# Multipoint Chemical Injection Solutions

with Remote Monitoring for Oil and Natural Gas Applications
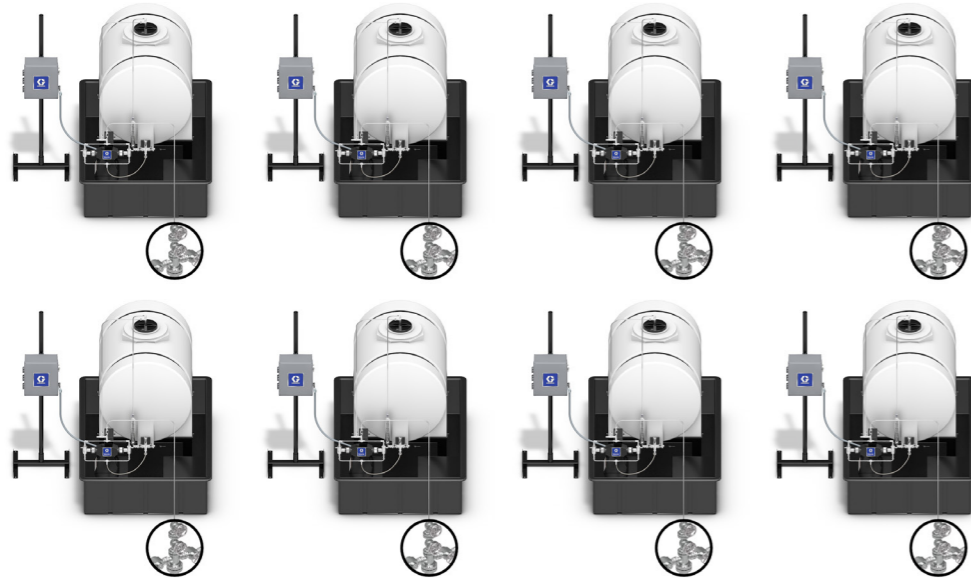
GRACO

# Multipoint Injection Solution from Graco

## REDUCED FOOTPRINT, LOWER COST OF ONWERSHIP

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**

**Multipoint Injection**



**VS.**

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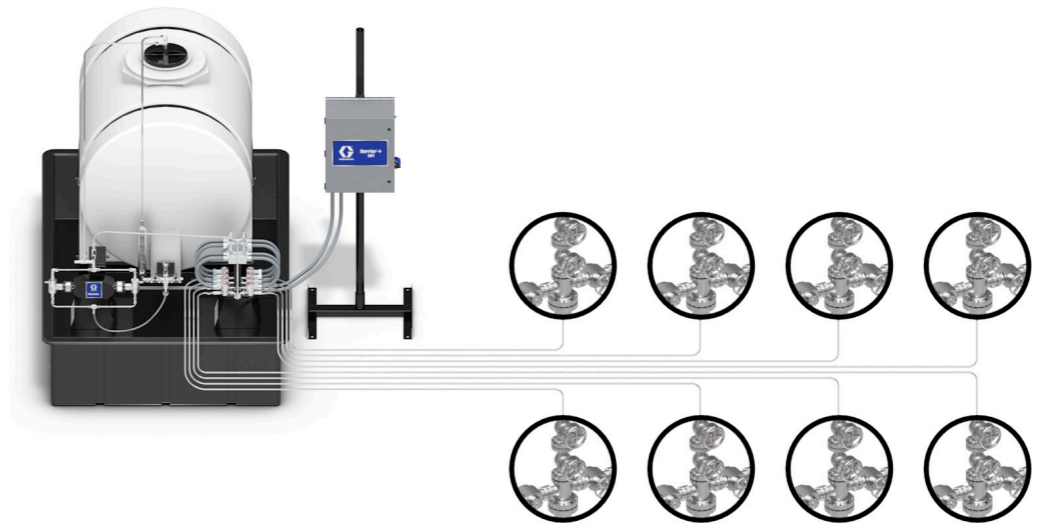
Same 8 well pads only require 1 pump and 1 control box using Graco's MPI Solution

