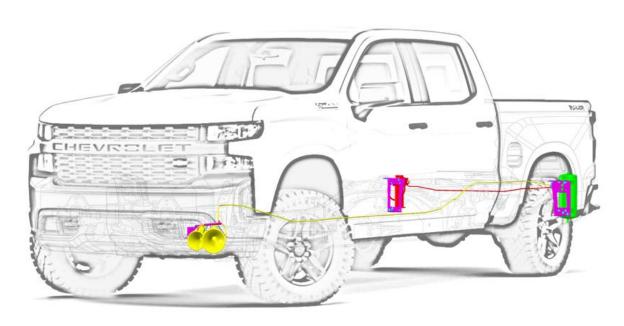


GMTRK4XTREME INSTALLATION MANUAL

REV: BETA (4/4/2020)



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Installation and Operation Manual

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2. How to Use this Manual

2.1. Interactive Manual using Adobe Reader

It is recommended to open this digital PDF using Adobe Reader ® to take advantage of following key features:

- Hyperlinks (blue underlined text) allow access to additional content via internet; click/tap to activate
- Includes <u>Installation Figures</u> and "<u>Figure xx</u>"
- Table of Contents page allows easily navigating this manual; click/tap any section line to go to it
- Bookmarks allow quickly navigating to any section; click/tap
- Zoom IN on pictures by pressing "CTRL and +" at same time on PC, or pinch in on smart devices
- Zoom OUT on pictures by pressing "CTRL and -" at same time on PC, or pinch out on smart devices

To install Adobe Reader ®

On PC, or Mac

visit https://get.adobe.com/reader/otherversions/

On Android, iPhone/iPad, and Windows devices,

visit https://acrobat.adobe.com/us/en/acrobat/mobile-app.html

2.2. Your Kit SKU Number and this Manual

This manual covers installation, testing, and operation of following SKU part numbers

2.2.1. **GMTRK4XTREME** (i.e., 220 Train Horn with On-Board Air System)

NOTE: Illustrations and pictures contained herein may represent only one kit part number. Where critical differences exist between kits (i.e., different parts, orientation, mounting points, etc.), additional text, or necessary graphics are provided to minimize confusion.

Parts list explicitly state kit differences with (BOLD TEXT) inside parenthesis, shown below part number.

2.3. Illustration/Photo Details and Orientation

This manual may use digitally created illustrations, and/or actual photos of example vehicle. These graphics may not include exact items found on your vehicle (i.e., electrical wiring, fuel lines, body panels, etc.). Illustrations typically will be missing details and are for clarity to show critical mounting locations and orientation on vehicle.



Throughout manual yellow arrows with text reading "FRONT", may be present over illustrations and pictures. These arrows specify direction toward front of vehicle and provide clarity to how illustration is viewed.



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3. Safety First

Read manual thoroughly before starting installation of this kit. Verify you have all parts listed and that you clearly understand this installation procedure. Contact Kleinn technical support for any questions.

Installation of this kit requires **moderate mechanical aptitude**; seek professional help if you're not competent using hand tools in tight uncomfortable spaces, and around possibly rusted and sharp vehicle parts.

Before starting, obtain proper tools required to perform installation correctly, adequate lighting, eye protection, hearing protection for operating train horns, and hand protection to guard against sharp edges and metal burrs, which may be present on kit parts and vehicle parts.

Throughout this manual the following words may be used; be aware of their meaning and application.

CAUTION: means damage could occur to vehicle, or kit parts during, or after installation

WARNING: means injury could occur to you or others, including damage to vehicle, or kit parts

DANGER: means serious injury or death could occur to you or others during installation



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4. Application Chart

4.1. Bolt-On Vehicle List

GMTRK4XTREME is a direct bolt-on aftermarket product for GM vehicles listed in below chart; every effort has been made to verify correct fitment on these vehicles in their factory, non-modified conditions.

| MODEL YR | MODEL | DRIVE | ENGINE | BODY | TRIM |
|-----------|----------------|-------|--------|------|-------|
| 2019-2023 | SILVERADO 1500 | ALL | ALL | ALL | ALL** |
| 2019-2023 | SIERRA 1500 | ALL | ALL | ALL | ALL** |

NOTE: All vehicles listed <u>may require drilling holes for ground wires and installing switches</u>, based on preference of installed switch locations and wire grounding points.

It is also recommended to <u>shorten one OE Bolt by cutting/grinding its non threaded end</u> to provide Air Tank clearance – see Mechanical Assembly section.

4.2. **Excluded Vehicles

4.2.1. N/A

4.3. Aftermarket Product Compatibility

- 4.3.1. This kit has been designed to be compatible with following products from leading manufacturers:
 - Most aftermarket suspension systems that directly-bolt on (i.e., utilize OE mounting points)
 - Aftermarket power steps and rocker steps/running boards
 - Aftermarket exhaust systems
- 4.3.2. This kit has NOT been designed to be compatible with any of the following products:
 - Aftermarket front bumpers that do not have same empty space behind Driver's side of OE bumper
 - Aftermarket fender flares that require cutting rear bed sides and OE rock guarding

NOTE: Review this manual in full before unpacking items and verify correct space and mounting locations exist with your aftermarket product(s). To install this kit alongside your other aftermarket product(s), modification to included parts, your vehicle, or aftermarket product(s) may be required.



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5. Installation Overview

5.1. Kit Layout and System Location(s)

GMTRK4XTREME consists of following components, located on vehicle, as follows:

| ITEM | DESCRIPTION | VEHICLE LOCATION | MOUNTING | APPROX. |
|------|-----------------------|-------------------------------------|------------------------|--------------|
| | | | METHOD | INSTALL TIME |
| 1 | 6450RC Air Compressor | Underbody, Passenger Side | Bracket bolts to Bed & | 1-2 Hours |
| | | (behind Rear Tire, inside Bed Side) | Wheel Rock Guard | |
| 2 | 1.5 Gal. Air Tank | Underbody, Driver Side | Bracket bolts to Bed & | 1-2 Hours |
| | | (behind Rear Tire, inside Bed Side) | Wheel Rock Guard | |
| 3 | 220 Series Dual Horn | Front Bumper, Driver Side | Bracket bolts to Frame | 1-2 Hours |
| | with Air Solenoids | (behind Bumper, outside Frame) | above Engine Shield | |

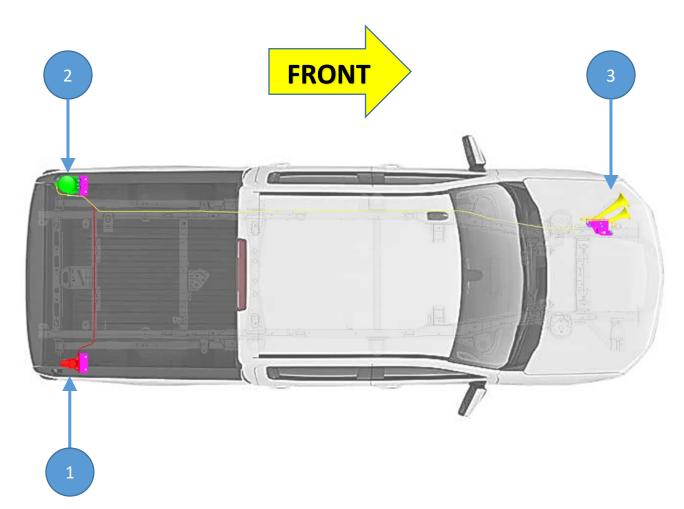


Figure 1 – Above Vehicle View Showing Kit Layout (2019 Silverado 1500 Crew Cab Short Bed Shown)



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Figure 2 – Under Vehicle View of Air Horn Installed – Behind Front Bumper (2020 Silverado Shown)



Figure 3 – Under Vehicle view of Air Tank Installed – Behind Driver Bed Side (2020 Silverado Shown)



Figure 4 – Under Vehicle view of Air Compressor Installed – Behind Passenger Wheel (2020 Silverado Shown)



Installation and Operation Manual

5.2. Install Process Outline

For person(s) with prior experience installing GMTRK4XTREME, a reminder of install steps are listed below:

UNPACKAGE KIT (SECTION 7)

1. Layout and organize all parts on bench

BENCH ASSEMBLY (SECTION 8)

- 2. Assemble Air Fittings to Air Tank
- 3. Assemble Air Fittings to Air Compressor Leader Hose
- 4. Remove Air Horn Trumpets and assemble Air Horn Drivers to Bracket (GMTRK-4-301)
- 5. Insert Square Neck Bolts onto Brackets (GMTRK-4-101, 102, 201)

ON-VEHICLE, MECHANICAL (SECTION 9)

- 6. Trim (Cut/Grind) Driver's Rear Leaf Spring Shackle Bolt
- 7. Install Air Tank Bracket (GMTRK-4-102, 103/104, 201)
- 8. Install Air Tank
- 9. Install Air Compressor Bracket (GMTRK-4-101, 102, 103/104)
- 10. Install Air Compressor
- 11. Remove/pull down Engine Shield to gain access to Driver's Frame Mount
- 12. Install Air Horn sub-assembly (GMTRK-4-301 w/Horn Drivers)
- 13. Connect Air Compressor Tubing to Air Tank
- 14. Connect Air Horn Tubing to Air Tank
- 15. Install Quick Connect Coupler in desired location and connect Air Tubing to Air Tank

ON-VEHICLE, ELECTRICAL (SECTION 10)

- 16. Install Relay & Fuse, route Wiring, and install Horn Button
- 17. Connect all Electrical items (Air Horn, Pressure Switch, Air Compressor)

FINAL STEPS (SECTION 11)

- 18. Install Trumpets onto Air Horn Drivers & Final Tighten Air Horns
- 19. Test system and adjust, as needed

5.3. Approximate Installation Time

GMTRK4XTREME is a multi-faceted product consisting of mechanical, electrical, and pneumatic components.

