



# Chemical Injection

Systems and Equipment for Oil and Natural Gas



PROVEN QUALITY. LEADING TECHNOLOGY.

# Chemical Injection Products

## “Be Green, Go Blue, Buy Graco”

Graco chemical injection products are exactly what experienced oil and gas industry professionals want and need to meet the ongoing challenges of transferring chemicals in harsh and often remote geographies. Three words can describe it all: reliability, durability, and affordability.

### RELIABLE

- Chemical injection packages are rigorously field-tested to ensure optimum performance
- Solar pumping systems can provide reliable chemical injection for up to 4 days without sun
- Electronic injection rate controllers ensure precise injection rates – optimizing your process
- Control and monitor your chemical injection system with your mobile device for peace of mind

### DURABLE

- Pump components are designed for up to two years of operation between service intervals
- Ideal for remote installations in extreme temperatures
- One year warranty

### AFFORDABLE

- Chemical injection equipment is available in a variety of configurations to provide premium performance at any price point
- Spend less time fixing and more time running with our durable components
- Save money by reducing chemical waste when you use our adaptive injection rate controls
- Lower energy costs by using off-the-grid solar powered systems vs. pneumatic or grid powered pumps





# Build Your Solar Chemical Injector System

## Build Your System in 4 Easy Steps!

### 1 Pump Size

Select based on your pressure and flow requirements:

- Pressures: 0-10,000 psi (689 bar, 68.9 MPa)
- Flow\*: 0-40 gpd (151.4 lpd)

*\*Flows above 40 gpd require multiple solar panels and batteries.  
Contact Graco for more information.*

### 2 Injection Rate Controller

Select based on your control requirements:

- Harrier™ LT: Basic time based control
- Harrier: Time and cycle based control with auxiliary switch
- Harrier+: Adaptive flow assurance with remote, cellular connectivity for monitoring and control

### 3 Power System

Select based on your pump demands and location

Solar panel:

- 50W
- 90W
- 150W

Battery type:

- Lead acid, 96 Ah
- Premium AGM, 105 Ah  
(recommended for extreme temperatures)

### 4 Chemical Compatibility

Select your seal type depending on your chemical handling requirements:

- HNBR
- FKM
- FKM ETP
- FFKM



# Wolverine™ DC and AC Series Pumps

Wolverine chemical injection pumps reduce emissions to the atmosphere and have a greater level of control when used with our injection rate controllers. These injection pumps are designed for up to two years of operation before simple repairs. Each pump features an adjustable fluid packing that lasts up to 25 times longer than non-adjustable seals.

## Operating Environment

The Wolverine is designed to operate in environments from -40°F to 175°F (-40°C to 79°C). They have 316 SST wetted parts, plus they're sealed against water and dust.

## Pump Capabilities

Flow rates up to 430 gpd (1,628 lpd) and a pressure rating up to 10,000 psi (686 bar, 68.9 MPa).

## Save Time

Easily replace pump seals in less than 5 minutes, on location.

## Accurate Control

Precision stroke adjustment between 1/2 in to 1 in (12.7 mm to 25.4 mm) ensures accurate injection rates.

## Chemical Compatibility

HNBR, FKM, FKM ETP, and FFKM plunger packings and check valve seals can handle some of the most aggressive chemicals.

## Save Power

Low friction drivetrain to optimize electrical efficiency, reducing the load on your power system.

## Configurations

### Fluid Plunger Sizes

- 1/8 in (3.18 mm)
- 3/16 in (4.76 mm)
- 1/4 in (6.35 mm)
- 3/8 in (9.5 mm)
- 1/2 in (12.7 mm)
- 5/8 in (15.9 mm)
- 3/4 in (19.1 mm)

### Input Power Types

- 12 VDC
- 115 VAC Single Phase
- 230 VAC Single Phase
- 230/460 VAC 3-Phase

### Electric Motor Sizes

- 1/11 hp
- 1/5 hp

### Drivetrain

- Simplex
- Duplex



# Harrier™ Electronic Injection Rate Controllers

Closely control and monitor chemical use and collect critical operating information for reducing costs and improving processes. Its easy, efficient and productive – saving you time and money.

## Accurate Control

Simple user interface for setup and control. Enter your desired injection rate and let Graco do the rest!

## Office or Remote Access

The Harrier+ control includes remote connectivity, allowing you to monitor, control and calibrate your system away from your injection site via cellular or ModBus.

## Notifications

Easily monitors your system for control, troubleshooting, maintenance needs and alerts.

## Minimize Waste

Patent pending adaptive flow control technology maintains a consistent injection rate, regardless of system variables, reducing waste and costs.

## System Control

Multiple inputs for system controls allow you to only run when it's necessary.

