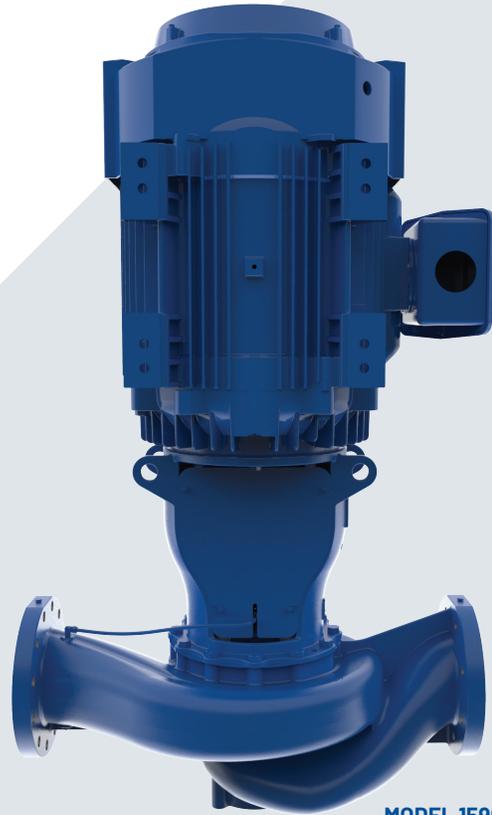


1590 SERIES

# SINGLE STAGE VERTICAL IN-LINE PUMPS



MODEL 1590  
CLOSE COUPLED



MODEL 1590  
SPLIT COUPLED



NSF372 LISTED

## 1590 SERIES SINGLE STAGE VERTICAL IN-LINE PUMPS

Capacities to 12,000 gpm (2,725 m<sup>3</sup>/hr)  
Heads to 370 feet (112 m)  
Temperatures to 275° F (135° C)

### Setting New Standards of Efficiency

The Pentair Fairbanks Nijhuis brand is delivering over a century of innovation for constant peace of mind. The years of experience with design, sales and manufacturing of centrifugal pumps has led to the new generation of the Pentair Fairbanks Nijhuis® 1590 Series. Today's room space constraints are more challenging than years ago. Pentair Fairbanks Nijhuis Vertical In-line Pumps are specifically designed for mounting directly in a pipeline and to reduce the space required in a pump room; two pumps fit in the space of one. These modern pumps with a clean, straightforward and updated design were developed with upgraded materials of construction and a simplified offering without limiting ranges of head and capacity requirements. These pumps not only exceed U.S. Department of Energy (U.S. DOE) pump efficiency standards, but also feature shared hydraulics and premium materials as standard offering. The new Pentair Fairbanks Nijhuis 1590 Series offer industry-leading durability and are an easy to maintain solution for your liquid handling needs.



#### STANDARD FEATURES

- ◆ Offered in two configurations
  - 1590 Close Coupled
  - 1590 Split Coupled
- ◆ New Ductile Iron ASTM A536 Casings provide higher strength and durability
- ◆ New 316 Stainless Steel impellers provide less corrosion, additional chemical resistance and durability
- ◆ New shared hydraulics with Pentair Fairbanks Nijhuis 1600 End Suction Pumps to streamline inventories
- ◆ Working pressures up to 175 psi
- ◆ New standard bracket design to accommodate common C-Face NEMA rated motors. (Pentair Fairbanks Nijhuis 1590 Split coupled only)
- ◆ Patented Seal Replacement mechanism allows servicing without removing motor and casing, one man operation. (Pentair Fairbanks Nijhuis 1590 Split coupled only)
- ◆ Mounting directly in a pipeline, no pipe support, special tools and flexible connectors required.
- ◆ Factory hydro test
- ◆ Stainless steel ASTM A582 Type 416 shaft
- ◆ 303 Stainless Steel mechanical seal with Buna-N, ceramic and carbon parts
- ◆ NSF372 listing low lead content

#### OPTIONAL FEATURES

- ◆ Working pressures up to 290 psi<sup>1</sup>
- ◆ Pump base
- ◆ Casing wear ring
- ◆ Wear ring (Bracket/ Seal plate)
- ◆ Impeller wearing rings<sup>2</sup>
- ◆ Outside balanced seal (Pentair Fairbanks Nijhuis 1590 Split coupled only)
- ◆ Several mechanical seal options for maximum temperatures up to 275°F
- ◆ Certified performance testing over the full operating range of the pump

#### APPLICATIONS

- ◆ Industrial Uses
- ◆ HVAC Systems
- ◆ Boosting
- ◆ Clean Water Pumping
- ◆ Municipal

