AIRLOCKER ARB

RD145

ROCKWELL 2.5T, 16 SPLINE

AIR OPERATED
LOCKING DIFFERENTIAL
INSTALLATION GUIDE

ARB 4x4 ACCESSORIES

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1 Introduction

IMPORTANT :

BEFORE ATTEMPTING TO DISMANTLE YOUR VEHICLE FOR THIS INSTALLATION, PLEASE READ THIS INSTALLATION GUIDE IN ITS ENTIRETY, AS WELL AS ALL APPLICABLE SECTIONS OF YOUR VEHICLE MANUFACTURER'S SERVICE MANUAL.

1.1 Pre-Installation Preparation

This booklet is to be used in conjunction with your vehicle manufacturer's service manual. ARB endeavors to account for every possible variation in vehicle model when publishing its installation guides, and guides are updated regularly as new model information becomes available, however, the rapid and globally varied release of some vehicles makes it difficult to insure that your vehicle model has been accurately accounted for. In the case of any technical discrepancies between this guide and your service manual, we strongly advise that you adhere to the specifications and techniques as documented in your service manual.

Although your *ARB Air Locker* comes complete with all the step by step instructions you will need to supplement your vehicle manufacturer's service manual and install your new differential, ARB recommends that you have your *Air Locker* installed by a trained professional. Many ARB distributors around the world have been fully instructed in *Air Locker* installations by ARB, and have gained a wealth of experience and skill from years of performing similar installations.

Once you begin this installation your vehicle will be immobile until all steps of the installation are complete. Make sure your *Air Locker* kit is the correct model for your vehicle and that it contains all of the parts listed on back cover of this booklet. Also be sure you have appropriately equipped yourself with all the necessary tools, parts, and materials to complete this installation (see section 1.2 *Tool-Kit Recommendations*), and that you have allowed for an appropriate amount of vehicle down time.

HINT : **Place a ✓ mark inside each of the ☐ symbols as you complete each step. It is very important NOT to miss any of the steps!**

1 Introduction

1.2 Tool-Kit Recommendations

Below is a list of tools and supplies you may need to complete this installation. Requirements for your vehicle may vary. Please consult your vehicle service manual for additional recommendations.

1.2.1 Tools

- ☐ Standard automotive sizes (metric and/or imperial) of sockets, wrenches, Alan keys, and drills.
- ☐ A standard automotive feeler gauge.
- ☐ A razor knife to cut the nylon tubing.
- ☐ An adjuster-nut wrench. (See your vehicle service manual)
- ☐ A torque wrench. (See vehicle service manual for required torque range.)
- ☐ A lubricant drain reservoir.
- ☐ A 11.2mm [7/16”] drill and ¼” NPT tap for bulkhead fitting installation.
- ☐ An automotive bearing puller (2 jawed is recommended) or a differential carrier bearing puller.
- ☐ A bearing press or arbor press.

1.2.2 Supplies

- ☐ Thread lubricant/sealant compound for pressure fittings (e.g., LOCTITE #567 Teflon paste)
- ☐ Thread locking compound (e.g., LOCTITE #272)
- ☐ Either a replacement gasket, or gasket sealant, for your differential cover.
- ☐ A sufficient volume of differential oil to completely refill your housing. (see the *ARB Air Locker Operating and Service Manual* for recommended lubricants)
- ☐ A soap and water mixture to test for air leaks.

2 Removing the Existing Differential

2.1 Vehicle Support

- ☐ Safely secure the vehicle on a hoist. We recommend supporting the vehicle on a chassis hoist to keep the differential area at a convenient working height and to leave the wheels and axles free to be rotated and removed.
- ☐ Once supported off the ground, release the parking brake and leave the vehicle in neutral. Chock the wheels if necessary.

2.2 Differential Fluid Drain

HINT : **This is a good time to check for metal particles in your oil, on your drain plug, or in the bottom of the housing which may indicate a worn bearing or differential component.**

- ☐ Clean around the drain plug and differential housing to prevent dirt from entering the differential.
- ☐ Position a fluid drain reservoir under the differential, remove the drain plug and completely drain all differential oil from the housing.

2 Removing the Existing Differential

2.3 Removing the Axles

IMPORTANT :

Collision damage or heavy off-road use of your vehicle in the past may have resulted in some degree of bending in the axle. Any misalignment of the axle tubes may result in excessive wear and/or failure of your differential and axle shafts. ARB strongly recommends that you have your axle assembly inspected for concentricity and straightness before installing your *Air Locker*.

☐ Remove the wheels, and both axle shafts according to your vehicle manufacture's service manual.

NOTE : **The axle oil seals are delicate and can be easily damaged. Support the weight of the axle shaft when drawing them out of their sockets in the housing.**

☐ Disconnect the drive shaft from the flange of the differential.

☐ Remove the third member from the differential housing. Refer to your vehicle's service manual.

2.4 Marking the Bearing Caps

☐ Using a pointed center punch, gently mark the bearing caps in a way that will enable you to know which cap is 'LEFT' and which cap is 'RIGHT', which way is 'UP' and which way is 'DOWN'. (Fig.1.)

HINT : **Many installers choose to make one punch mark on the left hand side of the left hand bearing cap and one similar punch mark on the housing at close proximity to the cap mark. The right hand side is then designated with two punch marks on the right hand side of the cap and two similar punch marks on the housing.**

Figure 1.

2 Removing the Existing Differential

2.5 Removing the Differential Carrier

- ☐ Remove both adjuster nut locking tabs.
- ☐ Loosen both bearing caps.
- ☐ Using the appropriate adjuster nut wrench, loosen the adjuster nuts at least half a turn.
- ☐ Remove the bearing caps.
- ☐ Carefully remove the differential carrier.

NOTE : **The differential carrier is heavy and quite difficult to handle when covered in oil. Take care not to drop it.**

3 Installing the Air Locker

3.1 Re-Mounting the Ring Gear

- ☐ Remove the bolts that hold the ring gear in place.
- ☐ Using a plastic or copper hammer, tap in a circle around the ring gear to separate it from the two halves of the original differential carrier.
- ☐ Cut the cable ties holding the two halves of the *Air Locker* together and separate the case and flange cap.
- ☐ Apply a thin film of high pressure grease to the outside diameter on the case of the *Air Locker* to prevent seizing.
- ☐ Thoroughly clean any thread locking compound or other foreign matter from the holes of the ring gear, the threads of the ring gear bolts, and the mating surfaces between the ring gear and the *Air Locker* flange.
- ☐ Heat the ring gear to between 80 and 100°C [175 - 212°F] in hot water or in an oven to slightly expand the gear and facilitate assembly.

NOTE : **<u>NEVER HEAT GEARS WITH A FLAME!</u> This could damage the hardened surface of the gear and result in premature wear or failure.**

- ☐ Dry the gear and bolt holes with compressed air (if wet).
- ☐ Install the ring gear onto the case of the *Air Locker* by aligning the bolt holes and then gently tapping it around in a circle with a soft mallet (Figure 2.).

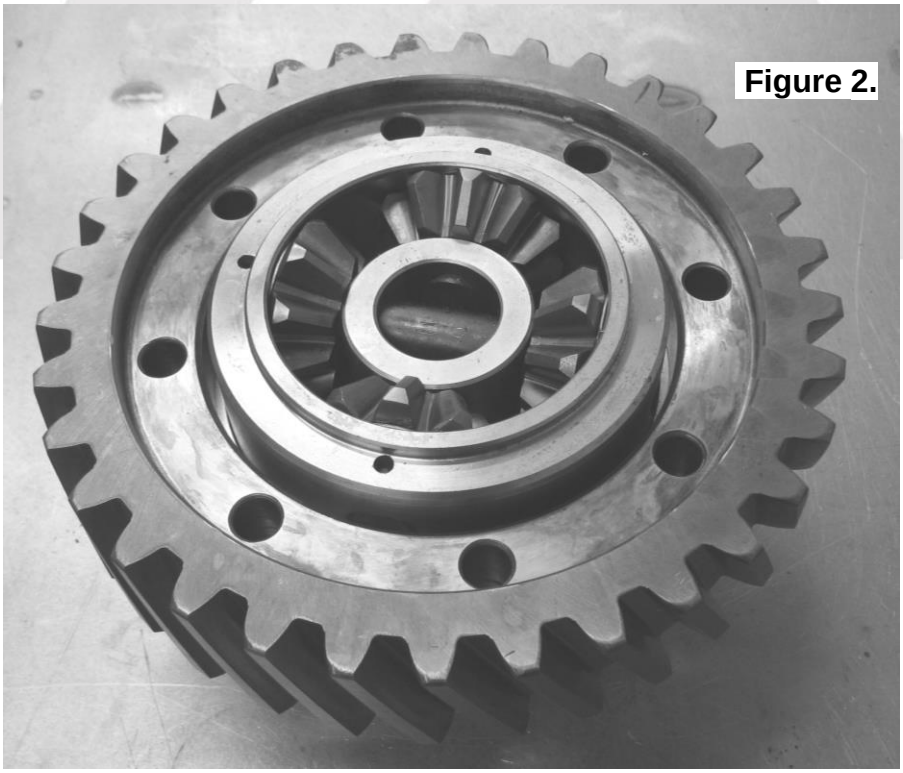


Figure 2.

