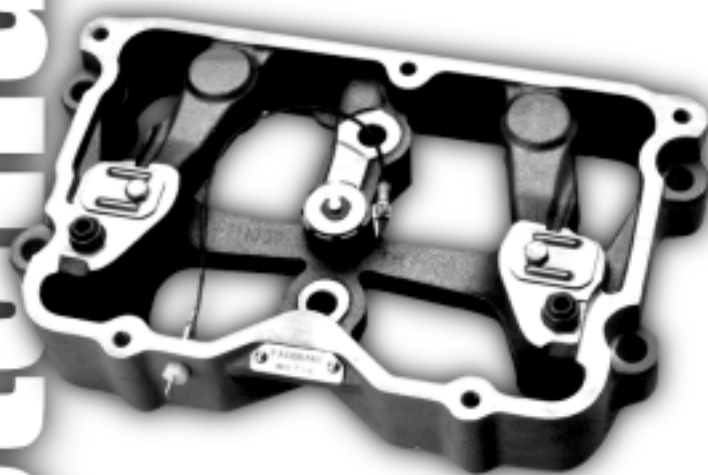


# Installation



## ENGINE BRAKES

Application:

P-25B/P-26/P-30E/P-40

REFER TO P-38 MANUAL  
FOR 88NT ENGINES

**PACBRAKE**  
ENGINE BRAKES

## APPLICATION GUIDE FOR NH/NT CUMMINS ENGINES.

ENGINE TYPE	PACBRAKE MODEL					P-26 & P-40 SCREW INFORMATION			
	P-25B	P-26	P-30E	P-40	P-40ST	SCREW KIT PART #	SCREW EA. PART #	COLOR	PROTRUSION
SMALL CAM NH/NT SINGLE ENTRY TURBO	X								
DIVIDED ENTRY TURBO		X				P40076	P40072	RED	.114
BIG CAM I SINGLE ENTRY TURBO			X	X		P40074	P40070	BLUE	.091
DIVIDED ENTRY TURBO				X		P40075	P40071	NATURAL	.106
BIG CAM II SINGLE ENTRY TURBO			X	X		P40074	P40070	BLUE	.091
DIVIDED ENTRY TURBO				X		P40075	P40071	NATURAL	.106
BIG CAM III SINGLE ENTRY TURBO			X	X		P40074	P40070	BLUE	.091
DIVIDED ENTRY TURBO				X		P40075	P40071	NATURAL	.106
BIG CAM IV SINGLE ENTRY TURBO			X	X		P40074	P40070	BLUE	.091
NEW BIG CAM IV (FIXED TIMING) CPL 0832			X	X		P40074	P40070	BLUE	.091
CPL 0796			X	X		P40074	P40070	BLUE	.091
CPL0797			X	X		P40074	P40070	BLUE	.091
NEW BIG CAM IV (STEPPED TIMING)					X	P40076	P40072	RED	.114
BIG CAM IV MVT and NTC 475				X		P40076	P40072	RED	.114

NOTE: Models P-25B, P-26, P-30E and P-40ST kits come with adjusting screws and locknuts.

Model P-40 kits are packaged and available 3 different ways for ordering and stocking convenience.

1. Pt# P40000 - w/o slave piston adjusting screws and locknuts.
2. Pt# P40001 - with screws and locknuts for single entry turbo.
3. Pt# P40002 - with screws and locknuts for dual entry turbo.

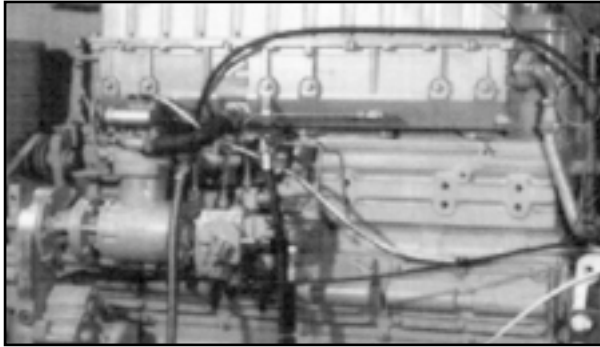
Part # P40081 6-pac kit is available to convert model 30 engine brakes to model P-40 for use with divided entry turbo applications on Big Cam I through Big Cam IV - consult factory for more application and parts breakdown information.

