OPERATIONS & INSTALLATION MANUAL

G T, Inc.

Digital Electronic Remote Control Unit

Ver. 100103

Please read this manual completely, before beginning Installation and Operation!!

SYSTEM OVERVIEW

The G T Inc. Deluxe Digital Remotely Adjustable Shock Control Unit is one that is very user friendly, and easy to use, once you understand the basics of the system, what it will do, and what you can expect from the programmed functions.

Basically, the system allows you to set the damping of the front and rear shocks independently, with each pair of shocks having an allowable setting parameter of 0-9, or 10 total positions of damping, 0 being the softest, and 9 being the stiffest, as well as a memory channel that also allows settings of 0-9 or 10 programmable settings.

The user can input shock damping settings into each of the 10 memory channels and store those settings for future and continued use. The user then, only has to cycle through the memory channels by cycling through those numbers with the center push button and then stop on the preset shock damping setting they would like use.

Once on that setting, the system has a built in 3 second delay that allows the user to preview that setting before the system accepts it. If the setting shown is not what you want, just continue to cycle the system to the preferred setting, and once on that setting for more than three seconds, the system automatically sets the shocks to the selected setting shown on the display.

To program a channel, you select a memory channel number you want to use on the center LED by pressing the center button on the faceplate and cycle to the number. Once on that number, you then select a damping setting for the front, (left LED) and rear, (right LED), shocks by using the increase, (top button), or decrease, (bottom button), for front and rear shocks. As an example, you've decided to select #1 on the center memory channel, and #5 for the front shocks, and #3 for the rear shocks. After setting the shock damping numbers you hold the center button down until the display beeps and flashes once, and you now have those settings stored into the #1 memory channel. That setting will remain as programmed until changed by the user in the same manner described above. You can change the damping on the front and/or rear shocks while on a memory channel setting by using the top or bottom buttons to increase of decrease those settings, but those settings will not remain in memory, unless you again hold the center button down as described above to store the new settings. This function allows you to manually change desired settings for a particular period of time, without the need to cycle through the memory channels to find a new damping setting.

Built into the system programming are error warnings that advise you of a possible leak in the pressure lines, either front or rear, and a potential line torn loose, which shuts the compressor down to protect the pump from burning out.

Refer to the numbered listings below for more detailed information.

1. Control Head Display

The control head display consists of the mounting box, PC Control board with 3 single digit LEDs, 2 green in color for the shocks, and 1 red in color for the memory channels, face plate, 5 push buttons, 4 stainless nuts, 4 nylon washers, 4 aluminum stand-offs, 10 small o-rings, 2 on each push button, and 2 dual push to connect line connectors attached to the pressure sensors on the PC board and 1 face plate backing decal. This unit comes assembled. This display will show dashed lines in LEDs before first use, and after that, it will show digits from 0-9 unless in error mode. The error mode displays are discussed below in the Operational Warnings section.

2. Control Head Functions

There are 4 major functions that the control head performs. You can set shock damping, set the memory channel programs, it displays error messages, and it provides aural and visual warnings.

3. System Functions

As described above, the system allows user input to set shock damping, independently front and rear, has user programmable memory channels, provides aural and visual warnings, maintains pre-selected shock damping by constantly measuring line pressures and adjusting them as necessary, gives a warning if the compressor adjusts line pressure more than 6 time in one hour if on the same setting, shuts down the compressor should a line break, be cut, or pulled loose to prevent compressor damage, and allows manual changes to pre-selected shocks settings without changing the pre-programmed settings.

4. Group Settings

It is suggested that may want to group your settings in order to keep like terrain, street, off-road, severe handling and other settings in close proximity in order to make it easier to remember the location of each setting. For example 0-2 could be your street handling settings, 3-6 could be your off-road settings, and 7-9 could be your mountain driving and/or towing settings.

5. Operational Warnings / Error Messages

Left and right single digit green LEDs flash showing an "E", and at the same time the center single digit red LED flashes, and displays either a 1, 2, or 3, and the unit sounds an aural warning.

Error 1 = compressor shutdown with a broken, loose, or pulled out line in the system.

Error 2 = potential front line set, push to connect fitting, or control valve leak.

Error 3 = potential rear line set, push to connect fitting, or control valve leak.

To cancel the provided warnings, you can do two things, one you can use the center push button and switch to another programmed setting, or two power the system down by turning the electrical to the system off. This will depend on how you've wired the system, but typically you would turn your ignition key to off.

In some cases, the owner or installer will wire in an on/off switch in the wiring system, that is located in a convenient spot, and you can then simply turn the unit on and off with that toggle switch.

In the case of an "Error 1" display, cycling to another memory channel will end with the same result as was first encountered and should not be attempted, since the malfunction needs to be repaired. It is suggested that you install in line a master switch that is easily accessible or keep the inline fuse holder in an area that is also easily accessible in order to be able to power the system down until you can correct the problem. Once the system is powered down, the shock damping settings will end up on the softest setting due to the loss of line pressure.

6. Installation Overview

Installing the system is fairly straight forward, and requires no specific talent other than a basic mechanical ability. Once installed, you must either, have the engine running or a battery charger attached to the battery system to make certain that the system is receiving the proper voltage. I suggest the latter, so that you can hear the pump start and stop, in order to verify proper operation of the system.

