



**PIVOT MASTER® Flexible Joints**

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**PIVOT MASTER® Floating Roof Drain System**

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**PIVOT MASTER® Floating Suction & Skimmer Systems**

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**PIVOT MASTER® Fire Fighting Delivery System**



## HMT PIVOT MASTER® Flexible Joint

The patented HMT PIVOT MASTER® Flexible Joint was designed to provide a superior solution to floating roof drainage than mechanical swivel joints and flexible hoses.

The HMT PIVOT MASTER® Flexible Joint consists of a specially designed composite type hose containing ANSI 150# raised faced flanges secured in place by a pivotal steel side plate structure.

The composite hose is designed with inner and outer stainless steel wire helixes and multiple inner layers of polar and non-polar elastomeric materials. The stainless steel wire helixes maintain the hose rigidity when subjected to internal or external pressures. Utilizing various layers of Polar and Non-Polar elastomeric materials prevents permeation of products through the hose along with providing a 100% aromatic resistant hose.

The composite hose is secured within two reinforced steel side plates (primed or galvanized carbon steel or stainless steel). These side plates are joined by a stainless steel pivotal pin that uses stainless steel bushings and spacers to eliminate binding and assure flexibility.

Applications of the PIVOT MASTER® Flexible Joint include, but are not limited to, Floating Roof Drain Systems, Floating Suctions Systems, Floating Skimmer Systems and Fire Fighting Delivery Systems.



# HMT PIVOT MASTER® Floating Roof Drain System

The HMT PIVOT MASTER® Floating Roof Drain System is designed to innovatively provide a better solution to floating roof drainage problems. Introduced in 1982, this system combines the flexibility of the various flexible hose / pipe systems with the strength found in rigid pipe / swivel joint systems. The PIVOT MASTER® Drain System is a steel pipe drain system with flexible hose joints capable of withstanding an extremely wide range of service conditions.

The system effectively provides positive roof drainage with maintenance-free and worry-free operation. This results in extended service life, with no hose kinking or clogging, and no stress loading on O-rings, bearings or seals. Instead of costly swivels, the PIVOT MASTER® employs unique flexible joints in a straight-line design, with no offsets to cause unbalanced loading.

The PIVOT MASTER® is easily installed in a fixed position, requiring a minimal operating area. With a designed continuous slope, the PIVOT MASTER® does not allow sediment to become trapped in the system. It is designed for submerged service with no lubrication required, and there are no corrosion freeze-ups. PIVOT MASTER® components are compatible with 100% aromatic products and can withstand high design pressures.

Designs available:

Standard - For normal floating roof low leg heights

Low Profile - Two designs for low heel tank designs

Multiple - Two or more standard or Low Profile drains per tank

PIVOT MASTER® Drain Systems can be designed to avoid interferences with heating coils, diffusers and other internal obstructions. Stress and flow rate calculations are available upon request.

## Advantages of the PIVOT MASTER® vs Swivel Joints and Hose Drains:

|   | HMT PIVOT MASTER® | RIGID PIPE | FLEXIBLE RUBBER HOSE | METALLIC HOSE |
|---|-------------------|------------|----------------------|---------------|
| Continuous slope promotes free flow                           | •                 | •          |                      |               |
| Continuous slope eliminates sediment trap areas               | •                 | •          |                      |               |
| Fixed position doesn't interfere with tank internals          | •                 | •          |                      | •             |
| Small, unobstructed area required for operation               | •                 | •          |                      |               |
| Fixed position doesn't scrape or drag on tank bottom          | •                 | •          |                      |               |
| Compatible with wide range of products                        | •                 | •          |                      | •             |
| No maintenance required                                       | •                 |            | •                    | •             |
| No lubrication required                                       | •                 |            | •                    | •             |
| No stress or load on hose end connections                     | •                 | •          |                      |               |
| No leaking due to offset tank joints                          | •                 |            | •                    | •             |
| No leaking due to deterioration of O-rings, bearings or seals | •                 |            | •                    | •             |
| System designed for submerged, external pressure use          | •                 |            | •                    | •             |
| High operating pressure                                       | •                 | •          |                      |               |
| No system damage due to tank turbulence                       | •                 | •          |                      |               |
| In stock for immediate delivery                               | •                 |            |                      |               |

## HMT PIVOT MASTER® Floating Suction & Skimmer Systems

HMT provides Floating Suction Systems designed to enable the removal of the stored product near the product surface, contaminate-free. HMT's Floating Suctions are engineered to operate in conjunction with all types of floating roofs or without a floating roof.

The HMT Floating Suction System is designed to meet all requirements of the storage tank size and submerged environment. All components are compatible with the stored product providing a long life and trouble free system that will be custom designed for your specific application.

