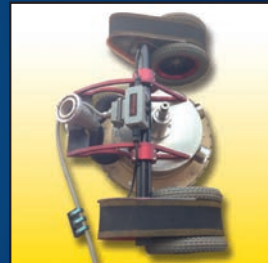
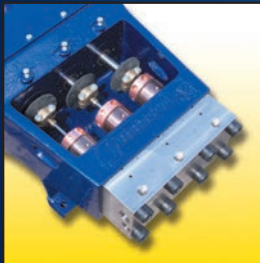




## Global Leader in Waterblasting Solutions



# The Worldwide Leader in TOTAL Solutions for Challenging Waterblasting Applications



**24/7**  
SUPPORT PROGRAM

## We're there anytime you need us!

The 24/7 Support Program provides Jetstream customers uninterrupted access to critical parts and accessories, service and expertise to keep the job running, no matter the time of day.

**713-302-7718**

**After Hours Support Hotline**

**800-231-8192**

**832-590-1300**

**Jetstream Support**

Standard business hours 7 am – 6 pm CST

Jetstream of Houston is a **leading supplier of innovative Waterblasting solutions for a wide range of applications** including – industrial cleaning, surface preparation, hydro-demolition and abrasive waterjet cutting.

Jetstream is committed to providing customers with **safe, sure, simple solutions** in everything we do. Our total waterblasting solutions include:

- Manufacture and distribution of **quality industrial high-pressure Waterblasting** units, pumps, parts and accessories; that are all built to last and easy to maintain
- Lead the way with an approved **Visual Safety System (VSS)** color coding on most Waterblasting components for safer operation within each pressure zone
- Provide a wide range of application appropriate **automation tools** – for **safe, hands-free** cleaning
- Share **Application Expertise** with customers for the best total solution approach for maximum productivity
- Train – operators on the **application, product operation and safety**
- **Rentals** for short term jobs or rent to own – units, accessories, automation tools – complete with training
- **Service equipment** with experienced technicians, **provide 24/7 support by telephone and ship parts quick** (most same day)



**Jetstream®**  
Subsidiary of Federal Signal Corporation

# Additional Products

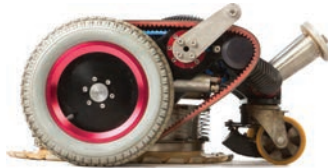
## Robotic Cleaning

Jetstream now offers a family of robotic tools from VertiDrive. These safe, environmentally friendly steel surface tools can remove scale, rust, paint and other coatings vertically, horizontally and overhead.

- Electric or Pneumatic
- Magnets used to adhere the robot to the surface

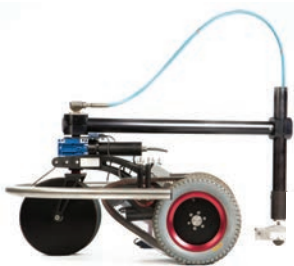
### M4.1 Robot

- Self-rotating nozzle bar with 16 nozzles
- Wireless remote operated
- Fast and efficient removal of paint or rust



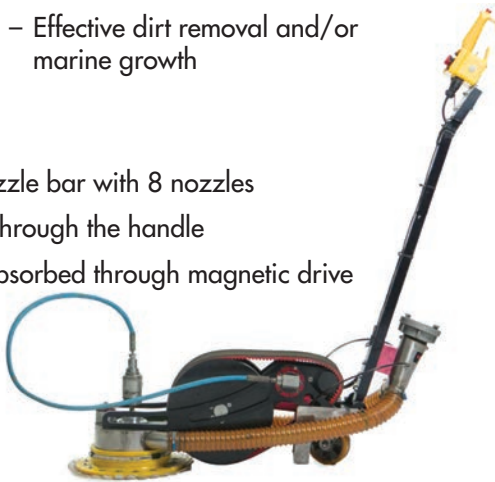
### M3 Robot

- Swinging arm, with programmable movement
- Effective dirt removal and/or marine growth



### Handy

- Self Rotating nozzle bar with 8 nozzles
- Easy operation through the handle
- Back pressure absorbed through magnetic drive



## Waterjet Cutting

Jetstream offers a dependable, versatile, and rugged abrasive waterjet cutting system for precise straight or circular cuts through almost any material. Quick and simple one-man setup makes it a great tool for cutting doorsheets and manways in tanks or cutting small to large pipes.

