



CRANE®

Barnes Blade


BLADE 3-15HP XGV Grinder

CRANE®

PUMPS & SYSTEMS

Goals For The Day

Think Big. Be Bold. Act Fast.

Agenda	
	BLADE XGV Grinders
	Introduction, SH Platform
	Grinder Portfolio
	Value Proposition
	Applications
	Technical Specs; Better Than Competition
	Tools For Success

BLADE
BY BARNES®



Current state	Future state
SGV 3HP to 7.5HP	SGV 3HP to 7.5HP
XSGV 3HP to 7.5HP	BLADE XGV 3HP to 7.5HP
No offering	BLADE XGVHH 7.5HP to 15HP



Introduction To **BLADE** XGV Grinders

Think Big. Be Bold. Act Fast.

- BLADE XGV Grinder Pumps are the newest Barnes solution to high head waste water grinding applications in commercial and municipal markets.
- BLADE XGV Grinder Pumps replace the 3HP to 7.5HP XSGV Grinder Pumps in addition to increasing the hydraulic coverage to compete in high flow and high capacity applications.
- BLADE XGV grinder pumps are available in 3HP, 5HP, 7.5HP, 10HP and 15HP explosion proof models with 2", 2.5" and 3" discharge sizes.

As of last month	Post WEFTEC 2017
SGV upto 2HP	SGV upto 2HP
XSGV upto 2HP	XSGV upto 2HP
SGV 3HP to 7.5HP	SGV 3HP to 7.5HP
XSGV 3HP to 7.5HP	BLADE XGV 3HP to 7.5HP
No offering	BLADE XGVHH 7.5HP to 15HP



Introduction To **BLADE** XGV Grinders

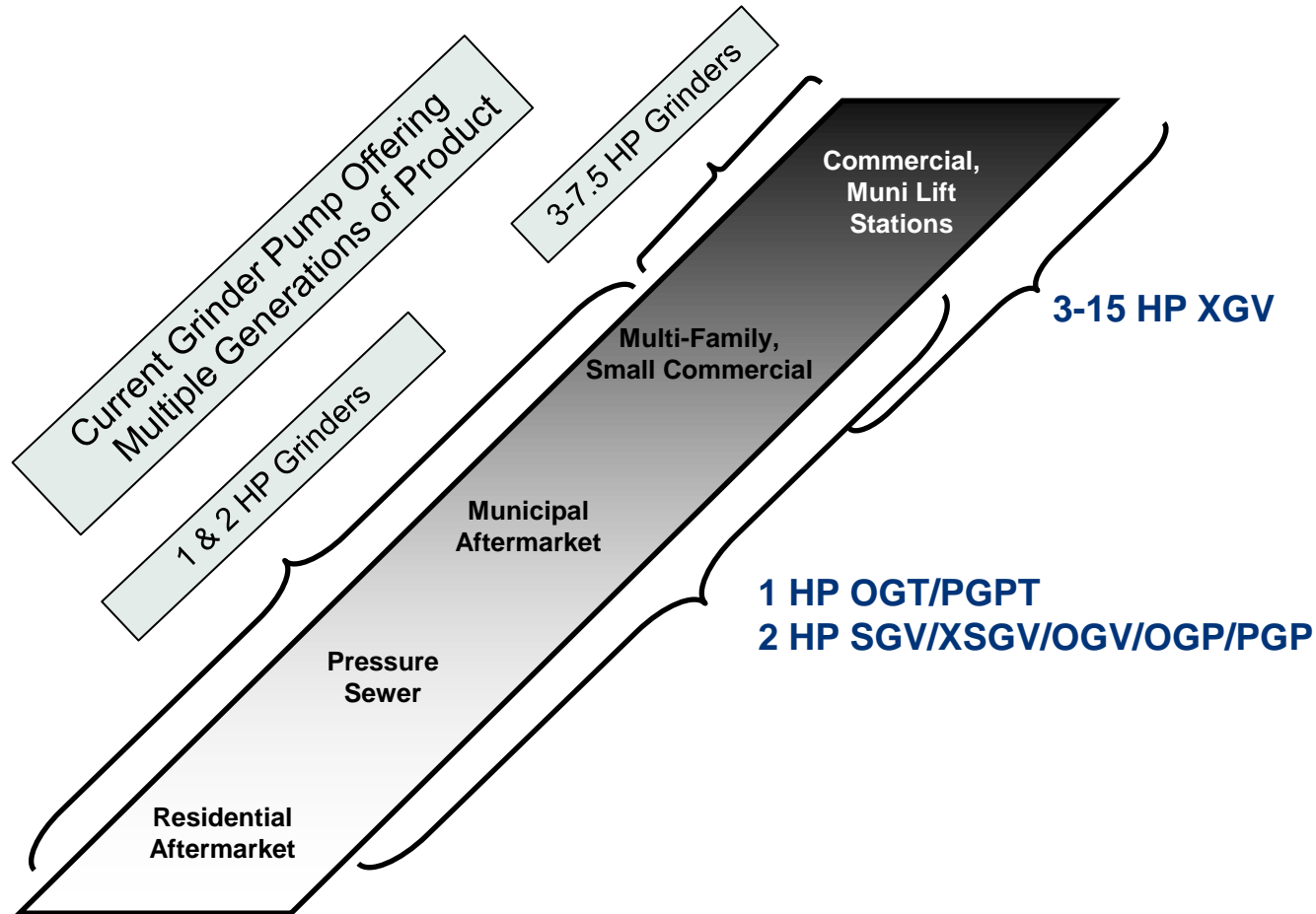
Think Big. Be Bold. Act Fast.

