



## MTS SilentFlo™ 515 Hydraulic Power Units

Efficient and reliable power generation

**RELIABLE POWER FROM A PROVEN SOURCE.** TRUST ONE OF THE  
WORLD'S LEADING PROVIDERS OF SERVOHYDRAULIC TEST SYSTEMS  
TO CREATE OPERATIONALLY EFFICIENT AND SAFETY-ENGINEERED  
HYDRAULIC POWER GENERATION. MTS HYDRAULIC POWER UNITS  
SET THE STANDARD FOR QUIET AND EFFICIENT OPERATION AND  
ENHANCED TEST SYSTEM PERFORMANCE.



## Powered by Knowledge

Designed with the knowledge gained through years of experience in servohydraulic power generation, the reliable MTS SilentFlo™ 515 Hydraulic Power Unit (HPU) can help you increase uptime and improve overall lab efficiency for a lower total cost of ownership.

### Energy Conservation

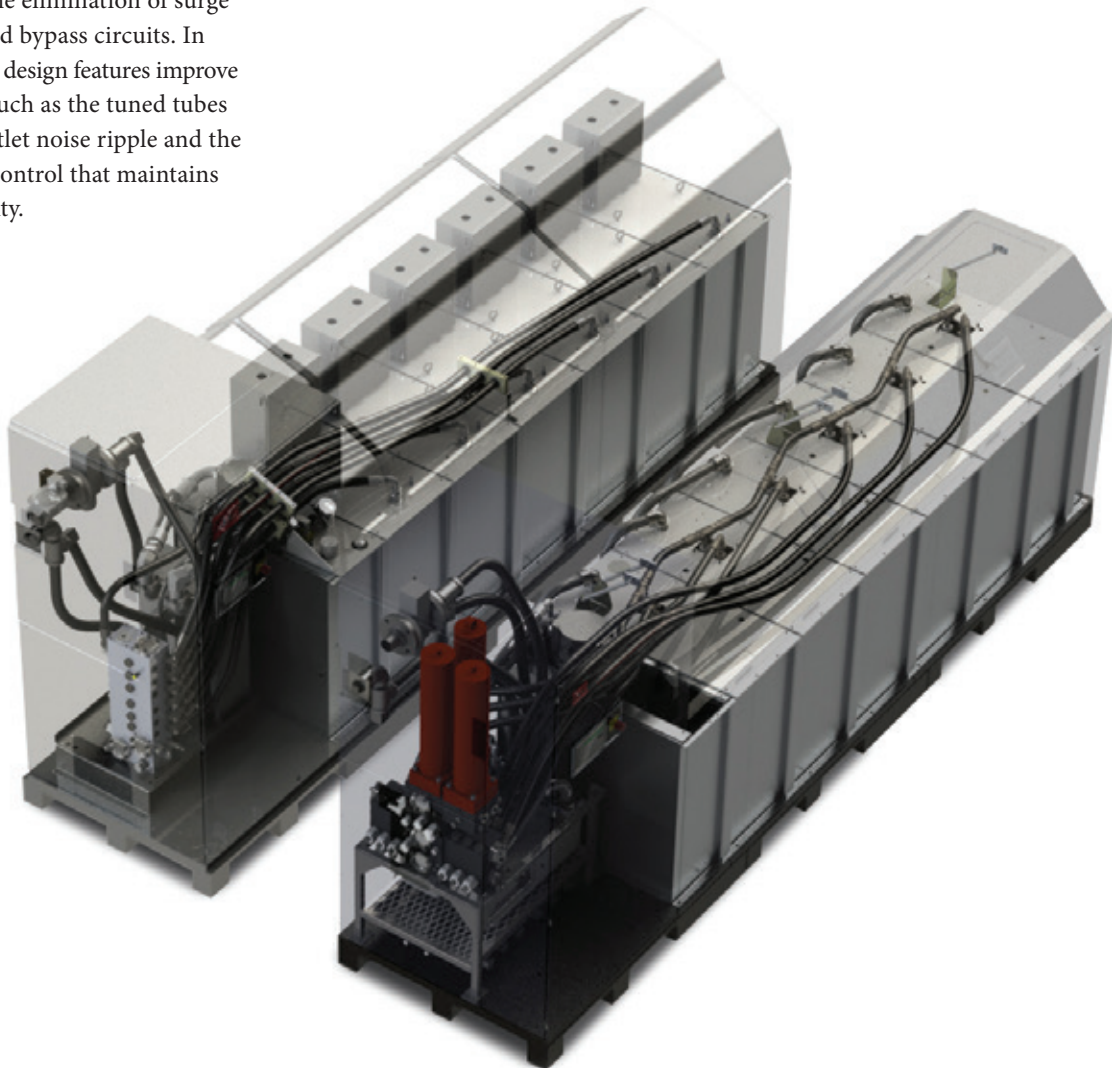
The MTS SilentFlo 515 HPU delivers significant improvements in energy efficiency. With new power modules and cooling circuits, the MTS SilentFlo 515 HPU is up to 8% more energy efficient than previous models. The circulating pump on each power module saves energy by requiring far less power to cool.

