

HONDA

Power

Equipment

HTA

OPERATOR'S MANUAL

ROTARY TILLER

for

LIGHT DUTY TRACTORS

with

CATEGORY 0 3-POINT HITCH

WARRANTY SERVICE

Your satisfaction and goodwill are important to your dealer and to us. All Honda warranty details are explained in the Distributor's Limited Warranty at the back of this booklet. Normally, any problems concerning the product will be handled by your dealer's service department. If you have a warranty problem that has not been handled to your satisfaction, we suggest you take the following action:

- Discuss your problem with a member of dealership management. Often complaints can be quickly resolved at that level. If the problem has already been reviewed with the Service Manager, contact the owner of the dealership or the General Manager.
- If your problem still has not been resolved to your satisfaction, contact the Customer Relations Department of American Honda Motor Co., Inc.:

American Honda Motor Co., Inc.
Customer Relations Department
P. O. Box 50
Gardena, California 90247-0805
Telephone: (213) 604-2400

We will need the following information in order to assist you:

- Your name, address, and telephone number
- Product model and serial number
- Date of purchase
- Dealer name and address
- Nature of the problem

After reviewing all the facts involved, you will be advised of what action can be taken. Please bear in mind that your problem will likely be resolved at the dealership, using the dealer's facilities, equipment, and personnel, so it is very important that your initial contact be with the dealer.

Your purchase of a Honda product is greatly appreciated by both your dealer and American Honda Motor Company. We want to assist you in every way possible to assure your complete satisfaction with your purchase.

Current customer service contact information:

United States, Puerto Rico, and U.S. Virgin Islands:

Honda Power Equipment dealership personnel are trained professionals. They should be able to answer any question you may have. If you encounter a problem that your dealer does not solve to your satisfaction, please discuss it with the dealership's management. The Service Manager or General Manager can help. Almost all problems are solved in this way.

If you are dissatisfied with the decision made by the dealership's management, contact the Honda Power Equipment Customer Relations Office. You can write:

American Honda Motor Co., Inc.
Power Equipment Division
Customer Relations Office
4900 Marconi Drive
Alpharetta, GA 30005-8847

Or telephone: (770) 497-6400 M-F, 8:30 am - 5:00 pm EST

When you write or call, please provide the following information:

- Model and serial numbers
- Name of the dealer who sold the Honda power equipment to you
- Name and address of the dealer who services your equipment
- Date of purchase
- Your name, address, and telephone number
- A detailed description of the problem


Thank you for purchasing an HTA Rotary Tiller attachment for your tractor.


This manual covers the assembly, operation, and maintenance of the HTA Rotary Tiller. For your convenience, it also provides a parts guide, troubleshooting section, and detailed warranty information.


NOTE: Illustrations in this manual are for reference only and do not necessarily depict every detail of the model noted above. Information in this publication is based on the latest product information available at the time of printing. American Honda Motor Co., Inc. reserves the right to make changes at any time without notice and without incurring any obligation.

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Please pay special attention to statements preceded by the following symbols:

 **This safety alert symbol identifies important safety messages throughout this manual. Whenever you see it, be alert to the possibility of personal injury and carefully read the message that follows.**

 **DANGER:** Indicates that severe personal injury or loss of life will result if instructions are not followed.

 **WARNING:** Indicates the strong possibility of severe personal injury or loss of life if instructions are not followed.

CAUTION: Indicates the possibility of equipment damage if instructions are not followed.

NOTE: Provides helpful information.

HTA attachments are designed to give safe and dependable service if assembled and operated according to instructions.

If a problem should arise, or if you have any questions about your rotary tiller, consult an authorized Honda HTA dealer.

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DEALER PREPARATION CHECK LIST

BEFORE DELIVERING MACHINE – The following check list should be completed. Use the Operator's Manual as a guide.

- ☐ 3-Point Hitch Assembled Properly
- ☐ Gearbox Filled with Oil
- ☐ All Safety Decals Readable (See Decal Page)
- ☐ All Bolts Tightened to Torque Specifications given on page 21
- ☐ Machine Operates Properly
- ☐ Operator's Manual has been delivered with the tiller, and the owner has been instructed on the safe and proper use of the tiller.

THIS CHECK LIST TO REMAIN IN OPERATOR'S MANUAL
It is the responsibility of the dealer to complete the procedures
above before delivering this implement to the customer.

INTRODUCTION AND DESCRIPTION

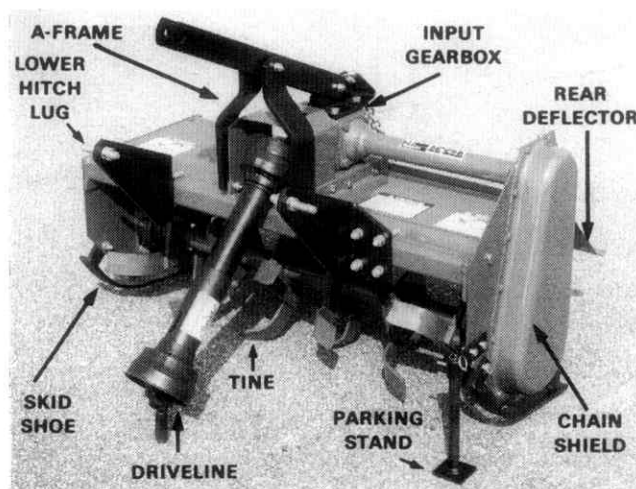
INTRODUCTION

We are pleased to have you as a Honda customer. Your Honda Rotary Tiller has been carefully designed to give maximum service with minimum down time. This manual is provided to give you the necessary operating and maintenance instructions for keeping your rotary tiller in top operating condition. Please read this manual thoroughly to understand the purpose and use of each control. For safe operation, observe all safety precaution decals on the machine and every precaution noted throughout the manual. If you need assistance or additional information, contact your authorized Honda HTA dealer.

NOTE: All reference to right, left, front, rear, top, or bottom is from the point of view of a person facing the direction of forward travel when the tiller is properly attached to a tractor.


DESCRIPTION

The Honda Rotary Tiller is a light duty attachment designed for use with tractors. Power for the tiller is supplied by the tractor's Power Take-Off (PTO) shaft operating at a speed of 2000 rpm. This power is transmitted from the input gearbox through the cross shaft and chain drive to the tine rotor. The drivetrain is protected by a shear bolt installed in the tine rotor. Skid shoes support the tiller during operation and can be adjusted from 1-4 inches of tilling depth. The rear shield is adjustable to regulate tilth of the soil.



GENERAL SAFETY

SAFE OPERATING RULES

 **WARNING:** Read this owner's manual carefully and familiarize yourself fully with its safety recommendations and operating procedures before using the tiller. Follow the instructions in this publication at all times, and insist that those who work with you do likewise. Failure to do so could result in personal injury or equipment damage.

1. Read the Operator's Manual.
2. Become familiar with all of the machine's controls and all the caution, warning, and danger decals affixed to the machine before attempting to start or operate the tiller.
3. Before starting or operating the tiller, make a walk around inspection and check for obvious defects such as loose mounting bolts and damaged components. Correct any deficiency before starting.
4. Check the operating area for ditches, stumps, holes and other obstacles that could upset the tractor or damage the tiller.
5. Do not operate the tiller without wearing safety glasses and safety shoes.
6. Do not allow children to operate the tiller. Do not allow adults to operate without proper instruction.
7. Do not carry passengers.
8. Keep the operating area clear of all persons, particularly small children and pets.
9. Clear the work area of objects which might be picked up and thrown or jammed in the rotor.
10. Do not operate without all guards and shields in place and in good condition.
11. Stop the tractor engine, apply the parking brake, and allow the tines to stop completely before dismounting the tractor or approaching the tiller.
12. Keep hands and feet away from the tines.

