

CATALOG CODE TI-320-X.XX-XX

TORQUE Nm
0.50
0.75
1.00
1.25
1.50

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

NOTES:

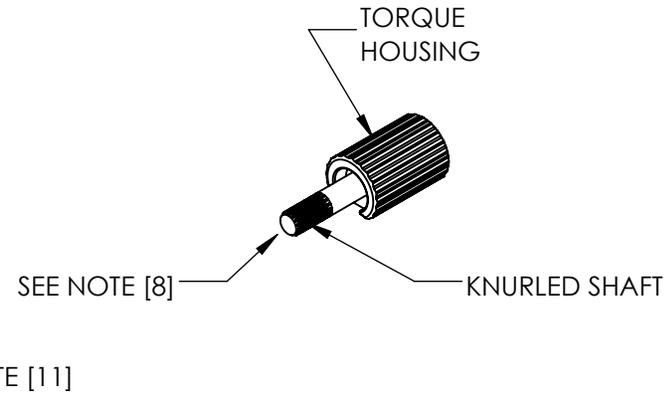
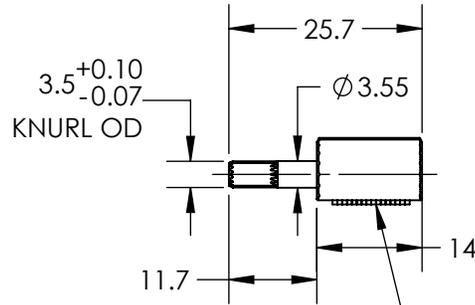
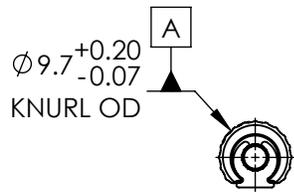
1. USER MUST DETERMINE FITNESS FOR USE IN APPLICATION.
2. ENVIRONMENTAL CONDITIONS:
-20°C TO +80°C .
3. PRODUCT TORQUE SPECIFICATION:
±20% DYNAMIC
4. LIFE: 50,000 CYCLES.
ONE CYCLE CONSISTS OF 120° CW AND 120° CCW AT 10% DUTY CYCLE FOR SPEEDS LESS THAN 100 RPM.
5. MATERIALS:
PLATED POWDERED METAL HOUSINGS
HARDENED STEEL TORQUE ELEMENT
DIECAST KNURLED ZINC SHAFT END
MINERAL OIL BASED LUBRICANT
HARDENED STEEL SHAFT
HARDENED STEEL BEARING
STEEL RETAINING RINGS
STEEL STRAIGHT SHAFT END
6. FINISH:
NON-COSMETIC.
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.
- [11] NUMBER OF TORQUE ELEMENTS MAY VARY.

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

SPECIFICATION SUBJECT TO CHANGE

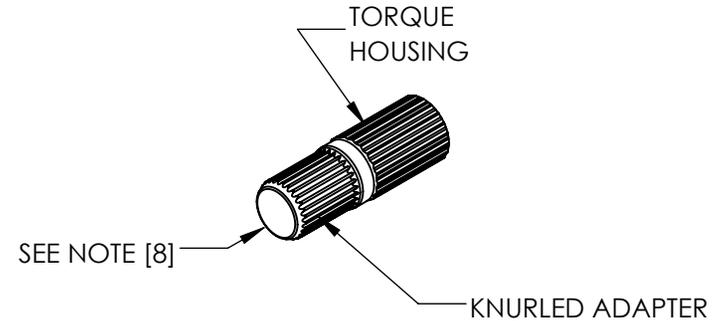
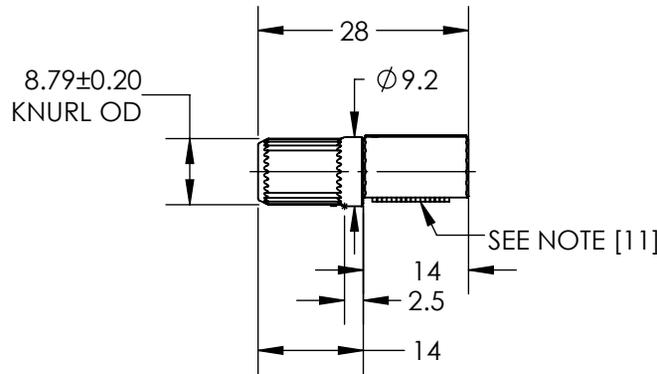
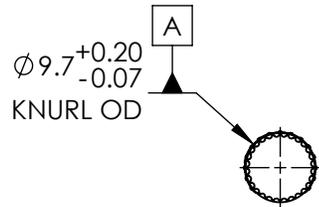
	ECO NO: 06213	PART LIFECYCLE: RELEASED		
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION		
	APPROVED DATE: 14JUL23	DESCRIPTION: SALES DRAWING		
	PROJECT NO: 0			
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-320		
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY: DERICK OFFOR			REV: N
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	DIMENSIONS: mm	SCALE: 2:1 DO NOT SCALE DRAWING	SHEET 1 OF 10

