



## Tri-Flo<sup>®</sup> C Series/SP Series Centrifugal Pumps

DISTRIBUTED BY

**HARCO**

**ENTERPRISES LTD.**

1-800-361-5361



**Tri-Clover Inc.**

# Tri-Flo®

## The centrifugal pump that was designed with the processor in mind

Tri-Clover's diversity of experience in the manufacture and application of fluid control systems and components is expressed in the practical design of the Tri-Flo Pump. And it is reflected in the high standards of performance attained by thousands of units that are presently in service in every phase of the processing industries.

*Relevance to your processing requirements is expressed in Tri-Flo Pump capabilities which let you:*

- Handle liquids and semisolids with entrained vapors.
- Sustain favorable vacuum characteristics under varying pumping conditions.
- Handle viscous products at elevated GPM and pressure ratings.
- Pump in series without seal failure from elevated inlet pressure.
- Provide full CIP service without dismantling. (Models equipped with type D, DG, E and F seals).

### INTEGRAL CLEAN-IN-PLACE DESIGN

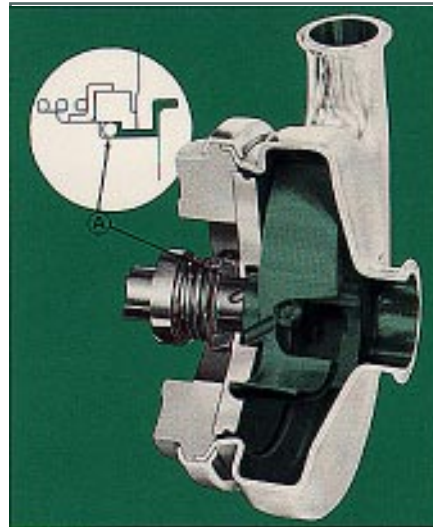
Series C and SP Pumps are available with Tri-Clover's "Groove-in-Shaft" design (D, DG, E and F seals) for use in CIP installations. This feature offers effortless self-cleaning with no dismantling or takedown. The sanitizing of all product contact areas (shown below in green) is automatic.

Circumferentially spaced angular grooves are located on the impeller hub and on the impeller shaft above the seal o-ring (A). These grooves cause turbulence which flush the hub pocket and adjacent parts as the impeller hub and shaft rotate.

*\*U.S. Patent No. 3,481,273*

### ENLARGED INLET OPTION

All series of Tri-Flo Pumps are available with both standard inlet sizes for regular service and with enlarged inlets for special applications requiring larger suction lines. Performance curves for both are included on pages 14-33. Also, useful application data on friction loss, viscosity and NPSH are shown on pages 9 and 34-36.



Tri-Clover Tri-Flo® Centrifugal Stainless Steel Sanitary Pumps, identified with the 3A symbol on the following pages are accepted as meeting the 3A sanitary standard by the appropriate committees of the International Association of Milk, Food & Environmental Sanitarians; U.S. Public Health Service; and Dairy Industry Committee. The 3A Standard specifically covering Centrifugal Pumps is available from the International Association of Milk, Food, and Environmental Sanitarians, Inc., 3020 Bluff Road, Columbia, SC 29209-3502. 3A marked items are also in compliance with ASME Food, Drug and Beverage Equipment Standard #ANSI/ASME F2.1-1982.

Catalog product presentations, including cataloged dimensions, designs and specifications are representative of product availability at time of publication only. Actual geometry, dimensions, and designs are subject to design and manufacturing changes without notice. All curves are typical performance curves, not Certified, and should be applied for guideline purposes only.

# Tri-Clover Products for Special Pump Requirements

(Contact Tri-Clover for additional details.)

DISTRIBUTED BY

**HARCO**  
**ENTERPRISES LTD.**  
1-800-361-5361



## Tri-Flo® Model CS Pump with Stainless Steel Motor Shroud

Similar in design to the C Series Pump, CS is available in most sizes, capacities and configurations as specified on page 4. The Stainless Steel shroud provides maximum motor protection against corrosive environments, and provides a “showcase” appearance. CS uses standard C-flange motor without feet.



## EH Series Pedestal Mount Cast Design Centrifugal Pumps

Heavy duty cast type 316 S/S construction for strength and durability. High volume, relatively high head, low RPM pump is ideal for delicate products such as latex, whole vegetables, protein slurries and enzymes. Unique one piece “bow-tie” impeller design protects product integrity. Available in three sizes, with Tri-Clamp®, Bevel Seat or flanged connections. Choice of five seals for sanitary and corrosion resistant service.



## Tri-Flo® CL Series Centrifugal Pumps

The newest family of centrifugal pumps from Tri-Clover is also the industry's widest. With eleven models to choose from our CL (*Complete Line*) Series means selection and application-matched performance for all of your process needs.

Constructed from 316L stainless steel, the CL Series pumps feature a cast heavy duty front cover and casing. That means long-lasting durability and quieter operation. Tight tolerances between impellers and front covers provide high efficiencies. And a choice of application-matched seals adds to the lines versatility. Each CL Series pump features CIP capability and all are designed to meet 3A requirements.

## Stainless Steel Motors/Adapters

Can be furnished on C Series Pumps, SS Motors provide the same benefits as the SS shroud, but allow greater accessibility for ease of motor maintenance. A C Series Pump with stainless steel motor is more compact and occupies less space than comparable CS unit.

## Special Materials for Backplates

For applications requiring a double seal and hard seal face surfaces, spray-coated backplates are available to extend wear life when pumping abrasive products, or products with poor lubricating qualities. Chrome Oxide or Tungsten Carbide backplate surfaces are less likely to wear than our standard Stainless Steel.

## AC Adjustable Frequency Motor Controls for Tri-Flo® Centrifugal and PR Positive Pumps

This drive system capability is highly cost efficient in terms of initial cost, potential energy savings, and its ability to provide the user with pumping control that can reduce error, boost production, and increase yield from raw materials.

An AC controller in your system can accept a signal from a microprocessor, computer, programmable controller, or pressure/flow sensing instrument.

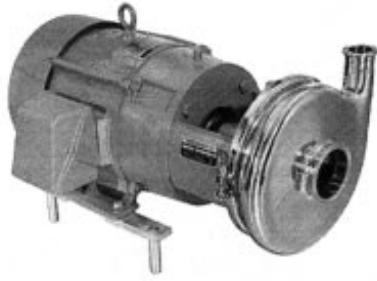
Tri-Clover offers AC controllers from a variety of manufacturers. They are available for 1/2 HP and up, for any Tri-Clover pump and are adaptable to our standard AC motor specs. Let us select the controller to fit your pumping application.



## Optional Casing Drain

For use in critical pharmaceutical, cosmetic, sterile water and microelectronic processing. Also on food applications where *complete* draining of the lines is imperative. Special casing is available in 90° or 45° discharge. Seal flush piping feature is also available as an option.

# C Series Close-Coupled Pump



Seal Guard Assembly (not shown) is furnished with all units as standard.

## MECHANICAL SPECIFICATIONS

| Model Number | Inlet (Inches) | Outlet (Inches) | Maximum Impeller Dia. (Inches) |
|--------------|----------------|-----------------|--------------------------------|
| C114         | 1½ or 2        | 1½              | 4                              |
| C216         | 2 or 2½        | 1½              | 6                              |
| C218         | 2 or 3         | 1½              | 8                              |
| C328         | 3 or 4         | 2               | 8                              |
| C4410        | 4 or 6*        | 4               | 10                             |

\*Pump supplied with 6" x 5" eccentric reducer on inlet (casing inlet is 5").

### Motor, Electrical

- 1 phase, 115/230 volts; 1750 and 3500 rpm.
- 3 phase, 230/460 volts; 1750 and 3500 rpm.

### Motor Housing Options

- Totally enclosed furnished as standard (available in all frame sizes).
- Other options include Drip-proof, Explosion-proof, Energy-efficient, and Mill and Chemical.

