E-Flo® iQ

Single Component Metering and Dispensing System

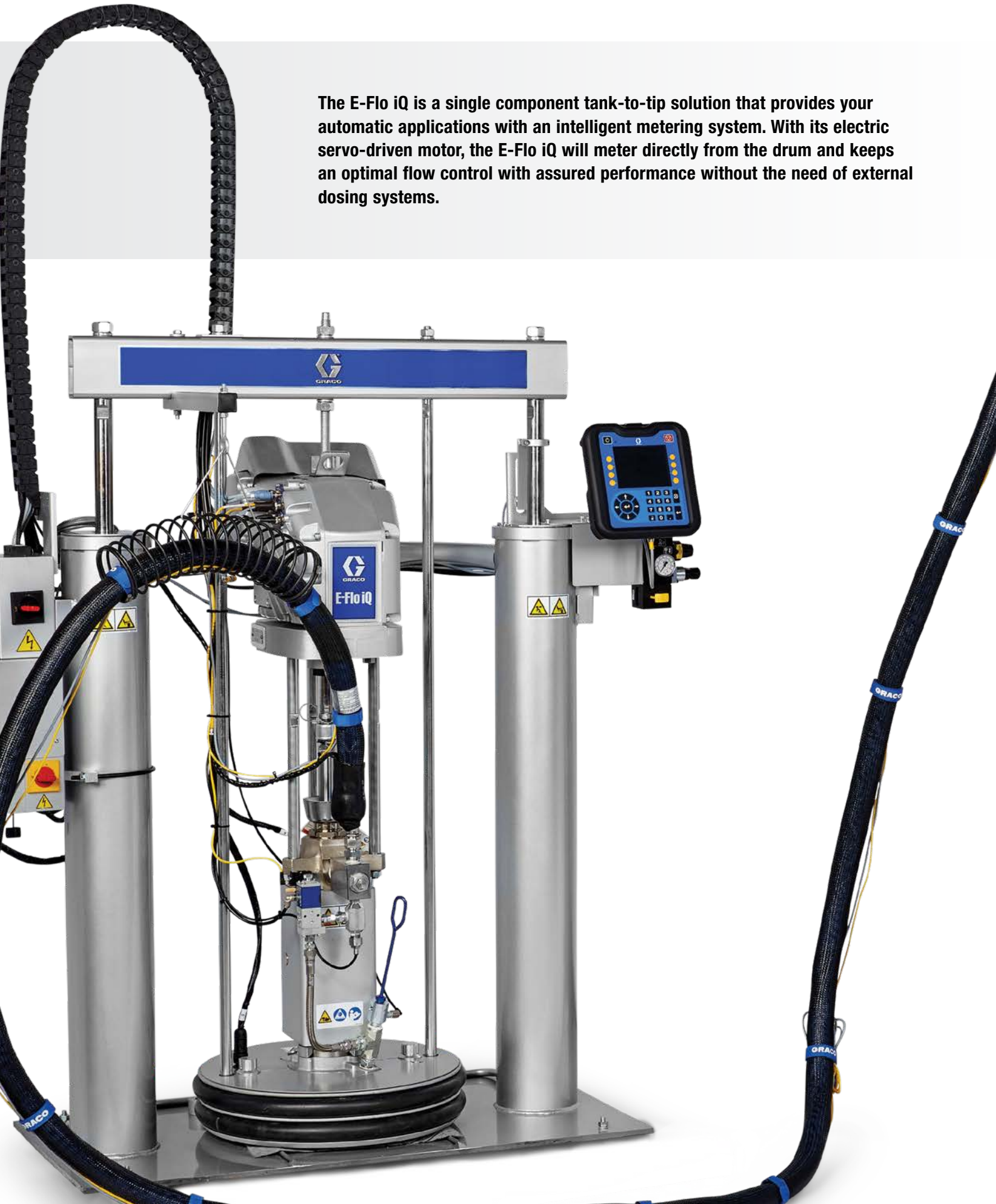
A new level of intelligence, control & performance

- Low cost of ownership
- Consistent control and accurate performance
- Simple system design and easy to integrate

