

NAME: TI - 340 - X.XX - XX

TORQUE Nm
- 2.00
- 3.00
- 4.00
- 5.00

SHAFT-END TYPE
-01 - KNURLED SHAFT
-02 - KNURLED ADAPTER
-03 - ONE WAY FORWARD
-04 - ONE WAY REVERSE
-05 - DUAL ENDED KNURLED SHAFT

NOTES:

1. APPLICATION CONDITIONS REFERENCE (USER MUST DETERMINE FITNESS FOR USE IN APPLICATION).
2. ENVIRONMENTAL CONDITIONS: -20°C to 80°C.
3. PRODUCT TORQUE SPECIFICATION:

TORQUE INSERT	DYNAMIC TORQUE	
	NOMINAL	TOLERANCE
	Nm	±%
TI-340-2.00-XX	2.00	25
TI-340-3.00-XX	3.00	20
TI-340-4.00-XX	4.00	20
TI-340-5.00-XX	5.00	20

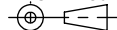
4. LIFE: 25,000 CYCLES.
ONE CYCLE CONSISTS OF 120° CW AND 120° CCW AT 10% DUTY CYCLE FOR SPEEDS LESS THAN 100 RPM.
5. MATERIALS:
PLATED POWDERED METAL HOUSINGS
HARDENED STEEL TORQUE ELEMENT
DIECAST KNURLED ZINC SHAFT END
HARDENED STEEL BEARINGS
STEEL WASHERS
STEEL RETAINING RINGS
MINERAL OIL BASED LUBRICANT
6. FINISH:
NON-COSMETIC PLAIN.
7. TORQUE INSERT DESIGNED FOR USE IN PLASTIC OR METAL. SEE INDIVIDUAL CONFIGURATION DRAWINGS FOR ADDITIONAL DETAIL.
- [8] HINGE DESIGNED TO SUPPORT A MINIMAL AXIAL FORCE IN DIRECTION SHOWN, NOT DESIGNED TO SUPPORT AXIAL FORCE IN THE OPPOSITE DIRECTION.
9. CUSTOMER IS RESPONSIBLE FOR CHECKING COMPATIBILITY OF REELL LUBRICANTS WITH PLASTICS USED.
10. OVERALL LENGTH MAY CHANGE DURING SHIPPING.

US PATENT NUMBER 8,875,348

SPECIFICATION SUBJECT TO CHANGE

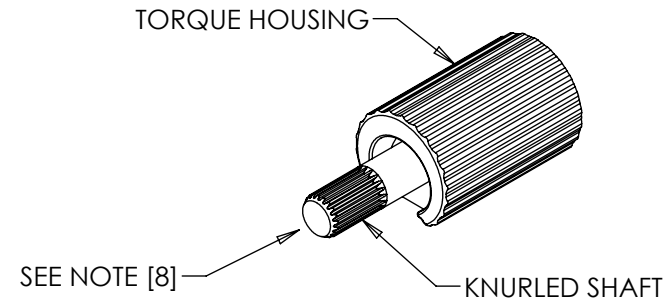
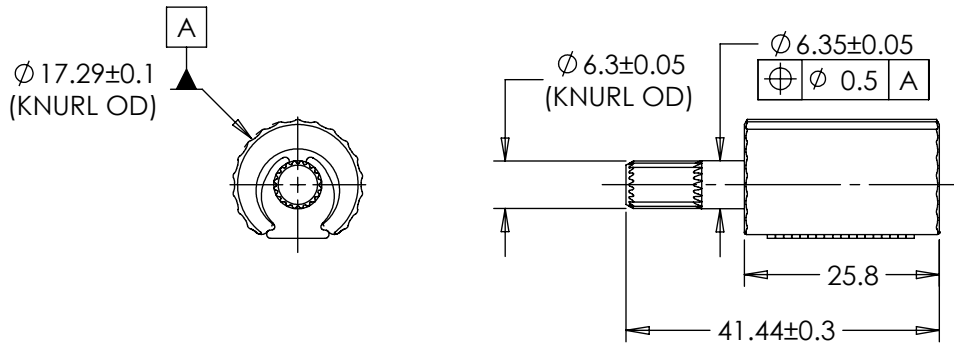
UNLESS SPECIFIED TOLERANCE ±0.15 INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.

