

OVER TWO DECADES OF PROVEN EXCEPTIONAL PERFORMANCE



- ◆ Application Guide
- ◆ Specifications
- ◆ Ordering Info



G2 PRO
SERIES

RUBI CRAWLER
42RLC AUXILIARY CRAWL BOX

ADVANCE ADAPTERS

SINCE NINETEEN SEVENTY ONE



This edition of the Advance Adapters Atlas Manual has been prepared to assist you with the general information on Atlas Transfer Case applications as well as the installation recommendations. An Atlas Transfer Case is sure to change the way your vehicle performs offroad. You will benefit greatly by understanding the Atlas characteristics and how to apply them for ultimate trail performance! If you should have any questions or comments, please feel free to contact our sales staff.

The information in this guide is constantly being updated and we ask that you verify any information that may be critical to your application. Please **REREAD** the **OPERATING INSTRUCTIONS** once you have completed your installation.

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LIMITED WARRANTY:

Atlas transfer cases have a warranty for 1 year from the date of shipping from Advance Adapters. These products will be free from defects in material and workmanship under the customary and normal installation, use, and service. This guarantee covers all components (gear sets, castings, shafts, bearings, gaskets & hardware).

We will not warranty any units that have not had adequate oil and maintenance. If at any time within the one year warranty period you have a problem or claim, simply return the unit prepaid to Advance Adapters and it will be completely rebuilt or replaced free of charge--provided the proper installation procedures were followed. **WARRANTY IS VOID** if (as determined by Advance Adapters) misuse, abuse, alterations of the product, racing/competition use, improper install or if the proper gear lubricants are not used, proper oil levels are not maintained, and installation and maintenance instructions have not been followed. These guarantees DO NOT cover any labor, shipping, normal wear or any other unforeseen event that may occur due to failure of a unit.

Advance Adapters reserves the right to repair or replace any product. All returns must be sent prepaid & have a **(RGA#) Return Authorization Number**. Please call the sales department for assistance.

SPECIAL NOTE: This manual has been put together with the best possible information available to us. Advance Adapters cannot accept the responsibility for vehicles and applications that are not standard. The contents of this brochure have been proofread before printing to minimize errors. We cannot be held responsible for errors overlooked. Please feel free to contact us with any suggestions or comments you may have regarding any portion of this manual. The information that you provide us could be useful in assisting other customers. The word Jeep & Jeep Grille as used in the contents of this manual have been recognized as a registered trade mark of Chrysler Corp. The artwork and copy contained in this manual is the property of Advance Adapters LLC and any use in part or in whole must obtain written permission from Advance Adapters. All contents of this catalog have a copyright and are reserved for Advance Adapters only.

Atlas Specifications

ATLAS 2 SPEED “Trail Rated”

The Atlas Trail Rated case is our standard application Atlas for most stock vehicles.

CASE: Material356-T6 Heat Treated Aluminum
Weight.....110 lbs. (dry)

INTERNAL COMPONENTS:

GearsHelical Cut
BearingsNeedle & Taper Rollers
SynchronizersBorg Warner
Available Input 10, 21, 23, 25, 26, 27, 28,
Shaft Splines: 29, 31, 32, 34, 35, Divorced unit

Rear Shaft32 Spline
Front Output.....32 Spline
Idler Pin.....1.25" diameter

RATIOS:

Low Range:2.0:1 or 3.0:1 or 3.8:1
or 4.3:1 or 5.0:1
High Range1:1

LUBRICATION:2.0 Quarts Redline 75-90

ATLAS 2 SPEED “G2 PRO Rated”

The Atlas G2 Pro Rated case is designed for Race competition vehicles. The case has a 300M output shaft and super finished gears. This case is race-proven and performs excellent in short courses as well as K.O.H.

CASE:

Material356-T6 Heat Treated Aluminum
Weight110 lbs. (dry)

INTERNAL COMPONENTS:

GearsHelical Cut Super Finished
BearingsNeedle & Taper Rollers
SynchronizersBorg Warner
Input Shaft Splines: 27, 29, 31, 32, 34, Divorced unit

Rear Shaft32 Spline 300M
Front Output.....32 Spline
Idler Pin.....1.50" diameter

RATIOS:

Low Range:1.5:1 or 2.0:1 or 3.0:1 or 3.8:1
High Range 1:1

LUBRICATION: 2.0 Quarts Redline Shockproof

ATLAS 2 SPEED “G2 HD Rated”

The Atlas G2 HD Rated case is our step-up case for vehicles that are a bit more modified. The larger cluster pin design with improved bearing support provides a perfect fit for vehicles demanding more.

CASE: Material356-T6 Heat Treated Aluminum
Weight.....110 lbs. (dry)

INTERNAL COMPONENTS:

GearsHelical Cut/Super Finish option
BearingsNeedle & Taper Rollers
SynchronizersBorg Warner
Available Input 10, 23, 26, 27, 28,
Shaft Splines: 29, 31, 32, 34, 35, Divorced unit

Rear Shaft32 Spline/ 300M option /
Flat tow or oil pump option
Front Output.....32 Spline
Idler Pin.....1.50" diameter

RATIOS:

Low Range:1.5:1 or 2.0:1 or 3.0:1 or 3.8:1
or 4.3:1
High Range1:1

LUBRICATION:.....2.0 Quarts Redline Shockproof
2.0 Quarts Redline ATF for Flat Tow units

ATLAS 4 SPEED

The Atlas 4 speed gives you a variety of gearing. This box was originally designed for low horsepower rigs. Today, gearing options for different terrain is the main need for this unit. With the Planetary increasing the torque in the Atlas, high horsepower and racing applications are not recommended.

CASE: Material356-T6 Heat Treated Aluminum
Weight135 lbs. (dry)

INTERNAL COMPONENTS:

GearsHelical Cut
Planetary Assy.....6 Pinion Helical design
BearingsNeedle & Taper Rollers
SynchronizersBorg Warner
Available Input Shaft Splines: 23, 27, 29, 31, 32, 34

Tail Shaft & Front Output.....32 Spline
Idler Pin.....1.50" diameter

RATIOS:

Low Range.....1.5:1, 2.72:1 & 4.08:1
or 2.0:1, 2.72:1 & 5.44:1
or 2.72:1, 3.0:1 & 8.16:1
or 2.72:1, 3.8:1 & 10.34:1
or 2.72:1, 4.3:1 & 11.70:1
High Range1:1

LUBRICATION:.....2.5 Quarts Redline 75-90

Atlas Information & Accessories

Oil Specification: The Atlas is shipped DRY. Before operating your Atlas, please fill with the recommended gear lubricant:

Red Line 75W-90 API GL4 Trail series case and the Atlas 4 speed cases [P/N 303200](#).

Red Line Heavy Shockproof G2 HD series [P/N 303201](#).

Red Line ATF for the Flat Tow case option [P/N 303202](#).

Additional oil options: Amsoil MTF GL-4, Torco MTF GL-4 or any other A.P.I. GL-4 rated synthetic gear oil.

The recommended oil capacity for the **Atlas 2 speed is 2 quarts**, and the **Atlas 4 speed is 2-1/2 quarts**. The Atlas does have a 'weep hole' to verify the oil level; however, we recommend our site tube kit be used to aid in determining the correct fluid level. Once the required quarts are put into the Atlas, we recommend marking the oil level on the site tube. *The oil site tube should be marked to indicate proper oil level for the Atlas at the rotation installed in your vehicle.* We prefer using a small zip tie as an oil level marking device.

NOTE: When the Atlas is overfilled with more than the recommended level, it will cause the unit to vent the extra oil out the breather. **Atlas oil levels should be monitored frequently. The oil should be drained and replaced after the first 500 miles and then at intervals of 10,000 to 15,000 miles thereafter.**

Atlas 2 and 4 speed Replacement Site Tubes: We carry replacement parts for existing Atlas site tubes. We currently offer two of the three thread sizes that fit the Atlas case. Early cases were drilled and tapped for 1/2" flare pipe fittings, we switched to a 1/4" flare pipe fittings for a few years, and now use a 9/16" - 18 thread (Manufactured after Nov. 2014.)

P/N 301600	Site tube kit with 1/4" fittings
P/N 301603	Site tube kit sold for current production units 9/16" - 18
P/N 301602	Replacement site tube for all cases with 90 degree fittings

Breather, Hose & U-Bolts: Normally a new breather and breather hose is required to properly vent an Atlas 2 or 4 speed transfer case. We can now supply you these items along with additional Atlas oil for the first or future oil changes. U-bolt kits for the standard yokes are also listed below.

Breather & Breather Hose

P/N X11320	2SP Atlas kit
P/N X11324	4SP Atlas kit

U-Bolt kits (includes two U-bolts)

P/N X11340	1310 & 1330 U-Bolt kit
P/N X11341	1350 & 1410 U-Bolt kit
P/N X11342	1410 Strap kit

Atlas Stud and Nut Kit: [P/N 302070](#)



Body Mounts: When installing an Atlas in some vehicles, floorboard clearances can become an issue. The Jeep TJs and YJs can be installed with in Atlas without a lift, but the extra 1" provided for these applications aid in the installation process.

ATLAS
O.A.L. with
the Yoke list
[1310 NON CV](#)
[1310 CV](#)
[FLANGE 1300](#)
[1350 NON CV](#)
[1410 NON CV](#)
[1350 CV](#)
[FLANGE 1410](#)

Atlas 2 speed STD. tailhousing	Atlas 2 speed Short tailhousing	Atlas 4 speed STD. tailhousing	Atlas 4 speed Short tailhousing
13.405"	11.380"	18.381"	16.356"
13.842"	11.817"	18.818"	16.793"
12.224"	10.199"	17.200"	15.175"
13.467"	11.442"	18.443"	16.418"
13.655"	11.630"	18.631"	16.606"
14.027"	11.815"	18.816"	16.791"
12.092"	10.067"	17.068"	15.043"

**LENGTH
COMPARISON:**
Dana 300, 12"
NP231, 20.5"
NP241, 15-1/4"

Atlas Shifter Knobs Option:

The Atlas twin stick shifter kit comes with two standard black knobs packed in the rubber shifter boot. You can customize your Atlas installation with one of our billet aluminum or anodized aluminum knobs. All knobs come in a standard pattern or reversed pattern for the cable shifters and measure 2-3/4" tall.



P/N 303150 Aluminum knobs Std. pattern
P/N 303150AA Black knobs Std. pattern
P/N 303150BL Blue knobs Std. pattern
P/N 303150GN Green knobs Std. pattern
P/N 303150RD Red knobs Std. pattern



P/N 303152 Aluminum knobs Rev. pattern
P/N 303152AA Black knobs Rev. pattern
P/N 303152BL Blue knobs Rev. pattern
P/N 303152GN Green knobs Rev. pattern
P/N 303152RD Red knobs Rev. pattern



P/N 303155 2 Speed Std. "Sport" labeled (Black)
P/N 303157 2 Speed Rev. "Sport" labeled (Black)



P/N 303155BL 2 Speed Std. "Sport" labeled (Blue)
P/N 303157BL 2 Speed Rev. "Sport" labeled (Blue)



P/N 303155RD 2 Speed Std. "Sport" labeled (Red)
P/N 303157RD 2 Speed Rev. "Sport" labeled (Red)



P/N 303155GN 2 Speed Std. "Sport" labeled (Green)
P/N 303157GN 2 Speed Rev. "Sport" labeled (Green)



P/N 303156 4 Speed Std. "Sport" (Black)
P/N 303158 4 Speed Rev. "Sport" (Black)

P/N 303156BL 4 Speed Std. "Sport" (Blue)
P/N 303158BL 4 Speed Rev. "Sport" (Blue)

P/N 303156RD 4 Speed Std. "Sport" (Red)
P/N 303158RD 4 Speed Rev. "Sport" (Red)

P/N 303156GN 4 Speed Std. "Sport" (Green) Not shown
P/N 303158GN 4 Speed Rev. "Sport" (Green) Not shown



P/N 303159
 Black knobs Std. pattern

P/N 303159-4
 Single knob reduction box



P/N 303159-C
 Cable shifter Black knobs reverse pattern



APPAREL:

We are constantly updating and adding new apparel. Most items have an Advance Adapters logo or Atlas transfer case logo. We buy quality apparel products since they represent our name. Check out our new apparel online at www.advanceadapters.com under the Apparel Category.

Most apparel is stocked in sizes ranging from Medium to XXXL. The apparel size is included in the part numbers (XLG is used for Extra large).

P/N 716051 — - Black logo T-shirts (indicate size)

P/N 716051 — -USA Orange logo T-shirts (indicate size)

Atlas Case Operating Temperature:

The case temperature will vary with the type of driving you are doing with the vehicle as well as outside air temperature and air flow around the drivetrain. The numbers listed below are what we feel are the normal operational temperatures. If you do connect a temperature gauge to your Atlas and are getting temperature variances from what we have listed, you should first make sure your gauge is accurately calibrated. If the gauge is reading correctly and your case temperature is greater than 15% than what we have listed, please call one of our technicians.

Normal Operating Temperature: 160 - 175F

Vehicle using high horsepower or pulling a heavy load: 190 - 220F

Maximum recommended case operational temperature: 230 - 240F

Custom Build Your Atlas 2 Speed T/C Trail or G2 Series

1. Gear Ratios

TRAIL (1.25" Idler)

ATLAS30	3.0 Gears 1.25 Idler Pin
ATLAS38	3.8 Gears 1.25 Idler Pin
ATLAS43	4.3 Gears 1.25 Idler Pin
ATLAS50	5.0 Gears 1.25 Idler Pin

G2 HD (1.50" Idler)

ATLAS15-G2	1.5 Gears W/ 1.5" Idler Pin
ATLAS20-G3	2.0 Gears W/ 1.5" Idler Pin
ATLAS30-G2	3.0 Gears W/ 1.5" Idler Pin
ATLAS38-G2	3.8 Gears W/ 1.5" Idler Pin
ATLAS43-G2	4.3 Gears W/ 1.5" Idler Pin

109% increase in beam strength / 7% dynamic/ 15% static load rating bearing sets / 25% thrust surface area for higher thrust loads / 7% reduction in weight

G2 PRO Super Finished (1.50" Idler)

ATLAS15-G2SF	1.5 Gears W/ 1.5" Idler Pin SUPER FINISHED
ATLAS20-G3SF	2.0 Gears W/ 1.5" Idler Pin SUPER FINISHED
ATLAS30-G2SF	3.0 Gears W/ 1.5" Idler Pin SUPER FINISHED
ATLAS38-G2SF	3.8 Gears W/ 1.5" Idler Pin SUPER FINISHED
ATLAS43-G2SF	4.3 Gears W/ 1.5" Idler Pin SUPER FINISHED

The super finished gears provide a number of benefits: less friction / lower operation temperatures, extended component life, increase efficiency & reduce lubrication requirements.

2. Input Splines

P/N	Gear Set	Description
A10	T,G2	GM 10 Spline
A21	T	JEEP 21 Spline
A23	T,G2	2" Input Stickout
A23LONG	T,G2	Long Input
A23SHORT	T,G2	JEEP 42RLE Trans JK Manual (ALL NSG-370)
A26A	T	2012-18 JK AUTO Trans. (Trail Case) <i>*Skip Item 3 Case Option</i>
A26A-G2	G2	2012-18 JK AUTO Trans. (Pro Case)
A26A-G2-FT	G2	2012-18 JK AUTO (Pro Case Flat Tow) <i>*Skip Item 3 Case Option</i>
A27	T,G2	GM 27 Spline
A28	T,G2	BRONCO C4 & FORD Transmission
A29	T,G2	DODGE 29 Spline
A29HD	G2	DODGE 29 Spline (HD MATL.)
A31	T,G2	FORD 31 Spline
A31S	T,G2	Short FORD 31 (6R80/ALLISON)
A32	T,G2	GM 32 Spline
A32HD	G2	GM 32 Spline (HD MATL.)
A34	T,G2	FORD 34 Spline
A35	T,G2	GM 2WD 35 Spline
A43F	G2	43 FORD 6R140 Trans.
A-DIV-T3	T,G2	DIVORCED ATLAS (Req. Extra Yoke, Front Yoke Needs Counter Bore)

3. Case Rotation

TRAIL OPTIONS:

ALC-T	LEFT Drop TRAIL SERIES CASE Flat, 18, 25, 32, 39, 46 (2.1875 Offset) Flat, 8, 15, 22, 29, 39 (1.6875 Offset)
ALC-D	LEFT Drop DIVORCED
ARC-T	RIGHT Drop TRAIL SERIES CASE 4, 11, 18, 25 (2.1875 Offset) 14, 21, 28, 35 (1.6875 Offset)
ARC-D	RIGHT Drop DIVORCED

G2 HD OPTIONS:

ALC-G2	LEFT Drop Case 1.5" Idler Pin
ALC-G2-D	LEFT Drop DIVORCED Case 1.5" Idler Pin
ALC-43F-G2	LEFT Case Assy. FORD 43 INPUT
ALC-G2-FT	LEFT Drop FLAT TOW 1.5" Idler Pin Flat, 18, 25, 32, 39, 46 (2.1875 Offset) Flat, 8, 15, 22, 29, 39 (1.6875 Offset)
ARC-G2	RIGHT Drop Case 1.5" Idler Pin
ARC-G2-D	RIGHT Drop DIVORCED Case 1.5" Idler Pin

4. Shift

Shift Control Options - ALL Gear Sets

301510A	Left Shift Control
301511A	Right Shift Control
301515	Left drop single stick shifter

5. Tailhousing

TRAIL OPTIONS:

ALT-T	Output Shaft (STD. Tailhousing)
AST-T	Output Shaft (SHORT Tailhousing)
AVT-T	GM VSS Tailhsg / RIGHT or LEFT DROP

G2 HD OPTIONS:

ALT-G2	300M Output Shaft (STD. Tailhousing)
AST-G2	300M Output Shaft (SHORT Tailhousing)
AVT-G2	300M GM VSS Tailhsg / RIGHT or LEFT DROP

(G2 PRO) FLAT TOW

(LEFT DROP CASES ONLY)

AFT-JP	JEEP VSS (FLAT TOW Tailhousing)
AFT-GM	GM VSS (FLAT TOW Tailhousing)
AFT-STD	NO SPEEDO Output (FLAT TOW Tailhousing)

List Rear Output First

A1310	32 Spline Yoke (non C.V.)
A1310CV	32 Spline Yoke
A1330CV	32 Spline Yoke
A1350	32 Spline Yoke (non C.V.)
A1350CV	32 Spline Yoke
A1410	32 Spline Yoke (non C.V.) strap style
A1410U	32 Spline Yoke (non C.V.) u-bolt style
AF1300	32 Spline FLANGE Yoke 1310-1350
AF1350	32Sp FLANGE 1350, 1410 (CV 3.125 Male Index)
AF1410	32Sp FLANGE 1350, 1410 (non CV 2.75 Female)
AF1410STD	32Sp 1350, 1410 (non CV 2.75 Female, 7/16-20)
AF1480	32 Spline FLANGE Yoke
AFJL	32 Spline Jeep JL Yoke
AFTOY	32 Spline TOYOTA Yoke
A1399	2.125" Seal Sleeve Kit
A1399CV	1.875" Seal Sleeve Kit

6. Yokes

7. Shifter Options

303000HD	H.D 2.5" UNIVERSAL SHIFTER
303000HD1	H.D 5.5" UNIVERSAL SHIFTER
303000L	UNIVERSAL LEFT & RIGHT
303002L	TJ AUTOMATIC
303002U	TJ UNIVERSAL
303003L	TJ MANUAL
303004L	BRONCO
303005L	ZJ
303007L	XJ
303035	JK SHIFTER
303009	UNIVERSAL CABLE
303009-72	72"UNIVERSAL CABLE
303012L	CHEROKEE WJ SHIFTER
303020	TJ CABLE SHIFTER
303030	JL CABLE SHIFTER
303025L	DIVORCED SHIFTER MOUNT LEFT 5" BORE CASE
303026R	DIVORCED SHIFTER MOUNT RIGHT 5" BORE CASE

8. Speedometer Options

Not needed on Flat Tow tailhousing

301506	MECH. SPEEDOMETER HOUSING
300621	SPEEDOMETER HOLE PLUG
300640	ELEC. SPEEDOMETER (TJ)

9. OIL KIT

303210	Oil & Stud kit Atlas 2SP 75W-90 API GL4
303211	Oil & Stud kit Atlas G2 HEAVY SHOOKPROOF
303212	Oil & Stud kit Atlas G2 ATF FLAT TOW CASE

10. Low Range Switch

300364	JEEP TJ'S NON RUBICON (QTY 1)
300377A	JK / JL ATLAS CONTROL MODULE

Jeep JK and JL ATLAS:

Both the Jeep JK's and JL's are prime candidates for the Atlas. There are certain features that these Jeeps need; and to make sure you get the proper components, we offer pre-configured units which include all the necessary items for the proper installation.