3 Installing the Air Locker

- ☐ Apply a thin film of high pressure grease to the ring gear diameter of the flange cap and install the flange cap into the ring gear.
- ☐ Apply a thread locking compound to the thread of each ring gear bolt before inserting into the *Air Locker*.
- ☐ Install the nuts and tighten the ring gear bolts in a star pattern with a torque wrench according to your vehicle manufacturer's specified torque (Figure 3.). The nuts will be held captive by the machined face on the case (Figure 4.).

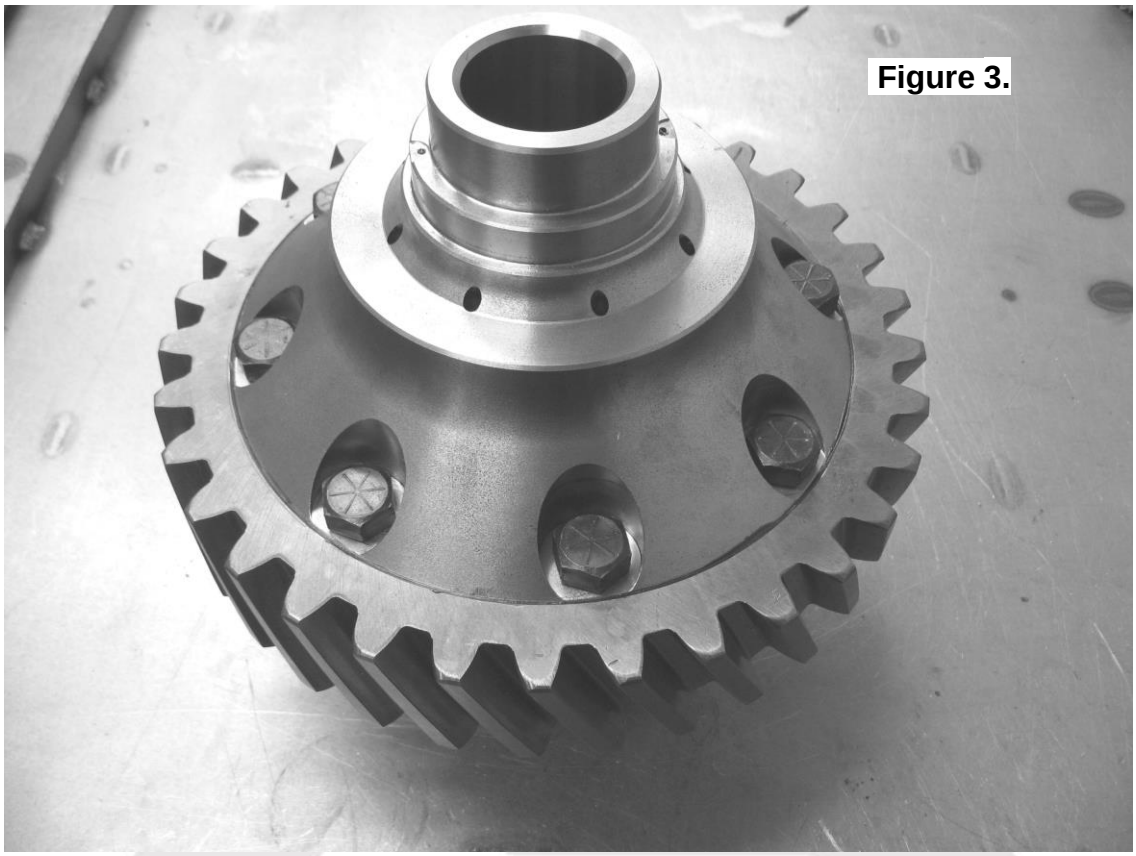


Figure 3.

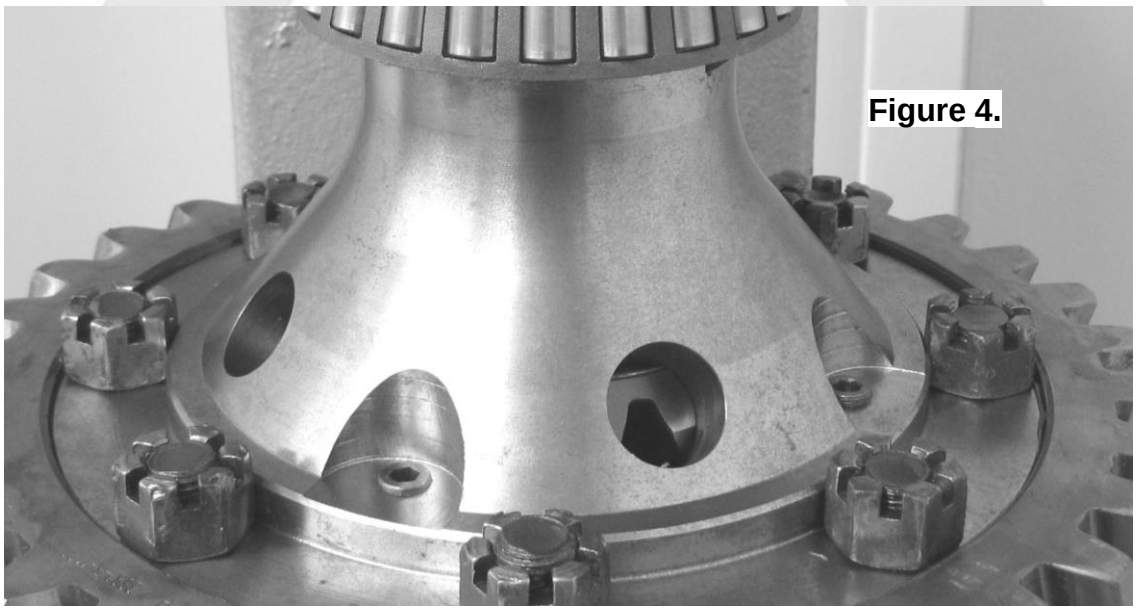


Figure 4.

3.2 Assembling the Seal Housing

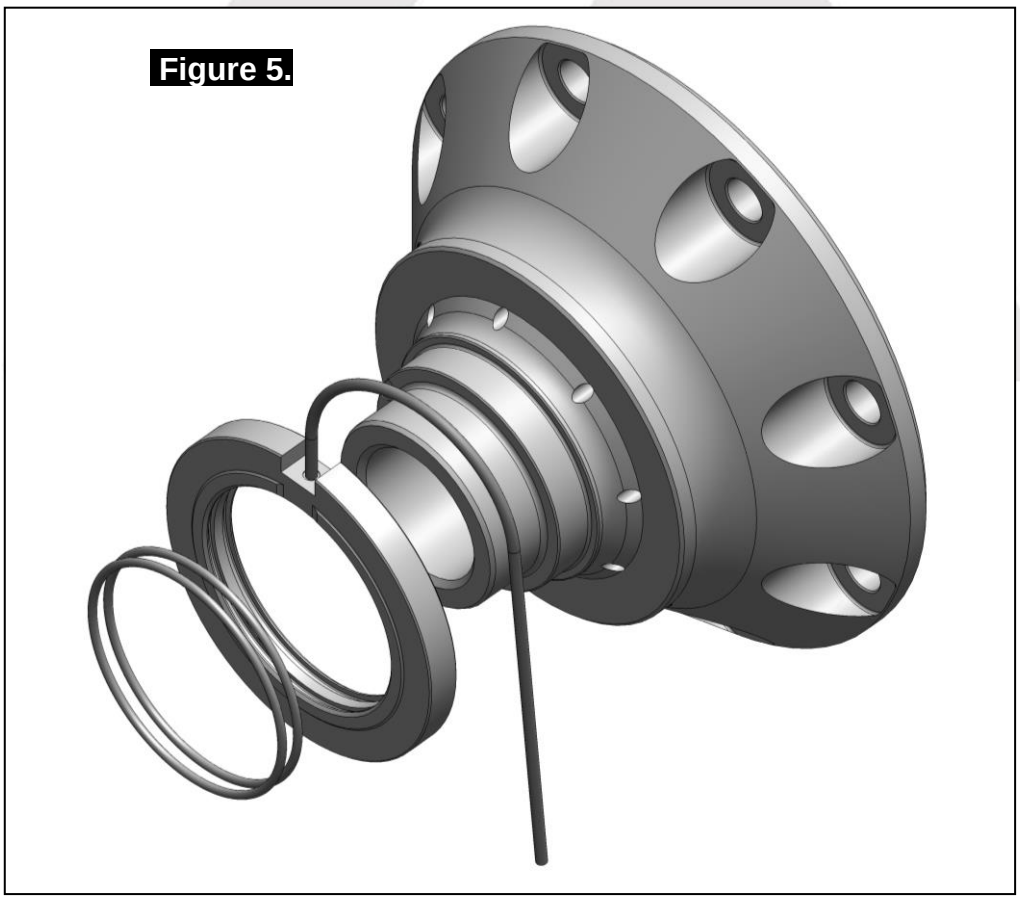
- ☐ Make sure the grooves and airway of the seal housing are clean and free from any contaminants (e.g. water, dirt, metal filings, etc.).
- ☐ Inspect the seal housing O-rings (supplied) for dirt, damage or other conditions which might cause leaks.
- ☐ Generously lubricate the O-rings with oil prior to assembly, then insert them into the grooves of the seal housing.

NOTE : **When assembling the O-rings, be careful not to leave them twisted when seated in the grooves as this could cause excessive wear and leakage.**

- ☐ Lubricate the seal housing running surface on the *Air Locker* carrier with oil.
- ☐ Carefully install the seal housing by sliding it all of the way onto the seal housing running surface with a gentle twisting motion.

