B FISHLINE KIT

(PNEUMATIC DUCT RODDER)

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1. GENERAL

1.01 This section describes and outlines the use of the B Fishline Kit (a pneumatic duct rodder). An air compressor with a capacity of 120 cubic feet per minute and a discharge pressure of 100 pounds per square inch is recommended to operate this device. A truck equipped with a collapsible Power Reel, and a C Drop Wire Reel are used in conjunction with this device for pulling a winch line through a duct.

1.02 This section is reissued to add information on a 4-inch plug assembly for use in 4-inch diameter round ducts, and to include replacement parts for the B Fishline Kit.

1.03 The B Fishline Kit is used to place a 3/16- or 1/4-inch B Fishline (polypropylene rope pull-in line) in clean, but not necessarily dry round single-duct underground conduit. The 3/16-inch fishline is for duct lengths up to 1000 feet, and 1/4-inch fishline for duct lengths of 1000 feet or more. B Fishline must be ordered separately. A spool of 3/16-inch line contains approximately 3500 feet; a spool of 1/4-inch line contains approximately 2500 feet.

2. DESCRIPTION

2.01 The B Fishline Kit is illustrated in Fig. 1. The kit is comprised of a plywood platform or base, and a removable cover containing the various parts of a pneumatic rodding tool. Mounted in a manner so as to be easily removable are the following: a cone assembly (projectile), a spare plastic cone, a duct plug assembly (for 3-1/2-inch diameter ducts) provided with a quick-connect air hose coupling, a 4-inch plug assembly for use in 4-inch diameter ducts, 15 feet of air hose with similar couplings at both ends, and an axle and spindle for the fishline spool. Permanently attached

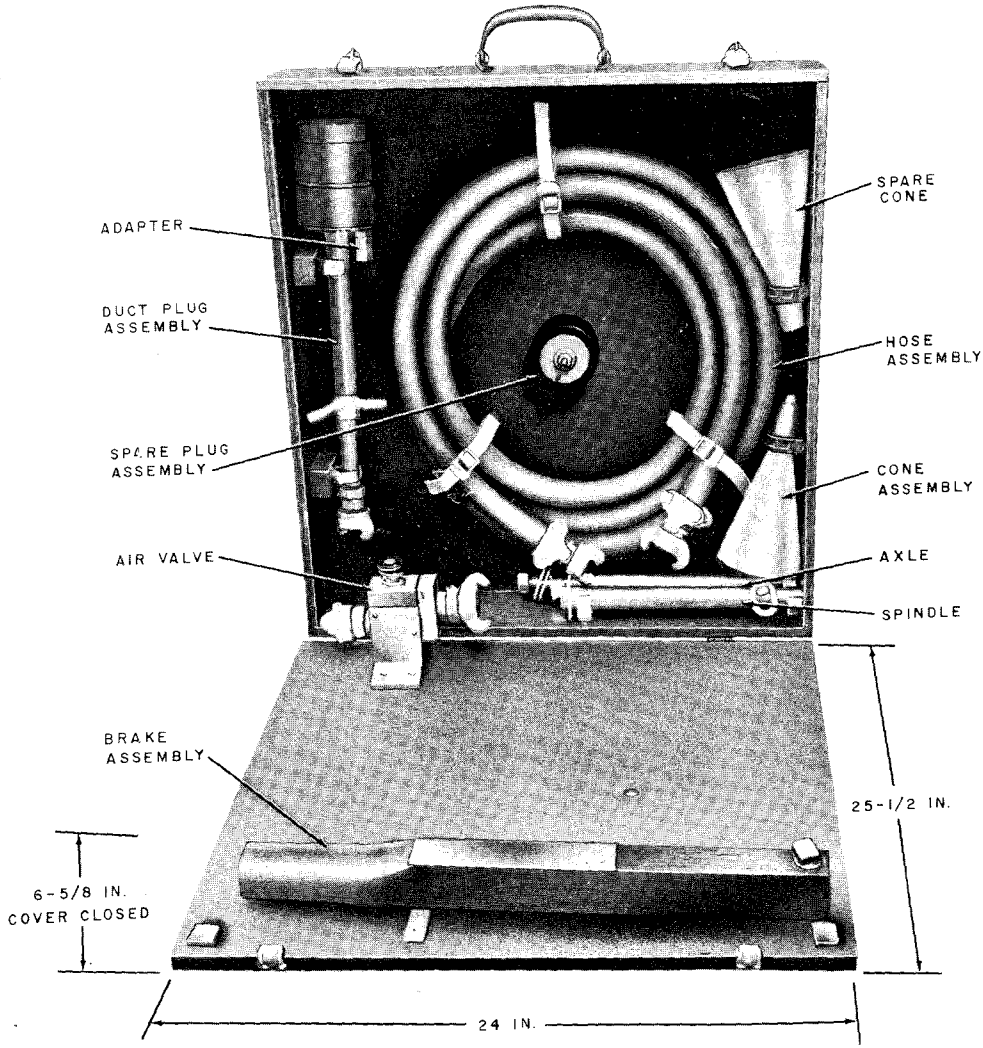


Fig. 1—B Fishline Kit

to the platform are a hand-operated brake for the spool and an air control valve equipped with an air hose coupling at each end. A hole in the platform provides a means of mounting the axle and spindle for the spool during operation.

