

MTD PRODUCTS

Warranty Repair Time Estimate Guide



MTD Factory Authorized Service Dealer

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Form No. 769-01134B

Warranty Repair Time Estimate Guide

Table of Contents

Warranty Claim Filing Policies	2
Labor Time Scale	3
Warranty Transmission Replacement Like-Kind Exchange Process	4
Warranty Transmission Service Information LT/GT	5
MTD Engine Replacement Like-Kind Exchange Process	6
MTD Engine Service Information	7

Warranty Repair Time Estimate

MTD Engine 4 Cycle Vertical Crankshaft	8
MTD Engine 4 Cycle Horizontal Crankshaft	9
MTD Carburetor Checklist Form	10
2-Cycle Hand-Held Engine	11
4-Cycle Hand-Held Engine	12
MTD Hand-Held Product Warranty Exchange Program	13
Hand Held Components for Blower, Trimmer, Cultivator, and Portable Edge	14
Lawn and Garden Riding Lawnmower	15-16
RZT and ZT Lawnmower	17
Walk-Behind Lawnmower	18
Single Stage and Two Stage Snow Throwers	19
Troy-Bilt Rear Tine Tillers	20
MTD Front and Rear Tine Tillers	21
Log Splitter	22
Log Splitter Hydraulic Pressure Test Form	24-27
Chipper Shredder/Vacuum	28
Lawn Edger	29

MTD Service Dealer Warranty Claim Filing Policies

- This is a guide for estimated warranty repair times. Diagnostic time is included.
- Assistance for electronic claim filing is available online through the Service Dealer portal or by calling 1 800 959 4683, Option 2, Dealers Only.
- File claims within 30 days from date of repair.
- Retain parts replaced for 30 days after claim has been paid
- Provide clear and detailed failure and repair information when filing the warranty claim.
- MTD product shop manuals are online. Search with key words "Shop Manuals".
- Warranty authorizations are to be obtained from either an MTD representative or your MTD Central Distributor.
- Service Kit documents will have warranty repair time noted.

Warranty Policies

- Failure descriptions that do not provide enough information include bad, defective, worn, worn out, went out, failed, failure, bent, blown (acceptable for a fuse), and blew apart.
- Refer to the consumer warranty when determining warranty coverage. The customer can either provide a copy or the owner's manual or owner's manuals are available online.
- Circumstances that may not be covered by warranty include damage, failures, and missing components from improper display, storage, set-up, freight, or shipping.

Warranty Repair Requiring Authorization

- Short Block, Crank Case, and Crank Shaft Service Replacement
- Electric Motor Service Replacement
- Front and Rear Tine Tiller Complete Chain Case Replacement
- Complete Rear Tine Troy-Bilt Tiller Transmission Replacement
- Ride On, Snow Thrower Equipment Frames or Similar.

Warranty Return Parts and Shipping Information

- Please include copy of shipping receipt. Once failure is determined, claim including shipping will be paid.
- Please make sure to drain fluids such as fuel, hydraulic oil, and engine oil.
- Shipping costs for warranted deck assemblies, log splitter beams, frames, tanks, cylinders, and complete MTD 400 series and Troy-Bilt tiller cases will be reimbursed with a valid shipping invoice.
- Expedited or drop shipment charges are not reimbursed through warranty.

Labor Time Scale

Please refer to the chart below when filing out your warranty claim form. Repair times should be submitted in tenths of an hour (the decimal equivalent of minutes). You can use this chart as a quick reference guide when completing the claim form to ensure that you are properly reimbursed for your labor time when performing warranty repairs.

Minutes to decimal (tenths of an hour) chart for calculating labor time.

<u>Minutes</u>	<u>Decimal</u>
10	.16
20	.33
30	.50
40	.66
45	.75
50	.83
60	1.00
75	1.25
90	1.50
120	2.00
150	2.50
180	3.00
210	3.50
240	4.00

**Transmission Warranty Process
Lawn and Garden Riding Lawnmower Like-Kind Exchange**

MTD Service Centers

Step 1

Dealer Inspects Unit
Determine If Unit Should Be Replaced Under Warranty

Step 2

Dealer Calls Parts Distributor for Like-Kind Exchange
Claim Information Must Be Complete

Step 3

Replacement Unit Sent

Step 4

Dealer Submits Copy of Warranty Claim to Distributor

Step 5

Dealer Submits Completed Original Warranty Claim To
MTD Warranty Department for Processing

Step 6

Dealer Returns Defective Unit to MTD upon Receipt of a Return Letter.

