

CATALOG CODE

TI-360-X.XX-XX

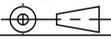
TORQUE Nm
6.00
8.00
10.00

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

- NOTES:
1. USER MUST DETERMINE FITNESS FOR USE IN APPLICATION.
 2. ENVIRONMENTAL CONDITIONS: -20°C to 80°C.
 3. PRODUCT TORQUE SPECIFICATION: DYNAMIC TORQUE ±20% OF NOMINAL
 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 ZINC KNURLED ADAPTER
 HARDENED STEEL BEARINGS
 STEEL WASHERS
 STEEL RETAINING RINGS
 MINERAL OIL BASED LUBRICANT
 6. FINISH:
 NON-COSMETIC.
 7. TORQUE INSERT DESIGNED FOR USE IN PLASTIC OR METAL. SEE INDIVIDUAL CONFIGURATION DRAWINGS FOR ADDITIONAL DETAIL.
 - [8] TORQUE INSERT 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.
 11. NUMBER OF TORQUE ELEMENTS MAY VARY.

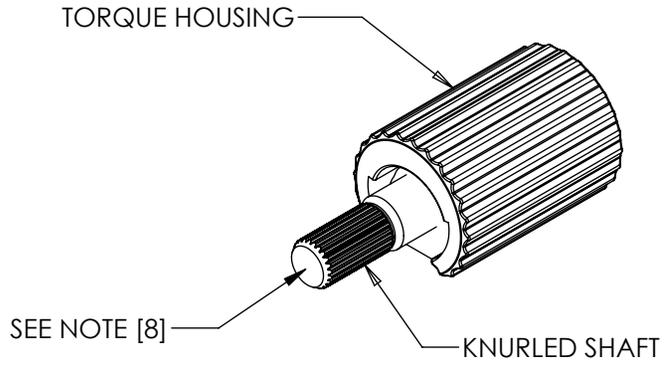
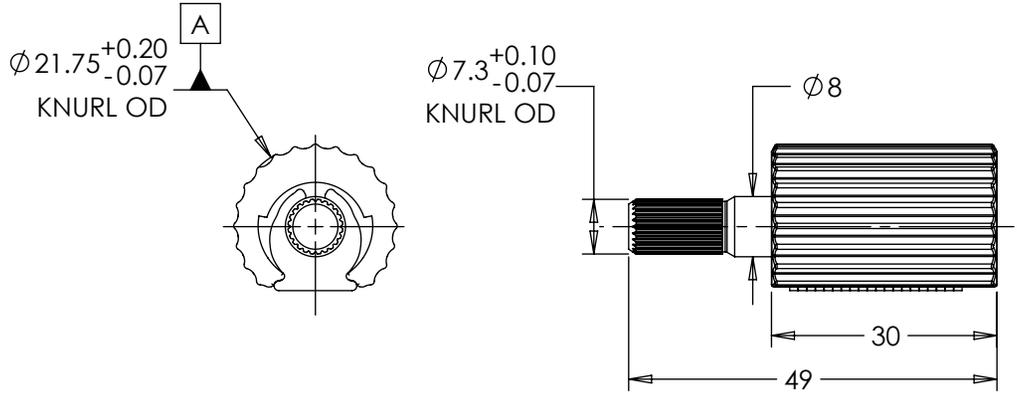
FOR PATENTS SEE:
pat.reell.com (PRODUCT CODE: CP10)

SPECIFICATIONS SUBJECT TO CHANGE

	ECO NO: 05430	PART LIFECYCLE: RELEASED		
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION		
	APPROVED DATE: 16SEP22	DESCRIPTION: SALES DRAWING		
	PROJECT NO: 100670			
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-360		
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY:			REV: F
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 1 OF 10

TI-360-X.XX-01 (KNURLED SHAFT)

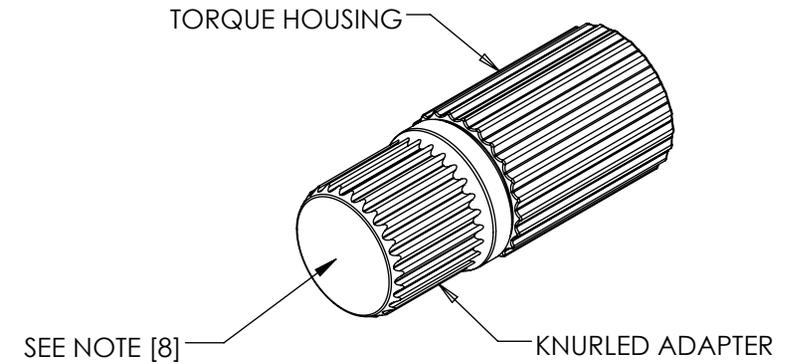
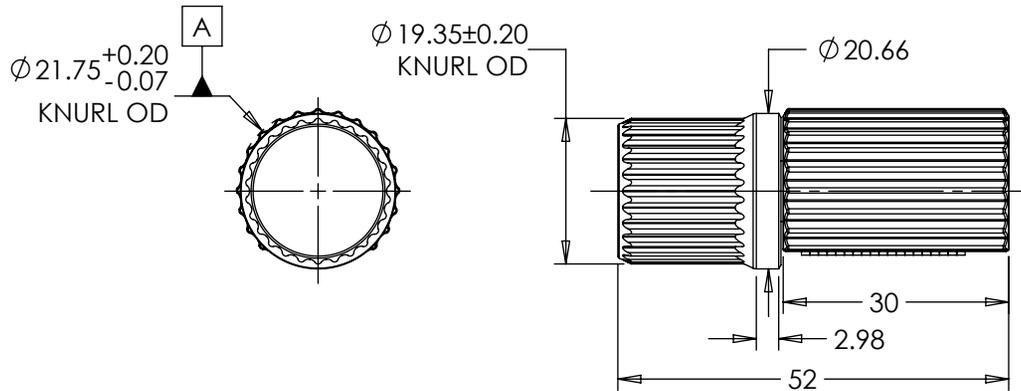
ALL DIMENSIONS ARE REFERENCE
SEE CAD MODEL FOR UNSPECIFIED FEATURES.