For a typical home mechanic, auto enthusiast, or technician installing this kit for first time, a professional installation job with setup and testing of final product, is estimated to take:

4-8 Hours



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6. List of Tools and Supplies

6.1. Standard Tool List (Required)

- 6.1.1. Basic mechanic's 3/8" drive socket sets with extensions
 - Inch Size Sockets (1/4" 1" Hex)
 - Metric Size Sockets (6mm 20mm Hex)
- 6.1.2. Basic mechanic's combination wrenches (box/open-end)
 - Inch Size Wrenches (1/4" 1" Hex)
 - Metric Size Wrenches (6mm 20mm Hex)
- 6.1.3. Basic mechanic's screwdriver set (Philips, Flat Head)
- 6.1.4. Diagonal Cutter/Wire Cutter Pliers
- 6.1.5. Wire Strippers
- 6.1.6. Wire Terminal Crimpers
- 6.1.7. Slip-Joint Pliers
- 6.1.8. Vise Grips, or Locking Pliers
- 6.1.9. Small pry bar, or large flat blade screwdriver
- 6.1.10. Utility Knife, or Utility Razor blade
- 6.1.11. Magnetic retrieval tool

6.2. Special Tool List (Recommended)

- 6.2.1. Power Hand Grinder, Air Grinder with Cut-Off wheel, or Hacksaw
- 6.2.2. 10-100 ft-lbs. torque wrench
- 6.2.3. 20-150 in-lbs. torque wrench
- 6.2.4. Multi-Meter for 12V DC electrical systems, or equivalent
- 6.2.5. 12V DC Test Light, or equivalent
- 6.2.6. Trim Panel Tool, for removing wiring and body clips, when needed

6.3. Shop Consumables List (Recommended)

- 6.3.1. Quality Electrical tape
- 6.3.2. Di-electric grease for electrical connections
- 6.3.3. Heat Shrink tubing for electrical connections
- 6.3.4. Medium-Strength ThreadLocker (i.e., Blue Loctite® PN 242), or equivalent
- 6.3.5. Low-Strength ThreadLocker (i.e., Purple Loctite® PN 222), or equivalent
- 6.3.6. Black/Clear Silicone for drilling holes in body
- 6.3.7. Sand Paper, or Wire Brushes for installing ground wires
- 6.3.8. Extra plastic zip ties > 6" long
- 6.3.9. Extra NPT sealant (i.e., Kleinn Air Horn Juice, Teflon tape, etc.)
- 6.3.10. Touch-up paint for frame/chassis/body (i.e., primer or black epoxy)
- 6.3.11. Typical cleanup supplies



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7. Parts List

7.1. Before Starting, Review Parts List

Unpackage and organize Kit across a large work area and verify all parts are included, as listed below. Contact Kleinn support if any questions arise.

- 7.1.1. Review pre-packaged Kit items (i.e., K1, K2, etc.)
- 7.1.2. Review Air Fittings and Tubing (i.e., F1, F2, etc.)
- 7.1.3. Review Wiring and Accessories (i.e., E1, E2, etc.)
- 7.1.4. Review Bolt-On Mounting Brackets (i.e., M1, M2, etc.)
- 7.1.5. Review Hardware/Fasteners (i.e., H1, H2, etc.)
- 7.1.6. Review Add-On Accessories (i.e., X1, X2, etc.)
- 7.1.7. Familiarize yourself with how parts assemble

7.2. Pre-Packaged Electro-Mechanical Kit Items

NOTE: Items in this section come in their own packages and may include additional items inside package

| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-----|-------------|--|---------|
| K1 | 1 | 6450RC | 6450RC AIR COMPRESSOR KIT – INCLUDES HARDWARE, REMOTE AIR FILTER, AIR TUBING, FITTINGS, EXTRA FILTER | |
| K2 | 1 | 6275RT | AIR TANK, 6" OD, 1.5 GAL., 5-PORT | |
| K3 | 1 | 220 | 220 SERIES AIR HORN KIT – INCLUDES DUAL SOLENOIDS, HARDWARE, AIR TUBING, TEE FITTING | |



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7.3. Air Fittings and Related Items

| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-------|-------------|--|---------|
| F1 | 1 | 2151 | 1/4" NPT PRESSURE SWITCH, 110- 150 PSI (view location on Air Tank) | |
| F2 | 1 | 52175 | 1/4" NPT, 175 PSI SAFETY VALVE (view location on Air Tank) | |
| F3 | 2 *** | 51414L | 1/4" NPT X 1/4" TUBE FITTING, MALE 90 DEG. ELBOW ***INCLUDED INSIDE 1302L (view location on Air Tank) (view location on Air Compressor) | |
| F4 | 1 | 51414NPTL | 1/4" NPT X 1/4" NPT FEMALE, 90 DEG. ELBOW (view location on Air Tank) | |
| F5 | 1 | 52835 | 1/4" NPT DRAIN VALVE (view location on Air Tank) | |
| F6 | 2 | 54440 | 1/4" NPT "T" MANIFOLD, FEMALE (view location on Air Tank) (view location on Air Compressor) | |
| F7 | 1 | 51414 | 1/4" NPT X 1/4" TUBE FITTING, MALE STRAIGHT (view location on Air Tank) | |



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| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-----|--------------------------|---|---------|
| F8 | 1 | 50041 | 1/4" NPT PLUG, INTERNAL HEX DRIVE (view location on Air Tank) | |
| F9 | 1 | 51414F | 1/4" NPT X 1/4" TUBE FITTING, FEMALE STRAIGHT (view location on Air Compressor) | |
| F10 | 1 | KLEINN AIR HORN JUICE | THREAD SEALENT FOR NPT FITTINGS | |
| F11 | 1 | 25014-1 | 1/4" AIR TUBING, 25 FT. LONG | |

7.4. Electrical Small Components and Related Items

| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-----|---------------|---|---------|
| E1 | 1 | 6850 WIRE KIT | ELECTRICAL WIRE, CONNECTORS, RELAY, FUSE, AND ZIPTIES PURPLE (18 GA.) – 12 FT YELLOW (18 GA.) – 40 FT RED (18 GA.) – 28 FT RED (12 GA.) – 2 FT BLACK (12 GA.) – 2 FT | |
| E2 | 1 | LOOM PACK | WIRE LOOM, CORRUGATED AND SPLIT 1/8" X 15 FT 1/4" X 25 FT | |



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| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-----|-------------|----------------------------|---------|
| E3 | 1 | 320 | TERMINATOR – NICKEL PLATED | * |
| | | | REMOTE HORN BUTTON | |

7.5. Bolt-On Mounting Brackets & Special Hardware

| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-----|-------------|--|---------|
| M1 | 1 | GMTRK-4-101 | 6450 COMPRESSOR BRACKET, CUT & FORMED | |
| M2 | 2 | GMTRK-4-102 | TANK & COMPRESSOR BOLT PLATE, CUT | |
| M3 | 2 | GMTRK-4-103 | TANK & COMPRESSOR SPACER- CHEVY, CUT | 0 |
| M4 | 2 | GMTRK-4-104 | TANK & COMPRESSOR SPACER- GMC, CUT | |
| M5 | 1 | GMTRK-4-201 | TANK BRACKET, CUT, FORMED & MACHINED | |
| M6 | 1 | GMTRK-4-301 | HORN BRACKET, WELDMENT | |



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7.6. Hardware, Fasteners and Soft Parts

