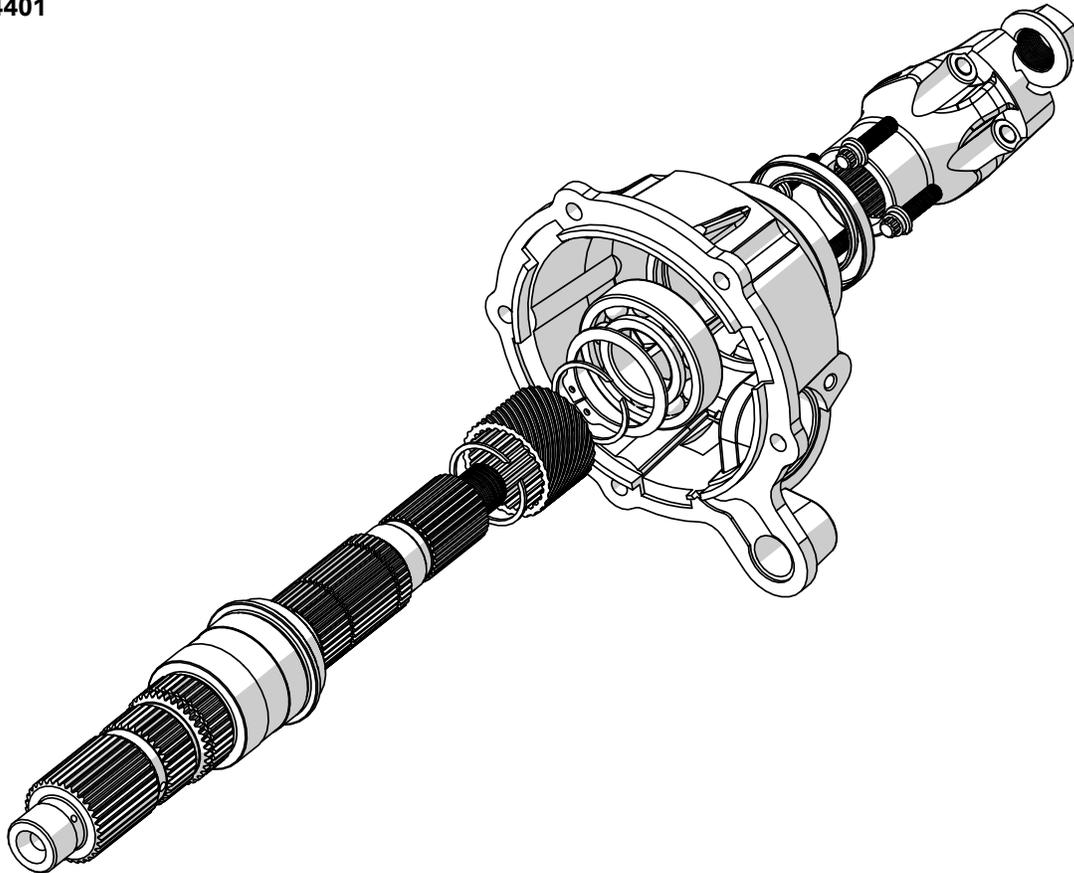




231 SYE Heavy Duty Short Shaft Kit

www.teraflex.com

Kit #4444401



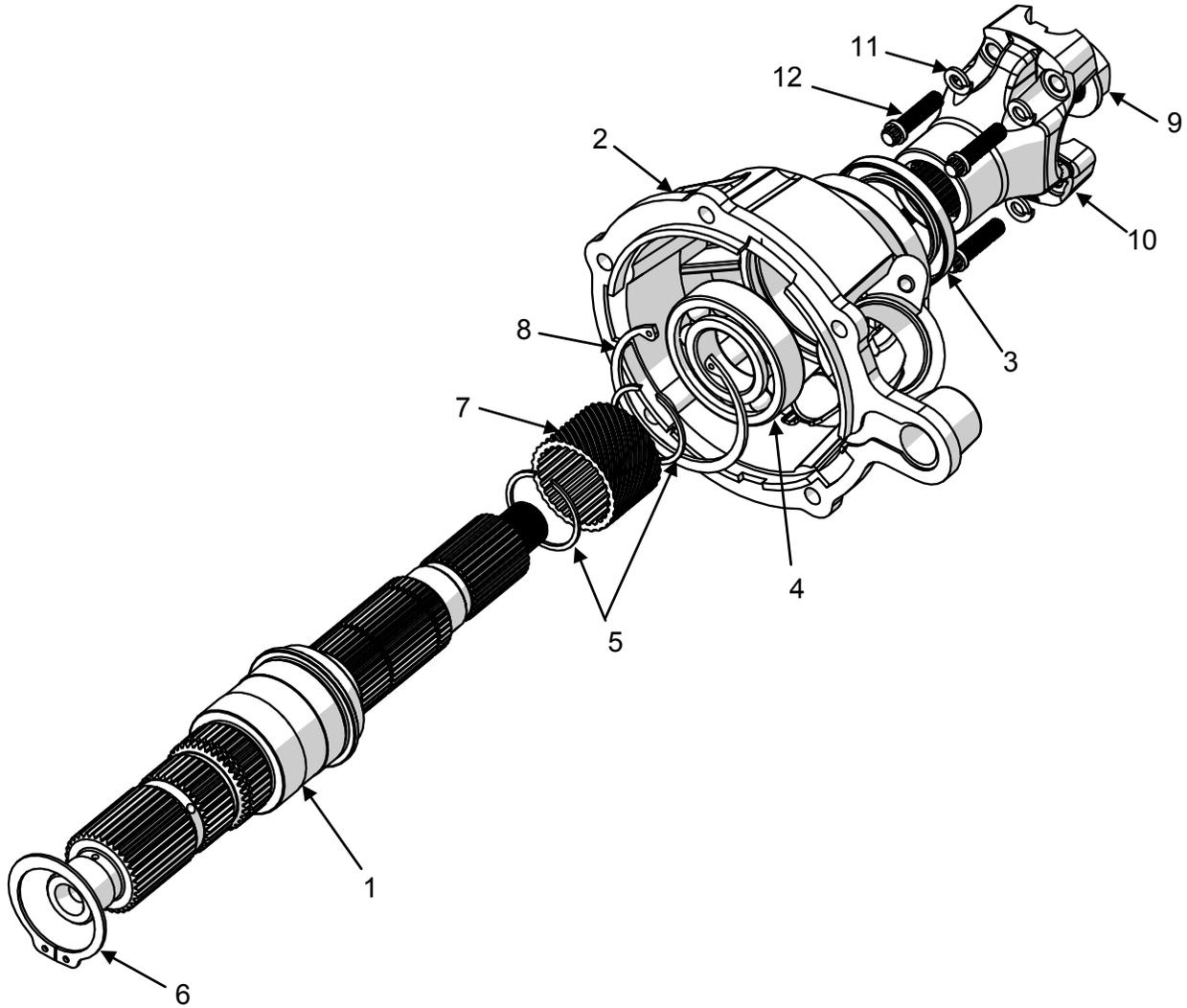
Important Notes:

Prior to beginning this or any installation read these instructions to familiarize yourself with the required steps and evaluate if you are experienced and capable to personally perform these modifications. A factory service manual should be used in conjunction with these installation instructions.

Refer to the parts list to ensure that all necessary components and hardware has been included. If any parts are missing please contact your local TeraFlex dealer for assistance.

Tools needed:

- This installation guide
- Basic mechanics tool set
- Snap ring pliers
- Mallet or dead blow hammer
- RTV Gasket Maker
- Red thread locking compound
- Blue thread locking compound



Item Number	Part Number	Description	Quantity
1	231100	Main Shaft	1
2	231101	Output Housing TJ/YJ	1
	231501	Output Housing XJ	
