

# Installation



DirectMount<sup>®</sup>

**C14000/C14000AT**

EXHAUST BRAKES

Application:

1988-1998 DODGE RAM

WITH 12 VALVE TURBO DIESEL

**PACBRAKE<sup>®</sup>**  
ENGINE BRAKES

# 1

## GETTING STARTED

Before starting, check that kit contains everything shown in photo.



NOTE: C14000 exhaust brake kit is for manual transmission vehicles. C14000AT exhaust brake kit is for automatic transmission vehicles. MISAPPLICATION MAY CAUSE ENGINE DAMAGE.

NOTE: 1988 - 1993 models require Pacbrake Header Pipe Group - P/N C14005. Refer to instructions in pipe kit at this point and disregard step 2.

IMPORTANT: This Pacbrake Kit is not designed for installation on Exhaust Gas Recirculation (EGR) equipped vehicles.

# 2

Remove and save rear turbo clamp and exhaust pipe flange bolts. Remove elbow and discard. Inspect the sealing face of turbo for carbon or imperfections.



NOTE: If heavy duty exhaust valve springs have been installed, install the performance plug as per instructions (PN C11880).

# 3

Install the two cylinder fittings, 90° fitting on top and straight fitting in front. A single length of cylinder vacuum hose is supplied in this kit. Install each end of this hose on both cylinder barbed fittings by moistening the fittings and firmly pushing the hose to the end of the barbed portion. Install the hose clamps and tighten. Install the Pacbrake and loosely install the original turbo V-clamp.



NOTE: 1988 - 1993 models return to step 3 of the header pipe instructions.

# 4

Loosely install the flange bolts and align the brake to achieve maximum clearance between the exhaust manifold and the vacuum cylinder.



NOTE: For vehicles with automatic transmissions it is very important that the dipstick tube does NOT contact the Pacbrake cylinder or bracket. Any interference could cause the brake to remain in the ON position. Bend dipstick tube to attain min 1/2" clearance. DO NOT use the Pacbrake cylinder or housing to pry on!

CAUTION: Do not over torque. Torque turbo clamp to 72 lb.in. (6 lbs.ft.). Torque flange bolts alternately to 25 lbs.ft.

# 5

1988 - 1993. Remove solenoid from bracket and re-install on the opposite side. Install control solenoid and bracket on intake horn. Ensure that ground terminal is under bracket. Torque to 18 lbs.ft.

1994 AND NEWER. Install control solenoid and bracket on intake horn. Ensure that ground terminal is under bracket. Torque to 18 lbs.ft.



PICTURE IS 1994 AND NEWER.

# 6

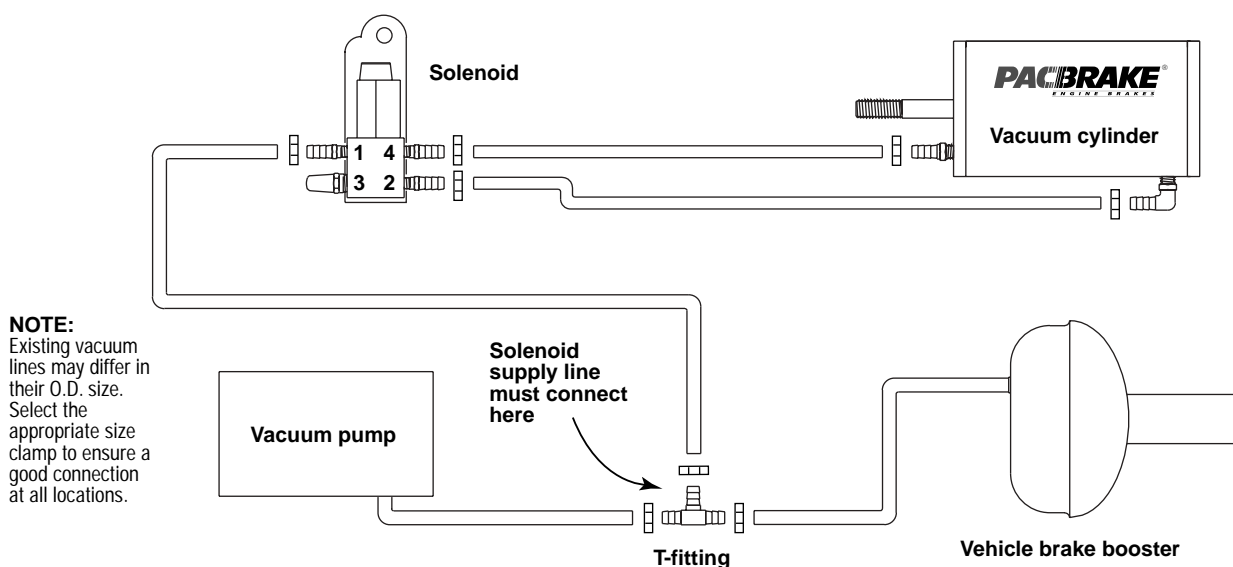
Install the T-fitting in vacuum line between the vacuum pump and brake booster. Following solenoid port numbers and the cylinder fitting locations on the schematic, route the looped hose from the Pacbrake cylinder to the control solenoid, keeping it as far away from any heat sources as possible. Cut the hose at the appropriate location and connect each end to the proper solenoid port. Tighten with the clamps provided.