**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 14001certified

## 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 |

Harrier+ Controller

Harrier+ MPI Control Box

RECOGNIZED COMPONENT

Intertek
9902471
Conforms to UL 508
Certified to CAN/CSA
STD C22.2 No. 14

Intertek
9902471
Class I Division 2
Groups A, B, C, D, T4
-40°C ≤ Ta ≤ +55°C

CE
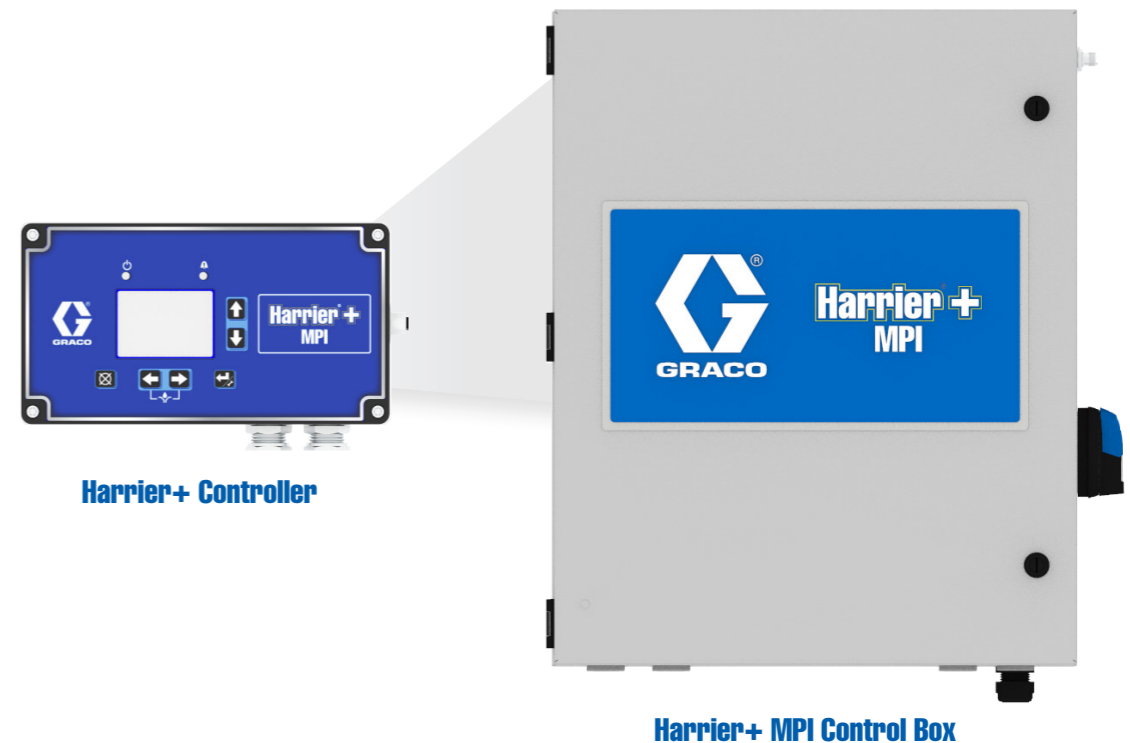
# How Does It Work?

