

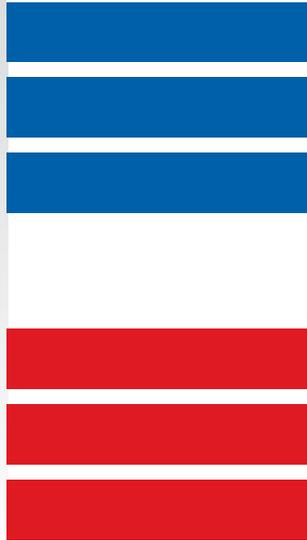
Advancing Waterjet Technology
Worldwide Sales and Support Network
Making Waterjet Systems Easier to Use, with Greater Reliability
ISO 9001:2000 Certification; CSA and CE Certified
Trained, Certified Technicians
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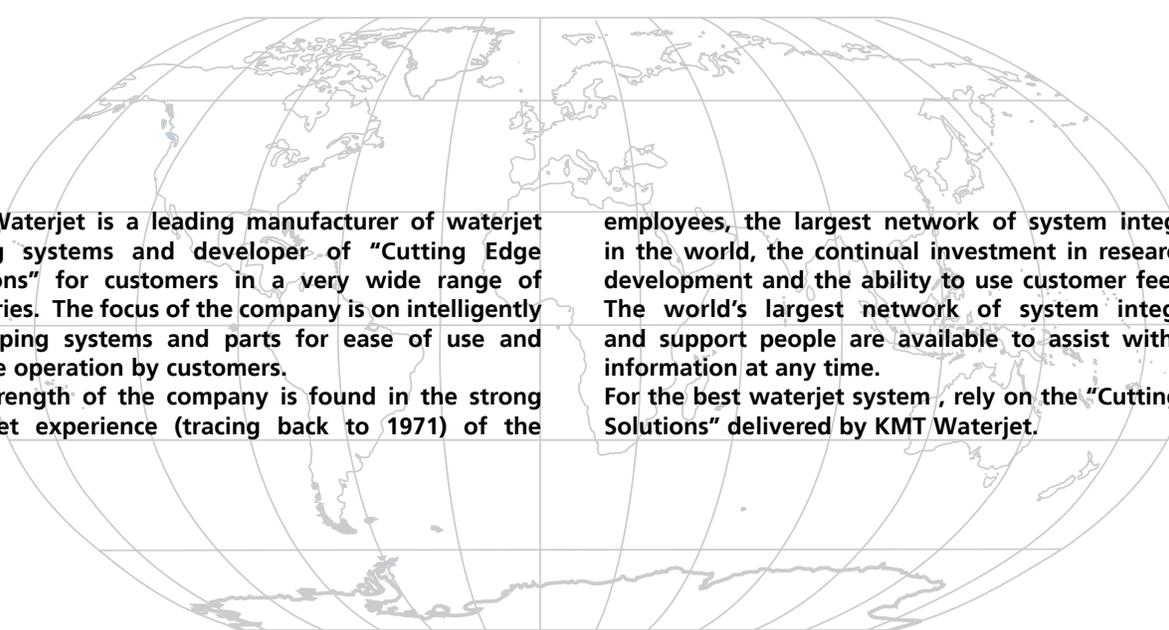
SLV-REV. 3-09/08



