



Spec Sheet 203-005

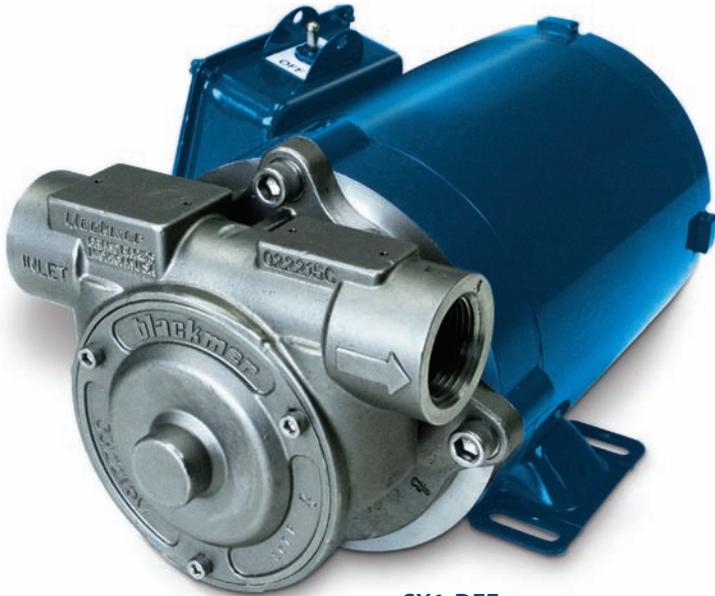
Section: 203

Effective: September 2017

Replaces: March 2014



SX1-DEF Series Sliding Vane Pumps



SX1-DEF
12-volt or 110-volt Motor Option

The features and benefits make the SX1-DEF pump a superior solution to low-cost, short-service “throwaway” pumps, which utilize inadequate designs and, in many cases, are constructed of cheaper plastic materials. These competitive models just can’t compete with the design, reliability, durability and overall performance of the Blackmer SX1-DEF Series Sliding Vane Pump.

In 2010, when new diesel-emission standards for Class 4-8 vehicles mandated its use in the USA, Diesel Exhaust Fluid (DEF) was called “the largest addition to the motor-vehicle liquids marketplace in decades.” Subsequent years have borne out the veracity of that statement with consumption growing geometrically and significant growth forecasted for the future.

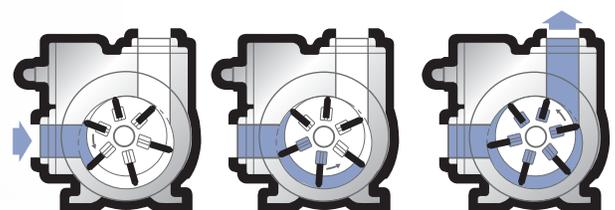
To meet this demand, thousands of truck stops, truck dealers and aftermarket parts stores are offering DEF. Pumps are needed to facilitate the transfer of DEF into on-site storage vessels, or from those vessels into the DEF tanks of fleet trucks and these pumps must be compatible with DEF’s unique properties to avoid contamination issues.

Recognizing both the opportunities and challenges inherent in the DEF marketplace, Blackmer® has produced a series of sliding vane-style pumps that are dedicated for DEF production and handling.

Features & Benefits

The SX1-DEF pumps offer the following operational features and benefits when dispensing DEF from various sized totes:

- Maximum flow rate: 10 gpm (37.9 L/min)
- Maximum differential pressure: 25 psi (1.7 bar)
- Motor speed: 1,750 rpm
- All 316 stainless-steel construction, including pump shaft
- Duravanes®
- EPDM O-rings
- Commercial mechanical seal
- 180° porting with optional 1” NPT or 1” BSPP tapped ports
- Optional foot-mounted, 0.5-horsepower TENV, C-face close-coupled 12-volt or 110-volt motor
- Integral relief valve with stainless-steel spring
- Meets ISO 22241-3 certification for material compatibility



How Blackmer’s sliding vane action works



SX1-DEF Series Sliding Vane Pumps

Characteristic Flow Rates

Pump Model	Pump Speed rpm	Pump Capacity @ 10 psid (0.7 bar) with 30 ssu (1 cSt) Fluid			Maximum Fluid Viscosity at rpm Shown	
		US gpm	L/min	m ³ /h	ssu	cSt
SX1-DEF	1750	8.5	32.2	1.93	30	2.0

