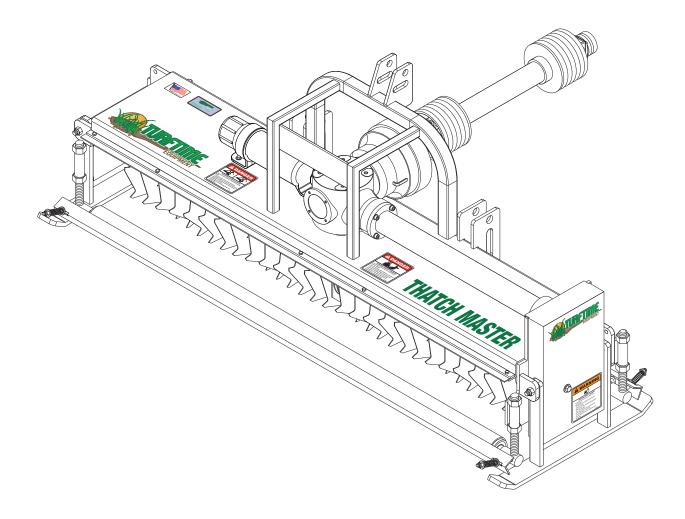


156 Kurtz Road New Holland, PA 17557 Phone (800) 201-1031 http://www.turftimeeq.com/



# **Thatch Master**

# Fine Turf Verticutter and Dethatcher Owner's Manual

MODELS TM-3600, TM-4800, TM-6000 & TM-7200

#### DISCLAIMER

The information in this manual is provided to promote the safe use of and assist the operator in achieving the best performance from the products described when used for their intended applications.

TurfTime Equipment, LLC reserves the right to alter, correct, and/or improve the documentation and the products described within the documentation at its own desecration and without giving prior notice as far as this is reasonable to the owner of the products.

You are responsible to verify the suitability and intended use of any TurfTime Equipment, LLC products for your specific application. All information made available in the documentation is supplied without any accompanying guarantee.

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#### LIMITED WARRANTY STATEMENT

#### **3-year Limited Warranty**

TurfTime Equipment, LLC, (TTE) hereby warrants that TTE's products will be free from defects in material and workmanship under normal use according to the provisions and limitations herein set forth. All parts, specifically EXCLUDING expendable 'wear' parts, that become unserviceable, due to defective material or workmanship, within 3 YEARS of date of the original retail purchase, shall, at TTE's option, be repaired or replaced as detailed below.

If the equipment is used for rental purposes, warranty is limited to 90 days from the initial rental date.

#### **Limitations**

The obligations of TTE for breach of warranty shall be limited to products manufactured by TTE; (1) that are installed, operated, and maintained according to TTE's instruction furnished and/or available to the purchaser upon request; (2) that are installed according to all other applicable federal, state, and local codes or regulations; and (3) that the purchaser substantiates were defective in material and workmanship notwithstanding that they were properly installed and correctly maintained as set forth and were not abused or misused. The obligation of TTE shall be limited to replacing or repairing the detective product, at the option of TTE. TTE shall not be responsible for any labor or cost of removal or repairing or re-installation of its products and shall not be liable for transportation costs to and from its facility in New Holland, PA. Use of parts for modification or repair of the product or any component part thereof not authorized or manufactured by TTE specifically for such product shall void this warranty.

This warranty shall not apply to any damage to or defect in TTE's products that is directly or indirectly caused by; (1) FORCE MAJEURE, act of GOD, or other accident not related to an inherent product defect; or (2) abuse, misuse, or neglect of the such product, including any damage caused by improper assembly, installation, adjustment, or faulty instruction of the purchaser. Other than as expressly set forth herein above, TTE makes no other warranty, express or implied, with respect to any of TTE's products, included but not limited to any merchantability or fitness for a particular purpose. In no event shall TTE be responsible for any incidental or consequential damages of any nature suffered by purchaser or any other person or entity caused in whole or in part by any of TTE's products.

Any person or entity to whom this warranty extends and who claims breach of warranty against TTE must bring suit thereon within 60 days from the date of occurrence of such breach of warranty or be forever barred from any and all legal or other remedies for such breach of warranty. TTE is not responsible for and hereby disclaims any undertaking, representation, or warranty made by any dealer, distributor, or other person that is inconsistent with or in any way more expensive than the provisions of this limited warranty. This warranty grants specific legal rights and shall be read in conformity with applicable state law. In some jurisdictions, the applicable law mandates warranty provisions that provide greater rights than those provided for herein. In such case, this limited warranty shall be read to include such mandates provisions; and any provision herein that is prohibited or unenforceable in any such jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceable without invalidating the remaining provisions and without affecting the validity or enforceability of such provisions in any other jurisdiction.

#### **Statement of Policy**

In accordance with our established policy of constant improvement, we reserve the right to amend these specifications at any time without notice.

#### Warranty by Manufacturer

Dealer/distributor understands and agrees that the manufacturer extends only the following warranty to its customers. In the event dealer/distributor extends any additional warranty such as enlarging the scope or period of warranty or undertaking a warranty of fitness for any particular purpose or obligation not encompassed in manufacturer's warranty, dealer/distributor shall be solely responsible therefore and shall have no recourse against manufacturer with respect thereto.

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This manual is furnished to you by TurfTime Equipment LLC as a guide to get the greatest benefit from your product. Before attempting to install or operate, carefully read all sections of this manual. Be sure that you thoroughly understand all of the safety information and operating procedures.

#### SAFETY PRECAUTION DEFINITIONS

Dangers, Warnings, Cautions, and Notes are strategically placed throughout this manual to further emphasize the importance of personal safety, qualifications of operating personnel, and proper use of the equipment in its intended application. These precautions supplement and/or complement the safety information decals installed on the equipment and include headings that are defined as follows:

## A DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

## 

Indicates a potentially hazardous situation or practice which, if not avoided, could result in death or serious injury.

## 

Indicates a potentially hazardous situation or practice which, if not avoided, will result in damage to equipment and/or minor injury.

#### NOTICE

Indicates an operating procedure, practice. etc., or portion thereof, which is essential to highlight.

