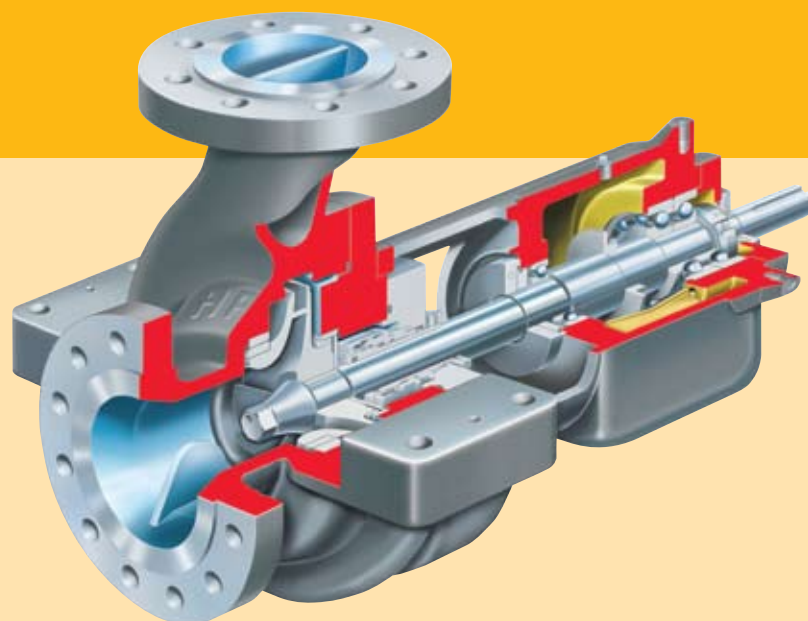


## Overhung Shaft

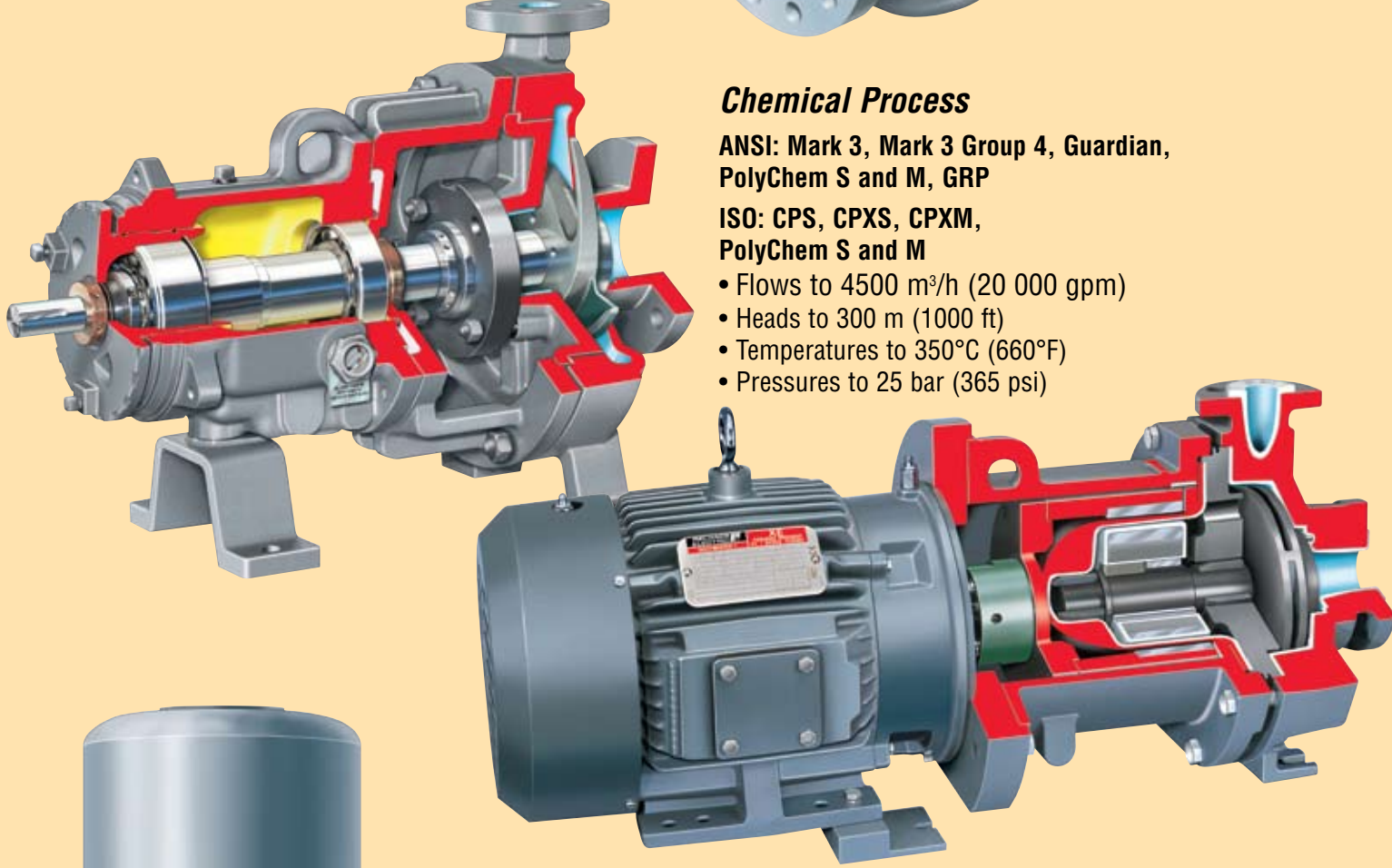
### API Process

- HPX, HPM, ERPN, ERPN-MAG, PHL, PHL-MAG
- Flows to 2000 m<sup>3</sup>/h (9000 gpm)
  - Heads to 350 m (1100 ft)
  - Temperatures from -160°C (-250°F) to 450°C (850°F)
  - Pressures to 80 bar (1160 psi)



### Chemical Process

- ANSI: Mark 3, Mark 3 Group 4, Guardian, PolyChem S and M, GRP  
ISO: CPS, CPXS, CPXM, PolyChem S and M
- Flows to 4500 m<sup>3</sup>/h (20 000 gpm)
  - Heads to 300 m (1000 ft)
  - Temperatures to 350°C (660°F)
  - Pressures to 25 bar (365 psi)



### Vertical In-Line

- HWX, HWM, W, WM, WM2, HWM2, MSP, MSP2, PVML, PVML-MAG, Mark 3
- Flows to 1200 m<sup>3</sup>/h (5300 gpm)
  - Heads to 600 m (2000 ft)
  - Temperatures to 425°C (800°F)
  - Pressures to 100 bar (1450 psi)

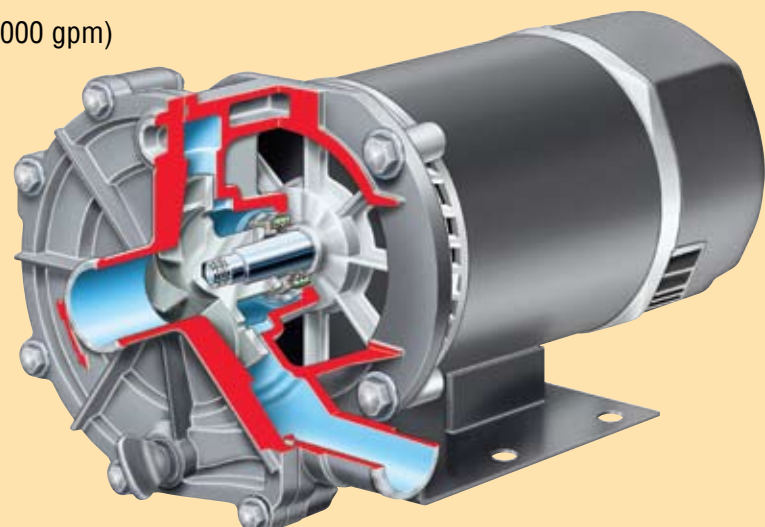
- DSVP
- Flows to 3000 m<sup>3</sup>/h (13 000 gpm)
  - Heads to 150 m (500 ft)



