

Cam Lobe Motors

**John Deere Waterloo Works
CTM19 (15MAY97)**

LITHO IN U.S.A.
ENGLISH

Introduction

FORWARD

This component technical manual contains necessary instructions to repair John Deere Cam Lobe Motors. This manual also includes theory of operation and testing procedures.

Use this component technical manual in conjunction with the machine technical manual. See the machine technical manual for information on motor removal and installation.



This is the safety-alert symbol. When you see this symbol on the machine or in this manual, be alert to the potential for personal injury.

MANUAL ORGANIZATION

GROUP 00 - INTRODUCTION AND SAFETY
GROUP 01 - GENERAL
GROUP 05 - STEERABLE COMPONENTS
GROUP 10 - BRAKE COMPONENTS

GROUP 15 - AXLE END PLAY
GROUP 20 - BASIC MOTOR REPAIR
GROUP 105 - OPERATION AND TESTS

NOTICE TO THE DEALER

This component technical manual should be used for the repair of John Deere Cam Lobe Motors. This CTM replaces CTM-19 dated (5-89) and also replaces TM-1289 for O.E.M. applications. Cam lobe motor repair information appearing in the following machine technical manuals should be discarded and CTM-19 should be used.

IMPORTANT: Before beginning repair or making adjustments to axle end play, be sure to become familiar with *Motor Identification* and the *Motor Serial Number Plate*. (See INTRODUCTION AND SAFETY—Group 00, and GENERAL—Group 01.)

TM-1202—6620, 7720, 8820 Combines

TM-1244—5720 and 5820 Forage Harvesters

TM-1352—5730 and 5830 Forage Harvesters

**DISCARD—TM-1289 dated Jan 86
CTM-19 dated (5-89)**

Introduction

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INDX

INTRODUCTION

This Component Technical Manual (CTM-19) covers recommended repair procedures for John Deere Cam Lobe Motors. Before beginning repair, thoroughly clean external surfaces of motor since cleanliness is most important when servicing cam lobe motors. Always use clean tools and work in a clean environment.

Motor should be mounted on a repair stand when servicing.

This manual contains SI Metric units of measure, followed immediately by the U.S. customary units of measure.

RX,CTM1900,1 -19-25OCT90

MOTOR IDENTIFICATION

Each 50 and 60 Series motor has a serial number plate located on the inner cover. Major design changes are noted within this Component Technical Manual (CTM) and will refer to the information on the serial number plate.

The seventh digit, reading from left-to-right, on the TOP line of the Serial Number Plate refers to the code for major revision.

Motors with serial plates having a 3 in this position will have a slightly different design. This CTM will reference REVISION CODE for difference in repair procedures.

ROM -- 3 - - - - -

REVISION CODE 1 and 2 represents 50 Series motors and REVISION CODE 3 represents 60 Series motors.

RX,CTM1900,2 -19-25OCT90

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



DX,ALERT -19-04JUN90

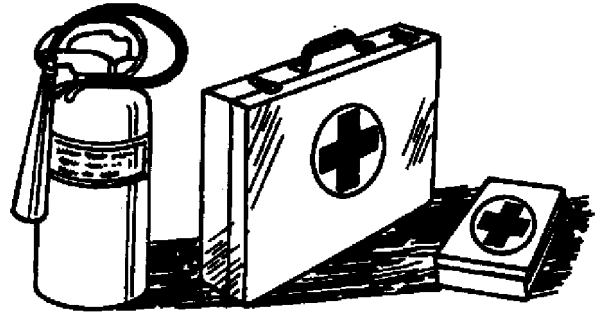
T81389 -UN-07DEC88

PREPARE FOR EMERGENCIES

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



DX,FIRE2 -19-04JUN90

TS291
-UN-23AUG88

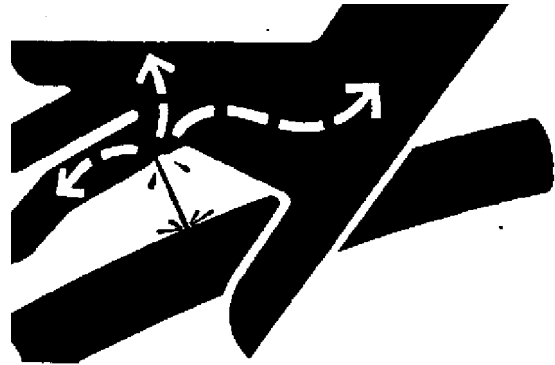
AVOID HIGH-PRESSURE FLUIDS

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury may call the Deere & Company Medical Department in Moline, Illinois, or other knowledgeable medical source.



