Kärcher's Classic hot water pressure washers

USE 25+% LESS FUEL

KÄRCHER®

makes a difference

INNOVATIVE TECHNOLOGY

How Kärcher's innovative heating technology achieves fuel savings of 25%... *and more!*

Kärcher's innovative heating technology in Classic series oil-fired hot water pressure washers is just one of the many innovations that make Kärcher the most energy-efficient pressure washers in the world.

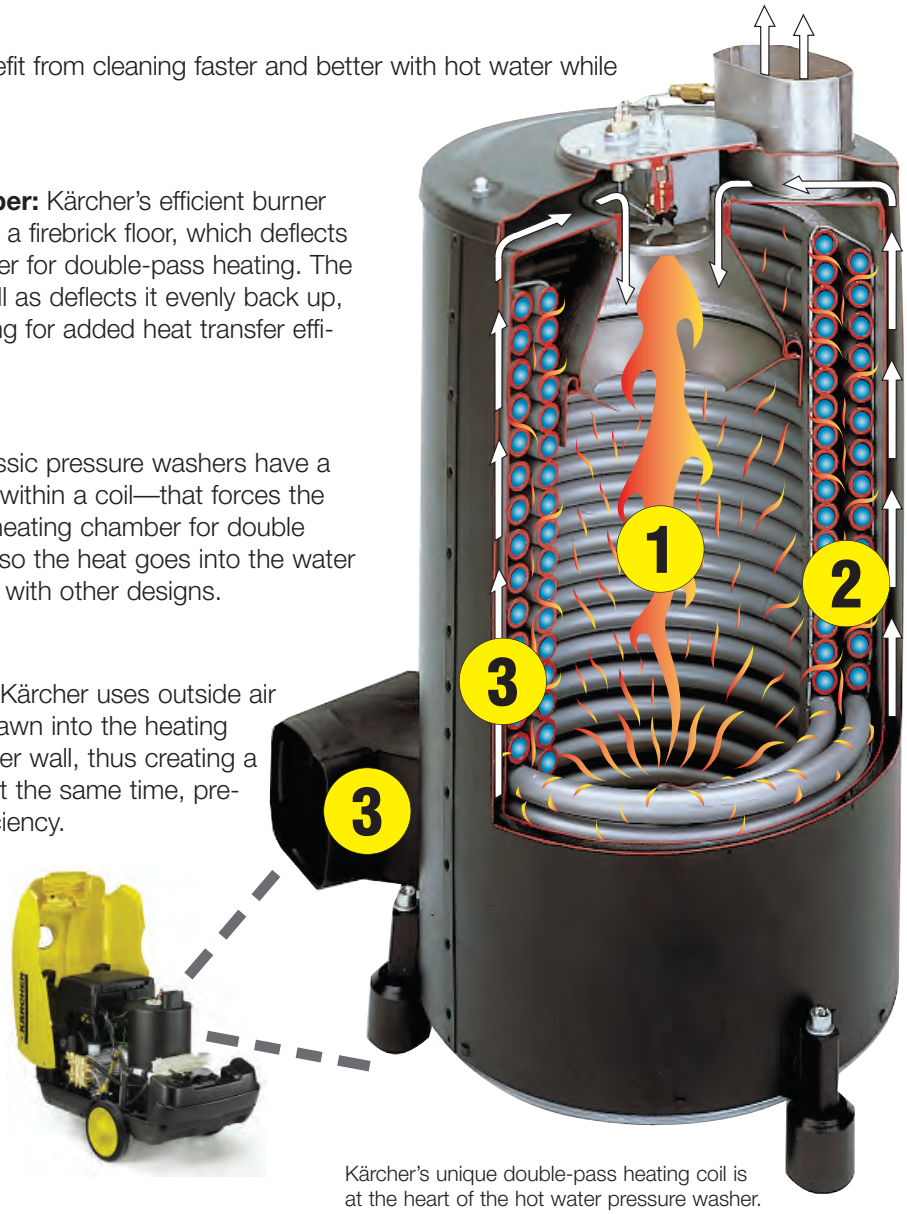
In 1950, Alfred Kärcher invented the hot water pressure washer and has since perfected the heating of water under high pressure with three innovative features; an extra-efficient heating chamber, a double pass coil system, and a pre-heated air intake design. Together these features deliver heat-transfer efficiency that results in fuel savings of 25% or more compared to most competitive brands.