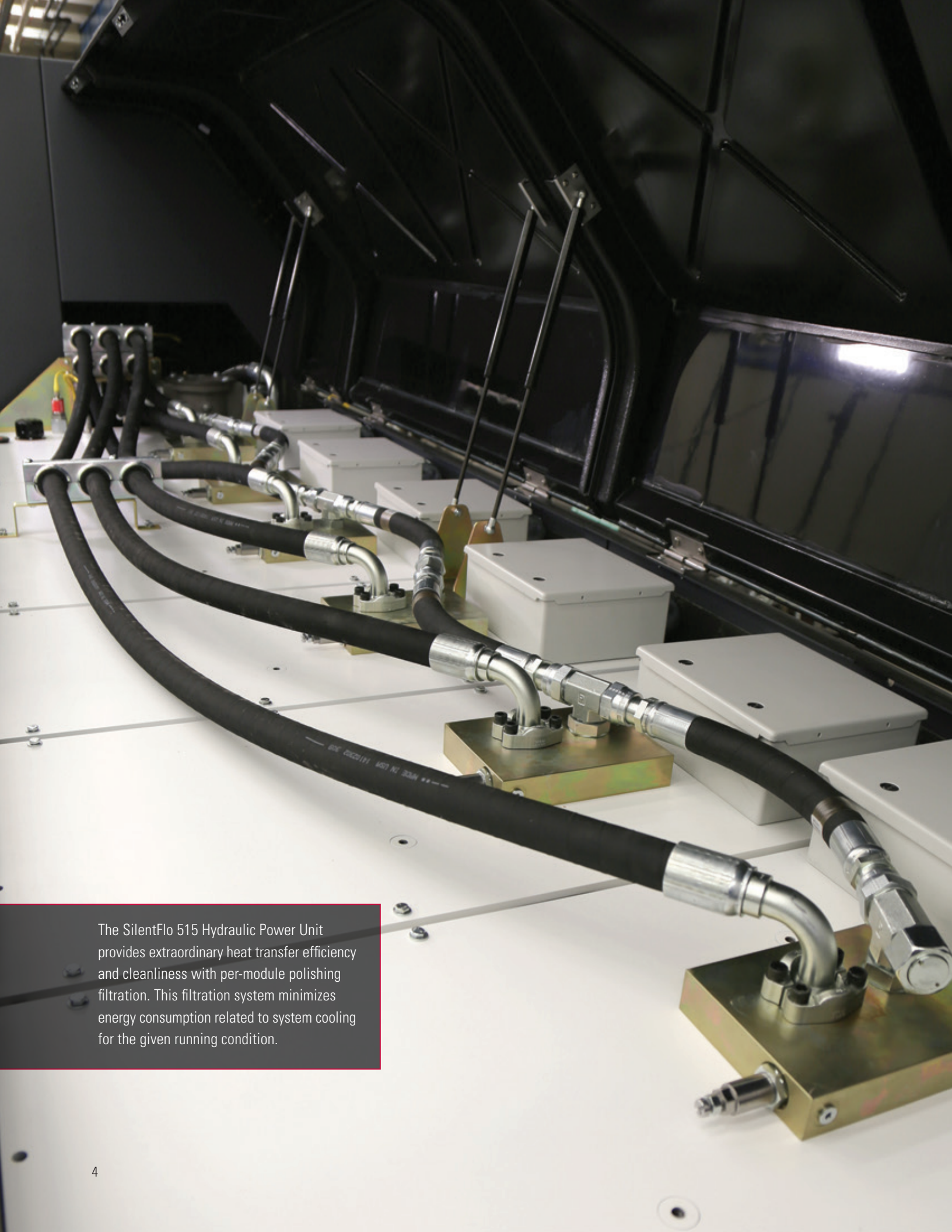
### Performance Reliability

These HPUs are easy to operate and maintain with fewer parts, accessible controls and the elimination of surge suppressors and bypass circuits. In addition, many design features improve performance such as the tuned tubes that reduce outlet noise ripple and the new pressure control that maintains pressure stability.