- SH 18 Frame Platform + Barnes grinding technology = BLADE XGV Grinder Pump
- Flow & Head capabilities 50% higher than current designs..... 105 gpm to 150 gpm, and 160 ft. to 240 ft.
- Having common SH platform provides numerous benefits to customers like highly reliable design, ease of maintenance, low servicing cost, and inventorying similar parts as that of a SH pump
- Only three competitors have high capacity grinders.... Myers, Sulzer ABS and Keen. BLADE XGV grinder pumps help increase Crane's served market.



XGV Grinder Pump Within Grinder Portfolio

Think Big. Be Bold. Act Fast.



Blade Customer Value Proposition

Think Big. Be Bold. Act Fast.

The XGV is an explosion-proof grinder pump that provides many benefits to **user customers**:

- Plug-n-Play cord technology dramatically reduces maintenance cost by eliminating the need to pull cable from conduit
- An over-sized lifting bail allows for rapid hooking of the pump, reducing maintenance time (cost)
- Standard mechanical seals rather than proprietary designs reduce the cost of maintenance on these wearing components
- A proven cutter design takes away the need for grinder evaluation compared to all of the competing designs in the market
- Explosion-proof as the standard offering eliminates the need to worry about whether X-Pruf is needed or not as enforcement of the NEC requirement by the States is increasing on non-residential applications
- Horizontal discharge 7.5 and 10 HP pumps will allow replacement of existing Myers and Hydromatic pumps

Blade Channel Partner Value Proposition

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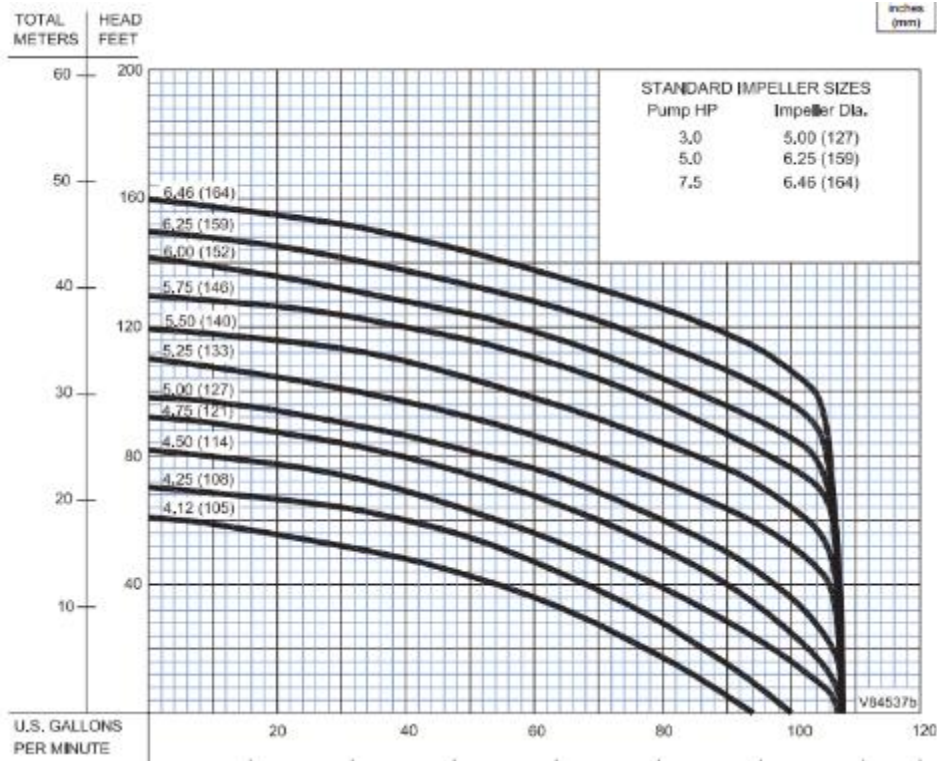
The XGV is an explosion-proof grinder pump that provides many benefits to the **Channel Partner**:

