

# **Gauge and ICM<sup>®</sup>, ICM Tx, ICM TxR, and HUD Transmitter: AirHawk II<sup>®</sup> Air Mask**

**MAINTENANCE AND REPAIR**



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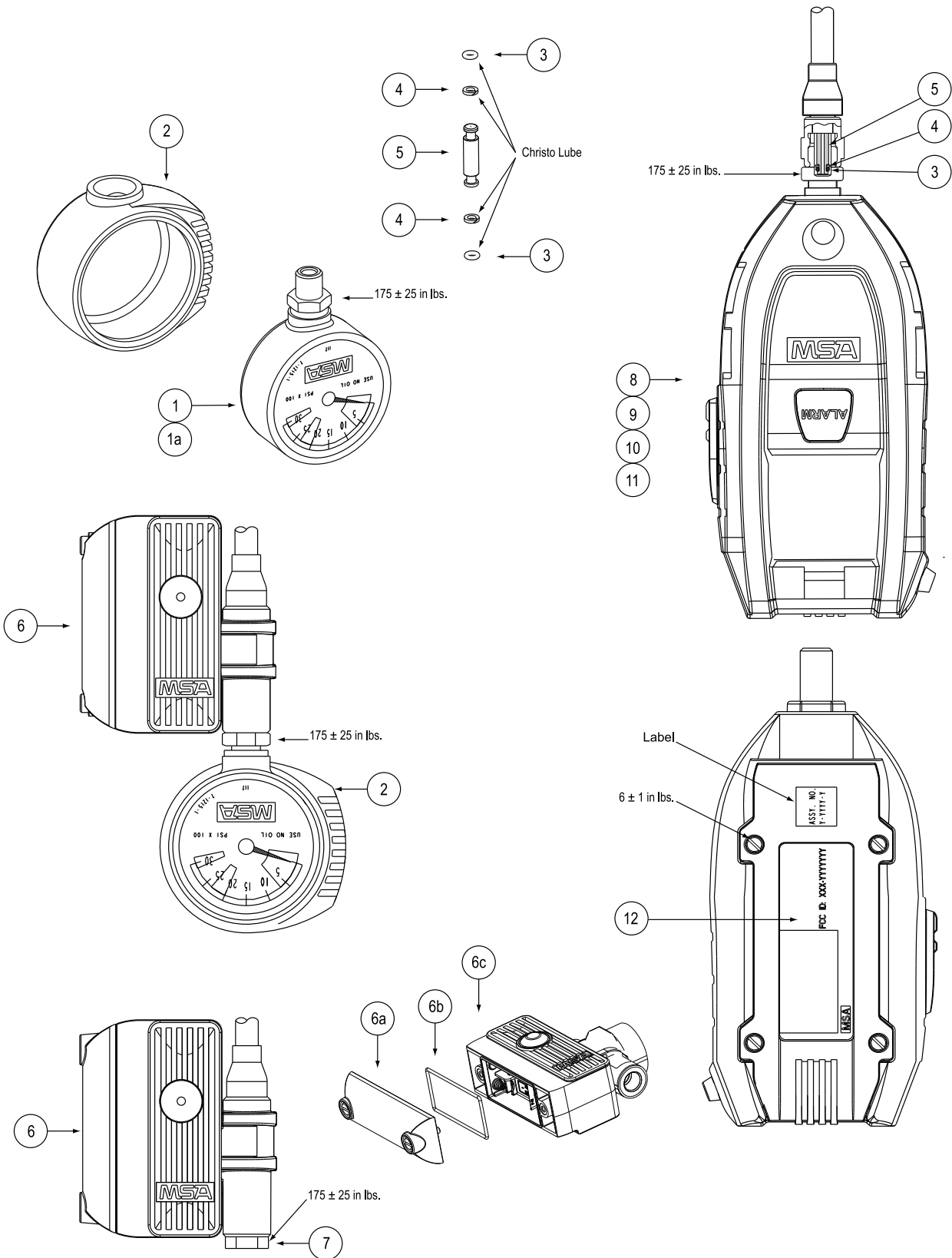
# GAUGE AND ICM, ICM Tx, ICM TxR, AND HUD TRANSMITTER

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

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



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

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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 a 9/16" wrench 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.



