INSTRUCTION MANUAL

MANUAL NUMBER X032396 | REVISION A | ENGLISH (US)

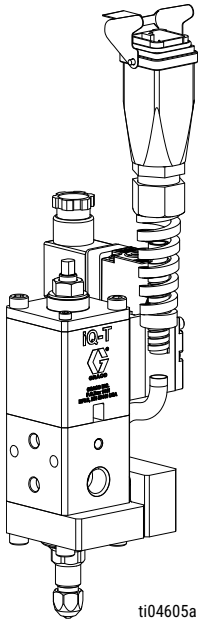
iQ™ Dispense Valves

Dispense valves for controlling material flow of adhesives, sealants, and other materials that are compatible with the wetted parts of the valve. For professional use only.

Not approved for use in explosive atmospheres or hazardous (classified) locations.

Important Safety Instructions

Read all warnings and instructions in this manual before using the equipment. Be familiar with the proper control and usage of the equipment. Save these instructions.



ti04605a

Model 2011589

Images are for illustrative purposes only

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CONTENTS

MODELS

Part numbers reflect distinct features and characteristics of the iQ Dispense Valves.

IQ DISPENSE VALVE MODELS AND APPROVALS

Maximum Working Pressure: 4000 psi (28 MPa, 276 bar) unless otherwise noted.

Table 1-1: Tip Seal Valves, 1.0 mm Tip Size

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011497	✔	12	–-	–-	–-
2011599	✔	12	–-	–-	60 (2.36)
2011600	✔	12	✔	–-	60 (2.36)
2012028	✔	2.4	✔	✺	60 (2.36)
2012029	✔	2.4	✔	✺	200 (7.87)
2011613	✔	12	–-	–-	200 (7.87)

Table 1-2: Tip Seal Valves, 1.3 mm Tip Size

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011588	✔	12	–-	–-	–-
2011590	–-	–-	–-	–-	–-
2011589	✔	12	✔	–-	–-
2011601	✔	12	–-	–-	60 (2.36)
2011602	✔	12	✔	–-	60 (2.36)
2011603	–-	–-	–-	–-	60 (2.36)
2011616	✔	12	✔	–-	200 (7.87)
2011615	✔	12	–-	–-	200 (7.87)
2011617	–-	–-	–-	–-	200 (7.87)

Table 1-3: Tip Seal Valves, 1.7 mm Tip Size

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011593	–-	–-	–-	–-	–-
2011591	✔	12	–-	–-	–-
2011592	✔	12	✔	–-	–-
2011605	✔	12	✔	–-	60 (2.36)
2011604	✔	12	–-	–-	60 (2.36)
2011606	–-	–-	–-	–-	60 (2.36)
2011619	✔	12	✔	–-	200 (7.87)
2011620	–-	–-	–-	–-	200 (7.87)
2011618	✔	12		–-	200 (7.87)
2012490	–-	–-	–-	❖	200 (7.87)

Table 1-4: Tip Seal Valves, 2.0 mm Tip Size

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011594	✔	12	–-	–-	–-
2011595	✔	12	✔	–-	–-
2011596	–-	–-	–-	–-	–-
2011607	✔	12	–-	–-	60 (2.36)
2011608	✔	12	✔	–-	60 (2.36)
2011609	–-	–-	–-	–-	60 (2.36)
2011621	✔	12	–-	200 (7.87)	200 (7.87)
2011622	✔	12	✔	–-	200 (7.87)
2011623	–-	–-	–-	–-	200 (7.87)

Table 1-5: Tip Seal Valves, 2.5 mm Tip Size

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011597	✔	12	✔	–-	–-
2011610	✔	12	✔	–-	60 (2.36)
2011624	✔	12	✔	–-	200 (7.87)

Table 1-6: Tip Seal Valves, 4.0 mm Tip Size

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011612	✔	12	–-	–-	60 (2.36)

Table 1-7: Elite Tip Seal Valves

MODEL	TIP SIZE MM (IN.)	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET BLOCK LENGTH MM (IN.)
2011598	2.5 (0.098)	✔	12	✔	–-	–-
2011611	2.5 (0.098)	✔	2.4	✔	✺	60 (2.36)
2011625	2.5 (0.098)	✔	2.4	✔	✺	200 (7.87)

Table 1-8: Ball Seat Valves

MODEL	SOLENOID	SOLENOID POWER W	FLUID WORKING PRESSURE PSI (MPA, BAR)	HEAT	INLET	OUTLET
2011766	–-	–-	4000 (28, 276)	–-	–-	1/4 -18 NPT (F)
2011761	✔	2.4	4000 (28, 276)	–-	–-	1/4 -18 NPT (F)
2011768	–-	–-	4000 (28, 276)	–-	–-	5/16"-28
2011770	–-	–-	5000 (34.5, 345)	–-	✺	1/4 -18 NPT (F)
2011765	✔	2.4	4000 (28, 276)	✔	–-	1/4 -18 NPT (F)
2011769	✔	12 W	5000 (34.5, 345)	–-	✺	1/4 -18 NPT (F)
2011767	–-	–-	4000 (28, 276)	✔	–-	1/4 -18 NPT (F)
2011771	–-	–-	4000 (28, 276)	–-	–-	90 degree

Table 1-9: Snuff Back Valves

MODEL	SOLENOID	SOLENOID POWER W	HEAT	INLET	OUTLET	OUTLET BLOCK LENGTH
2011300	–-	–-	–-	–-	1/4 -18 NPT (F)	–-
2011298	✔	2.4	–-	–-	1/4 -18 NPT (F)	–-
2011299	✔	2.4	✔	–-	1/4 -18 NPT (F)	–-
2011301	–-	–-	✔	–-	1/4 -18 NPT (F)	–-
2011319	✔	2.4	–-	–-	1/4 -18 NPT (F)	60 (2.36)
2012484	–-	–-	–-	–-	1/4 -18 NPT (F)	60 (2.36)
2012485	–-	–-	–-	–-	1/4 -18 NPT (F)	200 (7.87)
2011297	✔	2.4	–-		1/4 -18 NPT (F)	200 (7.87)
2011321	–-		–-		3/4-16 UNF (M) JIC, 45°	–-
2011320	✔	12	–-		3/4-16 UNF (M) JIC, 45°	–-

❖ ¼ NPT style fluid inlet, four bolt mounting pattern.

✺ 1/4 NPT fluid inlet. Face seal optional with four bolt mount.

IQ DISPENSE VALVE APPROVALS

All iQ Dispense Valves have the following approval.

ALL MODEL APPROVALS
CE

SAFETY SYMBOLS

The following safety symbols appear throughout this manual and on warning labels. Read the table below to understand what each symbol means.

SYMBOL	MEANING
	Burn Hazard
	Electric Shock Hazard
	Equipment Misuse Hazard
	Fire and Explosion Hazard
	Skin Injection Hazard
	Skin Injection Hazard
	Toxic Fluid or Fumes Hazard
	Do Not Place Hands or Other Body Parts Near Fluid Outlet

SYMBOL	MEANING
	Do Not Stop Leaks with Hand, Body, Glove or Rag
	Eliminate Ignition Sources
	Follow Pressure Relief Procedure
	Ground Equipment
	Ventilate Work Area
	Wear Personal Protective Equipment

Safety Alert Symbol

This symbol indicates: Attention! Become Alert! Look for this symbol throughout the manual to indicate important safety messages.

GENERAL WARNINGS FOR THE IQ DISPENSE VALVES

The following warnings apply throughout this manual. Read, understand, and follow the warnings before using this equipment. Failure to follow these warnings can result in serious injury.

⚠ WARNING	
	**SKIN INJECTION HAZARD** High-pressure fluid from dispensing device, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.** • Do not point dispensing device at anyone or at any part of the body. • Do not put your hand over the fluid outlet. • Do not stop or deflect leaks with your hand, body, glove, or rag. • Follow the **Pressure Relief Procedure** when you stop dispensing and before cleaning, checking, or servicing equipment. • Tighten all fluid connections before operating the equipment. • Check hoses and couplings daily. Replace worn or damaged parts immediately.
	**BURN HAZARD** Equipment surfaces and fluid that is heated can become very hot during operation. To avoid severe burns: • Do not touch hot fluid or equipment.

⚠ WARNING




FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, **in work area** can ignite or explode. Paint or solvent flowing through the equipment can cause static sparking. To help prevent fire and explosion:

- Use equipment only in well-ventilated area.
- Eliminate all ignition sources, such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static sparking).
- Ground all equipment in the work area. See **Grounding** instructions.
- Never spray or flush solvent at high pressure.
- Keep work area free of debris, including solvent, rags and gasoline.
- Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.
- Use only grounded hoses.
- Hold gun firmly to side of grounded pail when triggering into pail. Do not use pail liners unless they are anti-static or conductive.
- **Stop operation immediately** if static sparking occurs or you feel a shock. Do not use equipment until you identify and correct the problem.
- Keep a working fire extinguisher in the work area.


ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect all power before disconnecting any cables and before servicing or installing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read Safety Data Sheets (SDSs) to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.

⚠ WARNING

EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Specifications** in all equipment manuals.
- Use fluids and solvents that are compatible with equipment wetted parts. See **Technical Specifications** in all equipment manuals. Read fluid and solvent manufacturer's warnings. For complete information about your material, request Safety Data Sheets (SDSs) from distributor or retailer.
- Do not leave the work area while equipment is energized or under pressure.
- Turn off all equipment and follow the **Pressure Relief Procedure** when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or overbend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.

PERSONAL PROTECTIVE EQUIPMENT

Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. Protective equipment includes but is not limited to:

- Protective eyewear and hearing protection.
- Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.

TECHNICAL SPECIFICATIONS

The table provides important information related to the iQ Dispense Valves, including product attributes, measurements, and performance characteristics that support the use of the equipment.

Table 4-1: Technical Specifications for iQ Dispense Valves

	US	METRIC
Maximum fluid working pressure	4000 psi	28 MPa, 276 bar
Maximum cylinder air pressure	120 psi	0.83 MPa, 8.3 bar
Maximum fluid operating temperature	158° F	70° C
Fluid section sealing	Isolation chamber with dual seals	
Divorced air cylinder	Double acting Buna-N O-rings	
Valve Mounted Solenoid		
Inlet and exhaust port size	1/8 in. NPT(f)	
Outlet port size	O-ring seal	
Electrical connector style	Rectangular plug Form B DIN 43650	
Voltage	24 VDC	
Solenoid power	12 W, 2.4 W	
Sound Data		
Normal operation (dispensing)	< 70 dBA	
Inlet/Outlet Sizes		
Air inlet size	1/8 in. NPT(f)	
Air exhaust port size	1/8 in. NPT(f)	
Fluid inlet size	1/4 in. NPT(f)	
Fluid outlet size	See **Models, page 3** for tip sizes	
Materials of Construction		
Wetted materials on iQ-B models	Aluminum, UHMWPE, 17-4 SST, PEEK, Chemical Resistant o-rings, Silicon Nitride, CA 360 BRASS, Coated tool steel, and C2 carbide with cobalt binder.	
Wetted materials on iQ-S models	Aluminum, UHMWPE, 316 SST, 17-4 SST, PEEK, Chemical Resistant o-rings, CA 360 BRASS, Coated tool steel, and C2 carbide with cobalt binder.	
Wetted materials on iQ-T models	Aluminum, UHMWPE, 17-4 SST, PEEK, Chemical Resistant o-rings, CA 360 BRASS, Coated Tool Steel, and C2 carbide with cobalt binder.	

Table 4-2: Weight

OUTLET BLOCK LENGTH	AMBIENT, REMOTE MOUNT SOLENOID	HEATED, REMOTE MOUNT SOLENOID	AMBIENT, DIRECT MOUNT SOLENOID	HEATED, DIRECT MOUNT SOLENOID
0 mm	1.8 lb (0.8 kg)	2.1 lb (1.0 kg)	2.1 lb (1.0 kg)	2.5 lb (1.1 kg)
60 mm	2.0 lb (0.9 kg)	2.4 lb (1.1 kg)	2.4 lb (1.1 kg)	2.8 lb (1.3 kg)
200 mm	2.6 lb (1.2 kg)	3.1 lb (1.4 kg)	3.1 lb (1.4 kg)	3.5 lb (1.6 kg)

Table 4-3: Power Requirements

OUTLET BLOCK LENGTH	VOLTAGE	WATTAGE	RTD SENSOR RESISTANCE (OHMS), PINS 3 &4	HEATER CARTRIDGE RESISTANCE (OHMS), PINS 1 & 2
0 mm	240 VAC	100 W	100 Ohm Platinum RTD, 108.2 Ohms @ 20°C (70°F)	576
60 mm		75 W		786
200 mm		150 W		384

BALL SEAT IQ DISPENSE VALVES, 2011766 AND 2011765, COMPONENT ID

The diagram highlights the controls and features on the Ball Seat iQ Dispense Valves that are used during typical operation.

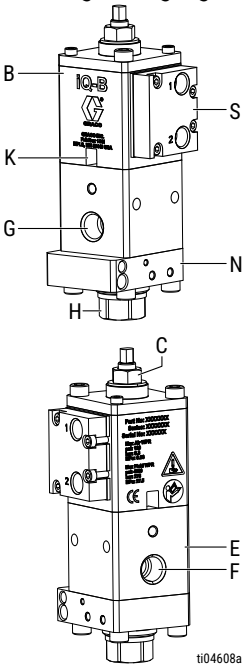


Figure 5-1: Ball Seat, Non-Heated Remote Solenoid 2011766 Valves

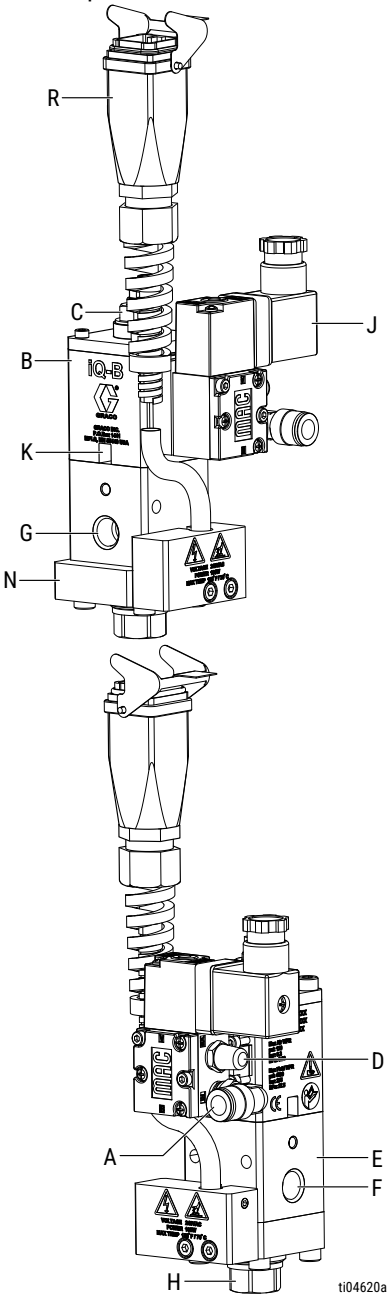


Figure 5-2: Ball Seat, Heated Valve Mounted Solenoid 2011765 Valves

KEY	
A	Air Fitting, 1/8 in. NPT male x 5/16 in. (8 mm) tube
B	Air Section
C	Adjustment Nut
D	Muffler
E	Fluid Housing
F	1/4 in. NPT Material Inlet Port
G	Additional 1/4 in. NPT Inlet Port
H	1/4 in. NPT Outlet
J	Solenoid
K	Weep Hole
N	Outlet Block
R	Heater Assembly
S	Remote Solenoid Block

TIP SEAL IQ DISPENSE VALVES, 2011590 AND 2011589, COMPONENT ID

The diagram highlights the controls and features on the Tip Seal iQ Dispense Valves that are used during typical operation.

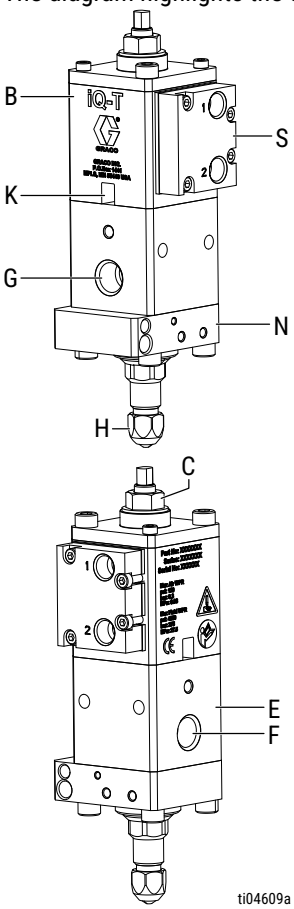


Figure 6-1: Tip Seal, Non-Heated Remote Solenoid 2011590 Valves

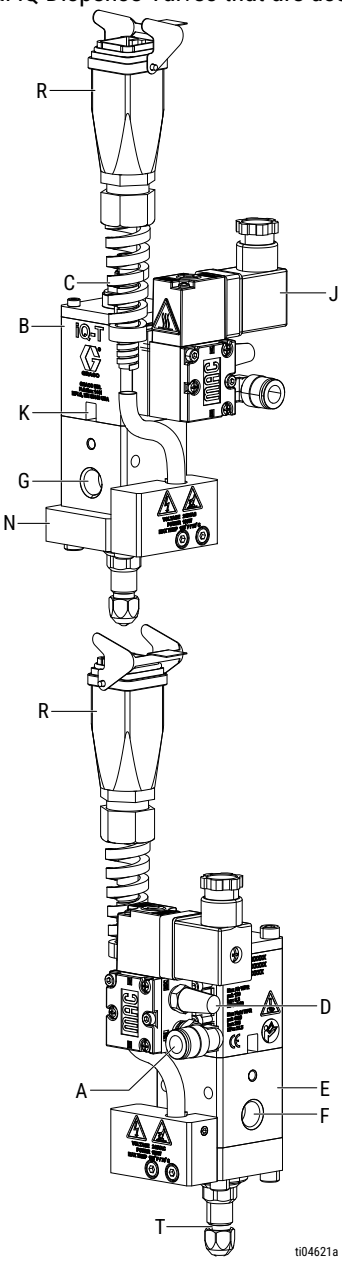


Figure 6-2: Tip Seal, Heated Valve Mounted Solenoid 2011765 Valves

KEY	
A	Air Fitting, 1/8 in. NPT male x 5/16 in. (8 mm) tube
B	Air Section
C	Adjustment Nut
D	Muffler
E	Fluid Housing
F	1/4 in. NPT Material Inlet Port
G	Additional 1/4 in. NPT Inlet Port
J	Solenoid
K	Weep Hole
N	Outlet Block
R	Heater Assembly
S	Remote Solenoid Block
T	Valve Tip

The diagram highlights the controls and features on the Tip Seal iQ Dispense Valves that are used during typical operation.