- SEE PAGE 5 FOR INSTALLATION RECOMMENDATIONS.
- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 61.2 GRAMS

TI-360-X.XX-02 (KNURLED ADAPTER)

ALL DIMENSIONS ARE REFERENCE
SEE CAD MODEL FOR UNSPECIFIED FEATURES.



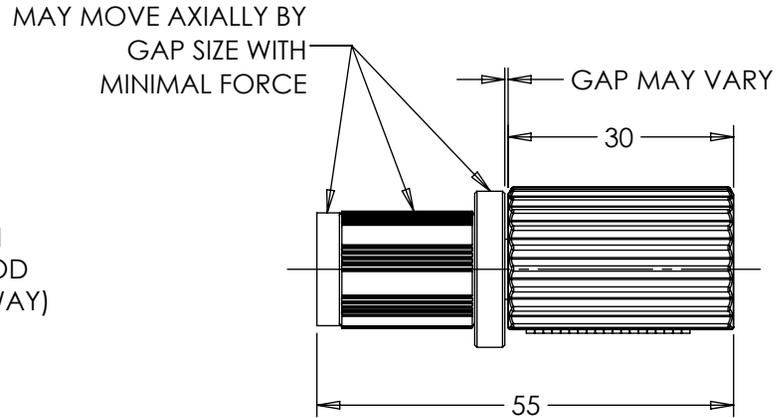
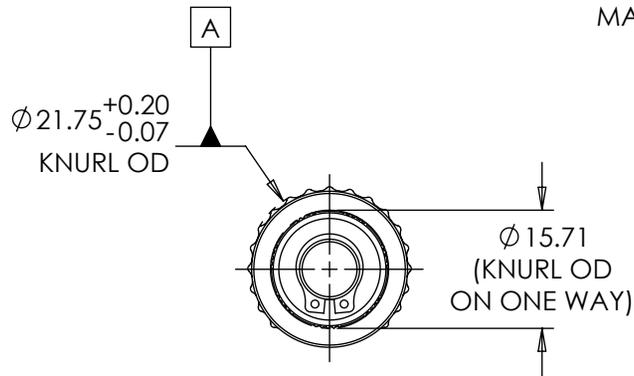
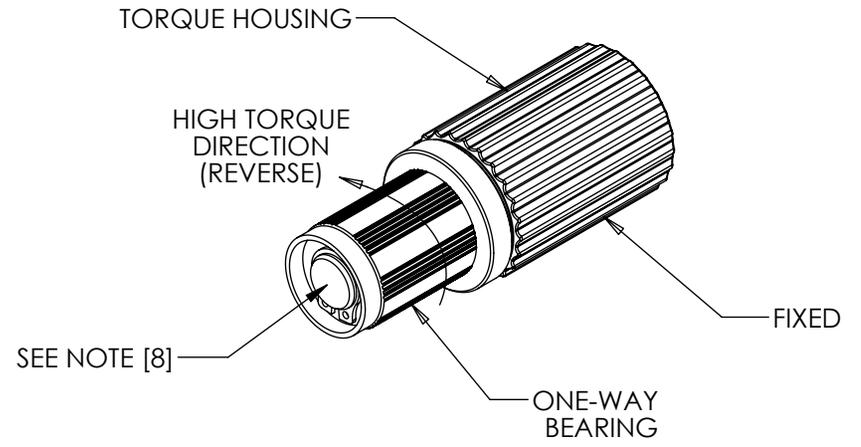
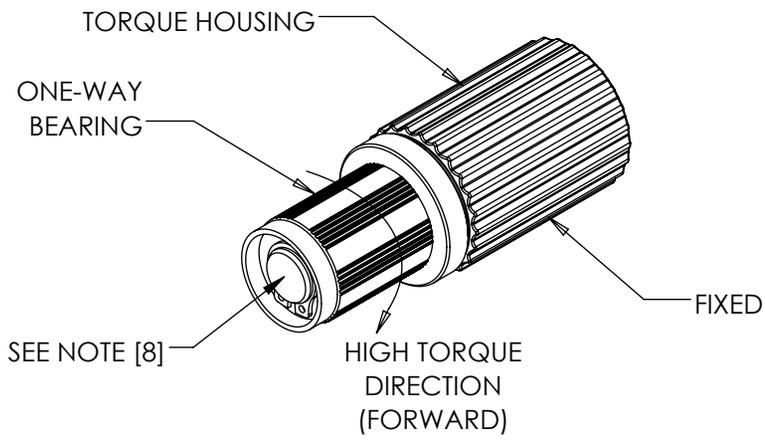
- SEE PAGES 6 AND 7 FOR INSTALLATION RECOMMENDATIONS.
- INTENDED FOR PRESS FIT INTO PLASTICS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 92.6 GRAMS

SPECIFICATIONS SUBJECT TO CHANGE

	ECO NO: 05430	PART LIFECYCLE: RELEASED	
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION	
	APPROVED DATE: 16SEP22	DESCRIPTION:	
	PROJECT NO: 100670	SALES DRAWING	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-360	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY:		REV: F
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1	DO NOT SCALE DRAWING
	DIMENSIONS: mm	SHEET 2 OF 10	

TI-360-X.XX-03 (ONE WAY FORWARD)

TI-360-X.XX-04 (ONE WAY REVERSE)



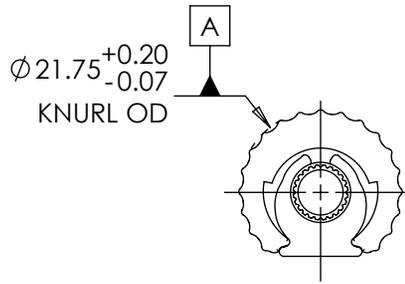
ALL DIMENSIONS ARE REFERENCE
SEE CAD MODEL FOR UNSPECIFIED FEATURES.