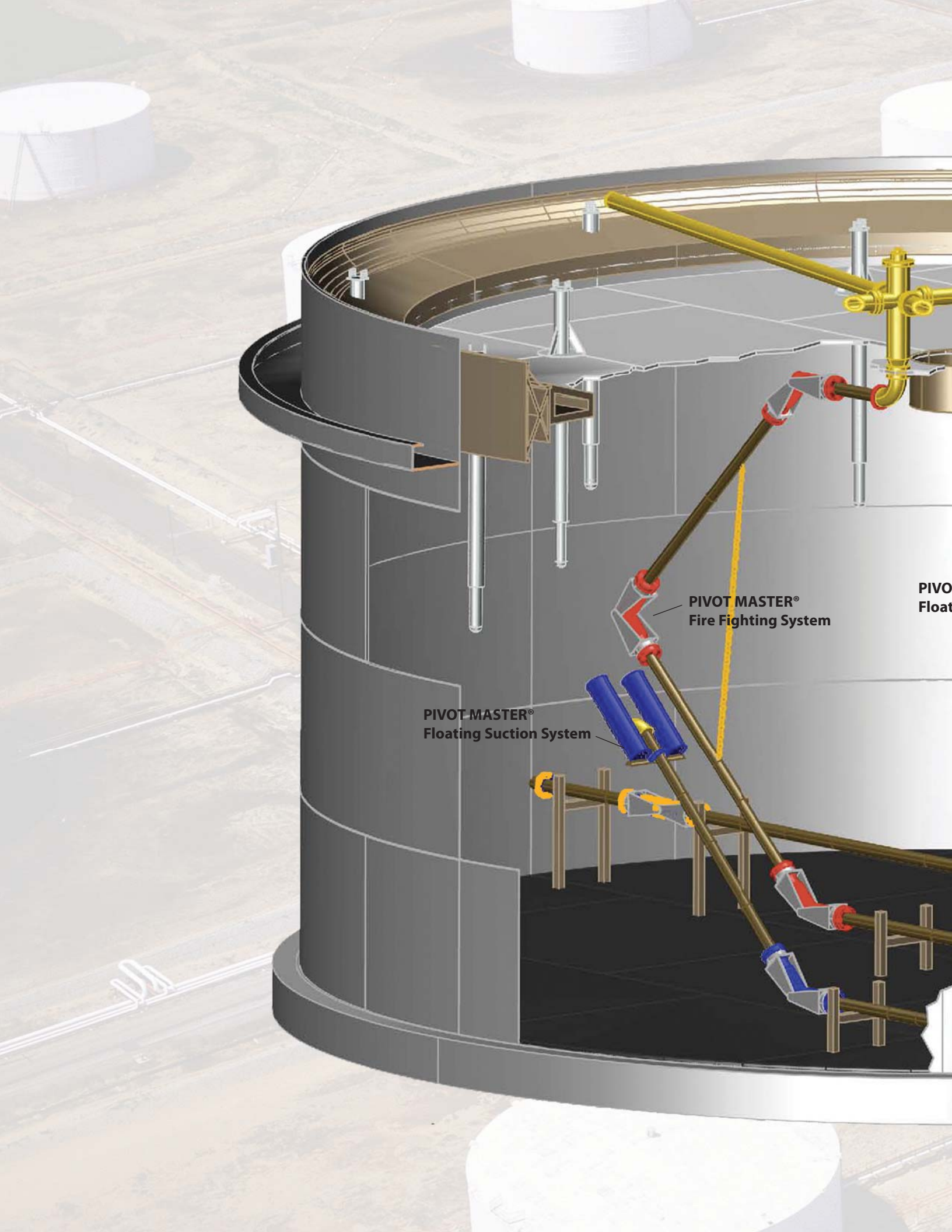
HMT Floating Suction units (3" – 10") utilize the HMT PIVOT MASTER® Flex Joint instead of a mechanical swivel, rigid piping (carbon steel, stainless steel or aluminum) and custom designed pressure tested flotation chambers.

HMT pre-fabricated Floating Suction Systems can be shipped to the site for final assembly and installation by an HMT service crew or installed by others.

### Features:

- Available in carbon steel, stainless steel or aluminum
- Available in standard sizes of 3", 4", 6", 8" & 10"
- Larger sizes available upon request
- Designed according to tank characteristics
- Installed with all types of floating roofs
- Maintenance free, smooth controlled operation
- Compatible with stored product
- Allows for removal of non-contaminated product

HMT also provides Skimmer Systems. Mixtures of liquids with different densities (such as oil and water) tend to stratify in a storage tank. A Skimmer System is designed to enable the removal of the lighter product(s) that float to the top. HMT has Skimmer System designs that are engineered to operate in conjunction with all types of floating roofs or without a floating roof. Contact your HMT representative for additional information.



