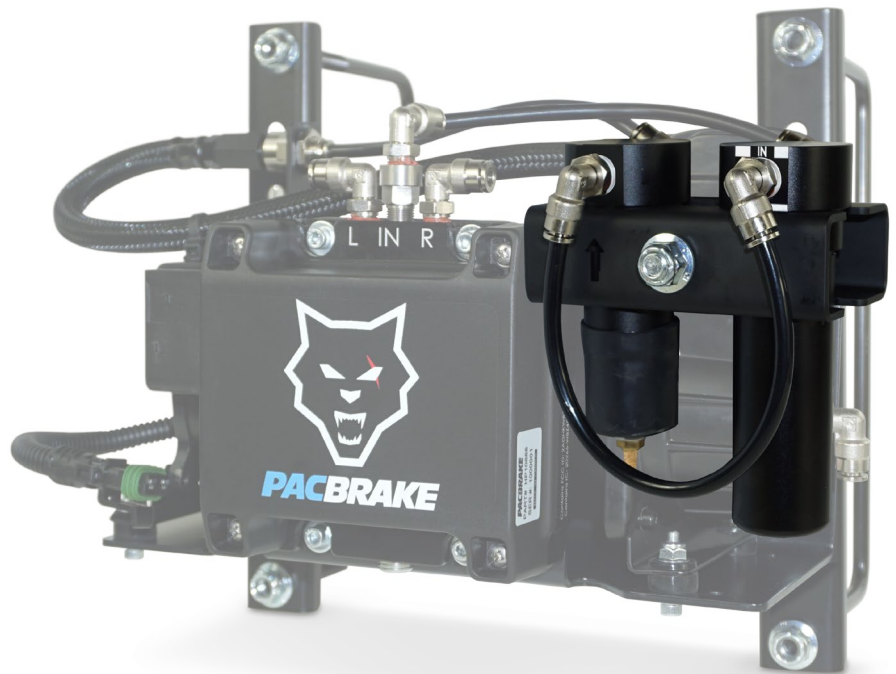


Installation Manual

PART OF PACBRAKE'S

AIR ARSENAL



WATER SEPARATOR KIT

APPLICATION: Universal*

**For use with HP30040-QM BRAVO Wireless Air Control systems only (sold separately)*

When used with a compatible air control system, this Water Separator Kit removes moisture from compressed air, helping prevent ice blockage, extend component life, and maintain consistent system performance.

** See application guide for proper fitment.*

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Thank you and congratulations on the purchase of a Water Separator kit. This kit is for use only with BRAVO's HP30040-QM Wireless Air Control System (sold separately).

Please read the entire manual prior to starting the installation to ensure you can complete it once started. If you are unsure whether you are qualified to install the kit, consult a qualified service professional before beginning the installation.

SAFETY WARNINGS!

You must read and abide by the instructions found in this manual, paying close attention to the helpful (+), cautionary (!) or dangerous (!) warning icons highlighting important safety recommendations and maintenance suggestions throughout this manual. Failure to abide by all instructions in this manual will void the warranty.

IMPORTANT TO KNOW WHEN USING A WATER SEPARATOR

- ! Pressurized air and moisture may discharge from the water separator. Keep clear of the outlet and avoid exposure to the discharge during operation or system shutdown.
- ! Always wear safety glasses when installing or servicing compressed-air components.
- ! Never work on a pressurized air system. Always fully depressurize before installing or servicing components.

	HELPFUL INSTALL TIP Additional information that could potentially make the job a little easier.
	PLEASE USE CAUTION Unsafe practices could result in damage to you or your vehicle, or others.
	DANGER WARNING Hazards which could result in severe personal injury or death.

IMPORTANT TO KNOW WHEN USING WITH AIR SUSPENSION

- ! An air suspension kit will not increase the GVWR (Gross Vehicle Weight Rating), as the GVWR is determined by the vehicle manufacturer. **Do not exceed the maximum capacity listed by the vehicle manufacturer.**
- ! Serious personal injury or death may result from an air spring failure or accident due to improper installation or air spring pressure operation or maintenance.
- ! Inflating an unsecured air spring is dangerous. If it bursts, it could be hurled into the air with explosive force resulting in serious personal injury or death. Never inflate an air spring unless it is secured to the vehicle.
- ! For safe and proper operation of the vehicle, never operate the vehicle under the minimum or over the maximum listed PSI in the air spring(s), (see: MIN/MAX PSI chart on the final page of this manual). Staying within the pressure limits will ensure a reasonable duration of the air springs. **Failure in doing so may result in damage to your vehicle and will void the warranty.**
 - ! PLEASE NOTE: If an onboard air accessory kit is installed, the accessory output pressure can reach 135 PSI. Use caution when inflating objects to prevent exceeding their maximum pressure.
- ! Removing and replacing air springs can be dangerous. This is only a job for a qualified service professional. Never perform air spring service procedures without proper training, tools, and equipment.
- ! It is recommended to always jack the vehicle on the axle. If lifting the vehicle with a floor jack or hoist on the frame, never allow the air spring to limit the travel of the axle. Suspending the axle with the air spring limiting the axle travel **will damage the air spring and void the warranty.** (This warning does not apply to In-Coil Springs)
- ! The air spring must have clearance between itself and the surrounding components to prevent any contact when the air spring is inflated or compressed. Trimming off excess bolt length may also be required to ensure no contact with the spring or other suspension components can be made once installed. **Failure to do so will void the warranty.**

