## Typical Applications and Specifications

### COSMETIC/PERSOAL CARE
- Cream Emulsions
- Lotions
- Multiple Emulsions
- Pigment Dispersion
- Sunscreens
- Cosmeceuticals

### FOOD & BEVERAGE
- Flavor Dispensers
- Colorant Milling
- Functional Foods
- Omega-3 Emulsions
- Beverage Fortification
- Condiment Emulsions
- Grain Suspensions
- Beverage Pulp Milling

### PHARMACEUTICAL
- Drug Delivery Creams
- API Wet Suspension Milling
- Eye Drop Emulsions
- Ophthalmic Suspensions
- Topical Suspensions
- Oral Suspensions
- Antacids

### CHEMICAL
- Ink Dispensers
- Wet Milling Pigments
- Graphite slurries
- Resin Suspensions
- Starch Emulsions
- Polymer Milling
- Coating Suspensions
- Battery Compounds

### MODEL

<table>
<thead>
<tr>
<th></th>
<th>HVO</th>
<th>HV1</th>
<th>HV3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MOTOR SIZE</strong></td>
<td>HP (kW)</td>
<td>7.5 (5.5)</td>
<td>20 - 25 (15 - 18.5)</td>
</tr>
<tr>
<td><strong>CAPACITY</strong></td>
<td>gpm (lpm)</td>
<td>0.3 - 2.5 (1 - 9.5)</td>
<td>5 - 25 (20 - 95)</td>
</tr>
<tr>
<td><strong>INLET FITTING</strong></td>
<td>in (mm)</td>
<td>0.5 (13)</td>
<td>1.5 (38)</td>
</tr>
<tr>
<td><strong>DISCHARGE FITTING</strong></td>
<td>in (mm)</td>
<td>0.5 (13)</td>
<td>1.5 (38)</td>
</tr>
</tbody>
</table>

*Capacities are based on water at max speed. Actual capacities may vary depending on rotor speed and product characteristics.*
QUADRO® LIQUIDS PROCESSING

HV Emulsifier & Wet Mill

Unmatched performance. Exceptional service.

SUBMICRON HOMOGENIZING, HIGH SHEAR WET MILLING, MICRONIZATION

UNIQUE HIGH SPEED DESIGN
The Quadro® HV Series can be optimized for various applications and is available in two configurations; the HV Emulsifier for submicron homogenizing, and the HV Wet Mill for micronizing suspensions and slurries.

The unique high speed design of the HV Series enables accelerated rotor/stator velocities and an exponential increase in process shear energy. At a maximum rotational speed of 70m/s, the HV produces more than 95x the high shear energy of a conventional rotor/stator mill.

SUBMICRON SIZE REDUCTION

Save on submicron emulsification
The HV Emulsifier provides more process shear energy than a conventional rotor/stator mill due to accelerated tooling tip speeds. This significantly lowers capital costs compared to homogenizers or media mills, and is ideally suited for processing submicron emulsions.

Unmatched sanitary design
All 3 models ranging from 75-60HP are fully drainable and assembled with quick connect sanitary clamps for ease of removal. In addition, the HV Series utilizes a unique high-speed sanitary mechanical seal that eliminates potential trap areas around the rotor shaft for improved CIP/SIP results.

High value alternative to media milling
The HV Wet Mill defines new limits in high shear milling and closes the gap between traditional rotor/stator mixers and media mill technology. Wet suspension milling and micronization processes can now be accomplished without the use of difficult-to-clean and time consuming media mills.

PERFORMANCE & ADVANTAGES
- High capacities save significant process time over conventional high-pressure homogenizers and media mills
- Equipment cost is generally 70% less than homogenizers and dry powder mills
- Machines easily retrofit into existing facilities
- High shear wet milling often doesn’t require additional containment
- Ideal choice for sensitive materials, as liquid dissipates heat generated by the mill
- Available in portable and multi-functional process skids to serve numerous mixing cells and reduce necessary capital

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