

Inspection and Technical Services

Gas Equipment Bulletin: Connecting Supply Piping to a Utility Gas Meter

ITS 21-012

Purpose: To clarify and provide direction to installers and contractors who are connecting customer's supply piping to the outlet of a single residential diaphragm type Utility gas meter.

Rationale: To ensure installers connecting customer's supply piping, or additional piping, to a single diaphragm Utility gas meter is piped so that it does not compromise the meter's engineered piping swing, or interferes with access to the plug on the Utilities outlet tee.

Background:

Swing Joints

When soil or cover material settles or heaves from frost action on the inlet side of a residential Utility Gas meter, it can cause the inlet piping to move in a downward/upwards/sideways direction. The Utility meter installation is designed and engineered to allow for this movement through the use of a meter piping swing that pivots on predetermined points on the inlet and outlet side of the meter.

Customer piping connected at the outlet of the Utility Meter that is not installed correctly can compromise this swing. If piping is connected incorrectly the piping will be held fast and will not swing on the pivot points. This exerts excessive stress on the Utility Gas Meter or piping or fittings, and can lead to a small gas leak or to total piping failure.

Note: This bulletin applies to typical residential installations and should **not** be used on the following:

- **Multiple meter sets** (normally installed on but not restricted to commercial buildings).

Rationale: These sets have all of the required piping swings on the inlet of the meter set prior to the connection at the header.

- **Rotary or turbine meters** (normally installed on but not restricted to commercial and industrial buildings).

Rationale: These meters are typically supported on a meter bracket and the outlet piping is not engineered into the meter swing.

- Diaphragm meters with an outlet greater than 1 ¼ inch.

Rationale: Diaphragm meters with outlets greater than 1 ¼ inch are typically supported on a meter bracket and the outlet piping is not engineered into the meter swing. The meter bypass system is not used on outlets larger than 1 ¼ inch.

Utility Meter By-pass Tee

The standard design of all new Utility Meter Installations with a 1 inch outlet incorporates a tee immediately downstream of the outlet meter swivel. This tee is installed on the meter outlet to facilitate the use of a Meter By-pass System. **The Utility uses this tee and Meter By-pass System to change meters without interrupting the customer's gas supply.**

This tee is the property of the Gas Utility and should not be removed from the system. Customer piping should be connected to this tee as per the attached drawings leaving the access plug for the Utility.

When connecting to the Utility gas meter, it is imperative that new piping be connected downstream of any pivot point.

New Appliance Installations:

On new appliance installations the supply piping to any appliance should be connected in a manner that does not compromise the Utility meter swing or interfere with the use of the Utilities Meter By-pass tee.

Replacement Appliances:

On replacement appliance installations the existing piping should not be installed in a way that compromises the Utility Meter Swing.

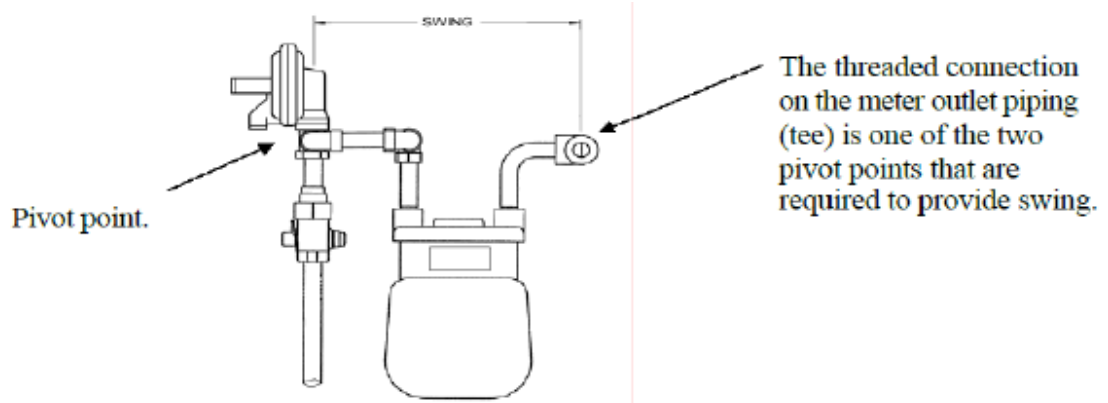
It is the responsibility of the fitter replacing the appliance to ensure that any existing piping to the appliance is upgraded.