BEFORE STARTING THE INSTALLATION

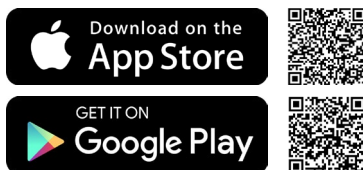
- ❗ **Always read your vehicle owner's manual and follow all instructions and warnings therein prior to modifying your vehicle.**
 - ❗ Ensure there is adequate frame clearance for mounting kit before beginning installation (see Step 1 for more info).
 - ❗ Verify that no brake lines, fuel lines, wiring, or hoses will be pinched or damaged during installation.
 - ❗ This kit contains push-to-connect fittings; using scissors or wire cutters to cut the nylon air line will distort the line and cause the connection to leak. The air line must be cut off squarely with the tube cutter provided in this kit, or a sharp utility knife.
Failure to do so will void the warranty.
 - + It is recommended to use only pneumatic PTFE tape or thread sealant on NPT fitting during the installation for a proper seal.
 - ❗ Always ensure the bolts are not over-torqued; especially when a torque value is provided, failing to use the provided torque value(s) can lead to **premature failure and will void the warranty.**
 - + It is recommended to use a good quality anti-seize on all fasteners to reduce the chance of corrosion and help facilitate removal, if required at a later date.
-

IMPORTANT TO KNOW — APP COMPATIBILITY

⚠ **A Mobile device App is required for initial installation & servicing of the system.**

MOBILE APP USERS:

Please ensure you have downloaded the latest Pacbrake BRAVO™ Wireless Air Control App from the Apple App Store or Google Play Store.



- ▶ Select the icon (with the white background) labelled **BRAVO™ Wireless Air Control**

STANDALONE REMOTE USERS (Part #: HP10660):

The Remote is a simplified alternative to the Mobile App and is intended for air spring control only; the mobile app is required to access the full functionality needed for safe installation, setup, and servicing of this kit. Desiccant status notifications are not available on the Remote. Use the Mobile App periodically to check if desiccant replacement is required. Please ensure the unit is fully charged before use.

SERVICE NOTICE:

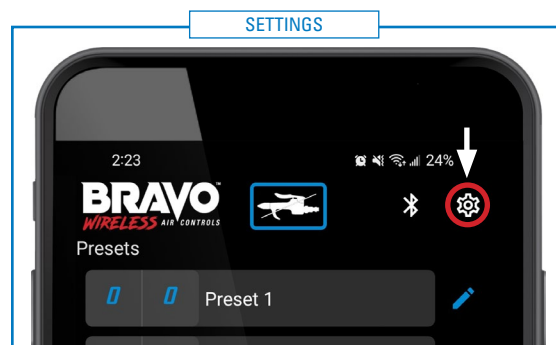
⚠ **Before servicing or performing other maintenance on the wireless air controls system, all pressurized air must be released or 'purged' from the system.**

⚠ **PLEASE NOTE:** A Mobile device App is required for the initial installation and servicing of the system.

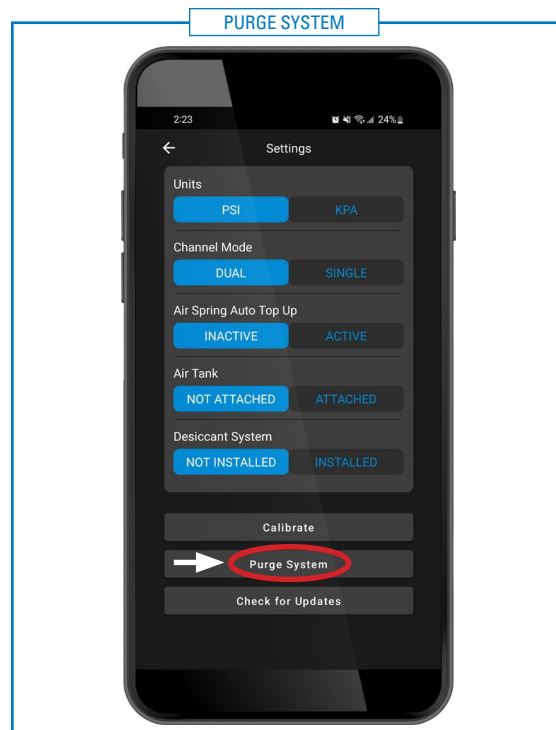
Use the Pacbrake BRAVO™ Wireless Air Control Mobile App to engage the 'Purge' function and de-pressurize the system.

