

Submersible Turbine Pump Products

Application Guide



VEEDER-ROOT

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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.

The Red Jacket® Submersible Turbine Pumps **60Hz**



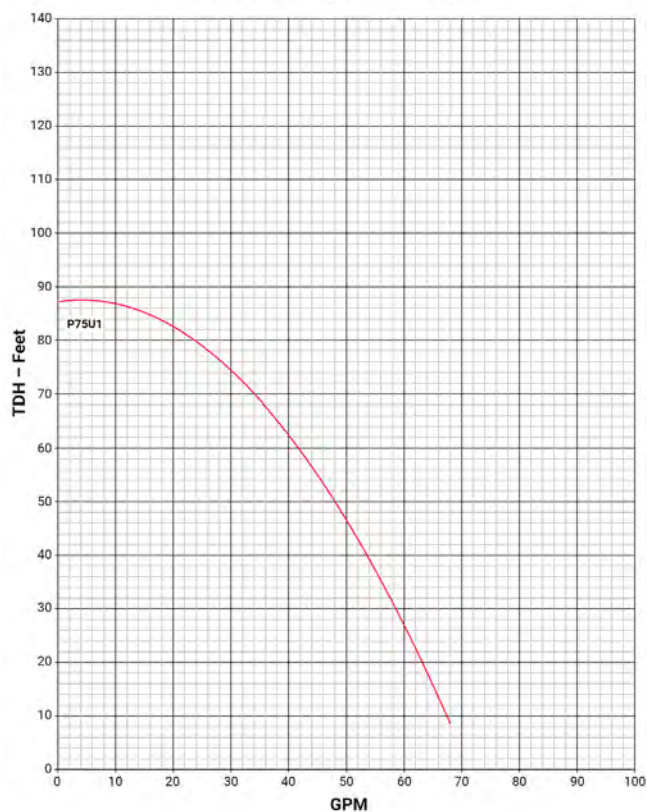
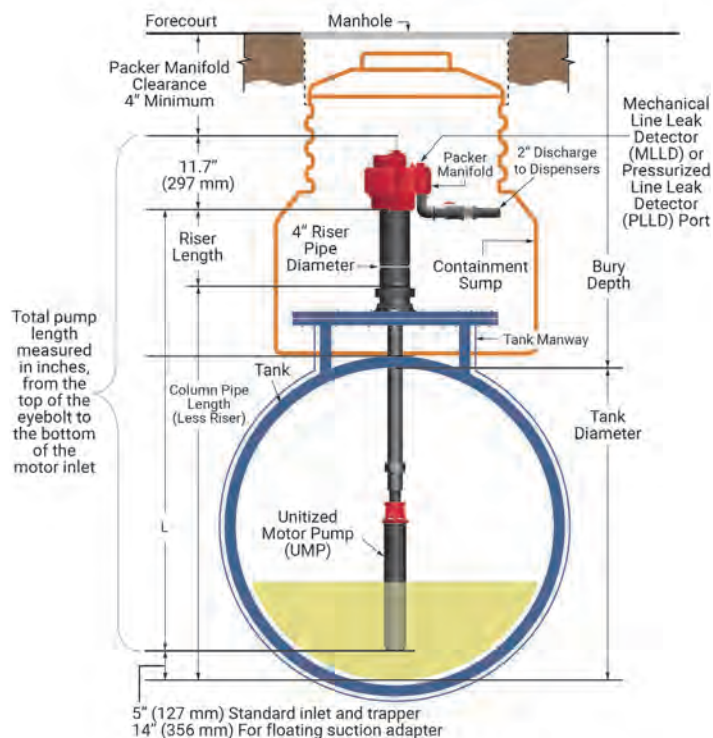
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STP Description	<p>The Red Jacket Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, 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 and fixed or 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.</p>				
4" Red Jacket STP	Part #	Description	Model #	Notes	
	0410140-001	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 72" - 102" Length	P75U1 RJ1	<ul style="list-style-type: none"> • 3/4 HP, 0.56 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. 	
	0410140-002	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 102" - 162" Length	P75U1 RJ2		
	0410140-003	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 162" - 222" Length	P75U1 RJ3		
	0410140-004	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 74.4" - 104.4" Length	P75U1 RJ1 FSA		
	0410140-005	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 104.4" - 164.4" Length	P75U1 RJ2 FSA		
	0410140-006	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 164.4" - 224.4" Length	P75U1 RJ3 FSA		
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline • 85% Gasoline with 15% Methanol • 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	

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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials
4" Red Jacket STP Models

Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Brass	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
Purge Screw	Brass	None
Siphon Cartridge	Brass	None
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

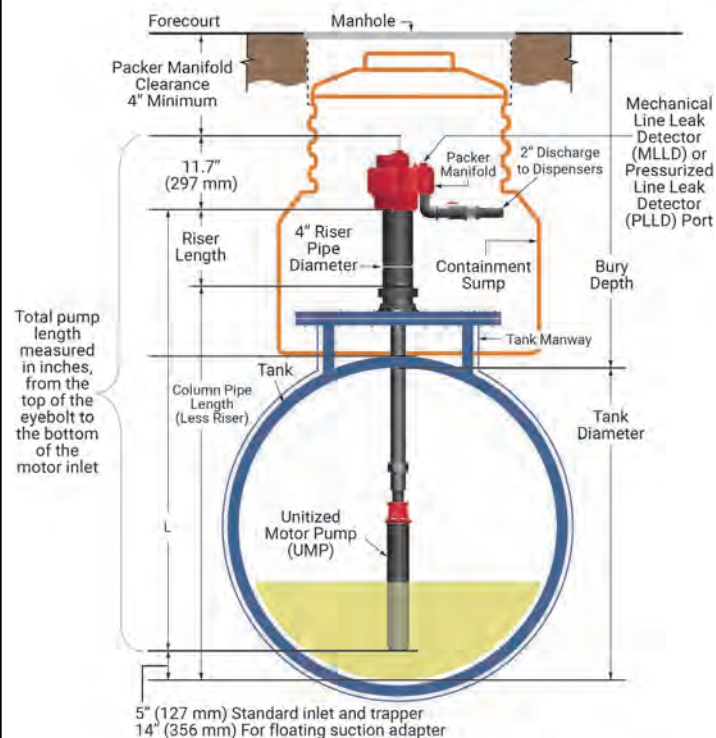
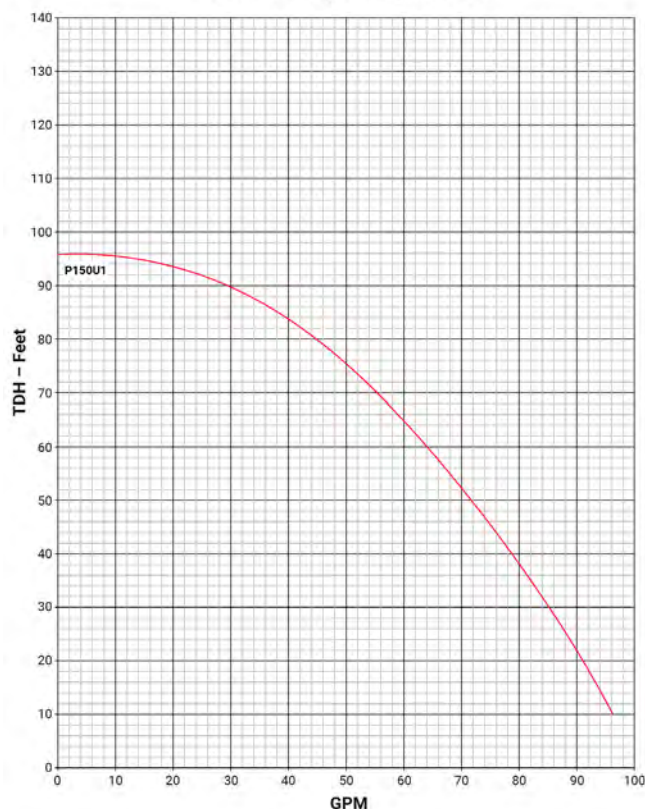
The Red Jacket STP Performance
Performance @ 230V; SG=0.78

The Red Jacket STP Dimensions



STP Description	<p>The Red Jacket 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 and fixed or 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.</p>			
4" Red Jacket STP	Part #	Description	Model #	Notes
	0410141-001	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 74.5" - 105" Length	P150U1 RJ1	<ul style="list-style-type: none"> 1.5 HP, 1.13 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.
	0410141-002	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 104.5" - 165" Length	P150U1 RJ2	
	0410141-003	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 164.5" - 225" Length	P150U1 RJ3	
	0410141-004	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 76.9" - 107.4" Length	P150U1 RJ1 FSA	
	0410141-005	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 106.9" - 167.4" Length	P150U1 RJ2 FSA	
	0410141-006	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 166.9" - 227.4" Length	P150U1 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials

4" Red Jacket STP Models		
Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Brass	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
Purge Screw	Brass	None
Siphon Cartridge	Brass	None
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

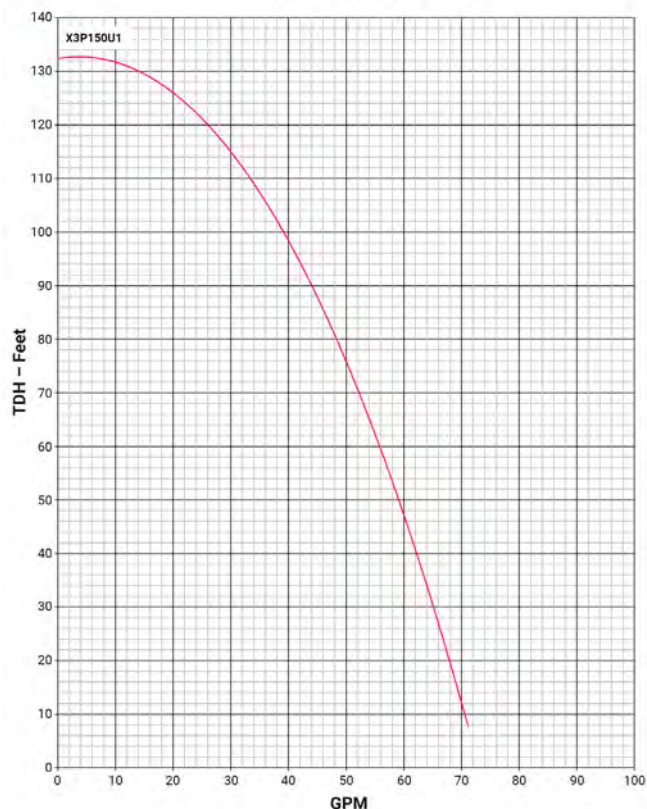
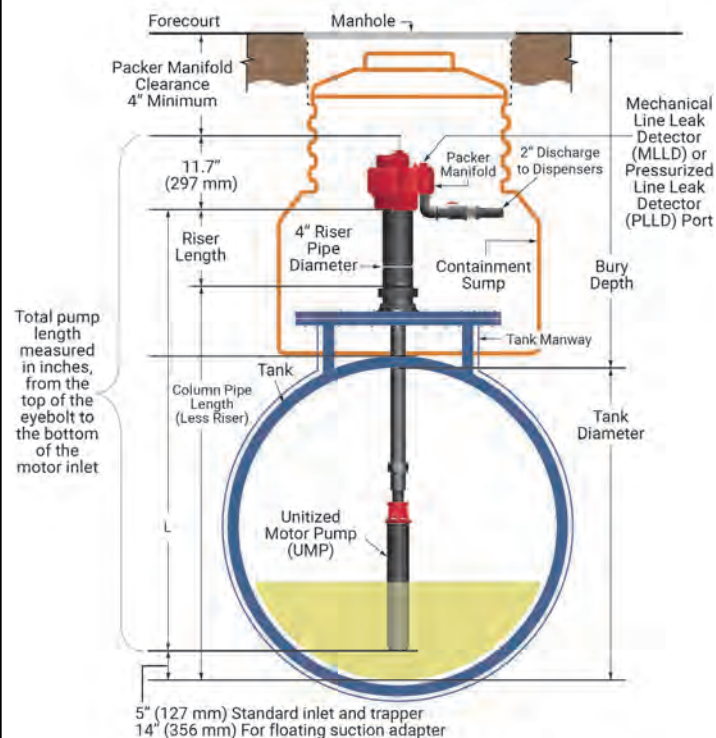
The Red Jacket STP Performance
The Red Jacket STP Dimensions
Performance @ 230V; SG=0.78



STP Description	The Red Jacket 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 and fixed or 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 STP	Part #	Description	Model #	Notes
	0410143-001	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 75.5" - 105.5" Length	X3P150U1 RJ1	<ul style="list-style-type: none">• 1.50 HP – High Pressure, 1.13 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.
	0410143-002	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 105.5" - 165.5" Length	X3P150U1 RJ2	
	0410143-003	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 165.5" - 225.5" Length	X3P150U1 RJ3	
	0410143-004	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 77.9" - 107.9" Length	X3P150U1 RJ1 FSA	
	0410143-005	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 107.9" - 167.9" Length	X3P150U1 RJ2 FSA	
	0410143-006	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 167.9" - 227.9" Length	X3P150U1 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 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®
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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.
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Environmental	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials
4" Red Jacket STP Models

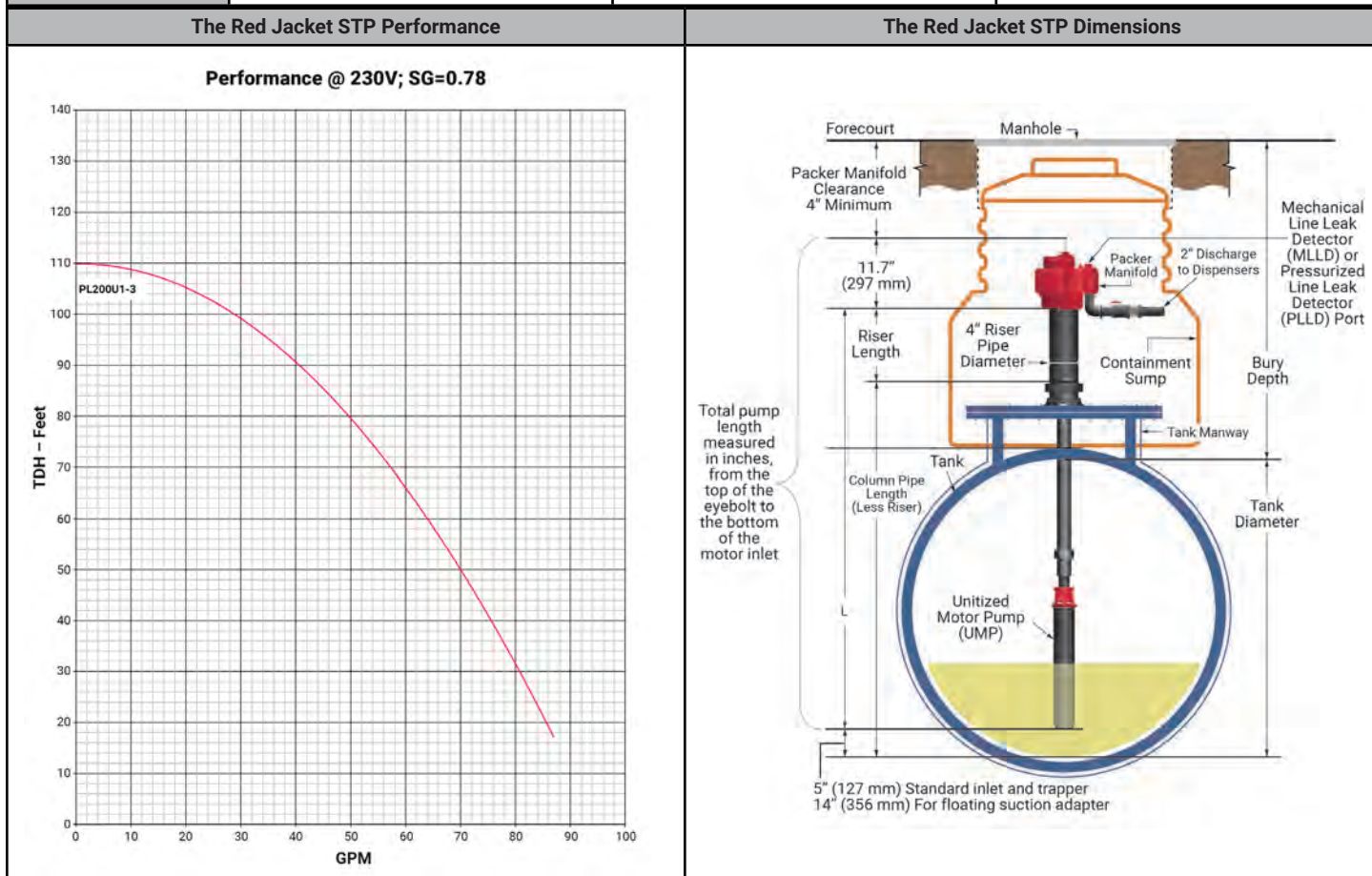
Component	Material	Surface Finish
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Elastomers – "O" Rings	Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Brass	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
Purge Screw	Brass	None
Siphon Cartridge	Brass	None
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 STP Performance
Performance @ 230V; SG=0.78

