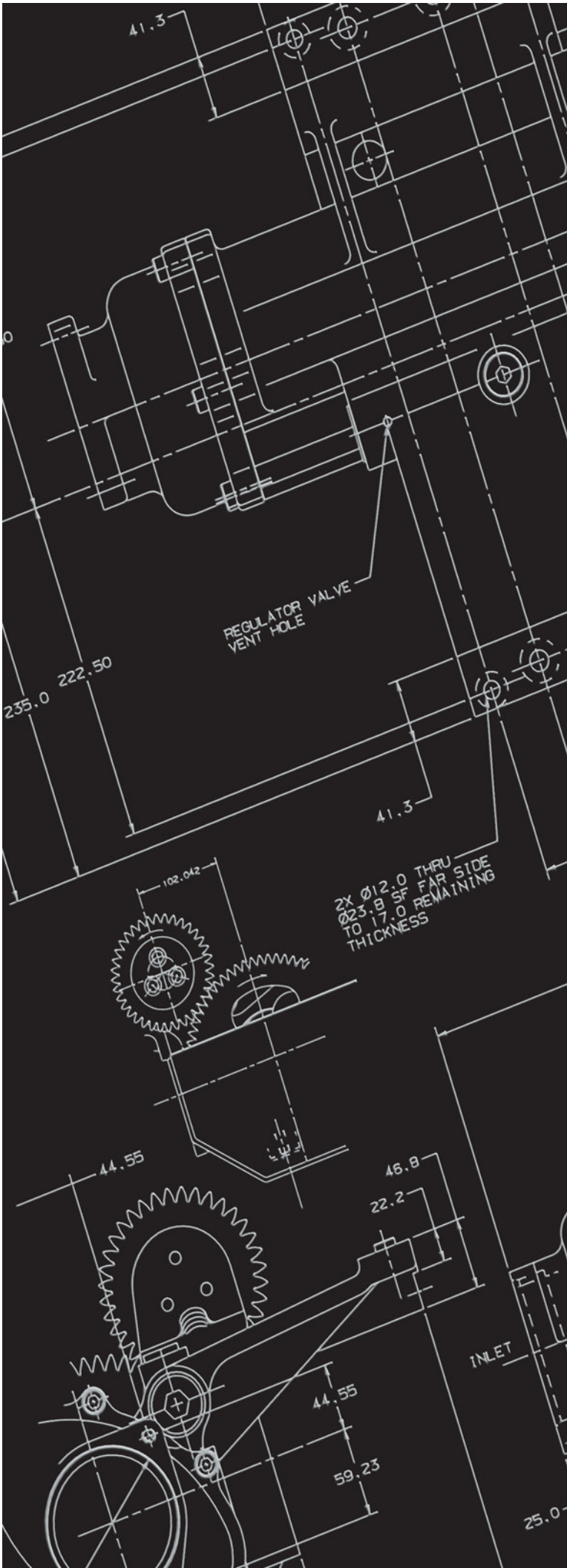


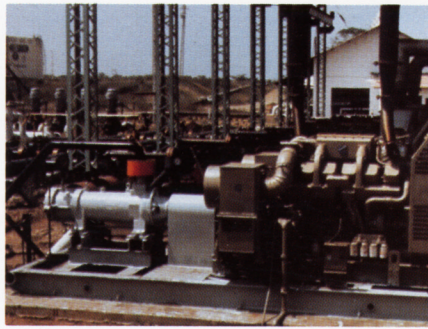


Crude Oil Transport Pumps

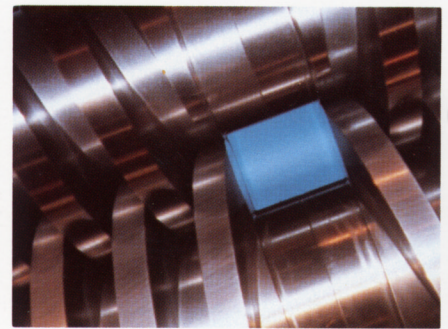
The reliable pump people



The Reliable Pump People



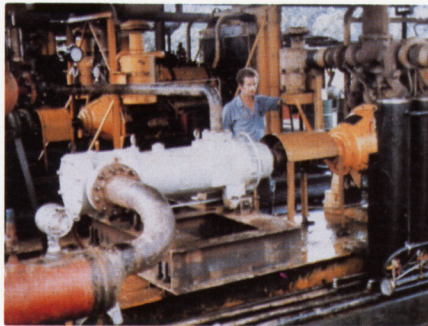
8L-462 - Columbia



2 - Screw Rotor Set



GTS 208-50 Platform - Venezuela



Diesel Driven 8L-462 - Peru



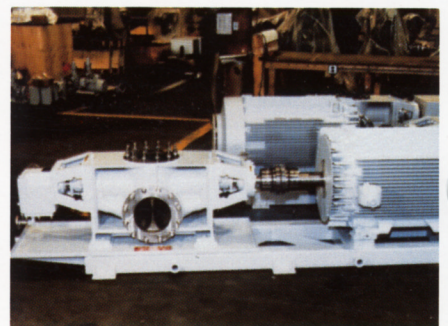
6D - 312 Oil Pipeline - Indonesia



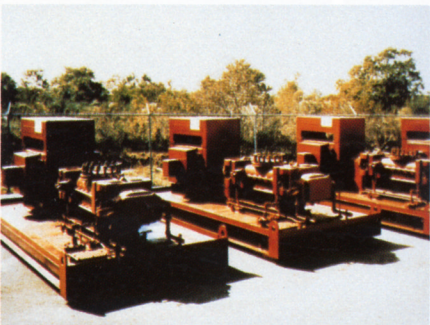
FS XA Platform - USA



8L-630 Pipeline - Canada



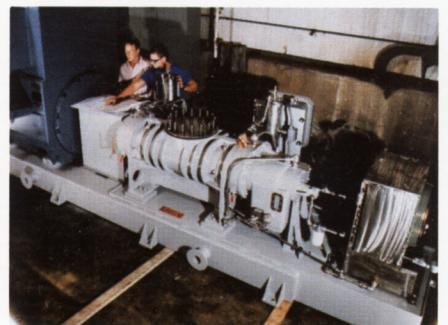
Warren J50 - China



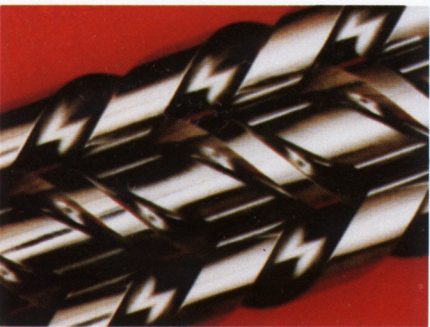
Warren J70 - Venezuela



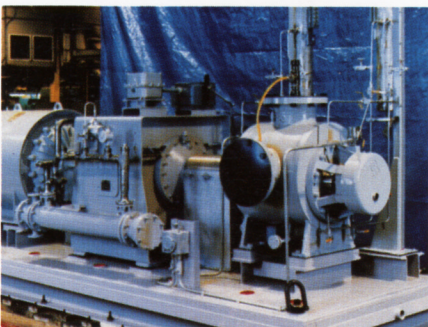
8L-640 Pumping Station - Indonesia



FSXA Orimulsion Station - Venezuela



3 - Screw Rotor Set

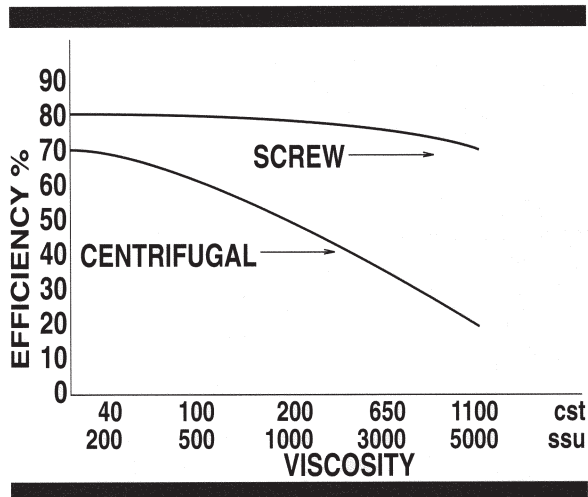


GTS 268-050 Gathering Pump - USA



High Efficiency

Imo Industries screw pumps are up to twice as efficient as centrifugal machinery pumping crude oils above 100 cst (500 SSU). The higher first cost of a screw pump is quickly recovered in energy savings. In remote locations, investment in power generation capacity can be reduced using these high efficiency, axial flow Imo screw pumps for crude oil transport.

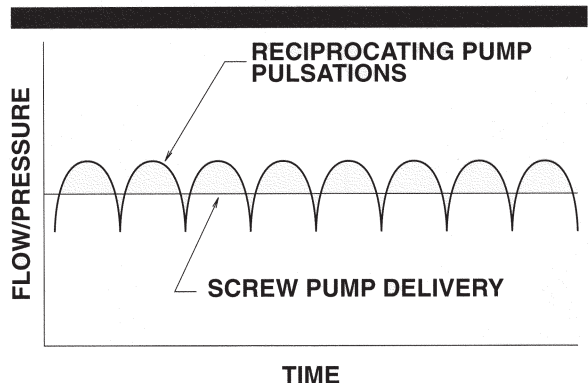


