



SHOCK ABSORBER TESTER

By Derossi Massimo S.r.l.





TOPICS

- ✓ Shock absorber
- ✓ Shock absorber problems
- ✓ Why it's important to test them
- ✓ How they are usually tested
- ✓ How we test them
- ✓ Examples of communication to the customer

SHOCK ABSORBERS



01

DAMPEN VIBRATIONS

They ensure greater comfort for passengers in the passenger compartment

They avoid skidding in the event of a cross wind

02

INCREASE ROAD HOLDING

They prevent loss of grip between the tires and the asphalt

They keep the braking distance efficient

SHOCK ABSORBERS



03

THEY WEAR OUT BASED ON DRIVING STYLE

Or based on road conditions

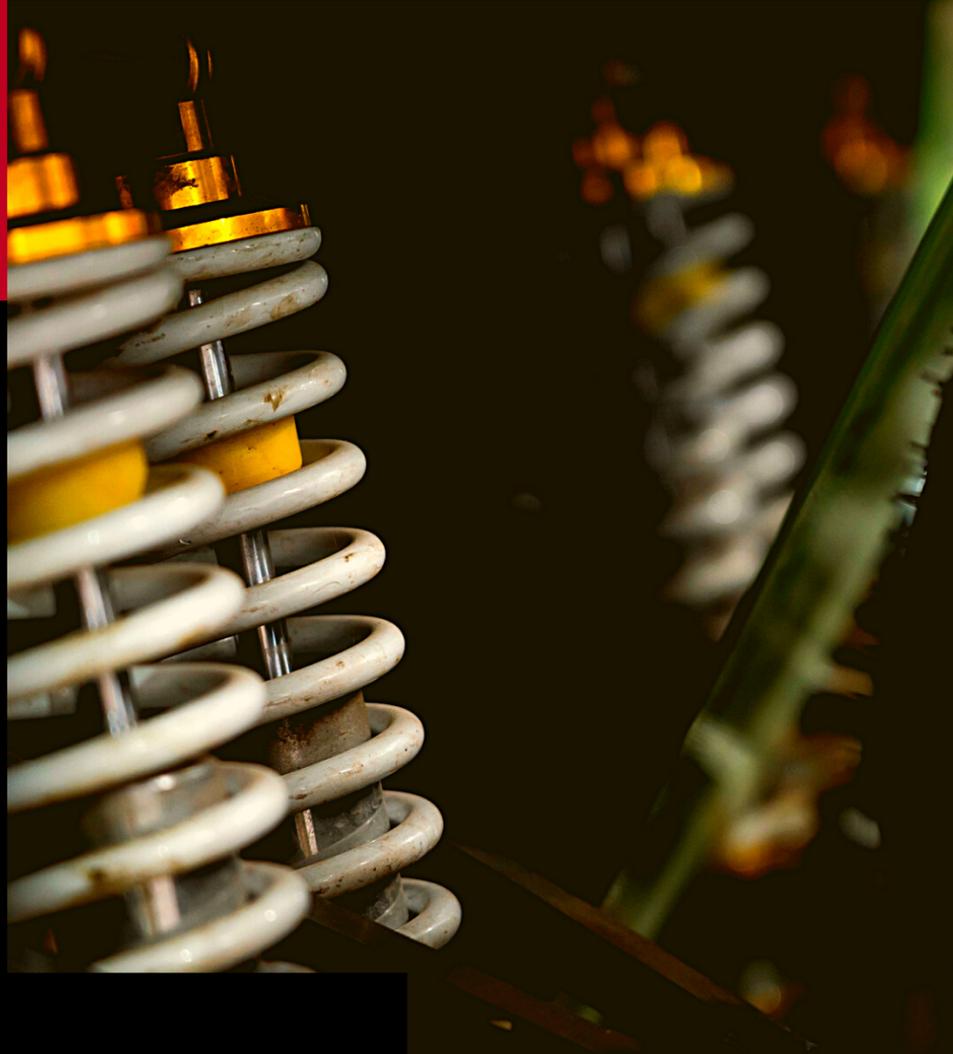
They can leak oil

04

THEY MUST BE CHANGED EVERY 100,000 KM

Or every 5 years

They must be checked every 20,000 km



**PROBLEMS DUE TO
MALFUNCTIONING
SHOCK ABSORBERS**



-
- Loss of braking efficiency
 - Loss of grip when cornering
 - Poor comfort in the passenger compartment

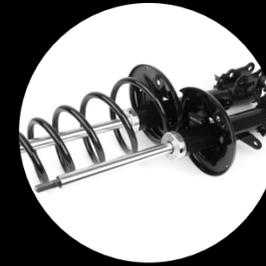


- Crosswind sensitivity
- Risk of skidding when overtaking
- Abnormal tire wear





WHY TEST THEM



SAFETY

Shock absorbers are an integral part of safety systems (such as ABS and ESP) which constantly read wheel revolutions. A worn shock absorber causes the wheel to jump, compromising the intervention of the safety systems.



WHY TEST THEM



PERCEPTION

As the degradation of the shock absorber occurs slowly, the driver gets used to driving by correcting the inefficiencies of the system, without realizing that the shock absorbers are completely discharged.



WHY TEST THEM



COMFORT

The rate of wear depends on variables such as environmental conditions, driving style and vehicle load. Excessive bouncing, vibrations, and unusual noises can be signs of inefficient shock absorbers.





COMMON TESTS



"Let's begin to dispel a false myth: pushing down on the 4 corners of the car is useless.

