



M296022B.1

MODEL NUMBER: 296022

SERIAL NUMBER: _____

Owner's Manual

Instructions for Assembly and Testing

Tow package for a Stump and Root Grinder

(Used on NorthStar Stump Grinder 296020)



WARNING

READ and UNDERSTAND this manual completely before using this Tow Package.

All operators of this equipment must read and completely understand all safety information, operating instructions.

Improper use of the tow package could result in serious injury to the operator or nearby persons.

Any Questions, Comments, Problems, or Parts Orders

Call NorthStar Product Support @ 1-800-270-0810

Hazard Signal Word Definitions






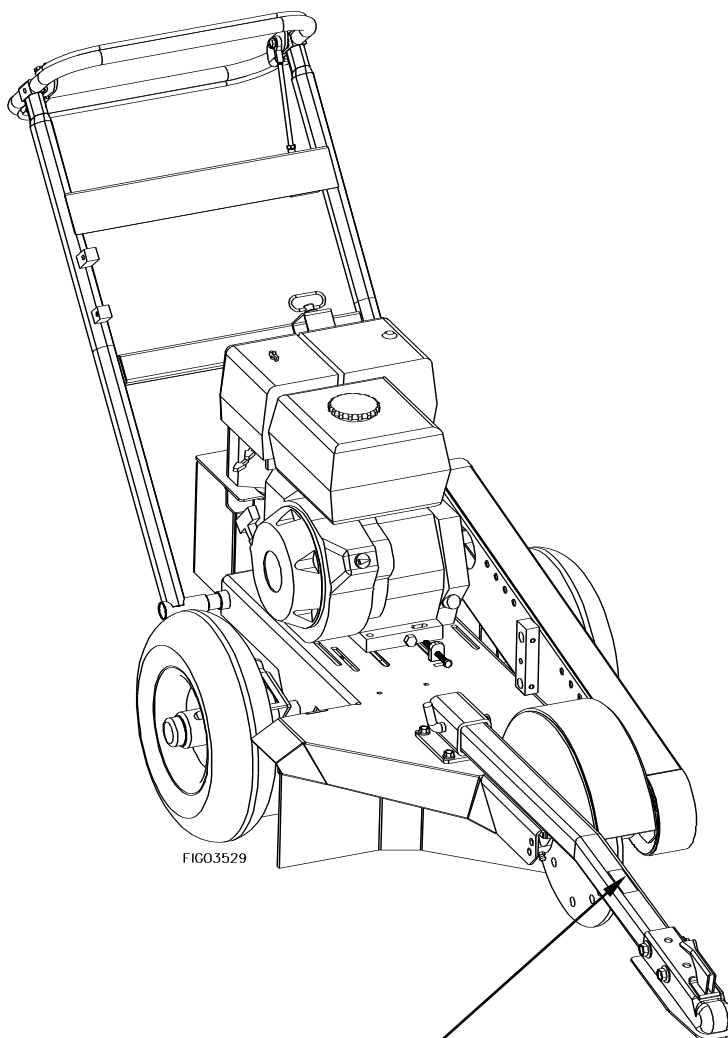
	<p>This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.</p>
	<p>DANGER (red) indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</p>
	<p>WARNING (orange) indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
	<p>CAUTION (yellow) indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</p>
	<p>CAUTION (yellow) used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.</p>

fig01453

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Safety Decal Locations



TOWING INSTRUCTIONS

**NEVER TOW ON FREEWAYS
OR MAJOR HIGHWAYS**

NEVER EXCEED 45 MPH
Do Not Exceed 15 MPH When Turning
Corners. Do Not Turn Sharp Corners