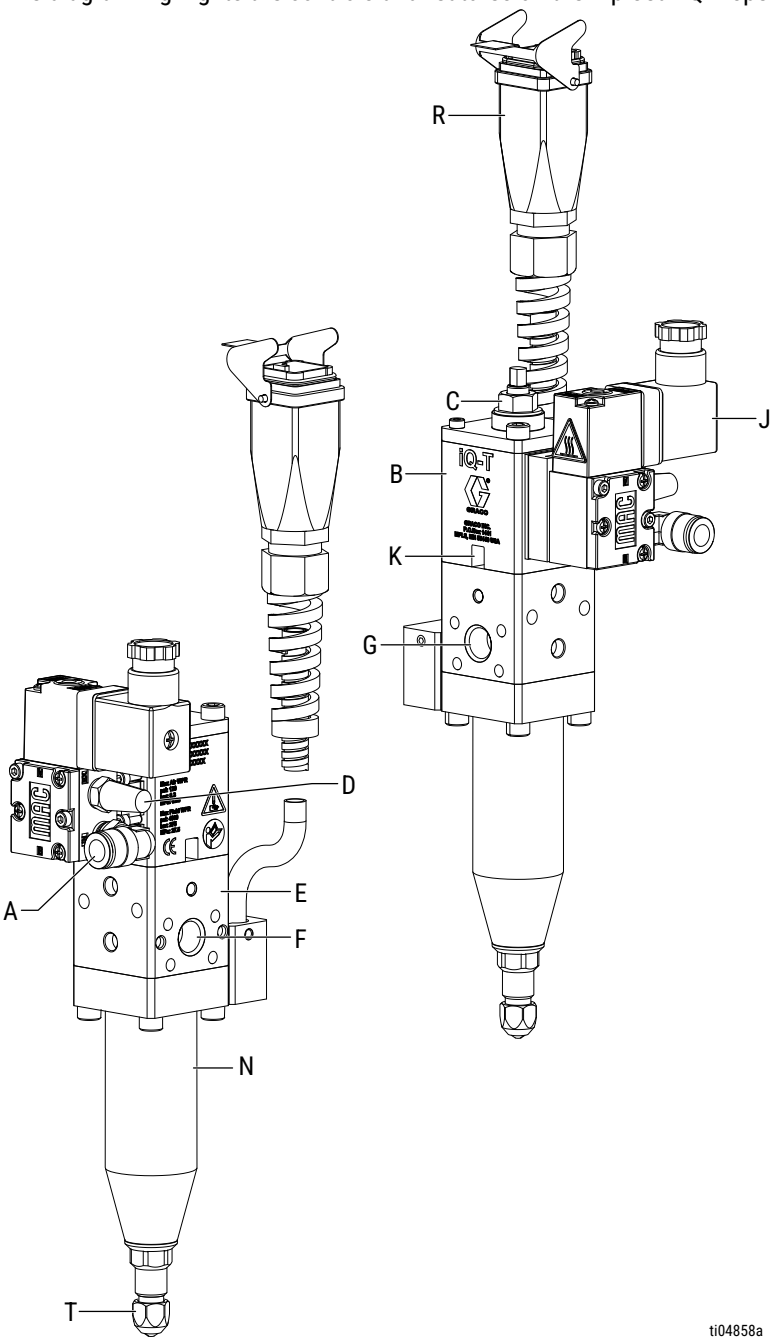


Figure 7-1: Tip Seal, Heated 2.4 W Solenoid 2012028, Four Bolt Mounting Valves

KEY	
A	Air Fitting, 1/8 in. NPT male x 5/16 in. (8 mm) tube
B	Air Section
C	Adjustment Nut
D	Muffler
E	Fluid Inlet Housing
F	1/4 in. NPT Material Inlet Port
G	Additional 1/4 in. NPT Inlet Port
J	Solenoid
K	Weep Hole
N	Outlet Block
R	Heater Assembly

The diagram highlights the controls and features on the Snuff Back iQ Dispense Valve that are used during typical operation.

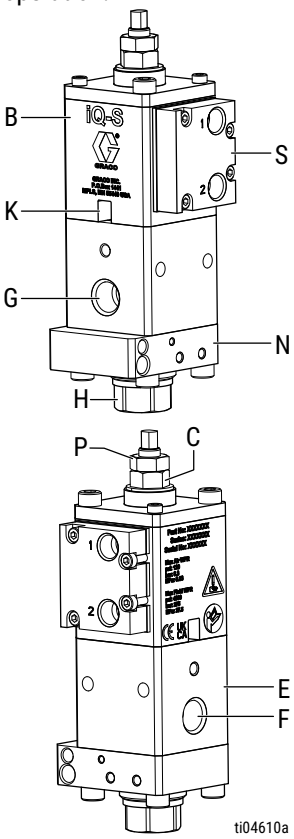


Figure 8-1: Snuff Back, Non-Heated Remote Solenoid 2011300 Valves

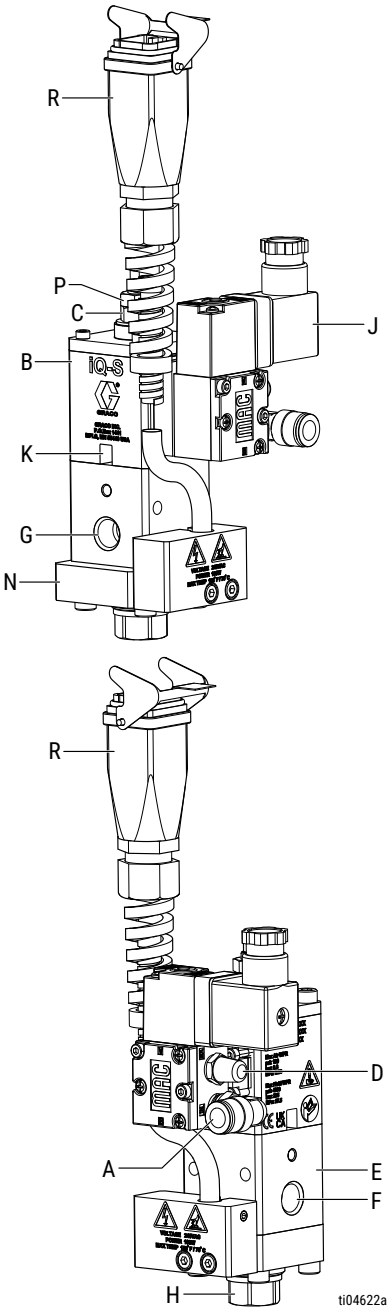


Figure 8-2: Snuff Back, Heated Valve Mounted Solenoid 2011299 Valves

KEY	
A	Air Fitting, 1/8 in. NPT male x 5/16 in. (8 mm) tube
B	Air Section
C	Adjustment Nut
D	Muffler
E	Fluid Housing
F	1/4 in. NPT Material Inlet Port
G	Additional 1/4 in. NPT Inlet Port
H	1/4 in. NPT Outlet
J	Solenoid
K	Weep Hole
N	Outlet Block
P	Lock Nut
R	Heater Assembly
S	Remote Solenoid Block

The diagram highlights the controls and features on the Heater Assemblies for the iQ Dispense Valves that are used during typical operation.

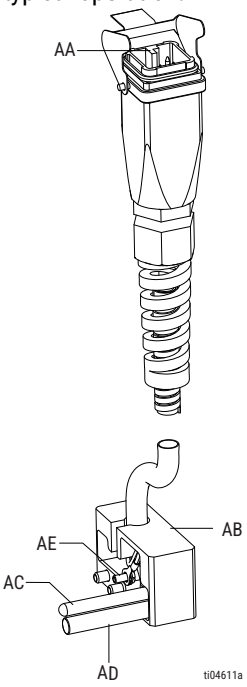


Figure 9-1: Heater Assembly (for 0 mm Outlet Block), 15N028

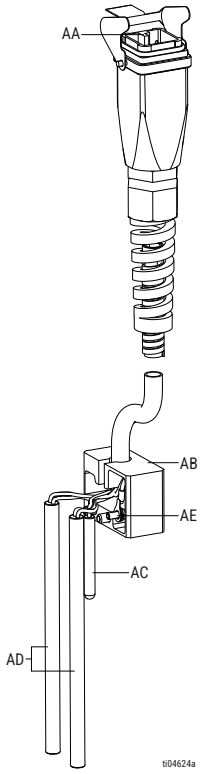


Figure 9-3: Heater Assembly (for 200 mm Outlet Block), 15N030

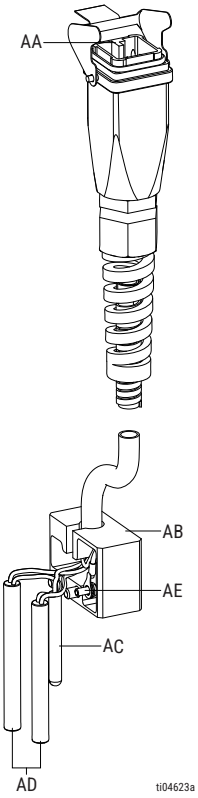


Figure 9-2: Heater Assembly (for 60 mm Outlet Block), 15N029

KEY	
AA	Wire Harness Connector
AB	Heater Cover
AC	RTD Sensor
AD	Heater Cartridges
AE	Ground Ring Terminal

The diagram highlights the controls and features on the PSM Tip Seal Dispense Valve that are used during typical operation.

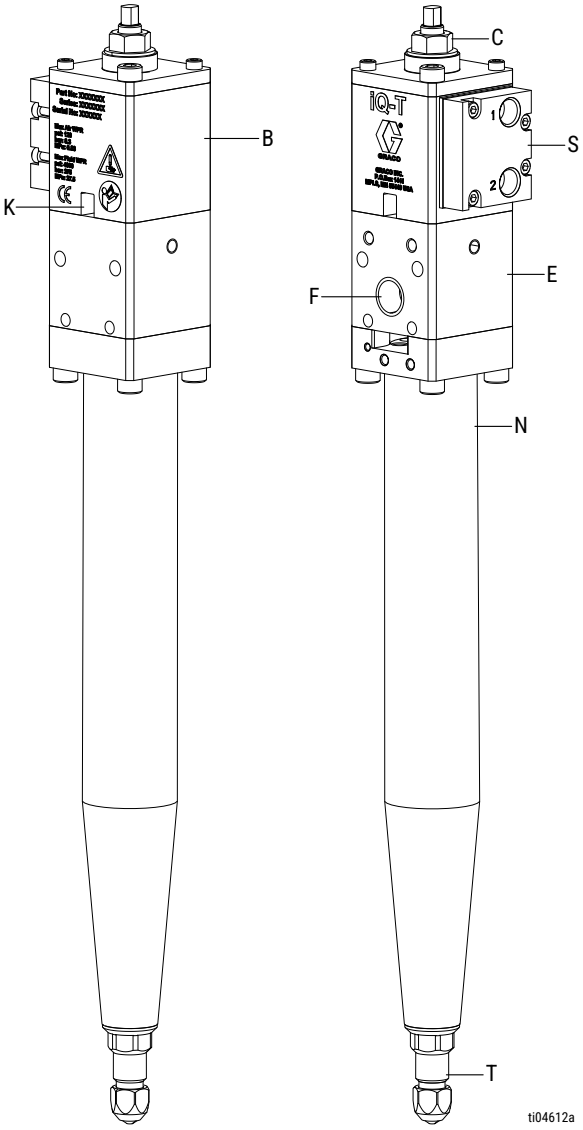


Figure 10-1: PSM Tip Seal Dispense Valve, 2012490

KEY	
B	Air Section
C	Adjustment Nut
E	Fluid Inlet Housing
F	1/4 in. NPT Material Inlet Port
K	Weep Hole
N	Outlet Block
S	Remote Solenoid Block
T	Valve Tip

PSM BALL SEAT DISPENSE VALVE, 2011771, COMPONENT ID

The diagram highlights the controls and features on the PSM Ball Seat Dispense Valve that are used during typical operation.

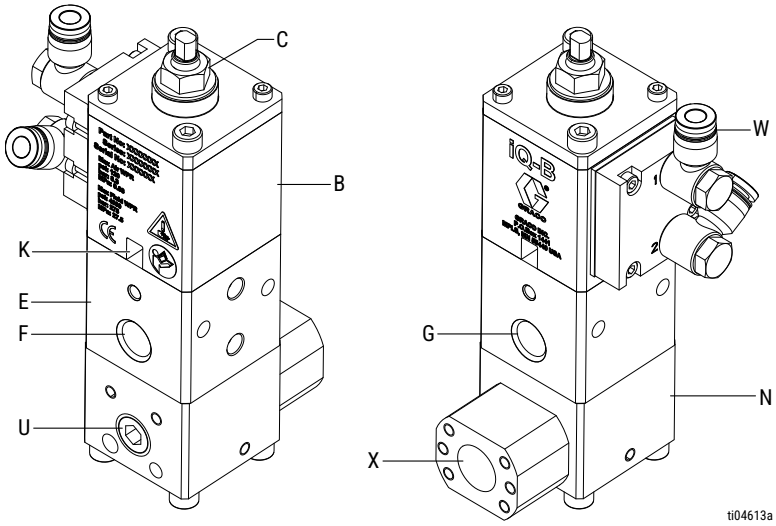


Figure 11-1: PSM Ball Seat Dispense Valve, 2011771

KEY	
B	Air Section
C	Adjustment Nut
E	Fluid Inlet Housing
F	1/4 in. NPT Inlet Port
G	Additional 1/4 in. NPT Inlet Port
	Solenoid
K	Weep Hole
N	Outlet Block
S	Remote Solenoid Block
U	1/4 in. NPT Plug
W	Air Fitting 1/8 in. NPT x (6 mm) Tube
X	Fluid Outlet

The iQ Dispense Valve uses a four-way exhausting solenoid to control the piston inside the valve.

Applying air pressure to the locations called out in the images will either open or close the valves.

VALVE TYPES

Ball Seat (iQ-B): A forward-acting valve with a silicon nitride ball sealing against a tungsten carbide seat.

Snuff Back (iQ-S): A reverse-acting valve with a tungsten carbide tip sealing against a tungsten carbide seat.

Tip Seal (iQ-T): A forward-acting valve with a tungsten carbide tip, sealing against a tungsten carbide seat.

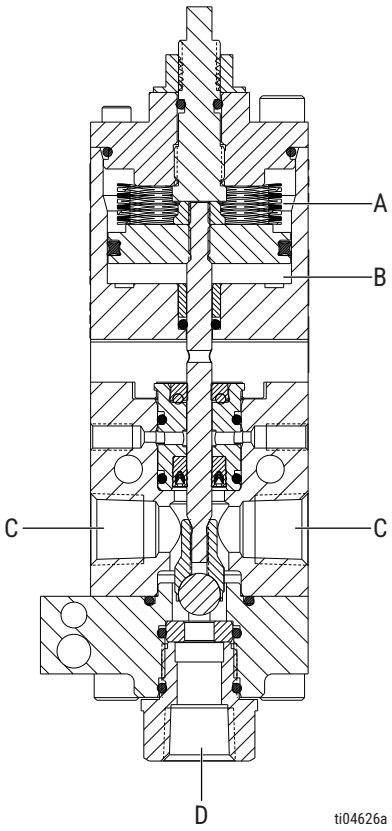


Figure 12-1: Ball Seat Valve (iQ-B)

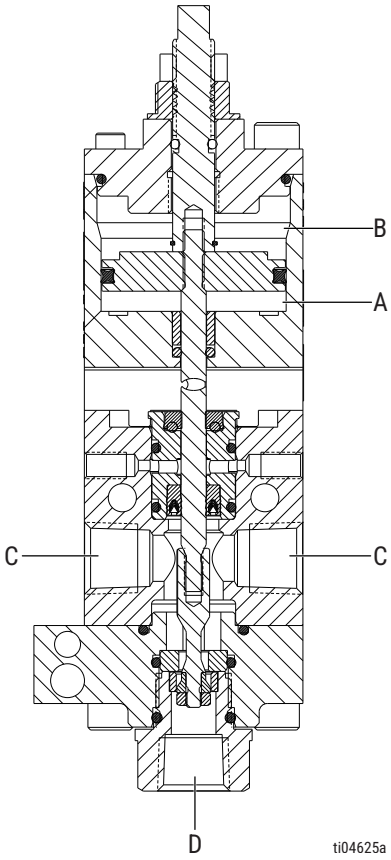


Figure 12-2: Snuff Back Valve (iQ-S)

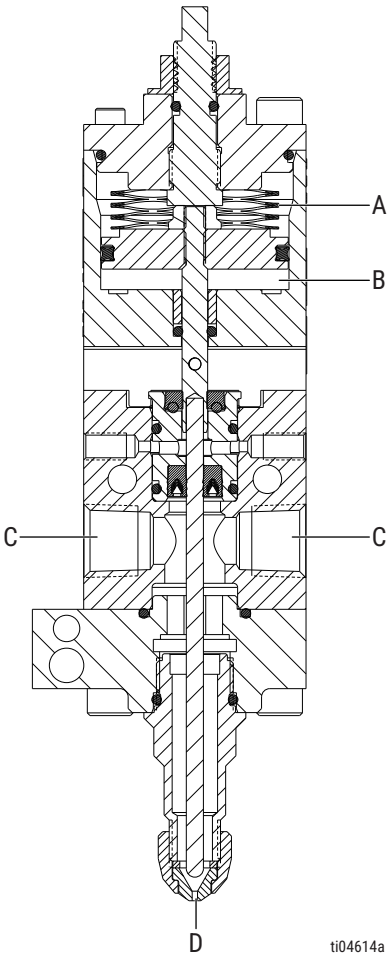


Figure 12-3: Tip Seal Valve (iQ-T)

KEY	
A	Closed
B	Open
C	Material Inlet
D	Material Outlet

Properly install the iQ Dispense Valve equipment to ensure optimal performance during use.

GROUNDING

Properly ground the iQ Dispense Valves to help ensure safe operation.

⚠ WARNING

The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

The following grounding instructions are the minimum for the specific items being used. Your system may include other equipment or objects that must be grounded. Check local electrical codes for detailed grounding instructions.

Dispense valve: Ground through a connection to a properly grounded fluid hose and pump. For heated valves, connect the Wire Harness Connector (AA) to the connector on the heated hose. Verify that pin 8 on the heated hose connector is connected to a true earth ground. **Electrical Schematic, page 76**.

Pump: See your pump manual.

Fluid hoses: Use only electrically conductive hoses with a maximum of 100 ft. (30.5 m) combined hose length to ensure grounding continuity. Check the electrical resistance of the air and fluid hoses at least once a week. If the total resistance to ground exceeds 25 megohms, replace the hose immediately. Use a meter that is capable of measuring resistance at this level.

Fluid supply container: Follow local codes and regulations.

Solvent pails used when flushing: Follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a non-conductive surface, such as paper or cardboard, which interrupts grounding continuity. Follow local codes and regulations.

To maintain grounding continuity when flushing or relieving pressure: Hold metal part of the spray gun/ dispense valve firmly to the side of a grounded metal pail, then trigger the gun/valve.

FLUSH BEFORE USING EQUIPMENT

Before operating, flush the iQ Dispense valve to prevent fluid contamination.

Flush the equipment with a compatible solvent before using the equipment.

INSTALL IQ DISPENSE VALVE

The following steps are to install and adjust the iQ Dispense Valve.

⚠ WARNING

The dispense valves have multiple mounting hole configurations. See **Dimensions, page 71**.

1. Inspect the iQ Dispense Valve for shipping damage. If there is damage, notify the shipping carrier immediately.
2. Install compatible accessories. For a list of accessories and installation instructions, see **Kits and Accessories, page 68**.
3. Securely attach the iQ Dispense Valve to its mounting fixture using socket head Cap Screws (C). For non-heated valves, securely attach the dispense valve to its mounting fixture using only the socket head cap screws, see Figure 7-2. For heated valves, install the Insulator Block (E) between the fluid housing and mounting surface, see Figure 7-1.
4. Connect air lines to the dispense valve.

   NOTICE

   Only use air fittings that are rated at a temperature equal to or higher than the operating temperature of the fluid dispensing system. Lower rated air fittings could melt and cause damage to the dispense valve.

   a. For valves with a Solenoid (J) mounted to the Air Section (B), connect the air supply tube to the Air Fitting (A).

   b. For valves with a Remote Solenoid Block (D), see the table for Tube Orientation. NOTE: Air fittings not included with the remote mount.

   Table 13-1: Tube Orientation

VALVE TYPE	AIR OPEN	AIR CLOSED
Ball Seat	Port #2	Port #1
Tip Valve	Port #2	Port #1
Snuff Back	Port #1	Port #2

5. Connect the fluid line to the NPT material Inlet (F or G) in the valve body.
6. Use 1/4 in. NPT plug for unused material inlet (F or G) for non circulating systems.
7. For heated valves, connect the Wire Harness Connector (AA) to the heated hose receptacle.