- Plug-n-Play cord technology allows CPs to easily convert from 230 V to 460 V 3 phase by simply replacing the cord
- The use of standardized parts common with 18 Frame SH pumps reduces inventory requirements
- Utilization of a long-proven grinder/shredder design simplifies the selling effort
- Explosion-proof as the standard offering eliminates the need to worry about which pump to offer, standard or X-Pruf, in light of increasing enforcement of NFPA and NEC requirements by the States
- Horizontal discharge flanges on 7.5 and 10 HP pumps will allow Channel Partners to replace existing Myers and Hydromatic pumps

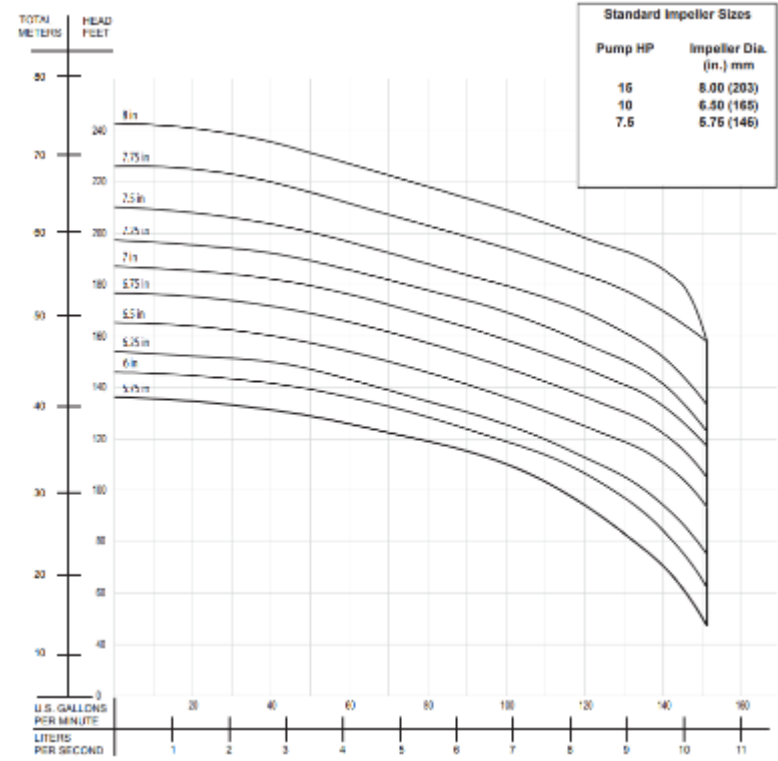


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Current XSGV



BLADE XGV



Application in High Head Lift Stations in both municipal and commercial markets

Blade Technical Specifications

Think Big. Be Bold. Act Fast.

Features	BLADE XGV	BLADE XGVHH
Discharge (in.)	2" NPT; 2", 2.5", 3" Flange	2.5", 3" Flange
Shutoff Head (Ft.)	160	242
Maximum Flow (gpm)	110	155
HP Range	3HP to 7.5HP	7.5HP to 15HP
Voltage	230	230
Full Load Amp Draw	23.2A to 35.1A	28.2A to 57.1A
Speed (RPM)	3450	3450
Motor Fill	Oil	Oil
Motor Insulation	Class H	Class H
Shaft Material	416 Stainless Steel	416 Stainless Steel
Impeller Material	Vortex type Cast Iron	Vortex type Cast Iron
Mechanical Seal	Tandem Carbon/ Ceramic	Tandem Carbon/ Ceramic
Cutter Mechanism	Exclusive Slicerator Radial Cutter	Exclusive Slicerator Radial Cutter
Cutter Material	Hardened 440C Stainless Steel Rockwell C-55	Hardened 440C Stainless Steel Rockwell C-55
Cord	Plug-n-Play Quick Connect	Plug-n-Play Quick Connect
Upper Bearing	Single Row Ball	Single Row Ball
Lower Bearing	Double Row Ball	Double Row Ball
Sensors	Moisture & Temperature Integral With Power Cord	Moisture & Temperature Integral With Power Cord
Leg Kit or Pump Stand	Optional	Optional
Weight (lb.)	204	305
Warranty	24 months from date of manufacture	24 months from date of manufacture



