

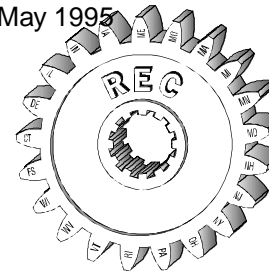
**JD450C\***  
**CERTIFIED RELIFE**  
**SPECIFICATION**

**ITEM**

Repower Engine 4 Cylinder 4039D  
Clutch and Pressure Plate AT104345  
H-L-R High Range Clutch  
H-L-R Reverse Clutch  
H-L-R Low Range Clutch  
Steer Clutch (2)  
Clutch Oil Manifold AR56620  
    R52038 Manifold Gasket  
    AR53084 Shift Valve Housing  
    R39781 Valve Spool  
    R78179 Valve Spool  
Final Drive Parts (2)  
    T75360, AT72157, JD9055, T31999  
    T55233, JD9118, JD9326, JD8992  
    JD8206, AT18387, T112130, T148796  
Hydraulic Pump AT38801 (23 GPM)  
Valve 3 Spool AT71452  
Cylinder Seal Kit AR105453(2)  
Structure Bushing U16875(2)  
Radiator AT11677  
Alternator TY6607  
Starter RE50095  
Sheet Metal  
    T38008 Lift Side  
    AT39135 Right Side  
    AT64826 Hood  
Undercarriage  
    AT71674 Roller (10)  
    T129880 Sprocket (2)  
    AT31129 Idler Roller (2)  
    AT86204 Front Idler Kit (2)  
    AT148564 16" Track with Shoes (2)  
Push Beam AT58689  
Blade AT104970 (96")  
Battery AT29160(2)  
Engine Wiring Harness AT64568  
Seat  
    AT18697 Back Cushion  
    AT23482 Seat Cushion  
    AT18698 Right Arm Cushion  
    AT18699 Left Arm Cushion  
Fan Belt T24473  
Lights AT18815(3)  
Muffler AT64813  
    AR38397 Muffler Extension  
Hourmeter AT160120  
Paint  
Miscellaneous Bearings and Pulleys

REC Newsnote #6

May 1995



## Rebuilding Used Crawler Tractors

*Roscommon Equipment Center*  
**Northeast Forest Fire Supervisors**  
*in Cooperation with*  
**Michigan's Forest Fire Experiment Station**

### BACKGROUND

In January 1994, the Missouri Department of Conservation proposed that the Roscommon Equipment Center (REC) program study the feasibility of rebuilding used crawler tractors. The need was spawned by John Deere's decision to cease production of their 400G tractor. This was the last "smaller" tractor in major production. In the 1980's Case stopped producing its' 350 crawler. Also in the 1980's, John Deere dropped its' 350D and 450E tractors in favor of the respectfully larger 400G and 450G. These changes caused two problems for agencies that used these tractors. First, these smaller tractors cost less, were more maneuverable and caused less damage to the land than the larger models sold currently. Secondly, the larger tractors required larger, more costly transport units. In short, the cost of replacing a worn out tractor is substantially increased compared to just a few years ago. Rebuilding smaller tractors is seen as a possible remedy.

### SURVEY

In 1994, REC surveyed eastern forest fire agencies to determine their interest in rebuilding tractors. We asked the

make, model and quantity of tractors that they were interested in rebuilding. Ten states indicated an interest. Nearly all their needs concerned John Deere 350 and 450 tractors. Over a three year period, as many as fifty (50) 350 models and forty (40) pre-450G tractors were considered potential candidates for revitalization by these agencies.

Because the John Deere models made up a majority of need, REC began working with that company to explore rebuilding.

### DEERE "RELIFE" PROGRAM

In April of 1994, REC first contacted John Deere. REC's goal was to work jointly with John Deere to determine a standard for component replacement and to secure a basic warranty for the product. By doing this, agencies would have a thought out, predetermined standard that will help secure a "like new" tractor with guarantees and consistent remanufacture. During the summer of 1994, John Deere, the Michigan Department of Natural Resources, and a Michigan John Deere dealer, Klooster, Inc., jointly began a trial rebuilding project. All tractors used in the trials were John Deere 350C

\* From John Deere Company January 25, 1995.

or 350D models. The parties felt the trial was successful and on January 25, 1995, John Deere formally announced its' "Relife" program available through Deere dealers in the United States and Canada. Highlights of the program include:

- A company approved specification for rebuilding the unit.
- John Deere, through the dealer, issues a new Product Identification Number (PIN) to the tractor.
- A six month warranty.

In addition to items listed on John Deere's specification sheets that follow, Michigan chose to update its 350 class tractors to the JD400G hydraulic system. This included stacking control valves and an improved blade control linkage. These improvements add some cost and may complicate future maintenance since the manuals will not show these changes.

