



**POWERTRAIN CONTROL SOLUTIONS**  
Engineering the future of driveline control.

## 2024 GSE PARTS CATALOG

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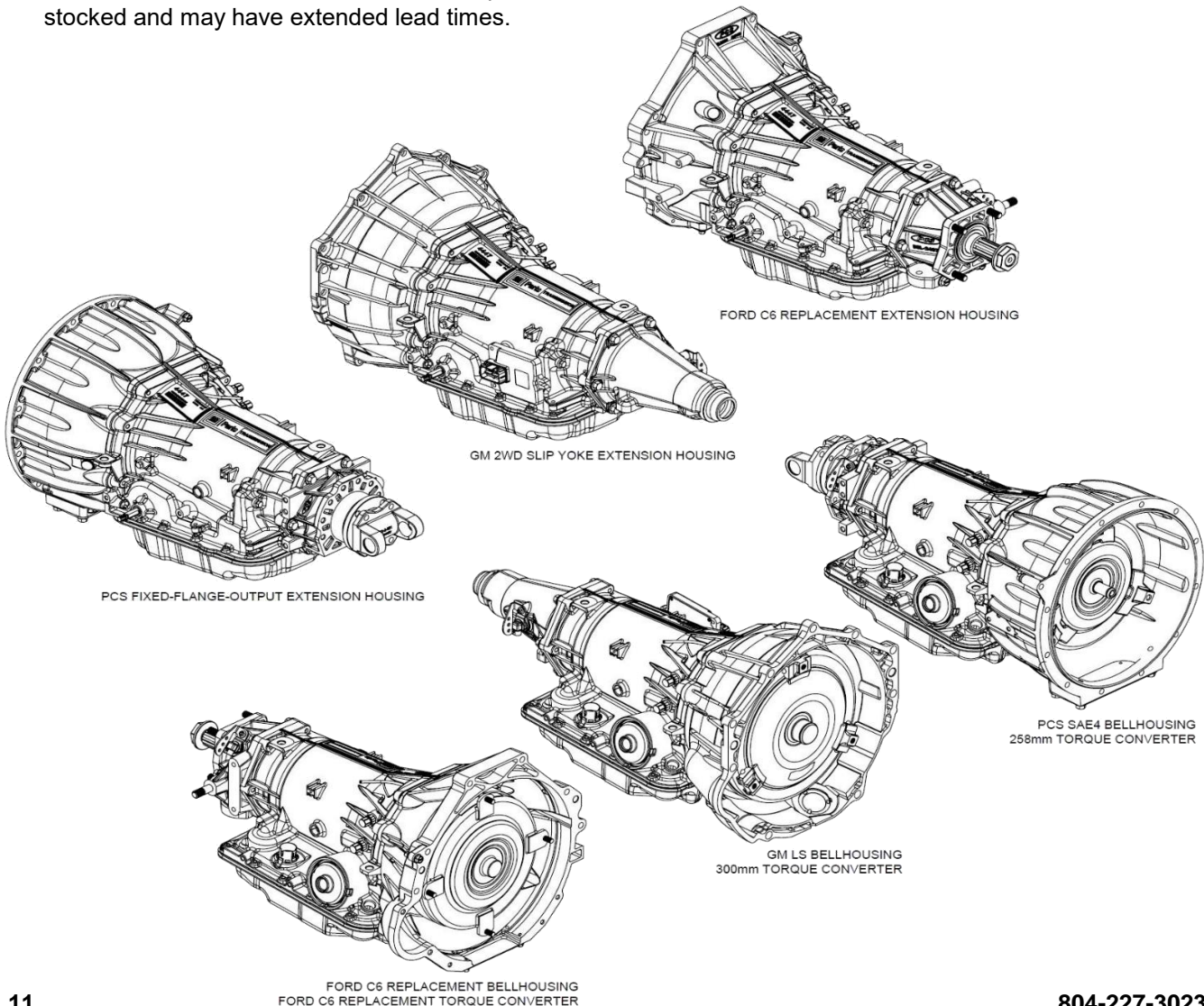
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## FACTORY NEW 4LHD / 4LHDX TRANSMISSIONS

PCS P/N	VALVEBODY	CONVERTER	BELLHOUSING	OUTPUT
TRN4347	GEN-3	GM 258mm	SAE4 (Standard)	Fixed Flange
TRN4331	GEN-3	GM 300mm	SAE4	Fixed Flange
TRN4362	GEN-3	C6 258mm	C6 Replacement	Fixed Flange
TRN4267	GEN-3	GM 258mm	SAE4	C6 Replacement
TRN4265	GEN-3	C6 258mm	C6 Replacement	C6 Replacement
TRN4447	GEN-3	GM 258mm	SAE4	4WD (No Housing)
TRN4431	GEN-3	GM 300mm	SAE4	4WD (No Housing)
TRN4462	GEN-3	C6 258mm	C6 Replacement	4WD (No Housing)

The Factory New "4xxx Series" 4LHD / 4LHDX transmissions listed above are readily available for new vehicle designs and upgrade packages. The "5xxx Series" transmissions listed to the right are Remanufactured units intended as field replacements and bulk orders. Not all "5xxx Series" units are stocked and may have extended lead times.

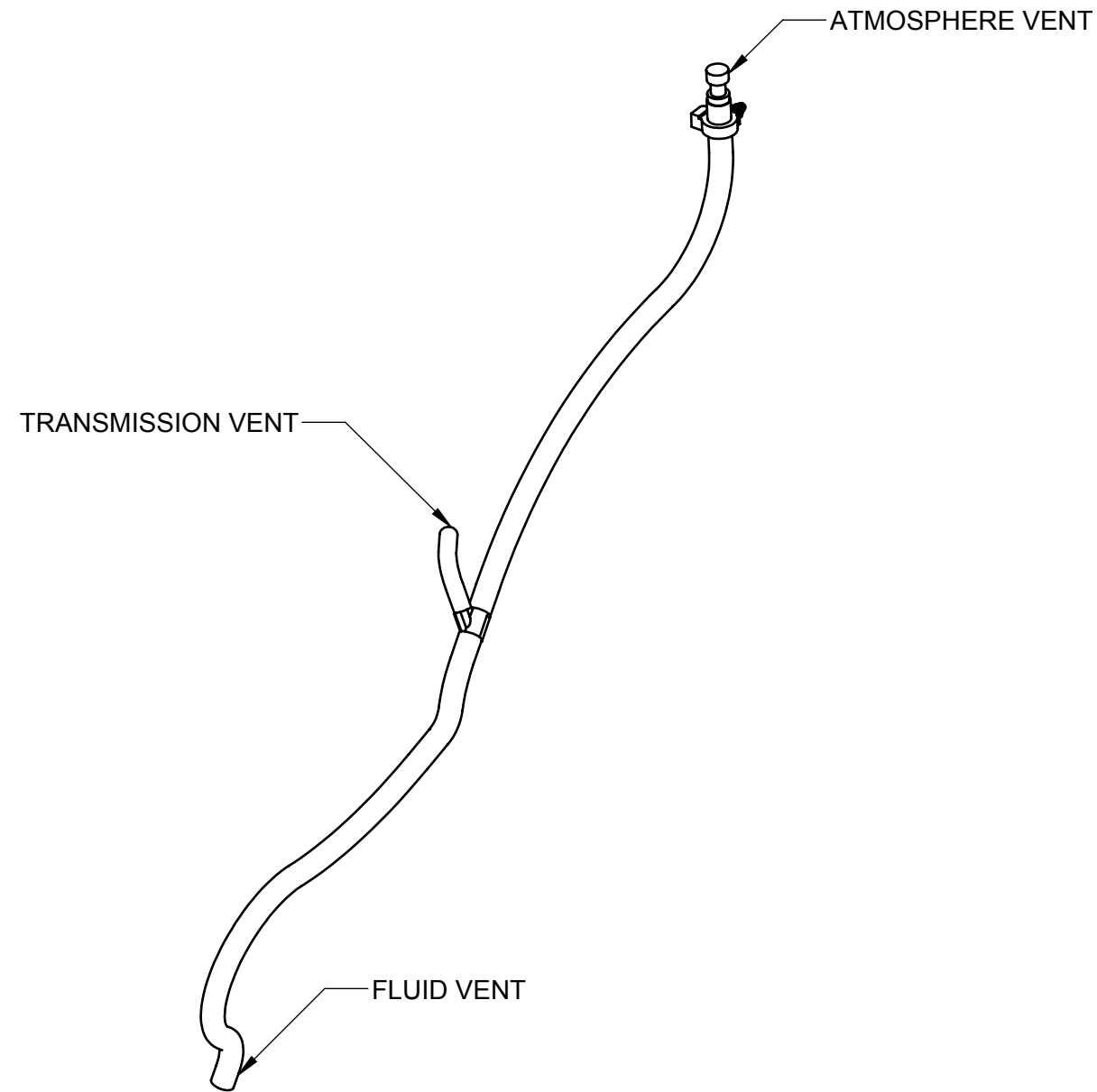


## REMANUFACTURED 4LHD / 4LHDX TRANSMISSIONS

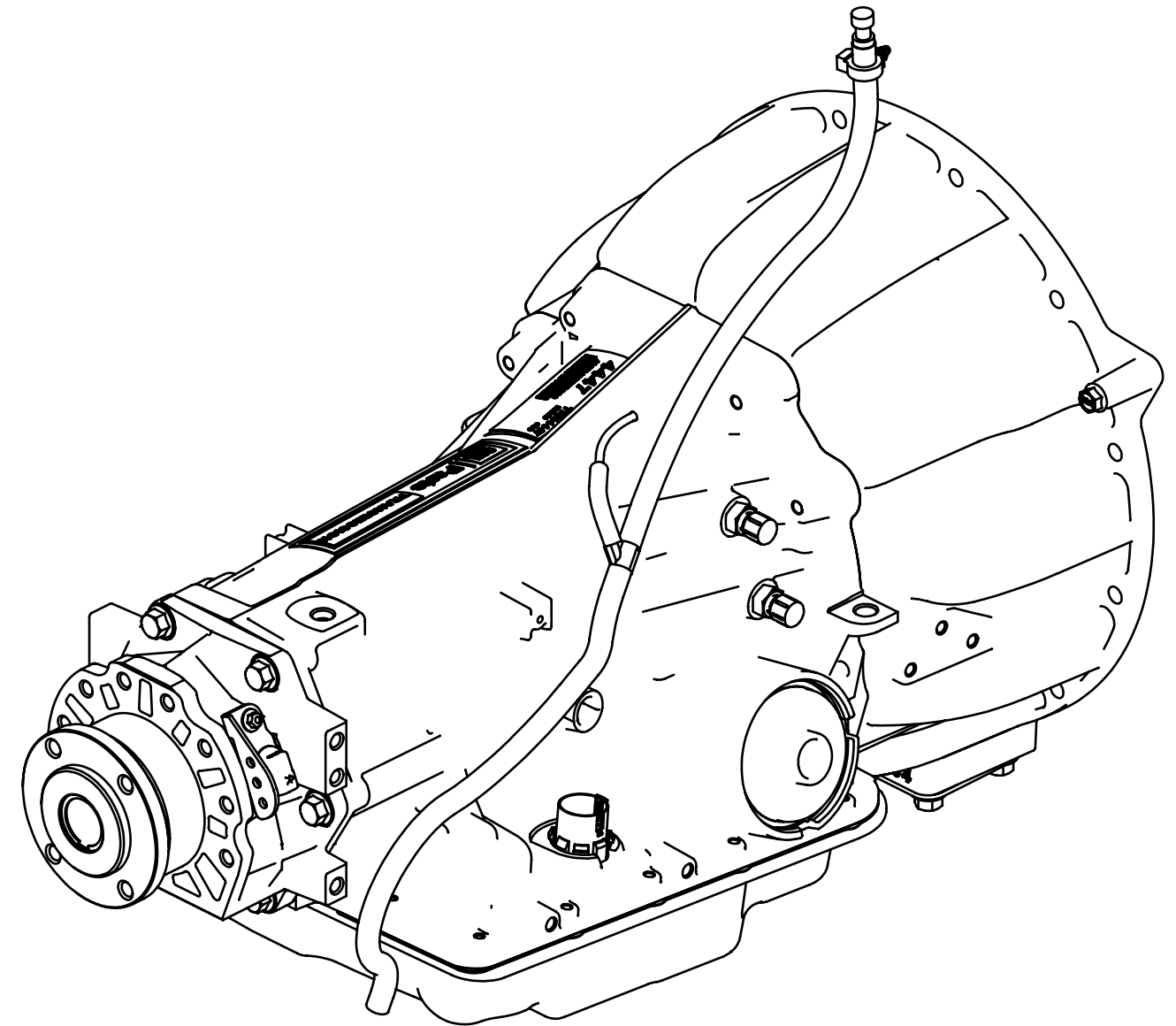
PCS P/N	VALVEBODY	CONVERTER	BELLHOUSING	OUTPUT
TRN5240	GEN 2	GM 258mm	GM LS GENIII	2WD Slip Yoke
TRN5245	GEN 3	GM 258mm	GM LS GENIII	2WD Slip Yoke
TRN5255	GEN 2	GM 300mm	GM LS GENIII	2WD Slip Yoke
TRN5257	GEN 3	GM 300mm	GM LS GENIII	2WD Slip Yoke
TRN5242	GEN 2	GM 258mm	SAE4	2WD Slip Yoke
TRN5247	GEN 3	GM 258mm	SAE4	2WD Slip Yoke
TRN5230	GEN 2	GM 300mm	SAE4	2WD Slip Yoke
TRN5231	GEN 3	GM 300mm	SAE4	2WD Slip Yoke
TRN5261	GEN 2	C6 258mm	C6 Replacement	2WD Slip Yoke
TRN5262	GEN 3	C6 258mm	C6 Replacement	2WD Slip Yoke
TRN5440	GEN 2	GM 258mm	GM LS GENIII	4WD (No Housing)
TRN5445	GEN 3	GM 258mm	GM LS GENIII	4WD (No Housing)
TRN5455	GEN 2	GM 300mm	GM LS GENIII	4WD (No Housing)
TRN5457	GEN 3	GM 300mm	GM LS GENIII	4WD (No Housing)
TRN5442	GEN 2	GM 258mm	SAE4	4WD (No Housing)
TRN5447	GEN 3	GM 258mm	SAE4	4WD (No Housing)
TRN5430	GEN 2	GM 300mm	SAE4	4WD (No Housing)
TRN5431	GEN 3	GM 300mm	SAE4	4WD (No Housing)
TRN5461	GEN 2	C6 258mm	C6 Replacement	4WD (No Housing)
TRN5462	GEN 3	C6 258mm	C6 Replacement	4WD (No Housing)
TRN5263	GEN 2	GM 258mm	GM LS GENIII	C6 Replacement
TRN5264	GEN 3	GM 258mm	GM LS GENIII	C6 Replacement
CALL PCS	GEN 2	GM 300mm	GM LS GENIII	C6 Replacement
CALL PCS	GEN 3	GM 300mm	GM LS GENIII	C6 Replacement
TRN5266	GEN 2	GM 258mm	SAE4	C6 Replacement
TRN5267	GEN 3	GM 258mm	SAE4	C6 Replacement
CALL PCS	GEN 2	GM 300mm	SAE4	C6 Replacement
CALL PCS	GEN 3	GM 300mm	SAE4	C6 Replacement
TRN5260	GEN 2	C6 258mm	C6 Replacement	C6 Replacement
TRN5265	GEN 3	C6 258mm	C6 Replacement	C6 Replacement
TRN5340	GEN 2	GM 258mm	GM LS GENIII	Fixed Flange
TRN5345	GEN 3	GM 258mm	GM LS GENIII	Fixed Flange
TRN5355	GEN 2	GM 300mm	GM LS GENIII	Fixed Flange
TRN5357	GEN 3	GM 300mm	GM LS GENIII	Fixed Flange
TRN5342	GEN 2	GM 258mm	SAE4	Fixed Flange
<b>TRN5347</b>	<b>GEN 3</b>	<b>GM 258mm</b>	<b>SAE4 (Standard)</b>	<b>Fixed Flange</b>
TRN5330	GEN 2	GM 300mm	SAE4	Fixed Flange
TRN5331	GEN 3	GM 300mm	SAE4	Fixed Flange
TRN5361	GEN 2	C6 258mm	C6 Replacement	Fixed Flange
TRN5362	GEN 3	C6 258mm	C6 Replacement	Fixed Flange

**NOTES:**

1. THE FLUID VENT SHALL BE BELOW / BEHIND ANY COMPONENTS THAT WOULD PREVENT PROPER DRAINAGE OF THE HOT AUTOMATIC TRANS FLUID (ATF), SUCH AS BELOW THE TRANSMISSION CROSSMEMBER.
2. THE ATMOSPHERE VENT SHALL BE MOUNTED AS HIGH AS POSSIBLE WITHIN THE VEHICLE WITH THE CAP POINTED UPWARD, SUCH AS AGAINST THE FIREWALL.
3. AFTER INSTALLATION THERE SHALL BE NO LOW POINTS WITHIN THE HOSE FOR FLUID TO ACCUMULATE, OR KINKS IN THE HOSE TO PREVENT FLOW.
4. ROUTE THE ENTIRE HOSE TO AVOID FIRE HAZARDS SUCH AS EXHAUST SYSTEM COMPONENTS. HOT ATF IS FLAMMABLE.
5. DO NOT INSTALL ANY OVERFLOW VENT HOSE THAT IS MISSING THE FLUID VENT. REMOVE AND REPLACE ANY UNITS WITH THIS FLUID VENT MISSING AND / OR CAPPED.
6. IMPROPERLY ADHERING TO THESE INSTRUCTIONS WILL VOID THE TRANSMISSION WARRANTY.



**ISO VIEW**  
FEATURES  
SCALE: 1:4



**ISO VIEW**  
INSTALLED KIT  
SCALE: 1:4



DESCRIPTION  
**4LHD OVERFLOW VENT KIT**

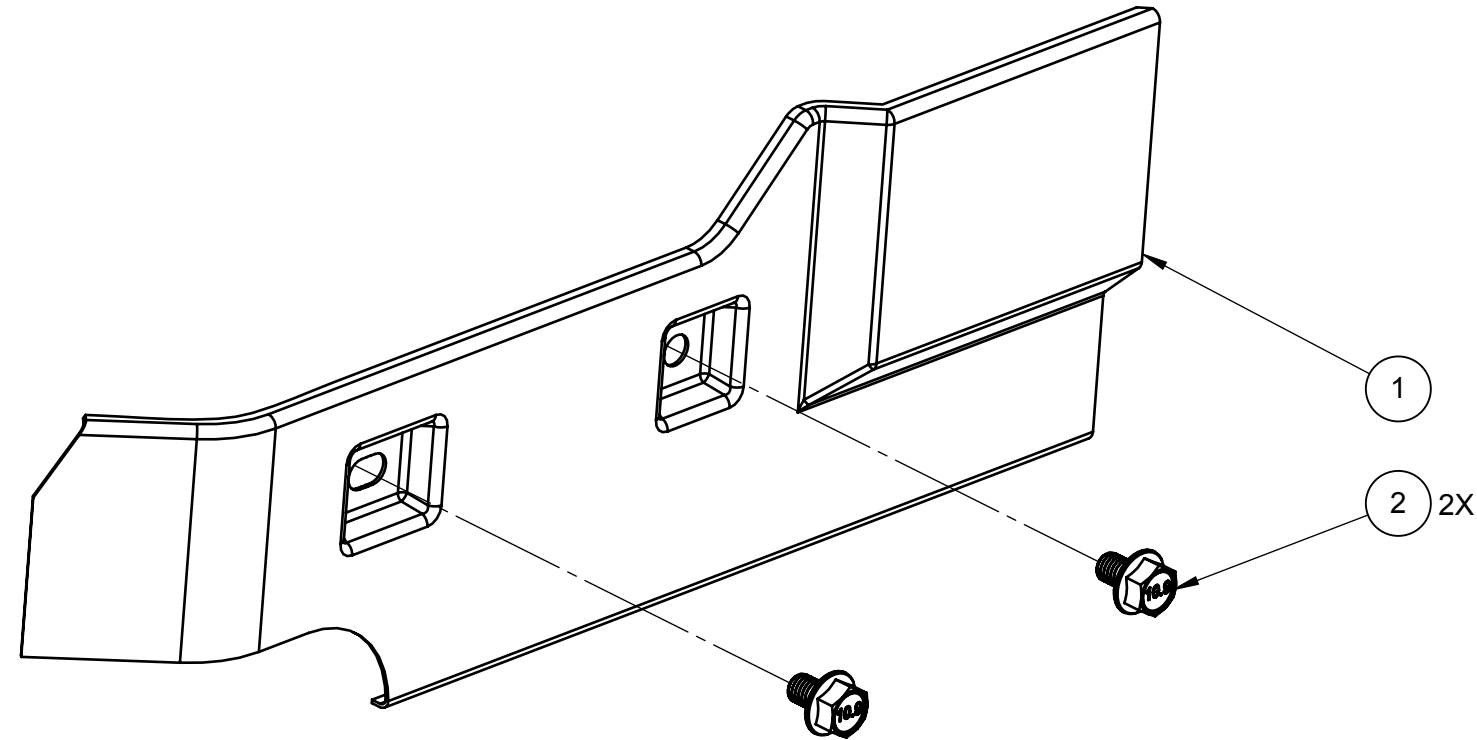
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DRAWN BY	MFP	9/15/17
ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:8 SHEET 1 OF 1

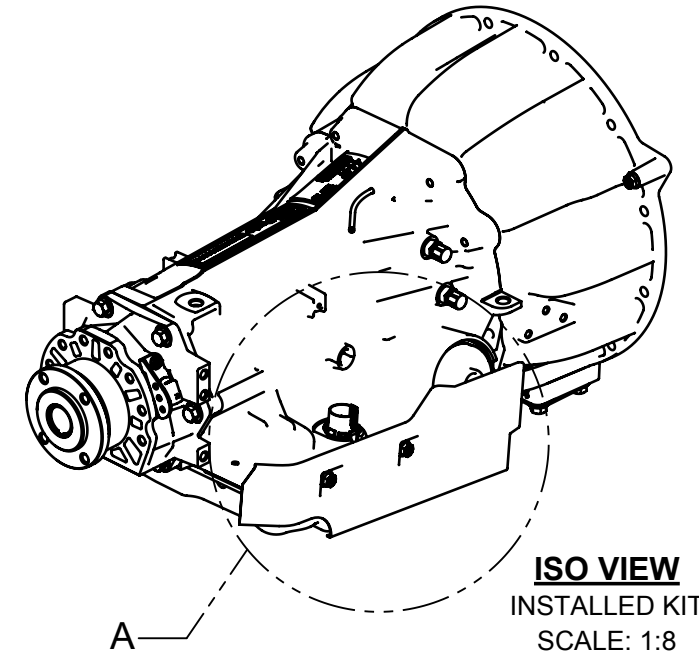
SIZE	DRAWING NO.	REV
<b>B</b>	TRN7006	2

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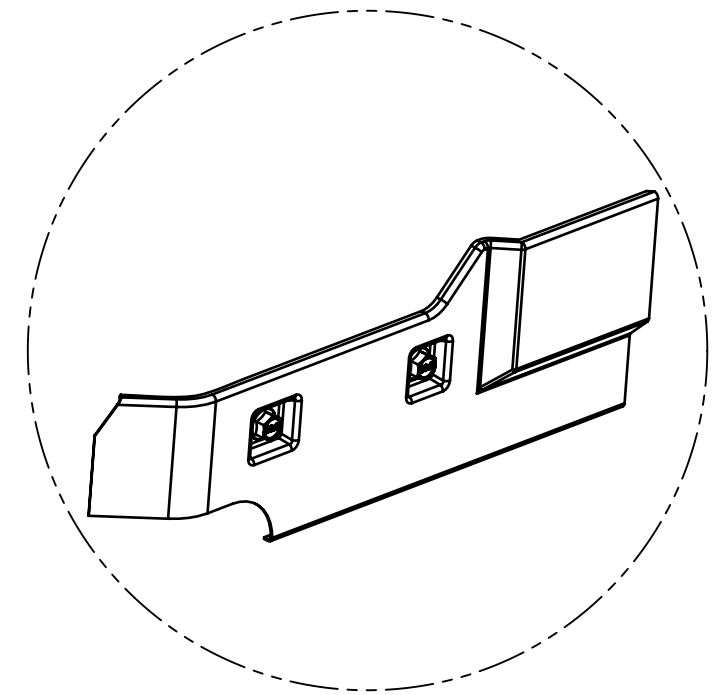
BOM #	DESCRIPTION	PCS PART #	QTY
1	4LHD HEAT SHEILD	TRN7021	1
2	M8X1.25X12mm FLANGED HEX BOLT	TRN7506	2



**EXPLODED VIEW**  
ASSEMBLY ORDER  
SCALE: 1:2



**ISO VIEW**  
INSTALLED KIT  
SCALE: 1:8



**DETAIL A**  
ASSEMBLED KIT  
SCALE: 1:4

**NOTES:**

- DO NOT INSTALL ANY PARTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- THIS KIT IS RECOMMENDED FOR VEHICLE INSTALLATIONS WHERE THE EXHAUST SYSTEM IS IN CLOSE PROXIMITY TO THE TRANSMISSION PACKAGE.
- REFER TO THE "PCS 4LHD APPLICATION GUIDE" FOR MORE INFORMATION REGARDING THERMAL REQUIREMENTS.



DESCRIPTION  
**4LHD HEAT SHEILD KIT**

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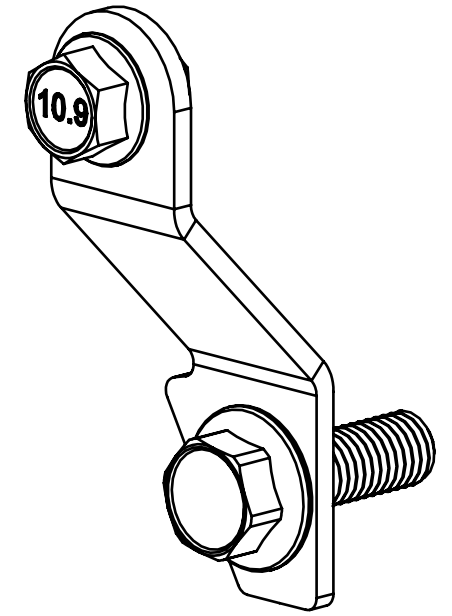
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DRAWN BY	MFP 9/18/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES SCALE: 1:12 SHEET 1 OF 1	

SIZE	DRAWING NO.	REV
<b>B</b>	TRN7012	B

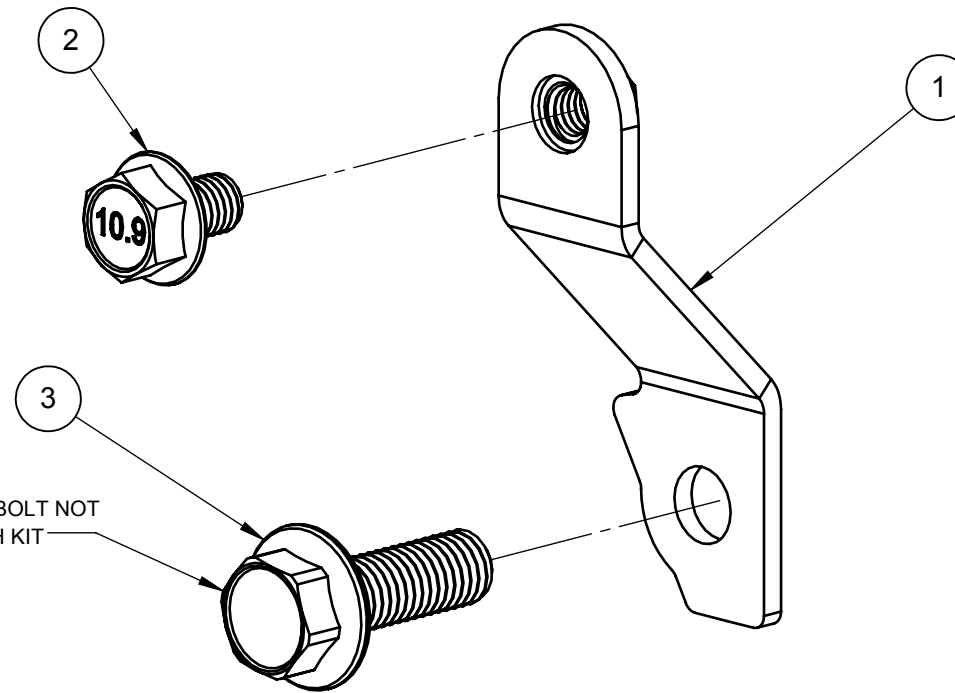
BOM #	DESCRIPTION	PCS PART #	QTY
1	DIPSTICK BRACKET - 4LHD W/SAE4 (BOLT MOUNT)	TRN7010	1
2	BOLT, M8X1.25X12mm FLANGED HEX	TRN7506	1
3	BOLT, M10X1.5X30mm FLANGED HEX	TRN7501	1

**NOTES:**

1. THE BOLT "TRN7501" AND ASSOCIATED HARDWARE IS INCLUDED IN SOME TRANSMISSION ACCESSORY KITS.
2. RED LOKTITE THREADLOCKER TO BE IMPLIMENTED WHILE INSTALLING BOM ITEMS "2" AND "3".
3. THIS BRACKET IS TO PLACE THE DIPSTICK IN AN IDENTICAL LOCATION TO THE ORIGINAL "LS GEN III" BELLHOUSING.
4. BOM ITEM "3" (TRN7501) IS NOT INCLUDED WITH THE DIPSTICK BRACKET KIT.



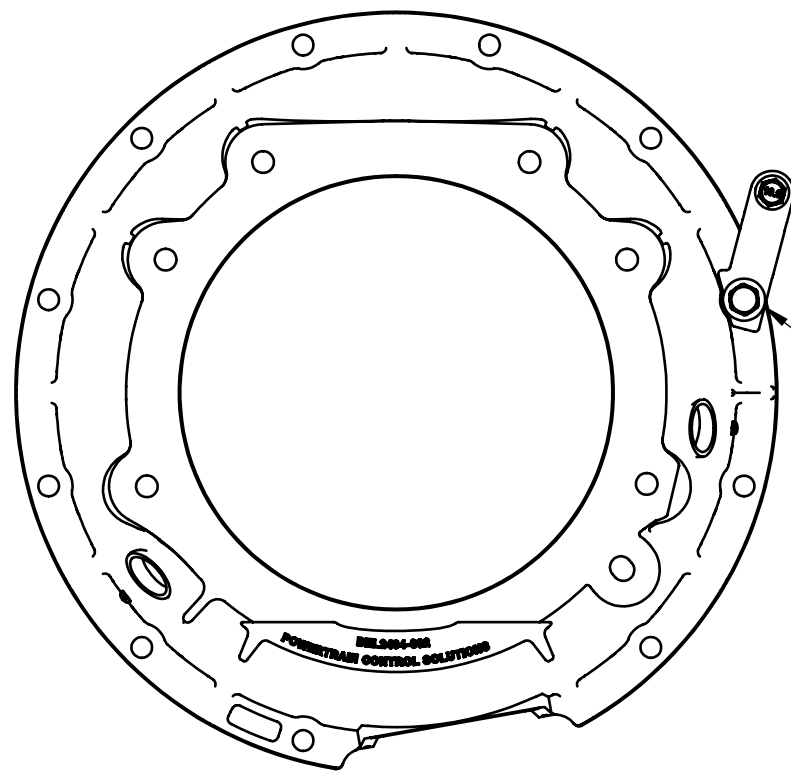
**BOLT STYLE**  
ISO VIEW  
SCALE: 1:1



**BOLT STYLE**  
EXPLODED VIEW  
SCALE: 1:1

BELLOUSING BOLT NOT INCLUDED WITH KIT

MOUNT BRACKET HERE



**BRACKET POSITION**  
REAR VIEW  
SCALE: 1:8



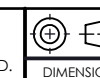
DESCRIPTION  
**DIPSTICK BRACKET KIT - 4LHD W/SAE4**

USED ON	NEXT ASSEMBLY

DRAWN BY	MFP	2/15/2017
ENG APPR.		

SIZE	DRAWING NO.	REV
<b>B</b>	TRN7013	1

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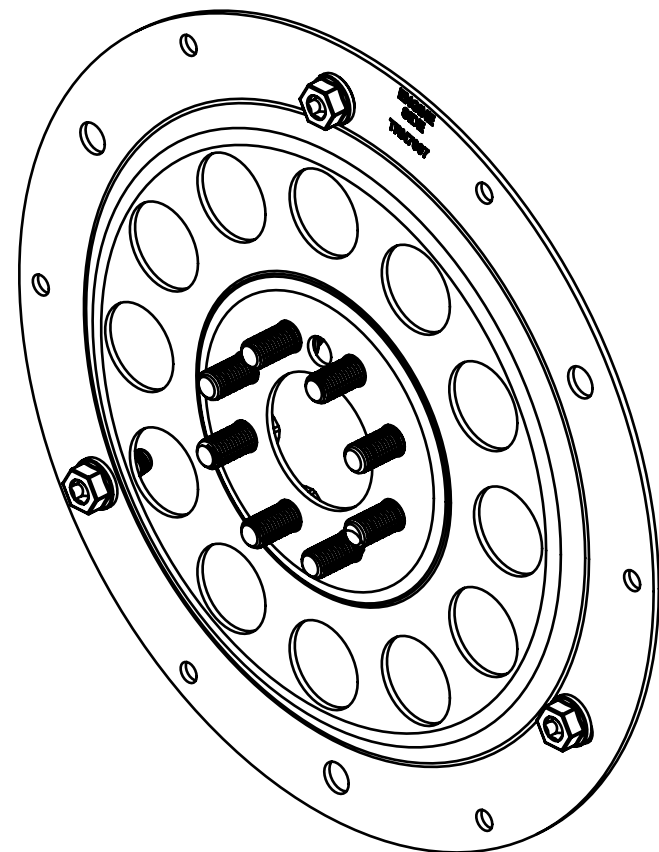


DIMENSIONS ARE IN INCHES	SCALE: 1:1	SHEET 1 OF 1
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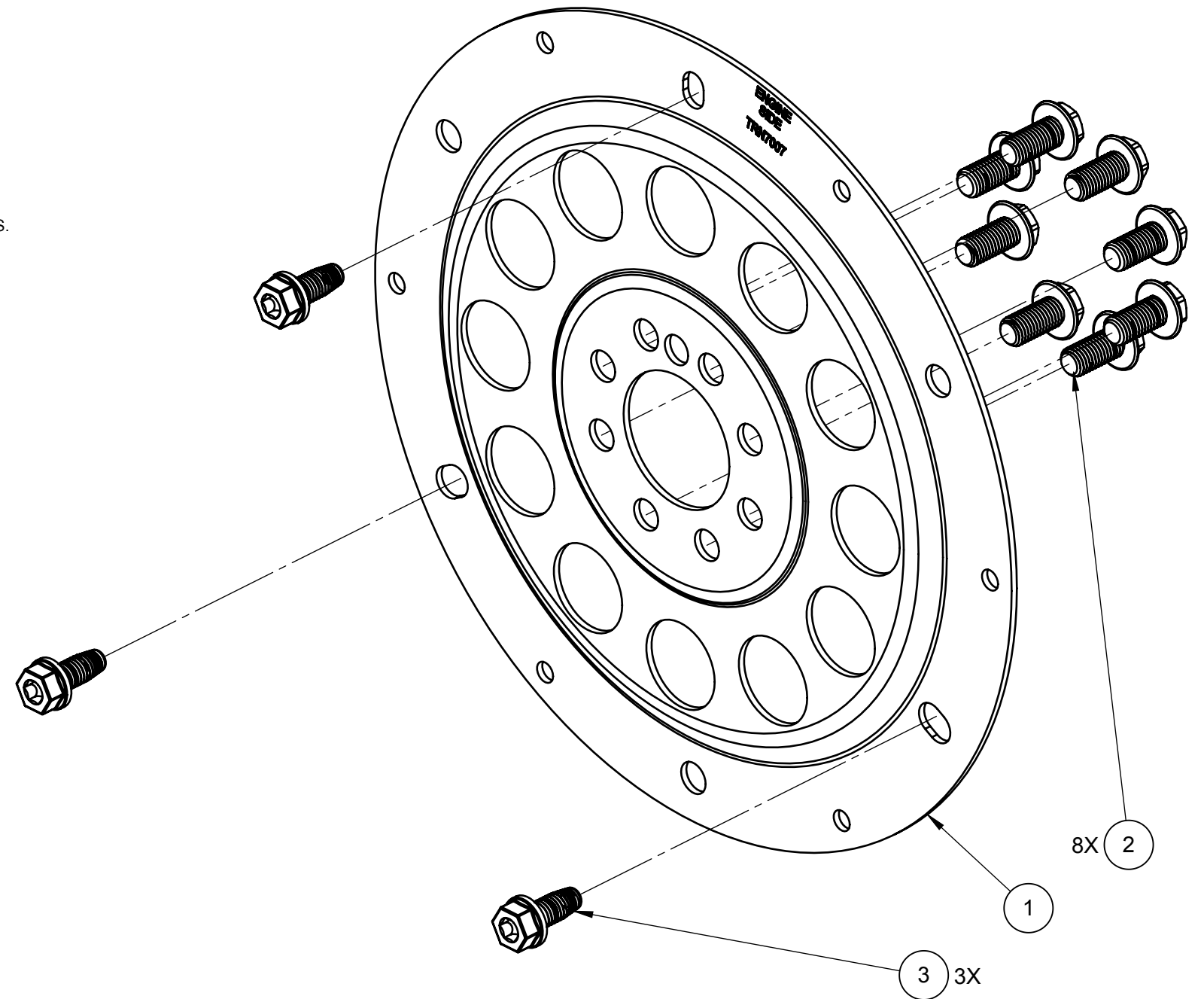
BOM #	DESCRIPTION	PCS PART #	QTY
1	FLEXPLATE, 11mm, 8 BOLT, 3 SLOTS, NO RING GEAR	TRN7007	1
2	BOLT, M11X1.5X22mm FLANGED HEX W/ THREADLOCKER	TRN7502	8
3	BOLT, M10X1.5X22mm FLANGED HEX W/ THREADLOCKER	TRN7503	3

**NOTES:**

- DO NOT INSTALL ANY PARTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- DURING INSTALLATION IT IS CRITICAL TO VERIFY TORQUE CONVERTER PULLOUT. SEE THE "PCS 4LHD APPLICATION GUIDE" OR OTHER RELEVANT DOCUMENTATION FOR MORE INFORMATION.
- THIS FLEXPLATE IS INTENDED FOR USE WITH BOTH 4LHD (258mm, TRN0515) AND 4LHDX (300mm, TRN0516) TORQUE CONVERTERS.
- LIKE BOLTS ARE TO BE BAGGED TOGETHER (3X TRN7503 AND 8X TRN7502) TO PREVENT MIXING THREAD SIZES.
- ON 5/20/2019 THE BOLT "TRN7502" WAS UPDATED FROM 29mm TO 22mm UNDER FLANGED HEAD.



**ISO VIEW**  
ASSEMBLED ITEMS  
SCALE: 3:8



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2



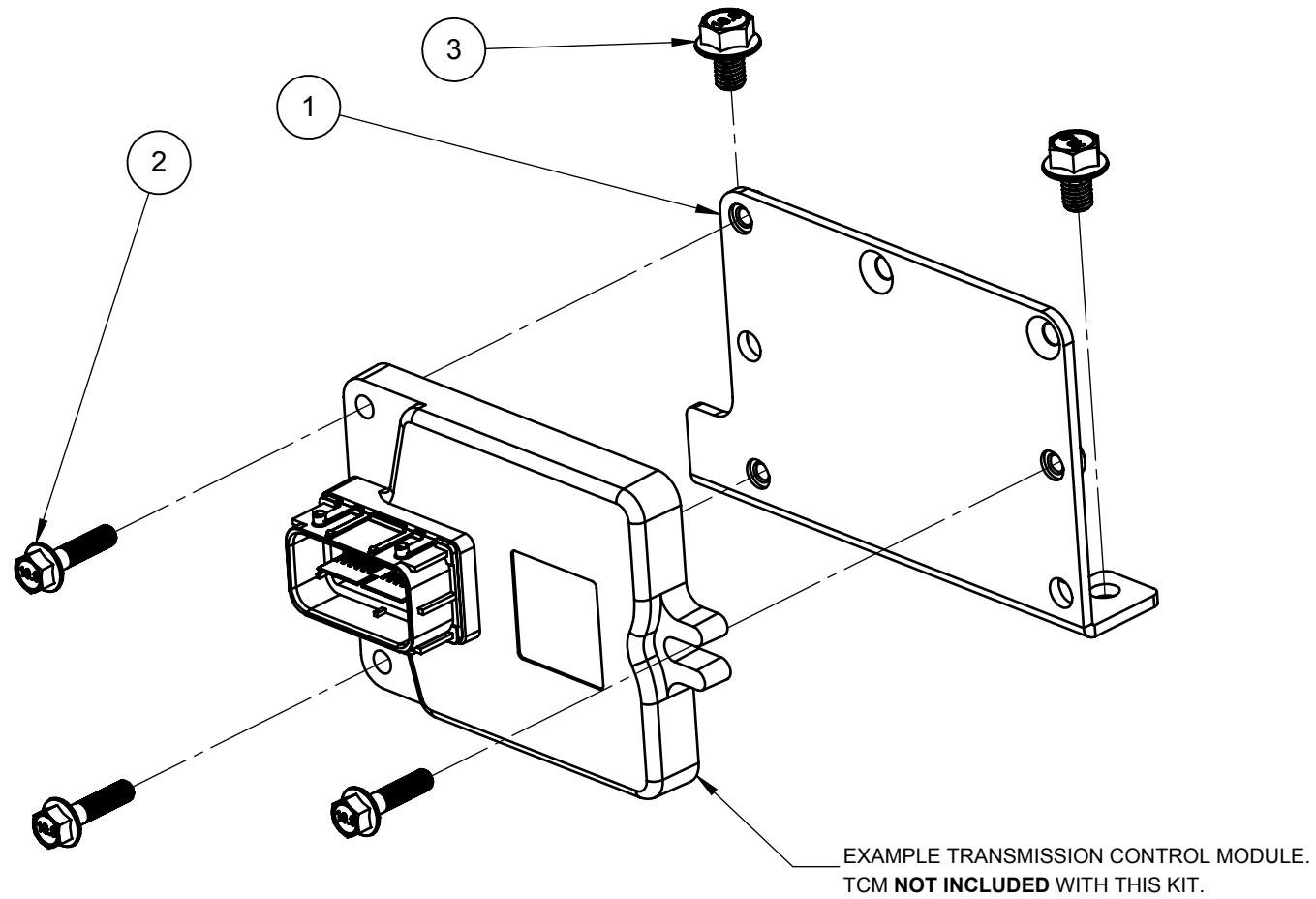
DESCRIPTION  
**4LHD FLEXPLATE KIT, SAE**

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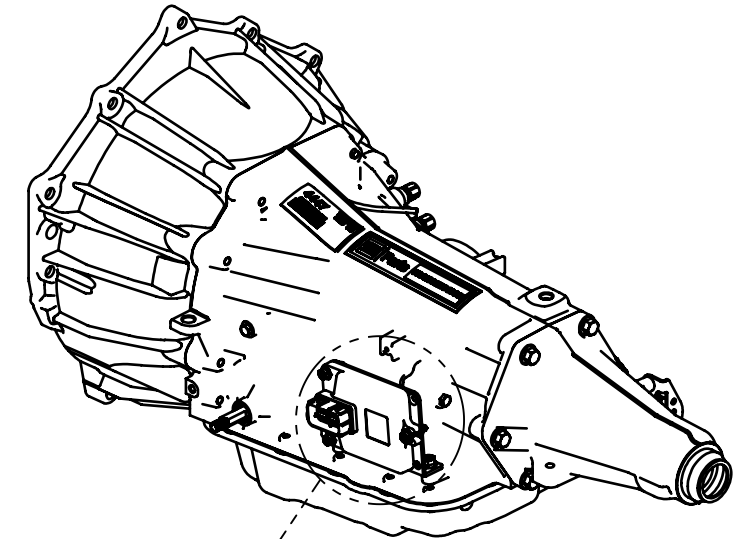
DRAWN BY	MFP	8/9/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:2 SHEET 1 OF 1

USED ON	NEXT ASSEMBLY	
SIZE	DRAWING NO.	REV
<b>B</b>	TRN8350	B

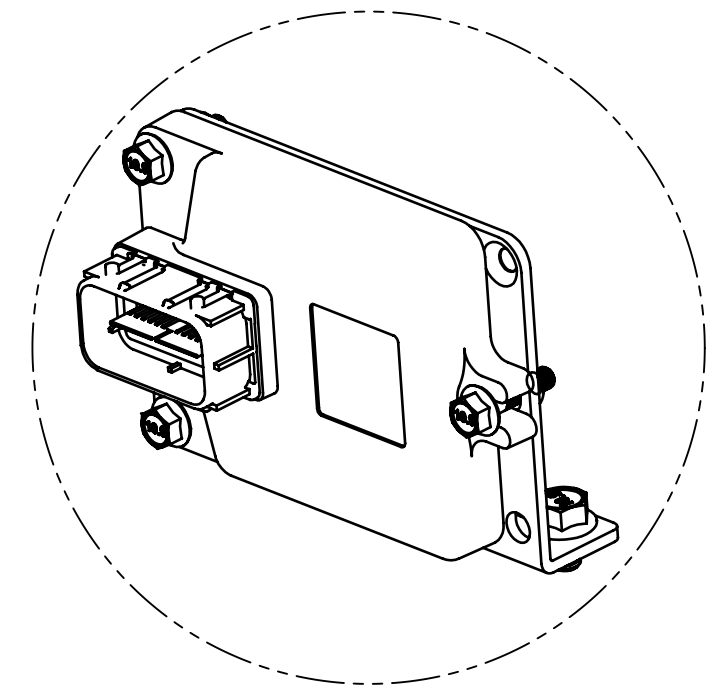
BOM #	DESCRIPTION	PCS PART #	QTY
1	TCM BRACKET - 4LHD	TRN7008	1
2	M6X1.0X25mm FLANGED HEX BOLT	TRN7507	3
3	M8X1.25X12mm FLANGED HEX BOLT	TRN7506	2



**EXPLODED VIEW**  
ASSEMBLY ORDER  
SCALE: 1:2



**ISO VIEW**  
INSTALLED KIT  
SCALE: 1:8



**DETAIL A**  
ASSEMBLED KIT  
SCALE: 1:2

**NOTES:**

- DO NOT INSTALL ANY TRANSMISSION CONTROL MODULES THAT SHOWS MANUFACTURING DEFECTS OR SHIPPING DAMAGE.
- DO NOT INSTALL THE TRANSMISSION CONTROL MODULE NEAR ANY HEAT SOURCES OR WITHOUT ADEQUATE PROTECTION.
- REFER TO THE "MX123 CONNECTION SYSTEM USER MANUAL" ONLINE FOR INSTALLATION INSTRUCTIONS AND FURTHER INFORMATION REGARDING THE SEALED TCM CONNECTOR.
- REFER TO THE "PCS 4LHD APPLICATION GUIDE" OR THE RELEVANT CONTROLLER DRAWING FOR MORE INFORMATION REGARDING HANDLING, INSTALLATION, AND MAINTENANCE PROCEDURES FOR THE TRANSMISSION CONTROLLER.

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 9/15/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:16 SHEET 1 OF 1

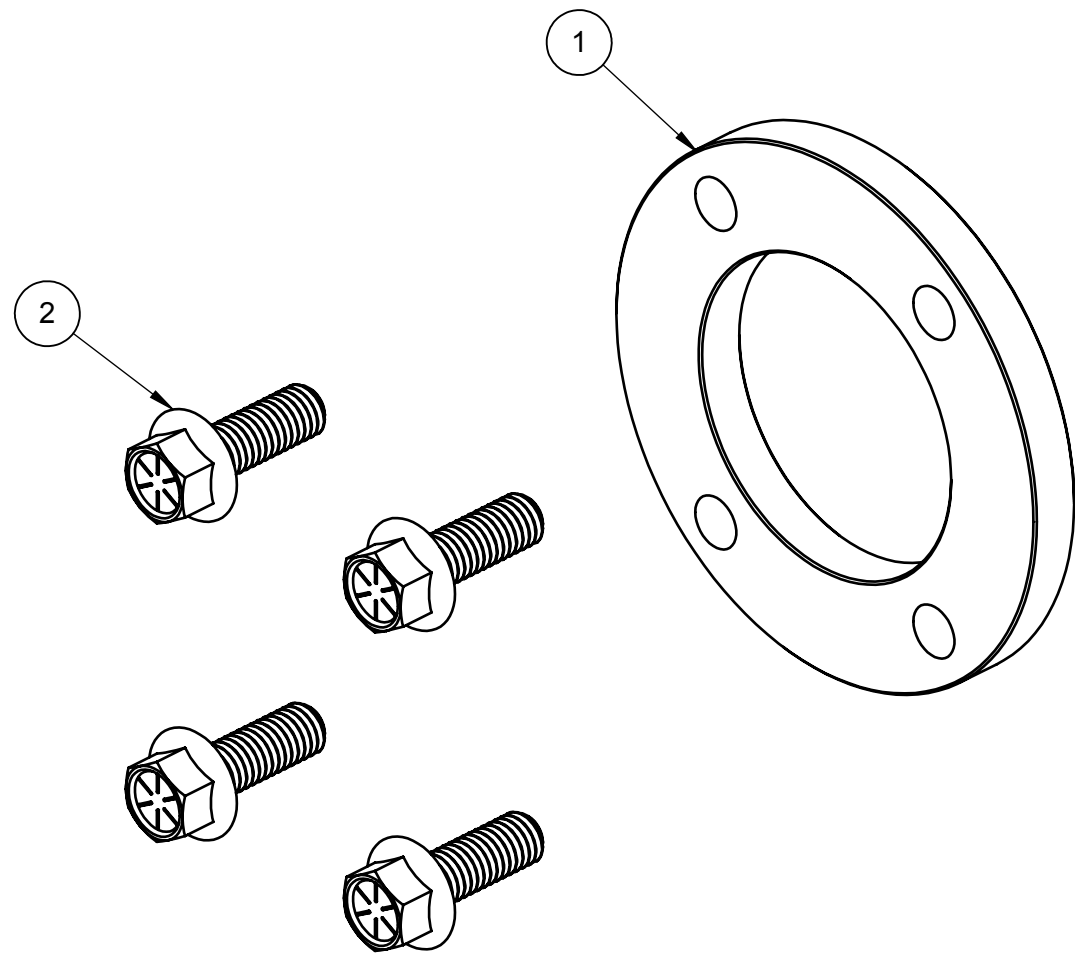
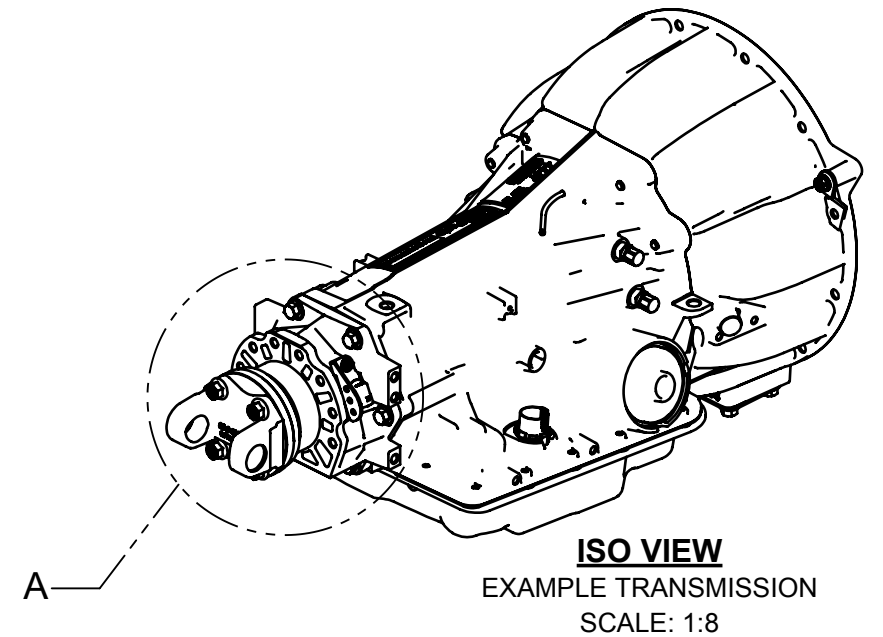
<b>PCS</b> Powertrain Control Solutions Engineering the future of driveline control	
DESCRIPTION	
4LHD TCM BRACKET KIT	
SIZE	DRAWING NO.
<b>B</b>	TRN8360
REV	1



BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SPACER, 4LHD FIXED FLANGE OUTPUT	BRK0240	1
2	7/16-14 X 1.25" FLANGED HEX BOLT	TRN7531	4

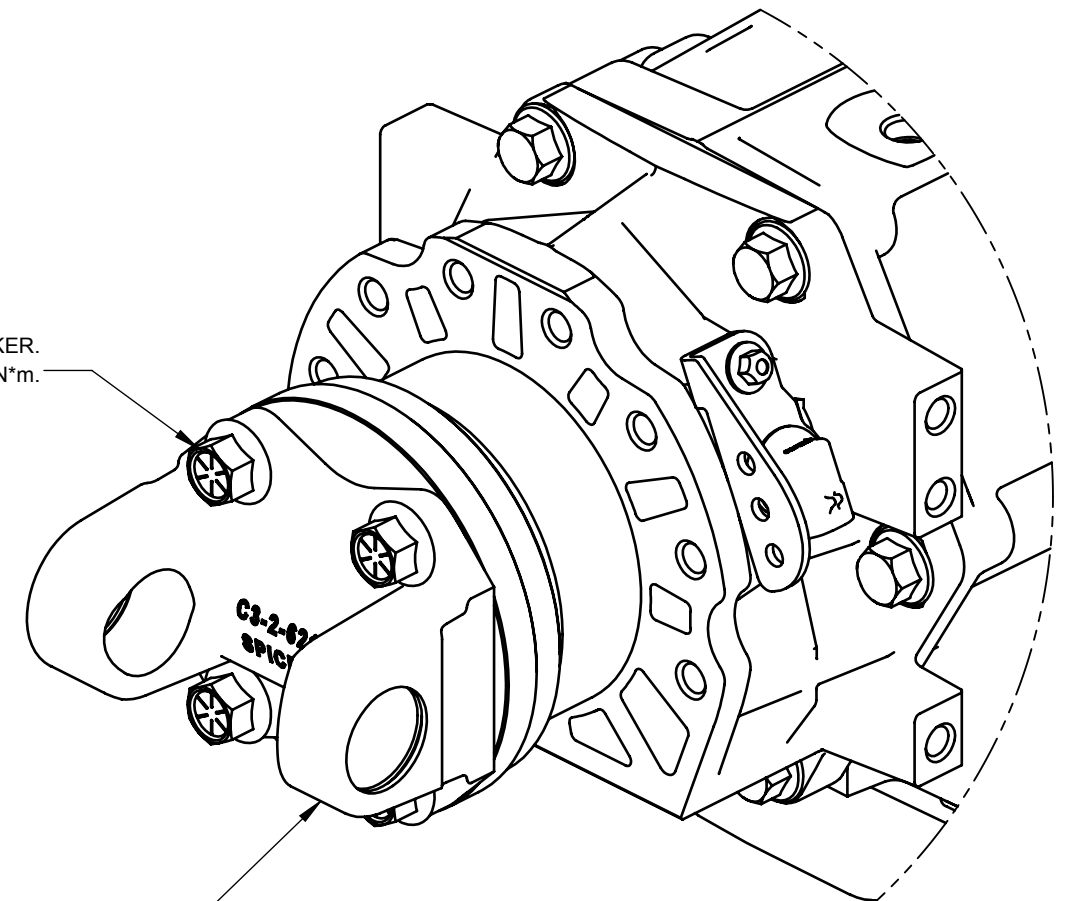
**NOTES:**

- THIS KIT IS INTENDED FOR VEHICLES USING A FIXED FLANGE OUTPUT (EXTENSION HOUSING) THAT DO NOT REQUIRE THE DISC PARKING BRAKE. THIS SPACER IS THE SAME THICKNESS OF THE PARKING BRAKE DISC, ALLOWING THE SAME DRIVESHAFT LENGTH TO BE IMPLEMENTED.
- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW SIGNS OF MANUFACTURING DEFECTS OR SHIPPING/HANDLING DAMAGE.
- FIXED FLANGE OUTPUT YOKE PROTOTYPES HAD M10X1.5 THREADS, IN THESE CASES USE 4X TRN7526 (M10X1.5X35MM FLANGED HEX BOLT).



**EXPLODED VIEW**  
KIT COMPONENTS  
SCALE: 2:3

APPLY THREADLOCKER.  
TORQUE TO 65±5 N\*m.



EXAMPLE U-JOINT YOKE SPICER 3-2-159 SHOWN.  
DRIVESHAFT COMPONENTS NOT SUPPLIED BY PCS.

**DETAIL A**  
ASSEMBLED KIT  
SCALE: 1:2



DESCRIPTION  
**SPACER KIT,  
FIXED FLANGE OUTPUT**

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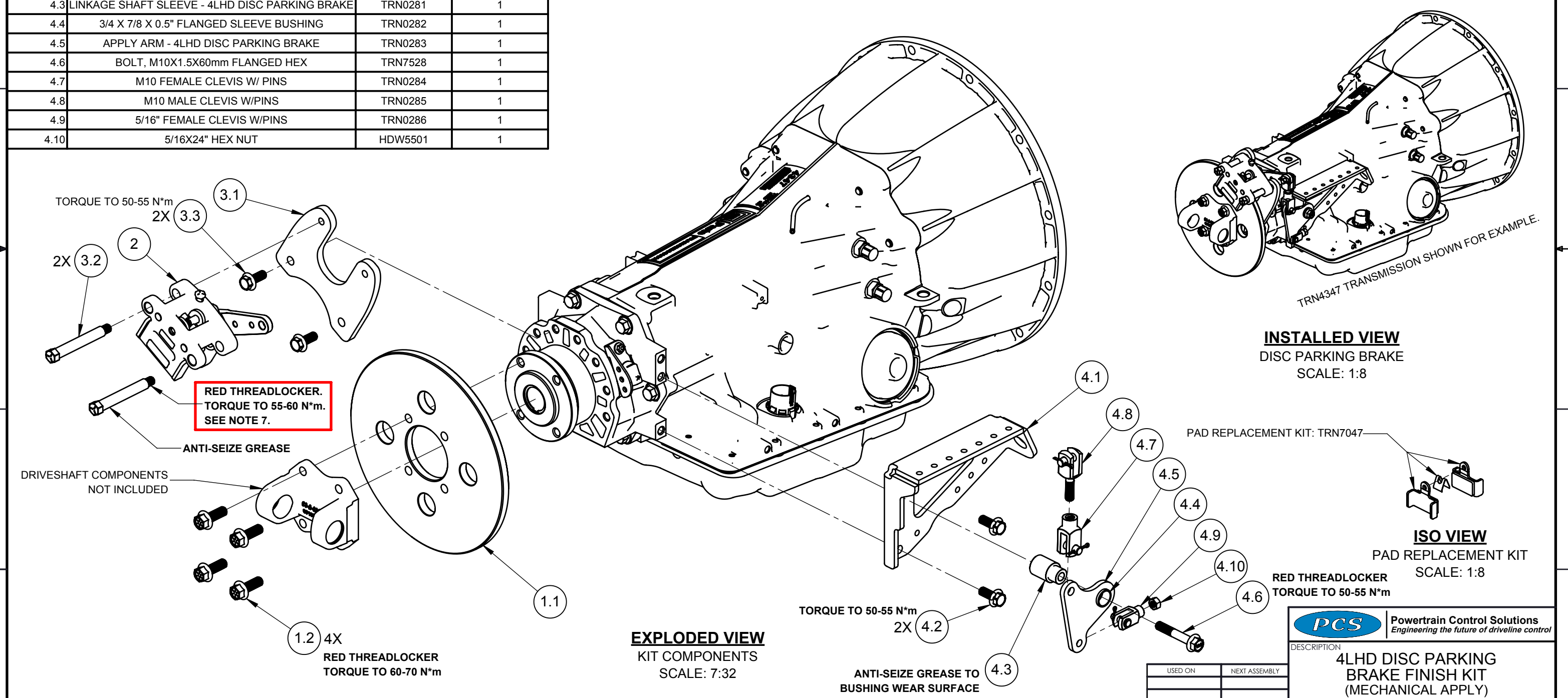
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 12/7/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:2 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	<b>BRK2021</b>	<b>1</b>

BOM #	DESCRIPTION	PCS PART #	QTY
1	10.25" DISC KIT - 7/16-14" BOLTS	BRK2011	1
1.1	BRAKE DISC - 4LHD - 10.25 X 0.5"	BRK0230	1
1.2	BOLT, 7/16-14X1.25" FLANGED HEX	TRN7531	4
2	BRAKE CALIPER - M515 W/PADS	TRN7035	1
3	CALIPER MOUNTING KIT - M515	BRK2015	1
3.1	CALIPER PLATE - 4LHD DISC PARKING BRAKE - M515	TRN0274	1
3.2	CALIPER BOLT - 12.7X80mm SHOULDER	TRN0275	2
3.3	BOLT, M10X1.5X25mm FLANGED HEX	TRN7500	2
4	FRONT PULL BRAKE LEVER KIT	BRK2020	1
4.1	4LHD BRAKE LEVER BRAKET - FRONT PULL	TRN0280	1
4.2	M10X1.5X25mm FLANGED HEX	TRN7500	2
4.3	LINKAGE SHAFT SLEEVE - 4LHD DISC PARKING BRAKE	TRN0281	1
4.4	3/4 X 7/8 X 0.5" FLANGED SLEEVE BUSHING	TRN0282	1
4.5	APPLY ARM - 4LHD DISC PARKING BRAKE	TRN0283	1
4.6	BOLT, M10X1.5X60mm FLANGED HEX	TRN7528	1
4.7	M10 FEMALE CLEVIS W/ PINS	TRN0284	1
4.8	M10 MALE CLEVIS W/PINS	TRN0285	1
4.9	5/16" FEMALE CLEVIS W/PINS	TRN0286	1
4.10	5/16X24" HEX NUT	HDW5501	1

**NOTES:**

1. THE FOLLOWING DOCUMENT IS INTENDED FOR USE AS A GENERAL REFERENCE. FOR TORQUE VALUES AND AREAS TO RECEIVE EITHER THREADLOCKER OR ANTI-SEIZE GREASE REFER TO THE PROPER SUB-KIT DOCUMENTATION.
2. THIS KIT IS INTENDED FOR VEHICLES / TRANSMISSIONS USING A FIXED-FLANGE-OUTPUT (FFO) EXTENSION HOUSING WHICH REQUIRE A DRIVESHAFT PARKING BRAKE. THIS DISC SETUP IS THE SAME THICKNESS AS OUR OTHER SPACER AND DISC KITS, ALLOWING THE SAME DRIVESHAFT LENGTH TO BE IMPLEMENTED.
3. DO NOT INSTALL ANY DISC PARKING BRAKE OR DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
4. FOR MORE INFORMATION REGARDING THE FEATURES AND INSTALLATION PROCEDURES OF THE ASSEMBLY PLEASE REFER TO THE *PCS 4LHD/4LHDX APPLICATION GUIDE* OR *4LHD FIXED-FLANGE-OUTPUT APPLICATION GUIDE*.
5. FIXED-FLANGE-OUTPUT EXTENSION HOUSING PROTOTYPES (BRK2010) USED M10X1.5X35MM FLANGED HEX BOLTS (TRN7526). FOR FLANGE BOLT REPLACEMENTS CHECK YOUR UNIT BEFORE ORDERING.
6. DRIVESHAFT COMPONENTS ARE NOT SUPPLIED BY PCS. FOR EXAMPLES OF COMPATIBLE 1310 / 1410 U-JOINTS REFER TO THE *PCS 4LHD/4LHDX APPLICATION GUIDE* OR THE *PCS 4LHD FIXED-FLANGE-OUTPUT APPLICATION GUIDE*.
7. CALIPER BOLTS (TRN0275) THAT DO NOT INCLUDE PRE-APPLIED THREADLOCKER ARE TO HAVE RED THREADLOCKER INSTALLED ON THE THREADS AND ANTI-SEIZE GREASE INSTALLED ON THE CALIPER BEARING SURFACE, DURING ASSEMBLY AND ANY MAINTENANCE PROCEDURES THAT REQUIRE COMPONENT REMOVAL.



**EXPLODED VIEW**  
KIT COMPONENTS  
SCALE: 7:32

**INSTALLED VIEW**  
DISC PARKING BRAKE  
SCALE: 1:8

**ISO VIEW**  
PAD REPLACEMENT KIT  
SCALE: 1:8

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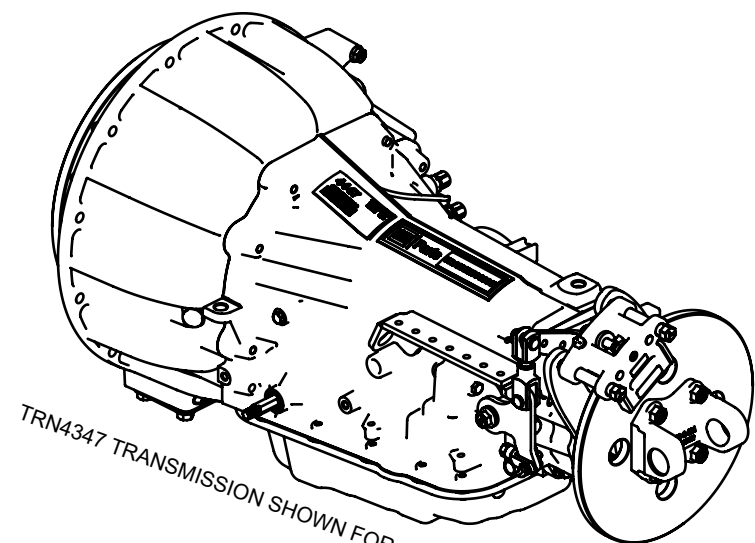
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP
ENG APPR.	9/6/19
DIMENSIONS ARE IN INCHES	
SCALE: 1:12 SHEET 1 OF 1	

<b>PCS</b> Powertrain Control Solutions Engineering the future of driveline control	
DESCRIPTION <b>4LHD DISC PARKING BRAKE FINISH KIT (MECHANICAL APPLY)</b>	
SIZE <b>B</b>	DRAWING NO. <b>BRK2050</b>
REV <b>4</b>	

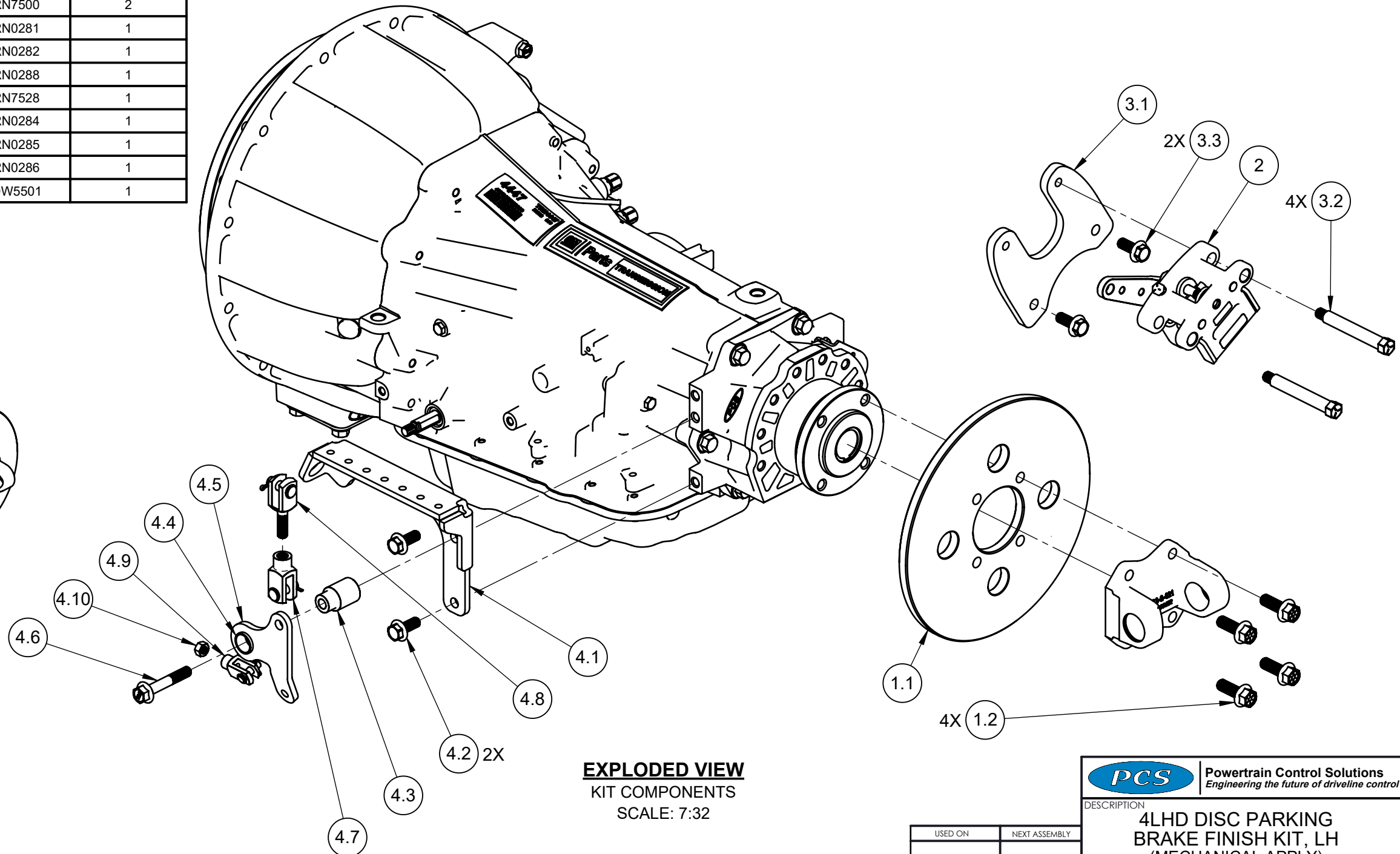
BOM #	DESCRIPTION	PCS PART #	QTY
<b>1</b>	<b>10.25" DISC KIT - 7/16-14" BOLTS</b>	<b>BRK2011</b>	<b>1</b>
1.1	BRAKE DISC - 4LHD - 10.25 X 0.5"	BRK0230	1
1.2	BOLT, 7/16-14X1.25" FLANGED HEX	TRN7531	4
<b>2</b>	<b>BRAKE CALIPER - M515 W/PADS</b>	<b>TRN7035</b>	<b>1</b>
<b>3</b>	<b>CALIPER MOUNTING KIT - M515</b>	<b>BRK2015</b>	<b>1</b>
3.1	CALIPER PLATE - 4LHD DISC PARKING BRAKE - M515	TRN0274	1
3.2	CALIPER BOLT - 12.7X80mm SHOULDER	TRN0275	2
3.3	BOLT, M10X1.5X25mm FLANGED HEX	TRN7500	2
<b>4</b>	<b>FRONT PULL BRAKE LEVER KIT</b>	<b>BRK2022</b>	<b>1</b>
4.1	4LHD BRAKE LEVER BRAKET - FRONT PULL, LH	TRN0287	1
4.2	M10X1.5X25mm FLANGED HEX	TRN7500	2
4.3	LINKAGE SHAFT SLEEVE - 4LHD DISC PARKING BRAKE	TRN0281	1
4.4	3/4 X 7/8 X 0.5" FLANGED SLEEVE BUSHING	TRN0282	1
4.5	APPLY ARM - 4LHD DISC PARKING BRAKE, lh	TRN0288	1
4.6	BOLT, M10X1.5X60mm FLANGED HEX	TRN7528	1
4.7	M10 FEMALE CLEVIS W/ PINS	TRN0284	1
4.8	M10 MALE CLEVIS W/PINS	TRN0285	1
4.9	5/16" FEMALE CLEVIS W/PINS	TRN0286	1
4.10	5/16X24" HEX NUT	HDW5501	1

**NOTES:**

1. THE FOLLOWING DOCUMENT IS INTENDED FOR USE AS A GENERAL REFERENCE. FOR TORQUE VALUES AND AREAS TO RECEIVE EITHER THREADLOCKER OR ANTI-SEIZE GREASE REFER TO THE PROPER SUB-KIT DOCUMENTATION.
2. THIS KIT IS INTENDED FOR VEHICLES / TRANSMISSIONS USING A FIXED-FLANGE-OUTPUT (FFO) EXTENSION HOUSING WHICH REQUIRE A DRIVESHAFT PARKING BRAKE. THIS DISC SETUP IS THE SAME THICKNESS AS OUR OTHER SPACER AND DISC KITS, ALLOWING THE SAME DRIVESHAFT LENGTH TO BE IMPLEMENTED.
3. DO NOT INSTALL ANY DISC PARKING BRAKE OR DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
4. FOR MORE INFORMATION REGARDING THE FEATURES AND INSTALLATION PROCEDURES OF THE ASSEMBLY PLEASE REFER TO THE *PCS 4LHD/4LHDX APPLICATION GUIDE* OR *4LHD FIXED-FLANGE-OUTPUT APPLICATION GUIDE*.
5. FIXED-FLANGE-OUTPUT EXTENSION HOUSING PROTOTYPES (BRK2010) USED M10X1.5X35MM FLANGED HEX BOLTS (TRN7526). FOR FLANGE BOLT REPLACEMENTS CHECK YOUR UNIT BEFORE ORDERING.
6. DRIVESHAFT COMPONENTS ARE NOT SUPPLIED BY PCS. FOR EXAMPLES OF COMPATIBLE 1310 / 1410 U-JOINTS REFER TO THE *PCS 4LHD/4LHDX APPLICATION GUIDE* OR THE *PCS 4LHD FIXED-FLANGE-OUTPUT APPLICATION GUIDE*.



**INSTALLED VIEW**  
DISC PARKING BRAKE  
SCALE: 1:8



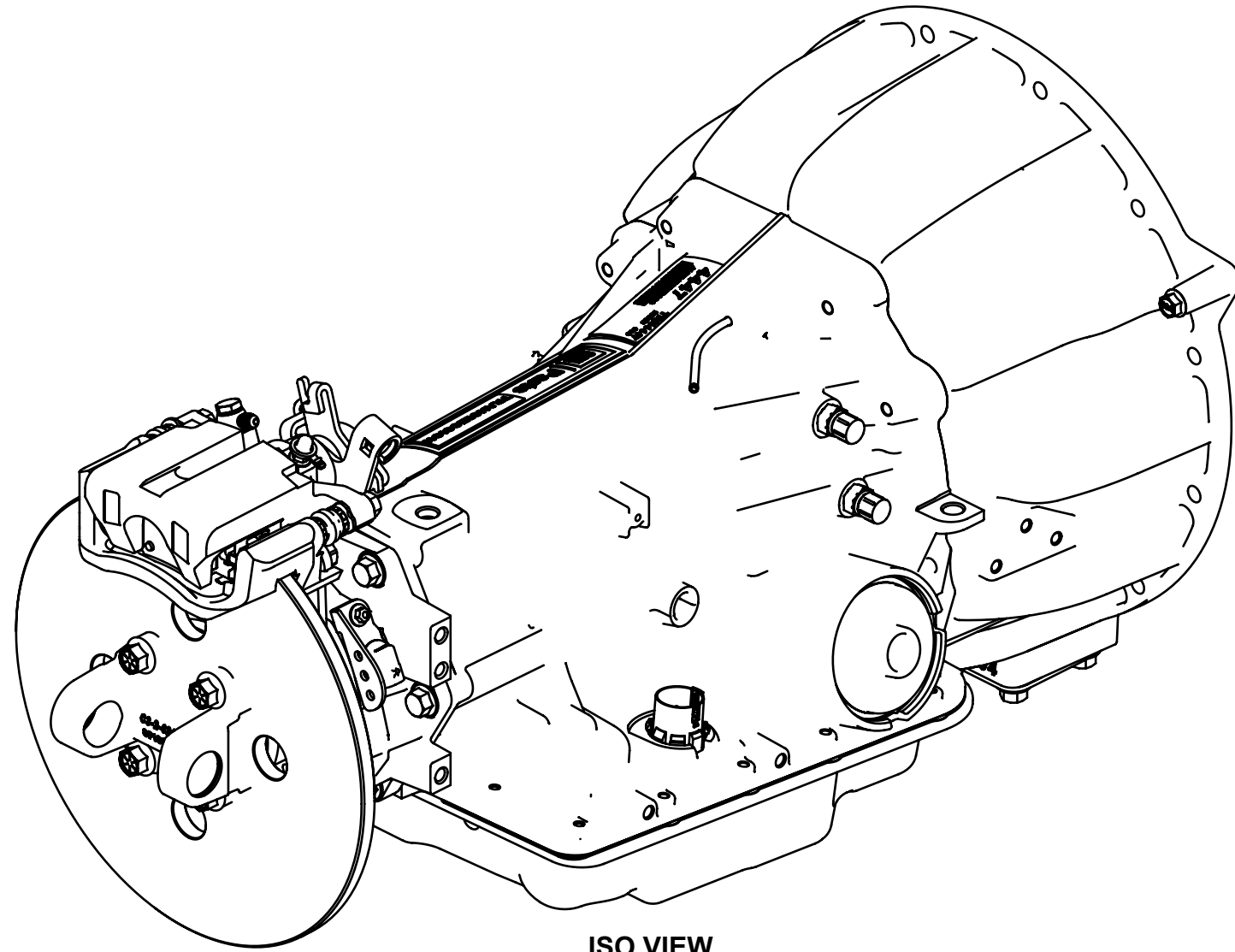
**EXPLODED VIEW**  
KIT COMPONENTS  
SCALE: 7:32

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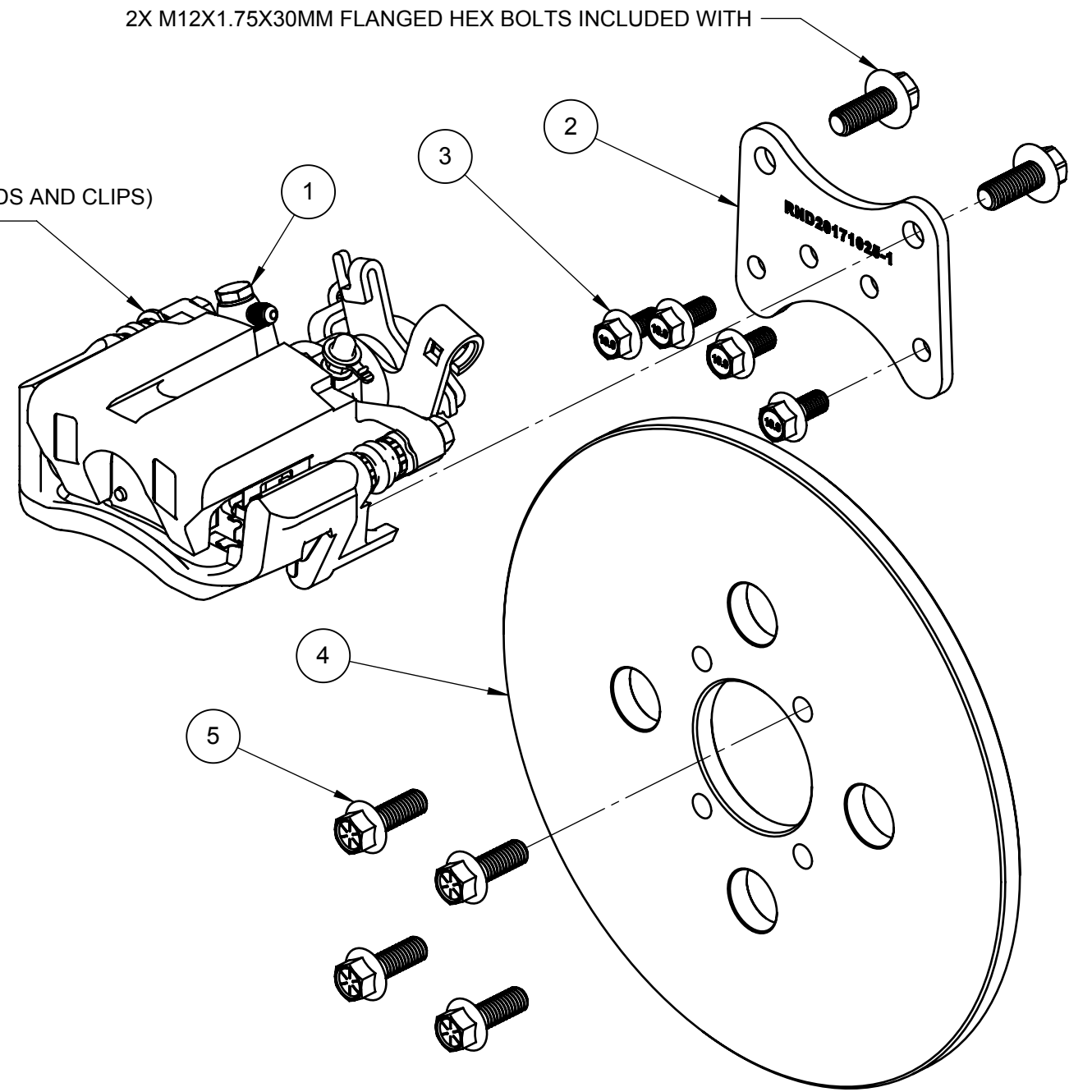
USED ON	NEXT ASSEMBLY
DRAWN BY	JJK 9/20/18
ENG APPR.	
DIMENSIONS ARE IN INCHES SCALE: 1:12 SHEET 1 OF 1	

<b>PCS</b> Powertrain Control Solutions Engineering the future of driveline control	
DESCRIPTION <b>4LHD DISC PARKING BRAKE FINISH KIT, LH (MECHANICAL APPLY)</b>	
SIZE <b>B</b>	DRAWING NO. <b>BRK2052</b>
REV <b>1</b>	

BOM #	DESCRIPTION	PCS PART #	QTY
1	MECHANICAL / HYDRAULIC CALIPER (RIGHT)	TRN7045	1
2	LEGACY CALIPER ADAPTER BRACKET	TRN7048	1
3	M10X1.5X20mm FLANGED HEX BOLT	TRN7527	4
4	BRAKE DISC - 4LHD - 12.0 X 0.5"	BRK0210	1
5	7/16-14X1.25" FLANGED HEX BOLT	TRN7531	4



REPLACEMENT PAD KIT (2X PADS AND CLIPS)  
CAN BE ORDERED AS TRN7056



**NOTES:**

- THIS KIT IS INTENDED TO KEEP THE MECHANICAL / HYDRAULIC CALIPER FUNCTIONALITY WITH THE NEW BRK2010 FIXED-FLANGE-OUTPUT EXTENSION HOUSING. FOR SYSTEMS USING ONLY MECHANICAL APPLY PARKING BRAKES WE RECOMMEND THE BRK2050 KIT.
- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 9/4/2018
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:4 SHEET 1 OF 1

**PCS** Powertrain Control Solutions  
Engineering the future of driveline control

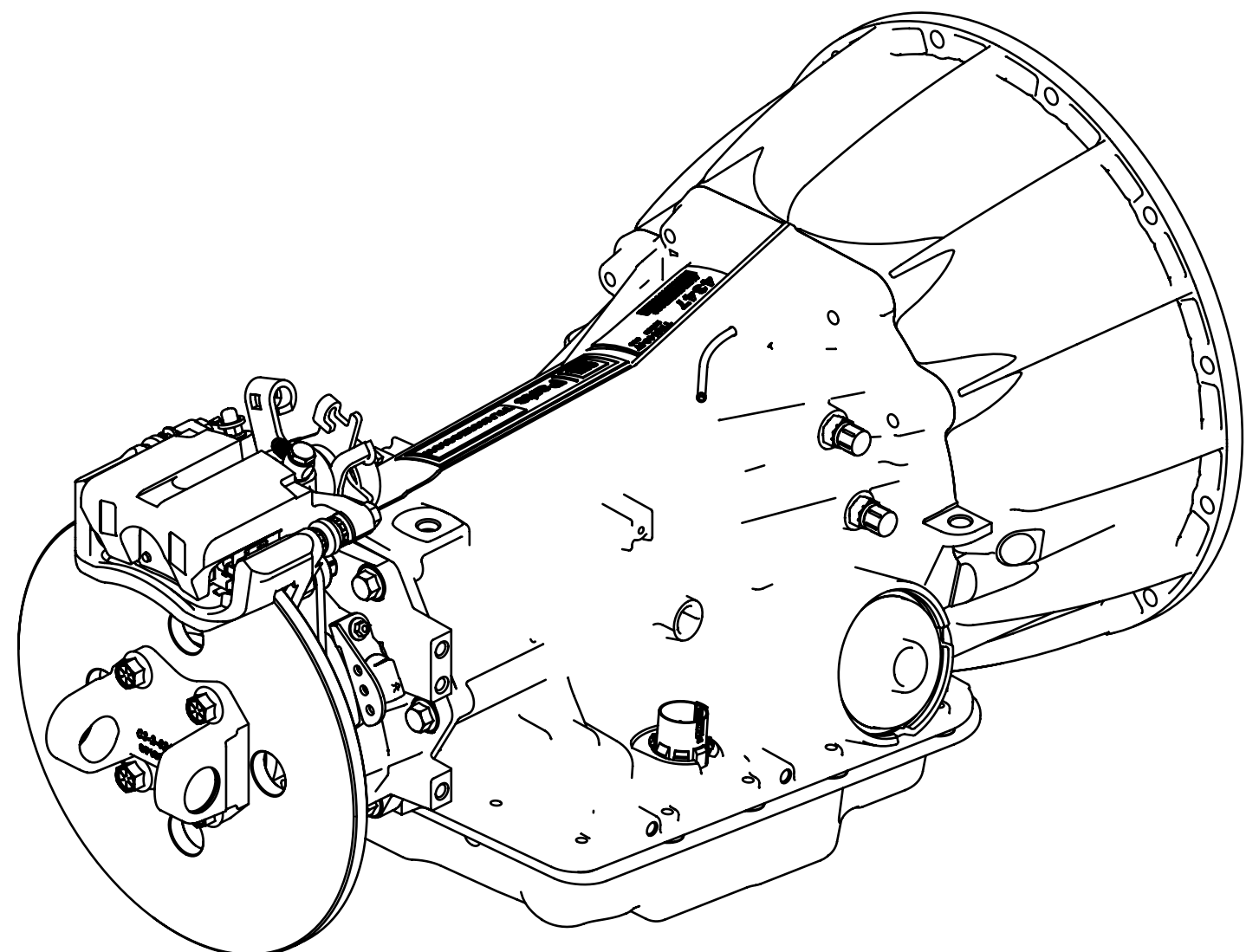
DESCRIPTION  
**MECHANICAL / HYDRAULIC  
PARKING BRAKE FINISH KIT**

SIZE	DRAWING NO.	REV
<b>B</b>	<b>BRK2080</b>	<b>1</b>

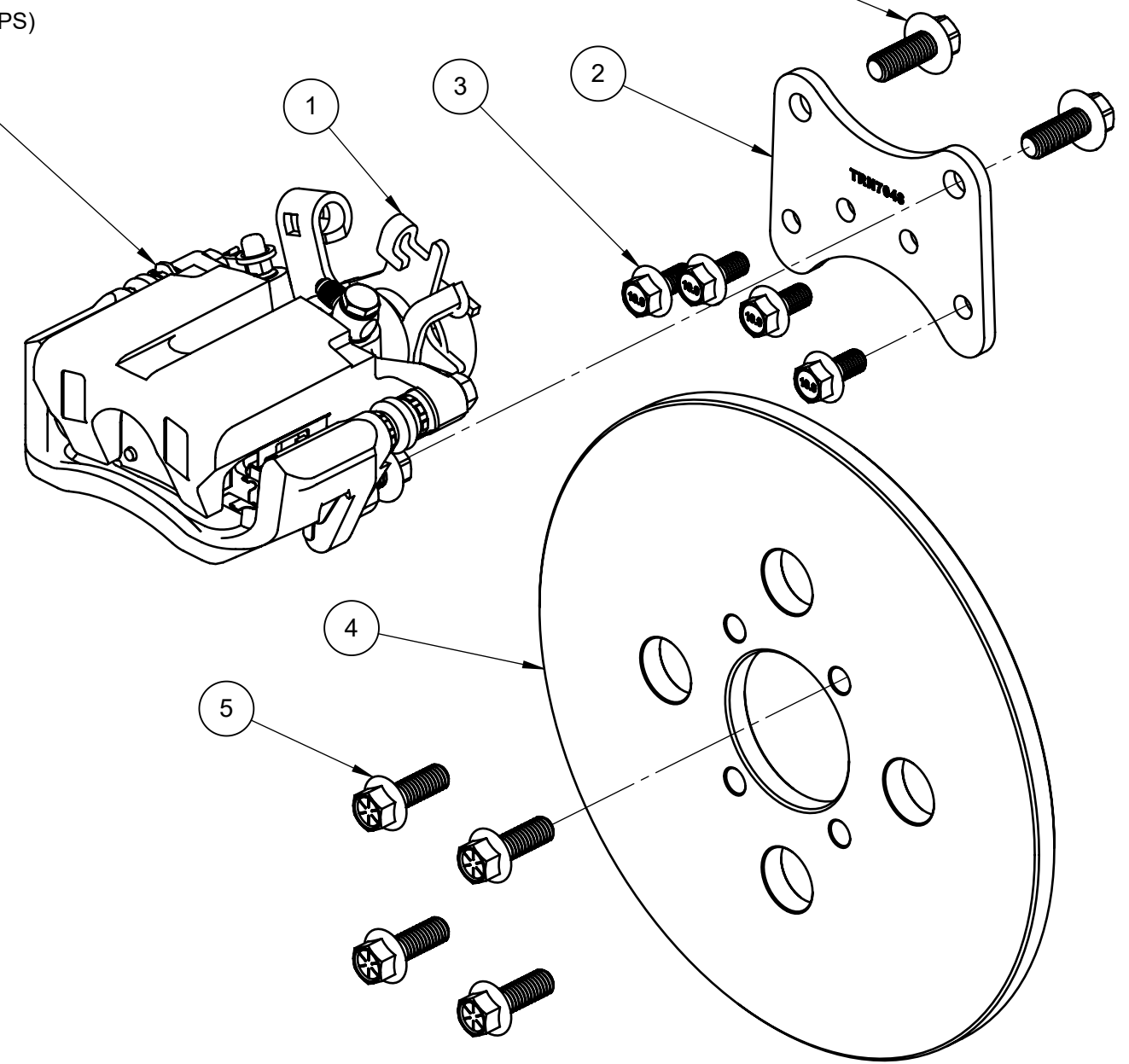
BOM #	DESCRIPTION	PCS PART #	QTY
1	MECHANICAL / HYDRAULIC CALIPER (LEFT)	TRN7044	1
2	LEGACY CALIPER ADAPTER BRACKET	TRN7048	1
3	M10X1.5X20mm FLANGED HEX BOLT	TRN7527	4
4	BRAKE DISC - 4LHD - 12.0 X 0.5"	BRK0210	1
5	7/16-14X1.25" FLANGED HEX BOLT	TRN7531	4

2X M12X1.75X30MM FLANGED HEX BOLTS INCLUDED WITH TRN7044 / TRN7045

REPLACEMENT PAD KIT (2X PADS AND CLIPS)  
CAN BE ORDERED AS TRN7056



**ISO VIEW**  
INSTALLED KIT  
SCALE: 1:4



**EXPLODED VIEW**  
ASSEMBLY PARTS  
SCALE: 1:4

**NOTES:**

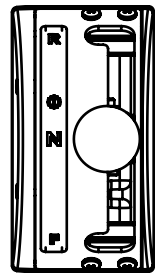
- THIS KIT IS INTENDED TO KEEP THE MECHANICAL / HYDRAULIC CALIPER FUNCTIONALITY WITH THE NEW BRK2010 FIXED-FLANGE-OUTPUT EXTENSION HOUSING. FOR SYSTEMS USING ONLY MECHANICAL APPLY PARKING BRAKES WE RECOMMEND THE BRK2050 KIT.
- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.

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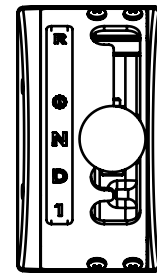
	DRAWN BY	MFP	6/6/2024
	ENG APPR.		
DIMENSIONS ARE IN INCHES	SCALE: 1:4	SHEET 1 OF 1	

<b>Powertrain Control Solutions</b> <i>Engineering the future of driveline control</i>	
DESCRIPTION	
<b>MECHANICAL / HYDRAULIC PARKING BRAKE FINISH KIT (LEFT)</b>	
USED ON	NEXT ASSEMBLY
SIZE	DRAWING NO.
<b>B</b>	<b>BRK2081</b>
REV	1

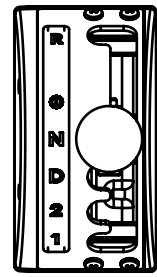
**SHIFT GATE CONFIGURATIONS (RIGHT HAND)**



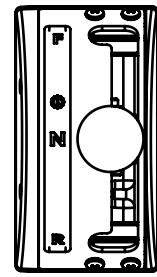
**TOP VIEW**  
FNR / DNR GATE  
SCALE: 1:4



**TOP VIEW**  
RND1 GATE  
SCALE: 1:4



**TOP VIEW**  
RND21 GATE  
SCALE: 1:4



**TOP VIEW**  
RNF (EUROPE) GATE  
SCALE: 1:4

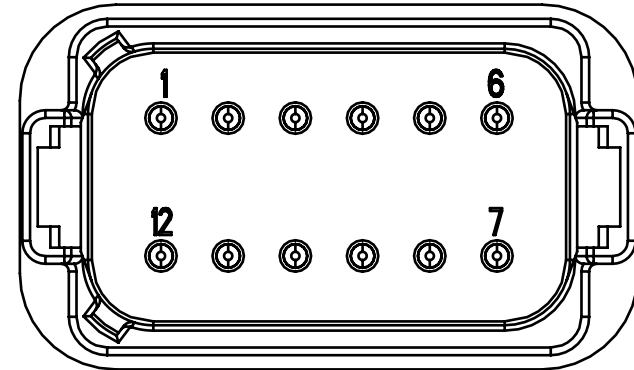
**ASSEMBLY PART NUMBERS**

CONFIGURATION	PCS PART NUMBER
FNR - RH	IES2030
FNR - LH	IES2031
DNR - RH	IES2032
DNR - LH	IES2033
RNF (EUROPE) - RH	IES2034
RNF (EUROPE) - LH	IES2035
RND1 - RH	IES2040
RND21 - RH	IES2050

\* SEE NOTES 6 AND 7.

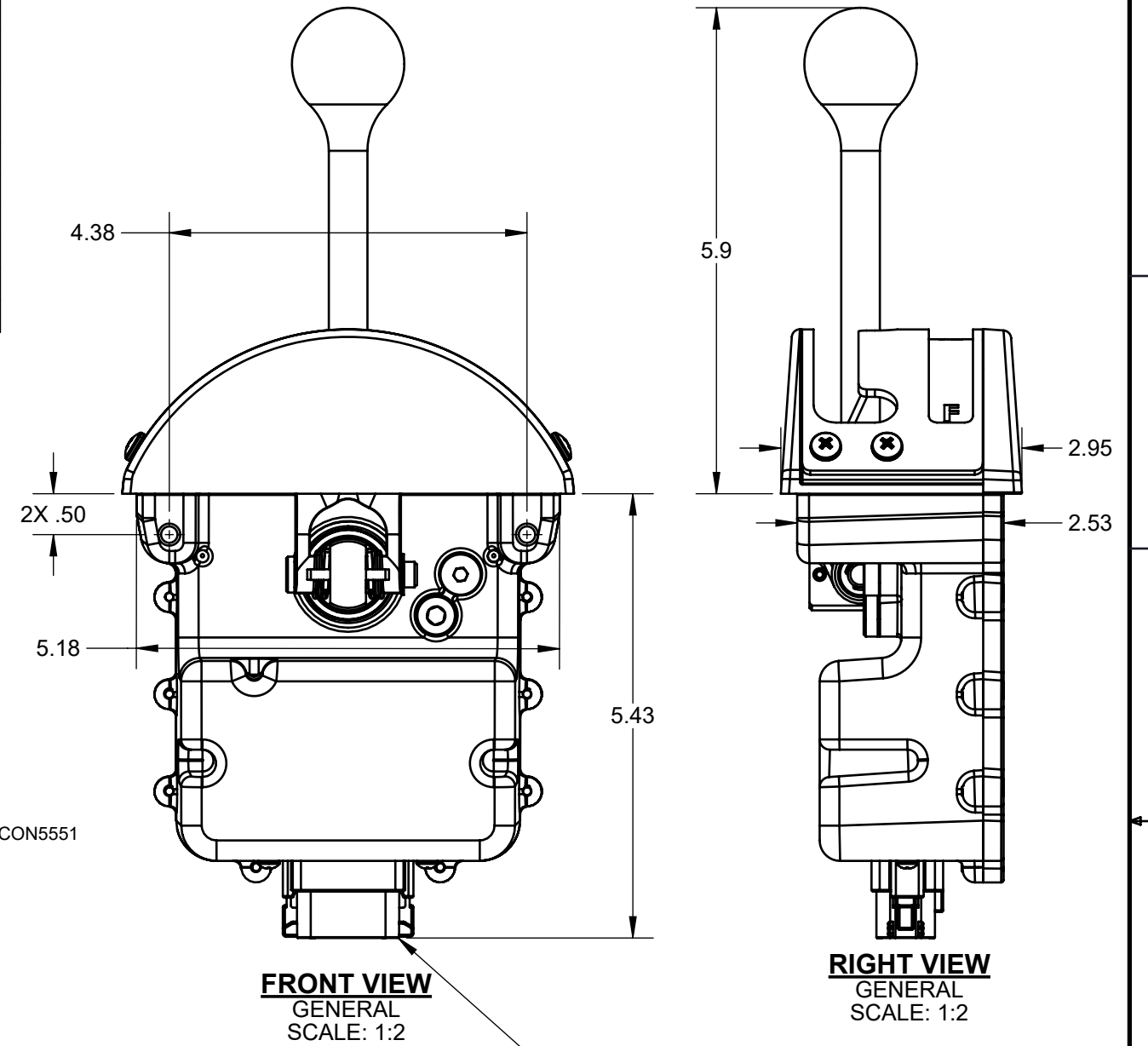
**INDUSTRIAL ELECTRONIC SHIFTER PINOUT**

PIN	NAME	DESCRIPTION	TYPICAL APPLICATION
1	RELAY 1	SOLID STATE RELAY, 10A MAX (SEE NOTE 8)	NEUTRAL SAFETY CIRCUIT
2			
3	OUTPUT 1	OUTPUT - BATTERY VOLTAGE (HIGH) OR GROUND (LOW). PWM, 1 AMP MAX.	ACTIVE LOW IN NEUTRAL POSITION
4	OUTPUT 2	OUTPUT - BATTERY VOLTAGE (HIGH) OR GROUND (LOW). PWM, 1 AMP MAX.	ACTIVE LOW IN REVERSE POSITION
5	RELAY 2	SOLID STATE RELAY, 10A MAX (SEE NOTE 8)	REVERSE / BACKUP LIGHTS
6			
7	POWER	SWITCHED (IGNITION), 8-32V DC	-
8	GROUND	GROUND	-
9	OUTPUT 3	OUTPUT - BATTERY VOLTAGE (HIGH) OR GROUND (LOW). PWM, 1 AMP MAX.	ACTIVE LOW IN FORWARD POSITION
10	CAN HI	CAN (J1939 OR CONFIGURABLE)	-
11	CAN LO		-
12	INPUT 1	DIGITAL INPUT (CONFIGURABLE)	SHIFT INHIBIT



**DETAIL VIEW**  
CONNECTOR  
SCALE: 2:1

INTEGRATED RECEPTACLE: DEUTSCH DT13-12PB  
RECOMMENDED HARNESS CONNECTOR: DEUTSCH DT06-12SB-P012 / CON5551  
RECOMMENDED TPA: DEUTSCH W12S-P012 / CON5508

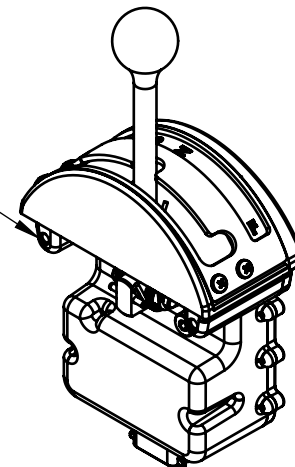


HARNESS CONNECTOR SHOWN.  
ADDITIONAL WIRE CLEARANCE REQUIRED.