Unless you are faced with a car that only rests on springs, it is not possible to understand the state of the shock absorbers from the way in which the car is raised after pushing it down."

From a Monroe article



OUR METHOD

MM111 - SHOCK ABSORBER TESTER

Our method involves performing a test in an extremely simple way, it will be sufficient to apply the sensors on the mudguards and go down a special step.

During the descent, the sensors will record acceleration, speed and displacement.

The dedicated software will finally show a report with the health conditions of the tested shock absorbers.

TEST EXAMPLES

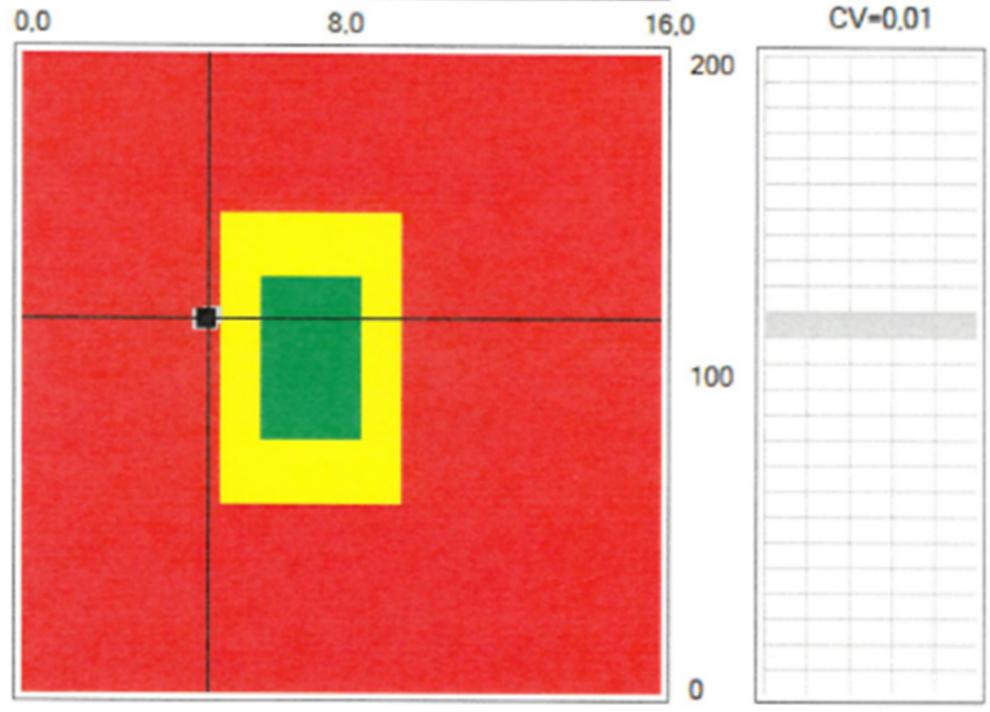
MASSA A VUOTO 1535 Kg PNEUMATICO 205 / 55 R 16 CHASSIS NORMAL ALTEZZA SCALINO 75 mm