Explanation of Process Steps

1. A thorough inspection is conducted. Check adjustments and brakes.
 - Always test a transmission prior to replacement
 - If necessary, open the transmission for further determination of warranty.
 - If internal failure is warrantable, replace complete unit, do not repair.
2. Central distributor will attach claim number to replacement order.
3. Dealer will submit a copy of the completed warranty claim form to the Central Distributor.
4. When filing the warranty claim, please include transmission part number and serial number.
5. Upon online notice of claim return, please return the part to MTD.

**Transmission Warranty Service
Lawn and Garden Riding Lawnmower**

If the tractor has drive system problems within the warranty period, the servicing MTD dealer has the following responsibilities.

- Eliminate any external causes for drive system problems before removing the transmission from the tractor.
- External problems would include, but are not limited to: belt, linkage, or brake issues.
- Look for signs of over-use or abuse. Transaxles that fail because of over use or abuse are not warrantable. They are to be repaired or replaced at the customer's expense.
- If the problem is internal, the transmission is to be replaced under the like-kind exchange policy.
- If a transaxle is replaced under warranty, the original transaxle may be called-back for evaluation by MTD Vendor Recovery Dept. If so, please return the transaxle completely assembled. Unassembled units may be returned without inspection.
- Warranty Claims will be denied, returned, or adjusted if the returned transaxle does not meet MTD's replacement criteria.
- Dealers are encouraged to open transaxles for inspection, allowing them to identify a problem within the transaxle.
- Beyond warranty, dealers are free to repair transmission at customer expense.
- If the dealer has questions regarding transaxle replacement, they should call MTD Service or your Central Distributor.

**MTD Engine Warranty Process
MTD Service Centers Like-Kind Exchange**

Step 1

Dealer inspects engine and determines if engine should be replaced under warranty

Step 2

Dealer submits copy of properly completed warranty claim form to Central Distributor

Step 3

Replacement engine sent upon approval of Central Distributor

Step 4

Dealer submits properly completed original warranty claim to MTD Warranty Department for processing and reimbursement

Step 5

Dealer returns defective engine to MTD Engine Evaluation Center using original carton (ship to address provided on return information)

PROCESS STEP EXPLANATION

1. The dealer **MUST** make a thorough inspection using specific diagnostic techniques to determine whether the engine must be replaced.
2. The dealer **MUST** submit a copy of the properly completed warranty claim form to the Central Distributor. Your Central Distributor will need this information to create a replenishment order. Any copy of a claim form without **COMPLETE** information will be returned to the dealer without a re-order being placed.
3. Engines will be shipped immediately to maintain service levels expectations.
4. The dealer will submit the properly completed original warranty claim form to MTD per the standard warranty procedure. Claims received with incomplete information will be returned unpaid.
5. The Central Distributor will gather the claim number from the dealer and attach it to the replacement order. Each Central Distributor is responsible for maintaining an available supply of engines to be used for warranty repairs.
6. **ALL** defective engines must be returned to the MTD Evaluation Center accompanied with a copy of the warranty claim. Dealer is to return defective engine in the same reusable carton used to ship replacement engine.

Warranty Time Estimate Guide MTD Brand Engine Service

Engine Service

If the MTD brand engine has problems within the warranty period, the servicing MTD dealer has the following responsibilities.

- Check for proper lubrication and level. Lack of lubrication or improper lubrication will not be warranted.
- If carburetor has problems, utilize the Carburetor Warranty Check List.
- A bent or damaged crankshaft is not warrantable.
- Look for signs of over-use or abuse. Engines that fail because of over use or abuse are not warrantable. They are to be repaired or replaced at the customer's expense.
- If the problem is internal, such as a piston rod failure the engine is to be replaced under the engine like-kind exchange policy. Do not short block warranty failures or without prior authorization.
- If an engine/part is replaced under warranty, the original engine/part may be called-back for evaluation by MTD Vendor Recovery Dept. If so, please return the engine completely assembled. Unassembled units may either be returned without inspection or denied due to failure not able to be determined.
- Warranty Claims will be denied, returned, or adjusted if the returned engine does not meet MTD's replacement criteria.
- Dealers are encouraged to open engines for inspection, allowing them to identify a problem within the engine.
- Beyond warranty, dealers are free to repair engines at customer expense.
- If the dealer has questions regarding engine replacement, they should call MTD Service using the dealer only line before proceeding.

