



Franklin Fueling Systems



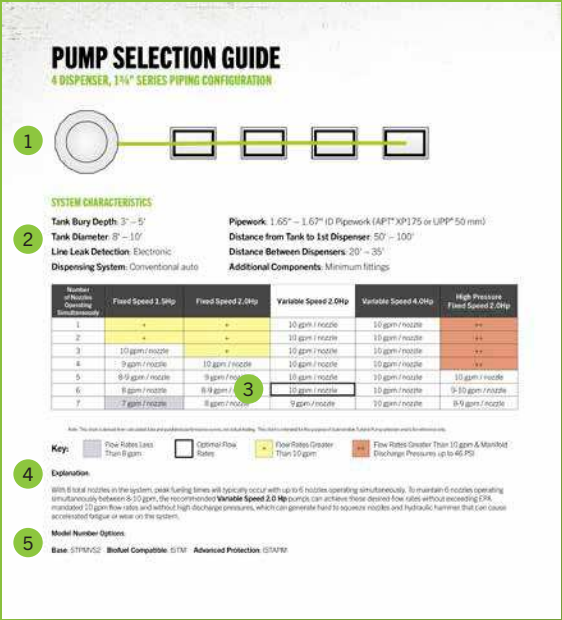
50 Hz SUBMERSIBLE PUMPS

SELECTION GUIDE

HOW IT WORKS

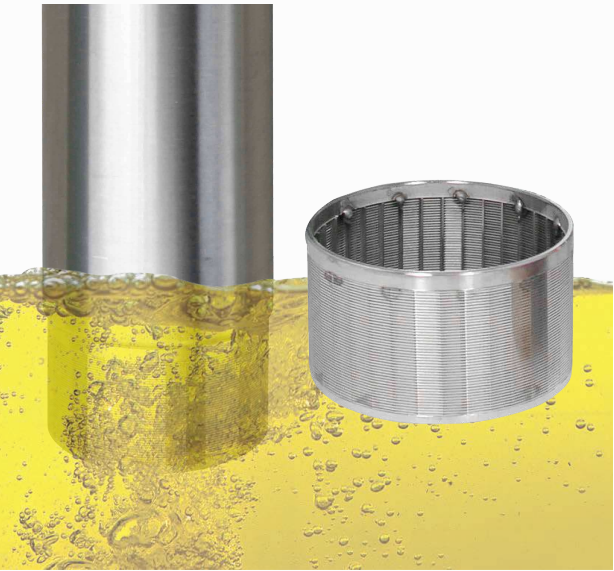
Use these key system factors to help you determine the right pump for your application.

- 1 Find the system layout that best represents your application using the dispenser count, pipework diameter, and visual pipework layout guide.
- 2 Review the common system characteristics.
- 3 Select the appropriate pump to achieve optimal flow rates for the number of nozzles operating simultaneously.
- 4 Review the pump recommendation explanation.
- 5 Choose the specific pump model from options including base, biofuel compatibility, and advanced protection models.



BIOFUEL COMPATIBILITY

As the demand for biofuels continues to grow, FE PETRO® brand Alcohol-Gas (AG) optioned submersible turbine pumps are at the forefront of motor fuel compatibility. Service station customers demand it, make sure you can provide it.



BIOFUEL APPROVED

FE PETRO® brand STPAG and IST models of STPs are currently the only STPs UL listed for use with gasoline up to 85% ethanol (E85) and diesel fuel with up to 20% biodiesel (B20) or 100% biodiesel according to UL79A and UL79B respectively.

INTAKE FILTER SCREENS

As biofuel use continues to grow, so does the potential for increased debris inside the storage tank. To stop this debris from entering the pumping system, use an FE PETRO® brand Intake Filter Screen (IFS). When installed, an IFS adds only about 25mm to the length of the PMA and provides filtration down to about the size of a grain of sand (0.25mm openings).