With today's high fuel prices, you can benefit from cleaning faster and better with hot water while saving some serious money.

1. **Extra-Efficient Heating Chamber:** Kärcher's efficient burner shoots the flame downward onto a firebrick floor, which deflects the heat back up into the chamber for double-pass heating. The brick both retains the heat as well as deflects it evenly back up, around and through the coil tubing for added heat transfer efficiency.

2. **Double-Pass Coil:** Kärcher Classic pressure washers have a double-pass heating coil—a coil within a coil—that forces the water to flow twice through the heating chamber for double exposure to the flame and heat, so the heat goes into the water and not out the exhaust vent, as with other designs.

3. **Pre-Heated Air As Insulation:** Kärcher uses outside air as an insulation blanket. Air is drawn into the heating chamber passing through an outer wall, thus creating a thermal insulation barrier while, at the same time, pre-heating the air for better fuel efficiency.



Kärcher's unique double-pass heating coil is at the heart of the hot water pressure washer.

Watch this video now by scanning this code with a QR reader on your smart phone.

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TEST RESULTS

Potential Annual Fuel Savings: Standard Models vs Kärcher Classic

Fuel consumption tests conducted on hot water pressure washers with 4 GPM @ 2000 PSI

* Tests were conducted on comparable size pressure washers of four standard machines with either horizontal or updraft vertical burners. The "fuel used" column below reflects the average consumption of the standard hot water pressure washers tested vs. the Kärcher Classic model.

Hours of Burner Operation	Standard Models Fuel Used	Kärcher Classic Fuel Used	Fuel Saved Per Week		Operating Weeks Per Year		Fuel Price		Annual Cost Savings
Diesel priced at $4.00 per gallon									
5 Hours Per Week	12.6 Gal	9.7 Gal	2.9 Gal	x	50	@	$4.00	=	$ 580
10 Hours Per Week	25.1 Gal	19.4 Gal	5.7 Gal	x	50	@	$4.00	=	$1,140
15 Hours Per Week	37.7 Gal	29.1 Gal	8.6 Gal	x	50	@	$4.00	=	$1,720
Diesel priced at $4.50 per gallon									
5 Hours Per Week	12.6 Gal	9.7 Gal	2.9 Gal	x	50	@	$4.50	=	$ 653
10 Hours Per Week	25.1 Gal	19.4 Gal	5.7 Gal	x	50	@	$4.50	=	$1,283
15 Hours Per Week	37.7 Gal	29.1 Gal	8.6 Gal	x	50	@	$4.50	=	$1,935
Diesel priced at $1.30 per liter									
5 Hours Per Week	47.7 Ltr	36.7 Ltr	11.0 Ltr	x	50	@	$1.30	=	$ 715
10 Hours Per Week	95.0 Ltr	73.4 Ltr	21.6 Ltr	x	50	@	$1.30	=	$1,404
15 Hours Per Week	142.7 Ltr	110.2 Ltr	32.5 Ltr	x	50	@	$1.30	=	$2,113
Diesel priced at $1.50 per liter									
5 Hours Per Week	47.7 Ltr	36.7 Ltr	11.0 Ltr	x	50	@	$1.50	=	$ 825
10 Hours Per Week	95.0 Ltr	73.4 Ltr	21.6 Ltr	x	50	@	$1.50	=	$1,620
15 Hours Per Week	142.7 Ltr	110.2 Ltr	32.5 Ltr	x	50	@	$1.50	=	$2,438

Validating Fuel Efficiency: Standard Models vs Kärcher Classic

You can determine fuel efficiency by the exhaust vent temperature

One way to identify a fuel efficient hot water pressure washer is to measure the heat coming out of the exhaust vent.

An efficient burner system will transfer the majority of the heat into the coil and water, not out the exhaust vent. Simply measure the air temperature at the mouth of the exhaust vent to determine the difference. For instance, our tests showed the average exhaust temperature for the standard models was 732°F (388°C) vs. 389°F (198°C) for the Kärcher Classic.

732°F*
388°C

389°F
198°C

Cooler exhaust vent air means it's more fuel efficient.

*Always use a temperature gauge to test the exhaust vent temperature. Never test the temperature with your hand or other exposed part of the body.