The Red Jacket STP Dimensions


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4" Red Jacket STP	Part #	Description	Model #	Notes	
	0410142-075	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 78.5" - 108.5" Length	PL200U1-3 RJ1	<ul style="list-style-type: none"> • 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. 	
	0410142-076	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 108.5" - 168.5" Length	PL200U1-3 RJ2		
	0410142-077	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 168.5" - 228.5" Length	PL200U1-3 RJ3		
	0410142-078	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 80.9" - 110.9" Length	PL200U1-3 RJ1 FSA		
	0410142-079	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 110.9" - 170.9" Length	PL200U1-3 RJ2 FSA		
	0410142-080	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 170.9" - 230.5" Length	PL200U1-3 RJ3 FSA		
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline • 85% Gasoline with 15% Methanol • 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	

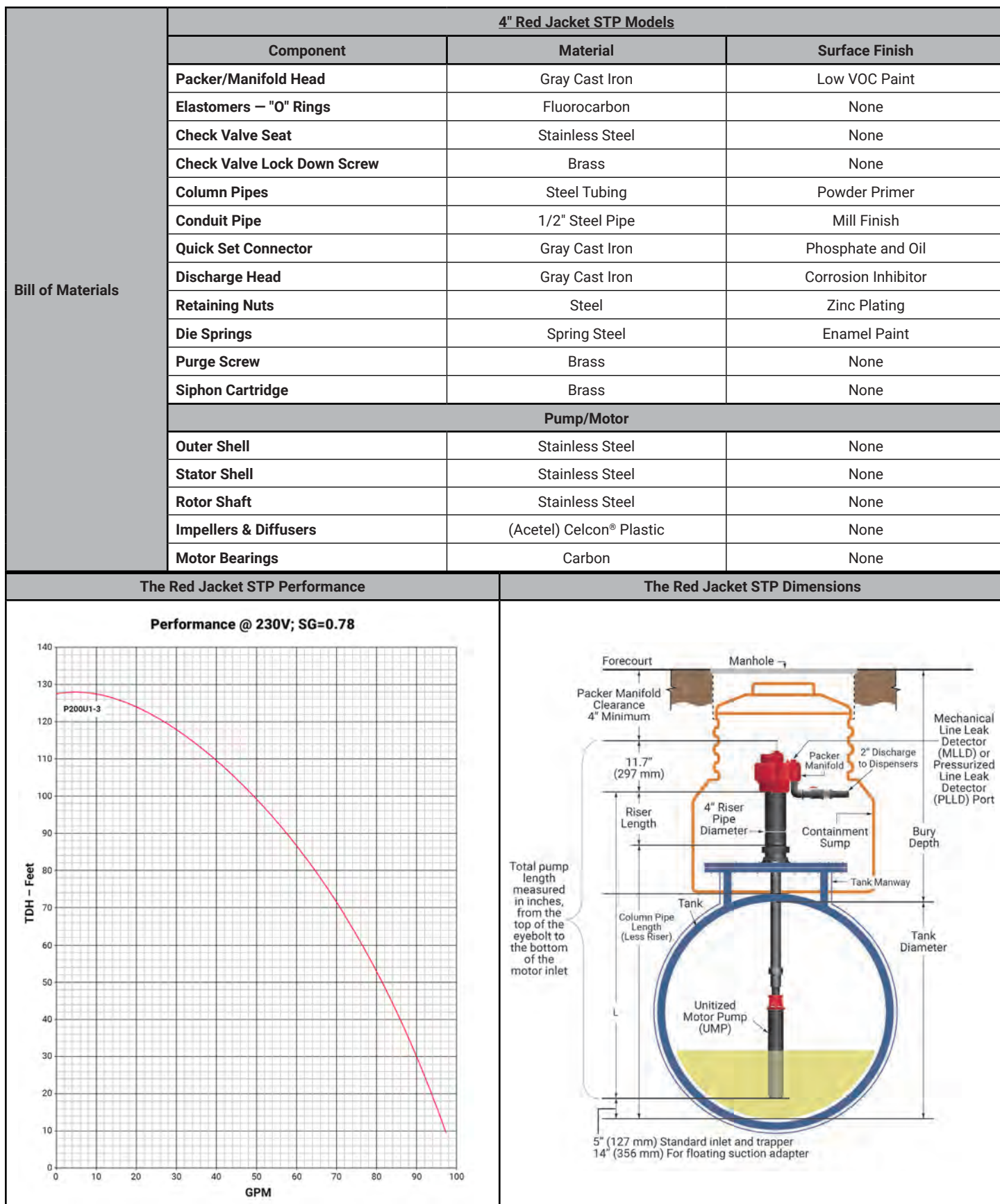
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with "Lock-n-Lift" Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	


Bill of Materials	4" Red Jacket STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Brass	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	Purge Screw	Brass	None
	Siphon Cartridge	Brass	None
	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



STP Description	<p>The Red Jacket 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 and fixed or 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.</p>			
4" Red Jacket STP	Part #	Description	Model #	Notes <ul style="list-style-type: none"> • 2 HP, 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.
	0410142-001	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 78.5" - 108.5" Length	P200U1-3 RJ1	
	0410142-002	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 108.5" - 168.5" Length	P200U1-3 RJ2	
	0410142-003	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 168.5" - 228.5" Length	P200U1-3 RJ3	
	0410142-004	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 80.9" - 110.9" Length	P200U1-3 RJ1 FSA	
	0410142-005	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 110.9" - 170.9" Length	P200U1-3 RJ2 FSA	
	0410142-006	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 170.9" - 230.5" Length	P200U1-3 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline • 85% Gasoline with 15% Methanol • 90% Gasoline with 10% Ethanol 			Pump 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 contractors 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

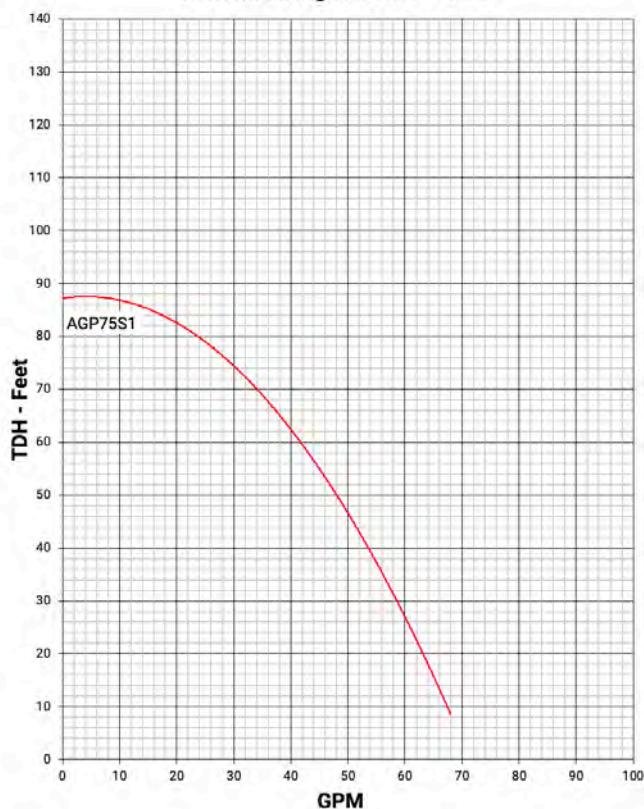
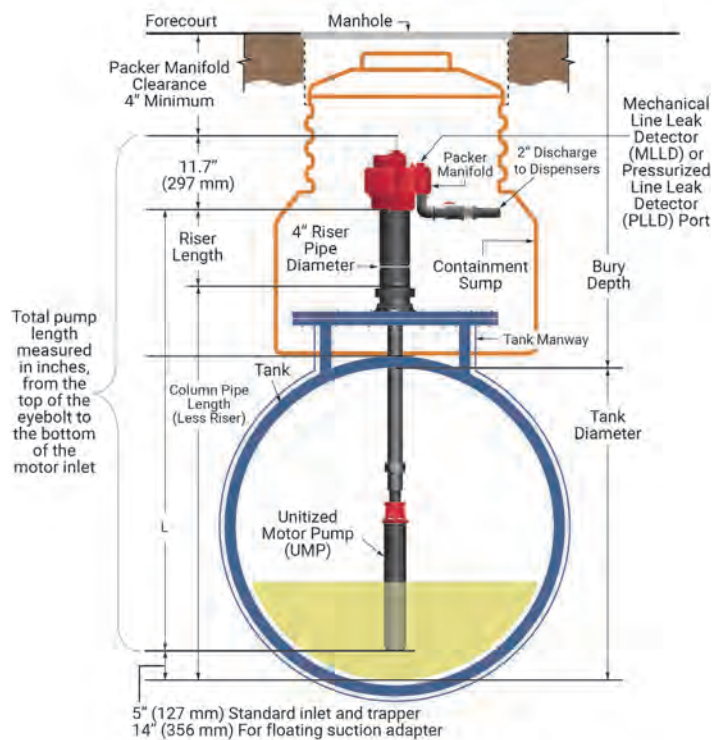



STP Description	<p>The Red Jacket Alcohol Gas (AG) Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, and its advanced packer manifold design 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.</p>				
4" Red Jacket AG STP	Part #	Description	Model #	Notes	
	0410140-019	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 72" - 102" Length	AGP75S1 RJ1	<ul style="list-style-type: none"> 3/4 HP, 0.56 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. 	
	0410140-020	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 102" - 162" Length	AGP75S1 RJ2		
	0410140-021	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 162" - 222" Length	AGP75S1 RJ3		
	0410140-022	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 74.4" - 104.4" Length	AGP75S1 RJ1 FSA		
	0410140-023	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 104.4" - 164.4" Length	AGP75S1 RJ2 FSA		
	0410140-024	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 164.4" - 224.4" Length	AGP75U1 RJ3 FSA		
Fuel Compatibility	The Red Jacket AG Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> 100% Gasoline 100% Diesel UL 79A: 85% Ethanol (E85) UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100) UL 79B: Kerosene and Fuel Oil Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	

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	<ul style="list-style-type: none"> The Red Jacket AG STP has a 30% increase in stainless steel hardware. 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	

Bill of Materials
4" Red Jacket AG STP Models

Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	High Grade Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Stainless Steel	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
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

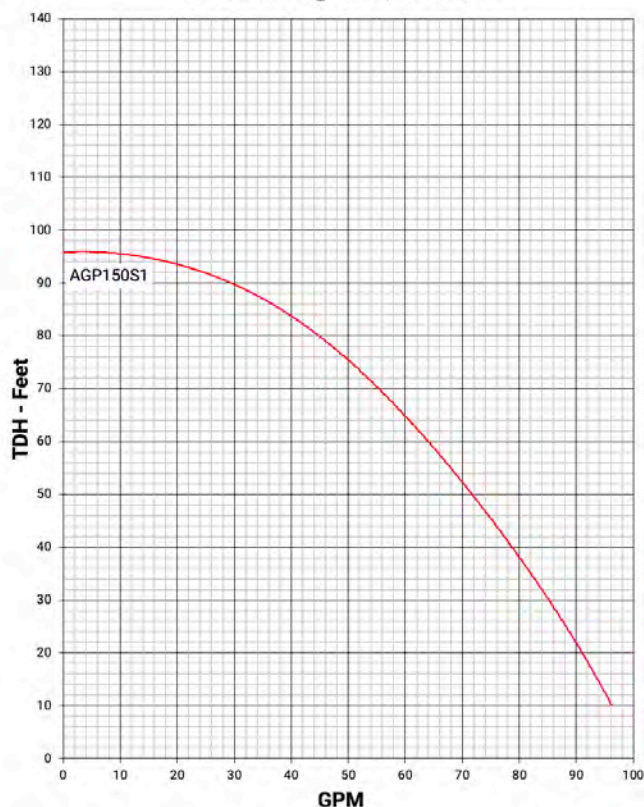
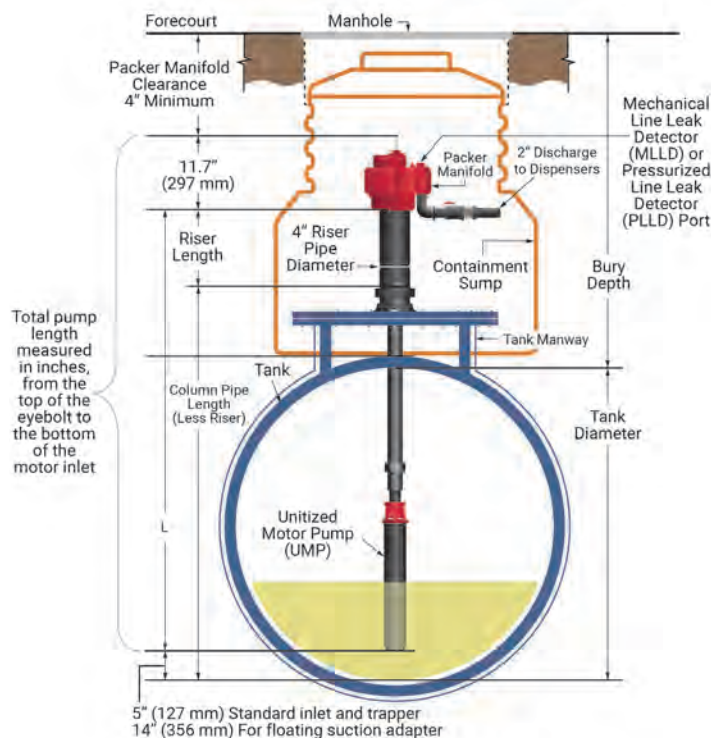
The Red Jacket AG STP Performance
Performance @ 230V; SG = 0.78

The Red Jacket AG STP Dimensions



STP Description	<p>The Red Jacket Alcohol Gas (AG) 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.</p>			
4" Red Jacket AG STP	Part #	Description	Model #	Notes
	0410141-019	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 74.5" - 105" Length	AGP150S1 RJ1	• 1.5 HP, 1.13 KW, 208/230 Voltage, single-phase.
	0410141-020	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 104.5" - 165" Length	AGP150S1 RJ2	• Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet.
	0410141-021	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 164.5" - 225" Length	AGP150S1 RJ3	• FSA stands for Floating Suction Adapter.
	0410141-022	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 76.9" - 107.4" Length	AGP150S1 RJ1 FSA	
	0410141-023	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 106.9" - 167.4" Length	AGP150S1 RJ2 FSA	
	0410141-024	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 166.9" - 227.4" Length	AGP150U1 RJ3 FSA	
Fuel Compatibility	The Red Jacket AG Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • UL 79A: 85% Ethanol (E85) • UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100) • UL 79B: Kerosene and Fuel Oil • Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME 			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
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>
	Pump Intake Inlet			Manifold Head Assembly
	<p>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.</p>			<p>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.</p>

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	<ul style="list-style-type: none"> The Red Jacket AG STP has a 30% increase in stainless steel hardware. 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	

