



# Hygienic

## H-FLO Series

Seal-Less Eccentric Disc Pumps



Purity.  
Performance.  
Purpose.



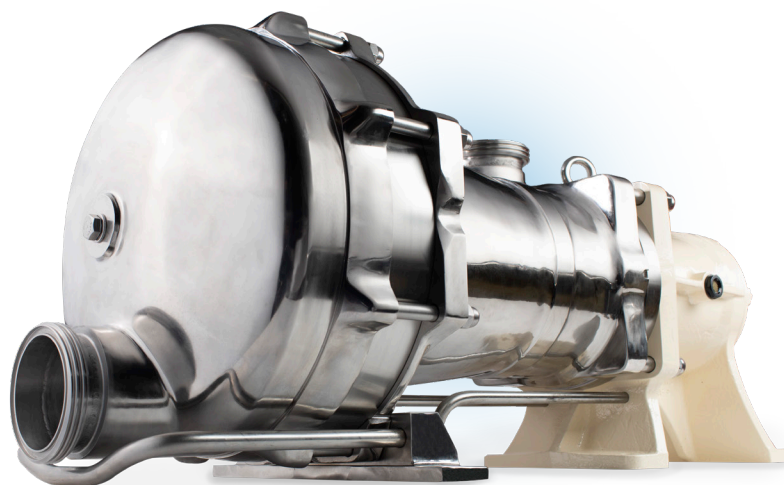
# Precision-Engineered for Hygienic Applications

## H-FLO Series Eccentric Disc Pump

Seal-Less Eccentric Disc Transfer Solution for Hygienic Applications Requiring High Flow Rates

Mouvex® H-FLO Series Seal-Less Eccentric Disc Pumps are designed for use in a wide range of applications in the food, beverage, cosmetic, home care and pharmaceutical industries, all of which require extremely hygienic operations.

A unique alternative to typical pump configurations, Mouvex H-FLO Series Pumps are designed to be seal-less without mechanical seals, magnetic drives or packings. H-FLO pumps deliver high-suction vacuum and high-discharge pressures that enable self-priming dry-run capabilities and full line stripping for maximum product recovery.



## Applications

Suitable for most sanitary applications, including food, beverage, cosmetic, home care and pharmaceutical, in particular those that require consistent non-pulsing flow and gentle fluid handling (low shear rate) such as:



### FOOD

- Sauce
- Chocolate
- Glucose
- & More



### BEVERAGE

- Concentrates
- Flavor
- Brewing
- Alcohol
- Fruit Juice
- & More



### DAIRY

- Yogurt
- Fermentation
- Yolk
- Dessert
- & More



### PHARMACEUTICALS AND COSMETICS

- Ointment
- Suppository
- Syrup
- Shampoo
- Cream
- & More



## Mouvex® H-FLO Series Features & Benefits

### Seal-Less Design

The unique seal-less design features a multi-layer bellows made of stainless steel that ensures durability, safety and product containment. The H-FLO Series provides high-suction vacuum and high-discharge pressure, which allows it to self-prime and fully strip lines, maximizing product recovery.

### Run Dry Capability

The H-FLO Series can run dry for up to five minutes, and the self-compensating eccentric disc principle provides consistent flow rates over a long period of time. The flow rate is extremely accurate, even at low speeds.

### Dependable

Fewer moving parts results in reduced maintenance and downtime.

### Operation

- Principle: Eccentric disc, positive displacement
- Installation: Can be base mounted

### Construction

- All stainless steel construction
- Shaft sealed by multi-layer bellows in stainless steel
- Ra 0.8  $\mu\text{m}$  (32  $\mu\text{in}$ ) wetted surfaces
- Easy Clean System
- Options include SMS, DIN 1185, DIN 11864 BF-A, Aseptik fl, Tri-Clamp® ASME-BPE and a heating jacket

### Options:

- |                  |                       |
|------------------|-----------------------|
| • SMS            | • Tri-Clamp® ASME-BPE |
| • DIN 11851      | • Heating jacket      |
| • DIN 11864 BF-A | • Easy Clean System   |
| • Aseptik fl     |                       |

