

***Buffalo*** pumps

# **BUFFALO CAN-O-MATIC® II**

**Reliable Zero Leakage Pumps**



## Background

The Can-O-Matic II is a hermetically sealed zero leakage pump with an ANSI standard pump end and a motor with unique tapered spring-loaded wear-compensating bearings. This specialized bearing construction provides a high level of reliability. When operating, pump axial and radial thrust loads within a Can-O-Matic II are balanced, and bearings wear concentrically. Elliptical wear patterns that cause stator-can rupture, as in failure prone sleeve bearing designs, are controlled. Under normal or near-normal operating conditions, a periodic inspection (usually annually) of the Can-O-Matic II bearing system is suggested to insure trouble-free, reliable operation. In liquid handling systems where severe pressure or temperature transients may occur, or suction pressures vary dramatically resulting in "zero" NPSH available to a Can-O-Matic II pump, vibration monitors or proximity probes should be utilized to avoid catastrophic failure due to massive axial thrust forces.

To confirm the built-in reliability of the Can-O-Matic II design, each unit is thoroughly tested before shipment. Each pumping unit is given a hydrostatic test to insure the integrity of materials... a running test to insure performance capability... and a halogen/mass spectrometer test to insure that the complete unit is hermetically sealed.

It is worth noting the fact that the Buffalo Can-O-Matic II is engineered and manufactured to ANSI Standards. This provides an efficient, low NPSH pump design that is field repairable and easily maintained.

The Buffalo Can-O-Matic II design has been field-proven in thousands of installations, and is backed by 30 years of experience in handling toxic, corrosive and carcinogenic liquids, refrigerants, high temperature water and heat transfer liquids.

## Availability/Service

The Can-O-Matic II is a part of Buffalo's "PDQ" Quick Shipment Program, where most popular model pumps are available for short-term shipment. In addition, a complete pump repair service is provided for Buffalo Pump customers.

## Engineering Assistance

Buffalo Pumps Sales Engineers throughout the United States have the engineering training and practical field experience necessary for the correct selection and application of Can-O-Matic II Pumps. In addition, they have the full support of Buffalo's home office research and engineering personnel. This in-depth engineering service is vital to assure proper pump application, especially when handling difficult and/or possibly hazardous fluids.

## General Pump Specifications

|            |             |
|------------|-------------|
| Pump Sizes | 13          |
| Gpm        | 1500        |
| Head       | 700'        |
| Rpm        | 1750 & 3500 |

Working Pressure to 400 psi standard. Higher pressure 600 psi designs available.

Temperature range from -100°F to 250°F standard, -150°F to 400°F available.

## Materials of Construction

| PART NO.                   | DUCTILE IRON CAST IRON FITTED | DUCTILE IRON BRONZE FITTED      | DUCTILE IRON 316SS FITTED | ALL 316SS |
|----------------------------|-------------------------------|---------------------------------|---------------------------|-----------|
| 2 CASING                   | D.I.                          | D.I.                            | D.I.                      | 316SS     |
| 3 IMPELLER                 | C.I.                          | BRZ                             | 316SS                     | 316SS     |
| 9 CASING RING              |                               | CARBON GRAPHITE                 |                           |           |
| 10 MOTOR RING              |                               | CARBON GRAPHITE                 |                           |           |
| 202 MOTOR FLANGE           | 316SS                         | 316SS                           | 316SS                     | 316SS     |
| 205 BEARING HOUSING        |                               | 316 STAINLESS STEEL             |                           |           |
| 208 WEAR RING HOUSING      | 316SS                         | 316SS                           | 316SS                     | 316SS     |
| 247 BEARINGS               |                               | CARBON GRAPHITE                 |                           |           |
| 211 JOURNALS               |                               | 316SS HARD FACED TO 500 BRINELL |                           |           |
| 216 STATOR CAN             |                               | HASTELLOY C                     |                           |           |
| 221 ROTOR CAN              |                               | 316 STAINLESS                   |                           |           |
| 229 ROTOR SHAFT            |                               | 316 STAINLESS                   |                           |           |
| 250 SPRINGS                |                               | 316 STAINLESS                   |                           |           |
| 258 THRUST-O-MATIC ORIFICE |                               | 316 STAINLESS                   |                           |           |

## General Motor Specifications

- Totally enclosed liquid cooled design
- Hastelloy C Stator Can
- 316SS Rotor and Rotor Can
- Class C Insulation System
- Hardened bearing journals
- Thermal sensor
- Liquid tight conduit box with oil expansion dome and pressure relief valve set at 15 PSI
- Dielectric oil filled stator housing

