LINK-PIPE® INC.
Manufacturer of No-Dig Pipe Repair Products

27 West Beaver Creek Rd., Unit # 2, Richmond Hill, Ontario
Canada L4B 1M8 Tel: (905) 886-0335 Fax: (905) 886-7323
E-Mail: info@linkpipe.com htpp://www.linkpipe.com

High Pressure Sleeve Installation Instructions (For Steel and Plastic Wells - Casings and Screens)

On-Site storage and handling:

Link-Pipe will supply sleeves in the shipping box. If some damage is observed immediately contact with shipping company and contact with Link-Pipe's engineering personnel for corrective actions.

Equipment:

- Two compressed air Cylinders, with pressure regulator: control valve and gages (See Fig.1 and http://www.americanairworks.com/index.html).
- 550 feet ¼" 800psi hydraulic/air hose to connect the point of repair to above ground air supply.
- Inspection camera.
- Installation Plug with ¼ NPT inlet (Supplied by Link-Pipe Inc.).
- Winch system for transporting and positioning the sleeve.
- 3 chains (size 5/16") of exactly 6 feet long each.
- 3 chains (size 5/16") of exactly 2 feet long each.
- 12 Safety spring Snap Links which open 5/8".
- Tie Ropes or other to tie gas line to cable when lowering.
- Teflon Tape.

Well Cleaning:

All obstructions protruding from the inner surface of the well casing shall be removed to insure free passing (the clearance between the sleeve and well casing is 1" – 2"), and placement and proper seating of the equipment and the repair sleeve.

Preparation for the Sleeve Installation:

In preparation for the sleeve installation the installation plug must be calibrated (if the value of the Calibration Pressure is not provided by Link-Pipe Inc.). "Calibration Pressure" is the pressure required to inflate the plug rubber to make contact with inside wall of the pipe.

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Installation Procedure:

To install the sleeve:

1. Hang the sleeve vertically (Fig. 2 and installation sketch Fig. 4).
2. In case a gas will used to inflate the plug, attach the sinker to the bottom of the plug by chains (f) 6 feet long (Figs. 3 and 4).
3. In case an inspection of locks is intended before the Plug is removed from the well
   a. Make sure all ropes are in place as shown in the attached sketch Fig. 4.
      i. 3 Ropes (d) are attached to joints (A) and (C). Joints (C) are the upper loops of the three black tape Hangers.
      ii. Cable (a) is attached to joint (A) and extends all the way to the top of the Well.
      iii. 3 Chains (c), 3 feet long each, are attached to the Plug and joint (B)
      iv. Cable (b) is attached to joint (B) and extends all the way to the top of the Well.
      v. 3 Ropes (e), 4 feet long each, are attached to joints (E) and (F). Joints (F) are the lower loops of the three black tape Hangers. Joints (E) are the chain links on the chains (f), 6 feet long each.
   b. Attach gas supply Hose to the Plug.
   c. Pay special attention to the movement of the Sleeve as it travels in the well casing. Keep the movement slow to make the controls easier. Clean the well casing of all sharp edges in order to avoid ripping the gasket. Black tape is wrapped over the lower and upper ends to ease the effect of impact with well casing as it is lowered.
   d. Place the Sleeve within +/- 1-inch from the center of the damage.
   e. Apply the required air pressure which equal the static water pressure at the installation level (for instance, 220psi) + Calibration pressure (for instance, 15psi) + Installation pressure 50psi. Thus the reading of the located on the ground level pressure gage will be 285psi.
   f. Allow 1-2 minutes for the Plug pressure to lock the Sleeve and then *slowly* relieve the pressure. If the sleeve is observed to contract away from the casing wall as the Plug pressure is lowered, this is a sign that locking is not complete. Immediately apply the pressure again at 5psi higher than before.
   g. When the Sleeve is seen remaining tight against the casing wall, the inspection of the lock can commence.
   h. Before removing the Plug, lower it to expose Sleeve Locks to the view by the Camera.

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i. If all locks are not engaged, move the Plug back into the Sleeve and increase the installation pressure by 5psi. It is essential that at least 2 locks at the ends of the Sleeve be engaged.

j. When the sleeve is locked in place fully deflate the plug, lower it up to 3 PVC tapes will be detached from the sleeve. Now, pull the plug up.

Figure 1

Figure 2

Figure 3

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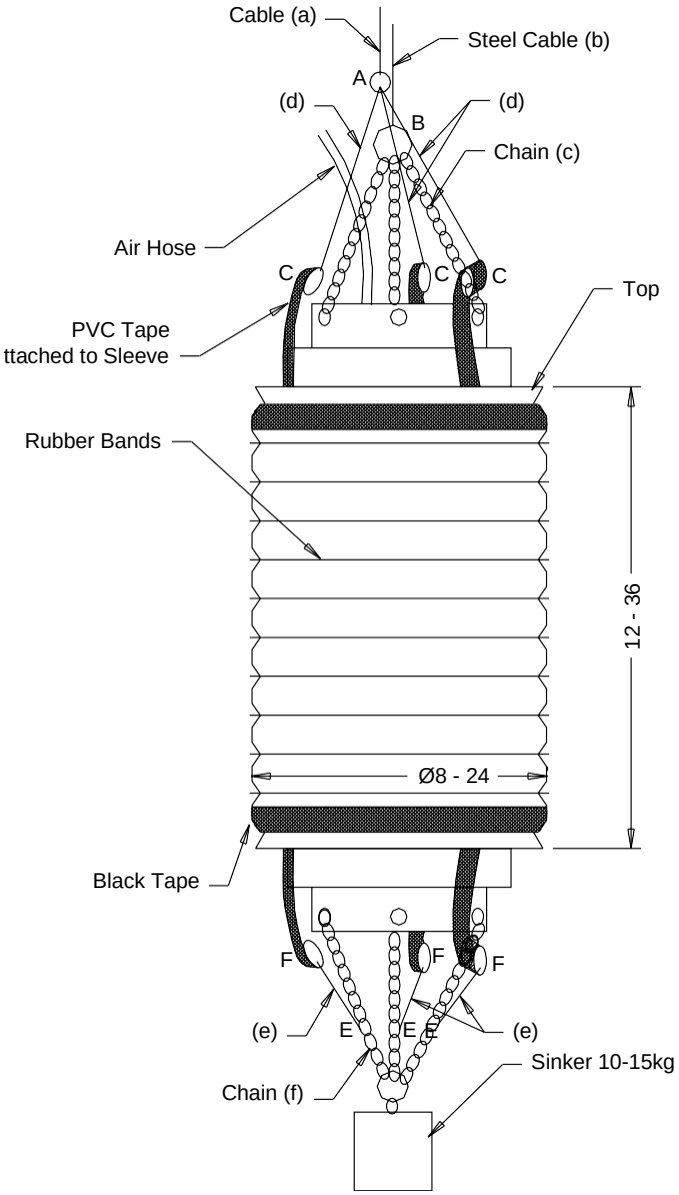

Fig. 4