NOTE : **A twisting motion (i.e., a slight rotation while pressing the seal housing on) will allow the O-rings to engage gently and prevent them from twisting. Twisted O-rings will result in pre-mature O-ring wear and oil contamination in the air system due to the helical shape formed by the O-ring mould line.**

Figure 5.



3 Installing the Air Locker

3.3 Installing the Carrier Bearings

- ☐ If the tapered roller bearings from the original differential carrier are to be reused, then remove them with an automotive bearing puller and inspect them for damage and/or wear and replace them if necessary.
- ☐ Apply a thin film of high pressure grease to both bearing journals of the *Air Locker* to prevent seizing.
- ☐ Using a bearing press or arbor press, press one of the bearing cones onto the *Air Locker* bearing journal, with the seal housing in place, until the bearing seats firmly against the bearing journal shoulder. (As shown in Figure 6.)

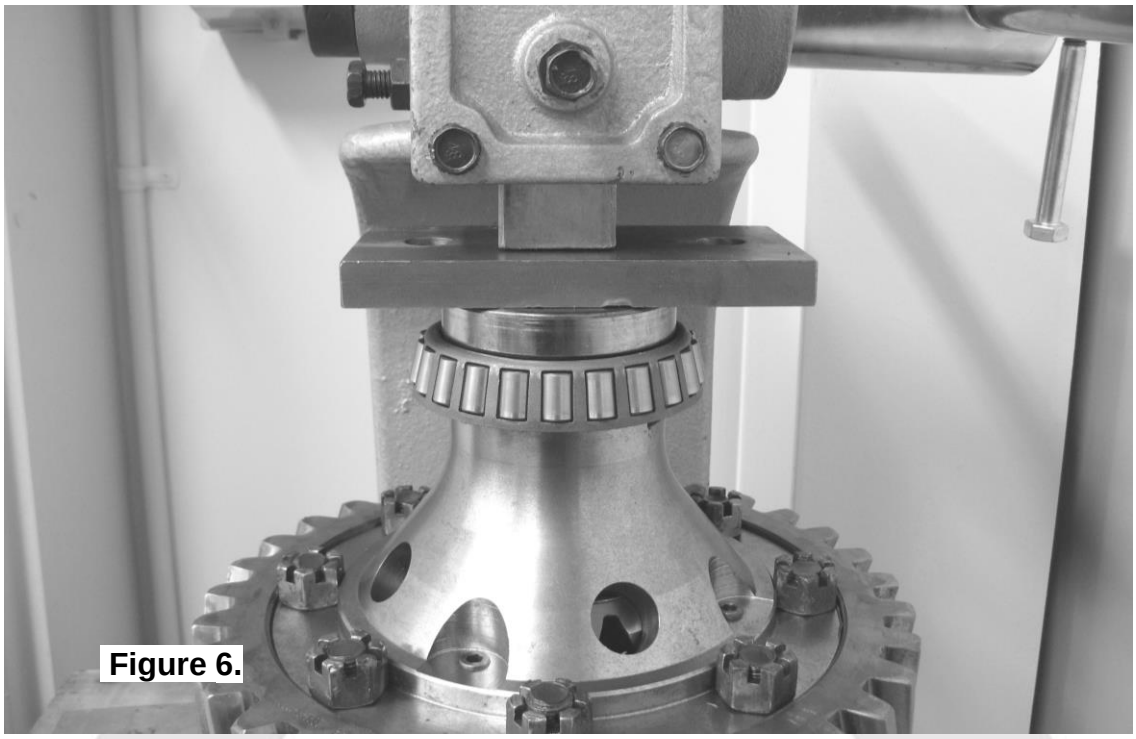


Figure 6.

- ☐ Invert the *Air Locker* and press the other tapered roller bearing cone onto the opposite bearing journal of the differential carrier until the bearing seats firmly against the bearing journal shoulder.

3.4 Drilling and Tapping the Bulkhead Port

An airline port must be drilled and tapped through the axle housing casting to mount the bulkhead fitting into.

- ☐ Cover the worm gear area with rags to protect from metal filings.
- ☐ Mark a spot on the axle housing casting in the position shown in Figure 7.

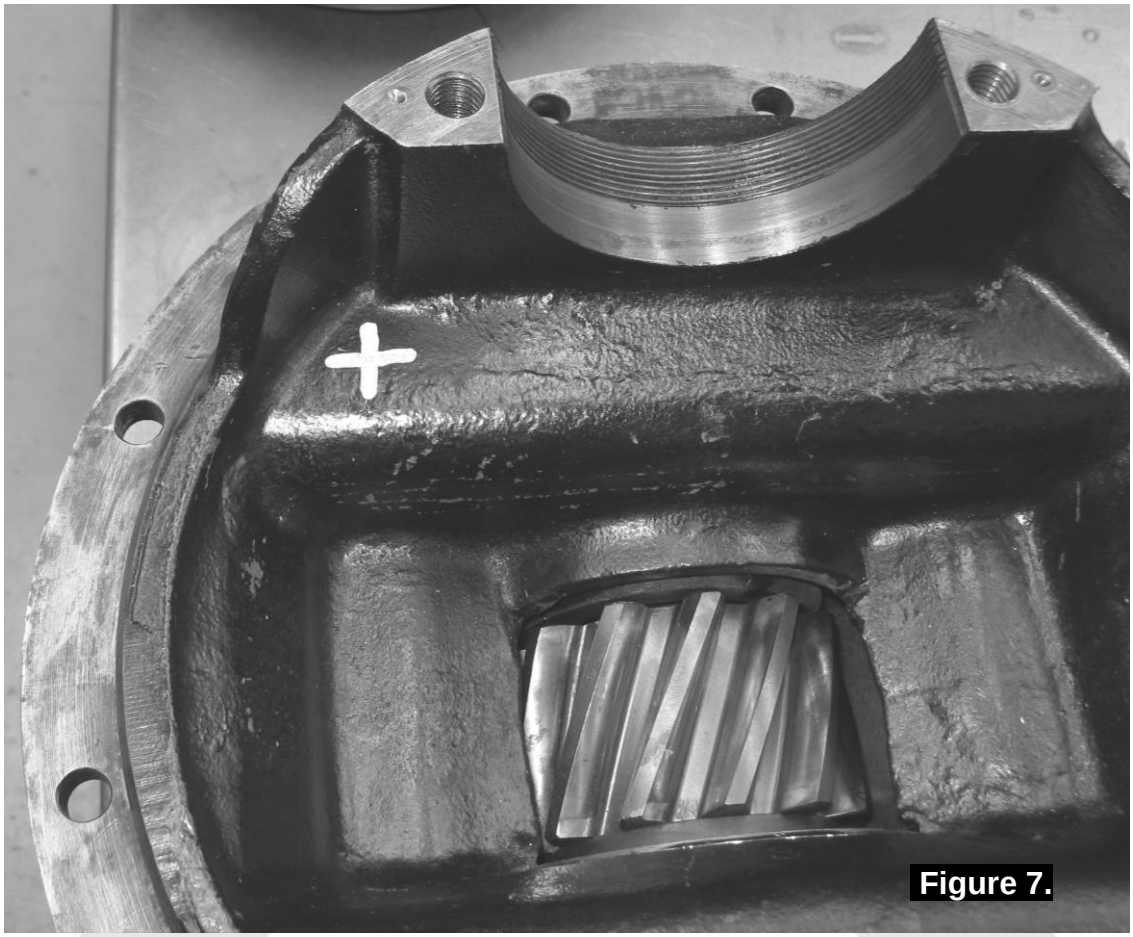


Figure 7.

- ☐ Drill through the housing square to the inside surface using a 11.2mm [7/16”] drill.
- ☐ Tap the hole from the outside using a ¼” NPT pipe tap.
- ☐ Remove any sharp edges from the hole that may chip-off and fall into the housing.

3 Installing the Air Locker

3.5 Final Air Locker Assembly

- ☐ Reinstall the *Air Locker* into the axle housing.
- ☐ Install the bearing caps oriented as they were marked before they were removed.
- ☐ Rotate the seal housing so the slot and the tube are pointing straight out of the axle opening. Then install the seal housing bracket with the tab locating in the slot as shown in Figure **8.**