Part # P40082 6-pac kit is available to convert model P-25B to P-26 for use on divided entry turbo applications on small cam engines.

## BEFORE STARTING

1

Identify the engine model.



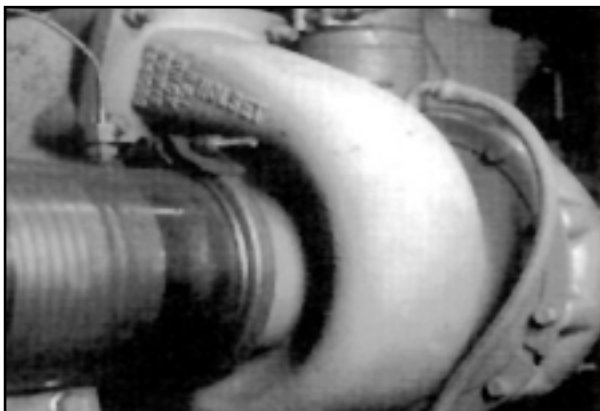
2

Ascertain if it is a big cam or small cam, by examining the engine block below the cam followers.



3

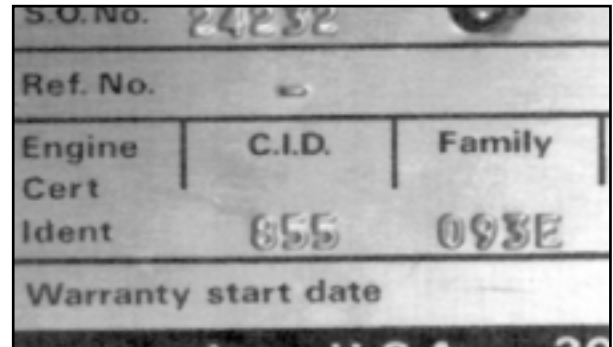
It is essential to determine the make and model of turbocharger fitted to the engine, and together with the information obtained in 1 & 2 ensure that the correct engine brake has been obtained. This can be verified by reference to the chart on the preceding page.



## ENGINE PREPARATION

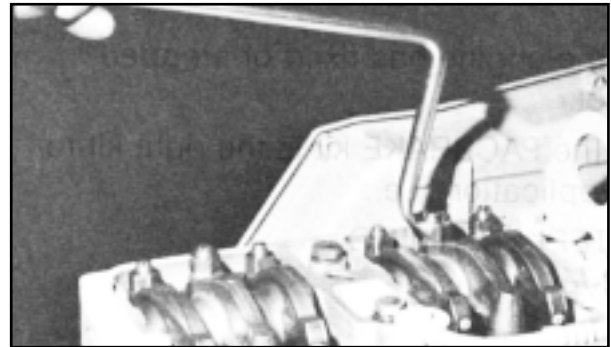
4

Should there be any doubt, obtain the CPL# from the engine spec. plate, and call your Pacbrake supplier.



5

Thoroughly clean the top of the engine, and remove the crossover pipe and rocker covers. Loosen all rocker adjusting screw locknuts.



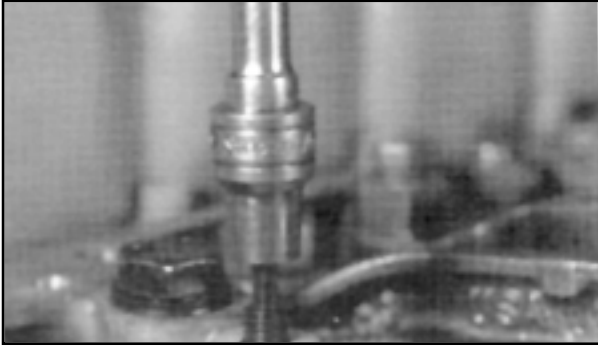
6

Remove injector adjusting screws and replace - loosely - with the Pacbrake counterpart.



