
HW305, HW305S, HW325 REPAIR MANUAL COMPLETE CONTENTS

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The following pages are the collation of the contents pages from each section and chapter of the HW305, HW305S and HW325 Repair manual. Complete Repair part # 87576230.

The sections used through out all New Holland product Repair manuals may not be used for each product. Each Repair manual will be made up of one or several books. Each book will be labeled as to which sections are in the overall Repair manual and which sections are in each book.

The sections listed above are the sections utilized for the HW305, HW305S and HW325 Self-Propelled Windrowers.

SECTION 00 - GENERAL INFORMATION

Chapter 1 - General Information

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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.

1. To stop, return the MFH lever to neutral, engage the parking brake, center the steering wheel to the locked position, and stop the engine before leaving the seat.
2. When descending steep grades on the road and when in the field, always place the switch into the field range position.
3. When going down a steep grade, pull the MFH lever back toward neutral to slow ground speed.
4. With the parking brake engaged, the steering wheel centered, and the hydrostatic MFH lever in the neutral slot, the neutral lock will engage pulling the lever to the right. The parking brake must be engaged before the engine will start.
5. The neutral lock should always be engaged when the windrower is stopped.
6. The steering wheel must be centered to keep the windrower from turning even with the MFH lever in neutral. When moving forward, the windrower turns the direction the steering wheel is turned. When moving in reverse, the windrower turns opposite the direction the wheel is turned. In reverse, hold the steering wheel at the back of the rim and move your hand in the direction you want to go.
7. When driving the windrower on the road or highway, use the proper accessory lights for adequate warning to the operators of other vehicles. Check your local government regulations concerning the use of warning devices. Work lights should not be used as they could be mistaken for an oncoming vehicle.
8. Always use the seat belt when operating the windrower.
9. Never idle the engine in a closed area. Exhaust gases may build up. These gases are harmful and potentially lethal. Carbon monoxide is colorless and odorless, but can be present with all other exhaust fumes.
10. Be sure everyone is clear of the windrower before starting the engine.
11. When using battery jumper cables, the last connection must be made away from the windrower battery to avoid sparks which may ignite battery gases and result in an explosion and fire.
12. Batteries normally produce explosive gases which can cause personal injury. Therefore do not allow flames, sparks, or lighted tobacco to come near the batteries. Always shield your eyes when charging or working near a battery. Always provide ventilation.
13. When lifting a plastic cased battery, excessive pressure on the end wall could cause acid to spew through the vent caps, resulting in personal injury. Lift a plastic cased battery with a battery carrier or with your hands on opposite corners of the battery.
14. Batteries contain sulfuric acid. In case of contact with skin, flush the affected area with water for five minutes. Seek medical attention immediately. Avoid contact with the skin, eyes or clothing. Wear eye protection when working near batteries.
15. Keep batteries out of reach of children. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Shield your eyes when working near the batteries to protect against possible splashing of the acid solution. In case of acid contact with skin or eyes, flush immediately with water for a minimum of fifteen minutes and get prompt medical attention. If acid is swallowed, call a physician immediately.
16. Header locks are built into the header lift system to lock the header in the raised position. Lock the header on both sides before working under a raised header.

