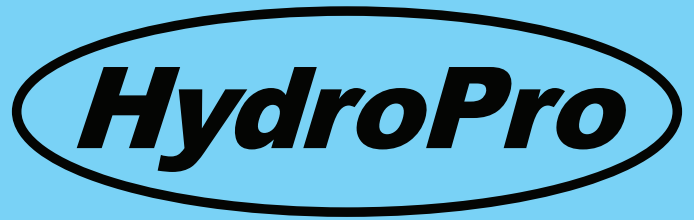


PRODUCT CATALOGUE



SOLUTIONS FOR EXTENDING EXCHANGER LIFE

573-732-3318



www.hpro.com

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SOLUTIONS FOR EXTENDING EXCHANGER LIFE

About HydroPro

...greatly improving tool life, system accuracy, and repeatability of the process as a whole.

HydroPro Incorporated was founded in 1997 by 3 heat exchanger experts who were looking to apply technological advancements to the field of hydraulic tube expansion.

Utilizing their engineering and manufacturing knowledge they completely redesigned and simplified the functionality of both the hydraulic expansion power supply and the tube-to-tubesheet tooling itself. Greatly improving tool life, system accuracy, and repeatability of the process as a whole.

These advancements were implemented into equipment and tooling for tube setting, sleeve/ferrule expansion, plugging, and even hydrotesting.



HydroPro Incorporated
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Today HydroPro stands as the world leader in equipment and technology for hydraulic tube expansion. Offering advanced solutions for extending exchanger life from original production, to preventative maintenance and in-place repair options.

HydroPro JR Series



The HydroPro JR-7 hydraulic expansion system offers users the most versatile tube expansion system in the world, in a lightweight, open frame package. With a digital pressure readout, LED cycle indicators, sturdy steel frame construction, electronic gun, and industrial casters, this system becomes the workhorse for heat exchanger manufacturers around the world. Currently used in more than 30 countries for their day-to-day tube expansion needs.

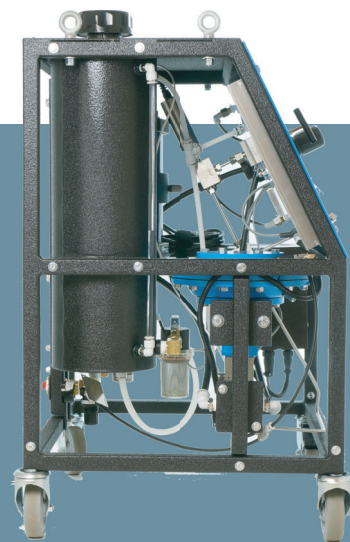
Standard features include

- ✓ Digital Pressure Readout / Display
- ✓ Toggle Switch Protection
- ✓ Faceplate mounted LED cycle indicators
- ✓ 3 Gallon Water Reservoir with Micron Filter
- ✓ Direct Pressure Output (no intensifier)
- ✓ Gun Mounted LED cycle indicators
- ✓ Industrial Casters
- ✓ Universal Electric Power Supply (110/220)
- ✓ H2O Low Level indicator
- ✓ Steel Frame Chassis
- ✓ 20' +/- Flex Tube / Gun Assembly

Optional Upgrades include

- ✓ Full Pneumatic Operation
- ✓ Side Panels
- ✓ USB Data Output (For Logging Expansion Data)

HydroPro's JR-7 hydraulic expansion power supply is the ideal expansion system for most heat exchanger manufacturers around the world. Its high pressure capability (55,000psi) allows for consistent controlled expansion of virtually any tube regardless of size or material. These include, but are not limited to, Stainless Steel, Titanium, Inconel, Hastelloy, Duplex, and AL6XN.





HydroPro HPX Series

HydroPro's HPX series utilizes **many advanced features that make it ideal for use with any expansion application.** Full enclosure panels offer quiet operation, with all of the system components protected from outside contaminants often found in fabrication facilities. Other features include an H2O level indicator, a standard 62,000psi max operating pressure (with 72,500psi max available on some models), LED status indicators, Digital pressure read-out, 44" tall chassis, 3-gallon reservoir, industrial wheels, data output via USB, 1/2% accuracy of scale, and a direct pressure pump (no need for an intensifier).

