

Product

INFORMATION

OCTOBER 1999

PAGE 1/4

SUBJECT

PACBRAKE AND DETROIT DIESEL SERIES 60 ENGINES

1999 ... Another year of continued improvements!

Keeping pace with the engine changes and technological advancements in the Pacbrake retarder for the Detroit Series 60® is the mandate at Pacbrake Co. The last half of '98 saw dramatic changes to the engineering technology of the Pacbrake retarder for Detroit.

The evolution of the Pacbrake for the Detroit Series 60 is directly related to engine changes and technological advancements of the brake's engineering. In 1998 Pacbrake changed the accumulator springs and control valve springs to facilitate ease of servicing. In addition to the spring change, again in 1998, Pacbrake made a change in the slave piston dimensions that resulted in reduced housing pressures, which offered lower cam loading thereby reducing wear and tear on the engine. These changes required the generation of the P-63A engine brake.

The close of '98 saw Detroit change the Series 60 engine, which required more changes to the Pacbrake engine brake. The Detroit High Torque Premium engine has a 16.5:1 compression ratio and utilizes oil-cooled pistons. These changes required minor modifications to the accumulator springs and the master piston was redesigned to an orificed piston (P-63 and P-63A have a ball check master piston) which brought about the P-63B. Additional changes to the brake (solid inner slaves, additional bridge springs and single accumulator springs) to optimize performance in the 1999 engines quickly brought about the P-63C.

Following are some frequently asked questions and the respective answers:

How are aftermarket engine brake kits for the Detroit Series 60 engine ordered?

With Pacbrake applications on Series 60 engines you need to order two separate part numbers; one for a base kit and one for a control group.

- if 11.1L order base kit, part no. P61001
- if 12.7L (1998 and earlier) order base kit, part no. P63008 (aftermarket only)
- if 12.7L (1999) order base kit, part no. P63009 (aftermarket only)
- if DDEC II order control group P60150*
- if DDEC III or IV order control group P60155*

(*NOT REQUIRED FOR VOEM INSTALLATIONS.)

(NOTE: FOR VOEM APPLICATIONS ONLY: P63001 IS THE PART NUMBER FOR ALL 12.7L ENGINES.)

PACBRAKE[®]
ENGINE BRAKES

Phone: 800-663-0096 • Fax: 604-882-9278 • E-mail: info@pacbrake.com • Internet: www.pacbrake.com
Canada: 19594 - 96 Ave, Surrey, BC V4N 4C3 • USA: Box 1822, 250 H St, Blaine, WA 98231-1822

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How can you tell the difference between P-63 & P-63A, B & C?

Externally P-63A, B & C are labeled with a metal tag on each cast housing assembly. P-63 has no tag. Internally the following characteristics are unique to each brake model:

P-63	P-63A	P-63B	P-63C
Orificed small inner slave piston	Orificed large inner slave piston	Orificed large inner slave piston	Solid large inner slave piston
Solid small outer slave piston	Solid large outer slave piston	Solid large outer slave piston	Solid large outer slave piston
Ball check master piston	Ball check master piston	Orificed master piston	Orificed master piston
Single bridge spring	Single bridge spring	Single bridge spring	Double bridge spring
Three (3) accumulator springs	Single accumulator spring†	Double accumulator springs	Single accumulator spring
Two (2) control valve springs	Single control valve spring†	Single control valve spring	Single control valve spring
Red Paclash adjusting screw	Red Paclash adjusting screw	Red Paclash adjusting screw	Natural Paclash adjusting screw

†NOT ALL P-63A BRAKES HAD SINGLE CONTROL VALVE AND ACCUMULATOR SPRINGS. TWO BATCHES OF FIELD TRIAL HOUSINGS WERE RELEASED WITH SINGLE SPRINGS BEFORE THE FINAL RELEASE. IN BETWEEN THESE FIELD TRIALS, PRODUCTION OF MULTIPLE SPRING HOUSINGS WAS CONTINUED.

What is the difference between small and large slave pistons and red and natural Paclash?

The small slave pistons have a finished diameter of 0.750". The large slave pistons have a finished diameter of 0.875". The red Paclash screws have a piston protrusion of 0.114" where the natural screws have a protrusion of 0.025". They are color coded for quick and easy identification.

How can you tell the difference between P-61 and P-63 brakes?

The main difference between the older model brakes would be the color of the Paclash adjusting screws. P-61 only uses GREEN (P60122) adjusting screws. The P-63 used primarily a RED screw, however, some units contained a YELLOW screw (for more details and serial number info, refer to P-63 parts page). Because of the similarity of P-61 and P-63, for a period of time, the P-61 housing displayed a P-63 serial tag but contained GREEN adjusting screws (serial no. 027600 - 030187). As of March 30, 1998 all P-61 housings are using a serial tag marked accordingly, starting from serial no. 001000.

