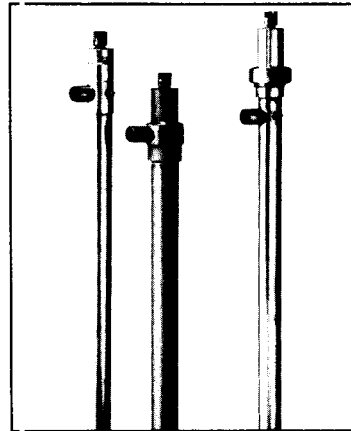


®  FPUD100, 300, 400,

®  500 Series

®  Pumps and
FMXD10 Series

®  Drum Mixers



Operator's Manual

M1337/0492

**Servicing USA and Canada: Call OMEGA Toll Free
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Headquarters: (203) 359-1660

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P.O. Box 1, Broughton Astley, Leicestershire LE9 6XR, England
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WARRANTY

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that our customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. Our Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses, and triacs.

We are glad to offer suggestions on the use of our various products. Nevertheless OMEGA only warrants that the parts manufactured by it will be as specified and free of defects.

OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

LIMITATION OF LIABILITY: The remedies of buyer set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

Every precaution for accuracy has been taken in the preparation of this manual, however, OMEGA ENGINEERING, INC. neither assumes responsibility for any omissions or errors that may appear nor assumes liability for any damages that result from the use of the products in accordance with the information contained in the manual.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING Customer Service Department. Call toll free in the USA and Canada: 1-800-622-2378, FAX: 203-359-7811; International: 203-359-1660, FAX: 203-359-7807.

BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, YOU MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OUR CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence. Please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems you are having with the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. That way our customers get the latest in technology and engineering.

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INTRODUCTION

THE FPUD100 Series portable transfer pumps are designed for pumping a variety of chemicals from carboys or small containers, for fluids up to 200 cps viscosity and 1.4 specific gravity. FPUD300 Series drum pumps feature corrosion-resistant construction and can empty a wide variety of containers in various applications. FPUD400 Series are medium viscosity drum pumps rated for 2,000 cps viscosity and 1.8 specific gravity. FPUD500 Series pumps are for high viscosity applications, for fluids up to 15,000 cps viscosity.

FMXD10 Series mixers efficiently mix from the top of a drum to the bottom with a non-vortexing, non-aerating action. These mixers can draw approximately 14 gallons of liquid per minute through a 2" diameter mixing tube up to 750 cps maximum viscosity.

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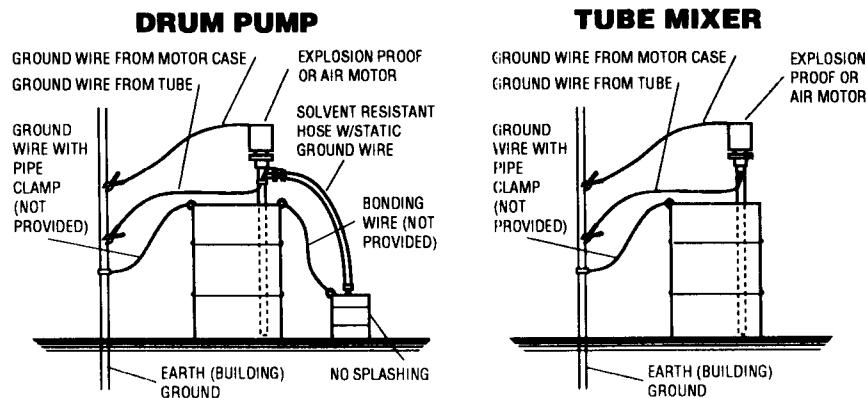
MAINTENANCE AND SAFETY PRECAUTIONS