## Choose the model that fits your needs:



Harrier LT  
and Harrier

### Harrier LT and Harrier

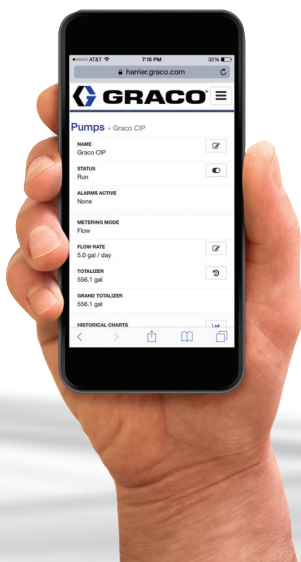
- Used for DC pumps
- Control injection rates via timer or cycle count
- ETL listed for electrical safety: UL 508 and CSA 22.2 No. 14

### Harrier+

- Used for AC and DC pumps
- Control injection rates via timer, cycle count or flow control
- Easy to read display that operates at temperatures as low as -40° F (-40° C)
- CDMA and GSM cellular connectivity
- ETL listed for electrical safety: UL 508 and CSA 22.2 No. 14



Harrier+



Control and monitor your systems  
from your mobile device

# Wolverine™ Series DC Systems

Graco chemical injection systems run off solar energy so there's no gas exhaust released in to the atmosphere. System configurations come with the necessary hardware to get you up and running in no time.

1

## Basic – Great for simple installations

- Harrier LT Injection Rate Controller – time based control
- Wolverine Simplex Electric Pump, 1/11 hp
  - Max flow = 20 gpd (75 lpd)
  - Max pressure = 3,500 psi (241 bar, 24.1 MPa)
- Solar panels up to 90W
- Lead acid battery, 96 Ah
- Can be installed by one technician in less than 30 minutes



2

## Advanced – Great for extreme environments

- Harrier Injection Rate Controller – cycle based control to improve the injection accuracy
- Wolverine Simplex or Duplex Electric Pump, 1/11 or 1/5 hp
  - Max flow = 40 gpd (150 lpd)
  - Max pressure = 10,000 psi (689 bar, 68.9 MPa)
- Solar panels up to 90W
- Premium AGM battery, 105 Ah
- Operating temperatures from -40°F to 135°F (-40°C to 57°C)



3

## Premium – Great for critical applications

- Harrier+ Injection Rate Controller – adaptive flow control technology for injection accuracy and assurance
- Control and monitor your system from your mobile device
- Wolverine Simplex or Duplex Electric Pump, 1/11 or 1/5 hp
  - Max flow = 40 gpd (150 lpd)
  - Max pressure = 10,000 psi (689 bar, 68.9 MPa)
- Solar panels up to 150W
- Premium AGM battery, 105 Ah
- Operating temperatures from -40°F to 135°F (-40°C to 57°C)



## Solar Chemical Injection Designation Key

SCI – X – XX – X – X – XX – X – X – XX – X – X

Solar Chemical Injection | Platform | Voltage | Motor | Number of Pumps | Plunger Size | Rod Coating | Seal Material | Solar Panel Wattage | Battery Package | Controller Package

Platform	Voltage	Motor	Number of Pumps	Plunger Size	Rod Coating	Seal Material	Solar Panel Wattage**	Battery Package	Controller Package
P: Pole Unit	12: 12 VDC	S: 1/11 HP L: 1/5 HP	1: 1 Pump 2: 2 Pump	25: 1/4 inch 38: 3/8 inch 50: 1/2 inch	S: 17-4 PH Stainless X: Chromex	A: FKM B: FKM ETP C: HNBR D: FFKM	05: 50 Watt 09: 90 Watt 15: 150 Watt	E: Economy P: Premium	1: Harrier LT 2: Harrier 3: Harrier+

\*\*Solar Panel Wattage: ± 5W



# Python™ Pneumatically Operated Pumps

Python pumps are ideal for applications that require a pump to operate in an explosion proof environment and can run off regulated natural gas or compressed air. These pumps have the lowest out of pocket cost, are easy to operate and use half the air consumption of other pumps in the market. Plus, the Python's extreme duty plungers, seals and timing valve are designed for up to two years of operation before replacement.

## Operating Environment

The Python is designed to operate in environments from -40°F to 175°F (-40°C to 79°C), made entirely from 316 SST parts and are sealed against water and dust.

## Accurate Control

Ultra precision stroke adjustment between 1/4 to 1 inch (6.4 to 25.4 mm) ensures accurate injection rates.

## Environmental

Reduced fugitive methane emissions.

## Chemical Compatibility

HNBR, FKM, FKM ETP, and FFKM plunger packings and check valve seals can handle some of the most aggressive chemicals.

## Consistent Operation

Pump cycle rate remains constant regardless of system back pressure.

## Configurations

### Fluid Plunger Sizes

- 1/8 in (3.18 mm)
- 3/16 in (4.76 mm)
- 1/4 in (6.35 mm)
- 3/8 in (9.5 mm)
- 1/2 in (12.7 mm)
- 5/8 in (15.9 mm)
- 3/4 in (19.1 mm)

### Air Motor Size

- 1-1/4 in (31.8 mm)
- 1-3/4 in (44.5 mm)
- 2 in (50.8 mm)

### Input Power

- Compressed air or natural gas
- Max 200 psig (13.8 bar, 1.38 MPa)

### Pump Capabilities

- Max flow rate: 165 gpd (625 lpd)
- Max pressure: 12,000 psi (827 bar, 82.7 MPa)
- Max cycle rate: 60 cycles/min





## ABOUT GRACO

### PROVEN QUALITY. LEADING TECHNOLOGY.

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

## GRACO LOCATIONS

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## SALES/ DISTRIBUTION/ SERVICE

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