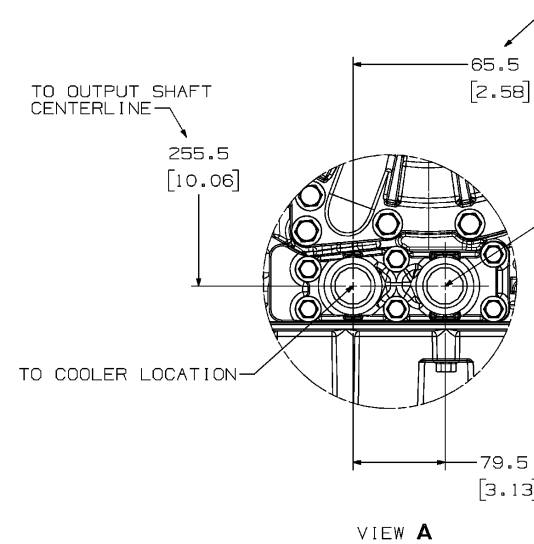


REMOVAL AND INSTALLATION CLEARANCE			
PART/ASSEMBLY	DIMENSION	DIRECTION *	DIRECTION
TRANSMISSION	106.0 (4.17)	HORIZONTAL	DISTANCE REQUIRED TO REMOVE TRANSMISSION
FILTERS	211.0 (8.31)	VERTICAL	CLEARANCE REQUIRED BELOW CONTROL MODULE FOR FILTER AND COVER REMOVAL
MAIN PRESSURE TAPS	38.0 (1.50)	PERPENDICULAR	CLEARANCE REQUIRED FROM CONTROL MODULE FOR PLUG REMOVAL
DRAIN PLUG	24.8 (1.98)	VERTICAL	CLEARANCE REQUIRED FROM CONTROL MODULE FOR PLUG REMOVAL
SPEED SENSOR CONNECTOR	40.0 (1.57)	HORIZONTAL	CLEARANCE REQUIRED TO REMOVE WIRING HARNESS FROM SPEED SENSOR

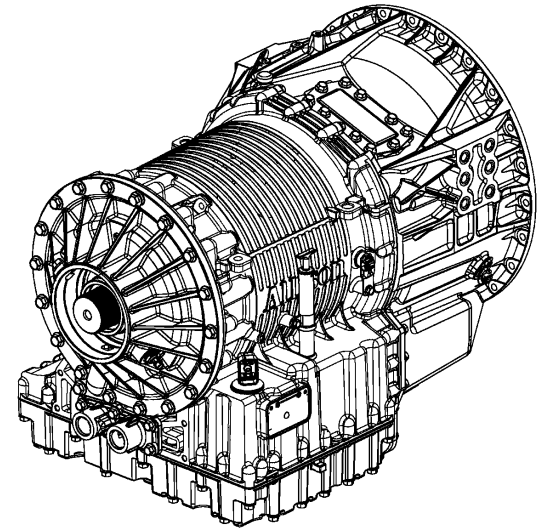
\* TRANSMISSION VIEWED FROM THE SIDE



COOLER RETURN LOCATION  
 SOCIETY OF AUTOMOTIVE ENGINEERS  
 1.3125 STRAIGHT THREAD  
 O-RING CONNECTION INCH SERIES THREAD  
 TORQUE COOLER FITTINGS TO  
 54-68 N·m (40-50 LB-FT)