2.02 The duct plug assembly, cone assembly (missile), air hose, bearing assembly and spare cone are stored in the cover of the case. The air valve assembly and brake assembly are attached to the base assembly. The cover is used only to store and transport the items listed; however, the base assembly is used also in the pneumatic duct rodding operation.

2.03 The C Drop Wire Reel may be modified for re-use of B Fishline (Fig. 2) in the pneumatic duct rodding operation.

3. PRECAUTIONS

3.01 Use manhole guard and place warning devices to guard the work area as described in Section 620-135-010 and related practices.

3.02 Test the atmosphere of all manholes before entering, in accordance with Section 620-140-501 and related practices.

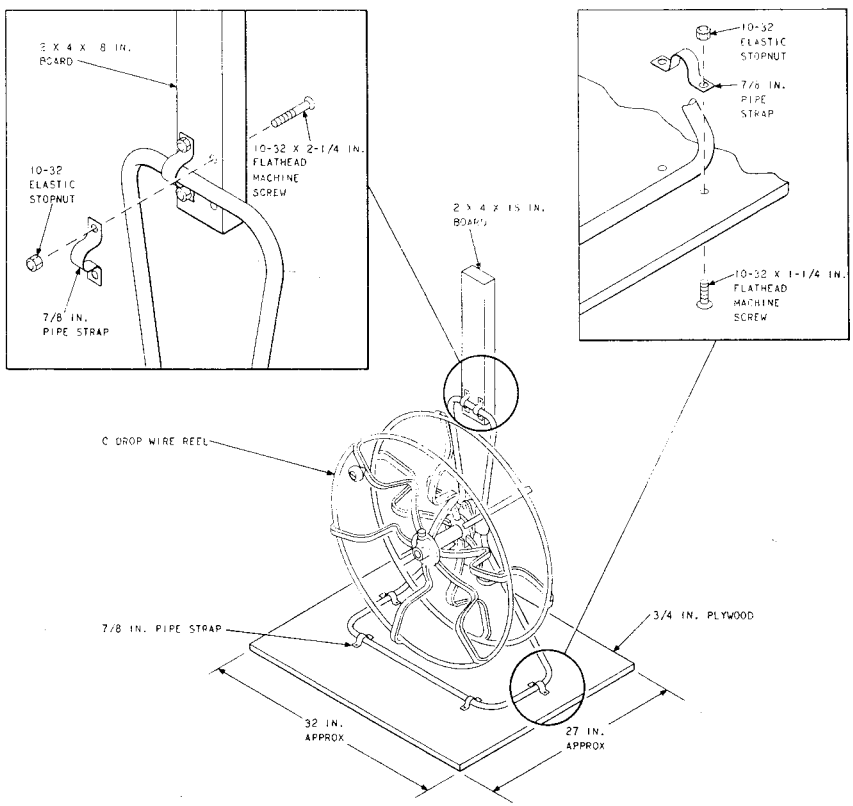


Fig. 2—Modified C Drop Wire Reel

3.03 The operator of the air valve and brake shall wear eye protection during the duct rodding operation.

3.04 ***NO ONE SHALL BE IN THE MANHOLE AT EITHER END OF THE DUCT RUN DURING THE DUCT RODDING OPERATION.***

3.05 The B Fishline Kit is capable of propelling the missile and line through the duct at a top speed of about 20 feet per second. This speed is dependent upon air volume and pressure, amount of water in the duct, air leakage, size of line, etc; therefore, when paying out line during a duct rodding operation, adjust air valve and maintain some braking at all times to keep rotation speed of the reel or spool at a safe rate and to prevent the reel from overruning in the event the missile is slowed by water or other obstructions before reaching the end of the duct.

3.06 Release air valve and apply full brake immediately when the missile stops. This is indicated by a pile-up of line in the manhole. Do not attempt to stop reel or spool except by the brake.

3.07 Maintain foot pressure on baseboard of modified drop wire reel during the duct rodding operation to minimize vibration. ***STAND CLEAR OF SPINNING REEL.***

3.08 The modified drop wire reel should be picked up by the frame and/or platform—***not by the reel itself***—when lifting.

3.09 Remove the wooden brake from the C Drop Wire Reel before using it to rewind line.

3.10 Before removing the B Fishline from the C Drop Wire Reel, tie the line in four or five places to avoid fouling.

3.11 Be sure the line does not drag on face of duct, edge of manhole frame, or roof opening when under tension.

4. RODDING DUCT—USING B FISHLINE ON SPOOL

4.01 Remove the cover from the base of the B Fishline Kit. Assemble the rod to the base, using a washer on each side of the base, and place bearing over the rod, as shown in Fig. 3. Position the base near the manhole and place a spool of B Fishline on the rod and bearing assembly so as to feed over handle side of spool brake as indicated in Fig. 9.