- Always use caution and safe operating practices when operating this equipment.
- Install all safety panels and guards before operating your equipment.
- Stay clear of all moving parts when the machine is in operation.
- Keep all people clear of the machine when it is running.

Read and comply with all safety recommendations of your tractor/skid steer manufacturer, as outlined in its operator and service manuals.

NOTE: Some equipment depicted in illustrations may not reflect exact production model configurations.

## SAFETY

While operating this equipment use common sense and follow all safety guidelines.

In addition to observing the specific precautions listed throughout this manual, the following general statements apply. These must be adhered to in order to insure proper and safe operation.

#### 

DO NOT get off the tractor while the tractor PTO is engaged. Insure that the PTO shield and safety chains are properly installed.

Keep hands and feet from under the equipment at all times. Make sure that all people are safely clear of the equipment before operating.

In order to prevent serious injury and to promote safe operation, keep shields in place during operation, and insure that all mounting hardware is properly tightened.

## WARNING

DO NOT attempt to operate the equipment in areas with steep inclines, ditches, large rocks, stumps, or holes that may upset the tractor, endangering the operator or damaging the equipment.

Never clean, adjust or repair the equipment while it or the tractor are running. Never attempt to pull material from any part of the equipment while it is running.

Never wear loose clothing while operating the equipment as it may become caught in the moving parts of the machine.

Never allow anyone to ride on the equipment or tow vehicle.

For safe operation of the equipment, periodically inspect all parts for excessive wear. Replace worn components with authorized parts.

To prevent the hitch from becoming disconnected during operation, always use the proper size hitch pin and safety cotter.

Be sure to use proper safety chains when towing equipment on a public roadway.

## A CAUTION

Most equipment accidents can be avoided by the observance of a few simple safety precautions.

Do not clean, lubricate or make any adjustments on the equipment while it is in motion.

Do not start the machine until you know everyone is clear of the area and all tools have been stowed away.

Do not work around the unit in loose clothing that might catch on any of the moving parts.

Do not attempt to pull material from any part of the equipment while it is in operation.

Replace all shields after lubrication or repairs.

Do not allow anyone to ride on the equipment

Park on level ground or block wheels to prevent the machine from rolling

Always follow manufacturer's instructions for maintenance, repair and adjustments

Read and pay close attention to hydraulic line safety.

## 

Never attempt to stop a leak by covering it with your hand as doing so can cause severe injury.

TurfTime Equipment LLC assumes no liability for injuries sustained because of failure to read this manual or due to carelessness. Always refer to this manual for guidance, or contact your local dealer.

## **OPERATION AND ADJUSTMENT**

Note: Not following these instructions may void the warranty

## Attaching the Thatch Master to the Tractor

Always attach the Thatch Master to the tractor on a firm, level surface.

- 1. Back the tractor up to the Thatch Master, lower the 3-point lift arms, switch off the engine and apply the parking brake.
- 2. The first time the Thatch Master is attached to a tractor measurements must be taken to assure that the PTO assembly is cut to the proper length. Detailed instructions for cutting the new PTO assembly are given below.

#### NOTICE

The fit of the PTO assembly must be checked each time the thatch master is to be used on a different tractor.

3. Connect the Thatch Master drive shaft to the PTO shaft of the tractor, ensuring that the chains on the plastic shaft guard are firmly secured at both ends and that the PTO guard on the tractor is also in place.

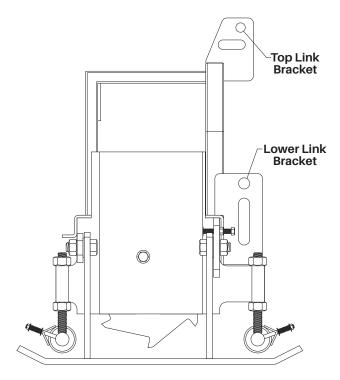


Figure 1-1. Upper and lower 3-point linkage

4. Position the lower lift arms of the tractor in the mounting brackets of the Thatch Master. Insert lower link pins and fasten with washers and lynch pins (see Figure 1-1).

#### NOTICE

Slots are provided for both the lower link and top link attachment points. Slots may be used to provide greater flotation of the Thatch Master while the hole mounts provide a more rigid positioning. For new machines, it is recommended that the lower links utilize the holes and the top link use the slot.

- 5. Install the top link and adjust the length of the top link until it is in the middle of the slot.
- Supporting the machine on the tractor's 3-point linkage, adjust the depth control rollers to give the correct blade depth setting according to turf conditions and working requirements (see "Initial Cutting Depth" on page 4).

If your Thatch Master is fitted with a flip stand, the approximate cutting depth can be set in the shop before the Thatch Master is attached to the tractor. Fine readjustments may be required depending on field conditions.

#### NOTICE

It is important that both front and rear rollers be adjusted equally so that the top cover of the Thatch Master is level when lowered onto flat ground. Failure to maintain the top cover level will reduce the ability of the Thatch Master to follow ground contours.

#### PTO Assembly Length

## NOTICE

This step is critical because a PTO assembly that is too long could damage the tractor PTO mechanism. If the PTO assembly is too short it could come apart when the Thatch Master is raised or lowered.

Your Thatch Master verticutter is supplied with a PTO assembly that consists of a tractor half and a Thatch Master half. The PTO assembly must be cut to the proper length to avoid damage to the tractor PTO shaft or the Thatch Master gearbox. In addition, the two halves of the assembly must slide freely in and out as the Thatch Master is raised and lowered. Damage done by improper hook-up is not covered under warranty.

#### NOTICE

#### Damage can occur to both the tractor and gearbox shafts if a proper length PTO assembly is not installed!

#### **Determining the Correct PTO Length**

- Connect the Thatch Master to the tractor 3-point hitch without installing the PTO drive shaft assembly.
- 2. Use the tractor 3-point linkage to raise the Thatch Master until the gearbox shaft is horizontal to the PTO output shaft on the tractor. This is the shortest and critical distance to consider.

