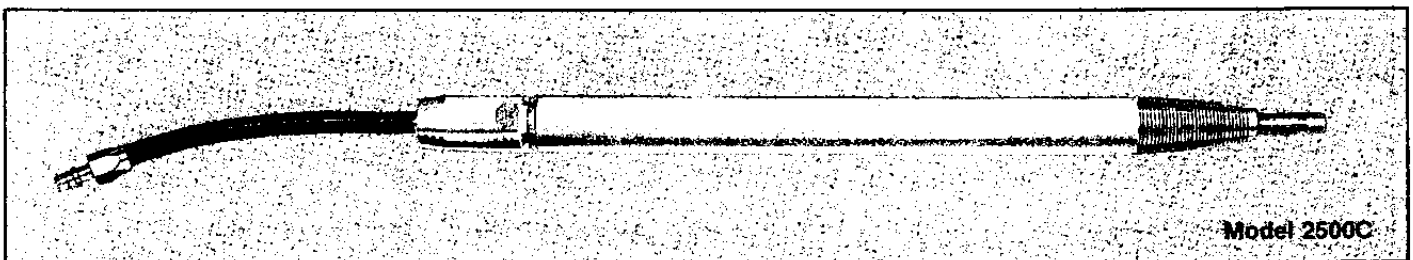
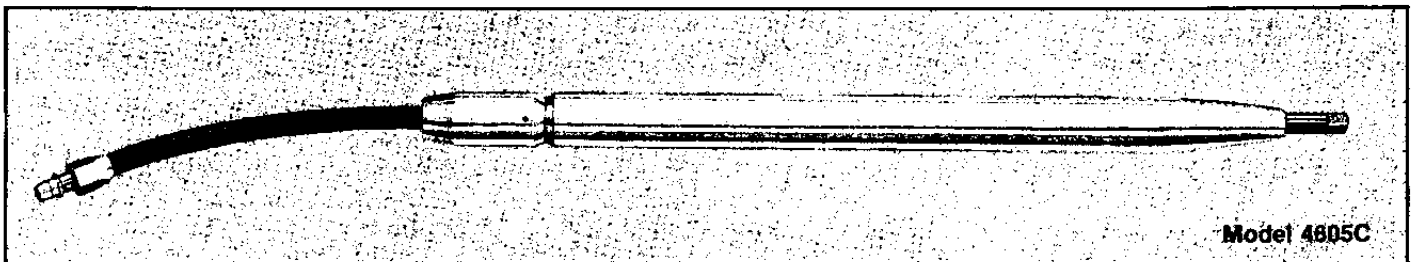
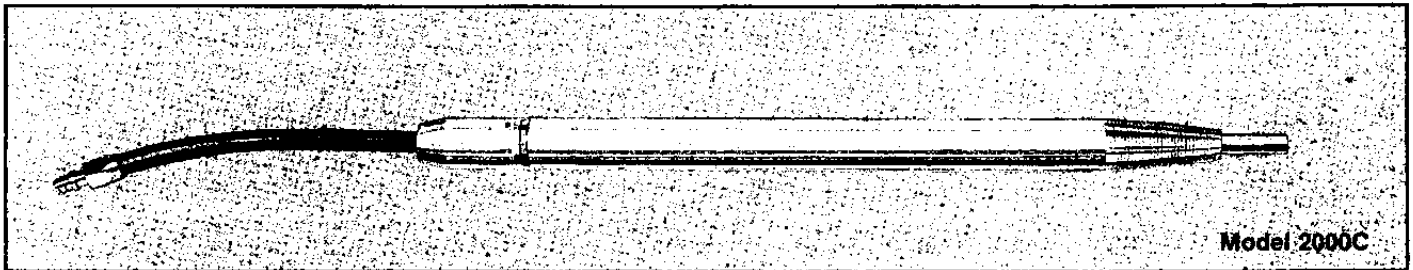


# Allied Model 2000C / Model 4605C / Model 2500C Hole-Hog®

## Quick Reversing Underground Piercing Tool OPERATING AND MAINTENANCE INSTRUCTIONS PARTS LIST AND WARRANTY

P/N 100175



**1.0 GENERAL:** The Allied Hole-Hog pneumatic reversible underground piercing tools are designed to pierce continuous and blind horizontal, inclined and vertical holes in compressible subsoils. Such holes are used for trenchless installation of underground utility lines, gas lines, water lines, sewers, etc., without the necessity of breaking or disturbing asphalt and concrete paving, landscaping such as lawns, shrubs, trees, and flowerbeds. Backfilling operations are eliminated and traffic is maintained. The tools may also be used to drive and withdraw rigid pipe from the ground with the use of optional attachments.

**THE STANDARD PROCEDURES THAT ARE EXPECTED AND/OR REQUIRED OF THOSE WORKING UNDERGROUND SHOULD OF COURSE BE FOLLOWED INCLUDING THE DETERMINATION AND LOCATION OF EXISTING UNDERGROUND SERVICE LINES, CABLES, CONDUIT AND THE LIKE.**

**2.0 DESCRIPTION:** The Allied Hole-Hog is a self-propelled pneumatic reversible piercing tool of percussion action. The body of the tool is the

operating member which forms the hole. An internal ram (striker) performs reciprocating motion, delivering blows against the inner front face of the body. Under action of these blows, the body is driven through the ground.

A reversing mechanism allows for changing the direction of blows and thus the direction of the tool, allowing the tool to exit from the hole that it has made. Hole-Hog's simple reversing mechanism is actuated easily by turning the whip hose 90° counterclockwise with the air supply off.

The Hole-Hog consists of the following major parts and/or assemblies: (Refer to Illustrative Drawings.)

**2.1 BODY ASSEMBLY:** The body assembly consists of an anvil and a body. The body's tail end has an internal thread intended for fastening the slide valve assembly. The body's front section has an external conical surface. The anvil has an external conical surface which is pressed into a matching internal surface of the body forming an integral assembly.