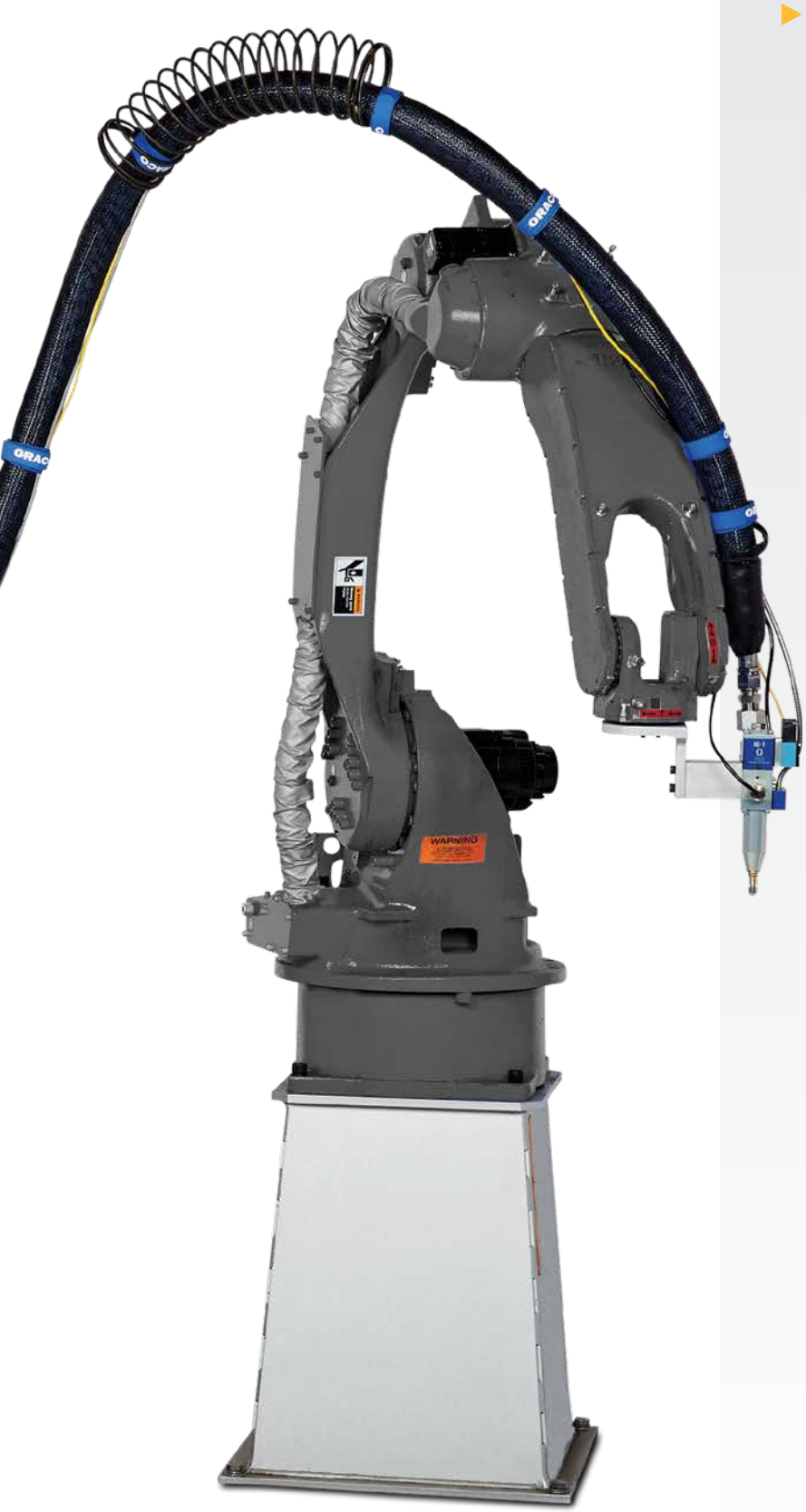
PROVEN QUALITY. LEADING TECHNOLOGY.

A new level of intelligence, control & performance

The E-Flo iQ is a single component tank-to-tip solution that provides your automatic applications with an intelligent metering system. With its electric servo-driven motor, the E-Flo iQ will meter directly from the drum and keeps an optimal flow control with assured performance without the need of external dosing systems.