3	231104	Rear Output Seal	1
4	231105	Housing Output Bearing	1
5	231106	External Snap Ring Used for Speedometer Gear on Shaft	2
6	231107	External Snap Ring Used on Short Shaft for Synchro Hub	1
7	231110	Speedometer Gear	1
8	231111	Internal Snap Ring Housing to Retain Bearing	1
9	231112	7/8" -20 UNEF Flanged Crimp Yoke Nut	1
10	3244404	Short Shaft Yoke	1
11	36	5/16" Lock Washer, Zinc Plated	4
12	93	5/16" -24 UNF x 1.25" 12 Point Head Bolt	4

Installation of the Heavy Duty Short Shaft Kit can be completed with the transfer case installed in the Jeep or on the workbench.

1

Begin by draining the oil from the transfer case. Some will require a 15/16" socket or wrench, while others will require a 10 mm allen socket or wrench.

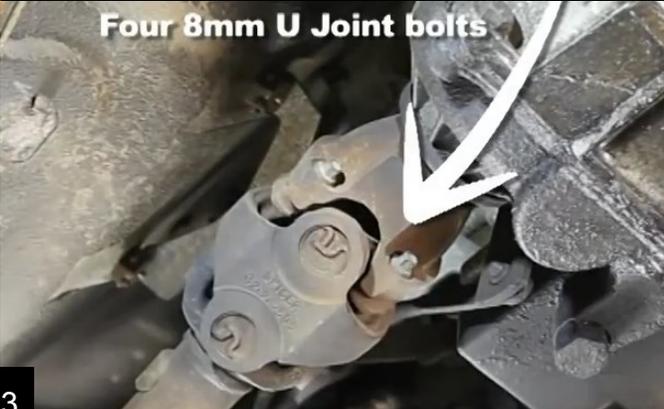


2

Remove the rear driveline completely, and disconnect the front driveline at the transfer case yoke. Tie the front driveline out of the way. Complete removal is not necessary.