Cost Effective

The installed cost of Imo Industries screw pumps with drivers and auxiliaries is comparable to many centrifugal and most reciprocating pumps of established reputation. Standard direct drive speeds eliminate the need for speed reduction equipment.

Non-Pulsating

Constant discharge area and no reciprocating plungers or valves results in uniform, smooth delivery of flow without equipment damaging pressure and flow pulsations common to reciprocating machinery.



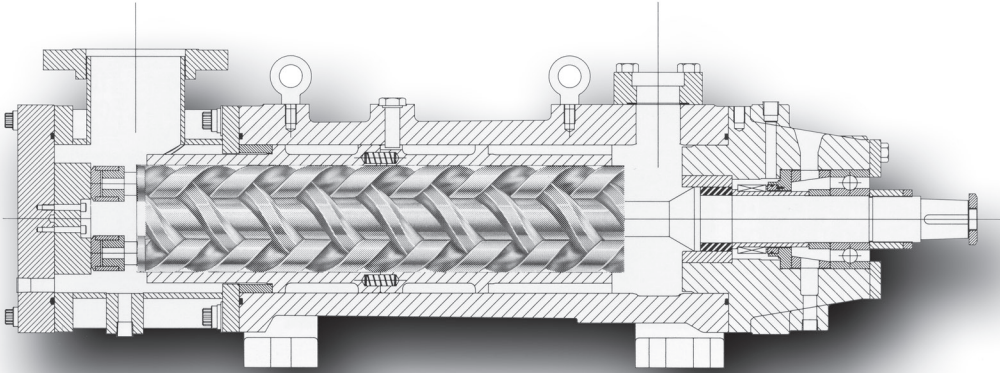
Repairable

Routine maintenance and repair of Imo Industries screw pumps is straightforward and does not require special tools, gaging equipment or intricate adjustments. Units can be restored to "as new" condition using available repair kits. With service experience, pumps can frequently be restored to original flow rate by replacement of rotors only.

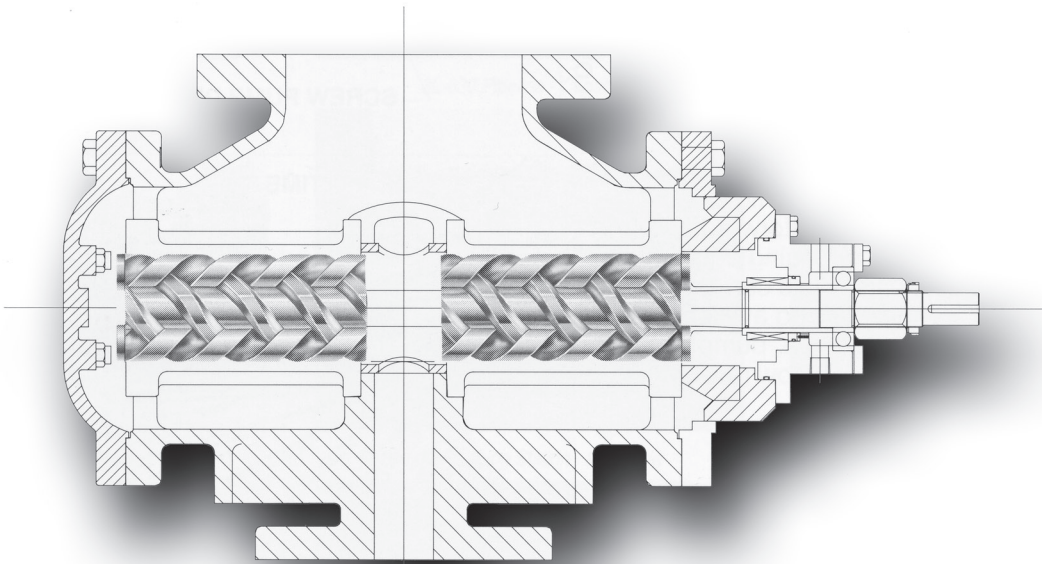
Experience

Imo Industries screw pumps have been transporting crude oils worldwide for more than 40 years. From the frozen northern reaches of North America to equatorial Latin America and the Pacific Rim, Imo Industries screw machines reliably move crude oil in field gathering and pipeline services as well as tank farms plus ship and barge loading facilities.