**2.2 STRIKER:** Striker has two precision, externally ground bearing surfaces, one at the front and the other at the rear of the striker. These bearing surfaces guide and support the striker during its movement within the body assembly. The front bearing surface has machined flats to

allow passage of compressed air. Ports are provided in the wall of the striker cylindrical surface to control the motion of the striker.

**2.3** The slide valve provides faultless starting of the unit in any position. It also controls forward and reverse directions of unit.

**3.0 SPECIFICATIONS:**

	<b>2000C/4605C U.S./Metric</b>	<b>2500C U.S./Metric</b>
<b>OUTSIDE DIAMETER</b>	3 <sup>3</sup> / <sub>4</sub> in./95 mm.	4 <sup>1</sup> / <sub>16</sub> in./103 mm.
<b>OVERALL LENGTH</b>	63 in./160 cm.	63 in./160 cm.
<b>WEIGHT</b>	110 lbs./50 kg.	140 lbs./63 kg.
<b>WORKING AIR PRESSURE*</b>	90 p.s.i./6.3 kg./cm. <sup>2</sup>	90 p.s.i./6.3 kg./cm. <sup>2</sup>
<b>AIR CONSUMPTION PER MINUTE</b>	60 c.f.m./2.5 c.m.m.	60 c.f.m./2.5 c.m.m.
<b>AIR HOSE (INSIDE DIAMETER)</b>	1 in./25 mm.	1 in./25 mm.
<b>PERCUSSION RATE PER MINUTE</b>	400	400
<b>SINGLE PERCUSSION ENERGY</b>	150 ft. lbs./104 n.m.	150 ft. lbs./104 n.m.
<b>MAXIMUM WORKING PRESSURE FOR ALL MODELS</b>	95 p.s.i./6.7 kg./cm. <sup>2</sup>	95 p.s.i./6.7 kg./cm. <sup>2</sup>
<b>AVERAGE GROUND PIERCING SPEED**</b>	Up to 4 ft./min./ 1.3 m.	Up to 4 ft./min./ 1.3 m.
<b>REVERSING SPEED</b>	Up to 5 ft./min./ 1.5 m.	Up to 5 ft./min./ 1.5 m.

\* The longer the hole to be pierced, the higher the pressure required to compensate for line pressure drop. Allow 5 p.s.i./4 kg./cm.<sup>2</sup> difference for each 100 ft./30 m. of hose. Pressure above 95 p.s.i.g./6.7 kg./cm.<sup>2</sup> at the tool could decrease the life of the Hole-Hog.

\*\* Based on standard diameters. The rate, which depends upon soil conditions, will decrease when expanders are used for larger diameter holes.

**OPTIONS:** Launching Stand, Pipe-Pusher, Expanders, Extractors, Lengtheners.

**OPERATING DEPTHS\*:**

	<b>2000C/4605C/2500C</b>		<b>2000C/4605C/2500C</b>	
Hard Glacial Gravel	25 in.	Clay/Sand Mix	25 in.	
Sand - Dry	33 in.	Cultivated Soil	33 in.	
Sand - Moist	33 in.	Clay/Loam Mix	28 in.	

\* Hole-Hog operates best in soils that compact well. The minimum depth for operating the Hole-Hog varies with soil conditions and the length of the hole to be made. The chart above is meant as a guide only.

*Specifications subject to change without notice.*

**4.0 OPERATION**

**4.1 PREPARING FOR OPERATING:**

The Hole-Hog as delivered by the manufacturer has been assembled, lubricated, factory tested, and placed in its shipping container. Remove the

Hole-Hog from its container and inspect for possible damage. Pay particular attention to the hose. Check the end cap to ascertain its tightness. If loose, retorque as follows:

Model 2000C/4605C      TORQUE MINIMUM: 1000 FT./LBS./1355 N.M.      WRENCH: 832068  
 Model 2500C            TORQUE MINIMUM: 2400 FT./LBS./3254 N.M.            WRENCH: 832817

It is suggested that the air hose be connected to an air compressor of sufficient capacity and the Hole-Hog operated above ground momentarily.

**SAFETY PRECAUTION**

**CHECK THE TIGHTNESS OF THE END CAP ON A DAILY BASIS USING THE PROPER TOOL & TORQUE. AN END CAP THAT IS NOT TIGHT COULD BLOW OUT AND COULD CAUSE INJURY TO THE OPERATOR.**

## 4.2 SUGGESTED OPERATIONAL

**PROCEDURES:** The following set of procedures should be followed when attempting to drive a hole with the Allied underground piercing tool.

1. Determine presence of obstructions such as: water lines, gas lines, sewers, and utility lines in the area to be penetrated.
2. Open entrance pit to depth, width, and length required to properly align piercing tool.
3. Open exit pit. Width and depth of exit pit should exceed entrance pit dimensions by 6 in. to 10 in./152 mm. to 245 mm.
4. Note type of soil.
5. Level entrance pit to achieve ground cover required, preferably at least the minimum recommended critical depth for the soil type.
6. Determine length of hole to be penetrated and mark hose for that length. (This gives operator indication when the piercing tool should reach its terminal point, and would indicate if the tool had been deflected off course.)
7. Check slope of ground using level.
8. Set piercing tool in pit and align on target. If starting device is used, align on target and level. If starting device is not used, level piercing tool.
9. Connect hose to compressed air supply and blow out air hose.
10. Pour small amount of Type A automatic transmission fluid into air line and connect to piercing tool. (See 6.0 Lubrication)
11. If the Hole-Hog is not in the forward mode, turn supply hose 180° counter clockwise. Reduce air pressure to approximately 60 p.s.i./4.2 kg./cm.<sup>2</sup> and start piercing tool penetration into the ground. It is necessary to apply force in the direction of its motion. If optional starting device is used, a down pressure on the handle is all that is required. Stop after approximately 1/3 body length has penetrated, and recheck alignment on target and grade level using suitable spirit level.
12. Restart air supply to piercing tool. Continually check alignment and grade level until the tool's body has fully penetrated.
13. Increase air pressure to 90 p.s.i./6.3 kg./cm.<sup>2</sup> and complete hole penetration.