### Construction Materials

- *Pump Casing, Backplate, Impeller Pin, Impeller and Shaft* – 316 S/S.
- *Seals* – see Ordering Information page 39.
- *Motor Housing and Adapter* – cast iron.
- *Mounting Legs* – zinc-plated steel.
- *Casing Gasket* – BUNA-N is standard. Fluoroelastomer, EPDM, and PTFE are available on application.

### Casings

- *Volute Type* – standard (shown on page 5).
- *Circular Type* – with a flat, two-bladed impeller is recommended where application is air-lock prone: where product has large volume of entrained vapor or on applications where supply tank could run dry.
- *Enlarged inlet casings* are available with either the volute or circular type casings.

### Port Connections / Finish

Casings furnished with Tri-Clamp® port connections and polished finish unless otherwise specified. See ordering information on page 39.

### Sanitary – Polished Finish

- Tri-Clamp® (standard)
- Bevel Seat (ACME thread)



C Series Pumps with types D, DG, E and F seals, polished casings with either Tri-Clamp or Bevel Seat connections are authorized as meeting 3A accepted practices, and are identified with the 3A Symbol.

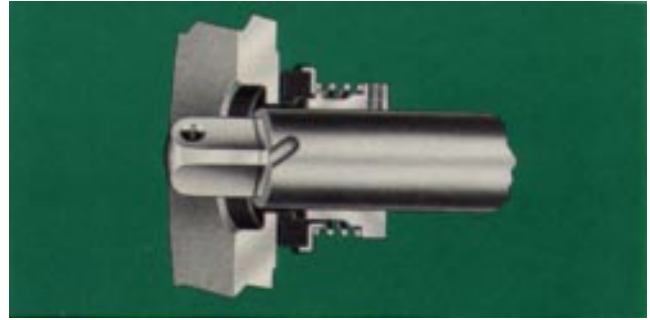
### General Service – Glass Beaded Finish

- NPT
- Flanged (ASA-150#, 1/16" raised face)
- Tri-Weld®

Additional charge applies to general service casings.

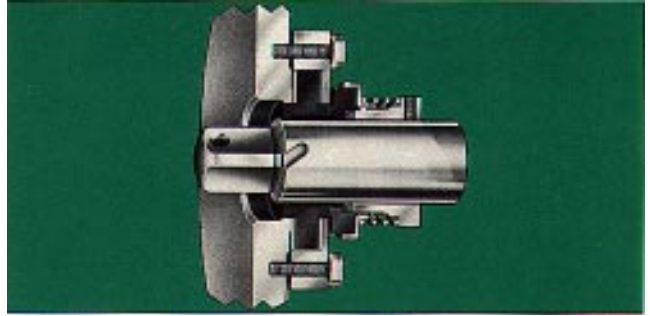
## SEAL SPECIFICATIONS

### Type D – External Balanced Seal



Well-suited for multipurpose use, this seal is designed to give long service life. Typical applications include: dairy products, cream style corn, tomatoes, beverages, etc. Also applicable for acid cleaning solutions and detergents.

### Type DG – Clamped-In Seal/Seat

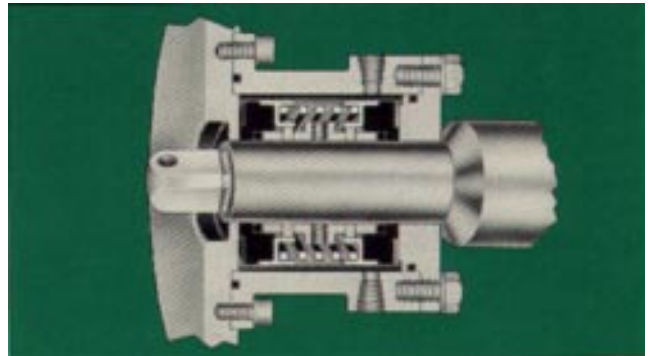


This long lasting seal assembly utilizes standard Type D rotating seal components, plus choice of silicon carbide, ceramic or tungsten carbide stationary seal seat. For maximum corrosion resistance in pure water applications, with abrasive or non-lubricating products. Stationary seat is reversible, for quick changeover if one side is damaged.

### Type F – External Balanced, Water Cascade Type Seal (shown in cutaway photo, page 5)



### Type E – Water Cooled Balanced Double Seal



Seal chamber can be pressurized to contain coolants or sealants which can be piped directly to drain. Ideal for slurries, heavy duty vacuum applications (to 28" Hg), tacky products or products at temperatures up to and exceeding 212°F.

# For top operating efficiency in either suction pressure or vacuum service.

**Easy-Clean Motors** available through 20 HP, frame size 256 TC.

**Longer seal life and less downtime:** Hydraulically balanced seal (D and F types) reduces pressure at sealing surface, providing for less wear and greater efficiency.

**Casings to meet individual requirements:** Two types are available. Volute (shown) is standard, or circular – both are available with enlarged inlet. Wide selection of port connections to meet most piping systems.

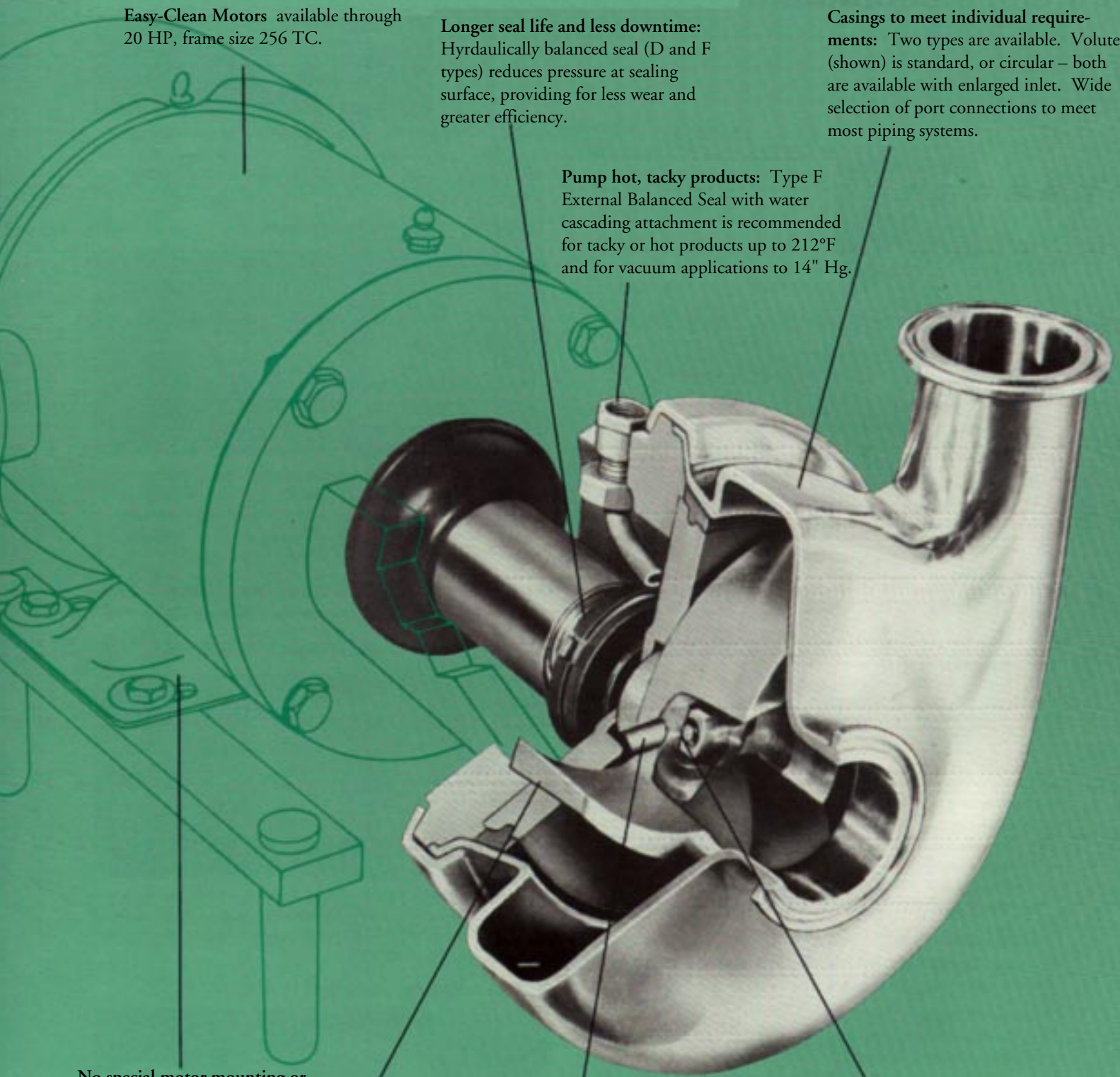
**Pump hot, tacky products:** Type F External Balanced Seal with water cascading attachment is recommended for tacky or hot products up to 212°F and for vacuum applications to 14" Hg.