### Whole Lab Productivity

Compatibility with existing SilentFlo HPUs and new smart monitoring capabilities increase overall lab productivity. A common interface between legacy and new MTS SilentFlo HPUs protects your current investment, enables seamless integration of all units and extends the operating life of the lab. Smart monitoring capabilities give greater access to information about HPU functioning and provide the ability to pre-empt disruptions and manage resources efficiently.





The SilentFlo 515 Hydraulic Power Unit provides extraordinary heat transfer efficiency and cleanliness with per-module polishing filtration. This filtration system minimizes energy consumption related to system cooling for the given running condition.

## The SilentFlo 515 Family

Known for their unmatched quiet and clean operation, MTS SilentFlo hydraulic power units (HPUs) help you power your test systems with superior flexibility and cost-efficiency. SilentFlo HPUs are specifically designed to handle the rigors of extreme, continuous-duty servohydraulic applications, and they perform reliably, year after year.

### FEATURES

- » Intuitive interface
- » TÜV certified\*
- » Energy efficient
- » Integrated cooling options
- » Remote monitoring capability

*\*The SilentFlo product family is certified by TÜV Rheinland, a Nationally Recognized Testing Laboratory (NRTL). The "cTUVus mark" accredited test mark is proof of compliance with U.S. National and Canadian National standards in accordance with Occupational Safety and Health Administration (OSHA) and the Standards Council of Canada (SCC).*

### Energy efficient

SilentFlo HPUs conserve valuable resources. Variable-displacement piston pumps ensure maximum hydraulic efficiency, even during times of reduced flow demand. And an innovative water-cooling system maintains the proper hydraulic fluid operating temperature. These pumps also offer optional water-shutoff valves to minimize water consumption.

### Remote monitoring and control

The SilentFlo 515 HPU comes equipped to integrate monitoring options for easier access to HPU control and information about HPU condition. MTS Echo® Health Monitoring options allow you to monitor your HPU's operational and health status from your control room, office or mobile device. In addition, a Remote Human-Machine Interface (RHMI) lets you transfer tethered control of a single HPU to another location of your choice, with identical screens, functionality and full E-stop capability. Instead of leaving a test station and walking to the pump room to monitor or change HPU settings, test engineers can now perform such tasks from a far more convenient location, improving their productivity.

### Designed for safety

Automatic interlocks protect against inadvertent damage due to high temperatures or high/low fluid levels. For added protection, there are user-selectable shutdown limit and alarms for both temperature and fluid levels. The insulated enclosure keeps SilentFlo HPUs completely cool to the touch on the outside, even after hours of operation. This design helps prevent injury, while eliminating the need for costly ventilation systems.

### Quiet, clean and compact

Depending on the model, SilentFlo HPUs run at 58 – 72 dB(A)—that's up to 30 dB(A) quieter than conventional HPUs—and are designed for extremely clean operation. SilentFlo HPUs require minimal floor space and are small enough to fit through standard doorways. With their quiet, clean and compact design, MTS SilentFlo HPUs can be placed directly on the test lab floor, eliminating the expenses associated with managing a separate pump room and transporting hydraulic fluid across the test facility.