Remove the front output yoke.

Four 8mm U Joint bolts



3

1-1/8 in Socket



4

Remove speedometer gear assembly by removing the 13 mm bolt and pulling the assembly out of the tail housing. XJ applications, remove the vacuum switch from the tail housing.

Remove the rear output dust shield and harmonic balancer if equipped.



5



6

Remove the rear output shaft seal.



7

Remove the rear output shaft snap ring.



8

Remove the 5 bolts holding the tail housing in place. Separate it from the transfer case.



9

Split the case by removing the 8 case half bolts. Note the location of the 10 mm 12 point bolt. Gently pry the case apart using the machined notches on either side of the case.



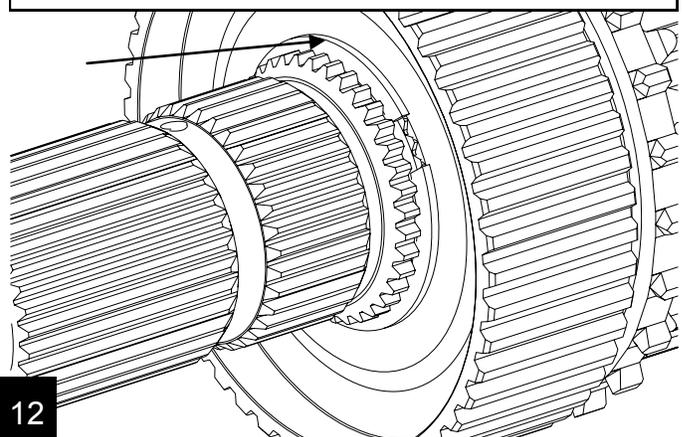
10

Remove the front and rear outputs together with the drive chain.



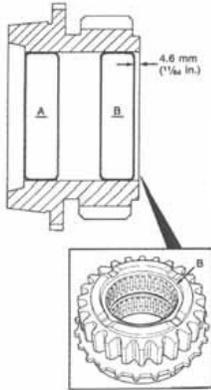
11

Remove the synchro hub snap ring and remove the hub and drive sprocket from the main shaft. Note the orientation of the hub and drive sprocket.



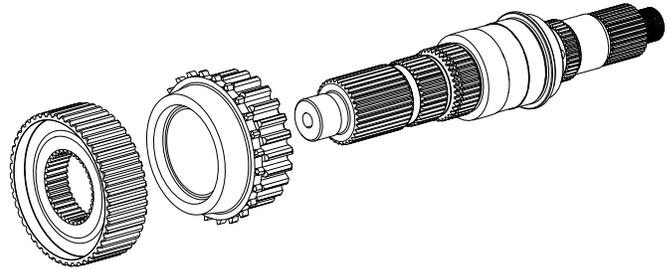
12

If your transfer case comes from a 1996 or older vehicle, it may be necessary to remove the needle bearings in the drive sprocket. Drive them out using a large socket and hammer.



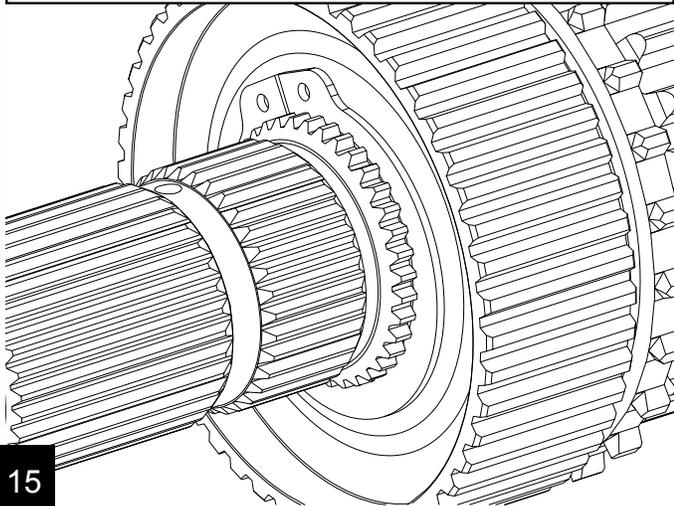
13

Orient the drive sprocket and synchro hub and install them on the new TeraFlex main shaft.