- SEE PAGE 8 FOR INSTALLATION RECOMMENDATIONS.
- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 91.7 GRAMS

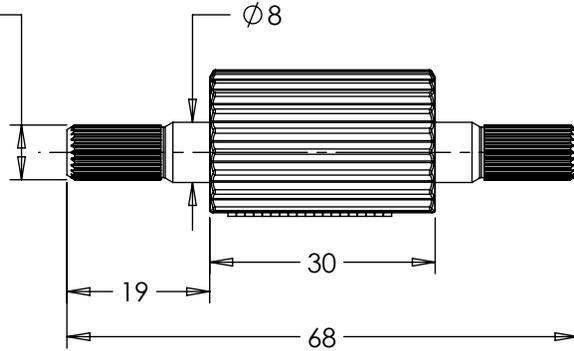
SPECIFICATIONS SUBJECT TO CHANGE

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	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION	
	APPROVED DATE: 16SEP22	DESCRIPTION:	
	PROJECT NO: 100670	SALES DRAWING	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	TI-360	
DRAWN BY:			
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION 	PART NO:	REV: F
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 1:1	DO NOT SCALE DRAWING
			SHEET 3 OF 10

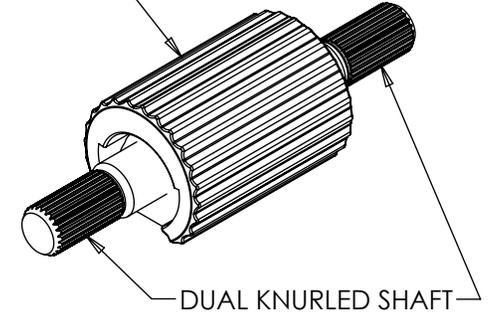
TI-360-X.XX-05 (DUAL ENDED KNURLED SHAFT)



$\phi 7.3^{+0.10}_{-0.07}$
KNURL OD



TORQUE HOUSING



- SEE PAGES 9 AND 10 FOR INSTALLATION RECOMMENDATIONS.
- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 67.5 GRAMS

ALL DIMENSIONS ARE REFERENCE
SEE CAD MODEL FOR UNSPECIFIED FEATURES.

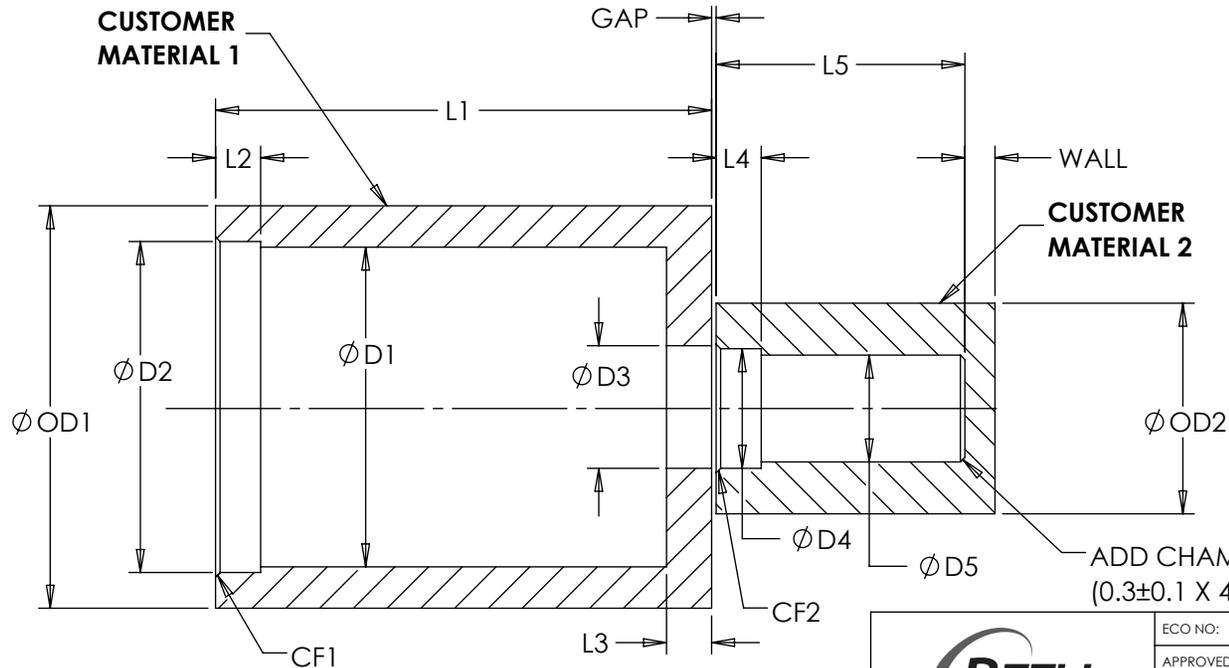
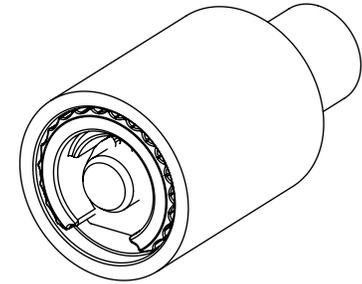
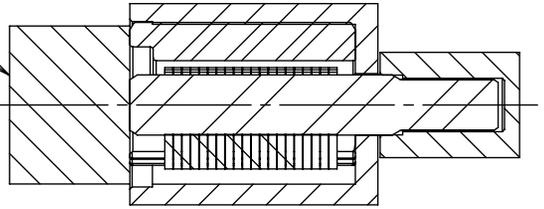
SPECIFICATIONS SUBJECT TO CHANGE

