single Spool PART NO: 86532910 LOCATION: Right-Hand POD Top



Front-Wheel
Drive Control
Lever
PART NO:
86532913
LOCATION:
Left-Hand POD Top
(Super Steer™ Only)

Front-Wheel
Drive Control
Lever
PART NO:
86532900
LOCATION:
Left-Hand POD Top

PTO Control Lever (Rear) PART NO: 86532898 LOCATION: Left-Hand POD Top PTO Control Lever (Mid) PART NO: 86532899 LOCATION: Left-Hand POD Top



Differential Lock PART NO: 86532901 LOCATION: Above Pedal



Starter Switch PART NO: 86575091 LOCATION: Starter Switch, Right Side of Instrument Panel



Flow Control Valve PART NO: 86532897 LOCATION: Top of Flow Control Knob



Engine Oil PART NO: 86532916 LOCATION: Engine Oil Filler Cap



Hyd. Manifold Operation (See Operator's Manual) PART NO: 86532914 LOCATION: Right-Hand Side of Hyd. Manifold/Air Filter Cap



Coupler-Extending PART NO:86532920



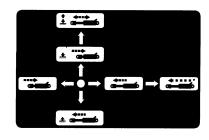
Coupler-Retracting PART NO:86532919



Coupler-Extending PART NO:86532921



Coupler-Retracting PART NO:86532922



Operating Remote Control Valve-Double Spool PART NO: 86532911 LOCATION: Cover of 2-Spool Remote Valve



Power Steering Fluid PART NO: 86532903 LOCATION: Top of P.S. Reservoir

> Lubrication and Maintenance Intervals PART NO: 86532908 LOCATION: Inside of Hood

			_		_					
WATCH YOUR PROOF METER HOURS Lubrication and maintenance service intervals										
LUBRICATION AND MAINTENANCE ITEM	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVAL				
Redistor Coolant Engine Oil level Air Cleaner	:					Every 10 Hours or Daily				
Transnission Oil Level Power Steering Oil Level Front Diff Oil Level Front Aire Oil Level Tries Clutch Pedal Battery Lubrication Fittings Steering Linkage 2-Wheel Drive King Pins 3-point Linkage Plvot Shart Brake Peda Front Pedal H.S.T. Foot Pedal Shart Power Steering						Every 50 Hours				
Engine Oil Fuel Filter Air Cleaner Engine Oil Filter		• •				Every 100 Hours				
Fuel Filter Fan Belt Brakee	•			•	:	Every 200 Hours				
H.S.T. Filter Front Axle Oil Front Diff Oil Hydraulic Filter Tranemission Oil				:		Every 300 Hours				
Fuel Injectors Valve Clearance Front Wheel Bearings Power Steering Oil	• •				•	Every 600 Hours				
Radistor Coolant Air Cleaner Element				:		Seasonal				
Refer to your Operator's Manual for additional information.										

# **SECTION 1**

# GENERAL INFORMATION

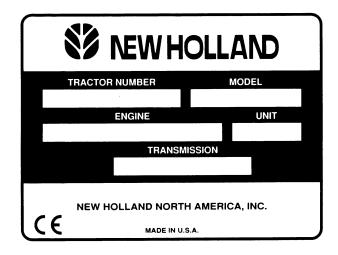
#### PLEASE READ CAREFULLY:

For a complete list of the pre-delivery service checks performed by your dealer, refer to the PRE-DELIVERY SERVICE checklist found at the back of this manual. Keep one copy as your record of the service performed. The other copy should be removed from the manual and kept by your dealer. MAKE SURE THAT BOTH COPIES ARE COMPLETED AND THAT YOU AND THE DEALER SIGN BOTH COPIES.

A PRODUCT IDENTIFICATION PLATE is located on the *left-hand side of the transmission housing*. The numbers on the plate are important in the event your tractor should require future service. For your convenience, have your dealer record these numbers in the appropriate spaces below.

New Holland North America, Inc. is continually striving to improve its products. We reserve the right to change prices, specification, or equipment at any time without notice.

All data given in this book is subject to production variations. Dimensions and weights are approximate only, and the illustrations do not necessarily depict tractors in standard condition. For exact information about any particular tractor, please consult your New Holland dealer.



### MINIMUM HARDWARE TIGHTENING TORQUES

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

#### INCH HARDWARE AND LOCKNUTS

	SAE G	RADE 2	SAE GRADE 5		SAE G	RADE 8	LOC	KNUTS	
NOMINAL SIZE	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	NOMINAL SIZE
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6.9)	86* (9.8)	1/4
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)	5/16
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)	3/8
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)	7/16
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)	1/2
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)	9/16
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)	5/8
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)	3/4
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)	7/8
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)	1

NOTE: Torque values shown with \* are inch pounds.

# IDENTIFICATION CAP SCREWS AND CARRIAGE BOLTS















SAE GRADE 5 HEX NUTS



SAE GRADE 8 HEX NUTS

#### **LOCKNUTS**

GRADE IDENTIFICATION

GRADE IDENTIFICATION
GRADE A NO NOTCHES
GRADE B ONE CIRCUMFERENTIAL NOTCH
GRADE C TWO CIRCUMFERENTIAL NOTCHES

GRADE IDENTIFICATION
GRADE A NO MARKS
GRADE B THREE MARKS
GRADE C SIX MARKS

MARKS NEED NOT BE LOCATED AT CORNERS



GRADE A NO MARK GRADE B LETTER B GRADE C LETTER C

**GRADE IDENTIFICATION** 

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