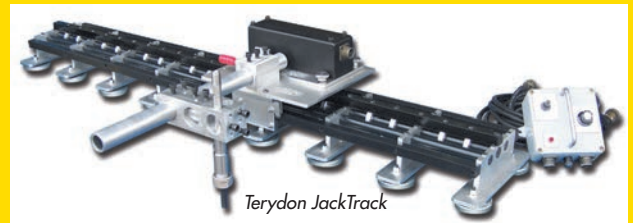
- Composite rails provide linear and lateral flexibility for precise cuts
- Powered by air or electricity
- Working pressure up to 55,000 psi (3792 bar)



Circle cutting



Cutting a doorsheet in a tank



Terydon JackTrack

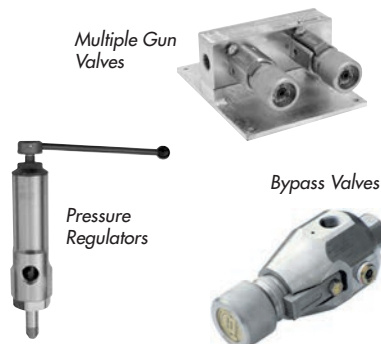
## Accessories

In addition to pumps and application tooling, Jetstream is a complete waterblasting solutions provider for all of the equipment necessary to get any job done safely and on time.

### Safety Equipment



### Control Valves



### Fittings & Gauges





# Surface Cleaning and Preparation Tools

Jetstream offers a full complement of surface cleaning tools for use in applications at a wide range of operating pressures, from removal of grease from roadways at pressures as low as 5,000 psi (344 bar) to stripping of marine paint from ship hulls at pressures up to 40,000 psi (2750 bar).

## Self-Rotating Nozzles

### Orbi-Jet™ X22

- Spins on water – no bearings
- Magnetic speed control
- Rated for pressures up to 22,000 psi (1516 bar)
- Easy Twis-Lok shroud
- Narrow, wide or combined cleaning path



## Nozzle Inserts

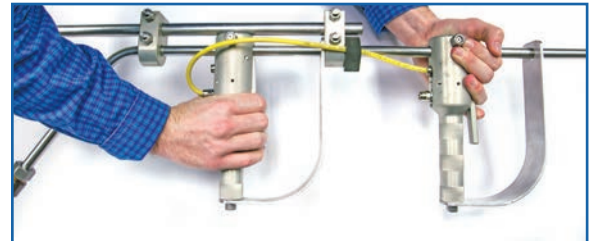
The most important factor in cleaning effectiveness is waterjet quality. With a huge variety of styles, flow ratings, and orifice materials, Jetstream has the perfect nozzles for any job.



## QuadraBlast™ – 40,000 psi (2750 bar) Air Gun

Enhancing productivity, while maintaining limited operator exposure to hazardous conditions due to the lightweight and mechanically-simplified design.

- Self-propelled rotating nozzle
- Air-driven
- Spring-loaded safety



## Tornado Cleaning System

- Working pressure: 40,000 psi (2750 bar)
- Air-powered rotary gun and a remote valve
- Single or multiple gun operation



Removing bonded paint from automotive assembly line carrier.



Removing rust from rebar in bridge piling.

## Control Guns



Valve cartridge can be replaced in 30 seconds using an adjustable wrench.



- Available in a variety of configurations
- Low trigger force
- Hydraulically biased valves for safety
- 30-second field replaceable cartridge



## Underwater Cleaning Made Easy

### Subsea, Zero-Thrust Gun

Designed for underwater cleaning. Due to no thrust, the operator is able to sustain a standard distance from the material being cleaning without being propelled away.



Petrochemical refineries are among the most challenging industries to serve because of the quantity and variety of industrial cleaning required.