Increase your overall equipment effectiveness



Lower your cost of ownership

Metering directly from the drum reduces the number of system components and lets you eliminate external dosing systems all together. With the simple setup of electric servo-driven pump, hose and valve, you will realise an immediate impact to your total cost of ownership.

Realise increased uptime at installation

- **Easy installations:** You will start realising the increased uptime of the installation. With the simplicity of E-Flo iQ, installations are done quickly and with ease.
- **Low maintenance:** By using parts that have been proven in industries to be long lasting and of high quality, maintenance needs are extremely low. Also with the easy to access and program diagnostics screens, you will be able to analyse the total work of the pump and determine preventive maintenance.
- **Continuous dispensing without reloading**

Lower sound levels

With current delivery systems, the sound levels often go well above 80 dBa. Because the E-Flo iQ is using an electric servo-driven motor, the sound level is often less then 70 dBa, making your working environment quieter.

Lower payloads for your robot

With only a hose and valve mounted on the robot you are able to select a smaller, less expensive robot with a smaller payload capacity.

Increase your overall equipment effectiveness

Consistent control of the flow rate with assured performance

Having accurate dispensing from start to finish and during the complete dispensing is not an easy task. You have to be able to control the flow and pressure, take into consideration the speed of the robot and be able to handle a wide range of materials for heated or non-heated applications.

Controlling and dispensing at accurate flow rates

The core of Meter from Drum Technology™ is the electric servo-driven motor. It is always aware of the position of the piston pump and its velocity, thus allowing the flow rate to be controlled and maintained at all times. Pressure sensors are placed at key locations to monitor and make sure the pressure is consistent from tank to tip.

Simple flow control changes

Changing flow rates can be done by simply changing the parameters in the control module. The E-Flo iQ will then automatically modify the pump controls and pressure to the requested new flow rate, without the need to make any mechanical changes.

Intelligent pump changeovers

Intelligent pump changeovers allow the pump to change direction between dispenses before the top and bottom end of the stroke, to ensure smooth and consistent flow at the valve.

Wide range of material compatibility

The E-Flo iQ can be configured to meet your dispense requirements for non-heated as well as heated applications up to 70°C (158°F). The reduced number of wetted parts makes the E-Flo iQ compatible with a wide range of adhesive viscosities and chemistries, including abrasive adhesives.

The right valve for every application

The choice of the valve plays a critical role for the quality of your dispense. While certain applications need a perfect start and stop, others need to apply the material in between tight spaces or need a vision system mounted onto them. With the E-Flo iQ valve range of tip seal, snuff back or ball/seat with heated or unheated options, there is a solution for each of these applications.

iQ-T = Tip seal*

iQ-S = Snuff back**

iQ-B = Ball/seat

*The iQ-T seal valve is shown with the heating option and a 200 mm nozzle length.
**The iQ-S seal valve is shown with a 60 mm nozzle length.

An easy to use control module with simple integration options

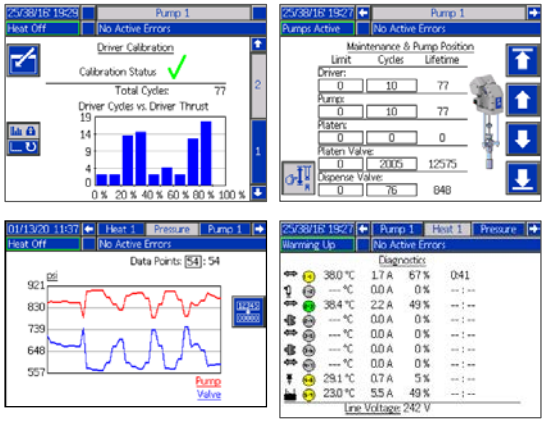
An easy to use control module

With the Advanced Display Module (ADM) on the E-Flo iQ, setting up and programming a metering system has never been easier.

It's intuitive screens make setting up of a bead profile quick and easy and lets you save up to 16 different dispense styles.

Simple diagnostics

The ADM also incorporates simple diagnostic screens which allow you to quickly check all the process variables and define predictive maintenance parameters.



