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# **Express Garage**

*Trailer Air and Electrical Systems Tester- Model 01012*

## **User's Guide**

### **Equipment Register**

Purchased from:
Date purchased:
Serial Number:



## Thank You...

**for buying an Express Garage.** You've purchased a well-made piece of test equipment that will serve you for years to come.

Please take a few moments now to look over this User's Guide. Once you know how to use your **Express Garage**, you will be able to perform an accurate lighting system test on any trailer in one minute or less.

Since the battery you install will have a big impact on the unit's overall performance, pay special attention to the section titled "Selecting the Battery" (page 6).



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# CONTENTS

## **1. Setting up your *EXPRESS GARAGE***

Installing the wheels, handle, etc	4
Selecting the battery	6
Using the BATTERY TENDER	10

## **2. *EXPRESS GARAGE*'s air controls**

Controls Identification	11
Air Pressure Safety Rules	13
Setting the air Controls	14
Using the remote control	15

## **3. Making air system tests**

Leakdown test	16
Charging/Parking Control Valve test	17

## **4. Light testing with the *SCANNER***

Basic light testing	18
Testing for bad grounds	19
Freeze feature	20
Short Circuit Indicators	20
Low Power Indicator	21

## **5. ABS testing**

ABS Switch- function	21
Testing ABS	22

## **6. Making Other Tests**

Testing light cords etc	23
Warranty	24

# Setting up your new *EXPRESS GARAGE*

## We already did the hard part...

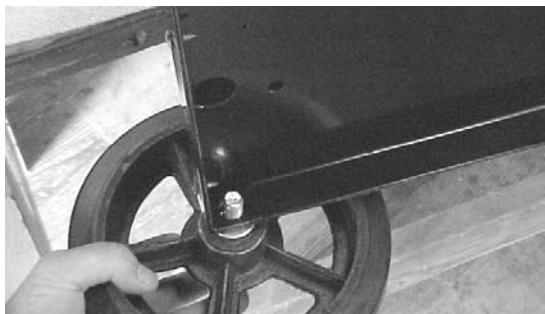
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Your new *EXPRESS GARAGE* was shipped fully assembled, except for the wheels and handle. In addition to this minor assembly job, you'll need to install your battery and a quick disconnect fitting that is compatible with your shop's air system.

You'll find the wheels, handle, and all the necessary hardware in a carton secured to the floor of the unit by the battery hold-down hardware. The unit weighs about 105 pounds at this point, so find an assistant to help you lift it.

## 1. Install the Wheels

With someone to help you lift, place your *EXPRESS GARAGE* onto your workbench and lay it on its left side (the shop air connection should be facing up) so the bottom surface hangs out over the edge of the bench.



1. Remove the axle nut and lock washer from the wheel assembly, then stick the assembly through the hole...

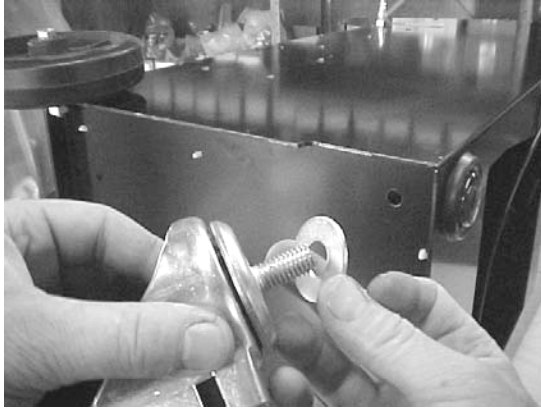


2. Reinstall the lock washer and nut, and tighten very securely.



3. A shot of grease completes the job. Repeat the procedure for the other side.

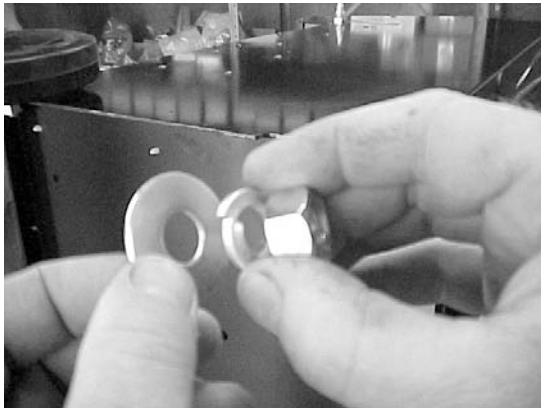
## 2. Install the casters



1. Put a big washer on the stem



2. Insert the stem through the hole in the base pan



3. Working from inside the cabinet, add another big flat washer, a lock washer, and a nut.



4. Tighten very securely. Be careful not to pinch any wiring when tightening. Do not add lubricant to the casters.

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## 3. Mount the handle

1. Leave your **EXPRESS GARAGE** on the bench, but have your assistant help you turn the unit upright, onto its new wheels.

2. **Mount the handle to the back of the cabinet.** Use the 5/16 x 1" stainless cap screws provided. Reach up through the access hole in the back of the cabinet (it's quite a reach) and install a 5/16 lock washer and nut on each of the handle mounting cap screws. Tighten securely.

