INDEX

# ANSIMAG®

*Simple by Design™*

## KF SERIES

## NON-METALLIC • MAG-DRIVE CENTRIFUGAL PUMPS

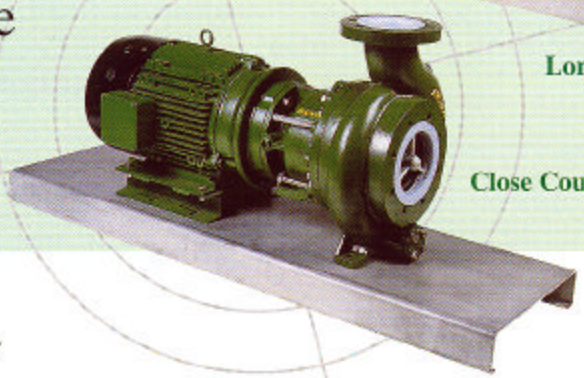

Sundyne CORPORATION

# KF SERIES

## NON-METALLIC • MAG-DRIVE CENTRIFUGAL PUMPS

# Wide Hydraulic Range And Rugged Construction Provides Superior Performance With Higher Head And Flow Applications.

Long Coupled



Close Coupled

ANSIMAG KF series pumps are non-metallic, magnetically driven, sealless centrifugal pumps capable of flows up to 1400 gpm (318 $m^3$/hr), TDH up to 500 feet (152 m), and temperatures from -20°F (-30°C) to 250°F (121°C). The series consists of various pump sizes with maximum impeller diameters of either 8" or 10" and flanges that meet ANSI, ISO or JIS dimensional standards. Mounting configurations are closed coupled, which is compact and requires no alignment, or long coupled which utilizes a pump bearing frame and flexible coupling between the motor and pump shaft. Compared to sealed pumps, with either conventional mechanical seals or gas purge systems, the KF series has significantly fewer parts and requires no buffer fluid or gas purge systems. The KF series' shaft and removable inner magnet makes the overall design the ultimate in simplicity.

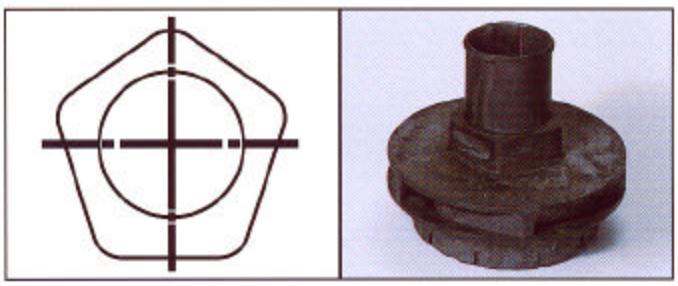
## Sealless, Mag-Drive Coupling.

The magnetically coupled design provides sealless operation, completely eliminating fugitive emissions and the need for time consuming and expensive seal monitoring, maintenance and replacement. The inner magnet assembly is completely encapsulated for protection against the chemicals being pumped, corrosive atmospheres or any other potential physical damage. The superior strength of the rare earth magnets provides no-slip performance. In addition, due to the elimination of eddy currents by the non-metallic rear casing, motor selection is determined by hydraulic horsepower alone.

### 2500 PSIG (180Kg/cm²) Burst Pressure

*The non-metallic rear casing/containment shell design utilizes a composite material reinforcement that approaches the strength of steel, providing a burst pressure of over 2500 PSIG (180 kg/cm²). Since the rear casing is non-metallic and non-conductive, no eddy currents are created. This means there is no heating of the process fluid due to the magnets, resulting in no loss of efficiency.*

