

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:

- APPLICATION CONDITIONS REFERENCE (USER MUST DETERMINE FITNESS FOR USE IN APPLICATION).
- ENVIRONMENTAL CONDITIONS: -20°C to 80°C.
- 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

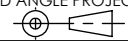
- LIFE: 25,000 CYCLES.
ONE CYCLE CONSISTS OF 120° CW AND 120° CCW AT 10% DUTY CYCLE FOR SPEEDS LESS THAN 100 RPM.
- MATERIALS:
PLATED POWDERED METAL HOUSINGS
HARDENED STEEL TORQUE ELEMENT
DIECAST KNURLED ZINC SHAFT END
HARDENED STEEL BEARINGS
STEEL WASHERS
STEEL RETAINING RINGS
MINERAL OIL BASED LUBRICANT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


US PATENT NUMBER 8,875,348

SPECIFICATION SUBJECT TO CHANGE

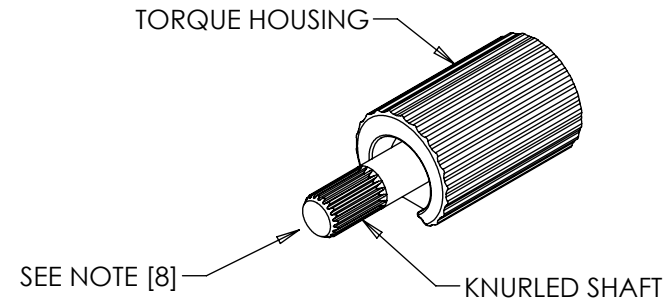
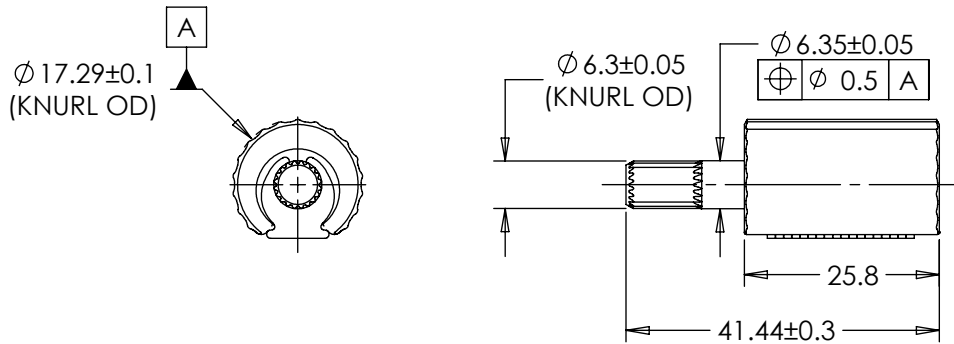
UNLESS SPECIFIED TOLERANCE ±0.15 INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.

THIRD ANGLE PROJECTION



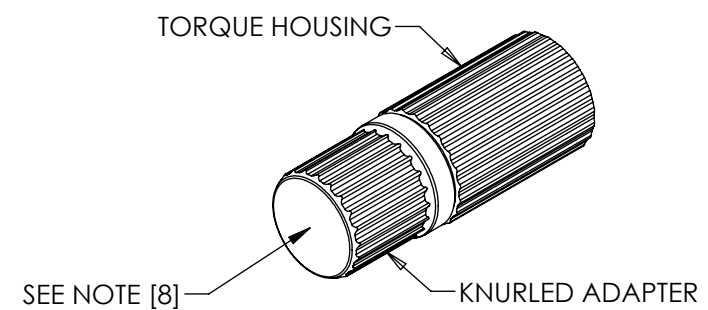
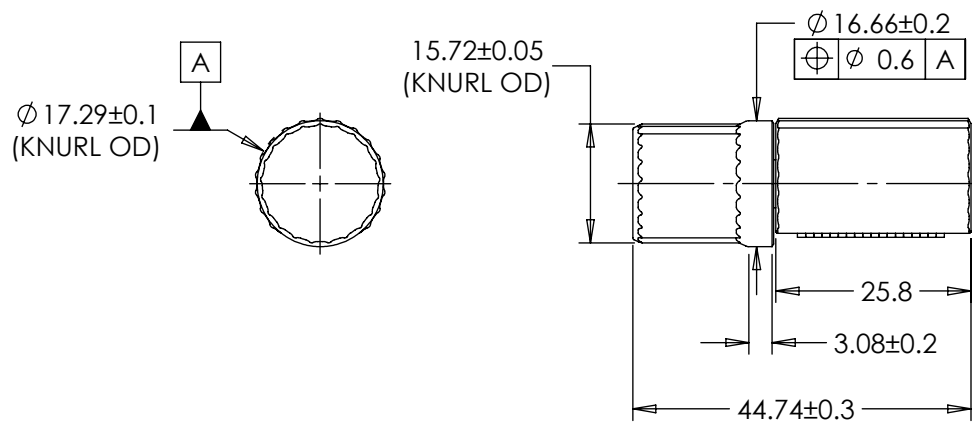
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DRAWN: HMA	DATE: 16APR12	REFERENCE: 83560-XXX		
CHECKED: STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED: STK	DATE: 18DEC13	PART NO: TI-340		
REVISED: 08JAN18	DIMS: mm	REV: H		
 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD 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

