First Stage Hose Assembly

MAINTENANCE AND REPAIR

For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAnet.com

MSA The Safety Company

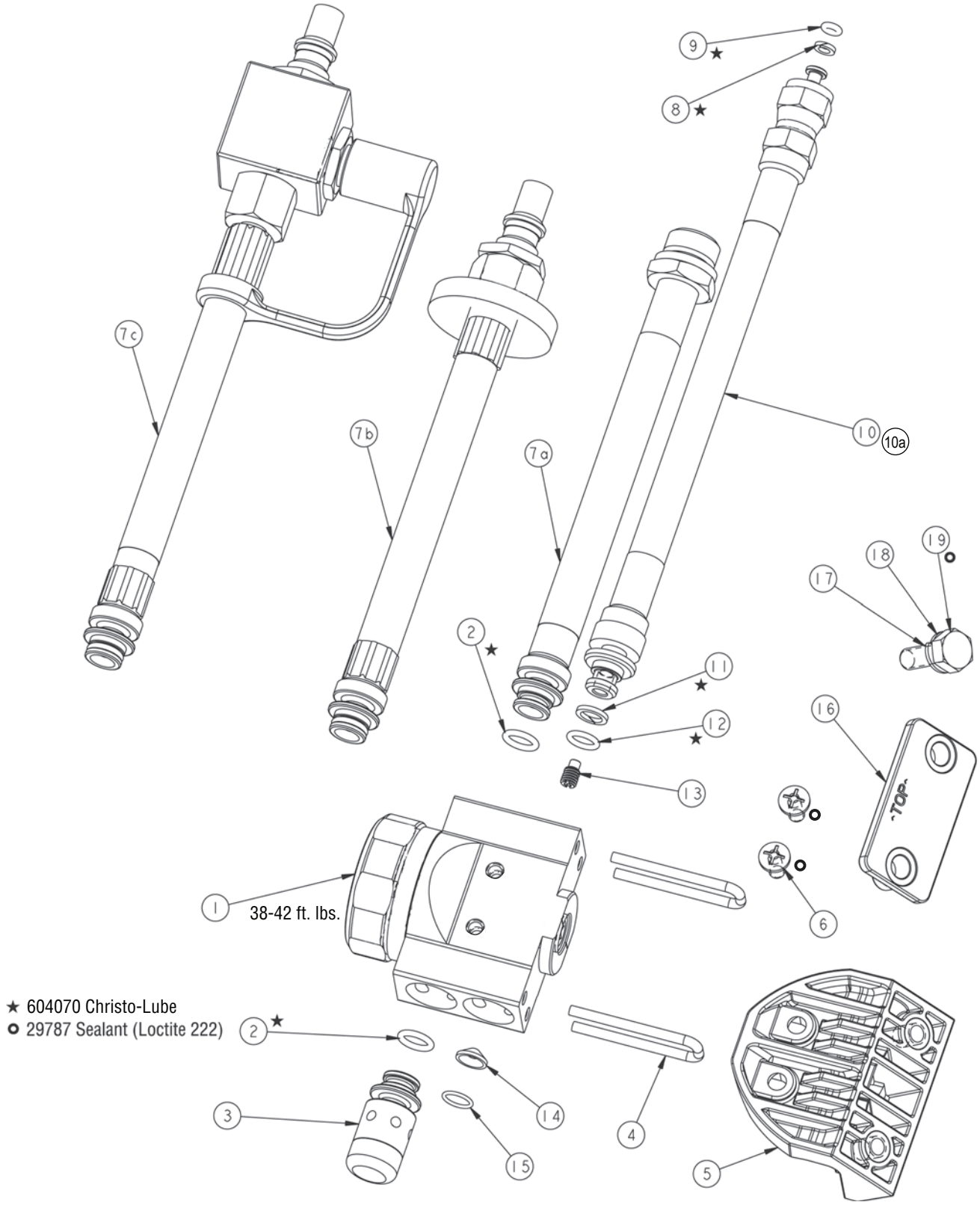
MINE SAFETY APPLIANCES COMPANY
CRANBERRY TWP., PENNSYLVANIA, U.S.A. 16066

 Prnt. Spec. 10000005389 (l) Mat. 10051135
Doc. 10000017843

PR14™ FIRST STAGE REGULATOR

PR14 FIRST STAGE REGULATOR COMPONENTS		
Item	**Part No.**	**Description**
1	**10053736**	Regulator Assy (includes Inlet Filter and O-ring)
2	**10053273**	O-Ring
3	**10053426**	Pressure Relief Valve (w/O-ring)
4	**10050622**	U-Clip
5	**10051664**	Mounting Bracket
6	**10052622**	Mounting Screws
7a	**10051882**	Intermediate Pressure Hose (Threaded w/O-ring)
7b	**10051883**	Intermediate Pressure Hose (Quick-Connect w/O-ring)
7c	**10051884**	Intermediate Pressure Hose (Extend-Aire w/O-ring)
8	**635277**	Back-Up Ring
9	**638167**	O-Ring
10	**10082852**	Gauge Hose (w/O-Ring and Back-Up Ring)
10a	**10083121**	High Pressure Hose for Quick-Fill
11	**635278**	Back-Up Ring
12	**63198**	O-Ring
13	**10026668**	Orifice
14	**10051663**	Inlet Filter
15	**10052367**	Inlet Filter O-Ring
16	**10047898**	Slider, AirFrame
17	**10014878**	Flat Washer
18	**631356**	Lock Washer
19	**10055563**	Screw, AirFrame
19a	**634994**	Screw, Vulcan/Black Rhino (not shown)

PR14 FIRST STAGE REGULATOR



PR14 FIRST STAGE REGULATOR DISASSEMBLY

PR14 FIRST STAGE REGULATOR DISASSEMBLY

Removing the PR14 First Stage Regulator from the Mounting Bracket

1. Use a screwdriver to remove both screws that secure the regulator to the mounting bracket.
2. Remove the regulator from the mounting bracket.
3. Remove the loose thread-locking material from the removed screw threads.
4. Remove the loose thread-locking material from the regulator body threads.