- Navigate to the App Settings (the cog wheel in the top right corner of the screen - highlighted in Figure A)
- Select "Purge System" to fully de-pressurize the air system before servicing (highlighted in Figure B).
- When all air has been exhausted from the system, remove the 10A fuse from the fuse tap in the main wiring harness.

⚠ **PLEASE NOTE:** Any automated inflation function, such as auxiliary air tank inflation, will resume on system power-cycle or by using a fill/drain or preset command in the app or remote.



A



B

KIT CONTENTS

Please confirm the items below are provided in your kit before starting the installation. Reference the kit explosion diagram on the following page for part assembly.

KIT CONTENTS		QTY	PART #
A	Desiccant Filter, 52cc, Aluminum	1	HP2238
B	Water Separator, Solenoid Drain, Aluminum	1	HP10724
C	Bracket, Water Separator Clamp	1	HP2230
D	Bracket, Water Separator Mount	1	HP2229
E	90° Swivel Fitting, 1/4" Tube to 1/4" NPT	4	HP1100
F	Carriage Bolt, 3/8"-16 x 3"	1	HP1003
G	Nut, 3/8"-16 Nylon Lock Flange	1	HP1975
H	Socket Head Cap Screw, #10-32 x 1.25"	2	HP2247
I	Nut, #10-32 Nylon Lock Flange	2	HP2242
J	Washer, #10 Flat	2	C10406
K	Nylon Tube, 1/4" OD, Black – 6.25"	1	M8280
L	Nylon Tube, 1/4" OD, Black – 7.5"	1	M8280
M	Nylon Tube, 1/4" OD, Black – 9.5"	1	M8280
N	Desiccant Packet, 32 g	1	HP2246
O	Zip Tie Mount with 8" Zip Tie	2	HP2096
P	Cable Tie, 7", 8 Pack	1	C11618-8

+ PLEASE NOTE: The BRAVO HP30040-QM Wireless Air Control kit (required, sold separately) has Frame Requirements of:

- Height of no more than 9" [230mm]⁺
- Width between 2 5/8" [66mm] to 4" [102mm]

⁺ QuickMount Extender Brackets (Part #: HP10742) are available separately to accommodate frame heights up to 11 5/16" [287mm]

