# Clamp Connector

## Here are 12 reasons why M-LOK® is better.

Metalok360™ is a Canadian own and operated OEM of M-LOK® clamp connectors.

Tested and Proven all M-LOK® clamp connectors are compliant with the following and are fully interchangeable with other well-known brands available in the market.

ASME VIII-div.2 – appendix 4

NACE MR01-75 standard

Metalok360™ implements, for all its design, production and marketing cycles, procedures and is compliant with the requirements of the international ISO standard.
The quality assurance system for the manufacture of pressure vessels is compliant with the requirements of the European Directive 2014/68

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# M-LOK® Connection Systems

M-LOK® Providing immediate savings in weight, space and installation, the unique M-LOK® connector outperforms flanges in many ways. The connector is specified as the preferred method of making difficult pipe connections in a wide range of diverse industries, applications and environments. M-LOK® has offered advantages in maintenance costs and improved performance.

**Here are the 12 reasons why M-LOK® is better.**

| Leak-Free Reliability | Weight Savings | Space Saving | External Loads | Quick Assembly | Cost Savings | High Pressure/ Temperature |
|---|---|---|---|---|---|---|

1 Smaller. Compared to conventional ANSI or ASME flanges, the M-LOK® connector is significantly smaller in diameter and has a shorter weld neck length.

2 Less Weight. The smaller size translates into weight as well as space reduction, for lightweight, compact, and economical systems with superior sealing integrity.

3 Metal-to-metal sealing. The heart of the connector M-LOK® seal ring, which engages the inner hub surface in an interference fit and forms a self-energized seal. Internal pressure reinforces the seal even further. Our seals are reusable unlike RTJ and spiral wound gaskets.

4 Toughness. In nearly all normal piping applications the M-LOK® connector is stronger than the pipe and most other components which might be connected. The M-LOK® connector goes to extremes:

Examples of M-LOK® Connectors in Extreme Service

| | |
|---|---|
| **Vibration:** | 80 to 2000 cycles per second at 6600 psi |
| **Pressure:** | Hard vacuum service to 60,000 psi |
| **High Temperature:** | Service experience to 1,700 °F (927 °C) |
| **Low Temperature:** | Routine liquefied gas service including, liquid hydrogen and nitrogen to -425 °F (-254 °C) |
| **Thermal Shock** | Routine service with temperature changes up to 300 °F per hour |
| **Corrosion:** | Liquid sodium service at 1,200 °F |
| **Zero Leak Rate:** | $10^{-6}$ atm cc/s Helium |

5 Ease of installation. The clamp can be rotated a full 360° around the hub to orient the bolts, connections can be made up in tight spaces and components installed without regard for bolt hole alignment.

6 Low torque makeup. Torque required to make up a M-LOK® connector can be as low as 30% of that for a ring joint flange.

7 Maintenance simplicity. There are only 4 bolts on a M-LOK® clamp rather than the 8 to 24 on a conventional flange, you can make up and break down 3 to 8 M-LOK® connectors in the same time as one flanged connection.

8 Low inventory requirements. One M-LOK® connector can be used for all piping of the same size, regardless of pressure. Spare parts inventory is significantly reduced.

9 M-LOK® Deliver shorter manufacturing lead times. M-LOK® allows you to meet your manufacturing, and installation target lead times.

10 Delivery simplicity. M-LOK® has logistic connections that allow for quick delivery.

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# M-LOK® Connection Systems

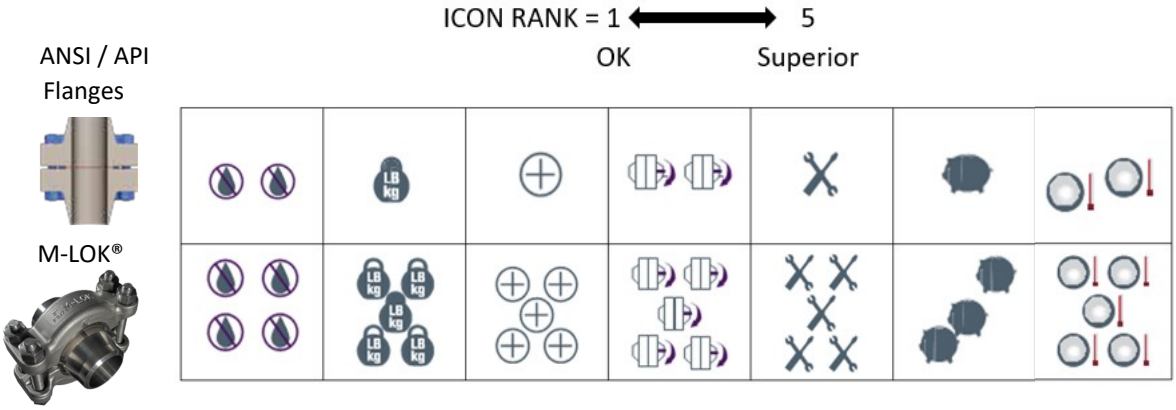
**11** External loads

External loads in engineering refer to forces or weights applied from outside a system. M-Lok® hub connectors secure pipes under external loads, ensuring reliable and efficient connections in various industrial applications.

**12** Eliminate fugitive emissions

M-Lok® clamp connector consists of three types of components, the seal ring, the two hubs and the clamp assembly, normally consisting of two clamp halves and four bolts.

## Comparison between ANSI/API and M-LOK®




Available in the following materials M-LOK® hubs are usually made of the same generic material as the other system components they connect. Standard hub materials are SA105 carbon steel, SA182-F316 stainless steel, but we can be manufactured from most machinable metals, including all of the carbon, low alloy, austenitic stainless steels, A182-F347 stainless steel, MONEL*, INCONEL*, titanium and zirconium alloys.

Sealing surfaces on carbon steel and low alloy steel weld hubs and fittings are protected by electroless nickel coating. The welding bevel and all part tolerances are in accordance with ANSI B16.5.

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