**Warranty Repair Time Estimate Guide
MTD Brand Engine
Vertical Shaft 4 Cycle**

Air Filter Assembly/Kit	.33
Carburetor Assembly Replace	.75
Carburetor Rebuild	1.00
Cylinder Head Complete	1.00
Dipstick Assembly	.16
Engine Replacement	.83
Flywheel/Key Service	1.25
Flywheel Shroud	.50
Fuel Line Kit	.50
Fuel Tank	.66
Governor Return Spring	.75
Gasket Service/Internal	1.50
Gasket Service/External	.75
Ignition Module	.75
Muffler	.40
Recoil Starter Assembly	.50
Stop Switch and Brake	.75
Relay Assembly	.66
Starter/Electric	.50
Valve Service	1.00

- Utilize the Carburetor Warranty Check List (page 11) and available online.
- The check list is provided with this guide and online. For evaluation purposes provide a completed checklist with the carburetor when returning it for evaluation.
- Starters and starter assemblies are not repaired under warranty. Replace only as an assembly.
- Do not use a short block for warranty repairs.
- Engines and components returned disassembled or incomplete may not be considered for evaluation and will be returned.
- To determine cause of catastrophic failure such as seizure or cause of compression loss, open engine for evaluation. Reassemble engine prior to return.

**Warranty Repair Time Estimate Guide
MTD Brand Engine
Horizontal Shaft 4 Cycle**

Air Filter Assembly/Kit	.33
Carburetor Assembly Replace.	.75
Carburetor Rebuild	1.00
Cylinder Head	1.00
Dipstick Assembly	.16
Engine Replacement	1.00
Flywheel/Key Service	1.25
Flywheel Shroud	.50
Fuel Line Kit	.50
Fuel Tank	.75
Governor Return Spring	.50
Gasket Service/Internal	1.50
Gasket Service/External	.75
Ignition Module	1.00
Ignition Switch	.33
Muffler	.40
Recoil Starter Assembly	.50
Starter/Electric	.66
Stator	1.50
Valve Service	1.00

- Utilize the Carburetor Warranty Check List (page 11) and available online.
- The check list is provided with this guide and online. For evaluation purposes provide a completed checklist with the carburetor when returning it for evaluation.
- Starters and starter assemblies are not repaired under warranty. Replace only as an assembly.
- Do not use a short block for warranty repairs.
- Engines and components returned disassembled or incomplete may not be considered for evaluation and will be returned.
- To determine cause of catastrophic failure such as seizure or cause of compression loss, open engine for evaluation. Reassemble engine prior to return.

MTD SERVICE DEALER CARBURETOR WARRANTY CHECK LIST

Form is also available online

Dealer number _____ Technician _____ Inspection Date _____

Engine model number _____ Engine serial number _____

IMPORTANT: This check sheet must be completed before replacing a carburetor under warranty. This check list must accompany all MTD engine carburetor warranty claims. Failure to do so will result in the warranty claim being returned.

Symptoms

Does not start

- Check for ignition
- Check compression
- Check valve lash
- Check for blocked air filter
- Check fuel quantity (at least ½ tank)
- Test for alcohol*
- Check fuel filter
- Check for full choke movement (if equipped)

Dies after starting

- Check fuel quality (water, dirt, stale, etc...)
- Check fuel filter
- Check fuel flow to the carburetor
- Check fuel tank venting

Idles rough/misfires

- Check fuel quality (water, dirt, stale, etc...)
- Check governor and speed settings
- Check for linkage interferences
- Check for debris/dirt in the carburetor (jet and emulsion tube)
NOTE: Removal of Welch plugs will destroy the carburetor and void the warranty.
- Check carburetor O-rings
- Check for an intake air leak

Hunting/surging

- Check fuel quality (water, dirt, stale, etc...)
- Check governor and speed settings
- Check for linkage interferences
- Missing or damaged springs
- Check for debris/dirt in the carburetor (jet and emulsion tube)
NOTE: Removal of Welch plugs will destroy the carburetor and void the warranty.
- Check carburetor O-rings
- Check for an intake air leak
- Test for alcohol*
- Check fuel filter
- Check valve lash

Poor Power

- Check fuel quality (water, dirt, stale, etc...)
- Check governor and speed settings
- Check for parasitic loads

Running rich (black smoke)

- Check choke operation
- Check air filter
- Check for needle and valve seat leakage

Flooding carburetor

- Check fuel quality (water, dirt, stale, etc...)
- Check for needle and valve seat leakage
- Check for blocked bowl vent or that the metal gasket is installed incorrectly