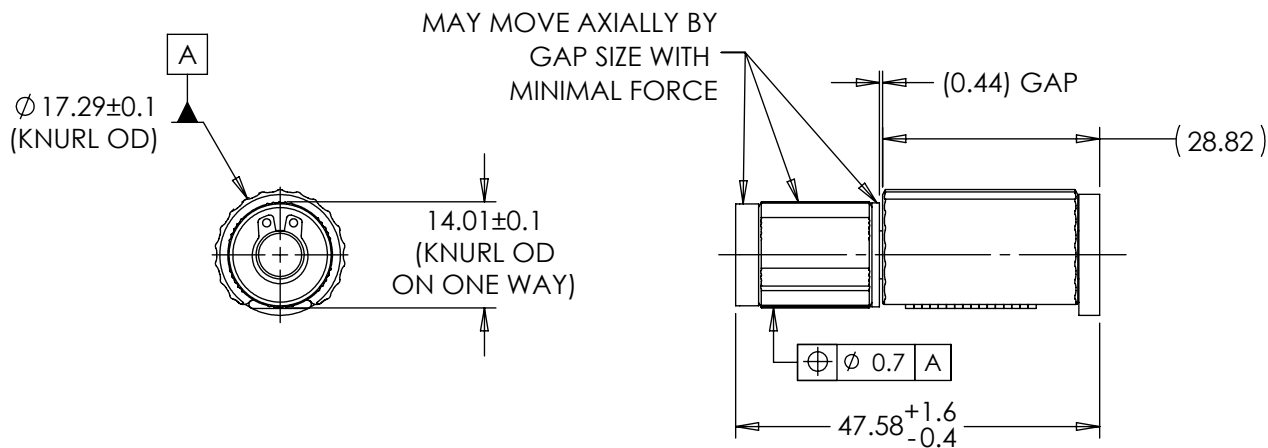
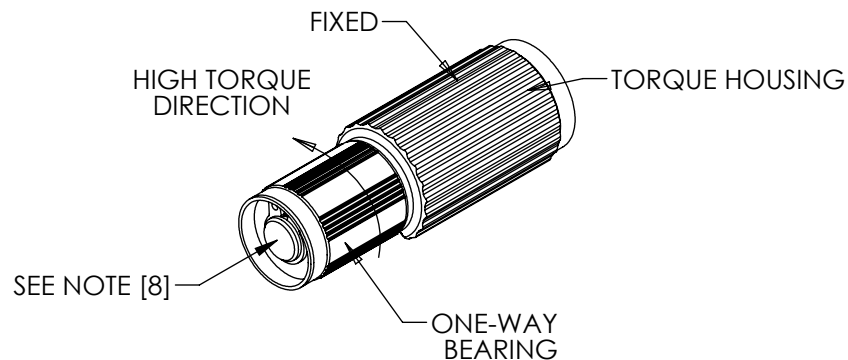
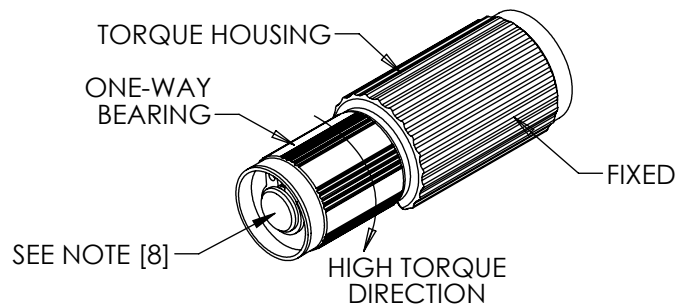
SPECIFICATION SUBJECT TO CHANGE