THIRD ANGLE PROJECTION



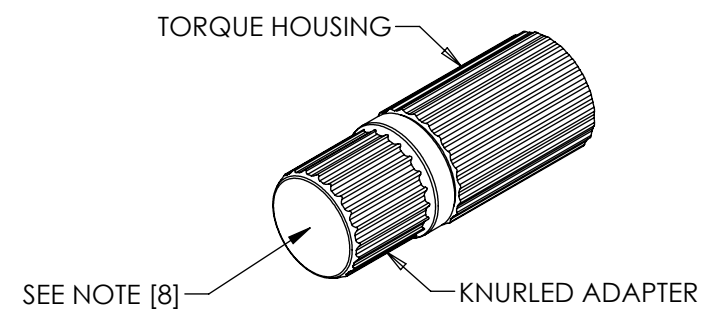
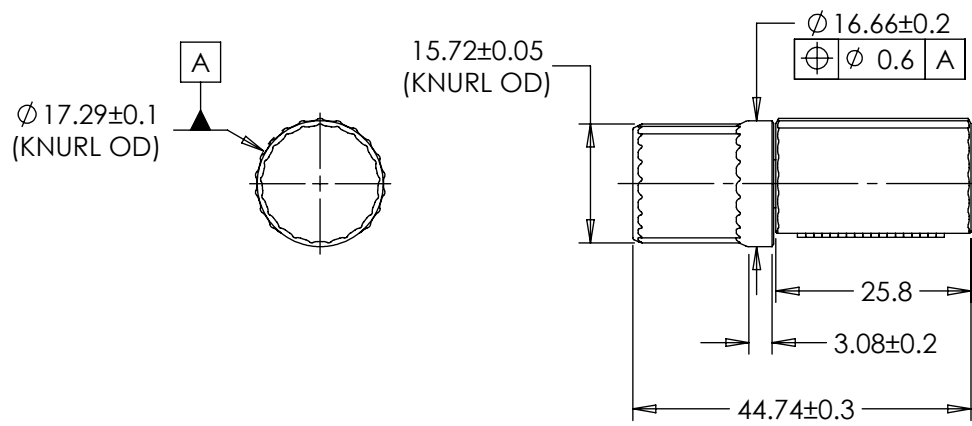
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DRAWN:	HMA	DATE:	16APR12	REFERENCE:
CHECKED:	STK	DATE:	18DEC13	83560-XXX
APPROVED:	STK	DATE:	18DEC13	TITLE:
REVISED:	30JUN16	DIMS:	mm	TORQUE INSERT SALES DRAWING
		PART NO:		REV:
		TI-340		G
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 1 OF 9

TI-340-X.XX-01 (KNURLED SHAFT)



- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
 - APPROXIMATE WEIGHT: 38.25 GRAMS

TI-340-X.XX-02 (KNURLED ADAPTER)



- INTENDED FOR PRESS FIT INTO PLASTICS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
 - APPROXIMATE WEIGHT: 59.28 GRAMS

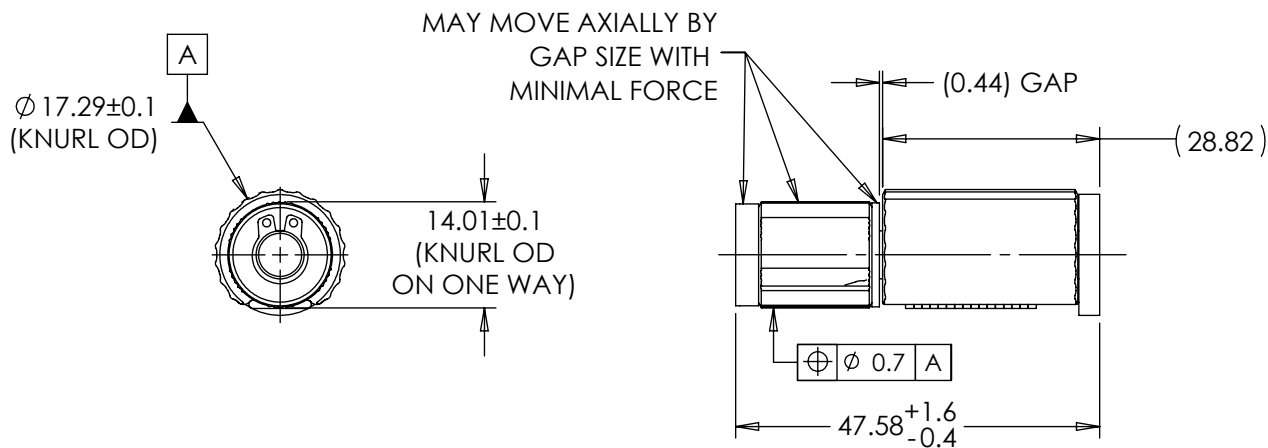
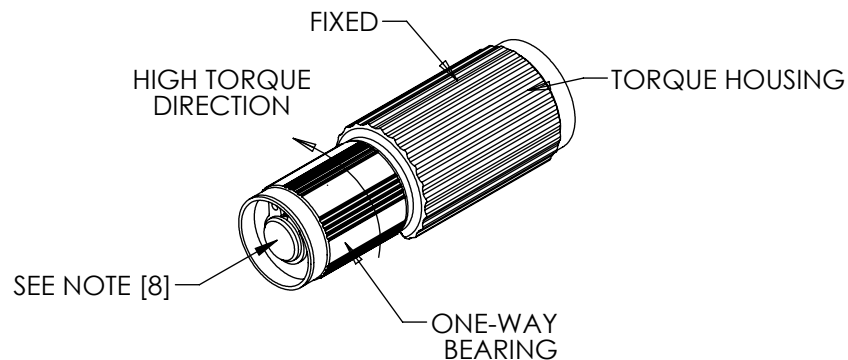
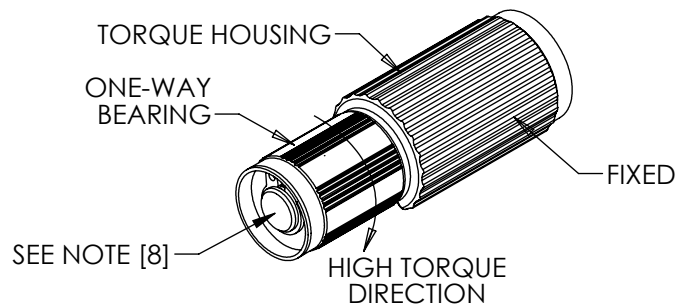
SPECIFICATION SUBJECT TO CHANGE