**THE TOOL SHOULD NEVER BE OPERATED ABOVE 95 P.S.I.G./6.7 KG./CM.<sup>2</sup>. PRESSURES ABOVE 95 P.S.I.G./6.7 KG./CM.<sup>2</sup> WILL DECREASE TOOL LIFE AND PARTS WILL NOT BE COVERED UNDER WARRANTY.**

After the tool has reached the exit pit, proceed as follows:

14. Stop compressed air delivery by shutting off the compressor air valve.
15. Disconnect the hose and remove the hose from the hole.

16. Withdraw the tool from the pit.

17. **IF AT ANY TIME THE END CAP SHOULD LOOSEN UP, DO NOT RETIGHTEN IT. REMOVE END CAP, CLEAN THOROUGHLY (GIVE SPECIAL ATTENTION TO CLEANING THE THREADS OF END CAP AND BODY) AND GREASE THREADS AS STATED (IN MAINTENANCE SECTION), THEN RE-ASSEMBLE.** If the piercing tool has met an unsurpassable obstacle or has deviated from the given direction more than permissible, the tool should be stopped and returned out of the hole. The tool may also be stopped and returned when a blind hole is required.

## 4.3 TO REVERSE THE TOOL, PROCEED AS FOLLOWS:

1. Stop compressed air delivery by shutting off the valve at the compressor.
2. Turn air hose counterclockwise approximately 180°. Turn air on.
3. When tool has backed out of hole, turn off air.

**5.0 CAUTION:** IF EITHER OR BOTH OF THE ITEMS LISTED BELOW OCCUR, ALLIED IS RELIEVED OF ALL WARRANTY RESPONSIBILITIES ON THAT HOLE-HOG:

1. Heat applied by a torch or by any other method to any part or parts of the Allied Hole-Hog. This includes the body when attempting to remove the end cap. Applying heat may destroy the main body, valve body, striker and other parts beyond use.
2. USING A PIPE WRENCH ON THE BODY OF AN ALLIED HOLE-HOG. When a pipe wrench is used on the body while attempting to remove the end cap, it will usually hinder - not help - in the removing of the end cap.

**6.0 LUBRICATION:** Before using the Hole-Hog it should be lubricated by pouring 2 oz./60 g. (½ of a small paper cup) of motor oil or transmission fluid mixed with ½ oz. to 1 oz. of Marvel Mystery Oil or Wynn's Friction Proofing Oil, or their equivalent, into the air supply hose. This should be repeated at approximately 100 ft./30 m. intervals.

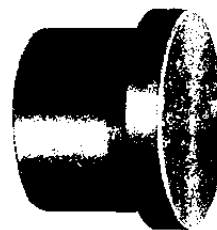
When operating in extremely low temperatures and/or high humidity, use lubricant containing molybdenum disulphide (MoS<sub>2</sub>). NOTE: If icing or freezing takes place, we suggest pouring 2 oz./60 g. of alcohol or dry gas into the air line, as close to the tool as possible, followed immediately by lubricant.

If sustained running below 40°F is required it is suggested that an air line lubricator be installed using NFD's "Airlube AF" as a lubricant. Adjust for the 2000C Hole-Hog lubricator for 4-6 drops/minute.

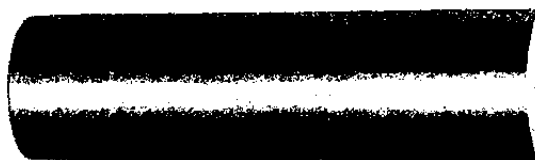
**MODEL 2000C/4605C/2500C HOLE-HOG ASSEMBLY TOOL KIT  
PART NUMBER 832872**



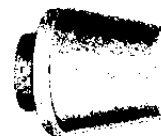
Shock Absorber Installation Tool  
832870



Shock Absorber Pusher Tool  
831785



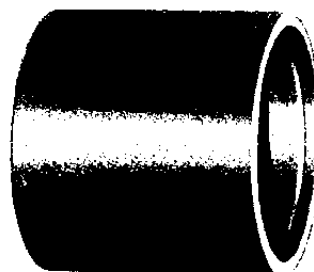
Push Bar Tool  
832873



Valve Guide Installation Tool  
832871



Valve Seal Installation Tool  
832874



Shock Absorber Removal Tool  
832875

**7.0 MAINTENANCE:** The Allied tool is nearly a maintenance-free tool. However, at the end of each 100 operational hours (other than if operated in very sloppy soil; then, at the end of that working day), it is recommended

that the tool be dismantled and all surfaces be checked for evidence of abrasion, and the exhaust ports in the Shock Absorber be inspected for obstructions.