Integration with the PLC

The communication gateway module (CGM) has integrated mapping of all of the programming data. Simply connect the CGM to the PLC for complete integration. Currently available protocols include EtherNet I/P, PROFINET, DeviceNet, or PROFIBUS.

By using the CGM you will be able to program an unlimited number of dispensing styles.

Proven components

Electric servo-driven motor

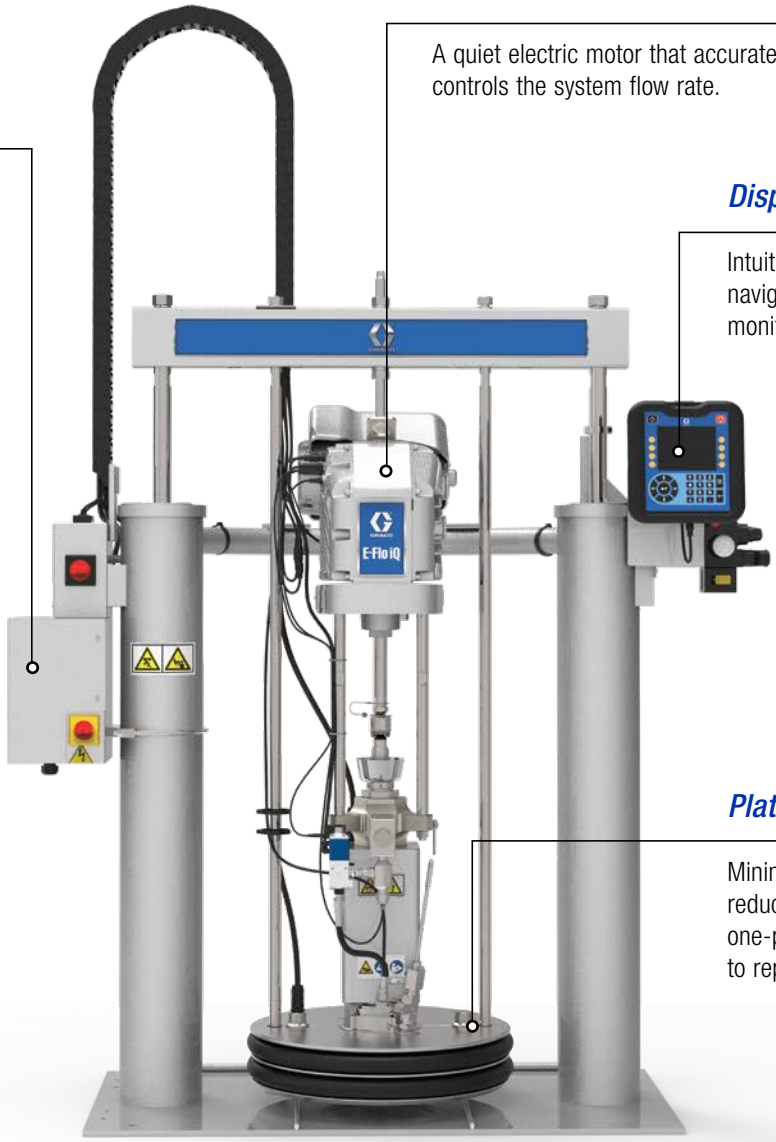
A quiet electric motor that accurately controls the system flow rate.

Optional heating

The system can be configured with the heat control module to handle adhesives up to 70°C. Next to the pump and platen heat zones, there are 6 heat zones for single systems and 12 for tandem systems.

Display module

Intuitive, easy-to-use screen navigation provides simple setup, monitoring and diagnostics.



Communication gateway module

The communication gateway module allows complete integration over EtherNet/IP, PROFINET, PROFIBUS, and DeviceNet or simple integration over discrete I/O.

Platen design

Minimises leftover material and reduces waste. Long-lasting, one-piece platen seals are easy to replace.

Hoses

Graco hoses maintain the material temperature and improve material integrity. For heated systems, the hoses are insulated for an accurate and uniform material temperature.

iQ Dispense Valves

A wide range of tip seal, snuff back and ball/seat valves that are a compact and lightweight design. Available with different tip lengths for vision system compatibility.