SINGLE END

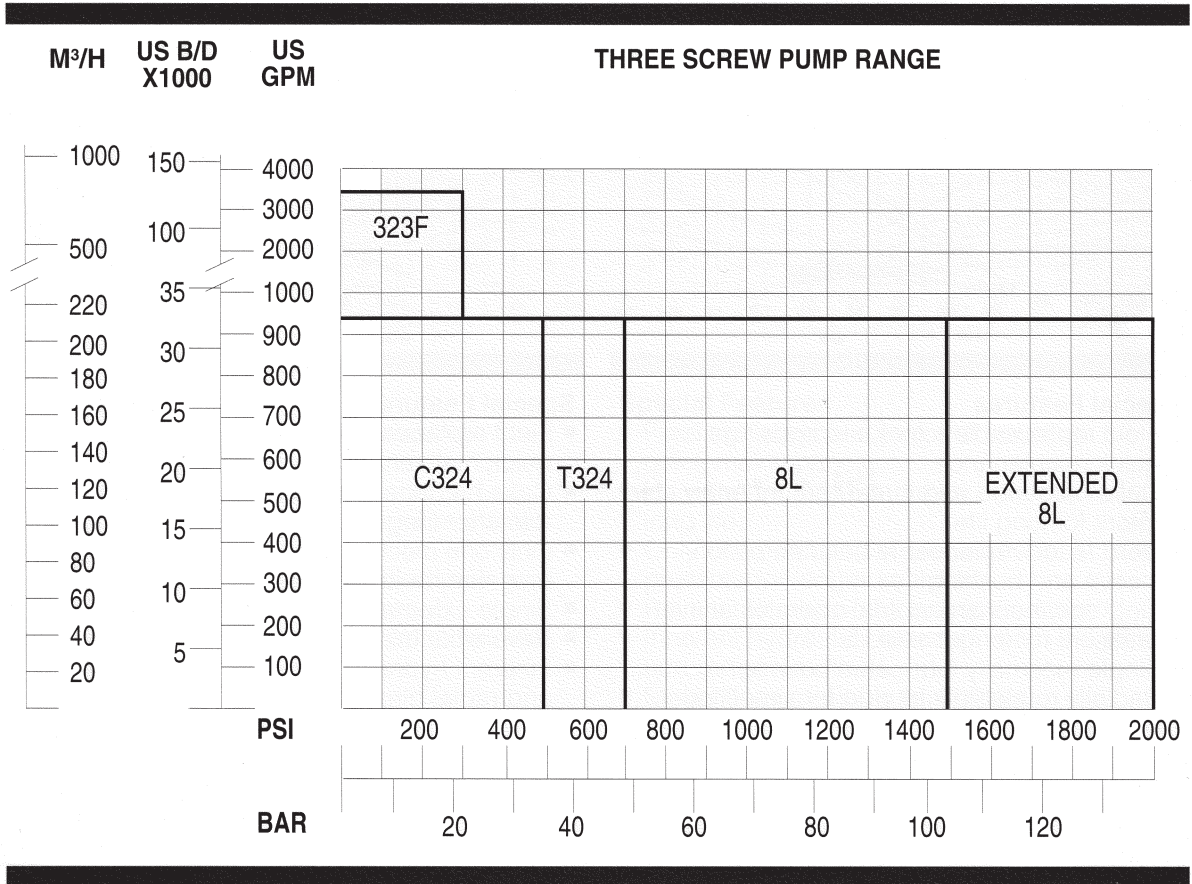


DOUBLE END

Design And Operation

Shaft rotation causes constant volume successive pockets of liquid to move in an axial direction from inlet to outlet. Each "wrap" of the screw set provides a stage of pressure capability. Single end pumps are used for small to medium flow rates at low to very high pressure. Double end pumps are used for medium to large flow rates at low to medium pressure.

Range of Available Sizes



Common Features

- Hardened and ground alloy steel rotors for abrasion resistance and long life.
- Field replaceable rotor housings for ease of maintenance.
- Only one mechanical shaft seal for reduced maintenance.
- Hydraulic balance in both the axial and radial directions minimizes bearing loads and prolongs life.

Recommended Use

- For minimum fluid shear.
- For free water not exceeding 10% (mixed).
- For sand concentrations to 2% by volume.
- For minimal gas content.

SERIES 8L

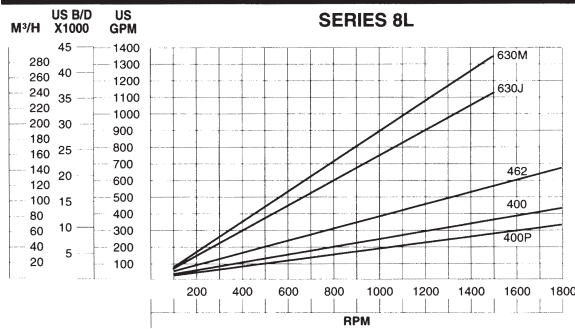
Application

For gathering, shipping, pipeline and other high pressure transport services.

Pressure Ratings

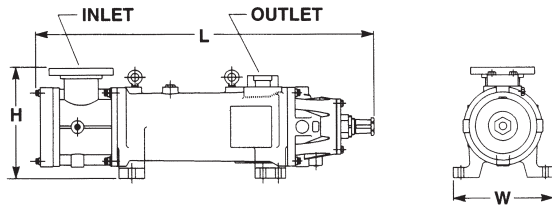
| | |
|--------------|-------------------------|
| Construction | Maximum outlet |
| Bronze | 1000 psi <i>70 Bar</i> |
| Bimetal | 1500 psi <i>100 Bar</i> |
| Extended | 2000 psi <i>140 Bar</i> |

Flow Performance



Special Features

- Field replaceable rotors and housings for quick maintenance.
- Case hardened and thread ground alloy steel rotors for long life.
- Hard faced replaceable balance piston sleeve and bushing.
- Only one mechanical seal operates at inlet pressure for longer seal life.
- Single externally lubricated bearing.
- Radially rotatable inlet port for simplified piping.



| | | | | | |
|------------|------|------|------|------|------|
| Rotor Size | 400 | 400P | 462 | 630J | 630M |
| Inlet | 300# | 6" | 8" | 10" | 10" |
| Outlet | | 3"* | 4** | 8** | 8** |
| L-in | mm | 65 | 1650 | 72 | 1830 |
| W-in | mm | 20 | 510 | 25 | 630 |
| H-in | mm | 22 | 560 | 25 | 635 |
| Lbs | kg | 1665 | 755 | 2480 | 1125 |
| | | | | 6350 | 2880 |

* Four bolt socket weld

** 1500#

SERIES T324

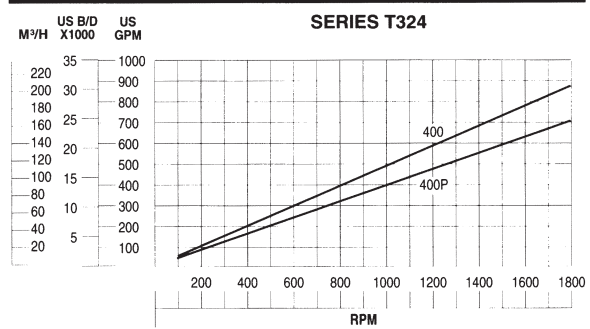
Application

For gathering, shipping, pipeline and other medium pressure, medium flow transport services.

