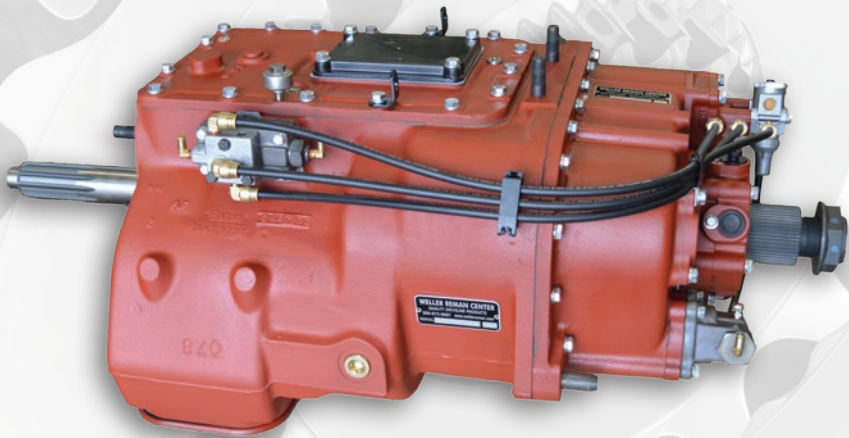


WELLER

100% Associate Owned



**OWNER'S MANUAL:
MANUAL
TRANSMISSION**

Tag # _____

Mileage In: _____

Date Installed: _____

WELLER REMAN

Quality Remanufactured



Manual Transmissions and Transfer Cases

Quality Remanufactured Products by WELLER for the Following Applications

Light to Heavy Duty

Eaton/Fuller • Borg Warner • New Process • Clark • IHC • TTC Spicer • Isuzu

• GMC • Mack • Noster • ZF • Meritor

A complete line of Auxiliaries and Transfer Cases

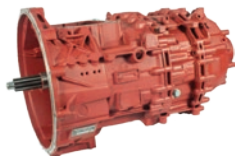


Automated Manual Transmissions

Quality Remanufactured Products by WELLER for the Following Applications

ZF AS-Tronic® • Meritor Freedoline® • Volvo I-Shift® • Mack M Drive®

• Eaton/Fuller • Detroit DT 12



Automatic Transmissions

Quality Remanufactured Products by WELLER for the Following Applications

Allison Transmissions® • Clark • Funk • CAT • ZF



Differentials

Quality Remanufactured Products by WELLER for the Following Applications

Complete Stock for quick exchange.

Spicer • Clark • FWD • GMC • IHC • Industrial/Off Road • Mack/PAI • Dana/Eaton

• Terex • Freightliner/Alliance • Meritor /Rockwell • Volvo



Steering Gear Boxes and Pumps

Quality Remanufactured Products by WELLER for the Following Applications

All units are tested on our state-of-the-art XLT3 Road Simulator.

TRW-Ross • Saginaw • Sheppard • Vickers Pumps • ZF • Eaton • Luk



Electronics

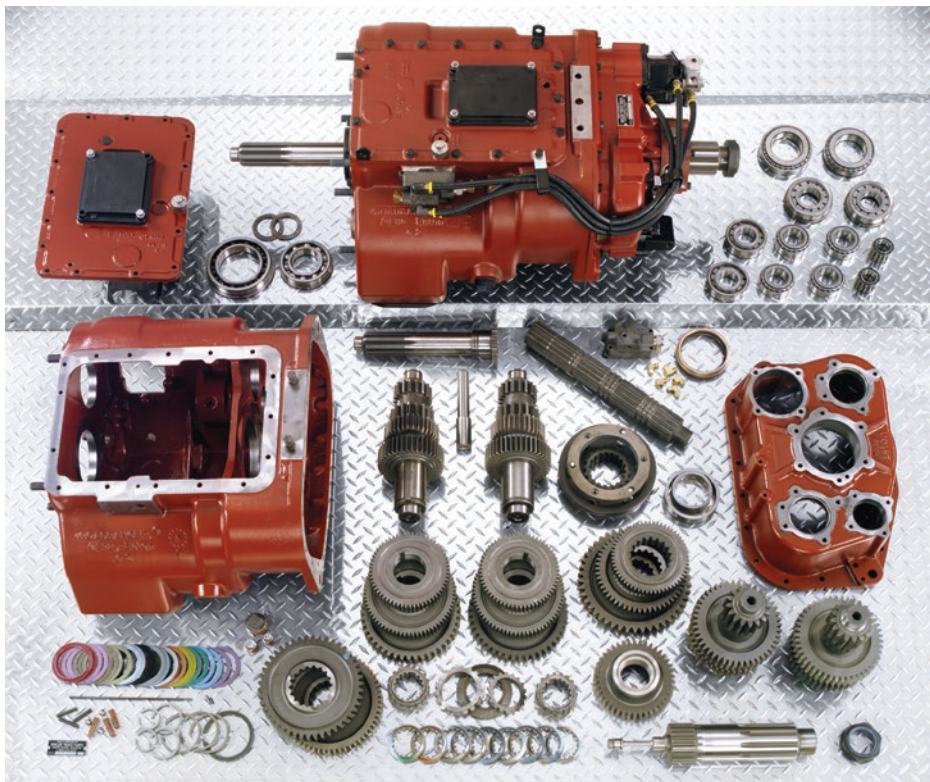
Quality Remanufactured Products by WELLER for the Following Applications All units are tested for performance and quality.

