



di Cicerchia Franco & C.

s.a.s.

40033 Ceretolo di Casalecchio di Reno (Bologna)

Via Scarlatti, 2 - Tel. +39 051 758888

Telefax +39 051 752893

E-mail: info@remet.it - www.remet.it

CERT. N°15354/2016

date 17/11/2016

Messrs

MASINARA S.p.A.

Via Einstein, 8

Loc. Monteveglio

40053 Valsamoggia (BO)

Attn Mr Antonio Isola

Subject: N°5 spring boxes.

TORSION TEST

Performed test, standard:

Used instrument:

Calibration:

Operating conditions:

Testing parameters:

Date

Torsion test

Digital torsionmeter LBG

mod. tds1000 – udi 14/2 matr. 071/001 – 071/042

cert. LBG N°07-369-L

room temperature

with a customized testing apparatus

16/11/2016

The following spring boxes have been analysed (photo N°1):

1. Spring box Masinara with Nylon rollers;
2. Spring box Masinara with POM bushing (orange);
3. Spring box with F bushing (blue);
4. Spring box with S bushing (white);
5. Spring box with P bushing (black).

The torque required to rotate the shaft inserted in each of the tested spring boxes, subjected to three different loads, has been measured (10+10, 20+20, 30+30 kg) (photo N°2).

Three measures have been done for every combination load+spring box, making a complete rotation and recording the maximum measured torque every time.

The measured values are recorded in the following table:

SPRING BOX N°	LOAD 10+10 kg		LOAD 20+20 kg		LOAD 30+30 kg	
	TORQUE (Nm)	AVERAGE (Nm)	TORQUE (Nm)	AVERAGE (Nm)	TORQUE (Nm)	AVERAGE (Nm)
1	0,32 – 0,30 – 0,30	0,31	0,50 – 0,46 – 0,48	0,48	0,76 – 0,82 – 0,60	0,73
2	1,33 – 1,37 – 1,27	1,32	2,61 – 2,37 – 2,41	2,46	3,42 – 3,50 – 3,66	3,53
3	1,63 – 1,63 – 1,55	1,60	2,68 – 2,80 – 2,78	2,75	3,94 – 3,84 – 3,92	3,90
4	3,32 – 3,86 – 3,36	3,51	4,81 – 4,45 – 4,69	4,65	5,65 – 5,81 – 5,81	5,76
5	2,19 – 1,97 – 2,11	2,09	4,08 – 3,92 – 3,90	3,97	5,71 – 5,67 – 6,01	5,80

For the laboratory

Andrea Tesini