PIVOT MASTER®  
Fire Fighting System

PIVOT MASTER®  
Floating Suction System

PIVOT  
Float



**HMT MASTER®**  
Floating Roof Drain System

Contact your local HMT representative to discuss the full suite of products and services that will satisfy all your AST needs.

# HMT PIVOT MASTER® Fire Fighting System

HMT's PIVOT MASTER® Fire Fighting Foam Delivery Systems are designed to rapidly extinguish floating roof tank rim fires. These systems deliver the fire fighting foam directly into the floating roof rim space where it effectively blankets the stored product surface, cutting off the fire's oxygen supply and extinguishing the fire with a minimum amount of foam.

Unlike subsurface and over-the-shell foam delivery methods, the HMT Foam Delivery System places the foam directly in the rim space either between the seals or over the stored product. By filling the rim space with fire fighting foam instead of the foam dam, less foam will be required and the response time in extinguishing the fire is decreased.

HMT offers both the PIVOT MASTER® Dedicated Foam Delivery System and the PIVOT MASTER® Dual Purpose Roof Drain / Foam Delivery System.

The PIVOT MASTER® Dedicated Foam Delivery System utilizes a separate piping system, independent of the roof drain system, to deliver the foam to the top of the floating roof.

Fire fighting foam is delivered from the tank dike wall to the tank and enters into the PIVOT MASTER® system. The fire fighting foam travels through the PIVOT MASTER® system to a central manifold on top of the floating roof, where it then flows into distribution (Foam Delivery) piping that delivers the foam directly into the rim space.

The PIVOT MASTER® Dual Purpose Roof Drain / Foam Delivery System incorporates an existing PIVOT MASTER® Drain System to become, when required, a Foam Delivery system. In this application, fire fighting foam is delivered from the tank dike wall to the tank and enters the existing PIVOT MASTER® drain system through a 3-port 2-way valve. The fire fighting foam travels through the PIVOT MASTER® system to a central manifold on top of the floating roof. A check valve located on the PIVOT MASTER® Drain System at the roof sump prevents the foam from spilling out on the roof and allows it to enter into the central manifold. The fire fighting foam then flows into distribution (Foam Delivery) piping that delivers the foam directly into the rim space.

Unlike subsurface and over-the-shell foam delivery methods, the HMT Foam Delivery System places the foam directly in the rim space either between the seals or over the stored product.

## Advantages of the System:

- Fast Response Time
- Reduces the Volume of Fire Fighting Foam Required
- No Foam Dams Required
- Lower Initial Cost
- Less Impact from Environmental Conditions while Fighting the Fire
- Complies with requirements of NFPA 11

## Operating Parameters:

| PIVOT MASTER® | Operating Temperature Range*   | Working Pressure  | Overall Length       | Weight Each**      |
|---------------|--------------------------------|-------------------|----------------------|--------------------|
| 3" Diameter   | -30 / +180 °F<br>-34 / + 82 °C | 50 PSI<br>344 kPa | 24.125 in<br>613 mm  | 65 lb<br>29.5 kg   |
| 4" Diameter   | -30 / +180 °F<br>-34 / + 82 °C | 50 PSI<br>344 kPa | 29.625 in<br>752 mm  | 98 lb<br>44.5 kg   |
| 6" Diameter   | -30 / +180 °F<br>-34 / + 82 °C | 50 PSI<br>344 kPa | 36.75 in<br>933 mm   | 192 lb<br>87.1 kg  |
| 8" Diameter   | -30 / +180 °F<br>-34 / + 82 °C | 50 PSI<br>344 kPa | 53.125 in<br>1349 mm | 373 lb<br>169.2 kg |
| 10" Diameter  | -30 / +180 °F<br>-34 / + 82 °C | 50 PSI<br>344 kPa | 79.875 in<br>2029 mm | 640 lb<br>290.3 kg |

\*Continuous operating temperature is noted above. In addition, the PIVOT MASTER® can tolerate intermittent temperatures up to +212 °F (+100 °C).

\*\*Weight does not include packaging or shipping crate.



## ABOUT HMT

HMT is the global leader in aboveground storage tank solutions. HMT's global team of engineers, project managers and field personnel can assist with common challenges including ways to reduce emissions, optimize tank capacity, reduce stranded inventory and engineer a tank system that exceeds safety standards and extends maintenance intervals.

**HMT's full suite of tank products includes:** External Seal Systems - Internal Seal Systems - Drain and Floating Suction Systems - Geodesic Domes - Skin and Pontoon IFRs - Full Contact IFRs - Emissions Reduction Devices

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