TI-320-X.XX-01 (KNURLED SHAFT)



- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 6.5 GRAMS

TI-320-X.XX-02 (KNURLED ADAPTER)



- INTENDED FOR PRESS FIT INTO PLASTICS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 11.85 GRAMS

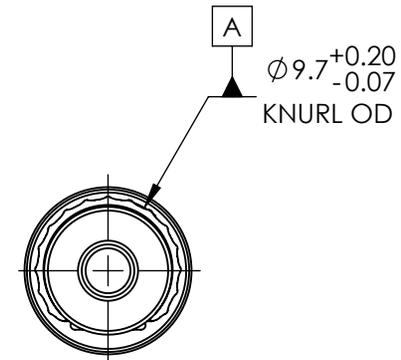
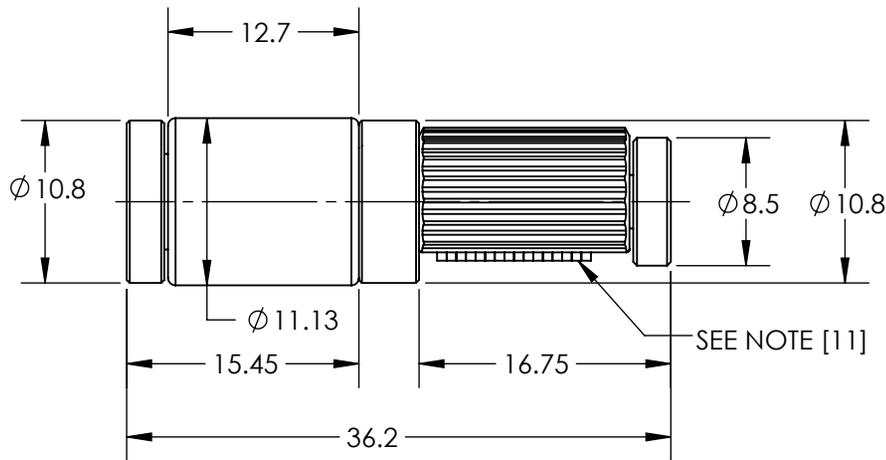
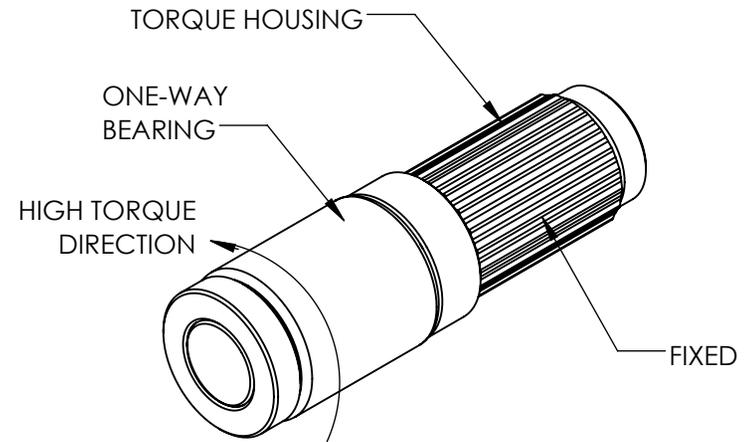
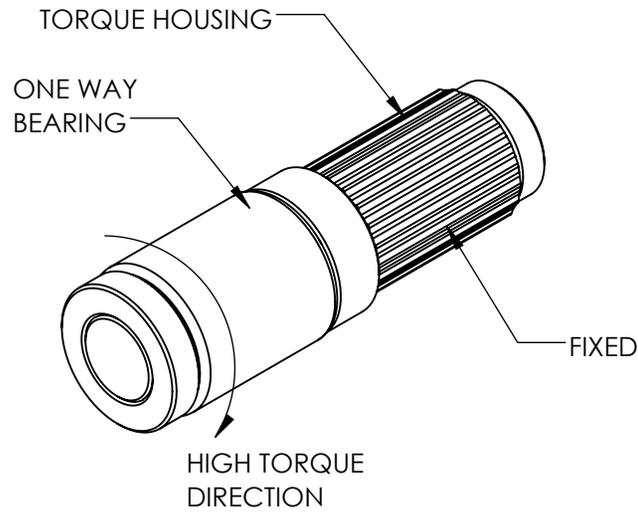
ALL DIMENSIONS ARE REFERENCE, SEE CAD MODEL FOR UNSPECIFIED FEATURES.