peso sulla ruota 461 Kg

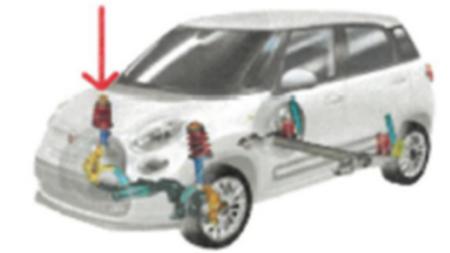
SMORZAMENTO
CV=0,03



RIGIDEZZA
CV=0,01



POSIZIONE
ANTERIORE DESTRA



VALORI MEDI 7 MISURE

SMORZAMENTO sm **4,6**

RIGIDEZZA k/m **117**

LA CLINICA DELL'AUTO
Via XXXXXXX
BIELLA BI
Tel.XXXXXXXX

MASSA A VUOTO 1535 Kg PNEUMATICO 205 / 55 R 16 CHASSIS ant NORMAL pos NORMAL SCALINO 75 mm

VISUALIZZA DATI

Ant DX: SMORZ. 4,6 RIGID. 117 NORMAL

Pos DX: SMORZ. 6,7 RIGID. 115 NORMAL

Ant SX: SMORZ. 4,2 RIGID. 120 NORMAL

Pos SX: SMORZ. 7,3 RIGID. 121 NORMAL

Asse Ant ROLLIO

LA CLINICA DELL'AUTO
Via XXXXXXX
BIELLA BI
Tel.XXXXXXXX

NOME del FILE con DATI della PROVA
MERCEDES C220

MASSA A VUOTO 1535 Kg PNEUMATICO 205 / 55 R 16 CHASSIS ant NORMAL pos NORMAL SCALINO 75 mm

VISUALIZZA DATI

Ant DX: SMORZ. 7,7 RIGID. 115 NORMAL

Pos DX: SMORZ. 8,3 RIGID. 107 NORMAL

Ant SX: SMORZ. 8,3 RIGID. 111 NORMAL

Pos SX: SMORZ. 8,4 RIGID. 102 NORMAL

Asse Ant ROLLIO

NOME del FILE con DATI della PROVA
MERCEDES C220 DOPO SOST AMMO ANT

MASSA A VUOTO 1535 Kg PNEUMATICO 205 / 55 R 16 CHASSIS NORMAL ALTEZZA SCALINO 75 mm

ACCELERAZIONE 5 m/s² peso sulla ruota 461 Kg

PROVA 4 POSIZIONE ANTERIORE DESTRA

VELOCITA' 5 sec 0,5 m/s

SPOSTAMENTO 5 sec 0,1 m

SMORZAMENTO s 4,7