### Standard Water Pumps

- Metallic and Non-Metallic
- Close-Coupled and Long-Coupled

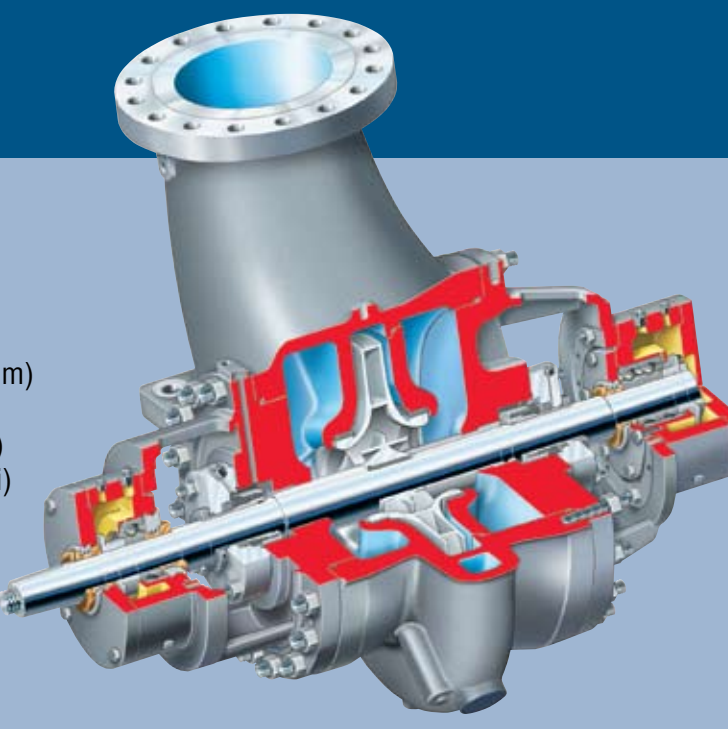
- ME, MEN, D800, SMP, SMX
- Flows to 2000 m<sup>3</sup>/h (9000 gpm)
  - Heads to 150 m (490 ft)



## Between Bearings Single and Two Stage

### Single Stage Radially Split Double Suction

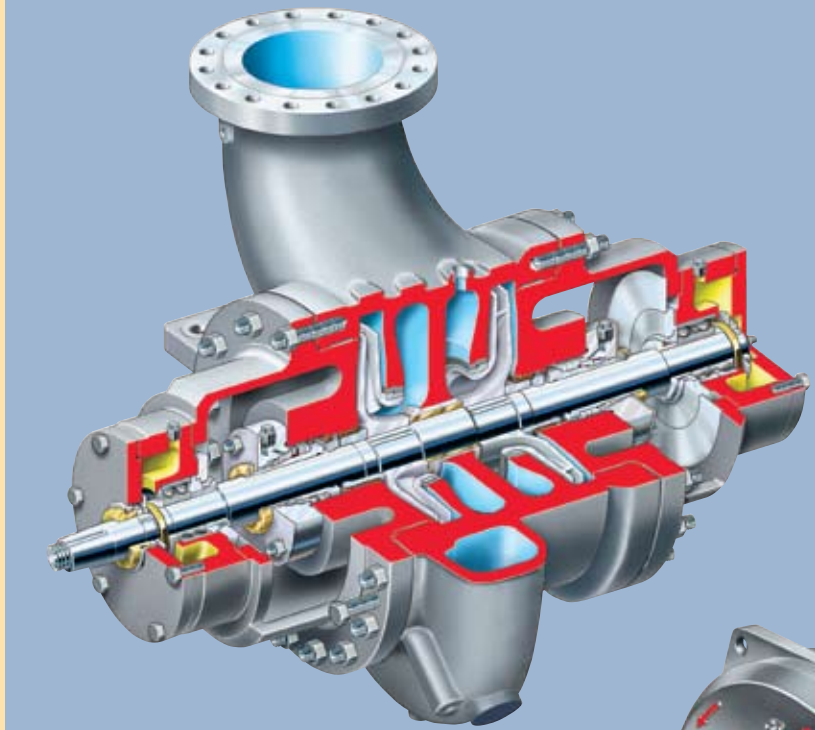
- HDX
- Flows to 4100 m<sup>3</sup>/h (18 000 gpm)
  - Heads to 450 m (1500 ft)
  - Temperatures to 450°C (850°F)
  - Pressures to 100 bar (1450 psi)



### Two Stage Radially Split

- Single and Double Suction First Stage

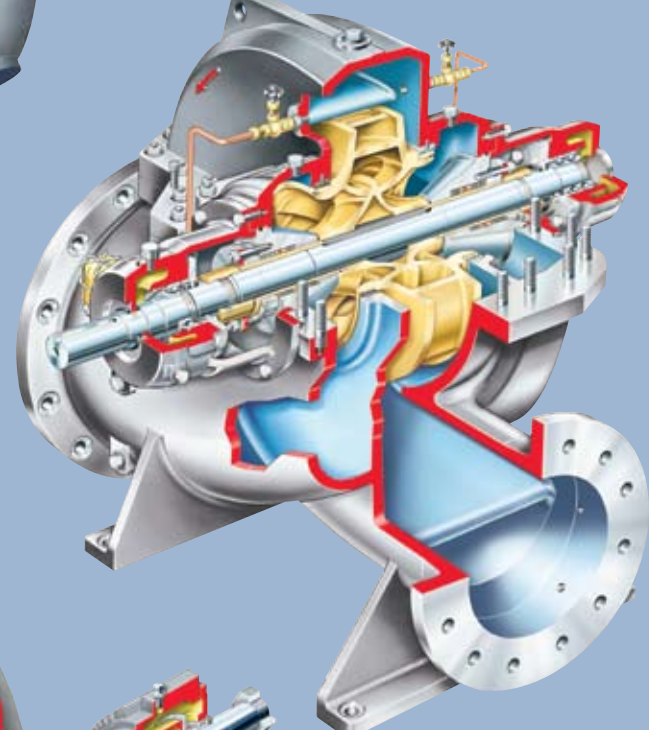
- HED, HED-DS, DSTHF, TSHO
- Flows to 1000 m<sup>3</sup>/h (4400 gpm)
  - Heads to 600 m (2000 ft)
  - Temperatures to 450°C (850°F)
  - Pressures to 80 bar (1160 psi)



### Single Stage Axially Split

- DVS, LPN

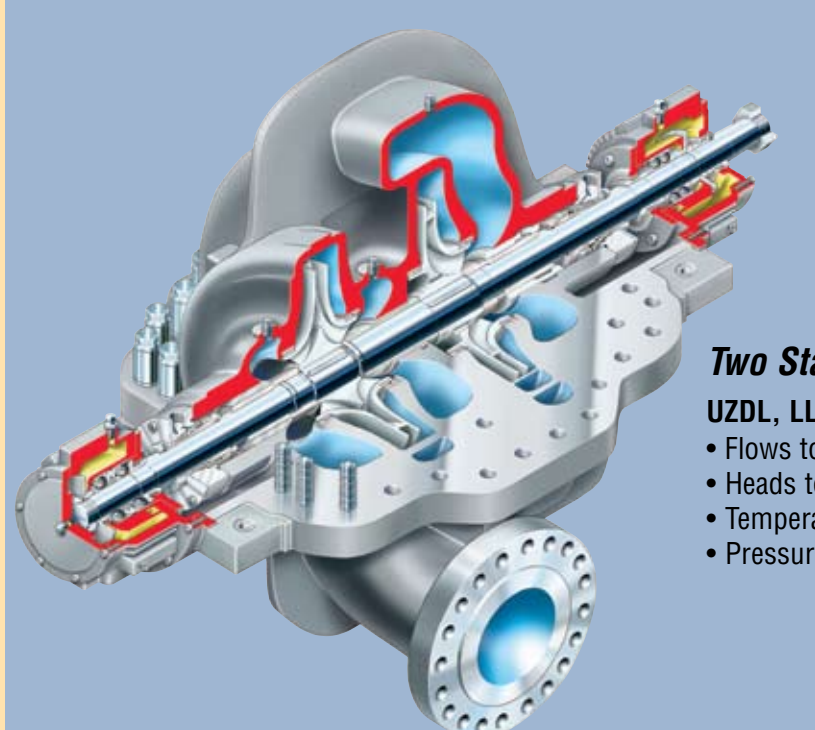
- Centerline Mounted API
- Flows to 9000 m<sup>3</sup>/h (40 000 gpm)
  - Heads to 500 m (1600 ft)
  - Horsepower to 5600 hp
  - Pressures to 100 bar (1450 psi)