CHOOSING VARIABLE SPEED

When you fully understand your sites flow rates needs you are able to make a sound submersible turbine pump (STP) selection. Choosing variable speed STPs will help you meet your flow rate needs with faster fill times during peak hours and power savings during non-peak hours. FE PETRO® brand variable speed STPs allow you to maximize profits while minimizing operating expenses and protecting your site from accelerated wear.

ADVANCED PROTECTION

Available as an option on Alcohol-Gasoline (AG) compatible STPs, Advanced Protection defends pumps from accelerated corrosion caused by the acetic byproduct of microbial activity. Building on the AG construction for biofuel compatibility, the Advanced Protection option includes additional upgraded materials for a greater level of protection. Choose this added level of protection for installations where additional corrosion protection is needed including Ultra Low Sulfur Diesel applications, aboveground storage tanks, marinas, and aviation applications.

HIGHER FLOW RATES

The MagVFC™ Variable Speed Controller ramps the STP up and down as needed to provide optimal flow rates at fueling points. The result is a more consistent customer experience.

- Faster, more consistent flow rates than fixed speed systems for higher throughput at virtually the same total cost of ownership.
- Ramping up and down of pressure makes nozzles easier to squeeze and helps reduce overall system wear.

MINIMIZE HYDRAULIC HAMMER

Hydraulic hammer is a sudden pressure spike resulting from a stoppage in flow in a pressurized piping system. This can be exaggerated in fixed speed systems.

- A variable speed STP will ramp up and down to provide only the pressure needed to meet demand and significantly minimize the effects of hydraulic hammer.
- Hydraulic hammer may result in system fatigue and intensified wear to system components.

FACTORY INSTALLED

Advanced Protection is a factory installed option on STPAG and IST biofuel compatible models.

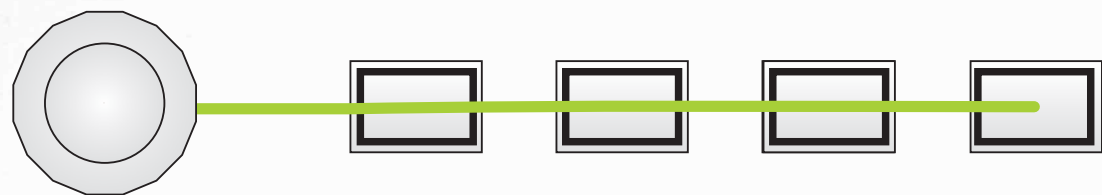
PROTECTIVE MATERIALS

Specifically formulated powder-coated and E-coated finishes protect exterior cast surfaces from accelerated corrosion. Stainless steel fasteners, riser, variable length column pipe and coupler protect against corrosion and provide long service life.



PUMP SELECTION GUIDE

4 DISPENSER, 1¾" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

- Tank Bury Depth:** 1.0 - 1.5m
- Tank Diameter:** 2.5 - 3.0m
- Line Leak Detection:** Electronic
- Dispensing System:** Conventional auto
- Pipework:** 1.65" – 1.67" ID Pipework (APT® XP175 or UPP® 50 mm)
- Distance from Tank to 1st Dispenser:** 15 - 30m
- Distance Between Dispensers:** 6 - 10m
- Additional Components:** Minimum fittings

Number of Nozzles Operating Simultaneously	Fixed Speed 1.5Hp	Fixed Speed 2.0Hp	Variable Speed 2.0Hp	Variable Speed 4.0Hp	High Pressure Fixed Speed 2.0Hp
1	+	+	38 lpm / nozzle	10 lpm / nozzle	++
2	+	+	38 lpm / nozzle	38 lpm / nozzle	++
3	34-38 lpm / nozzle	+	38 lpm / nozzle	38 lpm / nozzle	++
4	34 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle
5	30 lpm / nozzle	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34 lpm / nozzle
6	26-30 lpm / nozzle	30 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle
7	26 lpm / nozzle	26-30 lpm / nozzle	34 lpm / nozzle	34-38 lpm / nozzle	26-30 lpm / nozzle
8	<26 lpm / nozzle	<26 lpm / nozzle	30-34 lpm / nozzle	34 lpm / nozzle	26 lpm / nozzle

Note: This chart is derived from calculated data and published performance curves, not actual testing. This chart is intended for the purpose of Submersible Turbine Pump selection and is for reference only.