SAFETY DECALS



WARNING

TO AVOID INJURY

- READ OPERATORS MANUAL BEFORE USING THIS MACHINE (replacement manuals are available from your dealer)
- KEEP ALL SAFETY SHIELDS IN PLACE
- ALLOW NO RIDERS ON IMPLEMENT OR TRACTOR
- OPERATE ONLY AT SAFE DISTANCE FROM BYSTANDERS
- STOP POWER TAKE OFF AND SHUT OFF ENGINE BEFORE DISMOUNTING
- KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER DRIVEN PARTS
- USE EXTRA CARE WHEN OPERATING ON ROUGH TERRAIN OR WHEN ROCKS OR DEBRIS ARE PRESENT

Part No. 79413



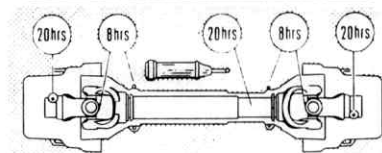
DANGER



ROTATING DRIVELINE
 CONTACT CAN CAUSE DEATH
KEEP AWAY!

DO NOT OPERATE WITHOUT —

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE





CAUTION

THIS IMPLEMENT IS DESIGNED TO OPERATE AT 2000 RPM MAXIMUM TRACTOR PTO SPEED.
 ALL DRIVE LINE SHIELDS MUST BE KEPT IN PLACE.

80933



DANGER



**SHIELD MISSING
DO NOT OPERATE**



DANGER



**SHIELD MISSING
DO NOT OPERATE**



DANGER



DANGER

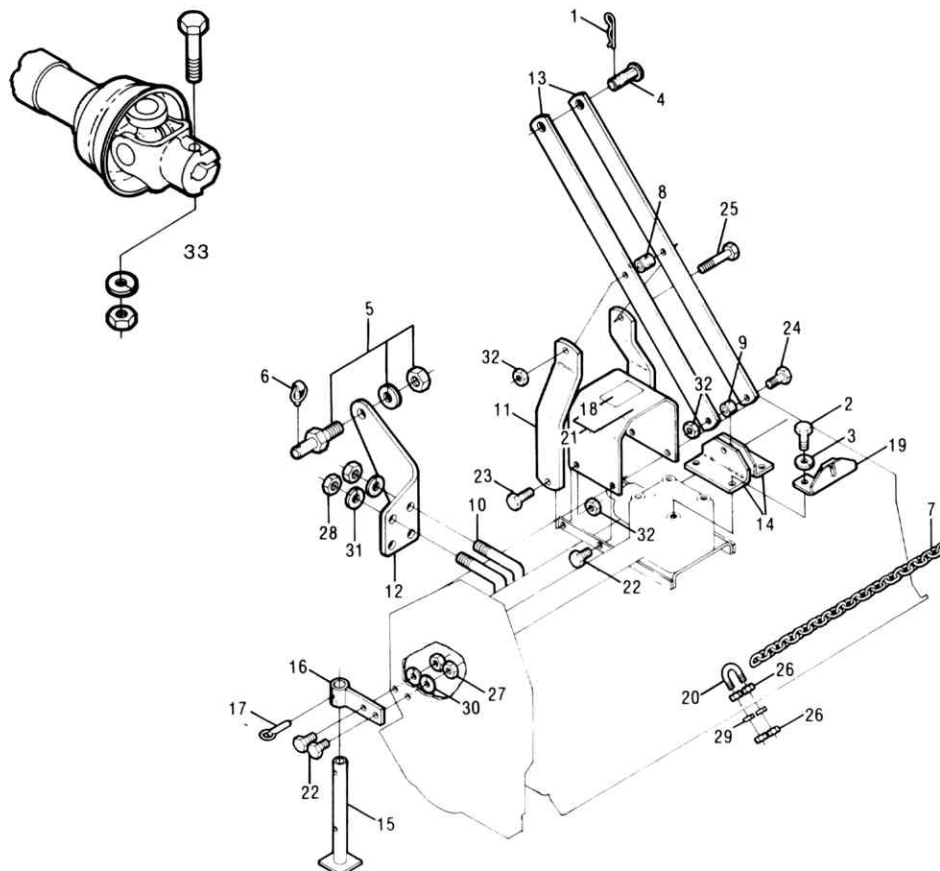


KEEP AWAY FROM ROTATING TINES.
**ROTATING TINES MAY CAUSE
SERIOUS INJURY OR DEATH.**

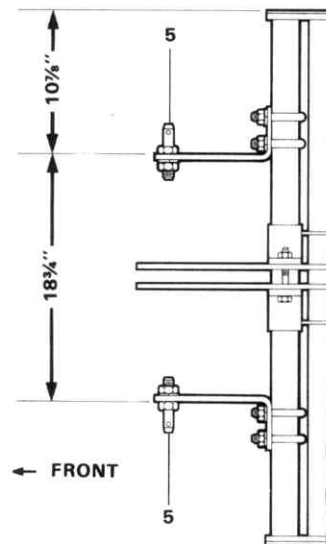
81067

ASSEMBLY

1. Insert the parking stand (15) into the parking stand bracket (16) and pin it into place. Attach the parking stand bracket to the tiller's left end plate by using two $\frac{3}{8}$ " x 1" bolts (22), lock washers and nuts.
2. Remove the oil level check plug on the rear of the gearbox housing and check the gearbox oil level. If necessary, add EP80W-90 gear oil to bring the oil level up to the check plug hole. Install the check plug.
3. Remove the bolt from the female yoke (33) on the PTO driveline. Insert the key into the gearbox input shaft. Align the keyway in the driveline female yoke with the key in the input shaft and slide the yoke onto the input shaft until the yoke's bolt hole is aligned with the groove in the shaft. Install the bolt to retain the shaft.
4. Attach the mast supports (14) and chain retainer (19) to the gearbox top by using four 10mm x 22mm bolts (2) and lock washers (3).
5. Attach the mast uprights (11) and PTO shield (21) to the tiller frame by using two $\frac{3}{8}$ " x 1 $\frac{1}{2}$ " bolts (23) and lock nuts (32).
6. Secure the rear of the PTO shield to the frame by using two $\frac{3}{8}$ " x 1" bolts (22), lock washers (3), and nuts (27).
7. Attach the mast top links (13) to the outside of mast supports (14) by using a $\frac{3}{8}$ " x 2 $\frac{1}{4}$ " bolt (24), lock nut (32), and 9/16" long bushing (8).
8. Fasten the mast top links (13) to the mast uprights (11) by using a $\frac{3}{8}$ " x 3 $\frac{1}{2}$ " bolt (25), lock nut (32), and 1-1/16" long bushing (8).



9. Position the right hitch lug on the frame 10 $\frac{7}{8}$ inches from the right end plate as shown in the adjacent illustration. Secure the hitch lug to the frame by using two $\frac{1}{2}$ " U-bolts, lock washers, and nuts.
10. Position the left hitch lug on the frame 18 $\frac{3}{4}$ inches from the right hitch lug. Secure the hitch lug using two $\frac{1}{2}$ " U-bolts, lock washers, and nuts.
11. Install the hitch pins (5) as shown in the illustration.
12. Attach the chain (7) to the rear deflector by using a $\frac{1}{4}$ " U-bolt (20), two lock washers (29), and four nuts (26). Hook the chain into the chain retainer (19) on the gearbox.
13. Install the top link pin (4) on the mast.



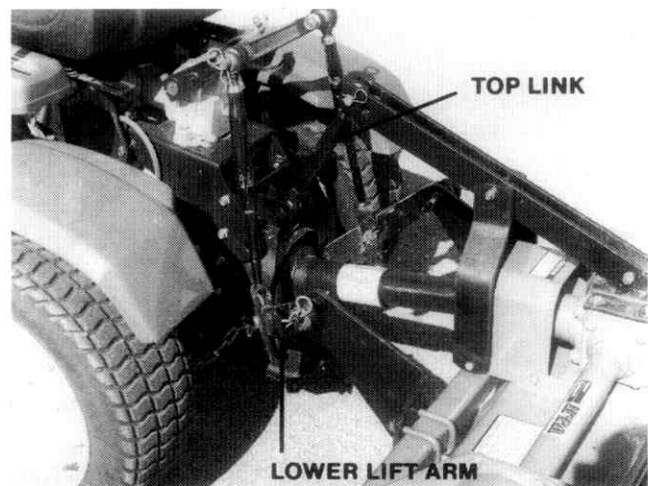
OPERATION

ATTACHING THE TILLER TO A TRACTOR

1. Back the tractor to the front of the tiller. Push the tractor Power Take-Off (PTO) lock collar forward. Slide the splined end of the driveline into the tractor PTO. Release the lock collar. Pull on the driveline to be certain that the lock collar remains in place, and that the retaining balls lock the drive shaft.

