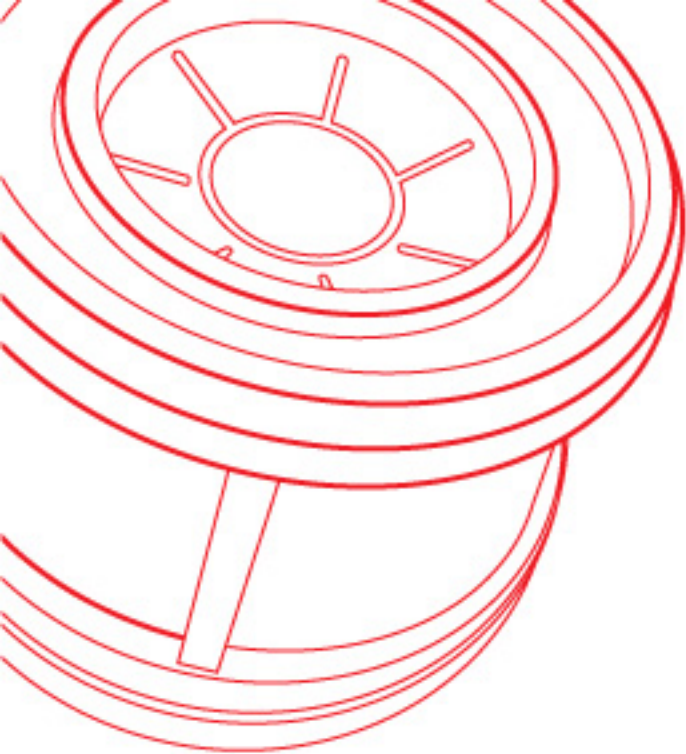


Horizontal Pumping System

2.0



Advanced Thinking – Down to Earth Service



Advanced Thinking – Down to Earth Service

By bringing together a highly experienced team with state-of-the-art manufacturing and a deep commitment to customer service, Canadian Advanced is able to deliver superior high pressure pump applications and leading variable speed drive systems

to the global oil and gas industry. Located in the heart of Canada's energy sector, our focus is on Electric Submersible Pump Systems for Artificial Lift applications and Horizontal Pump Systems for a variety of high pressure applications.

Engineered Operating sophisticated production processes in challenging conditions, extreme climates and remote locations requires reliable pumping systems. Canadian Advanced pumps are the industry choice, producing more head, greater efficiency and wider operating ranges than most competitor's offerings.

Canadian Advanced creates high quality, innovative, safe and environmentally sound solutions by applying advanced state-of-the-art technologies, strict quality management and superior engineering capabilities. Our detailed process and application knowledge has allowed us to develop several patented engineering solutions as well as custom design systems when required.

Quality All Canadian Advanced operations are certified to ISO 9001:2000 standards to ensure the highest quality products with the greatest value for customers worldwide. Quality assurance begins with a contract review and continues throughout the entire process. All products are inspected and performance tested in line with relevant API and other specification criteria before leaving the factory.

Horizontal Pumping System

Proven Design The Canadian Advanced Model HPS Horizontal Pump System is based on the proven multi-stage centrifugal pump design that is successfully used in thousands of downhole submersible pump system applications around the world. The horizontal skid mounting allows for a multitude of high head surface pumping applications. The Model HPS is the ideal choice for urban and environmentally sensitive locations as the high pitched noise inherent in single stage designs and the piston noise associated with reciprocating pumps are alleviated.

