

BLEEDER BRAKE



Jacobs[®]

ENGINE BRAKING IDEAL FOR SMALL ENGINES

Jacobs' Bleeder Brake is a simplified version of a traditional compression release engine brake with comparable retarding performance and noise levels similar to an exhaust brake. Bleeder brake technology is an ideal solution for applications on smaller displacement engines when cost and packaging is a consideration.



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JACOBS BLEEDER BRAKE

BENEFITS

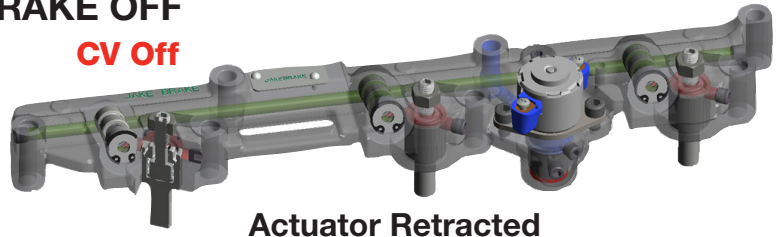
- Increases vehicle control
- Lower cost engine brake option ideal for smaller engines with packaging constraints
- Reduces wear on engine, tires, wheel ends, and service brakes
- Quiet operation so it can be used wherever and whenever needed
- Design flexibility to work with most engines
- Low added weight
- No camshaft required
- Use with a backpressure mechanism such as an exhaust brake or VGT for maximum performance

HOW A BLEEDER BRAKE WORKS

When the bleeder brake is turned on, a piston extends to its full stroke and stays there, holding the exhaust valve open a small, fixed distance throughout the entire four-stroke engine cycle. Since the bleeder brake only holds the exhaust valve open a fixed distance, it can be designed to not put any load on the camshaft and most of the overhead components.

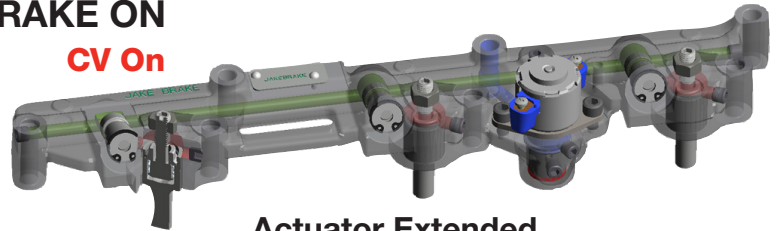
1. Exhaust valve is held open throughout all four strokes of the engine cycle.
2. The compressed air “bleeds” out through the slightly opened exhaust valve during the entire compression stroke.
3. The engine pumps by pushing against the valve restriction and against the back pressure.
4. Bleeding off compressed air prevents the return of energy to the piston, which slows the vehicle down.

BRAKE OFF
CV Off

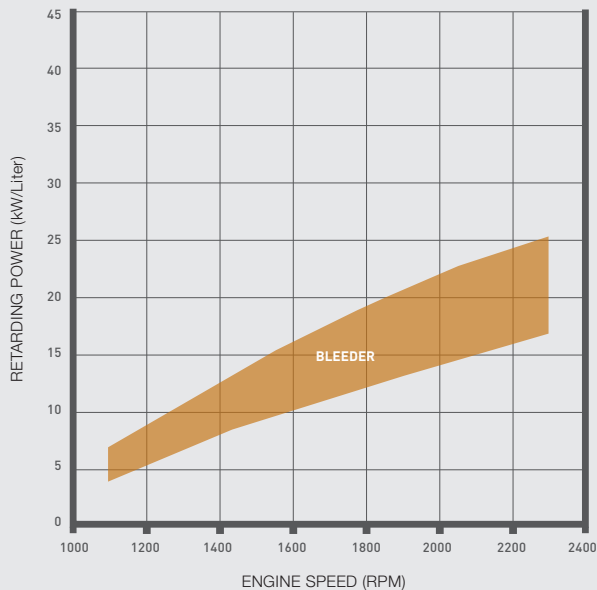


Actuator Retracted

BRAKE ON
CV On



Actuator Extended



BLEEDER BRAKE PERFORMANCE

Bleeder Brakes can also be used in combination with a backpressure mechanism such as an exhaust brake or VGT for maximum braking performance.

*Demonstrated engine brake performance ranges from various engine tests and simulation results.



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