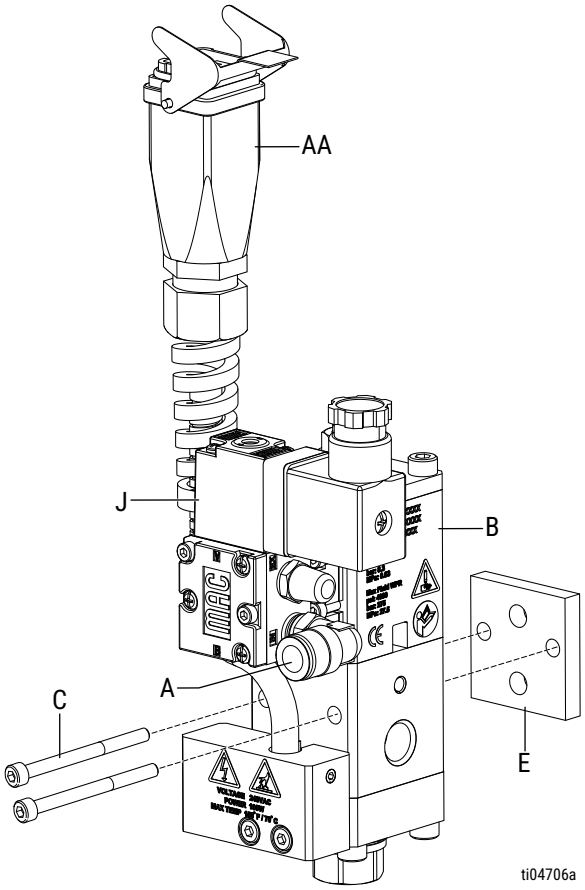


Figure 13-1: Valve to Fixture with Heated Valve

BALL SEAT AND TIP SEAL DISPENSE VALVE STROKE ADJUSTMENT

Adjusting the stroke of the Ball Seat and Tip Seal Dispense Valve of the iQ Dispense Valve.

The Adjustment Nut on the top of the valve can adjust the distance the dispense valve will open. This restricts the flow of material through the tip and seat.

To adjust the stroke on the Ball Seat and Tip Seal Dispense Valves follow the following procedure.

1. Hold adjustment shaft (X) with a wrench.
2. Loosen Lock Nut (Y).
3. Turn the adjustment shaft (X) clockwise until the valve is fully closed.
4. Slightly turn the adjustment shaft (X) counterclockwise.
5. Cycle the valve.
6. Repeat steps 4 and 5 until desired flow is achieved.
7. Once the desired flow is achieved, hold adjustment shaft (X) with a wrench and tighten the Lock Nut (Y).

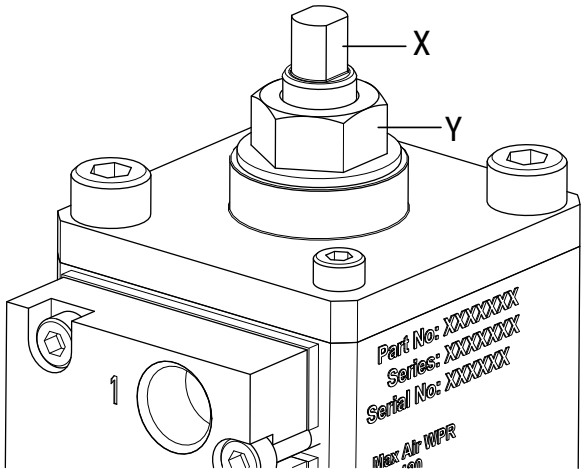


Figure 13-2: Adjustment

SNUFF BACK DISPENSE VALVE STROKE ADJUSTMENT

Adjusting the stroke of the Snuff Back Dispense Valve of the iQ Dispense Valve.

The Adjustment Nut on the top of the iQ Dispense Valve can adjust the distance the valve will open. This restricts the flow of material through the tip and seat.

To adjust the stroke on the Snuff Back iQ Dispense Valve follow the following procedure.

1. Hold Shaft (T) with a wrench.
2. Loosen Lock Nut (Z).
3. Turn Nut (Y) counterclockwise to reduce the distance the valve opens.
4. Slightly turn the Nut (Y) clockwise.
5. Cycle the valve.
6. Repeat steps 4 and 5 until desired flow is achieved.
7. Once the desired flow is achieved, tighten Lock Nut (Z) against Nut (Y).

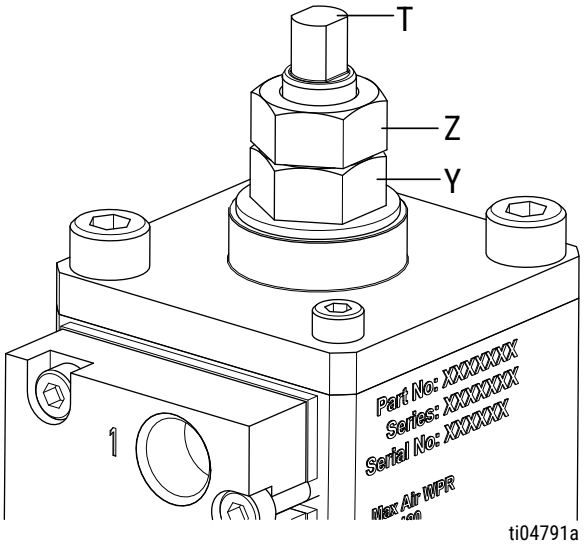


Figure 13-3: Adjustment Nut

PRESSURE RELIEF PROCEDURE

Relieve pressure on the iQ Dispense Valve when operation is stopped, and before cleaning, checking, or servicing the equipment.

Follow the Pressure Relief Procedure whenever you see this symbol.

⚠ WARNING

This equipment stays pressurized until pressure is manually relieved. To help prevent serious injury from pressurized fluid, such as skin injection, splashing fluid and moving parts, follow the Pressure Relief Procedure when you stop dispensing and before cleaning, checking, or servicing the equipment.

1. Turn off power supply to the pump or close upstream ball valve.
2. Trigger the dispense valve into a grounded waste container.
3. Open any bleed-type master air valves and fluid drain valves in the system.
4. Leave the drain valve open until you are ready to pressurize the system.

Follow the service schedule to keep the iQ Dispense Valve in good condition for optimal use.

Inspect the dispense valve, material, and air lines at least once every two weeks. Inspect for leakage and other visible damage.

MAINTENANCE TABLES

These tables are a guide to maintain the iQ Dispense Valves.

The following tables list recommended maintenance procedures and frequencies. The maintenance is divided between mechanical and electrical tasks. A typical application is a valve mounted on a robot dispensing a moderately abrasive sealant.

Table 15-1: Mechanical Maintenance Schedule

TASK	WEEKLY	MONTHLY OR 100,000 CYCLES
Inspect for leaks	✔	
Check hoses for wear*	✔	
Check/tighten fluid connections*		✔
Check/tighten air connections*		✔
Check stroke adjustment	✔	
Lubricate packing		✔
* Assumes movement from automation		

Table 15-2: Electrical Maintenance Schedule

TASK	WEEKLY	MONTHLY
Check cables for wear	✔	
Verify cable connections	✔	
Verify resistance of electric heaters		✔
Verify resistance of the Resistance Temperature Detector (RTD) sensors		✔

FACTORS AFFECTING VALVE LIFE

The maintenance tables should be used as a guideline for the frequency of maintenance tasks. Additional factors that could affect valve life include the following:

- Process fluid - Abrasive or fiber-filled fluids are much harder on seals, shafts, and seats than non-abrasive fluids such as oil.
- Pressure drop across the valve seat - As the valve opens or closes, the fluid is accelerated to a high velocity at the needle/seat contact area. The rate of wear at the needle/seat contact area will be much greater at 3000 psi than at 1000 psi. Changing the tip size to reduce fluid velocity can have a substantial effect on wear.
- Number of cycles - This has a much greater effect on valve wear than number of gallons. If you can do the same job with fewer on/off cycles, the valve will last longer.
- Speed of actuation - If you open and close the valve quickly, the needle and seat will last longer. When using a remote mounted solenoid, use short air lines after the Solenoid (J) to improve open and close speed.
- Air pressure - Use lowest air pressure required to actuate the valve. Higher than necessary air pressure can cause premature wear.

RECYCLING AND DISPOSAL

Properly recycle and dispose of the iQ Dispense Valve, and accessories, at the end of its useful life to minimize environmental impact and to ensure safe handling.

At the end of the product’s useful life, dismantle and recycle it in a responsible manner.

END OF PRODUCT LIFE

At the end of a product's useful life, recycle it in a responsible manner.

When problems occur, use the table to identify potential causes and solutions to repair the iQ Dispense Valve.

⚠ WARNING

Follow the **Pressure Relief Procedure, page 31**, before checking or repairing the equipment.

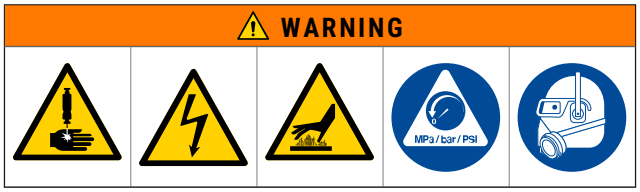
NOTE:

Check all possible problems and causes before disassembling the equipment.

PROBLEM	CAUSE	SOLUTION
Air leaks from dispense valve.	Worn gasket.	Replace gasket.
	Loose or worn air connections.	Tighten air connections.
	Worn o-rings.	Replace o-rings in Air Section (B).
	Loose end cap screws.	Tighten screws.
Material leaks from front of dispense valve.	Seal Tip, or seat, is worn.	Replace seat seals, tip, and/or seat.
		Check and replace tip, if necessary. If replacing needle, you must reverse or replace seat.
		Check and replace or reverse seat if necessary.
	Obstruction inside dispense valve.	Remove nose piece. Check and replace cartridge, tip, and seat if necessary.
Material leaks from dispense valve weep hole.	Seals not installed correctly.	Check cartridge seals and replace cartridge and rod if necessary.
	Seals are worn.	
Dispense valve does not shut off.	Loose air connections or air supply turned off.	Tighten air connections.
	Worn needle-seat interface.	Replace cartridge, tip, and seat.
	Broken piston, debris in air cylinder, or debris inside the fluid section (Ball Seat and Tip Seal valves only).	Disassemble dispense valve. Check and replace, if necessary, piston, piston rod, and o-rings.
	Spring broken or not installed correctly.	Disassemble iQ Dispense Valve. Check spring and replace, if necessary.
Dispense valve does not open or dispense material.	Loose air connections or air supply turned off.	Tighten air connections.
	Broken rod, piston, or tip. Debris or cured material inside fluid section.	Disassemble dispense valve. Check and replace, if necessary, piston, piston rod, and o-rings.
Dispense valve does not heat material.	Loose heater wires.	Check and reconnect wire connections.
	Loose sensor wires.	Check and reconnect wire connections.
	Heater unit failed.	Replace cable assembly.
	Sensor failed.	

PROBLEM	CAUSE	SOLUTION
	No power to heating circuitry.	Check that the source of electricity to the heater is providing power.

When replacing parts, follow the repair instructions to restore the components on the iQ Dispense Valve to working order.



Perform the following procedure before servicing the iQ Dipense Valve.

1. Perform the **Pressure Relief Procedure, page 31**.
2. For heated valves, shut off electrical power to the iQ Dispense Valve and disconnect the Wire Harness Connector.
3. Allow the valve to cool completely before servicing.

DISCONNECT AIR SECTION

Perform the following steps to remove the lower air manifold section of the iQ Dispense Valve.

FOR VALVES WITH SNUFF BACK TIP ASSEMBLIES:

1. Follow steps 1 and 3 from the **Repair, page 38**.
2. Disconnect the air lines from the valve.
3. Remove the Snuff Back Adapter (308) and Spacer (315). See Figure 12-2.

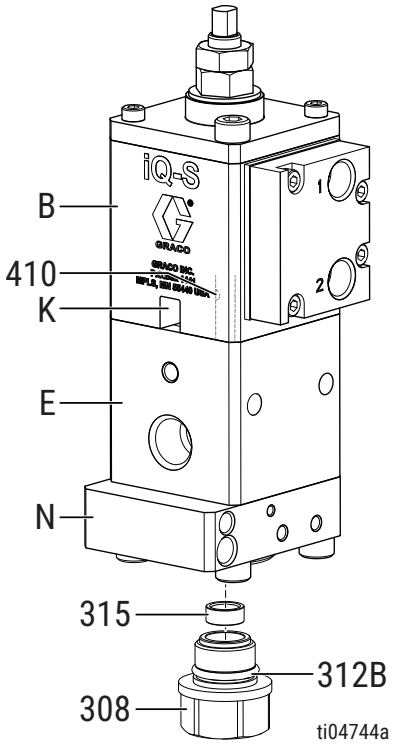


Figure 18-1: Snuff Back Air Section Removal

4. Place a 15 mm hex key through the Piston Rod (410) hole located in the Weep Hole (K). Unthread the Nut (310) using a 5.5 mm socket or nut driver and remove the Tip (309). See Figure 12-2.

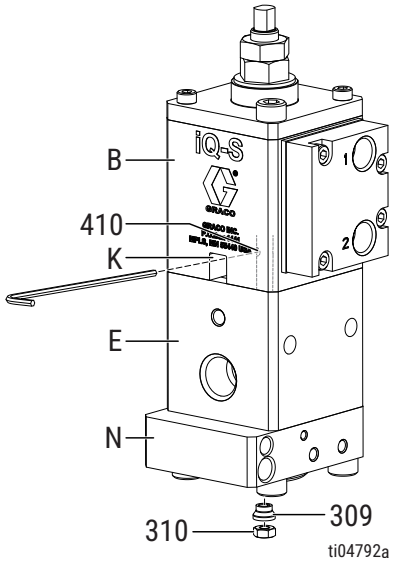


Figure 18-2: Tip Removal

5. If the Fluid Section (E) is not mounted, place the Fluid Section in a vise.
6. Remove the M5 screws (401) using a 4 mm hex key from the top of the air cylinder. Gently pull the Air Section (B) until the Piston Rod (410) is removed from the Fluid Section (E).

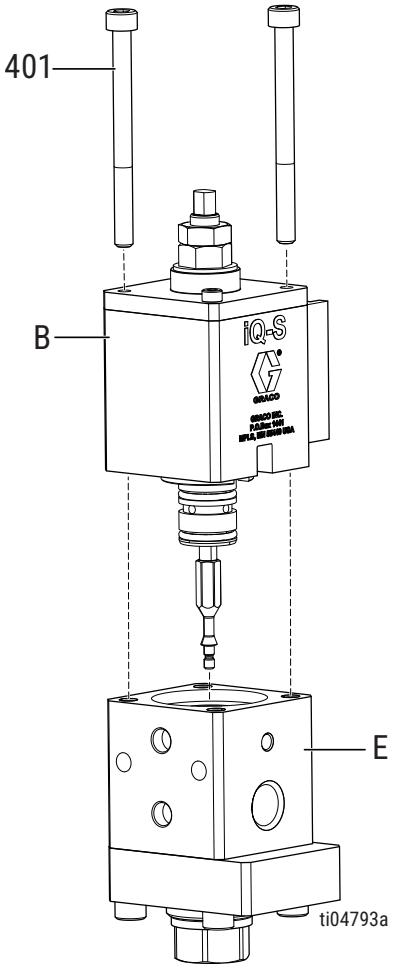


Figure 18-3: Tip Removal

NOTICE

O-rings in the Fluid Section (E) may stick to the u-cup cartridge, requiring more force to separate the Fluid and Air Sections (E, B).

FOR VALVES WITH BALL SEAT AND TIP SEAL ASSEMBLIES:

1. Follow steps 1 and 3 from **Repair, page 38**.
2. Disconnect the air lines from the valve.
3. Remove the M5 Screws (401) from the top of the Air Section (B). Pull the Air Section from Fluid Section (E).

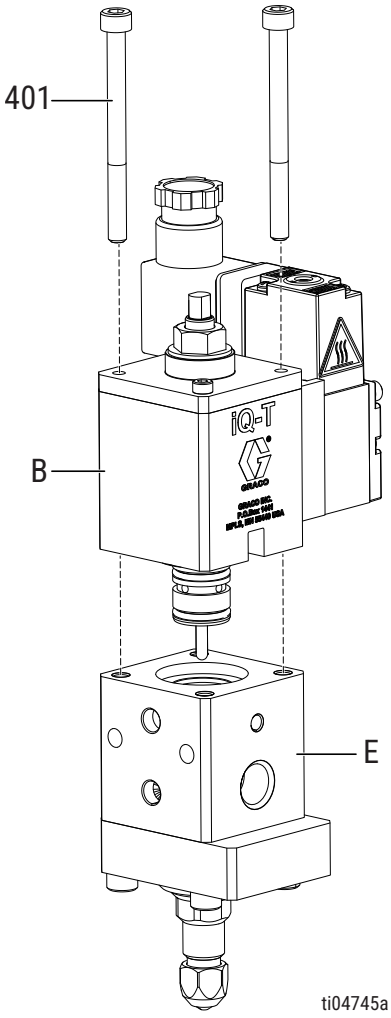


Figure 18-4: Ball Seat and Tip Seal Air Section Removal

AIR SECTION REPAIR

Perform the following steps to repair the lower air manifold section of the iQ Dispense valve. Follow this section if a noticeable air leak is detected in the air manifold housing.

BALL SEAT STYLE DISASSEMBLY

1. To repair the Air Section (B), you must first remove the tip assembly. Complete the disassembly procedure found in **Replace Seal Kit, Fluid Section O-Rings, and Tip Assembly, page 44**.
2. Remove two Screws (402).
3. Remove the Air End Cap (404), Piston Rod Assembly (409 and 410), and Spring (407), from the Air Section (B).

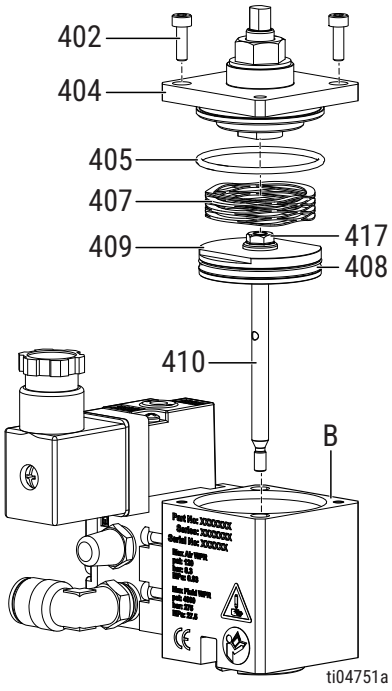


Figure 18-5: Remove Piston Rod Assembly

4. Use a clean cloth to remove all material inside the Air Section (B). Inspect for damage such as scoring marks.
5. Place an 1/16 in. (1.5 mm) hex key in the through hole in the Piston Rod (410) and unthread the Nut (417) using a 7 mm socket or wrench.

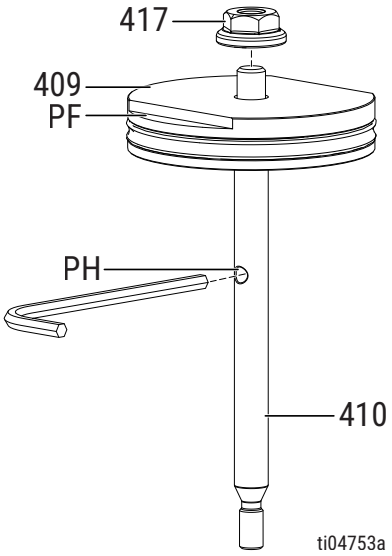


Figure 18-6: Remove Rod for the Ball Seat Valves

6. Place the flats (PF) of the Piston (409) in a vise with the Piston Rod (410) facing upward. Unthread the Piston Rod from the Piston.
7. Inspect the Piston (409) and Piston Rod (410) for damage. Replace if necessary.
8. Unthread the Lock Nut (414) from the Adjustment Shaft (413).
9. Unthread the adjustment shaft (413) from the Air Cylinder Cap (404).