### Some industries we serve:

- Chemical
- Petrochemical
- Automotive
- Pulp & paper
- Steel mills
- Power generation
- Marine
- Construction
- Mining
- Oil field
- Military
- Hydro Demolition

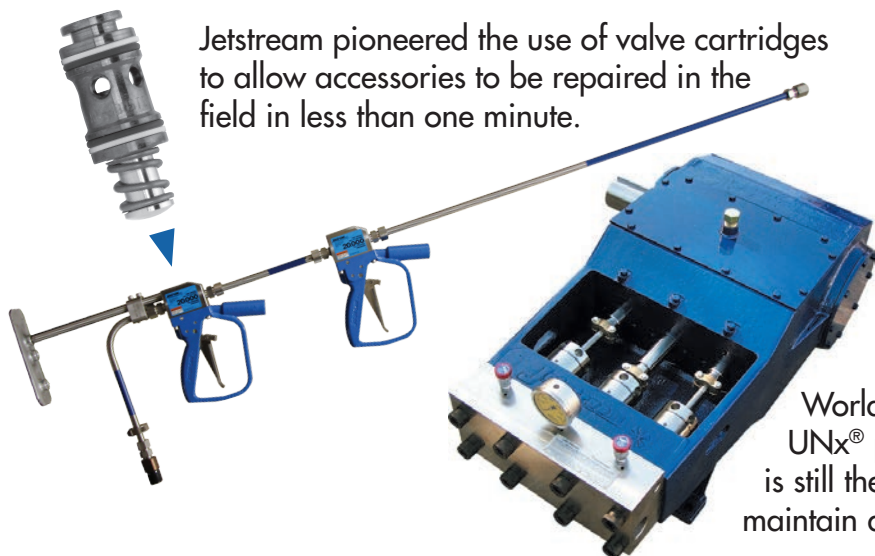
### Typical applications:

- Tube and tube bundle cleaning
- Pipe cleaning
- Stack cleaning
- Cooling tower cleaning
- Tank cleaning
- Facilities maintenance
- Grate and floor cleaning
- Automotive paint booth cleaning
- Ship hull cleaning
- Underwater cleaning
- Kiln cleaning
- Surface preparation
- Hydrostatic testing
- BOP testing
- Concrete demolition
- Waterjet cutting



Jetstream TwinForce 650HP Dual Pump Unit

## Innovative Engineered Solutions



Jetstream pioneered the use of valve cartridges to allow accessories to be repaired in the field in less than one minute.



Nozzles that spin on a bearing of water.

Worldwide, the UNx<sup>®</sup> pump design is still the simplest to maintain and operate.



# The UNx® Fluid End Advantage

## Unmatched for performance and flexibility!

Patented UNx fluid end technology is at the heart of every Jetstream waterblasting pump. Since 1988, this remarkably innovative family of fluid ends has provided thousands of plants and industrial cleaning contractors with the simplest and most flexible waterblasting pump available.

The most valuable benefit of the UNx design is simplicity. Repairs can be completed quickly in the field, eliminating hours of downtime for service by specially trained mechanics. To tackle a variety of jobs with a single system, UNx fluid ends can be easily reconfigured on the jobsite to utilize higher pressure or flow.

With the UNx, Jetstream provides the flexibility to tackle all jobs, the superior performance to optimize efficiency and productivity, and the reliability to minimize operating costs and downtime.

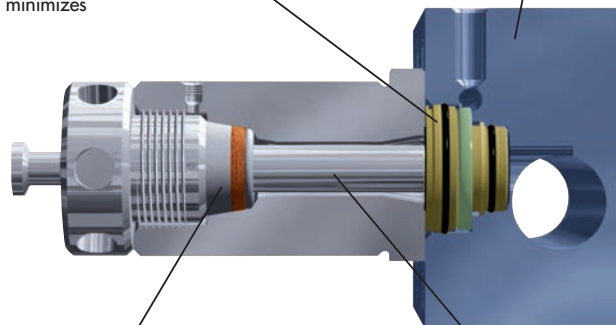
## Simple & Dependable

### Uni-Valve™ Cartridge

- self-contained suction and discharge valve assembly
- slip-fit for easy maintenance
- in-line design minimizes turbulence

### Swing-Down Manifold

- easy access to valves
- weep holes indicate source of seal leaks



### Plunger Packing Set

- three-piece and one-piece packings available
- tapered for easy removal
- water lubricated — no oil

### Clamp-Style Plungers

- specifically designed for the rigors associated with each operating pressure
- clamp-on design for easy maintenance

## Serviceable

Fewer parts ... faster servicing. No special tools or equipment required.