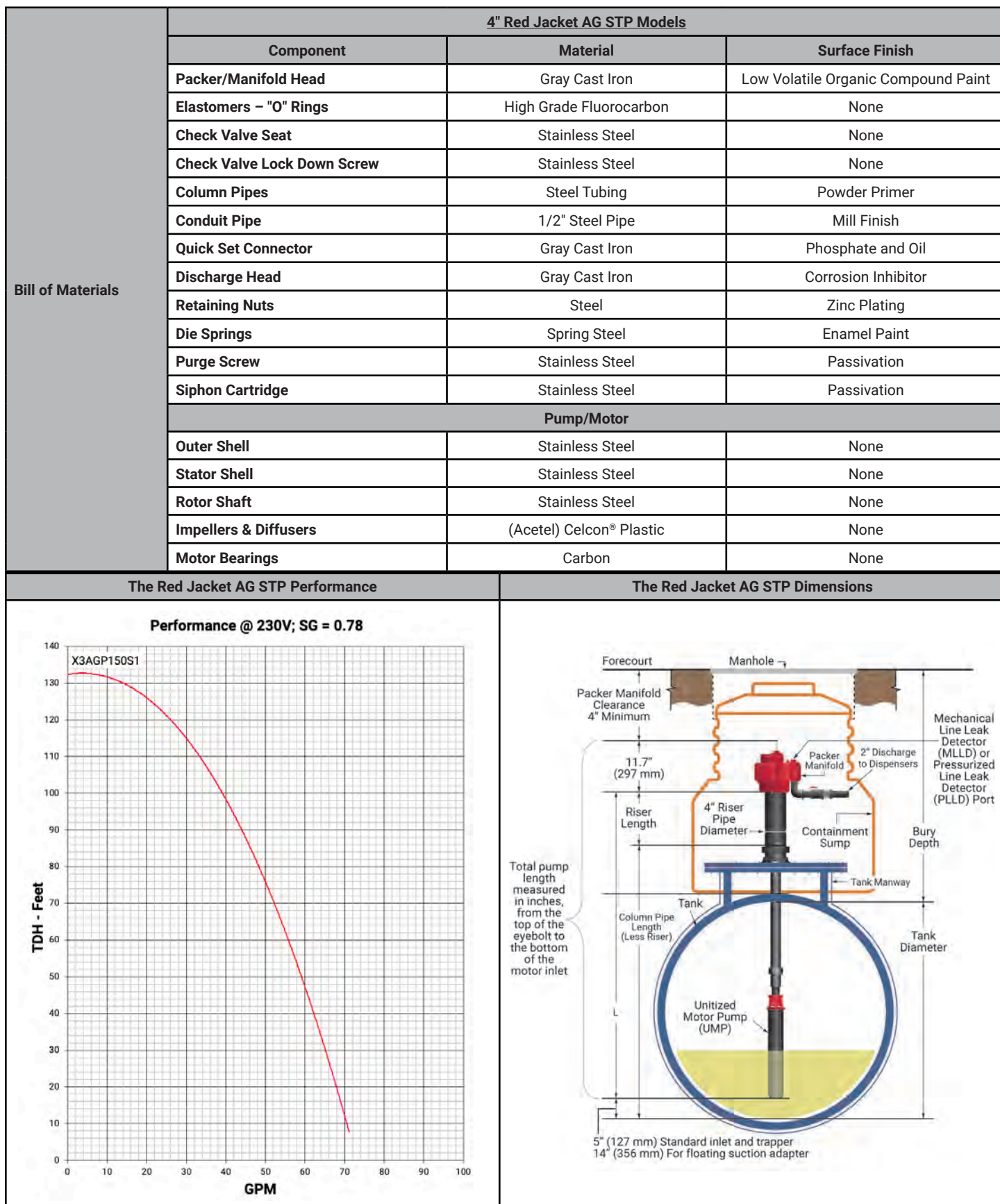
Bill of Materials
4" Red Jacket AG STP Models


Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	High Grade Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Stainless Steel	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
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 AG STP Performance
Performance @ 230V; SG = 0.78

The Red Jacket AG STP Dimensions


STP Description	<p>The Red Jacket Alcohol Gas (AG) 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.</p>			
4" Red Jacket AG STP	Part #	Description	Model #	Notes
	0410143-019	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 75.5" - 105.5" Length	X3AGP150S1 RJ1	<ul style="list-style-type: none"> 1.5 HP – High Pressure, 1.13 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.
	0410143-020	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 105.5" - 165.5" Length	X3AGP150S1 RJ2	
	0410143-021	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 165.5" - 225.5" Length	X3AGP150S1 RJ3	
	0410143-022	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 77.9" - 107.9" Length	X3AGP150S1 RJ1 FSA	
	0410143-023	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 107.9" - 167.9" Length	X3AGP150S1 RJ2 FSA	
	0410143-024	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 167.9" - 227.9" Length	X3AGP150S1 RJ3 FSA	
Fuel Compatibility	The Red Jacket AG Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none"> 100% Gasoline 100% Diesel UL 79A: 85% Ethanol (E85) UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100) UL 79B: Kerosene and Fuel Oil Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME 			<p>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.</p>
Mechanical Features	Pump			Impellers and Diffusers
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>
	Pump Intake Inlet			Manifold Head Assembly
	<p>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.</p>			<p>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.</p>

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	<ul style="list-style-type: none"> The Red Jacket AG STP has a 30% increase in stainless steel hardware. 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	

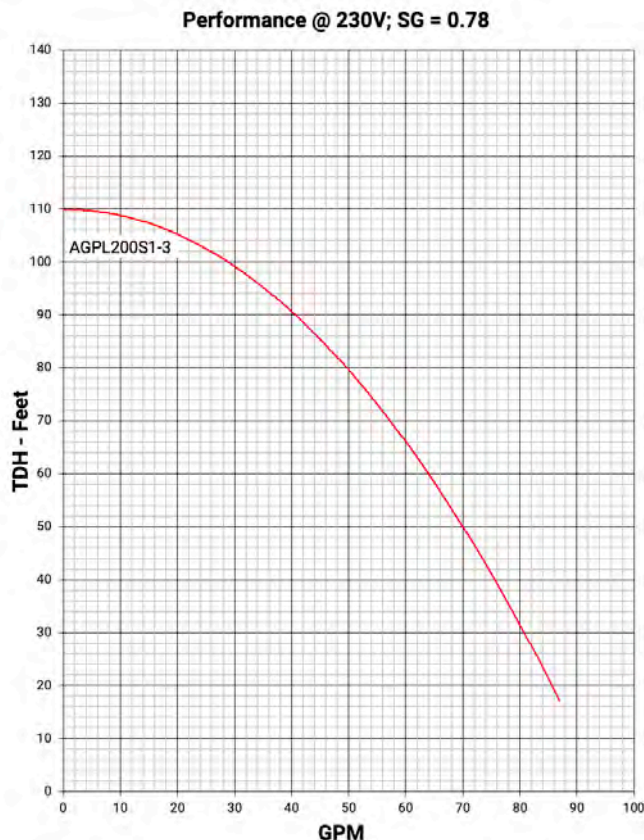


STP Description	<p>The Red Jacket Alcohol Gas (AG) Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, and its advanced packer manifold design 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.</p>				
4" Red Jacket AG STP	Part #	Description	Model #	Notes	
	0410142-081	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 78.5" - 108.5" Length	AGPL200S1-3 RJ1	<ul style="list-style-type: none"> • 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. 	
	0410142-082	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 108.5" - 168.5" Length	AGPL200S1-3 RJ2		
	0410142-083	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 168.5" - 228.5" Length	AGPL200S1-3 RJ3		
	0410142-084	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 80.9" - 110.9" Length	AGPL200S1-3 RJ1 FSA		
	0410142-085	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 110.9" - 170.9" Length	AGPL200S1-3 RJ2 FSA		
	0410142-086	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 170.9" - 230.9" Length	AGPL200S1-3 RJ3 FSA		
Fuel Compatibility	The Red Jacket AG Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • UL 79A: 85% Ethanol (E85) • UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100) • UL 79B: Kerosene and Fuel Oil • Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	

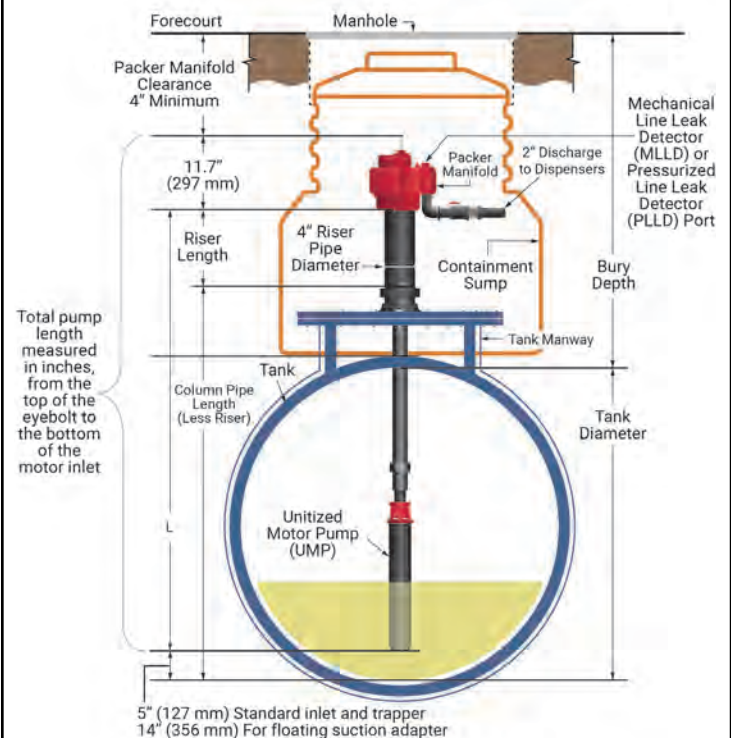
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with “Lock-n-Lift” Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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	<ul style="list-style-type: none"> • The Red Jacket AG STP has a 30% increase in stainless steel hardware. • 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	


Bill of Materials	4" Red Jacket AG STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	High Grade Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Stainless Steel	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	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 AG STP Performance

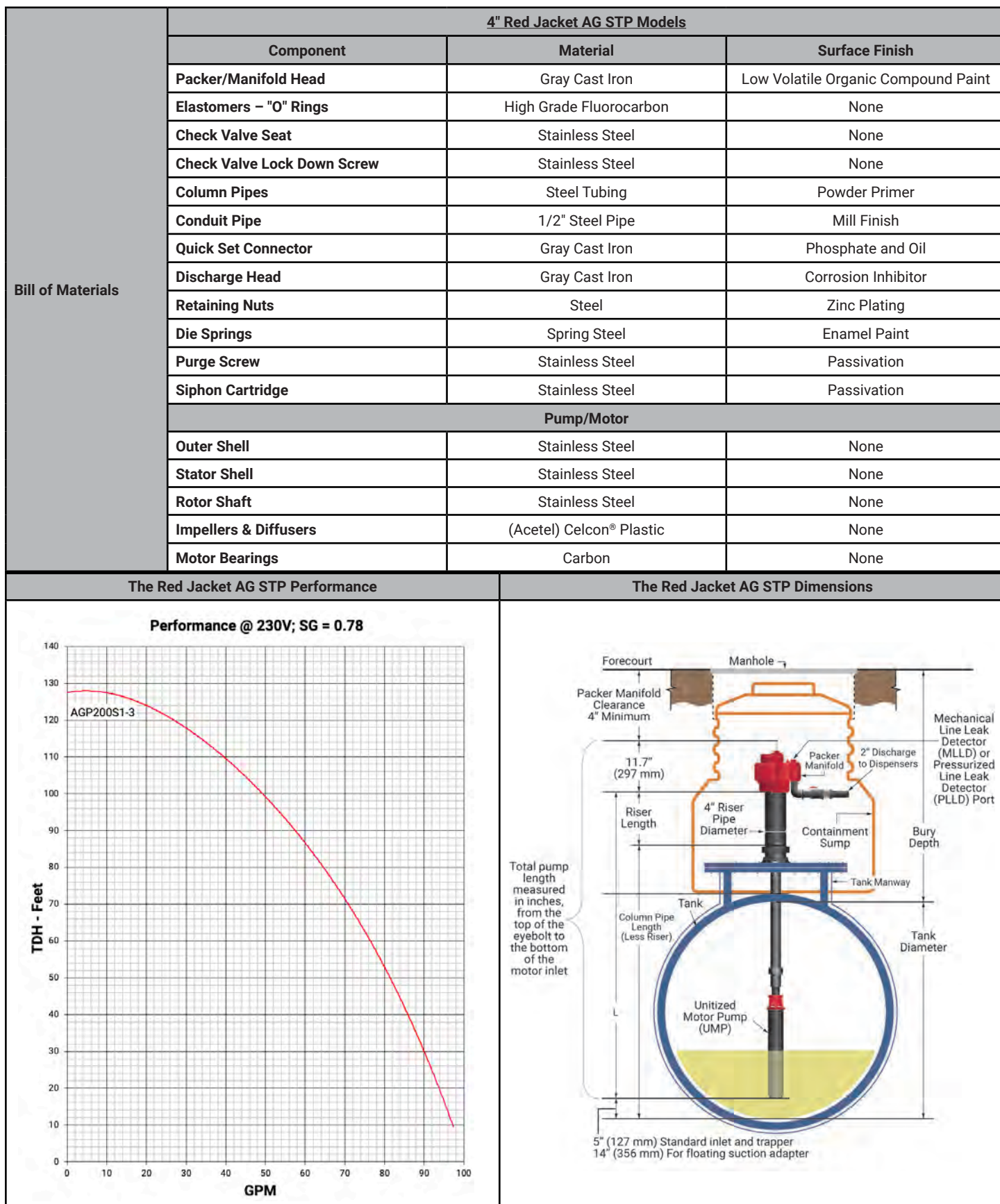



The Red Jacket AG STP Dimensions



STP Description	<p>The Red Jacket Alcohol Gas (AG) 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.</p>				
4" Red Jacket AG STP	Part #	Description	Model #	Notes	
	0410142-019	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 78.5" - 108.5" Length	AGP200S1-3 RJ1	<ul style="list-style-type: none"> • 2 HP, 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. 	
	0410142-020	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 108.5" - 168.5" Length	AGP200S1-3 RJ2		
	0410142-021	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 168.5" - 228.5" Length	AGP200S1-3 RJ3		
	0410142-022	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 80.9" - 110.9" Length	AGP200S1-3 RJ1 FSA		
	0410142-023	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 110.9" - 170.9" Length	AGP200S1-3 RJ2 FSA		
	0410142-024	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 170.9" - 230.9" Length	AGP200S1-3 RJ3 FSA		
Fuel Compatibility	The Red Jacket AG Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • UL 79A: 85% Ethanol (E85) • UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100) • UL 79B: Kerosene and Fuel Oil • Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	

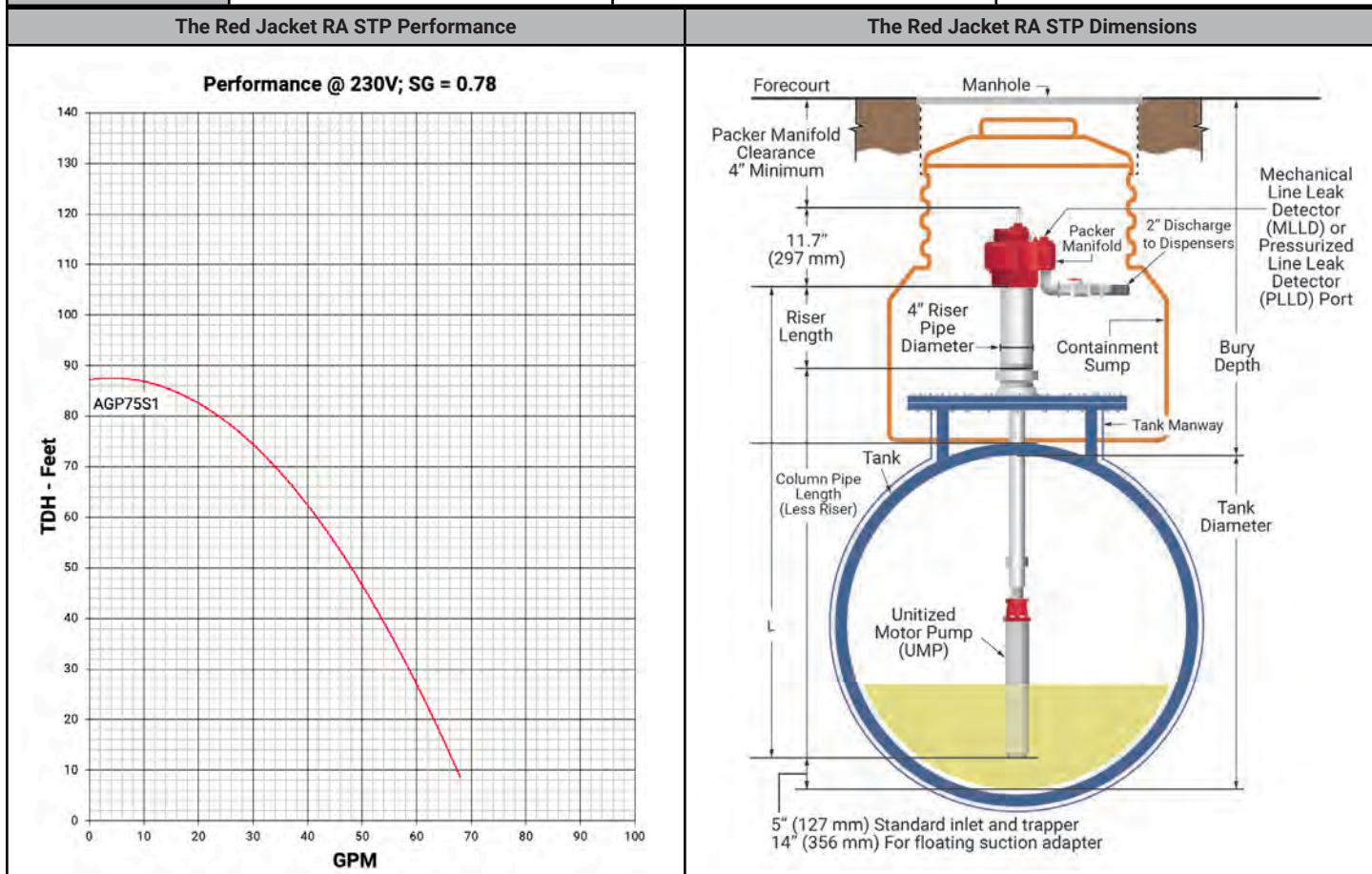
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with "Lock-n-Lift" Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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	<ul style="list-style-type: none"> The Red Jacket AG STP has a 30% increase in stainless steel hardware. 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	




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
	0410140-086	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 72" - 102" Length	AGP75S1 RA1	<ul style="list-style-type: none">• 3/4 HP, 0.56 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.
	0410140-087	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 102" - 162" Length	AGP75S1 RA2	
	0410140-088	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 162" - 222" Length	AGP75S1 RA3	
	0410140-089	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 74.4" - 104.4" Length	AGP75S1 RA1 FSA	
	0410140-090	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 104.4" - 164.4" Length	AGP75S1 RA2 FSA	
	0410140-091	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 164.4" - 224.4" Length	AGP75U1 RA3 FSA	
Fuel Compatibility	The Red Jacket RA Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 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.

