



Multipoint Chemical Injection Solutions

with Remote Monitoring for Oil and Natural Gas Applications

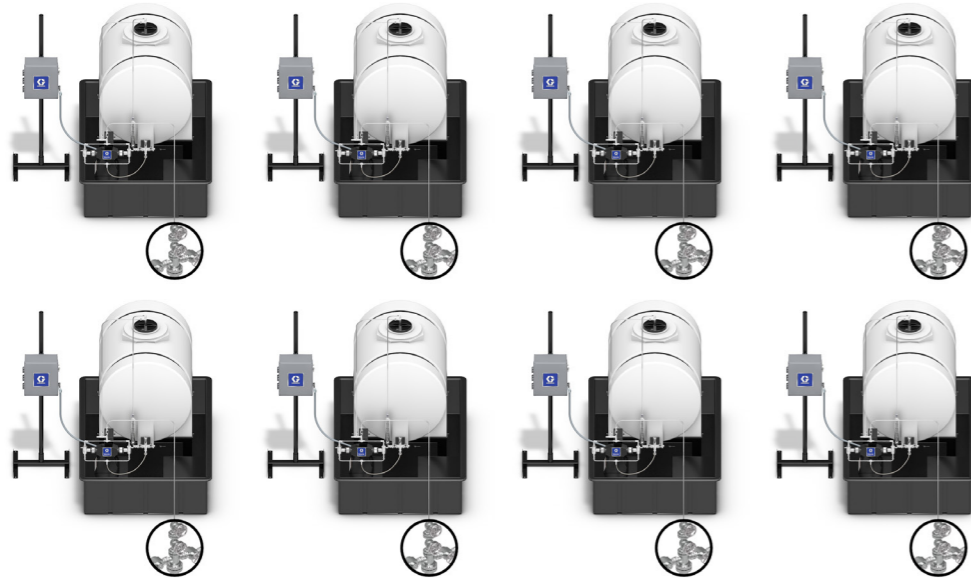


Multipoint Injection Solution from Graco

REDUCED FOOTPRINT, LOWER COST OF OWNERSHIP

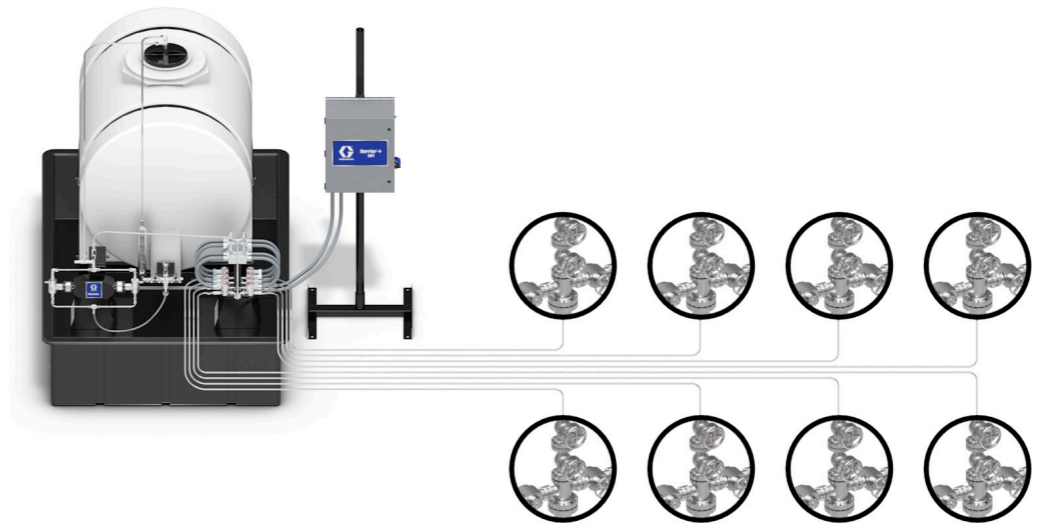
Dose chemicals to up to eight injection points using a single pump and controller. Set, change and remotely monitor the individual flow rates of each injection point to help reduce the number of trips to the well site and minimize downtime.