NOTE: 1997 and newer models will have a hydraulic boost brake system (see "Hydraulic" schematic on page 4)

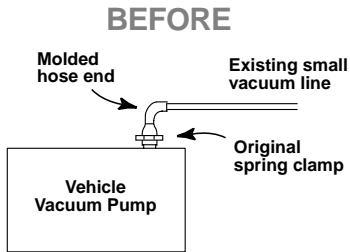
IMPORTANT: Double check all fittings, clamps and connections, including the brake power booster vacuum connection. Ensure the hoses at the vacuum cylinder have been secured as far away from the exhaust manifold as possible. Leaks could cause partial loss of braking.

## VACUUM BOOST BRAKE SYSTEM 1988 TO 1993 VEHICLES



## 1997-1998 HYDRAULIC BOOST BRAKE SYSTEM

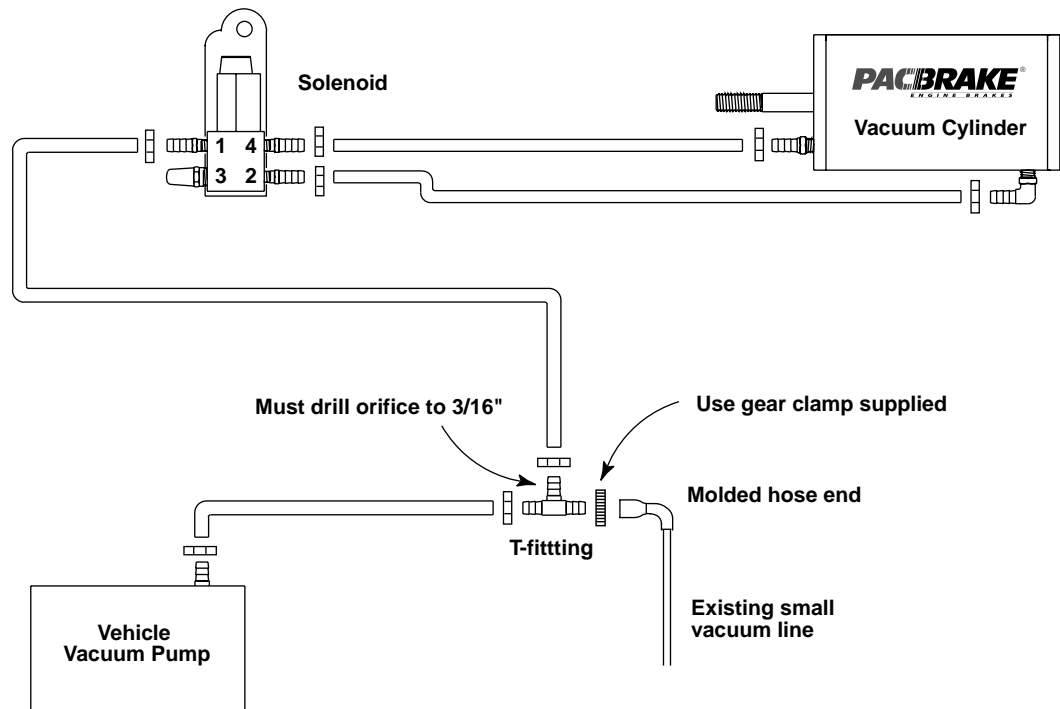
Sourcing vacuum for the '97-'98 Dodge Ram with hydraulic boost brake system varies slightly from trucks with a vacuum boost brake system.



## INSTRUCTIONS

1. Cut and discard the original steel clamp.
2. Disconnect the molded hose end from the vacuum pump.
3. Locate the white plastic T-fitting in the kit and note that one leg of the fitting has a small orifice. This orifice must be drilled out to 3/16" before installing. Clean thoroughly. CAUTION: Do not drill through base of T-fitting!
4. Using instructions in Step 6 and the schematic shown below, install lines and clamps, making sure the gear clamp is used in the location shown.