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 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:	08JAN18	DIMS: mm	REV: H		
		REELL PRECISION MANUFACTURING		SCALE: 1:1	
		1259 WILLOW LAKE BOULEVARD		DO NOT SCALE DRAWING	
SAINT PAUL, MINNESOTA 55110-5103, USA				SHEET 2 OF 9	

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

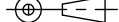
TI-340-X.XX-04 (ONE WAY REVERSE)



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

UNLESS SPECIFIED TOLERANCE ± 0.15
INTERPRET PRINT PER ASME Y14.5M-1994
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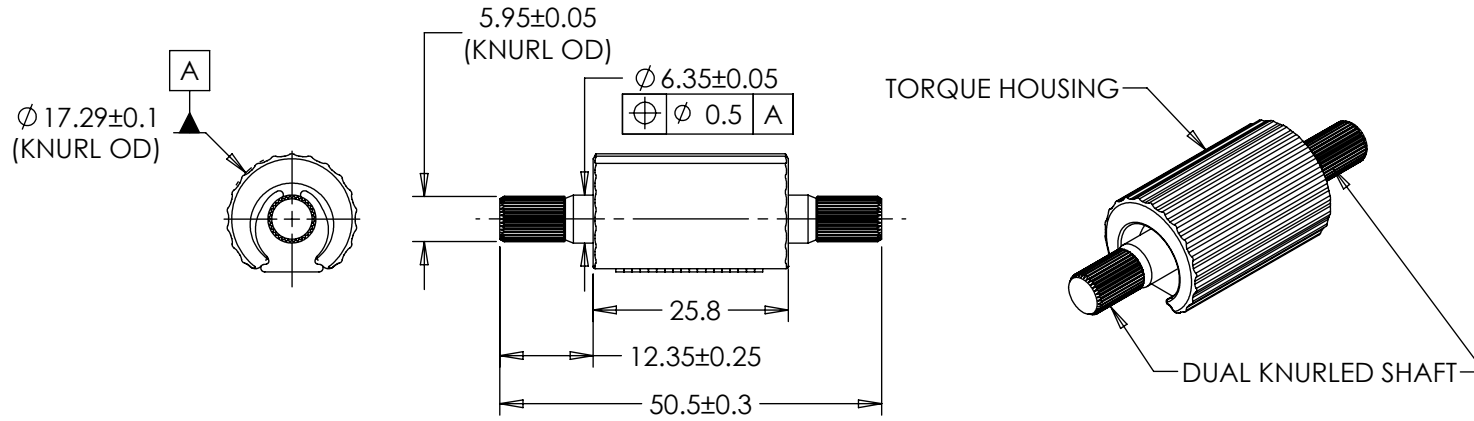
THIRD ANGLE PROJECTION



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: 08JAN18	DIMS: mm	REV: H		
 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 3 OF 9

SPECIFICATION SUBJECT TO CHANGE

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.