- **ALWAYS** wear protective clothing, eye protection and follow standard safety procedures when handling corrosive materials.
- **NEVER** use a plastic pump or the "O" Series or "T" Series motor when pumping or mixing flammable or combustible material.
- **ALWAYS** store unit upright away from corrosive liquids and vapors.
- **ALWAYS** check compatibility and temperature range of pump with liquids used.
- **ALWAYS** place pump or mixer in liquid before starting.
- **ALWAYS** make sure pump and hose are properly supported.
- **NEVER** run dry.
- **NEVER** use in pressurized containers.
- **NEVER** use with liquids containing solids that can damage internals (i.e. metal chips) without optional strainer.
- **ALWAYS** flush unit with water after each use.
- **ALWAYS** make sure pump or mixer is properly grounded when pumping or mixing flammable or combustible materials. Must use Static Protection Kit (Refer to page 2).

STATIC PROTECTION KIT

INSTALLATION

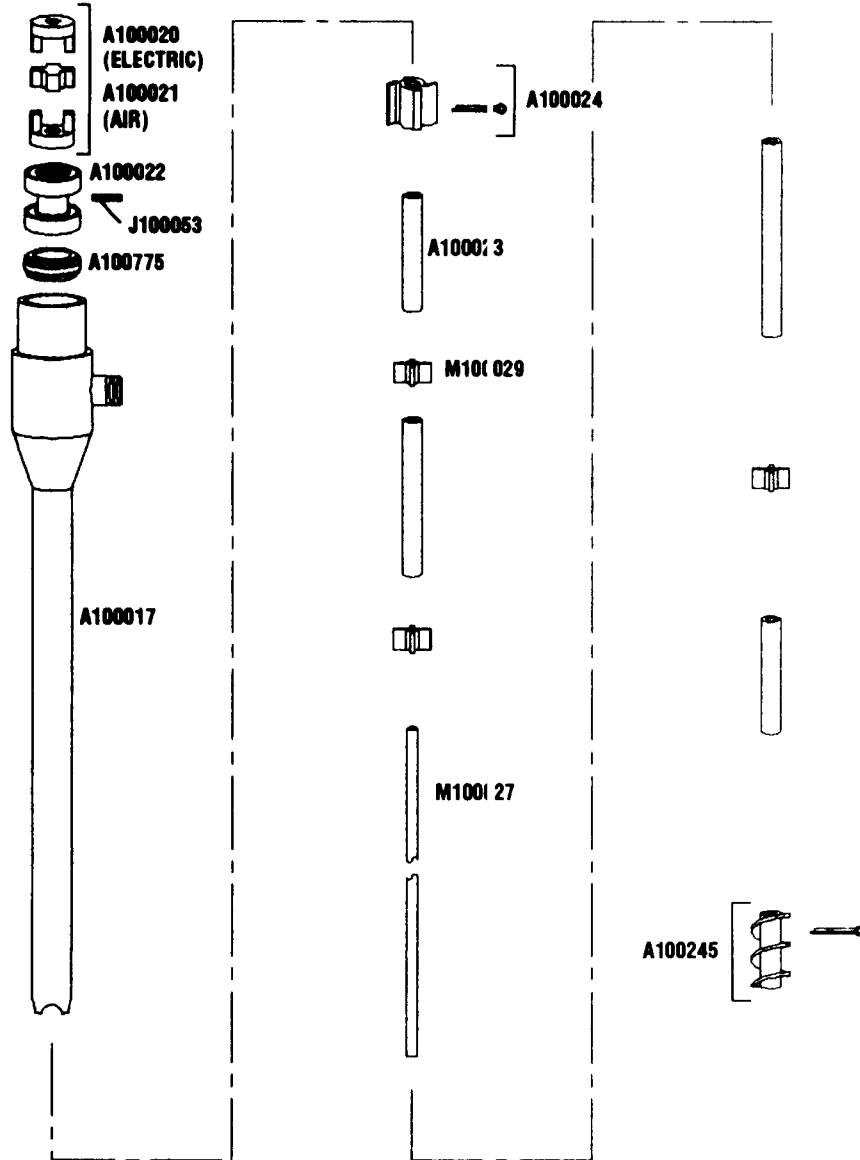
1. Install the pump and Static Protection Kit as shown.
2. Connect both motor and tube ground wires to earth ground.
3. Connect ground wire between drum and earth ground.
4. Connect ground wire between receiving container and earth grounds (or bonding wire to drum, as shown).
5. **CAUTION** - Check electrical continuity of all components before pumping. All should be less than one ohm.