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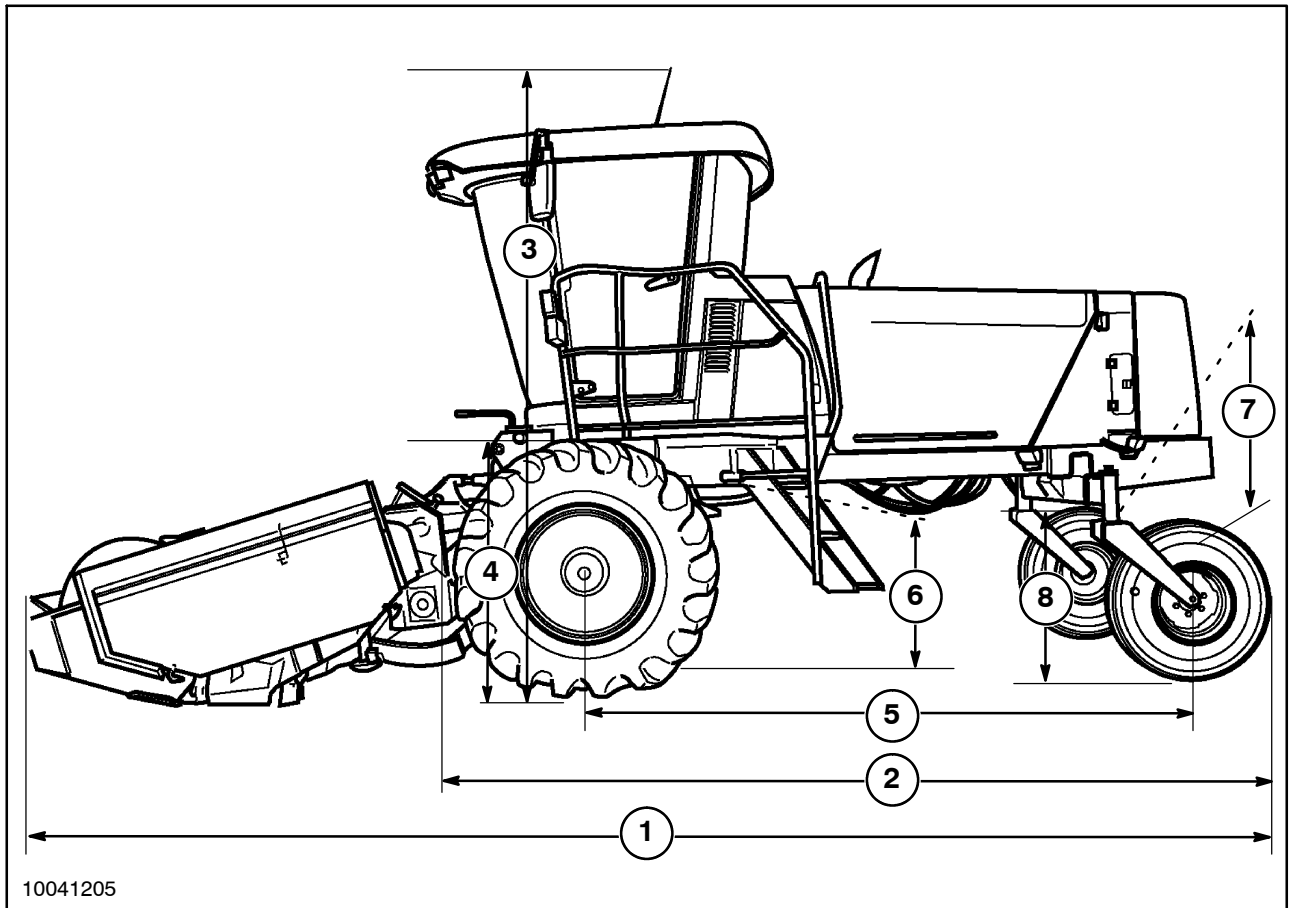
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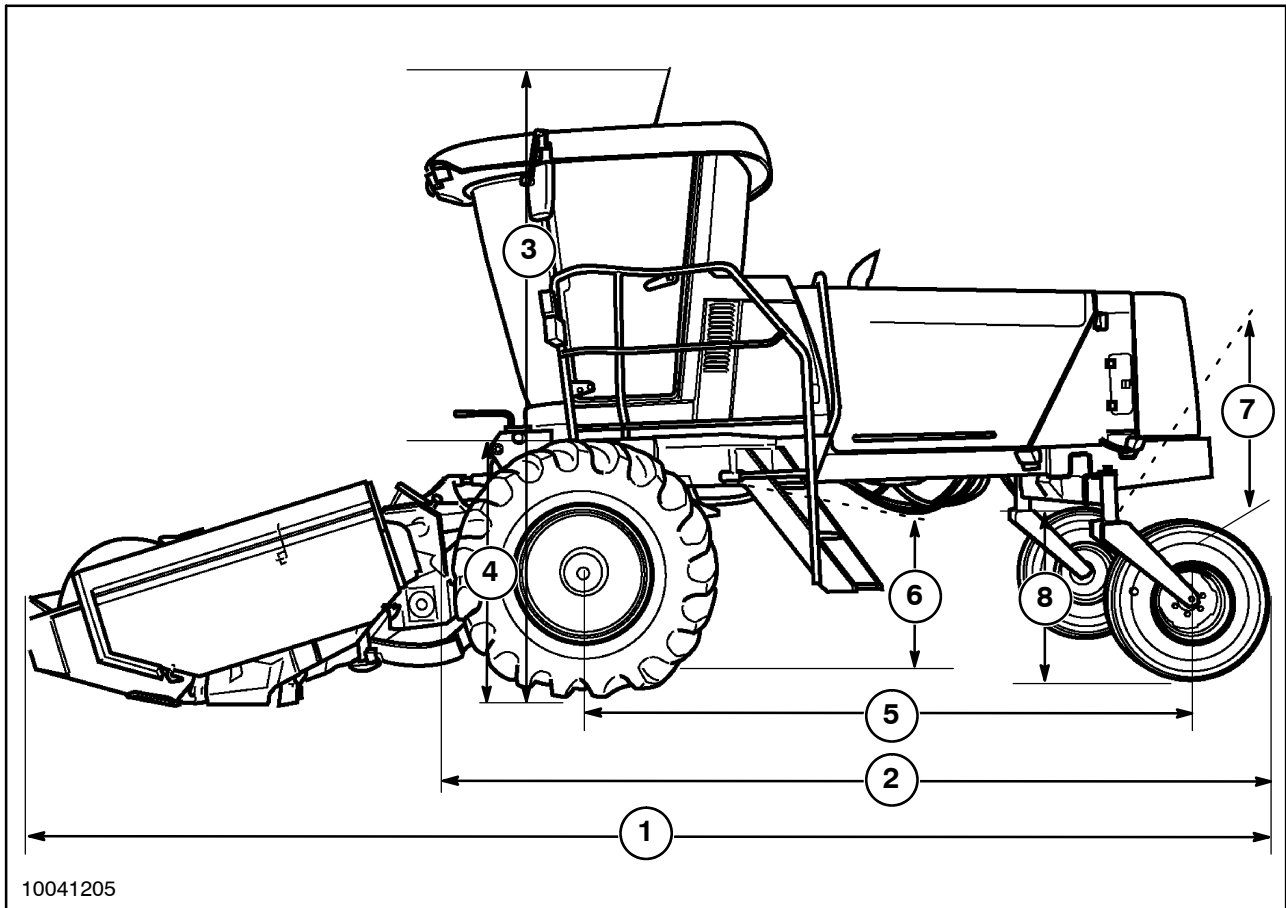
17. When the wheel caps are turned to the towing position (dimples in), there are no brakes, there will be absolutely no control of the unit from the cab. Tow only a short distance at a slow speed.
18. Be careful when driving the windrower without the header. It responds much more quickly than with the header installed.
19. When hauling the windrower on a road or highway, check your local government regulations concerning the use of proper warning devices and the necessity of a hauling permit.
20. Never make any adjustments or attempt to unplug the header with the engine running. Disengage the header drive, lower or lock the header up, shut off the engine, and engage the parking brake before attempting any adjustments or trying to unplug the header.
21. After the first one, five, and twenty hours use, check for loose wheel bolts. Tighten the bolts as outlined in "Before Operating", at the beginning of this section.
22. If stones and other foreign objects are carried into the conditioner rolls, the objects can be thrown toward the operator, possibly resulting in physical injury.
23. Raise the header and engage the lift locks before adjusting the skid shoes.
24. Some illustrations in this manual show shields removed to show the parts being serviced. Replace all shields before running the machine.
25. Never operate the windrower engine while it is being refueled. Do not smoke in the refueling area.
26. Be very careful to avoid contact with hot engine oil. If engine is extremely hot, allow oil to cool to a moderately warm temperature before proceeding.
27. Do not start the machine with any of these cleaners in the system or damage will result.
28. Whenever jacking under the main drive wheels, be sure the machine is on level ground and securely blocked to prevent the tail wheels from swiveling.
