



AURORA PUMP A member of PENTAIR PUMP GROUP

AURORA PUMP

**BULLETIN 410N
410 SERIES
SINGLE STAGE
SPLIT CASE
PUMPS**

**CAPACITIES TO 15000 G.P.M.
HEADS TO 500 FEET
TEMPERATURES TO 275° F**

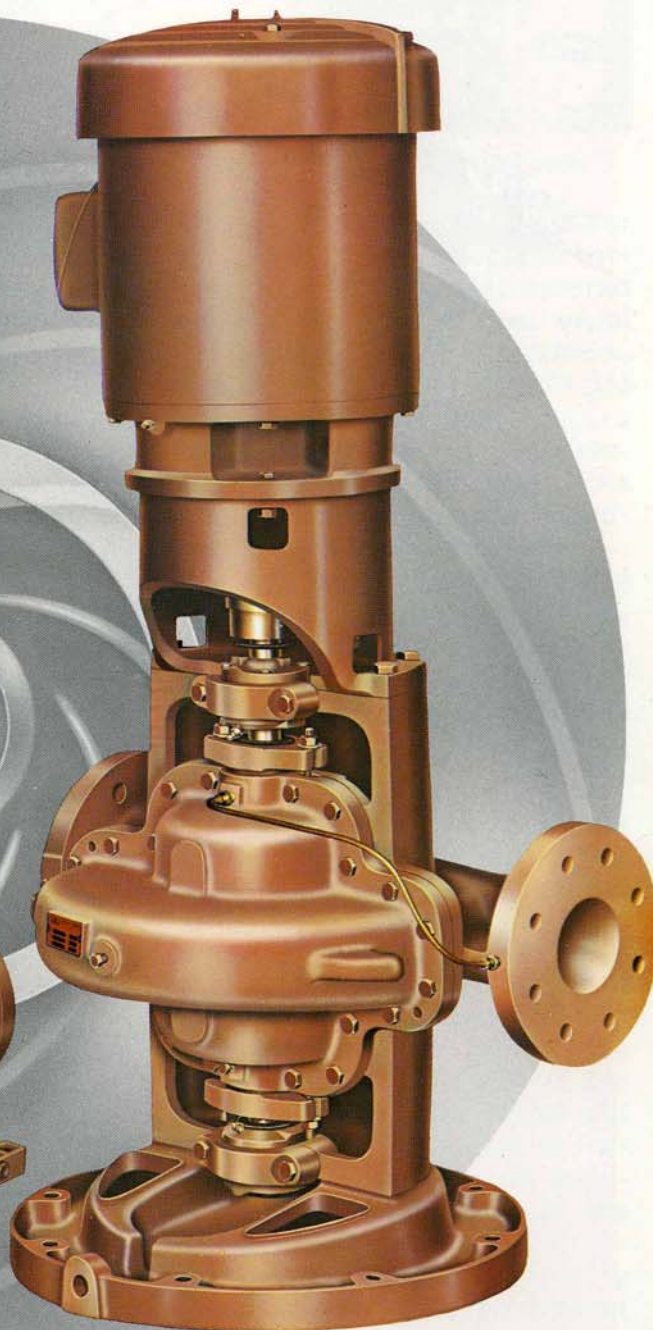
MODEL 412



MODEL 411



MODEL 413



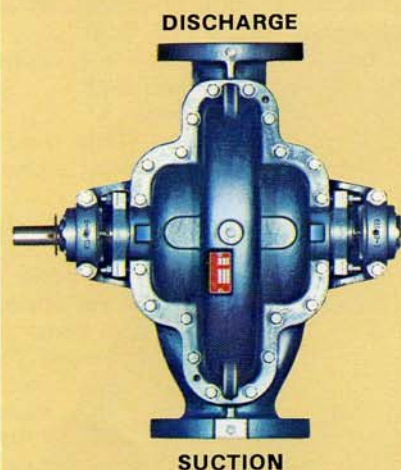
INTRODUCTION

410 SERIES PUMPS

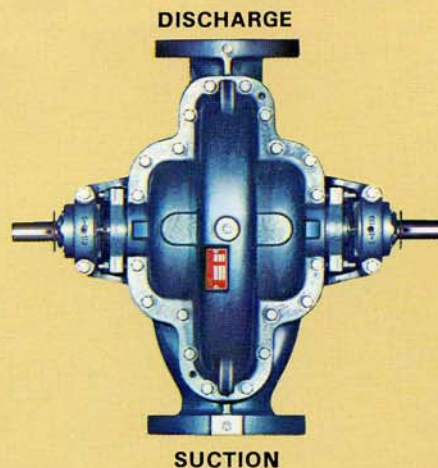
The horizontal split case pump has long and properly been used for the handling of liquids where the utmost in reliability and accessibility are paramount. Billions of gallons of liquid have been pumped by split case double suction pumps and billions more will be pumped con-

sidering the rapid industrial, agricultural and commercial expansion. The Aurora 410 Series pumps make a significant contribution to the customer requirements for pumps on this type of service. The 410 Series is a modern design based on Aurora Pump's 50 years experi-