### Utility Double Casing

- WCA, CSB, CHTA, WNC, HDB/HDS

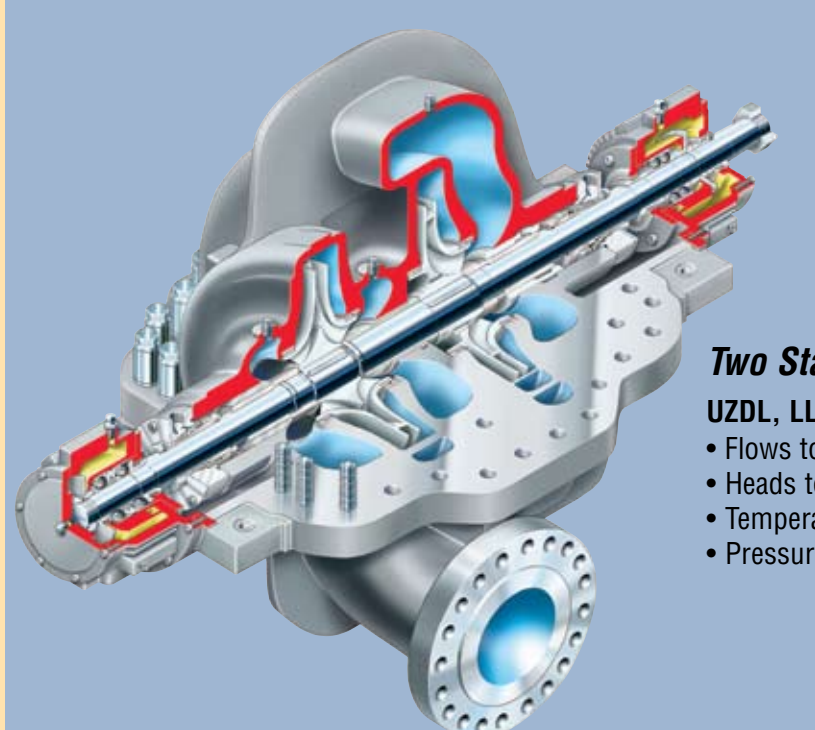
- Flows to 5250 m<sup>3</sup>/h (23 000 gpm)
- Heads to 4300 m (14 000 ft)
- Temperatures to 260°C (500°F)
- Pressures to 475 bar (7000 psi)
- Speeds to 7000 rpm
- Power to 52 000 kW (70 000 hp)



### Two Stage Axially Split

- UZDL, LLR

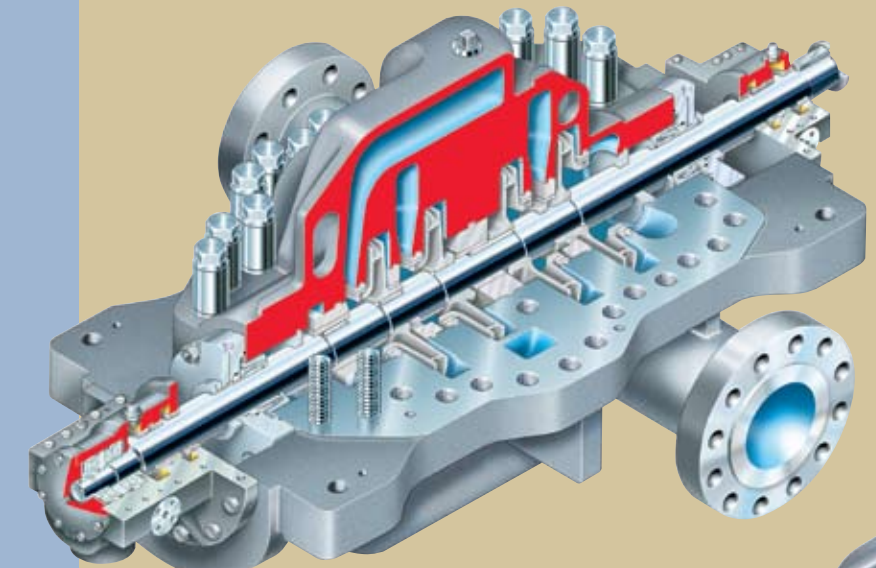
- Flows to 3000 m<sup>3</sup>/h (13 000 gpm)
- Heads to 700 m (2250 ft)
- Temperatures to 200°C (400°F)
- Pressures to 60 bar (900 psi)



## Between Bearings Multistage

### Axially Split

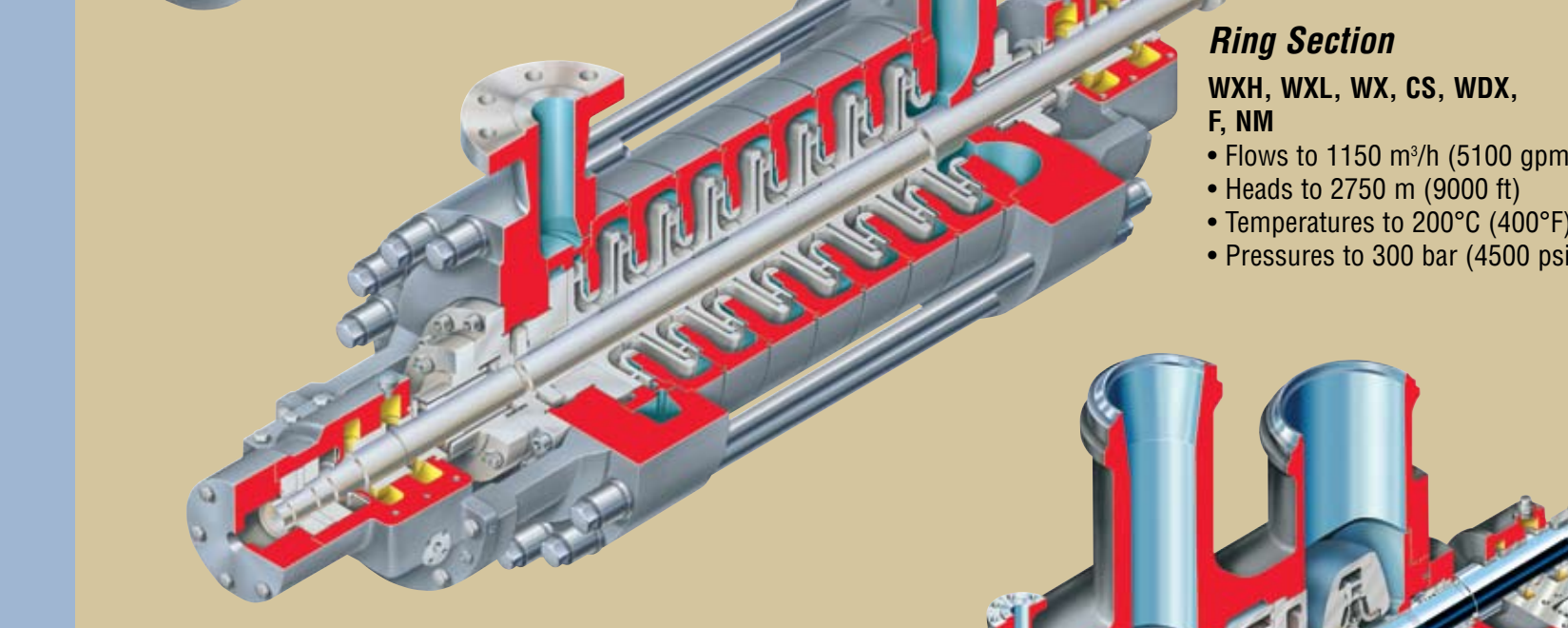
- DMX
- Flows to 3000 m<sup>3</sup>/h (13 000 gpm)
  - Heads to 2100 m (7000 ft)
  - Speeds to 8000 rpm
  - Specific gravities down to 0.35