• 5-minute packing change\*



• 15-minute valve cartridge change\*

\*Times for 3000/3600/4200 model

## Change Operating Pressure in Minutes

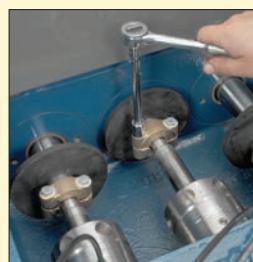
UNx Fluid Ends are designed for fast pressure conversion in the field to fully utilize the power available for applications that require higher flow or pressure than a current setup allows.

**Pressure conversions can be completed** in under 30 minutes with only simple tools and have been performed in live demos **in under five minutes** using power tools.

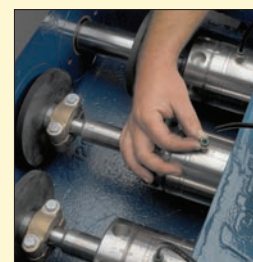
### 1 Disconnect hoses



### 2 Remove plunger clamps



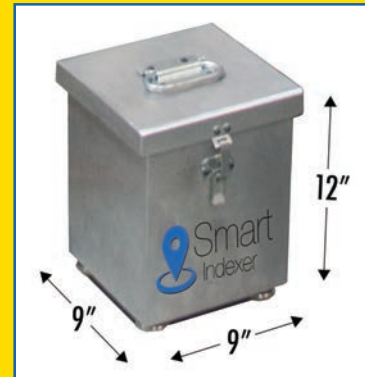
### 3 Disconnect lube lines



## Automated Systems and Tools

Automated and semi-automated systems are a must for large jobs. In addition to higher productivity rates, automation tools provide the most consistent cleaning, reduce or eliminate operator fatigue, and increase operator safety.

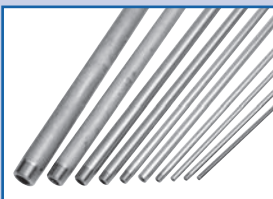
### Automated Hole Location – Peinemann Tools powered by Terydon® Technology



This industry-leading Automated Hole Location technology allows hole-to-hole navigation, automatically, during bundle cleaning in one simple step. The wireless control is used through a touch-screen tablet that allows the operator to control the tool from a safe distance.

#### Features

- Simple 4-Step Teach Method: Tube pattern taught in less than 2 minutes
- Enhance productivity: One touch of a button = automatic navigation
- Elimination of operator error from manual tube-to-tube indexing
- Auto Recollection: Notification of a prior cleaned tube
- Easy set-up for pattern design and quantity of tubes
- Precision sensors
- Smart Indexer Hub with two Lithium batteries for continued operation



#### Rigid Lances

Rigid lances are used for manual cleaning of straight tubes or with automated lancing systems to clean heat exchangers quickly and effectively.



#### SteelFlex™

This Flexible steel tubing with a welded nozzle can clean tubes as small as 5/32 in (3.96 mm) (nozzle shown actual size).



#### Foot Guns

Jetstream offers a wide selection of heavy-duty foot guns to provide the operator with safe and complete control of flow and pressure through the nozzle during manual cleaning operations.

All foot guns use 30-second field-replaceable valve cartridges.

# Tube and Pipe Cleaning

Pipe and tube cleaning are the most common uses for waterblasting. Many variables determine the most suitable equipment for a given job:

- Size of the job
- Budget and time available
- Tube diameter and length
- Deposit adhesion and hardness
- Unplugging or polishing
- Are the tubes straight or bent
- Orientation: horizontal or vertical
- Will the tubes or pipes be moved or cleaned in place?