TEMPO ESTINZIONE te 1,37 sec

RIGIDEZZA k/m 116

53500 N/m = 55 Kg/cm

MASSA A VUOTO 1535 Kg PNEUMATICO 205 / 55 R 16 CHASSIS NORMAL ALTEZZA SCALINO 75 mm

ACCELERAZIONE 5 m/s² peso sulla ruota 461 Kg

PROVA 3 POSIZIONE ANTERIORE DESTRA

VELOCITA' 5 sec 0,5 m/s

SPOSTAMENTO 5 sec 0,1 m

SMORZAMENTO s 7,7

TEMPO ESTINZIONE te 0,84 sec

RIGIDEZZA k/m 115

53000 N/m = 54 Kg/cm

PROVA AMMORTIZZATORI

MARCA MODELLO TARGA Km 19:22 23/11/2021

MASSA A VUOTO Kg PNEUMATICO / R CHASSIS ant pos SCALINO mm

VISUALIZZA DATI f1/2 diametro pneumatico mm

Asse Ant

ROLLIO

Ant DX

SMORZ.
RIGID.
NORMAL

Pos DX

SMORZ.
RIGID.
NORMAL

Ant SX

SMORZ.
RIGID.
NORMAL

Pos SX

SMORZ.
RIGID.
NORMAL
valori dispersi

LA CLINICA DELL'AUTO
Via XXXXXXXX
BIELLA BI
Tel.XXXXXXXX

DATI RIF

NOME del FILE con DATI della PROVA

SALVA DATI LEGGI DATI CANCELLA DATI

NOTE STAMPA EXIT

OK

NON OK

PROVA AMMORTIZZATORI

MARCA MODELLO TARGA Km 18:58 23/11/2021

MASSA A VUOTO Kg PNEUMATICO / R CHASSIS ant pos SCALINO mm

VISUALIZZA DATI f1/2 diametro pneumatico mm

Asse Ant

ROLLIO

Ant DX

SMORZ.
RIGID.
NORMAL

Pos DX

SMORZ.
RIGID.
NORMAL

Ant SX

SMORZ.
RIGID.
NORMAL

Pos SX

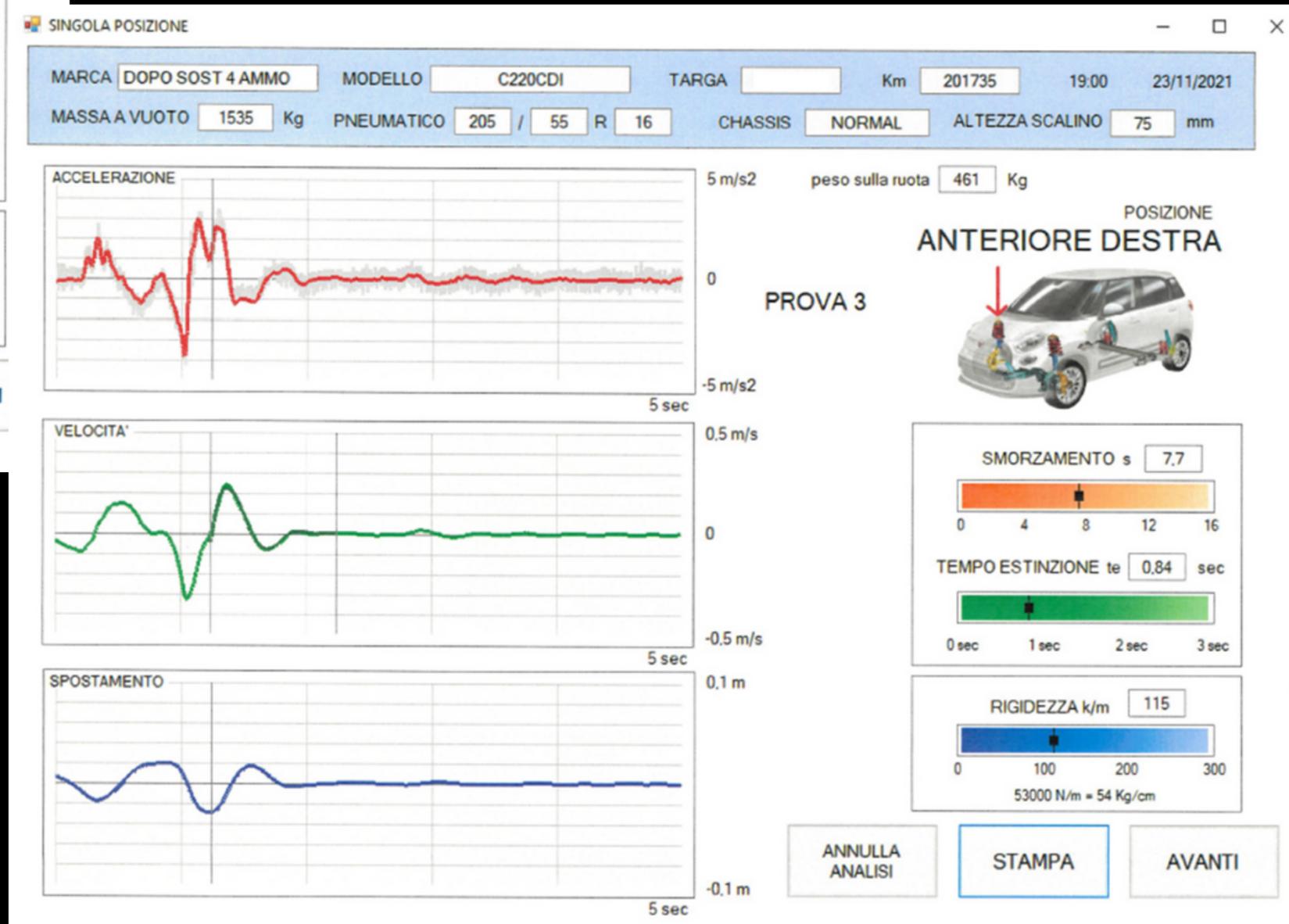
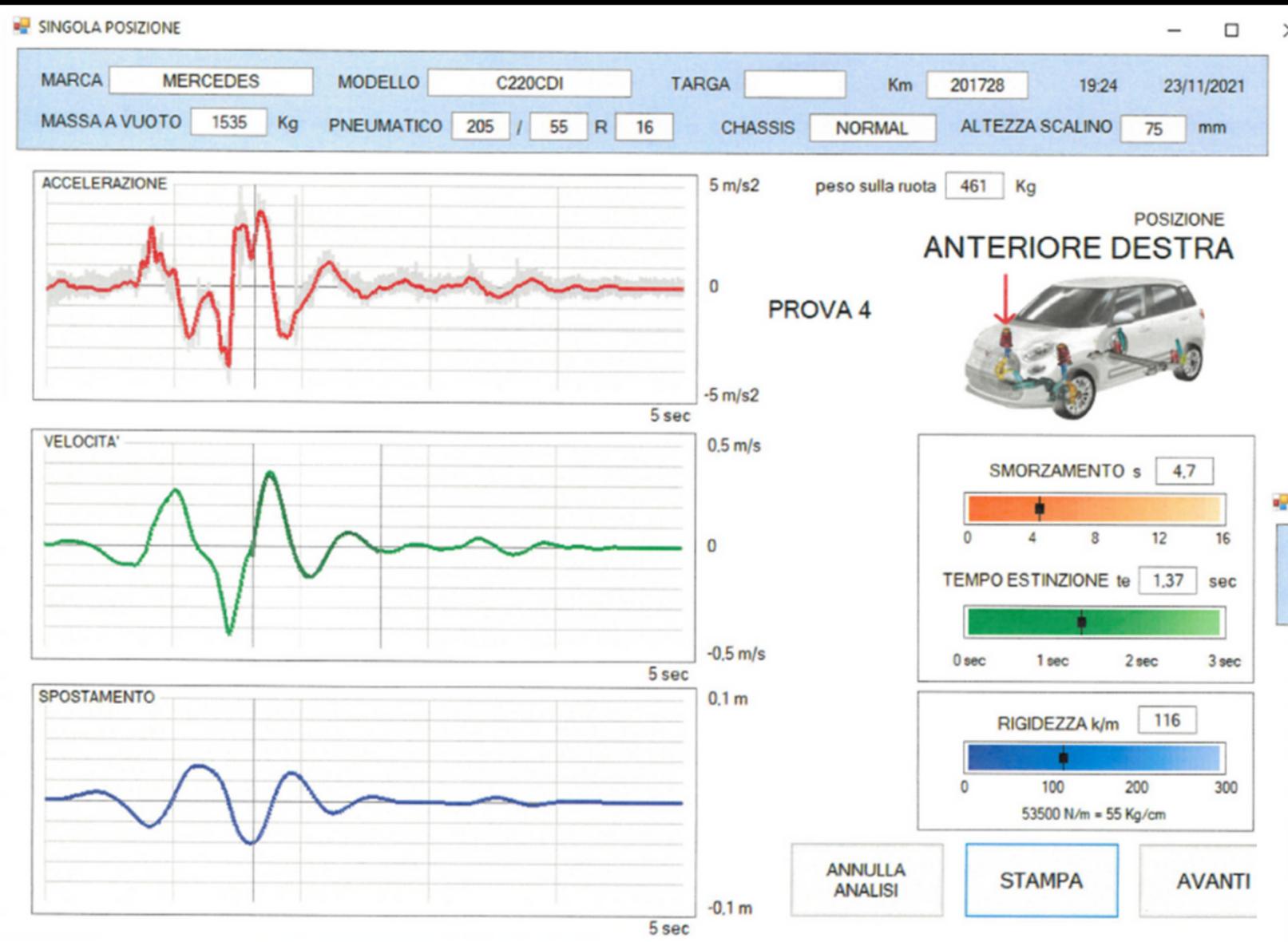
SMORZ.
RIGID.
NORMAL