DX,FLUID,NA -19-11JUN90

X9811
-UN-23AUG88

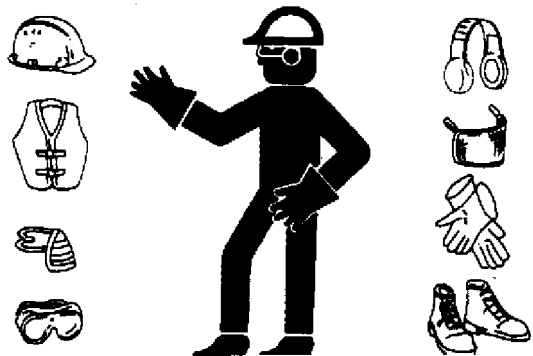
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



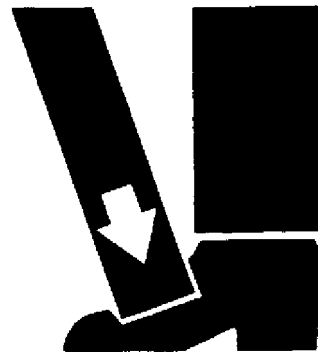
DX,WEAR -19-10SEP90

TS206 -UN-23AUG88

USE PROPER LIFTING EQUIPMENT

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.



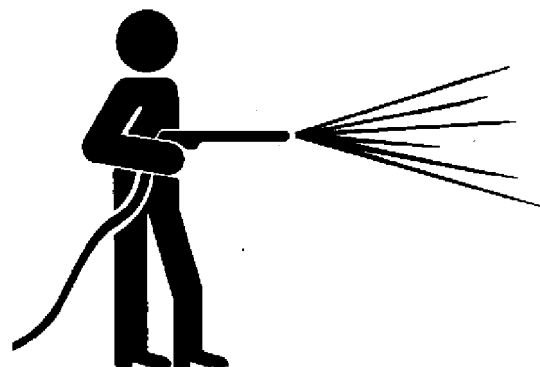
DX,LIFT -19-04JUN90

TS226 -UN-23AUG88

WORK IN CLEAN AREA

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.



DX,CLEAN -19-04JUN90

T6642EJ -UN-18OCT88

USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. **DO NOT** use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.



-UN-08NOV69
TS779

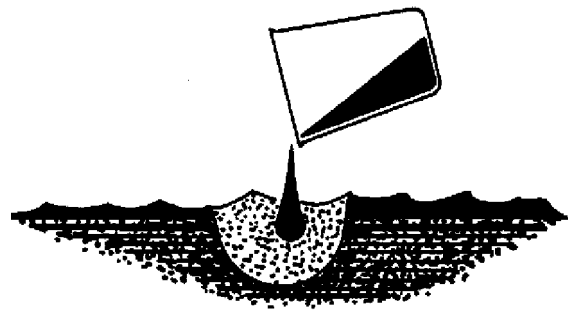
DX,REPAIR -19-04JUN90

DISPOSE OF FLUIDS PROPERLY

Improperly disposing of fluids can harm the environment and ecology. Before draining any fluids, find out the proper way to dispose of waste from your local environmental agency.

Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

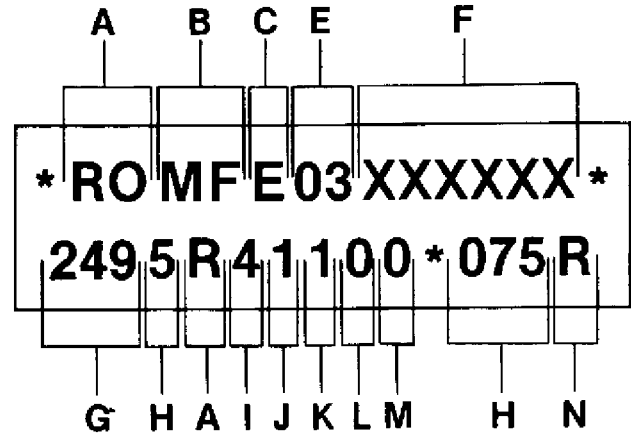
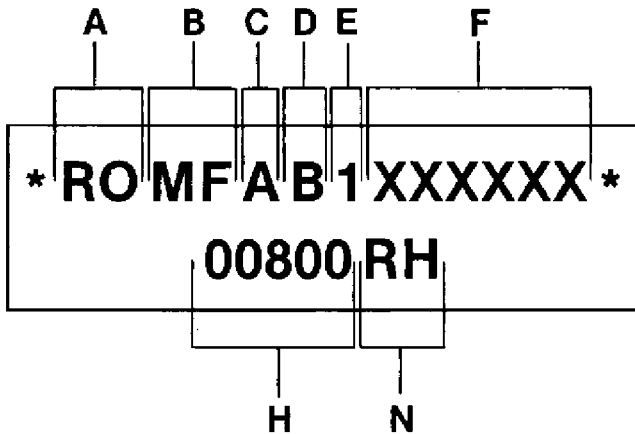
DO NOT pour oil into the ground, down a drain, or into a stream, pond, or lake. Observe relevant environmental protection regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, and other harmful waste.