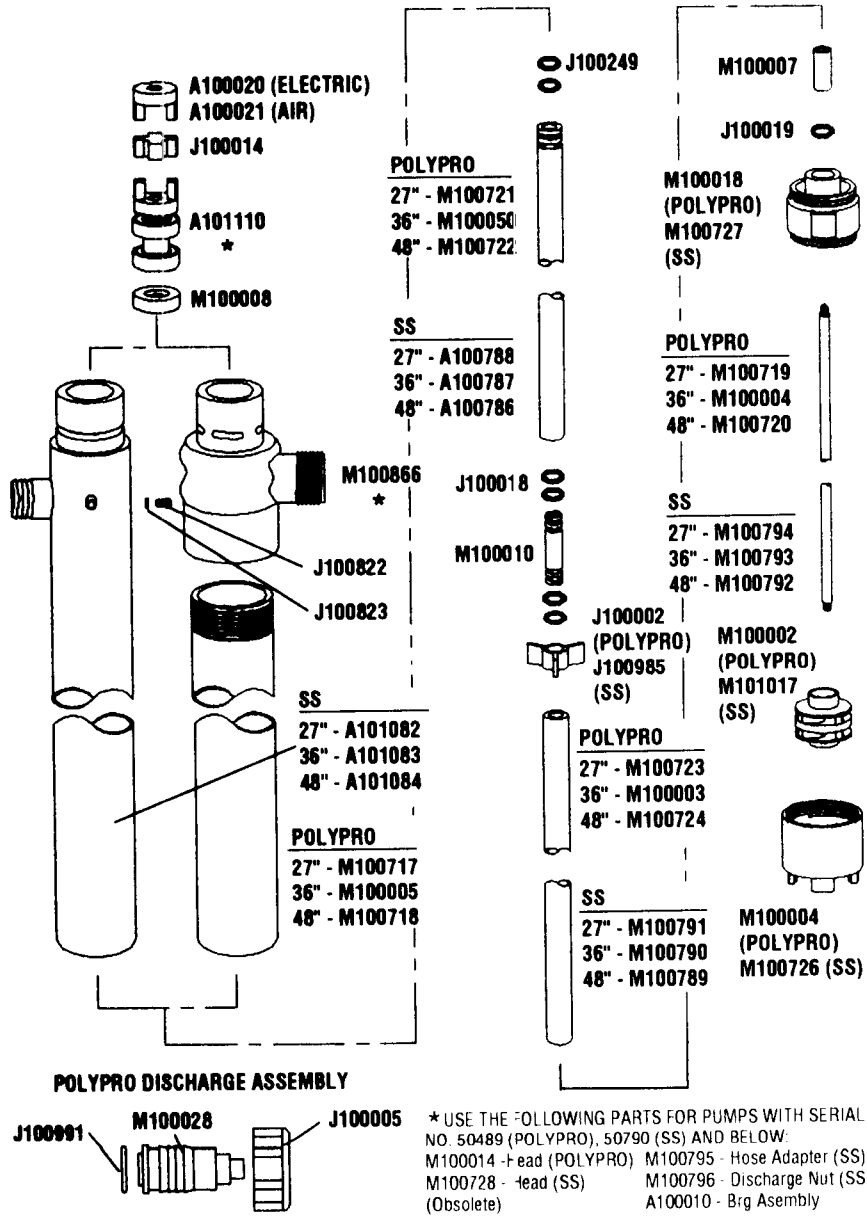
OPERATION AND SAFETY GUIDELINES

- Use only metallic pumps with air or explosionproof electric motor to transfer flammable or combustible liquids.
- Use in an area complying with fire safety standards such as NFPA 30.
- All containers and other equipment must be metal and grounded.
- Motor should be in off position. Connect motor to power source.
- Operator should ground himself by touching earth (building) ground before entering area.
- Operator should wear eye protection.
- **CAUTION** - Avoid splashing. Splash filling will generate static electricity and is extremely hazardous. Generally, velocity must be 3 ft./sec. maximum (7 GPM in 1" hose) until hose outlet is submerged.
- Follow NFPA 77. Ask chemical supplier for advice.
- Special precautions must be taken with Toluene, as it is very dangerous.

