

Original Instructions

Installation, Operation & Maintenance Manual

Sentry MT-2 Magnetic Trap

S-SW-IOM-00406-1 1-17



COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =

 **SENTRY**

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Do not install, maintain, or operate this equipment without reading, understanding, and following the appropriate Sentry Equipment Corp instructions. Otherwise, injury, damage, or both may result.

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Note

The information contained in this document is subject to change without notice.

Safety Information

Please read the entire manual before attempting to unpack, set up, or operate this product. Pay careful attention to all Warnings, Cautions, and Notes. Failure to do so could result in serious personal injury and/or equipment damage.

Use of Hazard Information

If multiple hazards exist, the signal word corresponding to the greatest hazard shall be used.

Definitions

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

NOTE

Information that requires special emphasis.

TIP

Alternate techniques or clarifying information.

SHALL: This word is understood to be mandatory.

SHOULD: This word is understood to be advisory.

General Safety Precautions

Product Selection, Installation, and Use

WARNING

Improper selection, installation, or use can cause personal injury or property damage. It is solely the responsibility of users, through their own analysis and testing, to select products suitable for their specific application requirements, ensure they are properly maintained, and limit their use to their intended purpose.

Follow proper local, state, and federal regulations for proper installation and operational requirements.

Always use caution and common sense when working with any chemical. Read the product label and Material Safety Data Sheets (MSDS) carefully and follow the instructions exactly.

Potential Equipment Hazards

WARNING

Hot surfaces! This equipment may have very hot surfaces. If an operator contacts a hot surface, injury may occur. Use protective clothing to prevent injury. If other equipment comes in contact with a hot surface, damage to the equipment may occur. Ensure the area around this equipment is kept clear to prevent this damage from occurring.

High pressures! This equipment may contain fluids at very high pressures. Prior to installing, removing, or maintaining this equipment, ensure that the equipment is isolated from all connecting piping, the equipment is depressurized, the contents have been drained, and the equipment is cool.

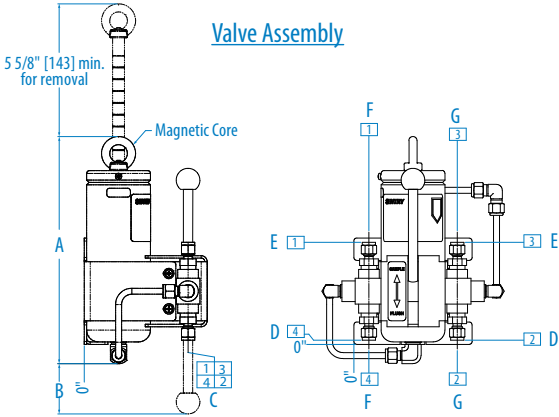
DANGER

Magnetic fields are present. Keep away from sensitive electronic devices and medical devices.

General Description

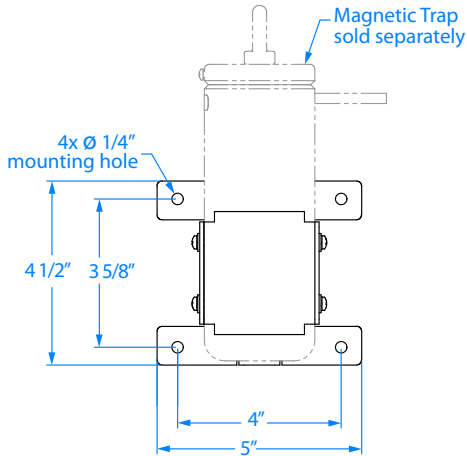
The Sentry® MT-2 Magnetic Trap is designed to collect fine magnetic particles such as magnetite in a fluid stream. All wetted metals are of 316 stainless steel construction. The magnetic core is isolated from the fluid stream by a stainless steel sleeve. When supplied with the valve assembly (MT-2V), the trap is flushed with single stroke actuation and an external source of clean water, preferably at low pressure.

Figure 1. Magnetic Trap dimensional drawings



	A	B	C	D	E	F	G
MT-2V	9 11/16" [246 mm]	2 1/16" [52 mm]	4 1/4" [108 mm]	1 1/16" [27 mm]	3 7/16" [87 mm]	11/16" [17 mm]	4 5/16" [108 mm]

Figure 2. Mounting bracket



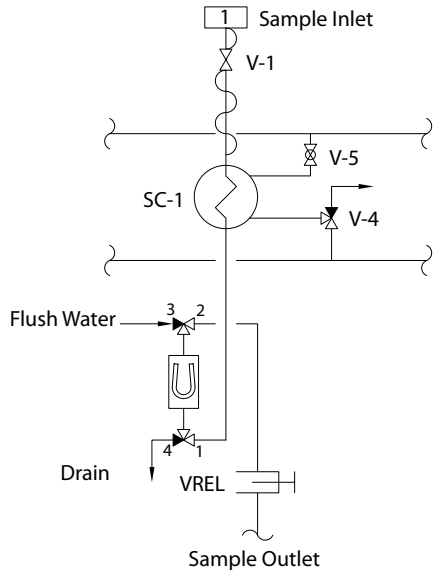


Installation

Refer to Figure 3 for proper location of the magnetic trap.

- The trap must be located downstream of the primary sample cooler. The magnets lose their strength if subjected to water above 175°F (79°C).
- The trap should be located upstream of the pressure reducing valve (i.e., fore pressure regulator, needle valve, or VREL® valve) to prevent magnetite from plugging these devices.