Meter Set Swing

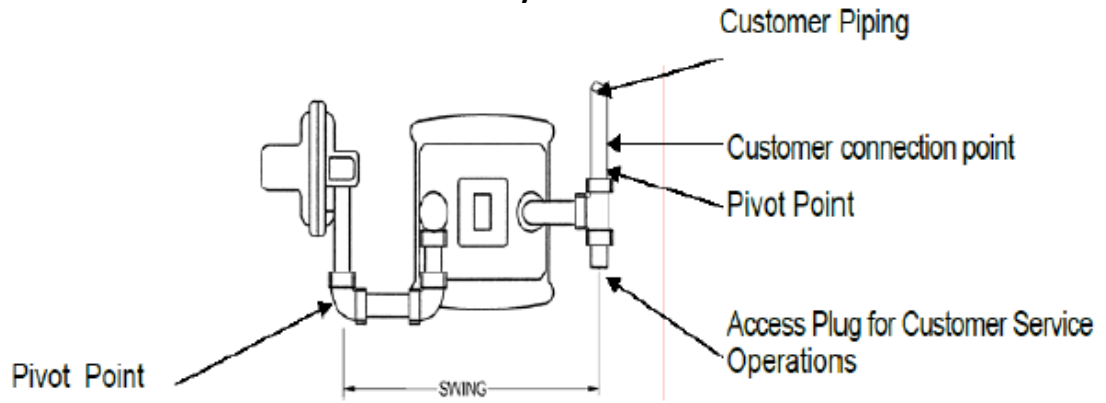
The swing for current residential meter sets is shown in Figure 1.

The swing for the older style meter sets is shown in Figure 2.

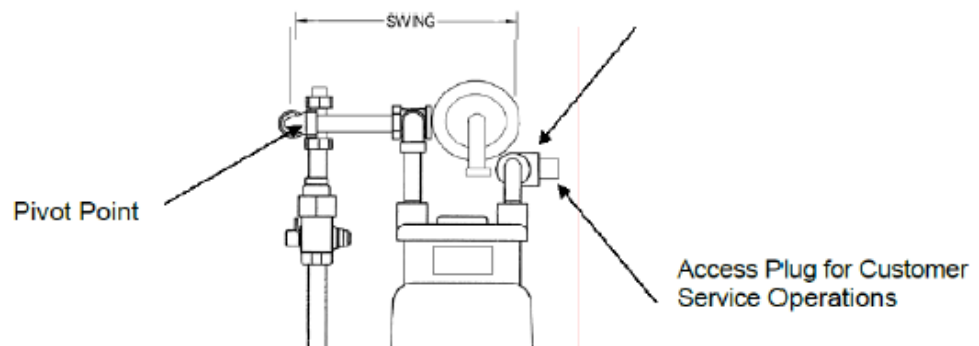
**Figure 1
Residential Meter Set**



**Figure 2
Older Style Meter Set**



The threaded connection on the meter outlet piping (tee) is one of the two pivot points that are required to provide swing



Access Plug for Customer Service Operations

New meter assemblies are equipped with two threaded plugs on a tee on the meter outlet. The plug facing the customer's building is the point designated for the customer to connect their gas piping to the meter set. The second plug either facing toward the front of the meter or to the left side of the meter is installed exclusively for the future use of Manitoba Hydro Customer Service Operations.

Note: The treaded plug designated for Customer Service Operations is required for future operations requirements and should **NOT** be used as an additional customer tie-in point. These plugs are show in Figure 1, 2 & 4.

Acceptable Piping Practices for Customer Piping Connection

Acceptable piping practices for a customer piping tie-in to a meter outlet should:

- Maintain the pivot point on the meter outlet piping.
- Not use or obstruct the plug on the meter outlet piping that is for Manitoba Hydro Use only.
- Be a minimum of 100 mm from the sides and/or the bottom of the meter (where piping is placed beside or beneath the meter). See Figure 3.



Figure 3
Minimum Spacing Requirements to Adjacent Piping

Piping Practices

Figure 4 shows an example of acceptable piping.

Figure 4
Acceptable Customer Piping Connection

