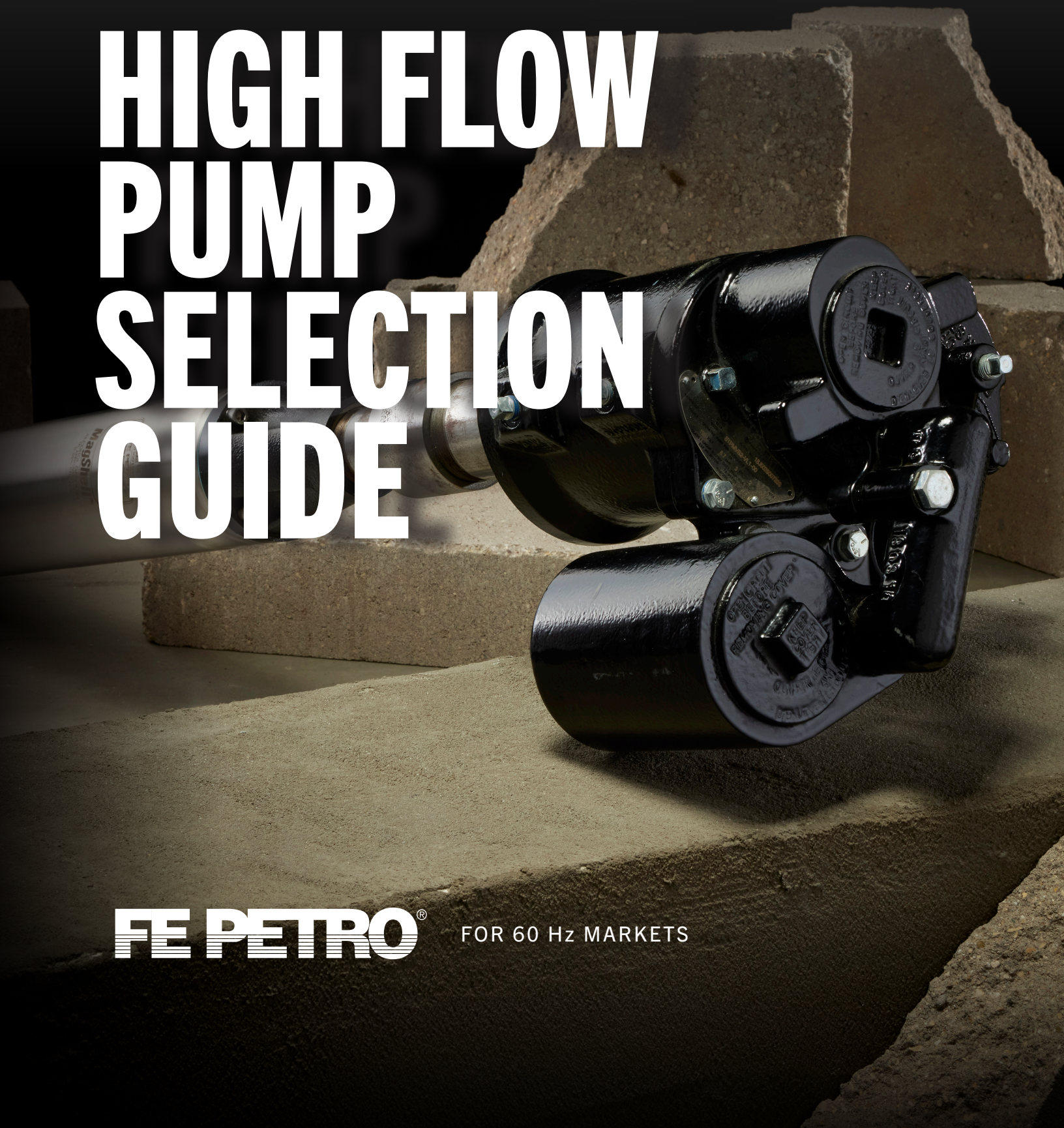
Franklin Electric
ENERGY SYSTEMS

HIGH FLOW PUMP SELECTION GUIDE



FE PETRO®

FOR 60 Hz MARKETS



SUBMERSIBLE TURBINE PUMPS

Since hitting the market in 1988, FE PETRO® Submersible Turbine Pumps (STPs) have developed a reputation as the standard in performance, quality and dependability with innovative features only available from Franklin Electric. It is, and always will be about filling cars faster and smarter. With best-in-class flow rates backed by a long history of dependability, FE PETRO® STPs are responsible for delivering fuel to thousands of customers around the globe, day in and day out.