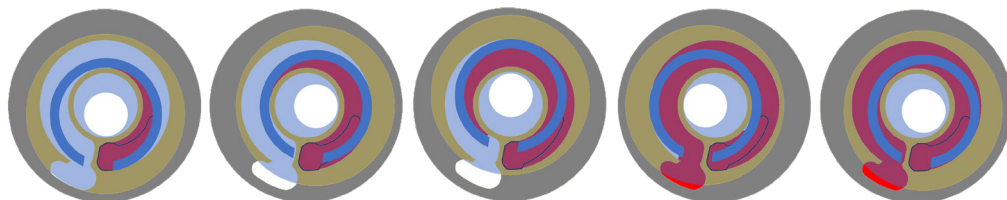
### Advantages

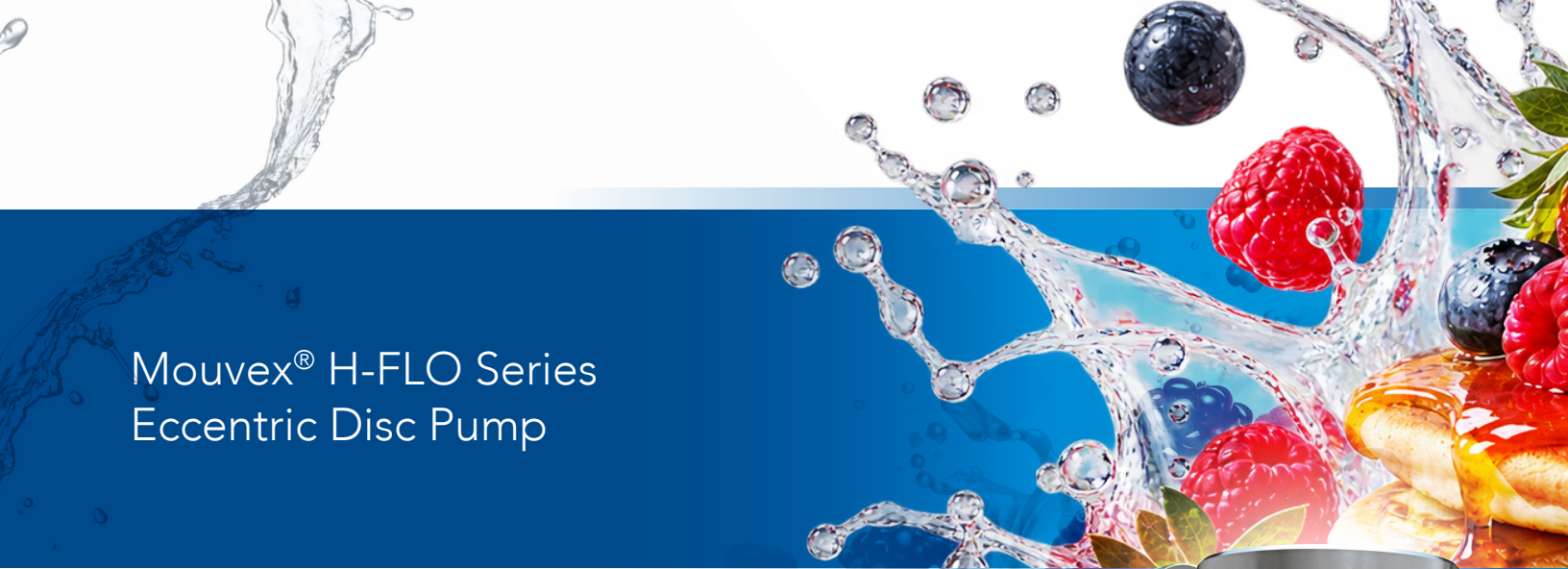
- Provides consistent and efficient flow with a wide range of viscosities independent of pressure
- Extremely gentle, pulse-free flow to protect shear-sensitive products
- Reduced maintenance with no mechanical seals or timing gears
- Easy to install
- Clean-in-place (CIP) and sterilize-in-place (SIP) capabilities for the ultimate in convenience and cleanliness
- Eccentric disc design allows for consistent flow and improved energy savings
- Seal-less design eliminates leakage
- Ability to strip and drain transfer piping/tubing
- Self-priming
- Strong suction and discharge pressure
- Flow rate up to 70 m<sup>3</sup>/h (308.2 gpm), 10 bar (145 psi)
- Low linear speed
- Precise dosing
- Accurate volume metering with high turn down
- Maintains consistent performance over time
- Effective with both high- and low-viscosity fluids
- Full drainability