BLADE XGV Grinder Vs. Competitors

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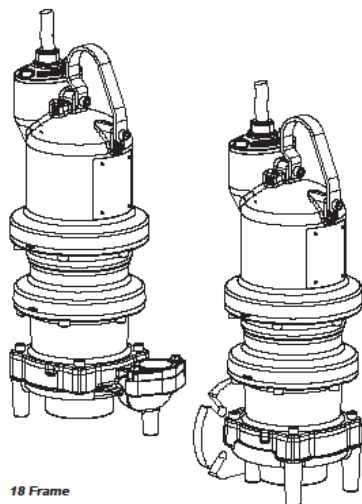
Feature	BLADE BY BARNES	SULZER	MYERS®	KEEN PUMP
Discharge	2" NPT, 2", 2.5", 3" flange	1 ¼ ", 2"	2 ½ "	2 ½ ", 3"
Shutoff Head	242 ft.	265 ft.	257 ft.	260 ft.
Max Flow	155 gpm	122 gpm	150 gpm	160 gpm
Full Load Amp Draw	57.1A	42.6A	59.5A	59.5A
Motor fill	Oil	Air	Oil	Oil
Motor insulation	Class H	Class H	Class H	Class H
Shaft Material	400 series SS	400 series SS	400 series SS	400 series SS
Impeller material	Cast iron	Cast iron	Ductile iron	Ductile iron
Cutter mechanism	Exclusive Slicerator™ Radial Cutter	Spiral Bottom Plate & Stationary Cutting Ring	Shredding Ring & Grinder Impeller	Reversible grinder ring & grinder impeller
Seal Material	Carbon/ ceramic	SiC/ SiC	Carbon/ ceramic	SiC/ SiC

BLADE XGV Grinder is a superior product compared to competitor products.

BARNES®

INSTALLATION and OPERATION MANUAL Submersible Grinder Pump

Explosion Proof



**XGV
Vertical Pumps
3 - 7.5HP, 3450RPM**

**XGV
Flange Pumps
3 - 7.5HP, 3450RPM**

This product may be covered by one or more of the following patents and other patent(s) pending:
US Patent X,000,000

IMPORTANT: Read all instructions in this manual before operating pump.
As a result of Crane Pumps & Systems, Inc., constant product improvement program, product changes may occur. As such Crane Pumps & Systems reserves the right to change product without prior written notification.



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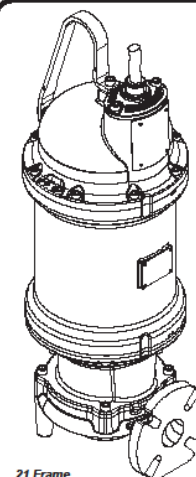


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INSTALLATION and OPERATION MANUAL Submersible Grinder Pump

Explosion Proof, Class 1, Division 1, Groups C & D, T4



**XGVHH
Horizontal Pumps
7.5 - 15HP, 3450RPM**

This product may be covered by one or more of the following patents and other patent(s) pending:
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Form No. 141183-Rev. P4



- Catalog Pages..... complete
- Specification Sheet..... complete
- I&O Manuals..... complete
- Mentor Curves complete
- Price Pages complete
- Test Configurator Demo complete
- Website Updates complete
- Success Stories..... to come soon
- Product Launch Packet complete



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BLADE Series XGV
18 Frame

BLADE Series XGV
21 Frame

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I&O Manual

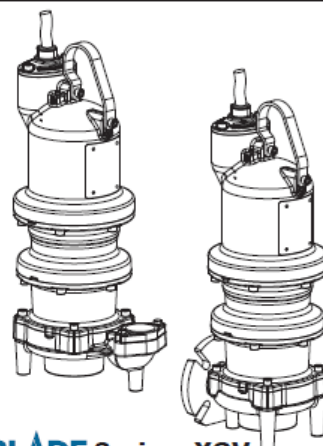
Submersible Grinder XP

Submersible Grinder XP

I&O Manual

Specifications:

DISCHARGE:	
Vertical	2" NPT
Flange	2"/2.50"/3", Horizontal
LIQUID TEMPERATURE	104°F (40°C) Continuous
VOLUTE	Cast Iron ASTM A-48, Class 30
MOTOR HOUSING	Cast Iron ASTM A-48, Class 30
SEAL PLATE	Cast Iron ASTM A-48, Class 30
IMPELLER: Design	12 Vane, Vortex, With Pump Out Vanes
	On Back Side. Dynamically Balanced, ISO G6.3
Material	Cast Iron
SHREDDING RING	Hardened 440C Stainless Steel, Rockwell® C-55
CUTTER	Hardened 440C Stainless Steel, Rockwell® C-55
SHAFT	416 Stainless Steel
SQUARE RINGS	Buna-N
HARDWARE	300 Series Stainless Steel
PAINT	Air Dry Enamel
SEAL: Design	Tandem Mechanical, Oil Filled Reservoir
Material	Rotating Faces - Carbon
	Stationary Faces - Ceramic
	Elastomer - Buna-N
	Hardware - 300 Series Stainless
CORD ENTRY	Custom Molded, Quick Connected for Sealing and Strain Relief
POWER CORD	CSA Certified Submersible Power Cable 2000V
UPPER BEARING:	
Design	Single Row, Ball, Oil Lubrication
Load	Radial
LOWER BEARING:	
Design	Double Row, Ball, Oil Lubrication
Load	Radial & Thrust
MOTOR:	
Design	NEMA B
	Three Phase Torque Curve
	Oil-Filled, Squirrel Cage Induction, Inverter Duty rated per NEMA MG1
Insulation	Class H Varnish & Magnet Wire
SINGLE PHASE	Requires overload protection to be included in control panel. Requires start components to be included in panel. Provided with pump
THREE PHASE	Requires overload protection to be included in control panel
MOISTURE SENSORS	Normally Open (N/O). Requires relay in control panel
TEMPERATURE SENSOR	Normally Closed (N/C)
	To be wired in series with control circuit
OPTIONAL EQUIPMENT	Seal Material, Impeller Trims, Cord Length, Leg Kit