To provide grounding for the auxiliary ground lead, the finish has been ground off of the inside of the cabinet around one of the handle mounting holes, and the area covered with a thin layer of grease to prevent corrosion. Expect to feel this grease when you start the nut on this cap screw.



## 4. Select the battery

### Battery Selection Recommendations

Size	<b>BCI Size (group) 22NF.</b>
Type	We suggest you not bother with long warranties or high CCA ratings; they aren't necessary. Standard lead-acid batteries are adequate for most applications; deep-cycle and gel cell batteries are best where your <b>EXPRESS GARAGE</b> must go for extended periods without charging, but they can be considerably more expensive.
Reserve Capacity	<b>Reserve capacity is a measure of your battery's ability to release power over a specific period of time, and is the only value you need to consider. Don't be fooled by high CCA ratings, they come at the cost of lower Reserve Capacity.</b>

TIP: A simple relationship exists between reserve capacity and test time. When testing the lights of typical van trailers with standard incandescent lighting equipment:

$$\text{Useful life per charge} = \text{Reserve Capacity} \times 2$$

LED lighting equipment draws only 15% of the current needed for equivalent incandescent lamps, therefore, battery life will be greatly extended when testing this type of equipment.

**Your *EXPRESS GARAGE*'s air solenoids also draw current from the battery when the air solenoids are open. Long periods of "air-on time" will reduce the period between battery charges somewhat.**

<b>Terminals</b>	Lug terminals are recommended, but post, stud, or side terminals are acceptable.
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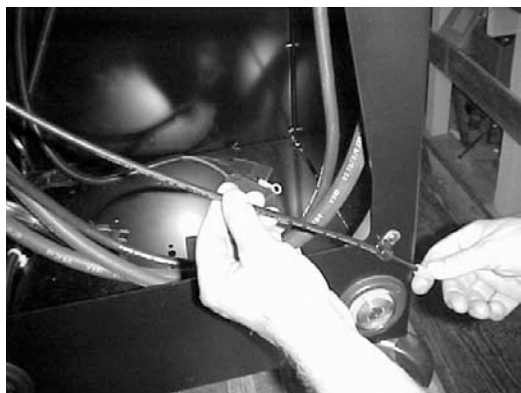
## 5. Install the battery

### Battery Safety Warning

**It is the user's responsibility to know and follow proper battery handling safety rules! Failure to do so can result in equipment damage and severe personal injury.**

Do not attempt to use this unit without a battery. The charger provided with this unit is intended for maintenance only and does not have the capacity to power this equipment on its own.

**Install a battery that is clean, dry, and in good condition.** The BCI group 22NF is recommended. Make sure you have read the section titled "Selecting the Battery".



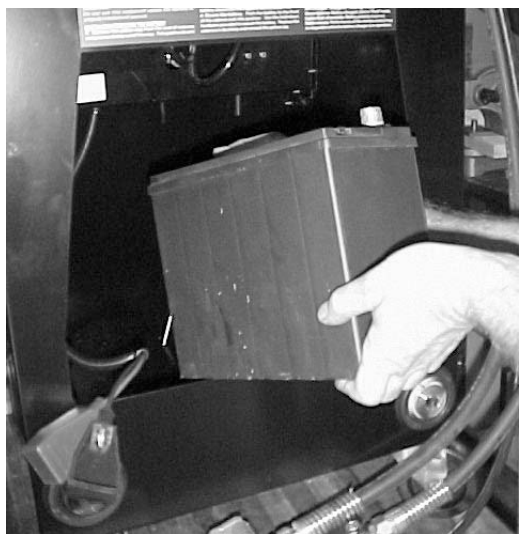
1.

**Pull the yellow cap off of the end** of the antenna and place the antenna out of the way. Pull the air hoses and light cord all the way up and out to clear the interior of the cabinet.



2.

**Insert the hook** of one of the battery hold-down bolts through the small round hole near the back of the base pan. Stand the bolt up and rotate it so the end of the hook peaks out of the oblong hole. Lean the bolt over and bind it in the hole so it stays roughly in place.



**3. Insert the battery *lengthwise*** through the access hole. This way, it's almost impossible for both battery terminals to touch the steel cabinet at once, which could cause a dangerous high-amperage short circuit.

#### 4. Connect the battery leads.

#### **OBSERVE CORRECT POLARITY!**

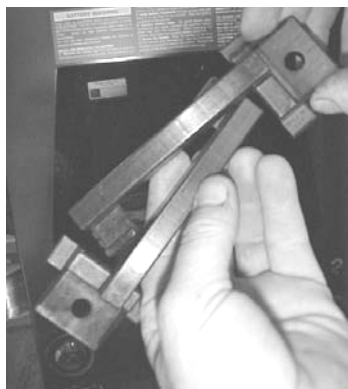
**Incorrect polarity can cause instant  
non-warrantable damage!**

**Red is Positive (+)  
Black is Negative (-)**

If your battery has post terminals, use the terminals provided to connect the leads from the EXPRESS GARAGE to the battery.