### Mouvex Technology

Eccentric disc pumps consist of a cylinder and pumping element mounted on an eccentric shaft. As the eccentric shaft is rotated, the pumping element forms chambers within the cylinder, which increase in size at the intake port, drawing fluid into the pumping chamber. The fluid is transported to the discharge port where the pumping chamber size is decreased. This action squeezes the fluid out into the discharge piping.

Mouvex  
Principle





## Mouvex® H-FLO Series Eccentric Disc Pump



### Shaft

Large diameter single shaft  
mounted on roller bearings

### Lubrication

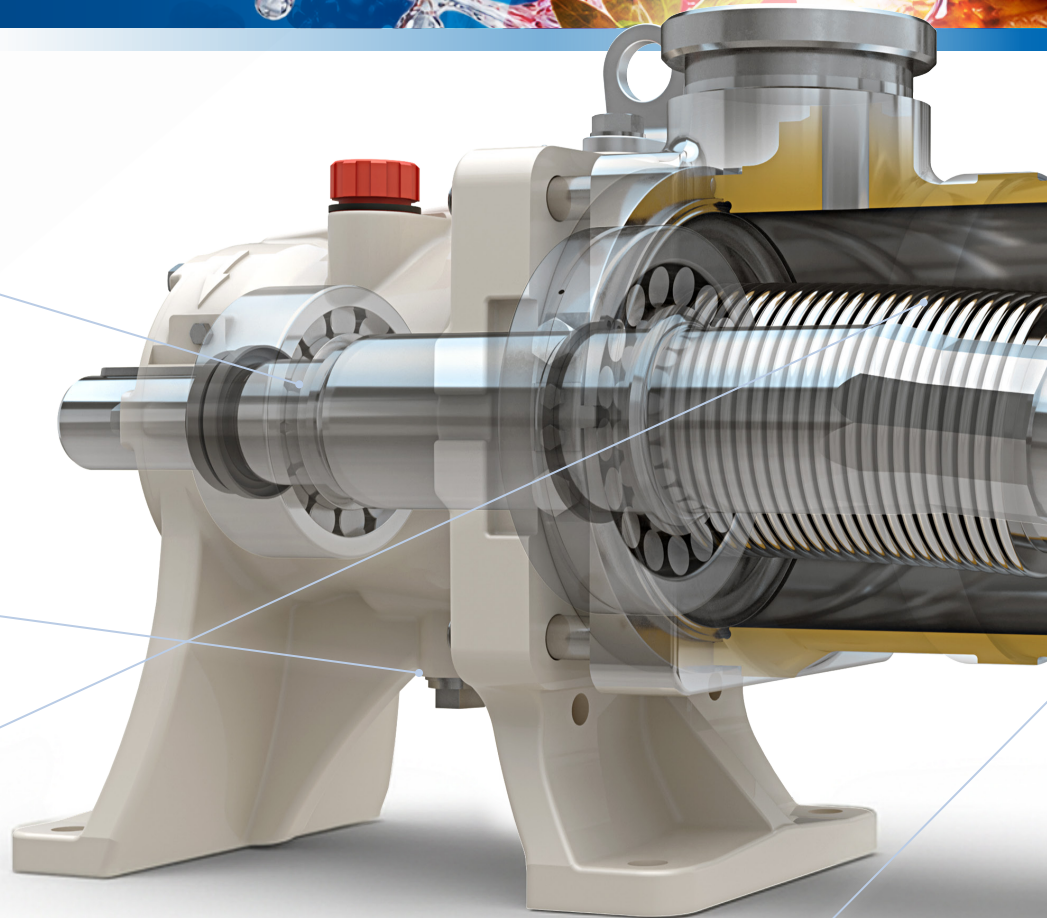
Lubrication by food grade oil

- Oil change every 24,000 hours at <80°C (<176°F)