Other- Describe _____

Cause of failure _____

*This form can be found online (answer ID 6872 or use key words "Carburetor Check list")

*Refer to Tech Brief online for alcohol testing (answer ID 5223 or search with key words "Fuel Test")

**Engine manuals are available through the dealer service site

**Warranty Repair Time Estimate Guide
2 Cycle Hand-Held**

Carburetor System

Air Filter Cover/Assembly	.30
Carburetor Service/Troubleshoot	.75
Choke/Housing	.30
Fuel Line/Filter/Primer	.75
Fuel Tank	.75
Reed Plate/Gasket	.75
Throttle Cable	.50

Engine

Clutch Drum/Rotor	.83
Crankshaft/Crankcase	Short Block Authorization Required
Cylinder/Piston Service	1.00
Cylinder Gasket	1.00
Flywheel	.41
Gasket(s)	.50
Muffler Service	.16

Ignition System

Ignition Module	.75
Ignition Switch/Wiring	.75

Starter Assembly

Starter Housing	.75
Starter Pulley/Spring	.75

- Always conduct a proper fuel test to verify correct fuel/oil mix ratio-Reference Tech Brief online using search words “Blended Fuels”.
- Carburetor Warranty Checklist is not required. However it is recommended. If part is requested for inspection, the Checklist will be required for verification. A copy is provided in this manual or online using search words “Carburetor Warranty Check List”.
- Carburetor failures due to debris, water, and build up are not warrantable.
- Short block service requires authorization. Reference page 14 for Hand-Held Warranty Exchange Policy

**Warranty Repair Time Estimate Guide
4 Cycle Hand-Held**

Carburetor System

Air Filter Cover/Assembly	.30
Carburetor Service/Troubleshoot	.75
Choke/Housing	.30
Fuel Line/Filter/Primer	.75
Fuel Tank	.75
Throttle Cable	.50

Engine

Cam Gear Service	1.00
Clutch Drum/Rotor	.83
Crankshaft/Crankcase	Short Block Authorization Required
Cylinder/Piston Service	1.00
Cylinder Gasket	1.00
Flywheel	.83
Muffler Service	.16
Flywheel	.83
Gasket(s) Oil Pan	.75
Valve Service/Troubleshoot	.75

Ignition System

Ignition Module	.75
Ignition Switch/Wiring	.75

Starter Assembly

Starter Housing	.83
Starter Pulley/Spring	.83

- Always conduct a proper fuel test to verify correct fuel/oil mix ratio-Reference Tech Brief online using search words “Blended Fuels”.
- Carburetor Warranty Checklist is not required. However it is recommended. If part is requested for inspection, the Checklist will be required for verification. A copy is provided in this manual or online using search words “Carburetor Warranty Check List”.
- Carburetor failures due to debris, water, and build up are not warrantable.
- Some valve adjustments are part of owner/operator maintenance.
- Short block service requires authorization. Reference page 14 for Hand Held Warranty Exchange Policy

MTD Hand Held Warranty Exchange Policy

Under MTD's handheld warranty, all customers are to obtain inspection and service from an authorized MTD Servicing Center. If a dealer determines that any of the following conditions exceed 75% of the retail purchase price, then replacement of the product is necessary. The purchase price can be determined by checking the customer receipt for the product.

• If a dealer determines that any combination of parts & labor will exceed 75% of the retail purchase price. Please verify purchase price from customer's receipt.

- To save time and cost, the preferred method of exchange is to refer the customer to the retailer as follows:
- The authorized dealer should write the customer an invoice describing the warranty failure.
- The customer should visit the retail store, from which the original product purchase occurred and the retailer will exchange the hand held product.
- The retailer will then contact MTD's Single Point of Contact (SPOC) team for credit.
- At this point, a product return to MTD may be arranged.

If this is not possible (i.e. the retailer has gone out of business, no longer carries the product line, or chooses not to participate).

MTD's customer service group may handle the situation as follows:

- MTD will obtain and record the customer's information, such as name address & phone.
- MTD will obtain product information, such as model, serial numbers, and purchase receipt.
- MTD will obtain dealer information, such as dealer name, address, phone, and verify failure.
- MTD manager will approve the exchange.
- MTD will ship the dealer a replacement unit.
- A customer can then acquire their product replacement from the dealer.

If the Service Dealer is not willing to participate, MTD Customer Service will provide further assistance to the customer.