	ECO NO: 05430	PART LIFECYCLE: RELEASED		
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION		
	APPROVED DATE: 16SEP22	DESCRIPTION:		
	PROJECT NO: 100670	SALES DRAWING		
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-360 REV: F		
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY:			
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 4 OF 10

TI-360-X.XX-01 CUSTOMER INSTALLATION GEOMETRY

MATERIAL	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	CF1	CF2	OD1	OD2	WALL	GAP
DIE CAST ZINC	21.5±0.05	22±0.03	8.15±0.03	7.95±0.03	7.15±0.03	33 MIN	3±0.1	3±0.1	3±0.1	16.75 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	26.75 MIN	14 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM				8.05±0.03	7.2±0.03											
MILD STEEL	21.63 ±0.025															
WROUGHT ALUMINUM																

INSTALLATION RAM TO CONTACT BOTH TORQUE HOUSING & SHAFT DURING PRESS, MINIMUM RAM DIAMETER OF 21mm.



CUSTOMER MATERIAL 1 AND CUSTOMER MATERIAL 2 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION.

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

SCALE 2:1

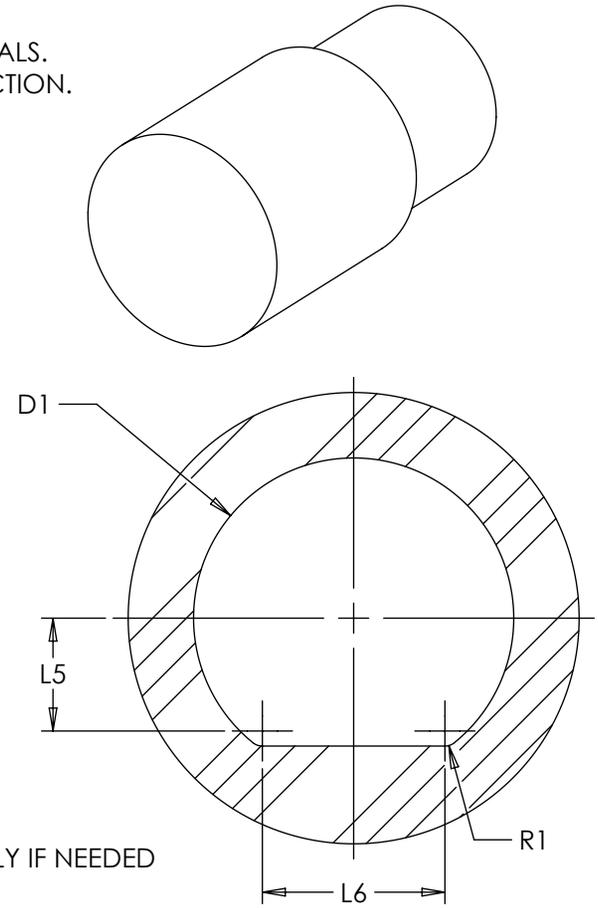
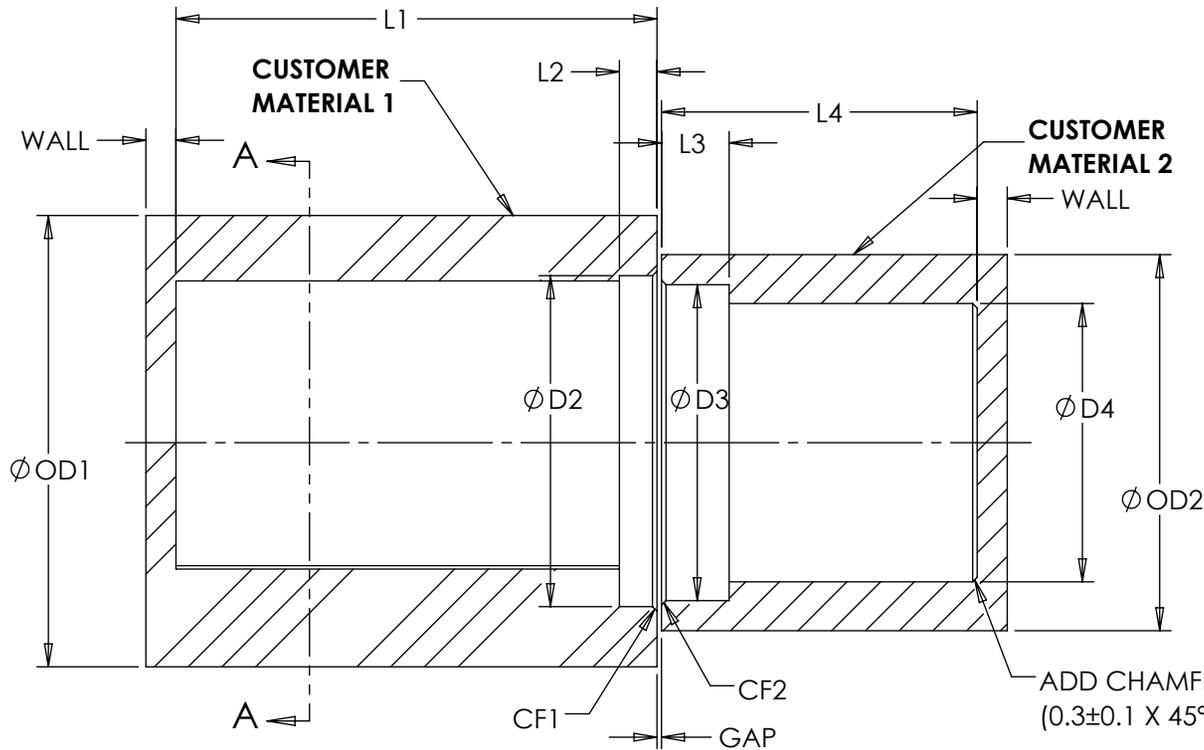
SPECIFICATIONS SUBJECT TO CHANGE