### Bellows

Multi-layer bellows ensures total product containment without magnetic drive

- Optional bellows monitoring available

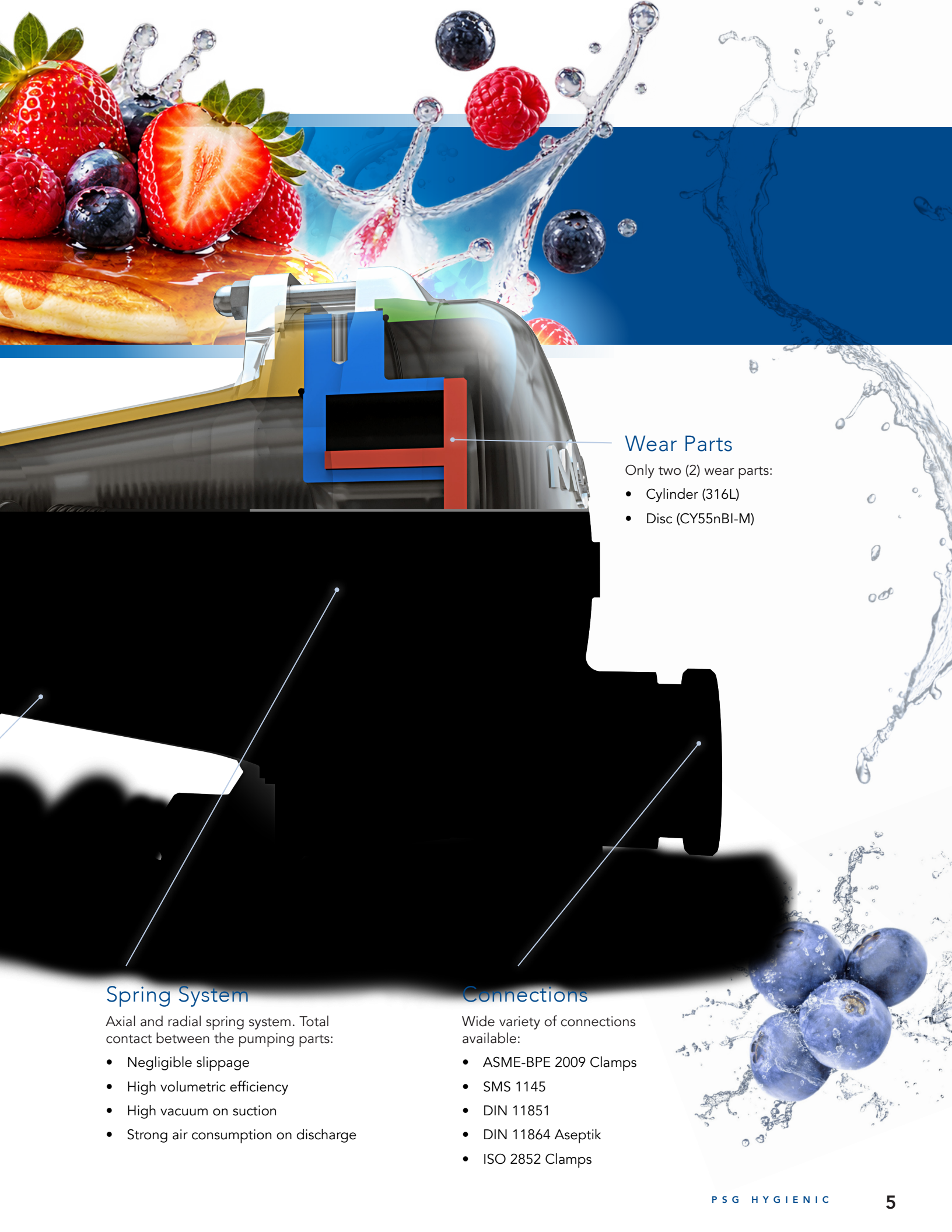


### Convenience & Cleanliness

Fully drainable and cleanable design. Pumped product in contact with only four (4) components:

- Casing
- Disc and cylinder set
- Bellows
- Few static O-rings

NO bushings, NO mechanical seal, NO magnets



## Wear Parts

Only two (2) wear parts:

- Cylinder (316L)
- Disc (CY55nBI-M)

## Spring System

Axial and radial spring system. Total contact between the pumping parts:

- Negligible slippage
- High volumetric efficiency
- High vacuum on suction
- Strong air consumption on discharge

## Connections

Wide variety of connections available:

- ASME-BPE 2009 Clamps
- SMS 1145
- DIN 11851
- DIN 11864 Aseptik
- ISO 2852 Clamps

## Mouvex H-FLO Series

MAXIMIZING PRODUCT RECOVERY

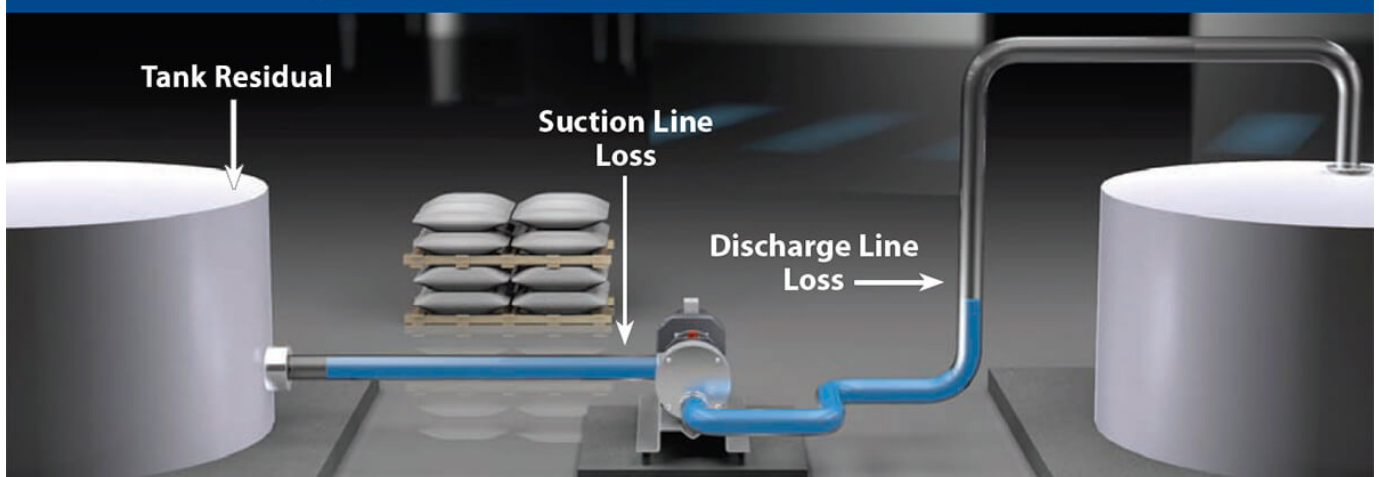


Within every industry, some expenses are considered unavoidable "costs of doing business." For manufacturers within hygienic industries such as food, beverage, personal care and pharmaceuticals, one such cost is the disposal of raw materials or finished products contained in piping at the end of production runs or product changeovers.

Manufacturers accept this cost as necessary because commonly used pump technologies, such as lobe, external circumferential piston (ECP), centrifugal, peristaltic hose and progressive cavity, are not capable of adequately clearing or stripping transfer lines for product recovery.

There is a better option available. With the right pumping technology, Mouvex H-FLO Series pumps can help manufacturers maximize product recovery, achieving rates of up to 90%.

### Typical Transfer or Fill Line Where Product Losses Occur





HOW OUR UNIQUE PUMPING  
TECHNOLOGY RECOVERS  
MORE PRODUCT

To optimize product recovery and, by extension, profit recovery, it's essential to implement efficient, reliable pumping technology that has the proven capability to strip suction or discharge lines of valuable raw materials and salable end-products.

