



# FREEWHEEL BOOK

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# ***FREEWHEEL BOOK***

*Published  
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## **INTRODUCTION**

The long awaited ***Freewheel Manual*** has finally arrived. ATSG has spent many long hours compiling, drawing, verifying and illustrating the proper freewheel and holding direction of virtually every freewheel device found in North America today. This manual is an absolute necessity for every serious transmission technician in todays working environment. These clear illustrations remove all possibilities of an incorrect installation, which prevents the second removal and disassembly of the unit. Even the Index has been laid out to be as user friendly as we can make it.

Special thanks go out to ***Greg Catanzaro and Allen Byington of TransOnLine®***, for providing us with some of the photographs that were used to produce the line drawings that made this manual possible.

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**ROBERT D. CHERRNAY**  
**TECHNICAL DIRECTOR**

**WAYNE COLONNA**  
**TECHNICAL SUPERVISOR**

**PETER LUBAN**  
**TECHNICAL CONSULTANT**

**JON GLATSTEIN**  
**TECHNICAL CONSULTANT**

**JERRY GOTT**  
**TECHNICAL CONSULTANT**

**GERALD CAMPBELL**  
**TECHNICAL CONSULTANT**

**DALE ENGLAND**  
**FIELD SERVICE CONSULTANT**

**JIM DIAL**  
**TECHNICAL CONSULTANT**

**ED KRUSE**  
**TECHNICAL CONSULTANT**

**GREGORY LIPNICK**  
**TECHNICAL CONSULTANT**

**DAVID CHALKER**  
**TECHNICAL CONSULTANT**

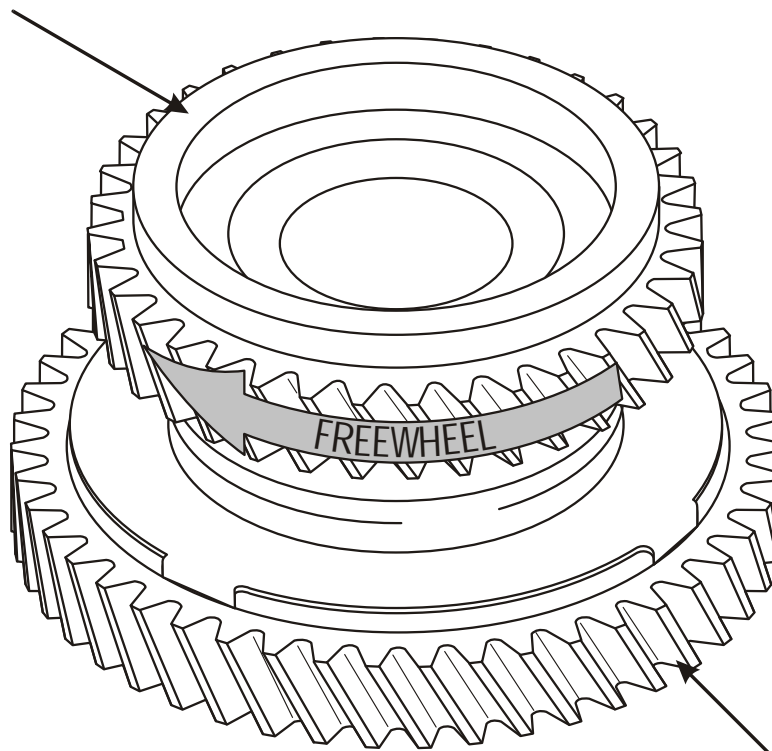
**MIKE SOUZA**  
**TECHNICAL CONSULTANT**

**AUTOMATIC TRANSMISSION SERVICE GROUP**  
**18639 SW 107TH AVENUE**  
**MIAMI, FLORIDA 33157**  
**(305) 670-4161**

**ACURA  
MPYA, M5DA, M5HA  
1ST GEAR ONE-WAY CLUTCH**

***THE COUNTERSHAFT 2ND GEAR MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE***

**FREEWHEEL  
COUNTERSHAFT  
2ND GEAR**



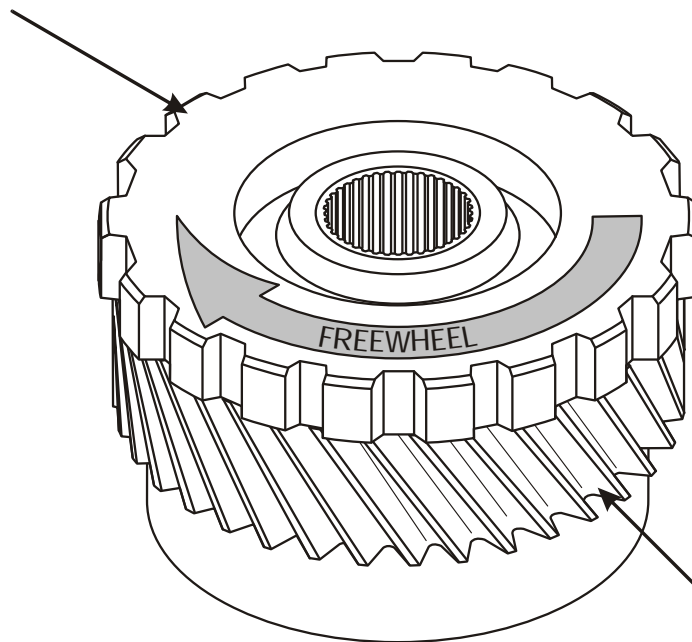
**HOLD  
COUNTERSHAFT  
1ST GEAR**



**ACURA**  
**MPYA, M5DA, M5HA**  
**2ND GEAR ONE-WAY CLUTCH**

***THE PARKING GEAR MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE***

**FREEWHEEL  
PARKING GEAR**

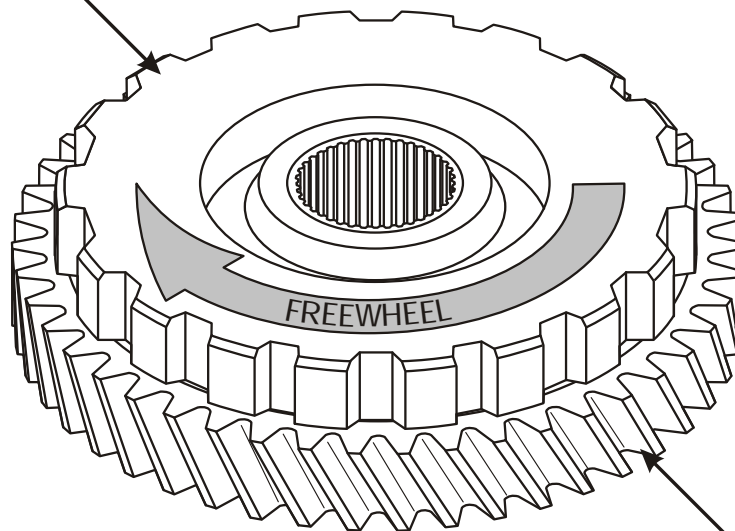


**HOLD  
COUNTERSHAFT  
2ND GEAR**

## ACURA G4, L5, PL5X, MR9A LOW ONE-WAY CLUTCH

*THE PARKING GEAR MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE*

**FREEWHEEL  
PARKING GEAR**



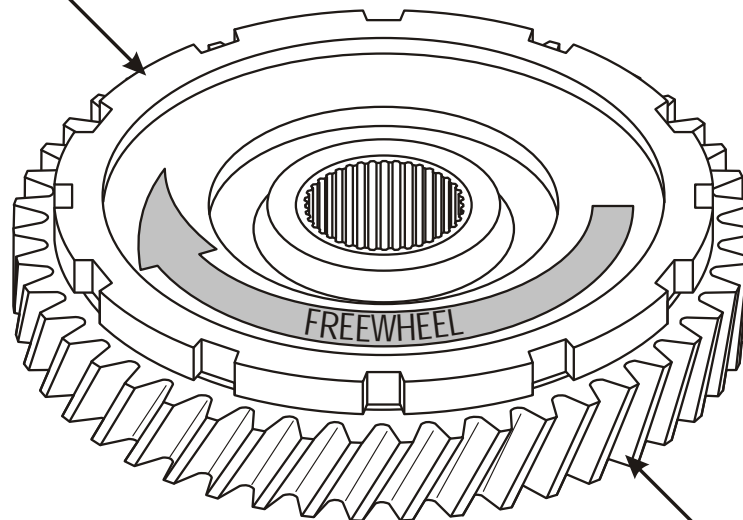
**HOLD  
COUNTERSHAFT  
1ST GEAR**



## ACURA MPWA, M1WA, LOW ONE-WAY CLUTCH

***THE PARKING GEAR MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE***

**FREEWHEEL  
PARKING GEAR**

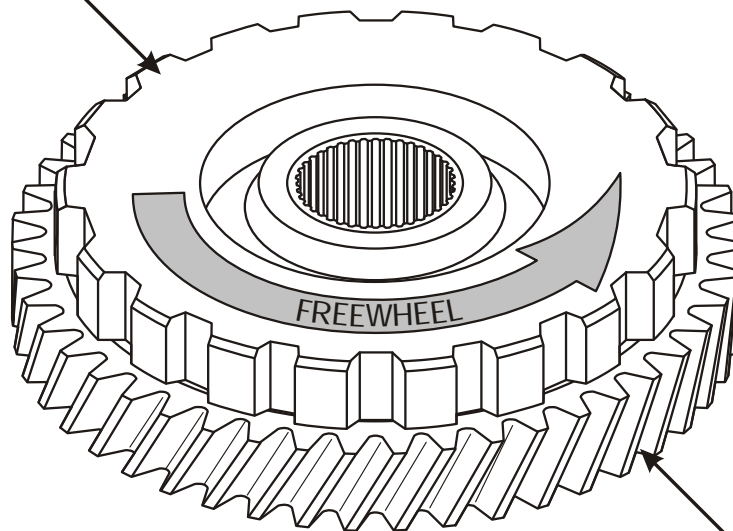


**HOLD  
COUNTERSHAFT  
1ST GEAR**

## ACURA CA, P1, RO, MPRA, S4XA, SP7A LOW ONE-WAY CLUTCH

***THE PARKING GEAR MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE***

**FREEWHEEL  
PARKING GEAR**

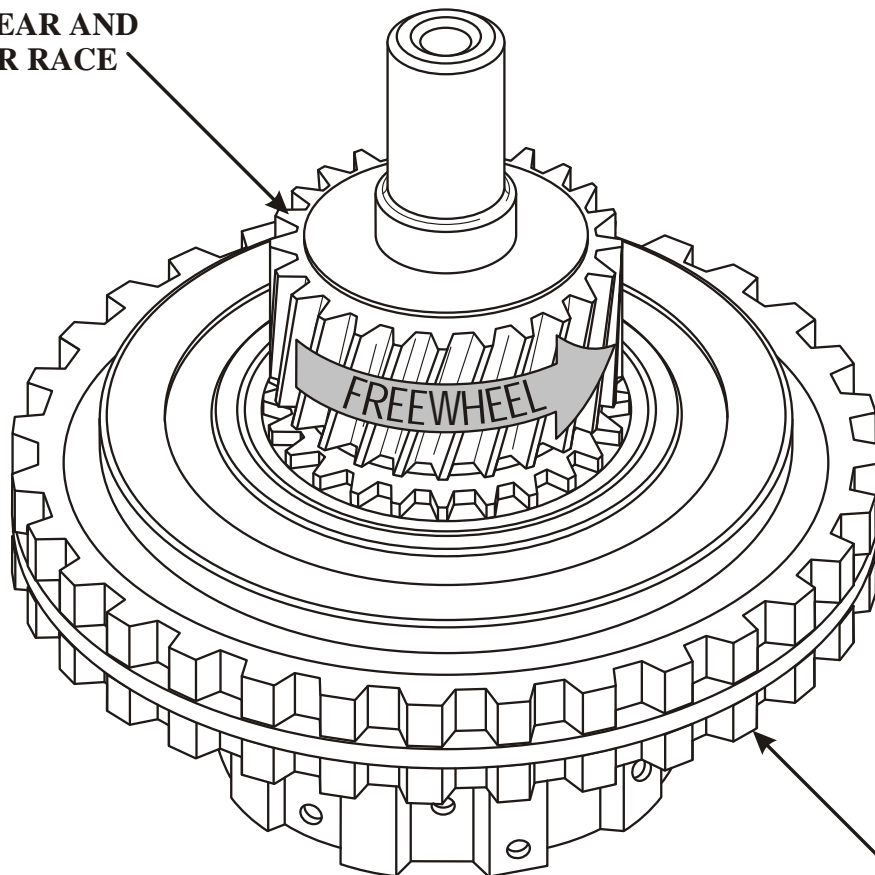


**HOLD  
COUNTERSHAFT  
1ST GEAR**

## THM 180 AND 4L30-E

***THE SUN GEAR AND INNER RACE MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE***

**FREEWHEEL  
SUN GEAR AND  
INNER RACE**

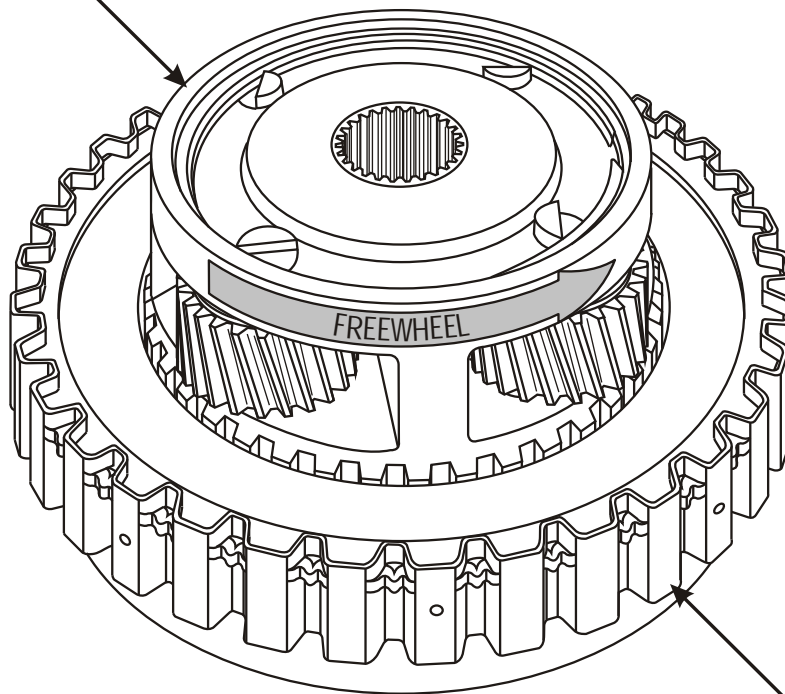


**HOLD  
OUTER RACE**

## THM 4L30-E OVERDRIVE ROLLER CLUTCH

***THE OVERDRIVE PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN OVERRUN CLUTCH DRUM IS HELD***

**FREEWHEEL  
OD CARRIER**



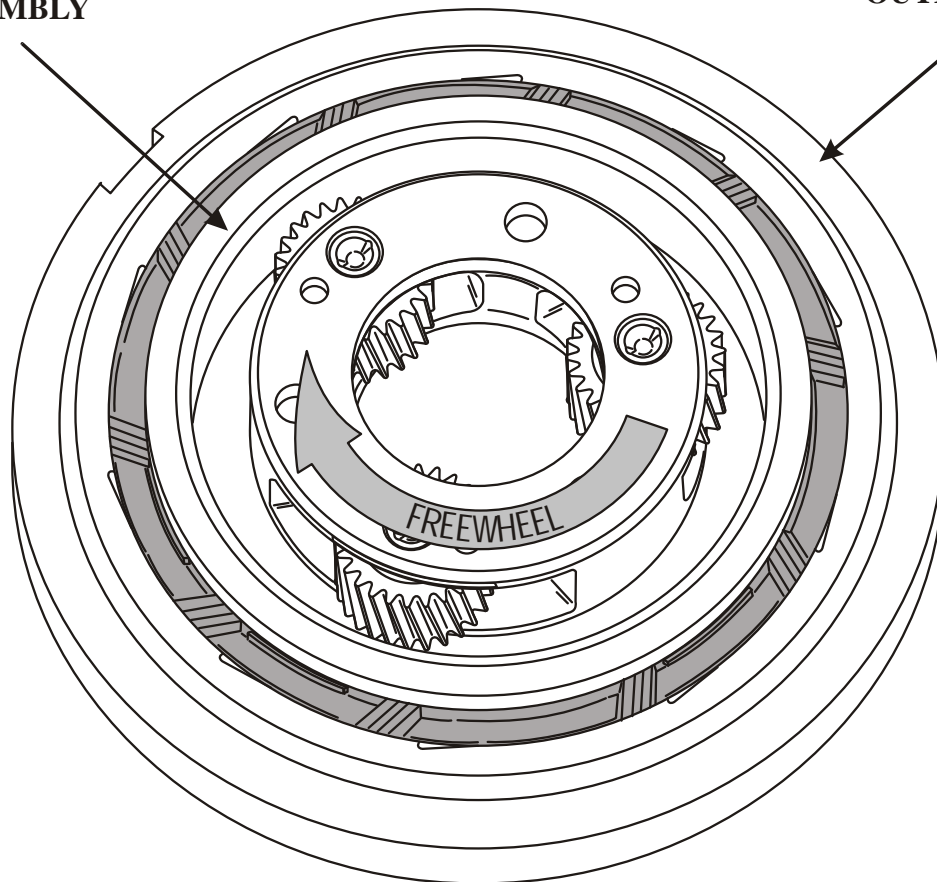
**HOLD  
OVERRUN CLUTCH  
HOUSING**

## AUDI/VOLKSWAGEN 003, 010, 087, 089 LOW ONE-WAY CLUTCH

***THE PLANETARY ASSEMBLY MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING THE OUTER RACE***

**FREEWHEEL  
PLANETARY  
ASSEMBLY**

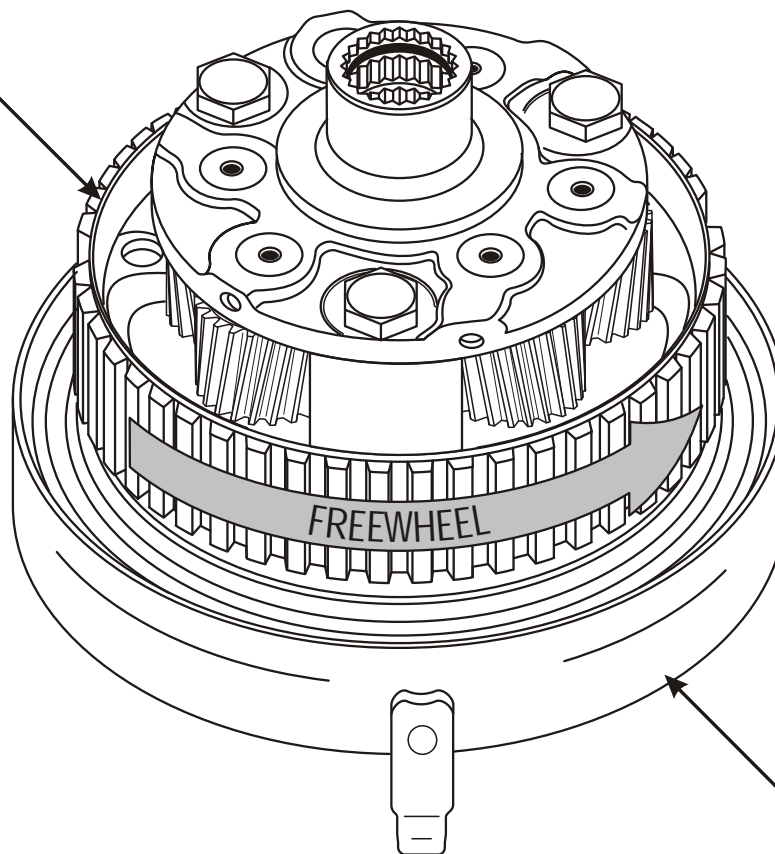
**HOLD  
OUTER RACE**



## AUDI/VOLKSWAGEN, 095, 096, 097, 098 LOW ROLLER

***THE PLANETARY ASSEMBLY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHILE HOLDING THE B1 CLUTCH HOUSING***

**FREEWHEEL  
PLANETARY  
ASSEMBLY**

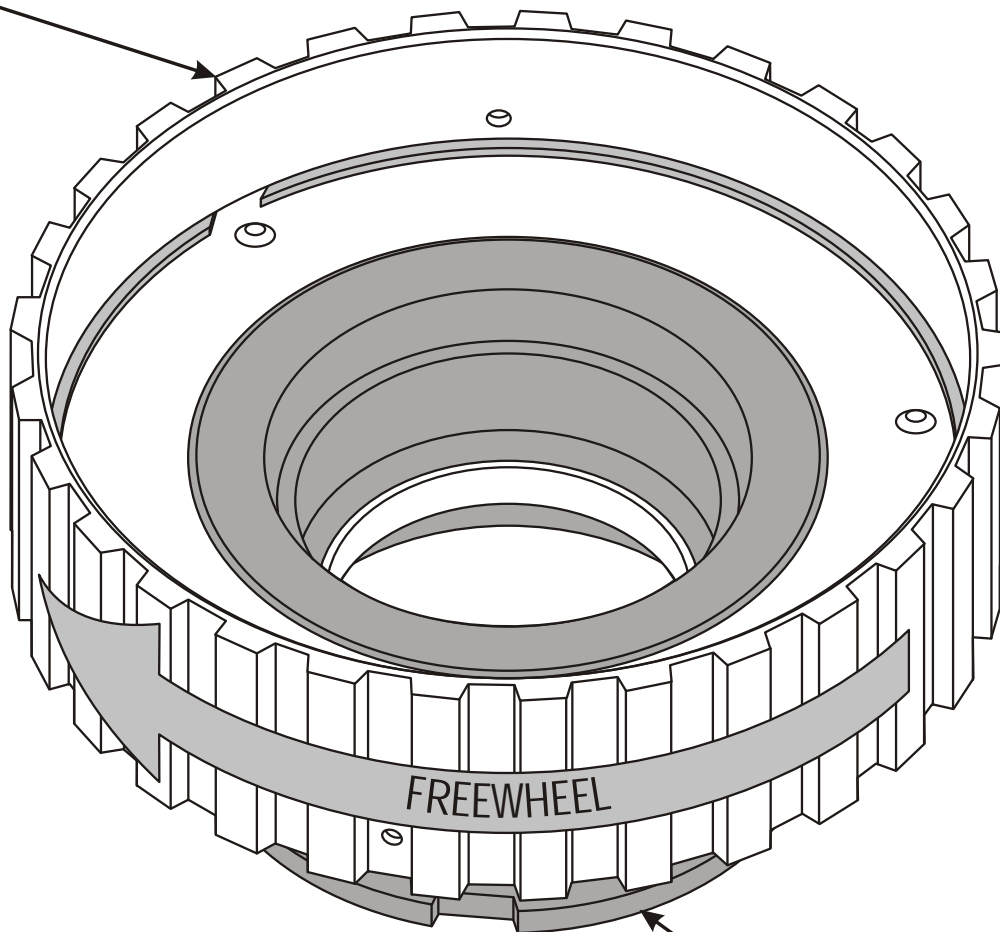


**HOLD  
B1 CLUTCH  
HOUSING**

## ZF4HP-14, ZF4HP-18, ZF5HP-18 AND ZF5HP-19 LOW SPRAG

*THE LOW AND REVERSE CLUTCH HUB MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE*

**FREEWHEEL  
OUTER RACE**



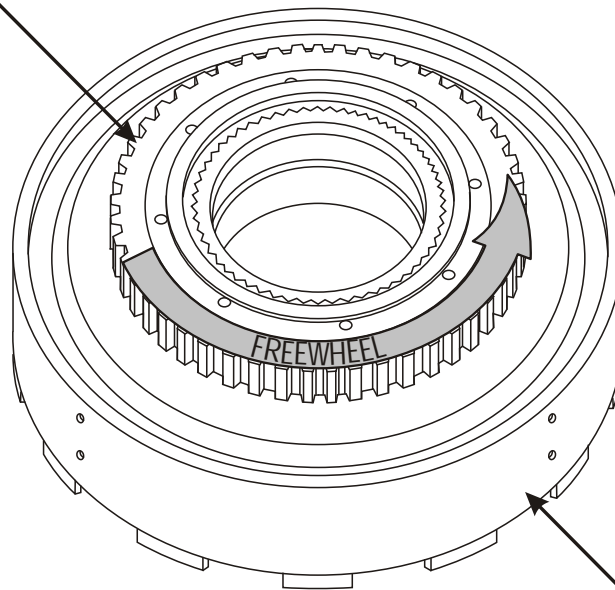
**HOLD  
INNER RACE**



## ZF4HP-14, ZF4HP-18 AND ZF5HP-18 INTERMEDIATE SPRAG

***THE INTERMEDIATE SPRAG OUTER RACE MUST FREEWHEEL COUNTER  
CLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE REVERSE INPUT DRUM***

**FREEWHEEL  
INTERMEDIATE SPRAG  
OUTER RACE**

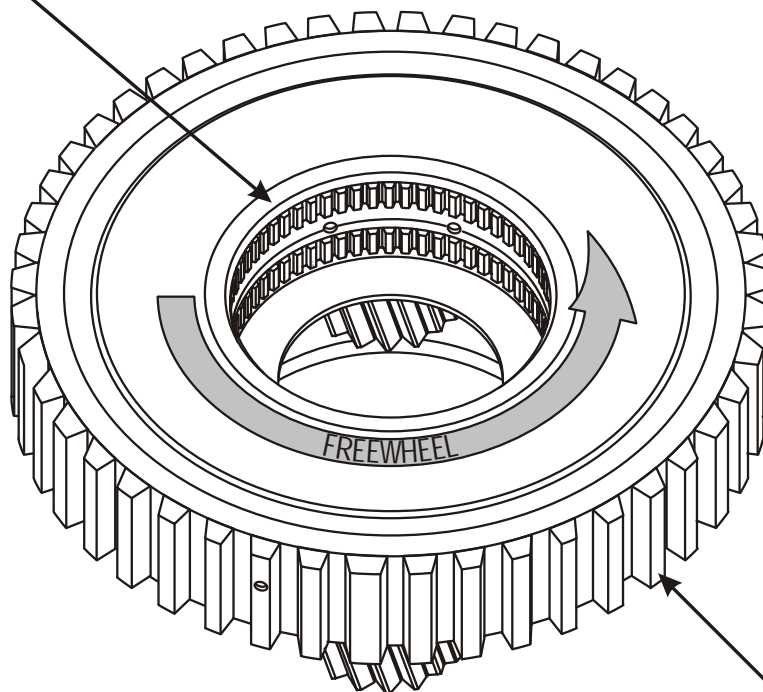


**HOLD  
REVERSE INPUT  
CLUTCH DRUM**

## ZF3HP-22, ZF4HP-22/EH AND ZF4HP-24/EH LOW SPRAG

***THE INNER SPRAG RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE PLANETARY CARRIER***

**FREEWHEEL  
INNER RACE**



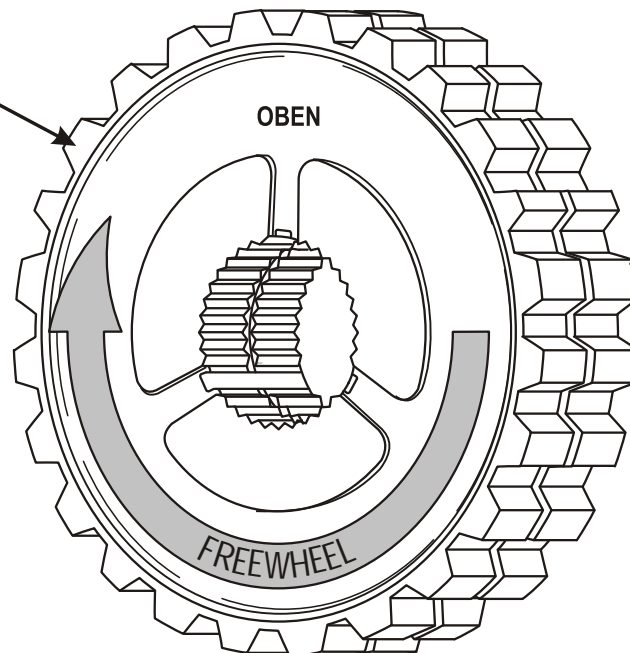
**HOLD  
PLANETARY  
CARRIER**

## ZF3HP-22, ZF4HP-22/EH AND ZF4HP-24/EH INTERMEDIATE ROLLER CLUTCH

***THE FRONT CLUTCH HUB MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN HOLDING THE REAR CLUTCH HUB***

**FREEWHEEL FRONT  
CLUTCH HUB**

**HOLD REAR  
CLUTCH HUB**



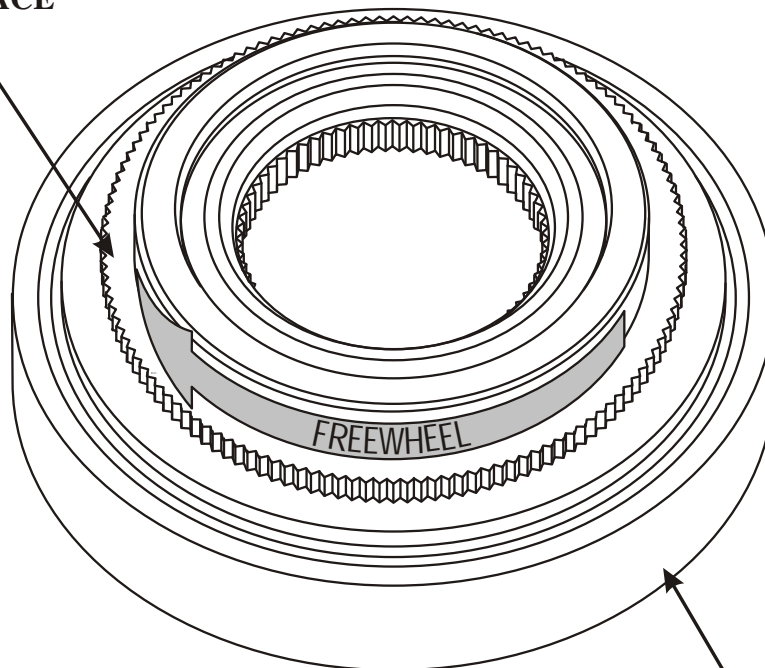
***NOTE: THE WORD "OBEN" MUST FACE THE BELLHOUSING***