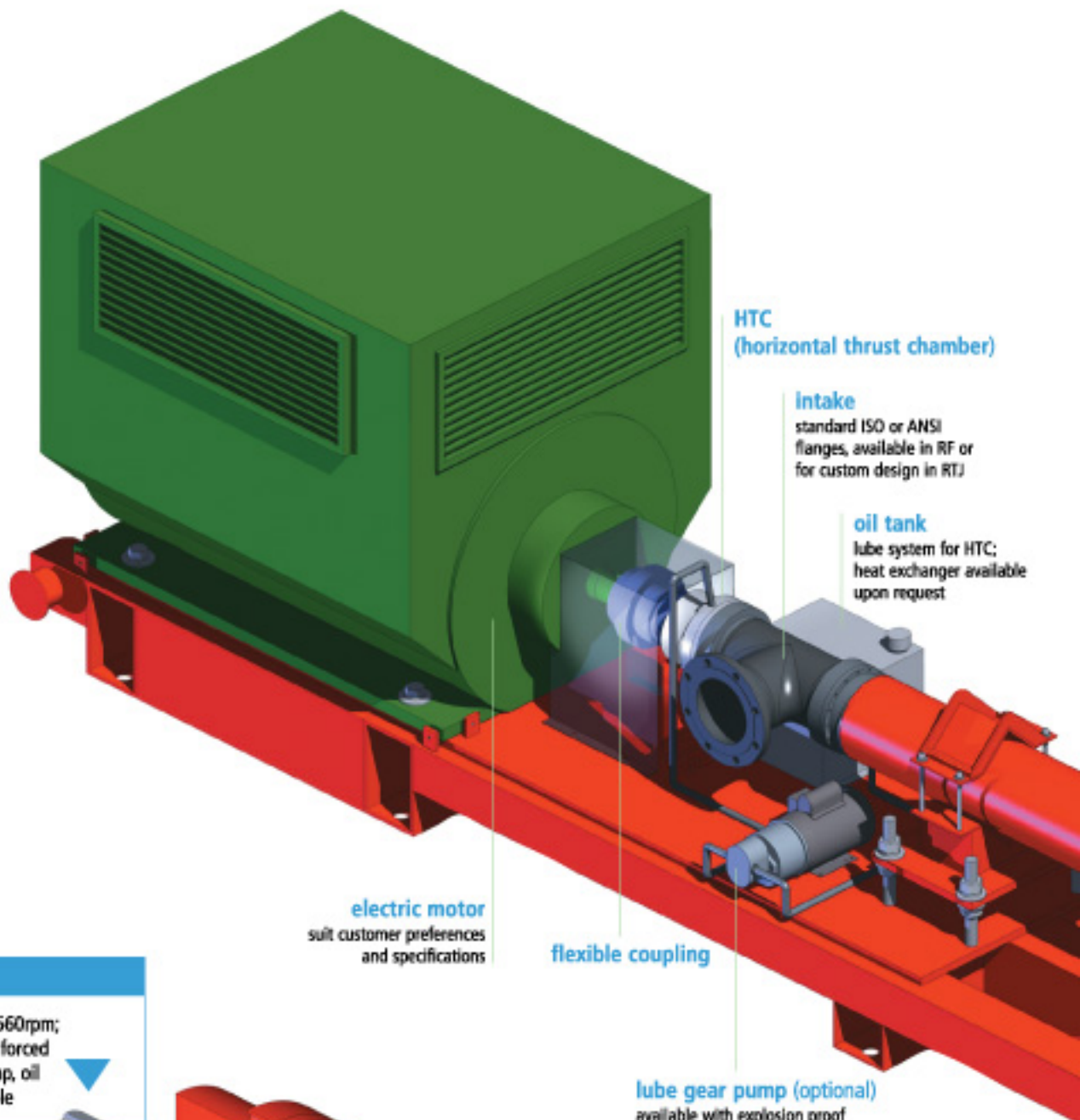
Cost Effective Our Horizontal Pump System technology distinguishes itself as a cost effective alternative to traditional high pressure designs such as the multi-stage barrel, split case, segmental and vertical turbine pumps, as well as high speed gear and positive displacement pumps. The Model HPS has radial and mixed flow hydraulics for optimum efficiency at any rating.

Low Maintenance The thrust chamber, or bearing frame, on the Model HPS features sleeve type radial and tilting pad thrust bearings. An ample oil reservoir and internal pump ring provide excellent lubrication and temperature control. Optional pressure lubrication, oil filtering and heat exchangers are available for severe applications. To create the best solution for each application, a variety of mechanical seals are available to accommodate customer preferences.



