

APV R5 Quad-Drive Series 2 Paraflow PHE PLC-Controlled or Manual-Closing NR5 & R5



Process Efficiency, Reliability and Integrity

As the industry leader in heat transfer equipment, APV raises the standard for process efficiency, and reliability once again with the Quad-Drive Series 2 Heat Exchanger.

Super hygienic/sanitary NR5 plates are ideally suited for a wide range of food processing, dairy, beverage, pharmaceutical and cosmetic applications, offering superior performance under the following conditions:

- Where there is a tendency for the product to foul the heated surface
- Where large temperature-induced viscosity changes are likely to occur
- When processing viscous and non-Newtonian processed foods including stabilizers

Dairy Products

Uniform thermal treatment of:

- Milk
- Ice cream
- Cream
- Yogurt
- Butter
- Desserts
- Sour cream
- Cheeses
- Condensed Milk
- And more



Foods and Beverages

Designed to process foods where large temperature-induced viscosity changes are likely to occur, such as:

- Fat substitutes
- Dressings
- Liqueurs
- Peanut butter
- Fruit juices
- Sauces
- Syrups
- Purees
- Nutritional products
- Reduced fat products
- Baby foods
- Vegetable juices
- Tomato products
- Infant formulas
- Juice concentrates
- Egg products
- Beverage emulsions
- Chocolate
- Non-Newtonian supplements
- Flavors and fragrances



Healthcare and Cosmetics

Wide gap results in reduced pressure drop when processing viscous material as in:

- Ointments
- Hair products
- Conditioners
- Skin creams
- Lipsticks
- Antibiotic creams
- Lotions
- Nail polishes
- Shampoos
- And more



Wide-Gap R5-Style Heat Transfer Area Maintains Operating Efficiency

NR5's wide-gap design reduces the effects of pressure increases (due to any fouling build-up) and provides for long run times while maintaining high thermal efficiency.



Innovative Plate Design

Superior Diagonal Flow Protects Product Integrity

Most vertical flow plates require an expanded inlet design to achieve adequate flow distribution that can compromise thermal, mechanical and process performance. By contrast, NR5's diagonal flow plates help ensure gentle, uniform heat treatment along the entire product path.

Large Inlet Port Resists Plugging

NR5 plate's large port entry area easily accommodates products containing small particulates and fibers. Up to 80% fewer contact points provide superior fiber handling capabilities compared with conventional chevron plates, while facilitating irrigation during CIP operations.

Exclusive Corner Interlock Enhances Alignment

NR5 plates feature patented corner interlocks that provide unmatched plate-to-plate alignment. This highly effective, metal-to-metal system is stronger and more resistant to damage than plate designs that simply use gasket or edge alignment.

Easy Clip Gaskets Simplify Refits

Patented Easy Clip tabs provide fast and secure adhesive-free gasket retention. Simply align the gasket tabs with the plate and snap the gasket into place. With Easy Clip, gaskets can be fitted and removed time after time as needed without the fear of traditional snap-in clip breakage.

Intelligent Frame Design Provides Unmatched Safety and Control



The patented PLC-controlled powered Quad-Drive Series 2 frame opens and closes at the touch of a button – no tools are required. Intelligent control is flexible and scalable for various applications. For added safety, controls are key protected to limit operator access. Also, a high visibility warning light operates prior to and during follower movement. Should the PLC or screen ever suffer damage, the frame can still be opened hydraulically. In the event of power failure, the frame can be opened and closed manually.

The unit includes a large (5.7"), backlit LCD touchscreen monitor. The control surface may be ordered on either side of the Paraflow to suit plant layout.

The frame's compact, self-contained design is easy to install and maintain. All plates are easily accessible without removing any components. In addition, automatic closure helps optimize plate and gasket life by eliminating over-compression and uneven compression.

In many cases, an oversize frame may be specified to accommodate future expansion needs if desired. In addition, any frame size may be expanded up to the designed maximum by simply swapping the carry bars and tie bars.