**No special motor mounting or adapters:** Pump uses any standard foot mounted C-flange motor with locked bearing.

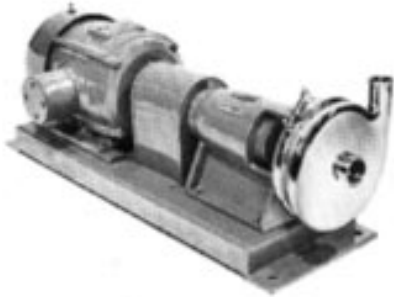
**Smoother pumping performance:** results from use of easy-to-clean, open-type backward curved impeller.

**No takedown for cleaning:** Unique groove-in-shaft design routes sanitizer to all critical areas for clean-in-place. No additional cost – built-in at factory. (Type D, DG, E and F Seals).

**Pump takedown is easy, fast – no tools required:** Casing is secured with quick-opening clamp. Impeller is centrifugally secured with a retainer pin.



# SP Series Base-Mounted Pump



Seal Guard Assembly (not shown) is furnished with all units as standard.

## MECHANICAL SPECIFICATIONS

| Model Number | Inlet (Inches) | Outlet (Inches) | Maximum Impeller Dia. (Inches) |
|--------------|----------------|-----------------|--------------------------------|
| SP114        | 1 1/2 or 2     | 1 1/2           | 4                              |
| SP216        | 2 or 2 1/2     | 1 1/2           | 6                              |
| SP218        | 2 or 3         | 1 1/2           | 8                              |
| SP328        | 3 or 4         | 2               | 8                              |
| SP4410       | 4 or 6*        | 4               | 10                             |

\*Pump supplied with 6" x 5" eccentric reducer on inlet (casing inlet is 5").

### Motor, Electrical

- 1 phase, 115/230 volts; 1750 and 3500 rpm.
- 3 phase, 230/460 volts; 1750 and 3500 rpm.

### Motor Housing Options

- Totally enclosed furnished as standard (available in all frame sizes).
- Other options include Drip-proof, Explosion-proof, Energy-efficient, and Mill and Chemical.

### Construction Materials

- *Pump Casing, Backplate, Impeller Pin, Impeller and Shaft* – 316 S/S.
- *Fabricated Base* is carbon steel.
- *Bearing Frame* is cast iron.
- *Seals* – see Ordering Information page 39.
- *Casing Gasket* – BUNA-N is standard. Fluoroelastomer, EPDM, and PTFE are available on application.

### Casings

- *Volute Type* – standard (shown on page 7).
- *Circular Type* – with a flat, two-bladed impeller is recommended where application is air-lock prone: where product has large volume of entrained vapor or on applications where supply tank could run dry.
- *Enlarged inlet casings* are available with either the volute or circular type casings. (Exception: Model SP4410 – volute only).

### Port Connections / Finish

Casings furnished with Tri-Clamp® port connections and polished finish unless otherwise specified. See ordering information on page 39.

### Sanitary – Polished Finish

- Tri-Clamp® (standard)
- Bevel Seat (ACME thread)



C Series Pumps with types D, DG, E and F seals, polished casings with either Tri-Clamp or Bevel Seat connections are authorized as meeting 3A accepted practices, and are identified with the 3A Symbol.

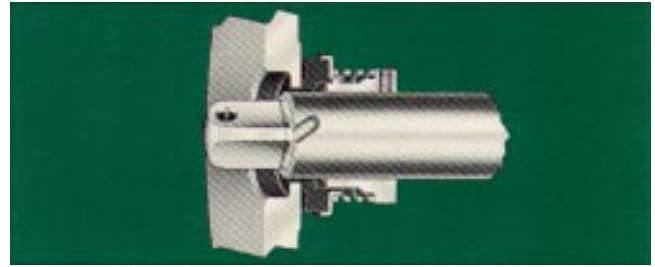
### General Service – Glass Beaded Finish

- NPT
- Flanged (ASA-150#, 1/16" raised face)
- Tri-Weld®

Additional charge applies to general service casings.

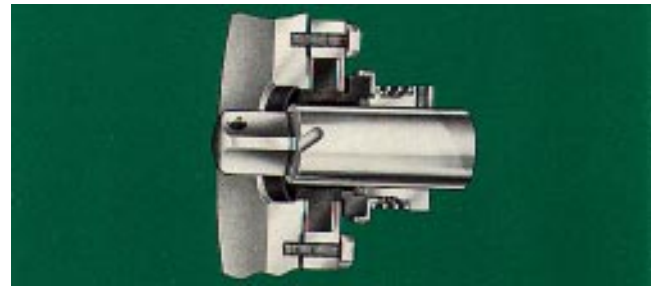
## SEAL SPECIFICATIONS

### Type D – External Balanced Seal



Well-suited for multipurpose use, this seal is designed to give long service life. Typical applications include: dairy products, cream style corn, tomatoes, beverages, etc. Also applicable for acid cleaning solutions and detergents.

### Type DG – Clamped-In Seal/Seat

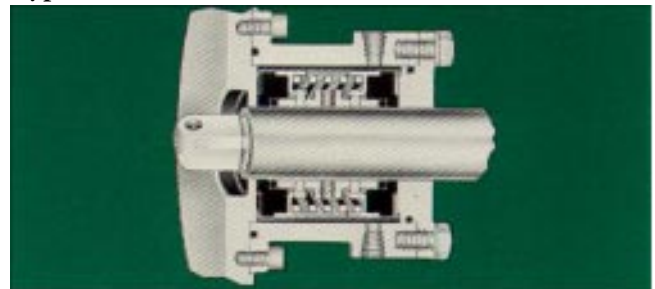


This long lasting seal assembly utilizes standard Type D rotating seal components, plus choice of silicon carbide, ceramic or tungsten carbide stationary seal set. For maximum corrosion resistance in pure water applications, with abrasive or non-lubricating products. Stationary seat is reversible, for quick changeover if one side is damaged.

### Type F – External Balanced Seal, with Water Cascade

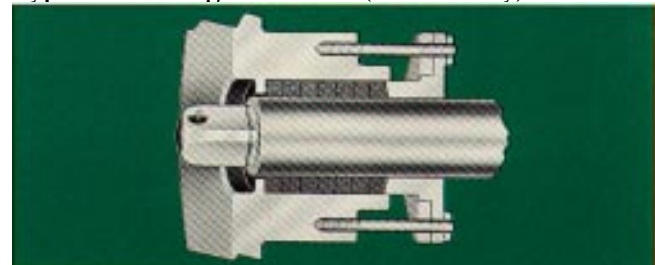


### Type E – Water Cooled Balanced Double Seal



Seal chamber can be pressurized to contain coolants or sealants which can be piped directly to drain. Ideal for slurries, heavy duty vacuum applications (to 28" Hg), tacky products or products at temperatures up to and exceeding 212°F.