***NOTE: SPRAG ROTATION MUST BE CHECKED IN THE VERTICAL POSITION, AS SHOWN, OR IT WILL NOT CHECK PROPERLY***

**ZF4HP-22/EH AND ZF4HP-24/EH  
OVERDRIVE SPRAG**

***THE FREEWHEEL OUTER RACE MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING THE RING GEAR ASSEMBLY***

**GRASP TEETH  
AND FREEWHEEL  
OUTER RACE**

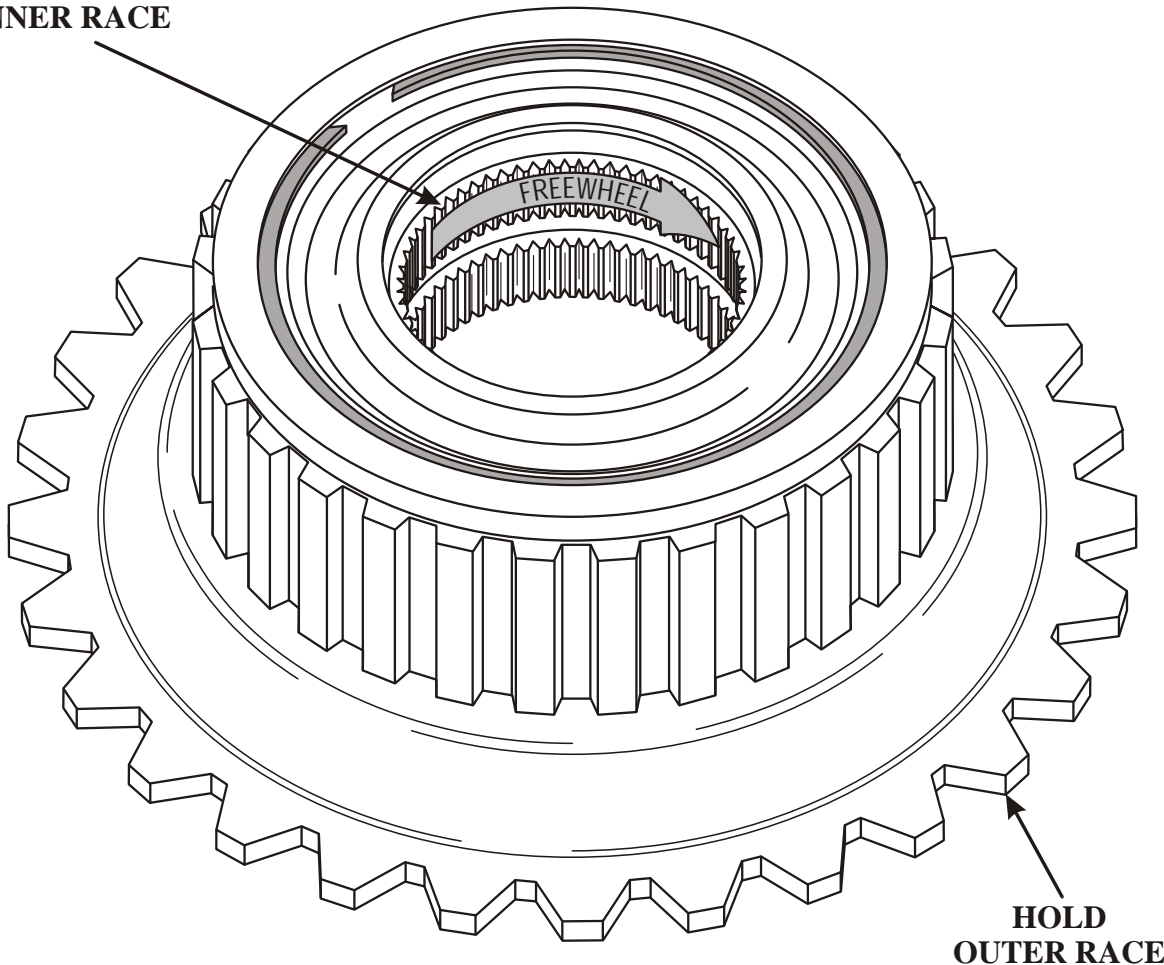


**HOLD  
RING GEAR  
ASSEMBLY**

## BMW ZF5HP-24 LOW SPRAG (FrF)

***THE LOW SPRAG INNER RACE MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN OUTER RACE***

**FREEWHEEL  
INNER RACE**



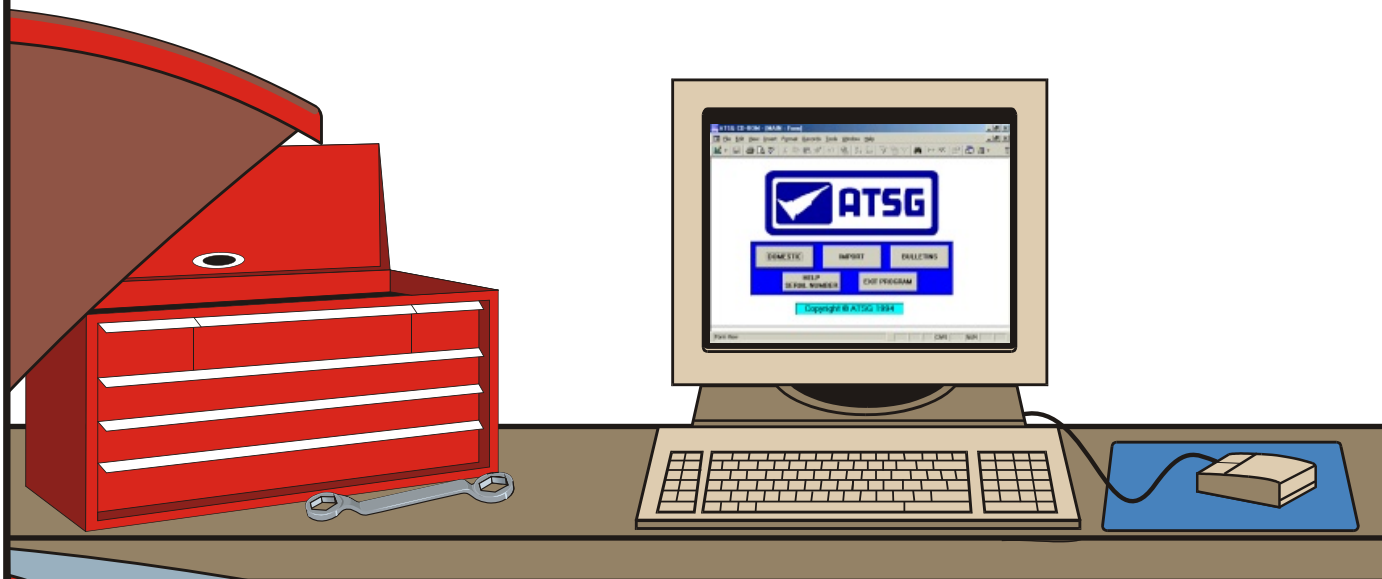


## FREEWHEEL BOOK

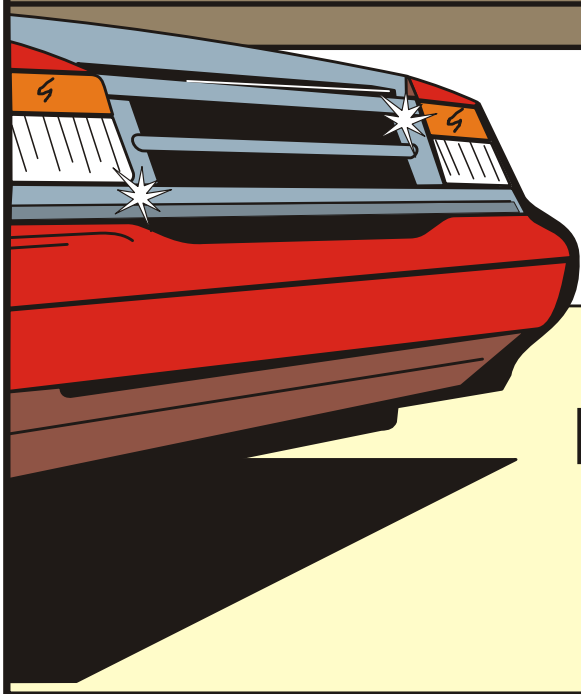


ATSG BULLETINS  
AND MANUALS ON CD

THE BEST THING NEXT TO YOUR TOOL BOX  
IS A COMPLETE LIBRARY OF TECH AT YOUR  
FINGER TIPS...



THE TECH YOU NEED...  
WHEN YOU NEED IT FAST...

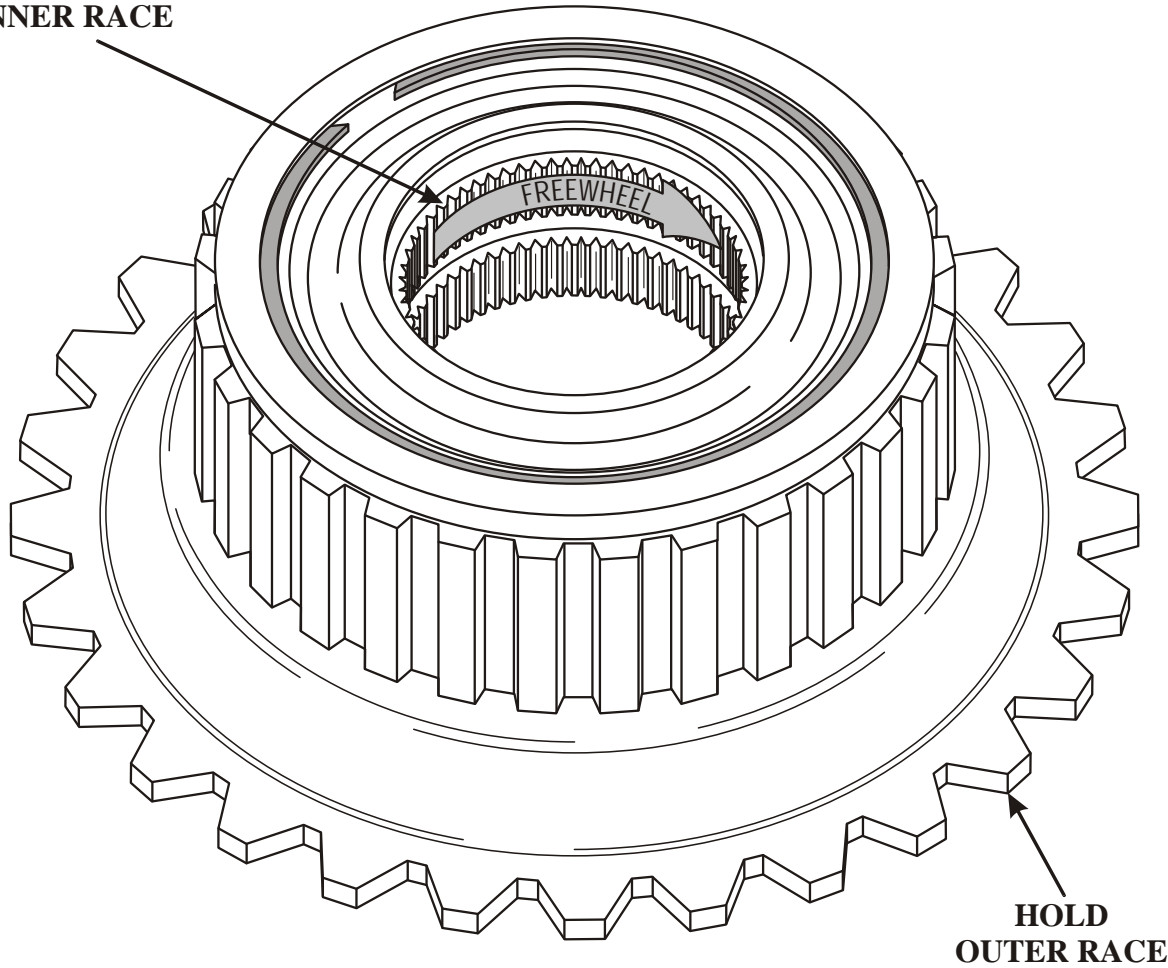


FOR MORE INFORMATION  
CALL  
(800) 245-7722

## ZF5HP-30 LOW SPRAG (FrF)

***THE LOW SPRAG INNER RACE MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN OUTER RACE***

**FREEWHEEL  
INNER RACE**

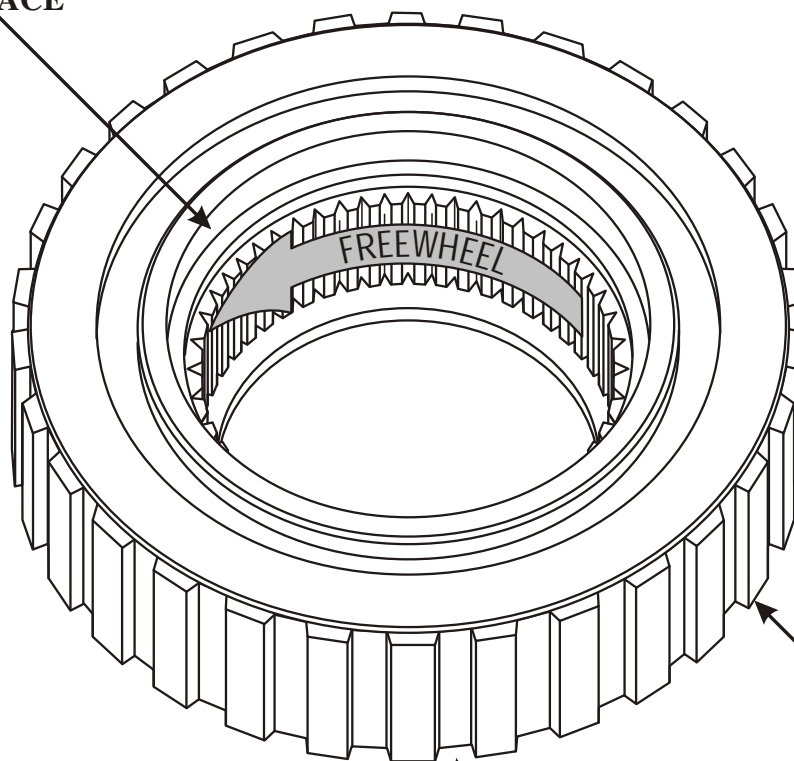




## ZF5HP-30 2ND SPRAG (FrE)

***THE 2ND SPRAG INNER RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN INSTALLED IN OUTER RACE***

**FREEWHEEL  
INNER RACE**

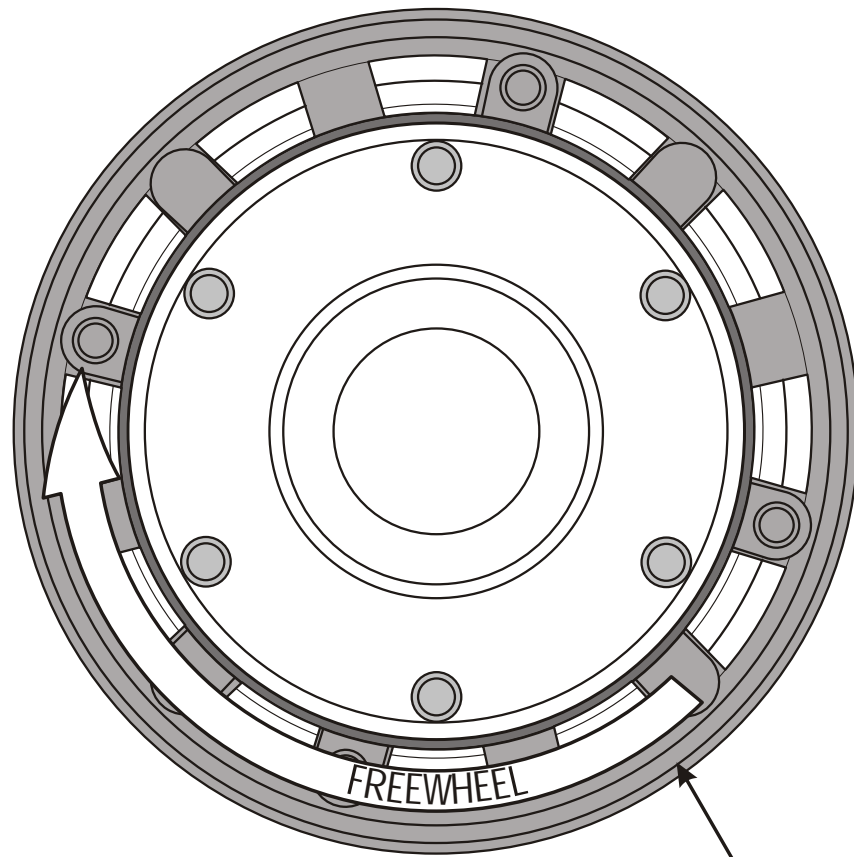


**HOLD  
OUTER RACE**

***SNAP RING SIDE  
FACING DOWN***

## CHRYSLER 404, 413, 670 SERIES LOW ROLLER

***THE LOW AND REVERSE DRUM MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN THE CASE***

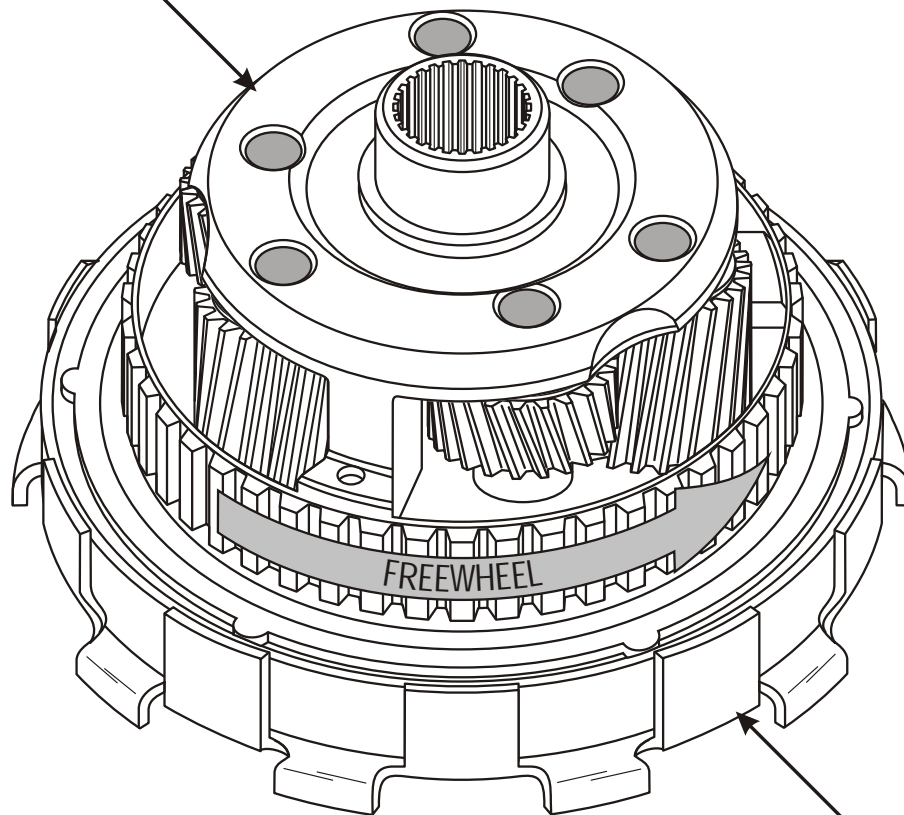


**FREEWHEEL  
LOW/REVERSE DRUM**

## MITSUBISHI AND HYUNDAI ALL KM FRONT WHEEL DRIVE, F3A20, F4A20, F4A30 AND W4A30 SERIES

***THE PLANETARY ASSEMBLY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHILE HOLDING THE CENTER SUPPORT***

**FREEWHEEL  
PLANETARY CARRIER  
ASSEMBLY**



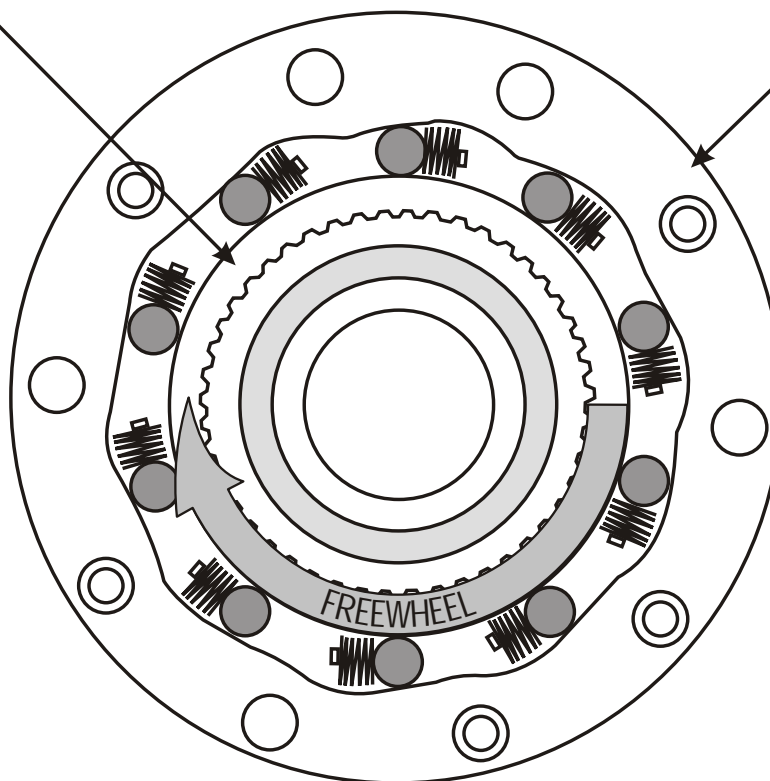
**HOLD  
CENTER  
SUPPORT**

## TORQUEFLITE REAR WHEEL DRIVE LOW ROLLER CLUTCH

***THE LOW ROLLER CLUTCH INNER RACE MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE  
WHEN INSTALLED INTO THE OUTER CAM***

**FREEWHEEL  
LOW ROLLER CLUTCH  
INNER RACE**

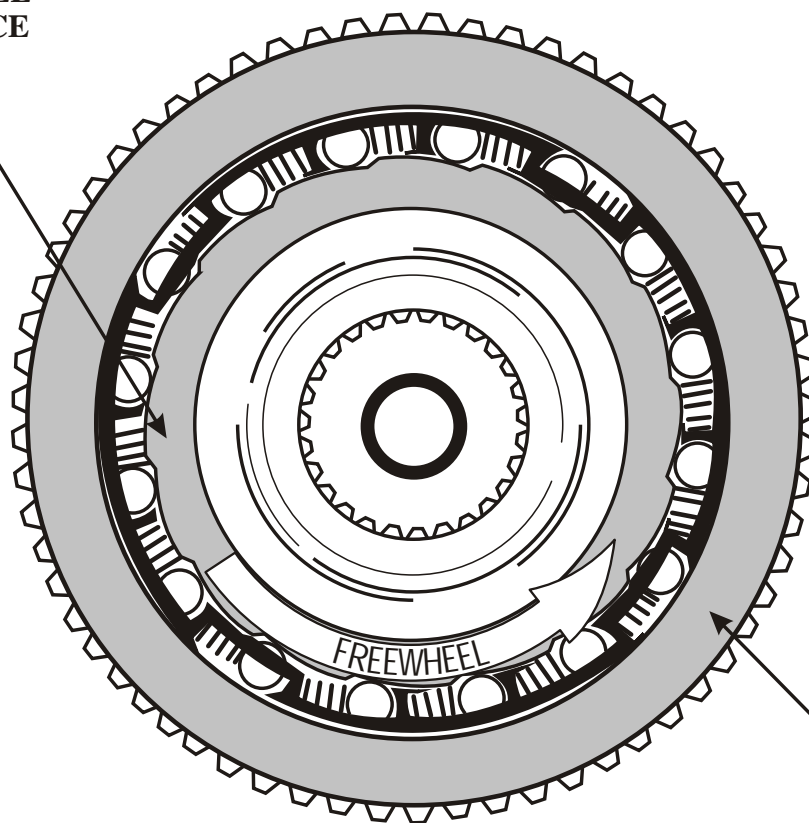
**OUTER CAM  
HELD IN CASE**



## TORQUEFLITE REAR WHEEL DRIVE OVERDRIVE ROLLER CLUTCH

*THE OVERDRIVE ROLLER CLUTCH INNER RACE MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE  
WHEN HOLDING THE OUTER RACE*

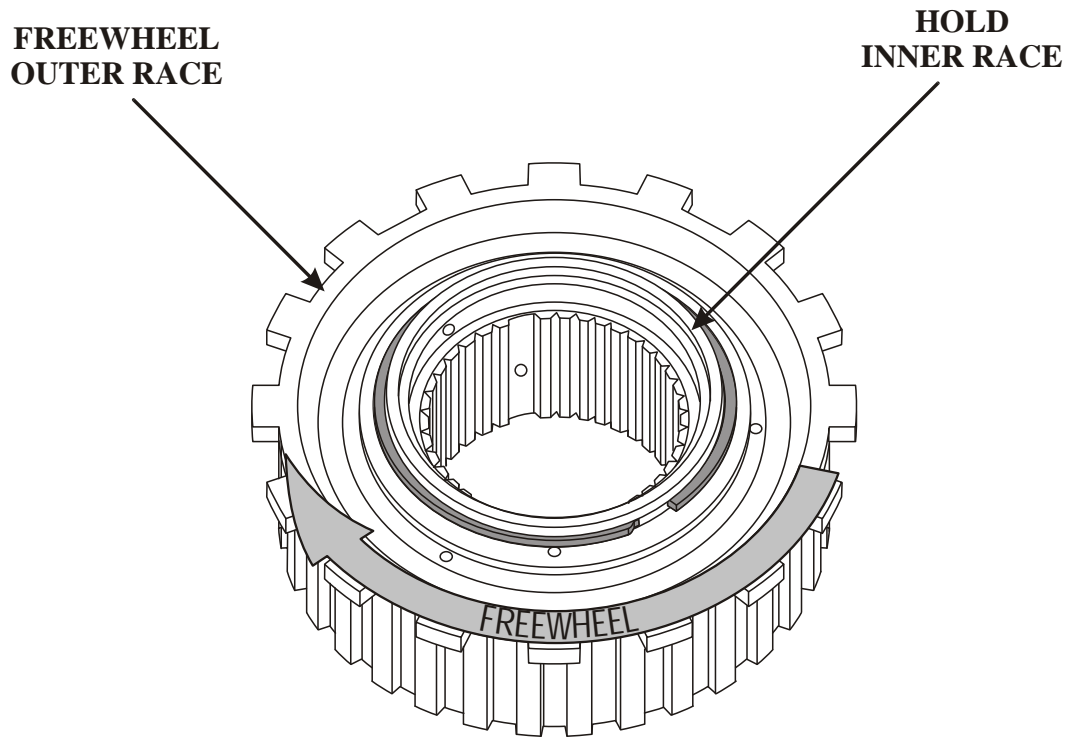
FREEWHEEL  
INNER RACE



HOLD  
OUTER RACE

## CHRYSLER 45RFE LOW ROLLER CLUTCH

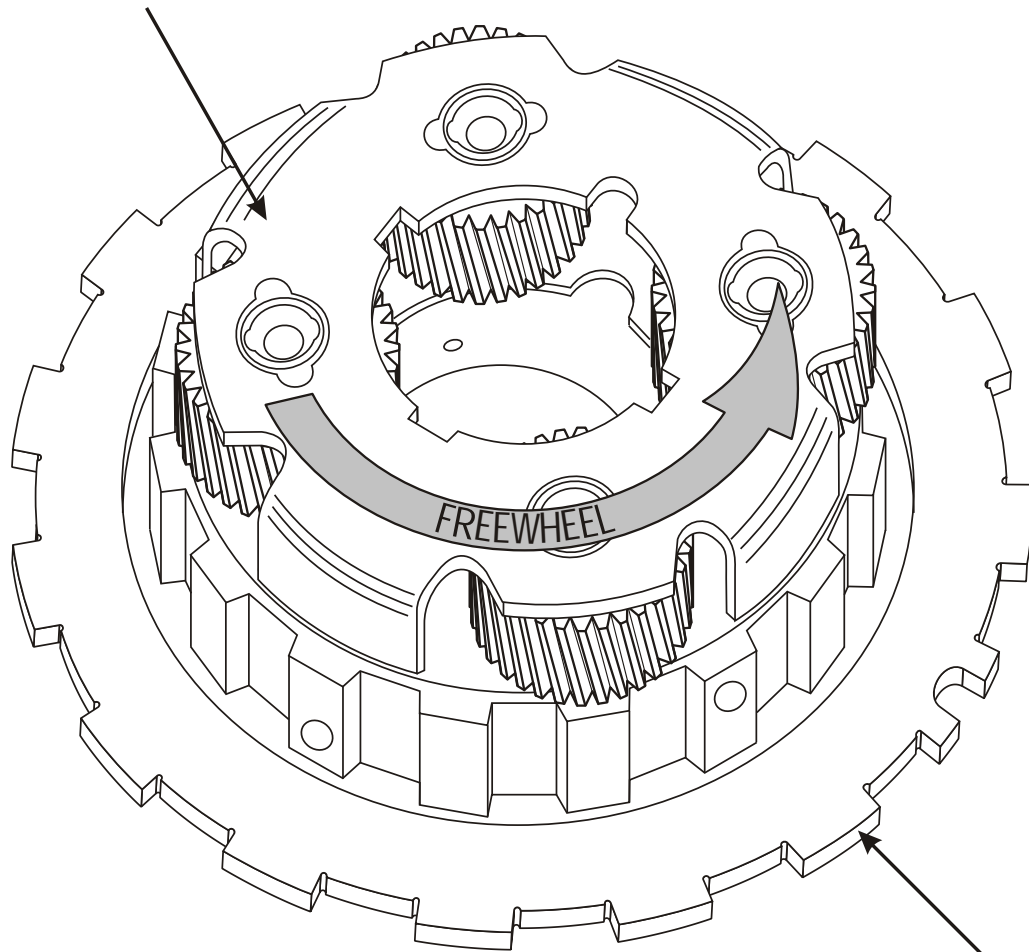
***THE LOW ROLLER OUTER RACE MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING THE INNER RACE***



## AW3, A40 SERIES, A55, LOW (NO. 2) ONE WAY CLUTCH

***THE PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE INNER RACE IS HELD***

**FREEWHEEL  
PLANETARY CARRIER**



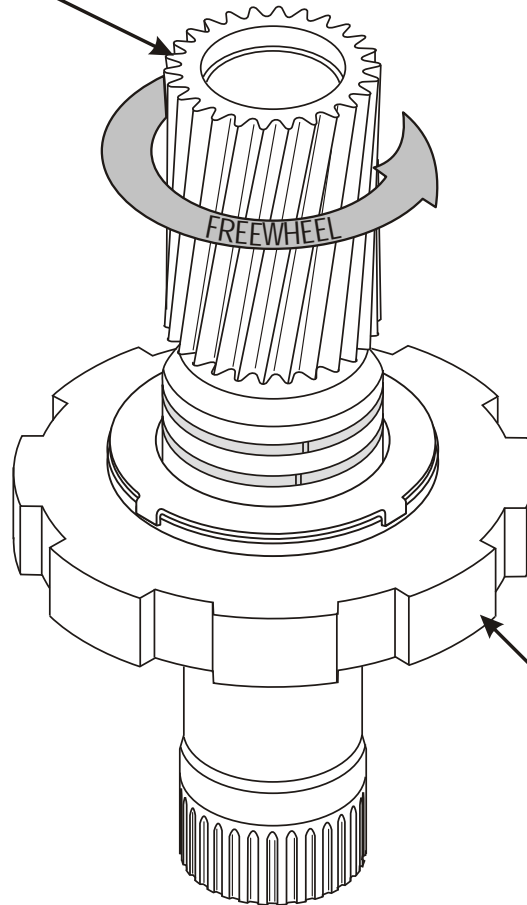
**HOLD  
INNER RACE**



## AW3, A40 SERIES, A55, 2ND GEAR (NO. 1) ONE WAY CLUTCH

***THE SUN GEAR MUST FREEWHEEL COUNTER CLOCKWISE AND  
LOCK CLOCKWISE WHEN THE ONE-WAY CLUTCH OUTER RACE IS HELD***

**FREEWHEEL  
SUN GEAR**

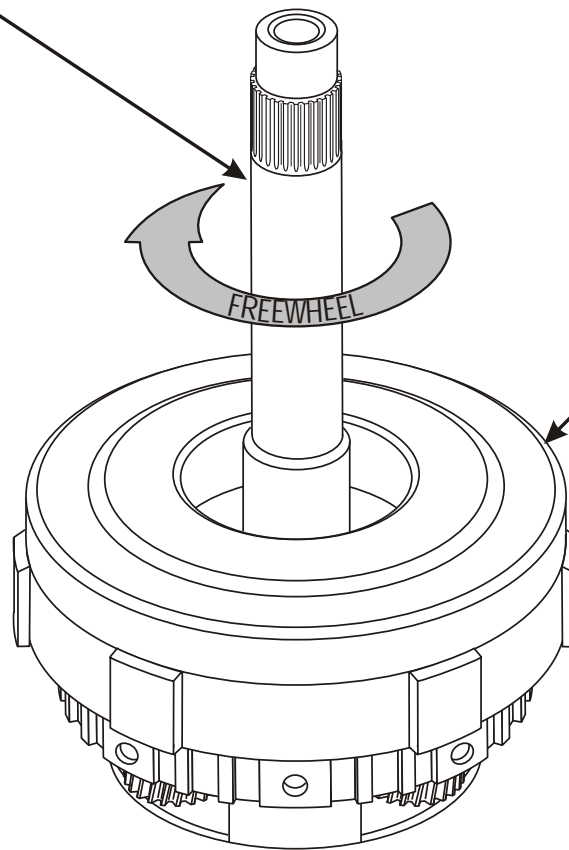


**HOLD  
OUTER RACE**

## A40 SERIES OVERDRIVE ONE WAY CLUTCH

***THE INPUT SHAFT MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN THE OVERDRIVE / DIRECT DRUM IS HELD***

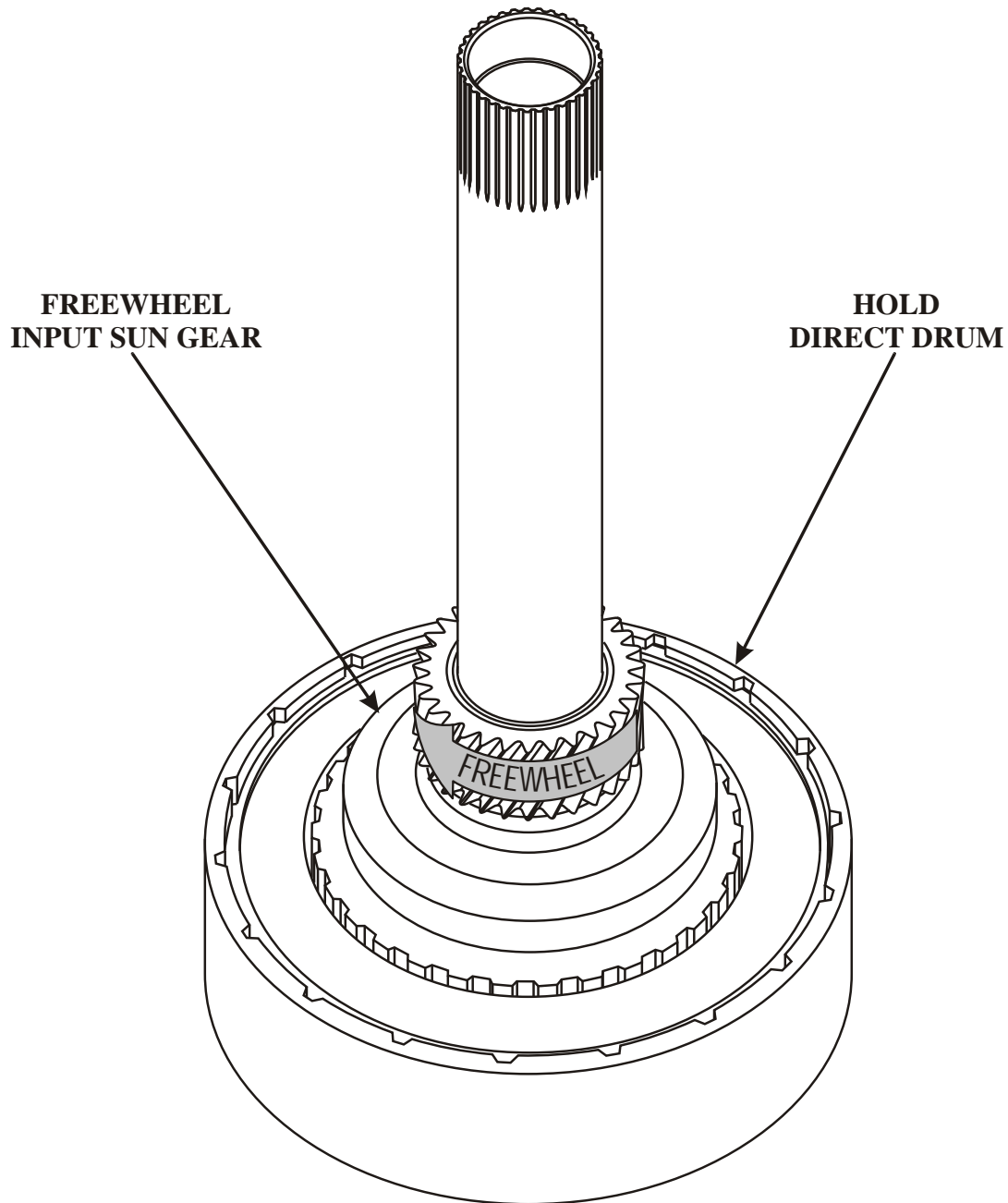
**FREEWHEEL  
INPUT SHAFT**



**HOLD  
OD/DIRECT  
DRUM**

**ATX ROLLER CLUTCH**

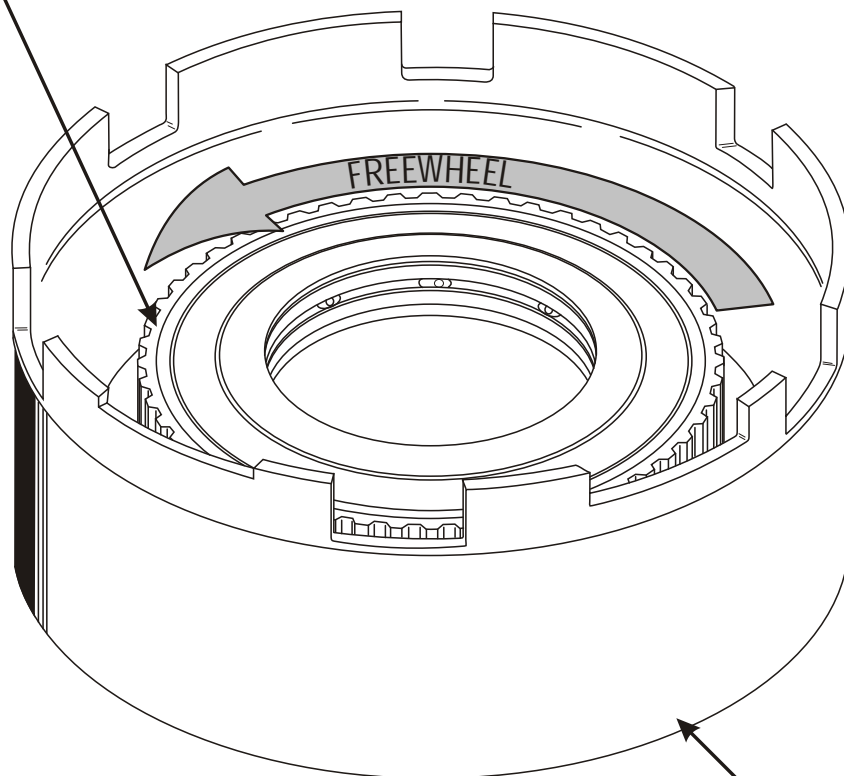
***THE INPUT SUN GEAR MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN DIRECT DRUM IS HELD***



