COURSE NUMBER AMT 164

Student Name_____

CO-OP V TASK LIST

Upon completion of a task, the student should enter the date of completion and an authorized employee of the dealership must then validate that the task has been successfully completed by initialing next to the date.

Work Area: Ford Manual Transmissions, Drivelines and Transfer Cases

1. Inspect, adjust or replace clutch pedal linkage, cables, and automatic adjuster mechanisms. _____
2. Inspect, adjust, repair or replace hydraulic slave and master cylinders, lines, and hoses. _____
3. Remove transmission/transaxle. _____
4. Inspect or replace throw-out bearing, lever, pivot; pressure plate and clutch disc; pilot bearing or bushing; flywheel and ring gear. _____
5. Reinstall transmission/transaxle. _____
6. Inspect and adjust shift linkages. _____

Work Area: Disassemble, Identify all Components, Explain Power Flow and Reassemble.

1. MTX 4 or 5 speed transaxle. _____
2. T5OD 5 speed transmission. _____
3. M5OD 5 speed transmission. _____
4. ZF Transmission. _____
5. Remove FWD axle, disassemble, replace CV boot and reinstall. _____
6. Remove and replace universal joint. _____
7. Disassemble, inspect, measure, and adjust or replace rear differential ring and pinion, pinion and side bearings, side and pinion gears washers, and case. _____

8. Reassemble rear differential assembly, measuring and adjusting ring gear runout, pinion depth and bearing preload, side bearing preload and gear backlash, and check ring and pinion gear tooth contact pattern _____
9. Replace axle bearing and seal on rear drive vehicle. _____
10. Measure rear axle flange runout and shaft end play. _____
11. Replace pinion seal (rear carrier intact in vehicle). _____
12. Measure rotating torque on limited slip differential. _____
13. Disassemble, identify all components, explain powerflow and reassemble MANUAL SHIFT transfer case. _____
14. Disassemble, identify all components, explain powerflow and reassemble ELECTRIC SHIFT transfer case. _____
15. Disassemble, inspect and reassemble automatic 4x4 hubs. _____
16. Disassemble, inspect and reassemble manual 4x4 hubs. _____
17. Check driveline angles using Anglemaster. _____
18. Complete Manual Transmission FMT _____

Work Area: Ford Automatic Transmissions

Work Area: General Transmission and Transaxle diagnosis, and Adjustments

1. Interpret and verify driver's complaint; verify proper engine operation; determine needed repairs. _____
2. Diagnose unusual fluid usage, level, and condition problems; determine needed repairs. _____
3. Perform pressure tests; determine needed repairs. _____
4. Perform stall tests; determine needed repairs. _____
5. Perform lock-up converter tests; determine needed repairs. _____
6. Diagnose electronic, mechanical, and vacuum control systems; determine needed repairs. _____
7. Inspect, adjust or replace manual shift valve and throttle (TV) linkages or cables and check gear select indicator (as applicable) _____

Work Area: Bench Unit Disassembly, Powerflow, Inspection and Assembly

1. Each student will be given a package of worksheets for each transmission / transaxle that will be taught in this course. There are four units taught:

    - AXOD(E)/AX4S _____
    - A4LD (4R44,55E) _____
    - AOD(E) /4R70W _____
    - CD4E _____

You are to use these sheets when disassembling, inspecting and assembling each of the units.

Worksheets:

- Powerflow
- Component inspection
- Clutch pack quiz
- Clutch pack clearance checks
- Transmission assembly quiz
- Transmission assembly (clearance/travel checks)

You must complete each sheet in detail. Sheets must be clean and legible or they will be returned. Throughout the course you will be evaluated individually in all of the above areas on all four units using performance testing methods.

The service manual will also be used as a guide. All inspections, tests, procedures and measurements must be made. The instructor will check off each component as you progress.

Work Area: General and Hydraulic

1. Inspect, repair, and replace governor assembly. _____

2. Inspect and replace speedometer drive gear, driven gear, vehicle speed sensor (VSS), and retainers. _____

3. Inspect servo bore, piston, pin, spring, and retainers; repair or replace as needed. _____

4. Inspect accumulator bore, piston, seals, spring, and retainer; repair or replace as needed. _____

5. Inspect, test, adjust, repair or replace transmission related electrical and electronic components. _____

Work Area: Oil Pump and Converter

1. Measure torque converter end play and check for interference; check stator clutch. _____

2. Inspect, measure, and replace oil pump housings, shafts, vanes, rotors, gears, valves, seals, and bushings. _____

3. Check torque converter and transmission cooling system for contamination; flush transmission cooler and lines. _____

Work Area: Gear Train, Shafts, Bushings and Case

1. Check end play or preload; determine needed service. _____

2. Inspect, measure, and replace thrust washers and bearings. _____

3. Inspect oil delivery seal rings, ring groves & sealing service areas. _____

4. Inspect bushings; replace as needed. _____

5. Inspect and measure planetary gear assembly; replace as needed. _____

6. Inspect cases, bores, passages, bushings, vents, and mating surfaces; replace as needed. _____

7. Inspect transaxle drive, link chains, sprockets, gears, bearings and bushings; replace as needed. _____

8. Inspect, measure, repair, adjust or replace transaxle final drive components. _____

9. Inspect & reinstall parking pawl, shaft, spring, & retainer; replace as needed. _____

Work Area: Valve Body Diagnosis

The class will examine valve bodies as a group checking valves listed by the instructor. There are no worksheets for this activity. Students will be evaluated on bugged valve bodies after instruction and practice.

Work Area: Electronic Transmission Diagnosis

1. Complete Transmission Component Location and Identification Worksheet. _____
2. Perform NGS OSC Bench Mode Operation Worksheet _____
3. Perform Transmission Tester and TR Worksheet. _____
4. Perform OSC Drive Mode Operation Worksheet. _____
5. Perform OSC Bench Mode Worksheet # 2. _____
6. Perform Electronic Transmission Diagnosis #1. _____
7. Perform Electronic Transmission Diagnosis #2. _____
8. Complete Service Publication Navigation Worksheet. _____
9. Perform Electronic Transmission Diagnosis #3. _____