For the Jeep JK's the Atlas units listed below only require you to pick a **gear ratio** and the **yokes** needed.

JK's Atlas to 2007-11 Auto Transmission:

- ATLAS-2SP-JK** Std tail Atlas 2SP (Trail Rated)
- ATLAS-PS-JK** Std tail Atlas 2SP (G2/G3 Gears)
- ATLAS-PSF-JK** Flat tow tailhousing Atlas 2SP(G2/G3 Gears)
- ATLAS-4SP-JK** Std tail Atlas 4SP (G2/G3 Gears)

JK's 2SP Atlas to 2012-18 Auto Transmission:

- ATLAS-2SP-JKA** Std tail Atlas 2SP (Trail Rated)
- ATLAS-PS-JKA** Std tail Atlas 2SP (G2/G3 Gears)
- ATLAS-PSF-JKA** Flat tow tailhousing Atlas 2SP(G2G3 Gears)

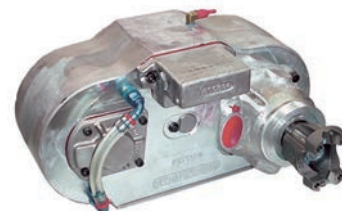
JK's Manual Transmission 2007-18:

- ATLAS-2SP-JK-M** Std tail Atlas 2SP (Trail Rated)
- ATLAS-4SP-JK-M** Std tail Atlas 4SP (G2/G3 Gears)

JL's 2SP Atlas to 2018 & Newer: (These kits do include the Adapter kit &T/C shifter)

- ATLAS-PS-JL** Short tail Atlas 2SP (G2/G3 Gears) *Automatic transmission.*
- ATLAS-PSF-JL** Flat tow tailhousing Atlas 2SP(G2/G3 Gears) *Automatic transmission.*
- ATLAS-PS-JL-M** Short tail Atlas 2SP (G2/G3 Gears) *Manual Transmission.*

****Requires Gear ratio & Yokes****



Complete Jeep JL Pre-configured Units:

These units are offered with a short or flat tow tailhousing. The yokes are the GKN flange yokes that retain the factory driveshafts. These kits are complete units and ready to install.

JL's 2SP Atlas Short tail to 2018 & Newer Auto Trans:

- ATLAS-PS-JL30** 3.0:1(G2 Gears)
- ATLAS-PS-JL38** 3.8:1(G2 Gears)
- ATLAS-PS-JL43** 4.3:1(G2 Gears)

JL's 2SP Atlas Flat tow to 2018 & Newer Auto Trans:

- ATLAS-PSF-JL30** 3.0:1 (G2 Gears)
- ATLAS-PSF-JL38** 3.8:1 (G2 Gears)
- ATLAS-PSF-JL43** 4.3:1 (G2 Gears)



Custom Build Your Atlas 2 Speed “GM Series” T/C

1. Gear Ratios

“TRAIL SERIES”

ATLAS20	2.0 GEARS 1.25 IDLER PIN
ATLAS30	3.0 GEARS 1.25 IDLER PIN
ATLAS38	3.8 GEARS 1.25 IDLER PIN
ATLAS43	4.3 GEARS 1.25 IDLER PIN
ATLAS50	5.0 GEARS 1.25 IDLER PIN

2. Input Splines

A27	GM 27 SPLINE
A29	DODGE 29 SPLINE
A32	GM 32 SPLINE

3. Case Rotation Options

ALC-T-GM	GM LEFT DROP CASE (Flat, 7, 20, 27)
ARC-T-GM	GM RIGHT DROP CASE (Flat (5 holes), 39, 46)

4. Shift Control

301510A	LEFT SHIFT CONTROL
301511A	RIGHT SHIFT CONTROL

5. Tailhousing

AVT-T	GM VSS TAILHOUSING/RIGHT OR LEFT DROP
--------------	---------------------------------------

6. Yoke Options

(list rear output 1st)

A1310	32 SPLINE YOKE (non C.V.)
A1310CV	32 SPLINE YOKE
A1330CV	32 SPLINE YOKE
A1350	32 SPLINE YOKE (non C.V.)
A1350CV	32 SPLINE YOKE
A1410	32 SPLINE YOKE (non C.V.) strap style
A1410U	32 SPLINE YOKE (non C.V.) u-bolt style
AF1300	32 SPLINE FLANGE YOKE 1310-1350
AF1410	32 SPLINE FLANGE YOKE
AF1410STD	32SP. 1350, 1410 N-CV 2.75 FEMALE, 7/16-20
AF1480	32 SPLINE FLANGE YOKE
A1399	2.125" SEAL SLEEVE KIT
A1399CV	1.875" SEAL SLEEVE KIT

7. Speedometer

300621	SPEEDOMETER HOLE PLUG
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8. Shifter Options

303000L	UNIVERSAL LEFT & RIGHT
303009	UNIVERSAL CABLE

9. Site Tube

301603	SITE TUBE KIT
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1. Gear Ratios

“HD & PRO SERIES”

ATLAS15-G2	1.5 GEARS W/ 1.5" IDLER PIN
ATLAS20-G3	2.0 GEARS W/ 1.5" IDLER PIN
ATLAS30-G2	3.0 GEARS W/ 1.5" IDLER PIN
ATLAS38-G2	3.8 GEARS W/ 1.5" IDLER PIN
ATLAS43-G2	4.3 GEARS W/ 1.5" IDLER PIN

ATLAS15-G2SF	1.5 GEARS W/ 1.5" IDLER SUPER FINISHED
ATLAS20-G3SF	2.0 GEARS W/ 1.5" IDLER SUPER FINISHED
ATLAS30-G2SF	3.0 GEARS W/ 1.5" IDLER SUPER FINISHED
ATLAS38-G2SF	3.8 GEARS W/ 1.5" IDLER SUPER FINISHED
ATLAS43-G2SF	4.3 GEARS W/ 1.5" IDLER SUPER FINISHED

2. Input Splines

A27	GM 27 SPLINE
A29	DODGE 29 SPLINE
A29HD	DODGE 29 SPLINE (HD MATL.)
A32	GM 32 SPLINE
A32HD	GM 32 SPLINE (HD MATL.)

3. Case Rotation Options

ALC-G2-GM	GM PRO LEFT DROP (Flat, 7, 20, 27)
ARC-G2-GM	GM PRO RIGHT DROP (Flat (5 holes), 39, 46)

4. Shift Control

301510A	LEFT SHIFT CONTROL
301511A	RIGHT SHIFT CONTROL

5. Tailhousing

AVT-G2	GM VSS TAILHOUSING/RIGHT OR LEFT DROP
ALT-G2	STD TAILHOUSING/RIGHT OR LEFT DROP
AFT-GM	GM VSS (FLAT TOW TAILHOUSING)

6. Yoke Options

(list rear output 1st)

A1310	32 SPLINE YOKE (non C.V.)
A1310CV	32 SPLINE YOKE
A1330CV	32 SPLINE YOKE
A1350	32 SPLINE YOKE (non C.V.)
A1350CV	32 SPLINE YOKE
A1410	32 SPLINE YOKE (non C.V.) strap style
A1410U	32 SPLINE YOKE (non C.V.) u-bolt style
AF1300	32 SPLINE FLANGE YOKE 1310-1350
AF1350	32SP. FLANGE 1350, 1410 CV 3.125 MALE INDEX
AF1410	32SP. FLANGE 1350, 1410 NON CV 2.75 FEMALE
AF1480	32 SPLINE FLANGE YOKE

7. Speedometer

300621	SPEEDOMETER HOLE PLUG
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8. Shifter Options

303000L	UNIVERSAL LEFT & RIGHT
303009	UNIVERSAL CABLE

9. OIL KIT

Custom Build Your Atlas 4 Speed Transfer Case

1. Ratios

ATLAS15-G2	(1:1 / 1.5:1 / 2.72:1 / 4.08:1)
ATLAS20-G3	(1:1 / 2.0:1 / 2.72:1 / 5.44:1)
ATLAS30-G2	(1:1 / 2.72:1 / 3.0:1 / 8.16:1)
ATLAS38-G2	(1:1 / 2.72:1 / 3.8:1 / 10.34:1)
ATLAS43-G2	(1:1 / 2.72:1 / 4.3:1 / 11.69:1)

2. Input Splines

A4-23L	JEEP LEFT DROP 23 SPLINE
A4-23R	JEEP RIGHT DROP 23 SPLINE
A4-23SL	JEEP LEFT DROP SHORT 23 (42RLE TRANS)
A4-23SR	JEEP RIGHT DROP SHORT 23
A4-23WJ	WJ LONG 23 SPLINE LEFT DROP
A4-27L	GM LEFT DROP 27 SPLINE
A4-27R	GM RIGHT DROP 27 SPLINE
A4-29L	DODGE LEFT DROP 29 SPLINE
A4-29R	DODGE RIGHT DROP 29 SPLINE
A4-31L	FORD LEFT DROP 31 SPLINE
A4-31R	FORD RIGHT DROP 31 SPLINE
A4-32L	GM LEFT DROP 32 SPL.
A4-32R	GM RIGHT DROP 32 SPL.
A4-34L	FORD LEFT DROP 34 SPL.

3. Case Rotation Options

A4-LC-G2	4SP LEFT CASE 1.5" IDLER
A4-RC-G2	4SP RIGHT CASE 1.5" IDLER

4. Tailhousing

ALT-T	STANDARD TAILHOUSING
AST-T	SHORT TAILHOUSING
ALT-G2	300M Output Shaft (STD. Tailhousing)
AST-G2	300M Output Shaft (SHORT Tailhousing)

5. Yokes

(list rear output 1st)

A1310	32 SPLINE YOKE (non C.V.)
A1310CV	32 SPLINE YOKE
A1330CV	32 SPLINE YOKE
A1350	32 SPLINE YOKE (non C.V.)
A1350CV	32 SPLINE YOKE (\$65.00)
A1410	32 SPLINE YOKE (non C.V.) strap style
A1410U	32 SPLINE YOKE (non C.V.) u-bolt
AF1300	32 SPLINE FLANGE YOKE 1310-1350
AF1350	32SP. FLANGE 1350,1410 CV 3.125 MALE INDEX
AF1410	32SP. FLANGE 1350, 1410 NON CV 2.75 FEMALE
AFTOY	32 SPLINE TOYOTA YOKE

6. Speedometer Options

301506	*MECH. SPEEDOMETER HOUSING
300621	SPEEDOMETER HOLE PLUG
300640	*ELEC. SPEEDOMETER (TJ)

*Does not include the speedometer drive gear. See Page 24 of the Atlas Manual.

7. Shifters

344000	UNIVERSAL RIGHT or LEFT
344000HD	UNIVERSAL R or L w/ HEIMS
344002	TJ 97-02 AUTO
344003	TJ MANUAL 03 & Newer
344004	BRONCO
344005	ZJ
344007	XJ
303035	JK
303009	UNIVERSAL CABLE
303012L	CHEROKEE WJ SHIFTER
303020	TJ CABLE SHIFTER

8. Reduction Shifter

344020	CABLE SHIFT REDUCTION BOX
344025	JK CABLE SHIFT REDUCTION BOX

9. OIL KIT

303213	Oil & Stud kit Atlas G2 4SP 75W-90 API GL4
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OPTIONAL ITEMS:

BREATHER KIT **P/N X11324**,

4WD SWITCH **P/N 300364**

SWITCH KIT **P/N 300378X** or **P/N 300378A**

CONTROLLER **P/N 300377** or **P/N 300377A**

Stock OEM output shafts:

We stock several OE output shafts and have good sources to obtain others. If you need a replacement shaft to fit your application, and its not listed just give us a call.

Shafts that we stock:

NV4500	4WD 29spl. -	P/N 52-0206
TH350	4WD 27spl. -	P/N 52-1200
TH400	4WD 32spl. -	P/N 52-7001
	2.40" stickout length from trans.	
TH400	4WD 32spl. -	P/N 52-7002
	1.40" stickout length from trans.	
700R	4WD 27spl. -	P/N 52-7450
4L60E	4WD 27spl. -	P/N 52-7460

SM465 Adapter Parts Required:

(1) 51-9807	Adapter Housing
(1) 716515	SM465 Gasket
(7) 723723	3/8" H.H.C.S.
(1) 723711	3/8" Stud Bolt
(8) 723704	3/8" Lock Washer
(1) 723701	3/8"-16 Nut

In addition, the 35 spline

SM465 Requires:

(1) 716457	Set Collar
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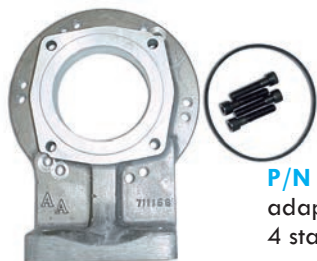
Atlas Adapter Selection Chart

The information listed below is to aid in the selection of the proper Atlas transfer case for the transmission you've selected. On certain transmission applications, we've listed a couple of options when coupling the transmission to the transfer case. The different options usually come about from different adapter lengths, giving you the choice for a longer or shorter drivetrain. With the diversity of adapters we offer, we could actually offer up to 5 or 6 ways to couple some of the different transmissions to the 11 different Atlas input shafts; however, we are trying to simplify the choices and applications.

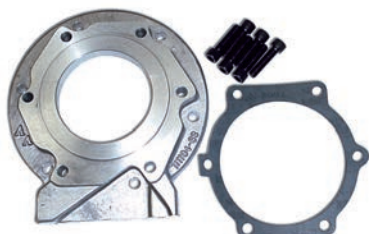
ATLAS TRANSFER CASE ADAPTER SELECTION CHART FOR GM, FORD, JEEP & DODGE MANUAL & AUTO TRANSMISSIONS	ADAPTER KIT, ADAPTER HOUSING OR STOCK HOUSING	ATLAS INPUT SPLINE	ATLAS TRANSFER CASE ADAPTER SELECTION CHART FOR GM, FORD, JEEP & DODGE AUTOMATIC TRANSMISSIONS	ADAPTER KIT, ADAPTER HOUSING OR STOCK HOUSING	ATLAS INPUT SPLINE
GM SM420 4 SPEED 10.5" CASE LENGTH	50-9702 (2) 5.25" ADAP.	23	GM TH350 2WD TRANS. 21.5" CASE LENGTH	50-6300 (2,3) 50-6802 (3)	23
GM SM465 4WD 10 SPL. 12" CASE LENGTH	51-9807 (7) 3.5" ADAPTER	10	GM TH350 4WD TRANS. 21.5" CASE LENGTH	50-6304 (2) AS-6800 (5)	23
GM SM465 2WD 35 SPL. 12" CASE LENGTH (NOTE 9)	51-9807 (4,7) 3.5" ADAPTER	35	GM TH400 2WD TRANS. SHAFT STICKOUT OF 5" (NOTE 9)	AS-6400 (4)	32
FORD RTS 45P O.D. 10.25" CASE LENGTH (4WD trans)	STOCK (5,8)	31	GM TH400 4WD TRANS. SHAFT STICKOUT OF 1.5" (NOTE 9)	AS-6401 (5)	32
FORD & JEEP T98 4 SPEED 11.87" CASE LENGTH	50-7503 (3,7) 3.25" ADAP.	23	GM TH400 4WD TRANS. SHAFT STICKOUT OF 2.5" (NOTE 9)	AS-6440 (5)	32
JEEP T18 4 SPEED 11.87" CASE LENGTH	50-7502 (3,7) 3.25" ADAP.	23	GM 4L80 & 4L80E 4SP TRANS. USE GM 4WD SHAFT (NOTE 9)	AS-6450 (5) AS-6455(ATLAS 4SP)	32
FORD T18 4 SPEED 11.87" CASE LENGTH	50-7500 (3,8,7) 3.25" ADAP.	23	GM 4L80E 4SP TRANS. USE GM 2WD SHAFT (NOTE 9)	AS-0401 (4)	32
FORD T19 4 SPEED 11.87" CASE LENGTH	52-6501(3,8,7) 51-7500	27	GM 700R / 4L60 O/D 4 SPEED 23.375" CASE LENGTH - 2wd Trans.	50-9102 (3)	23
FORD NP435 4 SPEED 10.87" CASE LENGTH	50-3801(3,8,7) 4.25" ADAP.	23	GM 700R / 4L60 O/D 4 SPEED 23.375" CASE - 4wd Trans.	AS-9111(5)	27
1980 to 1986 STOCK JEEP TRANSMISSIONS	STOCK ADAPTER	23	GM 4L60E 2WD & 4WD 23.375" CASE LENGTH	50-0404 (3)	23
1987 & NEWER STOCK JEEP TRANS 21 SPL. OR 23 SPL.	STOCK ADAPTER (7)	21 OR 23	GM 4L60E 4WD TRANS. 23.375" CASE LENGTH	AS-9111 (5,10)	27
GM NV4500 4WD 32 SPL. 12.375" CASE LENGTH	51-0205 (5) 51-0220	32	GM 4L60E 2WD W / REMOVABLE BELLHOUSING	50-0405 & E 50-9102 (3)	23
DODGE NV4500 4WD 23 SPL. 12.375 CASE LENGTH	STOCK (5,7) 6.3" ADAPTER	23	GM 4L60E 4WD TRANS. W / REMOVABLE BELLHOUSING	AS-9300	27
DODGE NV4500 4WD 29 SPL.	STOCK (5,7) 6.3" ADAPTER	29	GM 4L60E 4WD TRANS. SHORTY W / REMOVABLE BELLHOUSING	50-9305 (3)	23
FORD ZF 4WD TRANS. T18/ T19/ NP435 4WD TRANS. NOTE 1	STOCK (1,5,7)	31	GM 6L80 GM 6L90	50-9600 50-9600	32 29
GM MUNCIE 4 SPEED 10" CASE LENGTH NOTE 2,3,7	50-6000 (2,3,7)	23	FORD C4 3 SPEED TRANS. REPLACING A BRONCO DANA 20	STOCK (5,8)	28
GM ZF 6SP 56-650 TRANS		29	FORD C4 3 SPEED TRANS.	50-8100 (3)	23
TACOMA TRANS 23 SPLINE	50-5710	23 short	ALL OTHER VEHICLES OR TRANSMISSIONS		
TACOMA TRANS 26 SPLINE	50-5711	23 short	SHORTY C4 FORD TRANS.	50-2905	27
POWERGLIDE (automatic)	50-9200	27	ALLISON 1000 TRANS.	SEE PAGE 15	29
Toyota Crawler Box to Atlas Case	50-5915	23	FORD AOD 4SP 4WD/4R70W/AODE	STOCK (1,5,7)	31
2012 & Newer JEEP JK AUTOMATICS	STOCK	26	FORD C6 3 SP. TRANS. 20" CASE LENGTH	STOCK (1,5,7)	31
2007-2011 JK Autos & Manuals	STOCK	23 short	FORD EXPLORER/RANGER/BRONCO II	STOCK (5)	25
2012 & Newer JK Manuals			1980-11 JEEP AUTOMATICS	STOCK (1,5)	21 or 23