## Motor Horsepower Capability

| Frame | RPM  |       |
|-------|------|-------|
|       | 1750 | 3500  |
| 66M   | 5 HP | 7½ HP |
| 66V   | 10   | 15    |
| 66ZF  | 20   | 25    |
| 215ZH | 30   | 40    |
| 256ZM | 50   | 60    |
| 256AB | 75   | 100   |

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# THE CAN-O-MATIC II CONCEPT

## Design Features

### Conical Bearings

Long bearing life is essential for extended trouble-free service. Can-O-Matic II features a patented, self-adjusting spring loaded conical type of bearing which assures concentric rotation, eliminating mechanical interference between the rotor can and stator can. These bearings, of carbon graphite, maintain correct bearing/journal fit at all times.

### Balanced Axial Thrust

Buffalo's exclusive Thrust-O-Matic® device, consisting of this precision sized orifice and tapered motor shaft end, combines with the impeller balance chamber arrangement to create and maintain equilibrium between stationary and rotating elements.

### Segmented Bearings

Larger motors, which produce greater radial loads, are fitted with tapered segmented carbon graphite bearings. These tapered bearings, which are spring loaded, compensate for wear and prevent mechanical interference between the rotor can and stator can.

### Reduced Radial Thrust

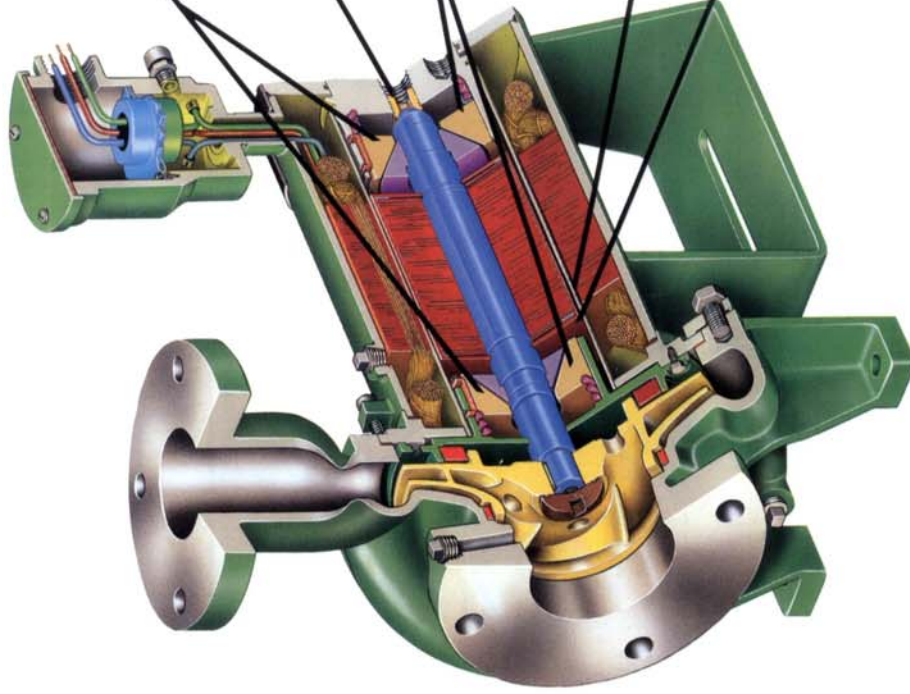
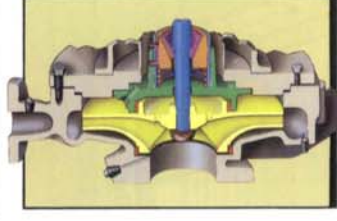
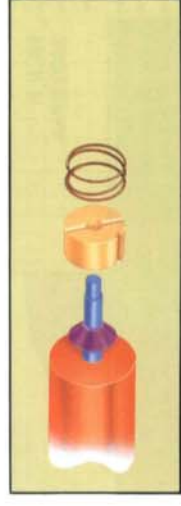
Can-O-Matic II pump casings have a special volute design which minimizes radial thrust, contributing to extended bearing life. Single and double volute casings are utilized, depending on pump size.

### Stator Can

To insure leakproof integrity, the stator can is a heliarc welded Hastelloy C assembly. At the pump end, the can is welded to the pump adapter flange. At the other end, it is welded to the bearing cap.