	ECO NO: 05430	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 16SEP22	DESCRIPTION:
	PROJECT NO: 100670	SALES DRAWING
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-360
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY:	
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1
	DIMENSIONS: mm	DO NOT SCALE DRAWING
		SHEET 5 OF 10

TI-360-X.XX-02 CUSTOMER INSTALLATION GEOMETRY

MATERIAL	D1	D2	D3	D4	R1	L1	L2	L3	L4	L5	L6	CF1	CF2	OD1	OD2	GAP	WALL
DELTRIN	21.3±0.05	22±0.03	21±0.03	18.5±0.03	3 MAX	32 MIN	2.5±0.1	4.5±0.1	21 MIN	8.5±0.1	(12)	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	30 MIN	25 MIN	(0.3)	2 MIN

- * DELTRIN DIMENSIONS SPECIFIED. OTHER PLASTICS MAY REQUIRE DIFFERENT MOUNTING OPTIONS.
- * D-PROFILE IN CUSTOMER MATERIAL 1 IS RECOMMENDED FOR PROPER ALIGNMENT IN PLASTIC MATERIALS.
- * CUSTOMER MATERIAL 1 AND CUSTOMER MATERIAL 2 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION.
- * SEE NEXT PAGE FOR INSTALLATION RECOMMENDATIONS.

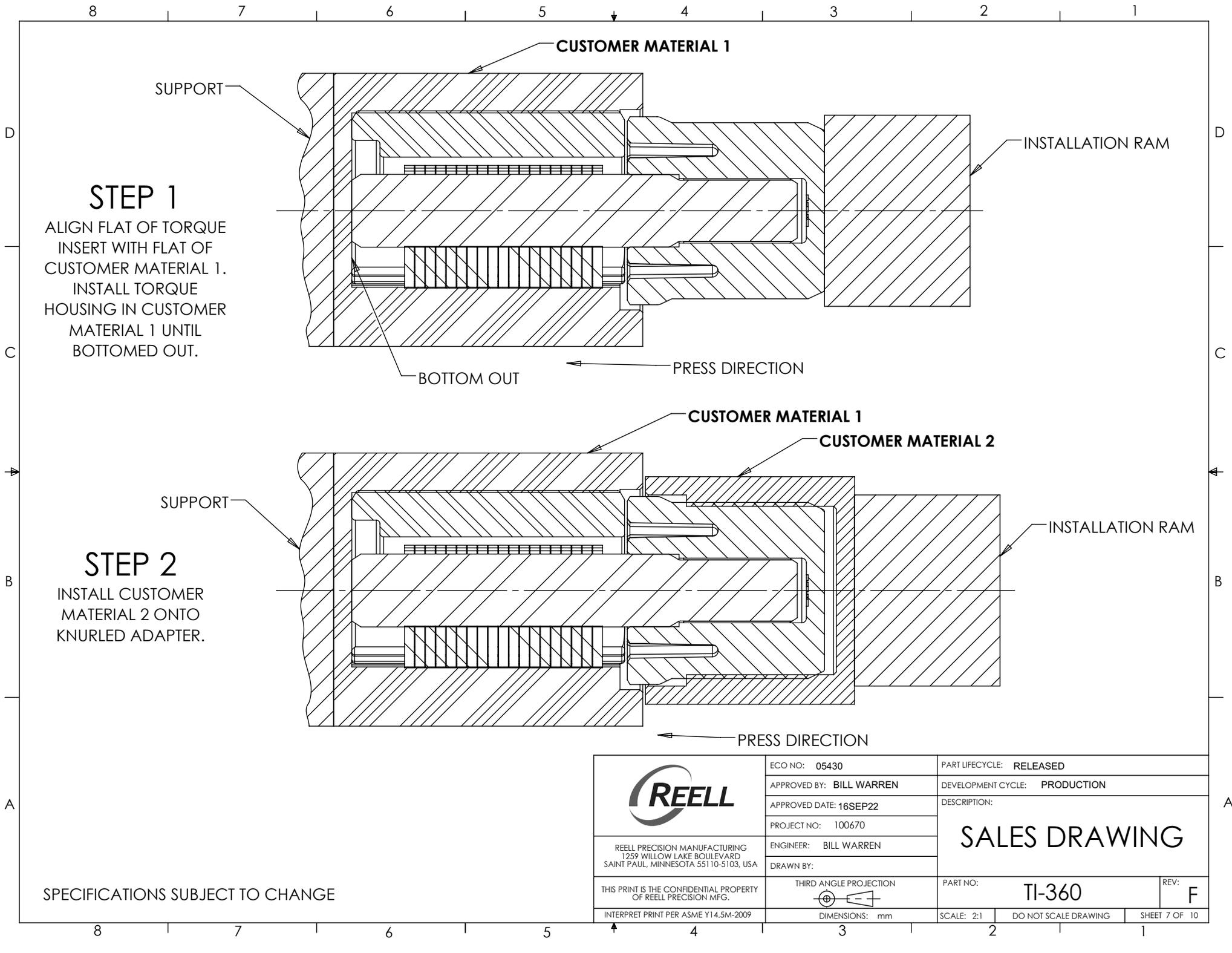


**SECTION A-A SCALE 2 : 1
CUSTOMER MATERIAL 1**

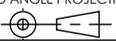


REELL <small>REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA</small>	ECO NO: 05430	PART LIFECYCLE: RELEASED	
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION	
	APPROVED DATE: 16SEP22	DESCRIPTION:	
	PROJECT NO: 100670	SALES DRAWING	
ENGINEER: BILL WARREN	DRAWN BY:		PART NO: TI-360 REV: F
THIRD ANGLE PROJECTION 			
DIMENSIONS: mm			
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG. <small>INTERPRET PRINT PER ASME Y14.5M-2009</small>	SCALE: 1:1	DO NOT SCALE DRAWING	SHEET 6 OF 10