### Ring Section

- WXH, WXL, WX, CS, WDX, F, NM

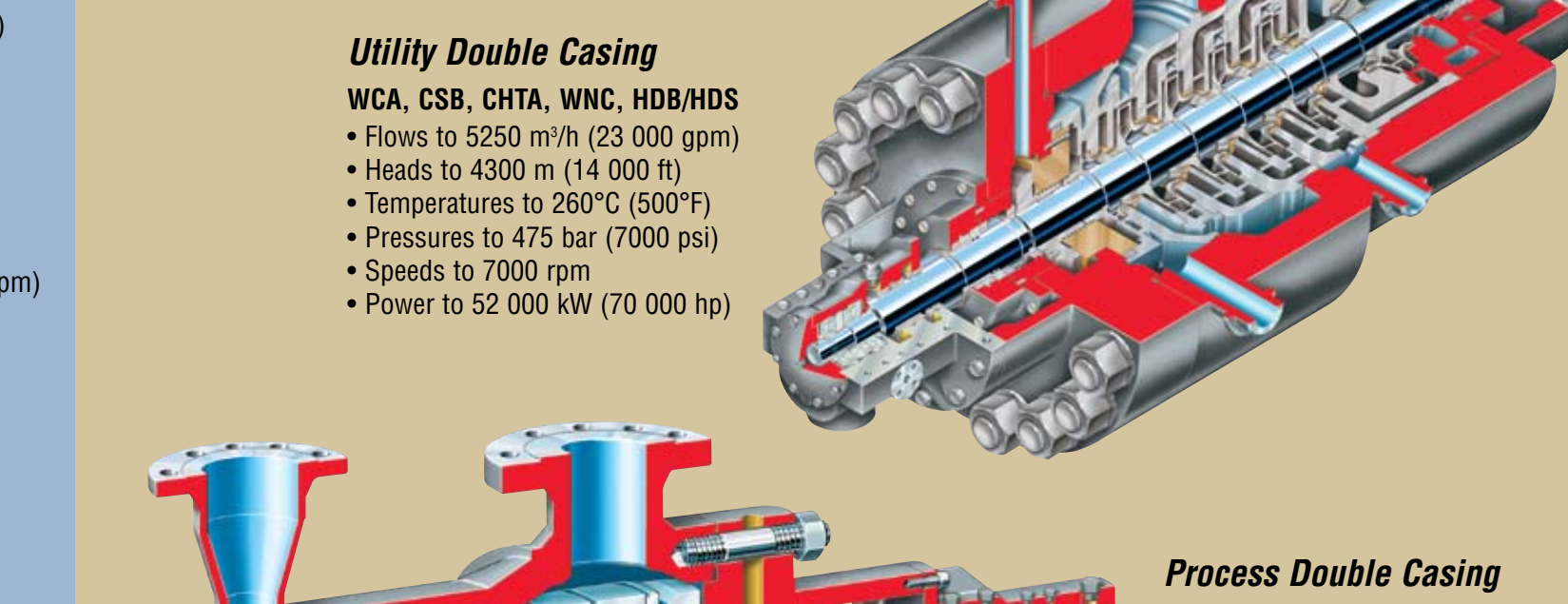
- Flows to 1150 m<sup>3</sup>/h (5100 gpm)
- Heads to 2750 m (9000 ft)
- Temperatures to 200°C (400°F)
- Pressures to 300 bar (4500 psi)



### Process Double Casing

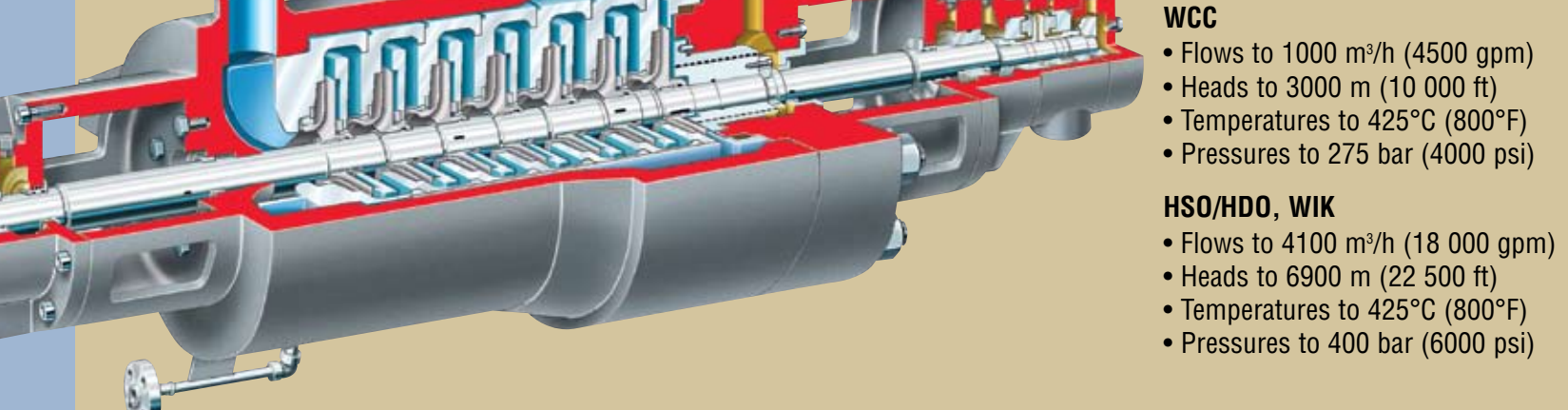
- WCC

- Flows to 1000 m<sup>3</sup>/h (4500 gpm)
- Heads to 3000 m (10 000 ft)
- Temperatures to 425°C (800°F)
- Pressures to 275 bar (4000 psi)



### HSD/HDO, WIK

- Flows to 4100 m<sup>3</sup>/h (18 000 gpm)
- Heads to 6900 m (22 500 ft)
- Temperatures to 425°C (800°F)
- Pressures to 400 bar (6000 psi)



## Vertical

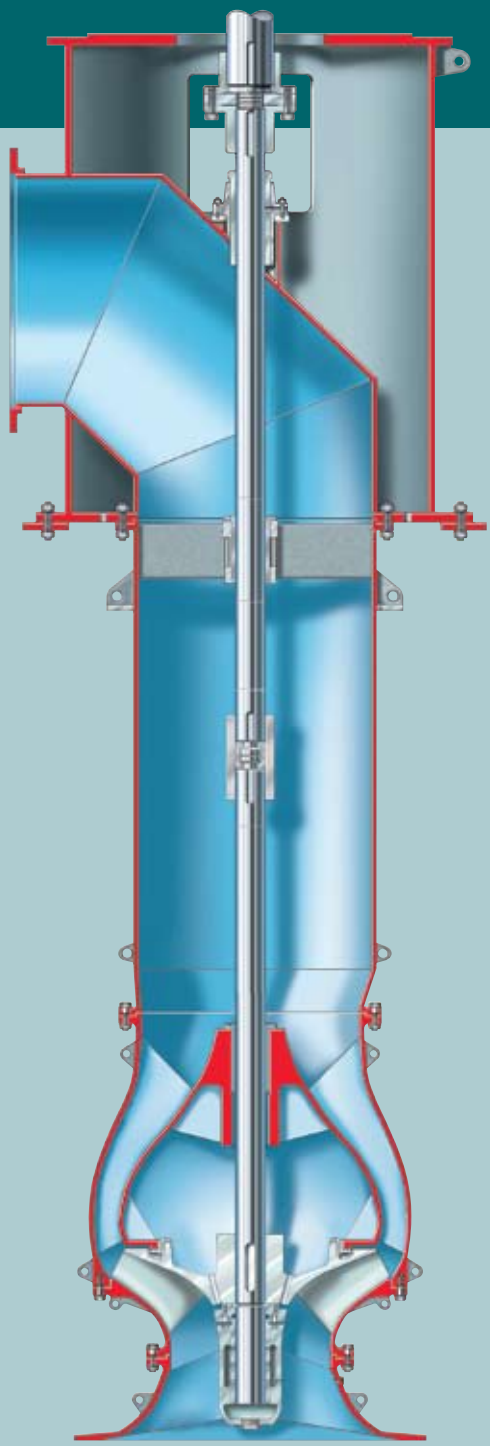
### Vertical Wet Pit

- Mixed Flow
- Axial Flow
- Double Suction

- VTP, WUJ
- Flows to 14 000 m<sup>3</sup>/h (60 000 gpm)
  - Heads to 1050 m (3500 ft)
  - Temperatures from -45°C (-50°F) to 200°C (400°F)
  - Pressures to 100 bar (1450 psi)
  - Settings to 365 m (1200 ft)