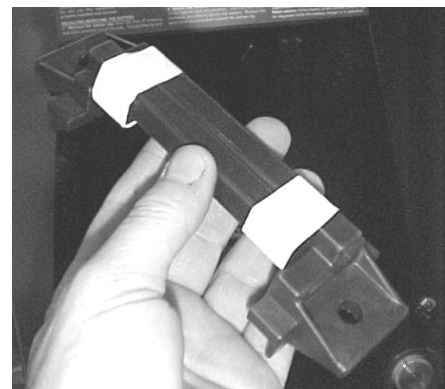


#### 5. Cover the battery terminals with the insulators



#### 6. Size the adjustable hold-down bar to fit your battery.

**Then tape it to that size.**  
It'll make installation easier.



#### 7. Slide the battery back into position as

shown. Hook the remaining hold-down bolt through the small round hole in the base pan (on the near side of the battery) and stand it up. Assemble the hold-down bar, the plastic or rubber washers, and wing nuts onto the hold-down bolts, and turn them down just enough to take up most of the slack.

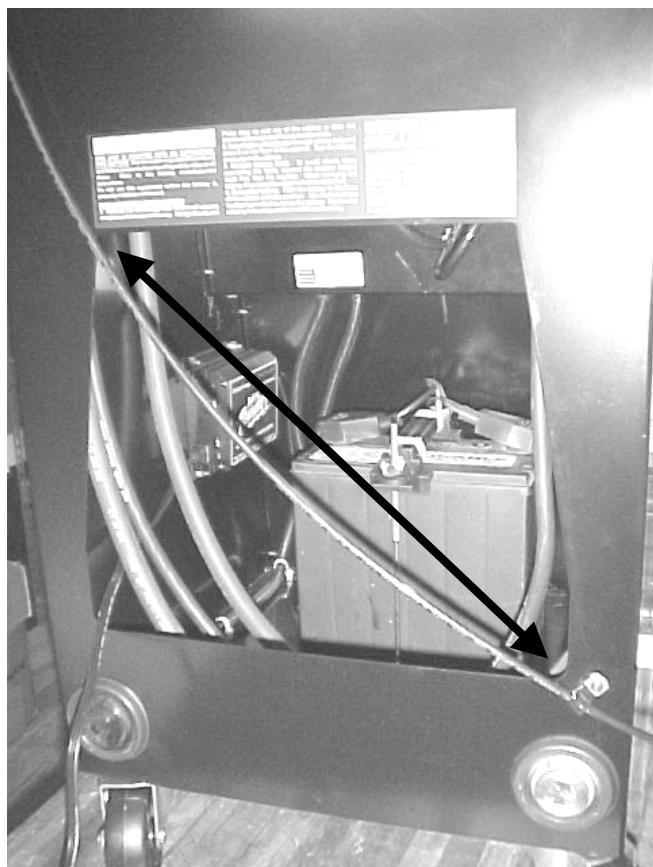
**Pull up lightly on one of the battery hold-down bolts** while rotating it. You'll feel the hooked end engage in the oblong hole of the base pan. Snug the wing nut down, and repeat for the other bolt.

**Snug both of the wing nuts** down a little more, alternating front and back as you go. The cross bar should remain straight and even.



## For safety, do not move this unit unless the battery is properly secured.

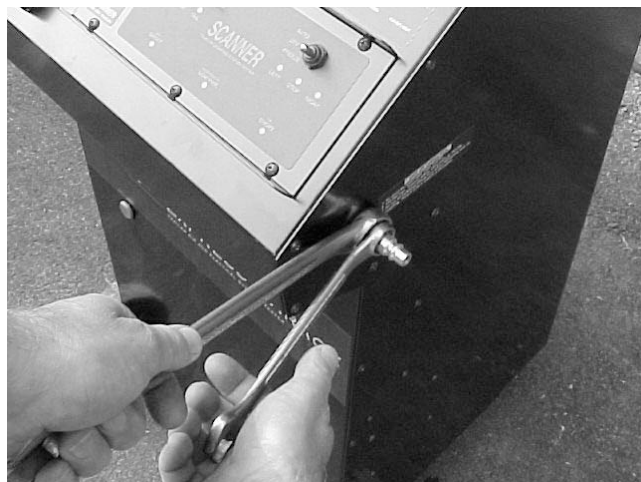
If the battery installation can not be completed for any reason, disconnect the battery and remove it from the unit until such time as proper installation can be accomplished.



**8. Feed the antenna back into** its lower clamp and replace the yellow cap.

For best remote control performance, the antenna should cross the access hole from corner to corner, so as to have the longest segment possible away from the steel cabinet.

**Finally, drop the air hoses and light cord** back into the cabinet. The complete unit now weighs about 135 lbs. Have your assistant help you in lowering the unit to the floor.



## 7. Install your shop air connection

**1. For this final step, you'll need** a male quick-disconnect air fitting of the type used in your shop and with  $\frac{1}{4}$ " male pipe threads. The shop air connection is located on the right side of the cabinet. We do not recommend using pipe tape on the threads. Use a paste-type sealant and use it sparingly. Hold the bulkhead fitting on your **EXPRESS GARAGE** with your wrench to keep it from turning as you snug your quick-disconnect fitting into it.

Your **EXPRESS GARAGE** is now ready.