Contact your point of purchase for further information



REQUIRED TOOLS

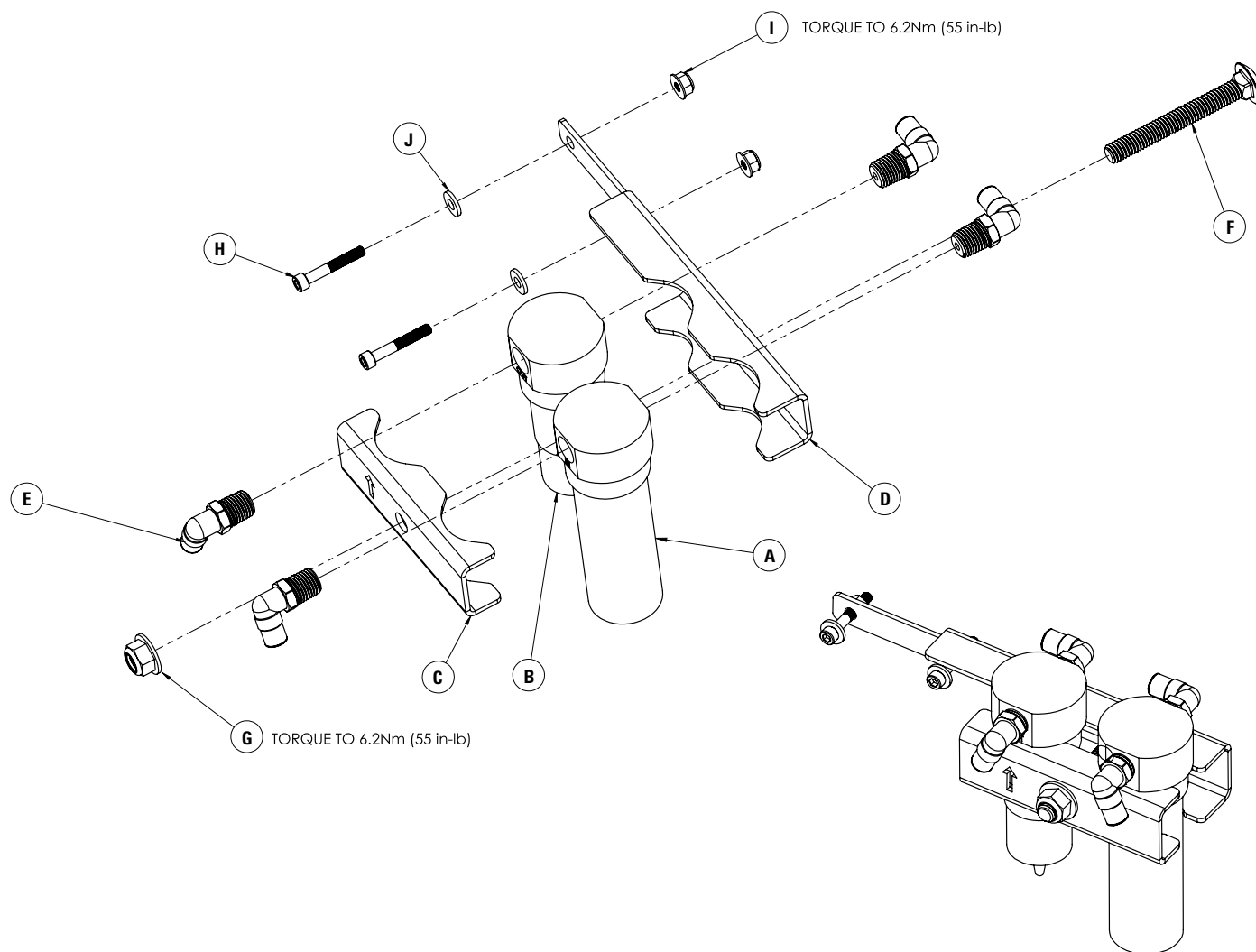
- Hoist or Floor Jack & Stands
- Safety Glasses
- Torque Wrench
- Standard Combination Wrenches
- Standard Sockets
- Tube Cutter (included) or Sharp Utility Knife
- Pipe Thread Sealant
- Side Cutters
- Spray Bottle with Dish Soap/Water



WARNING: This product can expose you to the chemical Hexavalent Chromate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. **For more information go to www.P65Warnings.ca.gov**

KIT EXPLOSION DIAGRAM

WATER SEPARATOR KIT ASSEMBLY



INSTALLATION INSTRUCTIONS

1 SELECT MOUNTING LOCATION

Select a suitable location on the vehicle's frame to install the **BRAVO Wireless Air Control system (Part #: HP30040-QM, sold separately)**.

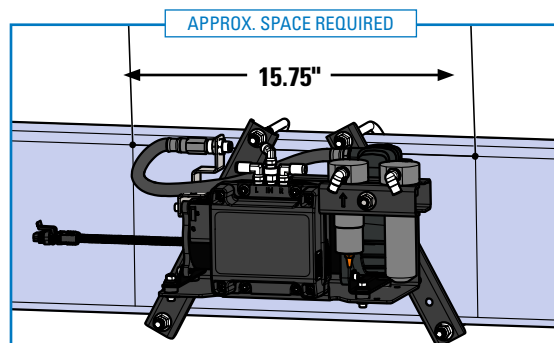
- ⚠ **Ensure the mounting area is clear of brake lines, fuel lines, wiring, and hoses.**

Frame Requirements (See Figure 1):

- Height of no more than 9" [230mm]*
 - Width between 2 5/8" [66mm] to 4" [102mm]
- + **QuickMount Extender Brackets (Part #: HP10742)** are available separately to accommodate frame heights up to 11 5/16" [287mm]

Verify there is sufficient clearance of at least 15.75" [400mm] wide by 10.5" [266mm] tall, so that the separator assembly will not interfere with surrounding components when installed.

- + *The optimal recommended mounting location is typically on the passenger side frame rail beneath the cab of the vehicle.*



1

2 PREPARE MANIFOLD ASSEMBLY

- ⚠ **A Mobile device App is required for initial installation and servicing of the system.**

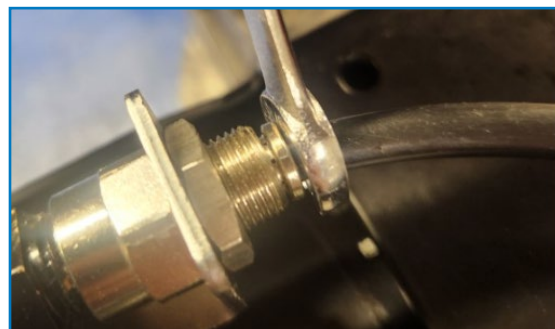
Using the Mobile Device App navigate to the Settings and select "Purge System" to fully depressurize the air system before servicing. (See details on Page 3 of this manual)

Remove the 1/4" Nylon tube connecting the compressor hose to the manifold (Highlighted and shown with a black arrow in Figure 2B).