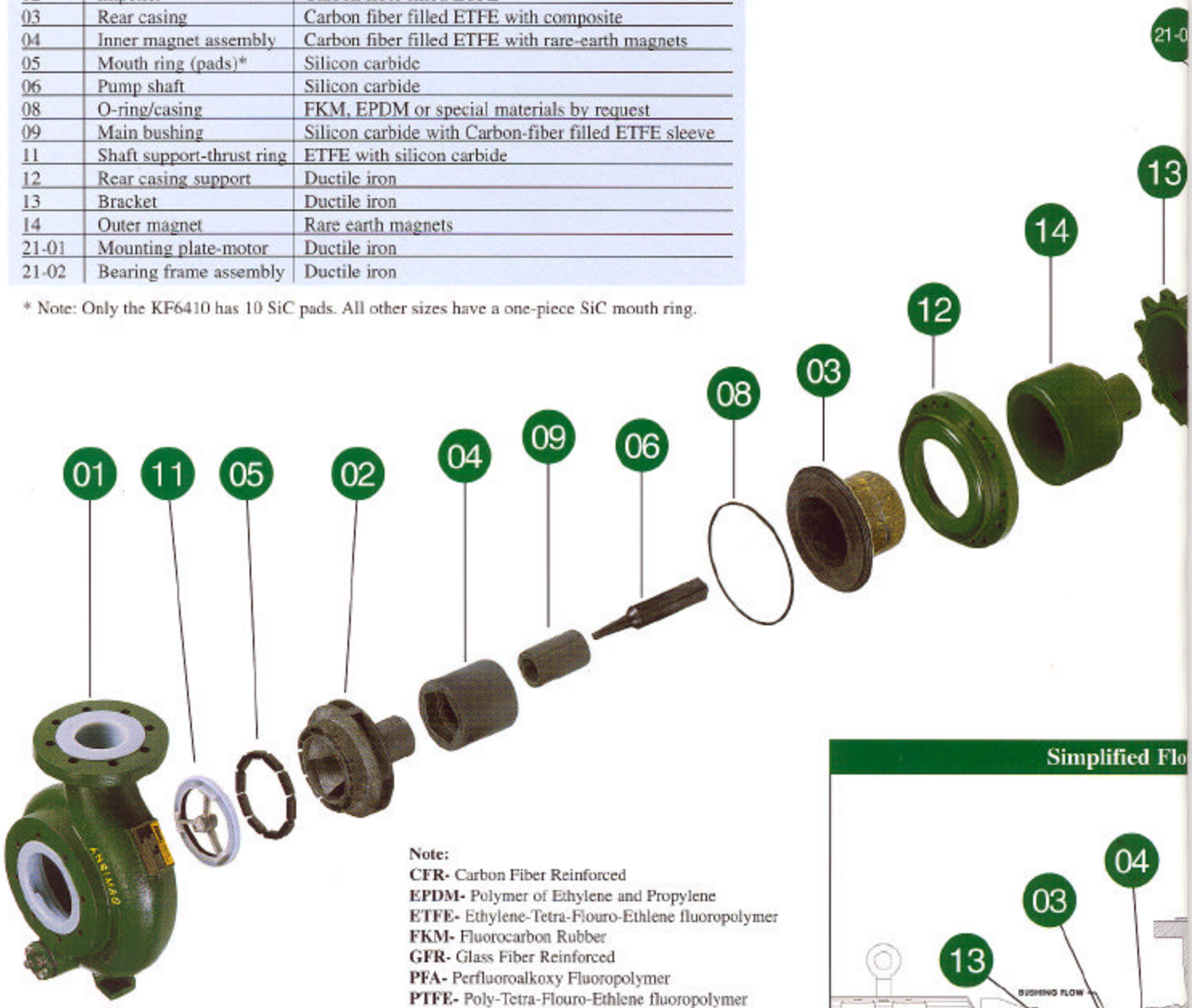
### Pentagon Positive Locking



*Carefully designed to avoid stress concentrations in plastic components, the ANSIMAG patented Pentagon Locking™ system offers you secure operation while retaining convenience of maintenance and wide interchangeability of impellers and driven magnets. Reverse rotation caused by start-up jogging or by back-flow does not effect the coupling.*