29. It is dangerous to remove the radiator cap while the system is hot because the system is under pressure. Let the system cool or turn the cap slowly to the first stop and allow the pressure to escape before removing the cap completely.
30. Do not tap any filter element against any hard surface as it will be damaged or distorted.
31. Diesel fuel escaping under pressure can penetrate the skin causing serious injury.
32. The air conditioning system contains environmentally safe HFC 134a refrigerant. This system is not compatible with R12 refrigerant and the components are different. Gauges and test equipment must not be used with R12 or damage to the system will result.
33. Fluid under pressure can have sufficient force to penetrate the skin, causing serious personal injury. Always protect the skin and eyes from escaping fluid under pressure.
34. Before disconnecting lines or fittings, be sure to relieve all pressure. Before applying pressure to the system, be sure that all connections are tight and that lines, pipes, and hoses are not damaged.
35. If injured by escaping fluid, obtain medical assistance at once. Serious infection or reaction can develop if medical treatment is not administered immediately.
36. Relief valves in the hydrostatic drive system and in the header drive system are not adjustable. They should not be tampered with. Check with your dealer's service department if you have problems with the hydraulic or hydrostatic system.
37. Because of the high pressure in the hydraulic system, use only genuine factory parts and hoses for repairing these systems.
38. If welding must be performed on either the tractor or the attached header, the battery ground strap must be disconnected from the battery or damage may result in the (XCM) and other electrical components. Reinstall the battery ground strap when welding is complete.
39. When adjusting the drag on the MFH lever, always lock the jam nuts together once this adjustment is completed. Failure to do so could lock the MFH handle.
40. Never use either starting fluid with thermo-start. An explosion would result that would cause severe damage to the engine.