## VACUUM SYSTEM 1994 TO 1998 VEHICLES



# 7a

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## THROTTLE SWITCH INSTALLATION 1988 TO 1993

- A. Remove dash panel below steering column to access fuse panel.
- B. Locate stud shown in the photo and remove nut.
- C. The header pipe kit contains an alternate throttle switch bracket for pre-1994 vehicles.
- D. Remove the switch from the bracket supplied in the main kit and install on the alternate bracket.
- E. Install the throttle switch assembly with the switch arm horizontal. Reinstall the stud nut and tighten, making sure the switch arm is behind the accelerator lever.
- F. Adjust the switch by loosening the screws and positioning it to “click” as the throttle returns to its released position. Cycle the throttle and listen for the click each time the throttle returns to idle. Tighten screws when adjustment is complete.



# 7b

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## THROTTLE SWITCH INSTALLATION (1994 AND NEWER)

- A. Remove dash panel below steering column.
- B. Locate the stud shown here and remove the nut.
- C. Install the throttle switch assembly with the switch arm horizontal. Reinstall the stud nut and tighten, making sure the switch arm is behind the throttle lever.
- D. Adjust the switch by loosening the screws and positioning it to “click” as the throttle returns to its released position. Cycle the throttle and listen for the click sound each time the throttle returns to idle.



## CAB WIRING

- A At the base of the steering column locate ignition power supply.  
1988 to 1993 models use medium blue 12 gauge wire, rear of the fuse panel.  
1994 to 1997 models use medium blue 14 gauge  
1998 models use black with orange trace
- B Install the "t-tap" connector on the power supply and attach the black wire from the fuse harness.
- C Route the fuse harness to the dash switch and connect the green wire to the top terminal, connect the black wire to the center terminal. Connect the red wire of the main harness to the lower terminal on the switch.
- D Route the main harness to the throttle switch and connect the yellow wire to the terminal with the diode and red wire to the other terminal.

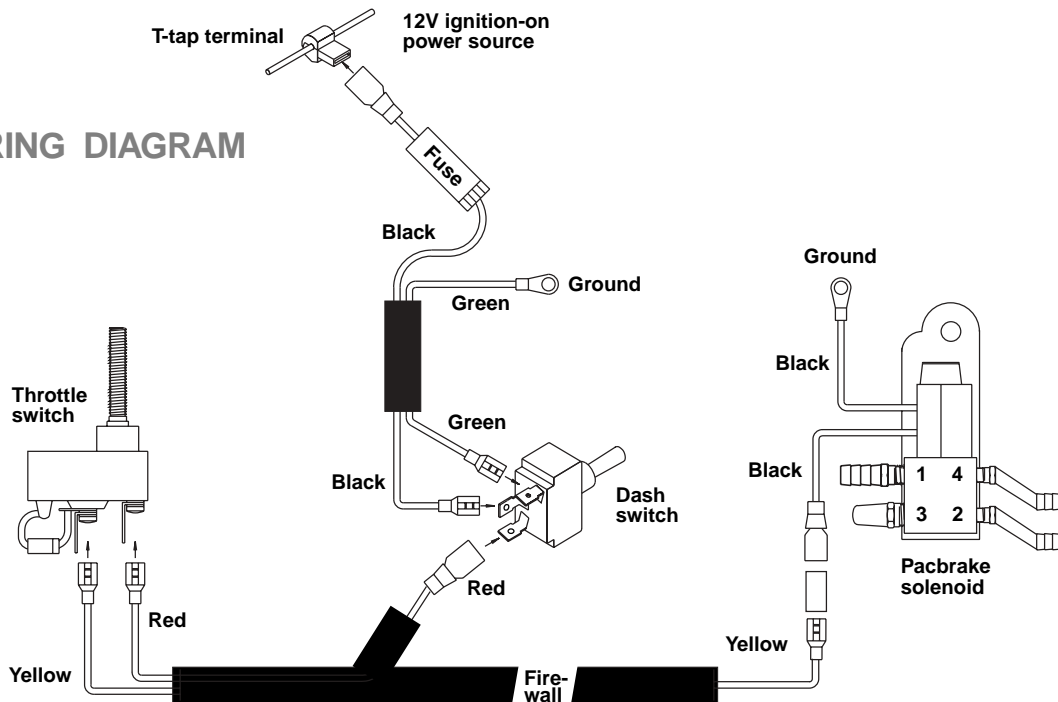
- E Feed the loomed yellow wire through the boot beside the steering column into the engine compartment. Secure all wiring from moving parts using plastic ties provided. Reinstall the lower dash panel removed earlier.