# Using the BATTERY TENDER

## Instructions for Charging your battery

---

**The low Power Indicator located** on the SCANNER's control panel monitors the battery any time the Mode Select Switch is set to AUTO or FREEZE. We highly recommend you develop a regular charging schedule (such as plugging the Battery Tender in each night). Remember that if you attempt to use your **EXPRESS GARAGE** while the battery is low, the air solenoids could "drop out" due to low voltage, thus creating a safety hazard for anyone working under the trailer.

**Your new EXPRESS GARAGE** is equipped with Deltran's 6-Amp **BATTERY TENDER** Charger/Maintainer as standard equipment.

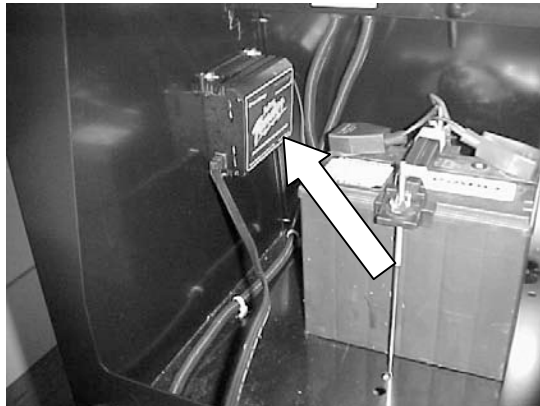
**There is nothing to operating** the BATTERY TENDER, aside from plugging the line cord in when you're done testing trailers for the day.

**The red LED** on the battery tender lights up when the unit is charging the battery at its full rate.

**The Green LED blinks** when the battery is at least 80% charged. It lights up steady when the battery is fully charged and the Battery Tender is in its Float Mode. Since no real charging takes place in Float Mode, The Battery Tender will hold your battery indefinitely in "Float" without overcharging it.

**You can use your EXPRESS GARAGE** while the battery is charging, but expect the performance of the remote control to be severely degraded during this time.

**Remember that storing a partially discharged battery** can shorten its life. Charge your battery as soon as practical after use.



# Your *EXPRESS GARAGE*'s controls

Function and simplicity... What a great combination.

## Controls Identification

**Your new *EXPRESS GARAGE*** was designed to be simple and sturdy. Its controls and functions will be readily apparent to anyone with even rudimentary air brake knowledge.

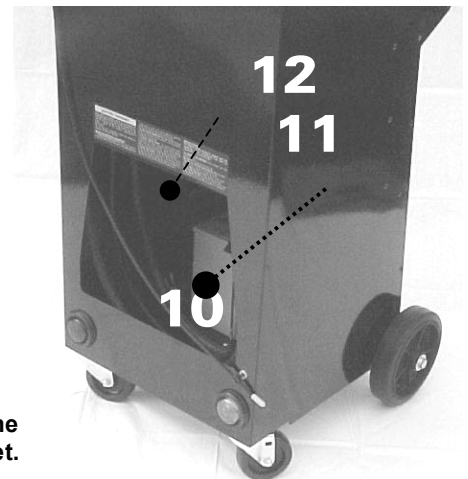


Item	Usage
1. Gladhands and light plug	Gladhands and hoses pull out of cabinet to make the air and electrical connections to the trailer. Reaches connections to 7 feet 3 inches above floor level. When you're done, they drop right back into the cabinet.
2. Red and blue (Supply and Control) pressure lights	Lights up when pressure is applied to their respective gladhands. Another set of pressure lights is located on the back of the unit, where they can be seen by someone on a creeper under the back of the trailer.
3. Supply and Control pressure gauges	Shows the pressure available to the Supply and Control sides of the system as set by the control pressure regulator. When the pressure lights are lit up, the gauge pressures are applied to the trailer via the gladhands.
4. Instruction decal	Permanently displays basic operating instructions. Should customer support be needed, our phone number is located in the lower-right-hand corner of the decal.
5. Remote control	Individual channels operate the Supply and Control air systems from any location around the trailer.
6. ABS Circuit control switch	Controls whether the Auxiliary and Stop light circuits are controlled by the Remote Control or the <i>SCANNER</i> .
7. <i>SCANNER</i> Light tester	Complete Trailer Lighting System tester is described starting on page 21.

8. **Adjustable Pressure Regulators** Sets the pressures that can be applied to the trailer's gladhands. The Control pressure can be set no higher than the Supply pressure. Usual recommended settings: Supply- 100-130 PSI, Control- 80-90 PSI. For safety, never set any pressure higher than 130 psi.
9. **Apply speed adjuster** Allows you to adjust how fast the control line loads, and thus how fast the service brakes apply. Service brakes release at full speed regardless of Apply Speed Adjustment.



10. **Antenna** Receives FM signals from the remote control.
11. **22NF battery** Shown for location only. Battery is not supplied, but is a common size, inexpensive, and readily available anywhere. Hold-down hardware is provided.
12. **Battery Tender** Keeps your battery properly charged. The line cord and plug store on the floor of the cabinet.



