

NORTON 961 UNCOVERED



TECH SESSION INTERNATIONAL NORTON
OWNERS CLUB

2018 TALL TIMBERS RALLY

ELMA, WASHINGTON, JULY 18, 2018

BY JIM BUSH
“THE BUSHMAN”



2013 NORTON CAFÉ RACER
BOUGHT USED AT 1500MLS, 1 YR OUT OF WARRANTY



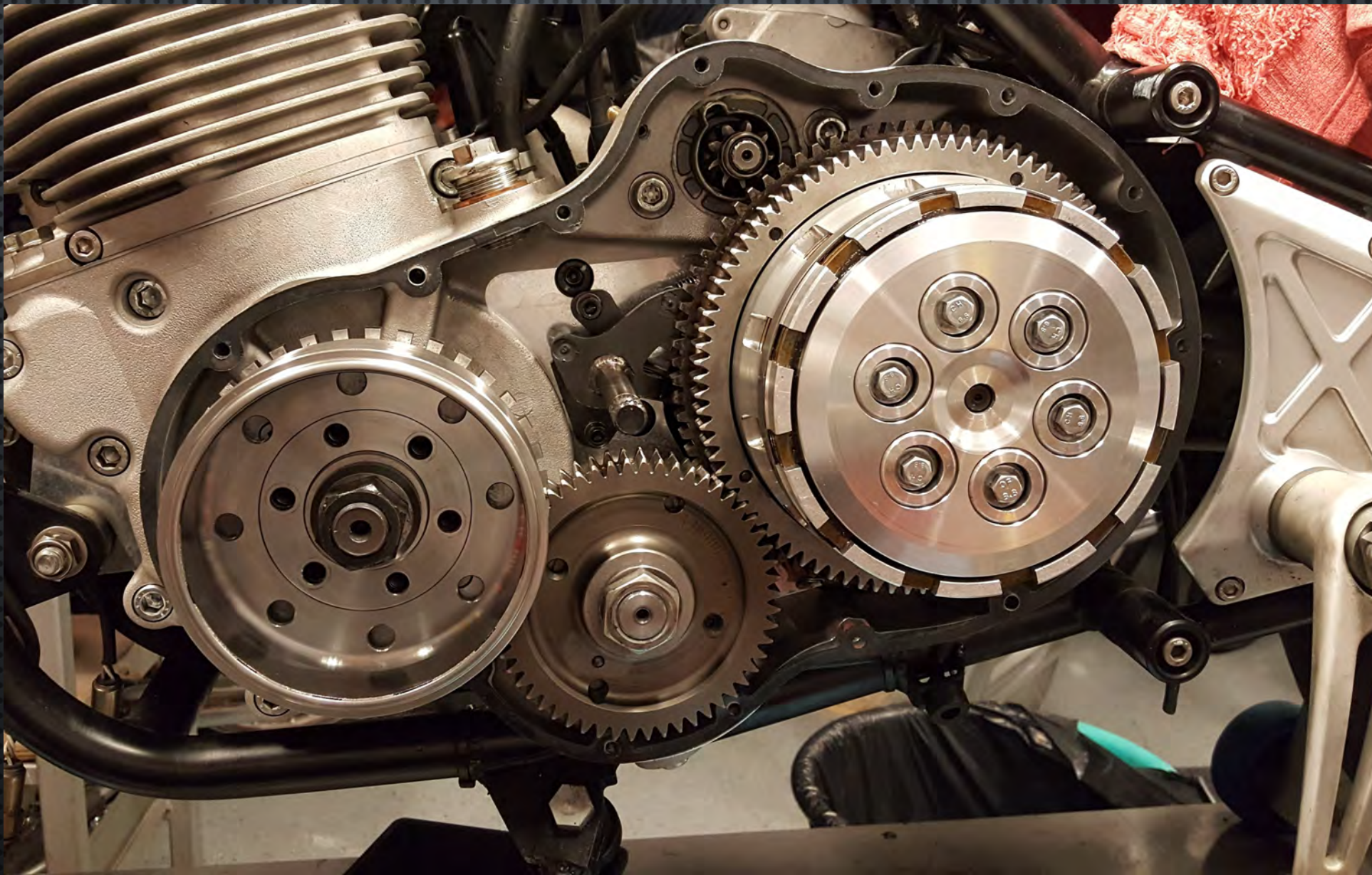
I UNDERTOOK THIS WORK
WITH THE SUPPORT OF

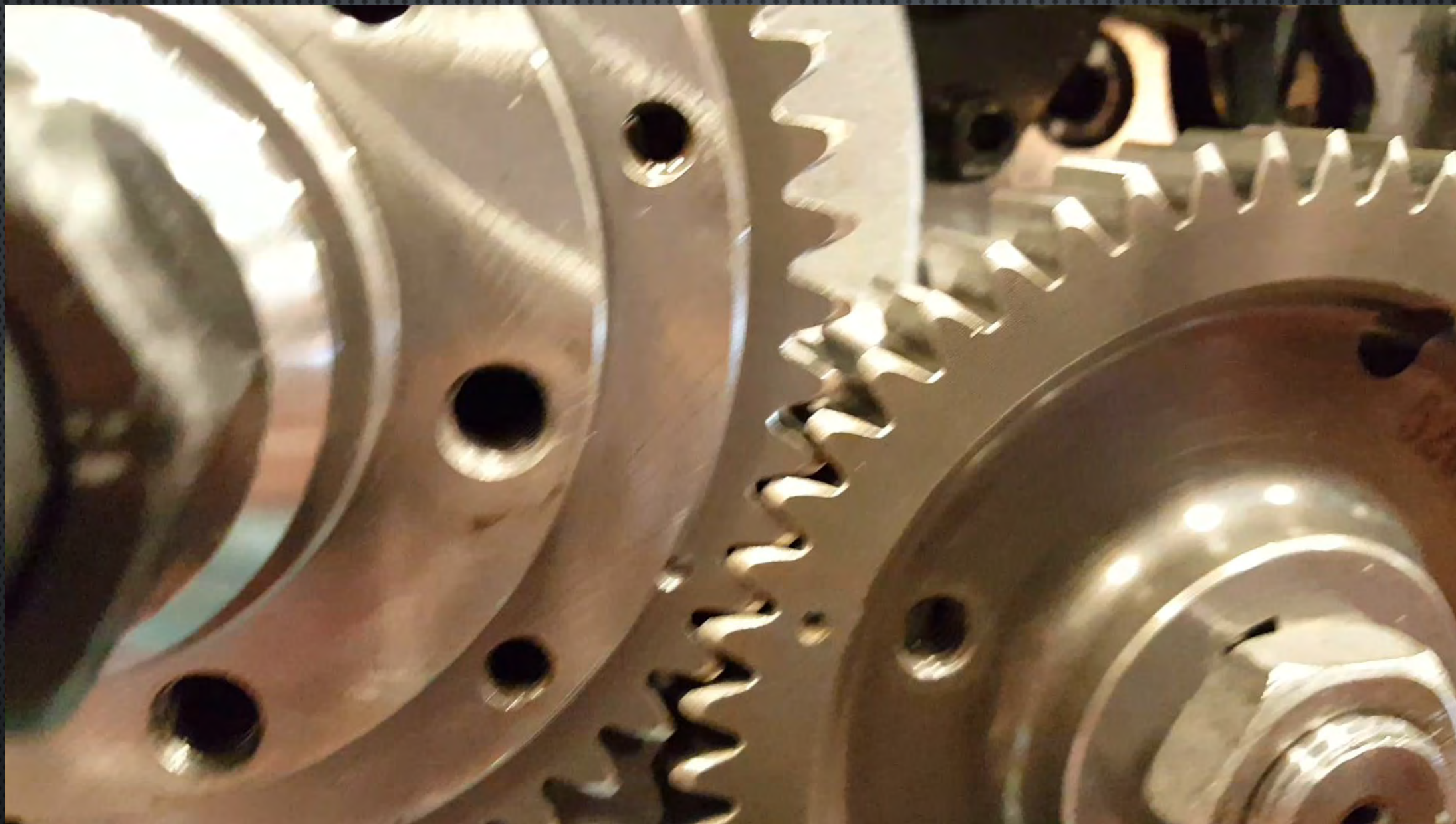
DAVE COOTE &
RICHARD COOTE

FROM ONTARIO.

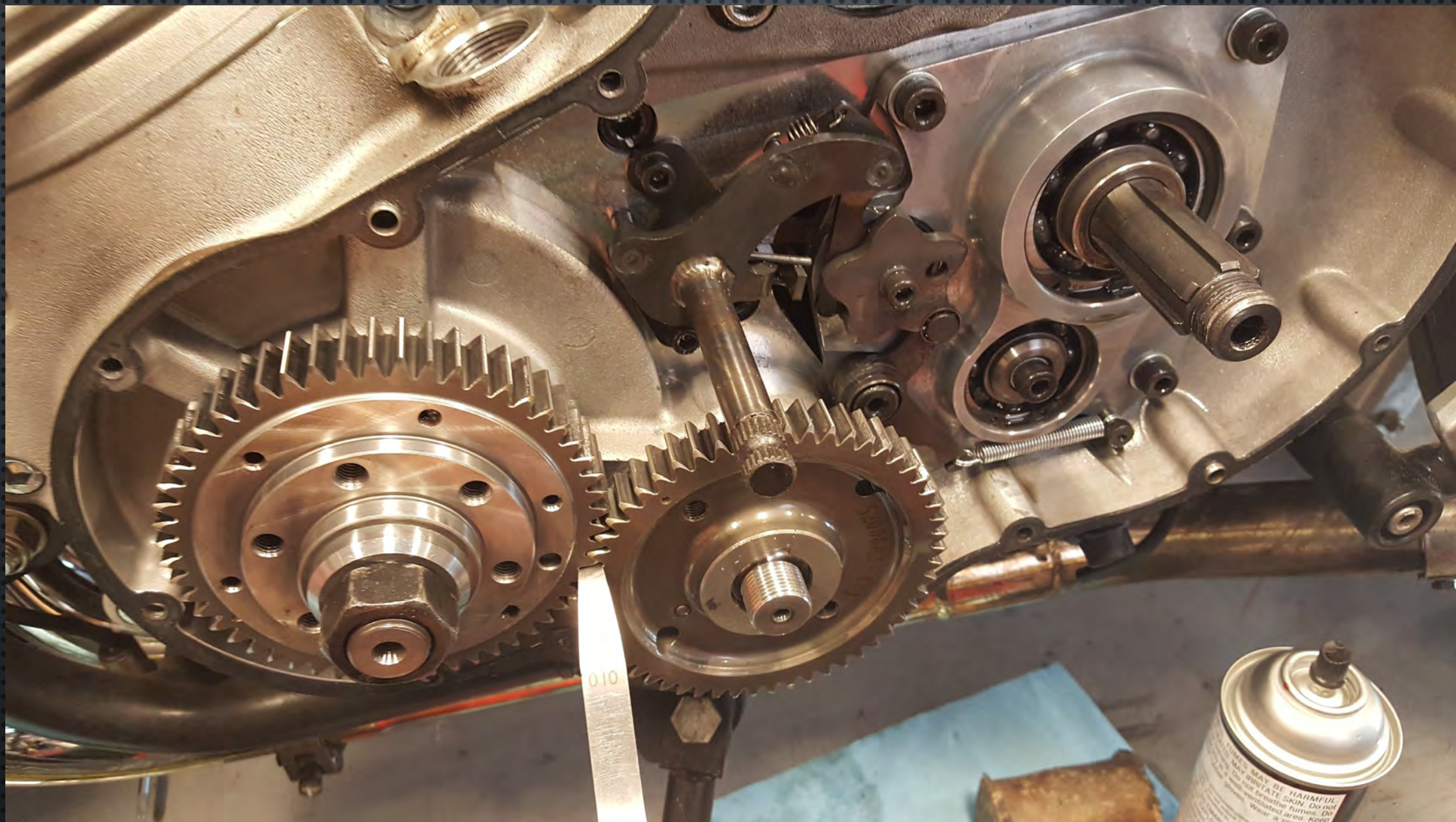
A NUMBER OF PICTURES FROM RICHARD
COOTE APPEAR IN THIS PRESENTATION WITH
FULL ACKNOWLEDGEMENT

