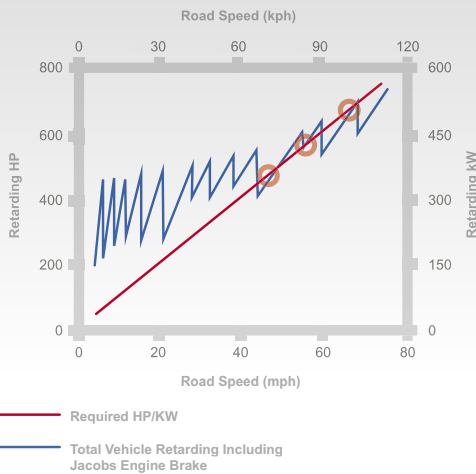


JACOBS ENGINE BRAKE®



THE JACOBS ENGINE BRAKE™ PROVIDES UNSURPASSED SLOWING POWER FOR ENHANCED VEHICLE CONTROL...

Retarding Performance



If an engine can get a truck up a hill, it should be able to get it down the hill... safely. That was the premise that inspired Clessie Cummins to invent the original compression release engine brake.

Together Clessie and Jacobs developed the idea and introduced the first Jacobs Engine Brake® in 1961. Today the Jacobs Engine Brake is the world leader in vehicle retarding power, and the preferred choice of leading diesel engine and truck manufacturers around the world.

With the reductions in aerodynamic

drag and rolling resistance, and increases in operating speeds and loads, heavy-duty vehicles require the superior retarding power a Jacobs Engine Brake provides.

As shown in the example on the left, in order to descend a 6% grade with an 80,000lb / ~36,000 kg vehicle at a controlled speed of 55 MPH/89KPH without using the service brakes, a modern truck requires about 400 HP/300 KW of *supplemental* retarding power.

The Jacobs Engine Brake delivers that vital power whenever necessary, for confident control of your vehicle.

DRAMATICALLY REDUCES SERVICE BRAKE AND TIRE WEAR...



The robust hardware and advanced design of the Jacobs Engine Brake assures you of reliable performance and durability while reducing vehicle maintenance costs and downtime. In numerous cases, operators have put their Jacobs Engine Brake to use for over one million miles of vehicle operation and extended service brake life up to 5 times.



By keeping brake temperatures lower, the Jacobs Engine Brake will reduce tire temperatures, increase tread life and permit more retreads per tire.

The Jacobs Engine Brake also helps to maintain normal engine temperature and turbocharger speeds on long downgrades, providing improved response when positive power is needed again.



Model 797 for Detroit Diesel Series 60 engines.

Top left: Model 615 for Renault V.I. dCi 11 engines

Bottom Left: Model 2100 for Hyundai Powertec engines

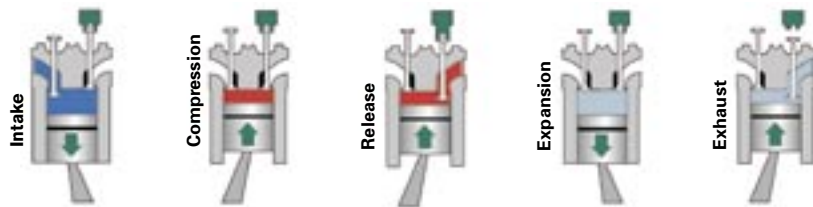


Jacobs Vehicle Systems™

HOW THE JACOBS ENGINE BRAKE™ TAKES THE LOAD OFF SERVICE BRAKES.

A Jacobs Engine Brake is a hydro-mechanical device that mounts under an engine's valve cover. It turns your power-producing diesel engine into a power-absorbing air compressor.

Here's how: when the driver releases the accelerator pedal, the forward momentum of the truck continues to turn the drivetrain and engine. The pistons continue to move up and down, and the intake air compresses and expands in the cylinders. Once activated, the engine brake opens the exhaust valves near the end of the compression stroke, releasing the highly compressed air through the exhaust system. Little energy is returned to the piston, and as the cycle repeats, the energy of the truck's forward motion is dissipated, causing the truck to slow down.



...AND IS THE PREFERRED CHOICE FOR SUPPLEMENTAL BRAKING AROUND THE WORLD.