## AXOD, AXODE (AX4S), AX4N, LOW SPRAG

***THE LOW SPRAG OUTER RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE OVERDRIVE DRUM***

**FREEWHEEL  
LOW SPRAG  
OUTER RACE**

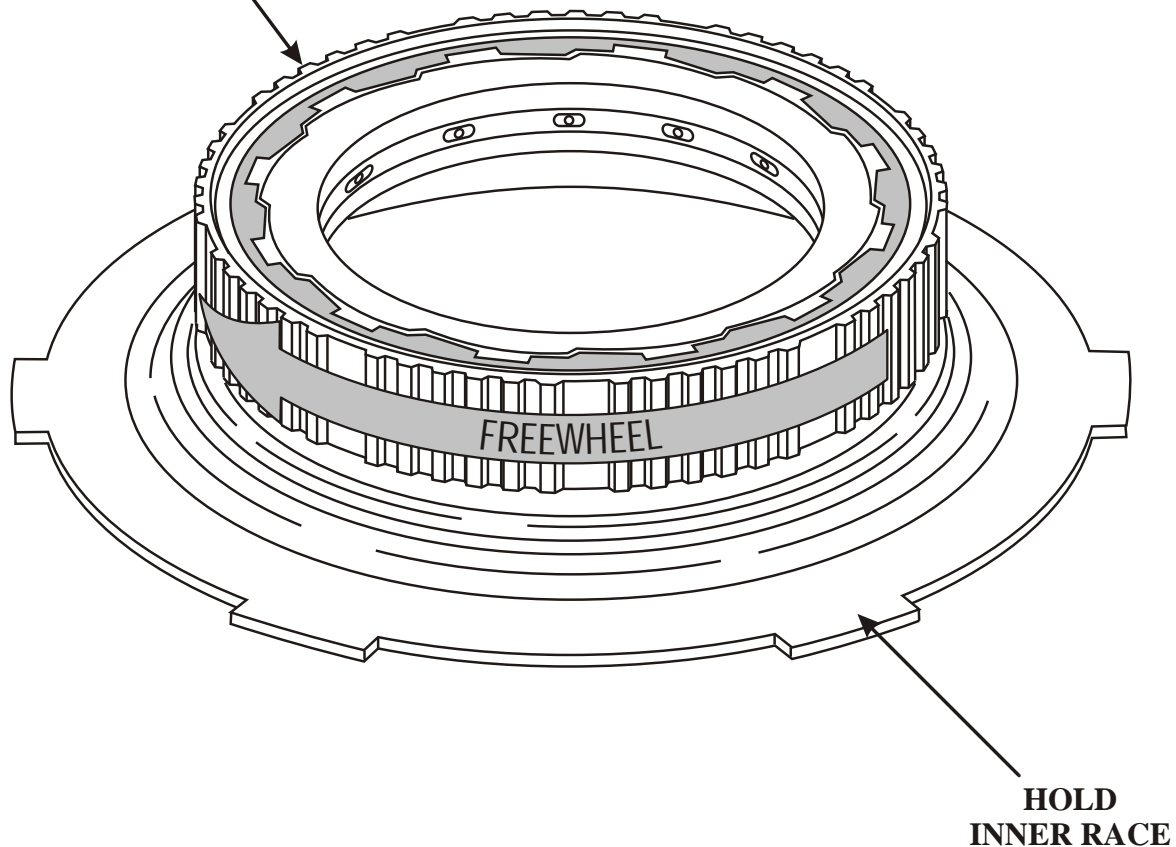


**HOLD  
OVERDRIVE DRUM**

**AXOD, AXODE (AX4S), AX4N  
3RD ROLLER CLUTCH**

***THE 3RD ROLLER CLUTCH OUTER RACE MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN THE  
3RD ROLLER CLUTCH INNER RACE IS HELD***

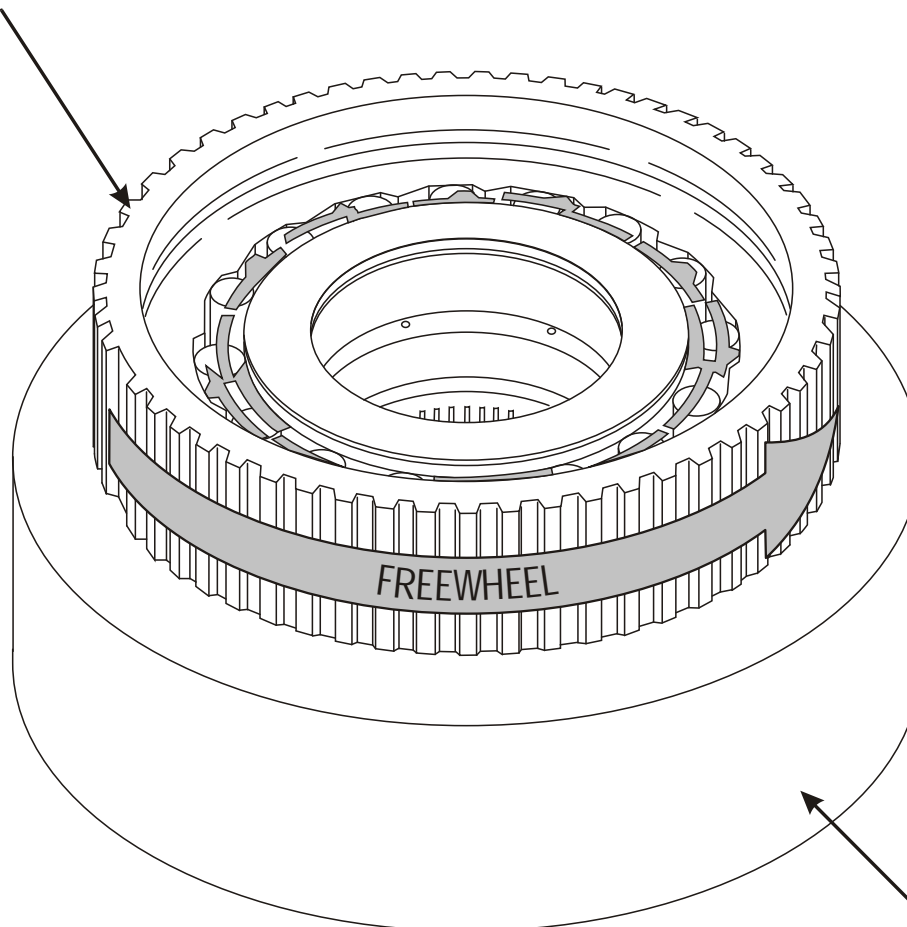
**FREEWHEEL  
OUTER RACE**



## AX4N 1-2 ROLLER CLUTCH

***THE 1-2 ROLLER CLUTCH OUTER RACE MUST FREEWHEEL COUNTER  
CLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE REAR SUN GEAR ASSEMBLY***

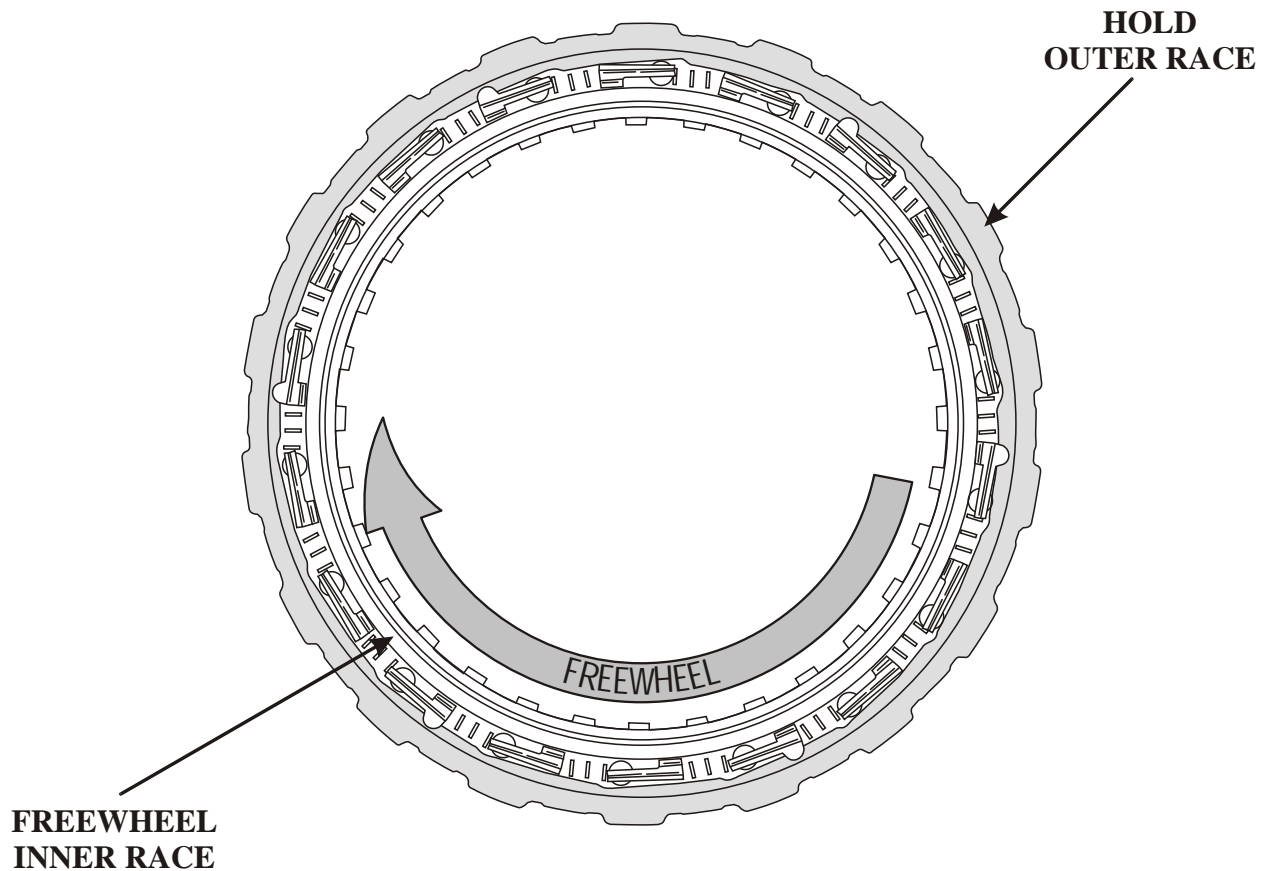
**FREEWHEEL  
1-2 ROLLER CLUTCH  
OUTER RACE**



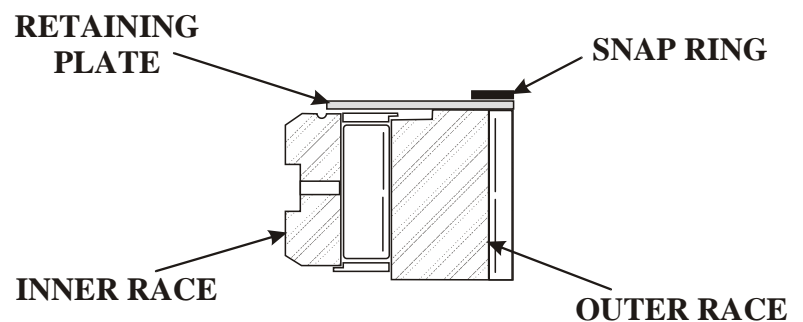
**HOLD  
REAR SUN  
GEAR ASSEMBLY**

## FORD CD4E, MAZDA LA4A-EL LOW ROLLER CLUTCH

***THE INNER RACE MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER  
CLOCKWISE, WHEN THE OUTER RACE IS HELD STATIONARY***



### ***INSTALLED IN THE CASE***

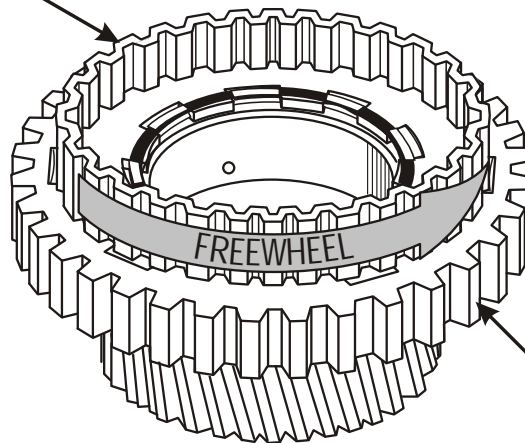




**FORD CD4E, MAZDA LA4A-EL  
FORWARD SPRAG**

***THE OVERRUN CLUTCH HUB MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE FORWARD CLUTCH HUB***

**FREEWHEEL  
OVERRUN  
CLUTCH HUB**

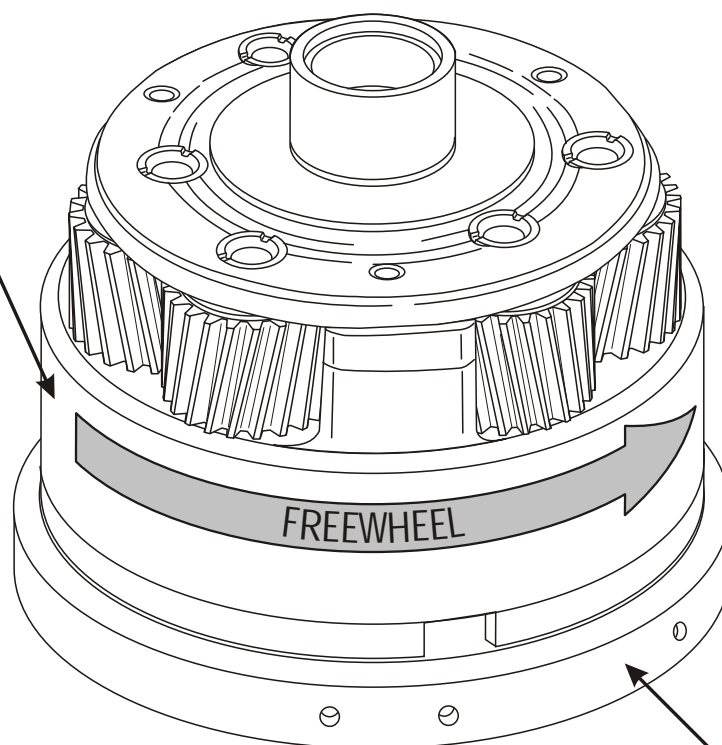


**HOLD  
FORWARD  
CLUTCH HUB**

**CAST IRON FORD, BORG WARNER 12, FMX,  
LOW ROLLER CLUTCH**

***THE REAR PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE AND  
LOCK CLOCKWISE WHEN HOLDING THE INNER RACE***

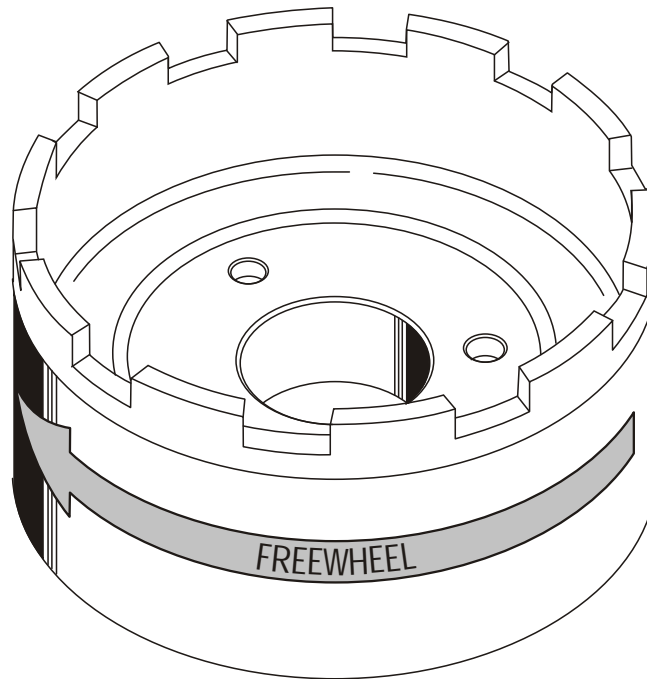
**FREEWHEEL  
PLANETARY  
CARRIER**



**HOLD  
INNER RACE  
(CENTER SUPPORT)**

## C-4 AND C-5 LOW ROLLER CLUTCH

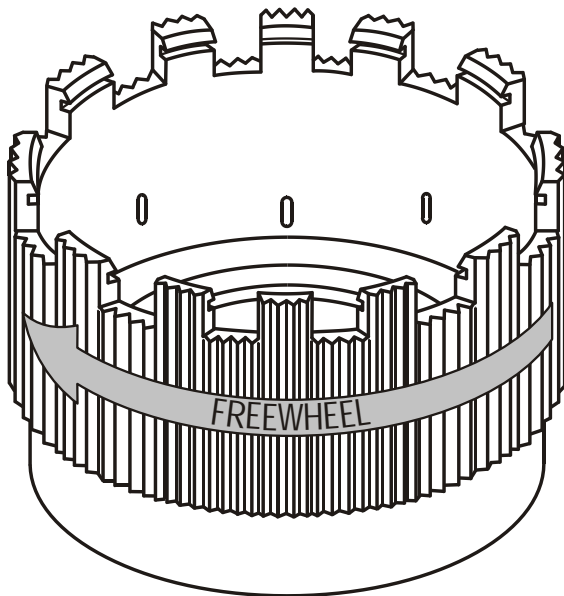
***THE LOW AND REVERSE DRUM MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN THE CASE***



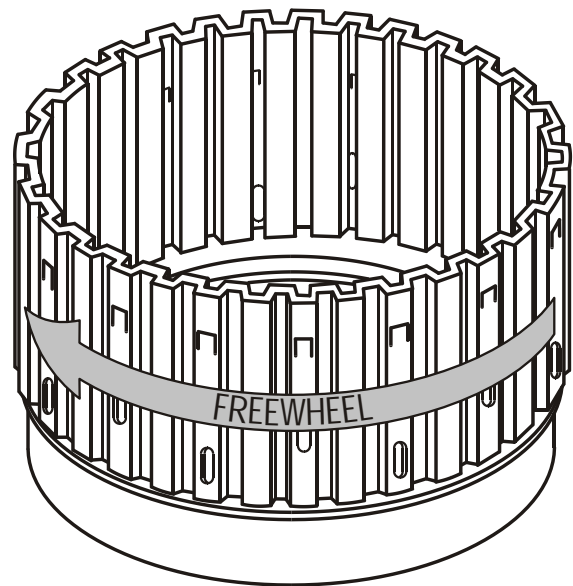
## C-6, E40D, 4R100, LOW ROLLER CLUTCH

***THE LOW AND REVERSE CLUTCH HUB MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN THE CASE***

**C-6 AND E40D  
1989-1996  
LOW/REVERSE HUB**



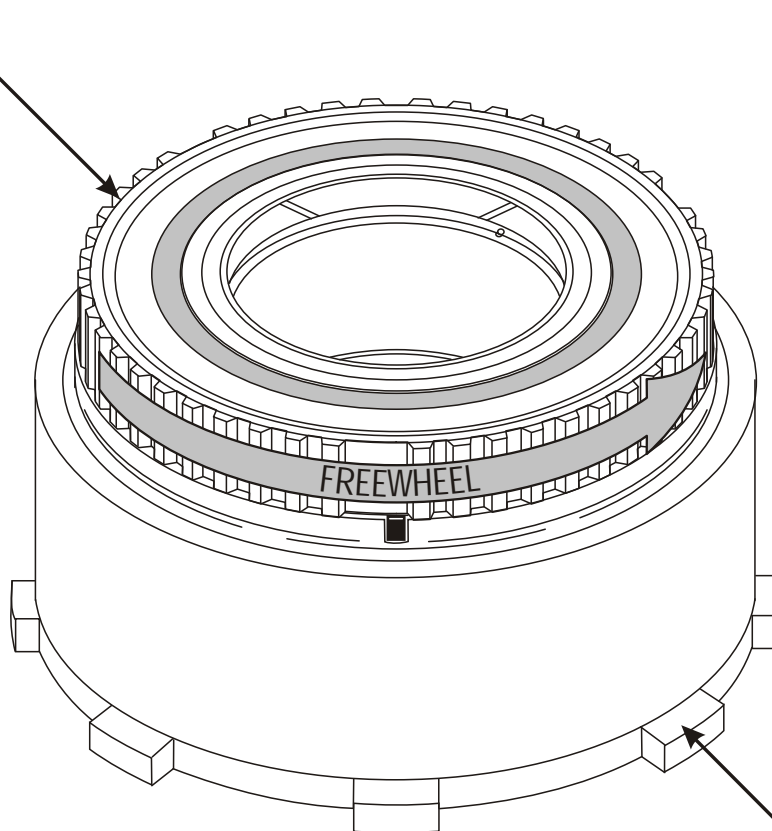
**1997 AND LATER  
E40D AND 4R100  
LOW/REVERSE HUB**



## E40D AND 4R100 INTERMEDIATE SPRAG

***THE INTERMEDIATE OUTER SPRAG RACE MUST FREEWHEEL  
COUNTERCLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE DIRECT CLUTCH DRUM***

**FREEWHEEL  
INTERMEDIATE SPRAG  
OUTER RACE**

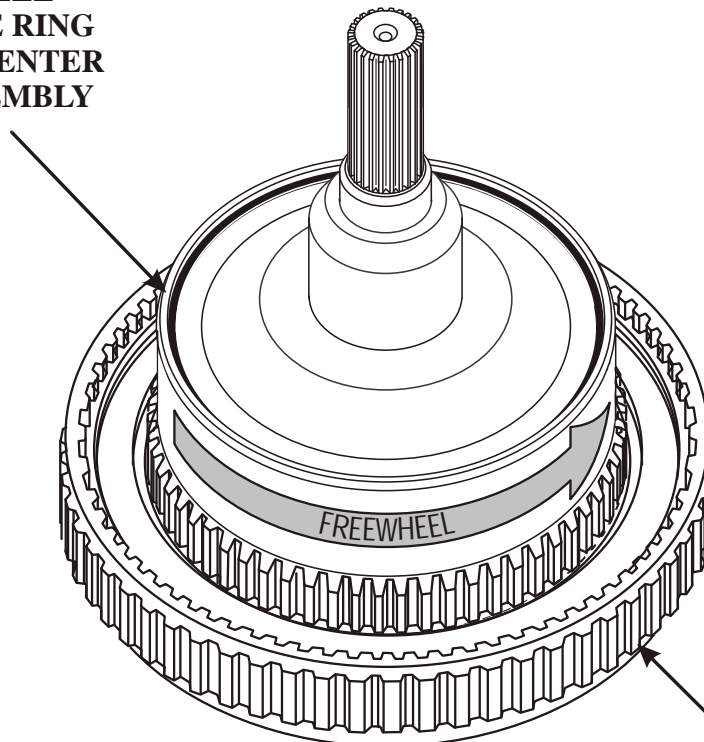


**HOLD  
DIRECT CLUTCH  
HOUSING**

## E40D AND 4R100 OVERDRIVE ONE-WAY CLUTCH

***THE OVERDRIVE RING GEAR AND CENTER SHAFT ASSEMBLY MUST  
FREEWHEEL COUNTER CLOCKWISE AND LOCK CLOCKWISE  
WHEN HOLDING THE COAST CLUTCH DRUM***

**FREEWHEEL  
OVERDRIVE RING  
GEAR AND CENTER  
SHAFT ASSEMBLY**

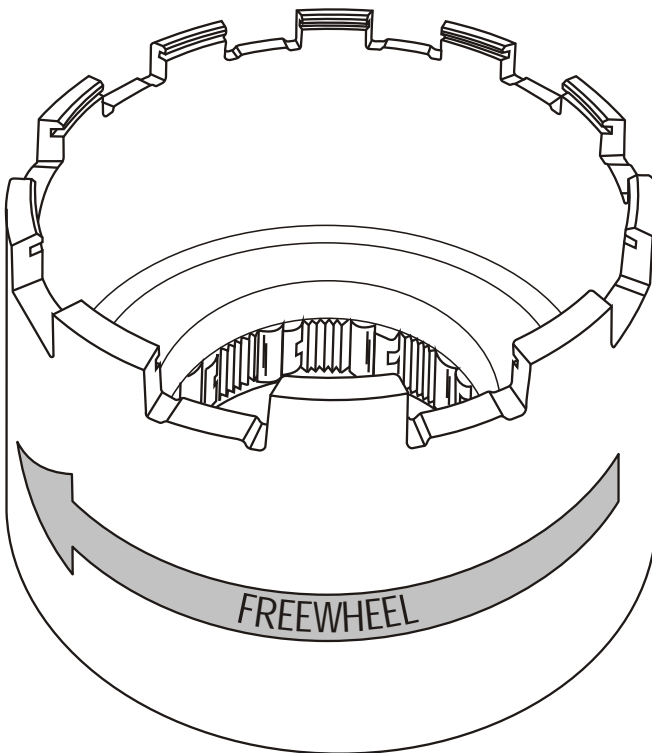


**HOLD  
COAST CLUTCH  
HOUSING**

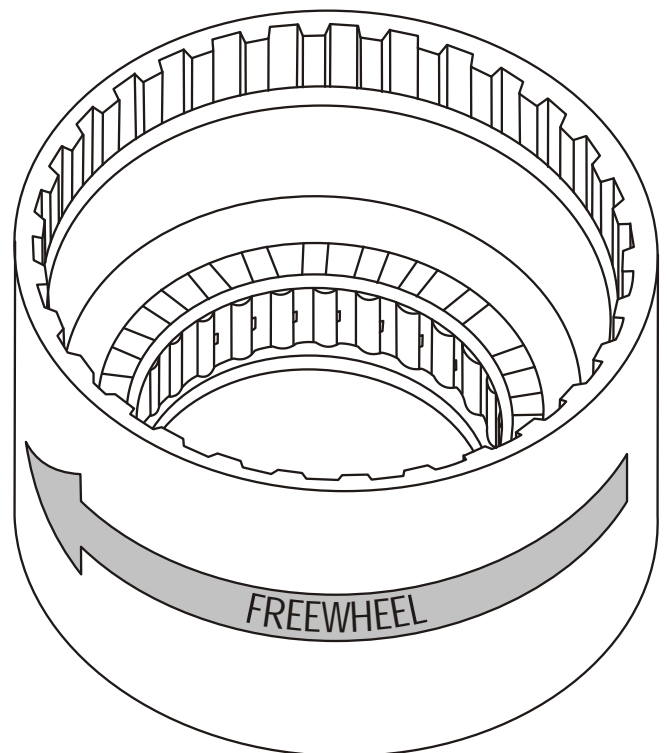
## C3, A4LD, 4R44E, 4R55E, 5R55E, 5R55N, LOW ONE WAY CLUTCH

***THE LOW AND REVERSE DRUM MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN THE CASE***

**C3, A4LD,  
LOW/REVERSE DRUM**



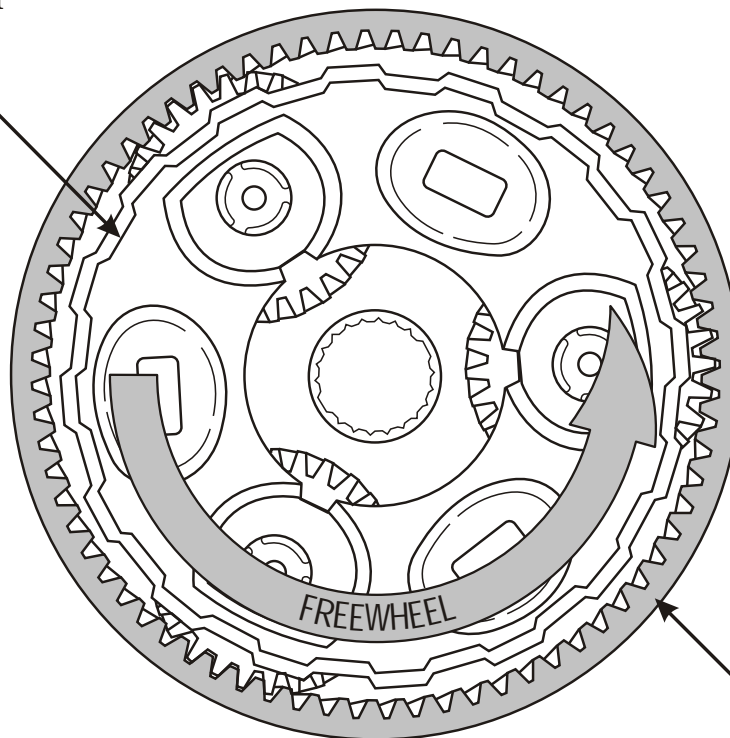
**A4LD, 4R44E, 4R55E, 5R55E, 5R55N,  
LOW/REVERSE DRUM**



