

TM

# LIQUID LINE

3rd Quarter 2018

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Published by:

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## All the Latest at Liquid Handling Equipment



On July 15th, Liquid Handling Equipment celebrated its 30th Anniversary. We have been very blessed over the past 30 years with the loyal support of our valued customers and suppliers. We are grateful to all who have been a part of our 30 years in business. The recently snapped picture below shows the current Liquid Handling Equipment team.



Our Annual Charity Golf Tournament to support the John Connor Charitable Foundation was held on Thursday September 20th in Gastonia, NC. It is the seventh consecutive year Liquid Handling Equipment has hosted the event. It was a spectacular day of fun and fellowship. Please let us know if you are interested in being included on the 2019 invitation list.



*The Liquid Handling Equipment Team*

Last but not least, we are extremely excited and pleased to be in the final stages of our shop / warehouse expansion. We expect the required occupancy permit in the next few weeks, after which Liquid Handling Equipment will begin moving equipment and stock into our new building.

*Stay tuned for updates!*

## Ken Mink Retiring December 31st

Ken Mink has recently announced that he will retire on December 31st of this year after 17 years with Liquid Handling Equipment. We want to thank Ken for his dedicated service.

Since 2001, Ken has successfully served as a sales representative in the state of Tennessee. He began employment the same year Liquid Handling Equipment established its presence in the Tennessee market. We are very grateful to Ken because he has been especially instrumental in the success Liquid Handling Equipment has enjoyed in Tennessee.

In retirement Ken plans to spend more time with family and friends. As Ken Mink says his farewells over the next few months, he looks forward to hearing from customers past and present. Ken, you will be missed!



**Ken Mink**  
Outside Sales - Tennessee



## Technical Spotlight Steps for Coupling Your Pump to Your Motor

By John Hickner



**John Hickner**  
Mechanical  
Engineer

A coupling is a device which is used to attach two rotating shafts together and correct any misalignments between the two. There is a large selection of couplings that can be used when coupling a motor to a pump. This article will share how to properly size a coupling, as well as how to choose the proper style of coupling for your specific application.

The first consideration is the style of coupling required for a particular application. The style of coupling can be narrowed down to two main styles: 1) tire spacer and 2) jaw.

A tire spacing coupling is one that has both of its hubs attached by a rubber or polyurethane “tire”. The tire coupling is ideal for severe misalignments and shock and vibration reduction. It allows for a broad range of torque capacities. Another important aspect of this coupling is that it also allows for the hubs to be spaced apart, making for easy removal of the spacer element without having to remove the hubs from the shaft. This feature is ideal for coupling a centrifugal pump to a motor because it allows for the piping to stay attached to the casing while the pump is removed for service.

The second coupling style is a jaw coupling. It has two hubs with teeth that mesh together with an elastomer spider. The spiders are commonly made out of NBR, Urethane, Hytrel, or bronze. Jaw couplings are recommended for general-purpose applications in that they allow for minor misalignments and vibration damping.

Once the style of coupling has been selected for the specific application, it needs to be properly sized. When sizing a coupling, it is important to check with the coupling manufacturer to learn the rating of each model. The ratings for couplings are usually based on either the torque that the coupling will experience or the HP/100 RPM. Even though they are almost identical, there are separate equations for each.

When discovering the torque, the rating of each unit has to be considered in either inch/pounds (in-lbs) or Newton-Meters (N-m). When finding the torque in in-lbs, use Equation 1.

$$\text{Torque (in – lbs)} = \frac{\text{Hp} \times 63000 \times \text{S. F.}}{\text{Coupling RPM}}$$

**Equation 1: Torque**

The motor’s horsepower needs to be multiplied by 63000, along with the Service Factor (S.F.). That number is then divided by the coupling’s rotations per minute (RPM). The service factor is a number that has to be referenced in the manufacturer’s manual or other professional source material. The service factor is used as padding, or as a safety factor, to help cover any unforeseen starts, stops, or shocks to the system. This number is a general guide used for sizing couplings. Once the torque has been calculated, it is necessary to find the coupling that has a rating high enough for the application. Once done, the last step is to check the maximum bore size for the coupling model. When finding the HP/100RPM rating, use Equation 2.

$$\frac{\text{Hp}}{100\text{RPM}} = \frac{\text{Hp} \times 100 \times \text{S. F.}}{\text{Coupling RPM}}$$

**Equation 2: Hp/100RPM**

All of the variables are the same as those in Equation 1. Once the Hp/100RPM has been found, it is then necessary to find a coupling model that is properly rated. This method can be used for any style of couplings.

## Spotlight on: The Strainrite Companies World Class Filtration

Since 1978, The Strainrite Companies has been designing and manufacturing filtration products for industry worldwide. Strainrite is a family-owned company headquartered in Auburn, Maine, USA, with additional locations in Michigan, California, and Georgia. Distributors are located throughout North America, as well as Europe and the Far East.