## Fits Your Needs Today and Tomorrow

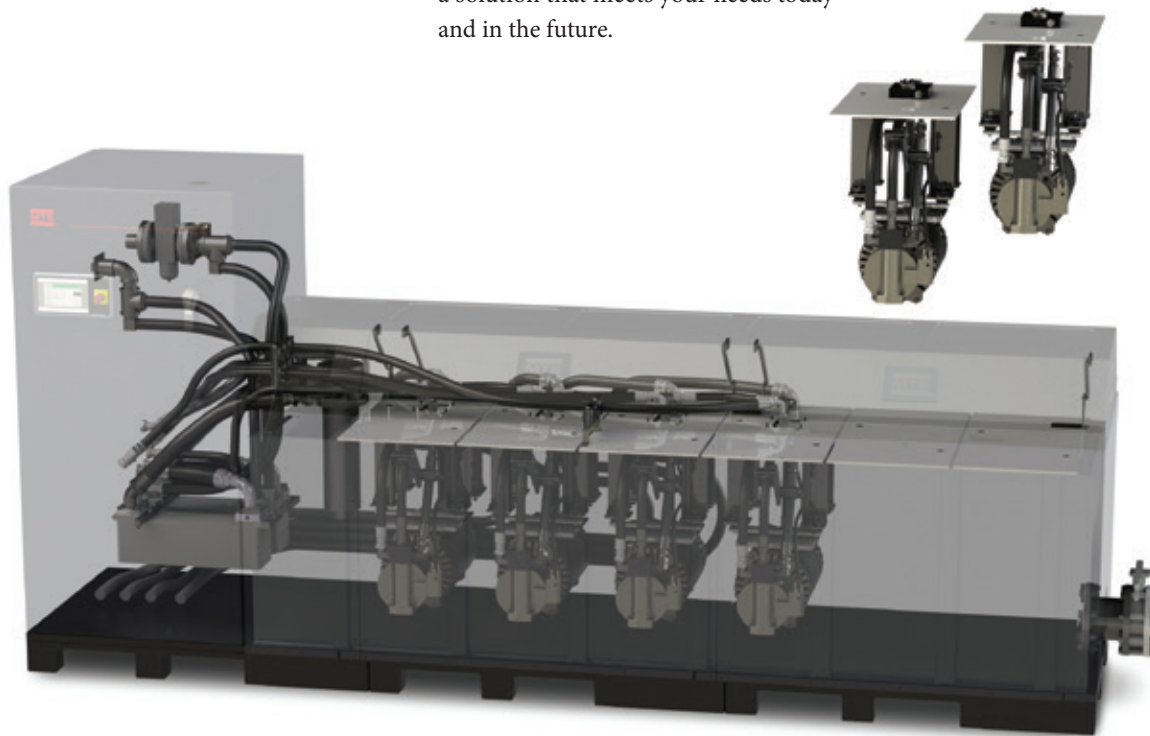
The SilentFlo series supports a wide range of flow demands, with the largest HPU capable of flow rates of up to 681 lpm (180 gpm). These HPUs provide powerful performance in a clean, sleek design that is a welcome addition to any lab.

### Ease of integration

The MTS SilentFlo 515 HPU is compatible with any previous generation SilentFlo HPU released in 1998 or later. With minor upgrades to legacy MTS HPUs, the new SilentFlo 515 HPU can be commoned with existing power units. In addition, upgrades are available to improve the performance of existing power units.

