



Test Monitoring Center

@ Carnegie Mellon University
6555 Penn Avenue, Pittsburgh, PA 15206, USA

<http://astmtmc.cmu.edu>
412-365-1000

Sequence IIIF Information Letter 17-1
Sequence No. 46
April 26, 2017

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Sequence III Mailing List
SUBJECT: Re-Use of Rocker Arm OHT3F-058-1

As a result of a recent Sequence III Surveillance Panel conference call, the panel agreed to allow the rocker arms, part number OHT3F-058-1, to be re-used as long as excessive wear or deformation is not present. This part number has been removed from Table A5.1 and is now shown in Table A5.2 and revised Tables A5.1 and A5.2 are attached. Cleaning requirements have been added to section 9.30. The change has been highlighted in red in Tables A5.1 and A5.2. Also, during review for this information letter, a part number discrepancy was noted for the rocker arm retainer, which has also been addressed in Table A5.2. Revisions to D6984-16a are attached and went into effect April 13, 2017.

Michael P. Raney
Engine Oil Test Development and Support
GM Powertrain Materials Engineering

Frank M. Farber
Director
ASTM Test Monitoring Center

Attachments

c: ftp://ftp.astmtmc.cmu.edu/docs/gas/sequenceiii/procedure_and_ils/IIIF/IL17-1_IIIF.pdf

Distribution: Electronic Mail

Modifies Test Method D6984-16a, as amended by Information Letter 16-3

9.30 *Valve Train Loading*—Install the rocker arm pivot retainer and the precision roller rockers and torque the rocker arm pedestal bolts according to the Sequence IIF Engine Assembly Manual, Section 6-Sheet 4. Rocker arms can be used as long as excessive wear or deformation is not present. When re-using rocker arms, clean the rocker arms using the procedure defined for the cylinder block in section 9.5.3.1, *If Using the Ultrasonic Cleaner Parts Washer*. After cleaning, soak the rocker arms in EF-411 for a minimum of one h prior to installation.

TABLE A5.1 Parts to be Replaced Every Test

Part Description	Part No.
Arm, rocker with pivot bearing	OHT3F-058-1
Bearing, kit, engine	OHT3F-042-2
Kit includes:	
Bearing, connecting rod, kit, upper and lower, OH-106 assy	
Main bearing kit, OH101 assy, includes:	3F042-01
Bearing, balance shaft front (part of 24502388)	3F042-02
Bearing, main, lower, No.1 and 3	SKF6205-2ZNRJEM
Bearing, main, lower, No.4	OH-102
Bearing, main, lower, flange, No.2	OH-103
Bearing, main, upper, flange, No.2	OH-104
Bearing, cam bushing, positions 1 and 4	OH-105
Bearing, cam bushing, positions 2 and 3	3F028-09
Bolt, camshaft sprocket	3F028-10
Bolt, cylinder head, long	24501366
Bolt, cylinder head, short	25527831
	25533811 or
	88891770
Bolt, flywheel	24505092
Bolt, main cap	24503056
Bolt, main cap, side	24505576
Bolt, rear cover housing	24503970
Bolt, rocker arm, special test	3F-058-02
Bolt/screw, thrust plate retainer	25519242
Camshaft, special test, including manganese-phosphate coating	
Cap, valve spring retainer	OHT3F-008-6
Chain, timing	24502257
Clip, retainer, piston pin	24504668
Cooler, oil, nickel plated, bypass closed	OHT3F-012-1
Damper, timing chain (includes bolt, retaining ring)	OHT3F-030-2
Filter, Pro Tec	24503893
Gasket kit, intake manifold lower	OHT3F-057-3
	89017399 or
	89017816
Gasket, cylinder head, left	24503802
Gasket, cylinder head, right	24503801
Gasket, front cover	12587003
Gasket, oil filter adapter	25534742
Gasket, oil pan	OHT3G-093-1
Gasket, oil suction tube	24501259 or
	12581570
Gasket, rear cover housing	24507388
Gasket, rocker cover	25532619
Gasket, water outlet	24502433
Gasket, water pump	24501565
Head, cylinder	24502260B or
	24502260SA
Key, camshaft sprocket	24500618
Key, valve stem keeper	1016634
Lifter, test ACI w/ flat (25338738A)	OHT3F-029-3
Piston, test, runs 1 and 2, grade 12	OHT3F-053-1
Piston, test, runs 3 and 4, grade 34	OHT3F-054-1
Piston, test, runs 5 and 6, grade 56	OHT3F-055-1
Plate, camshaft thrust, .1520 in. thickness	OHT3F-011-2
Plug, engine block core hole	24500867
Plug, cylinder head core hole	3835577
Plug, cylinder head cup	24502262
Plug, engine block, oil gallery	3835577
Plug, ignition spark	R42LTSM
Plunger, oil relief	25530949
Pushrod, special length, pkg. of 12	OHT3F-007-1
Retainer clip, piston pin pkg. of 12	OHT3F-012-1

