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LINKAGE STYLE THROTTLE STOP INSTALLATION & OPERATION MANUAL

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**INSTALLATION**

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1. Before mounting your new Dedenbear throttle stop, ensure that your current throttle linkage has a positive stop for the throttle pedal (preferably adjustable) and that you have a pull style throttle linkage. A linkage style throttle stop will not work with a push style linkage or without a pedal stop. On carbureted applications it is a good idea to drain the float bowls as you will be cycling the linkage back and forth numerous times.
2. Mount the solenoid pack within 4 feet of where the throttle stop will be mounted and away from extreme heat. Route 1/4" nylon tubing from your CO2 regulator and connect to the inlet "T" on the solenoid pack.
3. Disconnect your throttle linkage and mount the ball stud into the upper hole of your carburetor or injector arm. Move the throttle arm from idle to wide open and measure the stroke. The maximum stroke for the TS30 is 2 1/4". If the maximum stroke is exceeded, move the ball stud closer to the throttle shaft. Clip the throttle stop onto the ball stud and let the throttle stop hang loose.
4. Connect the air lines to the throttle stop by taking the small 5/32" OD nylon tubing and pushing it into the needle valve fitting until it bottoms out and the large 1/4" tubing and pushing it in to the right angle fitting. Trim the tubing to length and connect the other end of the air lines to the outlet fittings on the solenoid pack. To disconnect an air line, push in on the black release ring while pulling on the tubing.
5. Connect one wire from each solenoid together then wire to a solid ground. Hook the remaining two wires together and then to the throttle stop output terminal on your timer. Use 18 gauge or larger wire.
6. Turn on the CO2 bottle and set the pressure for 80 to 100 psi. The stop should retract and go to its shortest position. Select the proper black hex linkage adapter. If your car uses a 1/4" diameter rod linkage, select the hex with the 1/4-28 thread. If your car uses a Morse style cable, select the hex with the 10-32 thread. Thread a jam nut onto the piston rod and then thread the adapter hex onto the back of the throttle stop. Lock down the jam nut.
7. Have a friend step on the gas pedal to full throttle (against the pedal stop). Open the carb or injector linkage by hand to full throttle. Allowing 3/8" for thread engagement into the stop bolt, mark the throttle linkage rod for cutting or measure how far back the cable mounting point must be moved (depending on the type of linkage used). After cutting & rethreading the rod or moving back the cable mount, screw the linkage into the black adapter hex and check for idle to full throttle movement via the pedal. Final adjustments can be made by screwing the rod/cable in or out of the adapter hex, or by adjusting the positive pedal stop.
8. Make sure the throttle stop is in the retracted position (shortest length) during all of the above steps. Turn on the power, hold the throttle at wide open and cycle the timer or transbrake to check for proper operation. Make sure the wires and air line are routed properly to allow full movement of the throttle without binding or jamming of the linkage.

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**ADJUSTMENT**

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1. When CO2 is applied to the inlet of the throttle stop, the stop will retract to its shortest length thereby allowing the throttle to go to the full wide open position when the pedal is depressed. When power is applied to the solenoid, the stop extends to its longest length. When the stop is pulling back to wide open throttle it must overcome the resistance of the throttle return springs. The TS30 can be used with up to 50lbs of return spring.
2. The black adjustment knob will adjust the amount that the throttle closes when power is applied to the solenoid. As the adjustment knob is turned in (clockwise) the stroke of the cylinder will be shortened, not allowing the throttle to close as far, in effect raising the RPM (throttle position) while activated. As the adjustment knob is backed out (counter-clockwise) the stroke of the cylinder will be lengthened allowing the throttle to drop closed further, in effect lowering the RPM (throttle position) while the stop is activated. Changes made to the adjustment knob will not effect the wide open throttle adjustment made above in step #7.
3. The correct way to make changes with this style throttle stop is to loosen the jam nut on the black knob, then turn the knob to your desired position. After the adjustment is made, simply tighten the jam nut. Using this method of adjustment will ensure you do not disturb the wide open throttle adjustment. The most accurate way to record the position of the throttle stop is to use a caliper to measure the distance between the knob face and the purple billet bracket.