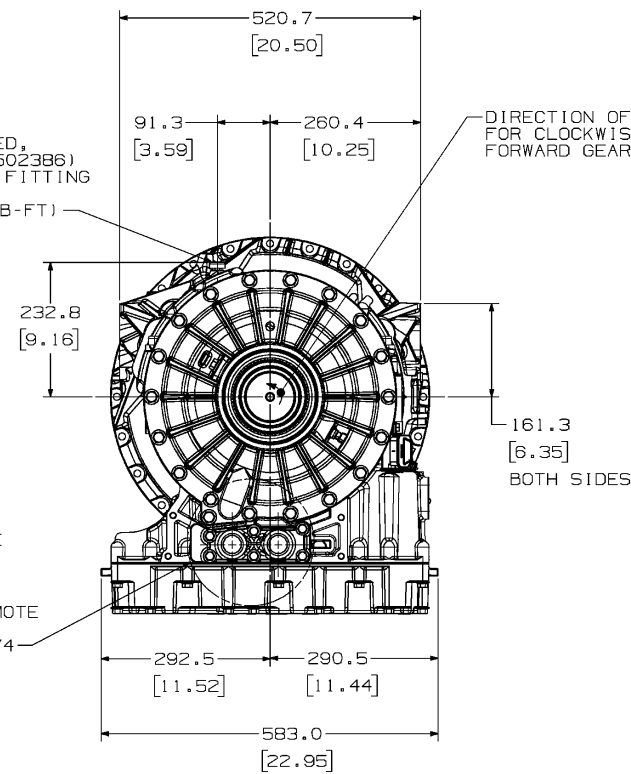
"TWO-WRENCH" INSTALLATION METHOD IS RECOMMENDED TO PREVENT ADDITIONAL ROTATION OF COOLER FITTINGS WHEN ATTACHING HOSES. FAILURE TO DO SO MAY RESULT IN AN OVERTORQUE CONDITION AT THE FITTING IN THE TRANSMISSION.

FOR EXTERNAL HYDRAULIC CIRCUIT REQUIREMENTS NOT SHOWN, SEE 4000 PRODUCT FAMILY TRANSMISSION SPECIFICATIONS



ISOMETRIC VIEW

BREATHER  
 M10 X 1.5-6g  
 IF A REMOTE BREATHER IS USED,  
 AN ALLISON ADAPTER (P/N 29502386)  
 MUST BE USED TO ADAPT THIS FITTING  
 TO M12 X 1.5-6H  
 TORQUE TO 12-16 N·m (9-12 LB-FT)