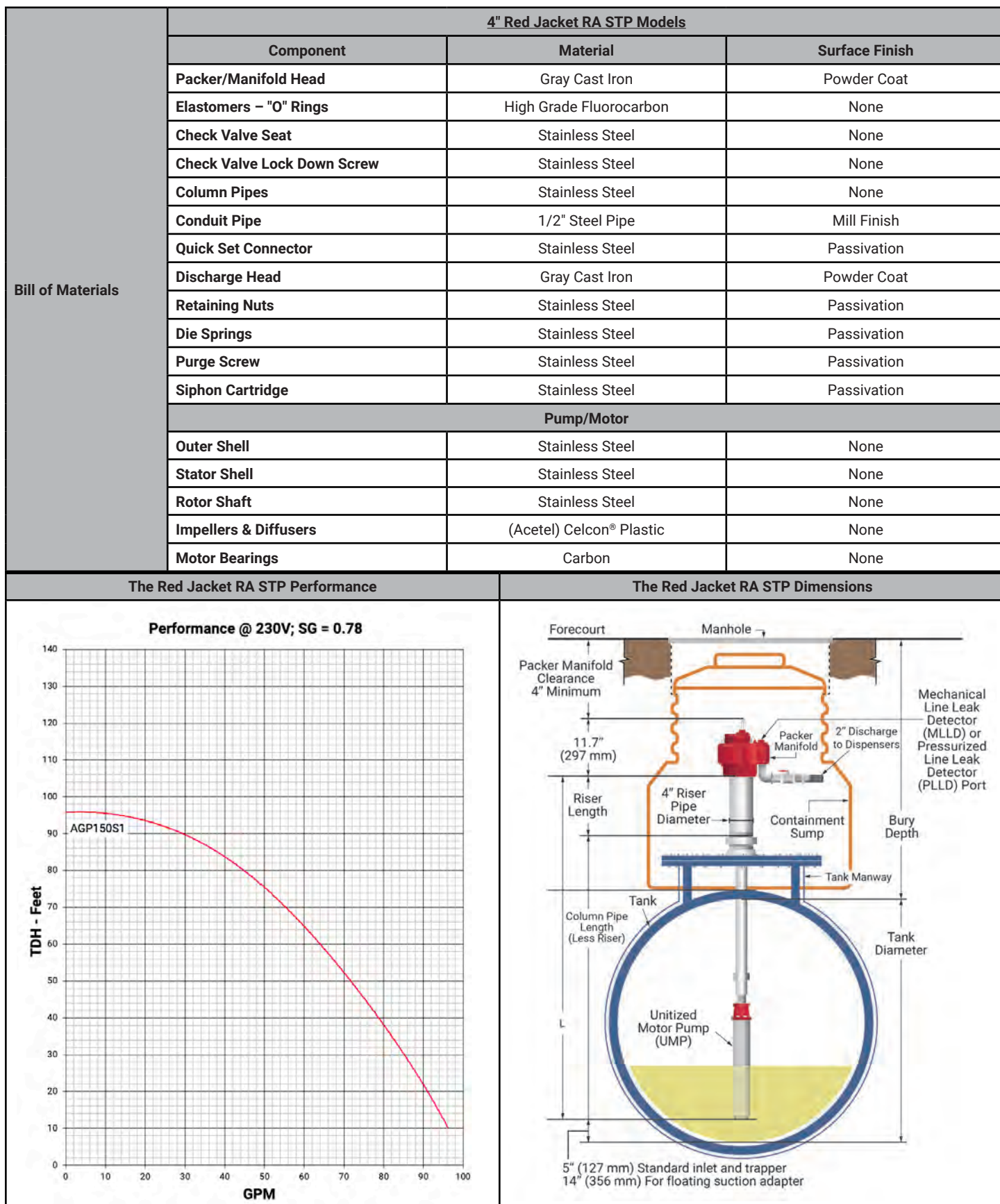
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with "Lock-n-Lift" Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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	<ul style="list-style-type: none"> 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	


Bill of Materials	4" Red Jacket RA STP Models		
	Component	Material	Surface Finish
	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



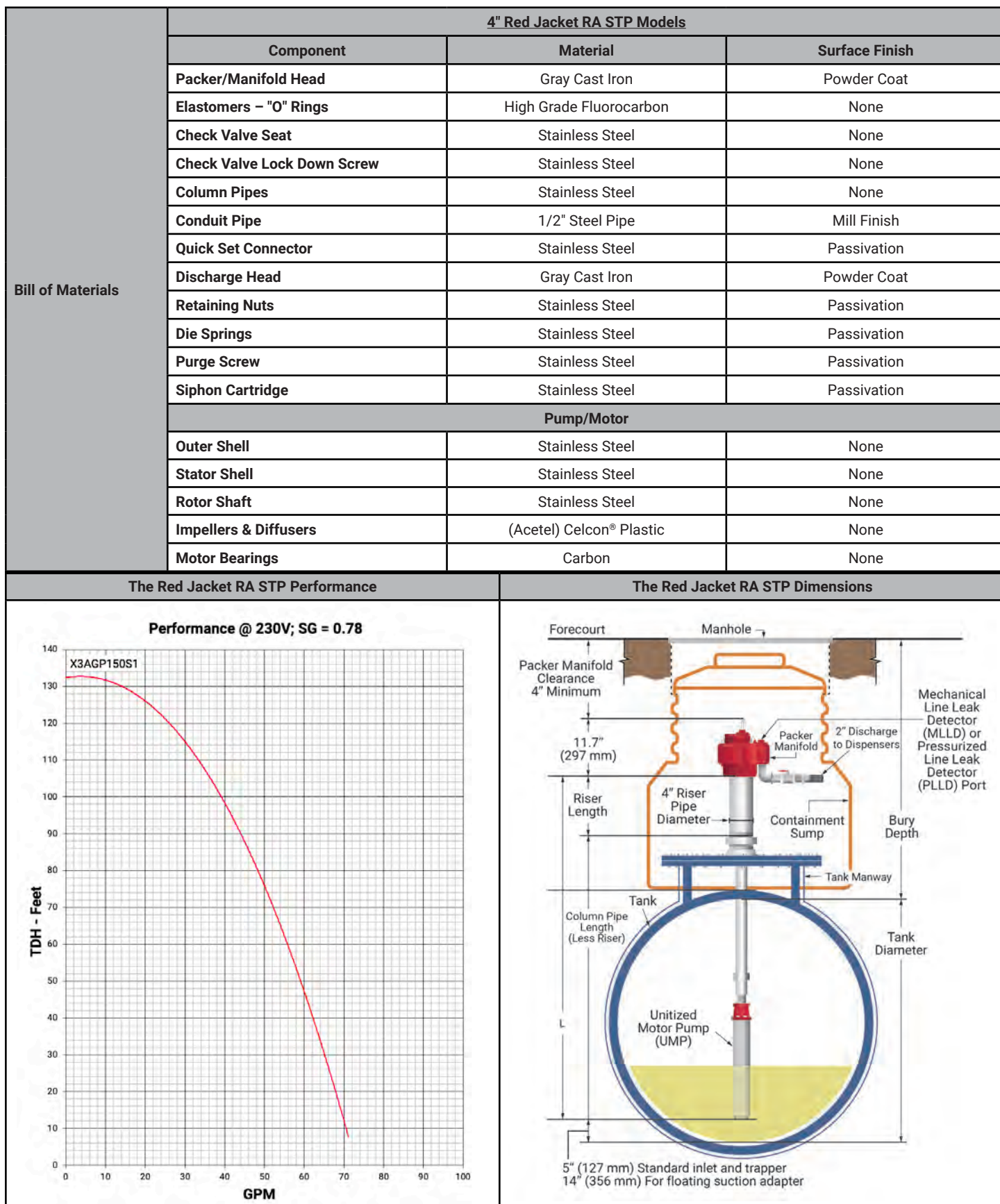
STP Description	<p>The Red Jacket Red Armor (RA) Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, and its advanced packer manifold design 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.</p>				
4" Red Jacket RA STP	Part #	Description	Model #	Notes	
	0410141-088	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 74.5" - 105" Length	AGP150S1 RA1	<ul style="list-style-type: none"> 1.5 HP, 1.13 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. 	
	0410141-089	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 104.5" - 165" Length	AGP150S1 RA2		
	0410141-090	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 164.5" - 225" Length	AGP150S1 RA3		
	0410141-091	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 76.9" - 107.4" Length	AGP150S1 RA1 FSA		
	0410141-092	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 106.9" - 167.4" Length	AGP150S1 RA2 FSA		
	0410141-093	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 166.9" - 227.4" Length	AGP150U1 RA3 FSA		
Fuel Compatibility	The Red Jacket RA Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> 100% Gasoline 100% Diesel 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline 85% Gasoline with 15% Methanol 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	


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	<ul style="list-style-type: none"> 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	



STP Description	<p>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.</p>				
4" Red Jacket RA STP	Part #	Description	Model #	Notes	
	0410143-083	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 75.5" - 105.5" Length	X3AGP150S1 RA1	<ul style="list-style-type: none"> 1.5 HP – High Pressure, 1.13 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. 	
	0410143-084	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 105.5" - 165.5" Length	X3AGP150S1 RA2		
	0410143-085	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 165.5" - 225.5" Length	X3AGP150S1 RA3		
	0410143-086	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 77.9" - 107.9" Length	X3AGP150S1 RA1 FSA		
	0410143-087	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 107.9" - 167.9" Length	X3AGP150S1 RA2 FSA		
	0410143-088	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 167.9" - 227.9" Length	X3AGP150S1 RA3 FSA		
Fuel Compatibility	The Red Jacket RA Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> 100% Gasoline 100% Diesel 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline 85% Gasoline with 15% Methanol 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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.</p>			<p>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.</p>	

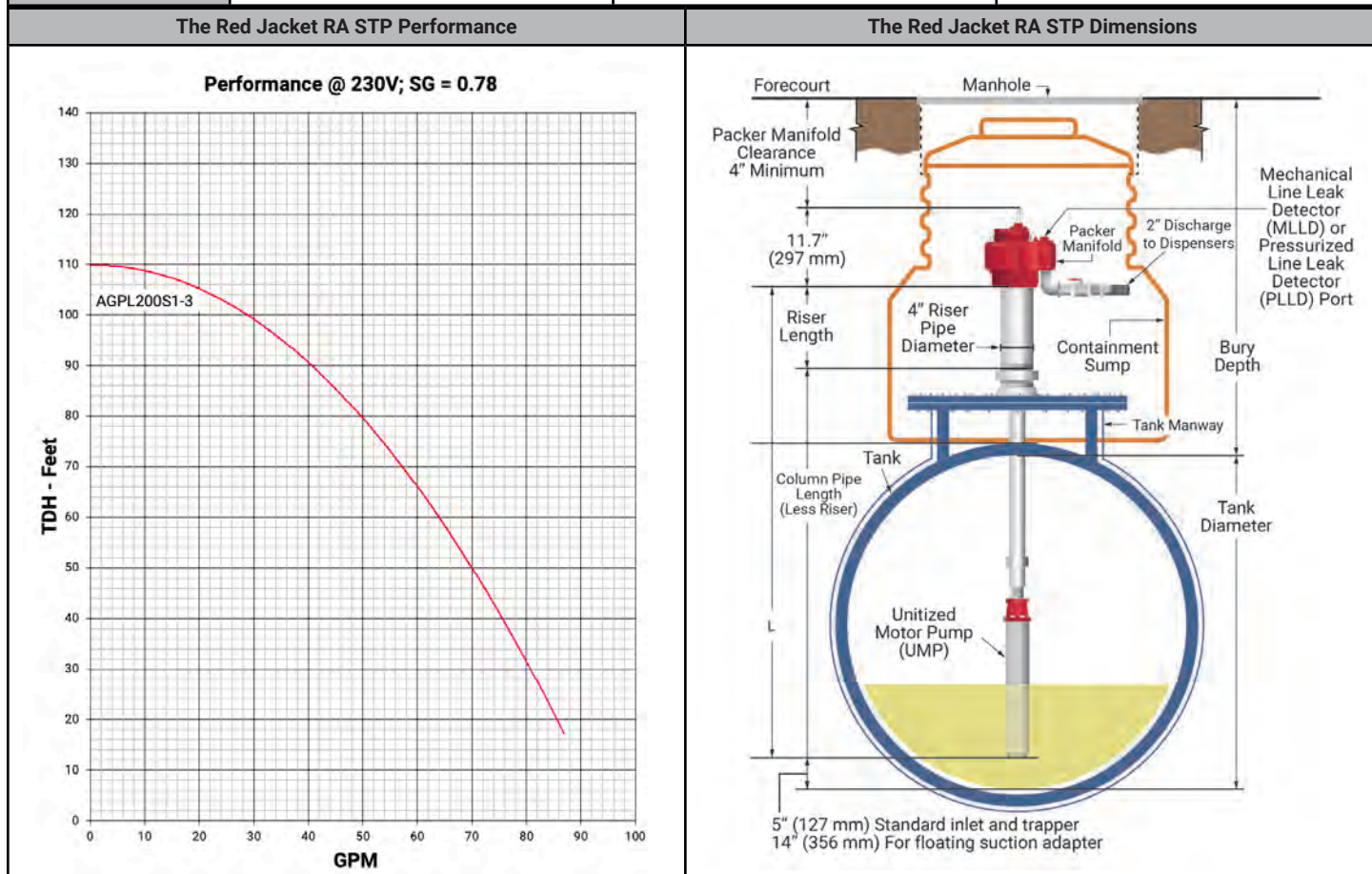
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with “Lock-n-Lift” Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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	<ul style="list-style-type: none"> • 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	




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	<ul style="list-style-type: none">• 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
	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none"> • 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	

Bill of Materials	4" Red Jacket RA STP Models		
	Component	Material	Surface Finish
	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



STP Description	<p>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.</p>			
4" Red Jacket RA STP	Part #	Description	Model #	Notes
	0410142-063	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 78.5" - 108.5" Length	AGP200S1-3RA1	• 2 HP, 1.5 KW, 208/230 Voltage, single-phase.
	0410142-064	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 108.5" - 168.5" Length	AGP200S1-3RA2	• Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet.
	0410142-065	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 168.5" - 228.5" Length	AGP200S1-3RA3	• FSA stands for Floating Suction Adapter.
	0410142-066	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 80.9" - 110.9" Length	AGP200S1-3RA1 FSA	
	0410142-067	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 119.9" - 170.9" Length	AGP200S1-3RA2 FSA	
	0410142-068	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 170.9" - 230.5" Length	AGP200S1-3RA3 FSA	
Fuel Compatibility	The Red Jacket RA Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none"> • 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
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>
	Pump Intake Inlet			Manifold Head Assembly
	<p>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.</p>			<p>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.</p>

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	<ul style="list-style-type: none"> 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	

