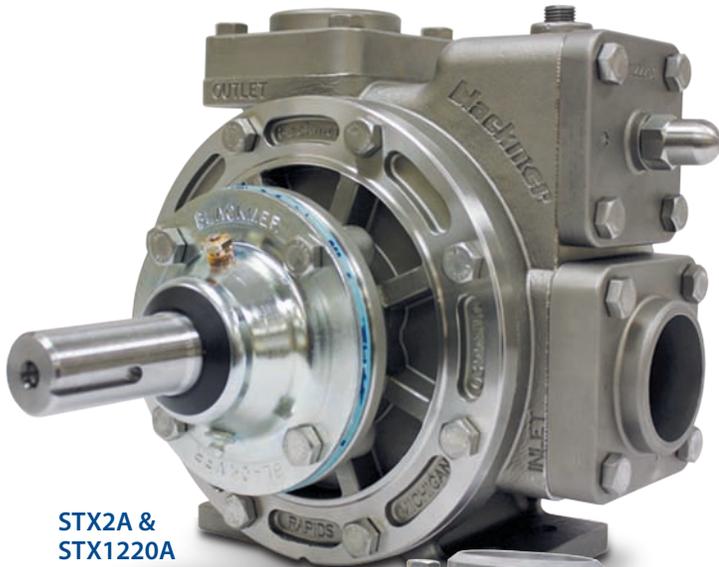




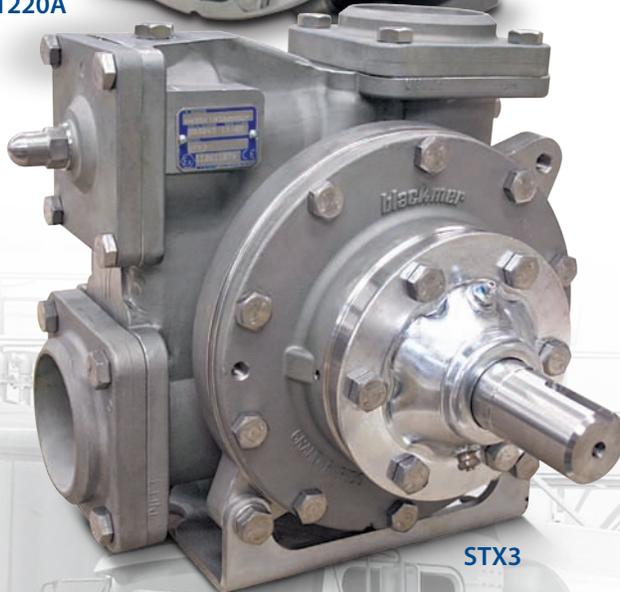
**Spec Sheet 203-001**  
Section: 203  
Effective: September 2017  
Replaces: March 2012



## STX Series Stainless Steel Transport Pumps



STX2A &  
STX1220A



STX3

### Design

Blackmer's STX Series pumps are made from 316 stainless steel with external ball bearings, non-metallic Duravanes, PTFE elastomers, and Blackmer chemical mechanical seals. The pumps feature an adjustable relief valve, weld flanges and are self-priming. The STX3 has a versatile mounting bracket.

### Application

Typical applications are solvents, chemicals, sulfates, vegetable oils, urea and many acids.

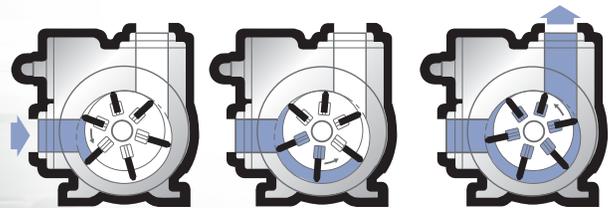
The STX3 offers flow rates up to 250 gpm (946 L/min) with differential pressures up to 125 psi (8.6 bar) and maximum speed of 800 rpm. The STX1220A offers flow rates up to 92 gpm (348 L/min) and maximum speed of 1,200 rpm, and the STX2A provides flow rates to 60 GPM (227 L/min) and maximum speed of 780 rpm.

### Benefit

Blackmer's STX3 offers fast fluid off-loading. A typical off-loading of a 6,000 gallon (22,700 liter) tanker can be unloaded as quickly as 24 minutes.

Blackmer's non-metallic vanes self-compensate for wear and allow the STX Series pumps to run dry for short periods of time for self-priming and blowing lines clean, without pump damage.

The STX Series is designed to offer easy maintenance because the internal wear is limited almost completely to the sliding vanes, which can be replaced with ordinary hand tools.



How Blackmer's sliding vane action works

## Characteristic Flow Rates

| Pump Model | Pump Speed<br>rpm | Pump Capacity @<br>50 psid (3.45 bar) with<br>30 ssu (1 cSt) Fluid |       |                   | Maximum Fluid<br>Viscosity at<br>rpm Shown |     |
|------------|-------------------|--|-------|-------------------|--|-----|
|            |                   | US gpm   | L/min | m <sup>3</sup> /h | ssu  | cSt |
| STX2A      | 780               | 50   | 189   | 11.3              | 30   | 1   |
|            | 520               | 30   | 113   | 6.8               | 1,000                                      | 210 |
|            | 350               | 16   | 60    | 3.6               | 4,600                                      | 970 |
| STX1220A   | 1,200             | 82   | 310   | 18                | 100  | 22  |
|            | 1,000             | 72   | 273   | 16                | 100  | 22  |
|            | 700               | 49   | 185   | 11                | 100  | 22  |