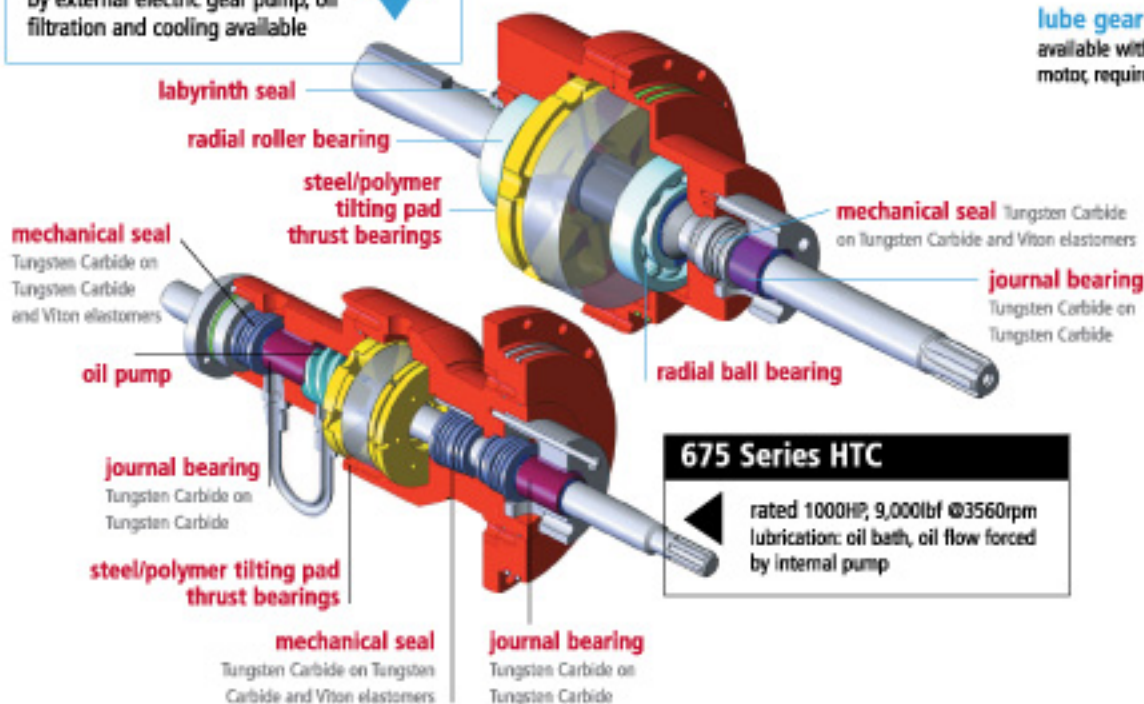
Expert Advice - High Quality Materials The correct application of technology is the critical success factor for any pumping system. You can count on Canadian Advanced's professional engineers to design a pumping system that exactly meets your application requirements. We use Ni-Resist as a standard material for diffusers and impellers and MONEL K500 for shafting. These special material combinations and designs cater to services with high levels of abrasion. Other materials are available upon request.