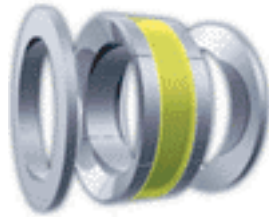
Additional HPX systems include our HPX 7000 System which includes full material traceability, membrane switch controls, and multiple available options often required in Nuclear fabrication and other high documentation applications. Additional options include system controlled multi-stage expansion, gun mounted transducer, and operation via touchscreen tablet.

These systems are further upgradeable to a 72,500psi max operating pressure with our HPX 6070 and HPX 7070, which integrate ultra-high pressure components for expansion of heavy wall exotic materials.



The HPX series of systems utilizes HydroPro's proven Standard Tooling along with our Basic and Fastool tooling options, ensuring you are able to use this machine for all of your hydraulic tube-to-tubesheet expansion needs, ranging from condensers to evaporators, and from high pressure feedwater heaters to reactors.

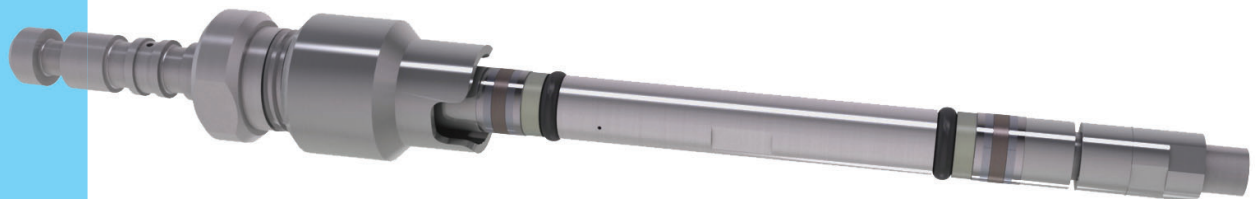
HydroPro Standard Tooling



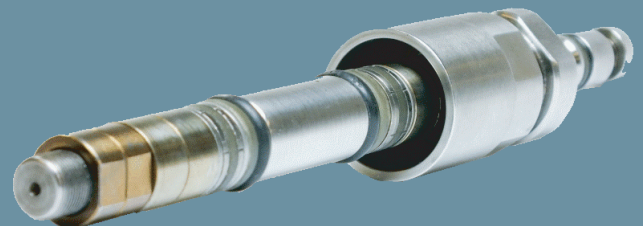
HydroPro Standard Tooling has proven time and again to be the most reliable and repeatable high-pressure tube expansion solution available. Our patented dual Cam / Segment configuration ensures both sustained high-pressure capabilities and long parts life. Something no other hydraulic expansion tool can offer.

The dual Cam setup allows the tool to remain centered axially inside the tube, and avoid "side loading" which occurs when the tool allows a higher volume of water on one side of the tool than another. This most often occurs when a single Cam design is used, or when no Segment Assembly is used.

Our tooling is trusted by nuclear and military fabricators around the world to ensure reliable results. With no maximum limit to tubesheet thickness and no tube size limitations, HydroPro tooling can be used on virtually any type of exchanger from air coolers to extreme pressure feedwater heaters.



Standard Tooling design is used in both tube-to-tubesheet expansion at extreme high pressures as well as sleeve / liner installation using our SleevePro systems, which is completed at much lower pressures, but typically with higher water volume. The design of our Standard Tool ensures maximum tube growth can be achieved without loss of seal under pressure.