STREAMLINE™ SL-V Plus Series

High Performance Waterjet Technology



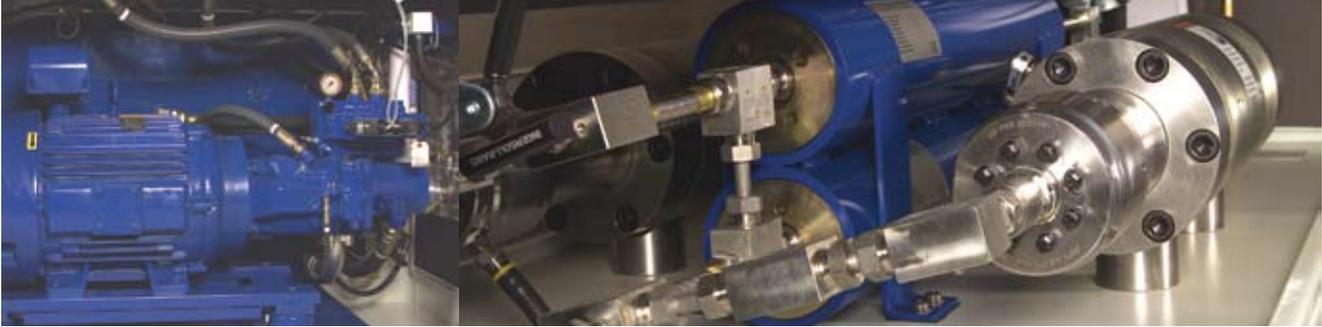


KMT Waterjet is a leading manufacturer of waterjet cutting systems and developer of "Cutting Edge Solutions" for customers in a very wide range of industries. The focus of the company is on intelligently developing systems and parts for ease of use and reliable operation by customers. The strength of the company is found in the strong waterjet experience (tracing back to 1971) of the

employees, the largest network of system integrators in the world, the continual investment in research and development and the ability to use customer feedback. The world's largest network of system integrators and support people are available to assist with more information at any time. For the best waterjet system , rely on the "Cutting Edge Solutions" delivered by KMT Waterjet.

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Advance to STREAMLINE™ SL-V

STREAMLINE™ Technology: Establish Your Competitive Edge

Streamline™ systems use the latest technology and a very smart design for ease of use, reliability and convenience. The result is a system that delivers highest efficiency and profit.

SL-V: The Best Series Ever Offered

The SL-V line represents the culmination of several technological advancements:

Advances in Convenience

- **Complete Redundancy** – Because a single intensifier produces all of the needed pressure, adding an optional redundant system for continuous production of 60,000 psi is a simple operation.

- **More Ergonomic Design** – From the see-through top cover, which opens on both sides, to the high pressure intensifier, which can be disassembled in parts or one side at a time, extreme convenience was a high priority during design.

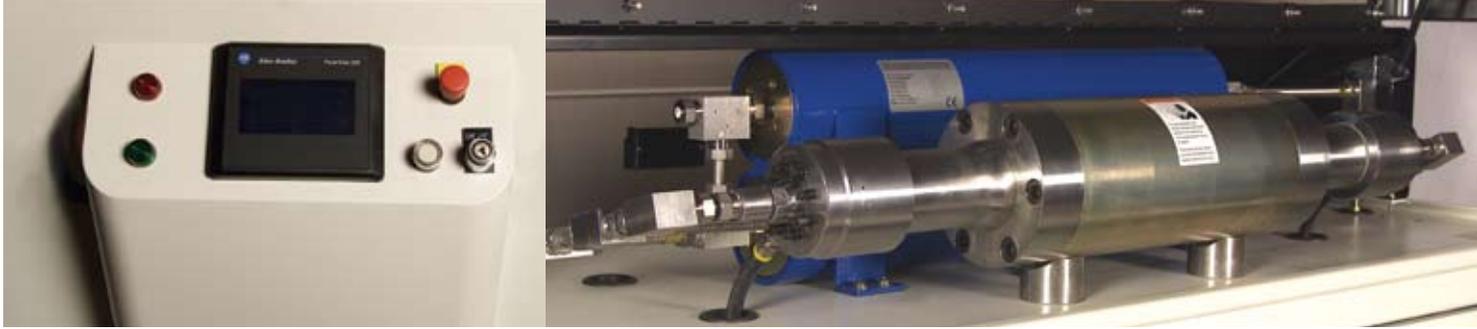
- **Better Software Features** – High-tech software and built-in sensors provide protection and immediate access to information. More control and information is available faster.

- **Long-term Competitiveness** – The SL-V pumps were designed with the latest technology to provide a competitive edge that will last long into the future.

Smart Design Advances

- **Longer Run-times** – Significant advances were achieved by eliminating some seals and changing materials.

- **Faster Cutting** – Rather than just increase the pressure, we changed and strengthened the machine design to produce 60,000 psi for faster cutting and cleaner edges.



Choosing the Right System

There are two main factors which determine the size of system required: water volume and pressure. By increasing these two factors, cutting can be faster and have cleaner edges. With this in mind, there are three main variables which help determine how much water and pressure is needed, and in turn, which system is best for an application:

1) Type of Material

The hardness and thickness of the material to be cut determines a minimum water volume requirement. Thick materials (whether hard or soft) require larger streams of water which have greater velocity and more energy to cut over a long distance. Harder materials with dense structures also require higher pressures.