Horizontal Pumping System



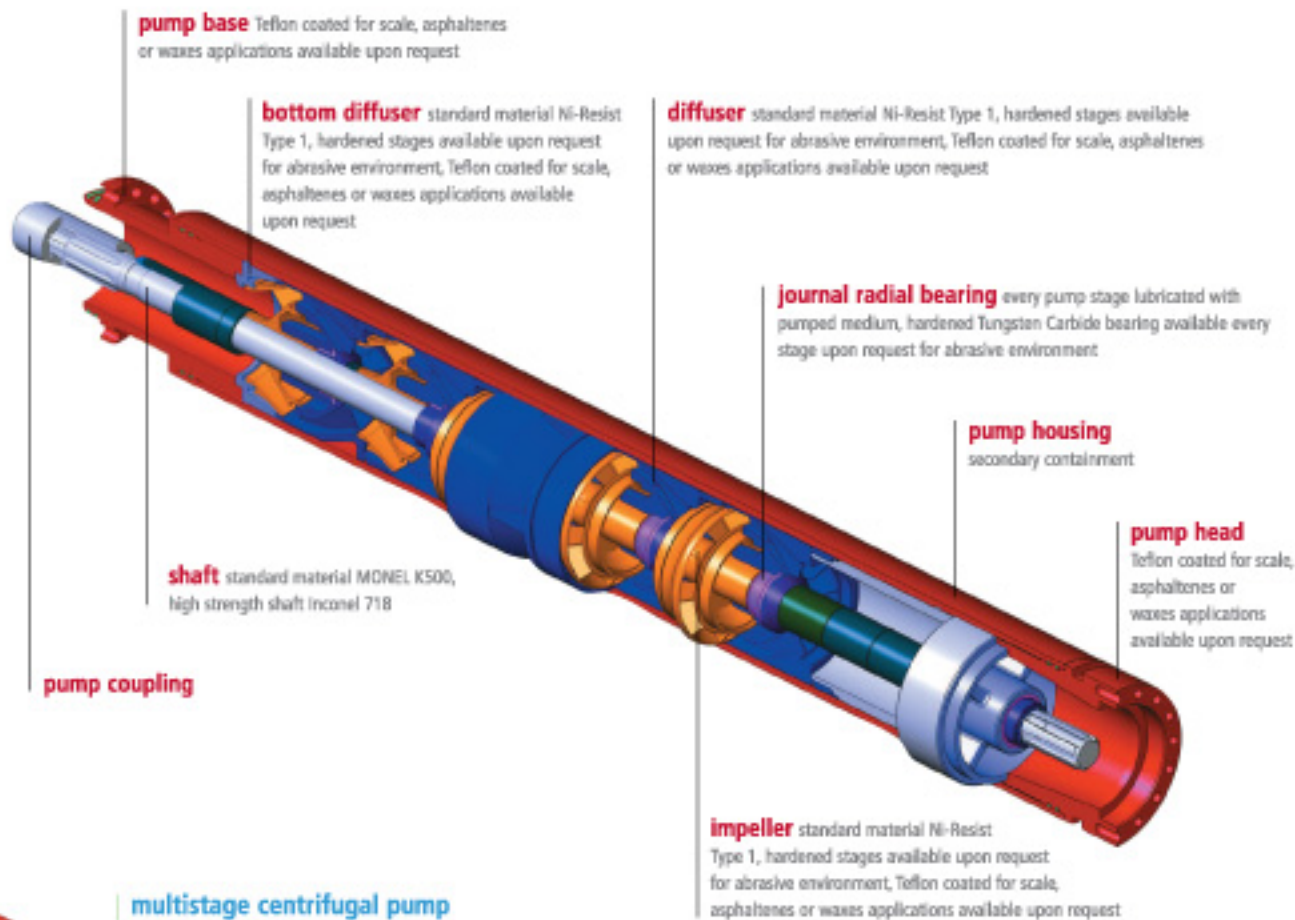
875 Series HTC

rated 1300HP, 25,000lbf @3560rpm;
lubrication: oil bath, oil flow forced by external electric gear pump, oil filtration and cooling available