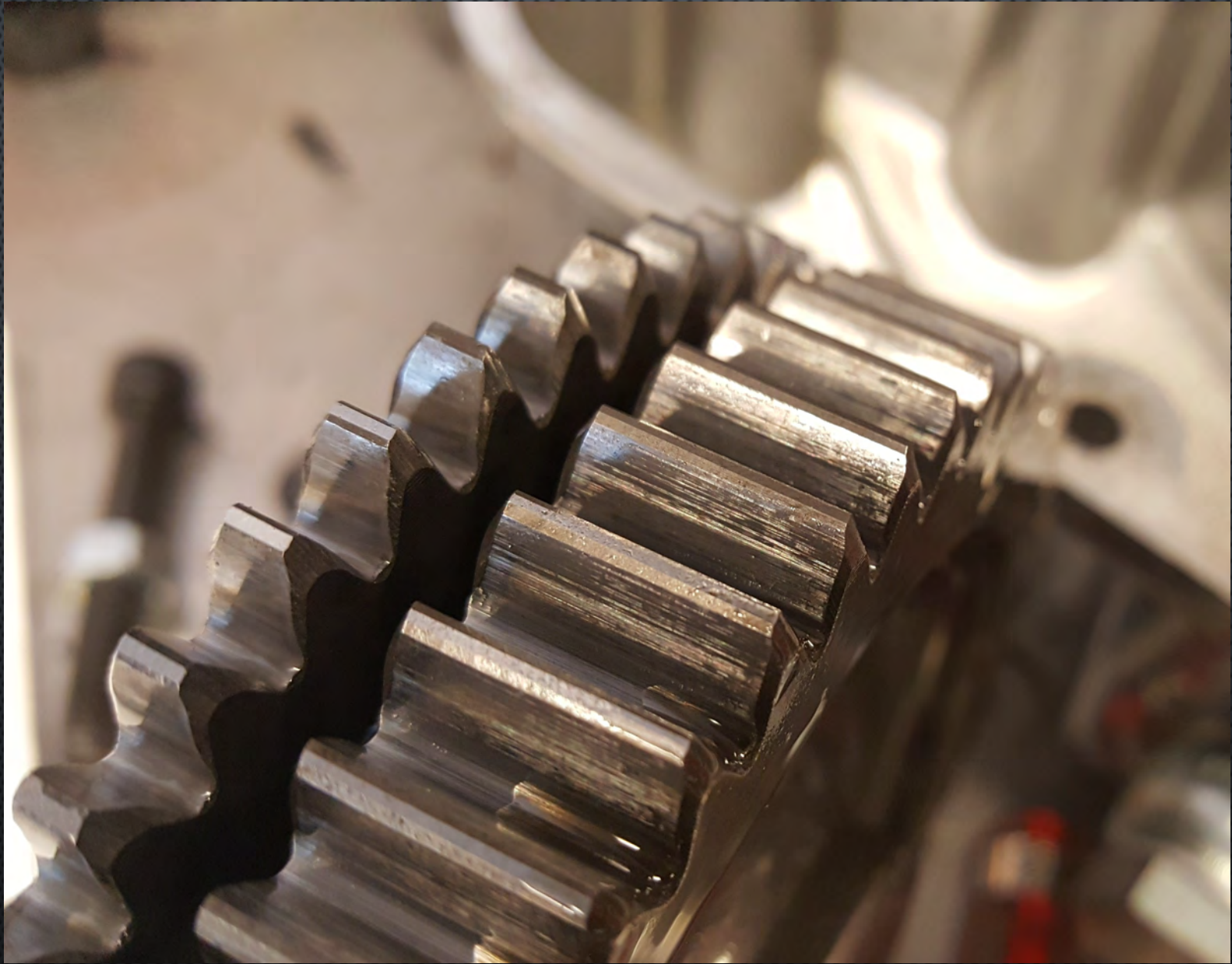
NOW ABOUT THAT MECHANICAL NOISE





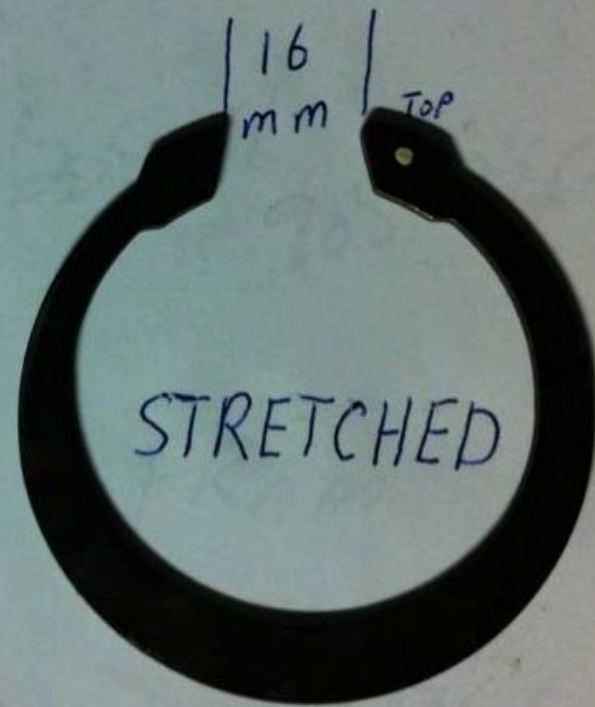




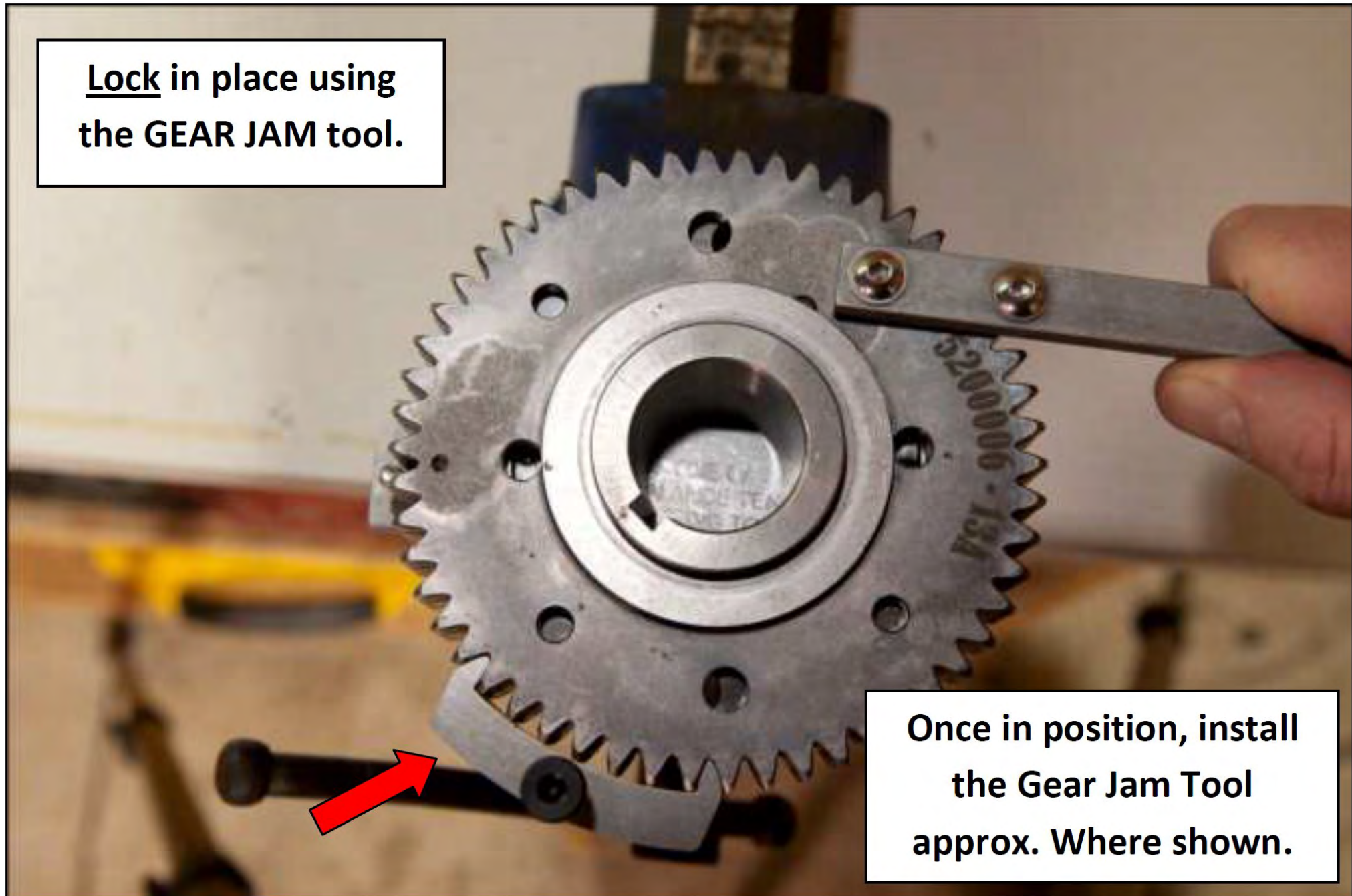


The first fix – NEW TENSION SPRING





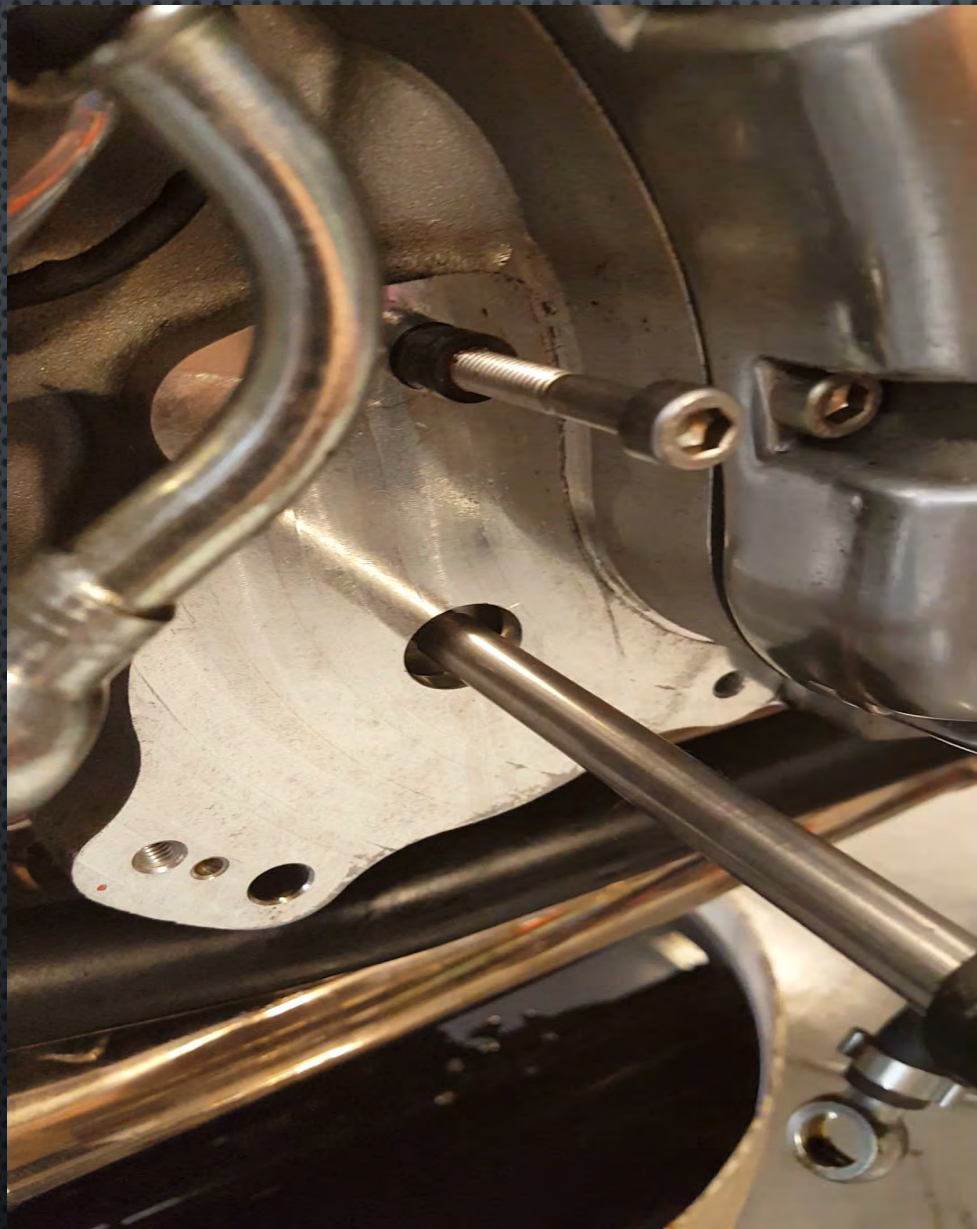
Lock in place using
the GEAR JAM tool.



Once in position, install
the Gear Jam Tool
approx. Where shown.