### Completely scalable solution

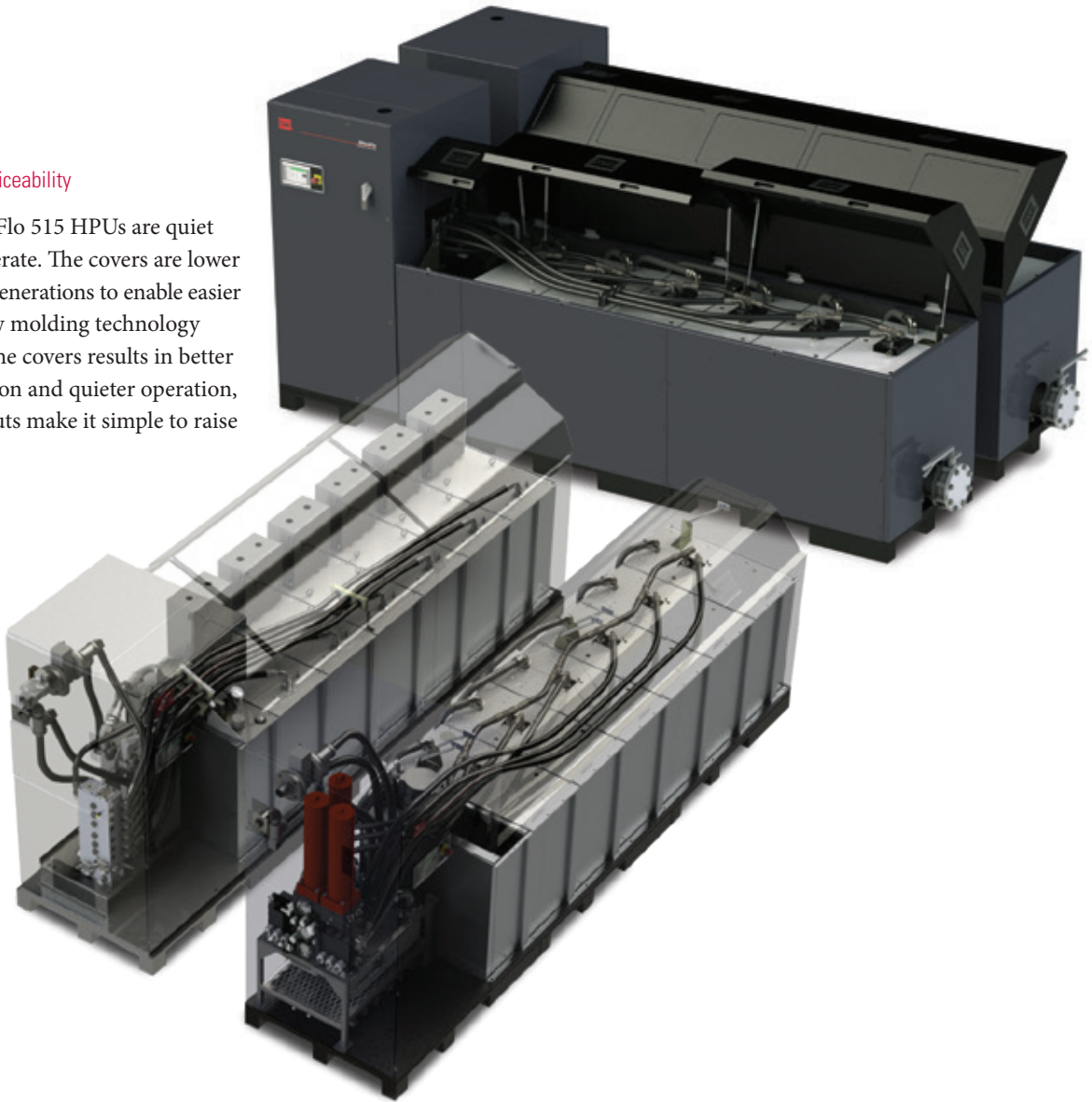
To accommodate your needs over the next few decades, MTS provides easy ways to increase the flow capacity of your HPU. As your testing demands grow, you can add an easy-to-install pump/motor module to gain more capacity at a fraction of the cost of adding another HPU. Your MTS representative can help you select a solution that meets your needs today and in the future.



## Ease of Operation and Maintenance

### Designed for serviceability

The new SilentFlo 515 HPU's are quiet and easy to operate. The covers are lower than previous generations to enable easier access. The new molding technology used to make the covers results in better sound absorption and quieter operation, and the gas struts make it simple to raise the cover.

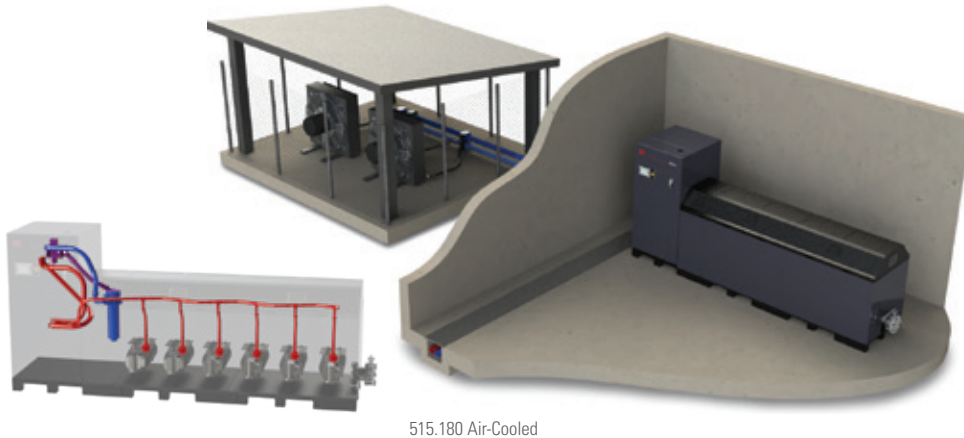


### Easy to Access

These incredibly lightweight covers can be lifted with very little effort, yet can be locked down when the system is in use. Additionally, the side panels can be easily removed for quick access during repairs and upgrades.