-UN-23AUG88
TS222

DX,DRAIN -19-05JUN90

MOTOR SERIAL NUMBER PLATE



- A—Producing Factory
- B—Type
 - MF—Motor
- C—Displacement (per rev)
 - A-800 cm³ (49 in.³)
 - B-1000 cm³ (61 in.³)
 - C-1600 cm³ (98 in.³)
 - D-2000 cm³ (122 in.³)
 - E-1200 cm³ (75 in.³)
- D—Usage
 - A or C—Left
 - B or D—Right
- E—Revision Code

- F—Serial Number
- G—Master Machine Code
 - 248-50 Series (2 in. axle)
 - 249-60 Series (3 in. axle)
- H—Displacement (per rev)
 - 1-800 cm³ (49 in.³)
 - 2-1000 cm³ (61 in.³)
 - 3-1600 cm³ (98 in.³)
 - 4-2000 cm³ (122 in.³)
 - 5-1200 cm³ (75 in.³)
- I—Mount/Rotation *
 - 1-Fixed/Clockwise
 - 2-Fixed/Counterclockwise
 - *3-Yoke/Clockwise
 - *4-Yoke/Counterclockwise
 - 5-Knee/Clockwise
 - 6-Knee/Counterclockwise
 - 7-Fixed Pentastar/Clockwise
 - 8-Fixed Pentastar/Counterclockwise

- J—Shaft **
 - 1-Flanged
 - **2-Splined
- K—Steering
 - 0-No Steering Arm
 - 1-Steering Arm
- L—Brake
 - 0-No Brake
 - 1-Mechanical Brake

- M—Destroke Option ***
 - ***0-No Destroke
 - 1-Destroke
- N—Rotation
 - R-Clockwise
 - L-Counterclockwise

The motor serial number plate is located on the inner cover. List the entire TOP line of the serial number plate in any correspondence. Some motors, of current design, may have a part number on the SECOND

line of the serial number plate rather than the coded information shown above.

MOTORS PRIOR TO SERIAL NUMBER -- 004400

- I—Mount/Rotation *
 - *3-Yoke/Counterclockwise
 - *4-Yoke/Clockwise

- J—Shaft **
 - **2-Splined (Pentastar Mount)

- M—Destroke Option ***
 - ***0-No Destroke

RX,CTM1901,1 -19-14NOV90

RW18137 -JUN-30OCT90

General/Specifications

BASIC MOTOR SPECIFICATIONS

General	800 cm ³	1000 cm ³	1200 cm ³	1600 cm ³	2000 cm ³
No. of pistons	12	15 ***	18	24	24
Piston Carrier Bore ID	A	A ***	A	A	B
Piston OD	C	C ***	C	C	D
Rated Speed ** (rpm)	150	150	150	150	150
50 Series Max. Operating Pressure * (psi)	6000	6000	6000	6000	6000
60 Series Max. Operating Pressure * (psi)	NA	6250	6250	6250	6000
Max. Disengaged Speed (rpm)	220	220	220	220	220
A—24.900 - 24.916 mm (0.9803 - 0.9809 in.)					
B—27.813 - 27.829 mm (1.0950 - 1.0956 in.)					
C—24.872 - 24.882 mm (0.9792 - 0.9796 in.)					
D—27.783 - 27.793 mm (1.0938 - 1.0942 in.)					
NA—Not Applicable					

* See Machine Manual for System Operating Pressure

** 220 rpm—Fixed Mounts at 1/3 or 2/3 Displacements

*** Early Version 1000 cm³ Motors use 24 pistons with piston OD of 19.650—19.660 mm (0.7736—0.7740 in.) with a piston carrier bore ID of 19.665—19.6685 mm (0.7742—0.7744 in.)

RX,CTM1901,2 -19-15NOV90

General/Specifications

OVERALL MOTOR DIMENSIONS

Dimension (approximate)	Steerable	Fixed Mount	Fixed Mount With Brake
Height	* 562 mm (22.1 in.)	351 mm (13.8 in.)	437 mm (17.2 in.)
Depth	**458 mm (18.0 in.)	399 mm (15.7 in.)	524 mm (20.6 in.)