For that reason, Jetstream manufactures and supplies a wide assortment of tube and pipe cleaning equipment, from simple manual tools to large-scale automated systems.



Removal of a hardened polymer from heat exchanger tubes using manually operated waterjetting tools.



Before



After

## Rotating Nozzles

### Tube Cleaning Nozzles

Custom-drilled tube cleaning nozzles are designed for use at the end of a flex lance or rigid lance. The configurations and flow ratings are personalized to each specific customer request. The recessed orifices provide protection from surface abrasion or damage by wrenches. Available in pressures up to 40,000 psi (2750 bar). These drilled nozzles can also be enhanced with the addition of a tube spinner for pressures up to 20,000 psi (1378 bar).



### Tube Spinners™

Featuring a specially coated shaft and hardened sleeve with two rotating jets, Tube Spinner Nozzles thoroughly clean small tube walls. Available with outside diameters from .375 in (9.525 mm) to 1.040" (26.42 mm) and pressures up to 20,000 psi (1378 bar).



### Pipe Cleaning Nozzles

Adaptable to various diameter pipes. With the ability to plug multiple ports, these nozzles, "line moles", were created with unique patterns to perform different tasks, such as unplugging and flushing. Several size options are available for cleaning pipes ranging from 1-3/16 in (30.16 mm) to several feet (meters) in diameter.



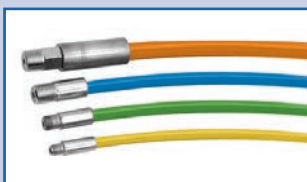
### RotoMag

Self-rotating nozzle designed for trouble-free cleaning of pipes, stacks, or tanks.

- Spins on water – no bearings
- Magnetic speed control limits rotational speed for maximum impact
- For use in pipes as small as 3 in (76.2 mm) or as large as 18 ft (5.48 m) using nozzle extensions
- Flows up to 50 gpm (189.2 lpm) and pressures up to 20,000 psi (1378 bar).



## Basic Tools



### Thermoplastic Hoses & Flex Lances

Thermoplastic hoses and flex lances are the most durable and offer the widest selection of end fitting connections. These hoses and lances are available in pressures up to 43,500 psi (2999 bar) and come standard in the corresponding pressure color according to the Visual Safety System (VSS).



### SteelBraid™

Highly flexible SteelBraid lances, with a Teflon core, are ideal for cleaning small tubes at pressures up to 10,000 psi (689 bar).



### Rubber Hoses

Available in several sizes, rubber hoses are the most economical and easiest to maneuver for pipe cleaning operations.





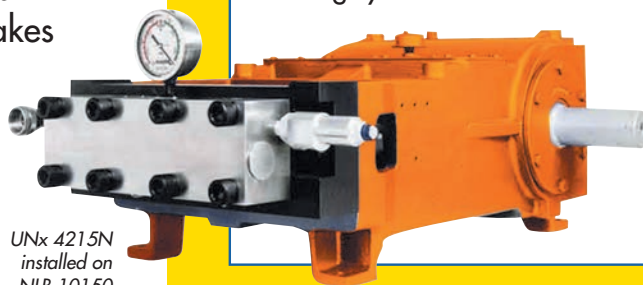
## Fewer Parts, Fewer Problems



UNx Fluid Ends  
that fit most makes  
and models

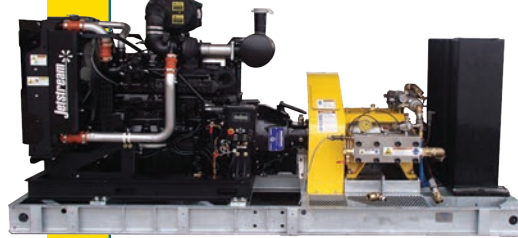
UNx pumps are ATEX  
Zone 2 approved.