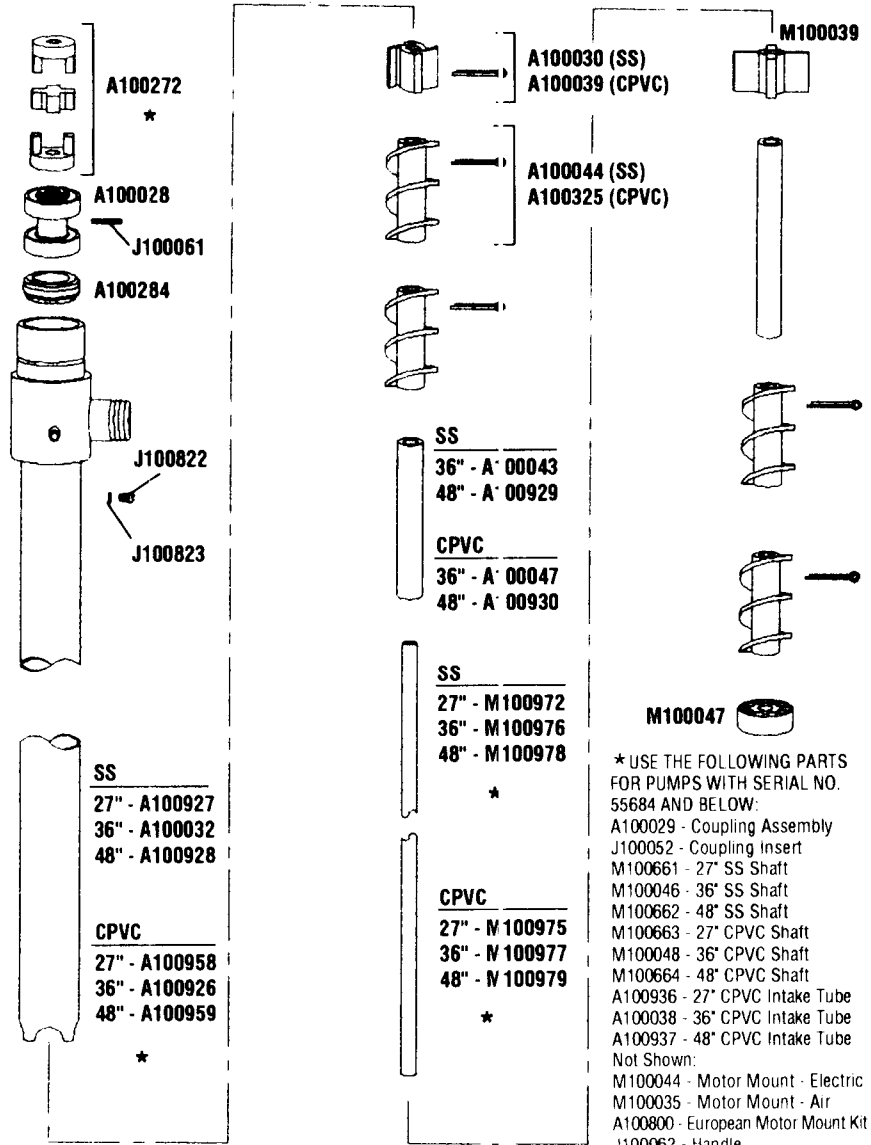
FPUD100 SERIES



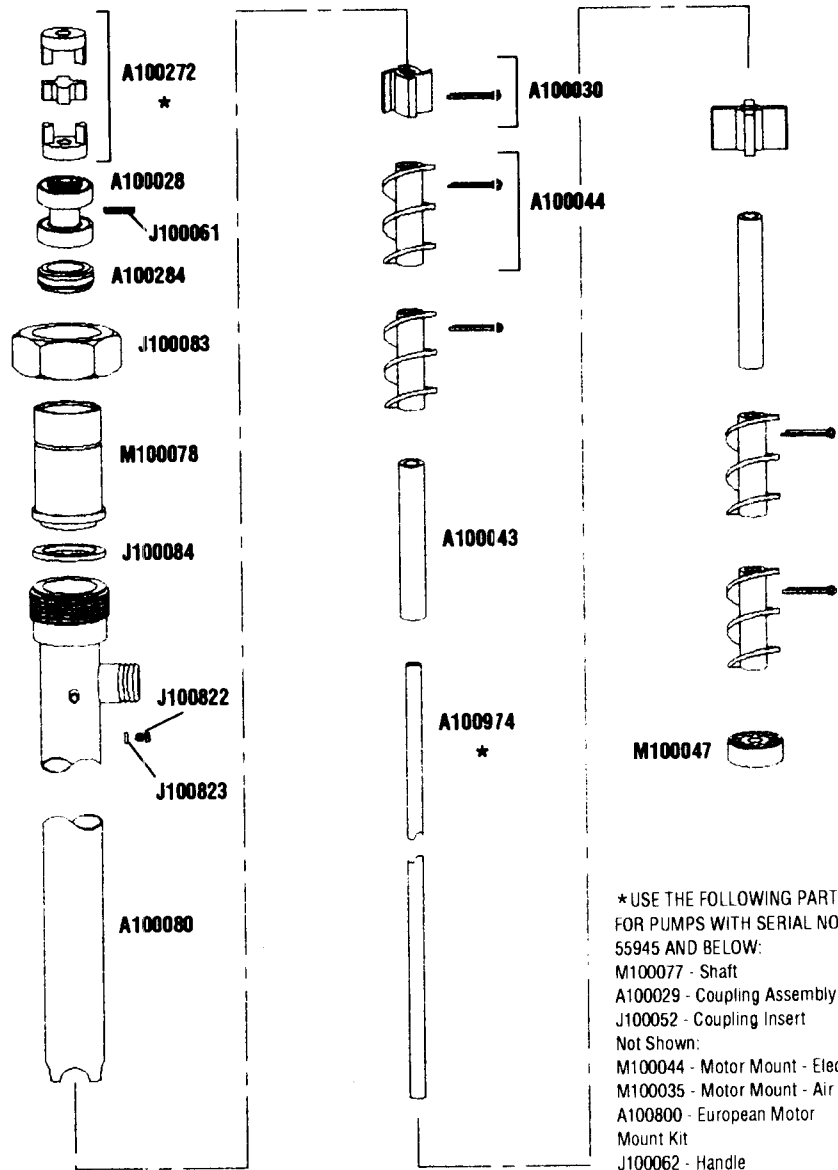
FPUD300 SERIES



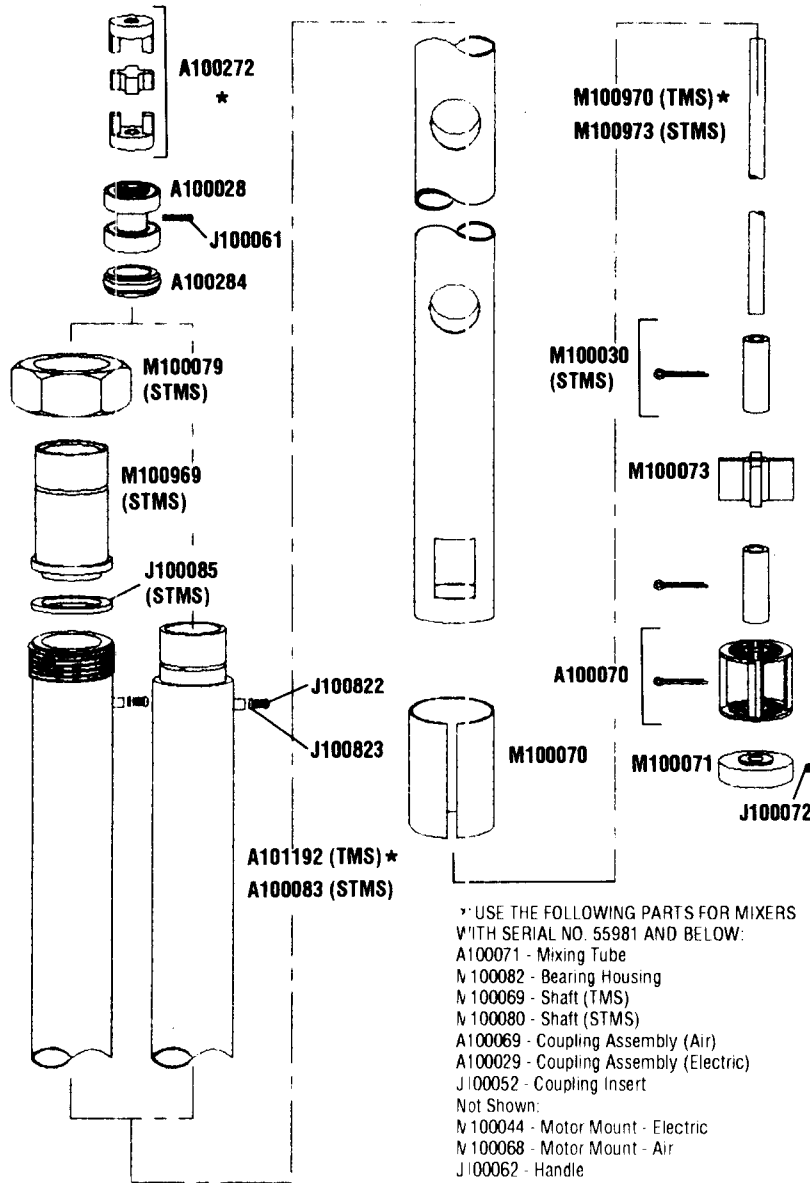
FPUD400 SERIES



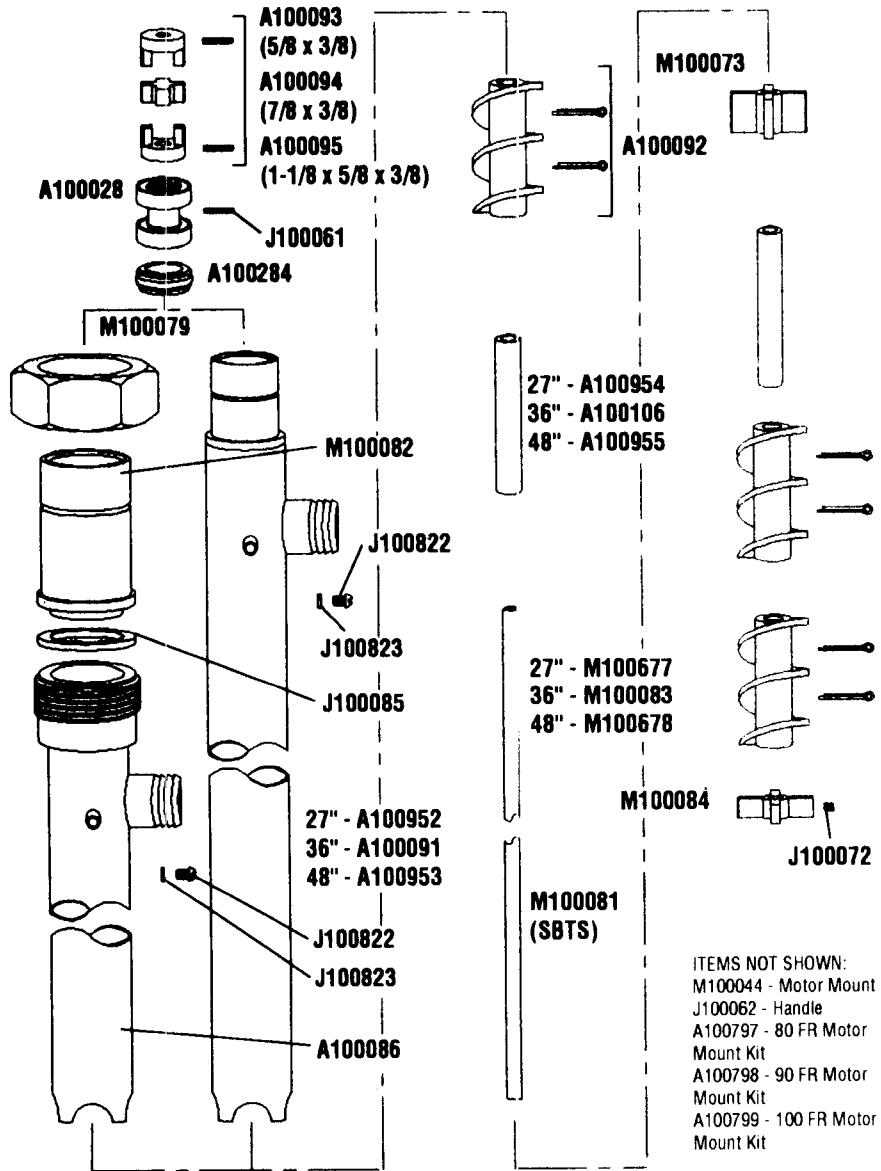
FPUD4 - SNT36 SERIES



FMXD11 SERIES/FMIXD11 - SNT



FPUD500 SERIES/FPUD5 - SNT-36



GENERAL SPECIFICATIONS

FPUD100 Series

Max. Viscosity: 200 cps, 1.4 specific gravity
Construction: 1" O.D. CPVC tube, graphite-filled, Teflon® seal, Inconel® shaft and Teflon internals
Max. Operating Temperature: 180°F

FPUD300 Series

Max. Viscosity: 500 cps, 1.8 specific gravity;