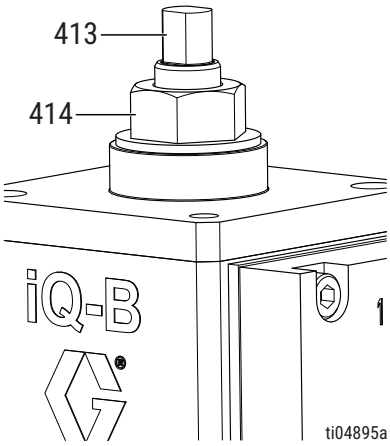


Figure 18-7: Ball Seat

10. Inspect O-ring (406) for damage. Replace if necessary.

TIP SEAL STYLE DISASSEMBLY

1. To repair the Air Section (B), you must first remove the tip assembly. Complete the disassembly procedure found in **Replace U-Cup Cartridge, Fluid Section O-Rings, and Tip Assembly, page 44**.
2. Remove two Screws (402).
3. Remove the Air End Cap (404), Piston Rod Assembly (409 and 410), and Spring (407), from the Air Section (B).

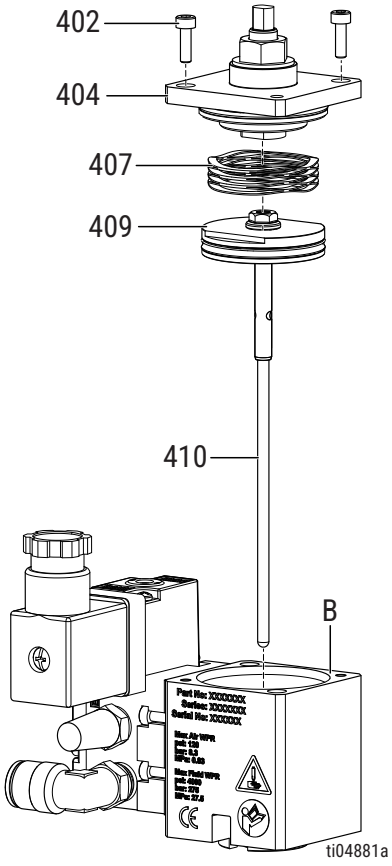


Figure 18-8: Remove Piston Rod Assembly

4. Use a clean cloth to remove all material inside the Air Section (B). Inspect for damage such as scoring marks.
5. Place a 1/16 in. (1.5 mm) hex key through the hole in the tip assembly (102) and unthread the Nut (417) using a 7 mm socket or wrench.
6. Place the flats (PF) of the Piston (409) in a vise with the piston rod facing upward. Unthread the Tip Assembly (102) from the Piston.

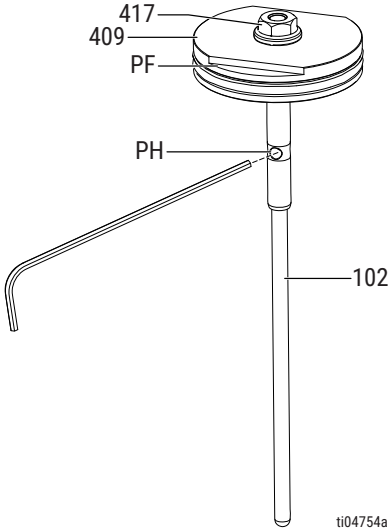


Figure 18-9: Remove Rod for Tip Seal Valves

7. Inspect the Piston (409) and Tip Assembly (102) for damage. Replace if necessary.
8. Unthread the Lock Nut (414) from the Adjustment Shaft (413).
9. Unthread the Adjustment Shaft (413) from the Air Cylinder Cap (404).

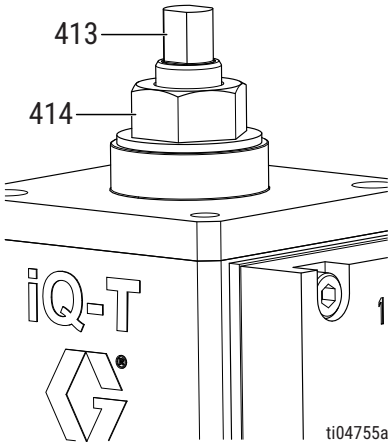


Figure 18-10: Tip Seal

10. Inspect O-ring (406) for damage. Replace if necessary.

SNUFF BACK STYLE DISASSEMBLY

1. To repair the Air Section (B), you must first remove the tip assembly. Complete the disassembly procedure found in **Replace U-Cup Cartridge, Fluid Section O-Rings, and Tip Assembly, page 44**.
2. Remove two Screws (402).
3. Remove the Piston Rod Assembly (409 and 410) from the Rod Adapter (416) and the Air End Cap (404). Hold the Piston Rod (410) with a 1/16 in. (1.5 mm) hex key through the piston rod hole (PH) and unthread the Rod Adapter (416).
4. Place a wrench on the Piston (409) flats (PF) , and a 1/16 in. (1.5 mm) hex key through the hole (PH) in the Piston Rod (410).
5. Unthread the Piston (409) from the Piston Rod (410).

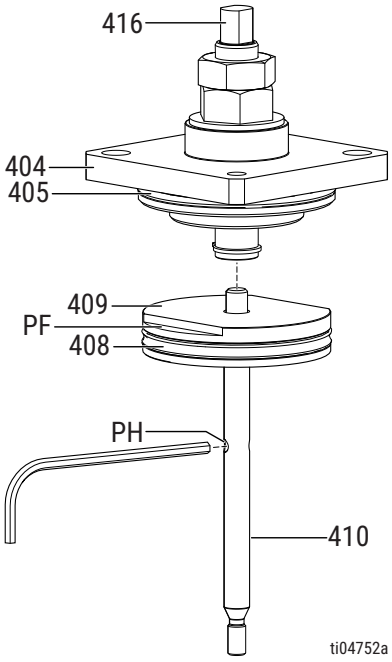


Figure 18-11: Remove Rod for the Snuff Back Valves

6. Hold the Rod Adapter with a wrench. Unthread the locknut (414) and the Adjustment Nut (415).

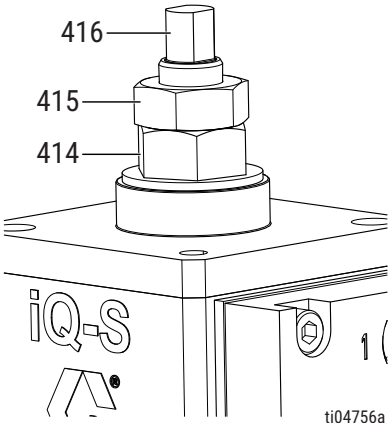


Figure 18-12: Snuff Back

7. Remove the Rod Adapter (416) from the Air Cylinder Cap (404).
8. Inspect O-ring (406) for damage. Replace if necessary.

BALL SEAT AND TIP SEAL STYLE ASSEMBLY

To Assemble the Air Cylinder Cap (404):

1. To assemble the Air Cylinder Cap (404), install the O-ring (406) on the Adjustment Shaft (413). Place the O-ring (403) in the Air Cylinder Cap (404).
2. Grease the O-ring (406) on the Adjustment Shaft (413) and screw it into the Air Cylinder Cap (404).
3. Thread the Lock Nut (414) onto the Adjustment Shaft (413).

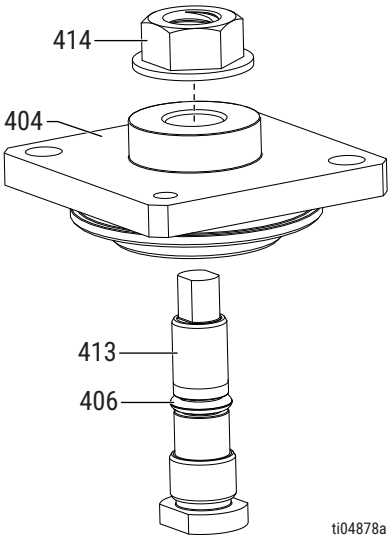


Figure 18-13: Lock Nut

To Assemble the Air Section (B)

1. Replace the piston O-ring (408) if it is scratched, cut, or worn.
2. Apply blue anaerobic adhesive on the Piston Rod (410) threads.
3. Thread the Piston Rod (410) into the Piston (409).
4. Place the Piston (409) flats (PF).
5. Place a 1/16 in. (1.5 mm) hex key into the hole (PH) in the Piston Rod (410) and torque to 24-36 in-lbs (2.7-4.1N•m).
6. Thread on the Nut (417) on the Piston Rod (410), and torque to 24-36 in-lbs (2.7-4.1N•m).
7. Thread on the Assembly Tool (AT) to the tip of the Piston Rod (410).
8. Lubricate the inside of the air cylinder in the Air Section (B), the piston o-ring (408) and the tip of the Assembly Tool (AT). Insert piston and rod assembly into the Air Section (B).
9. Remove the Assembly Tool (AT) from the Piston Rod (410).
10. Place the Spring (407) on the top of the Piston (409).
11. Replace the Air Cylinder Cap (404).
12. Apply blue anaerobic adhesive to the Screws (402) and insert into the Cylinder Cap (404).
13. Press down on the Air Cylinder Cap (404) to compress the Spring (407).
14. Torque the Screws (402) to 8-10 in-lbs (0.90 - 1.12 N•m).

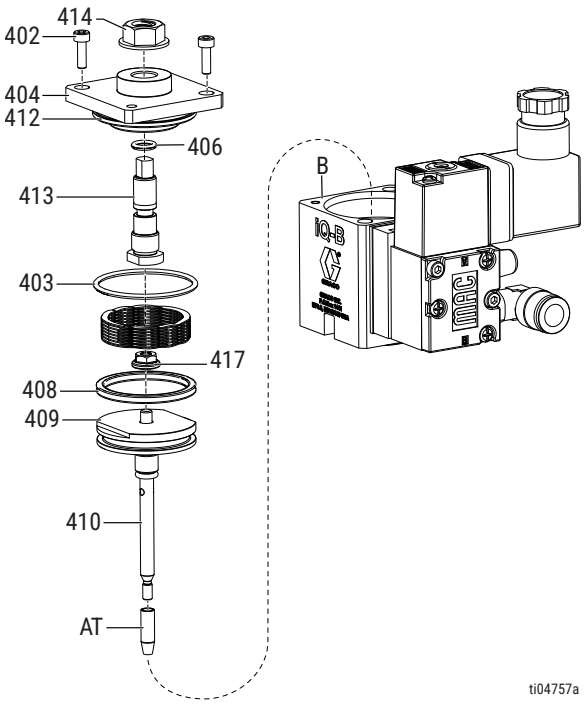


Figure 18-14: Assembly

SNUFF BACK STYLE ASSEMBLY

To Assemble the Air Cylinder Cap (404) and Air Section (B):

1. Install the O-ring (405) onto the Air Cylinder Cap (404).
2. Install the)-ring (406) onto the Rod Adapter (416).
3. Apply blue anaerobic adhesive on the Piston Rod (410) threads.
4. Thread the Piston Rod (410) into the Piston (409).
5. Place the Piston (409) flats (PF).
6. Place a 1/16 in. (1.5 mm) hex key into the hole (PH) in the Piston Rod (410) and torque to 24-36 in-lbs (2.7-4.1N•m).
7. Thread the Rod Adapter (416) onto the Piston Rod (410), and torque to 24-36 in- lbs (2.7-4.1 N•m).
8. Inspect retaining ring (403) for damage. Replace if necessary.
9. Lubricate the inside of the Air Cylinder (B), the piston O-ring (408) and the tip of the Assembly Tool (AT). Insert piston and rod assembly into the Air Section (B).

10. Remove the Assembly Tool (AT) from the Piston Rod (410).
11. Lubricate O-ring (406) and replace the air Cylinder Cap (404).
12. Apply blue anaerobic adhesive to the Screws (402) and insert into the Cylinder Cap (404).
13. Torque the Screws (402) to 8-10 in-lbs (0.90 - 1.12 N•m).
14. Thread the Adjustment Nut (414) onto the Rod Adapter (416).
15. Thread the Lock Nut (415) onto the Rod Adapter (416). See **Snuff Back Dispense Valve Stroke Adjustment, page 30** to adjust the flow rate.

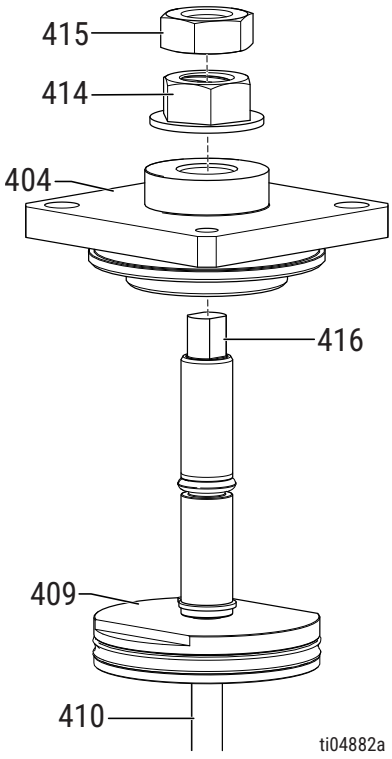


Figure 18-15: Assembly

REPLACE SEAL KIT, FLUID SECTION O-RINGS, AND TIP ASSEMBLY

Perform the following steps to repair the fluid manifold section of the iQ Dispense Valve.

DISASSEMBLY

Ball Seat iQ Dispense Valve

1. Perform the **Pressure Relief Procedure, page 31**, and follow the steps to **Disconnect Air Section, page 38**.
2. Place a 1/16 in. (1.5 mm) hex key or 5/64 in. (2 mm) rod into the hole to keep the Piston Rod (410) from rotating. Remove the Ball Assembly (203) with a 9 mm wrench.

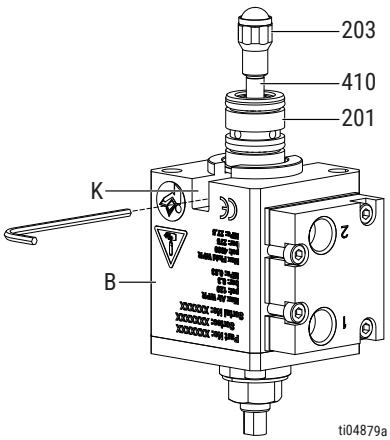


Figure 18-16: Remove Ball Assembly

3. Remove the Seal Kit (201) by sliding the Seal Kit off the shaft.
4. Inspect the Piston Rod (410) tip and shaft for grooves or pitting. Replace the Rod Assembly if worn.

Tip Seal iQ Dispense Valve

1. Perform the **Pressure Relief Procedure, page 31**, and follow the steps to **Disconnect Air Section, page 38**.
2. Remove the Seal Kit (101) by sliding the Seal Kit off the Rod Assembly (102) shaft.

3. Inspect the Rod Assembly (102) tip and shaft for grooves or pitting. Replace the Rod Assembly if worn.

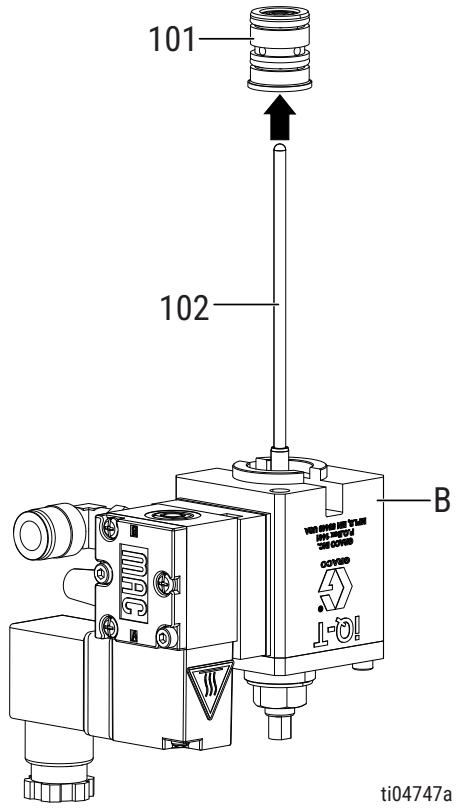


Figure 18-17: Rod Assembly

Snuff Back iQ Dispense Valve

1. Perform the **Pressure Relief Procedure, page 31**, and follow the steps to **Disconnect Air Section, page 38**.
2. Place a 1/16 in. (1.5 mm) hex key or 5/64 in. (2 mm) rod into the hole to keep the Piston Rod (410) from rotating. Remove the Snuff Back Shaft (306) with a 6 mm wrench.
3. Remove the Seal Kit (301) by sliding the Seal Kit off the shaft.
4. Inspect the Piston Rod (410) shaft for grooves or pitting. Replace if worn.

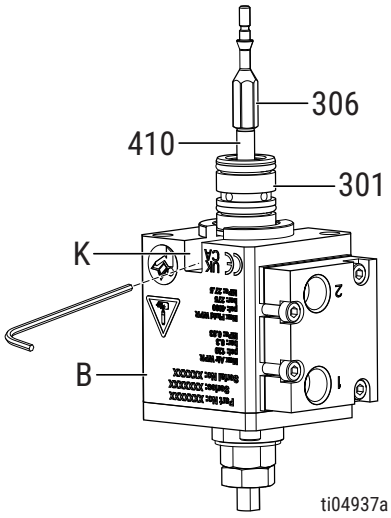


Figure 18-18: Snuff Back Rod Assembly

ASSEMBLY

NOTICE

To prevent damage to the seals during installation, use the seal assembly tool found in **Kits and Accessories, page 68**.

Ball Seat iQ Dispense Valve

1. Thread on the Seal Assembly Tool (AT) to the Piston Rod (410).
2. Install the new Seal Kit (201) on the Piston Rod (410) with the flange against the Air Section (B).
3. Remove and save the Seal Assembly Tool (AT).
4. Apply grease on the outside of the Seal Kit (201).
5. Apply a light amount of the supplied blue anaerobic adhesive to the bottom threads of the Piston Rod (410).
6. Screw the Ball Assembly (203) on the Piston Rod (410).
7. Place the valve in a vertical position in a vise. Place a hex key through the Piston Rod (410) located in the Weep Hole (K).
8. Use a small torque wrench with a 9 mm socket or crowfoot to tighten the Ball Assembly (203) to the Piston Rod (410). Torque to 20 in-lb (2.3 N•m).

9. Slide the assembled Air Section (B) with Piston Rod (410), Seal Kit (201), and Ball Assembly (203) into the top of the Fluid Section (E).
10. Torque the M5 screws (401) to 55 in-lb (6.2 N•m).
11. Install Outlet Block (N) to assembled Air Section and Fluid Section (E).
12. Apply blue anaerobic adhesive to the threads of the M5 screws (210) and torque to 55 in-lb (6.2 N•m).
13. Apply blue anaerobic adhesive to the threads of the Outlet (209) and torque to 55 in-lb (6.2 N•m.)
14. Connect the air lines.

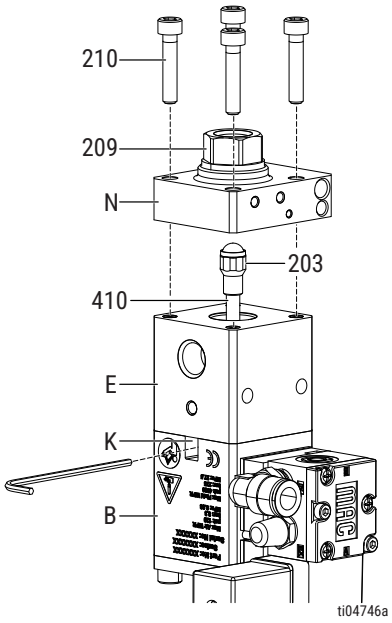


Figure 18-19: Remove Ball Assembly

Snuff Back iQ Dispense Valves

1. Use the Seal Assembly Tool (AT) to install the new Seal Kit (301) on the piston rod with the flange against the Air Section (B).
2. Remove and save the Seal Assembly Tool (AT).
3. Apply grease on the outside of the Seal Kit (301).
4. Place a 1/16 in. (1.5 mm) hex key through the Piston Rod (410) located in the Weep Hole (K).