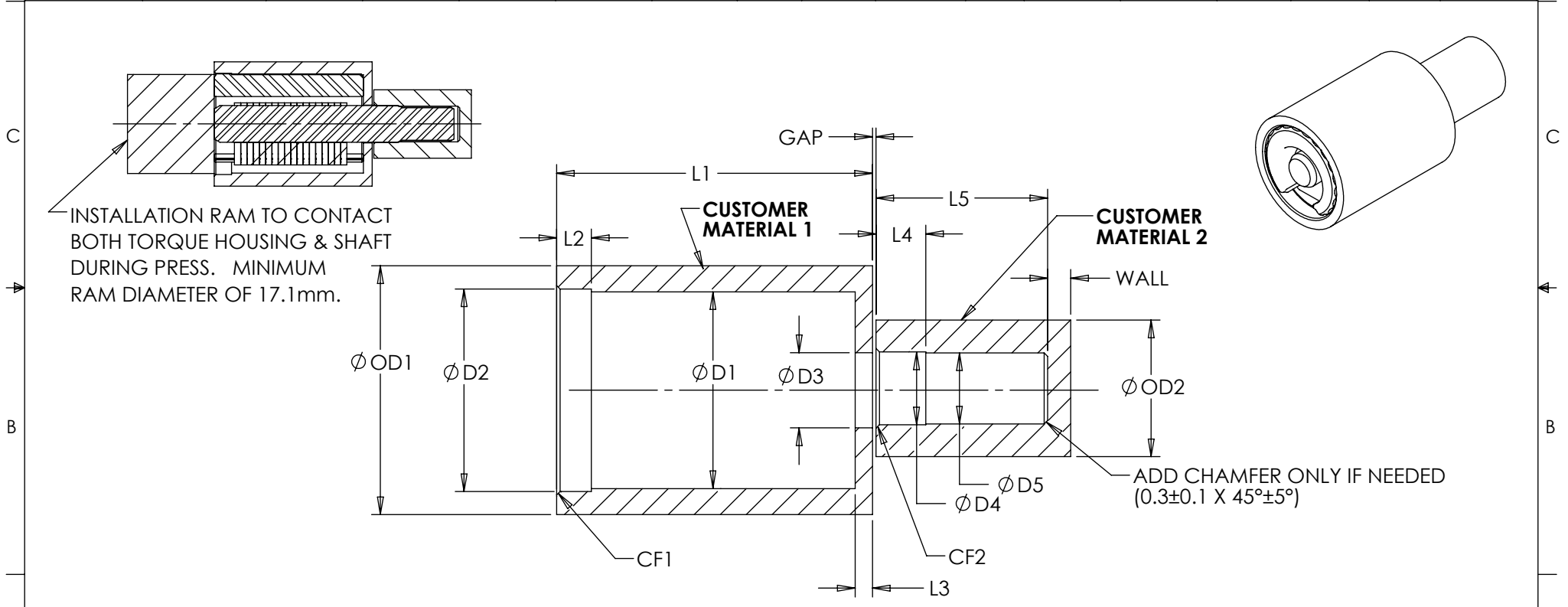
SPECIFICATION SUBJECT TO CHANGE

UNLESS SPECIFIED TOLERANCE ±0.15
 INTERPRET PRINT PER ASME Y14.5M-1994
 THIS PRINT IS THE CONFIDENTIAL PROPERTY 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:	08JAN18	DIMS: mm	REV: H		
		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)



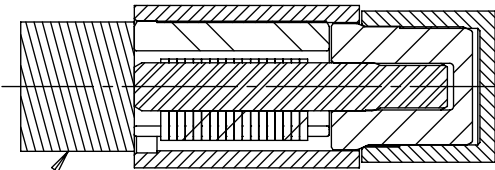
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DRAWN:	HMA	DATE: 16APR12	REFERENCE: 83560-XXX		
CHECKED:	STK	DATE: 18DEC13	TITLE: TORQUE INSERT SALES DRAWING		
APPROVED:	STK	DATE: 18DEC13	PART NO: TI-340		
REVISED:	08JAN18	DIMS: mm	REV: H		
INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE 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