**NOTES:**

- THIS DRAWING IS INTENDED AS A GENERAL REFERENCE FOR ANY VEHICLE WITH OR INTENDING TO HAVE A PCS "INDUSTRIAL ELECTRONIC SHIFTER" PACKAGE INCLUDING (BUT NOT LIMITED TO) THE FOLLOWING FEATURES:  
-DIRECT PHYSICAL REPLACEMENT TO THE TRADITIONAL GSE MECHANICAL SHIFTERS.  
-CONFIGURABLE "NEUTRAL-LOCK" RATED FOR 890N (200LB) KNOB LOAD DURING "SHIFT-INHIBIT" CONDITIONS.  
-DESIGNED AND TESTED FOR INDUSTRIAL ENVIRONMENTS.  
-INGRESS PROTECTION RATING OF IP66.  
-TEMPERATURE RATING OF -40 TO 85°C (-40 TO 185°F).  
-BUILT IN (LED ILLUMINATED) RANGE POSITION LIGHTS.  
-BUILT IN (LED ILLUMINATED) TRANSMISSION DIAGNOSTIC LIGHT (ALSO PROVIDES J1939 DIAGNOSTIC CODES).  
-BUILT IN NEUTRAL-SAFETY SWITCH (RELAY 1, CAN BE PROGRAMMED FOR OTHER APPLICATIONS).  
-BUILT IN BACKUP-LIGHT CONTROLLER (RELAY 2, CAN BE PROGRAMMED FOR OTHER APPLICATIONS).  
-AVAILABLE FORWARD / NEUTRAL / REVERSE OUTPUTS FOR RANGE NOTIFICATION TO OTHER VEHICLE SUB-SYSTEMS.
- A PCS GENIII (3) VALVEBODY, PCS TRANSMISSION CONTROLLER, AND PCS APPROVED CALIBRATION ARE REQUIRED TO OPERATE THE 4LHD TRANSMISSION SYSTEM UNDER WARRANTY. CONSULT PCS FOR OTHER TRANSMISSION APPLICATIONS.
- THE *NEUTRAL-LOCK* FEATURE WILL PREVENT THE SHIFT LEVER FROM LEAVING *NEUTRAL* (AND THUS THE TRANSMISSION) DURING UNSAFE SHIFTING CONDITIONS AND LOSS-OF-12V-POWER. ATTEMPTING TO BYPASS THIS FEATURE ELECTRONICALLY OR PHYSICALLY WILL VOID THE WARRANTY.
- THE SYSTEM REQUIRES SWITCHED (IGNITION) 8-32V DC, PROTECTED BY ITS OWN 10A FUSE (RELAYS EXEMPT AND REQUIRE THEIR OWN 10A FUSES). ELECTRICAL CONNECTIONS BETWEEN THIS SYSTEM AND THE POWER SOURCE MUST BE SECURELY FASTENED USING AN APPROVED CONTACT METHOD.
- THE SHIFTER IS TO BE SECURELY FASTENED TO THE VEHICLE BODY WITH A MINIMUM TWO OF THE 1/4"-20" MOUNTING HOLES.
- FURTHER FEATURES CAN BE ENABLED OR DISABLED WITH THE CALIBRATION. CONTACT PCS FOR CALIBRATION ASSISTANCE.
- REMINDER: RIGHT HAND SETUPS (SUCH AS IES2030) ARE THE MOST COMMON IN GSE VEHICLES.
- CONSULT PCS ENGINEERING FOR HIGHER RELAY CURRENT APPLICATIONS UP TO 15 AMPS.

4X 1/4"-20 TAPPED HOLES.  
1" LONG BOLTS RECOMENDED.  
TORQUE BOLTS TO 45 IN-LBS.  
THREADLOCKER RECOMMENDED.



**ISOMETRIC VIEW**  
GENERAL SCALE: 1:2

CURRENT DRAW PER FUNCTION	
IDLE	0.2 A
SHIFT-ENABLE INRUSH	2.5 - 3.0 A
SHIFT-ENABLE STEADY	1.0 A
DIGITAL OUTPUT (1 OF 3 ACTIVE)	1.0 A MAX

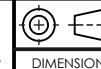
MAX THEORETICAL: 4.2 A



INDUSTRIAL ELECTRONIC SHIFTER

USED ON	NEXT ASSEMBLY

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DRAWN BY	JJK	4/11/2018
ENG APPR.	MFP	11/20/2018
DIMENSIONS ARE IN INCHES		SCALE: 1:2 SHEET 1 OF 3

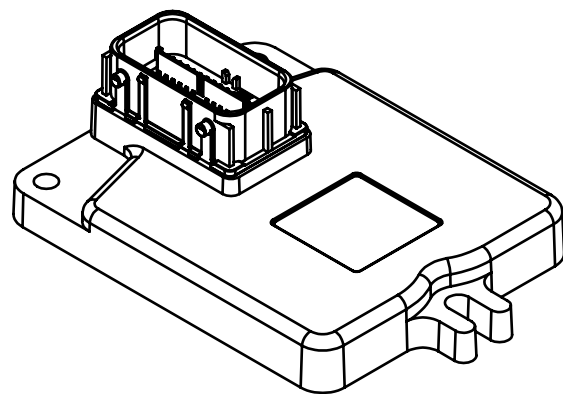
SIZE	DRAWING NO.	REV
<b>B</b>	SEE CHART	J

**TCM 2600 NOTES**

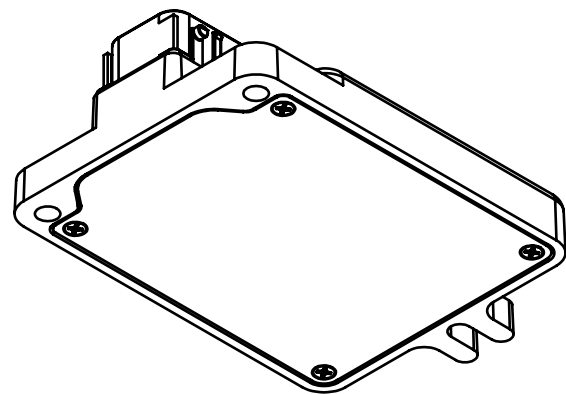
WEIGHT	0.37 kg (0.82 LBS)
CASE MATERIAL	DIE CAST ALUMINUM
CASE FINISH	BLACK ELECTROCOATING
VOLTAGE RANGE	8 - 36V DC
CURRENT	ON: 100mA QUIESCENT: 9mA
OPERATING TEMP	-50 TO 125°C (-58 TO 257°F)
STORAGE TEMP	-55 TO 150°C (-67 TO 302°F)
INGRESS PROTECTION	IP69K
ELECTROMAGNETIC COMPATABILITY	GM 9100
HARNESS INTERFACE	MOLEX MX123, OPTION 9, 56 PIN SEALED CONNECTOR
COMMUNICATION INTERFACE	2X CAN 2.0B (J1939, GMLAN/PCSCAN), 1X SERIAL RS-232, 1X J1850 CAN
DIGITAL INPUTS	16X, PROGRAMMABLE ACTIVE HIGH/LOW AND TOGGLE/MOMENTARY
DIGITAL OUTPUTS	2X, LOW SIDE DRIVE ONLY
ANALOG INPUTS	2X, 0-5V DC (SEE PINOUT NOTES)
FREQUENCY INPUTS (RANGE 0-10kHz)	4X (SEE PINOUT NOTES)
PWM OUTPUTS	7X, LOW SIDE DRIVE ONLY (4 W/CURRENT MONITORING)
MAX OUTPUT CURRENTS	3.5 AMP PER
REVERSE / TRANSIENT PROTECTION	YES
REAL TIME TUNING	YES (W/ LAPTOP)
DATA LOGGING	YES (W/ LAPTOP)
IN FIELD FLASH UPGRADABLE	YES
ANALOG INPUT FAILURE DIAGNOSTIC	YES
INPUT OVER-VOLTAGE PROTECTION	YES
SHORT CIRCUIT PROTECTION	YES
OVER CURRENT PROTECTION	YES
THERMAL PROTECTION	YES

**INSTALLATION NOTES:**

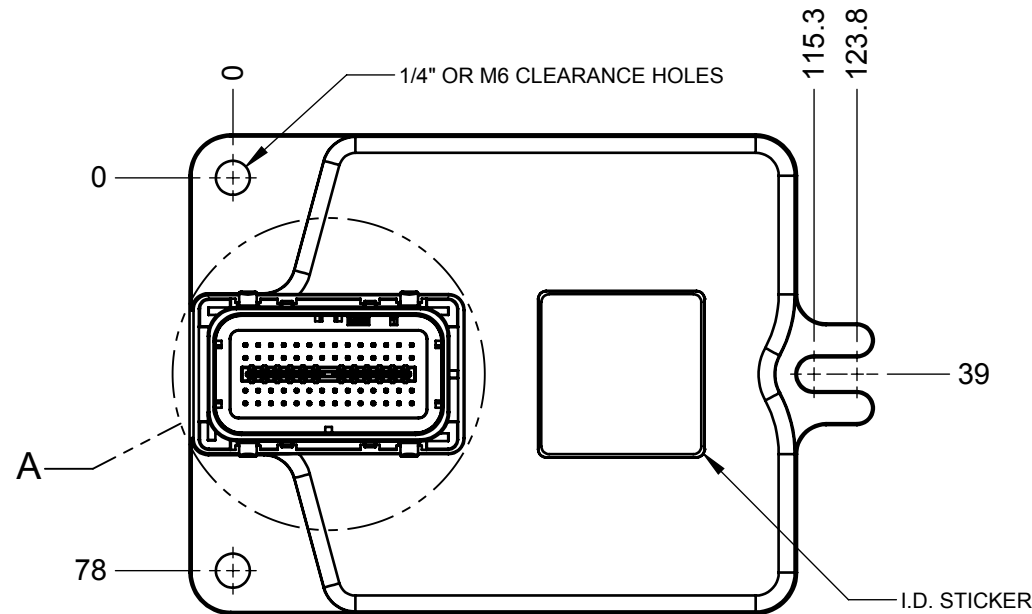
1. THE TRANSMISSION CONTROLLER IS TO BE SECURELY INSTALLED IN A LOCATION FREE OF SEVERE VIBRATION AND HEAT SOURCES.
2. THE CONNECTOR IS TO BE INSTALLED AND MAINTAINED USING THE PROCEDURES DESCRIBED IN THE "MX123 USER MANUAL".
3. ANY TRANSMISSION CONTROLLER DISPLAYING VISIBLE DAMAGE SHALL NOT BE INSTALLED IN A VEHICLE.
4. ELECTROSTATIC DISCHARGE PREVENTION TECHNIQUES SHALL BE EMPLOYED BY VEHICLE ASSEMBLY PERSONNEL DURING HANDLING.
5. TRANSMISSION CONTROLLERS SHALL NOT BE OPENED BY VEHICLE ASSEMBLY PERSONNEL, AND ONLY ON A CASE TO CASE BASIS.
6. PCS AND THE CUSTOMER SHALL WORK TOGETHER TO DEFINE THE TRANSMISSION CONTROLLER PROGRAMMING.
7. IF THE VEHICLE IS SUBJECTED TO ELECTRICAL WELDING PROCEDURES THE HARNESS AND TCM MUST BE REMOVED FROM THE VEHICLE.
8. WIRE GAUGE BETWEEN THE TRANSMISSION, TCM, AND OTHER SYSTEMS SHALL REFLECT THE DISTANCES BETWEEN COMPONENTS TO MINIMIZE VOLTAGE DROP AND SIGNAL DEGRADATION.
9. REFER TO SECTION 2.5 OF THE "PCS 4LHD APPLICATION GUIDE" FOR MORE DETAILED INSTALLATION AND OPERATION INFORMATION.



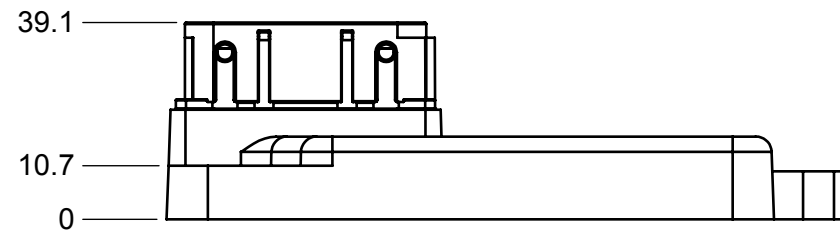
**ISO VIEW**  
GENERAL  
SCALE: 1:2



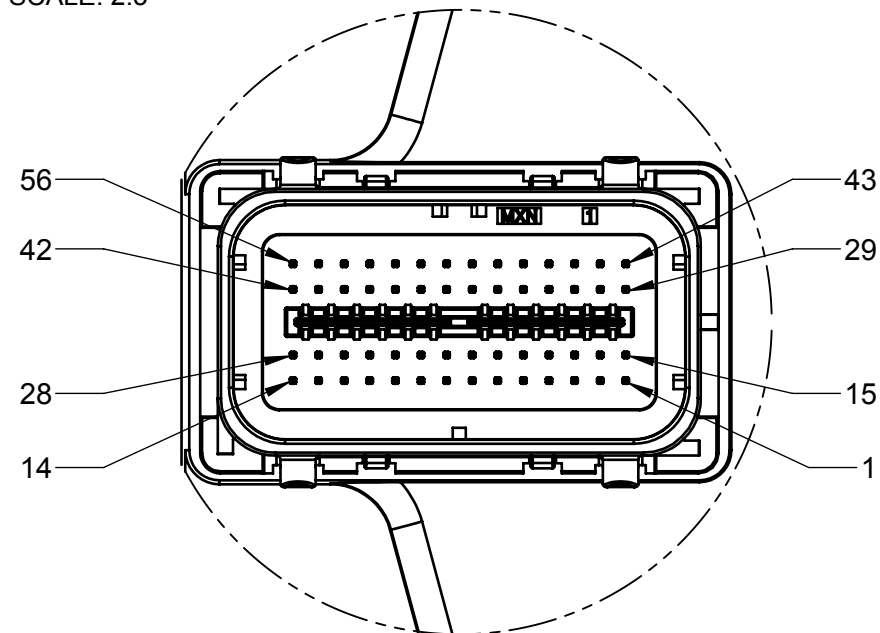
**ISO VIEW**  
GENERAL  
SCALE: 1:2



**TOP VIEW**  
PROFILE  
SCALE: 2:3



**SIDE VIEW**  
HEIGHTS  
SCALE: 2:3



**DETAIL A**  
PINOUT  
SCALE: 4:3

**TCM 2600 PINOUT**

PIN	OUTPUT
1	CLASS 2 SERIAL DATA (J1850)
2	DIGITAL INPUT 1
3	DIGITAL INPUT 2
4	DIGITAL INPUT 3
5	DIGITAL INPUT 4
6	DIGITAL INPUT 5
7	DIGITAL INPUT 6
8	DIGITAL INPUT 7
9	GROUND 1
10	DIGITAL INPUT 8
11	PWM OUTPUT 1
12	PWM OUTPUT 2
13	PWM OUTPUT 3
14	PWM OUTPUT 4
15	CAN 1 HIGH
16	CAN 1 LOW
17	SPEEDOMETER OUTPUT (ZERO CROSSING)
18	SWITCHED +12V OUTPUT
19	SWITCHED +12V INPUT
20	+12V BATTERY
21	+5V (SENSOR) REFERENCE
22	SIGNAL GROUND
23	SIGNAL GROUND
24	(3) SPEED INPUT (PROGRAMMABLE TRIGGER
25	(2) FILTER VALUE AND 1k PULL-UP
26	SERIAL TX (COM CABLE)
27	SERIAL RX (COM CABLE)
28	RS232 GROUND (COM CABLE)
29	DIGITAL INPUT 9
30	DIGITAL INPUT 10
31	DIGITAL INPUT 11
32	DIGITAL INPUT 12
33	DIGITAL INPUT 13
34	DIGITAL INPUT 14
35	DIGITAL INPUT 15
36	DIGITAL INPUT 16
37	SIGNAL GROUND
38	SPEED INPUT 1 (MAGNETIC SENSOR)
39	SPEED INPUT 4 (HALL-EFFECT SENSOR)
40	PWM OUTPUT 9 (OR DIGITAL)
41	DIGITAL OUTPUT 4
42	GROUND 2
43	CAN 2 HIGH
44	CAN 2 LOW
45	ANALOG INPUT 1
46	ANALOG INPUT 2
47	N/A
48	N/A
49	N/A
50	ANALOG INPUT 6, W/1kOhm 5V PULL-UP
51	SWITCHED +12V OUTPUT
52	SWITCHED +12V OUTPUT
53	PWM 7 OUTPUT (OR DIGITAL)
54	PWM 8 OUTPUT (OR DIGITAL)
55	SIGNAL GROUND
56	SIGNAL GROUND

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 8/7/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES SCALE: 1:1 SHEET 1 OF 2	



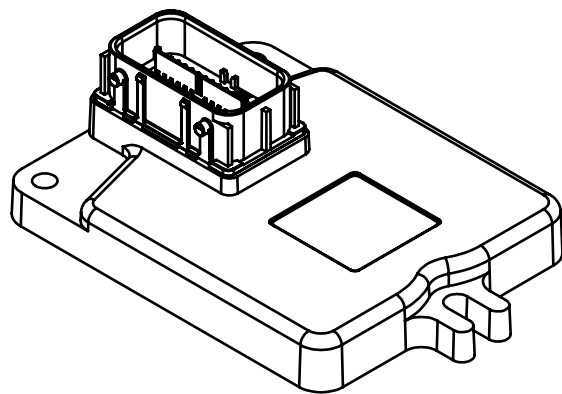
DESCRIPTION		
<b>TRANSMISSION CONTROLLER</b>		
SIZE	DRAWING NO.	REV
<b>B</b>	<b>TCM 2600</b>	<b>1</b>

### TCM 2800 NOTES

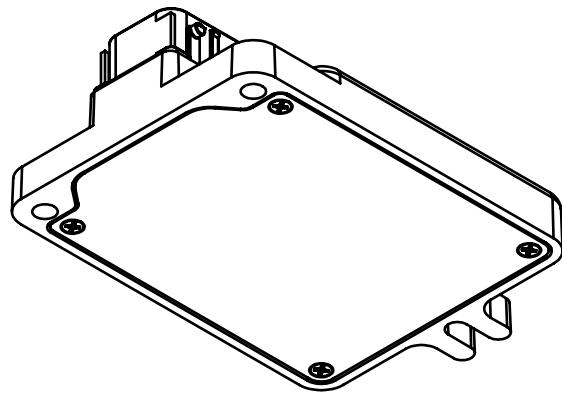
WEIGHT	0.37 kg (0.82 LBS)
CASE MATERIAL	DIE CAST ALUMINUM
CASE FINISH	BLACK ELECTROCOATING
VOLTAGE RANGE	8 - 36V DC
CURRENT	ON: 100mA QUIESCENT: 9mA
OPERATING TEMP	-50 TO 125°C (-58 TO 257°F)
STORAGE TEMP	-55 TO 150°C (-67 TO 302°F)
INGRESS PROTECTION	IP69K
ELECTROMAGNETIC COMPATABILITY	GM 9100
HARNESS INTERFACE	MOLEX 123, OPTION 9, 56 PIN SEALED CONNECTOR
COMMUNICATION INTERFACE	2X CAN 2.0B (J1939, GMLAN/PCSCAN), 1X SERIAL RS-232, 1X J1850 CAN
DIGITAL INPUTS	16X, PROGRAMMABLE ACTIVE HIGH/LOW AND TOGGLE/MOMENTARY
DIGITAL OUTPUTS	4X, PROGRAMMABLE LOW OR HIGH SIDE DRIVE
ANALOG INPUTS	6X, 0-5V DC (SEE PINOUT NOTES)
FREQUENCY INPUTS (RANGE 0-10kHz)	4X (SEE PINOUT NOTES)
PWM OUTPUTS	9X, HIGH OR LOW SIDE DRIVE (4X W/ CURRENT MONITORING)
MAX OUTPUT CURRENTS	3.5 AMP PER
REVERSE / TRANSIENT PROTECTION	YES
REAL TIME TUNING	YES (W/ LAPTOP)
DATA LOGGING	YES (W/ LAPTOP)
IN FIELD FLASH UPGRADABLE	YES
ANALOG INPUT FAILURE DIAGNOSTIC	YES
INPUT OVER-VOLTAGE PROTECTION	YES
SHORT CIRCUIT PROTECTION	YES
OVER CURRENT PROTECTION	YES
THERMAL PROTECTION	YES

### INSTALLATION NOTES:

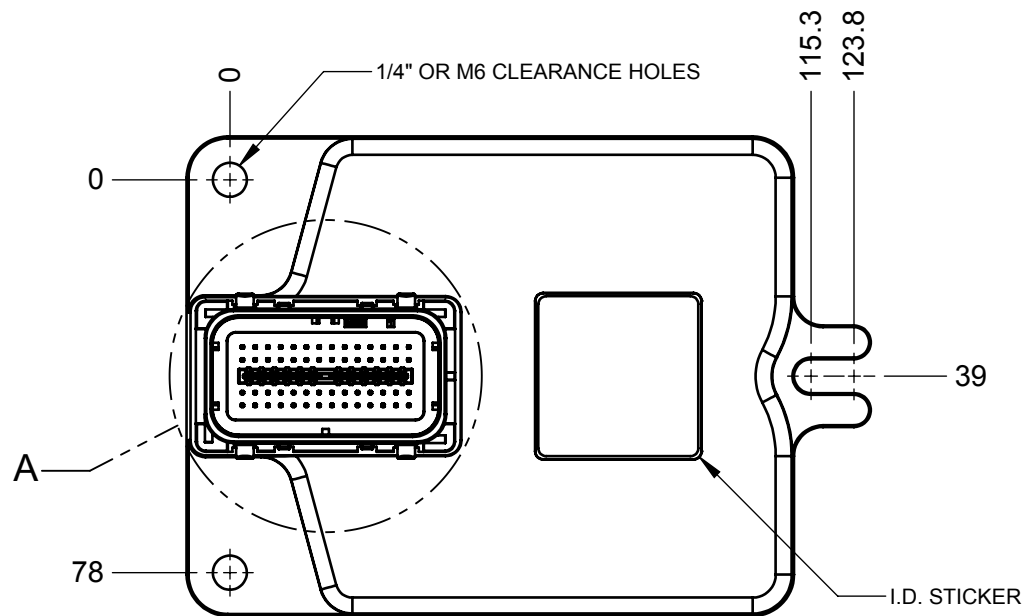
1. THE TRANSMISSION CONTROLLER IS TO BE SECURELY INSTALLED IN A LOCATION FREE OF SEVERE VIBRATION AND HEAT SOURCES.
2. THE CONNECTOR IS TO BE INSTALLED AND MAINTAINED USING THE PROCEDURES DESCRIBED IN THE "MX123 USER MANUAL".
3. ANY TRANSMISSION CONTROLLER DISPLAYING VISIBLE DAMAGE SHALL NOT BE INSTALLED IN A VEHICLE.
4. ELECTROSTATIC DISCHARGE PREVENTION TECHNIQUES SHALL BE EMPLOYED BY VEHICLE ASSEMBLY PERSONNEL DURING HANDLING.
5. TRANSMISSION CONTROLLERS SHALL NOT BE OPENED BY VEHICLE ASSEMBLY PERSONNEL, AND ONLY ON A CASE BASIS.
6. PCS AND THE CUSTOMER SHALL WORK TOGETHER TO DEFINE THE TRANSMISSION CONTROLLER PROGRAMMING.
7. IF THE VEHICLE IS SUBJECTED TO ELECTRICAL WELDING PROCEDURES THE HARNESS AND TCM MUST BE REMOVED FROM THE VEHICLE.
8. WIRE GAUGE BETWEEN THE TRANSMISSION, TCM, AND OTHER SYSTEMS SHALL REFLECT THE DISTANCES BETWEEN COMPONENTS TO MINIMIZE VOLTAGE DROP AND SIGNAL DEGRADATION.
9. REFER TO SECTION 2.5 OF THE "PCS 4LHD APPLICATION GUIDE" FOR MORE DETAILED INSTALLATION AND OPERATION INFORMATION.



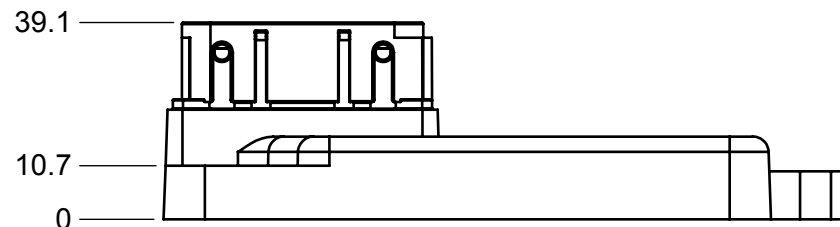
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SCALE: 1:2



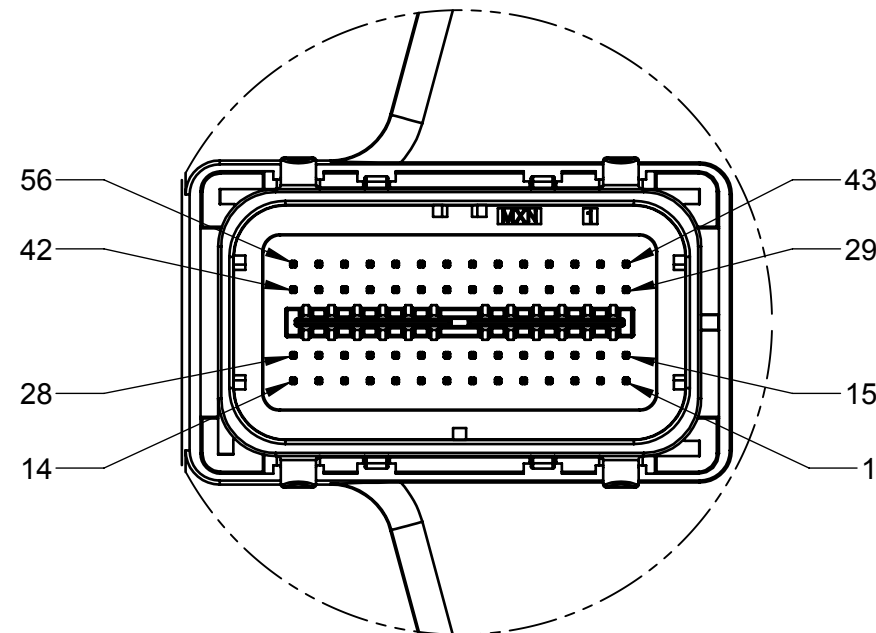
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**TOP VIEW**  
PROFILE  
SCALE: 2:3



**SIDE VIEW**  
HEIGHTS  
SCALE: 2:3



**DETAIL A**  
PINOUT  
SCALE: 4:3

### TCM 2800 PINOUT

PIN	OUTPUT
1	CLASS 2 SERIAL DATA (J1850)
2	DIGITAL INPUT 1
3	DIGITAL INPUT 2
4	DIGITAL INPUT 3
5	DIGITAL INPUT 4
6	DIGITAL INPUT 5
7	DIGITAL INPUT 6
8	DIGITAL INPUT 7
9	GROUND 1
10	DIGITAL INPUT 8
11	PWM OUTPUT 1
12	PWM OUTPUT 2
13	PWM OUTPUT 3
14	PWM OUTPUT 4
15	CAN 1 HIGH
16	CAN 1 LOW
17	SPEEDOMETER OUTPUT (ZERO CROSSING)
18	SWITCHED +12V OUTPUT
19	SWITCHED +12V INPUT
20	+12V BATTERY
21	+5V (SENSOR) REFERENCE
22	SIGNAL GROUND
23	SIGNAL GROUND
24	(1) SPEED INPUT (PROGRAMMABLE TRIGGER
25	(2) FILTER VALUE AND 1k PULL-UP
26	SERIAL TX (COM CABLE)
27	SERIAL RX (COM CABLE)
28	RS232 GROUND (COM CABLE)
29	DIGITAL INPUT 9
30	DIGITAL INPUT 10
31	DIGITAL INPUT 11
32	DIGITAL INPUT 12
33	DIGITAL INPUT 13
34	DIGITAL INPUT 14
35	DIGITAL INPUT 15
36	DIGITAL INPUT 16
37	SIGNAL GROUND
38	(3) SPEED INPUT (PROGRAMMABLE TRIGGER
39	(4) FILTER VALUE AND 1k PULL-UP
40	PWM OUTPUT 9 (OR DIGITAL)
41	DIGITAL OUTPUT 4
42	GROUND 2
43	CAN 2 HIGH
44	CAN 2 LOW
45	ANALOG INPUT 1
46	ANALOG INPUT 2
47	ANALOG INPUT 3
48	ANALOG INPUT 4
49	ANALOG INPUT 5, W/1kOhm 5V PULL-UP
50	ANALOG INPUT 6, W/1kOhm 5V PULL-UP
51	PWM 5 OUTPUT
52	PWM 6 OUTPUT
53	PWM 7 OUTPUT (OR DIGITAL)
54	PWM 8 OUTPUT (OR DIGITAL)
55	DIGITAL OUTPUT 5
56	DIGITAL OUTPUT 6

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 8/7/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES	
SCALE: 1:1	SHEET 2 OF 2



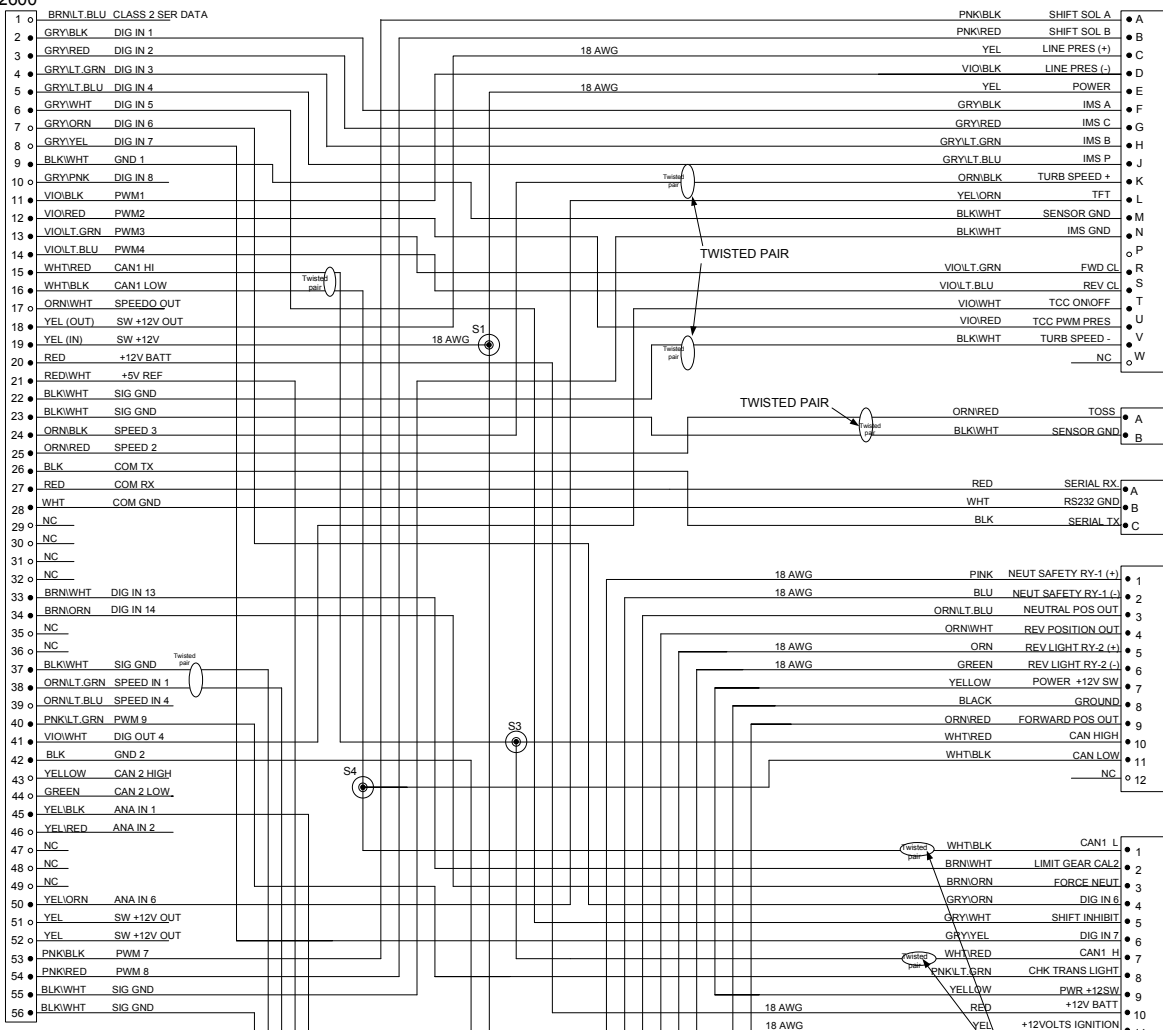
DESCRIPTION  
**TRANSMISSION CONTROLLER**

SIZE	DRAWING NO.	REV
<b>B</b>	TCM 2800	1



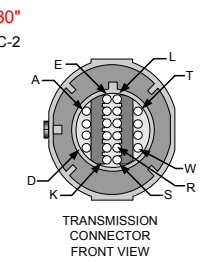
TCM-2600

C1



REVISION HISTORY

LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	4/24/19	FD	
1A	PROTO UPDATE	5/13/19	FD	
1B	PROTO CORRECTIONS	6/7/19	FD	
2	CUSTOMER TCU CON CHANGES	7/16/19	FD	
2A	UPDATE SPLICE LENGTHS	9/4/19	FD	



**C-2 TRANSMISSION CONNECTOR**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
17	TERMINAL	CON-2804	20-22 AWG
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

**C-3 OUTPUT SHAFT SPEED SENSOR FEMALE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
1	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

**C-4 DIAGNOSTIC COM CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
MF3	CABLE SEALS	CON-1027	WHT

**C-4A DIAGNOSTIC COMM CONNECTOR CAP**

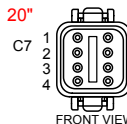
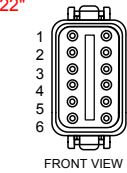
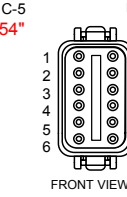
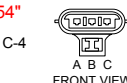
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1024	DK.RED
1	SECONDARY LOCK	CON-3417	

**C-5 E-SHIFTER CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5551	BLACK
12	TERMINALS	CON-5400	
1	WEDGE	CON-5508	

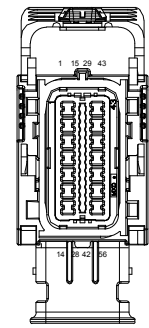
**C-6 BULKHEAD CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	WHITE
12	TERMINALS	CON-5400	
1	WEDGE	CON-5508	



**C-7 E-SHIFTER OUTPUT CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5532	
8	TERMINALS	CON-5400	
1	TPA	CON-5533	



TCU-2600

**TCU-2600 Connector**

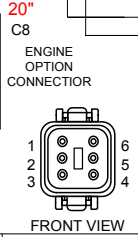
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	MIF
36	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
20	CAVITY PLUG	CON-1204	

**WIRE COLOR ABBREVIATIONS**

TXI	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

**SPLICE INFORMATION**

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	BLK/WHT
S2	GROUND	BLK/WHT
S3	CAN HIGH	WHT/RED
S4	CAN LOW	WHT/BLK



**C-8 ENGINE OPTION CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	
6	TERMINALS	CON-5400	
1	TPA	CON-5521	

INCLUDE CONNECTOR CAPS

POWERTRAIN CONTROL SOLUTIONS

TCM-4450 GSE 4LHD TRANS HARNESS W/ E-SHIFTER

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APPROVED BY: [Signature]

DATE: 9/4/2019

DESIGNED BY: [Signature]

DATE: 9/4/2019

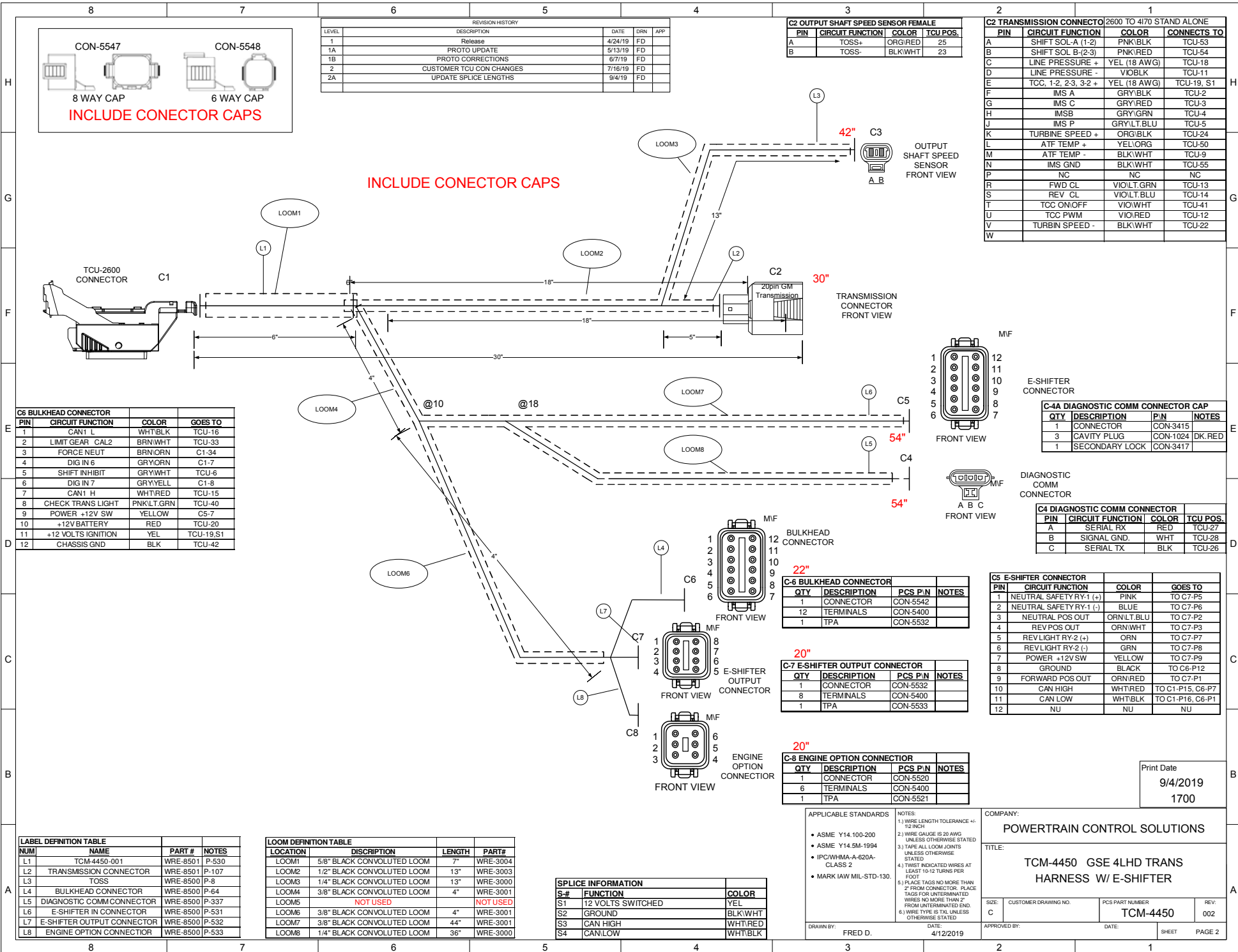
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REV: 002

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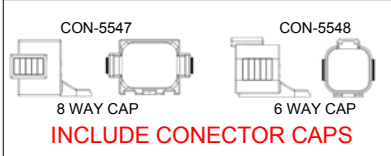
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REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	4/24/19	FD	
1A	PROTO UPDATE	5/13/19	FD	
1B	PROTO CORRECTIONS	6/7/19	FD	
2	CUSTOMER TCU CON CHANGES	7/16/19	FD	
2A	UPDATE SPLICE LENGTHS	8/4/19	FD	

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

C2 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIOLBK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIOL.T.GRN	TCU-13
S	REV CL	VIOL.T.BLU	TCU-14
T	TCC ON/OFF	VIOL/WHT	TCU-41
U	TCC PWM	VIOL/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22



INCLUDE CONECTOR CAPS

C6 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	LIMIT GEAR CAL2	BRN/WHT	TCU-33
3	FORCE NEUT	BRN/ORN	C1-34
4	DIG IN 6	GRY/ORN	C1-7
5	SHIFT INHIBIT	GRY/WHT	TCU-6
6	DIG IN 7	GRY/YELL	C1-8
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS LIGHT	PNK/LT.GRN	TCU-40
9	POWER +12V SW	YELLOW	C5-7
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

C-6 BULKHEAD CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	
12	TERMINALS	CON-5400	
1	TPA	CON-5532	

C-7 E-SHIFTER OUTPUT CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5532	
8	TERMINALS	CON-5400	
1	TPA	CON-5533	

C-8 ENGINE OPTION CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	
6	TERMINALS	CON-5400	
1	TPA	CON-5521	

C-4A DIAGNOSTIC COMM CONNECTOR CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1024	DK.RED
1	SECONDARY LOCK	CON-3417	

C4 DIAGNOSTIC COMM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

C5 E-SHIFTER CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	NEUTRAL SAFETY RY-1 (+)	PINK	TO C7-P5
2	NEUTRAL SAFETY RY-1 (-)	BLUE	TO C7-P6
3	NEUTRAL POS OUT	ORN/LT.BLU	TO C7-P2
4	REV POS OUT	ORN/WHT	TO C7-P3
5	REV LIGHT RY-2 (+)	ORN	TO C7-P7
6	REV LIGHT RY-2 (-)	GRN	TO C7-P8
7	POWER +12V SW	YELLOW	TO C7-P9
8	GROUND	BLACK	TO C6-P12
9	FORWARD POS OUT	ORN/RED	TO C7-P1
10	CAN HIGH	WHT/RED	TO C1-P15, C6-P7
11	CAN LOW	WHT/BLK	TO C1-P16, C6-P1
12	NU	NU	NU

LABEL DEFINITION TABLE			
NUM	NAME	PART #	NOTES
L1	TCM-4450-001	WRE-8501	P-530
L2	TRANSMISSION CONNECTOR	WRE-8501	P-107
L3	TOSS	WRE-8500	P-8
L4	BULKHEAD CONNECTOR	WRE-8500	P-64
L5	DIAGNOSTIC COMM CONNECTOR	WRE-8500	P-337
L6	E-SHIFTER IN CONNECTOR	WRE-8500	P-531
L7	E-SHIFTER OUTPUT CONNECTOR	WRE-8500	P-532
L8	ENGINE OPTION CONNECTOR	WRE-8500	P-533

LOOM DEFINITION TABLE			
LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	5/8" BLACK CONVOLUTED LOOM	7"	WRE-3004
LOOM2	1/2" BLACK CONVOLUTED LOOM	13"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	13"	WRE-3000
LOOM4	3/8" BLACK CONVOLUTED LOOM	4"	WRE-3001
LOOM5	NOT USED	NOT USED	
LOOM6	3/8" BLACK CONVOLUTED LOOM	4"	WRE-3001
LOOM7	3/8" BLACK CONVOLUTED LOOM	44"	WRE-3001
LOOM8	1/4" BLACK CONVOLUTED LOOM	36"	WRE-3000

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	GROUND	BLK/WHT
S3	CAN HIGH	WHT/RED
S4	CAN/LOW	WHT/BLK

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

DRAWN BY: FRED D. DATE: 4/12/2019

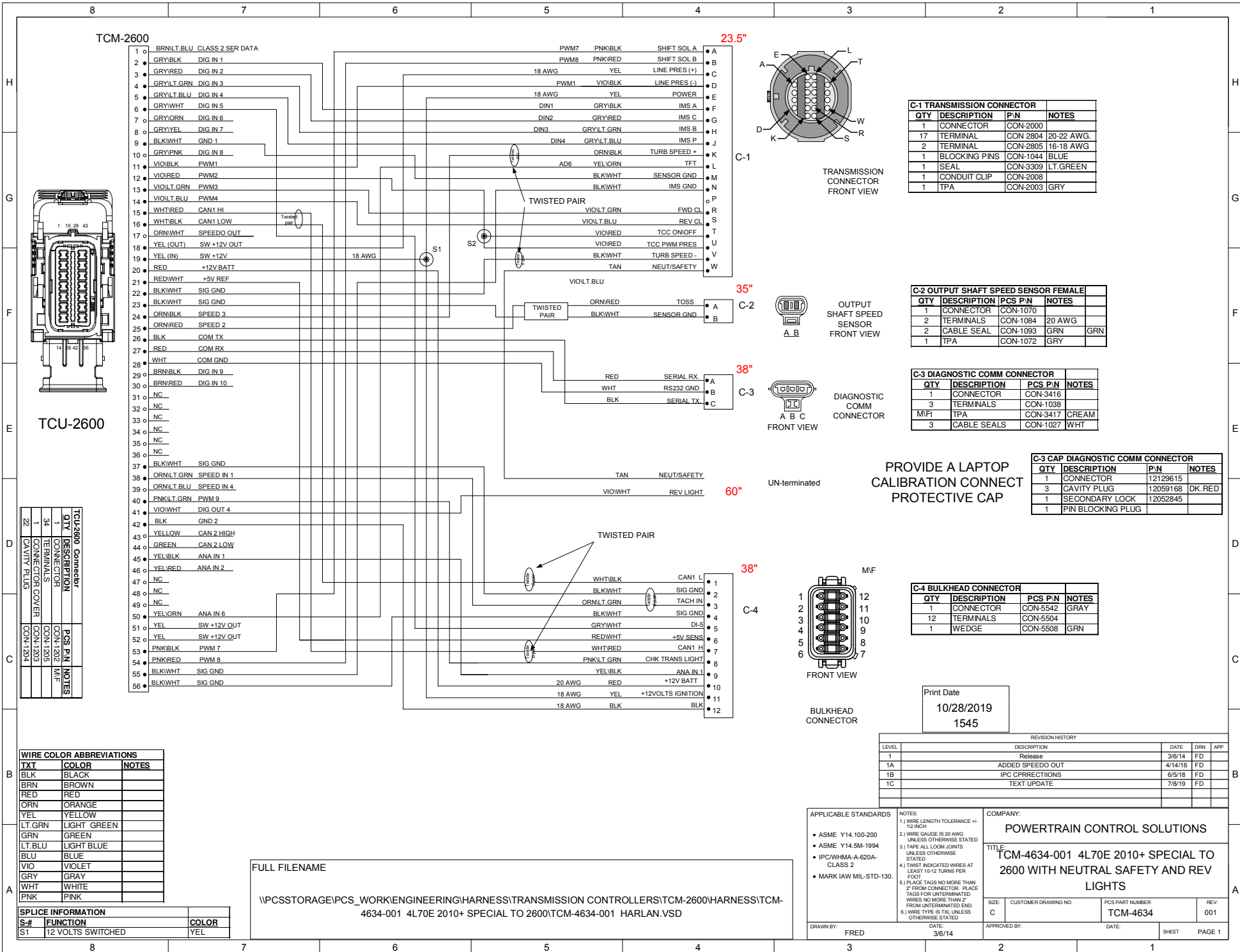
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TITLE: TCM-4450 GSE 4LHD TRANS HARNESS W/ E-SHIFTER

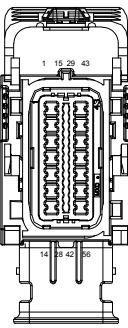
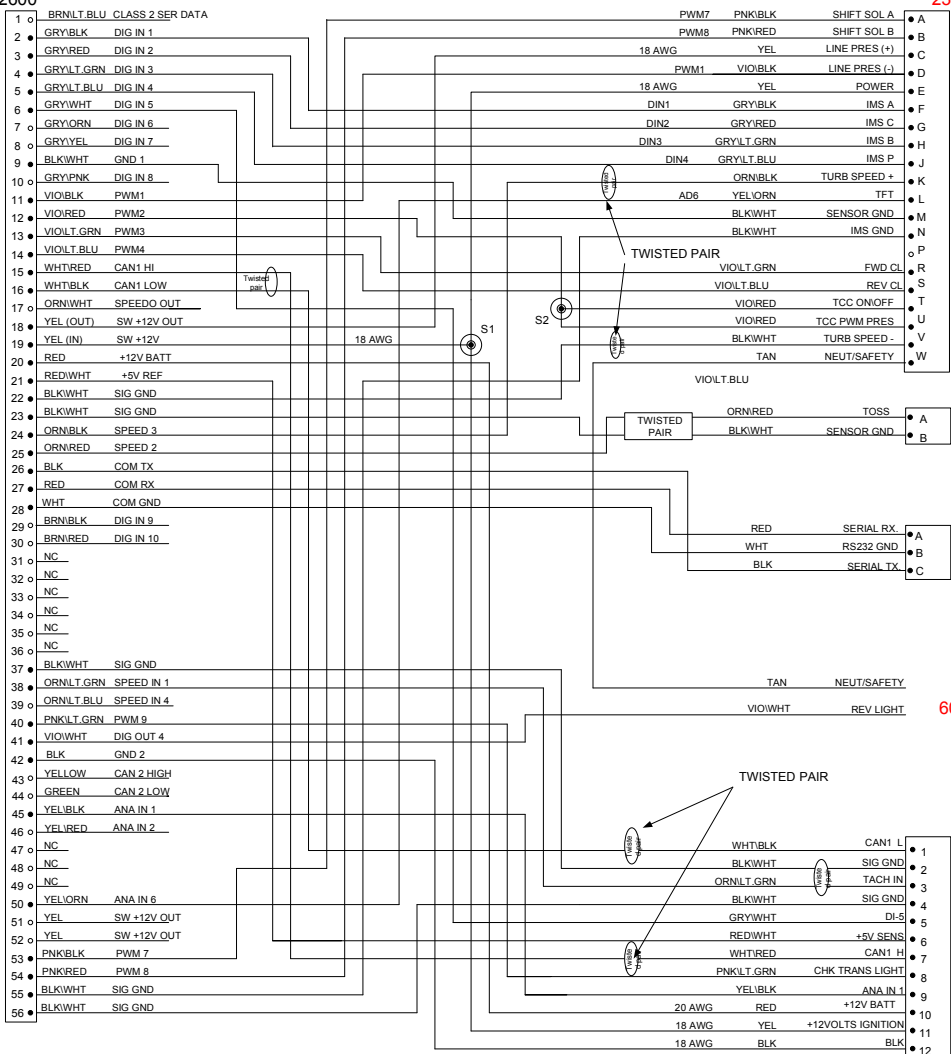
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DRAWN BY: FRED D. DATE: 4/12/2019 APPROVED BY: DATE: SHEET PAGE 2



TCM-2600



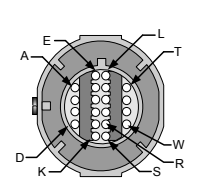
TCU-2600

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	M/F
34	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
22	CAVITY PLUG	CON-1204	

TX	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

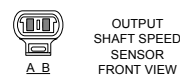
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL

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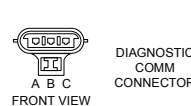
C-1 TRANSMISSION CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
17	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY



C-2 OUTPUT SHAFT SPEED SENSOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

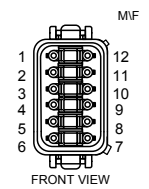


C-3 DIAGNOSTIC COMM CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
M/F	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK. RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		



C-4 BULKHEAD CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRAY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN

Print Date  
 10/28/2019  
 1545

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	3/6/14	FD	
1A	ADDED SPEEDO OUT	4/14/16	FD	
1B	IPC CORRECTIONS	6/5/18	FD	
1C	TEXT UPDATE	7/8/19	FD	

APPLICABLE STANDARDS	
• ASME Y14.100-200	
• ASME Y14.5M-1994	
• IPC/WMA-A-620A-CLASS 2	
• MARK IAW MIL-STD-130.	

NOTES		COMPANY:	
1.) WIRE LENGTH TOLERANCE +/- .12 INCH		POWERTRAIN CONTROL SOLUTIONS	
2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED		TITLE	
3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED		TCM-4634-001 4L70E 2010+ SPECIAL TO 2600 WITH NEUTRAL SAFETY AND REV LIGHTS	
4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT		SIZE:	CUSTOMER DRAWING NO.
5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.		PCS PART NUMBER	REV:
6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED		TCM-4634	001
DRAWN BY:	FRED	DATE:	3/6/14
APPROVED BY:		DATE:	
SHEET		PAGE 1	

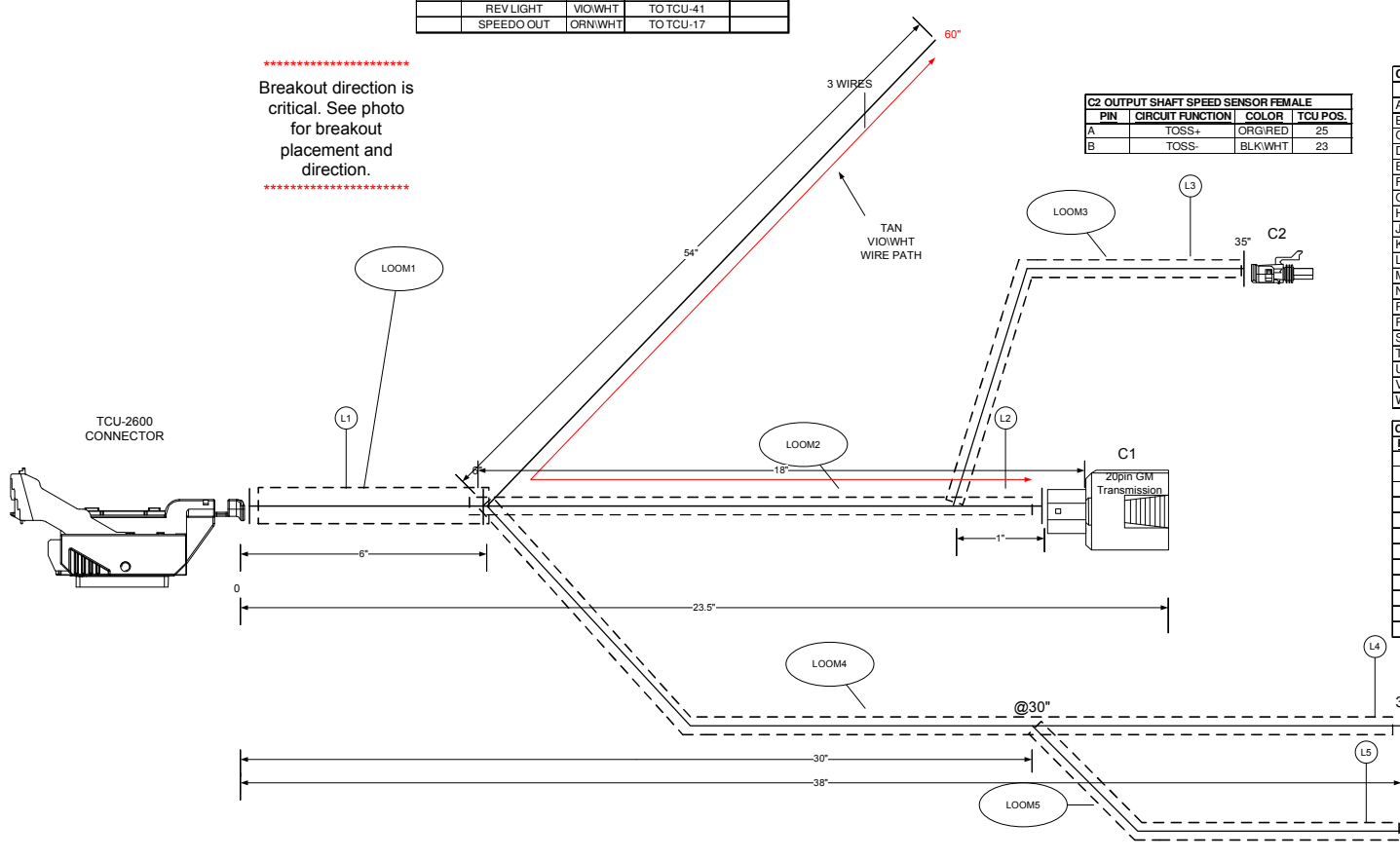
INTERM WIRE GROUP			
PIN	CIRCUIT FUNCTION	COLOR	CON TO
	NEUT.SAFETY	TAN	TO C1-W
	REV LIGHT	VIO/WHT	TO TCU-41
	SPEEDO OUT	ORN/WHT	TO TCU-17

\*\*\*\*\*  
Breakout direction is critical. See photo for breakout placement and direction.  
\*\*\*\*\*

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL-B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO/BLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W			

C4 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	SIGNAL GND	BLK/WHT	TCU-37
3	RPM	ORN/LT.GRN	TCU-38
4	SEN GND	BLK/WHT	TCU-56
5	DIG IN -S	GRY/WHT	TCU-6
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42



PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

C-3 DIAGNOSTIC COMM CONNECTOR CAP			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

C3 DIAGNOSTIC COMM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	3/6/14	FD	
1A	ADDED SPEEDO OUT	4/14/16	FD	
1B	IPC CPRRECTIONS	6/5/18	FD	
1C	TEXT UPDATE	10/28/19	FD	

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

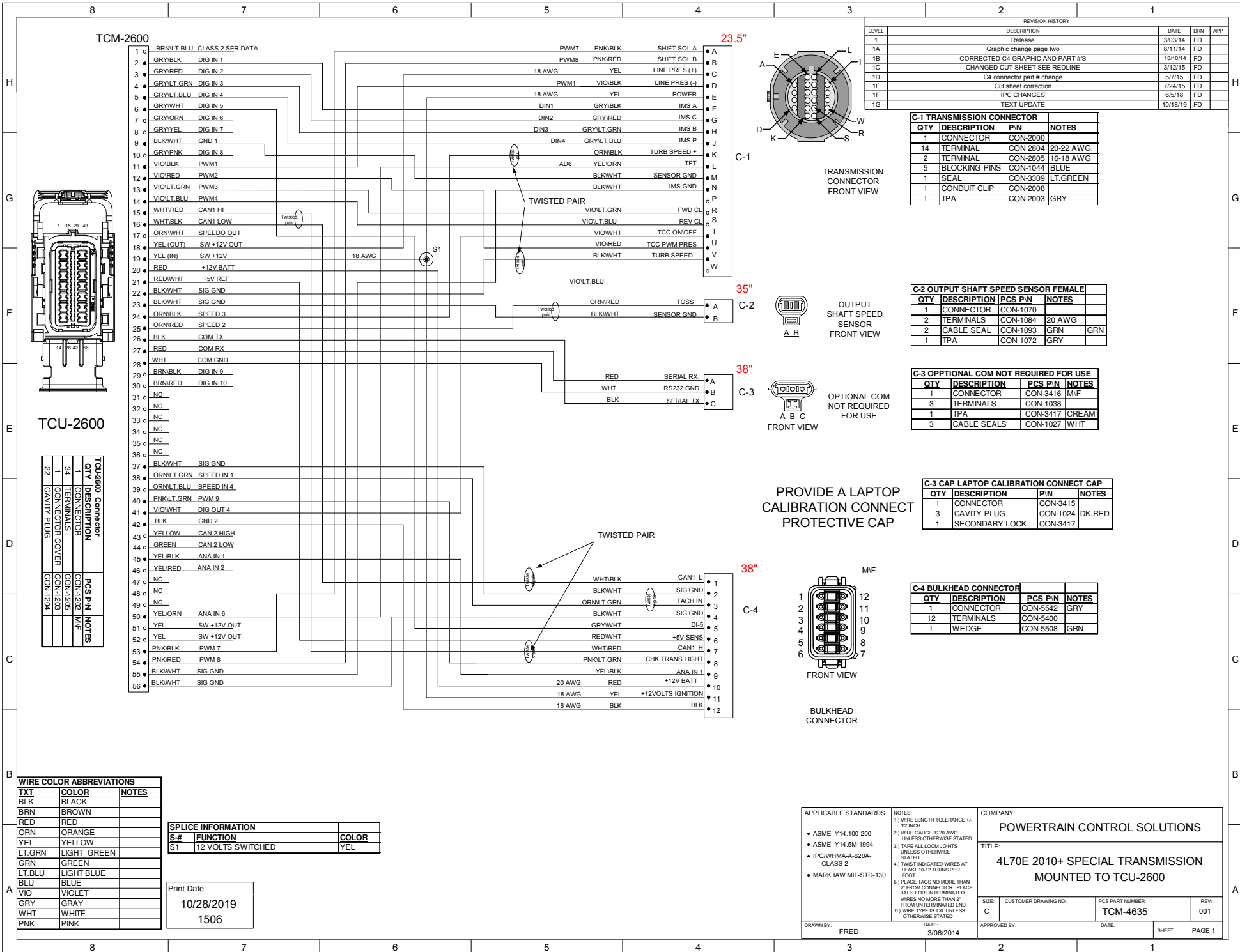
TITLE:  
**TCM-4634-001 4L70E 2010+ SPECIAL TO 2600 WITH NEUTRAL SAFETY AND REV LIGHTS**

SIZE: C CUSTOMER DRAWING NO. PCS PART NUMBER  
**TCM-4634**

DATE: 3/6/14 APPROVED BY: DATE: SHEET PAGE 2

SPLICE INFORMATION			LOOM DEFINITION TABLE			LABEL DEFINITION TABLE				
S-#	FUNCTION	COLOR	LOCATION	DISCRIPTION	LENGTH	PART#	NUM	NAME	PART #	NOTES
S1	12 VOLTS SWITCHED	YEL	LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005	L1	TCM-4635-001 4170E 2010+ TO	WRE-8501	P-318
S2	TCC CTL	VIO/RED	LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003	L2	TRANSMISSION CONNECTOR	WRE-8501	P-107
			LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000	L3	TOSS	WRE-8500	P-8
			LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003	L4	BULKHEAD CONNECTOR	WRE-8500	P-64
			LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000	L5	DIAGNOSTIC COMM CONNECTOR	WRE-8500	P-337

Print Date  
**10/28/2019**  
**1545**



REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
T	Release	3/03/14	FD	
1A	Graphic change page two	8/11/14	FD	
1B	CORRECTED C4 GRAPHIC AND PART #'S	10/10/14	FD	
1C	CHANGED CUT SHEET SEE REDLINE	3/12/15	FD	
1D	C4 connector part # change	5/7/15	FD	
1E	Cut sheet correction	7/24/15	FD	
1F	IPC CHANGES	6/5/18	FD	
1G	TEXT UPDATE	10/18/19	FD	

C-1 TRANSMISSION CONNECTOR				
QTY	DESCRIPTION	PIN	NOTES	
1	CONNECTOR	CON-2000		
14	TERMINAL	CON 2804	20-22 AWG.	
2	TERMINAL	CON-2805	16-18 AWG	
5	BLOCKING PINS	CON-1044	BLUE	
1	SEAL	CON-3309	LT.GREEN	
1	CONDUIT CLIP	CON-2008		
1	TPA	CON-2003	GRY	

C-2 OUTPUT SHAFT SPEED SENSOR FEMALE				
QTY	DESCRIPTION	PCS P/N	NOTES	
1	CONNECTOR	CON-1070		
2	TERMINALS	CON-1084	20 AWG	
2	CABLE SEAL	CON-1093	GRN	GRN
1	TPA	CON-1072	GRY	

C-3 OPTIONAL COM NOT REQUIRED FOR USE				
QTY	DESCRIPTION	PCS P/N	NOTES	
1	CONNECTOR	CON-3416	M/F	
3	TERMINALS	CON-1038		
1	TPA	CON-3417	CREAM	
3	CABLE SEALS	CON-1027	WHT	

C-3 CAP LAPTOP CALIBRATION CONNECT CAP				
QTY	DESCRIPTION	PIN	NOTES	
1	CONNECTOR	CON-3415		
3	CAVITY PLUG	CON-1024	DK.RED	
1	SECONDARY LOCK	CON-3417		

C-4 BULKHEAD CONNECTOR				
QTY	DESCRIPTION	PCS P/N	NOTES	
1	CONNECTOR	CON-5542	GRY	
12	TERMINALS	CON-5400		
1	WEDGE	CON-5508	GRN	

TCU-2600 Connector				
QTY	DESCRIPTION	PCS P/N	NOTES	
1	CONNECTOR	CON-1702	M/F	
34	TERMINALS	CON-1705		
1	CONNECTOR COVER	CON-1703		
22	CAVITY PLUG	CON-1704		

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

SPLICE INFORMATION		
S#	FUNCTION	COLOR
ST	12 VOLTS SWITCHED	YEL

Print Date  
10/28/2019  
1506

<b>APPLICABLE STANDARDS</b> • ASME Y14.100-200 • ASME Y14.5M-1994 • IPC/WHMA-A-620A-CLASS 2 • MARK IAW MIL-STD-130.	<b>NOTES:</b> 1) WIRE LENGTH TOLERANCE +/- 12 INCH 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED 3) TAPE ALL COOK JOINTS UNLESS OTHERWISE STATED 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END. 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED.	<b>COMPANY:</b> <b>POWERTRAIN CONTROL SOLUTIONS</b> <b>TITLE:</b> <b>4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TO TCU-2600</b>
DRAWN BY: FRED	DATE: 3/06/2014	APPROVED BY:  DATE:  SHEET PAGE 1
SIZE: C	CUSTOMER DRAWING NO.  PCS PART NUMBER TCM-4635	REV: 001

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	3/03/14	FD	
1A	Graphic change page two	8/11/14	FD	
1B	CORRECTED C4 GRAPHIC AND PART #'S	10/10/14	FD	
1C	CHANGED CUT SHEET SEE REDLINE	3/12/15	FD	
1D	C4 connector part # change	5/7/15	FD	
1E	Cut sheet correction	7/24/15	FD	
1F	IPC CHANGES	6/5/18	FD	
1G	TEXT UPDATE	10/28/19	FD	

\*\*\*\*\*  
Breakout direction is critical. See photo for breakout placement and direction.  
\*\*\*\*\*

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

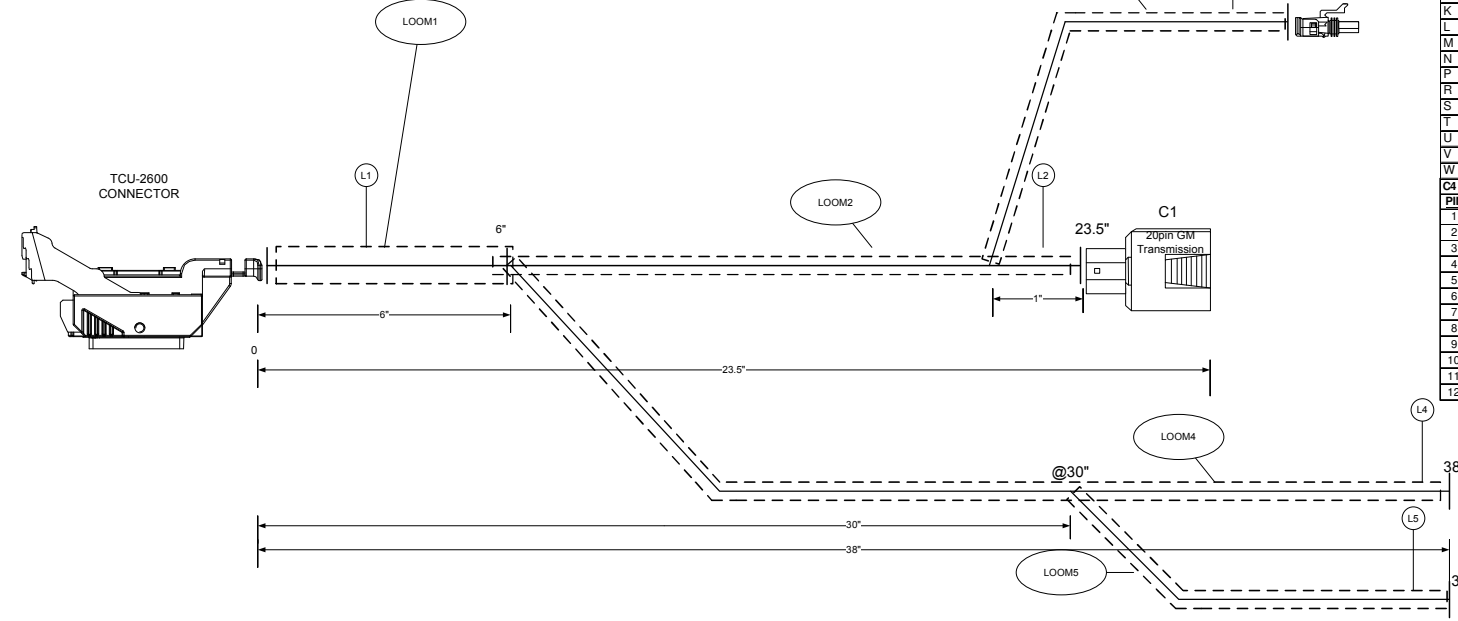
C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIOBLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W			

C4 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	SIGNAL GND	BLK/WHT	TCU-37
3	RPM	ORN/LT.GRN	TCU-38
4	SEN GND	BLK/WHT	TCU-56
5	DIG IN -5	GRY/WHT	TCU-6
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK. RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

C3 OPPTIONAL COM NOT REQUIRED FOR USE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP



Print Date  
10/28/2019  
1506

LOOM DEFINITION TABLE			
LOCATION	DESCRIPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000

LABEL DEFINITION TABLE		
NUM	NAME	PART #
L1	TCM-4635-001 4170E 2010+ TO	WRE-8501
L2	TRANSMISSION CONNECTOR	WRE-8500
L3	TOSS	WRE-8500
L4	BULKHEAD CONNECTOR	WRE-8500
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

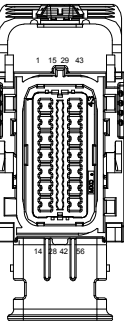
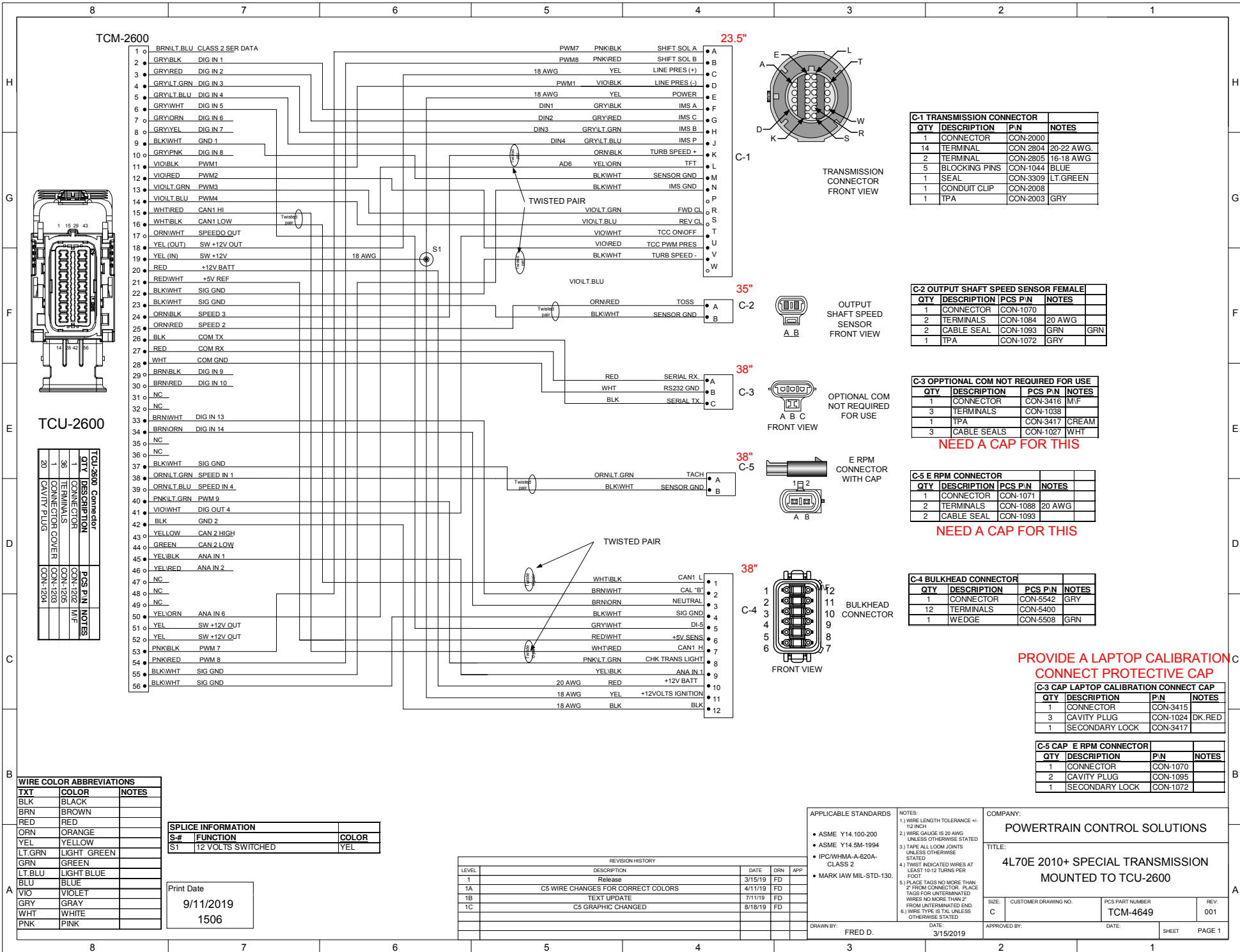
DRAWN BY: FRED DATE: 3/06/2014

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TO TCU-2600**

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER	REV: 001
		<b>TCM-4635</b>	

APPROVED BY: DATE: SHEET PAGE 2



TCU-2600

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1208	W/F
36	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
20	CAVITY PLUG	CON-1204	

WIRE COLOR ABBREVIATIONS	TX	COLOR	NOTES
BLK	BLACK		
BRN	BROWN		
RED	RED		
ORN	ORANGE		
YEL	YELLOW		
LT.GRN	LIGHT GREEN		
GRN	GREEN		
LT.BLU	LIGHT BLUE		
BLU	BLUE		
VIO	VIOLET		
GRY	GRAY		
WHT	WHITE		
PNK	PINK		

SPLICE INFORMATION			COLOR
S-#	FUNCTION		YEL
ST	12 VOLTS SWITCHED		

Print Date  
9/11/2019  
1506

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	3/15/19	FD	
1A	C5 WIRE CHANGES FOR CORRECT COLORS	4/11/19	FD	
1B	TEXT UPDATE	7/11/19	FD	
1C	C5 GRAPHIC CHANGED	9/18/19	FD	

APPLICABLE STANDARDS  
 • ASME Y14.100-200  
 • ASME Y14.5M-1994  
 • IPC/WHMA-A-620A-CLASS 2  
 • MARK IAW MIL-STD-130.

NOTES:  
 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH.  
 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED.  
 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED.  
 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT!  
 5.) PLACE TAGS NO MORE THAN 2" FROM UNTERMINATED END. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED.

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TO TCU-2600**

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER	REV: 001
DRAWN BY: FRED D.		DATE: 3/15/2019	APPROVED BY: DATE: SHEET PAGE 1

**C-1 TRANSMISSION CONNECTOR**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

**C-2 OUTPUT SHAFT SPEED SENSOR FEMALE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

**C-3 OPTIONAL COM NOT REQUIRED FOR USE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	M/F
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

**C-5 E RPM CONNECTOR WITH CAP**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1071	
2	TERMINALS	CON-1088	20 AWG
2	CABLE SEAL	CON-1093	

**C-4 BULKHEAD CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5400	
1	WEDGE	CON-5508	GRN

**C-3 CAP LAPTOP CALIBRATION CONNECT CAP**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1024	DK.RED
1	SECONDARY LOCK	CON-3417	

**C-5 CAP E RPM CONNECTOR**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-1070	
2	CAVITY PLUG	CON-1095	
1	SECONDARY LOCK	CON-1072	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

NEED A CAP FOR THIS

NEED A CAP FOR THIS

REVISION HISTORY					
LEVEL	DESCRIPTION	DATE	DRN	APP	
1	Release	3/15/19	FD		
1A	C5 WIRE CHANGES FOR CORRECT COLORS	4/11/19	FD		
1B	TEXT UPDATE	7/11/19	FD		

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE				
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO	
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53	
B	SHIFT SOL-B (2-3)	PNK/RED	TCU-54	
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18	
D	LINE PRESSURE -	VIOLBK	TCU-11	
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1	
F	IMS A	GRY/BLK	TCU-2	
G	IMS C	GRY/RED	TCU-3	
H	IMSB	GRY/GRN	TCU-4	
J	IMS P	GRY/LT.BLU	TCU-5	
K	TURBINE SPEED +	ORG/BLK	TCU-24	
L	ATF TEMP +	YEL/ORG	TCU-50	
M	ATF TEMP -	BLK/WHT	TCU-9	
N	IMS GND	BLK/WHT	TCU-55	
P	NC	NC	NC	
R	FWD CL	VIOL.T.GRN	TCU-13	
S	REV CL	VIOL.T.BLU	TCU-14	
T	TCC ON/OFF	VIOWHT	TCU-41	
U	TCC PWM	VIOR/RED	TCU-12	
V	TURBIN SPEED -	BLK/WHT	TCU-22	
W				

\*\*\*\*\*  
Breakout direction is critical. See photo for breakout placement and direction.  
\*\*\*\*\*

C2 OUTPUT SHAFT SPEED SENSOR FEMALE				
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.	
A	TOSS+	ORG/RED	25	
B	TOSS-	BLK/WHT	23	

C4 BULKHEAD CONNECTOR				
PIN	CIRCUIT FUNCTION	COLOR	GOES TO	
1	CAN1 L	WHT/BLK	TCU-16	
2	SIGNAL GND	BLK/WHT	TCU-37	
3	RFM	ORN/LT.GRN	TCU-38	
4	SEN GND	BLK/WHT	TCU-56	
5	DIG IN -5	GRY/WHT	TCU-6	
6	-5V SEN	RED/WHT	TCU-21	
7	CAN1 H	WHT/RED	TCU-15	
8	CHECK TRANS	PNK/LT.GRN	TCU-40	
9	TPS	YEL/BLK	TCU-45	
10	+12V BATTERY	RED	TCU-20	
11	+12 VOLTS IGNITION	YEL	TCU-19,S1	
12	CHASSIS GND	BLK	TCU-42	

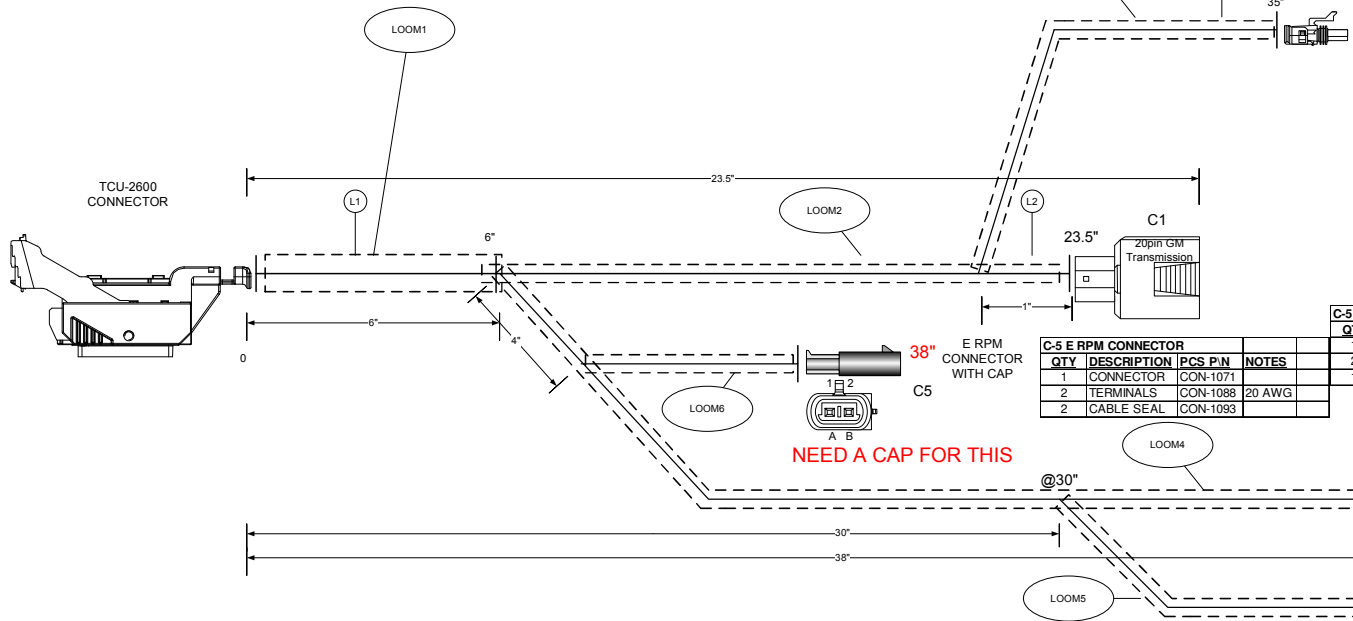
C-5 E RPM CONNECTOR				
QTY	DESCRIPTION	PCS	P/N	NOTES
1	CONNECTOR	CON-1071		
2	TERMINALS	CON-1088	20 AWG	
2	CABLE SEAL	CON-1093		

C-5 CAP E RPM CONNECTOR				
QTY	DESCRIPTION	P/N	NOTES	
1	CONNECTOR	CON-1070		
2	CAVITY PLUG	CON-1095		
1	SECONDARY LOCK	CON-1072		

C3 OPTIONAL COM NOT REQUIRED FOR USE				
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.	
A	SERIAL RX	RED	TCU-27	
B	SIGNAL GND.	WHT	TCU-28	
C	SERIAL TX	BLK	TCU-26	

C-3 CAP LAPTOP CALIBRATION CONNECT CAP				
QTY	DESCRIPTION	P/N	NOTES	
1	CONNECTOR	12129615		
3	CAVITY PLUG	12059168	DK.RED	
1	SECONDARY LOCK	12052845		
1	PIN BLOCKING PLUG			

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP



NEED A CAP FOR THIS

NEED A CAP FOR THIS

Print Date  
9/11/2019  
1506

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL

LABEL DEFINITION TABLE					
NUM	NAME	label#			
L1	TCM-4649-001	P-513			
L2	TRANSMISSION CONNECTOR	P-107			
L3	TOSS	P-8			
L4	BULKHEAD CONNECTOR	P-64			
L5	OPTIONAL COM NOT REQUIRED FOR USE	P-4			
L6	E RPM CONNECTOR	p-511			

REVISION HISTORY					
LEVEL	DESCRIPTION	DATE	DRN	APP	
1	Release	3/15/19	FD		
1A	C5 WIRE CHANGES FOR CORRECT COLORS	4/11/19	FD		
1B	TEXT UPDATE	7/11/19	FD		
1C	C5 GRAPHIC CHANGED	8/18/19	FD		

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6) WIRE TYPE IS TX UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: 4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TO TCU-2600 NMC

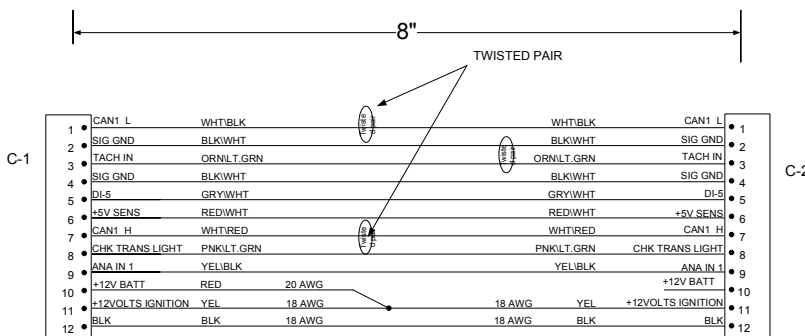
SIZE: C	CUSTOMER DRAWING NO. TCM-4649	PCS PART NUMBER	REV: 001
DRAWN BY: FRED D.		DATE: 3/15/2019	APPROVED BY: DATE: SHEET PAGE 1

LOOM DEFINITION TABLE					
LOCATION	DISCRIPTION	LENGTH	PART#	NUM	NAME
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005	L1	TCM-4649-001
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003	L2	TRANSMISSION CONNECTOR
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000	L3	TOSS
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003	L4	BULKHEAD CONNECTOR
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000	L5	OPTIONAL COM NOT REQUIRED FOR USE
LOOM6	1/4" BLACK CONVOLUTED LOOM	6"	WRE-3000	L6	E RPM CONNECTOR

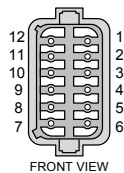


REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	7/9/15	FD	

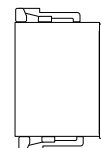
NO LONGER NEEDED IN  
HARNESS BUILD 3/11/2015 it is  
now a separate part



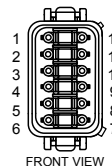
CONNECTOR			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON5543	
12	TERMINALS	CON5510	
1	WEDGE	CON5544	



MATES TO TCU  
HARNESS  
CONNECTOR



C-2 BULKHEAD CONNECTOR				M/F
QTY	DESCRIPTION	PCS P/N	NOTES	
1	CONNECTOR	CON-5542	GRY	
9	TERMINALS	CON-5504		
1	WEDGE	CON-5508	GRN	



BULKHEAD  
CONNECTOR

NORMAL LOOM AND TAPE  
NO PART NUMBER AT THIS TIME

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

Print Date  
7/11/2019  
1700

FULL FILENAME

X:\ENGINEERING\HARNESS\TRANSMISSION CONTROLLERS\TCM-2600\HARNESS\  
TCM-4650-001 4L70E 2010+ SPECIAL TRANSMISSION POWER ADAPTER PLUG\TCM-  
4650-001 4L70E 2010+ SPECIAL TRANSMISSION POWER ADAPTER PLUG.VSD

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES
- 1) WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

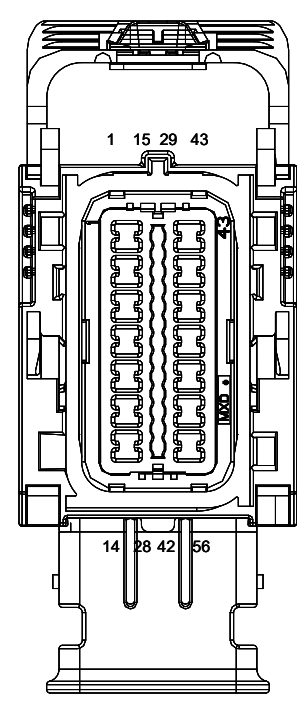
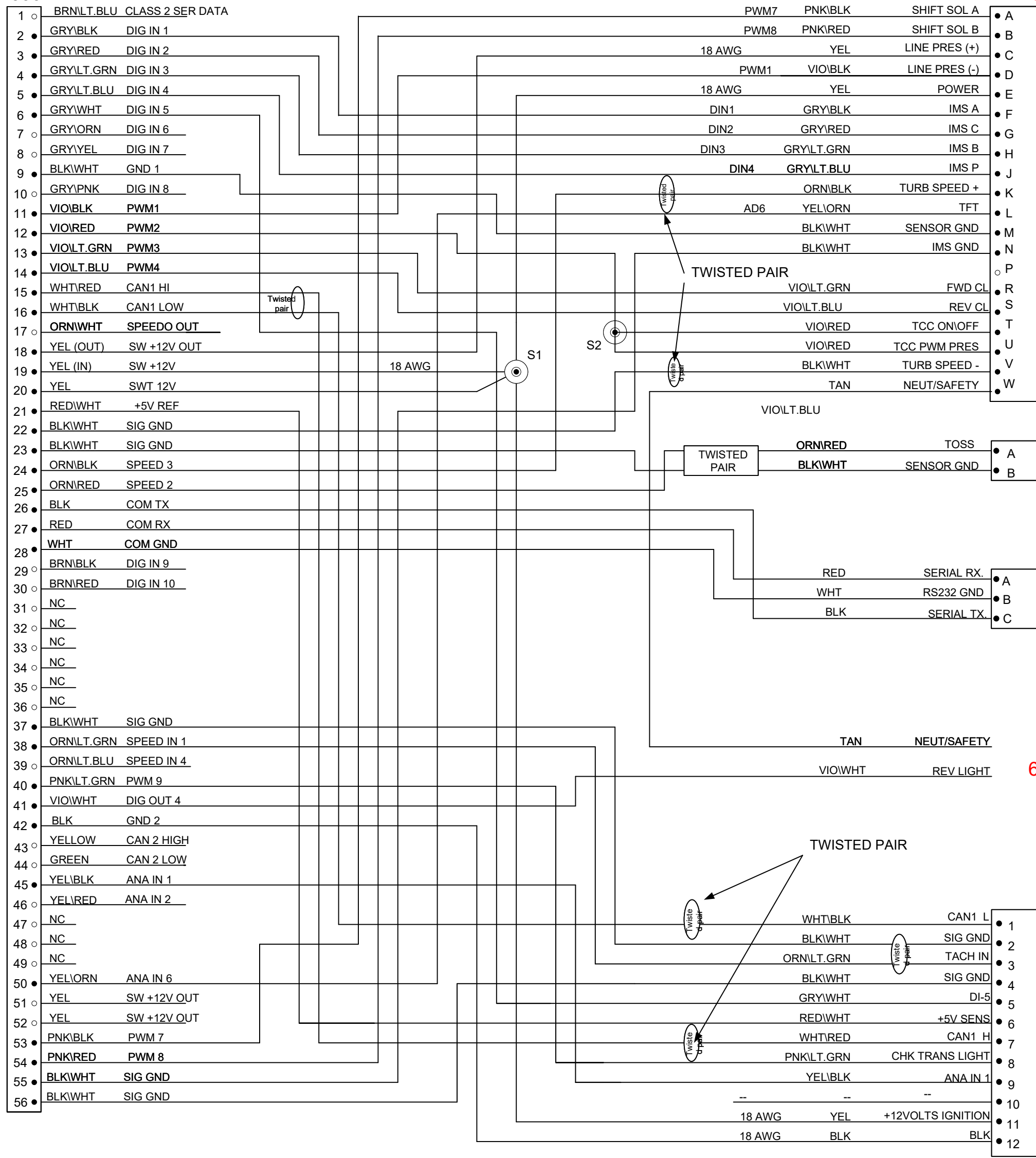
COMPANY:  
POWERTRAIN CONTROL SOLUTIONS

TITLE:  
4L70E 2010+ SPECIAL TRANSMISSION  
POWER ADAPTER PLUG

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER TCM-4650	REV: 001
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DRAWN BY: FRED D. DATE: 5/29/2015 APPROVED BY: DATE: SHEET PAGE 1

TCM-2600



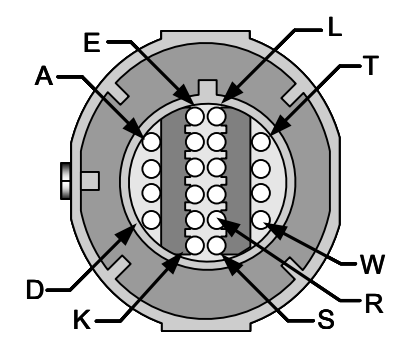
TCU-2600

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-1202	M/F
34	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
22	CAVITY PLUG	CON-1204	

WIRE COLOR ABBREVIATIONS		
TXI	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

SPLICE INFORMATION		
S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL

23.5"

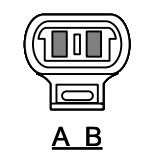


C-1

TRANSMISSION CONNECTOR FRONT VIEW

C-1 TRANSMISSION CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
17	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

35"

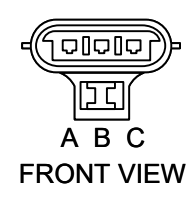


C-2

OUTPUT SHAFT SPEED SENSOR FRONT VIEW

C-2 OUTPUT SHAFT SPEED SENSOR FEMALE			
QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN GRN
1	TPA	CON-1072	GRY

38"



C-3

DIAGNOSTIC COMM CONNECTOR FRONT VIEW

C-3 DIAGNOSTIC COMM CONNECTOR			
QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
M/F	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

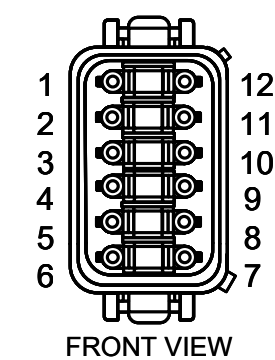
C-3 CAP DIAGNOSTIC COMM CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

60"

UN-terminated

TWISTED PAIR

38"



C-4

FRONT VIEW

BULKHEAD CONNECTOR

C-4 BULKHEAD CONNECTOR		
QTY	DESCRIPTION	PCS PIN
1	CONNECTOR	CON-5542
11	TERMINALS	CON-5400
1	WEDGE	CON-5508
1	PLUG	CON-5530

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES:
- WIRE LENGTH TOLERANCE +/- 1/2 INCH
  - WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: 4LHD TO 2600 WITH NEUTRAL SAFETY AND REV LIGHTS

DRAWN BY: LUKE P	DATE: 6/21/2023	APPROVED BY: TMP	DATE: 6/21/2023	PCS PART NUMBER: TCM-4654	REV: 002
SHEET		PAGE 1			

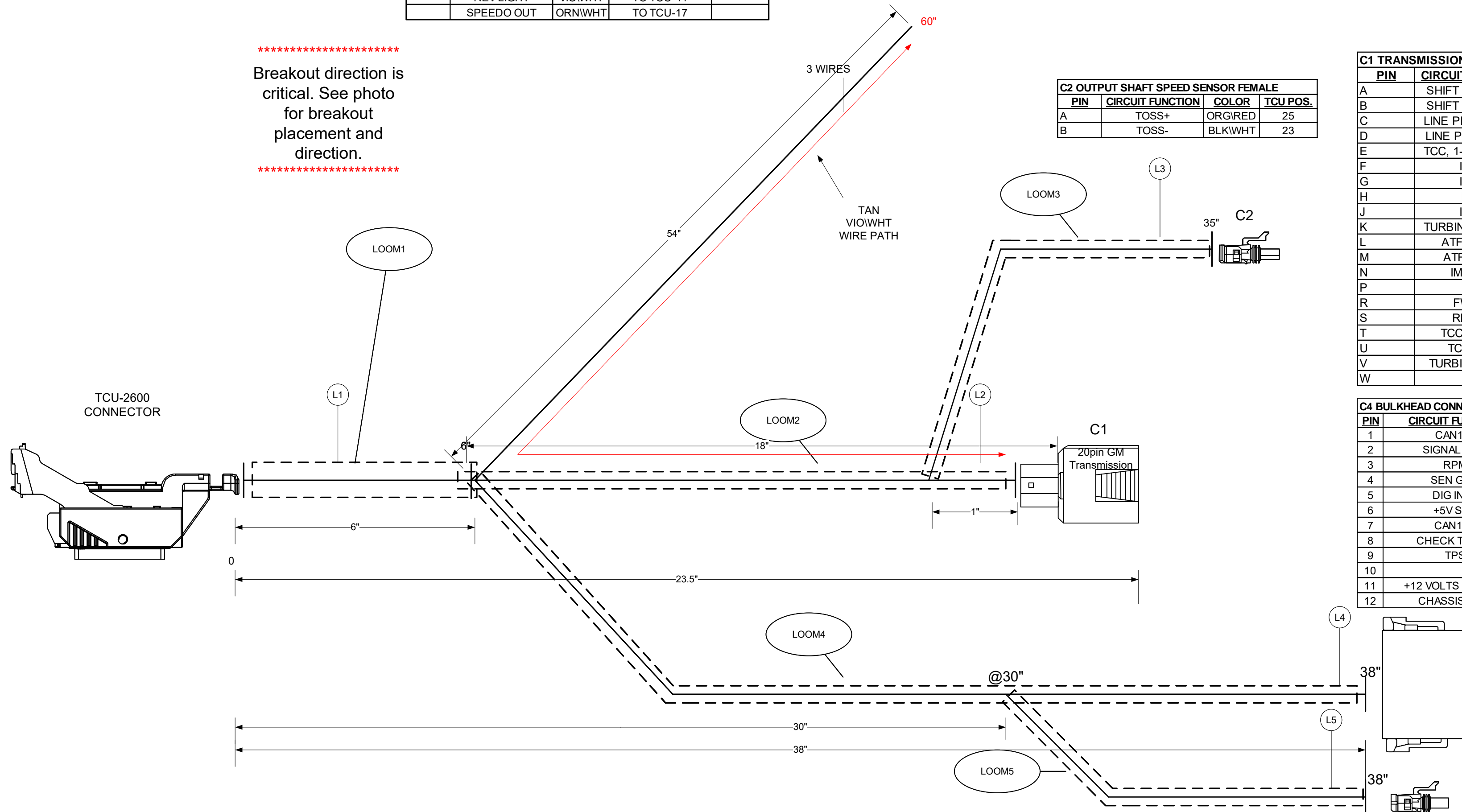
UNTERM WIRE GROUP			
PIN	CIRCUIT FUNCTION	COLOR	CON TO
	NEUTSAFETY	TAN	TO C1-W
	REVLIGHT	VIO\WHT	TO TCU-41
	SPEEDO OUT	ORN\WHT	TO TCU-17

\*\*\*\*\*  
Breakout direction is critical. See photo for breakout placement and direction.  
\*\*\*\*\*

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG\RED	25
B	TOSS-	BLK\WHT	23

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK\BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK\RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO\BLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY\BLK	TCU-2
G	IMS C	GRY\RED	TCU-3
H	IMSB	GRY\GRN	TCU-4
J	IMS P	GRY\LT.BLU	TCU-5
K	TURBINE SPEED +	ORG\BLK	TCU-24
L	ATF TEMP +	YEL\ORG	TCU-50
M	ATF TEMP -	BLK\WHT	TCU-9
N	IMS GND	BLK\WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO\LT.GRN	TCU-13
S	REV CL	VIO\LT.BLU	TCU-14
T	TCC ON/OFF	VIO\WHT	TCU-41
U	TCC PWM	VIO\RED	TCU-12
V	TURBIN SPEED -	BLK\WHT	TCU-22
W			

C4 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT\BLK	TCU-16
2	SIGNAL GND	BLK\WHT	TCU-37
3	RPM	ORN\LT.GRN	TCU-38
4	SEN GND	BLK\WHT	TCU-56
5	DIG IN -5	GRY\WHT	TCU-6
6	+5V SEN	RED\WHT	TCU-21
7	CAN1 H	WHT\RED	TCU-15
8	CHECK TRANS	PNK\LT.GRN	TCU-40
9	TPS	YEL\BLK	TCU-45
10			
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42



PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

C-3 DIAGNOSTIC COMM CONNECTOR CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

C3 DIAGNOSTIC COMM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

SPLICE INFORMATION		
S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CTL	VIO\RED

LOOM DEFINITION TABLE				
LOCATION	DISCRIPTION	LENGTH	PART#	
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005	
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003	
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000	
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003	
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000	

LABEL DEFINITION TABLE				
NUM	NAME	PART #	NOTES	
L1	TCM-4654-002 4170E 2010+ TO	WRE-8501	P-318	
L2	TRANSMISSION CONNECTOR	WRE-8501	P-107	
L3	TOSS	WRE-8500	P-8	
L4	BULKHEAD CONNECTOR	WRE-8500	P-64	
L5	DIAGNOSTIC COMM CONNECTOR	WRE-8500	P-337	