- ***Service dealer should submit claim for .50 diagnostic labor time for unit exchange policy.***
- ***MTD should only be shipping the replacement product to the dealer as a last resort.***

Warranty Repair Time Estimate Guide
Components Hand-Held, Blower, Cultivator, Trimmer, and Portable Lawn Edger

One Shaft Boom Assembly

Drive Shaft/Housing	.50
Throttle Trigger/Spring	.50

Split/Boom Assembly

Lower Drive Shaft/Housing	.50
Upper Drive Shaft Assembly	.75

Trimmer Head

Trimmer Head Assembly Service	.50
Gear Box	.50

Blower/Vacuum, BP and HH

Impellor/Fan	1.00
Fan Housing	.50
Throttle Trigger/Control	.66

Cultivator/Front Tine

Drive Shaft/Housing	.75
Handle Bar/Clamp Assemblies	.50
Gear Box	1.00
On/Off Switch	.50
Throttle Cable/Assembly	.50

Portable Lawn Edger

Belt	.83
Blade Spindle	.50
Idler Pulley Assembly	.83
Pulley/Belt	.83
Switch On/Off	.66
Tension Cable Assembly	.66
Throttle Assembly Service	.50

**Warranty Repair Time Estimate Guide
Lawn and Garden Riding Lawnmower**

Belts

Deck Drive/PTO	.83
Hydrostatic Drive	.83
PTO	.83
Variable/Drive Speed	1.00

Cables

Choke/Throttle	.66
PTO Engagement Cable	.83

Deck

Blade/Blade Set	.33
Blade Brake Assembly	1.00
Deck Idler Bracket Assembly/Pulley	1.25
Deck Shell	1.50
Deck Lift Links/Components	1.00
Deck Lift Shaft/Assembly	1.50
Deck Spindle/Each	1.00
Deck Spring(s)	.75

Drive System

Brake Pedal/ Assembly	1.25
Drive Pedal/Assembly	1.25
Engine Pulley	1.00
Hydro Transmission Pulley /Fan	1.00
Idler Bracket/Pulley Assembly	1.00
Speed Control Handle/Assembly	.75
Transmission Pulley/Drive Adjustment	1.25
Transmission Replacement	1.50
Variable Speed Pulley Bearing Service	1.00
Variable Speed Pulley	1.50

Frame Service/Replacement Requires Prior Authorization

**Warranty Repair Time Estimate Guide
Lawn and Garden Riding Lawnmower**

Electrical

Ammeter/Hour Meter	.75
Battery Replacement	.33
Electric PTO	1.25
Headlight Socket/Bulb/Harness Troubleshoot	1.00
Ignition Switch	.83
Safety Switch/Relay Troubleshoot	1.00
Solenoid	.83
Wiring Harness/Troubleshoot (Repair)	1.00
Wiring Harness/Troubleshoot (Replace)	1.50

Engine Related Components

Fuel Line	.50
Fuel Tank	.75
Muffler/Exhaust	.83

Frame/Body Panels

Dash/Console	1.25
Fender	2.00
Grille	.75
Hood	1.00
Seat	.20
Side Panel (Each)	.50

Frame Authorization Required

Springs

Drive System	.83
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- Spring Puller Tool Part# 732-0571

Steering

Axle	.75
Drag Link/Ball Joint Service	.83
Pivot Bar	1.25
Steering Shaft/Segment Gear	1.00
Steering Support Bracket	1.25
Tie Rod	.75
Tire-Rim Service Replace/Repair	.50

**Warranty Repair Time Estimate Guide
RZT and ZT**

Belts

PTO/Deck Drive	.75
Hydrostatic Drive	.75

Cables

Choke	.75
Throttle	.75

Deck

Blade/Blade Set	.33
Blade Brake Assembly	1.00
Deck Idler Bracket Assembly/Pulley	1.25
Deck Shell	1.50
Deck Lift Links/Components	1.00
Deck Lift Shaft/Assembly	1.50
Deck Spindle/Each	1.00
Deck Spring(s)	.75

Drive System

Engine Pulley	1.50
Drive/Idler Bracket/Pulley	1.00

Electrical

Ammeter/Hour Meter	.75
Battery Replacement	.33
Electric PTO	1.33
Ignition Switch	.83
Safety Switch/Relay Troubleshoot	1.00
Solenoid	.83
Wiring Harness/Troubleshoot (Repair)	1.00
Wiring Harness/Troubleshoot (Replace)	1.50