For more than a century, manufacturers have trusted eccentric disc pump technology from Mouvex® to optimize product recovery thanks to its unique operating principle that provides non-pulsing, low-slip operation with high volumetric consistency. Mouvex pumps are also able to pump air, which creates a vacuum effect on the pump's suction side and a compressor effect on the discharge side. This produces a plug effect that pushes a complete, usable product "plug" out of the piping. This advanced pumping technology typically achieves product-recovery rates of 60%, with maximum rates as high as 90%.

PRODUCT  
RECOVERY  
UP TO **90%**  
RECOVERY OF  
HIGH-VALUE  
PRODUCT

Value: What Can Be  
Recovered and Used?

The chart illustrates a conservative example of how much money, in general, a food, beverage, pharmaceutical or cosmetic manufacturer can save by using H-FLO Series pumps to maximize product recovery. For a more accurate gauge of your cost savings, the amount of recovery can be multiplied by the number of changeovers per day, if more than one occurs per day.

| PRODUCT-RECOVERY COSTS SAVED PER ECCENTRIC DISC PUMP       |                                 |
|------------------------------------------------------------|---------------------------------|
| Product Discharge Distance                                 | 30.5 m (100 ft)                 |
| Product Per Meter (Foot) with 63.5 mm (2.5") Line Diameter | 0.87 L (0.23 gal)               |
| Specific Gravity                                           | 0.99 kg/L (8.3 lb/gal)          |
| Total Weight in Line                                       | 86.6 kg (191 lb)                |
| Product Recovered at 70% Recovery Rate                     | 60.8 kg (134 lb)                |
| Price Per kg (lb)                                          | 1,85€ / \$2.20 (0.84€ / \$1.00) |
| Total Cost Savings Per Day (1 Change/Day)                  | 113€ / \$134                    |
| Cost Savings Per Week (x5 days)                            | 565€ / \$670                    |
| Cost Savings Per Month (x4 weeks)                          | 2251€ / \$2,680                 |
| Cost Savings Per Year (x12 months)                         | 27.016€ / \$32,160              |

# Mouvex Easy Clean System (ECS) for H-FLO Series Pumps

Simplify & Improve Your Clean-In-Place  
Operations with ECS

Specifically designed to improve clean-in-place (CIP) operations, the optional Mouvex Easy Clean System (ECS) for H-FLO Series pumps makes cleaning easier than ever before by eliminating the need for an external CIP bypass while still allowing full CIP flow to pass through the pump for maximum efficiency.

Unlike other pumps that require an external CIP bypass, Mouvex H-FLO series pumps equipped with ECS feature a design that incorporates the bypass directly inside the pump. With this design, there is no need for an additional power source because the compressed air source and the solenoid valve used for ordinary CIP bypass can power the ECS. With the ECS, the CIP process also does not negatively impact the pump's efficiency since no extra clearance is needed to cope with CIP temperatures. Furthermore, the ECS balances the pressures inside and outside of the pump bellows, creating a stronger resistance to water hammer. The ECS system is simple and easy to install, eliminates the need for additional piping and can be operated without letting the pump cool down. Additionally, utilizing the ECS limits the pressure drop inside the pump. Pressure drop for each pump's size and CIP flow rate can be supplied upon request.

## Pump Cleaning Advantages:

- Full CIP flow crosses the pump for maximum efficiency
- No external CIP bypass required
- Less piping
- Easy cleaning
- Simple installation
- Strong resistance to water hammer
- Limited pressure drop during CIP
- Stands up to 6 bar (90 psi) at pump inlet during CIP
- No need to let the pump cool down between warm and cold phases