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

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



3. Remove the jam nut and discard.

4. 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
Back-up Ring	635277
Christo-Lube	604070

1. Apply a small amount of Christo-Lube lubricant to the o-ring and back-up ring.
2. Install the o-ring and back-up ring onto the high pressure hose.



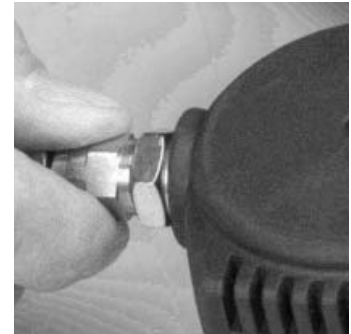
3. Install a jam nut onto the standard gauge.



4. Screw the gauge fully onto the high pressure hose assembly.



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



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



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

## Installing the Standard Gauge Quick-Fill System

Gauge (2216 psig)	10003611
Gauge (4500 psig)	10003610
Guard	10011302
O-Ring	638167
Back-up 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. Install the gauge air spool/orifice.
  - a. Install new o-rings and back-up rings onto the gauge air/spool orifice.
  - b. Apply a small amount of Christo-Lube lubricant to the o-ring and back-up ring.

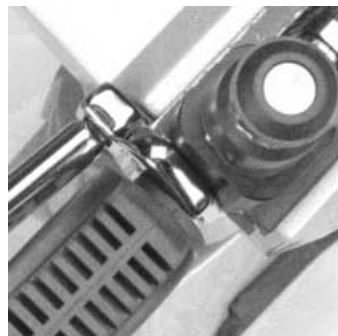
**NOTE:** Orient the larger opening of the air spool toward the gauge.

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



4. If necessary, back off for proper orientation.

**NOTE:** Do not back off more than one turn.



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

6. Apply a small amount of Christo-Lube lubricant to the o-ring and back-up ring.
7. Install the o-ring and back-up ring onto the high pressure hose.



8. Install the high pressure hose to the quick-fill adapter.
  - a. Use a 9/16" crowsfoot wrench.
  - b. Tighten to 100-125 in.lbs.

## Installing the Standard Gauge and HUD Transmitter

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

1. Secure the HUD Transmitter in a vise.

**NOTE:** Use protective sleeves on the jaws of the vise.

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

**NOTE:** Orient the larger opening of the air spool toward the gauge.

3. Screw the gauge into the HUD Transmitter.

4. If necessary, back off for proper orientation.

**NOTE:** Do not back off more than one turn.



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

- 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

- Secure the HUD Transmitter in a vise.

**NOTE:** Use protective sleeves on the jaws of the vise.

- Apply a small amount of Christo-Lube lubricant to the o-ring and back-up ring.
- Install the o-ring and back-up ring onto the high pressure hose.



- Install the high pressure hose to the HUD transmitter.

- Use an 9/16" crowfoot and inch pound torque wrench to tighten the nut to 100 - 125 in.lbs.



- Install the plug.



- Use an 9/16" socket 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 back-up ring 635277 and o-ring 638167

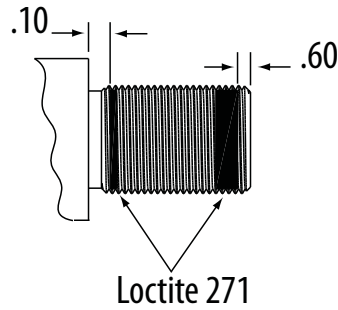
**NOTE:** Except for replacing the battery cover the ICM, ICM Tx, and ICM TxR are not field-serviceable and can only be repaired by MSA. Replace non-working ICM units.

- Remove the jam nut.



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

- 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 a 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.



- Install a new battery cover.
- 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 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	

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



- Install the battery cover.

- 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

- Stretch a new guard onto the gauge.



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