- 4 Hp, 2Hp, 1 ½ Hp, ¾ Hp, and ⅓ Hp options
- Biofuel compatibility handles ethanol / biodiesel blends
- Advanced protection prevents corrosion / extends pump life
- Variable speed maximizes profits with high flow rates
- MagShell® increases flow rates for higher throughput
- Variable length adjustment ensures perfect onsite fit
- Active air elimination for smooth fuel delivery
- Safe and simple service disconnects and pressure relief
- Intake filter screen keeps debris out / reduces wear
- Intelligent pump controllers maximize uptime

VARIABLE SPEED TECHNOLOGY

With faster fill times during peak hours and power savings during non-peak hours, variable speed submersible pumping systems allow you to maximize profits with consistent flow rates while mitigating operating expenses and system wear.

MAGSHELL® PUMP DESIGN

The patented stainless steel MagShell®, available on 2 Hp and 4 Hp pumps, is designed to maximize flow rate capabilities, potential throughput, and profits. By expanding the pump motor shell, the MagShell® increases the area for product flow by 45%.

TURBINE PUMP INTERFACE

Network pump controllers with the EVO™ Series for remote enhanced pump monitoring and control features including pump-in-water automation, clogged intake escalation, tank leveling/priority, and more.

THE BENEFITS OF VARIABLE SPEED PUMPING

Introduced in 1997, FE PETRO® variable speed submersible turbine pumps (STPs) were the first of their kind for the petroleum equipment industry.

Variable speed systems ramp up the system's horsepower as needed to provide optimal flow rates at fueling points. This results in faster and more consistent flow rates at peak business times compared to fixed speed systems. These benefits are something only Franklin Electric variable speed STPs, the industry's highest performing 4" diameter STPs, can provide.



FASTER, SMARTER FUELING

With faster fill times during peak hours and power savings during non-peak hours, FE PETRO® 2 Hp and 4 Hp variable speed submersible pumping systems allow operators to maximize profits while mitigating operating expenses.

CONSISTENT CUSTOMER EXPERIENCE

Variable speed pumps ensure consistent flow rates, even during peak demand, providing customers with faster fueling and a smoother experience at the dispenser, reducing wait times and improving overall satisfaction.

PREVENT EQUIPMENT WEAR

Minimize sudden pressure spikes, known as hydraulic hammer, that occur during sudden stoppages in flow. These spikes can be exaggerated in fixed speed systems and lead to accelerated equipment wear and damage.



VARIABLE FREQUENCY CONTROLLER

The FE PETRO® MagVFC™ Variable Frequency Pump Controller brings advanced precision and efficiency to fueling operations. Designed to optimize performance, this intelligent controller adjusts pump motor speed in real time to maintain consistent fuel flow, even during peak demand.

HIGH CAPACITY PUMPS

Available in either 3 Hp or 5 Hp, FE PETRO® High Capacity Submersible Turbine Pumps (STPs) deliver efficient, reliable and quiet performance when high volumes or high speed deliveries of gasoline or diesel fuel are required. The multi-stage, high capacity centrifugal pump is coupled with a dependable Franklin Electric motor to provide higher heads, faster fuel delivery and lower cost operation. Motors are all three phase for smooth operation and are available in various voltages. Units come standard with a 6" diameter riser pipe to mount the pump to the tank.



BUILT FOR RELIABLE, CONTINUOUS OPERATION

The continuous duty, three phase Franklin Electric motor with carbon bearings and stainless steel journals are just some of the heavy-duty features that keep our 3 HP and 5 Hp pumps in action at some of the world's highest capacity stations.

PRESSURE PROTECTION

Dual 3" horizontal discharge ports and two built-in line check valves allow maximum output flow potential. One line pressure relief valve protects the dispensers and piping from abnormal pressures due to thermal expansion.

FUEL FILTERING

A built-in mesh screen on the pump inlet prevents large particles from entering the pumping system and causing system damage or slowdowns.



THREE PHASE CONTROLLER

The Guardian Series™ Three Phase controller takes a major leap forward in fixed speed Submersible Turbine Pump (STP) control. Built upon the fixed speed Single Phase Guardian Controller platform, three phase fixed speed pump controllers feature an enhanced user interface, greater functionality, and higher performance compared to standard control boxes.