Manual Closure

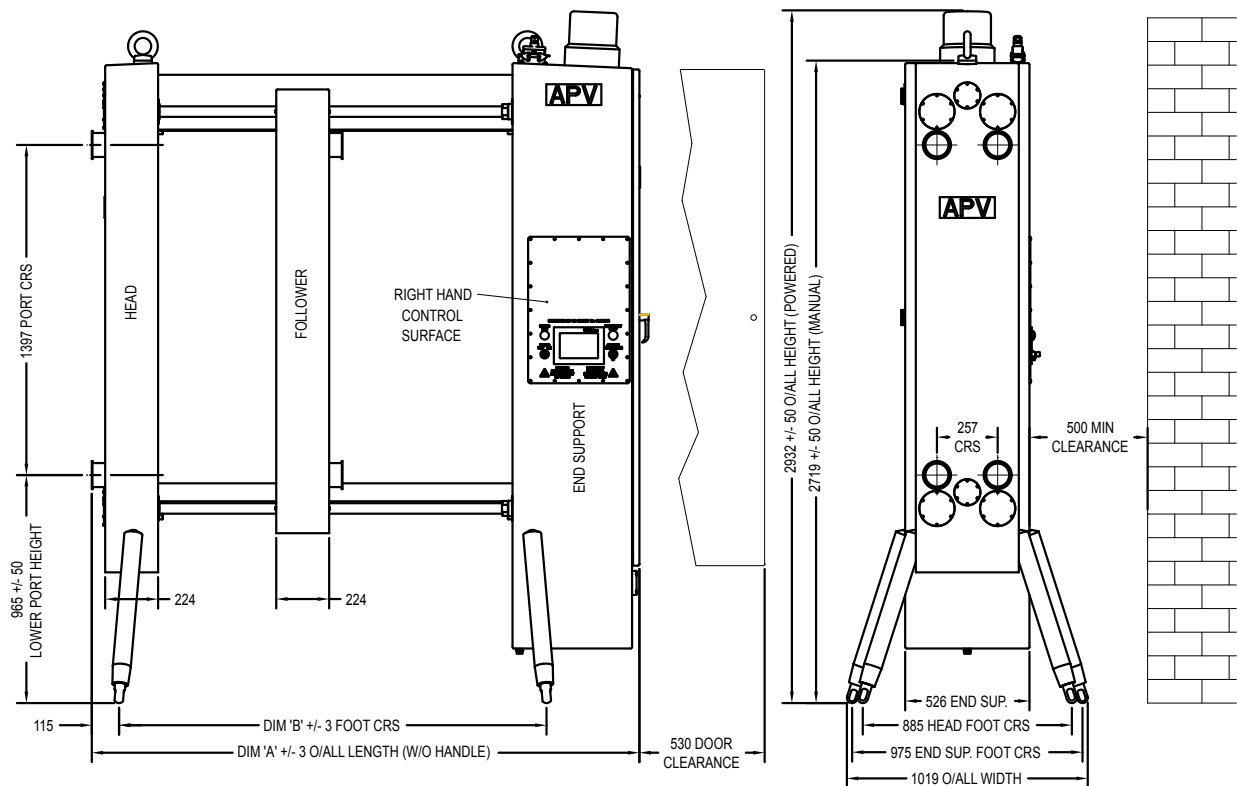
Ideally suited to applications where infrequent opening is anticipated, a manual frame with quad geared closure is offered. An operator can effortlessly bring the machine close to pitch and then transfer the supplied wrench to the second drive point and close to the final dimension. With synchronous tie bar movement, the follower stays parallel to the head at all times, eliminating uneven compression.

Suitable Plate Types

Quad-Drive Series 2 frames accept standard R5, the super sanitary NR5 and the wide gap ER5 plates. Plates may be mixed in a frame to suit process requirements and only need a grid or divider plate to separate differing types.

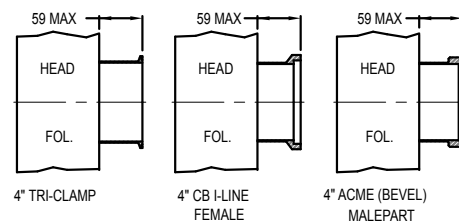
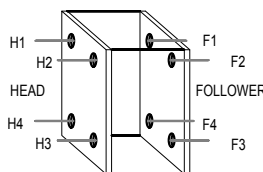
Key Specifications

| | |
|---|--|
| Heat Transfer Area/Plate | 5.86 ft ² (0.542 m ²) |
| Port Diameter | 4.0" |
| Plate Liquid Capacity/ Fluid Channel | 0.54 gallons (2.01 liter) |
| Maximum Flow Rate | 650 GPM (147.6 cu. m/h) |
| Maximum Design Pressure | Up to 225 psig (15.5 barg) |
| Operating Temperature | Up to 350°(177°C) depending on gasket material |
| Plate Materials | Stainless steel 316, Titanium and other corrosion-resistant materials |
| Gasket Materials | Nitrile, EPDM and Viton |
| Frame Materials | All stainless steel 304L cladding around ASME SA 516 grade 70 carbon steel core |
| Frame Finish | #4 polish on head, follower and end support. Glass blasted carrying bars. |
| Frame Sizes | Seven sizes up to 1234 plates (NR5 0.6mm) |
| Power Pack | Includes one 5 hp three-phase motor and hydraulic pump; one hydraulic motor and 20 gallon integral oil tank (oil A/W32) |
| Power Requirements | 230 or 460 VAC three-phase, mating connector supplied (other voltages can be special ordered) |
| Control System | Modular, plug and play, Siemens or three types of Allen Bradley PLC control on left or right hand side of machine. |
| User Interface | Backlit 5.7" LCD touchscreen monitor |
| Tie Bars | Four chain driven 1-3/4" ACME tie bars |
| Connection Positions | Four head, four follower |
| Connection Types | 4" Tri-Clamp™, ACME (bevel seat), CB I-line and plain stub end for welding. Industrial 4" L/T lap joint and weld neck flanges. |
| Options | Stainless steel protective plate pack shroud Grids with up to eight liquid connections Solid divider plate |
| Codes | 3A compliant, ASME VIII, Division 1 |



| R5 QUAD-DRIVE SERIES 2 | | | | | | | |
|------------------------|------------------|-------------|-------------|----------------------|----------|---------------------------|--------|
| FRAME SIZE | TOP BAR LEN (mm) | DIM 'A'(mm) | DIM 'B'(mm) | MAX PLATAGE # PLATES | DIM (mm) | FRAME WEIGHT (kg) POWERED | MANUAL |
| 1 | 1500 | 2316 | 1809 | 151 | 909 | 2122 | 2016 |
| 2 | 2500 | 3316 | 2809 | 318 | 1909 | 2232 | 2126 |
| 3 | 3500 | 4316 | 3809 | 484 | 2909 | 2341 | 2235 |
| 4 | 4500 | 5316 | 4809 | 651 | 3909 | 2529 | 2423 |
| 5 | 5500 | 6316 | 5809 | 818 | 4909 | 2654 | 2404 |
| 6 | 6500 | 7316 | 6809 | 984 | 5909 | 3378 | 3272 |
| 7 | 8000 | 8816 | 8309 | 1234 | 7409 | 3886 | 3780 |

MAX PLATE CAPACITY IS FOR 0.6 mm NR5 PLATES



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