GRACO

E-FLO® iQ

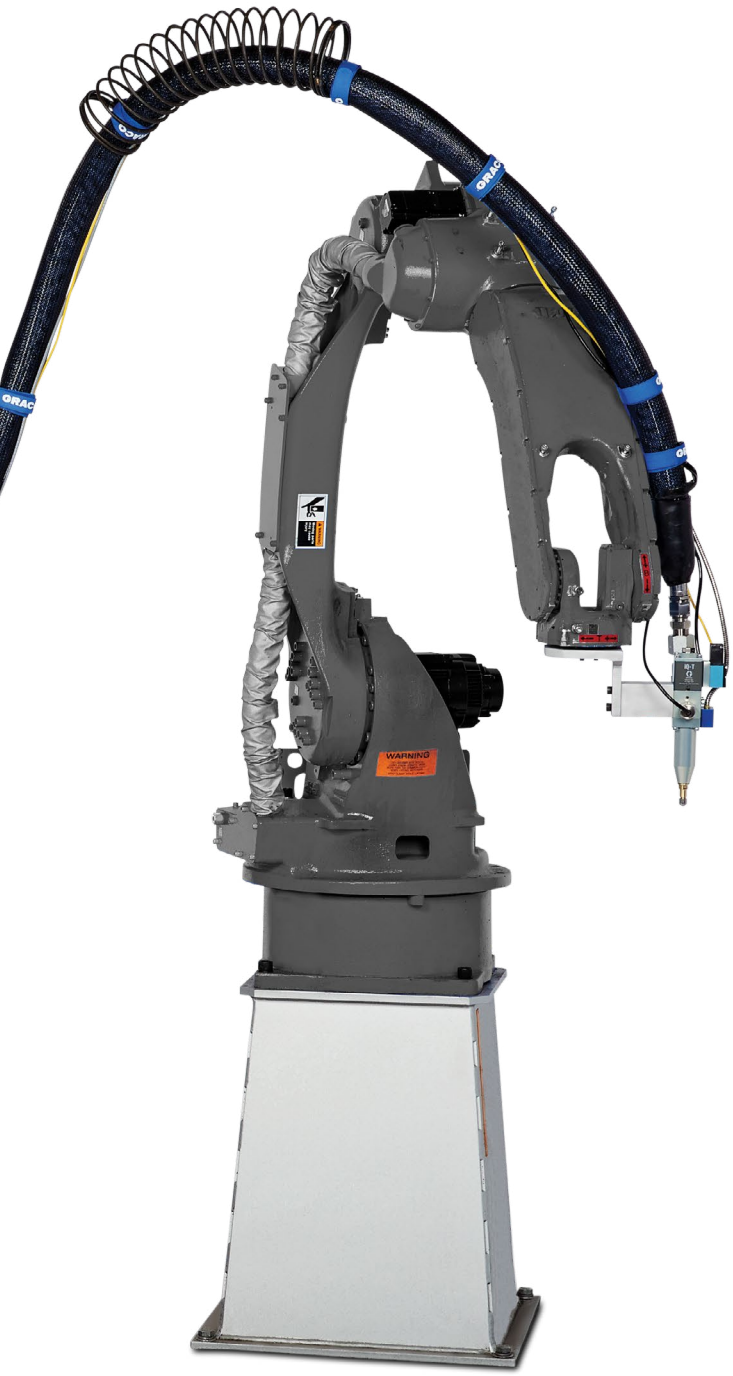
Single Component Metering and Dispensing System

MOVING MATERIALS THAT MATTER™

A NEW LEVEL OF INTELLIGENCE, CONTROL AND 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 metering 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 metering 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

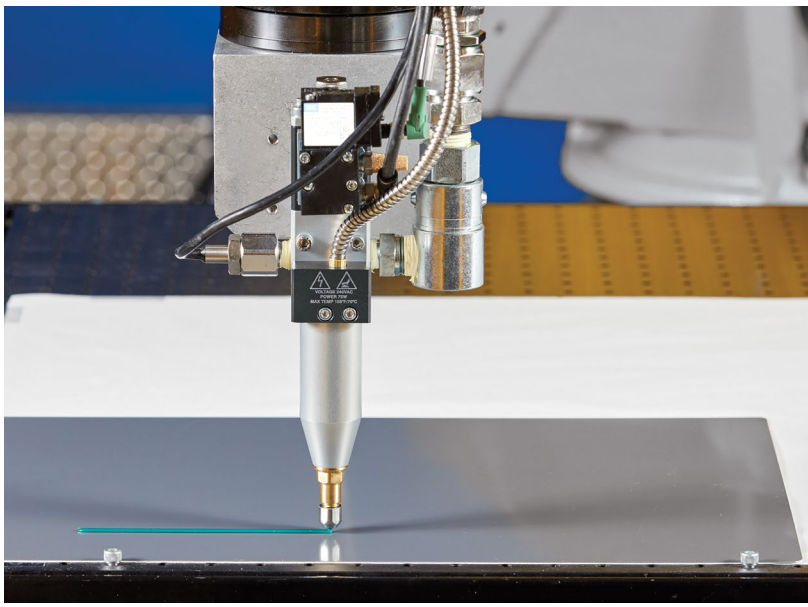
Having accurate dispensing from start to finish and during the complete dispensing is not an easy task. You have to be able to control the flow and pressure, take into consideration the speed of the robot and be able to handle a wide range of materials for heated or non-heated applications.