MANIFOLDING PUMPS FOR INCREASED FLOW AND FLEXIBILITY

When designing a fuel system for high-flow applications, selecting the right pump configuration is critical. Instead of relying on a single high-horsepower pump, such as a 5 Hp or 3 Hp high capacity model, you may achieve the same or better performance by manifolded configurations of smaller horsepower pumps, such as 4 Hp or 2 Hp models.

WHAT IS PUMP MANIFOLDING?

Pump manifolding is the practice of connecting multiple pumps together in a shared piping system. Instead of relying on one high capacity pump, two or more smaller pumps work in tandem to achieve the required flow rates. This configuration enables the combined flow rates of the individual pumps to meet the total system demand. Manifolding multiple pumps offers several advantages.

SAME HIGH-PERFORMANCE FLOW RATES

A properly manifolded system can stage operation of the pumps to ensure they are ready when called into service.

BUILT-IN REDUNDANCY

With multiple pumps in operation, the system remains functional even if one pump requires maintenance, reducing the risk of downtime.

ENHANCED SERVICEABILITY

Manifolded pumps allow for staged maintenance, where one pump can remain in service while another is being troubleshot, keeping fuel flowing and minimizing operational disruptions.

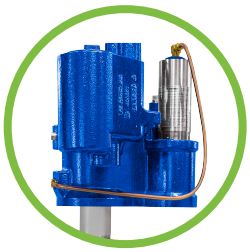
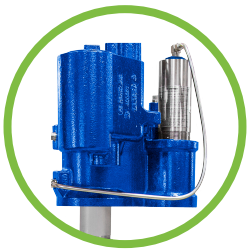
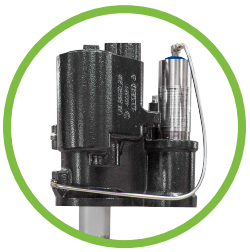
FEATURE OPTIONS

	5 HP HIGH CAPACITY	3 HP HIGH CAPACITY	4 HP	2 HP
Variable Speed			✓	✓
Fixed Speed	✓	✓		✓
MagShell®			✓	✓
Biofuel Compatibility*			✓	✓
Variable Length			✓	✓
Fixed Length	✓	✓		✓
Advanced Protection			✓	✓
Turbine Pump Interface**	✓	✓	✓	✓
Intake Filter Screen			✓	✓

*Up to 85% Ethanol and up to 20% or 100% Biodiesel.

**Fixed speed models require a Guardian Series™ Single Phase Smart Controller (SPGC-220) and Variable Speed models require MagVFC controller to network with EVO™ Series Automatic Tank Gauges.

FUEL COMPATIBILITY

				
Model	**6" STP5**	**4" STP**	**4" STPAG**	**4" STPAP**
Description	5 Hp High Capacity Pump	Standard Pump	Alcohol-Gas Pump	Advanced Protection Pump
Pump Speed	Fixed Speed	Variable Speed / Fixed Speed	Fixed Speed	Fixed Speed
Compatibility	Up to E10	Up to 10% Ethanol w/ Gas	Up to E85, up to B20, B100	Up to E85, up to B20, B100
Model			**4" IST**	**4" ISTAP**
Description			Alcohol-Gas Pump	Advanced Protection Pump
Pump Speed			Variable Speed	Variable Speed
Compatibility			Up to E85, up to B20, B100	Up to E85, up to B20, B100

ADVANCED PROTECTION

Advanced Protection safeguards pumps from corrosion. It builds on Alcohol-Gas compatible pumps with upgraded materials including powder-coating, E-coating, and stainless steel for enhanced durability. Choose this added level of protection for Ultra Low Sulfur Diesel applications, aboveground tanks, marinas, and aviation applications.