## A4LD, 4R44E, 4R55E, 5R55E, 5R55N, OVERDRIVE SPRAG

***THE OVERDRIVE PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE RING GEAR IS HELD***

**FREEWHEEL  
OVERDRIVE  
PLANETARY**



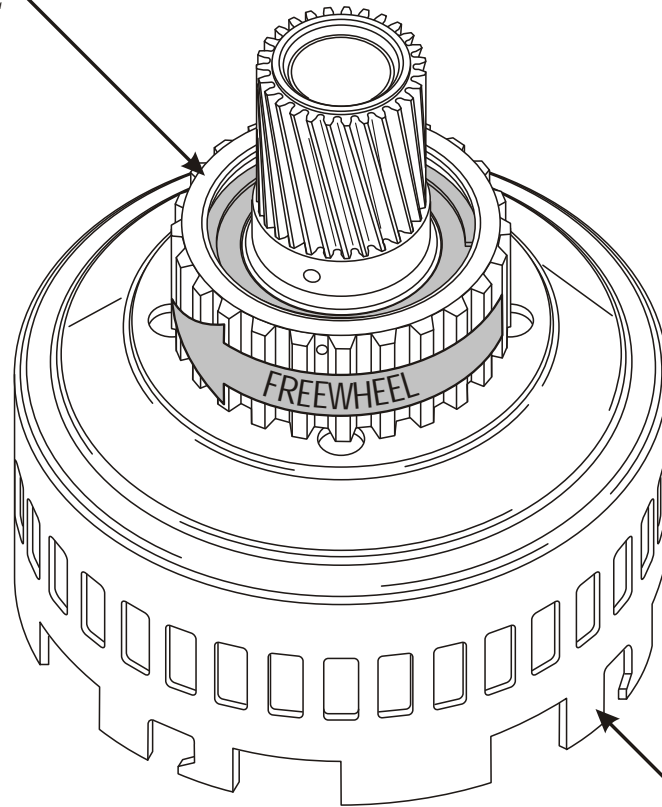
**HOLD  
RING GEAR**



## 5R55N SUN GEAR SHELL SPRAG

***THE OUTER SPRAG RACE MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN HOLDING SUN GEAR AND SHELL ASSEMBLY***

**FREEWHEEL  
OUTER SPRAG  
RACE**

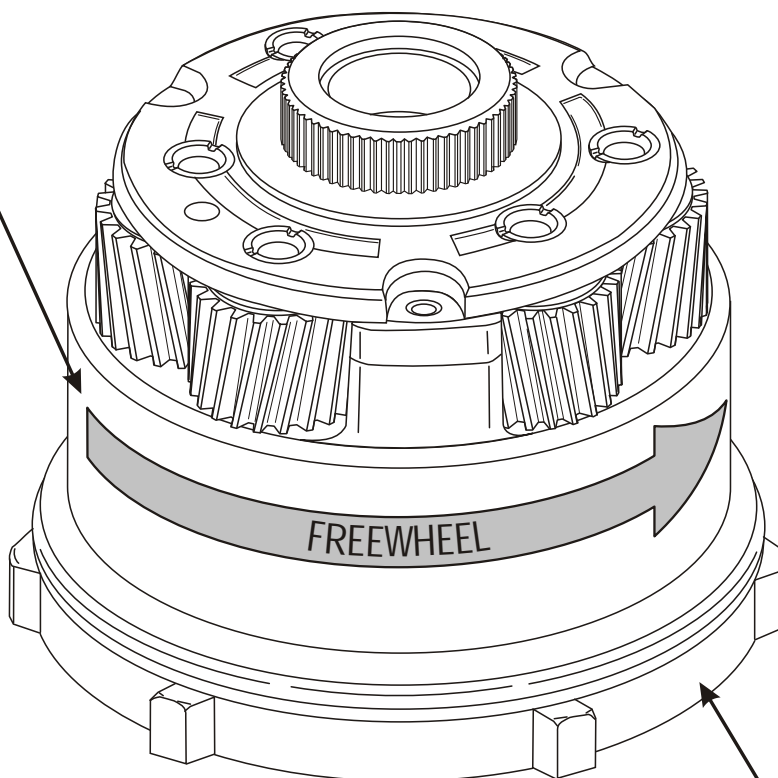


**HOLD  
SUN GEAR AND  
SHELL ASSEMBLY**

## AOD, AODE, 4R70W, LOW ROLLER CLUTCH

***THE REAR PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE AND  
LOCK CLOCKWISE WHEN HOLDING THE LOW ROLLER CLUTCH INNER RACE***

**FREEWHEEL  
REAR PLANETARY**

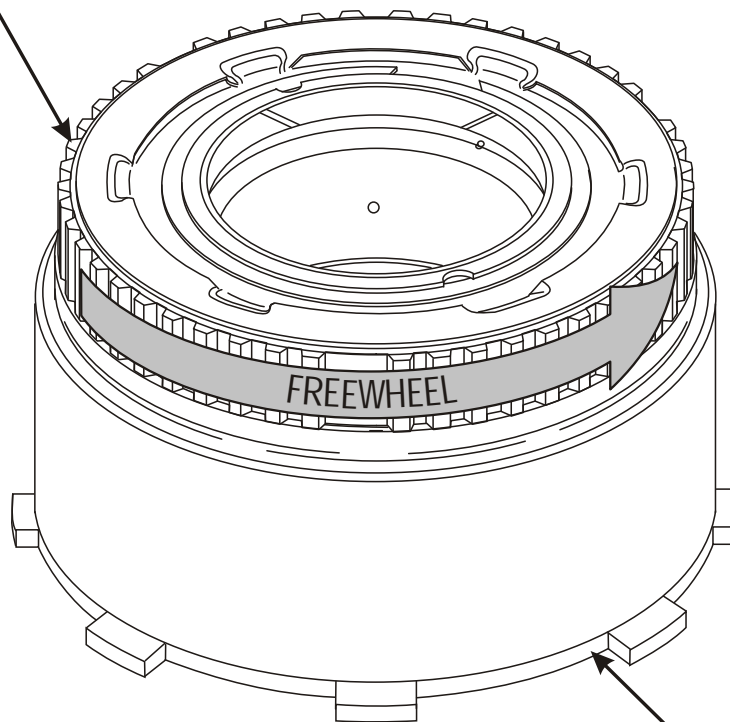


**HOLD  
LOW ROLLER  
CLUTCH INNER RACE**

## AOD, AODE, 4R70W, INTERMEDIATE ONE-WAY CLUTCH

***THE INTERMEDIATE ONE-WAY OUTER RACE MUST FREEWHEEL  
COUNTERCLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE REVERSE INPUT CLUTCH DRUM***

**FREEWHEEL  
INTERMEDIATE  
ONE-WAY  
OUTER RACE**

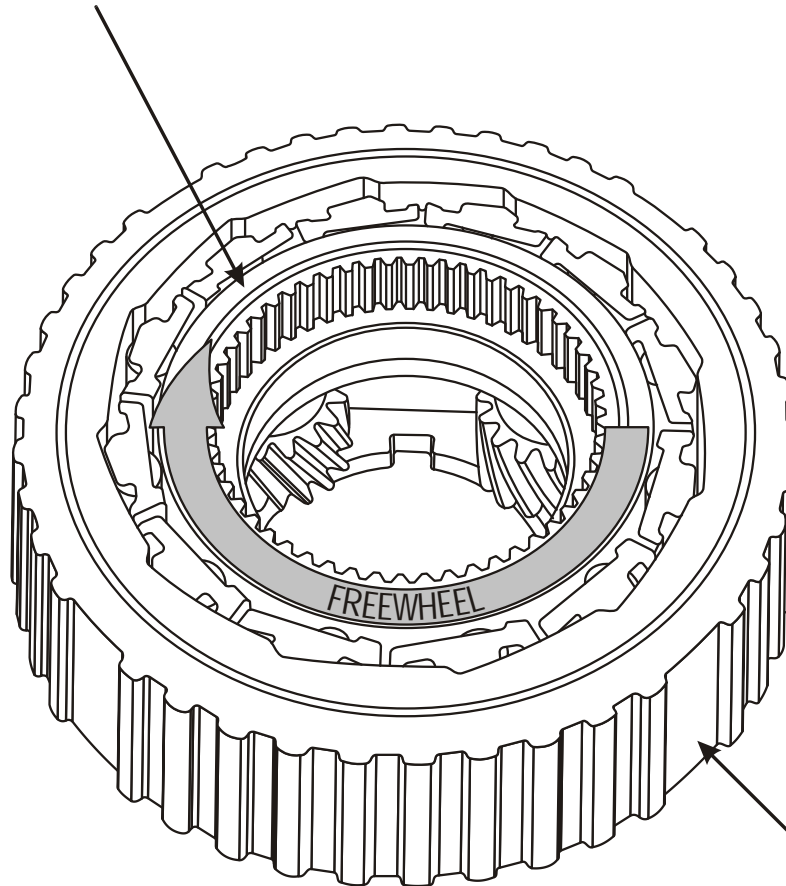


**HOLD  
REVERSE INPUT  
HOUSING**

## THM 125, 125C, 325, 325-4L LOW ROLLER CLUTCH

***THE INNER RACE MUST FREEWHEEL CLOCKWISE AND LOCK  
COUNTER CLOCKWISE WHEN THE PLANETARY CARRIER IS HELD***

**FREEWHEEL  
INNER RACE**

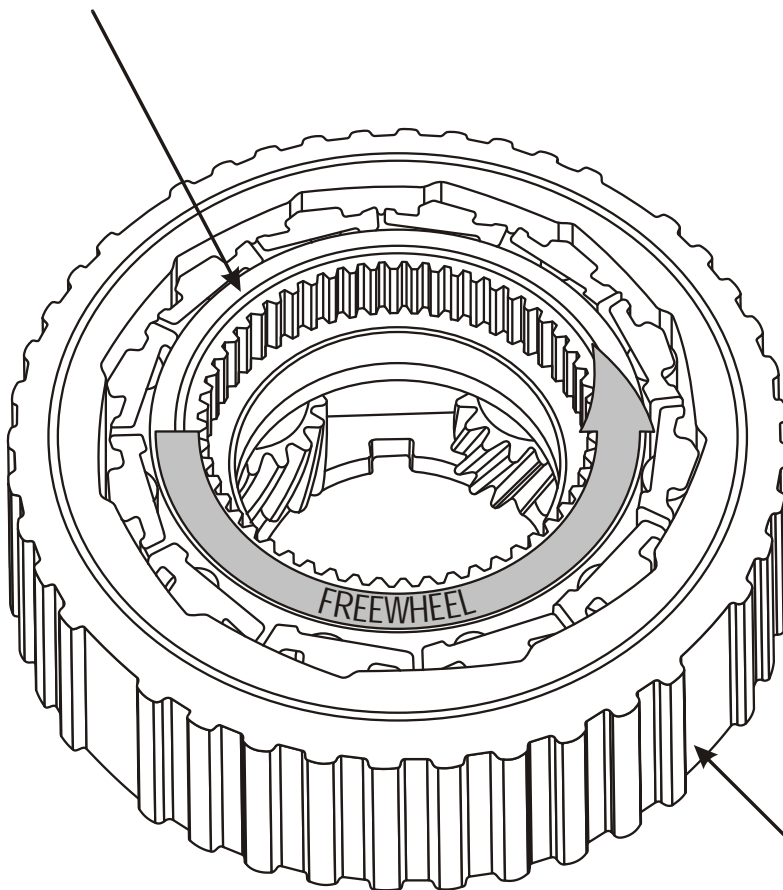


**HOLD  
PLANETARY  
CARRIER**

## THM 200, 200-4R, LOW ROLLER CLUTCH

***THE INNER RACE MUST FREEWHEEL COUNTER CLOCKWISE AND  
LOCK CLOCKWISE WHEN THE PLANETARY CARRIER IS HELD***

**FREEWHEEL  
INNER RACE**

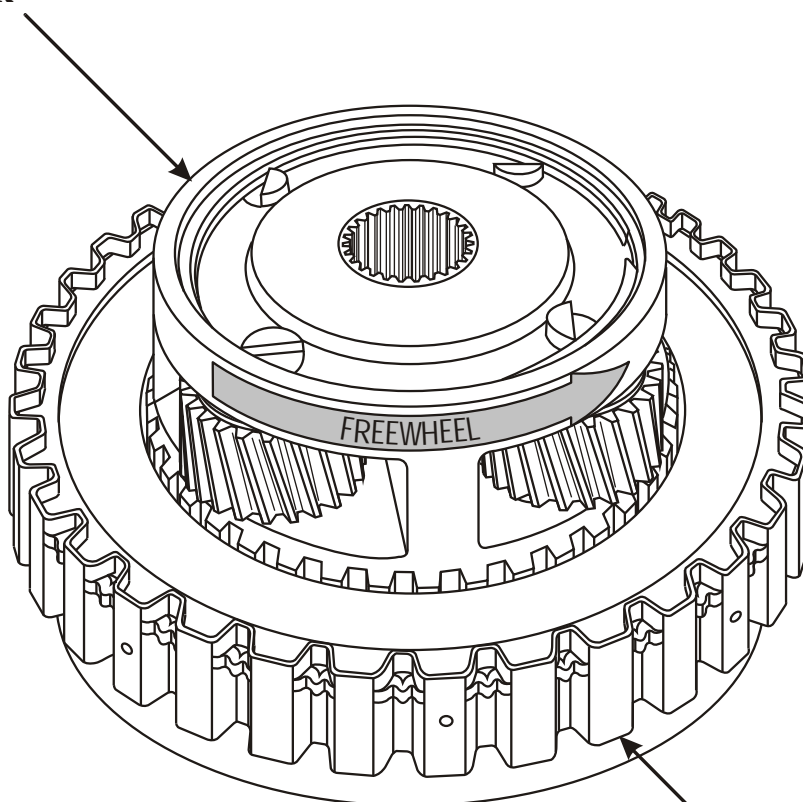


**HOLD  
PLANETARY  
CARRIER**

## THM 200-4R, 325-4L, OVERRUN ROLLER CLUTCH

***THE OVERDRIVE CARRIER MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING OVERRUN CLUTCH HOUSING***

**FREEWHEEL  
OVERDRIVE  
CARRIER**

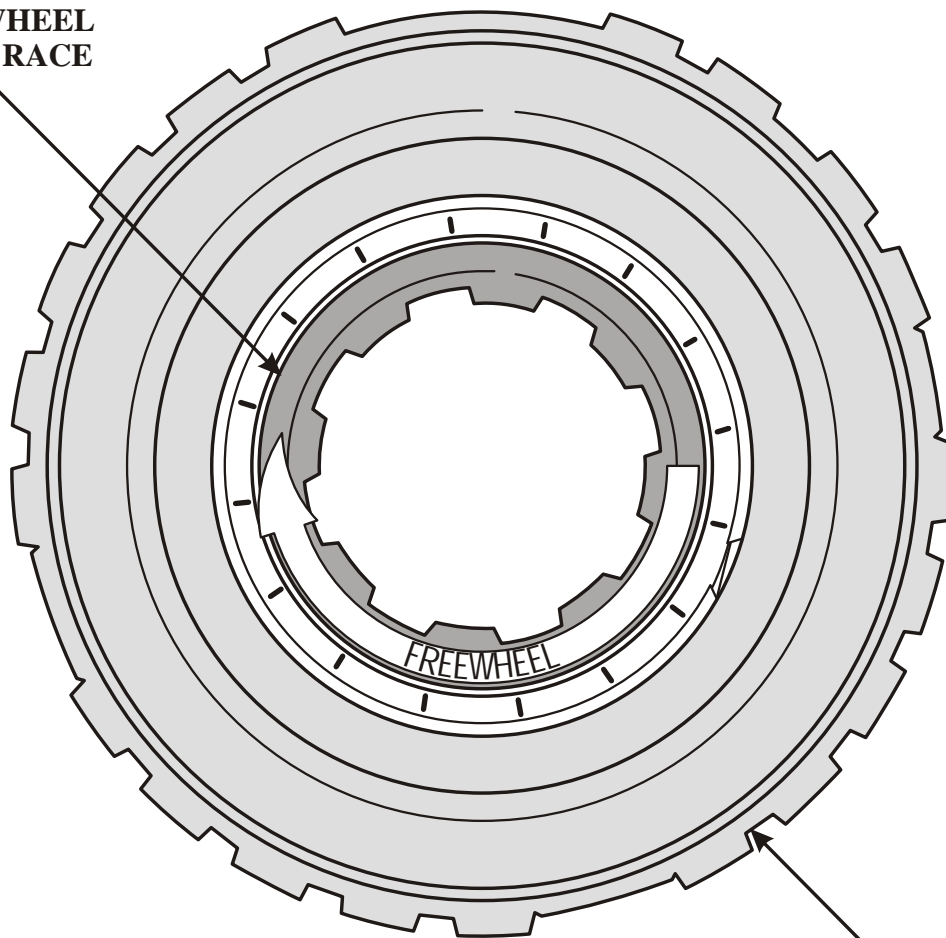


**HOLD  
OVERRUN  
CLUTCH DRUM**

## THM 250, 250C, 350, 350C, 700-R4, 4L60-E LOW ROLLER CLUTCH

***THE INNER RACE MUST FREEWHEEL CLOCKWISE AND LOCK  
COUNTER CLOCKWISE WHEN HOLDING THE CENTER SUPPORT***

**FREEWHEEL  
INNER RACE**

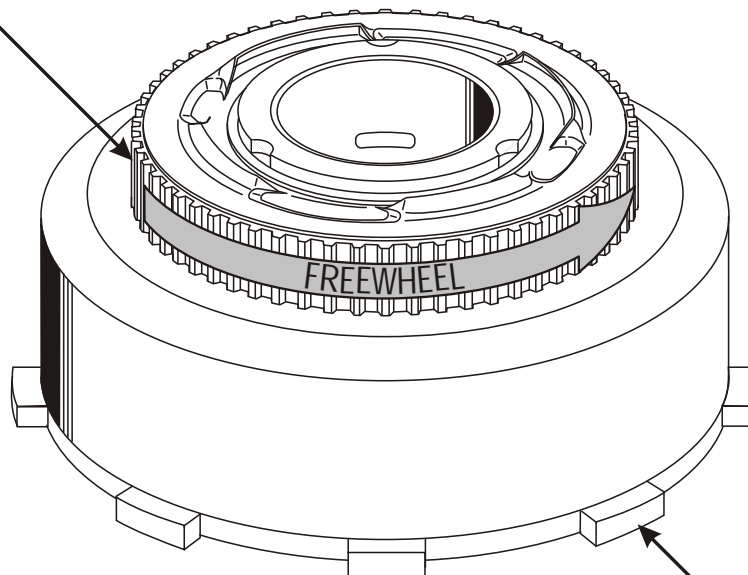


**HOLD  
CENTER SUPPORT**

## THM 350, 350C, INTERMEDIATE ROLLER CLUTCH

***THE INTERMEDIATE ROLLER CLUTCH OUTER RACE MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE DIRECT CLUTCH DRUM***

**FREEWHEEL  
INTERMEDIATE ROLLER  
CLUTCH OUTER RACE**



**HOLD  
DIRECT CLUTCH  
HOUSING**

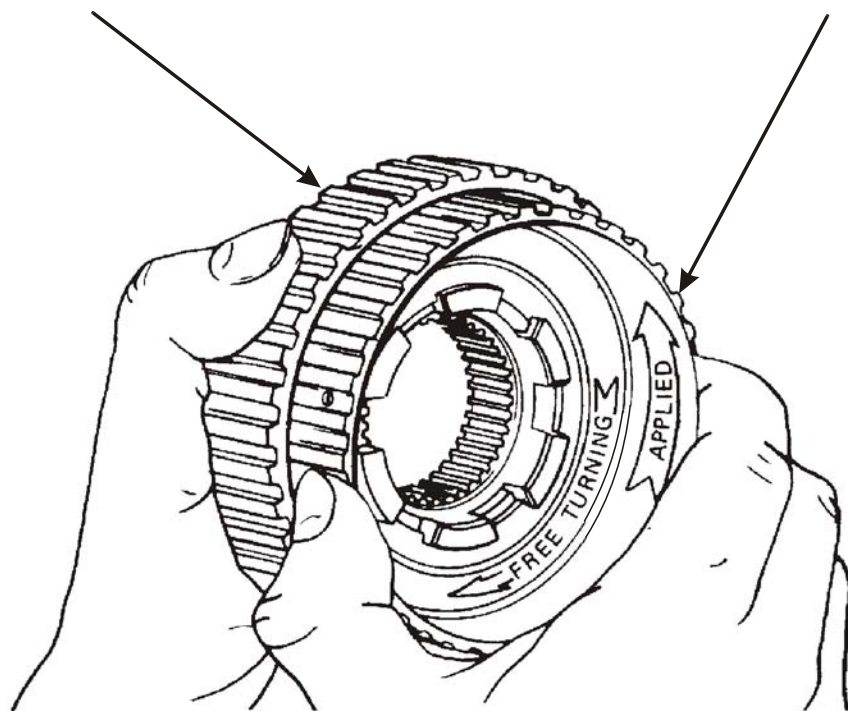


## THM 700-R4, 4L60-E, INPUT SPRAG

***THE OVERRUN CLUTCH HUB MUST FREEWHEEL CLOCKWISE AND LOCK  
COUNTER CLOCKWISE WHEN THE FORWARD HUB IS HELD***

**HOLD  
FORWARD  
CLUTCH HUB**

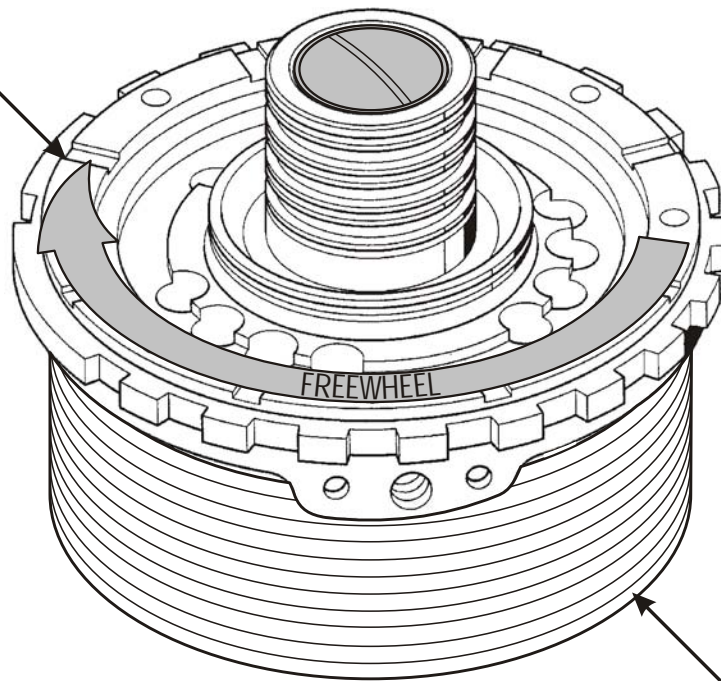
**FREEWHEEL  
OVERRUN  
CLUTCH HUB**



## THM 425, LOW ROLLER CLUTCH

***THE CENTER SUPPORT MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING THE REACTION CARRIER***

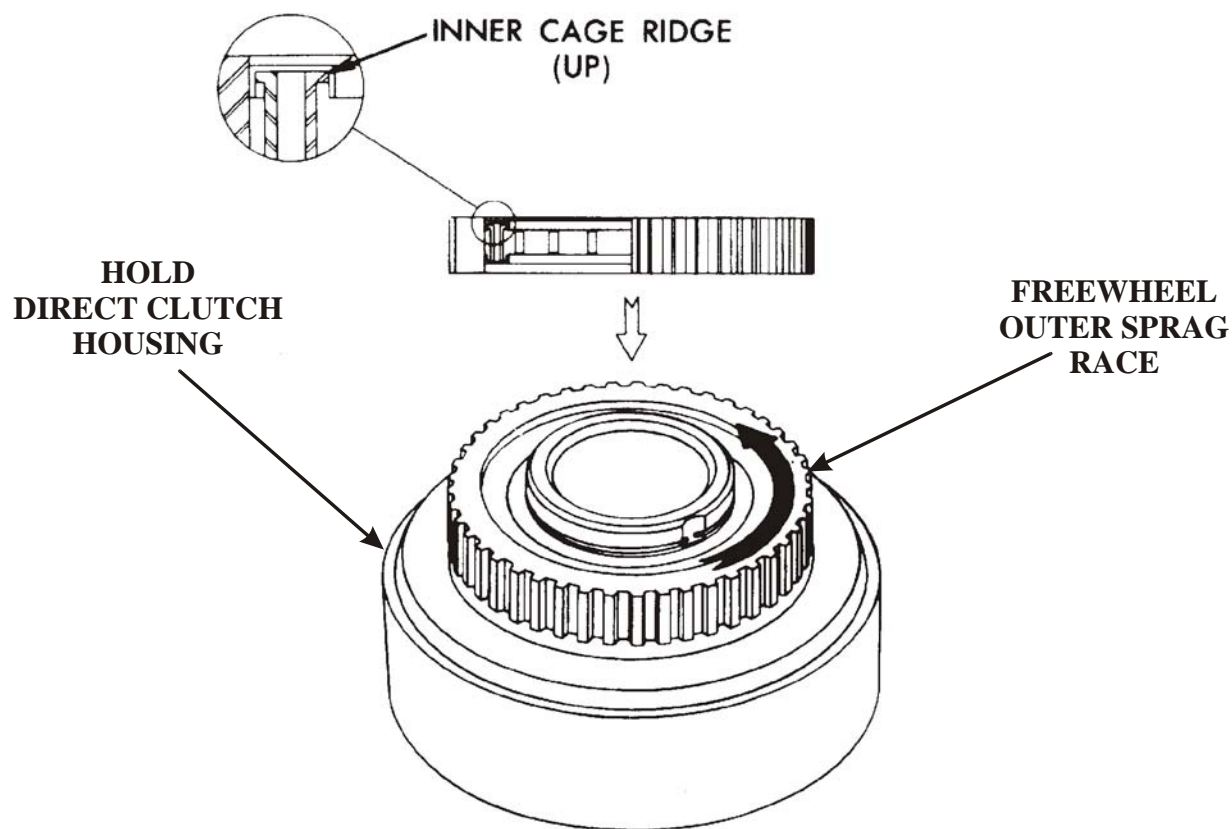
**FREEWHEEL  
CENTER SUPPORT**



**HOLD  
REACTION  
CARRIER**

## THM 425, INTERMEDIATE ONE-WAY CLUTCH

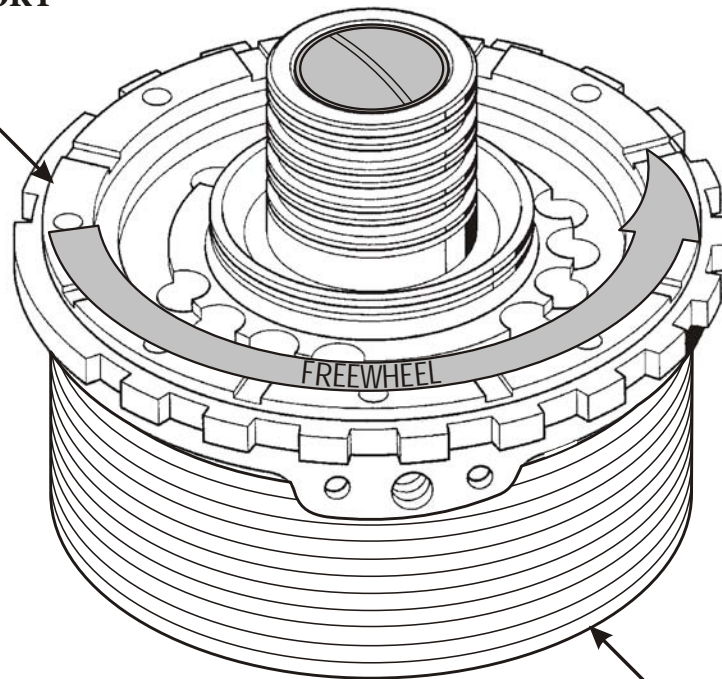
***THE OUTER SPRAG RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE DIRECT DRUM***



## THM 400, 4L80-E, 4L80-EHD LOW ROLLER CLUTCH

***THE CENTER SUPPORT MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE REACTION CARRIER***

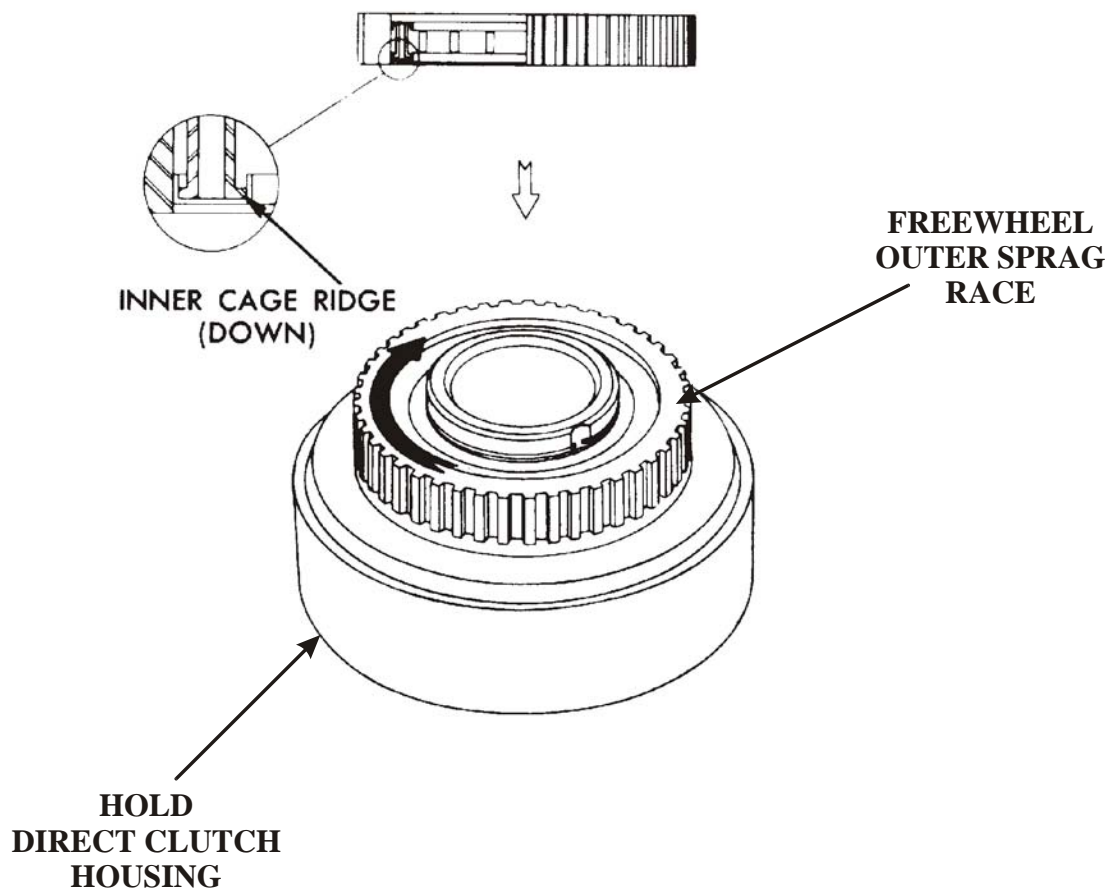
**FREEWHEEL  
CENTER SUPPORT**



**HOLD  
REACTION  
CARRIER**

## THM 400, 4L80-E, 4L80-EHD INTERMEDIATE ONE-WAY CLUTCH

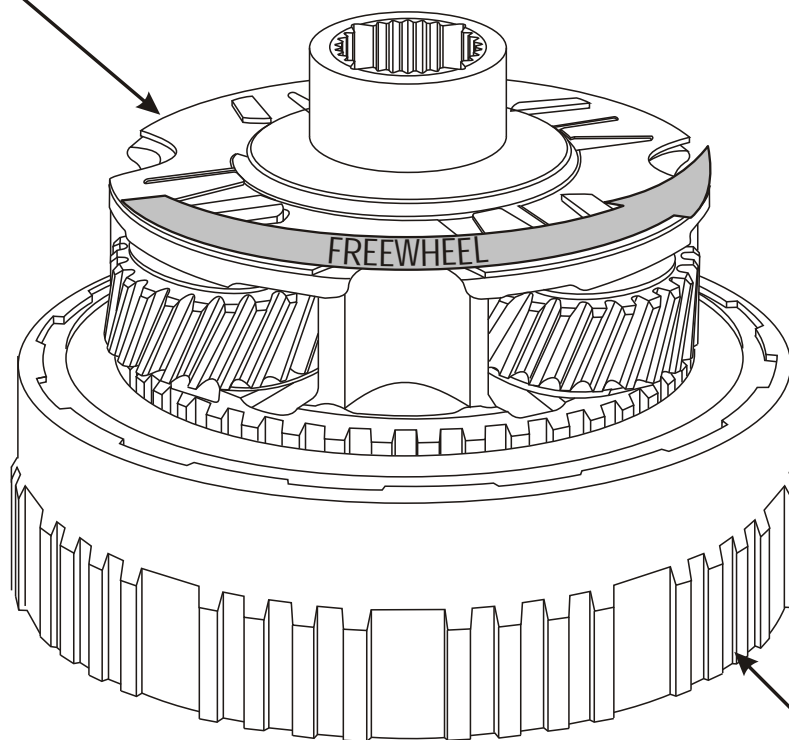
***THE OUTER SPRAG RACE MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN HOLDING THE DIRECT DRUM***