- (1) OUTPUT SHAFT MAY NEED TO BE SHORTENED OR A SPACER ADAPTER MAY NEED TO BE USED:
P/N AS-0404 - 1", P/N AS-8603 - 3/4" or P/N AS-8610 - 1/2"
- (2) THIS KIT USES A SPUD SHAFT
- (3) NEW OUTPUT SHAFT MUST BE INSTALLED
- (4) USES A STOCK 2WD OUTPUT SHAFT
- (5) USES A STOCK 4WD OUTPUT SHAFT
- (6) THIS KIT SHOULD BE USED IN CONJUNCTION WITH A 700R KIT

- (7) THE CASTING IN THIS KIT ONLY HAS ONE ROTATION AVAILABLE
- (8) THIS TRANSMISSION, IF CURRENTLY ADAPTED TO A BRONCO DANA 20 TRANSFER CASE, CAN USE AN ATLAS 28 SPLINE TRANSFER CASE AS A DIRECT BOLT UP TO THE TRANSMISSION ADAPTER
- (9) THE OUTPUT SHAFT MUST BE SHORTENED TO BE A FLUSH STICKOUT WITH THE BACK SIDE OF THE ADAPTER HOUSING
- (10) A RELUCTOR RING AND SENSOR KIT MUST BE PURCHASED, P/N 716073E



P/N AS-6800 - Includes a 1.5" adapter, an o-ring, 4 metric and 4 standard socket head cap screws.



P/N AS-9111 - Includes a 2.5" adapter, an o-ring, 4 metric and 4 standard hex head cap screws.

P/N AS-6401 - Includes a 1.25" adapter, a gasket, and 6 standard socket head cap screws.

GM 4L80E 4WD Requires:

- (1) **AS-6408** Adapter housing
(1) **50-6409** or **50-6410** 1.625" Reluctor kit
(6) **720028** S.H.C.S.



Spacer Adapters:

P/N AS-0404 - Includes a 1" spacer adapter, 6 longer studs, 6 lockwashers, and 6 nuts.

P/N AS-8603 - Includes a 3/4" spacer adapter and 6 bolts.

P/N AS-8610 - Includes a 1/2" spacer adapter, 6 longer studs, 6 lockwashers, and 6 nuts.

Atlas Gear Sets

The Atlas have undergone a few changes and update over the years. The gear sets is one item that has been updated and the update have dictated additional changes to the cast and other components. Most of the Atlas 2 speeds can be ordered with the different gear options listed below. **The Atlas flat tow and the Atlas 4 speeds are only offered with Option 2 and 3.**

We currently offer three different gear options for the various ratios we sell.

Option 1: The first option is our "Trail" series gears. These gears are a full fillet design and use the 1.25" idler pin.

Option 2: The second option is our "G2 HD" series gears. These are also full fillet and sport a larger idler pin of 1.50". This larger pin allows a stronger unit by reducing the gear deflection under load created by weight of vehicle or power of the engine. This gear set is indicated by a "-G2" at the end of the part number.

Option 3: The last option is the same "G2 PRO" gear set, but the gears are processed with the isotropic super finish. The super finished gears provide a number of benefits: less friction / lower operation temperatures, extended component life, increase efficiency & reduce lubrication requirements. This gear set is indicated by a "-G2SF" at the end of the part number.

The current ratios we offer are as follows:

1.5:1 This ratio is offered for both 2 speed and 4 speed transfer cases. This gear set is only made with the gear option 2 and 3. The Atlas 4 speed would have the following gearing options: 1.0:1, 1.5:1, 2.72:1, 4.08:1.

Atlas15-G2: includes 5 gears which consist of an input P/N 309115-FFA, front output P/N 309315-FFA, idler gear P/N 310415-FFA, and 2 low speed gears P/N 309515-FF.

Atlas15-G2SF: includes 5 gears which consist of an input P/N 309115-SFA, front output P/N 309315-SFA, idler gear P/N 310415-SF, and 2 low speed gears P/N 309515-SF.

2.11:1 This ratio is offered for both 2 speed and 4 speed transfer cases. This gear set is made with all the options. The Atlas 4 speed would have the following gearing options: 1.0:1, 2.11:1, 2.72:1, 5.44:1.

Atlas20: includes 5 gears which consist of an input P/N 309115-FFA, front output P/N 309315-FFA, idler gear P/N 309420-FFA, and 2 low speed gears P/N 309530-FFA.

Atlas20-G2: includes 5 gears which consist of an input P/N 309115-FFA, front output P/N 309315-FFA, idler gear P/N 310420, and 2 low speed gears P/N 309530-FF.

Atlas20-G2SF: includes 5 gears which consist of an input P/N 309115-SFA, front output P/N 309315-SFA, idler gear P/N 310420-SF, and 2 low speed gears P/N 309530-SF.

3.03:1 This ratio is offered for both 2 speed and 4 speed transfer cases. This gear set is made with all the options. The Atlas 4 speed would have the following gearing options: 1.0:1, 2.72:1, 3.03:1, 8.16:1.

Atlas30: includes 5 gears which consist of an input P/N 309130-FF, front output P/N 309330-FF, idler gear P/N 309430-FF, and 2 low speed gears P/N 309530-FF.

Atlas30-G2: includes 5 gears which consist of an input P/N 309130-FF, front output P/N 309330-FF, idler gear P/N 310430, and 2 low speed gears P/N 309530-FF.

Atlas30-G2SF: includes 5 gears which consist of an input P/N 309130-SF, front output P/N 309330-SF, idler gear P/N 310430-SF, and 2 low speed gears P/N 309530-SF

3.824:1 This ratio is offered for both 2 speed and 4 speed transfer cases. This gear set is made with all the options. The Atlas 4 speed would have the following gearing options: 1.0:1, 2.72:1, 3.8:1, 10.34:1.

Atlas38: includes 5 gears which consist of an input P/N 309138-FF, front output P/N 309338-FF, idler gear P/N 309438-FF, and 2 low speed gears P/N 309530-FF.

Atlas38-G2: includes 5 gears which consist of an input P/N 309138-FF, front output P/N 309338-FF, idler gear P/N 310438, and 2 low speed gears P/N 309530-FF.

Atlas38-G2SF: includes 5 gears which consist of an input P/N 309138-SF, front output P/N 309338-SF, idler gear P/N 310438-SF, and 2 low speed gears P/N 309530-SF.

4.286:1 This ratio is offered for both 2 speed and 4 speed transfer cases. This gear set is made with all the options. The Atlas 4 speed would have the following gearing options: 1.0:1, 2.72:1, 4.3:1, 11.69:1.

Atlas43: includes 5 gears which consist of an input P/N 309143-FF, front output P/N 309343-FF, idler gear P/N 309443-FF, and 2 low speed gears P/N 309530-FF.

Atlas43-G2: includes 5 gears which consist of an input P/N 309143-FF, front output P/N 309343-FF, idler gear P/N 310443, and 2 low speed gears P/N 309530-FF.

Atlas43-G2SF: includes 5 gears which consist of an input P/N 309143-SF, front output P/N 309343-SF, idler gear P/N 310443-SF, and 2 low speed gears P/N 309530-SF.

5.048:1 This ratio is offered for a 2 speed only. The Atlas 4 speed is not a option with this gear set. This gear set is only made with the gear option 1.

Atlas50: includes 5 gears which consist of an input P/N 309150, front output P/N 309350, idler gear P/N 310450, and 2 low speed gears P/N 309550.

Obsolete Gear Sets

2.09:1 This gear set was the early 2.0:1 ratio but was updated in April of 2014. The updated gear set added strength to the 2.0 ratio, however, the new design was not interchangeable with this gear set. This ratio 2.09:1 is an obsolete gear set for new units but we still offer gears replacements for old Atlas transfer cases. Input P/N 309120-FF, front output P/N 309320-FF, idler gear P/N 310420-FF, and 2 low speed gears P/N 309520-FF. Please call and check availability on any of the 2.09:1 gears.

6.00:1 This gear set was discontinued in November of 2007. we no longer have any of these gears available.

Atlas Rebuilds Kits

Seal and bearing kits: Complete rebuild kits that include new seals, bearings, gaskets, synchro dogs, springs and brass rings.

AB1000 Atlas 2 speed rebuild kit 1.25" idler

AB1003 Atlas 2 speed rebuild kit 1.5" idler

Atlas 2 Speed Racer Rebuild Kits: These are kits most racers should carry on hand and should be items that are periodically checking during the race year. What we have seen is that racers are the hardest on their equipment including the Atlas; however, the Atlas gets overlook many times when racers overhaul their rigs. This kit includes the items that take the most wear & abuse and, if negelected could cause complete failure of a unit. We have done some updates to the custer pin, so we offer a few different kits depending on the case serial number.

P/N AB2000 - Atlas cases before case #12313
P/N AB2002 - All Atlas Race Cases

P/N AB2001 - Atlas cases after case #12314
P/N AB2003 - Atlas cases with the 1.5" idler



Atlas Front Input Shaft

The Atlas is designed to fit numerous types of transmissions. The multitude of Atlas inputs are designed to fit to various stock transmission output shaft splines. Depending on the transmission of your choice, the Atlas can be bolted to the transmission using either a stock adapter or one of our transfer case adapter housings. When using a transmission out of a 2WD vehicle or even with some 4WD transmissions, you may be required to install a complete adapter kit which would include a new output shaft. This requirement is due to either the length of the output shaft or the length of the stock adapter being too long for your application.

The following pages list the different available input splines for the Atlas. You must make sure that your transmission has the proper bolt pattern and proper output shaft stickout length. **Incorrect output shaft lengths or improper indexing adapters can cause internal damage to the unit, voiding the warranty.** Please read the following information to verify the correct application.

JEEP 21 SPLINE:

The 21 spline Atlas was designed to fit Jeeps that were originally equipped with a 4 cylinder (and some 6 cylinders). Jeeps 1987 & up (with a 4 and some 6 cyl.) used 1 of 3 transmissions: the AX5, the Peugeot or AW4. The output shaft on these transmissions are either flush or protrude approximately a 1/2" from the stock transmission adapter. The AW4 transmission was most commonly found in the early Jeep Cherokees. All 4 cylinders manual transmission and most 4.0L 6 cylinder non-high output engines seem to be 21 spline transmissions; however, we recommend verifying the spline count on these transmission applications. The Jeep high output 4.0L 6 cylinder with the AW4 should be a 23 spline output shaft. **NOTE:** The 21 splines on these transmissions are very small in diameter, and thus we have seen the stock output shaft break on many engine converted vehicles.

When coupling an Atlas to these transmissions, the factory adapter is used. Due to the different output stickout lengths, vehicles equipped with a Peugeot and AW4 will require a 3/4" spacer plate to obtain proper spline engagement. In 1997, late model AX5 transmissions were changed to have an output shaft that protrudes a 1/2" from the stock tailhousing. Although this transmission can bolt directly to the Atlas 2 speed transfer case, we recommend using the 1/2" spacer plate for transfer case shifter clearance. This spacer plate should only be used on an AX5 that has a 1/2" output shaft stickout.

1/2" Spacer Adapter: **P/N AS-8610** (not needed on Atlas 4 speeds)

Atlas 2	Left & Right Drop:	Part Number:	Transmission Shaft Stickout Length:
		A21	.375" Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.

JEEP & DODGE 23 SPLINE & 2012-18 JEEP 26 SPLINE:

STOCK JEEP TRANSMISSIONS:

Stock Jeep transmissions 1980 & up with a 6 cylinder or larger engine were normally equipped with a 23 spline output shaft (except Peugeot). Since the Atlas was designed as a Jeep heavy-duty, low-geared transfer case replacement, it will bolt up directly to the stock Jeep transmission tailhousing that is equipped with the 23 spline output shaft. In these year Jeeps, the stock transfer cases used were both a driver's side (left hand drop) and passenger side (right hand drop) front driveshaft. The units listed accommodate both stock transfer case configurations.

Some of the later model Grand Cherokees with the A518, A500 & AW4 transmission will have some spline depth interference. On these applications, you may be required to use our spacer adapter **P/N AS-8603**. **Failure to use this plate (when necessary) will cause damage to the Atlas.**

The Atlas 23 spline transfer cases can be ordered in any low gear ratio offered for a 2 speed Atlas. The 4 speed Atlas is also an option for this spline count. These cases would use a **STD. 23 spline input**.

JEEP & DODGE 42RLE TRANSMISSION:

This automatic overdrive transmission was used in Jeep Wranglers from 2003 through 2011 in both the Jeep TJ & JK, and Dodge Dakotas 2004-2009. Both the 2 speed and 4 speed Atlas transfer cases use the **short 23 spline input**.

JEEP 2012-2018 JK AUTO TRANSMISSIONS A580 (NAG1)(26 SPLINE):

This automatic overdrive transmission is used in Jeep JKs from 2012 and newer. The Atlas 2 speed uses a new male 26 spline flanged shaft to couple to the A580 transmission. We make the Atlas look just like the stock transfer case with a new male 26 spline input. [P/N A26A](#)

JEEP 2007-18 JK MANUAL TRANSMISSIONS (23 SPLINE):

Jeeps with a manual transmission stayed with NSG-370 which is a "Short" Atlas 23 input and can use both an Atlas 2 or 4 speed transfer case.

JEEP 45RFE TRANSMISSION:

The 45RFE transmission was used in 1999 to 2004 WJ Grand Cherokees with the 4.7 V8 and a NP247 transfer case. This transmission was also used in 2002 & newer Dodge Durango and Dakotas with a 4.7 V8. This transmission had a 1" recessed output shaft from the rear of the transmission. We offer the Atlas transfer case with a longer 23 spline input shaft to couple to the 45RFE shorter transmission shaft length.

Additional 23 Spline Transmissions:

The transmission output shaft length or Atlas input shaft length cannot be determined by transmission model only. The following are some transmission models that may differ from the 23 spline data:

- 1999-04 ZJ 4.7L - 5-45RFE NV247 stock transfer case (approx. 1" recessed output shaft)
Requires "Long" Atlas 23 input
- 2003-10 Ram 5.7L - 5-45RFE NV244 stock t-case (approx. 1/4" output shaft stickout with 1.55" spline)
Requires "Short" Atlas 23 input
- 2001 Ram - 45RFE NV231 stock transfer case (approx. 1/2" output shaft stickout with 2.0" spline)
Requires "STD" Atlas 23 input & [AS-8603](#)
- 2004 Durango - 5-45RFE (3/8" output shaft stickout)
Requires "Short" Atlas 23 input
- 2005 & UP Manual Jeep 6 speed - NSG-370 23 spline Wrangler 4 cyl. & 6 cyl. transmission gear ratios of 4.459, 2.614, 1.723, 1.2, 1.0, .838 & R4.06 (output shaft approx .210" positive stickout). "Honsel" is cast into passenger side.
Requires "Short" Atlas 23 input

1" Spacer: [P/N AS-0404](#)

3/4" Spacer: [P/N AS-8603](#)

1/2" Spacer: [P/N AS-8610](#)

			Part Number:	Transmission Shaft Stickout Length:
Atlas 2	STD	Left & Right Drop:	A23	.375"
Atlas 2	LONG	Left & Right Drop:	A23LONG	.375"
Atlas 2	SHORT	Left & Right Drop:	A23SHORT	.375"
Atlas 4	STD	Left or Right Drop:	A4-23L/A4-23R	.500"
Atlas 4	LONG	Left Drop:	A4-23WJ	.500"
Atlas 4	SHORT	Left or Right Drop:	A4-23SL/A4-23SR	.500"

Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.

STOCK DODGE TRANSMISSIONS:

The Dodge NV4500 is probably the most popular Dodge transmission that we see coupled to the Atlas. Most Dodge 4WD transmissions are equipped with a 23 spline output shaft.

The Dodge 4WD NV4500 (1993-2000) has a 23 spline output shaft and has the correct tailhousing to bolt directly to the 23 spline Atlas transfer case.