Technical information

E-Flo iQ Metering and Dispensing System

	Metric	US
Maximum fluid operating temperature	70°C	158°F
Maximum working pressure	28 MPa, 276 bar	4000 psi.
Maximum driver cycle rate	25 cycles per minute	
Air inlet size *(supply system)*	3/4 npt (f)	
Ambient operating temperature range *(supply system)*	0-49°C	32-120°F
Flow rate	10 cc/min - 4500 cc/ min (max. flow rate is dependent on the material specifications)	
Gateway	EtherNet/IP, DeviceNet, PROFINET, PROFIBUS	

Electrical requirements	
Ambient system electrical ratings	200-240 VAC, 1 phase, 50/60 Hz, 20 A
Heated system electrical ratings	200-240 VAC, 1 phase, 50/60 Hz, 20 A
	200-240 VAC, 3 phase (Δ), 50/60 Hz, 38 A
	380-420 VAC, 3 phase (Y), 50/60 Hz, 38 A

Fluid outlet size	
Check-Mate 200	1" npt (f)

Maximum air input pressure (supply system)		
D60 - 3 in. dual post, 20 L (5 gal.)	10 bar, 1.0 MPa	150 psi
D200 - 3 in. dual post, 200 L (55 gal.)	10 bar, 1.0 MPa	150 psi
D200s - 6.5 in. dual post, 200 L (55 gal.)	9 bar, 0.9 MPa	125 psi

iQ-T, iQ-S and iQ B Dispense Valves

	Metric	US
Maximum fluid working pressure	276 bar, 28 MPa	4000 psi
Maximum cylinder air pressure	8.0 bar, 0.8 MPa	120 psi
Maximum fluid operating temperature	70°C	158°F

Inlet/Outlet Sizes	
Air inlet size	1/8 in. npt(f) (Remote solenoid options only)
Air exhaust port size	1/8 in. npt (f)
Fluid inlet size	1/4 in. npt (f)
Fluid outlet size	Depends on the model selected

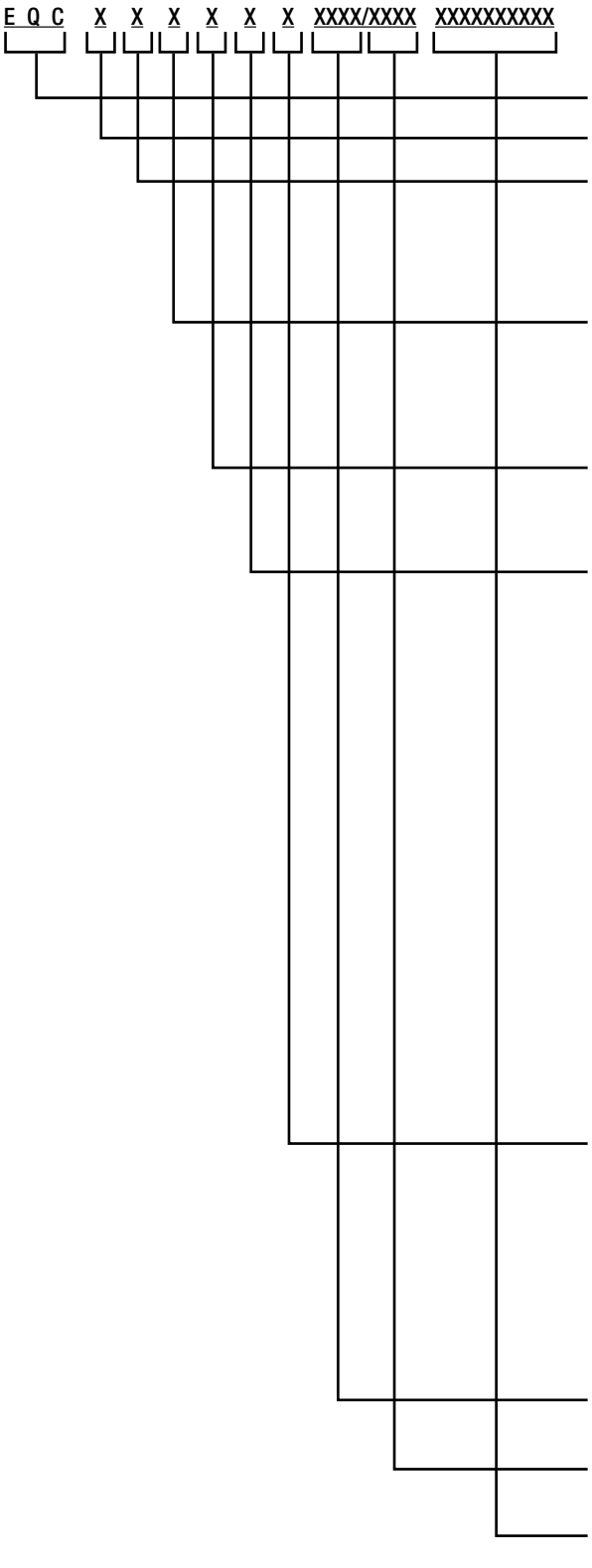
Weight
Weight: 0.8kg - 1.6 kg depending on the model selected