- QL, QLQ Double Suction
- Flows to 20 000 m<sup>3</sup>/h (90 000 gpm)
  - Heads to 600 m (2000 ft)
  - Temperatures from -45°C (-50°F) to 200°C (400°F)
  - Pressures to 70 bar (1000 psi)

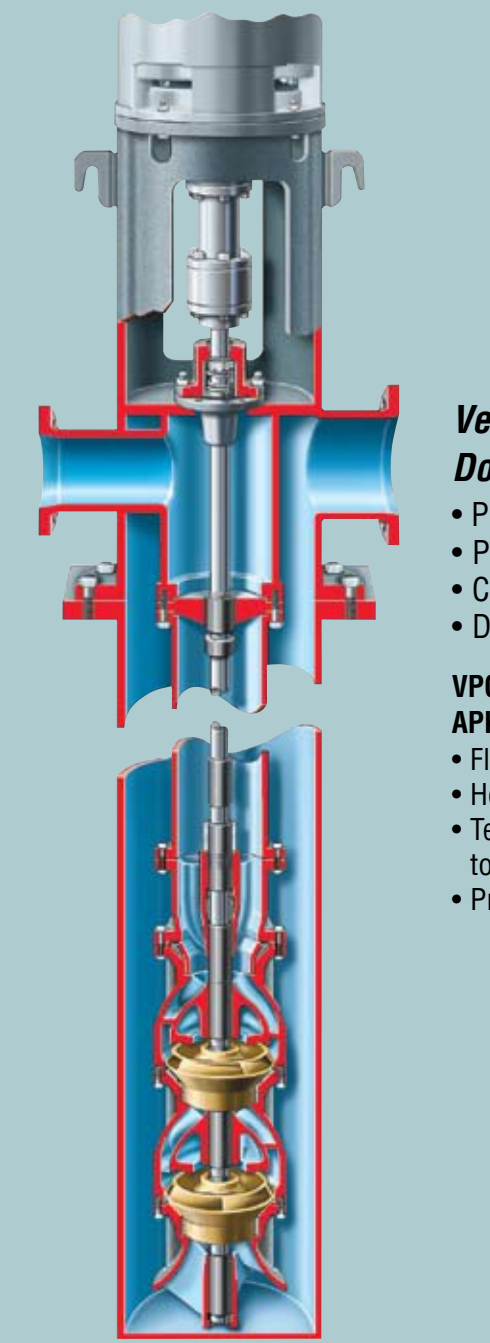
- AFV, VCT
- Flows to 158 000 m<sup>3</sup>/h (700 000 gpm)
  - Heads to 50 m (175 ft)
  - Temperatures to 65°C (150°F)
  - Pressures to 5 bar (75 psi)



### Vertical Double Casing

- Process
- Power
- Cryogenic
- Desalination

- VPC, VTP-CAN, QLC, QLQC, WUC, APKC, APKD
- Flows to 14 000 m<sup>3</sup>/h (60 000 gpm)
  - Heads to 1050 m (3500 ft)
  - Temperatures from -200°C (-330°F) to 300°C (570°F)
  - Pressures to 150 bar (2160 psi)



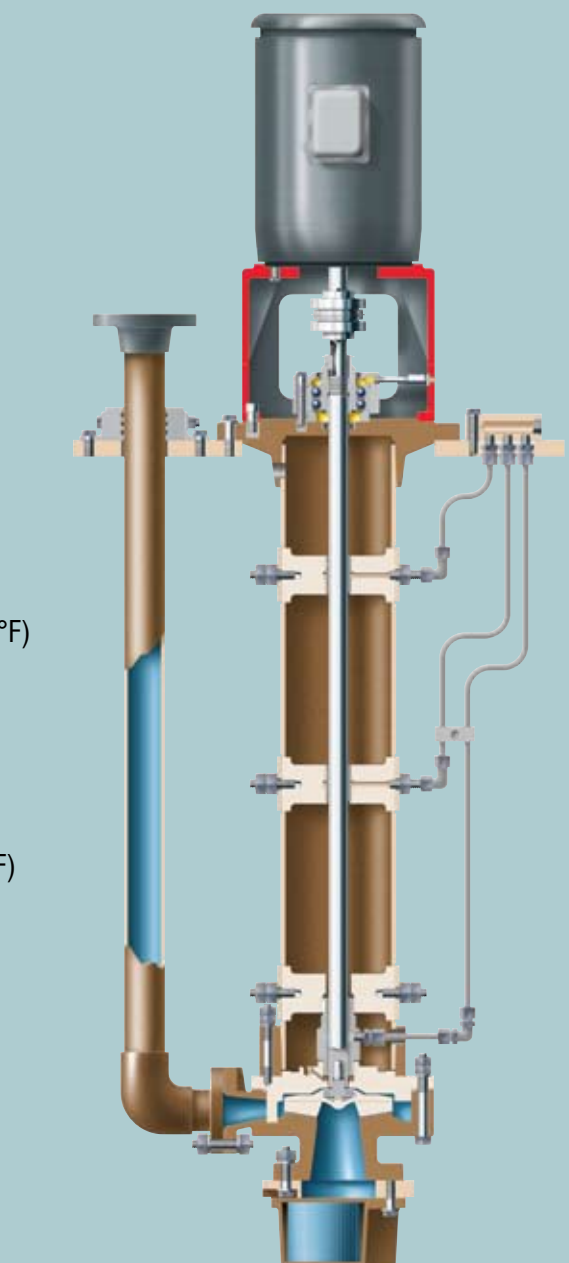
### Standard Sump

- ESP2
- Flows to 900 m<sup>3</sup>/h (4000 gpm)
  - Heads to 100 m (325 ft)
  - Temperatures from -75°C (-100°F) to 175°C (350°F)
  - Pressures to 12 bar (175 psi)

- VGRP
- Flows to 325 m<sup>3</sup>/h (1400 gpm)
  - Heads to 100 m (325 ft)
  - Temperatures from -20°C (-30°F) to 80°C (180°F)
  - Pressures to 12 bar (175 psi)

### Heavy-Duty Sump

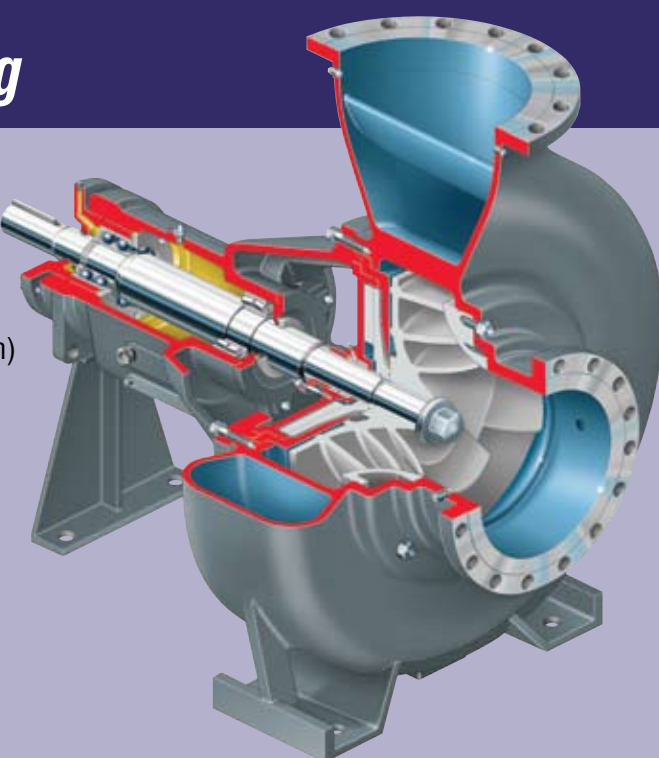
- RJ, MJ, LC-S, FRBHJ, EGPJ
- Flows to 1020 m<sup>3</sup>/h (4500 gpm)
  - Heads to 80 m (260 ft)
  - Temperatures to 110°C (225°F)
  - Pressures to 10 bar (150 psi)