SPECIFICATIONS SUBJECT TO CHANGE

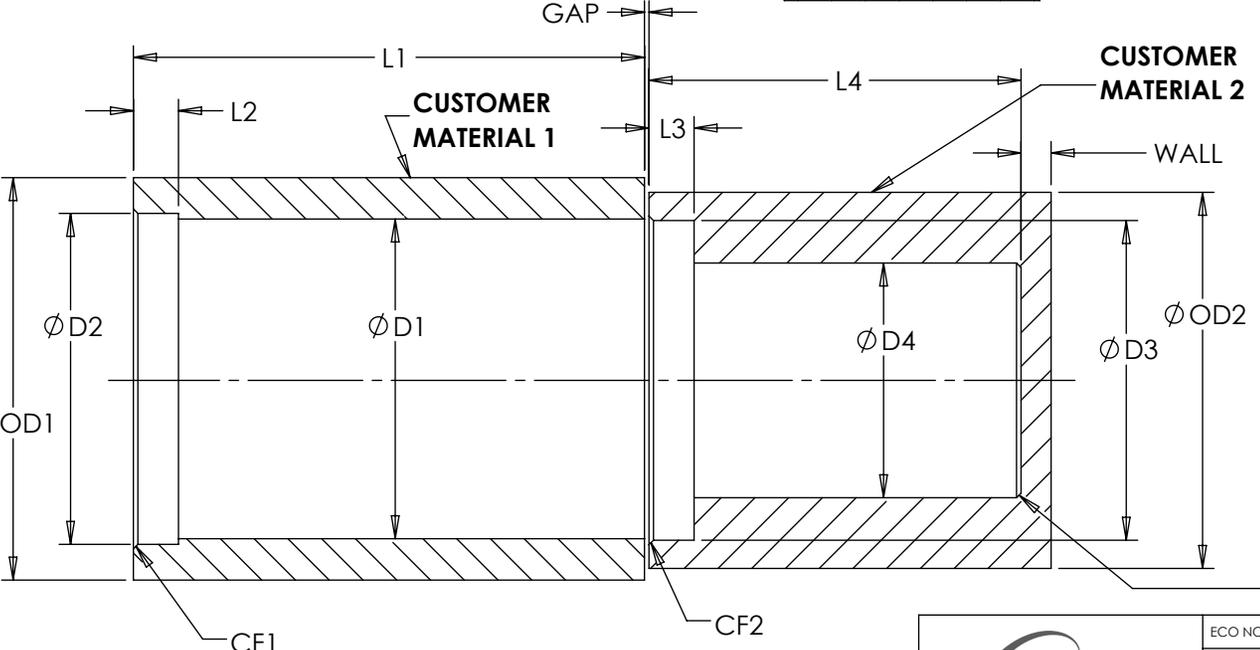
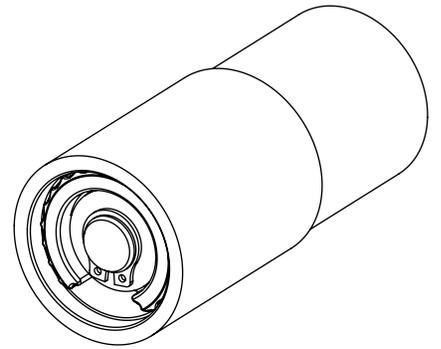
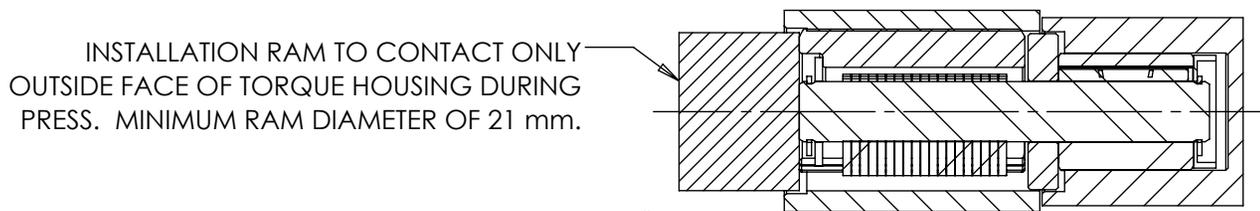


SPECIFICATIONS SUBJECT TO CHANGE

 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ECO NO: 05430	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 16SEP22	DESCRIPTION:
	PROJECT NO: 100670	SALES DRAWING
ENGINEER: BILL WARREN	PART NO: TI-360	REV: F
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG. INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION  DIMENSIONS: mm	SCALE: 2:1 DO NOT SCALE DRAWING SHEET 7 OF 10

TI-360-X.XX-03 AND TI-360-X.XX-04 CUSTOMER INSTALLATION GEOMETRY

MATERIAL	D1	D2	D3	D4	L1	L2	L3	L4	CF1	CF2	OD1	OD2	WALL	GAP
DIE CAST ZINC	21.5±0.05	22±0.03	21.25±0.03	15.53±0.03	32.4 MIN	3±0.1	2.5±0.1	24.5 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	26.75 MIN	25 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM														
MILD STEEL	21.63±0.025			15.57±0.015										
WROUGHT ALUMINUM														



CUSTOMER MATERIAL 1 AND CUSTOMER MATERIAL 2 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION.