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 INTERPRET PRINT PER ASME Y14.5M-1994
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 THIRD ANGLE PROJECTION

LEVEL	DESCRIPTION		DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE: 16APR12	REFERENCE: 83560-XXX		
CHECKED:	STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED:	STK	DATE: 18DEC13	PART NO: TI-340		
REVISED:	30JUN16	DIMS: mm	REV: G		
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		SCALE: 1:1		DO NOT SCALE DRAWING	
				SHEET 2 OF 9	

TI-340-X.XX-03 (ONE WAY FORWARD)

TI-340-X.XX-04 (ONE WAY REVERSE)



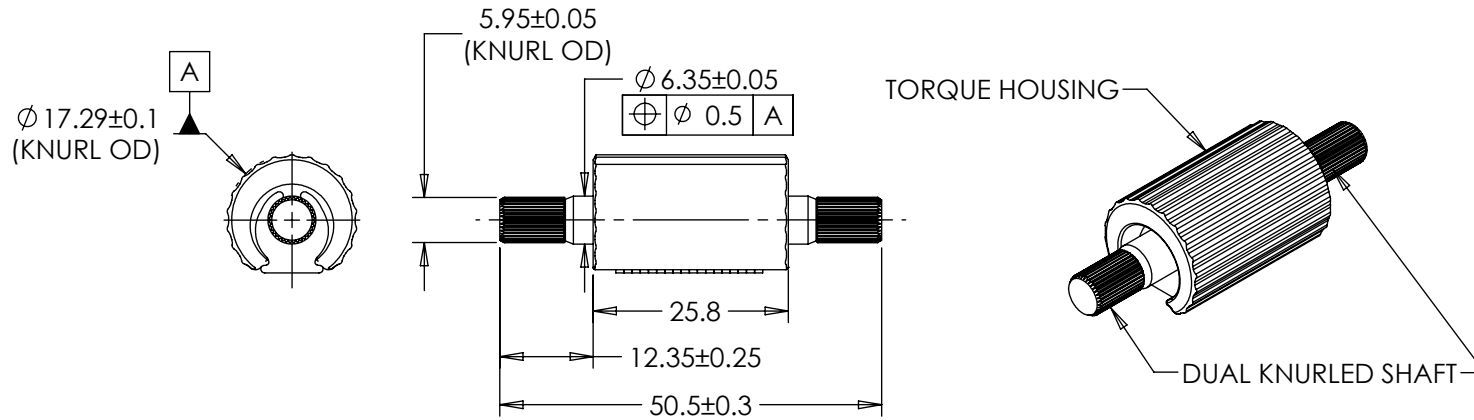
- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
 - APPROXIMATE WEIGHT: 54.83 GRAMS

SPECIFICATION SUBJECT TO CHANGE

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 THIRD ANGLE PROJECTION

LEVEL	DESCRIPTION	DRAWN	DATE	APPROVED
DRAWN: HMA	DATE: 16APR12	REFERENCE: 83560-XXX		
CHECKED: STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED: STK	DATE: 18DEC13	PART NO: TI-340		
REVISED: 30JUN16	DIMS: mm	REV: G		
 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 3 OF 9

TI-340-X.XX-05 (DUAL ENDED KNURLED SHAFT)



- APPROXIMATE WEIGHT: 39.65 GRAMS
 - INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.