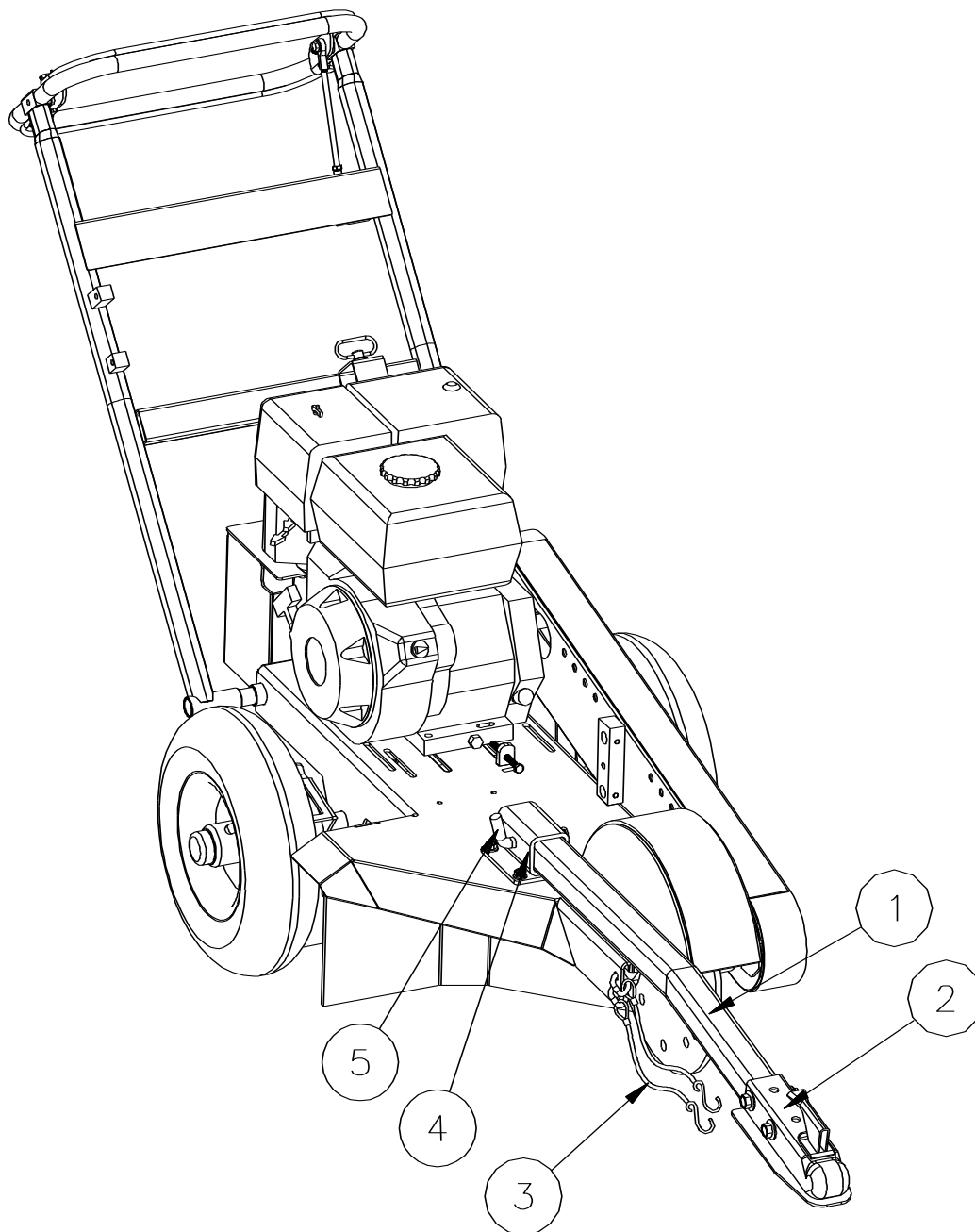
**Make Sure Safety
Cables Are Secured
To The Tow Vehicle**

To order replacement safety label part #785623, call NorthStar Product Support at 1-800-270-0810.

WARNING

ALWAYS make sure safety labels are in place and in good condition. If a safety label is missing or not legible, order new labels.