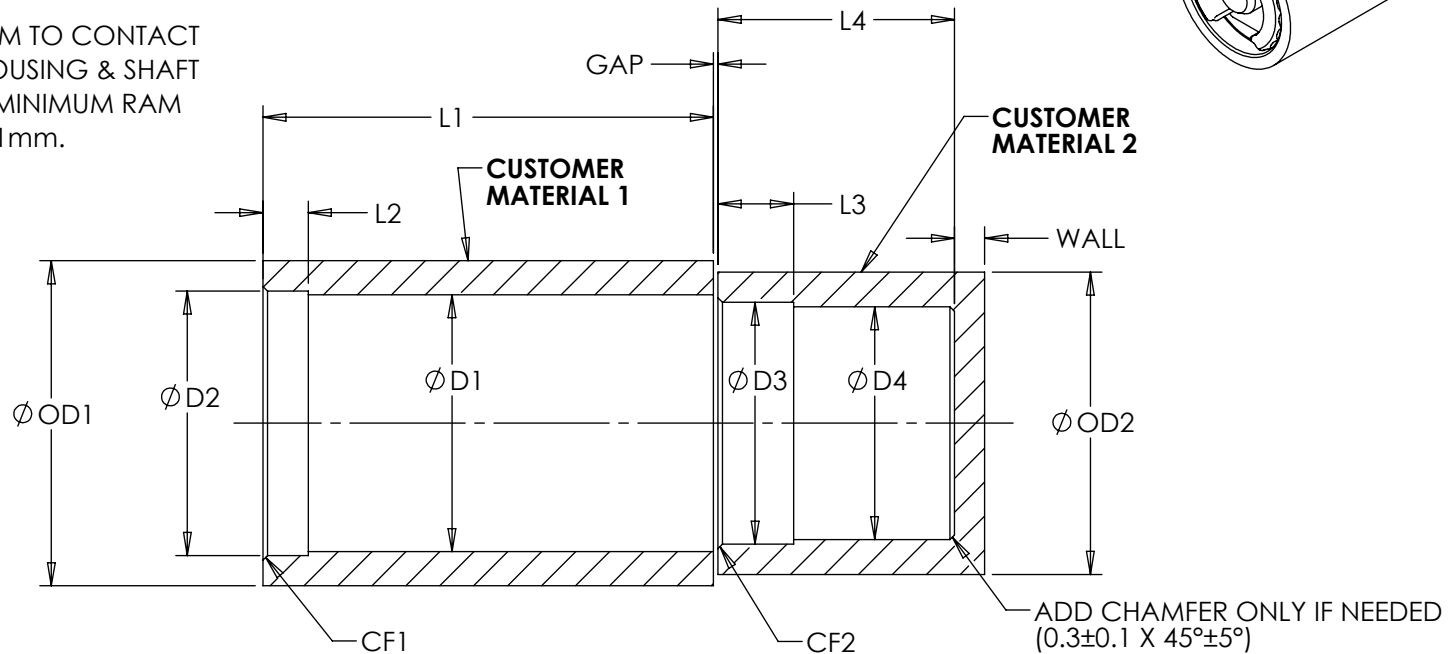
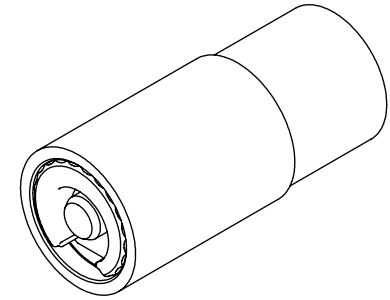
TI-340-X.XX-02 CUSTOMER INSTALLATION GEOMETRY

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.