FOR STANDARD REMOTE COOLER PROVISION SEE VIEW A

FOR FRONT MOUNT REMOTE COOLER PROVISION SEE DRAWING AS67-474

DIRECTION OF ROTATION IS SHOWN FOR CLOCKWISE INPUT ROTATION AND FORWARD GEAR

OIL FILL TUBE MOUNTING BRACKET LOCATION SEE DRAWING AS67-460

TRANSMISSION HARNESS MOUNTING BRACKET LOCATION SEE DRAWING AS67-431 FOR LOCATION

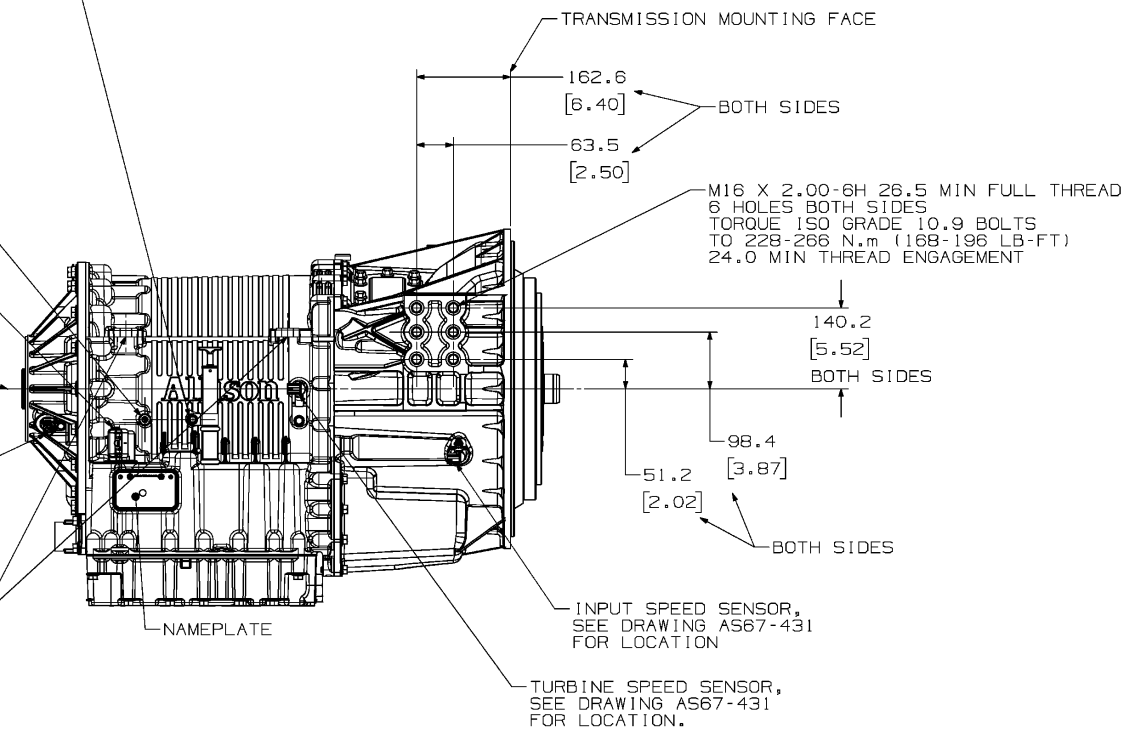
FOR MAIN ELECTRICAL CONNECTOR DESCRIPTION SEE DRAWING AS67-431

OUTPUT SHAFT FOR OUTPUT DRIVE FLANGE DATA AND AVAILABLE OUTPUT FLANGES AND YOKES SEE DRAWING AS67-441 AND DRAWING AS67-442

OUTPUT SPEED SENSOR SEE DRAWING AS67-431 FOR LOCATION

MACHINING LUGS (BOTH SIDES) USED FOR MANUFACTURING-MAY BE USED TO LIFT THE TRANSMISSION.

THESE LUGS WERE NOT DESIGNED TO PROVIDE STRUCTURAL SUPPORT FOR ANCILLARY EQUIPMENT. IF USED FOR THAT PURPOSE, STRICT REQUIREMENTS MUST BE MET. REFER TO DISCUSSION REGARDING DESIGN CONSIDERATIONS IN SECTION B, TRANSMISSION/ENGINE PACKAGING, OF THE TRANSMISSION INSTALLATION MANUAL. FOR LOCATIONS, SEE DRAWING AS67-431



ALLISON 4th GENERATION CONTROLS

TORQUES SHOWN ARE FOR PLAIN (NON-PLATED) FASTENERS AND OTHER THREADED COMPONENTS SUPPLIED AND INSTALLED BY THE VEHICLE BUILDER. TORQUE REQUIREMENTS SHOULD BE REVIEWED IF PLATED FASTENERS WILL BE USED. CONSULT THE SUPPLIER.

FOR WIRING HARNESS INFORMATION, REFER TO TECHNICAL DOCUMENT 173 (TD173)

FOR CONTROLS INFORMATION REFER TO ALLISON 4TH GENERATION CONTROLS TECH DATA

FOR TRANSMISSION SPECIFICATIONS NOT SHOWN, SEE "TRANSMISSION SPECIFICATIONS" SECTION OF THE TECH DATA BOOK

DIMENSIONS SHOWN IN PARENTHESES ARE IN INCHES, AND ARE FOR REFERENCE ONLY.

REV	DESCRIPTION	DATE	BY	CHK
C	ADDED "TORQUES SHOWN ARE FOR PLAIN..." NOTE REVISD "COOLER RETURN LOCATION..." CALLOUT SEE SHEET 2	15JUN07	RH-WF	
B	REMOVED LIMIT FOR LOADS AT MACHINING LUG ON MAIN CASE. REPLACED WITH NOTE AND REFERENCE TO INSTALLATION MANUAL. ADDED "DO NOT REMOVE" NOTE TO BOLTS WHICH RETAIN OIL PUMP. ADDED SEVERAL REFERENCES TO AS67-431	08M08	RH-LH	
A	UPDATE TO LATEST HARDWARE REVISD "ASSEMBLY PADS BOTH SIDES" TBD WAS 59 N·m (43 LB-FT) TBD WAS 70 N·m (52 LB-FT) ADDED NOTE "MAIN HOUSING SHOWN CUTAWAY FOR CLARITY"	20MY05	RH-WF	