14

Install the included snap ring.



15

Check the mode and range fork shift pads for wear. If any pads are in need of replacement, Crown Automotive #15866 includes pads for both the mode and range forks.



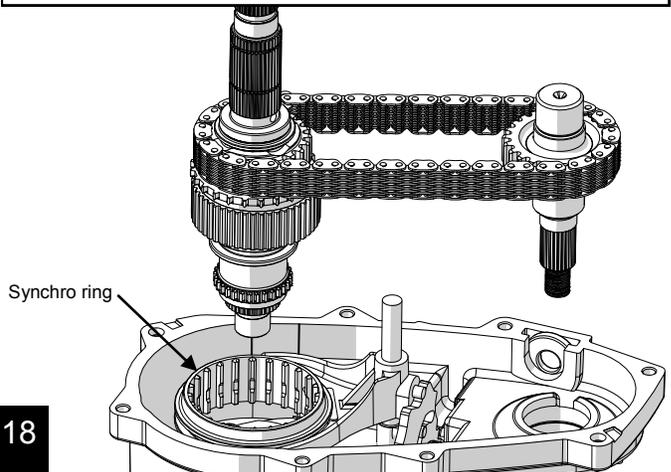
16

Verify the length of the mode fork shift rod is 9.38". Typically 1988 and 1989 YJs and XJs have a mode fork shift rod that is 10.2". Simply cut the shift rod as shown, or purchase a shift rod out of a newer model NP231.

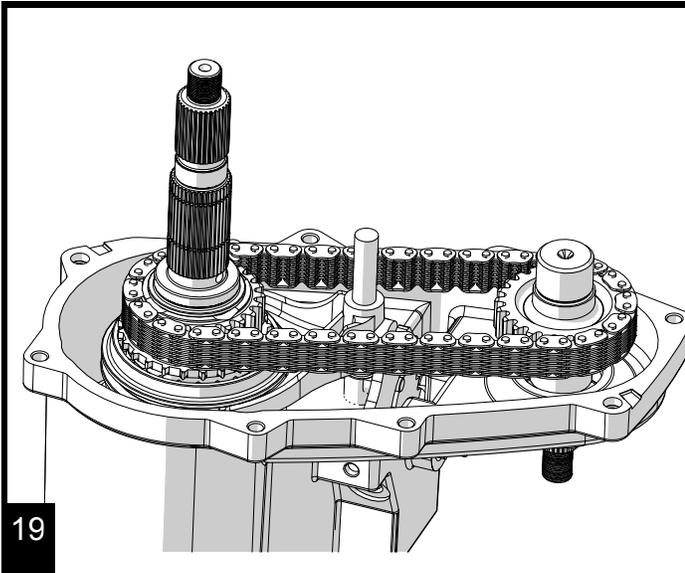


17

Install the new main shaft, chain and front output. **Note the orientation of the synchro ring.**