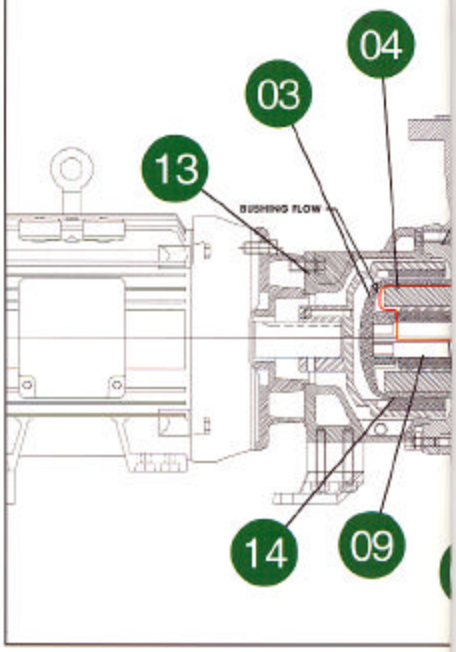
| ITEM | PART NAME | MATERIAL |
|---|---|---|
| 01 | Casing | Ductile iron with ETFE lining |
| 02 | Impeller | Carbon fiber filled ETFE |
| 03 | Rear casing | Carbon fiber filled ETFE with composite |
| 04 | Inner magnet assembly | Carbon fiber filled ETFE with rare-earth magnets |
| 05 | Mouth ring (pads)* | Silicon carbide |
| 06 | Pump shaft | Silicon carbide |
| 08 | O-ring/casing | FKM, EPDM or special materials by request |
| 09 | Main bushing | Silicon carbide with Carbon-fiber filled ETFE sleeve |
| 11 | Shaft support-thrust ring | ETFE with silicon carbide |
| 12 | Rear casing support | Ductile iron |
| 13 | Bracket | Ductile iron |
| 14 | Outer magnet | Rare earth magnets |
| 21-01 | Mounting plate-motor | Ductile iron |
| 21-02 | Bearing frame assembly | Ductile iron |

* Note: Only the KF6410 has 10 SiC pads. All other sizes have a one-piece SiC mouth ring.



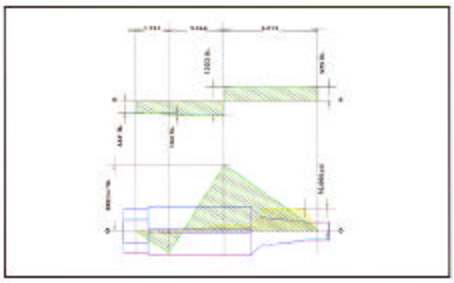

**Note:**
**CFR-** Carbon Fiber Reinforced
**EPDM-** Polymer of Ethylene and Propylene
**ETFE-** Ethylene-Tetra-Flouro-Ethlene fluoropolymer
**FKM-** Fluorocarbon Rubber
**GFR-** Glass Fiber Reinforced
**PFA-** Perfluoroalkoxy Fluoropolymer
**PTFE-** Poly-Tetra-Flouro-Ethlene fluoropolymer
**SiC-** Silicon Carbide

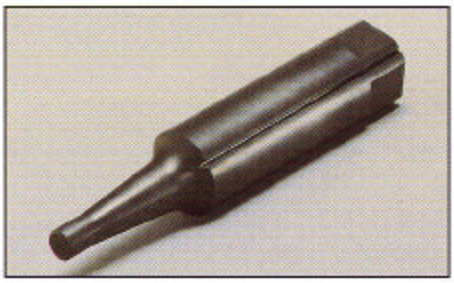
## Simplified Flo




*Three flow paths include the major flow line f path that flows from the volute casing to the r the pump shaft back to the impeller eye, and f shroud to the mouth ring. All flow paths are s*