Machine Components Identification



- 1.) **Tow Bar.** Connects the Stump Grinder to the tow vehicle.
- 2.) **2" Coupler.** Allows the trailer unit to be hooked up to a 2" ball hitch.
- 3.) **Safety Cables.** Secures trailer to vehicle in case of accidental disconnection of ball and coupler.
- 4.) **Tow Bar Socket.** Connects the Tow Bar to the Stump Grinder
- 5.) **Hitch Pin.** Locks tow bar into Tow Socket

All grinder units can be transported via trailers, or with the purchase of an optional towing kit package can be towed behind the vehicle.

Towing Instructions

IMPORTANT!

See Assembly Instructions section of this manual to assemble the Stump Grinder Tow Package.

Now that you have installed the Stump Grinder Tow Package, there is some important safety information you need to know with regard to vehicle handling with the Stump Grinder attached.

Step One. Inspect/Repair

If the Stump Grinder has been towed previously, it must be prepared **BEFORE EACH SUBSEQUENT USE**.

⚠ WARNING

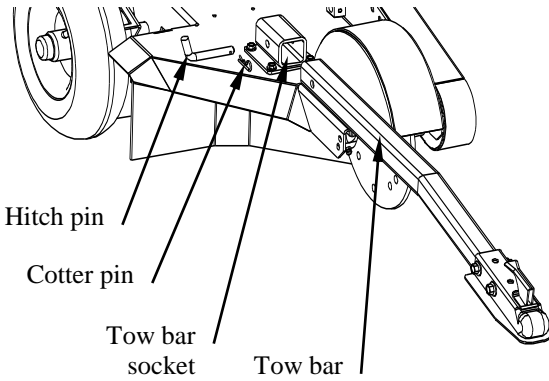
Read instructions below carefully for inspecting and preparing the Stump Grinder for high speed towing. Damaged or missing components could result in injury to the operator, bystanders, or property damage.

Important safety rules:

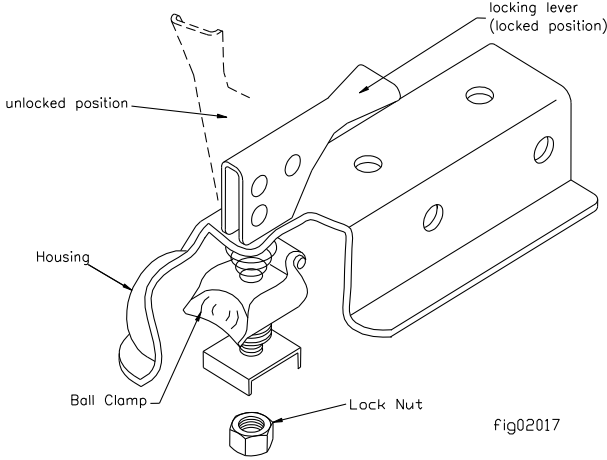
- **Replacement parts.** If a part needs replacement, only use parts that meet the manufacturer's specifications. Replacement parts that do not meet specifications may result in a safety hazard or poor operation.

Inspect and repair	Inspect and test the Stump Grinder Tow Package thoroughly <ol style="list-style-type: none"> a. Check tires for proper pressure level. b. Check to be sure that all nuts and bolts are tight.
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Step Two. Towing

1. Read instructions	Review towing safety instructions in your vehicle manual.
2. Check tires	Make sure tires are fully inflated and in good repair. See tire sidewall for recommended tire pressure. ⚠ WARNING: <ul style="list-style-type: none"> • Do not over-inflate tires. Serious injury can occur if tire explodes. • When seating a bead after repair, do not exceed 30 PSI. Pressures higher than 30 PSI can cause the tire and wheel to rupture and explode.
3. Tow bar is secured and locked	Insert the tow bar into the tow bar socket. Secure the hitch pin with a cotter pin. 
4. Attach to hitch (2" ball)	Attach Stump Grinder to vehicle hitch. Each state has legal requirements for towing equipment and trailers (such as lighting