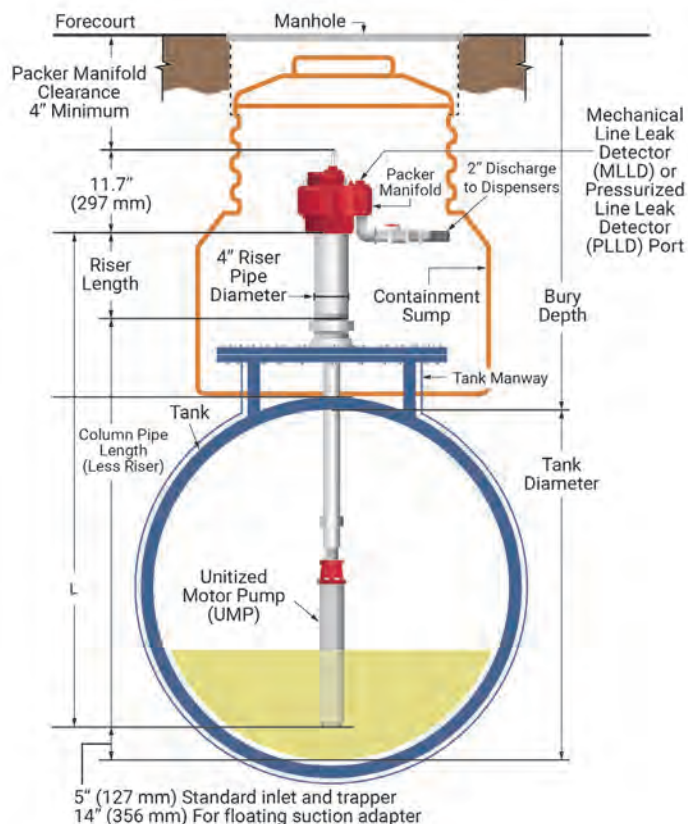
Bill of Materials

4" Red Jacket RA STP Models		
Component	Material	Surface Finish
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



The Red Jacket® Submersible Turbine Pumps **50Hz**

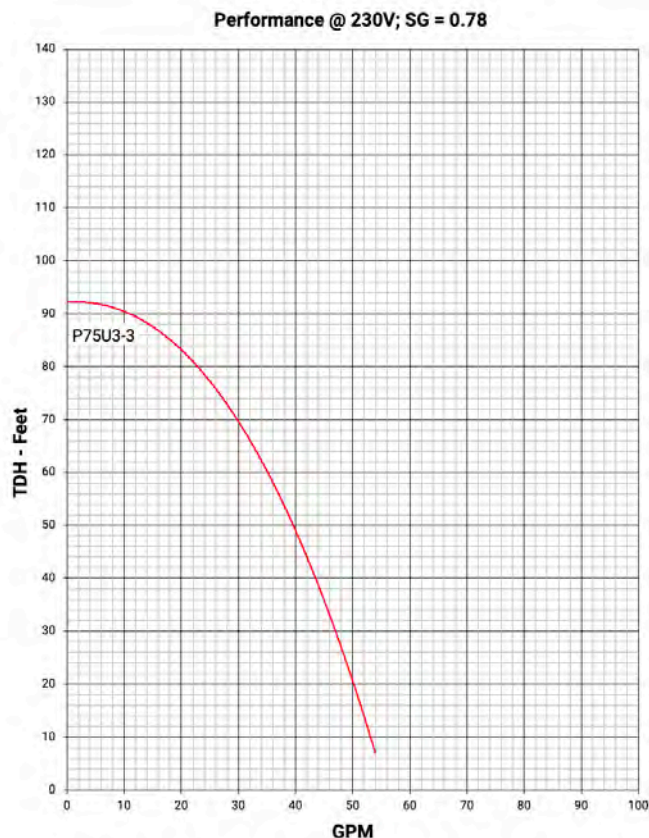
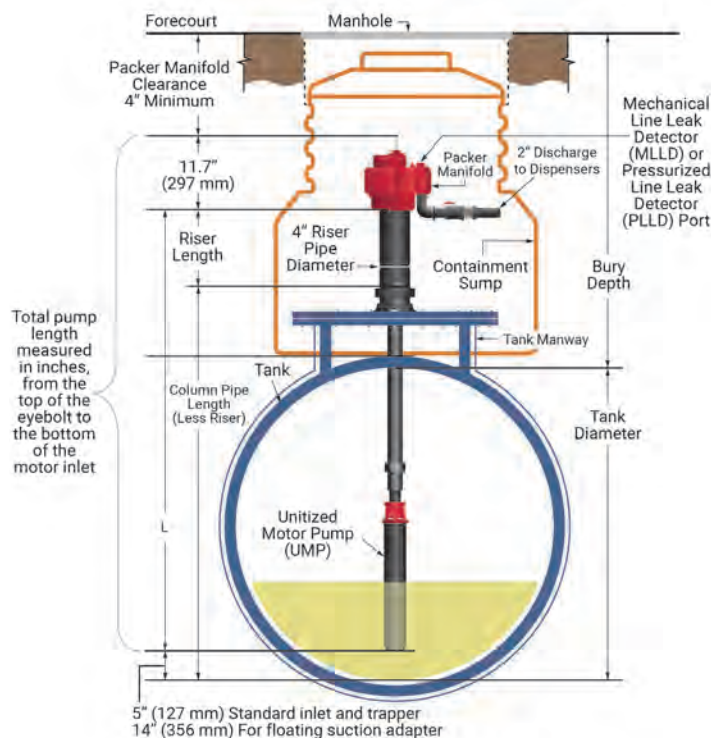



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STP Description	<p>The Red Jacket Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, 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.</p>				
4" Red Jacket STP	Part #	Description	Model #	Notes	
	0410140-046	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 74" - 104.5" Length	P75U3-3 RJ1	<ul style="list-style-type: none"> • 3/4 HP, 0.56 KW, 220/240 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. 	
	0410140-047	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 104" - 164.5" Length	P75U3-3 RJ2		
	0410140-048	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 164" - 224.5" Length	P75U3-3 RJ3		
	0410140-049	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 76.4" - 106.9" Length	P75U3-3 RJ1 FSA		
	0410140-050	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 106.4" - 166.9" Length	P75U3-3 RJ2 FSA		
	0410140-051	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 166.4" - 226.9" Length	P75U3-3 RJ3 FSA		
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> • 100% Gasoline • 100% Diesel • 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline • 85% Gasoline with 15% Methanol • 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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 particulates from being ingested into the motor.</p>			<p>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.</p>	

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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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 on specific pump model. Maximum viscosity allowable – 70SSU @ 60°F (15°C). 	
Approvals	UL 79, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials	4" Red Jacket STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Brass	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	Purge Screw	Brass	None
	Siphon Cartridge	Brass	None
	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

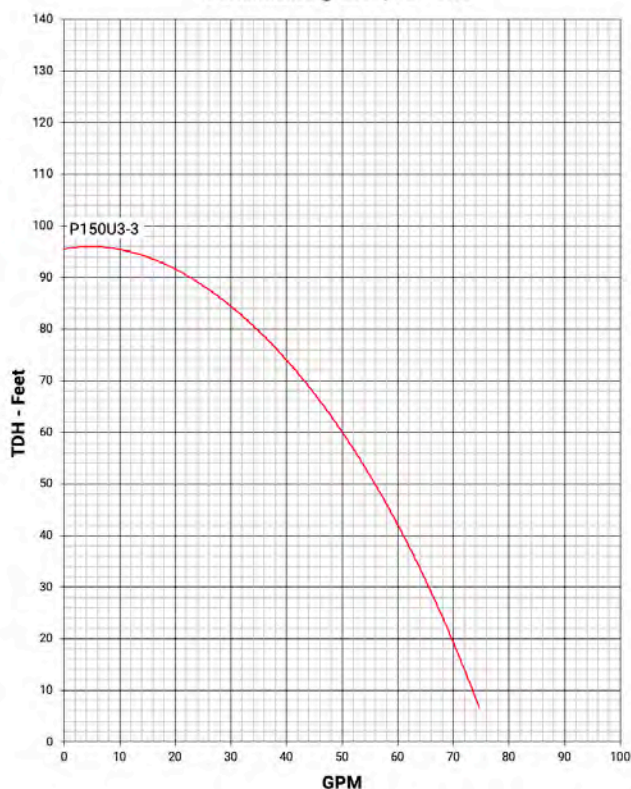
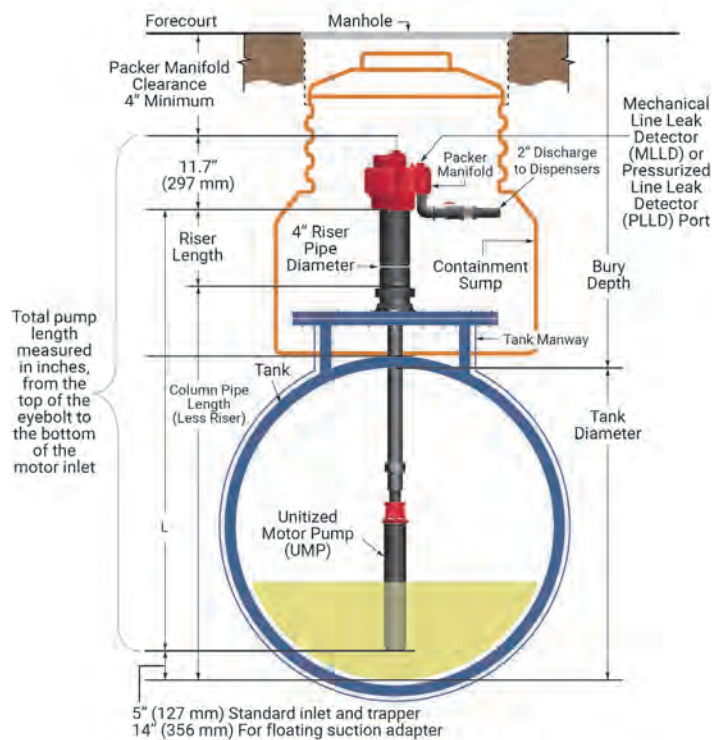
The Red Jacket STP Performance

The Red Jacket STP Dimensions



STP Description	<p>The Red Jacket 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.</p>				
4" Red Jacket STP	Part #	Description	Model #	Notes	
	0410141-048	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 76" - 106.5" Length	P150U3-3 RJ1	<ul style="list-style-type: none"> 1.5 HP, 1.13 KW, 220/240 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. 	
	0410141-049	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 106" - 166.5" Length	P150U3-3 RJ2		
	0410141-050	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 166" - 226.5" Length	P150U3-3 RJ3		
	0410141-051	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 78.4" - 108.9" Length	P150U3-3 RJ1 FSA		
	0410141-052	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 108.4" - 168.9" Length	P150U3-3 RJ2 FSA		
	0410141-053	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 168.4" - 228.9" Length	P150U3-3 RJ3 FSA		
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> 100% Gasoline 100% Diesel 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline 85% Gasoline with 15% Methanol 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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 particulates from being ingested into the motor.</p>			<p>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.</p>	

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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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 on specific pump model. Maximum viscosity allowable – 70SSU @ 60°F (15°C). 	
Approvals	UL 79, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

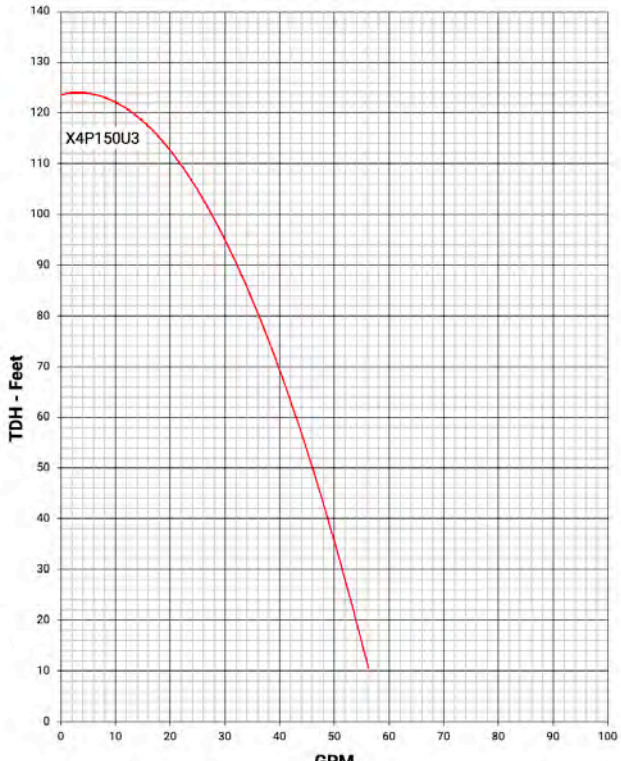
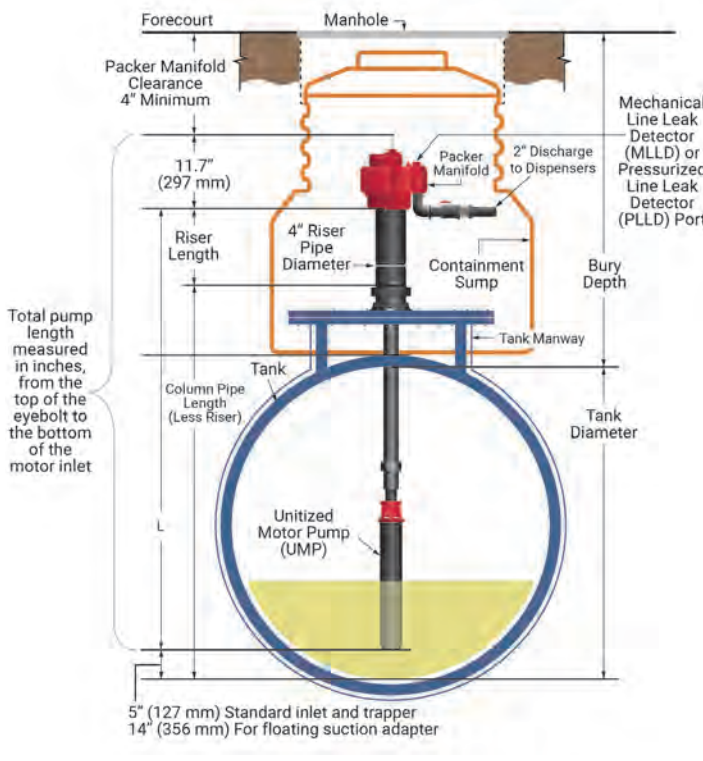
Bill of Materials
4" Red Jacket STP Models


Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Brass	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
Purge Screw	Brass	None
Siphon Cartridge	Brass	None
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 STP Performance
Performance @ 230V; SG = 0.78

The Red Jacket STP Dimensions


STP Description	<p>The Red Jacket 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.</p>				
4" Red Jacket STP	Part #	Description	Model #	Notes	
	0410143-043	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 76.5" - 107" Length	X4P150U3 RJ1	<ul style="list-style-type: none"> 1.5 HP – High Pressure, 1.13 KW, 220/240 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. 	
	0410143-044	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 106.5" - 167" Length	X4P150U3 RJ2		
	0410143-045	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 166.5" - 227" Length	X4P150U3 RJ3		
	0410143-046	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 78.9" - 109.4" Length	X4P150U3 RJ1 FSA		
	0410143-047	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 108.9" - 169.4" Length	X4P150U3 RJ2 FSA		
	0410143-048	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 168.9" - 229.4" Length	X4P150U3 RJ3 FSA		
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description	
	<ul style="list-style-type: none"> 100% Gasoline 100% Diesel 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline 85% Gasoline with 15% Methanol 90% Gasoline with 10% Ethanol 			<p>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.</p>	
Mechanical Features	Pump			Impellers and Diffusers	
	<p>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.</p>			<p>Impellers shall be splined to the pump shaft to provide positive, non-slip rotation. Diffusers shall be tightly secured to prevent rotation.</p>	
	Pump Intake Inlet			Manifold Head Assembly	
	<p>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 particulates from being ingested into the motor.</p>			<p>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.</p>	

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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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 on specific pump model. Maximum viscosity allowable – 70SSU @ 60°F (15°C). 	
Approvals	UL 79, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