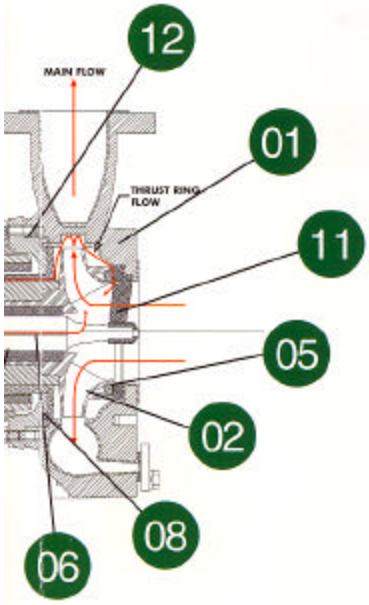
## Field Proven Stationary Shaft



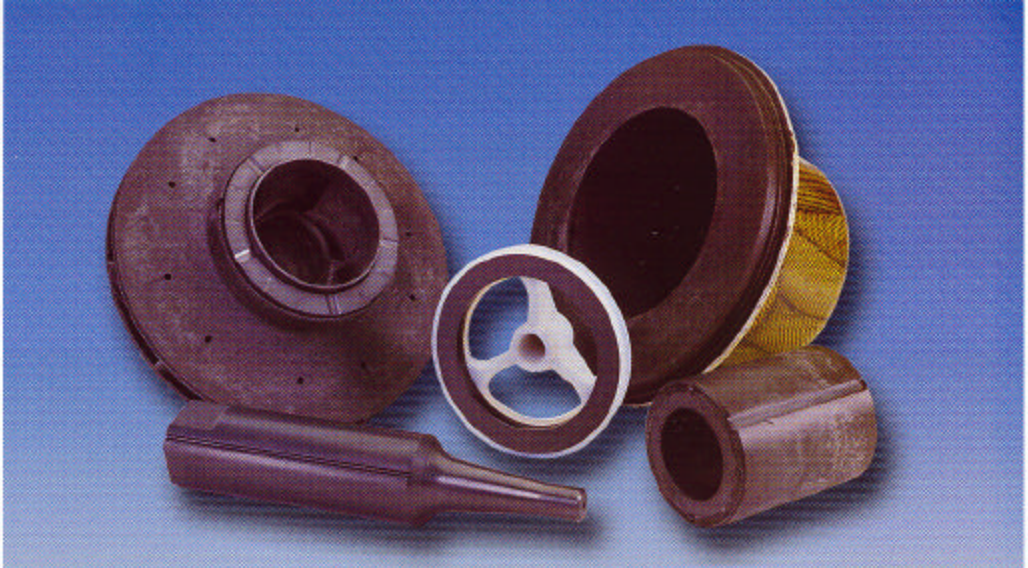


*The KF series shaft does not require any internal O-rings because it is made of solid sintered silicon carbide. Unlike a rotating shaft, the stationary shaft receives non-oscillating loads which results in much higher load carrying capacity. ANSIMAG'S patented groove allows unexpected particles to run through along the shaft without damaging the journal bearings and prevents stagnation of flow in the rear casing.*


## Flow Lines




*ne from suction inlet to discharge port, a he rear casing and through a groove in nd from the volute casing past the front re short and eliminate flow stagnation.*



# First class materials, replaceable wear parts

## *for economical, long lasting performance.*

- ✓ **Shaft**
- ✓ **Shaft Support/Thrust Ring**
- ✓ **Mouth Ring**
- ✓ **Main Bushing**
- ✓ **Rear Casing/ Containment Shell**
- ✓ **Impeller**
- ✓ **O-Ring**

All wear parts, such as the pump shaft, thrust ring and bushing, are made from pure sintered silicon carbide which is extremely high wear resistant and inert to almost all chemicals. Impellers, rear casings and shaft supports are made from fluoropolymers. These parts are designed to be easily field replaceable and most are interchangeable within the series. In fact, you can tear down and put back together an ANSIMAG pump with a single wrench in 30 minutes or less! Simplify pump selection and unify your plant by using ANSIMAG pumps.