UNx 4215N  
installed on  
NLB 10150

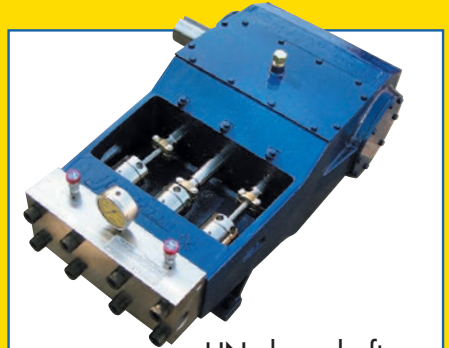


## There are Several Ways to Use the Advantages of the UNx® Fluid End.

Every Jetstream unit  
includes UNx technology



UNx bareshaft  
pumps can be installed  
on custom-built systems



UNx upgrades bolt on to other  
manufacturer's pumps to add  
the UNx Advantage to  
existing systems



Additional fluid ends  
allow one system to do  
the work of many

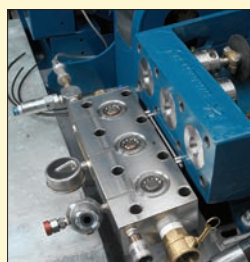
**Operating pressures from 5,000 psi (344 bar)  
to 40,000 psi (2750 bar)**

*A single Jetstream system can do the work of many*

**4** Remove water lube fittings



**5** Remove just 8 bolts to lower hinged manifold



**6** Slide out stuffing boxes  
containing packing and  
plungers



**7** Remove hinge and  
lift off manifold



**install the appropriate fluid end by reversing the steps**

# Waterblasting Units

## Engineered for Maximum Performance

Built for extreme duty, Jetstream waterblasting units are trusted on six continents to handle the toughest cleaning jobs in the most challenging operating environments in the world.

Jetstream systems provide reliable, efficient and safe waterjet cleaning power. Features like a PTO (clutch) that never needs grease and UNx pumps that can be repaired or reconfigured in minutes reduce both down-time and cost of ownership.

Because markets for waterblasting continue to expand and evolve, the experienced Jetstream engineering team constantly develops and improves system features and options to incorporate new technology, optimize performance for specific applications, and satisfy emerging customer requirements and government regulations.



The standard for North American waterblasting units.

### Diesel System Performance Specifications

X3000 Series	110 HP	Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	–	36,000	40,000
		Plunger Size (no.)	11	10	9	8	7	6	–	5	5
		Flow (gpm)*	23.2	18.4	14.9	11.8	9.9	11.2	–	9.9	4.3
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	36,000	36,000	40,000
X3600 Series	125 HP	Plunger Size (no.)	–	11	10	9	8	7	6	5	5
		Flow (gpm)*	–	23.3	18.4	14.9	11.8	9.7	6.1	5.2	4.9
		Pressure (psi)	5,000	7,500	10,000	12,500	15,000	20,000	–	30,000	40,000
		Plunger Size (no.)	15	13	11	10	9	8	–	–	–
X4200 Series	150 HP	Flow (gpm)*	45.4	31.2	23.2	18.6	15.7	11.7	–	–	–
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	–	30,000	40,000
		Plunger Size (no.)	15	13	12	11	10	8	–	7	6
		Flow (gpm)*	45.2	35.6	27.0	21.4	18	12.9	–	9.1	6.8
X4200 Series	170 HP	Pressure (psi)	6,000	8,000	10,000	12,500	15,000	20,000	–	30,000	40,000
		Plunger Size (no.)	15	13	12	11	10	9	–	7	6
		Flow (gpm)*	50.3	39.8	32.2	27.0	21.5	17.0	–	10.0	8.0
		Pressure (psi)	6,000	8,000	10,000	12,500	15,000	20,000	–	30,000	40,000
X4200 Series	215 HP	Plunger Size (no.)	16	15	13	12	11	10	–	8	7
		Flow (gpm)*	62.1	48.6	38.7	31.3	26.3	19.4	–	11.9	9.7
		Pressure (psi)	6,000	8,000	10,000	12,500	15,000	20,000	–	30,000	40,000
		Plunger Size (no.)	–	16	15	13	12	11	–	–	8
X6000 Series	250 HP	Flow (gpm)*	–	62.1	50.1	39.7	32.0	25.1	–	–	11.9
		Pressure (psi)	6,000	8,000	10,000	12,500	15,000	20,000	–	–	–
		Plunger Size (no.)	21	19	16	–	–	–	–	–	–
		Flow (gpm)*	115.5	92.8	64.1	–	–	–	–	–	–
X6000 Series	500 HP	Pressure (psi)	8,000	10,000	12,500	15,000	20,000	–	–	–	–
		Plunger Size (no.)	21	19	16	15	13	–	–	–	–
		Flow (gpm)*	115.4	92.8	64.1	61.7	46.1	–	–	–	–
		Pressure (psi)	8,000	10,000	12,500	15,000	20,000	–	–	–	–