5. Remove the U-clips from the first stage regulator body.

Removing the High Pressure Audi-Larm™ Audible Alarm Hose

1. Ensure the U-clip is removed.
2. Pull firmly on the hose to remove it from the regulator body.
3. Use the O-ring removal tool to remove the O-ring and back-up ring from the hose fitting. Be careful not to damage the O-ring sealing surfaces.
4. Discard the O-ring and back-up ring.

Removing the Inlet Filter

1. Use the O-ring removal tool to remove the filter O-ring.
2. Discard the O-ring.
3. Orient the filter port down to drop the filter out of the regulator body.
4. Discard the filter.

Removing the High Pressure Gauge Hose

1. Ensure that the U-clip is removed.

2. Pull firmly on the gauge hose to remove it from the regulator body.

3. Use the O-ring removal tool to remove the O-ring and back-up ring from the hose fitting. Be careful not to damage the O-ring sealing surfaces.
4. Discard O-ring and back-up ring.

Removing the Intermediate Pressure Hose

1. Ensure the U-clip is removed.

2. Pull firmly on the intermediate pressure hose to remove it from the regulator body.

PR14 FIRST STAGE REGULATOR DISASSEMBLY

3. Use the O-ring removal tool to remove the O-ring. Be careful not to damage the O-ring sealing surfaces.

4. Discard the O-ring.

Removing the Pressure Relief Valve

1. Ensure the U-clip is removed.
2. Pull firmly on the pressure relief valve to remove it from regulator body.

3. Use the O-ring removal tool to remove the O-ring. Be careful not to damage the O-ring sealing surfaces.

4. Discard the O-ring.

Removing the Mounting Bracket – AirFrame Backplate

1. Use a screw driver to remove screws that secure the regulator to the mounting bracket.
2. Remove the regulator from the mounting bracket. Keep the U-clips in the regulator body.
3. Use a wrench to remove the bolts, lock washers, and flat washers that secure the mounting bracket to the backplate.
4. Remove the mounting bracket from the backplate.
5. Remove the plastic slider from the backplate.
6. Remove the loose thread-locking material from the removed bolt threads.
7. Remove the loose thread-locking material from the mounting bracket threads.

Removing the Mounting Bracket – Vulcan/Black Rhino Backplates

1. Use a screw driver to remove the screws that secure the regulator to the mounting bracket.
2. Remove the regulator from the mounting bracket. Keep the U-clips in the regulator body.
3. Use a wrench to remove the bolts, lock washers, and flat washers that secure the mounting bracket to the backplate.
4. Remove the mounting bracket from the backplate.
5. Remove the loose thread-locking material from the removed bolt threads.
6. Remove the loose thread-locking material from the mounting bracket threads.

PR14 FIRST STAGE REGULATOR REASSEMBLY

PR14 FIRST STAGE REGULATOR REASSEMBLY

Replacing the Inlet Filter
1. Install the filter into the high pressure supply port. The high pressure supply port is labeled “HP IN”. Ensure the filter cone points into the regulator.

Note: The cone point should not be visible when properly installed.

2. Install the filter O-ring into port until it bottoms out against the filter. Do not lubricate the filter O-ring.

Replacing the Pressure Relief Valve
1. Apply lubricant to the pressure relief valve O-ring. See general note 1.
2. Install the new O-ring.
3. Install the pressure relief valve into the intermediate pressure port.

Replacing the Intermediate Pressure Hose
1. Apply lubricant to the intermediate pressure hose O-ring. See general note 1.
2. Install the new O-ring.
3. Install the intermediate pressure hose into the intermediate pressure port.

Replacing the High Pressure Gauge Hose
1. Install the new back-up ring.
2. Apply lubricant to the high pressure hose O-ring. See general note 1.
3. Install the new O-ring.
4. Install the high pressure gauge hose into the high pressure gauge port.

Note: The high pressure gauge port is not labeled.

Replacing the High Pressure Audi-Larm Hose
1. Install the new back-up ring.
2. Apply lubricant to the high pressure hose O-ring. See general note 1.
3. Install the new O-ring.
4. Install the high pressure Audi-Larm hose into the high pressure supply port. The high pressure supply port is labeled “HP IN”.

Replacing the Regulator onto the Mounting Bracket
1. Install both U-clips into regulator to retain the high pressure and intermediate pressure fittings.
2. Position the regulator onto the mounting bracket. Align the regulator mounting holes with the mounting bracket holes.
3. Apply Loctite 222 to each screw.

Note: New screws include a pre-applied thread-locker and do not require Loctite 222 application.

4. Thread the screws through the mounting bracket into regulator. Torque screws to 35-45 in.lbs.
5. Rotate and pull on each hose fitting and pressure relief valve to verify the components are properly installed and retained.

Replacing the Mounting Bracket – AirFrame Backplate
1. Install the plastic slider into the carrier rail. Orient the slider with the arrow pointing up (away from carrier).
2. Position the mounting bracket against the carrier rail.
3. Apply Loctite 222 to each bolt.
4. Thread the bolts through the lock washers, flat washers, and slider into the mounting bracket.
5. Tighten the bolts to 25-35 in.lbs. Ensure the mounting bracket slides freely following installation.
6. Position the regulator onto the mounting bracket. Ensure that both U-clips are installed. Align the regulator mounting holes with the mounting bracket holes.
7. Apply Loctite 222 to each screw.
8. Thread the screws through the mounting bracket into the regulator. Torque screws to 35-45 in.lbs.
9. Rotate and pull on each hose fitting and pressure relief valve to verify the components are properly installed and retained.