NOTICE
To prevent damage to the valve, ensure there is no grease on the piston rod threads.

5. Apply the supplied blue anaerobic adhesive to the bottom threads of the Piston Rod (410) threads.
6. Reinstall the Rod Adapter (306) and torque to 20 in-lb (2.3 N•m) using a 6 mm wrench or crowfoot.
7. Slide the assembled Air Section with Piston Rod (410) and Seal Kit 301) into the top of the Fluid Section (E).

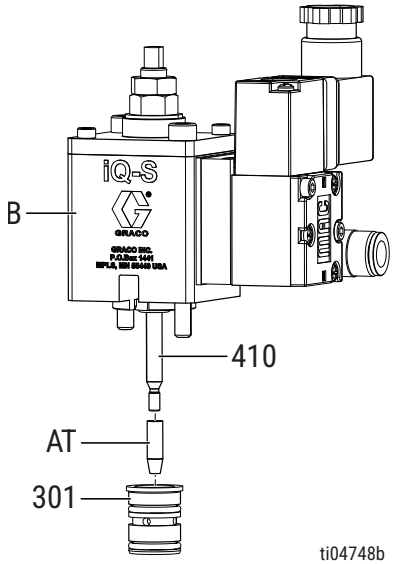


Figure 18-20: Install Seal Kit, Snuff Back Dispense Valve

8. Torque the M5 Screws (401) to 55 in-lb (6.2 N•m).
9. Install O-ring (304) onto Outlet Block (N). Apply grease to O-ring.
10. Install O-ring (312B) into Outlet Block (N). Apply grease to O-ring and install Seat (307).
11. Apply blue anaerobic adhesive to the threads of Outlet (308) and torque to 55 in-lb (6.2 N•m).
12. Install Outlet Block (N) to Air Section.

13. Apply blue anaerobic adhesive to the threads of the M5 Screws (311) to 55 in-lb (6.2 N•m).

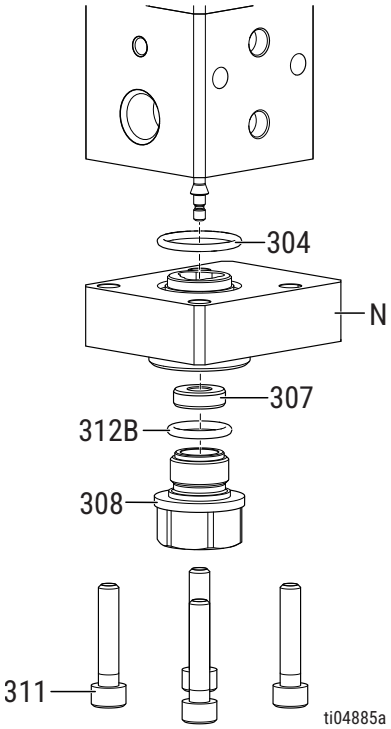


Figure 18-21: Outlet Block Assembly

14. Slide the Snuff Back Tip (309) onto the Rod Adapter (306). Note the orientation of the tip seat and rod adapter.

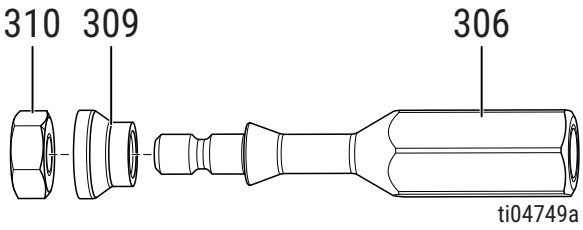


Figure 18-22: Snuff Back and Rod Adapter Assembly

15. Place a 1/16 in. (1.5 mm) hex key through the Piston Rod (410) located in the Weep Hole (K).

16. Apply blue anaerobic adhesive to the threads of the rod adapter (306). Thread on the nut (310) and torque to 15 in-lb (1.7 N•m).

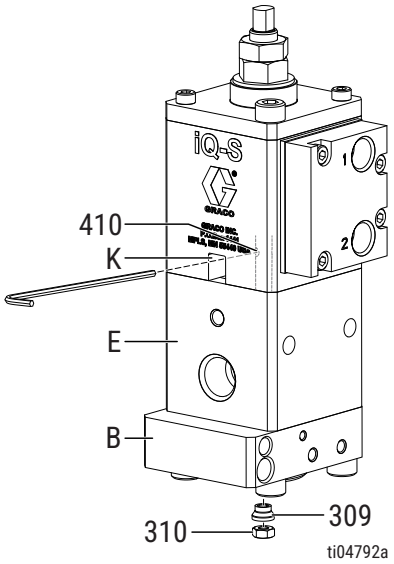


Figure 18-23: Nut Assembly

17. Install O-ring (312B) onto Outlet (308). Apply grease to O-ring.

18. Install Insert (315) into Outlet (308). Note: Optional. May be omitted based on material.

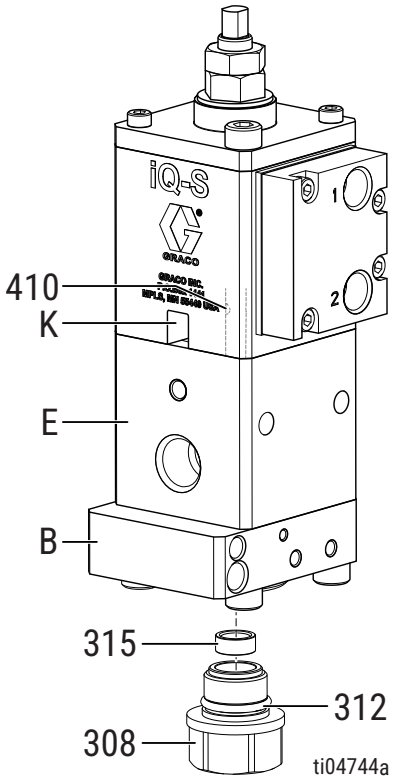


Figure 18-24: Snuff Back and Rod Adapter Assembly

19. Apply blue anaerobic adhesive to the threads of Outlet (308) and torque to 55 in-lb (6.2 N•m).
20. Install Outlet Block (N) to Air Section.
21. Apply blue anaerobic adhesive to the threads of the M5 Screws (311) to 55 in-lb (6.2 N•m).

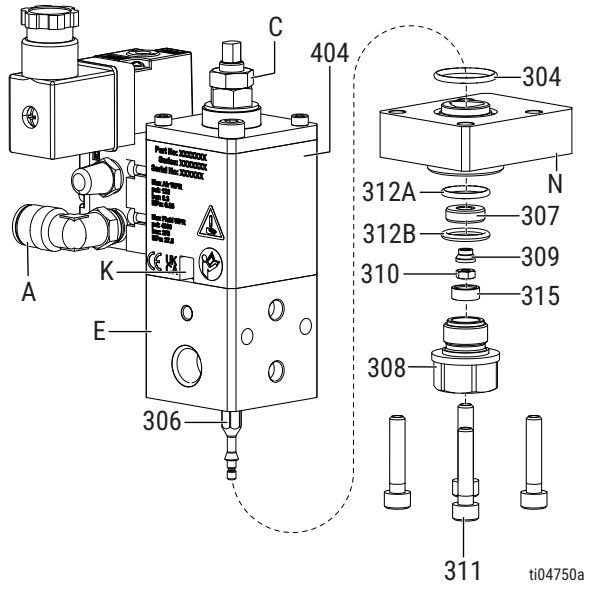


Figure 18-25: Outlet Block Assembly

22. Connect air lines.

Tip Seal iQ Dispense Valves

1. Install the new Seal Kit (101).
2. Apply grease on the outside of the Seal Kit (101).
3. Slide the assembled Air Section with Rod Assembly (102) and Seal Kit (101) into the top of the Fluid Section (E).
4. Torque the M5 screws (401) to 55 in-lb (6.2 N•m).
5. Install Outlet Block (N) to the assembled Air Section.

6. Apply blue anaerobic adhesive to the threads of the M5 Screws (109) and torque to 55 in-lbs (6.2 N•m).

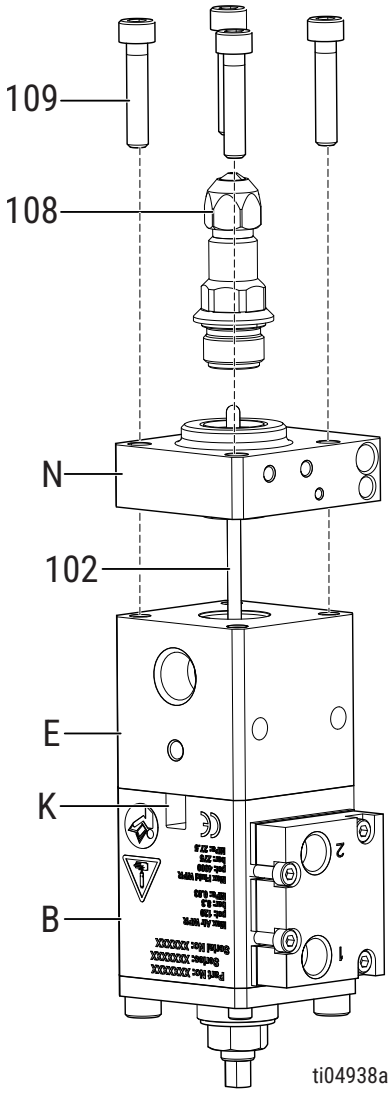


Figure 18-26: Tip Seal Assembly

REPLACE RESISTANCE TEMPERATURE DETECTOR (RTD) SENSOR AND HEATER CARTRIDGES

Perform the following steps to replace the RTD Sensor and heater cartridges of the iQ Dispense Valve.

⚠ WARNING

All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

1. Follow the **Pressure Relief Procedure, page 31**.
2. Remove the two Socket Head Screws (607) and loosen the Set Screw (608).
3. Lift the Metal Conduit (MC) up from the Heater Cover (604, 605, and 606). Remove the Heater Cover.
4. Remove the Ground Screw (609) and Star Washer (610).
5. Remove the Harness (601, 602, 603) by sliding the Heater Cartridge (HC) and RTD Sensor out of the heater block .
6. Replace the Harness (601, 602, 603) with a new harness assembly.
7. Coat the Heater Cartridge (HC) and RTD Sensor with thermal grease compound.
8. Slide the Heater Cartridge (HC) and RTD Sensor into the heater block.

9. Replace the ground wire, Heater Cover (604), and mounting screws.

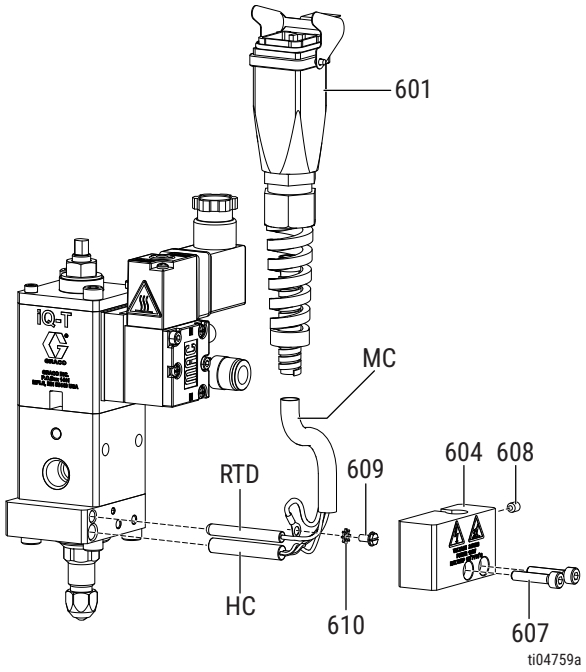


Figure 18-27: Heater Assembly for 0 mm Outlet Block

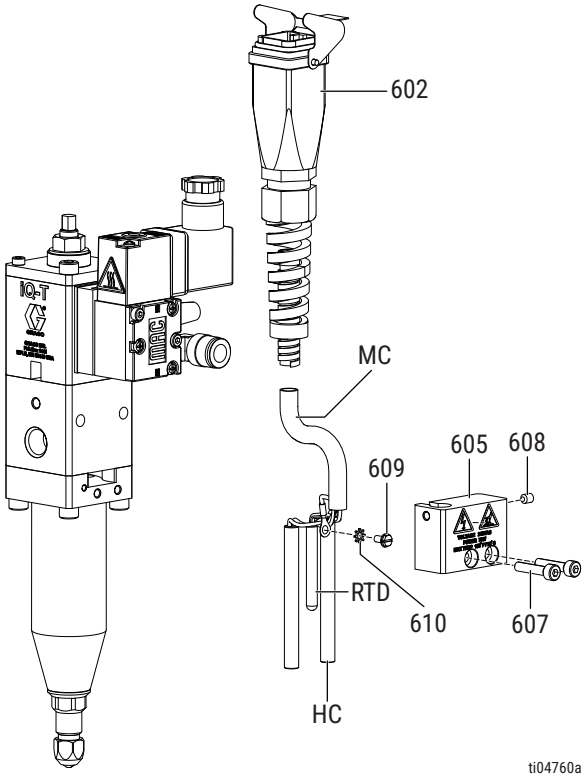


Figure 18-28: Heater Assembly for 60 mm Outlet Block

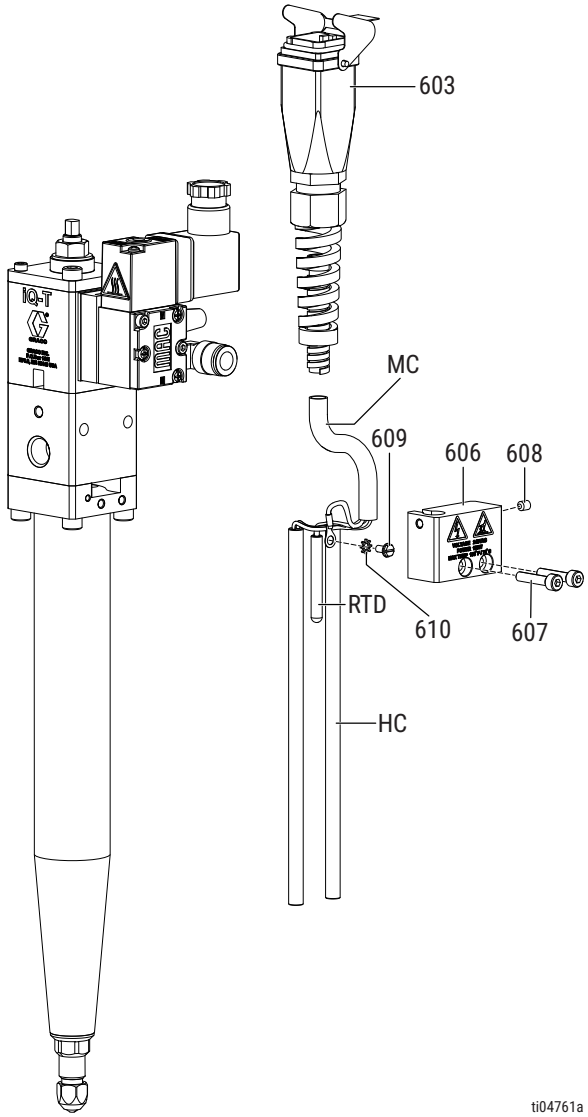


Figure 18-29: Heater Assembly for 200 mm Outlet Block

The parts illustrations and lists show the components of iQ Dispense Valves and their connections that are required for assembly, repair, and maintenance.

TIP SEAL IQ DISPENSE VALVES

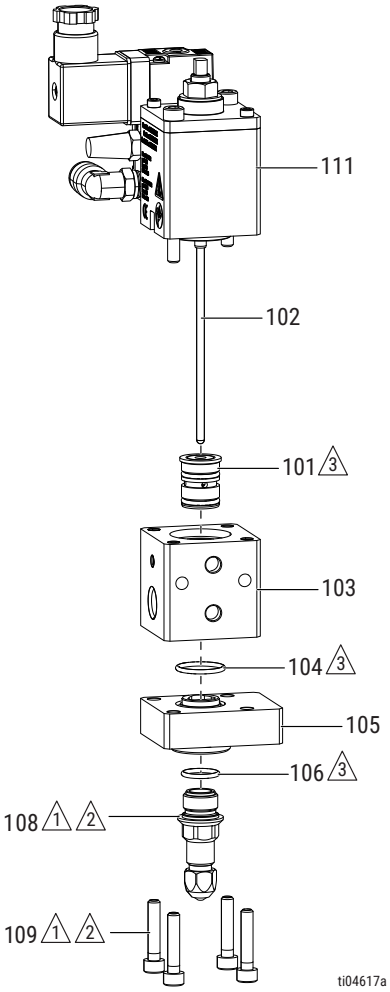


Figure 19-1: 2011588 Tip Seal Valve

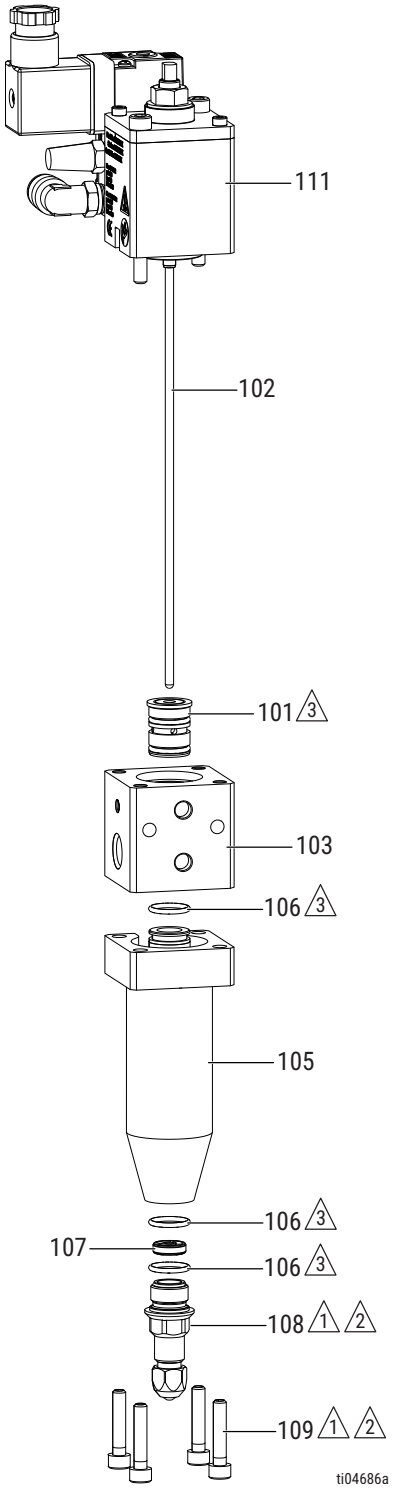


Figure 19-2: 2011601 Tip Seal Valve (shown with 60 mm outlet block)