## ENGINE COMPARTMENT



Connect the yellow wire from the cab to the remaining solenoid wire using the splice connector supplied in the kit. Secure all wiring and hoses away from heat sources and moving parts.

## WIRING DIAGRAM



**NOTE:** Yellow wire must be attached to same terminal as the diode.

# 9

You are ready to check operation.

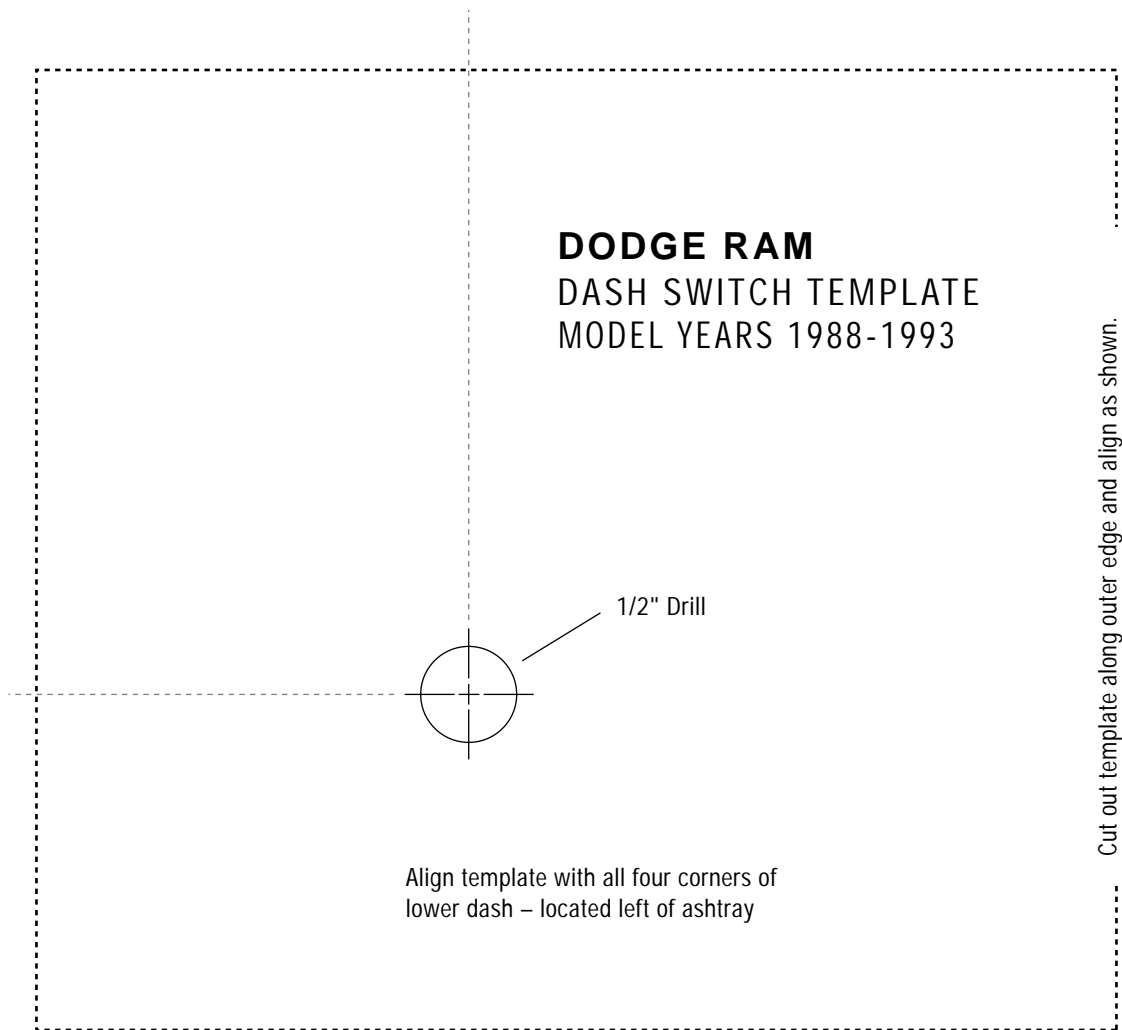
Start engine and turn Pacbrake on (engine will idle with Pacbrake engaged). Have an assistant move the throttle from idle to approximately 1200 RPM (Pacbrake should disengage before throttle RPM reaches 1000 RPM) and back to idle several times, while you observe the pacbrake operation from under the hood.

