Guidelines for Gas Meters & Manifolds

* By carefully following attached suggestions, you will help us get your meters set on the first trip and avoid costly delays related to return trips (for which you are being charged $65 per trip).

CoServ Gas Engineering
(940) 270-7585

For Gas Emergencies or Leaks call:
(844) 330-0763
CoServ Gas Meters and Manifolds
Builder & Customer Requirements

1) Gas Meter Planning Guidelines
   a. The size of gas metering and regulating facilities varies widely depending
      upon the gas-load needs of each residence, business or commercial
      building. Due to the parameters associated with meter and regulator
      selection, it is imperative that the Customer, or the Customer’s agent,
      contact the assigned CoServ Gas representative prior to construction to
      determine the exact requirements for specific installations, including
      location and space requirements. Consulting with us early in the process
      may eliminate the need for changes to the gas metering facilities or gas
      Main Extensions or relocation of gas risers at a later date with additional
      delays and expense to Builder or Customer.

2) Meter Selection Criteria
   a. To assure proper operation, each gas meter must be the proper size and
      type for the maximum gas demand and required pressure. The maximum
      gas demand is determined by adding the Btu input ratings of all gas
      burning devices that may possibly be operating simultaneously. Furnaces,
      space heaters, water heaters, boilers, pool heaters, fireplace logs, gas
      clothes dryers, gas lights, and gas generators should be included at their
      maximum input ratings.
   b. The type of meter installed can also vary depending upon the Customer’s
      usage factors, e.g., what type of business, hours of operation, critical
      operations, etc. As a rule of thumb, the factors listed in the following
      subsections apply for domestic and small commercial loads.
   c. Space Requirements: Occasionally, available space will be a factor in
      selecting the type of meter or meters to be used.
   d. Nature of Customer’s Use: The Customer’s type of load is a factor in
      choosing a meter or meters. If the load remains at or near peak load a
      substantial part of the operating time and the rated capacity of the meter is
      about the same as the rated load, the next larger meter is often selected.
      Likewise, while it is important that a meter of sufficient capacity be
      installed, it is also important from the standpoint of economics not to use a
      larger meter than is necessary.
   e. Gas meter sets operating at elevated delivery pressures above the
      standard 7 inches of water column (4 oz.) pressure may require a specific
      type of metering equipment.
   f. Additional Factors
i. Multiple risers and meter manifolds are required for commercial buildings with more than 6 suites/tenants or future customers.
ii. For larger commercial, manufacturing and industrial loads, as a rule of thumb, the following factors might apply:
   - Small manufacturing or commercial load (3,000 to 5,500 scfh)
     o Require a single “Commercial” type set-up.
     o Typical dimensions: 6ft X 12ft footprint.
   - Large Commercial load (5,500 to 7,000 scfh) OR load where Customer does not have any “critical batching”
     o Will usually require a single “Commercial” type set-up.
     o Typical dimensions: 6ft X 12ft footprint.
   - Industrial/Manufacturing or 24 hour operation (greater than 7,000 scfh)
     o Require a “Combined Consumption” meter and regulator set-up.
     o Typical dimensions: 12ft X 20ft footprint.

  g. Note* The footprint of the meter manifold or station is normally dictated by the specific metering equipment being utilized.

3) Meter Set Location, Requirements and Clearances
   a. Gas meter sets must be fully accessible and totally unobstructed. A meter MUST always remain accessible for inspection, reading, testing and shutdown.
   b. The riser and customer piping MUST be free of any conditions detrimental to the metering equipment and not in a hazardous or inconvenient location. Customer piping and location of riser must follow CoServ Gas clearance requirements – see attached details/drawings.
   c. Customer piping that extends along exterior wall to gas meter from upper part of building must be properly secured to building wall prior to installing gas meter(s) or meter manifold.
   d. When facing the meter, the gas service riser shall be to the left and the Customer owned piping must be to the right of the meter.
   e. The riser must be located outdoors and no less than 18 inches from exterior surface of building wall.
   f. The meter/manifold shall not be located within 3 feet of any door or under and/or within 3 feet of any window or vent that opens.
   g. There MUST be at least 3 feet of clear and level working space maintained in front of the meter. No source of ignition or heat that may damage the meter or meter set can be located nearby. An exception to the 3 feet of unobstructed space would be required protection from vehicular traffic.
h. Gas meter cannot be placed inside walls nor near any other obstructions that could make access difficult for installation, servicing, or reading dial of meter.

i. Gas meter cannot be located on walls or partitions subject to vibration or which have structural defects of any kind.

j. A meter cannot be installed in places with high risk of damage, such as driveways and sidewalks (without suitable protection), within poorly ventilated breezeways, public passages, halls, under porches or decks, in crawl spaces, inside garages, etc., or where subjected to excessive corrosion.