<sup>1</sup> Refer to factory for this option

<sup>2</sup> With 14 inch and larger impeller size only

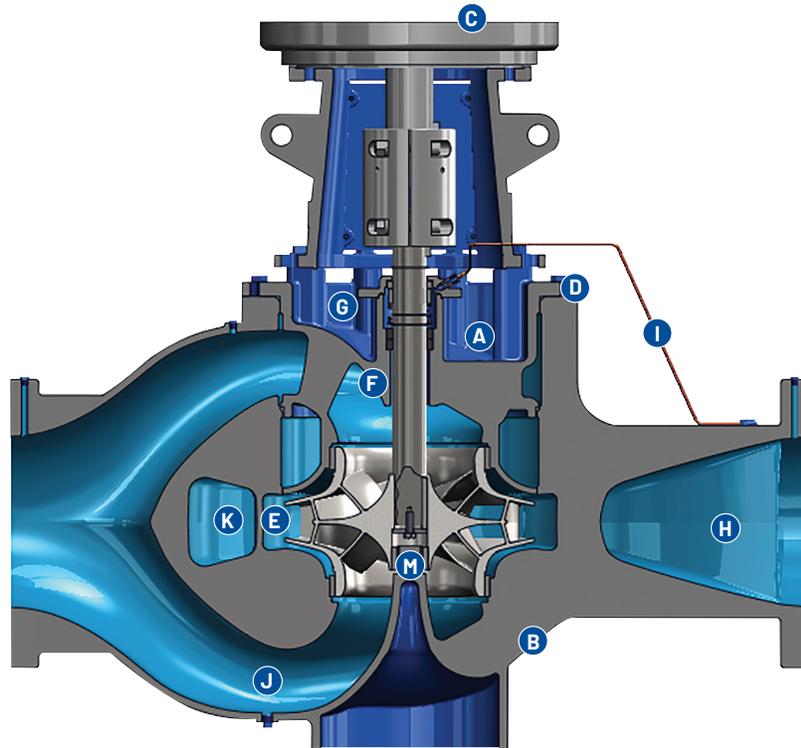
# PUMP SIZE OFFERING

Pump Sizes
1.5"1591
1.5" 1592A
2"1592A
2"1593
2.5"1591A
2.5"1592
3"1594
3"1595
3"1596A
3"1597
4"1595A
4"1596
4"1597
4"1598
5"1591A **
5"1592 **
5"1593A**
5"1594
6"1591A***
6"1592A**
6"1593**
6"1594**
8"1591**
8"1592A**
8"1594A**
10"1591A**
10"1592
10"1594
12"1591
12"1593
14"1591