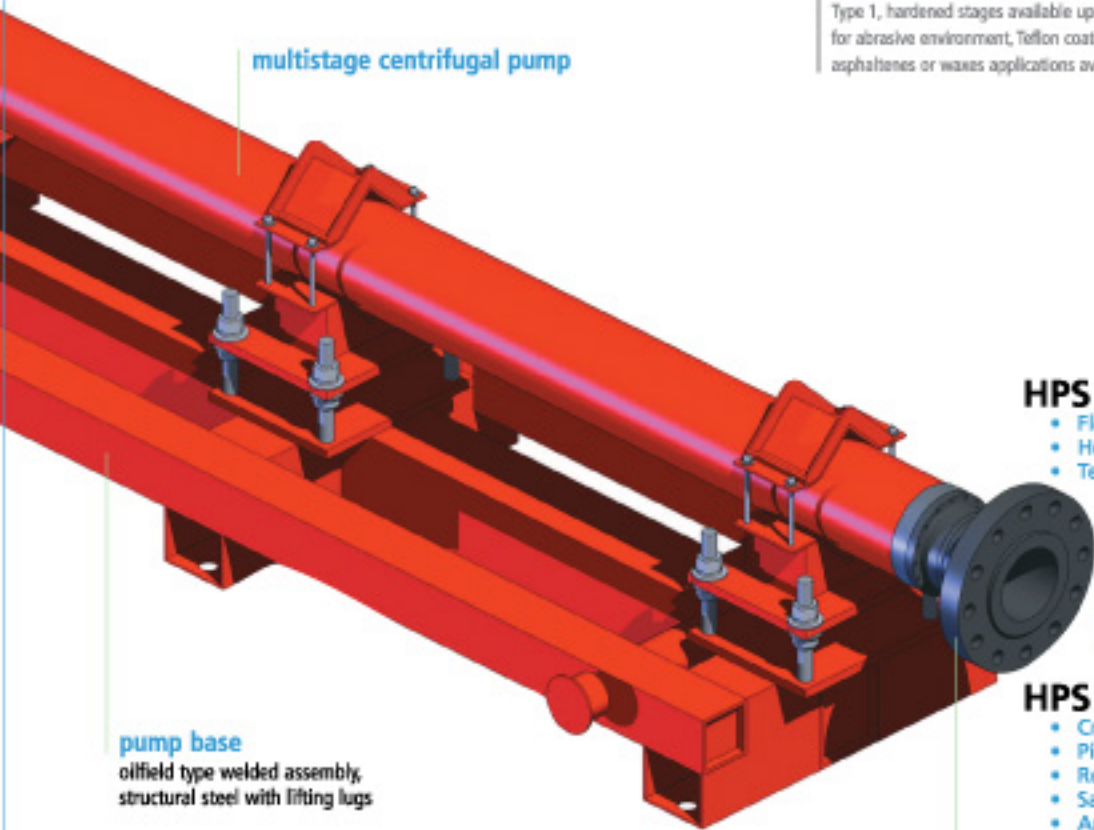


675 Series HTC

rated 1000HP, 9,000lbf @3560rpm
lubrication: oil bath, oil flow forced by internal pump