Dodge also has a heavy-duty version of the NV4500 transmission that was bolted up to a Cummins diesel engine. This transmission, along with the 2001 & newer gas version NV4500 transmission, was equipped with a 29 spline output shaft. We offer an Atlas input spline for these heavy-duty and late model transmissions. (See the 29 Spline section for more information).



JEEP JL & JT:

Jeep JL, automatic to Atlas 2 speed: The Jeep JL with the 850RE 8-speed automatic is coupled to a Magna transfer case. This is the first year Jeep went away from its standard circular bolt pattern when coupling these two gear boxes. So this required us to manufacture a new adapter housing to couple the Atlas to the 8 speed automatic. [P/N 50-9900](#) is the new adapter kit that provides the connection to a new Atlas. The 7.75" adapter also provides the needed length to clear the transmission cooling system.

The JL presented several other challenges for installing the Atlas such as the stock transfer case shifter for example. The factory shifter is very small and fits into a compact location. Having this lack of room required a redesign of the Atlas shifting system for the JL's.

[P/N 303030](#) - New twin stick shifter includes new cables allows the vehicle to have all the shifting features the Atlas is famous for.

The last update to finish the install into the Jeep JL's was new flange yokes. We have manufactured new yokes to retain the factory GKN yokes. The adapter puts the Atlas in a similar location as factory, allowing you to retain the factory driveshafts. These yokes can be swapped out for any Spicer yoke down the road, but it now allows the Jeep-equipped Atlas to be back on the road within a day. The complete install of the transfer case is approximately 6 hours and the shifter 1 to 2 hours. The pre-configured unit we offer comes complete with the adapter kit listed above. The Atlas is built with a 23 spline standard input.

Jeep JL, D478 manual 6 speed to Atlas 2sp: The manual transmission used in the JL will require the same adapter housing as the automatic with the same shifter components; however, it will need a different spud shaft 43 x 23 spline. [P/N 50-9901](#)

Jeep JL 392: These Jeeps have a full-time transfer case with an 8HP75 or 8HP75PH transmission. This transmission has a 43-spline output shaft and an adapter that is part of the stock transfer case. We offer an adapter kit that couples to this transmission and allows you to install an Atlas 23 spline input to the 8HP75/8HP75PH transmission. [P/N 50-9903](#)

Jeep Diesel 2020 & Newer: The 8HP75 transmission in this application uses a spacer adapter on the transmission. The transmission has a longer 23 spline output shaft the sticks out the back approximately 6.0". The bolt pattern is the same as the Jeep JL 850RE transmission. [P/N 50-9904](#)

GM & DODGE 29 SPLINE:

Dodge NV4500: The 29 spline Atlas was designed to fit the 4WD Dodge heavy-duty NV4500 transmission and the 2001 & newer gas version NV4500 transmissions. When coupling an Atlas to this transmission, the stock Dodge 4WD tailhousing can be retained. The Dodge tailhousing bolt pattern is shown on the rotation Option #1 found on [Page 21](#).

When using an Atlas left hand drop transfer case, the stock Dodge tailhousing requires the removal of the stock transfer case shifter bosses. The removal of these two bosses provide the necessary Atlas shifter clearance. **NOTE:** The seal in this stock tailhousing must also be removed because it will interfere with the Atlas input.

GM Transmissions: GM switched the spline count on some of their transmissions to the 29 spline output. The splines on these transmissions were the same as what Dodge had used on the NV4500 transmission. So the 29 spline input for the Atlas will work with all of these GM and Dodge transmission equipped with a 29 spline output shaft.

ZF S6-650: The ZF manual 6 speed is a 29 spline transmission when coupled to the Duramax and the 8.1L. This transmission can be directly mounted to the Atlas transfer case. The Atlas must be equipped with a "Chevy" case configuration and will bolt directly to the stock transmission 4WD adapter. The VSS tailhousing option would provide the GM computer the speedometer signal for this application.

Allison 4WD: These 5 and 6 speed automatics are also a 29 spline transmission when coupled to the same Duramax and the 8.1L. The Atlas must be equipped with a "Chevy" case configuration. This transmission must have the correct VSS input and output signals to shift properly. [50-9420](#) kit

6L90 4WD: This 6 speed automatic is also a 29 spline transmission. This transmission can be used with our [50-9600](#) kit. The VSS tailhousing option would provide the GM computer the speedometer signal for this application.

Dodge & GM Inputs: Since all of these transmissions are used in larger vehicle applications, we have had requests for upgrade options on the Atlas. One limited upgrade offered for these transmissions is the heavy-duty Atlas input (300M). This was developed for some applications that had an increase in horsepower and needed extra strength. The heavy duty input is not needed for all applications, but it's available if you feel you'll need it.

	Part Number:	Transmission Shaft Stickout Length:
Atlas 2 Left & Right Drop:	A29	.125"
Atlas 2 Heavy Duty Input Left & Right Drop:	A29HD	.125"
Atlas 4 Left or Right Drop:	A4-29L/A4-29R	.500"

Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.

FORD 28 SPLINE:

The 28 spline Atlas was designed to fit only the 1966-77 Broncos. The stock transmissions used in these vehicles were normally coupled to a Dana 20 transfer case. The bolt pattern on the face of the Dana 20 is a 6-bolt hex pattern, which we mirror on the Atlas transfer case. The rotation options of the Atlas into these vehicles are 42 degrees (which is stock), 35 degrees (for additional ground clearance), and 28 degrees (requires some internal frame modifications).

The Atlas 2 speed is the only unit available for these transmissions:
(A body lift is recommended)



Left Side Front Driveshaft **Atlas 2** Speed: **P/N A28**

FORD 31 SPLINE:

The 31 spline Atlas was designed to fit the 4WD Full Size Ford transmissions. The stock transmissions used in these vehicles were normally coupled to either a NP205, NP208 or Borg Warner 1356. The bolt pattern on these transmission tailhousing adapters is identical to a stock Jeep. Ford used various output shaft stickout lengths. **Caution** should be used in order to avoid the spline portion of the shaft from "bottoming out" in the Atlas input shaft. Some applications that have an output shaft stickout past the tailhousing will require a 1" spacer adapter, **P/N AS-0404**. Late model full size Fords with the Borg Warner 4406 transfer case and the vacuum activated electric lock front axle will require a low range switch on the Atlas shift housing and some electrical work for the front axle.

Ford ZF 5 speeds work fine and are equipped with a 31 spline output; however, the 6 speed ZF diesel will not since Ford used a 24 spline on this transmission.

Ford 6R80 6 speed and the 10R80 10 speed are great options for the Atlas. The output shafts on these 4WD transmissions require a shorter 31 spline and **P/N 50-3900**.

Ford 4R70 & 4R70E 4WD will use the stock 4WD adapter housing.

	Part Number:	Transmission Shaft Stickout Length:	
Atlas 2 Left & Right Drop:	A31	.325"	Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.
Atlas 2 6R80 & 10R80 :	A31S		
Atlas 4 Left or Right Drop:	A4-31L/A4-31R	.500"	

FORD 34 SPLINE:

The 34 spline Atlas was designed to fit the 2004 & newer 5R110 (Torqueshift) transmission. This 4WD transmission has the speed sensor in the transmission tailhousing; so when ordering the Atlas tailhousing, a speedometer hole plug is required. The 2003-2009 5R110 torqueshift is a 5 speed automatic that was used in the E250-350 and F250-450 6.0 & 6.4 Diesels. The gear ratios are 3.09, 2.20, 1.538, 1.096, 1.00, .712 & R2.88. To install an Atlas using the stock 4WD tailhousing, you will be required to use a 1" spacer, **P/N AS-0404**.

	Part Number:	Transmission Shaft Stickout Length:	
Atlas 2 Left & Right Drop:	A34	.325"	Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.
Atlas 4 Left Drop:	A4-34L	.250"	

GM 10 SPLINE:

The 10 spline Atlas input was designed to fit only the 4WD version of the SM465 transmission. This output shaft protrudes approximately 2-1/2" from the rear of the transmission. When coupling an Atlas to this transmission, you will need one of our adapter housings, the SM465 gasket, and fasteners to bolt the casting to the transmission (**P/N 51-9807**). This adapter housing measures 3-1/2" long and is the shortest adapter that we offer for the SM465. The Atlas 2 speed is the only unit available for this transmission. Due to the adapter length and the transmission size, the cable shifters are not recommended for this transmission/transfer case combination.

Atlas 2 Speed: **P/N A10**

GM 27 SPLINE:

The 27 spline Atlas was designed for transmissions with a 27 spline output. The TH350, Powerglide, 700R, and 4L60E transmissions are the most common GM transmissions equipped with this 27 spline output. These transmissions have various output shaft stickout lengths depending on the vehicle that the transmission was originally removed from.

TH350 4WD: When obtaining a TH350 out of a 4WD vehicle, the output shaft will protrude approximately 1" from the rear square flange of the transmission. An adapter housing ([P/N AS-6800](#)) can be purchased from us to use this transmission with this stock 27 spline 4WD output shaft.

TH350 2WD: When obtaining a TH350 out a 2WD vehicle, be aware that there are three different stickout lengths: 6, 9 & 12 inches. These transmissions would be better suited to either switch to a 4WD TH350 output shaft and use the adapter housing listed above, or use [P/N 50-6300](#) (3.6" long). This kit require the installation of a new output shaft which switches the output spline to a 23 spline (See the 23 Spline section).

POWERGLIDE: The Powerglide automatic transmission has gained popularity in rock crawling vehicles. We offer a new cast aluminum adapter and crossmember mount designed to couple the Powerglide to the Atlas transfer case ([Part No. 50-9200](#)). The adapter kit requires a shorty 27 spline output shaft to be use when coupling the Powerglide to the Atlas. Two sources to obtain this shaft would be Hughes Performance or B & M.

700R & 4L60 4WD: When obtaining a 700R or 4L60 out of a 4WD vehicle, the output shaft should have a stickout length of 2.75" from the rear square flange of the transmission. Adapter housing [P/N AS-9111](#) (2.5" long) can be purchased from us to use these transmissions with this stock 27 spline 4WD output shaft.

700R & 4L60 2WD: When obtaining a 700R out of a 2WD vehicle, the stock output shaft will be too long. These transmissions would be better suited to either switch to a 4WD 700R output shaft and use the adapter housing listed above, or use [P/N 50-6303](#) (3.6" long), or [P/N 50-9102](#) (1.5" long). Both of these kits require the installation of a new output shaft which switches the output spline to a 23 spline (See the 23 Spline section).

4L60E 4WD w/Non-Removable Bhsg: When obtaining a 4L60E out of a 4WD vehicle, the output shaft stickout length should be 2.75" from the rear square flange of the transmission. Adapter housing [P/N AS-9111](#) (2.5" long) can be purchased from us to use this transmission with this stock 27 spline 4WD output shaft. **NOTE: On these transmissions, you must use a reluctor kit, [P/N 716073E](#).**

4L60E 2WD & 4WD w/Non-Removable Bhsg: When obtaining a 4L60E out a 2WD vehicle, the stock output shaft will be too long; or if you have a 4WD transmission and would like to use an adapter housing with the reluctor as part of the kit, you can purchase [P/N 50-0404](#) (4.6" long). This kit requires the installation of a new output shaft which switches the output spline to a 23 spline (See the 23 Spline section). This kit also incorporates a reluctor ring and sensor for proper transmission operation.

4L60E 4WD with Removable Bhsg: When obtaining a 4L60E out of a 4WD vehicle, the output shaft stickout length should be 4.438" from the rear hex bolt flange of the transmission. We offer kit [P/N AS-9300](#) which adapts the hex bolt pattern to he Atlas. This adapter also provides a reluctor sensor and clamp-on reluctor ring. If a 4WD shaft is needed, we offer it under [P/N 52-7460](#).

4L60E 2WD with Removable Bhsg: When obtaining a 4L60E out of a 2WD vehicle, the stock output shaft will be too long. To use this transmission, you will be required to use [P/N 50-0430](#) which adapts the hex bolt pattern to a square bolt pattern. This adapter also provides a reluctor sensor and clamp-on reluctor ring. To couple this tranny to the Atlas transfer case, this kit requires the installation of a new output shaft, switching the output shaft spline to a 23 spline (See the 23 Spline section).

SHORTY 4L60E ADAPTER with Removable Bhsg: We offer a shorty adapter for the Atlas . The adapter length of 1.625" is shorter than any of our other adapter options. This kit, [P/N 50-9305](#), will use a 23 spline output shaft made out of 300M material. We also offer a complete transmission with our output shaft already installed. Please call for updated information and complete package pricing. The Atlas should be equipped with a STD. 23 spline input.

	Part Number:	Transmission Shaft Stickout Length:
Atlas 2 Left & Right Drop:	A27	.250"
Atlas 4 Left or Right Drop:	A4-27L/A4-27R	.500"

Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.

GM 32 SPLINE:

TH400: The 32 spline Atlas was primarily designed for the GM TH400 transmission with a 32 spline output shaft. One of the biggest problems with the TH400 transmission is that it was used in numerous vehicles which required numerous output shaft lengths. We estimate there are 7 different output lengths that the TH400 has been equipped with over the years in both 2WD and 4WD applications. We cannot fit all of the stock output shaft lengths; however, the Adapter Selection Chart on **Page 10** will assist you with the adapters we do offer. If you do not find an adapter housing to fit the output shaft you have, you may be required to change out the output shaft or use one of the different spacer adapters to fit your shaft length.

4L80E: This transmission was designed by GM to replace the GM TH400 transmission. Like the TH400, the 4L80E has a 32 spline output shaft. The major difference of the 4L80E is that the transmission index diameter is different than the TH400. We have seen 5 different output shaft lengths that were used in the 4L80E transmission. The 4WD 4L80E transmission is the best.

The early 4L80E transmission up to 1995 is normally equipped with an internal reluctor ring on both the transmission input shaft and output shaft. The computer takes both of these readings for the proper shifting and operation of this transmission. We have always ignored the reluctor ring requirement for this transmission since it is internally regulated. We have now learned that the rear reluctor ring is not always installed into the transmission. The basic rule of thumb is 4WD transmissions up to 1996 should have a rear reluctor ring in the main transmission case. All 2WD transmissions should have the rear reluctor in the main transmission case. The 1997 & newer 4WD 4L80E transmissions have a sensor provision; however, the reluctor ring in the transmission is left out. Since this transmission is expensive to rebuild and have a reluctor installed, we now offer a reluctor ring on the adapter housing. The reluctor on the adapter for a Atlas 2 speed is (P/N AS-6450), and for the Atlas 4 speed is (P/N AS-6455). These kits will always provide a 1-to-1 reading on the output even if the transfer case is in low gear. The VSS reluctor in the tailhousing is also an option, but it would require a low range switch to be integrated into the computer system.

Note: The information on years and models of the 4L80E transmission mentioned in the above section was obtained from various sources. You should always verify what your transmission is equipped with before beginning a conversion, especially with the 4L80E transmission.

6L80 2 & 4WD: This 6 speed automatic is also a 32 spline transmission. This transmission can be used with our **50-9600** kit. The VSS tailhousing option would provide the GM computer the speedometer signal for this application.

8L90 4WD: This 8 speed automatic is a 32 spline transmission. This transmission requires the Atlas to be built as a GM case and then use a .75" spacer **AS-8603** kit to allow for the proper spline engagement.

GM NV4500 4WD: The GM NV4500 4WD transmission can also be coupled to the Atlas. The stock GM adapter housing has the right index diameter for the transfer case; however, the bolt pattern is incorrect. We have found it easier to use a stock Dodge tailhousing or our replacement Dodge housing, **P/N 51-0205**. Either one of the 6.300" long adapters coupled with our 1-5/8" spacer adapter, **P/N 51-0220**, allows you to use the stock GM 32 spline output shaft. This casting will not fit the GM harmonic balancer, a new 5th gear set collar **P/N 716462** must be used once the balancer is removed.

GM Inputs: Since all of these transmissions are used in larger vehicle applications, we have had requests for upgrade options on the Atlas. One limited upgrade offered for these transmissions is the heavy-duty Atlas input. This was developed for some applications that had an increase in horsepower and needed extra strength. The heavy duty input is not needed for all applications, but it's available if you feel you'll need it.

	Part Number:	Transmission Shaft Stickout Length:	
Atlas 2 Left & Right Drop:	A32	.250"	Stickout length is the length that the shaft protrudes from the rear of the transmission with the adapter installed. The measurement is the length that the Atlas will accept.
Atlas 2 300M Input L or R:	A32HD	.250"	
Atlas 4 Left or Right Drop:	A4-32L/A4-32R	.500"	

GM 35 SPLINE:

The 35 spline Atlas was designed to fit *only* the 2WD SM465 transmission. This output shaft must be shortened to a length of 3.5" from the rear of the transmission. This shaft must also be locked into position with a set collar. The SM465 is 12" long and offers a 6.54:1 1st. gear ratio. The Atlas 2 speed is the only unit available for this transmission. Due to the adapter length and the transmission size, the cable shifters are not recommended for this transmission/transfer case combination.

Atlas 2 Speed: **P/N A35**

DIVORCED ATLAS:

The "Divorce Mounted Atlas Transfer Case" has been created to give you all of the great gearing options, parts availability, and strength features to vehicles that require a remote mounted transfer case. Early vehicles sometimes ran this type independent transfer case. It was attached to the powertrain by a small drive shaft coming from the transmission. This transfer case functioned identical to others and had a front and rear driveshaft. The entire transfer case assembly was hung from the frame on a crossmember-type mount. The Divorced Atlas can be built as either a right or left drop unit. The shifters and crossmember are sold as a separate kit to fit the transfer case. When ordering yokes for this unit, 3 are required.

The mount plate included in our kit will give you the rigid mounting location for supporting this gear box to the frame. Prothane bushings and all hardware are included in this kit. It is necessary that you fabricate a support bracket from our transfer case mount to the frame rails of your vehicle. Please be aware that this new mount bracket is very rigid and should be able to withstand the extreme twisting load that the gearing of the Atlas transfer case creates. Keep in mind that a good amount of frame flex may be generated in severe offroading conditions.

We only offer the divorced units in the 2 speed configuration.