Towing Instructions

	<p>and licensing). Be sure receiver on towing vehicle is bolted tightly. Towing vehicle capability must be matched to trailer weight and type of hitch arrangement</p> <ol style="list-style-type: none"> 1. Attach Stump Grinder coupler to a class 2 or higher hitch with 2" ball (only). 2. Adjust coupler to ball by raising locking lever and turning lock nut with fingers. 3. Proper adjustment is obtained when coupler is as tight as possible on ball and locking lever can still be opened and closed. 4. Close the lock lever to secure the attachment. An optional locking pin or padlock may be inserted in the locking lever hole for extra security.  <p style="text-align: right;">Fig02017</p>
5. Attach safety chains	<p>Attach safety chains.</p> <ol style="list-style-type: none"> 1. Two safety chains must be used while towing. 2. Cross safety chains under the coupler allowing only enough slack for vehicle turns.
6. Tow to desired location	<p>Tow Stump Grinder carefully to desired work site.</p> <p><u>Important safety instructions:</u></p> <ul style="list-style-type: none"> • Speed limit. Never tow this Stump Grinder over 45 mph. Faster speeds may result in loss of control. • Added length. Be aware of the added length of the Stump Grinder. • Rough terrain. Drive slowly and take extra caution when traveling over rough terrain. • On public roads. If towing on a public road, make sure to comply with all local, state, and federal towing requirements. It is the sole responsibility of the purchaser to obtain licensing, trailer lights, safety chains or signage, as needed to comply. • Unattended. Turn off the towing vehicle before leaving the Stump Grinder unattended. • Under the influence. Never tow or operate this Grinder while under the influence of alcohol, drugs, or medication
7. Remove tow bar & safety chains after towing.	<p>Remove tow bar and Safety chains after towing and before operating your Stump Grinder.</p> <p>NEVER operate Stump Grinder while the Tow Bar or Safety Chains are attached.</p>