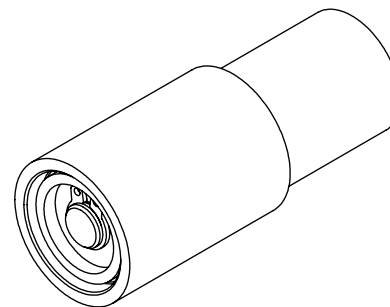
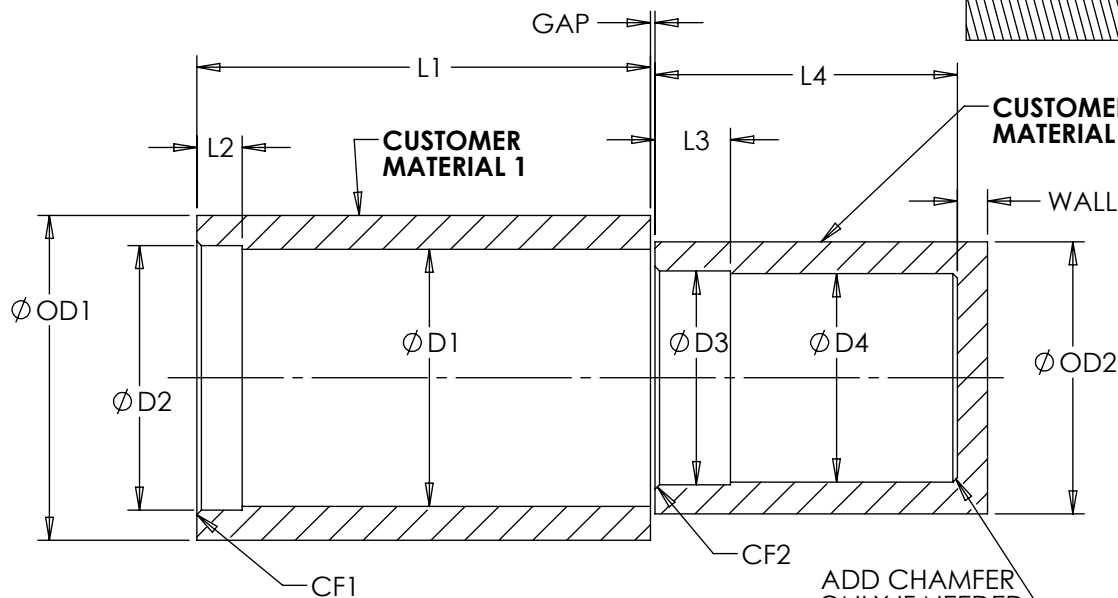
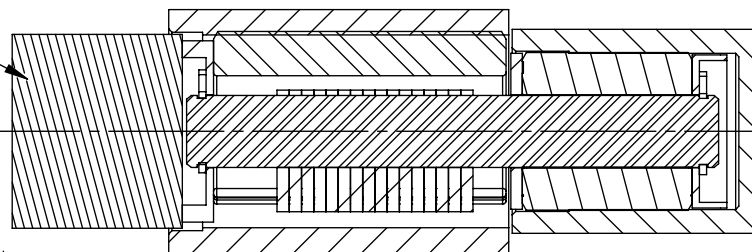
SPECIFICATION SUBJECT TO CHANGE

LEVEL	DESCRIPTION	DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE:	16APR12	REFERENCE: 83560-XXX TITLE: TORQUE INSERT SALES DRAWING PART NO: TI-340 SCALE: 1:1 DO NOT SCALE DRAWING
CHECKED:	STK	DATE:	18DEC13	
APPROVED:	STK	DATE:	18DEC13	
REVISED:	08JAN18	DIMS:	mm	
INTERPRET PRINT PER ASME Y14.5M-1994 THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG. THIRD ANGLE PROJECTION				TITLE: TORQUE INSERT SALES DRAWING PART NO: TI-340 SCALE: 1:1 DO NOT SCALE DRAWING
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		REV: H		SHEET 6 OF 9

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°)

LEVEL	DESCRIPTION	DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE:	16APR12	REFERENCE: 83560-XXX TITLE: TORQUE INSERT SALES DRAWING PART NO: TI-340 SCALE: 1:1 DO NOT SCALE DRAWING SHEET 7 OF 9
CHECKED:	STK	DATE:	18DEC13	
APPROVED:	STK	DATE:	18DEC13	
REVISED:	08JAN18	DIMS:	mm	
		REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		
		REV: H		