### Type A – Packing Gland Seal (non sanitary)



Recommended for chemical processing applications or nonabrasive and non-congealing products. Also available with water flush (Type B). A wide range of commercial packings are available.

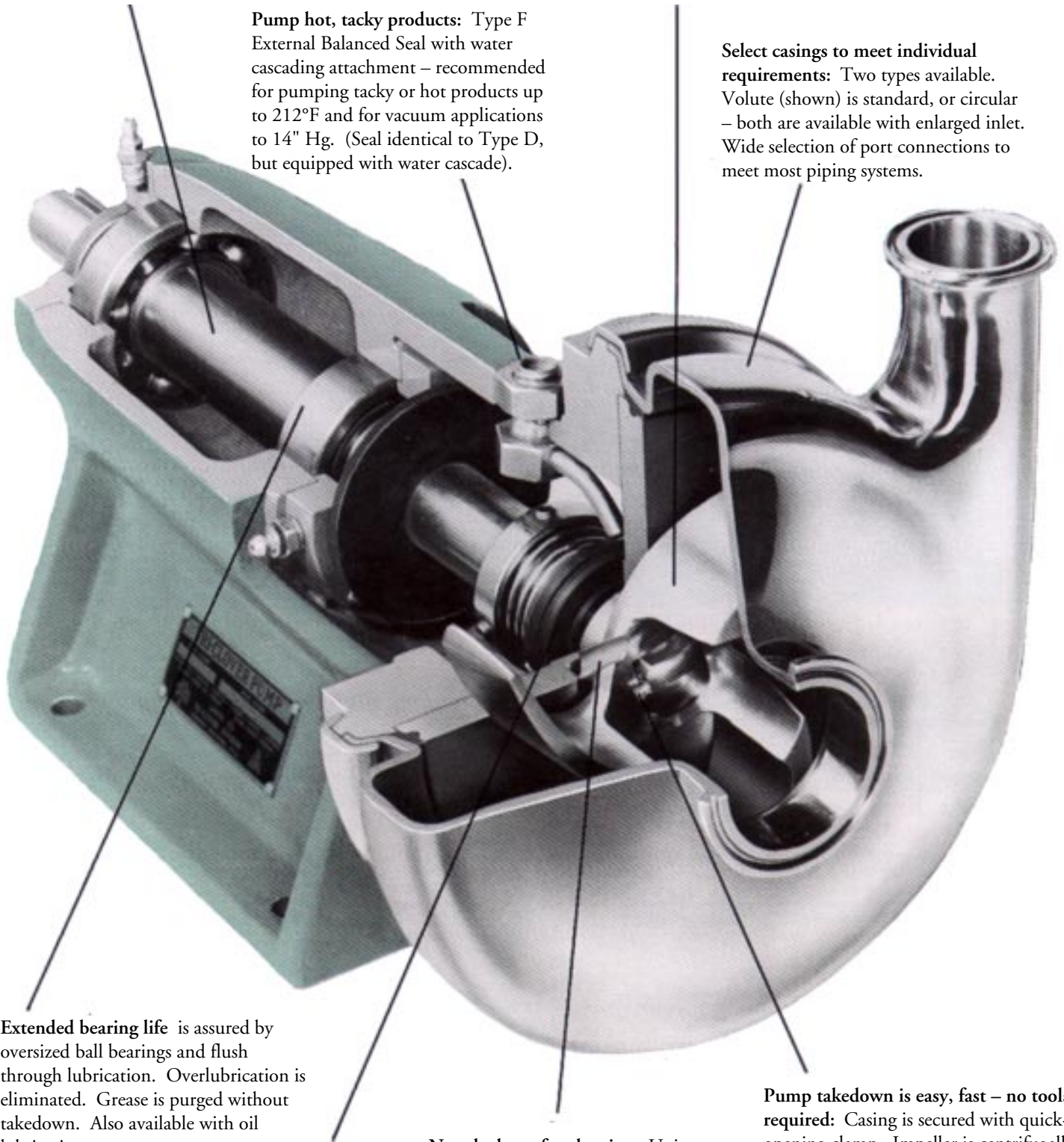
# The base-mounted pump you don't have to pamper.

**Shaft wear is minimized:** Shafts are precision machined, designed for operation at 1800 or 3600 RPM.

**Smoother pumping performance:** results from use of easy-to-clean, open-type backward curved impeller.

**Pump hot, tacky products:** Type F External Balanced Seal with water cascading attachment – recommended for pumping tacky or hot products up to 212°F and for vacuum applications to 14" Hg. (Seal identical to Type D, but equipped with water cascade).

**Select casings to meet individual requirements:** Two types available. Volute (shown) is standard, or circular – both are available with enlarged inlet. Wide selection of port connections to meet most piping systems.



**Extended bearing life** is assured by oversized ball bearings and flush through lubrication. Overlubrication is eliminated. Grease is purged without takedown. Also available with oil lubrication.

**Longer seal life and less downtime:** Hydraulically balanced seal (Type D, DG, E and F Seals) reduces pressure at sealing surface, providing for less wear and greater efficiency. Select from standard or special seals to meet your pressure, temperature, or product requirements.

**No takedown for cleaning:** Unique groove-in-shaft design routes sanitizer to all critical areas for clean-in-place. No additional cost – built-in at factory. (Type D, DG, E and F Seals).

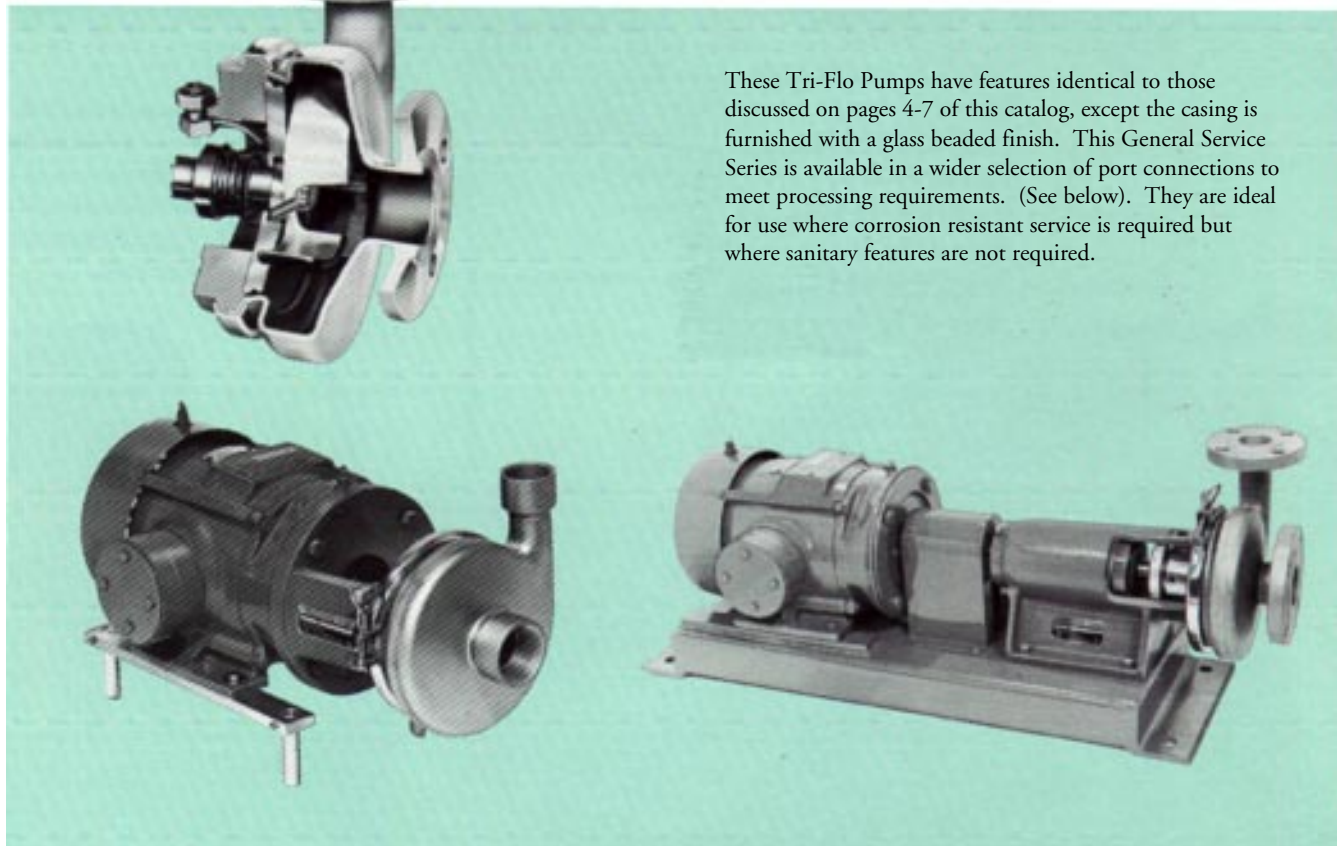
**Pump takedown is easy, fast – no tools required:** Casing is secured with quick-opening clamp. Impeller is centrifugally secured with a retainer pin.