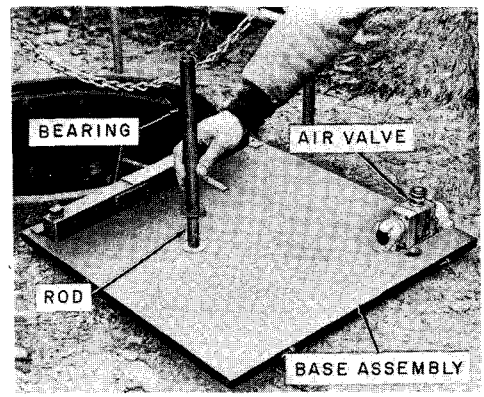


Fig. 3—Placing Bearing over Rod on Base Assembly

Note: Remove adapter (Fig. 5) for runs exceeding 1000 feet and use 1/4-inch B Fishline.

4.02 Remove the hose, missile, and duct plug assembly from the cover. Insert the missile into the duct to assure that the cone fits properly.

4.03 If the cone is too large, mark the circumference at the point of contact with the duct and cut the large end of the cone to proper size with a pair of scissors. If the cone is too small for the duct to be rodded, disassemble the missile, place a new cone in the duct, and mark the circumference of the cone at the point of contact with the duct. Cut the new cone on the mark with a pair of scissors. Reassemble the missile as shown in Fig. 4.

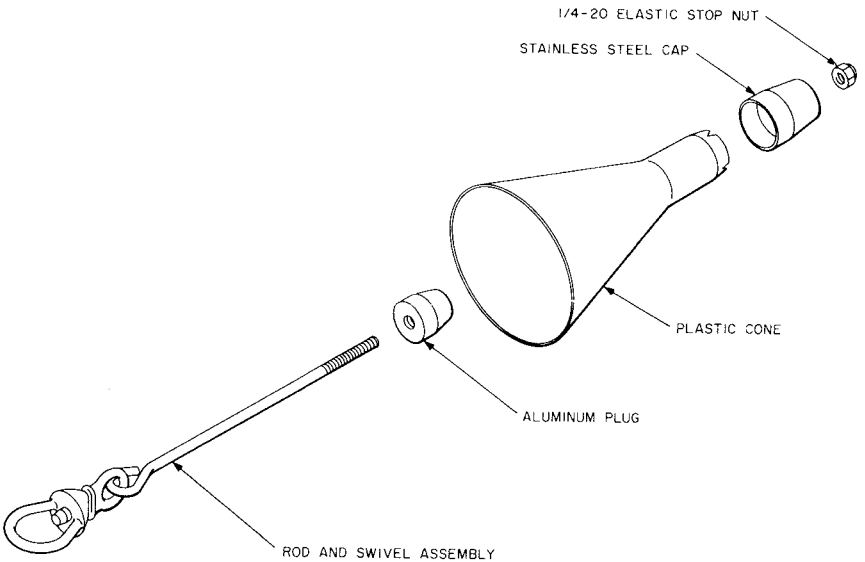


Fig. 4—Missile Assembly

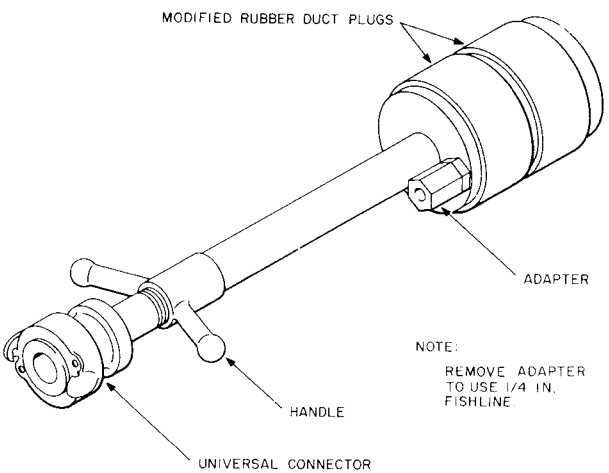


Fig. 5—Duct Plug Assembly

4.04 Thread the end of the line through the adapter of the duct plug assembly (Fig. 5), then fasten the line to the swivel eye on missile with two half hitches. Apply about five turns of D vinyl tape to the line to secure the free end of the line (Fig. 6).

4.05 Place the missile and duct plug assembly in the duct (Fig. 7). Tighten the duct plugs securely by turning the handle on the duct plug assembly.

4.06 Connect the air hose between the air valve and the duct plug assembly. Position the air compressor at a convenient location near the manhole and connect the air hose from the air compressor to the air valve.