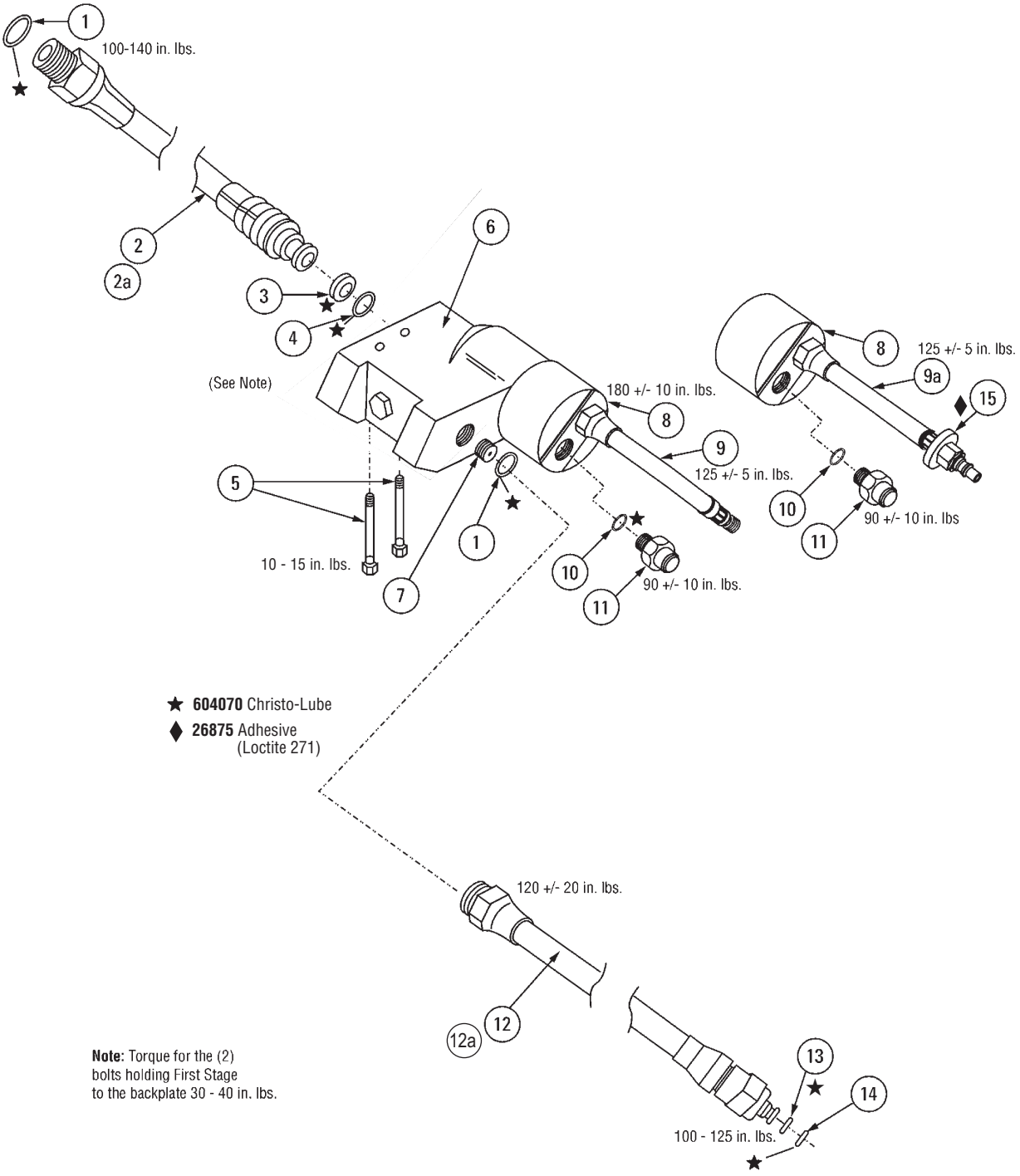
Replacing the Mounting Bracket – Vulcan/Black Rhino Backplates
1. Position the mounting bracket against the carrier rail.
2. Apply Loctite 222 to each bolt.
3. Thread the bolts through the lock washers, flat washers, and backplate into the mounting bracket.
4. Tighten the bolts to 25-35 in.lbs.
5. Position the regulator onto the mounting bracket. Ensure that both U-clips are installed. Align the regulator mounting holes with the mounting bracket holes.
6. Apply Loctite 222 to each screw.
7. Thread the screws through the mounting bracket into the regulator. Torque screws to 35-45 in.lbs.
8. Rotate and pull on each hose fitting and pressure relief valve to verify the components are properly installed and retained.

FIREHAWK® FIRST STAGE REGULATOR

FIREHAWK FIRST STAGE REGULATOR COMPONENTS		
Item	**Part No.**	**Description**
1	**638166**	O-Ring
2	**804382**	High Pressure Hose — 100 - 140 in. lbs.
2a	**10037954**	Hose (Black Rhino) — 100 - 140 in. lbs.
3	**635278**	Backup Ring
4	**63198**	O-Ring
5	**495929**	Pin (2 Req'd) — 10 - 15 in. lbs.
6	**488750**	Regulator Body
7	**495762**	Orifice Screw (if required)
7a	**10026668**	Rapid Vent Orifice (if required)
8	**805051**	Cap — 180 +/- 10 in. lbs.
9	**10020781**	Threaded Hose — 125 +/- 5 in. lbs.
9a	**10020779**	Quick-Connect Hose — 125 +/- 5 in. lbs.
10	**635037**	O-Ring
11	**481999**	Relief Valve — 90 +/- 10 in. lbs.
12	**804381**	Hose Assembly, High Pressure MMR, 20"
12a	**10004650**	Hose Assembly, High Pressure MMR, 26"
13	**635277**	Backup Ring
14	**638167**	O-Ring
15	**10047742**	Rubber Washer QC Hose (only)

Firehawk First Stage Regulator Assembly

part number 10026233 (with Threaded Hose 10020781 / Relief Valve 481999)
part number 10026234 (with Quick-Connect Hose 10020779 / Relief Valve 481999)