Engine Related Components

Fuel Line	.50
Fuel Tank	.83
Muffler/Exhaust	.83

Springs

Drive System	.83
➤ Spring Puller Tool Part# 732-0571	

**Warranty Repair Time Estimate Guide
Walk Behind Lawn Mowers**

Bag/Bag Frame	.33
Battery Pack/Assembly	.66
Blade and Adapter	.50
Deck	1.00
Deck Baffle	.50
Engine Pulley/Drive Pulley(s)	.75
Front or Rear Axle/Single Lever Height Adjuster	.83
Handle Bracket/Height Adjuster Assemblies	.25
Handle/Lower/Upper	.50
Height Adjuster/Single Lever/Connection Rod	.66
Rear Door/Spring	.50
Self Propel Cable/Controls Service	.83
Trail Shield	.33
Transmission/Replace	1.25
Wheel Bearing/Drive Component Service	.75
Wheel	.16
Wire Harness/Electrical Diagnosis	.66
Zone Start Cable	.50

**Warranty Repair Time Estimate Guide
Single Stage Snow Thrower**

Auger Assembly/Complete	1.16
Auger Pulley	.75
Bearing/Auger Service	.90
Belt Idler Bracket	.50
Clutch Cable	.50
Drive Belt	.75
Engine Pulley	1.25
Fuel Tank	.50
Lower Chute Components	.75

Two-Stage Snow Throwers

Auger LH RH	1.00
Auger Belt Pulley	1.25
Auger Drive Cable	.60
Axle Shaft Bearing Service/Related Components	1.00
Bearing/Impellor	1.25
Chute Assembly	.50
Chute Crank Assembly	.50
Chute Pitch Bracket/Cable	.50
Clutch Lock Rod Assembly/Handle	1.00
Drive Cable/Wheel	.60
Drive Gear/Shaft Service	1.25
Gear Box Replacement	1.25
Gear Box Service	1.50
Heated Hand Grip	.83
Idler Spring	.66
Impellor	1.25
Idler Pulley/Auger and Drive Service	1.00
Friction Disc/Replacement Service	1.00
Lamp Replacement	.50
Panel/Control	.83
Primer Bulb	.50
Speed Control Cable	.50
Speed Selector Bracket	.75
Switch/Key	.50
Trigger Drive/Cable Service	.50
Track Drive System Service/Internal	1.50
2 and 4-way Chute Control	.50
Wire Harness/Electrical	.75

**Warranty Repair Time Estimate Guide
Troy-Bilt Rear Tine Tiller
Tuffy, Bronco, and Pro**

Bail Handle	.33
Bearing Service/Shaft	2.00
Drive Belt/Forward	.80
Drive Belt/Reverse	1.00
Engine Drive Pulley	1.00
Forward Clutch Cable	.50
Forward Idler Lever	1.00
Forward/Reverse Idlers	1.00
Lower Handle Bar	.66
Oil Seal Service	(1)1.00 (2) 1.50
Pulley/Transmission	1.00
Reverse Clutch Cable	.50
Reverse Idler Arm	.83
Transmission Repair/Service	3.00
Transmission/Replacement	2.00
Upper Handle Bar	.66

**Flat Rate
Troy-Bilt Horse and Pony Tillers**

Battery	.25
Cable/Engagement	.50
Clutch Collar	1.00
Bearing Service/Shaft	2.00
Electrical/Harness	1.00
Engine Pulley/Pony	1.00
Engine Power Take-Off Pulley/Horse	1.50
Forward Drive Belt/Pony	.50
Forward Drive Belt/Horse	.66
Handle Bars/Assembly	.83
Oil Seal Service	(1)1.00 (2) 1.50
Reverse Disc	1.00
Reverse Drive Belt	.50
Reverse Idler Pulley	.75
Solenoid	.50
Transmission Drive Pulley	.90
Transmission Repair/Service	3.00

- Prior to request for complete transmission replacement disassembly of transmission and determination of failure is required.
- Troy-Bilt Seal Service Tool Kit Part# TWC-400
Contact Thexton Toolworx 1 800 328 6277

**Warranty Repair Time Estimate Guide
MTD Front/Rear Tine Tillers**

<u>Belt</u>	<u>.66</u>
<u>Cable/Engagement</u>	<u>.75</u>
<u>Drive/Idler Pulley Service</u>	<u>.83</u>
<u>Handle/Assembly</u>	<u>1.00</u>
<u>Transmission Replacement (Front Tine)</u>	<u>1.25</u>
<u>Transmission Repair (Rear Tine)</u>	<u>3.50</u>
<u>Transmission Replacement (Rear Tine) Requires Authorization</u>	<u>2.50</u>

Evaluation Information

- Bent shift forks are not warrantable unless an assembly issue is determined. Bent shift forks are often caused by improper shifting
- The operator's manual contains detailed information on proper shifting procedures.
- Prior to request for complete transmission replacement disassembly and determination of failure is required.
- Shipping related to 400 series complete transmissions will be reimbursed with copy of shipping invoice.