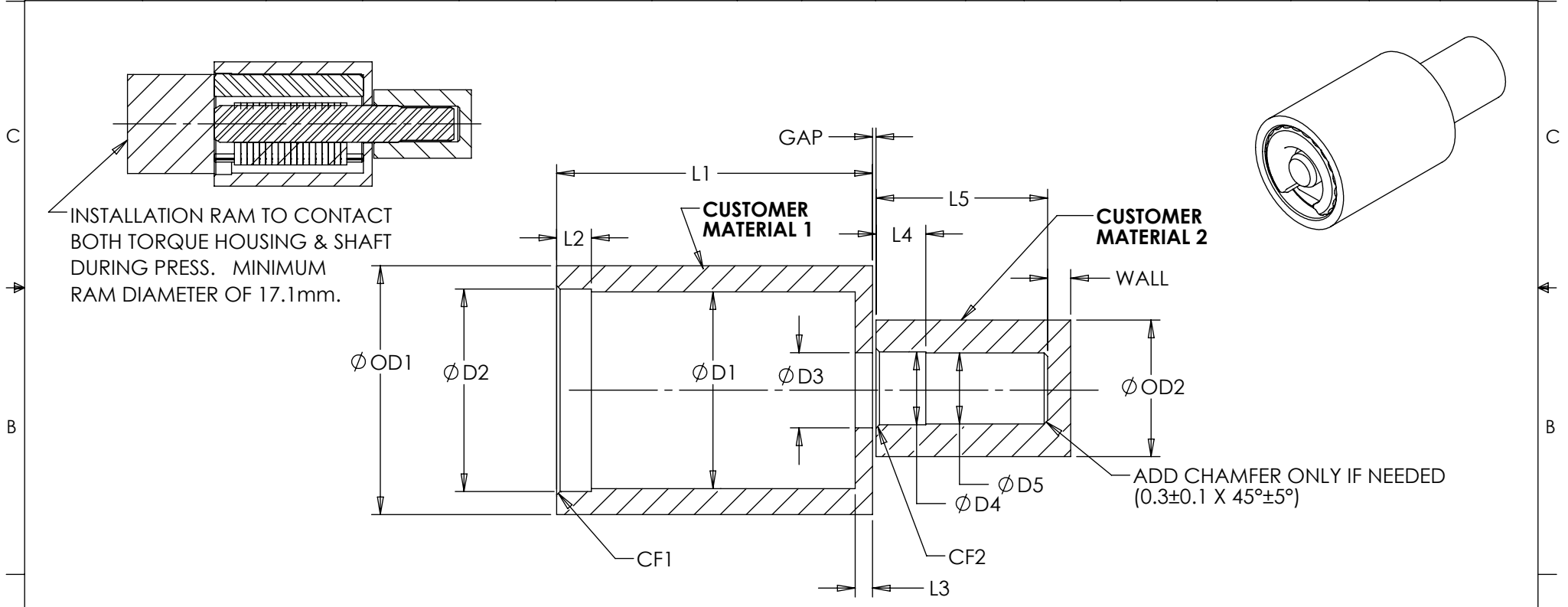
SPECIFICATION SUBJECT TO CHANGE

UNLESS SPECIFIED
 TOLERANCE ±0.15
 INTERPRET PRINT PER
 ASME Y14.5M-1994
 THIS PRINT IS THE
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 OF REELL PRECISION MFG.
 THIRD ANGLE PROJECTION

LEVEL	DESCRIPTION		DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE: 16APR12	REFERENCE: 83560-XXX		
CHECKED:	STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED:	STK	DATE: 18DEC13	PART NO: TI-340		
REVISED:	30JUN16	DIMS: mm	REV: G		
		REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		SCALE: 1:1	DO NOT SCALE DRAWING
					SHEET 4 OF 9

TI-340-X.XX-01 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	CF1	CF2	OD1	OD2	WALL	GAP
DIE CAST ZINC	17.0±0.05	17.5±0.03	6.5±0.03	6.3±0.03	6.15±0.03	27.3 MIN	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM	17.0±0.05	17.5±0.03	6.5±0.03	6.3±0.03	6.15±0.03	27.3 MIN	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)
MILD STEEL	17.15±0.025	17.5±0.03	6.5±0.03	6.38±0.03	6.2±0.015	27.3 MIN	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)
WROUGHT ALUMINUM	17.15±0.025	17.5±0.03	6.5±0.03	6.38±0.03	6.2±0.015	27.3 MIN	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)



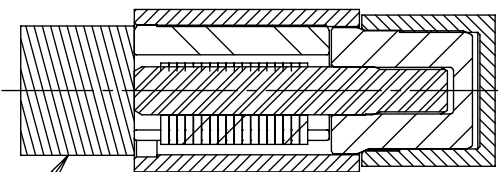
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CHECKED:	STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED:	STK	DATE: 18DEC13	PART NO: TI-340		
REVISED:	30JUN16	DIMS: mm	REV: G		
INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG. THIRD ANGLE PROJECTION				REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	
SCALE: 1:1		DO NOT SCALE DRAWING		SHEET 5 OF 9	

