

Gauge and ICM[®], ICM Tx, ICM TxR, and HUD Transmitter: AirHawk II[®] Air Mask

MAINTENANCE AND REPAIR

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**MINE SAFETY APPLIANCES COMPANY
PITTSBURGH, PENNSYLVANIA, U.S.A. 15230**

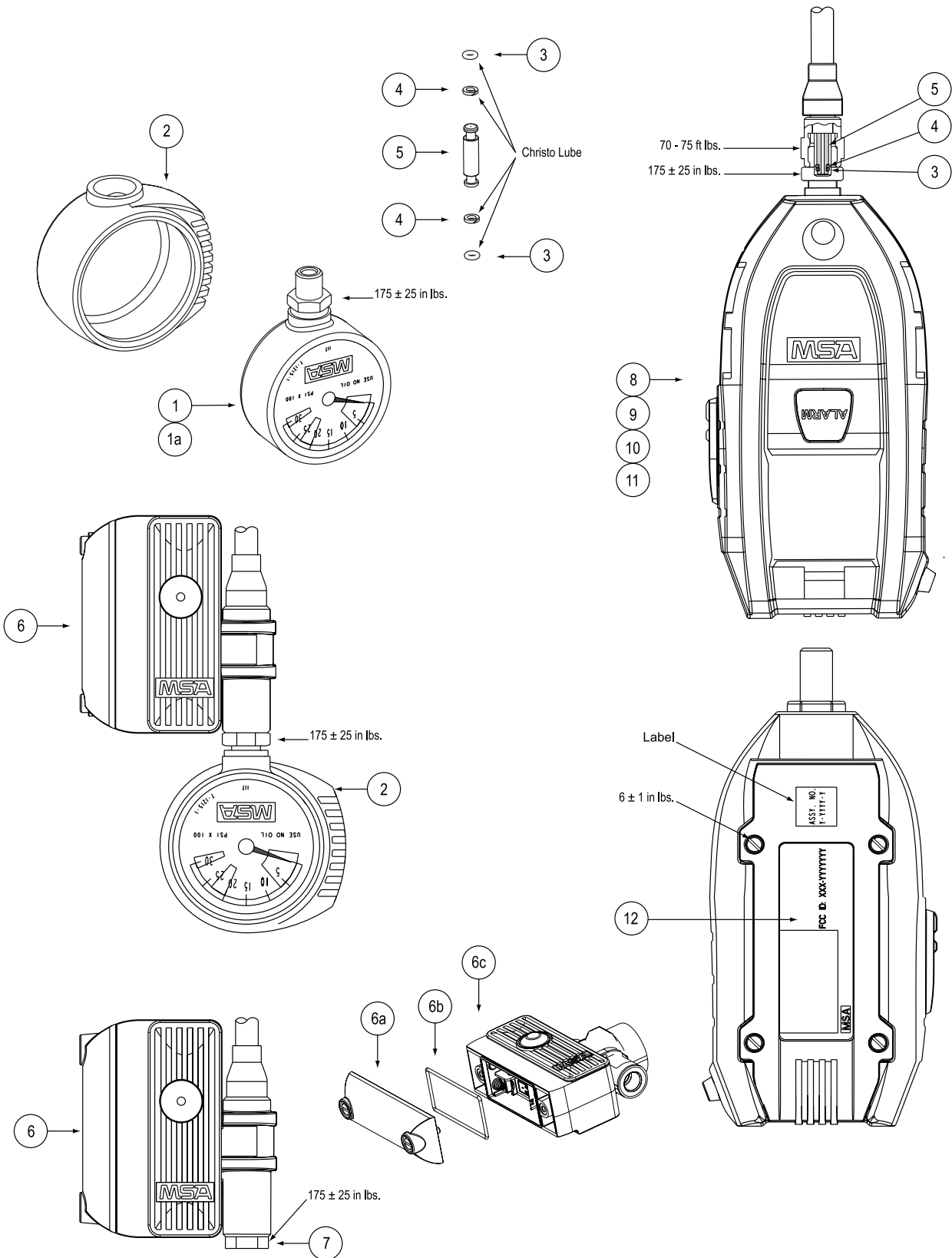
GAUGE AND ICM, ICM Tx, ICM TxR, AND HUD TRANSMITTER