k. Meters cannot be located within 10 feet of a mechanical air intake or “window” installed air conditioner.

l. Meter regulator vents cannot be located within 3 feet of a gravity fresh air intake or air conditioning condenser (compressor).

m. A meter and/or service regulator vent cannot be placed within 3 feet of a source of ignition, such as an open flame or pilot light, an electrical panel, circuit breakers, or any other ignition source including electric transformer.

n. A meter cannot be located under interior stairways. If allowed by other regulation, exterior stairway locations are permitted if open and the horizontal distance between the bottom step and the meter is 4 feet or greater.

o. A meter cannot be located within unventilated engine, boiler, heater, or electrical equipment rooms.

p. A meter cannot be in contact with the soil, in a depression below ground level, or where potentially corrosive materials might contact the meter set.

q. A meter cannot be located where it may cause an obstruction to a Siamese fire connection. An area defined by a 36-inch radius measured from the center of the connection and extending downward to grade will be kept clear of all associated piping and the gas metering assembly.

r. A meter cannot be located in any cabinet, enclosure or configuration, or near any pipe, cable or objects that could block, or otherwise inhibit remote meter reading capabilities.

s. Gas meter set and manifold MUST be plumb and level.

t. If located to the right of a window, the gas service riser must be 12 inches or more to the right of a window frame. If to the left of a window, the Customer piping entering the structure must be 12 inches or more to the left of the window frame.

u. The space around the meter must be clear of obstructions (shutters, doors, rain spouts, concrete equipment pads, shrubbery, porches, patios, decks and gardens).

v. No mechanical fittings or controls such as water faucets, sewer cleanouts, sprinkler controls, etc. will be located behind or under the meter set.
w. A meter will not be installed where it will be necessary to remove one gas meter to make possible the removal or installation of another.

x. For multiple meter installations, meters are installed on a manifold when practical. Multiple gas piping runs must be labeled by the Customer in a manner satisfactory to the Administrative Authority and CoServ Gas. The marking information must include the authorized suite, street number, designated building or part of the building being served. The means of marking is for licensed plumber to attach an embossed durable metal or plastic tag to each customer gas line.

y. Enclosures for telecommunication cables, wires, or other equipment along with conduit, pipes, and other wires or cables WILL NOT be installed within an area 12 inches above, behind and extending the entire width of a meter service and riser when the meter is installed adjacent to a structure/building.

4) Meter Manifolds
   a. Specific requirements apply where multiple meters are installed or grouped at a single location. These requirements are in addition to the requirements for single meter installations. CoServ Gas will determine whether the installation will have a single manifold or multi-riser manifolds.
   b. The Customer or Customer’s agent must consult with a representative of CoServ Gas Engineering regarding specific dimensional requirements. Gas meter manifolds will be limited to one tier with 6 meters per manifold. The height of a manifold will be approximately 36” from finished grade to the centerline of the horizontal manifold pipe. All exceptions such as two-tiers or additional risers will be made at the sole discretion of CoServ Gas.
   c. The distance from the centerline of the gas riser to the centerline of the first meter “drop” on the meter manifold will be 18” depending upon meter size. Subsequent meter drop centerlines will be 18” along the manifold, with the manifold extending 18” past the final meter drop. Please refer to page 11 for required clearances.

5) Meter Set Protection Requirements
   a. Protection from External Corrosion
      i. CoServ Gas is responsible for coating and visually inspecting risers, manifolds, and meter equipment for signs of corrosion.
   b. Protection from Electrical Hazards
      i. CoServ Gas piping and equipment is electrically isolated from Customer facilities and SHALL NOT be used as a grounding electrode connection. Attaching, electrically bonding, hanging or supporting any object from the gas service piping, risers or meter facilities is strictly forbidden.
c. Protection from Excess Pressure
   i. Exposing a meter set to pipe testing pressure can damage a meter and/or regulator. A Customer/Contractor that performs a pressure test on house pipe connected to a diaphragm or rotary meter is responsible for the cost to repair or replace the gas meter(s) and/or regulator(s).
   ii. On larger meter sets it is recommended that a Customer install a valve immediately downstream of the meter set to protect the meter and regulator during a pressure test of the Customer owned piping. School facilities subject to State mandated periodic testing of their piping would be well advised to install such a valve.