**Warranty Repair Time Estimate Guide
Log splitter**

Beam	1.50
Cylinder-Replace	1.25
Cylinder Seal Kit	2.00
Filter Housing/Assembly	.83
Flex Coupling	1.00
Hose (Each)	1.00
Hydraulic Tank-Replace	2.50
Hydraulic Tube	.75
Pump-Replace/Time includes testing	1.50
Remount Engine	1.00
Seal Kit (If available by MTD part is preferred method for leaking cylinder)	2.00
Valve-Replace/Time includes testing	1.50
Wedge	.75

Belt Powered Log Splitter

Belt	.75
Cylinder- Replace	1.00
Harness/Interlock	1.00
Hose (Each)	.75
Pump	1.00
Tank Assembly	1.50
Valve	1.00

Warranty for Hydraulic Components

- Pump is to be replaced, not repaired/disassembled. Disassembly will void warranty.
- Valve is to be replaced, not repaired/disassembled. Disassembly will void warranty.
- If cylinder has a warrantable leak due to seal(s), repair with an available seal kit
- Drain all fluids prior to returning part for evaluation.
- Hydraulic pressure testing should always be performed (page 24). Contact your Central Distributor for utilizing a test kit to determine failure. Part# 759-3742
- Shipping and use fee for hydraulic test kit will be reimbursed with copy of invoice.
- Provide pressure test results with returned component. The form is available in this guide and online.
- Shipping costs for warranted, log splitter beams, frames, tanks, cylinders, will be reimbursed with a valid shipping invoice.
- Hydraulic Components have a 1 Year Warranty. Reference Owner's Guide.

LOG SPLITTER WORK SHEET

WORK SHEET

FOR TEST KIT PART NUMBER 759-3742 WORK SHEET VIDEO TEXT

This program covers testing procedures for the hydraulic log splitter.

Proper testing and maintenance procedures will assure that the log splitter will work safely and properly.

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| _____ Checked | As a standard serviced procedure, replace the oil filter. Check the fluid level and add more if needed. |
| _____ Checked | Check to make sure that there is a key in the coupling between the engine and the hydraulic pump. Replace if it is missing. |
| _____ Checked | Remove the suction hose from the bottom of the pump and lower it into a drain pan. Assure that there is sufficient flow from the reservoir. Replace any lost fluid. |
| _____ RPM | Start the engine and using a tachometer, verify that the engine is operating between 3400 and 3600 RPM. |

There is a test kit (Part No. 759-3742) that will help you determine if the hydraulic system on the log splitter is operating properly. The test kit comes in a carrying case and includes a pressure gauge, flow meter and needle valve.

With the log splitter in a horizontal position, connect the kit between the pump and the control valve.

The pressure gauge side of the kit connects to the pump and the flow end connects to the valve. Tighten all connections securely to avoid leakage of fluid during tests.

Before starting the engine, turn the needle valve on the test kit counterclockwise to the completely open position. The indicator in the center should read "4" or the GOLD ring below the needle valve knob is showing.

Use caution when instructed to close the needle valve completely. Leaving the needle valve closed for more than a few seconds can blow seals and damage the log splitter. Follow all instructions carefully.

_____ Checked Now start the engine and run it at full throttle. Remember, it should be running between 3500 and 3600 RPM for the test to be accurate. Read fluid flow on the meter using the gallons per minute or GPM side of the gauge.

_____ GPM The flow meter should read between 8 and 14 gallons per minute if the pump is operating correctly.

_____ PSI The pressure gauge should read zero if the pump is operating correctly.

Begin at the top and close the needle valve slowly clockwise until the engine begins to labor.

_____ Checked

As the pressure gauge increases to between 500 and 700 PSI and the flow increases to between 1 and 3 GPM, the high volume check valve should close and the engine RPM will return to normal.

If the check valve does not close, the engine will bog down and stall and you need to replace the pump.

Continue to slowly close the needle valve until the pressure increases to between 1500 and 3200 PSI and the flow reads approximately 1 to 2 gallons per minute.