⚠ WARNING: Make certain the driveline is securely fastened. A loose driveline can cause severe personal injury or death to the operator or bystanders.

2. Attach the tractor's lower lift arms to the tiller's lower hitch pins, securing them with the link pin retainer.



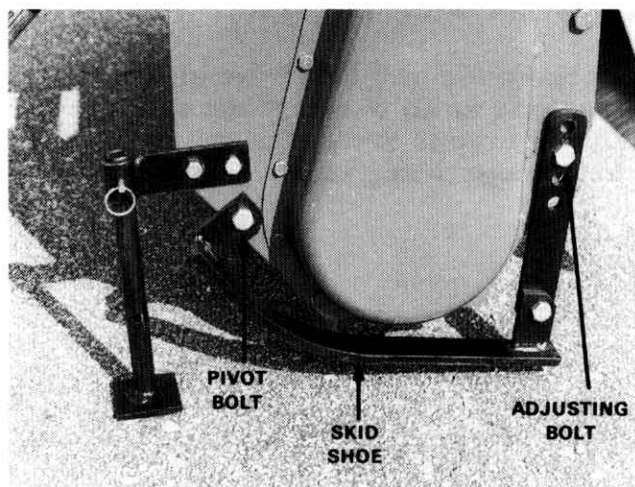
3. Attach the tractor's top link to the tiller mast by using the pin and link pin retainer.
4. Adjust the tractor top link in or out, as necessary, to level the tiller front to rear. If the tiller is not level, it will have poor ground penetration.

TILLING DEPTH ADJUSTMENT

Tilling depth is adjustable from 0 to 4 inches in 1-inch increments. To adjust the depth, proceed as follow:

1. Raise the tiller off the ground and securely block it into position.
2. Remove the skid shoe adjusting bolt.
3. Loosen the skid shoe pivot bolt.
4. Position the skid shoe for desired tilling depth.
5. Install and tighten the bolts on both sides.

NOTE: Make certain that the skid shoes are adjusted to the same position. Uneven adjustment will cause unsatisfactory results.



OPERATION

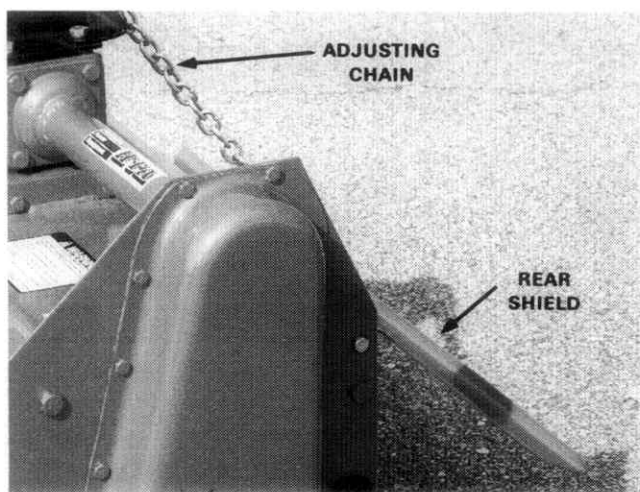
1. BEFORE EACH USE perform the maintenance described in the next section, "Maintenance".
2. Adjust the tiller for work as described under "Tilling Depth Adjustment", above.
3. Start the tractor and raise the tiller 1-2 inches off the ground.
4. With the tractor at idle speed, engage the PTO drive.
5. Place the tractor in low (1st) gear and proceed forward. Increase speed to $\frac{3}{4}$ throttle. Slowly lower the tiller into the soil. Increase PTO speed to 2000 rpm (full throttle). At the end of a pass, reduce throttle and lift the tiller clear of the ground before making a turn. After turning, proceed forward, increasing the throttle and slowly lowering the tiller into the ground.

WARNING:

- **Stay clear of rotating drivelines. Do not operate without the driveline shields in place and in good condition. Failure to do so may result in personal injury or death.**
- **Keep hands and feet from under the machine at all times. Make certain that everyone is clear of the machine before operating it.**

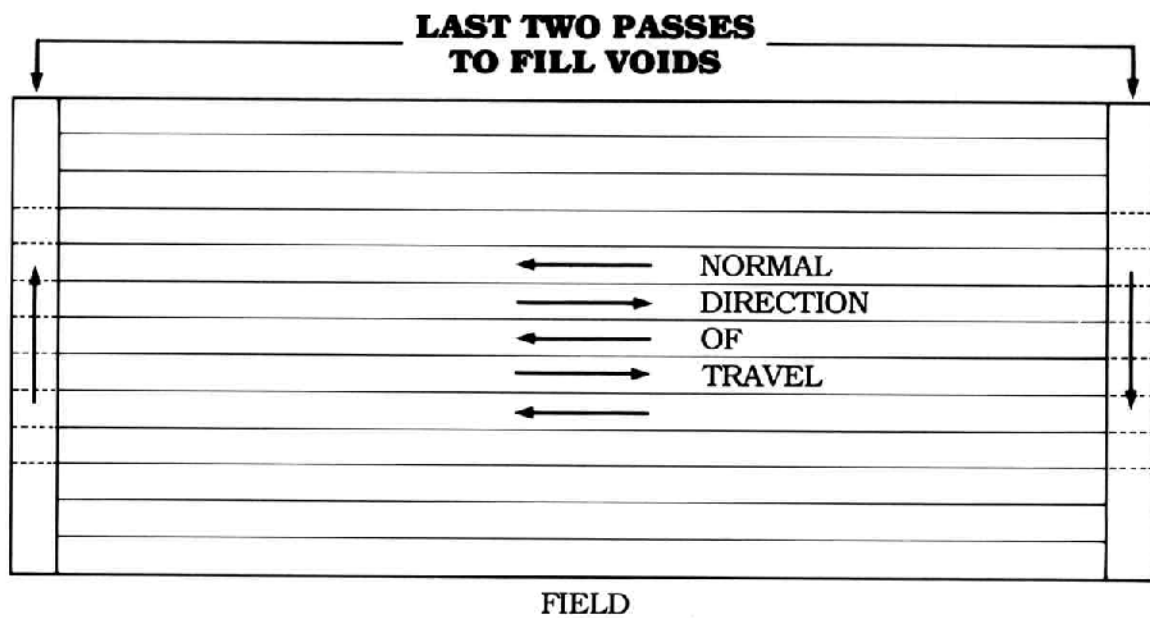
CAUTION:

- Do not make a turn with the tiller in the ground as this could damage the tiller and/or tractor lift linkage.
- Never use reverse gear when the tiller is in the ground or damage will result.
- To increase the life of the driveline, avoid operating the tiller in the fully raised position, especially for prolonged periods.



Lighter soils may allow the use of a higher gear. Shallow weed cultivation may be done in 3rd or 4th gear. Two or more passes are usually required when operating in sod. The first pass should be made with the rear shield open to allow clods to discharge out the rear.

Subsequent passes may be made with the shield nearly closed to give the soil a finer tilth. When you have finished tilling a plot, make a final pass across each end (see illustration).