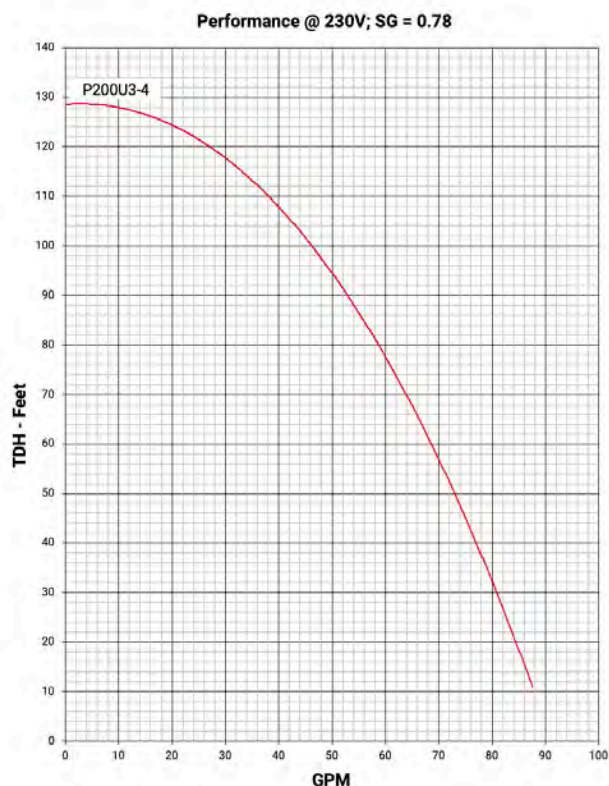
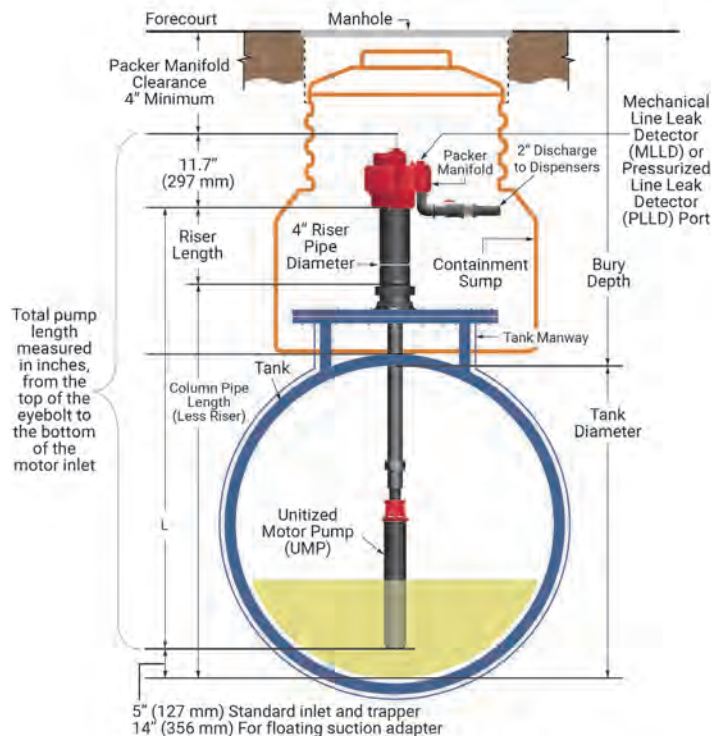
Bill of Materials	4" Red Jacket STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Brass	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	Purge Screw	Brass	None
	Siphon Cartridge	Brass	None
	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 STP Performance		The Red Jacket STP Dimensions	
<p>Performance @ 230V; SG = 0.78</p>  <p>TDH - Feet</p> <p>GPM</p> <p>X4P150U3</p>		 <p>Forecourt</p> <p>Manhole</p> <p>Packer Manifold Clearance 4" Minimum</p> <p>11.7" (297 mm)</p> <p>Riser Length</p> <p>4" Riser Pipe Diameter</p> <p>2" Discharge to Dispensers</p> <p>Mechanical Line Leak Detector (MLLD) or Pressurized Line Leak Detector (PLLD) Port</p> <p>Bury Depth</p> <p>Tank Manway</p> <p>Tank</p> <p>Column Pipe Length (Less Riser)</p> <p>Unitized Motor Pump (UMP)</p> <p>5" (127 mm) Standard inlet and trapper</p> <p>14" (356 mm) For floating suction adapter</p> <p>Total pump length measured in inches, from the top of the eyebolt to the bottom of the motor inlet</p> <p>Tank Diameter</p>	


STP Description	The Red Jacket 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 STP	Part #	Description	Model #	Notes
	0410488-001	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 80" - 110.5" Length	P200U3-4 RJ1	<ul style="list-style-type: none">• 2 HP, 1.5 KW, 220/240 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.
	0410488-002	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 110" - 170.5" Length	P200U3-4 RJ2	
	0410488-003	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 170" - 230.5" Length	P200U3-4 RJ3	
	0410488-004	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 82.4" - 112.9" Length	P200U3-4 RJ1 FSA	
	0410488-005	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 112.4" - 172.9" Length	P200U3-4 RJ2 FSA	
	0410488-006	4" TRJ STP - Quick Set (Adjustable) Final Assemblies, 172.4" - 232.9" Length	P200U3-4 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 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 particulates 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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 on specific pump model. Maximum viscosity allowable – 70SSU @ 60°F (15°C). 	
Approvals	UL 79, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials
4" Red Jacket STP Models

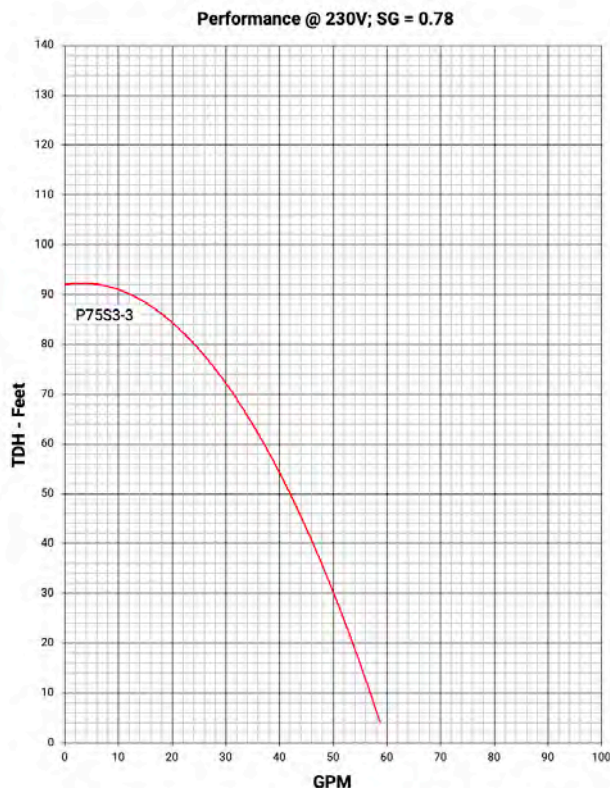
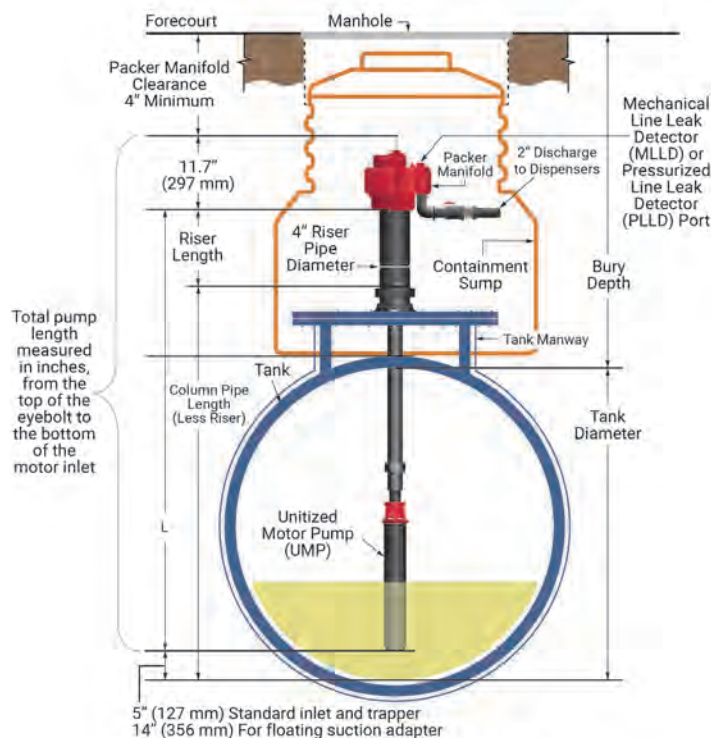
Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Brass	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
Purge Screw	Brass	None
Siphon Cartridge	Brass	None
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 STP Performance

The Red Jacket STP Dimensions


STP Description	The Red Jacket Alcohol Gas (AG) 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, and designed for alternative fuels – such as alcohol and ethanol. Red Jacket Submersible Turbine Pump AG is a fixed-speed alcohol gas fuel pump with a motor that delivers a higher flow rate than comparable submersible fuel motors, to optimize fuel flow and dispensing. It has an additional 30% increase in stainless steel hardware from The Red Jacket STP. It has all the advantages of The Red Jacket STP design, but was constructed with stainless steel on all parts exposed to the fuel path. 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 AG STP	Part #	Description	Model #	Notes
	0410140-058	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 74" - 104.5" Length	AGP75S3-3 RJ1	• 3/4 HP, 0.56 KW, 220/240 Voltage, single-phase
	0410140-059	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 104" - 164.5" Length	AGP75S3-3 RJ2	• Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet.
	0410140-060	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 164" - 224.5" Length	AGP75S3-3 RJ3	• FSA stands for Floating Suction Adapter.
	0410140-061	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 76.4" - 106.9" Length	AGP75S3-3 RJ1 FSA	
	0410140-062	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 106.4" - 166.9" Length	AGP75S3-3 RJ2 FSA	
	0410140-063	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 166.4" - 226.9" Length	AGP75S3-3 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 100% Gasoline• 100% Diesel• UL 79A: 85% Ethanol (E85)• UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100)• UL 79B: Kerosene and Fuel Oil• Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME			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 particulates 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.

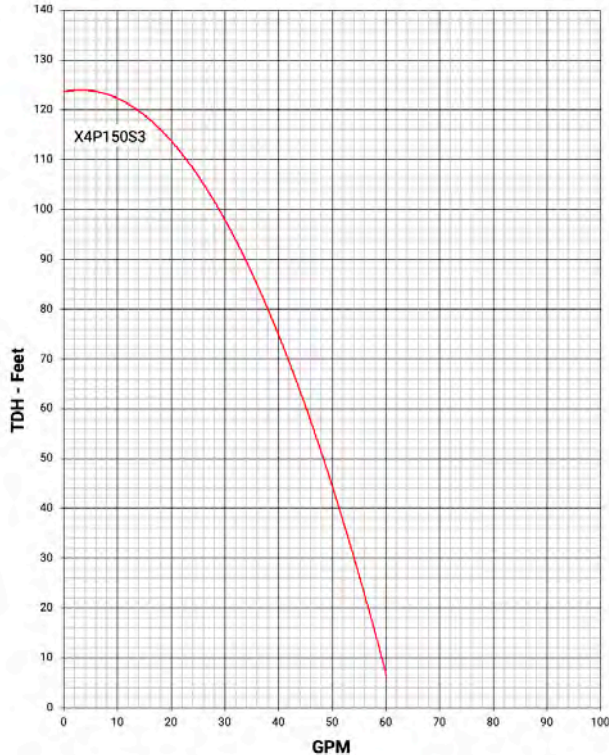
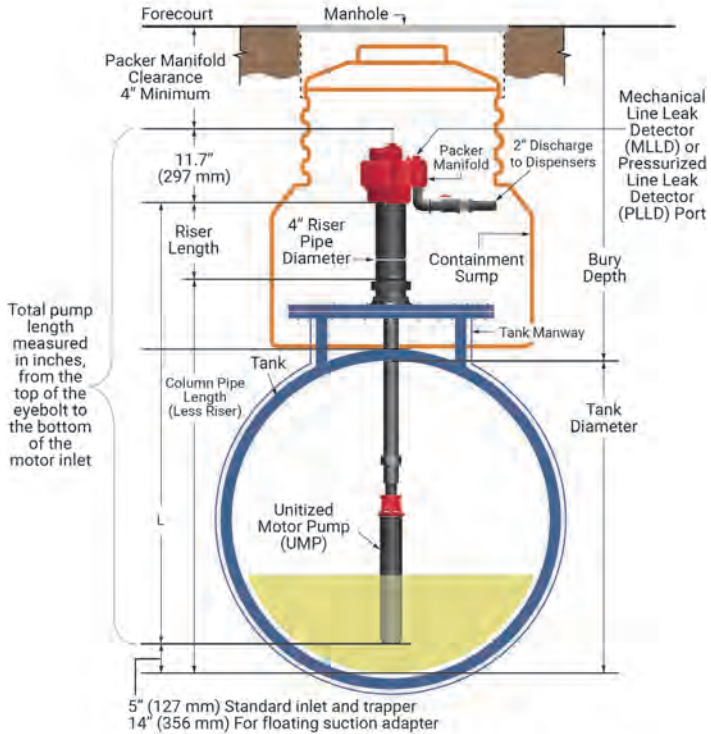
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with "Lock-n-Lift" Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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	


Bill of Materials	4" Red Jacket AG STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	High Grade Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Stainless Steel	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	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 AG STP Performance

The Red Jacket AG STP Dimensions


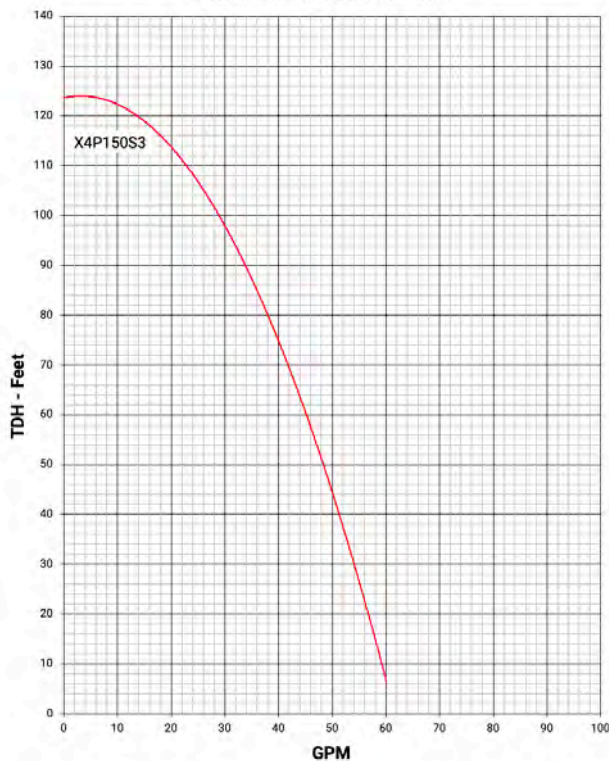
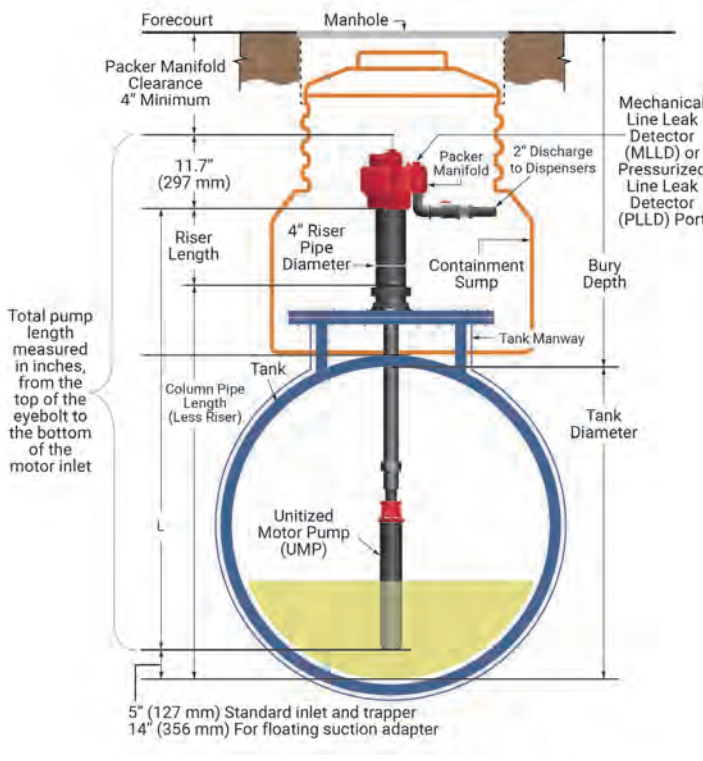
STP Description	The Red Jacket Alcohol Gas (AG) Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, and its advanced packer manifold design 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, and designed for alternative fuels – such as alcohol and ethanol. Red Jacket Submersible Turbine Pump AG is a fixed-speed alcohol gas fuel pump with a motor that delivers a higher flow rate than comparable submersible fuel motors, to optimize fuel flow and dispensing. It has an additional 30% increase in stainless steel hardware from The Red Jacket STP. It has all the advantages of The Red Jacket STP design, but was constructed with stainless steel on all parts exposed to the fuel path. 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 AG STP	Part #	Description	Model #	Notes
	0410141-060	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 76" - 106.5" Length	AGP150S3-3 RJ1	• 1.5 HP, 1.13 KW, 220/240 Voltage, single-phase.
	0410141-061	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 106" - 166.5" Length	AGP150S3-3 RJ2	• Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet.
	0410141-062	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 166" - 226.5" Length	AGP150S3-3 RJ3	• FSA stands for Floating Suction Adapter.
	0410141-063	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 78.4" - 108.9" Length	AGP150S3-3 RJ1 FSA	
	0410141-064	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 108.4" - 168.9" Length	AGP150S3-3 RJ2 FSA	
	0410141-065	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 168.4" - 228.9" Length	AGP150S3-3 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 100% Gasoline• 100% Diesel• UL 79A: 85% Ethanol (E85)• UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100)• UL 79B: Kerosene and Fuel Oil• Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME			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 particulates 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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	