# Air Pressure Safety Rules

## Now is not a good time to fool around

---

- 1. The person working on the trailer brakes should have the Remote Control in his possession, so he has control of it.** Leaving the remote in its holder on the *EXPRESS GARAGE*'s panel will surely prove to be an unbearable temptation to any practical jokers, well meaning "assistants", etc. (every shop has at least one of each of these). If **YOU** are under the trailer, **YOU** have the Remote in **YOUR** possession.
- 2. ALWAYS keep the movement of the slack adjusters in mind when positioning jack stands.** Plan for the full possible travel of any moving brake parts (for example, remember that a slack adjuster's travel can increase drastically when a brake drum is removed).
- 3. Whenever a jack or jack stands are added, make a test application** and release of the parking brakes with **no one under the trailer** to test for adequate clearance between the jack stands and moving brake parts.
- 4. NEVER set any system pressure higher than 130 PSI.** Higher pressures are not necessary for any test procedure, and since you will be working in close proximity of pressurized brake components, higher pressures simply create an unnecessary hazard.
- 5. NEVER remove the gladhands from a trailer when they are under pressure.** One could whip free and hit you in the face hard enough to injure you.
- 6. Stay away from air chambers that are heavily corroded,** have springs breaking through the housing, or are questionable in any way. Unload system pressure and make any repairs necessary before proceeding.
- 7. Stay away from any brake chambers whose clamp band has been disturbed,** such as it would be during Service diaphragm replacement or replacement of the whole chamber. Operate the service brakes several times with no one under the trailer to test the clamp band positioning and its ability to hold onto the chamber while the service diaphragm is under pressure, and when the spring brakes are applied.

# Setting the Air Controls

## Adjusting Air Pressures and the Application Speed

Before using your **EXPRESS GARAGE** to conduct a test of a trailer's air system, adjust the air pressures and application speed appropriately.

**Adjust the SUPPLY PRESSURE REGULATOR first.** It sets the pressure that will be applied to the supply (red) side of the air system, and at the same time, it sets the *maximum* pressure that is available to the control side of the system. The set pressure is indicated on the Supply Pressure Gauge found on the control panel. Either pressure can be adjusted at any time, whether the pressure is being applied to the trailer or not. Of course, you can never attain pressure higher than that of your shop's air supply. Normally, you should set the Supply pressure at 100-120 PSI. **For safety, NEVER set any pressure higher than 130 PSI.**

**The CONTROL PRESSURE REGULATOR** sets the pressure that will be applied to the control (blue) side of the system. Since the supply pressure regulator feeds the control pressure regulator, the control side can never attain a pressure higher than the supply side. The set pressure is indicated on the Control Pressure Gauge located on the control panel. Normally, you should set this to 80-90 PSI.

**The two PRESSURE LIGHTS light up when** their corresponding air solenoids are open. That means whatever pressure is indicated on the air pressure gauges is applied the gladhands. **DO NOT DISCONNECT THE GLADHANDS FROM THE TRAILER WHEN THE PRESSURE LIGHTS ARE LIT UP!** If you loose your grip on the gladhand the air pressure could whip it around, and the gladhand could possibly hit you in the face, causing injury.

**The APPLY SPEED knob adjusts the speed of the Control application.** Turning the knob to the right slows the application speed, turning it to the left increases it. (Turning the knob all the way to the right shuts the Control pressure application off completely). Understand, however, that even though the control circuit may apply slowly, it will still eventually attain whatever pressure you dialed in when you adjusted the Control Pressure Regulator. Use slow speed to better observe mechanical conditions (find worn or tight cam bushings, etc). No matter where the Apply Speed Knob is set, the service brakes will always release at full speed.

**Anti-compounding is accomplished electrically** within your **EXPRESS GARAGE**. The Control side cannot be pressurized unless the Supply side is pressurized first. If you depressurize the Supply side when the Control side is still pressurized, both sides will depressurize simultaneously. But if you repressurize the Supply side, both sides will repressurize simultaneously, because that's the state it was left in. Therefore, it's recommended that you always depressurize the Control side first, then depressurize the Supply side of the system.



# Using the Remote Control

## Some Things You Should Know

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1. **For your safety when you are working under the trailer**, have the Remote in **your possession** and under **your control** only.
2. **The remote Control that comes with your EXPRESS GARAGE** is a two-channel FM unit, and its frequency is keyed to the receiver inside the main unit. If you have more than one **EXPRESS GARAGE** in your shop, we strongly recommend that the units and remotes be numbered together, so there can never be any confusion as to which remote controls which unit. Inadvertently actuating the air system on a trailer two bays over could have serious safety consequences!
3. **The Remote Control transmitter is small enough** to easily fit into the breast pocket of your shirt. It is very convenient leave it there and simply operate the Remote's two buttons through the fabric of your shirt pocket.
4. **The Remote Control Transmitter is powered** by a standard nine-volt battery, and the unit has a built-in low battery warning. During normal transmission, the red LED on your remote flashes rapidly; about 12.5 times per second. When the battery gets low, the LED flashes only once per second. If your **EXPRESS GARAGE** does not seem to be responding to the Remote Control properly, check the low battery LED first. The slow flashing LED indicates that battery replacement is necessary.
5. **Your EXPRESS GARAGE comes with a spare remote.** It is strongly recommended that only ONE remote be issued at a time. The spare remote will then be available should someone accidentally take the primary one home in their pocket.



You can order additional or replacement Remote Control units from Square Wheel, but when you get them, you will have to program the digital code. The receiver in your **EXPRESS GARAGE** tells the Remote Control what the code is over a special cable. This is very easy to do; a cable and full instructions are provided with the new Remote.