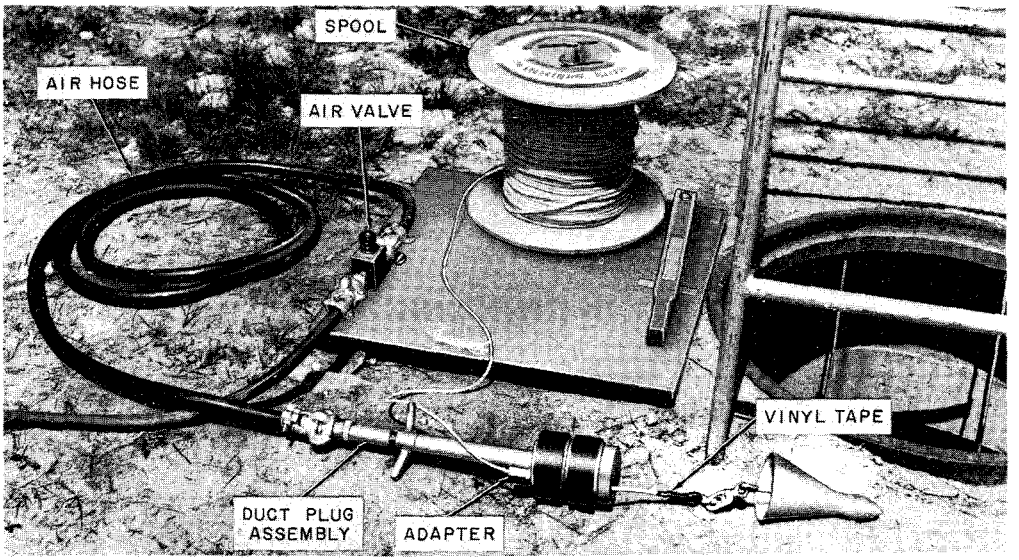


Fig. 6—Line Threaded through Duct Plug Assembly

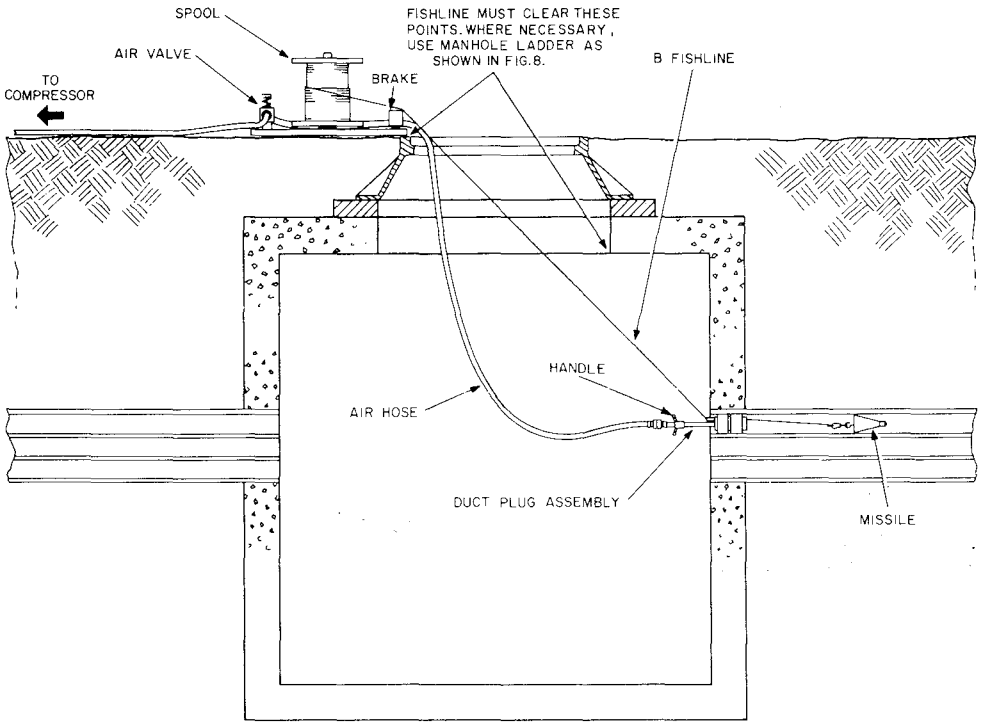


Fig. 7—Duct Plug Assembly in Duct—Using Spool

4.07 Start the air compressor and allow it to come to operating temperature. Meanwhile, check to see that the setup is complete and that the fishline will not drag against the edges of the manhole frame or roof opening. If the fishline is touching or nearly touching the roof opening, use a manhole ladder as shown in Fig. 8.

Caution: Be sure that no one is in either manhole and that eye protection is being worn before proceeding. Stay clear of spinning spool.

4.08 Depress the air valve while maintaining some breaking on the spool (Fig. 9).

Note: Keep a constant watch on the line in the manhole. If the missile should stop, as indicated by a pile-up of line in the manhole, release air valve and apply full brake immediately to avoid fouling line.

