



## Test Monitoring Center

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HTCT Information Letter 13-1  
Sequence Number 18  
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*ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.*

TO: HTCT Surveillance Panel

SUBJECT: Documentation of Tests Using Revised Range Clutch Synchronizer Components

During a February 6, 2013 meeting, the HTCT Surveillance Panel reviewed data produced using the revised range clutch synchronizer components described in Mack service bulletin FSB 431-003 and approved the hardware for use. The panel is choosing to track this hardware configuration as "CONFIGURATION 3" in the "Test Hardware Configuration" field of Form 1 of the test report. Sections 9.2.2.1, 9.2.3, and Tables 3 and 4 of D 5579 have been revised and are shown in the attached pages.

This change is effective for all tests completing on or after February 6, 2013.

Brian Koehler  
Chairman  
HTCT Surveillance Panel

Frank Farber  
Director  
ASTM Test Monitoring Center

Attachment

cc: [ftp://ftp.astmtmc.cmu.edu/docs/gear/htct/procedure\\_and\\_ils/il13-1.pdf](ftp://ftp.astmtmc.cmu.edu/docs/gear/htct/procedure_and_ils/il13-1.pdf)

Distribution: Email

**9.2.2.1** Inspect the following parts after each test and replace if worn or damaged:

	Number Required	Mack Part No.	Volvo Part No.
Thrust Washer	3	223KD249	25500345
Thrust Washer	2	223KD316A	25500919
Clutch Housing	2	53KC486C	25502585
High Range Main Shaft Gear	1	751KB4123 <sup>A</sup> or 751KB4176 <sup>B</sup>	25502562 <sup>A</sup> or 21649207 <sup>B</sup>

<sup>A</sup> Footnote A parts must be used together. Identify the test as "CONFIGURATION 2" in the space provided in the test report.

<sup>B</sup> Footnote B parts must be used together. Identify the test as "CONFIGURATION 3" in the space provided in the test report.

**9.2.3** Inspection of Air Valves—Inspect the piston of the range shift valve and the fork air cylinder and replace if damaged or visibly worn. Replace the O-rings in these valves when nicked, cut, softened, or hardened. However, replace these O-rings at least every six months. Install a 1/16-in. (1.59 mm) thick shim between the shaft cylinder and the transmission case for "CONFIGURATION 2" and "CONFIGURATION 3" tests.

**TABLE 3 Part Numbers for Approved Hardware**

Part description	Test Hardware Part Numbers	
	Mack Part Number	Volvo Part Number
Range synchronizer clutch	320KB459A <sup>A</sup> or 320KB463 <sup>B</sup>	25132811 <sup>A</sup> or 21636360 <sup>B</sup>
Synchronizer pin (3 each)	301KC33	25500623
Synchronizer pin (3 each)	301KC34	25498886
Synchronizer pin (3 each)	301KC35	25500385
Synchronizer pre-load spring (3 each)	107KD247	25500680
High range mainshaft gear	751KB4123 <sup>A</sup> or 751KB4176 <sup>B</sup>	25502562 <sup>A</sup> or 21649207 <sup>B</sup>
Low range mainshaft hub	84KC47 <sup>A</sup> or 84KC411 <sup>B</sup>	25502560 <sup>A</sup> or 21631781 <sup>B</sup>
Compound mainshaft, rear	601KC432	...
Bearing, compound mainshaft	46AX538	25499676
Snap ring (2 each)	97AX151 or 97AX171	25108495
Snap ring (2 each)	97AX267	...
Shift rail	591KC3154A	...
O-ring, low range shift piston	56AX560	25108495
Piston, high low range shift <sup>C</sup>	336KC318	...
Cylinder housing, hi-lo shift piston	55KC46A	...
O-ring, range high low shift piston	56AX588	20705679
Countershaft gear, front	757KB3322 or 757KB4108	...
Countershaft gear, rear	757KB4106	...
Range shift valve	216KD42	21041938

<sup>A</sup> Footnote A parts must be used together. Identify the test as "CONFIGURATION 2" in the space provided in the test report.

<sup>B</sup> Footnote B parts must be used together. Identify the test as "CONFIGURATION 3" in the space provided in the test report.

<sup>C</sup> The piston, high low range shift, has an outside diameter of 3.740 to 3.738 in. (95.00 to 94.95) mm.

**TABLE 4 New Parts for Each Test**

Name	Quantity	Mack Part Number	Volvo Part Number
Friction plate	8	N/A	N/A
Range fork	1	575KB457	25126946
Low range main shaft hub	1	84KC47 <sup>A</sup> or 84KC411 <sup>B</sup>	25502560 <sup>A</sup> or 21631781 <sup>B</sup>
Range synchronizer clutch	1	320KB459A <sup>A</sup> or 320KB463 <sup>B</sup>	25132811 <sup>A</sup> or 21636360 <sup>B</sup>
Pin	3	301KC33	25500623
Pin	3	301KC34	25498886
Spacer tube	3	301KC243C	25501259
Ball/Pin	6	301KC35	25500385
Spring	6	107KD247	25500650
Reaction disk	8	495KB367	25097624

<sup>A</sup> Footnote A parts must be used together. Identify the test as "CONFIGURATION 2" in the space provided in the test report.

<sup>B</sup> Footnote B parts must be used together. Identify the test as "CONFIGURATION 3" in the space provided in the test report.