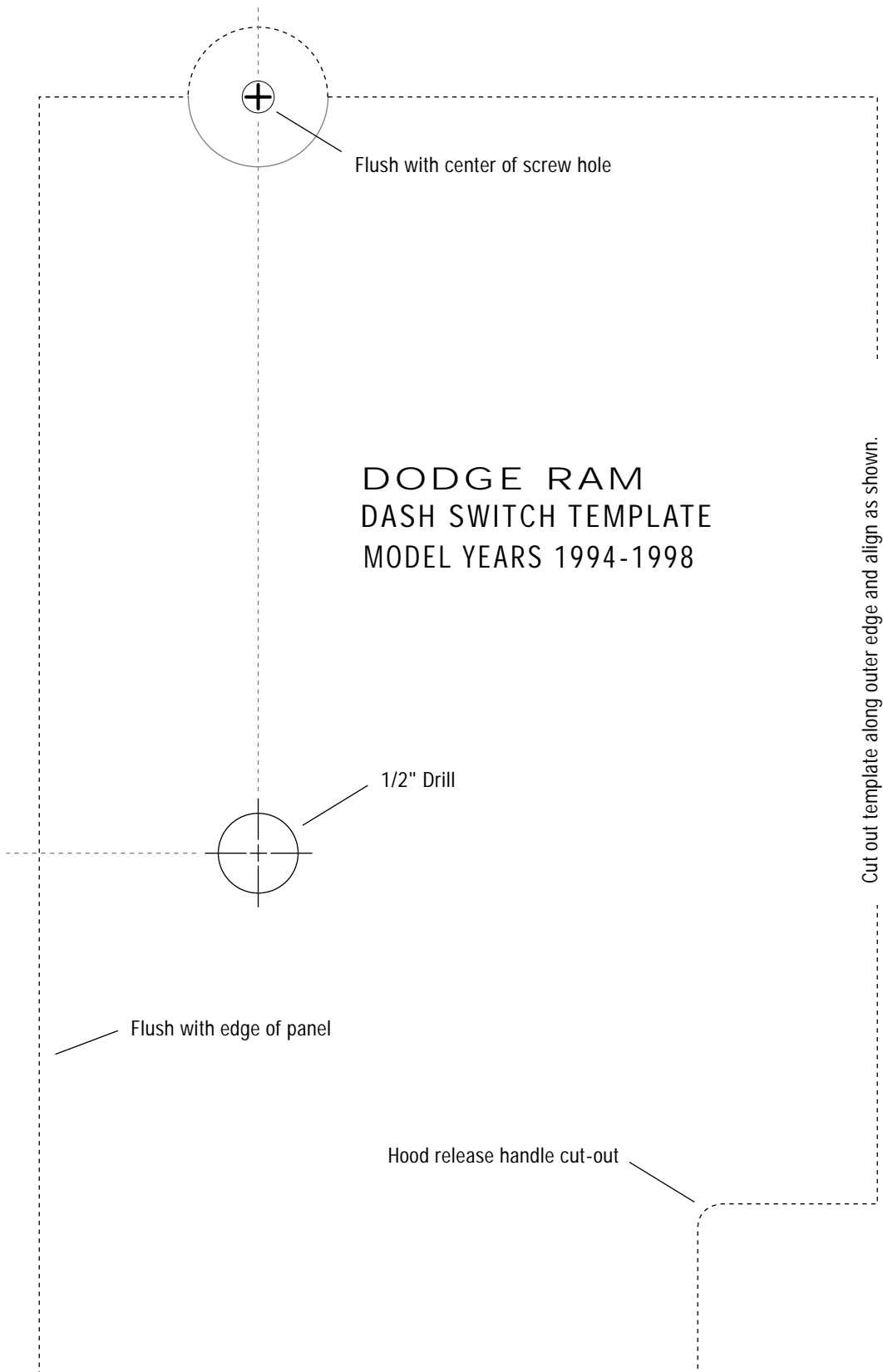
Check for exhaust leaks at all connections. Shut engine down and do a final check of all clamps, fittings, wiring and plastic ties.

# 10

Congratulations, you have completed the installation. For driving tips refer to the enclosed drivers guide.

NOTE: Cold weather operators can shorten their warm-up time by 50% by idling the engine after start-up with the Pacbrake on.





DODGE RAM  
DASH SWITCH TEMPLATE  
MODEL YEARS 1994-1998

Cut out template along outer edge and align as shown.