1 ea. ring, piston, run 1, engine set	OHT3F-050-RUN1
1 ea. ring, piston, run 2, engine set	OHT3F-050-RUN2
1 ea. ring, piston, run 3, engine Set	OHT3F-051-RUN3
1 ea. ring, piston, run 4, engine Set	OHT3F-051-RUN4
1 ea. ring, piston, run 5, engine Set	OHT3F-052-RUN5
1 ea. ring, piston, run 6, engine Set	OHT3F-052-RUN6
Rocker arm assembly (includes: 3F058-02)	OHT3F-058-1
Rod, connecting (powdered metal)	12593374
Seal, crankshaft front oil (24504098)	OHT3G-092-1
Seal, crankshaft rear oil (25534760)	OHT36-091-1
Seal, exhaust valve stem	OHT3F-061-1
Seal, intake valve stem	OHT3F-060-1
Spring, oil relief valve	1262505
Spring, valve special test (color code yellow)	OHT3F-059-5
sprocket, camshaft	24505306
Valve, exhaust (STD)	12579949
Valve, intake (STD)	12569550

^A These heads may be used for non-reference testing on or after March 18, 2014, provided that the laboratory has conducted a successful reference oil test.

TABLE A5.2 Parts to be Replaced As Needed

Part Description	Part Number
ADAPTER, BLOWBY BREATHER TUBE	OHT3F-040-1
ADAPTER, OIL FILTER	OHT3F-035-1
Adapter, Oil Filter, with External Bypass	OHT3F-080-1
Adapter, Throttle Body, Air Inlet	OHT3F-001-2
Balancer, Harmonic	12563267
Bearing, Balance Shaft Front (part of 24502388)	SKF6205-2ZNRJEM
Block, Engine Assembly	24502286
Bolt, Connecting Rod	11610158
Bolt, Counter Balance Gear	24501367
Bolt, Counter Balance Shaft Retainer	24500055
Bolt, Engine Front Cover	24504712
Bolt, Harmonic Balancer	24504736
Bolt, Lower Intake	9440227
Bolt, Oil Filter Adapter	24504713
Bolt, Oil Pan	1160052
Bolt, Oil Suction Tube	24505570
Bolt, Rear Cover Housing	11518075
Bolt, Rocker Cover	24502164
Bolt, Screw Camshaft Sensor	25526395
Bolt, Screw, Oil Gearotor, Cover	25519242
Bolt, Stud Type, Front Cover & Crankshaft Sensor (long)	24504718
Bolt, Stud Type, Front Cover & Crankshaft Sensor (short)	24504717
Bolt, Upper Intake Long	24505205
Bolt, Upper Intake Short	24506498
Bolt, Upper Intake, Stud	24502453
BRACKET, BREATHER TUBE	OHT3F-041-1
BREATHER TUBE, S.S. MATERIAL	OHT3F-075-1
Bushing, Balance Shaft Rear	24503193
BUSHING, ROCKER COVER	OHT3F-028-1
BUSHING, ROCKER COVER	OHT3F-028-2
Coil, Ignition	10472401 or 89056799
CONNECTOR, MODIFIED FOR LENGTH, GM PN 24502883	OHT3F-039-2