# Centrifugal Pumps for General Service

DISTRIBUTED BY

**HARCO**  
**ENTERPRISES LTD.**

1-800-361-5361



These Tri-Flo Pumps have features identical to those discussed on pages 4-7 of this catalog, except the casing is furnished with a glass beaded finish. This General Service Series is available in a wider selection of port connections to meet processing requirements. (See below). They are ideal for use where corrosion resistant service is required but where sanitary features are not required.

## SERIES C CLOSE COUPLED

| Model Number | Inlet (Inches) | Outlet (Inches) | Maximum Impeller Dia. (Inches) |
|--------------|----------------|-----------------|--------------------------------|
| C114         | 1 1/2 or 2     | 1 1/2           | 4                              |
| C216         | 2 or 2 1/2     | 1 1/2           | 6                              |
| C218         | 2 or 3         | 1 1/2           | 8                              |
| C328         | 3 or 4         | 2               | 8                              |
| C4410        | 4 or 6*        | 4               | 10                             |

\*Note: 4410 Models furnished with 6" x 5" eccentric reducers (casing inlet is 5").

**Seals:** Type D, DG, E and F (See page 4)

**Motor:** (See page 4)

### Construction:

- Pump Casing, Backplate, Impeller and Shaft – 316 S/S.
- Motor Housing and Adapter – cast iron.
- Mounting Legs – zinc-plated steel.
- Impeller mounted directly on shaft with lock nut.
- Port Connections available – NPT, flanged (ASA-ANSI 150#, 1/16" raised face) Tri-Clamp®, Bevel Seat (ACME thread).

## SERIES SP BASE-MOUNTED

| Model Number | Inlet (Inches) | Outlet (Inches) | Maximum Impeller Dia. (Inches) |
|--------------|----------------|-----------------|--------------------------------|
| SP114        | 1 1/2 or 2     | 1 1/2           | 4                              |
| SP216        | 2 or 2 1/2     | 1 1/2           | 6                              |
| SP218        | 2 or 3         | 1 1/2           | 8                              |
| SP328        | 3 or 4         | 2               | 8                              |
| SP4410       | 4 or 6*        | 4               | 10                             |

\*Note: 4410 Models furnished with 6" x 5" eccentric reducers (casing inlet is 5").

**Seals:** Type A, B D, DG, E and F (See page 5)

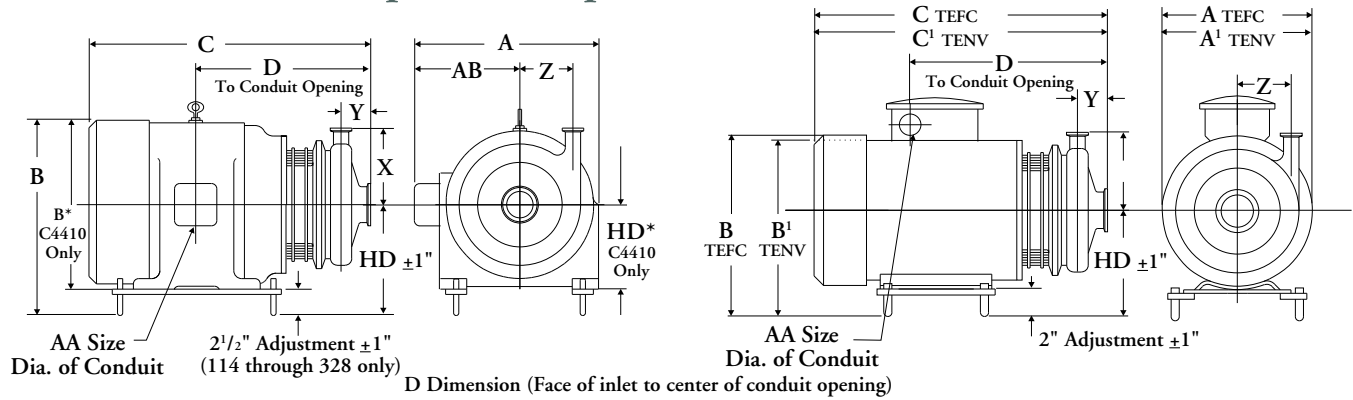
**Motor:** (See page 5)

### Construction:

- Pump Casing, Backplate, Impeller and Shaft – 316 S/S.
- Base – carbon steel (fabricated).
- Bearing Frame – cast iron.
- Impeller mounted directly on shaft with lock nut.
- Port Connections available – NPT, flanged (ASA-ANSI 150#, 1/16" raised face) Tri-Clamp®, Bevel Seat (ACME thread).



# C Series Close-Coupled Pump Dimensions



180 to 360 Frame Motors

56 to 140 Frame Motors

## Pump Dimensions ("Easy-Clean" totally enclosed motor)

\*C4410 Models furnished without legs or leg brackets. B & HD dimensions for C4410 show distance to bottom of motor. Legs and brackets furnished as standard on all other sizes, and included with dimensions shown. Contact Tri-Clover for dimensional data on pumps ordered less leg/bracket assembly.

| Pump Model | Suction | Discharge | X*    | X**   | Y*      | Y**     | Z       |
|------------|---------|-----------|-------|-------|---------|---------|---------|
| C114       | 1 1/2   | 1 1/2     | 3 3/8 | 3 7/8 | 1 19/32 | 1 27/32 | 2 5/8   |
| C216       | 2       | 1 1/2     | 4 1/2 | 4 3/4 | 1 29/32 | 2 3/32  | 3 11/16 |
| C218       | 2       | 1 1/2     | 5 1/2 | 5 3/4 | 1 23/32 | 1 31/32 | 4 3/4   |
| C328       | 3       | 2         | 5 1/2 | 5 3/4 | 2 7/32  | 2 23/32 | 4 3/4   |
| C4410      | 4       | 4         | 7     | 7 1/2 | 3 9/32  | 3 25/32 | 6       |