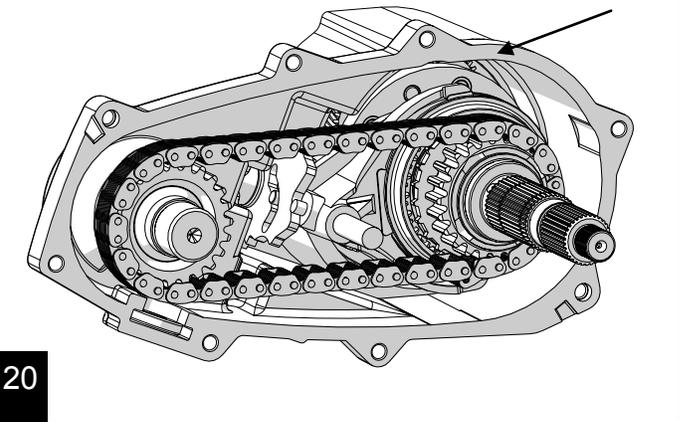


18

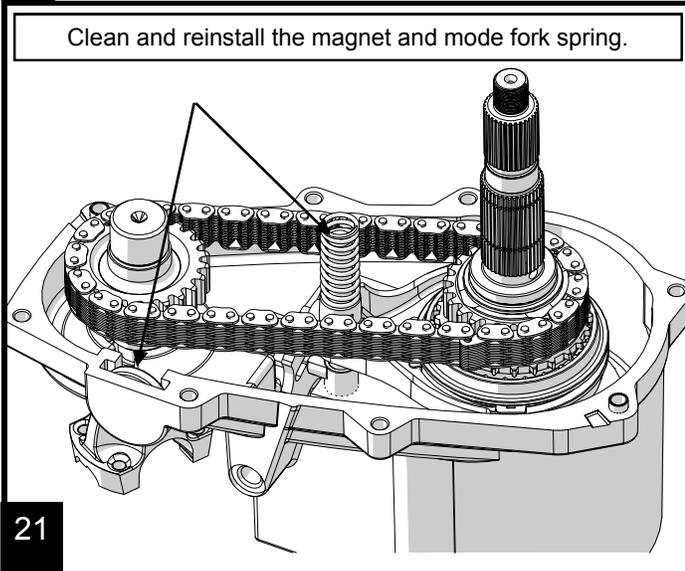


19

Clean the mating surface on the front case half in preparation for joining the two case halves. Ensure surface is free from oily residue and silicone from the old seal.

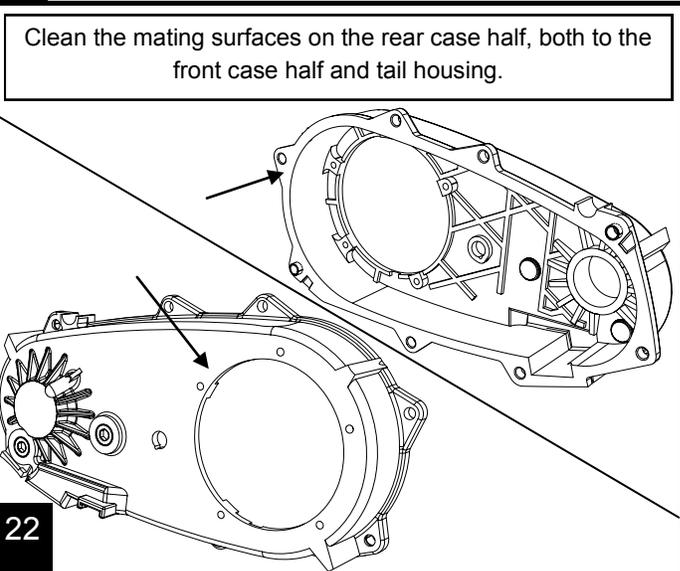


20



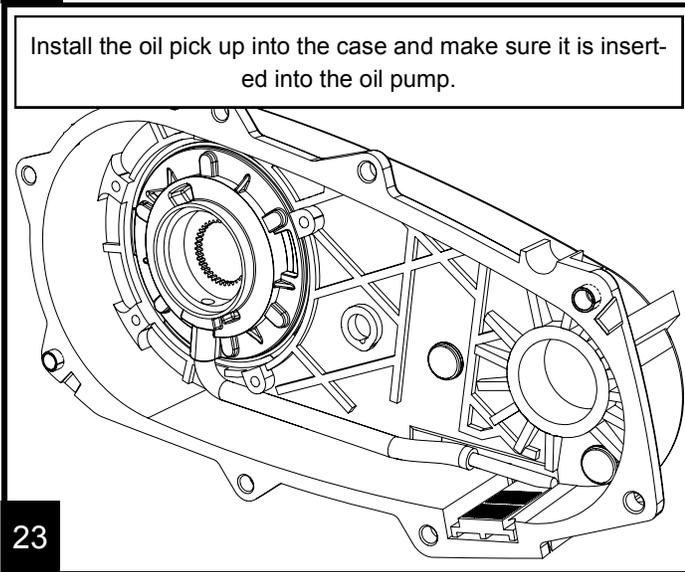
21

Clean and reinstall the magnet and mode fork spring.



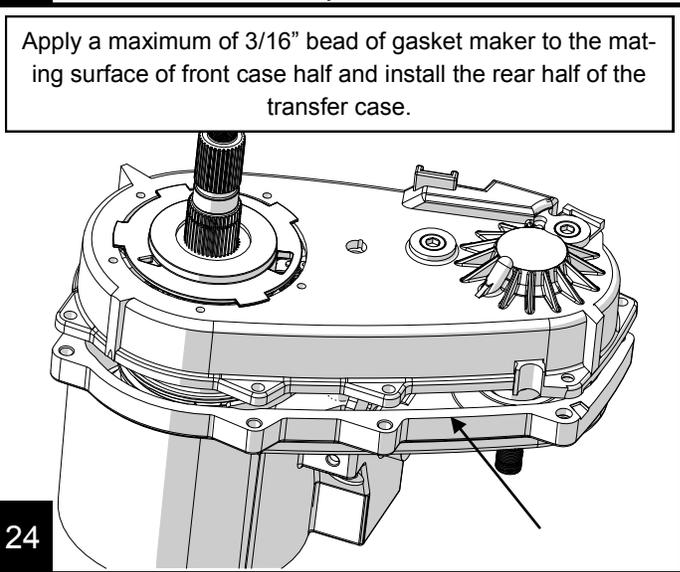
22

Clean the mating surfaces on the rear case half, both to the front case half and tail housing.