AFTER ANOTHER 400 MILES, I
DECIDED THE NOISE WAS NO
BETTER AND THE RIGHT FOOTPEG
VIBRATION WAS STILL THERE

..... **I NEEDED TO DIG DEEPER**



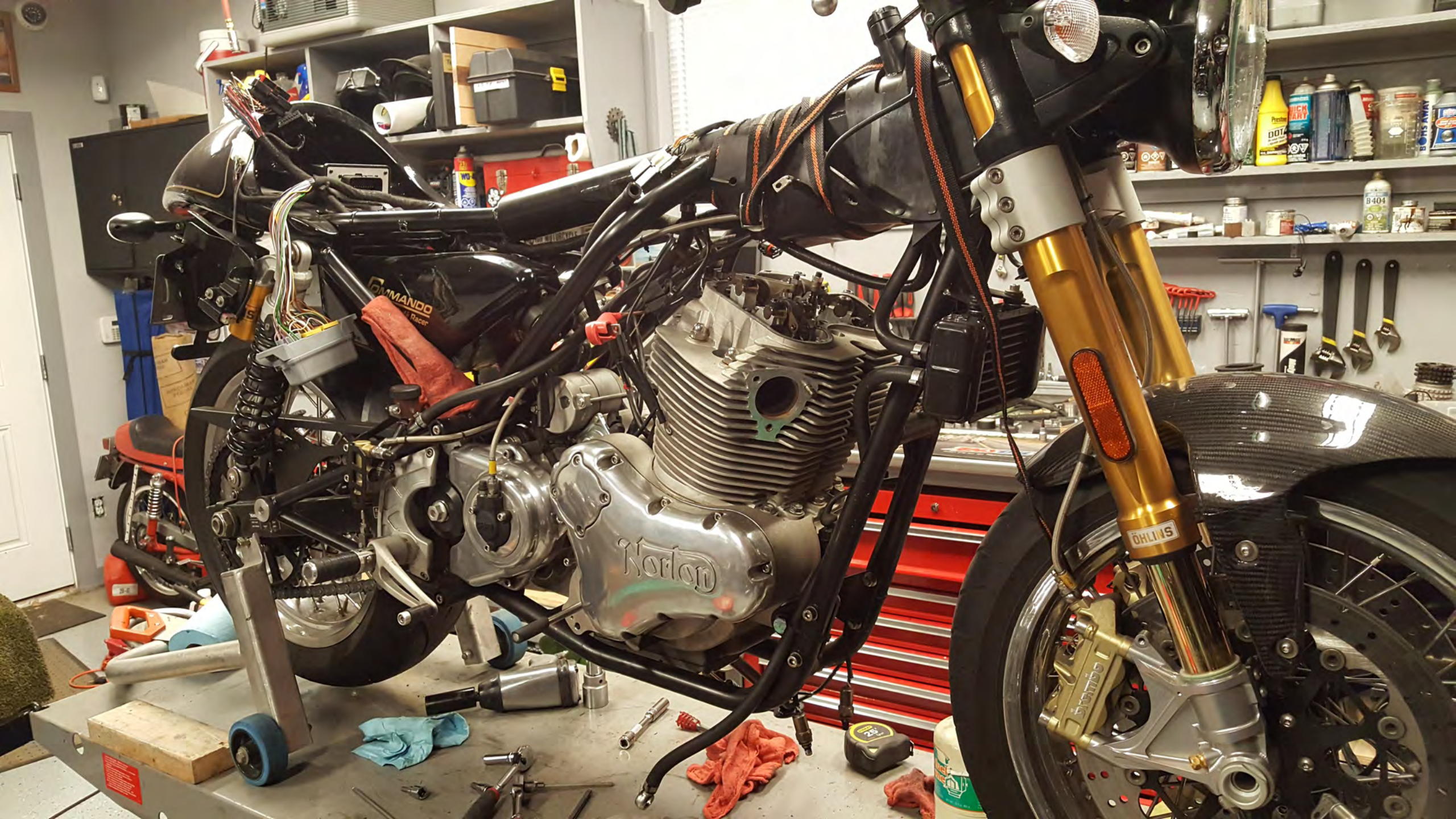
THE BALANCE SHAFT BEARING NJ305E



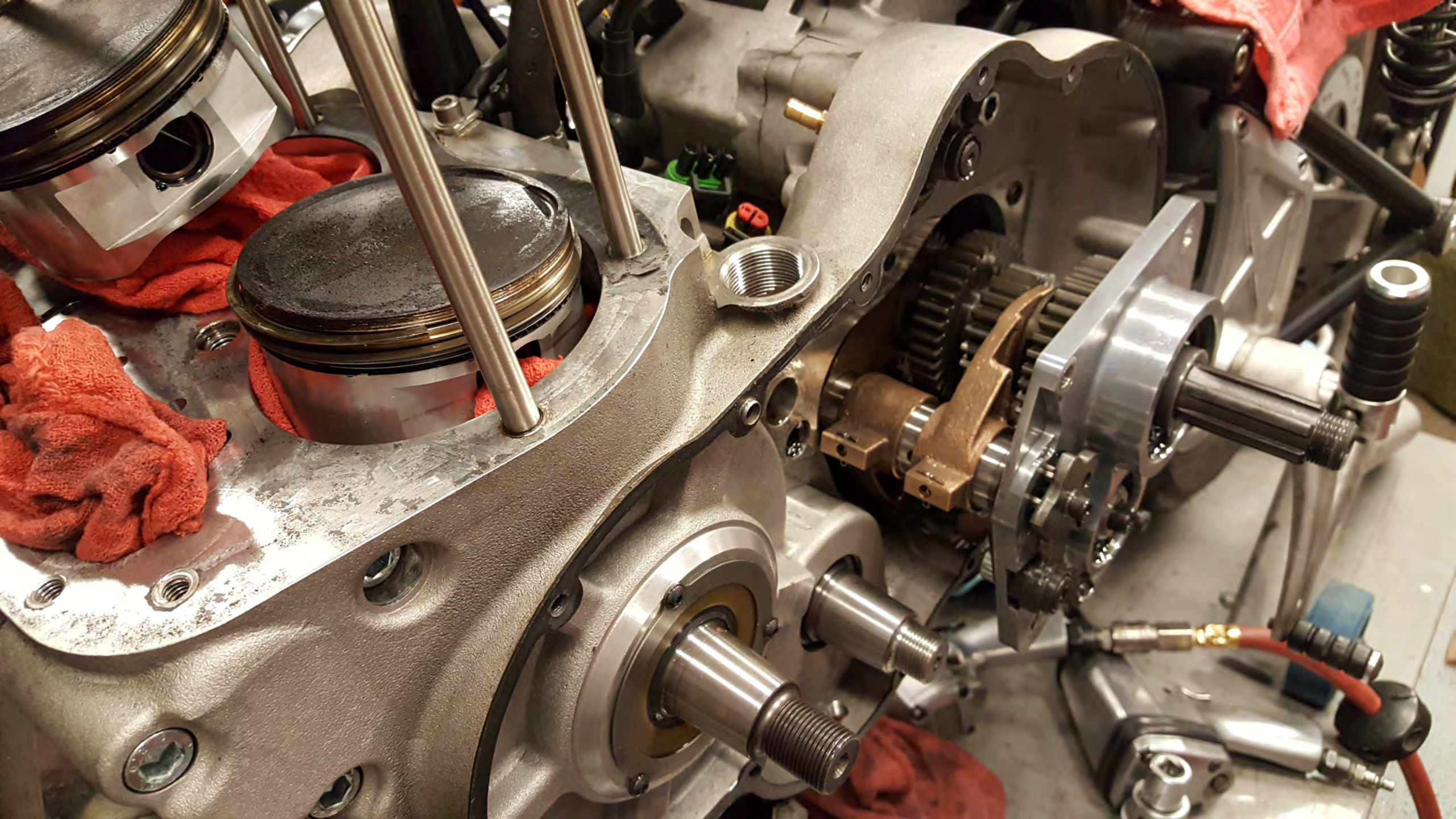
Sound Familiar?

Norton's famous "super blend" is NJ306E

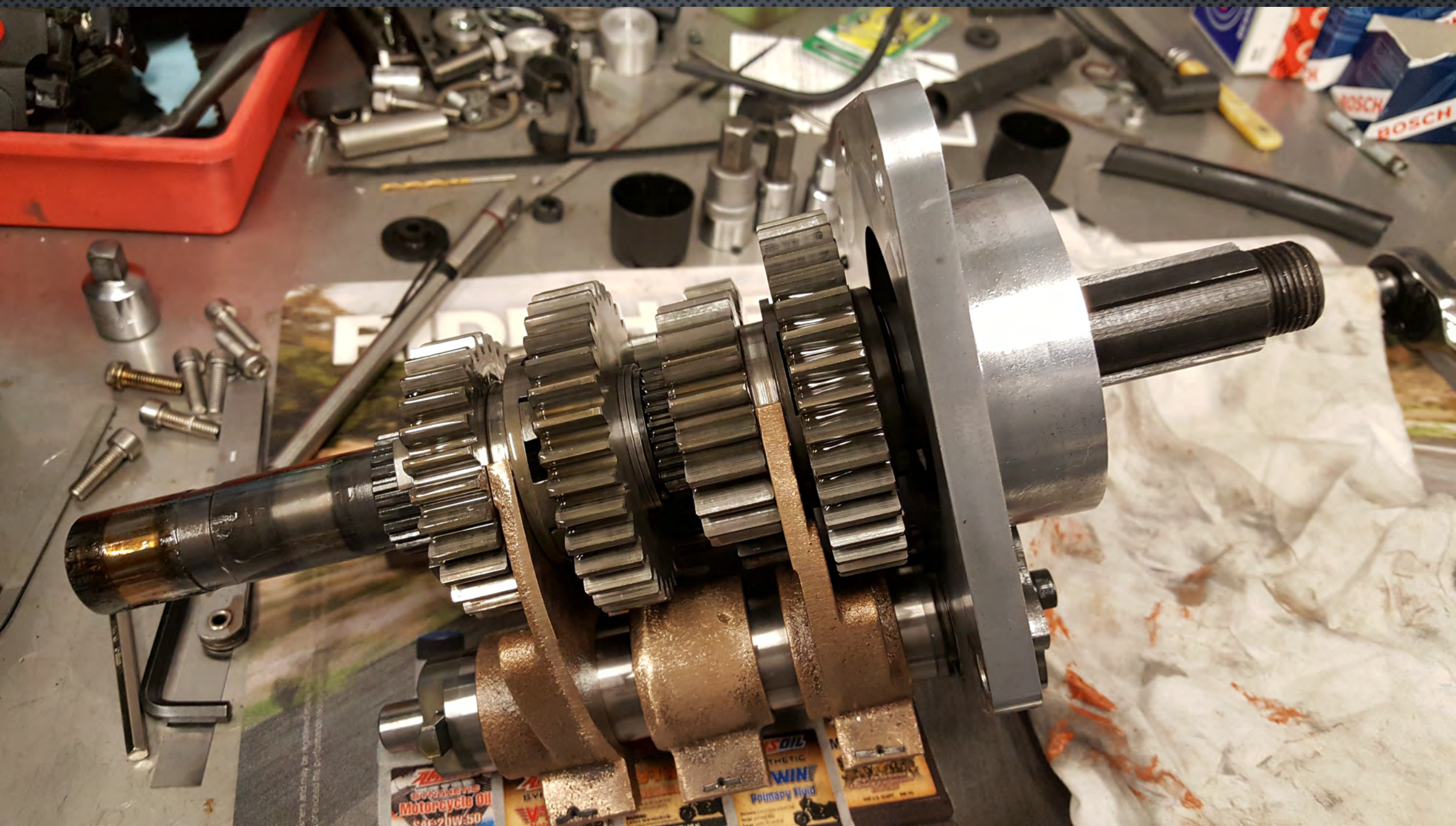
This is CZECH made Torrington with plastic cage that had failed... 1500mls !!