Key:

Flow Rates Less Than 30 lpm

Optimal Flow Rates

Flow Rates Greater Than 38 lpm

Flow Rates Greater Than 38 lpm & Manifold Discharge Pressures up to 3.2 bar

Explanation:

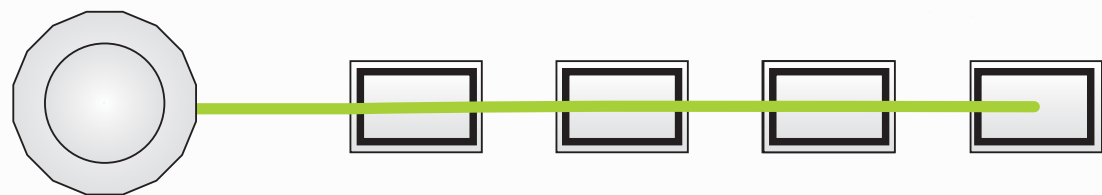
With 8 total nozzles in the system, peak fueling times will typically occur with up to 6 nozzles operating simultaneously. To maintain 6 nozzles operating simultaneously between 30-38 lpm, the recommended **Variable Speed 2.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: STPMVS2 Biofuel Compatible: ISTM Advanced Protection: ISTAPM

PUMP SELECTION GUIDE

4 DISPENSER, 2" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

- Tank Bury Depth:** 1.0 - 1.5m
- Tank Diameter:** 2.5 – 3.0m
- Line Leak Detection:** Electronic
- Dispensing System:** Conventional auto
- Pipework:** 2.04" – 2.12" ID Pipework (APT® XP200 or UPP® 63 mm)
- Distance from Tank to 1st Dispenser:** 15 – 30m
- Distance Between Dispensers:** 6 – 10m
- Additional Components:** Minimum fittings

Number of Nozzles Operating Simultaneously	Fixed Speed 1.5Hp	Fixed Speed 2.0Hp	Variable Speed 2.0Hp	Variable Speed 4.0Hp	High Pressure Fixed Speed 2.0Hp
1	+	+	38 lpm / nozzle	38 lpm / nozzle	++
2	+	+	38 lpm / nozzle	38 lpm / nozzle	++
3	38 lpm / nozzle	+	38 lpm / nozzle	38 lpm / nozzle	++
4	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	++
5	30-34 lpm / nozzle	34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle
6	30 lpm / nozzle	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34 lpm / nozzle
7	26-30 lpm / nozzle	26-30 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30 lpm / nozzle
8	<26 lpm / nozzle	26 lpm / nozzle	34 lpm / nozzle	38 lpm / nozzle	26-30 lpm / nozzle

Note: This chart is derived from calculated data and published performance curves, not actual testing. This chart is intended for the purpose of Submersible Turbine Pump selection and is for reference only.

Key:

Flow Rates Less Than 30 lpm

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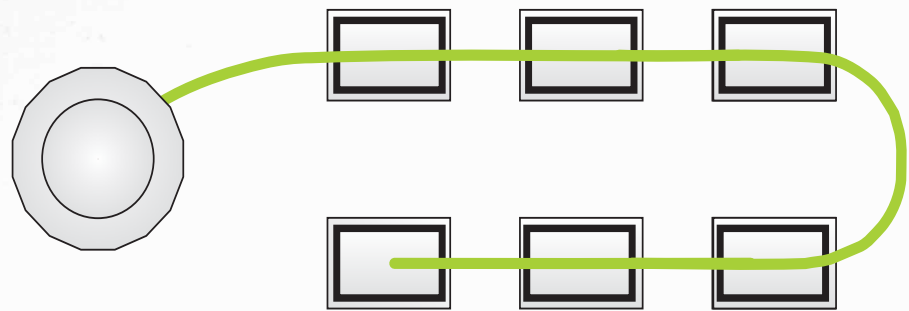
With 8 total nozzles in the system, peak fueling times will typically occur with up to 6 nozzles operating simultaneously. To maintain 6 nozzles operating simultaneously between 30-38 lpm, the recommended **Variable Speed 2.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: STPMVS2 Biofuel Compatible: ISTM Advanced Protection: ISTAPM