### Rotor Can

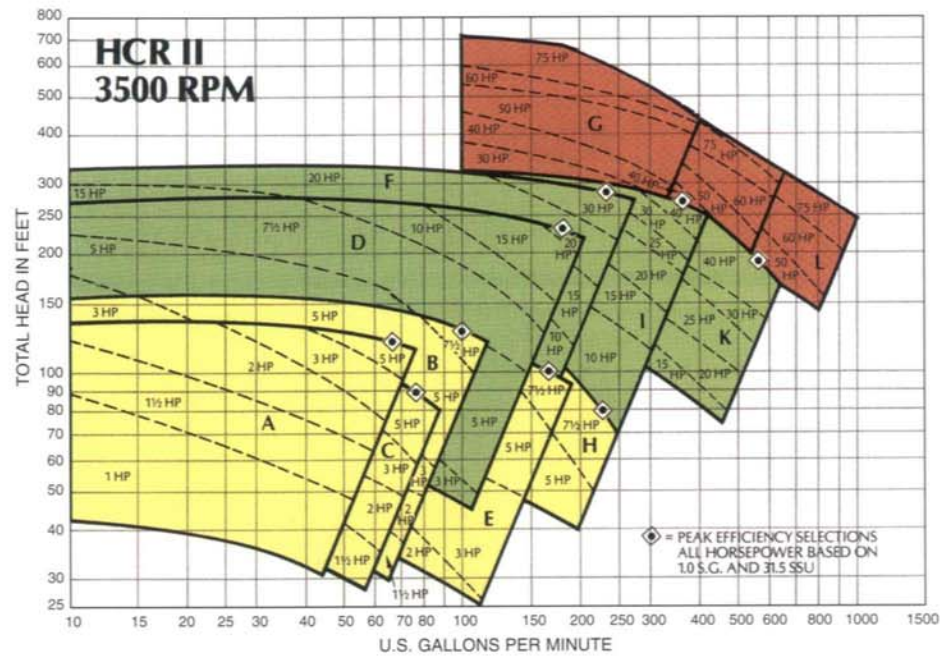
The rotor can, of 316SS, is heliarc welded to the rotor end plates which are welded to the shaft. Bearing shaft journals are of 316SS hard faced to 500 Brinell.