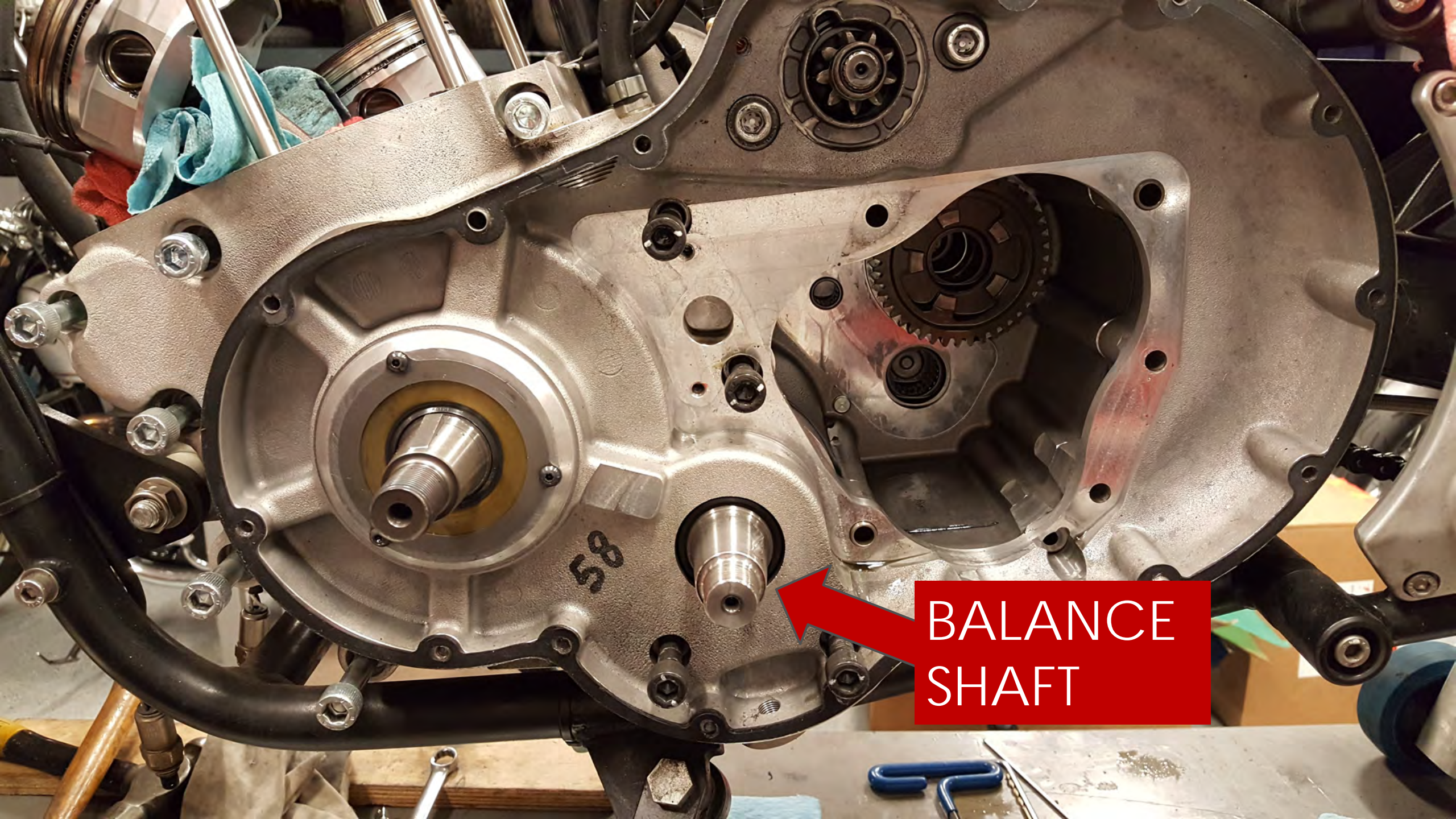




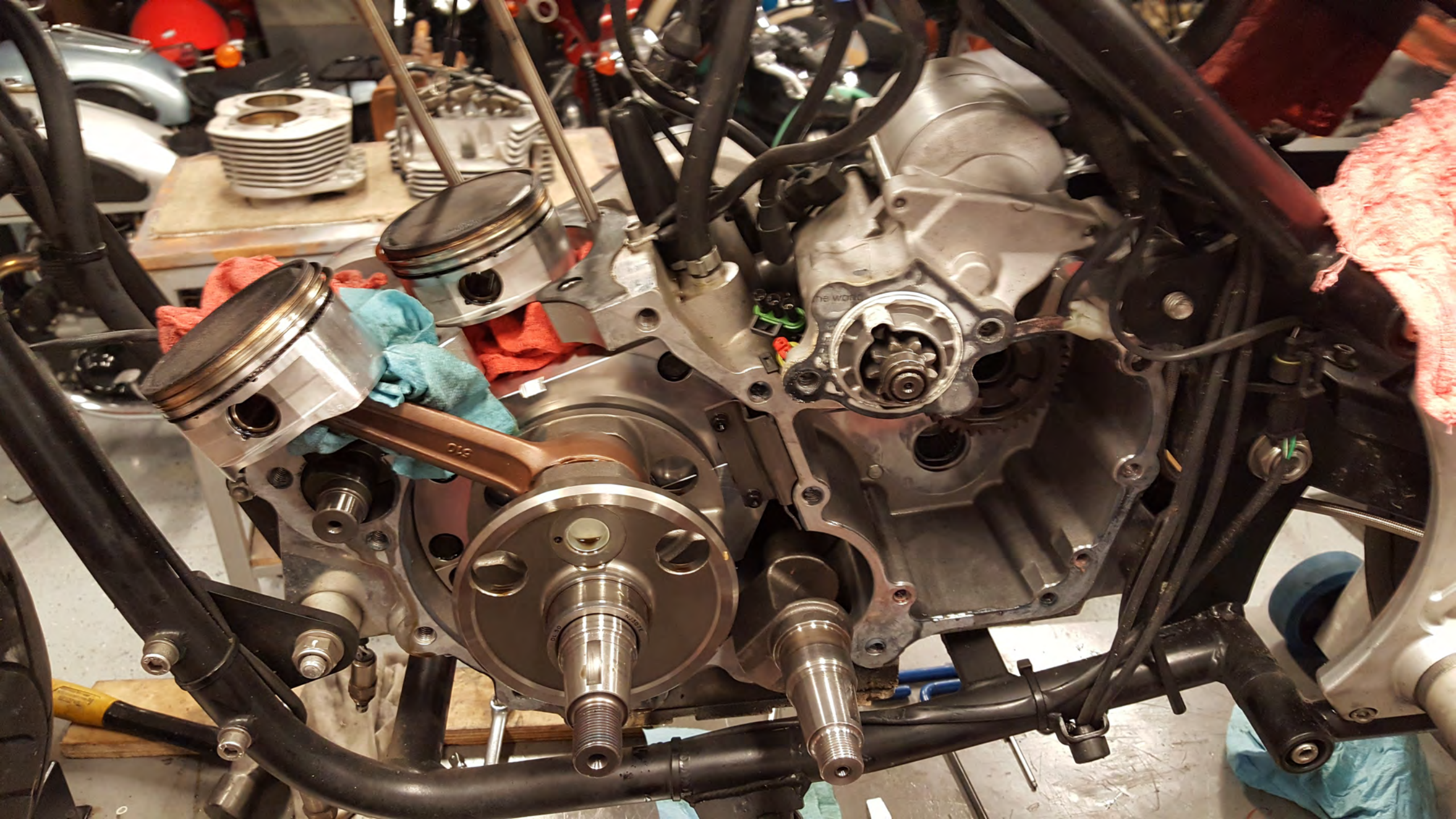


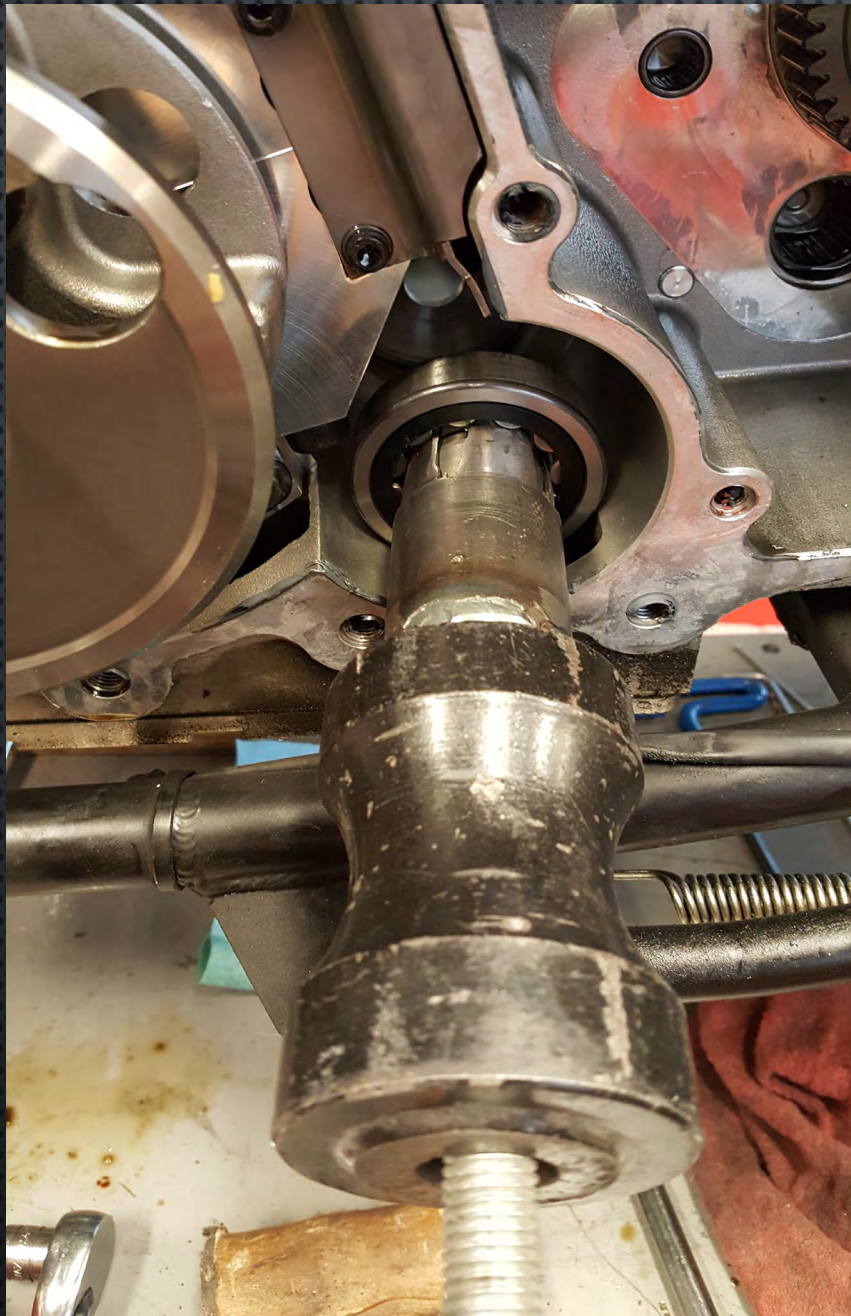


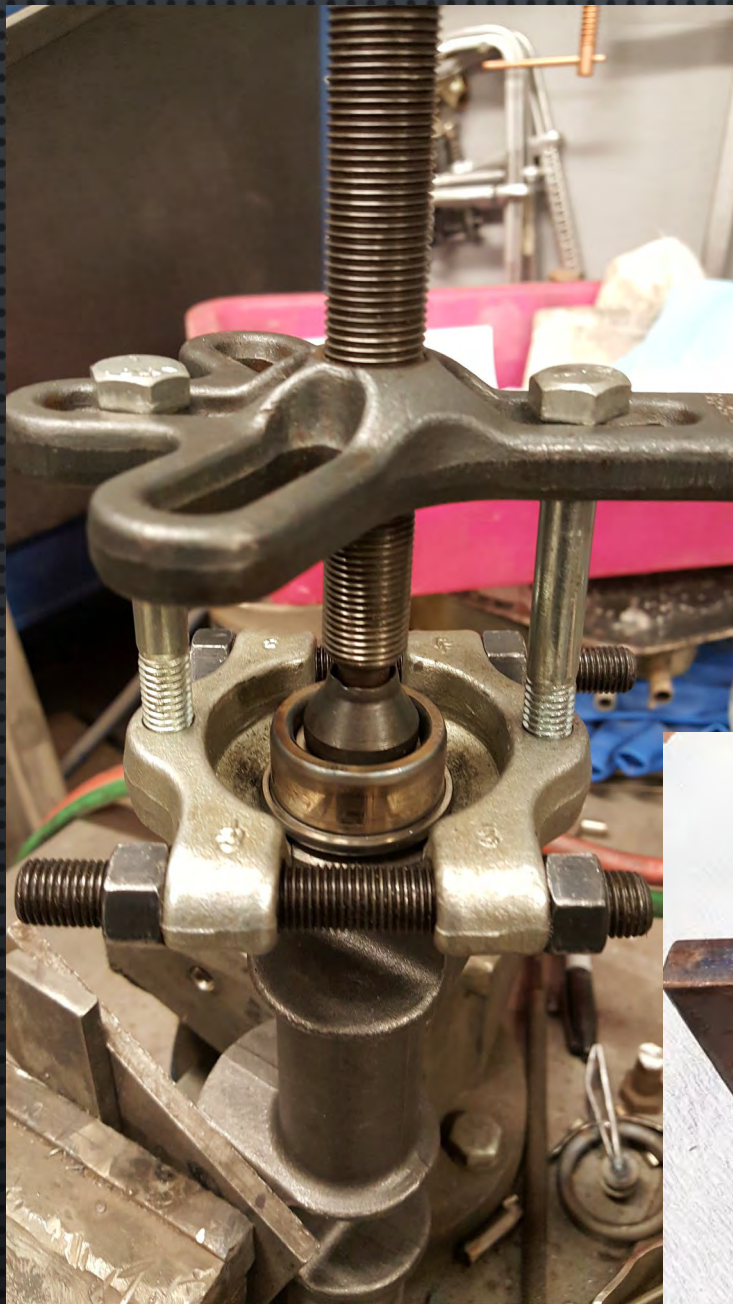




BALANCE
SHAFT



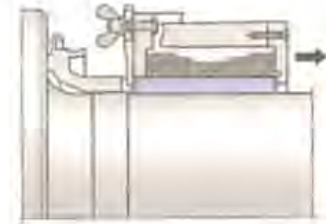




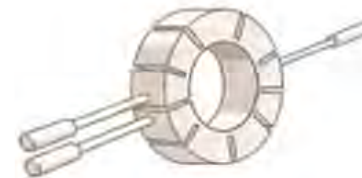
HOT DISMOUNTING

Special induction heaters have been developed to dismount the inner ring of cylindrical roller bearing having no flanges or only one flange.

They heat the inner ring rapidly without heating the shaft to any degree, so that the expanded ring can easily be removed.