Cummins • Eaton/Fuller • ZF • Allison® • Volvo



- Over 17,000 Units in Stock
- Nationwide Coverage
- Same Day Shipping
- One Year Warranty
- Specialists at Obsolete and Discontinued
- First Quality Units
- All Makes Coverage - One Call
- Technical Assistance

PROGRAM DESCRIPTION



Weller's Unit Exchange program eliminates down time by getting you the parts you need when you need them. With over 17,000 transmissions and differentials ready to ship, we can help you eliminate your or your customer's downtime. Consider becoming a key partner in the industry's leading drivetrain program today. With no commitments and no minimums, we are the industry partner for you!

Our aggressive reman program includes:

- All Makes Coverage – One Call
- Same Day Service
- Obsolete and Discontinued Specialists
- One-year Warranty
- Two Year Warranty on Eaton/Fuller Transmissions
- 17,000 Unit Stock – It's Available Today!
- Excellent Core Policy (call for details)
- Technical Support on Questions

WELLER REMAN HAS THE ADVANTAGE!



Check Out Our New App!



We are excited to announce our new app! Designed with our customers in mind, we wanted to bring a user-friendly way for you to access the information you need when you need it most.

Features

Schedule a Core Return: Easily schedule core returns from your phone!

View Warranty Status: Have a warranty you want to know the status of? View all of your warranties with the Warranty Tracker.

Quickly Locate a Store: We are always adding new locations to better serve you.

Weller Literature: Find our Owner's Manuals and other sales literature like our Core Return Program and sales catalogs

Training Videos: Visit our growing collection of videos designed to educate and prevent common issues across a wide range of our products.

How to Download

The new Weller Truck Parts app can be downloaded for free from the Apple App Store and Google Play.

Supported devices include iPhone (iOS 11.0 or later) and Android smartphones (5.0 Lollipop and up).





INSTALLATION GUIDE

VEHICLE MAKE AND MODEL _____
MECHANIC'S NAME _____

TRANSMISSION ASSEMBLY NO. _____
VEHICLE ID NO. _____

I. This transmission contains NO LUBRICANTS. Fill with OEM approved lubricants.

II. This transmission contains NO SPEEDOMETER gears. Be sure to remove speedo gears for your exchange unit.

III. Check engine mounts for wear.

IV. Check shift lever assembly

- Inspect lower gear/finger for wear ☐
- Inspect Isolator for wear ☐

V. Check clutch, and related components

- Inspect all clutch related parts for wear. (Forks, pins hydraulics, etc...) ☐
- Did the flywheel get resurfaced? ☐
- Inspect the dowel pins for wear ☐
- Inspect pedal shaft bushings ☐
- Pre lubricate the input shaft with dry graphite or light amount of white lithium grease ... ☐
- Ensure no grease or oil is on any friction surfaces! ☐
- After Installation:
 - Check Adjustments ☐
 - Grease pedal shafts ☐

VI. Check driveline for worn or failed components

- U-Joints ☐
- Carrier Bearing ☐
- Yoke seal surface, and splines ☐
- Ride height ☐
- Driveline phasing ☐
- Drive shaft balance ☐

VII. PTO (If equipped)

- Is the PTO leaking? ☐
- Is your PTO properly shimmed? (Backlash of .006-.012 inch or as specified by PTO Manufacturer) ☐
- Shim PTO with proper selective gaskets NOT PTO cover gaskets or cork gaskets ☐
- Flush PTO out. PTOs are a great catch-all for failed transmission parts ☐

INSTALLATION GUIDE



VIII. Transmission heat exchanger (If equipped)

- Clean, and flush cooler system..... ☐
- Weller recommends pressure testing cooler for leaks ☐

IX. Air system

- Check air dryer ☐
- Check truck pressure & inspect for leaks ☐

CAUTION!