# 7

Remove the solid rocker shaft locking screw and install the hollow Pacbrake oil supply screw.



# 8

Remove the rocker boxes and gaskets.

NOTE: Check to see that exhaust rocker arms have been ground to provide clearance for slave pistons. Width of rocker arm foot should be less than .625".



# 9

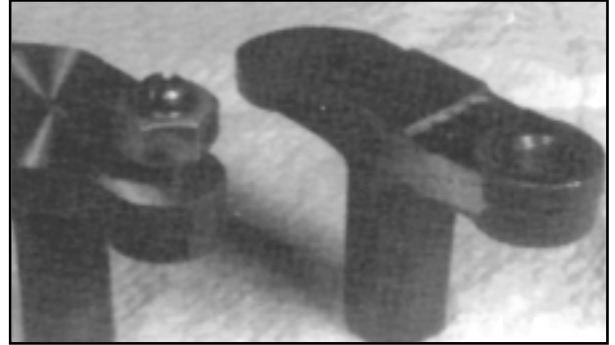
Loosen exhaust crosshead adjusting screw locknuts, and remove crossheads.



## OVERHEAD ADJUSTMENTS

# 10

Transfer adjusting screws and locknuts to Pacbrake crossheads.



# 11

Install on engine, and adjust per Cummins service manual.



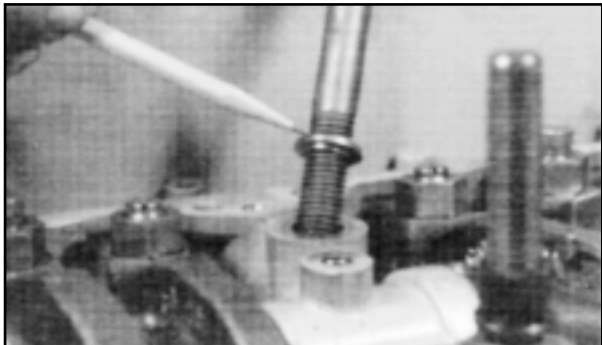
# 12

Replace the rocker box gaskets.



# 13

Re-install the rocker boxes, using the extension holddown studs and stepped steel washers. Long studs should be positioned to accept lifting brackets.



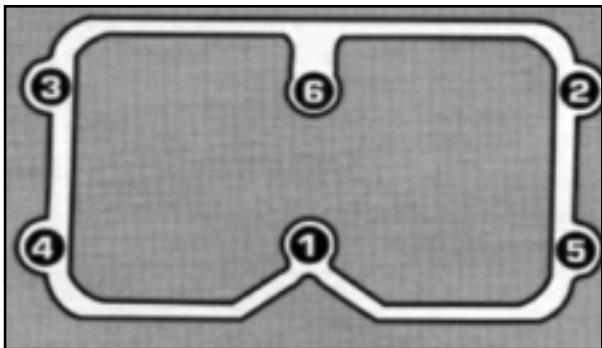
# 14

All Pacbrake housings are designed to accept the fan bracket support plate, in its original position, but WITHOUT the stepped steel washers on these two studs.



# 15

Use correct torque sequence.



# 16

Torque studs to 65-75 lb.ft. (88-102 N•m).



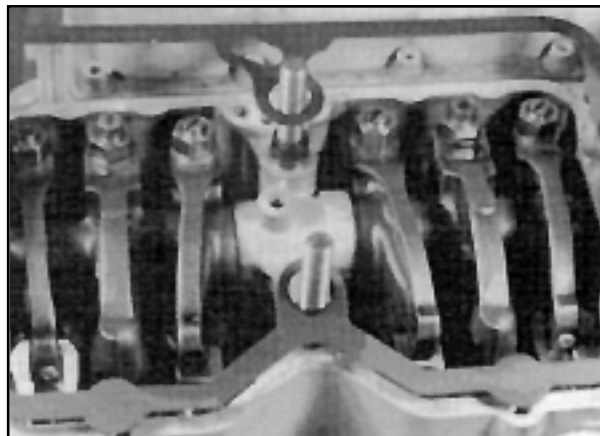
# 17

Adjust valves and injectors as per current Cummins service manual.