Fig

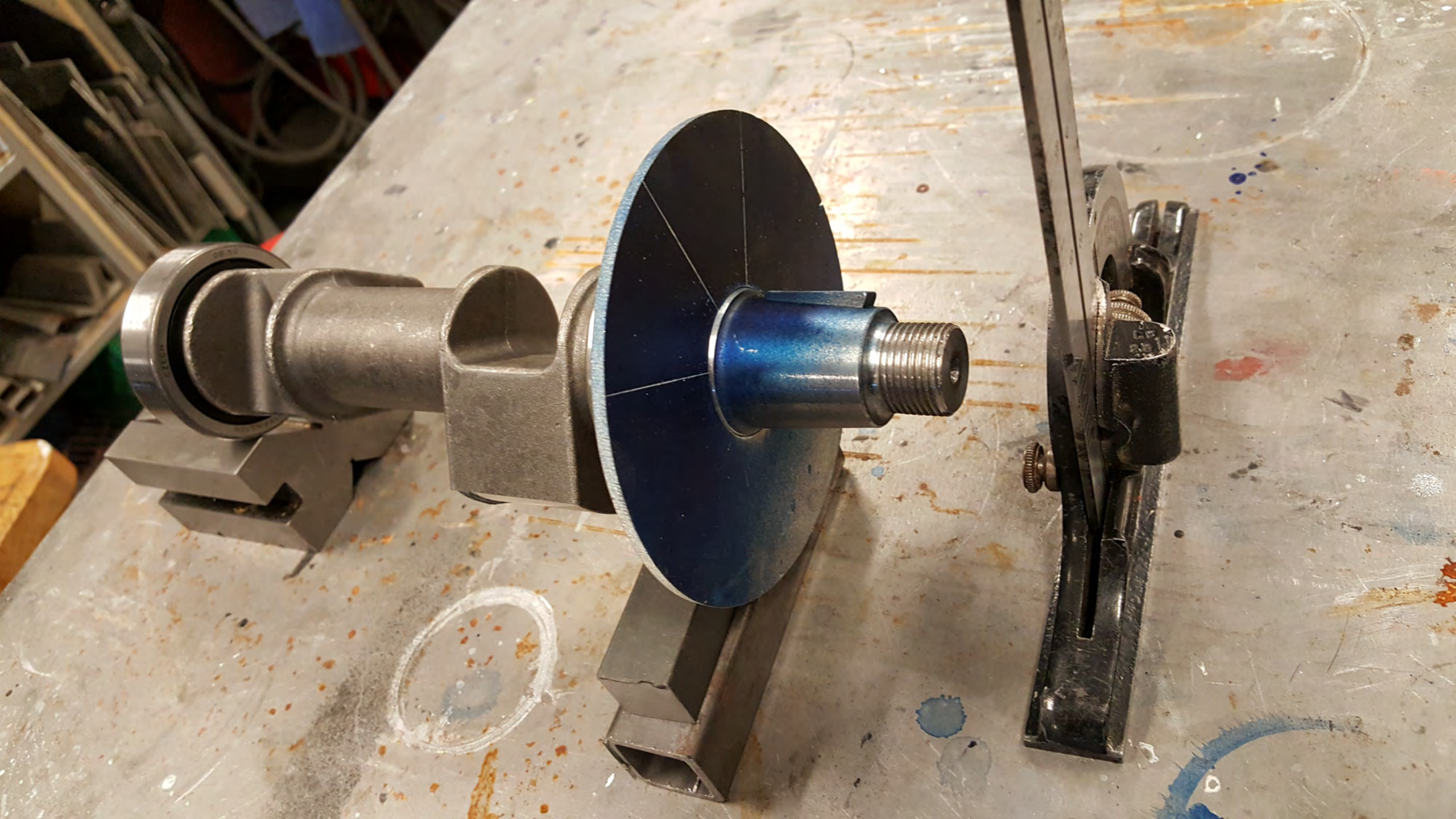


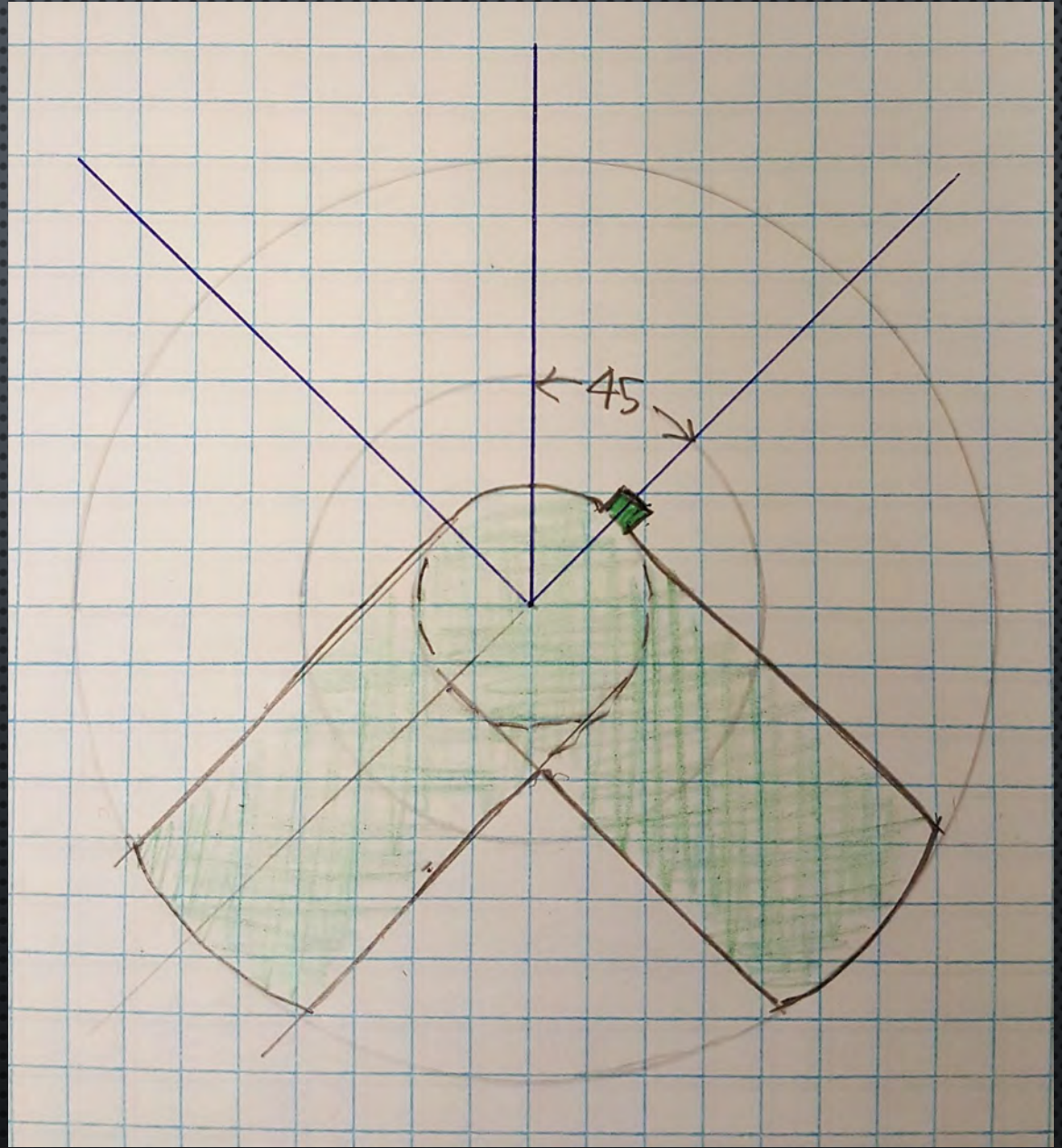
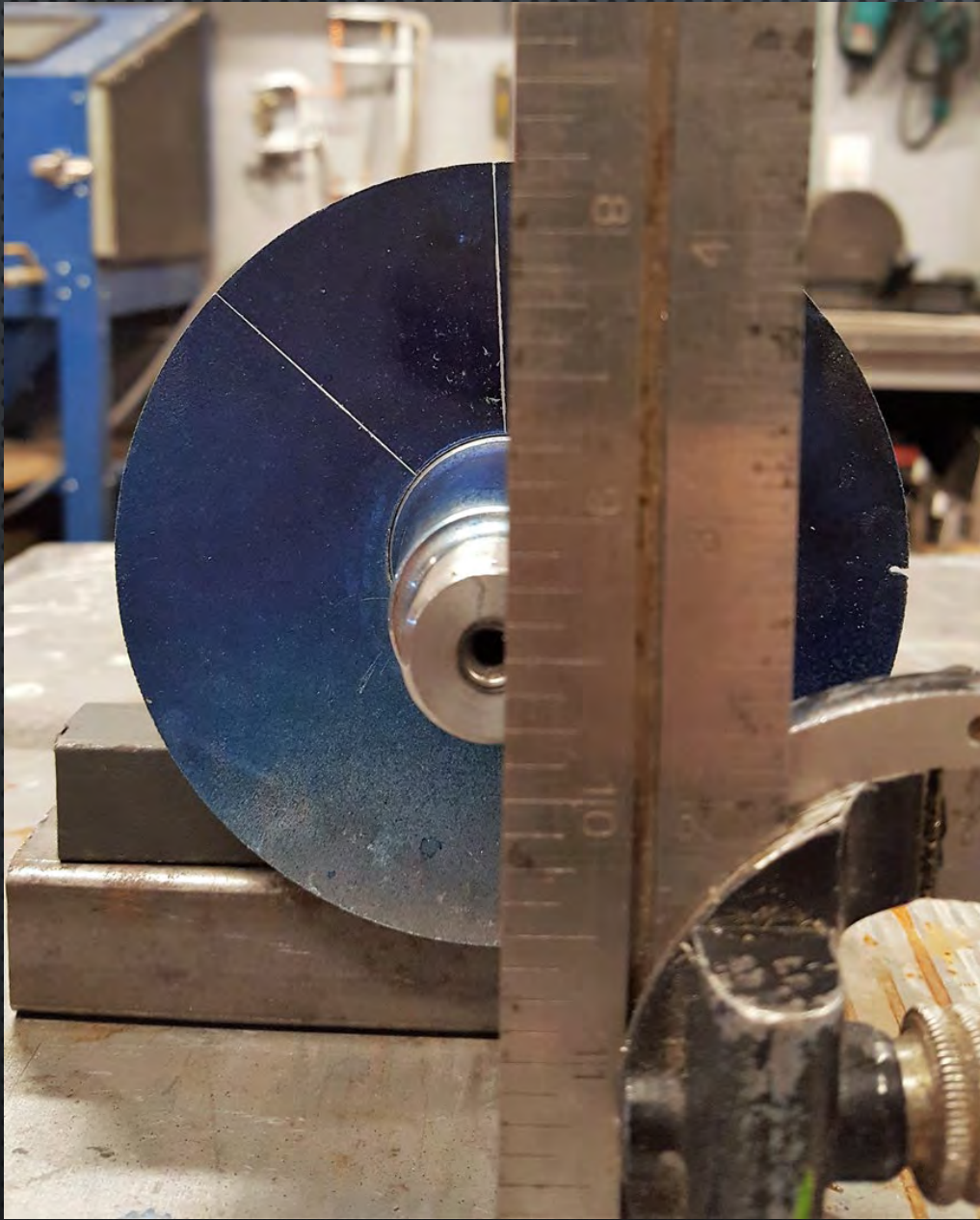
BALANCING THE BALANCE SHAFT



This is the early CNC machined shaft,
replaced by the forged version that I had.







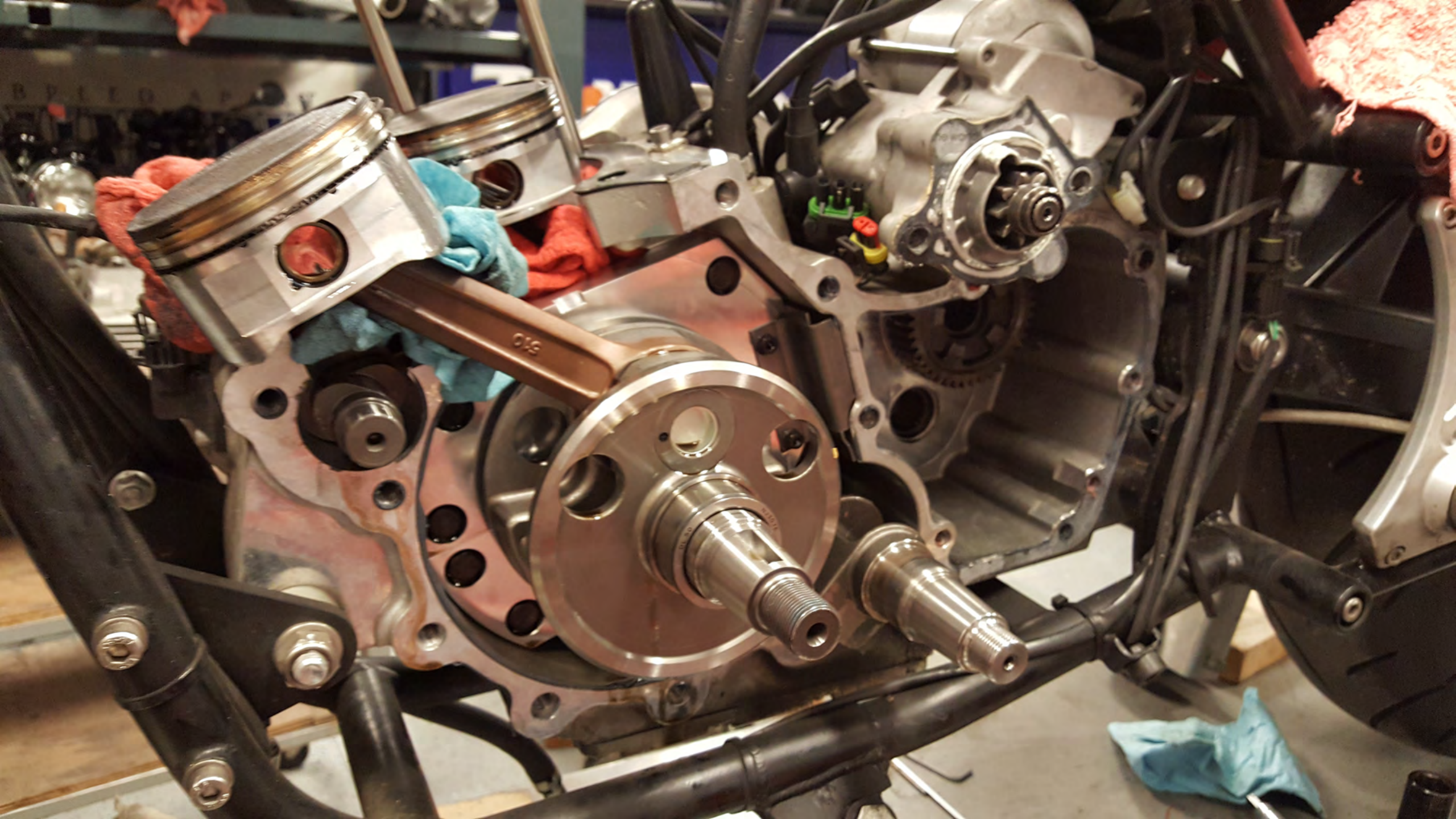
I HAD TO
REMOVE 3OZ
OF MATERIAL
OFF ONE OF
THE BOB
WEIGHTS

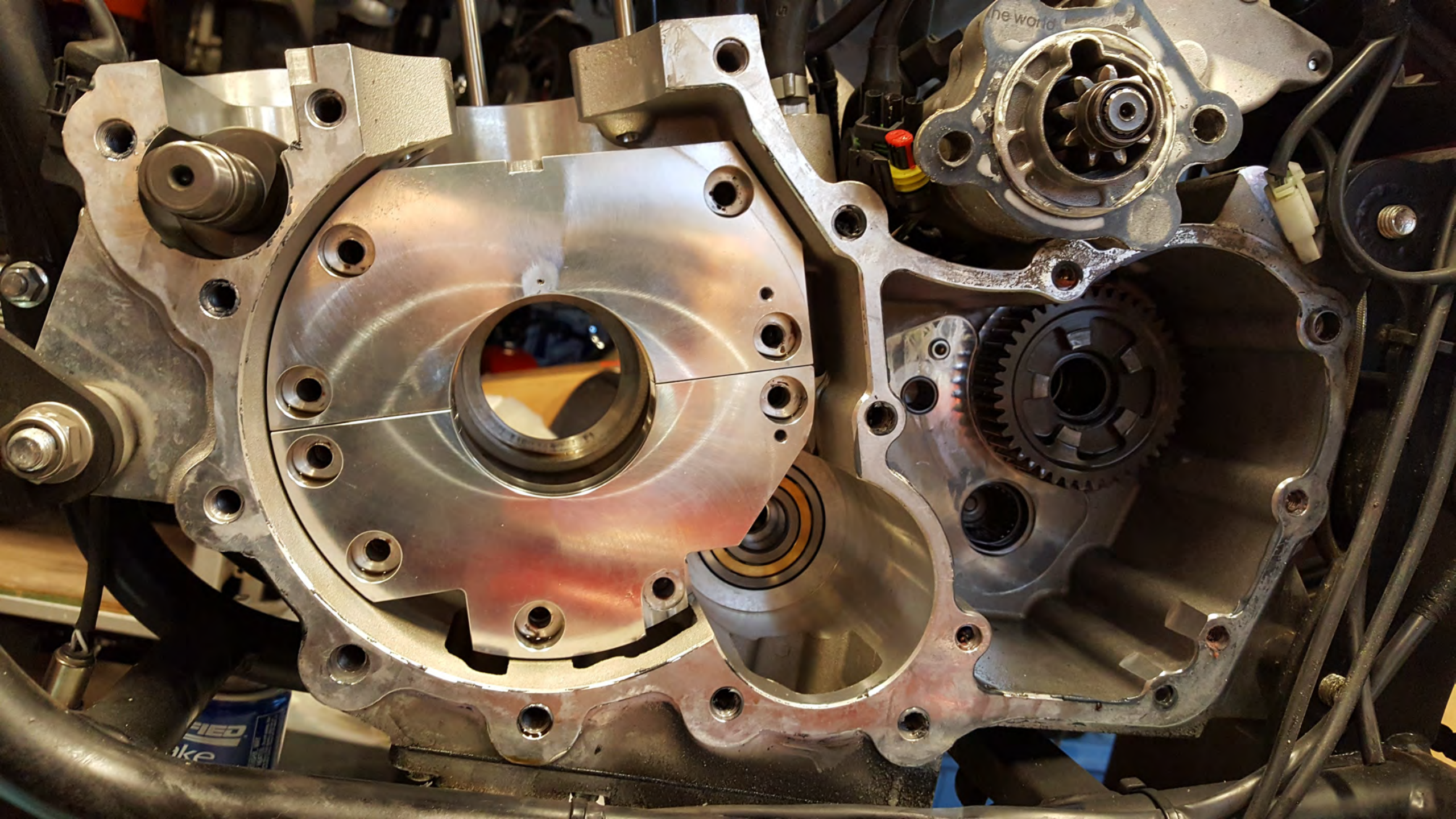


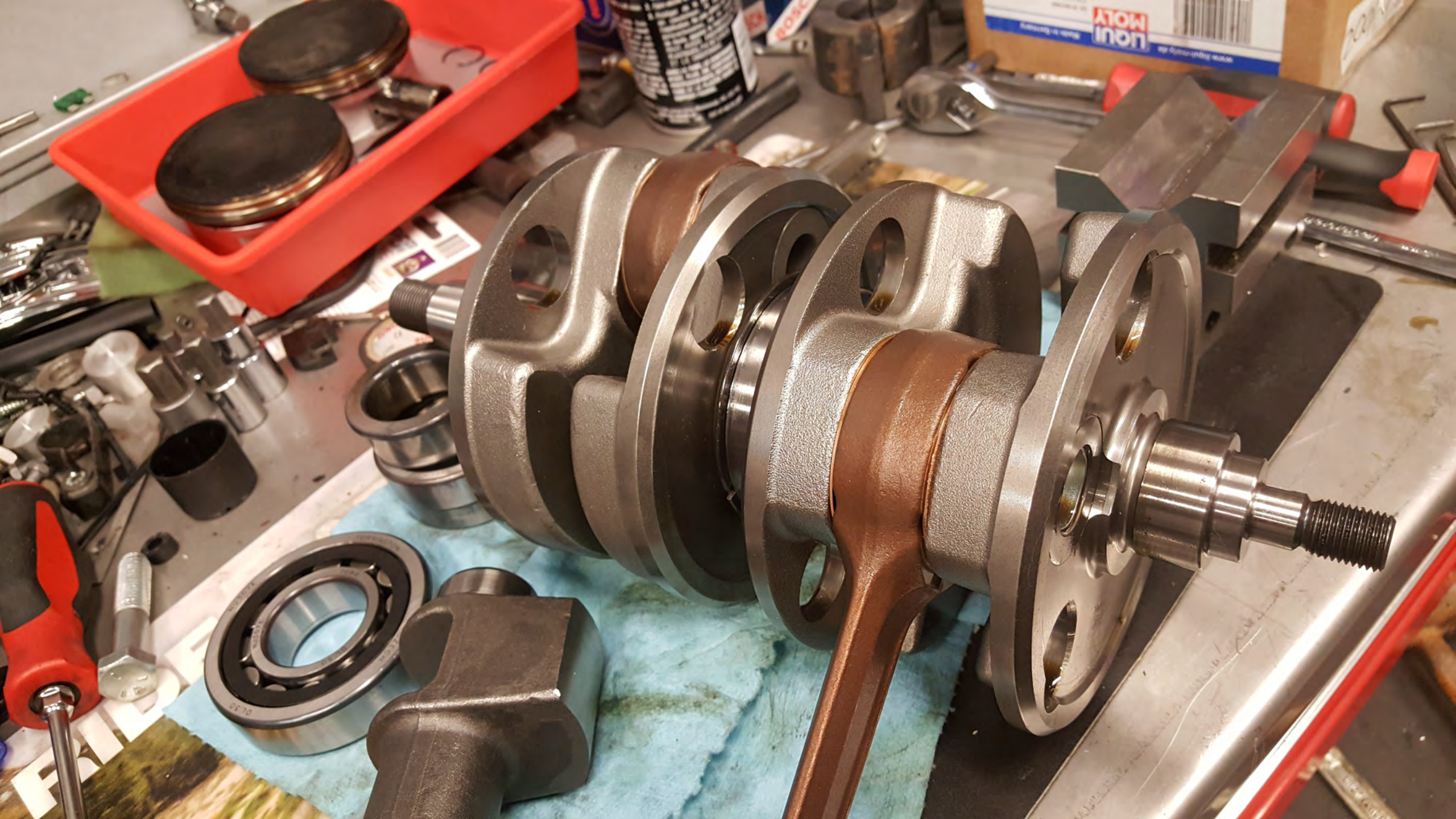
NOW THE CRANKSHAFT:

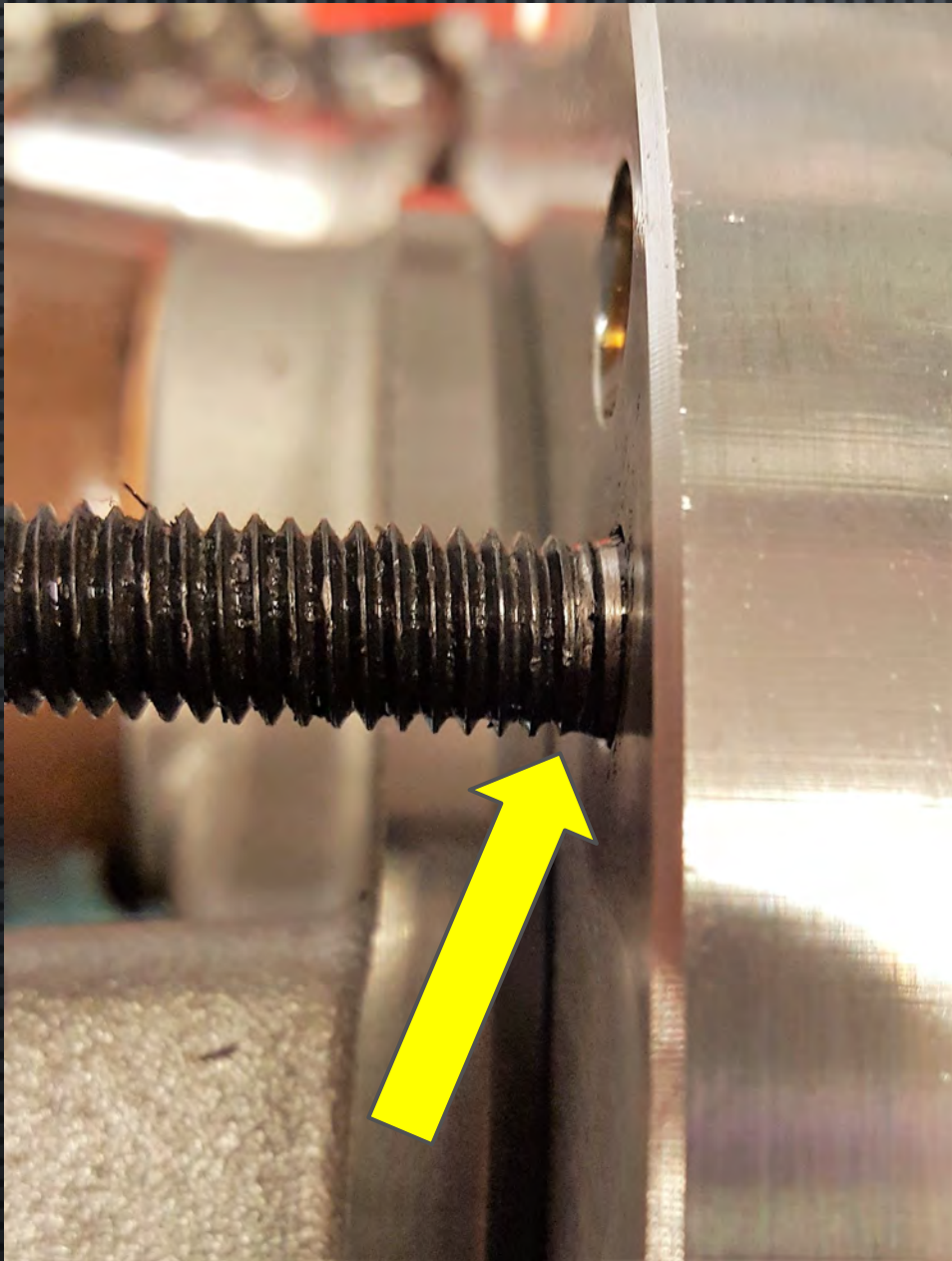
ADVISED BY DAVE COOTE:

“REMOVE THE CRANKSHAFT TO DETERMINE IF THERE IS AN ISSUE WITH THE CRANKSHAFT CENTRE-MAIN BEARING MOUNTING PLATE FASTENINGS”.





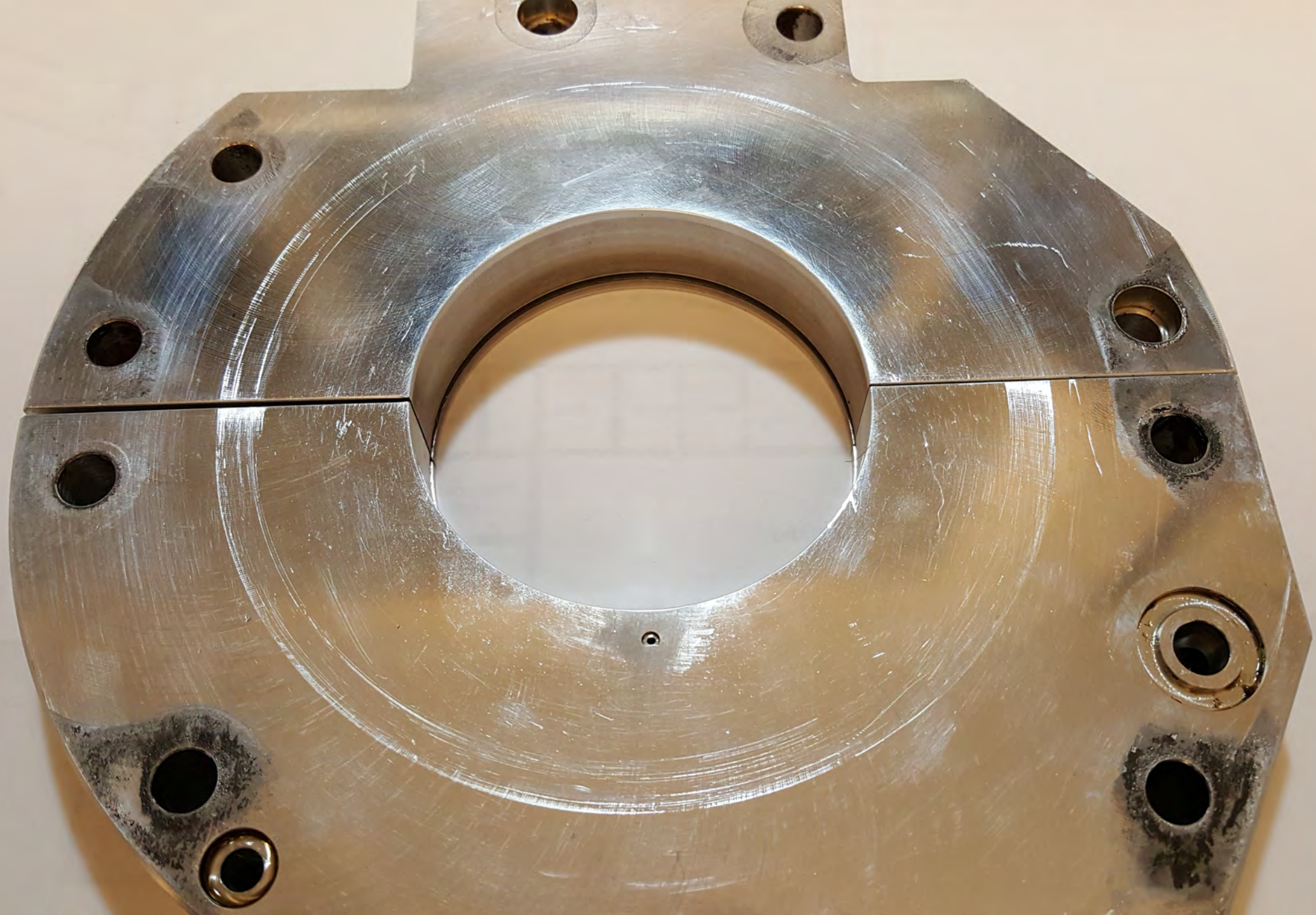




THE SHOULDER OF THE STUD IS BOTTOMING OUT
ON THE THREADS IN THE CRANK CASE.

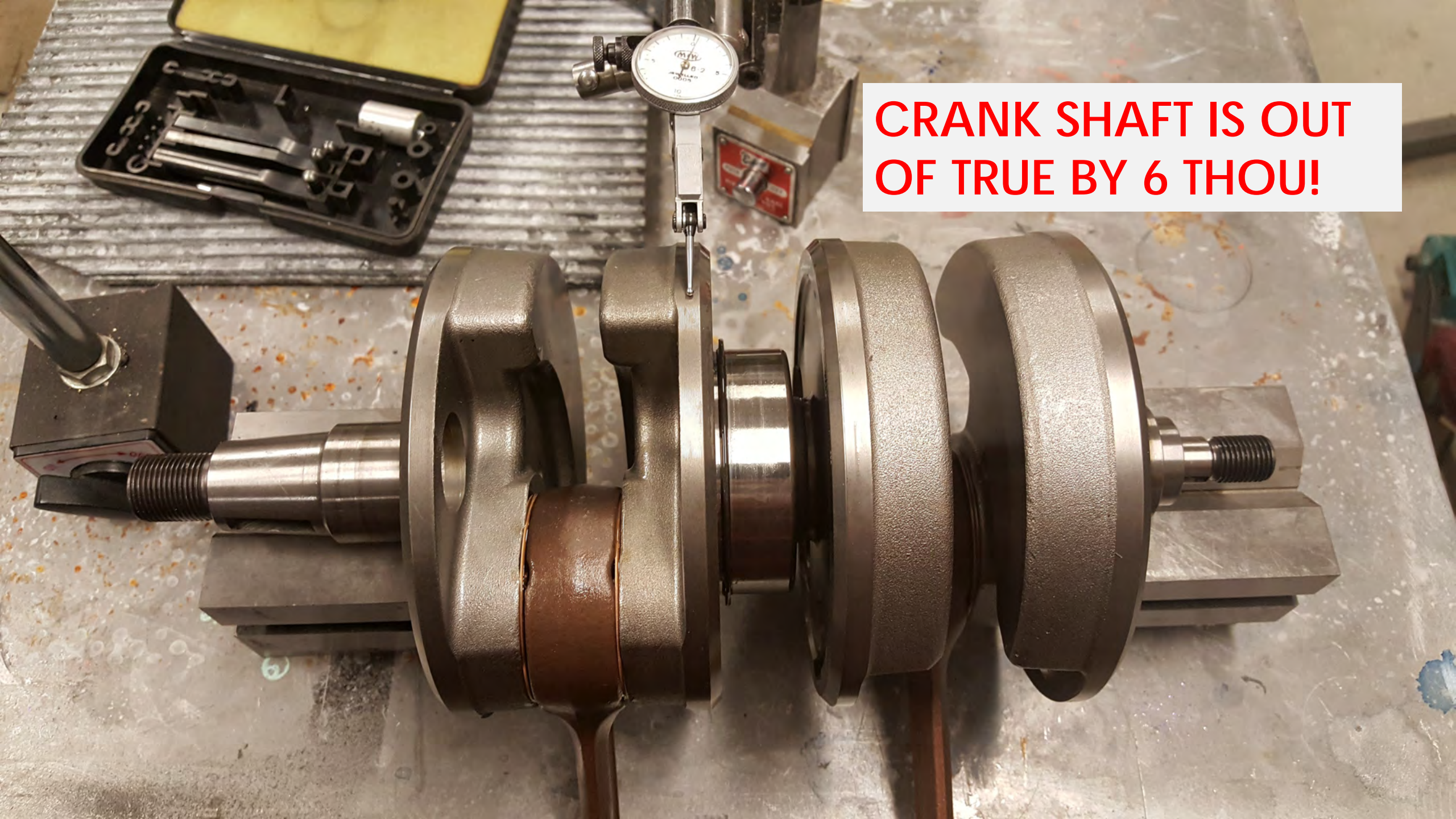
THE MOUNTING PLATE IS LOOSE !







**CRANK SHAFT IS OUT
OF TRUE BY 6 THOU!**



NORTON UK RESPONSE – Can offer nothing.

Since out of warranty and not a dealer, can not offer support or assistance.

NORTON UK – BIG SILENCE !!!

NORTON CANADA

Mr. Peter Howes, Stepped up with supplying

- new head gasket and new base gasket,
- the two bearings for the balance shaft
- paying the \$216 to get the crankshaft trued.

On NORTON ACCESS FORUM I had been posting my progress and there was a great deal of interest, until...