Pressure Ratings

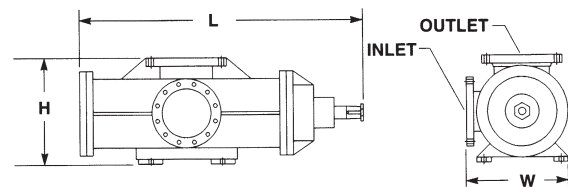
Maximum outlet - 700 psi *50 Bar*

Flow Performance



Special Features

- Field replaceable rotors and housings for quick maintenance.
- Case hardened and thread ground alloy steel rotors for long life.
- Only one mechanical seal operates at inlet pressure for longer seal life.
- Single externally lubricated bearing.
- Reversible inlet port for simplified piping.
- Inherent hydraulic balance in both the axial and radial directions.



| | | |
|------------|------|------|
| Rotor Size | 400 | 400P |
| Inlet | 150# | 8" |
| Outlet | 400# | 6" |
| L-in | mm | 60 |
| W-in | mm | 23 |
| H-in | mm | 20 |
| Lbs | kg | 2100 |
| | | 950 |

SERIES 323F

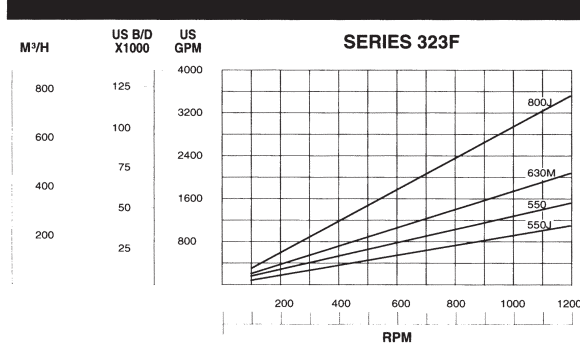
Application

For barge and tanker loading, unloading, tank farm and other low pressure transport services.

Pressure Ratings

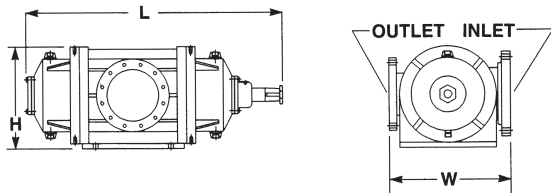
Maximum outlet - 300 psi 20 Bar

Flow Performance



Special Features

- Field replaceable rotors and housings for quick maintenance.
- Alloy steel rotors for long life.
- Only one mechanical seal operates at inlet pressure for longer seal life.
- Reversible inlet port for simplified piping.
- Steel cases available in all sizes.
- Inherent hydraulic balance in both the axial and radial directions.



| | 550J | 630M | 800J |
|-------------|----------|----------|-----------|
| Rotor Size | 550 | 630M | 800J |
| Inlet 300# | 10" | 12" | 12" |
| Outlet 300# | 8" | 10" | 10" |
| L-in mm | 61 1345 | 64 1625 | 75 1905 |
| W-in mm | 25 635 | 31 790 | 31 790 |
| H-in mm | 20 510 | 23 585 | 28 710 |
| Lbs kg | 1550 705 | 1950 885 | 2550 1155 |

SERIES C324

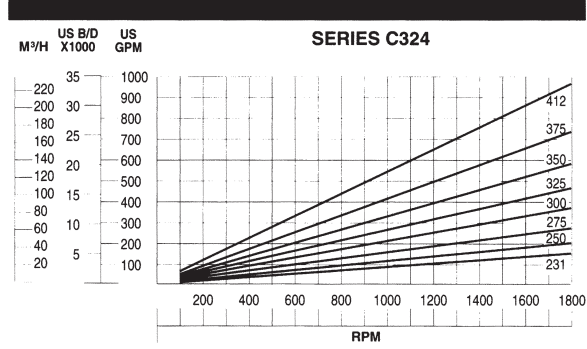
Application

For gathering, shipping, loading, tank farm and other low to medium pressure transport services.

Pressure Ratings

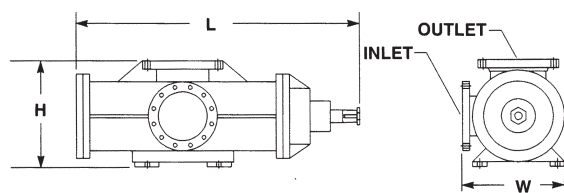
Maximum outlet - 500 psi 35 Bar

Flow Performance

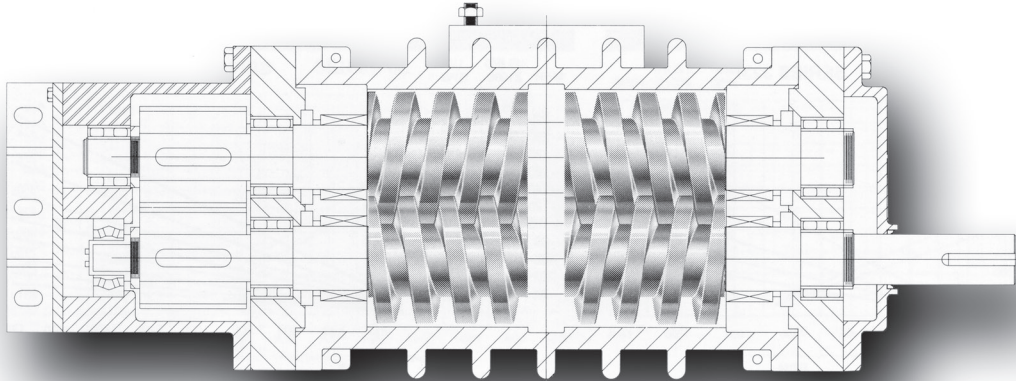


Special Features

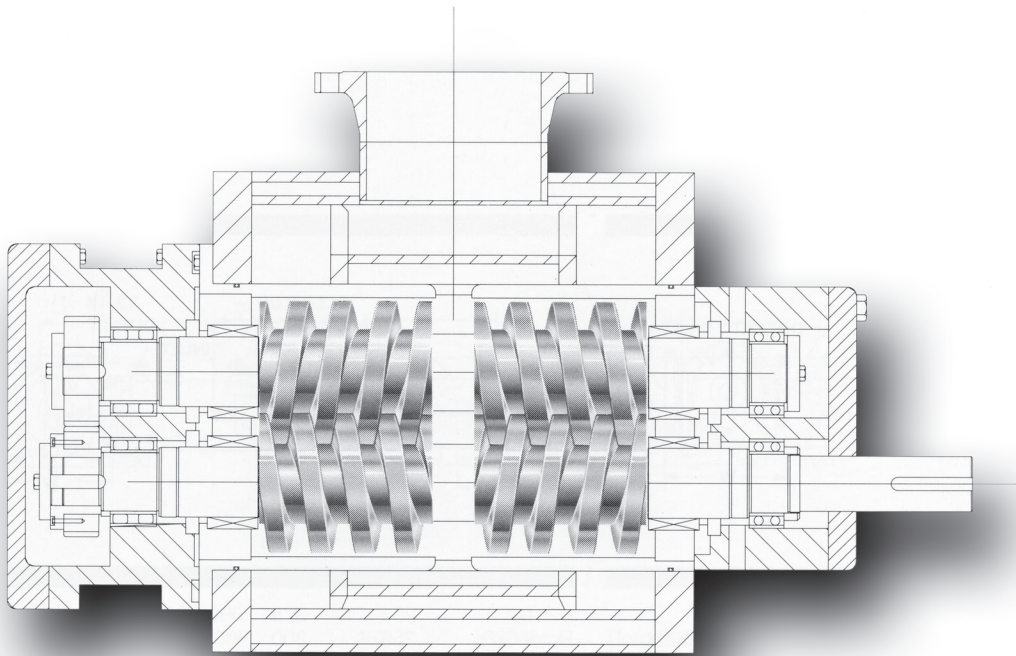
- Field replaceable rotors and housings for quick maintenance.
- Hardened and ground alloy steel rotors for long life.
- Only one mechanical seal operates at inlet pressure for longer seal life.
- Reversible inlet port for simplified piping.
- Inherent hydraulic balance in both the axial and radial directions.
- Steel cases available in all sizes.