# 18

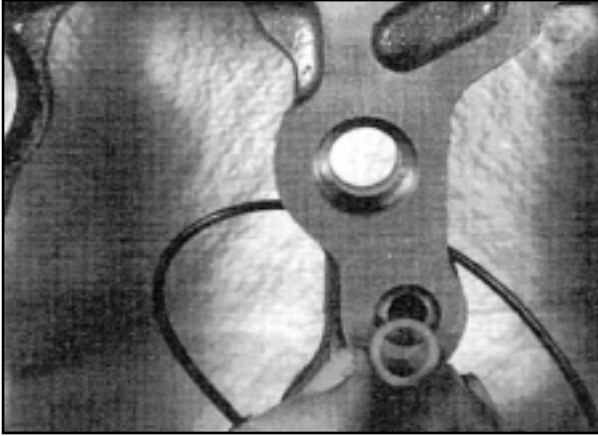
Install Pacbrake gaskets on rocker housings.



## BRAKE HOUSING INSTALLATION

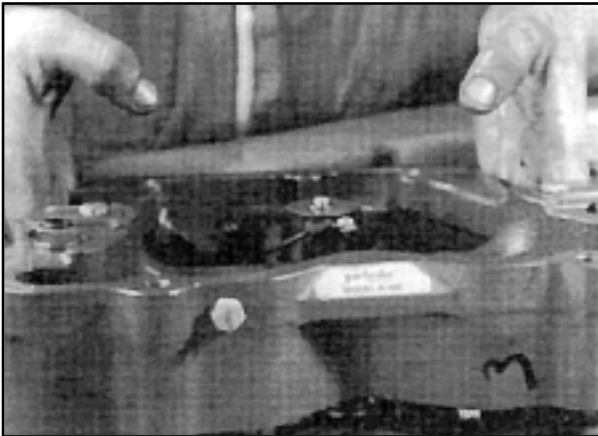
# 19

Install the rubber seal rings in underside of brake housings.



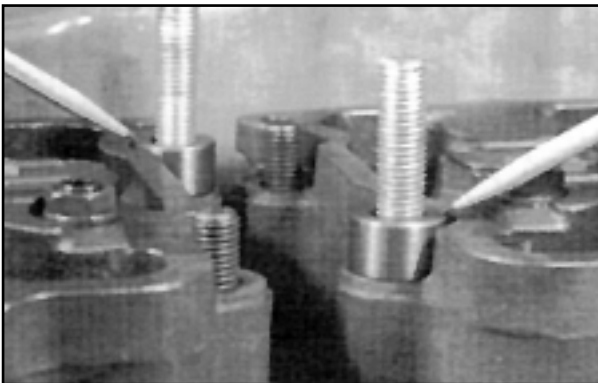
# 20

Install engine brake housings. Check for interference; units should be snug on gaskets all around.



# 21

Place spacers on the four long studs, located to accept the lifting brackets.



# 22

Replace lifting brackets in original position. Install hold-down nuts and torque to 55-60 lb.ft. (75-81 N(m)).



# 23

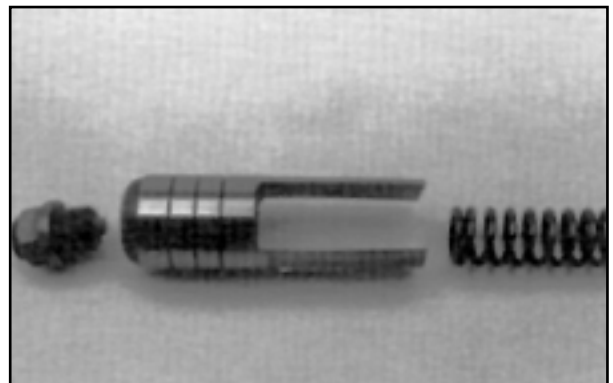
Note correct location of fan bracket support plate.