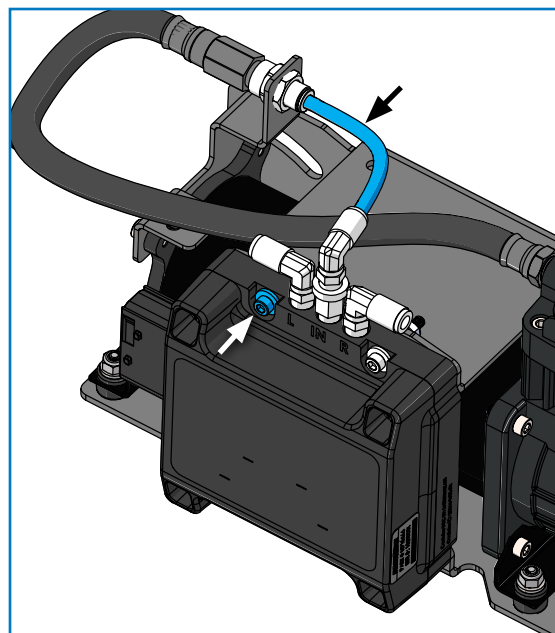
- + **To disconnect push-to-connect tubing:** Press the tube towards the fitting, press and hold the outer release ring (an open-ended wrench can be used to push with), then pull the tube straight out of the fitting (as shown in Figure 2A).

Remove the upper manifold mounting bolts securing the manifold to the compressor bracket (Highlighted and shown with a white arrow in Figure 2B).

Remove existing Zip Tie Mounts from the compressor bracket.



2A



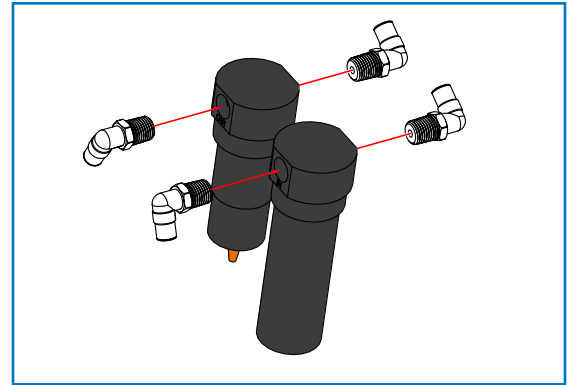
2B

3 PREPARE WATER SEPARATOR ASSEMBLY

Install the **90° Swivel Fittings** (Item E) into the ports of the **Water Separator** (Item B) and **Desiccant Filter** (Item A), (as shown in Figure 3).

+ *Some fittings have thread sealant pre-applied on threads, If threads have no visible coating, thread sealant or tape must be applied to prevent leaks.*

Thread the fitting finger-tight plus an additional 1.5 turns.



3

4 INSTALL WATER SEPARATOR BRACKET

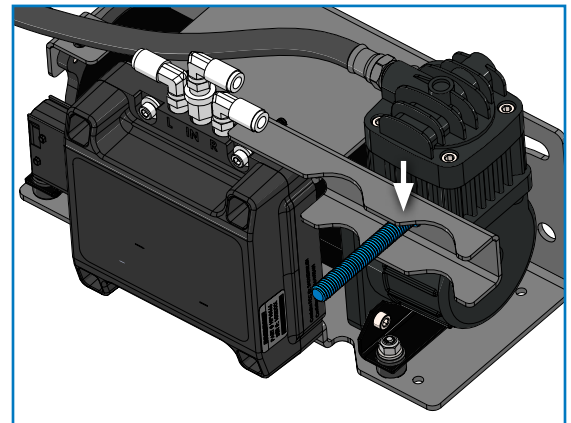
Insert the **3/8" Carriage Bolt** (Item F) through the square opening in the **Water Separator Mount** (Item D), (shown highlighted with a white arrow in Figure 4).

Position the Water Separator Mount on top of the compressor bracket.

Install the **#10 32 Socket Head Cap Screws** (Item H) with **Washers** (Item J) through the manifold and mount.

Secure using **#10 32 Flanged Nylon Lock Nuts** (Item I).

Level the mount and torque #10 32 Fasteners to **6.2 N•m [55 in lb]**.



4

5 INSTALL WATER SEPARATOR AND DESICCANT FILTER

Place the **Water Separator Clamp** (Item C) onto the **3/8" Carriage Bolt** (Item F) with the arrow pointing upward (shown circled in Figure 5A).