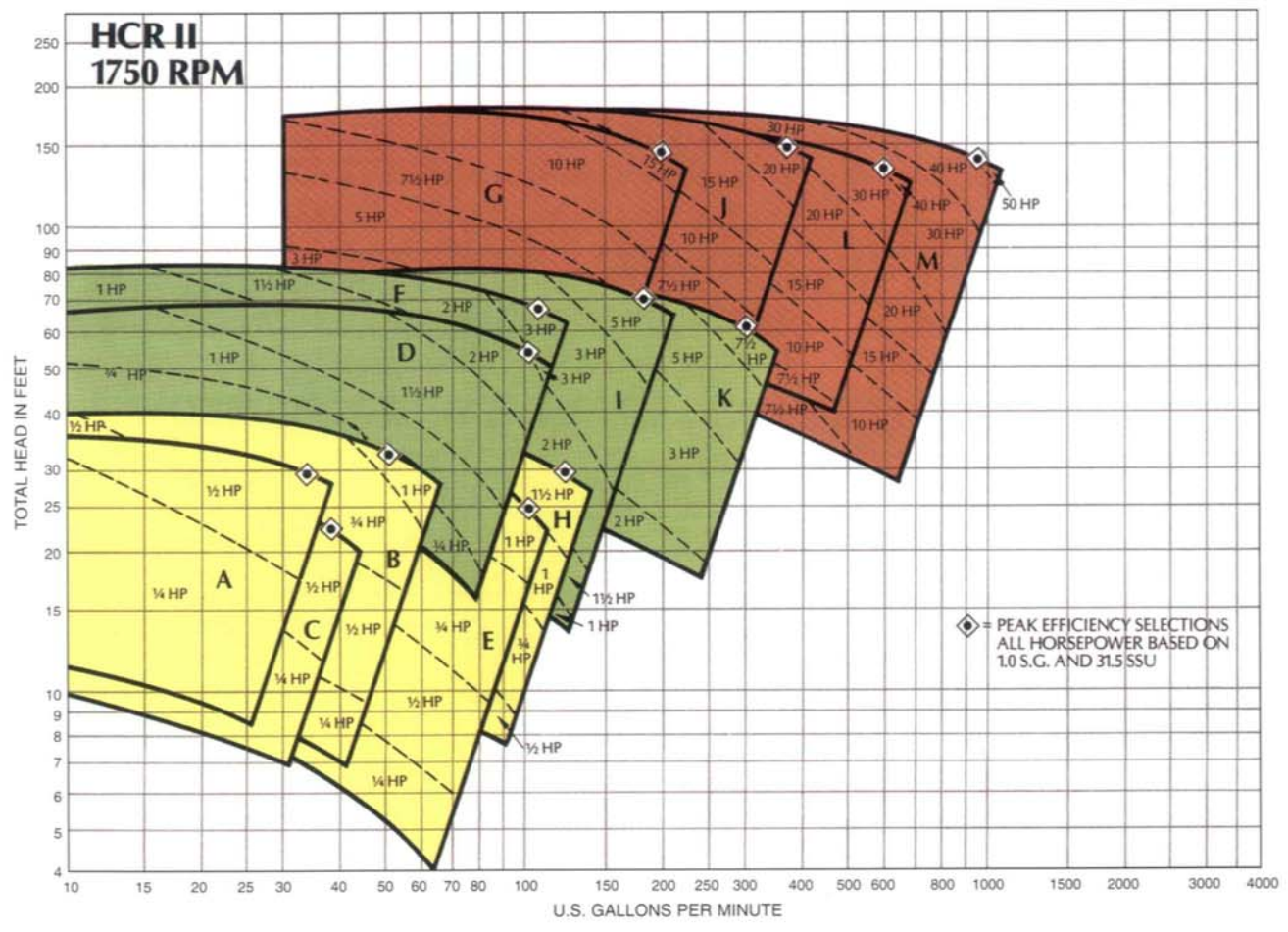


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# Performance Data

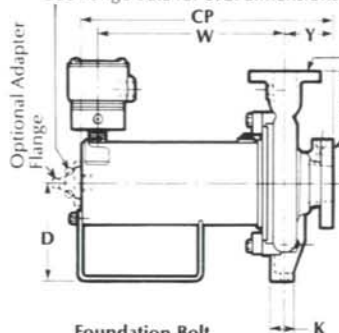


| Performance Identification | Pump Identification | Pump Size Discharge x Suction x Impeller Dia. |
|----------------------------|---------------------|-----------------------------------------------|
| A                          | 1015-6              | 1 x 1 1/2 x 6                                 |
| B                          | AA6                 | 1 x 1 1/2 x 6                                 |
| C                          | 1025-6              | 1 x 2 1/2 x 6                                 |
| D                          | 058                 | 2 x 1 x 8                                     |
| E                          | AB6                 | 1 1/2 x 3 x 6                                 |
| F                          | 509                 | 1 1/2 x 3 x 9                                 |
| G                          | 2013                | 1 1/2 x 3 x 13                                |
| H                          | 106                 | 2 x 3 x 6                                     |
| I                          | 609                 | 2 x 3 x 9                                     |
| J                          | 3013                | 2 x 3 x 13                                    |
| K                          | 709                 | 3 x 4 x 9                                     |
| L                          | 4013                | 3 x 4 x 13                                    |
| M                          | 8013                | 4 x 6 x 13                                    |

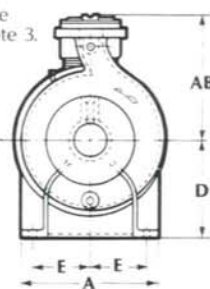


# Dimensions

See flange data for B.C. dimensions

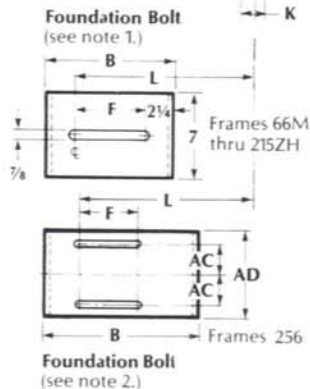


See note 3.



## NOTES:

1. Allowance for back withdrawal. Unit may be rotated 90° to the right or left.
  2. Allowance for back withdrawal.
  3. Suction flanges are tapped on 3013, 4013, and 8013 size pumps, also on 1015 and 1025 size pumps
- † For frames 256AB



## MOTOR DATA

| PUMP SIZE   | FRAME | B      | F  | L        | W        | CP       | AB       | AC | AD     |
|-------------|-------|--------|----|----------|----------|----------|----------|----|--------|
| AA6-106     | 66M   | 12 1/2 | 4  | 10 9/16  | 14 13/16 | 20 3/8   | 10 7/8   | NA | NA     |
| 1015 & 1025 | 66M   | 12 1/2 | 4  | 11 1/8   | 15 3/4   | 19 1/16  | 10 7/8   | NA | NA     |
| 058-8013    | 66M   | 10 1/2 | 6  | 12 7/16  | 13 13/16 | 19 1/2   | 10 7/8   | NA | NA     |
| 058-8013    | 66V   | 14     | 8  | 13 15/16 | 15 13/16 | 21 1/2   | 10 7/8   | NA | NA     |
| 058-8013    | 66ZF  | 16     | 8  | 15 15/16 | 19 13/16 | 25 1/2   | 10 7/8   | NA | NA     |
| 058-8013    | 215ZH | 19     | 10 | 17 15/16 | 22 13/16 | 28 1/2   | 11 13/16 | NA | NA     |
| 2013-8013   | 256ZM | 23     | 6  | 20 1/2   | 24 9/16  | 31 3/16  | 12 3/4   | 7  | 15 1/2 |
| 2013-8013   | 256AB | 23     | 6  | 20 1/2   | 28 7/16  | 34 11/16 | 12 3/4   | 7  | 15 1/2 |