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 maintining the target flow rates on each injection line.
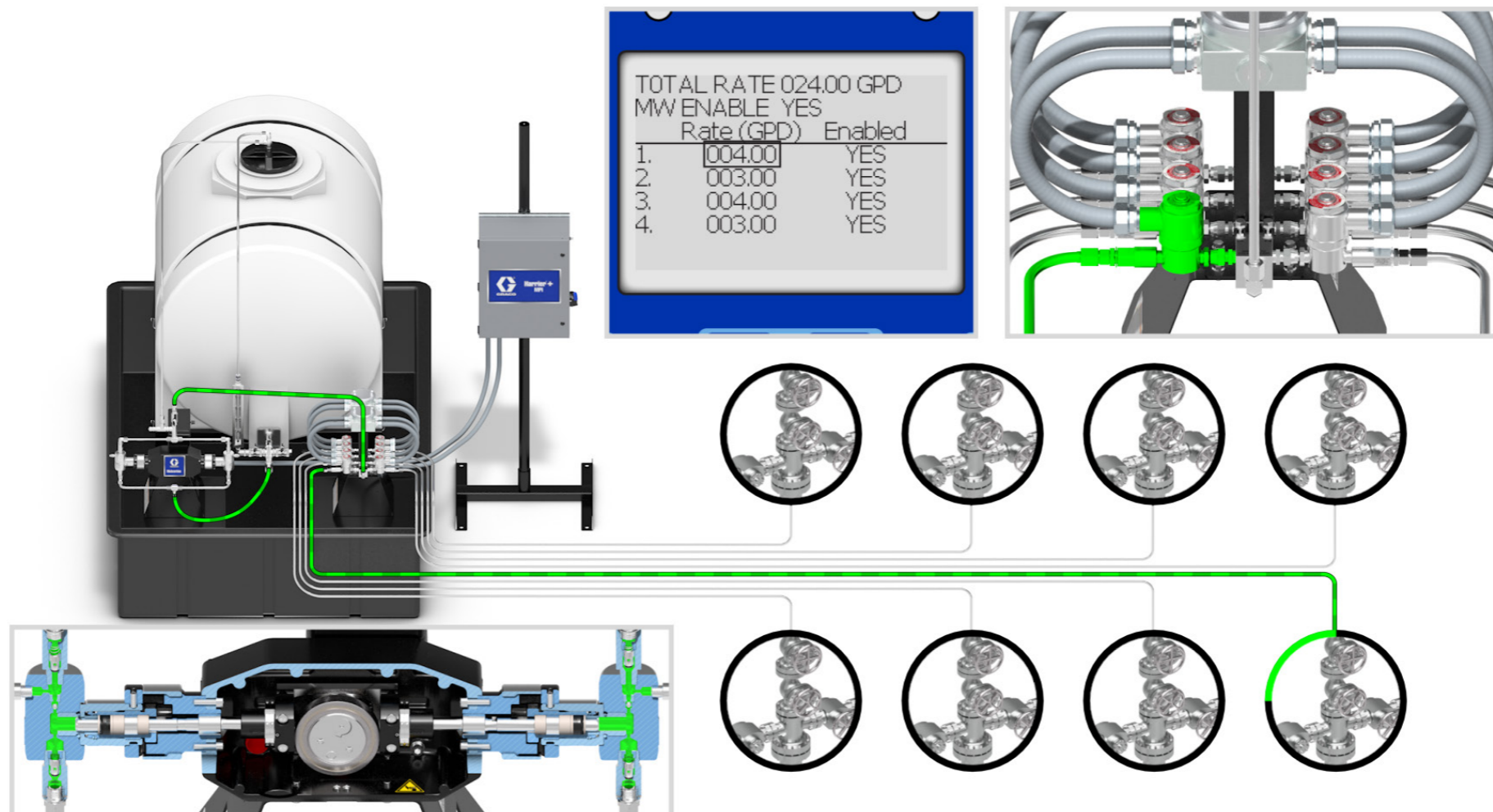
# Ordering Information

## 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 maifold assembly C1D1 |
| 25R051 | 3 valve KRAKN MPI fluid maifold assembly C1D1 |
| 25R052 | 4 valve KRAKN MPI fluid maifold assembly C1D1 |
| 25R053 | 5 valve KRAKN MPI fluid maifold assembly C1D1 |
| 25R054 | 6 valve KRAKN MPI fluid maifold assembly C1D1 |
| 25R055 | 7 valve KRAKN MPI fluid maifold assembly C1D1 |
| 25R056 | 8 valve KRAKN MPI fluid maifold assembly C1D1 |

24 VDC for General Purpose Use

| | |
|---|---|
| 25R057 | 2 valve KRAKN MPI fluid maifold assembly |
| 25R058 | 3 valve KRAKN MPI fluid maifold assembly |
| 25R059 | 4 valve KRAKN MPI fluid maifold assembly |
| 25R060 | 5 valve KRAKN MPI fluid maifold assembly |
| 25R061 | 6 valve KRAKN MPI fluid maifold assembly |
| 25R062 | 7 valve KRAKN MPI fluid maifold assembly |
| 25R063 | 8 valve KRAKN MPI fluid maifold 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, Dvision 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, Dvision 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+ |