Electrical Specifications			
Nozzle length	**Voltage**	**RTD sensor resistance**	**Heater sensor resistance**
0 mm	240 V	108.2 Ohms @ 20°C (70°F)	576 Ohms
60 mm			786 Ohms
200 mm			384 Ohms

Ordering information

Selection of the E-Flo iQ system

The E-Flo iQ System provides the flexibility to configure a system to meet your specific needs. This includes offering multiple combinations of supply systems, dispensing valves, hoses and accessories.



EQC = E-Flo iQ System

Revision

Single or Tandem

S	Single
T	Tandem

Heating option

H	Heated
A	Ambient

Platen Valve Option

Y	Yes

Ram Style

	Size	Drum size	Pump material	Seal material
A	3 in.	20 L (5 Gal)	CS	EPDM
B	3 in.	20 L (5 Gal)	CS	Neoprene
C	3 in.	20 L (5 Gal)	CM	EPDM
D	3 in.	20 L (5 Gal)	CM	Neoprene
F	3 in.	200 L (55 Gal)	CS	EPDM
G	3 in.	200 L (55 Gal)	CS	Neoprene
H	3 in.	200 L (55 Gal)	CM	EPDM
J	3 in.	200 L (55 Gal)	CM	Neoprene
K	6 in.	200 L (55 Gal)	CS	EPDM
M	6 in.	200 L (55 Gal)	CS	Neoprene
N	6 in.	200 L (55 Gal)	CM	EPDM
P	6 in.	200 L (55 Gal)	CM	Neoprene

Fieldbus option

A	EtherNet/IP
B	PROFINET
C	PROFIBUS
D	DeviceNet
N	None

Hose options for hoses A and B (*as tandem hose options*)

(See table: Selection of the hoses)

Hose options for hoses C and D

(See table: Selection of the hoses)

Valve Options

(See table: Selection of the valves)

