

INSTRUCTIONS

▲ Keep this sheet for your records.

Using the Hypo-Hatchet Tree Injector

No. 21002
Hypo-Hatchet Tree Injector

ACCESSORIES
No. 21038
One-gallon plastic container with cap



SPECIAL NOTICE

The piston in this Hypo-Hatchet® is to be used with only one "O" ring on the top of the piston – the end with the ball and cross pin visible.

For use with Amine herbicides only. The neoprene piston "O" Ring is a precision part. It will swell and bind the piston if Ester herbicide products are used. Aside from causing poor performance, **Esters are not registered** for this use.

INTRODUCTION

The Hypo-Hatchet gives you ability to manage woodlots with problems of excess or cull trees. The Hypo-Hatchet has been completely redesigned to improve its effectiveness, reliability and ease of maintenance. It should give dependable service for years.

The Hypo-Hatchet is designed for any registered tree-killing amine herbicide intended for trunk injection. Accord®, Roundup®, Arsenal®, Tordon 101R®, 2, 4-D amine, or Garlon 3A® and other products may be used effectively. Use of ester forms of 2, 4-D or Garlon 4® may not be effective, and may damage certain parts of the Hypo-Hatchet. They are not registered for this use.

The Hypo-Hatchet automatically injects adjustable amounts of herbicide into its own axe-cut. The herbicide is released at the point of maximum axe-bit penetration, not before.

The Hypo-Hatchet may be adjusted to deliver different volumes of chemical. Placement of the delrin spacers (Part 10 and included with Hypo-Hatchet purchase), in varying numbers, in the cylinder will regulate the length of the piston stroke, hence the herbicide amount injected. The Hypo-Hatchet can be calibrated to provide the right effect without wasting herbicide.

The combination of total placement of herbicide inside the unwanted or sick tree, and avoidance of excess dosage, make the Hypo-Hatchet among the safest and most environmentally sound methods of woodlot management. For all but the smallest woodlots, it is also the most economical.

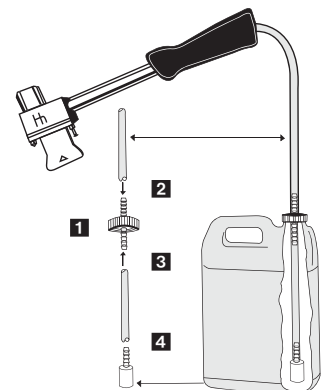
Before beginning any job, acquire information about appropriate herbicides and dosages for your situation and trees. **Always follow instructions on the herbicide label.**

1. Examine the Hypo-Hatchet. Be sure:
 - a. Bolts and handle are tight
 - b. There are no cuts in the herbicide hose
 - c. The head plug is snugly in place.
2. When using your new Hypo-Hatchet for the first time, the hose must

FIGURE 1

Installation of the splice and hose.

- Step 1** Drill a 7/32" diameter hole in the center of the herbicide bottle cap. Push the Hose Splice halfway through the cap.
- Step 2** Attach the hose from the Hypo-Hatchet handle onto the Splice until the hose touches the cap.
- Step 3** Attach the hose from the Herbicide Bottle onto the Splice until the hose touches the cap.
- Step 4** Attach the Foot Valve onto the end of the hose. For best results, the Foot Valve should rest in the bottom of the Herbicide Bottle.



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- be connected to your herbicide container. Remove cap from the plastic herbicide bottle (Stock No. 21038 or other container you wish to use) and drill a 7/32" hole in the center of the cap. Insert hose splice (Part 19) half-way through the cap, snugly in place. (Figure 1)
3. Cut off a section of the herbicide hose, with foot valve attached. Careful: This section should be long enough to attach to the hose splice on the underside for the cap and reach to the bottom of the herbicide bottle you are using. Push the hose onto the hose splice until the hose touches the underside of the cap. (See Figure 1)
 4. Screw cap, with hose attached, snugly back onto the herbicide bottle. (See Figure 1)
 5. Push the hose portion that goes to the Hypo-Hatchet handle onto the hose splice until the hose touches the top of the cap. (See Figure 1)
 6. When ready to begin use, place herbicide bottle into carrying bag (Stock No. 94054) and loosen cap slightly to allow air to enter bottle as herbicide is used.
 7. At the first tree you treat, prime the Hypo-Hatchet by:
 - a. Holding the hatchet below the waist, make several moderately gently chops into the tree at a 30-45° angle. Watch to see that the herbicide is flowing through the hose toward the head."
 - b. When you observe the herbicide being drawn through the hose, keep chopping until you see herbicide released into the tree.
 8. Continue injecting trees at dosage rates related to the resistance of the tree to the herbicide. Resistant trees should have injections about every 3 inches between centers around the entire tree. Sensitive trees may require only one injection per 9 inches.
 9. After a few hundred strokes, check to make sure the hex bolt (Part 2) is tight. Loosen jam nut with 7/16" wrench, tighten hex bolt, re-tighten jam nut. Recheck periodically.
 10. When injecting, be aware that large trees require more herbicide per inch of diameter than small trees.