Figure 3. Proper location of the magnetic trap



- An external source of clean, low pressure (<150 psi/10.3 bar) and low temperature (<175°F/79°C) water is needed for flushing if the unit will be flushed into an open sink.
- Flushing at a high pressure requires a high pressure blowdown header to protect operators. If the header operates at high temperatures, an additional check valve should be used to protect the valves on the trap from the high temperature fluid in the blowdown header. The valve assembly provided with the trap, if included, is only rated for 175°F (79°C).
- The magnetic trap is heavy (8 lb/3.6 kg) and needs to be properly supported.
- The magnetic trap should be mounted in a vertical orientation with enough space above it to allow lifting of the magnetic core.
- The magnetic core is on a tether to prevent removal. This is a safety measure to prevent personal injury: fingers or skin could become trapped between the strong magnet of the core and a ferrous surface.
- Consideration should be given to the rotation of the sample/flush lever so that it can be operated without interference.

Operation

⚠ CAUTION

Prevent operator exposure to high pressure fluid.

Magnetic Trap Operation Instructions and P&ID

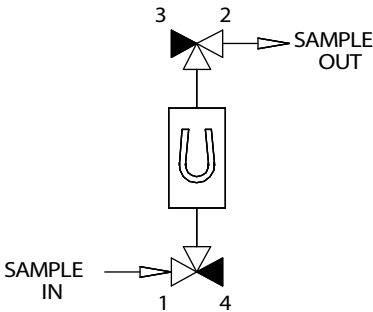
RUN

Operating Instruction

Magnetic Trap/Run Mode:

Valve handle in up position

Magnetic core inserted into trap



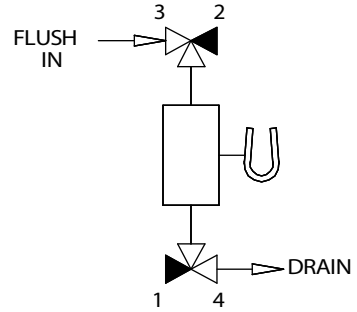
FLUSH

Operating Instruction

Magnetic Trap/Flush Mode:

Place valve handle in down position

Lift magnetic core out of trap



Under normal operation, with the valve handle in the Sample position, fluid flow enters the bottom of the trap and exits tangential to the core at the top of the sidewall. Optimal magnetite collection occurs below 1200 cc/min.

To Flush

1. Move the valve handle downward to the Flush position.
2. Lift the magnetic core from the inner sleeve until the magnets are exposed.
3. Assuming the flush water is discharged into a sink, the clarity of the fluid should turn clear as the magnetite flushes from the trap. This should occur within 15-30 seconds.
4. When the discharge runs clear, replace the magnetic core and then return the valve handle to the Sample position.

Maintenance

The Magnetic Trap does not require maintenance; however, the valve packings in the MT-2V valve assembly may require periodic replacement.

Seal kit for valve is 4-00640E.

Technical Data

Inlet Pressure Rating	2500 psig (172 bar)
Max. Temperature Rating	175°F (79°C)
Materials Wetted Magnets	316 Stainless Steel Neodymium
Maximum Flow	1200 cc/min

Standard Warranty

Sentry Equipment Corp (“Seller”) warrants products manufactured by it and supplied hereunder (“Products”) to be free from defects in workmanship and, to the extent materials are selected by Seller, to be free from defects in materials, in each case for a period as defined in the table below:

Brand	Product Line	Warranty Period
Sentry®	<ul style="list-style-type: none"> ▪ Steam & Water Sampling Products and Systems ▪ Solid & Powder Sampling Products and Systems ▪ Gas Sampling Products and Systems ▪ Liquid & Slurry Sampling Products and Systems ▪ Pipeline Integrity Products 	Eighteen months from date of shipment or twelve months from startup (whichever occurs first)
Waters Equipment	Steam & Water Sampling Products and Systems	Twelve months from date of shipment

To view the full warranty, go to www.sentry-equip.com/warranty.

Customer Support

With proven sampling expertise since 1924, Sentry products and services provide business operations the critical insights to optimize process control and product quality. We deliver true representative sampling and analysis techniques to customers around the globe, empowering them to accurately monitor and measure processes for improved production efficiency, output, and safety. Standing behind our commitments, we are determined to tackle any application, anywhere.

We know that running an efficient operation isn't easy. It requires thorough, careful analysis of controlled, real-time data achieved through reliable, accurate, and repeatable process monitoring and measuring. By effectively conditioning, sampling, and measuring gas, liquid, slurry, powder, solids, steam, or water within their production environments, our customers obtain the critical insights they need to control and optimize their processes.

Yet, controlling your processes also means reliable customer support throughout the life cycle of your equipment.

- Customer Service—General information, warranty claims, order management.
- Installation Service—For systems that require specialized expertise upon installation.
- Technical Support—Troubleshooting, training, and technical manuals.
- Field Service & Retrofits—When a problem needs immediate attention.
- Replacements Parts & Consumables—Order your replacement parts and consumables.
- Sentry ProShield Services—Select from four ProShield Guardian service plans providing different levels of support to protect your large system investments with regularly scheduled maintenance.

To learn more, go to www.sentry-equip.com/support.

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