



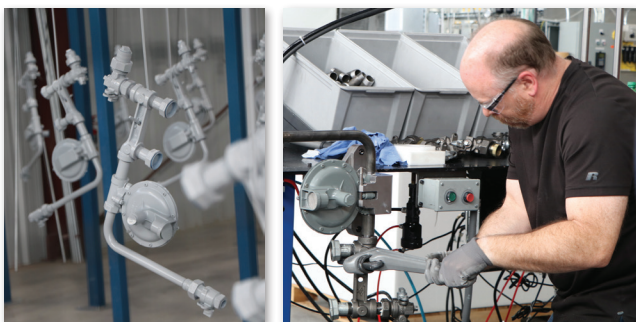
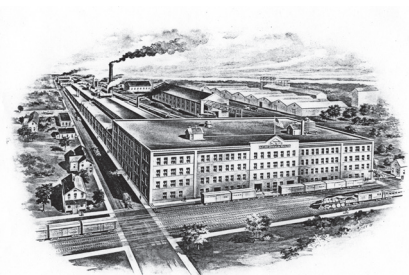
# INTRODUCING THE NATURAL GAS METER SET ASSEMBLY

## YOU SPOKE. WE LISTENED.

Since 1856, A.Y. McDonald has had the pleasure of providing quality solutions for the industries we serve. We are a family business that, at our core, believes the customer is the boss. One of the fundamental jobs that A.Y. McDonald does for our boss is to listen to their needs. Even more important than listening is to have the wherewithal to act on those needs, such as the decision to produce Natural Gas Meter Set Assemblies (MSA), which is an idea that stemmed from one of our own Innovation Summits. Adding this solution to our natural gas product line means that the customer will receive consistent timelines and lead times, along with open communication and customer service from our team to yours.

## DEMAND IN THE MARKET

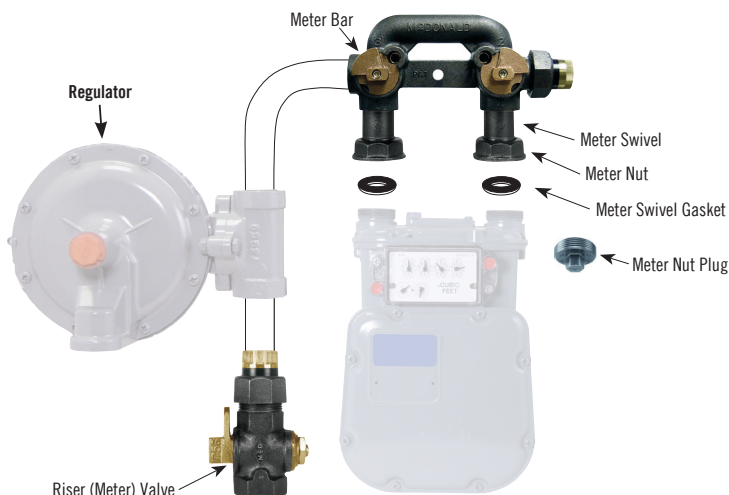
The natural gas distribution market has seen an increase in demand for meter set assemblies due to utilities looking to have consistency in assembly. Meter set assemblies not only provide time savings but also cost savings in labor for utilities. In addition, there's an added safety factor to meter set assemblies since they are tested prior to being installed. It's worth pointing out that A.Y. McDonald's meter set assemblies in particular are tested by an electronic machine, not water tested, thus eliminating human error in the process.



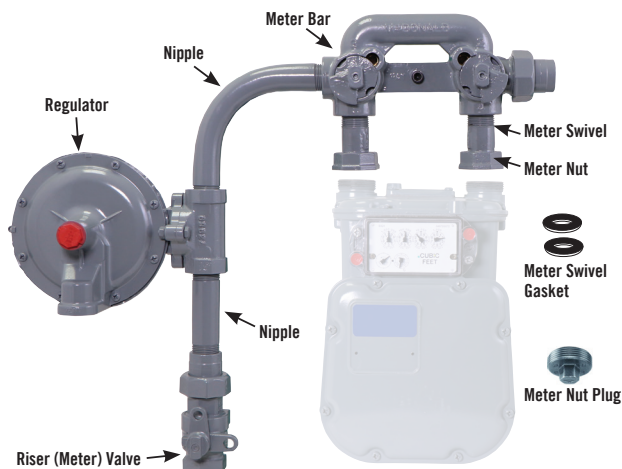
## CUSTOMER FOCUSED

- Consistent lead times
- Quality meter set assemblies
- Pressure testing for safety and quality
- Top notch customer service
- All parts under one roof - except regulator
- Traceability

## WHERE WE LIVED...



## WHERE WE LIVE NOW



Available as components or as a Meter Set Assembly

# INTRODUCING THE NATURAL GAS METER SET ASSEMBLY

## TRACEABILITY FOCUSED

In May of 2015, A.Y. McDonald introduced traceability tags for all of our natural gas products (excluding accessories), which include critical information such as manufacturer, materials, and date of manufacture.

Not only do traceability tags provide an innovative solution for detecting where underground pipes lie within a gas system, but they also serve as a safety initiative—allowing utilities to manage assets.



Like our standalone products, A.Y. McDonald's meter set assemblies also contain traceability tags for utilities to upload product information into their asset management system (see picture to the left).

## QUALITY

We control all components of a customer meter set as they are all A.Y. McDonald components, with the exception of the regulator. This includes quality control of thread connections on all components, excluding the regulator. A.Y. McDonald MSA's will include pipe nipples with CNC threads that are cut to length, quality thread checked before and after bending, as well as a focus on pipe cleanliness. Threads meet the ANPT Standard providing aeronautical thread measurement, truncation, and thread angle.