## Pump and Motor Dimensions with "Easy-Clean" Totally Enclosed Motors

| Pump Model                                      | Frame                           | A                                | A <sup>1</sup> | B                                | B <sup>1</sup>                   | C*                               | C <sup>1</sup> *                | C**                              | C <sup>1</sup> **                | D*                               | D**                              | HD    | AA                               | AB                               |
|---|---------------------------------|----------------------------------|----------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-------|----------------------------------|----------------------------------|
| C114  | FF56C                           | 7 <sup>9</sup> / <sub>32</sub>   | 6 1/2          | 9 1/8                            | 8 3/4                            | 21 1/4                           | 20 <sup>9</sup> / <sub>16</sub> | 21 1/2                           | 20 <sup>13</sup> / <sub>16</sub> | 17 <sup>3</sup> / <sub>16</sub>  | 17 <sup>7</sup> / <sub>16</sub>  | 5 1/2 | 1/2                              | —                                |
|   | 184TC                           | 11 <sup>7</sup> / <sub>8</sub>   |                | 11 <sup>11</sup> / <sub>16</sub> |                                  | 21 1/8                           |                                 | 21 <sup>3</sup> / <sub>8</sub>   |                                  | 13 <sup>13</sup> / <sub>16</sub> | 14 <sup>1</sup> / <sub>16</sub>  | 7     | 3/4                              | 7 <sup>3</sup> / <sub>16</sub>   |
| C216  | FF56C                           | 7 <sup>9</sup> / <sub>32</sub>   | 6 1/2          | 9 1/8                            | 8 3/4                            | 21 <sup>3</sup> / <sub>8</sub>   | 20 <sup>3</sup> / <sub>4</sub>  | 21 <sup>5</sup> / <sub>8</sub>   | 21                               | 17 <sup>5</sup> / <sub>16</sub>  | 17 <sup>9</sup> / <sub>16</sub>  | 5 1/2 | 1/2                              | —                                |
|   | 184TC                           | 11 <sup>7</sup> / <sub>8</sub>   |                | 11 <sup>11</sup> / <sub>16</sub> |                                  | 21 <sup>7</sup> / <sub>8</sub>   |                                 | 21 1/8                           |                                  | 14 <sup>9</sup> / <sub>16</sub>  | 14 <sup>13</sup> / <sub>16</sub> | 7     | 3/4                              | 7 <sup>3</sup> / <sub>16</sub>   |
|   | 215TC                           | 14 1/2                           |                | 13 <sup>3</sup> / <sub>16</sub>  |                                  | 25 <sup>9</sup> / <sub>16</sub>  |                                 | 25 <sup>13</sup> / <sub>16</sub> |                                  | 16 <sup>11</sup> / <sub>16</sub> | 16 <sup>15</sup> / <sub>16</sub> | 7 3/4 | 1                                | 9 1/16                           |
|   | 256TC                           | 16 <sup>7</sup> / <sub>16</sub>  |                | 15 1/4                           |                                  | 29 <sup>15</sup> / <sub>16</sub> |                                 | 30 <sup>3</sup> / <sub>16</sub>  |                                  | 18 <sup>11</sup> / <sub>16</sub> | 18 <sup>15</sup> / <sub>16</sub> | 8 3/4 | 1 1/4                            | 10                               |
| C218  | FF140TC                         | 7 <sup>9</sup> / <sub>32</sub>   | 6 1/2          | 9 1/8                            | 8 3/4                            | 22                               | 21                              | 22 1/4                           | 21 1/4                           | 17 <sup>19</sup> / <sub>32</sub> | 17 <sup>27</sup> / <sub>32</sub> | 5 1/2 | 1/2                              | —                                |
|   | 184TC                           | 11 <sup>7</sup> / <sub>8</sub>   |                | 11 <sup>11</sup> / <sub>16</sub> |                                  | 22 1/4                           |                                 | 22 1/2                           |                                  | 14 <sup>15</sup> / <sub>16</sub> | 15 <sup>3</sup> / <sub>16</sub>  | 7     | 3/4                              | 7 <sup>3</sup> / <sub>16</sub>   |
|   | 215TC                           | 14 1/2                           |                | 13 <sup>3</sup> / <sub>16</sub>  |                                  | 25 <sup>13</sup> / <sub>16</sub> |                                 | 26 <sup>1</sup> / <sub>16</sub>  |                                  | 16 <sup>15</sup> / <sub>16</sub> | 17 <sup>3</sup> / <sub>16</sub>  | 7 3/4 | 1                                | 9 1/16                           |
|   | 256TC                           | 16 <sup>7</sup> / <sub>16</sub>  |                | 15 1/4                           |                                  | 31 <sup>1</sup> / <sub>16</sub>  |                                 | 31 <sup>5</sup> / <sub>16</sub>  |                                  | 19 <sup>13</sup> / <sub>16</sub> | 20 <sup>1</sup> / <sub>16</sub>  | 8 3/4 | 1 1/4                            | 10                               |
|   | 284TC                           | 19 <sup>5</sup> / <sub>16</sub>  |                | 16 <sup>3</sup> / <sub>4</sub>   |                                  | 32                               |                                 | 32 1/4                           |                                  | 20 <sup>3</sup> / <sub>16</sub>  | 20 <sup>7</sup> / <sub>16</sub>  | 9 1/2 | 1 1/2                            | 12 1/16                          |
| C328  | FF140TC                         | 7 <sup>9</sup> / <sub>32</sub>   | 6 1/2          | 9 1/8                            | 8 3/4                            | 22 <sup>5</sup> / <sub>8</sub>   | 21 <sup>5</sup> / <sub>8</sub>  | 23 1/8                           | 22 1/8                           | 18 <sup>7</sup> / <sub>32</sub>  | 18 <sup>23</sup> / <sub>32</sub> | 5 1/2 | 1/2                              | —                                |
|   | 184TC                           | 11 <sup>7</sup> / <sub>8</sub>   |                | 11 <sup>11</sup> / <sub>16</sub> |                                  | 22 <sup>3</sup> / <sub>4</sub>   |                                 | 23 1/4                           |                                  | 15 <sup>7</sup> / <sub>16</sub>  | 15 <sup>15</sup> / <sub>16</sub> | 7     | 3/4                              | 7 <sup>3</sup> / <sub>16</sub>   |
|   | 215TC                           | 14 1/2                           |                | 13 <sup>3</sup> / <sub>16</sub>  |                                  | 26 <sup>5</sup> / <sub>16</sub>  |                                 | 26 <sup>13</sup> / <sub>16</sub> |                                  | 17 <sup>7</sup> / <sub>16</sub>  | 17 <sup>15</sup> / <sub>16</sub> | 7 3/4 | 1                                | 9 1/16                           |
|   | 256TC                           | 16 <sup>7</sup> / <sub>16</sub>  |                | 15 1/4                           |                                  | 31 <sup>11</sup> / <sub>16</sub> |                                 | 32 <sup>3</sup> / <sub>16</sub>  |                                  | 20 <sup>7</sup> / <sub>16</sub>  | 20 <sup>15</sup> / <sub>16</sub> | 8 3/4 | 1 1/4                            | 10                               |
|   | 284TC                           | 19 <sup>5</sup> / <sub>16</sub>  |                | 16 <sup>3</sup> / <sub>4</sub>   |                                  | 32 <sup>5</sup> / <sub>8</sub>   |                                 | 33 1/8                           |                                  | 20 <sup>13</sup> / <sub>16</sub> | 21 <sup>3</sup> / <sub>16</sub>  | 9 1/2 | 1 1/2                            | 12 1/16                          |
|   | 286TC                           | 19 <sup>5</sup> / <sub>16</sub>  |                | 16 <sup>3</sup> / <sub>4</sub>   |                                  | 34 <sup>3</sup> / <sub>8</sub>   |                                 | 34 <sup>7</sup> / <sub>8</sub>   |                                  | 21 <sup>13</sup> / <sub>16</sub> | 22 <sup>5</sup> / <sub>16</sub>  | 9 1/2 | 1 1/2                            | 12 1/16                          |
| C1410<br>Furnished without legs or leg brackets | 215TC                           | 13 <sup>15</sup> / <sub>16</sub> |                | 11 1/4                           |                                  | 27 <sup>9</sup> / <sub>64</sub>  |                                 | 27 <sup>21</sup> / <sub>32</sub> |                                  | 18 <sup>17</sup> / <sub>64</sub> | 18 <sup>25</sup> / <sub>32</sub> | 5 1/4 | 1                                | 8 <sup>11</sup> / <sub>16</sub>  |
|   | 254TC                           | 16 <sup>9</sup> / <sub>16</sub>  |                | 12 <sup>3</sup> / <sub>4</sub>   |                                  | 29 <sup>49</sup> / <sub>64</sub> |                                 | 30 <sup>9</sup> / <sub>32</sub>  |                                  | 19 <sup>25</sup> / <sub>64</sub> | 19 <sup>29</sup> / <sub>32</sub> | 6 1/4 | 1 1/4                            | 10 <sup>1</sup> / <sub>16</sub>  |
|   | 256TC                           | 16 <sup>9</sup> / <sub>16</sub>  |                | 12 <sup>3</sup> / <sub>4</sub>   |                                  | 31 <sup>33</sup> / <sub>64</sub> |                                 | 32 <sup>1</sup> / <sub>32</sub>  |                                  | 20 <sup>17</sup> / <sub>64</sub> | 20 <sup>25</sup> / <sub>32</sub> | 6 1/4 | 1 1/4                            | 10 <sup>1</sup> / <sub>16</sub>  |
|   | 284TC                           | 19 <sup>5</sup> / <sub>16</sub>  |                | 14 1/4                           |                                  | 32 <sup>29</sup> / <sub>64</sub> |                                 | 32 <sup>31</sup> / <sub>32</sub> |                                  | 20 <sup>41</sup> / <sub>64</sub> | 21 <sup>3</sup> / <sub>32</sub>  | 7     | 1 1/2                            | 12 1/16                          |
|   | 286TC                           | 19 <sup>5</sup> / <sub>16</sub>  |                | 14 1/4                           |                                  | 33 <sup>61</sup> / <sub>64</sub> |                                 | 34 <sup>15</sup> / <sub>32</sub> |                                  | 21 <sup>25</sup> / <sub>64</sub> | 21 <sup>29</sup> / <sub>32</sub> | 7     | 1 1/2                            | 12 1/16                          |
|   | 324TC                           | 21 <sup>5</sup> / <sub>16</sub>  |                | 16 1/4                           |                                  | 36 <sup>39</sup> / <sub>64</sub> |                                 | 37 <sup>1</sup> / <sub>8</sub>   |                                  | 23 <sup>27</sup> / <sub>64</sub> | 23 <sup>15</sup> / <sub>16</sub> | 8     | 2                                | 13 <sup>1</sup> / <sub>16</sub>  |
|   | 326TC                           | 21 <sup>5</sup> / <sub>16</sub>  |                | 16 1/4                           |                                  | 38 <sup>7</sup> / <sub>64</sub>  |                                 | 38 <sup>5</sup> / <sub>8</sub>   |                                  | 24 <sup>11</sup> / <sub>64</sub> | 24 <sup>11</sup> / <sub>16</sub> | 8     | 2                                | 13 <sup>1</sup> / <sub>16</sub>  |
|   | 364TC                           | 27 <sup>7</sup> / <sub>16</sub>  |                | 18 1/2                           |                                  | 40 <sup>31</sup> / <sub>64</sub> |                                 | 41                               |                                  | 24 <sup>59</sup> / <sub>64</sub> | 25 <sup>7</sup> / <sub>16</sub>  | 9     | 3                                | 17 <sup>15</sup> / <sub>16</sub> |
| 365TC   | 27 <sup>7</sup> / <sub>16</sub> |                                  | 18 1/2         |                                  | 40 <sup>31</sup> / <sub>64</sub> |                                  | 41                              |                                  | 24 <sup>59</sup> / <sub>64</sub> | 25 <sup>7</sup> / <sub>16</sub>  | 9                                | 3     | 17 <sup>15</sup> / <sub>16</sub> |                                  |

