Keyhole Technology

Service Retirement (Punch Type Tees) *For operating system pressures up*

Many gas distribution systems that were built with steel mains have been fitted with "punch type" service tees. These punch tees have been welded, clamped or threaded onto the main. The service tees covered by this process would be those that have been welded directly onto the main.

These service lines may be steel, copper or plastic and are usually connected to the service tee with one or two pipe elbows. The steel services are threaded directly into the pipe elbow while the copper and plastic services are connected to the pipe elbow through a compression coupling that makes a transition from the copper or plastic service line to a male pipe thread connection. When the service was installed a steel punch in the tee would be driven through the wall of the main to gas up the service. The hole in the main is always clean and straight and can be easily sealed by re-engaging the is accomplished by removing the tee cap and then threading the punch down into the hole in the main thus cutting off the flow of gas into the tee. After the gas flow has been cut-off the service line is cut, using a pneumatic saw, and then the fittings are removed from the service tee. The service line of the tee can now be capped and the punch withdrawn from the main. Finally the tee cap is reinstalled and the tee is leak tested.

Tellus has designed tooling that will dramatically reduce the occurrence of broken tees and stripped caps. This results in an ability to complete the process without the hazards of blowing gas and all of the problems that can result from these unforeseen events.

PROCESS DESIGN

All Tellus procedures and tooling have been designed and developed to employ innovative methods and specialized equipment for the performance of standard maintenance processes through core cut openings (18" diameter) in the road surface or pavement.

PROCESS INTEGRITY

A high level of process integrity can only be achieved through analysis and understanding the failure modes and hazards that may exist. Tellus Underground Technology works closely with the LDC's and their contractors to develop standard operating procedures and tool sets that are designed to address and resolve those unexpected situations in which events do not progress as expected.

OPERATING COST SAVINGS

When the costs of "Keyhole" procedures are compared to conventional methods operating costs are significantly reduced. The elimination of street restoration costs along with labor cost savings have resulted in operating cost reductions of as much as 50%.

Service Retirement (Punch Type Tees)
For operating pressures up to 99 PSIG

Tooling Description and

The keyhole tooling utilized to retire a punch tee includes a magnetic tee cap removal tool and a punch driver to run the punch down into the main thus cutting-off the flow of gas into the tee. Bonding clamps are then attached to the service tee and service line so that the service may be cut without the rick of static sparking across the cut. The pneumatic saw has the ability to cut any type of service including steel pipe, copper tubing or HDPE plastic. Many of these services were attached to the tee with one or two elbows so the tooling set includes specialized "elbow sockets" and a "keyhole" ratchet to facilitate removal of these elbows. A pipe cap socket and "sidewinder" wrench is then used to install the pipe cap on the service line of the tee and the abandon service line is capped using a cap installation tool.

All Tellus processes are supported by a flow chart and a step by step operating procedure. Just as in any scientific or medical procedure each step must be performed exactly as designed and in the prescribed sequence if we are to have repeatable and successful results. When well-designed tools are utilized in a thoughtfully-designed procedure the operating gas mechanics can always expect professional results.

Tool Requirements

Tool Description	Tellus P/N
¾" locking square drive extension (6 ft. length)	GTN-1006
Tee handle, ¾" drive	GTN-1005
Pneumatic extension saw, ¾" to 2" (6 ft. length)	GTN-1010
¼" hex drive w/remote release, (6 ft. length)	HEX-1011"
Sidewinder wrench, ½" drive (6 ft. length)	SWW-1211
Square drive locking extension ½" drive	GTN-1122
Three position wrench, 2" size	GTN-1016
Street tee socket, ¾" drive	SAS-1331
Grounding clamps, ½" to 2" pipe size	GTN-1017
Keyhole ratchet (6 ft. length)	GTN-1024
Service tee cap wrench (Continental punch tee)	SAS-1350
Hex bit socket, 3/8" drive x ½" drive	SRP-1240
Pipe cap socket, ½" drive	SAS-1332

TECHNICAL SUPPORT

We work with your operating crews and contractors to insure that they fully understand every detail of the keyhole process. We also work with your technicians and procurement staff to insure that all of your operating standards are fully satisfied.

SUPERIOR QUALITY

Tellus tools are professional quality tools designed for use by utility professionals. These tools are designed to exceed all of the demands of the underground gas distribution industry.

STATE OF THE ART TECHNOLOGY

The Tellus organization is constantly and consistently engaged in R&D and product development efforts. We are also in constant contact with gas utility industry equipment and hardware suppliers to insure that the latest developments will be applied to all new procedures and keyhole devices.

For more information on any of our products or services please visit us on the Web at:
www.tellusunderground.com

SERVICES AVAILABLE

- Technical Support
- Setup and Training
- Tool Maintenance Support
- Procedure Mapping
- Special Application Design

200 Hester Street
P.O. Box 157
Portland, PA 18351
Phone 570.234.0325
Fax 570.245.0026