First Stage Regulator Assemblies

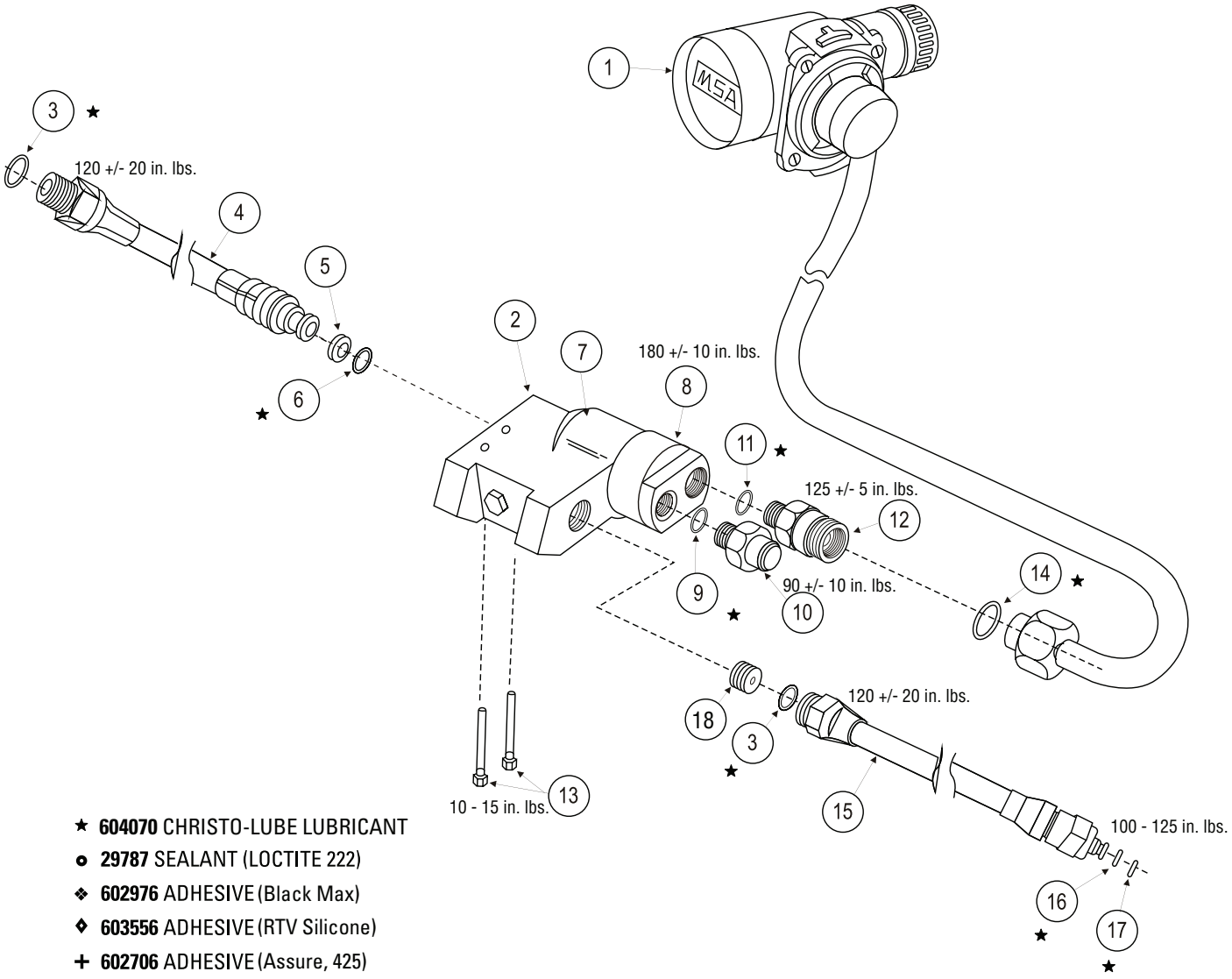
(Less High Pressure Hose, Pressure Gauge & Hose Assembly and Second Stage Regulator)

FIRST STAGE REGULATOR

CURRENT FIRST STAGE REGULATOR COMPONENTS		
Item	**Part No.**	**Description**
1	**812857**	MMR Assembly (Quick-Connect , 1/4 Turn)
2	**488885**	First Stage Regulator Assembly
3	**638166**	O-Ring (2 Req'd)
4	**804382**	High Pressure Hose — 120 +/- 20 in. lbs.
5	**635278**	Backup Ring
6	**63198**	O-Ring
7	**488750**	Regulator Body
8	**805051**	Regulator Cap — 180 +/- 10 in. lbs.
9	**635037**	O-Ring
10	**481999**	Relief Valve — 90 +/- 10 in. lbs.
11	**633776**	O-Ring (1/4 Turn only)
12	**805052**	Low Pressure Hose Adapter (1/4 Turn only) — 125 +/- 5 in. lbs.
13	**495929**	Pin (2 Req'd) — 10 - 15 in. lbs.
14	**63198**	O-Ring
15	**10004650**	Hose Assembly — 120 +/- 20 in. lbs.
16	**635277**	Backup Ring
17	**638167**	O-Ring
18	**495762**	Orifice Screw from Prior Drawing (if required)