TRANSPORTING

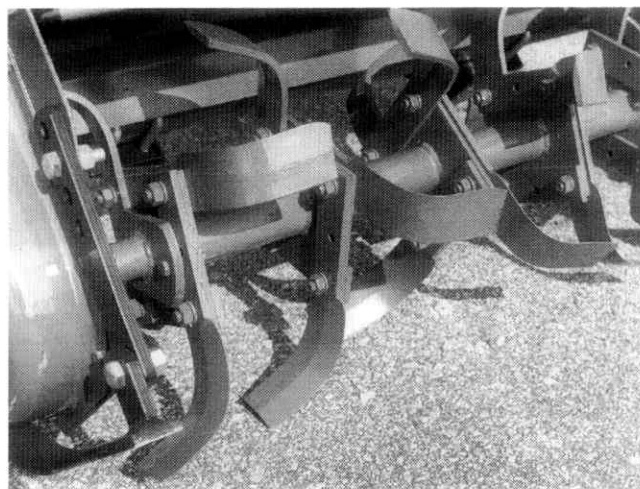
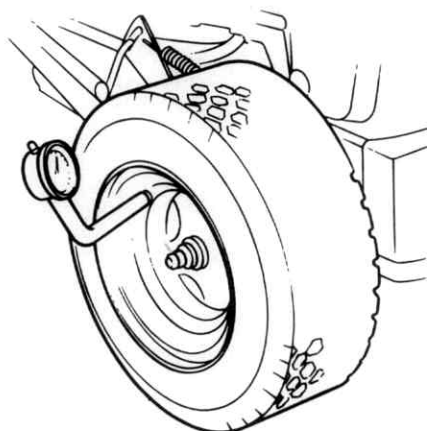
Do not engage the PTO drive while transporting the tiller. Transport only at low speeds. It is important to remember that the additional weight of the tiller on the rear of the tractor will make the front end light, reducing steering control and lateral stability, especially at high speeds.

MAINTENANCE

Perform scheduled maintenance as follows. Lower the tiller to the ground, turn off the tractor, and set the parking brake before doing maintenance inspection or work. When checks require raising the tiller off the ground, use blocks to securely support it. All bolts should be torqued as recommended in the "Torque Specifications", page 21, unless otherwise indicated.

Before Each Use

1. Check tractor tire air pressure. Refer to the tractor operator's manual.
2. Check the tines and rotor to be sure there are no foreign objects such as wire or steel strap bands wrapped around them.
3. Check tine bolts for tightness. Tighten them to 73 ft/lbs (10.1 kg-m).
4. Inspect tines for wear and replace them if necessary. See Tine Replacement, page 12.
5. Make certain that driveline shields are in place and in good condition.
6. BEFORE EACH USE lubricate as described in the "Lubrication" section on the next page.
7. During operation, listen for abnormal sounds which might indicate loose parts, damaged bearings, or other damage.



After Each Use

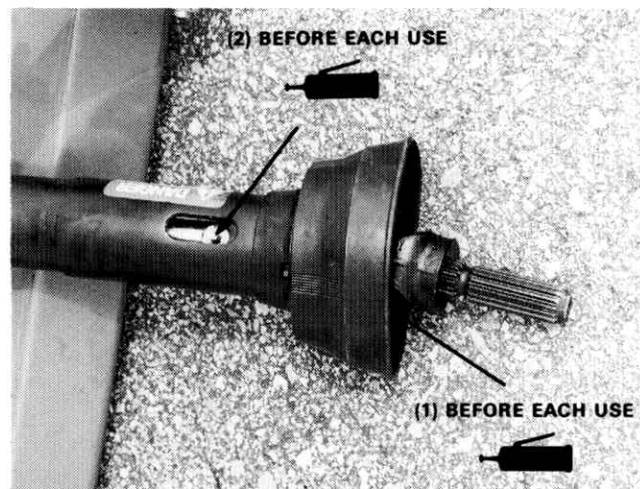
1. Clean all debris from the machine, especially the underside.
2. To prevent rusting, touch up any spots where paint has worn off.
3. Store the tiller in a clean, dry place.

LUBRICATION

NOTE: The multipurpose grease referred to in this section is an NLGI Grade-2 type of grease.

Before Each Use

1. Driveline Universal Joints: Apply multipurpose grease with a grease gun.
2. Driveline: Align slots in the plastic shield with the grease fitting on the driveshaft. Apply multipurpose grease with a grease gun.

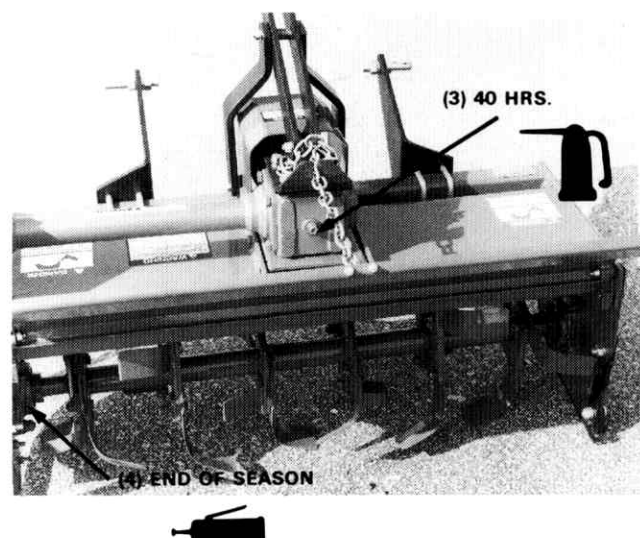


Every 40 Hours

3. Input Gearbox: Check the oil level by removing the check plug located on the side of the gearbox. Add EP80W-90 gear oil, if necessary, to bring oil level up to the check plug. Capacity is 1.5 pints.

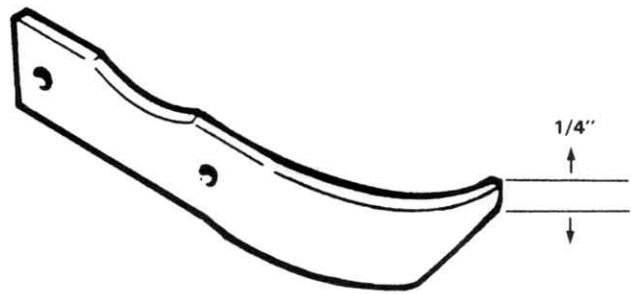
End of Season

4. Rotor Bearings: Apply multipurpose grease to lubrication fittings at the end of the tilling season.



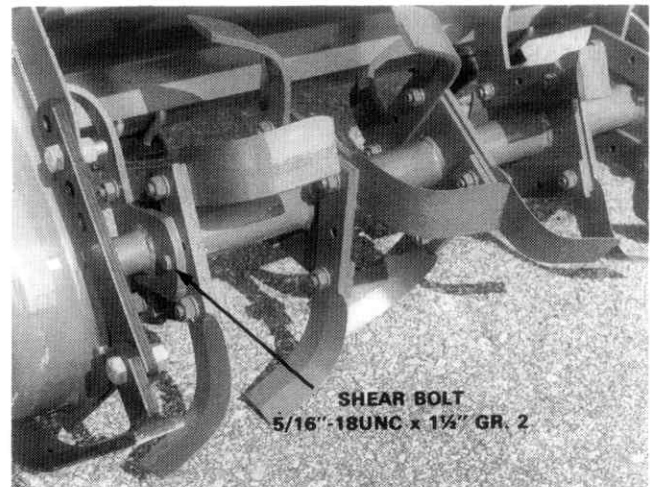
TINE REPLACEMENT

Tiller tines should be replaced when they have approximately $\frac{1}{4}$ inch of wear left on the tip. To replace a tine, remove bolts securing it and install the new tine. The tine must be a right or left tine, corresponding to the tine removed. Tighten the tine bolts to 73 ft/lbs (10.1 Kg-m). Use only genuine Honda replacement parts or their equivalent.



SHEAR BOLT REPLACEMENT

The shear bolt used to protect the drive-train is located on the left side of the tine rotor. Replace it with a $\frac{5}{16}$ -18UNC x $1\frac{1}{2}$ " Grade 2 bolt and lock nut. Tighten the bolt to 13 ft/lbs. Do not use a larger diameter or higher grade bolt as this could damage the tiller or tractor.