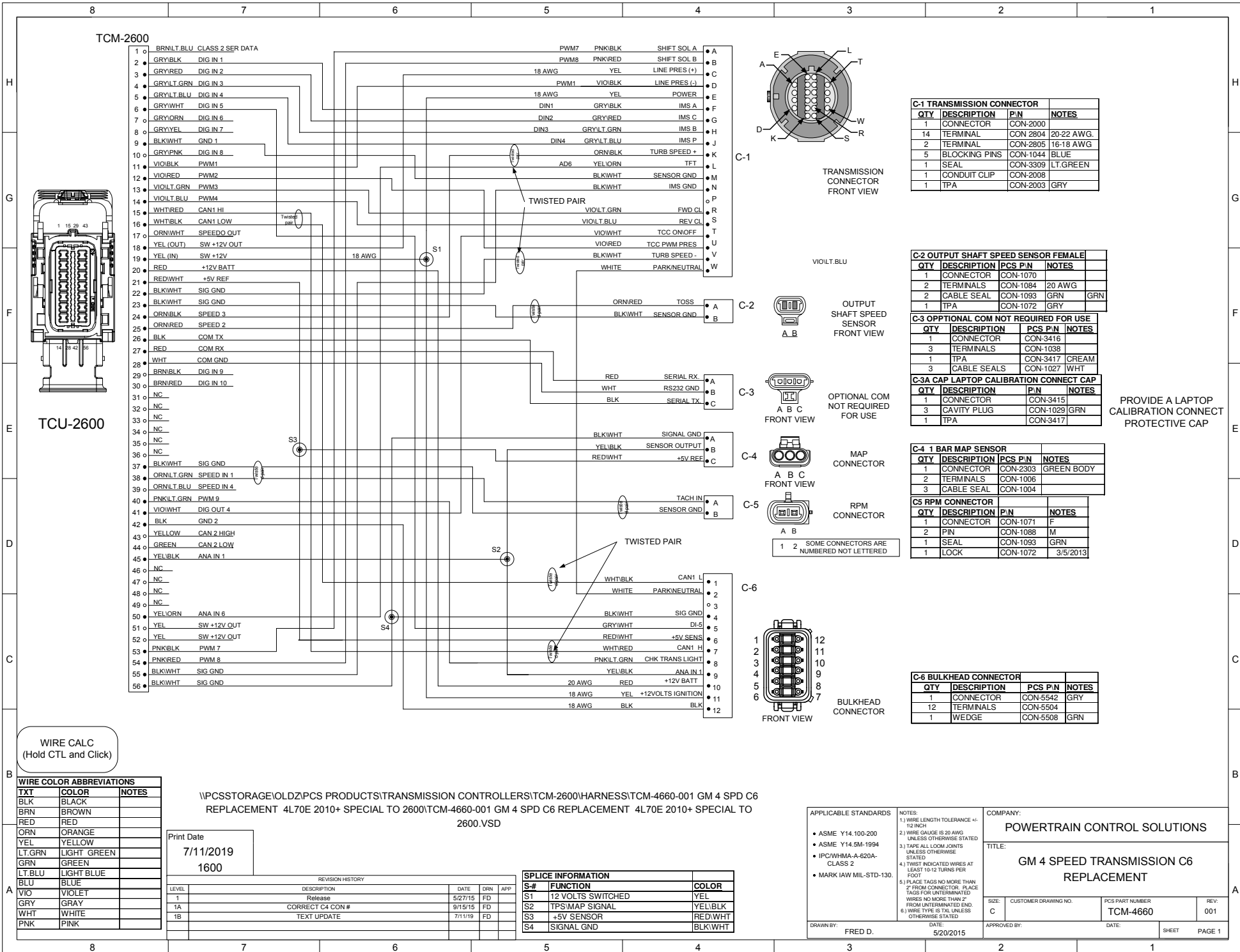
- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES:
- WIRE LENGTH TOLERANCE +/- 1/2 INCH
  - WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - WIRE TYPE IS TX UNLESS OTHERWISE STATED

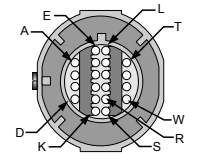
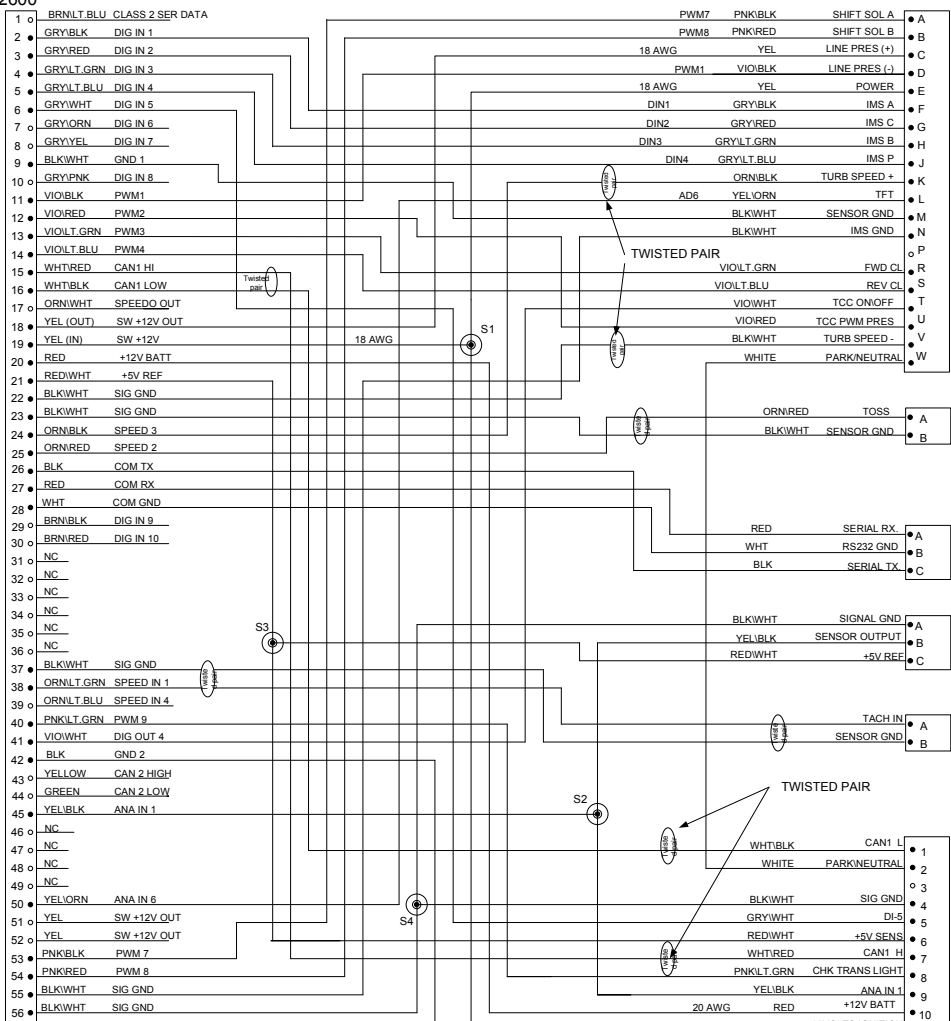
COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**4LHD TO 2600 WITH NEUTRAL SAFETY AND REV LIGHTS**

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER <b>TCM-4654</b>	REV: 002
DRAWN BY: LUKE P		DATE: 6/21/2023	APPROVED BY: TMP
DATE: 6/21/2023		SHEET	PAGE 2

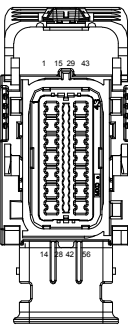


TCM-2600



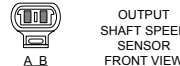
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

C-1 TRANSMISSION CONNECTOR FRONT VIEW



TCU-2600

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY



C-2 OUTPUT SHAFT SPEED SENSOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT



C-3 OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1029	GRN
1	TPA	CON-3417	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP



C-4 MAP CONNECTOR FRONT VIEW

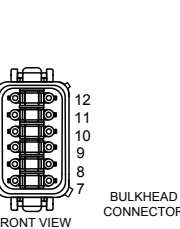
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2303	GREEN BODY
2	TERMINALS	CON-1006	
3	CABLE SEAL	CON-1004	



C-5 RPM CONNECTOR FRONT VIEW

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

1 2 SOME CONNECTORS ARE NUMBERED NOT LETTERED



C-6 BULKHEAD CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN

WIRE CALC (Hold CTL and Click)

WIRE COLOR ABBREVIATIONS	TX	COLOR	NOTES
BLK	BLACK		
BRN	BROWN		
RED	RED		
ORN	ORANGE		
YEL	YELLOW		
LT.GRN	LIGHT GREEN		
GRN	GREEN		
LT.BLU	LIGHT BLUE		
BLU	BLUE		
VIO	VIOLET		
GRY	GRAY		
WHT	WHITE		
PNK	PINK		

\\PCSSTORAGE\IOLDZ\PCS PRODUCTS\TRANSMISSION CONTROLLERS\TCM-2600\HARNESS\TCM-4660-001 GM 4 SPD C6 REPLACEMENT 4L70E 2010+ SPECIAL TO 2600\TCM-4660-001 GM 4 SPD C6 REPLACEMENT 4L70E 2010+ SPECIAL TO 2600.VSD

Print Date  
7/11/2019  
1600

LEVEL	DESCRIPTION	DATE	DRN	APP
1	REVISION	5/27/15	FD	
1A	CORRECT C4 CON #	9/15/15	FD	
1B	TEXT UPDATE	7/11/19	FD	

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TPS/MAP SIGNAL	YEL/BLK
S3	+5V SENSOR	RED/WHT
S4	SIGNAL GND	BLK/WHT

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

NOTES:  
1.) WIRE LENGTH TOLERANCE +/- .12 INCH  
2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED  
4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: <b>POWERTRAIN CONTROL SOLUTIONS</b>			
TITLE: <b>GM 4 SPEED TRANSMISSION C6 REPLACEMENT</b>			
SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER <b>TCM-4660</b>	REV: 001
DRAWN BY: FRED D.	DATE: 5/20/2015	APPROVED BY:	DATE: SHEET PAGE 1

LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM7	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000

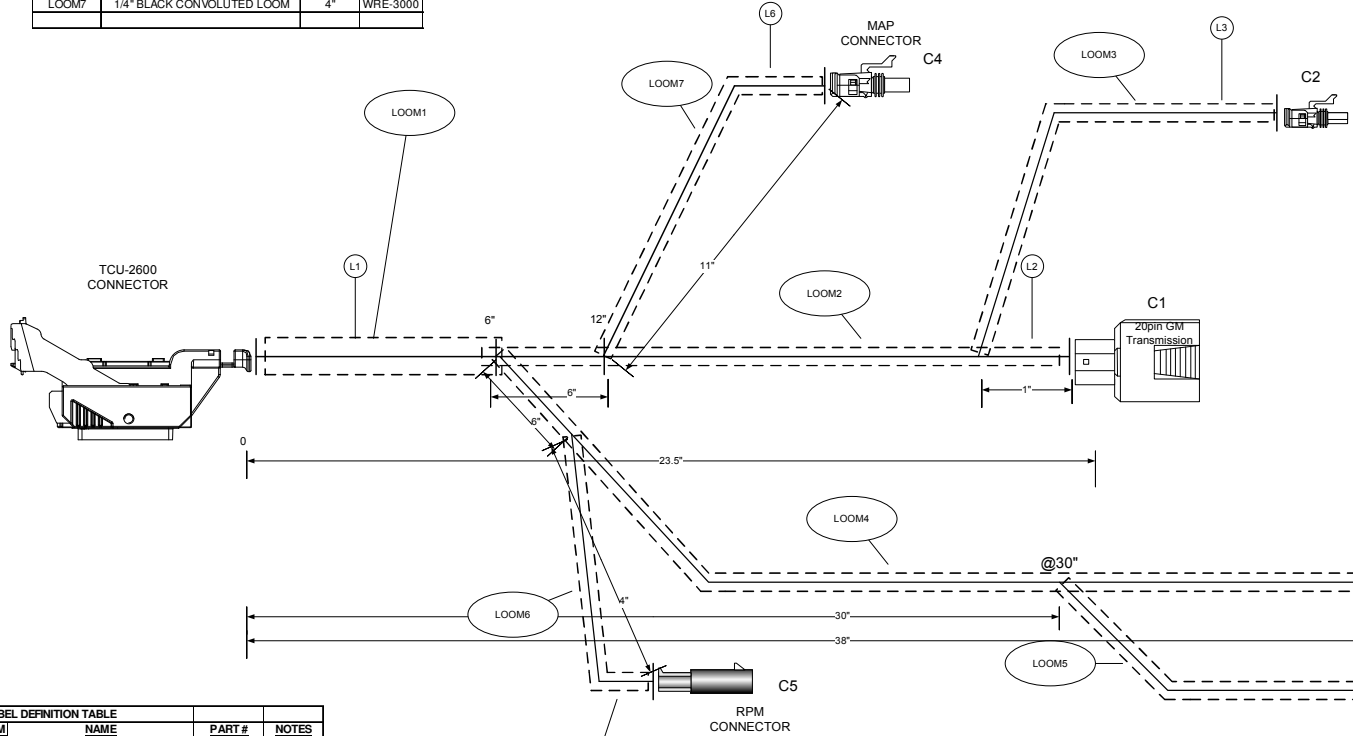
1 BAR MAP SENSOR CONNECTOR C4

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIOLBK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP -	YEL/ORG	TCU-50
M	ATF TEMP +	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-56
P	NC	NC	NC
R	FWD CL	VIOLT.GRN	TCU-13
S	REV CL	VIOLT.BLU	TCU-14
T	TCC ON/OFF	VIOWHT	TCU-41
U	TCC PWM	VIOR/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W	PIN	????	C1-W

PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	PIN	????????	C1-W
3	NC	NC	NC
4	SEN GND	BLK/WHT	TCU-56
5	DIG IN -5	GRY/WHT	TCU-6
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26



NUM	NAME	PART #	NOTES
L1	TCM-4660-001 4170E 2010+ TO	WRE-8501	P303
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	TOSS	WRE-8500	P8
L4	BULKHEAD CONNECTOR	WRE-8500	P64
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500	P4
L6	RPM CONNECTOR	WRE-8500	P304
L7	1 BAR MAP SENSOR	WRE-8500	P305

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORG/LT.GRN	38
B	SENSOR GND	BLK/WHT	37

TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

Print Date  
7/11/2019  
1600

LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	5/27/15	FD	
1A	CORRECT C4 CON #	9/15/15	FD	
1B	TEXT UPDATE	7/11/19	FD	

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TPS/MAP SIGNAL	YEL/BLK
S3	+5V SENSOR	RED/WHT
S4	SIGNAL GND	BLK/WHT

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES:
- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY:  
POWERTRAIN CONTROL SOLUTIONS

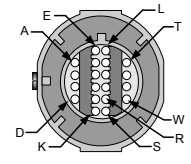
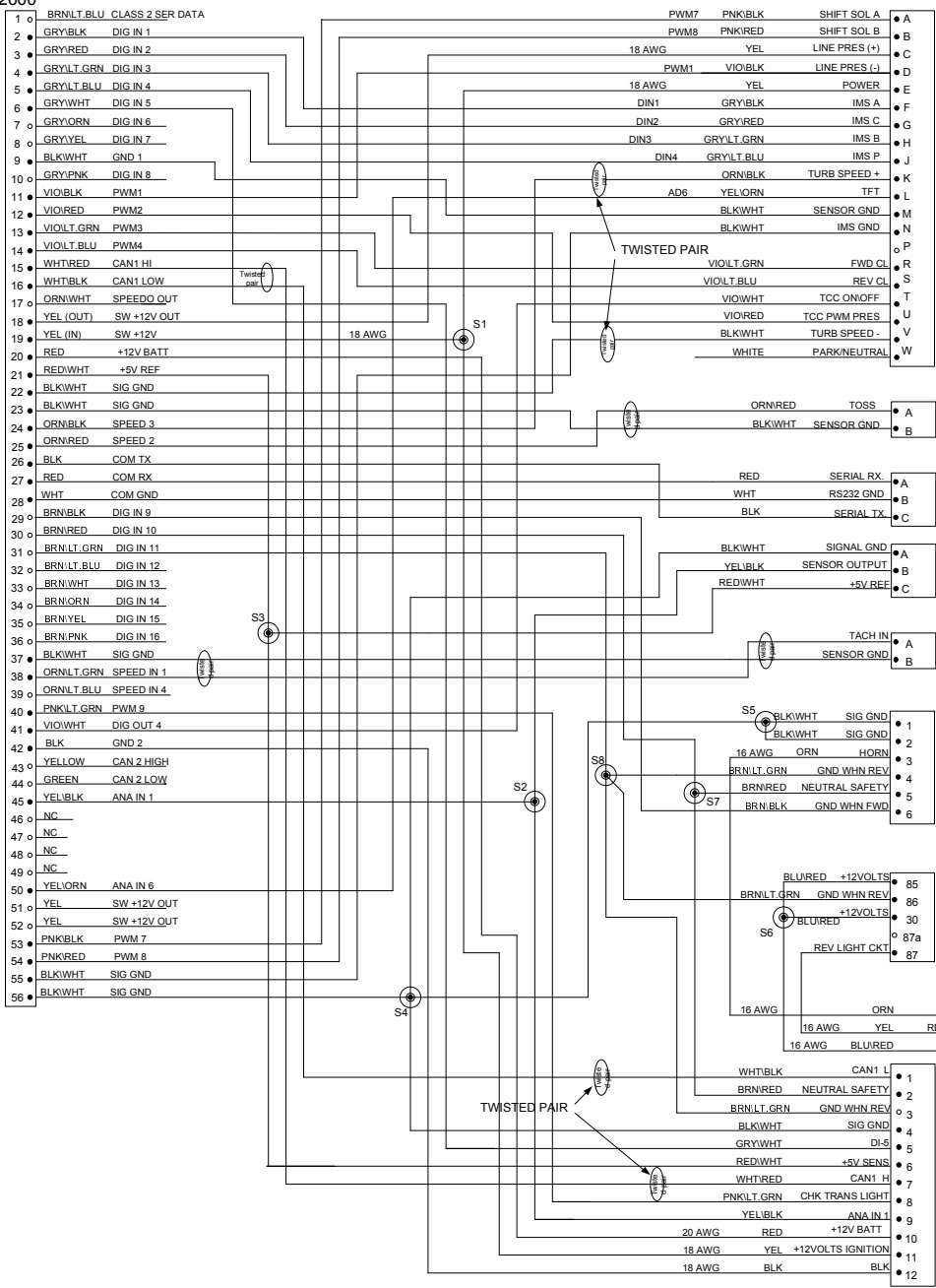
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GM 4 SPEED TRANSMISSION C6 REPLACEMENT

SIZE: C CUSTOMER DRAWING NO. TCM-4660 REV: 001

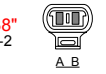
DRAWN BY: FRED D. DATE: 5/20/2015

APPROVED BY: DATE: SHEET PAGE 2

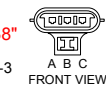
TCM-2600



C-1  
23.5"  
TRANSMISSION CONNECTOR FRONT VIEW



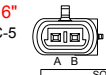
C-2  
38"  
OUTPUT SHAFT SPEED SENSOR FRONT VIEW



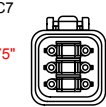
C-3  
38"  
OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW



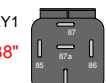
C-4  
23"  
MAP CONNECTOR



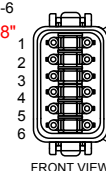
C-5  
16"  
RPM CONNECTOR



C-7  
75"  
SHIFTER CONNECTOR FRONT VIEW



RY1  
38"  
CONNECTOR FRONT VIEW (CONNECTOR NOT RELAY)



C-6  
38"  
BULKHEAD CONNECTOR

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	5/27/15	FD	
1A	CORRECT OF CON #	9/15/15	FD	
1B	DRAWING # CORRECTED FROM 4641 TO 4660	9/4/16	FD	
2A	DRAWING # CORRECTED FROM 4641 TO 4661 (new shifter con)	12/1/16	FD	
2B	ADDED TRN-1200 SWITCHING DETAIL	1/26/16	FD	
2C	CORRECT PAGE 7 PRODUCTION REMOVE #5 LINE	1/26/16	FD	
2D	ADD 20AWG NEUTRAL SAFETY WIRE TO PIGTAIL	8/9/17	FD	
3	SWAP C7 PINS 4 AND PIN 6. LABEL TRN-1200	4/12/18	FD	
3A	TEXT UPDATES	7/12/19	FD	

C-1 TRANSMISSION CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

C-2 OUTPUT SHAFT SPEED SENSOR FEMALE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

C-3 OPTIONAL COM NOT REQUIRED FOR USE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

C-3A CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1029	GRN
1	TPA	CON-3417	

C-4 1 BAR MAP SENSOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2303	GREEN BODY
2	TERMINALS	CON-1006	
3	CABLE SEAL	CON-1004	

C5 RPM CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

C7 START/BACKUP CIRCUIT CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	M/F
4	TERMINALS	CON-5504	
1	WEDGE LOCK	CON-5521	
1	CAVITY PLUG	CON5530	

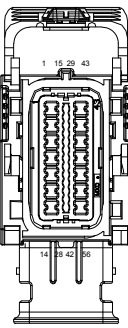
RY1 REV LIGHT RELAY			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2502	
1	RELAY	CON-2501	
4	TERMINAL	CON-2503	

C-6 BULKHEAD CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

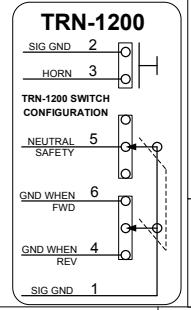
Print Date  
7/12/2019  
1700

APPLICABLE STANDARDS		NOTES	
• ASME Y14.100-200	2) WIRE GAUGE 28 AWG (SEE DRAWING)	1) LENGTH TOLERANCE +/- 1/8 INCH	
• ASME Y14.1M-1994	3) WIRE ALLOYS/CONDITIONS		
• IPC/WHMA-A-620A-CLASS 2	4) WIRE NICKELATED WIRE SMT FOOT 1/16" DIA (SEE DRAWING)	5) FINISH/CONDITION: PLATE FROM UNFINISHED END (IF OTHERWISE STATED)	
• MARKING MIL-STD-130			



TCU-2600

TCU-2600 Connector			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	M/F
34	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
21	CAVITY PLUG	CON-1204	



NOTE:  
FORWARD = SHIFTER HANDLE PULLED BACK WHEN INSTALLED ON RIGHT SIDE OF STEERING COLUMN.

DRAWN BY: FRED D.		DATE: 5/27/15	
DATE: 7/12/19	APPROVED BY:	DATE: 7/12/19	SHEET: PAGE 1
TITLE: GM 4 SPEED TRANSMISSION C6 REPLACEMENT [AA]		PCB PART NUMBER: TCM-4661	REV: 003
COMPANY: POWERTRAIN CONTROL SOLUTIONS		PROJECT NUMBER: TCM-4661	

LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM7	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM8	3/8" BLACK CONVOLUTED LOOM	9"	WRE-3001
LOOM9	3/8" BLACK CONVOLUTED LOOM	45"	WRE-3001

NUM	NAME	PART #	NOTES
L1	TCM-4661-002 4170E 2010+ TO	WRE-8501	P377
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	TOSS	WRE-8500	P8
L4	BULKHEAD CONNECTOR	WRE-8500	P64
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500	P4
L6	RPM CONNECTOR	WRE-8500	P304
L7	1 BAR MAP SENSOR	WRE-8500	P305
L8	RY1 REV LIGHT RELAY	WRE-8500	P278
L9	SHIFTER CONNECTOR	WRE-8500	P376

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TPS/MAP SIGNAL	YEL/BLK
S3	+5V SENSOR	RED/WHT
S4	SIGNAL GND	BLK/WHT

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK_RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORG/LT.GRN	38
B	SENSOR GND	BLK/WHT	37

LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	5/27/15	FD	
1A	CORRECT C4 CON #	9/15/15	FD	
1B	DRAWING # CORRECTED FROM 4641 TO 4660	8/4/16	FD	
2A	DRAWING # CORRECTED FROM 4641 TO 4661 [new shifter con]	12/1/16	FD	
2B	ADDED TRN-1200 SWITCHING DETAIL	1/28/16	FD	
2C	CORRECT PAGE 7 PRODUCTION REMOVE #5 LINE	1/28/16	FD	
2D	ADD 20AWG NEUTRAL SAFETY WIRE TO PIGTAIL	8/9/17	FD	
3	SWAP C7 PINS 4 AND PIN 6, LABEL TRN-1200	4/21/18	FD	
3A	TEXT UPDATES	7/12/19	FD	

**C4 1 BAR MAP SENSOR CONNECTOR**

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SIGNAL GND	BLK/WHT	S4, TCU-56
B	SENSOR OUTPUT	YEL/RED	S2, TCU-45
C	+5V REF	RED/WHT	S3, TCU-21

**C2 OUTPUT SHAFT SPEED SENSOR FEMALE**

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

**RY1 REV LIGHT RELAY**

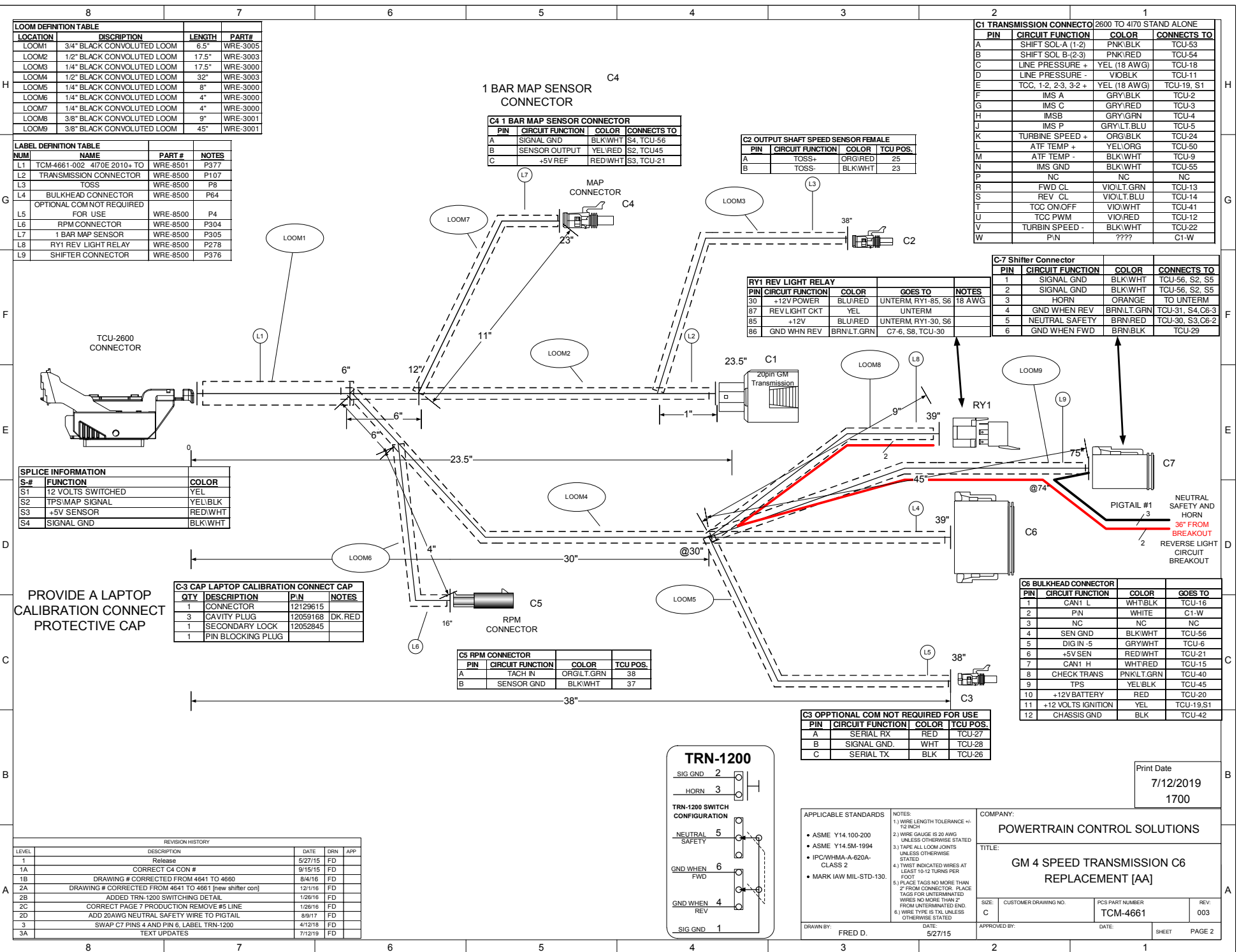
PIN	CIRCUIT FUNCTION	COLOR	GOES TO	NOTES
30	+12V POWER	BLU/RED	UNTERM RY1-85, S6	18 AWG
87	REV LIGHT CKT	YEL	UNTERM	
85	+12V	BLU/RED	UNTERM RY1-30, S6	
86	GND WHN REV	BRN/LT.GRN	C7-6, S8, TCU-30	

**C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE**

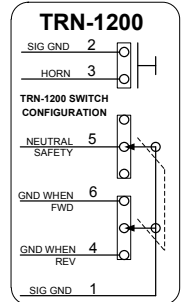
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO/BLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W	PIN	????	C1-W

**C-7 Shifter Connector**

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	SIGNAL GND	BLK/WHT	TCU-56, S2, S5
2	SIGNAL GND	BLK/WHT	TCU-56, S2, S5
3	HORN	ORANGE	TO UNTERM
4	GND WHEN REV	BRN/LT.GRN	TCU-31, S4, C6-3
5	NEUTRAL SAFETY	BRN/RED	TCU-30, S3, C6-2
6	GND WHEN FWD	BRN/BLK	TCU-29



PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP



**C3 OPTIONAL COM NOT REQUIRED FOR USE**

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

**C6 BULKHEAD CONNECTOR**

PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	PN	WHITE	C1-W
3	NC	NC	NC
4	SEN GND	BLK/WHT	TCU-56
5	DIG IN -5	GRY/WHT	TCU-6
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

APPLICABLE STANDARDS: ASME Y14.100-200, ASME Y14.5M-1994, IPC/WHMA-A-620A-CLASS 2, MARK IAW MIL-STD-130.

NOTES: 1.) WIRE LENGTH TOLERANCE +/- 1/32 INCH, 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED, 3.) TAP ALL LOOM JOINTS UNLESS OTHERWISE STATED, 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT, 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END, 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED.

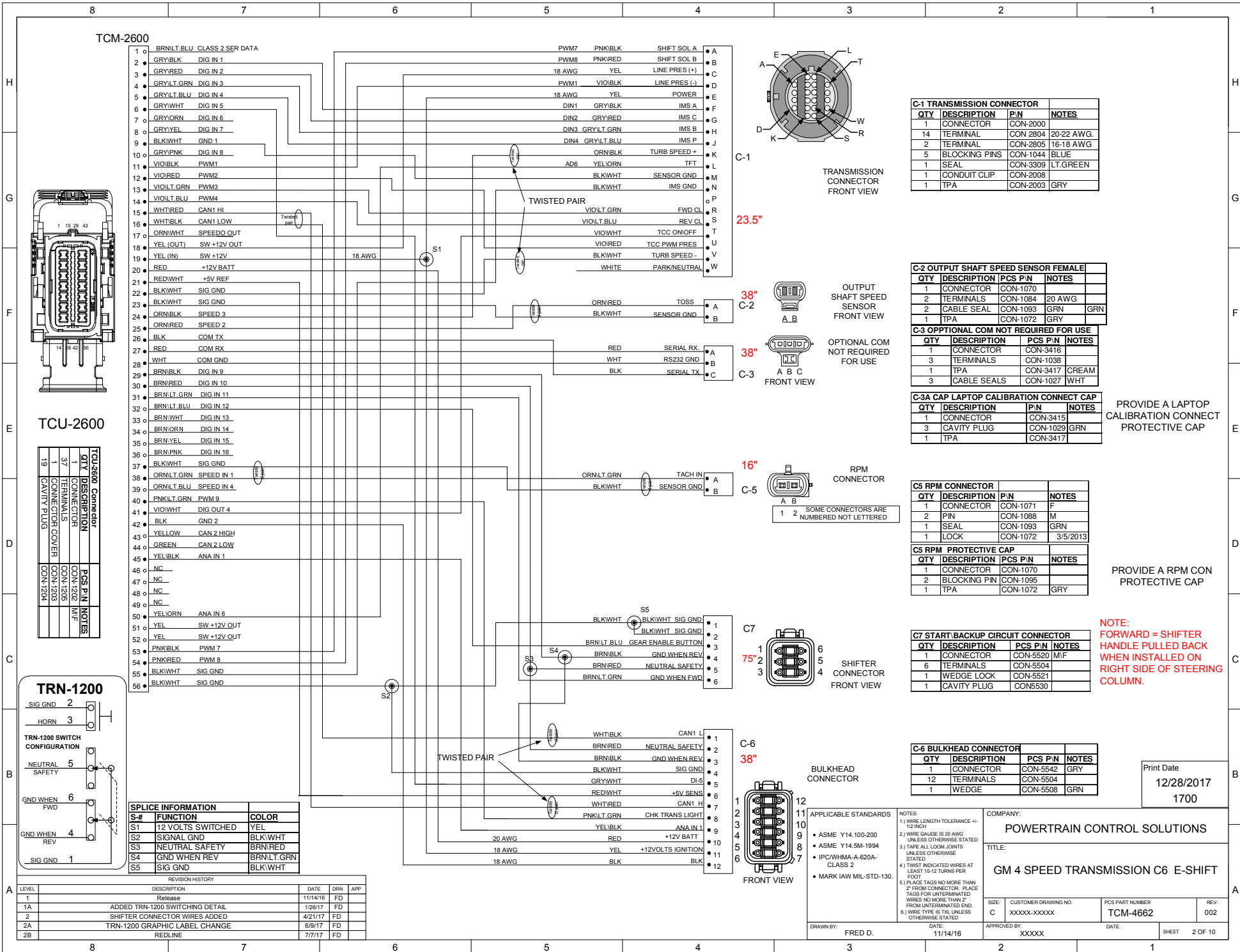
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COMPANY: POWERTRAIN CONTROL SOLUTIONS

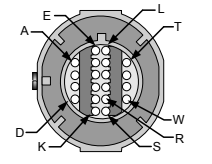
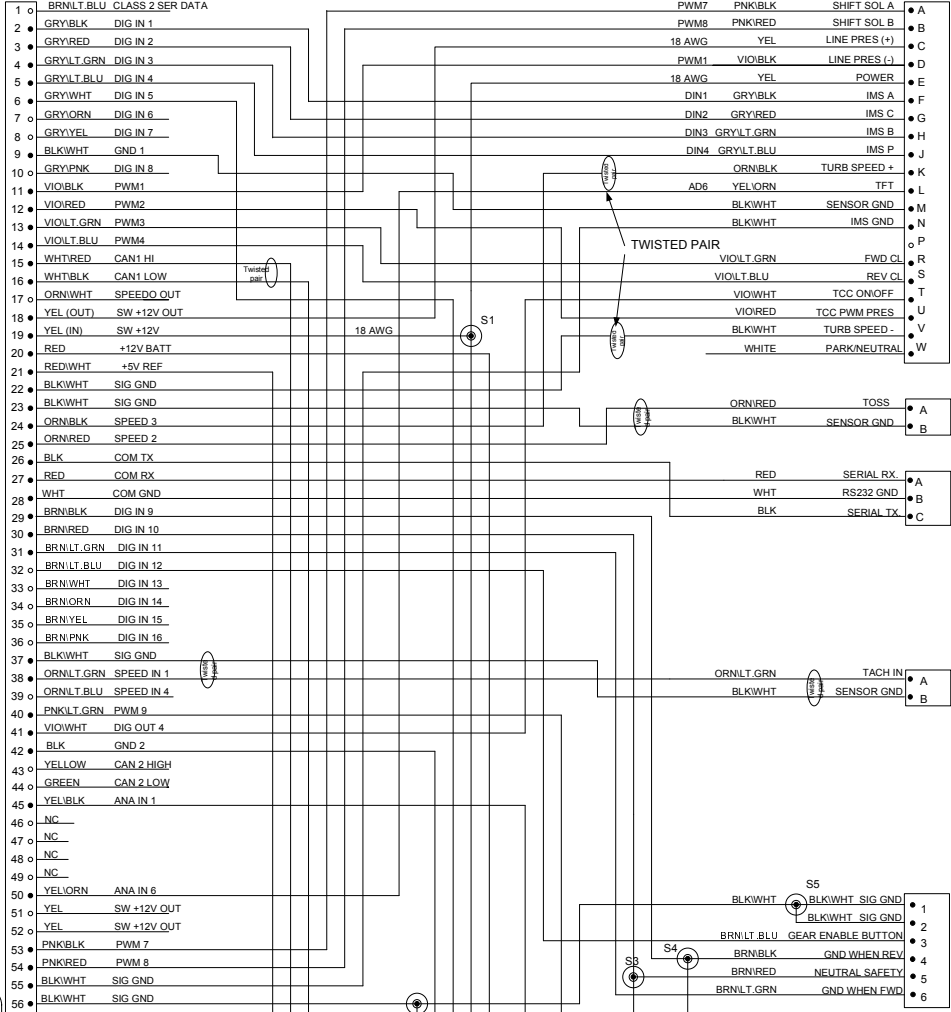
TITLE: GM 4 SPEED TRANSMISSION C6 REPLACEMENT [AA]

SIZE: C CUSTOMER DRAWING NO: PCS PART NUMBER: TCM-4661 REV: 003

DRAWN BY: FRED D. DATE: 5/27/15 APPROVED BY: DATE: SHEET PAGE 2

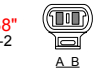


TCM-2600



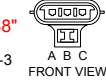
C-1 TRANSMISSION CONNECTOR FRONT VIEW

23.5"



C-2 OUTPUT SHAFT SPEED SENSOR FRONT VIEW

38"



C-3 OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW

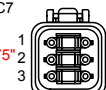
16"



C-5 RPM CONNECTOR

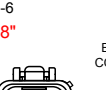
SOME CONNECTORS ARE NUMBERED NOT LETTERED

75"

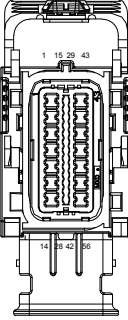


C-7 SHIFTER CONNECTOR FRONT VIEW

38"



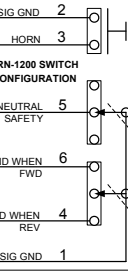
C-6 BULKHEAD CONNECTOR FRONT VIEW



TCU-2600

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2602	M/F
37	TERMINALS	CON-2605	
1	CONNECTOR COVER	CON-2603	
1	CAVITY PLUG	CON-2604	

TRN-1200



S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIGNAL GND	BLK/WHT
S3	NEUTRAL SAFETY	BRN/RED
S4	GND WHEN REV	BRN/LT.GRN
S5	SIG GND	BLK/WHT

LEVEL	DESCRIPTION	DATE	DRN	APP
1	REVISION	11/14/16	FD	
1A	ADDED TRN-1200 SWITCHING DETAIL	1/28/17	FD	
2	SHIFTER CONNECTOR WIRES ADDED	4/21/17	FD	
2A	TRN-1200 GRAPHIC LABEL CHANGE	6/9/17	FD	
2B	REDLINE	7/7/17	FD	

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN GRN
1	TPA	CON-1072	GRY

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1029	GRN
1	TPA	CON-3417	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	BLOCKING PIN	CON-1095	
1	TPA	CON-1072	GRY

PROVIDE A RPM CON PROTECTIVE CAP

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	M/F
6	TERMINALS	CON-5504	
1	WEDGE LOCK	CON-5521	
1	CAVITY PLUG	CON-5530	

NOTE: FORWARD = SHIFTER HANDLE PULLED BACK WHEN INSTALLED ON RIGHT SIDE OF STEERING COLUMN.

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN

APPLICABLE STANDARDS  
 • ASME Y14.100-200  
 • ASME Y14.5M-1994  
 • IPC/WMA-A-620A-CLASS 2  
 • MARK IAW MIL-STD-130.

NOTES:  
 1.) WIRE LENGTH TOLERANCE +/- .02 INCH  
 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
 3.) TAP ALL LOOM JOINTS UNLESS OTHERWISE STATED  
 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: GM 4 SPEED TRANSMISSION C6 E-SHIFT

DATE: 11/14/16

DRAWN BY: FRED D.

APPROVED BY: XXXXX

CUSTOMER DRAWING NO: XXXXX-XXXXX

PCS PART NUMBER: TCM-4662

REV: 002

SHEET 2 OF 10

Print Date  
12/28/2017  
1700

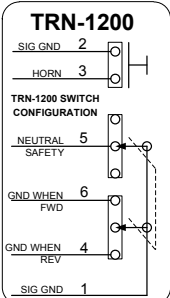
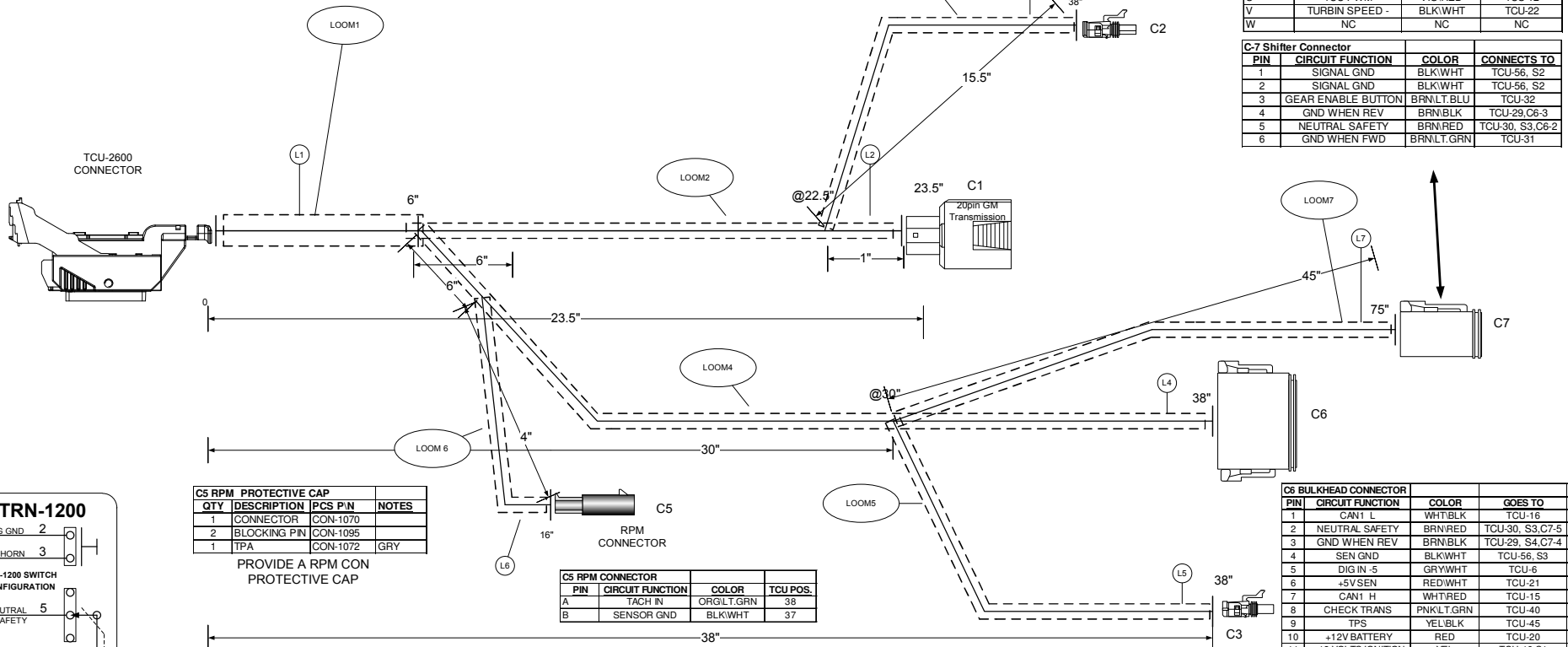


NUM	NAME	PART #	NOTES
L1	TCM-4662-001 GM 4 SPD TRANS C6 E-SHIFT	WRE-8501	P374
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	TOSS	WRE-8500	P8
L4	BULKHEAD CONNECTOR	WRE-8500	P64
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500	P4
L6	RPM CONNECTOR	WRE-8500	P304
L7	SHIFTER CONNECTOR	WRE-8500	P280

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL-B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO/BLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W	NC	NC	NC

C-7 Shifter Connector			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	SIGNAL GND	BLK/WHT	TCU-56, S2
2	SIGNAL GND	BLK/WHT	TCU-56, S2
3	GEAR ENABLE BUTTON	BRN/LT.BLU	TCU-32
4	GND WHEN REV	BRN/BLK	TCU-29, S4, C7-4
5	NEUTRAL SAFETY	BRN/RED	TCU-30, S3, C6-2
6	GND WHEN FWD	BRN/LT.GRN	TCU-31



C5 RPM PROTECTIVE CAP				
QTY	DESCRIPTION	PCS	PIN	NOTES
1	CONNECTOR	CON-1070		
2	BLOCKING PIN	CON-1095		
1	TPA	CON-1072	GRY	

PROVIDE A RPM CON PROTECTIVE CAP

C5 RPM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORG/LT.GRN	38
B	SENSOR GND	BLK/WHT	37

LOOM DEFINITION TABLE			
LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	15.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	1/8" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM7	3/8" BLACK CONVOLUTED LOOM	45"	WRE-3001

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1024	DK.RED
1	SECONDARY LOCK	CON-3417	

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIGNAL GND	BLK/WHT
S3	NEUTRAL SAFETY	BRN/RED
S4	GND WHEN REV	BRN/LT.GRN
S5	SIG GND	BLK/WHT

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	11/14/16	FD	
1A	ADDED TRN-1200 SWITCHING DETAIL	1/26/17	FD	
2	SHIFTER CONNECTOR WIRES ADDED	4/21/17	FD	
2A	TRN-1200 GRAPHIC LABEL CHANGE	6/9/17	FD	
2B	REDLINE	7/7/17	FD	

C3 OPTIONAL COM NOT REQUIRED FOR USE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

C6 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	NEUTRAL SAFETY	BRN/RED	TCU-30, S3, C7-5
3	GND WHEN REV	BRN/BLK	TCU-29, S4, C7-4
4	SEN GND	BLK/WHT	TCU-56, S3
5	DIG IN -5	GRY/WHT	TCU-6
6	+5VSEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19, S1
12	CHASSIS GND	BLK	TCU-42

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES
- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

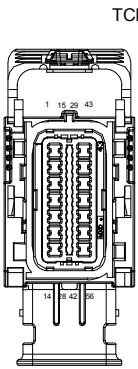
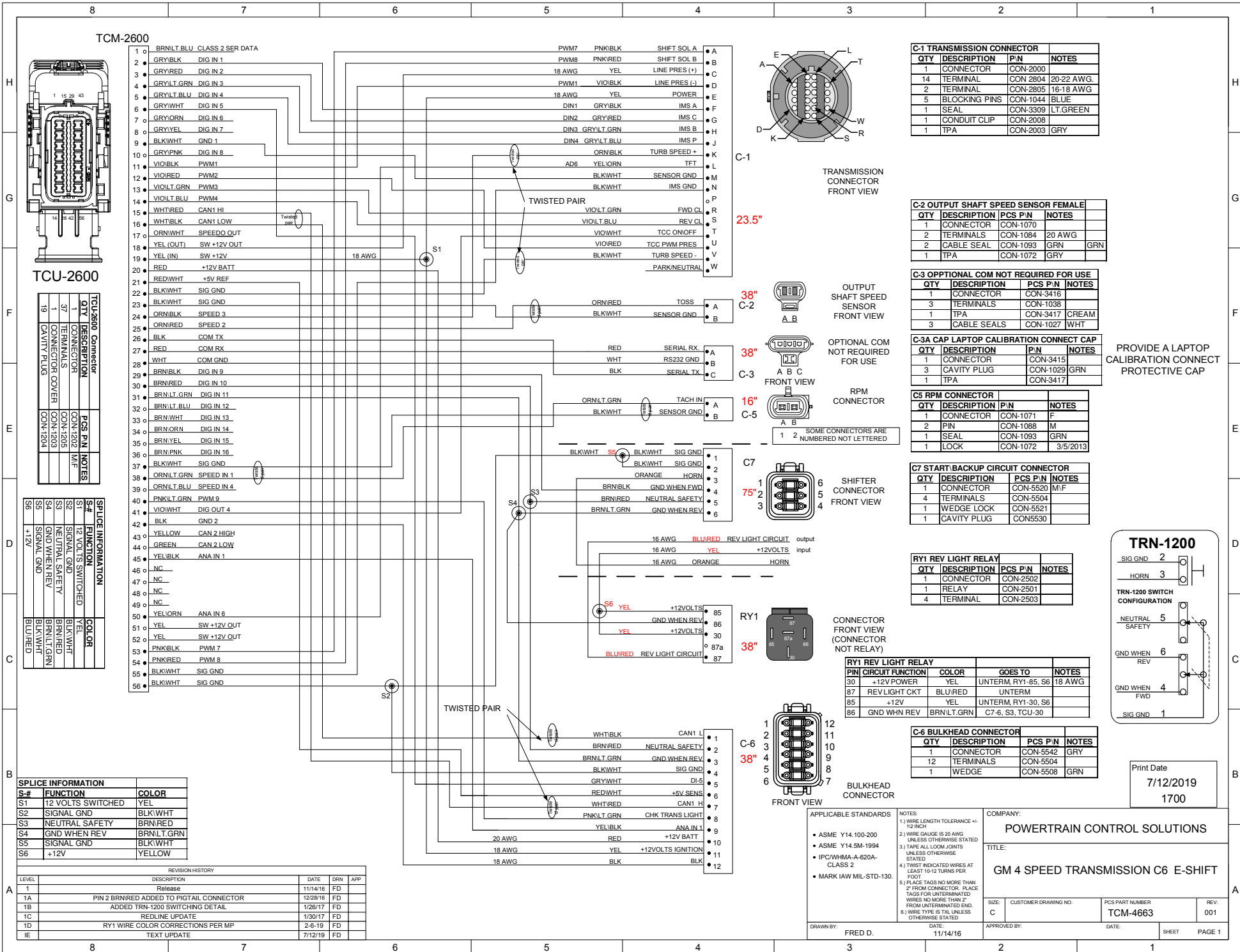
COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: GM 4 SPEED TRANSMISSION C6 E-SHIFT

DATE: 12/28/2017 1700

SIZE: CUSTOMER DRAWING NO. XXXXX-XXXXX PCS PART NUMBER TCM-4662 REV: 002

DRAWN BY: FRED D. DATE: 11/14/16 APPROVED BY: XXXXX DATE: SHEET 3 OF 10



**TCU-2600 Connector**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	M/F
37	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
19	CAVITY PLUG	CON-1204	

**SPLICE INFORMATION**

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIGNAL GND	BLK/WHT
S3	NEUTRAL SAFETY	BRN/RED
S4	GND WHEN REV	BRN/LT.GRN
S5	SIGNAL GND	BLK/WHT
S6	+12V	YELLOW

**SPLICE INFORMATION**

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIGNAL GND	BLK/WHT
S3	NEUTRAL SAFETY	BRN/RED
S4	GND WHEN REV	BRN/LT.GRN
S5	SIGNAL GND	BLK/WHT
S6	+12V	YELLOW

**REVISION HISTORY**

LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	11/14/16	FD	
1A	PIN 2 BRN/RED ADDED TO PIGTAIL CONNECTOR	12/29/16	FD	
1B	ADDED TRN-1200 SWITCHING DETAIL	1/26/17	FD	
1C	REDLINE UPDATE	1/30/17	FD	
1D	RY1 WIRE COLOR CORRECTIONS PER MP	2-6-19	FD	
1E	TEXT UPDATE	7/12/19	FD	

**C-1 TRANSMISSION CONNECTOR**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

**C-2 OUTPUT SHAFT SPEED SENSOR FEMALE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

**C-3 OPTIONAL COM NOT REQUIRED FOR USE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

**C-3A CAP LAPTOP CALIBRATION CONNECT CAP**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1029	GRN
1	TPA	CON-3417	

**C5 RPM CONNECTOR**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

**C7 START-UP/BACKUP CIRCUIT CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	M/F
4	TERMINALS	CON-5504	
1	WEDGE LOCK	CON-5521	
1	CAVITY PLUG	CON-5530	

**RY1 REV LIGHT RELAY**

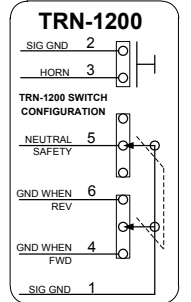
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2502	
1	RELAY	CON-2501	
4	TERMINAL	CON-2503	

**RY1 REV LIGHT RELAY**

PIN	CIRCUIT FUNCTION	COLOR	GOES TO	NOTES
30	+12V POWER	YEL	INTERM. RY1-85, S6	18 AWG
87	REV LIGHT CKT	BLU/RED	INTERM	
85	+12V	YEL	INTERM. RY1-30, S6	
86	GND WHN REV	BRN/LT.GRN	C7-6, S3, TCU-30	

**C-6 BULKHEAD CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN



Print Date  
7/12/2019  
1700

**POWERTRAIN CONTROL SOLUTIONS**

TITLE: **GM 4 SPEED TRANSMISSION C6 E-SHIFT**

COMPANY: POWERTRAIN CONTROL SOLUTIONS

DATE: 11/14/16

DESIGNER: FRED D.

APPROVED BY: [Signature]

SIZE: C

CUSTOMER DRAWING NO: [Blank]

PCS PART NUMBER: **TCM-4663**

REV: 001

SHEET: [Blank]

PAGE 1

C8 THROTTLE POSITION SENSOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	+5V	RED	C6M-6 [TCU-21]
B	SIGNAL GND	BLK/WHT	C6M-6 [TCU-56]
C	TPS SIGNAL	YEL/BLK	C6M-9 [TCM-45]

LABEL DEFINITION TABLE			
NUM	NAME	PART #	NOTES
L1	TCM-4663-001 GM 4 SPD TRANS C6 E-SHIFT	WRE-8501	P382
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	TOSS	WRE-8500	P8
L4	BULKHEAD CONNECTOR	WRE-8500	P64
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500	P4
L6	RPM CONNECTOR	WRE-8500	P304
L7	SHIFTER CONNECTOR	WRE-8500	P280

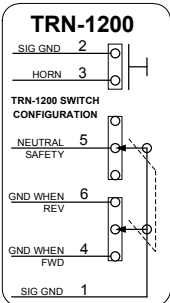
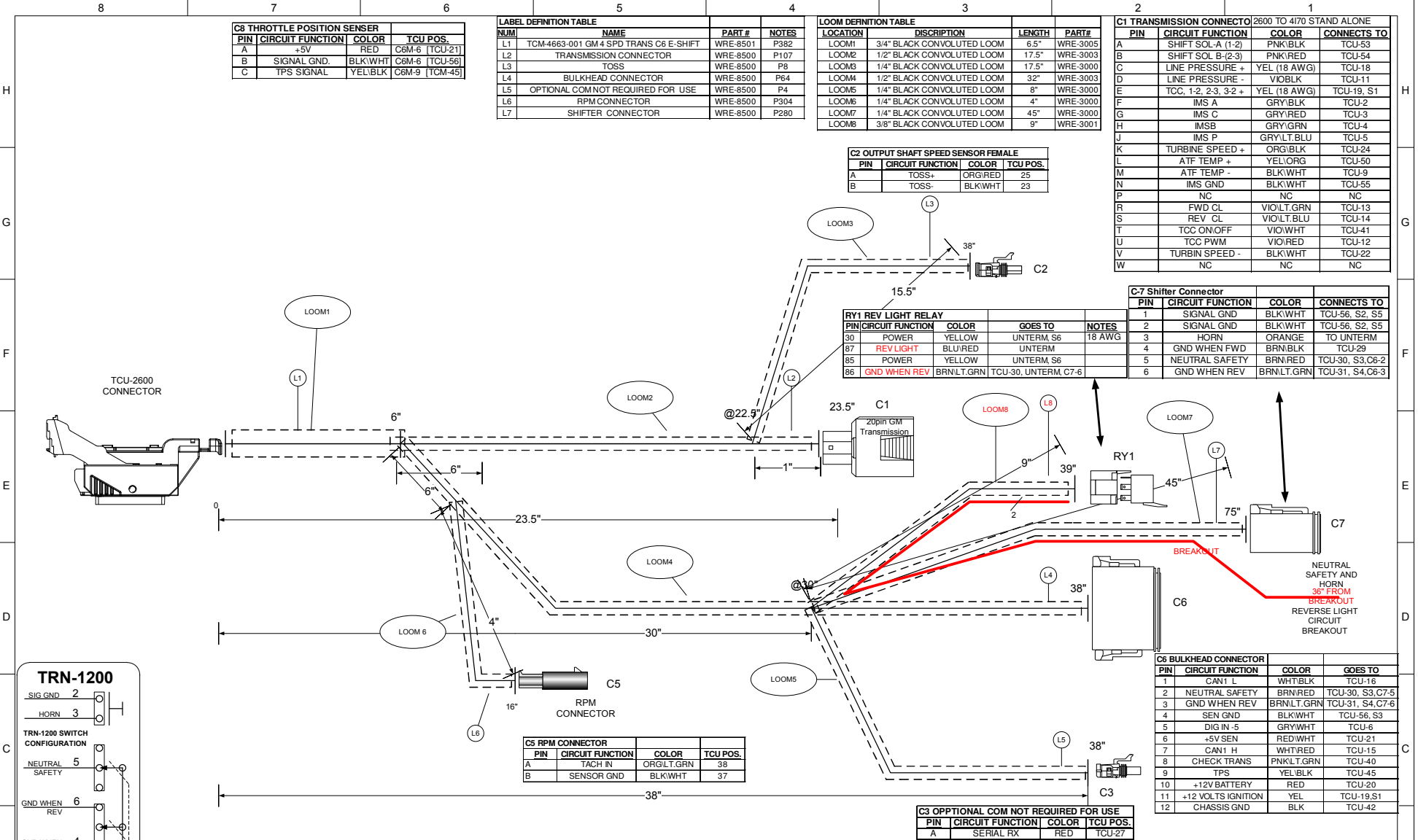
LOOM DEFINITION TABLE			
LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM7	1/4" BLACK CONVOLUTED LOOM	45"	WRE-3000
LOOM8	3/8" BLACK CONVOLUTED LOOM	9"	WRE-3001

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VOBLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W	NC	NC	NC

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

RY1 REV LIGHT RELAY				
PIN	CIRCUIT FUNCTION	COLOR	GOES TO	NOTES
30	POWER	YELLOW	UNTERM, S6	18 AWG
87	REV LIGHT	BLU/RED	UNTERM	
85	POWER	YELLOW	UNTERM, S6	
86	GND WHEN REV	BRN/LT.GRN	TCU-30, UNTERM, C7-6	

C-7 Shifter Connector			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	SIGNAL GND	BLK/WHT	TCU-56, S2, S5
2	SIGNAL GND	BLK/WHT	TCU-56, S2, S5
3	HORN	ORANGE	TO UNTERM
4	GND WHEN FWD	BRN/BLK	TCU-29
5	NEUTRAL SAFETY	BRN/RED	TCU-30, S3, C6-2
6	GND WHEN REV	BRN/LT.GRN	TCU-31, S4, C6-3



PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1024	DK_RED
1	SECONDARY LOCK	CON-3417	

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIGNAL GND	BLK/WHT
S3	NEUTRAL SAFETY	BRN/RED
S4	GND WHEN REV	BRN/LT.GRN
S5	SIGNAL GND	BLK/WHT
S6	+12V	YELLOW

C5 RPM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORG/LT.GRN	38
B	SENSOR GND	BLK/WHT	37

C3 OPTIONAL COM NOT REQUIRED FOR USE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

C6 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	NEUTRAL SAFETY	BRN/RED	TCU-30, S3, C7-5
3	GND WHEN REV	BRN/LT.GRN	TCU-31, S4, C7-6
4	SEN GND	BLK/WHT	TCU-56, S3
5	DIG IN -5	GRY/WHT	TCU-6
6	-5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19, S1
12	CHASSIS GND	BLK	TCU-42

Print Date  
7/12/2019  
1700

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES
- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

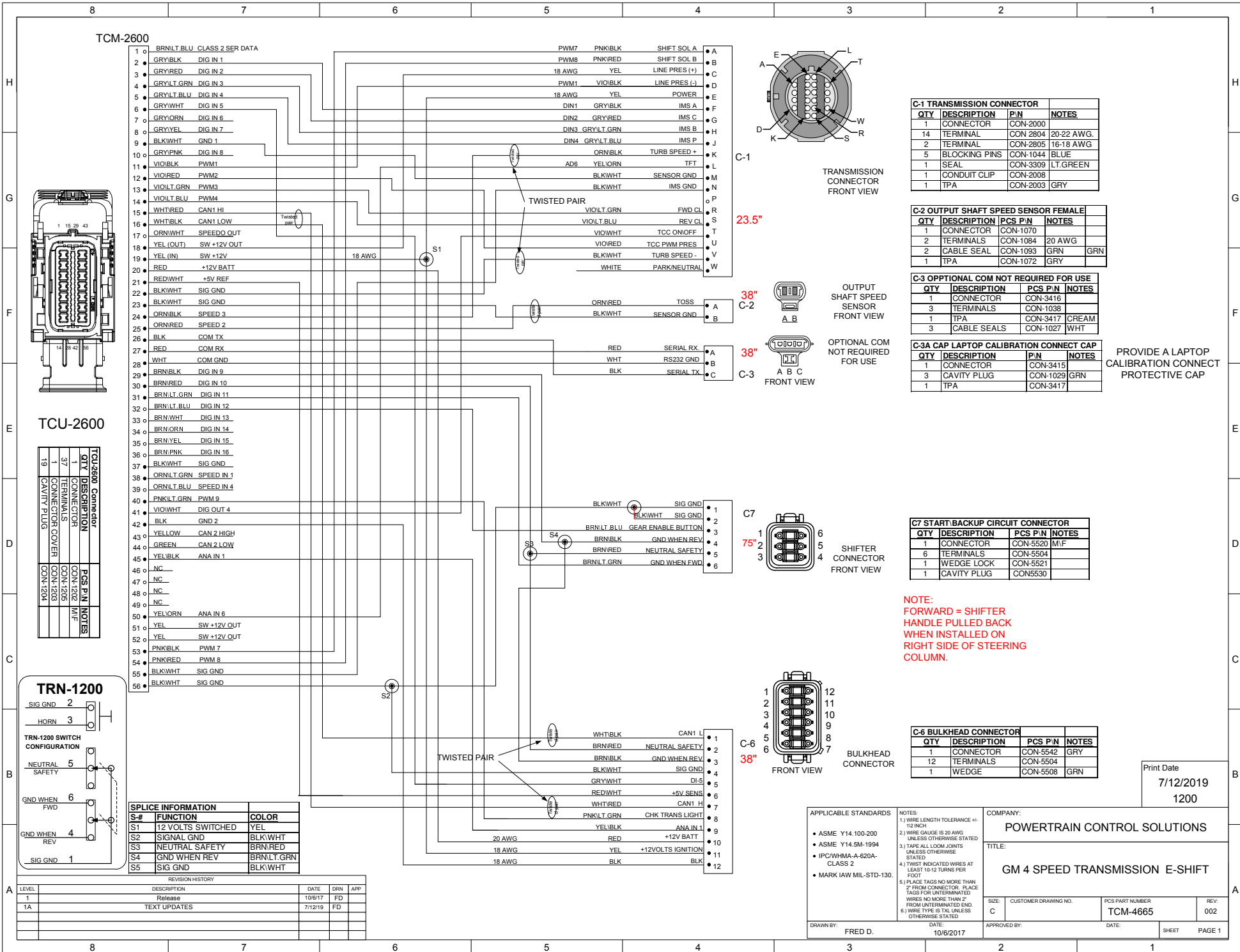
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**GM 4 SPEED TRANSMISSION C6 E-SHIFT**

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER	REV:
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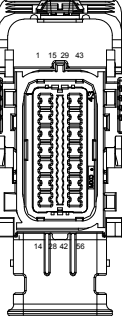
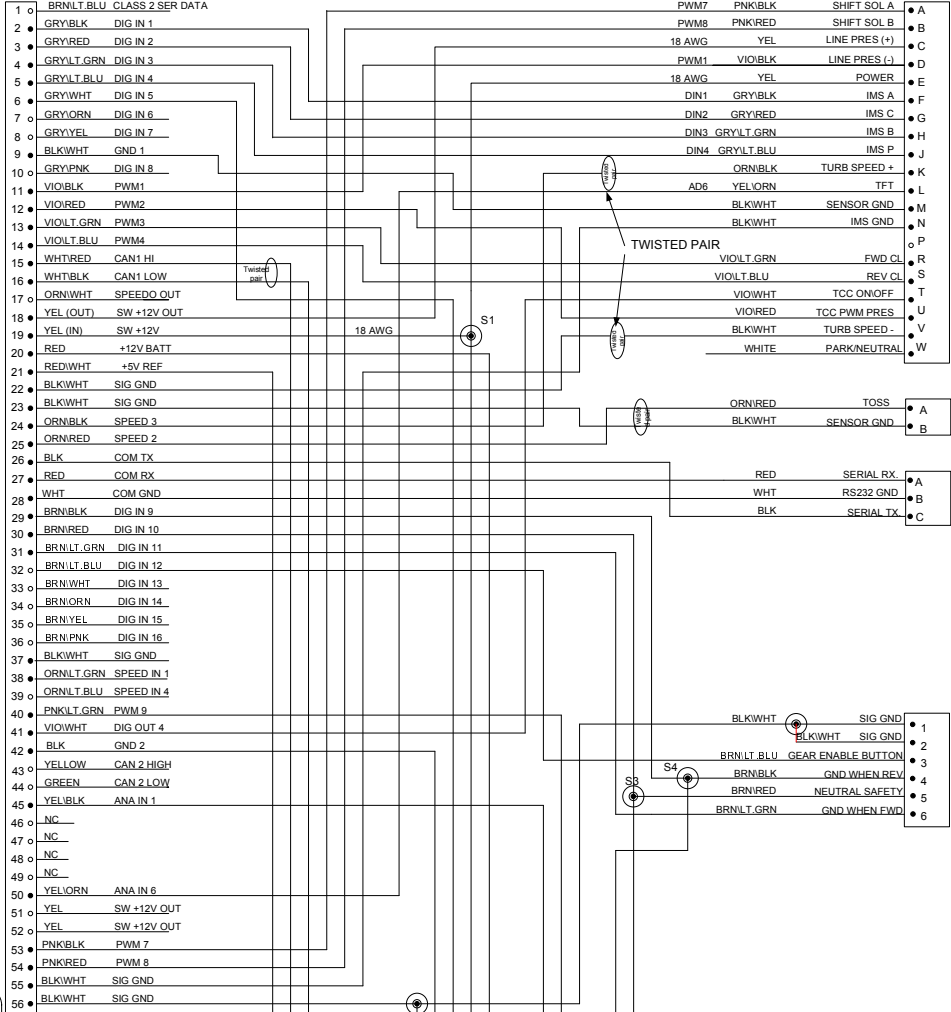
DRAWN BY: FRED D. DATE: 11/14/16

APPROVED BY: DATE: SHEET PAGE 2

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
T	R000000	11/14/16	FD	
1A	PIN 2 BRN/RED ADDED TO PIGTAIL CONNECTOR	1/28/16	FD	
1B	ADDED TRN-1200 SWITCHING DETAIL	1/26/17	FD	
1C	REDLINE UPDATE	1/30/17	FD	
1D	RY1 WIRE COLOR CORRECTIONS PER MP	2-6-19	FD	
1E	TEXT UPDATE	7/12/19	FD	



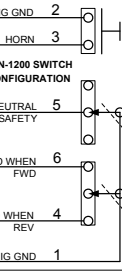
TCM-2600



TCU-2600

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	M/F
37	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
19	CAVITY PLUG	CON-1204	

TRN-1200



S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIGNAL GND	BLK/WHT
S3	NEUTRAL SAFETY	BRN/RED
S4	GND WHEN REV	BRN/LT.GRN
S5	SIG GND	BLK/WHT

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	10/6/17	FD	
1A	TEXT UPDATES	7/12/19	FD	

C-1 TRANSMISSION CONNECTOR			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

C-2 OUTPUT SHAFT SPEED SENSOR FEMALE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

C-3 OPTIONAL COM NOT REQUIRED FOR USE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

C-3A CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1029	GRN
1	TPA	CON-3417	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

C7 START/BACKUP CIRCUIT CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	M/F
6	TERMINALS	CON-5504	
1	WEDGE LOCK	CON-5521	
1	CAVITY PLUG	CON-5530	

NOTE:  
FORWARD = SHIFTER HANDLE PULLED BACK WHEN INSTALLED ON RIGHT SIDE OF STEERING COLUMN.

C-6 BULKHEAD CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES:
- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: <b>POWERTRAIN CONTROL SOLUTIONS</b>			
TITLE: <b>GM 4 SPEED TRANSMISSION E-SHIFT</b>			
SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER	REV:
		<b>TCM-4665</b>	<b>002</b>
DRAWN BY: FRED D.	DATE: 10/6/2017	APPROVED BY:	DATE: SHEET PAGE 1

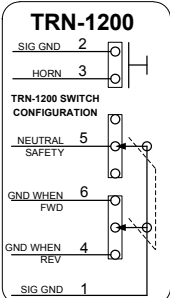
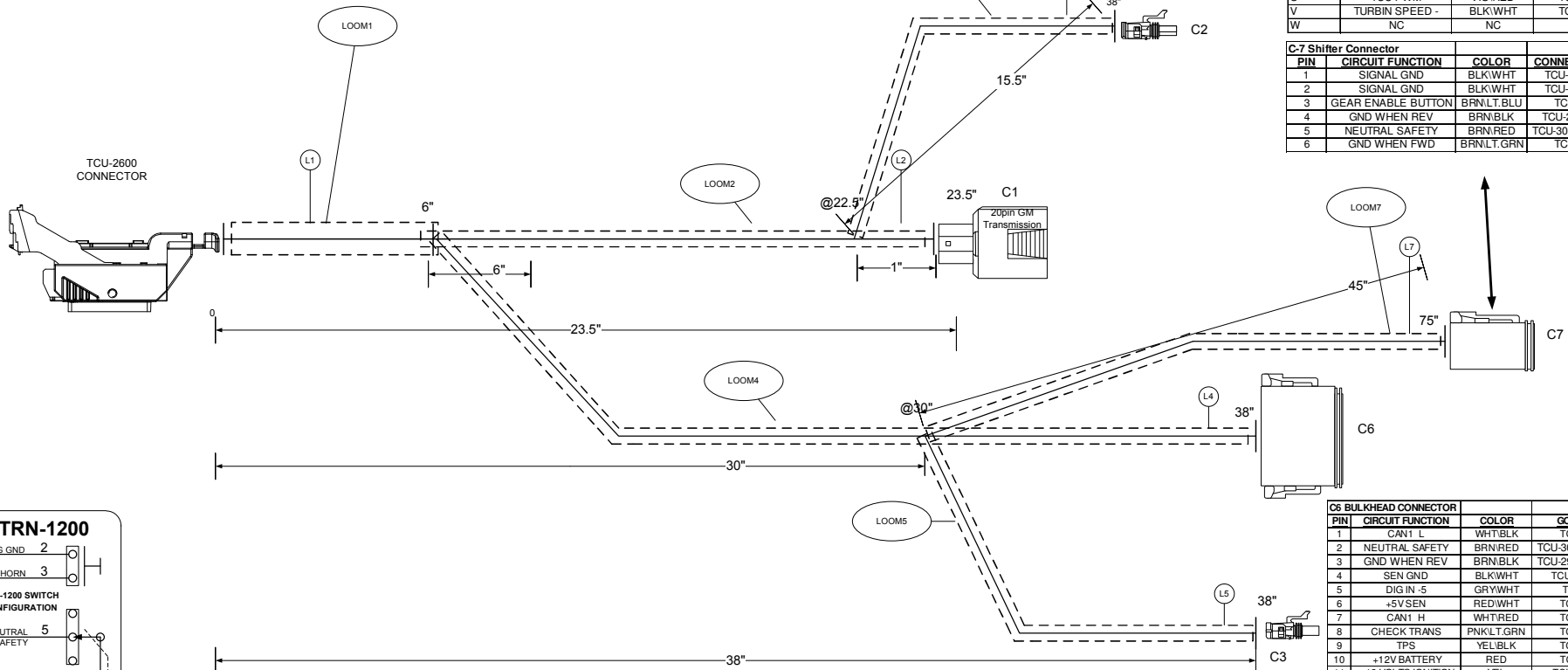
Print Date  
7/12/2019  
1200

NUM	NAME	PART #	NOTES
L1	TCM-4662-001 GM 4 SPD TRANS C6 E-SHIFT	WRE-8501	P374
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	TOSS	WRE-8500	P8
L4	BULKHEAD CONNECTOR	WRE-8500	P64
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500	P4
L6	NOT USED		
L7	SHIFTER CONNECTOR	WRE-8500	P280

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO/BLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W	NC	NC	NC

C-7 Shifter Connector			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	SIGNAL GND	BLK/WHT	TCU-56, S2
2	SIGNAL GND	BLK/WHT	TCU-56, S2
3	GEAR ENABLE BUTTON	BRN/LT.BLU	TCU-32
4	GND WHEN REV	BRN/BLK	TCU-29, S4, C7-4
5	NEUTRAL SAFETY	BRN/RED	TCU-30, S3, C6-2
6	GND WHEN FWD	BRN/LT.GRN	TCU-31



LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	15.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	NOT USED		
LOOM7	3/8" BLACK CONVOLUTED LOOM	45"	WRE-3001

TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1024	DK.RED
1	SECONDARY LOCK	CON-3417	

SPLICE INFORMATION			
S-#	FUNCTION	COLOR	
S1	12 VOLTS SWITCHED	YEL	
S2	SIGNAL GND	BLK/WHT	
S3	NEUTRAL SAFETY	BRN/RED	
S4	GND WHEN REV	BRN/LT.GRN	
S5	SIG GND	BLK/WHT	

REVISION HISTORY					
LEVEL	DESCRIPTION	DATE	DRN	APP	
1	Release	10/6/17	FD		
1A	TEXT UPDATES	7/12/19	FD		

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES:
- 1.3 WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6) WIRE TYPE IS TX UNLESS OTHERWISE STATED

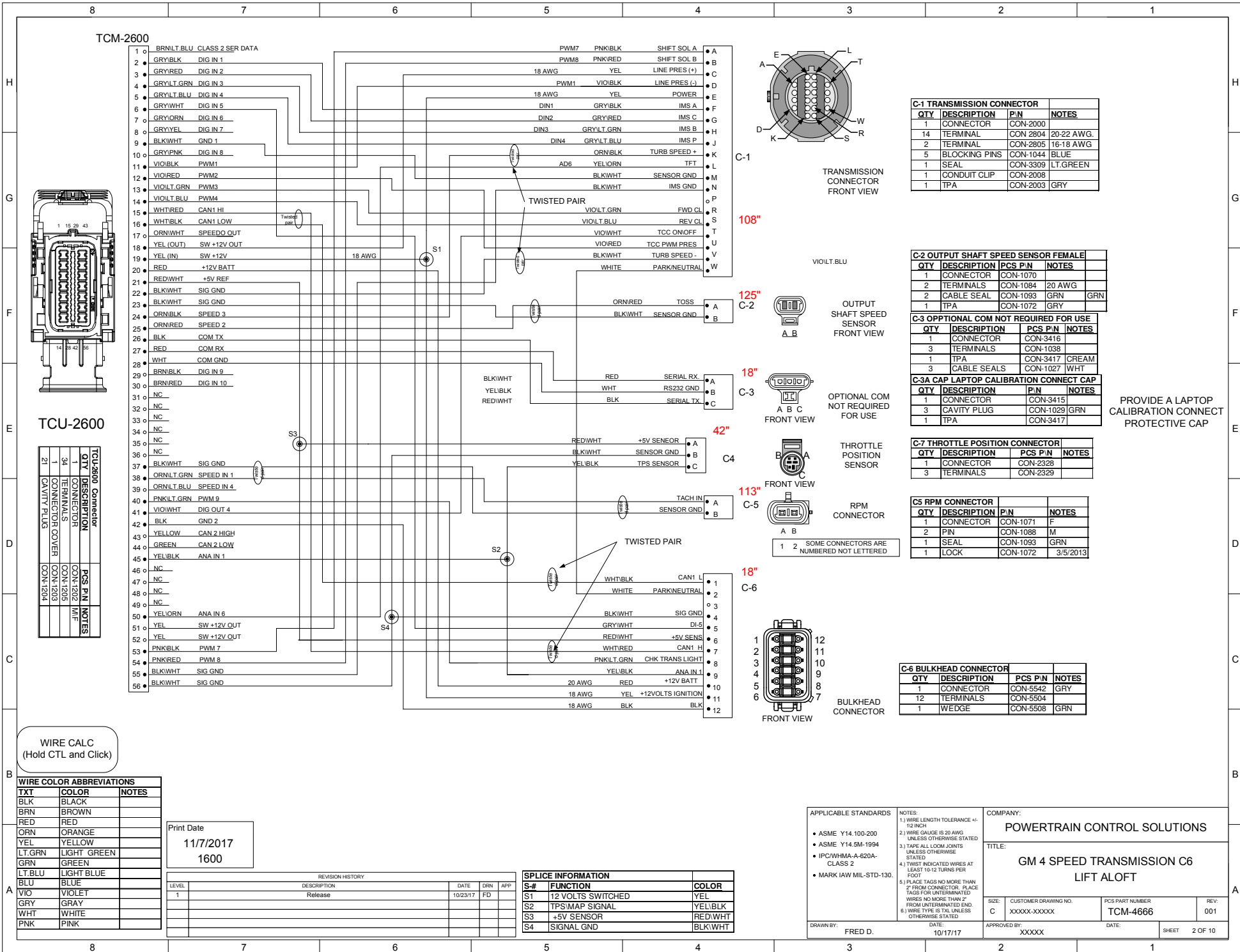
COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: GM 4 SPEED TRANSMISSION E-SHIFT

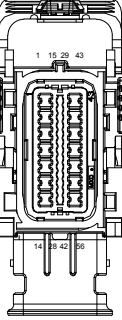
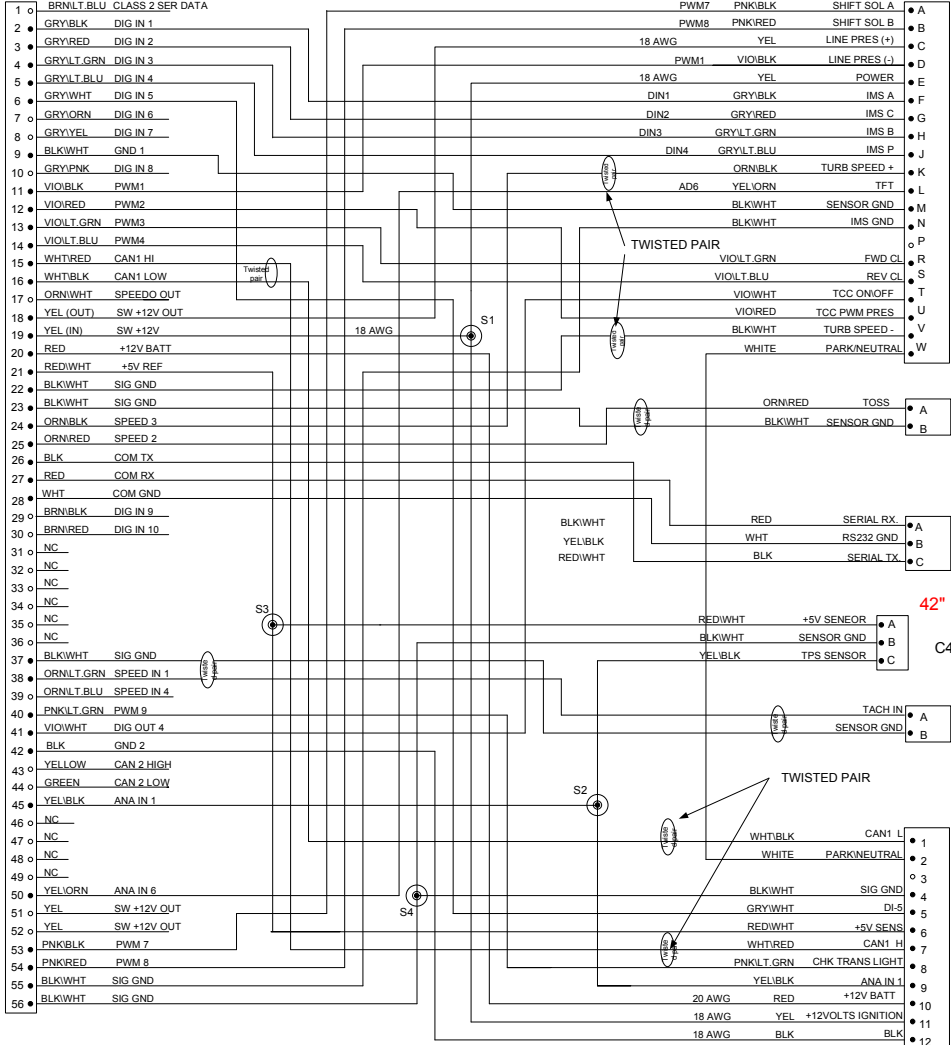
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DRAWN BY: FRED D. DATE: 10/6/2017 APPROVED BY: DATE: SHEET PAGE 2



**TCM-2600**



**TCU-2600**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	M/F
34	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
21	CAVITY PLUG	CON-1204	

WIRE CALC  
(Hold CTL and Click)

**WIRE COLOR ABBREVIATIONS**

TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

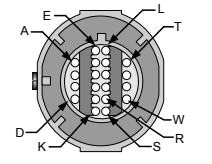
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11/7/2017  
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**REVISION HISTORY**

LEVEL	DESCRIPTION	DATE	DRN	APP
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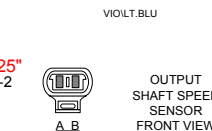
**SPLICE INFORMATION**

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TPS/MAP SIGNAL	YEL/BLK
S3	+5V SENSOR	RED/WHT
S4	SIGNAL GND	BLK/WHT

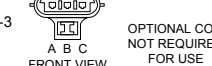


C-1 TRANSMISSION CONNECTOR FRONT VIEW

108"



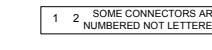
C-2 OUTPUT SHAFT SPEED SENSOR FRONT VIEW



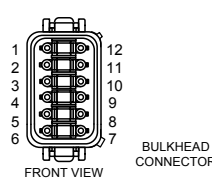
C-3 OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW



C-4 THROTTLE POSITION SENSOR FRONT VIEW



C-5 RPM CONNECTOR FRONT VIEW



C-6 BULKHEAD CONNECTOR FRONT VIEW

**C-1 TRANSMISSION CONNECTOR**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-2000	
14	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

**C-2 OUTPUT SHAFT SPEED SENSOR FEMALE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

**C-3 OPTIONAL COM NOT REQUIRED FOR USE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

**C-3A CAP LAPTOP CALIBRATION CONNECT CAP**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-1029	GRN
1	TPA	CON-3417	

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

**C-7 THROTTLE POSITION CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2328	
3	TERMINALS	CON-2329	

**C5 RPM CONNECTOR**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

**C-6 BULKHEAD CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY
12	TERMINALS	CON-5504	
1	WEDGE	CON-5508	GRN

APPLICABLE STANDARDS: ASME Y14.100-200, ASME Y14.5M-1994, IPC/WHMA-A-620A-CLASS 2, MARK IAW MIL-STD-130.

NOTES: 1.) WIRE LENGTH TOLERANCE +/- .12 INCH, 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED, 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED, 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT, 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END, 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED.

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: GM 4 SPEED TRANSMISSION C6 LIFT ALOFT

SIZE: C, CUSTOMER DRAWING NO: XXXXX-XXXXX, PCS PART NUMBER: TCM-4666, REV: 001

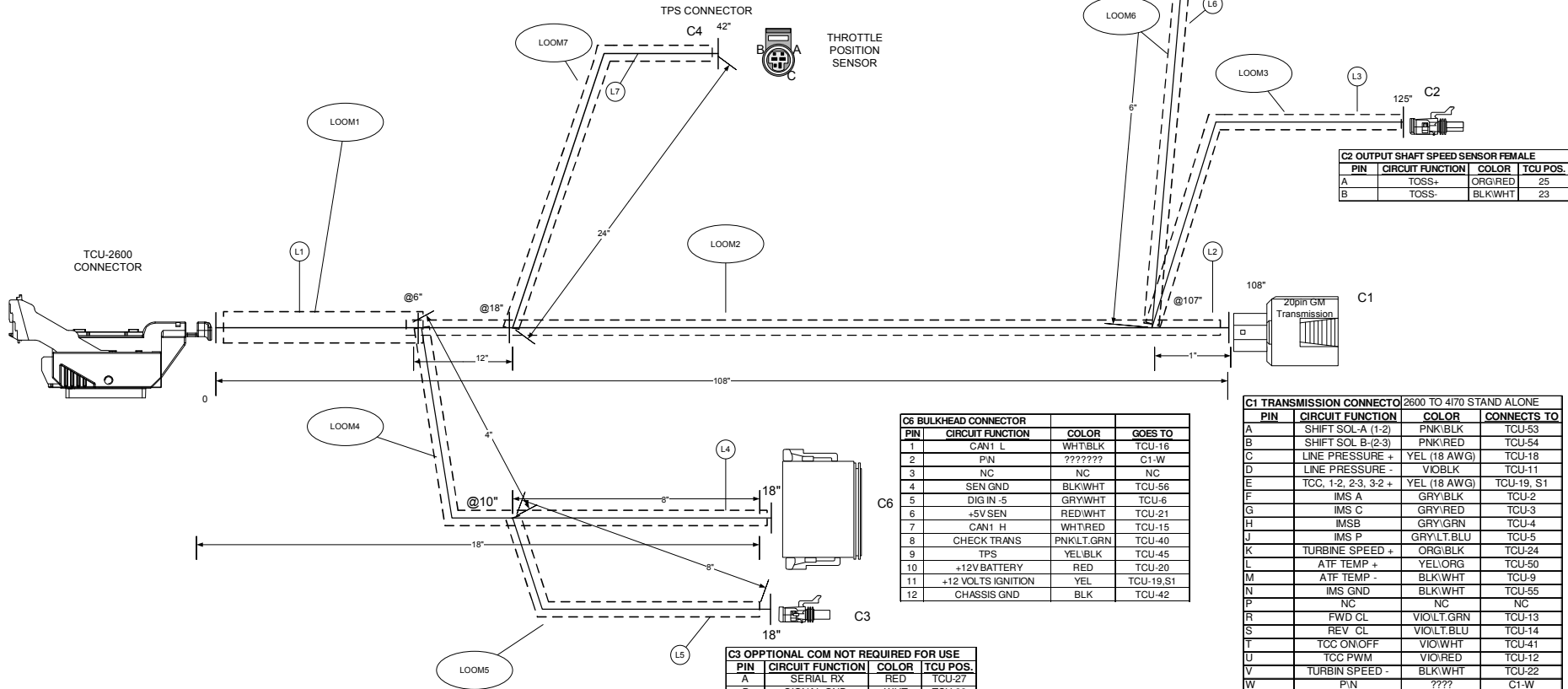
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LOOM DEFINITION TABLE			
LOCATION	DISCRPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	102"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	18"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	14"	WRE-3003
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	1/4" BLACK CONVOLUTED LOOM	6"	WRE-3000
LOOM7	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000

REDWHT  
BLKWHT  
YELBLK

C4 THROTTLE POSITION SENSOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	+5V REF	RED/WHT	S3, TCU-21
B	SIGNAL GND	BLK/WHT	S4, TCU-56
C	SENSOR OUTPUT	YEL/RED	S2, TCU45

C5 RPM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	38
B	SENSOR GND	BLK/WHT	37



C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

C6 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	P/N	???????	C1-W
3	NC	NC	NC
4	SEN GND	BLK/WHT	TCU-56
5	DIG IN -5	GRY/WHT	TCU-6
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL-B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIOLBK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/BLK	TCU-3
H	IMS B	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-55
P	NC	NC	NC
P	FWD CL	VIOLT/GRN	TCU-13
R	REV CL	VIOLT/BLU	TCU-14
T	TCC ON/OFF	VIOWHT	TCU-41
U	TCC PWM	VIOWHT	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W	P/N	????	C1-W

C3 OPTIONAL COM NOT REQUIRED FOR USE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

NUM	NAME	PART #	NOTES
L1	TCM-4666-001 4170E 2010+ TO	WRE-8501	P435
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	TOSS	WRE-8500	P8
L4	BULKHEAD CONNECTOR	WRE-8500	P64
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500	P4
L6	RPM CONNECTOR	WRE-8500	P304
L7	TPS SENSOR	WRE-8500	P2

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

SPLICE INFORMATION		
S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TPS/MAP SIGNAL	YEL/BLK
S3	+5V SENSOR	RED/WHT
S4	SIGNAL GND	BLK/WHT

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	10/23/17	FD	

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES:
- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
  - 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: GM 4 SPEED TRANSMISSION C6 LIFT ALOFT

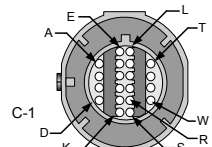
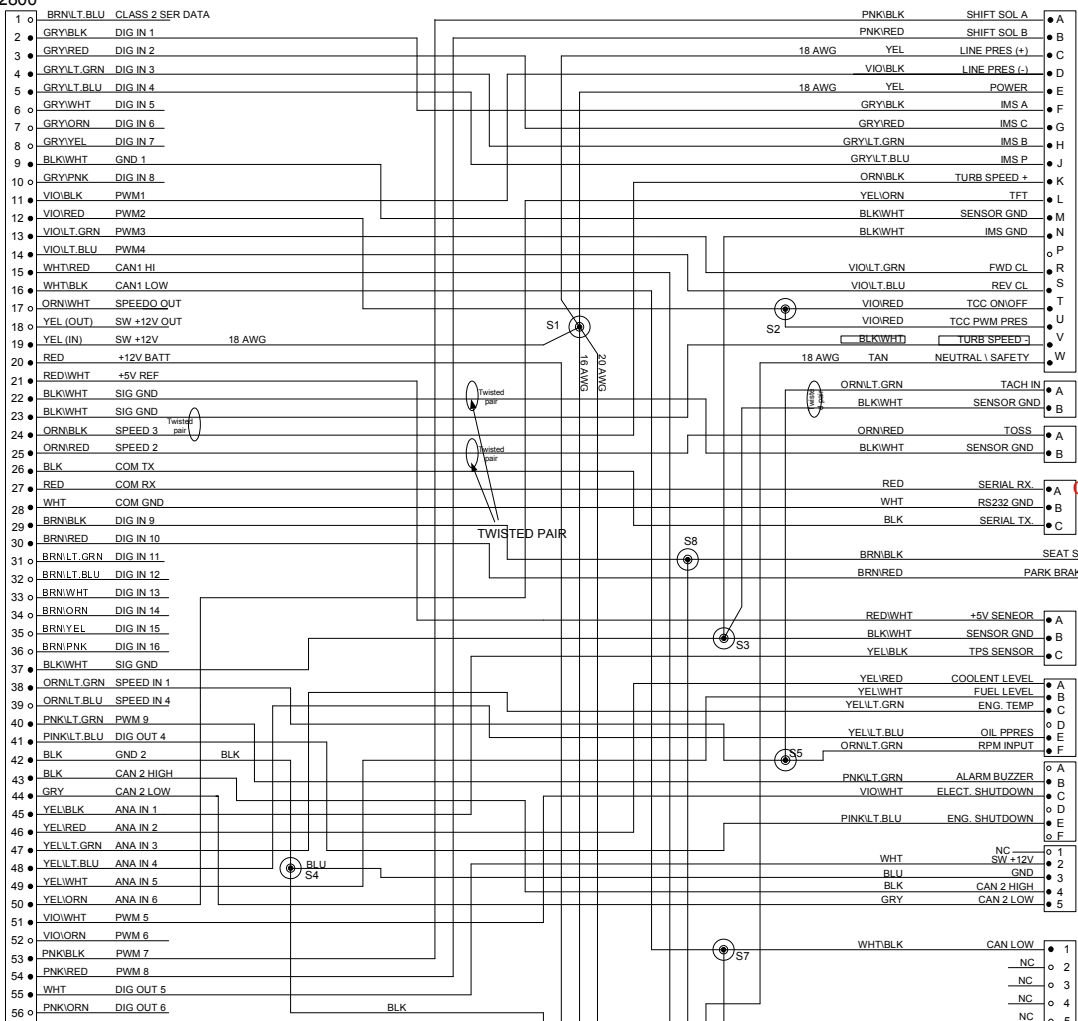
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DRAWN BY: FRED D. DATE: 10/17/17 APPROVED BY: XXXXXX DATE: SHEET 3 OF 10

Print Date  
11/7/2017  
1600

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
5	TRIMMED	11/15/16	FD	
5A	DRAW REDLINE UPDATE	8/7/17	FD	
5B	TEXT UPDATE	1/3/20	FD	

**TCM-2800**  
C-1



C-1 TRANSMISSION CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
16	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

C8 RPM CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-1071	F/M
2	PIN	CON-1088	
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	

C8M RPM CONNECTOR PIGTAIL			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

C-2 OUTPUT SHAFT SPEED SENSOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

C-3 OPTIONAL COM NOT REQUIRED FOR USE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

C-7 THROTTLE POSITION CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2328	
3	TERMINALS	CON-2329	

C-5 ENGINE GROUP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-4150	M
5	TERMINALS	CON-1011	F
5	CABLE SEALS	CON1004	

C6 OUTPUT GROUP			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-4151	F
4	TERMINALS	CON-1006	M
4	CABLE SEALS	CON-1004	

C10 DIGITAL DASH CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	IFM CABLE	DIS-7001	

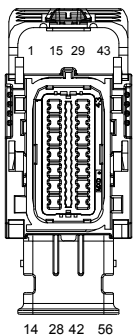
C-4 BULKHEAD CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY M/F
5	TERMINAL	CON-5504	
1	WEDGE	CON-5506	GRN

C9 CAN BUS CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5001	F
2	TERMINALS	CON-5201	MALE
1	WEDGE	CON-5003	BLK WEDGE

C-9M CAN1 TERM			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5056	

INCLUDE THROTTLE POSITION SENSOR KIT			
QTY	DESCRIPTION	PIN	NOTES
1	TPS KIT	TCM-6040	

RY-1 SEAT SW RELAY			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2502	BLACK
1	RELAY	CON-2500	
4	TERMINAL	CON-2503	



**TCU-2800**

TCU-2800 Connector			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2302	M/F
40	TERMINALS	CON-2305	
1	CONNECTOR COVER	CON-2303	
16	CAVITY PLUG	CON-2304	

PROVIDE A LAPTOP CALIBRATION CONNECTOR PROTECTIVE CAP

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS SEE PAGE 3

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: 4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2800 HARLAN

Print Date: 10/28/2019 1700

SCALE: C CUSTOMER DRAWING NO. TCM-4835 REV. 005

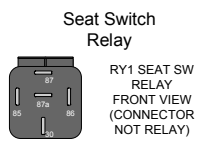
DATE: 11/25/2015 APPROVED BY: SHEET PAGE 1

APPLICABLE STANDARDS:

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA A-620A-CLASS 2
- MARK IAW MIL-STD-130

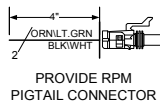
NOTES:

- 1) WIRE LENGTH TOLERANCE +/- 12 INCH
- 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3) TAPE ALL LOCK JOINTS UNLESS OTHERWISE STATED
- 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END
- 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED





PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS

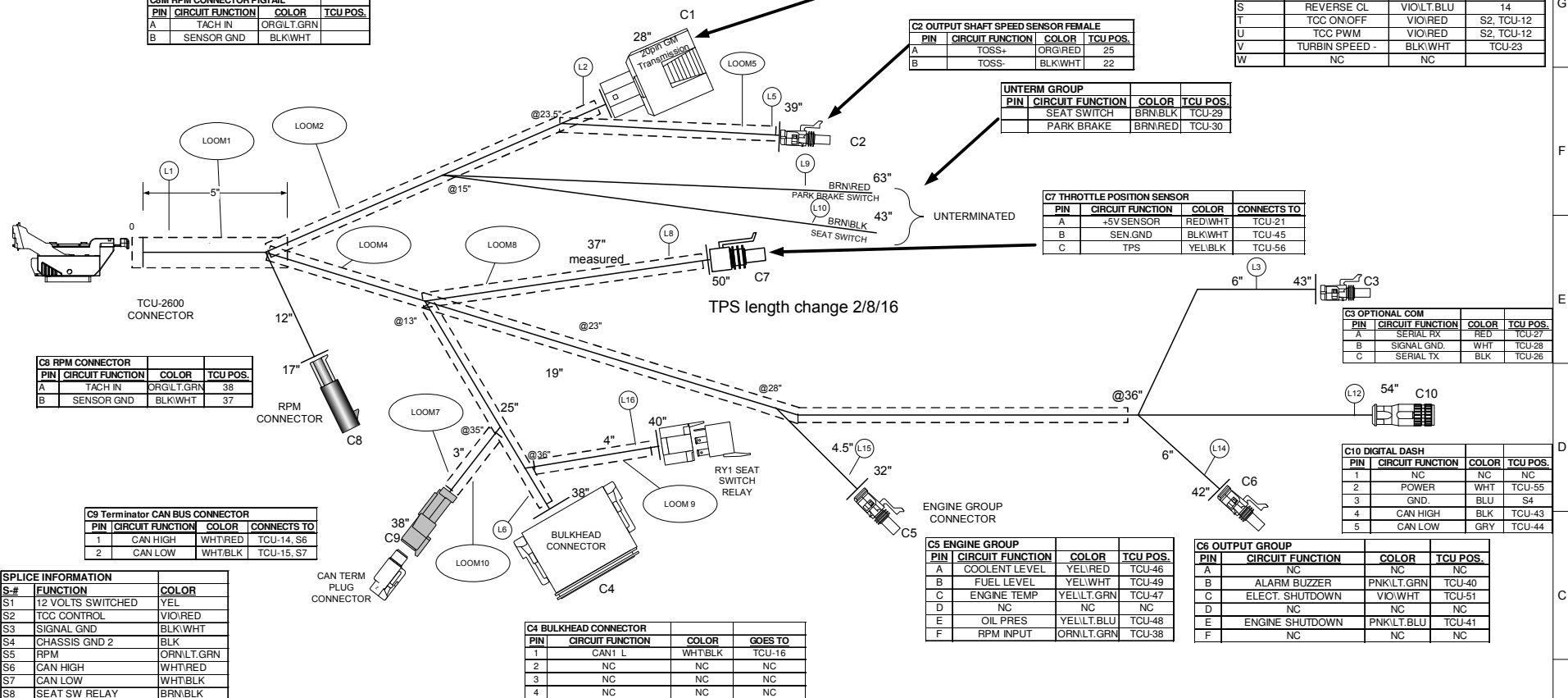


QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	
B	SENSOR GND	BLK/WHT	

LOCATION	DISCRPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	23"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	37"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	37"	WRE-3003
LOOM5	3/8" BLACK CONVOLUTED LOOM	15.5"	WRE-3001
LOOM6	NO LONGER USED		
LOOM7	1/4" BLACK CONVOLUTED LOOM	3"	WRE-3000
LOOM8	1/4" BLACK CONVOLUTED LOOM	79"	WRE-3000
LOOM9	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM10	3/8" BLACK CONVOLUTED LOOM	24"	WRE-3001

TRANSMISSION CONNECTOR		2800 TO 4170 STAND ALONE	
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VOBLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMS B	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-6
K	TURBINE SPEED +	ORGLT/BLU	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-37, S3
P	NC	NC	NC
R	FORWARD CL	VIOLT.GRN	13
S	REVERSE CL	VIOLT.BLU	14
T	TCC ON/OFF	VIO/RED	S2, TCU-12
U	TCC PWM	VIO/RED	S2, TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-23
W	NC	NC	NC



PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORGIRED	25
B	TOSS-	BLK/WHT	22

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
	SEAT SWITCH	BRN/BLK	TCU-29
	PARK BRAKE	BRN/RED	TCU-30

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	+5V SENSOR	RED/WHT	TCU-21
B	SEN.GND	BLK/WHT	TCU-45
C	TPS	YEL/BLK	TCU-56

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
1	NC	NC	NC
2	POWER	WHT	TCU-55
3	GND.	BLU	S4
4	CAN HIGH	BLK	TCU-43
5	CAN LOW	GRY	TCU-44