with rechargeable battery motor: 100 cps, 1.6 specific gravity
Construction: Graphite-Teflon seals with Teflon internals
Max. Operating Temperature: Polypropylene: 160°F (71.1°C)
316SS: 220°F (104°C)

FPUD400 Series

Max. Viscosity: 2,000 cps, 1.8 specific gravity
Construction: Graphite-Teflon seals with Teflon internals
Max. Operating Temperature: 150°F (SS and sanitary tubes)
180°F (CPVC tubes)

FPUD500 Series

Max. Viscosity: 15,000 cps, 1.8 specific gravity
Construction: Graphite-Teflon seals with Teflon internals
Max. Operating Temperature: 200°F (93.3°C)

FMXD10

Max. Viscosity: 750 cps, 1.8 specific gravity
Construction: 316SS, graphite-Teflon seals, Teflon bearings
Max. Operating Temperature: 200°F (93.3°C)

OMEGA® ... Your Source for Process Measurement and Control

TEMPERATURE

- Thermocouple, RTD & Thermistor Probes, Connectors,
- Panels & Assemblies
- Wire: Thermocouple, RTD & Thermistor
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- Infrared Pyrometers

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- Load Cells & Pressure Gauges
- Displacement Transducers
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- Turbine/Paddlewheel Systems
- Totalizers & Batch Controllers

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- Controllers, Calibrators, Simulators & Pumps
- Industrial pH & Conductivity Equipment

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- Data Acquisition and Engineering Software
- Communications-Based Acquisition Systems
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- Datalogging Systems
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- Heating Cable
- Cartridge & Strip Heaters
- Immersion & Band Heaters
- Flexible Heaters
- Laboratory Heaters