Bill of Materials	4" Red Jacket AG STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	High Grade Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Stainless Steel	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	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 AG STP Performance		The Red Jacket AG STP Dimensions	
<p>Performance @ 230V; SG = 0.78</p>  <p>TDH - Feet</p> <p>GPM</p> <p>X4P150S3</p>		 <p>Forecourt</p> <p>Manhole</p> <p>Packer Manifold Clearance 4" Minimum</p> <p>11.7" (297 mm)</p> <p>Riser Length</p> <p>4" Riser Pipe Diameter</p> <p>2" Discharge to Dispensers</p> <p>Mechanical Line Leak Detector (MLLD) or Pressurized Line Leak Detector (PLLD) Port</p> <p>Bury Depth</p> <p>Tank Manway</p> <p>Tank</p> <p>Column Pipe Length (Less Riser)</p> <p>Unitized Motor Pump (UMP)</p> <p>5" (127 mm) Standard inlet and trapper</p> <p>14" (356 mm) For floating suction adapter</p> <p>Total pump length measured in inches, from the top of the eyebolt to the bottom of the motor inlet</p> <p>Tank Diameter</p>	

STP Description	The Red Jacket Alcohol Gas (AG) 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, and designed for alternative fuels – such as alcohol and ethanol. Red Jacket Submersible Turbine Pump AG is a fixed-speed alcohol gas fuel pump with a motor that delivers a higher flow rate than comparable submersible fuel motors, to optimize fuel flow and dispensing. It has an additional 30% increase in stainless steel hardware from The Red Jacket STP. It has all the advantages of The Red Jacket STP design, but was constructed with stainless steel on all parts exposed to the fuel path. 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 AG STP	Part #	Description	Model #	Notes
	0410143-055	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 76.5" - 107" Length	X4AGP150S3 RJ1	<ul style="list-style-type: none">1.5 HP – High Pressure, 1.13 KW, 220/240 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.
	0410143-056	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 106.5" - 167" Length	X4AGP150S3 RJ2	
	0410143-057	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 166.5" - 227" Length	X4AGP150S3 RJ3	
	0410143-058	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 78.9" - 109.4" Length	X4AGP150S3 RJ1 FSA	
	0410143-059	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 108.9" - 169.4" Length	X4AGP150S3 RJ2 FSA	
	0410143-060	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 168.9" - 229.4" Length	X4AGP150S3 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">100% Gasoline100% DieselUL 79A: 85% Ethanol (E85)UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100)UL 79B: Kerosene and Fuel OilGasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME			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 particulates 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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	

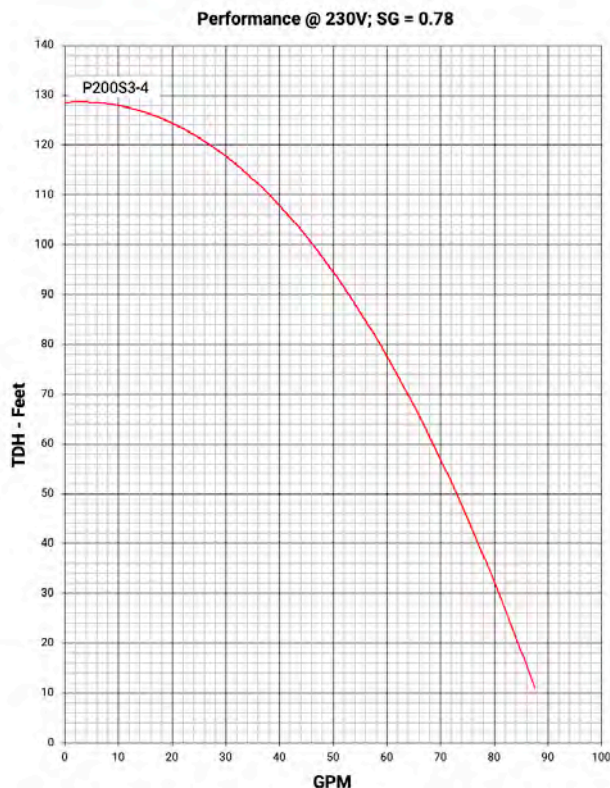
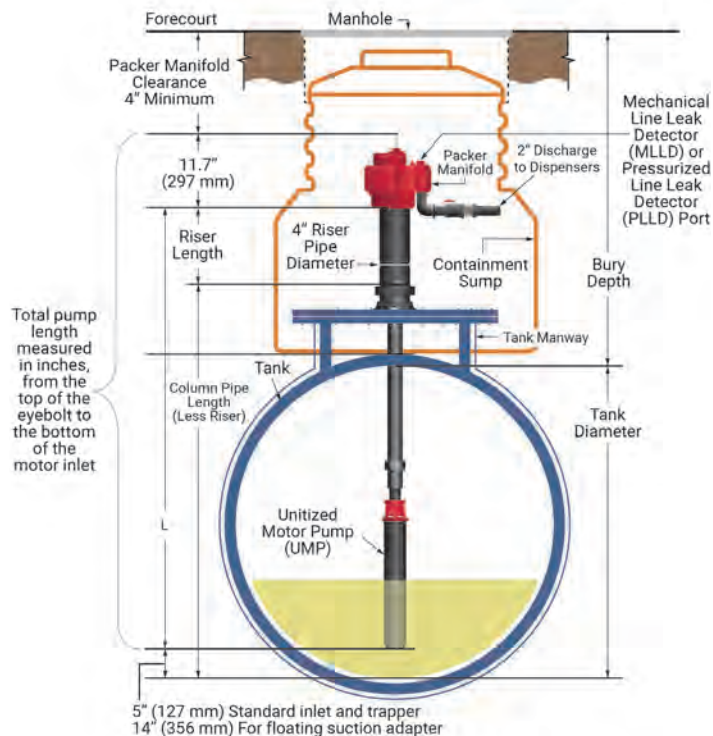
Bill of Materials	4" Red Jacket AG STP Models		
	Component	Material	Surface Finish
	Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
	Elastomers – "O" Rings	High Grade Fluorocarbon	None
	Check Valve Seat	Stainless Steel	None
	Check Valve Lock Down Screw	Stainless Steel	None
	Column Pipes	Steel Tubing	Powder Primer
	Conduit Pipe	1/2" Steel Pipe	Mill Finish
	Quick Set Connector	Gray Cast Iron	Phosphate and Oil
	Discharge Head	Gray Cast Iron	Corrosion Inhibitor
	Retaining Nuts	Steel	Zinc Plating
	Die Springs	Spring Steel	Enamel Paint
	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 AG STP Performance		The Red Jacket AG STP Dimensions	
<p>Performance @ 230V; SG = 0.78</p>  <p>TDH - Feet</p> <p>GPM</p> <p>X4P150S3</p>		 <p>Forecourt</p> <p>Manhole</p> <p>Packer Manifold Clearance 4" Minimum</p> <p>11.7" (297 mm)</p> <p>Riser Length</p> <p>4" Riser Pipe Diameter</p> <p>2" Discharge to Dispensers</p> <p>Mechanical Line Leak Detector (MLLD) or Pressurized Line Leak Detector (PLLD) Port</p> <p>Bury Depth</p> <p>Tank Manway</p> <p>Tank</p> <p>Column Pipe Length (Less Riser)</p> <p>Unitized Motor Pump (UMP)</p> <p>5" (127 mm) Standard inlet and trapper 14" (356 mm) For floating suction adapter</p> <p>Tank Diameter</p> <p>Total pump length measured in inches, from the top of the eyebolt to the bottom of the motor inlet</p>	


STP Description	The Red Jacket Alcohol Gas (AG) 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, and designed for alternative fuels – such as alcohol and ethanol. Red Jacket Submersible Turbine Pump AG is a fixed-speed alcohol gas fuel pump with a motor that delivers a higher flow rate than comparable submersible fuel motors, to optimize fuel flow and dispensing. It has an additional 30% increase in stainless steel hardware from The Red Jacket STP. It has all the advantages of The Red Jacket STP design, but was constructed with stainless steel on all parts exposed to the fuel path. 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 AG STP	Part #	Description	Model #	Notes
	0410488-013	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 80" - 110.5" Length	AGP200S3-4 RJ1	• 2 HP, 1.5 KW, 220/240 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.
	0410488-014	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 110" - 170.5" Length	AGP200S3-4 RJ2	
	0410488-015	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 170" - 230.5" Length	AGP200S3-4 RJ3	
	0410488-016	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 82.4" - 112.9" Length	AGP200S3-4 RJ1 FSA	
	0410488-017	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 112.4" - 172.9" Length	AGP200S3-4 RJ2 FSA	
	0410488-018	4" TRJ AG STP - Quick Set (Adjustable) Final Assemblies, 172.4" - 232.9" Length	AGP200S3-4 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 100% Gasoline• 100% Diesel• UL 79A: 85% Ethanol (E85)• UL 79B: 0-20% Biodiesel (B20), 100% Biodiesel (B100)• UL 79B: Kerosene and Fuel Oil• Gasoline and up to: 15% Methanol, 20% MTBE, 20% ETBE, 20% TAME			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 particulates 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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	

Bill of Materials
4" Red Jacket AG STP Models

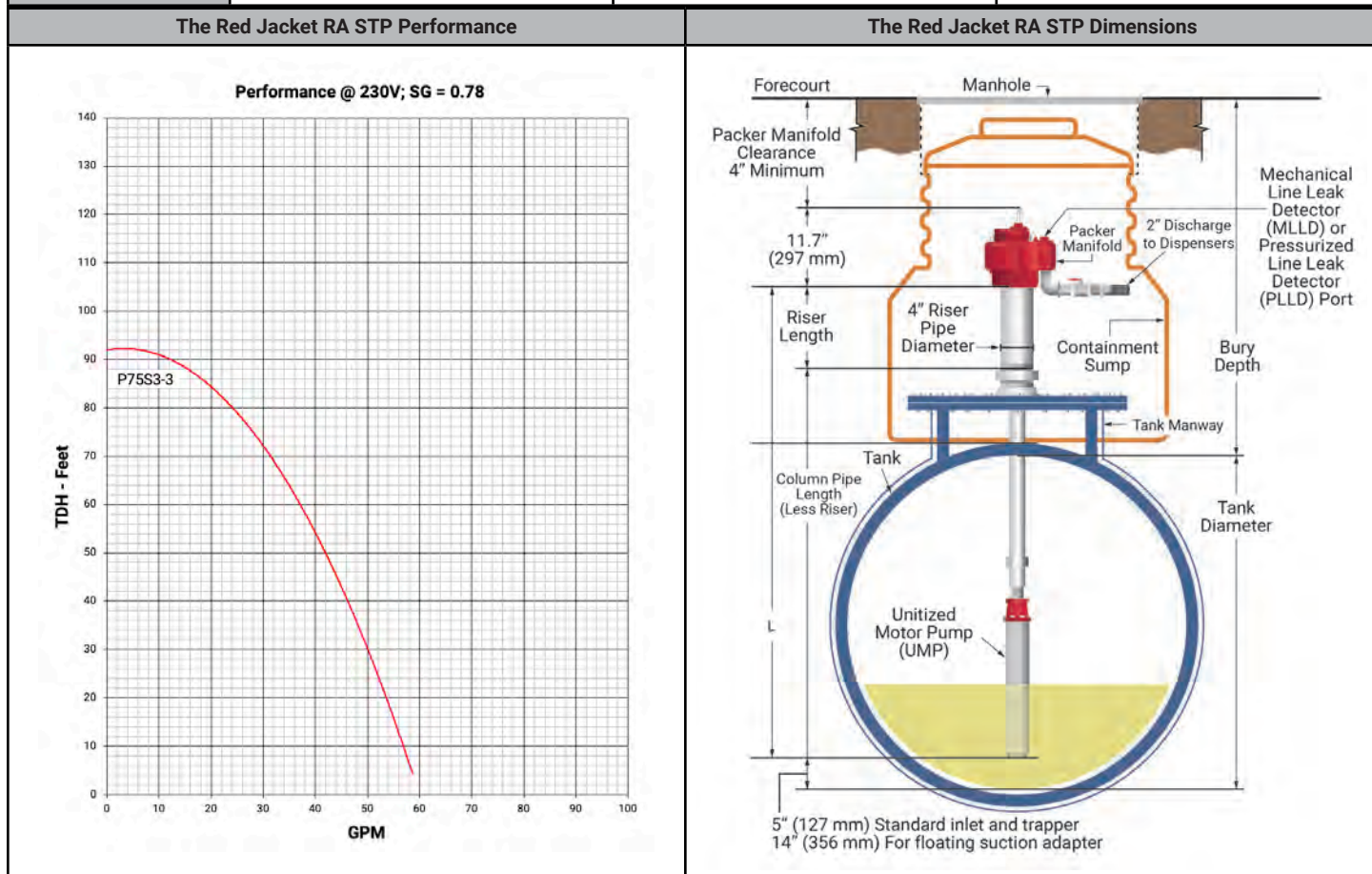
Component	Material	Surface Finish
Packer/Manifold Head	Gray Cast Iron	Low Volatile Organic Compound Paint
Elastomers – "O" Rings	High Grade Fluorocarbon	None
Check Valve Seat	Stainless Steel	None
Check Valve Lock Down Screw	Stainless Steel	None
Column Pipes	Steel Tubing	Powder Primer
Conduit Pipe	1/2" Steel Pipe	Mill Finish
Quick Set Connector	Gray Cast Iron	Phosphate and Oil
Discharge Head	Gray Cast Iron	Corrosion Inhibitor
Retaining Nuts	Steel	Zinc Plating
Die Springs	Spring Steel	Enamel Paint
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 AG STP Performance

The Red Jacket AG STP Dimensions


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, and designed to withstand corrosive environments. Whether your site is struggling with Ethanol-induced in-sump corrosion or ULSD-induced in-tank corrosion, with its specialty coating and stainless-steel construction, the Red Armor solution is designed to survive. The Red Armor STP has an additional 30% increase in stainless steel hardware from The Red Jacket AG STP. It has all the advantages of The Red Jacket STP design, but was constructed specifically to withstand corrosive environments. 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
	0410140-092	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 74" - 104.5" Length	AGP75S3-3RA1	<ul style="list-style-type: none">• 3/4 HP, 0.56 KW, 220/240 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.
	0410140-093	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 104" - 164.5" Length	AGP75S3-3RA2	
	0410140-094	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 164" - 224.5" Length	AGP75S3-3RA3	
	0410140-095	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 76.4" - 106.9" Length	AGP75S3-3RA1 FSA	
	0410140-096	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 106.4" - 166.9" Length	AGP75S3-3RA2 FSA	
	0410140-097	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 166.4" - 226.9" Length	AGP75S3-3RA3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 100% Gasoline• 100% Diesel• 80% Gasoline with 20% TAME, ETBE or MTBE Gasoline• 85% Gasoline with 15% Methanol• 90% Gasoline with 10% Ethanol			
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 particulates 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.

