



X1 Series

Ductile Iron Motor Speed Pumps

Applications

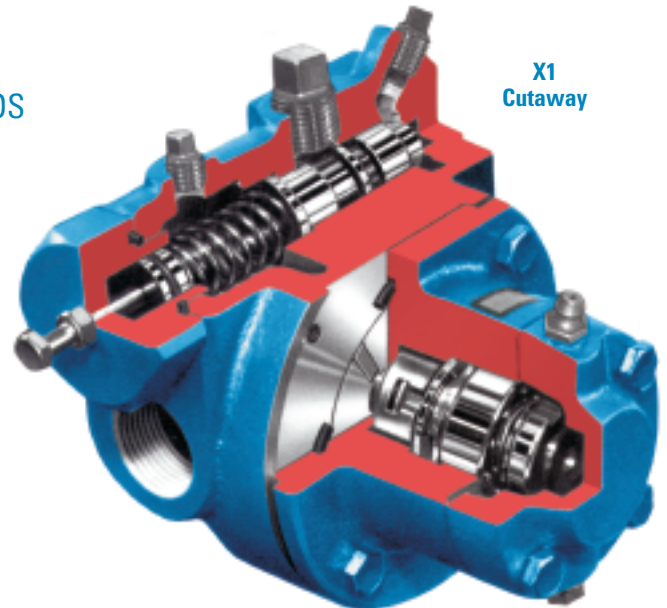
Blackmer X1 Series pumps are specially designed for the transfer and dispensing of solvents, light oils, alcohol, and a variety of other light, non-corrosive, non-abrasive fluids. Also, they are ideally suited for handling flammable liquids.

Quality Design and Construction

The X1 Series consists of thermal shock-resistant ductile iron construction with external ball bearings isolated from the pumpage by mechanical seals, designed to couple directly to standard electric motors. Meets tight installation requirements. XB1 and XB1P models are base-mounted for portable or pad installations. XF1 and XF1P types are fitted with an integral bracket for direct mounting to NEMA C-face motor.

High Performance Is Standard

The X1 Series have 1" NPT tapped ports and offer capacities in the range of 5 to 14 gpm (19-53 lpm) and operate at speeds up to 1,750 rpm, handling fluid viscosities up to 5,000 SSU (1,050 cP). XF1P and XB1P models offer 50% greater capacity than the XF1 and XB1 models. The integral dual-acting relief valve returns excess flow to the tank if equipped with return to tank pipe.



X1
Cutaway

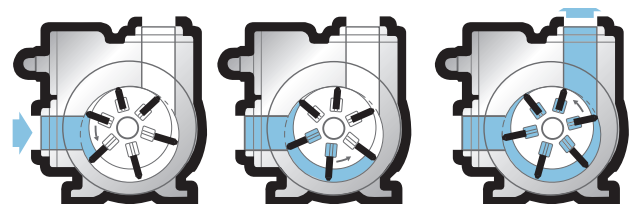


XB1P-DM



XF1P

How a Rotary Vane Pump Works





X1 Series Ductile Iron Motor Speed Pumps

Maximum Operating Limits

| Pump Model | Speed ¹ | Flow ² | Viscosity ³ | Speed ¹ | Flow ² | Viscosity ³ | Maximum Differential Pressure | Maximum Working Pressure | Maximum Operating Temperature |
|------------|--------------------|-------------------|------------------------|--------------------|-------------------|------------------------|-------------------------------|--------------------------|-------------------------------|
| | RPM | GPM (LPM) | SSU (cP) ⁴ | RPM | GPM (LPM) | SSU (cP) ⁴ | PSI (Bar) | PSI (Bar) | °F (°C) |
| XF1, XB1 | 1750 | 9 (34) | 5,000 (1,050) | 950 | 5 (18.9) | 5,000 (1,050) | 125 (8.62) | 350 (24.1) | 240 (115) |
| XF1P, XB1P | 1750 | 14 (53) | 2,500 (525) | 950 | 8 (30.3) | 2,500 (525) | 125 (8.62) | 350 (24.1) | 240 (115) |