BLADE Series: XGV
3, 5 & 7.5HP, 3450RPM, 60Hz

Explosion Proof, Class 1, Division 1, Groups C & D, T4

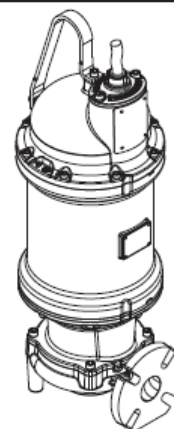


Canadian Standards Association
File No. LR16567

Sample Specification

DESCRIPTION:

THE GRINDER PUMP IS FOR USE IN HAZARDOUS LOCATIONS AND IS DESIGNED TO REDUCE DOMESTIC, COMMERCIAL, INSTITUTIONAL AND LIGHT INDUSTRIAL SEWAGE TO A FINELY GROUND SLURRY.



BLADE Series: XGV
7.5, 10 & 15HP, 3450RPM, 60Hz

Explosion Proof, Class 1, Division 1, Groups C & D, T4



Canadian Standards Association
File No. LR16567

Sample Specification

DESCRIPTION:

THE GRINDER PUMP IS FOR USE IN HAZARDOUS LOCATIONS AND IS DESIGNED TO REDUCE DOMESTIC, COMMERCIAL, INSTITUTIONAL AND LIGHT INDUSTRIAL SEWAGE TO A FINELY GROUND SLURRY.

Specifications:

DISCHARGE:	
Flange	2.50"/3", Horizontal
LIQUID TEMPERATURE	104°F (40°C) Continuous
VOLUTE	Cast Iron ASTM A-48, Class 30
MOTOR HOUSING	Cast Iron ASTM A-48, Class 30
SEAL PLATE	Cast Iron ASTM A-48, Class 30
IMPELLER: Design	12 Vane, Vortex, With Pump Out Vanes
	On Back Side. Dynamically Balanced, ISO G6.3
Material	Cast Iron
SHREDDING RING	Hardened 440C Stainless Steel, Rockwell® C-55
CUTTER	Hardened 440C Stainless Steel, Rockwell® C-55
SHAFT	416 Stainless Steel
SQUARE RINGS	Buna-N
HARDWARE	300 Series Stainless Steel
PAINT	Air Dry Enamel
SEAL: Design	Tandem Mechanical, Oil Filled Reservoir
Material	Rotating Faces - Carbon
	Stationary Faces - Ceramic
	Elastomer - Buna-N
	Hardware - 300 Series Stainless
CORD ENTRY	Custom Molded, Quick Connected for Sealing and Strain Relief
POWER CORD	CSA Certified Submersible Power Cable 2000V - Ordered Separately
UPPER BEARING:	
Design	Single Row, Ball, Oil Lubrication
Load	Radial
LOWER BEARING:	
Design	Double Row, Ball, Oil Lubrication
Load	Radial & Thrust
MOTOR:	
Design	NEMA B
	Three Phase Torque Curve
	Oil-Filled, Squirrel Cage Induction, Inverter Duty rated per NEMA MG1
Insulation	Class H Varnish & Magnet Wire
SINGLE PHASE	Requires overload protection to be included in control panel. Requires start components to be included in panel. Provided with pump
THREE PHASE	Requires overload protection to be included in control panel
MOISTURE SENSORS	Normally Open (N/O). Requires relay in control panel
TEMPERATURE SENSOR	Normally Closed (N/C)
	To be wired in series with control circuit
OPTIONAL EQUIPMENT	Seal Material, Impeller Trims, Cord Length, Leg Kit



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www.cranepumps.com

Specifications

Submersible Grinder Pumps, Class I, Groups C & D, Division 1
XGV, Tandem Seal, Oil-Filled

Word File

Effluent/Grinder Pumps

SCOPE: Furnish and install _____ submersible grinder pump (s). Each pump shall be capable of delivering the following performance points, _____ U.S. GPM at _____ TDH; _____ U.S. GPM at _____ TDH; _____ U.S. GPM at _____ TDH, with a shut off head of _____ TDH (minimum). The pump motor speed shall be _____ RPM, _____ HP (maximum), _____ Phase, 60 Hertz, _____ Volts. The pump (s) shall be manufactured by a company regularly engaged in the manufacture and assembly of similar units for a minimum of five (5) years. The pump (s) shall be Barnes® model _____.

