



## Field trial

April / May 2018  
Rosul Group  
Excavator CAT-324D

The Supertech was installed on a Caterpillar model 324D excavator that is excavating a basement for a building under construction located in zone 4 of our city.



The excavator works, on a regular day, from 7:00 a.m. at 5:00 p.m. performing, cutting and loading the existing material, using only one operator. The fuel tank is regularly filled after every 2 or 3 days and the head of machinery reports the following information:

- Date
- Initial Horometer
- Final Horometer
- Fuel received (in the tank).

With this information we have prepared a chart that provides us with the following information:

- Hours worked.
- Fuel consumed for each hour of work of the excavator.

We had a look at the documents they use to monitor the performance of the machines in operation. For the sample in question we use the months of April and May.

Note: The device was installed on April 20 before starting the work day.





Mayo 2018

**RENDIMIENTOS DE MAQUINARIA**

RESPONSABLE: Luis Valle Enredo

**MAQUICORP S.A.**

MAQUINA	FECHA RECARGA	HOROMETRO INICIAL	HOROMETRO FINAL	DIFERENCIA HOROMETRO	CANTIDAD RECARGA	RENDIMIENTO GALON HORA	OBSERVACIONES
PC 324D	2-5-18	6677	6696	19	90	4.73	
PC 324D	3-5-18	5637	5654	17	100	5.88	
PC 324D	8-5-18	5654	5668	14	86	6.14	
PC 324D	8-5-18	6696	6712	16	77	4.81	
PC 324D	14-5-18	5668	5686	18	101	5.61	
D6N	19-5-18	5779	5797	18	46	2.55	
PC 324D	15-5-18	1143	1174	31	27	0.87	
PC 324D	15-5-18	6712	6730	18	83	4.61	
PC 324D	18-5-18	5686	5707	21	86	4.09	
PC 324D	20-5-18	6730	6748	18	82	4.55	
D6N	20-5-18	5797	5808	11	15	1.36	
PC 324D	21-5-18	5707	5719	12	100	8.33	
PC 324D	23-5-18	5719	5736	17	105	6.17	
PC 324D	23-5-18	6748	6766	18	80	4.44	

With this information we were able to calculate the performance of the CAT 324D Excavator during the first 20 days of the month of April 2018, which tells us that the performance of the machine under evaluation WITHOUT THE SUPERTECH is 6.02 Gallons per Hour. (See the results table on the next page)

The evaluation of yields was carried out in the days following the installation of SUPERTECH (from April 20 to May 23, 2018) obtaining satisfactory results as the consumption of gallons for each hour of work was reduced, reaching this indicator at 5.39 Gallons per Hour.

This shows that the device has generated a saving of 0.63 gallons per hour of operation, which represents 10.40%.

If we use this data to quickly calculate the return on investment, we can assume that at a rate of Q.25.00 for each gallon of fuel, the savings generated during the 33 calendar days of the test was Q.2,439.88.

At this rate, the Return on Investment to be made with SUPERTECH is 41 days.

NOTE: See the Results Table 1 for the comparison of results



### Cuadro de Resultados 1

	HORÓMETRO						
Fecha	Inicio	Final	Horas	Galones	Galones/ Hora	Costo por Galón	Costo Total
04/04/2018	5471.8	5484.5	12.7	82	6.46	Q25.00	Q2,050.00
04/06/2018	5,485	5,500	16	98	6.32	Q25.00	Q2,450.00
04/09/2018	5,500	5,511	11	68	6.18	Q25.00	Q1,700.00
04/12/2018	5,511	5,526	15	85	5.67	Q25.00	Q2,125.00
04/14/2018	5,526	5,543	17	111	6.53	Q25.00	Q2,775.00
04/17/2018	5,543	5,562	19	102	5.37	Q25.00	Q2,550.00
04/20/2018	5,562	5,580	18	105	5.83	Q25.00	Q2,625.00
		<b>Subtotal 1</b>	<b>108</b>	<b>651</b>	<b>6.02</b>	<b>Instalación de SUPERTECH</b>	
04/24/2018	5,580	5,608	28	63	2.25	Q25.00	Q1,575.00
04/26/2018	5,608	5,620	12	100	8.33	Q25.00	Q2,500.00
04/30/2018	5,620	5,637	17	100	5.88	Q25.00	Q2,500.00
05/03/2018	5,637	5,654	17	100	5.88	Q25.00	Q2,500.00
05/08/2018	5,654	5,668	14	86	6.14	Q25.00	Q2,150.00
05/14/2018	5,668	5,686	18	101	5.61	Q25.00	Q2,525.00
05/18/2018	5,686	5,707	21	86	4.10	Q25.00	Q2,150.00
05/21/2018	5,707	5,719	12	100	8.33	Q25.00	Q2,500.00
05/23/2018	5,719	5,736	17	105	6.18	Q25.00	Q2,625.00
		<b>Subtotal 2</b>	<b>156</b>	<b>841</b>	<b>5.39</b>		
		<b>TOTALES</b>	<b>372.40</b>	<b>2,143.00</b>	<b>5.75</b>	<b>Q25.00</b>	<b>Q53,575.00</b>





### Cuadro de Resultados 2 (Resumen)

Comparación	Horas	Galones	Galones/Hora	Diferencia en galones/Hora	0.63
Subtotal 1	108	651	6.02	% de ahorro	10.40%
Subtotal 2	156	841	5.39	Galones ahorrados	97.60
				Dinero ahorrado al día de hoy	Q2,439.88
				Días de la prueba	33
				Ahorro diario	Q73.94
				Inversión SUPERTECH	Q3,000.00
				ROI en días	41





Through the results obtained during the test conducted in the period between the dates of April 20 and May 23, 2018, we can conclude the following:

- The saving device SUPERTECH has generated a 10.40% saving in comparison with the period evaluated prior to installation.
- If we use this data to quickly calculate the return on investment  
We can assume that at a rate of Q.25.00 for each gallon of fuel, the savings generated during the 33 calendar days of the test was Q.2,439.88.
- At this stage, the Return on Investment to be made with SUPERTECH is 41 days, showing that the investment made in SUPERTECH is 814 covered with the savings generated.
- If we transfer this data in the future, we can project that during the 5 year guarantee we offer, the SUPERTECH will generate an approximate of Q.135,000.00 if the working hours and fuel price conditions are maintained.
- WE ARE NOT CONTEMPLATING the rest of the benefits that our device generates such as the reduction of the emission of gases and the reduction in the maintenance costs generated by a more complete combustion.





### Additional Test

As additional proof, we installed the SUPERTECH type A to one of the hydrolavators that we found in the project. The washing operation of the trucks prior to their departure requires two machines of equal size, engine and use, which allows us a good opportunity to test by comparison.

The device was installed the same time period as the main test (33 days)



The results of this secondary test were taken from the conversation with the main user of the team, who told the Resident Engineer of the project that comparing the consumption of one pressure washer with the other was spending a lot more fuel.

"Before we filled the tank 4 times a day each. Now we fill it less than 3 times a day! "

If we take into consideration that the fuel tanks of these engines are 1.5 gallons, we can calculate that the savings are a minimum of 1.5 gallons per day. This represents an approximate of Q.40.00 per day.

If the investment to apurchase the SUPERTECH type A device is Q.700.00 we can assume that the time to recover the investment at this step is less than 17 working days, which makes SUPERTECH an excellent investment decision.