Atlas 2 Speed:	P/N A-DIV-T3
Left Drop Case Mount and Cable Shifters:	P/N 303025L
Right Drop Case Mount and Cable Shifters:	P/N 303026R

Toyota Tacoma, Tundra, and 4Runners:

For Toyota Tacoma 1996 to 2004, Tundra with the 4.7L Auto trans 1999-2006, and 4 Runners 1996-2002 with 3.4L V6 & 2.7L Auto trans., we use a 3/8" adapter plate that couples the Atlas to your transmission. We offer the Atlas in either a left or right drop, left being for stock installations. The Toyota transmission either had a 23 spline or 26 spline stock output shaft. Our spud shafts couple to either one of these splines and then provides a Jeep 23 spline output. Adapter kits would either be **P/N 50-5710** (23 spline) or **P/N 50-5711** (26 spline). The Atlas would need to be ordered with the following input:

Atlas 2 Speed: **P/N A23Short**

FJ CRUISER, Tacoma & 4Runners:

Toyota FJ Cruisers 2007 & up, Tacoma 2005 & up auto trans & 4Runners 2003 & up (auto transmission). Although it does require a bit of modifying, the option of both the Atlas 2 and 4 speed transfer case is available to fit to the stock transmission on these applications. Our adapter kits are listed on-line at (www.advanceadapters.com/h-atlas-tc-tacoma-tundra-t100-fj-cruiser). We recommend using a cable shifter due to the center console configuration in the of all these applications. **NOTE:** If VSS is required, you will need **P/N 301506** & **300605**.

	Part Number:	Transmission Shaft Stickout Length:
Atlas 2 Left & Right Drop:	A23	.375"
Atlas 4 Left or Right Drop:	A4-23L/A4-23R	.500"

OE, Military & Special Applications:

We are committed to offer the you the best transfer case available. It is for this reason that the Atlas is the transfer case used in a production built vehicle for the off-road enthusiast. This manufacturer uses the Atlas because of its reputation and years of reliability. The Atlas has also been used in several military prototype vehicles and is currently in use in overseas production vehicles. From this military application is why we now offer the Atlas with a 300M output upgrade. The vehicle is approximately 12,500 lbs., requiring the added strength to the output shaft. The Atlas has been proven flawless in these applications.

Atlas Dodge Ram and Jeep JL Drivetrains

Jeep and Ram have several versions of there 8HP transmission, we have seen 5 variations to this series of transmissions so far. The differences are spline counts and lengths as well as bolt patterns. Please reveiw these options on-line at (www.advanceadapters.com/atlas-adapters-for-jeep-jl-ram-drivetrains)

Atlas Front Input Shaft

Input shaft changes: Each Atlas is custom built to fit your vehicle specifications. Many times we find that customers end up changing drivetrain components, which then also requires changes to the Atlas. The most common change is the input shaft spline to match a new transmission. The Atlas input can be changed without too much difficulties. Instructions can be sent to you or you can access the procedure online at www.advancedadapters.com.

Atlas 2 Speed

Parts required to change out to a new front input Atlas 2 Speed:

AB1010 - Input seal kit for 29, 31, 32, 34 & 35 splined input shafts

AB1011 - Input seal kit for 10, 21, 23, 25, 27 & 28 splined input shafts

The input shafts have undergone one change over the years which was the internal spline of the drive gear that fastens to the shaft. The splines that have been used are a 6 spline and a 32 spline. We have made it fairly simple to identify which application you have by adding a "G" to the four digit serial number of each case that has the 32 spline drive gear requirements. In 2009 we switched to a 6 digit number machined into the case, these cases do not have a "G" on them, but they are the 32 spline input-to-gear applications.

An "A" has been added at the end of these numbers of inputs we still manufacture for the early "G" or 6 digit serial number cases. Listed in green are some of the 6 spline inputs we still manufacture.

300012A - Long 23 spline input

300013A - Short 23 spline input

300117A - 27 spline input

300034A - 34 spline input

300043A - 43 spline input

300111A - 35 spline input

300112A - 23 spline input

300113A - 29 spline input

300114A - 10 spline input

300116A - 32 spline input

300118A - 28 spline input

300119A - 21 spline input

300115A - 31 spline input

300112 - 6X23 spline input

300113 - 6X29 spline input

300115 - 6X31 spline input

300116 - 6X32 spline input

300117 - 6X27 spline input

301113B - 29 spline input HD

301116B - 32 spline input HD

Atlas 4 Speed

The input shafts for the Atlas 4 speed are late model stock New Process inputs gears. These are the new gear pitch design from New Process. **If the wrong year input is used, damage can occur to the planetary assembly.** The 4 speed case requires the disassembly of the planetary housing.

Input swap kits:

AB4010 -Small Bearing Swap kit for 23, 27, 32, & 29

AB4011 -Large bearing Swap kit for 31, & 34

The aluminum retainers are not included with these kits and will only be required when switching a large bearing input to a input needing a small bearing or vise versa.

Small bearing retainer **P/N 305115.**

Large bearing retainer **P/N 305116**

Atlas 4 speed inputs:

305023L - Long 23 spline input

305023S - Short 23 spline input

305023 - 23 spline input

305027 - 27 spline input

305032 - 32 spline input

305029 - 29 spline input (also requires **P/N 305308**)

305034 - 34 spline input

305031 - 31 spline input

Atlas Rotation Options

When coupling an Atlas to one of the various stock transmissions or to one of our adapter housings, you will have a number of choices as to the degree of rotations. The drawings that follow represent the stock Jeep and Advance Adapters tailhousing bolt patterns. Once you have identified the bolt pattern on your adapter housing, you can then select from the degree of rotation options listed along side your tailhousing bolt pattern. **These degree of rotations are approximate.** The rotation on your application may vary 1 to 2 degrees. We combine the case drop and input ring today to simplify our build process.

OPTION #1

This stock transmission bolt pattern is found on transmissions that were originally bolted to a Dana 300 transfer case with a stock case rotation of 35 degrees. This stock transmission bolt pattern is also found on some Jeep transmissions when bolted to a New Process transfer case that had a stock rotation of 23 degrees.

Atlas 2sp Left Drop 0, 18, 25, 32, 39, 46 Degrees

P/N ALC-T (Trail Case)
P/N ALC-G2 (Pro Case)
P/N ALC-D (Divorced Trail Case)
P/N ALC-G2-D (Divorced Pro Case)
P/N ALC-43F-G2 (Ford 6R140 transmission case assy. Pro Series)
P/N ALC-G2-FT (Flat Tow case assy. Pro Series)

Atlas 2sp Right Drop 5, 12, 19, 26 Degrees

P/N ARC-T (Trail Case)
P/N ARC-G2 (Pro Case)
P/N ARC-D (Divorced Trail Case)
P/N ARC-G2-D (Divorced Pro Case)

Atlas 4sp Left Drop 0, 17, 24, 31, 38 Degrees

P/N A4-LC-G2 (Pro Case)
P/N A4LC-G2-FT (Flat Tow case assy. Pro Series)

Atlas 4sp Right Drop 5, 12, 19, 26 Degrees

P/N A4-RC-G2 (Pro Case)

OPTION #2

This stock transmission bolt pattern is found on some Jeep transmissions when bolted to a New Process transfer case that had a stock rotation of 13 degrees.

Atlas 2sp Left Drop 0, 8, 15, 22, 29, 39 Degrees

P/N ALC-T (Trail Case)
P/N ALC-G2 (Pro Case)
P/N ALC-D (Divorced Trail Case)
P/N ALC-G2-D (Divorced Pro Case)
P/N ALC-43F-G2 (Ford 6R140 transmission case assy. Pro Series)
P/N ALC-G2-FT (Flat Tow case assy. Pro Series)

Atlas 2sp Right Drop 0, 15, 22, 29, 36 Degrees

P/N ARC-T (Trail Case)
P/N ARC-G2 (Pro Case)
P/N ARC-D (Divorced Trail Case)
P/N ARC-G2-D (Divorced Pro Case)

Atlas 4sp Left Drop 6, 13, 20, 27 Degrees

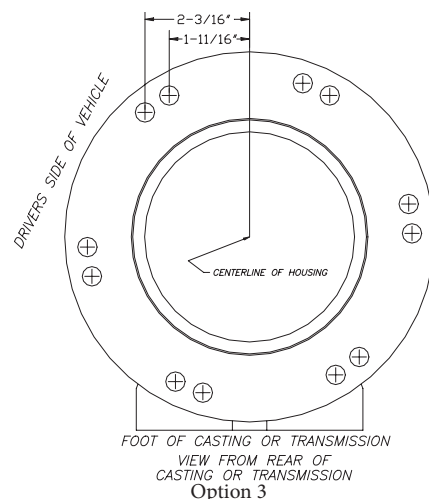
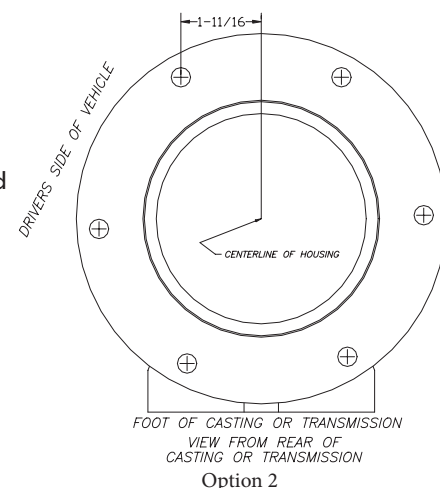
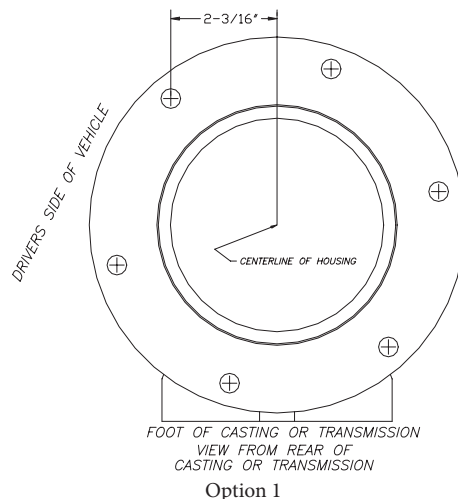
P/N A4-LC-G2 (Pro Case)
P/N A4LC-G2-FT (Flat Tow case assy. Pro Series)

Atlas 4sp Right Drop 5, 15, 22, 29, 36 Degrees

P/N A4-RC-G2 (Pro Case)

OPTION #3

This bolt pattern is found on *most* of our adapter housings. If you are currently using one of our castings equipped with the dual bolt pattern, you will have all the options listed above.



OPTION #4

We have a few applications that GM did not offer an adapter or we don't make an adapter housing for. For these applications, we offer the Atlas with a stock GM bolt pattern option. Common transmissions for this would be a NV3500, Allison & ZF.

Atlas 2sp Left Drop Flat, 7, 20, 27 Degrees
P/N ALC-T-GM (GM Trail Series)
P/N ALC-G2-GM (GM Pro Series)

Atlas 2sp Right Drop Flat (5 hole mount), 39, 46 Degrees
P/N ARC-T-GM (GM Trail Series)
P/N ARC-G2-GM (GM Pro Series)

Shifter Control

The Atlas shifter control houses the interlocks for the shift rails and the dent springs and balls. This is also where we connect any electronic shifter controls or sensors needed to let the vehicle know it is in 4WD. We have changed this unit over the years and below are the following changes:

1. The sensor threads size changed on the aluminum block August 2014, so we offer two switches for this housing: **P/N 300364** (newer housing) and **P/N 300378** (older housings).
2. Early housings were indexed to the Atlas case with a bronze bushing, and later housings were dowel pinned. Today, the housings are machined to fit either style case.
3. The interlocks prevent the Atlas from going into high and low gear at the same time. Race rigs that are using a reverse engine application can only get power to the rear axle in low range; however, by changing the shifter control to the opposite design from that of the case drop will give the normal functions of an Atlas.

Atlas Shifter Control:

P/N 301510A -	LEFT Drop Shift Assembly
P/N 301511A -	RIGHT Drop Shift Assembly
P/N 301515 -	LEFT Drop Shift Assembly(single stick shifter)

Tailhousing Options

REAR TAILHOUSING OPTION:

Standard Atlas Tailhousing

The standard Atlas transfer case comes with a rear tailhousing that accepts a stock Jeep speedometer from Jeep vehicles 1982 & newer. Atlas units ordered for earlier Jeeps or other vehicles can order a mechanical drive speedometer housing. This housing is the same as an early style Jeep. To connect to this housing, a special cable fitting may be necessary. The speedometer provision on the Atlas also allows you to calibrate your speedometer for tire and gearing changes. The chart on **Page 26** lists these options. This Atlas tailhousing is **P/N ALT-T**. This new tailhousing can be retrofitted to any Atlas case by ordering **P/N 301500R**. If a speedometer is not needed, the speedometer access hole can be plugged by using **P/N 300621**.

Atlas Short Tailhousing (No Speedometer)

The rock crawling & racing industry drove the demand for the creation of the short tailhousing. We had inquiries for new drivetrain combinations, shorter drivetrains and light weight rear engines combinations. With these newer combinations, we were prompted to build a shorter Atlas tailhousing. This tailhousing is 2" shorter than the standard Atlas tailhousing. It is designed for trail or competition use **only** since it does not provide provisions for any type of speedometer. This new tailhousing can be retrofitted to any Atlas case by ordering **P/N 301499R or 301499HD** (300M output). If you're ordering a new case, this item can be included on a new Atlas by using **P/N AST-T**. Not recommended for street use.

HD Atlas Tail housings with 300M Output Shaft

The HD Atlas rear tailhousing is basically the same as the standard and short housing with the exception on the output shaft. The output shafts in these tail housings are manufactured out of 300M steel. This was introduced into our product line for a special aftermarket military vehicle but also used in many of the performance racing applications. This high grade steel shaft is 130% stronger than our standard output. This kit is not necessary for most applications; however, for extreme horsepower and torque this Atlas HD tailhousing may be for you. The HD tailhousing is available for the all Atlas transfer cases at an additional cost, **Part No. ALT-G2 or AST-G2**.

GM VSS Tailhousing (No Speedometer)

Vehicle speed sensors (VSS) are mandatory for computer controlled engines and transmissions. The VSS sends information to the vehicle computer system for both engine and automatic transmission operations. Early Chevys up to 1992 used a computer that required a D.C. square wave input into the computer. These early computer system requirements could be fed by either a special speedometer drive or a reluctor ring. Chevys 1993 & newer required a A.C. sine wave. This sine wave creates a voltage that increases with vehicle speed. The only way that this voltage can be generated is through a reluctor ring mounted to either the transmission or transfer case shafts. This information was obtained from various sources, so please verify your requirements before doing any vehicle modifications.

Our tailhousing allows a sensor and reluctor to be installed in place of the speedometer drive. Our Atlas tailhousing had to have some slight pattern changes to incorporate this new feature. To add this option to an existing transfer case would require the purchase of a new tailhousing. This new option was primarily developed so that the Atlas could be installed into a newer Chevy 4WD vehicle. When ordering this tailhousing with an Atlas, we also include a standard shift control unit that is drilled and tapped to accept a low range switch. This allows the Chevy computer to re-calibrate the output shaft signal when in low range. **NOTE:** The Chevy computer may require some wiring and computer program changes for the different low ratios.

On Vehicles with computer controlled engine swaps, this tailhousing kit can provide the proper VSS signal when using a manual transmission. Vehicles with a computer controlled engine swap and an automatic transmission requiring a VSS should not use this tailhousing option unless a low range switch is installed and the computer program is modified. When installing this type of engine and automatic transmission combination, we highly recommend a reluctor ring location in the adapter or the transmission. This will give the engine computer system a correct 1-to-1 reading in or out of low range.

The VSS tailhousing kit we offer is **P/N AVT-T**

The VSS tailhousing kit for the 300M is **P/N AVT-G2**

If you have installed a newer GM engine into a Jeep with a manual transmission, you may want to retain the Jeep speedometer, but the GM engine needs the 40 pulse reluctor to function correctly. The standard Atlas transfer case tailhousing should be retained and one of our TruPulse kits should be used. These TruPulse reluctor kits fit on all of our Atlas tail housings. These kits are an externally mounted unit that provides the True 40 Pulse required for the computer system. The reluctor ring gets mounted to the transfer case yoke. The kit is offered in several yoke styles. **NOTE:** These kits will not work with a flange yoke.

TruPulse Kits:

P/N 50-5040 with a 1310 non C.V.

P/N 50-5042 with a 1350 non C.V.

P/N 50-5041 with a 1310 C.V.

P/N 50-5043 with a 1410 non C.V.

Flat Tow Tailhousing

In 2018, the flat tow option was released for the Atlas transfer case. This new option uses a new rear output shaft that is connected to a gyrator pump assembly. The Atlas pan has a pick up screen that pulls oil from the main case, into the tailhousing, and down the output shaft lubricating the bearings while driving and being flat towed. The length of the tailhousing is the same as the standard Atlas. It does not have the mechanical speedometer gear but offers an electronic pick up for a Jeep, GM or STD which has no pick up.

P/N AFT-JP Flat Tow tailhousing with Jeep sensor

P/N AFT-GM Flat Tow tailhousing with GM sensor

P/N AFT-STD Flat Tow tailhousing without a speed sensor

Front Output

The Atlas 2 speed was originally designed with a 26 spline front output shaft and we offered both a 26 or 32 spline front output option for several years. Today we only manufacture the 32 spline front output option. We have many of the early Atlas units with the 26 spline shaft still out running in vehicles.

32 Spline Upgrade Kits for used Atlas Units: ARF32

32 spline front output. (Yoke is sold separately)

All current units get the latest front output available at the time of the Atlas build. The front output is part of the case assembly bill of materials. The only thing that we will need to know is what yoke you want installed.

Yoke Options And Interchangeable Yokes

With the Atlas transfer case being such a diverse case fitting into such a wide variety of vehicles, naturally we needed a variety of available transfer case yokes. The yokes we offer are for the 32 spline front and rear outputs shafts.

ATLAS YOKE OPTIONS:

Yoke Series & Spline 32 Spline Yokes:	Yoke P/N's for A New Atlas:	Individual Yokes:	AA Seal P/N's	O.E. Seal P/N's
1310 series (C.V.)	P/N A1310CV	P/N 300475	P/N 300502	CR 18817 or NAT.473239
1330 series (C.V.)	P/N A1330CV	P/N 300369	P/N 300502	
1310 series (non-C.V.)	P/N A1310	P/N 716295	P/N 300473	CR 21164 or NAT.472015
1350 series (non-C.V.)	P/N A1350	P/N 300472	P/N 300473	
1350 series (C.V.)	P/N A1350CV	P/N 300485	P/N 300473	
1410 series (non-C.V.)Straps	P/N A1410	P/N 300483	P/N 300473	
1410 series (non-C.V.)U-bolt	P/N A1410U	P/N 300488	P/N 300473	
Flange Yokes 32 Spline				
1310/1330/1350 series (C.V. & non-C.V.)	P/N AF1300	P/N 300470	P/N 300473	CR 21164 or NAT.472015
1350/1410 CV 3.125 MALE INDEX	P/N AF1350	P/N 300450	P/N 300473	
1410 series (non-C.V.)	P/N AF1410	P/N 300471	P/N 300473	
1410 series (non-C.V.)7/16-20	P/N AF1410STD	P/N 300471	P/N 300473	
1480 series	P/N AF1480	P/N 716294	P/N 300473	
TOYOTA FLANGE YOKE	P/N AFTOY	P/N 300465	P/N 300473	
SLEEVE KIT/ NO YOKE, SEAL FOR 2.125	P/N 1399		P/N 300473	CR 18817 or Nat. 473239
SLEEVE KIT/ NO YOKE, SEAL FOR 1.875	P/N 1399CV		P/N 300502	

Companion yokes for the flange yokes listed above -

1310, 1330 & 1350 C.V. and non-C.V. flange yoke. Spicer companion yoke numbers are as follows:

(1310 C.V., P/N 211229x), (1310 non-C.V., P/N 2-2-939), (1330 C.V. - P/N 211631x),
(1330 non-C.V., P/N 2-2-1369), (1350 C.V., P/N 212024x), (1350 non-C.V., P/N 3-2-1579).