DATI RIF

NOME del FILE con DATI della PROVA

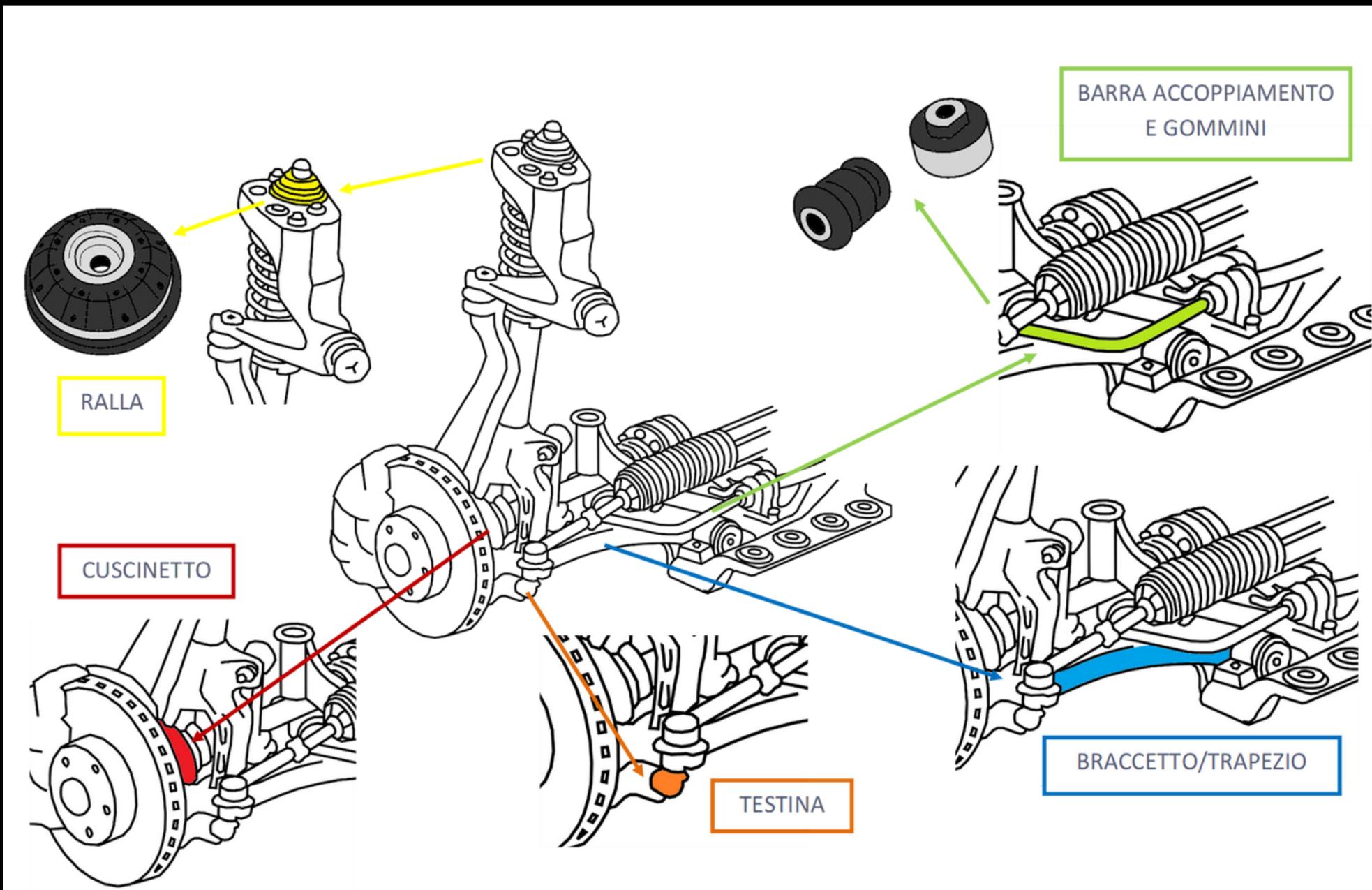
SALVA DATI LEGGI DATI CANCELLA DATI

NOTE STAMPA EXIT



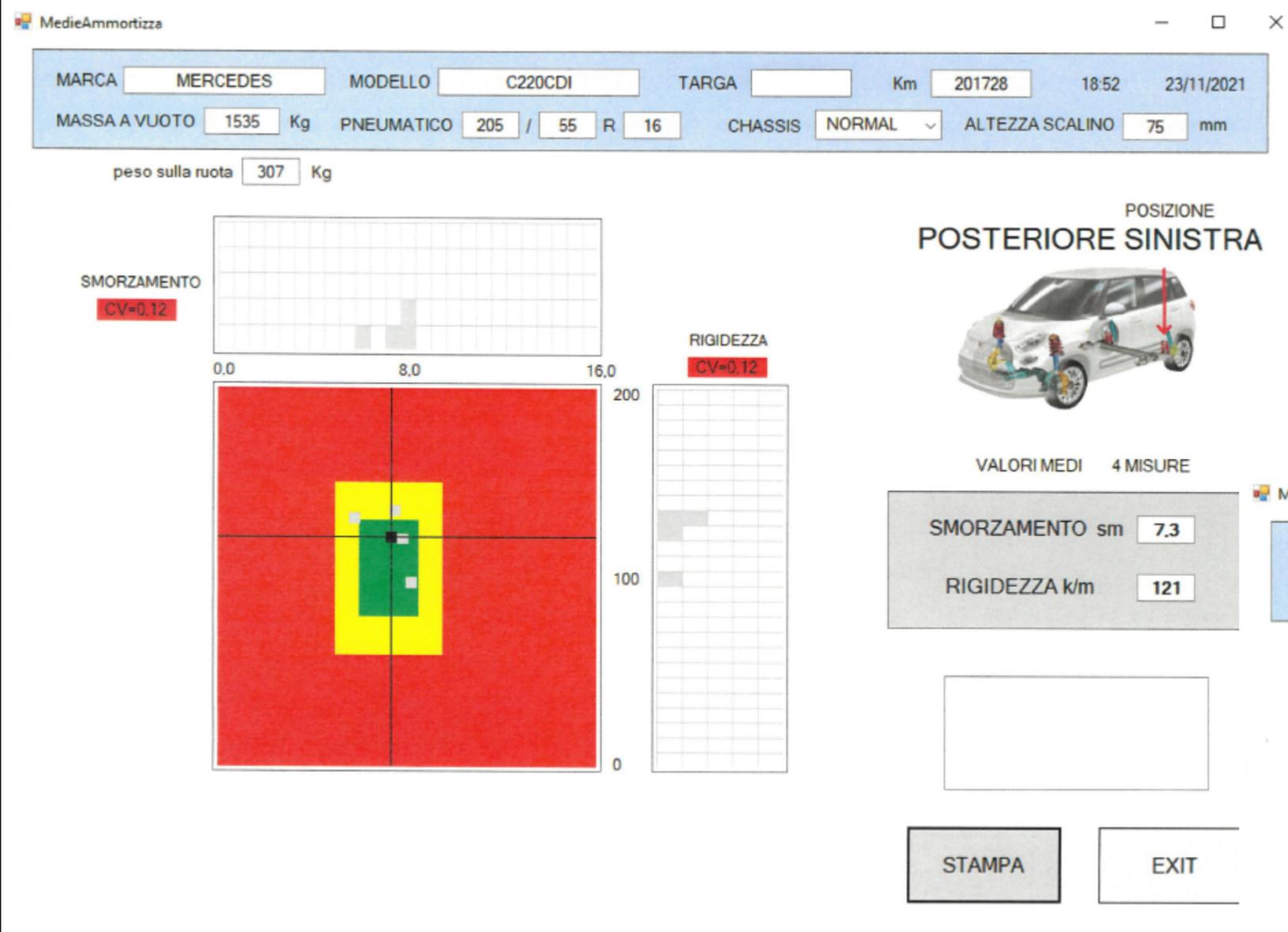