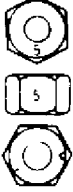
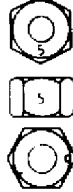
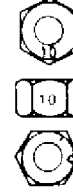
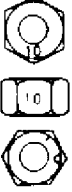
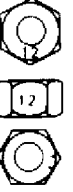
* Measured from top and bottom connectors

** Measured from back-side of yoke to axle flange

RX,CTM1901,3 -19-13NOV90

01
3

METRIC CAP SCREW TORQUE VALUES

Property Class and Head Markings	4.6 	4.8 	8.8  9.8 	10.9 	12.9 
Property Class and Nut Markings	5 	5 	10 	10 	12 

DIA.	WRENCH SIZE	4.6		4.8		8.8 or 9.8		10.9		12.9	
		OIL	DRY	OIL	DRY	OIL	DRY	OIL	DRY	OIL	DRY
		N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)
M3	5.5mm	0.4(0.2)	0.5(0.3)	0.5(0.4)	0.7(0.5)	1(0.8)	1.3(1)	1.5(1)	2(1.5)	1.5(1)	2(1.5)
M4	7mm	0.9(0.6)	1.1(0.8)	1(0.9)	1.5(1)	2.5(1.5)	3(2)	3.5(2.5)	4.5(3)	4(3)	5(4)
M5	8mm	1.5(1)	2.5(1.5)	2.5(1.5)	3(2)	4.5(3.5)	6(4.5)	6.5(4.5)	9(6.5)	7.5(5.5)	10(7.5)
M6	10mm	3(2)	4(3)	4(3)	5.5(4)	7.5(5.5)	10(7.5)	11(8)	15(11)	13(9.5)	18(13)
M8	13mm	7(5)	9.5(7)	10(7.5)	13(10)	18(13)	25(18)	25(18)	35(26)	30(22)	45(33)
M10	16mm	14(10)	19(14)	20(15)	25(18)	35(26)	50(37)	55(41)	75(55)	65(48)	85(63)
M12	18mm	25(18)	35(26)	35(26)	45(33)	65(48)	85(63)	95(70)	130(97)	110(81)	150(111)
M14	21mm	40(30)	50(37)	55(41)	75(55)	100(74)	140(103)	150(111)	205(151)	175(129)	240(177)
M16	24mm	60(44)	80(59)	85(63)	115(85)	160(118)	215(159)	235(173)	315(232)	275(203)	370(273)
M18	27mm	80(59)	110(81)	115(85)	160(118)	225(166)	305(225)	320(236)	435(321)	375(277)	510(376)
M20	30mm	115(85)	160(118)	165(122)	225(166)	320(236)	435(321)	455(356)	620(457)	535(395)	725(535)
M22	33mm	160(118)	215(159)	225(167)	305(225)	435(321)	590(435)	620(457)	840(620)	725(535)	985(726)
M24	36mm	200(148)	275(203)	285(210)	390(288)	555(409)	750(553)	790(583)	1070(789)	925(682)	1255(926)
M27	41mm	295(218)	400(295)	415(306)	565(417)	810(597)	1100(811)	1155(852)	1565(1154)	1350(996)	1835(1353)
M30	46mm	400(295)	545(402)	565(417)	770(568)	1100(811)	1495(1103)	1570(1158)	2130(1571)	1835(1353)	2490(1837)
M33	51mm	545(402)	740(546)	770(568)	1050(774)	1500(1106)	2035(1500)	2135(1575)	2900(2139)	2500(1844)	3390(2500)
M36	55mm	700(516)	950(700)	990(730)	1345(992)	1925(1420)	2610(1925)	2740(2021)	3720(2744)	3205(2364)	4355(3212)

CAUTION: Use only metric tools on metric hardware. Other tools may not fit properly. They may slip and cause injury.

DO NOT use these values if a different torque value or tightening procedure is listed for a specific application. Torque values listed are for general use only. Check tightness of cap screws periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.










Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used,

these should only be tightened to the strength of the original.

Make sure fastener threads are clean and you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of amount shown in chart. Tighten toothed or serrated-type lock nuts to full torque value.

INCH CAP SCREW TORQUE VALUES

SAE Grade	Head Markings	SAE Grade	Nut Markings	SAE Grade	Head Markings	SAE Grade	SAE Grade	Nut Markings	SAE Grade
SAE GRADE 1 SAE GRADE 2	 No Mark	2	 No Mark	SAE GRADE 5 SAE GRADE 5.1 SAE GRADE 5.2	  	5 Nut Markings 	SAE GRADE 8 SAE GRADE 8.2	 	8 Nut Markings 