NOTE : **Washers are to be left off the seal housing side bearing cap bolts.**

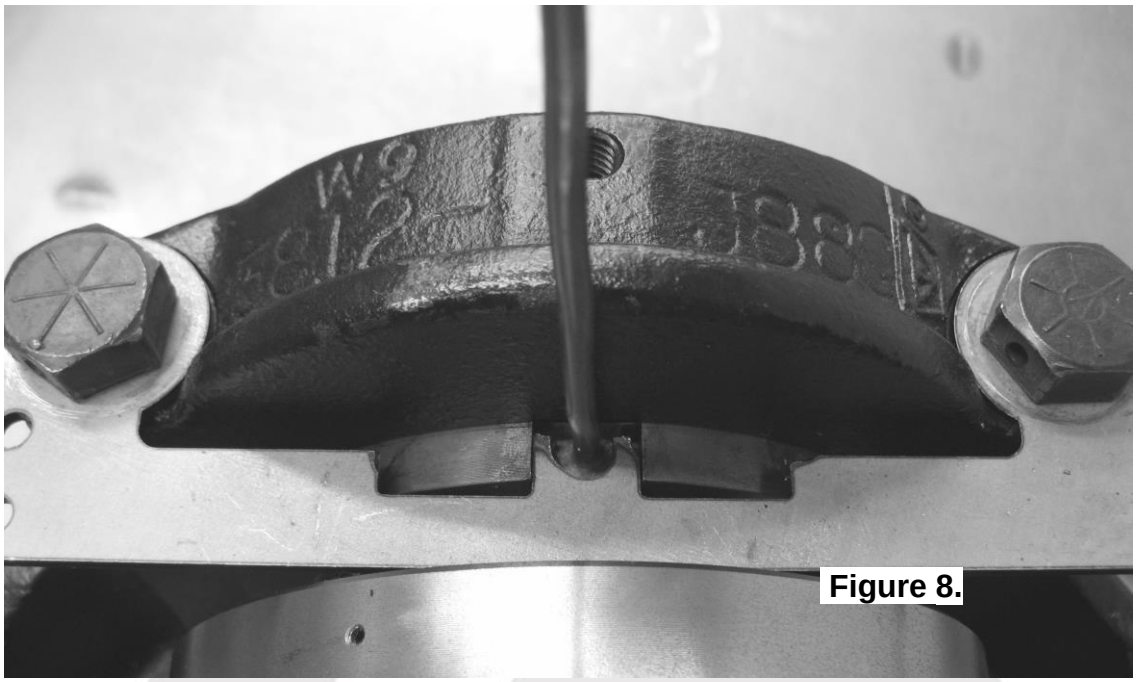


Figure 8.

- ☐ Insert the bearing cap bolts and finger tighten. It is not necessary to torque them down at this time.
- ☐ Tighten the adjuster nuts to give the carrier bearings the required preload.

3.6 Profiling the Seal Housing Tube

☐ Without using sharp, jagged tools such as pliers (your hands are the best tool for this job), gently bend the seal housing tube so that it runs in a loop beside the flange cap and out through the tapped bulkhead port as shown in Figures **9.**, **10.**, and **11.**

NOTE : **It is a good idea to cable tie the tube to the seal housing bracket to keep it from contacting anything inside the housing.**

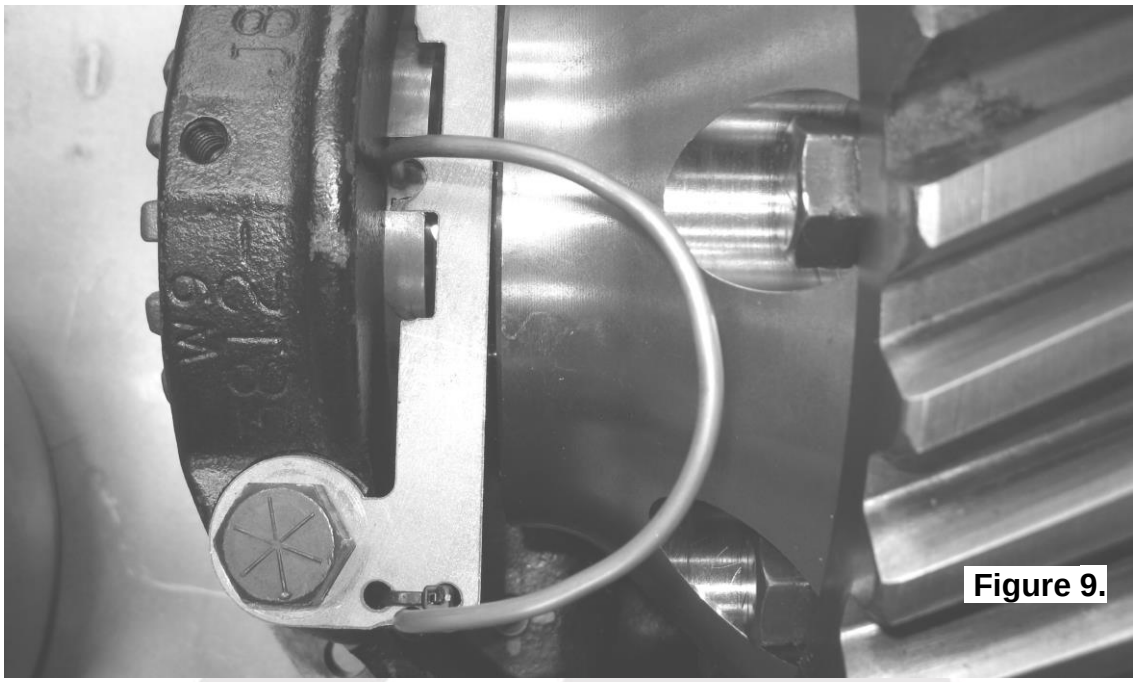


Figure 9.

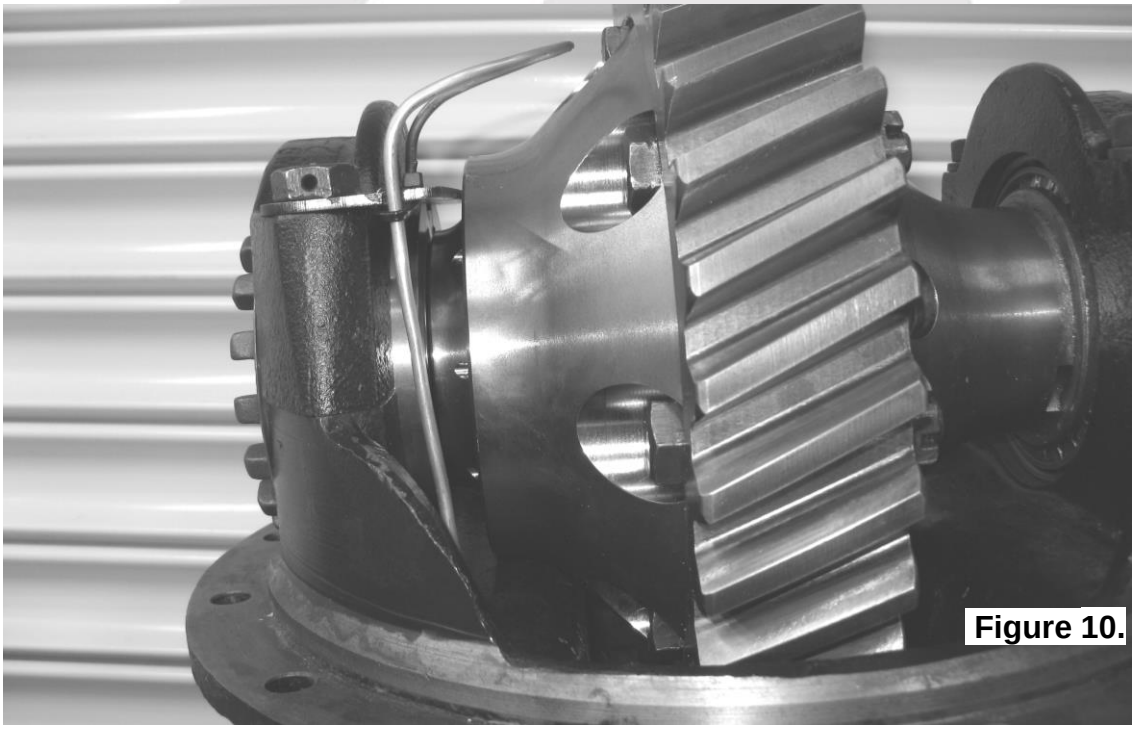


Figure 10.

3 Installing the Air Locker

Figure 11.

3.7 Setting Up the Bulkhead Fitting

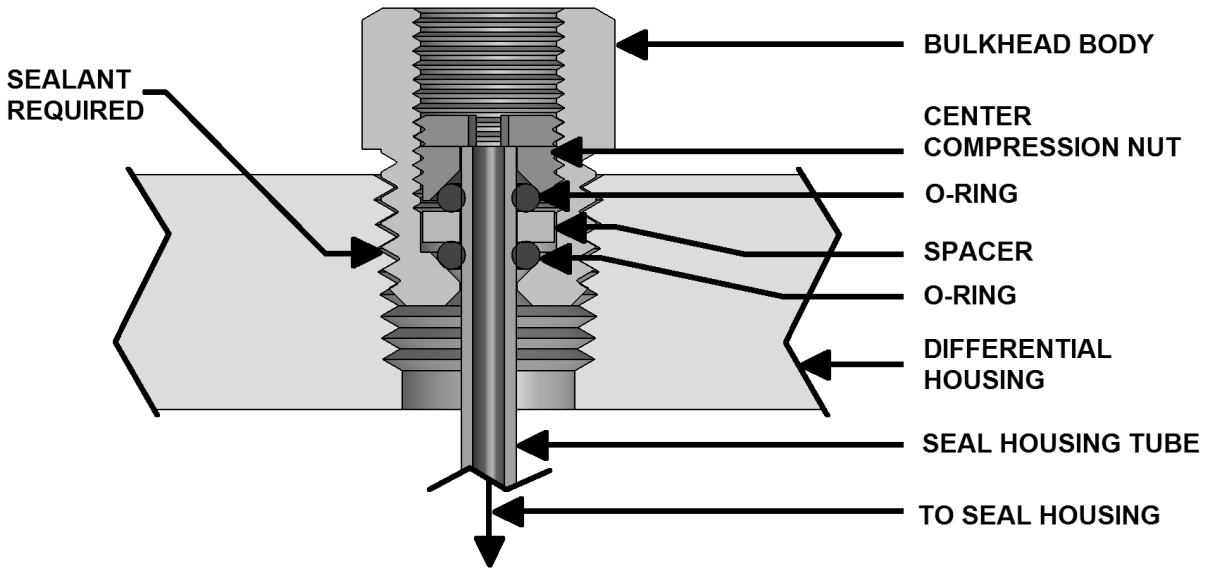
- ☐ Trim the seal housing tube that is extended through the bulkhead port to approximately 8mm [5/16”] long using an automotive brake line tubing cutter.