PUMP SELECTION GUIDE

6 DISPENSER, 2" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

- Tank Bury Depth:** 1.0 – 1.5m
- Tank Diameter:** 2.5 – 3.0m
- Line Leak Detection:** Electronic
- Dispensing System:** Conventional auto
- Pipework:** 2.04" – 2.12" ID Pipework (APT® XP200 or UPP® 63 mm)
- Distance from Tank to 1st Dispenser:** 15 – 30m
- Distance Between Dispensers:** 6 – 10m
- Additional Components:** Minimum fittings

Number of Nozzles Operating Simultaneously	Variable Speed 2.0Hp	Variable Speed 4.0Hp	2x Manifoldd Variable Speed 2.0Hp	2x Manifoldd Fixed Speed 2.0Hp	2x Manifoldd Hi-PSI Fixed Speed 2.0Hp
1	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
2	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
3	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
4	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
5	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
6	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	++
7	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	++
8	34 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	34 lpm / nozzle	34-38 lpm / nozzle
9	30-34 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle
10	26-30 lpm / nozzle	34 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	30-34 lpm / nozzle
11	26-30 lpm / nozzle	30 lpm / nozzle	34-38 lpm / nozzle	26-30 lpm / nozzle	30-34 lpm / nozzle
12	26 lpm / nozzle	26-30 lpm / nozzle	34-38 lpm / nozzle	26-30 lpm / nozzle	30 lpm / nozzle

Note: This chart is derived from calculated data and published performance curves, not actual testing. This chart is intended for the purpose of Submersible Turbine Pump selection and is for reference only.

Key: Flow Rates Less Than 30 lpm Optimal Flow Rates Flow Rates Greater Than 38 lpm Flow Rates Greater Than 38 lpm & Manifold Discharge Pressures up to 3.2 bar

Explanation:

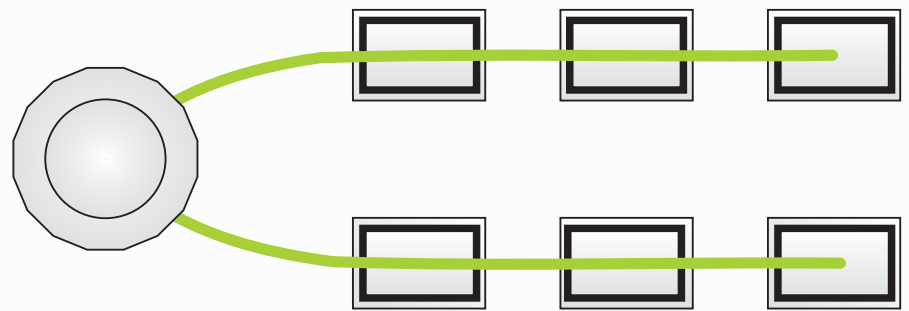
With 12 total nozzles in the system, peak fueling times will typically occur with up to 9 nozzles operating simultaneously. To maintain 8-9 nozzles operating simultaneously between 30-38 lpm, the recommended **Variable Speed 4.0 Hp** or **Manifolded Variable Speed 2.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: STPMVS4 / (2x) STPMVS2 **Biofuel Compatible:** ISTMVS4 / (2x) ISTM **Advanced Protection:** ISTAPMVS4 / (2x) ISTAPM