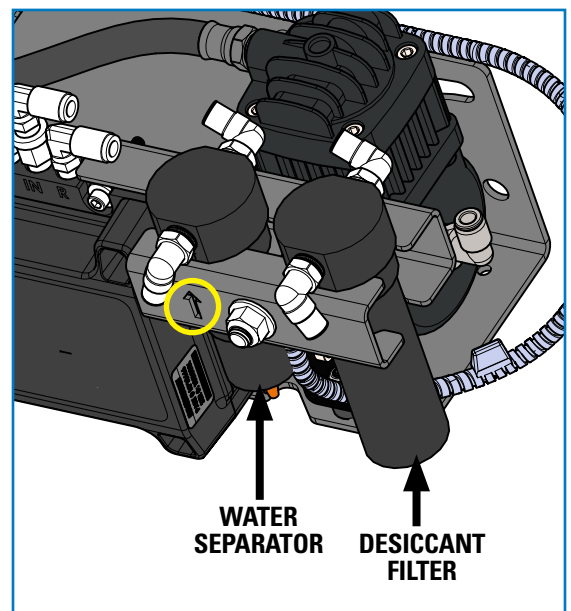
Feed the wiring harness through the assembly as required.

Install the **Water Separator** (Item B) on the left side of the carriage bolt.

Install the **Desiccant Filter** (Item A) on the right side of the carriage bolt.

Align both housings so the NPT ports (Item E) are parallel to the carriage bolt.

Secure using the **3/8" Nylon Lock Flange Nut** (Item G) and torque to **6.2 N•m [55 in lb]**.



5

6 AIR LINE INSTALLATION

⚠ **Ensure all tubing is routed securely and protected from abrasion, heat sources, and moving components.**

Airflow direction must follow:

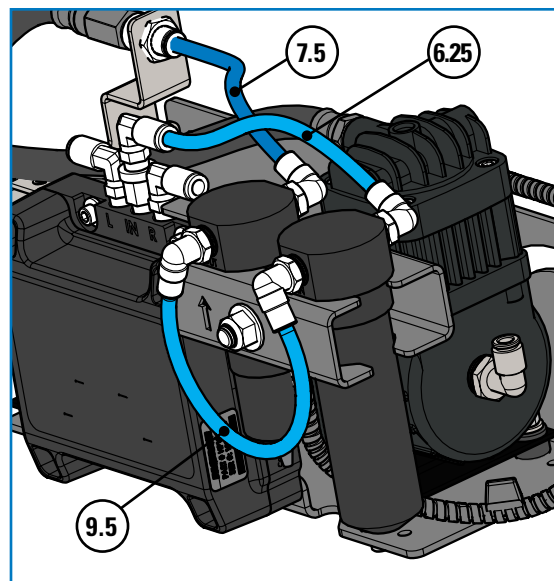
Compressor ► Water Separator ► Desiccant Filter ► Manifold

Using Figure 6 as a reference; Install the **7.5" Nylon Tube** (Item L) between the compressor hose and the water separator inlet (Item B).

Install the **9.5" [241mm] Nylon Tube** (Item M) between the water separator outlet (Item B) and the desiccant filter inlet (Item A).

Install the **6.25" [159mm] Nylon Tube** (Item K) between the desiccant filter outlet (Item A) and the manifold inlet.

⚠ **Ensure tubing is fully inserted into all Push-To-Connect fittings.**



6

7 WIRING INSTALLATION

⚠ **The water separator solenoid is used to automatically drain accumulated moisture. The system will not function without the solenoid connected.**

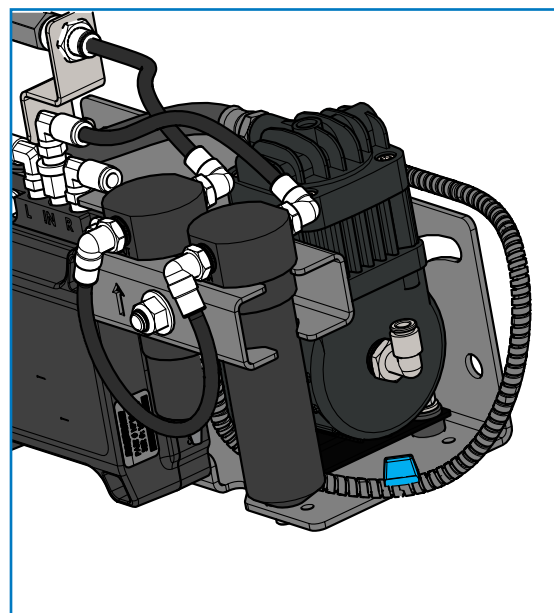
Route the solenoid wiring from the **Water Separator** (Item B) away from the compressor inlet.

Run the **Water Separator Harness** alongside the main controller harness.

⊕ **Provide sufficient slack to prevent strain at the connector.**

Secure all wiring using the supplied **Zip Tie Mounts** (Item O) on the compressor bracket.