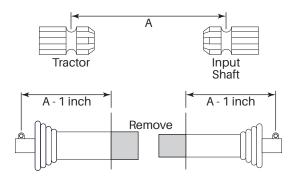


Figure 1-2. PTO assembly fitting

- 3. Turn the tractor turned off.
- 4. On both the gearbox and tractor PTO spline shaft there is a grooved ring that allows the PTO assembly to lock onto the shafts. With the two shafts horizontal to one another, measure the distance between the two grooved rings (distance A in Figure 1-2).
- 5. Collapse the PTO assembly to its shortest length. On each end there is a depression pin that fits into the grooved ring previously mentioned. Measure the distance between these two depression pins. The distance between the two depression pins must be at least one inch shorter than the distance between the tractor groove ring and the gearbox groove ring.

#### NOTICE

The PTO assembly must be able to be collapsed when in its shortest position in order to be installed and removed without "bottoming out" at this critical shortest distance. If the fully collapsed PTO assembly is not shorter by at least one inch, it must be cut to fit. Note that both halves must be cut.

6. Install the proper length PTO assembly on the Thatch Master gearbox shaft and attach it to the tractor PTO shaft. Ensure that the shaft is securely latched on to each shaft by giving it a strong tug.

#### **PTO Length Example**

This is an example of how to determine the proper length for the PTO assembly.

If the distance between the tractor-shaft groove ring and the gearbox groove ring is 25.5 inches and the closed, or collapsed, length of the PTO assembly is 28 inches, pin to pin, then 3.5 inches (2.5 inches plus 1.0 inch clearance) must be cut from each half of the PTO assembly – the tractor half and the Thatch Master half.

- Pull the PTO assembly apart and cut off the 3.5 inches from the shield and from the steel tubes. For easier re-assembly the outer shield can be cut back an additional 1/2 inch more than the inner square tube.
- 2. Carefully clean off any burrs or filings, and re-lubricate the tubes. Reassemble the two halves of the PTO assembly.

In this example, the closed or collapsed distance between the depression pins should now be 24.5 inches. If you run the Thatch Master on another tractor you will need to check the PTO shaft length to ensure proper fit.

## A CAUTION

Measure the distances for your particular set-up carefully before cutting. If too much is cut off each end of the PTO assembly, there is a possibility that the ends could come apart if the Thatch Master is raised too high when preparing for transport.

#### NOTICE

If you need help with the PTO assembly set up, please call 800-201-1031 before making the cuts.

#### Initial Cutting Depth

1. With the Thatch Master mounted to the tractor's 3-point hitch, raise the unit several inches off the ground.

#### NOTICE

On newer models, parking stands allow initial adjustments to be made before the Thatch Master is mounted on the tractor. These stands are available as retrofits on older models.

2. Lower the Thatch Master so the rollers rest onto two straight edges, one at each end of the unit. Be sure the blades do not rest on the ground or they may become damaged.

#### NOTICE

The Thatch Master should be operated in a fully upright position, i.e., the frame is vertical, and horizontal side to side.

3. Measure the distance from bottom of the top adjusting nut to the top of the straight edge (distance X on Figure 1-1). Ensure this distance is the same at all four corners.

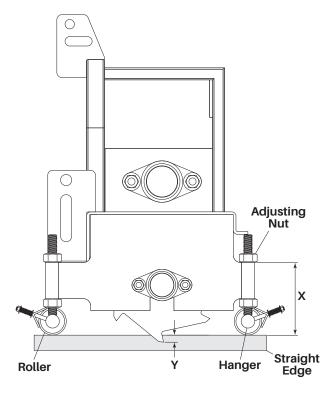


Figure 1-3. Setting the roller depth

4. Measure the distance from the top of the straight edge to the lowest point of a blade (distance Y). This is the cutting depth.

Alternatively, adjust the four hangers so the lowest point of the blade is even with the top of the straight edge for a 0-inch cutting depth. Record the distance X and then, whenever depth adjustment is required, add the desired cutting depth to X.

- 5. To adjust the cutting depth, loosen the upper and lower nuts on the hanger.
  - Turn the upper nut clockwise to raise the roller and increase the cutting depth.
  - Turn the upper nut counterclockwise to lower the roller and reduce the cutting depth.
- 6. After all four hangers are at the same level (distance X), tighten each bottom adjusting nut.
- 7. Check level and then tighten all four lower nuts.

If cutting depths vary from job to job, record settings for each application for future reference. It may be helpful to make a chart listing facility, location (greens-tees-fairway-rough-field-apron, etc.), application (dethatch – verticut), depth in inches, and/or threads exposed on top of the nut.

## **OPERATION**

The Thatch Master will give optimum results at a PTO speed of 540 rpm. If in doubt, please contact your dealer for advice or call TurfTime Equipment at 800-201-1031.

## NOTICE

The Thatch Master must be operated within 10% of 540 rpm PTO speed. Failure to do so could cause damage to the gearbox or premature wear on the chain.

- 1. Raising and lowering the Thatch Master is achieved by moving the tractor's 3-point hitch control lever.
- With the machine supported on the tractor's 3-point hitch linkage, proceed to the work site. Lower the Thatch Master until the blades are a few inches above the grass.

3. After checking to be sure the area is clear, engage the PTO and increase engine speed to provide 540 rpm at the PTO.

#### NOTICE

The engine speed that causes the PTO to operate at 540 rpm varies between tractor models. Consult the tractor operation manual to determine that the 540 rpm PTO speed.

## 

Never lower the Thatch Master into the ground without the tractor moving forward.

# Never drive backward with the Thatch Master down and contacting the ground.

4. Drive forward SLOWLY (2-4 mph) while lowering the machine into working position. Be sure the 3-point hitch control lever is moved into its lowest position on the tractor to allow the Thatch Master to ride on the rollers and follow the contours of the ground. Continue forward in a straight line.

For first time use of a new machine, or in a new application, stop after a few feet to evaluate the results and adjust as needed.

5. At the end of the pass, with blades still rotating, raise the unit several inches off the ground. Make the turn and repeat from step 4.

#### NOTICE

Ensure that the 3-point hitch control lever is in its lowest position when operating the machine. This allows the lift arms to float and enables the Thatch Master to rest on the rollers and follow the contour of the ground.