**8.0 POSSIBLE TROUBLES AND REMEDIES**

<b>TROUBLE: WILL NOT RUN OR START</b>	
<b>PROBABLE CAUSE</b>	<b>CORRECTION</b>
<ul style="list-style-type: none"> <li>a. Restriction in inlet hose.</li> <li>b. In cold weather, condensation may have frozen inside unit.</li> <li>c. Bent valve stem.</li> <li>d. Foreign material in unit through valve seal, or air line.</li> <li>e. Striker broken.</li> <li>f. Rusting of friction surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>a. Disconnect and blow out hose.</li> <li>b. Pour small amount of anti-freeze or de-icing fluid into hose.</li> <li>c. Replace valve stem.</li> <li>d. Disassemble unit and clean.</li> <li>e. Replace striker.</li> <li>f. Disassemble, clean, and polish.</li> </ul>
<b>TROUBLE: RUNS ERRATICALLY (FORWARD) OR STOPS IN GROUND</b>	
<b>PROBABLE CAUSE</b>	<b>CORRECTION</b>
<ul style="list-style-type: none"> <li>a. Bent valve stem.</li> <li>b. Hose restricted.</li> <li>c. Immovable obstacle.</li> <li>d. Excessive clearance body to striker.</li> <li>e. Excessive clearance striker to valve sleeve.</li> <li>f. Moisture in air.</li> </ul>	<ul style="list-style-type: none"> <li>a. Replace valve stem.</li> <li>b. Disconnect and blow out hose.</li> <li>c. Reverse.</li> <li>d. Replace worn parts.</li> <li>e. Replace worn parts.</li> <li>f. Flush with methanol.</li> </ul>
<b>TROUBLE: RUNS ERRATICALLY (REVERSE)</b>	
<b>PROBABLE CAUSE</b>	<b>CORRECTION</b>
<ul style="list-style-type: none"> <li>a. Air pressure too high (90 p.s.i. recommended).</li> <li>b. Improper lubrication.</li> <li>c. Bent valve stem.</li> <li>d. Worn or deteriorated shock absorber.</li> </ul>	<ul style="list-style-type: none"> <li>a. Check air pressure and flow.</li> <li>b. See recommended lube procedure.</li> <li>c. Replace valve stem.</li> <li>d. Replace shock absorber.</li> </ul>
<b>TROUBLE: LOW ON POWER OR SLOW RATE OF PENETRATION</b>	
<b>PROBABLE CAUSE</b>	<b>CORRECTION</b>
<ul style="list-style-type: none"> <li>a. Restriction in air hose.</li> <li>b. Air pressure too high (90 p.s.i. recommended).</li> <li>c. Air pressure too low.</li> <li>d. Shock absorber worn or deteriorated.</li> <li>e. Oscillation due to ground condition (i.e., water and clay).</li> <li>f. Very hard ground condition.</li> </ul>	<ul style="list-style-type: none"> <li>a. Disconnect and blow out hose.</li> <li>b. Check air pressure.</li> <li>c. Check air pressure.</li> <li>d. Replace shock absorber.</li> <li>e. Prevent water from entering hole if possible.</li> <li>f. Examine application.</li> </ul>

## 9.0 DISASSEMBLE\*

1. With body positioned horizontal in holding device, use wrench (2000C/4605C, use P/N 832068; 2500C, use P/N 832817) to loosen the end cap. Screw end cap tail section out of the body.
2. Remove the striker (2) by using a long hook to pull striker out 6" or 8" and then pull striker completely out of body.
3. Do not disassemble the valve and shock absorber assembly unless it is necessary to replace internal parts of the assembly.
4. a) Position the end cap (7) vertically against top of vise jaws, allowing the whip hose (10) to clear the jaws of the vise. Push valve sleeve (3A) until the flats of the hose socket fitting (9) are exposed between the jaws of the vise. Clamp the vise on the flats. With open end wrench placed across the flats of the valve body (3C) remove the valve body from the fitting (9) and hose (10). By holding the bias spring (4) and valve sleeve (3A) in one hand, pull valve assembly (3) out of the valve guide (5).  
b) Press shock absorber (6) and valve guide (5) out of end cap (7).  
c) Using sharp instrument, cut through shock (6) and seal (8) and remove from valve guide (5).