PUMP SELECTION GUIDE

6 DISPENSER, 1¾" PARALLEL PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

- Tank Bury Depth:** 1.0 – 1.5m
- Tank Diameter:** 2.5 – 3.0m
- Line Leak Detection:** Electronic
- Dispensing System:** Conventional auto
- Pipework:** 1.65" – 1.67" ID Pipework (APT® XP175 or UPP® 50 mm)
- Distance from Tank to 1st Dispenser:** 15 – 30m
- Distance Between Dispensers:** 6 – 10m
- Additional Components:** Minimum fittings and common pipe

Number of Nozzles Operating Simultaneously	Variable Speed 2.0Hp	Variable Speed 4.0Hp	2x Manifoldd Variable Speed 2.0Hp	2x Manifoldd Fixed Speed 2.0Hp	2x Manifoldd Hi-PSI Fixed Speed 2.0Hp
1	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
2	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
3	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
4	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
5	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
6	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
7	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	++
8	34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle
9	30-34 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle
10	30 lpm / nozzle	30-34 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34 lpm / nozzle
11	26-30 lpm / nozzle	30-34 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	30-34 lpm / nozzle
12	26 lpm / nozzle	26-30 lpm / nozzle	34-38 lpm / nozzle	26-30 lpm / nozzle	30-34 lpm / nozzle

Note: This chart is derived from calculated data and published performance curves, not actual testing. This chart is intended for the purpose of Submersible Turbine Pump selection and is for reference only.

Key: Flow Rates Less Than 30 lpm Optimal Flow Rates Flow Rates Greater Than 38 lpm Flow Rates Greater Than 38 lpm & Manifold Discharge Pressures up to 3.2 bar

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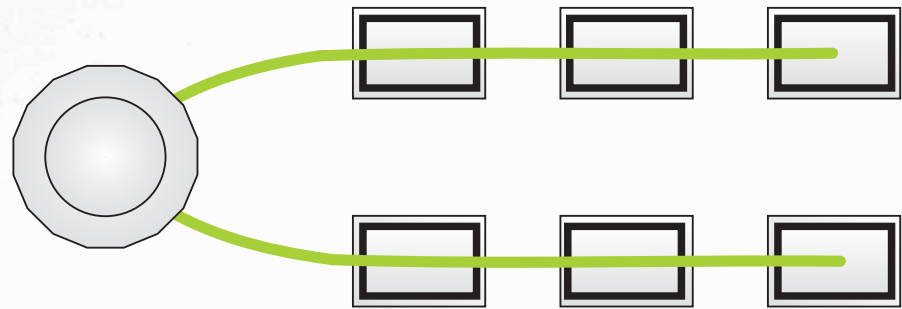
With 12 total nozzles in the system, peak fueling times will typically occur with up to 9 nozzles operating simultaneously. To maintain 8-9 nozzles operating simultaneously between 30-38 lpm, the recommended **Variable Speed 4.0 Hp** or **Manifolded Variable Speed 2.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: STPMVS4 / (2x) STPMVS2 **Biofuel Compatible:** ISTMVS4 / (2x) ISTM **Advanced Protection:** ISTAPMVS4 / (2x) ISTAPM

PUMP SELECTION GUIDE

6 DISPENSER, 2" PARALLEL PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth:1.0 – 1.5m

Tank Diameter: 2.5 – 3.0m

Line Leak Detection: Electronic

Dispensing System: Conventional auto

Pipework: 2.04" – 2.12" ID Pipework (APT® XP200 or UPP® 63 mm)

Distance from Tank to 1st Dispenser: 15 – 30m

Distance Between Dispensers: 6 – 10m

Additional Components: Minimum fittings and common pipe

Number of Nozzles Operating Simultaneously	Variable Speed 2.0Hp	Variable Speed 4.0Hp	2x Manifoldd Variable Speed 2.0Hp	2x Manifoldd Fixed Speed 2.0Hp	2x Manifoldd Hi-PSI Fixed Speed 2.0Hp
1	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
2	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
3	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
4	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
5	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
6	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
7	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
8	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	++
9	34 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle
10	30 lpm / nozzle	34 lpm / nozzle	38 lpm / nozzle	34 lpm / nozzle	34-38 lpm / nozzle
11	26-30 lpm / nozzle	30-34 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle
12	26-30 lpm / nozzle	30 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	30-34 lpm / nozzle