\* Flow values assume up to 10% inefficiency resulting from mechanical power transfer and do not account for compressibility of water. Actual output will vary based on the performance specifications of the engine (or motor), drive sheave ratio, and actual working pressure.

### Electric System Performance Specifications

X3000 Series	60 HP	Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	–	–	–
		Plunger Size (no.)	11	10	9	8	7	6	–	–	–
		Flow (gpm)**	16.9	13.3	10.8	8.5	7.2	5.4	–	–	–
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	–	–	–
X3000 Series	75 HP	Plunger Size (no.)	11	11	10	9	8	7	–	–	–
		Flow (gpm)**	16.9	16.9	13.3	10.8	8.5	6.5	–	–	–
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	–	–	–
		Plunger Size (no.)	11	11	10	9	8	7	–	–	–
X3000 Series	100 HP	Flow (gpm)**	21.3	21.3	16.8	13.6	10.8	8.2	–	–	–
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	–	–	–
		Plunger Size (no.)	11	11	10	9	8	7	–	–	–
		Flow (gpm)**	21.3	21.3	16.8	13.6	10.8	8.2	–	–	–
X3600 Series	125 HP	Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	30,000	35,000	40,000
		Plunger Size (no.)	15	13	12	11	10	8	–	–	6
		Flow (gpm)**	34.1	27.0	21.8	18.3	14.5	9.7	–	–	5.4
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	30,000	35,000	40,000
X3600 Series	150 HP	Plunger Size (no.)	15	13	12	11	10	8	8	7	6
		Flow (gpm)**	38.7	30.6	24.8	20.8	16.5	11.0	9.2	7.7	6.2
X4200 Series	200 HP	Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	30,000	35,000	40,000
		Plunger Size (no.)	15	13	12	11	10	9	8	8	7
		Flow (gpm)**	43.2	43.2	34.2	27.6	23.2	15.5	10.2	10.2	8.6
		Pressure (psi)	6,000	7,500	10,000	12,500	15,000	20,000	30,000	35,000	40,000
X4200 Series	250 HP	Plunger Size (no.)	15	15	15	13	12	10	8	8	8
		Flow (gpm)**	41.9	41.9	41.9	33.2	26.8	17.9	10.0	10.0	10.0
X6000 Series	500 HP	Pressure (psi)	6,000	8,000	12,500	15,000	20,000	–	–	–	–
		Plunger Size (no.)	21	19	16	–	–	–	–	–	–
		Flow (gpm)**	115.5	92.8	64.1	–	–	–	–	–	–
		Pressure (psi)	8,000	10,000	12,500	15,000	20,000	–	–	–	–
X6000 Series	600 HP	Plunger Size (no.)	21	19	16	15	13	–	–	–	–
		Flow (gpm)**	115.4	92.8	64.1	61.7	46.1	–	–	–	–

\*\* Depending on the application, there are other belt and sheave combinations that may be applicable for more horsepower or utilization.