NOTE : **Never use a hacksaw to cut the seal housing tube as this will leave metal filings in the air system.**

- ☐ Apply thread sealant to the outside threads of the bulkhead body.
- ☐ Screw the bulkhead body into the tapped hole, and lightly tighten using a 14mm [9/16”] spanner.
- ☐ Wipe the area clean of any excess thread sealant (inside and outside of the housing).
- ☐ Insert the free end of the seal housing tube into the bulkhead fitting until it protrudes approximately 8mm [5/16”] through the other side.
- ☐ From the outside of the housing, assemble one of the small O-rings over the top of the short length of seal housing tube protruding through the bulkhead fitting.
- ☐ Install the brass spacer.
- ☐ Install the second small O-ring after the spacer.
- ☐ While holding the seal housing tube into the bulkhead fitting, insert the chamfered end of the center compression nut over the extended tube as shown in the assembly diagram (Fig. 12.), and screw it into the bulkhead body, and tighten using Pozidriv #3 screwdriver.

3 Installing the Air Locker

Figure 12.



NOTE : Make sure the seal housing tube is all of the way into the center compression nut while you are tightening it.

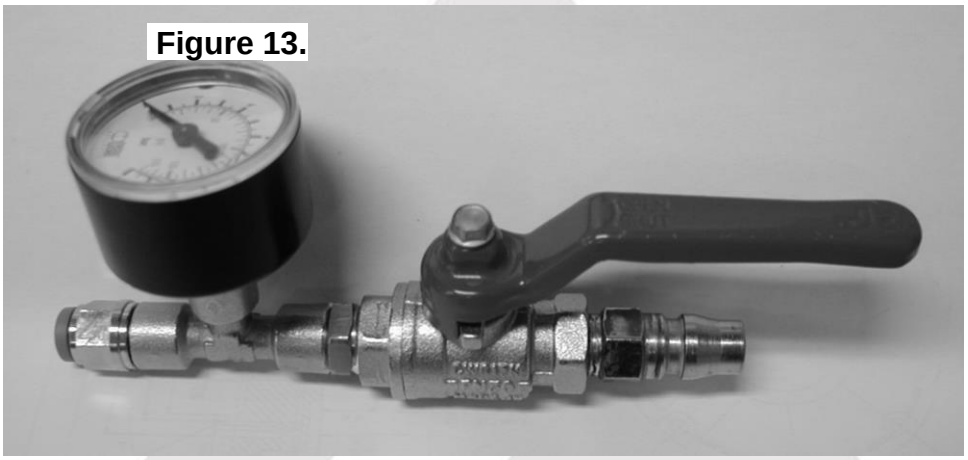
NOTE : Firmly tighten the center compression nut so that a good seal is formed around the tube.

3.8 Bench Testing the Air Locker

- ☐ To test the *Air Locker*, when 620kPa [90 PSI] shop air is applied to the seal housing tube, the *Air Locker* should engage.
- ☐ Check all fittings and the seal housing for air leaks.
- ☐ Rotate the differential carrier by turning the pinion flange whilst applying air pressure.

NOTE : **An accurate way to test for air leaks is to fit a shut-off valve to an air pressure gauge (Available as ARB part #ALTG01). Charge with shop air until 620 KPA [90 PSI] is reached, shut the valve off, disconnect the air hose, and watch to see if there is any drop in pressure. Any gradual pressure drop indicates an air leak. (Fig.13.)**

Figure 13.



- ☐ If a leak is found to be present, spray a soap and water mixture onto the bulkhead air fitting. Bubbles should appear at any leak points.

NOTE : **Do not spray this soapy mixture inside the differential**.

- ☐ Check that leaky fittings have been adequately tightened.
- ☐ Disassemble, clean threads, and reapply thread sealant if leaking persists.
- ☐ If a leak is found at the seal housing, carefully remove and refit. Be very careful with the O-rings and check they have not been damaged during installation.

3.9 Reinstalling the Differential and Axles

- ☐ Reinstall the differential and axles as per your vehicle manufacturers service manual.

4 Installing the Air System

4.1 Mounting the Solenoid

4.1.1 Connection to an ARB Air Compressor (Fig.14.)

☐ Remove one of the 1/8” BSP plugs from its port in the compressor manifold.

☐ Apply Teflon paste to the 1/8” BSP nipple on the solenoid and insert it into the port and tighten. The solenoid should be rotated into a position which does not obstruct any other ports on the compressor tank.

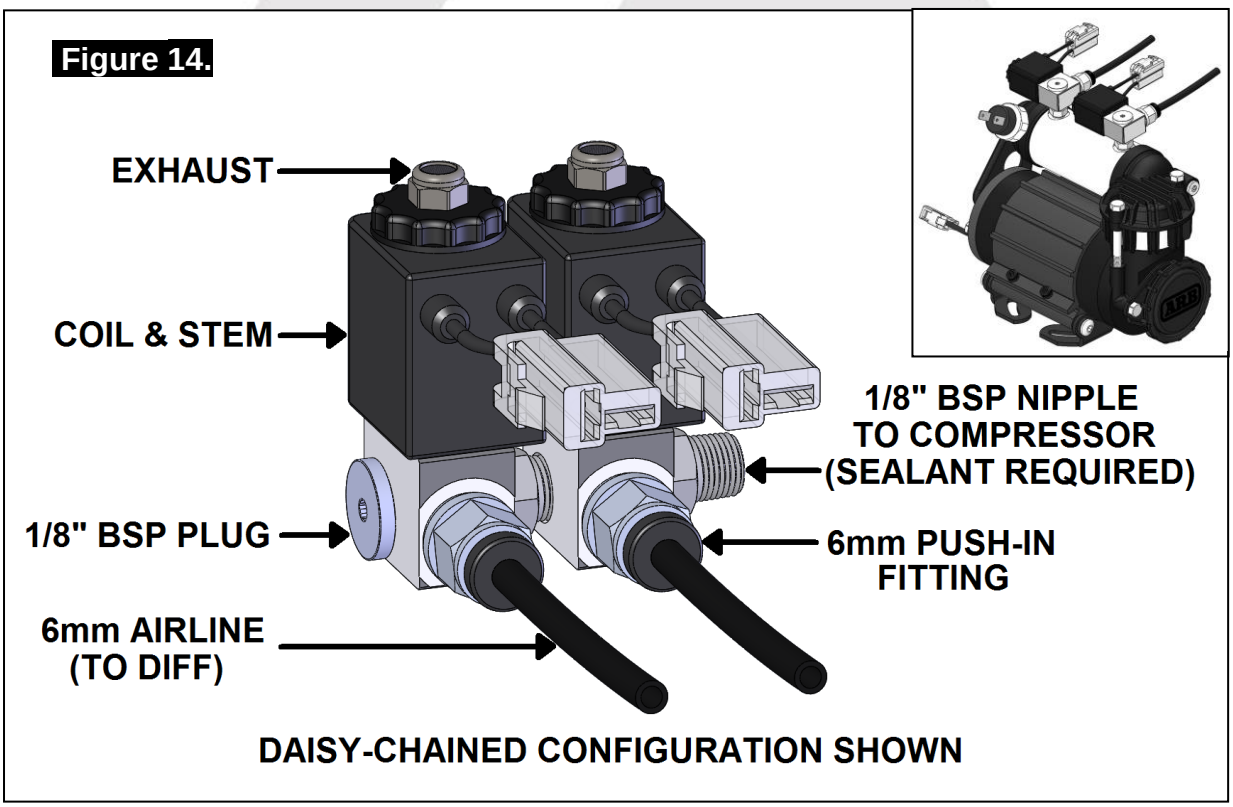
NOTE : **The coil and stem of the solenoid can be removed to make installation easier.**

NOTE : **The solenoid is marked with two #1 ports. If space is tight, a second solenoid can be “daisy-chained” off the first one by removing the plug from the redundant #1 port and screwing the nipple from the second solenoid into it (Fig. 14.).**

NOTE : **The solenoid exhausts compressed air through the center of the black retaining cap when the *Air Locker* is disengaged. Make sure this orifice cannot be obstructed.**

☐ Assemble the 6mm push-in fitting into the solenoid outlet port (stamped “2”) and hand tighten.

Figure 14.



4.1.2 Connection to an Alternate Air Source

For ease of installation, quality of air supply, and a high level of dependability from your *Air Locker(s)*, ARB strongly recommends use of a genuine ARB Air Compressor, however, the *Air Locker* air system can be operated on any alternate air source that meets each of the following guidelines:

- ☐ Must supply a minimum of 85PSI [586kPa].
- ☐ The supply must never exceed 105PSI [724kPa].
- ☐ The Air source should have a tank capacity that enables it to actuate the *Air Locker*(s) in one charge so that no hesitation is experienced when locking one or two differentials.