16.9 x 24 tires

Model HW305, 305S

1. Length of unit w/ header & lift arms	4984 mm (196.2 in.)
2. Length of unit less header & lift arms - HW305/305S	5035 mm (198.2 in.)
3. Height	3307 mm (130.2 in.)
4. Frame clearance (front)	1050 mm (41.3 in.)
5. Wheelbase	3419 mm (134.6 in.)
6. Front tread width (center to center)	3186 mm (125.4 in.)
7. Rear axle clearance (spindle to spindle)	2286 - 3048 mm (90 - 120 in.)
8. Rear axle clearance	860 mm (33.8 in.)



18.4 x 26 tires

Model HW305, 305S, 325

1. Length of unit w/ header & lift arms	4984 mm (196.2 in.)
2. Length of unit less header & lift arms - HW325	5060 mm (199.2 in.)
Length of unit less header & lift arms - HW305/305S	5035 mm (198.2 in.)
3. Height	3372 mm (132.8 in.)
4. Frame clearance (front)	1144 mm (45 in.)
5. Wheelbase	3419 mm (134.6 in.)
6. Front tread width (center to center)	3335 mm (131.3 in.)
7. Rear axle clearance (spindle to spindle)	2286 - 3048 mm (90 - 120 in.)
8. Rear axle clearance	922 mm (36.3 in.)

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ENGINE OVERHAUL INTRODUCTION

This engine overhaul procedure will describe how to repair the engine. It is up to the mechanic to decide which sections are required for each particular problem. The following associated systems of the engine are located in different chapters:

Section 55, Chapter 5 – Engine Electrical System

Chapter 2 – Fuel and Injection System

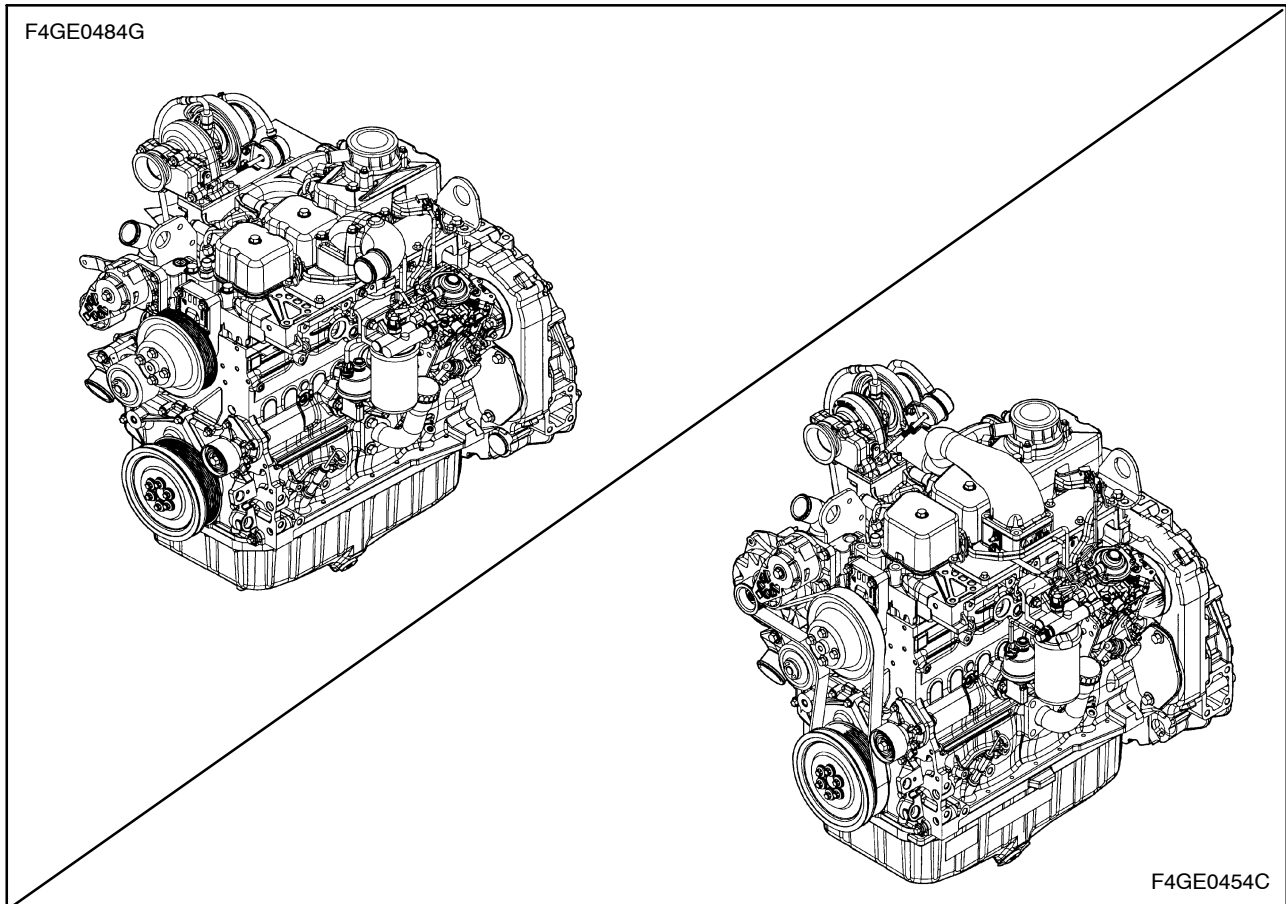
Chapter 3 – Air Intake System

Chapter 4 – Engine Coolant System

The water pump is covered in this section.

