VEEDER-ROOT

The Red Jacket® 2 HP Low Pressure Red Armor® Submersible Turbine Pump – 60Hz

STP Description

The Red Jacket Red Armor (RA) Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, and its advanced packer manifold design makes it the industry's easiest and safest STP to install and service. Available in 3/4 HP to 2 HP configurations in variable Quick Set® lengths. As a Veeder-Root flagship product line, Red Jacket is backed by the largest network of distributors and authorized service contractors worldwide.

4" Red Jacket RA STP

Part #	Description	Model #	Notes
0410142-087	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 78.5" - 108.5" Length	AGPL200S1-3 RA1	• 2 HP – Low Pressure, 1.5 KW, 208/230 Voltage, single-phase. • Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet. • FSA stands for Floating Suction Adapter.
0410142-088	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 108.5" - 168.5" Length	AGPL200S1-3 RA2	
0410142-089	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 168.5" - 228.5" Length	AGPL200S1-3 RA3	
0410142-090	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 80.9" - 110.9" Length	AGPL200S1-3 RA1 FSA	
0410142-091	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 119.9" - 170.9" Length	AGPL200S1-3 RA2 FSA	
0410142-092	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 170.9" - 230.5" Length	AGPL200S1-3 RA3 FSA	

Fuel Compatibility

The Red Jacket RA Submersible Turbine Pump Model is UL Listed for:	STP Application Description
• 100% Gasoline • 100% Diesel • 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline • 85% Gasoline with 15% Methanol • 90% Gasoline with 10% Ethanol	STP shall be of submersible centrifugal type which installs through a standard 4" threaded tank opening. Motor size shall be from 3/4 through 2 HP, depending upon required flow rates and head loss of a given piping system.

Mechanical Features

Pump	Impellers and Diffusers
Pump shall be multi-stage, dependent upon required flow rate, self-lubricating and easily removed from storage tank without disconnecting discharge piping, mechanical or electronic leak detectors or siphon systems. The pump and motor assembly shall be readily separable from the pump column pipe to allow for simple field replacement of the pump and motor.	Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.
Pump Intake Inlet	**Manifold Head Assembly**
Pump intake inlet shall be horizontal to prevent drawing sediment from the tank bottom into the pump inlet. The intake inlet shall be compatible with the particulate "Trapper" to prevent particulate from being ingested into the motor.	Manifold head assembly shall consist of a manifold and extractable packer assembly and shall be completely sealed against product leakage into the ground and exterior water intrusion into the storage tank. The discharge outlet shall be a 2" NPT opening. The manifold shall have a built-in air purge screw, line check valve, pressure relief valve, and shall support dual vacuum sensor siphon systems when required. The extractable packer shall incorporate industrial die springs to break loose the o-ring seals, when the flange nuts holding the extractable packer in place are removed. No physical lifting effort or special equipment shall be required to break the extractable packer seals. The contractor's box shall be built into the manifold head assembly and be completely isolated from the fuel path. The extractable packer assembly shall incorporate a lifting eye for safe extraction of the pump motor.

Mechanical Features (Continued)	**Electrical Disconnect**	**Check Valve with "Lock-n-Lift" Feature**
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, when the extractable packer assembly is removed. Re-insertion of the extractable packer and tightening of the flange nuts shall remake the electrical connection.	The check valve shall incorporate a "Lock-n-Lift" feature that mechanically locks the check valve and lifts to provide a larger path to depressurize the line and manifold head assembly, returning fuel to the tank preventing service spills. The check valve shall provide pressure relief of the product line and be optimized for compatibility with Veeder-Root PLLD systems.
	Vacuum Sensor Siphon System	**Quick Set®**
	The vacuum sensor siphon system shall be capable of drawing 25" of mercury vacuum through a venturi. The vacuum sensor siphon shall incorporate a check valve to maintain the siphon system vacuum after the pump has been turned off. Check valves shall be incorporated on the siphon inlet and fuel source inlet to the venturi. The inlet shall incorporate a screen that reduces clogs and failures that can cause false alarms on vacuum monitor systems. The vacuum sensor siphon system shall incorporate a swivel top for easy connection to siphon tubing. The vacuum sensor siphon system shall be designed to integrate with Veeder-Root Vacuum Sensors. The manifold head assembly shall support dual vacuum sensor siphon systems for vacuum monitoring or siphon manifold applications. Unused vacuum siphon ports shall be sealed with a plug designed specifically for that purpose.	The Quick Set feature shall be capable of varying the overall pump length. The Quick Set shall incorporate a collet gripping mechanism and setscrew as a locking mechanism allowing future resizing.
Electrical Features	**Electric Motors – 4" Models**	**Connections**
	The motor shall be 208/230 volt, 60Hz, single-phase, 3450 RPM, permanent split capacitor type continuous duty, rated explosion proof in Class 1, Group D, petroleum products. The motor windings shall be hermetically sealed against leakage of product or moisture, and shall have a thermal overload device with automatic reset built into the motor windings for motor cut-off when motor temperature reaches a level which may cause damage to the motor.	The motor shall have a quick-disconnect type male/female connector to be readily separable for servicing without cutting or splicing of conducting wires. Wiring connections to the motor shall be disconnected by the quick-disconnect. Reconnecting motor to column pipe shall use an alignment dowel pin for positive realignment of electrical male/female connector.
Construction	**Accessibility**	**Assembly Order**
	All components shall be designed and assembled to facilitate disassembly and servicing from above without disrupting the discharge piping, leak detection equipment and vacuum sensor siphon systems.	The pump shall be assembled with the pump inlet and impellers at the bottom for maximum liquid draw. The motor is to be mounted above the pump inlet, so that the motor is both cooled and lubricated by the liquid flow through and past the motor.
Environmental	• The Red Jacket RA STP has an additional 30% increase in stainless steel hardware from The Red Jacket AG STP. • The pump assembly shall be rated for operation between -40°F (-40°C) and 105°F (40.5°C) in non-gelling petroleum products. • The pump assembly shall be listed under UL 79 for operation between -20°F (-4°C) and 125°F (51°C) ambient environment. • The product temperature must not exceed 105°F (40.5°C). • Petroleum shall not exceed the specific gravity as stated in the installation manuals (ranging from 0.86 - 0.95) based upon the specific pump model. • Maximum viscosity allowable – 70SSU @ 60°F (15°C).	
Approvals	UL 79, UL 79A, UL 79B, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