Raise the Thatch Master using the 3-point hitch before making turns.

Avoid lifting the Thatch Master too high when making turns as this can put excess strain on the PTO shaft joints and couplings, reducing their working life.

While it is possible to make long sweeping turns while dethatching, doing so may effect operation and increase wear on the machine. Excessive turning during operation may void the warranty.

The recommended tractor ground speed when verticutting at different depths.

Depth of Cut	Ground Speed
0 - 1/4 inch	3 - 5 mph *
5/16 – 1/2 inch	1.5 - 3 mph *
9/16 - 1.5 inches	1 - 1.5 mph *

#### NOTICE

Travel speed will vary with cutting depth and ground conditions. The above chart is only a guide under ideal soil conditions. Working at deeper settings may require more horsepower and may increase wear on drive components and blades.

The Turftime Equipment, LLC warranty covers defects in the materials. Damage as a result of operating in adverse conditions is not covered under warranty. TurfTime Equipment, LLC offers a number of more rugged machines that can be used to aerate and till areas that contain small stones and debris. Using the Thatch Master in these conditions will void the warranty.

See www.turftimeeq.com/TurftimeEqProducts, ADVANTAGE Aerators and FORIGO product pages for other equipment options.

If a Thatch Master blade tip has hit a stone and is slightly bent, it can often be straightened by applying gentle pressure with a clamp or pliers. If the Thatch Master hits a substantial object, the shear pin is designed to break to prevent extended damage to the tractor and to the Thatch Master. Extra shear pins are stored in the black canister on the top of the unit. Only use shear pins purchased from Turftime Equipment, LLC.

If the THATCH MASTER hops, reduce ground speed while maintaining blade rotation speed. Optional weights are available and may add stability, depending on soil conditions, type of grass, and operating practices.

## SPECIFICATIONS

Models	Working width	Hp required	Weight	Length	Overall Width	Height
TM-3600	33 in.	20-35	320 lb.	21 in.	44 in.	26.5 in.
TM-4800	45 in.	25-40	350 lb.	21 in.	56 in.	26.5 in.
TM-6000	57 in.	30-45	387 lb.	21 in.	66 in.	26.5 in.
TM-7200	69 in.	35-50	425 lb.	21 in.	80 in.	26.5 in.

## MAINTENANCE

#### Initial

After initial inspection following delivery of your Thatch Master, check for any loose parts and verify that the PTO assembly and gearbox are properly lubricated. See "PTO Assembly Length" on "PTO Length Example" on page 3 for instructions on PTO set up.

#### Daily

Lubricate all grease fittings on the PTO drive shaft, blade shaft bearings, and gearbox shaft bearing. Never over-grease as this will push the seals out of the bearings, causing bearing failure.

Check drive chain and adjust, if necessary.

Check all nuts and bolts for tightness.

Check tightness of blades and carefully straighten any bent tips.

#### Weekly

Check gearbox oil level and top up if necessary with SAE 90 gear oil. Examine blades for tightness and wear. It is possible to straighten blade tips that have been slightly bent.

## NOTICE

Always grease the tractor's PTO shaft before attaching the Thatch Master. Failure to do this will result in rapid wear of the drive shaft.

#### **Blade Replacement**

A worn blade assembly may be replaced with a complete, factory-built blade assembly kit. Alternately, the blade assembly can be rebuilt on-site by removing and replacing worn blades. If replacing blades on-site, be sure to retain the spacers, bearings and other parts, or order new ones. The blades are sold separately from spacers and other parts. The instructions below also apply when dismantling the blade assembly to change spacing.

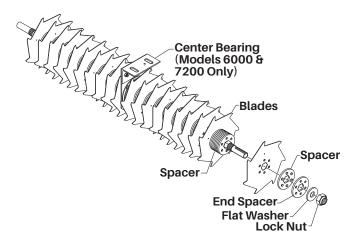


Figure 2-1. Blade assembly

- 1. Switch the tractor off and apply the parking brake. Remove the Thatch Master from the tractor.
- 2. With the unit securely positioned on a solid surface, remove the chain guard and disconnect and remove the chain. Unbolt both blade shaft bearings and carefully lower the blade shaft assembly.

## 

Care must be taken to avoid physical harm. The blade assembly is heavy with sharp blades. Keep hands and feet safely away from the blades to prevent injury.

- 3. If a factory-built replacement blade assembly has been purchased, skip to step 9.
- 4. If the original assembly is being rebuilt on-site, continue to line 5.
- 5. Remove the bearing from the left end (not the end with drive sprocket), taking care to avoid damage. Remove the blade lock nut and washer. Retain all parts and spacers for reuse.

## NOTICE

Note position of the cutting edge of blades for reassembly and proceed to remove all blades and spacers. The Thatch Master will not work if blades are installed backwards.

# MAINTENANCE

- 6. For reassembly, the blades can be fitted to the shaft in one of six positions. Offset each blade 1/6 turn around the six sides of the shaft to align blades in a spiral. Interlocking spacers are placed on the shaft between the blades, with each spacer filling 1/4" of space. For example, to provide one inch of spacing between blades, stack and interlock four spacers between each blades. Be sure that the blades and spacers are firmly pressed together to maintain equal spacing.
- 7. Finally, install flat washer and lock nut and torque to 250 lb-ft. Reinstall the left hand bearing.
- 8. Install the new or reassembled blade assembly into the Thatch Master in reverse order of removal.

#### NOTICE

After replacing the blade shaft, check for tightness after 30 minutes use. If blades are not tightly stacked, the center hole can round out and destroy the blade shaft.

#### Roller Rebuild kit

A roller rebuild kit is available to update the roller bearings to current production levels. The kit provides four roller tube hangers and twelve bearings (Order No. TM-3100K) (see "Figure 3-5. Sprockets, Roller Chain and Related Parts" on page 18).

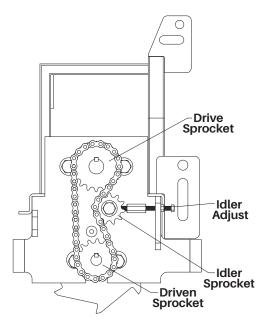
#### **Roller Chain Assembly**

An updated roller chain assembly is available if your Thatch Master is equipped with a springloaded idler sprocket. The upgraded idler sprocket is bolted in place, allowing a more secure position.