Which tune-up and service kits fit the different models of P-63?

Pacbrake standardized the P60101 kit to fit all P-61 and P-63 model applications. The service technician needs to pay attention to the colour of the control valve springs and accumulator springs and ensure that the correct spring(s) are being applied to the appropriate application. The parts manual and tune-up kit information sheets clearly outline the correct spring(s).



Can the P-63, P-63A, P-63B & P-63C be interchanged?

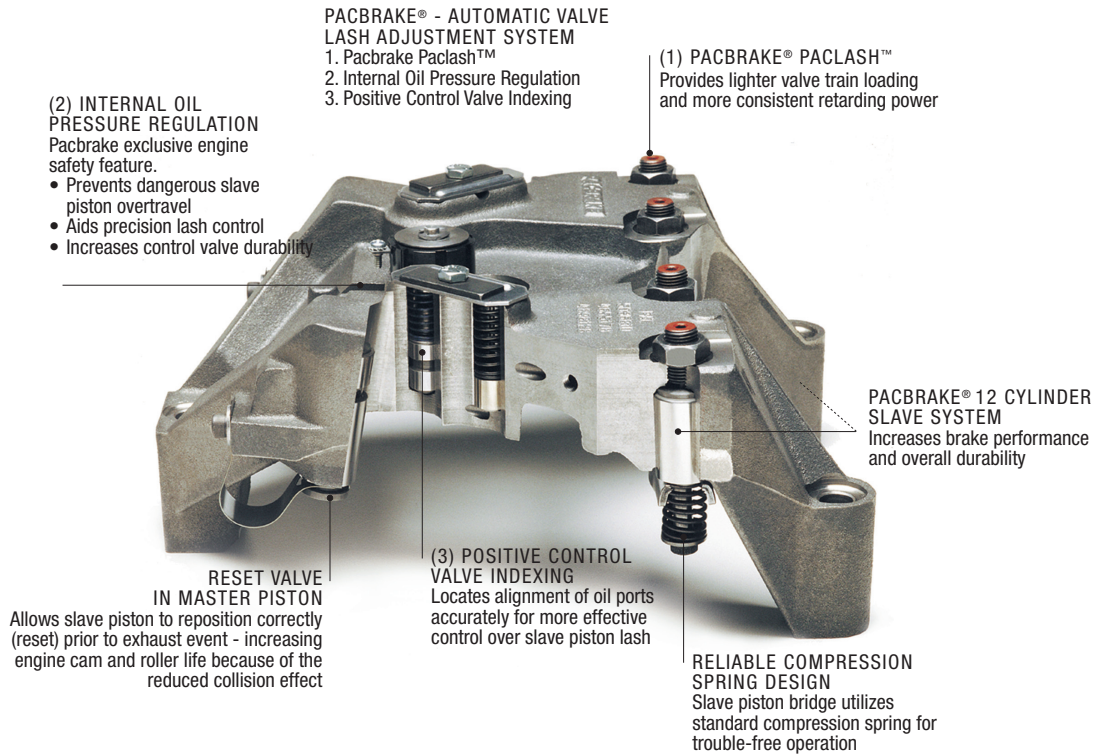
The simplest answer is NO! The technical answer is P-63B & C will work on all 12.7L applications. P-63 and P-63A will only work on the older ('98 and earlier) engines. UNDER NO CIRCUMSTANCES SHOULD THE GENERATIONS OF BRAKE HOUSINGS BE MIXED ON AN ENGINE OR SHOULD OLDER GENERATION BRAKES (P-63 & P-63A) BE INSTALLED ON 1999 ENGINES! MISAPPLICATION COULD CAUSE SEVERE ENGINE DAMAGE.

The following chart will help simplify engine brake application:

YEAR & DISPLACEMENT	DETROIT ENGINE MODEL	CONFIGURATION	PACBRAKE MODEL	PACBRAKE KIT	CONTROL GROUP
PRE '98 11.1L ENGINE	6067-WT40	PRE '90 DDEC I	P-61	P61001	P60150
	6067-WU40	PRE '91 DDEC II	P-61	P61001	P60150
	6067-WU60	'91-'93 DDEC II	P-61	P61001	P60150
	6067-WK60	'93-'95 DDEC III	P-61	P61001	P60155
	6067-SK60	'95-'97 DDEC III	P-61	P61001	P60155
	6067-EK60	'98 DDEC IV	P-61	P61001	P60155
1999 11.1L ENGINE	6067LK60	'99 DDEC IV TRUCK	P-61	P61001	P60155
	6067LK28	'99 DDEC IV COACH	P-61	P61001	P60155
	6067LK45	'99 DDEC IV FIRE TRUCK	P-61	P61001	P60155
	6067LK57	'99 DDEC IV CRANE	P-61	P61001	P60155
PRE '98 12.7L ENGINE	6067-GT40	PRE '90 DDEC I	P-63	P63008	P60150
	6067-GU40	PRE '91 DDEC II	P-63	P63008	P60150
	6067-GU60	'91-'93 DDEC II	P-63	P63008	P60150
	6067-GK60	'93-'97 DDEC III	P-63	P63008	P60155
	6067-TK60	'98 STD. PRODUCTION (400/430/470/500 HP) DDEC IV	P-63A OR P-63B	P63008	P60155
	6067-PK60	'98 PREMIUM, HI TORQUE (470/500 HP) DDEC IV	P-63B OR P-63C	P63008	P60155
1999 12.7L ENGINE	6067BK60	'99 PREM. TRUCK DDEC IV	P-63B OR P-63C	P63009	P60155
	6067BK28	'99 PREM. COACH DDEC IV	P-63B OR P-63C	P63009	P60155
	6067BK45	'99 PREM. FIRE TRUCK DDEC IV	P-63B OR P-63C	P63009	P60155
	6067BK57	'99 PREM. CRANE DDEC IV	P-63B OR P-63C	P63009	P60155
	6067MK60	'99 STD. TRUCK DDEC IV	P-63B OR P-63C	P63009	P60155
	6067MK28	'99 STD. COACH DDEC IV	P-63B OR P-63C	P63009	P60155
	6067MK45	'99 STD. FIRE TRUCK DDEC IV	P-63B OR P-63C	P63009	P60155
	6067MK57	'99 STD. CRANE DDEC IV	P-63B OR P-63C	P63009	P60155

NOTE: SERVICE REPLACEMENT HOUSINGS AND PARTS ARE AVAILABLE FOR ALL MODELS. CONSULT PACBRAKE PARTS MANUAL (FORM# L6001.0399) FOR DETAILS.



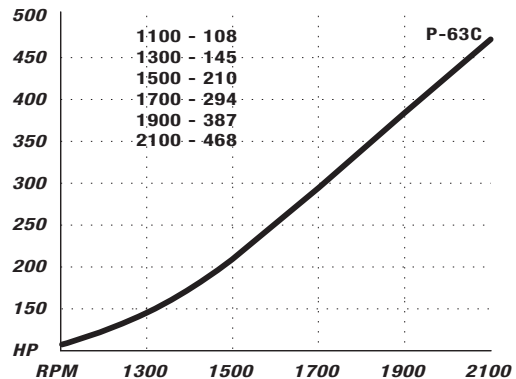


PACBRAKE P-63C ENGINE RETARDER

Designed specifically for all Detroit Diesel Series 60 engine applications (including the new '99 engine).

- STRONG VOEM SUPPORT FROM FREIGHTLINER, KENWORTH, PETERBILT, WESTERN STAR, ETC.
- INDUSTRY TRACK RECORD OF PERFORMANCE AND RELIABILITY.
- PATENTED FULL AUTHORITY LASH AND RESET MECHANISMS GIVING SUPERIOR BRAKE PERFORMANCE WHILE PROTECTING THE ENGINE.
- SIGNIFICANTLY REDUCED SOUND LEVELS DURING ENGINE BRAKING EVENTS (UP TO 5DB LOWER THAN COMPETITIVE MODELS).
- LONGEST WARRANTY IN THE INDUSTRY (5 YEARS ON CASTINGS - 4 YEARS 400,000 MILES ON ATTACHING AND CONTROL PRODUCTS).
- SEAMLESS WARRANTY ADMINISTERED THROUGH TRUCK MANUFACTURERS AND DETROIT DIESEL ENGINE COMPANY DISTRIBUTORS DIRECT TO PACBRAKE.

- NATIONAL SERVICE PARTS THROUGH DIRECT SHIP PROGRAM WITH MOST MAJOR TRUCK DEALERSHIPS.
- HIGHEST RETARDING HORSEPOWER ON THE MARKET (465 + RHP).



Pacbrake Marketing

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Phone: 800-663-0096 • Fax: 604-882-9278 • E-mail: info@pacbrake.com • Internet: www.pacbrake.com
 Canada: 19594 - 96 Ave, Surrey, BC V4N 4C3 • USA: Box 1822, 250 H St, Blaine, WA 98231-1822

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