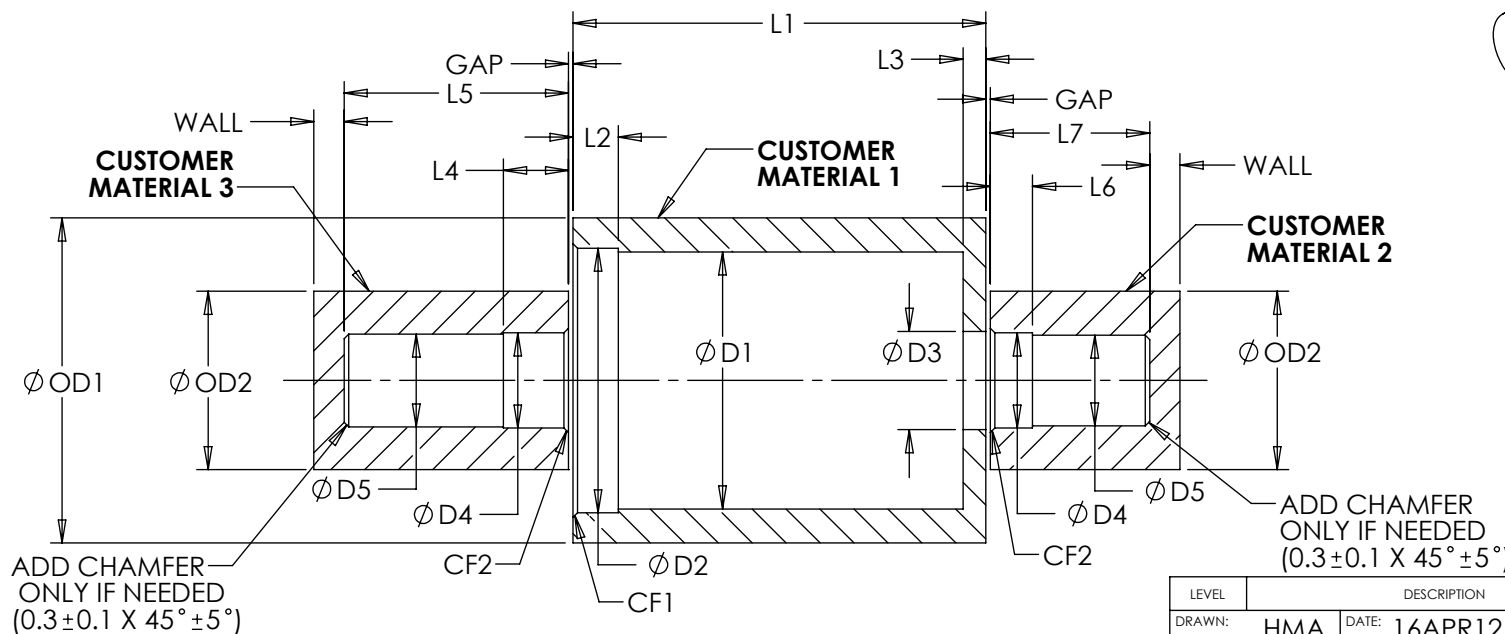
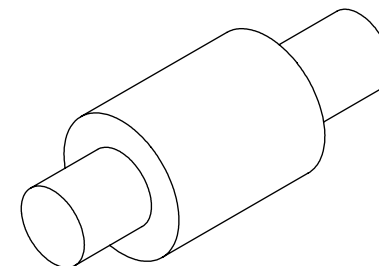
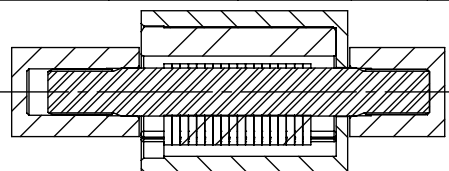
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SPECIFICATION SUBJECT TO CHANGE

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)