1410 non C.V. flange yoke. Spicer companion yoke number is 3-2-329 (1410 non-C.V.) 3-2-159

Flange yoke may require the companion flange bolts to be installed through the yoke before the yoke is installed onto the transfer case. This depends on the series of companion yokes used. If the flange yoke is currently installed on your transfer case, you may be required to first loosen the yoke retaining nut, pull the yoke away from the transfer case enough to install the companion flange bolts. Once the bolts are in place, a new lock nut should always be installed and torqued to 150 ft.-lbs. to secure the yoke to the transfer case.

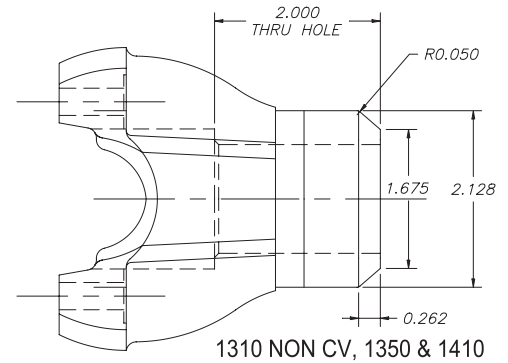
If any yoke nut is ever removed from the shaft for any reason, it should always be replaced with a new one. When installing a new yoke, use a small amount of silicon to prevent oil leakage down the shaft splines.



Yoke Modifications:

Changing the style of yokes on the Atlas transfer case may require your new yoke to be modified. When installed on an Atlas, the yoke will load up against a tapered roller bearing. Some yokes require a chamfer to be machined to clearance the cage of this bearing. The yoke drawing shows the required machining on these yokes.

NOTE: If you replace the front **26 spline** yoke with any of the yokes listed, the nut that retains the yoke has a torque specification of **130-135 ft.-lbs.** When replacing the front or rear **32 spline** yoke with any of the yokes listed above, the nut that retains the yoke has a torque specifications of **150-155 ft.-lbs.**

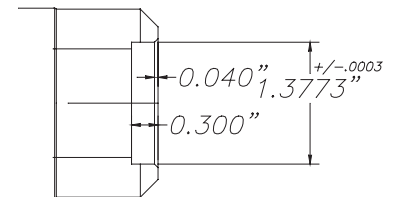
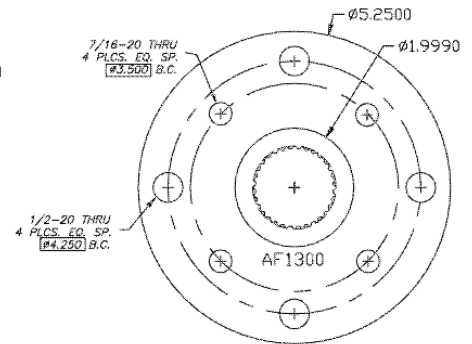


Yoke Design Change:

Recently, we started changing in the design of our yokes and their mating components. These updates started in 2017 with the new flat tow option on the Atlas and expanded into 2018 to include the standard Atlas 2 speed and 4 speed units.

The yokes are now being made with a counter bore to fit our shafts. The new shafts (indicated by an assembly number -T3 or -G3) have a shorter 32 spline with an index hub that indexes the yoke to the output shaft. This combination aligns these two components to make a stronger combination.

The updated shafts will require the yoke to have a counter bore for indexing to the shaft. The counter bore on the yoke does not affect the yoke to be used on any shaft that we have made over the years. The most important thing to note is the older yokes will not work on the new style shafts.



Summary:

All Advance Adapters shafts, New and Old will work with the new yokes that are counter bored. Old yokes NOT counter bored will still work on the older shaft, but would require the counter bore to work on the new design shafts. These shafts are identified by the assembly part number ending with a -T3 or -G3.

U-Joints:

Spicer series#	"D"- Dia of cap (in)	"E"-width across caps (in)	Part# (non-C.V.)	Std Spicer U-bolt Part
1310	1.062"	3.219"	5-153X	2-98-94X
1330	1.062"	3.625"	5-213X	3-94-58X
1350	1.188"	3.625"	5-178X	3-94-18X
1410	1.188"	4.188"	5-160X	3-94-18X
1480	1.375"	4.188"	5-188X	3-94-28X

YOKE REMOVAL TRAIL TOOL:

For the quick and easy removal of differential pinion yokes or transfer case yoke, this is a trail tool and/or shop tool that makes it easy. Fits yoke types: 1310 Non-CV, 1310 CV, 1330 Non-CV, 1330 CV, 1350 Non-CV, 1350 CV, 1410, 1480, DIN 120, DIN 150, Toyota Truck & Land Rover. **P/N 716400**



Speedometer Options

The Atlas long tailhousing is the only housing that offers a speedometer option (sold separately). The Atlas long tailhousing is designed to fit a stock Jeep (1982 & up) mechanical driven speedometer housing. These housings generate a pulse that operates the speedometer. Vehicles requiring a cable connection for the speedometer can order **P/N 301506** as part of the Atlas order. This speedometer housing is from a 1983 to 1986 Jeep CJ. The speedometer gear is not included with this housing, but by using the charts that follow you can select the correct gear for your tire size and axle ratio. Some of these gears are hard to come by, so we may not offer the gear for your application.

If your stock cable does not fit this speedometer housing and/or if you require additional speedometer connections, then we recommend that you contact Nevada Speedometer at (775)358-7422.

P/N 301506 Speedometer housing
P/N 300630 Replacement seal and O-ring



If a long tailhousing is needed but you do not want a speedometer, we also offer a plug for the tailhousing. If your application does not require any speedometer connections, order **P/N 300621** speedometer hole plug.

The late model Jeep TJs with the Rock Trac 241 J transfer case used a tone ring and sensor for the speedometer pickup source. This combination is not able to be used on the Atlas tailhousing. The Atlas only accepts the mechanically driven TJ Speedometer. This NP231 style speedometer will work the same as the later model tone ring and sensor. One advantage is the mechanical unit is easy to modify when larger tires or different ring and pinions are used. The charts that follow offer different drive gear part numbers to calibrate your speedometer. This speedometer assembly is offered under **P/N 300640**. The speedometer gear is not included with this housing assembly.

TIRE DIAMETER	AXLE GEAR RATIOS							
	5.38	5.13	4.88	4.56	4.10	3.73	3.55	3.07
44"	32T	31T	29T	27T				
42"	34T	32T	30T	28T				
40"	35T	34T	32T	30T	27T			
39"	36T	34T	33T	31T	28T			
38"	37T	35T	34T	31T	28T	26T		
37"	38T	36T	35T	32T	29T	26T		
36"	39T	37T	36T	33T	30T	27T	26T	
35"	40T	38T	37T	34T	31T	28T	27T	
33"		41T	39T	36T	33T	30T	28T	
32"			40T	37T	34T	31T	29T	
31"			41T	39T	35T	32T	30T	26T
30"				40T	36T	33T	31T	27T
29"				41T	37T	34T	32T	28T
28"					38T	35T	33T	29T

Toyota Speedometer Cable Adapter 1995-97:

This cable adapter allows the Atlas speedometer drive housing (**P/N 301506**) to couple to the stock Toyota speedometer cable. You can then retain the factory gauge and have all the added benefits of the Atlas transfer case. This cable adapter is sold under **P/N 300613** and has a Toyota side- 22mm w/ .203 female fitting, and on the other end couples to the Atlas speedo housing side- SAE 7/8"-18 .104 square.

We carry the various speedometer gears. All of the gears we offer are aftermarket. We have run into the occasional fit issue of the cable to the gear, most issues are that the cable is too long and bottoms into the shaft of the speedometer gear. The square end of the cable may need to be shortened slightly on applications where this is an issue. Long being 4.3" and short being 2.2". The speedometer housings that accept these gears are not interchangeable. For example: If your stock vehicle had a 2.2" gear, you cannot put a 4.3" gear onto that speed-o-drive housing.

SHORT GEARS

- 300637-28 300637-33 300637-38
- 300637-29 300637-34 300637-39
- 300637-30 300637-35 300637-40
- 300637-31 300637-36 300637-41
- 300637-32 300637-37 300637-42
- 300637-43



LONG GEARS

- 300620-26 300620-31 300620-36
- 300620-27 300620-32 300620-39
- 300620-28 300620-33 300620-40
- 300620-29 300620-34 300620-41
- 300620-30 300620-35 300620-42

On engine converted vehicles, caution should be used. If your engine has been converted to a newer Chevy, Ford or Chrysler and is computer controlled, it may also require a vehicle speed sensor. The speed sensor is usually connected at the speedometer. Each manufacturer has designed their own unique way of obtaining this computer input. If your vehicle has any computer requirements, you will need to take this into consideration. If you are wanting to install the Atlas into a Chevy, Ford or Chrysler vehicle, the computer requirements mentioned will also apply. Once you've taken into consideration your specific requirements, the speedometer cable can now be connected.

Speedometer Calibration: There are two factors that affect your speedometer reading; actual tire diameter and axle gear ratio. The actual tire diameter is usually different than what is printed on the side wall of your tire. For example: A 33 x 11.5 x 15 tire (depending on the brand), may actually measure 32.5" in diameter. Tire sizes vary greatly among the manufacturers. Even the same tire from the same manufacturer can vary as much as 7% in diameter.

If you are installing an Atlas in a 1987 or newer Jeep and have not changed your tire size or your axles, your stock speedometer drive gear would remain the same. When installing a speedometer gear with either 39, 40, 41 or 42 teeth, the gear and the housing must be installed separately. These are all large diameter speedometer gears. By first installing the gear into the tailhousing you will be able to tilt the gear shaft up allowing you to position the gear past the Atlas output shaft. Once this gear is in place, the speedometer housing must be aligned with the speedometer gear shaft and indexed into the tailhousing. When installing the speedometer housing, lube the o-ring that contacts the Atlas tailhousing with a bit of oil. This will prevent the o-ring from being nicked upon installation or rotation, causing this housing to leak.

Speedometer Problems: No matter what speedometer gear you use, you must make sure that the teeth of the speedometer gear have proper contact with the Atlas output shaft. The speedometer housing can be rotated to achieve proper contact. *Note:* There are three rotation possibilities. Many of the Jeep speedometer housings offer index numbers that reference to the gear tooth count. By lining up the retainer clip with the proper index number, the speedometer gear will work properly. If your housing does not have these index numbers, proper engagement can be obtained by rotating the speedometer housing until the speedometer gear meshes with the output shaft. The slots on the housing will then line up with the retainer clip. If this is not done, the speedometer will not engage properly.

TJ Speedometer Installation: The Jeep TJ speedometer is a tight clearance fit to the Atlas shift control. One option for clearance is to plug in the connector while the speedometer is rotated away from the shift control, and then rotate the assembly back into position for the speedometer gear engagement. The other option is to keep the white portion of the speedometer rotated 180 degrees from where it would normally be and use a washer under the bolt head to retain this part of the speedometer in place.



Toyota Speed Sensor 1999 -2004 FJ Cruisers, T100:

This kit allows you to retain the factory Toyota Vehicle Speed Sensor when installing an Atlas Transfer Case. A speedometer cable is used with a sensor housing to remote mount the VSS that was originally installed in the Toyota transfer case. This kit is sold under [P/N 300605](#). You will also need the speedometer housing [P/N 301506](#) for the Atlas and the proper drive gear.

Low Range & 4WD Switch:

A low range switch and pigtail is also available from us for the Atlas transfer case. This switch is from a stock Jeep TJ. The switch can be used for an indicator light or a low range switch. The sensor is [P/N 300364](#) and Pigtail [P/N 300378-C](#).

TJ Rubicon, JK Jeeps:

In essence, the Low-Range switch tells the computer what mode the transfer case is in. To operate the needed functions on these vehicles, we only need one of four normal mode positions and that is the "Low-Range" mode. This mode allows the factory lockers (and electric sway bar if equipped) to work on the Rubicon series TJ, JKs & Liberty's. The other necessity is the ESP (ELECTRONIC STABILITY PROGRAM) in the JK series of Jeeps. By installing the Low-Range switch in the JK it will automatically turn the ESP to its lowest setting possible allowing front digs in low range, tire slippage without engine hesitation or braking feedback. It will also change the fly-by-wire throttle sensitivity to take away the side affects that usually consist of jerky throttle response that occurs as a result of running low range without the Low-Range switch hooked up.

[P/N 300378X](#) - Low range pigtail for Jeep (will not light up 4WD indicator in high range) (FITS UNITS BUILT BEFORE 7/2014)

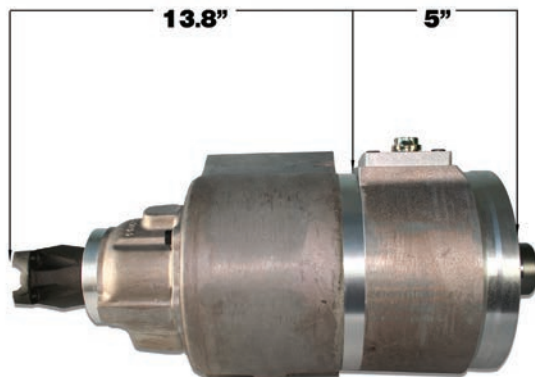
[P/N 300378A](#) - Low range pigtail for Jeep (will not light up 4WD indicator in high range) (FITS UNITS BUILT AFTER 8/2014)

[P/N 300377](#) - Control module for Jeep JKs (retains all stock features when an Atlas is installed) (UNITS BUILT PRE 7/2014)

[P/N 300377A](#) - Control module for Jeep JKs (retains all stock features when an Atlas is installed) (UNITS BUILT POST 8/2014)

2012 and Up Jeep JK Autos:

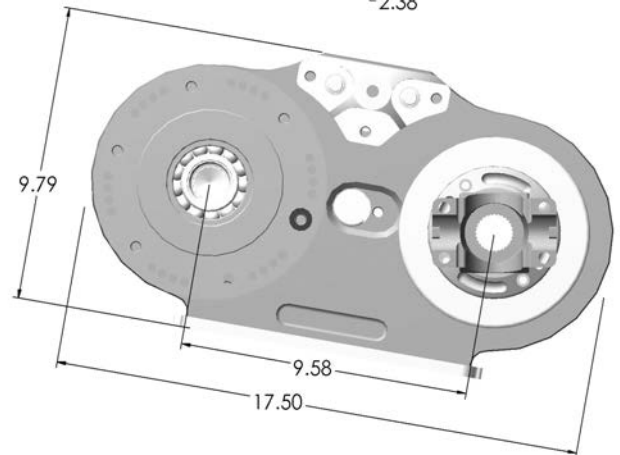
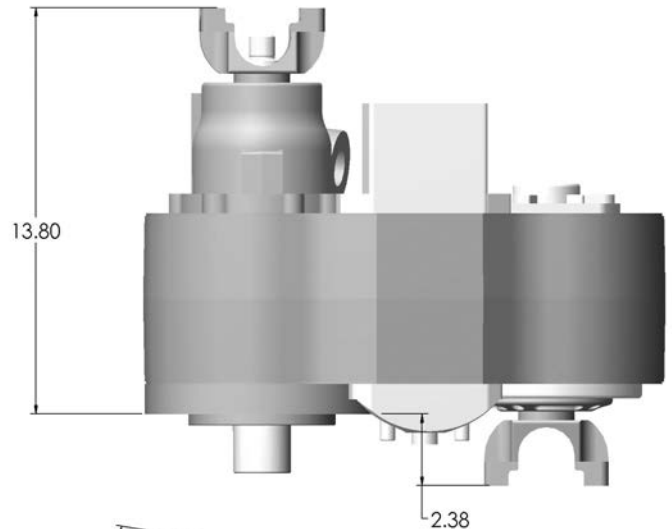
JK 2012 & newer Jeeps equipped with an automatic transmission will also require a Transmission Control Module flash to operate correctly with the new Atlas transfer case. Jeep coded the stock transfer case ratio of either the 2.72:1 or the 4.0:1 into this module and any different ratio in the transfer case will put the vehicle into a limp mode. A Jeep programmer like an A.E.V. Procal or the Bully Dog with the transfer case ratio option is needed and we sell both of these programmers. Unfortunately, the Atlas 4 speed is not an option in these newer JKs with the automatic. The exact ratios for the Atlas is required for reprogramming the module. We round up or down to the decimal on our ratios; however, the Jeep computer module will accept the three places right of the decimal. The ratios are as follows: 2.0:1 is exactly 2.11:1; 3.0:1 is 3.030:1; 3.8:1 is 3.824:1; 4.3:1 is 4.286:1; and 5.0:1 is 5.048:1.



ATLAS 4 SPEED 18.8" OAL

The Atlas measures approximately 14" from the center of the input to the outside edge of the main case.

The Atlas 4 speed has the same case dimensions as the 2 speed with the exception of the over all length and the linear distance of the front yoke to the transfer case input face.



2 SPEED Shifter Options

We have designed several different shifters to fit various vehicle applications. If your specific vehicle application is not listed, a universal right or left hand shifter should be used. Areas of consideration on any installation are vehicle console and floorboard clearances. These shifters have been designed mainly around stock vehicles. Vehicles with body lifts greater than 1" may require more than the usual modifications for proper fit of the shift handles.