## Cooling Choices

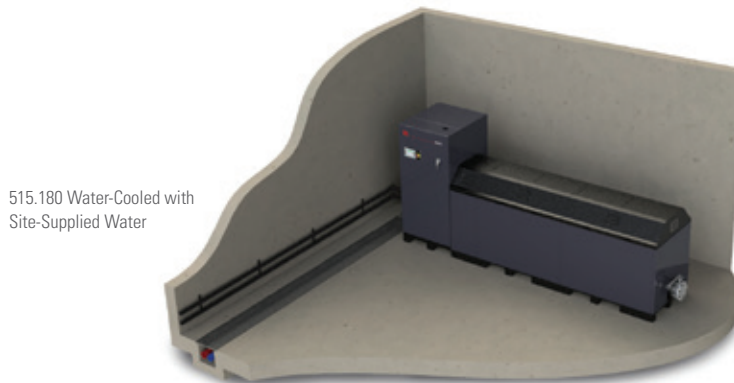
System cooling is an important consideration because it can place significant demand on facility services. MTS SilentFlo 515 HPUs feature a highly efficient cooling system with options for both air and water heat exchanging.



515.180 Air-Cooled

### Air-cooled

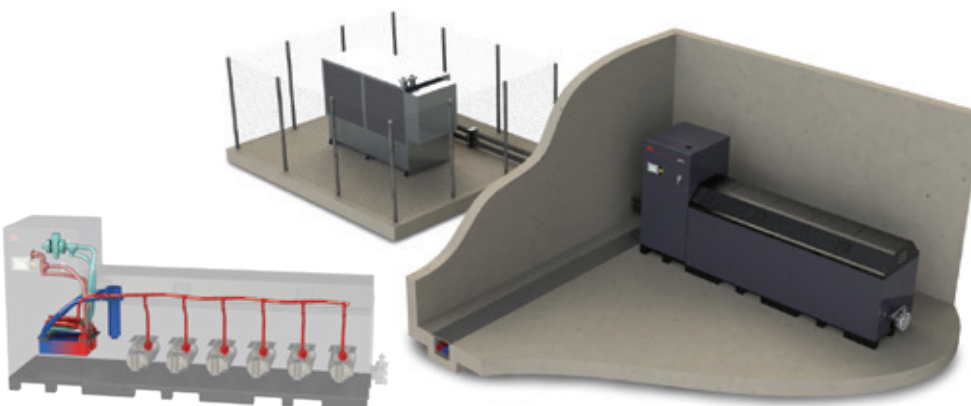
This energy-saving option is a good alternative in moderate climates. The MTS standard packages for air cooling are designed to be used in a sheltered outside installation and require the site to supply a separate three-phase power feed. All standard air cooling packages operate at temperatures from  $-7^{\circ}$  to  $40^{\circ}\text{C}$  ( $20^{\circ}$  to  $104^{\circ}\text{F}$ ), so temperature in and around the structure needs to be within this range. The standard air coolers need to be placed within nine meters (30 feet) of the hydraulic power unit.



515.180 Water-Cooled with Site-Supplied Water

### Water-cooled, site-supplied water

This option is one of the most common ways to cool your system. If you are using city or well water, you may want to include an optional positive shutoff valve that turns off the water when the HPU is not running. This water-saving valve will increase the pressure required to maintain flow rates during operation.



515.180 Water-Cooled with Chiller

### Water-cooled, chiller

MTS can help estimate the size chiller necessary to maintain a closed-loop cooling system for the SilentFlo HPUs in your facility. The SilentFlo 515 HPU is compatible with a wide variety of chiller systems types:

- » Refrigeration
- » Cooling tower – closed-loop
- » Cooling tower – open-loop
- » Cooling tower – open-loop indirect



## Improve Testing Efficiency and Accuracy

Decisions regarding hydraulic fluid power and distribution have a profound impact on test lab productivity. MTS has vast experience across a wide range of industries, and can offer multiple solutions to maximize hydraulic power while minimizing energy use. How you use hydraulic power to start, halt, restart or shutdown safely during planned or unplanned events can greatly impact the amount of testing you can accomplish and the quality of results you receive. With several options for monitoring and proactive care of your hydraulic systems, you can detect threats to hydraulic system health and keep your distribution system operating in optimal condition.