Traditional Method



8 well pads require 8 different chemical pumps and control boxes

Multipoint Injection



Same 8 well pads only require 1 pump and 1 control box using Graco's MPI Solution

vs.

Reduce Equipment & Maintenance Costs* By Up to
With a Multipoint Injection Solution

70%

**Savings based on pump, control box and chemical tank*

KRAKN™ MPI

Replace up to eight chemical pumps with just one when used in conjunction with the KRAKN MPI fluid manifold. Pair it with Graco's Harrier+ MPI control box and chemical pumps for best dosing accuracy.

Configurable

- Available from 2 up to 8 points of injection

Meets Safety Requirements

- Solenoid valve options for General Purpose use and Class 1, Division 1 Hazardous Locations

Smart, Simple, Robust Design

- If one line is down for service, flow rates and pressures are maintained across the remainder of the injection lines
- Easy access to all solenoid valves
- Harrier+ MPI compatible
- Works with third party pumps

Solenoid Valves

- 316 Stainless Steel construction
- Rated for 3000 PSI (345 Bar)
- FFKM seals
- C1D1 and GP



8-Point KRAKN MPI

Ordering Information

The KRAKN MPI comes in different configurations based on the number of required injection points

Injection Points/Approvals	2 points	3 points	4 points	5 points	6 points	7 points	8 points
General Purpose	25R057	25R058	25R059	25R060	25R061	25R062	25R063
Hazardous Location (C1D1)	25R050	25R051	25R052	25R053	25R054	25R055	25R056

HARRIER® + MPI Controller

Collect well site data of multiple injection points using one controller, remotely control chemical injection usage for each individual injection point, and analyze the data necessary to manage chemical usage.

Multi-Point Control

- Set, change and remotely monitor the flow rates of each injection point up to 8 points
- Receive alarm notifications on your phone, computer or smart device if any disruptions in operation occur

Offers Same Harrier+ Benefits

- Remote monitoring
- Tank level
- Temperature controlled dosing
- Analog In and Out control
- Smart alarms
- Variable or fixed speed pump control
- Flow verification for leak detection
- Class 1, Division 2 classified for Hazardous Locations

Smart Logic

- Solenoid failure detection
- System continues to operate while servicing a solenoid valve to help minimize downtime
- In the event of a solenoid failure, alarms will identify which one needs replacement
- Controller activates one valve at a time for maximum dosing efficiencies

Quality

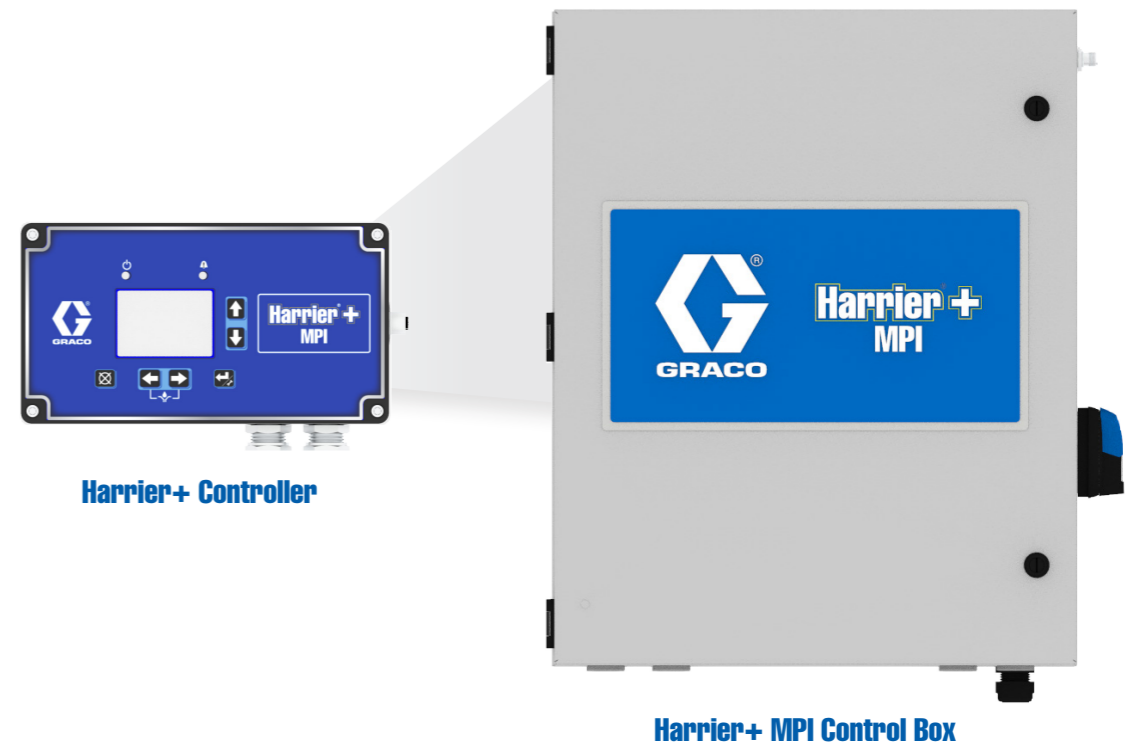
- Controller certified and ETL listed to UL Class 1 Division 2 Groups A, B, C, D, T4, to CAN/CSA under UL 508, CSA 22.2 No. 14 and CE Marked
- Factory is ISO 9001 and 14001 certified