OK

SHOCK ABSORBER PROBLEMS

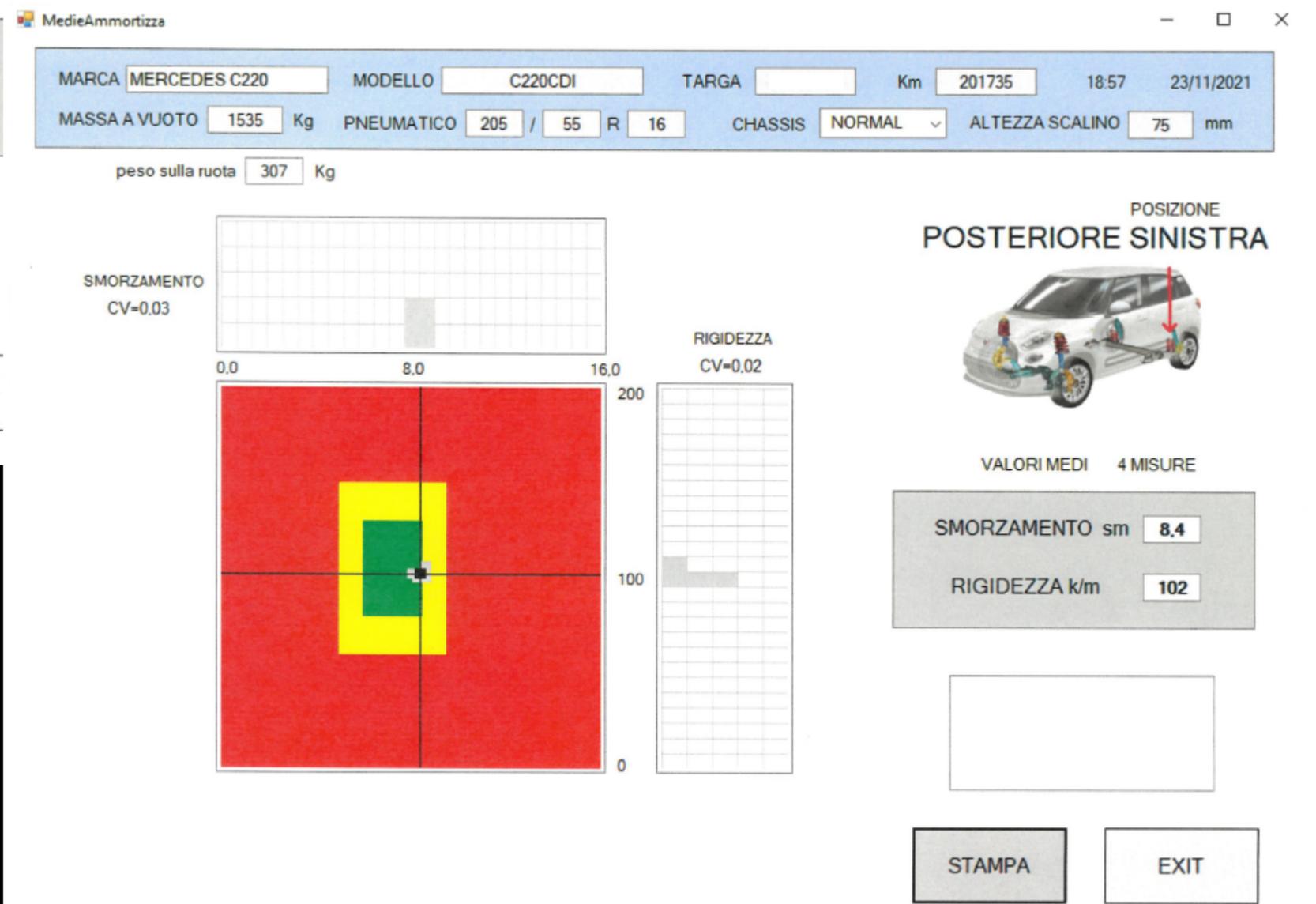


WHAT WE ANALYZE

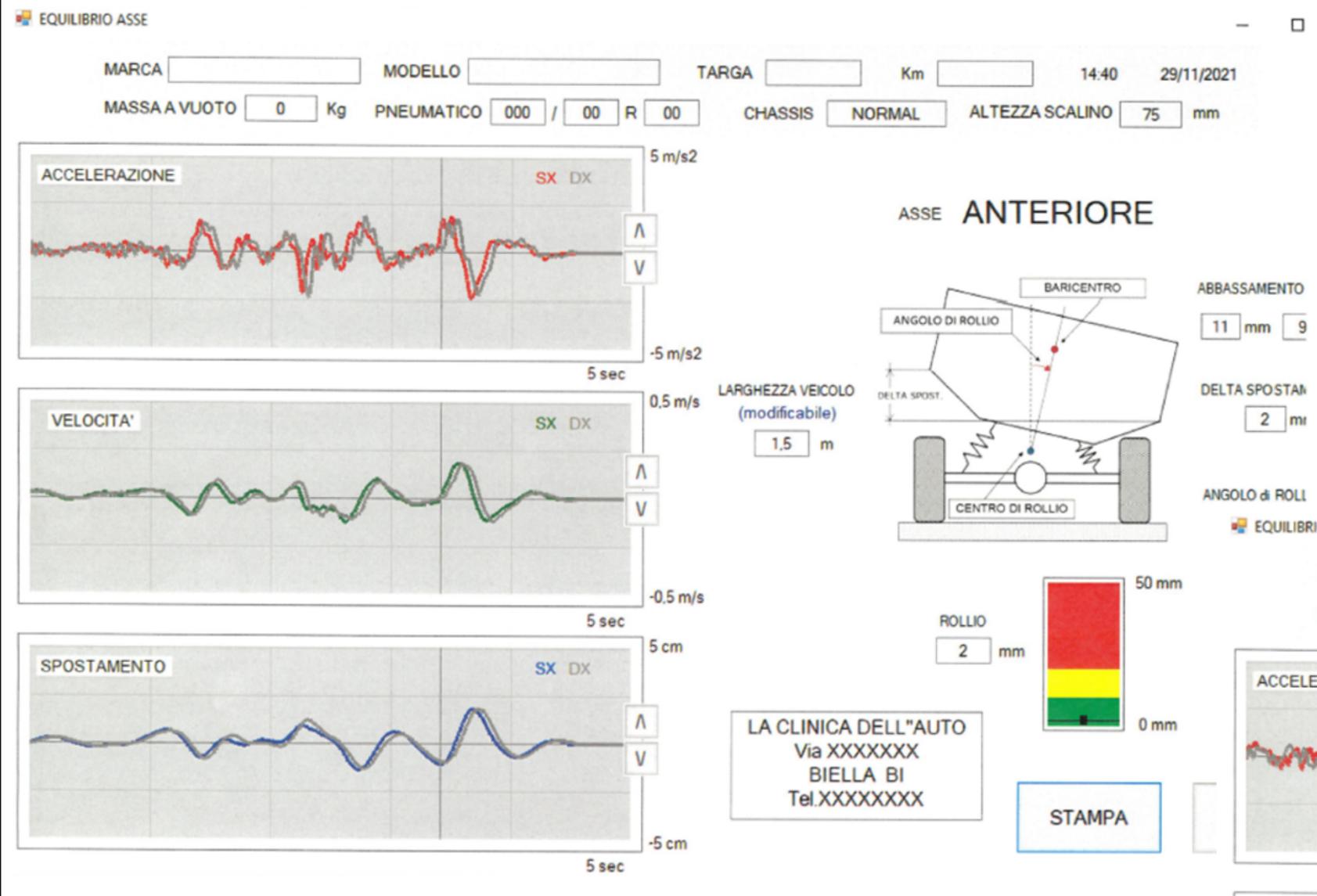
With our working method it is possible to carry out a comparative test between the axles by analyzing separately the spring, the shock absorber and the mechanics of the suspension.