SPECIFICATION SUBJECT TO CHANGE

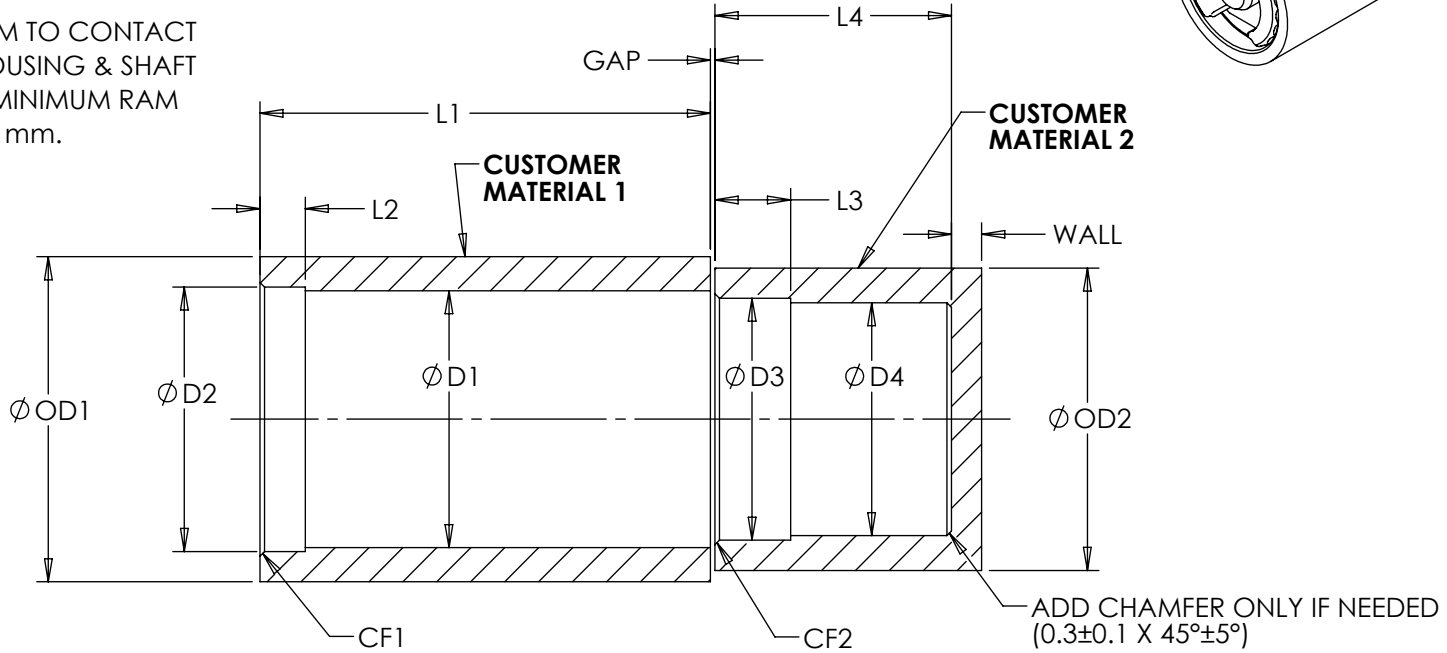
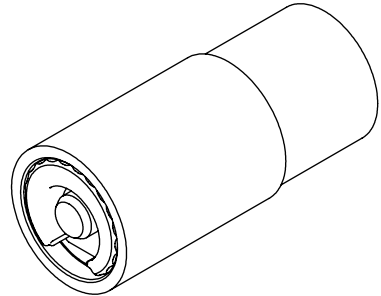
TI-340-X.XX-02 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	L1	L2	L3	L4	CF1	CF2	OD1	OD2	WALL	GAP
DELRIN	17.0±0.05	17.5±0.05	16±0.03	15.4±0.03	29.8 MIN	3±0.1	5±0.1	15.74 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	20 MIN	2 MIN	(0.3)

DELRIN DIMENSIONS SPECIFIED, OTHER PLASTICS MAY REQUIRE DIFFERENT MOUNTING OPTIONS.



INSTALLATION RAM TO CONTACT BOTH TORQUE HOUSING & SHAFT DURING PRESS. MINIMUM RAM DIAMETER OF 17.1mm.