Weller's history shows a majority of customer caused failures are from improper tightening of the yoke or flange and not checking these commonly worn items.

MODEL	OUTPUT YOKE NUT TORQUE SPEC
FRO16210C	650-700 lbs-ft.
RTLO18913A	650-700 lbs-ft.
RTLO18918B	650-700 lbs-ft.
RTLO16713A	450-500 lbs-ft.
ESO66 7B	362-434 lbs-ft.
FROF16210C	650-700 lbs-ft.
FS6406A	300-350 lbs-ft.
RTO16908LL	650-700 lbs-ft.
FSO8406A	300-350 lbs-ft.
PSO165 10S	550-600 lbs-ft.
FS6406N	300-350 lbs-ft.
RTLO18718B	450-500 lbs-ft.
RTLO16610B	450-500 lbs-ft.
MO16G10AM	450-500 lbs-ft.



EATON®

Eaton Approved Lubricant

PS-386 Synthetic Transmission Fluid

- Extended drain intervals up to 500,000 miles
- PS-386 lubricant can improve fuel economy by 1.5 percent
- Excellent gear and bearing protection
- Meets OEM factory fill specifications
- PS-386 is the only fluid approved for use in Eaton's Automated Mechanical transmissions
- PS-386 supersedes PS-164 rev 7



EATON®

Eaton Approved Lubricant

PS-278 Precision Transmission Fluid

- Eaton approved
- Original factory fill fluid
- Ultimate gear and bearing protection
- Excellent seal compatibility to ensure longer life
- Maximum extreme hot and cold temperature performance
- Ensures and maintains smooth transmission operation
- Less maintenance
- PS-278 is the only fluid approved for use in Eaton's Precision transmission

PS-386 and PS-278 are not approved for all transmissions. See OEM bulletins for specific approved lubricants.

EATON PS-386 SYNTHETIC TRANSMISSION FLUID

PERFORMANCE PROFILE



Heat Management

- Lower Sump Temperatures
- Higher Oxidative Stability
- Superior Low Temperature Performance



Fuel Economy

- Minimize Churning Loss
- Up to 1.5% Fuel Economy Improvement*



Improved Durability

- Improved Gear and Bearing Wear
- Copper Cooler Protection



Ecologically Friendly

- Reduced Waste
- CO2 Reduction



Backward Serviceability

- Meets Current Requirements for Eaton Heavy-Duty Manual and Automated Transmissions

* Tested against the previous Eaton synthetic transmission spec PS-164 Rev 7. SAE J1321 Fuel Consumption testing conducted by an independent fleet confirmed up to 1.5% fuel economy improvement.

PS-386 and PS-278 are not approved for all transmissions. See OEM bulletins for specific approved lubricants.

U-JOINT ANGLES

Out of spec u-joint operating angles reduces component life and is a leading cause of premature failure to transmissions, differentials, transfer cases, and PTO'S!

Note: Many resources are available regarding u-joint operating angles, yoke phasing, vehicle ride height, and driveline inspection; this bulletin will not cover them all.

You will need:

- Inclinometer for measuring angles and phasing
- Tape measure to measure length of tube and ride height
- Flat surface to park the vehicle and wheel chocks for stabilization
- Driveline worksheet for recordings



Recommend using the Roadranger DAA software and inclinometer.

The image shows an example of the Roadranger DAA Worksheet. At the top, it says 'Roadranger F.T.N. A-Frame Work with Joints'. Below this is a diagram of a vehicle's driveline with labels for various components like 'Front Drive Shaft', 'Rear Drive Shaft', 'Front U-Joint', 'Rear U-Joint', etc. To the right of the diagram is a table for recording data. The table has columns for 'Front Drive Shaft', 'Rear Drive Shaft', 'Front U-Joint', 'Rear U-Joint', and 'Rear U-Joint'. Each column has rows for 'Yoke Angle', 'Yoke Phase', 'Yoke Length', and 'Yoke Ride Height'. Below the table is a section for 'Before Measuring Angles' with instructions and a diagram of a u-joint.