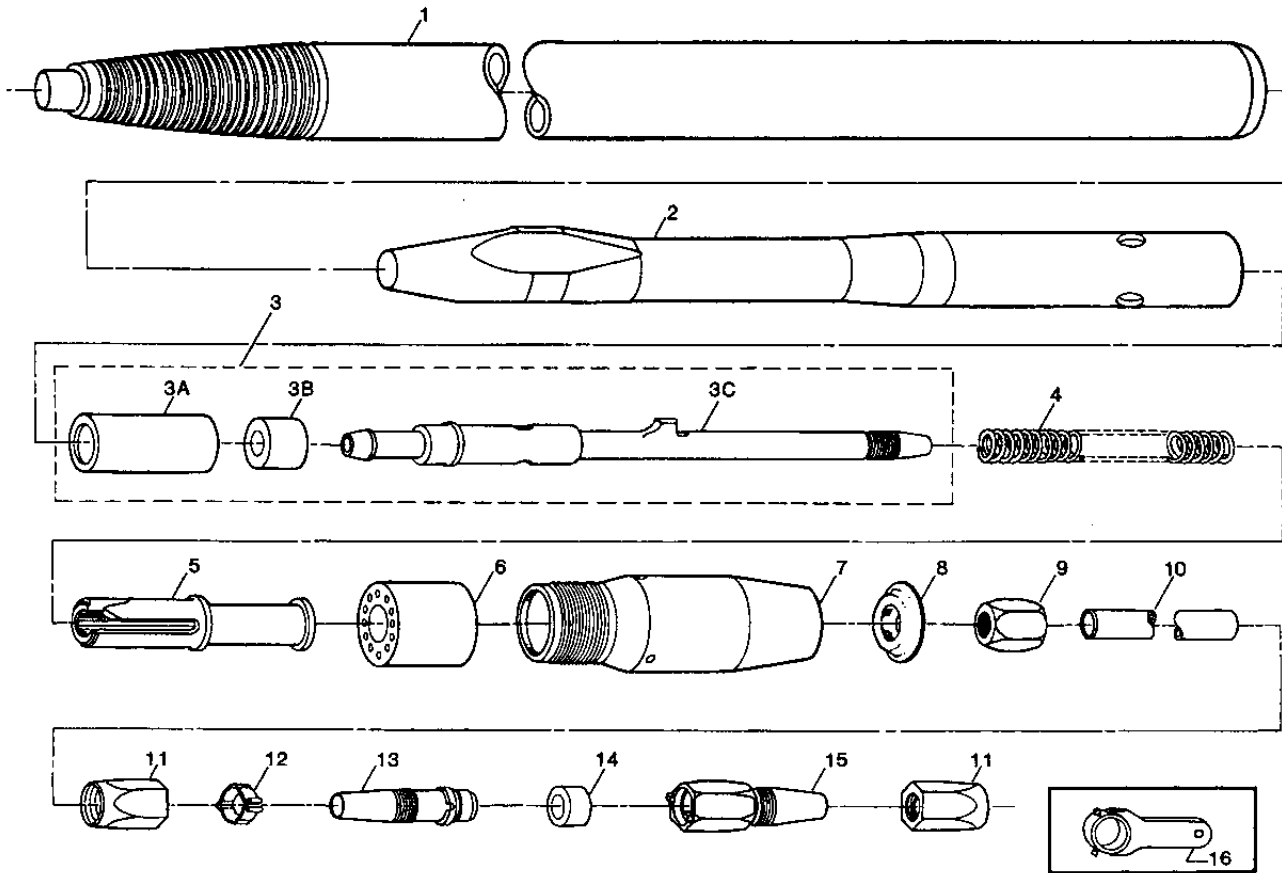
## 10.0 RE-ASSEMBLE:\*

1. Position end cap (7) in press with threaded end up. Press shock absorber (6) into end cap (7).
2. Press valve guide (5) into shock absorber (6).
3. Reverse end cap in vise and press valve seal (8) on valve guide (5).

4. Position end cap (7) vertically in vise with thread end up and clamp.
5. Lower valve assembly into the valve guide (5) until valve body threads are exposed on opposite end of end cap (7). Screw hose socket fitting (9) with whip hose (10) pre-assembled on valve body threads.
6. Reposition end cap vertically against vise, allowing whip hose to clear jaws of the vise. Push valve sleeve (3A) until the flats of the hose socket fitting (9) are exposed between jaws of the vise and clamp the vise on the flats. With open-end wrench placed across the flats of the valve body (3C), tighten the valve body into the hose socket fitting and hose until the undercut on the valve body reaches the fitting.
7. Install the striker into the body so that the back-end of the striker is inside the body about 6" to 8".
8. Coat the valve assembly with hydraulic fluid. Apply anti-seize thread lubricant sparingly to the threads on the end cap and to the body threads. Wipe off any lubricant that might have been applied to the body and end cap taper on the Model 2000C and 4605C Hole-Hogs.
9. Install the end cap tail assembly by inserting the valve sleeve into the striker and screwing the end cap in the body.
10. Using wrench (2000C, 4605C, use P/N 832068; 2500C, use P/N 832817) tighten the end cap and torque. With Model 2500C, a torque wrench is not necessary as long as the mark on the body is aligned with the mark on the end cap. Alignment of the marks will assure proper torque level.

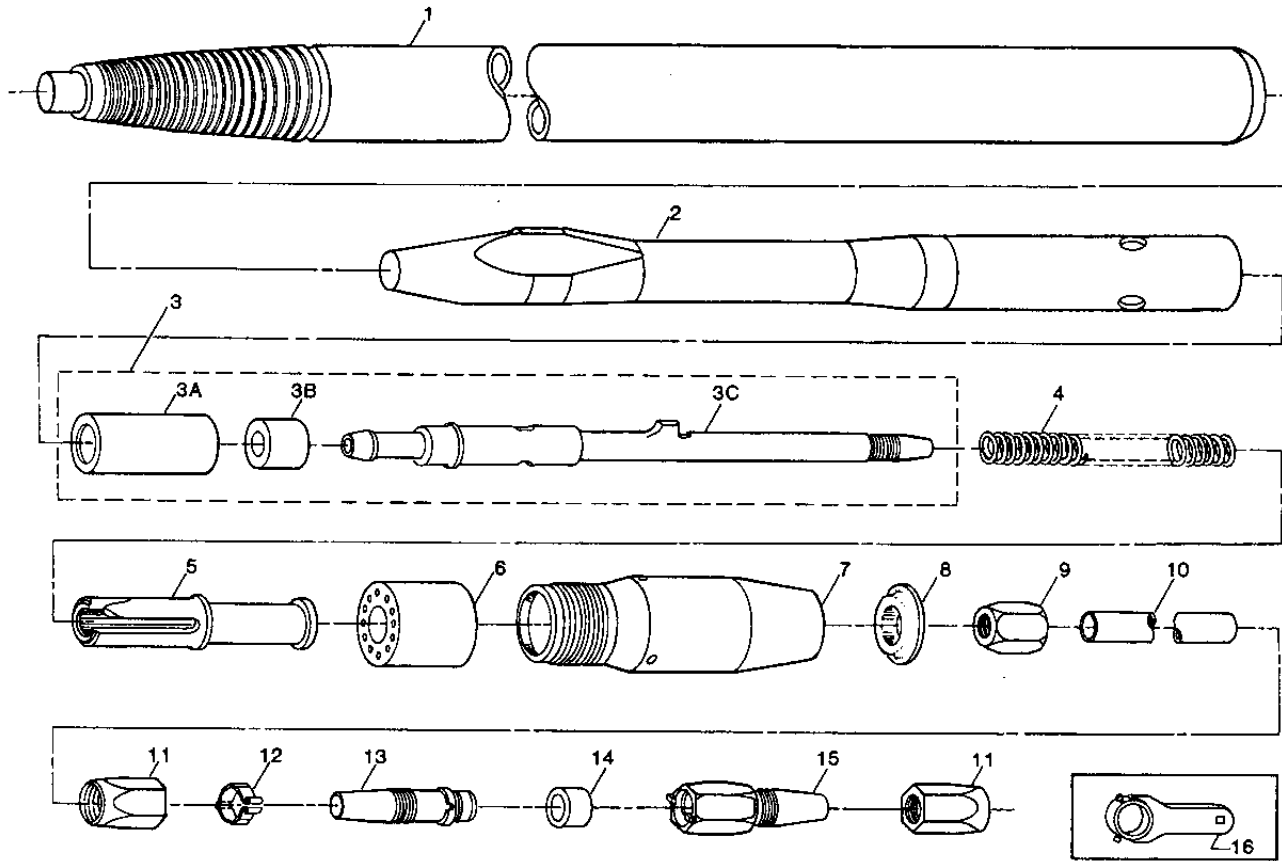
\*Contact your Allied Distributor for information on appropriate tools required.