\*Temporarily unavailable until further notice

\*\*Double volute

# PENTAIR FAIRBANKS NIJHUIS® 1590 SPLIT COUPLED AND CLOSE COUPLED IN-LINE PUMP FEATURES



Double Suction Pump

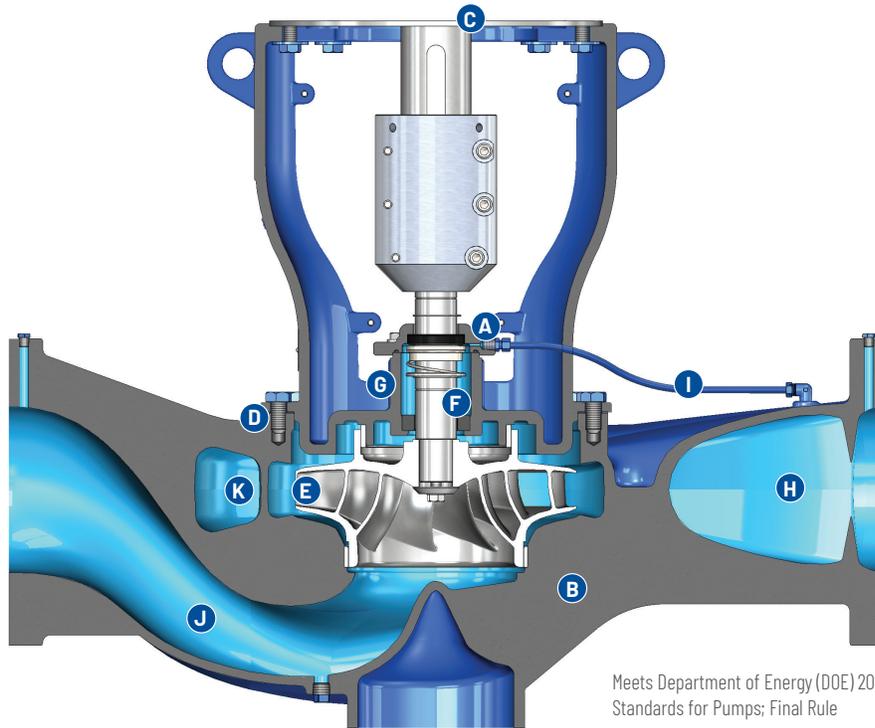
- A. Patented Jacking Mechanism<sup>1</sup>**  
simplifies seal replacement – one person operation.
- B. Ductile Iron Casing**  
long life with higher working pressures.
- C. Standard C-Face Motor<sup>2</sup>**  
provides low noise level pump operation.
- D. Back Pull-Out Casing**  
includes in-line suction and discharge.
- E. Investment Stainless Steel, Dynamically Balanced, Enclosed Impeller**  
keyed to the shaft extension and secured by a capscrew and washer. Gaskets are used to prevent leakage to shaft end.
- F. Stainless Steel Shaft**  
designed for minimum deflection.
- G. Mechanical Seal**  
has carbon against ceramic face for optimum hot water performance. Long life is assured with 303 SST metal parts and Buna-N flexible elastomers (outside balanced seal optional).
- H. Factory Hydro Test**  
guarantees casting and seal integrity.
- I. Relief Line**  
assures adequate venting of the seal chamber and lubrication of seal faces.
- J. Smooth Suction Passage**  
vortex breaker helps to minimize pre-rotation.
- K. Double Volute**  
minimizes side load on shaft extending mechanical seal life.  
Note: Single Volute also available.
- L. Spire<sup>3</sup>**  
supports rotating element from the bottom for stability and balance during operation.

<sup>1</sup> Split Coupled version only

<sup>2</sup> Split coupled version only. Close coupled uses JM/JP motors

<sup>3</sup> Double Suction models only

# PENTAIR FAIRBANKS NIJHUIS® 1590 SPLIT COUPLED AND CLOSE COUPLED IN-LINE PUMP FEATURES



Meets Department of Energy (DOE) 2020 Standards for Pumps; Final Rule

Single Suction Pump

- A. Patented Jacking Mechanism<sup>1</sup>**  
simplifies seal replacement – one person operation.
- B. Ductile Iron Casing**  
long life with higher working pressures.
- C. Standard C-Face Motor<sup>2</sup>**  
provides low noise level pump operation.
- D. Back Pull-Out Casing**  
includes in-line suction and discharge.
- E. Investment Stainless Steel, Dynamically Balanced, Enclosed Impeller**  
keyed to the shaft extension and secured by a capscrew and washer. Gaskets are used to prevent leakage to shaft end.
- F. Stainless Steel Shaft**  
designed for minimum deflection.

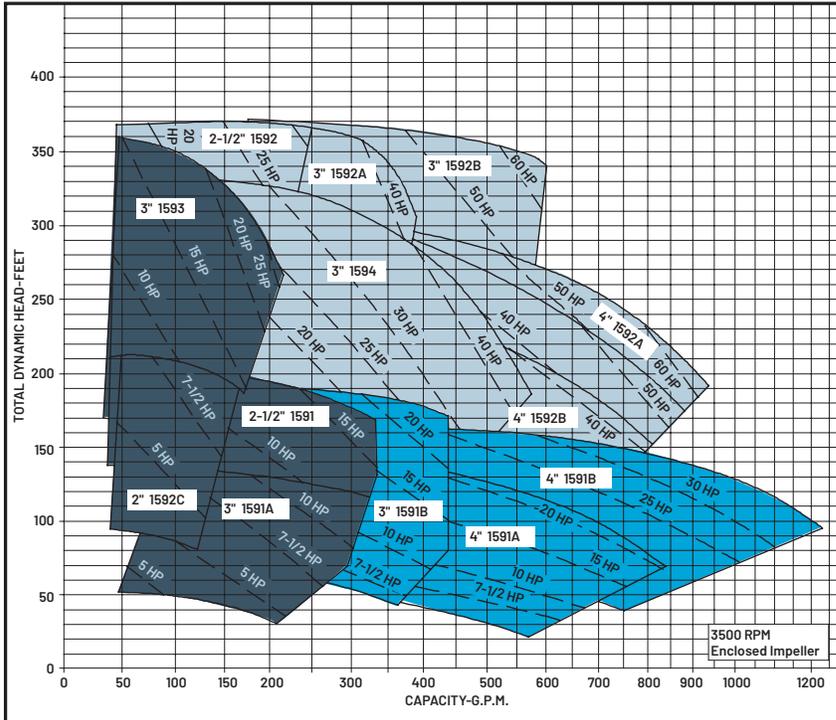
- G. Mechanical Seal**  
has carbon against ceramic face for optimum hot water performance. Long life is assured with 303 SST metal parts and Buna-N flexible elastomers (outside balanced seal optional).
- H. Factory Hydro Test**  
guarantees casting and seal integrity.
- I. Relief Line**  
assures adequate venting of the seal chamber and lubrication of seal faces.
- J. Smooth Suction Passage**  
vortex breaker helps to minimize pre-rotation.
- K. Double Volute**  
minimizes side load on shaft extending mechanical seal life.  
Note: Single Volute also available.