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



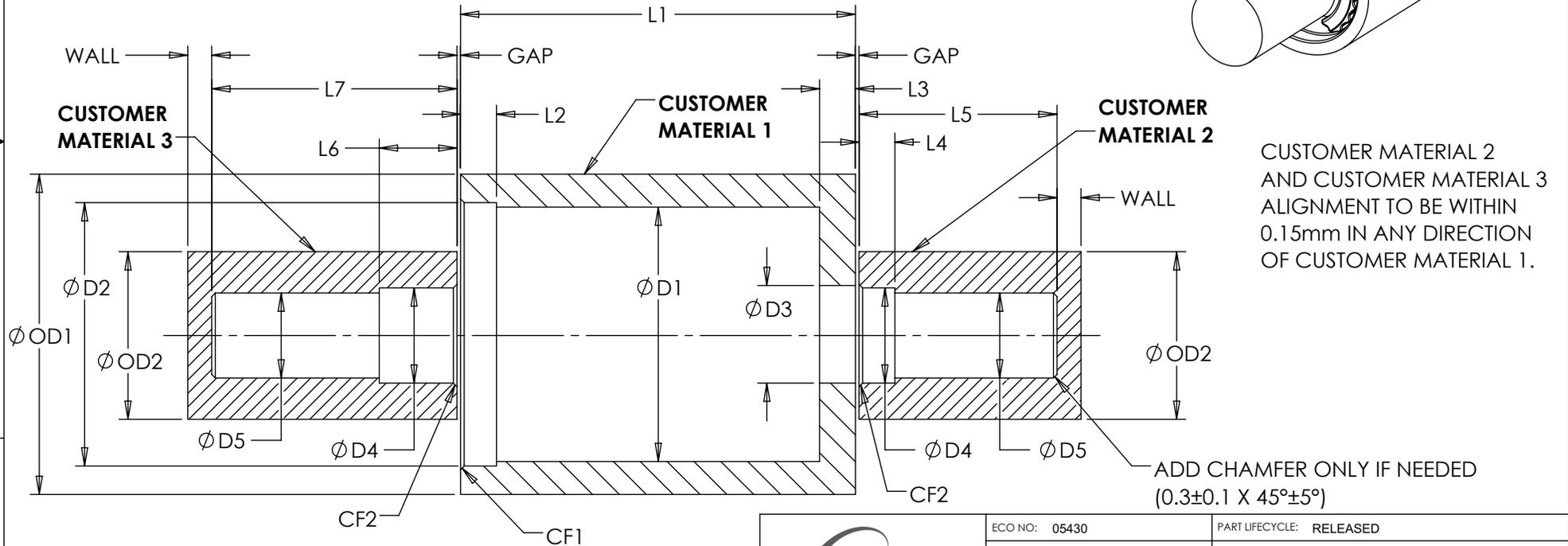
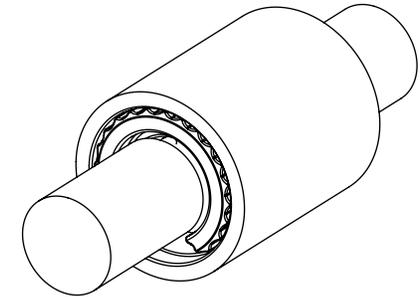
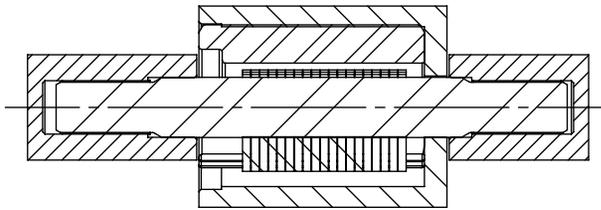
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ECO NO: 05430	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 16SEP22	DESCRIPTION:
	PROJECT NO: 100670	SALES DRAWING
ENGINEER: BILL WARREN	PART NO: TI-360	REV: F
DRAWN BY:	THIRD ANGLE PROJECTION	SCALE: 1:1
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.		DO NOT SCALE DRAWING
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SHEET 8 OF 10

SPECIFICATIONS SUBJECT TO CHANGE

TI-360-X.XX-05 CUSTOMER INSTALLATION GEOMETRY

MATERIAL	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	CF1	CF2	OD1	OD2	WALL	GAP
DIE CAST ZINC	21.5±0.05			7.95±0.03	7.15±0.03													
DIE CAST ALUMINUM																		
MILD STEEL		22±0.03	8.15±0.03			33±0.1	3±0.1	3±0.1	3±0.1	15.7±0.1	6.5±0.1	20.5 MIN	0.3±0.1 X 45°±5°	0.3±0.1 X 45°±5°	26.75 MIN	14 MIN	2 MIN	(0.3)
WROUGHT ALUMINUM	21.63 ±0.025			8.05±0.03	7.2±0.03													

SEE NEXT PAGE FOR INSTALLATION SUGGESTIONS



CUSTOMER MATERIAL 2 AND CUSTOMER MATERIAL 3 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION OF CUSTOMER MATERIAL 1.