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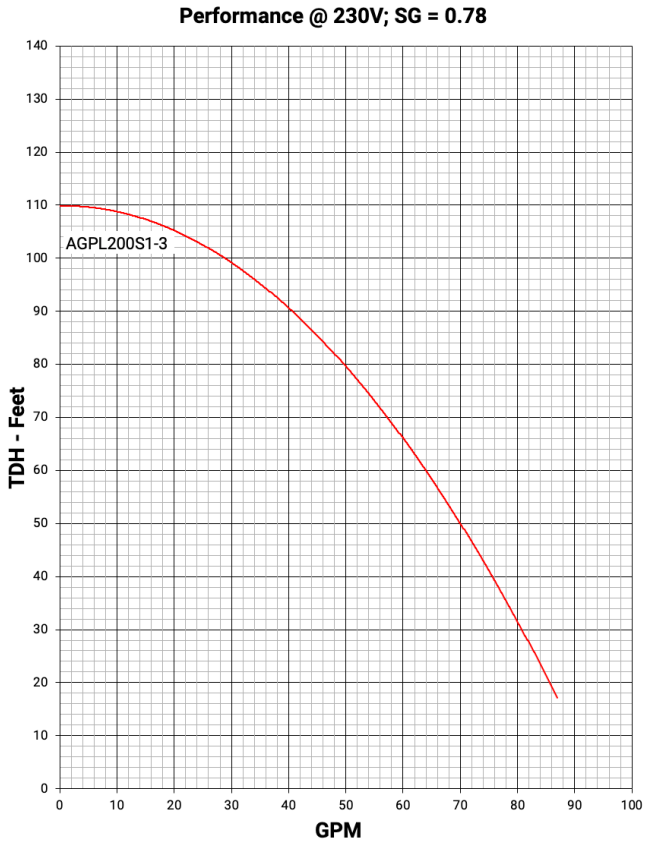
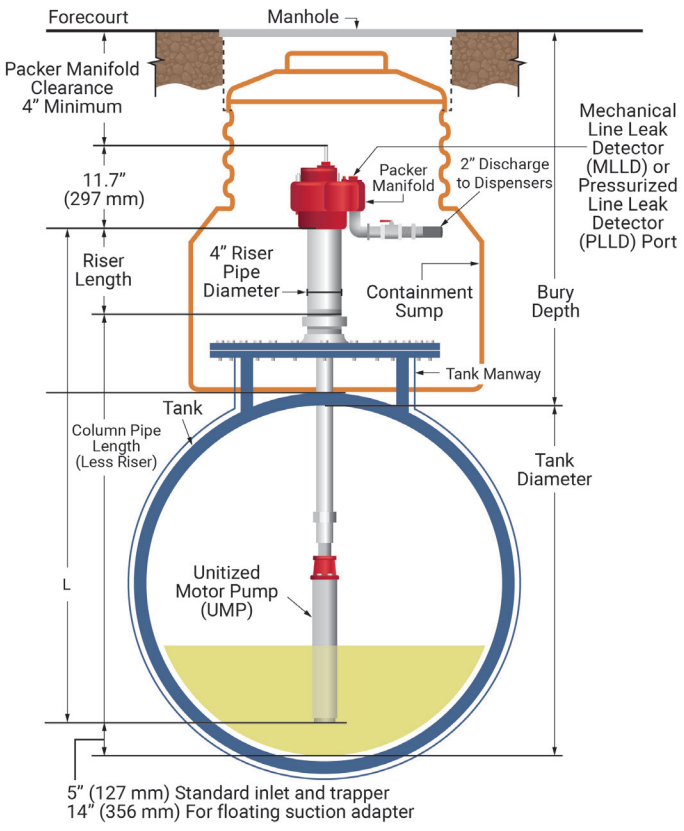
The Red Jacket® 2 HP Low Pressure Red Armor® Submersible Turbine Pump – 60Hz

	4" Red Jacket RA STP Models		
	Component	**Material**	**Surface Finish**
Bill of Materials	**Packer/Manifold Head**	Gray Cast Iron	Powder Coat
	Elastomers – "O" Rings	High Grade Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Stainless Steel	None
	Column Pipes	Stainless Steel	None
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Stainless Steel	Passivation
	Discharge Head	Gray Cast Iron	Powder Coat
	Retaining Nuts	Stainless Steel	Passivation
	Die Springs	Stainless Steel	Passivation
	Purge Screw	Stainless Steel	Passivation
	Siphon Cartridge	Stainless Steel	Passivation
	Pump/Motor		
	Outer Shell	Stainless Steel	None
	Stator Shell	Stainless Steel	None
	Rotor Shaft	Stainless Steel	None
	Impellers & Diffusers	(Acetel) Celcon® Plastic	None
	Motor Bearings	Carbon	None

The Red Jacket RA STP Performance



The Red Jacket RA STP Dimensions



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Example Illustrations

Illustrations used in this guide may contain components that are customer supplied and not included with the Red Jacket Submersible Turbine Pump. Please check with your Veeder-Root Distributor for recommended installation accessories.

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