

# SOLAR CHEMICAL INJECTION PUMP SUMMARY

TRIDO Solar Powered Chemical Injection Pumps leverage field-proven actuator technology to deliver chemical year around with precision and reliability while eliminating venting. The maintenance-free PMAC motor technology coupled with custom built VFD controller delivers high torque power with low power consumption, both at start up and normal operation. This technology enables TRIDO's system to accurately delivery chemical at high pressure while driving down maintenance demand and extend equipment life.

TRIDO injection system can accommodate up to 8 injection heads to deliver different chemicals at different pressure up to 8 delivery points. TRIDO injection system interfaces with most pump head models available on the market today.



## High Efficiency Motor

- ✔ Only draws 10% of power to achieve similar torque output as compared to peers
- ✔ Permanent Magnet Asynchronous 3 Phase Brushless Motor – leader in motor efficiency
- ✔ Three phase AC motor with soft-start feature to minimize power loss and wear on equipment. Soft start only requires 0.3 to 0.4 Amp, compare to start-up range of 4-40 Amp draw from peers
- ✔ Class 1 Div. 1 Groups C & D, robustness in safety



## Variable Head Adaptability

- ✔ Powers up to 8 individual injection heads w/ variable flow rate for different chemical fluids
- ✔ Compatible with majority of injection heads commonly available on market
- ✔ Injection rate: 1-40 GPD per head. Up to 320 GPD total capacity for single fluid line
- ✔ Injection pressure: 1400 psi – 9000 psi



## Automation Capability

- ✔ VFD control system with 4000 feedback per second – high precision, low power loss
- ✔ Automation compatible with SCADA through MODBUS connections
- ✔ Remote control based on pressure, temperature, and/or chemical tank volume

## Operation Range

Piston size 5100 Series Fluid End	Maximum Pressure	Piston size 5000 Series Fluid End	Maximum Pressure
3/16" Piston	9000 PSI	3/4" Piston	900 PSI
1/4" Piston	6200 PSI	1" Piston	450 PSI
3/8" Piston	3600 PSI	1.25" Piston	350 PSI
1/2" Piston	1600 PSI		

## Injection Rate Range

Strokes/ Minute	Volumetric Rate Gallons Per Day (GPD)					
	1	5	10	20	30	33
3/16" Piston	0	1	2	3	5	5
1/4" Piston	0	2	3	6	9	10
3/8" Piston	1	3	6	12	18	20
1/2" Piston	1	6	12	24	37	40

Rate table for single head operation, and can be upscaled up to 320 GPD by combining injection heads for a single fluid line

## Pressure Operation Range

Power Maximum Capacity for Dual Head Adapter	Maximum Operating Pressure
3/16" Pistons	5200 PSI
1/4" Pistons	3000 PSI
3/8" Pistons	1500 PSI
1/2" Pistons	850 PSI

Power Maximum Capacity for Four Head Adapter	Maximum Operating Pressure
3/16" Pistons	1700 PSI
1/4" Pistons	950 PSI
3/8" Pistons	450 PSI

Power Maximum Capacity for Eight Head Adapter	Maximum Operating Pressure
3/16" Pistons	1400 PSI
1/4" Pistons	850 PSI
3/8" Pistons	400 PSI



## Trido's Solution : Superior Reliability

- ✔ Low power consumption of the Trido Motor during start-up avoids cyclical surge of discharge on batteries, extends battery life even at extreme temperature
- ✔ Low power consumption of the Trido Motor during normal operation leads to long autonomous run time, minimize interruption to operation
- ✔ Trido VFD precision control adjust power output, prevent equipment wear and tear

## Benefit High Light

Long autonomous run time	minimum interruption to operation
Versatile compatibility upto 8 different pump head and chemicals	simple design and installation
Robust automation for real time monitor	reduces cost, improve chemical program efficiency
High efficiency motor	solar infrastructure costs less to build & lasts longer.
Zero Greenhouse Gas Venting	cleaner and safer, maintenance free.