DESIGN: A centrifugal submersible grinder pump designed to reduce all material found in normal domestic and light industrial sewage, including plastics, rubber, sanitary napkins, and disposable diapers into a finely ground slurry. The resultant slurry is then pumped through small diameter piping into a gravity interceptor or treatment facility. The temperature limitation of the liquid being pumped is 104 degrees F continuous and shall be capable of running dry for extended periods.

PUMP CONSTRUCTION: Unit (s) shall be CSA listed for Class I, Groups C & D, Division 1, hazardous locations. The volute, seal plates and motor housing shall be constructed of high quality ASTM A-48 class 30 cast iron. The pump (s) shall be painted with a water based air dry enamel of 2.0 mil minimum thickness. All exposed hardware shall be 300 series stainless steel. Discharge connection shall be a standard _____ inch NPT in the vertical position.

The pump impeller shall be of the recessed vortex design. Pumps with standard centrifugal semi-open impeller designs shall not be acceptable. The impeller shall be of ASTM A-48 class 30 cast iron construction and machined for threading to the motor shaft. The impeller shall be capable of being trimmed to meet specific performance characteristics.

The grinder mechanism shall consist of a radial cutter threaded and locked on the motor shaft by a washer in conjunction with a countersunk flat head cap screw, and a shredding ring containing a minimum of fifteen flow passages with cutting edges. The shredding ring shall be reversible to provide twice the cutting edge life. Both the shredding ring and radial cutter shall be constructed of 440C stainless steel hardened to a min. Rockwell C55 and shall be finish ground for a fine cutting edge. Two-stage cutter mechanisms requiring external adjustment for proper clearance are not acceptable.

The unit shall utilize a tandem mechanical shaft seal arrangement and shall operate in an oil atmosphere. The materials of construction shall be carbon for the rotating face and ceramic for the stationary face, lapped and polished to a tolerance of one light band, 300 series stainless steel hardware, and all elastomer parts to be Buna-N. The seal shall be commercially available and not a proprietary design of the manufacturer.

Single phase motors shall be of the capacitor start, capacitor run design and the three phase motors shall be of the dual-voltage 230/460 design. The pump shall be designed to be non-overloading throughout the entire pump curve. The rotor and stator assembly shall be of the standard frame design and secured to the pump seal plate by four threaded fasteners allowing for easy serviceability.

Air-filled motors shall not be acceptable. The motor windings shall be of Class F insulation with Class H wire. The motor shall meet the standard NEMA design L for single phase and NEMA design B for three phase. The motor shaft shall be of 416 stainless steel. Protection against excessive temperature shall be provided by heat sensor thermostat attached to the stator windings and connected in series with the contactor coil in the control panel.

The lower bearing shall be of the double row ball type to accept radial and thrust loads, and the upper bearing of the single row ball type for radial loads. Bearings shall operate in an oil bath atmosphere for superior life. Permanently lubricated bearings are not acceptable.

THREE PHASE: The pump shall be equipped with (30/50/75/100) ft. of a CSA-qualified submersible plug-n-play connect power cable constructed in accordance with type W guidelines and shall include the moisture and temperature sensor leads. The cable entry system shall consist of an expanding rubber plug held in place by a cast stainless steel plate indicating voltage and max amps.

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PUMP TEST: The pump manufacturer shall perform the following inspections and tests in accordance with Hydraulic Institute type B standards before shipment from the factory:

1. A check of the motor voltage and frequency shall be made as shown on the name plate.
2. A motor and cord insulation test for moisture content or insulation defects shall be made per CSA.
3. The pump shall be completely submerged and run to determine that the unit meets three pre-determined hydraulic performance points.
4. A written report shall be available showing the aforementioned tests have been performed in accordance with the specifications.

START-UP: The pump (s) shall be tested at start-up by a qualified representative of the manufacturer. A start-up report as provided by the manufacturer shall be completed before final acceptance of the pump (s).