The cost to relife a JD350C tractor will be in the low to mid-\$30,000 range. In terms of cost, not all models are reasonable to rebuild. For example, the JD350 and JD350B models have dry clutches. Converting dry clutches increases the cost enough to make relifing these tractors unappealing. John Deere chose not to make these models available for the "Relife" Program. If an agency does not have a tractor to rebuild, the dealer may be able to obtain a used tractor to relife. Michigan did this in several cases. Final cost was about \$50,000 including brush protection and hydraulic options. If you have a JD350B or earlier tractor, the dealer may accept it on trade to reduce the cost.

The Michigan DNR had seven tractors relifed through the trial John Deere program. Reception from operators to the relife tractors have been favorable. Increased power and better traction from the new tracks are very noticeable. However, at the time of this writing, the tractors were just beginning their "first" fire season.

### SUMMARY

- The John Deere "relife" plan for its 350 and 450 tractors is well thought out and provides customers with a standard that helps assure a like new tractor. It provides a basic warranty.
- Reconstruction of the tractor is done by the dealer. As such, the dealer's abilities may affect the final product. Quality control of the tractor assembly is obviously dependent on the dealer. Part of the warranty obligation is shouldered by the dealer, which should provide incentive to do good work.
- Relifing is a viable option for agencies needing a reliable small tractor, especially to reduce costs of both the tractor and transport unit. The cost is particularly attractive if the agency has a used tractor to rebuild.
- John Deere models 350C, 350D, 400G and 450C tractors can be rebuilt under the program.
- If agencies do not have a tractor to rebuild or have an older 350 or 350B model tractor, an option is to have the dealer locate a used tractor to rebuild. The cost will be at least that of a new tractor of that size if it were available, but \$10,000-\$15,000 less than today's smallest available production tractors.

### JD350C and JD350D\* CERTIFIED RELIFE SPECIFICATION

#### ITEM

Repower Engine 3 Cylinder 179 CU IN  
Torsional Isolator AT77319  
Transmission/Steering Clutch  
AT125953 Steering Clutch (2)  
AT37548 Hydraulic Reverser Clutch  
With Manifold  
Final Drive  
JD7424(2), JD8100(2), T112784(2)  
JD8939(2), JD7416(2)  
T59769(2), AT36097(2), JD9079(2)  
JD9114, JD9113(2), JD9048(2)  
Hydraulic Pump AT38801  
Valve 3 Spool  
AT71452  
Cylinder Seals AR105454(2)  
Structure Bushing  
AU13822 Pin (2)  
U11121 Bushing (4)  
Radiator AT32087  
Alternator TY161  
Starter TY6702  
Sheet Metal  
T32072 Left Side  
AT31177 Right Side  
AT104583 Hood  
Undercarriage  
AT104780 Roller (10)  
T129879 Sprocket (2)  
AT132705 Idler Roller (2)  
AT104595 Idler Kit Left  
T104596 Idler Kit Right  
AT148540 Track with Shoes (2)  
Push Beam AT58688  
Blade AT62829 (80 IN)  
Battery TY21741(2)  
Engine Wiring Harness AT64568  
Seat AT105140  
Fan Belt T24473  
Lights AT135486(3)  
Muffler AT21689  
Hourmeter AT160120  
Paint  
Miscellaneous Bearings and Pulleys

### JD400G\* CERTIFIED RELIFE SPECIFICATION

#### ITEM

Repower Engine  
Engine Clutch AT160474  
Transmission/Steering Clutch  
AT125952 Steering Clutch (2)  
AT125713 Clutch Pack  
AR56620 Manifold  
Final Drive  
JD7424(2), JD8100(2), T112784(2)  
JD9049(2), JD9114(2)  
T112785(2), JD8939(2), JD7416(2)  
AT117910(2), JD9113(2), JD9048(2)  
Hydraulic Pump AT15170  
Valve Seals  
AT160684  
AT160683  
Cylinder Seals RE20428(2)  
Structure Bushing  
AU13822 Pin (2)  
U11121 Bushing (4)  
Radiator/Oil Cooler  
AT116777 Radiator  
AT137547 Oil Cooler  
Alternator TY6750  
Starter RE50095  
Sheet Metal  
AT125863 Left Side  
AT125264 Right Side  
AT125864 Hood  
Under Carriage  
AT104780 Roller (10)  
T129879 Sprocket (2)  
AT167258 Idler Roller (2)  
AT104595 Idler Kit Left  
AT104596 idler Kit Right  
AT148540 Track with Shoes (2)  
Push Beam AT125207  
Blade AT116723  
Battery TY6128(2)  
Engine Wiring Harness AT161135  
Seat AT105140  
Fan Belt R82602  
Lights AT135486(3)  
Muffler AT83613  
Hourmeter AT86509  
Paint  
Miscellaneous Bearings and Pulleys