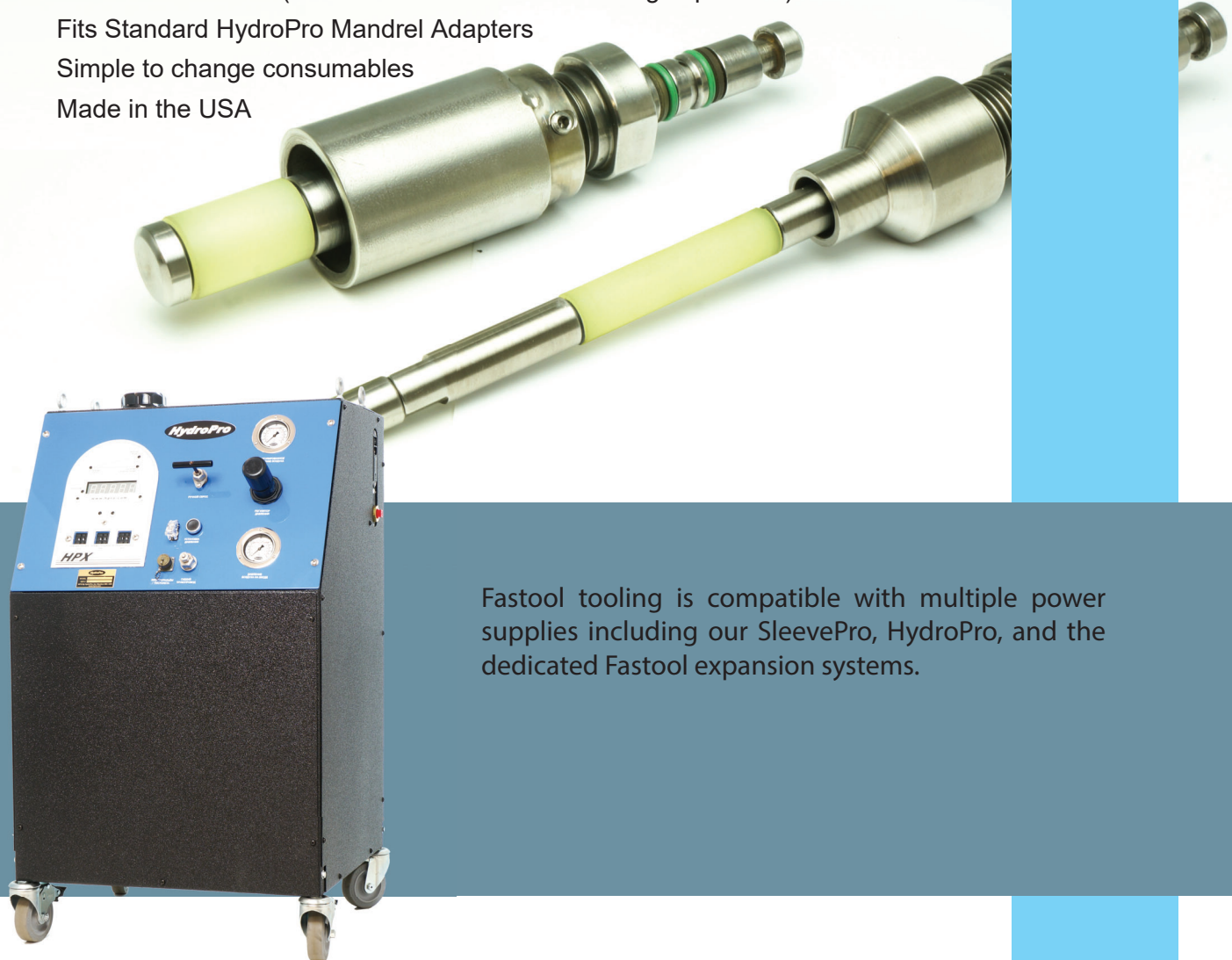


Fastool Tooling

Fastool is a revolutionary tool design that, depending on the application, can be used with our SleevePro or HydroPro power supplies along with our standalone Fastool system. It utilizes a polyurethane sleeve which encases the water during expansion and **requires less than half the consumables of our standard tooling**. The fluid actuates the polyurethane expansion sleeve, allowing greater tube expansion without the need to pre-seal against the tube ID. This means that retube applications need not have as tight of ID tolerances, and without losing the ability to expand into oval tube holes.