| | 231 | 275 | 325 | 375 |
|-------------|---------|---------|----------|----------|
| Rotor Size | 231 | 275 | 325 | 375 |
| Inlet 300# | 4" | 5" | 5" | 6" |
| Outlet 300# | 3" | 4" | 4" | 5" |
| L-in mm | 38 965 | 51 1295 | 55 1400 | 62 1575 |
| W-in mm | 15 380 | 18 460 | 21 535 | 21 535 |
| H-in mm | 13 330 | 13 330 | 17 430 | 18 460 |
| Lbs kg | 480 220 | 850 385 | 1100 500 | 1450 660 |



INTEGRAL CAST CASE

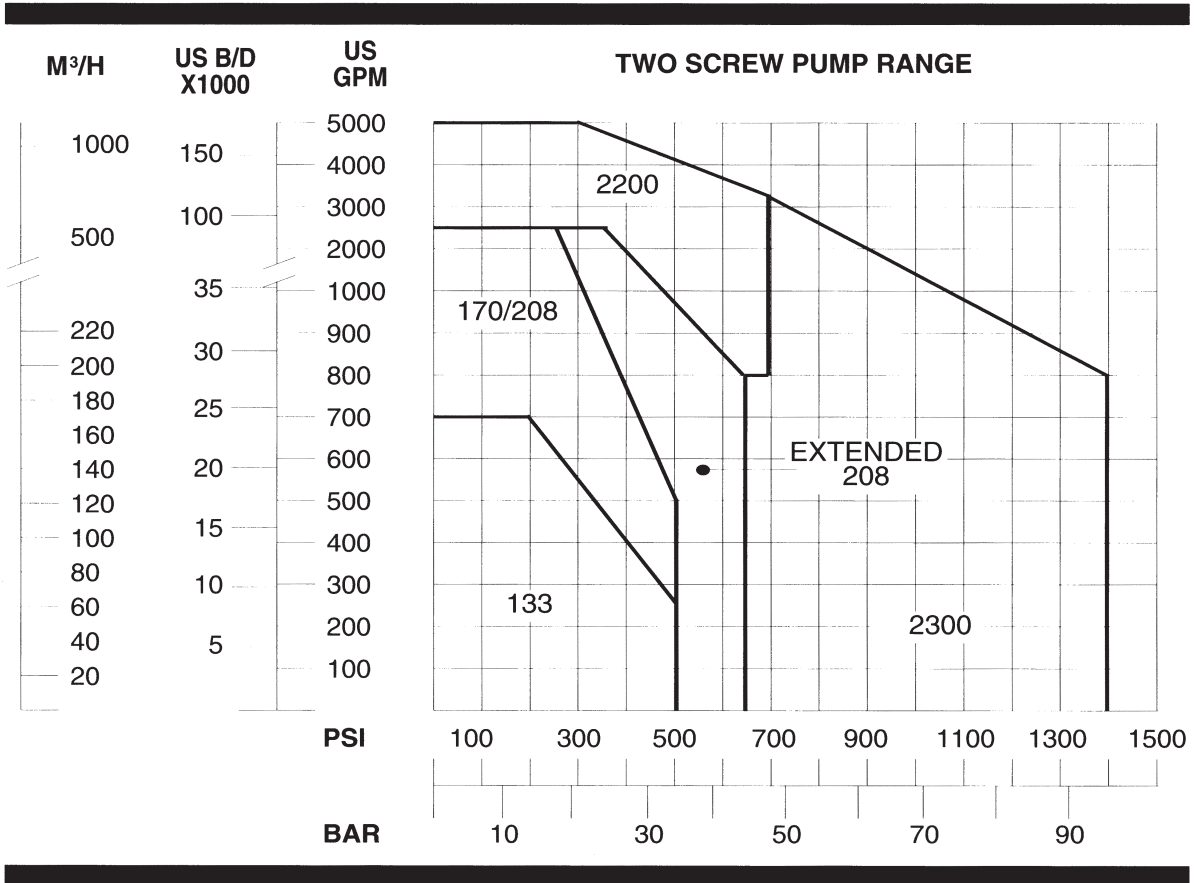


REPLACEABLE HOUSING

Design And Operation

Shaft rotation causes constant volume successive pockets of liquid to move in an axial direction from inlet to outlet. Each "wrap" of the screw set provides a stage of pressure capability. Opposed flow paths provide complete axial hydraulic balance. Timing gears maintain clearance between the pumping screws such that the screws do not touch each other and are thus able to pump water and light ends as well as heavy crude oil and are highly tolerant of gas in the oil.

Range of Available Sizes



Common Features

- Low fluid entry velocities allow operation at low inlet pressures.
- External, oil lubricated, heat treated steel timing gears for long life. Cannot be damaged by sand, water, sediment, etc.
- Externally lubricated bearings support the non-contacting screw set and are also protected from wear and damage due to sand, water and sediment.
- High efficiency profiles for the screw flanks result in better performance.

Recommended Use

- For minimum fluid shear.
- For pumping crude oil containing significant gas.
- For sand concentrations to 5%.
- For high percentages of water, up to 100%.
- High flow rates with low available inlet pressure.
- For short duration dry running.

SERIES 133

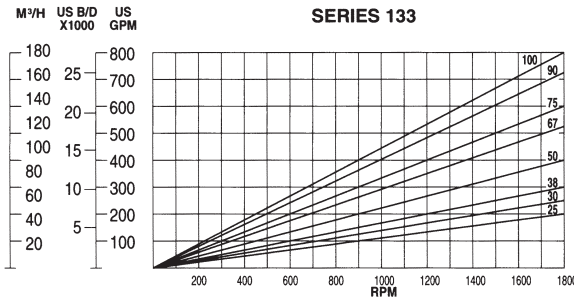
Application

For gathering, shipping, pipeline and other medium pressure/flow transport services.

Pressure Ratings

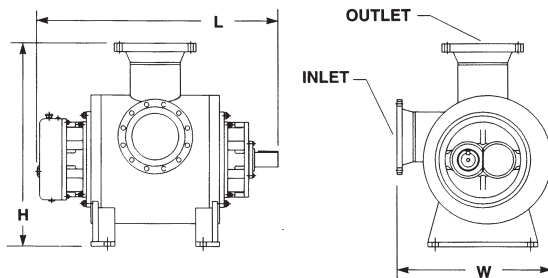
Casing Size 133 Maximum outlet 500 psi 35 Bar

Flow Performance



Special Features

- Integral body/housing or separate, field replaceable housing within a fabricated steel case.
- Back pull out cartridge design available for the ultimate in quick field overhaul.
- Rigid, integral, one piece screw and shaft in the extended construction resists deflection under high pressure.
- Separate screw/shaft standard construction for lower cost.
- Hard surfaced screw outside diameters optional for extended durability.
- All externally lubricated bearings and hardened helical timing gears for long life, low noise.
- Back pull out rotors remove for inspection without disturbing piping or driver.



| | |
|-------------|---------|
| Case Size | 133 |
| Inlet 150# | 6" |
| Outlet 300# | 6" |
| L-in mm | 35 890 |
| W-in mm | 27 685 |
| H-in mm | 36 915 |
| Lbs kg | 913 414 |

SERIES 170/208

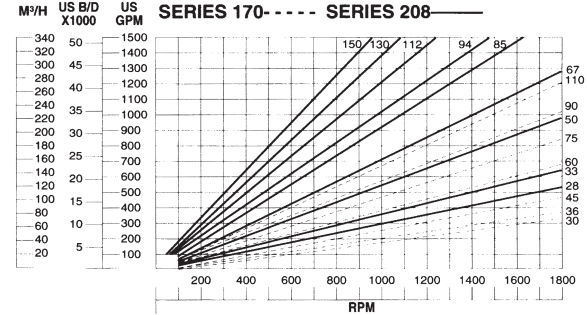
Application

For gathering, shipping, pipeline and other medium pressure/flow transport services.