**ANSIMAG KF series pumps are versatile and can effectively handle a wide range of corrosive chemical liquids in the following applications:**

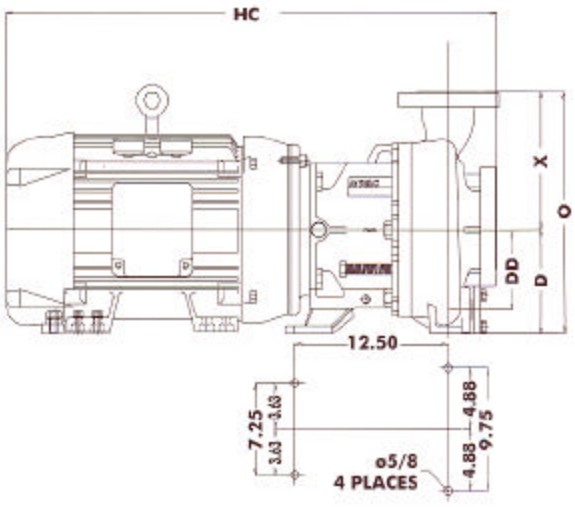
- Chemical Processing and Transfers
- Waste Chemical Treatment
- Bulk Storage
- Surface Treatment for Plating, Etching and Pickling
- Scrubber Systems
- Filtration
- Metal Finishing

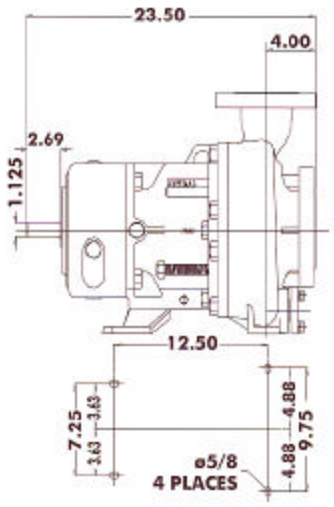
The following is a partial list of liquids commonly pumped by ANSIMAG products:

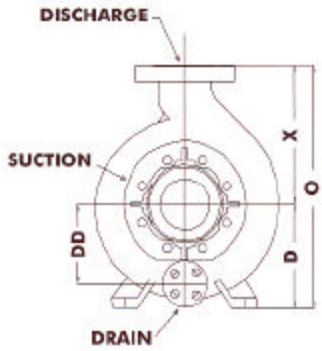
| | | |
|---|---|---|
| Acetic Acid | Chromic Acid | Nitric Acid + Sulfuric Acid |
| Ammonia | Ferric Chloride | Oleum |
| Benzene | Hydrochloric Acid | Phosphoric Acid |
| Bleach Solution | Hydrofluoric Acid | Sodium Hypochlorite |
| Caustic Soda | Hydrogen Peroxide | Sulfuric Acid |
| Chlorosulphonic Acid | Methyl Ethyl Ketone | Water |

Always consult factory for specific performance characteristics.

## Dimensions for ANSI STANDARDS with NEMA MOTORS




DIMENSIONS ARE IN INCHES.

| ANSI B73.1 NOMINAL | ANSIMAG MODEL | SUCTION FLANGE | DISCHARGE FLANGE | D | X | O | DD |
|---|---|---|---|---|---|---|---|
| A05 | KF2110 | 2" | 1" | 8.25" | 8.5" | 16.75" | 5.404" |
| A50 | KF31510 | 3" | 1.5"* | 8.25" | 8.5" | 16.75" | 5.68" |
| A60 | KF3210 | 3" | 2"* | 8.25" | 9.5" | 17.75" | 6.16" |
| A70 | KF438 | 4" | 3" | 8.25" | 11" | 19.25" | 6.3" |
| A70 | KF4310 | 4" | 3" | 8.25" | 11" | 19.25" | 6.38" |
| A80 | KF6410 | 6"* | 4" | 10" | 13.5" | 23.5" | 8.125" |