Fastool Benefits (Compared to HydroPro Standard Tooling)

- 85% Fewer Components
- Easier Tool Insertion / Removal for Faster Production (No Lubricant Required)
- Easily Expand Thin Tubesheets
- Increased time between needing to change consumables
- Same Repeatable Expansion Results as with Standard Tooling
- Water is Contained (No water left in the unit following expansion)
- Fits Standard HydroPro Mandrel Adapters
- Simple to change consumables
- Made in the USA



Fastool tooling is compatible with multiple power supplies including our SleevePro, HydroPro, and the dedicated Fastool expansion systems.

SleevePro

SleevePro

The SleevePro system is the most reliable and proven method of hydraulically expanding sleeves or inserts available in the world. Using our proven HydroPro tooling, sleeves of virtually any material and length can be installed to breathe more life into aging exchangers, or as preventative measures in new ones.

Whether a fin-fan unit with tube failures behind the tubesheet, TLEs with inlet erosion, or a feedwater heater with baffle vibration failures, the SleevePro expansion system is the most effective way to keep it the unit in service.

Utilizing a patented strain relief system, the SleevePro Digital System will monitor for tube yield and help to prevent over-expansion from user error.

The SleevePro is available as the SP-1 (15,000 psi) which comes in a lightweight steel chassis, or the SP-2 (30,000 psi) which comes in a slightly larger steel frame chassis with industrial wheels. Both are available in either Digital or Fully Pneumatic operation and can be built into a Watertight Pelican case for the ultimate in portability.

Both the SP-1 and SP-2 Digital Systems include five operating modes.

- Manual Mode
- Test Mode
- STEP Mode
- Production Mode
- HydroPro Mode

The SleevePro system can be used with all Standard and Basic HydroPro Tooling as well as Fastool Tooling.

SleevePro technology is ideal for use in many production applications that require great control over the pressures used and/or a lengthy expansion area.

- Tube-to-Fin Expansion
- Double Tube Expansion
- Tube-to-Extrusion Expansion



TubePro

WeldLock

The TubePro and WeldLock systems were developed to combat common issues with tube end prep. Too often, tube ends are set in the bottom of the tube hole during welding, or have variances in protrusion. Both the TubePro and WeldLock tools will correct both of these issues.

The TubePro system is ideal for setting tubes prior to final tube expansion and is especially effective on U-tubes or units with exotic materials to ensure consistent protrusion, that tubes are centered in the hole, and that they're securely locked into the tubesheet.

The WeldLock system was developed specifically for use prior to automated orbital welding and works great for locking tubes prior to manual welding or final tube expansion. Utilizing a metal segment expander, the WeldLock tool leaves small gaps for weld gasses to escape, preventing blow back often experienced when using automated welders after tubes have been "tack rolled". By centering the tube in the hole and creating consistent protrusions it helps to ensure overall weld quality across the entire unit, regardless of whether welding is manual or automated. WeldLock tooling doesn't require lubrication either, ensuring a clean joint for welding.

TubePro / WeldLock



Both TubePro and WeldLock power supplies are a closed loop hydraulic system and are fully pneumatic for simple operation. Both come in compact steel frame chassis' and gun assemblies come standard with a 20' umbilical.





HydroPro

HydroProof



HydroProof

The HydroProof system offers users the ability to perform a true hydro-test at up to 2,000psi on an individual tube or tube joint, using a small portable power supply that is designed to fit into manways. This method of testing drastically reduces time spent locating leakers for repair.

By using two Full Tube Test Fixtures an operator can hydro-test a full tube in a matter of minutes, regardless of whether a straight tube or a u-tube. A tube-to-tubesheet joint can be tested in mere seconds using a Joint Test Fixture which seals on the ID of the tube and the face of the tubesheet. Joint fixtures can also be made for curved Boiler drums, long reach requirements and other custom applications.

Test fixtures can be used for a timed test as per your specific requirements, while other tubes/joints are tested using additional fixtures.



Joint Test Fixture



Full Tube Test Fixtures

The HydroProof power supply comes standard in a watertight case designed to be compact and portable, with the ability to fit through manways. The HydroProof can be operated via a hand pump or a compressed air connection, and includes a small reservoir that's the ideal water volume for performing joint testing without the need for an external water source.





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