DIA.	WRENCH SIZE	SAE GRADE 1		*SAE GRADE 2		SAE GRADE 5		SAE GRADE 8	
		OIL	DRY	OIL	DRY	OIL	DRY	OIL	DRY
		N•m(lb-in)	N•m(lb-in)	N•m(lb-in)	N•m(lb-in)	N•m(lb-in)	N•m(lb-in)	N•m(lb-in)	N•m(lb-in)
#6		0.5(4.5)	0.7(6)			1.4(12)	1.7(15)		
#8		0.9(8)	1.2(11)			2.4(21)	3.2(28)		
#10		1.4(12)	1.8(16)			3.4(30)	4.6(41)		
#12		2(19)	2.8(25)			5.4(48)	7.3(65)		
		N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)	N•m(lb-ft)
1/4	7/16	3.5(2.5)	4(3)	5(4)	7(5)	8(6)	11(8)	12(8.5)	16(12)
5/16	1/2	7(5)	9(6.5)	10(7.5)	14(10)	16(12)	23(17)	24(18)	33(24)
3/8	9/16	12(8.5)	16(12)	19(14)	24(18)	30(22)	41(30)	41(30)	54(40)
7/16	5/8	19(14)	26(19)	30(22)	41(30)	47(35)	68(50)	68(50)	95(70)
1/2	3/4	24(21)	41(30)	47(35)	61(45)	75(55)	102(75)	102(75)	142(105)
9/16	13/16	41(30)	54(40)	68(50)	88(65)	108(80)	142(105)	149(110)	203(150)
5/8	15/16	54(40)	75(55)	88(65)	122(90)	149(110)	197(145)	203(150)	278(205)
3/4	1-1/8	102(75)	136(100)	163(120)	217(160)	258(190)	353(260)	366(270)	495(365)
7/8	1-5/16	163(120)	244(185)	163(120)	224(165)	414(305)	563(415)	590(435)	800(590)
1	1-1/2	244(180)	332(245)	244(180)	332(245)	624(460)	848(625)	881(650)	1193(880)
1-1/8	1-11/16	346(255)	468(345)	346(255)	468(345)	780(575)	1058(780)	1248(920)	1695(1250)
1-1/4	1-7/8	488(360)	664(490)	488(360)	665(490)	1098(810)	1492(1100)	1763(1300)	2393(1785)
1-3/8	2-1/16	637(470)	868(640)	637(470)	868(640)	1438(1061)	1953(1440)	2312(1705)	3140(2315)
1-1/2	2-1/4	848(625)	1153(850)	848(625)	1153(850)	1912(1410)	2590(1910)	3065(2260)	4163(3070)

DO NOT use these values if a different torque value or tightening procedure is listed for a specific application. Torque values listed are for general use only. Check tightness of cap screws periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

*For SAE Grade 2 fasteners 152 mm (6 in.) or less in length, use torque values for SAE Grade 2. For fasteners longer than 152 mm (6 in.), use SAE Grade 1 torque values.

Make sure fastener threads are clean and you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of amount shown in chart. Tighten toothed or serrated-type lock nuts to full torque value.

General/Inch Series Torque Chart

01
6

Group 05
Steerable Components

ESSENTIAL TOOLS

NOTE: Order tools from your SERVICE-GARD™ Catalog. Some tools may be available from a local supplier.

DX,TOOLS -19-04JUN90

Pivot Pin Bushing Installer JDG133

RW13717 -UN-10FEB89

Install pivot pin bushings in inner cover



JDG133 -19-25OCT90

SERVICE EQUIPMENT AND TOOLS

NOTE: Order tools from the U.S. SERVICEGARD™ Catalog or from the European Microfiche Tool Catalog (MTC). Some tools may be available from a local supplier.

Name	Use
JDH6 O-Ring Seal Hook	Install and remove O-rings and backing rings
D01045AA Bushing, Bearing, and Seal Driver Set	Install pivot pin bushing seals

RX,CTM1905,1 -19-26OCT90

OTHER MATERIAL

Number	Name	Use
—	Petroleum Jelly	Lubricate thrust washers and seals during assembly

RX,CTM1905,2 -19-26OCT90

SPECIFICATIONS

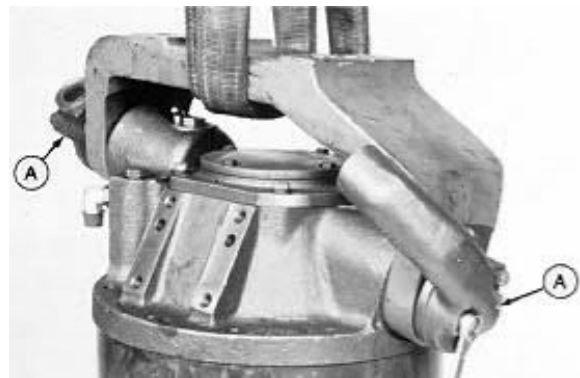
Item	Measurement	Specification
Pivot Pin Cap-to-Inner Cover	Torque	68 N·m (50 lb-ft)
Steering Arm 50 Series	Torque	162 N·m (120 lb-ft)
Steering Arm 60 Series		
Large Cap Screws	Torque	326 N·m (240 lb-ft)
Small Cap Screws	Torque	162 N·m (120 lb-ft)

RX,CTM1905,3 -19-26OCT90

REMOVE AND INSTALL STEERING YOKE

CAUTION: The steering yoke is heavy. Use proper lifting equipment to prevent injury.