HINT : **A good way to insure that you have the necessary capacity is to make sure you can engage, disengage, and then reengage your *Air Locker*(s) without the air source having to regenerate (e.g., without the compressor turning on to refill the tank).**

- ☐ Must supply clean air, free of rust, dirt, water, or other foreign matter.
- ☐ Must match the 1/8” BSP porting of the *Air Locker* solenoid.

☐ Mount solenoid within close proximity of the air supply and secure it from the effects of vibration and shock.

☐ Connect the air supply to the 1/8” BSP inlet port of the solenoid (stamped “1” on the solenoid body) using thread sealant.

IMPORTANT :

ARB cannot warrant your *Air Locker*(s) against damage caused as a result of using an alternate air supply. If you have any doubts as to the suitability of your air system to use in an *Air Locker* system, consult your ARB distributor.

4.2 Running and Securing the Air Line

The path taken by the air line from your air source (i.e., compressor) to your *Air Locker* is unique to your vehicle and the position of your air source. Plan ahead carefully when running the air line and always follow these guidelines:

- ☐ Account for axle travel when running the line from the axle to a fixed point on the vehicle. Leave enough slack in the air line to allow for maximum suspension travel in both directions. (Not necessary on IFS installations)
- ☐ Avoid leaving large lengths of air line hanging underneath the vehicle where they may get tangled on rocks, sticks, etc.

HINT : **Cable tying the air line to one of your flexible brake lines will account for axle travel and should help keep your line from getting snagged.**

- ☐ Run the air line all the way from the compressor to the differential before trimming either end of the line to length. This will save complications that may arise if the air line has to be removed.
- ☐ Make sure the line does not contact sharp edges or abrasive surfaces that may damage the air line over time.
- ☐ Do not run the air line around tight bends which may kink the air line and restrict or block the air flow.
- ☐ Keep the air line well away from your vehicle's exhaust components. Air lines will melt if subjected to extreme heat.
- ☐ Do not run more air line than necessary. Excess line volume created when coiling the left over hose, using unusually large diameter hose, etc., will increase drain on the compressor tank resulting in the compressor running more often than needed.
- ☐ Support the air line by tying it back with cable ties wherever possible.
- ☐ At the solenoid end of the air line, always trim the line to length with a sharp knife to avoid distorting the tube where it plugs into the push-in fitting.

NOTE : **To remove the air line from the push-in fitting; push the air line into the fitting as far as possible, then press the flange inward, then pull the air line free of the fitting.**

- [ ] To attach the air line to the push-in fitting of the solenoid; insert the line firmly into the fitting, pull outward on the flange of the fitting while holding the line as far into the fitting as possible, and then gently pull outward on the air line to clamp the line in place.

4.3 Connection to the Bulkhead Fitting

- [ ] In the case of an IFS axle assembly or in the case that the axle assembly has been completely removed from the vehicle, the assembly will have to be remounted in order to position the bulkhead fitting in its correct location for air line access.
- [ ] Trim the air line to length using a sharp knife.
- [ ] Assemble an aluminium washer onto the banjo bolt and insert through the banjo fitting. Assemble second aluminium washer and tighten into bulkhead fitting using a 14mm [9/16”] spanner. (Fig.15.)
- [ ] Apply thread sealant to the tapered thread of the compression fitting body and screw into the banjo fitting. Tighten using a 12mm spanner.
- [ ] Insert the outer compression nut and ferrule over the air line. Ferrule should be orientated as per Fig.15.

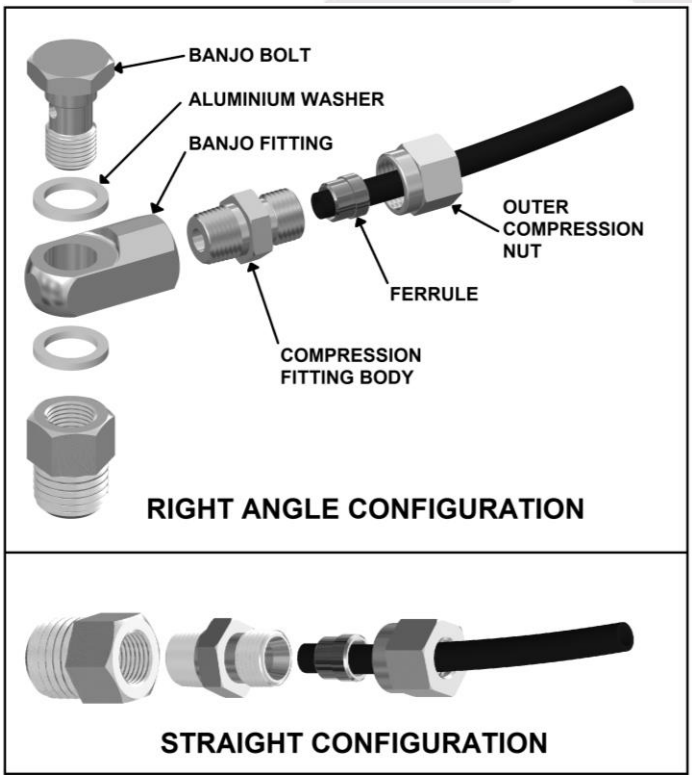


Figure 15.

4 Installing the Air System

☐ Push the airline into the compression fitting body and screw the outer nut down onto it. Using a 12mm spanner, tighten the outer nut onto the compression fitting body.

NOTE : **Some force is required to crush the ferrule, however the outer compression nut will tighten against a stop. Over tightening will not create a better seal.**

☐ Secure any loose sections of tube with a cable tie.

NOTE : **When right angle routing of the tube is not required, screw the compression fitting body straight into the bulkhead fitting body (Fig.15.).**

5 Mounting & Connecting the Electrical System

5.1 Mounting the Actuator Switch(es)

Air Locker actuator switch(es) can be easily panel mounted inside the vehicle in a 21mm x 36.5mm [0.83” x 1.44”] rectangular cutout.

NOTE : **Only attach the cover plate to the face of the switch once the switch has been mounted and wired correctly as the cover plates are designed to be difficult to remove.**

For reasons of safety and for ease of operation, the *Air Locker* actuator switch(es) should be mounted in a location picked to best suit the operator. Make sure you have taken the following points into consideration:

- ☐ Switch(es) MUST be mounted and should never be allowed to simply dangle from the wiring loom during vehicle use.
- ☐ Switch(es) should be within easy reach of the driver. Ideally, any *Air Locker* switch should be able to be operated without physical effort or distraction to the driver.
- ☐ Switch(es) should be mounted within the line of sight of the driver so that switch position (‘ON’ or ‘OFF’) can be visually determined by the rocker position and the illumination state.
- ☐ The position of the switch(es) should best eliminate any possibility of accidental operation by the driver or one of the passengers.
- ☐ Switch cutout position(s) must be located in an area with a minimum of 50mm [2”] of clearance behind the face of the cutout.
- ☐ Switch(es) should not be mounted where they will be exposed to water (e.g., in the lower section of an inner door panel).
- ☐ ARB recommends that you apply the *Air Locker* Warning Sticker (ARB part # 210101) within close visual proximity of the switch location.

NOTE : **If no adequate position can be found on existing dashboard panels, a surface mounted bracket (Fig. 16.) may be purchased from your ARB *Air Locker* distributor to suit 1, 2, or 3 switches.**

Figure 16.

5.2 Wiring the Actuator System

5.2.1 Connection to an ARB Air Compressor

When wiring the *Air Locker* actuator switch(es) and solenoid(s) to an ARB Air Compressor, all connections can easily be set up directly from the supplied wiring loom. (Fig. 17.)

NOTE : **180409 model loom shown for reference only. Refer to your ARB Air Compressor Installation Guide for details on configuring your installation.**

Figure 17.