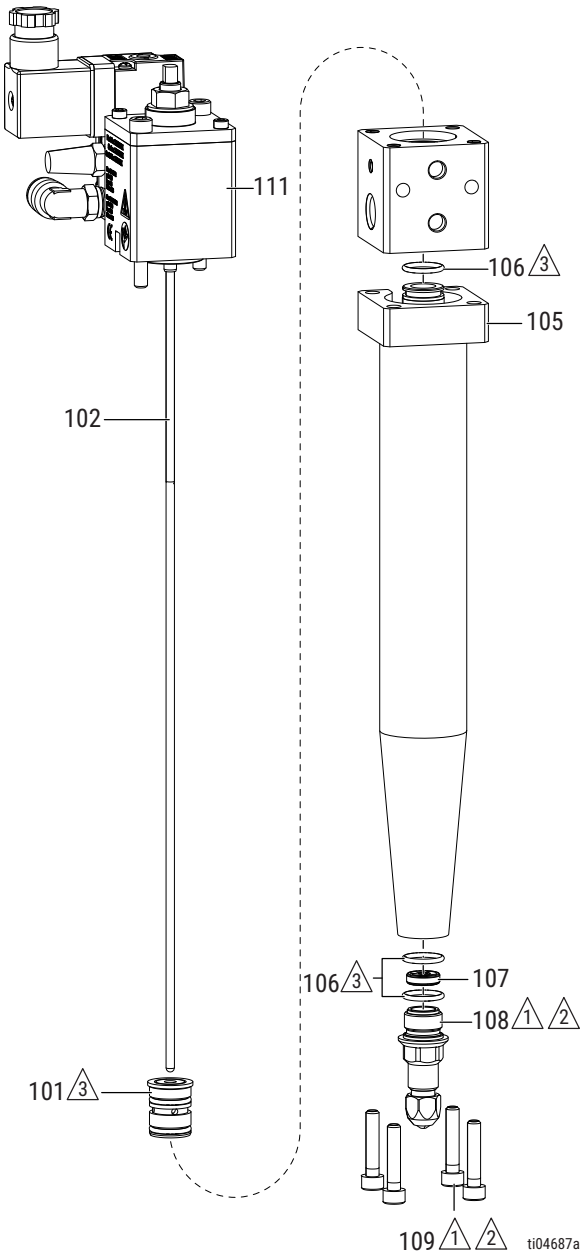


Figure 19-3: 2011615 Tip Seal Valve (shown with 200 mm outlet block)

1 Apply blue anaerobic adhesive to threads.

2 Torque to 55 in-lbs (6.2 N●m)

3 Apply grease. Multipurpose, NLGI 2, synthetic recommended.

TIP SEAL MODELS

REF.	PART	DESCRIPTION	1/8 IN. ROD QTY.			* 3/16 IN. ROD QTY.
			0 MM	60 MM	200 MM	60 MM
101	25B302	KIT, seal, 1/8 in. shaft	1	1	1	- - -
	26A861	KIT, seal, 3/16 in. shaft	- - -	- - -	- - -	1
	25B588	KIT, seal, 1/8 in. shaft, Elite	1	1	1	- - -
	25B589	KIT, seal, 3/16 in. shaft, Elite	- - -	- - -	- - -	- - -
102	26A859	ROD ASSY, tip, 1/8 in., 60 mm	1	- - -	- - -	- - -
	25B304	ROD ASSY, tip, 1/8 in., 200 mm	- - -	1	- - -	- - -
	25B125	ROD ASSY, tip, 1/8 in.	- - -	- - -	1	- - -
	26B979	ROD ASSY, tip, 3/16 in., 60 mm	- - -	- - -	- - -	1
103	2011554	HOUSING, fluid, 1/4 in.	1	1	1	1
104	117610	PACKING, o-ring	1	- - -	- - -	- - -
105	25R631	BLOCK, outlet, 1/4 in.	1	- - -	- - -	- - -
	25R632	BLOCK, outlet, 1/4 in., 60 mm	- - -	1	- - -	1
	25R639	BLOCK, outlet, 1/4 in., 200 mm	- - -	- - -	1	- - -
106	113746	PACKING, o-ring	1	3	3	3
107	25R634	BEARING, 1/8 in.	- - -	1	1	- - -
	29B982	BEARING, 3/16 in.	- - -	- - -	- - -	1
108	See **Tip Assembly, page 54**	TIP ASSY	1	1	1	1
109	130458	SCREW, shc, M5	4	4	4	4
111	See **Air Section, page 62**	AIR SECTION, NPT, 1/4 in.	1	1	1	1
***NOTE:** 3/16 in. Rod only used on 4.0 mm tip seal valves						

Table 19-1: Tip Sizes

PART	SIZE	COMPATIBLE ROD SIZE
25B308*	1.0 mm	1/8 in.
25B309*	1.3 mm	1/8 in.
25B316*	1.7 mm	1/8 in.
25T450*	2.0 mm	1/8 in.
26B660*	2.5 mm	1/8 in.
26D315*	4.0 mm	3/16 in.
26B195+	1.0 mm	1/8 in.
26B196+	1.3 mm	1/8 in.
26B197+	1.7 mm	1/8 in.
26B198+	2.0 mm	1/8 in.
26B683+	2.5 mm	1/8 in.
26B984+	4.0 mm	3/16 in.
* Includes one each of 108a, 108b, 108c, and 108d		
+ Includes one each of 108b and 108c		

TIP ASSEMBLY

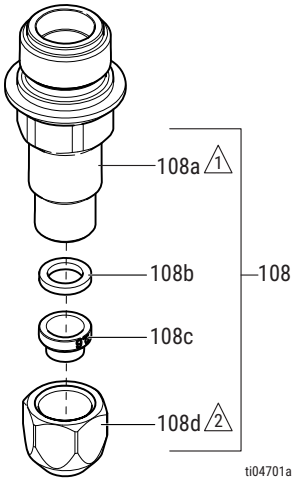


Figure 19-4: Tip Assembly

1 Apply blue anaerobic adhesive to threads.

2 Torque to 5 ft-lb (0.56 N●m)

TIP ASSEMBLY PARTS

REF.	PART	DESCRIPTION	QTY.
108a	26B190	NOZZLE, forward, tip, ¼ in.	1
108b	26B191	GASKET, nozzle, IQ valve, 5 pack	1
108c	*	SEAT, tip	1
108d	26B192	NUT, nozzle, IQ valve	1

BALL SEAT IQ DISPENSE VALVES

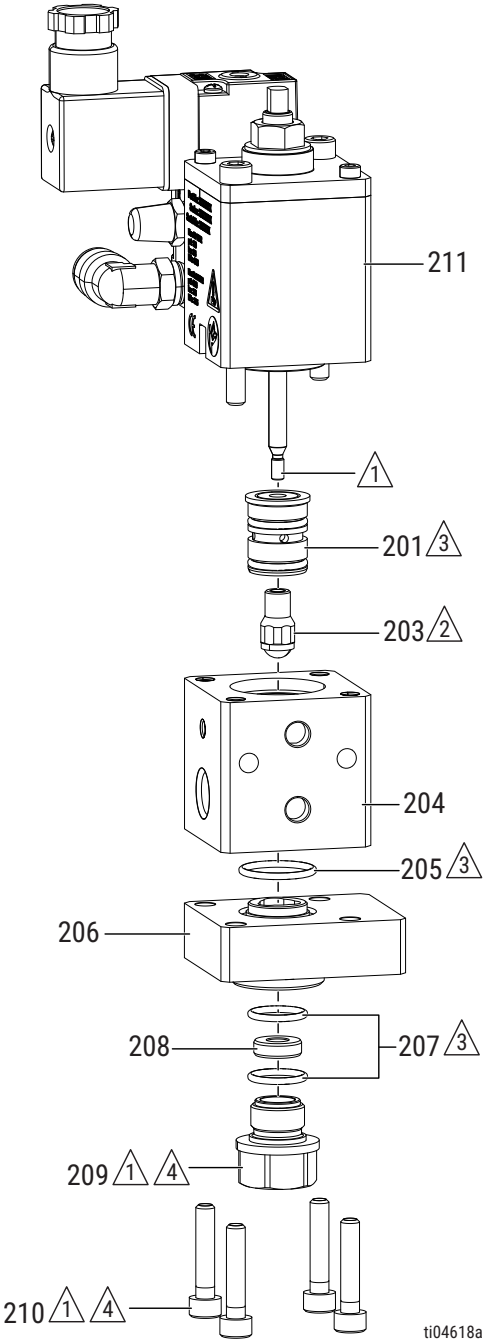


Figure 19-5: 2011761 Ball Seat Valve

1 Apply blue anaerobic adhesive to threads.

2 Torque to 20 in-lbs (2.3 N●m)

3 Apply grease. Multipurpose, NLGI 2, synthetic recommended.

4 Torque to 55 in-lbs (13 N●m)

Table 19-2: Ball Seat Models

REF.	PART	DESCRIPTION	QTY.		
			STANDARD	5,000 PSI VALVES 2011770 AND 2011769	RAC TIP 2011768
201	26A861	KIT, seal, 3/16 in. shaft	1	1	1
203	26A858	BALL ASSY, crimp, ¼ in.	1	1	1
204	2011554	HOUSING, fluid, ¼ in., SST	1	–-	1
205	117610	PACKING, o-ring	1	–-	–-
206	25R631	BLOCK, outlet, ¼ in.	1	–-	–-
	25T260	BLOCK, outlet, ¼ in. SS	–-	1	–-
	–-	BLOCK, outlet, RAC	–-	–-	1
207	113746	PACKING, o-ring	2	1	1
208	185467	SEAT, valve	1	1	1
209	25R633	NOZZLE, rev/fwd, ¼ in.	1	1	–-
210	130458	SCREW, shc, M5	4	4	–-
	136250	SCREW, shc, M5	–-	–-	4
211	See **Air Section, page 62**	AIR SECTION, NPT, ¼ in.	1	1	1

SNUFF BACK IQ DISPENSE VALVES

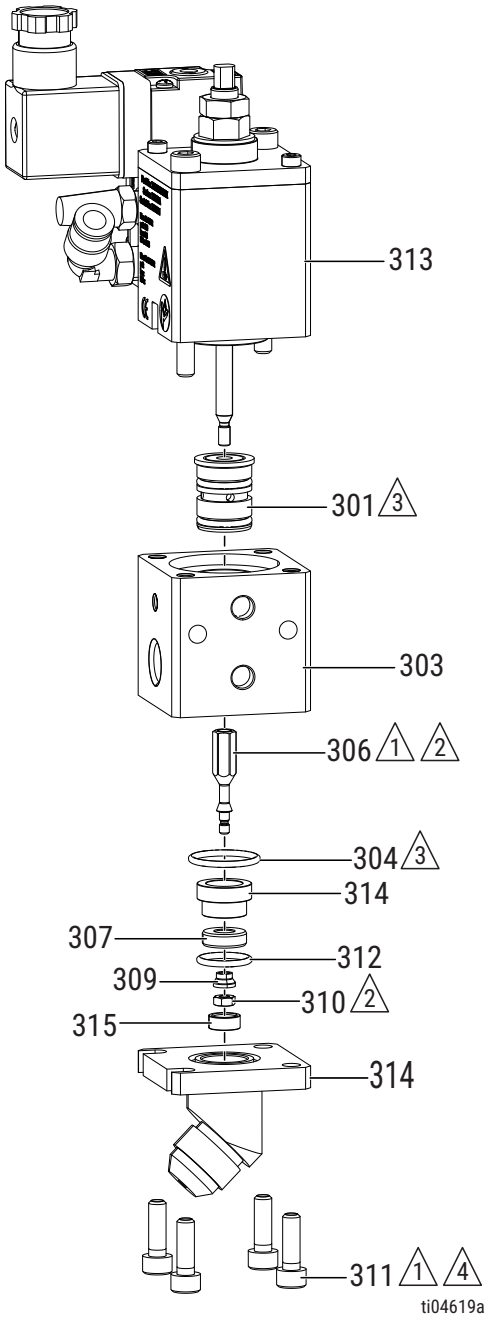


Figure 19-6: 2011320 and 2011321 Snuff Back iQ Dispense Valve with 45 Degree Tip

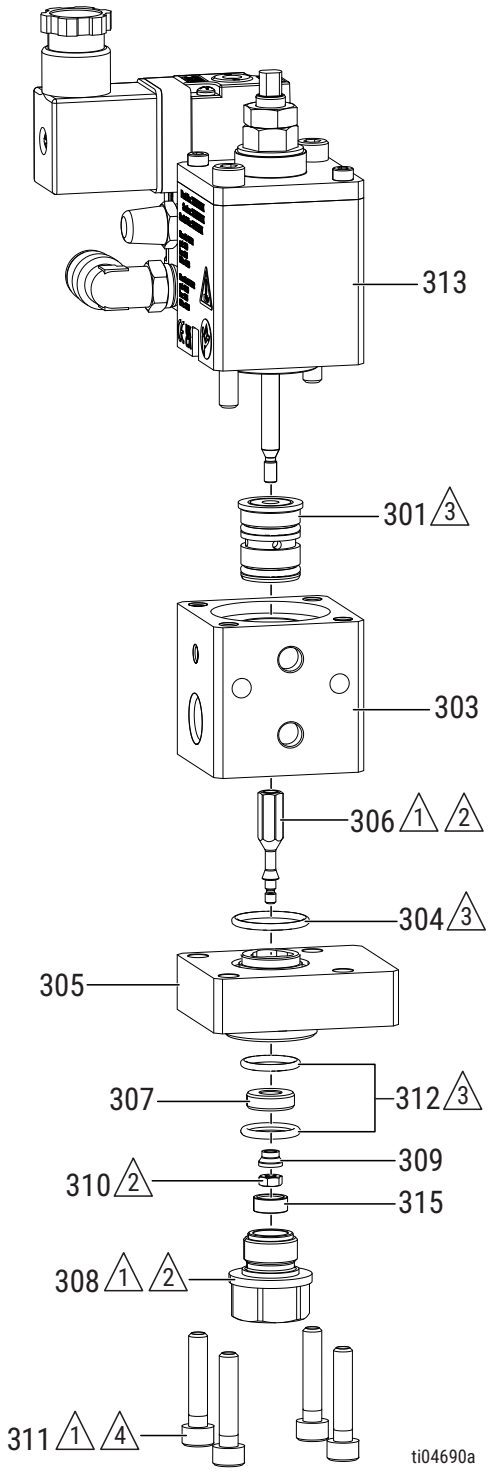


Figure 19-7: 2011298 Snuff Back iQ Dispense Valve

1 Apply blue anaerobic adhesive to threads.

2 Torque to 20 in-lb (2.3 N●m)

3 Apply grease. Multipurpose, NLGI 2, synthetic recommended.

4 Torque to 55 in-lb (13 N●m)

5 Torque to 8-10 in-lb (10-13 N●m)

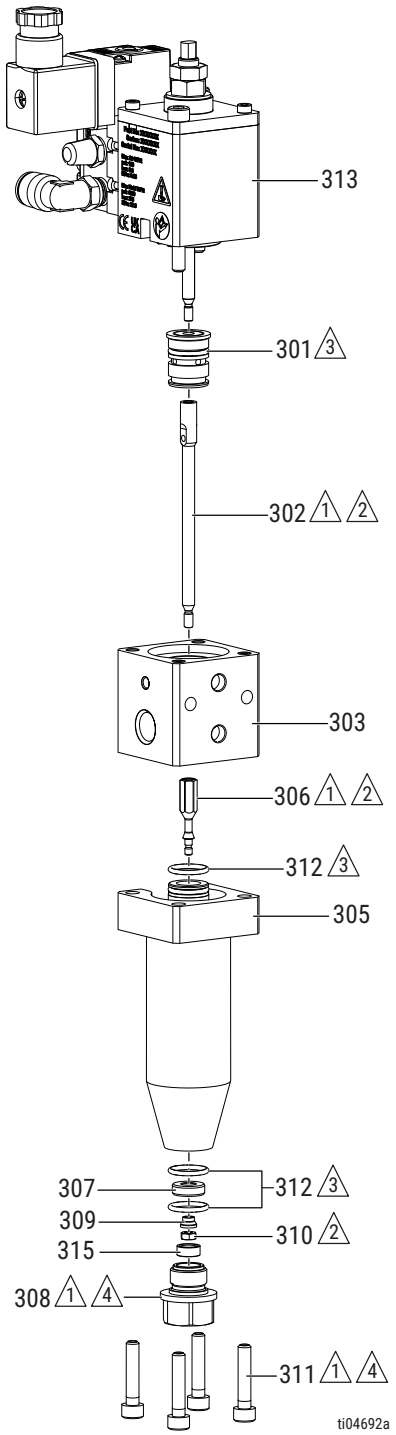
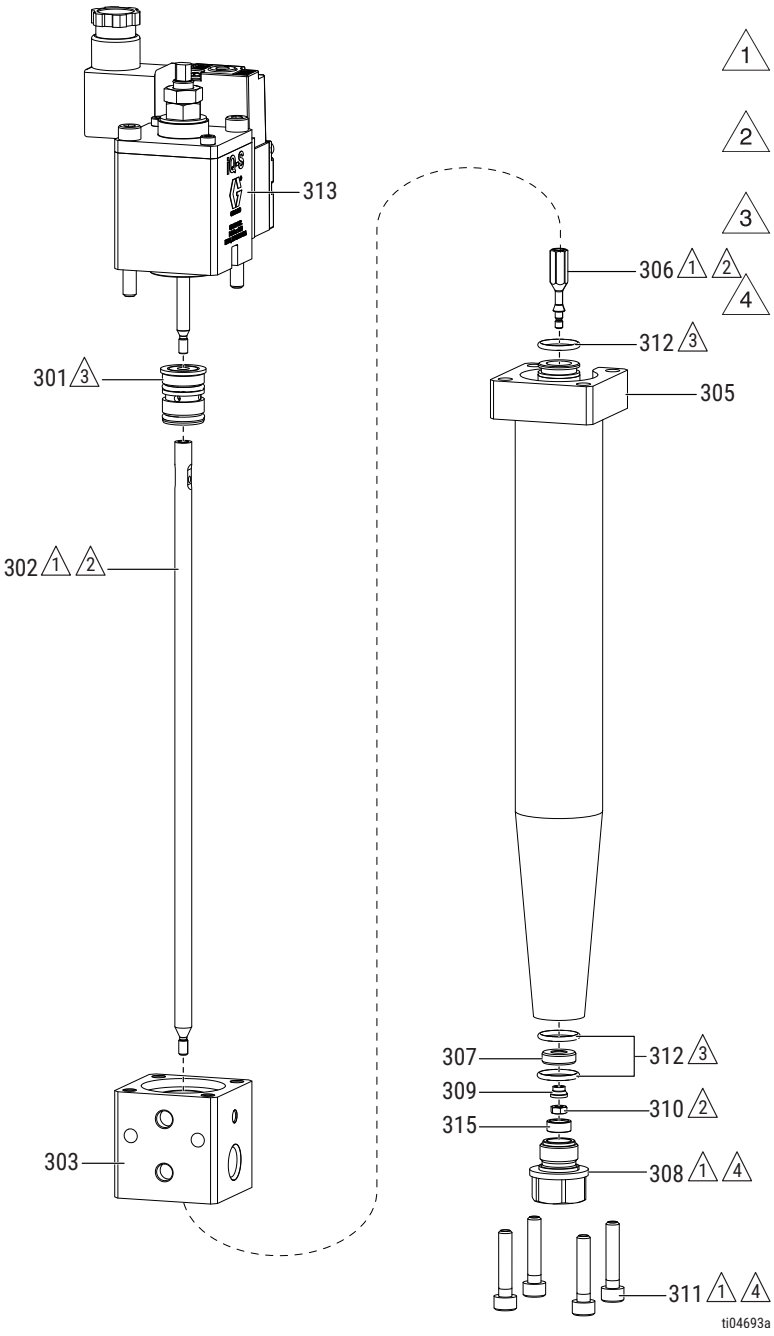


Figure 19-8: 2011319 Snuff Back iQ Dispense Valve (shown with 60 mm tip)



1 Apply blue anaerobic adhesive to threads.

2 Torque to 20 in-lb (2.3 N●m)

3 Apply grease. Multipurpose, NLGI 2, synthetic recommended.

4 Torque to 55 in-lb (13 N●m)

Figure 19-9: 2011297 Snuff Back iQ Dispense Valve (shown with 200 mm tip)