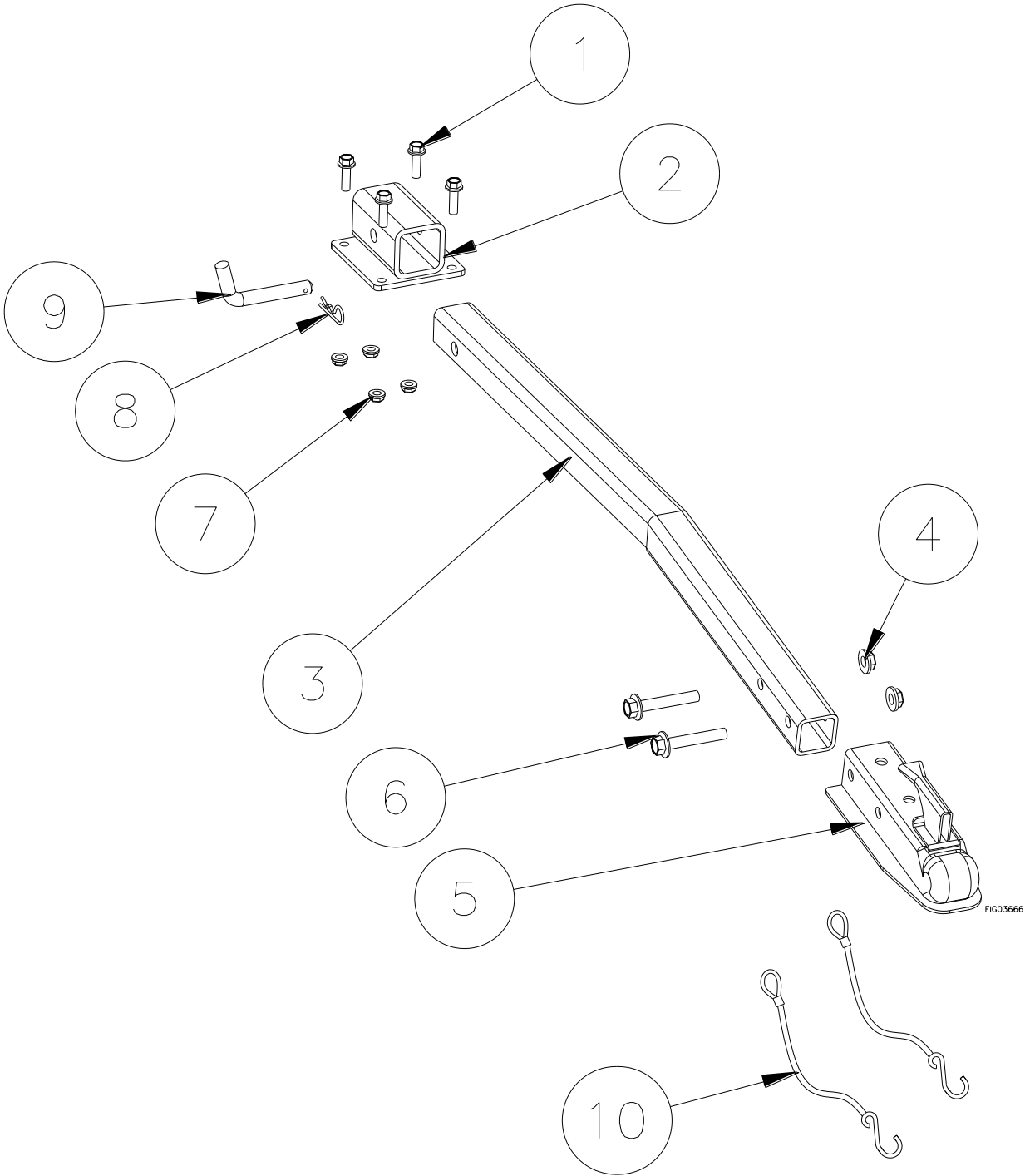
Specifications

Maximum Towing Speed.....	45 MPH
Coupler Size.....	2" Ball
Overall Dimensions (boxed).....	39.5"L x 7"W x 4.5 "H
Weight (shipping).....	20 lbs.

The manufacturer reserves the right to make improvements in design and/or changes in specifications at any time without incurring any obligation to install them on units previously sold.

Any Questions, Comments, Problems, or Parts Orders
Call NorthStar Product Support @ 1-800-270-0810

Parts Breakdown – Exploded View



Item	Part #	Description	Qty
1	82024	3/8" x 1-1/4" Bolt	4
2	785491	Tow socket	1
3	785490	Tow bar	1
4	82291	1/2" Flange nut	2
5	38587	2" Ball coupler	1

Item	Part #	Description	Qty
6	82118	1/2" x 3" Bolt	2
7	82290	3/8" Lock nut	4
8	30312	Cotter pin	1
9	37459	Hitch pin	1
10	792482	Safety cable	2

Safety Instructions

WARNING

Carefully read and make sure you understand the following safety information before towing the Stump Grinder.

Improper use or maintenance of the Stump Grinder can result in serious injury to the operator or bystanders.

Safety in Moving and Towing the Stump Grinder

WARNING

The Stump Grinder is very heavy. It can crush and cause serious injury if it rolls out of control or tips over. Follow the instructions below for safely moving and towing the Stump Grinder.

Safety – Before Use

Always inspect your Stump Grinder before each use, and repair as needed, to keep it in safe working condition:

- **Read manual.** Do not allow anyone to tow the Stump Grinder who has not read the Owner's Manual.
- **Review safety rules.** Before towing this Stump Grinder, review the instructions for safe towing. Failure to follow these instructions may result in serious injury to the operator or bystanders.
- **Mechanical parts.** Check to be sure all nuts and bolts are tight to make sure the Stump Grinder is in safe working condition.
- **Tires.** Be sure tires are fully inflated and in good repair before towing the Stump Grinder. When adding air to tires, do not over-inflate -- serious injury could occur if tire explodes.