Note: When using the Hypo-Hatchet, it is not necessary to strike the tree as if chopping it down! Excessive force

increases human fatigue and wear on the instrument without improving effectiveness.

SAFETY

1. Use properly-sharpened tools. Sharp tools don't glance as much.
2. There are two principal ways herbicides can be troublesome:
 - a. Splatter in eyes
 - b. Excessive contact with skin
3. Prevention of the above:
 - a. Eye spatter can be avoided by wearing glasses, goggles or face shields of some kind.
 - b. Skin contact may occur because of chemical spattering during use, or during filling containers or disassembly of equipment. In all cases, follow label safety instructions for the herbicides used.

Remember, herbicides should be treated with respect. Always read, understand and comply with all laws and label instructions for herbicide use.

CARING FOR YOUR HYPO-HATCHET

The Hypo-Hatchet should have few maintenance needs. Maintenance mainly consists of keeping the bit sharp, using only clean amine herbicides, and keeping the Hypo-Hatchet clean.

1. The bit (Part 5) is made of hardened tool steel. Do not sharpen on a power grinder. The heat will destroy the temper. The edge should be ground or filed with hand tools to as nearly straight a taper as possible (also see Troubleshooting) If only the edge is ground, the bit becomes blunt, with increased risk of glancing and injury to legs, as well as more fatigue for the user.
2. Cleanliness. (Also see Troubleshooting.) Since the tolerances in the Hypo-Hatchet are close to prevent leakage, any particles of grit or organic material can cause damage or jamming in the cylinder or in the valve. Clean the Hypo-Hatchet after each day's use. Disassembly may at times be necessary. Follow these steps:
 - a. Unscrew the head plug (Part 16).
 - b. Flush the system with water. Remove the intake hose, foot valve and cap from the chemical jug. Then, rinse off the intake hose, foot valve, cap and hose splice (Part 19) that has been in the chemical and insert in a container of clean water, tightening cap. Squeeze the water container, then

hold it higher than the injector. Water should continue siphoning through the Hypo-Hatchet. Water will then flow out the top of the cylinder portion of the head (Part 7). If the piston (Part 13) is slightly depressed, water will drain out through the bit orifice in the head.

- c. After rinsing, remove the piston seal (Part 14) from the cylinder above the piston assembly (Part 13). If the piston does not fall out when the hatchet is turned upside down, tap the head gently with a stick on the flat surface above the handle while it is upside down. The piston should fall out. When the piston is out, the internal parts are fully exposed. **Do not attempt to disassemble the piston.**
- d. Removal of the handle (Part 17) requires loosening of the jam nut (Part 3), holding the rear of the bit (Part 5). Then loosen the hex bolt (Part 2) which holds the handle in place. Light tapping may be necessary alternately on the rear of the bit and on the head above the handle to coax the head off. Do not hit the head with steel objects!
- e. When the handle is removed, the intake hose connector (Part 9) and "O" ring (Part 8) are visible. If pulling on the hose does not remove the connector, it may be necessary to use needle nose pliers to remove the connector.
- f. Removal of the bit is possible after the jam nut (Part 3) is loosened on the rear hex bolt (Part 2). Remove both hex bolts (Parts 1 and 2). Note "O" ring (Part 6) where the herbicide flows from the head into the bit. When reassembling, be sure "O" ring is in place.

STORAGE

The concentrated chemicals used for tree injection are salts. They may be corrosive to steel, brass or aluminum. The components of the Hypo-Hatchet are nickel-plated or stainless steel for corrosion resistance. However, it is always a good idea to thoroughly rinse out all parts that have been in contact with chemicals before putting the equipment away. If storing for more than a few days, it is advisable to coat the tool steel bit with oil to prevent rust. However, a moderate amount of rust will not impair function.