23

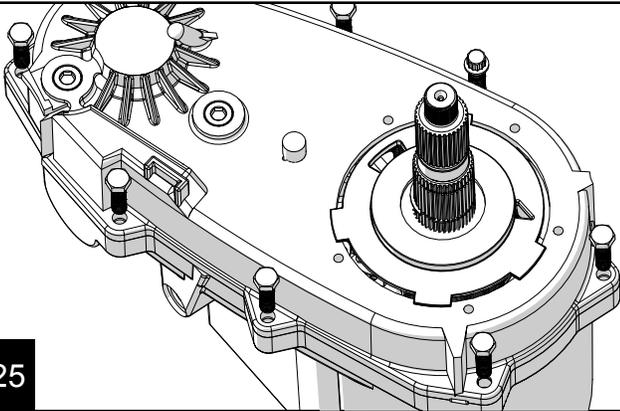
Install the oil pick up into the case and make sure it is inserted into the oil pump.



24

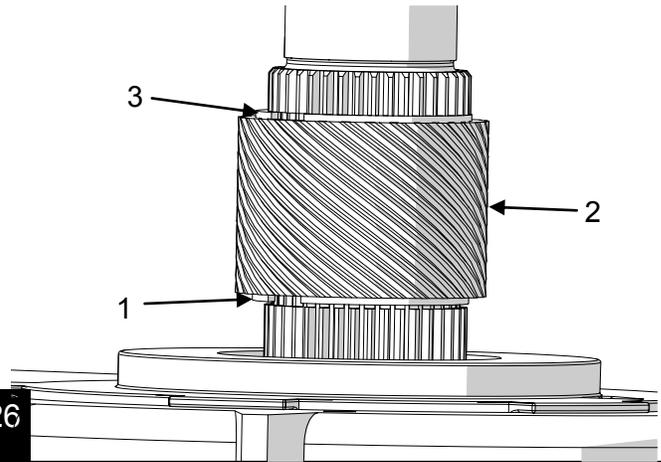
Apply a maximum of 3/16" bead of gasket maker to the mating surface of front case half and install the rear half of the transfer case.

Verify shift rail and case alignment dowels are aligned before installing any bolts. Apply blue thread locking compound to bolts and torque in a crisscross pattern to 20-25 ft-lbs, noting the location of the bolt with the 12 point head.



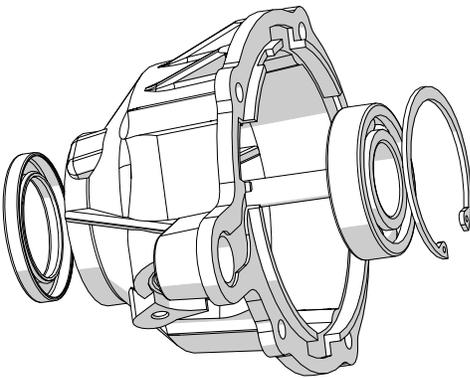
25

Install a new snap ring (1), followed by the speedometer gear (2), install the final snap ring (3) to retain the gear.



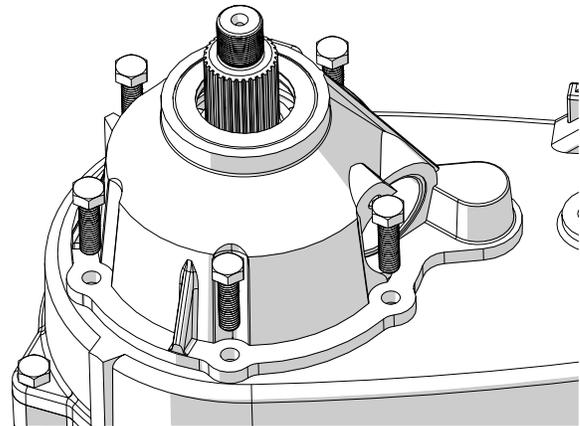
26

Install the output bearing into the housing from the inside, install the snap ring and finally install the seal.



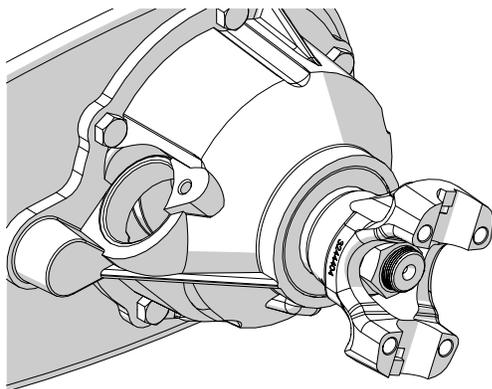
27

Apply a maximum 3/16" bead of gasket maker to the new tail housing, install and torque bolts in a crisscross pattern to 15-20 ft-lbs.