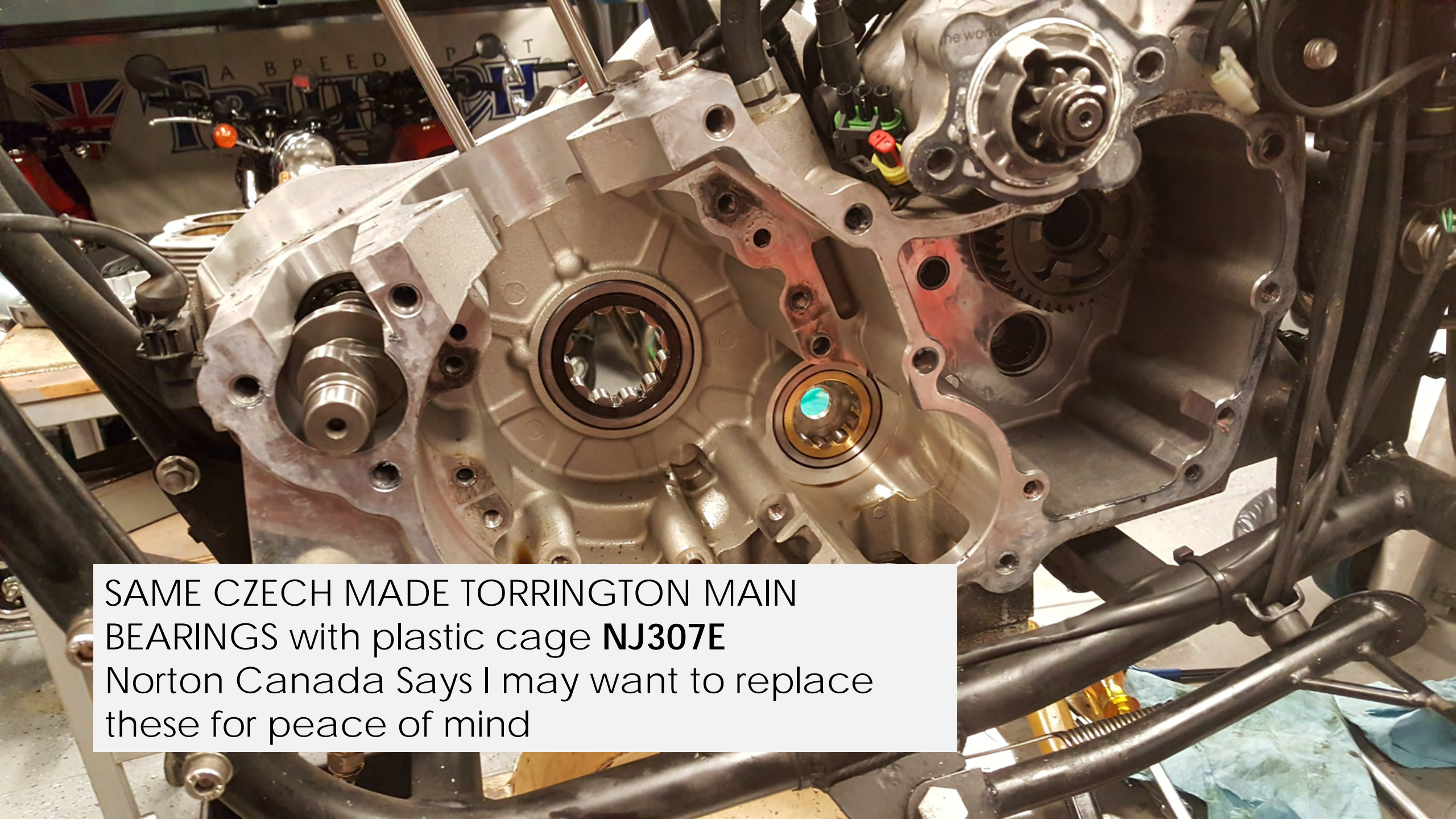
I got an email from someone connected to Norton, "suggesting" that I not continue with my posts, Norton is a small company and it is not fair to publish damaging information that could be a one off"

I had sent many emails to **NORTON UK – NOT ONE EMAIL HAS BEEN ANSWERED**

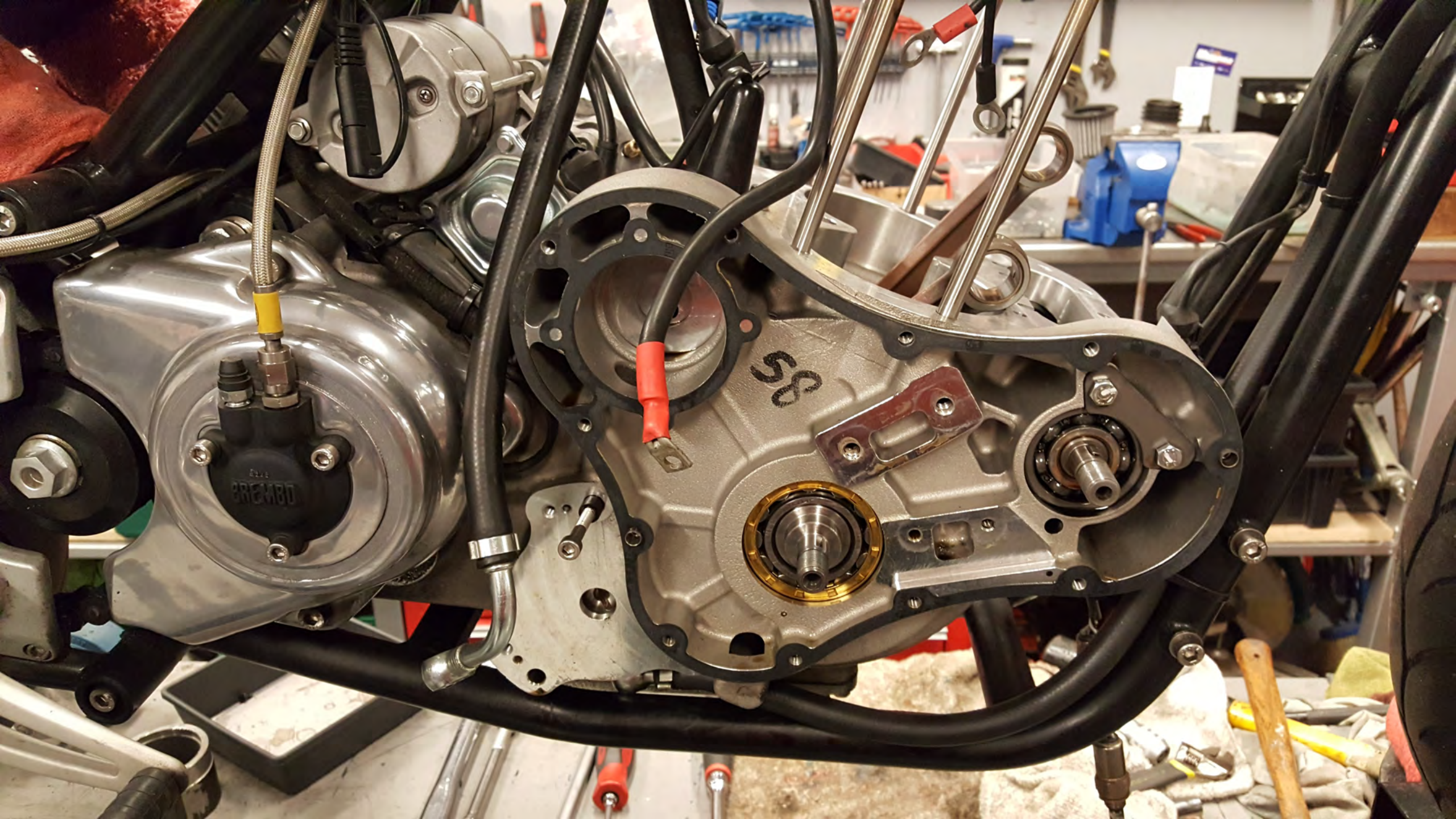
I received NO ASSISTANCE or HELP from NORTON UK

NORTON CANADA did come through with some help.

Told my option was to send my bike to ONTARIO and pay out of my own pocket for it to be repaired, including parts and shipping both ways....



SAME CZECH MADE TORRINGTON MAIN
BEARINGS with plastic cage **NJ307E**
Norton Canada Says I may want to replace
these for peace of mind

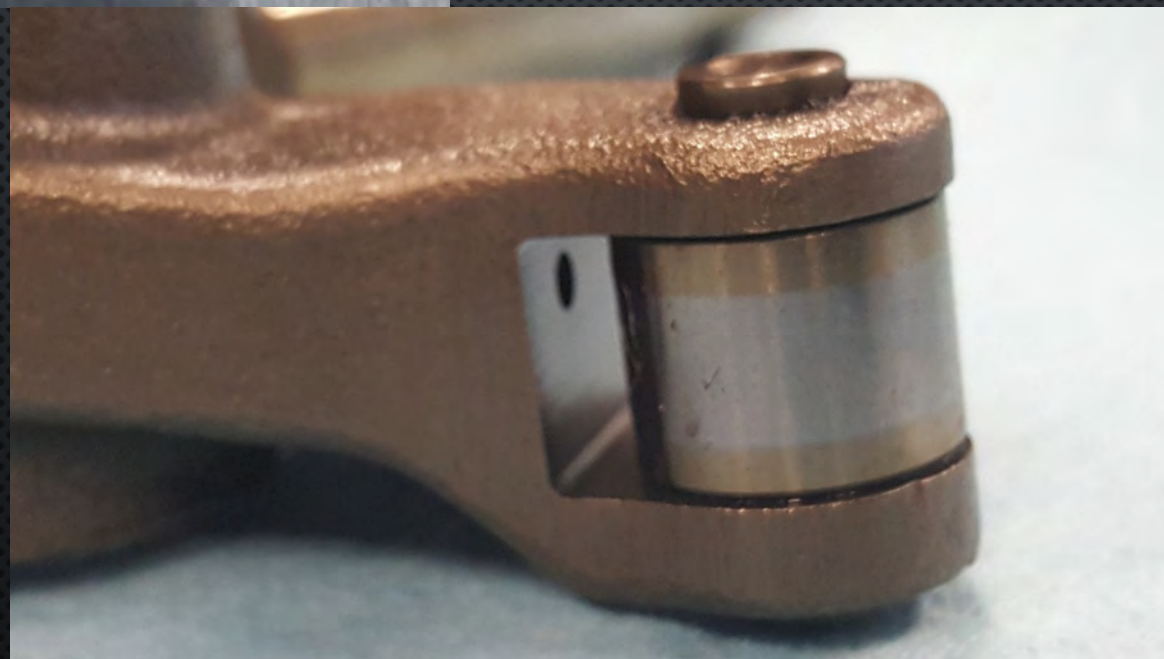






This undercut allows
oil to enter and go
into the push rod





OTHER RECOMMENDED UPGRADES

Replace the

- Cam speed sensor,
- Head temperature sensor
- Ignition Coils

With BOSCH components



Replace the ignition wires with Magnecor wires....

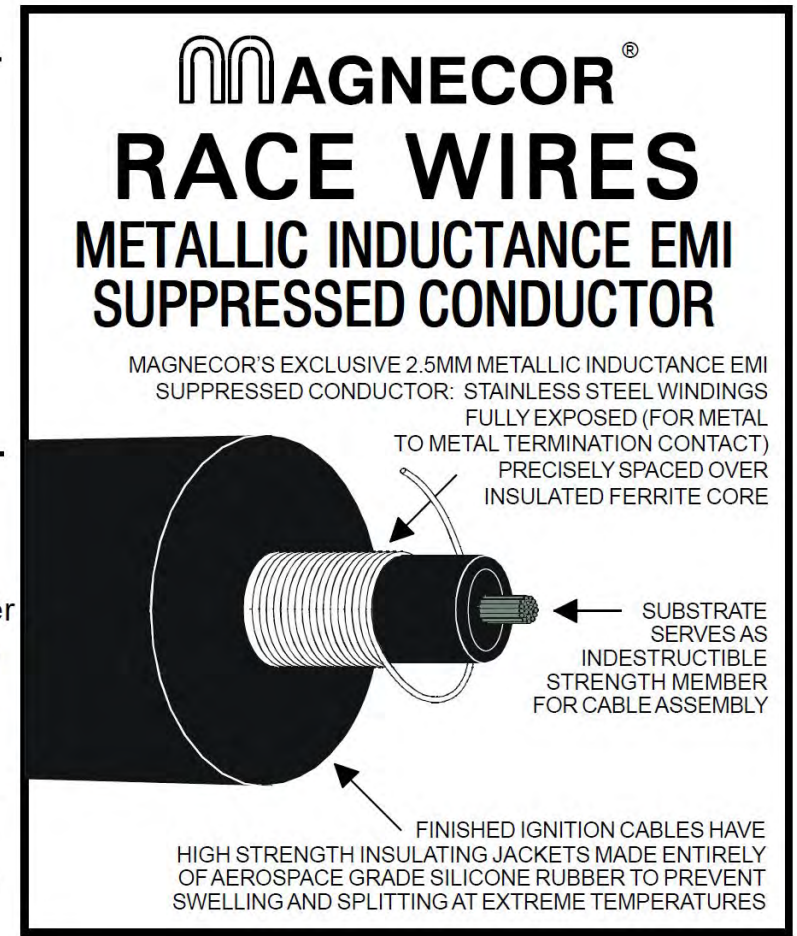
Magnecor KV85 V6 and R-100 V4 Ignition Cables Specifications

OVERALL LEAD ASSEMBLY

Outside Diameter of Cables.....	8.5mm (KV85) and 10mm (R-100).
Colour.....	Red.
Boot/Terminal Configuration.....	Various - to suit different domestic and foreign applications as well as customer special requirements.
Country of Manufacture.....	Cable: USA. Assemblies: USA, UK and Australia.

CABLE

Construction Type.....	All silicone conductor core and jacket.
Insulator Jacket Material.....	Extreme heat resistant TC-1500-HS high strength aerospace silicone rubber formulated to dissipate heat away from section exposed to high temperatures.
Heat Resistance.....	KV85: 600°F (320°C) service temp. 1,000°F (540°C) short burst 3 minutes, R-100: 700°F (380°C) service temp. 1,200° F (650°C) short burst 3 minutes.
Dielectric Strength.....	KV85: 60 kV, R-100: 80kV at 260°C.