BUILDING A PUMP MODEL NUMBER

A typical STP model designation has up to five components to define the pump being supplied as follows:

XXX YYYYY Z - A - B

XXX = Basic Model Designation

STP = 4" or 6" Standard compatibility

STPAG = 4" Alcohol-gas compatibility, fixed speed

IST = 4" Alcohol-gas compatibility, variable speed

STPAP = 4" Advanced protection, fixed speed

ISTAP = 4" Advanced protection, variable speed

YYYYY = Factory Installed Options

Model designations may include one or more of the following characters in alphabetical order:

K = Intake filter screen (IFS, factory installed to 4" PMA)

R = Model R check valve (24 psi relief/22 psi reset for PLLD)

Z = Pump Motor Horsepower Rating

MVS4 = 4 Hp variable speed

MVS2 = 2 Hp variable speed

M200 = 2 Hp fixed speed

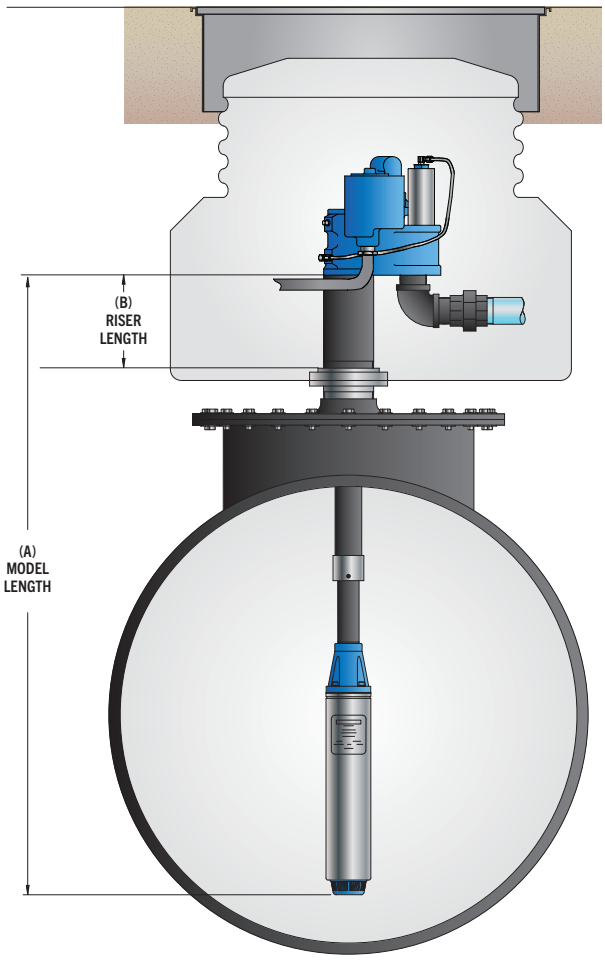
5 = 5 Hp fixed speed

A = Model Length (see diagram)

Each model will have a unique variable length range to choose from. See datasheets for specific details.

B = Riser Pipe Length (see diagram)

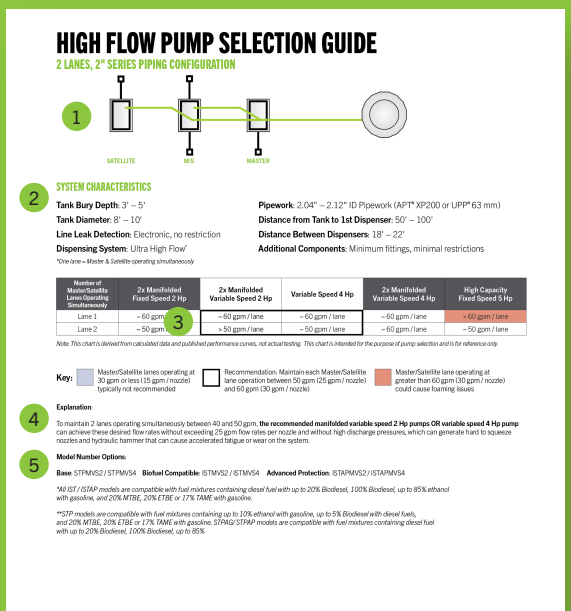
Riser pipe length is expressed as two numeric characters that indicate the total length of the riser in inches. Riser pipes are available from 7" to 60" in 1" increments (additional charge for risers 31" or longer).



HOW TO DETERMINE HORSEPOWER RATING

This guide will help you determine the right Pump Horsepower Rating 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 (recommendation highlighted in black box).
4. Review the pump recommendation explanation.
5. Choose the specific pump model from options included based on the type of fuel for your application.