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Key:

Flow Rates Less Than 30 lpm

Optimal Flow Rates

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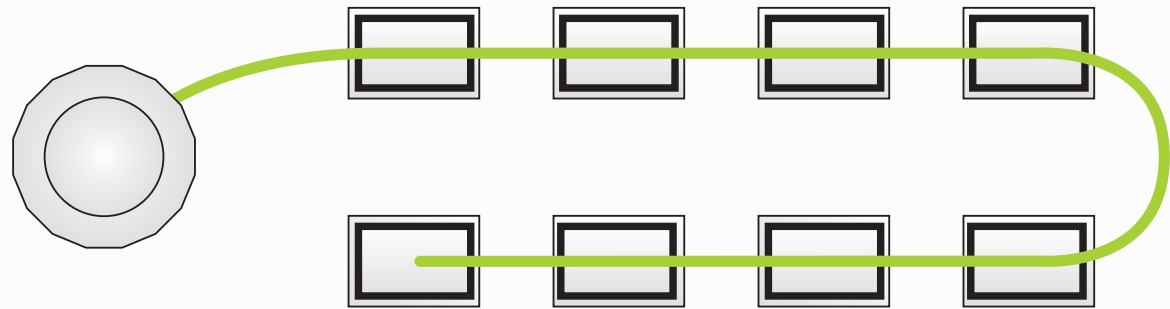
With 12 total nozzles in the system, peak fueling times will typically occur with up to 9 nozzles operating simultaneously. To maintain 8-9 nozzles operating simultaneously between 30-38 lpm, the recommended **Variable Speed 4.0 Hp** or **Manifolded Variable Speed 2.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: STPMVS4 / (2x) STPMVS2 **Biofuel Compatible:** ISTMVS4 / (2x) ISTM **Advanced Protection:** ISTAPMVS4 / (2x) ISTAPM

PUMP SELECTION GUIDE

8 DISPENSER, 2" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 1.0 – 1.5m

Tank Diameter: 2.5 – 3.0m

Line Leak Detection: Electronic

Dispensing System: Conventional auto

Pipework: 2.04" – 2.12" ID Pipework (APT® XP200 or UPP® 63 mm)

Distance from Tank to 1st Dispenser: 15 – 30m

Distance Between Dispensers: 6 – 10m

Additional Components: Minimum fittings

Number of Nozzles Operating Simultaneously	Variable Speed 4.0Hp	2x Manifoldd Variable Speed 2.0Hp	2x Manifoldd Variable Speed 4.0Hp	2x Manifoldd Fixed Speed 2.0Hp	2x Manifoldd Hi-PSI Fixed Speed 2.0Hp
1	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
2	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
3	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
4	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
5	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
6	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
7	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	++
8	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle
9	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34 lpm / nozzle	34-38 lpm / nozzle
10	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle
11	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	30-34 lpm / nozzle
12	26-30 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	26-30 lpm / nozzle	30-34 lpm / nozzle
13	26-30 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	26 -30 lpm / nozzle	30 lpm / nozzle
14	< 26 lpm / nozzle	34-38 lpm / nozzle	34-38 lpm / nozzle	26-30 lpm / nozzle	26-30 lpm / nozzle
15	< 26 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle	< 26 lpm / nozzle	26-30 lpm / nozzle
16	< 26 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle	< 26 lpm / nozzle	< 26 lpm / nozzle

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Key:

Flow Rates Less Than 30 lpm

Optimal Flow Rates

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 Flow Rates Greater Than 38 lpm & Manifold Discharge Pressures up to 3.2 bar