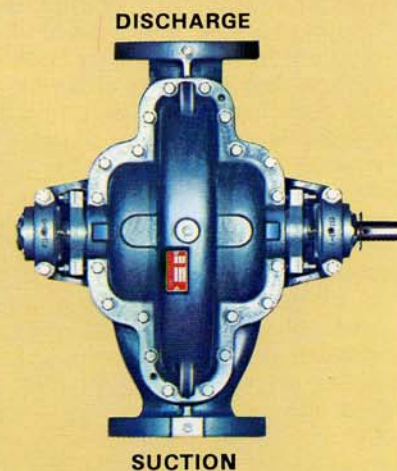
ence with the design, sales and manufacture of horizontal split case pumps. Look through this bulletin and see what real accomplishments can be made when an imaginative approach is taken to the customer's problem of moving liquids within a piping system. See Aurora now!



**STANDARD
RIGHT HAND ROTATION**



**OPTIONAL DUAL DRIVE
RIGHT HAND ROTATION**



**OPTIONAL
LEFT HAND ROTATION**

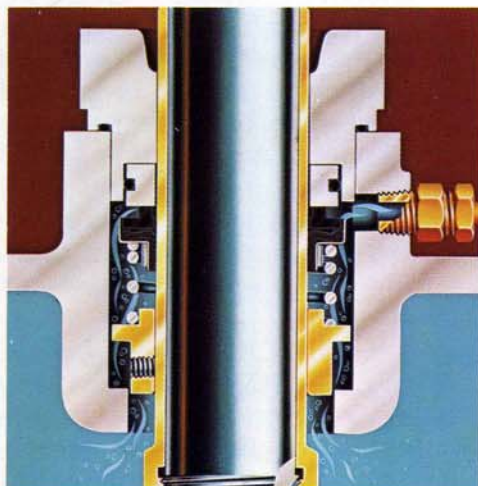
QUICK REFERENCE 410 SERIES FEATURE SELECTOR

STANDARD

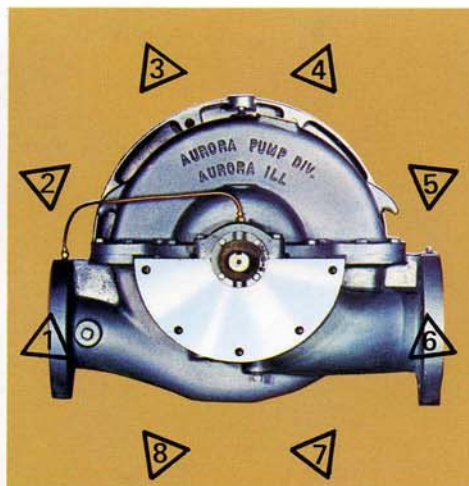
- Bronze fitted pump construction
- Bronze shaft sleeves
- Dynamically balanced impellers
- Bronze case wearing rings
- Twin volute on 10" and larger pumps
- Stainless steel impeller key
- Regreasable ball bearings
- Single row ball bearing (inboard)
- Double row ball bearing (outboard)
- Mechanical seals . . . single unbalanced (Model 412 and 413)
- Graphite and TFE lubricated acrylic packing
- Internal bypass between casing and stuffing box
- 125# ASA flanges
- 250 psi case working pressure
- Carbon steel shaft
- Stuffing box bushings
- Lifting lugs
- Hydrostatic test
- Cast integral bearing arms
- Water slingers and grease seals
- External bypass between casing and stuffing box (Model 412 and 413)
- Coupling guard (Model 411)

OPTIONAL

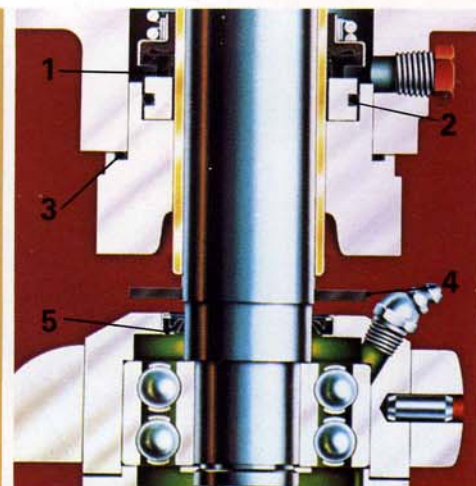
- All iron, all bronze or special alloy pump construction
- Hardened 440C stainless steel shaft sleeves (packing only)
- 316 stainless steel shaft sleeves (mechanical seal)
- Impeller wearing rings
- Oil lubricated ball bearings (Model 411 horizontal pump)
- Mechanical seals . . . single unbalanced (Model 411)
- . . . single balanced (All Models)
- Stainless steel or monel shaft
- External bypass between casing and stuffing box (Model 411)
- Steel drip rim, formed steel or fabricated steel bases
- Double extended shaft (Model 411)
- Right or left hand rotation
- Certified performance test
- Packing with lantern ring (Model 411)
- 250# ASA suction and discharge flanges
- Bottom suction or chair mounted pumps
- Water cooled cartridge caps



EXTERNAL UPPER SEAL FLUSH



INLINE PIPING IN ANY DIRECTION



FIVE WAY BEARING PROTECTION

GO VERTICAL AND PUT 2 PUMPS WHERE ONLY ONE HORIZONTAL WOULD FIT.