## Slurry and Solids Handling

### Paper Stock

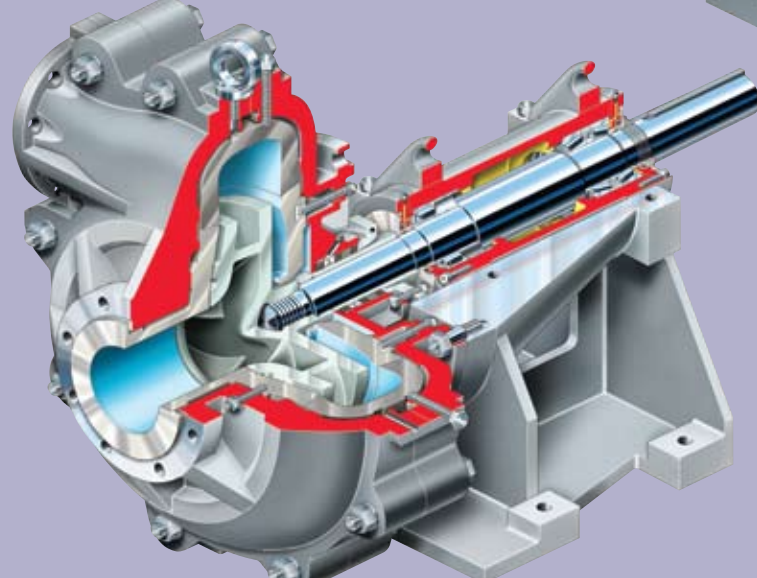
- FRBH
- Flows to 5000 m<sup>3</sup>/h (22 000 gpm)
  - Heads to 100 m (325 ft)
  - Temperatures to 150°C (300°F)



### Slurry/Abrasive

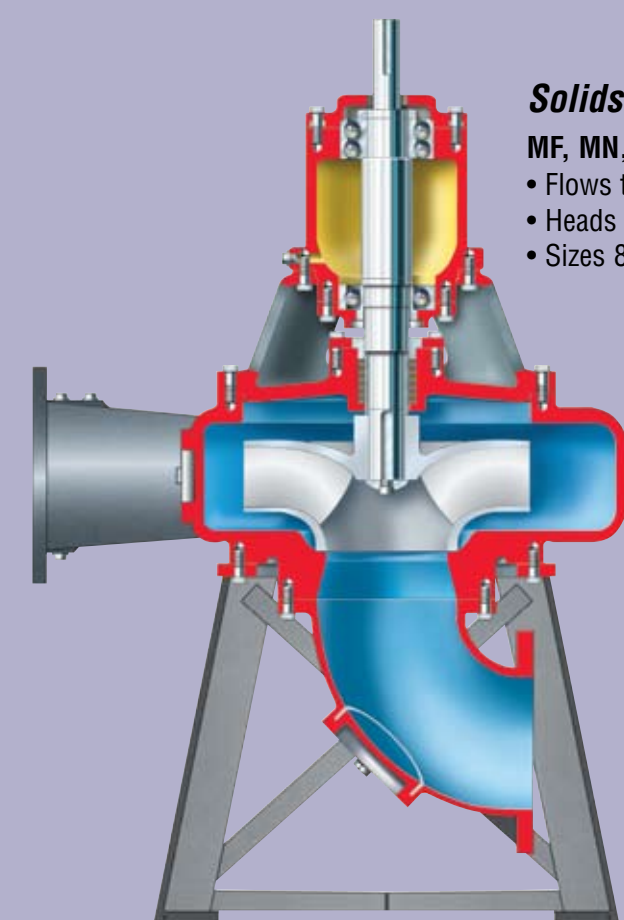
- Hard Metal
- Rubber Lined

- R, M, LC, Titan Slurry, Terra Titan
- Flows to 10 000 m<sup>3</sup>/h (44 000 gpm)
  - Heads to 100 m (325 ft)
  - Temperatures to 150°C (300°F)
  - Pressures to 10 bar (150 psi)



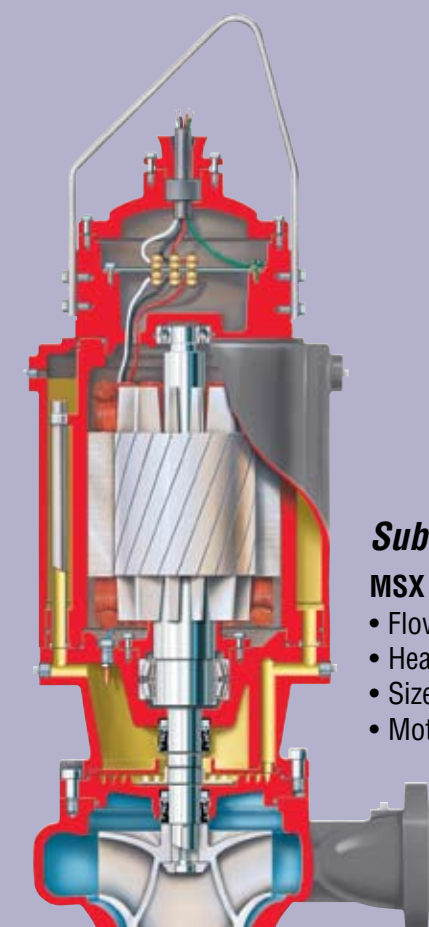
### Solids Handling

- MF, MN, Primo-Titan
- Flows to 45 000 m<sup>3</sup>/h (200 000 gpm)
  - Heads to 90 m (300 ft)
  - Sizes 80 mm (3 in) to 1800 mm (72 in)



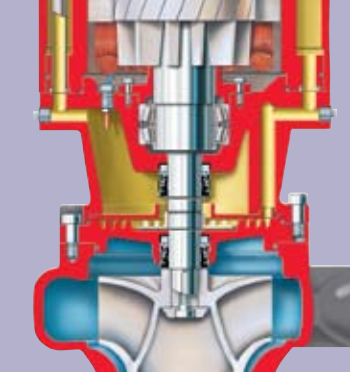
### Wet Pit Solids Handling

- MXV
- Flows to 17 000 m<sup>3</sup>/h (75 000 gpm)
  - Heads to 40 m (130 ft)
  - Sizes 250 mm (10 in) to 1200 mm (48 in)



### Submersible Motor

- MSX
- Flows to 4500 m<sup>3</sup>/h (20 000 gpm)
  - Heads to 90 m (300 ft)
  - Sizes 80 mm (3 in) to 500 mm (20 in)
  - Motors to 225 kW (300 hp)