Safety During Towing

- **Read instructions.** Review towing safety instructions in your towing vehicle manual.
- **Securely attached.** Be sure the Stump Grinder is securely attached to the towing vehicle before towing.
- **Tires.** Be sure tires are fully inflated and in good repair before towing the Stump Grinder. When adding air to tires, do not over-inflate -- serious injury could occur if tire explodes.
- **Added length.** Be aware of the added length of the Stump Grinder.
- **Speed limit.** Never tow this Stump Grinder over **45 mph**. Faster speeds may result in loss of control.
- **Rough terrain.** Be extra cautious and drive slowly when traveling over rough terrain.
- **Under the influence.** Never tow this Stump Grinder while under the influence of alcohol, drugs, or medication.
- **On public roads.** If towing on a public road, make sure to comply with all local, state, and federal towing requirements. It is the sole responsibility of the purchaser to obtain licensing, trailer lights, safety chains or signage, as needed to comply.
- **Unattended.** Turn off the towing vehicle before leaving the Stump Grinder unattended.
- **Disconnect before operate.** Do not use the Stump Grinder while it is connected to the towing vehicle.

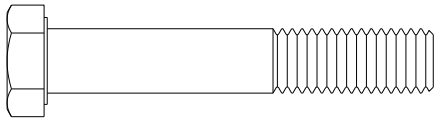
Safety – After use

- **Periodic maintenance.** Perform periodic maintenance as directed in this manual to keep the Stump Grinder in safe working condition.

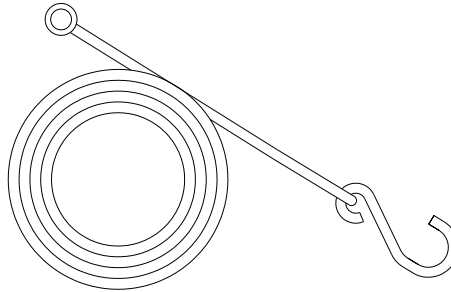
Unpacking

Closely inspect all contents in the shipping carton.

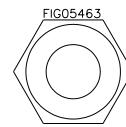
- If you have missing or damaged components: Contact NorthStar Product Support at 1-800-270-0810.