d. Protection from External Forces
   i. Protection from tampering, vehicular contact and vandalism are Customer responsibilities to be installed and paid for by the Customer. Protection includes, but is not limited to, bollards, fences, permanently installed planters or other similar permanent structures. Wheel stops, wooden posts and removable barriers are not considered acceptable substitutes.
   ii. CoServ Gas should be consulted about the type and extent of protection.
   iii. If the Customer cannot provide protection, CoServ Gas will provide it at Customer expense.
   iv. New Meter(s) can be installed but not activated until required protective measures are in place.
   v. Gas meter sets located in the following areas must be protected:
      - Within 3 feet or less of single-family residential driveways or parking areas (including garage areas), commercial refuse container locations, or thoroughfares or paved areas with curbs 6 inches or higher. Bollards constructed of standard 4" diameter steel pipe (schedule 40), encased in 12" x 12" x 30" deep concrete footers and extending 2 feet below and 3 feet above final grade are considered adequate protection. Minimum compressive strength of the concrete will be 2,000 psi. Bollards should be level and plumb.
      - Within 8 feet of multi-family, commercial, or industrial driveways or parking areas, loading docks or freight handling areas, or thoroughfares or paved areas without curbs, bollards constructed of standard 6" diameter steel pipe (schedule 40), encased in 15" x 15" x 36" deep concrete footers and extending approximately 2 1/2 feet below, and 3 feet above final grade are considered adequate protection.
Minimum compressive strength of the concrete will be 2,000 psi. Bollards should be level and plumb.

6) Meter Rooms or Enclosed Spaces
a. The following information is required to determine if the proposed gas meter manifold location is suitable or not for CoServ Gas meter and regulator equipment. Specialized venting of the gas service regulators may be required depending on answers to the following questions.
   i. Is it possible to locate the gas meter outside the building or somewhere other than the enclosed mechanical space? If so, then select alternate riser location.
   ii. Is the proposed mechanical space/room designed to prevent fugitive gas migrating into the building space or accumulating in an unsafe manner?
   iii. Will the meter room be well lit with explosion proof lighting equipment per Class 1, Division 2, Group D standards of the National Electric Code and be accessible to CoServ Gas personnel at all times?
   iv. Will the doors have locks or not?
   v. Will the doors open outward from the meter room or into the meter room?
   vi. Will the proposed mechanical space EVER contain any sources of ignition such as electric meters (not allowed in gas meter rooms) or electrical wiring/equipment that does not meet NEC Class 1, Div 2 area classification?
   vii. Does the proposed meter room construction have a minimum fire rating of one hour and completely sealed from the rest of the building?
   viii. Will there be any non-airtight doors or openings connecting from the meter room to an area inside the building? Penetration points through the floors, walls and ceilings of meter rooms must be vapor-proof sealed, and can be designed and installed in accordance with all applicable regulations, as set forth in federal, state and municipal codes.
   ix. What is total NET OPEN AREA of the proposed vents?
   x. What is total inside volume of the enclosed meter room?
   xi. The room must have at least two fresh air vents to the outside. The Customer must install one (1) vent near the top of the room and at least one vent near the bottom of the room and arrange the vents to provide cross-ventilation to avoid the recirculation of vented gas. The total area of the vents must be a minimum of thirty square
inches per one hundred cubic feet of volume in the meter room, but WILL NOT be less than one hundred square inches.
xii. A sealed port into the meter room that can be safely accessed from the outside must be installed to allow a technician to use a methane detection instrument to determine the concentration of natural gas, if any, before entering the room. The port must be a ½-inch NPT-sized coupling with a cap, penetrate completely through the wall of the meter room, and be sealed to the wall to prevent leakage in or out. The port must be accessible at all times and be located seven feet from the surface of the floor or one (1) foot from the ceiling if the meter room is less than seven feet high. If an airtight door is necessary, the port must be installed on the same meter-room wall as the door.

xiii. Where venting of the service regulator is necessary, the Customer must locate gas meter sets in a position that allows the gas regulator to vent to a safe outside location and minimizes the length of the regulator vent line to allow adequate venting capacity. An Engineer from CoServ Gas must approve the location of the regulator within the room and the length of the vent line. For this reason, the Customer must consult with CoServ Gas for specific requirements prior to construction.

b. Service Regulator Vent Requirements
   i. Indoor gas regulators are installed only when absolutely necessary and no other options are feasible. Regulator vent pipes will be extended to a safe, remote outside location with the vent opening facing downward with a rust-proof screen over the vent opening.
   ii. Gas meter sets MAY NOT be installed where the service-regulator vent terminates in any of the following areas:
       - Within a rectangular area extending 18 inches either side of, and 10 feet below, any air vent or opening window that connects to a habitable space in a building or any space likely to contain a source of ignition.
       - Within 3 feet of an opening (excluding windows) used as an outside air intake for ventilation, where venting gas could be drawn into a building or an enclosed space under an occupied portion of a building. Vents located within 10 feet (measured horizontally) of an air intake will terminate at least 3 feet above the highest point of the air intake. Dryer vents and windows are not considered air intakes, but a reasonable distance should be allowed between them and the regulator vent.
       - Within 3 feet of any source of ignition.
• Under a display platform or show window in commercial buildings, including any permanent, elevated, display floors or platforms associated with the window where the purpose of the window is to present a display to the public.
• Under building overhangs where the overhang is likely to direct venting gas to a building opening.

iii. In areas subject to flooding, the regulator vent(s) will terminate at least 1 foot above the 100-year base flood elevation. These assemblies may also be required to have additional protection from damage due to floating debris during a flood. This protection will be the Customer's responsibility.
NOTES:
ALL GAS METERS MUST BE LOCATED IMMEDIATELY ADJACENT TO AN OUTSIDE WALL AT A LOCATION READILY ACCESSIBLE BY OUR METER READERS AND MORE IMPORTANTLY BY EMERGENCY PERSONNEL SHOULD A FIRE OR OTHER EMERGENCY REQUIRE THAT THE GAS BE TURNED OFF.