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**WIRING**

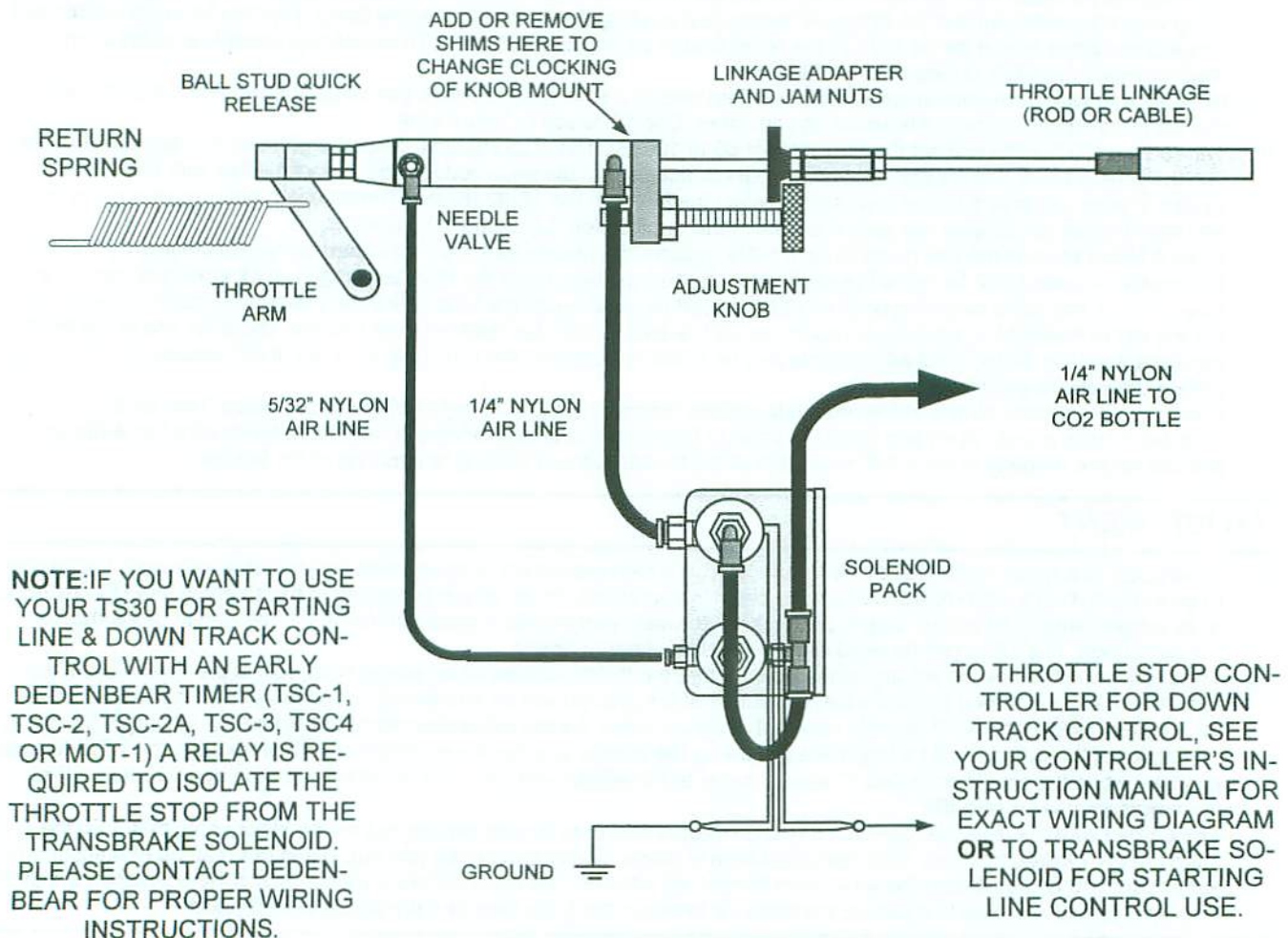
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There are 3 different ways to wire a linkage style throttle stop, they are as follows:

1. **Starting Line Control:** In this application the linkage stop closes on the starting line when the transbrake is applied. This is to control the staging RPM of the engine.
2. **Down Track E.T. Control:** In this application the linkage stop is used only during the pass to control the vehicle's elapsed time. Typically racers will close the throttle stop a fraction of a second into the pass and reopen the throttle a few seconds later to slow a car for a particular index.
3. **Both Starting Line & Down Track Control:** This last application allows a racer to use the linkage stop for controlling staging RPM and again during the pass to control the E.T.

## OPERATION TIPS

1. Since the carburetor throttle position is determined by shortening and expanding the throttle linkage, any deflection of the car or linkage will effect the closed position of the throttle, therefore effecting the E.T. of the car. For this type of stop to work properly, the chassis must be rigid, the linkage must be rigid, the cable attaching bracket must be rigid, and the throttle pedal stop must be absolutely solid. Any flexing or binding will ruin consistency.
2. It will take some experimentation to find the throttle position setting that will work best for your car, but a good starting point is 1000 to 1500 RPM less than the converter stall speed. Example: With a 5500 stall converter, the motor should run at 4000 to 4500 RPM while the stop is activated and the motor is under a load (during a pass or while the transbrake is set). For the most consistency the throttle stop should be cycled early in the pass, timer #1 should be set from 0.10 to 0.30 and timer #2 should be set at the shortest duration possible to obtain your desired E.T. If you exceed 3 seconds in timer #2 adjust the throttle stop to a lower RPM until your timer #2 setting drops into the 2 to 3 second range.
3. To control tire spin when the stop is opening, you may adjust the needle valve to slow the rate of opening. There is a total of 9 turns worth of adjustment. To start, turn the thumbscrew clockwise until it bottoms out, then counter-clockwise 4 turns. Lock it in place with the jam nut. To slow down the opening rate, turn the thumbscrew clockwise, to speed up the opening rate, counter-clockwise.



## LIMITED 1 YEAR WARRANTY

Dedenbear Products components are warranted directly by Dedenbear Products against defective material or workmanship under normal use and service for a period of one (1) year after purchase. Dedenbear Products will repair or replace the defective unit at Dedenbear Products option, free of charge. This warranty does not cover any damage to the component caused by abuse, mishandling, alteration, accident, electrical current or voltage fluctuations, failure to follow installation/operating instructions, storage and environmental conditions, or repair attempts made by anyone other than Dedenbear Products authorized service facility.

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