TROUBLESHOOTING

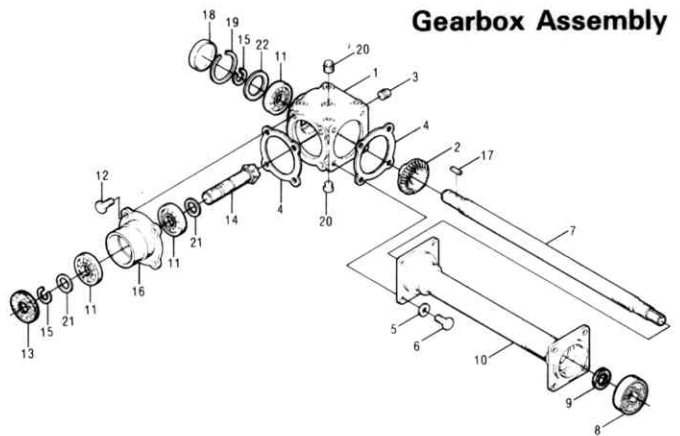
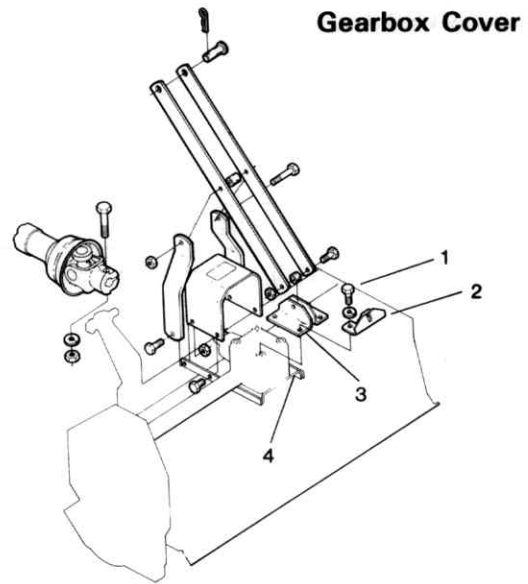
Troubleshooting procedures are listed below. If the problem cannot be solved or replacement parts are necessary, contact your authorized Honda dealer. Please have ready your machine name, model number, serial number, purchase date, and exact cause or description of problem.

PROBLEM	PROBABLE CAUSE	REMEDY
Uneven Till	Tiller not level right to left	Adjust skids for same depth Adjust tractor lower lift arms
Noisy	Loose components	Check all bolts for tightness Refer to Page 5
	Low oil in gearbox	Check for proper oil level Refer to Page 11
Knocking or Chattering	Tiller is tilted towards the rear	Adjust 3-point hitch top link to level tiller
Bogging	Vines wrapped around rotor	Remove vines
Will not Penetrate Ground	Tiller is tilted towards rear	Adjust 3-point hitch top link to level tiller
	Blades worn out	Replace blades

REPAIR PROCEDURES

INPUT GEARBOX DISASSEMBLY

1. Remove the four bolts (1, Gearbox Cover) securing the chain bracket (2) and mast support (3) to the gearbox.
2. Remove the chain cover from the tiller end plate.
3. Loosen the set screw and remove the top gear and chain from the output shaft.
4. Remove the four bolts securing the output shaft housing (10, Gearbox Assembly) to the tiller end plate.
5. Remove the four bolts securing the gearbox stand (4, Gearbox Cover) to the tiller deck. Remove the gearbox.
6. Remove the plug (20, Gearbox Assembly) and drain oil from gearbox.
7. Remove the bolt securing the driveline to the gearbox input shaft. Remove the driveline.
8. Remove the four bolts (12, Gearbox Assembly) securing the input shaft assembly to the housing (1). Remove the input shaft assembly.
9. Using a flat blade screwdriver, pry the oil seal (13, Gearbox Cover) out of the input shaft housing (16).
10. Remove the snap ring (15, Gearbox Cover) from the input shaft (14) by using the snap ring pliers. Remove the input shaft (14), bearings (11) and shims (21) from the input shaft housing (16). Note the location of shims to facilitate reassembly.

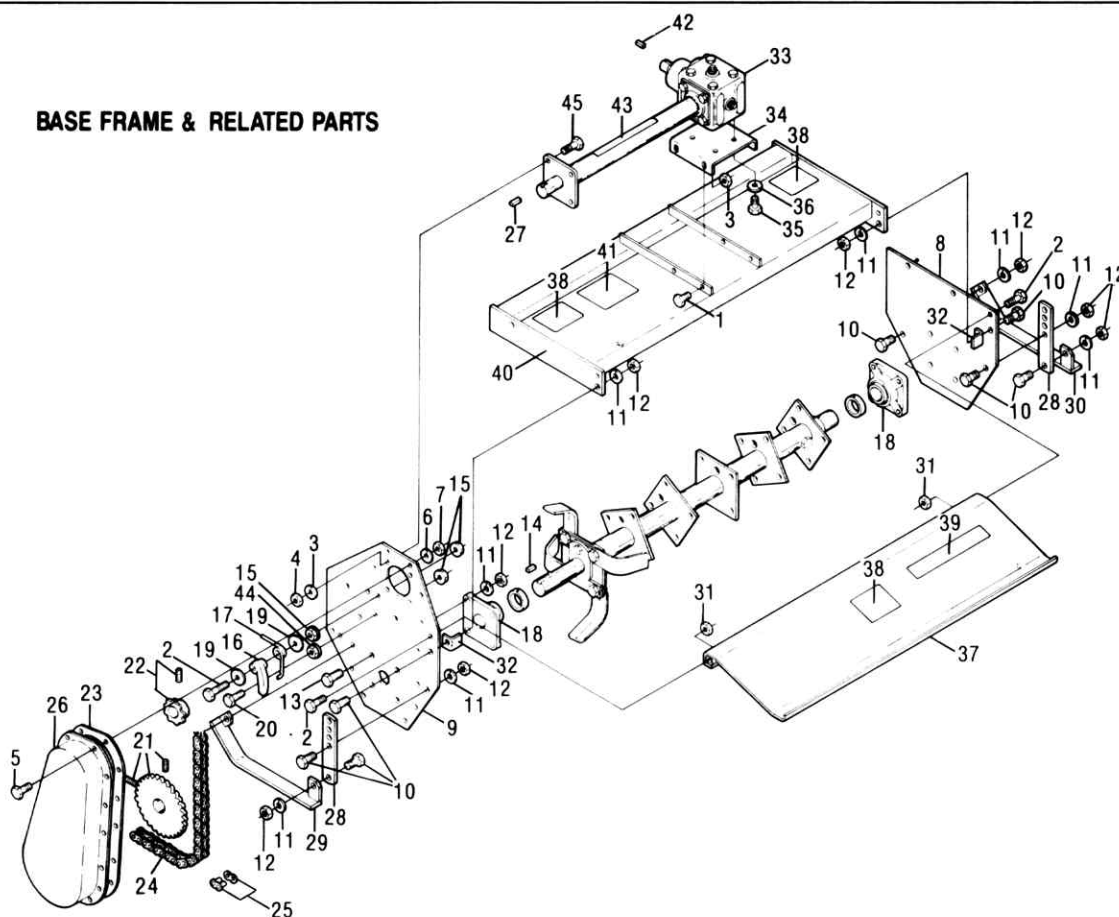


11. Using a flat blade screwdriver, pry the cap (18, Gearbox Cover) out of the gearbox housing (1).
12. Remove the snap ring (19, Gearbox Assembly) from the gearbox housing and the snap ring (15) from the output shaft (7) using snap ring pliers. Remove the output shaft (7), bearings (8, 11), shims (22), gear (2), key (17), and oil seal (9).
13. Remove the four bolts (6, Gearbox Assembly) securing the output shaft housing (10) to the gearbox housing (1). Remove the output shaft housing.