Chapter 5 – Lubrication System

Most of the repair for these areas can be done with the engine mounted in the windrower.

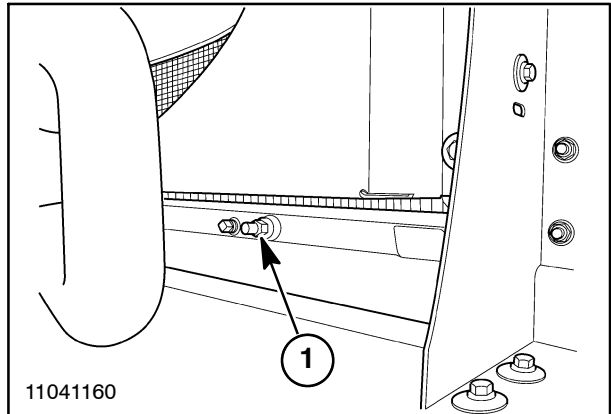


OVERHAUL

ENGINE

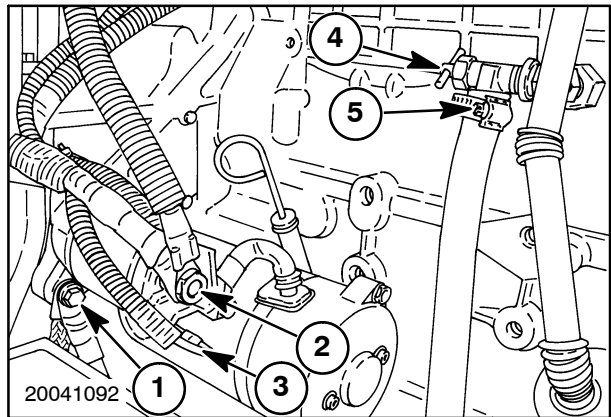
Removal

1. Drain coolant from radiator and engine by opening valve, 1. Catch fluid from drain hose and save for recycling. Remove the radiator cap to speed up the draining, using caution if the system is hot.



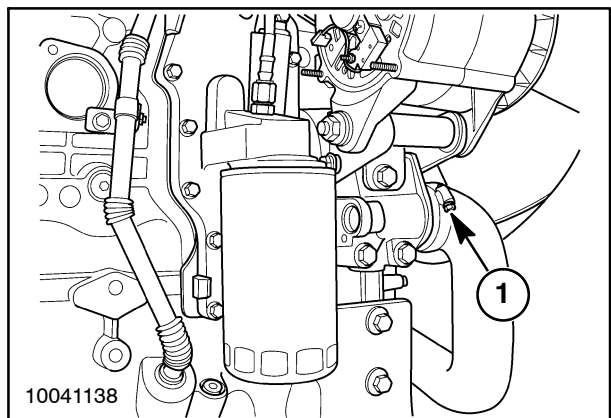
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2. Remove battery ground cables by removing starter mounting bolt, 1.
3. Remove all positive power cables from starter terminal, 2.
4. Remove wire, 3, from starter terminal.
5. Open valve, 4, if closed, and allow any trapped coolant to drain. Loosen clamp, 5, and remove heater hose.



3

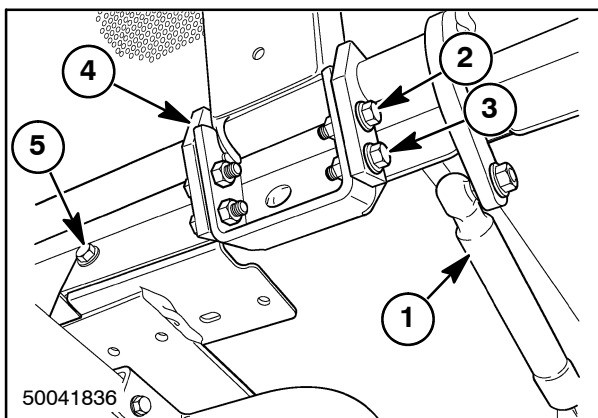
6. Loosen clamp, 1, and remove lower radiator hose. Also, in like manner, disconnect the upper hose.



4

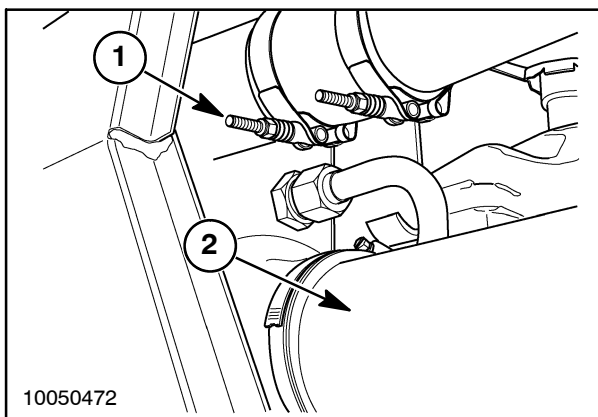
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7. Using a helper, detach four gas springs, 1, from engine area side doors by removing four flange nuts and lock washers.
8. Remove side doors by removing one bolt, 2, and loosening one, 3, at each of twelve pivot clips, 4.
9. Remove two carriage bolts, lock washers and flange nuts, 5, on each side of hood support frame.