multistage centrifugal pump



pump base
oilfield type welded assembly, structural steel with lifting lugs

bolt on discharge
standard ISO or ANSI flanges, available in RF or RTJ

HPS DESIGN CAPACITIES

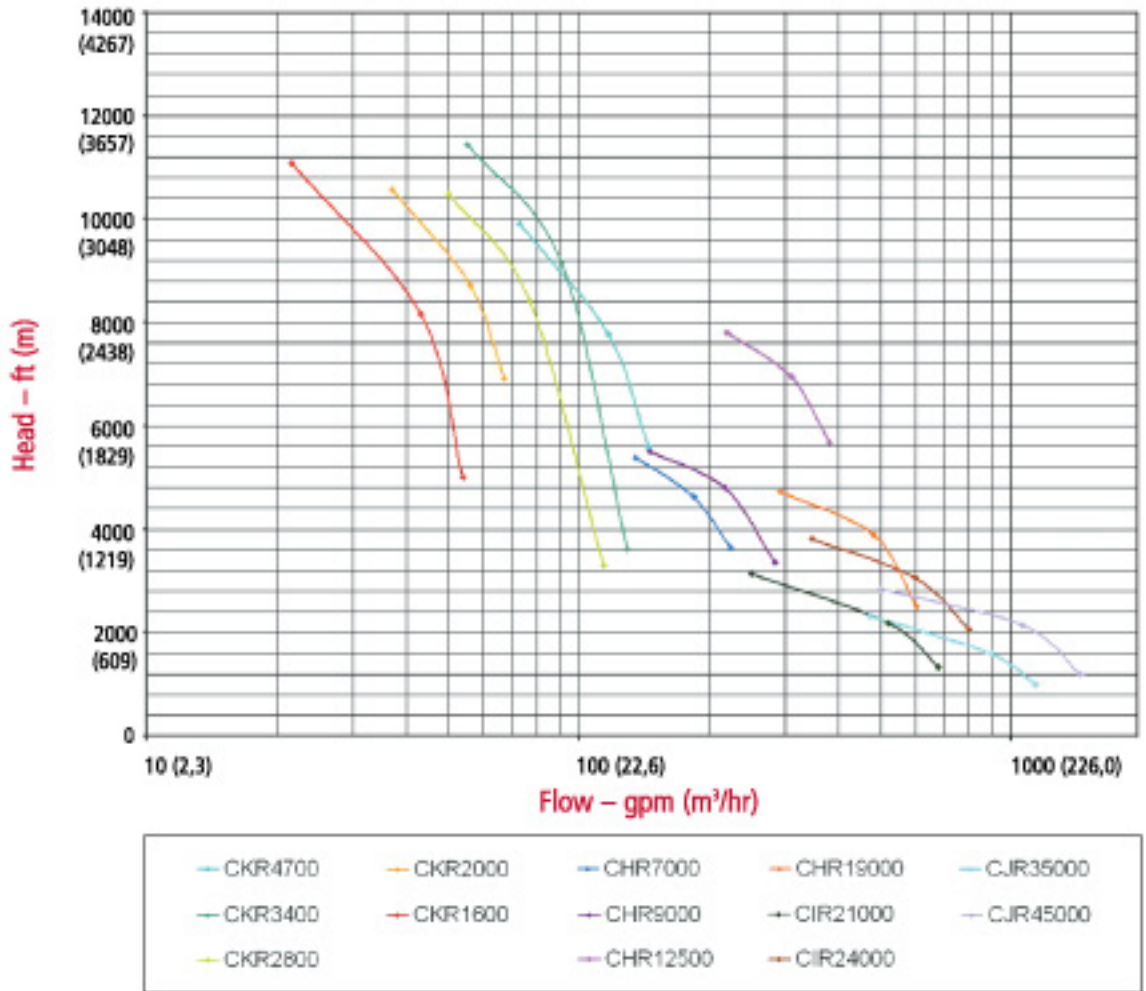
- Flow to 65,000 bpd (430 m³/hr)
 - Heads to 9,850 ft (3,450 m)
 - Temperatures to 250° F (120° C)
- PRESSURES RATINGS:**
- 538 series – 5000 PSI
 - 675 series – 3500 PSI
 - 875 series – 4300 PSI
 - 1025 series – 3000 PSI
- Driver power to 1,300 HP (950 KW)
 - Higher ratings upon request

HPS APPLICATIONS

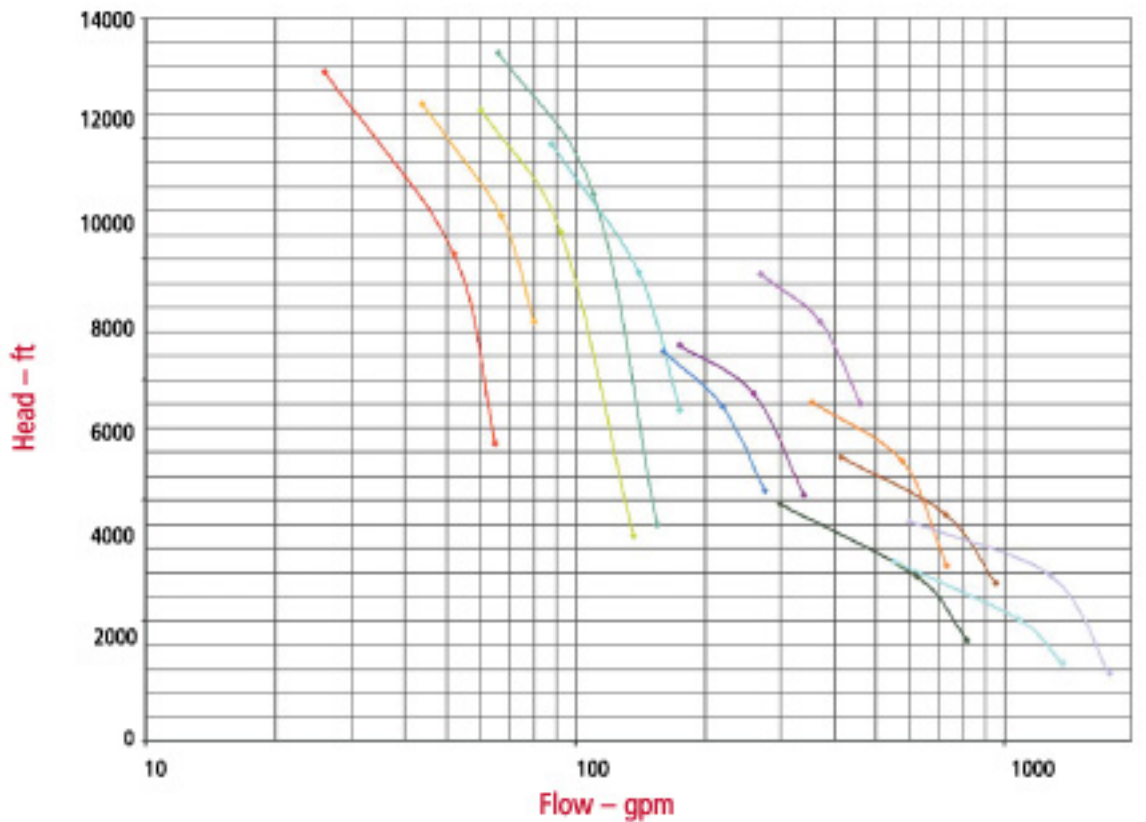
- Crude oil transfer
- Pipeline booster
- Reservoir pressure maintenance
- Salt water disposal and water flood
- Amine circulation
- CO₂ booster
- Power fluid booster
- NGL booster and injection
- LPG booster
- Mine dewatering
- Geothermal
- Reverse osmosis
- Wash down and descaling