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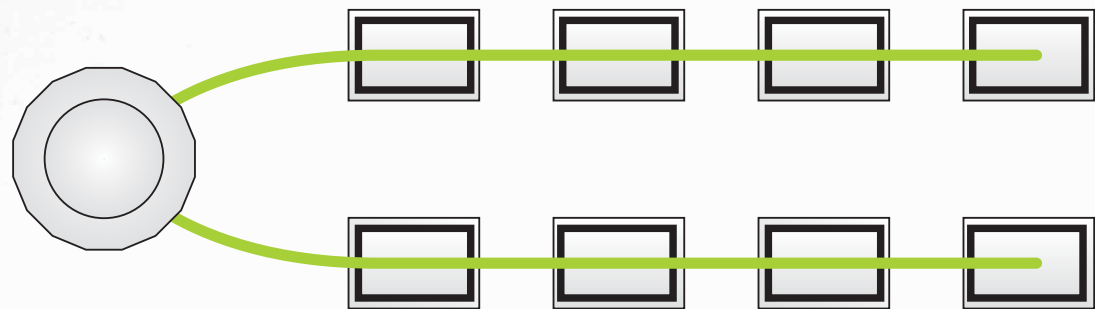
With 16 total nozzles in the system, peak fueling times will typically occur with up to 12 nozzles operating simultaneously. To maintain 10-12 nozzles operating simultaneously between 30-38 lpm, the recommended **Manifolded Variable Speed 2.0 Hp** or **Manifolded Variable Speed 4.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: (2x) STPMVS2 / (2x) STPMVS4 **Biofuel Compatible:** (2x) ISTM / (2x) ISTMVS4 **Advanced Protection:** (2x) ISTAPM / (2x) ISTMVS4

PUMP SELECTION GUIDE

8 DISPENSER, 1¾" PARALLEL PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

- Tank Bury Depth:** 1.0 – 1.5m

Tank Diameter: 2.5 – 3.0m

Line Leak Detection: Electronic

Dispensing System: Conventional auto
- Pipework:** 1.65" – 1.67" ID Pipework (APT® XP175 or UPP® 50 mm)

Distance from Tank to 1st Dispenser: 15 – 30m

Distance Between Dispensers: 6 – 10m

Additional Components: Minimum fittings and common pipe

# Of Nozzles Operating Simultaneously	Variable Speed 4.0Hp	2x Manifoldd Variable Speed 2.0Hp	2x Manifoldd Variable Speed 4.0Hp	2x Manifoldd Fixed Speed 2.0Hp	2x Manifoldd Hi-PSI Fixed Speed 2.0Hp
1	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
2	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
3	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
4	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
5	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
6	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
7	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	++
8	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	38 lpm / nozzle
9	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle
10	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34 lpm / nozzle
11	30 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30 lpm / nozzle	30-34 lpm / nozzle
12	26-30 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	26-30 lpm / nozzle	30 lpm / nozzle
13	26-30 lpm / nozzle	34-38 lpm / nozzle	34-38 lpm / nozzle	26-30 lpm / nozzle	26-30 lpm / nozzle
14	< 26 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle	26 lpm / nozzle	26-30 lpm / nozzle
15	< 26 lpm / nozzle	30-34 lpm / nozzle	34 lpm / nozzle	< 26 lpm / nozzle	26 lpm / nozzle
16	< 26 lpm / nozzle	30-34 lpm / nozzle	30-34 lpm / nozzle	< 26 lpm / nozzle	< 26 lpm / nozzle