HIGH FLOW PUMP SELECTION GUIDE

2 LANES, 2" SERIES PIPING CONFIGURATION

1

SATELLITE M/S MASTER

2 SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'
Tank Diameter: 8' – 10'
Line Leak Detection: Electronic, no restriction
Dispensing System: Ultra High Flow*
*One lane = Master & Satellite operating simultaneously

Pipework: 2.04" – 2.12" ID Pipework (APT® XP200 or UPP® 63 mm)
Distance from Tank to 1st Dispenser: 50' – 100'
Distance Between Dispensers: 18' – 22'
Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	~ 60 gpm	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	~ 50 gpm	> 50 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane

3

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

Key: Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended; Recommendation: Maintain each Master/Satellite lane operation between 50 gpm (25 gpm / nozzle) and 60 gpm (30 gpm / nozzle); Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

4 **Explanation**:

To maintain 2 lanes operating simultaneously between 40 and 50 gpm, **the recommended manifolded variable speed 2 Hp pumps OR variable speed 4 Hp pump** can achieve these desired flow rates without exceeding 25 gpm flow rates per nozzle 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.

5 **Model Number Options**:

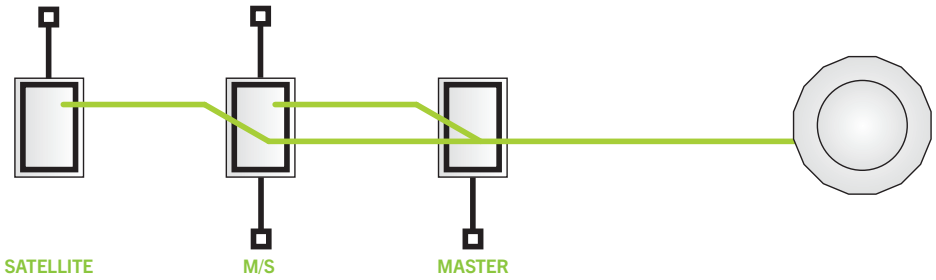
Base: STPMVS2 / STPMVS4 **Biofuel Compatible**: ISTMVS2 / ISTMVS4 **Advanced Protection**: ISTAPMVS2 / ISTAPMVS4

*All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.

**STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%

HIGH FLOW PUMP SELECTION GUIDE

2 LANES, 2" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'

Tank Diameter: 8' – 10'

Line Leak Detection: Electronic, no restriction

Dispensing System: Ultra High Flow*

**One lane = Master & Satellite operating simultaneously*

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

Distance from Tank to 1st Dispenser: 50' – 100'

Distance Between Dispensers: 18' – 22'

Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	~ 50 gpm / lane	> 50 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane

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

Key:

- Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended
- Recommendation: Maintain each Master/Satellite lane operation between 40 gpm (20 gpm / nozzle) and 60 gpm (30 gpm / nozzle)
- Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

Explanation:

To maintain 2 lanes operating simultaneously between 40 and 60 gpm, **the recommended manifolded variable speed 2 Hp pumps OR single variable speed 4 Hp pump** can achieve these desired flow rates without exceeding 30 gpm flow rates per nozzlet, which can cause foaming issues

Model Number Options:

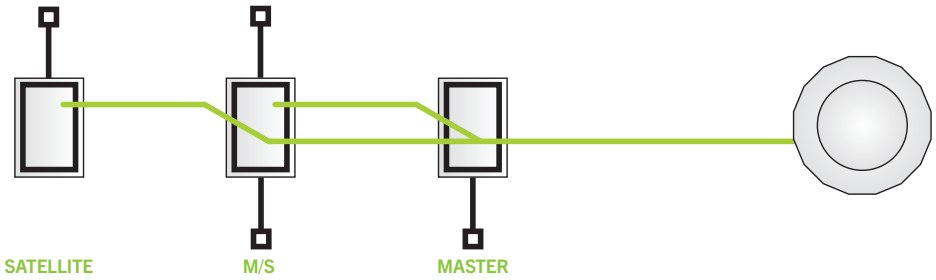
Base: STPMVS2 / STPMVS4 **Biofuel Compatible**: ISTMVS2 / ISTMVS4 **Advanced Protection**: ISTAPMVS2 / ISTAPMVS4

**All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.*

***STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%*

HIGH FLOW PUMP SELECTION GUIDE

2 LANES, 3" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'

Tank Diameter: 8' – 10'

Line Leak Detection: Electronic, no restriction

Dispensing System: Ultra High Flow*

**One lane = Master & Satellite operating simultaneously*

Pipework: 2.94" – 3.02" ID Pipework (UPP® 90 mm)

Distance from Tank to 1st Dispenser: 50' – 100'

Distance Between Dispensers: 18' – 22'

Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	> 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	> 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane

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

Key:

- Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended
- Recommendation: Maintain each Master/Satellite lane operation between 40 gpm (20 gpm / nozzle) and 60 gpm (30 gpm / nozzle)
- Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

Explanation:

To maintain 2 lanes operating simultaneously between 40 and 60 gpm, **the recommended manifolded variable speed 2 Hp pumps OR single variable speed 4 Hp pump** can achieve these desired flow rates without exceeding 30 gpm flow rates per nozzle, which can cause foaming issues.