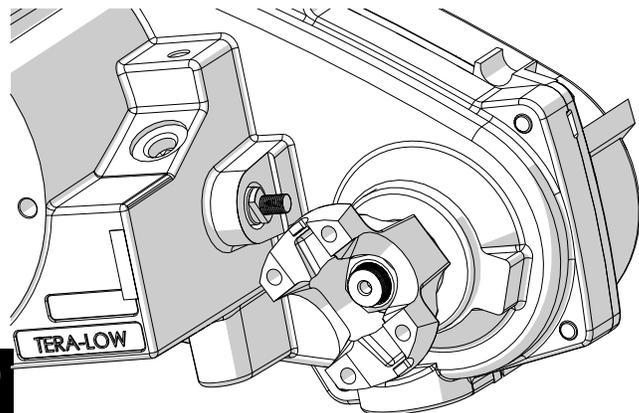
28

Apply a small amount of silicone to seal the spline and yoke interface under the yoke nut. Apply red thread locking compound to the yoke nut and torque to 90-130 ft-lbs.



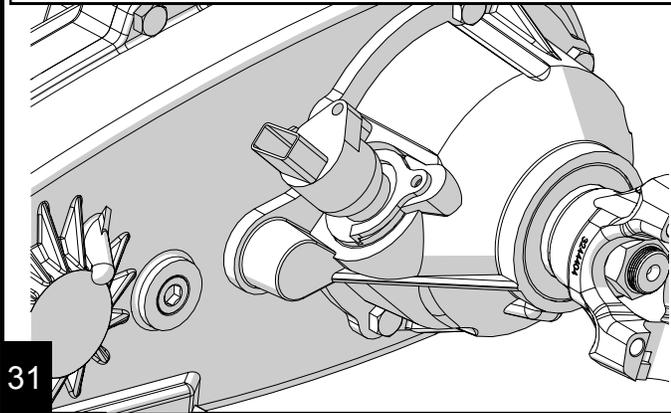
29

Install the rubber seal washer on front output, install yoke. Apply red thread locking compound to nut and torque to 90-130 ft-lbs



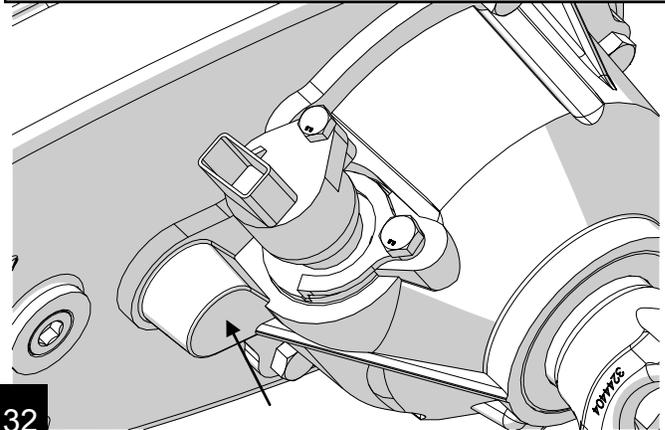
30

Apply a thin film of oil to sensor o-ring to aid in sensor installation. To be sure that the gears are engaged, rotate the yoke with your hand on the sensor, you will be able to feel the sensor turn.



31

Torque the sensor bolt 8-12 ft-lbs. XJ applications, install the vacuum switch into the tail housing. Torque to 15-25 ft-lbs.



32

Fill transfer case with 2.2 pints (1.0L) of ATF+4 and reinstall into vehicle if transfer case was removed.

33

NP 231 TORQUE SPECIFICATIONS

DESCRIPTION	N·m	Ft. Lbs.
Plug, Detent	16-24	12-18
Plug, Drain/Fill	20-34	15-25
Bolt, Front Brg. Retainer	21	16
Bolt, Case Half	27-34	20-25
Nut, Front Yoke	122-176	90-130
Nut, Range Lever	27-34	20-25
Bolt, Rear Retainer	35-46	26-34
Nuts, Mounting	35-47	26-35
Switch, Indicator	20-34	15-25

PRODUCT INFORMATION

MAINTENANCE INFORMATION:

It is the buyer's responsibility to have all suspension, drivetrain, steering, and other components checked for proper tightness and torque after the first 100 miles and every 3000 miles after that.