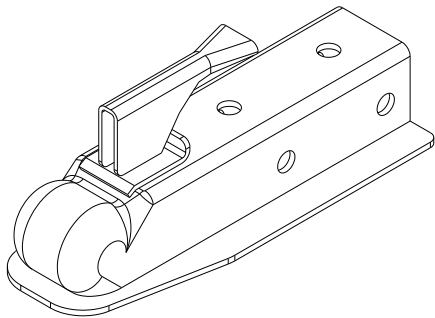
1/2" X 3" BOLT
QTY 2



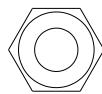
SAFETY CABLES
QTY 2



1/2" FLANGE NUT
QTY 2



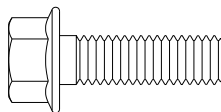
2" TOWING COUPLER
QTY 1



3/8" LOCK NUT
QTY 4



HITCH PIN w/COTTER PIN
QTY 1

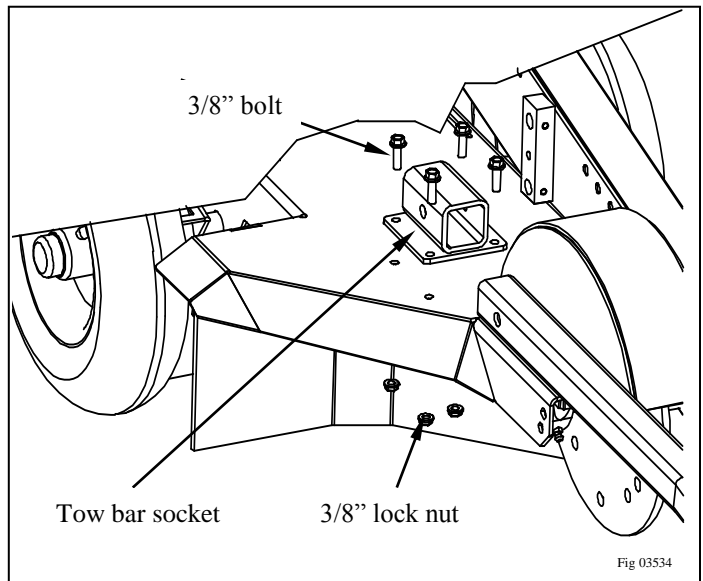


3/8" X 1-1/4" BOLT
QTY 4

Assembly Instructions

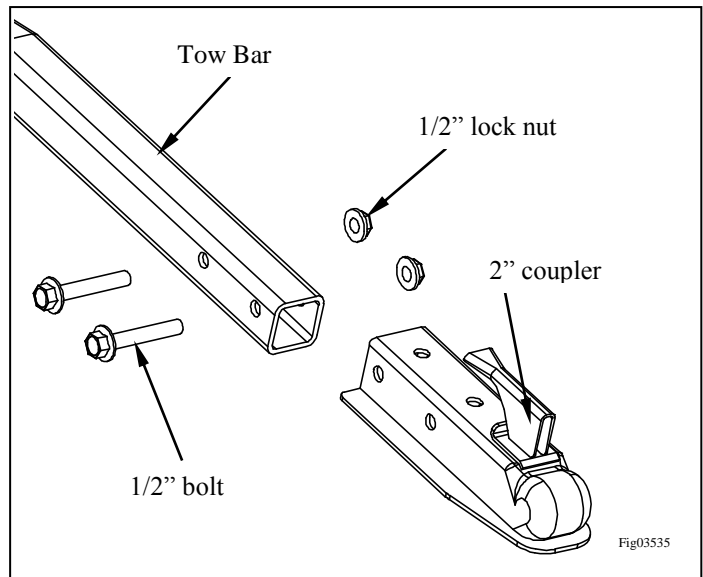
Step 1

- Attach Tow Bar Socket to Stump Grinder Using (4) 3/8" x 1-1/4" Bolts and (4) 3/8" Class G Locking Nuts.
- Tighten Bolts to 19 lb-ft torque.



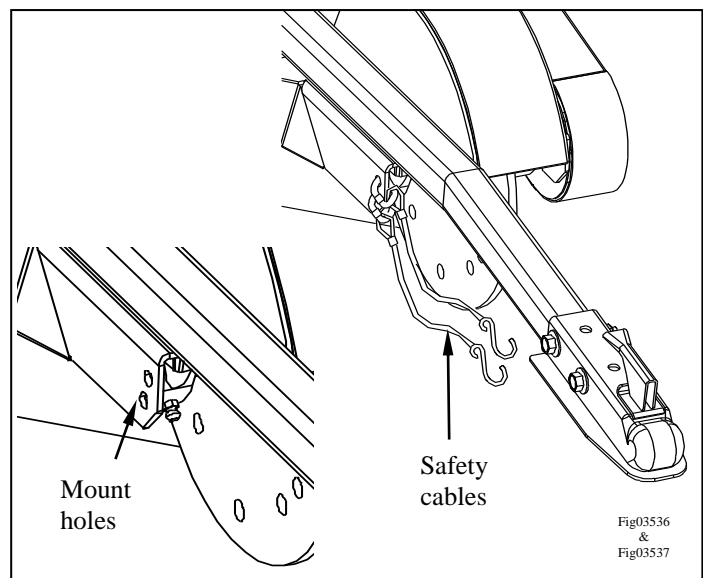
Step 2

- Attach coupler to Tow Bar by using (2) 1/2" x 3" bolts and (2) 1/2" Class G Flange Nuts.
- Tighten Bolts to a 90 lb-ft torque.