1. Support the yoke with a chain hoist.
2. Remove caps (A), oil tube and pivot pins from inner cover. Support yoke during removal to prevent damage to oil tubes.

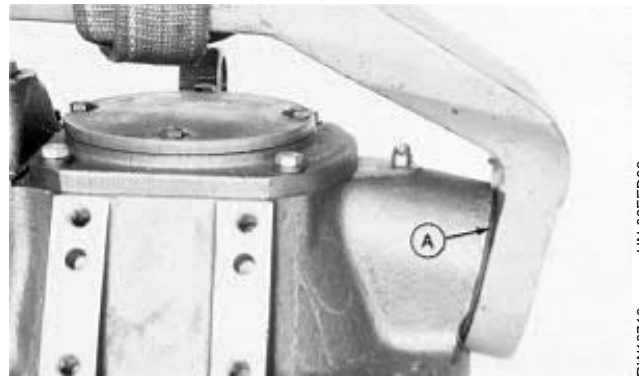


RX,CTM1905,4 -19-13NOV90

3. Remove yoke and thrust washers (A).

NOTE: Apply petroleum jelly to washers to hold them in place.

4. Install yoke with thrust washers.



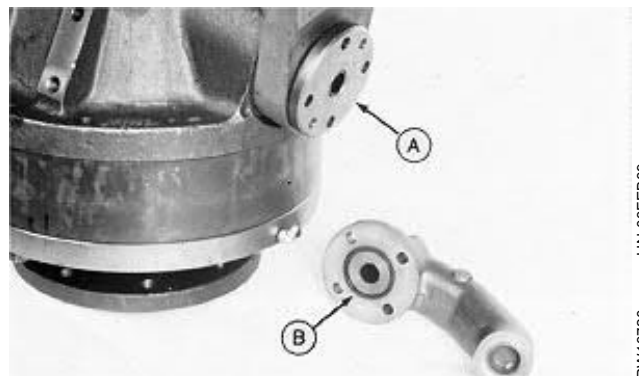
RX,CTM1905,5 -19-13NOV90

5. Install pivot pins (A) with oil tube.

NOTE: Some Revision Code 2 motors may use Revision Code 3 caps.

For REVISION CODE 1 or 2, perform Step 6a.

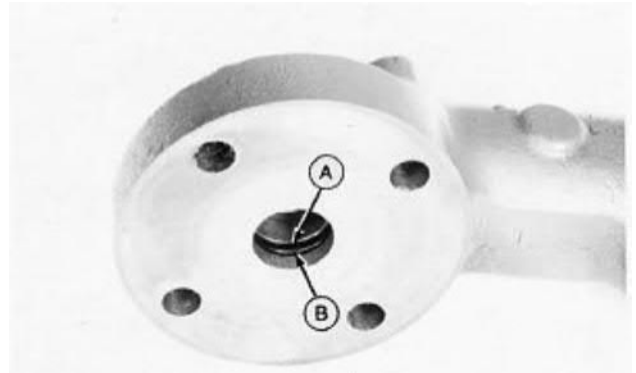
- 6a. Install new O-ring (B) in oil cap.



RX,CTM1905,6 -19-13NOV90

For REVISION CODE 3, perform Step 6b.

6b. Install new O-ring (A), then install backup ring (B) in cap.