6. **The Remote Control Receiver** inside your **EXPRESS GARAGE** turns itself on when you connect your shop air supply, and turns itself off when you disconnect it. Exception: If you have pressure applied to the gladhands when you disconnect your shop air, (such as you would do when conducting a leak-down test), the remote remains turned on until you use it to release the pressure.

The remote receiver's current draw is negligible, so if you prefer to keep your unit connected to your shop air supply for extended periods, there should be no concern of battery depletion.

# Making Air System Tests

## Testing for Leakdown, General System Condition

**It is your responsibility to know and follow proper safety rules** concerning working with compressed air. Do not endeavor to use the **EXPRESS GARAGE** unit unless you have adequate experience and safety training relevant to working with compressed air.

All of the following test instructions assume that your **EXPRESS GARAGE** is connected to your shop air supply; properly positioned in front of the trailer; its battery is charged; both gladhands and the light cord (if applicable) are connected and that those connections are tight and not leaking.

### Leakdown Test

Step	Action	Detail
<b>1</b>	Set-up	Hook up gladhands and light cord, shop air supply
<b>2</b>	Apply pressure	Use the remote to pressurize <b>both sides</b> of the system
<b>3</b>	Set pressures	Use the air regulators to set both pressures to 120 PSI
<b>4</b>	Disconnect shop air	A check valve will retain air in the system. The gauges will settle a few pounds.
<b>5</b>	Begin timing	We recommend you use a count down timer such as our #01088 or McMaster-Carr #12475T37.
<b>6</b>	End timing	The usual timing period is 1 minute.
<b>7</b>	Evaluate the results	<b>Supply Side-</b> Generally, pressure loss at a rate of 3 PSI* per minute is considered acceptable.  <small>* Intended as general information. Adhere to applicable Federal, state and local regulations, and established shop procedures and practices.</small>
		<b>Control side-</b> Gauge reading is not relevant. Any pressure reductions attributable to the control side are included in the Supply reading.



# Charging/Parking Brake Control Valve Test

Step	Action	Detail
<b>1</b>	Set-up	Hook up gladhands and shop air supply
<b>2</b>	Set starting pressure	Use the Supply air regulator to set the pressure to about 60 lbs.
<b>3</b>	Pressurize the system	Use the remote to pressurize the Supply side of the system.
<b>4</b>	Slowly decrease pressure	Use the Supply Pressure Regulator to decrease the system pressure gradually while observing the Supply Pressure Gauge. <b>The Relay Emergency Valve should apply the spring brakes when the system pressure falls to between 45 and 20 PSI.</b>
<b>5</b>	Slowly increase pressure	Slowly increase the pressure again. <b>The spring brakes should release when the pressure reaches 20 to 45 PSI.</b>
<b>6</b>	De-pressurize system	Once the spring brakes release again, use the remote to de-pressurize both sides of the system.
<b>7</b>	Disconnect the gladhands	No air should leak from the trailer's gladhands.  If Air is leaking from the trailer's gladhands, it indicates a malfunctioning Relay Emergency Valve (Pre-121 type systems, such as used on converter dollies), or a malfunctioning check valve, pressure protection check valve, or a Charging/Parking Brake Control valve (121 Systems).

# Light Testing With the **SCANNER**

## Instructions for Basic Light Testing



Your **EXPRESS GARAGE** comes standard with the **SCANNER** Trailer Light Tester.

### Basic Testing

1. Insert your **EXPRESS GARAGE's** 7-way plug into the trailer's lighting socket.
2. Turn **ON** the Auxiliary, Marker, and Tail light circuit switches as needed. Flip the Mode Select Switch to **AUTO** to activate the Scan Feature. Your **EXPRESS GARAGE's** **SCANNER** then operates the turn signals and stop lights in the following sequence:



**Left 1.5 Sec→**



**Stop 3.0 Sec→**



**Right 1.5 Sec→**

3. Walk around the trailer to visually determine that all lighting functions are working and that the turn signals and stop lights operate in this exact sequence.
4. If the lights operate in some other order or the long dwell is not on the stop lights, the trailer has either wiring defects or is improperly wired.

**Note:** The fact that the red Circuit Status Indicators (CSIs) on the **SCANNER's** panel light up does **not** mean that the trailer's lights are operating. The only way to verify actual light function on the trailer is to **walk around the trailer and visually check them**.



## Note:

**The SCANNER's Mode Select Switch must be set to the "Auto" position, and shop air must be supplied to the Express Garage for the ABS Switch to function.**

**5. The ABS Switch is provided** to make testing ABS easier. While ABS testing is discussed later, for now, understand how this switch affects the scanning sequence.

**When the ABS switch is flipped to the "with REMOTE" position**, the air controls take over the operation of the Auxiliary and Stoplight circuits. If you use your **SCANNER** while the ABS switch is in the "with REMOTE" position, The Stoplights will come on steady any time you use the remote to apply air pressure to the Control Gladhand. The normal scanning sequence will be suspended.

**In this case, you can test the operation** of the Auxiliary and Stoplight circuits at any time by pressing the Remote's red Supply button (Auxiliary circuit) and the blue Control button (Stop light circuit). Remember, you'll have to hook the unit up to your shop air supply in order to turn the remote receiver on, so **you will also be activating the air system**. If someone needs to be working under the trailer while you are testing the ABS, dial the Supply Pressure Regulator down to zero. This way, when the air solenoids open, there will be no pressure available to apply.