SCALE 2:1

SPECIFICATION SUBJECT TO CHANGE

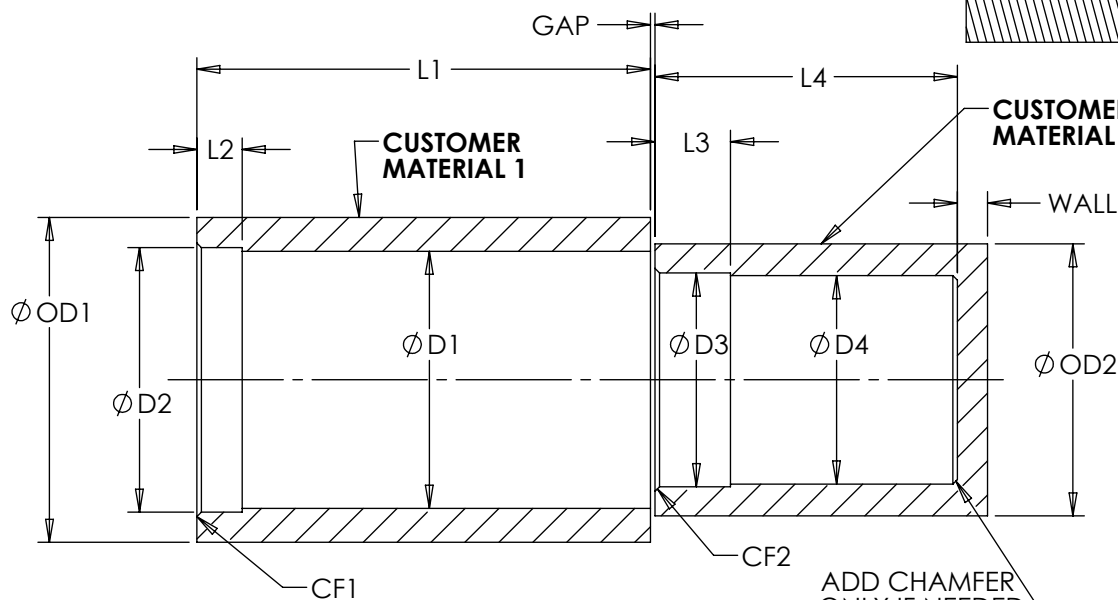
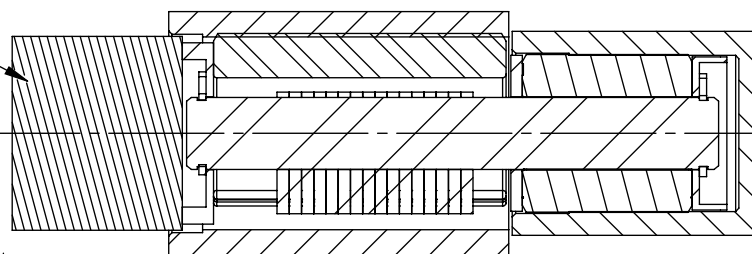
LEVEL	DESCRIPTION	DRAWN	DATE	APPROVED
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CHECKED:	STK	DATE:	18DEC13	
APPROVED:	STK	DATE:	18DEC13	
REVISED:	30JUN16	DIMS:	mm	
		TITLE: TORQUE INSERT SALES DRAWING		
		PART NO: TI-340	REV: G	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 6 OF 9

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 THIRD ANGLE PROJECTION

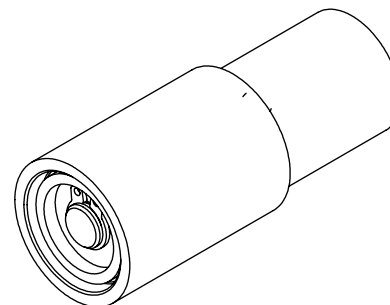
TI-340-X.XX-03 AND TI-340-X.XX-04 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	L1	L2	L3	L4	CF1	CF2	OD1	OD2	WALL	GAP
DIE CAST ZINC	17±0.05	17.5±0.03	14.14±0.03	13.78±0.03	30 MIN	3±0.1	5.0±0.1	20 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	18 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM	17±0.05	17.5±0.03	14.14±0.03	13.78±0.03	30 MIN	3±0.1	5.0±0.1	20 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	18 MIN	2 MIN	(0.3)
MILD STEEL	17.15±0.05	17.5±0.03	14.14±0.03	13.925±0.015	30 MIN	3±0.1	5.0±0.1	20 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	18 MIN	2 MIN	(0.3)
WROUGHT ALUMINUM	17.15±0.05	17.5±0.03	14.14±0.03	13.925±0.015	30 MIN	3±0.1	5.0±0.1	20 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	18 MIN	2 MIN	(0.3)

INSTALLATION RAM TO CONTACT ONLY
OUTSIDE FACE OF WAHSER DURING PRESS.
MINIMUM RAM DIAMETER OF 17.1mm.



ADD CHAMFER
ONLY IF NEEDED
(0.3±0.1 X 45°±5°)



