BTC Automotive Technology

Job Sheet: MT4 – Final drive repair

Objective: To familiarize the student diagnosis, repair and adjustment of a hypoid style final drive gear set.

Procedure: Using a mach-up rear axle or a live vehicle, perform the steps listed below. Repair quality must be at industry standard.

Vehicle: ____________________________________________________________

Complaint: _________________________________________________________

☐ Describe common failures that would require a “rear end overhaul”.

_________________________________________________________________

☐ Describe three common sources for leaks in a rear axle.

_________________________________________________________________

☐ Remove axle shafts and driveshaft as required.

☐ Check gear ratio and record. _________

☐ Is it a hunting, partial non-hunting or non-hunting gear set? _________

☐ Measure ring gear backlash BEFORE disassembly and record. ___________

☐ Measure ring gear runout BEFORE disassembly and record. ________________

☐ Measure companion flange runout BEFORE disassembly and record. _________

☐ Mark differential side bearing caps before removal.

☐ Remove differential case assembly and disassemble (including removing ring gear).

☐ Remove drive pinion gear, bearings, shim and related components.

Measure and record pinion shim thickness.

Inspect ring and pinion gears, bearings, spider gears, shims and spacers, differential case and axle housing for wear, cracks or damage and record.

Install new bearings, shims and required components on pinion. Install pinion without crush sleeve and set bearing preload to specs.

Record recommended method of measuring pinion depth.

Assemble differential case with new or reused ring gear and spider gears.

Install new differential side bearings.

Adjust side bearing preload and record spec and adjustment procedure.

Adjust ring gear backlash and record spec.

Check ring and pinion tooth contact pattern. Record what the pattern indicated.

When pattern is correct, remove differential case and pinion. Install crush sleeve and adjust pinion bearing preload. Reinstall side bearing shims and recheck backlash and tooth pattern.