## THM 4L80-E, 4L80-EHD, OVERDRIVE ROLLER CLUTCH

***THE OVERDRIVE PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE OVERRUN CLUTCH DRUM IS HELD***

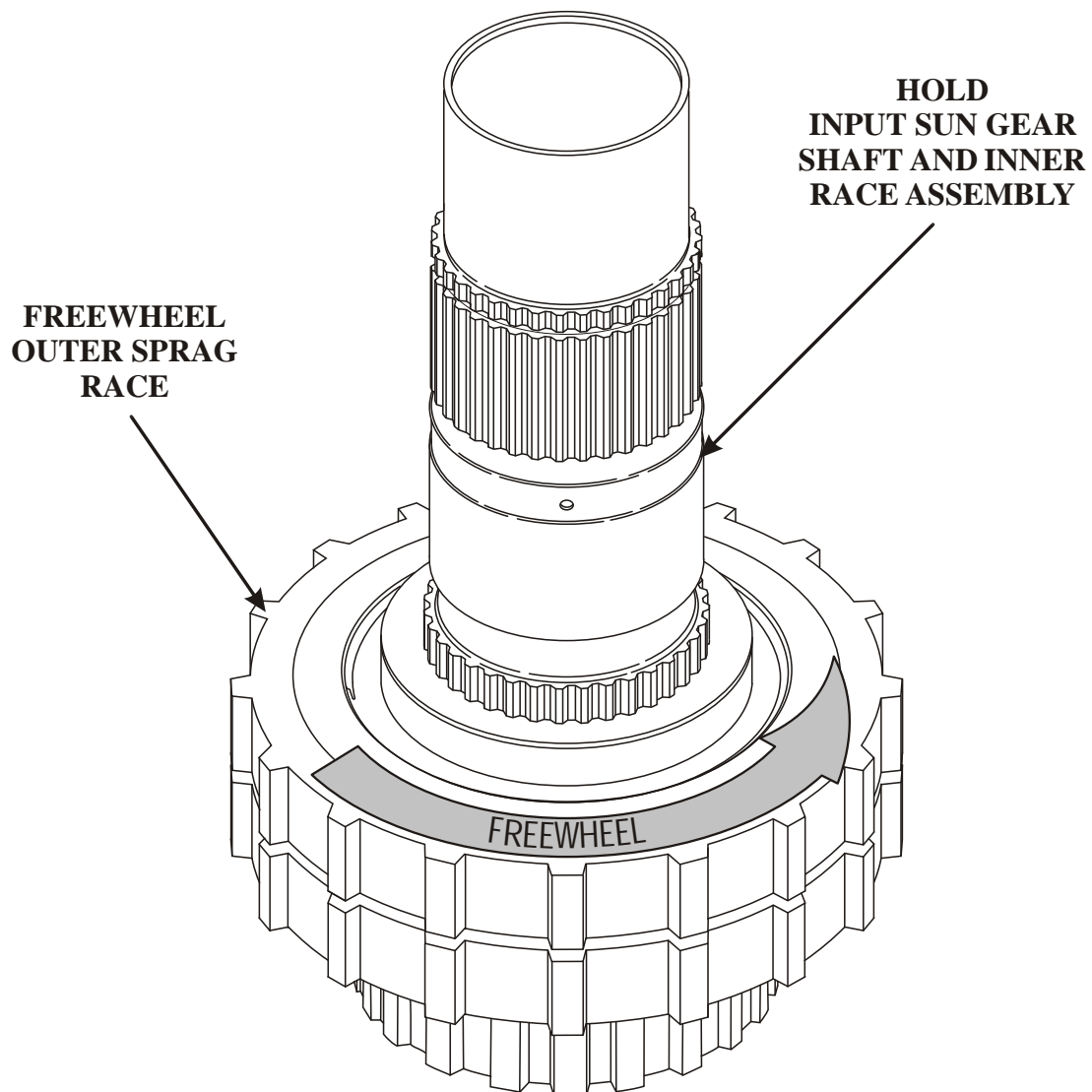
**FREEWHEEL  
OVERDRIVE  
PLANETARY**



**HOLD  
OVERRUN  
CLUTCH DRUM**

**THM 4T40-E,  
INPUT SPRAG**

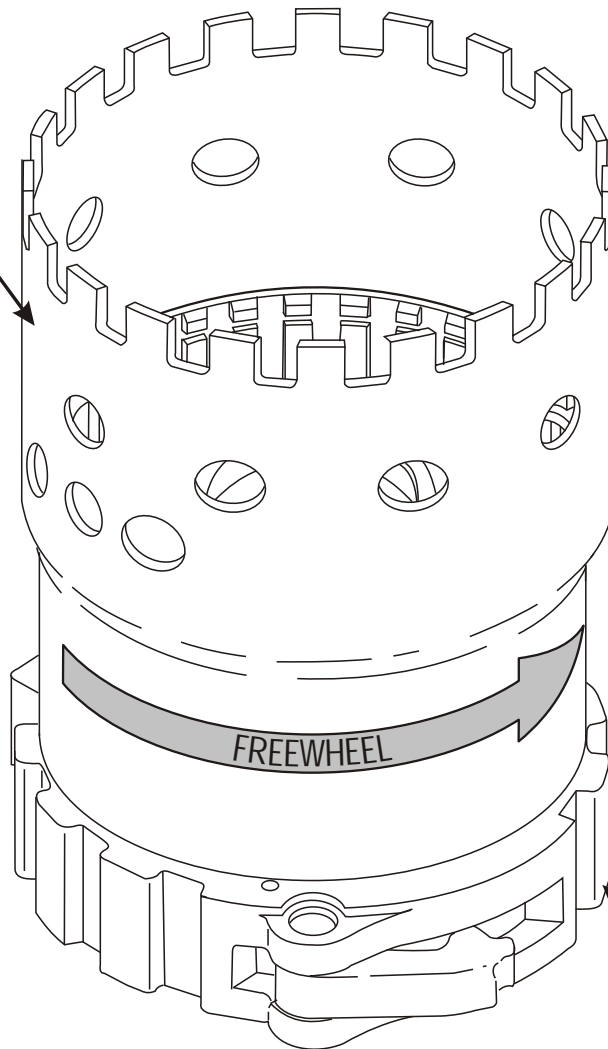
***THE INPUT SPRAG OUTER RACE MUST FREEWHEEL COUNTER  
CLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE INPUT SUN GEAR SHAFT***



## THM 4T40E, LOW ROLLER CLUTCH

***THE FORWARD CLUTCH HOUSING MUST FREEWHEEL COUNTER  
CLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING  
THE FORWARD CLUTCH SUPPORT***

**FREEWHEEL  
FORWARD CLUTCH  
HOUSING**



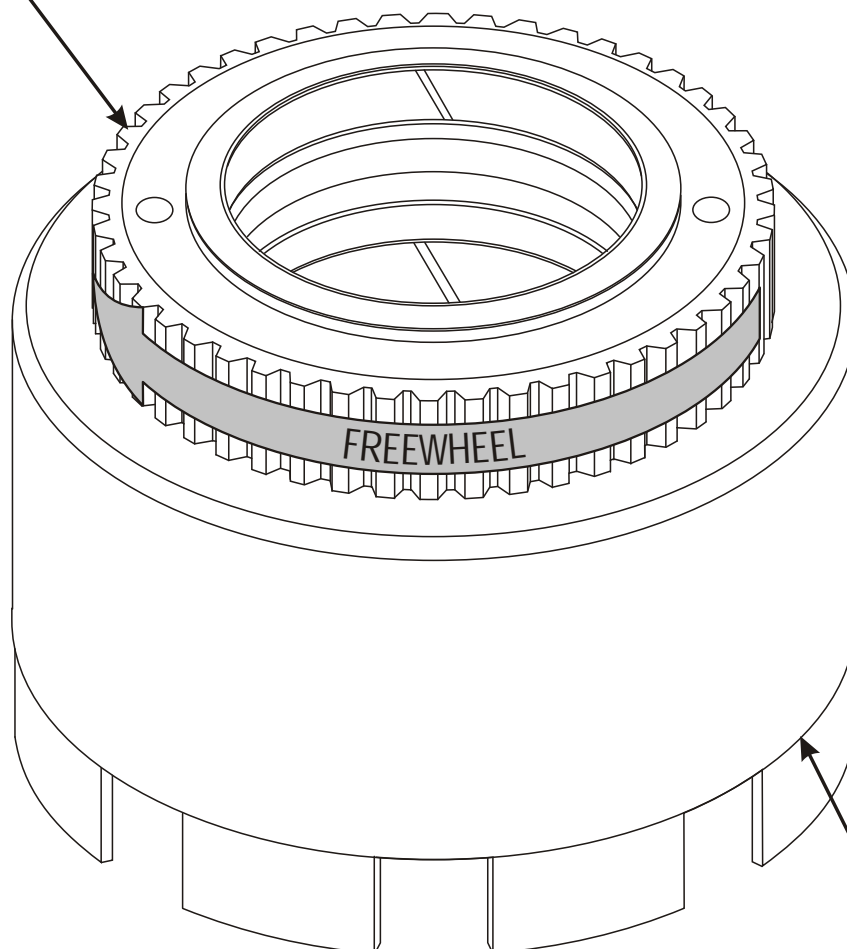
**HOLD  
FORWARD CLUTCH  
SUPPORT**



**THM 4T40E,  
2ND ROLLER CLUTCH**

***THE ROLLER CLUTCH OUTER RACE MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING  
THE REVERSE CLUTCH HOUSING***

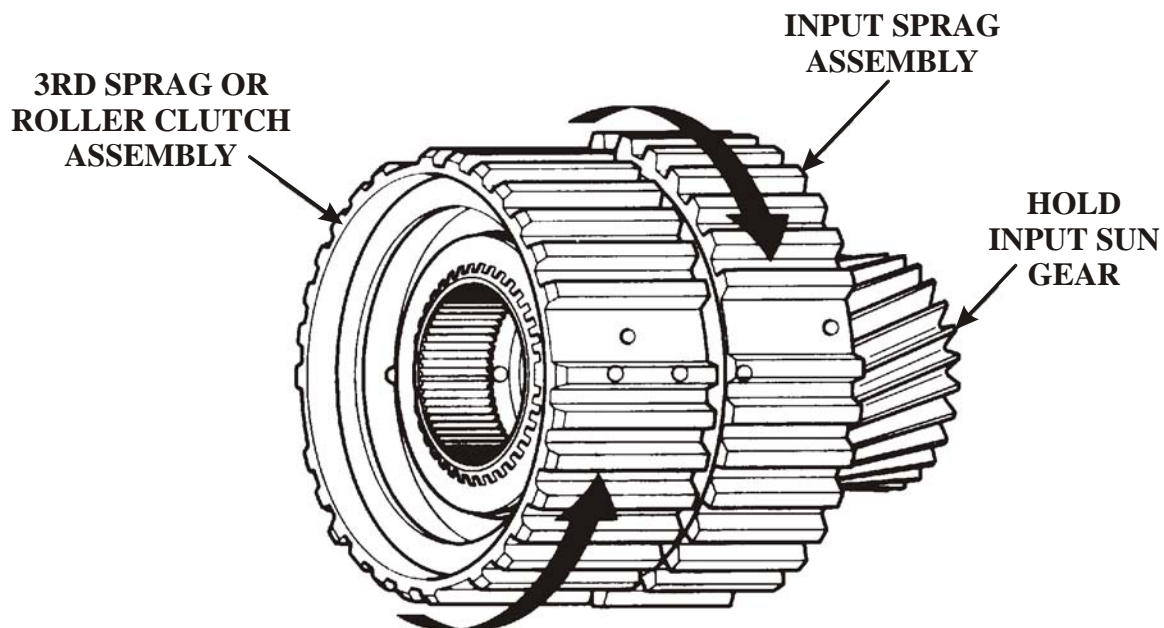
**FREEWHEEL  
ROLLER CLUTCH  
OUTER RACE**



**HOLD  
REVERSE CLUTCH  
HOUSING**

## THM 4T60, 4T60E, 4T65E, INPUT AND 3RD SPRAG ASSEMBLY

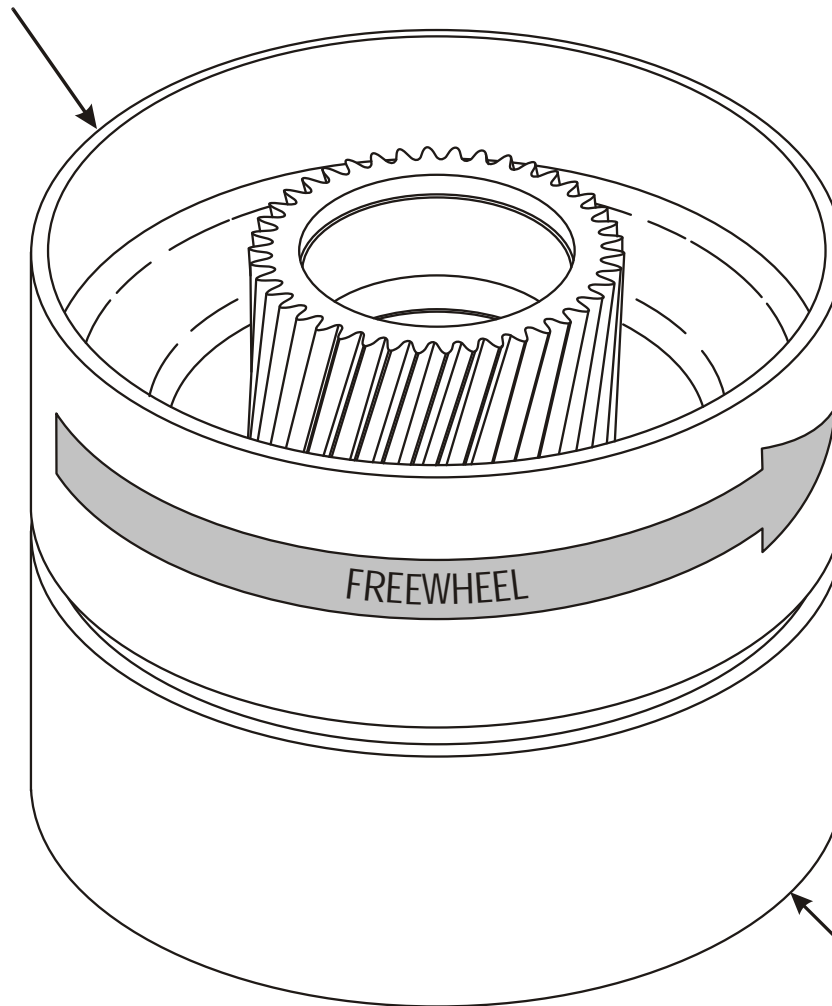
***THE SPRAG/ROLLER CLUTCH ASSEMBLIES MUST FREEWHEEL IN  
DIRECTION OF ARROWS, AND HOLD IN OPPOSITE DIRECTION  
WHILE HOLDING SUN GEAR AND SHAFT ASSEMBLY***



## THM 4T60E, 4T65-E, 1-2 ROLLER CLUTCH

***REACTION SUN GEAR DRUM MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE 1-2 ROLLER CLUTCH ASSEMBLY IS HELD***

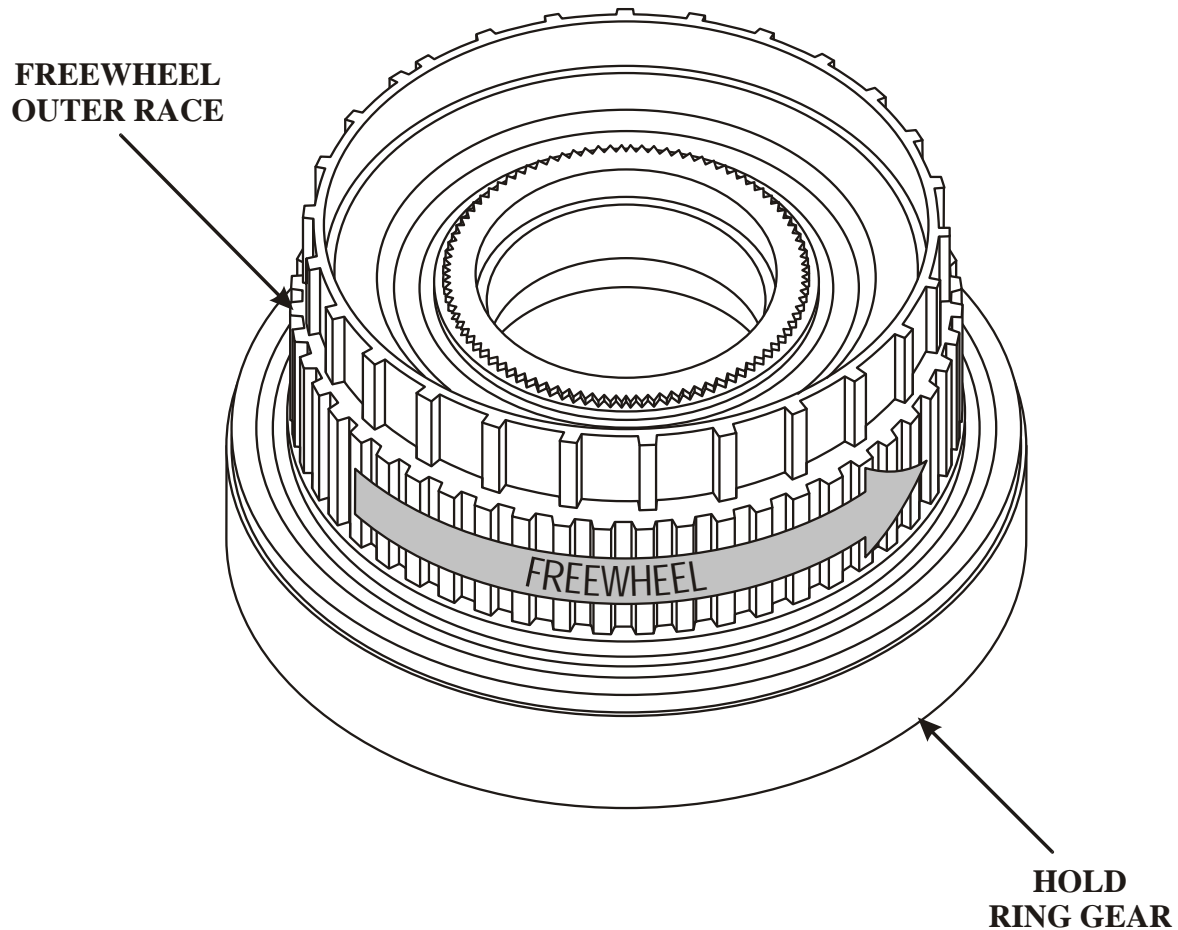
**FREEWHEEL  
REACTION  
SUN GEAR DRUM**



**HOLD  
1-2 ROLLER  
CLUTCH ASSEMBLY**

**THM 4T80E,  
INPUT SPRAG**

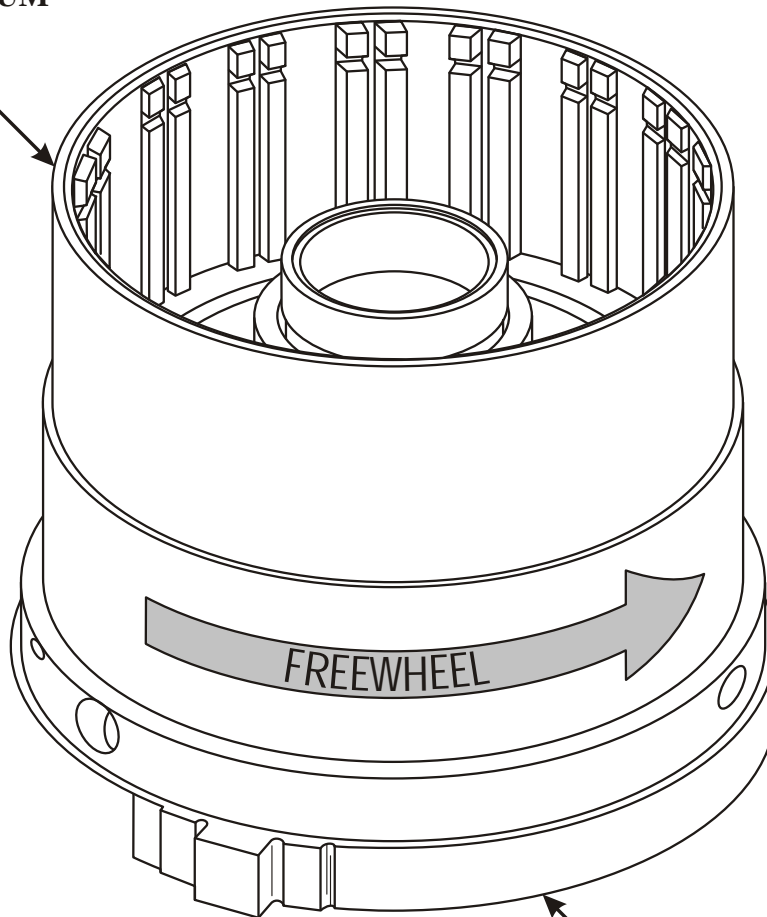
***THE OUTER RACE/CLUTCH HUB MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE  
WHEN HOLDING RING GEAR***



## THM 4T80E, LOW ROLLER CLUTCH

***THE FORWARD/COAST CLUTCH DRUM MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE ON SUPPORT***

**FREEWHEEL  
FORWARD DRUM**

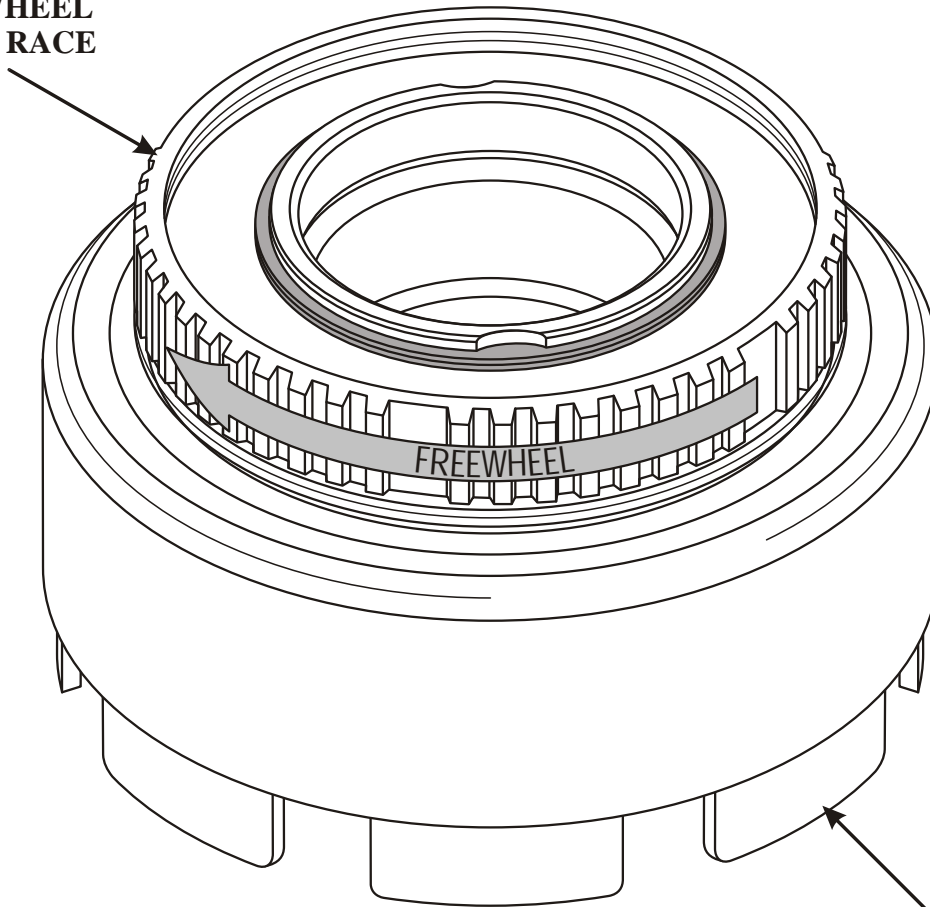


**HOLD  
SUPPORT**

## THM 4T80-E, INTERMEDIATE SPRAG

***THE OUTER RACE MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING REVERSE DRUM***

**FREEWHEEL  
OUTER RACE**



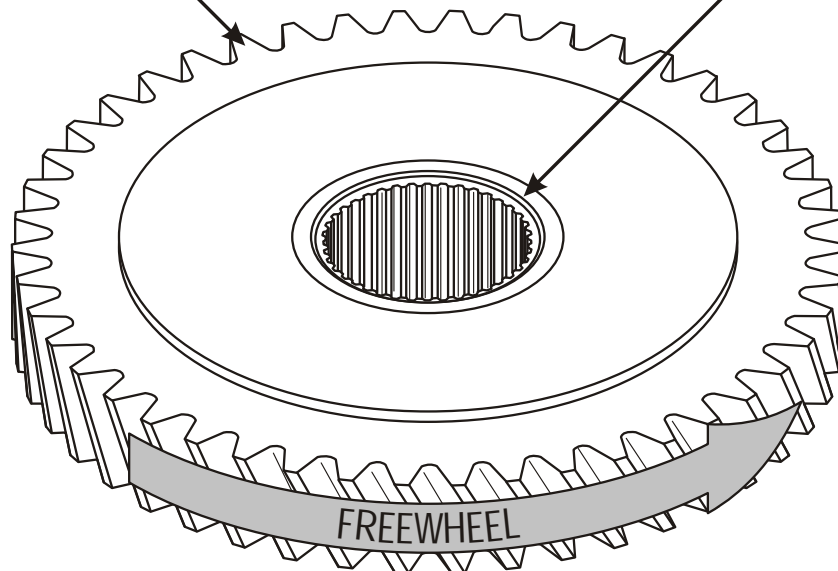
**HOLD  
REVERSE DRUM**

## SATURN TAAT

***THE 1ST DRIVEN GEAR MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHILE HOLDING INNER HUB***

**FREEWHEEL  
1ST DRIVEN  
GEAR**

**HOLD  
INNER HUB**

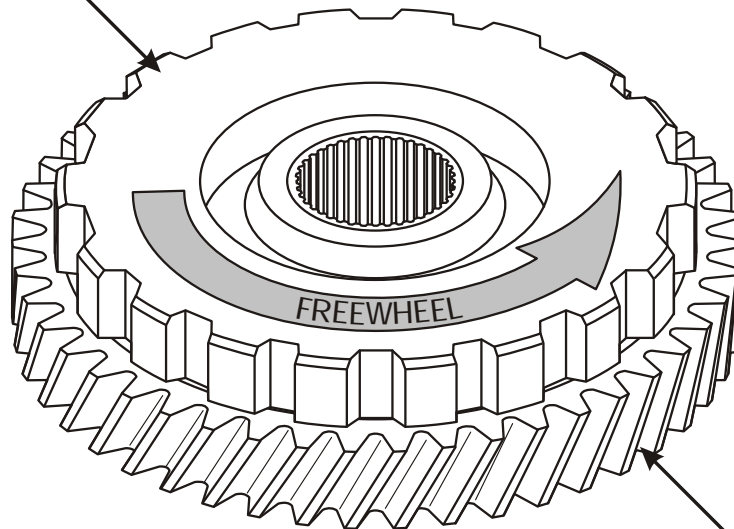


## HONDA

**AK, AS, CA, F4, K4, L4, S5, A4RA, A24A, B4RA, M4RA, M4TA,  
M24A, MDLA, MDMA, MPSA, MY8A, PY8A, S24A, SDMA,  
LOW ONE-WAY CLUTCH**

***THE PARKING GEAR MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE***

**FREEWHEEL  
PARKING GEAR**



**HOLD  
COUNTERSHAFT  
1ST GEAR**

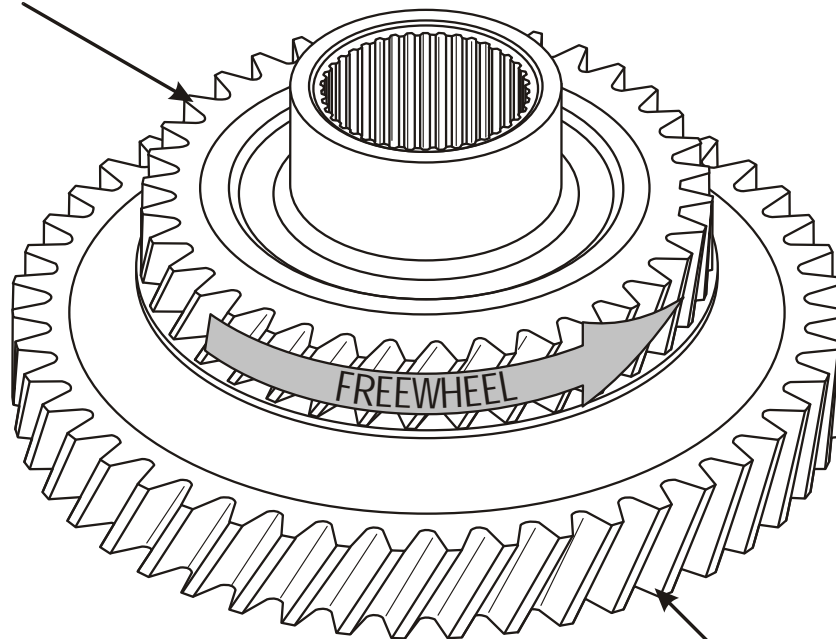


# HONDA

## AOYA, APX4, MP1A, MPJA, MPOA, PX4B, LOW ONE-WAY CLUTCH

***COUNTERSHAFT 3RD GEAR MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING COUNTERSHAFT 1ST GEAR***

**FREEWHEEL  
COUNTERSHAFT  
3RD GEAR**

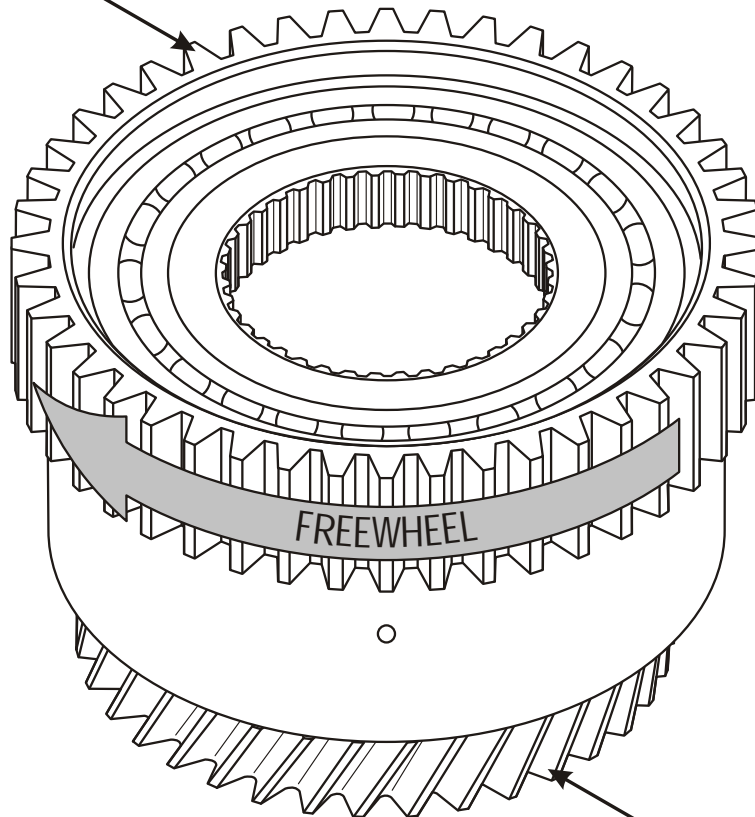


**HOLD  
COUNTERSHAFT  
1ST GEAR**

## HONDA MPZA LOW ONE-WAY CLUTCH

***THE SECONDARY SHAFT 1ST CLUTCH HUB MUST  
FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE***

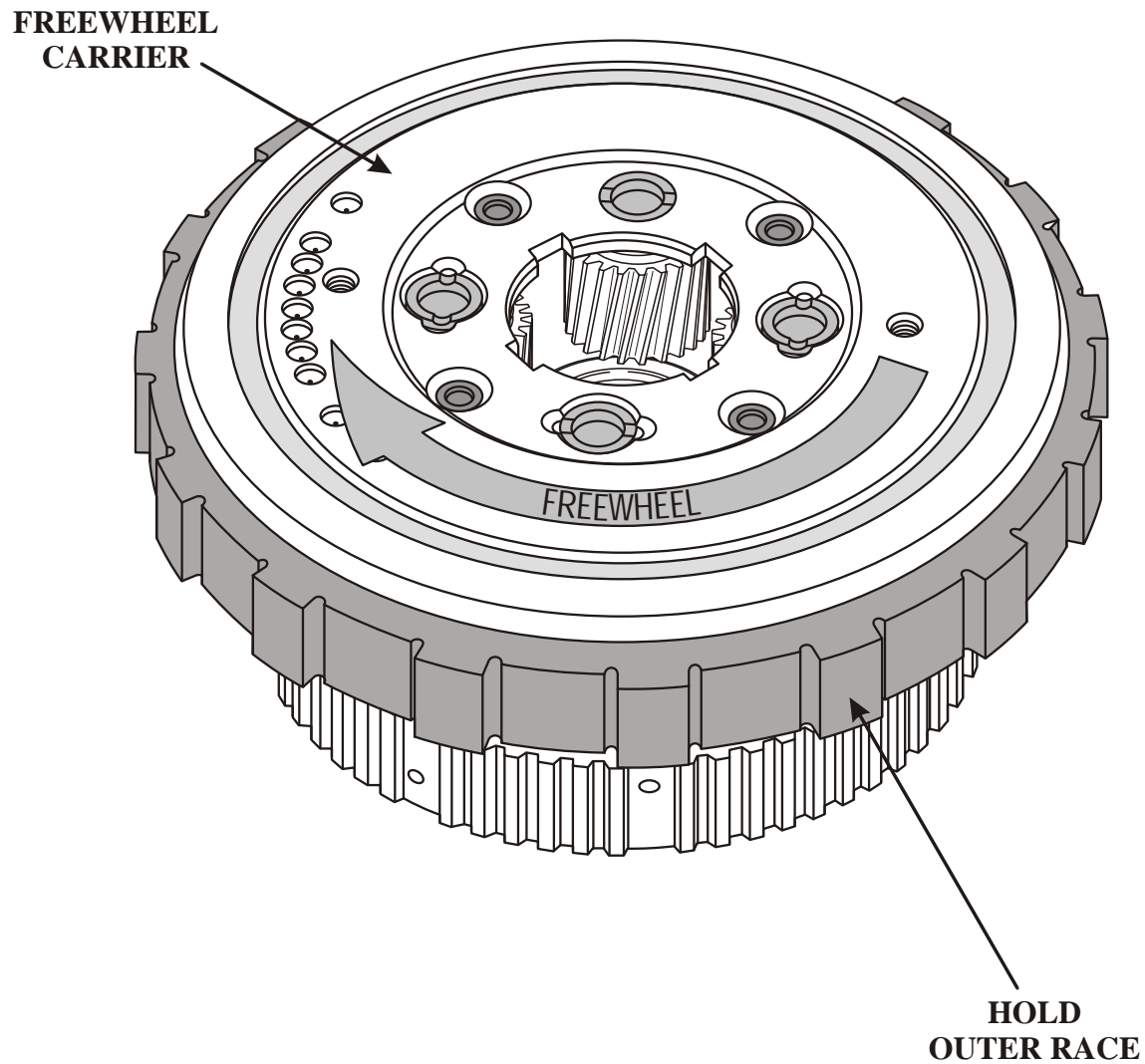
**FREEWHEEL  
SECONDARY SHAFT  
1ST CLUTCH HUB**



