

# NOVA RACING TRANSMISSIONS LTD

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MANUFACTURERS OF  
TRANSMISSION SYSTEMS  
FOR RACING AND  
DEVELOPMENT

## VELOCETTE 5 SPEED GEAR SETS INSTALLATION INSTRUCTIONS

1. Remove 4 speed gear set and associated camplate, pawl actuating plate including the return spring and gear indexing assembly.
2. The one piece Nova camplate has a boss projecting down beyond the ratchet track. This boss must move freely in the oval aperture in the pawl actuating plate. It will require the removal of any material in the aperture, which interferes with the smooth passage of the actuating plate over its full movement. A small grinding burr should be all that is required.
3. Install the pawl actuating plate and the Nova camplate. Check that you have full and smooth movement of the actuating plate.
4. Remove camplate and install return spring assembly.
5. Fit pawl with spring to actuating plate and install camplate. Ensure pawl is in contact with ratchet on camplate
6. Rotate camplate so that 1<sup>st</sup> gear position is opposite the gear indexing pawl. (see sketch)
7. Fit gear indexing assembly and engage 1<sup>st</sup> gear position.
8. Once satisfied that the selector mechanism is correctly installed You can now proceed to install the gear set. **Refer to the layout Drawing 0002 for gear positions.**
9. Using standard oil thrower plate, fit sleeve gear (1) through bearing in case, make sure the three needle bearings are inside the sleeve gear. If the bearing has been changed at drive end, ensure that the shroud's are concentric with the bore of the bearing, to allow the standard oil thrower plate to contact the bearing inner race.

10. Remove 2<sup>nd</sup> gear mainshaft, No 25 from the assembly supplied, locate on selector fork L and install in the farthest track from you. Slide the two selector rods from the outside, into the gear box to locate the fork.
11. Remove from the assembled layshaft the locating spacer (29) and 1<sup>st</sup> gear (19) and 4<sup>th</sup> gear (18)
12. Install the layshaft into the case. The layshaft drive gear (15) engages with sleeve gear. 2<sup>nd</sup> gear (26) engages with the previously installed mainshaft 2<sup>nd</sup> gear. (25)
13. Locate selector fork B5 in the 3<sup>rd</sup> sliding gear (28) and engage guide pin in the centre track. Slide selector rods through to locate. You will find this easy to do if camplate is in 1<sup>st</sup> gear as per operation 6.
14. Remove from the mainshaft the 1<sup>st</sup> gear(14) and the sliding 4<sup>th</sup> gear (13)
15. Install the mainshaft through the splined 2<sup>nd</sup> gear (25) and engage the teeth of layshaft 3<sup>rd</sup> gear as it passes through the sleeve gear (1)
16. Slide 4<sup>th</sup> gear (13) on the mainshaft. Engage selector fork R with outside cam track slide selector forks through to locate.
17. Install 4<sup>th</sup> gear layshaft (18) followed by splined washer (20) and circlip (21)
18. Install thrust washer, needle bearing and 1<sup>st</sup> gear mainshaft followed by 2<sup>nd</sup> thrust washer onto mainshaft and (19) layshaft and layshaft spacer.  
(Kickstart version or Racing Version as supplied)  
**Note:** A dab of grease on the 2<sup>nd</sup> thrust washer will hold it in place during assembly
19. Install the outer over as per the standard assembly instructions. Lock mainshaft with standard nut.
20. Check selection of all FIVE gears and neutral. All should turn smoothly and engage gears with only small movements on the mainshaft. If you have any problems please contact us before any damage is caused.

### **Racing Version**

Remove kickstart boss from outer cover and install "Nova 5" bearing housing sealing with silicon sealer. (if purchased)

A range of sprockets are available and are retained with the 8mm bolt and washer supplied.