Ordering Information

Control box selection will depend on voltage and data communication protocol. For standalone controllers please reference the instruction manual for part numbers.

Voltage/Communication	SCADA	GSM	GSM GLOBAL	CDMA
24 VDC to 24 VDC	B52M00	B52M01	B52M02	B52M03
115 VAC to 24 VDC	B52M04	B52M05	B52M06	B52M07
115 VAC to 115 VAC	B52M08	B52M09	B52M10	B52M11

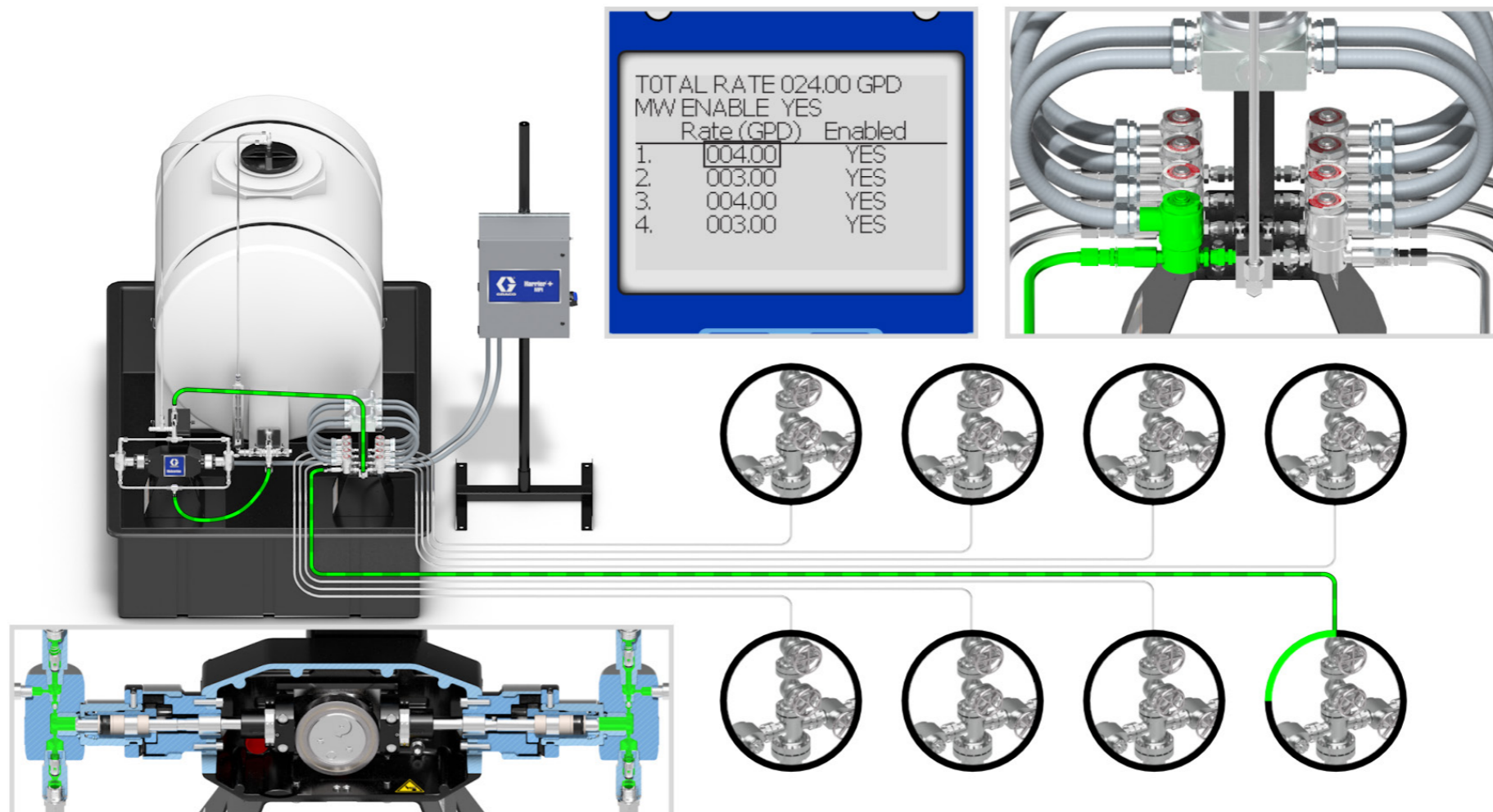


How Does It Work?

The chemical pump feeds up to 8 injection lines through the KRAKN MPI, the solenoid valve fluid manifold. The Harrier+ MPI controller will actuate the solenoid valve corresponding to each injection line allowing the desired dose of chemical to be dispensed. The Harrier+ MPI will then cycle through the rest of the solenoid valves until the total desired flow rate has been achieved across all injection lines.

The flow rates for each injection line can be individually set and monitored on the Harrier+ MPI controller directly on the controller interface or via the Harrier+ Web Portal. Each solenoid valve can be ENABLED or DISABLED on the Harrier+ MPI controller. If a solenoid valve is DISABLED on the Harrier+ MPI, the controller will simply skip that valve and continue to cycle through the rest of the solenoid valve sequence.

If one or more lines are down for maintenance or repair, the Harrier+ MPI will notify the user, continue to cycle through the rest of the solenoid valve sequence while maintaining the target flow rates on each injection line.



Ordering Information

Building Your System

Ordering your system is as easy as picking your pump, fluid manifold and control box from the list below. Or you can simply pick one of the per-configured systems based on your needs.