## Testing for Bad Grounds

**1. The red Circuit Status Indicators** do double duty. When the circuits are turned ON the CSIs function as tell-tale lights. When the circuits are turned OFF, the CSIs continue to monitor their assigned circuits, looking for small current feedbacks. By detecting small wayward currents, bad grounds and other problems are revealed.

**2. To test for bad grounds**, start with all of the circuit switches OFF. Flip the Mode Select Switch to the AUTO position. The unit will scan the turn signal and stop light circuits in turn.

**3. Watch the CSIs on the SCANNER's panel.** As the **SCANNER** scans through the circuits, **there should never be more than one CSI lit up at a time**. If any two CSIs light up while the unit is scanning, it usually indicates a bad ground at a lamp that is performing those two functions. For example, if the TAIL CSI lights up when the Right CSI does, suspect a bad ground at the Right-hand tail/turn light assembly. This test is only valid for circuits that use dual-filament incandescent bulbs.



**This test is only valid for circuits that use dual-filament incandescent lamps.** Ungrounded LED lights do not back feed current as incandescent lamps do, thus the **SCANNER** will see this as simply an open circuit (which it actually is).

**4. Other problems can cause the CSIs** to respond similarly. These include circuits that are bleeding into each other due to wiring problems, or touching bulb filaments. The most likely culprit- by a wide margin- will be a grounding problem, so check your grounds first.

**5. If all CSIs light** when only one circuit is turned ON, the main ground circuit is open. Grounding the trailer with the auxiliary ground lead provided with your **EXPRESS GARAGE** should temporarily clear the problem so you can continue your lighting system test. Attach one end of the Aux. Ground lead to a good, clean ground point on the trailer, and the other end to the **EXPRESS GARAGE's** handle.



## Using the Freeze Feature

**1. The scanning action can be stopped at any point.** Observe the CSIs until the circuit you want to freeze on is powered, then move the Mode Select switch quickly through OFF to the FREEZE position. The scanning action is halted at that point and steady power is applied to the circuit.

**2. Scanning action resumes** where it left off when the Mode Select Switch is pushed back to AUTO.

## Using the Short Circuit Indicators (SCIs)



**If the SCANNER confronts a short circuit**, one of its circuit breakers will trip open, and the appropriate SCI will light up. Turn all circuits OFF while you're waiting for the circuit breaker to reset (it will reset automatically with an audible click in about 15 seconds). Once the circuit breaker resets, turn the circuits

ON again, one at a time. The circuit breaker will trip open again, and its SCI will light up again when the offending circuit is turned ON.

## Using the Low Power Indicator (LPI)

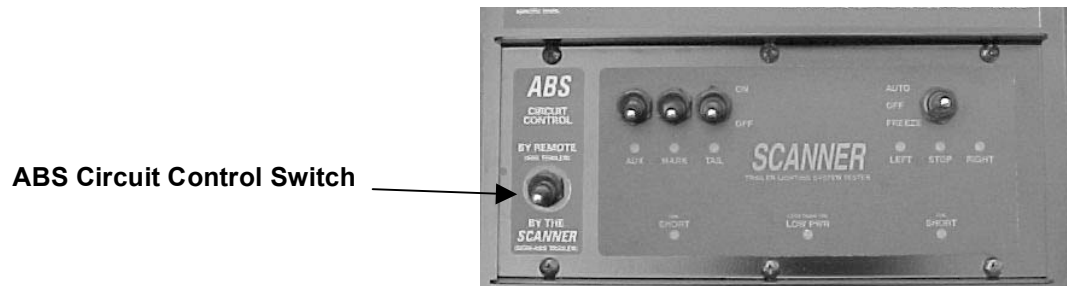


**The LPI blinks** when the battery voltage falls to 11 volts. When the battery falls to 10 volts, the LPI lights up steady and the scanning action is halted. This feature protects your test battery from deep discharges that can ruin it. The Low Power indicator feature only works when the SCANNER's Mode Select switch is set to AUTO or FREEZE.

**A low power indication applies to the EXPRESS GARAGE too.** If the low power indicator on your **SCANNER** blinks, it means you won't be able to continue air system testing much longer before battery charging is required.

# The ABS Switch

## Using the ABS Switch



The **ABS Switch** is **provided** to make testing ABS easier. While ABS testing is discussed later, for now, understand how this switch affects the scanning sequence.

When the **SCANNER** is in operation and the **ABS switch** is flipped to the “**with REMOTE**” position, the remote over-rides the **SCANNER** as follows:

**Press the red Supply button-** Air pressure is applied to the Supply Gladhand as usual, but the **Auxiliary** circuit is also powered. This simulates “ignition ON and parking brakes RELEASED”.

**Press the blue Control button-** Air pressure is applied to the Control Gladhand as usual, but the normal scanning sequence is suspended, and the **Stoplight** circuit is powered steadily. This simulates #1 plus service brakes APPLIED.