<sup>1</sup> Split Coupled version only

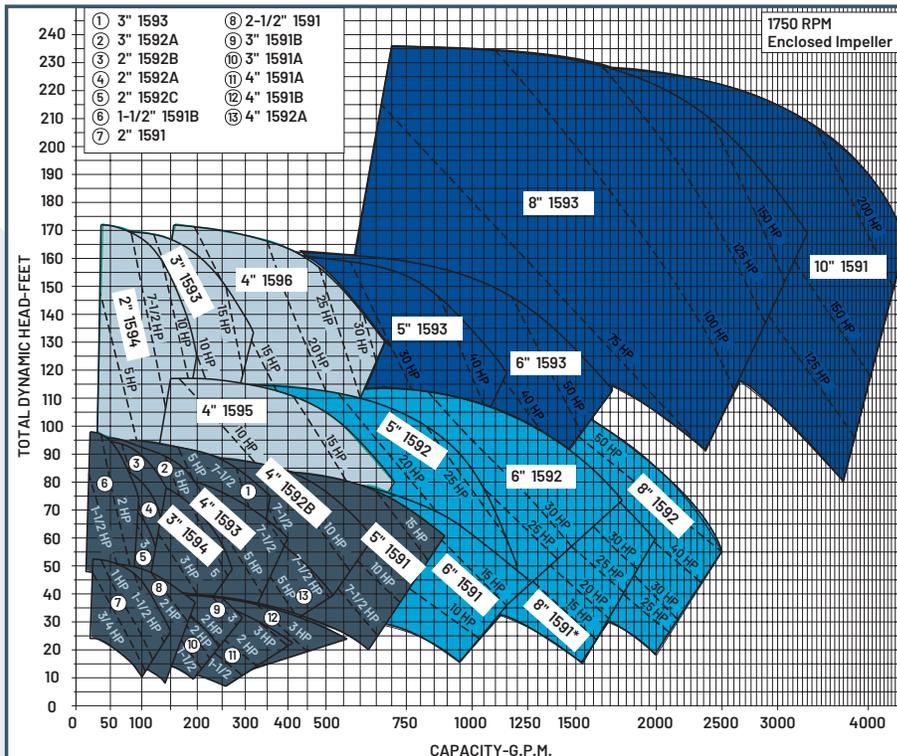
<sup>2</sup> Split coupled version only. Close coupled uses JM/JP motors