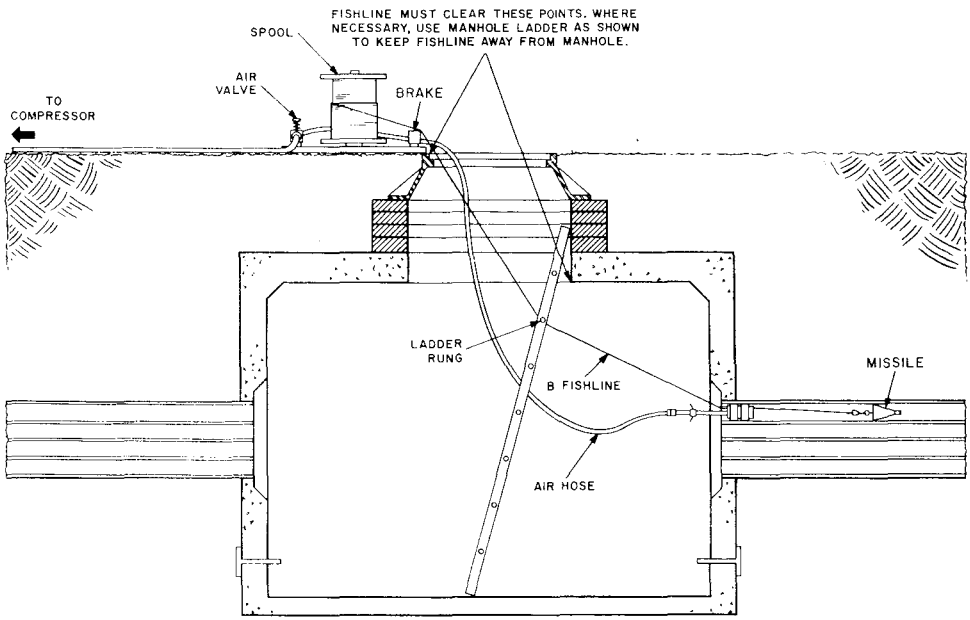


Fig. 8—Use of Ladder in Manhole

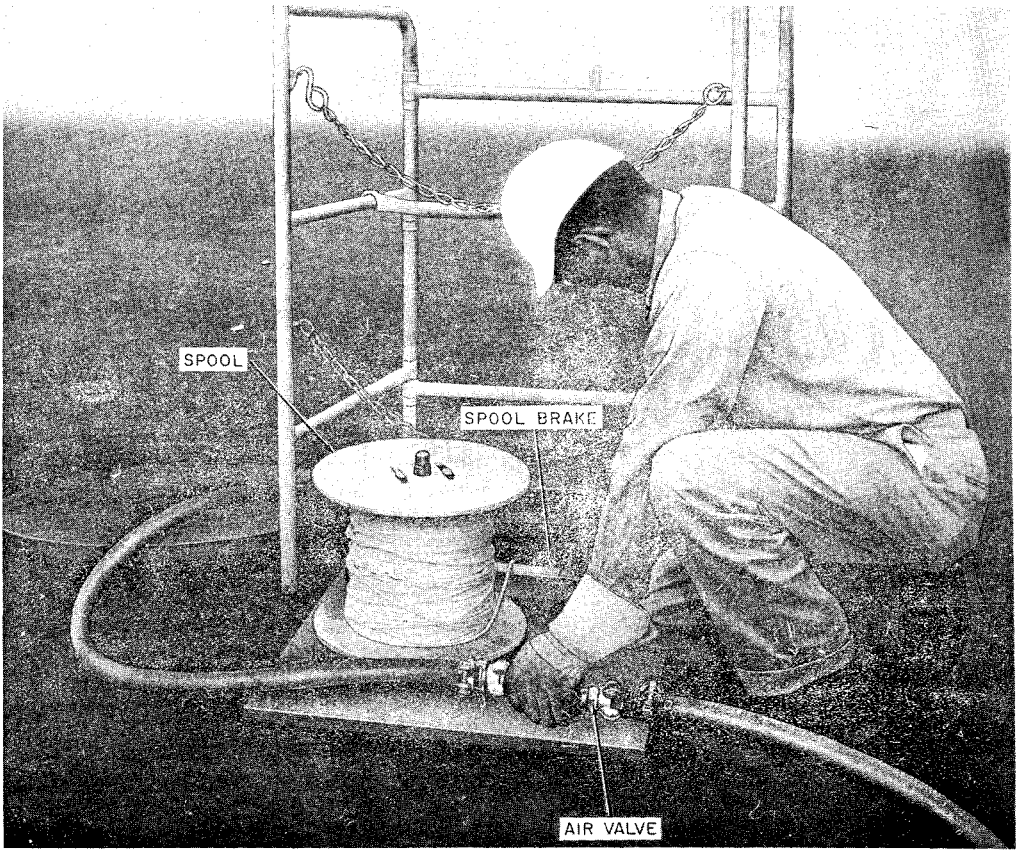


Fig. 9—Placing B Fishline from Spool

5. RODDING DUCT– USING B FISHLINE ON MODIFIED C DROP WIRE REEL

5.01 Remove the cover from the base of the B Fishline Kit. Position the drop wire reel near the manhole and place B Fishline Kit base over edge of reel base, as shown in Fig. 10.

5.02 Prepare the missile and duct plug assembly as described in 4.02 through 4.04.

5.03 Place the missile and duct plug assembly in the duct (Fig. 10). Tighten the duct plugs securely by turning the handle on the duct plug assembly.