### Optimize power generation

MTS Echo Health Monitoring can help you optimize power generation by protecting your hydraulic power unit from common failures. Early detection of potential issues prevents unplanned downtime for maintenance.

### Manage energy use

With MTS Fluid Power System Management, you can best manage day-to-day energy use and prolong equipment life. Various elements of this solution allow you to control and monitor the pump/motor module(s) within a single HPU, or operate up to eight hydraulically-commoned HPUs as a single system. As a customized solution, more HPUs may be commoned and operated as a single system.

### Monitor system condition

MTS offers several options that allow you to create a customized approach to proactively monitor your entire hydraulic distribution system. Combining onsite fluid sampling with sensor technology, MTS Routine Maintenance and MTS Echo Health Monitoring Services enable the remote measurement and trending of hydraulic system performance.

### Observe lab operations

The MTS Echo Intelligent Lab makes it possible to track tests, monitor test equipment and much more, from anywhere and at any time. Using their preferred mobile technology, authorized personnel get highly secure, on-demand access to the information that is most important to them.

The MTS Echo Intelligent Lab currently includes the following capabilities:

- » **Equipment Monitoring.** Learn the status of any test at any time and from anywhere.
- » **Health Monitoring.** Proactively maintain your test systems with on-demand health updates.
- » **Test Tracking.** Allow your customers to easily track the progress of their tests online.
- » **Online Service Resources.** Manage your MTS software updates and version information from a single location.



## Larger SilentFlo HPUs

### Model 515.60 – 515.180 Specifications

Operating pressure: 21 MPa (3,000 psi)  
 Pump type: Variable displacement pumps  
 Filtration: Full flow on the return side  
 Maximum ambient operating temperature: 40°C (104°F)  
 Minimum ambient operating temperature: 5°C (40°F)

|                               | Model 515.60        | Model 515.90        | Model 515.120        | Model 515.150        | Model 515.180        |
|-------------------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| Flow rates (for 60 Hz models) | 227 lpm (60 gpm)    | 340 lpm (90 gpm)    | 454 lpm (120 gpm)    | 567 lpm (150 gpm)    | 681 lpm (180 gpm)    |
| Flow rates (for 50 Hz models) | 200 lpm (53.2 gpm)  | 300 lpm (80 gpm)    | 400 lpm (106.4 gpm)  | 500 lpm (133 gpm)    | 600 lpm (160 gpm)    |
| Noise level*                  | 68 dB (A)           | 68 dB (A)           | 70 dB (A)            | 71 dB (A)            | 72 dB (A)            |
| Reservoir capacity (maximum)  | 1,211 L (320 gal)   | 1,211 L (320 gal)   | 2,188 L (578 gal)    | 2,188 L (578 gal)    | 2,188 L (578 gal)    |
| Unit dimensions               |                     |                     |                      |                      |                      |
| Width                         | 103.4 cm (40.7 in)  | 103.4 cm (40.7 in)  | 103.4 cm (40.7 in)   | 103.4 cm (40.7 in)   | 103.4 cm (40.7 in)   |
| Height                        | 199.4 cm (78.5 in)  | 199.4 cm (78.5 in)  | 199.4 cm (78.5 in)   | 199.4 cm (78.5 in)   | 199.4 cm (78.5 in)   |
| Length                        | 287.0 cm (113.0 in) | 287.0 cm (113.0 in) | 430.5 cm (169.5 in)  | 430.5 cm (169.5 in)  | 430.5 cm (169.5 in)  |
| Weight with maximum oil       | 2,835 kg (6,250 lb) | 3,289 kg (7,250 lb) | 4,876 kg (10,750 lb) | 5,330 kg (11,750 lb) | 5,783 kg (12,750 lb) |
| Motor size                    | 45 KW (60 Hp)       | 45 KW (60 Hp)       | 45 KW (60 Hp)        | 45 KW (60 Hp)        | 45 KW (60 Hp)        |
| Number of Motor/pump units    | 2, max of 3         | 3                   | 4, max of 6          | 5, max of 6          | 6                    |

\* Sound levels [dB(A)] are expressed as a free field value. Readings may vary with acoustic environment.  
 Specifications subject to change without notice. Please contact MTS for specifications critical to your application.

### Model 515.60 – 515.180 Options

#### ELECTRICAL PACKAGE (FACTORY INSTALLED ONLY)

SilentFlo HPUs support your electrical requirements. Standard voltages from 380 – 575 V AC and frequencies of 50 or 60 Hz may be selected as a factory option (please specify at time of initial order).