2) Cut Speed Required

Cutting faster, extremely important for higher margins and high production environments, is possible by increasing both water volume and pressure. KMT Waterjet pumps can be networked (a KMT Waterjet exclusive) to allow high cutting speeds for multiples of cutting heads.

3) Size and Number of Cutting Heads

Multiple cutting heads enable higher productivity but require more water. KMT Waterjet pumps enable operating multiple cutting heads cutting the same or different parts, at extremely low operating costs.

Abrasive Waterjet Cutting Speeds
Approximate inches per Minute
At 60,000 PSI (4,137 Bar)

KMT Waterjet can help determine the ideal mix of water and pressure by providing sample cuts or drawing on extensive experience with cutting materials.

The table provides general information about cutting speeds; please call to arrange for free sample cuts of your specific materials.

MATERIAL	MATERIAL THICKNESS	ORIFICE DIAMETER			
		0.007"	0.010"	0.012"	0.014"
Aluminum	0.25" (6mm)	12 - 19	23 - 34	30 - 47	38 - 58
	0.50" (13mm)	6 - 8	11 - 15	13 - 21	17 - 26
	0.75" (19mm)	3 - 4	5 - 7	6 - 10	8 - 12
Stainless Steel	0.25" (6mm)	4 - 6	8 - 12	10 - 16	13 - 20
	0.50" (13mm)	2 - 3	4 - 5	5 - 7	6 - 9
	0.75" (19mm)	1 - 2	2 - 3	2 - 3	3 - 4
Titanium	0.25" (6mm)	5 - 7	9 - 13	12 - 19	15 - 23
	0.50" (13mm)	2 - 3	4 - 6	5 - 8	7 - 10
	0.75" (19mm)	1 - 2	2 - 3	2 - 4	3 - 5
Marble	0.25" (6mm)	14 - 17	22 - 31	28 - 44	36 - 54
	0.50" (13mm)	6 - 8	10 - 14	13 - 20	16 - 25
	0.75" (19mm)	3 - 4	5 - 6	6 - 9	7 - 11
Glass	0.25" (6mm)	20 - 31	39 - 56	49 - 79	63 - 96
	0.50" (13mm)	9 - 14	18 - 25	22 - 35	29 - 43
	0.75" (19mm)	4 - 6	8 - 11	10 - 16	13 - 19
Abrasive Flow Rate (Pounds/minute Medium-Fine Grade)		0.4 - 0.6	0.7 - 1.0	0.9 - 1.5	1.3 - 2.0

The Intensifier

The source of pressure.

No other system incorporates the features of the SL-V to deliver the simplest, easiest-to-operate, most reliable system.

Plunger

- **Ceramic** – Harder surface lasts longer, eliminates scoring and reduces wear on seals.

- **Exclusive Long, Slow Stroke Moves More Water**– Reduced maintenance results from the longer (about 8") stroke which moves more volume (up to 5.5ci) allowing a slower stroke rate, extending the life of seals.

- **“Quick Release” Plunger** – Allows fast, easy removal and replacement of plungers.