UG  
 FR2  
 METRIC  
 THIRD ANGLE

REV	DESCRIPTION	DATE	BY	CHK
FR2	CHWIDE RESTRICTED			

ALLISON Transmission  
 General Motors Corporation  
 Indianapolis, Indiana

INSTALLATION DRAWING-BASIC MODELS, PTO DEEP SUMP

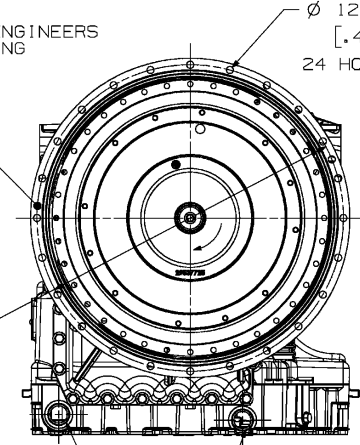
MODEL 4000 PRODUCT FAMILY  
 SIZE/CAGE CODE DWG NO  
 R 73342 AS67-402

SCALE NONE SHEET 1 OF 2

FR1	DWG. NO. AS67-402	LTR SH C I
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AS67-402

SOCIETY OF AUTOMOTIVE ENGINEERS  
NUMBER 1 FLYWHEEL HOUSING  
MOUNTING FACE



Ø 12.02 - 12.37 THRU  
[.473 - .487]  
24 HOLES EQUALLY SPACED

Ø 530.22  
[20.875]  
BOLT CIRCLE  
REFERENCE

FOR FRONT MOUNT REMOTE  
COOLER PROVISION  
AND REQUIREMENTS  
NOT SHOWN SEE  
DRAWING AS67-474

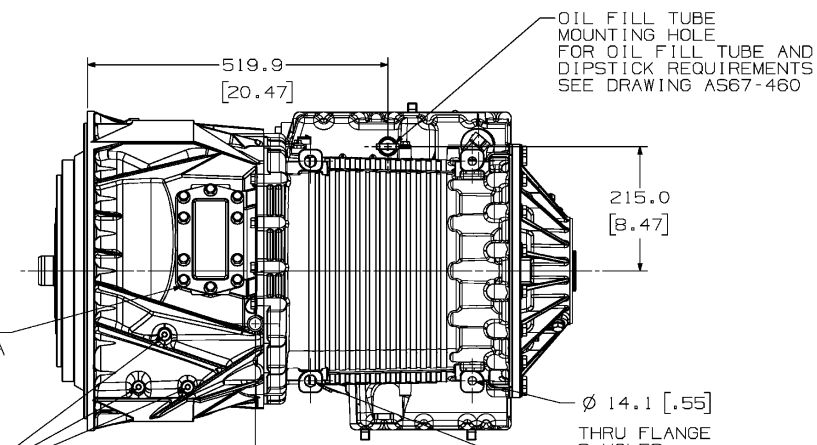
SOCIETY OF AUTOMOTIVE ENGINEERS  
1.3125 STRAIGHT THREAD  
O-RING CONNECTION INCH SERIES THREAD

EXTERNAL M10 X 35 LONG CONVERTER HOUSING-TO-MAIN  
CASE BOLT (14 PLACES)  
MAY BE REMOVED AND REINSTALLED FOR ATTACHMENT  
OF BRACKET WITH MAXIMUM THICKNESS OF 2.110(08) .  
FOR BRACKETS WITH THICKNESS GREATER THAN 2.1 MM,  
A 40 MM BOLT MUST BE USED TO MAINTAIN ADEQUATE  
THREAD ENGAGEMENT. A WASHER MAY BE REQUIRED TO  
PREVENT BOTTOMING OUT OF BOLT IN THE TAPPED HOLE.  
BRACKET AND WASHER MUST HAVE COMBINED THICKNESS  
OF 5.0-6.0 MM (0.24-0.24 IN)  
MAXIMUM OF TWO PER TRANSMISSION.  
ALL BOLTS MUST BE RE-TORQUED TO 61-72 N·m (45-53 LB-FT) .

POWER TAKE-OFF MOUNTING PAD-2 PLACES  
FOR ENGINE DRIVEN POWER TAKE-OFF DATA  
SEE DRAWING AS67-085

PROVISION FOR ATTACHING HARNESS OR  
BRACKET, SEE DRAWING AS67-431  
FOR DESCRIPTION AND LOCATION (3 PLACES)

TRANSMISSION MOUNTING FACE



OIL FILL TUBE  
MOUNTING HOLE  
FOR OIL FILL TUBE AND  
DIPSTICK REQUIREMENTS  
SEE DRAWING AS67-460

215.0  
[8.47]

519.9  
[20.47]

Ø 14.1 [.55]

THRU FLANGE  
2 HOLES

290.4  
[11.43]

Ø 19.0 [.75]

THRU FLANGE  
2 HOLES  
SEE MACHINING LUGS  
NOTE ON SHEET 1

TO END OF OUTPUT SHAFT

845.8  
[33.30]

839.4  
[33.05]

760.1  
[29.93]

304.0  
[11.97]

BOSS FOR ATTACHING  
HARNESS OR BRACKET,  
SEE DRAWING AS67-431,  
FOR DESCRIPTION AND LOCATION.