Part Description	Part Number
COVER, FRONT, IMPREGNATED	OHT3G-085-1
COVER, Rear, crankshaft rear seal housing	OHT3G-088-1
Cover, Oil Gearotor	25521935
Cover, Rocker Arm Valve Cover Left Side Plastic	12590366
Crankshaft	24502168
Cylinder Head	24502260S
DIP STICK, METRIC, EXTENDED LENGTH	OHT3G-064-1
FITTING, OIL FILTER ADAPTER	OHT3F-043-1
FLYWHEEL, MANUAL, MODIFIED P.N. 24503285	OHT3F-020-2
GASKET, EXHAUST, END PLATE	OHT3F-009-1
GASKET, EXHAUST, FLANGE, METAL	OHT3F-018-1
Gasket, Manifold, Upper Intake	89017556
GASKET, OIL COOLER, PKG. OF 50	OHT3F-074-1
GASKET, OIL FILTER, PKG. OF 50	OHT3F-062-1
Gear, Balanceshaft Drive	24504792
Gear, Balanceshaft Driven	24503524
Gear, Counter Balance Drive	24504792
Gear, Counter Balance Shaft	24503524
Grommet, Rocker Arm Valve cover bolt	25534749
HARNESS, COIL PACK SEGMENT	3F022-2
HARNESS, FUEL INJECTOR SEGMENT	3F022-1
HARNESS, WIRING, DYNO W/ OHT3F-056-1 SENSOR	OHT3F-022-1
HOUSING, ASSEMBLY, BYPASS VALVE	OHT3F-084-1
Injector, Fuel	17120601
Key, Crankshaft	12563282
Magnet, Camshaft Position Sensor	10456195
MANIFOLD, CAST IRON	OHT3F-003-0
MANIFOLD, EXHAUST, WATER COOLED ASSY (ONE BANK)	OHT3F-003-1
ASSEMBLY INCLUDES:	
1 EA. RUNNER, EXHAUST MANIFOLD	OHT3F-004-1
1 EA. PLATE, REAR, EXHAUST MANIFOLD	OHT3F-005-1
1 EA. ELBOW, EXHAUST, MODIFIED	OHT3F-005A-1
1 EA. PLATE, FRONT, EXHAUST MANIFOLD	OHT3F-006-1
2 EA. GASKET, EXHAUST, END PLATE	OHT3F-009-1
1 EA. GASKET, EXHAUST, FLANGE, METAL	OHT3F-018-1
Manifold, Lower Intake	24508923
Manifold, Upper Intake	89017272
METER, BLOWBY	RX-116169-A1 REV N
Module, Coil Pack	12617924
MOUNT FRONT ENGINE W/ BOLT PATTERN FOR COIL PACK	OHT3F-026-1
MOUNT, REAR ENGINE HOUSING W/AIR STARTER, MUFFLER & SHIM PACK	OHT3F-025-1
ASSEMBLY INCLUDES:	
STARTER, AIR	3F025-03
MUFFLER, STARTER, AIR	3F025-04
SHIM PACK, STARTER, AIR	3F025-05
MUFFLER, STARTER, AIR	3F025-04
Nut, Throttle Body Fuel Rail Retainer	3530297
Nut, Throttle body Retainer	3530297
OIL FILTER HOUSING ASSEMBLY, NO BYPASS, IMPREGNATED	OHT3G-080-1
OUTLET, COOLANT	OHT3F-034-1
PAN, IIIF TEST, NICKEL PLATED	OHT3F-073-1
PCM, SPECIAL	OHT3F-021-1

Part Description	Part Number
PCV, DUMMY	OHT3F-002-1
Pin, Cylinder Head Locating	25536320
Pin, Front Cover Lower	25536323
Pin, Front Cover Upper	24501162
Pin, Piston, wrist package of 6	OHT3F-014-1
Pin, transmission locating	12338076
PLATE, EGR BLOCKOFF	OHT3F-024-1
PLATE, FRONT, EXHAUST MANIFOLD	OHT3F-006-1
PLATE, REAR, EXHAUST MANIFOLD	OHT3F-005-1
PLATE, WATER PUMP HOUSING	OHT3F-031-1
Plug, Auto Hex, Socket, (Main Oil Gallery Block Off)	444777
PLUG, DIP STICK	OHT3F-065-1
PLUG, DRAIN, MODIFIED	OHT3F-063-1
Pump, Oil, Gearoter Set	24505433
Rail, Fuel Injector	12587077
REAMER, DIP STICK AND DIP STICK HOLE PLUG	OHT3F-071-1
Regulator, Fuel Pressure, on Rail	89017530 or 89060416
Retainer, Counter Balance, Timing Chain Oiler	24500374
Retainer, Rocker arm (replace after 6 tests)	24502278
Rocker arm assembly	OHT3F-58-1
RUNNER, EXHAUST MANIFOLD	OHT3F-004-1
Screen, Oil pump (w/suction pipe)	24505569
Seal, Ignition Coil	1989579
Seal, oil pan drain plug (o ring)	3536966
Sensor, Camshaft Position	10456148
Sensor, Crankshaft Position	10456161
Sensor, MAF	19112543 or 19179715
SENSOR, MODIFIED COOLANT TEMPERATURE	OHT3F-056-1
Shaft Assembly, Counter Balance	24506557
Shield, Crankshaft Position Sensor	24506440 or 12591982
SHIM PACK, STARTER, AIR	3F025-05
SHIM, STEEL, 0.127 mm THICK, 10 PER PKG.	OHT3F-072-005
SHIM, STEEL, 0.254 mm THICK, 10 PER PKG.	OHT3F-072-010
SHIM, STEEL, 0.381 mm THICK, 10 PER PKG.	OHT3F-072-015
SHIM, STEEL, 0.508 mm THICK, 10 PER PKG.	OHT3F-072-020
SHIM, STEEL, 0.787 mm THICK, 10 PER PKG.	OHT3F-072-031
SLEEVE, VALVE STEM PROTECTORS (PKG. OF 100)	OHT3F-070-1
SPROCKET, CRANKSHAFT, SPECIAL 2 PC	OHT3F-036-1
STARTER, AIR	3F025-03
Stud, front cover (2)	24504717
Stud, front cover (2)	24504718
Support, throttle body	24504697
Throttle Body (2 Bolt Mass Air Flow Sensor)	24507235
TOOL, CAMSHAFT BUSHING INSTALLATION	OHT3F-019-2
TOOL, OIL PUMP PRIMER	OHT3F-038-1
Tube, throttle body to fuel pressure regulator	24505671