MMR Regulator Assembly

NFPA - 1981-1997 Edition Compliant



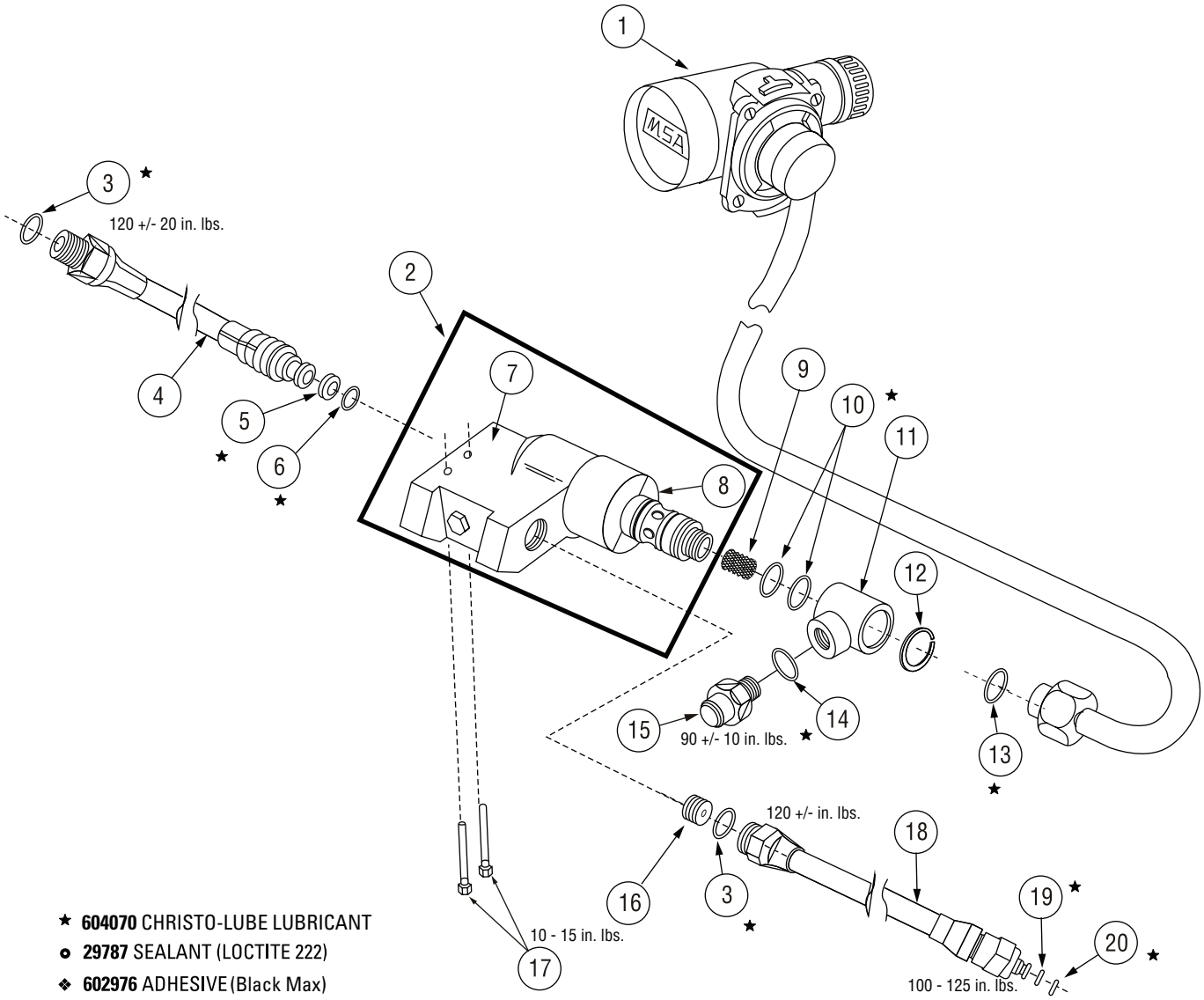
★ **604070** CHRISTO-LUBE LUBRICANT
⚬ **29787** SEALANT (LOCTITE 222)
❖ **602976** ADHESIVE (Black Max)
♦ **603556** ADHESIVE (RTV Silicone)
+ **602706** ADHESIVE (Assure, 425)
⌘ **494992** LUBRICANT (LIQUID SILICONE)
♦ **26875** ADHESIVE (271 LOCTITE)

FIRST STAGE REGULATOR

PRIOR FIRST STAGE REGULATOR COMPONENTS		
Item	**Part No.**	**Description**
1	**812857**	MMR Assembly (Quick-Connect , 1/4 Turn)
2	**488885**	First Stage Regulator Assembly
3	**638166**	O-Ring (2 Req'd)
4	**804382**	High Pressure Hose — 120 +/- 20 in. lbs.
5	**635278**	Backup Ring
6	**63198**	O-Ring
7	**488750**	Regulator Body
8	**--------**	Cap
9	**495928**	Screen
10	**635036**	O-Ring (2 Req'd)
11	**488819**	Relief Valve Swivel
12	**635035**	Retaining Ring
13	**63198**	O-Ring
14	**635037**	O-Ring
15	**481999**	Relief Valve — 90 +/- 10 in. lbs.
16	**495762**	Orifice Screw (if required)
17	**495929**	Pin (2 Req'd) — 10 - 15 in. lbs.
18	**10004650**	Hose Assembly — 120 +/- 20 in. lbs.
19	**635277**	Backup Ring
20	**638167**	O-Ring

MMR Regulator Assembly

NFPA - 1981-1997 Edition Compliant



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+ **602706** ADHESIVE (Assure, 425)
⌘ **494992** LUBRICANT (LIQUID SILICONE)
♦ **26875** ADHESIVE (271 LOCTITE)

DISASSEMBLY AND REPAIR

HIGH PRESSURE HOSE AND HARNESS GAUGE FOR 1/4 TURN AND FIREHAWK

All repair procedures assume that the regulator is disassembled from the apparatus and facepiece. To do this:

- Be sure the cylinder valve is completely closed.
- Disconnect the regulator from the facepiece.
- Be sure nothing is blocking the regulator outlet. Crack the bypass valve to release any trapped air.
- If desired, disconnect the intermediate-pressure hose from the first stage regulator at the hose fitting using an 11/16" open-end wrench. Refer to INTRODUCTION Tab for General Notes and required tools. FIRST STAGE HOSE ASSEMBLY section for hose repairs in this Binder.

Note: Refer to the appropriate illustrated parts lists for the apparatus being repaired.

Refer to the appropriate illustrated Parts Lists for the apparatus being repaired. All repair procedures require that the regulator and Audi-Larm audible alarm are disassembled from the apparatus cylinder carrier.

⚠ CAUTION

Wear eye protection throughout maintenance procedures to avoid eye injury.

- Be sure that the cylinder valve is completely closed.
- Be sure that nothing blocks the MMR outlet. Allow any trapped air to bleed from the apparatus by cracking the bypass valve.

⚠ CAUTION

Do not disconnect the Audi-Larm coupling nut when pressure is shown on the harness gauge. Always be sure that you have released all pressure from the regulator. Removing the coupling nut with the regulator pressurized may result in serious personal injury, death, or damage to equipment.

- Unscrew the alarm coupling nut from the cylinder valve.
- Use a 7/16" wrench to remove the two bolts and washers holding the first stage regulator to the backplate.

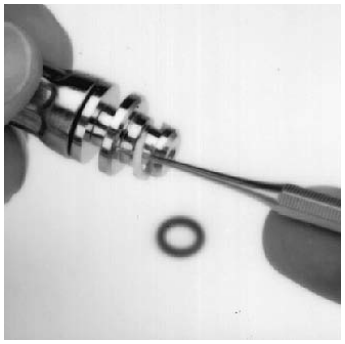
Leak-Test after each repair (see the LEAK-TEST Tab in this Binder).

1. Removing the High Pressure Hose

a. Using a 1/4" socket, remove the two screw-pins from the regulator body.

b. Pull firmly on the high pressure hose to remove it from the regulator body.

c. Remove the old O-ring and backup ring. Be careful not to damage the O-ring seal area.