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 158°F (70°C). 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

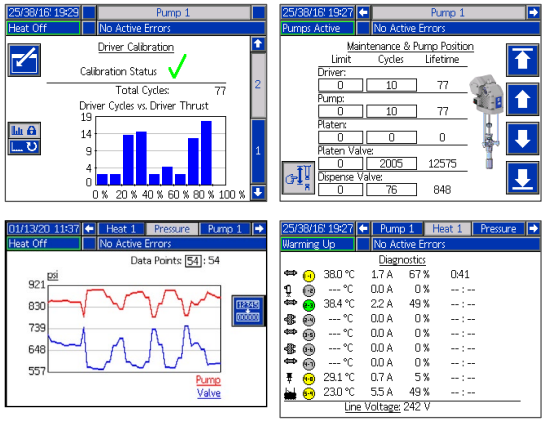
AN EASY TO USE CONTROL MODULE

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.

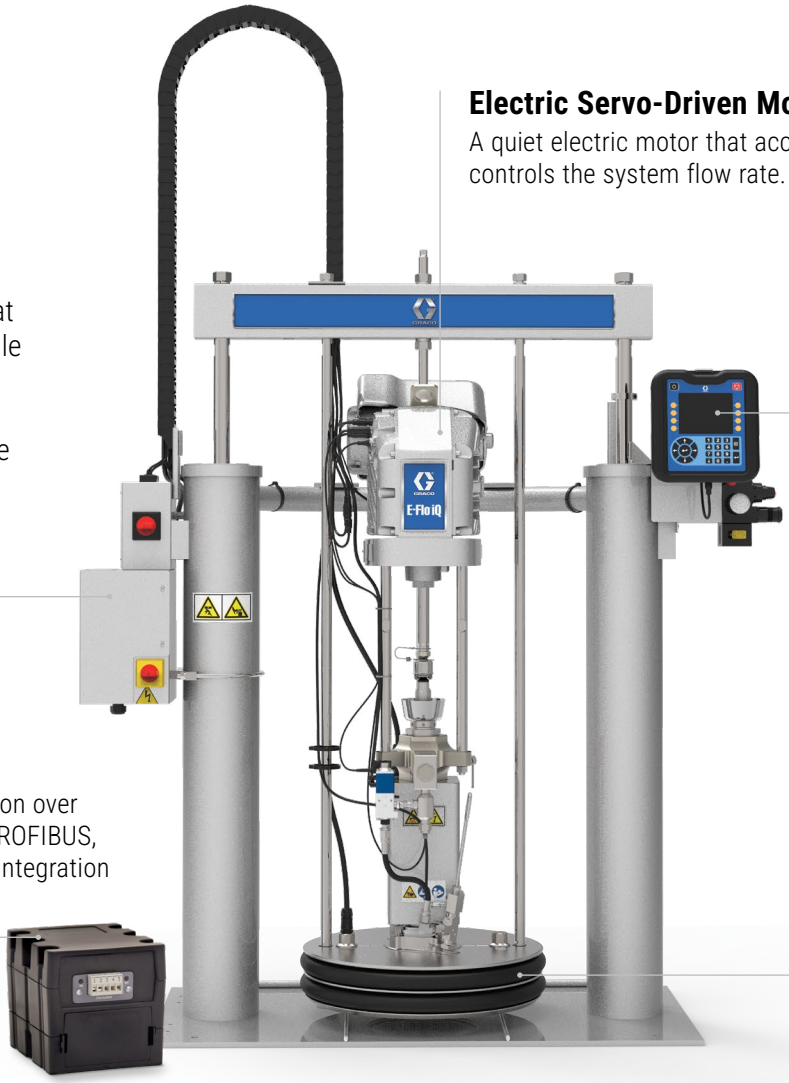


INTEGRATION WITH THE PLC

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
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 SPECIFICATIONS