Seals

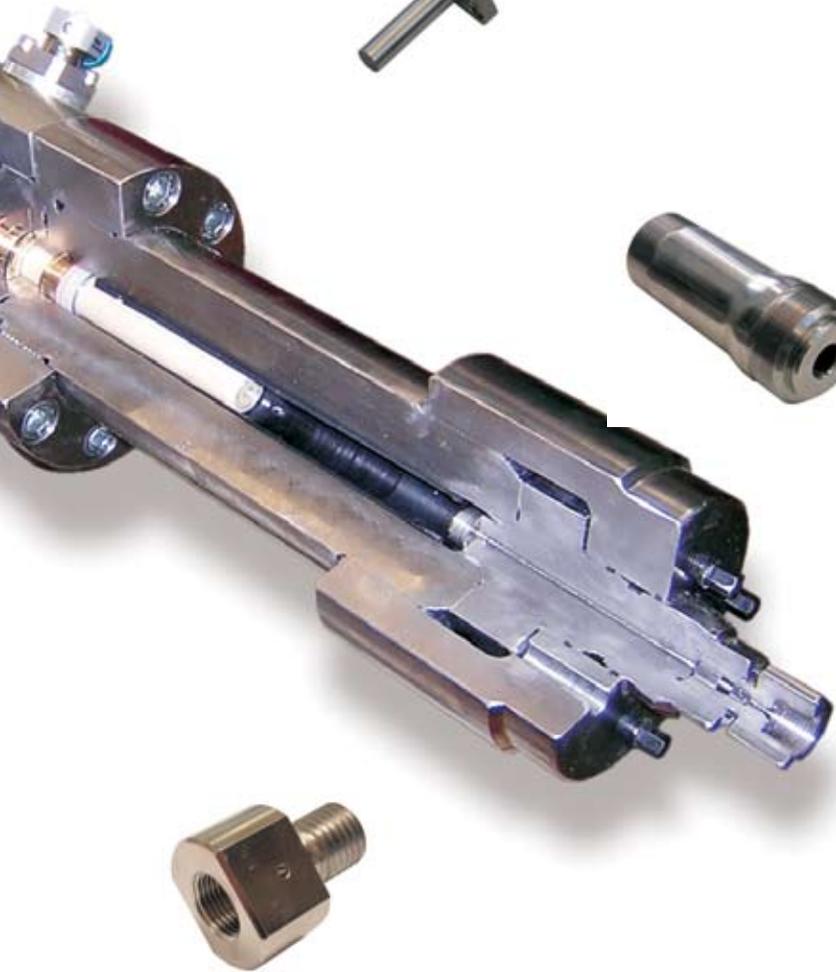
- **“One-Step” Seal Replacement** – Hydraulic and high pressure seals can be replaced in one operation – with little downtime.

- **HYPERLIFE™ Seals** – U.S. Patent #6,769,695 - Sweden Patent #0203660-6. The seals now last twice as long over 1,000 hours while providing a better seal by conforming to the shape of the cylinder when under pressure. (Seal performance may be longer or shorter depending on pressure and water quality.)



Hydraulic Seal

The convenient, cartridge-style seal in the intensifier combines 6 seals on one cartridge; it can be changed quickly using the plunger removal tool.



Electronic Shifting

Electronics provide smoother, more reliable shifting for a more leak-free operation.

Metal-to-Metal Seal Head

The exclusive, metal-to-metal seal of the seal head eliminates the maintenance of a consumable seal.

Threaded End Cap

The threaded Hard Seal End Cap and threaded cylinders make it easier to access internal parts. Maintenance can be performed quickly to just one side of the intensifier at a time no need to remove the entire intensifier to work on one side.

Weep Hole Indicators

Weep holes were included to reveal the condition of internal seals, before major problems appear.





STREAMLINE™ SL-V 15

The smallest pump in the SL-V family delivers big performance and reliability - fitting for a product bearing the STREAMLINE™ name.

This pump was designed specifically for light-duty applications demanding a reliable source of high pressure. For pure-water applications with one to three cutting heads or abrasive applications with a single cutting head, it consumes little water yet produces 60,000 psi.

Features:

- Simpler, more basic controls than the large SL-V systems.
- Small, compact machine with minimal water consumption.
- Open top for higher visibility and ease of maintenance.
- Includes the significant SL-V technology advancements.



STREAMLINE™ SL-V 30, 50, 60, 75 & 100 hp Pumps

Our full-featured, SL-V pumps are available in more sizes and with new “Cutting Edge” options available only from KMT Waterjet. These pumps are the easiest to maintain and the most advanced STREAMLINE™ pumps ever offered. Seals last over 1,000 hours, depending on pressure and water quality – longer than any other system – for continuous operation for the most demanding production schedules.

Easiest to Maintain

- **Single Intensifier per Pump** – 60,000 psi is produced with just one intensifier, delivering lower maintenance costs, and quieter operation with fewer parts.
- **Larger Plunger** – The longer, slower strokes of the ceramic plunger move more water with each stroke, providing more uptime and longer seal life.
- **“Quick Release” Plunger** – Exclusive plunger removal design simplifies removal. Cartridge seal system design is the fastest change-out design and provides a redundant sealing system.