2. Removing the High Pressure Hose from URC Assembly

a. Clamp the Alarm body in a vise.

⚠ CAUTION

Be careful that you do not damage the bell or the housing with the vise. Use shields on the vise jaws.

b. Place a 5/8" wrench on the hex flats of the hose fitting. Unthread in a counter-clockwise direction to remove the high pressure hose.

c. Using the O-ring removal tool, remove the O-ring from the hose fitting. Be careful. Do not damage the O-ring seal area.

3. Installing the High Pressure Hose on the URC Assembly

a. Use transparent tape to cover the hose fitting threads. Install a new O-ring on the high pressure hose fitting. Lubricate the O-ring (see General Note 1).

b. Clamp the Alarm body in a vise. See CAUTION above. Remove tape.
c. Hand thread the hose fitting clockwise into the Alarm outlet.
d. Tighten with a crow's foot wrench to a torque of 100-140 inch-pounds.

4. Installing the High Pressure Hose on the First Stage Regulator

a. Install a new backup ring and a new O-ring on the hose fitting. (Refer to General Note 1).
b. Insert the high pressure hose into the regulator body.
c. Insert a new screw pin into each of the two holes in the regulator body.
d. Use a socket to tighten the pins to a torque of 10-15 inch-pounds.

This completes the high pressure hose replacement procedure for 1/4 Turn and Firehawk.

5. Second Stage Intermediate Pressure Hose 1/4 Turn.

Removing the Second Stage Intermediate Pressure Hose from the First Stage Regulator Hose.

a. Disconnect the intermediate hose from the first stage regulator. Use an open-end wrench.
b. Turn the hex nut counter-clockwise. When the nut is loose, pull firmly on the hose to break the O-ring connection.
c. Unthread the hose from the shoulder strap.

Installing the Second Stage Intermediate Pressure Hose on the First Stage Regulator Hose.

a. Thread the hose through the left shoulder strap.
b. Remove the old O-ring. Be careful not to damage the metal seat area. Install a new O-ring. (Refer to General Notes).
c. Reconnect the intermediate hose if no further repair to the regulator is required. Tighten with a wrench.

6. Second Stage Intermediate Pressure Hose Firehawk.

Removing the Second Stage Threaded Intermediate Pressure Hose from the First Stage Regulator Hose.

a. Disconnect the second stage threaded intermediate hose from the first stage regulator intermediate hose. Use an open-end wrench to unthread the hose assemblies.
b. Turn the hex nut counter-clockwise to loosen. Disconnected the second stage hose from the first stage hose and break the connection.
c. Unthread the hose from the shoulder strap.

Removing the Second Stage Quick-Connect Intermediate Pressure Hose from the First Stage Regulator Hose.

a. Disconnect the second stage Quick-Connect intermediate hose from the first stage regulator intermediate hose. Twist the second stage male Quick-Connect to disconnect the hose assemblies.
b. Unthread the hose from the shoulder strap.

Installing the Second Stage Threaded Intermediate Pressure Hose on the First Stage Regulator Hose.

a. Thread the hose through the shoulder strap.
b. Remove the old O-ring. Be careful not to damage the metal seat area. Install a new O-ring. (Refer to General Notes).
c. Reconnect the intermediate hose if no further repair to the regulator is required. Torque to 125+/- 5 in. lbs. with a torque wrench.

Installing the Second Stage Quick-Connect Intermediate Pressure Hose on the First Stage Regulator Hose.

a. Twist to reconnect the second stage and the first stage intermediate hoses.

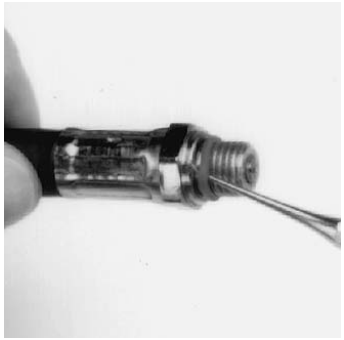
This completes the intermediate pressure hose replacement procedure for 1/4 Turn and Firehawk

7. Removing the Redundant Alarm, Harness Gauge Hose, and ICM® Unit from the First Stage Regulator for 1/4 Turn and Firehawk.

a. Use a wrench to remove the two bolts, and washers that hold the first stage regulator to the backplate.

b. Use a wrench to unscrew the hose from the regulator body.

c. Remove the O-ring (P/N 638166). Be careful not to damage the O-ring seat area.



Note: Remove Orifice if using Spool (P/N 10003605). The orifice restricts flow rate.

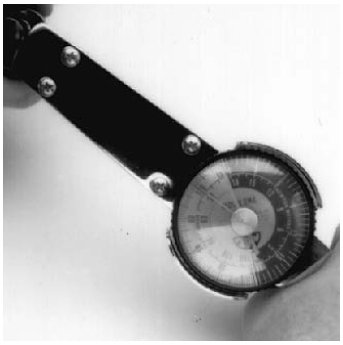
8. Removing Orifice

a. Use a small screwdriver and unscrew the Orifice.

9. Installing the Harness Gauge Hose on the First Stage Regulator.

a. Insert the hose through the right shoulder strap.
b. Install a new O-ring and backup ring. (Refer to General Note 1).

c. Thread the redundant alarm and harness gauge hose into the regulator body. Using a crow's foot wrench, tighten the gauge to a torque of 100-140 inch-pounds.

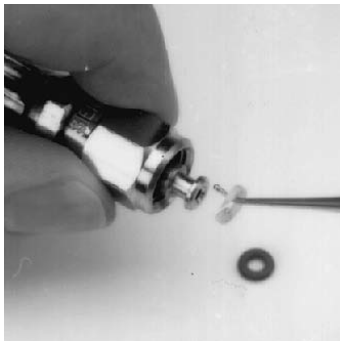


d. Using 7/16" bolts and washers, re-install the first stage regulator on the backplate. Tighten the bolts to a torque of 30-40 inch-pounds.

10. Removing the Redundant Alarm from the Hose

a. Pull the gauge guard off the back of the gauge and slide it down the hose until it clears the jam nut and hose swivel.
b. Using a open-end wrench on the jam nut and a open-end wrench on the gauge hex, loosen the jam nut on the gauge.