# MODEL 2000C HOLE-HOG PART NUMBER 832800



Item No.	Qty.	Part No.	Description	Weight	
				Lbs.	Kg.
1	1	832020	Anvil & Body Assembly	58.00	27.90
2	1	832001	Striker	40.00	18.82
3	1	832821	Valve Assembly, Includes:	4.23	1.93
3A	1		Valve Sleeve	1.00	.45
3B	1		Bushing	.23	.10
3C	1		Valve Body	3.00	1.38
4	1	832824	Bias Spring	.40	.18
5	1	832805	Valve Guide	2.50	1.13
6	1	832857	Shock Absorber	.85	.38
7	1	832856	End Cap	8.00	3.63
8	1	832513	Valve Seal	.10	.04
9	1	832750	Whip Hose Nut	.80	.36
10	1	833761	Whip Hose	2.50	1.13
11	2	832009	Hose Nut	.80	.36
12	1	832042	Spring	.03	.01
13	1	832005	Connector	.80	.36
14	1	832011	Seal	.05	.02
15	1	832008	Hose Disconnect	1.20	.54
16	1	832068	End Cap Wrench	6.55	2.97

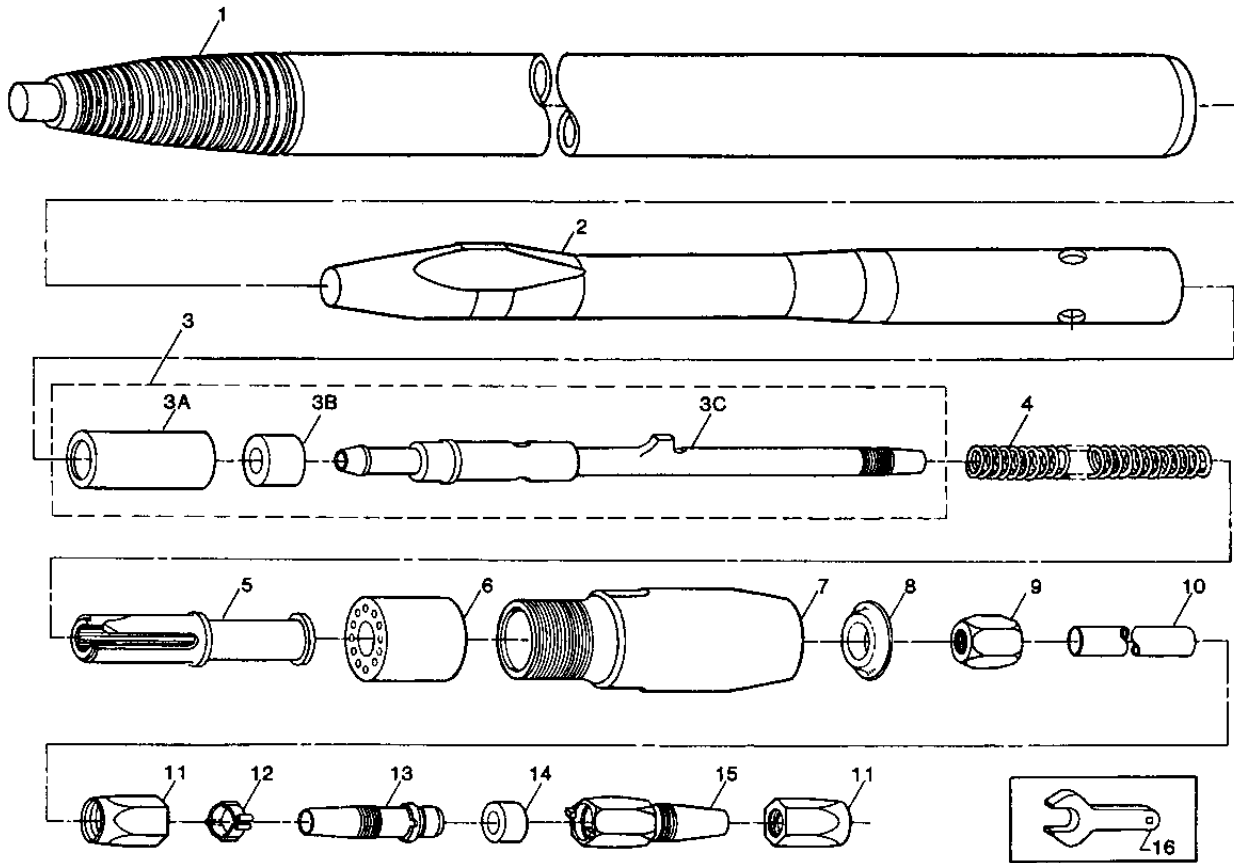
# MODEL 4605C HOLE-HOG PART NUMBER 834650



Item No.	Qty.	Part No.	Description	Weight	
				Lbs.	Kg.
1	1	835020	Anvil & Body Assembly	58.00	27.90
2	1	832001	Striker	40.00	18.82
3	1	832821	Valve Assembly, Includes:	4.23	1.93
3A	1		Valve Sleeve	1.00	.45
3B	1		Bushing	.23	.10
3C	1		Valve Body	3.00	1.38
4	1	832824	Bias Spring	.40	.18
5	1	832805	Valve Guide	2.50	1.13
6	1	832857	Shock Absorber	.85	.38
7	1	834656	End Cap	8.00	3.63
8	1	832513	Valve Seal	.10	.04
9	1	832750	Whip Hose Nut	.80	.36
10	1	833761	Whip Hose	2.50	1.13
11	2	832009	Hose Nut	.80	.36
12	1	832042	Spring	.03	.01
13	1	832005	Connector	.80	.36
14	1	832011	Seal	.05	.02
15	1	832008	Hose Disconnect	1.20	.54
16	1	832068	End Cap Wrench	6.55	2.97