Standard Operating Ranges | CAI HPS Pumps

50 Hz ratings



60 Hz ratings





Customer Support Service

The long-term success of any pumping system depends upon the quality and availability of customer support services.

Canadian Advanced prides itself on providing fast and efficient response to any situation, without compromising quality.

Fast Response Our field technicians will install, start and monitor the pumping system to ensure successful operation. The crews are equipped with state-of-the-art tooling and modern truck-mounted spooling units for all capillary tube spooling and banding needs. Canadian Advanced service centres, strategically located across the globe, offer our customers easy access to a full range of repair and maintenance services including unit installation, troubleshooting and preventive maintenance.

Servicing All Markets In addition to supplying parts and services for all of our equipment, Canadian Advanced's in-house re-engineering specialists will design, deliver and fit high integrity components for other manufacturer's machinery – including upgrading and retrofitting existing pump installations. Using root-cause failure analysis, system investigation and material assessment, Canadian Advanced can modify existing installations to meet new duty conditions, improve operating efficiencies and increase MTBF.

Canadian Advanced also provides all the accessories needed during installation and overhaul of Electric Submersible Pumps and Horizontal Pump Systems including bleeder valves, check valves, banding materials, MONEL bolting and couplings, as well as flat cable extensions for most designs used in the industry.

Commitment At Canadian Advanced, we constantly strive to improve our customer service performance and deliver the highest possible life cycle value in the industry.

Canadian Advanced provides a broad range of pumping systems.

Electric Submersible Pumps (ESP)

Canadian Advanced manufactures a wide range of ESP for artificial lift and other specialized applications. Many specially engineered and often patented solutions provide equipment that is tailored to your specific operating conditions.

Variable Frequency Generators (VFG)

Canadian Advanced has developed and manufactures a unique power supply system that eliminates the need for variable speed drives, harmonic filters and step-up transformers. It provides a pure sine wave and significantly extends your MTBF and production rates.

Rebuilding of ESP's

Canadian Advanced rebuild used ESP's of most known manufacturers into "as new" condition. Systems are completely tested and certified before leaving the factory.

Consumables

Canadian Advanced offers all of the materials and accessories needed for the installation and overhaul of Electrical Submersible Pumps and Horizontal Pump Systems, including:

- Bleeder valves and check valves on 2 7/8 and 3 1/2 inches, EUE 8 RD
- MONEL K500 bolts, stainless steel
- MONEL couplings
- Flat cable extension on 540 and 456 series taped in with Galvanized or MONEL Armor
- Other consumable items such as quality banding materials are offered at competitive prices.

Contact Canadian Advanced Inc. – Head Office

ISO 9001:2000
OHSAS 18001:1999
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