DOCUMENTATION: The manufacturer, if requested, will supply a minimum of _____ sets of standard submittal data;

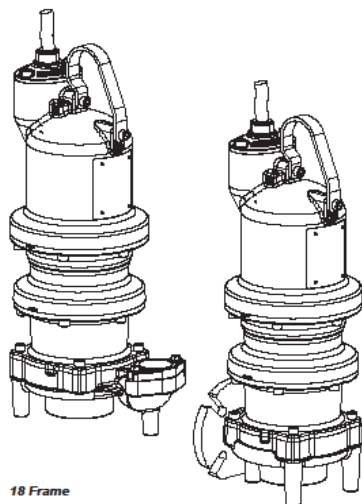
Standard submittal data consist of:

- a. Pump catalog data;
- b. Pump performance curve;
- c. Break away fitting data;
- d. Access frame data;
- e. Typical installation drawing;
- f. Control panel data
- g. Panel wiring schematic;
- h. Accessory data;
- i. Installation & Operation Manuals with Parts List

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INSTALLATION and OPERATION MANUAL Submersible Grinder Pump

Explosion Proof



**XGV
Vertical Pumps
3 - 7.5HP, 3450RPM**

**XGV
Flange Pumps
3 - 7.5HP, 3450RPM**

This product may be covered by one or more of the following patents and other patent(s) pending:
US Patent X,000,000

IMPORTANT: Read all instructions in this manual before operating pump.
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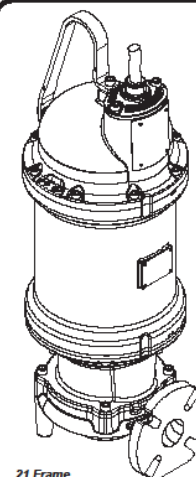
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Explosion Proof, Class 1, Division 1, Groups C & D, T4

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Horizontal Pumps
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BLADE Series XGV / XGVH

Performance Curve
3, 5 & 7.5HP, 3450RPM, 60Hz

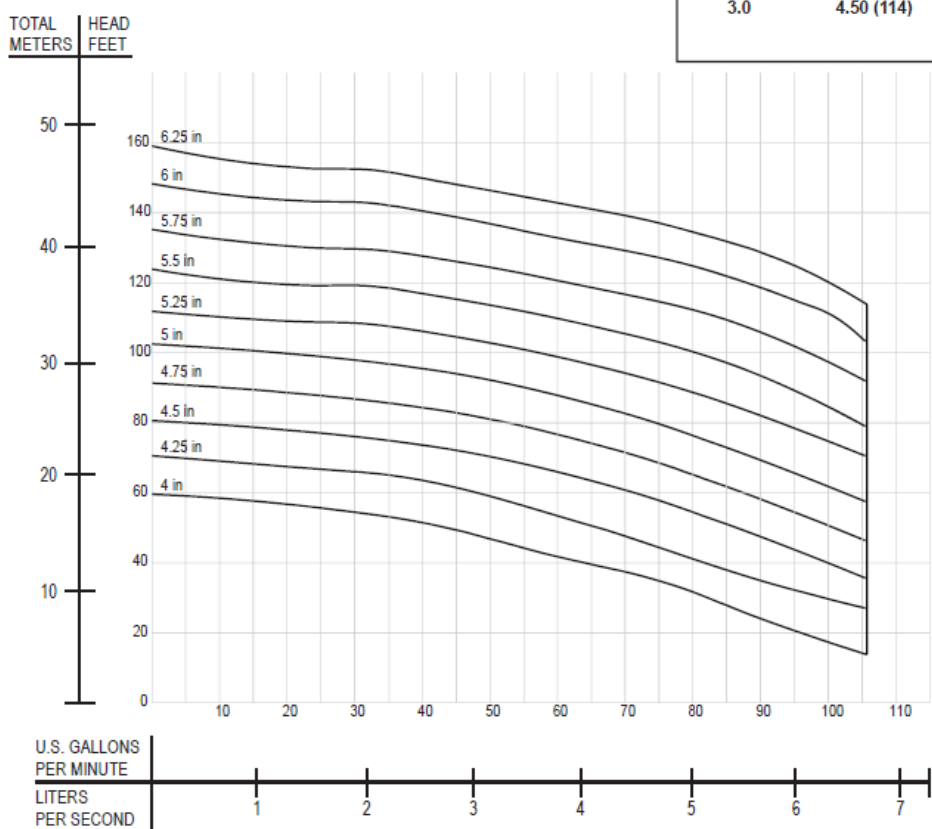
Submersible Grinder XP

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STANDARD IMPELLER SIZES

Pump HP	Impeller Dia. in. (mm)
7.5	6.25 (159)
5.0	5.25 (133)
3.0	4.50 (114)