Model Number Options:

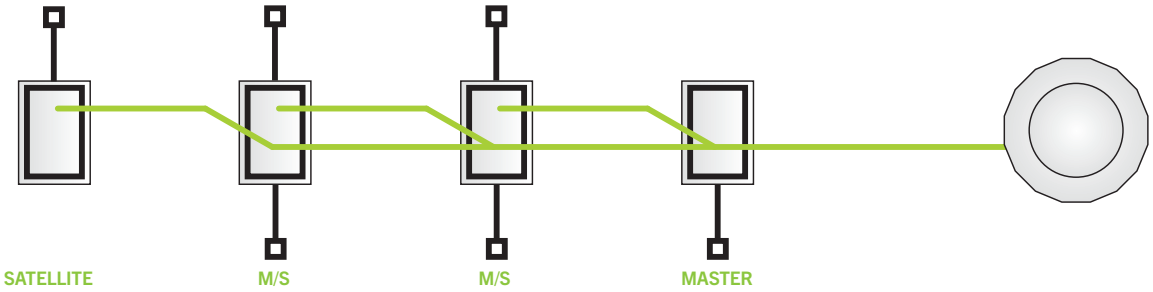
Base: STPMVS2 / STPMVS4 **Biofuel Compatible**: ISTMVS2 / ISTMVS4 **Advanced Protection**: ISTAPMVS2 / ISTAPMVS4

**All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.*

***STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%*

HIGH FLOW PUMP SELECTION GUIDE

3 LANES, 2" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'

Tank Diameter: 8' – 10'

Line Leak Detection: Electronic, no restriction

Dispensing System: Ultra High Flow*

**One lane = Master & Satellite operating simultaneously*

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

Distance from Tank to 1st Dispenser: 50' – 100'

Distance Between Dispensers: 18' – 22'

Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	~ 50 gpm / lane	> 50 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane
Lane 3	> 30 gpm / lane	> 40 gpm / lane	> 30 gpm / lane	~ 50 gpm / lane	~ 40 gpm / lane

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

Key:

- Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended
- Recommendation: Maintain each Master/Satellite lane operation between 40 gpm (20 gpm / nozzle) and 60 gpm (30 gpm / nozzle)
- Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

Explanation:

To maintain 2 lanes operating simultaneously between 40 and 60 gpm, **the recommended manifolded variable speed 4 Hp pumps** can achieve these desired flow rates without exceeding 30 gpm flow rates per nozzle, which can cause foaming issues.

Model Number Options:

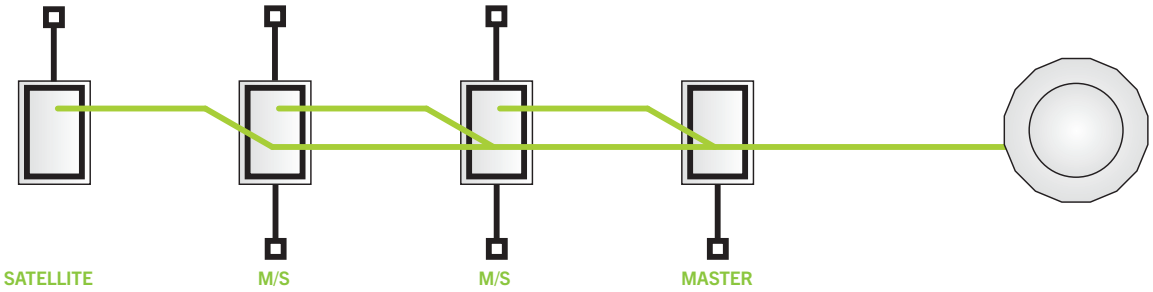
Base: STPMVS4 **Biofuel Compatible**: ISTMVS4 **Advanced Protection**: ISTAPMVS4