To install the upgraded parts refer to Figure 2-5.

#### Tightening the chain

Periodically check the chain for tightness. There should be approximately 1/2-in. of play in the center of the chain.





To adjust the chain tension:

- 1. Remove the chain cover.
- 2. Loosen the bolt through the center of the idler sprocket.
- 3. Loosen the idler screw adjustment jam nut.
- 4. Turn the idler screw adjustment bolt clockwise to tighten the chain. Set the adjustment bolt so approximately 1/2-in. of play is in the center of the chain span opposite of the idler sprocket.
- 5. Tighten the jam nut and recheck the play. Loosen and readjust, if necessary.

## DANGER

Never operate the Thatch Master without the chain cover installed.

6. Install the chain cover.

#### NOTICE

If a new chain has been installed, the chain tension must be checked after 30 minutes of operation. Adjust if necessary.

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#### HOW TO ORDER REPAIR PARTS

Each thatch master has its own model and serial number.

The model and serial number for the Thatch Master is located on the top left of the frame.

Always mention the model and serial number when calling for service or when ordering repair parts.

All parts listed and illustrated in this manual may be ordered through your nearest authorized dealer. If parts you need are not available locally, your order will be processed through the factory and shipped promptly.

When ordering repair parts, have the following information ready:

- 1. Item part number
- 2. Quantity needed
- 3. Part description
- 4. Thatch master model and serial number

Be sure to record both the model and serial number of your Thatch Master upon delivery. Keep this information in a safe place for future reference.

TurfTime Equipment 156 Kurtz Road New Holland, PA 17557 Phone (800) 201-1031

Figure 3-1. Frame Assembly, Stands and Related Parts

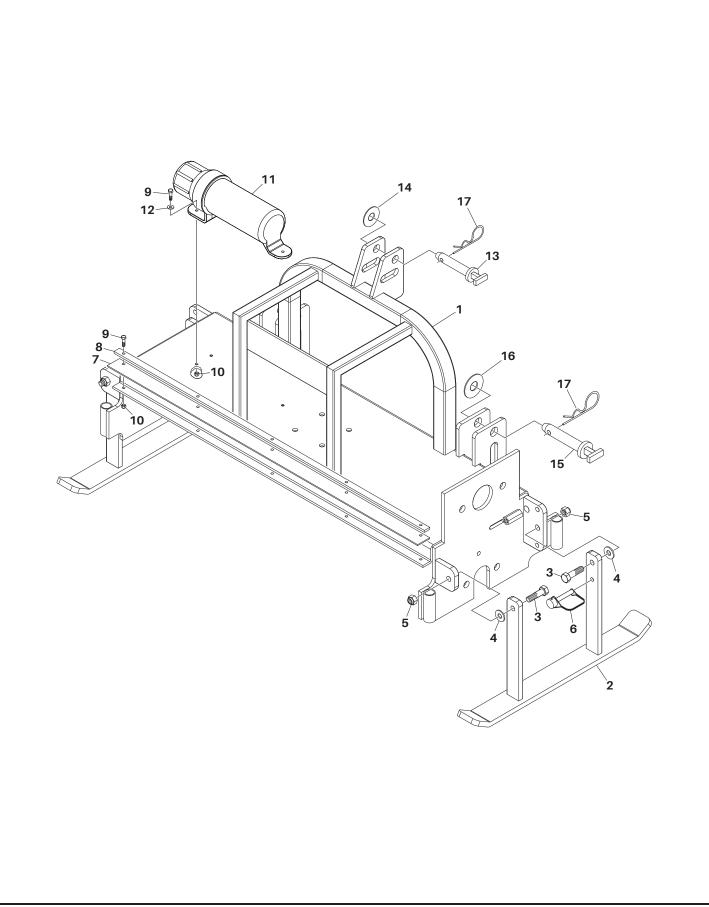


Figure 3-1. Frame Assembly, Stands and Related Parts

Item	Part No.	Qty	Description
1	TM-4201	1	Frame Assembly, Model TM-3600
	TM-4202	1	Frame Assembly, Model TM-4800
	TM-4203	1	Frame Assembly, Model TM-6000
	TM-4204	1	Frame Assembly, Model TM-7200
2	TM-4210	2	Stand, Flip Down
3	TM-4325	4	Bolt, Hex Head, 1/2"-13UNC x 2" Long
4	TM-2114	4	Washer, Flat, 1/2"
5	TM-2119	4	Nut, Hex, Nylon Lock, 1/2"-13UNC
6	TM-4300	2	Pin, Square Wire Locking, 5/16" Dia. x 1-3/4" Long
7	TM-4301	1	Flap, Rubber, Model TM-3600
	TM-4302	1	Flap, Rubber, Model TM-4800
	TM-4303	1	Flap, Rubber, Model TM-6000
	TM-4304	1	Flap, Rubber, Model TM-7200
8	TM-4305	1	Strip, Metal, Model TM-3600
	TM-4306	1	Strip, Metal, Model TM-4800
	TM-4307	1	Strip, Metal, Model TM-6000
	TM-4308	1	Strip, Metal, Model TM-7200
9	TM-4312	AR	Bolt, Hex Head, 1/4"-20UNC x 1" Long
10	TM-1313	AR	Nut, Hex, Nylon Lock, 1/4"-20UNC
11	TM-4315	1	Canister, Owners Manual
12	TM-4314	3	Washer, Flat, 1/4"
13	TM-4320	1	Pin, Top Link, Cat I, Includes Items 14 & 17
14	TM-4321	1	Washer, Flat, 3/4" SAE
15	TM-4322	2	Pin, Lower Link, Cat I, Includes Items 16 & 17
16	TM-4323	2 2	Washer, Flat, 7/8" SAE
17	TM-4324		Cotter, Hairpin, 1/8"Dia.
			AR-AS Required
			Ar-AS hequiled