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	COOLANT LEVEL	YEL/RED	TCU-46
B	FUEL LEVEL	YEL/WHT	TCU-49
C	ENGINE TEMP	YEL/LT.GRN	TCU-47
D	NC	NC	NC
E	OIL PRES	YEL/LT.BLU	TCU-48
F	RPM INPUT	ORNL/GRN	TCU-38

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	NC	NC	NC
B	ALARM BUZZER	PNK/LT.GRN	TCU-40
C	ELECT. SHUTDOWN	VIO/WHT	TCU-51
D	NC	NC	NC
E	ENGINE SHUTDOWN	PNK/LT.BLU	TCU-41
F	NC	NC	NC

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	38
B	SENSOR GND	BLK/WHT	37

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	CAN HIGH	WHT/RED	TCU-14, S6
2	CAN LOW	WHT/BLK	TCU-15, S7

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S4	CHASSIS GND 2	BLK
S5	RPM	ORNL/GRN
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK
S8	SEAT SW RELAY	BRN/BLK

NUM	NAME	PART#	
L1	TCM-4835-005	WRE-8501	P-321
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	OPTIONAL COM NOT REQUIRED	WRE-8500	P-004
L4	NOT USED		
L5	TOSS	WRE-8500	P-008
L6	BULKHEAD CONNECTOR	WRE-8500	P-035
L7	NOT USED		
L8	TPS SENSOR	WRE-8500	P002
L9	SEAT SWITCH	WRE-8500	P-226
L10	NOT USED		
L11	NU	NU	NU
L12	DIGITAL DASH	WRE-8500	P-228
L13	REAR BRAKE	WRE-8500	P-230
L14	OUTPUT GROUP CONNECTOR	WRE-8500	P-308
L15	ENGINE GROOP CONNECTOR	WRE-8500	P-307
L16	RY1 SEAT SWITCH RELAY	WRE-8500	

TX	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	NC	NC	NC
3	NC	NC	NC
4	NC	NC	NC
5	NC	NC	NC
6	NC	NC	NC
7	CAN1 H	WHT/RED	TCU-15
8	NC	NC	NC
9	NC	NC	NC
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

LEVEL	DESCRIPTION	DATE	DRN	APP
5	REVISION	11/15/16	FD	
5A	DRAW REDLINE UPDATE	8/7/17	FD	
5B	TEXT UPDATE	1/20/20	FD	

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAP ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

REVISION HISTORY

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: 4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2800 HARLAN

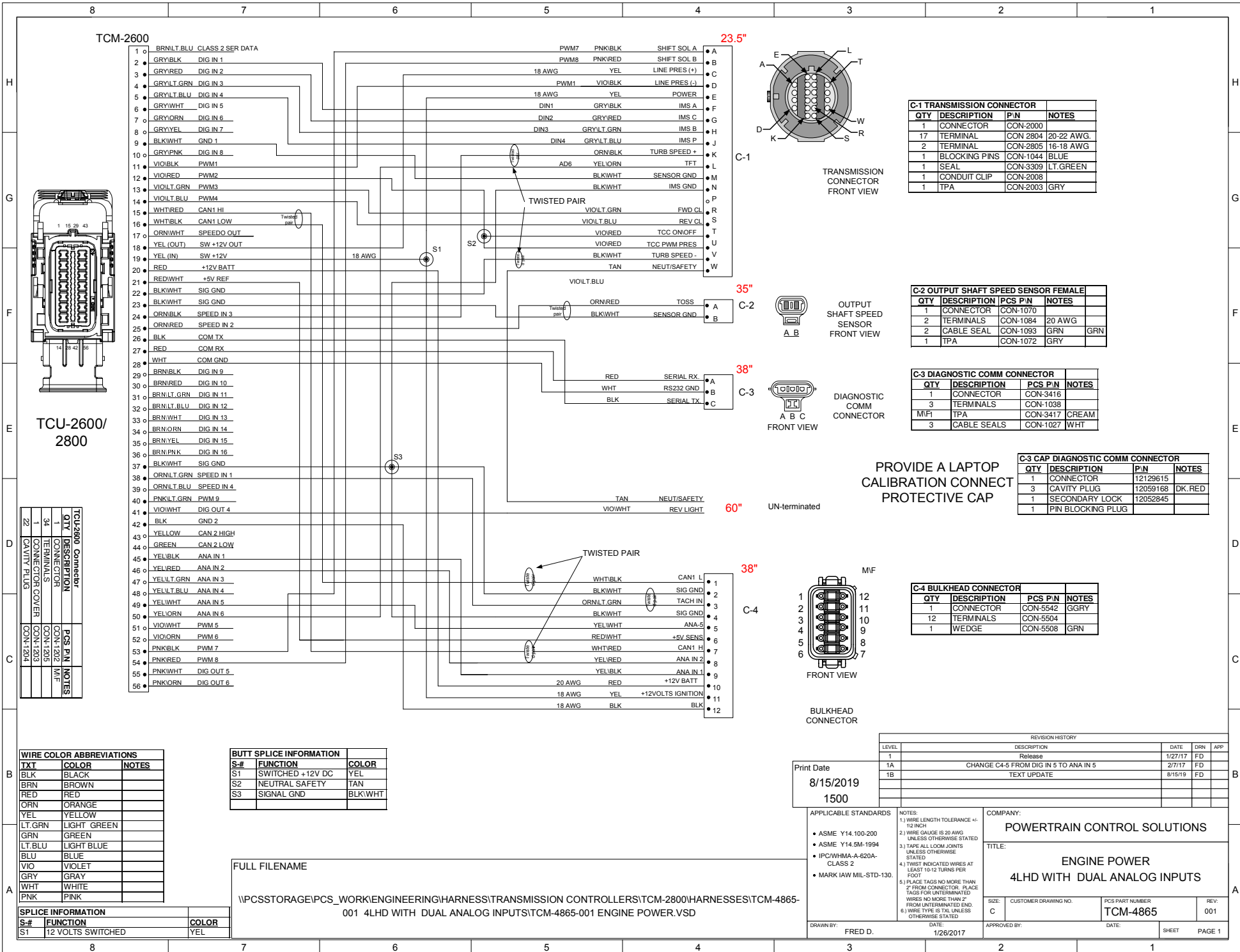
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Print Date

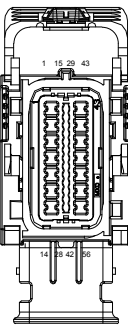
SIZE: C CUSTOMER DRAWING NO. PCS PART NUMBER TCM-4835 REV: 005

DRAWN BY: FRED DATE: 11/25/2015

APPROVED BY: DATE: SHEET PAGE 2



TCM-2600



TCU-2600/  
2800

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1202	M/F
34	TERMINALS	CON-1202	
1	CONNECTOR COVER	CON-1203	
22	CAVITY PLUG	CON-1204	

WIRE COLOR ABBREVIATIONS	TXL	COLOR	NOTES
BLK		BLACK	
BRN		BROWN	
RED		RED	
ORN		ORANGE	
YEL		YELLOW	
LT.GRN		LIGHT GREEN	
GRN		GREEN	
LT.BLU		LIGHT BLUE	
BLU		BLUE	
VIO		VIOLET	
GRY		GRAY	
WHT		WHITE	
PNK		PINK	

BUTT SPLICE INFORMATION	S-#	FUNCTION	COLOR
S1		SWITCHED +12V DC	YEL
S2		NEUTRAL SAFETY	TAN
S3		SIGNAL GND	BLK/WHT

FULL FILENAME  
 \\PCSSSTORAGE\PCSS\_WORK\ENGINEERING\HARNESSTRANSMISSION CONTROLLERS\TCM-2800\HARNESSES\TCM-4865-001 4LHD WITH DUAL ANALOG INPUTS\TCM-4865-001 ENGINE POWER.VSD

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	1/27/17	FD	
1A	CHANGE C4-5 FROM DIG IN 5 TO ANA IN 5	2/7/17	FD	
1B	TEXT UPDATE	8/15/19	FD	

Print Date  
 8/15/2019  
 1500

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

NOTES:  
 1.) WIRE LENGTH TOLERANCE +/- .12 INCH  
 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED  
 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**ENGINE POWER  
 4LHD WITH DUAL ANALOG INPUTS**

SIZE: C CUSTOMER DRAWING NO. TCM-4865 REV: 001

DRAWN BY: FRED D. DATE: 1/26/2017 APPROVED BY: DATE: SHEET PAGE 1

**C-1 TRANSMISSION CONNECTOR**

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
17	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

**C-2 OUTPUT SHAFT SPEED SENSOR FEMALE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

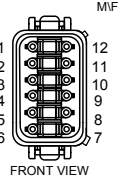
**C-3 DIAGNOSTIC COMM CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
M/F	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

**C-3 CAP DIAGNOSTIC COMM CONNECTOR**

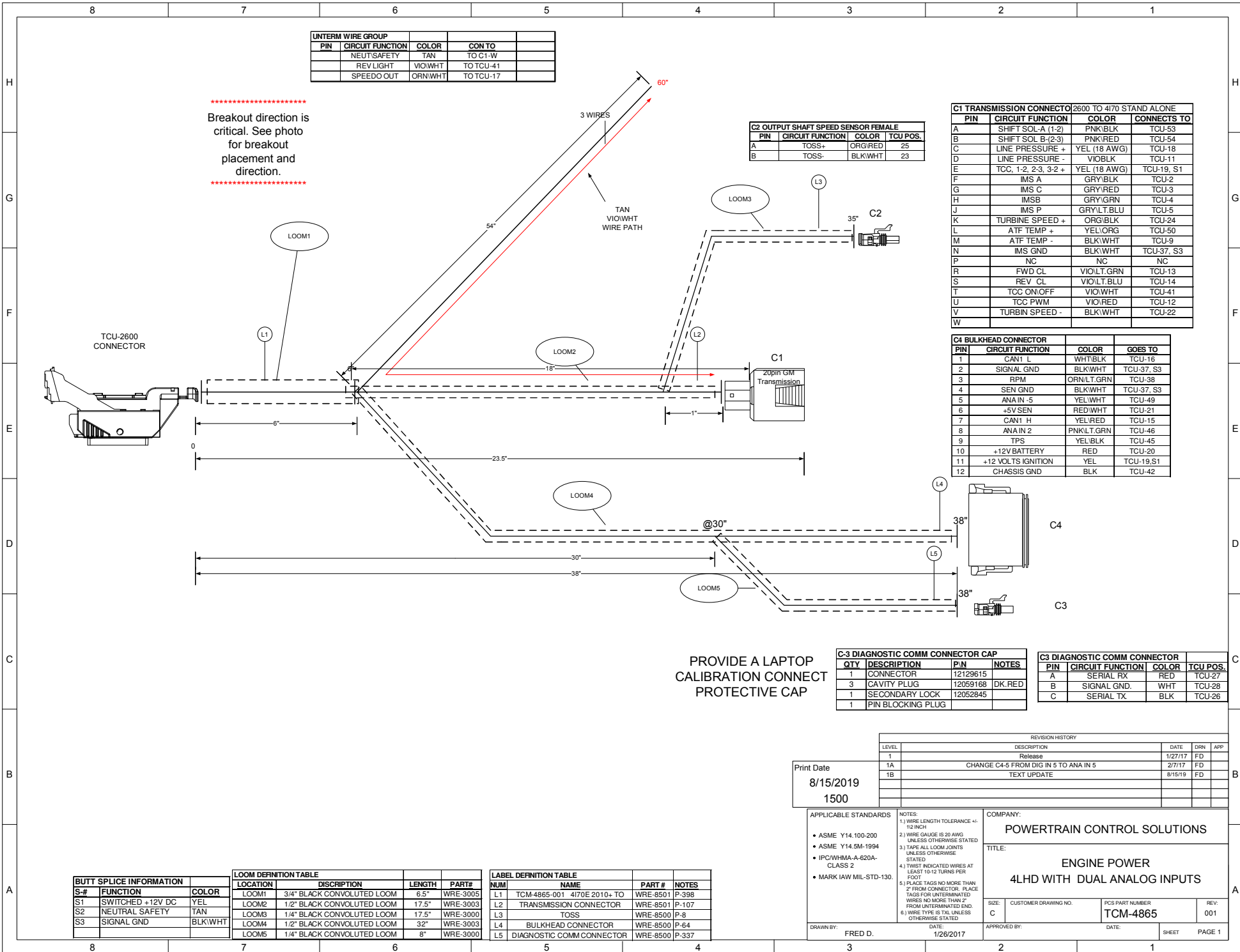
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP



BULKHEAD CONNECTOR

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	1/27/17	FD	
1A	CHANGE C4-5 FROM DIG IN 5 TO ANA IN 5	2/7/17	FD	
1B	TEXT UPDATE	8/15/19	FD	



INTERM WIRE GROUP			
PIN	CIRCUIT FUNCTION	COLOR	CON TO
	NEUT SAFETY	TAN	TO C1-W
	REV LIGHT	VIO/WHT	TO TCU-41
	SPEEDO OUT	ORN/WHT	TO TCU-17

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	23

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL-A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL-B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO/BLK	TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMSB	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-37, S3
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-22
W			

C4 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	SIGNAL GND	BLK/WHT	TCU-37, S3
3	RPM	ORN/LT.GRN	TCU-38
4	SEN GND	BLK/WHT	TCU-37, S3
5	ANA IN -5	YEL/WHT	TCU-49
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	YEL/RED	TCU-15
8	ANA IN 2	PNK/LT.GRN	TCU-46
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19, S1
12	CHASSIS GND	BLK	TCU-42

C-3 DIAGNOSTIC COMM CONNECTOR CAP			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

C3 DIAGNOSTIC COMM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	1/27/17	FD	
1A	CHANGE C4-5 FROM DIG IN 5 TO ANA IN 5	2/7/17	FD	
1B	TEXT UPDATE	8/15/19	FD	

Print Date  
8/15/2019  
1500

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**ENGINE POWER 4LHD WITH DUAL ANALOG INPUTS**

SIZE: C CUSTOMER DRAWING NO. PCS PART NUMBER  
**TCM-4865**

DATE: 1/26/2017

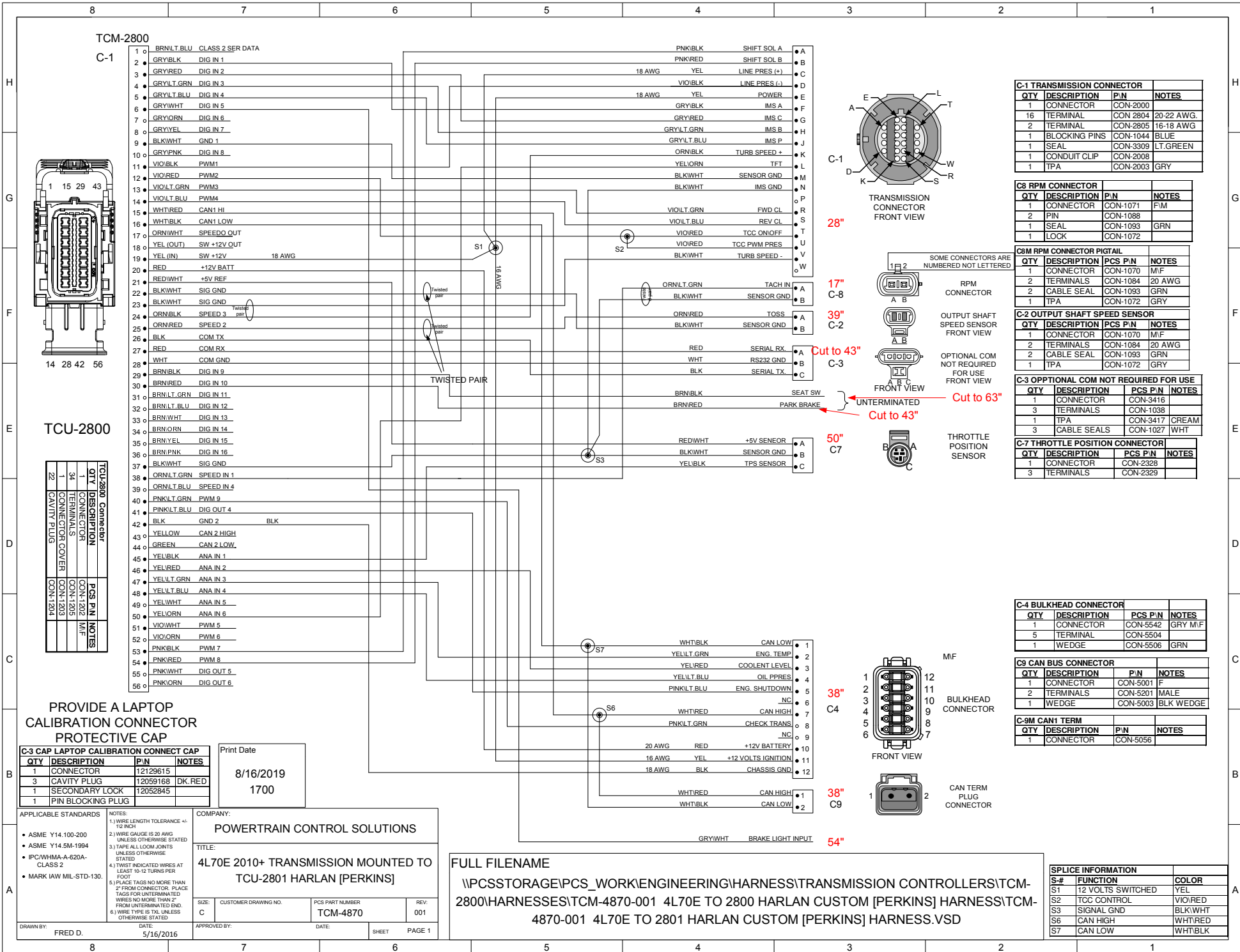
DRAWN BY: FRED D. DATE: 1/26/2017

APPROVED BY: DATE: SHEET PAGE 1

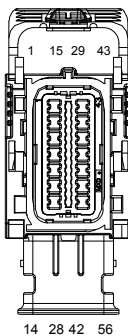
BUTT SPLICE INFORMATION		
S#	FUNCTION	COLOR
S1	SWITCHED +12V DC	YEL
S2	NEUTRAL SAFETY	TAN
S3	SIGNAL GND	BLK/WHT

LOOM DEFINITION TABLE				
LOCATION	DISCRIPTION	LENGTH	PART#	
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005	
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003	
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000	
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003	
LOOM5	1/4" BLACK CONVOLUTED LOOM	8"	WRE-3000	

LABEL DEFINITION TABLE				
NUM	NAME	PART #	NOTES	
L1	TCM-4865-001 4170E 2010+ TO	WRE-8501	P-398	
L2	TRANSMISSION CONNECTOR	WRE-8501	P-107	
L3	TOSS	WRE-8500	P-8	
L4	BULKHEAD CONNECTOR	WRE-8500	P-64	
L5	DIAGNOSTIC COMM CONNECTOR	WRE-8500	P-337	



**TCM-2800**  
C-1



**TCU-2800**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-202	M/F
34	TERMINALS	CON-205	
1	CONNECTOR COVER	CON-203	
22	CAVITY PLUG	CON-204	

**PROVIDE A LAPTOP CALIBRATION CONNECTOR PROTECTIVE CAP**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

Print Date  
**8/16/2019**  
1700

**APPLICABLE STANDARDS**

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

**NOTES:**

- 1) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3) TAPE ALL LOCK JOINTS UNLESS OTHERWISE STATED
- 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END
- 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

**COMPANY:**  
**POWERTRAIN CONTROL SOLUTIONS**

**TITLE:**  
**4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2801 HARLAN [PERKINS]**

SIZE: C CUSTOMER DRAWING NO. TCM-4870 REV: 001

DRAWN BY: FRED D. DATE: 5/16/2016 APPROVED BY: DATE: SHEET PAGE 1

**FULL FILENAME**  
\\PCSSTORAGE\PCS\_WORK\ENGINEERING\HARNESS\TRANSMISSION CONTROLLERS\TCM-2800\HARNESSES\TCM-4870-001 4L70E TO 2800 HARLAN CUSTOM [PERKINS] HARNESS\TCM-4870-001 4L70E TO 2801 HARLAN CUSTOM [PERKINS] HARNESS.VSD

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK

**C-1 TRANSMISSION CONNECTOR**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-2000	
16	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

**C8 RPM CONNECTOR**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-1071	F/M
2	PIN	CON-1088	
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	

**C8M RPM CONNECTOR PIGTAIL**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

**C-2 OUTPUT SHAFT SPEED SENSOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

**C-3 OPTIONAL COM NOT REQUIRED FOR USE**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

**C-7 THROTTLE POSITION CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2328	
3	TERMINALS	CON-2329	

**C-4 BULKHEAD CONNECTOR**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY M/F
5	TERMINAL	CON-5504	
1	WEDGE	CON-5506	GRN

**C9 CAN BUS CONNECTOR**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-5001	F
2	TERMINALS	CON-5201	MALE
1	WEDGE	CON-5003	BLK WEDGE

**C-9M CAN1 TERM**

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-5056	

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	8/16/16	FD	
1a	Title block cleanup	8/19/16	FD	
1B	ADDED CHECK TRANS LIGHT	8/26/16	FD	
1C	TEXT UPDATES	9/12/16	FD	

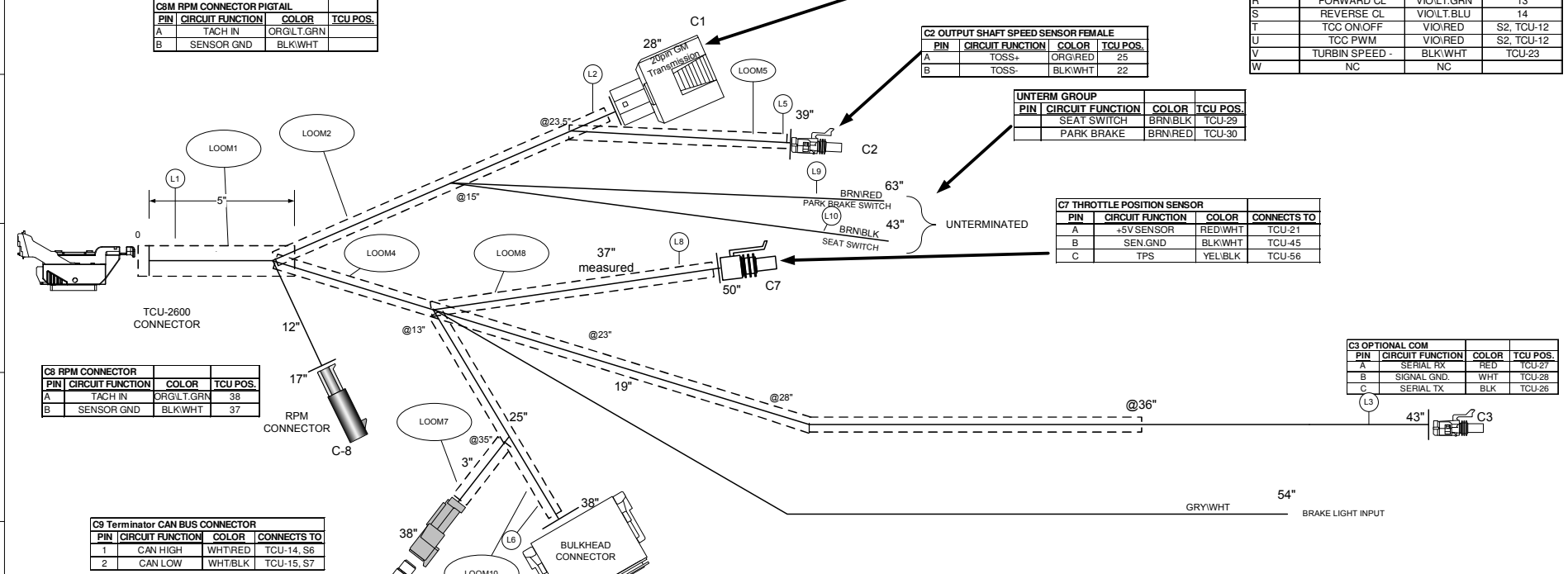
PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	
B	SENSOR GND	BLKWHT	

LOCATION	DISCRPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	23"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	37"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	37"	WRE-3003
LOOM5	3/8" BLACK CONVOLUTED LOOM	15.5"	WRE-3001
LOOM6	NO LONGER USED		
LOOM7	1/4" BLACK CONVOLUTED LOOM	3"	WRE-3000
LOOM8	1/4" BLACK CONVOLUTED LOOM	79"	WRE-3000
LOOM9	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM10	3/8" BLACK CONVOLUTED LOOM	24"	WRE-3001

PIN	CIRCUIT FUNCTION	2800 TO 4170	STAND ALONE	CONNECTS TO
A	SHIFT SOL A (1-2)	PNK/BLK		TCU-53
B	SHIFT SOL B (2-3)	PNK/RED		TCU-54
C	LINE PRESSURE +	YEL (18 AWG)		TCU-18
D	LINE PRESSURE -	VIO/BLK		TCU-11
E	TCC, 1-2, 2-3, 3-2 +	YEL (18 AWG)		TCU-19, S1
F	IMS A	GRY/BLK		TCU-2
G	IMS C	GRY/RED		TCU-3
H	IMS B	GRY/GRN		TCU-4
J	IMS P	GRY/LT.BLU		TCU-6
K	TURBINE SPEED +	ORG/BLK		TCU-24
L	ATF TEMP +	YEL/ORG		TCU-50
M	ATF TEMP -	BLK/WHT		TCU-9
N	IMS GND	BLK/WHT		TCU-37, S3
P	NC	NC		NC
R	FORWARD CL	VIO/LT.GRN		13
S	REVERSE CL	VIO/LT.BLU		14
T	TCC ON/OFF	VIO/RED		S2, TCU-12
U	TCC PWM	VIO/RED		S2, TCU-12
V	TURBIN SPEED -	BLK/WHT		TCU-23
W	NC	NC		NC



PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	22

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
	SEAT SWITCH	BRN/BLK	TCU-29
	PARK BRAKE	BRN/RED	TCU-30

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	+5V SENSOR	RED/WHT	TCU-21
B	SEN.GND	BLK/WHT	TCU-45
C	TPS	YEL/BLK	TCU-56

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	38
B	SENSOR GND	BLK/WHT	37

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	CAN HIGH	WHT/RED	TCU-14, S6
2	CAN LOW	WHT/BLK	TCU-15, S7

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S4	CHASSIS GND 2	BLK
S5	RPM	ORN/LT.GRN
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK
S8	SEAT SW RELAY	BRN/BLK

PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	ENG. TRMP.	YEL/LT.GRN	TCU-47
3	COOLANT LEVEL	YEL/RED	TCU-46
4	OIL PRES	YEL/LT.BLU	TCU-48
5	ENG SHUTDOWN	PNK/LT.BLU	TCU-41
6	NC	NC	NC
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	NC	NC	NC
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19, S1
12	CHASSIS GND	BLK	TCU-42

TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

NUM	NAME	PART #
L1	TCM-4870-001	WRE-8501 P-346
L2	TRANSMISSION CONNECTOR	WRE-8500 P107
L3	OPPTIONAL COM NOT REQUIRED	WRE-8500 P-004
L4	NOT USED	
L5	TOSS	WRE-8500 P-008
L6	BULKHEAD CONNECTOR	WRE-8500 P-035
L7	CAN CONNECTOR	WRE-8500 P006
L8	TPS SENSOR	WRE-8500 P002
L9	PARK BRAKE SW	WRE-8500 P-227
L10	SEAT SWITCH	WRE-8500 P226
L11	BRAKE LIGHT IN	WRE-8500 P038

FULL FILENAME  
 \\PCSSTORAGE\PCS\_WORK\ENGINEERING\HARNESS\TRANSMISSION  
 CONTROLLERS\TCM-2800\HARNESSES\TCM-4870-001 4L70E TO 2800 HARLAN  
 CUSTOM [PERKINS] HARNESS\TCM-4870-001 4L70E TO 2801 HARLAN CUSTOM  
 [PERKINS] HARNESS.VSD

Print Date  
 8/16/2019  
 1700

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK

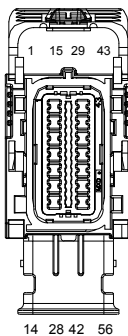
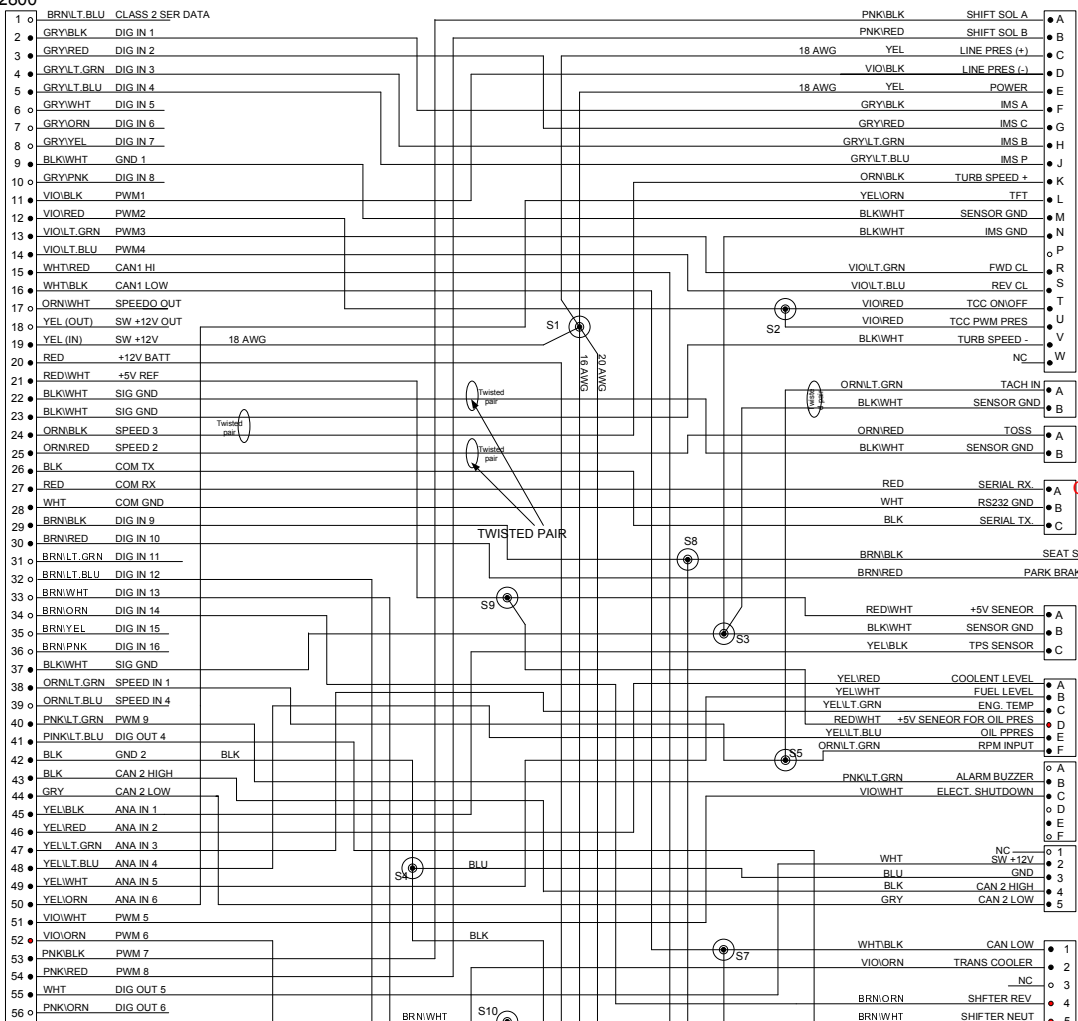
COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**4L70E 2010+ TRANSMISSION MOUNTED TO  
 TCU-2801 HARLAN [PERKINS]**

SIZE: C	CUSTOMER DRAWING NO. TCM-4870	REV: 001
DRAWN BY: FRED D.	DATE: 5/16/2016	APPROVED BY: DATE:
SHEET		PAGE 2

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	3/21/18	FD	

**TCM-2800**  
C-1



**TCU-2800**

TCU-2800 Connector	QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-202	M/F	
40	TERMINALS	CON-205		
1	CONNECTOR COVER	CON-203		
16	CAVITY PLUG	CON-204		

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S4	CHASSIS GND 2	BLK
S5	RPM	ORN/LT.GRN
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK
S8	SEAT SW RELAY	BRN/BLK
S9	+5V REF	RED/WHT
S0	NEUTRAL SAFETY	BRN/WHT

PROVIDE A LAPTOP CALIBRATION CONNECTOR PROTECTIVE CAP

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

**POWERTRAIN CONTROL SOLUTIONS**

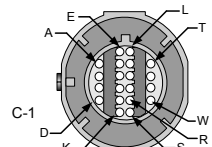
TITLE: **NEW 4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2801**  
HARLAN

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER	PAGE 1	REV. 001
		<b>TCM-4871</b>		

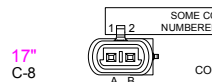
Print Date: **8/16/2019**  
1600

APPLICABLE STANDARDS  
 • ASME Y14.100-200  
 • ASME Y14.5M-1994  
 • IPC/WHMA-A-620A-CLASS 2  
 • MARK IAW MIL-STD-130.

NOTES:  
 1) WIRE LENGTH TOLERANCE +/- .12 INCH  
 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
 3) TAPE ALL LOCK JOINTS UNLESS OTHERWISE STATED  
 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED.



TRANSMISSION CONNECTOR FRONT VIEW



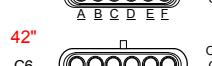
RPM CONNECTOR



OUTPUT SHAFT SPEED SENSOR FRONT VIEW



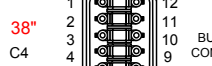
OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW



THROTTLE POSITION SENSOR



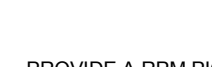
ENGINE GROUP



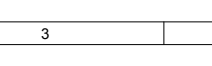
OUTPUT GROUP



DIGITAL DASH CONNECTOR



BULKHEAD CONNECTOR



CAN BUS CONNECTOR

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
16	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-1071	F/M
2	PIN	CON-1088	
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2328	
3	TERMINALS	CON-2329	

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-4150	M
6	TERMINALS	CON-1011	F
6	CABLE SEALS	CON1004	

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-4151	F
4	TERMINALS	CON-1006	M
4	CABLE SEALS	CON-1004	

QTY	DESCRIPTION	PCS P/N	NOTES
1	IFM CABLE	DIS-7001	

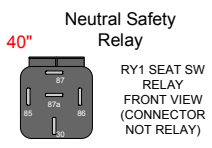
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY M/F
5	TERMINAL	CON-5504	
1	WEDGE	CON-5506	GRN

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5001	F
2	TERMINALS	CON-5201	MALE
1	WEDGE	CON-5003	BLK WEDGE

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5056	

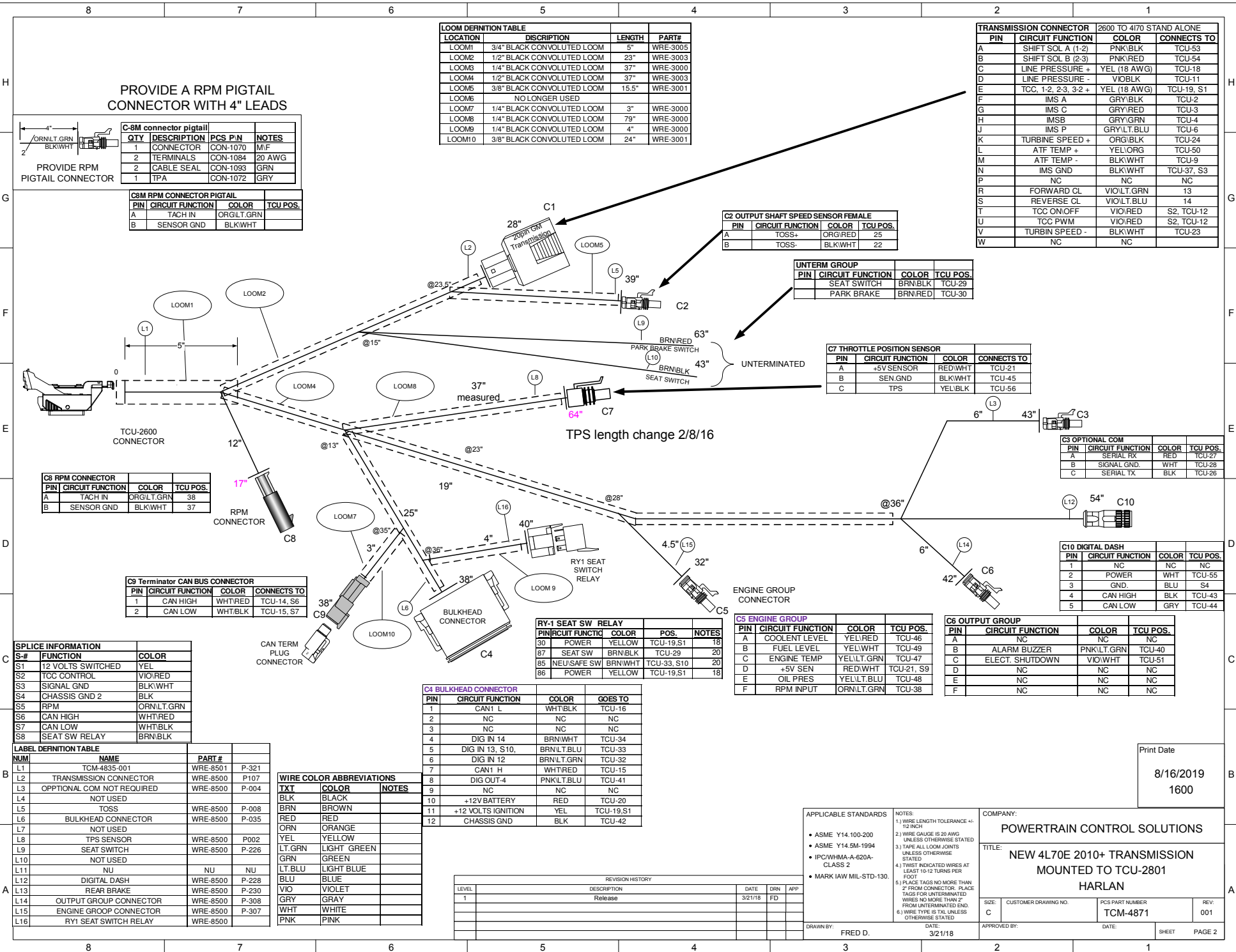
QTY	DESCRIPTION	PIN	NOTES
1	TPS KIT	TCM-6040	

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2502	BLACK
1	RELAY	CON-2500	
4	TERMINAL	CON-2503	

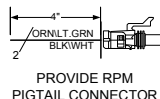


Neutral Safety Relay  
RY1 SEAT SW RELAY FRONT VIEW (CONNECTOR NOT RELAY)

PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS SEE PAGE 3



PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS



QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

LOCATION	DISCRPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	23"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	37"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	37"	WRE-3003
LOOM5	3/8" BLACK CONVOLUTED LOOM	15.5"	WRE-3001
LOOM6	NOLONGER USED		
LOOM7	1/4" BLACK CONVOLUTED LOOM	3"	WRE-3000
LOOM8	1/4" BLACK CONVOLUTED LOOM	79"	WRE-3000
LOOM9	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM10	3/8" BLACK CONVOLUTED LOOM	24"	WRE-3001

TRANSMISSION CONNECTOR				2800 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO	PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL A (1-2)	PNK/BLK	TCU-53				
B	SHIFT SOL B (2-3)	PNK/RED	TCU-54				
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18				
D	LINE PRESSURE -	VOBLK	TCU-11				
E	TCC 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1				
F	IMS A	GRY/BLK	TCU-2				
G	IMS C	GRY/RED	TCU-3				
H	IMS B	GRY/GRN	TCU-4				
J	IMS P	GRY/LT.BLU	TCU-6				
K	TURBINE SPEED +	ORG/BLK	TCU-24				
L	ATF TEMP +	YEL/ORG	TCU-50				
M	ATF TEMP -	BLK/WHT	TCU-9				
N	IMS GND	BLK/WHT	TCU-37, S3				
P	NC	NC	NC				
R	FORWARD CL	VIOL/GRN	13				
S	REVERSE CL	VIOL/BLU	14				
T	TCC ON/OFF	VIO/RED	S2, TCU-12				
U	TCC PWM	VIO/RED	S2, TCU-12				
V	TURBIN SPEED -	BLK/WHT	TCU-23				
W	NC	NC	NC				

C8M RPM CONNECTOR PIGTAIL			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	
B	SENSOR GND	BLK/WHT	

C2 OUTPUT SHAFT SPEED SENSOR FEMALE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	22

INTERM GROUP			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
	SEAT SWITCH	BRN/BLK	TCU-29
	PARK BRAKE	BRN/RED	TCU-30

C7 THROTTLE POSITION SENSOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	+5V SENSOR	RED/WHT	TCU-21
B	SEN.GND	BLK/WHT	TCU-45
C	TPS	YEL/BLK	TCU-56

C3 OPTIONAL COM			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

C10 DIGITAL DASH			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
1	NC	NC	NC
2	POWER	WHT	TCU-55
3	GND.	BLU	S4
4	CAN HIGH	BLK	TCU-43
5	CAN LOW	GRY	TCU-44

C8 RPM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	38
B	SENSOR GND	BLK/WHT	37

C9 Terminator CAN BUS CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	CAN HIGH	WHT/RED	TCU-14, S6
2	CAN LOW	WHT/BLK	TCU-15, S7

RY-1 SEAT SW RELAY			
PIN	CIRCUIT FUNCTIC	COLOR	POS. NOTES
30	POWER	YELLOW	TCU-19,S1 18
87	SEAT SW	BRN/BLK	TCU-29 20
85	NEUSAFE SW	BRN/WHT	TCU-33, S10 20
86	POWER	YELLOW	TCU-19,S1 18

C4 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	NC	NC	NC
3	NC	NC	NC
4	DIG IN 14	BRN/WHT	TCU-34
5	DIG IN 13, S10,	BRN/LT.BLU	TCU-33
6	DIG IN 12	BRN/LT.GRN	TCU-32
7	CAN1 H	WHT/RED	TCU-15
8	DIG OUT-4	PNK/LT.BLU	TCU-41
9	NC	NC	NC
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

C5 ENGINE GROUP			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	COOLENT LEVEL	YEL/RED	TCU-46
B	FUEL LEVEL	YEL/WHT	TCU-49
C	ENGINE TEMP	YEL/LT.GRN	TCU-47
D	+5V SEN	RED/WHT	TCU-21, S9
E	OIL PRES	YEL/LT.BLU	TCU-48
F	RPM INPUT	ORN/LT.GRN	TCU-38

C6 OUTPUT GROUP			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	NC	NC	NC
B	ALARM BUZZER	PNK/LT.GRN	TCU-40
C	ELECT. SHUTDOWN	VIO/WHT	TCU-51
D	NC	NC	NC
E	NC	NC	NC
F	NC	NC	NC

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S4	CHASSIS GND 2	BLK
S5	RPM	ORN/LT.GRN
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK
S8	SEAT SW RELAY	BRN/BLK

LABEL DEFINITION TABLE			
NUM	NAME	PART#	
L1	TCM-4835-001	WRE-8501	P-321
L2	TRANSMISSION CONNECTOR	WRE-8500	P107
L3	OPTIONAL COM NOT REQUIRED	WRE-8500	P-004
L4	NOT USED		
L5	TOSS	WRE-8500	P-008
L6	BULKHEAD CONNECTOR	WRE-8500	P-035
L7	NOT USED		
L8	TPS SENSOR	WRE-8500	P002
L9	SEAT SWITCH	WRE-8500	P-226
L10	NOT USED		
L11	NU	NU	NU
L12	DIGITAL DASH	WRE-8500	P-228
L13	REAR BRAKE	WRE-8500	P-230
L14	OUTPUT GROUP CONNECTOR	WRE-8500	P-308
L15	ENGINE GROUP CONNECTOR	WRE-8500	P-307
L16	RY1 SEAT SWITCH RELAY	WRE-8500	

TXI	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	3/21/18	FD	

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: NEW 4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2801 HARLAN

DATE: 8/16/2019 1600

Print Date

SIZE: C CUSTOMER DRAWING NO. PCS PART NUMBER TCM-4871

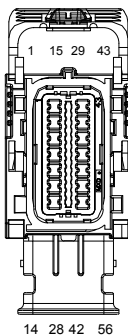
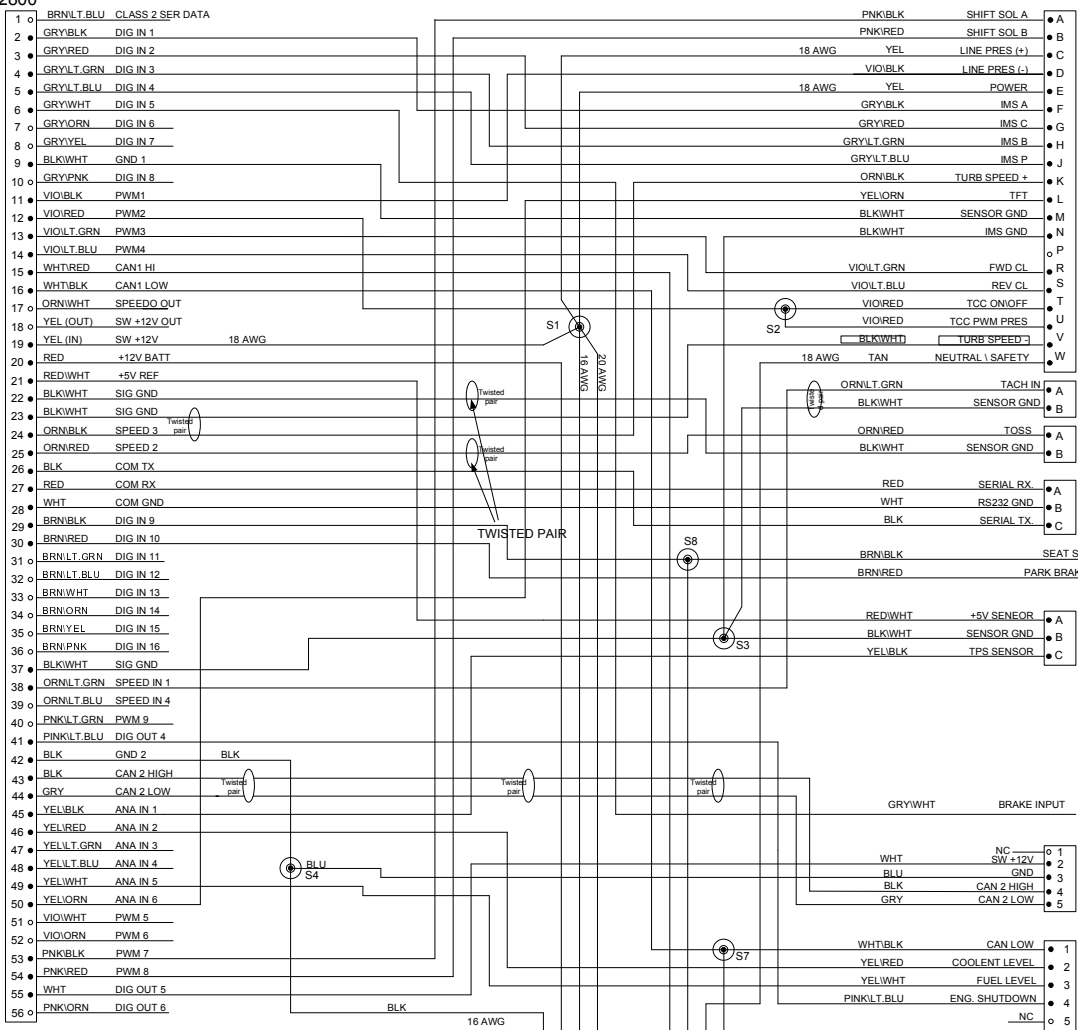
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DRAWN BY: FRED D. DATE: 3/21/18

APPROVED BY: DATE: SHEET PAGE 2

REVISION HISTORY			
LEVEL	DESCRIPTION	DATE	DRN APP
1	Release	11/29/18	FD
1A	TEXT UPDATE	8/19/19	FD

**TCM-2800**  
C-1



**TCU-2800**

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-202	M/F
40	TERMINALS	CON-205	
1	CONNECTOR COVER	CON-203	
16	CAVITY PLUG	CON-204	

PROVIDE A LAPTOP CALIBRATION CONNECTOR PROTECTIVE CAP

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS SEE PAGE 3

COMPANY: **POWERTRAIN CONTROL SOLUTIONS**

TITLE: **4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2800 HARLAN**

Print Date: **8/19/2019**

REV: **001**

DATE: **11/29/2018**

REV: **001**

DATE: **11/29/2018**

DATE: **11/29/2018**

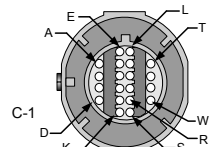
DATE: **11/29/2018**

APPLICABLE STANDARDS:

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/HMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130

NOTES:

- 1) WIRE LENGTH TOLERANCE +/- 12 INCH
- 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3) TAPE ALL LOCK JOINTS UNLESS OTHERWISE STATED
- 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED.



TRANSMISSION CONNECTOR FRONT VIEW

28"

SOME CONNECTORS ARE NUMBERED NOT LETTERED

1 2

A B

RPM CONNECTOR

A B

OUTPUT SHAFT SPEED SENSOR FRONT VIEW

A B

OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW

A B C

FRONT VIEW

UNTERMINATED

Cut to 63"

Cut to 43"

Cut to 43"



THROTTLE POSITION SENSOR

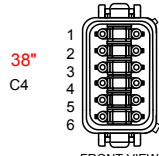
50"

BRAKE INPUT PIGTAIL NEAR C9 BREAKOUT



C10 DIGITAL DASH CONNECTOR

54"



C4 BULKHEAD CONNECTOR

38"



C9 CAN BUS CONNECTOR

38"



C9M CAN1 TERM CONNECTOR

38"

C-1 TRANSMISSION CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
16	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

C8 RPM CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-1071	F/M
2	PIN	CON-1088	
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	

C8M RPM CONNECTOR PIGTAIL			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

C-2 OUTPUT SHAFT SPEED SENSOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

C-3 OPTIONAL COM NOT REQUIRED FOR USE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

C-7 THROTTLE POSITION CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2328	
3	TERMINALS	CON-2329	

C10 DIGITAL DASH CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	IFM CABLE	DIS-7001	

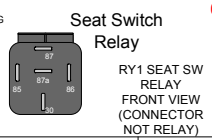
C-4 BULKHEAD CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	GRY M/F
5	TERMINAL	CON-5504	
1	WEDGE	CON-5506	GRN

C9 CAN BUS CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5001	F
2	TERMINALS	CON-5201	MALE
1	WEDGE	CON-5003	BLK WEDGE

C-9M CAN1 TERM CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5056	

INCLUDE THROTTLE POSITION SENSOR KIT			
QUAN	DESCRIPTION	PIN	NOTES
1	TPS KIT	TCM-6040	

RY-1 SEAT SW RELAY			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2502	BLACK
1	RELAY	CON-2500	
4	TERMINAL	CON-2503	



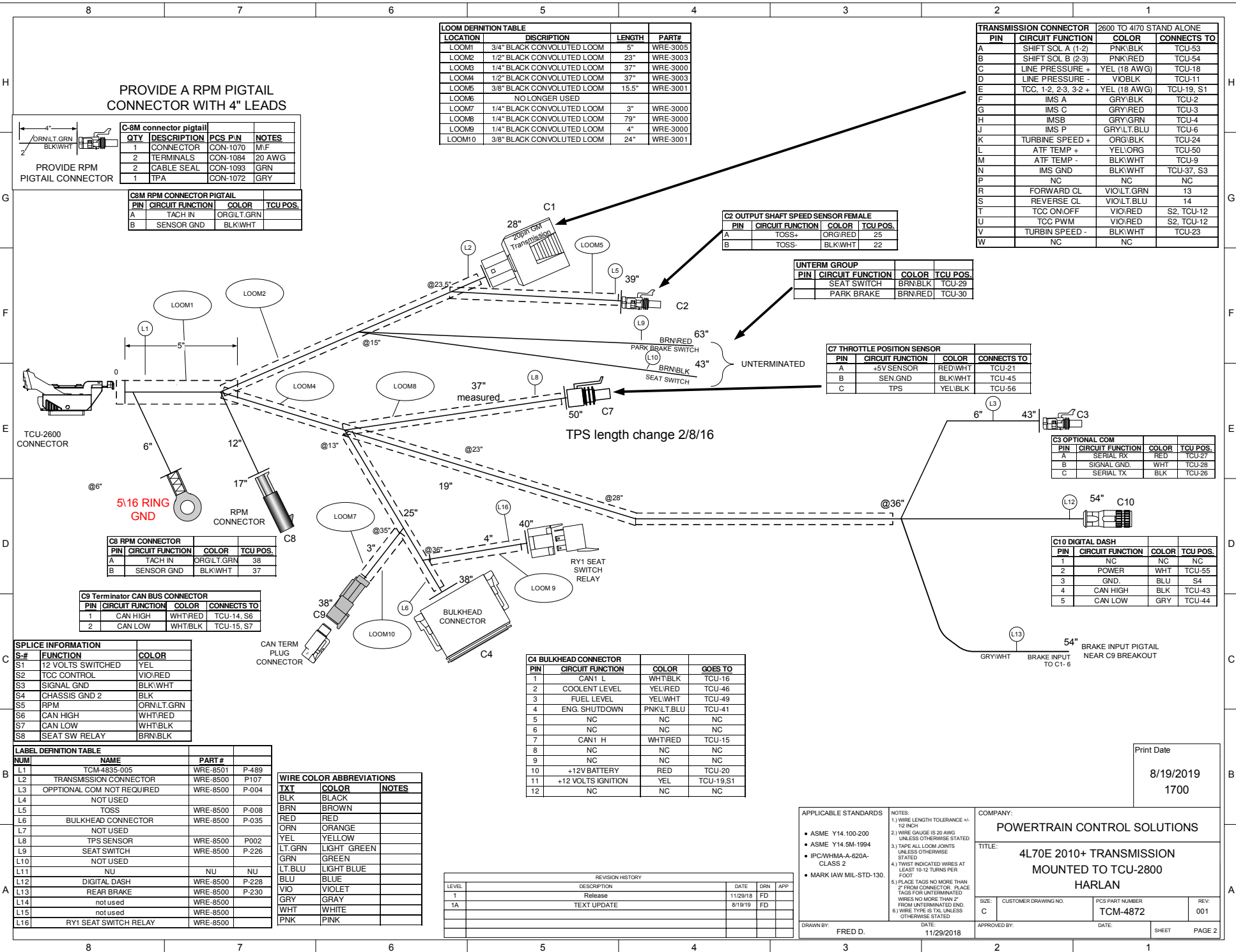
Seat Switch Relay

RY1 SEAT SW RELAY FRONT VIEW (CONNECTOR NOT RELAY)

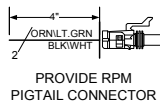
5/16 RING 6" From TCU

3/8 Ring Term





PROVIDE A RPM PIGTAIL CONNECTOR WITH 4" LEADS



QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TACH IN	ORGLT.GRN	
B	SENSOR GND	BLKWHT	

LOCATION	DISCRPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	23"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	37"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	37"	WRE-3003
LOOM5	3/8" BLACK CONVOLUTED LOOM	15.5"	WRE-3001
LOOM6	NO LONGER USED		
LOOM7	1/4" BLACK CONVOLUTED LOOM	3"	WRE-3000
LOOM8	1/4" BLACK CONVOLUTED LOOM	79"	WRE-3000
LOOM9	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000
LOOM10	3/8" BLACK CONVOLUTED LOOM	24"	WRE-3001

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B (2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VOBLK	TCU-11
E	TCC 1-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMS B	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-6
K	TURBINE SPEED +	ORG/BLK	TCU-24
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-37, S3
P	NC	NC	NC
R	FORWARD CL	VIO/LT.GRN	13
S	REVERSE CL	VIO/LT.BLU	14
T	TCC ON/OFF	VIO/RED	S2, TCU-12
U	TCC PWM	VIO/RED	S2, TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-23
W	NC	NC	NC

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORG/RED	25
B	TOSS-	BLK/WHT	22

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
	SEAT SWITCH	BRN/BLK	TCU-29
	PARK BRAKE	BRN/RED	TCU-30

PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	+5V SENSOR	RED/WHT	TCU-21
B	SEN.GND	BLK/WHT	TCU-45
C	TPS	YEL/BLK	TCU-56

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
1	NC	NC	NC
2	POWER	WHT	TCU-55
3	GND.	BLK	S4
4	CAN HIGH	BLK	TCU-43
5	CAN LOW	GRY	TCU-44

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	TCC CONTROL	VIO/RED
S3	SIGNAL GND	BLK/WHT
S4	CHASSIS GND 2	BLK
S5	RPM	ORN/LT.GRN
S6	CAN HIGH	WHT/RED
S7	CAN LOW	WHT/BLK
S8	SEAT SW RELAY	BRN/BLK

NUM	NAME	PART #
L1	TCM-4835-005	WRE-8501 P-489
L2	TRANSMISSION CONNECTOR	WRE-8500 P107
L3	OPTIONAL COM NOT REQUIRED	WRE-8500 P-004
L4	NOT USED	
L5	TOSS	WRE-8500 P-008
L6	BULKHEAD CONNECTOR	WRE-8500 P-035
L7	NOT USED	
L8	TPS SENSOR	WRE-8500 P002
L9	SEAT SWITCH	WRE-8500 P-226
L10	NOT USED	
L11	NU	NU NU
L12	DIGITAL DASH	WRE-8500 P-228
L13	REAR BRAKE	WRE-8500 P-230
L14	not used	WRE-8500
L15	not used	WRE-8500
L16	RY1 SEAT SWITCH RELAY	WRE-8500

TXL	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	

PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16
2	COOLENT LEVEL	YEL/RED	TCU-46
3	FUEL LEVEL	YEL/WHT	TCU-49
4	ENG. SHUTDOWN	PNK/LT.BLU	TCU-41
5	NC	NC	NC
6	NC	NC	NC
7	CAN1 H	WHT/RED	TCU-15
8	NC	NC	NC
9	NC	NC	NC
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	NC	NC	NC

LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	11/29/18	FD	
1A	TEXT UPDATE	8/19/19	FD	

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC-WHMA-A-820A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES:

- WIRE LENGTH TOLERANCE +/- 12 INCH
- WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- WIRE TYPE IS TXL UNLESS OTHERWISE STATED.

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: 4L70E 2010+ TRANSMISSION MOUNTED TO TCU-2800 HARLAN

SIZE: C CUSTOMER DRAWING NO. TCM-4872

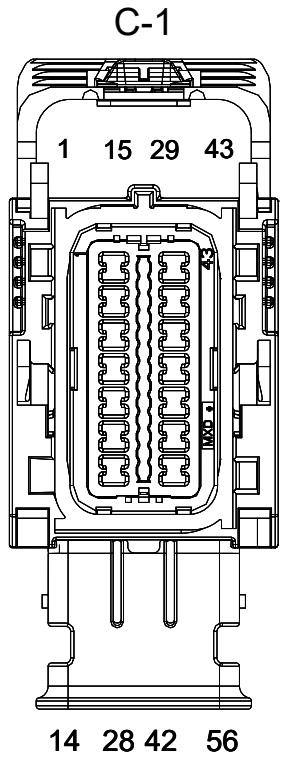
DATE: 11/29/2018

REV: 001

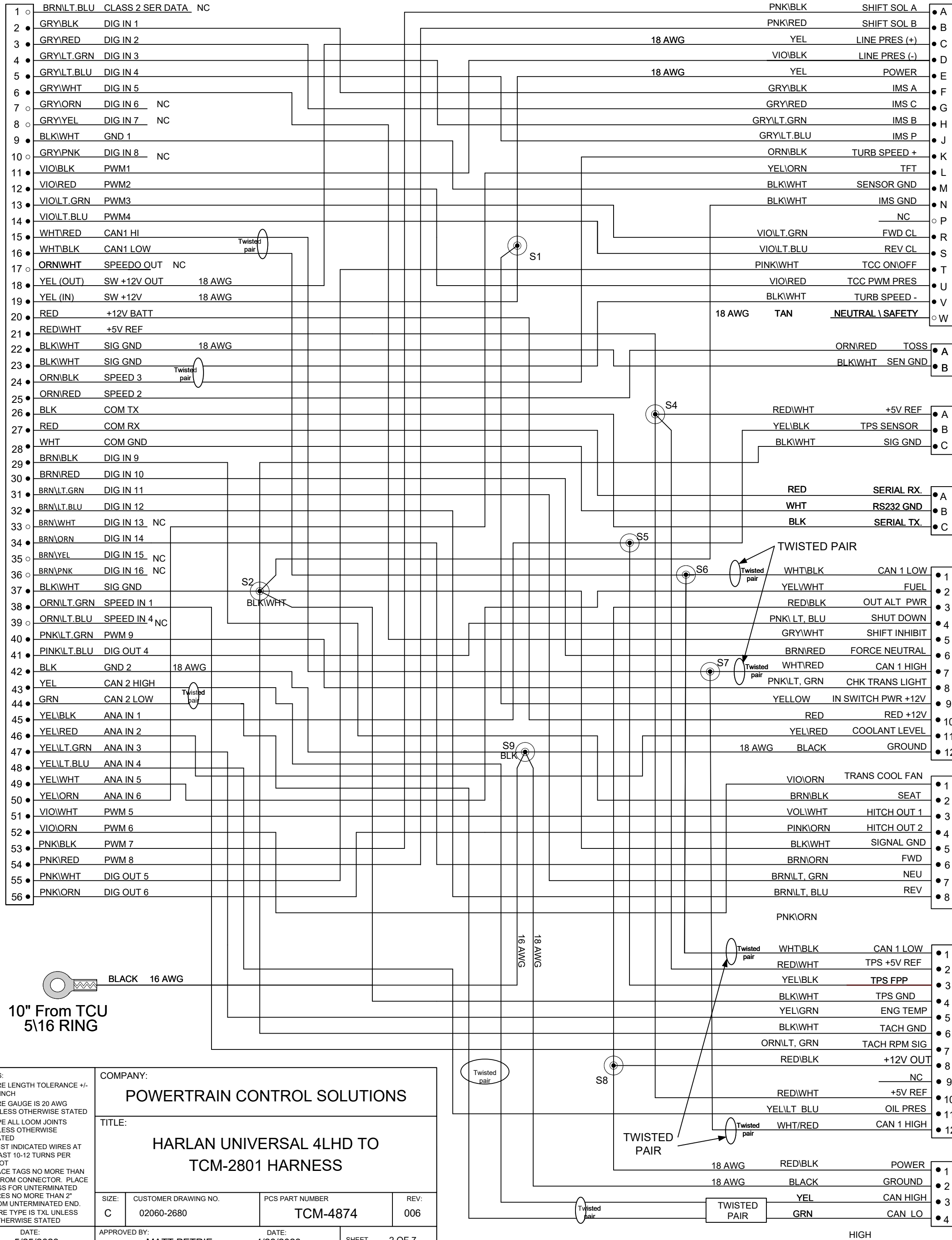
SHEET PAGE 2

Print Date  
8/19/2019  
1700

TCM-2801



QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-1202	M/F
48	TERMINALS	CON-1205	
1	CONNECTOR COVER	CON-1203	
8	CAVITY PLUG	CON-1204	

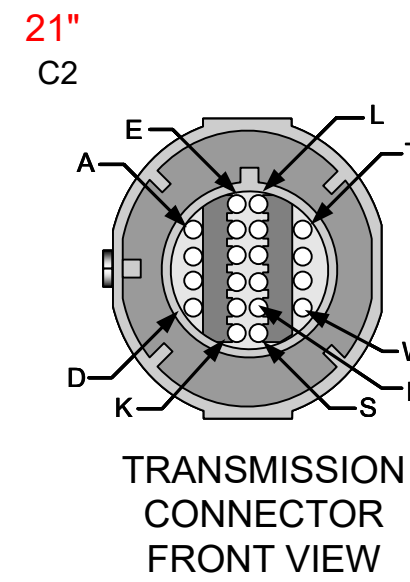


10" From TCU  
5/16 RING

APPLICABLE STANDARDS	NOTES:	COMPANY:
<ul style="list-style-type: none"> <li>ASME Y14.100-200</li> <li>ASME Y14.5M-1994</li> <li>IPC/WHMA-A-620A-CLASS 2</li> <li>MARK IAW MIL-STD-130.</li> </ul>	<ol style="list-style-type: none"> <li>WIRE LENGTH TOLERANCE +/- .12 INCH</li> <li>WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED</li> <li>TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED</li> <li>TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT</li> <li>PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.</li> <li>WIRE TYPE IS TXL UNLESS OTHERWISE STATED</li> </ol>	<p><b>POWERTRAIN CONTROL SOLUTIONS</b></p> <p>TITLE: <b>HARLAN UNIVERSAL 4LHD TO TCM-2801 HARNESS</b></p>

SIZE:	CUSTOMER DRAWING NO.	PCS PART NUMBER	REV:
C	02060-2680	TCM-4874	006

DATE:	APPROVED BY:	DATE:	SHEET
5/25/2023	MATT PETRIE	4/28/2023	2 OF 7



QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
16	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLU
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-1070	M/F
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY

QTY	DESCRIPTION	PIN	NOTES
1	BODY	CON-5515	CON
1	CAP	CON-5530	

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5513	M/Fp
3	TERMINALS	CON-5400	OR TCM-5504
1	WEDGE LOCK	CON-5514	

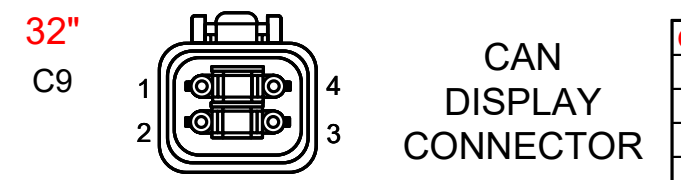
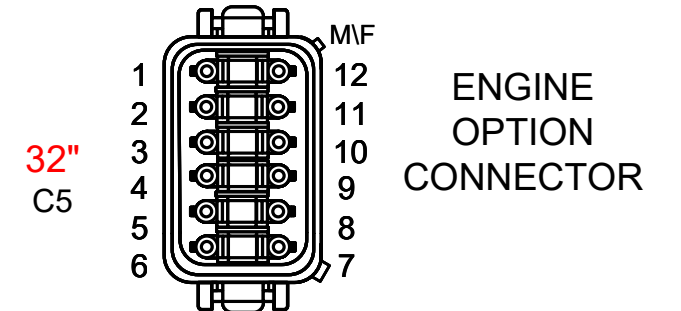
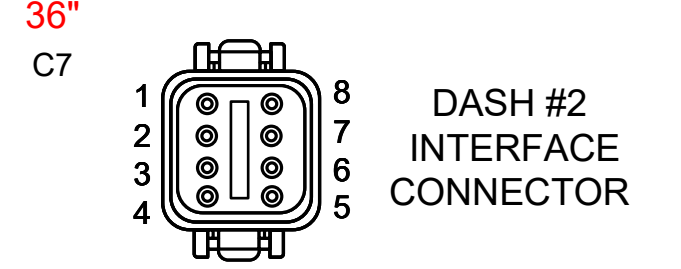
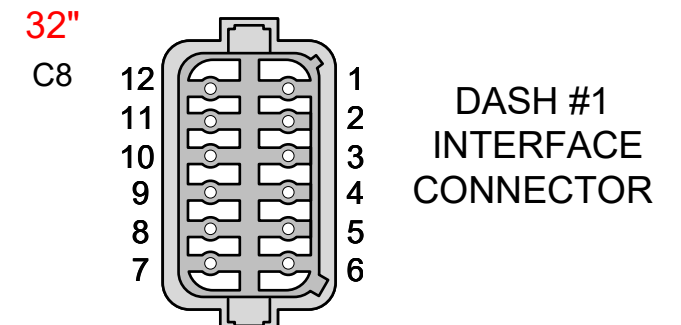
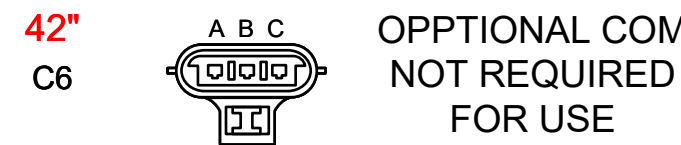
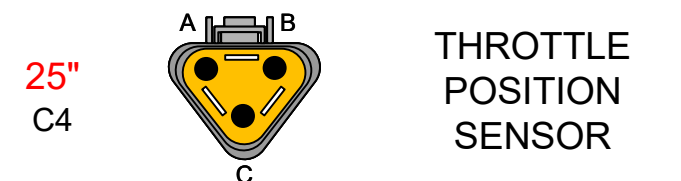
QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-3416	
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-5543	
12	TERMINALS	CON-5401	
1	TPA	CON-5544	CREAM

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-5532	
8	TERMINALS	CON-5400	
1	WEDGE	CON-5508	

QTY	DESCRIPTION	PCS PIN	NOTES
1	CONNECTOR	CON-5542	
12	TERMINALS	CON-5400	
1	WEDGE	CON-5532	

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5540	5538 MATE
4	TERMINALS	CON-5400	4 pin
1	WEDGE LOCK	CON-5541	TBD



C4 TPS SENSOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	+5V SENSOR	RED/WHT	TCM-25
B	TPS SENSOR	YEL/BLK	S5, TCM-45
C	SIG GND	BLK/WHT	S2, TCU-37

C6 OPTIONAL COM			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

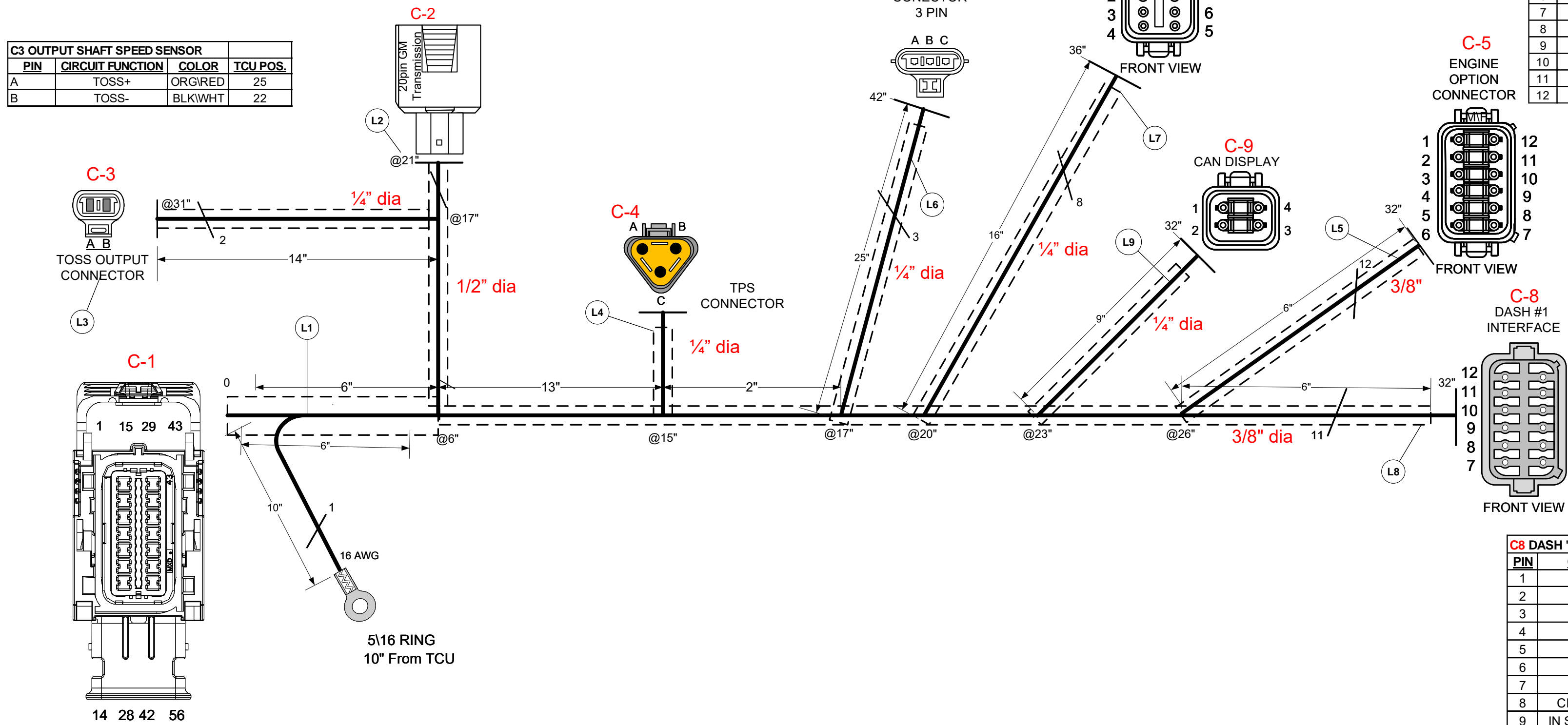
C7 DASH #2			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	TRANS COOL FAN	VIO/ORN	TCM-52
2	SEAT	BRN/BLK	TCM-29
3	HICH OUT 1	VIO/WHT	TCM-51
4	HICH OUT 2	PNK/WHT	TCM-56
5	SIGNAL GND	BLK/WHT	S2, TCU 37
6	DIG IN 10	BRN/ORN	TCM-34
7	DIG IN 11	BRN/LT.GRN	TCM-31
8	DIG IN 12	BLU/LT.BLU	TCM-32

C9 POWER AND CAN CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	NOTES
1	RED	RED/BLK	S8
2	BLK	BLACK	S9
3	WHT/RED	YEL	TCU-43
4	WHT/BLK	GRN	TCU-44

C-2 TRANSMISSION CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
16	TERMINAL	CON 2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
1	BLOCKING PINS	CON-1044	BLU
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY

C3 OUTPUT SHAFT SPEED SENSOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	TOSS+	ORGI/RED	25
B	TOSS-	BLK/WHT	22

C5 OPTIONS CONNECTOR 12 PIN CON			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 LO	WHT/BLK, S6	S6, TCU-16
2	TPS +5V	RED/WHT	S4, TCU-21
3	TPS FPP	YEL/BLK	S5, TCU-45
4	TPSIGND	BLK/WHT	S2, TCU-37
5	ENG TEMP	YEL/GRN	TCU-47
6	TACH GND	BLK/WHT	S2, TCU-37
7	TAC RPM SIG	ORN/LT.GRN	TCU-38
8	+12V OUT	RED/BLK	S8, C9-1, C8-3
9	NC	NC	NC
10	+5V REF	RED/WHT	S4, C8-3
11	OIL PRES	YEL/BLU	TCU-48
12	CAN 1 HI	WHT/RED, S7	S7, TCU-15,



TCU-2801

C8 DASH "1" DASH INTERFACE			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN 1 LOW	WHT/BLK, S6	S6, TCU16
2	FUEL	YEL/WHT	TCU-49
3	OUT ALT POWER	RED/BLK	S8, C5-8, CP-1
4	SHUTDOWN	PNK/LT, BLU	TCU-41
5	SHIFT INHIBIT	GRY/WHT	TCU-6
6	FORCE NEUTRAL	BRN/RED	TCU-30
7	CAN 1 HIGH	WHT/RED, S7,	TCU-15
8	CHECK TRANS LIGHT	PNK/LT GRN	TCU-40
9	IN SWITCHED PWR +12V	YEL, S1	TCU-19
10	RED +12V BATT	RED	TCU-20
11	COOLANT LEVEL	YEL/RED	TCU-46
12	GROUND	BLK, S9	TCU-42

LABEL DEFINITION TABLE			
NUM	NAME	PART #	
L1	TCM-4874-001	WRE-8501	P-608
L2	TRANSMISSION CONNECTOR	WRE-8500	P 107
L3	SPEED SENSOR	WRE-8500	P276
L4	TPS SENSOR	WRE-8500	P-553
L5	ENGINE OPTION CONNECTOR	WRE-8500	P5
L6	DIAG COM CONNECTOR	WRE-8500	P-609
L7	DASH #2 INTERACE	WRE-8500	P-610
L8	DASH #1 INTERACE	WRE-8500	P-611

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES:

- WIRE LENGTH TOLERANCE +/- 1/2 INCH
- WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- WIRE TYPE IS TXL UNLESS OTHERWISE STATED

DRAWN BY: LUKE P DATE: 5/25/2023

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: HARLAN UNIVERSAL 4LHD TO TCM-2801 HARNESS

SIZE: C	CUSTOMER DRAWING NO. 02060-2680	PCS PART NUMBER TCM-4874	REV: 006
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APPROVED BY: MATT PETRIE DATE: 4/28/2023 SHEET 3 OF 7



NUM	NAME	PART #	STOCK #	NOTES
L1	TCM-4880-001	P-569	594-01105	
L2	TRANSMISSION CONNECTOR	P-107	594-09105	
L3	TOSS	P-8	594-09105	
L4	DASH BULKHEAD CONNECTOR	P-573	594-09105	
L5	DIAGNOSTIC COM CONNECTOR	P-337	594-09105	
L6	PARK BRAKE	P-227	594-09105	
L7	E-RPM	P-380	594-09105	
L8	GROUND GROUP	P-548	594-09105	
L9	START SIGNAL	P-579	594-01105	
L10	BRAKE SWITCH PRESSURE	P-516	594-09105	
L11	ECAL	P-570	594-01105	
L12	SHIFTER CONNECTOR	P-280	594-09105	
L13	TIMER PIN # 1	P-575	594-09105	
L14	TIMER PIN # 2	P-576	594-09105	
L15	TIMER PIN # 3	P-577	594-09105	
L16	TIMER PIN # 8	P-578	594-09105	
L17	LH RVLTR	P-561	594-09105	
L18	LH RVLTR	P-562	594-09105	
L19	REF HORN	P-571	594-01105	
L20	REF HORN	P-572	594-09105	
L21	REV HORN OUTPUT	P-571	594-01105	
L22	INCHING OPTION	P-572	594-09105	
L23	RH REV LIGHTS	P-561	594-09105	
L24	RH REV LIGHTS	P-562	594-09105	
L25	TIMER RELAY SIGNAL	P-582	594-09105	
L26	CUT OFF RELAY TERM 87	P-586	594-09105	

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIG GND	BLK/WHT
S3	GROUND 1	BLK/WHT
S4	CAN HIGH	WHT/RED
S5	CAN LOW	WHT/BLK
S6	POWER	RED
S7	IES POWER	YELLOW

C-3 E-RPM CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
1	+12V SW	YEL	TCU-19 SPLICE
2	BRN/ORN	BRN/ORN	TCU-34
3	GROUND	BLACK	TCU-42 SPLICE
4	INC	NC	NC

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1071	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	
1	TPA	CON-1072	

C-8 PARKING BRAKE SENSOR CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5540	
3	TERMINALS	CON-5400	
1	CABLE SEAL	CON-5401	

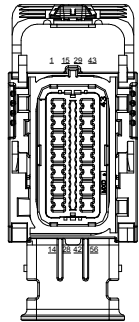
PIN	CIRCUIT FUNCTION	COLOR	NOTES
1	S1 TCU-19 S1	YELLOW	
2	TCU PIN-34	BROWN	
3	TO GND RING TERM	BLACK	
4	NC	NC	NC

C-2 TOSS SHAFT SPEED SENSOR FEMALE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRN

C-2 TOSS CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
1	TOSS	ORN RED	TCU-25
2	SIGNAL GND	BLK/WHT	TCU-23

SEE SCHEMATIC 1 FOR CONNECTIONS



TCU



@0"



@24"



@37"



@10"



@12"



@17"



@13"



@21"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



@17"



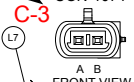
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@17"



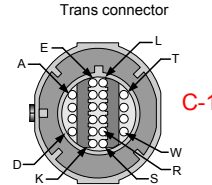
@17"



A B FRONT VIEW @17"



PARKING BRAKE SENSOR @21"



Trans connector

C-1

To wire group, GRAY CONNECTOR CON-5542 STARTS AT 10"

To wire group, BLK CONNECTOR CON-5551 STARTS AT 12"

Print Date  
12/17/2019  
1700

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIG GND	BLK/WHT
S3	GROUND 1	BLK/WHT
S4	CAN HIGH	WHT/RED
S5	CAN LOW	WHT/BLK
S6	POWER	RED
S7	IES POWER	YELLOW

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASED NOT COMPLETE	11/28/19	FD	
1	RELEASED	12/9/19	FD	

FULL FILENAME  
\\PCS\STORAGE\PCS\_WORK\ENGINEERING\HARNESSES\TRANSMISSION CONTROLLERS\TCM-2800\HARNESSES\TCM-4880-001 DELTA M1A [MLC] TRANSMISSION HARNESSES\DELTA M1A [MLC] TRANSMISSION HARNESSES\TCM-4880-001 DELTA M1A [MLC] TRANSMISSION HARNESSES.VSD

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.

- NOTES
- 1) WIRE LENGTH TOLERANCE +/- 1/2 INCH
  - 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
  - 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: <b>POWERTRAIN CONTROL SOLUTIONS</b>			
TITLE: <b>DELTA M1A DEUTZ TRANSMISSION HARNESSES</b>			
SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER <b>TCM-4880</b>	REV: 001
DRAWN BY: FRED	DATE: 10/31/2019	APPROVED BY:	SHEET PAGE 2

NUM	NAME	PART #	STOCK #	NOTES
L1	TCM-4880-001	P-569	594-01105	
L2	TRANSMISSION CONNECTOR	P-107	594-09105	
L3	TOSS	P-8	594-09105	
L4	DASH BULKHEAD CONNECTOR	P-573	594-09105	
L5	DIAGNOSTIC COM CONNECTOR	P-337	594-09105	
L6	PARK BRAKE	P-227	594-09105	
L7	E-RPM	P-380	594-09105	
L8	GROUND GROUP	P-548	594-09105	
L9	START SIGNAL	P-579	594-01105	
L10	BRAKE SWITCH PRESSURE	P-516	594-09105	
L11	ECAL	P-570	594-01105	
L12	SHIFTER CONNECTOR	P-280	594-09105	
L13	TIMER PIN # 1	P-575	594-09105	
L14	TIMER PIN # 2	P-576	594-09105	
L15	TIMER PIN # 3	P-577	594-09105	
L16	TIMER PIN # 8	P-578	594-09105	
L17	LH RV LITR	P-561	594-09105	
L18	LH RV LITR	P-562	594-09105	
L19	REF HORN	P-571	594-01105	
L20	REF HORN	P-572	594-09105	
L21	REV HORN OUTPUT	P-571	594-01105	
L22	INCHING OPTION	P-572	594-09105	
L23	RH REV LIGHTS	P-561	594-09105	
L24	RH REV LIGHTS	P-562	594-09105	
L25	TIMER RELAY SIGNAL	P-582	594-09105	
L26	CUT OFF RELAY TERM 87	P-586	594-09105	

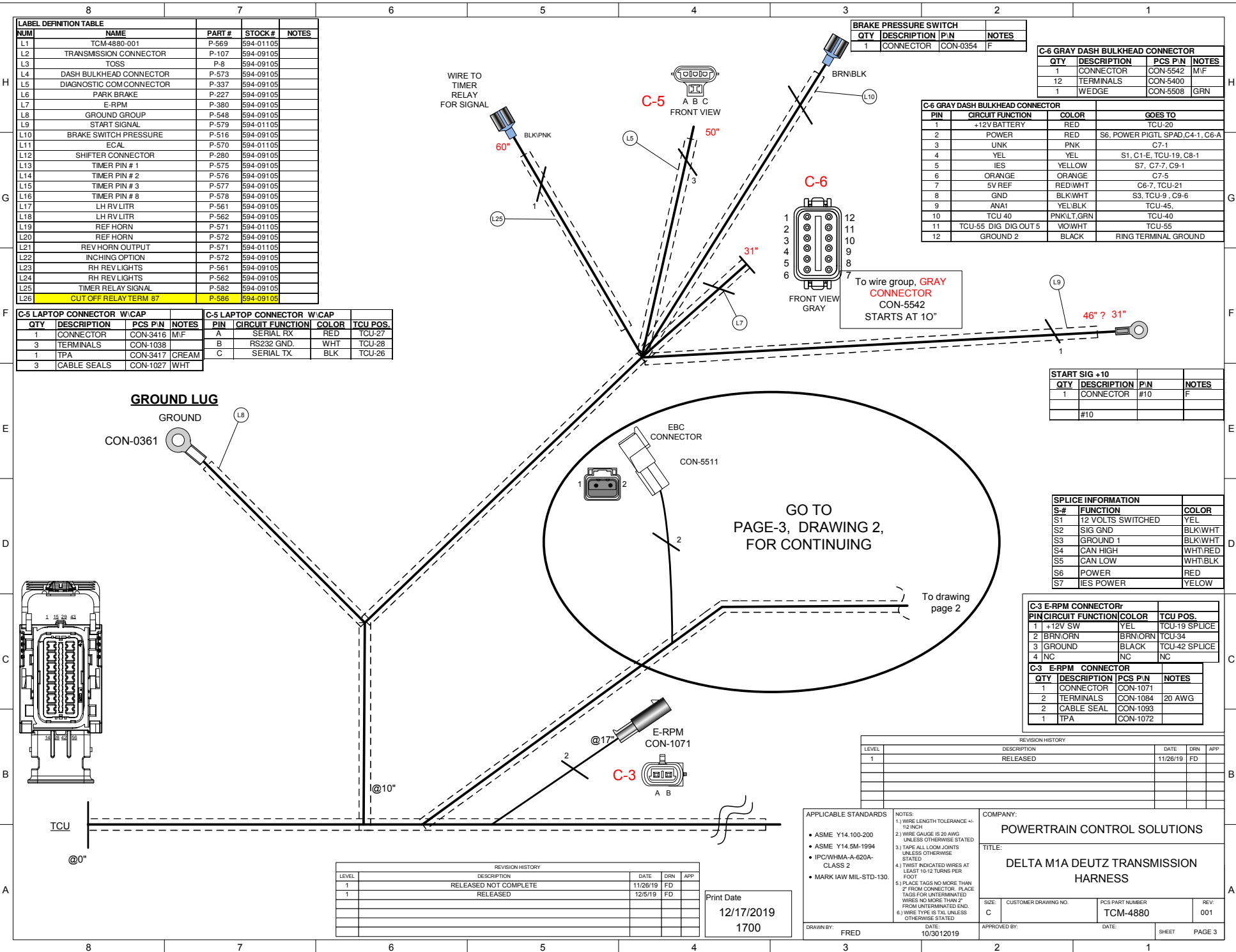
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	M/F
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT

QTY	DESCRIPTION	PCS P/N	NOTES	TCU POS.
1	CONNECTOR	CON-3416	M/F	TCU-27
1	TERMINAL	CON-1038	B	TCU-28
1	TERMINAL	CON-1038	C	TCU-26

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-0354	F

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	M/F
12	TERMINALS	CON-5400	
1	WEDGE	CON-5508	GRN

PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	+12V BATTERY	RED	TCU-20
2	POWER	RED	S6, POWER PIGTL SPAD, C4-1, C6-A
3	UNK	PNK	C7-1
4	YEL	YEL	S1, C1-E, TCU-19, C8-1
5	IES	YELLOW	S7, C7-7, C9-1
6	ORANGE	ORANGE	C7-5
7	5V REF	RED/WHT	C6-7, TCU-21
8	GND	BLK/WHT	S3, TCU-9, C9-6
9	ANA1	YEL/BLK	TCU-45,
10	TCU-40	PNK/LT.GRN	TCU-40
11	TCU-55 DIG DIG OUT 5	W/WHT	TCU-55
12	GROUND 2	BLACK	RING TERMINAL GROUND



To wire group, GRAY CONNECTOR CON-5542 STARTS AT 10"

QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	#10	F
		#10	

S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIG GND	BLK/WHT
S3	GROUND 1	BLK/WHT
S4	CAN HIGH	WHT/RED
S5	CAN LOW	WHT/BLK
S6	POWER	RED
S7	IES POWER	YELLOW

PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
1	+12V SW	YEL	TCU-19 SPLICE
2	BRN/ORN	BRN/ORN	TCU-34
3	GROUND	BLACK	TCU-42 SPLICE
4	NC	NC	NC

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1071	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	
1	TPA	CON-1072	

LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASED	11/26/19	FD	

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES

- WIRE LENGTH TOLERANCE +/- 1/2 INCH
- WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: DELTA M1A DEUTZ TRANSMISSION HARNESS

DATE: 12/17/2019

PRINT DATE: 12/17/2019 1700

DRAWN BY: FRED

DATE: 10/30/2019

APPROVED BY:

DATE:

REVISION HISTORY

LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASED NOT COMPLETE	11/26/19	FD	
1	RELEASED	12/5/19	FD	

LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASED NOT COMPLETE	11/26/19	FD	
1	RELEASED	12/5/19	FD	

Print Date  
12/17/2019  
1700

S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YEL
S2	SIG GND	BLK/WHT
S3	GROUND 1	BLK/WHT
S4	CAN HIGH	WHT/RED
S5	CAN LOW	WHT/BLK
S6	POWER	RED
S7	IES POWER	YELLOW

C-4 E-CAL CONNECTOR			
PIN	CIRCUIT FUN	COLOR	TCU POS.
1	POWER	RED	TO S6, PWR PGTL
2	GROUND	BLACK	TO GND LUG
3	CAN HIGH	WHT/RED	S4 CAN HIGH
4	CAN LOW	WHT/BLK	S5 CAN LOW

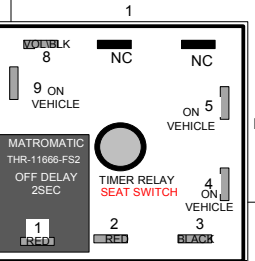
  

C-4 E-CAL CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5538	
4	TERMINALS	CON-5401	
1	TPA	CON-5539	

SPADE FEMAL PIN			
QTY	DESCRIPTION	PIN	NOTES
2	CONNECTOR	CON-0344	F

C-7 BLACK IES SHIFTER CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5551	IMF
12	TERMINALS	CON-5400	
1	WEDGE	CON-5508	GRN

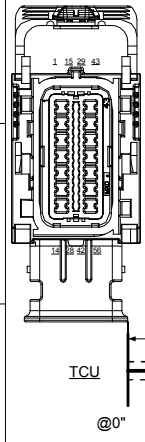
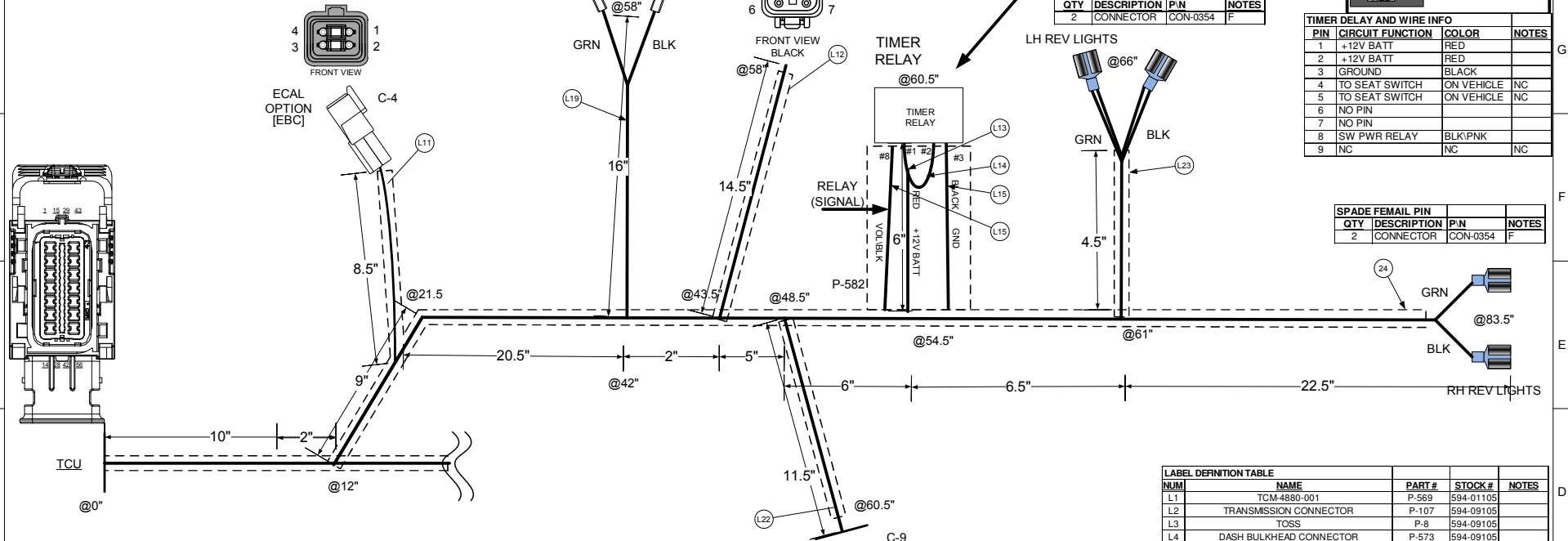
TIMER DELAY AND WIRE INFO			
QTY	DESCRIPTION	PIN	NOTES
2	CONNECTOR	CON-0354	F



SPADE FEMAL PIN			
QTY	DESCRIPTION	PIN	NOTES
2	CONNECTOR	CON-0354	F

TIMER DELAY AND WIRE INFO			
PIN	CIRCUIT FUNCTION	COLOR	NOTES
1	+12V BATT	RED	
2	+12V BATT	RED	
3	GROUND	BLACK	
4	TO SEAT SWITCH	ON VEHICLE	NC
5	TO SEAT SWITCH	ON VEHICLE	NC
6	NO PIN		
7	NO PIN		
8	SW PWR RELAY	BLK/PNK	
9	NC	NC	NC

SPADE FEMAL PIN			
QTY	DESCRIPTION	PIN	NOTES
2	CONNECTOR	CON-0354	F



C-7 C-7 BLACK IES SHIFTER CONNECTOR				
PIN	CIRCUIT FUNCTION	COLOR	GOES TO	
1	NEUT SAFETY RY-1 (+)	PINK	TO C7-P5	18 AWG
2	NEUT SAFETY RY-1 (-)	BLU	TO C7-P6	18 AWG
3	NEUTRAL POS OUT	ORN/BLU	TO C7-P2	
4	REV POSITION OUT	ORN/WHT	TO C7-P3	
5	REV LIGHT RY-2 (+)	ORN	TO C7-P7	
6	REV LIGHT RY-2 (-)	GREEN	TO C7-P8	18 AWG
7	POWER +12V SW	YELLOW	TO C7-P9	18 AWG
8	GROUND	BLACK	TO C6-P12	
9	FORWARD POS OUT	ORN/RED	TO C7-P1	
10	CAN HIGH	WHT/RED	TO C1-P15, C6-P7	
11	CAN LOW	WHT/BLK	TO C1-P16, C6-P1	
12	NC	NC	NC	

C-9 INCHING OPTION CONNECTOR CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5520	
6	TERMINALS	CON-5400	
1	TPA	CON-5521	

LABEL DEFINITION TABLE				
NUM	NAME	PART #	STOCK #	NOTES
L1	TCM-4880-001	P-569	594-01105	
L2	TRANSMISSION CONNECTOR	P-107	594-09105	
L3	TOSS	P-8	594-09105	
L4	DASH BULKHEAD CONNECTOR	P-573	594-09105	
L5	DIAGNOSTIC COM CONNECTOR	P-337	594-09105	
L6	PARK BRAKE	P-227	594-09105	
L7	E-RPM	P-380	594-09105	
L8	GROUND GROUP	P-548	594-09105	
L9	START SIGNAL	P-579	594-01105	
L10	BRAKE SWITCH PRESSURE	P-516	594-09105	
L11	E-CAL	P-570	594-01105	
L12	SHIFTER CONNECTOR	P-280	594-09105	
L13	TIMER PIN # 1	P-575	594-09105	
L14	TIMER PIN # 2	P-576	594-09105	
L15	TIMER PIN # 3	P-577	594-09105	
L16	TIMER PIN # 8	P-578	594-09105	
L17	LH RV LITR	P-561	594-09105	
L18	LH RV LITR	P-562	594-09105	
L19	REF HORN	P-571	594-01105	
L20	REF HORN	P-572	594-09105	
L21	REV HORN OUTPUT	P-571	594-01105	
L22	INCHING OPTION	P-572	594-09105	
L23	RH REV LIGHTS	P-561	594-09105	
L24	RH REV LIGHTS	P-562	594-09105	
L25	TIMER RELAY SIGNAL	P-582	594-09105	
L26	CUT OFF RELAY TERM 87	P-586	594-09105	

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASED NOT COMPLETE	11/26/19	FD	
1	RELEASED	12/5/19	FD	

FULL FILENAME  
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 CONTROLLERS\TCM-2800\HARNESSES\TCM-4880-001 DELTA M1A [MLC]  
 TRANSMISSION HARNES\DELTA M1A [MLC] TRANSMISSION HARNES\TCM-  
 4880-001 DELTA M1A [MLC] TRANSMISSION HARNES.VSD

Print Date  
 12/17/2019  
 1700

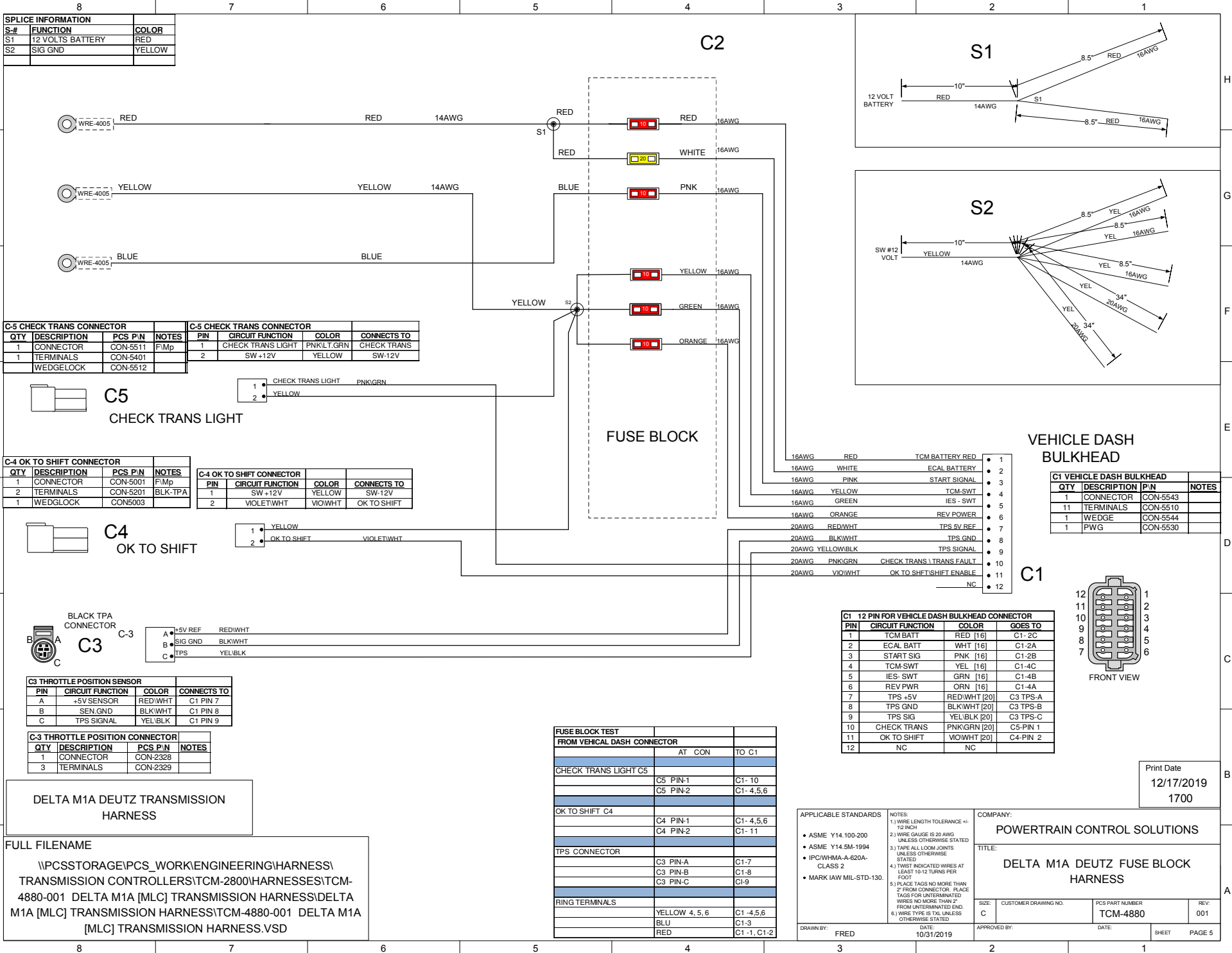
APPLICABLE STANDARDS  
 • ASME Y14.100-200  
 • ASME Y14.5M-1994  
 • IPC/WHMA-A-620A-CLASS 2  
 • MARK IAW MIL-STD-130.