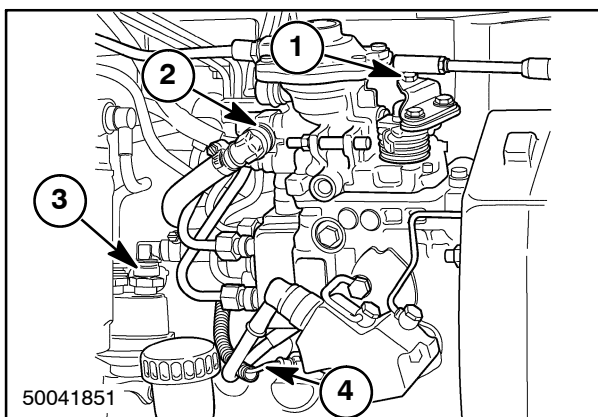
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10. On HW305S and HW325, loosen spring clamps, 1, and remove tubing from turbo to intercooler, and from intercooler to intake manifold.
11. Loosen clamps and remove 102 mm (4") diameter tubing, 2, from air cleaner to rear bulkhead.



6

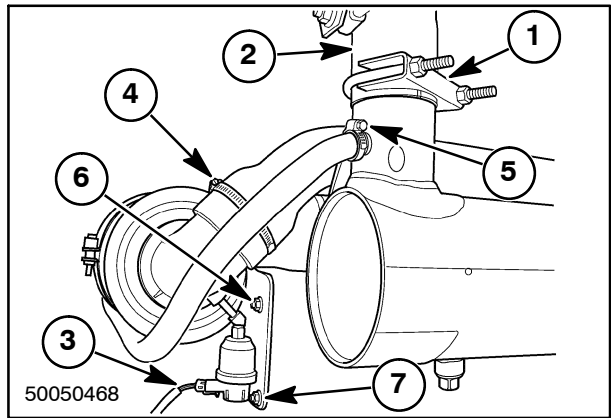
12. Remove nut and lock washer, 1, on ball joint at end of control cable.
13. Push off clip, 2, and remove fuel return hose with elbow attached. Likewise push off clip, 3, on fuel supply hose. Plug and bag the end of these hoses to keep out contamination.
14. Disconnect wire, 4, from fuel injection pump.



7

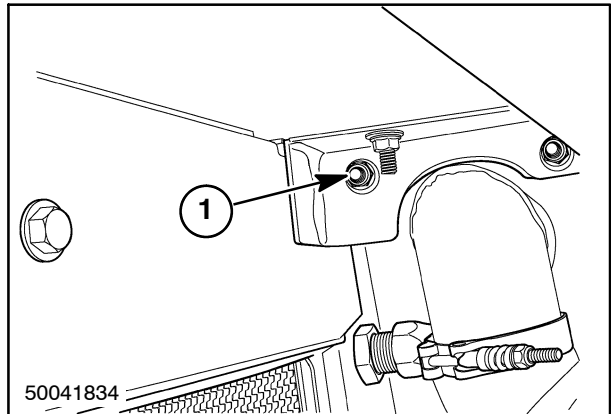
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15. Loosen pipe clamp, 1, and remove exhaust stack, 2.
16. Disconnect restriction indicator wire, 3.
17. Loosen clamp, 4, and remove hose from air cleaner.
18. Loosen clamp and remove air cleaner evacuator hose at muffler outlet, 5.
19. Remove one 5/16 in. bolt, 6.
20. Remove two M8 cap screws and lock washers, 7, and move air cleaner to one side with mounting bracket and cable still attached.



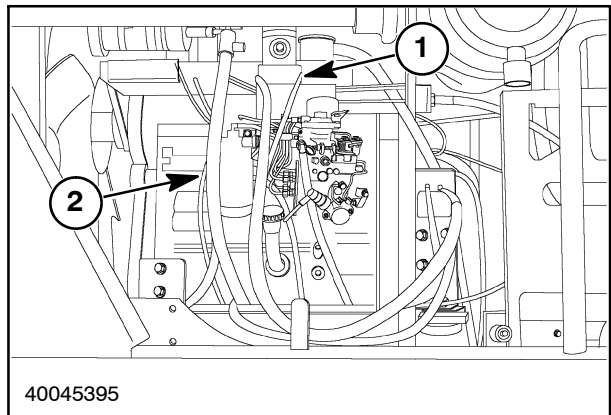
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21. Remove four flange bolts, lock washers and flange nuts, 1, to detach hood support frame from radiator side supports. Frame can now be removed with roof panel attached.