**HOLD  
SECONDARY SHAFT  
1ST GEAR**

## AISIN SEIKI LOW SPRAG

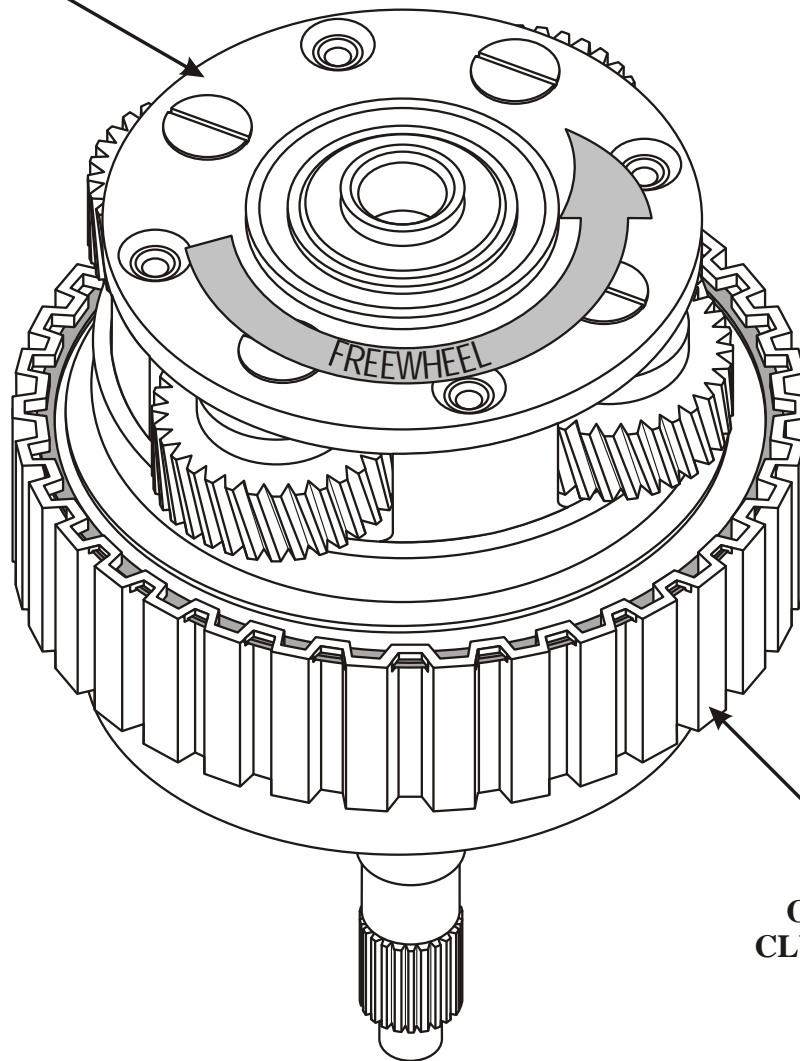
*THE PLANETARY CARRIER MUST FREEWHEEL CLOCKWISE AND  
 LOCK COUNTER CLOCKWISE WHEN HOLDING OUTER RACE*



## AISIN SEIKI OVERDRIVE SPRAG

***THE OVERDRIVE CARRIER MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE***

**FREEWHEEL  
O.D. CARRIER**

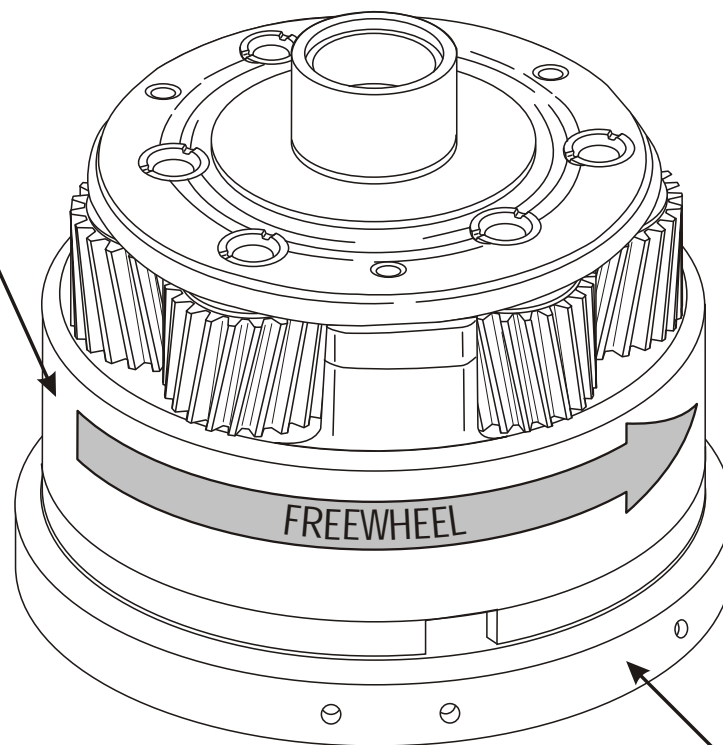


**HOLD  
OD DIRECT  
CLUTCH DRUM**

## JAGUAR BORG WARNER-65, BW-66, LOW ROLLER CLUTCH

***THE REAR PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE AND  
LOCK CLOCKWISE WHEN HOLDING THE INNER RACE***

**FREEWHEEL  
PLANETARY  
CARRIER**

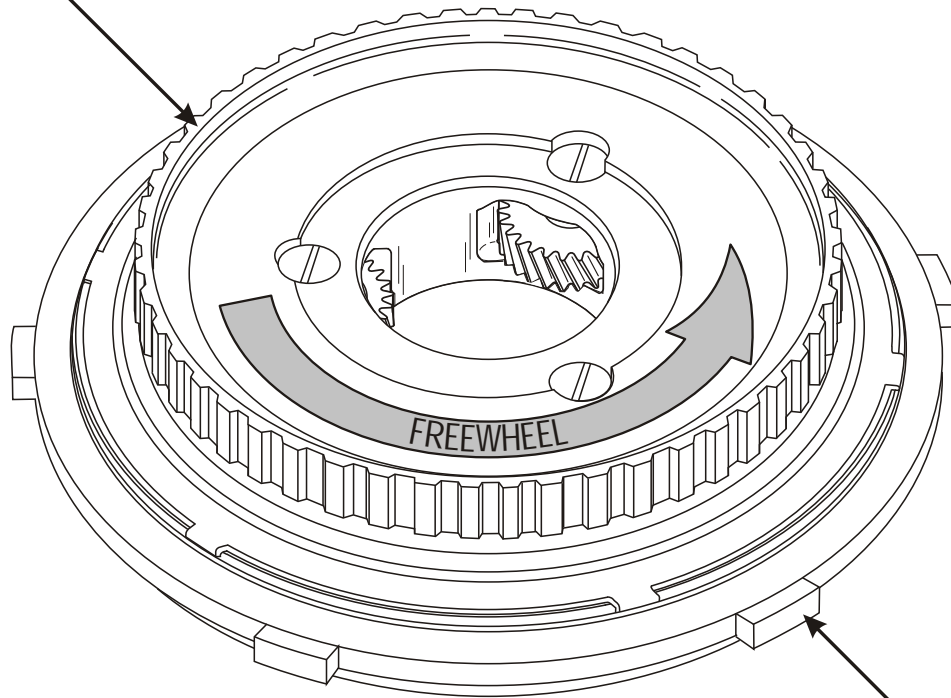


**HOLD  
INNER RACE  
(CENTER SUPPORT)**

## F3A, KF100, LOW SPRAG

***THE PLANETARY ASSEMBLY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE OUTER RACE***

**FREEWHEEL  
PLANETARY  
ASSEMBLY**

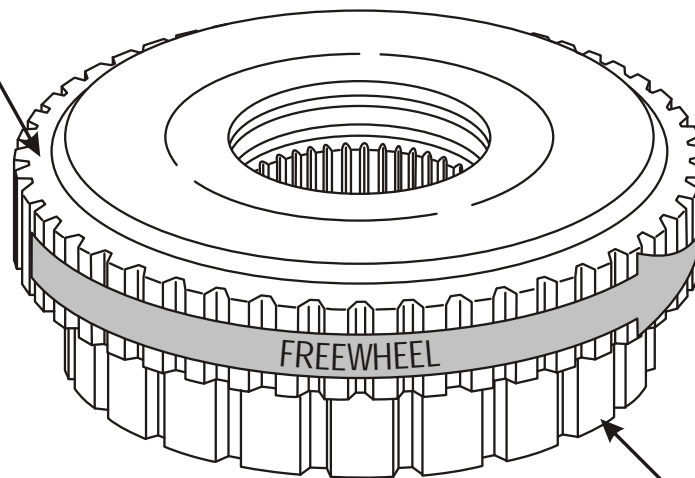


**HOLD  
OUTER SPRAG  
RACE**

**FORD/MAZDA F4EAT, F4A-EL, FB4A-EL,  
FORWARD ONE WAY SPRAG**

***THE FORWARD CLUTCH HUB MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE OVERRUN CLUTCH HUB***

**FREEWHEEL  
FORWARD  
CLUTCH HUB**

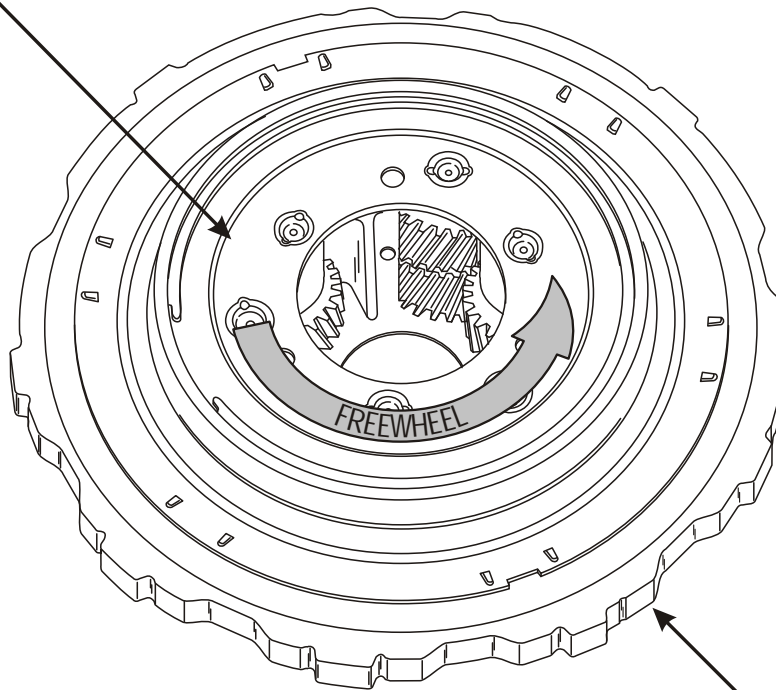


**HOLD  
OVERRUN  
CLUTCH HUB**

## FORD/MAZDA F4EAT, F4A-EL, FB4A-EL G4A-HL, G4A-EL, GF4A-EL LOW ROLLER CLUTCH

***PLANETARY CARRIER MUST FREEWHEEL COUNTER CLOCKWISE AND  
LOCK CLOCKWISE, WHEN THE ROLLER CLUTCH IS HELD STATIONARY***

**FREEWHEEL  
PLANETARY  
CARRIER**



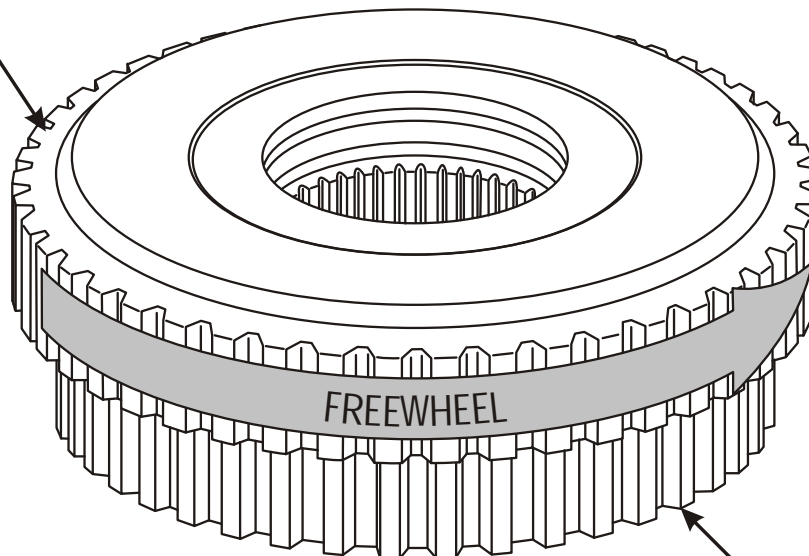
**HOLD  
ROLLER CLUTCH**



**FORD/MAZDA  
G4A-HL, G4A-EL, GF4A-EL  
FORWARD ONE WAY SPRAG**

***THE FORWARD CLUTCH HUB MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE OVERRUN CLUTCH HUB***

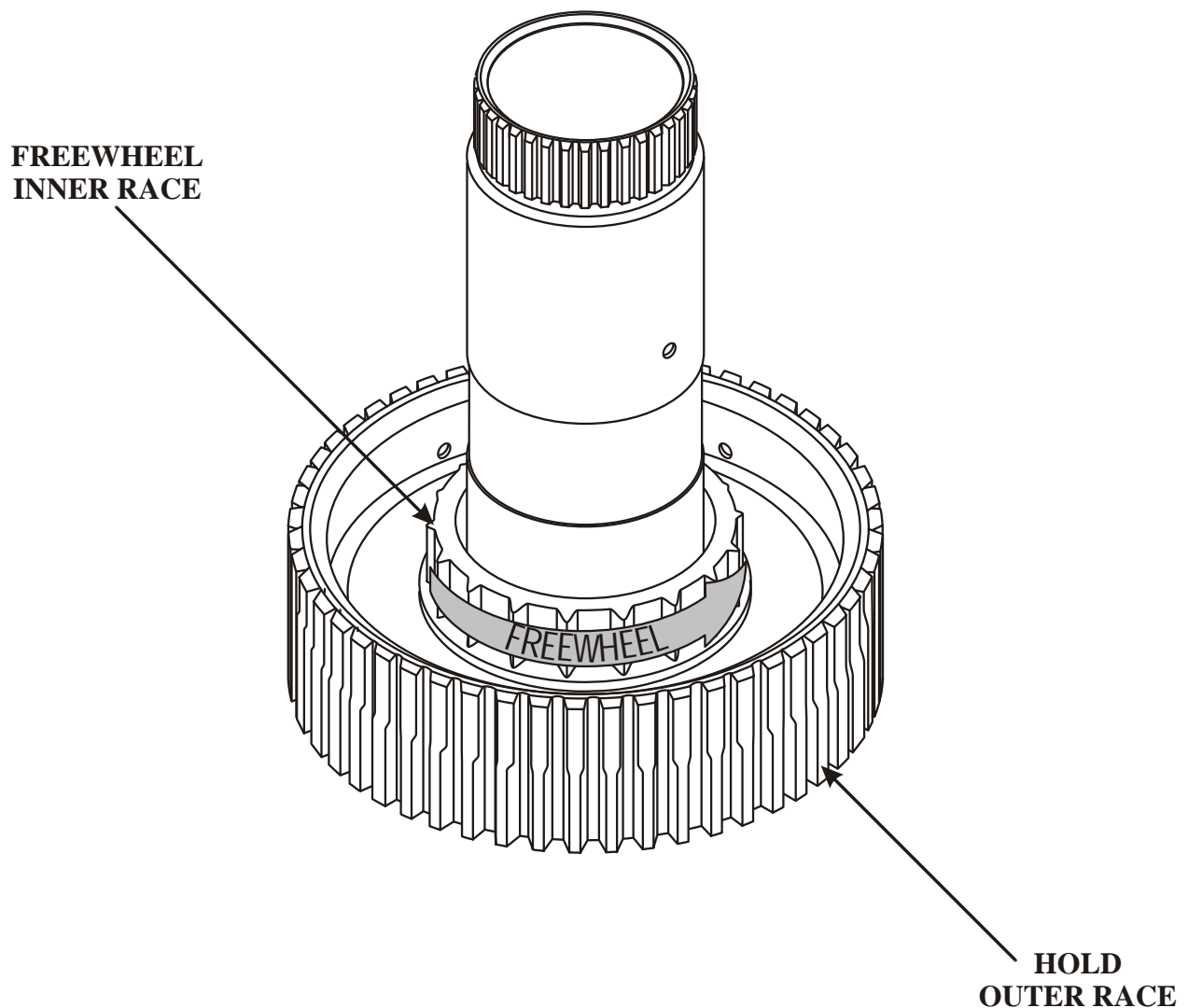
**FREEWHEEL  
FORWARD  
CLUTCH HUB**



**HOLD  
OVERRUN  
CLUTCH HUB**

**MERCEDES 722.1, 722.2  
LOW SPRAG**

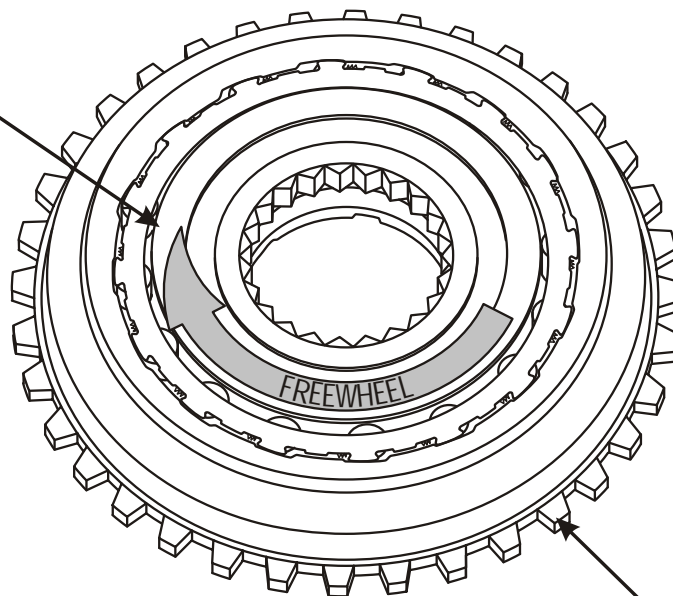
***THE INNER RACE OF THE LOW SPRAG MUST FREEWHEEL COUNTER  
CLOCKWISE AND LOCK CLOCKWISE WHEN HOLDING THE OUTER RACE***



**MERCEDES 722.3, 722.4, 722.5  
LOW ROLLER CLUTCH**

***LOW ROLLER CLUTCH INNER RACE MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE  
WHEN HOLDING THE OUTER RACE AND  
VIEWED AS SHOWN BELOW***

**FREEWHEEL  
INNER RACE**



**HOLD  
OUTER RACE**

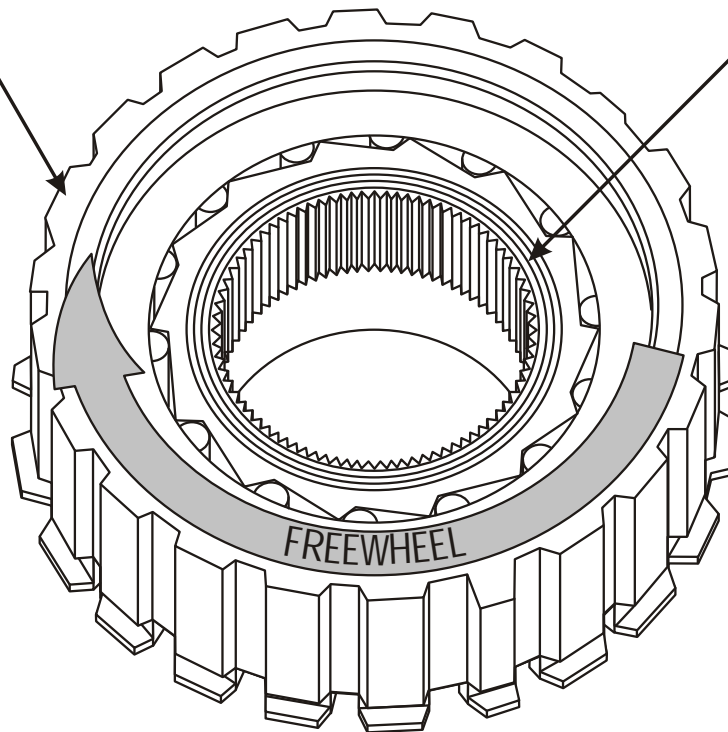
***NOTE: Illustration shows REAR view.***

## MERCEDES 722.5 OVERDRIVE ONE-WAY CLUTCH

***THE CLUTCH HUB/OUTER RACE MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING INNER RACE***

**FREEWHEEL  
OUTER RACE**

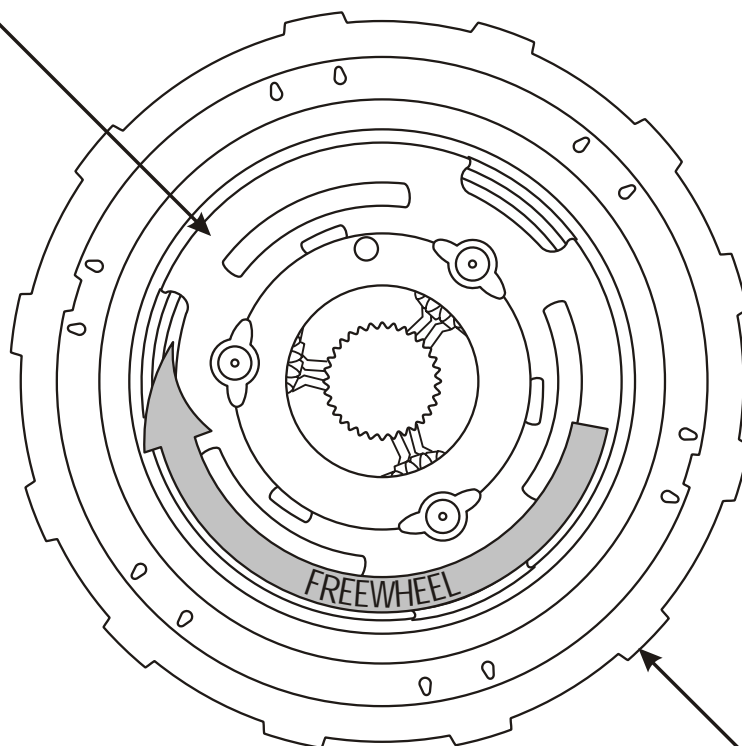
**HOLD  
INNER RACE**



## RL3FO1A, RN3FO1A, RL4FO2A, RE4FO2A, RE4FO3A, RL4FO4A, RE4FO4A, 4F20E, JF403E, LJ4A-EL, LOW ONE-WAY ROLLER CLUTCH

***THE PLANETARY CARRIER MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING  
THE LOW ONE WAY ROLLER CLUTCH***

**FREEWHEEL  
PLANETARY  
CARRIER**

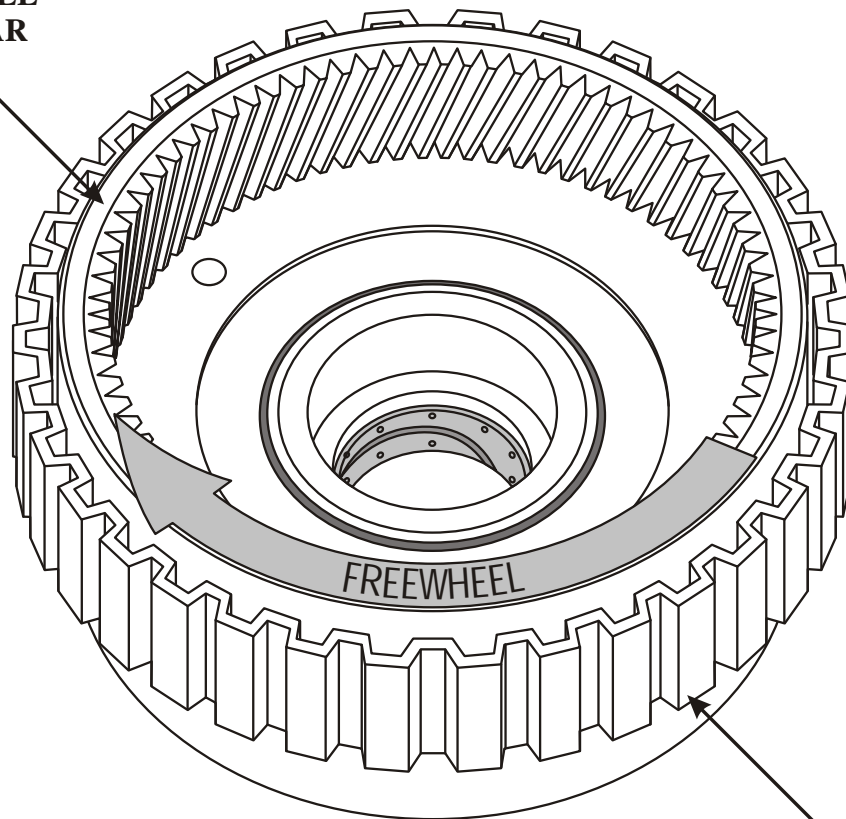


**HOLD  
LOW ONE WAY  
ROLLER CLUTCH**

## RL4FO3A, RE4FO3A, RL4FO4A, RE4FO4A, 4F20E, JF403E, LJ4A-EL, FORWARD SPRAG

***THE REAR INTERNAL RING GEAR MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING FORWARD HUB***

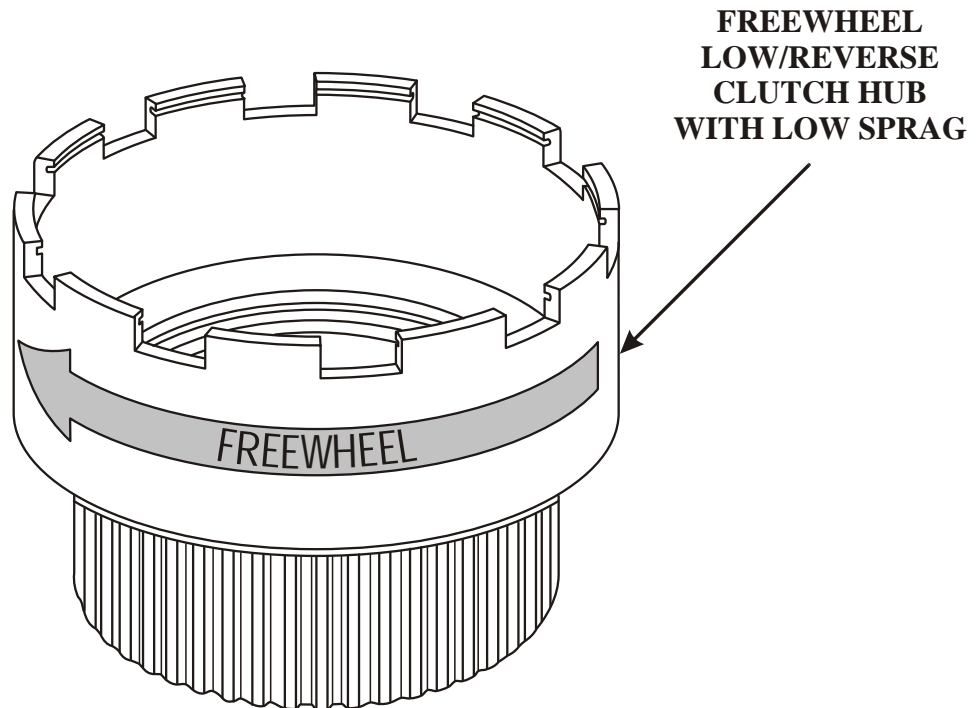
**FREEWHEEL  
RING GEAR**



**HOLD  
FORWARD  
CLUTCH HUB**

## L3N71B, L4N71B, E4N71B, N4A-EL LOW ONE-WAY CLUTCH

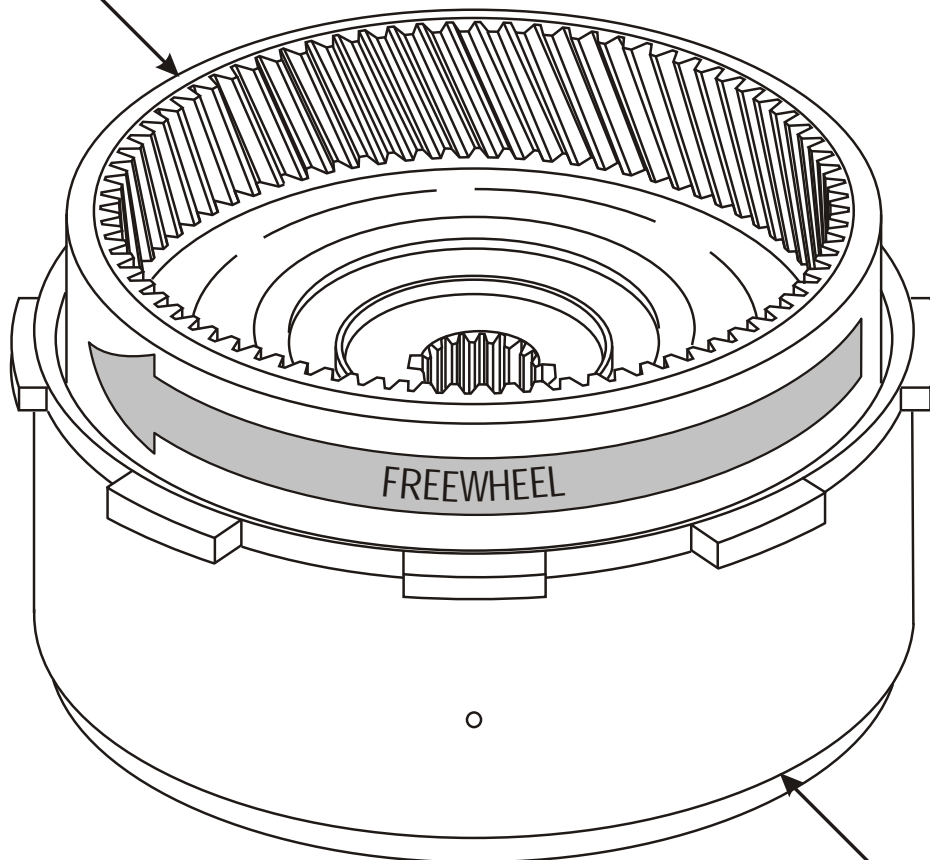
***THE LOW/REVERSE CLUTCH HUB WITH LOW SPRAG  
MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE  
WHEN INSTALLED IN CASE***