INPUT GEARBOX REASSEMBLY

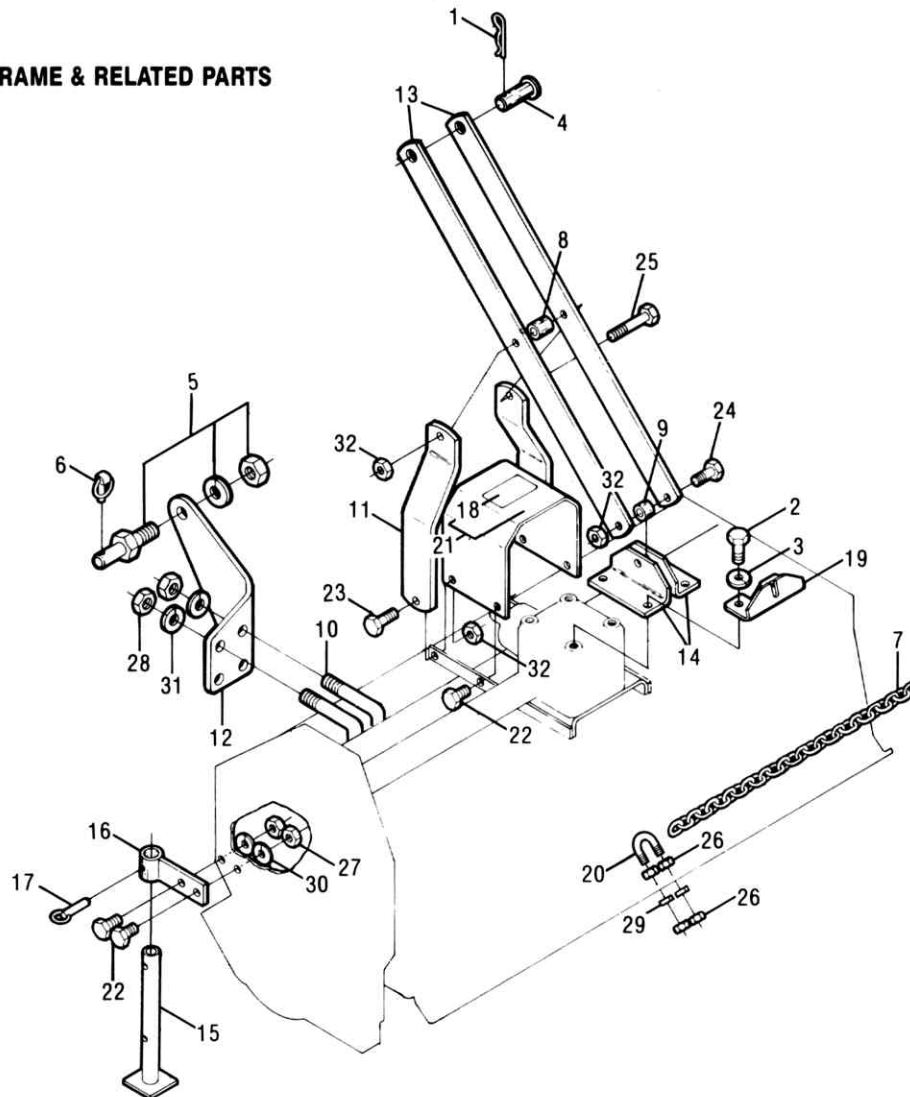
Before beginning assembly, clean all inside surfaces with solvent to remove any foreign particles. Thoroughly clean all contact surfaces for the input shaft housing and output shaft housing. Reassemble in reverse order of disassembly. Make certain that the shims are installed in their original locations. After assembly, fill the gearbox with 1.5 pints of EP80W-90 gear oil.

BASE FRAME & RELATED PARTS



Ref. No.	Qty.	Description	Ref. No.	Qty.	Description
1	4	Capscrew 3/8" - 16 UNC x 3/4" Gr. 5	25	1	Master Link
2	3	Capscrew 3/8" - 16 UNC x 2-1/4" Gr. 5	26	1	Chain Cover
3	4	Lockwasher 3/8"	27	1	Key
4	4	Hex Nut 3/8" - 16 UNC	28	2	Depth Adjust Bar
5	14	Capscrew 5/16" - 18 UNC x 3/4" Gr. 5	29	1	Skid Shoe Weld. L.H.
6	14	Lockwasher 5/16"	30	1	Skid Shoe Weld. R.H.
7	14	Hex Nut 5/16" - 18 UNC	31	2	Locknut 3/8" - 16 UNC
8	1	Side Plate R.H.	32	2	Shield Stop
9	1	Side Plate L.H.	33	1	Gearbox Assembly
10	12	Capscrew 1/2" - 13 UNC x 1-1/4" Gr. 5	34	1	Plate Weld.
11	20	Lockwashers 1/2"	35	4	Capscrew M10 x 1.5 x 25 Gr. 8.8
12	20	Hex Nut 1/2" - 13 UNC	36	4	Lockwasher M10
13	8	Capscrew 1/2" - 13 UNC x 1-1/2" Gr. 5	37	1	Shield Weld. w/Decals (USA)
14	1	Key	38	1	Shield Weld. w/Decals (Canada)
15	3	Whiz Nut 3/8" - 16 UNC	39	1	Danger Decal (USA)
16	1	Chain Tensioner	40	1	Danger Decal (Canada)
17	1	Chain Tensioner Spring	41	1	HTA Decal (Large)
18	2	Bearing Assembly	42	1	Frame Weld. w/Decals (USA)
19	2	Flatwasher 3/8"	43	1	Frame Weld. w/Decals (Canada)
20	1	Capscrew 3/8" - 16 UNC x 1-3/4" Gr. 5	44	1	Warning Decal (USA)
21	1	Sprocket 29 Tooth	45	1	Warning Decal (Canada)
22	1	Sprocket 9 Tooth			
23	1	Chain Cover Gasket			
24	1	Drive Chain			