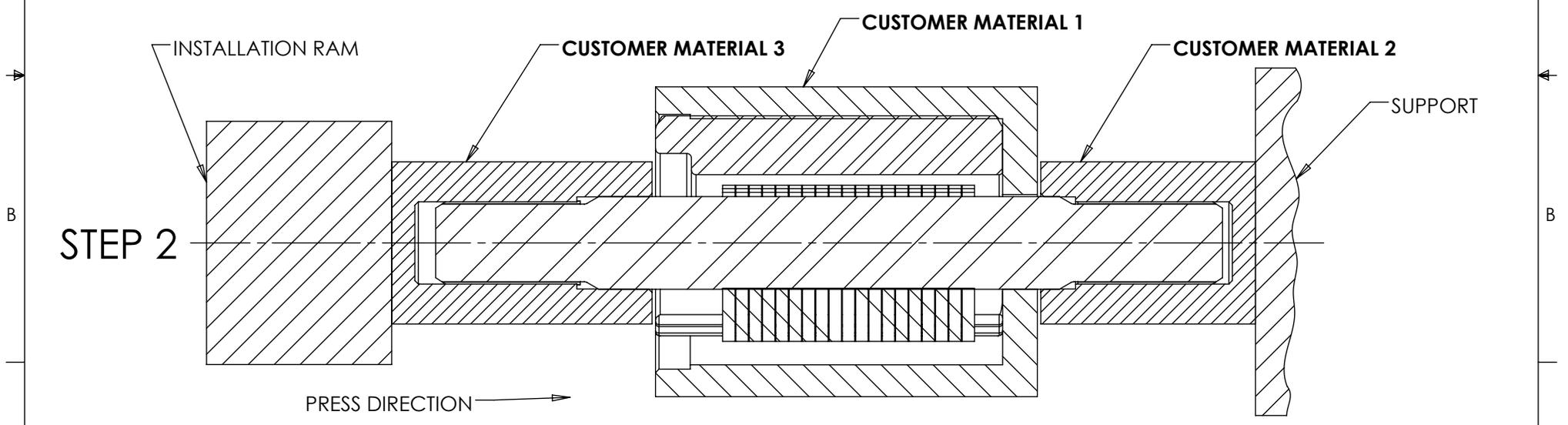
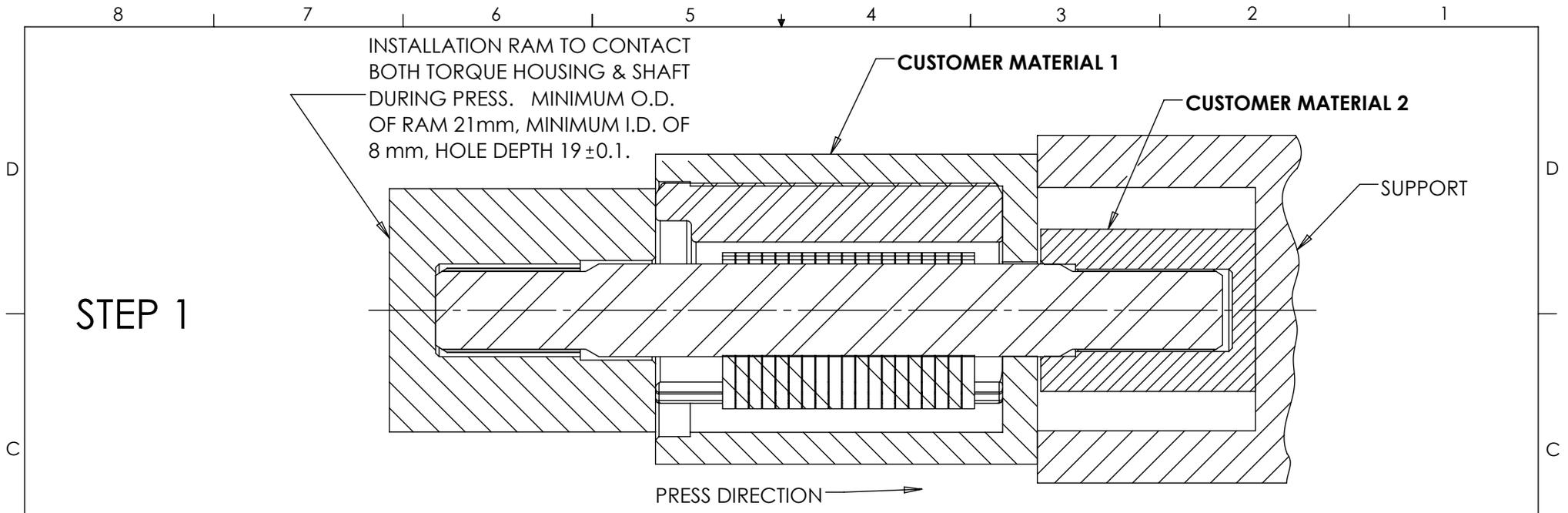
ADD CHAMFER ONLY IF NEEDED
(0.3±0.1 X 45°±5°)

SCALE 2 : 1

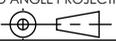
<p>REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA</p>	ECO NO: 05430	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 16SEP22	DESCRIPTION:
	PROJECT NO: 100670	SALES DRAWING
ENGINEER: BILL WARREN	TI-360	
DRAWN BY:		
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION 	PART NO: TI-360
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 9 OF 10

SPECIFICATIONS SUBJECT TO CHANGE

REV: **F**



SPECIFICATIONS SUBJECT TO CHANGE

 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ECO NO: 05430	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 16SEP22	DESCRIPTION:
	PROJECT NO: 100670	SALES DRAWING
ENGINEER: BILL WARREN	PART NO: TI-360	REV: F
DRAWN BY:	THIRD ANGLE PROJECTION 	SCALE: 2:1
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DIMENSIONS: mm	DO NOT SCALE DRAWING
INTERPRET PRINT PER ASME Y14.5M-2009		SHEET 10 OF 10