5.04 Connect air hose from compressor to air valve and from air valve to duct plug assembly.

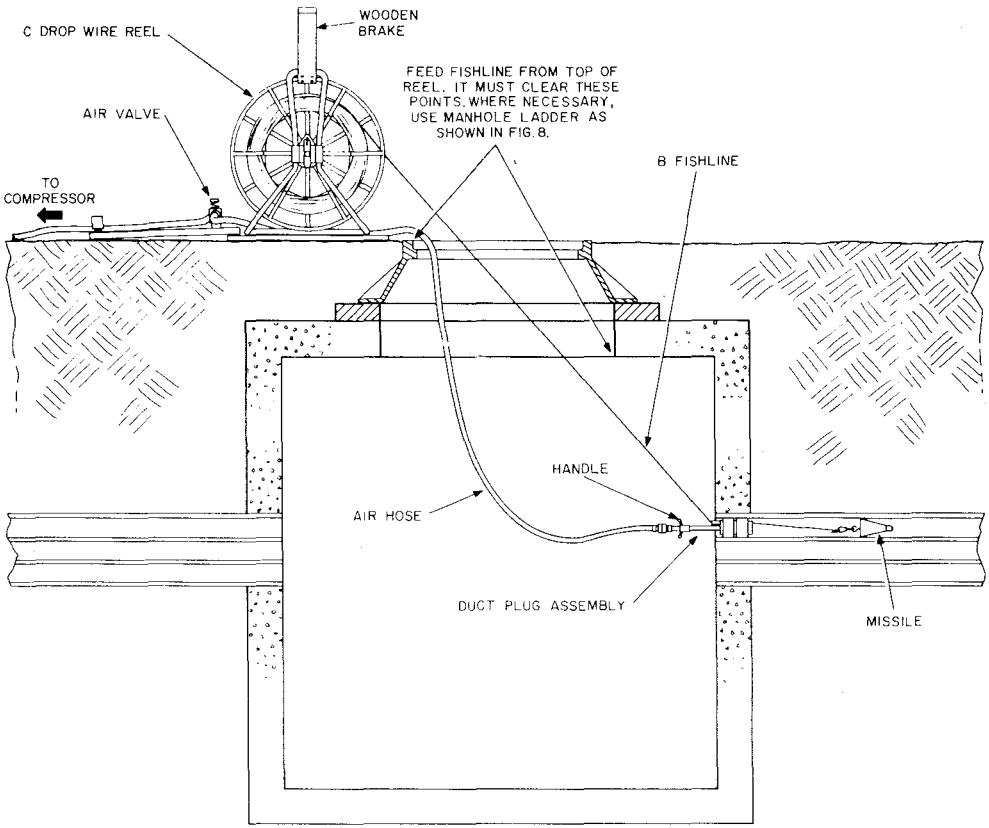


Fig. 10—Duct Plug Assembly in Duct—Using Reel

5.05 Start the air compressor and allow it to come to operating temperature. Meanwhile, release the adjustable brake on the modified reel and check to see that the setup is complete and that the line will not drag on the edges of the manhole frame or roof opening (Fig. 10).

Caution: Be sure that no one is in either manhole and that eye protection is being worn before proceeding. Maintain foot pressure on base of reel while rodding duct. Stay clear of spinning reel.

5.06 Depress the air valve while maintaining some braking on the reel (Fig. 11).

Note: Keep a constant watch on the line in the manhole. If the missile should stop, as indicated by a pile-up of line in the manhole, release air valve and apply full brake immediately to avoid fouling line.

