Background

For years, many centrifugal pump users have been looking for an economical pump which would provide high efficiencies, quiet operation, and short, consistent priming times when used for intermittent or cyclical pumping applications. These operating benefits have been difficult to obtain when standard centrifugal pumps are fitted with costly auxiliaries such as separate priming pumps or performance-robbed foot or check valves. "Self-priming" pumps designed for this service generally have long and/or inconsistent priming times, noisy operation and low operating efficiencies.

The Buffalo Self-Prim ing Centrifugal Pump CR-SP

Buffalo's newly designed self-priming pump provides high operating efficiencies for pumps of this type... operates quietly and has a short, consistent priming time. This performance is achieved with a unique combination of diffuser guide vane, Buffalo's proven open impeller, and a special casing configuration which provides ample fluid for repriming.

In addition, extended bearing life and added years of reliable operation are made possible through Buffalo's balanced axial and radial thrust design which keeps these forces to an absolute minimum.

Parts Interchangeability

All Buffalo CR-SP Self-Prim ing pumps utilize our standard oil lubricated M-3 ANSI power frame regardless of pump size. This power frame is also supplied as standard equipment on Buffalo's CR-FY/Vortex Pump, "Class F"/Two Stage Pump and CRE/CRO frame mounted ANSI standard pump. This allows the Buffalo pumps user to minimize spare parts inventory requirements as well as achieve maximum power frame interchangeability irrespective of pump size or class.

NOTE: CRE/CRO is available in 4 power frame sizes. Refer to Buffalo Pumps sales before utilizing any present CRE/CRO power frames on CR/SP. Power frame interchangeability not applicable to horizontal split case, vertical submerged, or solids handling pump lines.

Application Engineering

Buffalo Factory Trained Authorized Representatives are located in major business centers. They are there to help you with your pumping applications, system start-up, and follow-up field service.

General Specifications

PUMP SIZES: 7
CAPACITIES: 1,000 GPM
HEAD: to 540'
RPM: 1750 & 3500
TEMPERATURE: to 500° F
WORKING PRESSURES: to 400 PSI standard, higher pressure designs available.

Prim ing Time

\[ T = T_c \left( \frac{L_0}{L_{es}} \right) 2 \]

\[ T = \text{System Priming Time} \]
\[ T_c = \text{Prim ing Time from curve below} \]
\[ L_0 = \text{Total Length of Suction Pipe} \]
\[ L_{es} = \text{Effective Static Lift} \]
\[ (\text{Static Lift} \times \text{S.G.}) \]
\[ D_0 = \text{Suction Pipe Dia.} \]
\[ D_i = \text{Pump Suction Dia.} \]

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Buffalo Pumps
Performance Curves

CR-SP 3500 RPM

- Peak Efficiency

All horsepower based on 1.0 S.G. & 31.5 S.S.U.

CR-SP 1750 RPM

- Peak Efficiency

All horsepower based on 1.0 S.G. & 31.5 S.S.U.
Quick Release Locking Lugs
High strength sintered metal. Facili-
tates easy back withdrawal of rotating
external trim casing without disturb-
ing suction or discharge piping.

Bearing Frame
All 7 sizes of the CR-SP utilize Buffalo's
standard oil lubricated M-3 bearing
frame. Breather and drain provided.
A stainless steel detector and lip
seals, are used to protect bearings
from contamination. Water cooled
bearing frame available.

Thrust Bearing and Cartridge
Double row to minimize end play.
2 year minimum life. Axial adjust-
ment of cartridge maintains proper impeller
clearance for optimum performance.

Shaft
Stainless 302Z maximum selection.
316SS standard with other machin-
able alloys available. Replaceable
hook type shaft sleeve with gasket
between sleeve and impeller also
available.

Guide Vane Diffuser
Buffalos's guide vane diffuser design
eliminates the need for a close fitting
tongue (bevel). This provides for
unusually high operating efficiencies,
shorter more consistent priming times
and quieter, smoother operating
during priming and normal running
cycles. Available in a wide variety of
machinable alloys for compatibility
with service fluid.

Casing
One piece cast construction to
insure hydraulic integrity. Casing
with cavity sized to retain ample fluid
for repriming. Casing design allows
for the use of immersion heaters
optional) when required. Ductile
iron and 316SS standard with other
machinable alloys readily available.

Open Impeller
Sewage or clear liquid applications.
Fully open design. Balanced axial
thrust provides optimum bearing life.
Large balance holes and chamber.
316SS standard with other machin-
able alloys available.

Stuffing Box
Available packed, with or without
glass filled teflon seal cage. Sized to
accommodate virtually all of today's
most popular mechanical sealings.
inside or outside mounted
single and/or double mechanical
seals as well as cartridge type seals
available. Solid and or flush type
glands available in a wide variety
of machinable alloys.
### Materials of Construction

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part Description</th>
<th>Ductile Iron/Ductile Iron Fitted</th>
<th>Ductile Iron/316SS Fitted</th>
<th>All 316SS</th>
<th>Alloy 20</th>
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<tr>
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<td>Lantern Ring</td>
<td>GLASS FILLED TEFLOMN</td>
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<td>316SS</td>
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*For mechanical seals:

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<td>12</td>
<td>Gland</td>
<td>316SS</td>
<td>316SS</td>
<td>Alloy 20</td>
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</tbody>
</table>

†Teflon, formed braided graphite yarn & graphite filament packing available as options.

*Other machinable alloys available.
### Dimensional Data

#### Pump Data

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<th>Size</th>
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<th>0510</th>
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<th>6011</th>
<th>2013</th>
<th>3013</th>
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<td>10</td>
<td>11</td>
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<td>9 3/16</td>
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*H1' is minimum distance required for back pull-out.

### Motor Data

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<tr>
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### Flange Data/Flat Faced

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<th>B.C.</th>
<th>Bolts (Straddling)</th>
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<td>4 1/4</td>
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<tr>
<td>3</td>
<td>7 1/8</td>
<td>1 1/16</td>
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<tr>
<td>4</td>
<td>9</td>
<td>1 1/16</td>
<td>7 1/8</td>
</tr>
</tbody>
</table>

*Base Numbers 1 thru 5 for 058 thru 609
Base Numbers 1A thru 5A for 6011 thru 4013
All dimensions shown are in inches.
Other Buffalo Pumps

Leakproof Can-O-Matic II Pumps


ANSI Standard Pumps

Buffalo CRE-CRO ANSI Standard Pumps with open or enclosed impeller, are designed to operate with reduced axial and radial loads for long maintenance-free service in the chemical process and allied industries. 21 sizes. Capacities to 5000 gpm. Pressures to 400 psi. Bulletin 903.

Vertical Submerged Pumps

A reliable, heavy duty industrial pump for a wide range of pit and tank applications including pumping slurries, chemicals, condensate, waste water, etc. 21 sizes from 1" to 8" discharge. Capacities to 4800 gpm. Heads to 250 ft. Bulletin 905.

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(ROCKVILLE, MD)
(LEXINGTON, VA)
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SOUTHERN REGIONAL PUMP OFFICE
MARIETTA, GA

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KITCHENER, ONT.
MONTREAL (QUE.)
OTTAWA, ONT.
SAINT JOHN, N.B.
SARNIA, ONT.
SASKATOON, SASK.
SUDbury, ONT.
TORONTO, ONT.
VANCOUVER, B.C.
WINNIPEG, MAN.

In Mexico:
GUADALAJARA, JAL.
MEXICO CITY, D.F.
MONTERREY, N.L.

buffalo pumps

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North Tonawanda, New York 14120-0156

PRINTED IN U.S.A.