## L4N71B, E4N71B, N4A-EL OVERDRIVE SPRAG

***THE RING GEAR MUST FREEWHEEL CLOCKWISE AND LOCK  
COUNTER-CLOCKWISE WHEN DIRECT DRUM IS HELD***

**FREEWHEEL  
RING GEAR**

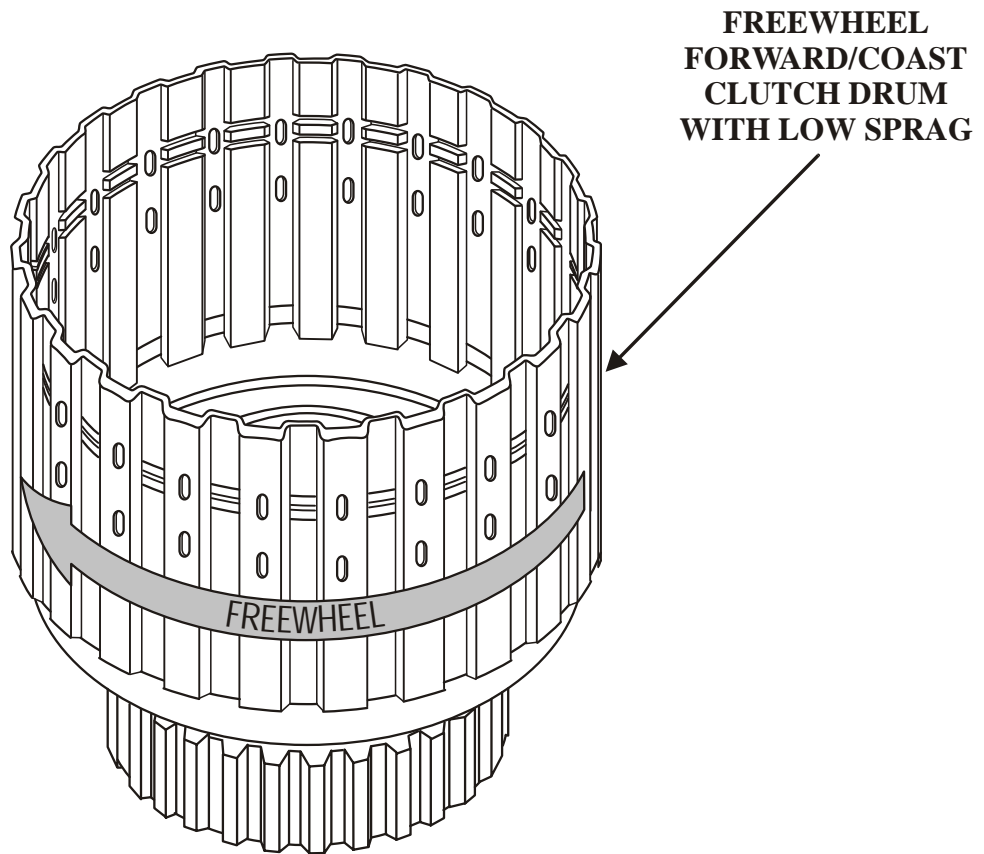


**HOLD  
DIRECT DRUM**



## RL4R01A, RE4R01A, RE4R03A, RE5R01A, JR403E, R4A-EL, SUBARU 4 SPEED, LOW ONE-WAY CLUTCH

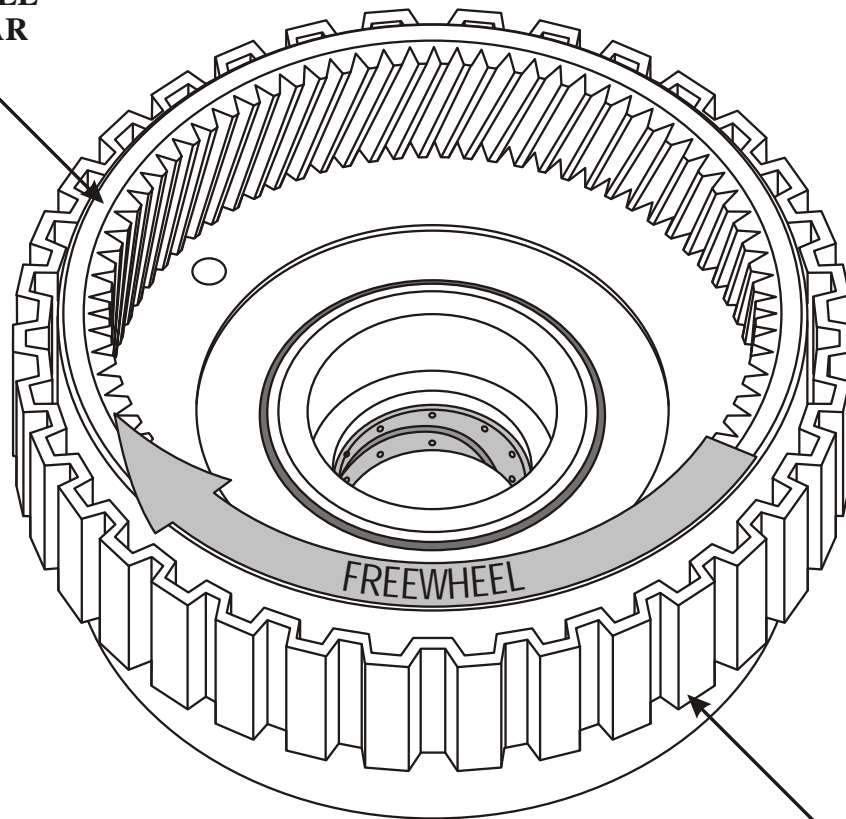
***THE FORWARD/COAST CLUTCH DRUM WITH LOW SPRAG  
MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE  
WHEN INSTALLED IN CASE***



## RL4R01A, RE4R01A, RE4R03A, RE5R01A, JR403E, R4A-EL, SUBARU 4 SPD FORWARD SPRAG

***THE REAR INTERNAL RING GEAR MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING FORWARD HUB***

**FREEWHEEL  
RING GEAR**

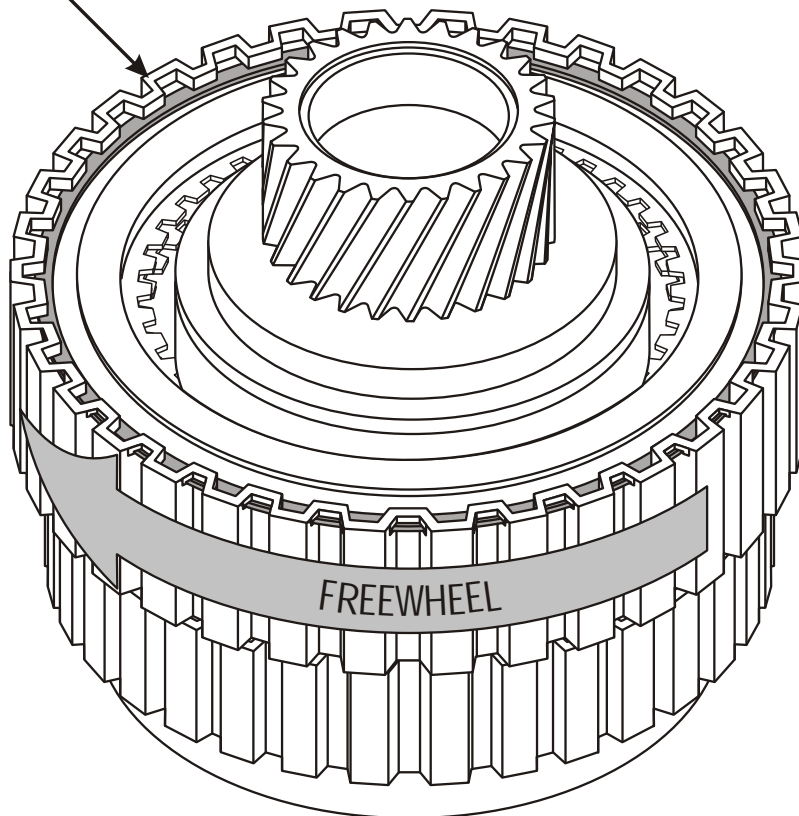


**HOLD  
FORWARD  
CLUTCH HUB**

## NISSAN RE5R01A OVERDRIVE ONE-WAY CLUTCH

***THE DIRECT CLUTCH DRUM MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN INSTALLED IN THE CASE***

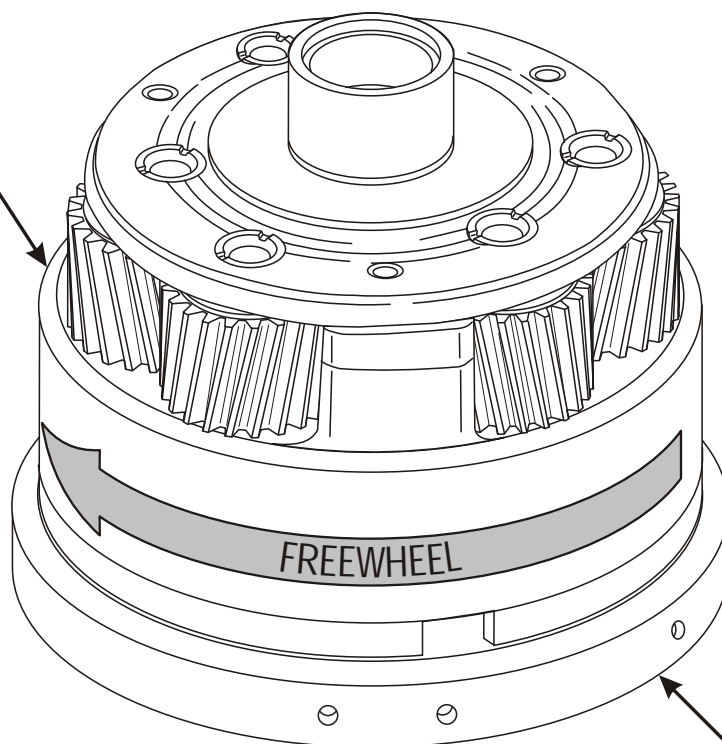
**FREEWHEEL  
DIRECT CLUTCH  
HOUSING**



## SAAB TB35, TB37 LOW ONE-WAY CLUTCH

*THE REAR PLANETARY MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING THE INNER RACE*

**FREEWHEEL  
PLANETARY**

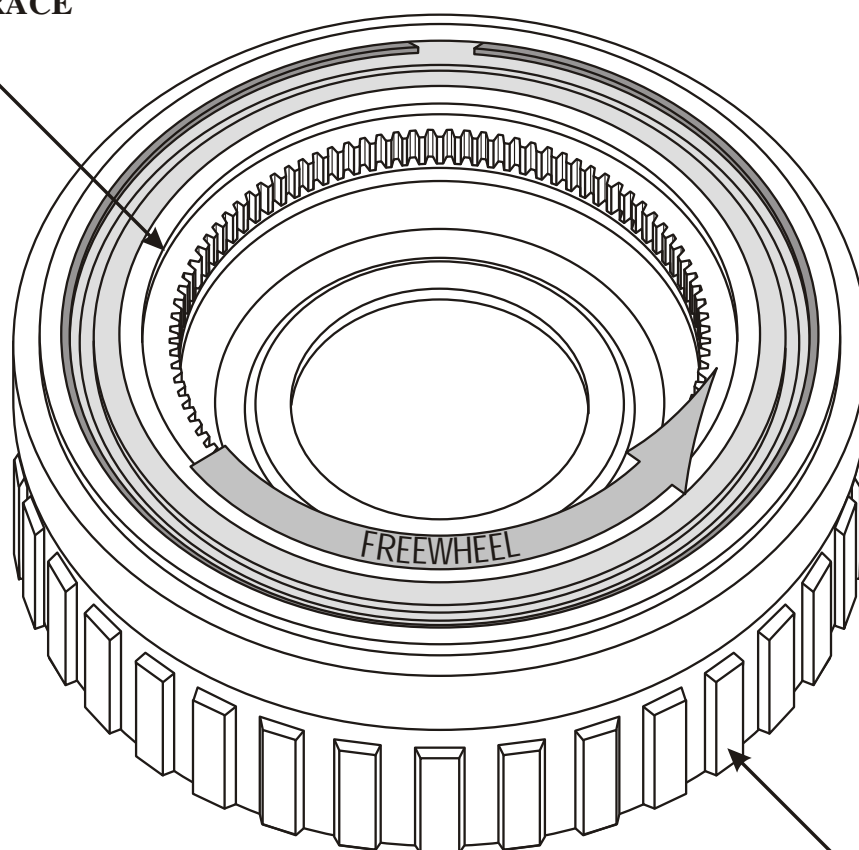


**HOLD  
INNER RACE**

## SAAB/VOLVO AW50-40, AW50-42LE LOW ONE-WAY CLUTCH

*THE INNER RACE MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE*

**FREEWHEEL  
INNER RACE**

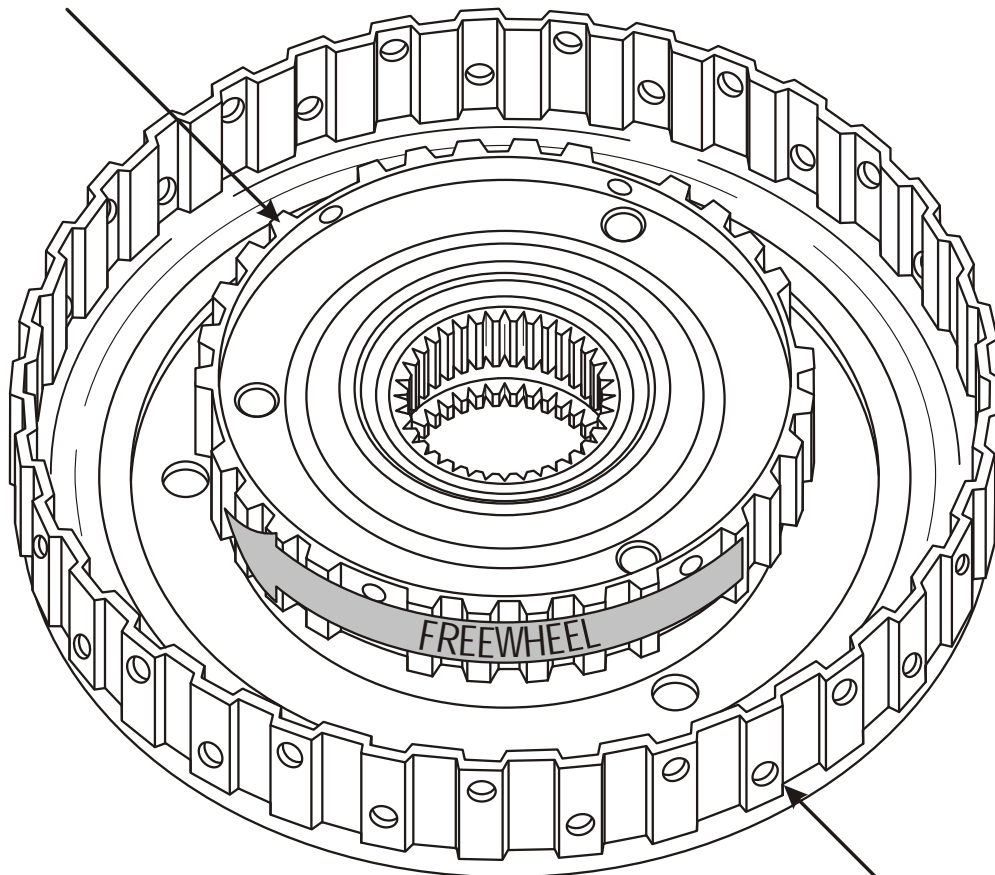


**HOLD  
CLUTCH HUB**

**SAAB/VOLVO AW50-40, AW50-42LE  
INTERMEDIATE SPRAG**

***THE OUTER SPRAG RACE MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE***

**FREEWHEEL  
OUTER RACE**

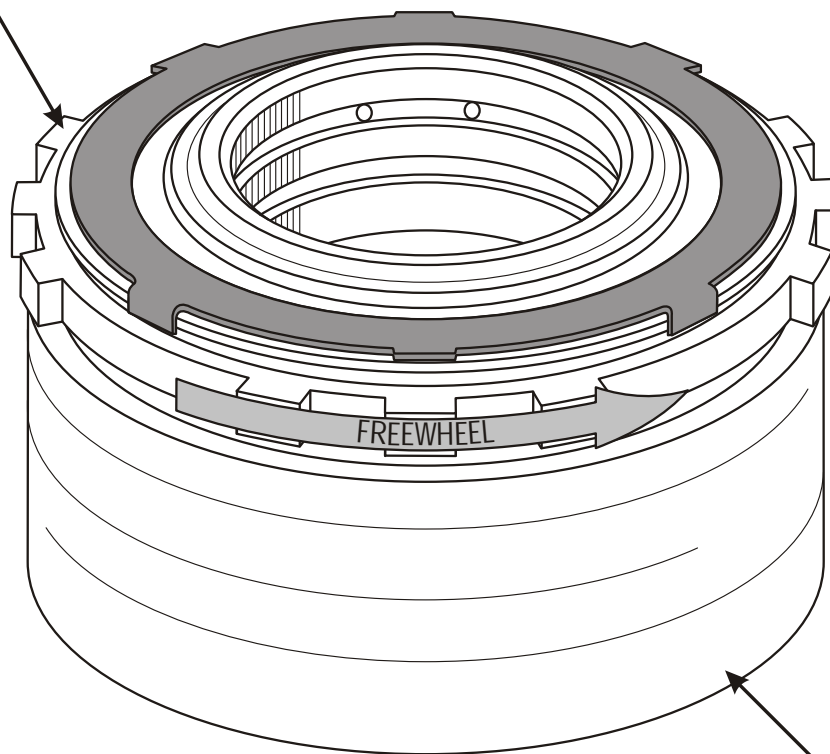


**HOLD  
HUB/INNER RACE**

**SAAB/VOLVO AW50-40, AW50-42LE  
UNDERDRIVE SPRAG**

*THE OUTER RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE, AS SHOWN BELOW*

**FREEWHEEL  
OUTER RACE**

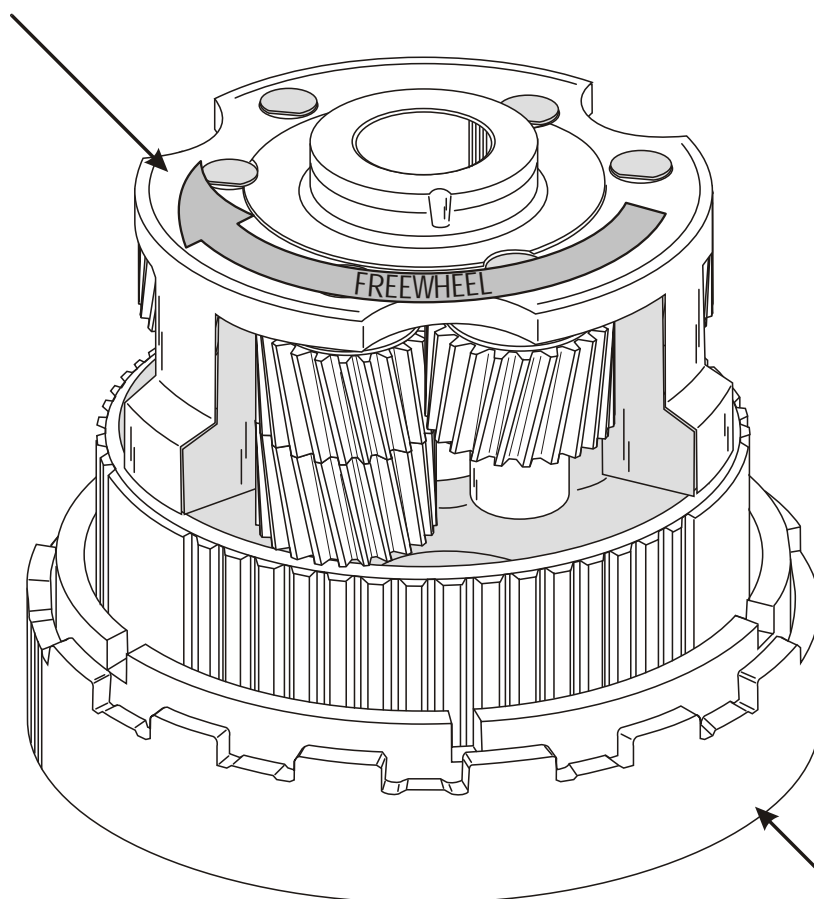


**HOLD  
UNDERDRIVE  
DRUM**

## SUBARU 3 SPEED LOW ONE-WAY CLUTCH

***THE PLANETARY ASSEMBLY MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING THE CENTER SUPPORT***

**FREEWHEEL  
PLANETARY  
ASSEMBLY**



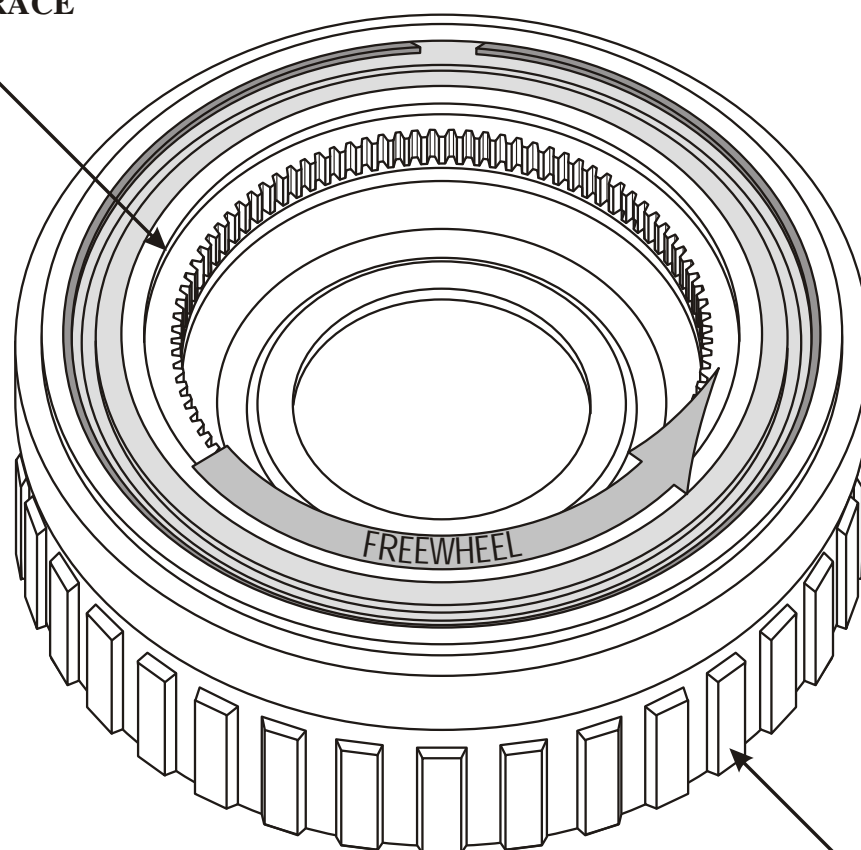
**HOLD  
CENTER  
SUPPORT**



## SUZUKI ESTEEM AW 60-40 LOW ONE-WAY CLUTCH

*THE INNER RACE MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE*

**FREEWHEEL  
INNER RACE**

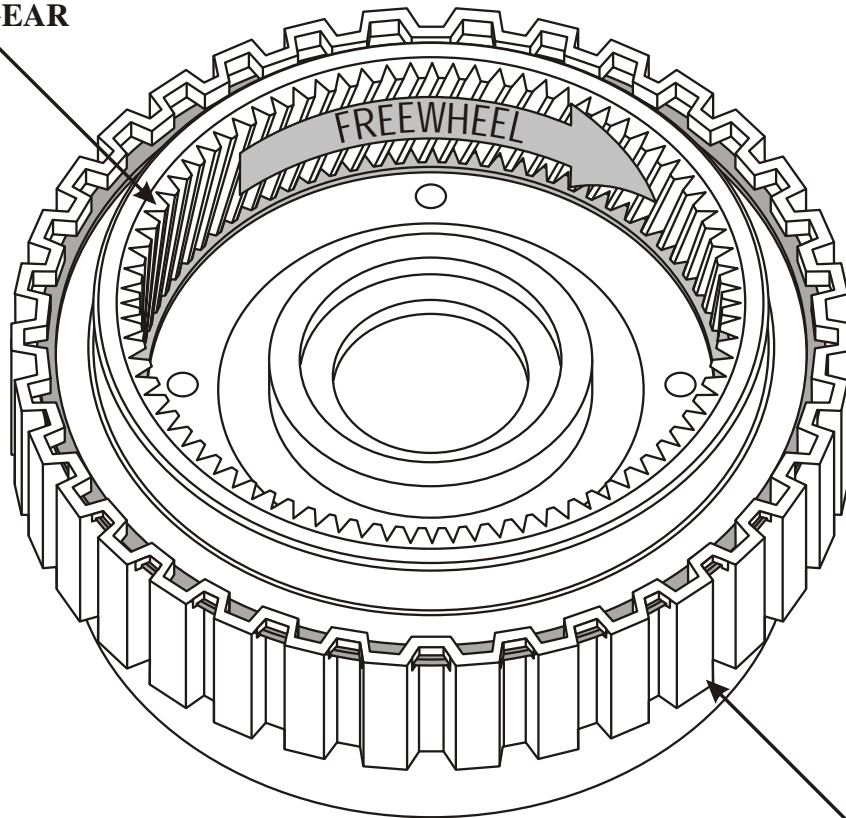


**HOLD  
CLUTCH HUB**

## SUZUKI ESTEEM AW 60-40 FORWARD SPRAG

***THE REAR INTERNAL RING GEAR MUST FREEWHEEL  
CLOCKWISE AND LOCK COUNTER CLOCKWISE***

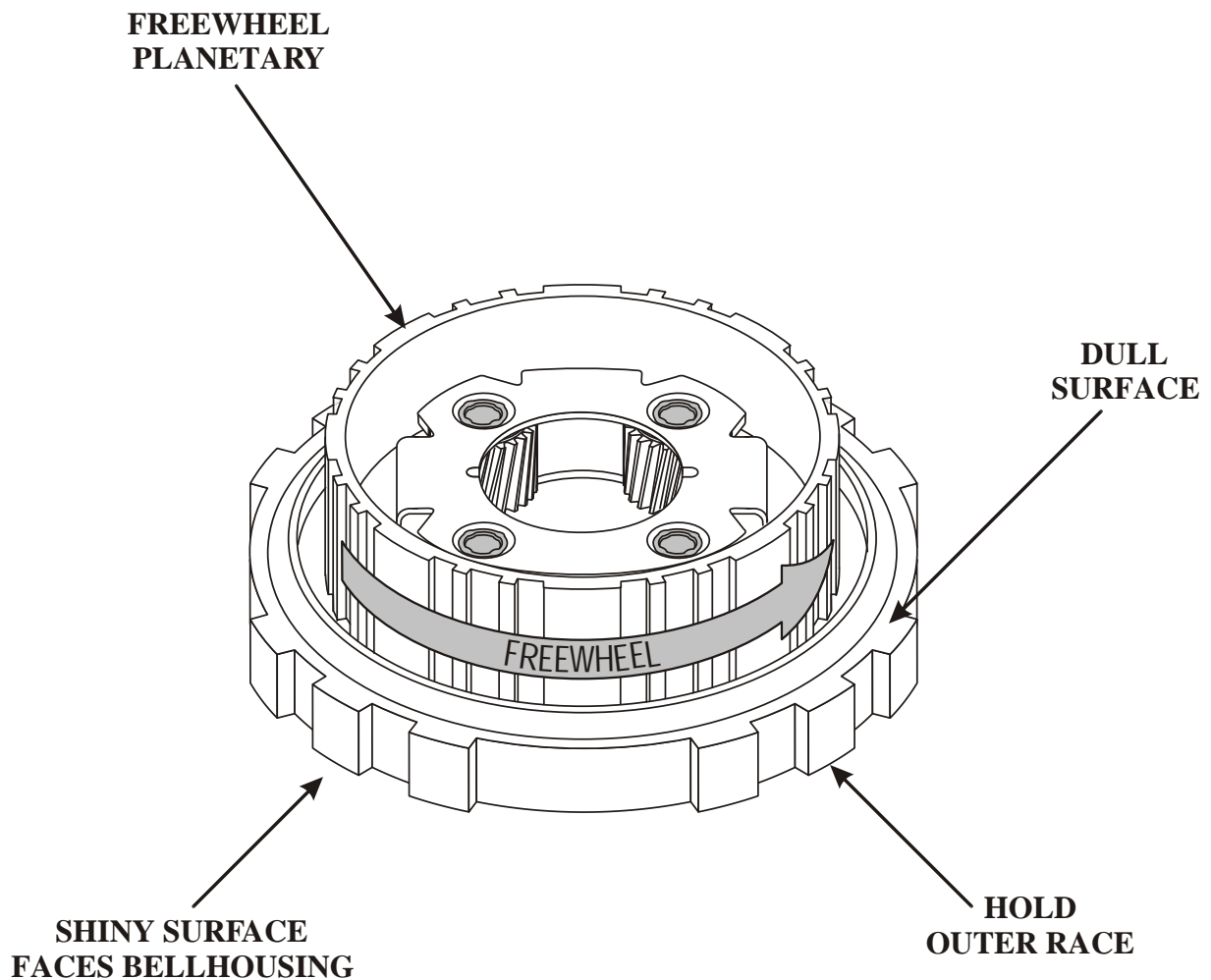
**FREEWHEEL  
RING GEAR**



**HOLD  
OVERDRIVE  
COAST DRUM**

## TOYOTA A130, A140, A240, A540 SERIES AND MX17 LOW ONE-WAY CLUTCH

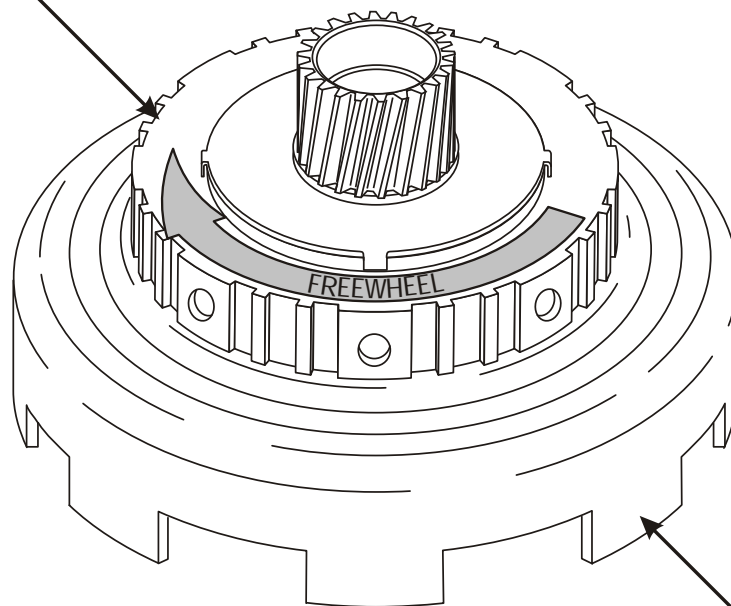
*THE PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE OUTER RACE IS HELD*



