

# 15MR and 31MR

APV laboratory homogenizers employ a single-plunger, positive-displacement pump equipped with a versatile homogenizing valve assembly, specifically designed for laboratory or pilot-plant use. Gauge fluctuations usually associated with single-plunger pumps are reduced by a special dampener assembly. The motor, through a gear-reduction unit, turns an eccentric shaft which causes the plunger to reciprocate. The product being processed is drawn from the supply tank, through a pump valve and into the pumping chamber ... then forced through the homogenizing valve on the pressure stroke of the pump. Homogenizing pressure is controlled by a simple adjustment of the handwheel, which controls the gap between the homogenizing valve and seat. The product is discharged through the three-way valve for sample collection or recirculation back to the supply tank.

The 15MR and 31MR Laboratory Homogenizers can be used for processing many different types of products in the chemical, food, dairy, cosmetic and pharmaceutical industries. These products include water- in-oil emulsions, oil-in-water emulsions, dispersions of many types (solids dispersed in water or oils), and for disruption of cells.

Standard lab-scale homogenizers can be rented or purchased. All rental payments can be applied to the purchase price of the unit.

### Standard Construction

All units are single-plunger, 2-1/8" stroke, positive displacement; ball valve cylinder; removable, tapered, Tungsten Carbide ball

valve seat; adjustable-screw packing assembly; three-way valve and bypass assembly with stainless steel tubing; a one gallon, 316 stainless steel feed tank. Cylinder and wettable parts 316 stainless steel. The motor is 3 hp, 3 phase, 1,800 rpm, open drip-proof.

### Dimensions and Weights

Height: 24" (610 cm)

Width: 36" (914 cm)

Depth: 38" (965 cm)

Weight (uncrated): 350 lbs (159 kg)



### Homogenizing Valve Assemblies

Lab-scale homogenizers can be supplied with a single-stage homogenizing valve assembly, recommended for dispersions; or a two-stage valve assembly, recommended for emulsions. Stellite 20 is standard for homogenizing valves, seats and impact rings; and is suitable for emulsions and some dispersions. For abrasive applications a tungsten carbide material is also available.

They can also be equipped with the "CD" valve for high efficiency cell disruption. These parts are constructed of ceramic for long wear life.

# Options

## PRESSURE FEEDER

The stainless steel assembly utilizes a simple plunger design, actuated by operator controlled air pressure and should be used where viscosity of the product results in a decrease in capacity.

## STERILE PROCESSING

The lab-scale homogenizer can be purchased with a sterile modification. This modification provides a plunger packing arrangement to enable the use of steam or a sterile fluid to purge the exposed plunger zone.

## CORED CYLINDER BLOCK

Cored cylinder block is available to be operated with hot fluids or steam to preheat the cylinder prior to processing. The cored cylinder will normally operate at temperatures as high as 350°F (175°C). With additional minor modifications it can be operated to 500°F (260°C).



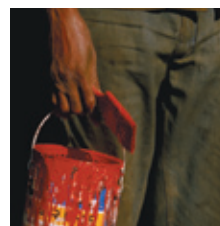
## SAMPLE OF APPLICATIONS

The following is a representative sampling of a few of the many thousands of products processed by APV equipment:

- |                    |                         |
|--------------------|-------------------------|
| Antacid            | Intravenous Emulsions   |
| Baby Food          | Latex                   |
| Beverage Emulsions | Motor Oil Additives     |
| Car Polish         | Peanut Butter           |
| Carbon Black       | Pharmaceuticals         |
| Cell Disruption    | Pigments                |
| Cosmetics          | Polymer Emulsions       |
| Cream Soups        | Resins/Rosins           |
| Dairy Products     | Salad Dressings         |
| Greases            | Sulphur                 |
| Herbicides         | Tomato Products         |
| Infant Formula     | Typist Correction Fluid |
| Insect Repellents  | Viscosity Improvers     |



Healthcare/Cosmetics



Chemical



Food/Beverage



Pharmaceutical/Biotech

APV's robust and reliable 15MR and 31MR Laboratory Homogenizers allow you the ability to achieve fully-reproducible results for emulsions, dispersions, or cell disruption that can be applied to full-scale production with complete confidence!

APV 15MR & 31MR	
PRESSURE CAPABILITIES	NORMAL CAPABILITIES
15MR: TO 10,000 PSI (689,5 BAR)	15MR: 15 GPH/57 LPH
31MR: TO 3,500 PSI (241,3 BAR)	31MR: 31 GPH/117 LPH



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