NOTES:  
 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH  
 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED  
 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**DELTA M1A DEUTZ TRANSMISSION HARNES**

DATE: 10/30/2019  
 DRAWN BY: FRED  
 APPROVED BY: [Signature]  
 SHEET: TCM-4880  
 PAGE: 001



SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS BATTERY	RED
S2	SIG GND	YELLOW

C-5 CHECK TRANS CONNECTOR				C-5 CHECK TRANS CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES	PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	CONNECTOR	CON-5511	F/Mp	1	CHECK TRANS LIGHT	PNK/LT GRN	CHECK TRANS
1	TERMINALS	CON-5401		2	SW +12V	YELLOW	SW-12V
	WEDGLOCK	CON-5512					

C-4 OK TO SHIFT CONNECTOR				C-4 OK TO SHIFT CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES	PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	CONNECTOR	CON-5001	F/Mp	1	SW +12V	YELLOW	SW-12V
2	TERMINALS	CON-5201	BLK-TPA	2	VIOLETWHT	VIOWHT	OK TO SHIFT
	WEDGLOCK	CON-5003					

C3 THROTTLE POSITION SENSOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	+5V SENSOR	RED/WHT	C1 PIN 7
B	SEN GND	BLK/WHT	C1 PIN 8
C	TPS SIGNAL	YEL/BLK	C1 PIN 9

C-3 THROTTLE POSITION CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-2328	
3	TERMINALS	CON-2329	

DELTA M1A DEUTZ TRANSMISSION HARNESS

FULL FILENAME  
 \\PCSSTORAGE\PCS\_WORK\ENGINEERING\HARNESS\TRANSMISSION CONTROLLERS\TCM-2800\HARNESSES\TCM-4880-001 DELTA M1A [MLC] TRANSMISSION HARNESS\DELTA M1A [MLC] TRANSMISSION HARNESS\TCM-4880-001 DELTA M1A [MLC] TRANSMISSION HARNESS.VSD

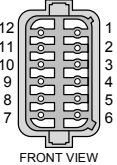
FUSE BLOCK TEST		
FROM VEHICAL DASH CONNECTOR	AT CON	TO C1
CHECK TRANS LIGHT C5	C5 PIN-1	C1- 10
	C5 PIN-2	C1- 4,5,6
OK TO SHIFT C4	C4 PIN-1	C1- 4,5,6
	C4 PIN-2	C1- 11
TPS CONNECTOR	C3 PIN-A	C1-7
	C3 PIN-B	C1-8
	C3 PIN-C	C1-9
RING TERMINALS	YELLOW 4, 5, 6	C1- 4,5,6
	BLU	C1-3
	RED	C1- 1, C1-2

APPLICABLE STANDARDS	NOTES
• ASME Y14.100-200	1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH
• ASME Y14.5M-1994	2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
• IPC/WHMA-A-620A-CLASS 2	3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
• MARK IAW MIL-STD-130.	4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
	5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
	6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: <b>POWERTRAIN CONTROL SOLUTIONS</b>			
TITLE: <b>DELTA M1A DEUTZ FUSE BLOCK HARNESS</b>			
SIZE: C	CUSTOMER DRAWING NO	PCS PART NUMBER TCM-4880	REV: 001
DRAWN BY: FRED	DATE: 10/31/2019	APPROVED BY:	DATE: SHEET PAGE 5

Print Date  
12/17/2019  
1700

C1 VEHICLE DASH BULKHEAD			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5543	
11	TERMINALS	CON-5510	
1	WEDGE	CON-5544	
1	PWG	CON-5530	

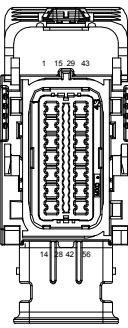


- 16AWG RED TCM BATTERY RED
- 16AWG WHITE ECAL BATTERY
- 16AWG PINK START SIGNAL
- 16AWG YELLOW TCM-SWT
- 16AWG GREEN IES - SWT
- 16AWG ORANGE REV POWER
- 20AWG RED/WHT TPS 5V REF
- 20AWG BLK/WHT TPS GND
- 20AWG YELLOW/BLK TPS SIGNAL
- 20AWG PNK/GRN CHECK TRANS LTRANS FAULT
- 20AWG VIO/WHT OK TO SHIFT/SHIFT ENABLE
- NC
- NC



TCM-2600

REVISION HISTORY			
LEVEL	DESCRIPTION	DATE	DRN APP
1	Release	8/14/16	FD
1A	ADD CT	11/2/16	FD
2	EXTRA I/O CON CHANGE	1/30/17	FD
2A	TCU-10 COLOR CHANGE	3/8/17	FD
2B	CHANGE I/O CONNECTOR	3/8/17	FD



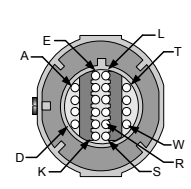
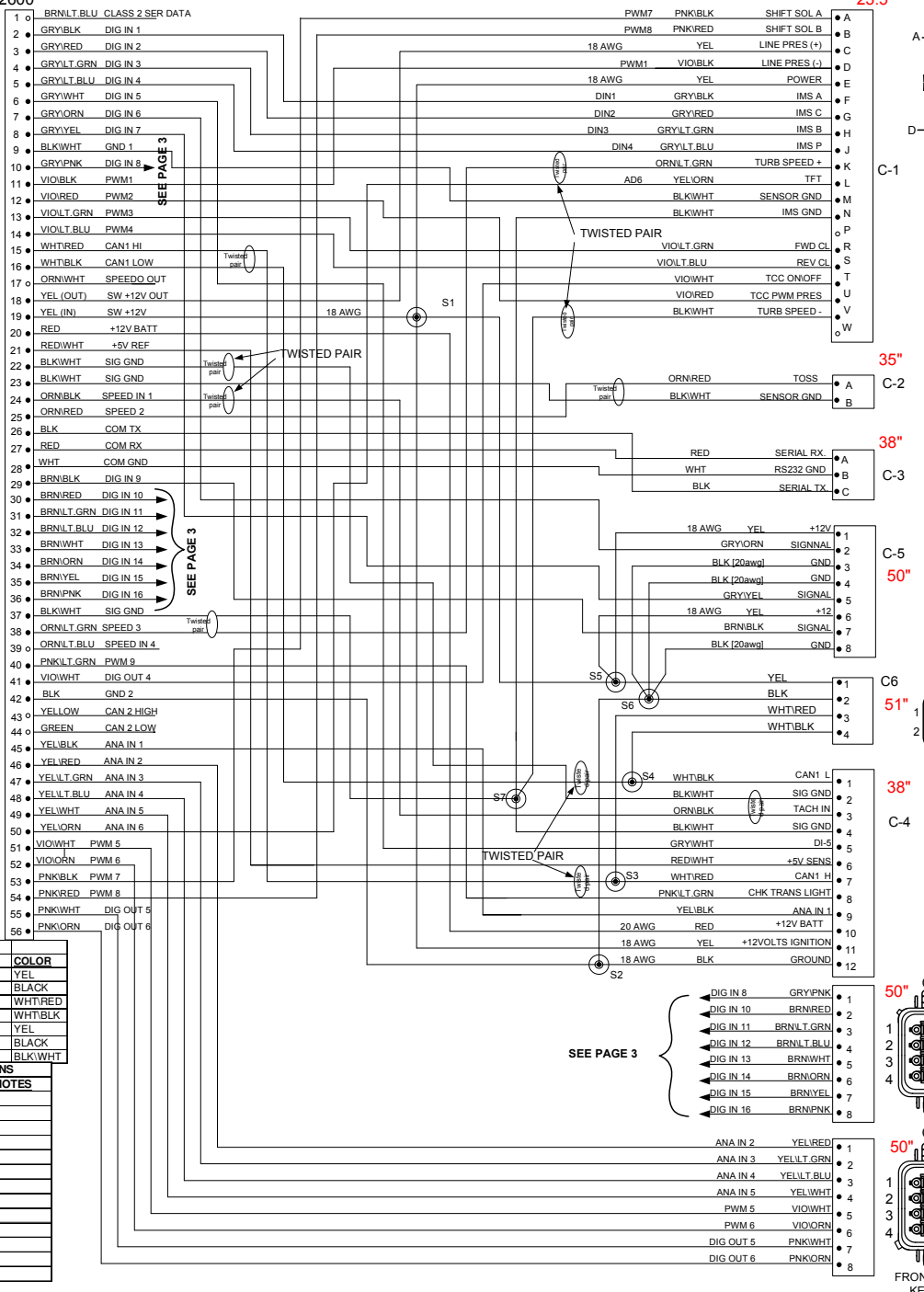
TCU-2600

TCU-2600 Connector	QTY	DESCRIPTION	PCS P/N	NOTES
1	1	CONNECTOR	CON-1702	M/F
34	34	TERMINALS	CON-1705	
1	1	CONNECTOR COVER	CON-1703	
22	22	CAVITY PLUG	CON-1704	

SPLICE INFORMATION		
S#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YELLOW
S2	GROUND	BLACK
S3	CAN HIGH	WHT/RED
S4	CAN LOW	WHT/BLK
S5	12 VOLTS SWITCHED	YELLOW
S6	GROUND	BLACK
S7	SIGNAL GND	BLK/WHT

WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	



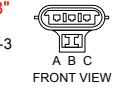
C-1 TRANSMISSION CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2000	
18	TERMINAL	CON-2804	20-22 AWG.
2	TERMINAL	CON-2805	16-18 AWG
5	BLOCKING PINS	CON-1044	BLUE
1	SEAL	CON-3309	LT.GREEN
1	CONDUIT CLIP	CON-2008	
1	TPA	CON-2003	GRY



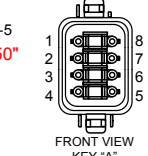
C-2 OUTPUT SHAFT SPEED SENSOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	
2	TERMINALS	CON-1084	20 AWG
2	CABLE SEAL	CON-1093	GRN
1	TPA	CON-1072	GRY



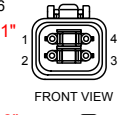
C-3 OPTIONAL COM NOT REQUIRED FOR USE FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-3416	M/F
3	TERMINALS	CON-1038	
1	TPA	CON-3417	CREAM
3	CABLE SEALS	CON-1027	WHT



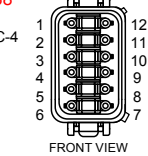
C-5 SENSOR INTERFACE FRONT VIEW KEY "A"

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5532	M/F DT06-08SA
8	TERMINALS	CON-5400	
1	WEDGE	CON-5533	M/F



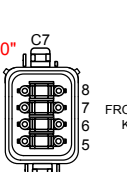
C6 POWER AND CAN FRONT VIEW

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	M/F CON-5540	5538 MATE
4	TERMINALS	CON-5400	4 pin
1	WEDGE LOCK	CON-5541	TBD



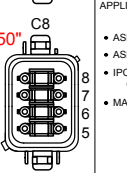
C-4 BULKHEAD CONNECTOR FRONT VIEW

QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5542	M/F
12	TERMINALS	CON-5400	
1	WEDGE	CON-5508	GRN



C-7 SENSOR INTERFACE FRONT VIEW KEY "B"

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5545	M/F DT06-08SB
8	TERMINALS	CON-5400	
1	WEDGE	CON-5533	M/F



C-8 SENSOR INTERFACE FRONT VIEW KEY "C"

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5546	M/F DT06-08SC
8	TERMINALS	CON-5400	
1	WEDGE	CON-5533	M/F

APPLICABLE STANDARDS:  
 • ASME Y14.100-200  
 • ASME Y14.5M-1994  
 • IPC/WHMA-A-620A-CLASS 2  
 • MARK IAW MIL-STD-130.

NOTES:  
 1.) WIRE LENGTH TOLERANCE +/- .12 INCH  
 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
 3.) TAP ALL LOOM JOINTS UNLESS OTHERWISE STATED  
 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY: POWERTRAIN CONTROL SOLUTIONS

TITLE: 4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TCU-2800 [ANTI COLLISION]

DATE: 11/1/2016

APPROVED BY: FRED D.

DATE: 11/1/2016

PRINT DATE: 5/12/17

1700

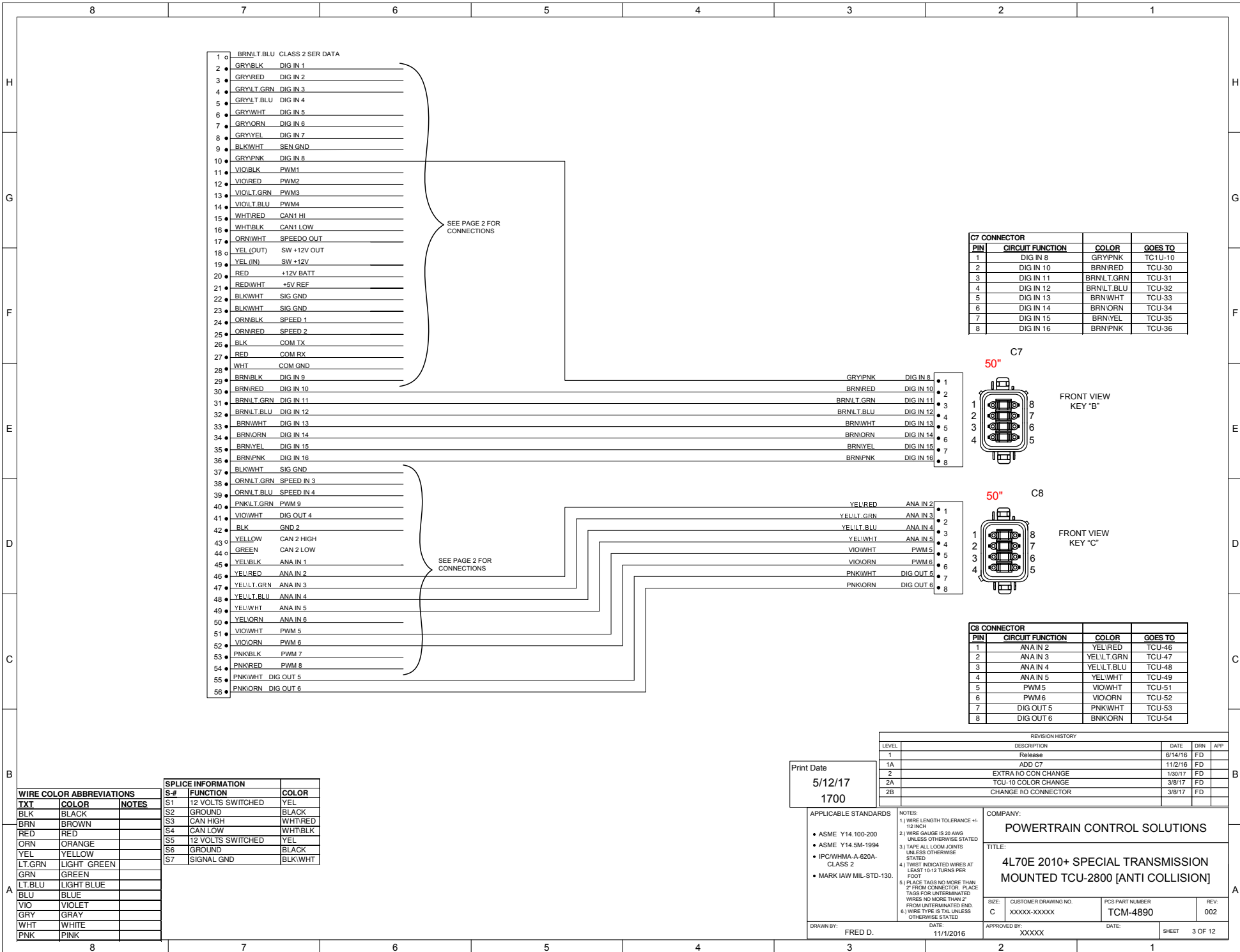
SIZE: C CUSTOMER DRAWING NO: XXXXX-XXXXX PCS PART NUMBER: TCM-4890

REV: 002

SHEET 2 OF 12

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-3415	
3	CAVITY PLUG	CON-024	PK/RED
1	SECONDARY LOCK	CON-3417	



- 1 BRN/BLU CLASS 2 SER DATA
- 2 GRV/BLK DIG IN 1
- 3 GRV/RED DIG IN 2
- 4 GRV/LT.GRN DIG IN 3
- 5 GRV/LT.BLU DIG IN 4
- 6 GRV/WHT DIG IN 5
- 7 GRV/ORN DIG IN 6
- 8 GRV/YEL DIG IN 7
- 9 BLK/WHT SEN GND
- 10 GRV/PNK DIG IN 8
- 11 VIO/BLK PWM1
- 12 VIO/RED PWM2
- 13 VIO/LT.GRN PWM3
- 14 VIO/LT.BLU PWM4
- 15 WHT/RED CAN1 HI
- 16 WHT/BLK CAN1 LOW
- 17 ORN/WHT SPEEDO OUT
- 18 YEL (OUT) SW +12V OUT
- 19 YEL (IN) SW +12V
- 20 RED +12V BATT
- 21 RED/WHT +5V REF
- 22 BLK/WHT SIG GND
- 23 BLK/WHT SIG GND
- 24 ORN/BLK SPEED 1
- 25 ORN/RED SPEED 2
- 26 BLK COM TX
- 27 RED COM RX
- 28 WHT COM GND
- 29 BRN/BLK DIG IN 9
- 30 BRN/RED DIG IN 10
- 31 BRN/LT.GRN DIG IN 11
- 32 BRN/LT.BLU DIG IN 12
- 33 BRN/WHT DIG IN 13
- 34 BRN/ORN DIG IN 14
- 35 BRN/YEL DIG IN 15
- 36 BRN/PNK DIG IN 16
- 37 BLK/WHT SIG GND
- 38 ORN/LT.GRN SPEED IN 3
- 39 ORN/LT.BLU SPEED IN 4
- 40 PNK/LT.GRN PWM 9
- 41 VIO/WHT DIG OUT 4
- 42 BLK GND 2
- 43 YELLOW CAN 2 HIGH
- 44 GREEN CAN 2 LOW
- 45 YEL/BLK ANA IN 1
- 46 YEL/RED ANA IN 2
- 47 YEL/LT.GRN ANA IN 3
- 48 YEL/LT.BLU ANA IN 4
- 49 YEL/WHT ANA IN 5
- 50 YEL/ORN ANA IN 6
- 51 VIO/WHT PWM 5
- 52 VIO/ORN PWM 6
- 53 PNK/BLK PWM 7
- 54 PNK/RED PWM 8
- 55 PNK/WHT DIG OUT 5
- 56 PNK/ORN DIG OUT 6

SEE PAGE 2 FOR CONNECTIONS

SEE PAGE 2 FOR CONNECTIONS

- 1 GRV/PNK DIG IN 8
- 2 BRN/RED DIG IN 10
- 3 BRN/LT.GRN DIG IN 11
- 4 BRN/LT.BLU DIG IN 12
- 5 BRN/WHT DIG IN 13
- 6 BRN/ORN DIG IN 14
- 7 BRN/YEL DIG IN 15
- 8 BRN/PNK DIG IN 16

- 1 YEL/RED ANA IN 2
- 2 YEL/LT.GRN ANA IN 3
- 3 YEL/LT.BLU ANA IN 4
- 4 YEL/WHT ANA IN 5
- 5 VIO/WHT PWM 5
- 6 VIO/ORN PWM 6
- 7 PNK/WHT DIG OUT 5
- 8 PNK/ORN DIG OUT 6

C7 CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	DIG IN 8	GRV/PNK	TCU-10
2	DIG IN 10	BRN/RED	TCU-30
3	DIG IN 11	BRN/LT.GRN	TCU-31
4	DIG IN 12	BRN/LT.BLU	TCU-32
5	DIG IN 13	BRN/WHT	TCU-33
6	DIG IN 14	BRN/ORN	TCU-34
7	DIG IN 15	BRN/YEL	TCU-35
8	DIG IN 16	BRN/PNK	TCU-36

C8 CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	ANA IN 2	YEL/RED	TCU-46
2	ANA IN 3	YEL/LT.GRN	TCU-47
3	ANA IN 4	YEL/LT.BLU	TCU-48
4	ANA IN 5	YEL/WHT	TCU-49
5	PWM 5	VIO/WHT	TCU-51
6	PWM 6	VIO/ORN	TCU-52
7	DIG OUT 5	PNK/WHT	TCU-53
8	DIG OUT 6	BNK/ORN	TCU-54

C8 CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	ANA IN 2	YEL/RED	TCU-46
2	ANA IN 3	YEL/LT.GRN	TCU-47
3	ANA IN 4	YEL/LT.BLU	TCU-48
4	ANA IN 5	YEL/WHT	TCU-49
5	PWM 5	VIO/WHT	TCU-51
6	PWM 6	VIO/ORN	TCU-52
7	DIG OUT 5	PNK/WHT	TCU-53
8	DIG OUT 6	BNK/ORN	TCU-54

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	6/14/16	FD	
1A	ADD C7	11/2/16	FD	
2	EXTRA I/O CON CHANGE	1/20/17	FD	
2A	TCU-10 COLOR CHANGE	3/8/17	FD	
2B	CHANGE I/O CONNECTOR	3/8/17	FD	

Print Date  
5/12/17  
1700

APPLICABLE STANDARDS

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

NOTES:

- 1.) WIRE LENGTH TOLERANCE +/- .12 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TX UNLESS OTHERWISE STATED

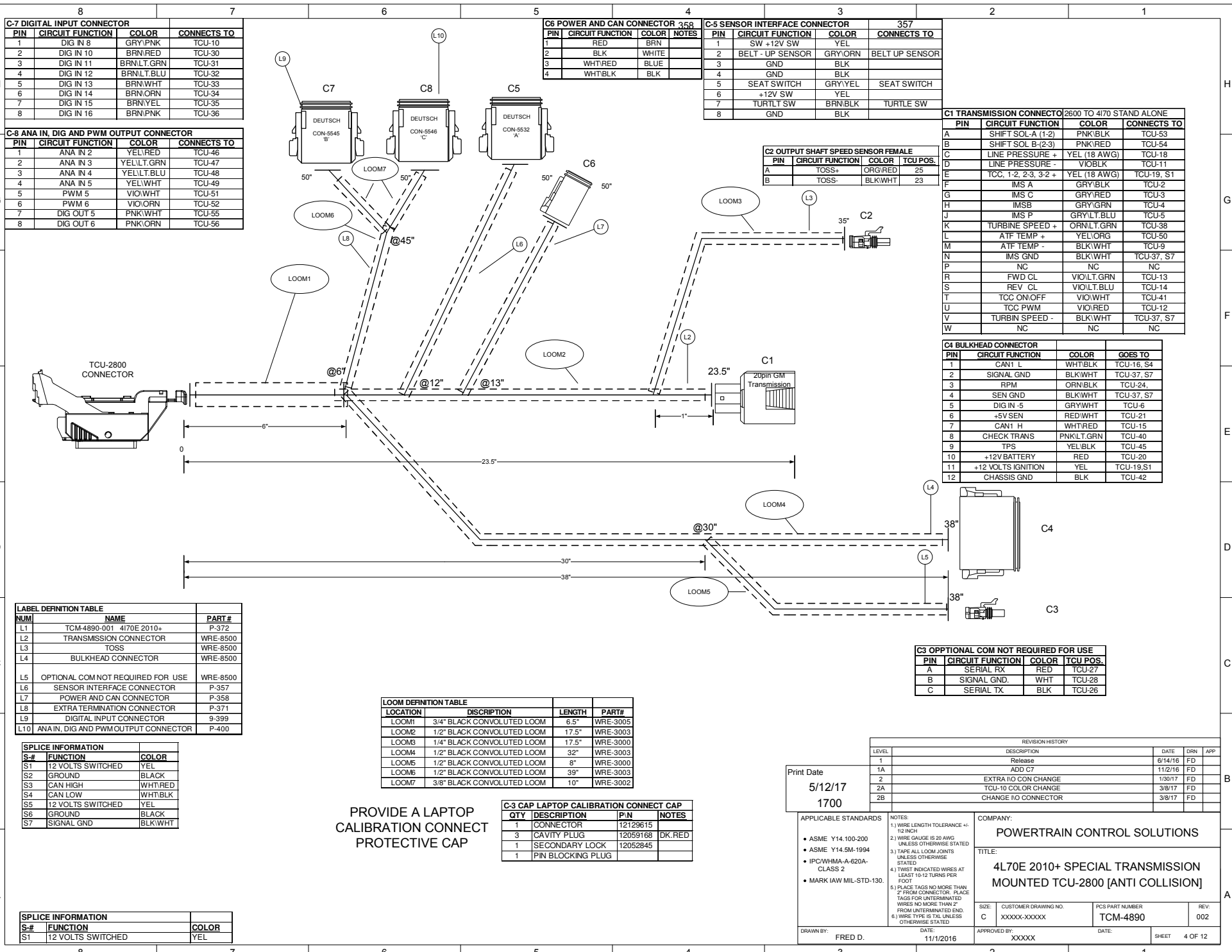
COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TCU-2800 [ANTI COLLISION]**

SIZE: C CUSTOMER DRAWING NO. XXXXX-XXXXX PCS PART NUMBER TCM-4890 REV: 002

DRAWN BY: FRED D. DATE: 11/1/2016 APPROVED BY: XXXXX DATE: SHEET 3 OF 12

WIRE COLOR ABBREVIATIONS	SPICE INFORMATION		
TXI	S#	FUNCTION	COLOR
BLK	S1	12 VOLTS SWITCHED	YEL
BLK	S2	GROUND	BLACK
BRN	S3	CAN HIGH	WHT/RED
RED	S4	CAN LOW	WHT/BLK
ORN	S5	12 VOLTS SWITCHED	YEL
YEL	S6	GROUND	BLACK
LT.GRN	S7	SIGNAL GND	BLK/WHT
GRN			
LT.BLU			
BLU			
VIO			
GRY			
WHT			
PNK			



C-7 DIGITAL INPUT CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	DIG IN 8	GRY/PNK	TCU-10
2	DIG IN 10	BRN/RED	TCU-30
3	DIG IN 11	BRN/LT.GRN	TCU-31
4	DIG IN 12	BRN/LT.BLU	TCU-32
5	DIG IN 13	BRN/WHT	TCU-33
6	DIG IN 14	BRN/ORN	TCU-34
7	DIG IN 15	BRN/YEL	TCU-35
8	DIG IN 16	BRN/PNK	TCU-36

C-8 ANA IN, DIG AND PWM OUTPUT CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	ANA IN 2	YEL/RED	TCU-46
2	ANA IN 3	YEL/LT.GRN	TCU-47
3	ANA IN 4	YEL/LT.BLU	TCU-48
4	ANA IN 5	YEL/WHT	TCU-49
5	PWM 5	VIO/WHT	TCU-51
6	PWM 6	VIO/ORN	TCU-52
7	DIG OUT 5	PNK/WHT	TCU-55
8	DIG OUT 6	PNK/ORN	TCU-56

C6 POWER AND CAN CONNECTOR 358			
PIN	CIRCUIT FUNCTION	COLOR	NOTES
1	RED	BRN	
2	BLK	WHITE	
3	WHT/RED	BLU	
4	WHT/BLK	BLK	

C-5 SENSOR INTERFACE CONNECTOR 357			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
1	SW +12V SW	YEL	
2	BELT -UP SENSOR	GRY/ORN	BELT UP SENSOR
3	GND	BLK	
4	GND	BLK	
5	SEAT SWITCH	GRY/YEL	SEAT SWITCH
6	+12V SW	YEL	
7	TURTLE SW	BRN/BLK	TURTLE SW
8	GND	BLK	

C1 TRANSMISSION CONNECTOR 2600 TO 4170 STAND ALONE			
PIN	CIRCUIT FUNCTION	COLOR	CONNECTS TO
A	SHIFT SOL A (1-2)	PNK/BLK	TCU-53
B	SHIFT SOL B-(2-3)	PNK/RED	TCU-54
C	LINE PRESSURE +	YEL (18 AWG)	TCU-18
D	LINE PRESSURE -	VIO/BLK	TCU-11
E	TCC, T-2, 2-3, 3-2 +	YEL (18 AWG)	TCU-19, S1
F	IMS A	GRY/BLK	TCU-2
G	IMS C	GRY/RED	TCU-3
H	IMS B	GRY/GRN	TCU-4
J	IMS P	GRY/LT.BLU	TCU-5
K	TURBINE SPEED +	ORN/LT.GRN	TCU-38
L	ATF TEMP +	YEL/ORG	TCU-50
M	ATF TEMP -	BLK/WHT	TCU-9
N	IMS GND	BLK/WHT	TCU-37, S7
P	NC	NC	NC
R	FWD CL	VIO/LT.GRN	TCU-13
S	REV CL	VIO/LT.BLU	TCU-14
T	TCC ON/OFF	VIO/WHT	TCU-41
U	TCC PWM	VIO/RED	TCU-12
V	TURBIN SPEED -	BLK/WHT	TCU-37, S7
W	NC	NC	NC

C4 BULKHEAD CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN1 L	WHT/BLK	TCU-16, S4
2	SIGNAL GND	BLK/WHT	TCU-37, S7
3	RPM	ORN/BLK	TCU-24,
4	SEN GND	BLK/WHT	TCU-37, S7
5	DIG IN -5	GRY/WHT	TCU-6
6	+5V SEN	RED/WHT	TCU-21
7	CAN1 H	WHT/RED	TCU-15
8	CHECK TRANS	PNK/LT.GRN	TCU-40
9	TPS	YEL/BLK	TCU-45
10	+12V BATTERY	RED	TCU-20
11	+12 VOLTS IGNITION	YEL	TCU-19,S1
12	CHASSIS GND	BLK	TCU-42

C3 OPPTIONAL COM NOT REQUIRED FOR USE			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	SERIAL RX	RED	TCU-27
B	SIGNAL GND.	WHT	TCU-28
C	SERIAL TX	BLK	TCU-26

LABEL DEFINITION TABLE		
NUM	NAME	PART #
L1	TCM-4890-001 4170E 2010+	P-372
L2	TRANSMISSION CONNECTOR	WRE-8500
L3	TOSS	WRE-8500
L4	BULKHEAD CONNECTOR	WRE-8500
L5	OPTIONAL COM NOT REQUIRED FOR USE	WRE-8500
L6	SENSOR INTERFACE CONNECTOR	P-357
L7	POWER AND CAN CONNECTOR	P-358
L8	EXTRA TERMINATION CONNECTOR	P-371
L9	DIGITAL INPUT CONNECTOR	9-399
L10	ANA IN, DIG AND PWM OUTPUT CONNECTOR	P-400

LOOM DEFINITION TABLE			
LOCATION	DISCRPTION	LENGTH	PART#
LOOM1	3/4" BLACK CONVOLUTED LOOM	6.5"	WRE-3005
LOOM2	1/2" BLACK CONVOLUTED LOOM	17.5"	WRE-3003
LOOM3	1/4" BLACK CONVOLUTED LOOM	17.5"	WRE-3000
LOOM4	1/2" BLACK CONVOLUTED LOOM	32"	WRE-3003
LOOM5	1/2" BLACK CONVOLUTED LOOM	8"	WRE-3000
LOOM6	1/2" BLACK CONVOLUTED LOOM	39"	WRE-3003
LOOM7	3/8" BLACK CONVOLUTED LOOM	10"	WRE-3002

C-3 CAP LAPTOP CALIBRATION CONNECT CAP			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	12129615	
3	CAVITY PLUG	12059168	DK.RED
1	SECONDARY LOCK	12052845	
1	PIN BLOCKING PLUG		

PROVIDE A LAPTOP CALIBRATION CONNECT PROTECTIVE CAP

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	BLACK
S2	GROUND	YELLOW
S3	CAN HIGH	WHT/RED
S4	CAN LOW	WHT/BLK
S5	12 VOLTS SWITCHED	YELLOW
S6	GROUND	BLACK
S7	SIGNAL GND	BLK/WHT

SPLICE INFORMATION		
S-#	FUNCTION	COLOR
S1	12 VOLTS SWITCHED	YELLOW

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	Release	6/14/16	FD	
1A	ADD C7	11/2/16	FD	
2A	EXTRA I/O CON CHANGE	1/30/17	FD	
2B	TCU-10 COLOR CHANGE	3/8/17	FD	
2B	CHANGE I/O CONNECTOR	3/8/17	FD	

Print Date  
5/12/17  
1700

- APPLICABLE STANDARDS
- ASME Y14.100-200
  - ASME Y14.5M-1994
  - IPC/WHMA-A-620A-CLASS 2
  - MARK IAW MIL-STD-130.
- NOTES:
- 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH.
  - 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
  - 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
  - 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT!
  - 5.) PLACE TAGS NO MORE THAN 2" FROM UNTERMINATED END. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
  - 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**4L70E 2010+ SPECIAL TRANSMISSION MOUNTED TCU-2800 [ANTI COLLISION]**

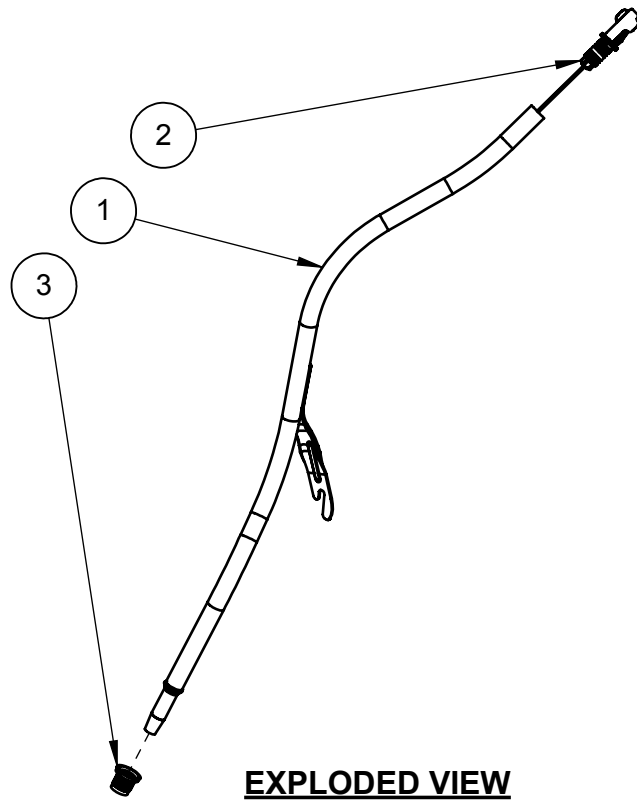
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DRAWN BY: FRED D.	DATE: 11/1/2016	APPROVED BY: XXXXX	DATE: SHEET 4 OF 12

**TRN7011 - 4LHD DIPSTICK KIT**

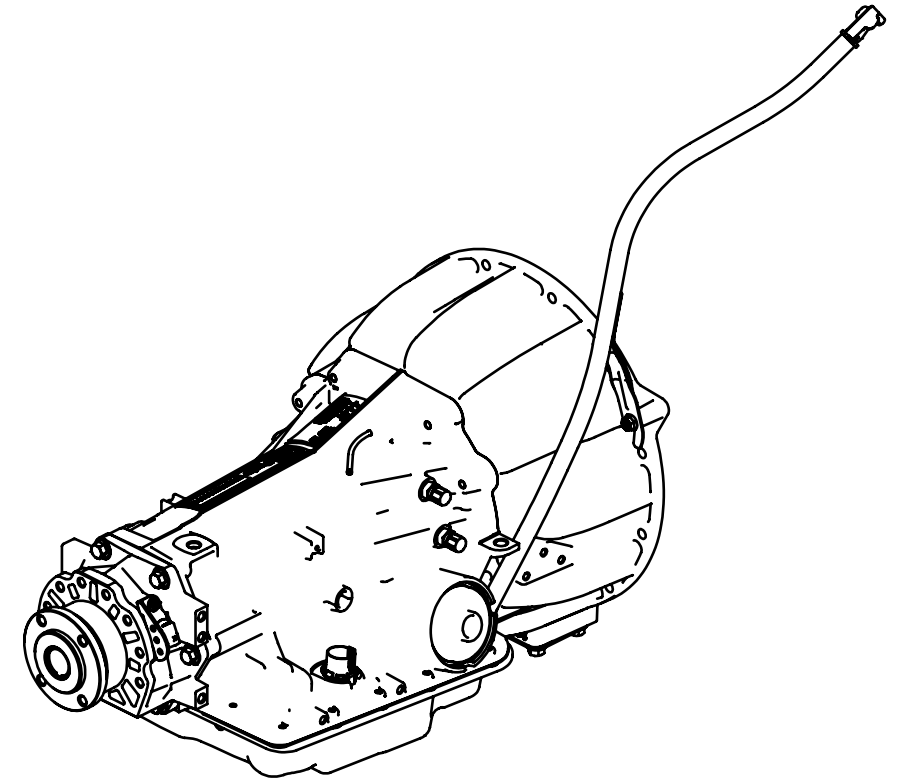
BOM #	DESCRIPTION	PCS PART #	QTY
1	4LHD DIPSTICK TUBE	TRN7031	1
2	4LHD DIPSTICK INDICATOR	TRN7032	1
3	4LHD DIPSTICK SEAL	TRN7030	1

**NOTES:**

- DO NOT INSTALL ANY PARTS IF THEY SHOW MANUFACTURING DEFECTS OR SHIPPING DAMAGE.
- DURING INSTALLATION ENSURE ALL FASTENERS ARE PROPERLY TORQUED AND THREADLOCKER APPLIED.
- FOR A PROPER AND ACCURATE ATF (AUTOMATIC TRANS FLUID) LEVEL READING ENSURE THE ATF IS TO OPERATING TEMPERATURE AND THE ENGINE IS RUNNING. FOR MORE INFORMATION SEE THE "PCS 4LHD TECHNICIANS GUIDE" OR THE "PCS 4LHD APPLICATION GUIDE".
- BOTH TRN7011 AND TRN7089 ARE COMPATIBLE WITH 4LHD / 4LHDX TRANSMISSIONS.



**EXPLODED VIEW**  
STANDARD DIPSTICK  
SCALE: 1:8



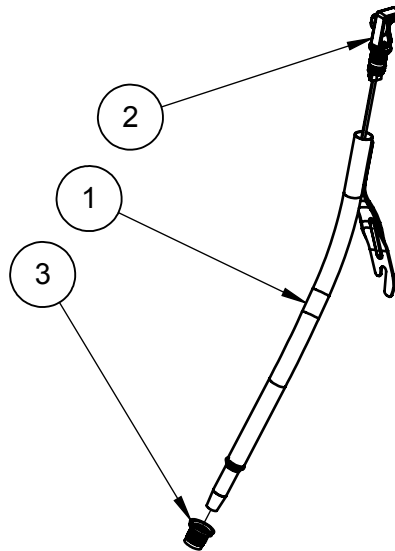
**ISO VIEW**  
INSTALLED KIT  
SCALE: 1:8

**TRN7089 - 4LHD DIPSTICK KIT**

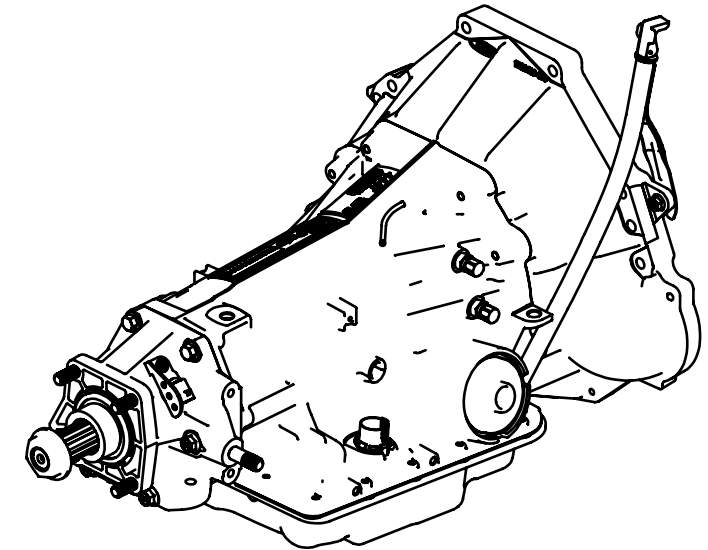
BOM #	DESCRIPTION	PCS PART #	QTY
1	4LHD DIPSTICK INDICATOR - SHORT	TRN0225	1
2	4LHD DIPSTICK TUBE - SHORT	TRN0224	1
3	4LHD DIPSTICK SEAL	TRN7030	1

**NOTES:**

- DO NOT INSTALL ANY PARTS IF THEY SHOW MANUFACTURING DEFECTS OR SHIPPING DAMAGE.
- DURING INSTALLATION ENSURE ALL FASTENERS ARE PROPERLY TORQUED AND THREADLOCKER APPLIED.
- FOR A PROPER AND ACCURATE ATF (AUTOMATIC TRANS FLUID) LEVEL READING ENSURE THE ATF IS TO OPERATING TEMPERATURE AND THE ENGINE IS RUNNING. FOR MORE INFORMATION SEE THE "PCS 4LHD TECHNICIANS GUIDE" OR THE "PCS 4LHD APPLICATION GUIDE".
- BOTH TRN7011 AND TRN7089 ARE COMPATIBLE WITH 4LHD / 4LHDX TRANSMISSIONS.



**EXPLODED VIEW**  
SHORT DIPSTICK  
SCALE: 1:8



**ISO VIEW**  
INSTALLED KIT  
SCALE: 1:8



DESCRIPTION	4LHD DIPSTICK KITS	
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**PROPRIETARY AND CONFIDENTIAL**  
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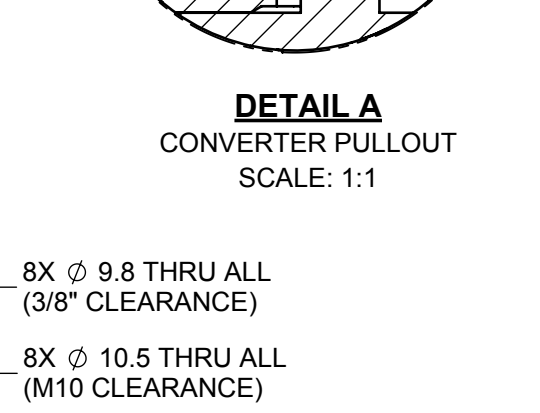
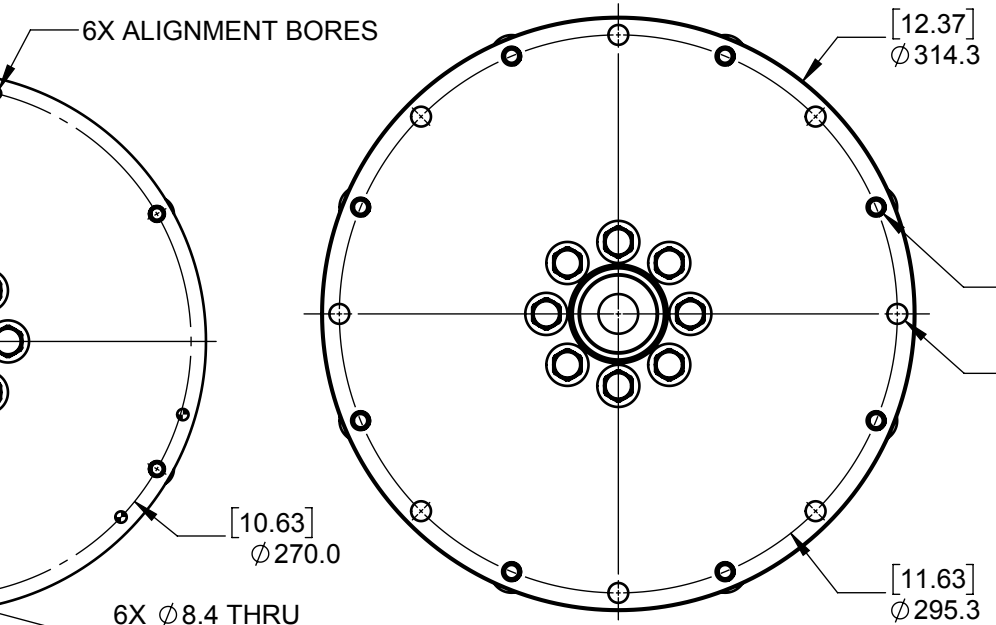
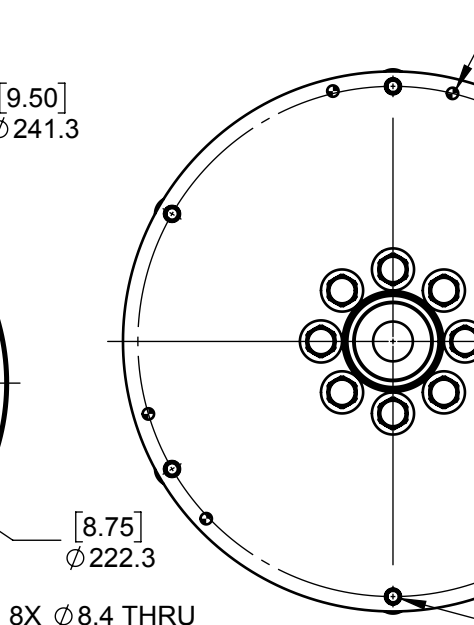
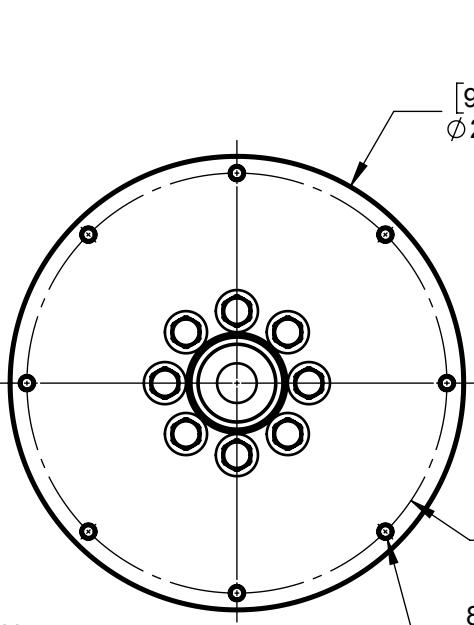
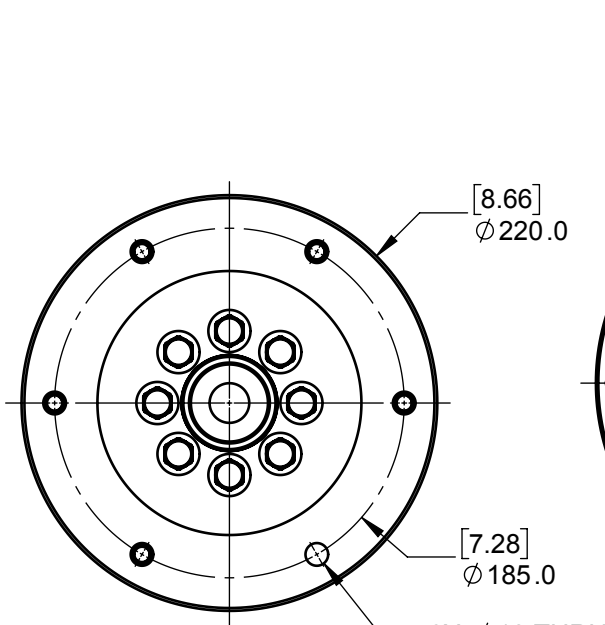
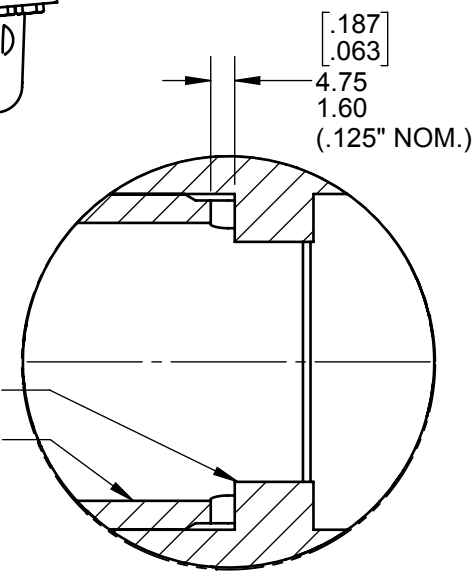
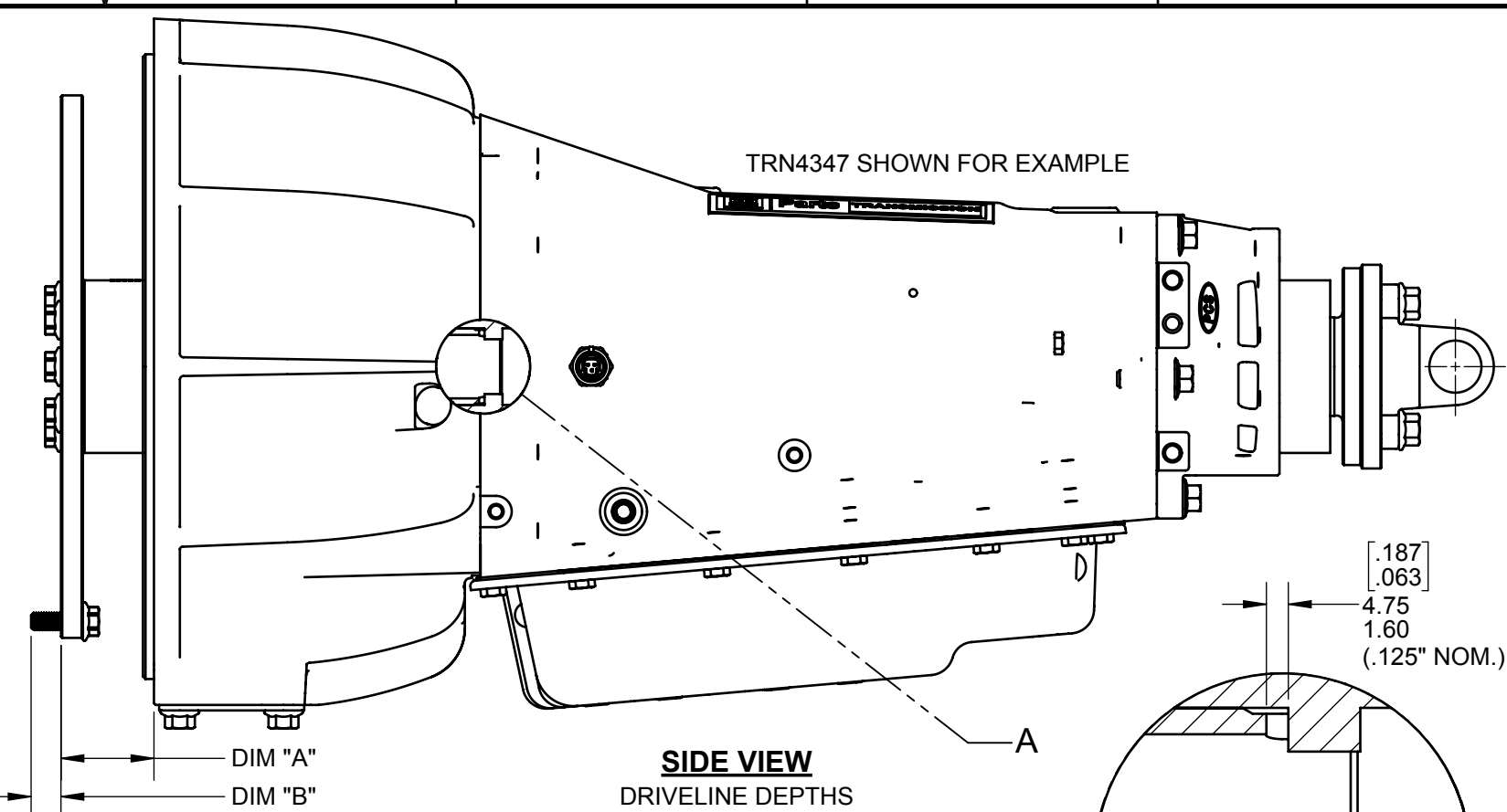
DRAWN BY	MFP	9/15/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		
SCALE: 1:8	SHEET 1 OF 1	

USED ON	NEXT ASSEMBLY	
SIZE	DRAWING NO.	REV
<b>B</b>	ITEMS SOLD SEPARATELY	1

PCS P/N	"A" - 4LHD / 258mm	"A" - 4LHDX / 300mm	FLYWHEEL	BOLT PITCH	BOLT, DIM "B" mm
TRN8205	83.4	94.4	FORD DSG	M8X1.25	12.3
TRN8227	64.3	75.3	SAE10	NOTE 3	NOTE 3
TRN8222	53.8	64.8	SAE10	NOTE 3	NOTE 3
TRN8216	51.9	62.9	SAE10	3/8-16"	9.5
TRN8224	39.4	50.4	SAE10	NOTE 3	NOTE 3
TRN8310	36.9	47.9	SAE10	3/8-24"	22.4
TRN8217	36.8	47.8	SAE10	3/8-16"	7.2
TRN8218	30.4	41.4	SAE7.5	5/16-18"	15.9
TRN8220	28.5	39.5	SAE7.5	5/16-18"	12.7
TRN8410	26.4	37.4	SAE10	M10X1.5	12.3
TRN8225	25.1	36.1	SAE10	NOTE 3	NOTE 3
TRN8412	23.1	34.1	SAE10	M10X1.5	12.3
TRN8226	15.0	26.0	SAE10	NOTE 3	NOTE 3
TRN8219	12.9	23.9	SAE10	M10X1.25	12.3
TRN8215	12.2	23.2	BBS	M10X1.25	15.0
TRN8221	10.4	21.4	SAE10	NOTE 3	NOTE 3
TRN8223	3.8	14.8	BBS	M10X1.25	15.0
TRN8200	1.5	12.5	SAE10	M10X1.50	12.3

**NOTES:**

1. INTERPRET THIS DRAWING PER ASME Y14.5-2009.
2. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGE.
3. BEFORE ORDERING ANY OF THE KITS ABOVE, IT IS CRITICAL TO CHECK BOTH THE DISTANCE BETWEEN THE FLYWHEEL AND FLYWHEEL-HOUSING MATING FACES AS WELL AS THE BOLT THREADS AND DEPTHS. SOME KITS DO NOT INCLUDE FLYWHEEL MATING HARDWARE TO AVOID THIS CONFUSION. HARDWARE AVAILABLE SEPARATELY.
4. CONTACT PCS IF ANY COMBINATION OF DEPTH (DIM "A") AND HARDWARE DO NOT MATCH FOR YOUR APPLICATION.
5. DURING TRANSMISSION TO ENGINE INSTALLATION IT IS CRITICAL TO VERIFY THE TORQUE CONVERTER PULLOUT. FAILURE TO DO SO WILL VOID THE WARRANTY AND MAY CAUSE PERMANENT DAMAGE TO THE TRANSMISSION. THIS PROCEDURE CAN BE FOUND IN THE *PCS 4LHD TECHNICIANS GUIDE* OR THE *PCS 4LHD APPLICATION GUIDE*.



**FRONT VIEW**  
BBS / SAE5 ADAPTER  
SCALE: 1:4

**FRONT VIEW**  
SAE7.5 ADAPTER  
SCALE: 1:4

**FRONT VIEW**  
FORD DSG ADAPTER  
SCALE: 1:4

**FRONT VIEW**  
SAE10 ADAPTER  
SCALE: 1:4

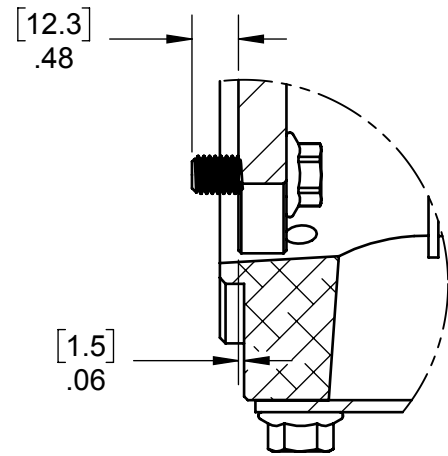
		Powertrain Control Solutions Engineering the future of driveline control	
DESCRIPTION			
<b>ENGINE SPACER CHART</b>			
USED ON	NEXT ASSEMBLY	SIZE	DRAWING NO.
		<b>B</b>	N/A
DRAWN BY	MFP	6/1/2018	REV
ENG APPR.			5
DIMENSIONS ARE IN INCHES		SCALE: 1:12	SHEET 1 OF 1

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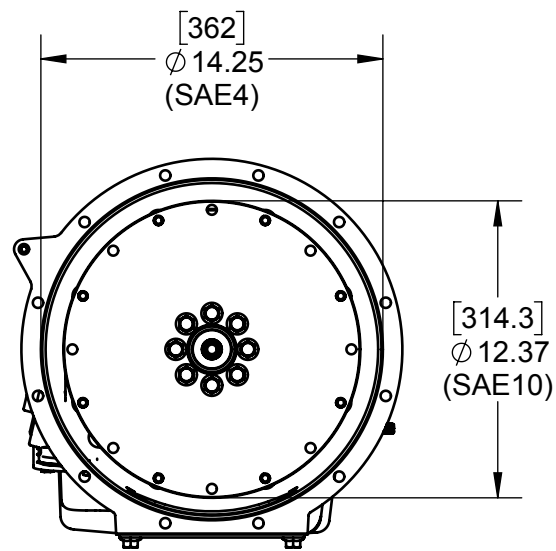
BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SAE10 FLYWHEEL ADAPTION PLATE	TRN7001	1
2	29.2mm ENGINE SPACER	TRN7000	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	M10X1.5X25mm FLANGED HEX BOLT	TRN7500	8

**NOTES:**

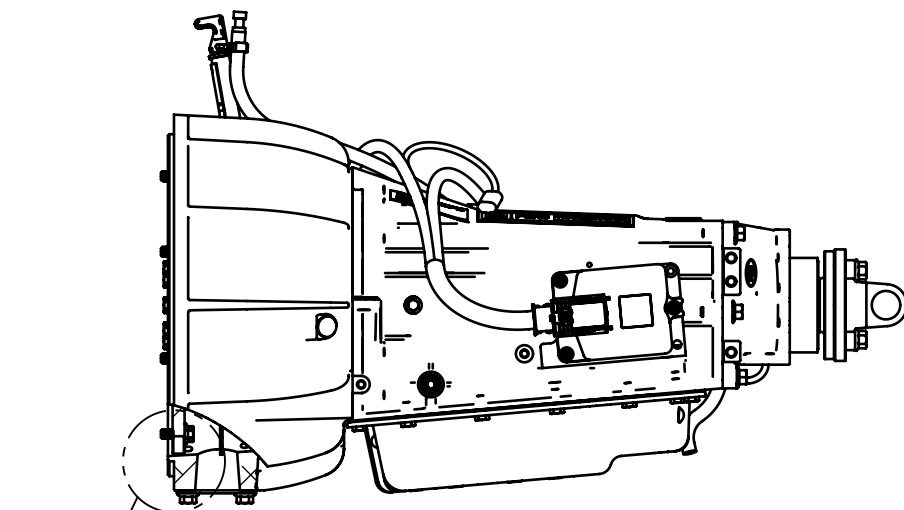
- THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0515 TORQUE CONVERTER.
- WITH THE 258mm TORQUE CONVERTER (TRN0515) THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 1.5mm (0.059") BEYOND THE SAE4 BELLHOUSING MOUNTING FACE.
- FLYWHEEL INTERFACE BOLTS MAY VARY. FOR FLYWHEELS NOT USING M10X1.5 PITCH BOLTS, CONTACT PCS ENGINEERING FOR AN APPROPRIATE KIT.
- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



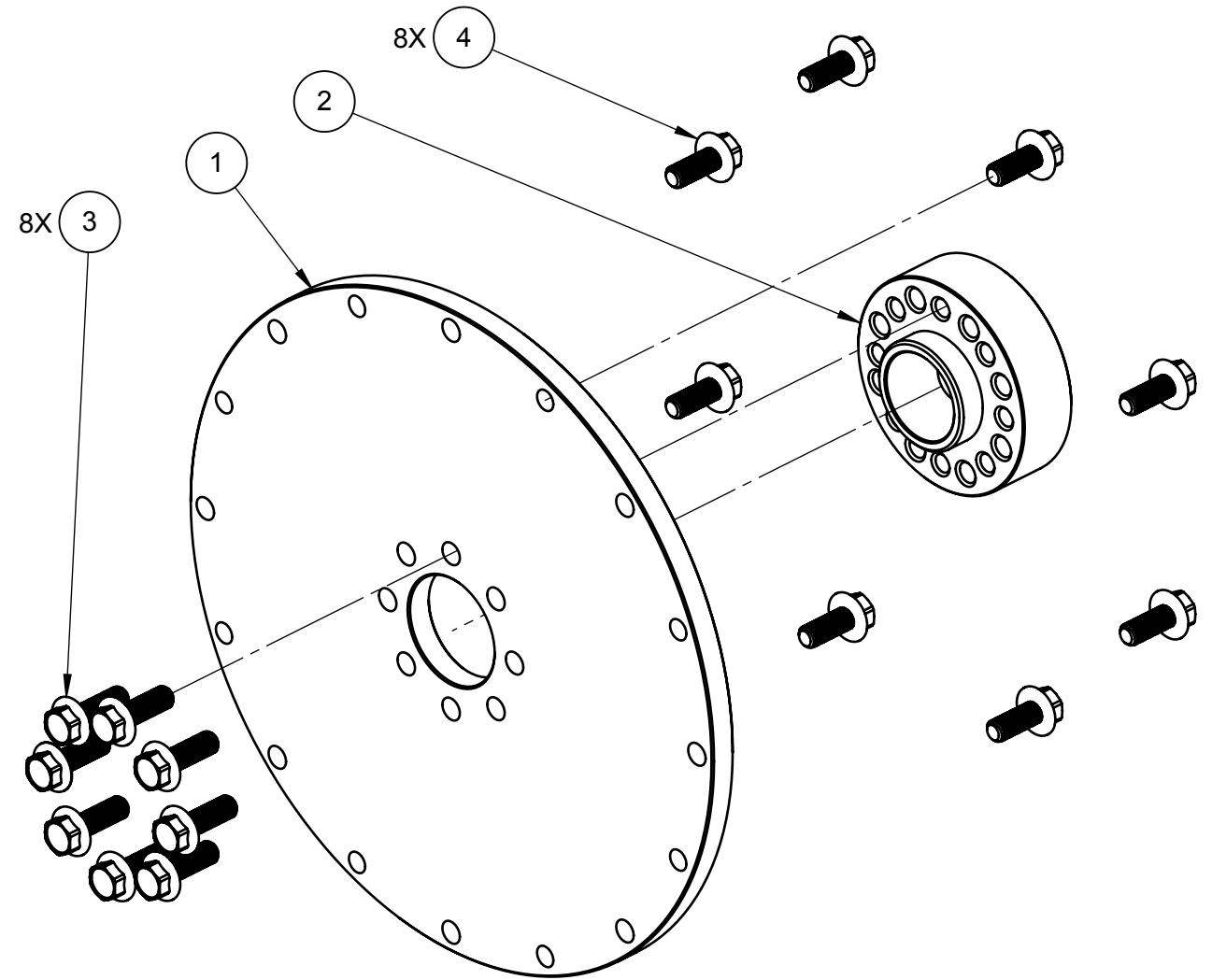
**DETAIL A**  
FLYWHEEL DEPTH  
SCALE: 1:2



**FRONT VIEW**  
ASSEMBLED TRANSMISSION  
SCALE: 1:8



**SIDE VIEW**  
ASSEMBLED TRANSMISSION  
SCALE: 1:8



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2



DESCRIPTION  
**41.9mm SAE10 FLYWHEEL ADAPTION KIT**

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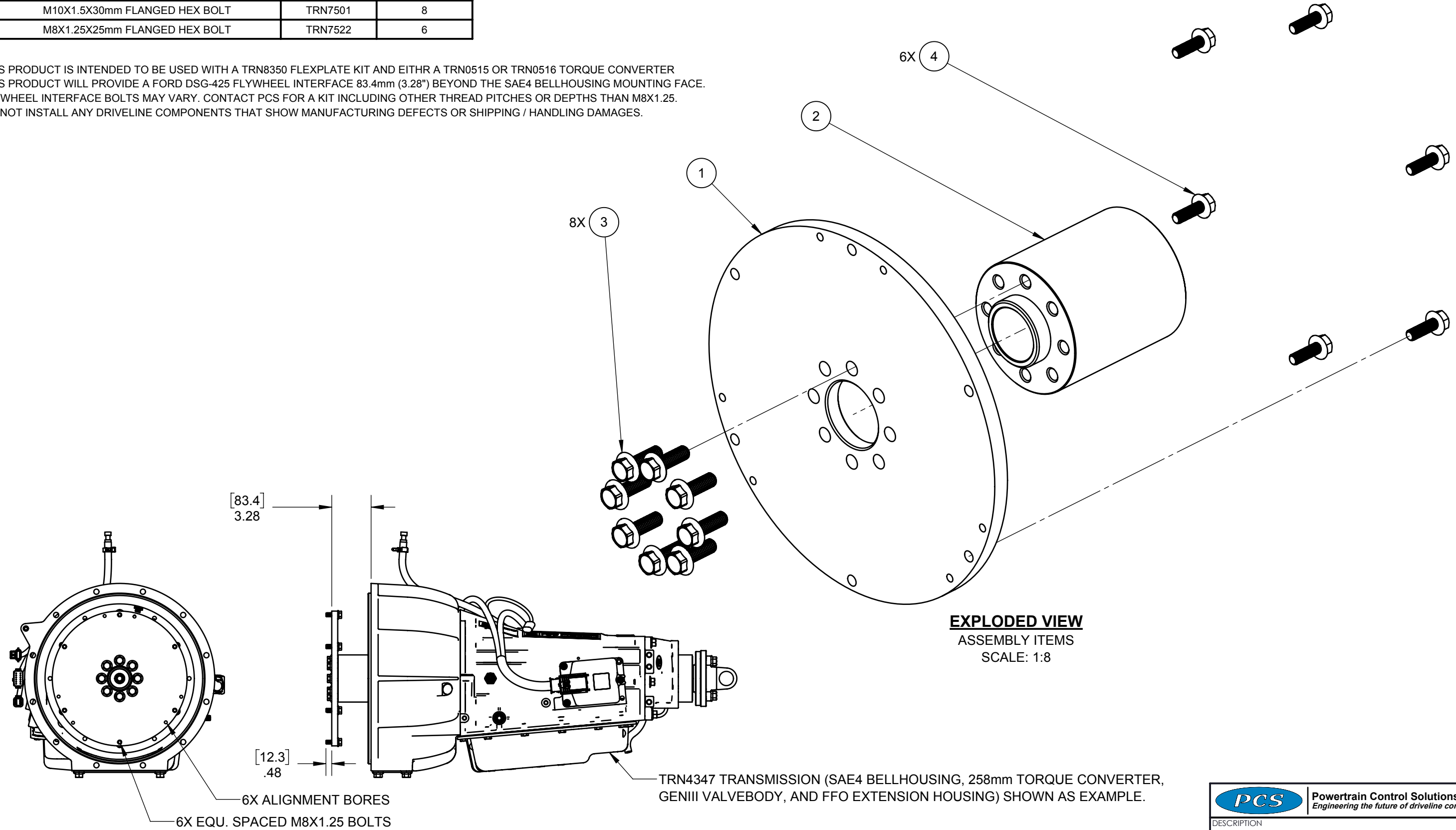
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DRAWN BY	MFP
ENG APPR.	2/4/2019
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8200	B

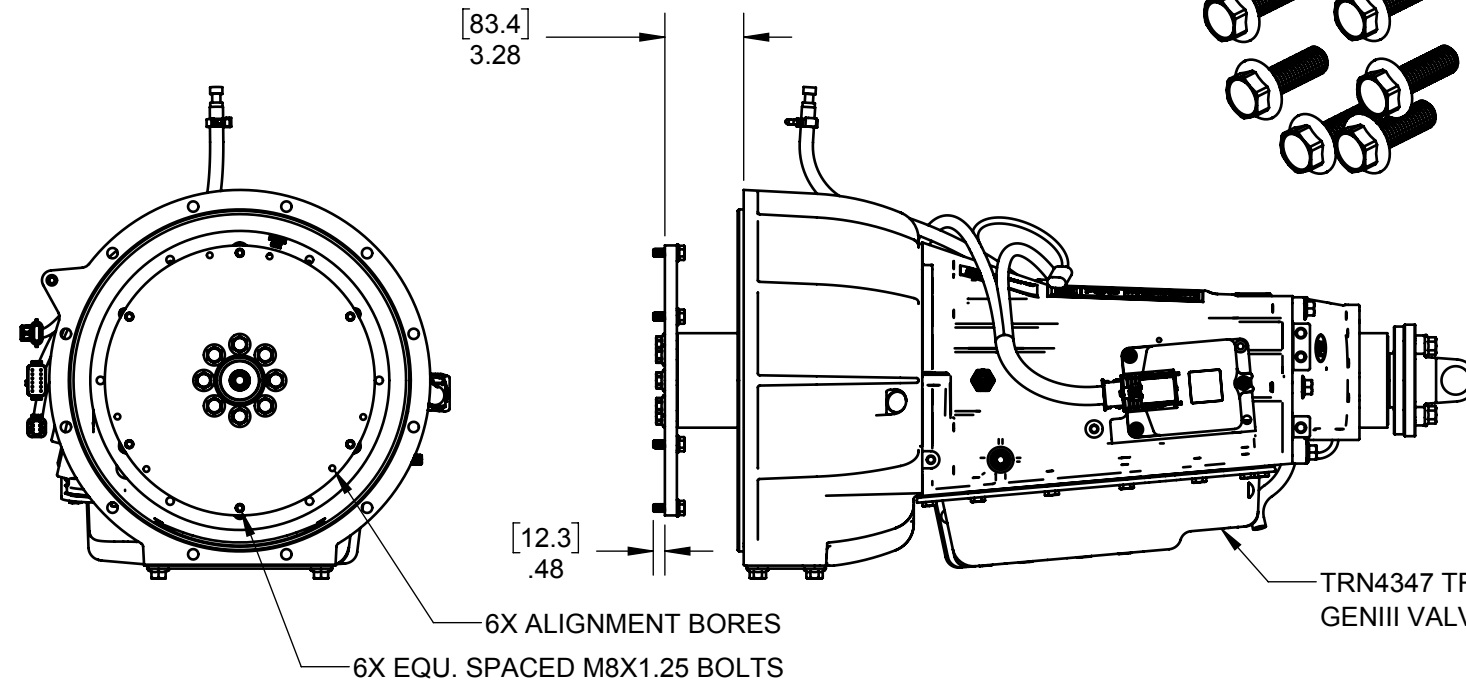
BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" FORD DSG ADAPTER PLATE	TRN7003	1
2	111.1mm ENGINE SPACER	TRN7002	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	M8X1.25X25mm FLANGED HEX BOLT	TRN7522	6

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER
2. THIS PRODUCT WILL PROVIDE A FORD DSG-425 FLYWHEEL INTERFACE 83.4mm (3.28") BEYOND THE SAE4 BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. CONTACT PCS FOR A KIT INCLUDING OTHER THREAD PITCHES OR DEPTHS THAN M8X1.25.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:8



**TRANSMISSION VIEWS**  
ASSEMBLED ITEMS  
SCALE: 1:8

TRN4347 TRANSMISSION (SAE4 BELLHOUSING, 258mm TORQUE CONVERTER, GENIII VALVEBODY, AND FFO EXTENSION HOUSING) SHOWN AS EXAMPLE.



DESCRIPTION  
**123.8mm FORD-DSG425 FLYWHEEL ADAPTION KIT**

**PROPRIETARY AND CONFIDENTIAL**  
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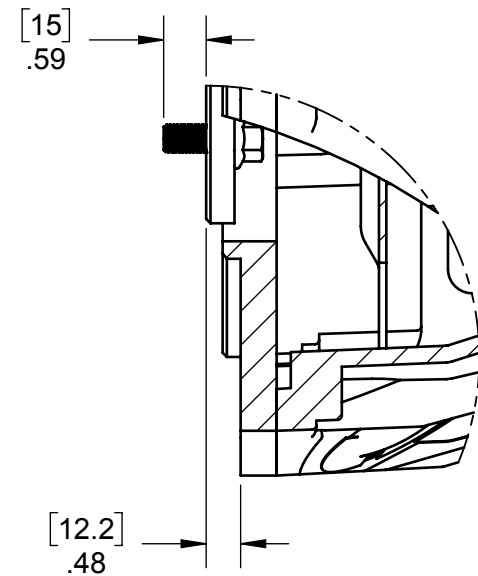
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 9/4/2018
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8205	A

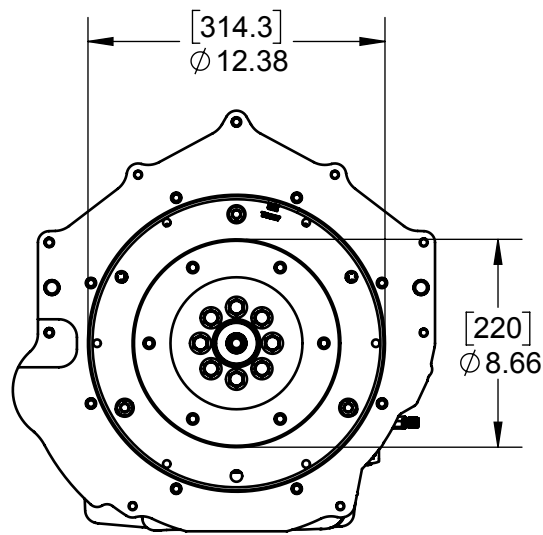
BOM #	DESCRIPTION	PCS PART #	QTY
1	10mm BBS (SAE5) FLYWHEEL ADAPTION PLATE	TRN7020	1
2	42.6mm ENGINE SPACER	TRN7019	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	M10X1.5X25mm FLANGED HEX BOLT	TRN7535	6

**NOTES:**

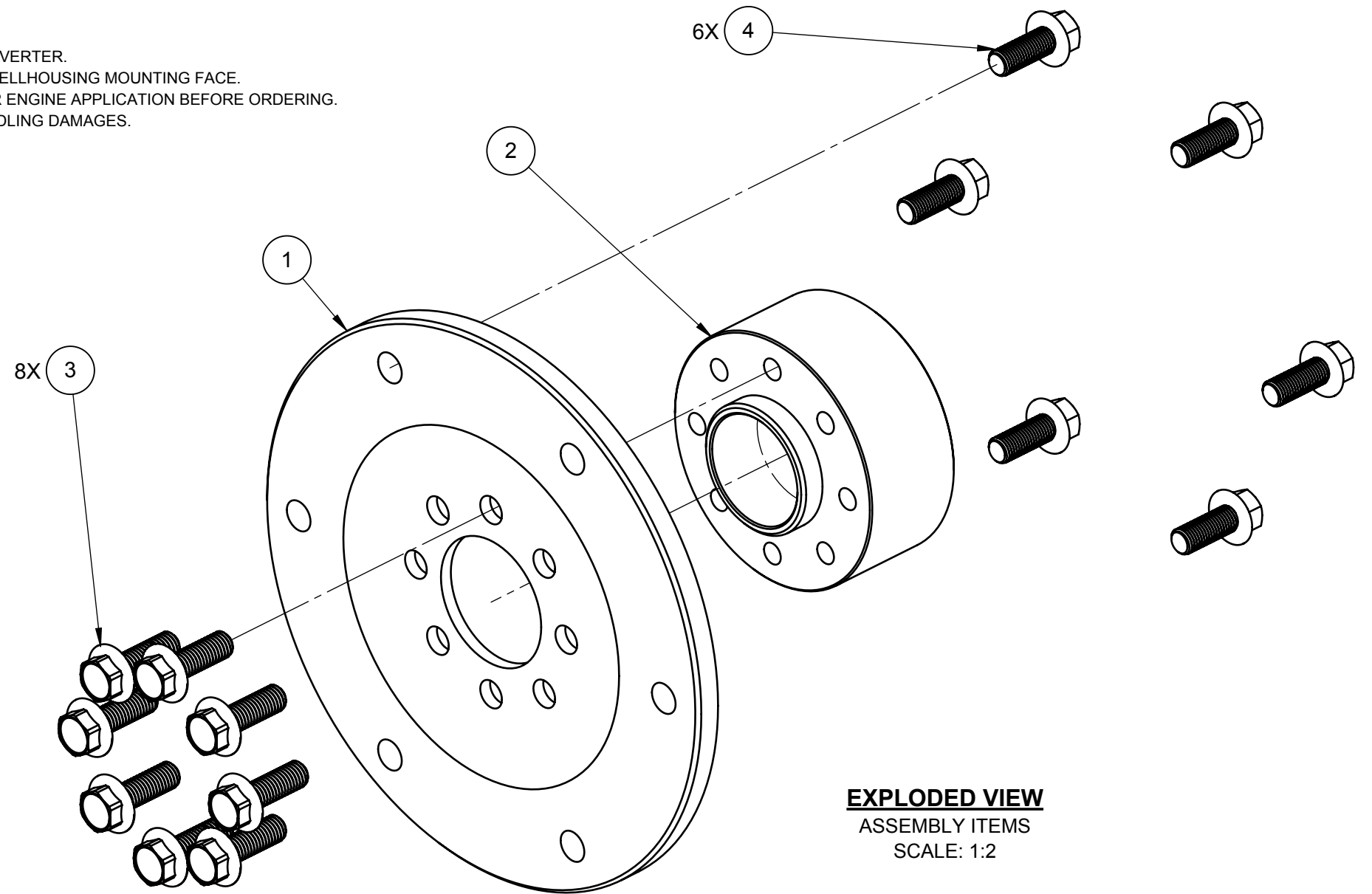
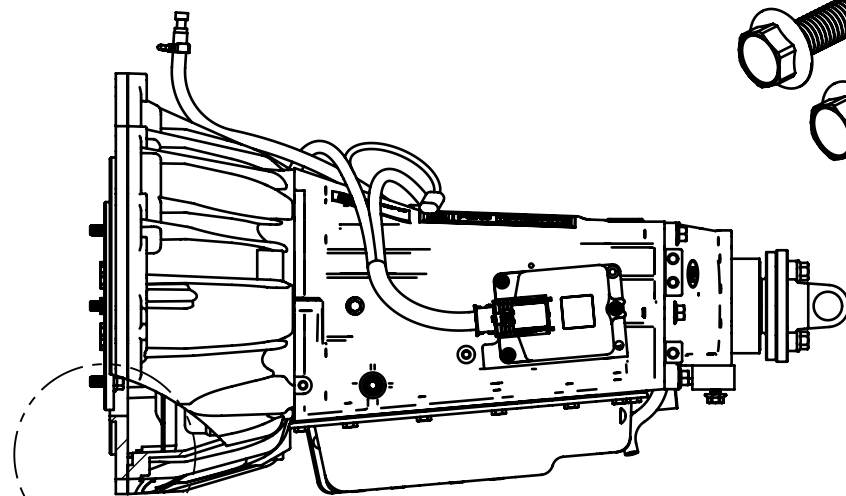
- A. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0515 TORQUE CONVERTER.
- B. THIS PRODUCT WILL PROVIDE A BBS (SAE5) FLYWHEEL INTERFACE 0.479" (12.2mm) BEYOND THE SAE4 BELLHOUSING MOUNTING FACE.
- C. FLYWHEEL INTERFACE BOLTS MAY VARY. CONFIRM THE FLYWHEEL THREAD SIZE AND DEPTH ON YOUR ENGINE APPLICATION BEFORE ORDERING.
- D. DO NOT INSTALL DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**DETAIL A**  
FLYWHEEL DEPTH  
SCALE: 3:8



**TRANSMISSION VIEWS**  
ASSEMBLED ITEMS  
SCALE: 1:8



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 5/2/2019
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1



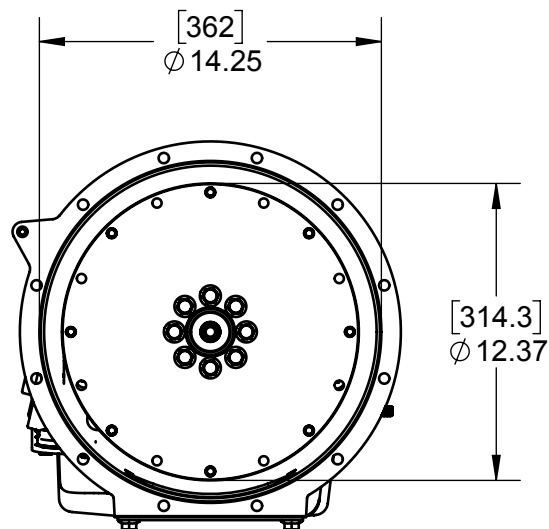
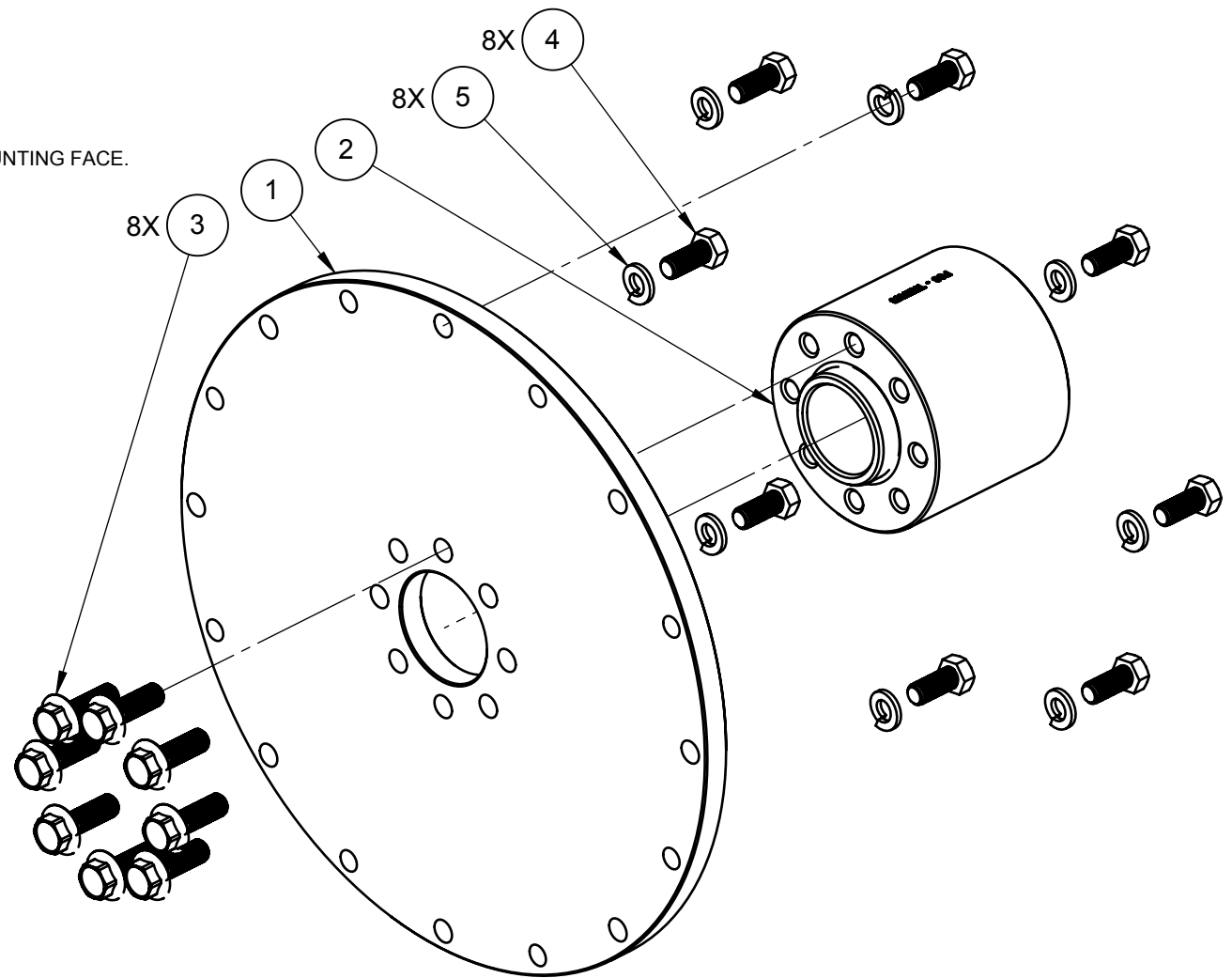
DESCRIPTION	
52.6mm BBS (SAE5) FLYWHEEL ADAPTION KIT	
SIZE	DRAWING NO.
<b>B</b>	TRN8215
REV	A



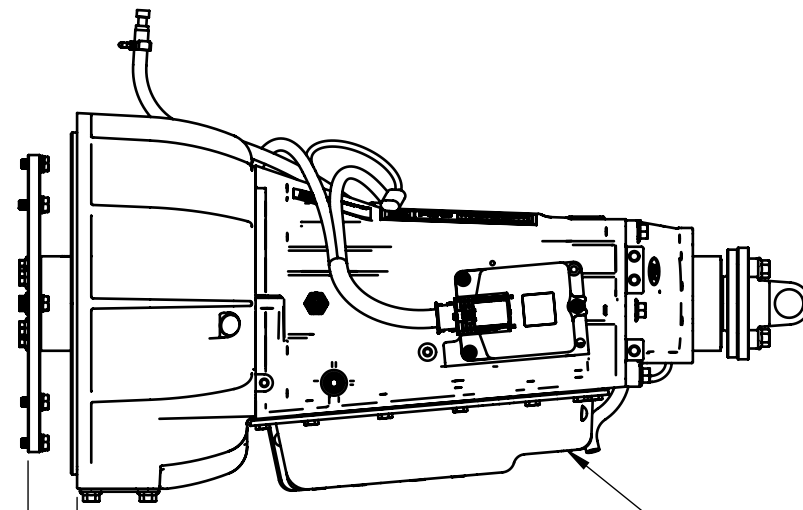
BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SAE10 FLYWHEEL ADAPTION PLATE	TRN7001	1
2	79.6mm ENGINE SPACER	TRN7073	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	3/8-16 X 0.875" HEX BOLT	TRN7538	8
5	3/8" SPLIT LOCK WASHER	TRN7515	8

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0515 TORQUE CONVERTER.
2. WITH THE 258mm TORQUE CONVERTER (TRN0515) THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE BEYOND THE SAE4 BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. FOR FLYWHEELS NOT USING 3/8-16" PITCH BOLTS, CONTACT PCS ENGINEERING FOR AN APPROPRIATE KIT.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**FRONT VIEW**  
ASSEMBLED TRANSMISSION  
SCALE: 1:8



**SIDE VIEW**  
ASSEMBLED TRANSMISSION  
SCALE: 1:8

TRN4347 TRANSMISSION (SAE4 BELLHOUSING, 258mm TORQUE CONVERTER, GENIII VALVEBODY, AND FFO EXTENSION HOUSING) AS EXAMPLE. SAE5 AND SAE3 OPTIONS AVAILABLE THOUGH REQUIRE A DIFFERENT SPACER KIT.



DESCRIPTION  
**92.3mm SAE10 FLYWHEEL ADAPTION KIT**

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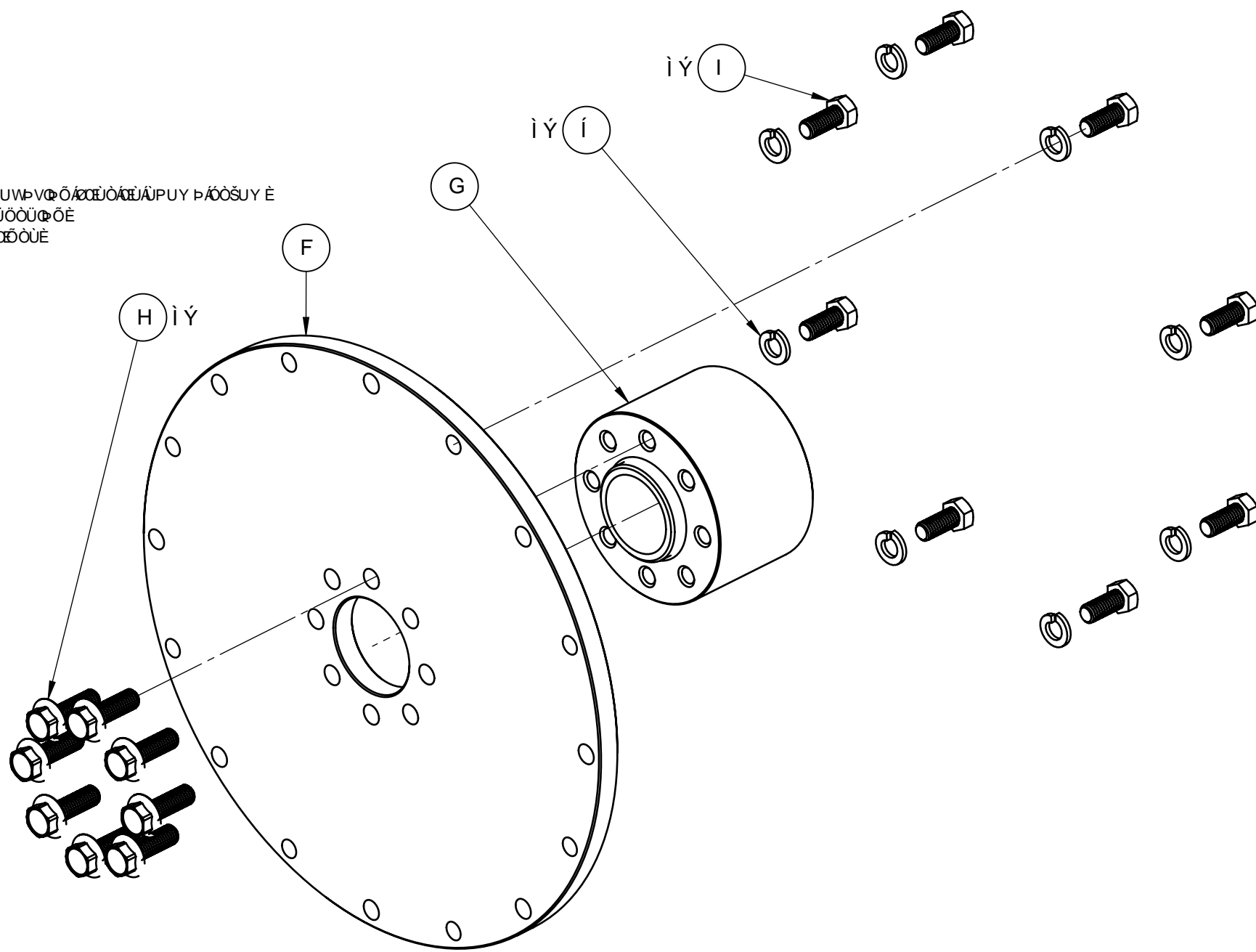
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 2/7/2019
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:4 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8216	B

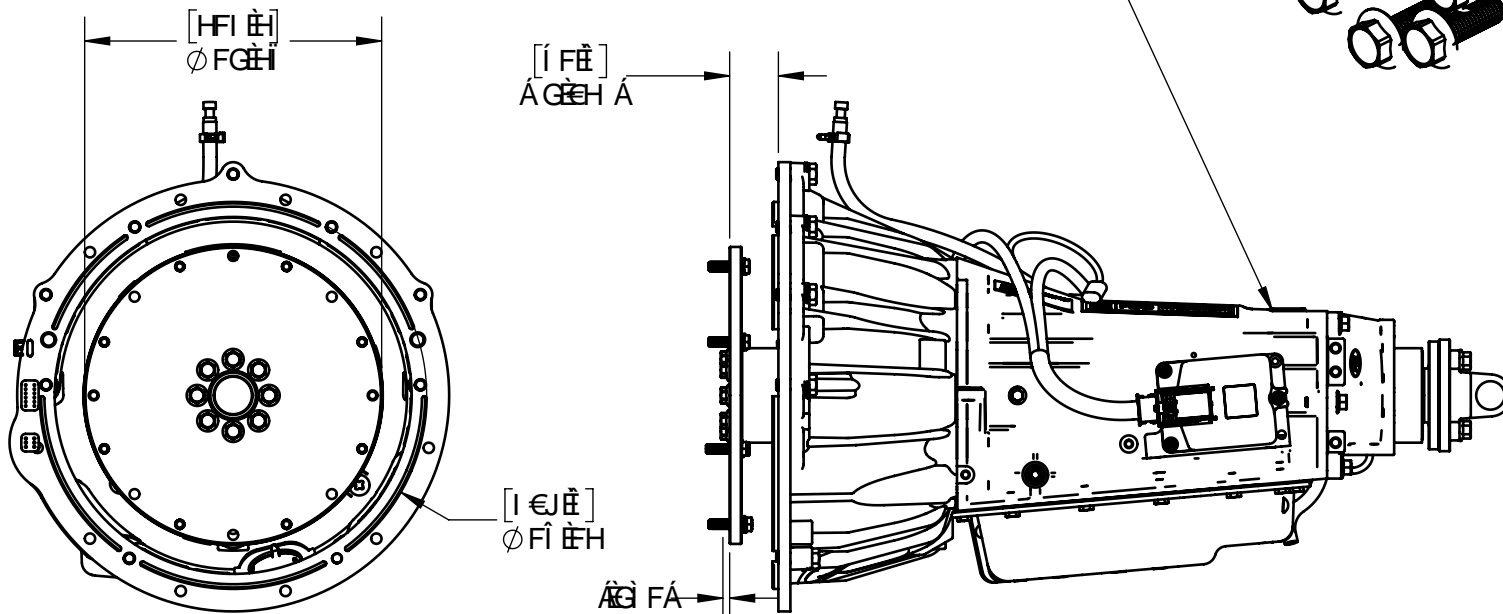
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F	ΕΞΑΙΟΦΕΛΣΥΥ ΡΟΟΣΑΠΟΕΥΟΥΑΙΣΑ/Ο	VÜPì €€F	F
G	Ï Ì È { { ΔΟΡΟΦΟΑΙΥΑΕΟÙ	VÜPì €ì F	F
H	T FEYFÈ ÝHE { ΔΟΣΠΟΟΟΡΟΥΑΟΥSV	VÜPì í €F	ì
I	HÈ ÈÍ Á/ÁÈ Ì Í ÁΡΟΥΑΟΥSV	VÜPì í H	ì
Í	HÈ ÁSUÓSAÝ ΑΕΡΟÙ	VÜPì í Fí	ì

**BCH9G**

FÈ VPQÁÛÛÜÖWÓNÁ/ÁΠΝΟΡΟΟΔÁ/ÚΔΟÁWÚΔΟÁ QPÁVÜPì H È ΔΟΣΥΣ/ΟΣQVΠΟΑΠÜPÈ FÍ ÁUÛÜWÁΔÜPΧΟÛVÜÈ  
 GÈ VPQÁÛÛÜÖWÓNÁ/ÁΠΝΟΡΟΟΔÁ/ÚΔΟÁWÚΔΟÁ QPÁVÜPì H È ΔΟΣΥΣ/ΟΣQVΠΟΑΠÜPÈ FÍ ÁUÛÜWÁΔÜPΧΟÛVÜÈ  
 HÈ ΔΟΣΥΥ ΡΟΟΣΑΠΟΕΥΟΥΑΙΣΑ/Ο ΔΕΥΑΚΕΥÈ ΕΠΟΥΡΑΠΤ ÁΡΟÁ/ΡÜΔΟΑΙΖΟÁ/ΡÁUWÚÁΡΟΦΟΑΕÛΣΦΑΠ/ΑΟΟΑÛÜÖÙΦΟÈ  
 I È ÖUÁ/UVÁ/ΠÜVCSÖÜQÖSPÖÁUT ÜPÜPÖP VÜÁ/PCÁ/ÁPÜY ÁT ÇPWCÁEWÜΦΟΔΟΖΟÖVÁ/ÜÁ/ΡÜQÜΦΟÁP ÇPÖSPÖÁÇF ÇÈÖÙÈ



ÖT ÁSUÓSSPUWÜΦΟÁ QPÁVÜPì H È ΔΟΣΥΣ/ΟΣQVΠΟΑΠÜPÈ FÍ ÁUÛÜWÁΔÜPΧΟÛVÜÈ ÁΡΟΥΑΟΥSV  
 ÜÇDÍ ÁPÖÁÜÇDÍ ÁOÖSSPUWÜΦΟÁ/ÜVWÜPÜÁÇKÖSÇÖSÈ  
 I SPÖÁÇ { { ΔVUÛÜWÁΔÜPΧΟÛVÜÈ ÜÁÇKÖSÇÖSÈ



**HF5 BGA-GG-CB'J-9K G**  
 ÇÈÜÖT ÖSÖÖÁVÖT Ü  
 ÜÖÇSÖÁK

**9LD@898'J-9K**  
 ÇÈÜÖT ÖSÖÖÁVÖT Ü  
 ÜÖÇSÖÁK

DFC DF-5FM5B8 7CB: -89H5@  
 H: 9 B: CFA 5HC B 7C B H5-B98 B H-68F5K B: 4GH-9GC @DFC D9FMC: D7 G' 5BM  
 F9DFC 81 7HC B B D5FHCF 5G5 K <C @K #K C1 H#K 9K F #9B D9FA 6GC B C: D7 G-GDFC <-6#98\*

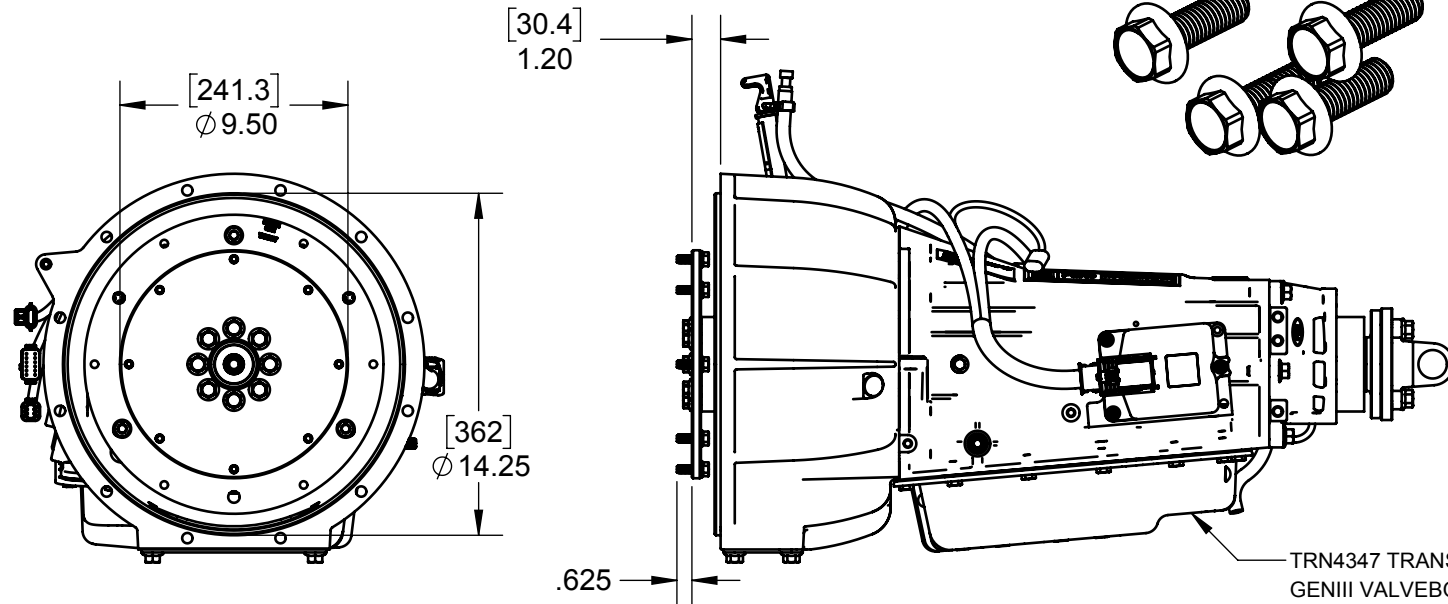
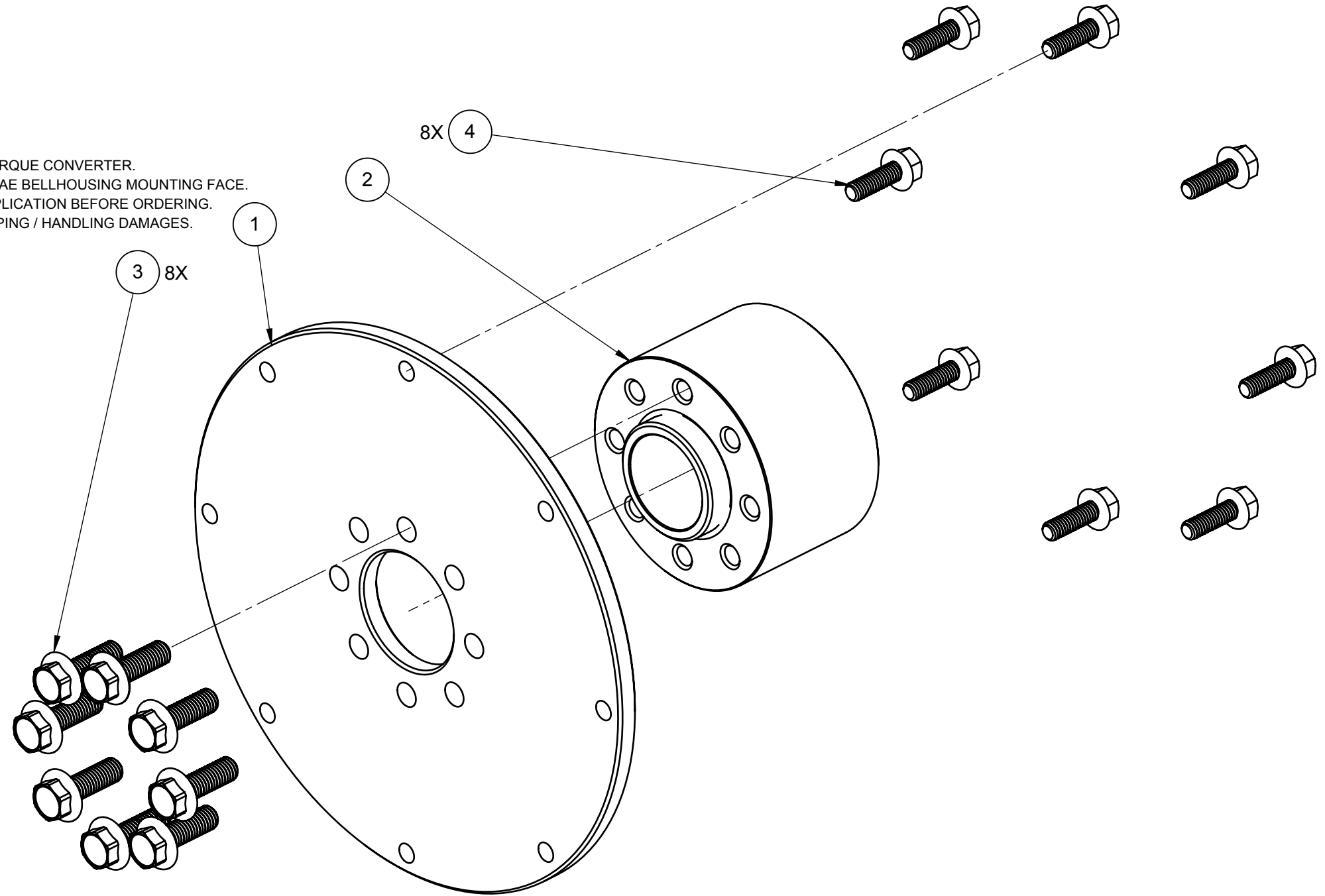
8A 9B GC BG5F9 B: B7 <9G	G7 5@9 %	Gc-99H% C: %
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		Dck YffUjb 7 cbifc Gc i Hcbg 9b JbYfJb J H YZ h fYcZfJ J JbYVcbifc										
89G7 F-DHCB												
Ï Ì È { { ΔΙΟΦΕΛΣΥΥ ΡΟΟΣΑ ÇÈÜÖVQΠÁSQ												
<table border="1"> <tr> <td>I G98 CB</td> <td>B 9LH5GG9A 6dM</td> </tr> </table>	I G98 CB	B 9LH5GG9A 6dM	<table border="1"> <tr> <td>8F5K B 6M</td> <td>A . D</td> <td>(#)#-#/#</td> </tr> <tr> <td>9B: 5DDF*</td> <td></td> <td></td> </tr> </table>	8F5K B 6M	A . D	(#)#-#/#	9B: 5DDF*			G&P <b>6</b>	8F5K B: BC* <b>VÜPì GFí</b>	F9J <b>7</b>
I G98 CB	B 9LH5GG9A 6dM											
8F5K B 6M	A . D	(#)#-#/#										
9B: 5DDF*												

BOM #	DESCRIPTION	PCS PART #	QTY
1	3/8" SAE7.5 FLYWHEEL ADAPTER PLATE	TRN7093	1
2	61.2mm ENGINE SPACER	TRN7092	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	5/16-18X1.00" FLANGED HEX BOLT	TRN7541	8

**NOTES:**

- THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0515 TORQUE CONVERTER.
- THIS PRODUCT WILL PROVIDE AN SAE7.5 FLYWHEEL INTERFACE 1.2" (30.4mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE.
- FLYWHEEL INTERFACE BOLTS MAY VARY. CONFIRM THE THREAD SIZE ON YOUR ENGINE APPLICATION BEFORE ORDERING.
- DO NOT INSTALL DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



TRN4347 TRANSMISSION (SAE4 BELLHOUSING, 258mm TORQUE CONVERTER, GENIII VALVEBODY, AND FFO EXTENSION HOUSING) AS EXAMPLE. SAE5 AND SAE3 OPTIONS AVAILABLE THOUGH REQUIRE A DIFFERENT SPACER KIT.