SNUFF BACK IQ DISPENSE VALVE MODELS

REF.	PART	DESCRIPTION	QTY.			
			0 MM	60 MM	200 MM	2011320 AND 2011321
301	26A861	KIT, seal, 3/16 in. shaft	1	1	1	1
302	25R637	SHAFT, forward, tip, ¼ in.	–-	1	–-	–-
	25R641	SHAFT, forward, tip, ¼ in.	–-	–-	1	–-
303	2011554	HOUSING, fluid, ¼ in.	1	1	1	1
	2011555	HOUSING, fluid, ¼ in., SS,pinned	–-	–-	–-	–-
304	117610	PACKING, o-ring	1	–-	–-	1
305	25R631	BLOCK, outlet, ¼ in.	1	–-	–-	–-
	25R632	BLOCK, outlet, ¼ in.	1	1	–-	–-
	25R639	BLOCK, outlet, ¼ in.	–-	–-	1	–-
	–-	BLOCK, outlet, ¼ in., SS	–-	–-	–-	–-
306	25R638	SHAFT, reverse, ¼ in.	1	1	1	1
307	185467	SEAT VALVE	1	1	1	1
308	25R633	NOZZLE, rev/fwd. ¼ in.	1	1	1	–-
309	17H991	TIP, reverse, ¼ in.	1	1	1	1
310	125104	NUT, hex, M3	1	1	1	1
311	130458	SCREW, shc, M5	4	4	4	4
312	113746	PACKING, o-ring	2	3	3	1
313	See **Ball Seat iQ Dispense Valves, page 55**	AIR SECTION, NPT, ¼ in.	1	1	1	1
314	26B489	NOZZLE, IQ, 45 degree	–-	–-	–-	1

REF.	PART	DESCRIPTION	QTY.			
			0 MM	60 MM	200 MM	2011320 AND 2011321
315	15N101	INSERT, snuff, back, valve IQ	1	1	1	1

AIR SECTION

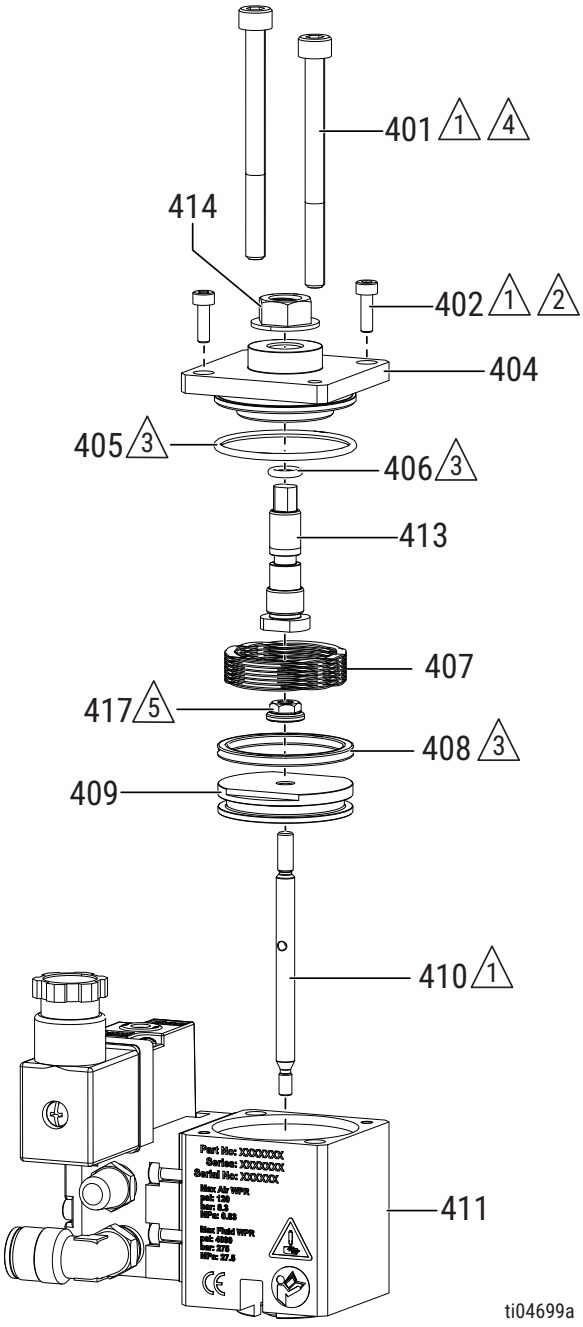


Figure 19-10: Spring Action with Ball Seat or Tip Seal iQ Dispense Valve

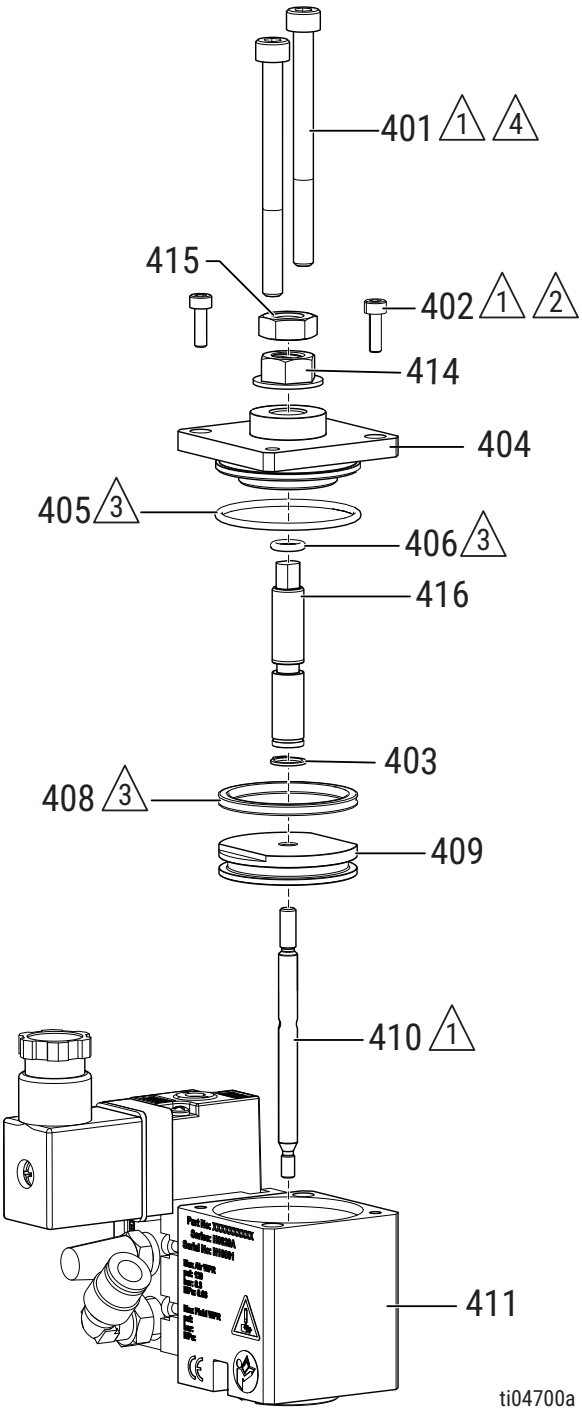


Figure 19-11: Snuff Back iQ Dispense Valve

1 Apply blue anaerobic adhesive to threads.

2 Torque to 8-10 in-lb (0.90-1.2 N●m)

3 Apply grease.

4 Torque to 55 in-lb (6.2 N●m)

5 Torque to 24-36 in-lb (2.7-4.1 N●m)

AIR SECTION

REF.	PART	DESCRIPTION	QTY.		
			IQ-T	IQ-B	IQ-S
401	136240	SCREW, shc, M5	2	2	2
402	130181	SCREW, shc, M3	2	2	2
403	131502	RING, retaining	- - -	- - -	1
404	2012056	CAP. air cylinder	1	1	1
405	120818	PACKING, o-ring	1	1	1
406	111625	PACKING, o-ring	1	1	1
407	130186	SPRING, wave	1	1	- - -
408	136246	O-RING, quad	1	1	1
409	25R645	PISTON, air cylinder, ¼ in.	1	1	1
410	2013753	SHAFT, rev/fwd, ¼ in.	- - -	1	1
411	2013404	KIT, air cylinder, ¼ in.	1	1	1
413	2012057	ROD, adapter, 1/4", forward	1	1	- - -
414	2012132	NUT, hex, flange	1	1	1
415	100077	NUT, jam hex	- - -	- - -	1
416	2012058	ROD, ¼ in., adapter	- - -	- - -	1
417	136242	NUT, flange, M4	1	1	- - -

HEATER ASSEMBLY PARTS

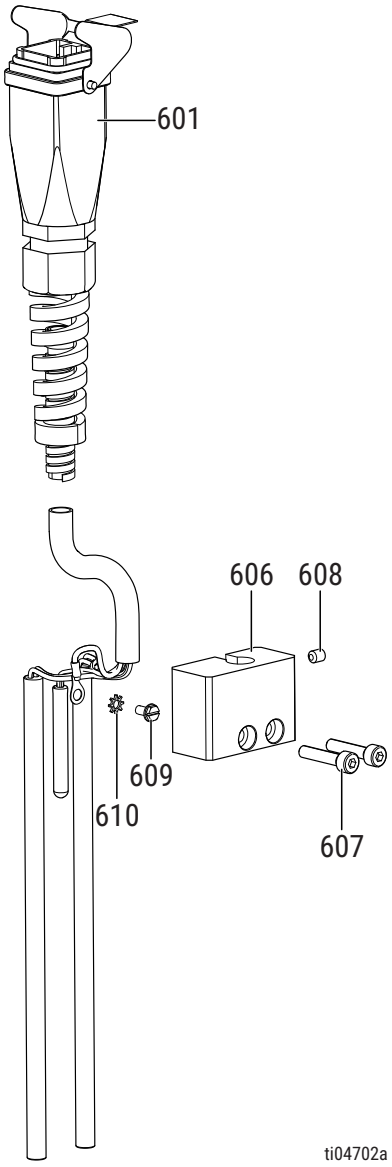


Figure 19-12: Heater Assembly (for 200 mm Outlet Block)

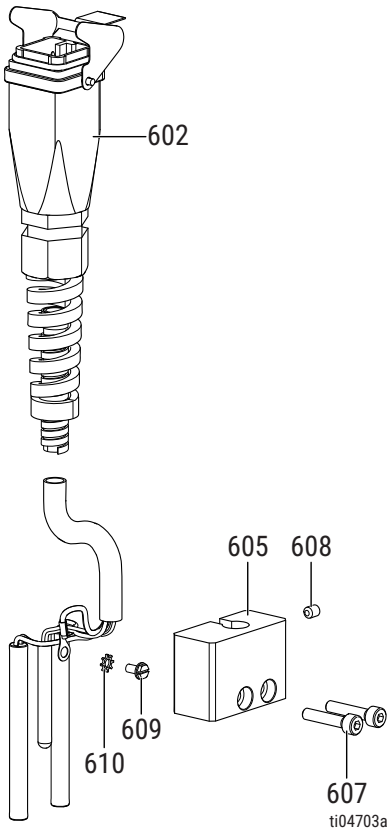


Figure 19-13: Heater Assembly (for 60 mm Outlet Block)

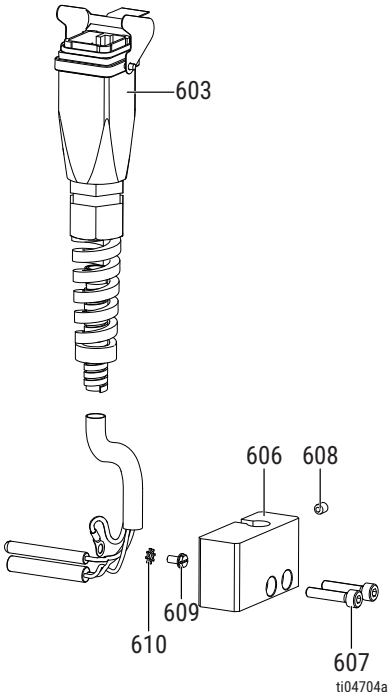


Figure 19-14: Heater Assembly (for 0 mm Outlet Block)

REF.	PART	DESCRIPTION	QTY.
601	15N030	HARNESS, heat, 200 series	1
602	15N029	HARNESS, heat, 060 series	1
603	15N028	HARNESS, heat, 000 series	1
604	2012662	COVER, heater	1
605	20120686	COVER, heater, 60 mm outlet	
606	2012688	COVER, heater, 200 mm outlet	1
607	116474	SCREW, shcs, m4 x 20	2
608	124736	SCREW, set, cup, m4 x 0.7 mmx 4 mm	1
609	112506	SCREW, ground	1
610	112505	WASHER, lock	1

VALVE MOUNTED SOLENOID

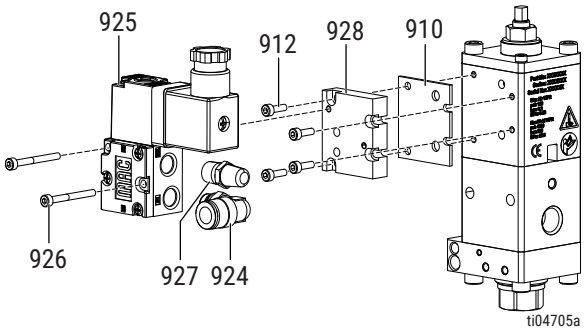


Figure 19-15: Valve Mounted Solenoid

REF.	PART	DESCRIPTION	QTY.
910	130866	GASKET, solenoid, ¼ in.	1
912	130181	SCREW, shcs	4
924	116197	FITTING, elbow, 5/16 OD x 1/8 in. NPTF (use with 5/16 in. (8 mm) OD tubing)	1
925	2013406	SOLENOID, face mount, 24VDC, 12W	1
	2011023	SOLENOID, face mount, 24VDC, 2.4W	1
926	–-	SCREW, shcs	2
927	C06061	MUFFLER, sintered, dia 1/8 in.	1
928	18B334*	BLOCK, solenoid, reverse	1
	18B335†	BLOCK, solenoid, forward	

** Used on Snuff Back valves.*

† Used on Ball Seat and Tip Seal valves.

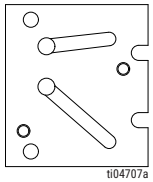


Figure 19-16: Configuration for Reverse Acting Solenoid 18B334

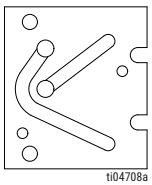


Figure 19-17: Configuration for Forward Acting Solenoid

REMOTE MOUNTED SOLENOID

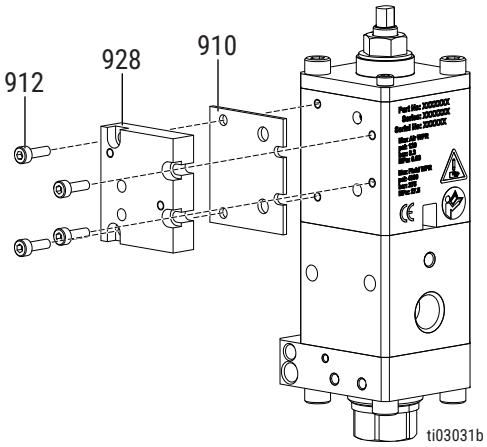


Figure 19-18: Remote Mounted Solenoid

REF.	PART	DESCRIPTION	QTY.
910	130866	GASKET, solenoid, ¼ in.	1
912	130181	SCREW, shcs	4
928	18B333	BLOCK, solenoid, ¼ in., 1/8 NPT Remote	1

1/4 IN. NPT VALVE REPAIR KITS

See **Maintenence** and **Repair** for appropriate kit installation procedures.

FLUID SECTION REPAIR KITS

KIT NO.	VALVE DESCRIPTION	IQ-T	IQ-B	IQ-S
26B981	ROD, assy, tip, 3/16 in. dia	✔		
25B308	TIP, assy, 1.0 mm, ¼ in.	✔	✔	✔
25B309	TIP, assy, 1.3 mm, ¼ in.	✔	✔	✔
25B3316	TIP, assy, 1.7 mm, ¼ in.	✔	✔	✔
25T450	TIP, assy, 2.0 mm, ¼ in.	✔	✔	✔
26B660	TIP, assy, 2.5 mm, ¼ in.	✔	✔	✔
26D315	TIP, assy, 4.0 mm, ¼ in.	✔	✔	✔
26B195	KIT, seat, tip, 1.0 mm, ¼ in.	✔	✔	✔
26B196	KIT, seat, tip, 1.3 mm, ¼ in.	✔	✔	✔
26B197	KIT, seat, tip, 1.7 mm, ¼ in.	✔	✔	✔
26B198	KIT, seat, tip, 2.0 mm, ¼ in.	✔	✔	✔
26B683	KIT, seat, tip, 2.5 mm, ¼ in.	✔	✔	✔
26B983	KIT, seat, tip, 3.0 mm, ¼ in.	✔		
26B984	KIT, seat, tip, 4.0 mm, ¼ in.	✔		
26B214	KIT, 113746 o-ring, 10 pack	✔	✔	✔

CARBIDE WEAR ITEMS

KIT NO.	VALVE DESCRIPTION	IQ-T	IQ-B	IQ-S
25B302	KIT, seal, 1/8 in. shaft, ¼ in. shaft	✔		
26A861	KIT, seal, 3/16 in. shaft, ¼ in. shaft	✔	✔	✔

KITS AND ACCESSORIES

The following kits and accessories are items that are offered by Graco for the iQ Dispense Valves and available to purchase separately. Kits and accessories use a Graco part number.

Before installing any accessories, follow steps 1 through 3 from **Repair**.

REMOTE MOUNTED SOLENOID, 25R640

4000 psi (28 MPa, 276 bar) Maximum Working Pressure. ¼ in. NPT male fitting to thread into additional inlet port. Use with 15M669 Pressure Transducer.

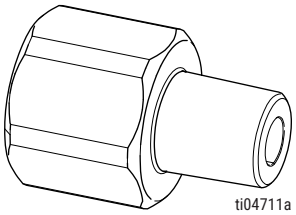


Figure 20-1: Pressure Transducer Adapter, 25R640

HEAT BLOCK SPACER, 25R642

Use with heated valves to isolate heat.

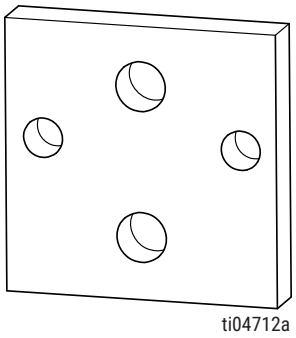


Figure 20-2: Heat Block Spacer, 25R642

VISION ADAPTER KIT, 25R650

Use with a Coherix Predator 3D vision system.

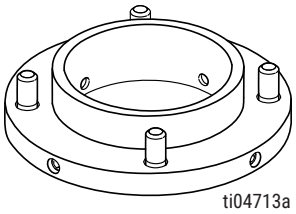


Figure 20-3: Vision Adapter Kit, 25R650

SEAL ASSEMBLY TOOL, 25R643

Use when rebuilding valve seal sections.

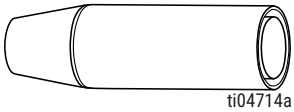


Figure 20-4: Seal Assembly Tool, 25R643

SWIVEL FITTING, 130995

5000 psi (34.5 MPa, 345 bar) Maximum Working Pressure. 90° swivel fitting with two ½ in. NPT female threads.

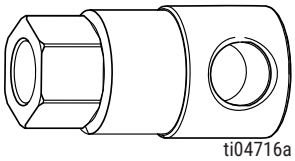


Figure 20-5: Swivel Fitting, 130995

GREASE ZERK FITTING 130883, GREASE PLUG 136249

For applications dispensing moisture sensitive materials, install the Grease Zerk Fitting (M) into the Fluid Section (E), fill the grease port with grease, and install the Grease Plug (L).

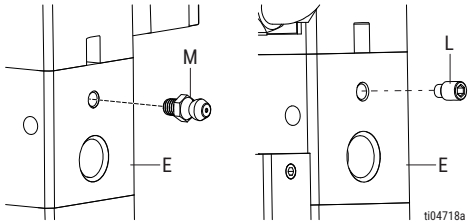


Figure 20-6: Grease Zerk Fitting 130883, Grease Plug 136249

SEAL KIT ELITE, 25B589

Use with Ball Seat (iQ-B) and Snuff Back (iQ-S) Dispense Valves.