Connect the male connector on the **Water Separator Harness** to the female connector on the **Main Controller Harness**.



7

8 MOBILE APP CONFIGURATION

Power on the vehicle.

Connect to the controller using the Mobile device app.

Navigate to the App Settings (the cog wheel in the top right corner of the screen - highlighted in Figure 8A)

Set **Desiccant System** to "INSTALLED".

 *The app will notify you when the desiccant needs to be changed. See the following page of this manual for instructions on how to change the desiccant.*

9 FINAL INSPECTION

With the vehicle on the ground, verify all fasteners have been torqued correctly to the torque values provided.

 ***Failing to use the provided torque value(s) can lead to premature failure and will void the warranty.***

With the vehicle on the ground, inflate both air springs to 10 psi less than the maximum recommended pressure for the air spring part number included with your kit (see MIN/MAX PSI chart on the following page for reference).

Use a mixture of dish soap and water on all air line connections to detect any air leaks.

Large, expanding bubbles indicate a leak (as exemplified in Figure 9).

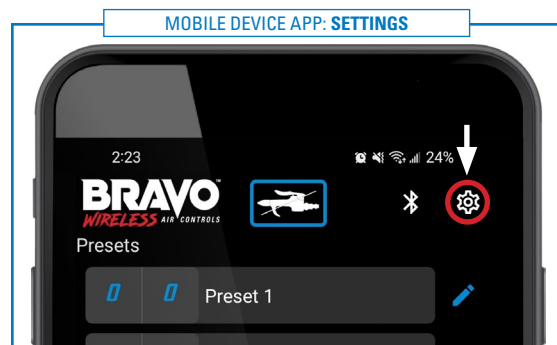
 ***The leak must be repaired, and then retested until no leaks exist.***

CONGRATULATIONS! You have completed the install

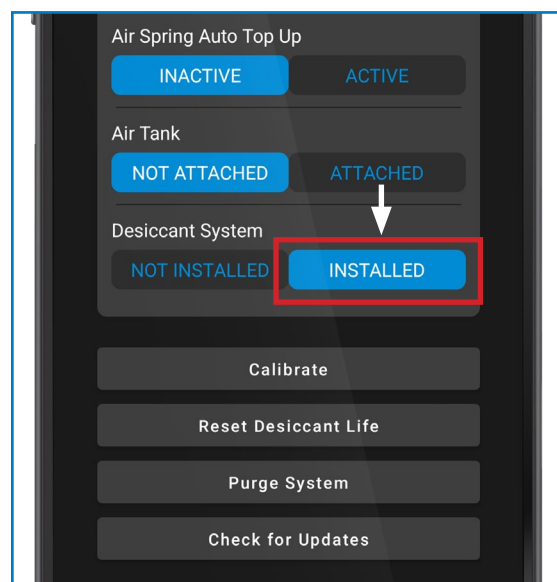
Desiccant Replacement Procedure continues on the following page.

After Installation & Legal continues on the last page of this manual.

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8A



8B



*Air Spring & NPT Air Fitting shown as an example and may differ between kit offerings

9

DESICCANT REPLACEMENT PROCEDURE**REPLACING THE DESICCANT**

- + **A Mobile device App is required for servicing of the system.**
- ! **The Mobile app tracks desiccant usage based on compressor run time. A notification will appear when replacement is required.**
- + **Replace desiccant if contamination, oil, or excessive moisture is ingested by the compressor.**

Ensure system is depressurized / purged before servicing the Desiccant Filter (part highlighted in Figure A). Navigate to the Settings and select "Purge System" to fully depressurize the air system before servicing. (See details on Page 3 of this manual)

Loosen the **3/8" Lock Nut** (circled in Figure A) securing the **Water Separator Clamp** until the desiccant filter housing can be rotated.

Hold the top housing with one hand and rotate the filter bowl counterclockwise (when viewed looking up at the bowl). Fully unthread the bowl and remove it from the clamp.

Discard the used desiccant and inspect the bowl, wiping the inside clean if any moisture is present.

Fill with fresh desiccant to a level 0.4–0.6 in [10–15 mm] below the upper edge of the filter bowl.

Ensure the O-ring is properly seated, undamaged, and free of debris before reinstalling the filter bowl.

Reinstall the filter bowl, gently rotating it back and forth while threading to prevent binding in the desiccant bed.

Once the threads are engaged, lightly tap the filter bowl to allow the desiccant to settle.