Pump Performance Data*

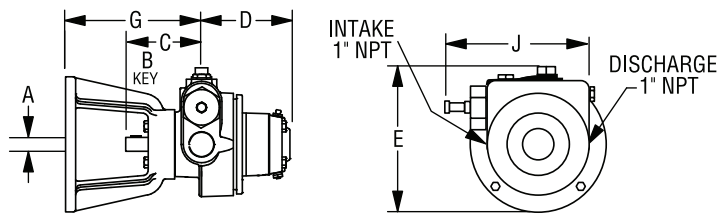
| Pump Model | XF1, XB1 | | | | XF1P, XB1P | | | |
|------------------------|----------|-------|-------|------|------------|-------|-------|------|
| Rated Pump Speed (RPM) | 1,750 | 1,450 | 1,150 | 950 | 1,750 | 1,450 | 1,150 | 950 |
| U.S. GPM | 9.0 | 7.4 | 5.8 | 4.6 | 14.3 | 11.6 | 9.1 | 7.3 |
| LPM | 34.1 | 28.0 | 22.0 | 17.4 | 54.1 | 43.9 | 34.4 | 27.6 |
| HP | .71 | .58 | .39 | .23 | 1.0 | .84 | .63 | .47 |
| KW | .53 | .43 | .29 | .17 | .75 | .63 | .47 | .35 |

- Nominal motor speed.
- Flow is nominal at 50 psi (3.45 Bar) differential pressure.
- Viscosity listed is maximum. Blackmer XF and XB pump models are also well suited for viscosities less than 31 SSU (1 cP).
- Centipoise (cP) = Centistokes (cSt) at fluid specific gravity of 1.0.

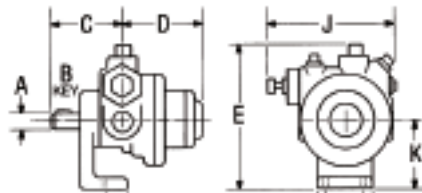
Note: Optional materials of construction may be required to meet specific application requirements – refer to Blackmer Material Specification Sheet 101-091.

* Approximate capacities and horsepower (HP) are based on a 100 SSU (22cP) fluid at a 50 psi (3.45 Bar) differential pressure. Refer to Characteristic Curves for capacities and horsepower at other pressures and viscosities.

Pump Dimensions

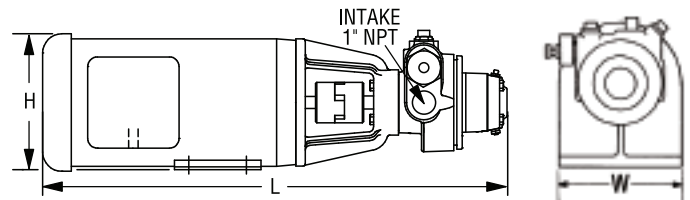


XF1 / XF1P Pump Models

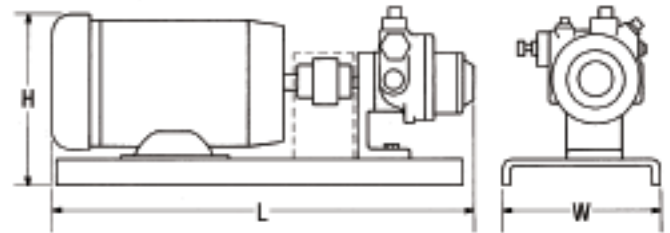


XB1 / XB1P Pump Models

Unit Dimensions - Direct Mount



Flange Mounting – XF1 / XF1P



Base Mounting – XB1 / XB1P

| Pump Model | | A | B | C | D | E | G | J | K | N | Inlet/Discharge | Approx. Wt. Less Motor |
|------------|-----|-------|------|---------|-------|--------|-------|-------|-------|-------|-----------------|------------------------|
| XF1, XF1P | in. | 11/16 | 3/16 | 3 11/16 | 4 3/8 | 8 9/16 | 6 1/4 | 6 3/4 | 4 1/2 | 5 1/4 | 1" NPT | 39 lbs. |
| | mm | — | — | 94 | 111 | 217 | 159 | 171 | 114 | 133 | — | 18 kgs |
| XB1, XB1P | in. | 11/16 | 3/16 | 3 11/16 | 4 3/8 | 7 9/16 | — | 6 3/4 | 3 1/2 | 2 | 1" NPT | 19 lbs. |
| | mm | — | — | 94 | 111 | 192 | — | 171 | 89 | 51 | — | 9 kgs |

| Pump Model | | L | W | H | Approx. Wt. With Motor |
|------------|-----|--------|--------|--------|------------------------|
| XF1, XF1P | in. | 27 1/4 | 8 1/2 | 9 1/8 | 78 lbs. |
| | mm | 692 | 216 | 232 | 35 kgs |
| XB1, XB1P | in. | 25 3/8 | 10 1/2 | 11 1/8 | 130 lbs. |
| | mm | 645 | 267 | 283 | 59 kgs |



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