When the blue Control button is pressed again, the Control air pressure is removed from the gladhand, and the scanning sequence resumes (the scanning cycle continues “in the back round” while the stoplights are on, so the cycle may not resume at the same point it left off).

**This gives you the ability to control the two circuits** needed for the ABS from the back of the trailer, where the ABS light is.

### BE CAREFUL!

Remember, when testing the ABS, **you will also be activating the air system**. If someone needs to be working under the trailer while you are testing the ABS, or if you don't have the gladhands hooked up, use the Supply Air Pressure Regulator to dial the Supply Air Pressure down to zero. This way, when the air solenoids open there will be no pressure available to apply.

**If you are testing a trailer that does not have ABS**, or if you're not interested in testing the ABS right now, it's best to keep the ABS Switch in the “**with SCANNER**” position.

# Testing ABS

## Some general information...

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**Modern trailer ABS systems** contain an on-board computer with self-testing and diagnostic capabilities. These systems run a self-test on themselves as they go into



operation. An amber “ABS fault” marker light is located on the left frame rail, usually near the rear of the trailer where it can be seen by the driver through his mirror. It is used to signal the results of this test. Some systems test when the Auxiliary pin of the 7-pole plug is powered, while other systems test when their Stoplight circuit is powered.

**Using your *EXPRESS GARAGE* to test these systems** is simply a matter of powering up the ABS so that the system can **test itself**, and observing the result of that test.

**To test the system**, Your *EXPRESS GARAGE* should be connected to your shop air supply and both gladhands and the 7-pole plug should be connected to the trailer. Flip your *EXPRESS GARAGE*'s ABS Switch to “with REMOTE”.

1. Take the remote and go to the left rear corner of the trailer so you can clearly observe the ABS marker light.
2. Push the Supply (red) button on the remote to release the trailer's spring brakes. Depending on the system, the ABS might test at this time. The ABS marker light should light up and remain lit up for three to five seconds, then go out; you might hear the modulating valves ‘chuffing’.
3. If nothing happens, press the remote's Control (blue) button to apply the service brakes. The system should now test (minus the ‘chuffing’).

**If the ABS fault light fails to light up**, or if it blinks, or if it stays lit all the time, a problem likely exists in the trailer's ABS.

**If an ABS fault is found**, some ABS's have an extensive self-diagnostic feature that can guide you straight to the problem. Since there are several different systems in use, using this feature is beyond the scope of this User's Guide; you should consult the factory documentation for model-specific information.

**ABS technology is evolving rapidly.** New systems and procedures are arriving almost daily. Even though testing and diagnosing ABS systems is a remarkably “user friendly” operation, the complexities of today's vehicles make it essential that you **know the correct testing protocol for the type of ABS system you are servicing.**

# Making Other Tests

## Testing Light Cords, Etc...

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### Testing Rear-Mounted 7-Pole Lighting Sockets

**1. Never conduct your primary lighting system check** from the rear-mounted plug! You are not testing the floor cable or the nose plug this way, and these are two common trouble spots. And **never** power the trailer from both ends at once, such as powering the rear plug with your **EXPRESS GARAGE's SCANNER** while a tractor is plugged into the trailer at the front (even if everything is turned off in the tractor). Not only will any test results obtained **this** way be invalid, but you could damage the **SCANNER** and conceivably cause damage to electronic equipment in the tractor.

**2. If the trailer has a rear-mounted lighting socket**, you'll want to check its operation. Use a Trailer Socket Output tester made for this purpose, such as our # 01955, or Velvac #057119. Then, with your **SCANNER** powering the trailer from the **front**, read the test results from the Socket Tester.

### Testing Light Cords

**1. To test light cords** you'll need an adapter (such as our # 01030 or equivalent) to connect your **EXPRESS GARAGE's** 7-way plug to the light cord in question. Insert a Trailer Plug Output tester (such as our #01950 or Velvac #057118) into the other end of the light cord. Observe the lights on the TPO Tester as you operate the **SCANNER's** circuit switches.

**2. If all of the TPO or TSO Tester's LED's light** when only one circuit switch is turned on, the light cord's ground circuit is open.

# Famous Last Words:

## What Could *Possibly* Go Wrong?

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**Warranty Policy:** Each *EXPRESS GARAGE* Trailer Systems Tester is warranted by Square Wheel Industries, Inc. to be free from defects in materials and workmanship for a period of one year from the date of purchase by the original customer. The warranty will not apply where the unit has been abused, misused, subject to accident, or if the defect is caused by alterations made to the unit without approval from the manufacturer.

This warranty covers 100% of parts and labor. Square Wheel Industries, Inc. will, at its option, repair or replace any unit or part thereof which, in its opinion, has failed under the terms of this warranty. Replacement units may be a different model than the unit being returned for service providing the replacement unit is functionally equal to or better than the unit that was returned. Replacement units may be either new or reconditioned. Replacement of parts or the complete unit does not extend the original warranty period. The customer shall return the unit to Square Wheel Industries, Inc. "freight prepaid" or, at our sole discretion, Square Wheel Industries, Inc. will designate another party to repair the equipment at the customer's location.

If you have questions, or need service or spare parts for your *EXPRESS GARAGE* contact us at the phone number below, or use the "Contact Us" section of our website.



[www.trailertester.com](http://www.trailertester.com)

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