# 24

The P-40 and P-26 Paclash System is comprised of three parts:

1. Adjusting screw (which varies by application)
2. Slave Piston, Pt.# P40060 (which differs from the standard by a small hole through the top).
3. Slave Piston Return Spring, Pt.# P40055 (less tension than standard).





SLAVE PISTON  
ADJUSTMENT  
PROCEDURE

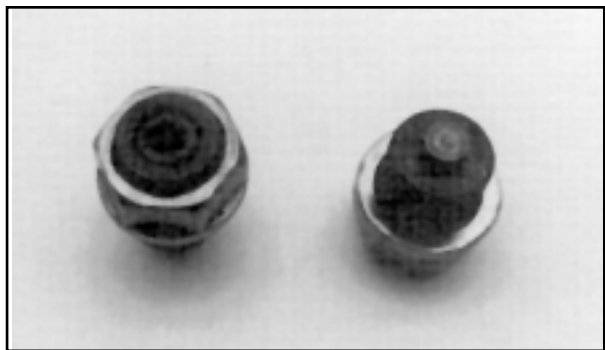
25

Screw identification:

Part # Each	Colour	Pkg. of 6	Protrusion
P40070	Blue	P40074	.091
P40071	Natural	P40075	.106
P40072	Red	P40076	.114

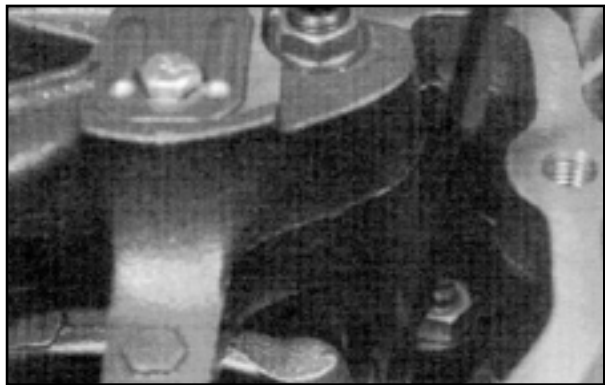
Part # of individual screws and package of 6 include locknuts.

NOTE: Slave Piston adjustment must be made with the engine stopped and should be done cold.



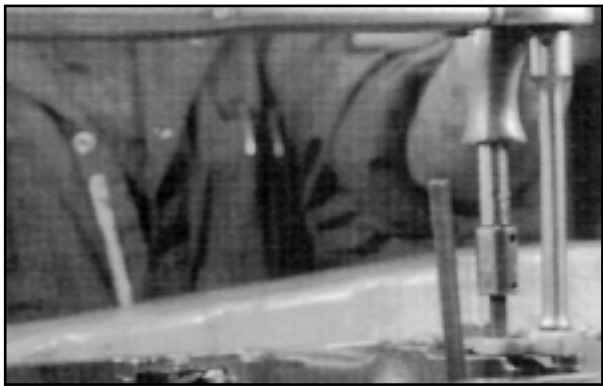
26

Loosen all adjusting screw locknuts, and ascertain which cylinders have clearance between exhaust rocker lever and crosshead, indicating that the exhaust valves on that cylinder are fully closed. There are usually four in this position. These can now be adjusted by inserting the special .018" Pt.#P03087 feeler gauge between the crosshead and slave piston foot.



27

Turn adjusting screw down until the correct clearance of .018" is obtained, and tighten the locknut to 25 lb. ft. (35 N•m). Bar the engine over approximately 2 set marks from its present position, and adjust the remaining cylinders.



28

Start engine, and at idle, momentarily depress solenoid cap a few times, until the oil being exhausted down the control valve spillways, is free of air.



29

Install on/off switch and three position switch in dash, conveniently located for the driver.