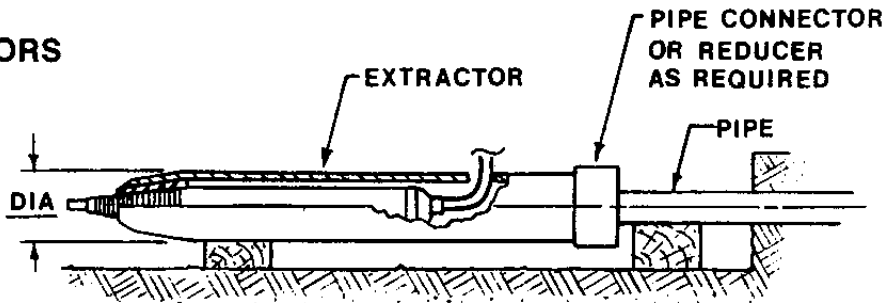
# MODEL 2500C HOLE-HOG PART NUMBER 832500



Item No.	Qty.	Part No.	Description	Weight	
				Lbs.	Kg.
1	1	832520	Anvil & Body Assembly	70.00	31.70
2	1	832001	Striker	40.00	18.82
3	1	832821	Valve Assembly, Includes:	4.23	1.93
3A	1		Valve Sleeve	1.00	.45
3B	1		Bushing	.23	.10
3C	1		Valve Body	3.00	1.38
4	1	832824	Bias Spring	.40	.18
5	1	832805	Valve Guide	2.50	1.13
6	1	832857	Shock Absorber	.85	.38
7	1	832556	End Cap	11.00	5.00
8	1	832513	Valve Seal	.10	.04
9	1	832750	Whip Hose Nut	.80	.36
10	1	833761	Whip Hose	2.50	1.13
11	2	832009	Hose Nut	.80	.36
12	1	832042	Spring	.03	.01
13	1	832005	Connector	.80	.36
14	1	832011	Seal	.05	.02
15	1	832008	Hose Disconnect	1.20	.54
16	1	832817	End Cap Wrench	22.00	10.00

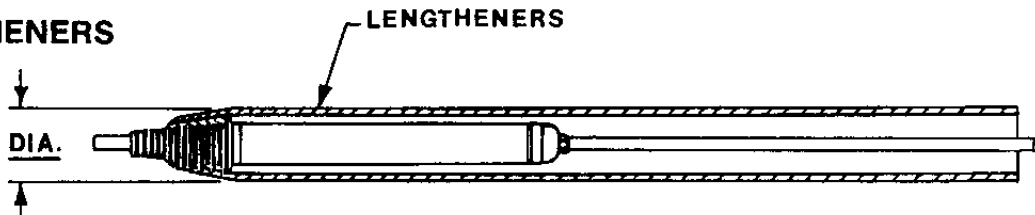
## MODEL 2000C/MODEL 4605C/MODEL 2500C HOLE-HOG ACCESSORIES

### EXTRACTORS



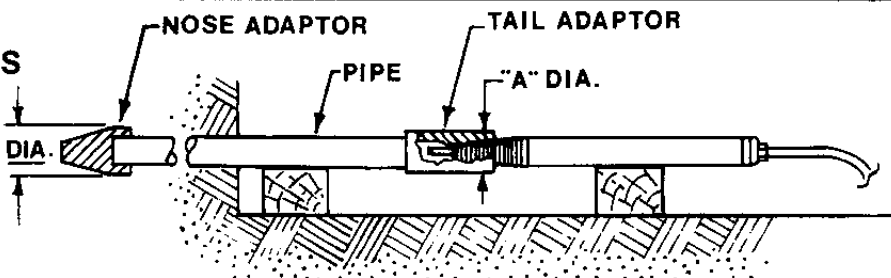
Application	Model No.	Part No.	Description	Dia.
Extracting 3" nominal pipe (3½" O.D.) may also be used for extracting 2½" nominal sized pipe. Standard pipe reducers or connectors required.	2000C 4605C	832048	W/4 In.-8 NPTF Male Thread	4.5 in./ 114 mm.

### LENGTHENERS



Application	Model No.	Part No.	Dia.
Lengthen hole in soft soil.	2000C 4605C	832047	4.5 in./ 114 mm.

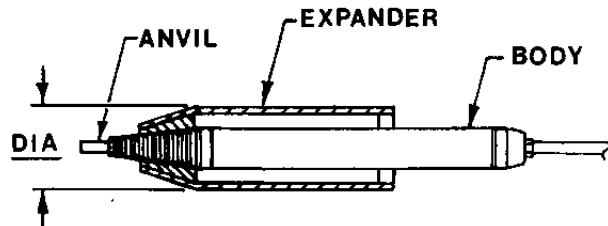
### ADAPTORS



Application	Model No.	Part No.	Description	Dia.
Pushing 3" nominal pipe (3½" O.D.) also used for pushing 2" and 2½" nominal sized pipe. Standard pipe reducers required.	2000C 4605C	832032	Nose Adaptor W/3 In. - 8 NPTF Female	4 in./ 102 mm.
		832033	Tail Adaptor W/3 In. - 8 NPTF Female Thread	4 in./ 102 mm.