Figure 3-2. Shaft, Blades and Related Parts

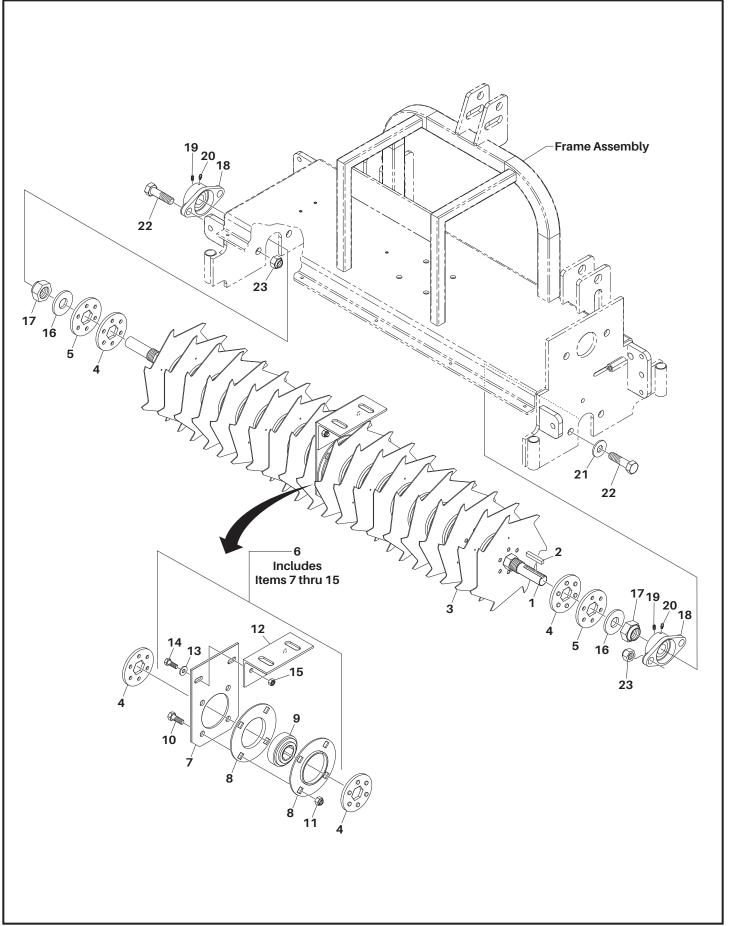


Figure 3-2. Shaft, Blades and Related Parts

Item	Part No.	Qty	Description
1	TM-1105	1	Shaft, Hex, 1-1/8", Model TM-3600, ASN 2020 models or newer
	TM-1100	1	Shaft, Hex, 1", Model TM-3600, BSN 2019 models or older
	TM-1106	1	Shaft, Hex, 1-1/8", Model TM-4800, ASN 2020 models or newer
	TM-1101	1	Shaft, Hex, 1", Model TM-4800, BSN 2019 models or older
	TM-1107	1	Shaft, Hex, 1-1/8", ModelTM-6000, ASN 2020 models or newer
	TM-1102	1	Shaft, Hex, 1", ModelTM-6000, BSN 2019 models or older
	TM-1108	1	Shaft, Hex, 1-1/8", Model TM-7200, ASN 2020 models or newer
	TM-1103	1	Shaft, Hex, 1", Model TM-7200, BSN 2019 models or older
2	TM-1104	1	Key, 1/4" Square x 1-1/4" long
3	TM-1009	AR	Blade, Hex Shaft, 7 Tooth w/Carbide Tip x .047" Thick
	TM-1010	AR	Blade, Hex Shaft, 7 Tooth w/Carbide Tip x .079" Thick
	TM-1011	AR	Blade, Hex Shaft, 7 Tooth w/Carbide Tip x .125" Thick
4	TM-1206	AR	Spacer, Blade, Stackable, Hex Hole, 1/4" Wide
5	TM-1207	2	Spacer, End, 1/4" Wide
6	TM-1013K	1	Kit, Bearing, Center, Models, TM-6000 & TM-7200,
			Includes Items 7 thru 15,
7	TM-1208	1	Plate, Bearing Mount
8	TM-1209	2	Plate, Bearing
9	TM-1210	1	Bearing
10	TM-1211	4	Bolt, Hex Head, 7/16"-14UNC x 1/" Long
11	TM-1212	4	Nut, Hex, Nylon Lock, 7/16"-14UNC
12	TM-1213	1	Bracket, Bearing Mount
13	TM-2003	2	Washer, Flat, 3/8"
14	TM-1214	2	Bolt, Hex Head,3/8"-16UNC x 1" Long
15	TM-2005	2	Nut, Hex, Nylon Lock, 3/8"-18UNC
16	TM-1216	2	Washer, Flat, 1-1/4"
17	TM-1215	2	Nut, Lock, Blade Shaft, 1-1/4"-7UNC
18	TM-1220	2	Bearing, Flange, 1-1/8" Bore,
			Includes Items 19 & 20, ASN 2020 models or newer
	TM-1217	2	Bearing, Flange, 1" Bore,
			Includes Items 19 & 20, BSN 2019 models or older
19	TM-1218	4	Screw, Set, 1/4"-28UNF
20	TM-1219	2	Fitting, Grease, 1/8"
21	TM-2114	2	Washer, Flat, 1/2"
22	TM-2115	4	Bolt, Hex Head, 1/2"-13UNC x 1-3/4" Long
23	TM-2119	4	Nut, Hex, Nylon Lock, 1/2"-13UNC