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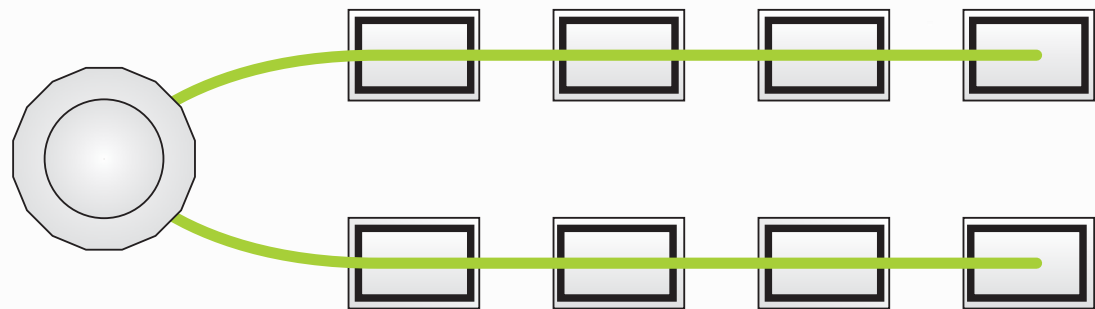
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Model Number Options:

Base: (2x) STPMVS2 / (2x) STPMVS4 **Biofuel Compatible:** (2x) ISTM / (2x) ISTMVS4 **Advanced Protection:** (2x) ISTAPM / (2x) ISTAPMVS4

PUMP SELECTION GUIDE

8 DISPENSER, 2" PARALLEL PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

- Tank Bury Depth:** 1.0 – 1.5m

Tank Diameter: 2.5 – 3.0m

Line Leak Detection: Electronic

Dispensing System: Conventional auto
- Pipework:** 2.04" – 2.12" ID Pipework (APT® XP200 or UPP® 63 mm)

Distance from Tank to 1st Dispenser: 15 – 30m

Distance Between Dispensers: 6 – 10m

Additional Components: Minimum fittings and common pipe

# Of Nozzles Operating Simultaneously	Variable Speed 4.0Hp	2x Manifoldd Variable Speed 2.0Hp	2x Manifoldd Variable Speed 4.0Hp	2x Manifoldd Fixed Speed 2.0Hp	2x Manifoldd Hi-PSI Fixed Speed 2.0Hp
1	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
2	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
3	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
4	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
5	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
6	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
7	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	+	++
8	38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	++
9	34-38 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle
10	34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	34 lpm / nozzle	34-38 lpm / nozzle
11	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	34-38 lpm / nozzle
12	30-34 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	30-34 lpm / nozzle	30-34 lpm / nozzle
13	26-30 lpm / nozzle	38 lpm / nozzle	38 lpm / nozzle	26-30 lpm / nozzle	30-34 lpm / nozzle
14	26-30 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	26-30 lpm / nozzle	30 lpm / nozzle
15	26-30 lpm / nozzle	34-38 lpm / nozzle	38 lpm / nozzle	26-30 lpm / nozzle	26-30 lpm / nozzle
16	26 lpm / nozzle	34 lpm / nozzle	34-38 lpm / nozzle	26 lpm / nozzle	26-30 lpm / nozzle

Note: This chart is derived from calculated data and published performance curves, not actual testing. This chart is intended for the purpose of Submersible Turbine Pump selection and is for reference only.

Key:

Flow Rates Less Than 30 lpm

Optimal Flow Rates

Flow Rates Greater Than 38 lpm

Flow Rates Greater Than 30 lpm & Manifold Discharge Pressures up to 3.2 bar

Explanation:

With 16 total nozzles in the system, peak fueling times will typically occur with up to 12 nozzles operating simultaneously. To maintain 10-12 nozzles operating simultaneously between 30-38 lpm, the recommended **Manifolded Variable Speed 2.0 Hp** or **Manifolded Variable Speed 4.0 Hp** pumps can achieve these desired flow rates without exceeding 38 lpm flow rates and without high discharge pressures, which can generate hard to squeeze nozzles and hydraulic hammer that can cause accelerated fatigue or wear on the system.

Model Number Options:

Base: (2x) STPMVS2 / (2x) STPMVS4 **Biofuel Compatible:** (2x) ISTM / (2x) ISTMVS4 **Advanced Protection:** (2x) ISTAPM / (2x) ISTMVS4

TOTAL SYSTEM SOLUTIONS™



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