Standard Gauge		
Item	P/N	Description
1	10003611	Gauge (2216 psig)
1a	10003610	Gauge (4500 psig)
2	10011302	Guard
3	638167	O-ring (2 required)
4	635277	Back-up Ring (2 required)
5	10003605	Gauge Air Spool/Orifice
HUD Transmitter		
6	10036997	Transmitter Assembly (2216 psig)
	10036998	Transmitter Assembly - Quick-Fill (2216 psig)**
	10036995	Transmitter Assembly (4500 psig)
	10036996	Transmitter Assembly - Quick-Fill (4500 psig)**
6a	10037385	Battery Cover w/ Screws
6b	10035665	Seal Ring, Battery Cover
7	10037790	Plug
	632040	AA Battery (2 required)
ICM TX		
8	10067165	ICM Tx (2216 psig)*
	10067168	ICM Tx (4500 psig)*
3	638167	O-ring (2 required)
4	635277	Back-up Ring (2 required)
5	10003605	Gauge Air Spool/Orifice
12	10068303	Battery Cover w/ Screws
	632466	AA Battery (4 required)
ICM TX w/ Heat Sensor		
9	10067164	ICM Tx w/ Heat Sensor (2216 psig)*
	10067167	ICM Tx w/ Heat Sensor (4500 psig)*
3	638167	O-ring (2 required)
4	635277	Back-up Ring (2 required)
5	10003605	Gauge Air Spool/Orifice
12	10068303	Battery Cover w/ Screws
	632466	AA Battery (4 required)

ICM TxR		
Item	P/N	Description
10	10063248	ICM TxR (2216 psig)*
	10063276	ICM TxR (4500 psig)*
3	638167	O-ring (2 required)
4	635277	Back-up Ring (2 required)
5	10003605	Gauge Air Spool/Orifice
12	10078561	Battery Cover w/ Screws
	632466	AA Battery (4 required)
ICM TxR w/ Heat Sensor		
11	10063247	ICM TxR w/ Heat Sensor (2216 psig)*
	10063275	ICM TxR w/ Heat Sensor (4500 psig)*
3	638167	O-ring (2 required)
4	635277	Back-up Ring (2 required)**
5	10003605	Gauge Air Spool/Orifice
12	10078561	Battery Cover w/ Screws
	632466	AA Battery (4 required)
Lubricants and Adhesives		
	26875	Loctite 271
	604070	Christo-Lube Lubricant

*Includes O-ring and Back-up Ring
 ** Quick-Fill System sold separately

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DISASSEMBLY

Removing the Standard Gauge

1. Use an 11/16" wrench on the jam nut and a 9/16" wrench to unscrew the jam nut.



2. Unscrew the gauge.
3. Use the o-ring removal tool to remove the o-ring and backup ring from the air spool orifice. Discard the o-ring and back-up ring.



Note: Be careful not to scratch the o-ring groove.

Removing the Standard Gauge Guard

1. Remove the jam nut and old guard.



Removing the HUD Transmitter

1. Use an 11/16" and unscrew the HUD transmitter.



Removing the Quick-Fill System (Threaded Connection)

1. Secure the Quick-Fill Adapter in a vise.



Note: Use protective sleeves on the jaws of the vise.

2. Use an 11/16" wrench to unscrew the gauge from the Quick-Fill Adapter.
3. Use a 9/16" wrench to unscrew the Quick-Fill Adapter from the hose.

Removing the ICM, ICM Tx, and ICM TxR

1. Use an 11/16" wrench on the jam nut and a 9/16" wrench to loosen the jam nut.



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- Unscrew the ICM, ICM Tx, or ICM TxR.



- Remove the jam nut and discard.

- Use the o-ring removal tool. Remove and discard the o-ring and backup ring. Be careful not to scratch the o-ring groove.



REASSEMBLY

Installing the Standard Gauge

Gauge (2216 psig)	10003611
Gauge (4500 psig)	10003610
Guard	10011302
O-Ring	638167
Backup Ring	635277
Christo-Lube	604070

- Install the gauge air spool/orifice.
 - Install new o-rings and backup rings onto the gauge air spool/orifice.
 - Apply a small amount of Christo Lube lubricant to the o-ring and back up ring.



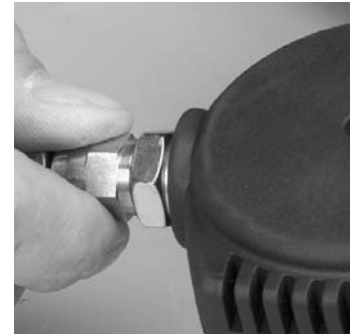
- Install a jam nut and insert the gauge air spool/orifice into the standard gauge.



- Screw the gauge fully onto hose assemblies.



- Back the gauge off about a quarter (1/4) turn.



- Use the inch pound torque wrench with 11/16" crowfoot and 9/16" wrench to tighten the jam nut to 175 ± 25 in lbs.



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Installing the Standard Gauge: Quick-Fill System

Gauge (2216 psig)	10003611
Gauge (4500 psig)	10003610
Guard	10011302
O-Ring	638167
Backup Ring	635277
Christo-Lube	604070

1. Secure the Quick-Fill Adapter in a vise.

Note: Use protective sleeves on the jaws of the vise.