| Pump Model | Pump Speed<br>rpm | Pump Capacity @<br>50 psid (3.45 bar) with<br>30 ssu (1 cSt) Fluid |       |                   | Maximum Fluid<br>Viscosity at<br>rpm Shown |       |
|------------|-------------------|--|-------|-------------------|--|-------|
|            |                   | US gpm   | L/min | m <sup>3</sup> /h | ssu  | cSt   |
| STX3       | 800               | 250  | 946   | 57                | 500  | 105   |
|            | 600               | 190  | 719   | 43                | 5,000                                      | 1,050 |
|            | 400               | 125  | 473   | 28                | 20,000                                     | 4,250 |

## Pump Horsepower Requirements

| Pump Model | Pump Speed<br>rpm | 30 ssu<br>(1 cSt) Viscosity |                      | 100 ssu<br>(21 cSt) Viscosity |                      | 1,000 ssu<br>(210 cSt) Viscosity |                      | 4,600 ssu<br>(970 cSt) Viscosity |                      |
|------------|-------------------|-----------------------------|----------------------|-------------------------------|----------------------|----------------------------------|----------------------|----------------------------------|----------------------|
|            |                   | 50 psi<br>(3.45 bar)        | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)          | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)             | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)             | 100 psi<br>(6.9 bar) |
| STX2A      | 780               | 2.4                         | 4.3                  | –                             | –                    | –                                | –                    | –                                | –                    |
|            | 520               | 1.5                         | 2.9                  | 1.7                           | 3.1                  | 2                                | 3.3                  | –                                | –                    |
|            | 350               | 1                           | 1.9                  | 1                             | 1.9                  | 1.2                              | 2.1                  | 1.6                              | 2.5                  |
| STX1220A   | 1,200             | 4                           | 6.9                  | 4.2                           | 7.3                  | –                                | –                    | –                                | –                    |
|            | 1,000             | 3.4                         | 5.6                  | 3.6                           | 6                    | –                                | –                    | –                                | –                    |
|            | 700               | 2.3                         | 3.8                  | 2.4                           | 4.1                  | –                                | –                    | –                                | –                    |

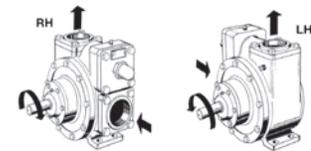
| Pump Model | Pump Speed<br>rpm | 30 ssu<br>(1 cSt) Viscosity |                      | 50 ssu<br>(13 cSt) Viscosity |                      | 500 ssu<br>(105 cSt) Viscosity |                      | 5,000 ssu<br>(1,050 cSt) Viscosity |                      | 10,000 ssu<br>(2,200 cSt) Viscosity |                      | 20,000 ssu<br>(4,250 cSt) Viscosity |                      |
|------------|-------------------|-----------------------------|----------------------|------------------------------|----------------------|--------------------------------|----------------------|------------------------------------|----------------------|-------------------------------------|----------------------|-------------------------------------|----------------------|
|            |                   | 50 psi<br>(3.45 bar)        | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)         | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)           | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)               | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)                | 100 psi<br>(6.9 bar) | 50 psi<br>(3.45 bar)                | 100 psi<br>(6.9 bar) |
| STX3       | 800               | 9.5                         | 17.5                 | 9.8                          | 17.9                 | 11                             | 19.0                 | –                                  | –                    | –                                   | –                    | –                                   | –                    |
|            | 600               | 6.7                         | 12.8                 | 6.9                          | 13.2                 | 7.6                            | 13.5                 | 10                                 | 16.3                 | –                                   | –                    | –                                   | –                    |
|            | 400               | 4.2                         | 8.0                  | 4.3                          | 8.3                  | 4.7                            | 8.5                  | 6.1                                | 10.3                 | 6.9                                 | 11.1                 | 8.3                                 | 12.4                 |

Refer to Blackmer Characteristic Curves for flow rates and torque requirements for your specific conditions.

## Maximum Operating Limits

| Pump Model | Nominal Flow Rate |       |                   | Pump Speed<br>rpm | Viscosity |       | Differential Pressure |     | Working Pressure |      | Temperature |     |
|------------|-------------------|-------|-------------------|-------------------|-----------|-------|-----------------------|-----|------------------|------|-------------|-----|
|            | US gpm            | L/min | m <sup>3</sup> /h |                   | ssu       | cSt   | psi                   | bar | psi              | bar  | °F          | °C  |
| STX2A      | 60                | 227   | 13.6              | 780               | 4,600     | 970   | 125                   | 8.6 | 200              | 13.8 | 240         | 115 |
| STX1220A   | 92                | 348   | 21                | 1,200             | 100       | 22    | 125                   | 8.6 | 200              | 13.8 | 240         | 115 |
| STX3       | 250               | 946   | 57                | 800               | 20,000    | 4,250 | 125                   | 8.6 | 200              | 13.8 | 240         | 115 |

For pump dimensions, refer to Blackmer dimension page 203-101 and 203-103. Pages can be found in the literature section on Blackmer.com.



### Pump Rotation

Blackmer's STX pump models are equipped with a double-ended straight-keyed drive shaft for either clockwise (RH) or counterclockwise (LH) rotation.

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