# PUMP PERFORMANCE

## 3500 RPM, 60 Hz RANGE CHART



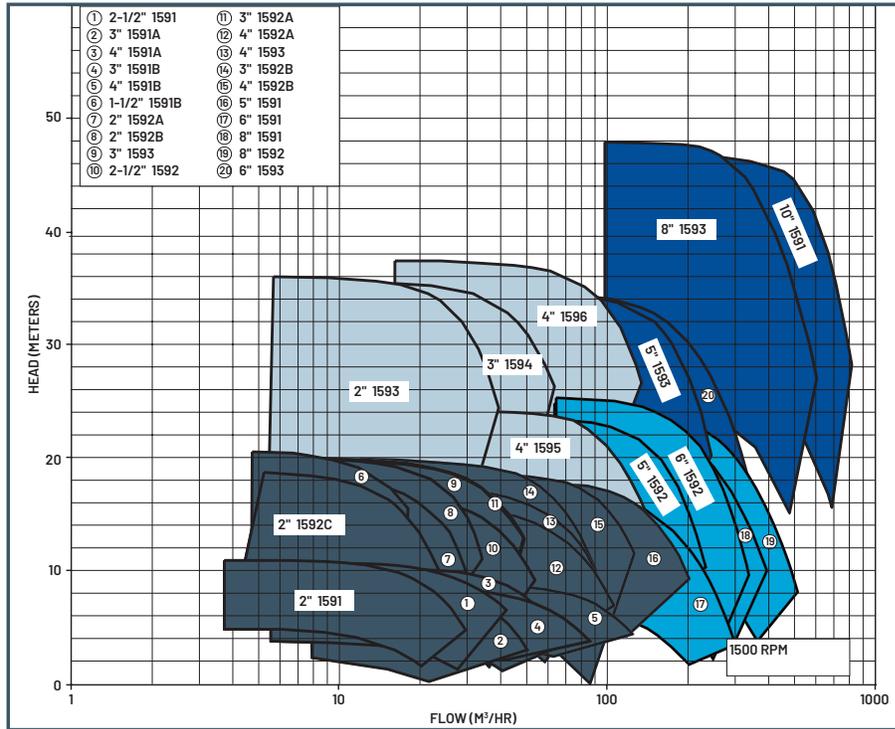
## 1750 RPM, 60 Hz RANGE CHART



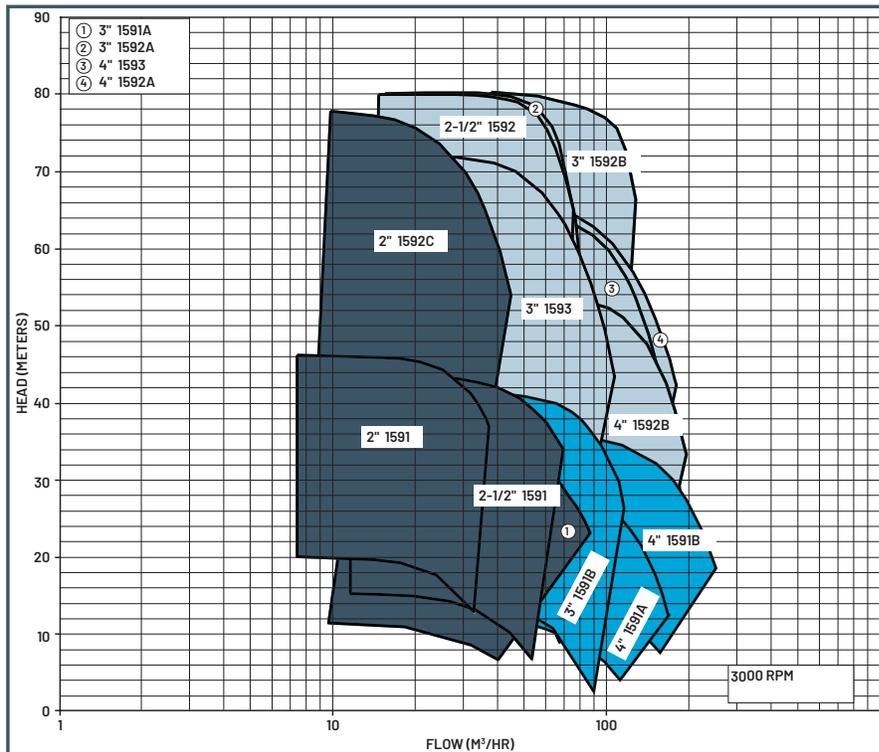
Reference only: For the most current information, refer to the Pentair Encompass Pump Selection Tool.

# PUMP PERFORMANCE

## 1500 RPM, 50 Hz RANGE CHART



## 3000 RPM, 50 Hz RANGE CHART



Reference only: For the most current information, refer to the Pentair Encompass Pump Selection Tool.

# PUMP FEATURES

## MAXIMUM LIMITATION BASED ON STANDARD MATERIALS AND PUMPING CLEAR WATER

Speed (RPM)		Up to 3600 RPM
Horsepower (HP)	1200 RPM	250 HP
	1800 RPM	800 HP
	3600 RPM	500 HP
Temperature °F/ °C		Standard 225 °F (107 °C) Optional 275 °F (135 °C)
Case Working Pressure PSI		290 <sup>1</sup>

<sup>1</sup>With optional 250# flanges and seal rated for 290 psi

## MATERIALS OF CONSTRUCTION

Pump Part	Stainless Steel Impeller Fitted
Casing	Ductile Iron ASTM A536
Impeller	Stainless Steel ASTM A743 Type 316
Shaft	Stainless Steel ASTM A582 Type 416
Bushing	Carbon Graphite Matrix
Case Wearing Rings	Stainless Steel ASTM A582 Type 416
Bracket	Cast Iron ASTM A48
Mechanical Seal (STD)	-
Washer	Carbon
Seat	Ceramic
Elastomer	Buna-N
Metal Parts	303 SST
Spring	303 SST



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