NOTE: Pictures only indicative, not to scale and may not represent exact item

| ITEM | QTY. | DESCRIPTION | WHERE USED | PICTURE |
|------|------|---|---|-----------|
| H1 | 4 | (#10-24 X 1.25" LONG) SQUARE NECK BOLT, GRADE 2, ZINC-PLATED | COMPRESSOR TO BRACKET (4) | Committee |
| H2 | 4 | (#10 ID X .69" OD) FLAT WASHER, FENDER, ZINC- PLATED | COMPRESSOR TO BRACKET (4) | |
| Н3 | 4 | (#10) LOCK WASHER, SPLIT, ZINC- PLATED | COMPRESSOR TO BRACKET (4) | |
| Н4 | 4 | (#10-24) HEX NUT, GRADE 2, ZINC- PLATED | COMPRESSOR TO BRACKET (4) | |
| Н5 | 12 | (5/16"-18 X 1.00" LONG) SQUARE NECK BOLT, GRADE 2, ZINC-PLATED | 220 HORN TO BRACKET (4) TANK BRACKET MOUNTING (2) TANK TO BRACKET (4) COMPRESSOR BRACKET MOUNTING (2) | |
| Н6 | 1 | (5/16"-18 X 1.00" LONG) RIBBED NECK CARRIAGE BOLT, GRADE 2, ZINC-PLATED | HORN BRACKET MOUNTING (1) | |
| Н7 | 1 | (5/16"-18 X 1.25" LONG) FLAT HEAD CAP SCREW, ALLOY STEEL, BLACK-OXIDE | TANK BRACKET MOUNTING (1) | |
| Н8 | 1 | (5/16"-18 X 1.25" LONG) SQUARE NECK BOLT, GRADE 2, ZINC-PLATED | COMPRESSOR BRACKET MOUNTING (1) | Camada |
| Н9 | 16 | (5/16" ID X 0.88" OD) FLAT WASHER, USS, ZINC- PLATED | HORN BRACKET MOUNTING (2) 220 HORN TO BRACKET (4) TANK BRACKET MOUNTING (3) TANK TO BRACKET (4) COMPRESSOR BRACKET MOUNTING (3) | |



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| ITEM | QTY. | DESCRIPTION | WHERE USED | PICTURE |
|------|------|--|---|---------|
| H10 | 15 | (5/16") LOCK WASHER, SPLIT, ZINC- PLATED | HORN BRACKET MOUNTING (1) 220 HORN TO BRACKET (4) TANK BRACKET MOUNTING (3) TANK TO BRACKET (4) COMPRESSOR BRACKET MOUNTING (3) | |
| H11 | 15 | (5/16"-18) HEX NUT, GRADE 2, ZINC- PLATED | HORN BRACKET MOUNTING (1) 220 HORN TO BRACKET (4) TANK BRACKET MOUNTING (3) TANK TO BRACKET (4) COMPRESSOR BRACKET MOUNTING (3) | |
| H12 | 1 | (M8 X 1.25 X 14.5 OFFSET) NO-SLIP, CLIP-ON BARREL NUT, ZINC-PLATED | HORN BRACKET MOUNTING (1) | |
| H13 | 2 | (1/4" ID X 0.63" OD X 1/4" THICK) PRESS-IN RUBBER GROMMET | COMPRESSOR TO TANK TUBING (1) HORN TO TANK TUBING (1) | |

7.7. Add-On Accessories

| ITEM | QTY | PART NUMBER | DESCRIPTION | PICTURE |
|------|-----|-------------|--|---------------|
| X1 | 1 | 1302L | QUICK COUPLER MOUNT KIT - BRACKET, HARDWARE, FITTINGS, 1/4" X 15FT AIR TUBING | |
| X2 | 1 | INF-1 | INFLATOR KIT – COIL AIR HOSE, QUICK CONNECT COUPLER/COVER, TIRE CHUCK, STORAGE BAG | Marini Marini |
| Х3 | 1 | 59830 | DIGITAL TIRE INFLATOR | |



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8. Bench Assembly

Complete following steps off vehicle to facilitate final installation.

8.1. Assemble Air Fittings to Air Tank

- 8.1.1. Gather all necessary Air Fittings and Air Tank; ensure all threads on fittings and inside ports are clean.
- 8.1.2. Apply two small drops of <u>Kleinn Air Horn Juice</u> to each male pipe thread.
- 8.1.3. Attach Air Fittings to Air Tank, per below illustrations; ensure they are oriented correctly.

Click Here to View Fittings List

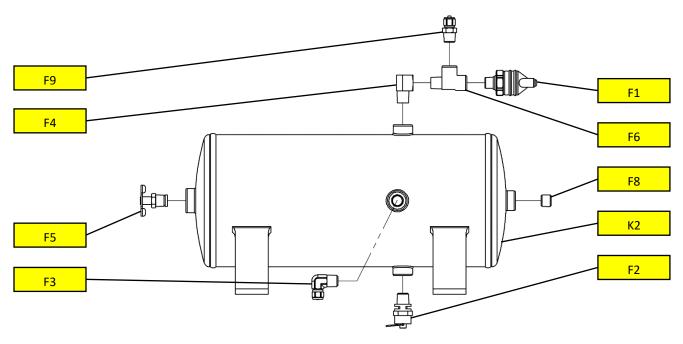


Figure 5 – Air Fittings installed on Air Tank (Side Exploded view, as shown resting on bench)

8.1.4. Hand-tighten each fitting, then further tighten 1/4-1/2 turn using proper sized box-end wrench; adjust as necessary to match fitting orientation, as shown below.

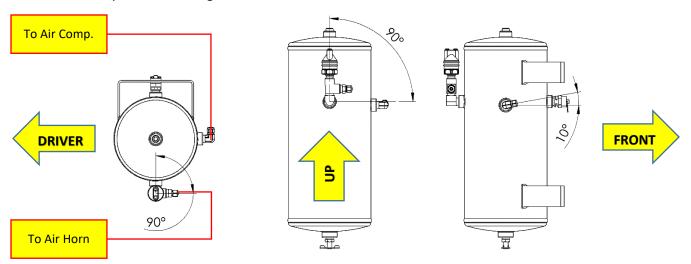


Figure 6 – Air Fittings Orientation (Top, Back & Inboard view, as shown if installed in Vehicle)



Installation and Operation Manual

8.2. Assemble Air Fittings to Air Compressor & Air Filter

- 8.2.1. Remove Air Compressor from packaging, included hardware, and Air Filter. Hardware will not be used.
- 8.2.2. Review included directions in Compressor package on remote Air Filter; select location on Vehicle where to mount Air Filter, or if desired, Filter housing may be attached directly to inlet on Compressor.
- 8.2.3. Pry-open plastic Air Filter housing and install foam Filter inside. Attach fittings for Filter to end of Air Compressor and Filter housing. Follow instructions included in Compressor package.

NOTE: Air Filter Tubing is rigid and may be difficult to install over Barb Fittings; if necessary, use Hair Dryer, Candle, or Heat Gun at a safe distance to soften end of Air Tubing and place over Fitting. Do not bend Tubing excessively and cause it to kink; use even heat if necessary, to bend Tubing sharply.



Figure 7 – Air Compressor remote Air Filter and Tubing (shown without Air Compressor)

- 8.2.4. Apply two small drops of Kleinn Air Horn Juice to each male pipe thread.
- 8.2.5. Attach Fitting #F6 to end of Leader Hose and hand tighten; use wrench to further tighten 1/4-1/2 Turn.

CAUTION: do NOT over tighten Fitting onto Leader Hose; over tightening may damage one-way ball valve. Read all instructions accompanying Air Compressor thoroughly.

8.2.6. Attach remaining fittings F3 and F9 and orient them, as shown in below illustration.

Click Here to View Fittings List

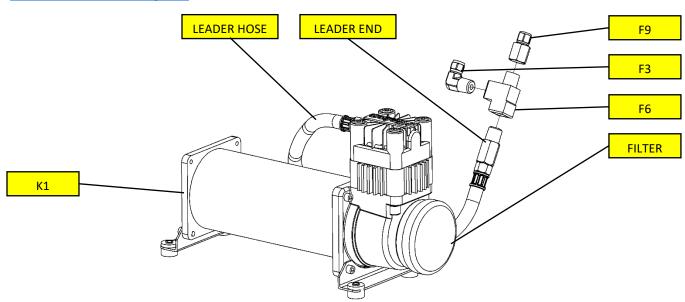


Figure 8 – Air Compressor Leader Hose attached to Air Fittings (Exploded view with Air Filter included)



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8.3. Disassemble Trumpets from Air Horn Drivers

- 8.3.1. Remove Air Horns and included Air T-Fitting from packaging; Air Tubing and Hardware are not used.
- 8.3.2. Disassemble Trumpets from Air Horn Drivers by firmly grasping Trumpet around Metal/Chrome Collar and twisting counter-clockwise, as shown below. If necessary, use pliers with rag or soft material over jaw.



Figure 9 - Removing Trumpets from Air Horn Drivers, Exploded View

8.4. Assemble Air Horn Drivers to Horn Bracket (GMTRK-4-301)

8.4.1. Before assembling Air Horn Drivers to Bracket, adjust orientation of Air Horn Fittings, as shown below, by further tightening each Solenoid using an appropriate Wrench. If desired, Solenoids may be removed, threads cleaned and re-installed with Air Horn Juice, then tightened to proper orientation.