There are 6 steps that need to be accomplished for installation.

1. **Install the push to connect fittings on the shocks.**
2. **Install the shocks.**
3. **Install and run the shock pressure line tubing.**
4. **Install the compressor.**
5. **Install the control display head.**
6. **Install the pressure control and relief valves.**

7. Shock Installation

Install the push to connect fitting on the shocks by removing the factory installed manual adjuster knobs, and make certain that you use the new larger o-rings provided with the new fittings.

8. Pressure Line Installation

Plug in the nylon pressure lines to the shocks, run those lines to avoid areas of heat or mechanical operating parts. It might be advisable to install the pressure lines in the shocks just prior to putting them up inside the coil, rather than having to try and push the line into the push to connect fittings after the shocks are installed. The lines can be installed in one of two ways, either running the line straight up the shock body and out the top of the shock tower, or you can run the line under an area where the coil sits slightly above the A-Arm on the lower A-Arm, and then drill a 5/32" hole in the pinch weld area and run the line along the A-Arm up to the frame rail. The typical installation of the pressure lines would be running a line from the shocks on one side of the vehicle, preferably using a frame cross member if possible, to frame rail on the other side of the vehicle. You then run a short line from the other shocks to the T fitting included, plug both shocks into that T fitting and then run those two pressure lines from the T fittings along the frame rail to the appropriate fitting on the control valve. You do the same front and rear, and bring the longer of the two shocks lines to side of the vehicle where you have the compressor mounted. See the pressure line schematic included with these instructions. Keep in mind

that these instructions are only suggestions, and that the owner/installer is the final authority on how they want to install this system.

9. Compressor Installation

Decide on a location to mount the compressor, which should be fairly open and accessible which will leave room for mounting the control valves and attaching the pressure lines to those valves. Also, on system versions delivered after 10/01/03, the compressor has a small slot cut in the box for the ribbon cable exit. You must partially remove the top of the compressor box half. Please do this carefully and slowly, so as to not damage the distribution board located inside the box. When opening the box, it is suggested that you lift the front of the box half first, and slightly tilting it rearward. This must be done in order to plug the ribbon cable into the distribution board. The ribbon cable plug has a small tang on one side of the plug and this must be oriented to the female plug on the board. It is also suggested that you put a small, round, rubber plug, or similar item on the ribbon cable, inside the box, and attach it a tie wrap to keep from pulling the plug loose from the distribution board.

10. Control Valve Installation

Mount the control valves in the approximate location of the compressor so that you are not binding any of the pressure lines, and in an area that is open and easy to get to for any future adjustments.

11. Pressure Relief Valve Installation

There are many locations to mount the pressure relief valves, but again it should be in a location that is easy to get to. The location and distance that you mount the pressure relief valve from the compressor is not critical and so you can mount it higher, lower, or remotely from the compressor, although it is not suggested that you run an excessively long line.

12. Control Head Installation

Decide on a location to mount the digital control head, which should be in an area that is as close to a forward view as possible to allow you to keep your eyes on the road if you want to view the current shock setting. We recommend that you "DO NOT" make shock settings or changes while driving. Make sure that it is a location that will allow you to easily bring the two pressure lines, and one ribbon cable to the unit. You should also make sure that the location of the control head will not interfere with any other operations of the vehicle, particularly those of safety while driving.

13. System Parts Content

A complete system consists of the following –

1. ***4 Remote Control Shocks***
2. ***4 Push to Connect replacement fittings for the shocks***
3. ***4 Larger O-Rings to be used with the new shock fittings.***

4. *1 Compressor mounted inside a black nylon box.*
5. *1 Display control head assembly.*
6. *1 Pressure Relief Valve.*
7. *2 Pressure Control Valves mounted as an assembly.*
8. *1 Fuse line with fuse holder.*
9. *1 Ribbon Cable with Connectors.*
10. *1 Roll of Nylon Pressure tubing. (50')*
11. *4 Shock Boots*
12. *2 Push to Connect T-Valves*

14. Trouble Shooting

The only problem that occurs on almost every installation is getting the lines, valves, and shocks in sync with the control display panel that houses the PC Board, and the system power distribution and control board located inside the compressor box.

If the compressor continues to run once a pressure setting above 0 is selected, then you do not have those lines in sync.

The electrical lines coming from the control board inside the compressor box and going to one of the pressure control valves must be the same line as indicated on that control board. In other words, if the electrical line plugged into the control board is on the front shocks, then the pressure lines for the front shocks must go to that valve, and the lines from that valve must go to the pressure line on the Display PC Board that indicates the front shocks.

It is advisable that you mark these lines and connectors prior to installation in order to keep track of the correct sequence once you are ready to plug the lines into the control modules.

The only other item that can cause a problem is a leaking push to connect fitting, and that will show up in error messages described in the above information.

Those items can be checked with a spray bottle with lightly soapy water sprayed on the external connectors, but not on the PC Board inside the Display panel.

If you are having any other unusual or specific problems not described in this manual, please call us directly at 1-949-394-1578 for help.