Example Roadranger DAA Worksheet

Safety FIRST! Review owners manuals, service manuals, and other OE provided instructions. Confirm driveline series and length is correct for torque, RPM, and vehicle specifications. Wear appropriate PPE.

U-JOINT ANGLES



General U-Joint Angle Rules:

- i. Should have a minimum angle of 1°
- ii. Angles on each end of a shaft should ALWAYS be within 1° of each other
- iii. U-Joint angles should NOT be larger than 3°
- iv. Yoke phasing is vehicle specific & set by operating angles

Inspection:

2. Print corresponding worksheet.
3. Park the vehicle on a flat surface, chock the wheels, and release the parking brake.
4. Inspect driveline for u-joint endplay and worn components.
Note: Spicer recommends U-Joint endplay should not exceed .006
5. Measure and record angles, shaft length, and u-joint phase.
Make Corrections as needed



Measure Shaft length
from u-joint cap centers



Yoke Phased
Yoke caps ARE aligned



90° Out of Phase
Yoke caps NOT aligned



CRACKLE TEST

The crackle test is a simple and cost effective way to identify the presence of water contamination in oil. Contamination has three stages: free, emulsified, and dissolved.

Note: Many resources are available regarding the effects of water contamination and the crackle test. This bulletin will not cover them all.

You will need: a surface that is capable of achieving and sustaining a surface temperature of 380°F and a clean container to gather the sample. Note: For the test, Weller used a SKF bearing heater pictured below.



Safety FIRST! Review all SDS prior. Test must be completed in a well ventilated area as it will produce fumes and vapors that can be hazardous. Wear appropriate PPE.

Test:

1. Preheat surface to 380°F
2. Using a clean uncontaminated container gather sample
3. Pour small amount directly to the heated surface
4. Observe test sample for signs of contamination

CRACKLE TEST



Example: 50W synthetic gear oil with a limit of 2000ppm or .2%

Visible bubbles confirm water has contaminated the sample. The size and quantity of bubbles indicate the percentage or amount of contamination.



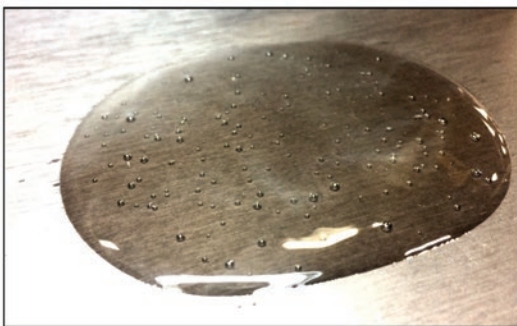
651 PPM .065% of water



At .065% water contamination, the oil produces very small bubbles 0.5 mm that quickly disappear.



2310 PPM .23% of water



At .23% water contamination, the oil produces bubbles approximately 2 mm that quickly disappear.

Oil exceeds water contamination limit of .2%

DYNO TESTING



All transmissions are dyno tested with a load to simulate real truck conditions. Every transmission is evaluated to ensure proper torque, no leakage, accurate shifting, oil flow and performance on our state-of-the-art dynamometers.

CORE RETURN INSTRUCTIONS



The Weller Truck Parts core return program is designed to facilitate an efficient and cost effective way of returning your cores. Following the instructions listed below will ensure your core is processed quickly and correctly.

1. Attach the Core Return Tag provided with the remanufactured unit to core

- For warranty units, obtain a Warranty Repair Authorization (RA#) from your Weller Truck Representative. If you are not sure who your representative is call the Reman Center at 1-800-872-6697 or email warranty@wellertruck.com.

2. Prepare the unit for shipping.

1. Drain oil from unit.
2. Band, wrap, or strap unit(s) to a pallet.
3. Attach a copy of the warranty invoice, core tag or RA# to the unit for identification.

3. Notify Weller Shipping Department when unit is ready for pick up.

- Download the Weller App!
 - Scan the QR code or go to wellertruck.com/app
- Email corereturn@wellertruck.com or call 1-800-872-6697 Ext. 3794 or 3759
 - Provide the following:
 - ✓ Core return tag, Weller Truck Parts invoice, or the RA if the unit is a possible warranty
 - ✓ Your contact information
 - ✓ Hours of operation



Weller will prepare the bill of lading and schedule your unit to be picked up by a Weller approved carrier.