\* With Tri-Clamp connections.

\*\* With threaded bevel seat connections.

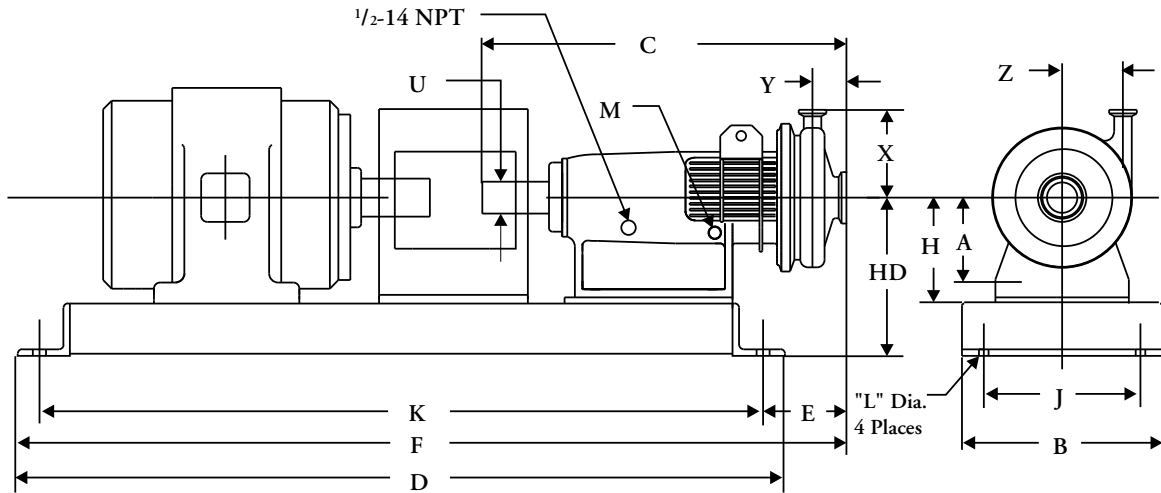
Dimensions are approximate and for guidance only. On application where exact dimensions are required, request a certified print from Tri-Clover.

NOTES: 1—Dimensions for single phase #140 frame motors 1 7/32 longer.

•—These dimensions are for pumps using standard "C" Flange Motors.

•—Tri-Flo C Series pumps will not accept TSC Frame Motors.

# SP Series Base-Mounted Pump Dimensions



## Pump Dimensions

| Pump Model | Suction (Inches) | Discharge (Inches) | X*    | X**   | Y*      | Y**     | Z       | C*       | C**      | H      | A      | NPT M  | Dia. U |
|------------|------------------|--------------------|-------|-------|---------|---------|---------|----------|----------|--------|--------|--------|--------|
| SP114      | 1 1/2            | 1 1/2              | 3 5/8 | 3 7/8 | 1 19/32 | 1 27/32 | 2 5/8   | 14 11/32 | 14 19/32 | 4 3/64 | 3 3/16 | 1/4-18 | 5/8    |
| SP216      | 2                | 1 1/2              | 4 1/2 | 4 3/4 | 1 29/32 | 2 5/32  | 3 11/16 | 17 1/32  | 17 9/32  | 5 3/64 | 4 7/32 | 3/8-18 | 1      |
| SP218      | 2                | 1 1/2              | 5 1/2 | 5 3/4 | 1 23/32 | 1 31/32 | 4 3/4   | 19 3/16  | 19 7/16  | 6 3/64 | 5 1/2  | 1/2-14 | 1 3/8  |
| SP328      | 3                | 2                  | 5 1/2 | 5 3/4 | 2 7/32  | 2 23/32 | 4 3/4   | 19 13/16 | 20 3/16  | 6 3/64 | 5 1/2  | 1/2-14 | 1 3/8  |
| SP4410     | 4                | 4                  | 7     | 7 1/2 | 3 9/32  | 3 25/32 | 6       | 21 1/8   | 21 5/8   | 6 3/64 | 7 7/32 | 1/2-14 | 1 3/8  |