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CONDUCT YOUR OWN TEST

Step-by-Step: How to measure fuel efficiency for hot water units

Below are the step-by-step procedures to determine the fuel savings you will realize with Kärcher's Classic series heating technology featuring a downdraft burner, double-pass coil and pre-heated air that also serves as an insulation blanket.

Set Up for the Test

You'll need to obtain the following prior to conducting the test:

- Two hot water pressure washers with identical flow rate (GPM) and identical high-pressure hose length. One should be a Kärcher Classic hot water pressure washer and the other a standard pressure washer with either a conventional horizontal or vertical heating coil.
- Temperature gauge for measuring the water temperature at the pressure washer's inlet and outlet with a temperature range of 35° to 230°F (2° to 110°C). Kärcher offers a gauge, #8.712-488.0, which reads 50° to 500°F (10° to 260°C).
- Two empty, external fuel tanks—one marked for the Kärcher hot water pressure washer and the other for the standard unit.
- Ten gallons of diesel fuel.
- A scale for weighing the fuel tanks with a range of at least 8 to 50 pounds.
- An optional tool would be a gauge for measuring the air temperature as it exits the exhaust vent; must be able to measure temperatures of 240° to 900° F (115° to 482°C). Grainger offers a gauge, Grainger Item #1LYR5, with a range of -58°F to 1999°F (-14° to 1093°C).

Conducting the Fuel Test

1. Use the temperature gauge (P/N 8.712-488.0) to measure the temperature of the water entering both pressure washers.
2. Operate both pressure washers with the thermostat turned to the highest temperature setting, with the burner on, and with the gun open for at least five minutes. Then use the gauge to measure the temperature of the water exiting the pressure washers.
3. Adjust the fuel pump pressure of one or both machines so that both pressure washers have the same temperature rise for the water temperature. For example, if the temperature of the inlet water is 60°F (16°C) and 200°F (93°C) at the outlet, then the rise is 140°F. Adjust one or both units to equalize the rate of temperature rise.

   NOTE: It is likely that the Kärcher Classic pressure washer will have hotter water than the standard unit, so the hot water temperature of the Kärcher Classic may have to be reduced to align the temperature rise to the standard model.
4. Fill each fuel tank with 4-5 gallons of fuel, and weigh the fuel tanks.
5. Take the open end of the fuel line from each pressure washer and insert it into its designated external fuel tank.
6. Operate the machines with the burner on and the gun open for exactly the same amount of time. We recommend 60 minutes.
7. At the end of the test, remove the fuel tanks and weigh them. Calculate the reduction in weight.
8. Use the chart below to record your findings. To convert from weight to volume (lbs to gallons), you must divide the difference in weight by 7.175 lbs., which is the weight of a gallon of fuel. [A liter of fuel weighs .86 kg.] This will tell you how many gallons each machine used during the 60-minute test. The difference in the amount used is the fuel efficiency of one unit over the other.

Charting Results of a 60-Minute Test

	Standard Pressure Washer	Kärcher Classic Pressure Washer
A. Rated GPM *[Should be equal for both machines]*	_____	_____
B. Water inlet temperature	_____	_____
C. Water outlet temperature before adjustment to make them equal	_____	_____
D. Water outlet temperature after adjustment making them equal	_____	_____
E. Weight of tank and fuel before the test	_____	_____
F. Weight of tank and fuel after 60-minute test	_____	_____
G. Difference in weight [Row **E — F**]	_____	_____
H. Gallons used in test [**G** ÷ 7.175]	_____	_____
I. Cost per hour [**H** x $ price per gal)	$_____	$_____
J. Savings per hour [**I** Standard — **I** Kärcher]	$_____	
K. Savings per week [**J** x # of hours* use / week] *Hours of operation with burner on	$_____	
L. Savings per year [**K** x 50 weeks]	$_____	

NOTE: Kärcher Classic pressure washers produce higher-temperature water than standard pressure washers. If the water temperature of a standard pressure washer is adequate for your cleaning application, then adjust the thermostat on the Kärcher Classic pressure washer to cut back the Kärcher water temperature so it matches that of a standard pressure washer (usually 180°F, 82°C). This will allow you to achieve additional fuel savings and still have the option of producing even hotter water, if needed.

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