Thank you for choosing Weller Truck Parts!

Failure to follow these procedures could result in core credit delays and freight charge backs.

*Core eligibility is one year from invoice date



WELLER WARRANTY

WARRANTY STATEMENT

- **Metal tag must not be removed or warranty will be void**
 - **Nationwide**
 - **One Year Coverage**
 - **Two Year Coverage on Eaton/Fuller Transmissions**
 - **Unlimited Mileage**
- Call Us!*
800-872-6697
-for-
- **Technical Assistance**
 - **Return Authorization**

Warranty Coverage

Standard Warranty Coverage

Weller Reman Manual Transmissions – One year, unlimited mileage – parts and labor.

Authorized Repair Points – Our Nationwide Warranty may be administered only by an authorized warranty repair facility. Call 1-800-872-6697 for authorization.

Exclusions – Subject to the conditions stated herein, Weller warrants to the original retail purchaser thereof that its Reman products will, when used in a motor truck for on-highway or on/off-highway applications in the United States and properly installed and assembled on vehicles approved by the O.E.M. for such purpose, be and remain under normal conditions of use and operation free from failure due to defects in materials and workmanship from the date of sale.

This warranty covers parts and labor to repair or replace, at Weller's option, the failed Weller component. Units installed as replacements under this warranty are warranted only for the remainder of the original warranty period.

This warranty shall not extend to failures or damage due to improper lubrication or operation in excess of original design limitations, failure to follow normal published preventive maintenance guidelines of the O.E.M., abuse or damage by improper installation, casualty or shipment.

This warranty shall not extend to repairs for noise (including idle rattle), excessive operating temperature, transmission rear seal leakage, nor does it cover failures caused by engine, clutch, driveline; including transmission synchronizer pin breakage, or other truck components or system.

This warranty does not cover failures caused by a worn, damaged or defective part or component mounted to the unit by the dealer or retail purchaser, including without limitation, the transmission end yoke.

All warranty claims shall be made to Weller and shall be supported by satisfactory evidence in respect of the conditions stated herein. As a condition precedent to the allowance of such claims, the component or assembly involved shall, if requested by Weller, be returned prepaid to Weller for examination.