Immediately open the needle valve to relieve the pressure and avoid damage to the pump and seals.

_____ PSI Record your readings on the test data work sheet.

(1500-3200 range)

_____ GPM If the pressure reading falls below minimum PSI, the pump is defective and should be (1 - 2 range) replaced. If the pressure reading is within specification, continue trouble shooting.

Move the valve handle to the forward position until the ram fully extends. Hold the valve open in that position.

Read the gallons per minute from the flow meter and the pressure per square inch from the pressure gauge. Release the valve and return it to the neutral position.

_____ PSI The pressure should read between 1500 and 3200 PSI and the flow reading should be between 1 and (1500 - 3200 range) 2.5 gallons per minute. Record these readings on the work sheet for later reference.

If the pressure is lower than your initial readings, there may be a problem with the control valve, pressure relief valve or hydraulic cylinder.

It will be necessary to continue to determine which part is at fault.

Remove the test kit from the log splitter and replace the hose. Tighten the connections to specification.

To test the control valve, pressure relief valve and hydraulic cylinder, place the log splitter in the vertical position.

Connect the test kit between the control valve and the hydraulic cylinder. The pressure gauge is to the control valve side and the flow meter is to the hydraulic cylinder end.

Open the needle valve to a fully open position.

Start the engine and run it at full throttle.

Hold the valve handle in the fully open position until the ram bottoms out. Hold the control valve open in this position.

Slowly close the needle valve and take a reading of the pressure and flow. Immediately open the needle valve to avoid seal damage.

_____ PSI Record the readings on the data (work sheet).

(1500-3200 range)

_____ GPM

(1-1.5 range)

If the pressure is below your earlier readings, you will need to try adjusting the pressure relief valve before condemning the control valve.

To adjust the pressure relief valve, remove the nut on the valve cover.

Using a flat bladed screwdriver, adjust the slotted screw in the bottom of the hole.

CAUTION: This adjustment is very sensitive. Turn the adjustment screw slowly one eighth of a turn at a time and check the pressure. Turning clockwise increases the pressure. Counterclockwise decreases pressure.

Briefly close the needle valve and operate the control valve.

If the correct pressure cannot be obtained by adjusting the pressure relief valve, the control valve needs to be replaced.

Open the needle valve fully.

If adjusting the pressure relief valve brings the pressure to within specifications, the control valve is O.K. Continue trouble shooting.

_____ PSI Read the maximum PSI and flow rate and record it on the work sheet.

(1500 - 3200 range)

_____ GPM

(0 - 1 range) Compare the PSI reading with the previous reading. If the PSI is the same and the flow is between 0 and 1 GPM, the cylinder is good.

HH file 0091 If the flow gauge shows 2 to 3 GPM or more and the pressure is below your initial reading, the cylinder is leaking and must be repaired or replaced.

Seal kits are available. Check with your parts supplier to order the correct seal kit for your cylinder.

**Warranty Repair Time Estimate Guide
Chipper Shredder**

020/060/070 Series Walk-Behind and Self Propelled

Chipper Blade	1.40
Chute Assembly	.50
Drive Belt	2.00
Drive Control Cable	.50
Flail	.40
Flail Screen	1.00
Harness/Safety Switch	.50
Impeller Assembly	1.50
Nozzle	.66
Safety Switch	.50

200 Series Walk-Behind and Self Propelled

Axle Assembly	2.00
Chipper Blade	1.25
Clutch Cable	.75
Drive Belt	.66
Flail	1.50
Flail Screen	1.00
Harness/Safety Switch	.60
Impeller Assembly	1.50
Nozzle Assembly/Door	.50
Safety Switch	.50
Shredder Blade	1.25
Transmission Replacement	1.50

400 Series

Chipper Blade	1.25
Flail	1.50
Hopper/Assembly	1.00
Impeller Assembly	1.50
Shredder Blade	1.50

- Self propelled chipper/shred vac impeller service tool. Used to pull the impeller and engine pulley off of the crankshaft. The jack screw of this tool will remove all chipper shredder impellers. Part # 753-04868
- Chipper impeller service tool. Used to pull the impeller off of the crankshaft. Part# 753-0900

**Warranty Time Estimate Guide
Lawn Edger**

Belt	<u>.50</u>
Bearing/Blade Service	<u>.75</u>
Blade Adjustment Rod	<u>.66</u>
Control Cable	<u>.50</u>
Flywheel Pulley/Flat Idler Pulley Service	<u>1.00</u>
Wheel Adjustment Cable	<u>.50</u>