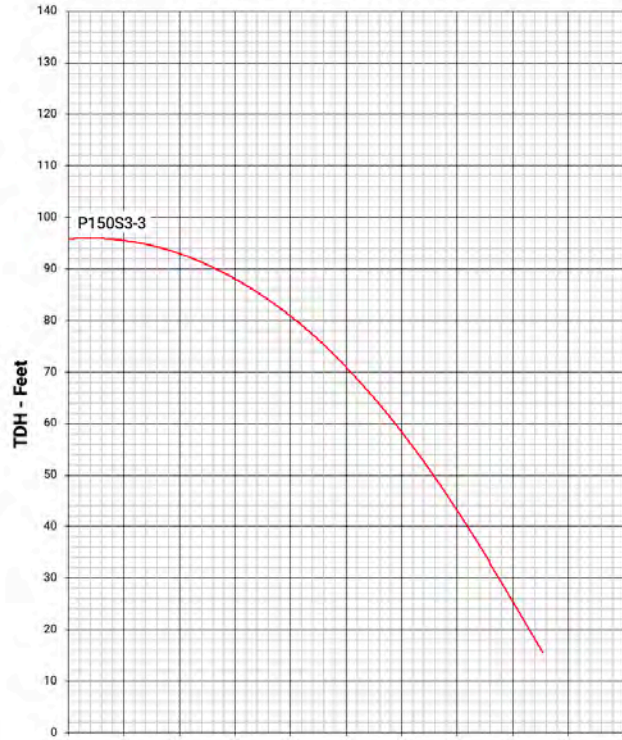
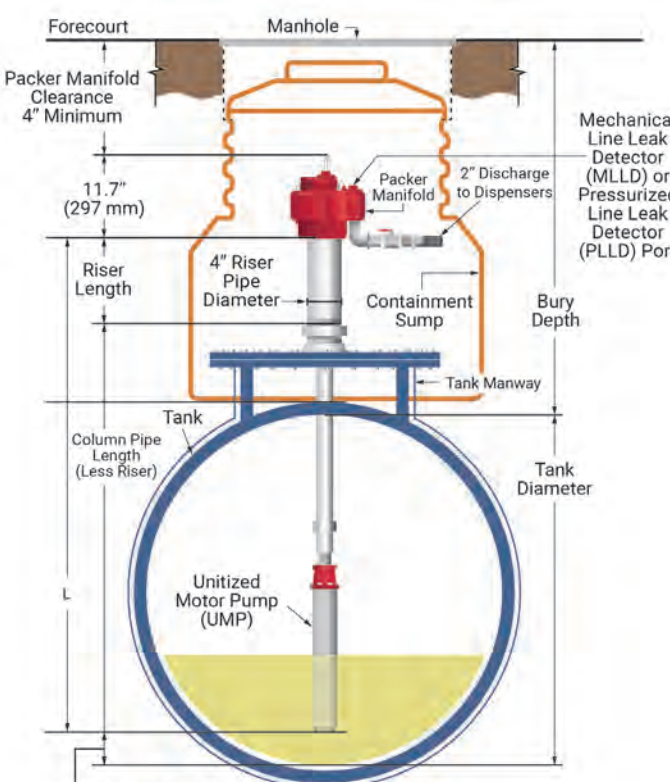
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with "Lock-n-Lift" Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	


Bill of Materials	4" Red Jacket RA STP Models		
	Component	Material	Surface Finish
	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



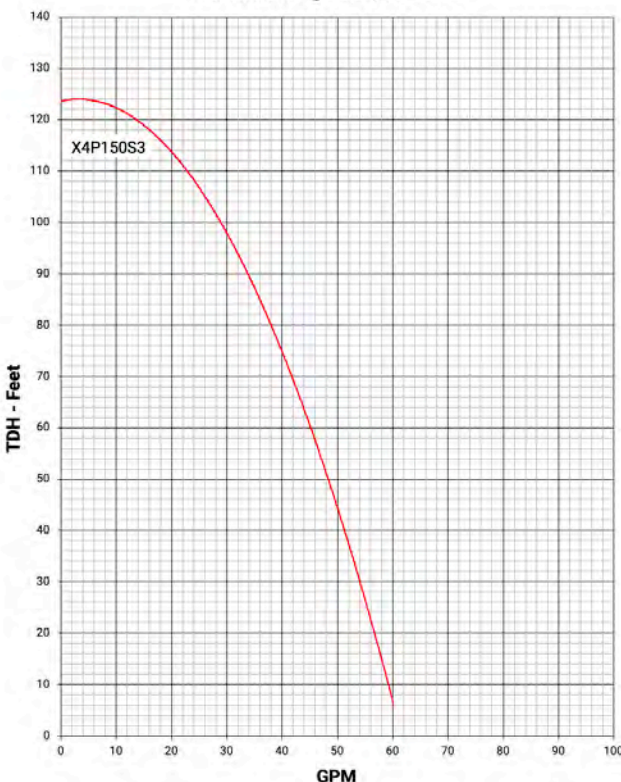
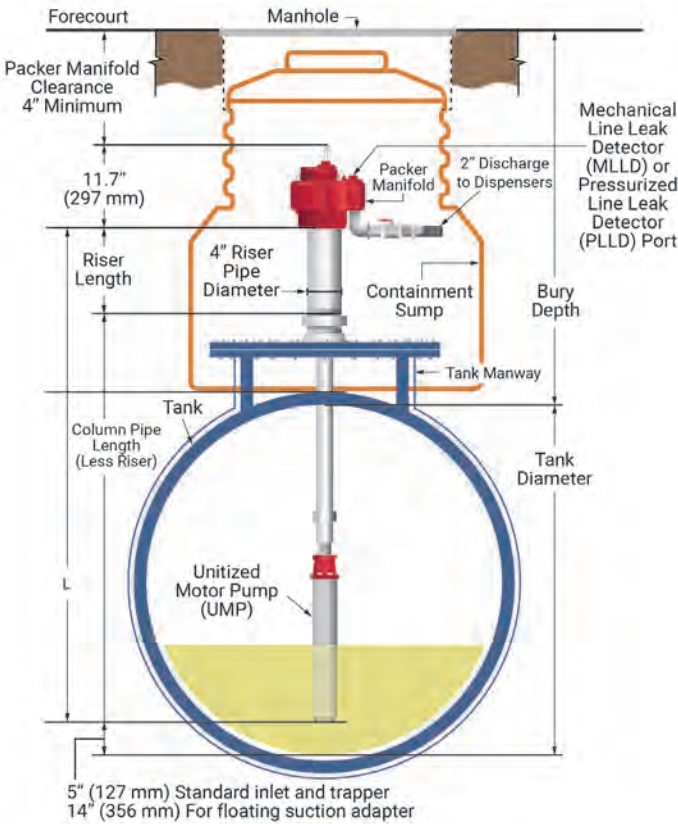
STP Description	The Red Jacket Red Armor (RA) Submersible Turbine Pump (STP) is responsible for driving fuel from the storage tank, through the piping infrastructure and into the vehicle through the use of pressure energy. It optimizes fuel flow and dispensing, and its advanced packer manifold design 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, and designed to withstand corrosive environments. Whether your site is struggling with Ethanol-induced in-sump corrosion or ULSD-induced in-tank corrosion, with its specialty coating and stainless-steel construction, the Red Armor solution is designed to survive. The Red Armor STP has an additional 30% increase in stainless steel hardware from The Red Jacket AG STP. It has all the advantages of The Red Jacket STP design, but was constructed specifically to withstand corrosive environments. 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
	0410141-094	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 76" - 106.5" Length	AGP150S3-3RA1	• 1.5 HP, 1.13 KW, 220/240 Voltage, single-phase.
	0410141-095	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 106" - 166.5" Length	AGP150S3-3RA2	• Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet.
	0410141-096	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 166" - 226.5" Length	AGP150S3-3RA3	• FSA stands for Floating Suction Adapter.
	0410141-097	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 78.4" - 108.9" Length	AGP150S3-3RA1 FSA	
	0410141-098	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 108.4" - 168.9" Length	AGP150S3-3RA2 FSA	
	0410141-099	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 168.4" - 228.9" Length	AGP150S3-3RA3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 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 particulates 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials	4" Red Jacket RA STP Models		
	Component	Material	Surface Finish
	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	
<p>Performance @ 230V; SG = 0.78</p>  <p>TDH - Feet</p> <p>GPM</p> <p>P150S3-3</p>		 <p>Forecourt</p> <p>Manhole</p> <p>Packer Manifold Clearance 4" Minimum</p> <p>11.7" (297 mm)</p> <p>Riser Length</p> <p>4" Riser Pipe Diameter</p> <p>Packer Manifold</p> <p>2" Discharge to Dispensers</p> <p>Mechanical Line Leak Detector (MLLD) or Pressurized Line Leak Detector (PLLD) Port</p> <p>Bury Depth</p> <p>Tank Manway</p> <p>Tank</p> <p>Column Pipe Length (Less Riser)</p> <p>Unitized Motor Pump (UMP)</p> <p>5" (127 mm) Standard inlet and trapper 14" (356 mm) For floating suction adapter</p>	

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, and designed to withstand corrosive environments. Whether your site is struggling with Ethanol-induced in-sump corrosion or ULSD-induced in-tank corrosion, with its specialty coating and stainless-steel construction, the Red Armor solution is designed to survive. The Red Armor STP has an additional 30% increase in stainless steel hardware from The Red Jacket AG STP. It has all the advantages of The Red Jacket STP design, but was constructed specifically to withstand corrosive environments. 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
	0410143-089	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 76.5" - 107" Length	X4AGP150S3 RJ1	• 1.5 HP – High Pressure, 1.13 KW, 220/240 Voltage, single-phase.
	0410143-090	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 105.5" - 165.5" Length	X4AGP150S3 RJ2	• Length is in inches, measured from top of the eyebolt to the bottom of the motor inlet.
	0410143-091	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 166" - 226.5" Length	X4AGP150S3 RJ3	• FSA stands for Floating Suction Adapter.
	0410143-092	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 78.9" - 109.4" Length	X4AGP150S3 RJ1 FSA	
	0410143-093	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 108.9" - 169.4" Length	X4AGP150S3 RJ2 FSA	
	0410143-094	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 168.9" - 229.4" Length	X4AGP150S3 RJ3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 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 particulates 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.

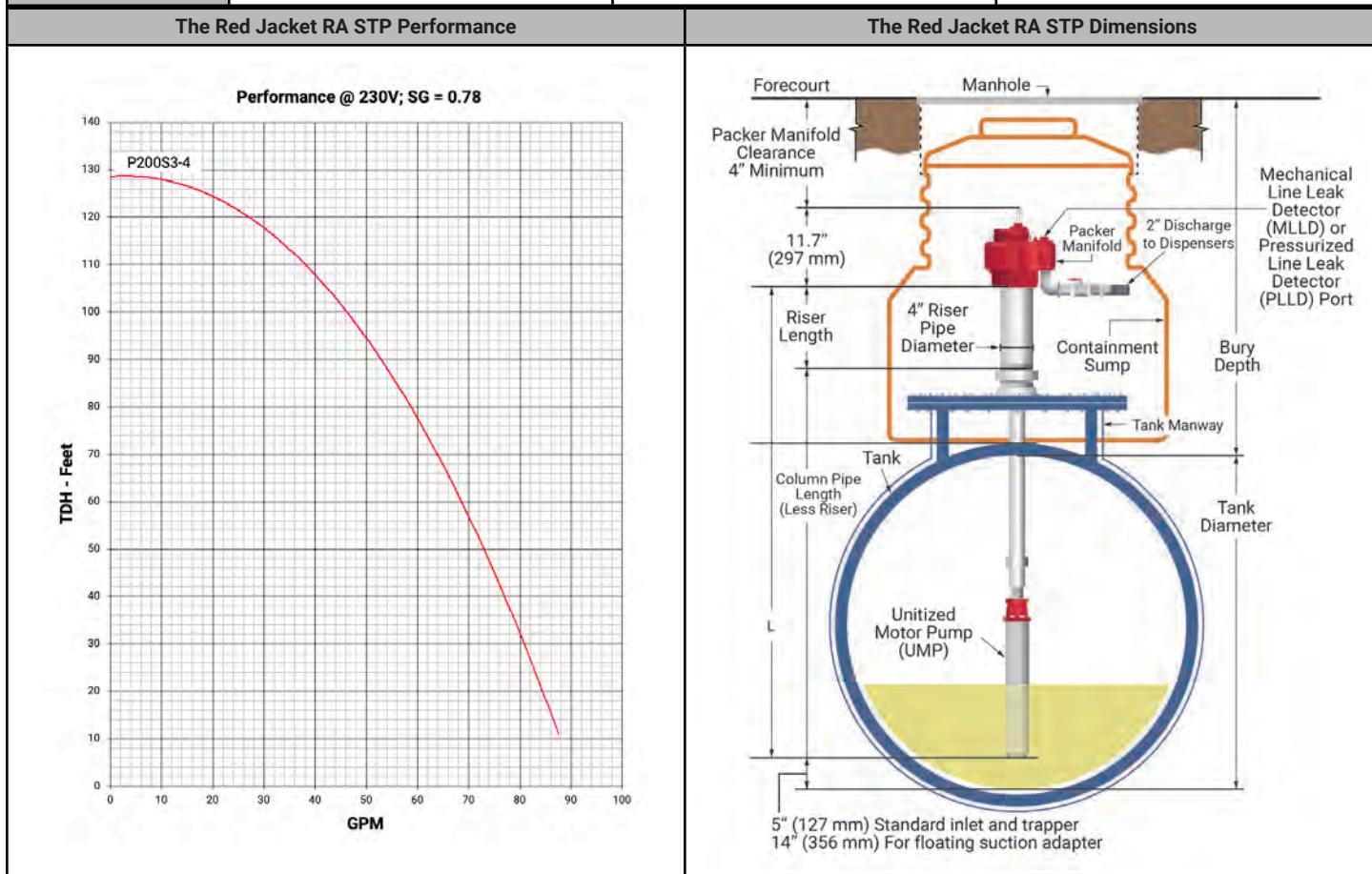
Mechanical Features (Continued)	Electrical Disconnect	Check Valve with “Lock-n-Lift” Feature
	The electrical disconnect shall be an integral part of the manifold assembly. The electrical disconnect shall automatically disconnect and sever electrical connection to the pump motor, without a swing joint, 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials	4" Red Jacket RA STP Models		
	Component	Material	Surface Finish
	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	
<p>Performance @ 230V; SG = 0.78</p>  <p>TDH - Feet</p> <p>GPM</p> <p>X4P150S3</p>		 <p>Forecourt</p> <p>Manhole</p> <p>Packer Manifold Clearance 4" Minimum</p> <p>11.7" (297 mm)</p> <p>Riser Length</p> <p>4" Riser Pipe Diameter</p> <p>Packer Manifold</p> <p>2" Discharge to Dispensers</p> <p>Mechanical Line Leak Detector (MLLD) or Pressurized Line Leak Detector (PLLD) Port</p> <p>Bury Depth</p> <p>Containment Sump</p> <p>Tank Manway</p> <p>Tank</p> <p>Column Pipe Length (Less Riser)</p> <p>L</p> <p>Unitized Motor Pump (UMP)</p> <p>Tank Diameter</p> <p>5" (127 mm) Standard inlet and trapper 14" (356 mm) For floating suction adapter</p>	

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, and designed to withstand corrosive environments. Whether your site is struggling with Ethanol-induced in-sump corrosion or ULSD-induced in-tank corrosion, with its specialty coating and stainless-steel construction, the Red Armor solution is designed to survive. The Red Armor STP has an additional 30% increase in stainless steel hardware from The Red Jacket AG STP. It has all the advantages of The Red Jacket STP design, but was constructed specifically to withstand corrosive environments. 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
	0410488-025	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 80" - 110.5" Length	AGP200S3-4RA1	<ul style="list-style-type: none">• 2 HP, 1.5 KW, 220/240 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.
	0410488-026	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 110" - 170.5" Length	AGP200S3-4RA2	
	0410488-027	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 170" - 230.5" Length	AGP200S3-4RA3	
	0410488-028	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 82.4" - 112.9" Length	AGP200S3-4RA1 FSA	
	0410488-029	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 112.4" - 172.9" Length	AGP200S3-4RA2 FSA	
	0410488-030	4" TRJ RA STP - Quick Set (Adjustable) Final Assemblies, 172.4" - 232.9" Length	AGP200S3-4RA3 FSA	
Fuel Compatibility	The Red Jacket Submersible Turbine Pump Model is UL Listed for:			STP Application Description
	<ul style="list-style-type: none">• 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 particulates 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 220/240 volt, 50 Hz, single-phase, 2850 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	<ul style="list-style-type: none"> 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, cUL	
Product Installation Guide	https://www.veeder.com/us/technical-document-library	

Bill of Materials	4" Red Jacket RA STP Models		
	Component	Material	Surface Finish
	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





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