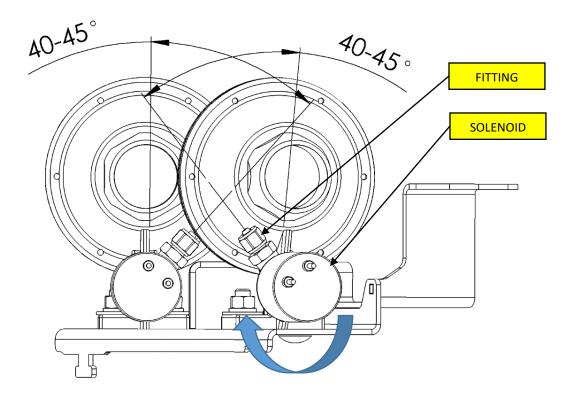


Figure 10 – Air Horn Fittings Orientation (Air Horn Drivers shown assembled to Bracket as if sitting on bench)

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8.4.2. Using <u>Hardware #H5, H9, H10, H11</u>, install Air Horn Drivers, as shown below. Snug-tighten fasteners only, as Drivers may need to be repositioned for proper Trumpet clearance on vehicle.

NOTE A: when installing Air Horn Drivers, they are identical, but critical they are positioned such that attached Air Fittings face each other as shown in below illustration.

NOTE B: discard included white plastic protector, attached to bottom of each Driver before attaching.

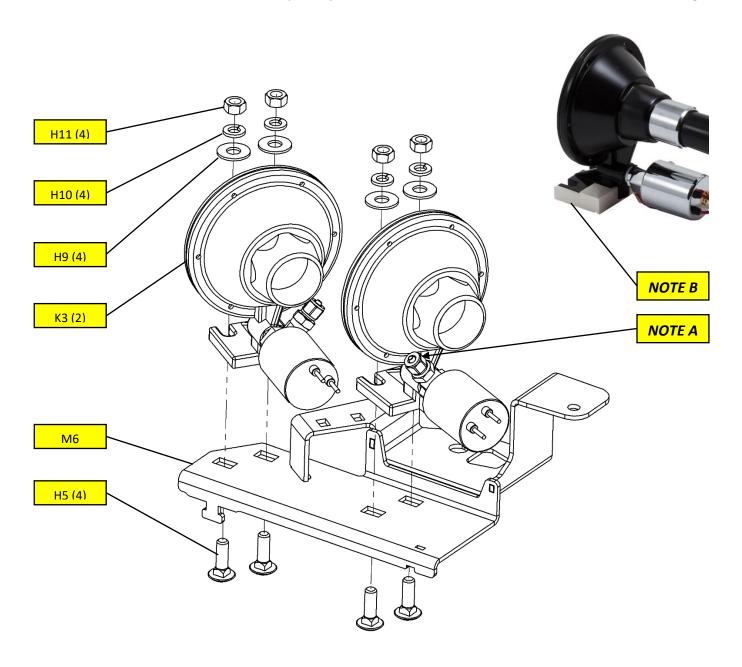


Figure 11 – Air Horn Drivers Assembled to Bracket (Exploded View)



Installation and Operation Manual

8.5. Insert Square Neck Bolts onto Brackets (GMTRK-4-101, 102, 201)

8.5.1. Using Hardware #H5 press each Carriage/Square Neck Bolt into corresponding square holes in both GMTRK-4-102 Plates, as shown below. It may be necessary to use a deep socket and rubber mallet to set each Bolt flush. This step is required to facilitate installation in Vehicle.

NOTE: if any Bolts fit loosely, secure them to back side of Bracket using electrical tape or similar.

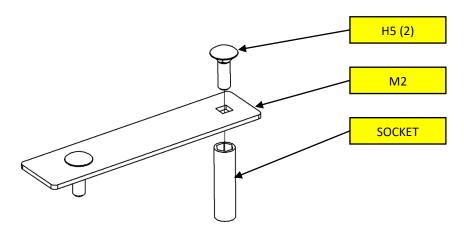


Figure 12 – GMTRK-4-102 Plate with Bolts pressed in place (Exploded View)

8.5.2. Repeat above process using <u>Hardware #H1</u> with GMTRK-4-101, as shown in below.

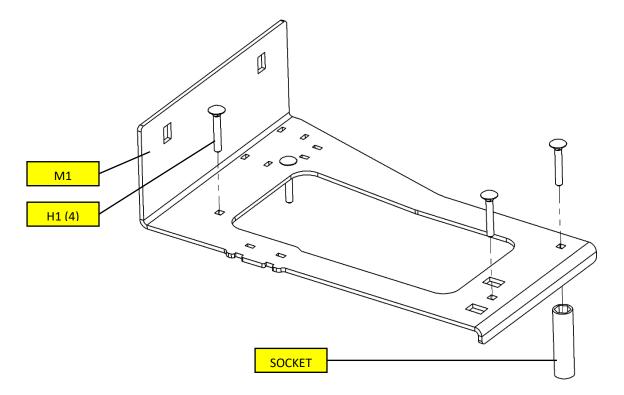


Figure 13 – GMTRK-4-101 Compressor Bracket with Bolts pressed in place (Exploded View)



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8.5.3. Repeat above process using <u>Hardware #H5</u> with GMTRK-4-201, as shown in below.

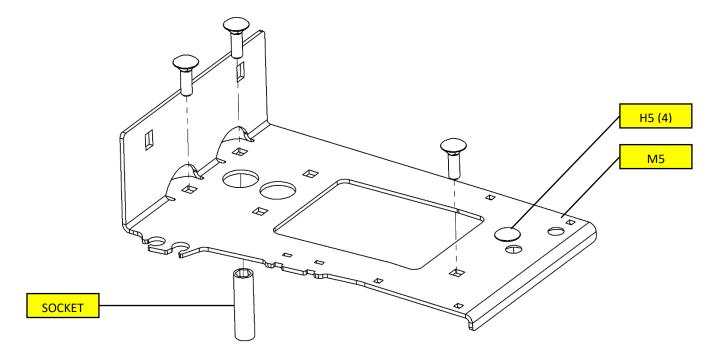


Figure 14 – GMTRK-4-201 Tank Bracket with Bolts pressed in place (Exploded View)



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9. On-Vehicle Mechanical Assembly

Complete following steps on-vehicle using a lift, vehicle ramps, or other safe lifting method.

DANGER: Follows all manufacturer's instructions for safely lifting vehicle; reference owner's manual.

9.1. Trim Driver's Side OE Leaf Spring Shackle Bolt

9.1.1. Locate Driver's side Leaf Spring Shackle area directly behind rear tire (i.e., OE rock guard), as shown below.

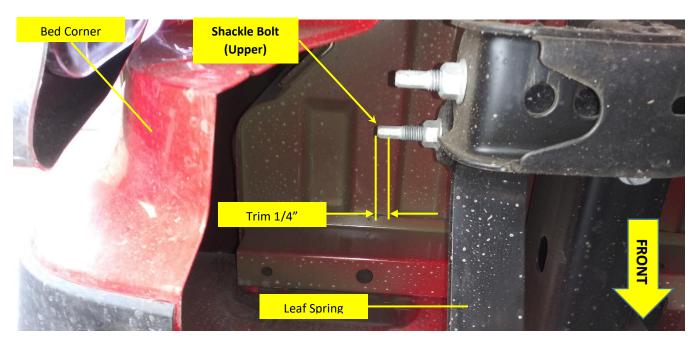


Figure 15 – Underbody view of Driver's side Leaf Spring Shackle Bolt (2020 Silverado shown)

9.1.2. Using a Hand Grinder, Hacksaw, or Air Grinder with Abrasive Cut-off wheel, trim 1/4" off end of <u>Upper Shackle Bolt</u>. Remove sharp edges with a file, or similar, then touch up with primer, or auto paint.

WARNING: ensure use of safety glasses and ear protection while grinding under vehicle.



Figure 16 – Underbody view of Driver's side Leaf Spring Shackle Bolt trimmed (2020 Silverado shown)



Installation and Operation Manual

- 9.2. Install Air Tank Bracket (GMTRK-4-201) & Bolt Plate (-102)
- 9.2.1. Return to Driver's side installation area (i.e., OE Rock Guard) and locate mounting holes, as shown below.

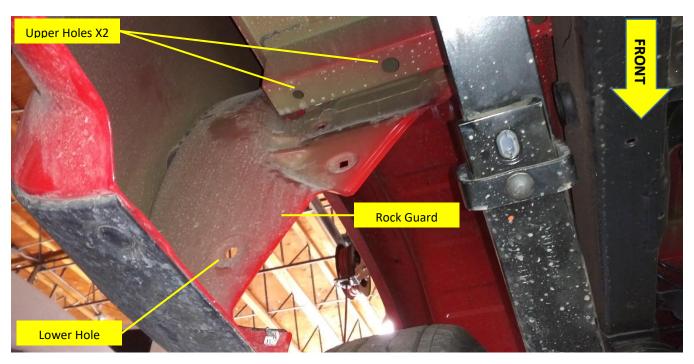


Figure 17 – Underbody view of Driver's side mounting holes (2020 Silverado shown)

9.2.2. Insert Bolt Plate (M2) with Bolts previously pressed in place into Bed Support Brace, as shown below. This can be done easily by grasping long side of Plate, rotating into Support Brace and dropping in place.