Step 3

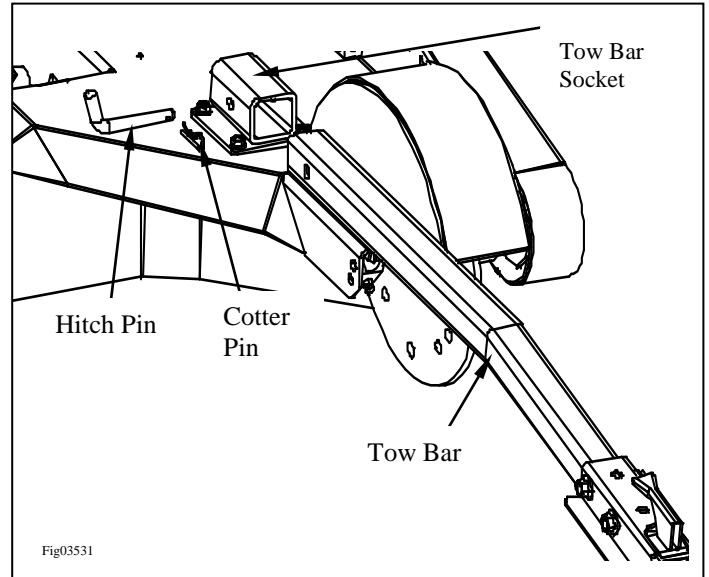
- Attach (2) Safety Cables to Stump Grinder by attaching to the Mounting Holes on the Stump Grinder Frame.



Assembly Instructions cont'd

Step 4

- Slide the Tow Bar into the Tow Bar Socket and secure with Hitch Pin.
- Lock Hitch Pin into position using cotter pin.



WARNING

- Remove safety cables from stump grinder before operating

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Limited Warranty Policy

Dear Valued Customer:

The NorthStar Product you just purchased is built with the finest material and craftsmanship. Use this product properly and enjoy the benefits from its high performance. By purchasing a NorthStar product, you show a desire for quality and durability. Like all mechanical equipment this unit requires a due amount of care. Treat this unit like the high quality piece of machinery it is. Neglect and improper handling may impair its performance. Please thoroughly read the instructions and understand the operation before using your product.

Limited Warranty

NorthStar shall warranty any piece of equipment manufactured, or parts of equipment manufactured, to be free from defects in material or workmanship for a period of 90 days for noncommercial/nonrental use and a period of 90 days for commercial/rental use from the date of purchase by user.

NorthStar shall warranty any wear item, including, but not limited to, valves, seals, pump diaphragms, hoses, and filter elements to be free from defects in material or workmanship for a period of 90 days from the date of purchase by user. This warranty applies to the original purchaser of the equipment and is non-transferable. Verification of purchase is the responsibility of the buyer. Parts will be replaced or repaired at no charge, except when the equipment has failed due to lack of proper maintenance. Any misuse, abuse, alteration or improper installation or operations will void warranty. Determining whether a part is to be replaced or repaired is the sole decision of NorthStar.

NOTE: Some services performed by parties other than NorthStar may void warranty.

This warranty covers parts only. It will not provide for replacement of complete products due to defective parts. Components not manufactured by NorthStar are guaranteed by their manufacturer and can be serviced at factory-authorized locations near you. Any costs incurred due to replacement or repair of items outside of a NorthStar approved facility is the responsibility of the buyer and not covered under warranty. NorthStar can supply you with the service center location in your area.

This warranty specifically excludes the following: failure of parts due to damage caused by accident, fire, flood, windstorm, acts of God, applications not approved by NorthStar in writing, corrosion caused by chemicals, use of replacement parts which do not conform to manufacturer's specifications, and damage caused by vandalism. Additional exclusions: loss of running time, inconvenience, loss of income, or loss of use, including any implied warranty of merchantability of fitness for a specific use.

Warranty does not cover items subject to normal wear such as tires, receptacles or any part subject to direct physical contact by the public. This warranty does not cover any personal injury or damage to surrounding property caused by failure of any part.

This warranty is in lieu of any other warranty expressed or implied and NorthStar assumes no other responsibility or liability outside that expressed within this warranty.

Please fill in the following information and have it on hand when you call in on a warranty claim.

Customer Number: _____

Date of Purchase: _____

NorthStar Serial Number: _____

Item Number: _____

▲ WARNING: This product can expose you to soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils), which are known to the State of California to cause cancer.

For more information go to www.P65Warnings.ca.gov.



Manufactured by
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Made in the USA