Pressure Ratings

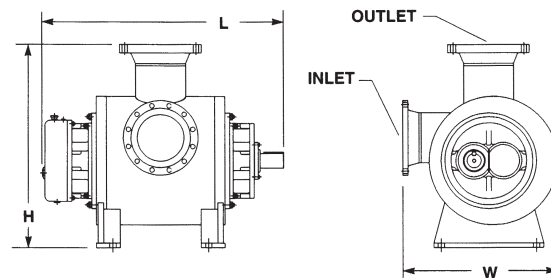
Construction Standard 170 Maximum outlet 600 psi 40 Bar
Standard 208 500 psi 35 Bar
Extended 208 650 psi 45 Bar

Flow Performance



Special Features

- Integral body/housing or separate, field replaceable housing within a fabricated steel case.
- Back pull out cartridge design available for the ultimate in quick field overhaul.
- Rigid, integral, one piece screw and shaft in the extended construction resists deflection under high pressure.
- Separate screw/shaft standard construction for lower cost.
- Hard surfaced screw outside diameters optional for extended durability.
- All externally lubricated bearings and hardened helical timing gears for long life, low noise.
- Back pull out rotors remove for inspection without disturbing piping or driver.



| | | |
|-------------|----------|----------|
| Case Size | 170 | 208 |
| Inlet 150# | 8" | 10" |
| Outlet 300# | 8" | 10" |
| L-in mm | 50 1270 | 52 1320 |
| W-in mm | 30 760 | 34 865 |
| H-in mm | 42 1065 | 44 1120 |
| Lbs kg | 1300 590 | 2134 968 |

SERIES 2200

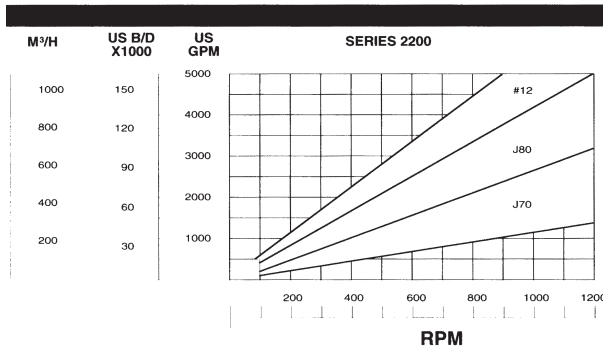
Application

For gathering, shipping, pipeline and other medium pressure/flow transport services.

Pressure Ratings

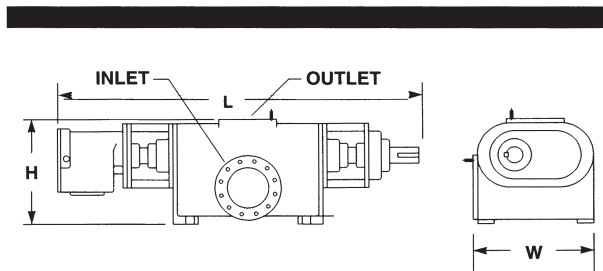
Maximum outlet - 700 psi 50 Bar

Flow Performance



Special Features

- Rugged integral body available in cast iron, steel or stainless steel.
- Integral or separate screws.
- Hard surfaced screw outside diameters and body bores optional for extended durability.
- All externally lubricated heat treated herringbone timing gears and bearings for long life, low noise.
- Custom cut screw leads to exactly match customer specified flow.
- Back pull out rotors remove for inspection without disturbing piping or driver.



| Case Size | J70 | J80 | 12 |
|-------------|-----------|-----------|-----------|
| Inlet 150# | 12" | 16" | 14" |
| Outlet 300# | 10" | 12" | 600# 12" |
| L-in mm | 90 2285 | 106 2695 | 95 2415 |
| W-in mm | 21 535 | 26 660 | 31 790 |
| H-in mm | 21 535 | 25 635 | 34 865 |
| Lbs kg | 3600 1633 | 8700 3945 | 9000 4085 |

SERIES 2300

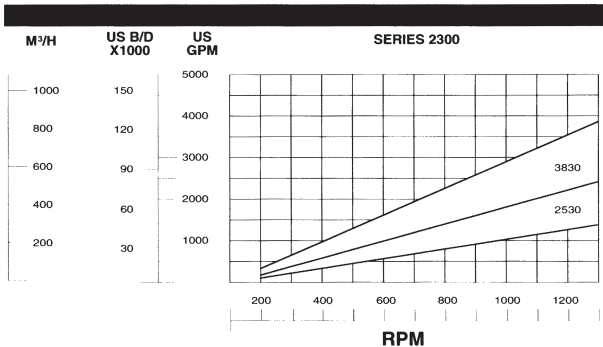
Application

For gathering, shipping, pipeline and other medium to high pressure/flow transport services..

Pressure Ratings

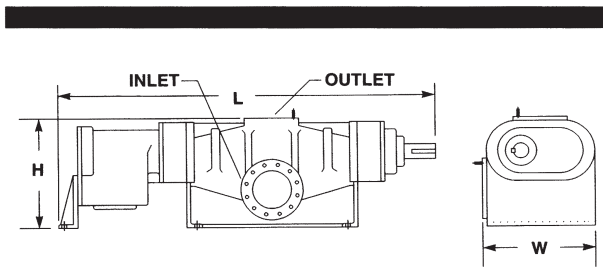
Maximum outlet - 1400 psi 95 Bar

Flow Performance



Special Features

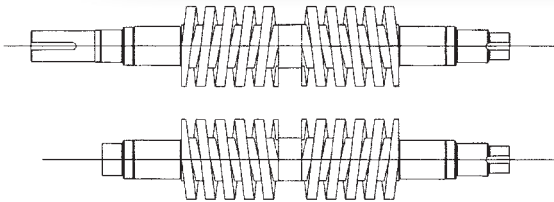
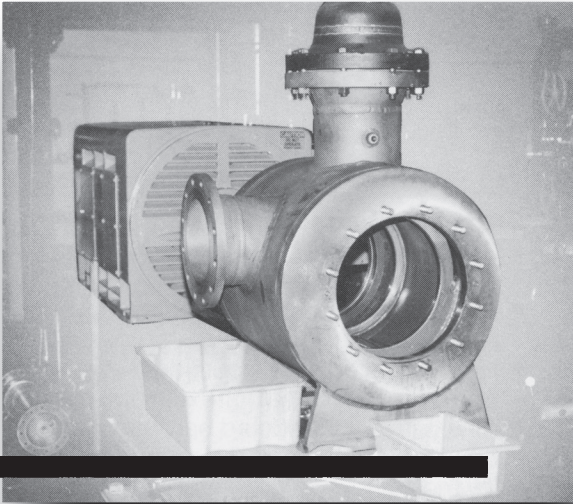
- Rugged integral body available in cast ductile iron or steel.
- Rigid, integral, one piece screw and shaft resists deflection under high pressure.
- Hard surfaced screw outside diameters and body bores optional for extended durability.
- All externally lubricated hardened herringbone timing gears and bearings for long life, low noise.
- Back pull out rotors remove for inspection without disturbing piping or driver.
- Custom cut screw leads to exactly match customer specified flow.