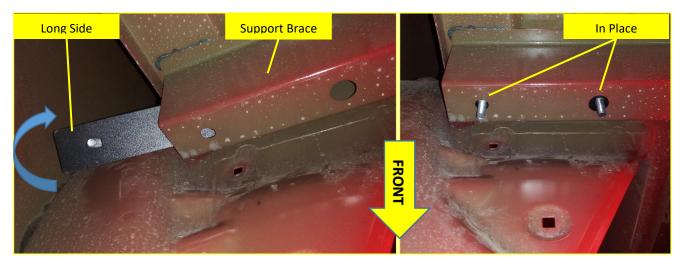


Figure 18 – Installing GMTRK-4-102 Bolt Plate (2020 Silverado shown)



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9.2.3. Using <u>Hardware #H7, H9, H10, H11 & M3/M4</u>, install Air Tank Bracket (M5), as shown below. It is recommended to apply medium-strength Loctite to Bolts and **final torque to 75 in-lbs**.

**NOTE: Spacer is placed between Bracket and OE Rock Guard; Chevys use M3 and GMCs M4

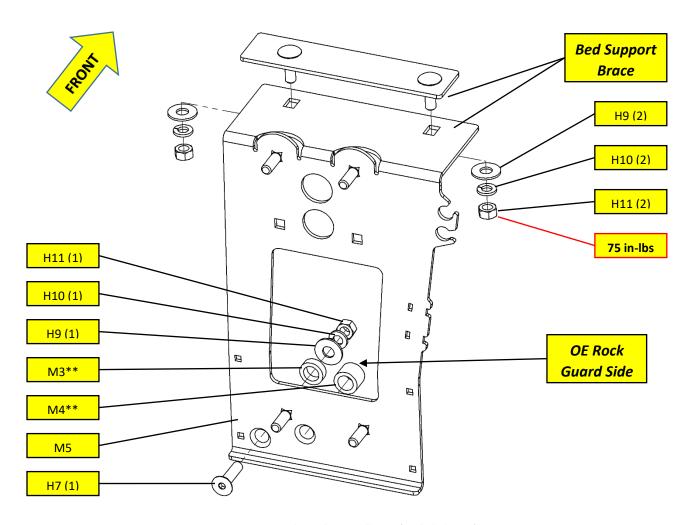


Figure 19 – Air Tank Bracket installation (Exploded View)

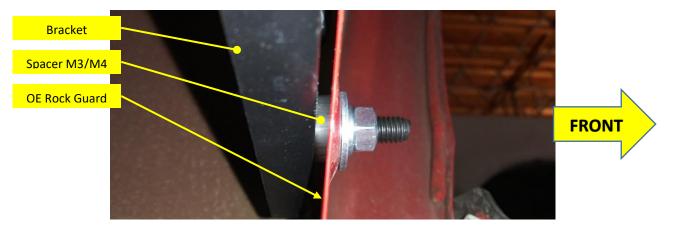


Figure 20 – Air Tank Bracket installed onto OE Rock Guard (2020 Silverado Shown)

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9.3. Install Air Tank

9.3.1. Take pre-assembled Air Tank with Air Fittings and position over four (4) Square Neck Bolts protruding from Air Tank Bracket. Use vice grips or a hand clamp to hold Tank to Bracket to facilitate installing hardware.

NOTE: Insert Air Tank between rear leaf spring shackle and bed side at an angle, using a twisting motion and rotating it into place over Bolts. Clearance is tight during insertion process; use care not to knock out Bolts previously installed into Bracket.

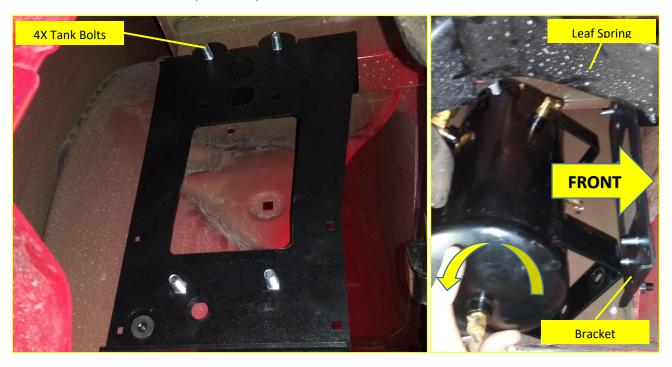


Figure 21 – Installing Air Tank onto Air Tank Bracket (2020 Silverado Shown)



Installation and Operation Manual

9.3.2. Using <u>Hardware #H9, H10 & H11</u> install Air Tank, as shown below. Position Air Tank up/down and sideways as needed to obtain clearance all around it from body. It is recommended to apply medium-strength Loctite to Bolts and **final torque to 75 in-lbs**.

NOTE: Ensure Air Pressure Relief valve is properly aligned with hole and ring can be pulled freely.

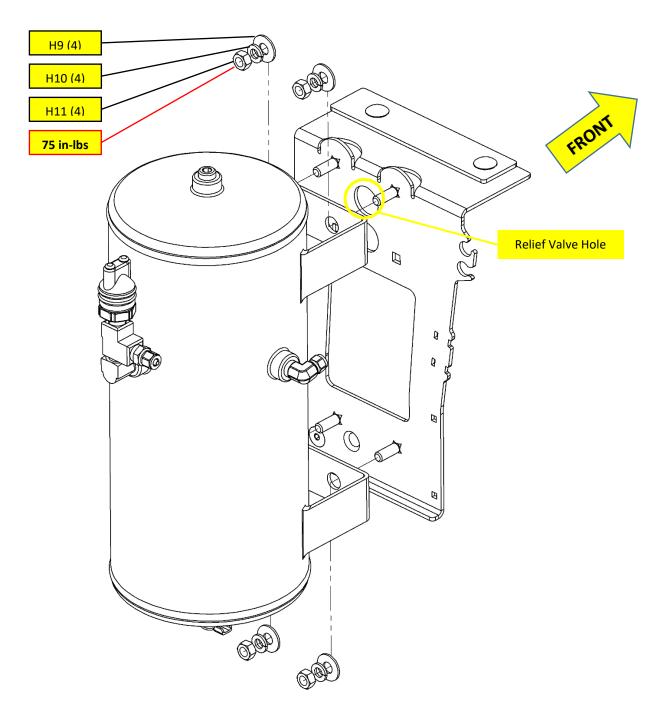


Figure 22 – Air Tank Assembly onto Bracket (Exploded View)

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- 9.4. Install Air Compressor Bracket (GMTRK-4-101) & Bolt Plate (-102)
- 9.4.1. Locate Passenger's side installation area (i.e., OE Rock Guard) and locate mounting holes, as shown below.

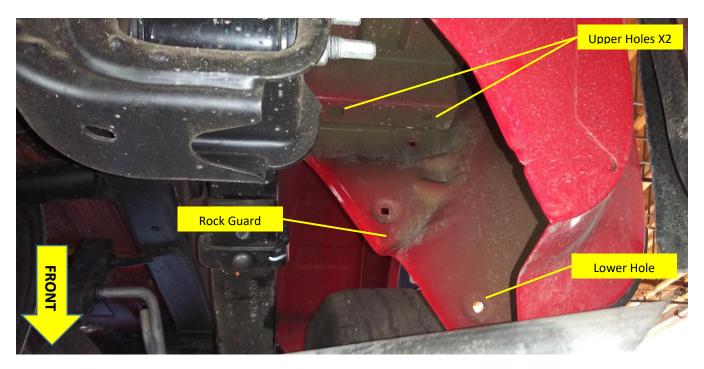


Figure 23 – Underbody view of Passenger's side mounting holes (2020 Silverado shown)

9.4.2. Insert Bolt Plate (M2) with Bolts as done previously on Driver's side.



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9.4.3. Using <u>Hardware #H8, H9, H10, H11 & M3/M4</u>, install Air Compressor Bracket (M1), as shown below. It is recommended to apply medium-strength Loctite to Bolts and **final torque to 75 in-lbs**.