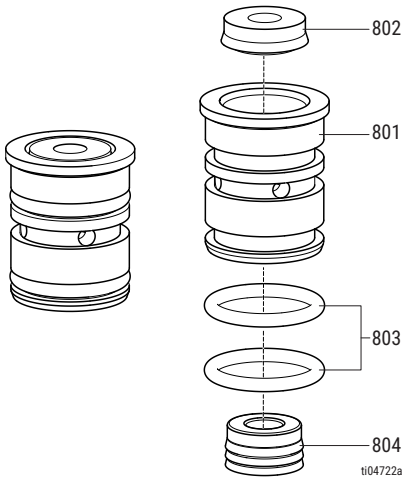


Figure 20-7: Seal Kit Elite, 25B589

REF.	PART	DESCRIPTION	QTY.
801	- - -	CARTRIDGE, seal, 3/16 in. shaft	1
802	95/0884/11	SEAL, pospk	1
803	- - -	PACKING, o-ring	2
804	- - -	SEAL, 3/16 in., green	1

SEAL KIT ELITE, 25B588

Use with tip seal (iQ-T) valves.

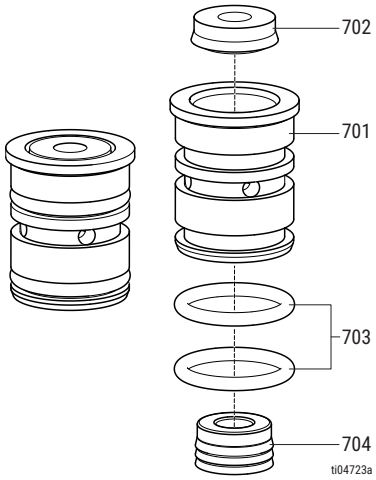


Figure 20-8: Seal Kit Elite, 25B588

REF.	PART	DESCRIPTION	QTY.
701	- - -	CARTRIDGE, seal, 3/16 in. shaft	1
702	95/0884/11	SEAL, pospk	1
703	- - -	PACKING, o-ring	2
704	- - -	SEAL, 3/16 in., green	1

PRESSURE TRANSDUCER, 15M669

Use to monitor the fluid outlet pressure in the valve. Requires a pressure transducer adapter for ¼ in. valves.

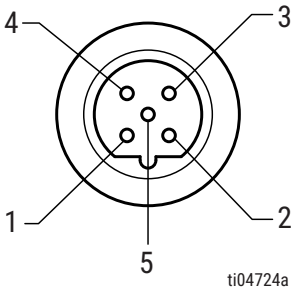


Figure 20-9: Pressure Transducer, 15M669

Input voltage: 5.0 VDC +/- 1 mV.

Span at 7500 psi: 175 mV +/- 2 Percent.

M12 PINOUT DETAILS	
Pin	Description
1	+ Exitation (5 VDC)
2	- Signal
3	- Exitation (COM)
4	+ Signal
5	Shield Drain

LUER FIXED ADAPTER KIT, 2005723

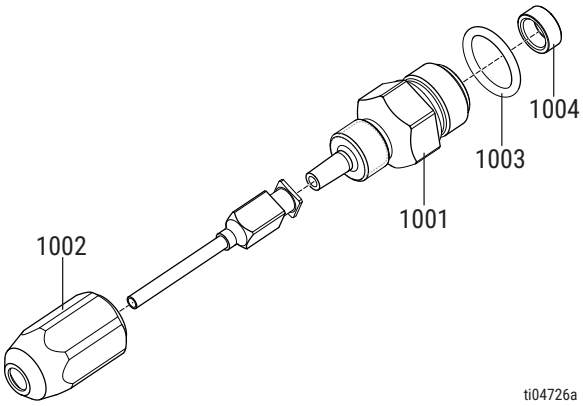


Figure 20-10: Luer Fixed Adapter Kit, 2005723

REF.	PART	DESCRIPTION	QTY.
1001	–-	ADAPTER, luer	1
1002	–-	NUT, valve, luer	1
1003	113746	O-ring	1
1004	15N101	INSERT, snuff back	1

NEEDLE KITS, 10 PK

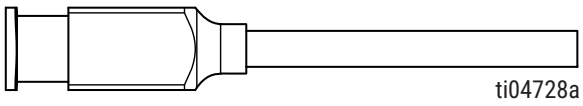


Figure 20-11: Needle Kits, 10 pk

REF.	PART	DESCRIPTION	QTY.
1101	26D538	KIT, needle, 10 ga x 2 in.	10
1102	26D539	KIT, needle, 12 ga x 2 in.	10
1103	26D540	KIT, needle, 14 ga x 2 in.	10

DIMENSIONS

The dimension diagrams show detailed measurements and specifications to ensure accurate installation and operation of the iQ Dispense Valve.

TIP SEAL IQ DISPENSE VALVE DIMENSIONS

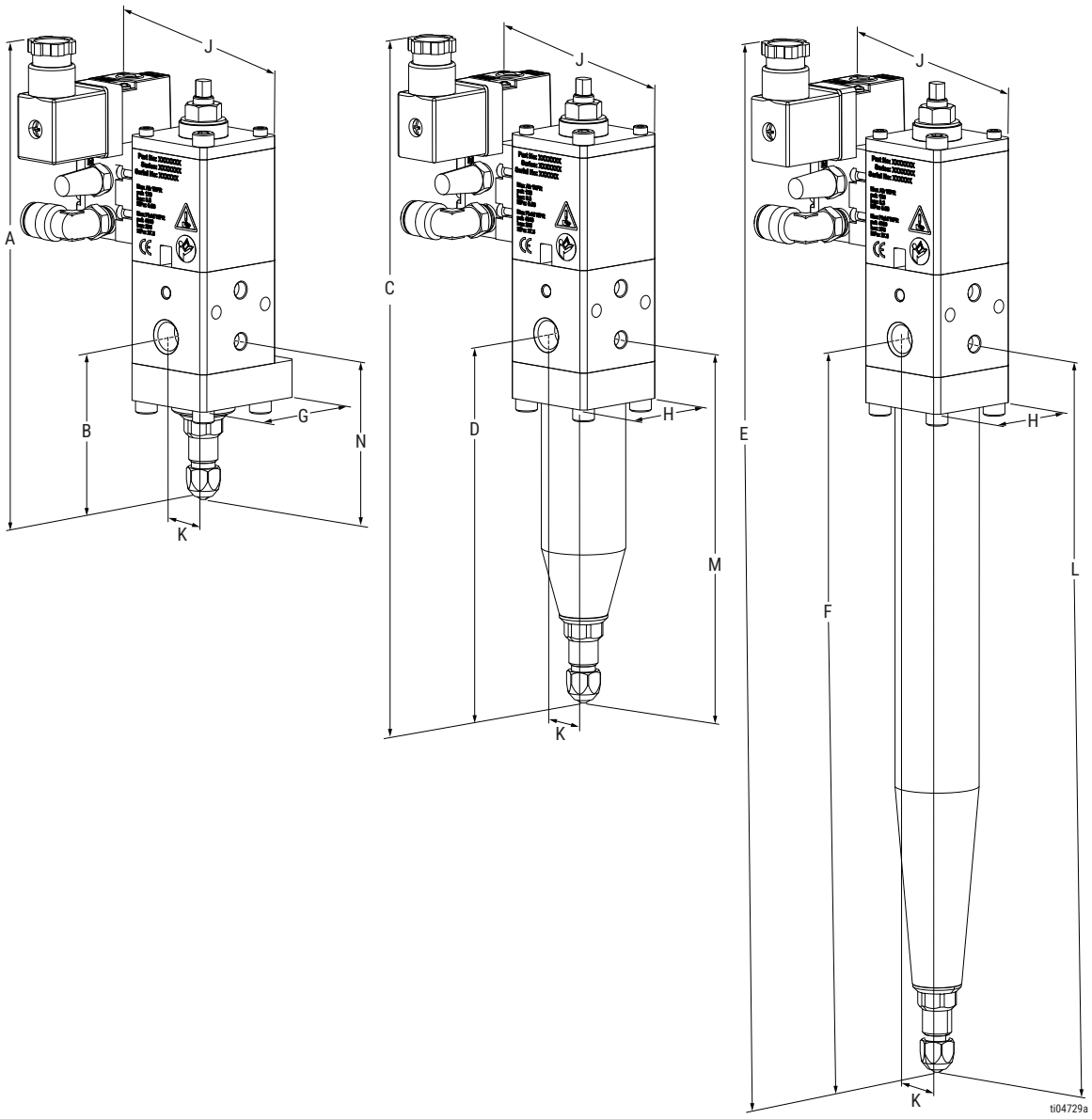


Figure 21-1: Dimensions for Tip Seal iQ Dispense Valve

Table 21-1: Tip Seal iQ Dispense Valve dimensions

A	B	C	D	E	F	G	H	J	K	L	M	N
6.4 in. (163 mm)	3.1 in. (79cm)	9.6 in. (244 cm)	6.3 in. (160 cm)	15.3 in. (389 cm)	11.9 in. (302 cm)	2.0 in. (51 cm)	1.6 in. (41 cm)	3.0 in. (76 cm)	0.8 in. (20 cm)	11.5 in. (292 cm)	5.8 in. (147 cm)	2.6 in. (66 cm)

BALL SEAT AND SNUFF BACK IQ DISPENSE VALVE DIMENSIONS

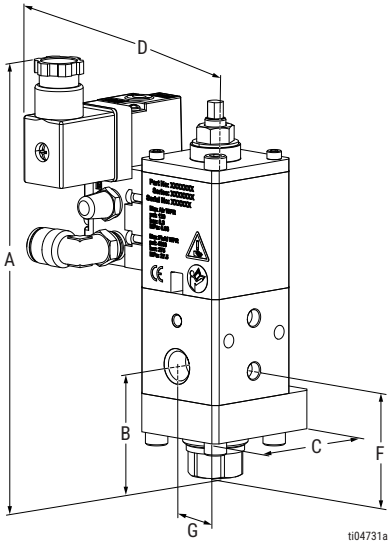


Figure 21-2: Dimensions for Ball Seat iQ Dispense Valve

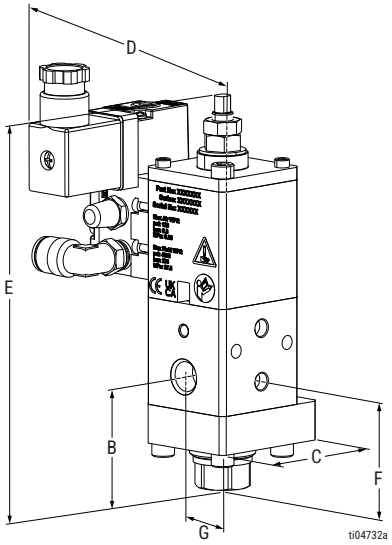


Figure 21-3: Dimensions for Snuff Back iQ Dispense Valve

Table 21-2: Ball-Seat and Snuff Back iQ Dispense Valve Dimensions

A	B	C	D	E	F	G
5.5 in. (140 mm)	1.7 in. (43 cm)	2.0 in. (51 cm)	3.0 in. (76 cm)	5.9 in. (150 cm)	1.7 in. (43 cm)	0.8 in. (20 cm)

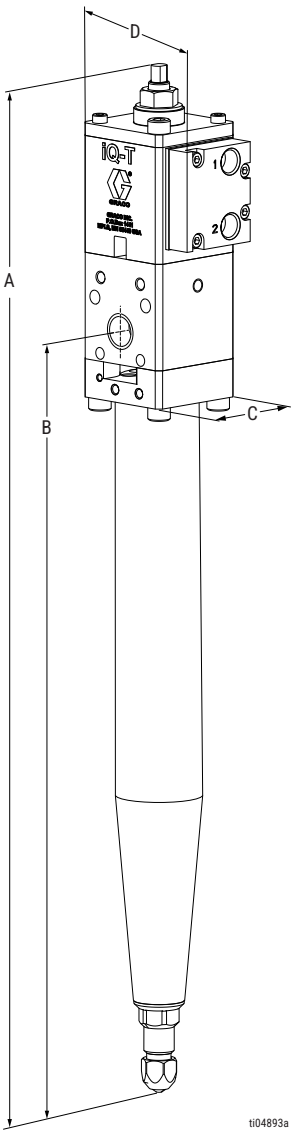


Figure 21-4: Dimensions for Tip Seal PSM PN 2012490

Table 21-3: Dimensions for Tip Seal PSM 2012490

A	B	C	D
15.4 in. (392 mm)	11.5 in. (29 cm)	1.6 in. (4 cm)	2.1 in. (5 cm)

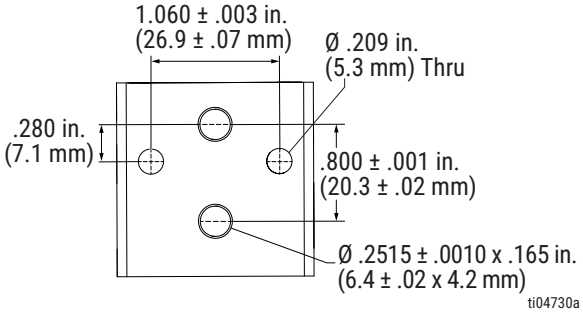
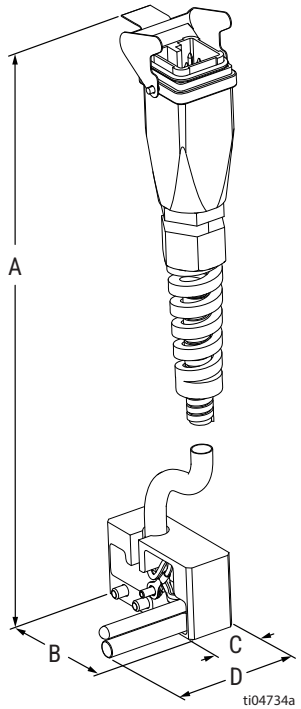
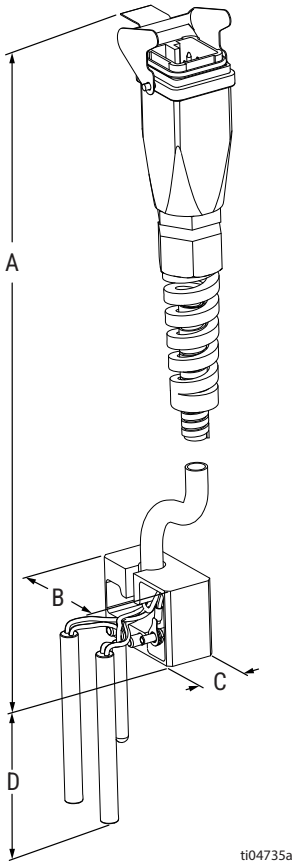


Figure 21-5: Mounting Dimensions for Tip Seal iQ Dispense Valve

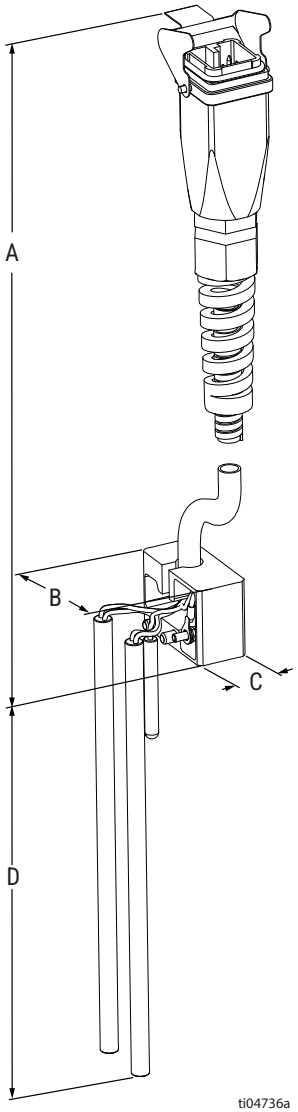
HEATER ASSEMBLY DIMENSIONS



Dimensions for 0 mm Outlet Block



Dimensions for 60 mm Outlet Block



Dimensions for 200 mm Outlet Block

REF.	0 MM OUTLET BLOCK	60 MM OUTLET BLOCK	200 MM OUTLET BLOCK
A	21.75 in. (553 mm)	21.75 in. (553 mm)	21.75 in. (553 mm)
B	2.0 in. (51 mm)	1.63 in. (41 mm)	1.63 in. (41 mm)
C	0.75 in. (19 mm)	0.75 in. (19 mm)	0.75 in. (19 mm)
D	2.13 in. (54 mm)	2.21 in. (56 mm)	6.07 in. (154 mm)

ELECTRICAL SCHEMATIC

The wiring diagram illustrates the electronic connections that are useful for troubleshooting and repairing the electrical components of the iQ Dispense Valve.

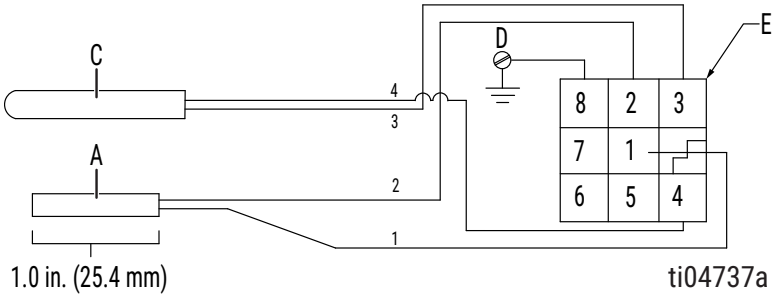


Figure 22-1: Wiring Diagram for the 000 heater (240 V, 100 W)

KEY	
A	100 W / 240 V Heater
C	100 Ohm Platinum RTD Sensor
D	Ground
E	Connector (viewed from wire end)

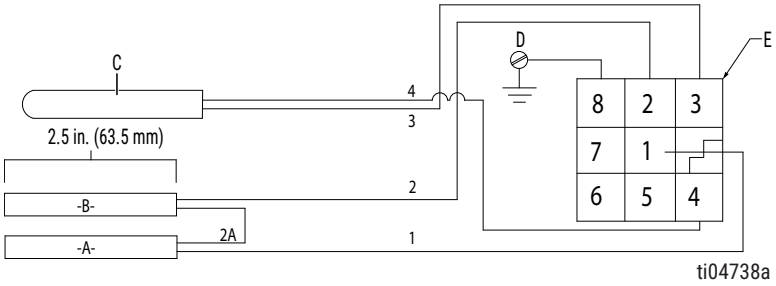


Figure 22-2: Wiring Diagram for the 060 heater (240 V, 150 W)

KEY	
A	150 W / 240 V Heater
B	150 W / 240 V Heater
C	100 Ohm Platinum RTD Sensor
D	Ground
E	Connector (viewed from wire end)

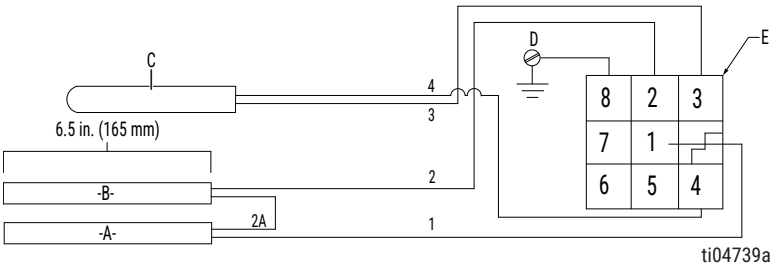


Figure 22-3: Wiring Diagram for the 200 heater (240 V, 300 W)

KEY	
A	300 W / 240 V Heater
B	300 W / 240 V Heater
C	100 Ohm Platinum RTD Sensor
D	Ground
E	Connector (viewed from wire end)

CALIFORNIA PROPOSITION 65

CALIFORNIA RESIDENTS

⚠**WARNING** Cancer and reproductive harm — www.P65warnings.ca.gov.

NOTES

GRACO STANDARD WARRANTY

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

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GRACO INC. AND SUBSIDIARIES I P.O. BOX 1441 I MINNEAPOLIS MN 55440-1441 I USA

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