Most Intelligently Designed System

- **High Tech Software** – Standard system includes plunger location control (plunger can be moved to a specific side to facilitate maintenance), system capacity utilization (to show if it is stroking at the maximum rate), hours of operation (for either side, if redundant option is installed), and more.
- **Lower Noise Levels** – The SL-V's were designed to operate below 77.5 dB(A), improving the environment for workers.

- **See-through Top Covers** – Inspection of the intensifier can be done by looking through the top cover. In addition, both sides can be open at the same time, allowing easier access.
- **Dual Pressure Control** – Pumps are equipped for a high and a low setting. Ideal for brittle materials, the low setting is used for piercing and the high setting for cutting. For even more versatility, check out the Proportional Control option under "Options".
- **Threaded End Cap Retainers** – End caps, high pressure cylinder and hydraulic cylinder are all threaded together, simplifying access to the seals. In addition, each side of the intensifier can be disassembled independently of the other.
- **Booster Pump Protection** – Sensors before and after the booster pump assure that the flow of water is continual and adequate. An important feature to protect your system.

Sophisticated Software

- **Touch Control Panel** – Rapid programming and troubleshooting.
- **Upgradeable Communications** – Remote access and networking of multiple pumps are options which represent huge potential for creating new opportunities.
- **Multiple Language, Dual Pressure Control and many more standard features.**

Technical Specifications

	SL-V 15 PLUS	SL-V 30 PLUS	SL-V 50 PLUS	SL-V 60 PLUS	SL-V 75 PLUS	SL-V 100 PLUS
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System Information

Nominal Power Rate	15hp (11kW)	30hp (22kW)	50hp (37kW)	60hp (45kW)	75hp (56kW)	100hp (75kW)
Maximum Pressure Range	60,000psi (4,137 bar)					
Max. Water Flow Rate @ 55,000psi (3,792 bar)	.30 gpm (1.14 lpm)	.60 gpm (2.27 lpm)	1.0 gpm (3.79 lpm)	1.2 gpm (4.54 lpm)	1.5 gpm (5.68 lpm)	2.0 gpm (7.57 lpm)
Maximum Single Orifice Diameter	0.007" (0.178mm)	0.011" (0.279mm)	0.014" (0.355mm)	0.015" (0.381mm)	0.017" (0.432mm)	0.020" (0.508mm)
Number of Language Options on Display	5					
Control Voltage & Power Supply	24V DC; 10 Amps DC					
Max. Noise Level	75.5 dB(A)	72.5 dB(A)	77.5 dB(A)			
Ambient Operating Temperature	Minimum: 40° F (5° C); Maximum: 104° F (40° C)					
Length	56" (1.4 m)	67.75" (1.7 m)			77.75" (2.0 m)	
Width	28" (711 mm)	36.00" (914 mm)	36.00" (914 mm)	36.00" (914 mm)	36.00" (914 mm)	36.00" (914 mm)
Height	33" (838 mm)		57.19" (1,453 mm)			
Weight	1,800 lbs (816 kg)	2,100 lbs (953 kg)	2,900 lbs (1,315 kg)	3,400 lbs (1,542 kg)	3,800 lbs (1,724 kg)	4,200 lbs (1,905 kg)

Cutting Water

Minimum Inlet Cutting Water Flow	1.5 gpm (6.82 lpm)	2.5 gpm (9.5 lpm)	4.0 gpm (15.1 lpm)	4.8 gpm (18.2 lpm)	6.0 gpm (22.7 lpm)	8.0 gpm (30.3 lpm)
Minimum Inlet Cutting Water Pressure	35 psi (2.4 bar) flowing					
Plunger Diameter	0.875" (22.2mm)			1.125" (28.6mm)		
Max. Nominal Strokes per Minute (at 55,000 psi, 3.792 bar)	17	34	54	64	51	71
Accumulator Volume	0.11 gal (0.41 L)	0.25 gal (0.96 L)			0.51 gal (1.92 L)	

Hydraulic System

Max. Hydraulic Pressure (operating at max water pressure)	3,000 psi (207 bar)			2,600 psi (179 bar)		
Hydraulic Reservoir Capacity	12 gal (45 L)	28 gal (106 L)			48 gal (182 L)	
Hydraulic Pump Flow Rate at 60Hz (@1,750 rpm)	12.9 gpm (49 lpm)	20.9 gpm (79 lpm)	33.0 gpm (125 lpm)	33.0 gpm (125 lpm)	53.4 gpm (202 lpm)	65.0 gpm (246 lpm)