6. PULLING WINCH LINE THROUGH DUCT WITH B FISHLINE

6.01 Attach the winch line securely to the fishline at distant manhole.

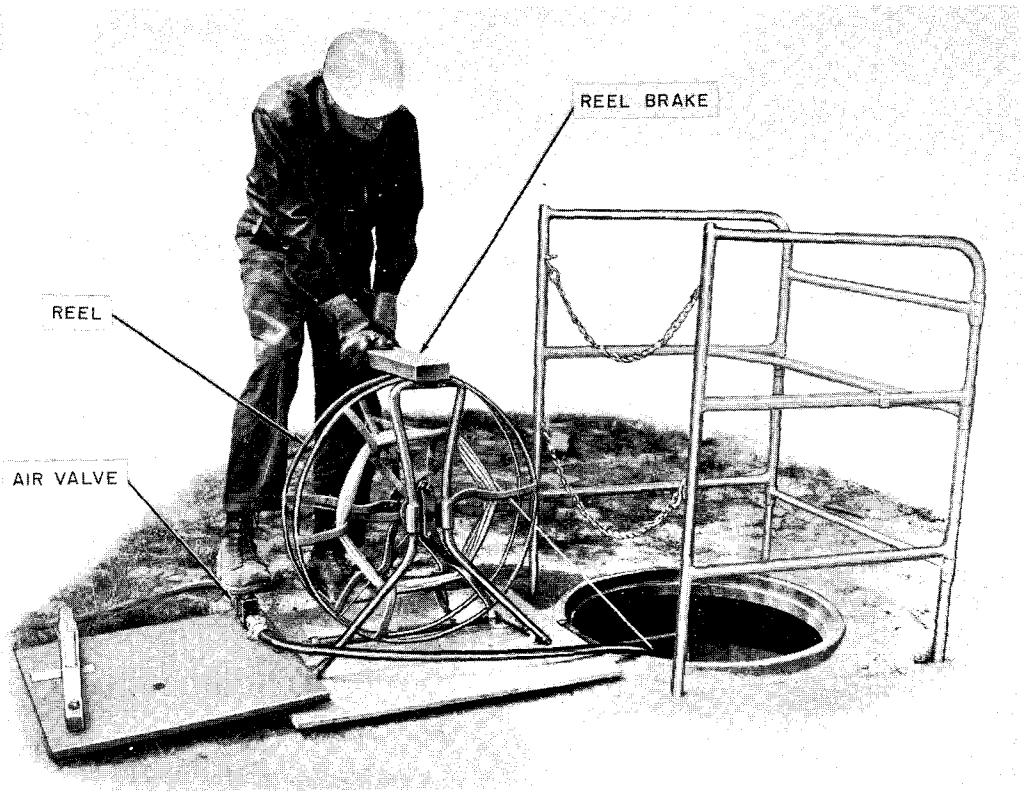


Fig. 11—Placing B Fishline from Modified C Drop Wire Reel

6.02 Fasten a Wire Rope Snatch Block inside the manhole, place a manhole sheave on the edge of the manhole, and thread the fishline through the snatch block and sheave as shown in Fig. 12.

6.03 Position the truck so that the line from the manhole is aligned with the outer edge of the collapsible Power Reel, and place the C Drop Wire Reel approximately as shown in Fig. 13.

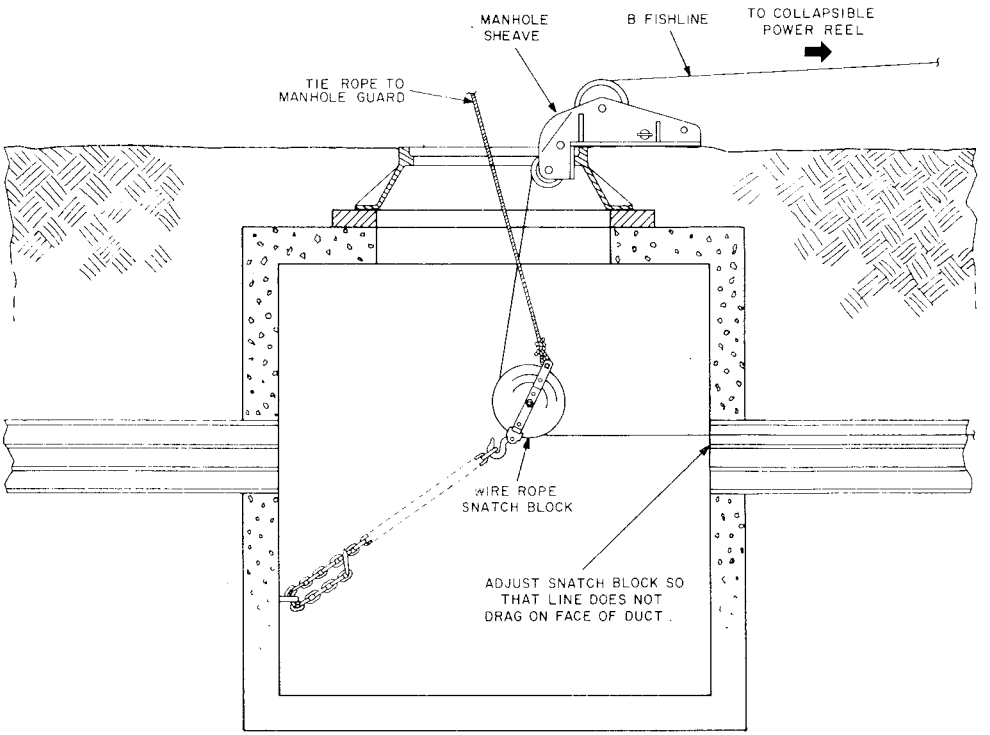
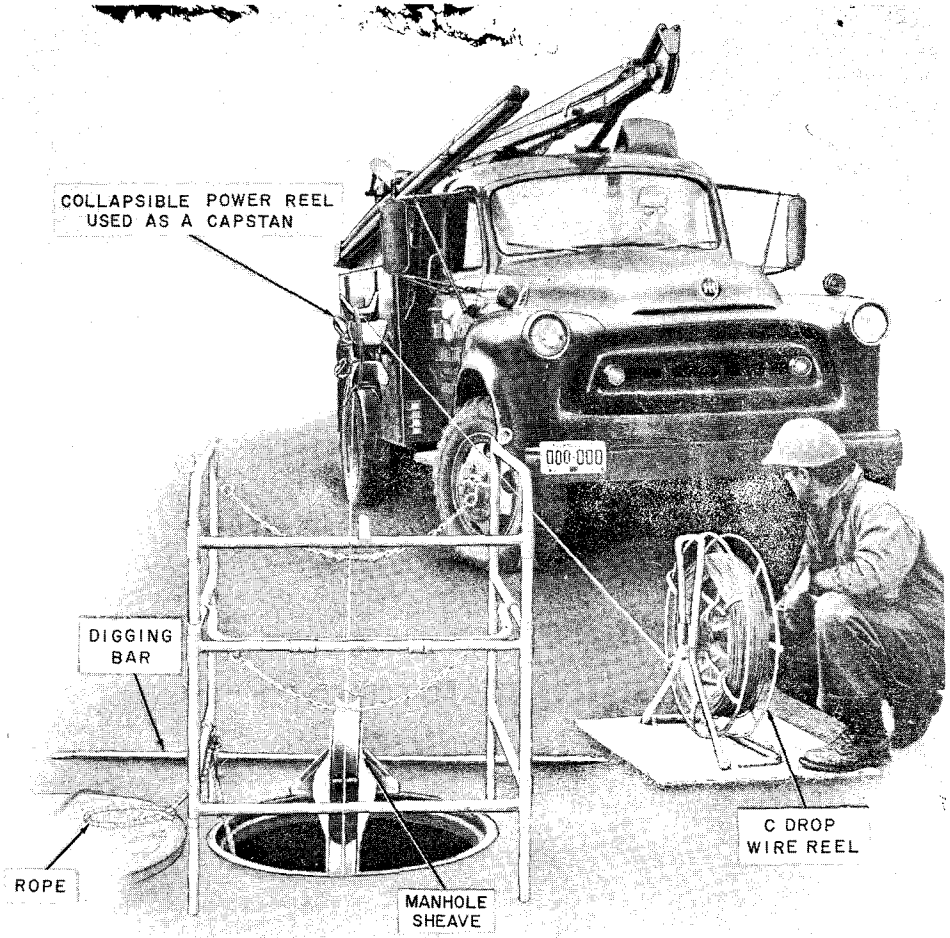