LOCATION OF TACHOGRAPH DRIVE  
PROVISION WHEN AVAILABLE  
SEE DRAWING AS67-456

R 219.0  
[8.62]

374.7  
[14.75]

345.8  
[13.62]

FOR ENGINE ADAPTATION  
REQUIREMENTS  
SEE DRAWING AS67-020

Ø 552.4  
[21.75]

FOR CLEARANCE REQUIRED TO REMOVE  
DRAIN PLUG SEE REMOVAL AND INSTALLATION  
CLEARANCE CHART

MAIN PRESSURE TAP PLUG  
.4375-20 UNF-2A INCH SERIES THREAD  
TORQUE TO 10-13 N·m (7-10 LB-FT)

FOR CLEARANCE REQUIRED TO REMOVE  
OIL FILTER AND COVER SEE REMOVAL AND  
INSTALLATION CLEARANCE CHART

OIL FILTER COVERS RETAINED  
WITH 6 BOLTS INDICATED **B**  
2 PLACES  
M10 X 1.5-6g X 55 LONG  
TORQUE TO 51-61 N·m (38-45 LB-FT)

MAGNETIC DRAIN PLUG  
.750-16 UNF-2A INCH SERIES THREAD  
TORQUE TO 25-32 N·m (18-24 LB-FT)

Ø 148.0  
[5.83]

788.3  
[31.04]

697.4  
[27.46]

457.4  
[18.01]

42.8  
[1.68]

206.5  
[8.13]

126.0  
[4.96]

171.0  
[6.73]

119.6  
[4.71]

436.9  
[17.20]

BOLT FOR RETAINING OIL SUMP  
TO TRANSMISSION.  
DO NOT REMOVE OR USE TO ATTACH  
AUXILIARY EQUIPMENT TO TRANSMISSION.  
28 PLACES AROUND PERIPHERY OF SUMP.

ALLISON 4th  
GENERATION  
CONTROLS

UG

FR2

METRIC

THIRD ANGLE

THE INFORMATION CONTAINED HEREIN IS PROPRIETARY AND THE  
PROPERTY OF ALLISON TRANSMISSION, GENERAL MOTORS CORPORATION  
AND MAY NOT BE REPRODUCED, DISCLOSED OR USED FOR ANY  
PURPOSE OTHER THAN A QUOTATION TO OR AN ORDER FROM ALLISON  
TRANSMISSION WITHOUT THE SPECIFIC WRITTEN AUTHORIZATION OF  
ALLISON TRANSMISSION.

REV	DESCRIPTION	DATE	BY	CHK
C	ADDED "PROVISION FOR ATTACHING HARNESS..." CALLOUT ADDED "BOSS FOR ATTACHING..." CALLOUT ADDED "EXTERNAL M10 X 35 LONG CONVERTER..." NOTE REVISED Ø 19.0 [.75] DIM ADDED "SEE MACHINING LUGS NOTE ON SHEET 1"	18.N07	RH	WF
B	SEE SHEET 1	18.N06	RH	WF
A	UPDATE TO LATEST HARDWARE "848.8(33.42) TO END OF OUTPUT SHAFT" WAS "847.6(33.37)"	20M05	RH	WF

REVISIONS	
DRAWN R.HOBGINS	DATE 07.N04
CHECKED W.F.FLOCK	DATE 08.N04
APPROVED K.SCHNABEL	DATE 08.N04
PROD. ENGR. W.F.FLOCK	DATE 08.N04
APPL. ENGR. B.LADD	DATE 08.N04

MODEL	4000 PRODUCT FAMILY
SIZE/CAGE CODE/DWG NO	R 73342 AS67-402
SCALE	NONE
SHEET	2

FR1 DWG. NO. AS67-402

LTR SH

C 2