Maximum fluid operating temperature	158°F (70°C)
Maximum working pressure	4000 psi (276 Bar, 28 Mpa)
Maximum driver cycle rate	25 cycles per minute
Air Inlet size (supply system)	3/4 in NPT(f)
Maximum air input pressure (supply system)	D60 – 3 in dual post, 20 L (5 gal), 150 psi (10 Bar, 1.0 Mpa) D200 – 3 in dual post, 200 L (55 gal), 150 psi (10 Bar, 1.0 Mpa) D200s – 6.5 in dual post, 200 L (55 gal), 125 psi (9 Bar, 0.9 Mpa)
Ambient operating temperature range	32-120°F (0-49°C)
Fluid outlet size (Check-Mate 200)	1 in NPT(f)
Flow rate	10 cc/min - 4500 cc/min (max. flow rate is dependent on the material specifications)
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
Gateway	EtherNet/IP, DeviceNet, PROFINET, PROFIBUS

DISPENSE VALVE SPECIFICATIONS

	iQ-B / iQ-S / iQ-T
Maximum fluid working pressure	4000 psi (276 Bar, 28 Mpa)
Maximum cylinder air pressure	120 psi (8.3 Bar, 28 Mpa)
Maximum fluid operating temperature	158°F (70°C)
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	Depending on model
Manual	X032396

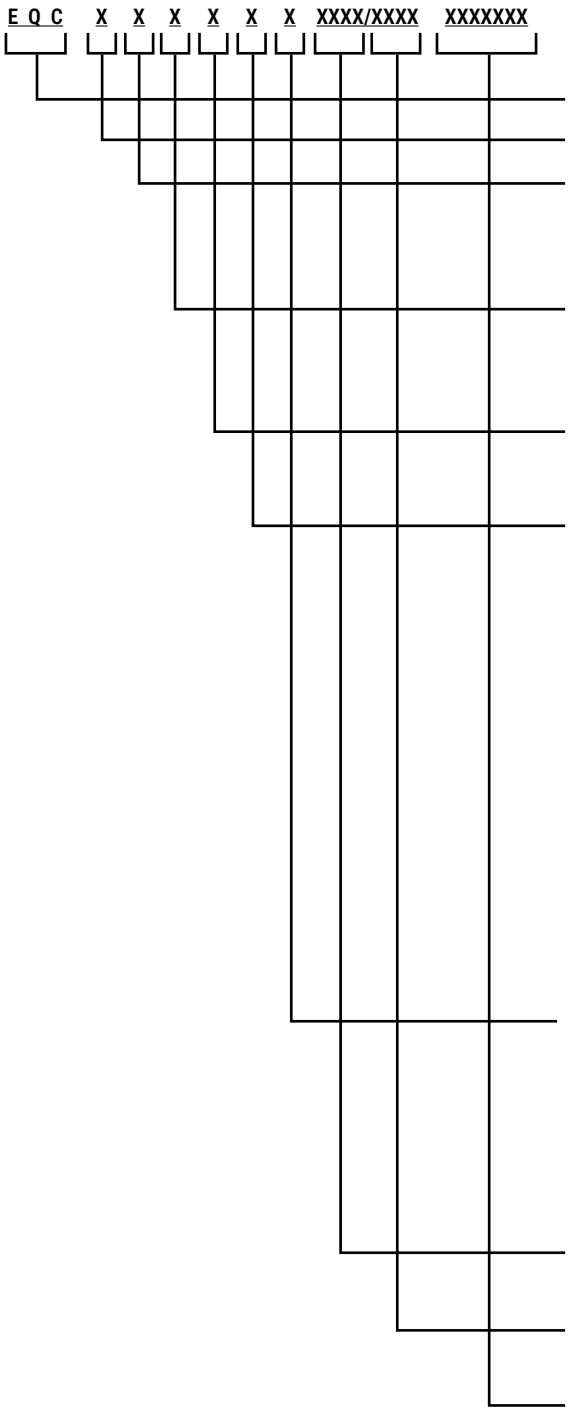
NOZZLE SPECIFICATIONS

		0 MM	60 MM	200 MM
WEIGHT	Ambient, Remote Mount Solenoid	1.8 lb (0.8 kg)	2.0 lb (0.9 kg)	2.6 lb (1.2 kg)
	Heated, Remote Mount Solenoid	2.1 lb (1.0 kg)	2.4 lb (1.1 kg)	3.1 lb (1.4 kg)
	Ambient, Direct Mount Solenoid	2.1 lb (1.0 kg)	2.4 lb (1.1 kg)	3.1 lb (1.4 kg)
	Heated, Direct Mount Solenoid	2.5 lb (1.1 kg)	2.8 lb (1.3 kg)	3.5 lb (1.6 kg)
ELECTRICAL	Voltage	240 V ac	240 V ac	240 V ac
	RTD Type	100 Ohm PT	100 Ohm PT	100 Ohm PT
	Wattage	0 mm = 100 W	60 mm = 75 W	150 mm = 150 W

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 Hose Ordering Options)

Hose Options for Hoses C and D
(See Hose Ordering Options)

Valve Options
(See Valve Ordering Options)

ORDERING INFORMATION

ORDERING OPTIONS

HOSES

CODE	PART NUMBER	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

CODE	PART NUMBER	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

BALL SEAT VALVES

4000 psi (276 bar, 28 Mpa) Fluid Working Pressure. 1/4 NPT Inlet Ports.