KRAKN™ MPI Fluid Manifold

24 VDC Class 1, Division 1 Classified for Hazardous Location

25R050	2 valve KRAKN MPI fluid manifold assembly C1D1
25R051	3 valve KRAKN MPI fluid manifold assembly C1D1
25R052	4 valve KRAKN MPI fluid manifold assembly C1D1
25R053	5 valve KRAKN MPI fluid manifold assembly C1D1
25R054	6 valve KRAKN MPI fluid manifold assembly C1D1
25R055	7 valve KRAKN MPI fluid manifold assembly C1D1
25R056	8 valve KRAKN MPI fluid manifold assembly C1D1

24 VDC for General Purpose Use

25R057	2 valve KRAKN MPI fluid manifold assembly
25R058	3 valve KRAKN MPI fluid manifold assembly
25R059	4 valve KRAKN MPI fluid manifold assembly
25R060	5 valve KRAKN MPI fluid manifold assembly
25R061	6 valve KRAKN MPI fluid manifold assembly
25R062	7 valve KRAKN MPI fluid manifold assembly
25R063	8 valve KRAKN MPI fluid manifold assembly

Recommended Accessories and Add-on Kits

Part No.	Description
B32072	Pressure sensor kit for pressure spike alarms
B32771	Tank level monitor sensor for General Purpose use
B32873	Tank level monitor sensor for Hazardous Locations, Class 1, Division 1 approved
B33063	Solenoid valve add-on kit for General Purpose use
B33064	Solenoid valve add-on kit for Hazardous Locations, Class 1, Division 1 approved
B32873	RS-232 to RS-485 converter for SCADA communication
B32131	Temperature probe kit for Harrier+ and Harrier+ MPI
B32989	Temperature thermistor kit (adjustable)
B32238	Cycle count kit for AC and 24 VDC Class 1, Division 1 motors (includes barriers)
B32239	Cycle count kit for 12 VDC Class 1, Division 1 motors (includes barriers)
B32810	Cycle count kit for G-Chem pumps
B32479	Cycle count kit for Wolverine pumps