SHIFTER SOLD WITH AN ATLAS

P/N 303000HD	2.5"H.D Universal Atlas shifter
P/N 303000HD1	5.5"H.D Universal Atlas shifter
P/N 303000L	5.5" Universal Atlas shifter
P/N 303002L	TJ 97-02 Automatic Atlas shifter
P/N 303002U	TJ Universal Atlas shifter
P/N 303003L	TJ Manual Atlas shifter
P/N 303004L	Bronco Atlas shifter
P/N 303005L	ZJ 6" Left Atlas shifter

P/N 303006L	Explorer/Bronco II shifter
P/N 303007L	XJ AW4 Atlas shifter
P/N 303035	JK shifter
P/N 303030	JL shifter
P/N 303009	Cable shifter 48" cable
P/N 303009-72	Cable shifter 72" cable
P/N 303012L	WJ Cherokee Cable shifter
P/N 303020	TJ Cable shifter

- NOTES:**
1. The Lokar auto transmission shifters may have some clearance issues with the Atlas cable shifters.
 2. The Allison transmission coupled to the Atlas 2 speed cannot use cable shifters.

DIVORCED ATLAS SHIFTER & SUPPORT

P/N 303025L	Left drop Divorced case shifter and support mount
P/N 303026R	Right drop Divorced case shifter and support mount

Atlas Shifter Linkage Upgrade: The connection rods for the Atlas were designed to be universal so they could be adjusted for various drivetrain lengths. The stock linkage works well for the majority of applications and vehicles. The extreme racers and rock crawlers, on the other hand, were looking for a linkage that would withstand the abuse that they put their rigs through. The two kits offered are upgrades that work with the standard handles and use heim joints that are bolted to the Atlas linkage. Anyone can upgrade to these kits as they will work on all Atlas ridged-mounted twin stick applications: **P/N 303040** or **P/N 303041**. The application details & descriptions are available online.



Jeep TJ
2 & 4 Speed
shifter install
photos



4 Speed Shifter Options - MAIN CASE

We have designed several different shifters to fit various vehicle applications. If your specific vehicle application is not listed, the universal shifter should be used. Areas of consideration on any installation are vehicle console and floorboard clearances. These shifters have been designed mainly around stock vehicles. Vehicles with body lifts greater than 1" may require more than the usual modifications for proper fit of the shift handles.

The 4 speed shifters are basically the same as the standard Atlas shifters except for the extension tube and shift rail connecting links which are longer to compensate for the added length of the transfer case.

SHIFTER SOLD WITH AN ATLAS 4 SPEED

P/N 344000	Universal Atlas 4 speed Right or Left shifter
P/N 344000HD	Universal Atlas 4 speed (heim joints)
P/N 344002	TJ Automatic Atlas 4 speed shifter
P/N 344003	TJ Manual Atlas 4 speed shifter
P/N 344004	Bronco Atlas 4 speed shifter
P/N 344005	ZJ Atlas 4 speed shifter
P/N 344006	Explorer and Bronco II Atlas 4 speed shifter
P/N 344007	XJ Atlas 4 speed shifter
P/N 344008	JK Atlas 4 speed shifter
P/N 303009	Cable Shifter
P/N 303012L	WJ Cherokee Cable shifter
P/N 303020-4	TJ Cable Shifter



JK 4 speed install

COMPONENT SPEC.	QTY	BOLT SEALANT/THREADLOCK	WASHER	TORQUE (Ft-Lbs)
HOUSING - OIL PAN - BLIND	10	RTV SILICONE	N	20
HOUSING - OIL PAN - THRU	4	RTV SILICONE	N	20
HOUSING - OIL PAN	10	RTV SILICONE	N	20
HOUSING - INPUT	6	RTV SILICONE	Y	30
HOUSING - DIVORCED INPUT	6	MED. STRENGTH THREADLOCK	Y	30
HOUSING - REAR OUTPUT	5	RTV SILICONE	N	30
HOUSING - FRONT OUTPUT	5	RTV SILICONE	N	30
HOUSING - SHIFT RAIL	3	RTV SILICONE	N	30
HOUSING - SHIFTER SUPPORT	3	RTV SILICONE	N	20
HOUSING - FRONT BRG. CAP	4	RTV SILICONE	N	20
BRACKET - DIVORCED PAN	10	RTV SILICONE	N	23
SHAFT - CLUSTER	2	SEAL WASHER	N	20
RETAINER - SPEEDO	1	RTV SILICONE	N	10
FITTING - SITE TUBE	2	RTV SILICONE	N	15
FITTING - BREATHER	1	RTV SILICONE	N	10
PLUG - OIL PAN	1	SEAL WASHER	Y	10
SHIFT SWITCH BORE	2	SEAL WASHER	Y	12
SWITCH-4WD/LOW RANGE			N	12
SHIFT FORK - SHIFT RAIL	2	MED. STRENGTH THREADLOCK	N	12
NUT - YOKE - 26SPL	1	RTV SILICONE	N	130
NUT - YOKE - 32SPL	1	RTV SILICONE	N	150
ATLAS 4SP PLANET BOLTS	6	RTV SILICONE	Y	35



4 SPEED REDUCTION HOUSING SHIFTER:

The planetary reduction portion of this box is a non-synchronized unit. **YOU MUST COME TO A COMPLETE STOP BEFORE SHIFTING THE PLANETARY.**

For the manual transmission, the shifting procedure should be to stop the vehicle then shift the planetary. If the shift is unsuccessful, then feather the clutch as you pull on the shift lever. The unit should slide easily into gear.

For an automatic transmission, the shifting procedure should be to stop the vehicle. Shift the transmission to neutral and then quickly shift the planetary. If you pause, the transmission output shaft will accelerate while the planetary is between gears. If the shift is not immediately successful, then shut off the engine while the transmission is still in neutral. Once the engine is shut off, complete the shift of the planetary unit. Restart your engine while the transmission is still in neutral.

Cable Shifter:

This shifter provides a linkage system that can be mounted to the floorboard of the vehicle. This single handle shifter has a front-to-rear movement and only requires a small clearance hole in the floorboard. It requires you to route the cable so that it does not interfere with the driveshafts or other moving components. We also recommend that you keep the cable away from the exhaust as much as possible. The location of the shifter on the floorboard can vary. On Jeeps with a full console like the TJs, we have found that this shifter fits nicely besides the emergency brake towards the driver's seat. We've also had customers install the shifter between the driver's door and their seat. The floorboard requires three holes drilled through and a small oval slot for the handle.

P/N 344020 - Cable Shifter Atlas 4 speed

P/N 344025 - Cable Shifter Atlas 4 speed Jeep JK



Jeep TJ without a console



Jeep TJ 4 speed shifter located between the E-brake and the console (left) and the 4 speed cable routed on a Jeep TJ (right)

Installation Procedures For All Vehicles

Before the actual installation begins, you should read the installation and operating procedures of your new transfer case. Please verify that ALL features such as input spline and case configuration (left or right hand drop) are correct. Also inspect the unit for any damage that may have occurred during shipping. This section of the manual deals with the general installation procedures of the Atlas. Specific installation instructions for many vehicles are also on our website at www.advanceadapters.com or provided for you with your unit. **Please read all instructions before installing.**

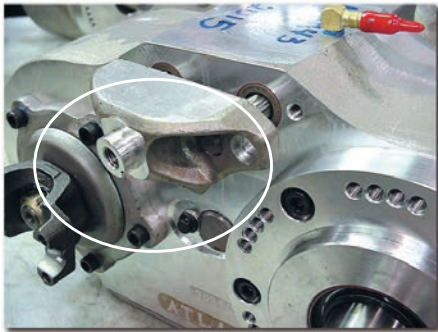
LUBRICATION

This unit is shipped DRY. Before operating your Atlas, please fill with the recommended gear lubricant.

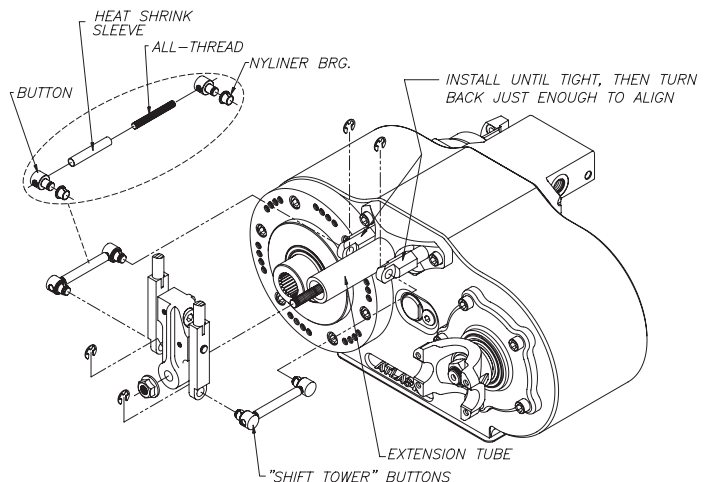
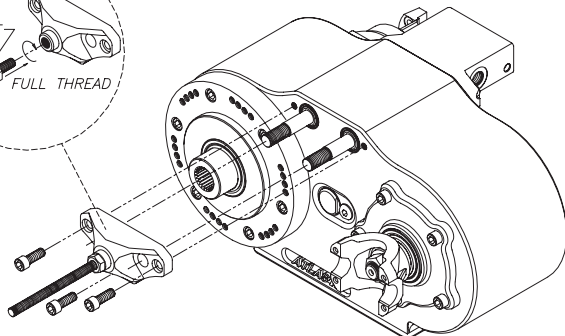
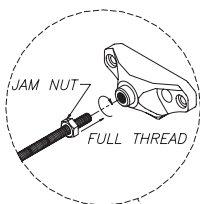
The recommended oil capacity is 2 quarts in the Atlas 2 speed and 2-1/2 quarts for the Atlas 4 speed transfer case. The Atlas does offer a 'weep hole' to verify the oil level. However, we recommend all units use our site tube to aid in determining the correct fluid level. Once the required two quarts are put into the Atlas, we recommend marking the oil level on the site tube. We like to use a small zip tie as a oil level marking device. **Note:** When the Atlas is overfilled beyond the recommended levels, it will cause the unit to vent the extra oil out the breather.

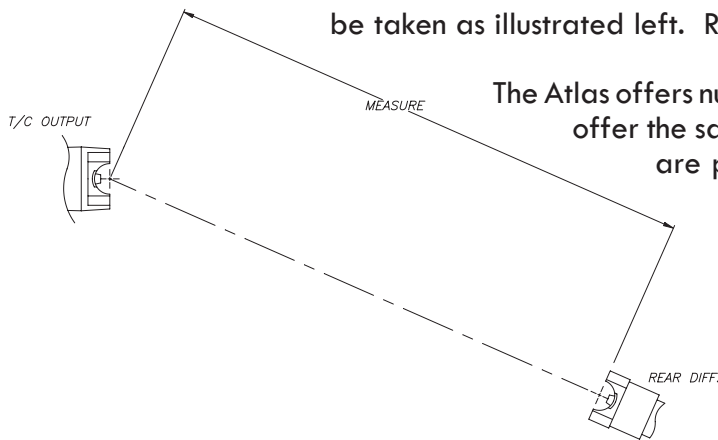
PREPARATION

Now is a good time to familiarize yourself with the shifter components. Pre-assembly of the shifter items will help a great deal with the final installation. Unpack the shifter and install the shifter base. Use RTV Blue silicone to seal the bolt threads. Pre-assemble the rest of the components. Detailed shifter assembly instructions can be found in The Final Installation section. Once the shifter has been properly setup, remove it from the transfer case (leaving the triangular 3 bolt base on the unit). The Atlas must be installed into the vehicle without the shifters attached. On Atlas 4 speed units, the cable shifter on the reduction housing must be installed before installing the Atlas into your vehicle.



A normal installation of the Atlas transfer case should take around 6 to 8 hours. Before disassembling your vehicle, the undercarriage should be cleaned to aid in the installation process. Stock driveline lengths should be measured with your vehicle on the ground. The measurement should





be taken as illustrated left. Retain these measurements for later use.

The Atlas offers numerous rotations depending on the application. We offer the same rotation as stock on all units. The other rotations are provided for either additional ground clearance or unique applications. Vehicles using one of our adapters with the dual bolt patterns have numerous rotation options. Before removing your stock transfer case, an angle finder can be used to obtain the rotation of your stock transfer case.

Your vehicle can now be raised for the necessary removal of the driveshafts, skid pan, and the stock

transfer case. **Note: Please make sure your vehicle is supported securely!**

Recommended Equipment: A floor jack to support the tranny and engine when the crossmember is removed, and a transmission jack for raising and lowering the transfer cases.

By unbolting and removing your stock transfer case, you should have your transfer case adapter and output shaft exposed. The adapter housing transfer case mating flange should be cleaned of any debris. Double check the output shaft splines of your transmission and verify the stickout length. Make sure the Atlas has the same spline and that the length of the transmission output isn't too long for the Atlas input. (Refer to the Atlas Input Shaft section for more information).

The Atlas should now be test-fitted into the vehicle. The Atlas should index onto the spline of your transmission and up to the adapter housing. While holding the Atlas securely in place, rotate the transfer case to the desired rotation for your vehicle. Locate a stock hole on the adapter housing. Using a marker, mark the outside of the Atlas index ring. This will help to identify the rotation pattern. Check for tunnel clearance, front driveshaft clearance, and shifter clearance with the Atlas in this new rotation. **Note:** On many of the YJ, TJ, and CJ vehicles, a minor modification to the tunnel area will allow you to mount the Atlas at a higher rotation with little or no crossmember modifications. (Refer to the specific vehicle application for more details at www.advanceadapters.com).



Once this is done, remove the Atlas from the vehicle. Locate the mark on the index ring of the Atlas transfer case. The bolt patterns on the transfer case index ring are relative. In other words, whatever hole you've selected will be the same all the way around the index ring. Using the stud bolts provided, install them in the chosen pattern rotation. These studs are stock New Process items and are a restrictive fit into the front of the Atlas. If you are using a spacer adapter that requires longer bolts or stud bolts, they should be installed using 242 Loctite. Install the studs so that they have full thread engagement in the transfer case adapter ring. **DO NOT PRELOAD THE STUDS INTO THE ATLAS INPUT RING!**

TIP: Before the final bolt up, we have found it easier to equip the Atlas with all the necessary components. For example: Shift indicator switch, speedometer, site tube, and drain plug, etc. The Atlas is also shipped with numerous red plastic caps to keep contaminants out of the unit. At this point in time, remove all caps and properly install all components.

The Final Installation

Apply a very thin film of RTV Blue silicone to your transfer case adapter mating surface. Aligning the studs with the adapter holes and the transmission output shaft with the Atlas input, the Atlas should slide completely onto the transmission mating surface. There should not be any GAP between the two units! If they do not meet, then you have an interference problem! Refer to the Atlas Input Shaft section for the recommended transmission shaft lengths. **DO NOT PULL THE TWO UNITS TOGETHER WITH THE FASTENERS.** This will cause internal damage to the unit. Possible problems may be too long of an output shaft or on some Jeep 21 & 23 spline transmissions, a spacer adapter may be necessary. If you are in doubt regarding your interference problem, please call!

The recommended nuts have been provided to secure the Atlas to your adapter. With the Atlas now secure, check again for proper clearances such as driveshaft, floorboard, skid pan, and exhaust, etc.

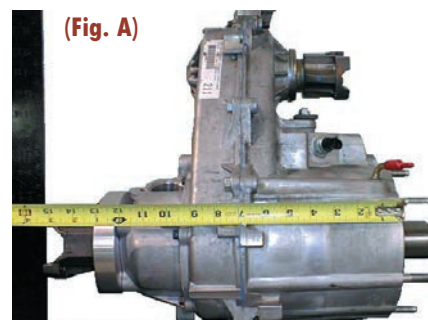
DRIVELINE MODIFICATIONS

You will normally need driveline modifications when installing the Atlas transfer case. What we have found that works well is either adding or subtracting (depending on the application) the measurements of the Atlas from the stock length of your transfer case.

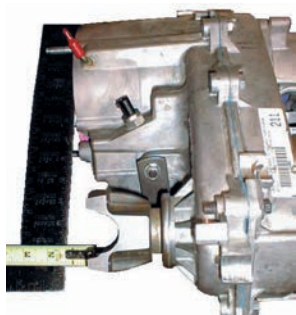
REAR MEASUREMENT: To determine the new length for the rear driveline, simply measure from the face of the transfer case to the face of the rear output yoke (**Fig. A**). Write that measurement down.

Take the same type of measurement of the Atlas. With that in mind, consider the following example.

Rear Measurement Example (Fig. A): This stock transfer case measured (on our example) 16.8". When subtracting that measurement from the Atlas measurement of 13.8", you have a difference of 3.0". Since the Atlas is 3.0" shorter than your stock transfer case, your rear driveshaft would then need to be lengthened 3.0". This difference is now added to the measurement taken from your stock driveline, as recommended in the Preparation section. You would now have your new rear driveshaft length.



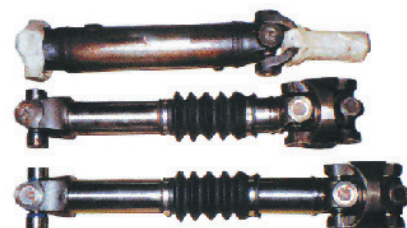
FRONT MEASUREMENT: Measure the stock transfer case from the front yoke face to the surface of where the transfer case bolts to the adapter housing (**Fig. B**). Write that measurement down.



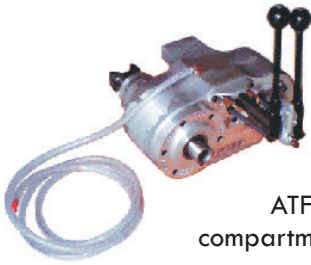
(Fig. B)

The front yoke on the various stock transfer cases can either be a positive measurement (protrudes out from the adapter input face), or a negative measurement (recessed inward from the adapter input face). Most gear-driven transfer cases will have a positive yoke measurement, and most chain-driven transfer cases will have a negative yoke measurement. The Atlas measures approximately 2" positive offset from the face of the front yoke to the transmission adapter input.

Front Measurement Example (Fig. B): This stock transfer case (our example) measured a negative 1-1/4". Adding that to the Atlas measurement of positive 2", the difference is 3-1/4". Since the Atlas front yoke on this application is 3-1/4" closer to your front axle, you would then need to shorten your front driveshaft this distance. This difference can now be subtracted from the measurement taken from your stock driveline, as recommended in the Preparation section. You would now have your front driveshaft length.



Stock driveshaft (top) vs.
New fixed yoke driveshafts



BREATHER INSTALLATION:

The stock transfer case breather hose should be replaced with a 3/8" fuel hose and connected to the brass elbow located on top of the Atlas. A new breather should be installed on the opposite end of this hose and mounted to the firewall. A free flowing atmospheric breather typically found in earlier model vehicles or used on differentials is best. On later model Jeeps, the stock breather is very restrictive. This stock breather is for lighter viscosity oils such as the ATF used in the stock transfer case. If this breather is not replaced, oil will blow out into the engine compartment. We offer new breather kits for the 2 and 4 speed cases.