PART NUMBER	SOLENOID	SOLENOID POWER (W)	HEAT	OUTLET
2011766	–	–	–	1/4-18 NPT(f)
2011761	X	2.4	–	1/4-18 NPT(f)
2011765	X	2.4	X	1/4-18 NPT(f)
2011767	–	–	X	1/4-18 NPT(f)
2011768	–	–	–	5/16 in-28 RAC
2011771	–	–	–	90 degree

2011766

2011319

SNUFF BACK VALVES

4000 psi (276 bar, 28 Mpa) Maximum Fluid Working Pressure. 1/4 NPT Inlet Ports.

PART NUMBER	SOLENOID	SOLENOID POWER (W)	HEAT	OUTLET	OUTLET BLOCK LENGTH MM (IN)
2011300	–	–	–	1/4-18 NPT(f)	–
2011298	X	2.4	–	1/4-18 NPT(f)	–
2011299	X	2.4	X	1/4-18 NPT(f)	–
2011301	–	–	X	1/4-18 NPT(f)	–
2012484	–	–	–	1/4-18 NPT(f)	60 (2.36)
2011319	X	2.4	–	1/4-18 NPT(f)	60 (2.36)
2012485	–	–	–	1/4-18 NPT(f)	200 (7.87)
2011297	X	2.4	–	1/4-18 NPT(f)	200 (7.87)
2011321	–	–	–	3/4-16 UNF(m) JIC, 45°	
2011320	X	12	–	3/4-16 UNF(m) JIC, 45°	

ORDERING OPTIONS

TIP VALVES

4000 psi (276 bar, 28 Mpa) Maximum Fluid Working Pressure. 1/4 NPT Inlet Ports for standard inlet block.

PART NUMBER	TIP SIZE MM (IN)	SOLENOID	SOLENOID POWER (W)	HEAT	OUTLET BLOCK LENGTH MM (IN)
2011497	1.0 (0.039)	X	12	–	–
2011599	1.0 (0.039)	X	12	–	60 (2.36)
2011600	1.0 (0.039)	X	12	X	60 (2.36)
2011613	1.0 (0.039)	X	12	–	200 (7.87)
2011614	1.0 (0.039)	–	–	–	200 (7.87)
2011588	1.3 (0.051)	X	12	–	–
2011589	1.3 (0.051)	X	12	X	–
2011590	1.3 (0.051)	–	–	–	–
2011601	1.3 (0.051)	X	12	–	60 (2.36)
2011602	1.3 (0.051)	X	12	X	60 (2.36)
2011603	1.3 (0.051)	–	–	–	60 (2.36)
2011615	1.3 (0.051)	X	12	–	200 (7.87)
2011616	1.3 (0.051)	X	12	X	200 (7.87)
2011617	1.3 (0.051)	–	–	–	200 (7.87)
2011591	1.7 (0.067)	X	12	–	–
2011592	1.7 (0.067)	X	12	X	–
2011593	1.7 (0.067)	–	–	–	–
2011604	1.7 (0.067)	X	12	–	60 (2.36)
2011605	1.7 (0.067)	X	12	X	60 (2.36)
2011606	1.7 (0.067)	–	–	–	60 (2.36)
2011618	1.7 (0.067)	X	12	–	200 (7.87)
2011619	1.7 (0.067)	X	12	X	200 (7.87)
2011620	1.7 (0.067)	–	–	–	200 (7.87)
2011594	2.0 (0.079)	X	12	–	–
2011595	2.0 (0.079)	X	12	X	–
2011596	2.0 (0.079)	–	–	–	–
2011607	2.0 (0.079)	X	12	–	60 (2.36)
2011608	2.0 (0.079)	X	12	X	60 (2.36)
2011609	2.0 (0.079)	–	–	–	60 (2.36)
2011621	2.0 (0.079)	X	12	–	200 (7.87)
2011622	2.0 (0.079)	X	12	X	200 (7.87)
2011623	2.0 (0.079)	–	–	–	200 (7.87)
2011597	2.5 (0.098)	X	12	X	–
2011598*	2.5 (0.098)	X	12	X	–
2011610	2.5 (0.098)	X	12	X	60 (2.36)
2011624	2.5 (0.098)	X	12	X	200 (7.87)
2011612	4.0 (0.0157)	X	12	–	60 (2.36)

*Indicates Elite components.

2011596

2011599

2011616

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