DESCRIPTION  
**70.8mm SAE7.5 FLYWHEEL ADAPTION KIT**

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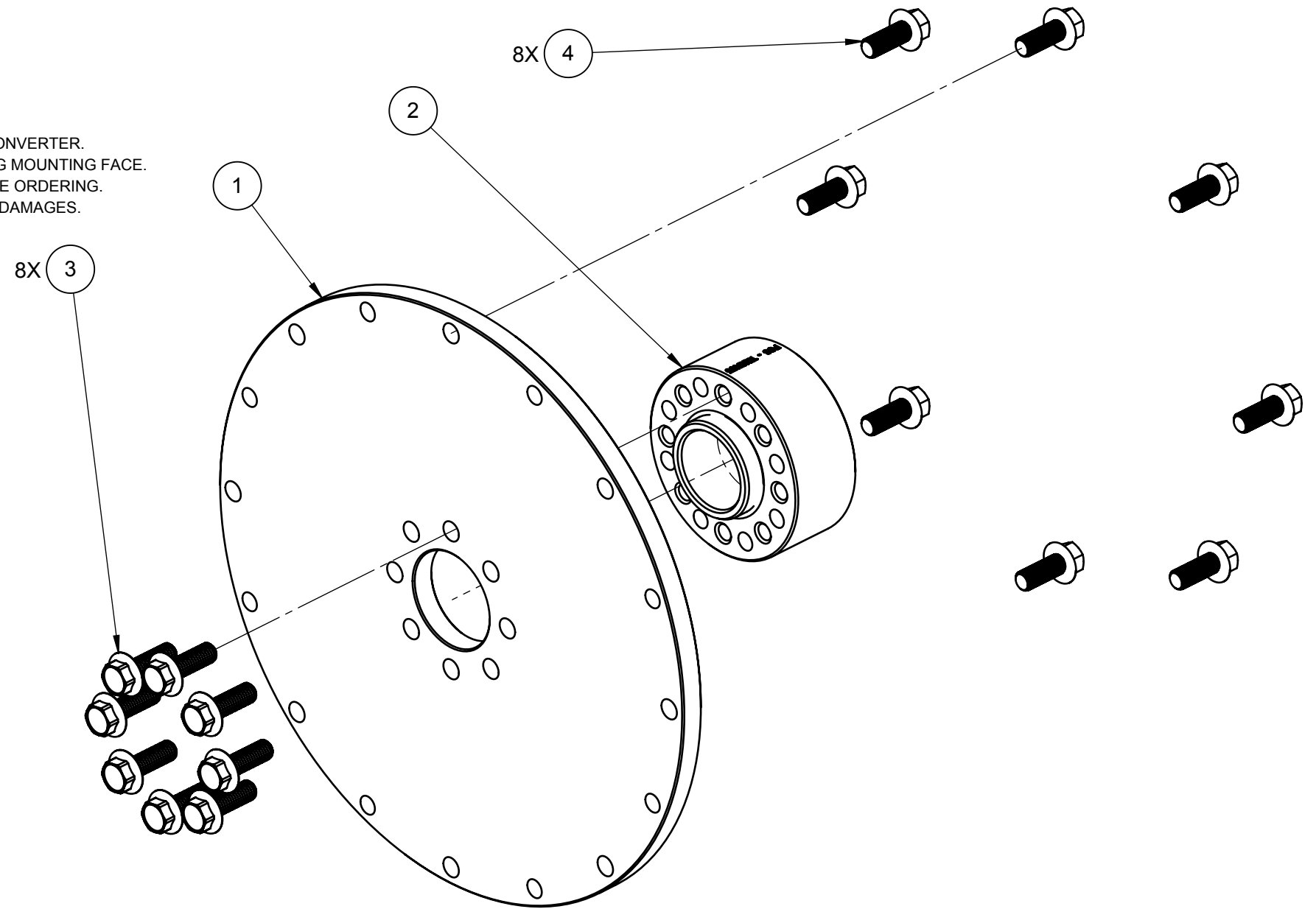
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP
ENG APPR.	4/18/19
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8218	B

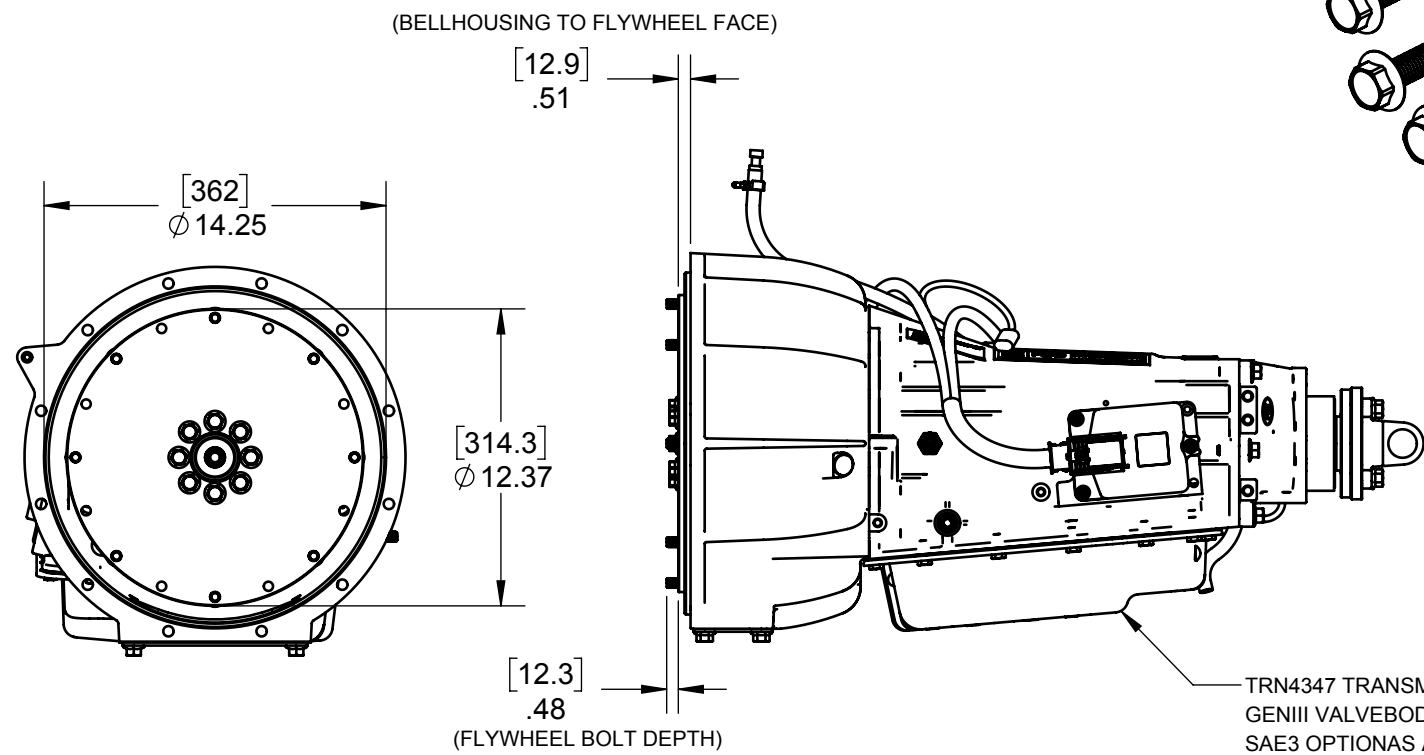
BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SAE10 FLYWHEEL ADAPTION PLATE	TRN7001	1
2	40.6mm ENGINE SPACER	TRN7075	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	M10X1.25X25mm FLANGED HEX BOLT	TRN7535	8

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0515 (258mm) TORQUE CONVERTER.
2. THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 0.51" (12.9mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. CONFIRM THE THREAD SIZE ON YOUR ENGINE APPLICATION BEFORE ORDERING.
4. DO NOT INSTALL DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 3:8



**TRANSMISSION VIEWS**  
ASSEMBLED ITEMS  
SCALE: 1:8

TRN4347 TRANSMISSION (SAE4 BELLHOUSING, 258mm TORQUE CONVERTER, GENIII VALVEBODY, AND FFO EXTENSION HOUSING) AS EXAMPLE. SAE5 AND SAE3 OPTIONAS ARE AVAILABLE THOUGH REQUIRES A DIFFERENT SPACER KIT.



DESCRIPTION  
**53.3mm SAE10 FLYWHEEL ADAPTION KIT**

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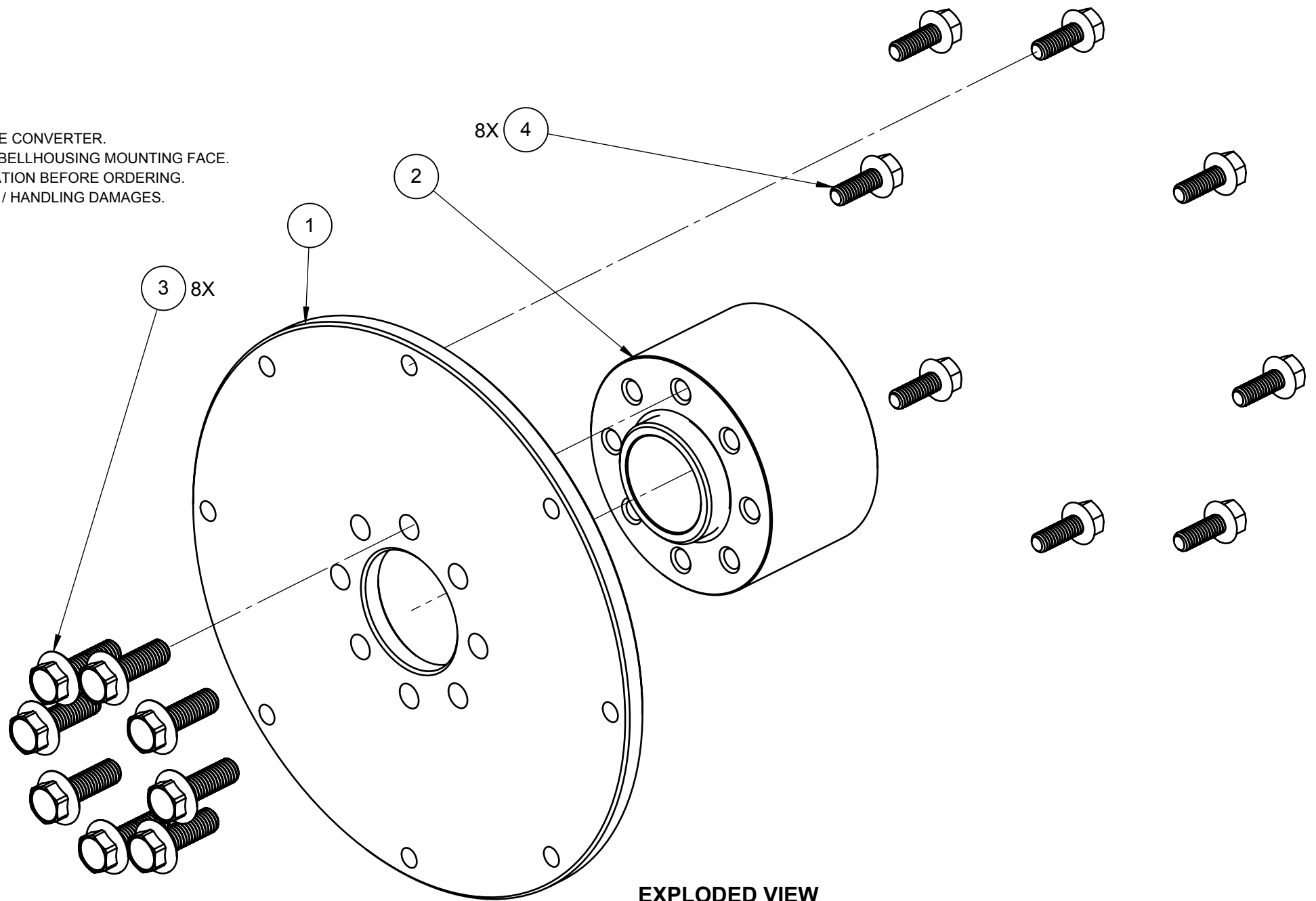
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 5/2/2019
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8219	A

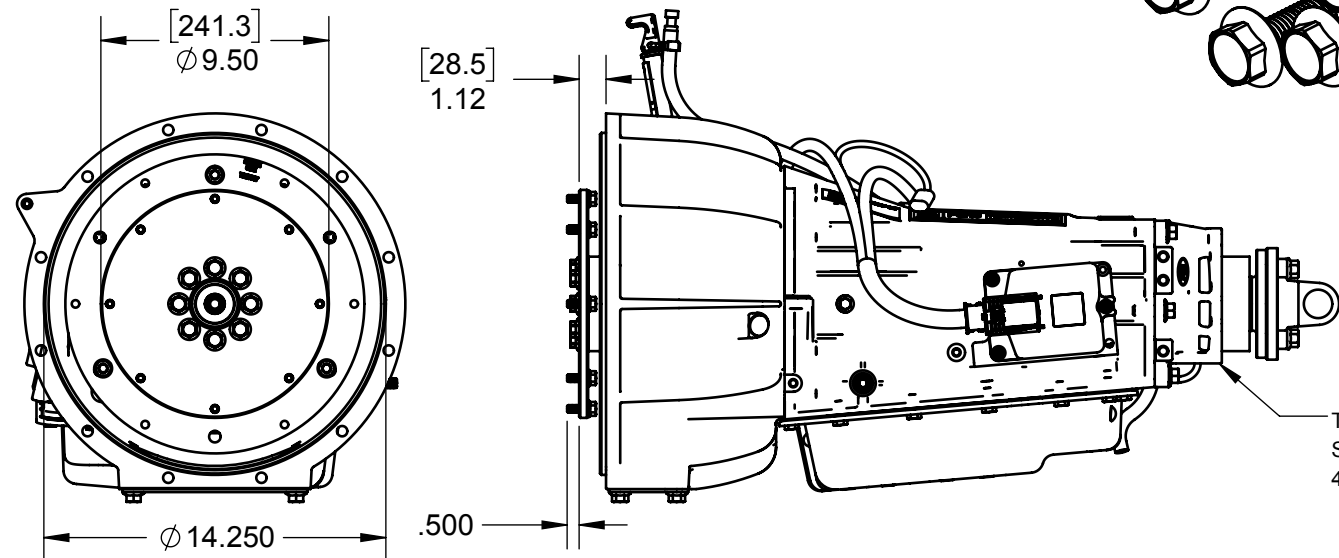
BOM #	DESCRIPTION	PCS PART #	QTY
1	3/8" SAE7.5 FLYWHEEL ADAPTION PLATE	TRN7090	1
2	59.4mm ENGINE SPACER	TRN7072	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	5/16-18 X 7/8" FLANGED HEX BOLT	TRN7543	8

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0515 TORQUE CONVERTER.
2. THIS PRODUCT WILL PROVIDE AN SAE7.5 FLYWHEEL INTERFACE 1.12" (28.5mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. CONFIRM THE THREAD SIZE ON YOUR ENGINE APPLICATION BEFORE ORDERING.
4. DO NOT INSTALL DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2



**TRANSMISSION VIEWS**  
ASSEMBLED ITEMS  
SCALE: 1:8

TRN4347 TRANSMISSION W/ SAE4 BELLHOUSING AND 4LHD (258mm) CONVERTER SHOWN.  
SAE3 AND SAE5 BELLHOUSING OPTIONS AVAILABLE.  
4LHDX (300mm) TORQUE CONVERTERS AVAILABLE.

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP
ENG APPR.	4/18/19
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1



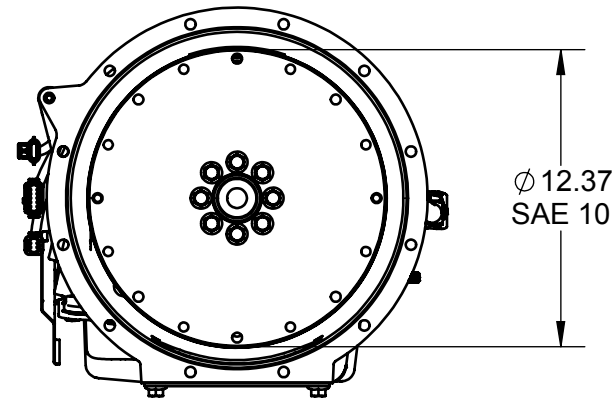
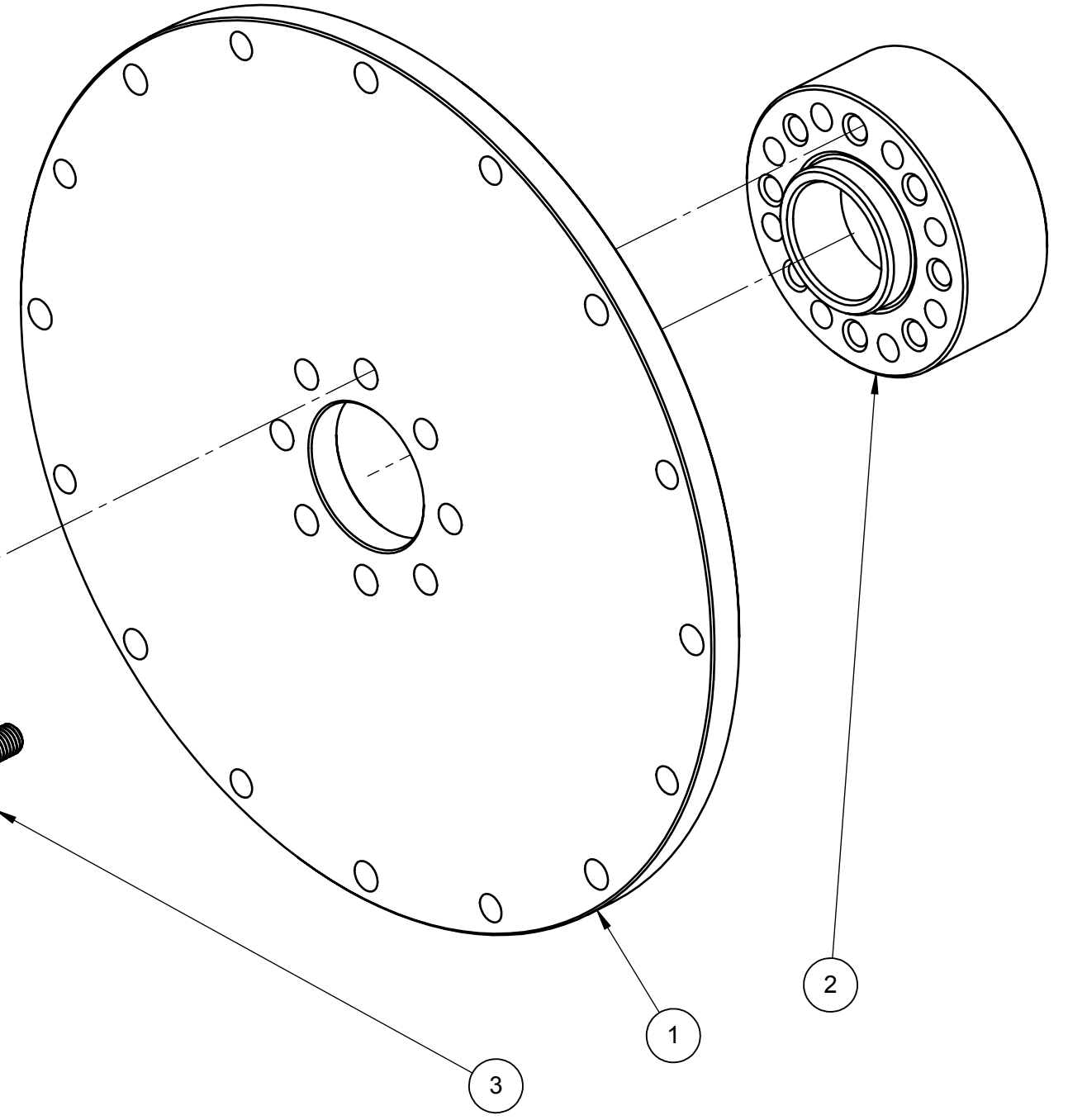
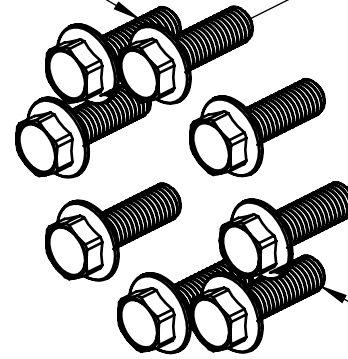
DESCRIPTION	
68.9mm SAE7.5 FLYWHEEL ADAPTION KIT	
SIZE	DRAWING NO.
<b>B</b>	TRN8220
REV	B

BOM #	DESCRIPTION	PCS PART #	QTY
1	0.5" SAE10 FLYWHEEL ADAPTER PLATE	TRN7001	1
2	38.1mm ENGINE SPACER	TRN7076	1
3	BOLT, M10X1.5X30mm FLANGED HEX	TRN7501	8

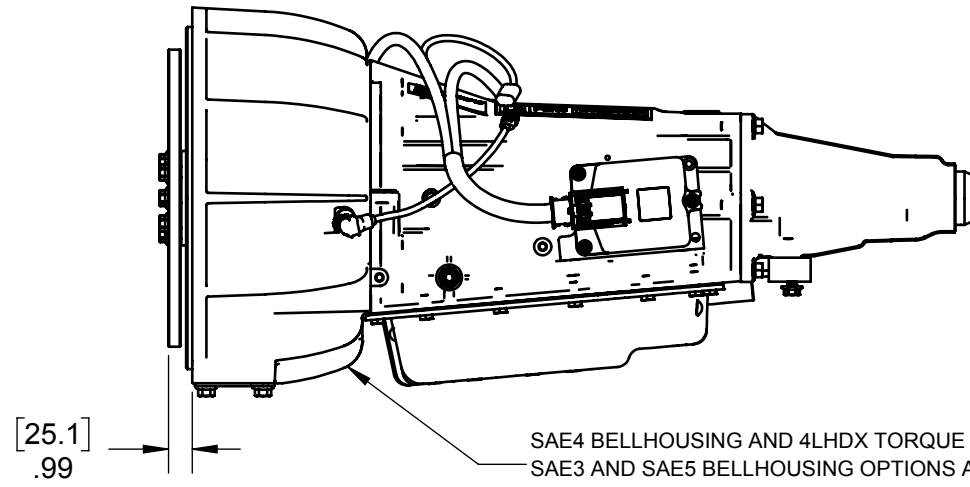
**NOTE:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER.
2. THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 0.99" (25.1mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE WHILE USING A TRN0516 "300mm" 4LHDX TORQUE CONVERTER.
3. FLYWHEEL INTERFACE BOLTS ARE NOT INCLUDED IN THIS KIT DUE TO MODEL-SPECIFIC THREAD PITCHES. PCS HAS THESE BOLTS AVAILABLE SEPARATELY.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.

APPLY RED THREADLOCKER



**FRONT VIEW**  
DIAMETERS  
SCALE: 1:8



**LEFT VIEW**  
DEPTHS  
SCALE: 1:8

SAE4 BELLHOUSING AND 4LHDX TORQUE CONVERTER SHOWN.  
SAE3 AND SAE5 BELLHOUSING OPTIONS AVAILABLE.  
4LHD (258mm) TORQUE CONVERTERS AVAILABLE.

**EXPLODED VIEW**  
ASSEMBLY ORDER  
SCALE: 1:2



DESCRIPTION  
**50.8mm SAE10 FLYWHEEL ADAPTION KIT**

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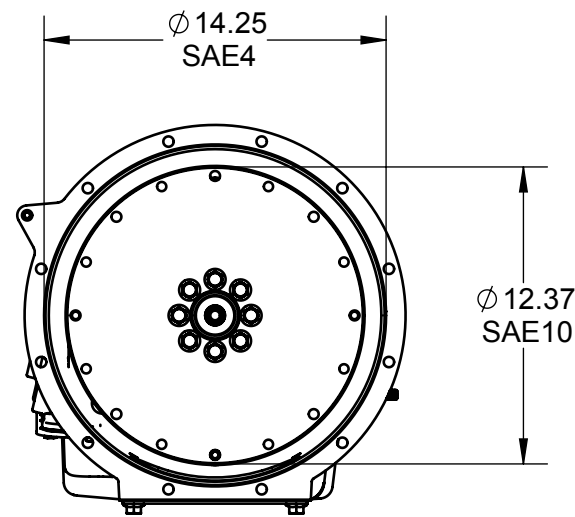
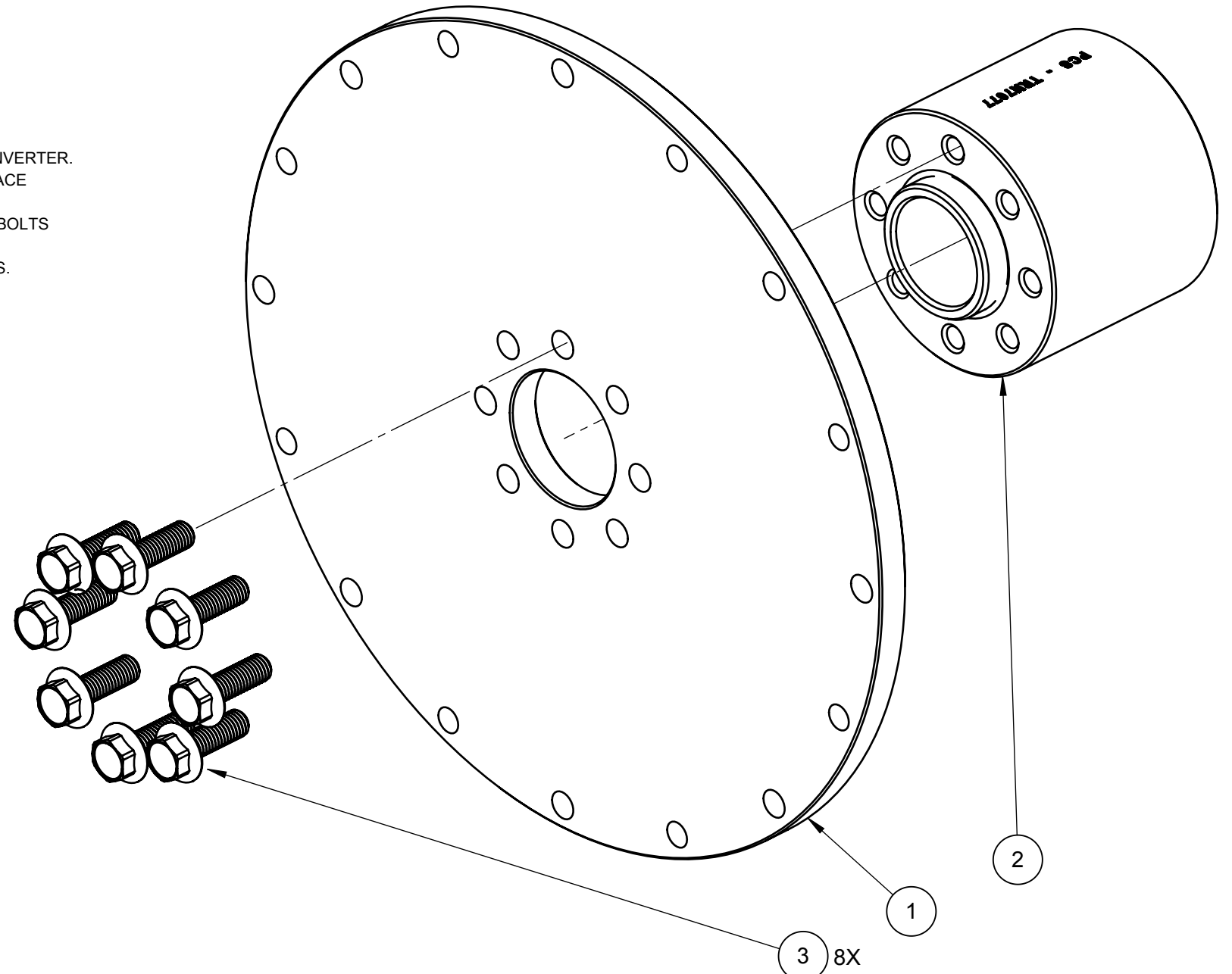
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 9/1/2017
ENG APPR.	AR 9/1/2017
DIMENSIONS ARE IN INCHES SCALE: 1:8 SHEET 1 OF 1	

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8221	1

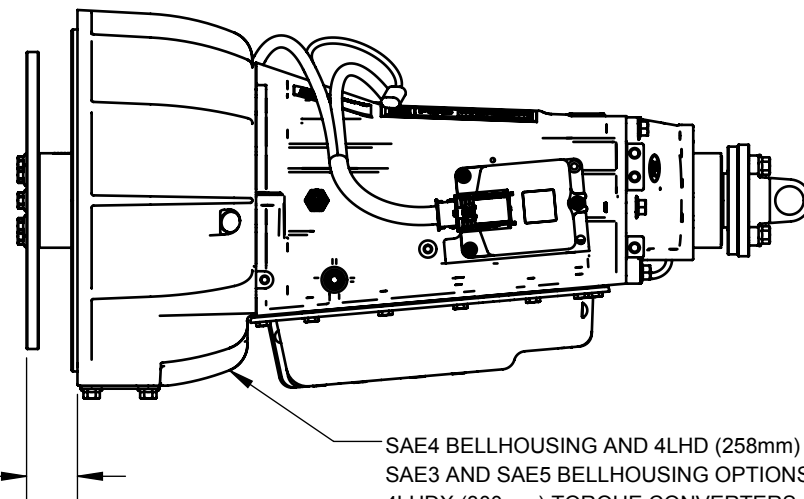
BOM #	DESCRIPTION	PCS PART #	QTY
1	0.5" SAE10 FLYWHEEL ADAPTER PLATE	TRN7001	1
2	81.5mm ENGINE SPACER	TRN7077	1
3	BOLT, M10X1.5X30mm FLANGED HEX	TRN7501	8

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER.
2. THIS PRODUCT WILL PROVIDE AN SAE4 FLYWHEEL INTERFACE 2.12" (53.9mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE WHILE USING A TRN0515 "258mm" 4LHD TORQUE CONVERTER.
3. FLYWHEEL INTERFACE BOLTS ARE NOT INCLUDED IN THIS KIT DUE TO MODEL-SPECIFIC THREAD PITCHES. PCS HAS THESE BOLTS AVAILABLE SEPARATELY.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**FRONT VIEW**  
DIAMETERS  
SCALE: 1:8



**LEFT VIEW**  
DEPTHS  
SCALE: 1:8

SAE4 BELLHOUSING AND 4LHD (258mm) TORQUE CONVERTER SHOWN.  
SAE3 AND SAE5 BELLHOUSING OPTIONS AVAILABLE.  
4LHD (300mm) TORQUE CONVERTERS AVAILABLE.

**EXPLODED VIEW**  
ASSEMBLY ORDER  
SCALE: 1:2



DESCRIPTION  
**94.3mm SAE10 FLYWHEEL ADAPTION KIT**

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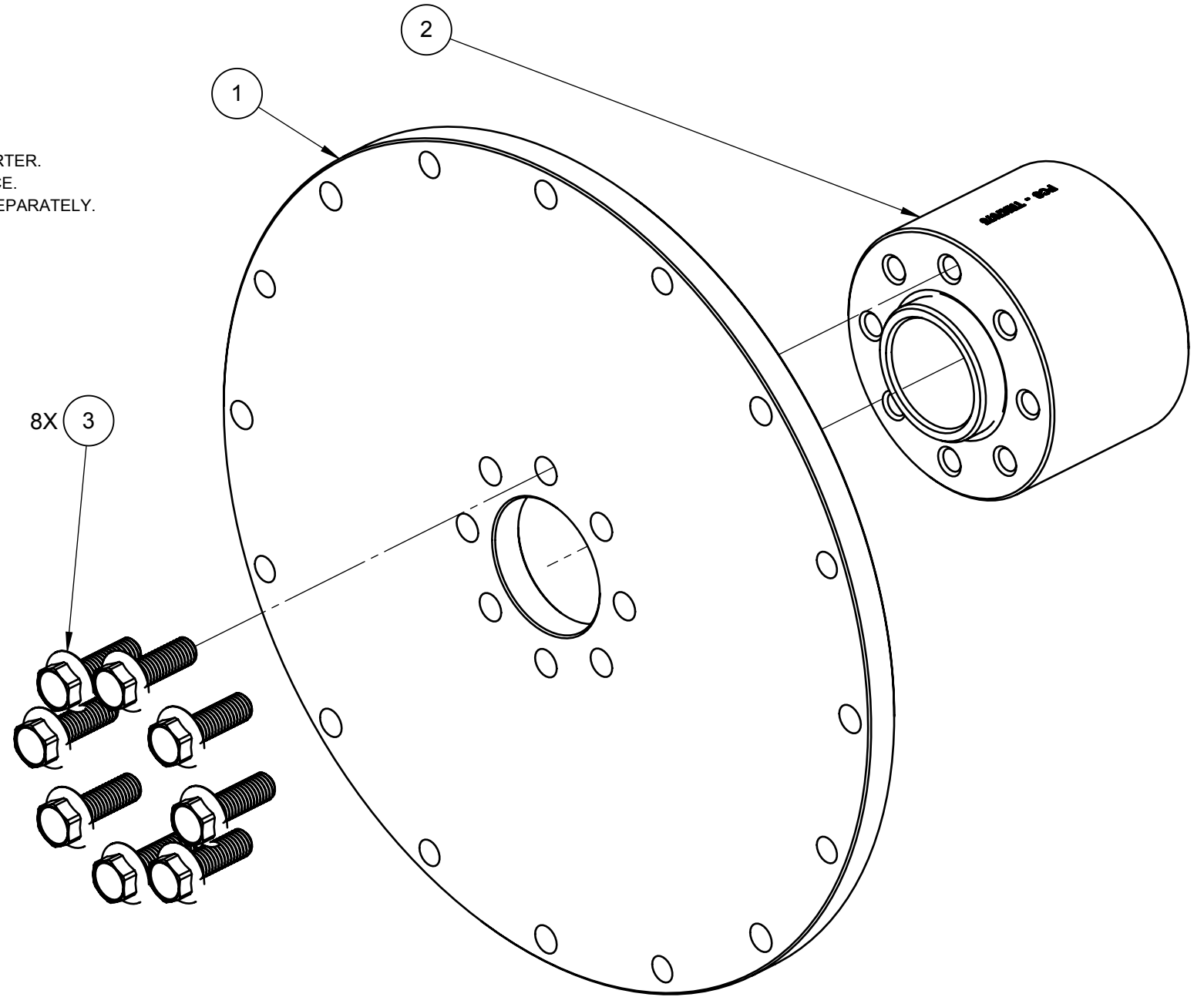
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 9/21/17
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:4 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8222	B

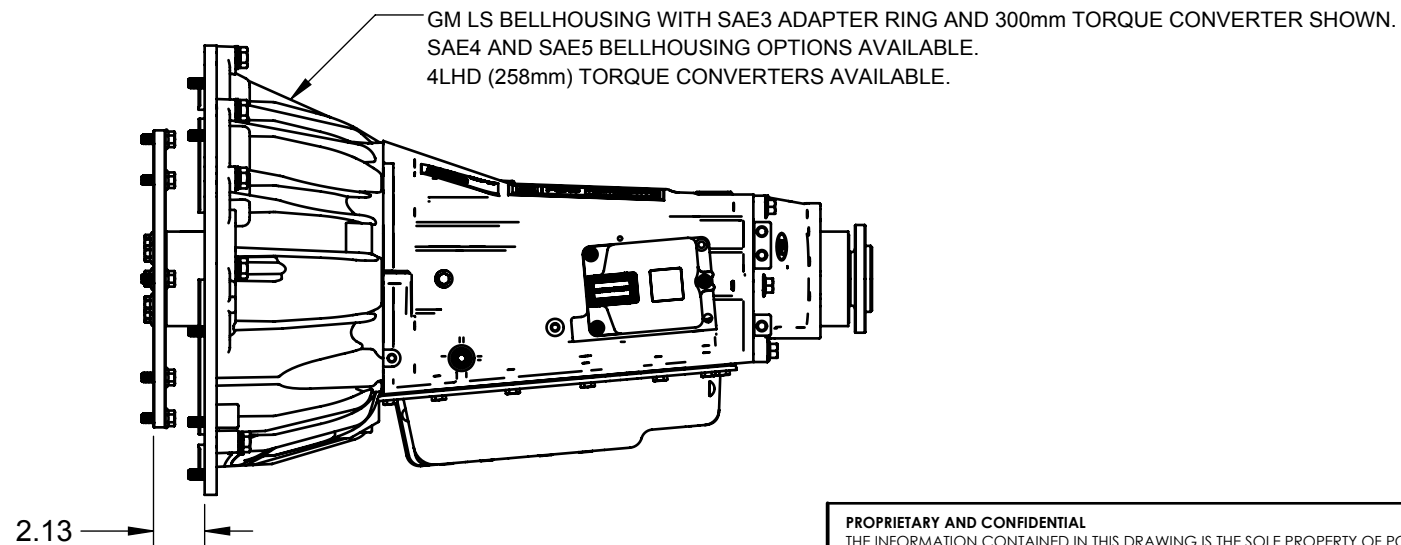
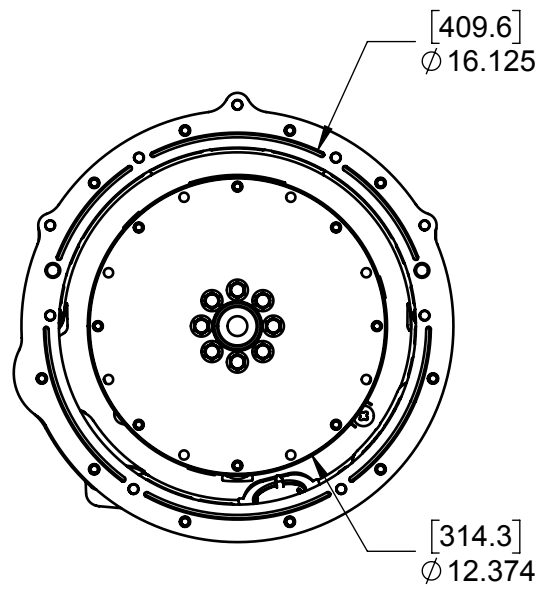
BOM #	DESCRIPTION	PCS PART #	QTY
1	0.5" SAE10 FLYWHEEL ADAPTER PLATE	TRN7001	1
2	67.1mm ENGINE SPACER	TRN7078	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER.
2. THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 2.13" (54.1mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. BOLTS COMMONLY USED IN THIS APPLICATION (M10X1.5 OR 3/8-16") ARE AVAILABLE SEPARATELY.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2



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DIMENSIONS ARE IN INCHES	DRAWN BY: MFP ENG APPR.: SCALE: 1:2	1/19/18 SHEET 1 OF 1
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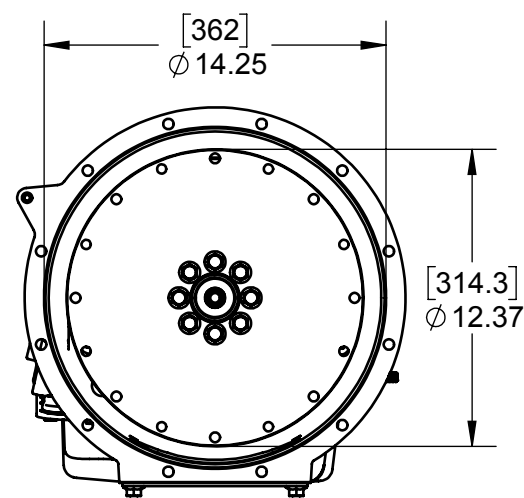
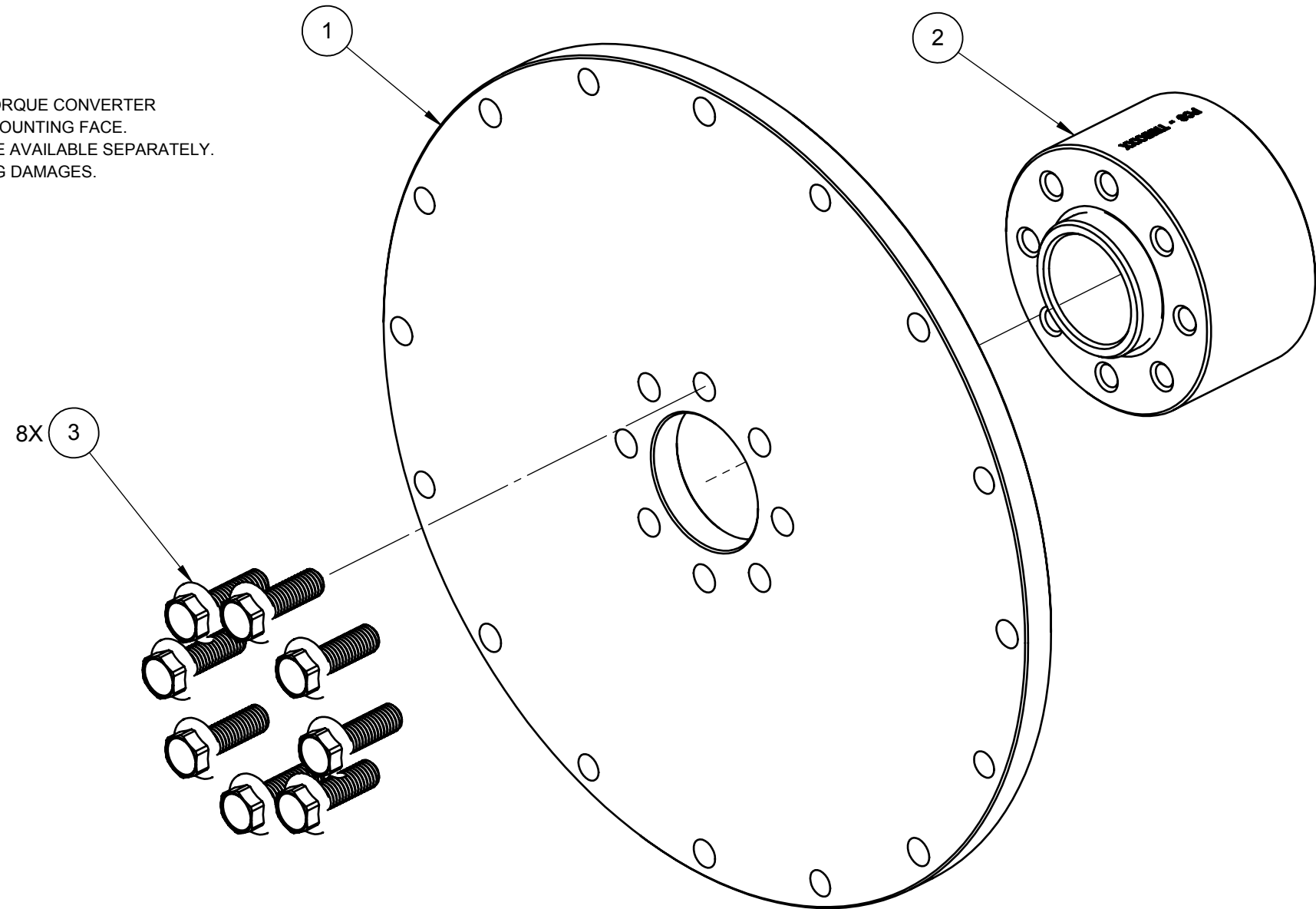
DESCRIPTION		SIZE	DRAWING NO.	REV
79.8mm SAE10 FLYWHEEL ADAPTION KIT		<b>B</b>	TRN8224	B
USED ON	NEXT ASSEMBLY			



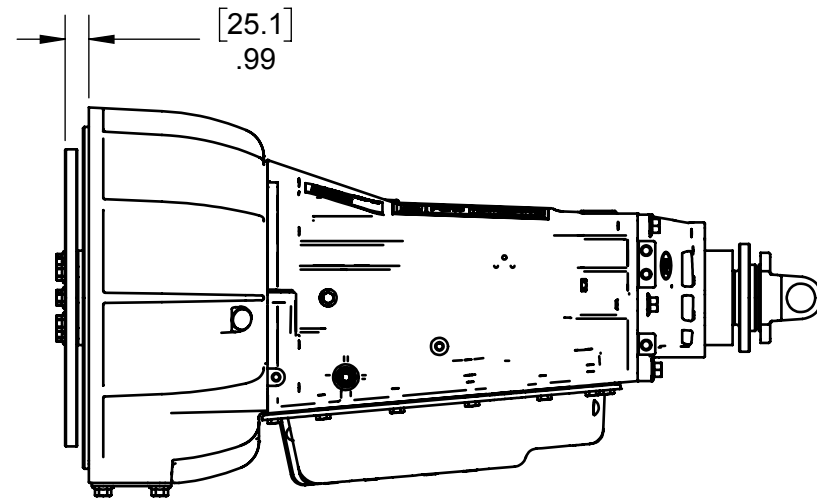
BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SAE10 FLYWHEEL ADAPTION PLATE	TRN7001	1
2	52.8mm ENGINE SPACER	TRN7079	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8

**NOTES:**

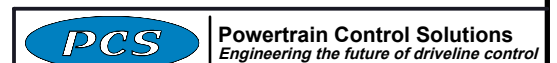
1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER
2. THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 0.99" (25.1mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. BOLTS COMMONLY USED IN THIS APPLICATION (M10X1.5 OR 3/8-16") ARE AVAILABLE SEPARATELY.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**TRANSMISSION VIEW**  
ASSEMBLED ITEMS  
SCALE: 1:8



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2



DESCRIPTION  
**65.5mm SAE10 FLYWHEEL ADAPTION KIT**

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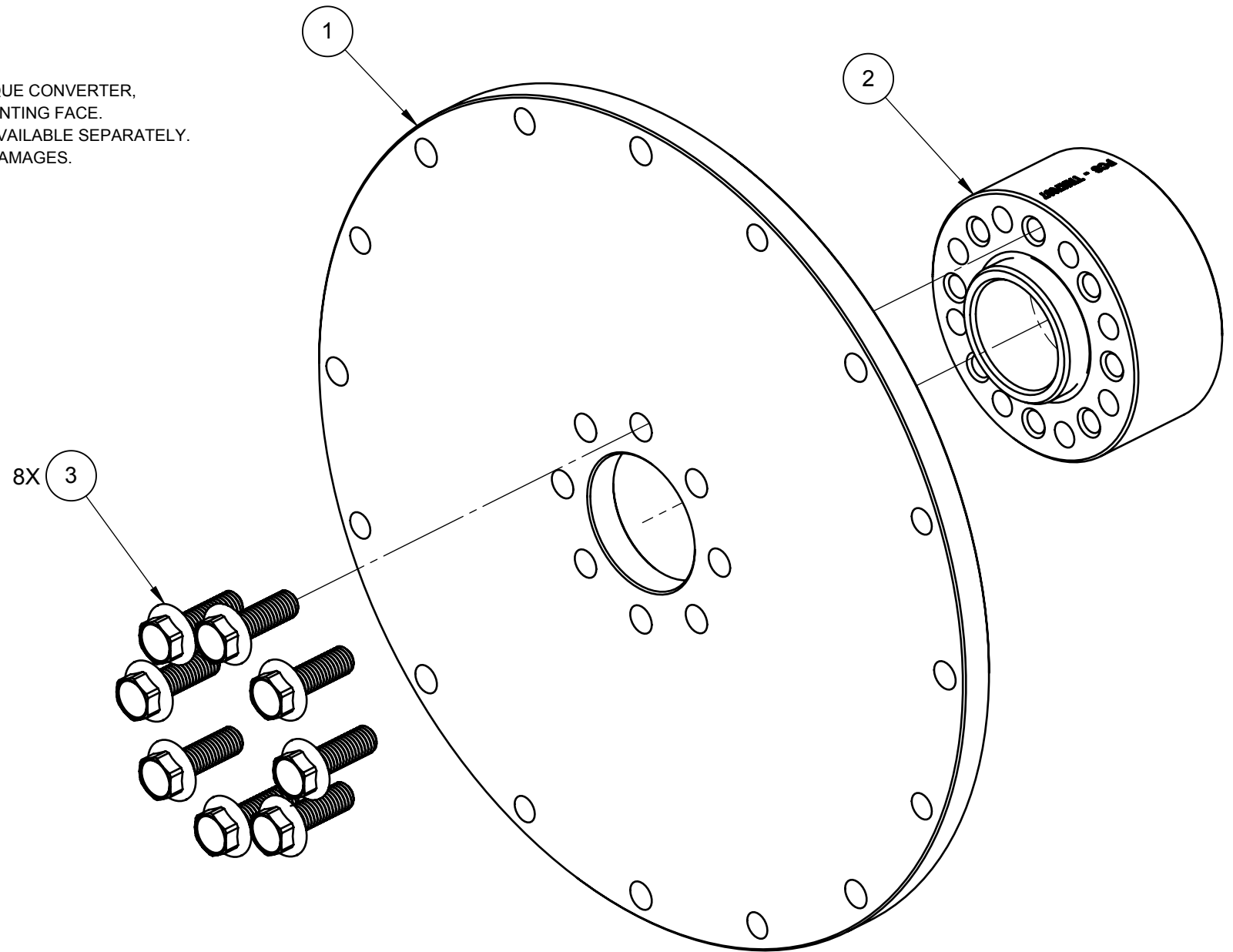
DRAWN BY	MFP	6/22/2018
ENG APPR.		
DIMENSIONS ARE IN INCHES		
SCALE: 1:8	SHEET 1 OF 1	

USED ON	NEXT ASSEMBLY
SIZE	DRAWING NO.
<b>B</b>	TRN8225
REV	1

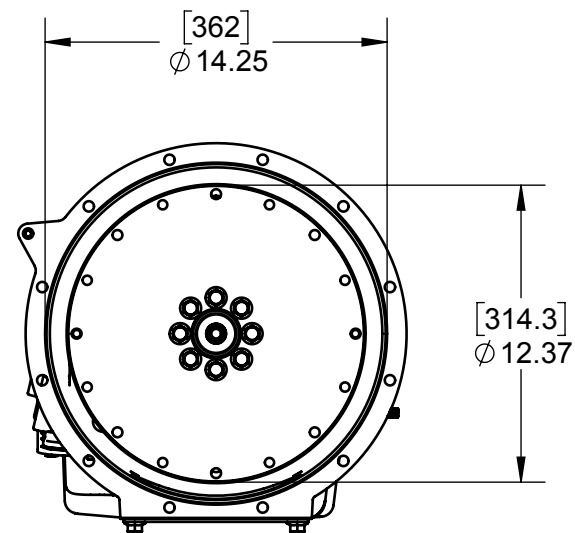
BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SAE10 FLYWHEEL ADAPTION PLATE	TRN7001	1
2	42.7mm ENGINE SPACER	TRN7097	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8

**NOTES:**

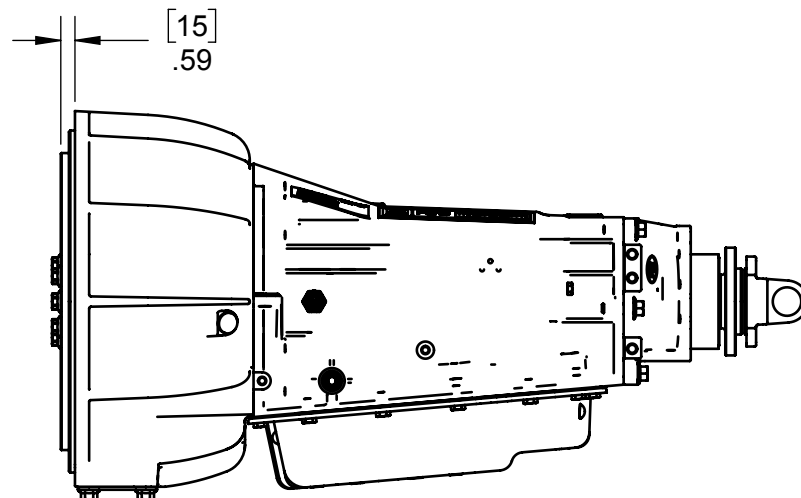
1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER.
2. THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 0.99" (25.1mm) BEYOND THE SAE BELLHOUSING MOUNTING FACE.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. BOLTS COMMONLY USED IN THIS APPLICATION (M10X1.5 OR 3/8-16") ARE AVAILABLE SEPARATELY.
4. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



**EXPLODED VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:2



**TRANSMISSION VIEW**  
ASSEMBLED ITEMS  
SCALE: 1:8



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	DRAWN BY	MFP	9/10/2018
	ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:4	SHEET 1 OF 1

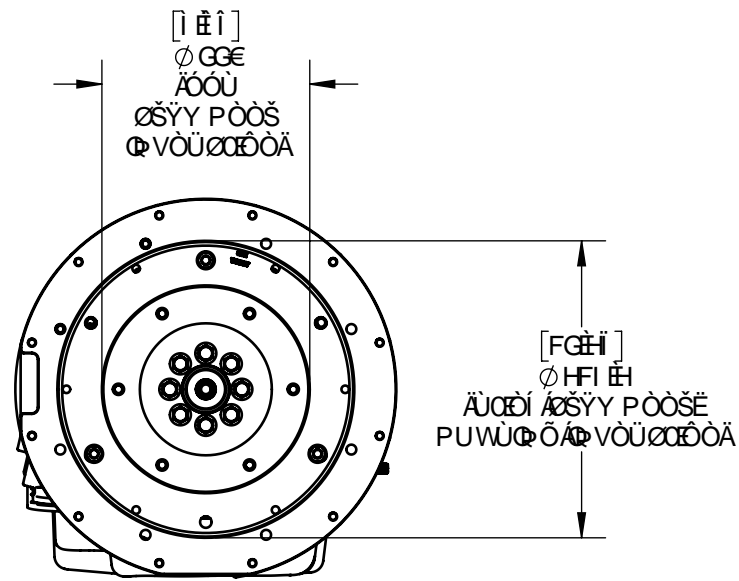
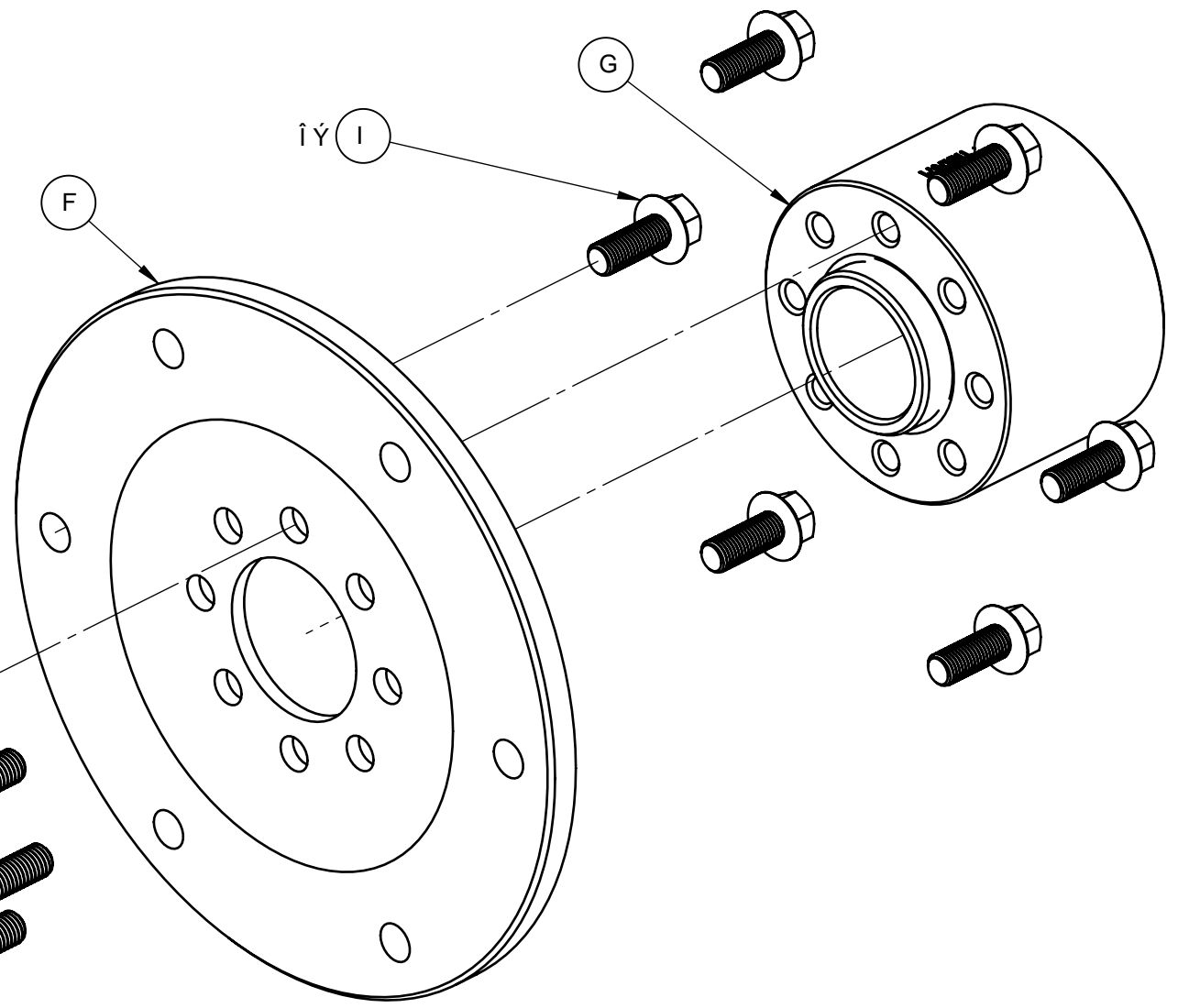


DESCRIPTION		55.4mm SAE10 FLYWHEEL ADAPTION KIT	
SIZE	DRAWING NO.	REV	
<b>B</b>	TRN8226	B	

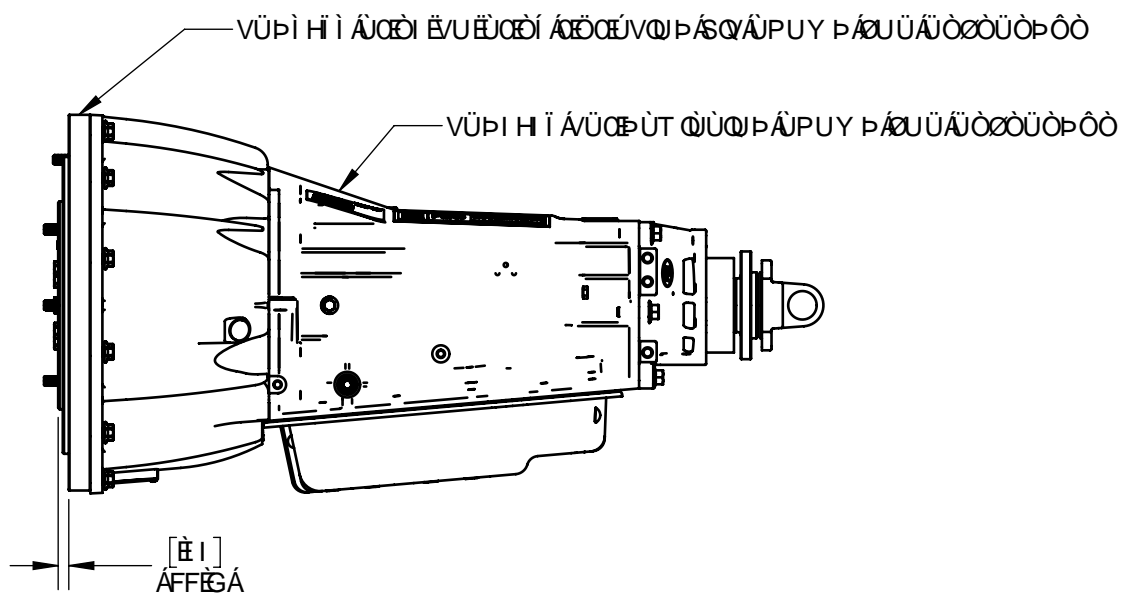
6 CA	89G7 F-DHCB	D7 G'D5 FH	EHM
F	Fε { ΑΟΟΥΑΣΨΥ ΡΟΟΣΑ	VÜPì €€	F
G	Ï Ì È { { ΑΠΟΦΟΑΥΟΟ	VÜPì € F	F
H	T FεΥFÈ ÝHε { ΑΣΟΠΟΟΑΡΟΥΑΟΥΣV	VÜPì € F	ì
I	T FεΥFÈ ÝG { { ΑΣΟΠΟΟΑΡΟΥΑΟΥΣV	VÜPì € H	ì

**BCH9G**

FÈ VPQÁÏÛÛÖWÖNÁVÁVÖPÖÖÖÁVÁDÖWÖÖÁ VPÁVÜPì H È ΑΣÖYÚΣV/ÖΣVÁPÖÁVÜPÈ FÍ Aε { { ΔVÛÛWÖÁÛPΧÖÛVÖÈ  
 GÈ VPQÁÏÛÛÖWÖNÁVÁVÖPÖÖÖÁVÁDÖWÖÖÁVÜPì H È ΑΣÖYÚΣV/ÖΣVÁPÖÁVÜPÈ FÍ Aε { { ΔVÛÛWÖÁÛPΧÖÛVÖÈ  
 HÈ ÖΣY ΡΟΟΣΑ VÖÛÖÖÖÁÛS VÜÁ T FεYÁÏÛÛÖWÖNÁVÁVÖPÖÖÖÁVÁDÖWÖÖÁVÜPì H È ΑΣÖYÚΣV/ÖΣVÁPÖÁVÜPÈ FÍ Aε { { ΔVÛÛWÖÁÛPΧÖÛVÖÈ  
 I È ÖUÁVÜPì H È ΑΣÖYÚΣV/ÖΣVÁPÖÁVÜPÈ FÍ Aε { { ΔVÛÛWÖÁÛPΧÖÛVÖÈ



**HF5 BGA-GGCB-J-9K G**  
 ÖÛÛÖT ÖSÖÖÁVÖT Û  
 ÛÖSÖMÁK



DFC DF-5FM5B8 7CB: -89H5@  
 H: 9 B: CFA 5HC B 7CBH5-B98 B H-68F5K B: 6GH-9GC @DFC D9FMC: D7 G' 5BM  
 F9DFC 81 7HC B-B D5FHCF 5G5 K < C @K #K C1 H#K 9K F #9B D9FA 6GC B C: D7 G-6DFC < -6#98\*

1 G98 CB	B 9LH5C99A 64M
8F5K B 6M	A: D
9B: 5DDF*	*#6-#8%
8 A 9B GC BG5F9-B: B7 < 9G	G7 5@9 %
	G< 99H% C: %

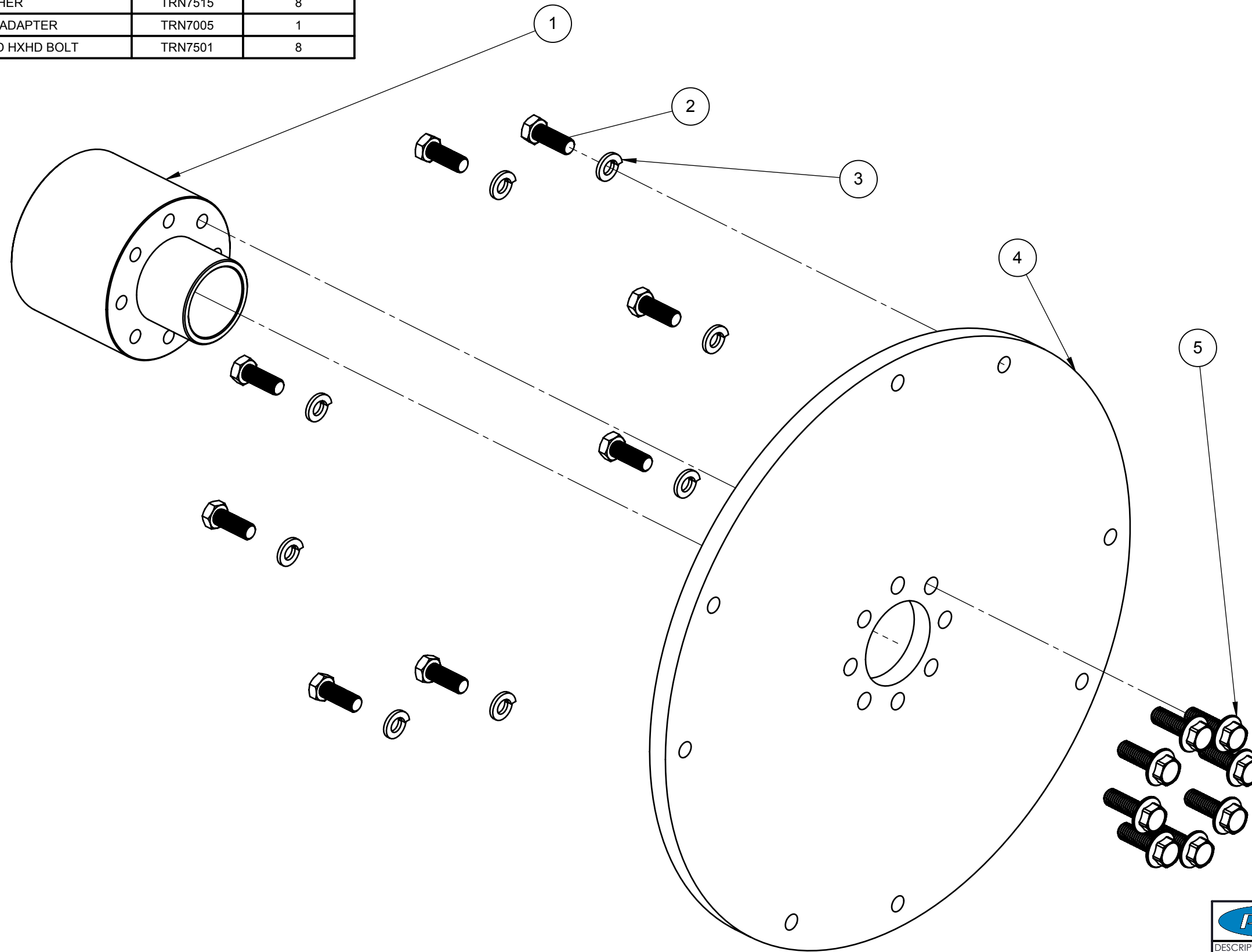
**PCS** Dck YffUjb 7 cbfbc Gc i Hcbg  
 9b [ JbYf ] b [ H YZ h fYczXf ] Y JbY Vcbfbc

89G7 F-DHCB

Ï Ì È { { ΑΟΟΥΑΣΨΥ ΡΟΟΣΑ  
 ÖÖÏVQΡΑΣQ

G&P	8F5K B: BC*	F9J
<b>6</b>	VÜPì GG	5

BOM #	DESCRIPTION	PCS PART #	QTY
1	PERKINS SAE3 SPACER (300mm CONVERTER)	TRN7004	1
2	3/8-24X1.00" HXHD BOLT	TRN7514	8
3	3/8" SPLIT WASHER	TRN7515	8
4	PERKINS FLYWHEEL ADAPTER	TRN7005	1
5	M10X1.5X30mm FLANGED HXHD BOLT	TRN7501	8



DESCRIPTION  
**ENGINE ADAPTER - PERKINS  
 1104C (C0002/D0006) TO 4LHDX**

USED ON	NEXT ASSEMBLY

DRAWN BY	MFP	9/20/16
ENG APPR.	CSK	9/20/16
DIMENSIONS ARE IN INCHES		SCALE: 1:12 SHEET 1 OF 1

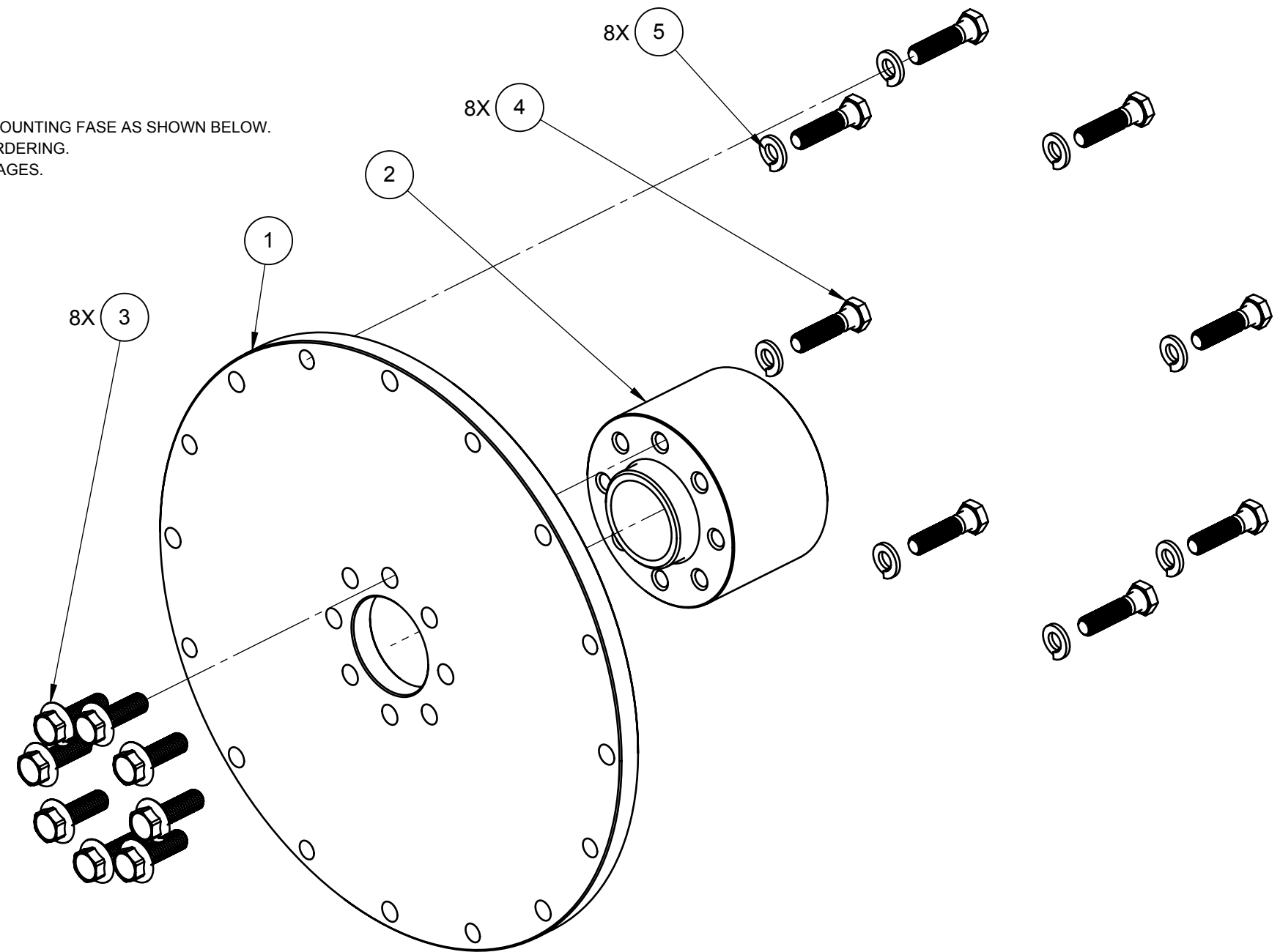
SIZE	DRAWING NO.	REV
<b>B</b>	TRN8300	1

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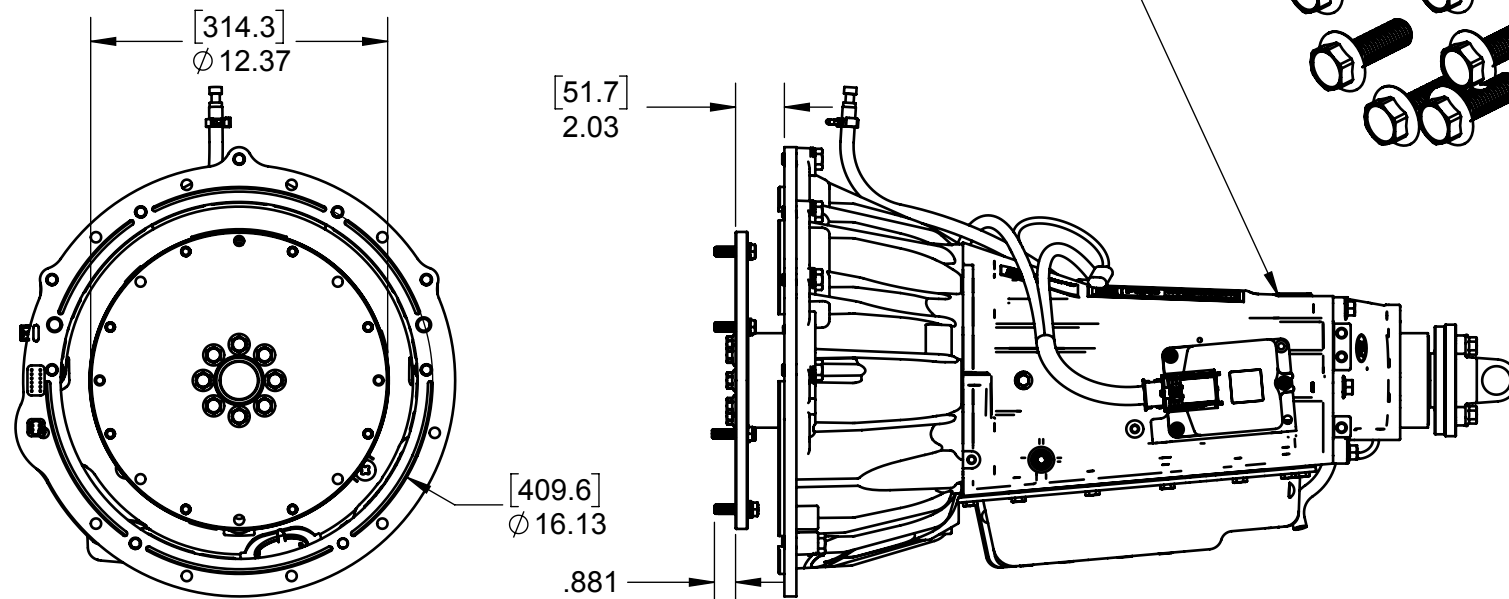
BOM #	DESCRIPTION	PCS PART #	QTY
1	0.5" SAE10 FLYWHEEL ADAPTER PLATE	TRN7001	1
2	64.6mm ENGINE SPACER	TRN7070	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	3/8-24 X 1.5" HEX BOLT	TRN7539	8
5	3/8" LOCK WASHER	TRN7515	8

**NOTES:**

1. THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND A TRN0516 TORQUE CONVERTER.
2. THIS PROCUDT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 2.03" (51.7mm) BEYOND THE SAE3 BELLHOUSING MOUNTING FASE AS SHOWN BELOW.
3. FLYWHEEL INTERFACE BOLTS MAY VARY. CONFIRM THE THREAD SIZE ON YOUR ENGINE APPLICATION BEFORE ORDERING.
4. DO NOT INSTALL DRIVELNE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.



GM LS BELLHOUSING WITH SAE3 ADAPTER KIT (TRN7015) AND 300mm TORQUE CONVERTER SHOWN.  
 SAE4 AND SAE5 BELLHOUSING OPTIONS AVAILABLE.  
 4LHD (258mm) TORQUE CONVERTERS AVAILABLE.



**TRANSMISSION VIEWS**  
 ASSEMBLED ITEMS  
 SCALE: 1:8

**EXPLODED VIEW**  
 ASSEMBLY ITEMS  
 SCALE: 3:8

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DRAWN BY	MFP	4/17/19
ENG APPR.		
DIMENSIONS ARE IN INCHES SCALE: 1:8 SHEET 1 OF 1		

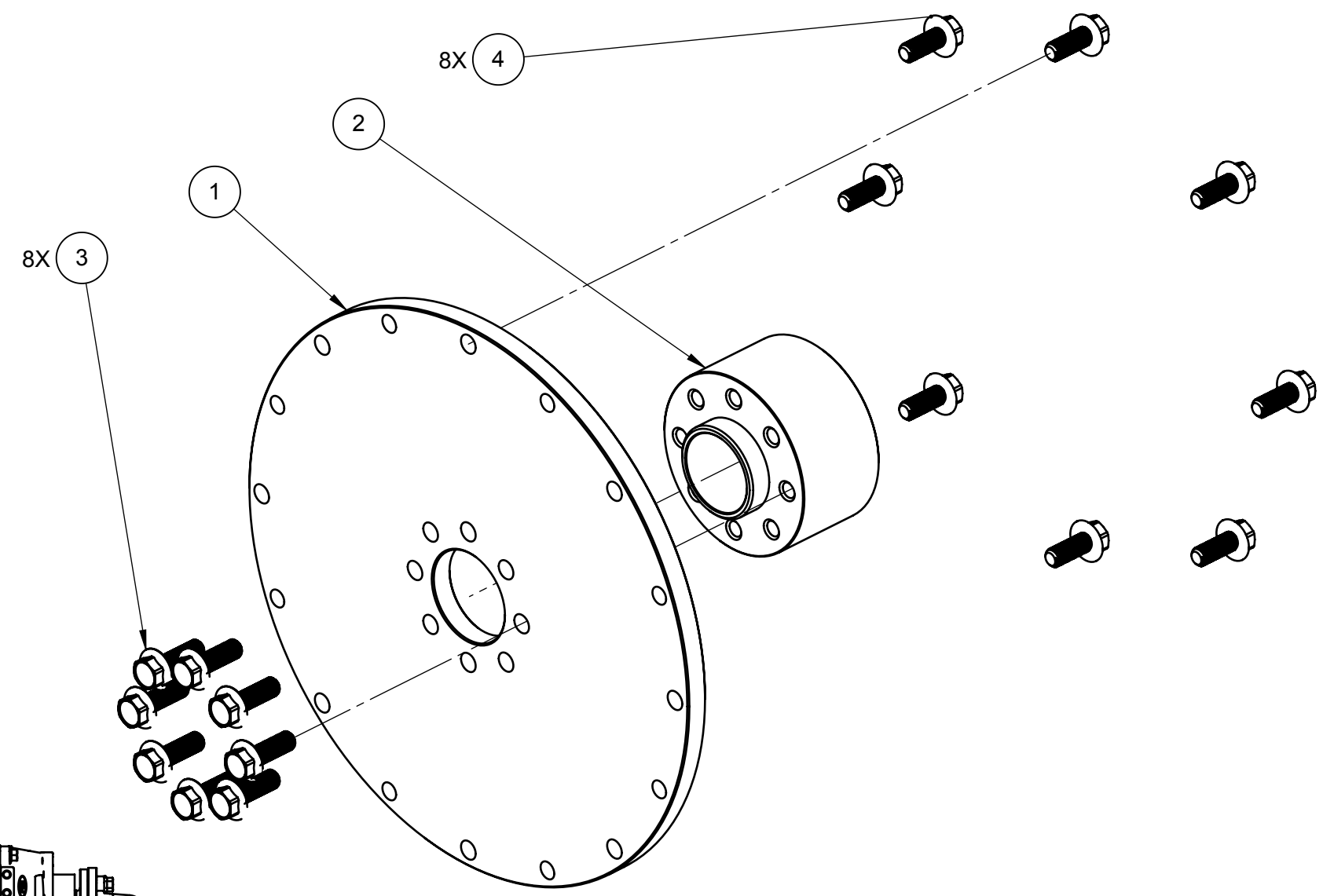
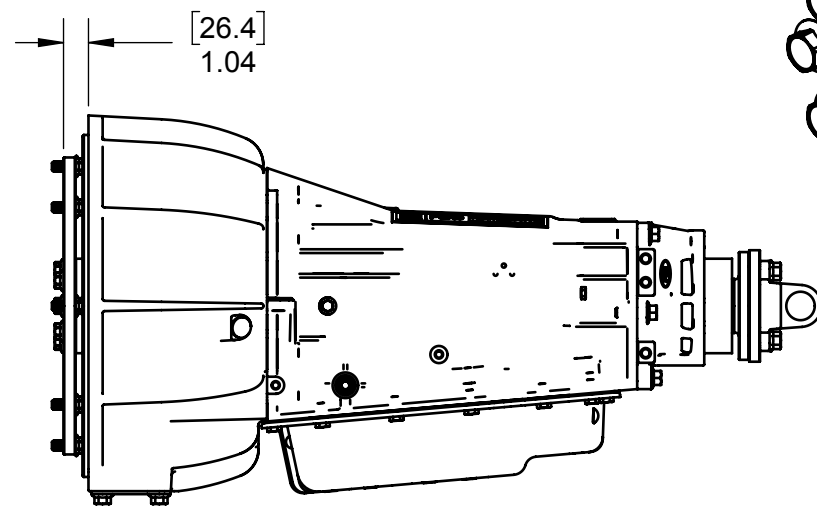
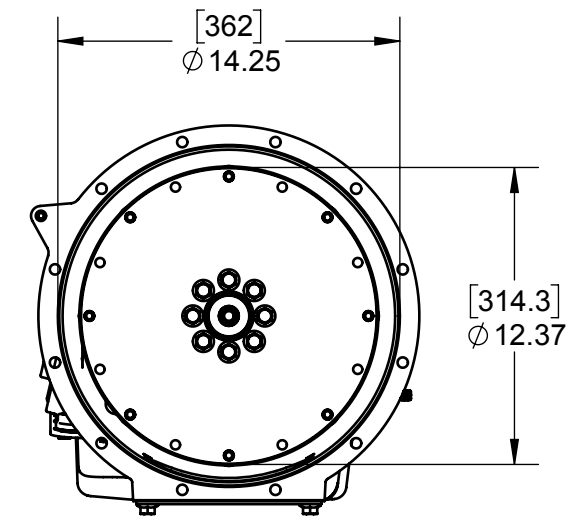


DESCRIPTION		
ENGINE ADAPTER KIT - PERKINS C0001/D0004		
USED ON	NEXT ASSEMBLY	
SIZE	DRAWING NO.	REV
<b>B</b>	TRN8310	D

BOM #	DESCRIPTION	PCS PART #	QTY
1	1/2" SAE10 FLYWHEEL ADAPTION PLATE	TRN7001	1
2	54.1mm ENGINE SPACER	TRN7017	1
3	M10X1.5X30mm FLANGED HEX BOLT	TRN7501	8
4	M10X1.5X25mm FLANGED HEX BOLT	TRN7500	8

**NOTES:**

- THIS PRODUCT IS INTENDED TO BE USED WITH A TRN8350 FLEXPLATE KIT AND EITHER A TRN0515 OR TRN0516 TORQUE CONVERTER.
- WITH THE 258mm TORQUE CONVERTER THIS PRODUCT WILL PROVIDE AN SAE10 FLYWHEEL INTERFACE 1.04" (26.4mm) BEYOND THE SAE4 BELLHOUSING MOUNTING FACE.
- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMEGES.



DESCRIPTION  
**66.8mm SAE10 FLYWHEEL ADAPTION KIT**

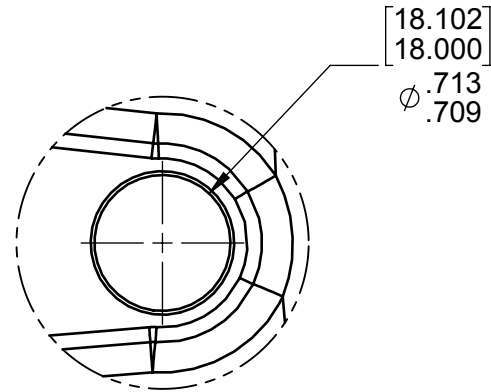
USED ON	NEXT ASSEMBLY

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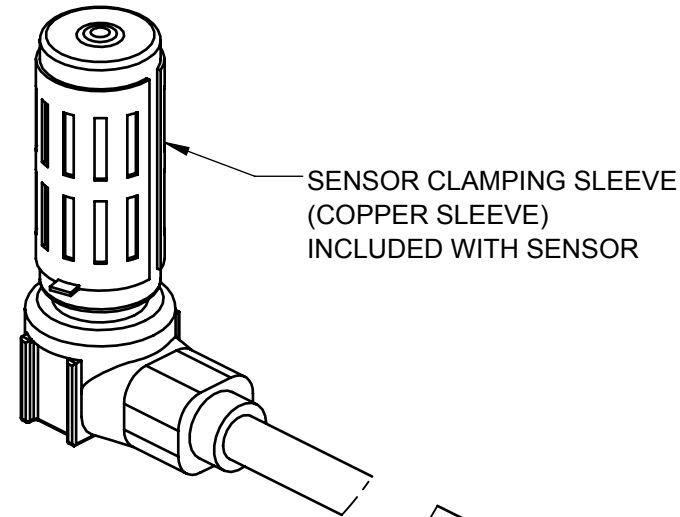
DRAWN BY	MFP	1/8/2019
ENG APPR.		
DIMENSIONS ARE IN INCHES SCALE: 1:8 SHEET 1 OF 1		

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8410	1

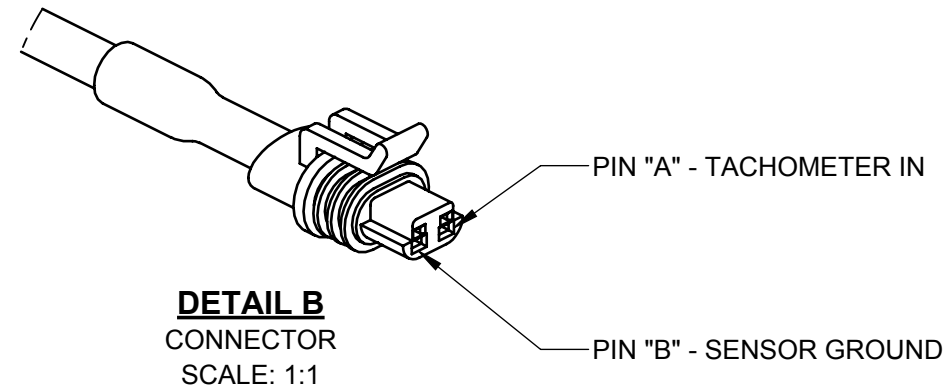
BOM #	DESCRIPTION	PCS PART #	QTY
1	RPM SENSOR - ENGINE OUTPUT	SNS1025	1



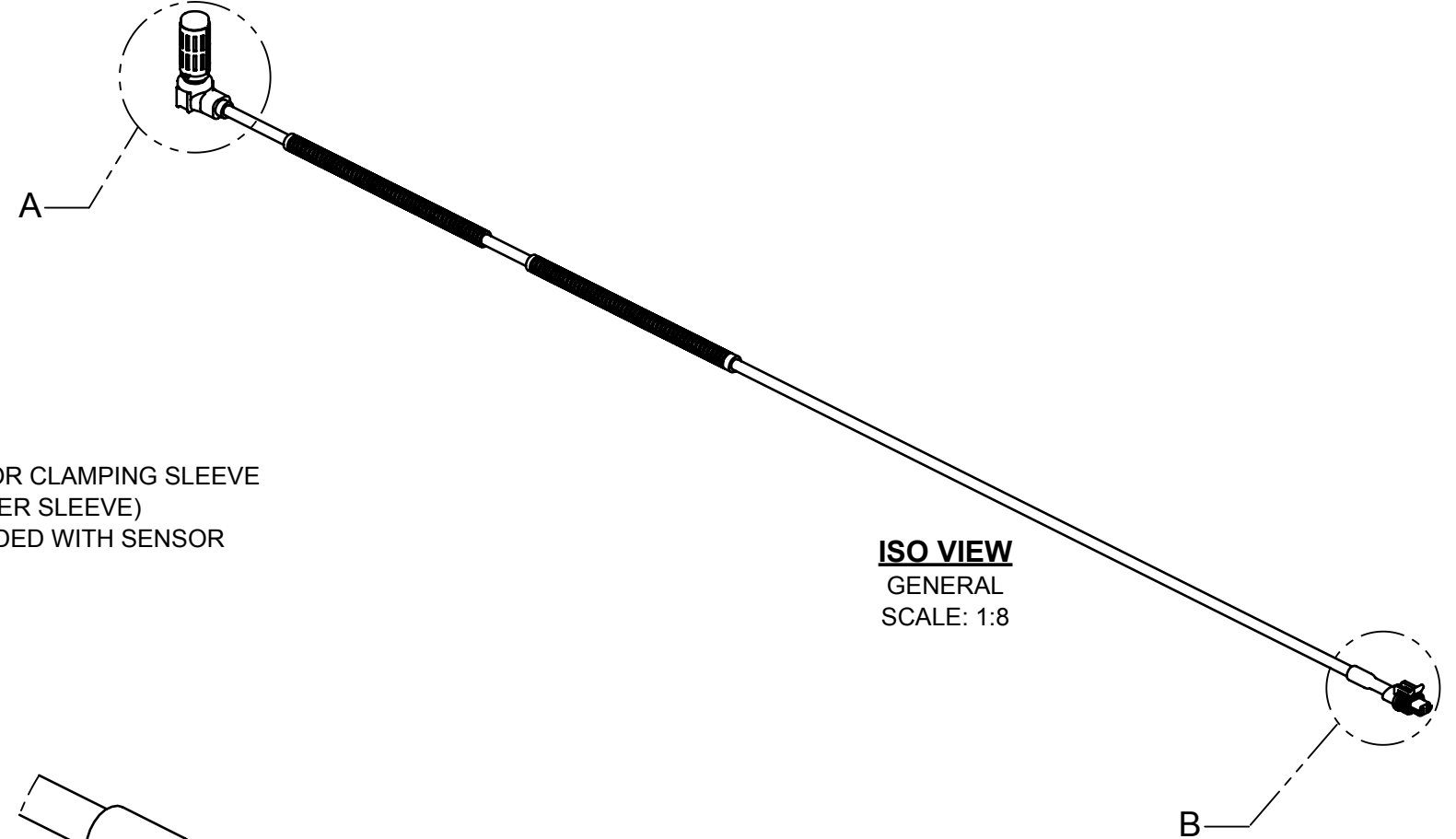
**TOP VIEW**  
EXAMPLE BORE  
SCALE: 1:1



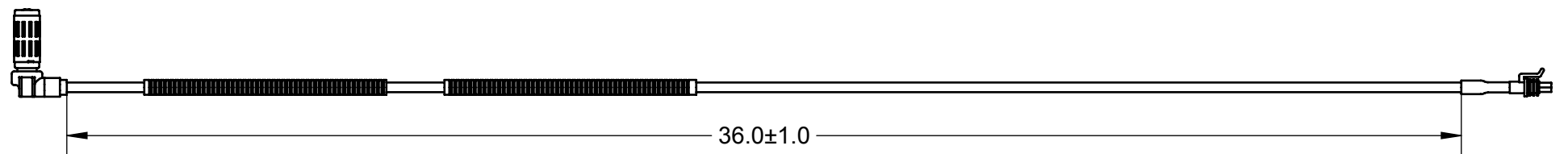
**DETAIL A**  
SENSOR AND SLEEVE  
SCALE: 1:1



**DETAIL B**  
CONNECTOR  
SCALE: 1:1



**ISO VIEW**  
GENERAL  
SCALE: 1:8



**SIDE VIEW**  
CABLE LENGTH  
SCALE: 1:4

**NOTES:**

- INTERPRET THIS PART IN ACCORDANCE WITH ASME Y14.5-2009.
- THE TWO WIRES ("A" AND "B" SHOWN IN **DETAIL B**) BETWEEN THIS SENSOR AND THE ELECTRONIC CONTROLLER ARE TO BE A TWISTED PAIR.
- THE PACKAGE INCLUDES (1X) SENSOR, (1X) COPPER SLEEVE, AND (1X) INSTALLATION INSTRUCTIONS.
- READ AND ADHERE TO ALL OEM INSTALLATION NOTES INCLUDED IN THE PACKAGING BEFORE INSTALLATION AND USE. FULLY INSERT THE COPPER SLEEVE INCLUDED, THEN THE SENSOR. THE SENSOR MUST BE PUSHED FULLY AGAINST ANY TONE WHEEL DURING INSTALLATION, THE SENSOR WILL SELF-ADJUST FOR THE CORRECT GAP.
- THE SENSOR AND HARNESS ARE TO BE INSTALLED IN SUCH A MANNER THAT DOES NOT ALLOW DIRECT EXPOSURE TO HEAT SOURCES, DOES NOT ALLOW THEM TO KINK, AND DOES NOT ALLOW ANY RUBBING ON SHARP EDGES.
- ANY VARIATIONS TO THE TONE WHEEL ASSEMBLY ARE TO BE APPROVED BY PCS ENGINEERING.

