YOUR CHALLENGE:
You need a system to pump out sump tanks and to reinject the drained fluid back to the pipeline. You need the system to handle particulates with a simple design that requires minimal routine maintenance. CIRCOR offers an engineered system solution for pipeline drainage reinjection.

SOLUTION:
The system is designed for pumping crude oil from a pipeline collection tank or sump approximately once a week; and in some instances once a month.

With its PVD hardened internal surfaces, unlike standard PD pump technologies, the Emtec-A® design allows for extended operation in services with particulates.

RESULTS:
Moving to an engineered systems solution for pipeline drainage re-injection means leaving the design and engineering to experts. From CIRCOR you get a system with a simple design capable of handling particulates. You also receive a system that requires minimal routine maintenance resulting in maximized cost reduction. You ultimately get a customized solution for your critical fluidhandling need.

Available Models:

<table>
<thead>
<tr>
<th>Available Models</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity range @ 0 psi differential pressure</td>
<td>25, 40, 65, 85 and 110 BPH</td>
</tr>
<tr>
<td>Suction pressure</td>
<td>up to 145 psig</td>
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<tr>
<td>Discharge pressure</td>
<td>up to 1450 psig</td>
</tr>
<tr>
<td>Fluid viscosity</td>
<td>down to 1 cSt</td>
</tr>
<tr>
<td>Fluid temperature</td>
<td>up to 175° F</td>
</tr>
</tbody>
</table>

- Vertical motor/pump set for cartridge type installation
- Direct coupled to constant-torque, synchronous speed motor (VFD option available)
- Typical pump rotating speed with either a 4-pole or 6-pole motor speeds
- Tank top mounted with sealing provision
PERFORMANCE CAPABILITIES FOR EMTEC-A® THREE-SCREW ROTARY PD PUMP:

ADVANTAGES

Complete package for pumping out the sump tank and reinjecting the fluid into the pipeline
- Simpler overall design
- More reliable
- Eliminates leak points to the environment

Smooth, non-pulsating pump flow
- Minimizes foundation requirements
- Eliminates source of damaging vibration

Simple pump design with 3 rotating parts, 1 bearing and 1 mechanical seal
- Few parts to stock and maintain
- Manufactured with highly abrasive resistant materials and components
- Translate into a long MTBR

Minimal routine maintenance
- Pre-greased for pump bearing life
- Dry type motor/pump shaft coupling
- Greasing only required on motor

Optimal shaft design
- Reduced loading on screw
- Greater volumetric efficiency
- Reduced internal velocities control internal wear

Few parts, simplified design
- Easier assembly
- Easier maintenance
- Increased reliability

PHYSICAL VAPOR DEPOSITION (PVD) PROCESS:
The special material combination used on Emtec® brings together the highest possible hardness with optimal elasticity and resistance to fracture.

Base material:
Special steel
Hardened zone 62 HRC
PVD hard coating 1200 HV
Ceramic like edge layer 1200 HV
Special hardened casting 62 HRC

AVAILABLE SCOPE OF SUPPLY:
- 1000 gallon (~24 barrel) vertical, foot mounted tank with removable cover for clean out provision – carbon or stainless steel
- Re-injection pump package with integral suction drop pipe (gusset braced) and surface mounted discharge connection
- Suction drop pipe equipped with suction strainer and suction check valve to maintain prime of pump during idle periods
- Starter/breaker panel
- VFD controller
- Level switch controls
- Discharge pressure transmitter
- Pressure-limiting valve (external type)

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