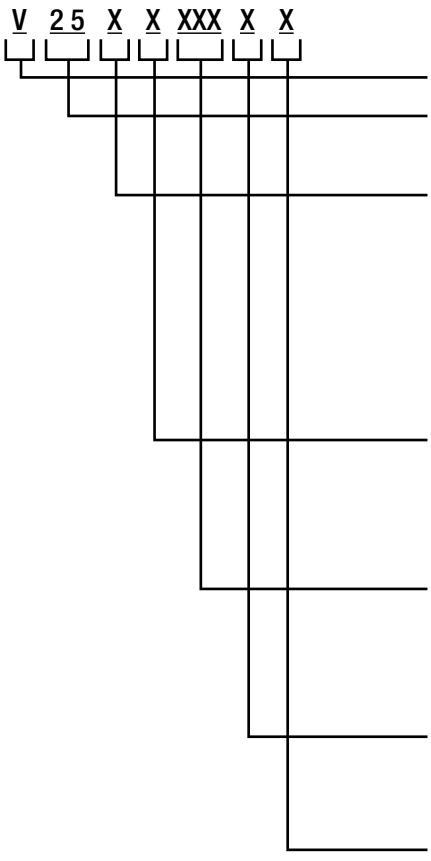
Selection of the hoses

	Part No.	Connection	Length	Heat
04	19M404	10	6 ft	Heated
05	19M405	10	10 ft	Heated
06	19M406	10	15 ft	Heated
07	19M407	10	20 ft	Heated
08	19M408	10	25 ft	Heated
11	19M411	12	6 ft	Heated
12	19M412	12	10 ft	Heated
13	19M413	12	15 ft	Heated
14	19M414	12	20 ft	Heated
15	19M415	12	25 ft	Heated
16	19M416	16	6 ft	Heated
17	19M417	16	10 ft	Heated
18	19M418	16	15 ft	Heated
19	19M419	16	20 ft	Heated
20	19M420	16	25 ft	Heated

	Part No.	Connection	Length	Heat
65	17K265	10	6 ft	Ambient
66	17K266	10	10 ft	Ambient
67	17K267	10	15 ft	Ambient
68	17K268	10	20 ft	Ambient
69	17K269	10	25 ft	Ambient
72	17K272	12	6 ft	Ambient
73	17K273	12	10 ft	Ambient
74	17K274	12	15 ft	Ambient
75	17K275	12	20 ft	Ambient
76	17K276	12	25 ft	Ambient
77	17K277	16	6 ft	Ambient
78	17K278	16	10 ft	Ambient
79	17K279	16	15 ft	Ambient
80	17K280	16	20 ft	Ambient
81	17K281	16	25 ft	Ambient
00	N/A	N/A	N/A	N/A

Selection of the valves

Check the identification plate for the ten-digit part number of the valve. Use the following matrix to define the construction of the valve, based on the ten digits.



Valve

Size

25	1/4" npt (f)

Tip Size

A	1/4" npt (f) (not for the tip seal version)
B	7/8-14 unf (m) (only available in a ball/seat, 0mm and ambient version.)
C	0.6 mm
D	1.0 mm
F	1.3 mm
G	1.7 mm

Type

T	Tip Seal
S	Snuff Back
B	Ball/Seat

Tip length

000	N/A
060	60 mm
200	200 mm

Action

B	Valve mounted solenoid
D	Remote solenoid block (solenoid sold seperately.)

Heat

A	None
B	Heated

ABOUT GRACO

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

MAILING ADDRESS
P.O. Box 1441
Minneapolis, MN 55440-1441
Tel: 612-623-6000
Fax: 612-623-6777

AMERICAS

MINNESOTA
Worldwide Headquarters
Graco Inc.
88-11th Avenue N.E.
Minneapolis, MN 55413

EUROPE

BELGIUM
European Distribution Center
Graco Distribution BV
Industrieterrein-Oude Bunders
Slakweidestraat 31
3630 Maasmechelen,
Belgium
Tel: 32 89 770 700
Fax: 32 89 770 777

ASIA PACIFIC

AUSTRALIA
Graco Australia Pty Ltd.
Suite 17, 2 Enterprise Drive
Bundoora, Victoria 3083
Australia
Tel: 61 3 9468 8500
Fax: 61 3 9468 8599

CHINA
Graco Hong Kong Ltd.
Shanghai Representative Office
Building 7
1029 Zhongshan Road South
Huangpu District
Shanghai 200011
The People's Republic of China
Tel: 86 21 649 50088
Fax: 86 21 649 50077

INDIA
Graco Hong Kong Ltd.
India Liaison Office
Room 432, Augusta Point
Regus Business Centre 53
Golf Course Road
Gurgaon, Haryana
India 122001
Tel: 91 124 435 4208
Fax: 91 124 435 4001

JAPAN
Graco K.K.
1-27-12 Hayabuchi
Tsuzuki-ku
Yokohama City, Japan 2240025
Tel: 81 45 593 7300
Fax: 81 45 593 7301

KOREA
Graco Korea Inc.
38, Samsung 1-ro 1-gil
Hwaseong-si, Gyeonggi-do, 18449
Republic of Korea
Tel: 82 31 8015 0961
Fax: 82 31 613 9801

Graco is certified ISO 9001.

Europe
+32 89 770 700
FAX +32 89 770 777
WWW.GRACO.COM