In 1961, Jacobs Vehicle Systems launched the first compression release engine brake. Today, with over 2 million sold, drivers around the world rely on the Jacobs Engine Brake for unsurpassed retarding performance. In fact, over 70% of new Class 8 vehicles in North America have a Jacobs Engine Brake on board. To meet the ever-increasing worldwide demand for improved diesel engine retarder performance and enhanced vehicle control, Jacobs will continue to partner with leading diesel engine manufacturers to integrate Jacobs Engine Brake® technology into new diesel engine designs.

Our advanced engine brake systems will help to optimize retarding performance throughout the vehicle speed range, improve vehicle control, reduce system size and weight and improve vehicle profitability. Drivers can rely on Jacobs to meet their vehicle retarding needs over the long haul.

Building on proven expertise in precision hydraulic engine valve

actuation, Jacobs Vehicle Systems continues to lead the way with an exciting array of variable valve actuation technology and integrated engine braking solutions for many engines. As new generations of more powerful and efficient diesel engines are developed, technology and engineering from Jacobs Vehicle Systems will continue to help those engines better meet the ever-increasing performance, fuel economy and emissions demands of the future.



Jake Brake® Retarders are part of the Jacobs Vehicle Systems™ family of products ... Trusted throughout the world for safety, unsurpassed performance and reduced operating expenses.

Above: Model 340C for Caterpillar 3406E, C15/C16 engines

ENGINEERED
FOR THE **ROAD AHEAD**

ENGINE APPLICATION		PRODUCT NAME	MODEL
Caterpillar	C-12	Jacobs Engine Brake™	312 Series
	C-10	Jacobs Engine Brake™	310 & 312 Series
	3176 Series	Jacobs Engine Brake™	317 Series
	3306 Series	Jacobs Engine Brake™	336 Series
	3406 Mechanical Series	Jacobs Engine Brake™	346 & 349 Series
	3406E, C15, C16	Jacobs Engine Brake™	340 Series
Cummins	L-10	Jacobs Engine Brake™	404 Series
	ISL	C Brake by Jacobs™	490 Series
	M-11/ISM	C Brake by Jacobs™	411 Series
	NH/NT Series	Jacobs Engine Brake™	425 & 430 Series
	N-14	Jacobs Engine Brake™	440 Series
	N-14, N-14 Plus	C Brake by Jacobs™	450 & 455 Series
	ISX/Signature 600	Cummins Inte Brake™	
DAF	XF, XE	DAF Engine Brake	126
Detroit Diesel	Series 50	Jacobs Engine Brake™	750 Series
	Series 53	Jacobs Engine Brake™	53A
	Series 60	Jacobs Engine Brake™	760, 765, 770, 790, 795, & 797 Series
	Series 71	Jacobs Engine Brake™	71A
	Series 92	Jacobs Engine Brake™	92A
Hino	F17D, F20C F21CNA	Jacobs Engine Brake™	983 Series
	K13C	Jacobs Engine Brake™	963 Series
	PI IC	Jacobs Engine Brake™	962 Series
	V26C	Jacobs Engine Brake™	911
Hyundai	Powertec	Jacobs Engine Brake™	2100
MACK	E5	Jacobs Engine Brake™	610
	E6 4 valve	Jacobs Engine Brake™	680A
	E7	Jacobs Engine Brake™	680B
	E-Tech™	Jacobs Engine Brake™	690 J-Tech™ Series
	ASET™ (AC, AI, AMI)	Jacobs Engine Brake™	690 J-Tech™ Series
Mitsubishi	6D16 (T5)	Jacobs Engine Brake™	861
	6D40	Jacobs Engine Brake™	864B
	8M20/21	Jacobs Engine Brake™	882 Series
	8M22	Jacobs Engine Brake™	883 Series
	10M20	Jacobs Engine Brake™	875A
Renault V.I.	6.20.45	Frein Moteur "J"	610
	dCi 11	Frein Moteur "J"	615
	6.23.56	Frein Moteur "J"	610
	6.24.65	Frein Moteur "J"	680B
	E-Tech™	Frein Moteur "J"	690 J-Tech™ Series

Contact your engine distributor or truck dealer for specific application and performance information on original equipment and retrofit Jacobs products for your vehicles. E-Tech™ is a trademark of Mack Trucks, Inc. Inte Brake™ is a trademark of Cummins, Inc. **For more information go to www.jacobsvehiclesystems.com**



Jacobs Vehicle Systems™

JACOBS ENGINE BRAKE®



THE
LEADER

IN ENGINE BRAKE
TECHNOLOGY

ENGINEERED
FOR THE *ROAD AHEAD*