**NOTE: Spacer is placed between Bracket and OE Rock Guard; Chevys use M3 and GMCs M4

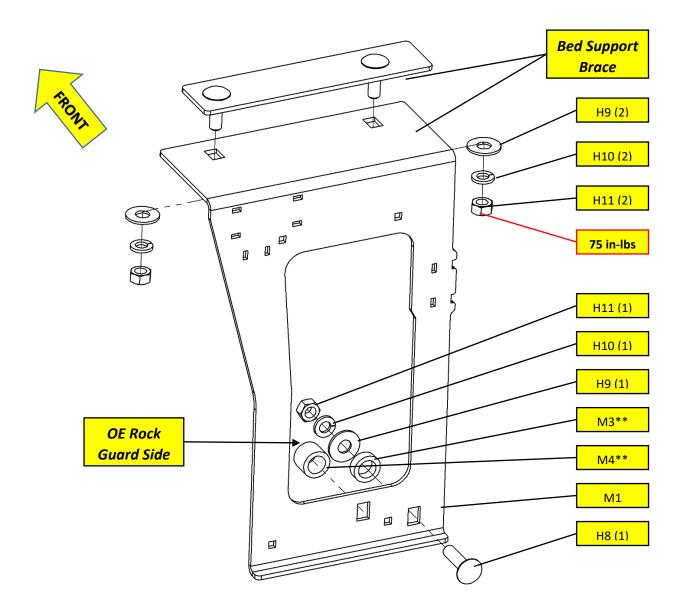


Figure 24 – Installing GMTRK-4-101 Air Compressor Bracket (Exploded View)

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9.5. Install Air Compressor

9.5.1. Take pre-assembled Air Compressor with Air Fittings and position over four (4) Square Neck Bolts protruding from Air Compressor Bracket.

NOTE: Insert Air Compressor over Bolts using same method as Air Tank between rear leaf spring shackle and bed side at an angle using a twisting motion and rotating it into place over Bolts. Use care not to knock out Bolts previously installed, or small brass collars in Compressor Feet.

9.5.2. Using <u>Hardware #H2, H3 & H4</u> install Air Compressor, as shown below. It is recommended to apply low-strength Loctite to Bolts and **final torque to 20 in-lbs**.

NOTE: Ensure Air Compressor Leader Hose is routed as shown and aligned with Zip Tie holes.

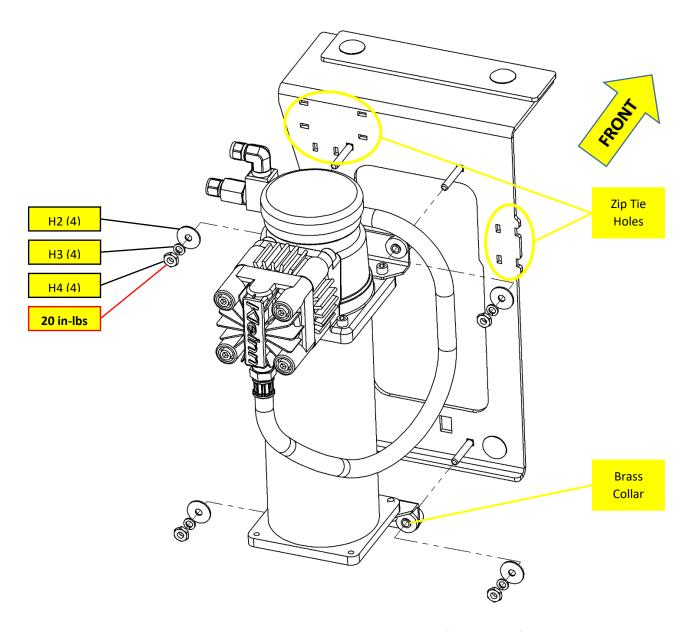


Figure 25 – Air Compressor Assembly onto Bracket (Exploded View)



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9.6. Remove OE Engine Shield & OE Clip-On Nut

9.6.1. Locate Engine Shield behind Front Bumper. Depending on engine, Shield may be secured using four (4) Bolts or more and look different than shown. Remove OE Bolts, as shown below and retain for later.

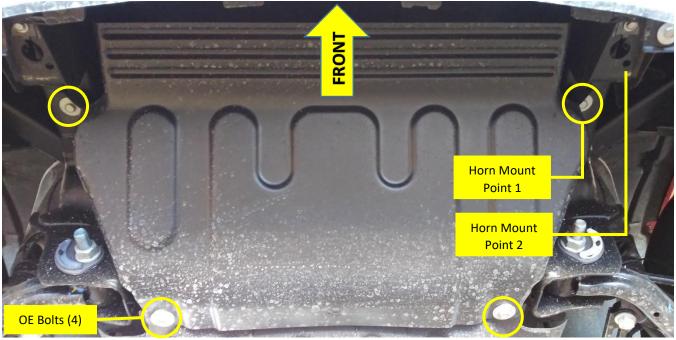


Figure 26 - Engine Shield Bolts removal (2020 Silverado 5.3L Shown)

9.6.2. Once Engine Shield is removed, remove OE Clip-On frame nut, as shown below; clip may be discarded.

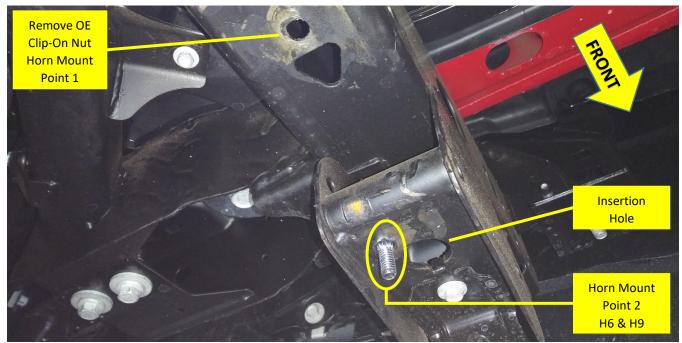


Figure 27 – Engine Shield Clip-On Nut removal; Hardware H6 & H9 shown installed (2020 Silverado Shown)

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9.7. Install Air Horn Driver Sub-Assembly & Connect Air Tubing

9.7.1. Place Air Horn Driver sub-assembly over frame and attach using Hardware #H9, H10, H11, As shown in below illustrations. An extendable magnet tool may facilitate inserting H9 & H10 through "Horn Mount Point 2". Apply medium-strength Loctite to fasteners and final torque to 75 in-lbs.

NOTE: Hardware H12 (Clip-On Nut) *must go over BOTH Bracket and Frame.* First spread Clip-On nut open using a pry bar and pliers if having difficulty installing over both parts.



Figure 28 – Air Horn Sub-Assembly installed over Frame with H12 Clip-On Nut (2020 Silverado Shown)

9.7.2. Reinstall OE Engine Shield, as shown below and final torque to 120 in-lbs.



Figure 29 – Air Horn Sub-Assembly installed with Engine Shield in place (2020 Silverado Shown)

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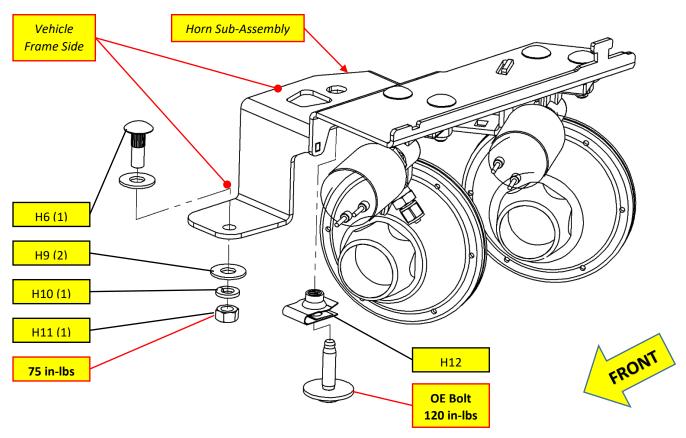


Figure 30 – Installing Air Horn Sub-Assembly over Frame (Exploded View)

9.7.3. Connect Air Tubing to Air Horn Drivers using Tee Fitting (*) included in Air Horn package, as shown below. *It is recommended to pre-connect Solenoid power (PWR) wiring and grounds (GND) at this time.*

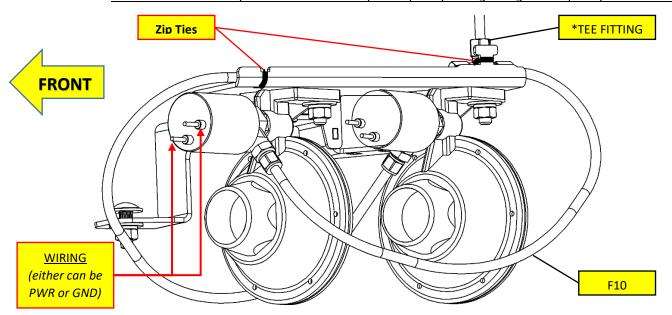


Figure 31 – Connecting Air Tubing to Air Horn Drivers (Shown as if installed in vehicle)

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9.8. Connect Air Horn Tubing to Air Tank

9.8.1. Route Air Tubing from Air Horn to Air Tank, as desired. However, it is recommended to place tubing inside included 1/4" Loom and run along top of frame rail, through front suspension tower, as shown below.

