

## Standard LX VMS

### Valve Maintenance Skid System

Valve Exercising Equipment		Yes	No	Specify
<b>ERV-750</b> <i>Patents:</i> #9,523,443 #9,188,240 #9,038,667 #8,025,078	An articulating arm, automated valve operator, utilizing proprietary intelligent automation (VITALS) to control torque, direction, and turns. Dual arms (one telescoping) provide 13' [3.9 m] reach over 270 degrees of freedom while automatic hydraulic disk brakes safely secure equipment in any position during operations up to 750 ft/lbs [1016 Nm] of torque. Constructed of 3" [76 mm] square steel tube. Powder coated for long life. A lightweight, telescoping valve key is also provided.	X		
<b>TM-7 HD Plus (#17-405-00)</b>  <i>Patent:</i> #5,381,996	Heavy duty, slide style, skid mount valve exerciser operated through either proprietary Intelligent Automation (VITALS) or fail-safe manual local interface (Plus) to control torque, direction, and turns. Rigidly mounted to the skid frame, the 27" [685 mm] head extension safely and securely exercises valves up to 2,500 ft/lbs [2033 Nm] torque. An 8' [2.4 m] long valve key with a 2" [50 mm] universal socket is also provided.			Optional
<b>Valve Machine Intelligent Automation (VITALS)</b>  <i>Patent:</i> #5,937,373	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 (#79-423-05)</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.	X		
<b>Data Management</b>	Fully compatible with the VITALS database, infraMap with VITALS, Unity with VITALS, or Sedaru with VITALS GIS software packages enabling 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.	X		

Power Pack		Yes	No	Specify
<b>Engine</b>	Kubota 1.1L, I-3 4-stroke, liquid cooled, IDI diesel engine EPA Tier 4F & EU Stage IIIA emission compliant (VMS #77-000-54)			Skid Option
	Kohler (Rehko) 27 HP [20.1 KW] gasoline engine, model CH7405 Command Pro 27 (VMS #77-000-55)			
<b>Fuel Tank</b>	Heavy duty 10 gallon (38L) fuel tank, complies with all Federal Motor Carrier Safety Administration requirements for non-side mounted fuel tanks.	X		
<b>Battery</b>	12V, 550 CCA, Size 24 deep cycle battery fully enclosed and mechanically secured.	X		
<b>Controls</b>	Digital tachometer, engine hour meter, volt meter, vacuum gauge, spoils dump switch, spoils door switch, water/vacuum selector switch, arrow board control and service light switch.	X		
<b>Vacuum Pump</b>	Clutch operated, dual belt drive, positive displacement rotary lobe (Roots Type) blower. Vacuum performance of 500 CFM [14 CMM] @ 11 inches of Hg [37.2 kPa] produces conveying velocity rating of 10,185 FPM [3,104 MPM] through 3" [76 mm] hose.	X		
<b>Water Pump</b>	Clutch operated, belt driven, 2.5 GPM [9.4 lpm] @ 3,000 PSI [206 BAR] pump.	X		
<b>Hydraulic System</b>	HTMA class II direct-coupled pump rated at 8 GPM [30 LPM] @ 2,000 PSI [138 BAR] continuous duty. 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; hydraulics are leak-tight JIC or O-ring face. Reservoir cleaning, filler neck, and filter are all easily accessed through the front panel. Instrumentation includes an oil level gauge, temperature gauge, pressure gauge, and selector switch for the hydraulic circuit with status lights.	X		

Spoils - Rear Discharge (pump specifications in the Power Pack section)			
		Yes	No
		Specify	
<b>Debris Holding Tank</b>	250 gallon [946 L] holding capacity. Top-hinged, full-opening dump door with twin hydraulic remote operation door latches, sure seal square gasket, vacuum break valve, 6" [152 mm] mechanical ball shut-off, and 3" [76 mm] dump valve.	X	
<b>Filtration</b>	Staged filtration consisting of a heavy material drop out debris tank and a self-contained multi-stage filter canister with a 10 micron polyester reusable cartridge. All filters washable and reusable.	X	
<b>Dumping</b>	Twin cylinder, electric over hydraulic dump system, powered by Monarch HPU. The slide and tip system moves the tank out before tilting to clear the truck for dumping, then lifts to 55 degrees to drop debris.	X	
<b>Dump Chute</b>	10 gauge, rolled Stainless Steel	X	
<b>Hose and Wands</b>	3" x 20' [76 mm x 6 m] suction hose with 2.5" [63 mm], 1.25" [31 mm] and .875" [22 mm] x 8' [2.4 m] long steel suction wands.	X	

Pressure Washer (pump specifications in the Power Pack section)			
		Yes	No
		Specify	
<b>Water Holding Tank</b>	95 gallon [360 L] clean water holding tank with 8" [203 mm] fill neck & remote, quick disconnect fill with backflow preventor	X	
<b>Winterization</b>	Low point drain for held water & recirculation system allows operation in sub-zero temperatures. A separate (3) gallon [11 L] antifreeze tank with two position selector valve allows pump to source antifreeze and prime entire system.	X	
<b>Hose and Wands</b>	50' [15.2 m] hose on spring rewind hose reel uses quick disconnects to change between the (2) included wands; one with a zero degree nozzle for digging and 45 degree, fan wash down "shorty" wand.	X	
<b>Hot Water Heater (#77-414-02)</b>	Optional for cold weather climates, used in conjunction with 2.5 GPM [9.4 LPM] at 3000 PSI [206 BAR] pressure washer, diesel fired water heater produces 197,000 BTUs of energy. Adjustable to 210 degrees F [98 degrees C], the unit has flow and temperature limit switches to maintain safe operation.		Optional

Skid			
		Yes	No
		Specify	
<b>Frame</b>	A36 formed steel fabrication utilizing 1/4" thick material on structural tube frames and 3/16" thick material elsewhere; welded in accordance with AWS D1.3/D1.3M:2018 & AWS D1.1/D1.1M:2015 standards.	X	
<b>Storage</b>	Integrated storage for (3) 8' long vacuum wands in the dedicated magazine, (2) pressure washer wands in the dedicated magazine, telescoping valve key for ERV-750 in quick access tray, and long storage for Valve Nut Rx (optional) or TM-7 valve keys (optional).	X	
<b>Access</b>	Arrangement and features provide for safe work flow, operational interfaces and access to features provided either curb side or at the rear of skid (irrespective options)	X	
<b>Lifting</b>	2X fork lift points at both the rear of the frame and a second set curb side assessable through removable service covers.	X	
<b>Finish</b>	Entire fabricated skid is solvent washed and phosphoric etched. All seams are caulked then a two part urethane paint (color black) applied.	X	

LX Features			
		Yes	No
		Specify	
<b>Job Box (#77-409-00)</b>	Heavy duty, locking, polished diamond plate job box. (Not available when TM-7 HD Plus is optioned)		Optional
<b>Service Lighting</b>	Programmable arrow board light bar features six lighting sections, dual-mounted swiveling LED work lights, multi-position switch.	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>Hydraulic Hose Reel</b>	50' [15.2 m] spring rewind hose reel with quick disconnects for auxiliary hydraulic power.	X	