Cooling System

Cooling Water Consumption @ 75° F (24° C) Water Temp. (Max)	2 gpm (7.6 lpm)	2.5 gpm (9.5 lpm)	3 gpm (11.4 lpm)	3.5 gpm (13.2 lpm)	4 gpm (15.1 lpm)	4.5 gpm (17.0 lpm)
Minimum Cooling Water Pressure	35 psi (2.4 bar)					

Options & Other Features

Booster Pump (adjustable & protected)	na	Included	Included	Included	Included	Included
Wye-Delta Starter or Soft Start	na	Optional	Optional	Optional	Wye Delta Included Soft Start Optional	Wye Delta Included Soft Start Optional
Oil / Air-Cooler	na	Optional	Optional	Optional	Optional	Optional
Dual Pressure Compensator	na	Included	Included	Included	Included	Included
Redundant Topworks	na	Optional	Optional	Optional	Optional	Optional
Proportional Control	na	Optional	Optional	Optional	Optional	Optional
Remote Online Diagnostics (via Modem)	na	Optional	Optional	Optional	Optional	Optional
EQUALIZER Networking Kit Compatible	na	Optional	Optional	Optional	Optional	Optional



Accessories and Options

Electrical Options

50 Hz: 190/380, 200/400, 208/416, 230/460 volts AC (3 phase) 60 Hz: 230/460, 240/480 volts AC (3 phase)

Redundant Intensifier

Adding a *Redundant Intensifier* provides a completely identical high pressure production system to any pump over 15hp. Activating the redundant system takes just a few minutes and maintains a continuous flow of maximum high pressure for continuous production. The option is well worth the investment for shops under tight production schedules and in need of continuous, reliable production from just one machine. It is nearly the equivalent to having two pumps in one, while consuming less space - and far less capital.

Proportional Control

The *Proportional Control* enables automatic changes to the pressure generated by the pump, even mid-job, in order to maximize machine time and vary the cutting speed. It can dramatically reduce the complexity of cutting and the cutting time required, especially when working with fragile materials such as ceramic tile and glass. Using the *Proportional Control*, pressure can be lowered to one level for starting new holes, ramped up for cutting lines, and adjusted again for cutting curves. Pressure can be instantly adjusted to any level. Installing this option also makes it possible to connect multiple pumps to a common high pressure line for the ultimate in continuous production shops: a networked pump system where the pumps are monitored by the *Equalizer* load-balancing system.

EQUALIZER System

The load-balancing *Equalizer*, available exclusively from KMT Waterjet, is the perfect tool for connecting multiple pumps and creating a much more reliable source of high pressure. The *Equalizer* controls the output of each pump to be consistent with the size of the pump and proportional to the total load required from the pump network. With the *Equalizer*, the stroke rate of each pump is monitored so the total system demand is shared equally by all pumps. It is the ultimate in automated, reliable, high pressure production.

Remote Diagnosis Capability

With the *Remote Diagnosis* option, KMT Waterjet technicians can quickly access the control panel of any pump, remotely, for immediate troubleshooting. Simply connect a phone line so the technician can dial in, and it will be as if a KMT Waterjet expert was in your shop performing diagnostic work on the control panel. This feature pays for itself after it is used to quickly identify issues and speed your machines back into service.

Soft Start or Wye-Delta Starter

These energy efficient starters reduce electrical demand when pumps first start and are especially important in areas where energy costs are based upon peak-demand.

Additional Tools and Options

KMT Waterjet also makes and distributes a complete range of certified genuine high pressure system parts including valves, cutting heads, nozzles, orifices, tubing and abrasive feeder equipment. Call for more information.

Standard Service Commitment

KMT Waterjet is committed to helping customers successfully choose the best system for specific applications and, after the selection is made, run and operate that system. KMT Waterjet provides the highest level of training, service and support for all of the systems it makes, directly and in conjunction with the widest range of system integrators in the world. No other company has a larger support network. Support and access to "*Cutting Edge Solutions*" is only a phone call away.

For the best in support and service, call KMT Waterjet Systems.