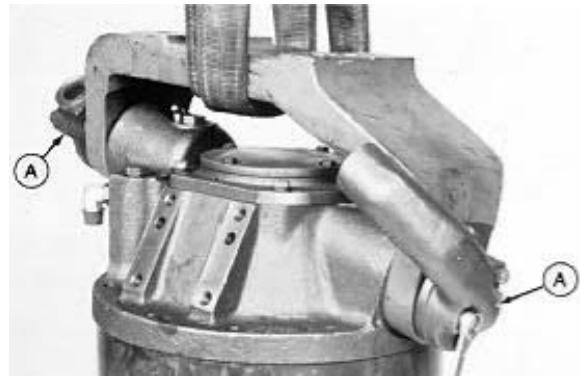


RX,CTM1905.7 -19-13NOV90

RW13721 -UN-03FEB89

7. Install washers and cap screws in caps (A). Tighten cap screws to 68 N-m (50 lb-ft).

8. Pump multipurpose grease into pivot pin grease fittings on the inner cover.



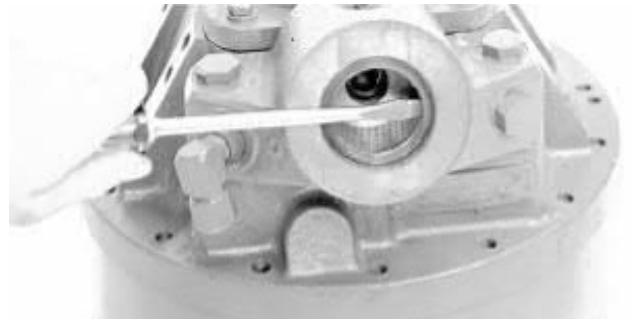
RX,CTM1905.8 -19-13NOV90

RW13718 -UN-03FEB89

DISASSEMBLE AND ASSEMBLE PIVOT PINS, BUSHINGS, AND SEALS

IMPORTANT: Do not damage the thrust washer contact surface.

1. Remove pivot pin seals.



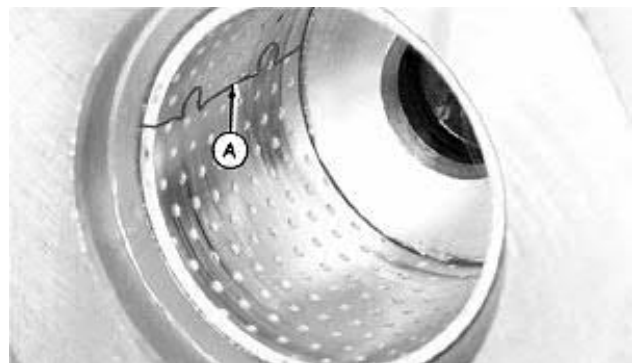
RX,CTM1905.9 -19-25OCT90

R37686 -UN-11JUL89

IMPORTANT: Do not damage the bushing bores in the inner cover.

2. Inspect bushing for wear.

3. Remove bushing from bore by peeling the bushing starting at seam (A).

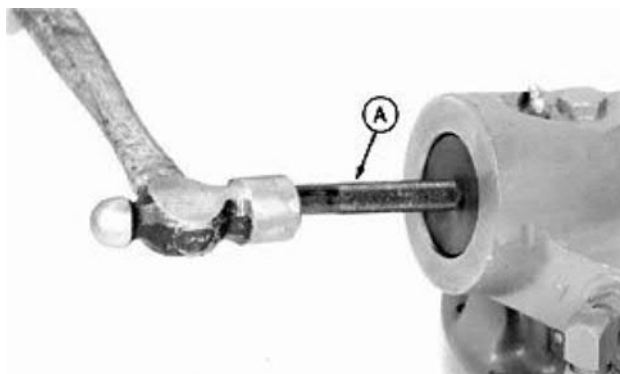


RX,CTM1905.10 -19-13NOV90

R36075 -UN-11JUL89

05
4

4. Install new pivot pin bushings in inner cover using JDG133 Pivot Pin Bushing Installer.



RX,CTM1905,11 -19-25OCT90

-UN-11JUL89
R36098

5. Push new seals into inner cover using a 1-15/16 in. and a 2-1/2 in. disk from D01045AA Bushing, Bearing, and Seal Driver Set.



RX,CTM1905,12 -19-26OCT90

-UN-11JUL89
R36099

6. Replace O-ring and backup ring in inner cover. Backup ring is closest to pivot pin bushing bore.

7. Replace O-ring and backup ring in pivot pin or in pivot pin cap in some motors. Backup ring will be closest to motor when assembled.

8. Install yoke. (See Remove and Install Steering Yoke, this group.)



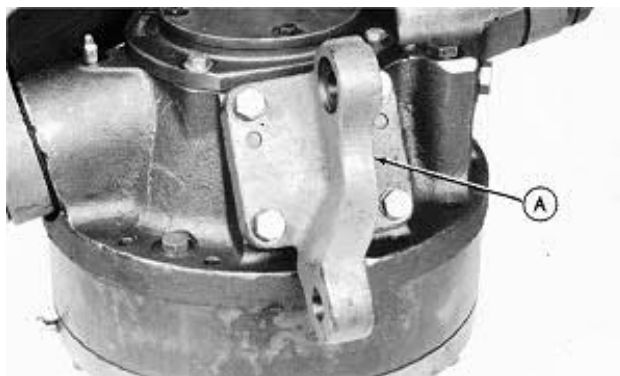
RX,CTM1905,13 -19-25OCT90

-UN-11JUL89
R36116

9. Tighten cap screws on steering arm (A).

TORQUE SPECIFICATION

50 Series (Revision Code 1—2)	162 N·m (120 lb-ft)
60 Series (Revision Code 3)	
Large Cap Screws	326 N·m (240 lb-ft)
Small Cap Screws	162 N·m (120 lb-ft)



RX,CTM1905,14 -19-26OCT90

-UN-10FEB89
RW13768

SERVICE EQUIPMENT AND TOOLS

NOTE: Order tools from the U.S. SERVICEGARD™ Catalog or from the European Microfiche Tool Catalog (MTC). Some tools may be available from a local supplier.