### Sealed Control Panel

full instrumentation at your fingertips:

- hour meter
- tachometer
- oil pressure
- voltmeter
- water temperature

### Lifetime LED Trailer Lights

- weather sealed
- corrosion resistant
- lights up faster, brighter

### Galvanized Steel Fenders

### EZ-Lube Hubs

lubricate wheel bearings quickly via standard grease fitting

### Torsion-Style Axles

smoother towing while providing lower trailer profile

### Shorter Wheelbase

- improves trailer travel through tight turns
- helps minimize tire scrubbing

### Hydro-Throttle Control\*

- saves fuel and engine wear
- manual throttle override to maintain set engine speed

### Improved Pump Access

unobstructed access to fluid end for performing pressure conversion or routine maintenance

### High-Capacity Aluminum Fuel Tank

- reduced dry weight
- resists corrosion
- longer runs between refueling

\* optional

### High-Performance Diesel Engines

- engines from the world's top manufacturers
- available as open (standard) or enclosed units
- Tier IV engines will be available in late 2016

### Powerband Belt Drive

- dual five-band belts (most units)
- high-torque carrying capabilities

### Safety Features

- comprehensive safety decal package
- conspicuity tape surrounds entire frame

### Power End Dependability

- ductile iron power frame
- high-strength, forged steel crankshaft

### Safety Shutdown Systems\*

protect against low oil pressure and high temperature

### Forward Water Tank Location

improves weight distribution with lower center of gravity

### Low Profile Trailer

just 26" to top of frame for lower center of gravity

### Adjustable Hitch Height

for safe, level hauling behind different vehicles

### UNx Fluid End

- Jetstream's patented system designed for fast conversion from 5,000 psi (344 bar) to 40,000 psi (2750 bar) operating pressures
- ATEX approved

### Center-mounted Trailer Jack

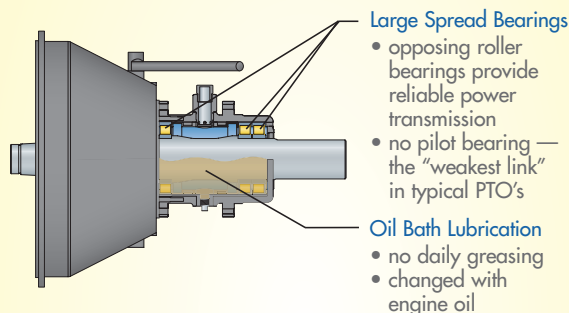
rated at 12,000 lb (387 N)

### Trailer Wiring

- completely weatherproof harness and connectors
- protective grommets runs

## Jetstream innovations continually enhance your productivity

### Greaseless Spread Bearing PTO



#### Large Spread Bearings

- opposing roller bearings provide reliable power transmission
- no pilot bearing — the "weakest link" in typical PTO's

#### Oil Bath Lubrication

- no daily greasing
- changed with engine oil



An integrated filter and water tank design that extends component life and increases operating uptime.

## Global Waterjetting Solutions Provider



**Electric** — Ideal for process plants, industrial operations and military environments. Available as stationary skids or steerable, in-plant trailers.



**600HP** — Powerful performance and undeniable reliability are just two reasons the new Jetstream 6000 Series waterblaster is the clear choice for your high-flow applications.



**TwinForce™** — With the design of this dual 650 HP system, Jetstream provides a multi-functional product to enhance the utilization of a two waterblasting units on one single trailer.



**HydroForce™ & 3000HT** — Both the HydroForce and HT-Series are hydrostatic test units designed to offer robust operating, dependability, and versatility to operators around the world in the oil and gas industry.

## Additional Options

- Remote emergency stop
- Regulator valve for shut-in applications
- Workbench and industrial strength vise
- Forklift pads or slots
- Packing lube water recirculation package
- Charge pump\*\*
- Air compressor package
- Safety package, including fire extinguisher
- Lifting bale
- Hose racks
- Hydrostatic test package
- Strobe light
- Work area light
- Spare tire
- Corrosion resistant

\*\* standard on models equipped for pressures above 20,000 psi.





Jetstream products are also sold and serviced by FS Solutions, with 12 convenient locations across North America. FS Solutions provides high-performance parts, accessories, Jetstream rentals, repair, rebuild and safety training.

**Gonzales, LA**  
(225) 647-0660

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