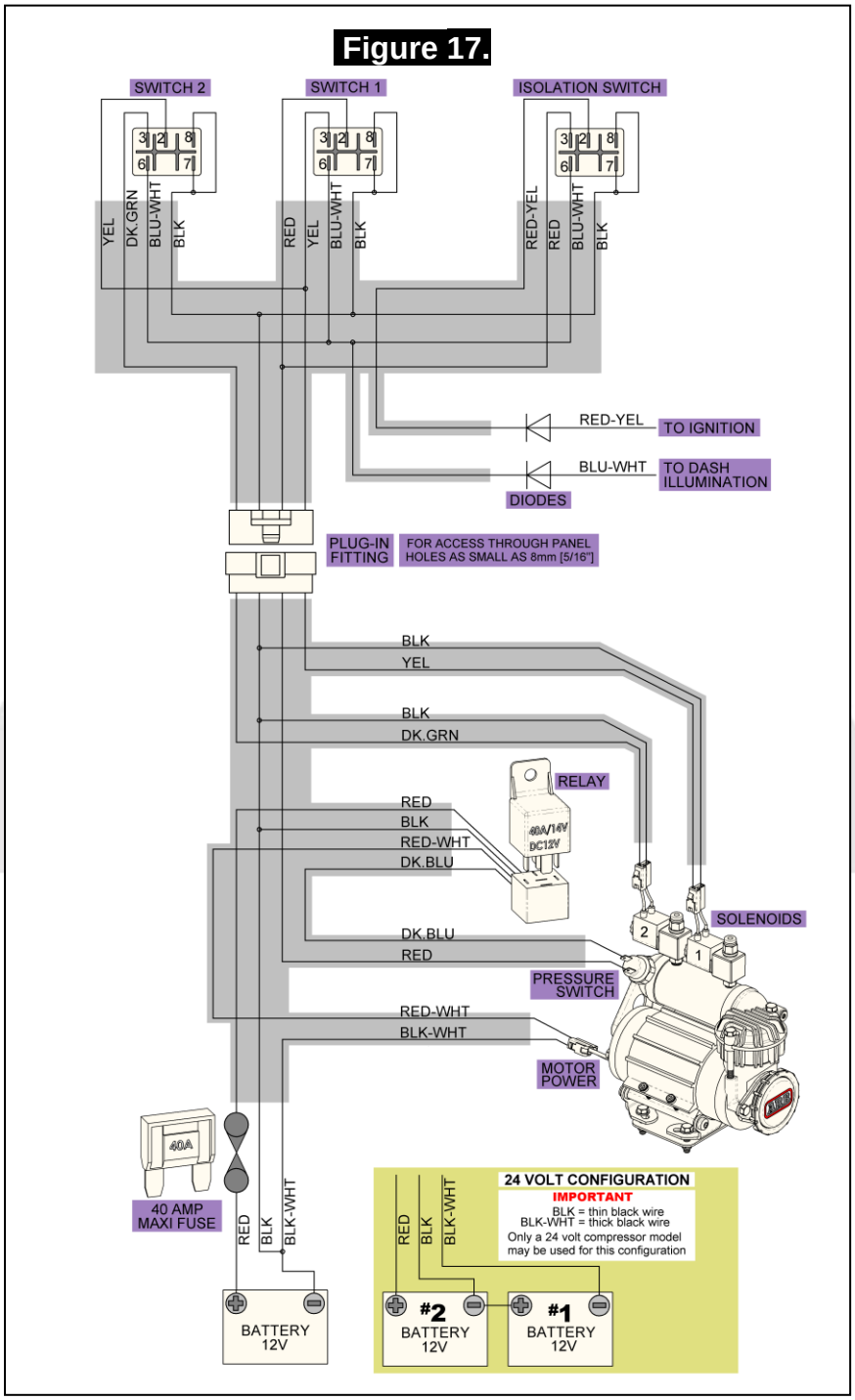


Figure 18.

5.2.2 Connection to an Alternate Air Source

When connecting the actuation switch to an alternate air source, the switch(es) should be wired according to figures 19. and 20., depending on whether one or two *Air Lockers* will be installed in the vehicle.

5.2.2.1 Single Air Locker System

- ☐ If only one *Air Locker* is to be installed in the system, the switch and solenoid should be wired according to figure 19. regardless of whether the *Air Locker* has been installed in the front or rear axle of the vehicle.
- ☐ Attach the appropriate switch cover (i.e., 'FRONT' or 'REAR') to the switch.

NOTE : **Refer to Figure 18. for the correct switch terminal identification and switch orientation.**

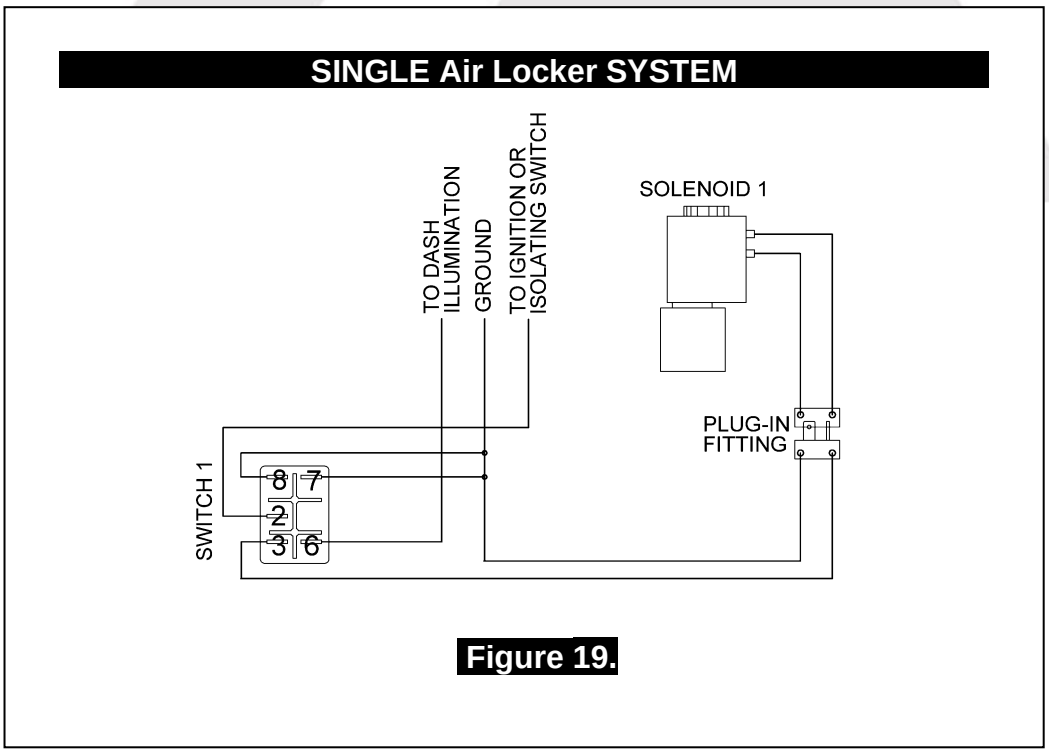


Figure 19.

5.2.2.2 Dual Air Locker System

☐ If two *Air Locker*s are to be installed in the system, ARB recommends that the switches and solenoids be wired according to figure 20. For safety reasons, this configuration allows SOLENOID 2 to be actuated only if SOLENOID 1 is already on.

☐ Attach the “REAR AIR LOCKER” switch cover to SWITCH 1, and the “FRONT AIR LOCKER” switch cover to SWITCH 2.

NOTE : **Refer to Figure 18. for the correct switch terminal identification and switch orientation.**

☐ Configure SOLENOID 1 as the air line leading to the rear axle *Air Locker*, and SOLENOID 2 as the air line leading to the front axle *Air Locker*.

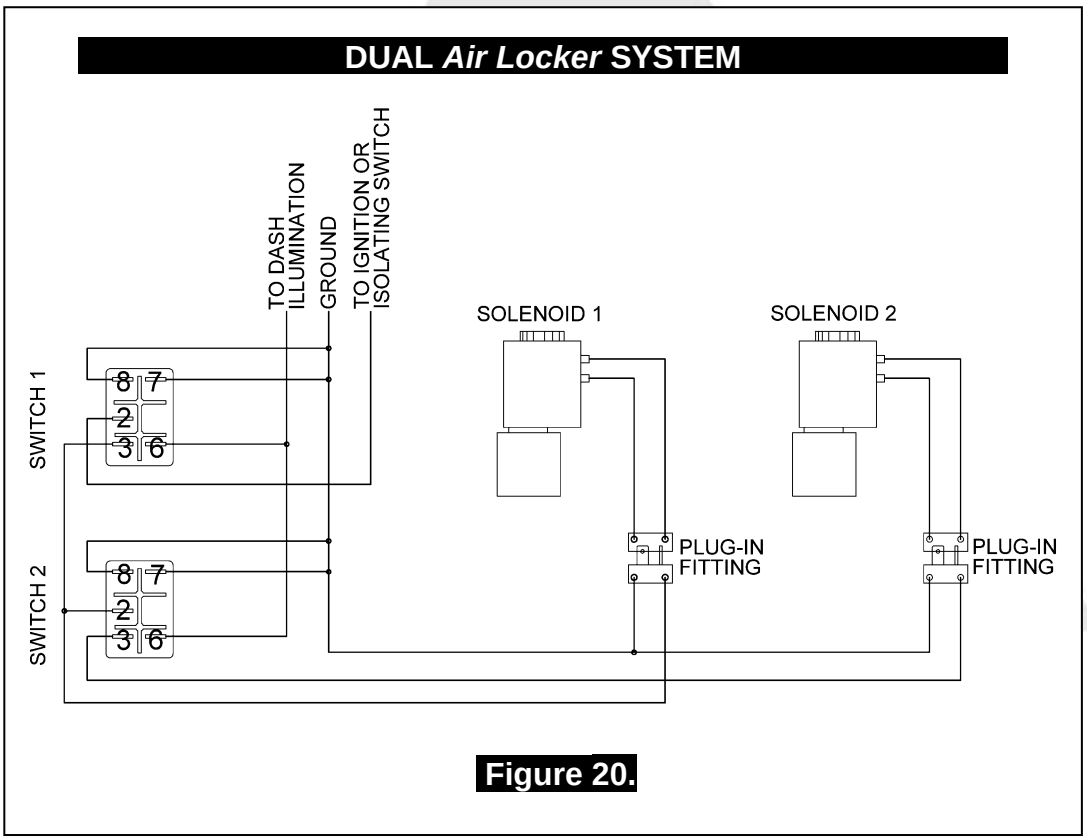


Figure 20.

6 Testing & Final Assembly

6.1 Leak Testing

☐ With the vehicle parked and the engine off, turn the compressor on and wait until the air system is fully charged.

NOTE : **With the *Air Locker(s)* disengaged, the air source (i.e., compressor) should not have to recharge over time. Intermittent recharging without *Air Locker* use usually indicates a leak at the solenoid fittings or at the compressor tank O-ring seal.**

☐ Actuate the *Air Locker*(s).