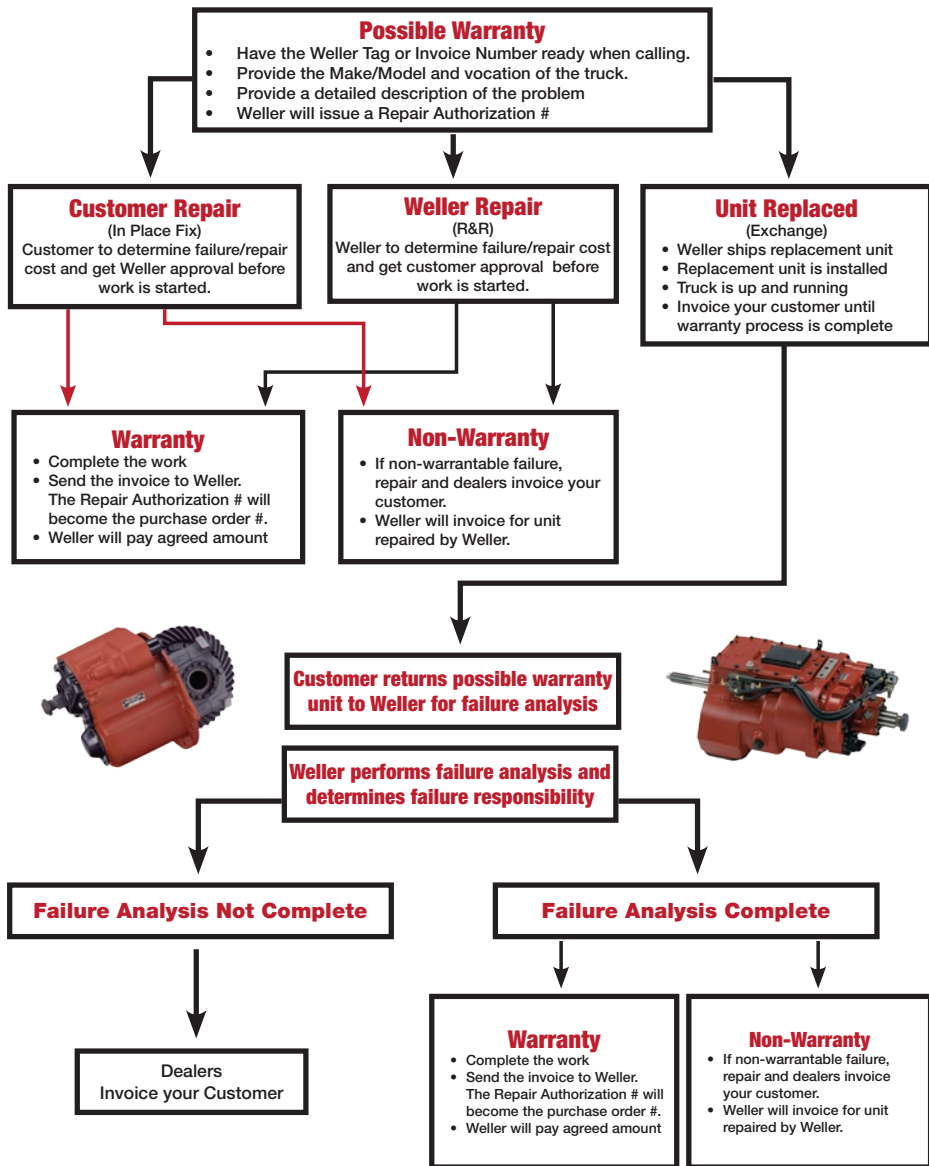
EXCEPT FOR THE EXPRESS WARRANTY STATED HEREIN, WELLER DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE FOREGOING IS THE LIMIT OF THE LIABILITY OF WELLER, AND IS THE EXCLUSIVE AND SOLE REMEDY OF THE PARTY TO WHOM THIS WARRANTY IS MADE. LIABILITY ON THE PART OF WELLER FOR DAMAGES, EXPRESSLY INCLUDING CONSEQUENTIAL DAMAGES IS DISCLAIMED.

This warranty may not be changed or modified in any way except in writing by Weller.

AVAILABILITY



CALL WELLER FIRST!



WARRANTY CLAIM FORM1500 Gezon Parkway SW
Grand Rapids, MI 49509
616-724-2000
800-872-6697
Fax 616-365-5679

Date: _____

TAG #: _____

Claim Contact Information:	Vehicle Owner Information:	Truck Information:
Name, Company, and Address: _____ _____ _____	Name, Company, and Address: _____ _____ _____	Make: _____
Phone: _____	Phone: _____	Model: _____
Fax: _____	Fax: _____	Mileage: _____
E-Mail: _____	E-Mail: _____	Vocation: _____
		Engine: _____
		VIN: _____

COMPLAINT

		Description of the Problem:
Fluid Leak:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Shifting:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Noise:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Vibration:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Hard Steering:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Contamination:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____
Other:	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____

ADDITIONAL INFO

Change with Speed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Suspension Modified Recently?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Change with RPM?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Driveline in Phase?	<input type="checkbox"/> Yes <input type="checkbox"/> No
During Acceleration?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Engine Mounts Checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No
During Deceleration?	<input type="checkbox"/> Yes <input type="checkbox"/> No	King Pin Checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No
When Stationary?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Hydraulic Brakes?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Fluid at Proper Level?	<input type="checkbox"/> Yes <input type="checkbox"/> No	System Flushed & Filter Replaced?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Fluid Clean?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Is the Unit Getting Hot?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Vehicle Towed?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Running PTO?	<input type="checkbox"/> Yes <input type="checkbox"/> No		

EMAIL TO: WARRANTY@WELLERTRUCK.COM
FAX TO: 616-365-5679, WELLER TRUCK PARTS WARRANTY

WELLER WARRANTY



Warranty

It is essential to contact Weller and start the claim prior to removing the differential from the vehicle for warranty consideration. Weller's technicians can assist with diagnosing the complaint to reduce downtime. If the differential failed, the unit will be filmed, documented, and warranty determined.

The following are the maximum flat rates for failures due to defective products or workmanship:

Manual Transmissions	Flat Rate Credit
Mid Range	\$500
Heavy Duty	\$700
Auxiliary/Transfer Case	\$600

Authorized Weller Dealers call for warranty labor hours guidelines.