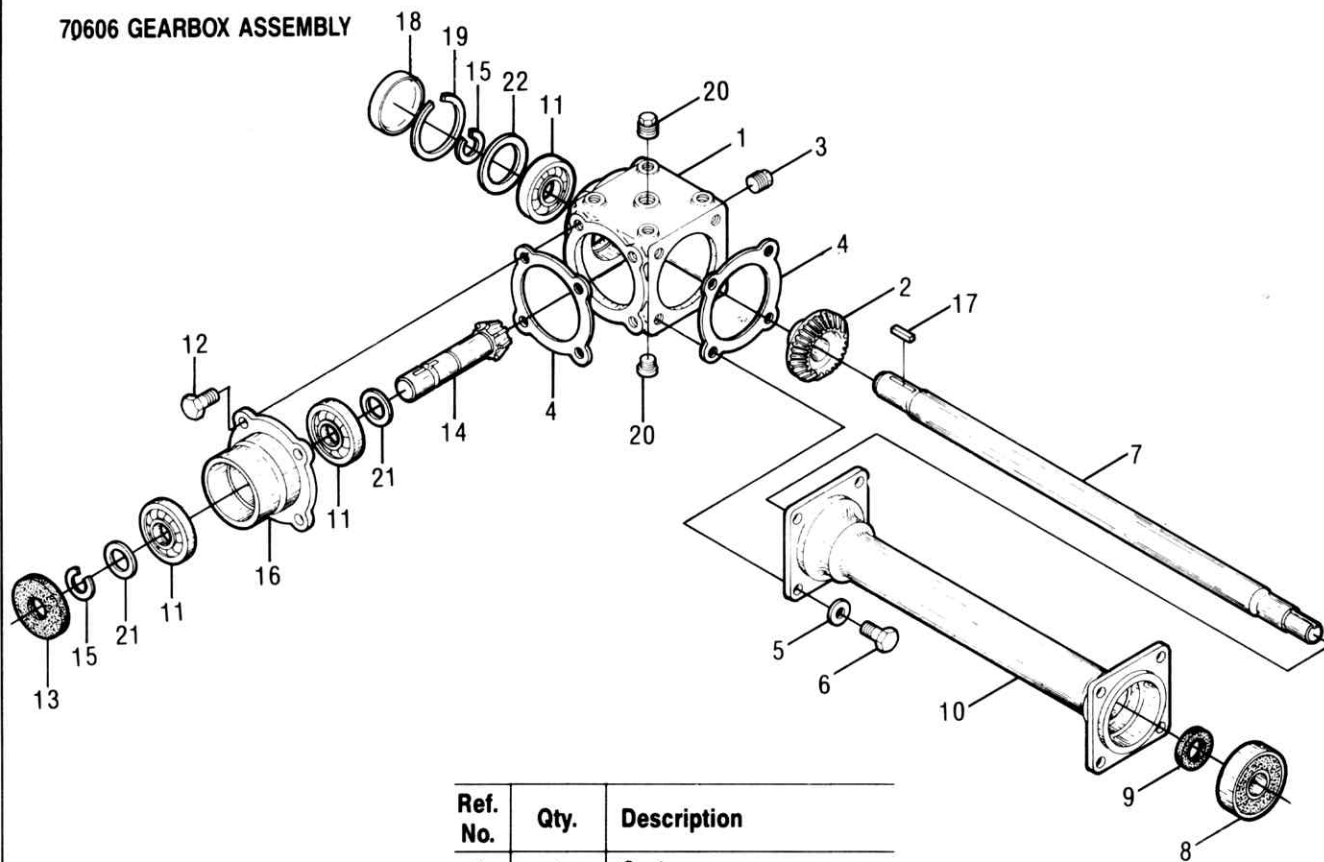
MAST FRAME & RELATED PARTS



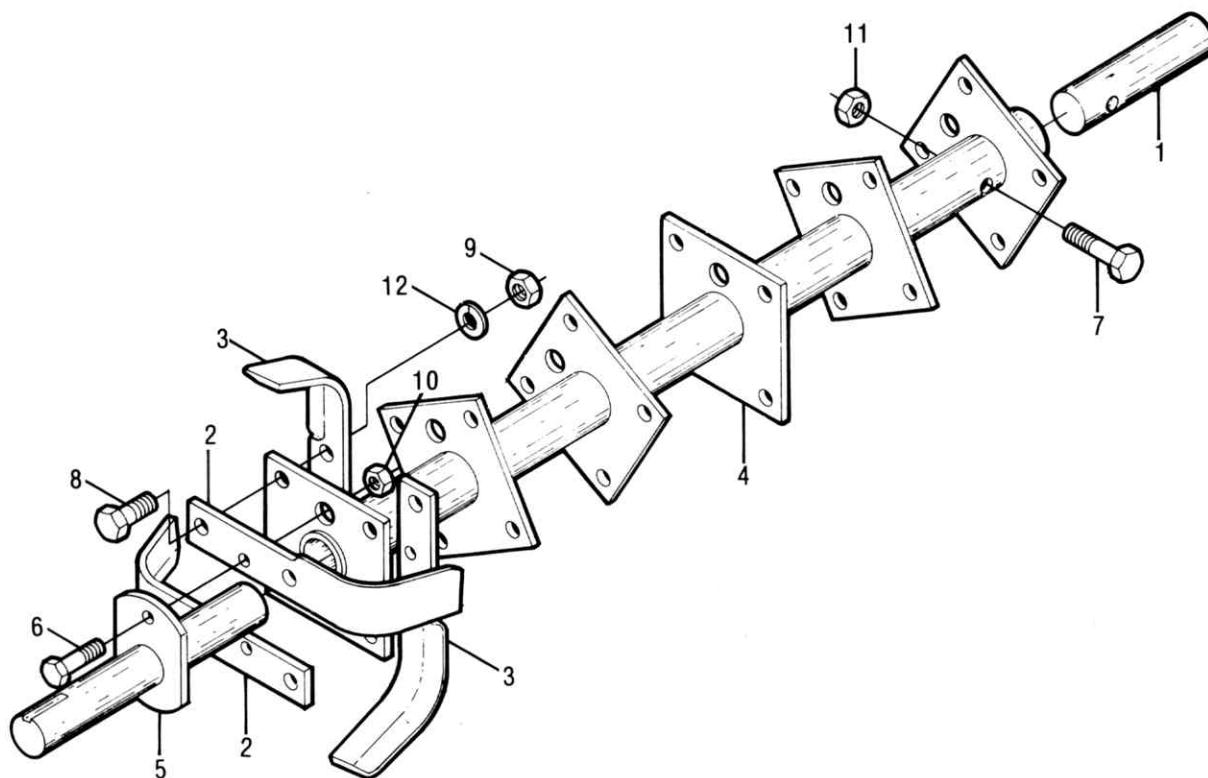
Ref. No.	Qty.	Description
1	1	Presto Pin
2	4	Capscrew M10 x 1.5 x 22 Gr. 8.8
3	4	Lockwasher M10
4	1	Clevis Pin
5	2	Lift Arm Pin
6	2	Linch Pin
7	1	Chain
8	1	Toplink Bushing 1-1/16" Long
9	1	Mast Bushing 9/16" Long
10	4	U-Bolt 1/2" - 13 UNC
11	2	Mast Bar
12	1	Hitch Lug, L.H. (Shown)
	1	Hitch Lug, R.H.
13	2	Toplink Mast
14	2	Mast Support
15	1	Parking Stand Weld.
16	1	Stand Securing Weld.

Ref. No.	Qty.	Description
17	1	Pin
18	1	Caution Decal
19	1	Chain Retainer
20	1	U-Bolt 1/4" - 20 UNC
21	1	PTO Shield w/Decal
22	4	Capscrew 3/8" - 16 UNC x 1" Gr. 5
23	2	Capscrew 3/8" - 16 UNC x 1-1/2" Gr. 5
24	1	Capscrew 3/8" - 16 UNC x 2-1/4" Gr. 5
25	1	Capscrew 3/8" - 16 UNC x 3-1/2" Gr. 5
26	4	Hex Nut 1/4" - 20 UNC
27	4	Hex Nut 3/8" - 16 UNC
28	8	Hex Nut 1/2" - 13 UNC
29	2	Lockwasher 1/4"
30	4	Lockwasher 3/8"
31	8	Lockwasher 1/2"
32	4	Locknut 3/8" - 16 UNC