**All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.*

***STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%*

HIGH FLOW PUMP SELECTION GUIDE

3 LANES, 3" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'

Tank Diameter: 8' – 10'

Line Leak Detection: Electronic, no restriction

Dispensing System: Ultra High Flow*

**One lane = Master & Satellite operating simultaneously*

Pipework: 2.94" – 3.02" ID Pipework (UPP® 90 mm)

Distance from Tank to 1st Dispenser: 50' – 100'

Distance Between Dispensers: 18' – 22'

Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	> 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	> 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane
Lane 3	> 40 gpm / lane	~ 50 gpm / lane	~ 40 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane

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

Key:

- Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended
- Recommendation: Maintain each Master/Satellite lane operation between 40 gpm (20 gpm / nozzle) and 60 gpm (30 gpm / nozzle)
- Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

Explanation:

To maintain 2 lanes operating simultaneously between 40 and 60 gpm, **the recommended manifolded variable speed 2.0 Hp pumps** can achieve these desired flow rates without exceeding 30 gpm flow rates per nozzle, which can cause foaming issues.

Model Number Options:

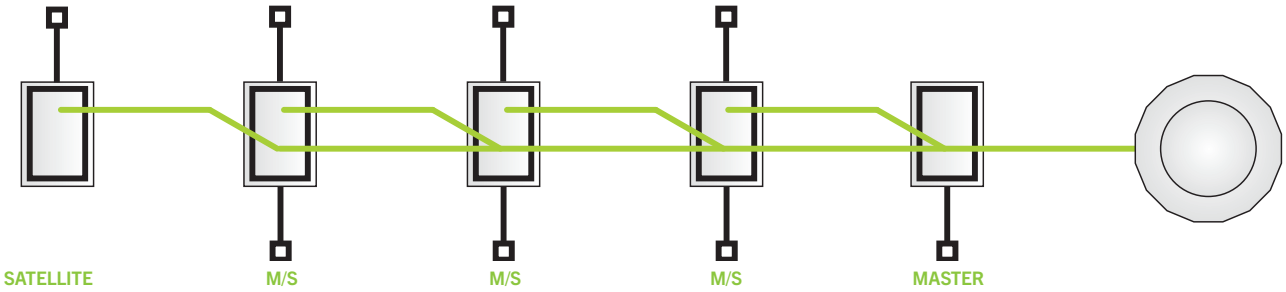
Base: STPMVS2 **Biofuel Compatible**: ISTMVS2 **Advanced Protection**: ISTAPMVS2

**All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.*

***STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%*

HIGH FLOW PUMP SELECTION GUIDE

4 LANES, 3" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'

Tank Diameter: 8' – 10'

Line Leak Detection: Electronic, no restriction

Dispensing System: Ultra High Flow*

**One lane = Master & Satellite operating simultaneously*

Pipework: 2.94" – 3.02" ID Pipework (UPP® 90 mm)

Distance from Tank to 1st Dispenser: 50' – 100'

Distance Between Dispensers: 18' – 22'

Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	> 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	> 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane
Lane 3	> 40 gpm / lane	~ 50 gpm / lane	~ 40 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane
Lane 4	~ 40 gpm / lane	> 40 gpm / lane	~ 30 gpm / lane	~ 50 gpm / lane	> 40 gpm / lane

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

Key:

- Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended
- Recommendation: Maintain each Master/Satellite lane operation between 40 gpm (20 gpm / nozzle) and 60 gpm (30 gpm / nozzle)
- Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

Explanation:

To maintain 2 lanes operating simultaneously between 40 and 60 gpm, **the recommended manifolded variable speed 4 Hp pumps** can achieve these desired flow rates without exceeding 30 gpm flow rates per nozzle, which can cause foaming issues.