Maximum Operating Limits

Pump Model	Nominal Flow Rate			Pump Speed rpm	Viscosity		Differential Pressure		Temperature	
	US gpm	L/min	m ³ /h		ssu	cSt	psi	bar	°F	°C
SX1-DEF	7.5	28.4	1.7	1750	30	2.0	25	1.72	80	32

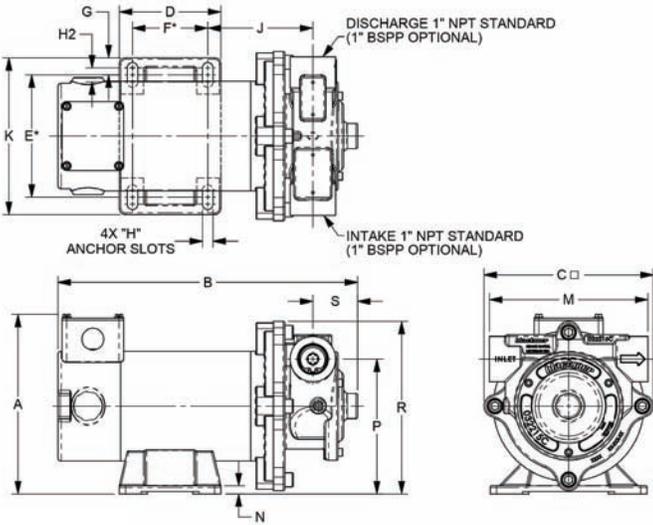
Motor Descriptions

12-Volt

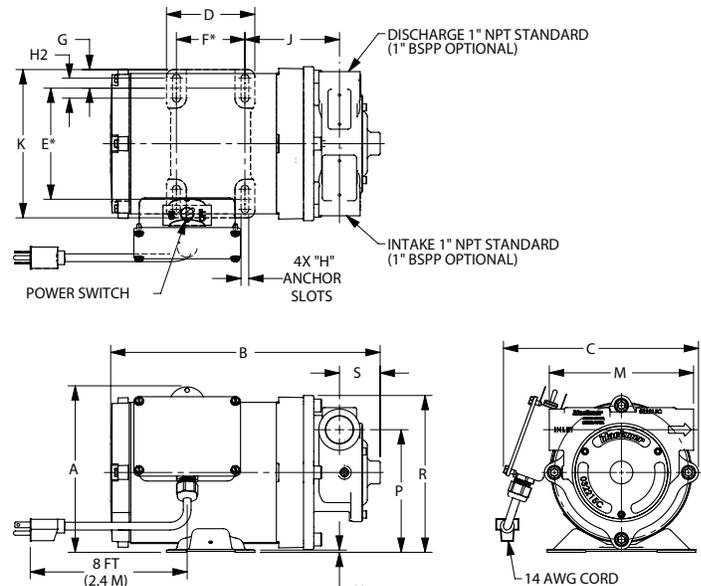
Frame: 56C Phase: —
 HP: 1/2 Freq: —
 Volts: 12 DC Encl: TENV

110-Volt

Frame: 56CZ Phase: 1 PH
 HP: 1/2 Freq: 60 HZ
 Volts: 115 AC Encl: TENV



12-Volt



110-Volt

Pump Dimensions

Pump Model	A	B	C	D	E	F	G	H	H2	J	K	M	N	P	R	S	Pump Weight	
SX1-DEF 12-Volt	in.	7 1/8	11 15/16	6 3/4	4 1/16	4 7/8	3	1 1/16	7/16	9/16	4 3/16	6 1/4	6 5/16	5/16	5 3/8	6 7/8	1 13/16	27 lbs,
	mm	181.0	303.2	171.5	103.2	123.8	76.2	17.5	11.1	14.3	106.4	158.8	160.3	7.9	136.5	174.6	46.0	12 kg
SX1-DEF 110-Volt	in.	7 5/16	11 13/16	8 9/16	3 3/8	4 1/8	3	1 3/16	1 1/2	7/8	4 1/8	6 1/2	6 5/16	1/8	5 3/8	6 7/8	1 13/16	36 lbs.
	mm	185.7	300.0	217.5	98.4	123.8	76.2	20.6	8.7	22.2	104.8	165.1	160.3	3.2	136.5	174.6	46.0	16.3 kg



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Process | Energy | Military & Marine
 PSG Grand Rapids
 1809 Century Avenue SW, Grand Rapids, MI 49503-1530 USA
 T 616.241.1611 • F 616.241.3752
blackmer.com