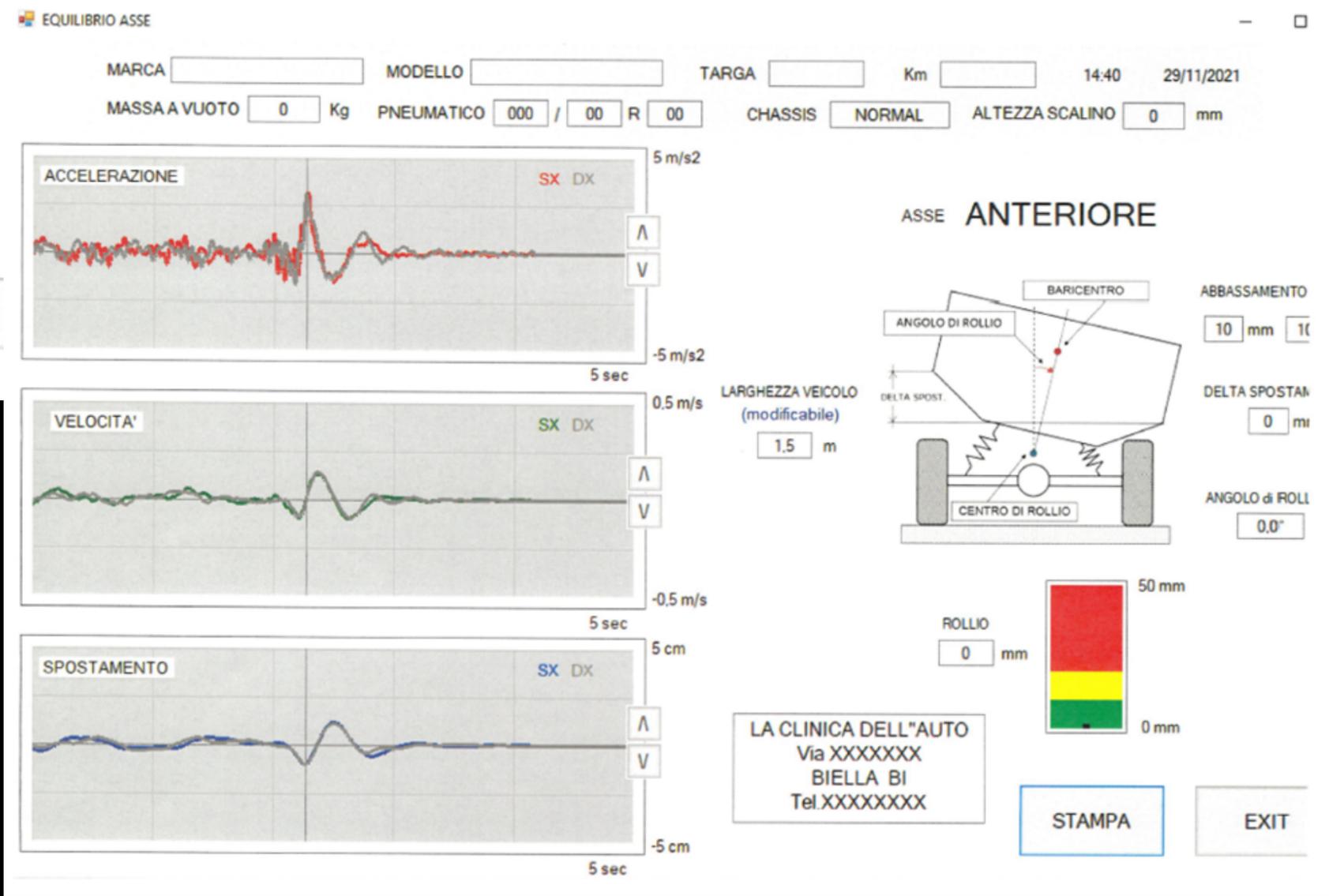
MECHANICS
OK



PROBLEMS ON
MECHANICS



ROLL OK



**EXCESSIVE
ROLL**

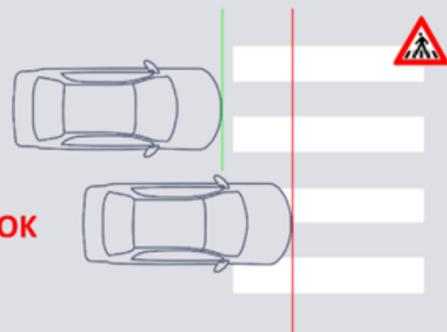
CENTRO SPECIALIZZATO CONTROLLO AMMORTIZZATORI

NUOVO SERVIZIO

Controlla i tuoi ammortizzatori ogni 20.000 km e sostituisgili quando si usurano per aumentare la sicurezza tua e degli altri

Un ammortizzatore danneggiato aumenta gli spazi di frenata

OK



NON OK



OK

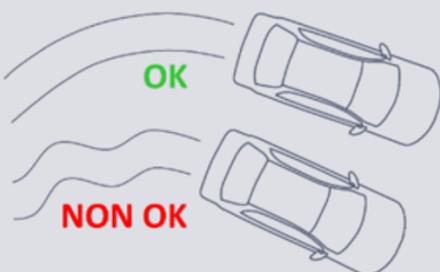
Un ammortizzatore in buono stato contrasta le oscillazioni del veicolo garantendo maggiore comfort in abitacolo



NON OK

Con ammortizzatori usurati il mezzo perde manovrabilità e controllo

OK



NON OK

A NEW SERVICE TO CUSTOMERS

A new service that informs you about the real safety status of your vehicle



SAFETY WEEK

An innovative,
complementary service





A NEW SERVICE TO CUSTOMERS

The operator can create a database of his customers to manage any marketing campaigns



SUSPENSION TEST DURING CAR SERVICE

A test every two car services



SHOCK ABSORBER TEST BEFORE AND AFTER

In case of replacement or modification



TIRE CHANGE WITH CONTROL INCLUDED

And if there is a problem we solve it



OUR HISTORY

Derossi Massimo srl has been working in the Automotive sector since 1991.

Over the years, the continuous development of this sector has allowed the company to undertake a path of study, design and construction of innovative diagnostic equipment in the field of Common Rail.



 **VISION**

We put customer satisfaction first, remaining constantly updated to ensure a service to the best of our abilities.

 **MISSION**

Quality, innovation, commitment and continuous improvement in providing specific equipment for state-of-the-art workshops.

OUR PRODUCTS

Tools specifically designed to allow the operator to perform diagnostic operations that usually take several hours in a few minutes.



DIAGNOSIS

Una serie di strumenti studiati appositamente per il meccanico



WORK BENCHES

Benches for common rail and petrol-lpg injector washers



ACCESSORIES AND SPARE PARTS

A must-have selection for repairs!

CONTACTS



WEBSITE

www.derossimassimo.it



EMAIL

info@derossimassimo.it



PHONE

+39 015.8129887

**THANKS FOR
YOUR ATTENTION**

Derossi Massimo S.r.l.



mm11
PROVA AMMORTIZZATORI