Figure 3-3. Roller Tube, Scraper and Related Parts

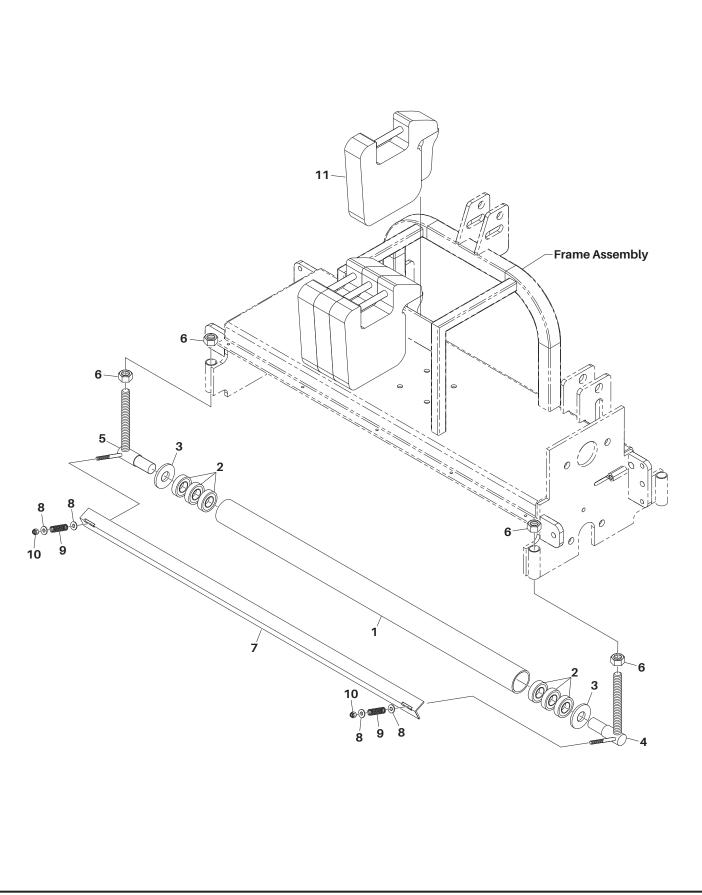


Figure 3-3. Roller Tube, Scraper and Related Parts

Item	Part No.	Qty	Description
1	TM-3113	2	Roller Tube, 38" Long, Model TM-3600
	TM-3114	2	Roller Tube, 50" Long, Model TM-4800
	TM-3115	2	Roller Tube, 62" Long, Model TM-6000
	TM-3116	2	Roller Tube, 74" Long, Model TM-7200
2	TM-3118	12	Bearing, Roller
3	TM-2120	AR	Washer, Flat, 1"
4	TM-3200	2	Hanger, Roller Tube, Right
5	TM-3201	2	Hanger, Roller Tube, Left
6 7	TM-3202	8	Nut, Hex, 3/4"-10UNC
	TM-3203	2 2	Scraper, Roller Tube, Model TM-3600
	TM-3204 TM-3205	2	Scraper, Roller Tube, Model TM-4800 Scraper, Roller Tube, Model TM-6000
	TM-3205	2	Scraper, Roller Tube, Model TM-8000
8	TM-2105	8	Washer, Flat, 5/16"
9	TM-3207	4	Spring, Roller Scraper
10	TM-3208	4	Nut, Hex, Nylon Lock, 5/16"-18UNC
11	TM-3220	AR	Weights, Suitcase (Optional)
			AR-As Required
	TM-3210K	1	Kit, Roller Rebuild, Includes Items 2, 3, 4, 5 & 6
			1

Figure 3-4. Gearbox, PTO Shaft and Related Parts

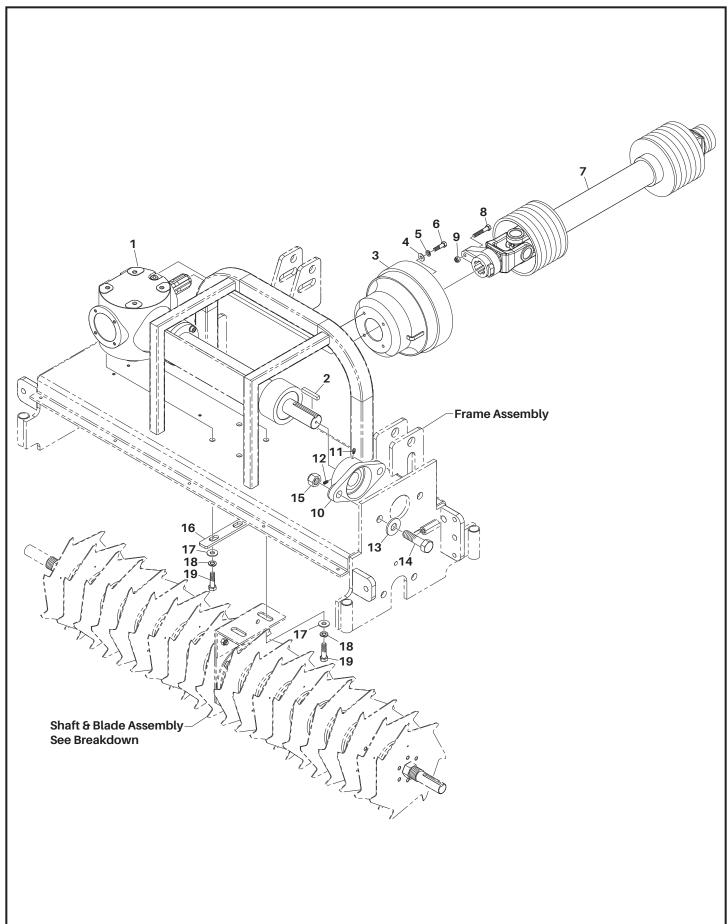


Figure 3-4. Gearbox, PTO Shaft and Related Parts

Item	Part No.	Qty	Description
1	TM-2100	1	Gearbox, With 11.5" Extension, Models TM-3600 and TM-4800
	TM-2101	1	Gearbox, With 22.17" Extension, Model TM-6000
	TM-2102	1	Gearbox, With 29.06" Extension, Model TM-7200
	TM-2099	1	Gearbox Only No Extension
2	TM-2103	1	Key, 5/16" Square x 1-1/4" Long
3	TM-2104	1	Shield, Cone, Gearbox
4	TM-2105	4	Washer, Flat, 5/16"
5	TM-2106	4	Washer, Lock, 5/16"
6	TM-2107	4	Bolt, Hex Head, 5/16"-18UNC x 3/4" Long
_	TM-4326	4	Bolt, Hex Head, 8mm
7	TM-2108	1	PTO Assembly, Includes 8 & 9
8	TM-2109	1	Bolt, Hex Head, 8mm x 45mm
9	TM-2110	1	Nut, Hex, Lock, 8mm
10	TM-2111	1	Bearing, Flange, 1-3/8" Bore, Includes Items 11 & 12
11	TM-2112	1	Fitting, Grease, 1/8"
12 13	TM-2113 TM-2114	2	Screw, Set, 5/16-24UNF Washer, Flat, 1/2"
13	TM-2114 TM-2115	2	Bolt, Hex Head, 1/2"-13UNC x 1-3/4" Long
14	TM-2119	2	Nut, Hex, Nylon Lock, 1/2"-13UNC
16	TM-2116	1	Spacer, Gearbox Mount
17	TM-2114	4	Washer, Flat, 1/2"
18	TM-2117	4	Washer, Lock, 1/2"
19	TM-2118	4	Bolt, Hex Head, 1/2"-13UNC x 1-1/2" Long
	TM-4327	4	Bolt, Hex Head, 12mm
	_		