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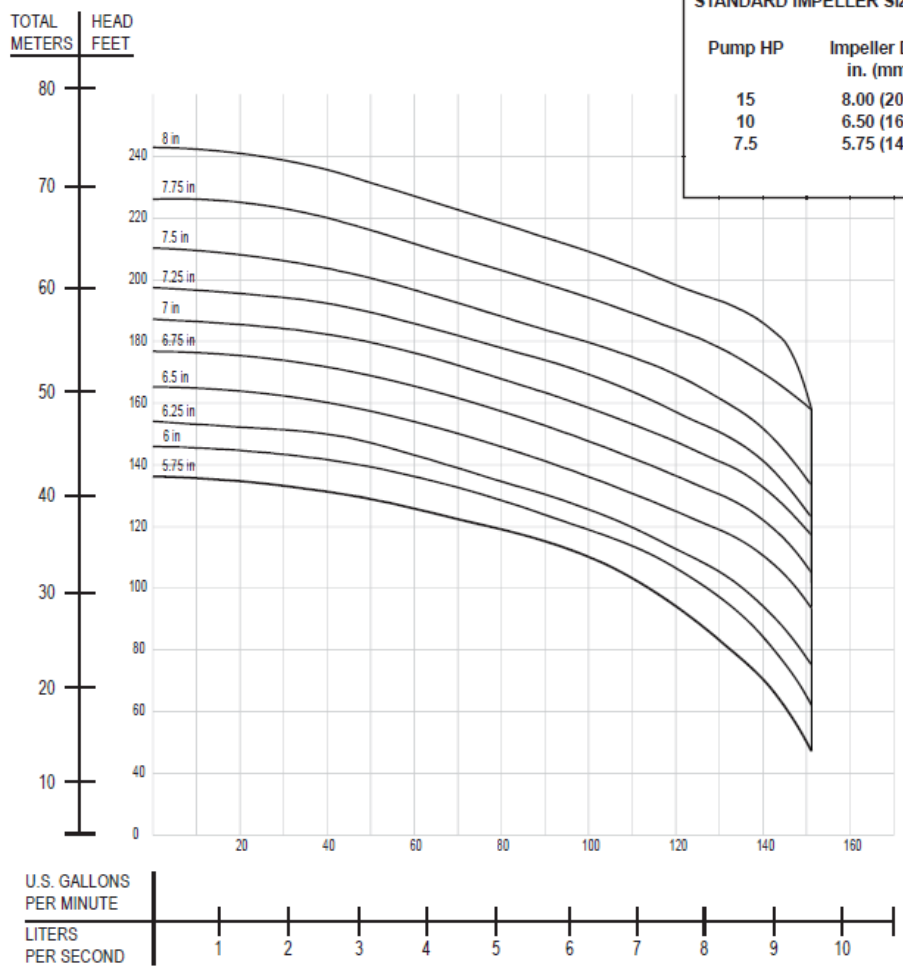
BLADE Series XGVH

Performance Curve
7.5, 10 & 15HP, 3450RPM, 60Hz

Submersible Grinder XP

STANDARD IMPELLER SIZES

Pump HP	Impeller Dia. in. (mm)
15	8.00 (203)
10	6.50 (165)
7.5	5.75 (146)



CP&S Connect Menu

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Selling Aids

Online Learning Center

Training Matrix

Order / Product Information

Alternate Pump Search

Bill of Materials

Bookings Report by RSM

Inventory Lookup

Lookup My Order

Orders Not Yet Shipped

For Crane Pumps & Systems most updated pricing, see below.

Below are Excel flat files and searchable PDF files for the Crane Pumps & Systems brand that you represent

If you have any questions regarding your discount schedule, please contact your Regional Sales Manager.

You will also find the standard lead-time documents for all brands located under the Quick Links box on the left hand side of the page.

Should you require support for this site, please contact Inside Sales at **937-778-8947**.

Thank you for your support of Crane Pumps & Systems!

All Available Price Page Download Files				
	File Description (File Name)	Date Uploaded	File Type	
1	---Part Numbering System - Barnes Submersible	12/29/2015	PDF File	Download
2	---Part Numbering System - Burks	12/29/2015	PDF File	Download
3	---Part Numbering System - Crown	12/29/2015	PDF File	Download
4	---Part Numbering System - Deming	12/29/2015	PDF File	Download
5	---Part Numbering System - Weinman	12/29/2015	PDF File	Download
6	--.2016 12 01 TEST pricing for all pumps	12/01/2016	PDF File	Download
7	--2016 12 01 BARNES SH combined	02/06/2017	PDF File	Download

- Market pricing was analyzed between Myers and ABS.
- BLADE pricing is set to be competitive with both ABS and Myers
- Pump and Accessory pricing now available on the price page downloads and CP&S Inventory look-up.

GRINDER-WEFTEC LAUNCH PACKET

Everyone. Everywhere. On Time Every Time.

THE NEXT GENERATION
OF GRINDER IS HERE

BLADE
BY BARNES®

X-Proof Grinder Pumps

- Proven cutter technology
- Explosion proof design