Harrier® +MPI Control Box Options

24 VDC Input & 24 VDC Output

B52M00	Harrier+ MPI controller for SCADA communication
B52M01	Harrier+ MPI controller for GSM USA communication
B52M02	Harrier+ MPI controller for International communication
B52M03	Harrier+ MPI controller for CDMA communication

115 VAC Input & 115 VAC Output

B52M04	Harrier+ MPI controller for SCADA communication
B52M05	Harrier+ MPI controller for GSM USA communication
B52M06	Harrier+ MPI controller for International communication
B52M07	Harrier+ MPI controller for CDMA communication

115 VAC Input & 24 VDC Output

B52M08	Harrier+ MPI controller for SCADA communication
B52M09	Harrier+ MPI controller for GSM USA communication
B52M10	Harrier+ MPI controller for International communication
B52M11	Harrier+ MPI controller for CDMA communication

Recommended Pumps

Wolverine Hazardous Location C1D1

A27322	Simplex, 24 VDC, 3/8 inch plunger, FFKM seals
A27350	Duplex, 24 VDC, 3/8 inch plunger, FFKM seals
A27522	Simplex, 115 VAC, 3/8 inch plunger, FFKM seals
A27550	Duplex, 115 VAC, 3/8 inch plunger, FFKM seals

Wolverine Variable Speed C1D2

A28322	Simplex, 24 VDC, 3/8 inch plunger, FFKM seals
A28350	Duplex, 24 VDC, 3/8 inch plunger, FFKM seals
A28522	Simplex, 115 VAC, 3/8 inch plunger, FFKM seals
A28550	Duplex, 115 VAC, 3/8 inch plunger, FFKM seals

G-Chem

A23508	Simplex, 115 VAC, 3/8 inch plunger, HNBR seals
A23558	Duplex, 115 VAC, 3/8 inch plunger, HNBR seals
A23502	Simplex, 115 VAC, 3/8 inch plunger, FKM seals
A23558	Duplex, 115 VAC, 3/8 inch plunger, FKM seals

Pre-configured MPI Packages

Class 1, Division 2 Classified for Hazardous Locations

25R900	6-point MPI package, 115 VAC/24 VDC, C1D2 classified Wolverine pump, 3/8" plunger Duplex, FFKM seals, CDMA Harrier+
25R901	8-point MPI package, 115 VAC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, CDMA Harrier+
25R902	6-point MPI package, 115 VAC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, SCADA Harrier+
25R903	8-point MPI package, 115 VAC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, SCADA Harrier+
25R904	6-point MPI package, 24 VDC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, CDMA Harrier+
25R905	8-point MPI package, 24 VDC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, CDMA Harrier+
25R906	6-point MPI package, 24 VDC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, SCADA Harrier+
25R907	8-point MPI package, 24 VDC/24 VDC, C1D2 classified Wolverine Variable Speed pump, 3/8" plunger Duplex, FFKM seals, SCADA Harrier+

Non-Classified for General Purpose Use

25R908	4-point MPI package, 115 VAC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, CDMA Harrier+
25R909	6-point MPI package, 115 VAC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, CDMA Harrier+
25R910	4-point MPI package, 115 VAC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, SCADA Harrier+
25R911	6-point MPI package, 115 VAC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, SCADA Harrier+
25R912	4-point MPI package, 24 VDC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, CDMA Harrier+
25R913	6-point MPI package, 24 VDC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, CDMA Harrier+
25R914	4-point MPI package, 24 VDC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, SCADA Harrier+
25R915	6-point MPI package, 24 VDC/24 VDC, G-Chem pump, 3/8" plunger Duplex, TFE/P seals, SCADA Harrier+

All written and visual data contained in this document are based on the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.



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