Figure 3-5. Sprockets, Roller Chain and Related Parts

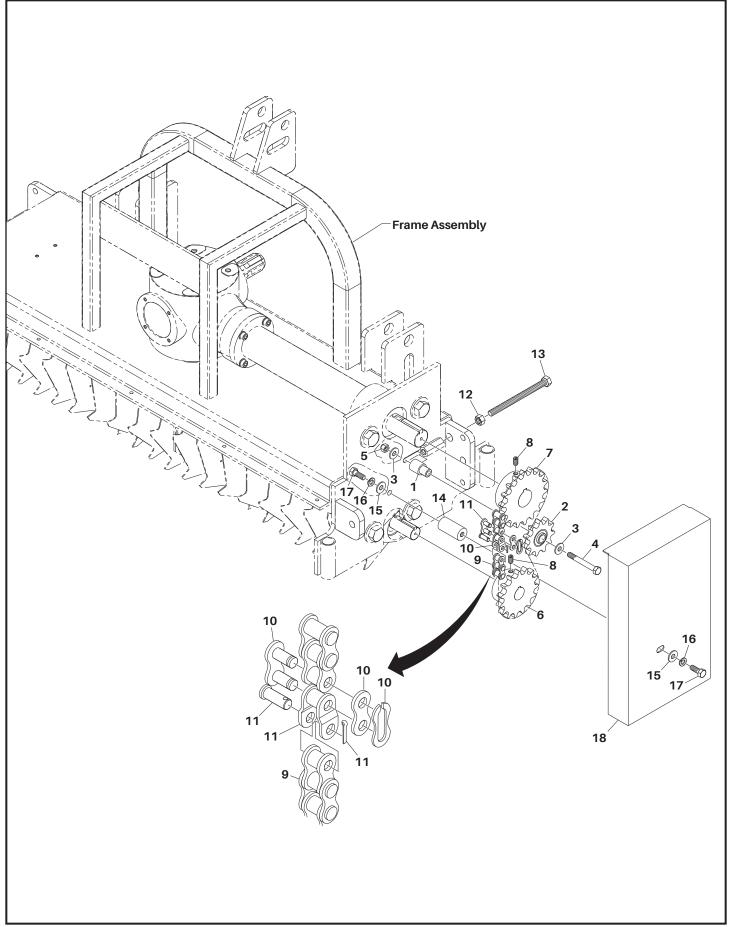


Figure 3-5. Sprockets, Roller Chain and Related Parts

Item	Part No.	Qty	Description
	TM-2018K	1	Kit, Complete Chain, Includes Items 1 thru 11
	TM-2019K	1	Kit, Idler, Includes Items 1 thru 5
1	TM-2001	1	Spacer, Idler Adjust
2	TM-2002	1	Sprocket, Idler, #60 - 11 Tooth
3	TM-2003	2	Washer, Flat, 3/8"
4	TM-2004	1	Bolt, Hex Head, 3/8"-16UNC x 2-1/2" Long
5	TM-2005	1	Nut, Hex, Nylon Lock, 3/8"-16UNC
6		1	Sprocket, Driven, Shaft 1-1/8 Dia. " Dia., #60 - 15 Tooth,
			Includes Item 8, ASN 2020 models or newer
	TM-2006	1	Sprocket, Driven, Shaft 1" Dia., #60 - 15 Tooth,
			Includes Item 8, BSN 2019 models or older
7	TM-2008	1	Sprocket, Drive, #60-18 Tooth, Includes Item 8
8	TM-2009	AR	Screw, Set, 5/16"-18UNC
9	TM-2010	1	Chain, Roller, #60, Includes Item 10 & 11
10	TM-2011	1	Link, Master, #60 Chain, Includes Side Plate
11	TM-2012	1	Link, Half, #60 Chain, Includes Pin & Cotter Pin
12	TM-2013	1	Nut, Hex, 1/2"-13UNC
13	TM-2014	1	Bolt, Hex Head, 1/2"-13UNC x 6" Long (Idler Adjust)
14	TM-2015	1	Spacer, Cover
15	TM-2003	2	Washer, Flat, 3/8"
16	TM-2121	2	Washer, Lock, 3/8"
17	TM-2016	2	Bolt, Hex Head, 3/8"-16UNC x 1" Long
18	TM-2017	1	Cover, Chain
			AD As Dequired
			AR-As Required

Figure 3-6. Decals



Figure 3-6. Decals

Item	Part No.	Qty	Description
1	TM-8000	1	Decal, TurfTime Equipment
2	TM-8001	1	Decal, Danger, Guard Missing
3	TM-8002	1	Decal, Danger, Keep Hands and Feet Away
4	TM-8003	1	Decal, Warning, Moving Part Hazard
5	TM-8004	1	Decal Danger, Rotating Blade Hazard
6	TM-8005	1	Decal Danger. Thrown Object Hazard
7	TM-8006	1	Decal, Thatch Master
8	TM-8007	1	Decal, Model TM-3600
	TM-8008	1	Decal, Model TM-4800
	TM-8009 TM-8010	1	Decal, Model TM-6000 Decal, Model TM-7200
9	TM-8010 TM-8012	1	Decal, Model 1117200 Decal, Made in USA
10	TM-8011	1	Plate, Model and Serial Numbers

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