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DRAWN BY	MFP	3/16/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES SCALE: 1:2 SHEET 1 OF 1		



DESCRIPTION		
RPM SENSOR - ENGINE OUTPUT		
SIZE	DRAWING NO.	REV
<b>B</b>	SNS1025	1

USED ON	NEXT ASSEMBLY

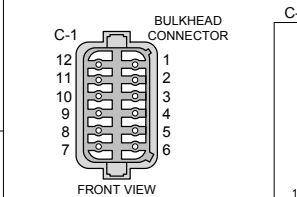
C1 12 PIN FOR E-SHIFTER HARNESS CONNECTOR			
PIN	CIRCUIT FUNCTION	COLOR	GOES TO
1	CAN L	WHT/BLK	C2-2
2	NA	NA	NA
3	NA	NA	NA
4	NA	NA	NA
5	SHIFT INHIBIT	GRYWHT	UNTERM
6	NA	NA	NA
7	CAN H	WHT/RED	C2-1
8	CHECK TRANS LIGHT	PNKLT/GRN	
9	+12 VOLT SW	YEL	
10	+12V BATTERY	RED	
11	+12 VOLTS SWITCHED	YEL	
12	CHASSIS GND	BLK	

C2 CAN CAP [INCLUDE CAP, NOT SHOWN]			
QTY	DESCRIPTION	P/N	NOTES
1	BODY	CON-5001	
1	PLUG	CON-5210	

C2 CAN CONNECTOR INCLUDE CAP			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-5050	
2	TERMINALS	CON-5200	
1	WEDGE LOCK	CON-5100	

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASE	7/24/19	FD	
1A	TEXT UPDATE	9/23/19	FD	

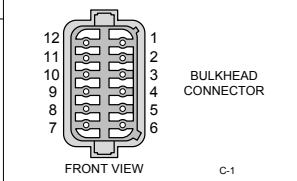
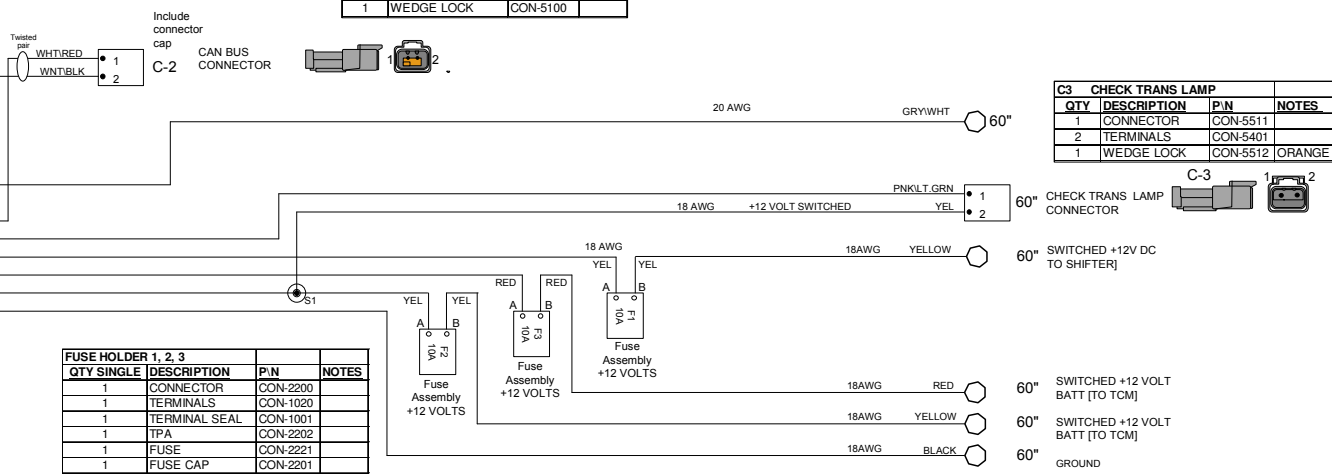


PIN	CIRCUIT FUNCTION	COLOR	GAUGE
1	CAN L	WHT/BLK	
2	NA	NC	
3	NA	NC	
4	NA	NC	
5	SHIFT INHIBIT	GRYWHT	
6	NA	NC	
7	CAN H	WHT/RED	
8	CHECK TRANS LIGHT	PNKLT/GRN	
9	+12 VOLT SW. SHIFTER	YEL 18AWG	
10	+12 VOLT BATTERY	RED 18AWG	
11	+12 VOLT SWITCHED	YEL 18AWG	
12	GROUND	BLK 18AWG	

FUSE HOLDER 1, 2, 3				
QTY	SINGLE	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-2200		
1	TERMINALS	CON-1020		
1	TERMINAL SEAL	CON-1001		
1	TPA	CON-2202		
1	FUSE	CON-2221		
1	FUSE CAP	CON-2201		

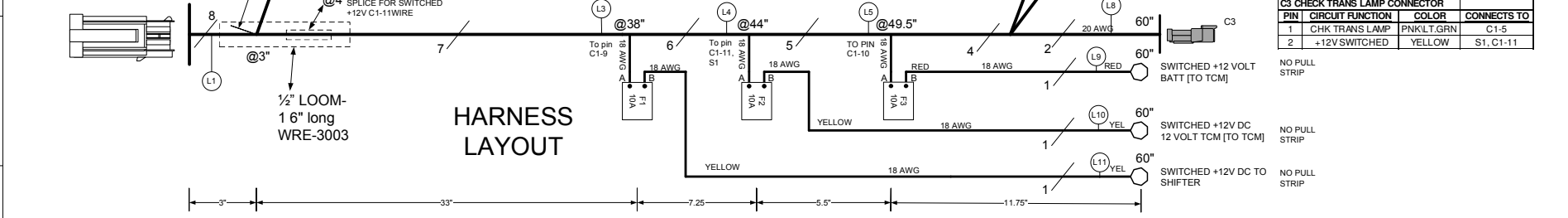
C1 CONNECTOR			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON5543	
8	TERMINALS	CON5510	
1	WEDGE	CON5544	

## Harness SCHEMATIC

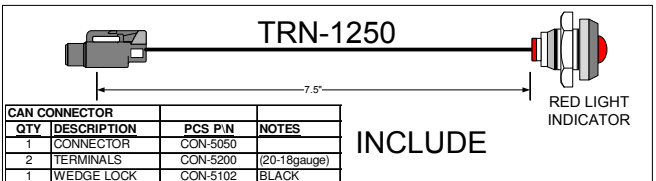


C2 CAN CONNECTOR			
QTY	DESCRIPTION	GOES TO	NOTES
1	CAN HIGH	C1-7	
2	PRE BUILT	C1-1	

LABEL DEFINITION TABLE			
NUM	NAME	STOCK #	NOTES
L1	BULKHEAD CONNECTOR	594-01105	P-64
L2	CAN CONNECTOR	594-01105	P-524
L3	F1 SW +12V DC TO SHIFTER	594-09105	P-544
L4	F2 SW +12V DC TO TCM	594-09105	P-545
L5	F3 SW +12V DC TO BATTERY	594-09105	P-547
L6	SHIFT INHIBIT	594-01105	P-546
L7	GROUND	594-01105	P-548
L8	CHECK TRANS LAMP CONNECTOR	594-01105	P-549
L9	SWITCHED +12 VOLT BATT [TO TCM]	594-01105	P-547
L10	12 VOLT TCM [TO TCM]	594-01105	P-545
L11	SWITCHED +12V DC TO SHIFTER	594-01105	P-550



WIRE COLOR ABBREVIATIONS		
TXT	COLOR	NOTES
BLK	BLACK	
BRN	BROWN	
RED	RED	
ORN	ORANGE	
YEL	YELLOW	
LT.GRN	LIGHT GREEN	
GRN	GREEN	
LT.BLU	LIGHT BLUE	
BLU	BLUE	
VIO	VIOLET	
GRY	GRAY	
WHT	WHITE	
PNK	PINK	



CAN CONNECTOR			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-5050	
2	TERMINALS	CON-5200	(20-18gauge)
1	WEDGE LOCK	CON-5102	BLACK

Print Date  
9/24/19  
1228

APPLICABLE STANDARDS  
 • ASME Y14.100-200  
 • ASME Y14.5M-1994  
 • IPC/WHMA-A-620A-CLASS 2  
 • MARK IAW MIL-STD-130.

NOTES  
 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH  
 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED  
 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED  
 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT  
 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.  
 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**GSE E-SHIFTER BULKHEAD HARNESS**

DATE: 7/17/2019

DRAWN BY: FRED D.

APPROVED BY:

SIZE: C

CUSTOMER DRAWING NO:

PCS PART NUMBER: **TCM-4500**

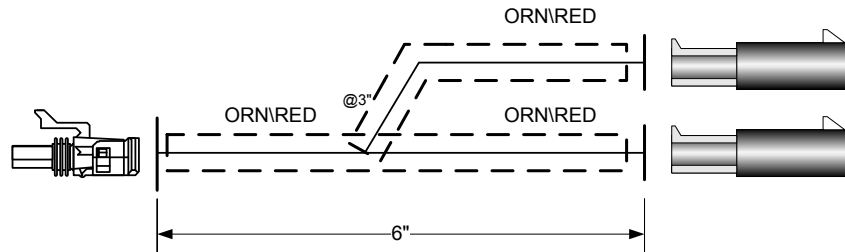
REV: 001

SHEET PAGE 1



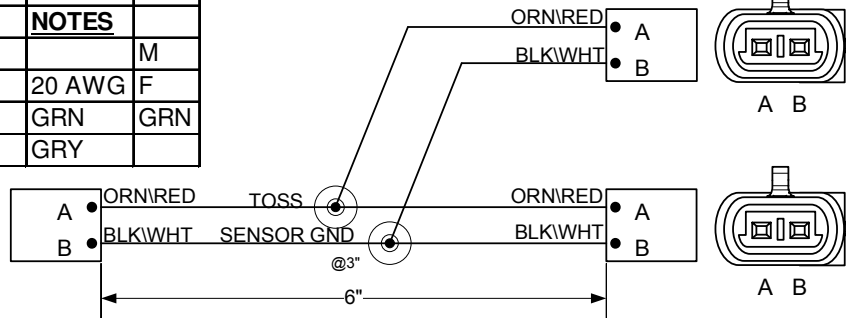
# TOSS EXTENTION ADAPTER CABLE

USE P-508 TCM-4613 TOSS EXT ADAPTER LABEL



C-1 SPEED SENSOR FEMALE			
QTY	DESCRIPTION	PCS P/N	NOTES
1	CONNECTOR	CON-1070	M
2	TERMINALS	CON-1084	20 AWG F
2	CABLE SEAL	CON-1093	GRN GRN
1	TPA	CON-1072	GRY

OUTPUT SHAFT SPEED SENSOR FRONT VIEW



C2A TOSS EXTENTION ADAPTER			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

C2A TOSS EXTENTION ADAPTER			
QTY	DESCRIPTION	P/N	NOTES
1	CONNECTOR	CON-1071	F
2	PIN	CON-1088	M
1	SEAL	CON-1093	GRN
1	LOCK	CON-1072	3/5/2013

Print Date  
10/23/19  
1700

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASE	5/23/13	FD	
1A	TEXT UPDATE	7/3/19	FD	

**APPLICABLE STANDARDS**

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

**NOTES:**

- 1.) WIRE LENGTH TOLERANCE +/- 1/2 INCH
- 2.) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3.) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4.) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5.) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6.) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

DRAWN BY: FRED  
DATE: 9/13/18

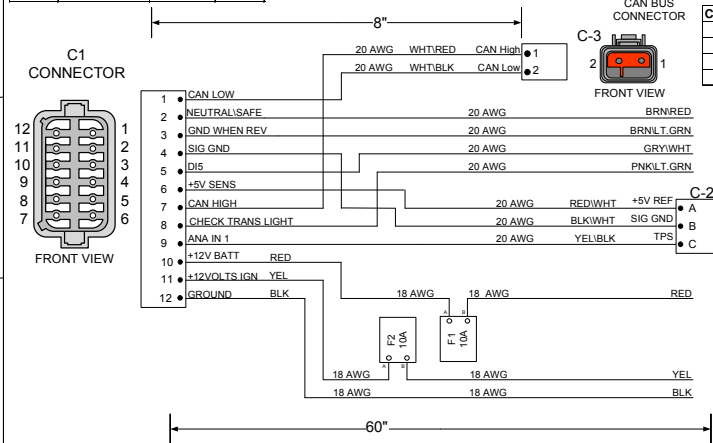
COMPANY:  
**POWERTRAIN CONTROL SOLUTIONS**

TITLE:  
**TOSS EXTENTION ADAPTER CABLE**

SIZE: C	CUSTOMER DRAWING NO.	PCS PART NUMBER TCM-4613	REV: 001
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APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ SHEET PAGE 1

C1 CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON5543	
12	TERMINALS	CON5510	
1	WEDGE	CON5544	

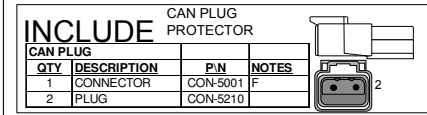
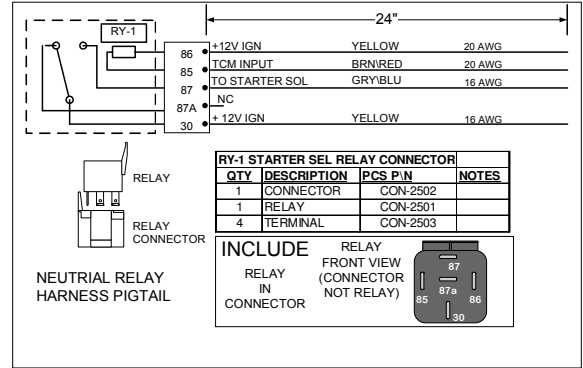


C3 CAN CONNECTOR			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-5050	
2	TERMINALS	CON-5200	
1	WEDGE LOCK	CON-5100	

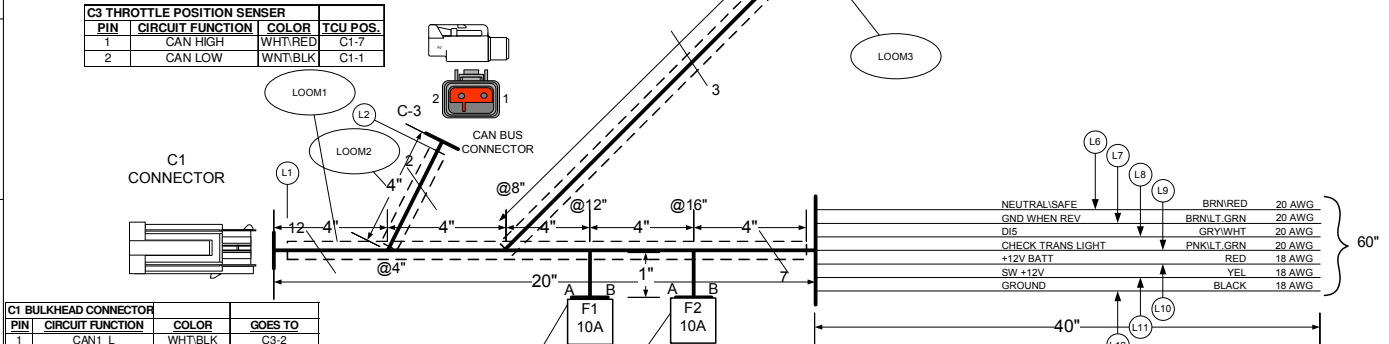
C2 THROTTLE POSITION			
QTY	DESCRIPTION	PIN	NOTES
1	CONNECTOR	CON-2328	
3	TERMINAL	CON-2329	22-20 awg

F1			
QTY	DESCRIPTION	PCS	PIN
1	CONNECTOR	CON-2200	
1	FUSE CAP:	CON-2201	BLK
1	TPA	CON-2202	BLU
2	TERMINAL	CON-1020	(18-16 AWG)
1	FUSE	CON-22XX	10A
2	CABLE SEAL	CON-1001	GRN

F2			
QTY	DESCRIPTION	PCS	PIN
1	CONNECTOR	CON-2200	
1	FUSE CAP:	CON-2201	BLK
1	TPA	CON-2202	BLU
2	TERMINAL	CON-1020	(18-16 AWG)
1	FUSE	CON-2221	10A
2	CABLE SEAL	CON-1001	GRN



C2 THROTTLE POSITION SENSER			
PIN	CIRCUIT FUNCTION	COLOR	TCU POS.
A	+5V	RED/WHT	C1-6
B	SIGNAL GND.	BLK/WHT	C1-4
C	TPS SIGNAL	YEL/BLK	C1-9



NUM	NAME	STOCK #	NOTES
L1	TCM-4659-003	594-01105	P479
L2	CAN BUS	594-09105	P35
L3	FUSE #1 +12 VOLT BATT	594-09105	P480
L4	FUSE #2 SWITCHED +12V DC	594-09105	P81
L5	THROTTLE POS SEN	594-09105	P2
L6	NEUTRAL SAFETY	594-09105	P274
L7	GROUND WHEN REV SIGNAL	594-09105	P478
L8	D15 SHIFT INHIBIT	594-09105	P477
L9	CHECK TRANS LIGHT	594-01105	P257
L10	+12V BATTERY	594-09105	P30
L11	SW +12V	594-09105	P31
L12	GROUND	594-09105	P32

LOOM DEFINITION TABLE			
LOCATION	DISCRIPTION	LENGTH	PART#
LOOM1	1/2" BLACK CONVOLUTED LOOM	20"	WRE-3003/LCN500
LOOM2	1/4" BLACK CONVOLUTED LOOM	4"	WRE-3000/LCN250
LOOM3	1/4" BLACK CONVOLUTED LOOM	52"	WRE-3000/LCN250

Print Date  
8/22/2019  
1700

REVISION HISTORY				
LEVEL	DESCRIPTION	DATE	DRN	APP
1	RELEASE	4/12/18	FD	
2	TPS LENGTH CHANGE SEE REDLINE	1/17/2019	FD	
3	TEXT UPDATE	8/22/19	FD	

**FULL FILENAME**

X:\ENGINEERING\HARNESST\TRANSMISSION CONTROLLERS\TCM-2600\HARNESST\TCM-4659-001 BULKHEAD HARNESS FOR 2600 E-SHIFT TCU HARNESS\TCM-4659-003 BULKHEAD HARNESS FOR 2600 E-SHIFT TCU HARNESS.VSD

**APPLICABLE STANDARDS**

- ASME Y14.100-200
- ASME Y14.5M-1994
- IPC/WHMA-A-620A-CLASS 2
- MARK IAW MIL-STD-130.

**NOTES**

- 1) WIRE LENGTH TOLERANCE +/- 1/2 INCH
- 2) WIRE GAUGE IS 20 AWG UNLESS OTHERWISE STATED
- 3) TAPE ALL LOOM JOINTS UNLESS OTHERWISE STATED
- 4) TWIST INDICATED WIRES AT LEAST 10-12 TURNS PER FOOT
- 5) PLACE TAGS NO MORE THAN 2" FROM CONNECTOR. PLACE TAGS FOR UNTERMINATED WIRES NO MORE THAN 2" FROM UNTERMINATED END.
- 6) WIRE TYPE IS TXL UNLESS OTHERWISE STATED

**COMPANY:**  
**POWERTRAIN CONTROL SOLUTIONS**

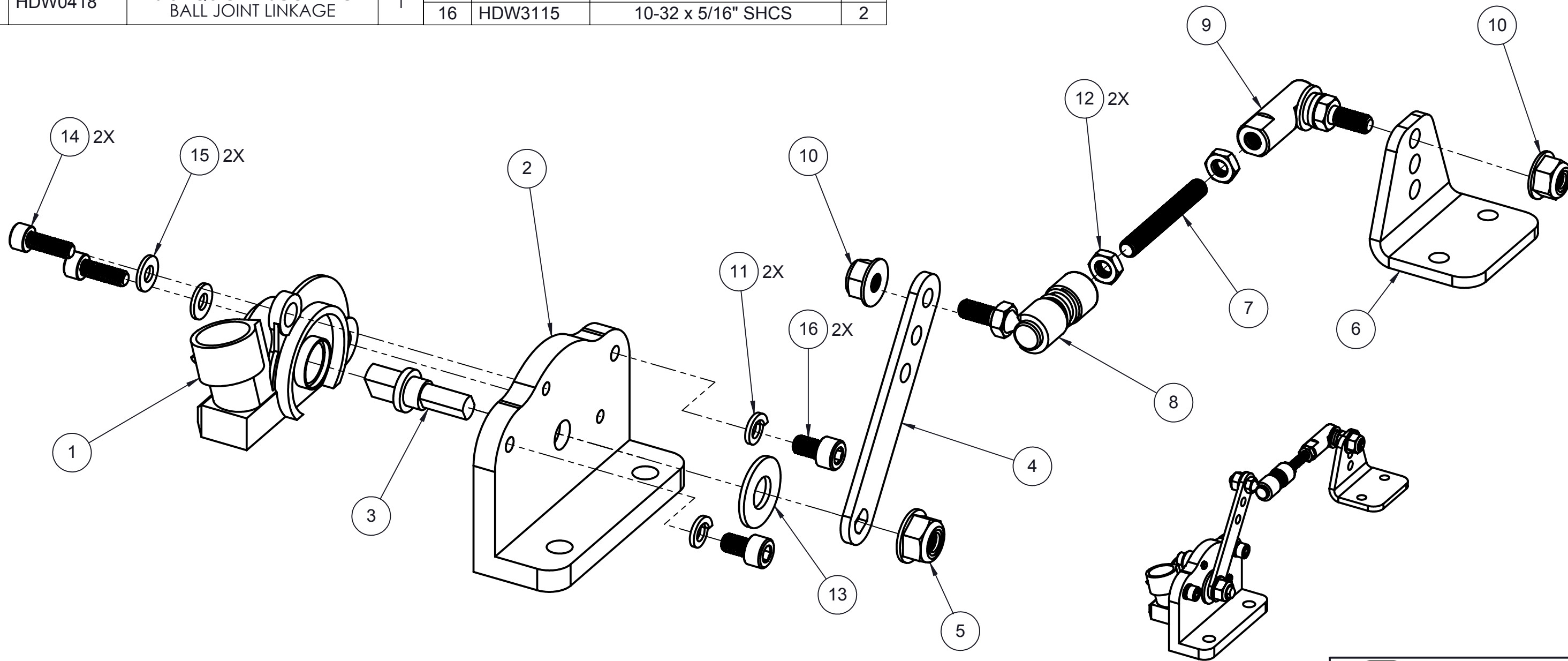
**TITLE:**  
**TCM-4659-001 BULKHEAD HARNESS FOR 2600 E-SHIFT TCU HARNESS TCM-4663-001**

SIZE: C	CUSTOMER DRAWING NO:	PCS PART NUMBER: TCM-4659	REV: 003
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DRAWN BY: FRED D. DATE: 4/12/18  
APPROVED BY: DATE: SHEET PAGE 1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SNS1020	TPS SENSOR MPF329920	1	9	HDW0416	10-32 SHIELDED BALL JOINT LINKAGE	1
2	HDW3100	TPS MOUNTING BRACKET	1	10	HDW0422	10-32 NYLON LOCK NUT	2
3	HDW3101	TPS SHAFT	1	11	HDW3111	#10 SPLIT LOCK WASHER	2
4	HDW3102	TPS PIVOT ARM	1	12	HDW3112	10-32 x 5/16" Jam Nut	2
5	HDW3110	1/4-20 FLANGED NYLON LOCK NUT	1	13	HDW3113	5/16" Mil Spec Flat Washer	1
6	HDW3103	TPS PEDAL MOUNT	1	14	HDW0200	8-32 x 1/2" SHCS	2
7	HDW3104	10-32 x 4" THREADED ROD	1	15	HDW3114	#8 Flat Washer	2
8	HDW0418	10-32 QUICK DISCONNECT BALL JOINT LINKAGE	1	16	HDW3115	10-32 x 5/16" SHCS	2

REVISIONS				
REV.	ZONE	DESCRIPTION	DATE	APPROVED
1		INITIAL CONCEPT		
2	A1	NAME CHANGED AND ADDED PCS PART NUMBERS	2/5/2016	CSK



TOLERANCES	
DECIMAL	.X ±.05 .XX ±.01 .XXX ±.005 .XXXX ±.0010
HOLE DIA.	.004
ANGLE	±0.5°
FRACTION	± 1/32"

USED ON	NEXT ASSY.	MATERIAL: N/A
		FINISH: N/A
		DRAWN BY: MEH 9/30/15
		ENG APPR.: MFP 10/1/15
		MFG APPR.:

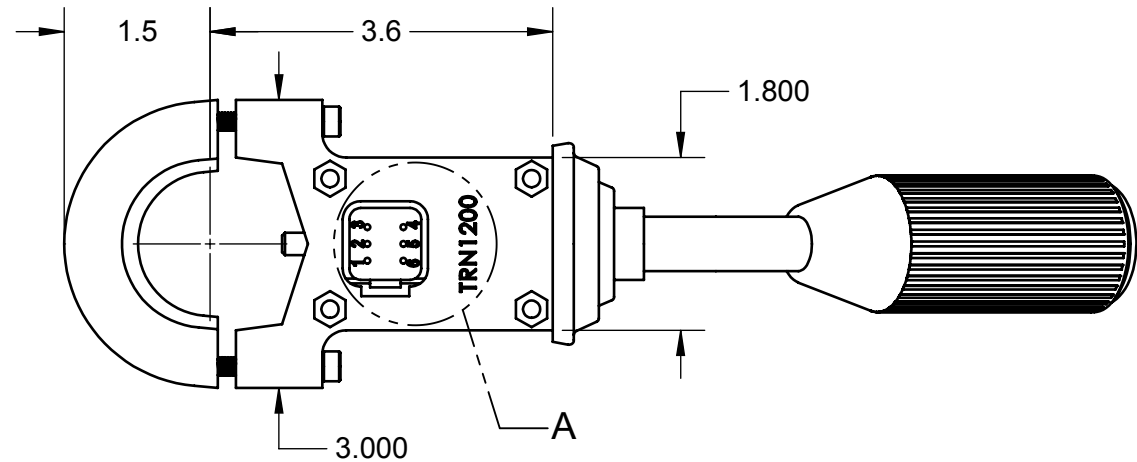
**PCS** Powertrain Control Solutions  
Engineering the future of driveline control

DESCRIPTION  
**REMOTE MOUNT TPS ADAPTER V2**

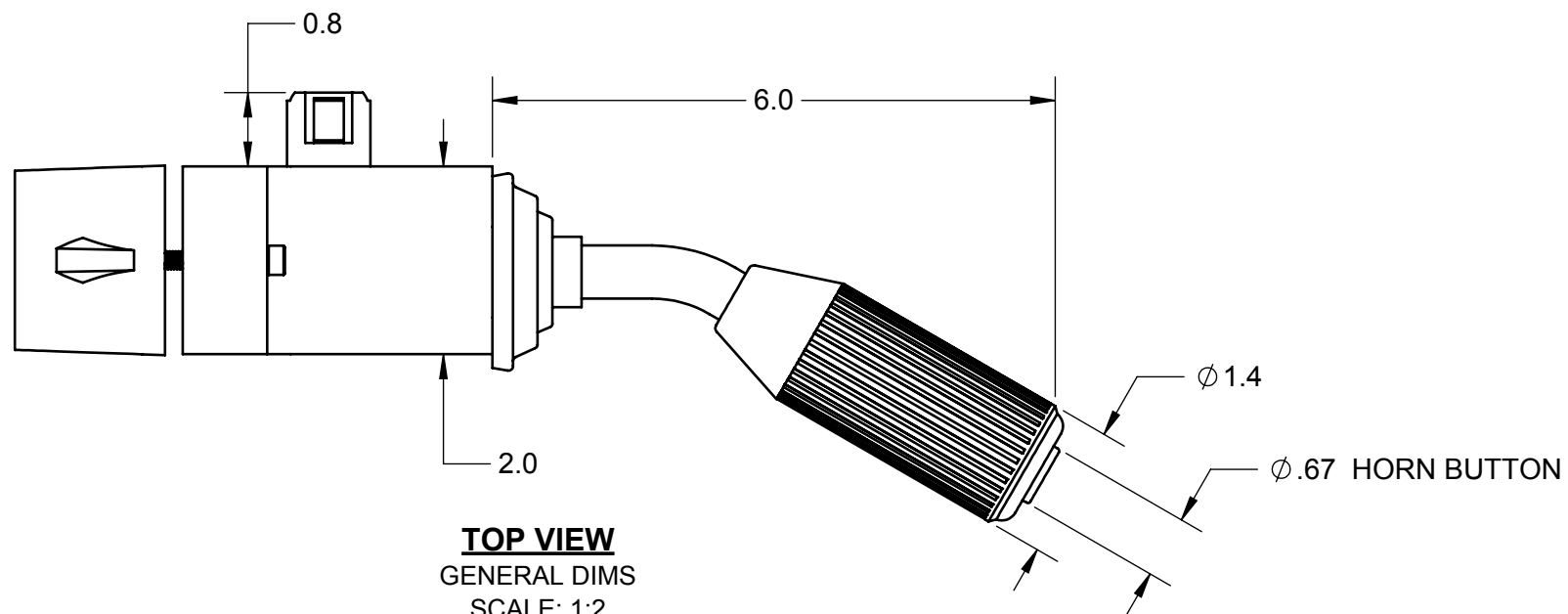
SIZE <b>B</b>	PART NO. <b>TCM6040</b>	REV <b>2</b>
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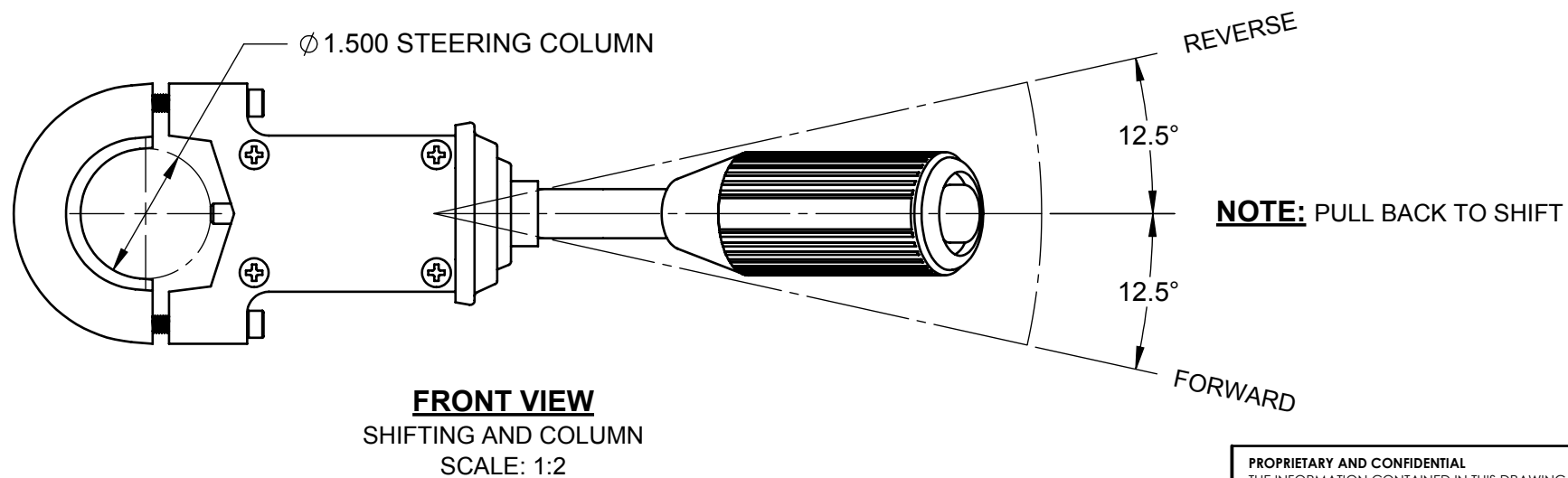
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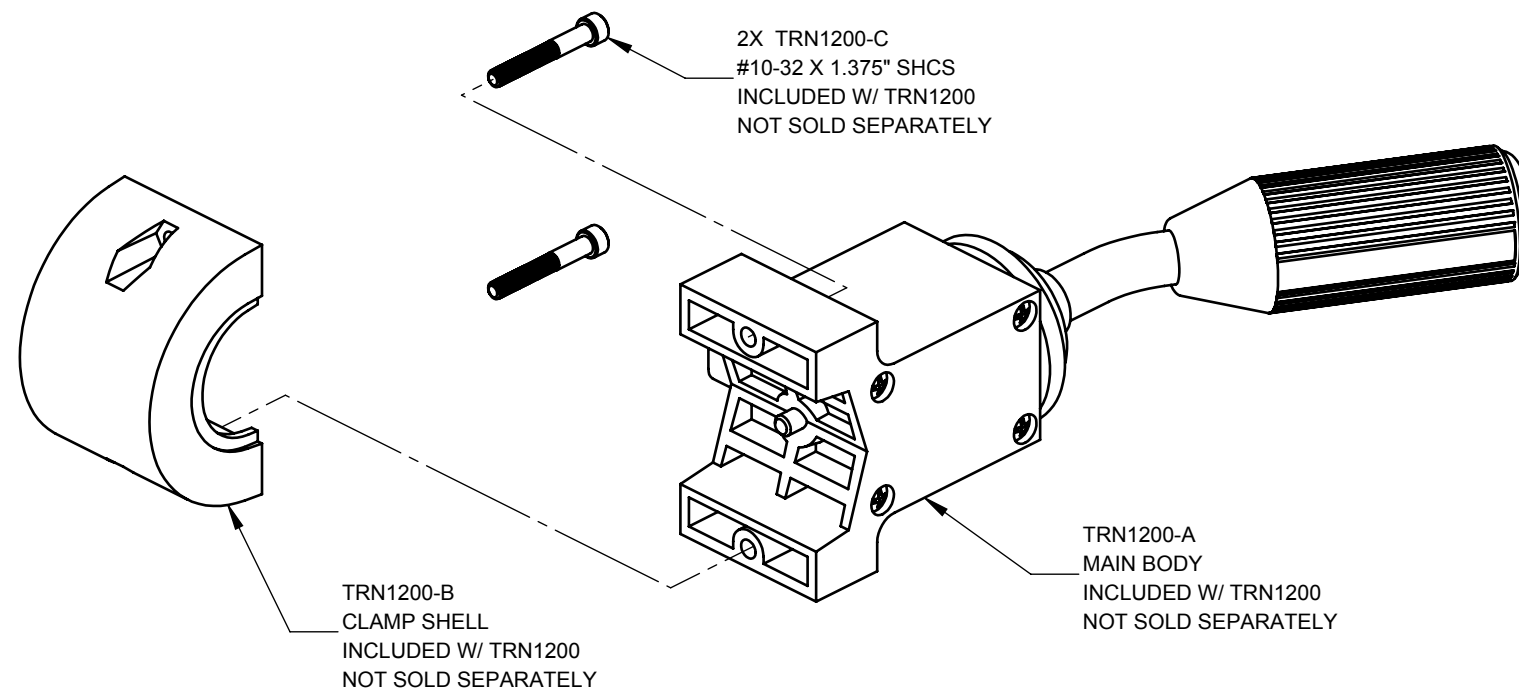
**BACK VIEW**  
GENERAL DIMS  
SCALE: 1:2



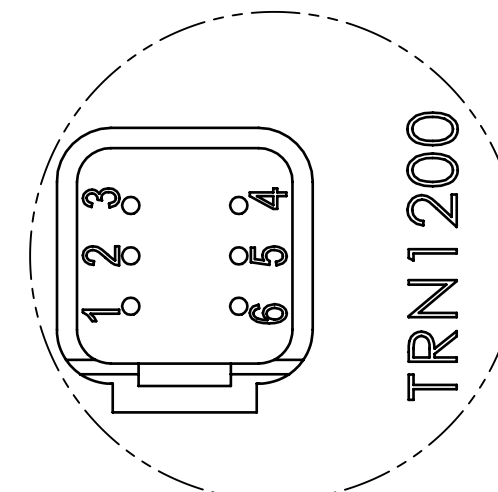
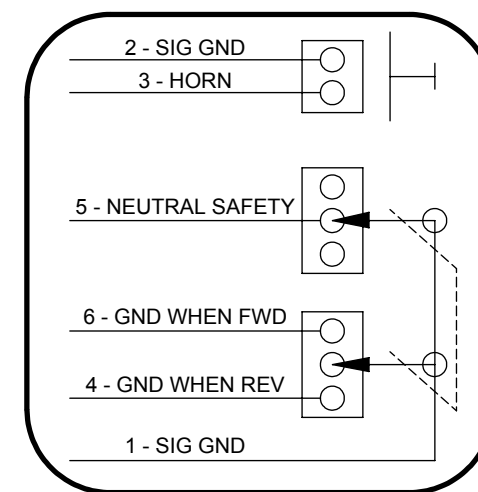
**TOP VIEW**  
GENERAL DIMS  
SCALE: 1:2



**FRONT VIEW**  
SHIFTING AND COLUMN  
SCALE: 1:2



MOLDED DEUTSCH DT04-6P PINOUT	
PIN	DESCRIPTION
1	F-N-R SIGNAL GROUND
2	HORN SIGNAL GROUND
3	HORN (OPTIONAL)
4	REVERSE SIGNAL
5	NEUTRAL SAFETY
6	FORWARD SIGNAL



**DETAIL A**  
CONNECTOR PINOUT  
SCALE: 3:2

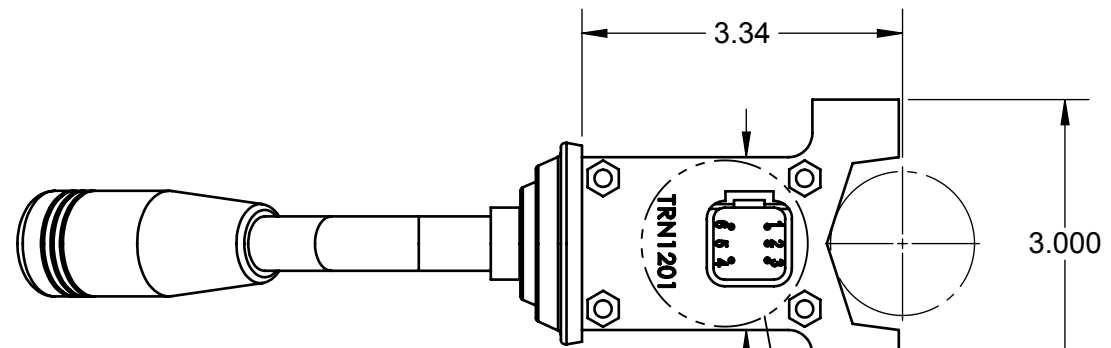
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DRAWN BY	MFP	6/15/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		
SCALE: 1:2	SHEET 1 OF 1	

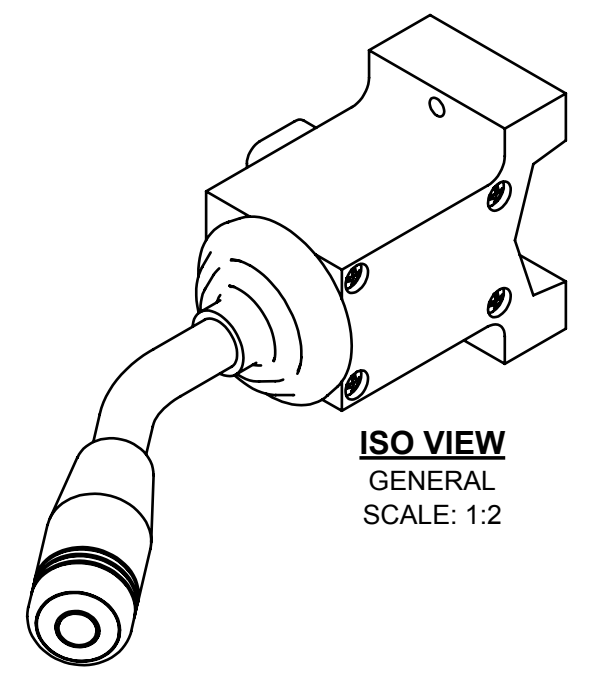
**PCS** Powertrain Control Solutions  
Engineering the future of driveline control

DESCRIPTION  
**FORWARD-NEUTRAL-REVERSE  
ELECTRONIC SHIFTER**

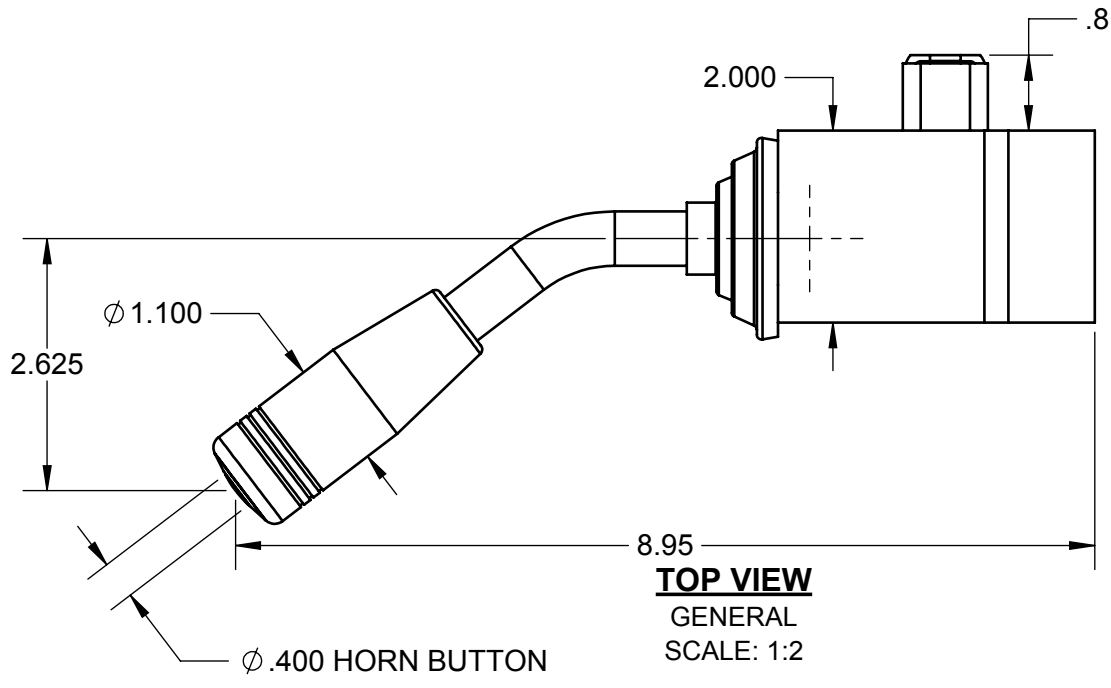
USED ON	NEXT ASSEMBLY
SIZE	DRAWING NO.
<b>B</b>	TRN1200
	REV
	1



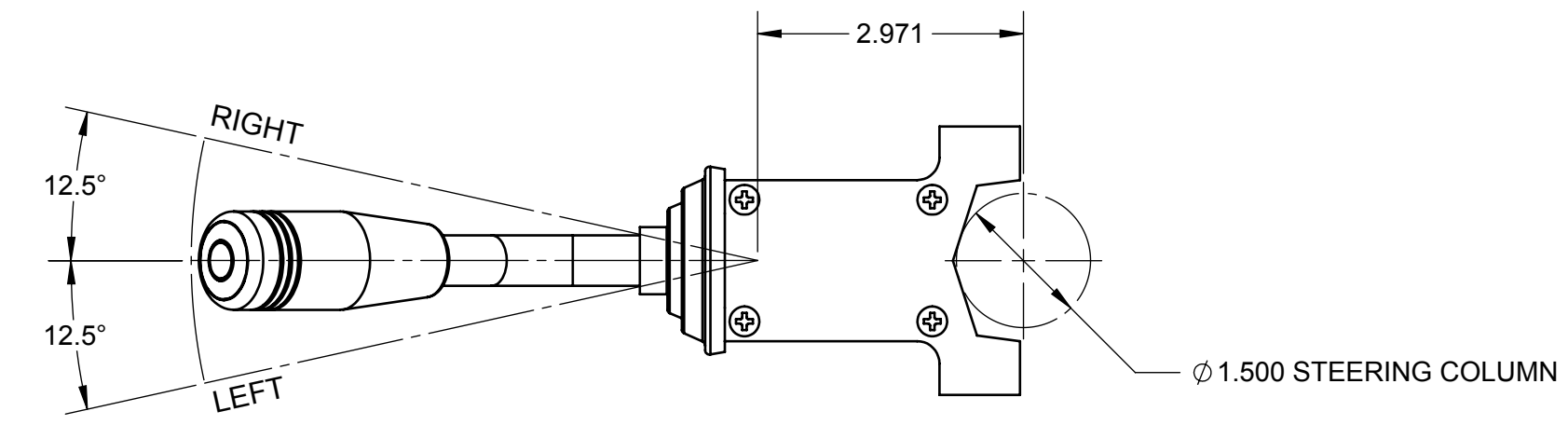
**REAR VIEW**  
GENERAL  
SCALE: 1:2



**ISO VIEW**  
GENERAL  
SCALE: 1:2

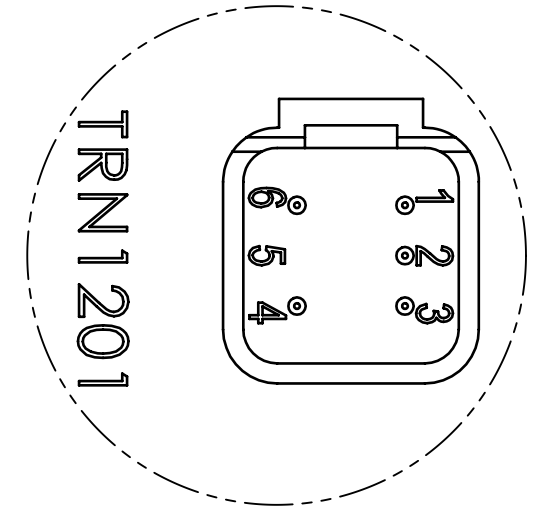


**TOP VIEW**  
GENERAL  
SCALE: 1:2



**FRONT VIEW**  
SHIFTING AND COLUMN  
SCALE: 1:2

MOLDED DEUTSCH DT04-6P PINOUT	
PIN	DESCRIPTION
1	GROUND (TURN SIG.)
2	HORN OUT
3	HORN IN
4	LEFT TURN SIG.
5	N / A
6	RIGHT TURN SIG.

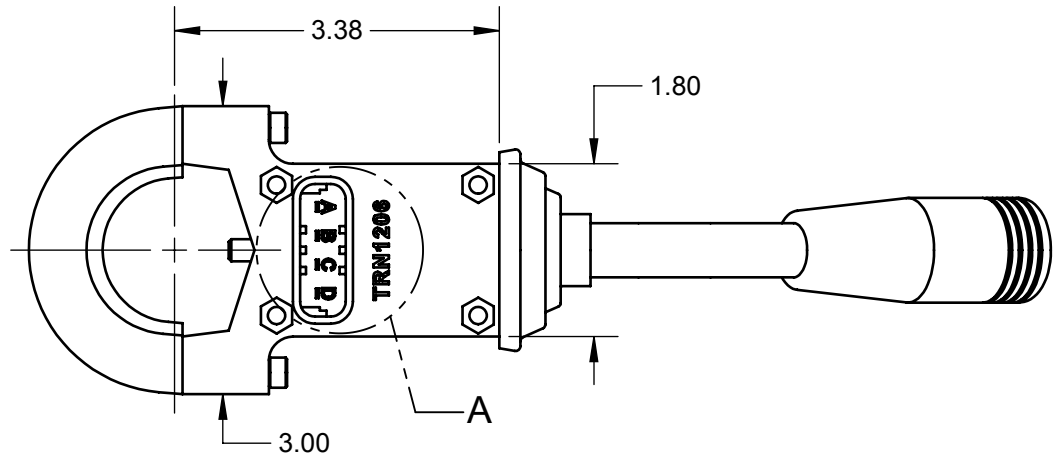


**DETAIL A**  
PINOUT  
SCALE: 1:1

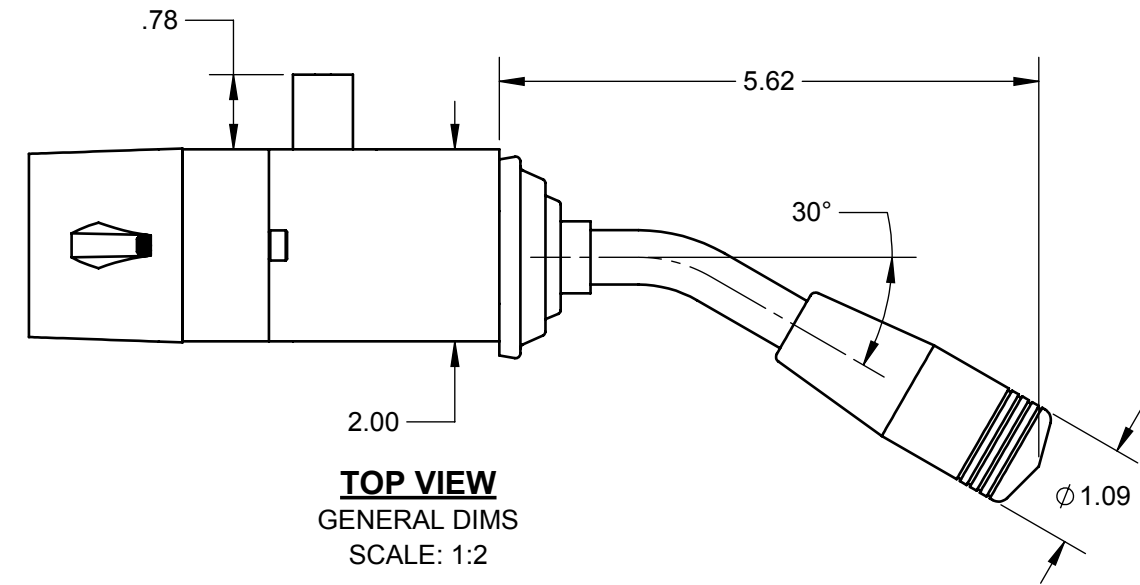


DESCRIPTION		TURN SIGNAL	
USED ON	NEXT ASSEMBLY	SIZE	DRAWING NO.
		<b>B</b>	TRN1201
DRAWN BY	MFP	1/30/18	REV
ENG APPR.			1
DIMENSIONS ARE IN INCHES		SCALE: 1:4	SHEET 1 OF 1

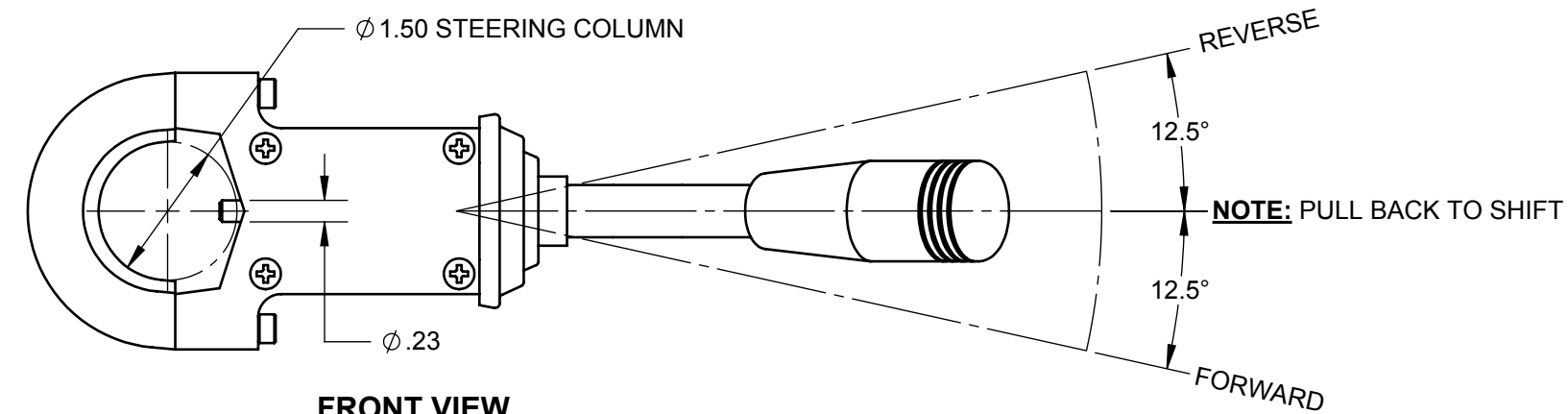
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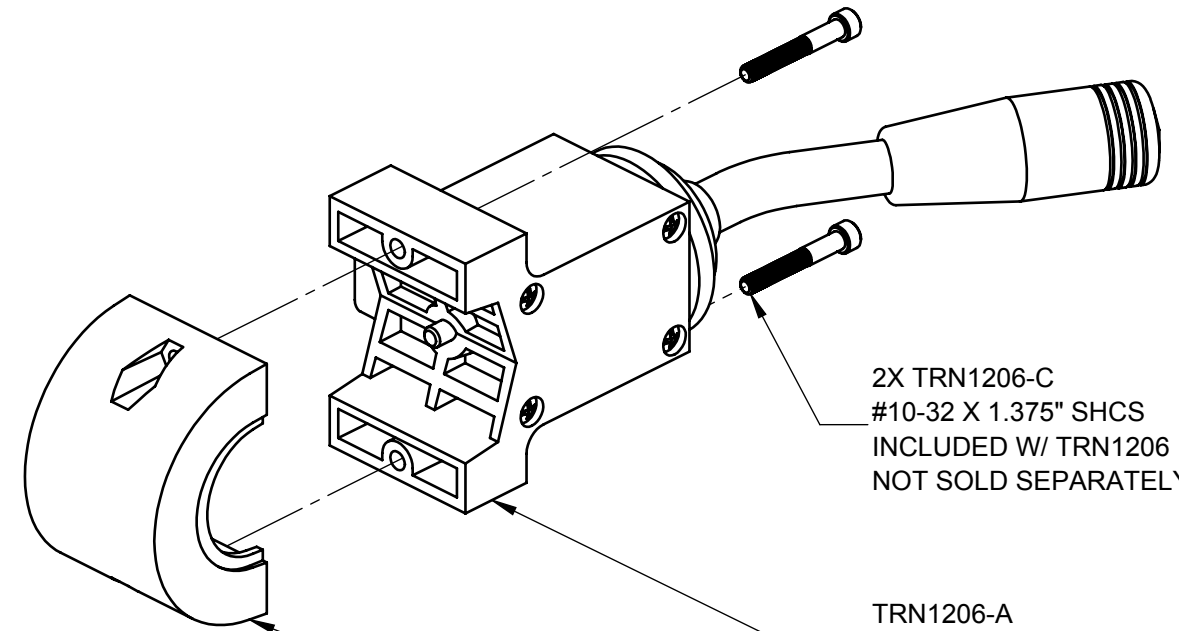
**BACK VIEW**  
GENERAL DIMS  
SCALE: 1:2



**TOP VIEW**  
GENERAL DIMS  
SCALE: 1:2



**FRONT VIEW**  
SHIFTING AND COLUMN  
SCALE: 1:2



**EXPLODED VIEW**  
KIT ITEMS  
SCALE: 1:2

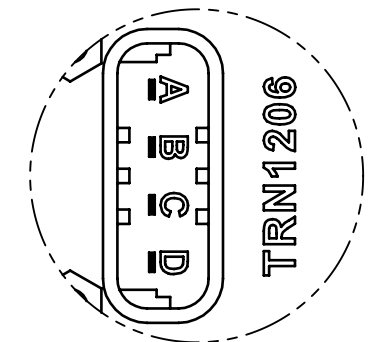
2X TRN1206-C  
#10-32 X 1.375" SHCS  
INCLUDED W/ TRN1206  
NOT SOLD SEPARATELY

TRN1206-A  
MAIN BODY  
INCLUDED W/ TRN1206  
NOT SOLD SEPARATELY

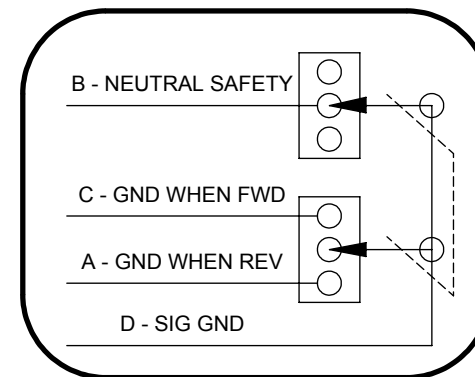
TRN1206-B  
CLAMP SHELL  
INCLUDED W/ TRN1206  
NOT SOLD SEPARATELY

MOLDED METRI-PACK 280 PINOUT	
PIN	DESCRIPTION
A	REVERSE SIGNAL
B	NEUTRAL SAFETY SIGNAL
C	FORWARD SIGNAL
D	F-N-R SIGNAL GROUND

MATING CONNECTOR TO BE CON2205



**DETAIL A**  
CONNECTOR  
SCALE: 1:1



**PCS** Powertrain Control Solutions  
Engineering the future of driveline control

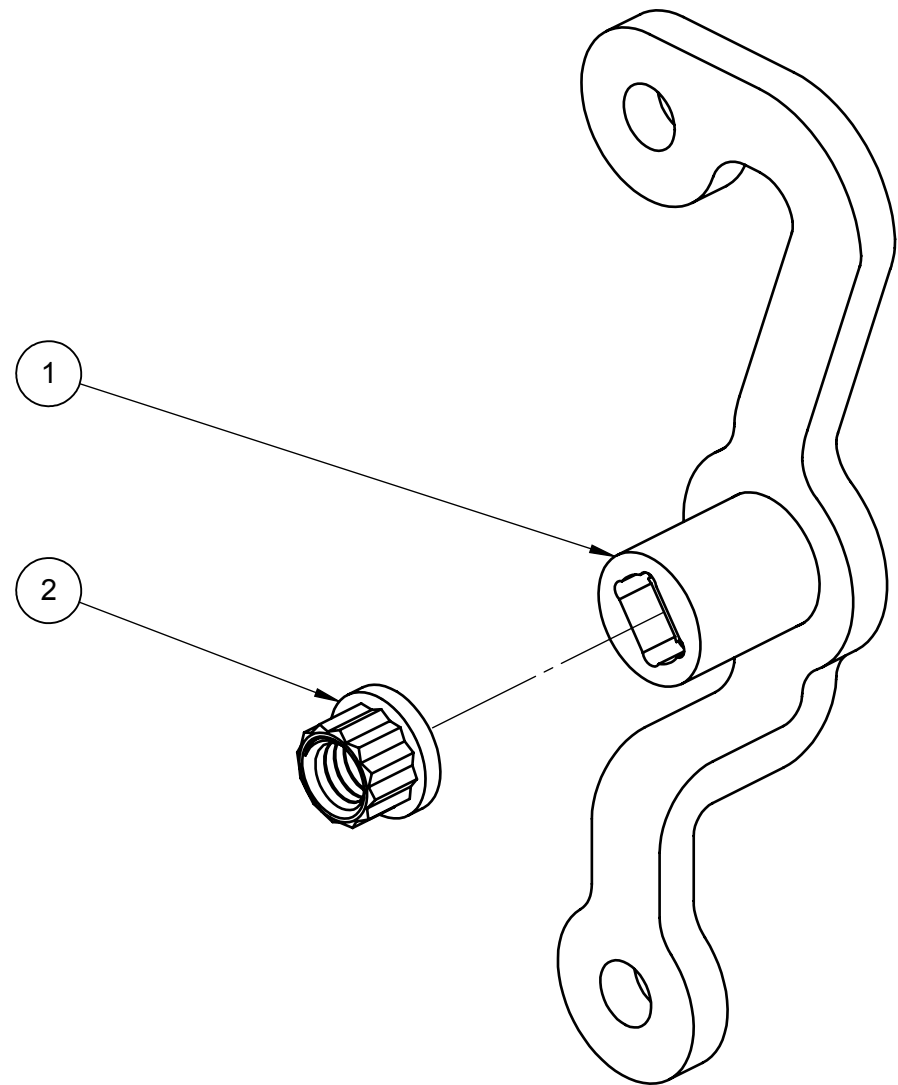
DESCRIPTION  
**FORWARD-NEUTRAL-REVERSE  
ELECTRONIC SHIFTER**

**PROPRIETARY AND CONFIDENTIAL**  
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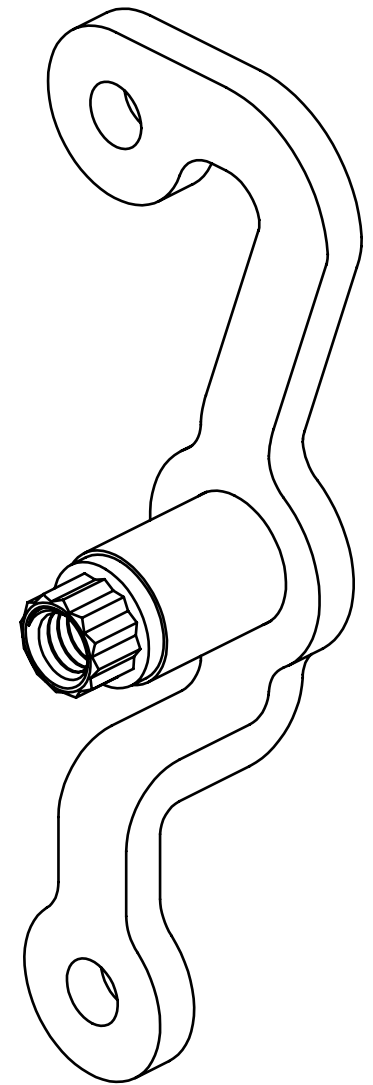
DRAWN BY: MFP 6/15/2017  
ENG APPR.:  
DIMENSIONS ARE IN INCHES SCALE: 1:2 SHEET 1 OF 1

USED ON: NEXT ASSEMBLY:  
SIZE: **B** DRAWING NO.: **TRN1206** REV: **1**

BOM #	DESCRIPTION	PCS PART #	QTY
1	C6 SHIFT ARM	TRN0227	1
2	BOLT, M10X1.5 FLANGED 12-POINT NUT	TRN0203	1



**ISO VIEW**  
EXPLODED  
SCALE: 1:1



**ISO VIEW**  
EXPLODED  
SCALE: 1:1



DESCRIPTION  
**C6 SHIFT ARM KIT**

USED ON	NEXT ASSEMBLY

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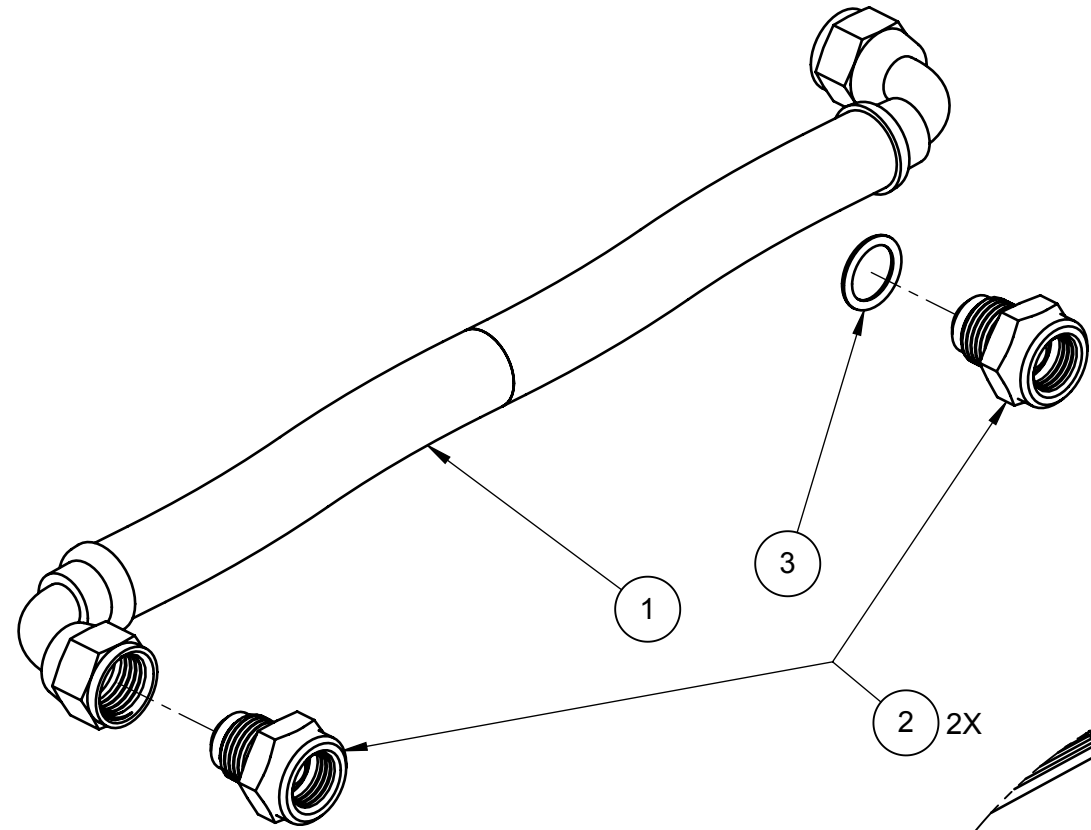
	DRAWN BY	MFP	8/21/2017
	ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:2	SHEET 1 OF 1

SIZE <b>B</b>	DRAWING NO. <b>TRN7084</b>	REV <b>1</b>
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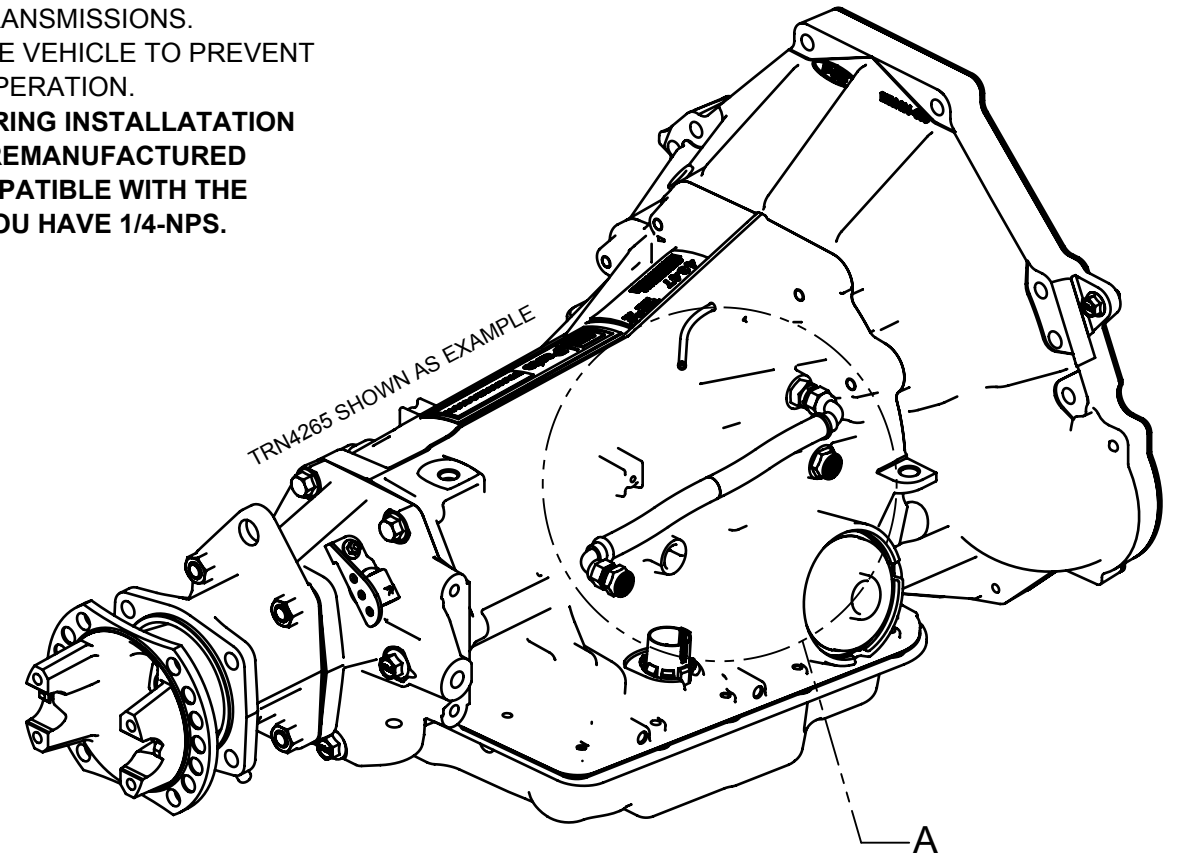
BOM #	DESCRIPTION	PCS PART #	QTY
1	C6 FLEXIBLE COOLER LINE	TRN0223	1
2	-6ORB MALE TO 1/2-20" IF FEMALE	TRN0213	2
3	-906 O-RING	TRN0209	1

**NOTES:**

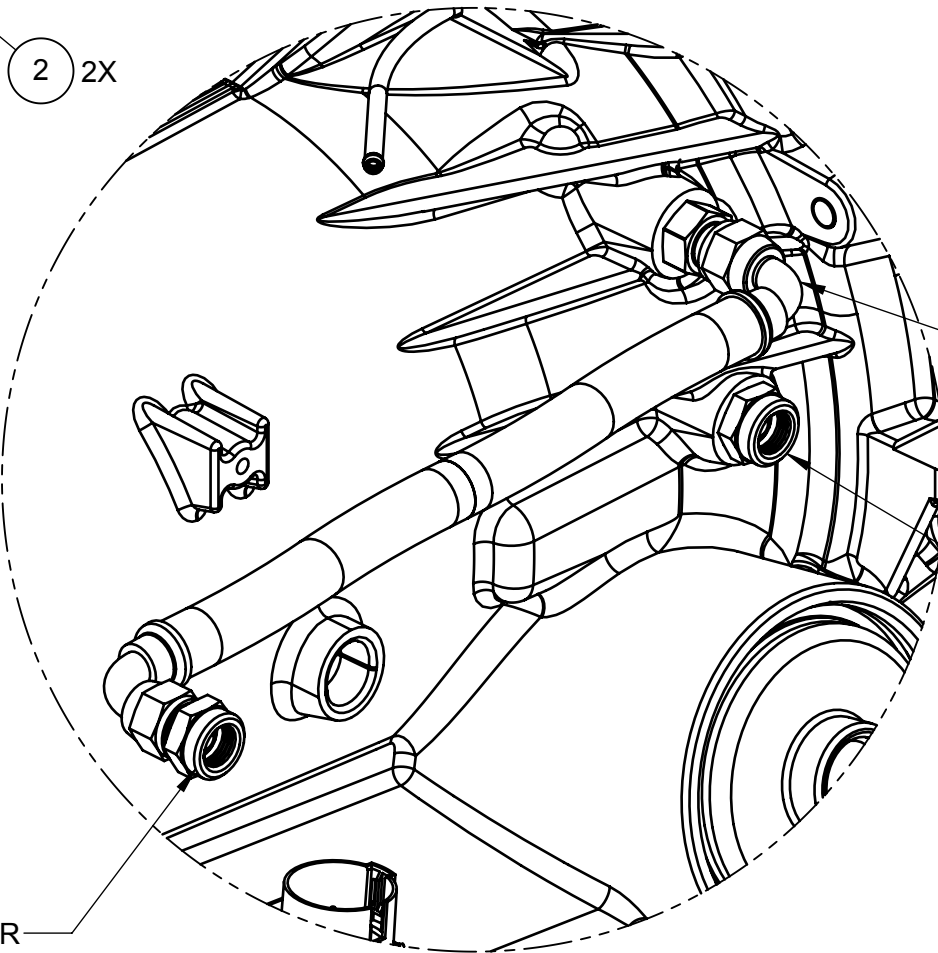
- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- TRN0212 (-6ORB TO -6JIC) FITTING WAS INCLUDED IN EARLY "C6 COOLER LINE KITS" AND IS NOW INCLUDED WITH ALL PCS TRANSMISSIONS.
- ENSURE ALL LINES ARE SECURED PROPERLY IN THE VEHICLE TO PREVENT DAMAGE DUE TO EXCESSIVE VIBRATION DURING OPERATION.
- HAND TIGHTEN BOTH FITTINGS INTO THE CASE DURING INSTALLATION BEFORE APPLYING THE PROPER TORQUE. SOME REMANUFACTURED CASES HAVE 1/4-NPS THREADS AND ARE NOT COMPATIBLE WITH THE -6ORB HARDWARE IN THIS KIT. CONTACT PCS IF YOU HAVE 1/4-NPS.**



**ISO VIEW**  
INCLUDED ITEMS  
SCALE: 2:3



**ISO VIEW**  
C6 REPLACEMENT TRANS  
SCALE: 1:4



**DETAIL A**  
INSTALLED KIT  
SCALE: 1:2

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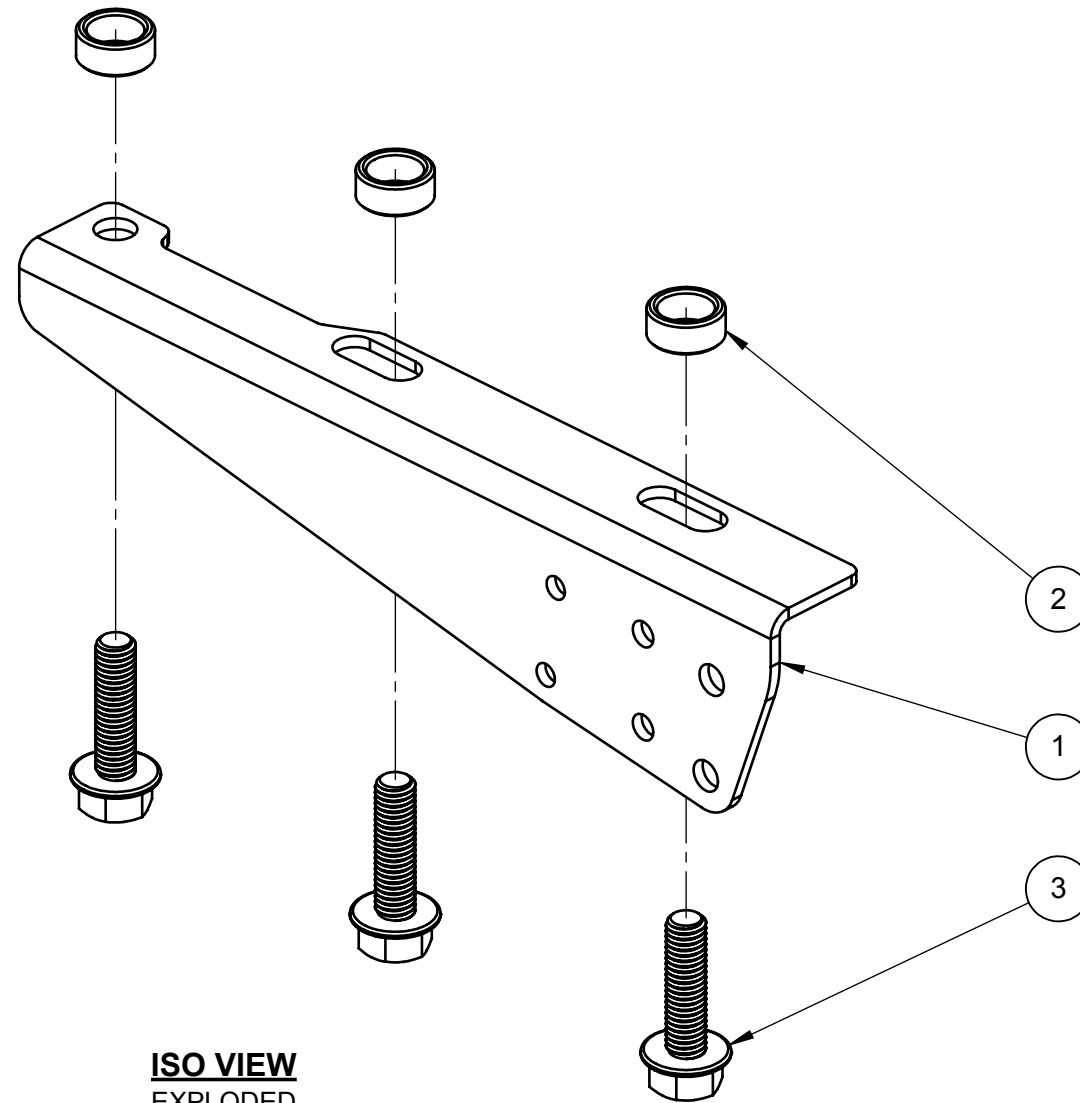
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 8/21/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:4 SHEET 1 OF 2

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Engineering the future of driveline control

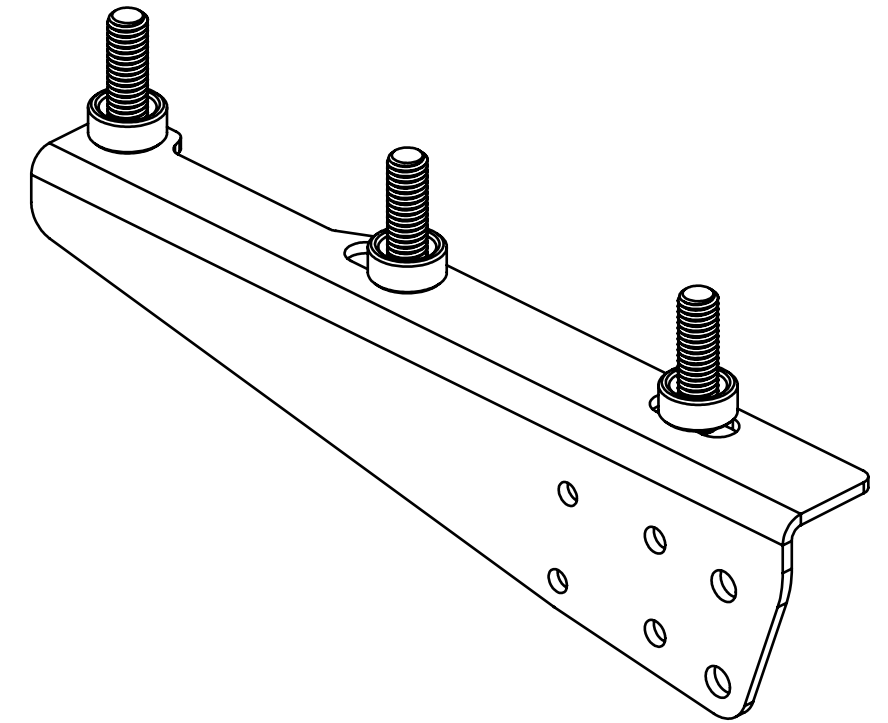
DESCRIPTION		C6-REPLACEMENT COOLER LINE KIT	
SIZE	DRAWING NO.	REV	
<b>B</b>	TRN7085	3	



BOM #	DESCRIPTION	PCS PART #	QTY
1	C6 SHIFT BRACKET	TRN0220	1
2	7mm SPACER, 8mm CLEARANCE	TRN7504	3
3	BOLT, M8X1.25X30mm FLANGED HEX	TRN7505	3



**ISO VIEW**  
EXPLODED  
SCALE: 2:3



**ISO VIEW**  
ASSEMBLED  
SCALE: 2:3



DESCRIPTION  
**C6 SHIFTER BRACKET KIT**

USED ON	NEXT ASSEMBLY

DRAWN BY	MFP	8/21/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:4 SHEET 1 OF 1

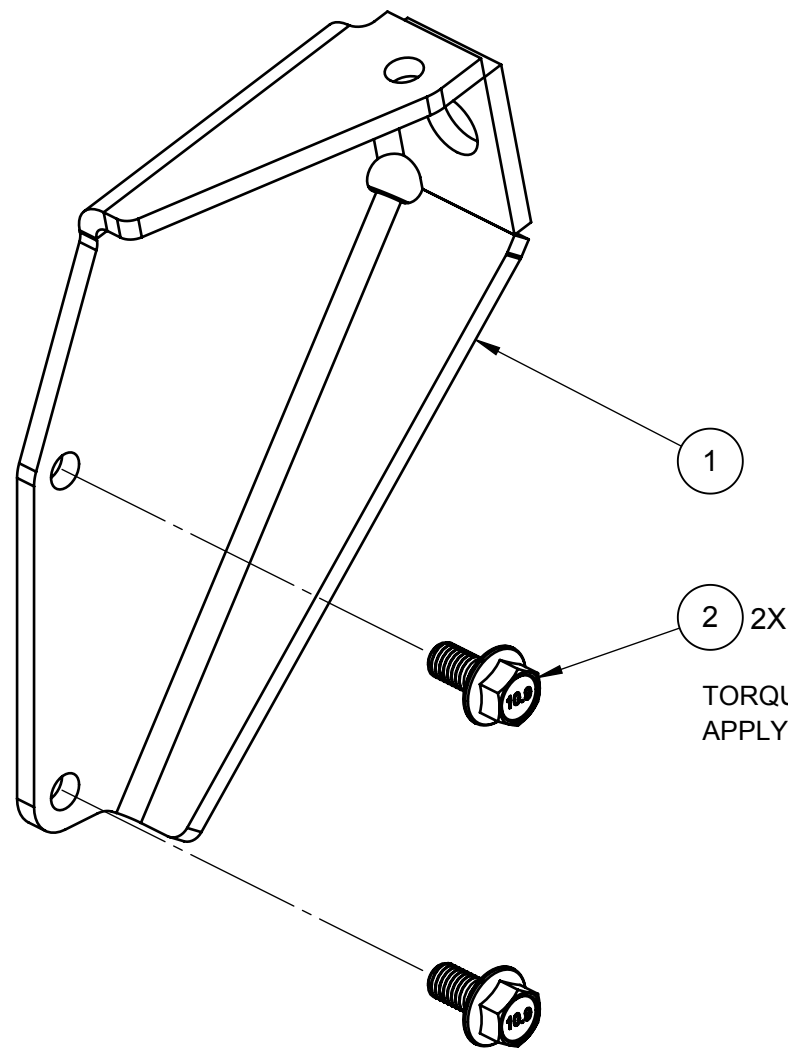
SIZE	DRAWING NO.	REV
<b>B</b>	TRN7087	1

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BOM #	DESCRIPTION	PCS PART #	QTY
1	C6 BRAKE CABLE BRACKET	TRN0221	1
2	BOLT, M10X1.5X20mm FLANGED HEX	TRN7527	2

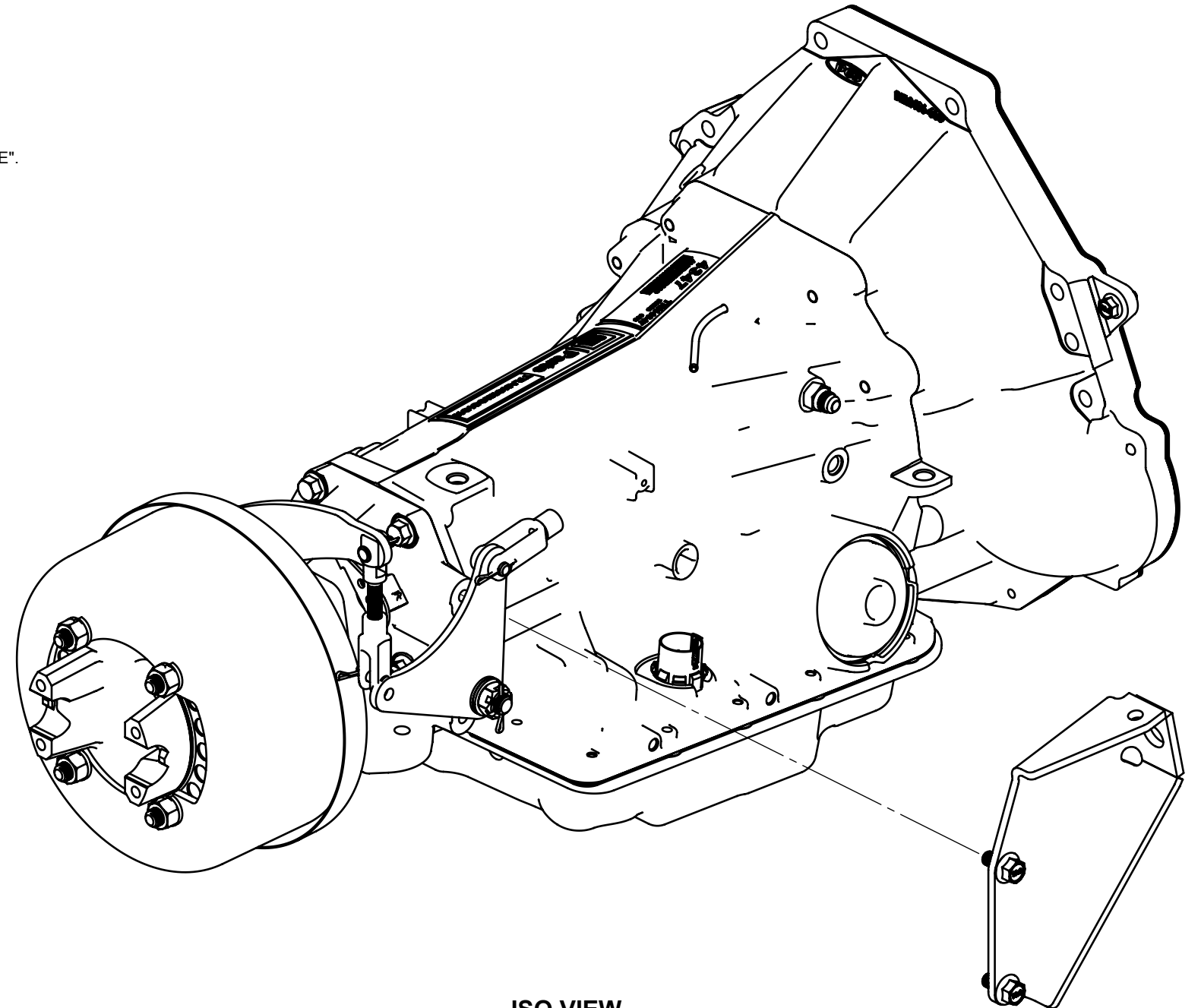
**NOTES:**

- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- FOR MORE INFORMATION REGARDING C6 COMPONENT INSTALLATION INSTRUCTIONS REFER TO THE "PCS C6 REPLACEMENT GUIDE".



**ISO VIEW**  
EXPLODED  
SCALE: 2:3

TORQUE TO 50-55 N\*m  
APPLY THREADLOCKER



**ISO VIEW**  
INSTALL LOCATION  
SCALE: 1:4



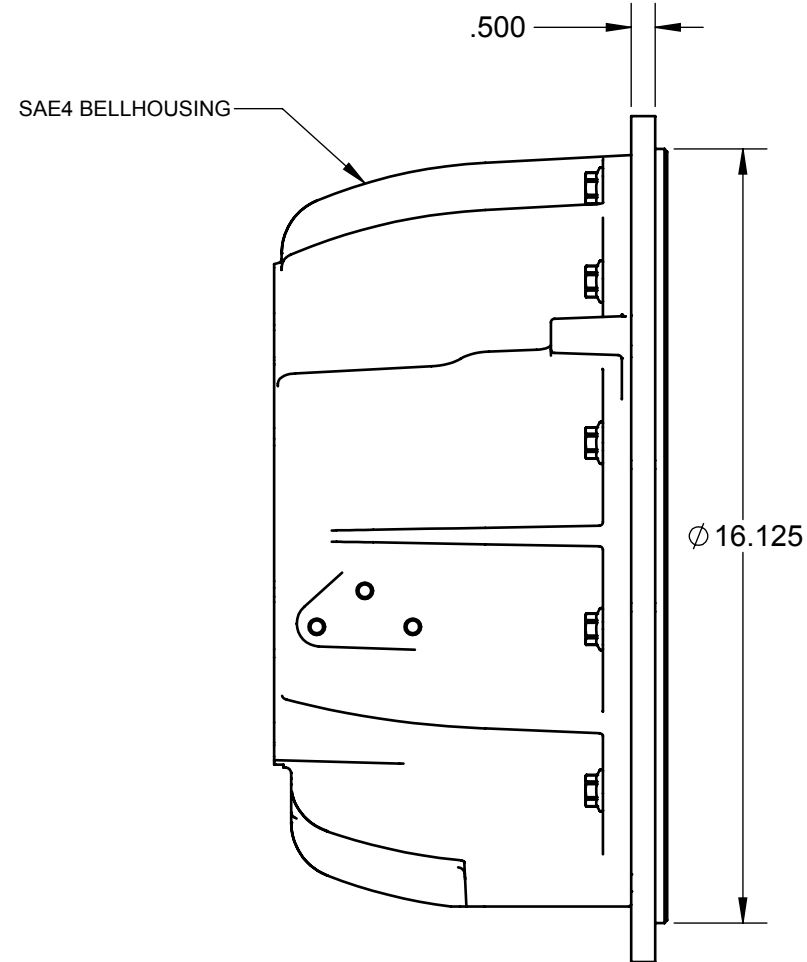
DESCRIPTION	
C6 BRAKE CABLE BRACKET KIT	

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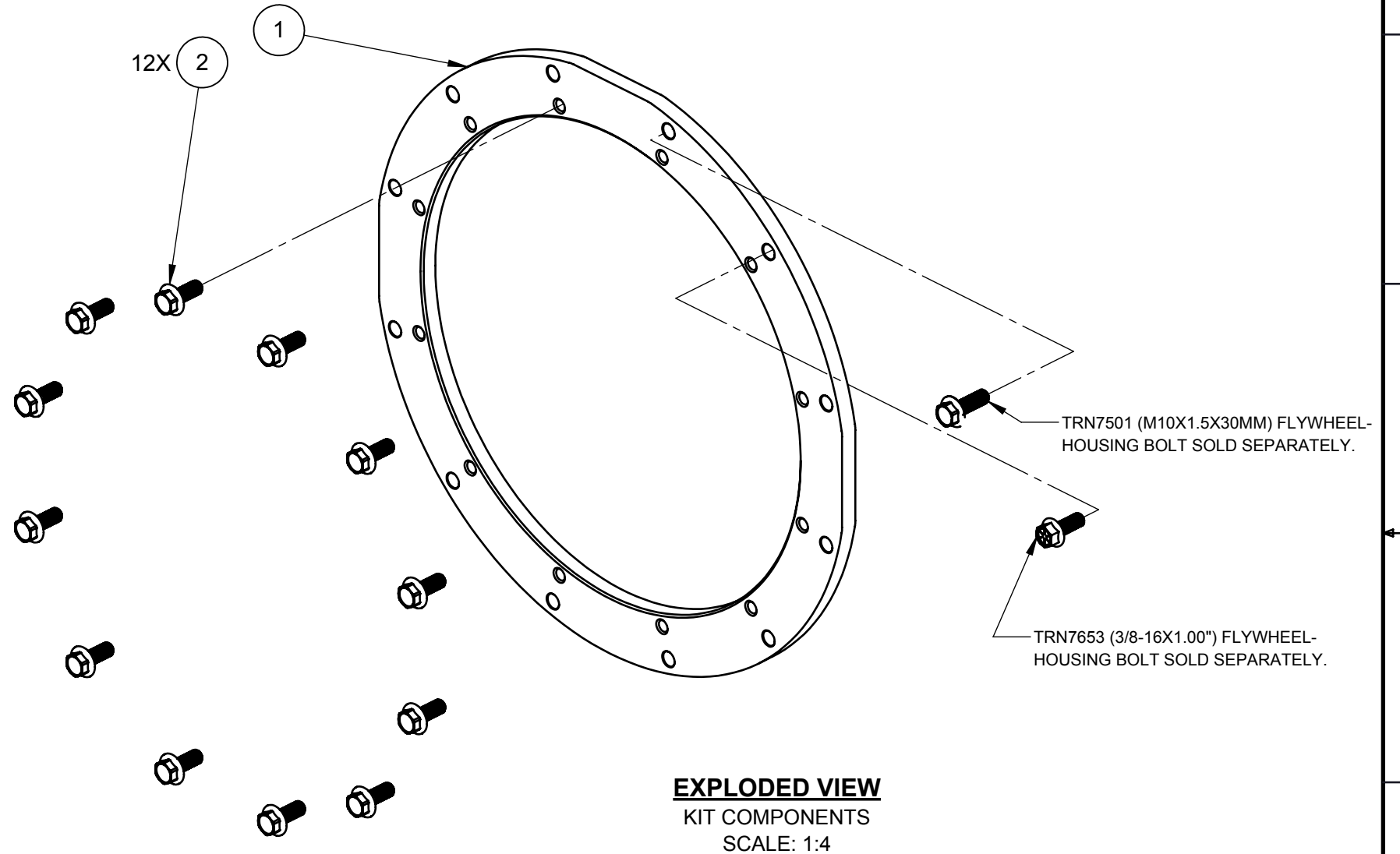
USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 8/21/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:4 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	TRN7088	2

BOM #	DESCRIPTION	PCS PART #	QTY
1	SAE4 TO SAE3 ADAPTER PLATE	TRN7710	1
2	BOLT, M10X1.5X25mm FLANGED HEX	TRN7500	12



**SIDE VIEW**  
ASSEMBLED  
SCALE: 1:4



**NOTES:**

1. INTERPRET THIS DRAWING IN ACCORDANCE WITH ASME Y14.5-2009.
2. THIS KIT IS INTENDED FOR ADAPTING ENGINES WITH SAE3 FLYWHEEL-HOUSING INTERFACES TO TRANSMISSIONS WITH SAE4 BELLHOUSING INTERFACES.
3. DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
4. FLYWHEEL-HOUSING INTERFACE BOLTS ARE NOT SUPPLIED WITH THIS KIT, BUT ARE AVAILABLE SEPARATELY. REFERENCE YOUR FLYWHEEL-HOUSING FOR CORRECT THREAD PITCH AND DEPTH.



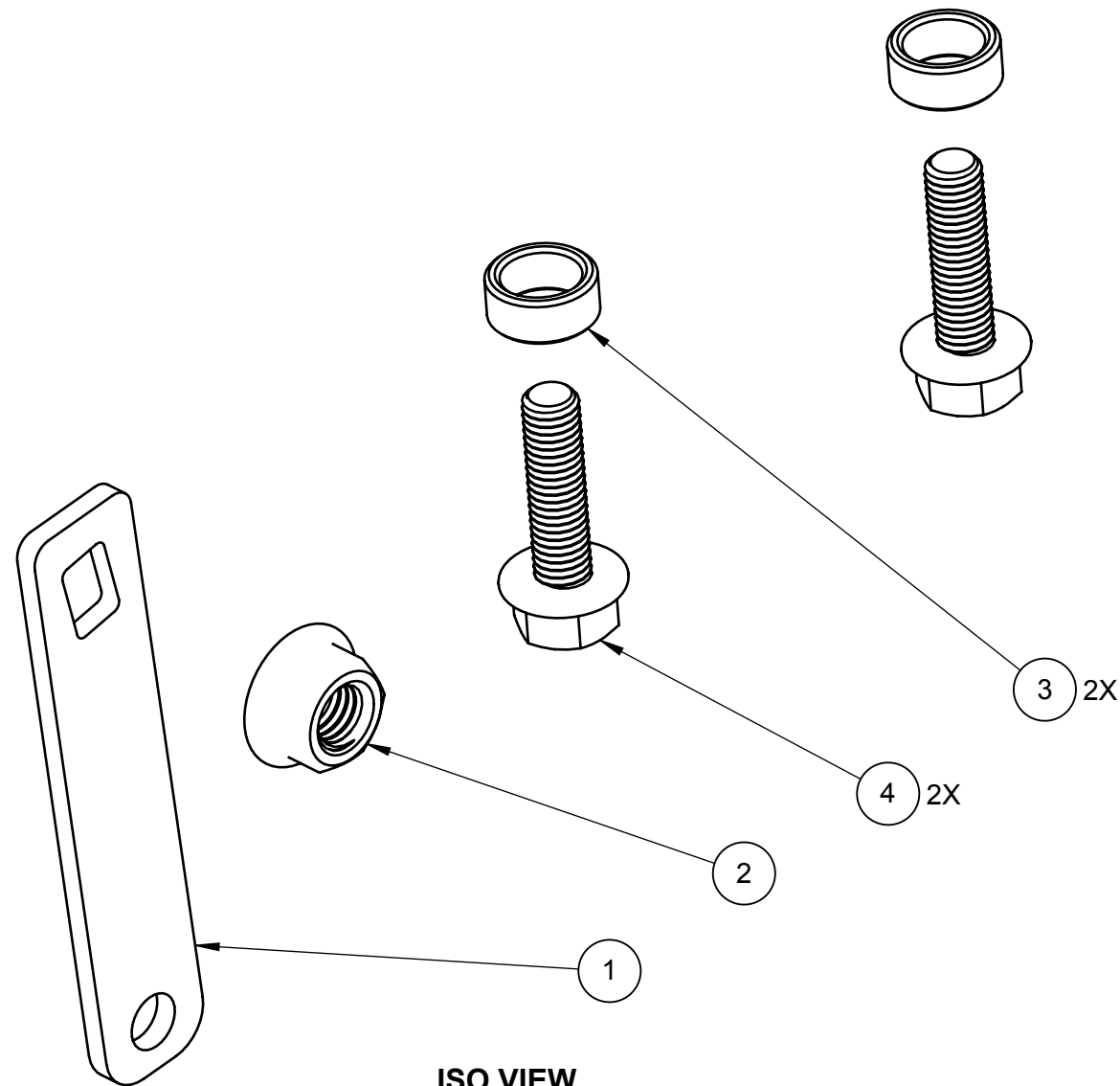
DESCRIPTION  
**SAE4 TO SAE3 ADAPTER KIT**

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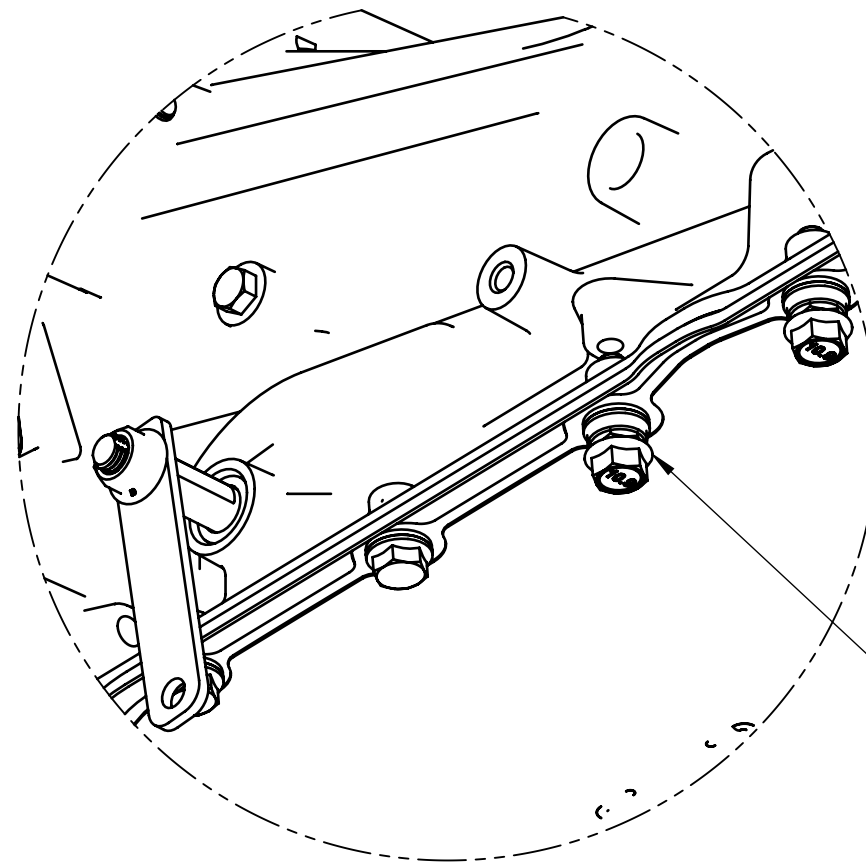
DRAWN BY	MFP	4/9/2018
ENG APPR.	JJK	4/9/2018
DIMENSIONS ARE IN INCHES		SCALE: 1:8 SHEET 1 OF 1

USED ON	NEXT ASSEMBLY	
SIZE	DRAWING NO.	REV
<b>B</b>	TRN8379	1

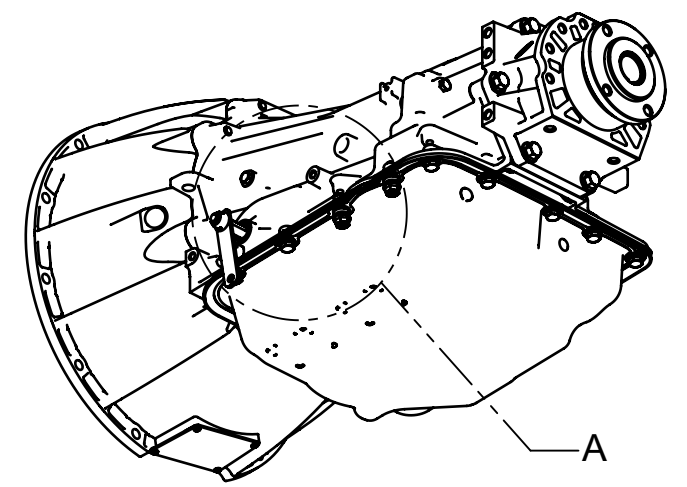
BOM #	DESCRIPTION	PCS PART #	QTY
1	4LHD MANUAL SHIFT BRACKET	TRN7670	1
2	NUT, M10X1.5 FLANGED HEX	TRN7508	1
3	SPACER, 7mm TALL FOR M8 BOLT	TRN7504	2
4	BOLT, M8X1.25X30mm FLANGED HEX	TRN7505	2



**ISO VIEW**  
ASSEMBLY ITEMS  
SCALE: 1:1

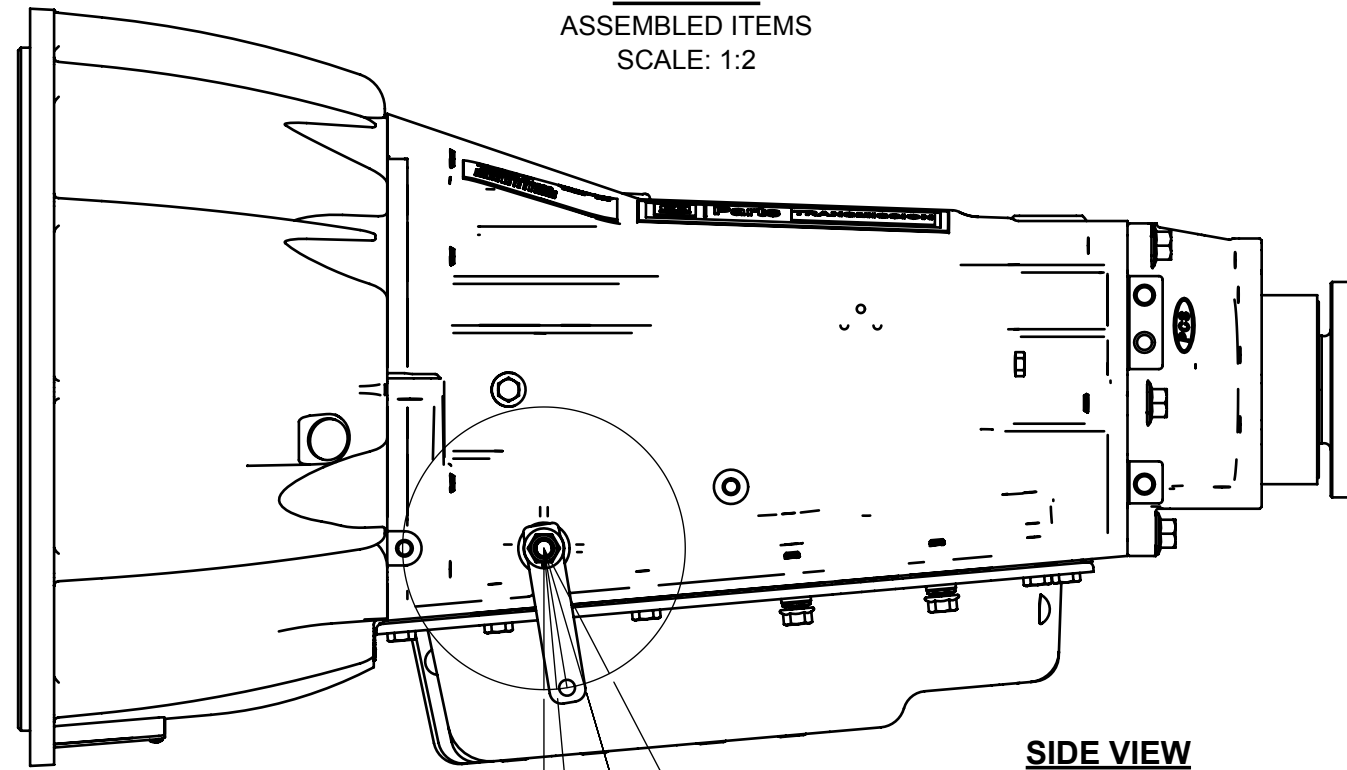


**DETAIL A**  
ASSEMBLED ITEMS  
SCALE: 1:2



**ISO VIEW**  
ASSEMBLED ITEMS  
SCALE: 1:4

PAN BRACKET AND PUSH-PULL CABLE ARE VEHICLE SPECIFIC, NOT INCLUDED WITH KIT.