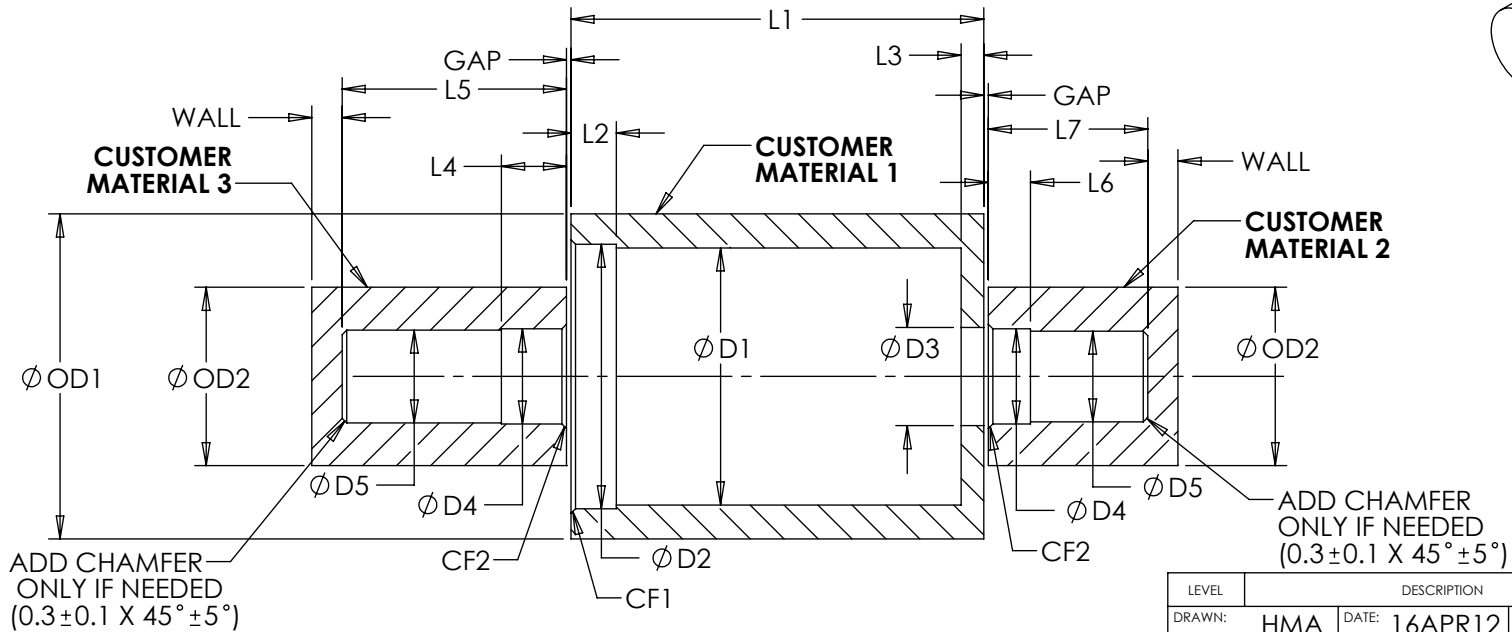
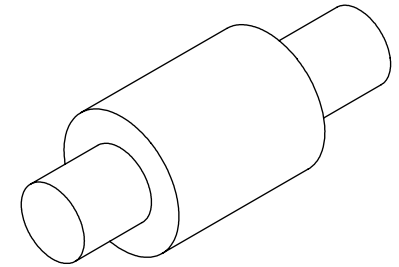
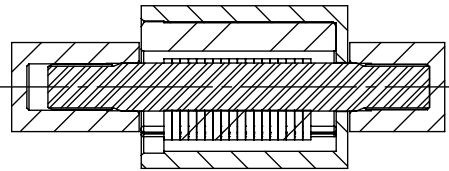
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CHECKED:	STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED:	STK	DATE: 18DEC13	PART NO: TI-340		
REVISED:	30JUN16	DIMS: mm	REV: G		
INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG. THIRD ANGLE PROJECTION				REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	
SCALE: 1:1		DO NOT SCALE DRAWING		SHEET 7 OF 9	

SPECIFICATION SUBJECT TO CHANGE

TI-340-X.XX-05 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	CF1	CF2	OD1	OD2	WALL	GAP
DIE CAST ZINC	17.0±0.05	17.5±0.03	6.5±0.03	6.3±0.03	5.75±0.03	27.3±0.1	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	2.8±0.1	10.55±0.1	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM	17.0±0.05	17.5±0.03	6.5±0.03	6.3±0.03	5.75±0.03	27.3±0.1	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	2.8±0.1	10.55±0.1	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)
MILD STEEL	17.15 ±0.025	17.5±0.03	6.5±0.03	6.48±0.03	5.85 ±0.015	27.3±0.1	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	2.8±0.1	10.55±0.1	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)
WROUGHT ALUMINUM	17.15 ±0.025	17.5±0.03	6.5±0.03	6.48±0.03	5.85 ±0.015	27.3±0.1	3±0.1	1.5±0.1	4.3±0.1	13.84 MIN	2.8±0.1	10.55±0.1	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	21.5 MIN	11.8 MIN	2 MIN	(0.3)