Fig. 12—Pulling Winch Line



NOTE: REMOVE WOODEN BRAKE FROM C DROP WIRE REEL WHEN USING TO TAKE UP LINE.

Fig. 13—Alignment of Line on Sheave, Power Reel, and Modified C Drop Wire Reel

6.04 Using the Power Reel as a capstan, place five turns of line around the reel starting from the outer bottom edge, as shown in Fig. 14. Make sure that the angle of the line going on the Power Reel is as shown in this figure; otherwise, the line may not come off the reel properly.

> ***Note:*** The collapsible Power Reel is used as a capstan to keep from damaging the Power Reel (the squeezing action of many turns of B Fishline on the Power Reel may damage the reel) and to facilitate re-use of the line. (The diameter of the Power Reel is 19 inches; the diameter of the C Drop Wire Reel is 17 inches. This difference in diameters prevents the transfer of the whole coil from the Power Reel on the drop wire reel.)

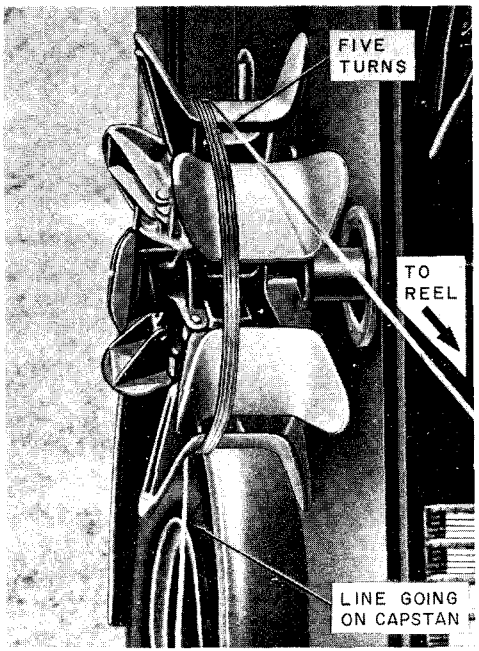


Fig. 14—Power Reel Used as Capstan

6.05 Tie the free end of the fishline to the drop wire reel and, before proceeding to pull the winch line through the duct, be sure that the fishline, when under tension, does not drag on the edges of the duct face.

6.06. Engage the Power Reel and pull the winch line through the duct, taking up the B Fishline on the drop wire reel.

> ***Note:*** Make sure when taking up the fishline on the drop wire reel that very little tension is placed on the line between this reel and the Power Reel. If this procedure is not followed, the elastic effect in the rope will cause the diameter of the coil to become smaller when removed from the drop wire reel. It will therefore be extremely difficult to replace the coil on a drop wire reel for re-use of the fishline in pneumatic rodding.

7. MAINTENANCE

7.01 Keep the adapter and tube of the duct plug assembly clean. Inspect these items occasionally and clean if necessary.

7.02 When the brake on the C Drop Wire Reel becomes excessively worn from contact with the spinning reel, it should be replaced.

7.03 After use, wipe off any dirt or water from the components of the B Fishline Kit with a clean rag. Disassemble the rod and bearing assembly and replace washer and nut on the rod. Strap the missile, rod, bearing assembly, air hose, and duct plug assembly in the case.

7.04 Release all pressure on modified duct plugs of duct plug assembly after using.

7.05 Store in a dry place away from direct sun, radiators, or other sources of heat.

8. ♦REPLACEMENT PARTS♦

8.01 ♦The following are available as replacement parts for the B Fishline Kit:

Cone

Assembly, Cone

Valve, Air

Assembly, Plug, 4-inch♦