SOURCE OF IGNITION, PUBLIC SAFETY AND POSSIBLE AIR INTAKES INTO BUILDINGS STRUCTURES MUST BE A FACTOR IN METER LOCATION. LOCATIONS TO AVOID ARE:
- WITHIN 18" OF A BASEMENT WINDOW
- UNDER AIR INTAKE DUCT OR A WINDOW AIR CONDITIONER TO A HEIGHT OF 10" FROM FINAL GRADE
- WITHIN 3' OF ANY SOURCE INCLUDING ELECTRIC METER SWITCHES AND EQUIPMENT
- BELOW A FIRST FLOOR WINDOW THAT CAN BE OPENED OR UNDER A FIRE ESCAPE
- WHERE A SUBJECT TO VANDALISM, EXCESSIVE CORROSION, EXCESSIVE HEAT, VIBRATION OR VANDALISM

NO VENTS/ELECTRICAL SOURCE/WINDOWS OR DOORS
**NOTES:**

All gas meters must be located immediately adjacent to an outside wall at a location readily accessible by our meter readers and more importantly by emergency personnel should a fire or other emergency requiring that the gas be turned off.

Source of ignition, public safety and possible air intakes into buildings structures must be a factor in meter location. Locations to avoid are:

- With in 18" of a basement window
- Under air intake duct or a window air conditioner to a height of 10' from final grade
- With in 3' of any source including electric meter switches and equipment
- Below a first floor window that can be opened or under a fire escape
- Where a subject to vandalism, excessive corrosion, excessive heat, vibration or vandalism

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[Diagram showing required clearances]
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Residential Gas Meters – Important Considerations

a. A release from the city (in most cases) is required to set a new gas meter.
b. Customer piping/ riser placement. (See attached diagrams)
   i. **House set** - Customer piping needs to come out of wall at least 24” above the bottom of foundation and extend out of wall 12” (even with Coserv riser) with a 1”Ell installed.
   ii. **Alley set** - Customer riser needs to be installed 12” to the right & back of the Coserv riser and built up at least 12” taller then the Coserv riser.
c. **All unattended gas appliances** (water heaters and central heating units) must be installed and properly connected with valves and flex lines. If other gas appliances are installed, they must be properly connected with valves and flex lines as well (i.e.: gas logs, cook top /oven, etc.).
d. All other gas appliance outlets must have valves w/ plugs installed.
e. Access to the house is required (i.e. when you are ready for meter, make sure house is unlocked and no floor work is being performed).
f. Attic access is required via pull down ladder with strings or unlocked doors (whichever applies). The attic access must be properly secured to joists and functioning properly with no obstructions in the way (i.e.: trash, hall lights, bricks, etc.). Temporary ladders thru scuttle holes are unacceptable.
g. Each builder **must have a safe & accessible walkway** to and in front of any gas appliance/ application that is located in the attic.
h. There can be nothing installed, placed, or planted within a 36” radius of the Coserv Gas riser (i.e.: air conditioning units, vents, water faucets, shrubs, etc.) Coserv Gas Techs have to have room to safely work around that meter now and in the future.
i. Make sure there is no item in the way of meter placement (i.e.: T-poles, other utilities, or dirt/debris). The space around the meter must remain clear of obstructions (shutters, doors, rain spouts, concrete equipment pads, shrubbery, porches, patios, decks and gardens).
j. Air Pressure left on all house piping is not required, but it will help identify any leaks in your system that would prevent you from getting your meter.
k. Coserv Gas Technicians test piping at operating pressure with all valves open to any gas application. We test up to the control of each unit, which includes all piping as well as the valves and the flex lines.
NOTES:

ALL GAS METERS MUST BE LOCATED IMMEDIATELY ADJACENT TO AN OUTSIDE WALL AT A LOCATION READILY ACCESSIBLE BY OUR METER READERS AND MORE IMPORTANTLY BY EMERGENCY PERSONNEL. SHOULD A FIRE OR OTHER EMERGENCY REQUIRING THAT THE GAS BE TURNED OFF.

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☐ NO VENTS/ELECTRICAL SOURCE/WINDOWS OR DOORS