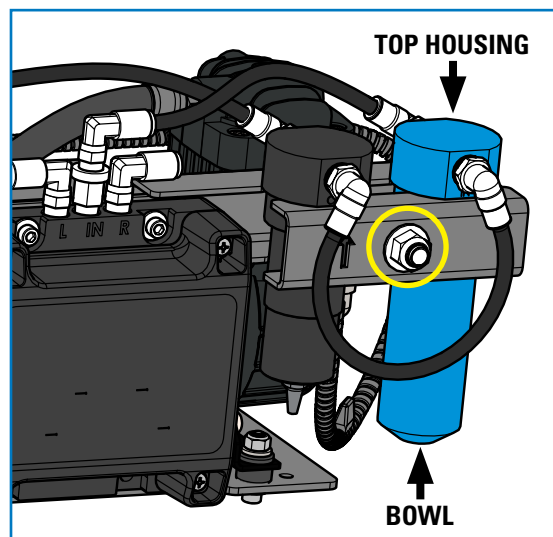
- ! **If any resistance is encountered before O-ring contact, back off and re-thread to prevent cross-threading.**

Continue threading until the O-ring first contacts and light resistance is felt. Tighten an additional 1/2 turn. **Do not tighten to a hard stop.**

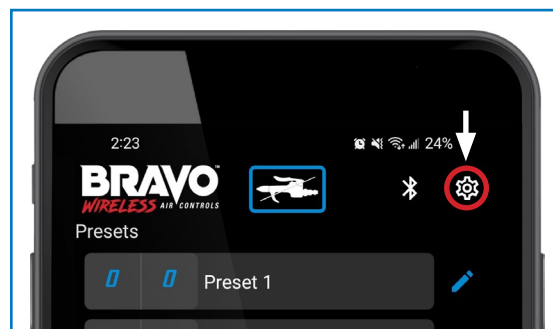
Tighten 3/8" Lock Nut (circled in Figure A) to **6.2 N•m [55 in-lb]**.

Leak check the system to ensure everything is sealed properly.

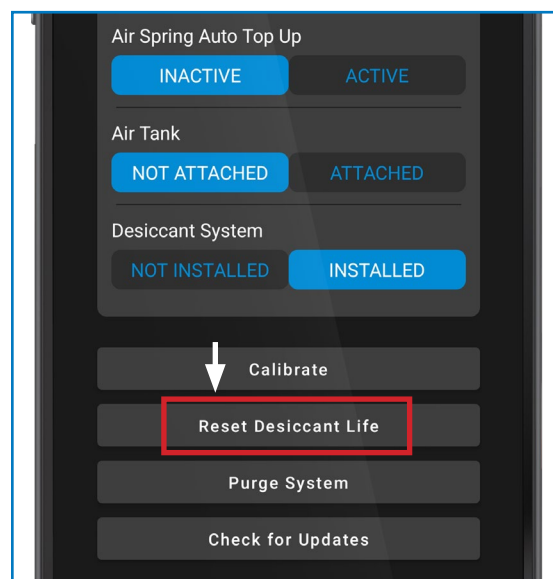
- + **After completing the replacement desiccant, navigate back to the Settings and select "Reset Desiccant Life".**



A



B



C

AFTER COMPLETING THE INSTALLATION

- ⚠ **Re-torque all mounting fasteners after the first 500 miles (800 km) of driving.**
 - ⚠ **Periodically inspect the assembly and fittings during routine vehicle maintenance.**
-

OPERATING YOUR VEHICLE WITH AIR SUSPENSION

Air springs have minimum and maximum recommended pressure requirements:

MIN / MAX PSI: REQUIREMENTS FOR YOUR AIR SPRING(S)				
PART #	SPRING STYLE	SPRING TYPE	MIN PSI	MAX PSI
HP10687	In-Coil	STANDARD DUTY	5 PSI	50 PSI
HP10560		STANDARD DUTY	5 PSI	70 PSI
HP10001	Sleeve Style	STANDARD DUTY	10 PSI	100 PSI
HP10173		STANDARD DUTY		
HP10199		STANDARD DUTY		
HP10083	Single Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10083J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10000	Double Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10000J		HEAVY DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI
HP10068	Large Double Convoluted	HEAVY DUTY	5 PSI	100 PSI
HP10438	Double Convoluted	EXTREME DUTY	5 PSI	100 PSI
HP10438J		EXTREME DUTY with JOUNCE BUMPER	0 PSI* / 5 PSI	100 PSI

* Springs with a jounce bumper can be run at zero PSI when vehicle is unloaded only

Never operate the vehicle under the minimum or over the maximum listed PSI in the air spring(s). Staying within the pressure limits will ensure maximum air spring life. **Failure in doing so may result in damage to your vehicle and void the warranty.**

- ⚠ **It is recommended to check the air pressure in your air springs daily, for the first 5 days, to ensure a leak has not developed.**

Air springs are designed to maintain the vehicle's stock ride height with a load. Do not use the air springs as a means to lift vehicle with no load. This will result in a harsh ride.

WARRANTY

See accompanying limited warranty included with this kit for details.

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