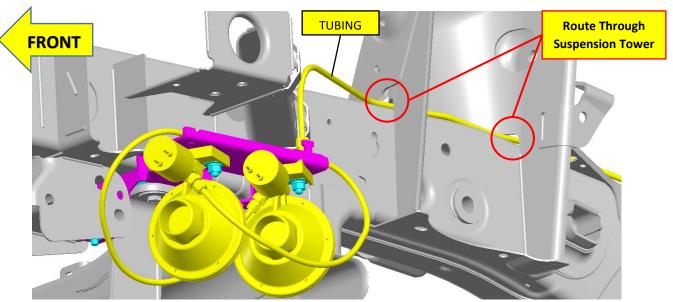


Figure 32 – 220 Air Horn Tubing Routed through Front Suspension Tower (Shown as if installed on Vehicle)

9.8.2. Place #H13 Rubber Grommet over Air Tubing before connecting to Air Tank, then insert each grommet into small holes on Air Tank Bracket, as shown below. Use of grease on Grommet will help insertion.

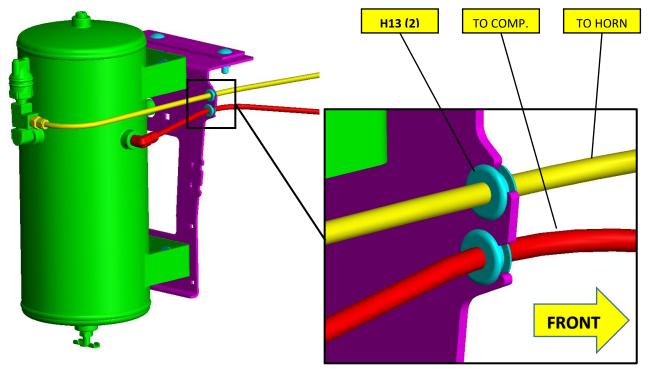


Figure 33 – Air Tank Air Tubing Route with Rubber Grommets (Shown as if installed in vehicle)

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9.9. Connect Air Compressor Tubing to Air Tank

- 9.9.1. Route Air Tubing from Air Tank to Air Compressor, as desired. However, it is recommended to place Tubing inside included 1/4" Loom and route through Rear Frame Crossmember, as shown below.
- 9.9.2. Secure all Air Tubing to vehicle and Brackets using supplied zip ties.

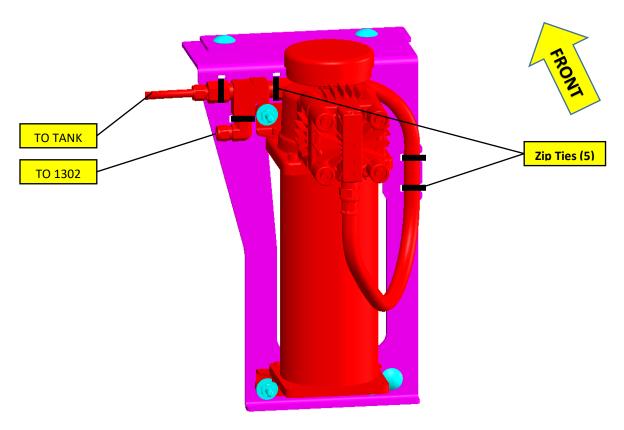


Figure 34 – Air Compressor Tubing Route & Zip Ties (Shown as if installed in vehicle)

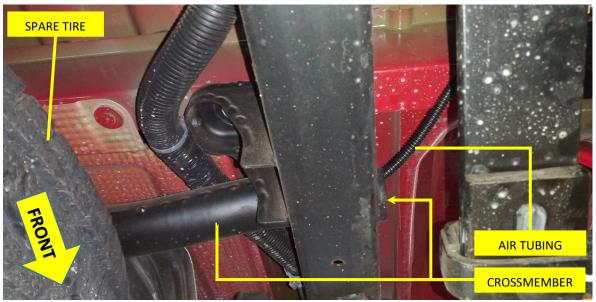


Figure 35 – Air Compressor Tubing Routed through Crossmember (2020 Silverado Shown)



Installation and Operation Manual

9.10. Final Trumpet Installation

- 9.10.1. Re-attach Trumpets to Air Horn Drivers, as shown below. Ensure Trumpets are firmly tightened by grasping Metal/Chrome Collar, as performed earlier.
- 9.10.2. Reposition Air Horn Drivers if needed to ensure at least 1/4" of space exists between them and vehicle, especially any moving parts such as Brake Cables, Lines, Wiring, etc. Final torque fasteners to 75 in-lbs.

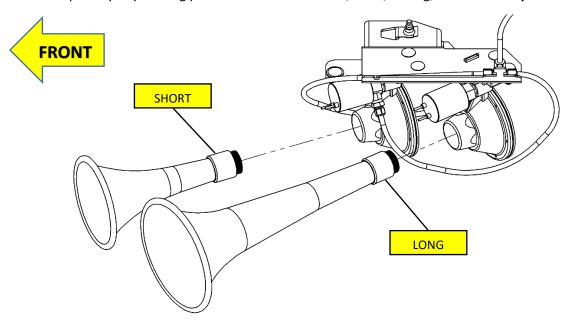


Figure 36 – Re-attaching Trumpets (Exploded View shown as if installed in vehicle)

9.11. Install 1302 Remote Connect Coupler to Vehicle

- 9.11.1. Remove Quick Connect Coupler & Rubber Cover from #X2 INF-1 Air Hose Bag.
- 9.11.2. Decide where on vehicle to install Coupler. Some installers choose to directly fasten Coupler to supplied Brackets by using self-tapping screws or drilling a hole for Coupler itself.

NOTE: modification of Brackets in any way voids their warranty.

9.11.3. Use supplied <u>#X1 Air Tubing</u>, <u>Bracket</u>, <u>Fittings</u>, <u>and Hardware</u> and attach Tubing to port shown in <u>Figure</u> <u>34 above</u>. Some example locations include under hood, on, or below front/rear bumper, etc.



Figure 37 – Example of Air Coupler Mounted to Bumper



Installation and Operation Manual

10. On-Vehicle Electrical Installation

CAUTION: Follow all recommended safety precautions for working on vehicle's electrical system; consult vehicle owner's manual for further instruction.

10.1. Relay and Fuse Diagram for Air Horn System

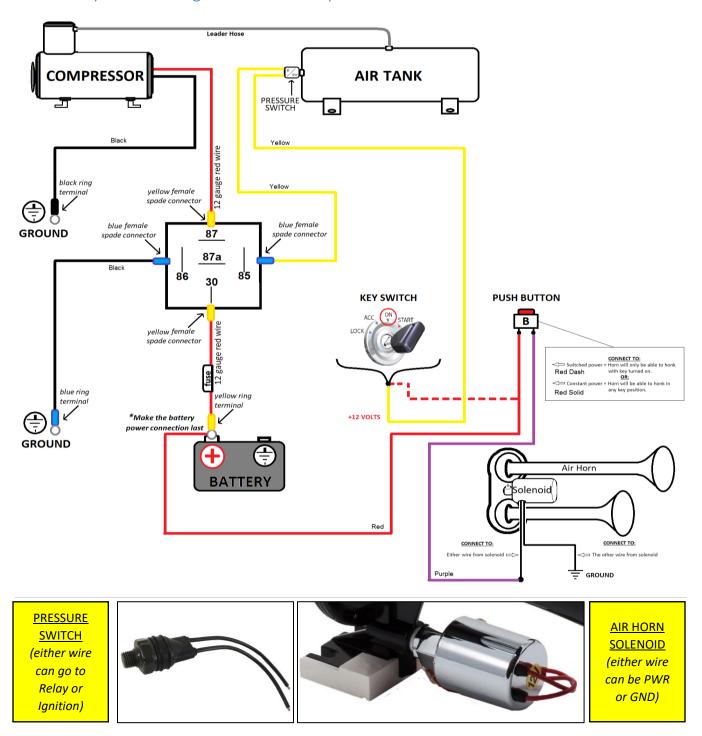


Figure 38 – Suggested Ignition Relay Diagram for Air Horn System (Single 220 Horn Shown)



Installation and Operation Manual

10.2. Suggested Wire Routing for Air Horn System

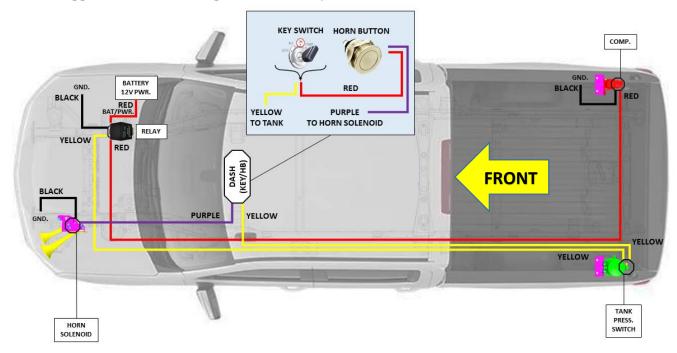


Figure 39 – Suggested Wire Routing for Horn, Air Compressor, and Pressure Switch (GMTRK4XTREME Shown)

10.3. Disconnect Vehicle Battery(s)

10.3.1. Consult Owner's Manual.

10.4. Connect Wiring to Fuse and Relay

10.4.1. Find a suitable location for supplied Fuse and Relay. Shown below is an example location under hood next to Battery mounted on firewall. Use supplied self-tapping screws, as necessary.