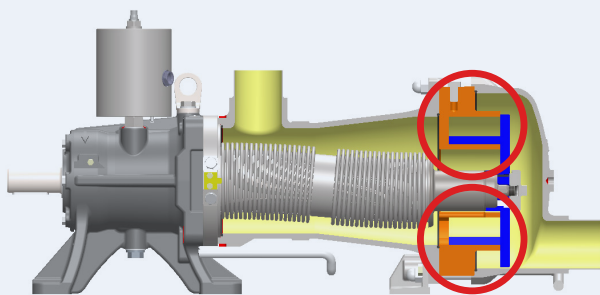


Mouvex H-FLO Series  
Eccentric Disc Pump

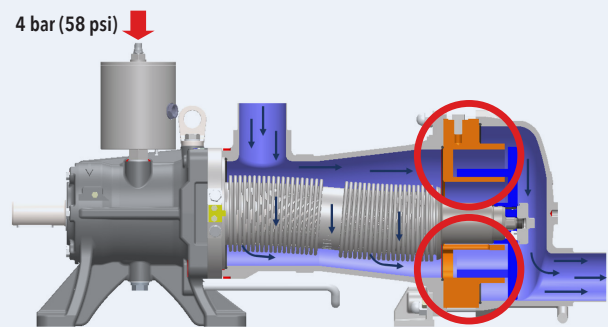


## How the Easy Clean System Works

All H-FLO Series pumps can be equipped with ECS upon request. Transmission includes a pressurization capacity designed to be supplied with 4 bar (58 psi) of compressed air. The air supply leads to the opening of the pump interior, allowing the full Clean-In-Place (CIP) flow rate to pass through the pump with limited pressure drop. This design eliminates the need for an external CIP bypass valve and linked piping.

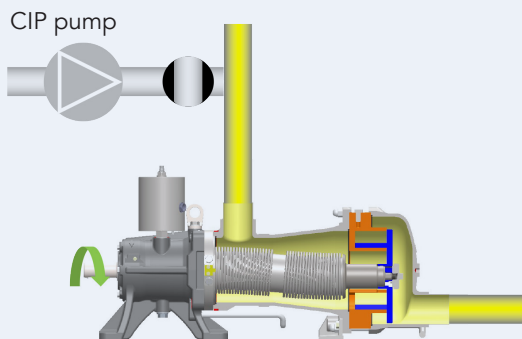


When transmission inside is at atmospheric pressure, disc is in contact with the cylinder.



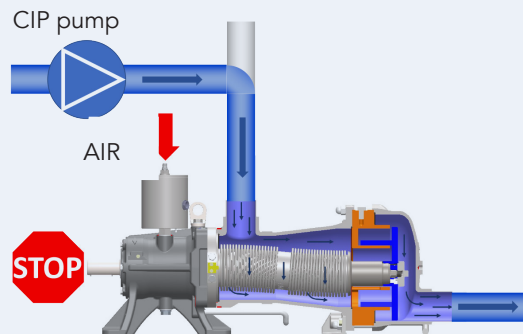
When compressed air is admitted inside the transmission, bellows stretches, pushing disc away from the cylinder.

## Process Operation (Product Pumping):



During process operation, transmission is not supplied with air. Disc remains against the cylinder to allow pumping action.

## Clean-In-Place or Water Flush:



During a CIP or a water flush, the pump is stopped and the transmission is supplied with compressed air. This enables the disc to move away from the cylinder, letting the full CIP flow rate to go through the pump with a limited pressure drop.