* Flange has tapped bolt holes 3/4 - 10 NC

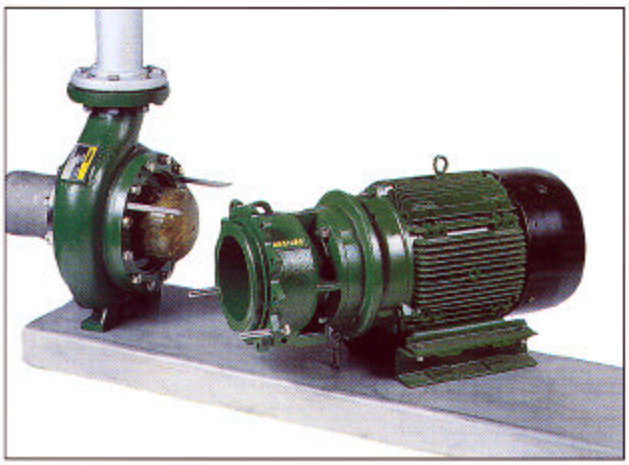
| MOTOR FRAME NEMA | HC |
|---|---|
| 182TC / 184TC | 30 |
| 213TC / 215TC | 34 |
| 254TC / 256TC | 37 |
| 284TC / 286TC | 42 |
| 324TC / 326TC | 44 |
| 284TSC / 282TSC | 41 |
| 324TSC / 326TSC | 41 |
| 364TSC / 365TSC | 42 |
| 405TSC | 43 |

All flanges are raised face type with ANSI class 150 flanges as standard. ANSI class 300 flanges and ISO/DIN/JIS flanges are optional. Unmarked flanges have through holes according to ANSI #150/300 flanges dimensions of ASME/ANSI B73.

**IEC MOTOR DIMENSIONS AVAILABLE UPON REQUEST.**

**DIMENSIONAL DRAWINGS ARE FOR REFERENCE ONLY, NOT FOR CONSTRUCTION.**

## Back-Pull-Out Design Offers Easy Inspections & Maintenance



***In a long coupled/bearing frame configuration, the flexible coupling can be removed without removing the motor and pump. In a close coupled configuration, the motor, outer magnet and bracket can be removed without draining liquid from the pump or piping. The optional large foot bracket holds the motor in balance. This design greatly simplifies inspections and maintenance.***

## KF Specifications

**Temperature Range:**
-20°F to 250°F
(-30°C to 121°C)

**Maximum Discharge Pressure:**
350 psi (24 Bars)

**Maximum Flow:**
1400 gpm (318 m³/hr)

**Maximum TDH:**
500 ft. (152 m)

**Slurry:**
5% by weight (150 microns)
Consult factory if application exceeds this specification

**Maximum Viscosity:**
1700 SSU (365 centistokes)

**Motors:**
Up to 100 hp (74.6 kW)

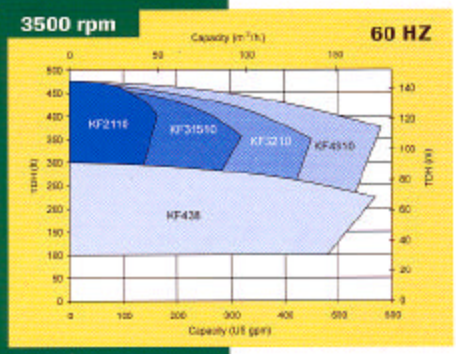
**Mounting:**
Close coupled or long coupled
NEMA or IEC

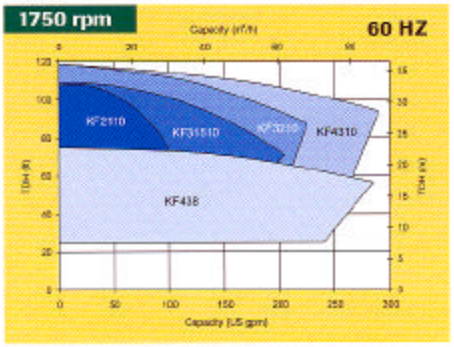
**Dimensional Standards:**
ASME/ANSI B73
ISO PN16
JIS 10