## Specialty Centrifugal

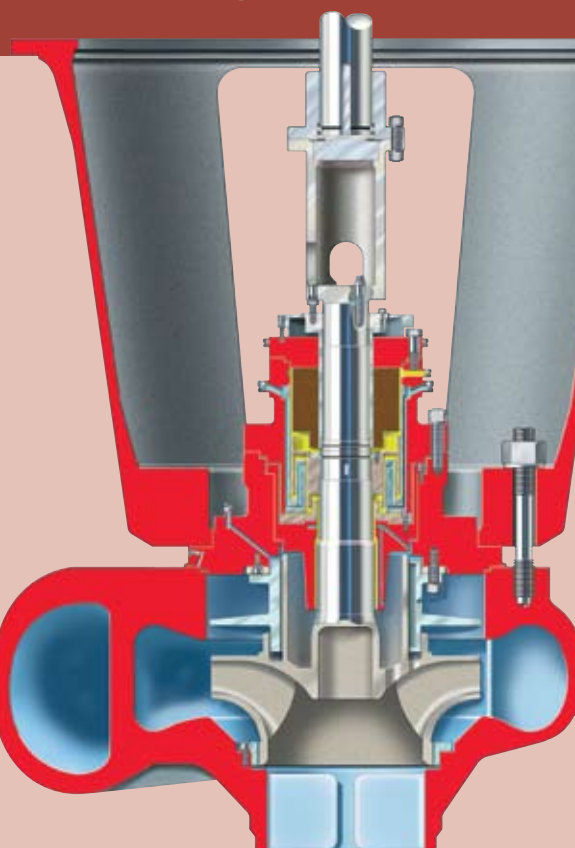
### Nuclear

- ASME Class 3 Pumps

- Safety
- Residual core cooling
- Service water
- Reactor feed

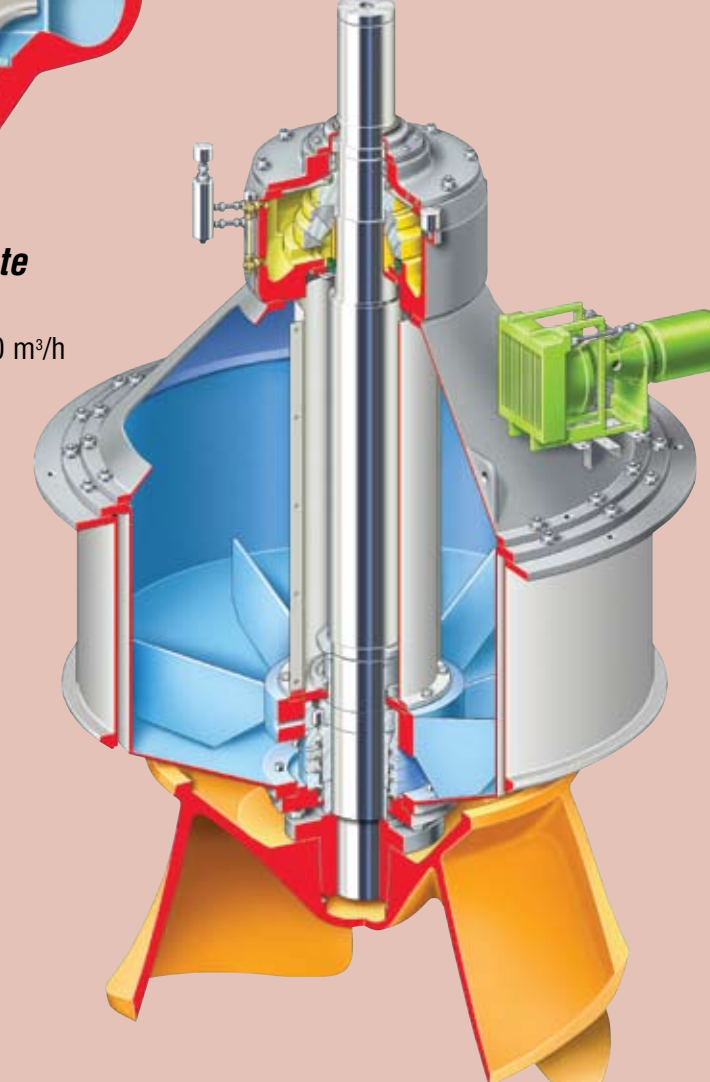
### Reactor Recirculation

- Flows to 4500 m<sup>3</sup>/h (20 000 gpm)
- Heads to 750 m (2500 ft)
- Temperatures to 200°C (400°F)
- Pressures to 170 bar (2500 psi)



### Concrete Volute

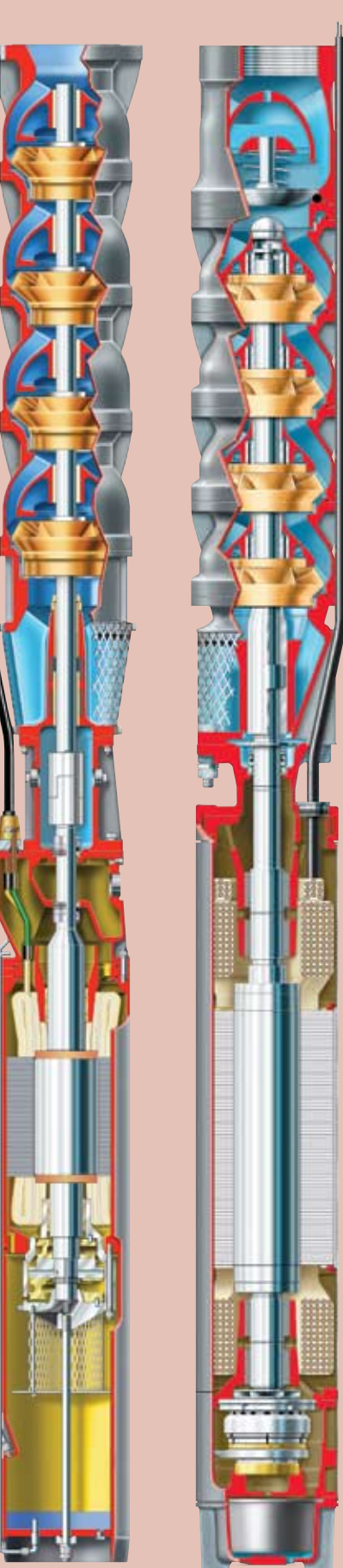
- BSV, BCV
- Flows to 115 000 m<sup>3</sup>/h (500 000 gpm)
  - Heads to 30 m (100 ft)



### Submersible

- Water Filled Motor
- Oil Filled Motor

- SUBM
- Flows to 4500 m<sup>3</sup>/h (20 000 gpm)
  - Heads to 800 m (2600 ft)
  - Motor sizes to 5000 kW (6700 hp)

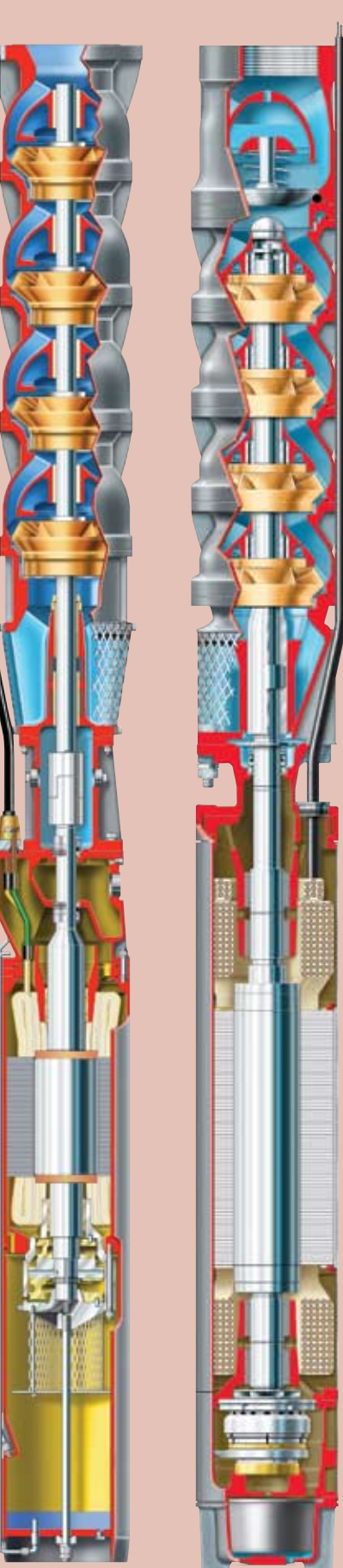


### Special Purpose Equipment and Systems

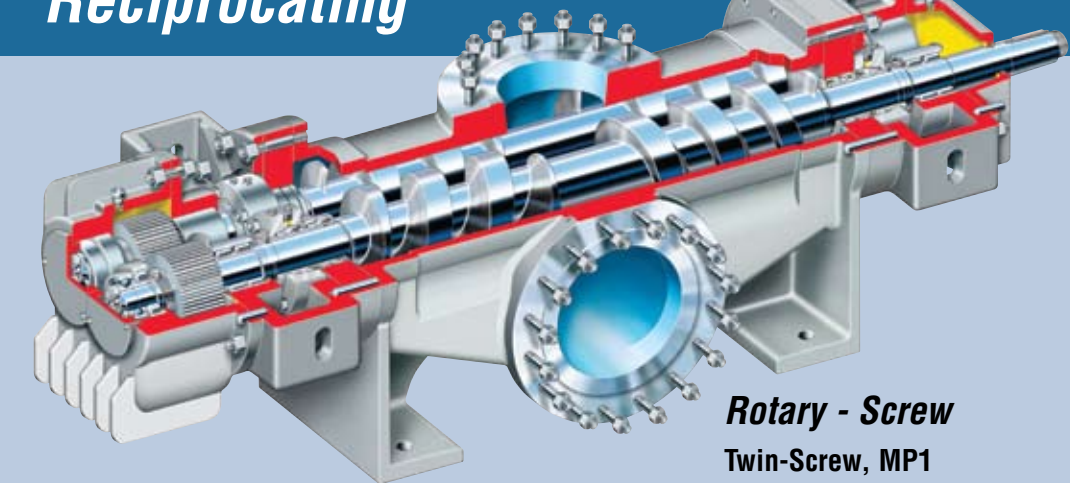
- Unspared process barrel pumps
- Hydraulic power recovery turbines
- Reactor recycle systems
- Hydraulic decocking systems
- Plunger pumps
- Cryogenic expanders