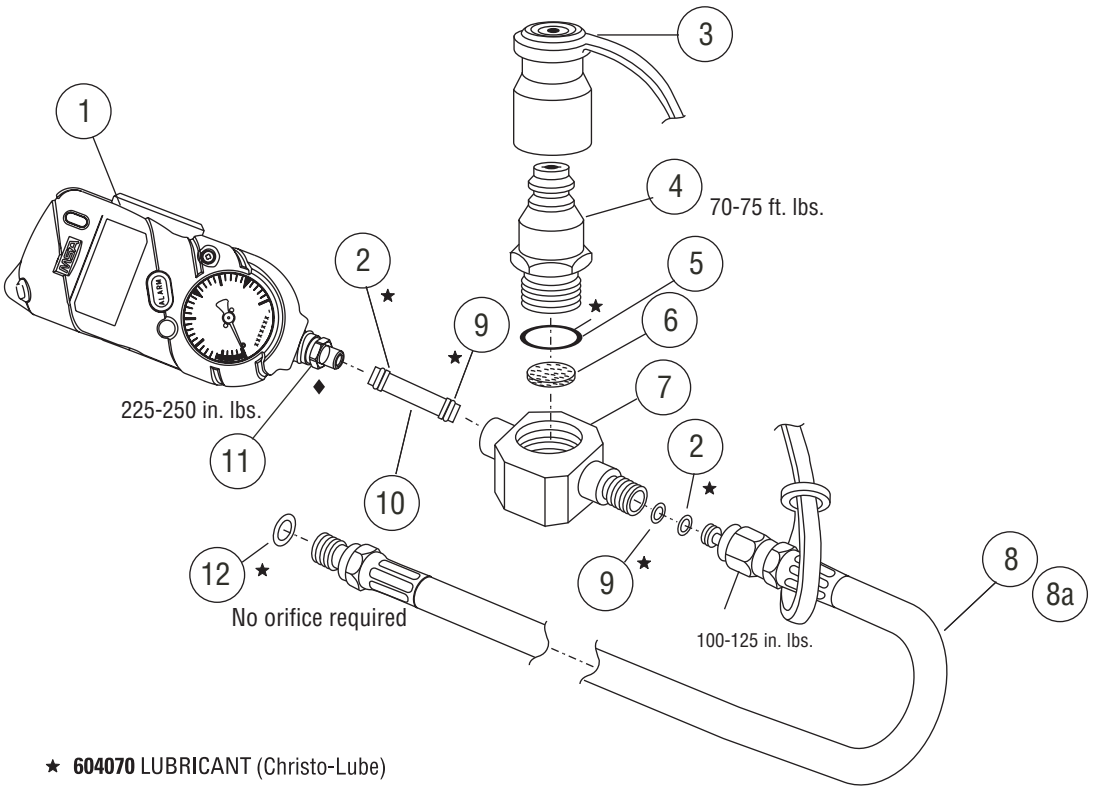
c. Remove and replace the O-ring and backup ring.



ICM UNIT

ICM QUICK-FILL UNIT		
Item	**Part No.**	**Description**
1	**10022315**	ICM 2000
2	**635277**	Back-up Ring (2 Req'd)
3	**801164**	Dust Cover
4	**485070**	Quick-Fill Coupling — 70 - 75 ft. lbs.
5	**635068**	O-Ring
6	**485574**	Filter
7	**10020475**	Quick-Fill Adapter
8	**804381**	Hose Assembly, High Pressure MMR, 20"
8a	**10004650**	Hose Assembly, High Pressure MMR, 26"
9	**638167**	O-Ring
10	**10003605**	Spool
11	**10003606**	Jam Nut — 225 - 250 in. lbs.
12	**638166**	O-Ring
LUBRICANTS AND ADHESIVES		
★	**604070**	Lubricant (Christo-Lube)
♦	**26875**	Adhesive (Loctite 271)

ICM UNIT



★ **604070** LUBRICANT (Christo-Lube)

♦ **26875** ADHESIVE (LOCTITE 271)

ICM UNIT

REMOVING THE GAUGE HOSE FROM THE CARRIER AND HARNESS ASSEMBLY

1. Remove the first stage regulator from the carrier. (Refer to the First Stage Regulator section of this binder.)
2. Secure the first stage regulator body in a vise. Use protective sleeves to prevent damage to the body.
3. Remove the gauge hose from the regulator body. (Refer to the First Stage Regulator section of this binder.)
4. Remove the O-ring from the threaded end of the hose.
5. Unthread the hose from the shoulder strap.

REMOVING ICM UNIT FROM THE QUICK-FILL SYSTEM BLOCK

1. Using a wrench, hold the Quick-Fill System Block or place Quick-Fill System Block in a vise using protective sleeves to keep from damaging the block.
2. Using a wrench, loosen the jam nut by turning counter-clockwise.
3. Unthread the ICM Unit from Quick-Fill System Block.
4. Remove and discard the jam nut.

⚠ WARNING

Dispose of the jam nut immediately. Do not reuse the jam nut. Failure to follow this warning can result in serious personal injury or death.

CLEANING

1. Apply alcohol to a Q-Tip applicator.
   a. Wipe threads on ICM Unit and wipe jam nut (Dull Surface Finish).
   b. Wipe threads of ICM Unit port of Quick-Fill System Block.
2. Let alcohol dry for 15 seconds.

INSPECTION

This gauge hose with swivel nut inspection must be performed is part of the After Each Use and Monthly Component Inspection and Functional Checks.

Inspection must consist of verification of visual and a go /no go Gap Gauge Test, ensuring that the hose nut swivels freely when apparatus is not pressurized.

- A visual inspection must be conducted as part of the After Each Use and Monthly Component Inspection and Functional Checks to ensure the hose nut swivels freely when the apparatus is not pressurized.
- If the hose nut does not swivel freely, the hose assembly must be cleaned first and then inspected with the Gap Gauge Tool (P/N 10053229).

Note: If hose swivel does not move freely when pressurized, it must be cleaned by a Certified Technician using the following procedures.

Note: There is a gap between the swivel nut base and ferrule nut shoulder of the hose.