70606 GEARBOX ASSEMBLY

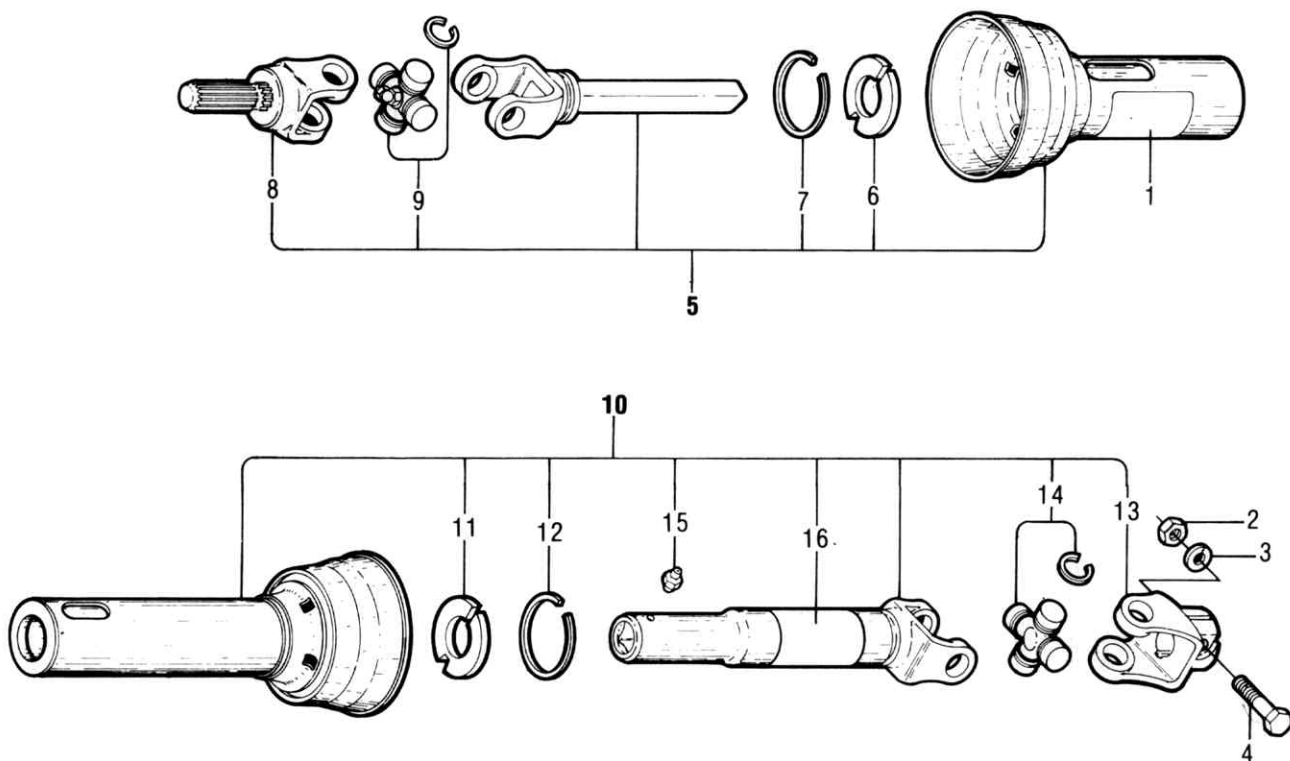


Ref. No.	Qty.	Description
1	1	Casing
2	1	Crownwheel 25 Tooth
3	1	Plug
4	2	Gasket
5	4	Washer M10
6	4	Capscrew M10 x 20 Gr. 8.8
7	1	Shaft
8	1	Bearing
9	1	Oil Seal 30 x 47 x 7
10	1	Extension
11	3	Bearing
12	4	Capscrew M10 x 22 Gr. 8.8
13	1	Oil Seal 25 x 62 x 7
14	1	Bevel Pinion 9 Tooth
15	2	External Circlip
16	1	Extension
17	1	Parallel Key 8 x 7 x 25
18	1	Cap
19	1	Internal Circlip
20	2	Plug
21	2	Shim .3mm thick
	2	Shim .4mm thick
	2	Shim .5mm thick
	2	Shim 1.0mm thick
22	1	Shim .3mm thick
	1	Shim .4mm thick
	1	Shim .5mm thick
	1	Shim 1.0mm thick



ROTOR ASSEMBLY

Ref. No.	Qty.	Description
1	1	Stub Shaft L.H.
2	12	Blade R.H.
3	12	Blade L.H.
4	1	Rotor Weldment
5	1	Stub Shaft Weldment
6	1	Capscrew 5/16" - 18 UNC x 1-1/2" Gr. 5
7	1	Capscrew 3/8" - 16 UNC x 2-1/4" Gr. 5
8	24	Capscrew 7/16" - 14 UNC x 1-1/2" Gr. 5
9	24	Hex Nut 7/16" - 14 UNC Gr. 5
10	1	Locknut 5/16" - 18 UNC
11	1	Locknut 3/8" - 16 UNC
12	24	Lockwasher 7/16"



80633 DRIVESHAFT ASSEMBLY (USA)
81292 DRIVESHAFT ASSEMBLY (CANADA)

Ref. No.	Qty.	Description
1	1	Safety Decal (USA)
	1	Safety Decal (Canada)
2	1	Hex Nut 3/8" - 16 UNC
3	1	Capscrew 3/8" - 16 UNC x 2" Gr. 5
4	1	Lockwasher 3/8"
5	1	Shielded Outer Half
6	1	Nylon Bearing
7	1	Bearing Retainer
8	1	Tractor Yoke
9	1	Cross Bearing Kit
10	1	Shielded Inner Half
11	1	Nylon Bearing
12	1	Bearing Retainer
13	1	Implement Yoke
14	1	Cross Bearing Kit
15	1	Grease Fitting
16	1	Safety Decal

TORQUE SPECIFICATIONS

Proper torque for American fasteners used on Honda equipment.
Recommended Torque in Foot Pounds (Newton Meters). *

AMERICAN

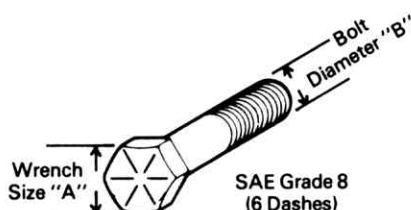
Bolt Head Markings



SAE Grade 2
(No Dashes)



SAE Grade 5
(3 Dashes)

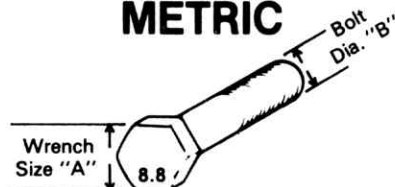


SAE Grade 8
(6 Dashes)

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
1	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
1	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288 (1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

Proper torque for metric fasteners used on Honda equipment.
Recommended Torque in Foot Pounds (Newton Meters). *

METRIC



Numbers appearing on bolt heads indicate ASTM class.

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM CLASS 4.6	ASTM CLASS 8.8	ASTM CLASS 9.8	ASTM CLASS 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

* Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

HONDA**Power****Equipment**

Distributor's Limited Warranty

HONDA POWER EQUIPMENT

This warranty is limited to Honda power equipment products (other than general purpose engines) distributed by American Honda Motor Co., Inc., 100 W. Alondra Blvd., Gardena, California 90247.

PRODUCTS COVERED BY THIS WARRANTY:

Generators
Generator/Welders
Lawn Mowers
Riding Mowers
Lawn Tractors
Tillers
Snowblowers/Snowthrowers
Water Pumps
Trash Pumps
Outboard Motors
Accessories
Attachments
Apparel
Replacement Parts

LENGTH OF WARRANTY:

(from date of purchase)

NONCOMMERCIAL	COMMERCIAL/RENTAL
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
12 months	3 months
3 months	3 months
3 months	3 months

NOTE: This warranty does not apply to Honda general purpose engines; they are covered by a different warranty.

TO QUALIFY FOR THIS WARRANTY:

1. The product must be purchased from American Honda or dealers authorized by American Honda to sell those products within the United States, Puerto Rico, and the U.S. Virgin Islands.
2. You must be the first retail purchaser. This warranty is not transferable to subsequent owners.

WHAT AMERICAN HONDA WILL REPAIR OR REPLACE UNDER WARRANTY:

Except as described under "EXCLUSIONS", American Honda will repair or replace, at its option, any power equipment product that is proven to be defective in material or workmanship under normal use during the applicable warranty time period. Anything replaced under warranty becomes the property of American Honda Motor Co., Inc.

- Accessories, attachments, and replacement parts—
Except as described under "EXCLUSIONS", accessories, attachments, and replacement parts installed by a dealer who is authorized by American Honda to sell them will be repaired or replaced under warranty without charge for parts or labor. If installed by anyone else, accessories, attachments, and replacement parts will be repaired or replaced under warranty without charge for parts, but any labor charges will be the responsibility of the purchaser.
- All other power equipment products—
Except as described under "EXCLUSIONS", all other power equipment products will be repaired or replaced under warranty without charge for parts or labor.

TO OBTAIN WARRANTY SERVICE:

You must take the Honda power equipment product and proof of purchase, at your expense, to any Honda power equipment dealer within the United States, Puerto Rico, or the U.S. Virgin Islands who is authorized to sell that product, during the dealer's normal business hours. If you are unable to obtain warranty service, or are dissatisfied with the warranty service you receive, take the following steps: First, contact the owner of the dealership involved; normally this should resolve the problem. However, if you should require further assistance, call the Power Equipment Customer Relations Department at (213) 604-2400, or write American Honda Motor Co., Inc., Customer Relations Dept., P.O. Box 50, Gardena, CA 90247-0805.

EXCLUSIONS:

THIS WARRANTY DOES NOT EXTEND TO PRODUCTS AFFECTED OR DAMAGED BY ACCIDENT AND/OR COLLISION, NORMAL WEAR, USE IN AN APPLICATION FOR WHICH THE PRODUCT WAS NOT DESIGNED OR ANY OTHER MISUSE, NEGLIGENCE, INCORPORATION OR USE OF UNSUITABLE ATTACHMENTS OR PARTS, UNAUTHORIZED ALTERATION, OR IMPROPER INSTALLATION.

THIS WARRANTY DOES NOT APPLY TO ANY OUTBOARD MOTOR THAT HAS BEEN USED BY A DEALER AS A DEMONSTRATOR. THE AUGER AND PADDLE ASSEMBLIES OF SNOWTHROWERS AND SNOWBLOWERS ARE SPECIFICALLY NOT WARRANTED AGAINST DAMAGE, INCLUDING BUT NOT LIMITED TO, ABRASIVE DAMAGE.

DISCLAIMER OF CONSEQUENTIAL DAMAGE AND LIMITATION OF IMPLIED WARRANTIES:

AMERICAN HONDA DISCLAIMS ANY RESPONSIBILITY FOR LOSS OF TIME OR USE OF THE PRODUCT OR THE ITEM IN WHICH THE PRODUCT IS INSTALLED, TRANSPORTATION, COMMERCIAL LOSS, OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGE. ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

AMERICAN HONDA MOTOR CO., INC.