9

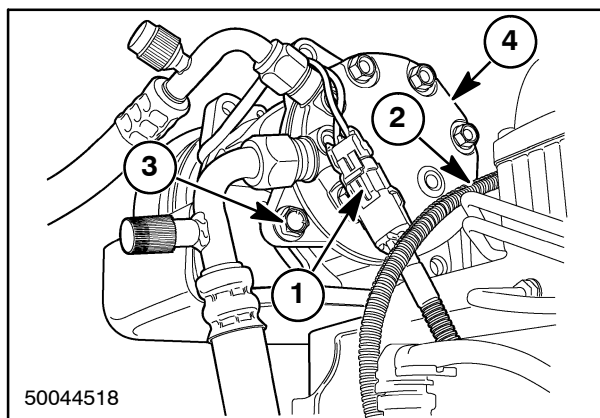
22. Disconnect wire harness at both sides of intake air heater, 1, if so equipped, and at oil pressure switch, 2.



10

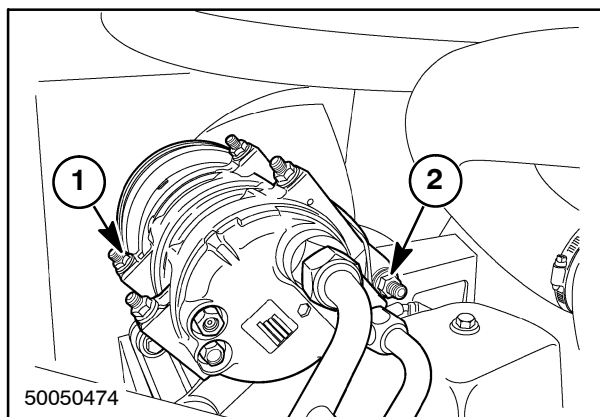
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23. Disconnect wire connector, 1, and wire at temperature sensor, 2.
24. On models HW305 & HW305S, remove two bolts, 3, from feet of compressor, and long pivot bolt, 4, remove drive belt and lay compressor over to right side of machine with hoses connected.



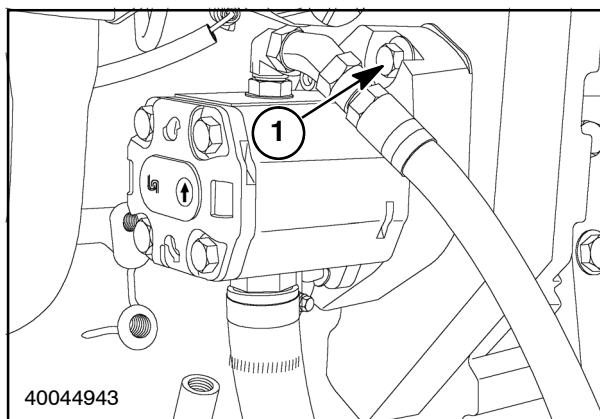
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25. On model HW325, remove two 5/16 X 3-3/4" cap screws with lock washers and flange nuts, 1, from lower holes in compressor and through lower mount casting.
26. Remove one 3/8 X 5" long pivot bolt with lock washer and lock nut, 2, remove drive belt and lay compressor over to right side of machine with hoses connected.



12

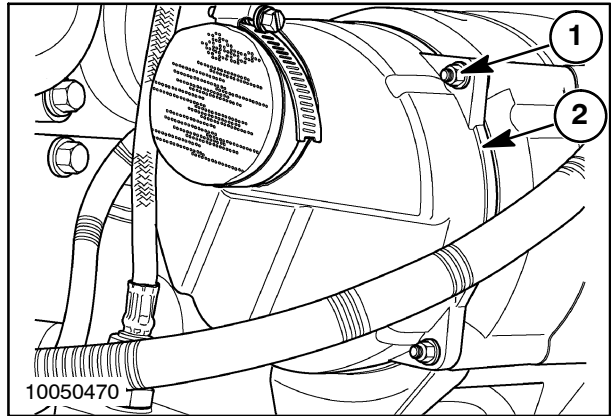
27. If equipped with auxiliary pump, remove two hex head flange bolts and lock washers, 1, to remove pump with PTO drive and hoses attached. Lay over to right side of windrower frame. Save gasket for re-use when reinstalling.



13

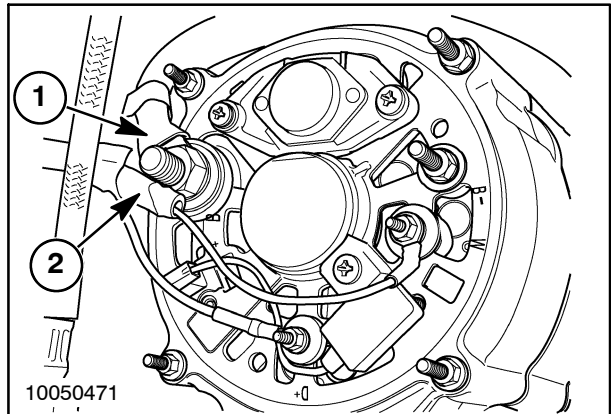
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28. Remove four nuts and lock washers, 1, to remove rear cover, 2.