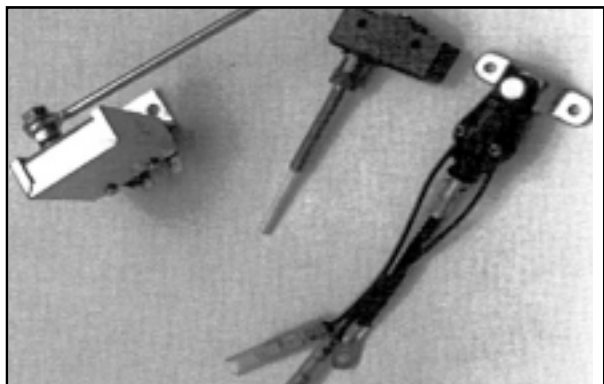


## CONTROL SYSTEM INSTALLATION

### 30

Install the standard or optional clutch switch in the cab, and adjust it, so that the circuit will be broken within the first inch of free travel of the clutch pedal.

NOTE: For vehicles having automatic transmissions, please consult your Pacbrake supplier.



### 31

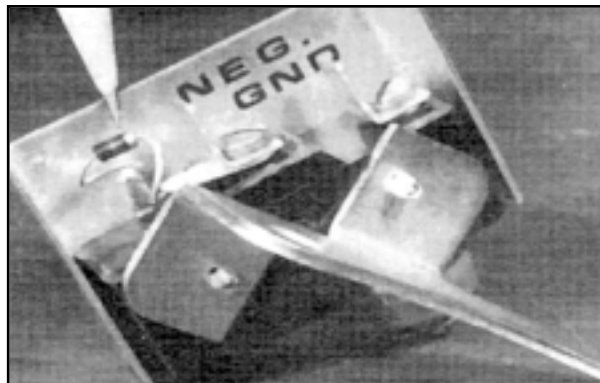
The pump switch supplied in the Pacbrake kit has the diode connected for negative ground vehicles.



### 32

Should the vehicle have a positive ground system, the diode MUST be reversed before installing on the engine.

NOTE: The marked end of the diode indicates the positive side.



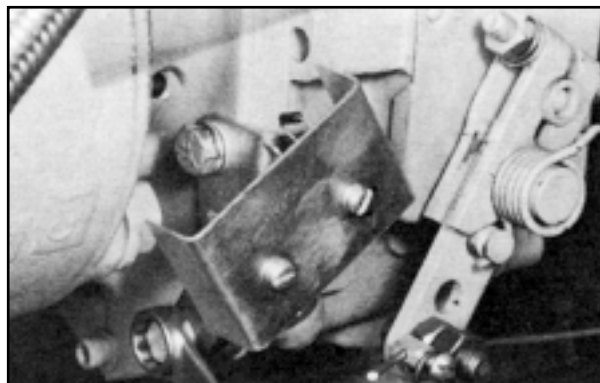
### 33

Remove the two hex, capscrews adjacent to the lever on the fuel pump.



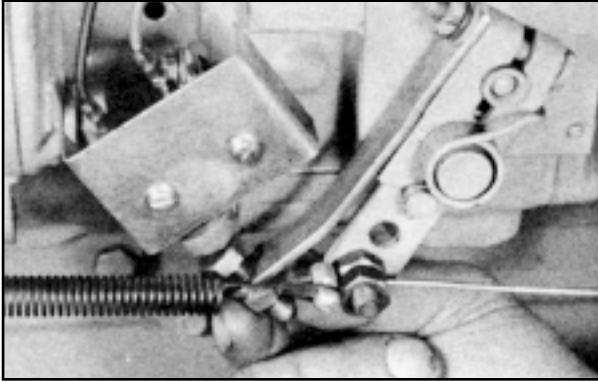
### 34

Install the fuel pump switch.





Install the actuating arm, and adjust it so that the micro switch "clicks on" when the pump lever moves to the idle position, and has no more than 1/16" overtravel. Check that the full fuel position is still smoothly obtainable.



Connect all the switches together, as per the wiring diagram, using the correct Pacbrake harness and securing with plastic ties. Where the harness terminates at the brake housings, ensure that the connectors are a tight fit and the harness is secured with clamps to the rocker cover bolts.

CHECK the entire control system by watching the solenoids during operation of each switch in turn.

COMPLETE the installation by replacing the rocker covers, crossover pipe and all components previously removed.

Road test vehicle.