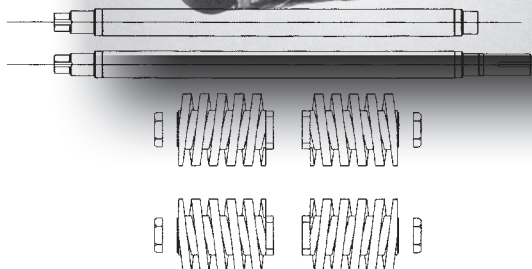
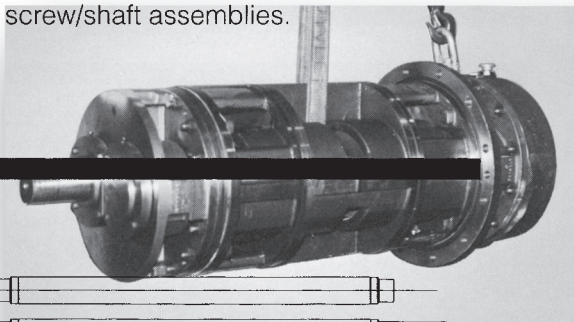
| Case Size | 2530 | 3830 |
|-------------|-----------|-----------|
| Inlet 300# | 10" | 12" |
| Outlet 600# | 8" | 10" |
| L-in mm | 78 1989 | 88 2235 |
| W-in mm | 25 635 | 25 635 |
| H-in mm | 22 560 | 22 560 |
| Lbs kg | 3775 1712 | 5000 2267 |

**Back Pull Out Cartridge Design
Two Screw Pump**

Available in series 133, 170 and 208, the cartridge design provides the fastest possible field overhaul of pumps while eliminating disturbing piping, driver or alignment. The cartridge itself can be overhauled back in the maintenance shop at the user's convenience. New factory tested cartridges are also available as spares to support your oil production needs.



Integral screw/shaft assemblies.

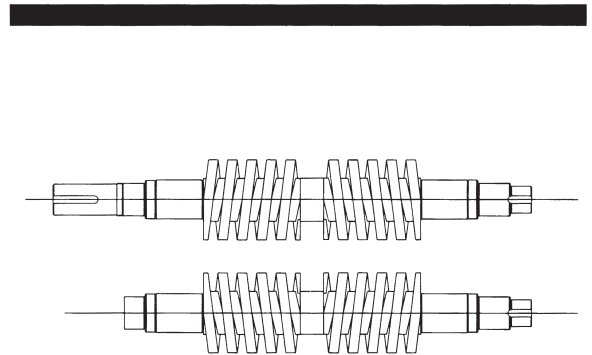


Separate screw/shaft pieces before assembly.

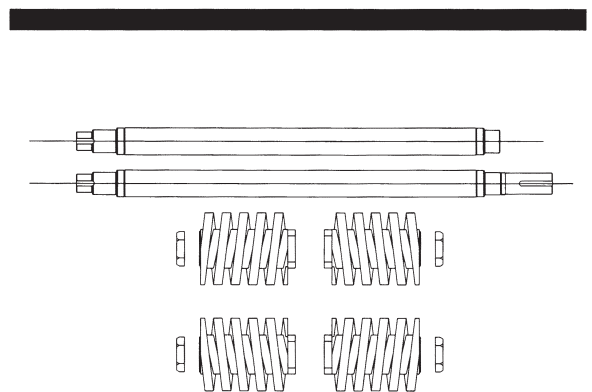
Separate Or Integral Screw/Shaft Assemblies

Screw/shaft assemblies can be manufactured either from a single-piece of material (integral) or as screw "shells" mounted to separately manufactured shafts. The integral one piece design is stiffer and better resists deflection caused by operating pressure. It is essential for two screw pumps operating at higher pressure levels.

The separated design allows more flexibility in material selections and can result in a lower cost pump especially when relatively expensive materials are needed.



Integral screw/shaft assemblies.



Separate screw/shaft pieces before assembly.

MATERIALS OF CONSTRUCTION TWO SCREW PUMPS

| COMPONENT | STANDARD MATERIAL | OPTIONAL MATERIALS |
|---|--|---|
| CASING * | CAST DUCTILE IRON OR STEEL, WELDED STEEL OR STAINLESS STEEL | NEARLY ANY MACHINABLE ALLOY |
| SHAFTS | ALLOY STEEL | VARIOUS STAINLESS STEELS |
| SCREWS - INTEGRAL SEPARATE | SAME AS SHAFTS DUCTILE IRON | NEARLY ANY MACHINABLE ALLOY |
| ROTOR HOUSING - INTEGRAL SEPARATE | SAME AS CASING IRON | DUCTILE NIRESSIST |
| SHAFT SEALS * | SINGLE MECHANICAL-TO SUIT | DOUBLE MECHANICAL, SOFT PACKING |
| BEARINGS | ANTIFRICTION BALL AND ROLLER | ~ |
| BORE COATING | ~ | INDUSTRIAL HARD CHROME |
| SCREW O.D. COATINGS * | ~ | CHROME OXIDE TUNGSTEN CARBIDE STELLITE OTHERS ON APPLICATION |

* DEPENDING ON SERIES

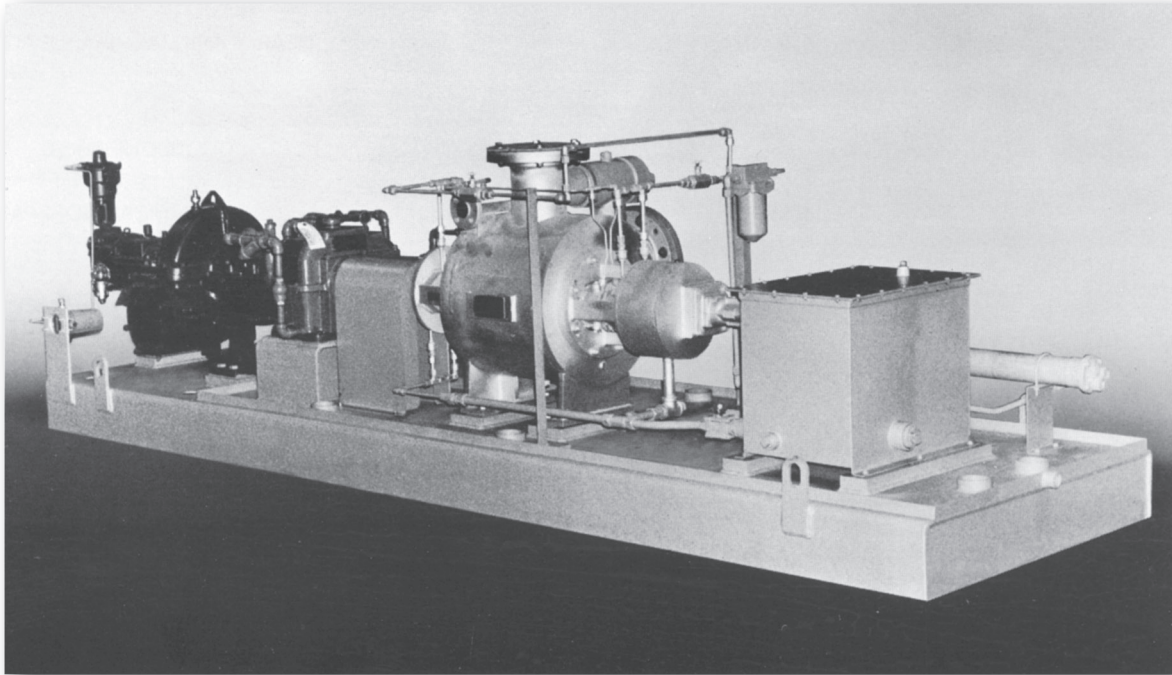
MATERIALS OF CONSTRUCTION THREE SCREW PUMPS