SPOOL

Note: If the apparatus is equipped with the Quick-Fill System and the ICM Unit, it will have the spool included. Make sure spool is in the ICM Unit.

REMOVING THE QUICK-FILL SYSTEM BLOCK FROM THE GAUGE HOSE

1. Using a wrench, hold the Quick-Fill System Block or place Quick-Fill System Block in a vise using protective sleeves to keep from damaging the block.
2. Using another wrench, loosen the gauge hose swivel from the Quick-Fill System Block by turning counter-clockwise.
3. Remove the O-ring and back-up ring from the end of the gauge hose.
4. Discard the O-ring and back-up ring.

CLEANING

1. Apply alcohol to a Q-tip applicator and wipe the swivel nut and ferrule nut insert.
2. Let alcohol dry for 15 seconds.
3. Perform the Gap Gauge Test after cleaning to ensure the gap has not changed.

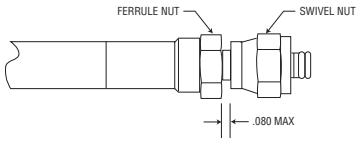
GAP GAUGE TEST

1. Perform a visual inspection of the hose swivel nut ensuring that it rotates freely.
2. Attempt to slide the go/no-go gap gauge between the ferrule nut and the swivel nut.

3. The gap gauge must not slide in between the ferrule and the swivel nut.

ICM UNIT

⚠ WARNING



If the gap gauge will slide between the ferrule nut and swivel nut, the gap is greater than 0.080 inch. This is an indicator that the ferrule nut is unthreading from the hose and the hose must be replaced by an MSA Certified Air Mask Technician. Failure to follow this warning can result in serious personal injury or death.

REMOVING THE COUPLING FROM THE QUICK-FILL SYSTEM BLOCK

1. Place the Quick-Fill System Block in a vise. Use protective sleeves to keep from damaging the block.
2. Using a 1" deepwell socket, remove the coupling by turning counter-clockwise.

INSTALLING THE COUPLING IN THE QUICK-FILL SYSTEM BLOCK

1. Place the Quick-Fill System Block in a vise. Use protective sleeves to keep from damaging the block.
2. Wrap the coupling threads with transparent tape to prevent damage to the O-ring. Apply a thin film of Christo-Lube lubricant to the coupling O-ring (P/N 635068). Slide the new O-ring over the coupling threads. Remove the tape.

3. Thread the coupling into the block and tighten to 70–75 ft.lbs. using a 1" deepwell socket.

INSTALLING THE QUICK-FILL SYSTEM BLOCK ON THE GAUGE LINE

1. Apply a thin film of Christo-Lube lubricant to a **new** back-up ring (P/N 635277). Place the back-up ring in the groove on the end of the hose fitting.
2. Apply a thin film of Christo-Lube lubricant to a **new** O-ring (P/N 638167). Place the O-ring in the groove on the end of the hose fitting.

3. Insert the hose fitting into the Quick-Fill System Block. Torque the adapter to 100-125 in.lbs.

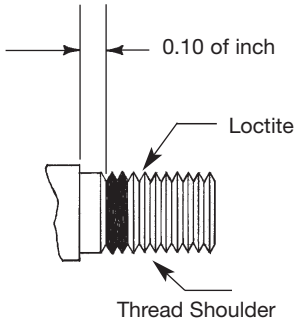
INSTALLING THE ICM UNIT ON THE QUICK-FILL SYSTEM BLOCK

Note: If the apparatus is equipped with the Quick-Fill System and ICM Unit, the ICM Unit will have the spool included. No orifice is required in Hose Assembly.

1. Apply a thin film of Christo-Lube lubricant to two back-up rings (P/N 635277). Place one back-up ring in the groove on each end of the spool.
2. Apply a thin film of Christo-Lube lubricant to two O-rings (P/N 638167). Place one O-ring in the groove on each end of the spool.
3. Insert the spool into the ICM Unit. The spool's larger diameter hole must face **toward** the ICM Unit.

Note: Prior to applying Loctite ensure the threads on the ICM Unit are wiped clean. Refer to Cleaning.

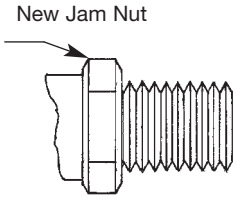
4. Remove old jam nut from the ICM Unit. Apply Loctite 271 on two threads approximately one tenth (0.10) of an inch from the thread shoulder of ICM Unit as per view shown.



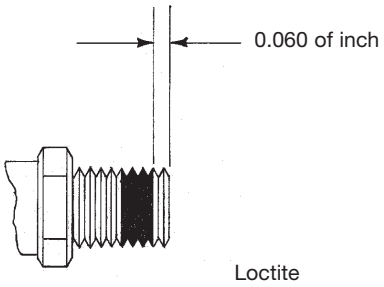
ICM UNIT

Note: Do not reuse old jam nut.

5. Thread jam nut (supplied with kit) against the threaded shoulder of ICM Unit as per view shown.



6. Apply Loctite 271 to three threads approximately one sixteenth (0.060) of an inch from the end of the ICM Unit as per view shown.



7. Thread the ICM Unit into the Quick-Fill System Block until it stops.

⚠ CAUTION

Do not tighten ICM Unit by hand. Use wrenches.

8. The gauge face of the ICM Unit must be facing out and away from the shoulder pad with the Quick-Fill System coupling pointing toward the left shoulder strap. To obtain this alignment, unthread the ICM Unit from the Quick-Fill System Block not more than one full turn. Hold the ICM Unit to prevent turning. Hand-tighten the jam nut against the Quick-Fill System Block and torque to 225–250in.lbs. See view below for suggested torque wrench orientation.

⚠ WARNING

Do not unthread the ICM Unit more than one full turn. Further unthreading can cause the gauge-adapter connection to leak, resulting in serious personal injury or death.

9. Make sure the alarm boot on the ICM Unit is in place around the gauge.
10. Check that the dust cover is installed on the gauge hose above the Quick-Fill System Block.
11. The hose swivel nut must swivel freely when tightened.
12. Perform the leak test. (Refer to Leak-Testing section of this binder)

For More Information, call 1-800-MSA-2222 or Visit Our Website at www.MSAnet.com

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