

Keyhole Technology

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 (up to 100PSIG)



This procedure is designed for the retirement or abandonment of saddle mounted steel services that have been attached to steel gas mains operating at pressures ranging from 10 to 100 PSIG. In most installations the service tee is mounted using a mechanical "U bolt" saddle similar to those manufactured by Mueller Co. and Dresser Industries. It should be noted that this is a "No-Blow" procedure that is designed to be performed in an 18" diameter cored "Keyhole" excavation.

At the time most of these services were installed there were two commonly used methods to pierce a hole in the steel gas main. The most frequently utilized method was to drill a hole in the main using a drilling fixture that cut a hole with a shell cutter, resulting in a perfectly round hole that is always a uniform size and centered squarely under the threaded hole in the saddle. The second commonly used method was to pierce the main with a welding

torch. When this method was utilized it was virtually impossible to make a perfectly round hole in the main or to accurately locate the hole under the threaded opening in the saddle.

This Tellus procedure has been designed to address either of these types of installations by providing a gas camera inside the operating pressure chamber thus allowing the operator the ability to inspect the opening in the main then carry out the procedure that is appropriate for the existing installation. Either procedure is always completed by plugging the main and then assembling a stainless steel band clamp to permanently seal the area where the saddle was removed from the main.



Service Retirement (up to 100 PSIG) For mechanical saddles on steel mains

Tooling Description and

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



The keyhole tooling utilized to remove a gas service from a pressurized steel main is based upon the use of a pressure chamber to perform many of the steps in this “no-blow” procedure. The procedure begins with launching of an inspection camera to view the pierced hole in the main. The gas mechanic can bypass this step if he already knows the method that was utilized to pierce the main. Once the main configuration is clearly defined, the hole in the main is either sized and tapped for the installation of a special steel plug or plugged with an expansion plug for those mains with a torched hole. After the main has been plugged the pressure chamber is removed and the main is sandblasted to prepare it for final sealing with a stainless steel band clamp.

In those cases where the torched hole in the main is so far off center that it is impossible for the gas mechanic to install the plug into the main, we have established a conventional excavation method to move the saddle over the pierced hole using the inspection camera.

If for any reason the gas mechanic determines that he would prefer to abort the “Keyhole” procedure and perform the procedure using conventional open excavation methods, he can replace the tee plug for completion at a later date.

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 to achieve repeatable and successful results. When well-designed tools are utilized in a thoughtfully-designed procedure the operating gas mechanic can always expect professional results.

Tool Requirements

Tool Description

3/4" locking square drive extension (6 ft. length)
Tee handle, 3/4" drive
Pneumatic extension saw, 3/4" to 2" (6 ft. length)
1/4" hex drive w/remote release, (6 ft. length)
2" pressure chamber w/3/4" service tee adapter
Main clamping fixture for 2" or 3" to 6" mains
Band clamp assembly tools for 2" to 6" mains
Sandblasting extension tool
Pneumatic ratchet, 3/8" drive X 6 ft. length
Band clamp closing tool

Additional optional tooling:

Gas camera w/ 6 ft. rigid cable
Stuffing box for 2" pressure chamber

Tellus P/N

GTN-1006
GTN-1005
GTN-1010
HEX-1011
GTN-1030
SAS-1336
SAS-1352
GTN-1013
BJE-1240
SAS-1351

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