REPLACEMENT PARTS

TROUBLESHOOTING

Problem	Solution
<i>Blade glances off tree.</i>	<ul style="list-style-type: none"> Be sure the angle of impact is about 45°. If the angle is less than 30° to the tree, glancing will occur. Check the angle at which the bit is ground. It should be about 20-25°. If the cutting edge is thicker than 30°, the rounded shoulder of the bit will cause glancing. If the bit is worn so that it is difficult to sharpen at a thin angle, replace the bit.
<i>Herbicide does not emerge properly from bit outlet after striking the tree</i>	<ul style="list-style-type: none"> First check to see if there is herbicide in the hose. If there is only air in the hose and there is herbicide in the bottle, the piston is not functioning properly. To check this, remove head plug (Part 16). With a clean probe, such as a screwdriver, nail, paperclip or similar device, push piston down and release it several times to simulate the pumping action of striking the hatchet against a tree. This should start herbicide flowing through the hose. Sometimes the piston may stick if left with chemical in it. Simply pumping a few strokes with the piston should get it working properly. If the piston binds in the cylinder, replace the one "O" ring with one from Forestry Suppliers, Inc. only. If this does not free up the piston, call Customer Service or Technical Support at Forestry Suppliers, Inc. Note: There should always be only one "O" ring in the top groove of the piston. If pumping doesn't start the flow, check hose and foot valve (Part 20) in the bottle to see if there is an air leak. If there is no leak, the trouble may be in the piston. In this case, remove the piston to check that the ball valve in the piston is working properly. The ball should be retained by a cross pin visible from above, beneath which the ball should move freely about 1/8" away from its seat. If there is dirt between the ball and seat, it will not pump efficiently. Clean the piston assembly, install the piston return spring (Part 11), and install the piston and retainer piston seal (Part 14). When installing piston, the cross pin should be visible from above. If not, the piston is upside down and will not work. Repeat the pumping action. If there is still failure to draw herbicide through the hose, remove the handle to check that the hose is still connected to the connector in the head. Sometimes the piston may appear to malfunction if the bit orifice is plugged. Check bit outlet to determine if bark is jammed in the hole. If jammed tightly, it may be necessary to remove the bit to probe out the obstruction. If plugged, remove from inside the bit with a nail, paperclip or similar device. If at any time the piston does not move freely and fails to move to the top of its stroke under normal spring pressure, remove the piston. Clean the cylinder and piston with clean water. Coat the piston lightly with light oil and install the piston.
<i>Rubber hand grip comes loose from handle.</i>	Slide hand grip off handle and remove old cement from metal surface. Apply "GOOP" brand of adhesive, or similar, to metal in a generous, uniform coat. Immediately slide grip back onto metal handle. Allow to set 24 hours before using.
<i>Handle comes loose from head.</i>	Loosen jam nut (Part 3) on hex bolt (Part 2). Tighten set screw. If handle loosens again, remove handle. After locating spot where set screw touches the handle, mark the center of that spot with a center punch. Using a 7/32" drill, drill at that point only to the point that permits the set screw to fit on and catch.
<i>Long herbicide hose gets tangled in brush.</i>	Run hose from rear-mounted container between legs. If hose is still too long, shorten by two inches at a time, until comfortable.

FIGURE 2

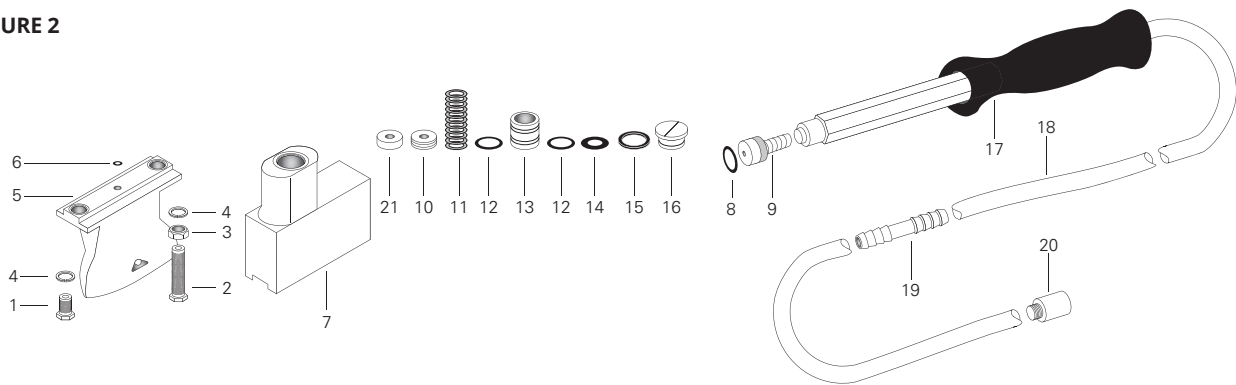


Fig.	Description	
1	Hex Bolt, 1/4" NC x 1/2" SS	21031
2	Hex Bolt, 1/4" NC x 1-3/8" SS	21030
3	Jam Nut, 1/4" NC SS	21033
4	Lock Washer, 1/4" SS, pk. of 2	21032
5	Bit, Tool Steel	21004
6	O-Ring, Bit	21022
7	Body (Head), nickel-plated	21040
8	O-Ring; Connector, Handle	21041
9	Connector, Handle	21042
10	1/16" Stroke Limit Spacer, pk. of 3	21043
11	Spring	21024

Fig.	Description	
12	O-Rings, Piston, pack of 2	21044
13	Piston Assembly	21045
14	Seal, Piston	21046
15	O-Ring; Plug, Head	21047
16	Plug, Head	21048
17	Handle Assembly w/Grip	21049
18	Hose with Repair Couplings	21018
19	Splice, Hose Connector	21050
20	Foot Valve	21051
21	1/4", Stroke Limit Spacer, pk. of 2	21052