#### HIGH PRESSURE FILTRATION

As a standard feature, all SilentFlo HPUs come with a kidney loop for cooling and filtration. A high pressure filter can be added for additional system filtration at the outlet of the pump.

#### AIR COOLING (FACTORY INSTALLED ONLY)

While water cooling is the standard method for maintaining proper hydraulic fluid operating temperature, an environmentally friendly air cooling option is also available.

#### COMMONING

The SilentFlo 515.60-515.180 models can be installed with multiple power units (up to 16) supplying oil to the same hydraulic circuit. The commoning option includes a short extension pipe and valve allowing the reservoirs to be connected together so the fluid levels in all the units stays the same. This option is required for both units and does not include the piping between the two HPUs.

#### ACCUMULATORS

High pressure accumulators are available to help manage surges in flow demand.

#### RUN ON DEMAND (ROD)

The models may be ordered with MTS' run-on-demand (ROD) option which reduces electrical power and cooling water consumption when the system is not running at full capacity. The ROD automatically starts and stops individual pump/motor modules based on system flow requirements.

#### MIRROR IMAGE

The larger SilentFlo power units can be configured with the control panel and hydraulic connections positioned either on the left (standard) or right-hand sides to fit your facility.

## Model 515.60 – 515.180 Order Guide

You can order a SilentFlo HPU by selecting the flow rating, supply voltage, operating pressure and the desired options. Note that some options are not available on all models.

### Model 515.60 – 515.180 SilentFlo HPU

|  |  |
|--|--|
| Hydraulic Power Unit                       | <input type="checkbox"/> 515.60 (3-bay with 2 modules installed)<br><input type="checkbox"/> 515.90 (3-bay with 3 modules installed)<br><input type="checkbox"/> 515.90S-1 (3-bay with 1 module installed)<br><input type="checkbox"/> 515.120 (6-bay with 4 modules installed)<br><input type="checkbox"/> 515.150 (6-bay with 5 modules installed)<br><input type="checkbox"/> 515.180 (6-bay with 6 modules installed)<br><input type="checkbox"/> 515.180S-1 (6-bay with 1 module installed)<br><input type="checkbox"/> 515.180S-2 (6-bay with 2 modules installed)<br><input type="checkbox"/> 515.180S-3 (6-bay with 3 modules installed) |
| Supply Voltage                             | <input type="checkbox"/> 380-3-50 <input type="checkbox"/> 380-3-60<br><input type="checkbox"/> 400-3-50 <input type="checkbox"/> 400-3-60<br><input type="checkbox"/> 415-3-50 <input type="checkbox"/> 440-3-60<br><input type="checkbox"/> 440-3-50 <input type="checkbox"/> 460-3-60<br><input type="checkbox"/> 480-3-60<br><input type="checkbox"/> 575-3-60   |
| Operating Pressure                         | <input type="checkbox"/> 21 MPa (3000 psi)   |
| High Pressure Filter <i>(Optional)</i>     | <input type="checkbox"/> High-pressure full flow filter on the outlet  |
| Heat Exchanger                             | <input type="checkbox"/> Water- or liquid-cooled (stainless steel standard)<br><input type="checkbox"/> Air-cooled   |
| Accumulator <i>(Optional)</i>              | <input type="checkbox"/> US customary certified<br><input type="checkbox"/> CE certified<br><input type="checkbox"/> KHK certified<br><input type="checkbox"/> SELO certified<br><input type="checkbox"/> CRN certified  |
| Transport Kit <i>(Optional)</i>            | <input type="checkbox"/> Transport kit (515.60/90 only)  |
| Commoning Kit <i>(Optional)</i>            | <input type="checkbox"/> Commoning ready kit<br><input type="checkbox"/> Check valves  |
| Run-On-Demand <i>(Optional)</i>            | <input type="checkbox"/> Run-On-Demand   |
| Mirror Image <i>(Optional)</i>             | <input type="checkbox"/> Electrical panel and hydraulic connections on right hand side   |
| Port Kits (available for 90S-1, 60 and 90) | <input type="checkbox"/> -24 JIC<br><input type="checkbox"/> 1.5 inch code 61  |
| Monitoring Options                         | <input type="checkbox"/> Remote monitoring (RHMI)<br><input type="checkbox"/> MTS Echo Health Monitoring   |

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