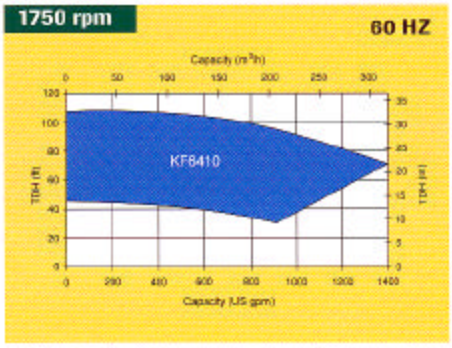
**Models:**
KF438 (4" x 3" x 8")
KF2110 (2" x 1" x 10")
KF31510 (3" x 1.5" x 10")
KF3210 (3" x 2" x 10")
KF4310 (4" x 3" x 10")
KF6410 (6" x 4" x 10")

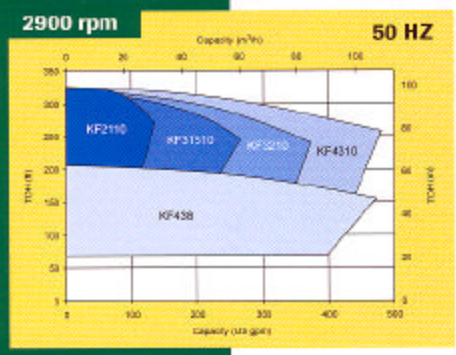
# KF SERIES

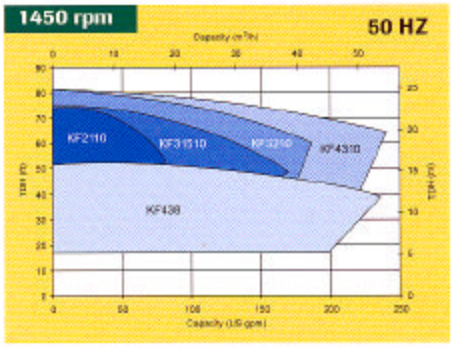
## NON-METALLIC • MAG-DRIVE CENTRIFUGAL PUMPS

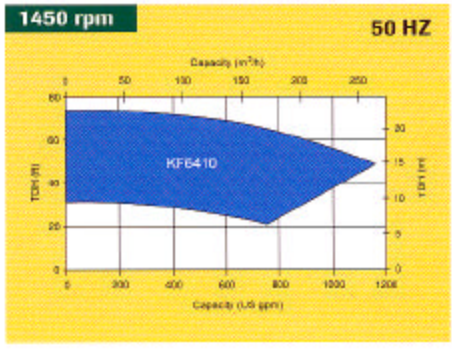



*"When it comes to corrosion resistant, emission-free pumping, ANSIMAG makes the choice simple."*

**K+ SERIES**

**KP SERIES**
Self-Priming

**KV SERIES**
Vertical

**KM SERIES**

**G SERIES**

**POWER MONITORS**

**www.ansimag.com**

Manufacturers representatives, distributors, service centers and direct offices are located throughout the world. For a complete list, visit our website.

GENUINE GSP SERVICE & PARTS

Hydraulic Institute
Creating Pump Standards Since 1917

**Sundyne CORPORATION**™

• ANSIMAG • ANYSPEED • CASTER • GSP • HMD/KONTRO • MASO/SINE • SCMP • SUNDYNE COMPRESSORS • SUNDYNE • SUNFLO •

**ANSIMAG** • 14845 W. 64th Avenue • Arvada, Colorado 80007 USA • +1-303-425-0800 • Fax +1-303-425-0896 • www.ansimag.com

FABU02K3 (11/02) Printed in the U.S.A.