Model Number Options:

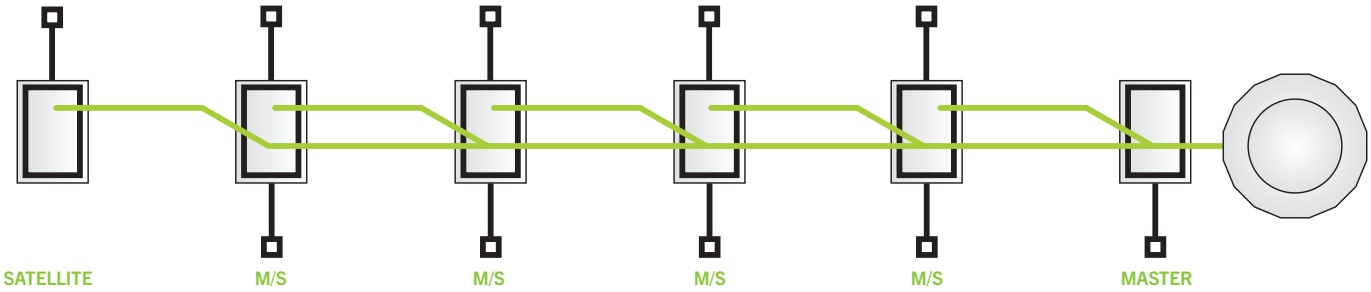
Base: STPMVS4 **Biofuel Compatible**: ISTMVS4 **Advanced Protection**: ISTAPMVS4

**All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.*

***STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%*

HIGH FLOW PUMP SELECTION GUIDE

5 LANES, 3" SERIES PIPING CONFIGURATION



SYSTEM CHARACTERISTICS

Tank Bury Depth: 3' – 5'

Tank Diameter: 8' – 10'

Line Leak Detection: Electronic, no restriction

Dispensing System: Ultra High Flow*

**One lane = Master & Satellite operating simultaneously*

Pipework: 2.94" – 3.02" ID Pipework (UPP® 90 mm)

Distance from Tank to 1st Dispenser: 50' – 100'

Distance Between Dispensers: 18' – 22'

Additional Components: Minimum fittings, minimal restrictions

Number of Master/Satellite Lanes Operating Simultaneously	2x Manifolded Fixed Speed 2 Hp	2x Manifolded Variable Speed 2 Hp	Variable Speed 4 Hp	2x Manifolded Variable Speed 4 Hp	High Capacity Fixed Speed 5 Hp
Lane 1	> 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane	> 60 gpm / lane
Lane 2	> 50 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane	~ 60 gpm / lane	~ 60 gpm / lane
Lane 3	> 40 gpm / lane	~ 50 gpm / lane	~ 40 gpm / lane	~ 60 gpm / lane	~ 50 gpm / lane
Lane 4	~ 40 gpm / lane	> 40 gpm / lane	~ 30 gpm / lane	~ 50 gpm / lane	> 40 gpm / lane
Lane 5	> 30 gpm / lane	> 30 gpm / lane	< 30 gpm / lane	~ 40 gpm / lane	> 30 gpm / lane

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

Key:

Master/Satellite lanes operating at 30 gpm or less (15 gpm / nozzle) typically not recommended

Recommendation: Maintain each Master/Satellite lane operation between 40 gpm (20 gpm / nozzle) and 60 gpm (30 gpm / nozzle)

Master/Satellite lane operating at greater than 60 gpm (30 gpm / nozzle) could cause foaming issues

Explanation:

To maintain 2 lanes operating simultaneously between 40 and 60 gpm, **the recommended manifolded variable speed 4 Hp pumps** can achieve these desired flow rates without exceeding 30 gpm flow rates per nozzle, which can cause foaming issues.

Model Number Options:

Base: STPMVS4 **Biofuel Compatible**: ISTMVS4 **Advanced Protection**: ISTAPMVS4

**All IST / ISTAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85% ethanol with gasoline, and 20% MTBE, 20% ETBE or 17% TAME with gasoline.*

***STP models are compatible with fuel mixtures containing up to 10% ethanol with gasoline, up to 5% Biodiesel with diesel fuels, and 20% MTBE, 20% ETBE or 17% TAME with gasoline. STPAG/ STPAP models are compatible with fuel mixtures containing diesel fuel with up to 20% Biodiesel, 100% Biodiesel, up to 85%*

TOTAL SYSTEM SOLUTIONS™



Franklin Electric
ENERGY SYSTEMS

franklin-energy.com
3760 Marsh Rd. • Madison, WI 53718, USA
Tel: USA & Canada +1 800 225 9787 • Fax: +1 608 838 6433
Tel: UK +44 (0) 1473 243300 • Tel: Mex 001 800 738 7610
Tel: DE +49 6571 105 380 • Tel: CH +86 10 8565 4566

© 2026 Franklin Electric, Co. Inc. All Rights Reserved.

FFS-0963 09-26