



**TM-7 PLUS**

Mounted Valve Exerciser

General		Yes	No	Specify
<b>Capacity</b>	Operates all valves 4" (100mm) and larger.	X		
<b>Speed</b>	16 RPM at rated flow	X		
<b>Torque</b>	0-2,500 ft/lbs (0-3390 Nm) fully isolated within equipment's design.	X		
<b>Supply Requirements</b>	8 GPM @ 2,000 PSI (30 LPM @ 138 BAR), recommended 4-8 GPM variable.	X		
<b>Finish</b>	White & black, two part epoxy on carbon steel components.	X		

Dexterity		Yes	No	Specify
<b>Reach</b>	21 inches from frame to center of head; 27 inches maximum.	X		
<b>Alignment</b>	Valve key swivel mount allows up to 15 degrees of valve stem misalignment.	X		
<b>Valve Key</b>	Included valve key operates standard AWWA 2" nuts to a depth of 6', rated for 2,500 ft/lbs (3390 Nm) of torque. Longer, shorter and low clearance keys are available as options.	X		

Operation		Yes	No	Specify
<b>Valve Machine Intelligent Automation (VITALS)</b>  <b>Patent: #5,937,373</b>	Wachs valve exercisers utilize proprietary "no assumption" automation technology to safely and effectively turn valves using AWWA recommended procedures. This technology protects the operators by keeping their "hands off" the machine while exercising the valve and protects the valve by not assuming size, direction, or current position. Torque is applied until the device senses resistance, causing the programming and sensors to automatically stop the rotation and reverse in half-turn increments to flush calcification from the valve gate. This patented automation process exercises valves at the minimum torque required to turn, then automatically lowers the preset threshold once rotation begins so the impact at end of valve travel is soft as possible.	X		
<b>TC-110 Controller (#79-106-XX)</b>	Ruggedized Windows 11 Pro Tablet Controller to operate and collect data for either arm (ERV-750) or slide (TM-6 upgraded & TM-7) style valve exercisers. The TC-110 includes a built-in GPS and bright touch screen display. TC-110 is water resistant and meets IP68 and MIL-STD-810H military specifications. Includes TC-110 tablet controller with battery, stylus and tether, hand strap, AC 120V wall charger, 12V vehicle charger and dedicated control cable assembly.			Optional
<b>Plus Interface</b>	Operated through either proprietary Intelligent Automation (VITALS) or fail-safe manual local interface (Plus) to control torque, direction and turns in the event the computer control is not available. A pressure gauge and corresponding chart assist operator in controlling the power, while a direction control switch and associated bi-directional digital counter keeps track of rotational position.	X		
<b>Operator Safety</b>	No operator support or interaction required during valve exercise, all reaction torque and feedback is absorbed through machine only. This combined with automated control allow the operator to start the exercise then get out of any environmental conditions which may pose a hazard. When combined with optional wireless control tether (#79-419-00), allows operator to monitor and control the exerciser up to 25' away for increased safety.	X		
<b>Bluetooth Tether</b>	Wireless control of your valve exercising machine(s) via a secure Bluetooth connection. Up to 25' range to control the exerciser.	X		
<b>Data Management</b>	Fully compatible with VITALS database, or infraMap with VITALS, Unity with Vitals or Sedaru with Vitals GIS software packages which enable full data logging and synchronization between the handheld and your ArcGIS database. Allows importing/exporting of existing data labels and categories with user defined fields. Conforms to the AWWA Valve Exercising Standard.	X		



<b>Mechanical</b>		Yes	No	Specify
<b>Positioning</b>	TM-7 HD Plus standard on Grand LX Trailer, optional on Standard LX Skid, not available on Standard LX Trailer. Driver side mounting for line of sight. Exerciser reach slide locked in place with use of a single, over-center cam.	X		
<b>Materials of Construction</b>	Frame - 3/16" formed carbon steel weldment Exerciser Slide - Cast aluminum alloy Reservoir - 1/8" (10 Ga) cold rolled steel	X		
<b>Torque Measurement</b>	A single pressure transducer combined with an calibration script, samples system pressure in both directions prior to beginning an exercise for precise feedback every exercise.	X		
<b>Drive</b>	Single heavy duty hydraulic drive motor with spur gear offset drive reduction allowing for pass through of drive key to keep operating head at a consistent and convenient working height.	X		

<b>Power Supply</b>		Yes	No	Specify
<b>Hydraulic Reservoir</b>	10 gallon [37 L] hydraulic reservoir with thermostatic controlled fan cooled heat exchanger (factory set at 120F/49C). Hydraulic circuits controlled via solenoid operated control valve with pressure neutral, return to tank default position or if over temp is signaled (185F/85C). All electrical terminations are Deutsch IP67 waterproof connectors; hydraulic are leak tight JIC or O-ring face. Reservoir cleaning, filler neck and filter all easily accessed through front panel. Instrumentation includes an oil level gauge, temperature gauge, pressure gauge, selector switch for hydraulic circuit with status lights.			Optional
<b>Gas Engine (79-405-00)</b>	Stand alone HTMA Class II Hydraulic Power Supply Skid unit with electric start 16 Hp (19 kW) Briggs & Stratton Vanguard V-Twin Engine with 10 gallon reservoir, heat exchanger and auxiliary tool circuit. Supplies both hydraulic and 12v power to either TM-7 or ERV-750 valve operators.			Optional