NOTICE TO INSTALLER:

The enclosed "Warning to Driver" sticker must be installed in the vehicle in driver's view. This sticker is to act as a constant safety reminder when operating the vehicle. It is your responsibility as the equipment installer to install the provided sticker and to forward the product instructions to the vehicle's owner for review. If a "Warning to Driver" sticker or product installation guide were not included in the kit, FREE replacement stickers and instructions are available by request. It is the installer's duty to ensure a safe and controllable vehicle after the modifications have been performed.

WARNING:

Neither the seller nor the manufacturer will be liable for any loss, damage, or injury directly or indirectly arising from the use of or inability to determine the use of these products. Before using, the user shall determine the suitability of the products for its intended use, and the user shall assume all responsibility and risk in connection therewith.

WARNING TO DRIVER:

This vehicle has been modified to enhance off road performance and has unique handling characteristics. Use in harsh environments can cause extreme stress on the components. Vehicle should be inspected after being off road to make sure that all the components are in working order and safe to travel on the highway. All fasteners should be checked so that they are at the correct torque specifications as the vibration and stresses from off roading may cause critical fasteners to work loose. Extra care should be taken to inspect the critical components, steering, and brake systems. During each oil change components such as arms, tie rod ends, etc should be greased and checked for excessive wear. Any worn components should be replaced. When returning to the pavement always set or restore tire air pressure to the factory recommendation and connect or engage any disabled sway bar mechanisms. Because of the higher center of gravity and larger tires, this vehicle handles and reacts differently than many passenger cars, both on and off road. You must drive it safely! Extreme care should be taken to prevent vehicle rollover or loss of control, which can result in serious injury or death. Avoid sudden sharp turns or abrupt maneuvers. Generally, braking performance and capabilities are decreased when significantly larger/heavier tires are used, especially when used in combination with transfer case low-range reduction kits. Take this into consideration while driving. Do not add, alter or fabricate any factory or aftermarket parts to increase vehicle height over the intended height of the TeraFlex product purchased. Mixing component brand is not recommended. TeraFlex Inc. will not be responsible for any altered product or any improper installation or use of our products. We will be happy to answer any questions concerning the design, function, and correct use of our products. It is ultimately the buyer's responsibility to have all bolts/nuts checked for tightness after the first 100 miles and then every 3000 miles. Wheel alignment, steering system, suspension and drive line systems must be inspected by a qualified professional mechanic at least every 3000 miles.

TERAFLEX PRODUCT WARRANTY:

TeraFlex Inc. warrants TeraFlex Suspension products to the original retail purchaser to be free of defects in material and workmanship for as long as the original purchaser owns the vehicle on which products were originally installed.

Failure to complete regular maintenance (grease every 3000 miles) on TeraFlex FlexArms will void this warranty. All other conditions of the standard TeraFlex product warranty apply.

All TeraLow products are covered by the TeraFlex two (2) year warranty to be free of defects in material and workmanship for two years from date purchased.

TeraFlex axles are covered by a 12-month warranty to be free of defects in materials and workmanship.

This warranty does not cover or include product finish, improperly installed or applied products, improperly maintained products, products or components used for racing or competition or damage due to abuse or neglect, products that fail due to the use of larger tire and wheel combinations.

All returns must be accompanied by an original invoice. It is the customer's responsibility to remove the product from the vehicle. Shipping charges are the responsibility of the customer. TeraFlex Inc. will pay the return freight if the product meets the terms of warranty.

This warranty is for the replacement or repair of defective TeraFlex products only and does not include freight charges, labor charges for removal of or installation of TeraFlex or related products or components, costs incurred due to down time of the vehicle, or lost profits due to vehicle down time.

A returned goods authorization number (RGA#) must accompany any returned products. For more information please contact a TeraFlex customer service representative.

COPYRIGHT

©Copyright 2014. All rights reserved, TeraFlex Inc. Reproduction of this catalog and/or any of its contents without written permission is strictly prohibited.

TeraFlex® is a registered trademark of TeraFlex Inc. All trade names and logos including but not limited to TeraFlex, FlexArms, RockGuard, Monster, and LCG are protected by law and duplication of trade names and/or logos are strictly prohibited.

TeraFlex Inc. reserves the right to update, discontinue, redesign, modify finish, part number or component build parts if deemed necessary without written notice.

TeraFlex Inc., and any associated dealers are not responsible for misprints or typographical errors that may have inadvertently been made within this instruction sheet.

Jeep® and the Jeep® grill are registered trademarks of Fiat Chrysler Automobiles N.V., and have no affiliation with TeraFlex Inc.

TERAFLEX, Inc.
5680 West Dannon Way
West Jordan, Utah 84081
Phone/801.713.3314
Fax/801.713.2313
www.teraflex.com