☐ The compressor should not come on again for a period of at least 15min. Air system recharging within that time period would indicate that a leak is present in the system.

NOTE : **If an alternate air source (e.g., an air cylinder or a belt driven air pump) is used instead of a compressor, the air system will have to be leak tested with a pressure gauge and a shut-off valve in series before the solenoid input.**

☐ If a leak is found to be present, spray a soap and water mixture onto all air fittings in the system while the compressor is fully charged. Bubbles should appear at any leak points.

☐ Check that leaky fittings have been adequately tightened.

☐ Disassemble, clean threads, and reapply thread sealant if leaking persists.

6.2 Testing the Air Locker Actuation

To test that your air system, electrical system, and your *Air Locker* differential is functioning correctly:

- ☐ Support the vehicle such that the wheels are free to rotate (e.g., on axle stands, a chassis hoist, etc.)
- ☐ Leave the parking brake off, the transmission in neutral, and the *Air Locker* switch 'OFF'.
- ☐ Turn the ignition to the 'ON' position (leaving the motor off). The large illuminating symbol on the *Air Locker* switch cover should be 'OFF'.
- ☐ Turn the compressor (or alternate air source) on to charge the air supply up to its maximum pressure.
- ☐ While supporting the drive shaft flange, rotate one wheel by hand.
- ☐ The wheel should rotate freely and the opposite wheel should be turning in the opposite direction without any resistance or mechanical noise from within the differential.
- ☐ Turn the *Air Locker* switch to the 'ON' position. The illuminated symbol on the switch cover should light up.
- ☐ Rotate the same wheel again.
- ☐ Both wheels should rotate together.
- ☐ Turn the switch off again.
- ☐ Rotate the same wheel.
- ☐ The wheels should again rotate in opposite directions.

6.3 Filling the Differential

NOTE : **Consult the *ARB Air Locker Operating & Service Manual* for recommendations on differential lubricant specifications.**

- ☐ Refill the differential until level with the filler hole.
- ☐ Rotate the differential carrier 2 full turns.
- ☐ Check the oil level and add oil if necessary.
- ☐ Replace filler plug (apply thread sealant to filler plug before inserting if it is a threaded type plug).
- ☐ Wipe differential housing clean of any oil or grease which may collect dirt or other abrasive particles.

6 Testing & Final Assembly

6.4 Post-Installation Check List

Now that the *Air Locker* installation has been completed, ARB recommends that you take the time to complete the following check list just to insure that you haven't missed any of the vital steps.

- ☐ The air system has been leak tested.
- ☐ Thread locking compound was used on the ring gear bolts.
- ☐ All torque settings comply with the vehicle manufacturer's specs and were set with an accurate torque wrench.
- ☐ Differential fluid complies with ARB recommendations and has been filled to the correct level.
- ☐ Axle breather has been checked and found to be clear and free flowing, and located where it will not be susceptible to water or mud contamination.
- ☐ All air lines and wiring have been securely cable tied to resist snagging.
- ☐ Switch(es) have been securely mounted within operator reach, yet well away from danger of accidental engagement.
- ☐ Switch(es) function properly and illuminate to indicate that *Air Locker*(s) are engaged.
- ☐ All operators who are to use the *Air Locker* have read, and fully understand the *ARB Air Locker Operating & Service Manual*.
- ☐ The *Air Locker* Warning Sticker has been located within close proximity of the actuator switch(es).

INSTALLATION PERFORMED BY: _____

DATE OF INSTALLATION: _____

ODOMETER READING: _____

ARB AIR LOCKER SERIAL No: _____

6 Testing & Final Assembly

7 Parts List

7.1 Exploded Assembly Diagram (See itemized parts list overleaf)

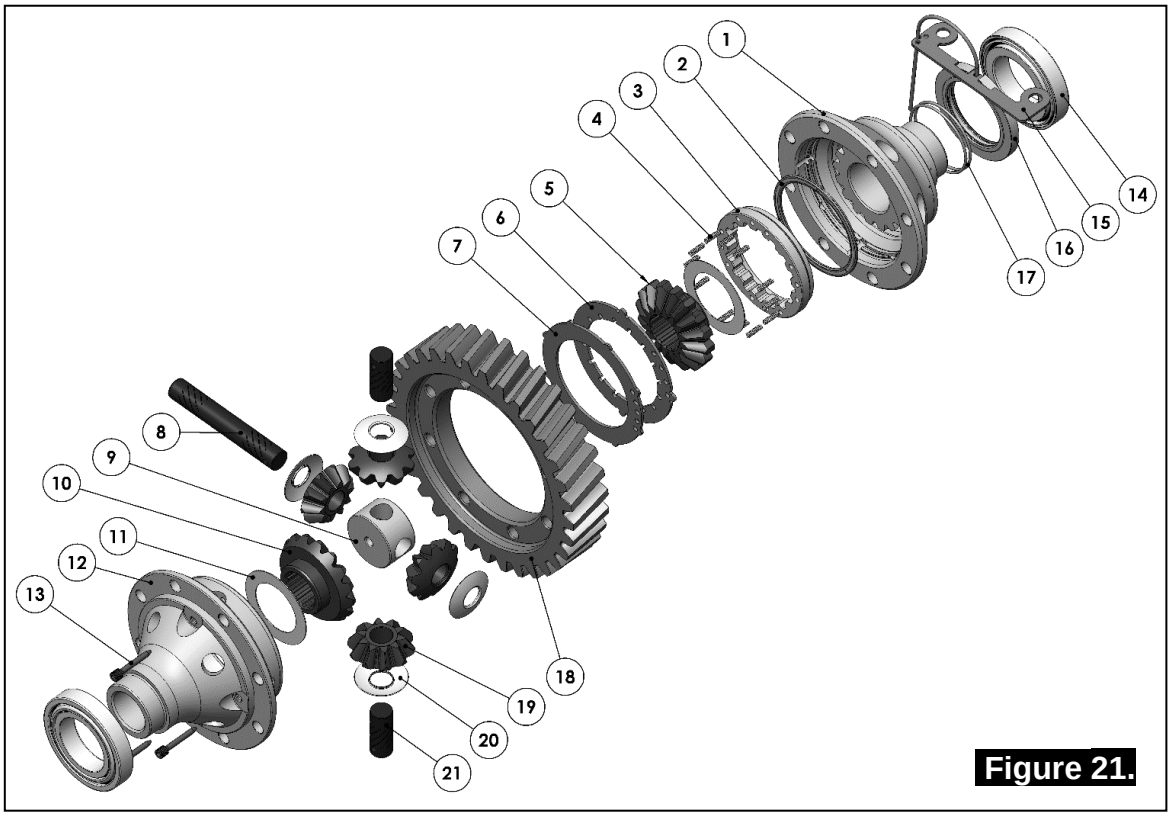


Figure 21.

7.2 Specifications

Axle Spline	16 tooth, Ø41.3 [1.625”]
Ratio Supported	All
Ring Gear ID	206.38mm [8.125”]
Ring Gear OD	268mm [10.55”]
Ring Gear Bolts	8 bolts on Ø181.1mm [7.13”]

7 Parts List

7.3 Itemized Parts List

(See exploded diagram figure 21.)

ITEM #	QTY	DESCRIPTION	PART #	NOTES
1	1	FLANGE CAP KIT	028602SP	
2	1	BONDED SEAL	160703SP	
3	1	CLUTCH GEAR	050807SP	
4	1	RETURN SPRING (PK OF 12)	150107SP	
5	1	SPLINED SIDE GEAR	SEE NOTE	2
6	1	RETURN SPRING GUIDE BRACKET	220207	
7	1	RETURN SPRING SUPPORT BRACKET	220208	
8	1	LONG CROSS SHAFT	061501SP	
9	1	SPIDER BLOCK	070402SP	
10	1	SIDE GEAR	SEE NOTE	2
11	2	SIDE GEAR THRUST WASHER	SEE NOTE	3
12	1	DIFFERENTIAL CASE	013202SP	
13	1	RETAINING PIN SET (PK OF 4)	120601SP	
14	2	TAPERED ROLLER BEARING	NOT SUPPLIED	
15	1	SEAL HOUSING BRACKET	220206	
16	1	SEAL HOUSING KIT	082102SP	
17	1	SEAL HOUSING O-RINGS (PK OF 2)	160246-2	1
18	1	HELICAL SPUR GEAR	NOT SUPPLIED	
19	4	PINION GEAR	SEE NOTE	2
20	4	PINION GEAR THRUST WASHER	SEE NOTE	3
21	2	SHORT CROSS SHAFT	061601SP	
*	1	BULKHEAD FITTING KIT (BANJO TYPE)	170114	4
*	1	AIR LINE (6mm DIA X 6m LONG)	170314SP	4
*	1	SOLENOID VALVE (12V)	180103	
*	1	SWITCH|FR OR RR LOCKER	180225	
*	1	CABLE TIE (PK OF 25)	180305	
*	1	OPERATING & SERVICE MANUAL	210200	
*	1	INSTALLATION GUIDE	2102145	

* *Not illustrated in exploded view*

NOTES

1 For replacement O-rings use only BS151 Viton 75.
2 Available only as complete 6 gear set # 728K021.
3 Available only as complete thrust washer kit #730K01.
4 All diffs produced before serial #17070001 came with 5mm air connection system. For information contact ARB.
- For the 40 spline OE shaft model see RD200 (Section 2.200).

Part No. 2102145
Revision 27/10/2020