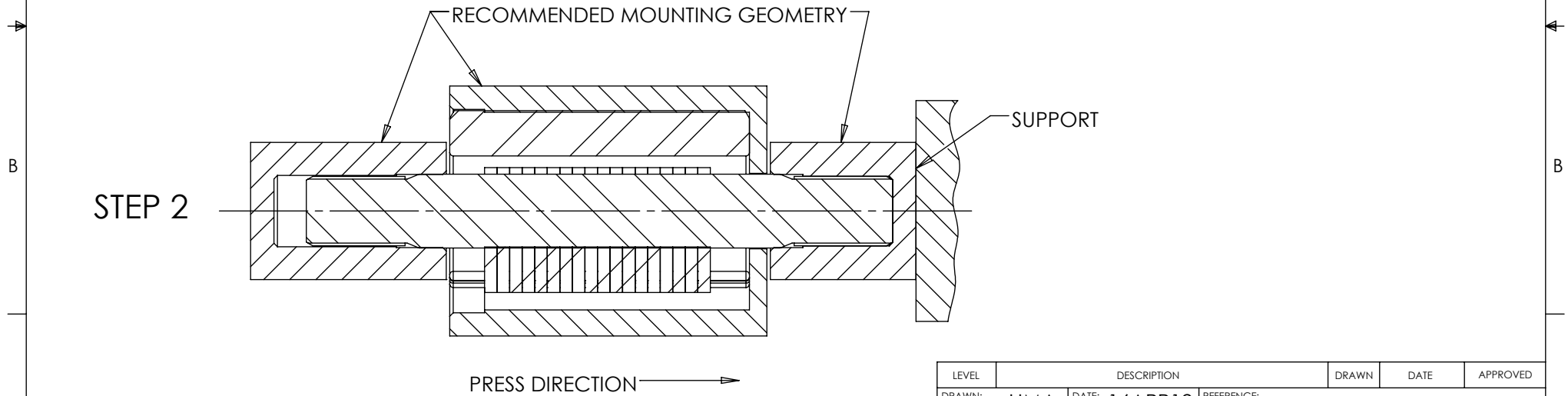
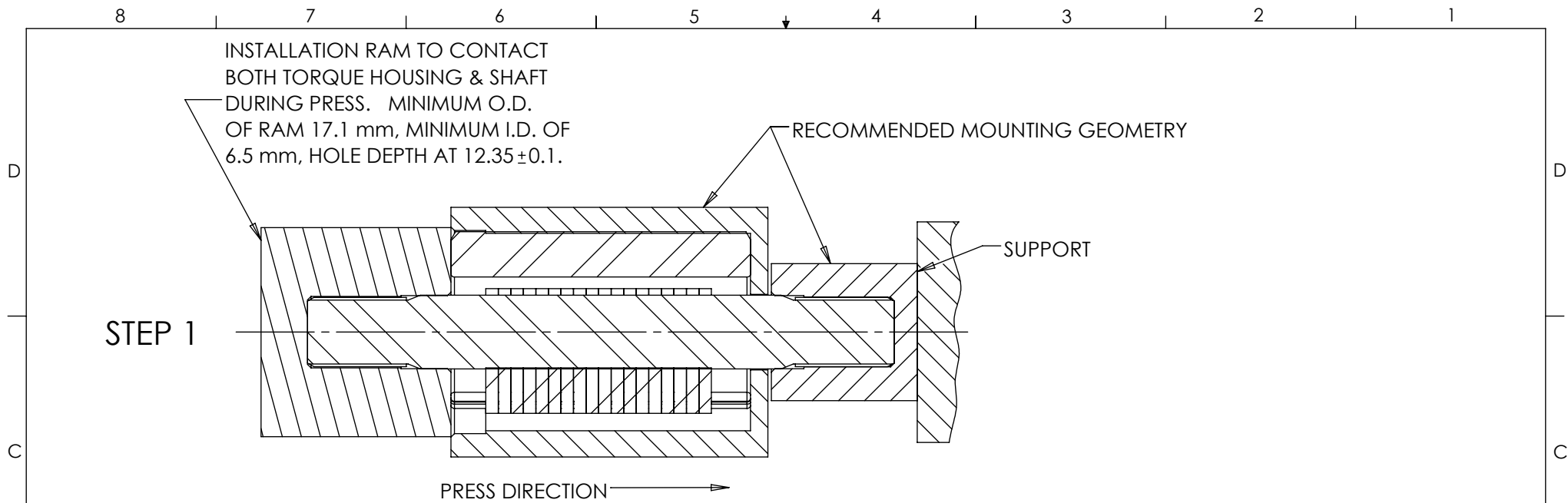
SEE NEXT PAGE FOR
INSTALLATION SUGGESTIONS




LEVEL	DESCRIPTION	DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE:	16APR12	83560-XXX TORQUE INSERT SALES DRAWING
CHECKED:	STK	DATE:	18DEC13	
APPROVED:	STK	DATE:	18DEC13	
REVISED:	30JUN16	DIMS:	mm	
		REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		PART NO: TI-340
				REV: G
		SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 8 OF 9

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THIRD ANGLE PROJECTION

SPECIFICATION SUBJECT TO CHANGE



SPECIFICATION SUBJECT TO CHANGE

LEVEL	DESCRIPTION		DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE: 16APR12	REFERENCE: 83560-XXX		
CHECKED:	STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED:	STK	DATE: 18DEC13	PART NO: TI-340		
REVISED:	30JUN16	DIMS: mm	SCALE: 1:1		REV: G
INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG. THIRD ANGLE PROJECTION		 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		DO NOT SCALE DRAWING	
			SHEET 9 OF 9		