**SIDE VIEW**  
DETENT ANGLES  
SCALE: 1:4

**NOTES:**

- THIS KIT IS INTENDED FOR VEHICLES WITH PUSH-PULL CABLE STYLE SHIFTERS AND WITHOUT ELECTRONIC SHIFTERS.
- DO NOT INSTALL ANY COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- IT IS CRITICAL TO ENSURE THE PUSH-PULL CABLE PLACES THE MANUAL SHAFT IN THE CENTER OF EACH DETENT.

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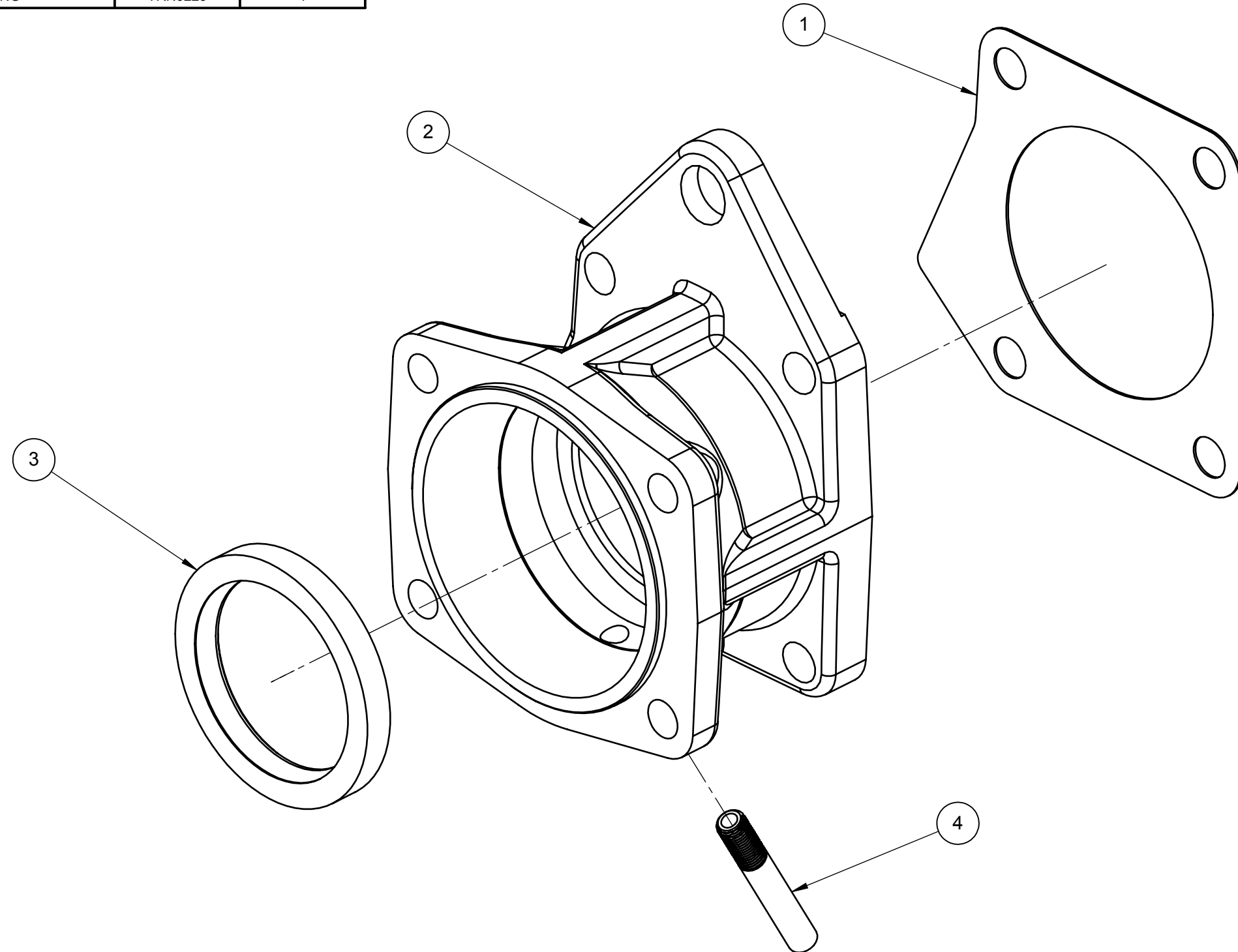
DRAWN BY	MFP	5/28/2019
ENG APPR.		
DIMENSIONS ARE IN INCHES		
SCALE: 1:4	SHEET 1 OF 1	



DESCRIPTION  
**MANUAL SHIFTER BRACKET KIT**

USED ON	NEXT ASSEMBLY	SIZE	DRAWING NO.	REV
		<b>B</b>	TRN8380	A

BOM #	DESCRIPTION	PCS PART #	QTY
1	GASKET, C6 BRAKE HOUSING	TRN0230	1
2	C6 BRAKE HOUSING	TRN0231	1
3	C6 YOKE SEAL	TRN0232	1
4	VENT - C6 BRAKE HOUSING	TRN0229	1



DESCRIPTION  
**C6 BRAKE HOUSING  
W/SEALS**

USED ON	NEXT ASSEMBLY

DRAWN BY	MFP	4/22/2017
ENG APPR.		

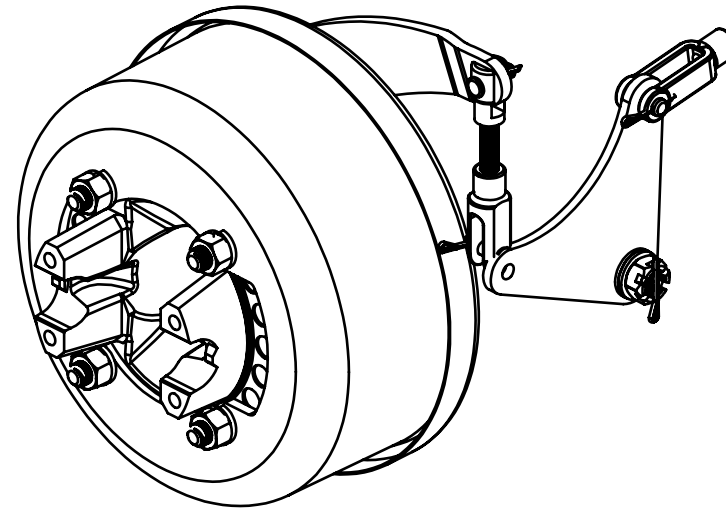
SIZE	DRAWING NO.	REV
<b>B</b>	TRN8630	2

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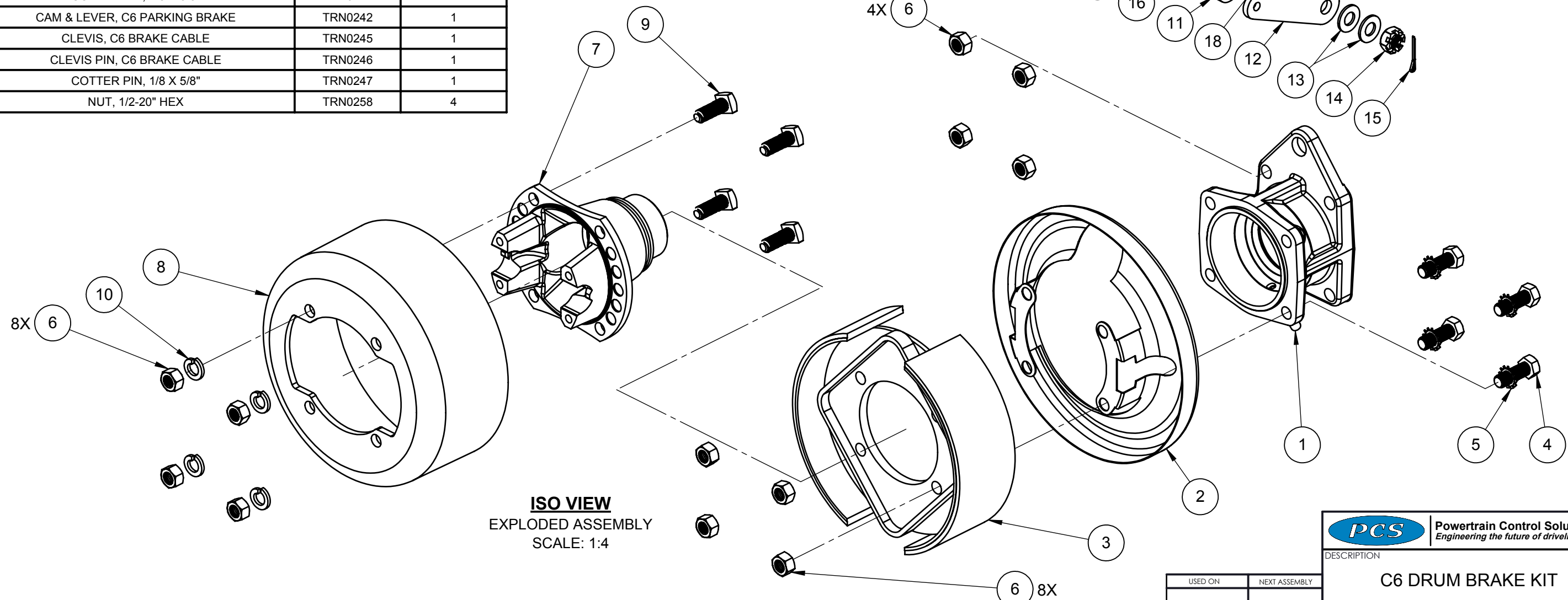
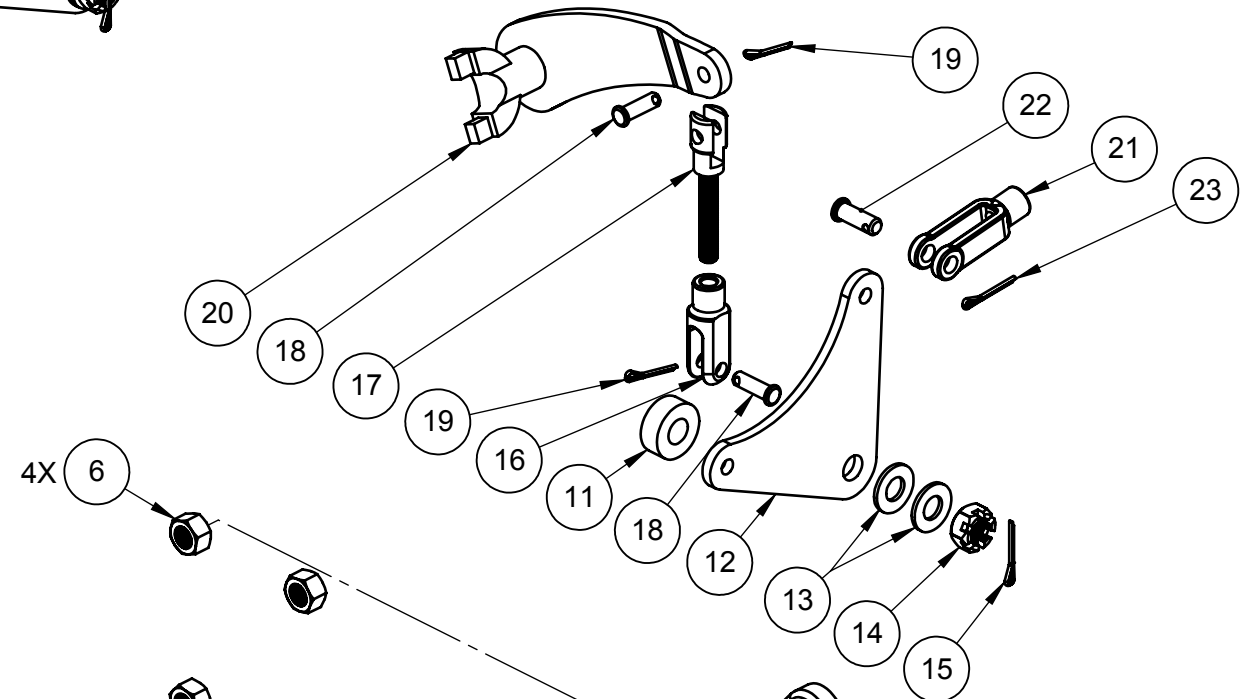


DIMENSIONS ARE IN INCHES	SCALE: 2:3	SHEET 1 OF 1
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BOM #	DESCRIPTION	PCS PART #	QTY
1	C6 BRAKE HOUSING W/ SEALS	TRN8630	1
2	DUST SHIELD, C6 PARKING BRAKE	TRN0248	1
3	SHOW ASSEMBLY, C6 PARKING BRAKE	TRN0249	1
4	BOLT, 1/2-13X1.5" HEX	TRN0250	4
5	1/2" TOOTH LOCK WASHER	TRN0233	4
6	1/2-13" HEX NUT	TRN0234	8
7	C6 YOKE	TRN0251	1
8	DRUM, C6 PARKING BRAKE	TRN0252	1
9	BOLT, 1/2-13X1.44" SQUARE HEAD	TRN0253	4
10	1/2" SPLIT WASHER	TRN0254	4
11	SPACER, BELL CRANK	TRN0235	1
12	BELL CRANK	TRN0236	1
13	FLAT WASHER, 9/16"	TRN0237	2
14	NUT, 9/16-18" SLOTTED	TRN0238	1
15	COTTER PIN, 3/32 X 3/4"	TRN0239	1
16	YOKE END, FEMALE	TRN0240	1
17	YOKE END, MALE	TRN0241	1
18	CLEVIS PIN, C6 LINKAGE, 5/16X1"	TRN0243	2
19	COTTER PIN, 1/8 X 5/8"	TRN0244	2
20	CAM & LEVER, C6 PARKING BRAKE	TRN0242	1
21	CLEVIS, C6 BRAKE CABLE	TRN0245	1
22	CLEVIS PIN, C6 BRAKE CABLE	TRN0246	1
23	COTTER PIN, 1/8 X 5/8"	TRN0247	1
24	NUT, 1/2-20" HEX	TRN0258	4



**ISO VIEW**  
ASSEMBLED KIT  
SCALE: 1:4



**ISO VIEW**  
EXPLODED ASSEMBLY  
SCALE: 1:4

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Engineering the future of driveline control

DESCRIPTION  
**C6 DRUM BRAKE KIT**

USED ON	NEXT ASSEMBLY

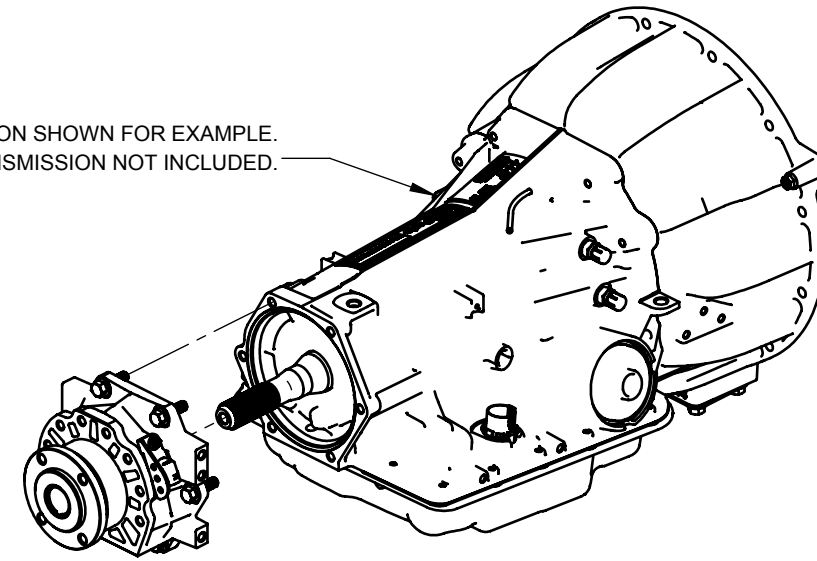
DRAWN BY	MFP	8/21/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES SCALE: 1:12 SHEET 1 OF 1		

SIZE	DRAWING NO.	REV
<b>B</b>	TRN8805	1

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BOM #	DESCRIPTION	PCS PART #	QTY
1	EXTENSION HOUSING - 4LHD DISC PARKING BRAKE	BRK0203	1
2	DOUBLE BALL BEARING - 3208 A	TRN0270	1
3	80mm INTERNAL RETAINING RING	TRN0271	1
4	SEAL - OUTPUT SHAFT - 22640	TRN0272	1
5	YOKE - 4LHD DISC PARKING BRAKE - FIXED FLANGE	TPB5030	1
6	SPEED GEAR SPACER - 4LHD DISC PARKING BRAKE	TRN0273	1
7	PCS SPEED GEAR	TPB5011	1
8	1.5" EXTERNAL RETAINING RING	TRN7066	1
9	SEAL - 4LHD EXTENSION HOUSING	TRN7062	1
10	OUTPUT SPEED SENSOR - 4LHD	TRN7060	1
11	BOLT, M6X1.00X10mm FLANGED HEX	TRN7521	1

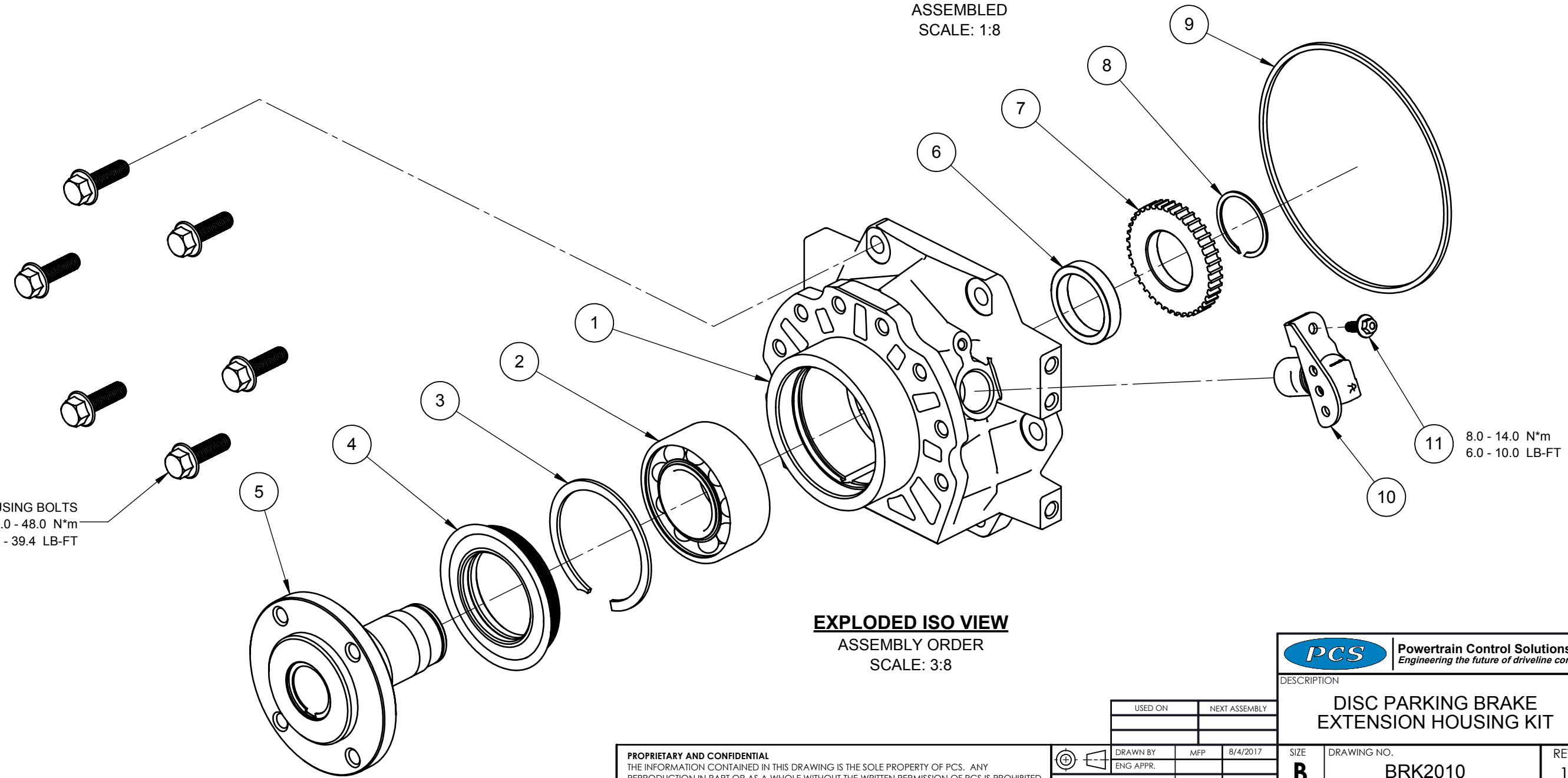
SAE4 BELLHOUSING AND TRANSMISSION SHOWN FOR EXAMPLE.  
TRANSMISSION NOT INCLUDED.



**ISO VIEW**  
ASSEMBLED  
SCALE: 1:8

**NOTES:**

- DO NOT ASSEMBLE OR INSTALL COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- EXTENSION HOUSING BOLTS (8680874) ARE PROVIDED WITH THE TRANSMISSION AND ARE NOT A PART OF THIS KIT.
- FOR ASSEMBLY, INSTALLATION, AND MAINTENANCE PROCEDURES REFER TO THE "4LHD DISC PARKING BRAKE APPLICATION GUIDE".



**EXPLODED ISO VIEW**  
ASSEMBLY ORDER  
SCALE: 3:8

6X STOCK EXTENSION HOUSING BOLTS  
M10X1.5X33.4mm 42.0 - 48.0 N\*m  
8680874 35.0 - 39.4 LB-FT

11 8.0 - 14.0 N\*m  
6.0 - 10.0 LB-FT



DESCRIPTION  
**DISC PARKING BRAKE  
EXTENSION HOUSING KIT**

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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 8/4/2017
ENG APPR.	
DIMENSIONS ARE IN INCHES	SCALE: 1:8 SHEET 1 OF 1

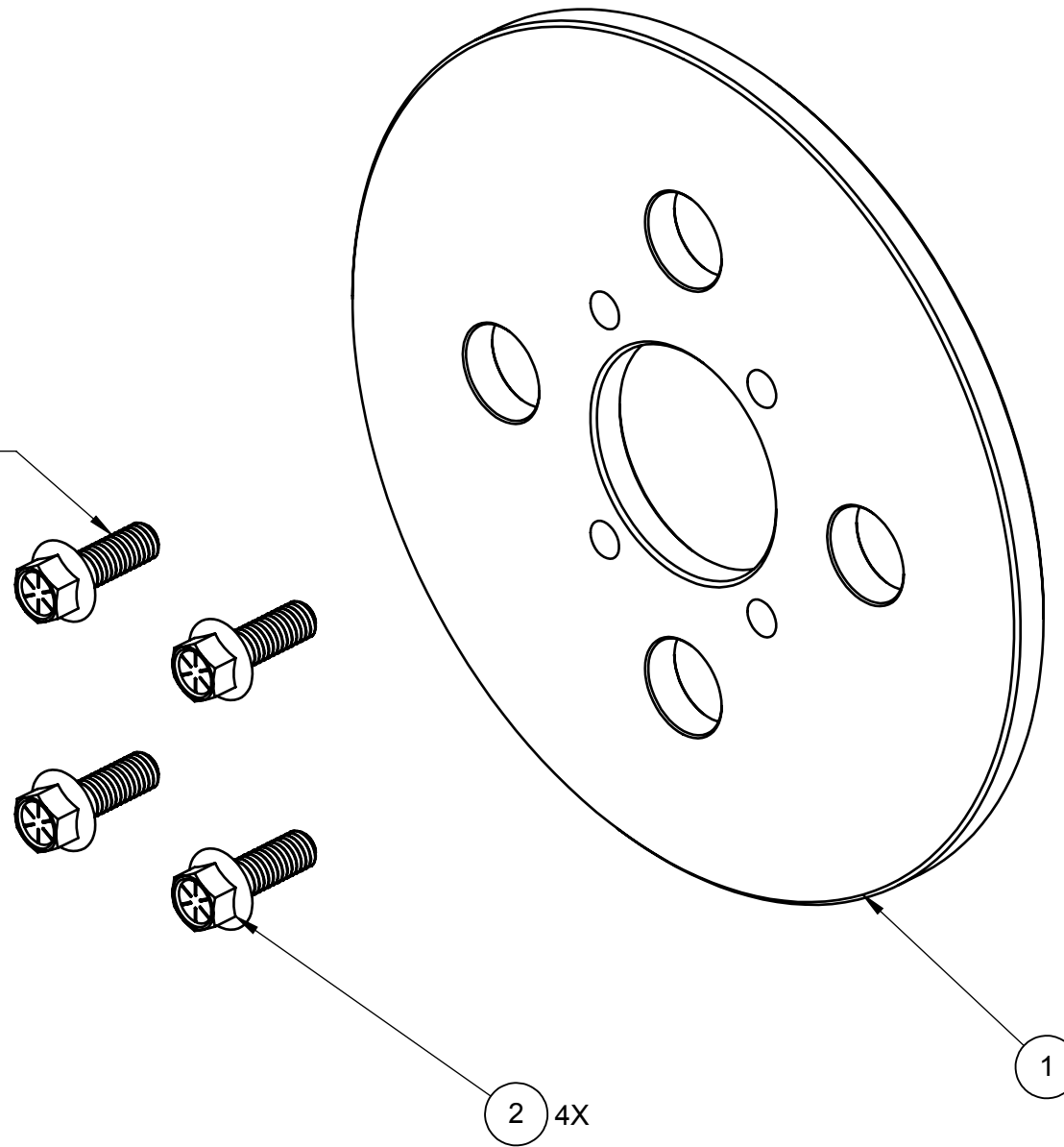
SIZE	DRAWING NO.	REV
<b>B</b>	<b>BRK2010</b>	<b>1</b>

BOM #	DESCRIPTION	PCS PART #	QTY
1	BRAKE DISC - 4LHD - 10.25 X 0.5"	BRK0230	1
2	BOLT, 7/16-14 X 1.25" FLANGED HEX		4

**NOTES:**

1. USE THREADLOCKER ON ALL DRIVELINE COMPONENTS.
2. DO NOT INSTALL COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
3. PROTOTYPES USED M10X1.5X35MM FLANGED HEX BOLTS (TRN7526). FOR REPLACEMENTS CHECK YOUR UNIT BEFORE ORDERING.

APPLY RED THREADLOCKER



DESCRIPTION	
10.25" DISC KIT	

USED ON	NEXT ASSEMBLY

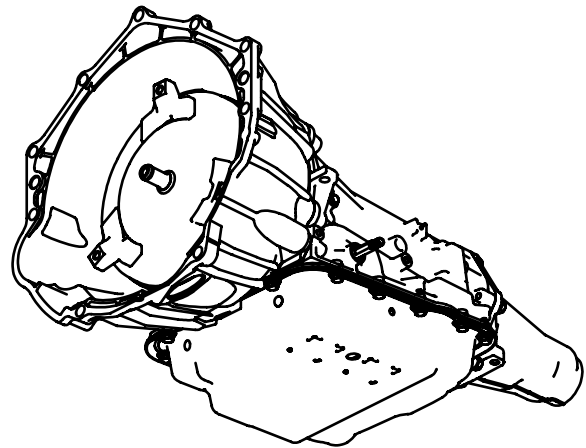
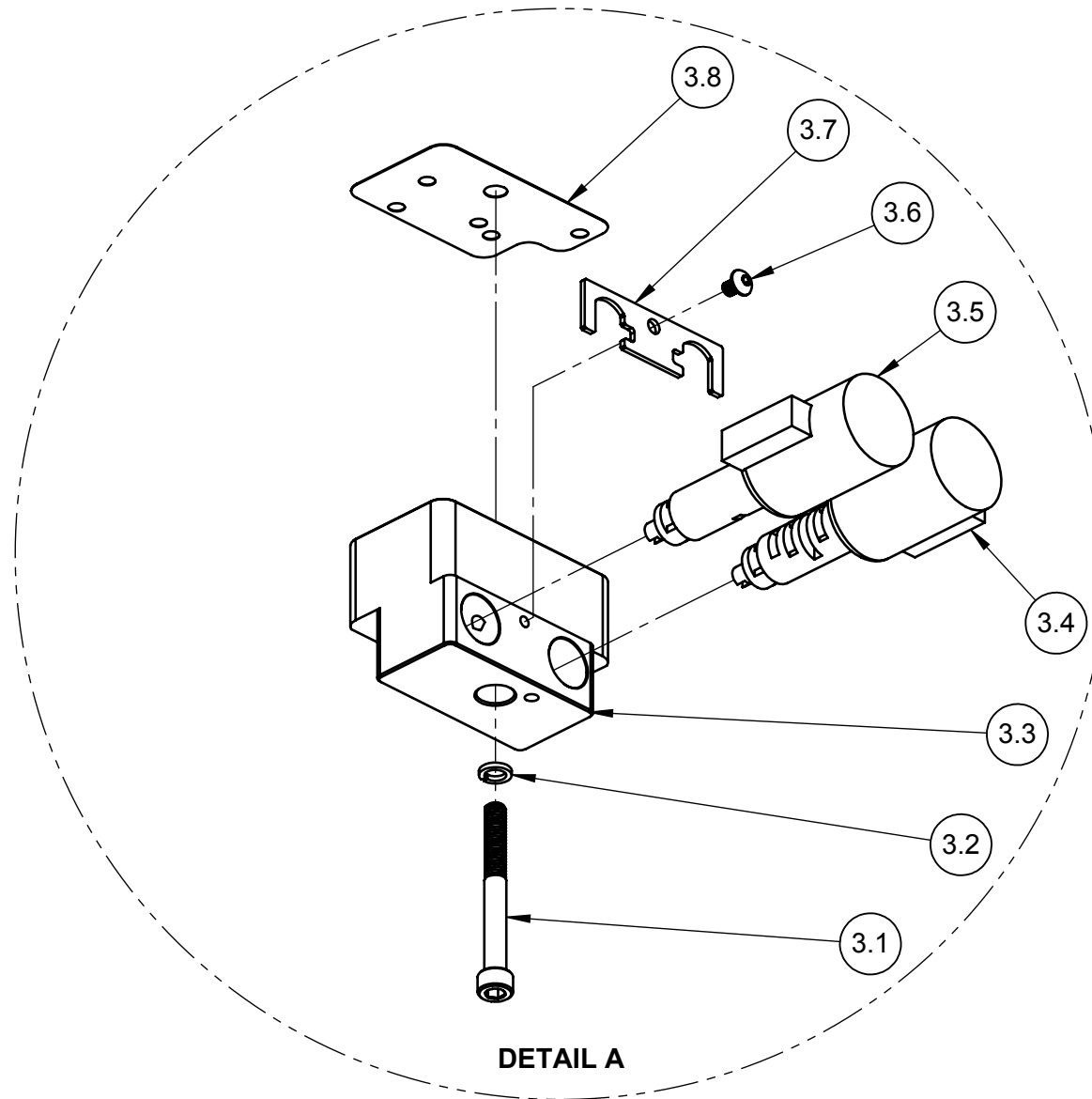
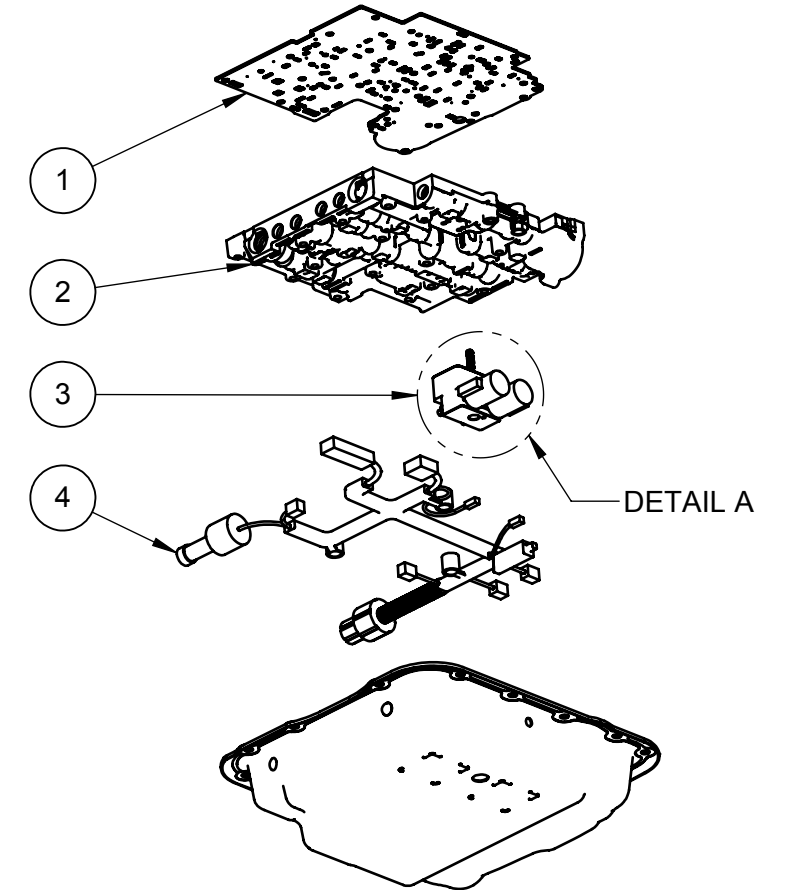
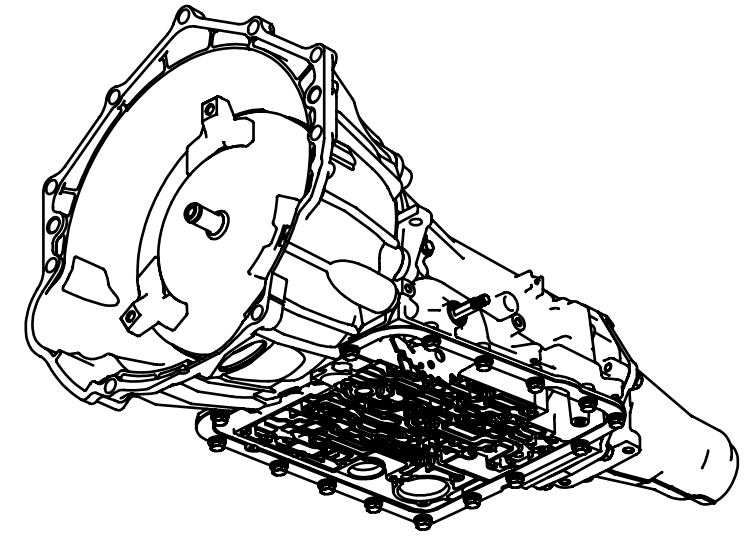
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DRAWN BY	MFP	8/4/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:2 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	BRK2011	2



BOM #	DESCRIPTION	PCS PART #	QTY
1	GASKET - ABUSE VALVEBODY TO 4LHD TRANSMISSION	VBM1100	1
2	4LHD ABUSE PROTECTION VALVE BODY	VBM1011	1
3	4LHD GENII AUX BLOCK		1
4	4L70 ABUSE PROTECTION INTERNAL HARNESS	VBM4070	1
3.1	M6X1X55mm SHCS	VBM1015	1
3.2	M6 SPLIT WASHER		1
3.3	4L70 ABUSE PROTECTION AUXILIARY VALVE BODY FINISH MACHINED	VBM1016	1
3.4	SOLENOID FOR 4L70 ABUSE PROTECTION VALVE BODY - FORWARD	HDW7225	1
3.5	SOLENOID FOR 4L70 ABUSE PROTECTION VALVE BODY - REVERSE	HDW7230	1
3.6	M4X0.7X6mm BHCS	VBM1101	1
3.7	AUX BLOCK SOLENOID CLIP	VBM1017	1
3.8	4L70 ABUSE PROTECTION VALVE BODY GASKET	VBM1012	1



DESCRIPTION  
**4LHD VALVEBODY REPLACEMENT  
 - ABUSE PROTECTION (GEN II)**

USED ON	NEXT ASSEMBLY

DRAWN BY	MFP	4/19/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES SCALE: 1:12 SHEET 1 OF 1		

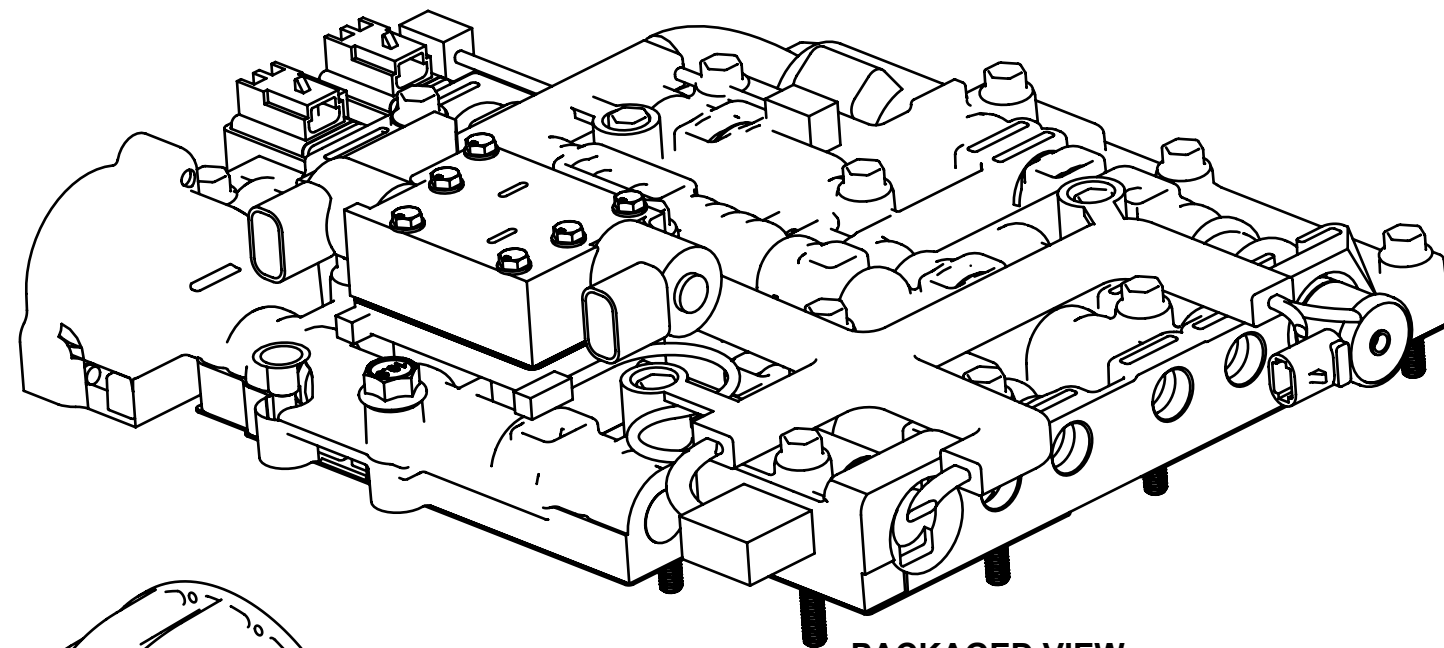
SIZE	DRAWING NO.	REV
<b>B</b>	TRN0520	1

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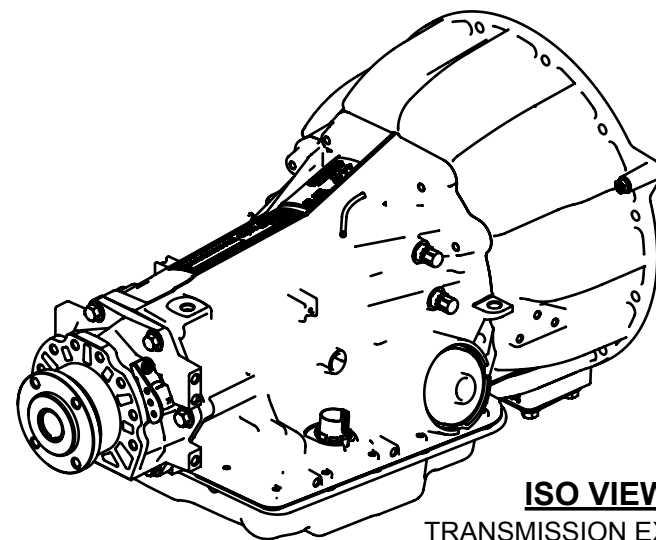
BOM #	DESCRIPTION	PCS PART #	QTY
1	ERF MAIN VALVE - 3 LOBE	VBM1049	1
2	ERF MAIN VALVE - 2 LOBE	VBM1048	1
3	4LHD ERF CLIP	VBM1047	1
4	INTERNAL HARNESS - GENIII ABUSE PROTECTION	VBM4075	1
5	GENIII AUX BLOCK ASSEMBLY	TRN0841	1
6	8680741 STOCK VB BOLT	N/A	1

**NOTES:**

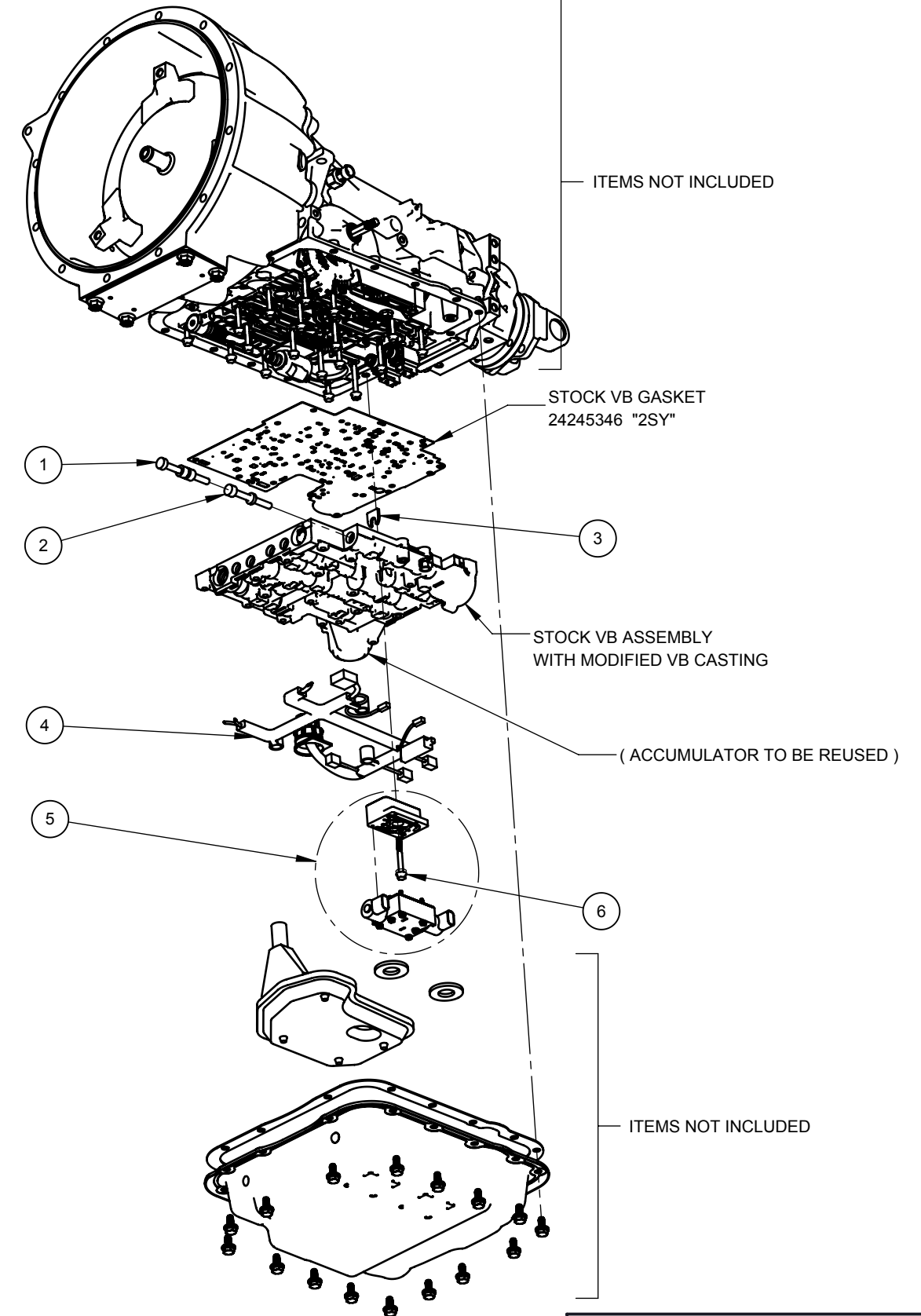
- THIS KIT "TRN0522" IS TO INCLUDE ALL STOCK COMPONENTS FROM THE "2SY" GASKET DOWN, WITH EXCEPTION TO THE VALVEBODY BOLTS (8680741) AND 1-2 ACCUMULATOR (24220142), THESE ITEMS WILL STAY WITH THEIR RESPECTIVE TRANSMISSIONS.
- THE PCS COMPONENTS LISTED ABOVE ARE REPLACEMENTS / ADDITIONS TO THE STOCK COMPONENTS.
- ONE "VALVEBODY BOLT" (8680741) IS TO BE INCLUDED WITH THIS KIT (BOM # 6) AS GENII (2) UNITS REPLACED THESE.
- THE ERF MAIN VALVES (BOM ITEMS 1 AND 2) ARE TO BE INSTALLED FOR ENGINE-BRAKING AS SHOWN.
- THE SEVEN CHECK BALLS (AND ALL OTHER INTERNAL COMPONENTS) ARE TO REMAIN WITH THEIR RESPECTIVE VALVEBODY. A "CHECK-BALL-LOCATION" REFERENCE DIAGRAM IS TO BE INCLUDED WITH EACH KIT FOR THE INSTALLER SUCH AS **FIGURE 33** (PAGE 35) FROM THE 4L60-E TECHNICIAN'S GUIDE.
- AN "AUX-BLOCK-ASSEMBLY" REFERENCE DIAGRAM IS TO BE INCLUDED WITH EACH KIT, SUCH AS THE BOM FOR TRN0841.
- THE PACKAGED KIT IS TO BE TESTED USING STANDARD TRANSMISSION VERIFICATION PROCEDURES.
- THE KIT IS TO BE PACKAGED IN SUCH A MANNER THAN SHIPPING AND HANDLING SHALL NOT CAUSE ANY FORM OF DAMAGE THAT COULD ALTER THE FORM OR FUNCTION OF THE KIT.



**PACKAGED VIEW**  
GENIII VB REPLACEMENT KIT  
SCALE: 1:8



**ISO VIEW**  
TRANSMISSION EXTERIOR  
SCALE: 1:8



**EXPLODED VIEW**  
INTERNAL COMPONENTS  
SCALE: 1:8



DESCRIPTION  
**4LHD GENIII (3) VALVEBODY  
UPGRADE / REPLACEMENT KIT**

USED ON	NEXT ASSEMBLY

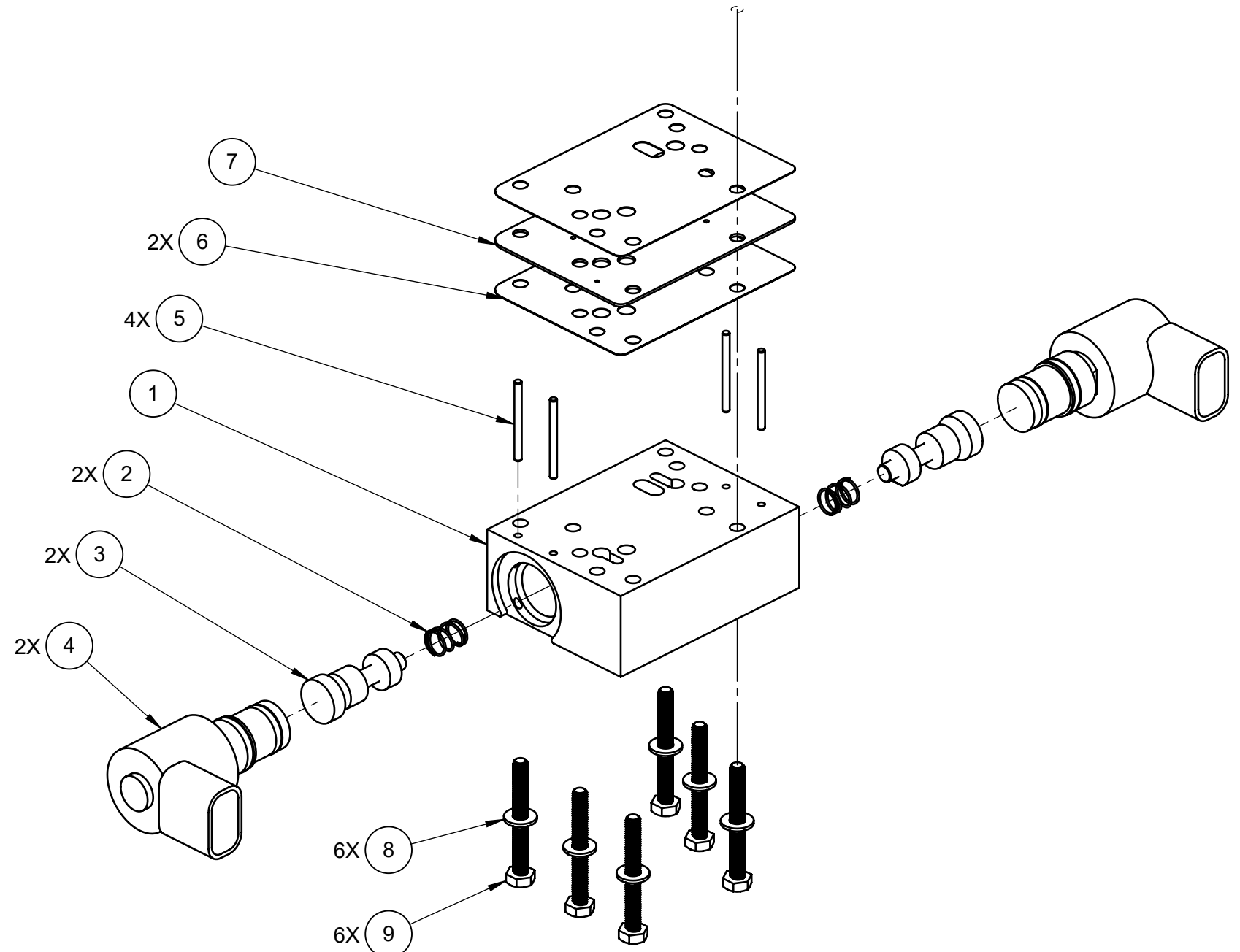
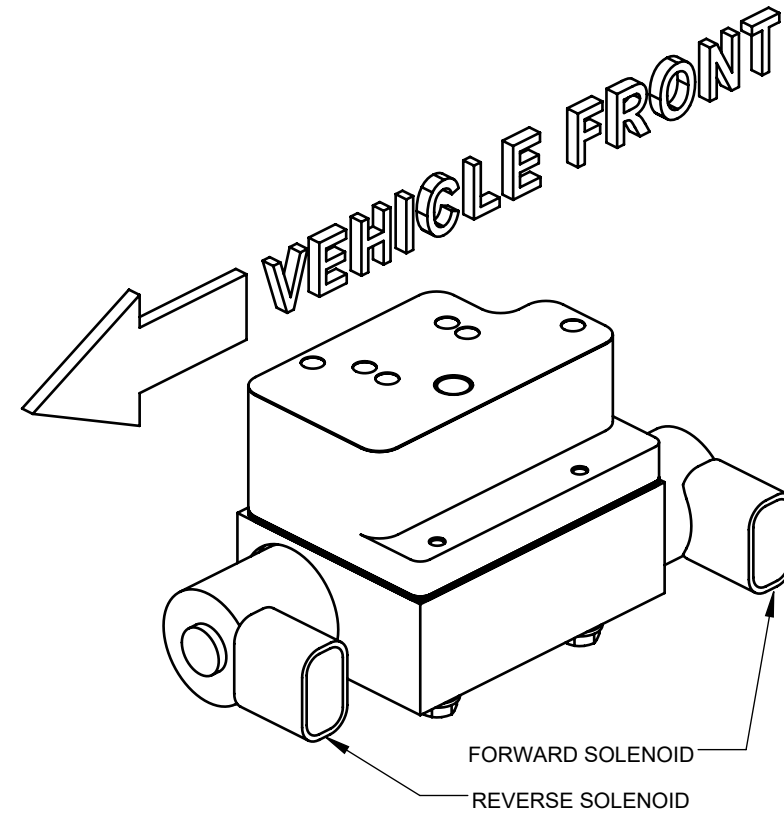
SIZE <b>B</b>	DRAWING NO. <b>TRN0522</b>	REV <b>A</b>
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DRAWN BY MFP	9/25/2017
ENG APPR. AR	9/25/2017
DIMENSIONS ARE IN INCHES	
SCALE: 1:6	SHEET 1 OF 1

BOM #	DESCRIPTION	PCS PART #	QTY
1	TOP BLOCK - AUX BLOCK GENIII - PIN UPDATE	VBM1055	1
2	0.5X0.3 COMPRESSION SPRING	VBM1052	2
3	VALVE - AUX BLOCK GENIII	VBM1045	2
4	SOLENOID, GEN3 FWD / REV ABUSE PROTECTION	VBM1050	2
5	M2 X 24mm DOWEL PIN	VBM1056	4
6	GASKET - AUX BLOCK GENIII SPACER PLATE	VBM1044	2
7	SPACER PLATE - AUX BLOCK GEN3.1	VBM1060	1
8	M4 FLAT WASHER	VBM1054	6
9	BOLT, M4X0.7X35mm HEX	VBM1051	6



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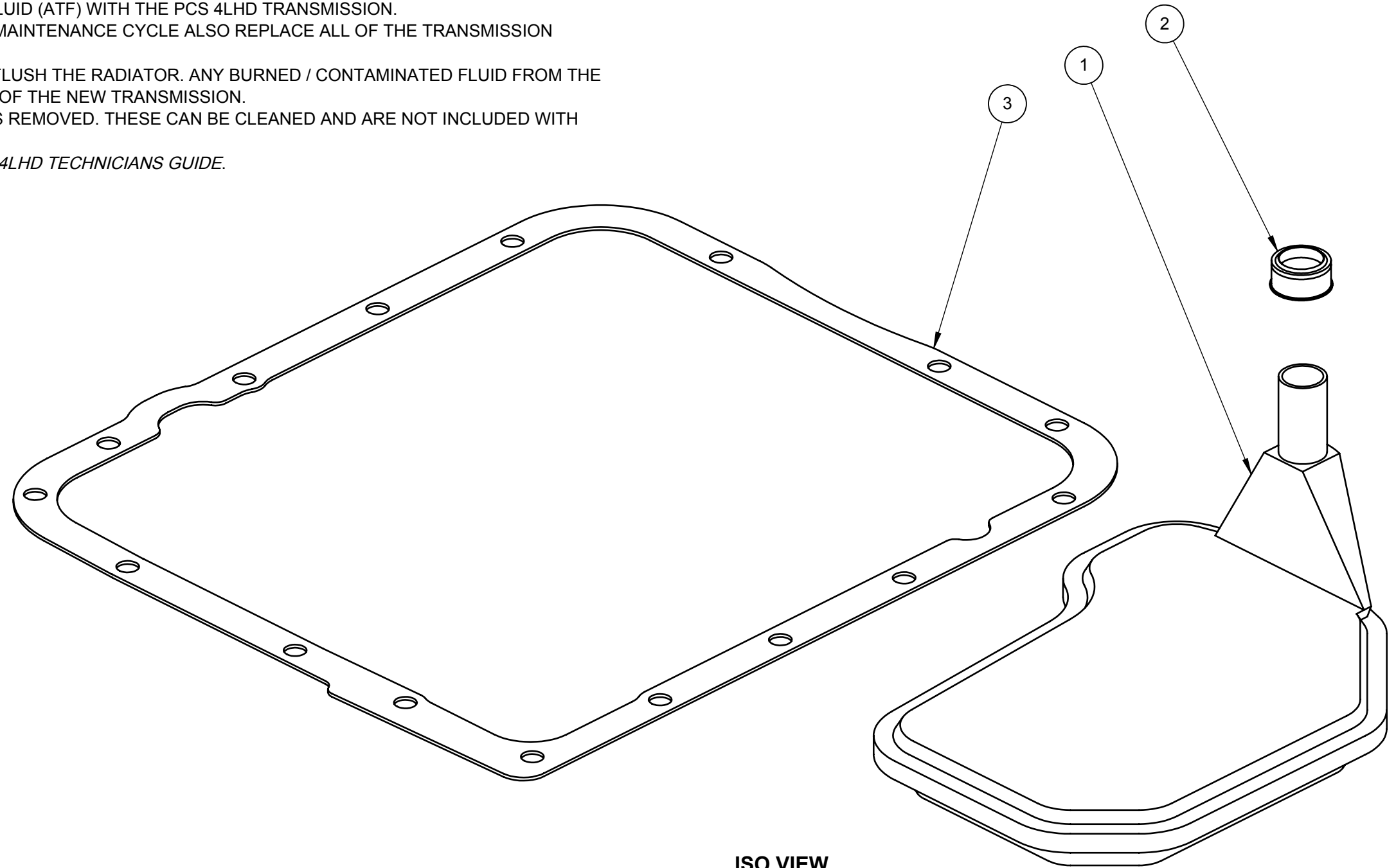
DRAWN BY	MFP	8/4/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:4 SHEET 1 OF 1

<b>Powertrain Control Solutions</b> <i>Engineering the future of driveline control</i>	
DESCRIPTION	
<b>4LHD GEN 3.1 ABUSE PROTECTION AUX BLOCK</b>	
USED ON	NEXT ASSEMBLY
SIZE	DRAWING NO.
<b>B</b>	TRN0843
REV	A

BOM #	DESCRIPTION	PCS PART #	QTY
1	4LHD ATF FILTER (INTERNAL)	N/A	1
2	SEAL - 4LHD ATF FILTER	N/A	1
3	4LHD PAN GASKET	N/A	1

**NOTES:**

- DO NOT INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- USE ONLY DEXRON VI (6) AUTOMATIC TRANSMISSION FLUID (ATF) WITH THE PCS 4LHD TRANSMISSION.
- WHEN CHANGING THE FILTER DURING THE 1000 HOUR MAINTENANCE CYCLE ALSO REPLACE ALL OF THE TRANSMISSION FLUID FROM BOTH THE TRANSMISSION AND RADIATOR.
- WHEN REPLACING A TRANSMISSION IT IS CRITICAL TO FLUSH THE RADIATOR. ANY BURNED / CONTAMINATED FLUID FROM THE LAST TRANSMISSION WILL LEAD TO AN EARLY FAILURE OF THE NEW TRANSMISSION.
- DO NOT THROW AWAY THE MAGNETS WHEN THE PAN IS REMOVED. THESE CAN BE CLEANED AND ARE NOT INCLUDED WITH THIS KIT.
- FOR INSTALLATION INSTRUCTIONS REFER TO THE *PCS 4LHD TECHNICIANS GUIDE*.



**ISO VIEW**  
KIT CONTENTS  
SCALE: 1:2



DESCRIPTION		4LHD FILTER KIT	
USED ON	NEXT ASSEMBLY	SIZE	DRAWING NO.
		<b>B</b>	TRN7090
DRAWN BY	MFP	5/23/2018	REV
ENG APPR.			1
DIMENSIONS ARE IN INCHES		SCALE: 2:1	SHEET 1 OF 1

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BOM #	DESCRIPTION	PCS PART #	QTY
1	EXTENSION HOUSING, GM 4L70 2WD SLIP-YOKE	N/A	1
2	BUSHING, 2WD SLIP YOKE	TRN7061	1
3	BOOTED OUTPUT SEAL, 2WD SLIP-YOKE	TRN0902	1
4	EXTENSION HOUSING SEAL, 2WD SLIP-YOKE	TRN7062	1

REVISIONS				
REV.	ZONE	DESCRIPTION	DATE	APPROVED
1		INITIAL CONCEPT		

**NOTES:**

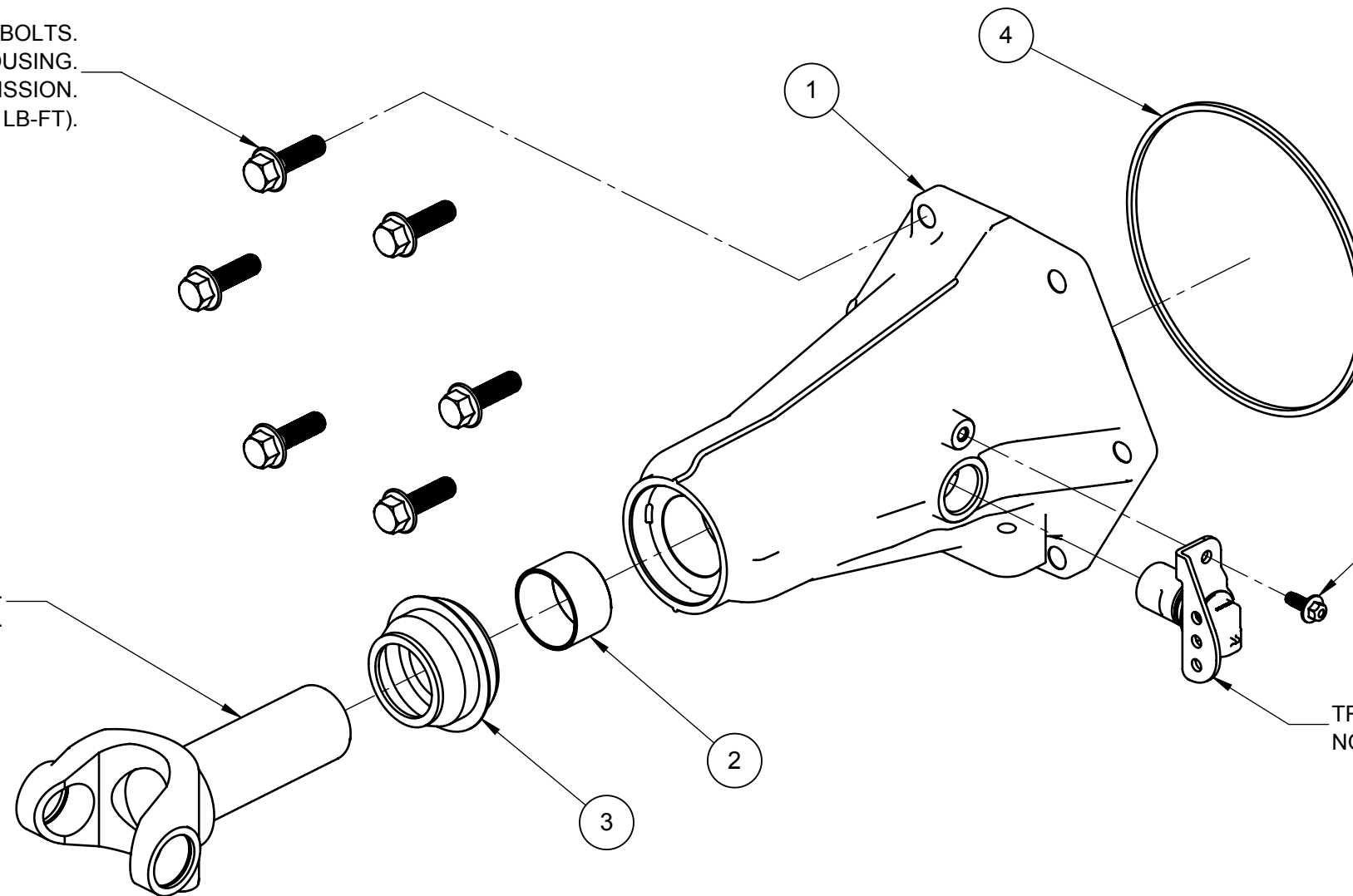
- DO NOT ASSEMBLE OR INSTALL ANY DRIVELINE COMPONENTS THAT SHOW MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGES.
- EXTENSION HOUSING BOLTS (8680874) ARE PROVIDED WITH THE TRANSMISSION AND ARE NOT PART OF THIS KIT.

6X TRN7526 EXTENSION HOUSING BOLTS.  
NOT INCLUDED WITH EXTENSION HOUSING.  
INCLUDED WITH TRANSMISSION.  
TORQUE TO 42-48 N\*m (35-39 LB-FT).

DRIVESHAFT COMPONENTS NOT INCLUDED WITH TRN8110.  
SPICER 2-3-12411X SHOWN AS EXAMPLE.

TRN7521 OSS BOLT.  
NOT INCLUDED WITH TRN8110.  
TORQUE TO 8-14 N\*m (6-10 LB-FT).


TRN7060 OUTPUT-SPEED-SENSOR.  
NOT INCLUDED WITH TRN8110.



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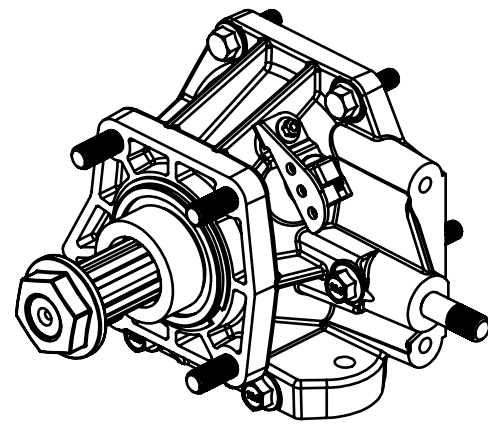
TOLERANCES (UNLESS OTHERWISE SPECIFIED)	
DECIMAL	.X ±1.0
	.XX ±0.25
	.XXX ±0.1
HOLE DIA.	0.1
ANGLE	±0.5°

USED ON	NEXT ASSEMBLY	MATERIAL:	N/A
		FINISH:	N/A
		DRAWN BY	MFP 1/30/19
		ENG APPR.	
		MFG APPR.	
3.2 MIN ✓		DIMENSIONS ARE IN MILLIMETERS SCALE: 1:5 SHEET 1 OF 1	

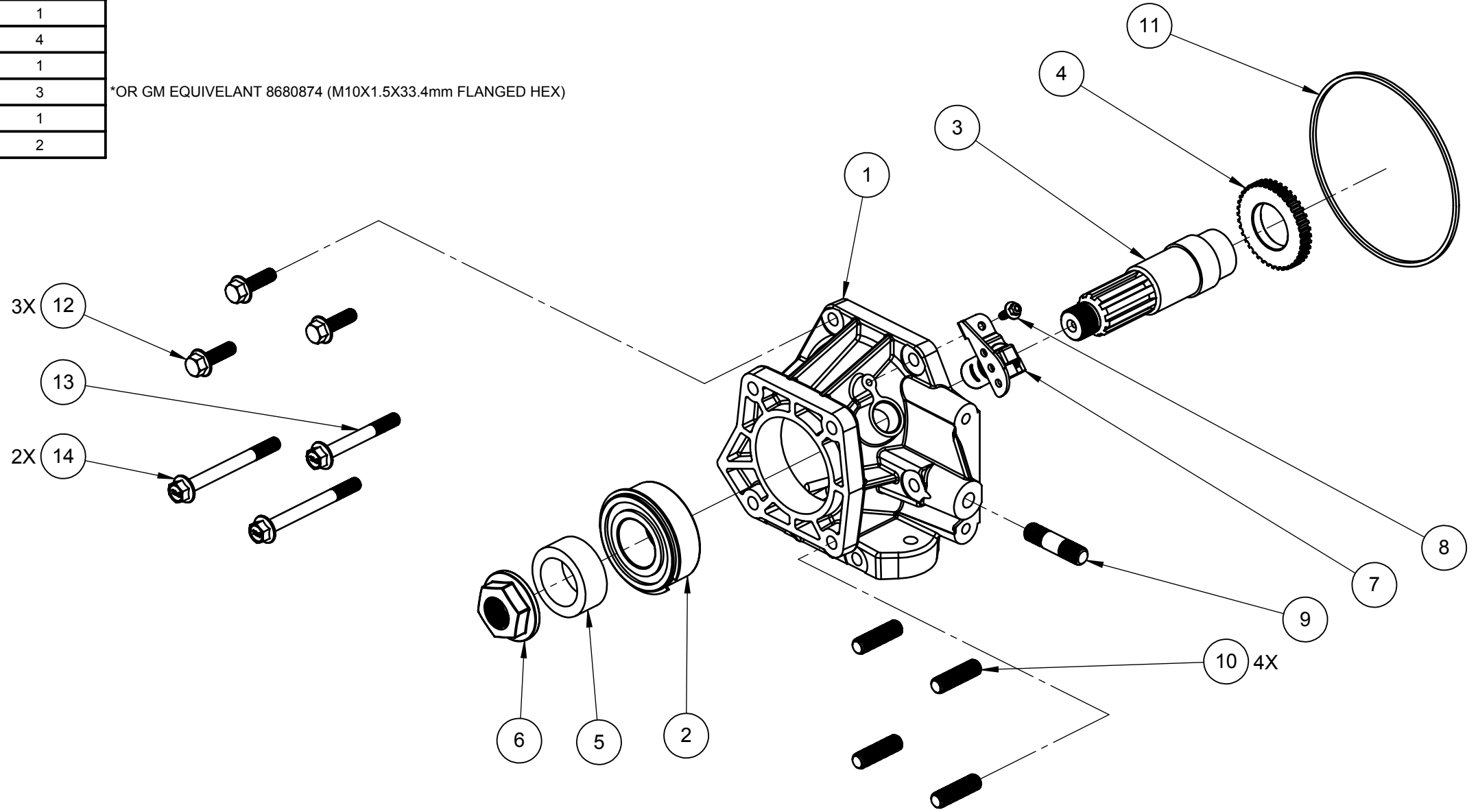
 <b>Powertrain Control Solutions</b> <i>Engineering the future of driveline control</i>	
DESCRIPTION	
<b>GM 4L70 2WD SLIP-YOKE EXTENSION HOUSING (KIT)</b>	
SIZE	DRAWING NO.
<b>B</b>	<b>TRN8110</b>
REV	
1	

BOM #	DESCRIPTION	PCS PART #	QTY
1	EXTENSION HOUSING - C6 TO 4LHD	BEL2407	1
2	5208 NR DOUBLE BALL BEARING	TRN0226	1
3	C6 OUTPUT SHAFT ADAPTER	BEL2408	1
4	PCS SPEED GEAR	TPB5011	1
5	SPACER - C6 OUTPUT SHAFT ADAPTER	TRN0214	1
6	1-20" UNEF FLANGED LOCKNUT	TRN0225	1
7	4LHD OUTPUT SPEED SENSOR	TRN7060	1
8	BOLT, M6X1.00X16mm FLANGED HEX	TRN7521	1
9	9/16-12" TO 9/16-18" ADAPTER STUD	TRN0204	1
10	1/2-13 TO 1/2-20 ADAPTER STUD	TRN0205	4
11	SEAL - 4LHD EXTENSION HOUSING	TRN7062	1
12	BOLT, M10X1.5X35mm FLANGED HEX	TRN7526	3
13	BOLT, M10X1.5X80mm FLANGED HEX	TRN0211	1
14	BOLT, M10X1.5X100mm FLANGED HEX	TRN0210	2

\*OR GM EQUIVELANT 8680874 (M10X1.5X33.4mm FLANGED HEX)



**ISO VIEW**  
ASSEMBLED  
SCALE: 1:4



**EXPLODED VIEW**  
KIT COMPONENTS  
SCALE: 1:4

**NOTES:**

- DO NOT INSTALL DRIVELINE COMPONENTS ON THR TRANSMISSION OR IN THE VEHICLE IF THEY SHOW SIGNS OF MANUFACTURING DEFECTS OR SHIPPING / HANDLING DAMAGE.
- FOR MORE INFORMATION ON TRANSMISSION ASSEMBLY AND INSTALLATION PROCEDURES SEE THE "PCS C6 INSTALLATION GUIDE", "PCS 4LHD APPLICATION GUIDE", OR CONSULT PCS ENGINEERING.

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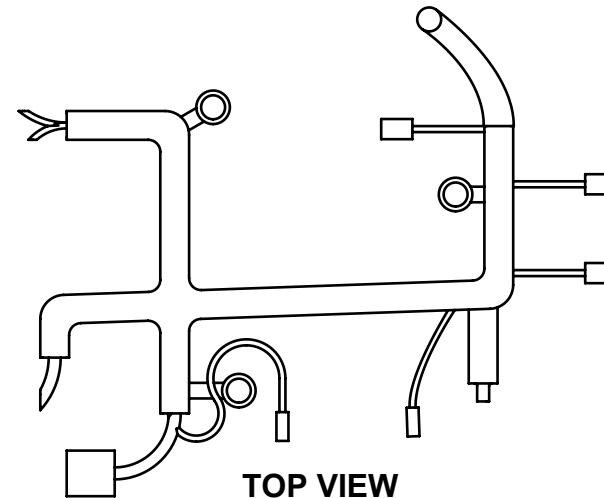
DRAWN BY	MFP	8/21/2017
ENG APPR.		
DIMENSIONS ARE IN INCHES		
SCALE: 1:8	SHEET 1 OF 1	

<b>PCS</b> Powertrain Control Solutions Engineering the future of driveline control	
DESCRIPTION	
<b>C6 EXTENSION HOUSING KIT</b>	
SIZE	DRAWING NO.
<b>B</b>	<b>TRN8800</b>
REV	1

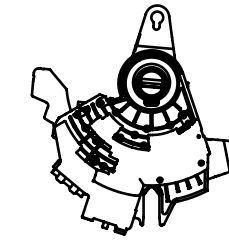
BOM #	DESCRIPTION	PCS PART #	QTY
1	IMS "INTERNAL MODE SWITCH"	TRN9535	1
2	ISS "INPUT SHAFT SPEED" SENSOR, SEE NOTE 1	TRN9660	1
3	4LHD GEN-2 INTERNAL HARNESS, SEE NOTE 2	VBM4070	1
3	4LHD GEN-3 INTERNAL HARNESS, SEE NOTE 2	VBM4075	1
4	CONVERTER PWM SOLENOID	VBM5342	1
5	A/B SHIFT SOLENOID(S)	VBM5343	2
6	LINE PRESSURE CONTROL SOLENOID	VBM5344	1

**NOTES:**

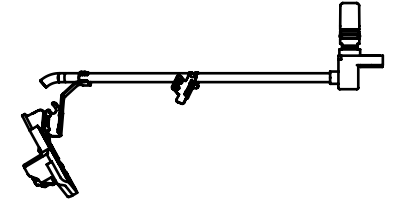
- REPLACING THE "ISS" REQUIRES CONVERTER REMOVAL, PUMP DISASSEMBLY, AND PUMP REASSEMBLY. THIS IS RECOMMENDED TO BE DONE BY A TRANSMISSION SHOP AND NOT IN FEILD.
- THE INTERNAL HARNESS INCLUDES THE MAIN CASE CONNECTOR, "TFT" TRANS FLUID TEMPERATURE SENSOR, AND THE "TCC ON/OFF" SOLENOID.
- SEE TRN0840 AND TRN0843 FOR ABUSE PROTECTION PARTS AND SOLENOIDS.



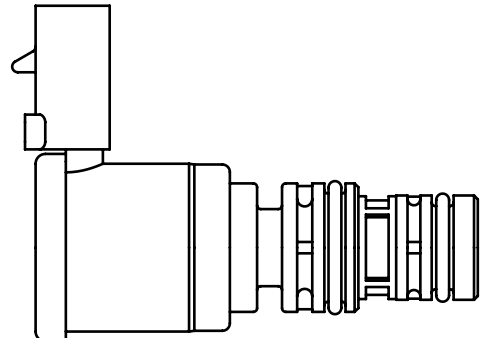
**TOP VIEW**  
GEN-2/3 INTERNAL HARNESS  
VBM4070 / VBM4075, SCALE: 1:4  
VISUAL REPRESENTATION



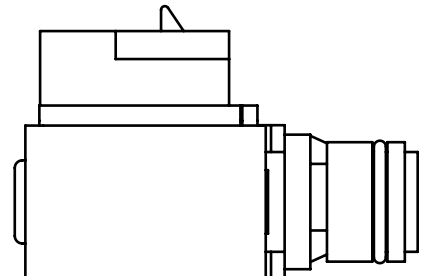
**SIDE VIEW**  
"IMS" INTERNAL MODE SWITCH  
TRN9535, SCALE: 1:4



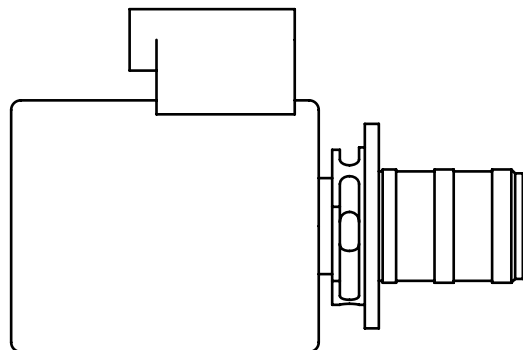
**SIDE VIEW**  
"ISS" INPUT SHAFT SPEED SENSOR  
TRN9660, SCALE: 1:4



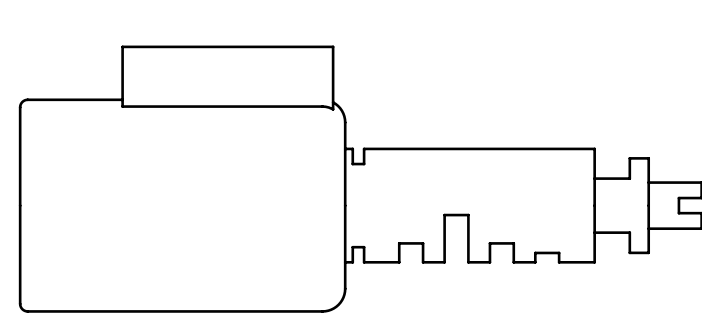
**SIDE VIEW**  
TCC PWM SOLENOID  
VBM5342, SCALE: 1:1



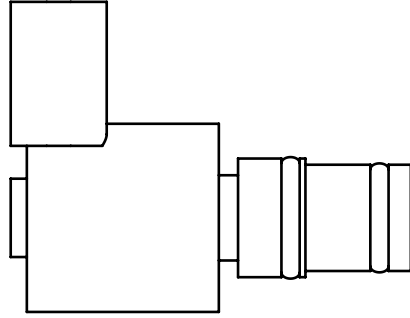
**SIDE VIEW**  
A/B SHIFT SOLENOID(S)  
VBM5343, SCALE: 1:1



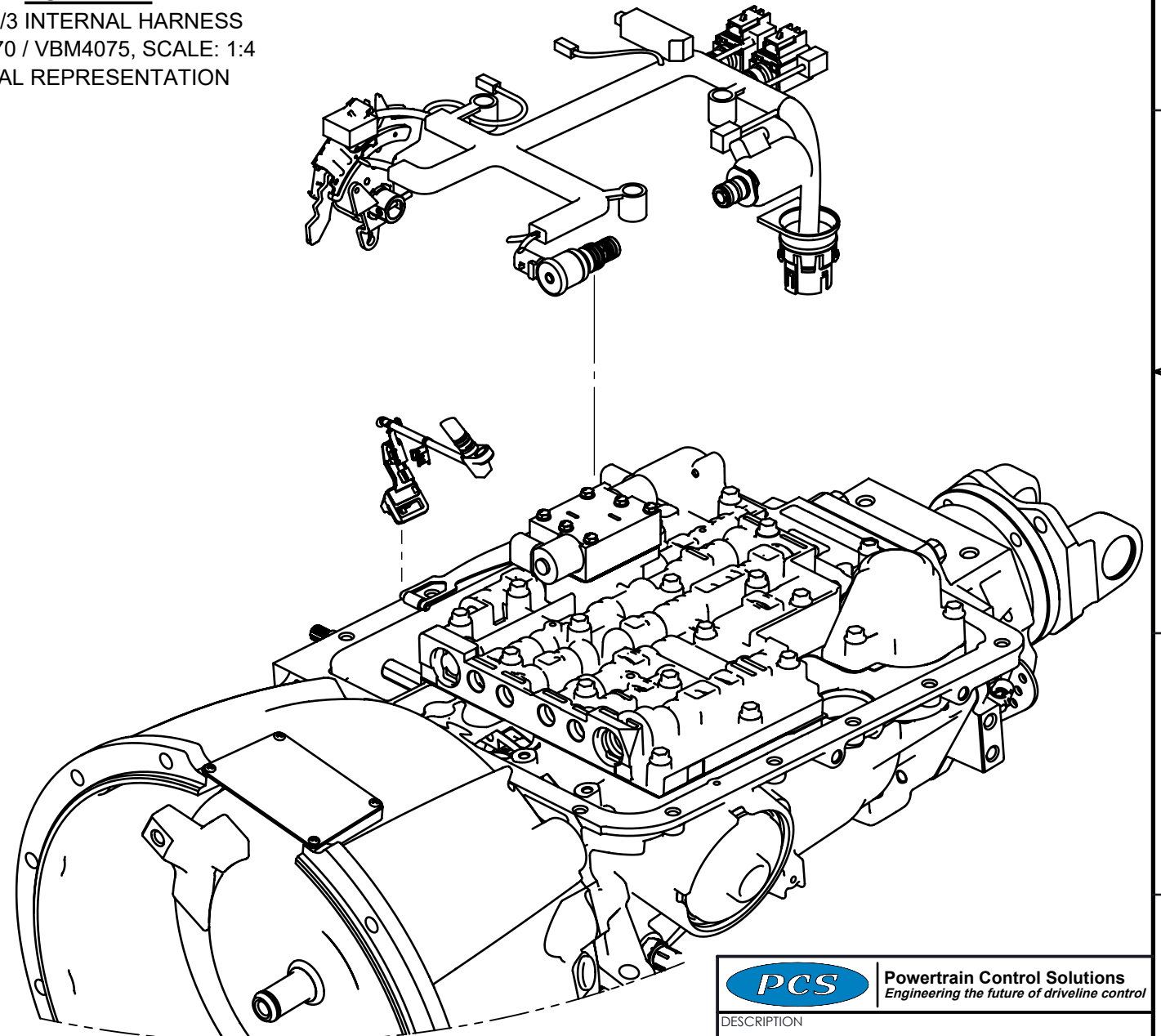
**SIDE VIEW**  
LINE PRESSURE SOLENOID  
VBM5344, SCALE: 1:1



**SIDE VIEW**  
GEN-2 FWD / REV SOLENOID(S)  
HDW7225 / HDW7230, SCALE: 1:1  
FOR REFERENCE



**SIDE VIEW**  
GEN-3 FWD / REV SOLENOID(S)  
VBM1050, SCALE: 1:1  
FOR REFERENCE



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DESCRIPTION  
**4LHD INTERNAL ELECTRONICS**

USED ON	NEXT ASSEMBLY

DRAWN BY  
MFP  
6/6/2024

ENG APPR.

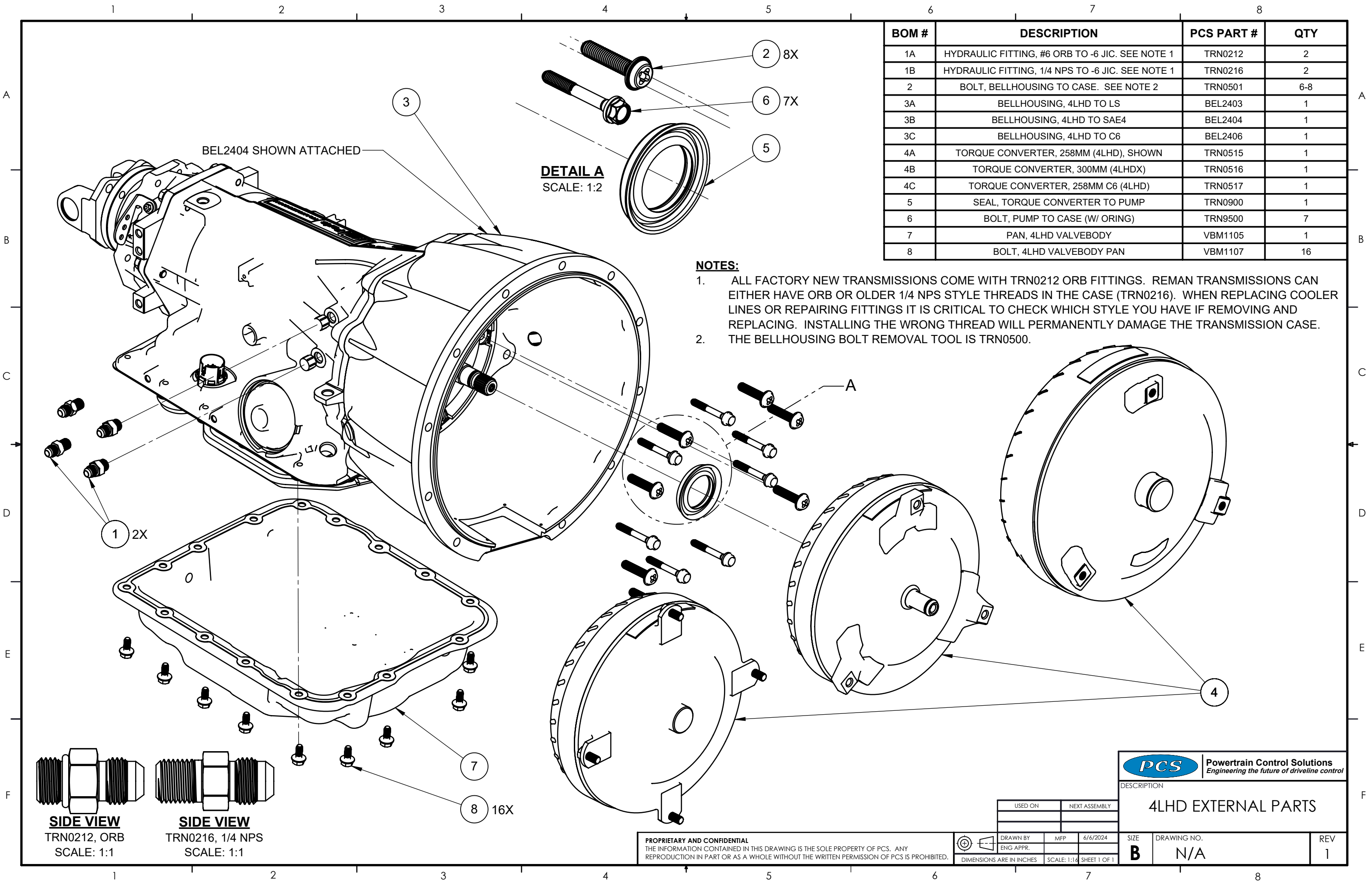
DIMENSIONS ARE IN INCHES  
SCALE: 1:12 SHEET 1 OF 1

SIZE  
**B**

DRAWING NO.  
N/A

REV  
1

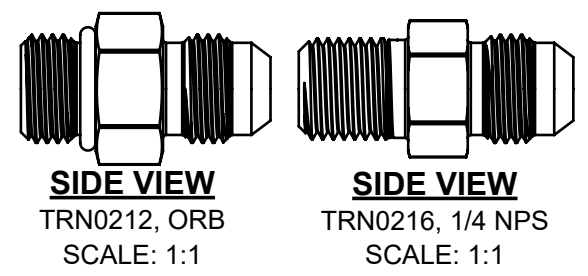
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BOM #	DESCRIPTION	PCS PART #	QTY
1A	HYDRAULIC FITTING, #6 ORB TO -6 JIC. SEE NOTE 1	TRN0212	2
1B	HYDRAULIC FITTING, 1/4 NPS TO -6 JIC. SEE NOTE 1	TRN0216	2
2	BOLT, BELLHOUSING TO CASE. SEE NOTE 2	TRN0501	6-8
3A	BELLHOUSING, 4LHD TO LS	BEL2403	1
3B	BELLHOUSING, 4LHD TO SAE4	BEL2404	1
3C	BELLHOUSING, 4LHD TO C6	BEL2406	1
4A	TORQUE CONVERTER, 258MM (4LHD), SHOWN	TRN0515	1
4B	TORQUE CONVERTER, 300MM (4LHDX)	TRN0516	1
4C	TORQUE CONVERTER, 258MM C6 (4LHD)	TRN0517	1
5	SEAL, TORQUE CONVERTER TO PUMP	TRN0900	1
6	BOLT, PUMP TO CASE (W/ ORING)	TRN9500	7
7	PAN, 4LHD VALVEBODY	VBM1105	1
8	BOLT, 4LHD VALVEBODY PAN	VBM1107	16

**NOTES:**

- ALL FACTORY NEW TRANSMISSIONS COME WITH TRN0212 ORB FITTINGS. REMAN TRANSMISSIONS CAN EITHER HAVE ORB OR OLDER 1/4 NPS STYLE THREADS IN THE CASE (TRN0216). WHEN REPLACING COOLER LINES OR REPAIRING FITTINGS IT IS CRITICAL TO CHECK WHICH STYLE YOU HAVE IF REMOVING AND REPLACING. INSTALLING THE WRONG THREAD WILL PERMANENTLY DAMAGE THE TRANSMISSION CASE.
- THE BELLHOUSING BOLT REMOVAL TOOL IS TRN0500.



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USED ON	NEXT ASSEMBLY
DRAWN BY	MFP 6/6/2024
ENG APPR.	
DIMENSIONS ARE IN INCHES SCALE: 1:1 SHEET 1 OF 1	

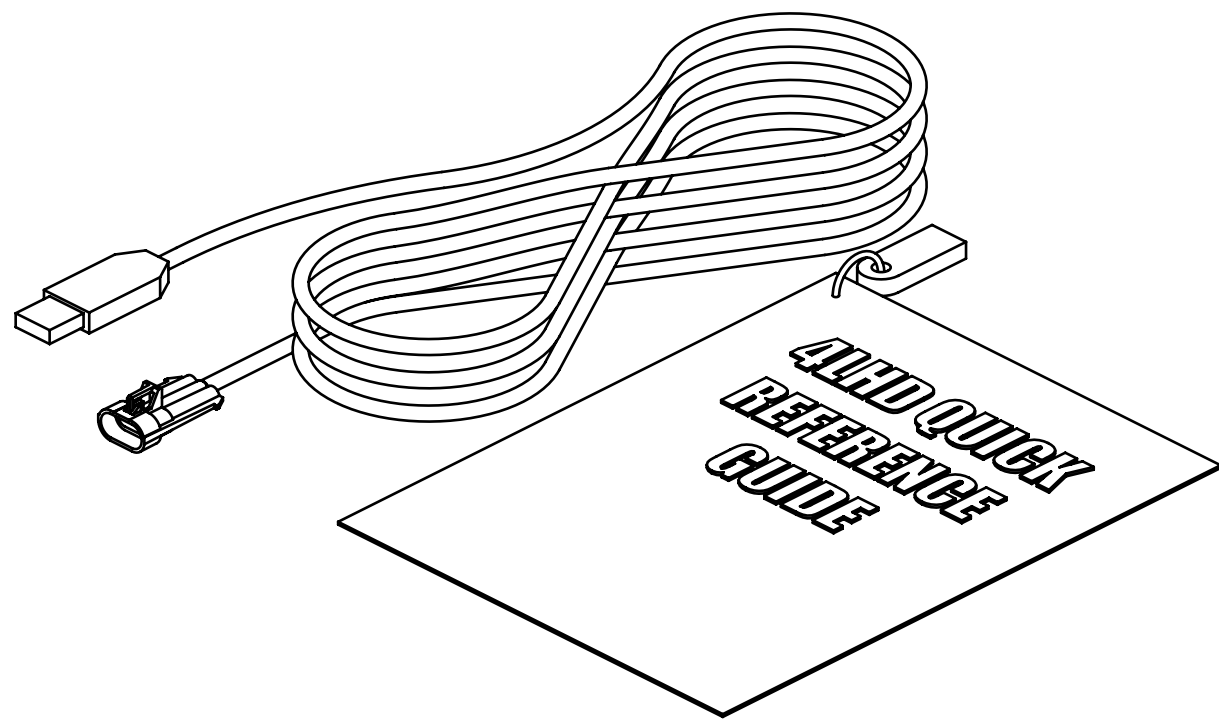
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DESCRIPTION  
**4LHD EXTERNAL PARTS**

SIZE	DRAWING NO.	REV
<b>B</b>	N/A	1

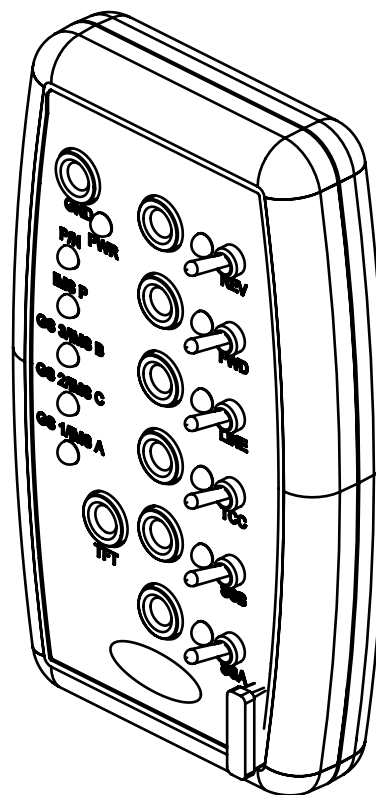


BOM #	DESCRIPTION	PCS PART #	QTY
1	QUICK REFERENCE GUIDE, COMM CABLE, AND USB	TCM4640	1
2	TRANSMISSION DIAGNOSTIC DEVICE "TDD" KIT, W/ HARNESS	TDD5000	1
3	ADVANCED TDD, WITH SCREEN AND KEYBOARD	TDD6000	1

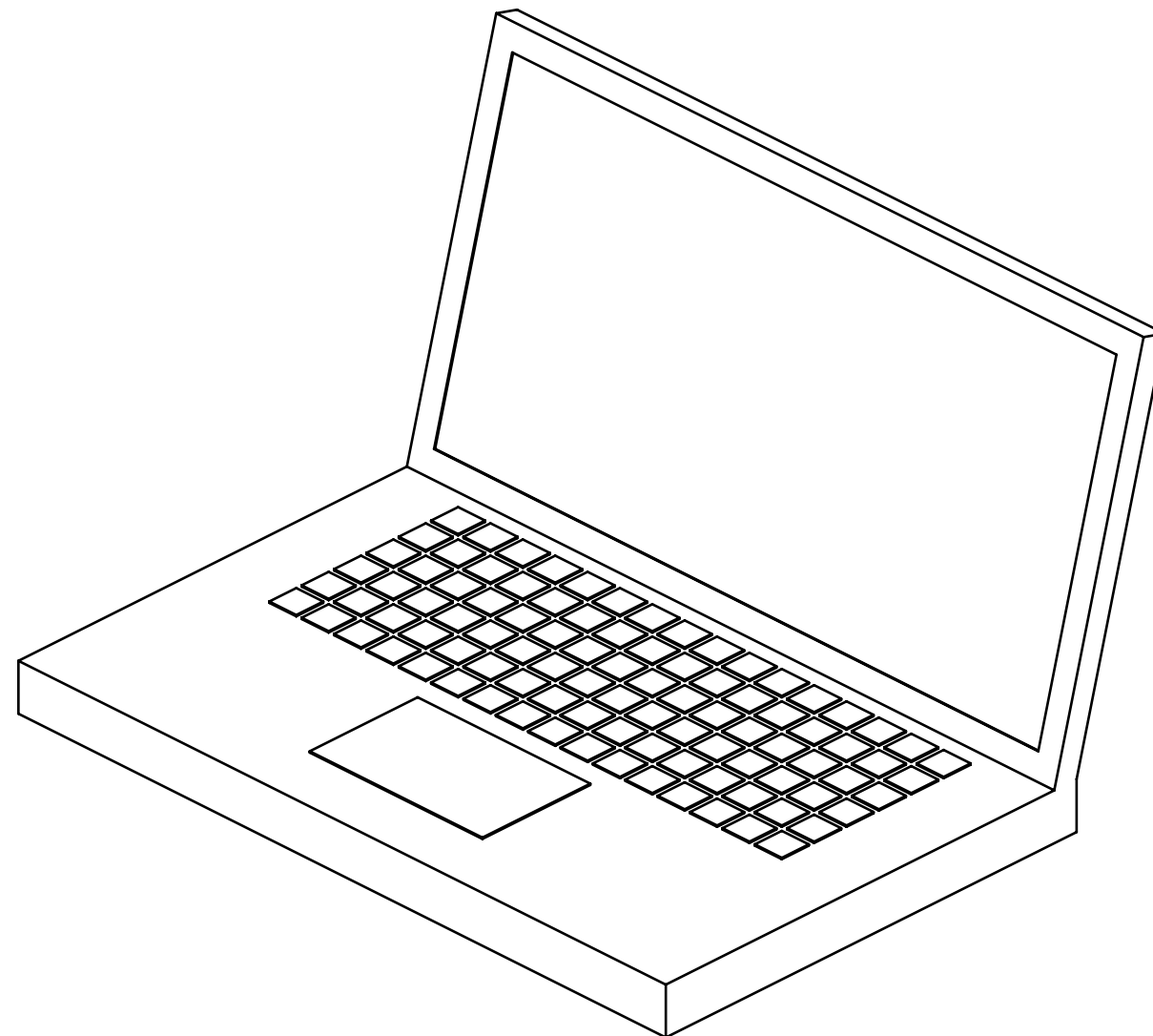


**TCM4640 KIT**

HARNESS NOT SHOWN



**TDD5000 KIT**



**TDD6000 KIT**



DESCRIPTION  
**GSE DIAGNOSTIC EQUIPMENT**

USED ON	NEXT ASSEMBLY

DRAWN BY	MFP	6/6/2024
ENG APPR.		
DIMENSIONS ARE IN INCHES		SCALE: 1:2 SHEET 1 OF 1

SIZE	DRAWING NO.	REV
<b>B</b>	N/A	1

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