Notes on engine rebuild

Password for engine manuals. adzam

When rebuilding my engine I used following information to make my own coolant seals, very easy process and a lot faster than waiting for seals from Mazda or USA aftermarket.

Soft seals, info used from AusRotary forum, search or click [Re: Sick of gettin jipped on O'Rings!!]

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#50 Post by **bumpstart** » Thu Oct 09, 2008 11:18 pm
prices below are in AUD and reflect time of post in AusRotary (2008)

Transeals Perth, Western Australia. Or find your local seal manufacturer.
08 94516011 (WA)
Inner and outer oil seals , not mazda
VITON 75 O'ring 4.737 x 0.103" PART No 158v7 at $4.99each
VITON 75 O'ring 110.0 x 3.0mm part No 110X3v7 at $8.21each
the number code used signifies hardness [shore test A] order by quoting the dash number (imperial) or the metric size, then material, specify ID, then CS (inside diameter of ring, cross section of rubber)
ok, thems the details for the rotor O rings

Coolant O'Rings (make your own)
NBR is nitrile butyl rubber, or buna-n for WW2 buffs, viton 75 is a newer , better alternative, as discussed above (has 67% flouro silicon which makes it a newer closer cousin to mazdas special O rings)

here is the sting
nitrile is around $3.70 a metre - well worth the effort but due to its -40 to 120 centigrade design temps you may want to use the RTV silicon to heat buffer it ! (not that i think that the heat range is incorrect, just not any buffer !)

the viton 75 is MUCH more expensive at $20 a metre but handles -30 to 205 centigrade but , doesn't work out cheaper for the outer ring (maybe select NBR there for 2.0) and works out only around 50% of a saving over mazda inners - but will be physically more compression resistant (and by reports reusable), more chemically resistant, equivalent in heat resistant, more tear resistant and prouder for less true housings, and it joined easily and strongly (stronger than a laminated OEM inner seal join) its cut straight and glued with black and gold super glue !

just to make it all stunningly easy
- inner 740 mm , 2.4 mm CS per plate surface (its fractionally long and fills outer edge of groove perfectly) = 3m for engine

- outer 930 mm , 2.0 mm CS = 3.8 m for engine
you also need 4 x (15.8 mm x 2.4 mm) NBR O rings for the engine oil passage dowels
and 1 x (11.8 mm x 2.4 mm) NBR O ring for the S5 type timing cover passage
(and nylon insert)

edit ,, o ring length reviewed 4/10/2009 to be fractionally longer
- push o ring to outside of the track to make the longer lengths fit