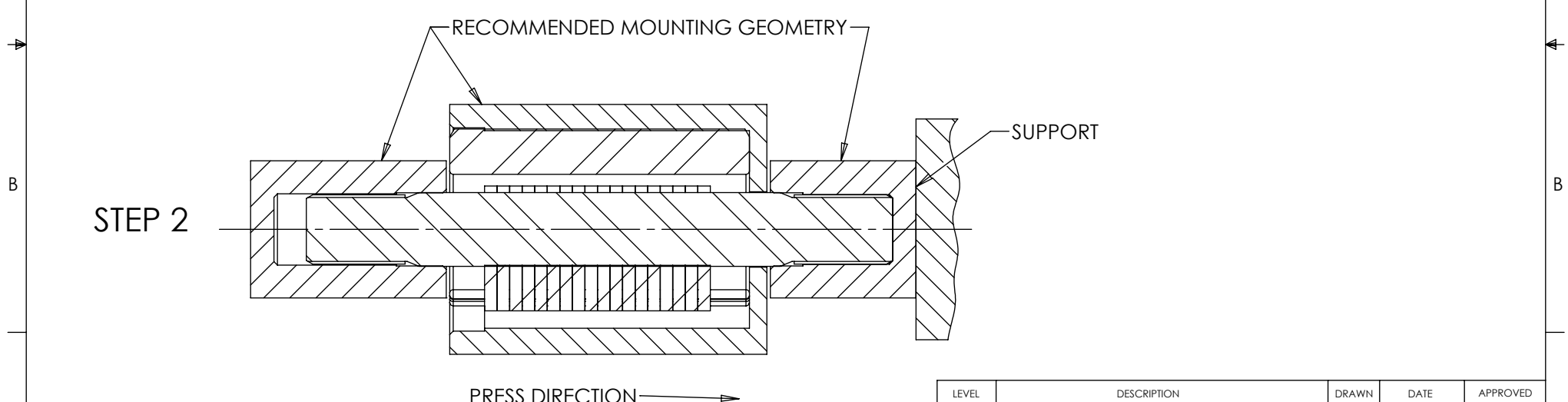
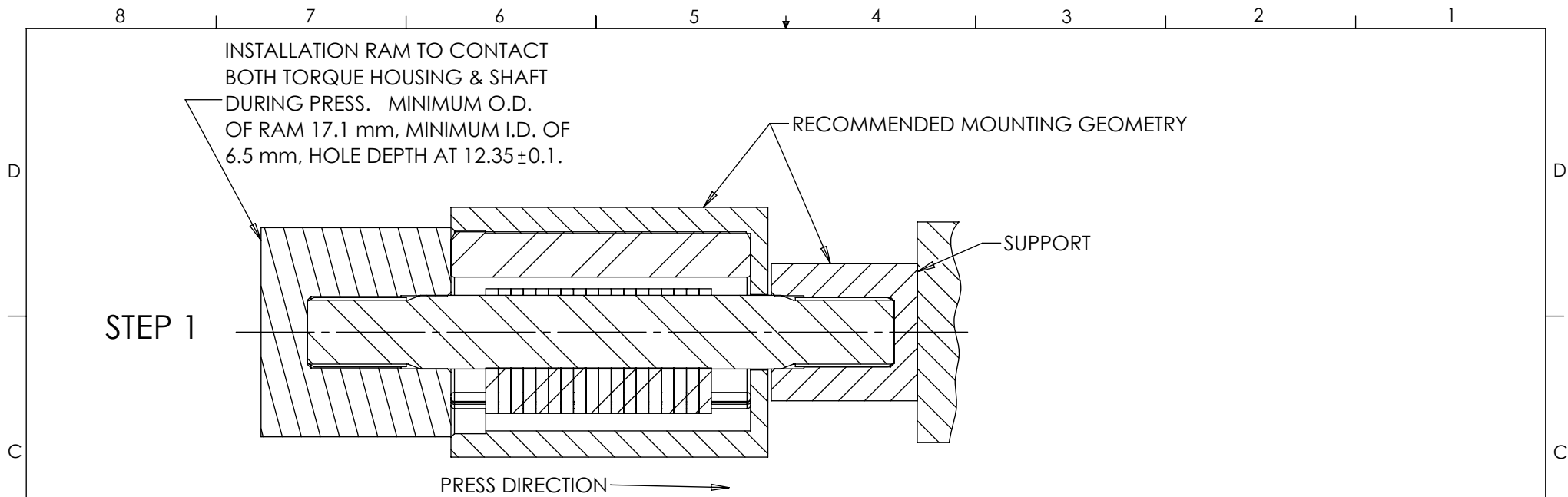
SEE NEXT PAGE FOR INSTALLATION SUGGESTIONS



LEVEL	DESCRIPTION	DRAWN	DATE	APPROVED
DRAWN:	HMA	DATE:	16APR12	83560-XXX TORQUE INSERT SALES DRAWING PART NO: TI-340 REV: H
CHECKED:	STK	DATE:	18DEC13	
APPROVED:	STK	DATE:	18DEC13	
REVISED:	08JAN18	DIMS:	mm	
		REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA		
SCALE: 1:1		DO NOT SCALE DRAWING		SHEET 8 OF 9

INTERPRET PRINT PER ASME Y14.5M-1994
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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:	08JAN18	DIMS: mm	REV: H		
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 9 OF 9