Aurora's space saving vertical split case pumps have long been recognized for their reliability. This reputation in the field of vertical installations has been re-emphasized since the introduction of the Model 413 as pumps of unmatched quality. VERTICAL PUMPS PROVIDE DISTINCT ADVANTAGES OVER HORIZONTAL PUMP CONSTRUCTION.

- A. Less floor space required.
- B. Inline piping arrangement al-

lows piping in any direction. C. Elevated motor protects against potential flooding if the pump station is in a low area.

Additional features described for the horizontal pumps are also found in the vertical pumps. In addition, there are several features unique only to Model 413.

1 COUPLING ALIGNMENT True alignment is vital to long life and proper performance. To maintain proper coupling alignment the mounting bracket is rabbet fitted to the motor.

2 MECHANICAL SEALS Standard construction includes car-

bon against Ni-Resist face for optimum hot water performance. Long life is also assured with 303 stainless steel metal parts and "Buna-N" elastomers.

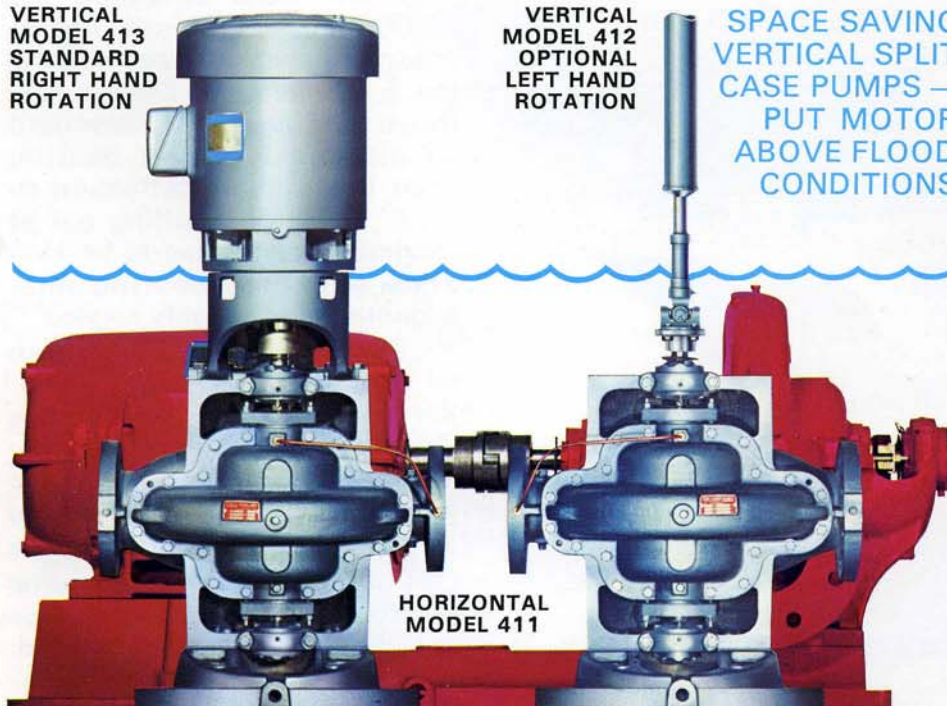
3 BEARING PROTECTION Grease seals and water slingers are provided to protect the bearings from contamination. This important feature is also standard on horizontal pumps.

4 CAST IRON DRIP RIM BASE Accurate positioning of the pump is assured by the mounting base. A drip rim is incorporated in the base design to control condensation and leakage.

VERTICAL
MODEL 413
STANDARD
RIGHT HAND
ROTATION

VERTICAL
MODEL 412
OPTIONAL
LEFT HAND
ROTATION

SPACE SAVING
VERTICAL SPLIT
CASE PUMPS —
PUT MOTOR
ABOVE FLOOD
CONDITIONS



HORIZONTAL
MODEL 411

MODELS 411 are horizontally baseplate mounted with a driver flexibly coupled to the pump. This design is recommended where floor space is readily available and where flooding of the installation is not possible. MODELS 412 are vertically mounted and utilize flexible shafting between the driver and the pump. This model is frequently used on difficult applications where flooding of the installation is a possibility. MODELS 413 are vertically mounted with an elevated driver coupled directly to the pump thru a flexible coupling. Model 413 is very popular for installations where available floor space is limited and where possible flooding is marginal.