SHIFT INDICATOR:

The transfer case shift indicator (if applicable) should be connected. Make sure wires and/or hoses have proper body clearance and are not bound in any way. For more information, see the specific vehicles applications. (AA P/N 300364)

DRIVESHAFTS & CROSSMEMBER / SKID PAN:

You should now install your modified driveshafts. Trial fit your crossmember or skid pan, noting any modifications that may be necessary. The Atlas is equipped with a drain plug located on the inspection cover. You may wish to cut an access hole in your crossmember/skid plate for easy access. Once the modifications are made, install the crossmember/skid plate securely to the frame and the rubber support to the crossmember/skid plate.

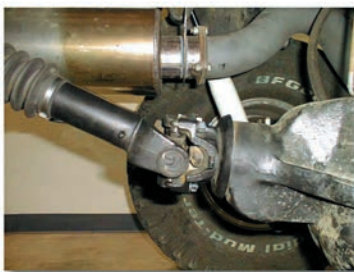
LUBRICATION:

Before lowering your vehicle, fill your Atlas with the oil provided. By using a hand pump, connect the hose end to the upper fitting of the site tube to fill the Atlas to the recommended oil level. Once this is completed, re-secure the upper site tube fitting to the Atlas.

VISUAL INSPECTION:

Once the vehicle is back on the ground, the transfer case area should be inspected to verify that all fasteners and components relating to the transfer case are properly attached.

A visual inspection should be made with regard to driveline angles and clearance. New and unwanted noises are most often related to poor driveshaft angles! **C.V.** driveshaft combinations must be set so that the differential yokes are in-line with the driveshaft under normal operating load. **Non-C.V.** driveshaft combinations must be set so that the pinion yoke angles match the transfer case output yoke angles under normal operating load. Remember to allow for (spring wrap) if you have leaf springs. The front pinion will dive downward under load and the rear pinion will rise upward. There are many different spring rates on the market, so this may take some tweaking to eliminate a poor driveshaft condition. (For examples, see photos below). The Atlas transfer case is a close tolerance design. If you feel any vibration at all in the shift handles, suspect improper driveshaft angles!



Rear (too low).
Will not raise enough for C.V.!



Rear (correct).
Perfect for C.V.

Common Installation Mistakes

This section highlights a few of the areas that we commonly see mistakes made during the installation of an Atlas 2 and 4 speed. These mistakes will cost you time and money. Most problems occur because the installation is rushed or procedures overlooked. Other errors happen because the instructions were not read or followed.

The most common mistake is having a transmission output shaft that is too long or does not have long enough splines. A shaft that has either one of these problems can bottom out or not engage enough into the Atlas input. Most times, this interference is not noticed until the transfer case is being installed. Most installers get the transfer case near to the mating flange, but find they are lacking roughly 1/16 of an inch between the two gear boxes coming together. They push, pull & rotate to mate the two boxes, then decide to put the nuts on the stud of the transfer case to pull the units together. **Running the units in this state will cause complete destruction of the unit.** In short, both units will need disassembly to fix the problem. The easiest fix is prevention. If the gear boxes do not slide together completely when installing,

remove the transfer case and measure the shaft lengths. Refer back to this application guide to the input section for spline engagement lengths. The Atlas is a precision built transfer case. **DO NOT FORCE TOGETHER** even if it's a small gap between the transmission and transfer case.

The second, most common mistake or problem is the cable shifter adjustments and installation. We now offer several custom and universal cable shifters to fit the Atlas 2 and 4 speed transfer cases. The instructions highly recommend installing the shifters to the Atlas while the transfer case is outside the vehicle. This will allow you the opportunity to fine tune the linkage while viewing the movement of both the handle and the shift rail. Adjustments to the linkage could be a half turn of a certain nut. If the Atlas & shifters are installed, that nut is hard to get a wrench on and you could spend a lot of time trying to get it adjusted correctly. Incorrect adjustments to the linkage will make the Atlas hard to shift, and we have seen some cables actually break because of driver trying to force a mis-adjusted shifter.

THINGS YOU SHOULD KNOW ABOUT YOUR ATLAS

1. **DO NOT** disassemble the unit!
2. We have had a few customers that have disassembled their Atlas transfer case. One mistake commonly made is the reassembly of the unit. The tailhousing on the Atlas is a component that must be shimmed properly in order for the unit to operate properly. When reinstalling the tailhousing, most individuals use a silicone sealant which changes the end play on the Atlas and will cause internal problems.
3. Proper support of the Atlas and transmission with a support mount that is in good shape is recommended.
4. Check the yoke nut torque specifications periodically. The yoke nuts should be torqued at 150 ft./lbs.
5. It is twice as hard to shift the transfer case if the vehicle is not at least slowly rolling forward. In addition, trying to shift the transfer case while the wheels are turned puts a bind on the synchronizers, making it almost impossible to shift in or out of gear.
6. Layout and inventory all parts. Test fit before starting the installation. Verify the configuration of your Atlas.
7. Give ample clearance between the Atlas and the body. The shifters also need to have complete free range of motion.
8. We've found that driveline angles are responsible for 99.9% of all noises that "seem" to be coming from the Atlas.

Operating Your New Atlas

The Atlas has internal shifter interlocks that prevent the unit from being mis-shifted. The knobs on the Atlas Twin Stick are to assist you with identifying the rear output and the front output.

For **2WD High** in which the vehicle should first be tested, the knob labeled "Rear" will be in the high position and the "Front" knob should be in the neutral position. After a few miles in 2WD High, we recommend that you shift the "Front" shifter knob into High, putting you in 4WD High. (On manual locking hubs, to achieve any type of 4WD your hubs must be locked). *The "Front" shifter handle should shift smoothly in and out of neutral and High.* **IF THE SHIFTER DOES NOT ENGAGE EASILY, DO NOT FORCE IT.** (Your linkage may need to be adjusted). When you are shifting out of 4WD high, the "Front" knob *must always* be disengaged first. If the shifter feels tight or sticky, press in the clutch or shift to neutral (automatic transmission), or simply straighten the front wheels. The vehicle should be moving forward when shifting the Atlas.

When shifting into **Low range**, REMEMBER the following: The vehicle should be at a slow roll forward, no faster than 5 miles an hour. Speeds faster than recommended could cause personal injury (like unloading the rear payload into the front seats!), or damage to the drivetrain (which is not only embarrassing but expensive!). The Atlas has the unique feature of 2WD low with the rear axle or the front axle. At any time while driving in low ratio, you can disengage either the front or rear by shifting the respective handle into neutral.

Shifting an Atlas with an Automatic transmission: While the vehicle is slowly moving forward, place the transmission into neutral and engage the front or rear control into Low. The Atlas is a synchronized shift design which means synchro sets have been added to SPEED MATCH the gear and shaft relationship. If you are stopped with no forward motion and the unit will not shift, place the *transmission* in Drive or Reverse then back to neutral, then attempt to shift the Atlas. **DO NOT FORCE THE ATLAS INTO GEAR.**

Shifting an Atlas with an Manual transmission: While the vehicle is slowly moving forward, depress the clutch and engage the front or rear control into Low. **DO NOT FORCE THE ATLAS INTO GEAR or HOLD PRESSURE ON THE SHIFT LEVERS WHILE RELEASING THE CLUTCH.**

As you become accustom to the operations of the Atlas and the unit accumulates miles, the shifting will become easier.

TWIN STICK SHIFT POSITIONS

Neutral: Both the “rear” and “front” knobs in the “N” position.

2WD High: The “rear” knob in “H” position and the “front” knob in “N” position.

4WD High: The “rear” knob in “H” position and the “front” knob in “H” position.

4WD Low: The “rear” knob in “L” position and the “front” knob in “L” position.

2WD Low:

(Rear Drive ONLY) The “rear” knob in “L” position and the “front” knob in “N” position.

*(Front Drive ONLY) The “rear” knob in “N” position and the “front” knob in “L” position.

***Special Note:** With the front in 2WD low, the torque is distributed 100% to the front axle. Combined with the low gearing in the transfer case, these factors can cause undue strain on your front axles. This should only be used for quick tight turns in loose soil conditions. The only shift position that is not available is Front 2WD high.

4 Speed Atlas Reduction Housing: This is a non-synchronized shifted unit. To shift the reduction housing portion of the Atlas, the vehicle should come to a complete stop and the transmission must be in a neutral position. Once the vehicle is stopped, you can then engage or disengage the planetary gearing. The shifting of this unit is designed for a cable shifter.

Operating Considerations

The low gear reduction of the transfer case will help to ease you through the toughest terrain you can find. The essentials of good 4-wheeling is the sheer ability to maneuver at a safe speed while retaining your line of attack on the course in front of you. The slower rate of approach will not only keep you in the seat, but also keep the tires on the ground for the best possible performance. If you are considering the Atlas or have purchased one already, it is sure to change the way you 4-wheel. **KNOW YOUR LIMITS!** Please begin with mild terrain and experiment safely to your new level of potential. The low reduction will not only slow you to a tactical approach, but will also increase the expected output of your current equipment. Your response from the accelerator may surprise you. The crawl ratio is a torque multiplication. In some transfer case replacements, it can be an increase of more than twice that of the original potential.

KEY CONSIDERATIONS:

Brakes: On flat ground, with the brakes applied and the transfer case in low, you will notice deeper squat in the suspension as you shift your automatic transmission into gear. If you have large disk brakes (front and rear), you will be well equipped to control the increase in torque. If you have drum brakes or a set of stock vehicle brakes (front and rear), you might find it hard to stop the vehicle when the transfer case is in its low range gear. There are many aftermarket brake upgrade kits out on the market. For serious off-roading, this upgrade should be considered.

Differentials: You are sure to find your weakest link! If you are not sure about the capacity of your current equipment, you may want to consult with an expert in this field! Research any 4WD magazine for the various sources of manufacturers and distributors.

MAINTENANCE

Atlas oil levels should be monitored frequently. The oil site tube should be marked with a zip tie to indicate proper oil level for the Atlas at the rotation installed in your vehicle. The oil should be drained and replaced after the first 500 miles and then at intervals of 10,000 to 15,000 miles. Extreme offroading, you may consider intervals as frequent as every engine service.

TOWING

The **ATLAS 2** speed has been flat-towed for a distance of 300 miles and no problems were encountered. At this time, we can only recommend flat-towing at this maximum distance. After 300 miles of travel, the vehicle should be started. With the transmission in gear and the Atlas in neutral, let the vehicle idle for 5-10 minutes. This will circulate the oil in the Atlas and allow for proper lubrication. We recommend that the Atlas should have at least 500 driving miles on it before you flat-tow, allowing the bearings to break in. When a vehicle is being towed with the Atlas 2 speed, both shift levers should be in the Neutral position. Our experience regarding the transmission towing position are as follows (please also verify in your owners manual what the vehicle manufacturer recommends): **Automatic transmissions should be left in park/ Manual transmissions should be left in any gear. If you plan on flat-towing an Atlas 2 speed equipped vehicle and do not wish to stop to circulate the oil, we actually prefer that you remove the driveshafts from the vehicle. This will prevent any damage that may occur to the internal components due to lack of normal oil circulation.**

The **ATLAS 4** speed **should never be flat-towed without removing the driveshafts**. The planetary unit and additional bearings do not receive the normal oil flow as they would under normal driving conditions and, therefore, damage will occur.

ADVANCE ADAPTERS RUBICRAWLER

This unit fits Jeeps 2003 to 2011 with the 42RLE automatic overdrive transmission. This new reduction unit replaces the stock 42RLE tailhousing with a 6 gear planetary reduction box featuring a 2.72 low range. This is a true bolt-in doubler that couples to the stock Jeep transfer case or an existing Atlas transfer case.

Features: The RubiCrawler increases your available gear ratios allowing you to gear your Jeep to the terrain in which you're wheeling on. The various ratios will allow you more control of the vehicle which results in extreme off road performance while maintaining a fun and safe offroading experience.

Ratios with a Stock New Process 231/241 are a 2.72:1 and a 7.40:1

Ratios with a Stock NP Rocktrac are a 2.72:1, 4.0:1 and a 10.88:1

Shifting the RubiCrawler: The RubiCrawler shifting mechanism utilizes push/pull cable technology for a smooth and easy shift. The universal cable shifter is included with the purchase of your RubiCrawler. *The universal shifter should be used if your vehicle is equipped with an Atlas transfer case.*

The installations include a twin stick cable shifter. These kits are designed to fit the stock Jeep TJ and JK consoles.

The Jeep TJ twin stick shifter replaces the standard mechanical linkage. We have designed a twin stick shifter to come through the stock console for a clean installation that operates both the RubiCrawler and the stock NP231 or NP241 transfer case.

The JK shifter also provides a twin stick shifter through the stock console. This kit upgrades the stock transfer case cable with new heavy duty cable and the addition of the new RubiCrawler cable. The kit numbers below include the RubiCrawler unit as well as the shifter kit:

P/N RUBI-JKAD

JEEP JK (STOCK TRANSFER CASE)

P/N RUBI-TJ

JEEP TJ (STOCK 231 or 241 TRANSFER CASE)

P/N RUBI-UNIV

JEEP TJ or JK (ATLAS TRANSFER CASE) Universal Shifter RubiCrawler



Additional Accessories:

P/N 42R360 - 1 quart A.T.F. (4 quarts recommended)



We have also designed an electronic interface assembly that integrates the RubiCrawler into the Jeep Wranglers electronics. The primary function of the RubiCrawler Control Module is to allow the Rubicon locking differentials and disconnecting sway bar (JK only) to operate when the RubiCrawler Low is engaged. **P/N 42R800** (included in the RUBI-JKAD)

ADVANCE ADAPTERS, INC. LIMITED WARRANTY

The RubiCrawler is guaranteed against defects in workmanship and materials for one year. This warranty begins from the date the unit is shipped from Advance Adapters. We log all units with a serial number at time of shipping. The warranty is void (as determined by Advance Adapters) by misuse, abuse, improper maintenance, installation and/or alterations to the product. Warranty will be voided if the proper transmission fluid levels are not maintained, if any transmission fluid other than ATF+4 is used or the product has not been properly installed and instructions have not been followed. Do not disassemble or attempt to repair the RubiCrawler as doing so will void the warranty. Please return the product as further described below.

These guarantees do not cover any outside labor, shipping, towing, normal wear or any other unforeseen events that may occur due to failure of a unit. Advance Adapters reserves the right to repair or replace any product.

All returns must have a returned goods authorization (RGA#) prior to shipping the product, and returns are to be sent prepaid freight. Please call 1-800-350-2223 and the sales department can assist you.



The installation of a RubiCrawler into a Jeep is very simple and can be accomplished in a days time (8 hours on average). The transfer case remains in the stock location, so no driveline modifications are required. The installation does require the removal of the transfer case and disassembly of the console.



The 42RLE transmission rear housing after the stock transfer case has been removed.

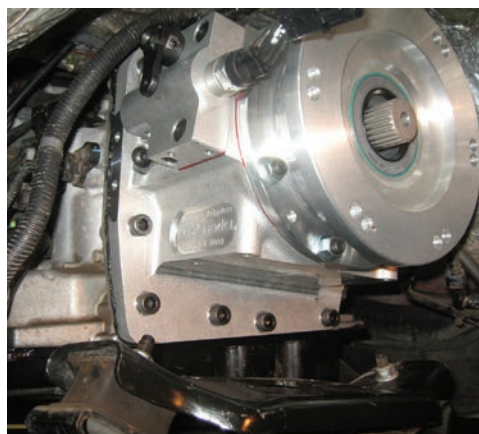
An unpacked TJ RubiCrawler kit. Also shown with ATF+4 fluid & filter (optional purchase items).

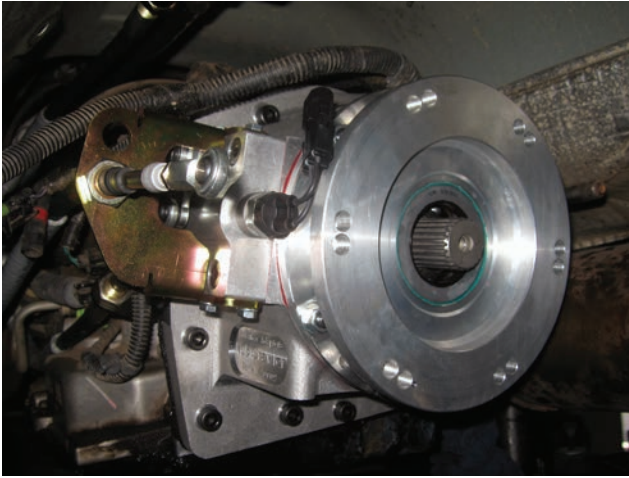
These photos show the rear housing of the 42RLE transmission and the removal of the stock spud shaft. A slid hammer works the best; however, you could also pry the shaft out or make your own pulling tool (shown far left). Once the spud shaft is removed, the stock tailhousing can also be removed.



The rear housing of the 42RLE transmission with the stock tailhousing removed. Note: Removing the tailhousing will cause the lose of some transmission fluid. The rear of the transmission needs to be cleaned and the mating surface of the RubiCrawler needs to have the Chrysler silicone applied to the housing. The oil supply for the RubiCrawler comes from a high pressure source in the transmission and the o-ring must also be installed to insure proper lubrication. On average, 4 quarts of ATF are required when installing a RubiCrawler.

The unit is the exact same length as the stock tailhousing and has the same cross-member mounting location. This allows the stock transfer case to be reinstalled into its original location without any driveshaft or crossmember modifications.





This section of 4 photos show some of the shifter brackets and cables connected to the RubiCrawler and the transfer case. The cables come with heat shields to protect them from the drivetrain.

Transfer Case Shifting: The transfer case can be shifted from 2 wheel drive to 4 wheel drive HIGH while the vehicle is moving. To shift the transfer case into 4 wheel drive LOW, you must shift the transmission to neutral and the vehicle speed must be below 2 mph. The transfer case can be shifted at a complete stop, but it is easier to shift the unit when at a very slow roll.

RubiCrawler Shifting: The RubiCrawler must be shifted when the transmission is in neutral and the vehicle speed is less than 2 mph. The RubiCrawler can be shifted at a complete stop, but it is easier to shift the unit when at a very slow roll. DO NOT try to FORCE the shift levers as serious damage to the shifters or unit can occur.

Maximum Speed: The RubiCrawler should not be operated at engine speeds above 5000 rpm when the transmission is in overdrive. This over speed condition will cause damage to the bearings and geartrain in the RubiCrawler in addition to possible damage to other components in the vehicle.