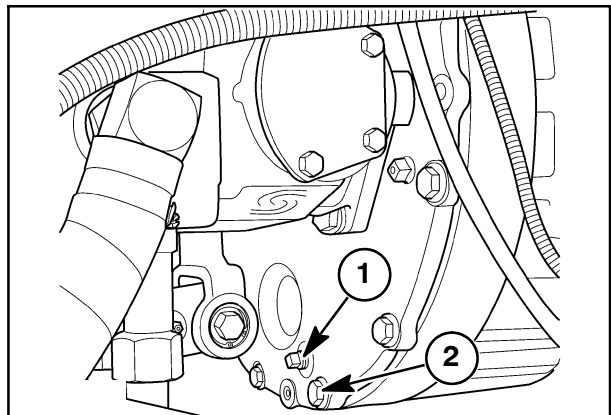
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29. Disconnect cable, 1, and two wires of harness, 2, from alternator by removing three nuts. Screw these nuts on the terminals loosely to save for later use.
30. Remove and loosen clamps as necessary to free wiring harness and cables from engine.



15

31. Remove plug, 1, to drain oil from gear box.
32. With adequate support provided for the pumps, remove twelve flange bolts, 2.



16



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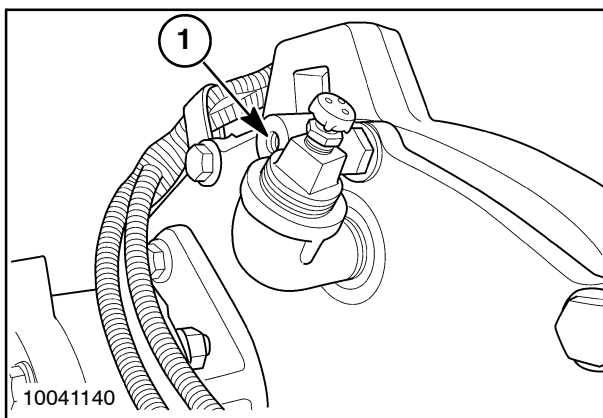
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SECTION 10 - ENGINE - CHAPTER 1

33. There are three tapped holes, 1, in periphery of cover plate that are provided for removal purposes. Use three of the bolts removed in previous step and thread into tapped holes to push plate away from flywheel housing.

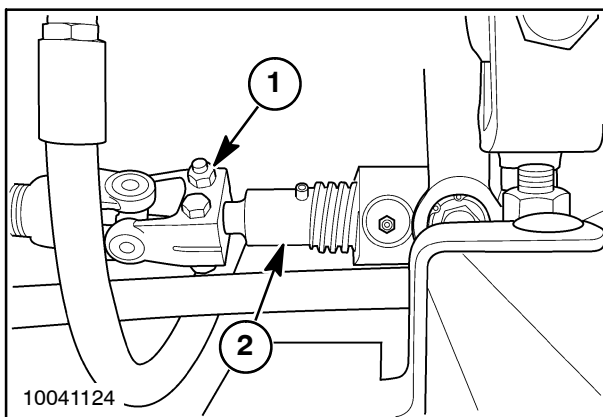
NOTE: The holes are tapped with M10X1.5 threads. Do not attempt to use inch series bolts, as thread damage will occur.

34. Pull cover plate with pumps attached forward so that drive gears clear the flywheel housing. Support from above to avoid damage to hoses and fittings.



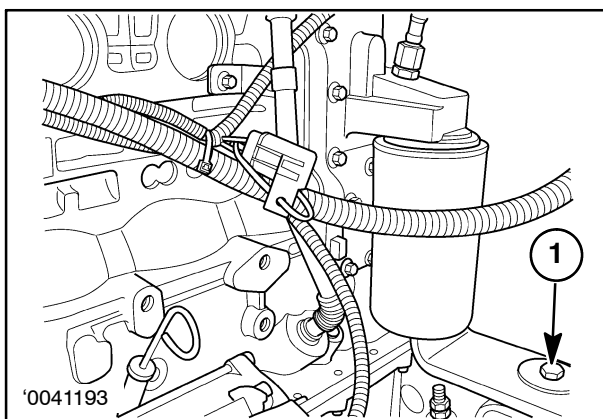
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35. It may be necessary to loosen clamp bolts, 1, in steering yoke and remove from splined shaft, 2.



18

36. Remove four large cap screws with lock nuts, 1.
37. Use appropriate lifting equipment to lift engine out of machine.
38. Mount the engine to an engine stand before removing the chain and hoist.



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