## PUMP DATA

| PUMP SIZE | SUCTION x DISCHARGE | A      | D     | E     | K       | X      | Y     |
|-----------|---------------------|--------|-------|-------|---------|--------|-------|
| AA6       | 1 1/2 x 1           | 8      | 5 1/4 | 3     | 2       | 6 1/2  | 4     |
| AB6       | 3 x 1 1/2           | 8      | 5 1/4 | 3     | 2       | 6 1/2  | 4     |
| 106       | 3 x 2               | 8      | 5 1/4 | 3     | 2       | 8 1/4  | 4     |
| 10-5      | 1 1/2 x 1           | NA     | NA    | NA    | 2       | 6      | 1 5/8 |
| 1025      | 2 1/2 x 1           | NA     | NA    | NA    | 2       | 6      | 1 5/8 |
| 12515     | 1 1/2 x 1 1/4       | NA     | NA    | NA    | 2       | 7      | 2     |
| 058       | 2 x 1               | 11 3/4 | 8 1/4 | 4 7/8 | 1 15/16 | 8 1/2  | 4     |
| 509       | 3 x 1 1/2           | 11 3/4 | 8 1/4 | 4 7/8 | 1 15/16 | 8 1/2  | 4     |
| 609       | 3 x 2               | 11 3/4 | 8 1/4 | 4 7/8 | 1 15/16 | 9 1/2  | 4     |
| 709       | 4 x 3               | 11 3/4 | 8 1/4 | 4 7/8 | 1 15/16 | 11     | 4     |
| 2013      | 3 x 1 1/2           | 11 3/4 | 10    | 4 7/8 | 2 1/16  | 10 1/2 | 4     |
| 3013      | 3 x 2               | 11 3/4 | 10    | 4 7/8 | 2 1/16  | 11 1/2 | 4     |
| 4013      | 4 x 3               | 11 3/4 | 10    | 4 7/8 | 2 1/16  | 12 1/2 | 4     |
| 8013      | 6 x 4               | 14     | 10    | 6     | 2 1/16  | 13 1/2 | 4     |

## FLANGE DATA

| SIZE  | O.D.  | T.KNS. | NO. HOLES (NOTE 4, 5 & 6) | FLG. B.C. | OPT. AD'PT. FLG. "HLS. | FLG. B.C.        |
|-------|-------|--------|---------------------------|-----------|------------------------|------------------|
| 1     | 4 1/4 | 3/16   | 4-3/8                     | 3 3/8     | 4-3/8-11 UNC           | 2 1/4            |
| 1 1/4 | 4 5/8 | 3/8    |                           | 3 1/2     | 4-3/8-11 UNC           | 2 1/4            |
| 1 1/2 | 5     | 11/16  | 4-3/8 DR.<br>4-1/2-13 UNC | 3 3/8     | 4-3/8-11 UNC           | 2 1/4            |
| 2     | 6     | 1/4    | 4-3/4                     | 4 3/4     | 4-3/8-11 UNC           | 2 1/4            |
| 2 1/2 | 7     | 7/8    | 4-1/4 DR.<br>4-3/8-11 UNC | 5 1/2     | 4-3/8-11 UNC           | 2 1/4            |
| 3     | 7 1/2 | 15/16  | 4-3/4                     | 6         | 4-3/8-11 UNC           | 2 1/4            |
| 3     | 7 1/2 | 15/16  | 4-3/4 DR.<br>4-3/8-11 UNC | 6         | 4-3/8-11 UNC           | 2 1/4<br>3 1/4†  |
| 4     | 9     | 1      | 8-1/4 DR.<br>8-3/8-11 UNC | 7 1/2     | 4-3/8-11 UNC           | 2 1/4†<br>3 1/4† |
| 6     | 11    | 1 1/16 | 8-1/2 DR.<br>8-3/4-10 UNC | 9 1/2     | 4-3/8-11 UNC           | 2 1/4†<br>3 1/4† |

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