The  
**STRAINRITE**  
Companies | World Class  
Filtration

The company believes in developing and maintaining long-term, strategic relationships with clients in order to deliver innovative, real-time solutions to meet specific customer and market requirements. Strainrite's new product innovations are derived from a collaborative philosophy in which new products are developed through customer-supplier communication and cooperation.



**Heavy-Duty Housing**

Strainrite offers liquid filter housings, including Single or Multi-Bag Filter Housings, Low Flow Vessels, Industrial Duty, Heavy Duty, Manifold Systems, Extra Seal, Multi-Basket, and Sanitary Housings. Cartridges and filter bags are available from 0.04 endotoxin removal to 1200 micron mesh. The combined capabilities and certified approvals in the food and beverage, bio-med, automotive, paints, coatings, adhesives, plating, inks, chemical and medical industries, and pharmaceuticals make Strainrite the best choice in liquid filtration products.



**Madd-Maxx  
Cartridge**

The Strainrite Companies - Manufacturing Liquid Filtration Bags, Cartridges, and Vessels:

### Filter Bags

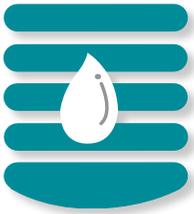
- Classic Felt All Welded
- Extended Life Filter Bags
- Enhanced Vertical Pleat
- High Performance
- High Efficiency
- Resin Bonded

### Filter Cartridges

- Large Diameter Pleated Filters
- Pleated Felt, Polypropylene & Nylon
- Polypropylene & Polyester
- Borosilicate Microglass
- Polyester Resin
- Membrane Cartridge Filters
- Polyethersulfone, Polysulfone, Nylon, Cellulose Acetate, Nylon 66, Teflon

**Contact your local Liquid Handling Equipment representative for help in selecting the best Strainrite product for your liquid filtration needs.**

Website: [www.strainrite.com](http://www.strainrite.com)



## A Liquid Handling Equipment Success Story

by Phil Underwood



**Phil Underwood**  
Outside Sales

Three years ago a major manufacturer of films contacted Liquid Handling Equipment about a hot oil application that was creating unsafe conditions for its workers, not to mention the inconvenience and annoyance of downtime and the continuing necessity of costly repairs! The problem created an opportunity to replace six of the existing double-mechanically-sealed pumps that required cooling fluids with controls and filtration.

The customer was a satisfied HMD Kontro user with years of experience with numerous HMD Kontro CS2DSL hot oil pumps, located in a different area of the plant. The plant was familiar with our ability to handle hot oil up to 850°F without the need for cooling water or utilities. It was hoping we could offer sealless pumps similar to the CS Series pumps for its difficult application without the need for utilities.

The required flow rates were well below the plant's CS pumps in use. The pump duty point was 18 gpm @ 78 feet of head operating at 315°C without cooling. Liquid Handling Equipment went right to the experts; we requested assistance from HMD Kontro Engineering.

HMD Kontro recommended a GSA Fr 0 rated for 315°C, which required a high temperature magnet set with a Ceramic-potted IMR, a carbon steel bush holder, a thermal spacer, and a long-coupled arrangement with a finned-external-drive-shaft-bearing frame to meet the requirements. Although the plant endorsed our solution, it was unable to get the needed capital approved to move forward on the project for two years.

During the time delay, the customer continued to experience seal failures. Born out of frustration, the plant decided to purchase one of the recommended HMD Kontro pumps to test its performance in the demanding hot oil application. After a successful trial, the customer purchased and installed four additional pumps without any issues.

The manufacturer now plans to replace all six of its existing sealed pumps in order to eliminate the leakage and unsafe conditions, all the while cutting operating costs by eliminating utilities downtime, maintenance, and cleanup.

HMD Kontro was able to provide the long-awaited sealless solution the plant needed to create safer working conditions for its operators.

**Call your local area Liquid Handling Equipment representative to determine solutions for your demanding hot oil / liquid applications with the superior HMD Kontro sealless pumps!**



### Meeting Your Process Needs

Liquid Handling Equipment carries a full line of products to meet all of your process needs.

#### Tanks & Heat Exchangers

*Bendel Tank & Heat Exchanger  
Edwards F.R.P. Tanks & Repair  
Modern Welding  
Poly Processing Company  
Sharpsville Container*

#### Pumps

*Boerger Pumps  
Crane Pumps - Barnes / Burks / Crown /  
Deming / Weinman  
DESMI / Rotan  
Ebara  
Flux Pumps  
HMD Kontro / Sundyne  
Iwaki-America  
LC Thomsen  
Price  
Roper  
Walchem  
Watson-Marlow / MasoSine Pump  
Watson-Marlow Sanitary Process Pumps  
Yamada America  
Zoeller Pump Company*

#### Agitators

*MixMor Corporation*

#### Filtration

*Eaton / Hayward MFG  
Harmsco  
Pentair  
Strainrite*

#### Flow & Liquid Level Management

*FLOWLINE  
ICON Process Controls, Ltd.  
Niagara Meters*

#### Accessory Equipment

*Blacoh Fluid Products  
Dixon  
Garlock Sealing Technologies  
Novaflex  
OPW / Civacon Corp.*