# MODEL 2000C/MODEL 4605C/MODEL 2500C HOLE-HOG ACCESSORIES

## EXPANDERS

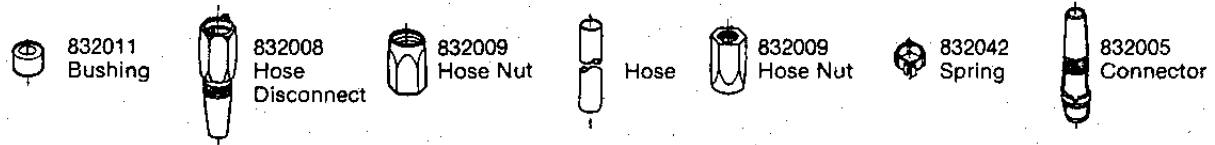


Application	Model No.	Part No.	Dia.
Enlarging hole only after primary hole has been made with Models 2000C/4605C Hole-Hogs, holes must be enlarged in steps, using expanders. Soil condition determines size required.	2000C 4605C	832036	4.5 in./ 114 mm.
		832039	5 in./ 127 mm.

## HOSE ASSEMBLY OPTIONS MODELS 2000C/4605C/2500C 100R1 THICK COVER

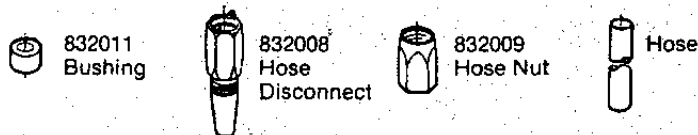
### MALE-FEMALE ASSEMBLY

25 Ft. Lgth. No. 832783 50 Ft. Lgth. No. 832784



### MALE ASSEMBLY

25 Ft. Lgth. No. 832781 50 Ft. Lgth. No. 832782

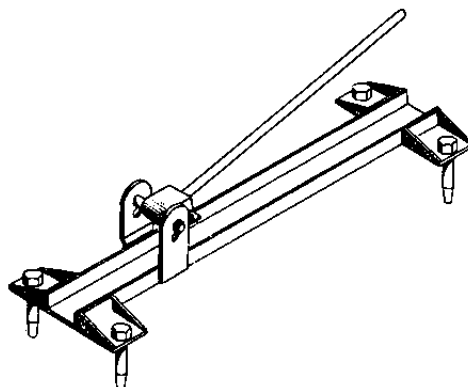


### PLAIN HOSE

25 Ft. Lgth. 832059  
50 Ft. Lgth. 832062

## LAUNCHER ASSEMBLY

832025



**MODEL 2000C/MODEL 4605C/MODEL 2500C  
HOLE-HOG PRODUCT WARRANTY**

**BASE WARRANTY**

**ALLIED** warrants its products to be well-made, durable and of good material and if within twelve (12) consecutive months from the date of delivery of such new product to the actual and original purchaser or renter, but no more than eighteen (18) months from the date of shipment from **ALLIED'S** factory, any part except the rubber shock absorber, rubber valve seal, rubber hose assemblies or Hole-Hog accessories, such as launchers, extractors, expanders, pipe pushers, lengtheners which are covered by the **LIMITED WARRANTY**, shall fail by reason of defective material or poor workmanship, **ALLIED** will at its option, repair or furnish such part free of charge under the conditions listed in **WARRANTY LIMITATIONS**. **ALLIED'S WARRANTY LABOR ALLOWANCE POLICY IS WITH THE DEALER**. All inquiries on the **WARRANTY LABOR ALLOWANCE** should be directed to the Allied Authorized Sales and Service Dealer.

**LIMITED WARRANTY**

The rubber shock absorber, rubber valve seal, rubber hose assemblies or Hole-Hog accessories, such as launchers, extractors, expanders, pipe pushers, lengtheners are covered by the **LIMITED WARRANTY** for a period of thirty (30) days. **ALLIED** reserves the full right to determine if and to what extent warranty adjustments may be made for damage or breakage of these items. **ALLIED IS NOT RESPONSIBLE FOR LABOR OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL ITEM REQUIRED TO MAKE THE REPAIR.**

**WARRANTY LIMITATIONS**

For warrantable failures, **ALLIED** will, at its option, repair or furnish such part free of charge F.O.B. factory where manufactured (or other place designated by **ALLIED**); provided, however, that the defective part or sufficient evidence of such defect in the part be delivered to its factory in the United States where manufactured (or other place designated by **ALLIED**), transportation prepaid. Such parts or such evidence must clearly show that the failure was due to poor workmanship of defective material and not due to the negligence or improper use by such purchaser, renter or operator.

No claim under this warranty will be accepted by **ALLIED** unless the proper filled out claim form is submitted and received by **ALLIED** within thirty (30) days of the date of discovery of the defect or within fifteen (15) days of the date of repair.

Breakage or damage resulting from installation or operation or use not in accordance with **ALLIED'S** published installation and operating instructions are not covered by any warranty.

Operation or use beyond published capacities, substitution or interchanging of parts or any alterations not approved by **ALLIED** shall void this warranty.

**ALLIED'S** responsibility and warranty applies only when this equipment is operated and used in accordance with (1) its published instructions and (2) pursuant to the terms, conditions and restrictions of any local, state, dominion or federal laws, ordinances and regulations. The purchaser, user or renter assumes the responsibility to familiarize himself with such published capacities, instructions, terms and conditions as set forth above. **ALLIED'S** warranty is voided if the serial number is removed or altered in any way.

The original purchaser, user or renter is responsible for "downtime" expenses and all business costs and losses resulting from a warrantable failure.

**DISCLAIMER**

**THESE WARRANTIES AND THE COMPANY'S OBLIGATIONS THEREUNDER ARE IN LIEU OF ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ALL OTHER REPRESENTATIONS TO THE ORIGINAL PURCHASER, USER OR RENTER AND ALL OTHER OBLIGATIONS OR LIABILITIES, INCLUDING LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES ON THE PART OF THE COMPANY OR THE SELLER WITH RESPECT TO THE SALE OR USE OF THE MACHINE.**

No person is authorized to give any other warranties or to assume any other liability on the company's behalf unless made or assumed in writing by the company, and no person is authorized to give any warranties or to assume any liabilities on the seller's behalf unless made or assumed in writing by the seller.

**ALLIED** specifically disclaims any responsibility for any damages of any kind or description, whether to property or person, in any way connected with or arising out of the use of said product.



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