### Pesticide and Insecticide Closed Chemical Transfer

- AP-30
- DD6
- MDX/MDXN
- MTX
- PH6
- STX



## Rotary and Reciprocating



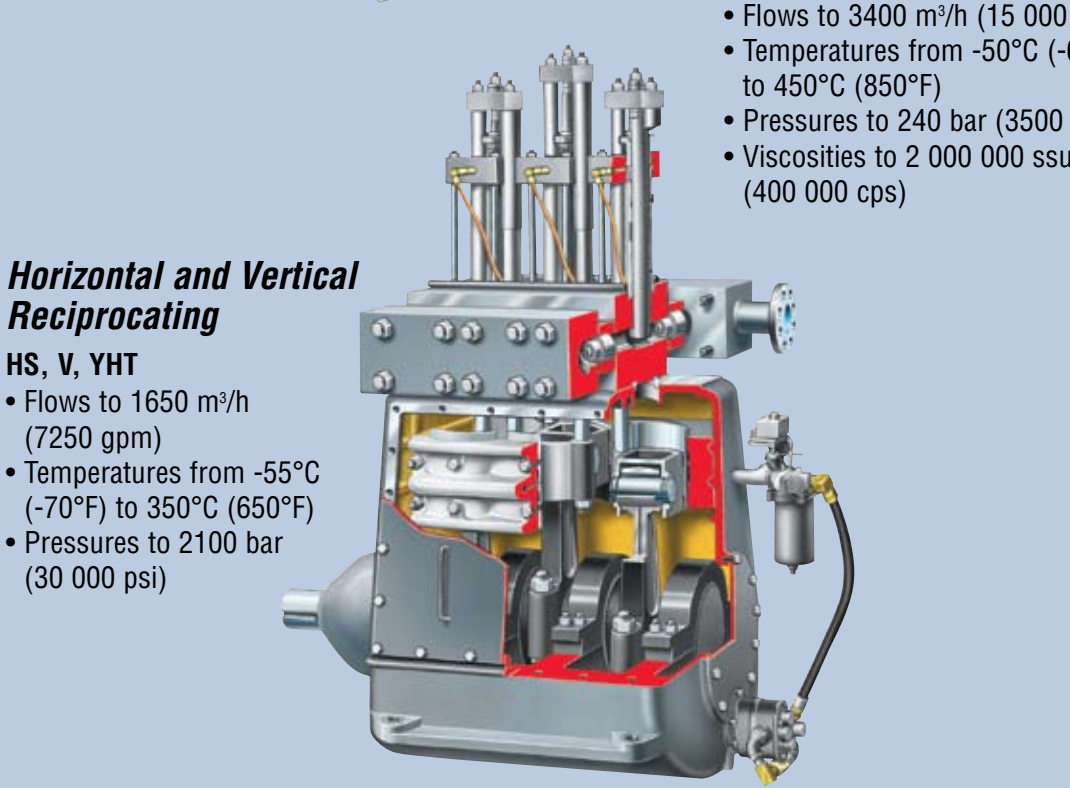
### Rotary - Screw

- Twin-Screw, MP1
- Flows to 3400 m<sup>3</sup>/h (15 000 gpm)
  - Temperatures from -50°C (-60°F) to 450°C (850°F)
  - Pressures to 240 bar (3500 psi)
  - Viscosities to 2 000 000 ssu (400 000 cps)

### Horizontal and Vertical Reciprocating

- HS, V, YHT

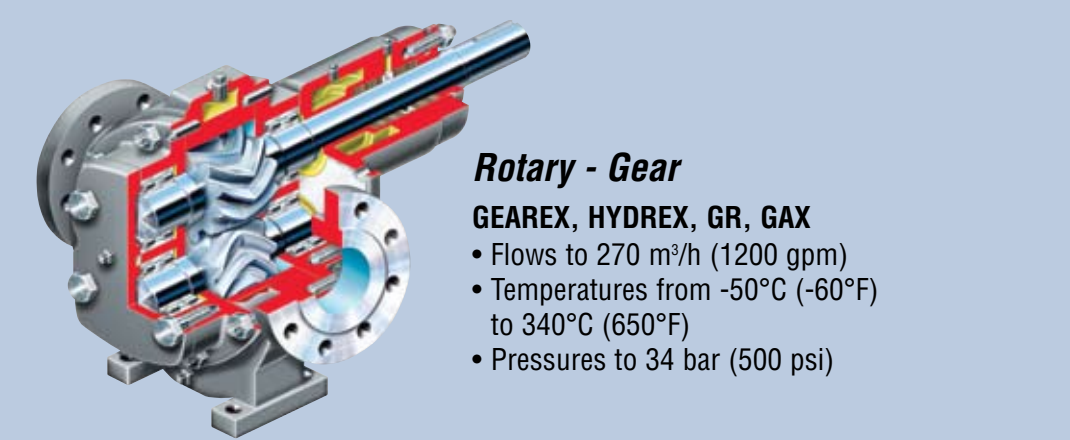
- Flows to 1650 m<sup>3</sup>/h (7250 gpm)
- Temperatures from -55°C (-70°F) to 350°C (650°F)
- Pressures to 2100 bar (30 000 psi)



### Rotary - Gear

- GEAREX, HYDREX, GR, GAX

- Flows to 270 m<sup>3</sup>/h (1200 gpm)
- Temperatures from -50°C (-60°F) to 340°C (650°F)
- Pressures to 34 bar (500 psi)



### Heritage Names of Distinction

- ACEC™ Centrifugal Pumps
- Aldrich® Pumps
- Byron Jackson® Pumps
- Cameron® Pumps
- Durco® Pumps
- Flowserve® Pumps
- IDP® Pumps
- Jeumont-Schneider™ Pumps
- Niigata Worthington Pumps
- Pacific® Pumps
- Pleuger® Pumps
- Scienco® Pumps
- Sier-Bath® Rotary Pumps
- TKL™ Pumps
- United® Centrifugal Pumps
- Western Land Roller® Irrigation Pumps
- Wilson-Snyder® Pumps
- Worthington® Pumps
- Worthington Simpson® Pumps

Flowserve offers the world's most complete line of pumps for Process, Chemical, Power, Water and General Industrial applications. Only a representative sample of these pumps are shown.



**USA and Canada**  
Flowserve Corporation  
5215 North O'Connor Blvd.  
Suite 2300  
Irving, Texas 75039-5421 USA  
Telephone: 1 937 890 5839

**Europe, Middle East, Africa**  
Flowserve Corporation  
Gebouw Hagepoint  
Westbroek 59-51  
4822 ZX Breda  
Netherlands  
Telephone: 31 76 502 8920

**Latin America**  
Flowserve Corporation  
Boulevard del Cafetal  
Edificio Nimita, Local 7  
El Cafetal - Caracas  
Venezuela 1061  
Telephone: 58 212 985 3092  
Telefax: 58 212 985 1007

**Asia Pacific**  
Flowserve Pte. Ltd.  
10 Tuas Loop  
Singapore 637345  
Telephone: 65 6771 0600  
Telefax: 65 6779 4607

FPD-10022  
Printed in U.S.A.  
August 2009  
© Flowserve Corporation