## PEOPLE

A.Y. McDonald's natural gas products are produced at all of our facilities; Dubuque, IA, Albia, IA, and Elizabethton, TN. With the new meter set assembly offering, this opened up the opportunity to further grow the A.Y. McDonald family. Therefore, a number of additional production positions were filled at our expanded Elizabethton plant. Extensive training for meter set assemblies also took place.

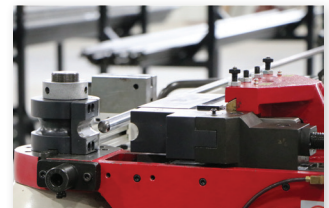
## BUILDING

In order to accommodate the addition of meter set assemblies to the natural gas line, the Elizabethton facility was doubled in size, growing from roughly 100,000 square feet to just under 200,000 square feet. This expansion started in July 2018 and was completed in April 2019.



## EQUIPMENT

In addition to expanding A.Y. McDonald's Elizabethton facility, an investment was also made for a number of machines and equipment that allow for the production of quality meter set assemblies. The new machines were first shipped to the Dubuque headquarters for testing purposes and then sent to Elizabethton for operation. In preparation for the meter set assembly addition, an investment was made for an entirely new paint line. The focus for this new paint line is based on efficiency, quality paint output, and taking into account the vast volume of meter set assemblies that can be completed.



# INTRODUCING THE NATURAL GAS METER SET ASSEMBLY

## PRESSURE TESTING

A.Y. McDonald meter set assemblies are tested electronically, eliminating the chance of water getting into the regulator or water initiating rust prior to painting. Each meter set assembly goes through four tests, which include the following:

- 1) The regulator is tested to assure it is the correct regulator and is set properly.
- 2) The inlet of the meter set assembly is pressurized at the maximum rated pressure for the regulator so leaks can be detected.
- 3) Joints after the regulator are tested by vacuum pressure significantly above the regulated pressure to ensure all joints seal well.
- 4) The outlet side of the meter set assembly is tested with the outlet valve at about 70 PSI.



## PAINT

In preparation for the meter set assembly addition, an investment was made for an entirely new paint line. The focus for this new paint line is based on efficiency, quality paint output, and taking into account the vast volume of meter set assemblies that can be completed.

### - Paint Specifications (relates to color and gloss, not to material (paint)):

- Fabrication Paint - 2-part epoxy primer applied by electrostatic air spray, ANSI 49 gray 2-part Urethane topcoat applied by electrostatic air spray, Approximately 6-10mil total DFT (dry film thickness).
- The paint chosen provides excellent corrosion resistance and durability for this application. Salt spray tests have been performed in order to ensure the protection is acceptable. The paint, along with an efficient process, provides a quality meter set assembly.

### - Coating Test Documents - Salt Spray Test per ASTM B117, measuring failure at 4% rust

- Coating on black casting has variable results dependent on the casting surface but can provide up to 800 hours of protection. Use on steel pipe and galvanized valves prevents rust for 3,000 hours of salt spray testing.



The test samples above are shown following 3,000 hours of salt spray exposure. These are zinc coated castings with two coats of paint.



The test samples above are shown following 3,000 hours of salt spray exposure. These are steel pipe with two coats of paint.

### - Cleaning specification

- Pipe will be free of chips and debris using a solvent wash per SSPC-SP1 standards

### - Protection in paint process (masking, etc.)

- Threads and open ends will be plugged or capped to prevent any paint entering the meter set assembly
- Custom masks will be applied for tags and other areas that need to remain unpainted

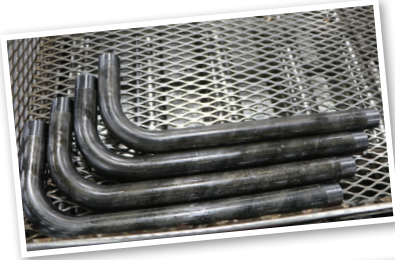




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## PACKAGING

- Bulk packages are provided in 40" x 48" x 36" gaylords. Foam bags are used for protecting the meter sets assemblies with cardboard pads separating the stacked layers. A lid can be provided to allow for double stacking of the skids for storage. Custom packaging may be available.



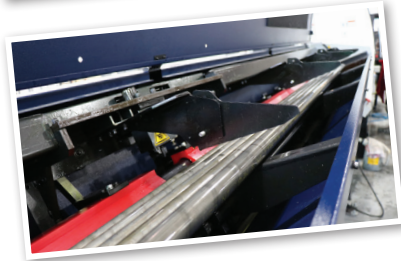
## NIPPLES

Straight schedule 40 galvanized A53 welded nipples 3/4", 1", and 1 1/4" machined from 2" up to 36". Bent nipples of schedule 40 black A106 seamless:

Pipe	Min	Max
3/4"	5" x 5"	18" x 18"*
1"	5" x 5"	18" x 18"*
1 1/4"	6 1/2" x 6 1/2"	18" x 18"*

\*Individual end lengths may vary, with maximum overall length of 36"

\*Schedule 80 straight nipple – custom option. Contact A.Y. McDonald's Customer Service Department.



## THE CUSTOMER IS THE BOSS

At A.Y. McDonald, there's only one boss, and whether a person pours brass for a living or heads up the largest corporation in the world, the boss remains the same. It's the customer!

At A.Y. McDonald, we remind ourselves every day that the customer is the boss. It's one of our core values and the reason we provide the best customer service in the business.



## OUR STRENGTHS

- Family Values
- Unbeatable Customer Service
- History of Quality Gas Products Manufactured
- Quality Products
- Innovation

