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## BC RACING - THE ULTIMATE TEST

1. Take one Mitsubishi Legnum
2. Fit it with BC Racing BR coilovers with pillowball top mounts
3. Leave the coilovers totally unprotected
4. Drive for over two years and 30 000 kilometers through two of the most snowy winters, salted roads, potholes, gravel roads, etc.
5. Take the kit off the car, clean it, have it thoroughly tested
6. Share the results

## THE SET UP

As we were going to fit our company car with BC Racing BR coilovers anyway, we decided to do a little test at the same time. We installed the kit and left it totally unprotected and did not oil it or do anything else to prevent it from failing during the test. We then drove the car as we would drive any car for over two years and 30 000 kilometers.

The test was done over two winters and one summer. The winters happened to be two of the most snowy and rough weathered winters in close history. We had temperatures under  $-30^{\circ}$  Celcius. The roads were at times in horrible condition and the test period was certainly not easy for the coilovers. Most of the driving was done in southern Finland but the car was also driven in northern Sweden and Lapland.

When taken off the car, the coating of the springs was partially worn and overall the coilovers looked sad. Big surprise was that after the set was thoroughly cleaned it was almost immaculate apart from the outlook of the springs.



## TESTING

Spring and damper testing was done by MPro Racing, a professional test center that specializes in suspension overhaul, tuning and testing. They use high-end scales and devices to measure both the springs and dampers.

## RESULTS

### SPRINGS

Used springs were tested in a digital Longacre spring scale to determine how they compare to the nominal value of new springs.

As you can see from the table, the springs are as good as new even though the look of the springs is worn. Spring preload stays consistent throughout the travel. The deviation of front spring is only 3% from the nominal value. Rear spring deviation is under 2%.



Front Spring: nominal value 10kg/mm

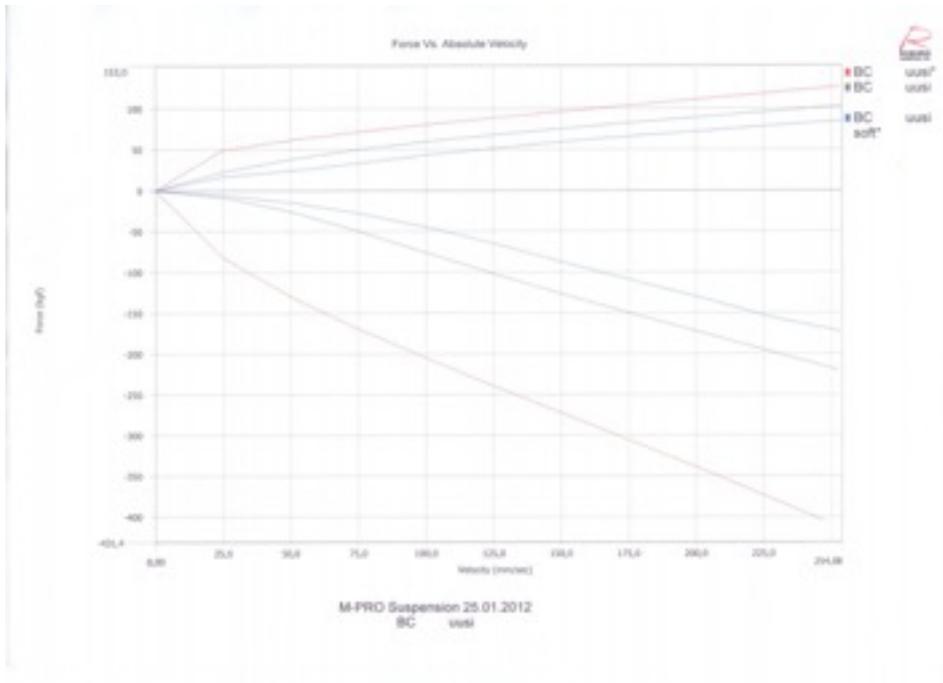
Measured Preload	Travel / mm	Kg / 10mm
	20	196
	30	100
	40	101
	50	102
	60	103

Rear Spring: nominal value 6kg/mm

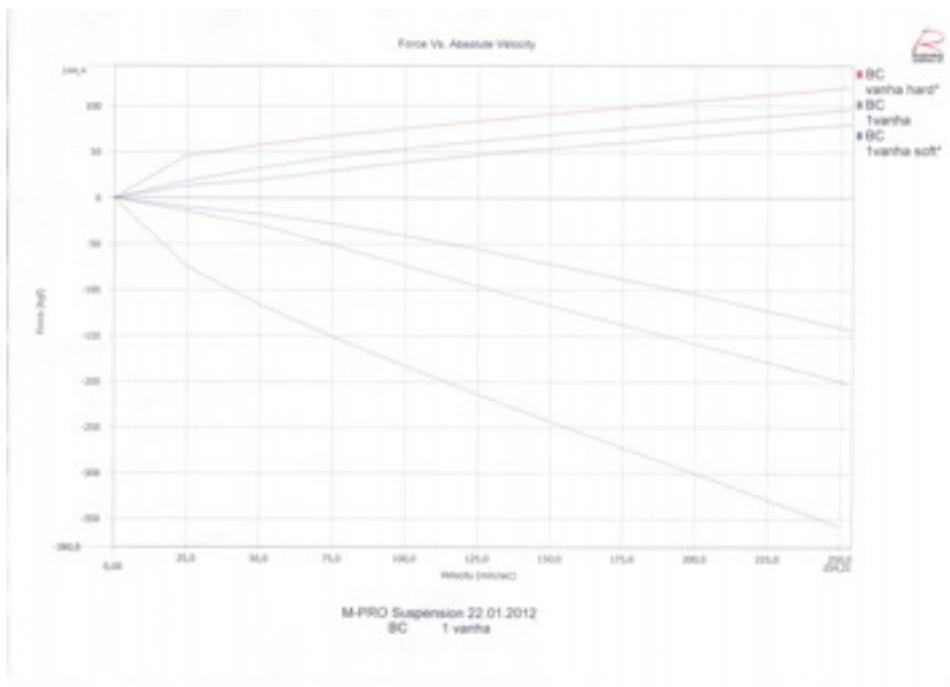
Measured Preload	Travel / mm	Kg / 10mm
	20	120
	30	60
	40	61
	50	60
	60	60

## DAMPERS

We tested new and used dampers in a Roehrig damper dynamometer to determine how they compare to each other. As you can see from the graphs, there is virtually no difference between new damper and over 30 000 kilometers used one. Professional opinion was that the used dampers are as good as new and has not been worn out in any way.



[Graph 1 new](#)  
[\[Full size\]](#)



[Graph 2 old](#)  
[\[Full size\]](#)

## PILLOWBALL TOP MOUNTS

Top mounts with uniball joints were found to be in good working order with no backlash whatsoever. These are the ones that are usually claimed to fail if not taken careful precautions. BC Racing mounts with quality parts did not wear in any way and are as good as new.

## CONCLUSIONS

BC Racing coilovers were found to be not only extremely good value for money but also stay in near new condition for years even when strained as much as possible.

Below is a picture of the used set reassembled. The only thing new is the spring which we changed purely for looks. Every other part is from the actual set used for more than two years and 30 000 kilometers.

The set is already back to a car and ready to serve for years to come.



## BC RACING FINLAND

Pictures on this report as well as other pictures of the coilovers can be found bigger [\[here\]](#).