Name	Use
D01003AA Repair Stand	Hold motor during repair
D01004AA Universal Mounting Arms (four)	Mount motor to repair stand
JDG19 Special Mounting Brackets	Lifting motor and components

RX,CTM1910,1 -19-25OCT90

SPECIFICATIONS

Item	Measurement	Specification
Brake Cover-to-Bearing Housing Cap Screws	Torque	550 N·m (400 lb-ft)

RX,CTM1910,2 -19-25OCT90

DISASSEMBLE, INSPECT, AND ASSEMBLE BRAKE COMPONENTS

NOTE: Brake components may be serviced with motor mounted on machine if brake housing is accessible.

1. Mount motor to D01003AA Repair Stand with four D01004AA Universal Mounting Arms.
2. Remove rubber boot and brake housing.

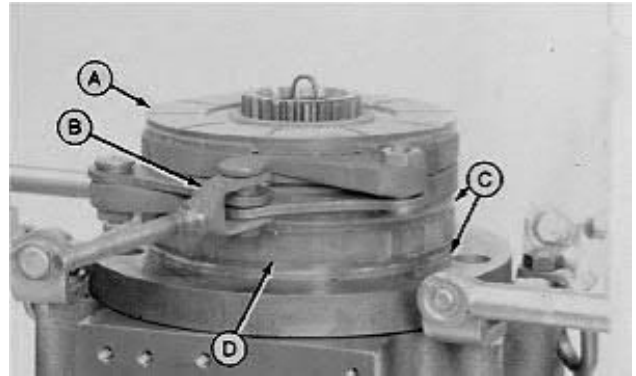


R39448 -JUN-02DEC88

RX,CTM1910,3 -19-13NOV90

3. Disassemble brake assembly by removing parts (A—D).

- A—Brake Disk
- B—Double Plate Assembly
- C—Brake Disk
- D—Separator Plate

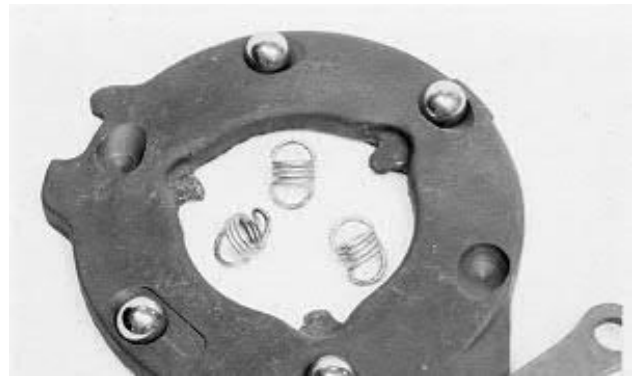


RX,CTM1910,4 -19-14NOV90

R39449 -UN-02DEC88

CAUTION: Hold a shop rag around each spring during removal and installation to prevent spring from flying causing the possibility of injury.

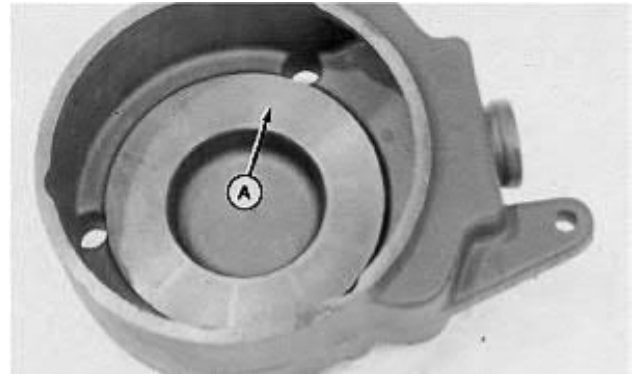
- 4. Disassembly double plate assembly.
- 5. Inspect parts for excessive wear or damage and replace as required.



RX,CTM1910,5 -19-25OCT90

R38799 -UN-02DEC88

6. Inspect machined surface (A) in brake housing for galling or excessive wear.



RX,CTM1910,6 -19-25OCT90

R39450 -UN-02DEC88

NOTE: Brake disks may or may not have grooves in facings.

- 7. Inspect brake disks. Replace if peening is evident, splines show backlash or friction material is flaked, pitted or burned.
- 8. Inspect separator plate. Replace if tangs are worn or surface is galled or scored.



RX,CTM1910,7 -19-25OCT90

R38802 -UN-02DEC88