| COMPONENT | STANDARD MATERIAL | OPTIONAL MATERIALS |
|-------------------|--|-------------------------------|
| CASING * | CAST IRON, DUCTILE IRON OR STEEL | ~ |
| SHAFT/POWER ROTOR | NITRIDED ALLOY STEEL | ~ |
| IDLER ROTORS | HARDENED DUCTILE IRON OR NITRIDED ALLOY STEEL | ~ |
| ROTOR HOUSING | PEARLITIC CAST IRON OR BRONZE | BIMETALIC BRONZE BACKED STEEL |
| SHAFT SEAL | SINGLE MECHANICAL - TO SUIT | SOFT PACKING |
| BEARINGS | ANTIFRICTION BALL OR SLEEVE | ~ |

* DEPENDING ON SERIES

All Pumps Available Fully Packaged To Suit

**Drivers Can Include: Electric Motors
Diesel Engines
Gas Or Steam Turbines**



Packaging Capability

All pumps can be provided alone or packaged to whatever extent is desired by the customer. Imo Pump can acquire drivers and mount them, mount customer provided drivers or deliver a package ready for others to field mount drivers. Spacer type flexible couplings are recommended for all pumps to ease shaft seal servicing. Reduction gears, fluid coupling, instrumentation packages, even seismic analysis when required can be provided.

Field Service and Repair

Field service personnel are available to assist you anywhere in the world. They have years of experience in the oil fields with both pump evaluation and repair as well as system trouble shooting. They can provide training to customer technical and mechanical personnel as well as start-up supervision.

Minor and major repair kits are available for all pumps and ensure that the correct parts needed to restore pumps to new or near new condition are acquired. Minor repair kits include bearings, seals and gaskets necessary for a tear down and inspection. Major repair kits include the minor repair kit plus all replaceable wearing parts.

The combined resources of the Colfax Pump Group, comprised of Imo Pump, Monroe, NC, IMO AB of Stockholm and Warren Pumps of Warren, Mass., offers a breadth unmatched by any other manufacturer and a depth of engineering, application and manufacturing experience second to none. Modern facilities, computer aided design and manufacture, state of the art quality gaging systems and extensive testing facilities provide optimum capabilities to meet customer requirements worldwide.

From highly standardized, cost effective industrial pumps to one of custom designed and manufactures units, Colfax Pump Group can meet your pumping needs reliably, competitively and with predictable, efficient results. With quality assurance systems capable of meeting stringent military requirements, Colfax Pump Group is able to provide high quality pumps for both industrial and military use.



IMO PUMP – MONROE, NC, USA

ISO 9001, ANSI/ASQC Q91 certified, this design and manufacturing facility produces two and three screw pumps of both standard design and highly engineered construction for industrial and military use. Industries served include crude oil transport, electric utility, refinery, machinery systems, fluid power and others.



IMO PUMP – COLUMBIA, KY, USA

This ISO 9002 plant manufactures highly standardized three screw pumps and high performance gear pumps in larger lot sizes for cost effectiveness. Using state of the art multiaxis, computer controlled profiling machinery and automated test stands, high value, low cost pumps are produced with consistent predictable performance.



WARREN PUMPS INC. – WARREN, MA, USA

An established design and manufacturing facility for cost effective two screw and centrifugal pumps serving the petroleum, petrochemical, chemical, pulp-and-paper and marine industries. Warren specializes in exotic metallurgy pumps and can provide screw pumps in nearly any machinable alloy to suit customer requirements.



IMO AB – STOCKHOLM, SWEDEN

As the original inventor/designer of multiple screw pumps, this ISO 9001 facility continues in the tradition of innovation in design, manufacturing and application of three screw pumps to European standards, IMO AB is a manufacturer of a comprehensive standard program and is a globally recognized supplier for industrial and marine applications.

Imo Pump is proud to be a member of the Colfax Pump Group associated with Allweiler Pump of Radolfzell, Germany, Houttuin Pump of Utrech, The Netherlands, Warren Pump of Warren, Massachusetts, USA, providing World-Class fluid handling equipment and services to a global market.

Imo Pump means in a word, Performance. Imo Pump's "Performance Over Time" provides the best overall value by providing low maintenance or lengthy service intervals and efficient product operation or low energy costs, which results in the lowest "Total Cost of Ownership".

All of Imo Pump's products are designed to be of "Heavy Duty - Industrial Grade" construction and certain models are designed specifically for "Severe Duty" services such as Marine, Power Generation or Process Applications.

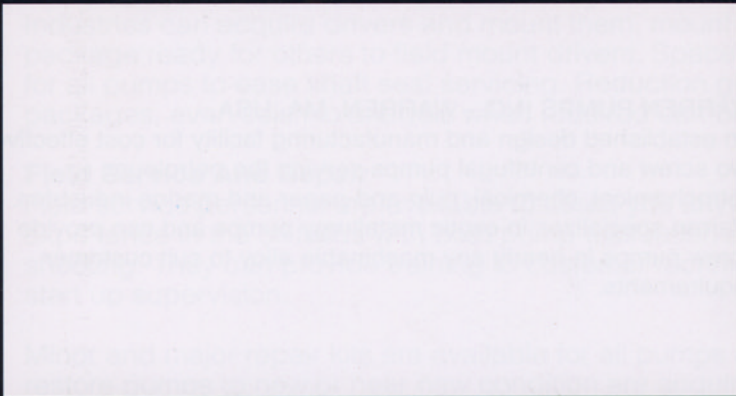
Imo Pump is fully qualified to respond on all of the imposed quality and design standards provided, such as Military Standards, ABS, ANSI, ASME, SAE, ISO-9000, CE, UL, CSA, NEMA and ISO, among others.

Imo Pump maintains a fully qualified staff of experienced Application Engineers, Technical Sales Engineers, Product Engineers, Service Engineers and Draftsmen capable of handling the most demanding applications.

We are responding to our customer needs with efficient, reliable products capable of handing a wide range of fluids over a long service life.

Our QuickServe Department processes internet and credit card orders. Most repair kits can be shipped same or next business day delivery saving valuable down time. Visit our E-Commerce site on the web or call our customer service department to place your order today!

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