## Base Dimensions

| Pump Model  | SP114    |          |          |           | SP216     |           |           |           | SP218     |           |           |           | SP328     |           |           |           | SP4410    |           |           |          |           |           |           |           |           |           |
|-------------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Motor Frame | 48.56    | 143T     | 182T     | 184T      | 56        | 143T      | 182T      | 213T      | 245T      | 143T      | 182T      | 213T      | 254T      | 284TS     | 145T      | 182T      | 213T      | 254T      | 284TS     | 324TS    | 184T      | 213T      | 254T      | 284TS     | 324TS     | 364TS     |
| *E          | 3 3/16   | 3 9/16   | 4 7/16   | 4 7/16    | 3 15/16   | 4 3/16    | 4 3/16    | 3 19/32   | 3 19/32   | 3 19/32   | 3 31/32   | 3 31/32   | 4 7/32    | 4 7/32    | 4 7/32    | 4 19/32   | 4 19/32   | 4 13/32   | 5 17/32   | 5 17/32  | 5 17/32   | 5 29/32   | 5 29/32   | 5 29/32   | 5 29/32   | 5 29/32   |
| **E         | 4 1/16   | 3 3/16   | 4 11/16  | 4 11/16   | 4 3/16    | 4 7/16    | 4 7/16    | 3 27/32   | 3 27/32   | 3 27/32   | 4 7/32    | 4 7/32    | 4 23/32   | 4 23/32   | 4 23/32   | 5 3/32    | 5 3/32    | 4 29/32   | 6 1/32    | 6 1/32   | 6 1/32    | 6 13/32   | 6 13/32   | 6 13/32   | 6 7/32    | 6 7/32    |
| *F          | 2 9/16   | 3 6/16   | 2 9/16   | 3 2 11/16 | 3 6 11/16 | 4 2 15/16 | 4 1 15/16 | 3 3 11/32 | 3 5 27/32 | 4 2 11/32 | 4 6 23/32 | 5 2 23/32 | 3 3 11/32 | 3 6 15/32 | 4 2 31/32 | 4 7 11/32 | 5 3 11/32 | 5 2 11/32 | 3 7 25/32 | 4 4 9/32 | 4 8 21/32 | 5 4 21/32 | 5 3 21/32 | 5 3 21/32 | 5 3 21/32 | 5 3 21/32 |
| **F         | 2 9 5/16 | 3 6 9/16 | 2 9 5/16 | 3 2 15/16 | 3 6 5/16  | 4 3 3/16  | 4 2 3/16  | 3 3 19/32 | 3 6 3/32  | 4 2 19/32 | 4 6 31/32 | 5 2 31/32 | 3 4 15/32 | 3 6 31/32 | 4 3 15/32 | 4 7 27/32 | 5 3 27/32 | 5 2 27/32 | 3 8 9/32  | 4 4 5/32 | 4 9 5/32  | 5 5 5/32  | 5 4 5/32  | 5 4 5/32  | 5 3 25/32 | 5 3 25/32 |
| HD          | 6 3/64   | 7 35/64  | 7 3/64   | 7 3/64    | 8 3/64    | 8 19/64   | 9 19/64   | 9 3/64    | 9 3/64    | 9 19/64   | 11 3/64   | 9 3/64    | 9 3/64    | 9 3/64    | 9 19/64   | 11 3/64   | 12 3/64   | 9 3/64    | 9 3/64    | 9 3/64   | 9 19/64   | 11 3/64   | 12 3/64   | 12 3/64   | 13 3/64   | 13 3/64   |
| J           | 5        | 8        | 5        | 8         | 10        | 12 1/2    | 8         | 10        | 12 1/2    | 14        | 8         | 10        | 12 1/2    | 14        | 15        | 8         | 10        | 12 1/2    | 14        | 15       | 14        | 15        | 15        | 17        | 17        | 17        |
| K           | 24 1/2   | 31 1/2   | 24 1/2   | 27 1/2    | 31 1/2    | 37 1/2    | 36 1/2    | 28 1/2    | 31        | 37 1/2    | 41 1/2    | 47 1/2    | 28 1/2    | 31        | 37 1/2    | 41 1/2    | 47 1/2    | 46 7/8    | 31        | 37 1/2   | 41 1/2    | 47 1/2    | 46 7/8    | 46 7/8    | 46 7/8    | 46 1/2    |
| L           | 5/8      | 3/4      | 5/8      | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 3/4       | 7/8       | 3/4       | 3/4      | 3/4       | 3/4       | 7/8       | 7/8       | 7/8       | 7/8       |
| B           | 7 3/4    | 10 3/4   | 7 3/4    | 7 3/4     | 10 3/4    | 12 3/4    | 15 1/4    | 10 3/4    | 10 3/4    | 12 3/4    | 15 1/4    | 16 3/4    | 10 3/4    | 10 3/4    | 12 3/4    | 15 1/4    | 16 3/4    | 17 3/4    | 10 3/4    | 12 3/4   | 15 1/4    | 16 3/4    | 17 3/4    | 17 3/4    | 20 3/4    | 20 3/4    |
| D           | 26       | 34       | 26       | 29        | 34        | 40        | 39        | 31        | 33 1/2    | 40        | 44        | 50        | 31        | 33 1/2    | 40        | 44        | 50        | 49        | 33 1/2    | 40       | 44        | 50        | 49        | 50        | 49        | 48 5/8    |

\* With Tri-Clamp connections.

\*\* With threaded bevel seat connections.

Dimensions are approximate and for guidance only. On applications where exact dimensions are required, request a certified print from Tri-Clover.

## Conversion Table - Motor to NEMA Frame Sizes\*

| HP         | 1/4  | 1/4  | 1/2  | 1/2  | 1/2  | 1/2  | 3/4  | 3/4  | 3/4  | 3/4  | 1    | 1    | 1    | 1    | 1 1/2 | 1 1/2 • | 1 1/2 |
|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|---------|-------|
| RPM        | 1750 | 1750 | 1750 | 1750 | 3500 | 3500 | 1750 | 1750 | 3500 | 3500 | 1750 | 1750 | 3500 | 3500 | 1750  | 1750    | 3500  |
| Phase      | 1    | 3    | 1    | 3    | 1    | 3    | 1    | 3    | 1    | 3    | 1    | 3    | 1    | 3    | 3     | 3       | 3     |
| TEFC       | 48♦  | 48♦  | 56♦  | 56♦  | 48   | 48   | 56   | 56   | 56   | 56   | 143T | 143T | 56   | 56   | 145T  | 145T    | 143T  |
| Easy-Clean | 56♦  | 56♦  | 56♦  | 56♦  | 56♦  | 56♦  | 56   | 56♦  | 56   | 56♦  | M56  | 56♦  | 56   | 56   | 56    | 145T    | 56S   |

| HP         | 2    | 2 •  | 2    | 3    | 3    | 5    | 5    | 7 1/2 | 7 1/2 | 10   | 10   | 15   | 20   | 25   | 30   | 40   |  |
|------------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|--|
| RPM        | 1750 | 1750 | 3500 | 1750 | 3500 | 1750 | 3500 | 1750  | 3500  | 1750 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |  |
| Phase      | 3    | 3    | 3    | 3    | 3    | 3    | 3    | 3     | 3     | 3    | 3    | 3    | 3    | 3    | 3    | 3    |  |
| TEFC       | 145T | 145T | 145T | 182T | 182T | 184T | 184T | 213T  | 213T  | 215T | 215T | 254T | 256T | 284T | 286T | 324T |  |
| Easy-Clean | 56   | 145T | 56   | 184T | 184T | 184T | 184T | 215T  | 215T  | 215T | 215T | 256T | 256T | -    | -    | -    |  |

• Used on C218 & C328 only.

♦ TENV Frame—all other motors are TEFC.

\* All Fractional C Face Motors are 56, 143 or 145 Frames.

DISTRIBUTED BY

**HARCO**  
ENTERPRISES LTD.  
1-800-361-5361