Call Weller First!
1-800-872-6697



NOTES

[illegible]

THE WELLER REMAN NETWORK



Scan to
download
our mobile
app!



- 1 Reman Center**
1500 Gezon Pkwy S.W.
Grand Rapids, MI 49509
616-724-2000
800-872-6697
- 2 Atlanta, GA**
5007 Clark Howell Hwy.,
Suite A
Atlanta, GA 30349
404-768-9577
877-768-9577
- 3 Baltimore, MD**
899 Airport Park Rd., Ste. N
Glen Burnie, MD 21061
410-553-0443
877-550-0443
- 4 Birmingham, AL**
116 Total Solutions Way
Alabaster, AL 35007
205-685-0777
866-535-0777
- 5 Boise, ID**
8484 W. Victory Road
Boise, ID 83709
208-331-1061
888-331-1061
- 6 Chicago, IL**
14407 S Gougar Rd Ste 500
Lockport, IL 60491
708-974-9919
888-974-9319
- 7 Columbus, OH**
2885 International St.
Columbus, OH 43228
614-771-9500
866-771-9501
- 8 Dallas, TX**
3113 Skyway Circle N
Irving, TX 75038
972-258-0460
855-258-0460
- 9 Denver, CO**
11333 East 55th Ave Unit A
Denver, CO 80239
303-375-6633
833-375-6633
- 10 Detroit, MI**
29826 W. Eight Mile Road
Farmington Hills, MI 48336
248-473-1900
800-473-1905
- 11 Gaylord, MI**
353 Expressway Court
Gaylord, MI 49735
989-731-6700
888-731-6700
- 12 Houston, TX**
4549 Aldine Bender
Houston, TX 77032
281-442-8855
877-677-8855
- 13 Indianapolis, IN**
6903 E. 32nd St.
Indianapolis, IN 46226
317-547-3190
888-547-3190
- 14 Jacksonville, FL**
10330 Chedoak Court
Suite 205
Jacksonville, FL 32218
904-757-0777
888-474-0777
- 15 Kansas City, MO**
3824 N. Skiles Ave.
Kansas City, MO 64161
816-454-2237
844-341-4578
- 16 Las Vegas, NV**
2985 Coleman St., Suite 14
North Las Vegas, NV 89032
702-638-8222
866-764-8222
- 17 Los Angeles, CA**
9355 Cherry Ave.
Fontana, CA 92335
909-356-8322
877-356-8322
- 18 Lubbock, TX**
603 CR 7150
Lubbock, TX 79423
806-516-8112
844-389-1766
- 19 Memphis**
7520 Appling Center Dr.
Ste 102
Memphis, TN 38133
901-386-8604
833-270-3220
- 20 Milwaukee, WI**
8625 North 107th
Milwaukee, WI 53224
414-354-6400
877-354-6400
- 21 Minneapolis, MN**
3201 85th Avenue North
Brooklyn Park, MN 55443
763-424-3800
877-424-3802
- 22 Nashville, TN**
230 Molly Walton Drive
Hendersonville, TN 37075
615-264-2750
866-426-2750
- 23 Omaha, NE**
8623 S. 117th St.
LaVista, NE 68128
402-597-9000
855-597-9001
- 24 Phoenix, AZ**
702-638-8222
866-764-8222
- 25 Portland, OR**
13150-2 NE Airport Way
Portland, OR 97230
503-255-1924
888-839-9758
- 26 Sacramento**
1424 N Market Blvd. Unit 80
Sacramento, CA 95834
279-972-4170
888-553-9753
- 27 Salt Lake City, UT**
3450 W. California Ave.
Suite 400
Salt Lake City, UT 84104
801-886-0100
855-847-0100
- 28 Seattle, WA**
6408 South 196th Street
Kent, WA 98032
253-872-0321
877-572-0321
- 29 South Bend, IN**
3303 William Richardson Ct.
Suite 200
South Bend, IN 46628
574-237-1000
800-968-8860
- 30 St. Louis, MO**
2388 Chaffee Drive
Maryland Heights, MO 63146
314-692-2227
877-992-2227
- 31 Syracuse, NY**
4530 Morgan Place
Liverpool, NY 13090
315-457-7098
844-320-4288
- 32 Tampa, FL**
217 Hobbs Street
Suite 103
Tampa, FL 33619
813-685-6100
866-685-6109

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