## Mouvex H-FLO Series



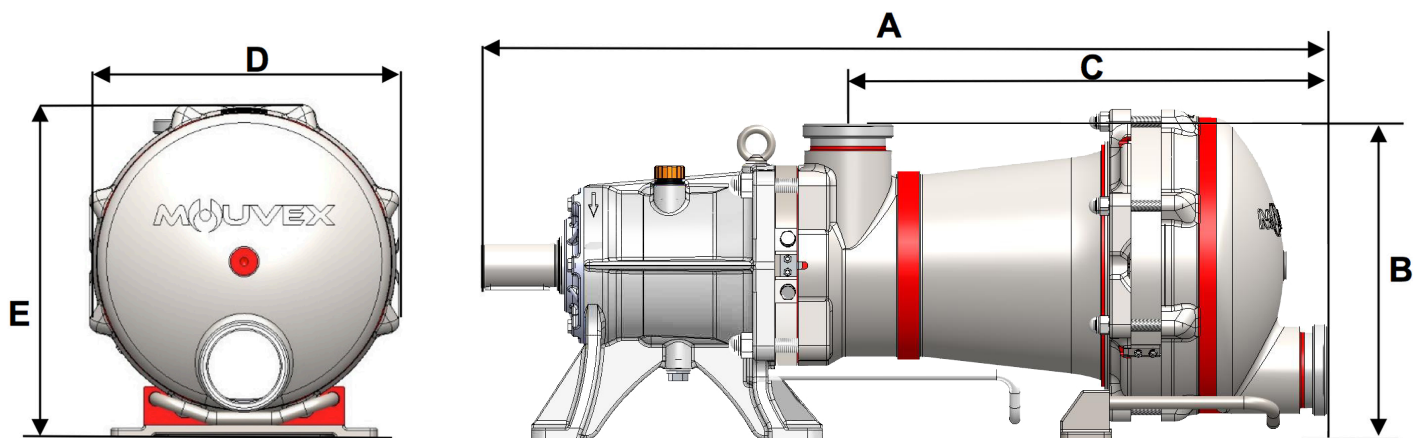
### Product Specifications

| PUMP MODEL  | MAXIMUM FLOW RATE |       | MAXIMUM SPEED | MAXIMUM OUTPUT PRESSURE |     | MAXIMUM TEMPERATURE |     |
|-------------|-------------------|-------|---------------|-------------------------|-----|---------------------|-----|
|             | M <sup>3</sup> /H | GPM   | RPM           | BAR                     | PSI | °C                  | °F  |
| H-FLO 65-S  | 70                | 308.2 | 350           | 7                       | 101 | 100                 | 212 |
| H-FLO 65-HP | 54                | 237.7 | 350           | 10                      | 145 | 100                 | 212 |
| H-FLO 50    | 55                | 242.2 | 400           | 10                      | 145 | 100                 | 212 |
| H-FLO 40    | 43                | 189.3 | 460           | 10                      | 145 | 100                 | 212 |
| H-FLO 25    | 27.5              | 121.1 | 525           | 10                      | 145 | 100                 | 212 |
| H-FLO 15    | 16.5              | 72.6  | 600           | 10                      | 145 | 100                 | 212 |
| H-FLO 11    | 12                | 52.8  | 600           | 10                      | 145 | 100                 | 212 |

# Mouvex H-FLO Series

## Product Dimensions

| PUMP MODEL  | DN MM (IN) | A MM (IN)      | B MM (IN)     | C MM (IN)     | D MM (IN)   | E MM (IN)     | WEIGHT<br>KG (LBS) |
|-------------|------------|----------------|---------------|---------------|-------------|---------------|--------------------|
| H-FLO 65-S  | 100 (3.94) | 1177 (46.34)   | 434 (17.03)   | 672.5 (26.48) | 448 (17.64) | 464 (18.27)   | 321 (708)          |
| H-FLO 65-HP | 100 (3.94) | 1177 (46.34)   | 434 (17.03)   | 672.5 (26.48) | 448 (17.64) | 464 (18.27)   | 315 (695)          |
| H-FLO 50    | 100 (3.94) | 1066.5 (41.99) | 400 (15.75)   | 623 (24.53)   | 410 (16.14) | 425 (16.73)   | 225 (497)          |
| H-FLO 40    | 76 (3)     | 1023 (40.28)   | 386.5 (15.22) | 591 (23.67)   | 354 (13.94) | 372 (14.65)   | 175 (386)          |
| H-FLO 25    | 76 (3)     | 872 (34.33)    | 346 (13.59)   | 518.5 (20.41) | 304 (11.97) | 327 (12.87)   | 122 (269)          |
| H-FLO 15    | 63 (2.48)  | 793 (31.22)    | 311 (12.24)   | 457 (17.99)   | 263 (10.35) | 286.5 (11.28) | 82 (181)           |
| H-FLO 11    | 63 (2.48)  | 793 (31.22)    | 311 (12.24)   | 457 (17.99)   | 263 (10.35) | 286.5 (11.28) | 82 (181)           |



(With SMS Connections)





Hygienic

PSG Hygienic  
Feldmühlenweg 6-10  
D-49593 Bersenbrück  
Germany  
+49 5439 809210  
[psgdover.com/hygienic](https://psgdover.com/hygienic)



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