**TOYOTA A130, A140, A240, A540 SERIES  
INTERMEDIATE ONE-WAY CLUTCH**

***THE CLUTCH HUB MUST FREEWHEEL CLOCKWISE AND LOCK  
COUNTER CLOCKWISE WHEN THE SUN SHELL IS HELD***

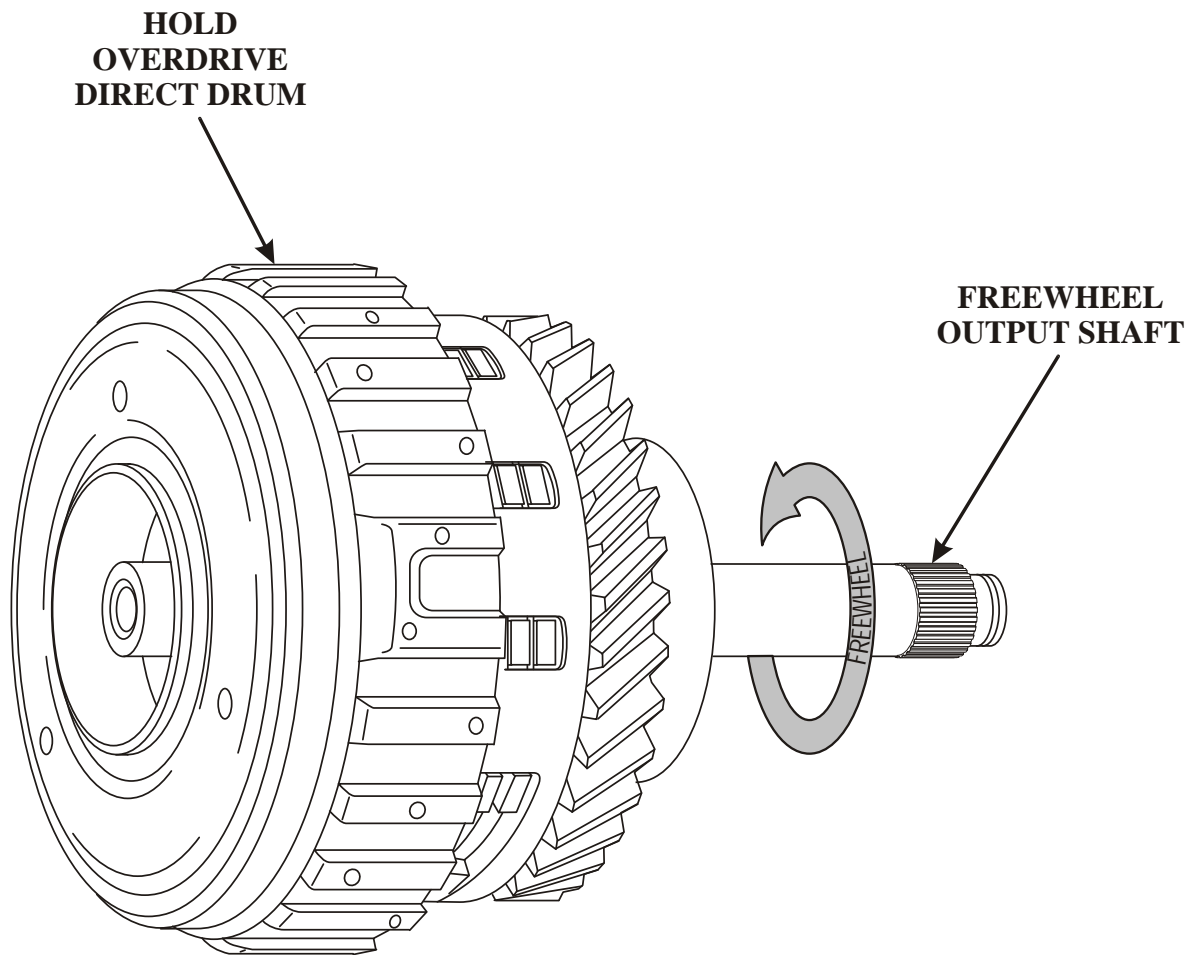
**FREEWHEEL  
CLUTCH HUB**



**HOLD  
SUN SHELL**

## TOYOTA A140, A540 SERIES OVERDRIVE ONE-WAY CLUTCH

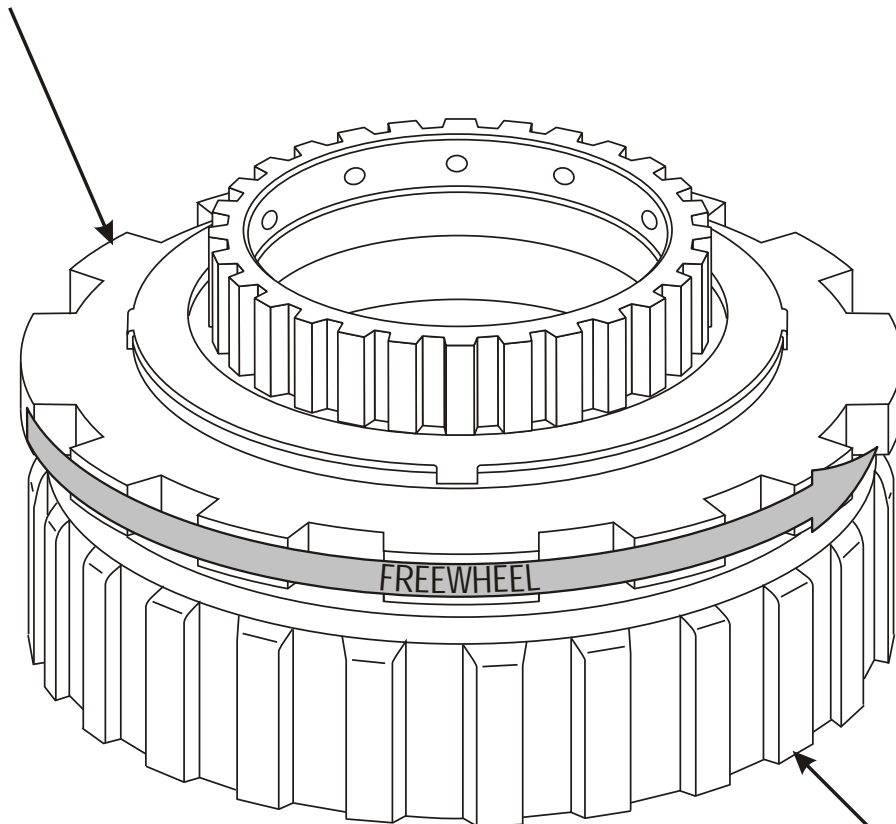
***THE SHAFT MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER  
CLOCKWISE WHEN THE OVERDRIVE DIRECT DRUM IS HELD***



## TOYOTA A240 SERIES UNDERDRIVE (F3) SPRAG

***THE UNDERDRIVE SPRAG OUTER RACE MUST FREEWHEEL  
COUNTER CLOCKWISE AND LOCK CLOCKWISE  
WHEN UNDERDRIVE HOUSING IS HELD***

**FREEWHEEL  
UNDERDRIVE SPRAG  
OUTER RACE**

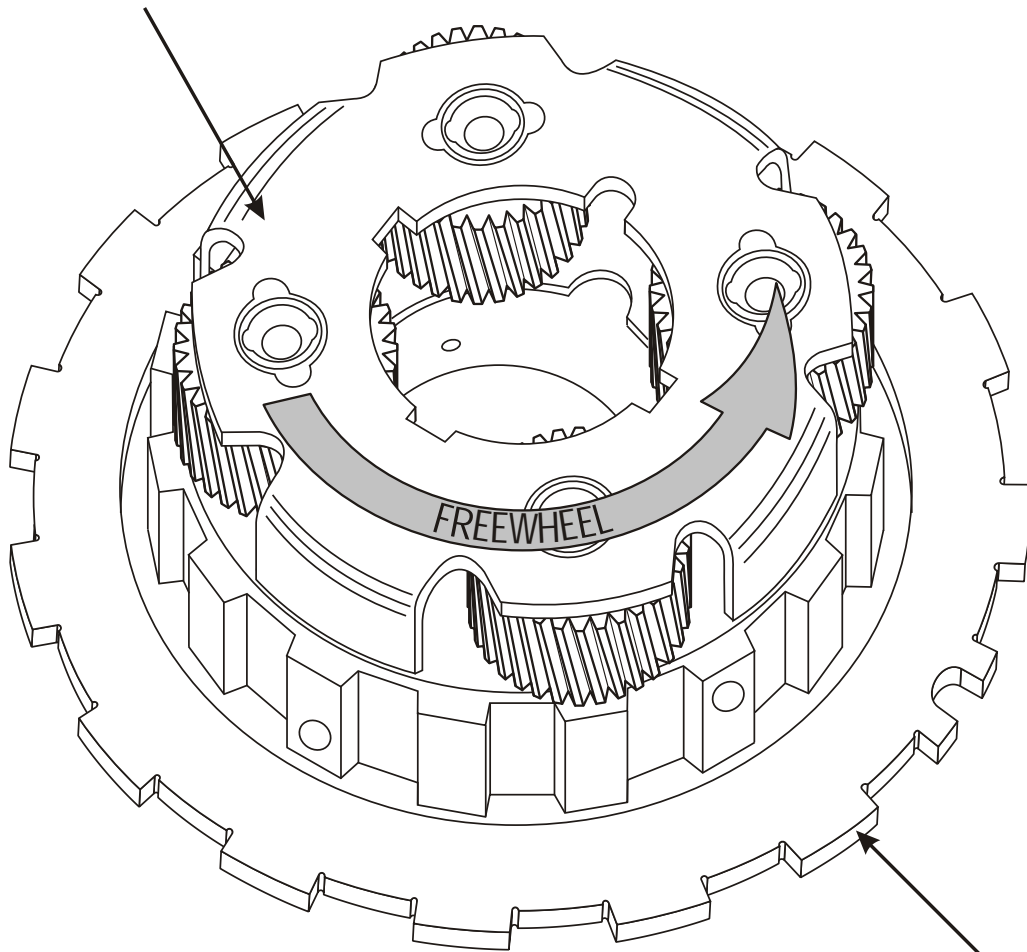


**HOLD  
UNDERDRIVE  
HOUSING**

## AW3, A40 SERIES, A55, LOW (NO. 2) ONE WAY CLUTCH

*THE PLANETARY MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE INNER RACE IS HELD*

**FREEWHEEL  
PLANETARY CARRIER**

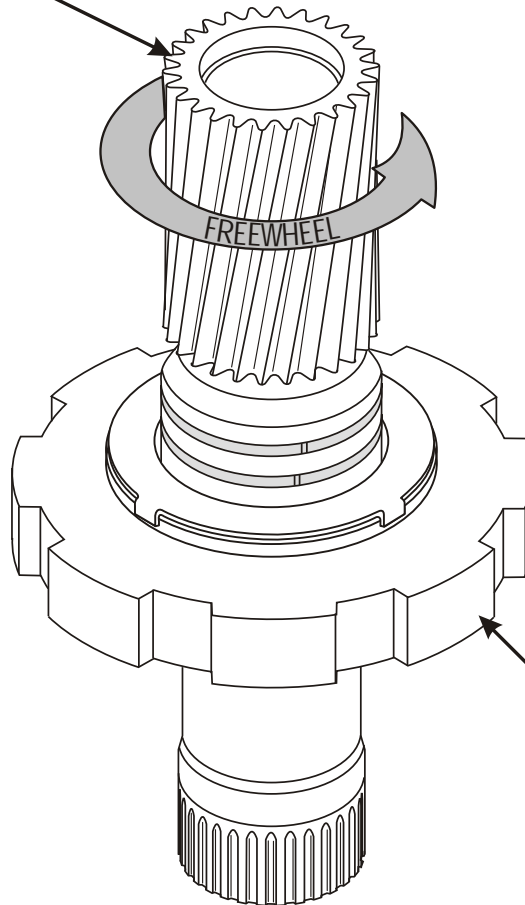


**HOLD  
INNER RACE**

**AW3, A40 SERIES, A55,  
2ND GEAR (NO. 1) ONE WAY CLUTCH**

***THE SUN GEAR MUST FREEWHEEL COUNTER CLOCKWISE AND LOCK  
CLOCKWISE WHEN THE ONE-WAY CLUTCH OUTER RACE IS HELD***

**FREEWHEEL  
SUN GEAR**



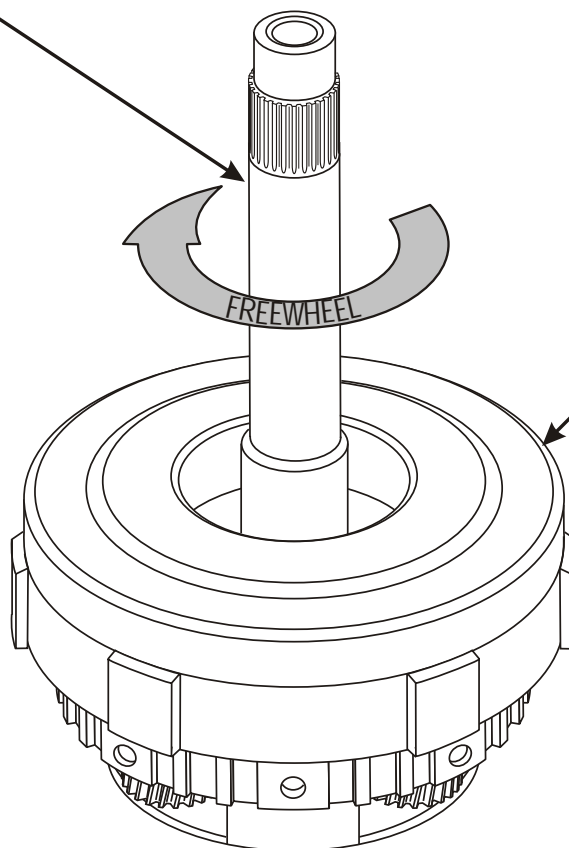
**HOLD  
OUTER RACE**



## A40 SERIES OVERDRIVE ONE WAY CLUTCH

***THE INPUT SHAFT MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN THE OVERDRIVE / DIRECT DRUM IS HELD***

**FREEWHEEL  
INPUT SHAFT**

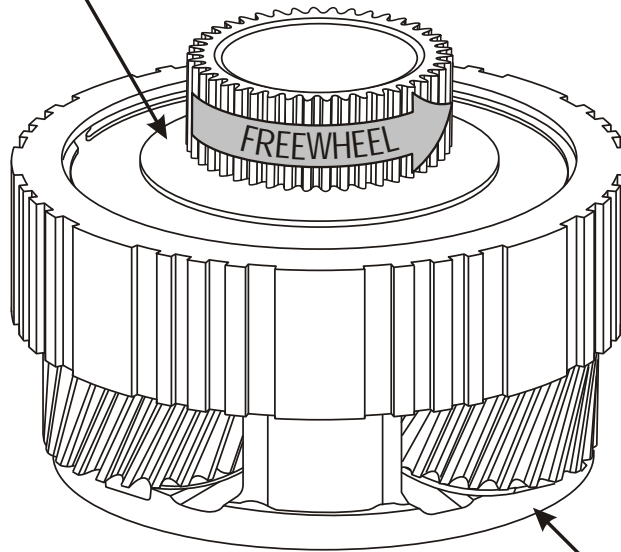


**HOLD  
OD/DIRECT  
DRUM**

## TOYOTA A340E, A340F, A340H, A341E, A350E, AW30-40LE, AW30-80LE, AW4, LOW (No. 2) ONE-WAY CLUTCH

***THE INNER RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN THE PLANETARY CARRIER IS HELD***

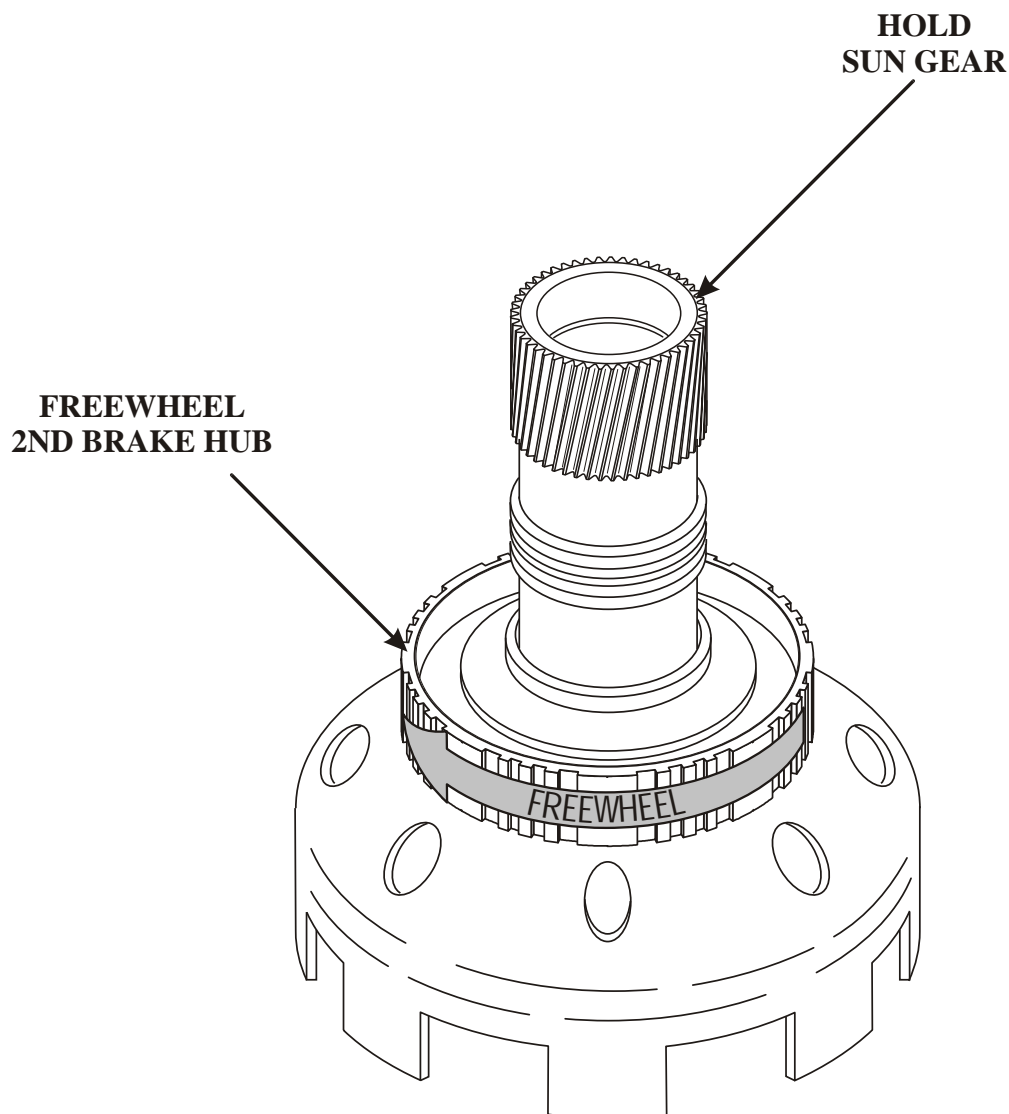
**FREEWHEEL  
INNER RACE**



**HOLD  
PLANETARY  
CARRIER**

## TOYOTA A340E, A340F, A340H, A341E, A350E, AW30-40LE, AW30-80LE, AW4, 2ND GEAR (No. 1) ONE-WAY CLUTCH

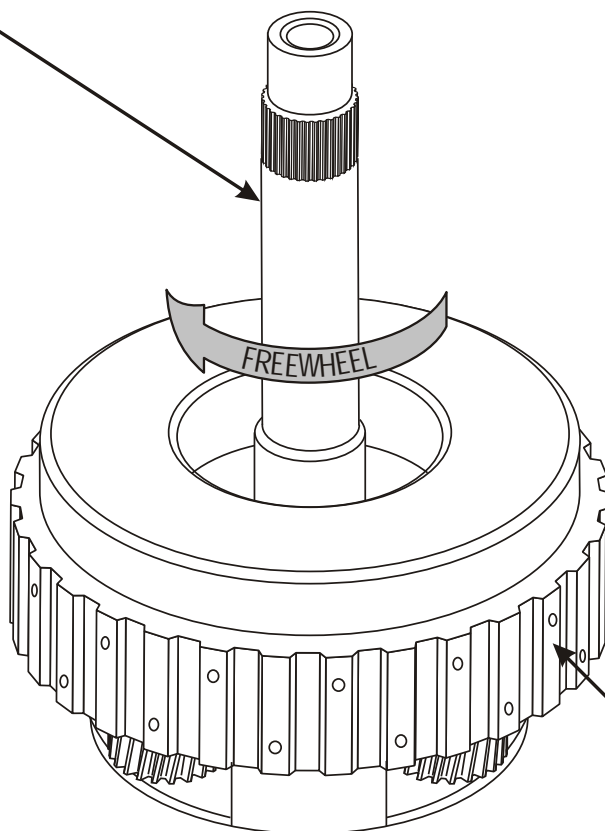
*THE 2ND BRAKE HUB MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING THE SUN GEAR*



## TOYOTA A340E, A340F, A340H, A341E, A350E, AW30-40LE, AW30-80LE, AW4, OVERDRIVE ONE-WAY CLUTCH

***THE INPUT SHAFT MUST FREEWHEEL CLOCKWISE AND LOCK  
COUNTER CLOCKWISE WHEN THE O/D DIRECT DRUM IS HELD***

**FREEWHEEL  
INPUT SHAFT**

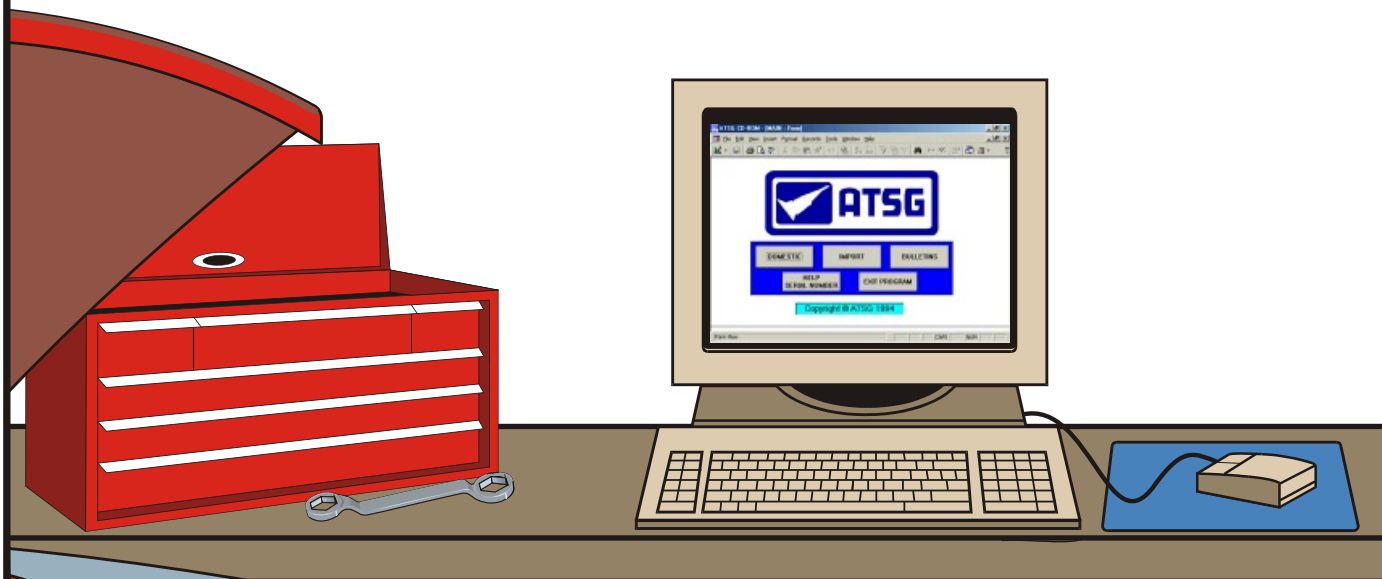


**HOLD  
OVERDRIVE  
DIRECT DRUM**



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AND MANUALS ON CD

THE BEST THING NEXT TO YOUR TOOL BOX  
IS A COMPLETE LIBRARY OF TECH AT YOUR  
FINGER TIPS...



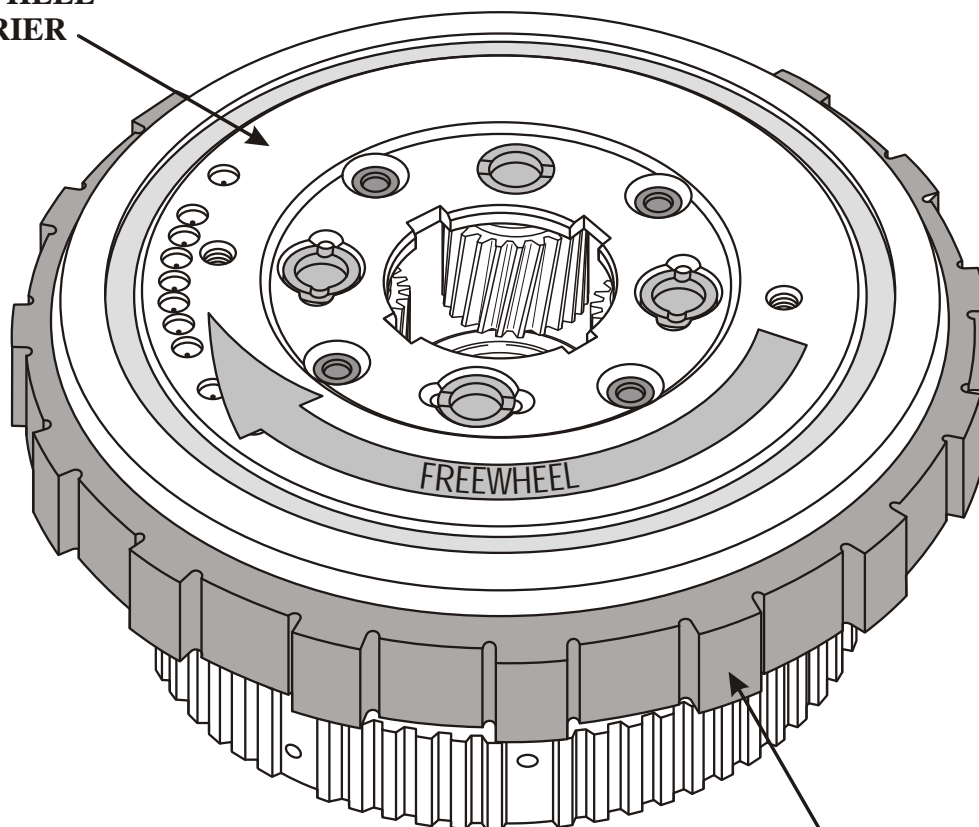
THE TECH YOU NEED...  
WHEN YOU NEED IT FAST...

FOR MORE INFORMATION  
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(800) 245-7722

## TOYOTA A440 SERIES LOW ONE-WAY CLUTCH

***THE PLANETARY CARRIER MUST FREEWHEEL CLOCKWISE AND  
LOCK COUNTER CLOCKWISE WHEN HOLDING OUTER RACE***

**FREEWHEEL  
CARRIER**

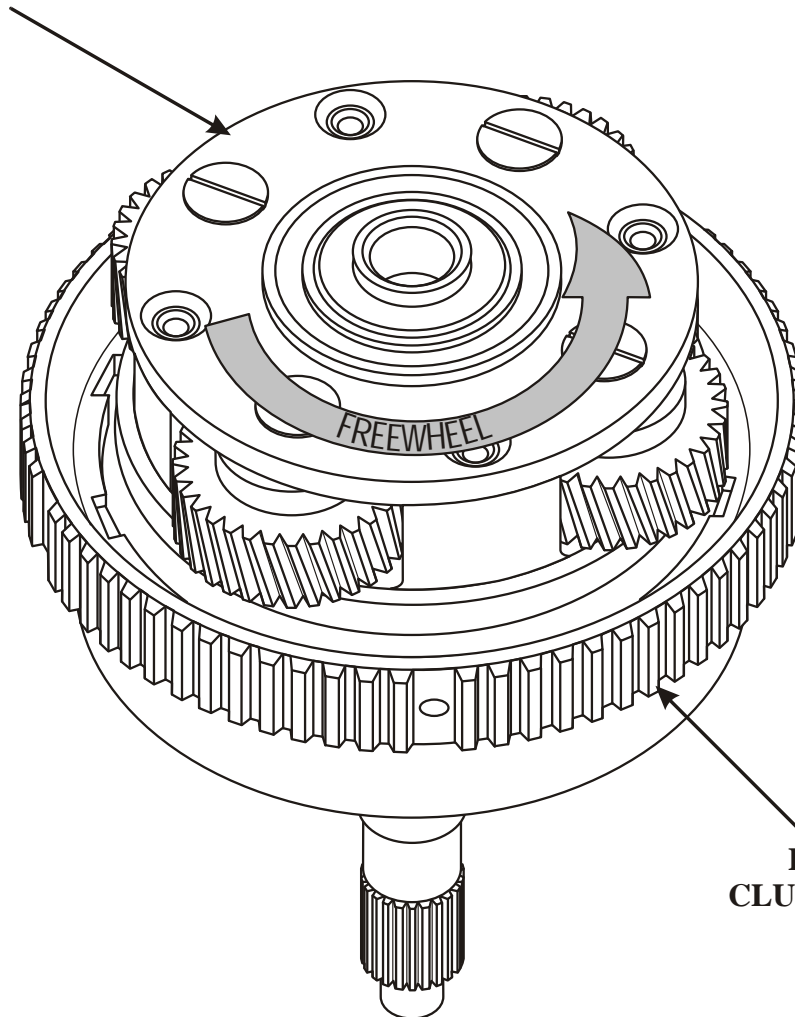


**HOLD  
OUTER RACE**

TOYOTA A440 SERIES  
OVERDRIVE SPRAG

***OVERDRIVE CARRIER MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING CLUTCH HUB***

**FREEWHEEL  
O.D. CARRIER**

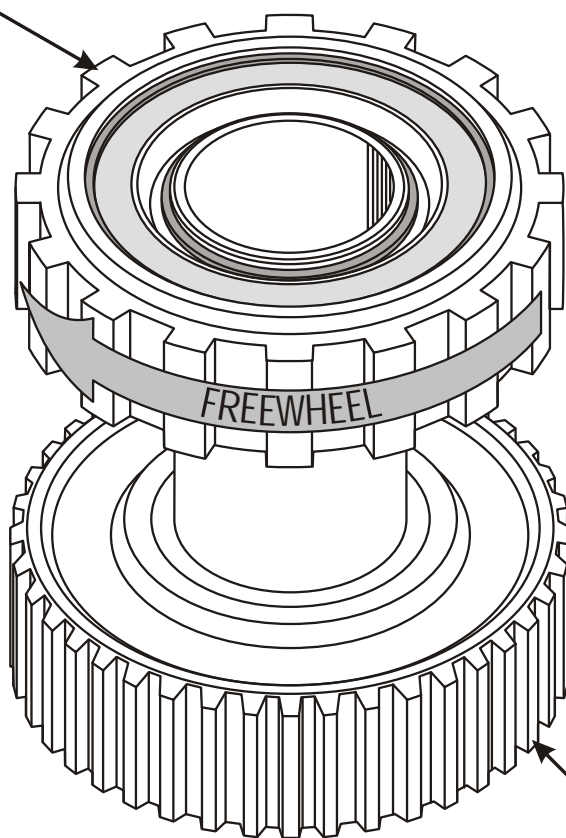


**HOLD  
CLUTCH HUB**

## LEXUS A650E LOW (No. 2) ROLLER CLUTCH

***THE LOW ROLLER OUTER RACE MUST FREEWHEEL CLOCKWISE  
AND LOCK COUNTER CLOCKWISE WHEN HOLDING THE INNER RACE***

**FREEWHEEL  
OUTER RACE**



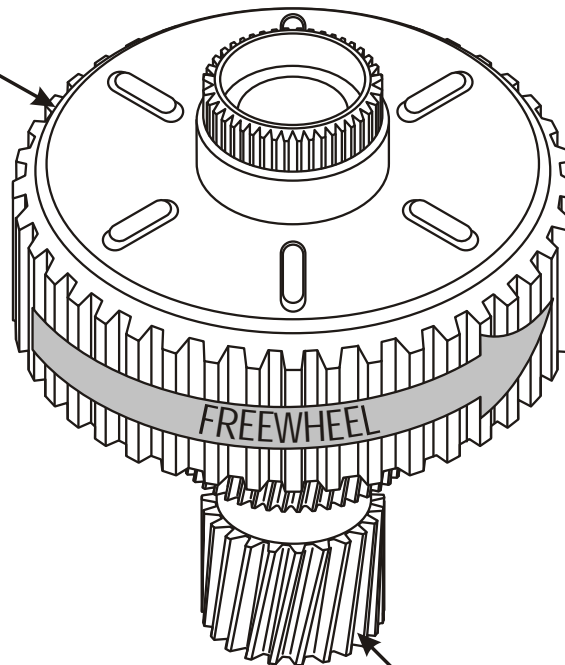
**HOLD  
CLUTCH HUB THAT IS  
SPLINED TO INNER RACE**



## LEXUS A650E 3RD GEAR (No. 1) ONE-WAY CLUTCH

***THE 3RD GEAR OUTER RACE MUST FREEWHEEL COUNTER CLOCKWISE  
AND LOCK CLOCKWISE WHEN HOLDING THE INNER RACE (SUN GEAR)***

**FREEWHEEL  
OUTER RACE**

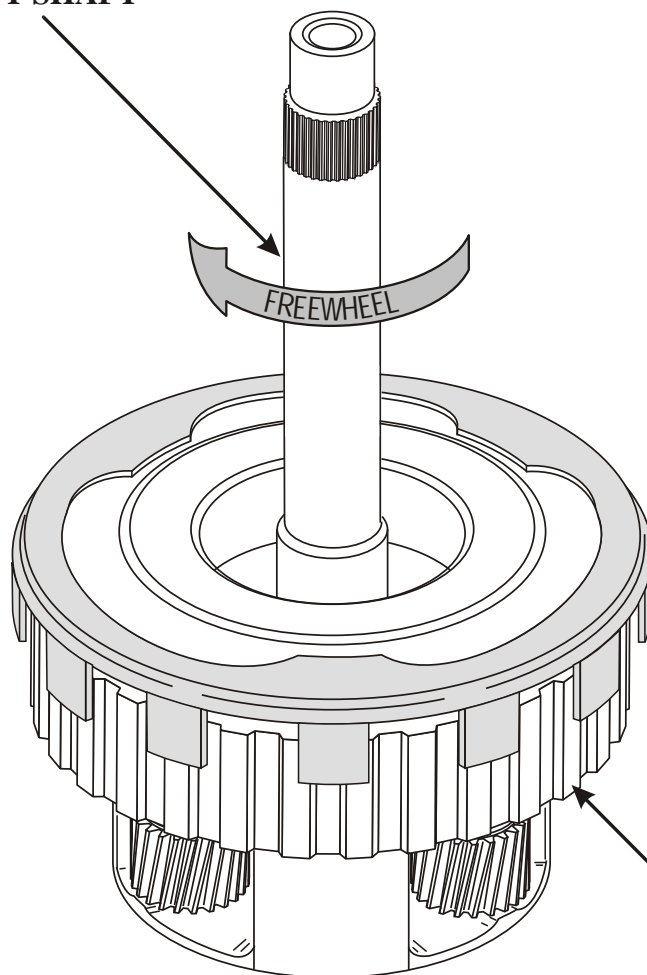


**HOLD  
SUN GEAR AND  
INNER RACE**

## LEXUS A650E OVERDRIVE SPRAG

***THE INPUT SHAFT MUST FREEWHEEL CLOCKWISE AND LOCK COUNTER CLOCKWISE WHEN THE O/D DIRECT DRUM IS HELD***

**FREEWHEEL  
INPUT SHAFT**



**HOLD  
OVERDRIVE  
DIRECT DRUM**



# FREEWHEEL BOOK

## *Notes*



# FREEWHEEL BOOK

## *Notes*