Figure 40 – Relay and Fuse location example under hood (2020 Silverado 5.3L Shown)

10.4.2. Install supplied fuse holder on end of power wire by cutting the loop in fuse holder and connecting supplied Ring terminal to one end and Butt connector on other end.

CAUTION: Do not install 30-amp fuse until all electrical connections are final.



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10.5. Install Horn Button

- 10.5.1. Find a suitable location for Horn Button (i.e., in dash, center console, etc.); verify location has 1"+ of clearance behind for terminal connectors. Mark location for drilling.
- 10.5.2. Drill a 3/4" hole at location. Route Horn Button wires to hole then slide push-button retaining nut over wires and connect wiring. Install Button into hole and tighten retaining nut from backside.



Figure 41 – Horn Button Installed in Dash and OE Upfitter Switches (Shown in example vehicles)

NOTE: FOR VEHICLES WITH OE/FACTORY UPFITTER SWITCHES:

If your vehicle is equipped with factory upfitter (i.e., auxiliary) switches, you may elect to use them for your Kleinn Air Horn kit; consult Owner's Manual, or dealership for further instructions on what wire terminals/fuse block location to use and programming required.

10.6. Connect Pressure Switch

10.6.1. Route wiring, as desired to Air Tank and connect to Pressure Switch, per wiring diagram.

NOTE: Either pressure switch wire can be connected to Relay or Ignition; they are identical.

10.7. Connect Air Compressor

10.7.1. Route wiring, as desired to Air Compressor and connect, per wiring diagram.

10.8. Connect Air Horn Solenoid(s)

10.8.1. Route wiring, as desired to Air Horn and connect to Solenoid(s), per wiring diagram.

NOTE: Either Air Solenoid wire can be connected to Power (PWR) or Ground (GND); they are identical.

10.9. Secure Wiring to Vehicle

10.9.1. Insert all wiring into included wire loom and ensure loom is away from all sharp edges, hot/moving vehicle parts (i.e., exhaust, engine, radiator) and fasten securely to vehicle using supplied zip ties, or equivalent.



11. Final Steps & Testing

11.1. Reconnect Vehicle Battery(s)

CAUTION: Before connecting vehicle battery(s), verify all wiring is properly connected and no shorts exists. Use of Multi-Meter, or Test Light is recommended to check continuity of all connections.

11.2. Test Air Compressor

- 11.2.1. Turn vehicle ignition to on position and allow compressor to fill Air Tank. Initial fill may take approximately 1.5-3 minutes; Air Compressor should shut off automatically once full pressure is achieved.
- 11.2.2. If compressor runs excessively (i.e., 5 minutes or more), disconnect electrical power to Air Compressor and listen for air leaks in system. Repair any problems and retest; contact Kleinn technical support if problem persists.
- 11.2.3. Inspect all air line connections (i.e., Air Tank fittings, Quick Connect fittings, Air Horn fittings, etc.) for leaks by using a soap and water solution sprayed directly onto fittings
- 11.2.4. System must be pressurized or at least Air Compressor running
- 11.2.5. If an air leak is found:
- 11.2.6. Safely release air pressure from system (i.e., slowly open drain valve)
- 11.2.7. Disassemble leaky connection, re-seal and reinstall fittings as needed

11.3. Test Train Horns

- 11.3.1. Allow Air Compressor to run and shut-off automatically (i.e., Air Tank is full)
- 11.3.2. Verify all tubing and electrical wire is securely fastened to vehicle, brackets, or kit parts; if necessary, use extra zip ties to hold tubing and wire in place
- 11.3.3. Ensure all nearby persons have adequate hearing protection and provide courtesy warning to neighbors or others in vicinity

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WARNING: NEVER operate train horns with ears close to trumpets or in an enclosed space without <u>substantial hearing protection</u> (i.e., > Ear Plugs and Ear Muffs) for all persons closer than 100 feet from vehicle. Never operate train horns outdoors when persons are near vehicle without adequate hearing protection.

- 11.3.4. Briefly activate Horns by pressing Horn Button for one (1) second; repeat three (3) times with a short rest period between (i.e., 1-3 seconds)
- 11.3.5. Horns should sound as expected and be loud; click to listen to example 230 Kit
- 11.3.6. Horn sound/loudness will taper quickly as Air Tank loses pressure
- 11.3.7. Allow Air Compressor to refill tank, if needed and activate Horns for longer three (3) second period to ensure Horns are functioning properly.

11.4. Test Quick Connect Coupler

- 11.4.1. Allow Air Compressor to refill tank, if needed
- 11.4.2. Attach supplied INF-1 inflator kit to Quick Connect Coupler and verify adequate air pressure is available
- 11.4.3. Test fill tires on vehicle, bicycle, etc.
- 11.4.4. Use Air Blow Gun
- 11.4.5. Use Air Impact Gun



12. General Operation

12.1. Compressor Operation

WARNING: NEVER operate Air Compressor above its MAXIMUM PRESSURE RATING (see label on body). Operation exceeding maximum pressure will damage Compressor and potential Air System failure.

- 12.1.1. Kleinn's Oil-Less Compressor is equipped with an automatic thermal overload protection circuit, designed to protect air compressor from overheating and permanent damage.
- 12.1.2. Automatic thermal overload protector will automatically reset after 30 minutes.
- 12.1.3. To prevent discharge of vehicle's battery and for best performance, keep vehicle's engine running while using Air Compressor for any prolonged use (i.e., filling tires, using air tools, etc.).

12.2. Horn Operation

- 12.2.1. Allow Air Compressor to run until it shuts off automatically (i.e., Air Tank is full), or for at least one minute in between horn activations.
- 12.2.2. Press Horn Button to activate Horns
- 12.2.3. Horn sound/loudness will taper quickly as Air Tank loses pressure.
- 12.2.4. Horns should sound for 3-7 seconds depending on kit and tank size

WARNING: NEVER operate train horns with ears near trumpets or in an enclosed space without <u>hearing protection</u> (i.e., > Ear Plugs/Muffs) for all persons closer than 100 feet from vehicle. Never operate train horns outdoors when persons are near vehicle without hearing protection.

End of Section

13. Routine Maintenance

Perform following steps at least once during recommended intervals.

GMTRK4XTREME

Installation and Operation Manual

- 13.1. Yearly, or every 12000 miles verify all mounting fasteners are properly torqued; applying witness marks across fasteners and mounting parts is good practice to quickly ensure fasteners have not moved.
- 13.2. Yearly, or every 12000 miles inspect OE wiring, tubing, cables, etc. where Kit parts may touch, to verify no abrasion or rubbing.
- 13.3. Yearly, or every 12000 miles remove all road grime and mud from mounting brackets and kit parts using clean water from a garden hose; pay special attention to corners where dirt may collect. Touch up all paint chips using automotive grade enamel in either spray, or brush form.
- **NOTE:** High-pressure washers may damage part finishes and *must* be used with care. Do this more frequently if traveling regularly offroad, or in winter climates with road salts.
- 13.4. Yearly, or every 12000 miles check electrical and air fitting connections and wires for abrasion, corrosion, or other damage. Replace damaged components.
- **NOTE:** if system runs continuously or turns on unexpectedly, leaks or intermittent electrical connection may be present.
- 13.5. Monthly, or every 10 hours of compressor run time, drain moisture from Air Tank using Drain Valve installed at bottom of Tank.
- **WARNING:** Failure to regularly drain Air Tank may result in corrosion inside Tank and possible failure in Tank or Air Tubing, causing injury.
- 13.6. Yearly, or every 12000 miles clean, or replace Air Compressor Air Filter element. Replacement frequency depends on operating frequency and conditions of environment (i.e., daily use requires more frequent changes). Order replacement filters at <u>Kleinn.com</u>.

NOTE: NEVER lubricate or add liquids to Compressor



Installation and Operation Manual

14. Warranty Information

Thank you for purchasing GMTRK4XTREME. Shall you experience any unexpected problems during installation or have problems with any part at any time please contact Kleinn support.

KLEINN MANUFACTURER LIMITED DEFECT WARRANTY:

Kleinn Automotive Air Horns warrants this product to the end-user, when properly installed and under normal conditions of use, to be free from defects in workmanship and materials for a period of one year from the provided date of purchase, to the original purchaser of the product. This warranty does not cover abuse, operation in a manner inconsistent with the product's design, or damage resulting from exposure to the elements. If the defect is considered "under warranty", Kleinn will, at its option, repair or replace the product free of charge to the original purchaser. Kleinn is not liable for any installation charges, loss or damage of any kind incurred in the replacement or repair of any warranted product.

End of Technical Manual

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