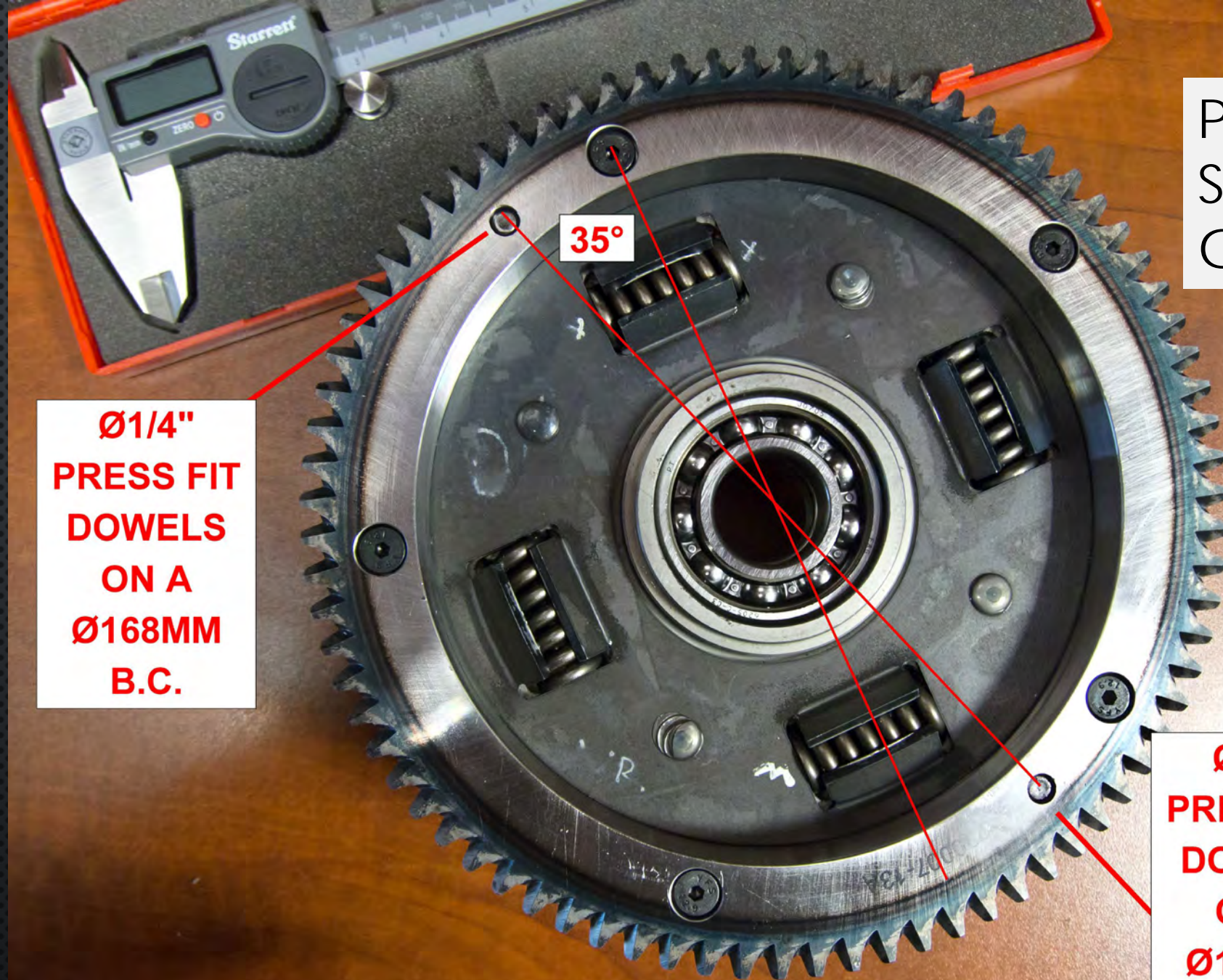


PIN THE
STARTER RING
GEAR

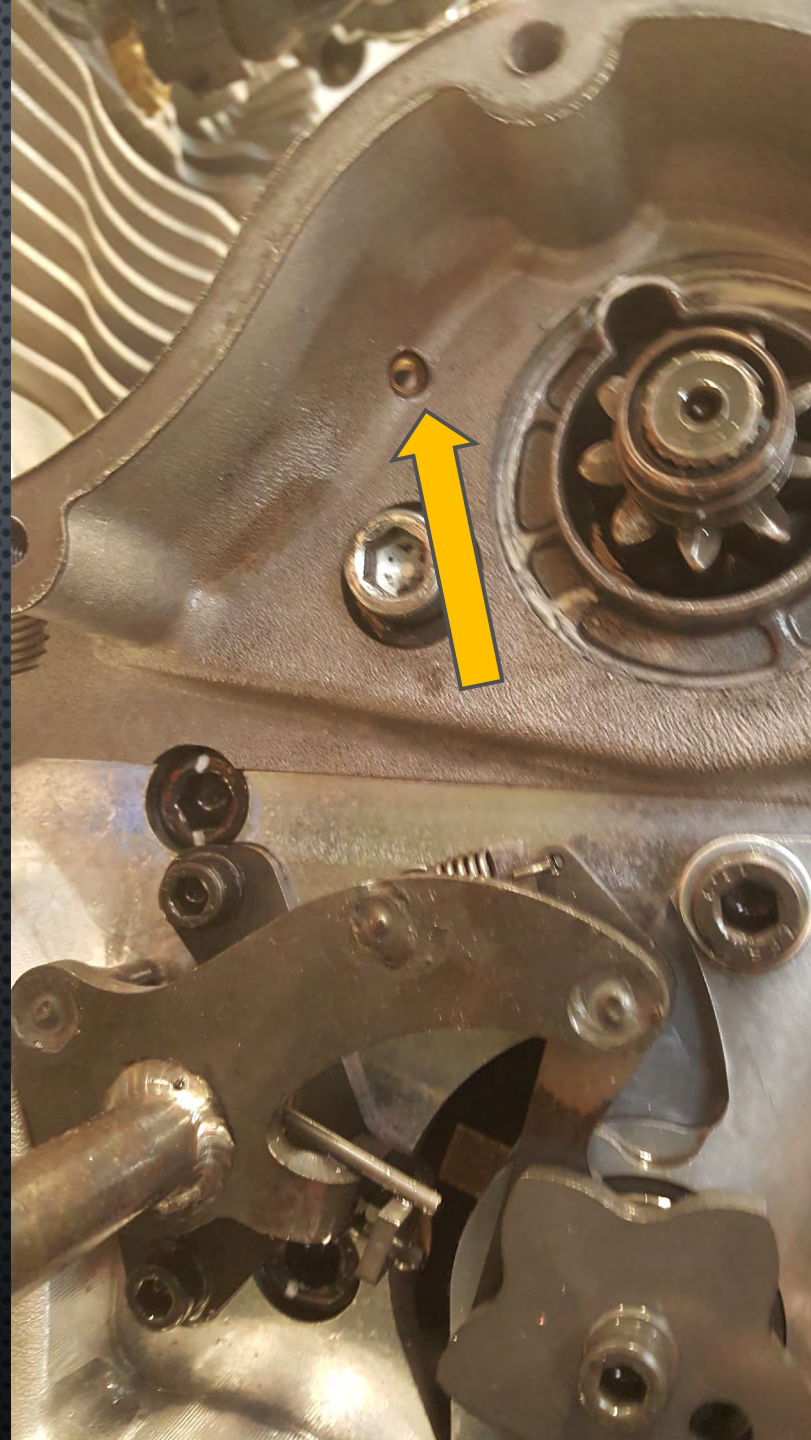
**Ø1/4"
PRESS FIT
DOWELS
ON A
Ø168MM
B.C.**

35°

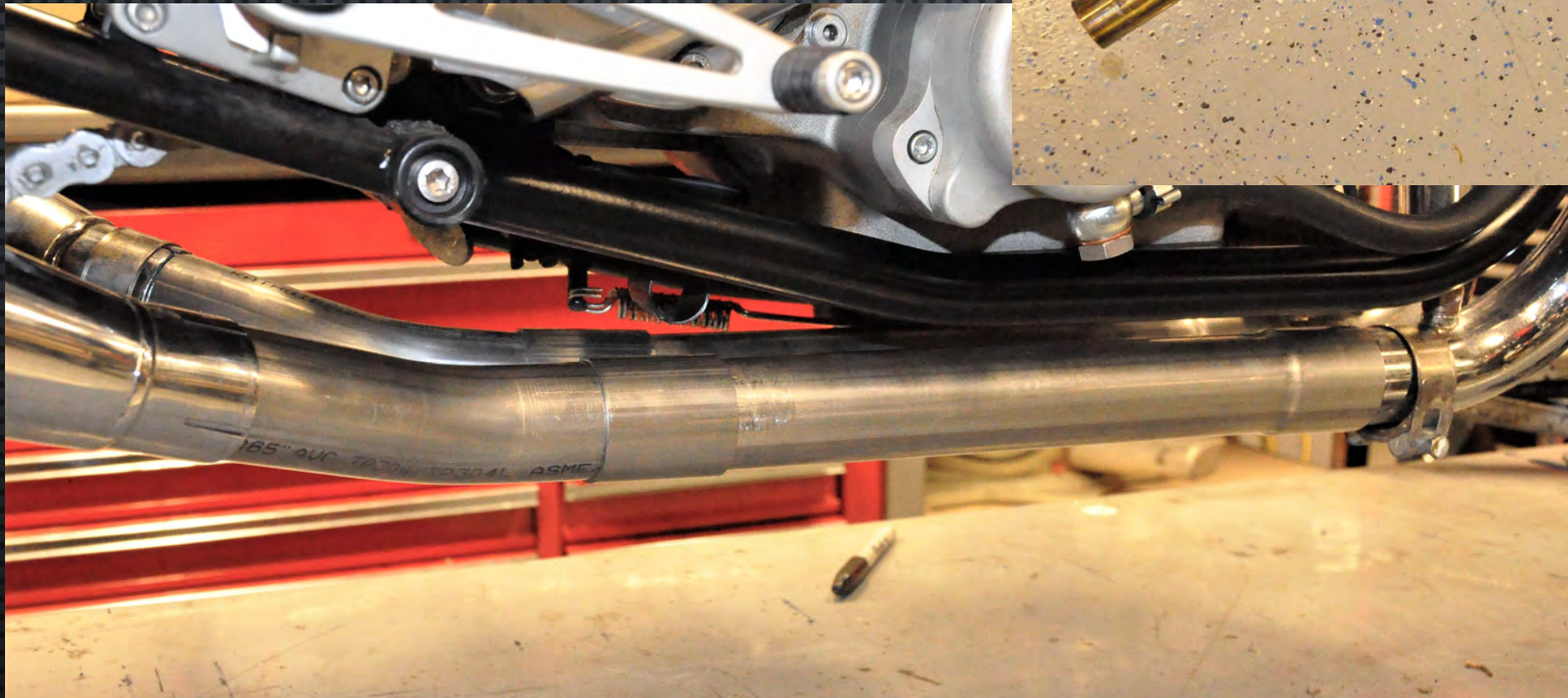
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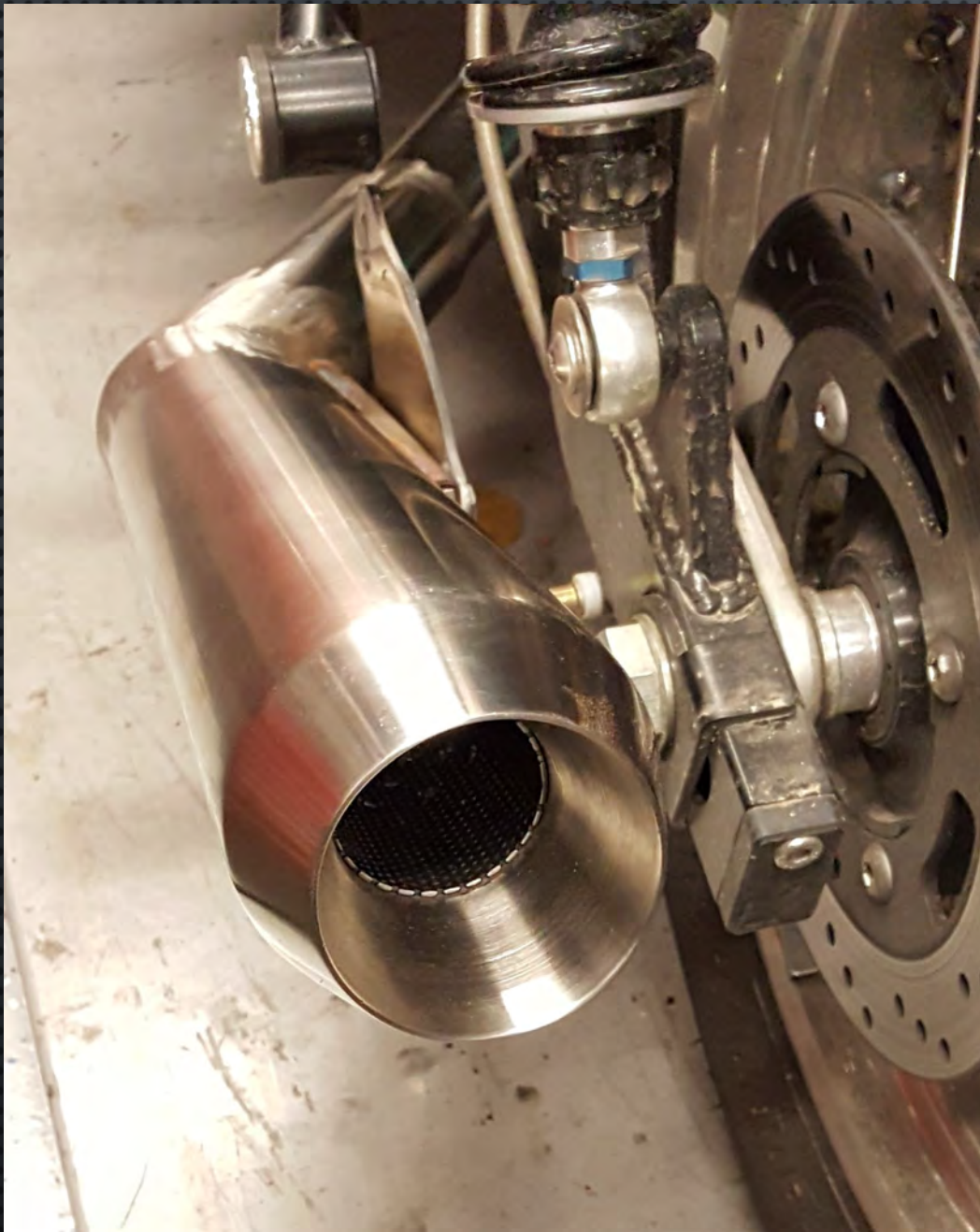
Add a Gear case or
Primary Vent (Breather)



Remove the Catalytic Converters....



Install OPEN SHORTIES



QUESTIONS ?

THE END