2. Screw the gauge into the Quick-Fill Adapter.



3. If necessary, back off for proper orientation.

Note: Do not back off more than one turn.

4. Use an 11/16" crowfoot and inch pound torque wrench to tighten the jam nut to 175 ± 25 in lbs.



5. Connect the hose to the Quick-Fill Adapter.
 - a. Apply a small amount of Christo-Lube lubricant to the o-ring and back-up ring.
 - b. Install the o-ring and back-up ring.



Installing the Standard Gauge and HUD Transmitter

Gauge (2216 psig)	10003611
Gauge (4500 psig)	10003610
Guard	10011302
O-Ring	638167
Backup Ring	635277
Transmitter Assembly (2216 psig)	10036997
Transmitter Assembly (4500 psig)	10036995
Christo-Lube	604070

1. Screw the gauge into the HUD Transmitter.



2. If necessary, back off for proper orientation.

Note: Do not back off more than one turn.

3. Use an 11/16" crowfoot and inch pound torque wrench to tighten the jam nut to 175 ± 25 in lbs.



Installing the HUD Transmitter

Transmitter Assembly (2216 psig)	10036997
Transmitter Assembly (4500 psig)	10036995
Christo-Lube	604070

1. Install the HUD transmitter to the hose.
 - a. Apply a small amount of Christo-Lube lubricant to the o-ring and back up ring.
 - b. Install the o-ring and back-up ring.



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- Use an 9/16" crowfoot and inch pound torque wrench to tighten the nut to 175 ± 25 in lbs.



- Install the plug.



- Use an 9/16" crowfoot and inch pound torque wrench to tighten the plug to 175 ± 25 in lbs.



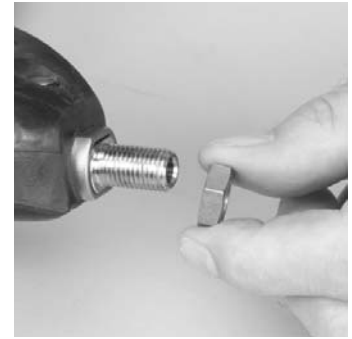
Installing the ICM, ICM Tx, and ICM TxR

ICM Tx (2216 psig)*	10067165
ICM Tx (4500 psig)*	10067168
ICM TxR (2216 psig)*	10063248
ICM TxR (4500 psig)*	10063276
ICM TxR w/Heat Sensor (2216) psig)*	10063247
ICM TxR w/Heat Sensor (4500) psig)*	10063275
O-Ring (2 Req'd)	638167
Backup Ring (2 Req'd)	635277
Gauge Air Spool/Orifice	10003605
Loctite 271	26875

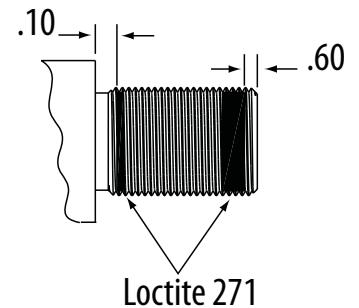
*Includes backup ring 635277 and o-ring 638167

Note: Except for replacing the battery cover the ICM, ICM Tx, and ICM TxR are not field-serviceable and can only be repaired by MSA. Replace non-working ICM units.

- Remove the jam nut.



- Apply a small amount of sealant (P/N 26875) to ICM as shown.



- Screw the jam nut all the way onto the ICM.
- Screw the ICM into the connector.

- If necessary, back off for proper orientation.

Note: Do not back off more than one turn.



- Use an 9/16" crowfoot and inch pound torque wrench to tighten the jam nut to 225-250 in lbs.

Replacing the ICM, ICM Tx, and ICM TxR Battery Cover

- Use a small lot head screwdriver to unscrew the battery cover screws.



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2. Install a new battery cover.
3. Affix the appropriate label to the battery cover. The ICM Tx/TxR part number is on the sidewall of the battery compartment. Use the table below to find the appropriate label. Discard unused labels.

Pressure Rating	ICM Tx/TxR Part Number	Label Part Number
2216psig	10063245	10064954
	10063246	
	10077049	
	10077045	
4500psig	10063273	10064952
	10063274	
	10077048	
	10077044	

4. Ensure that the gasket is clean, undamaged, and properly installed in the groove.



5. Install the battery cover.

6. Use a slot head screwdriver to evenly tighten the screws in an X pattern to 6 in lbs.



Note: Do not over-tighten the screws. Do not use a thread sealant on the screws.

Installing the Standard Gauge Guard



1. Stretch a new guard onto the gauge.

2. Reinstall the gauge. (See **Installing the Standard Gauge** for instructions)