	ECO NO: 06213	PART LIFECYCLE: RELEASED	
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION	
	APPROVED DATE: 14JUL23	DESCRIPTION:	
	PROJECT NO: 0	SALES DRAWING	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-320	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY: DERICK OFFOR	REV: N	
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1	DO NOT SCALE DRAWING
	DIMENSIONS: mm	SHEET 2 OF 10	

SPECIFICATION SUBJECT TO CHANGE

TI-320-X.XX-03 (ONE WAY FORWARD)

TI-320-X.XX-04 (ONE WAY REVERSE)



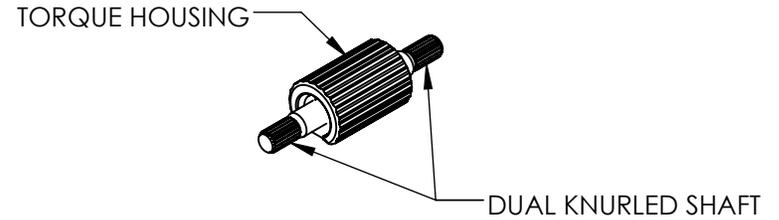
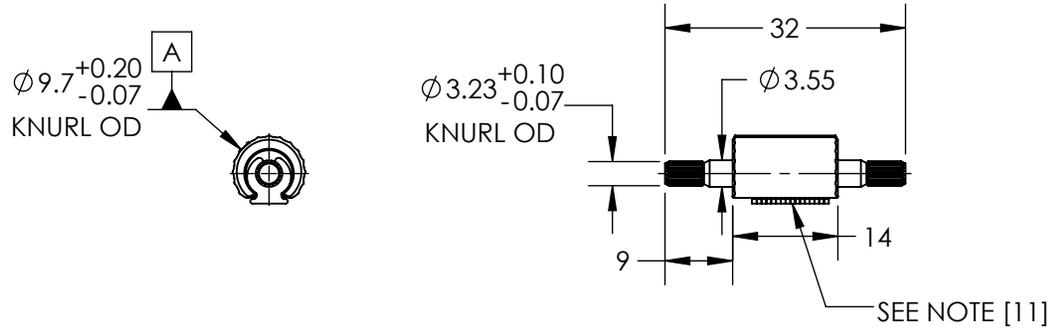
- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 19.2 GRAMS

ALL DIMENSIONS ARE REFERENCE, SEE CAD MODEL FOR UNSPECIFIED FEATURES.

	ECO NO: 06213	PART LIFECYCLE: RELEASED	
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION	
	APPROVED DATE: 14JUL23	DESCRIPTION:	
	PROJECT NO: 0	SALES DRAWING	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-320	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY: DERICK OFFOR		REV: N
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 2:1	DO NOT SCALE DRAWING
	DIMENSIONS: mm	SHEET 3 OF 10	

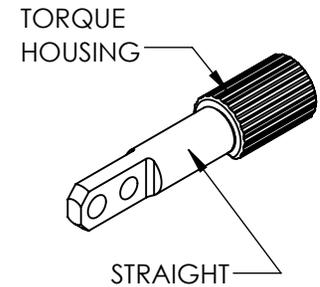
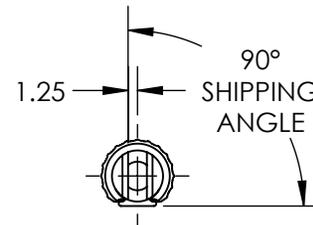
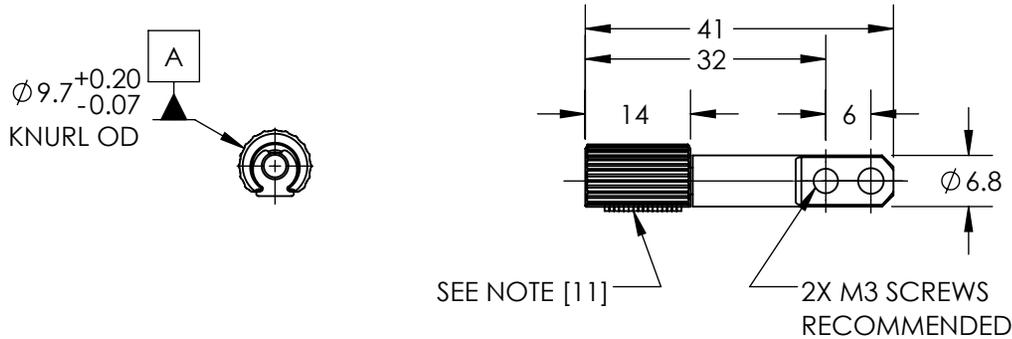
SPECIFICATION SUBJECT TO CHANGE

TI-320-X.XX-05 (DUAL ENDED KNURLED SHAFT)



- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 7.25 GRAMS

TI-320-X.XX-06 (STRAIGHT)



- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 7.25 GRAMS

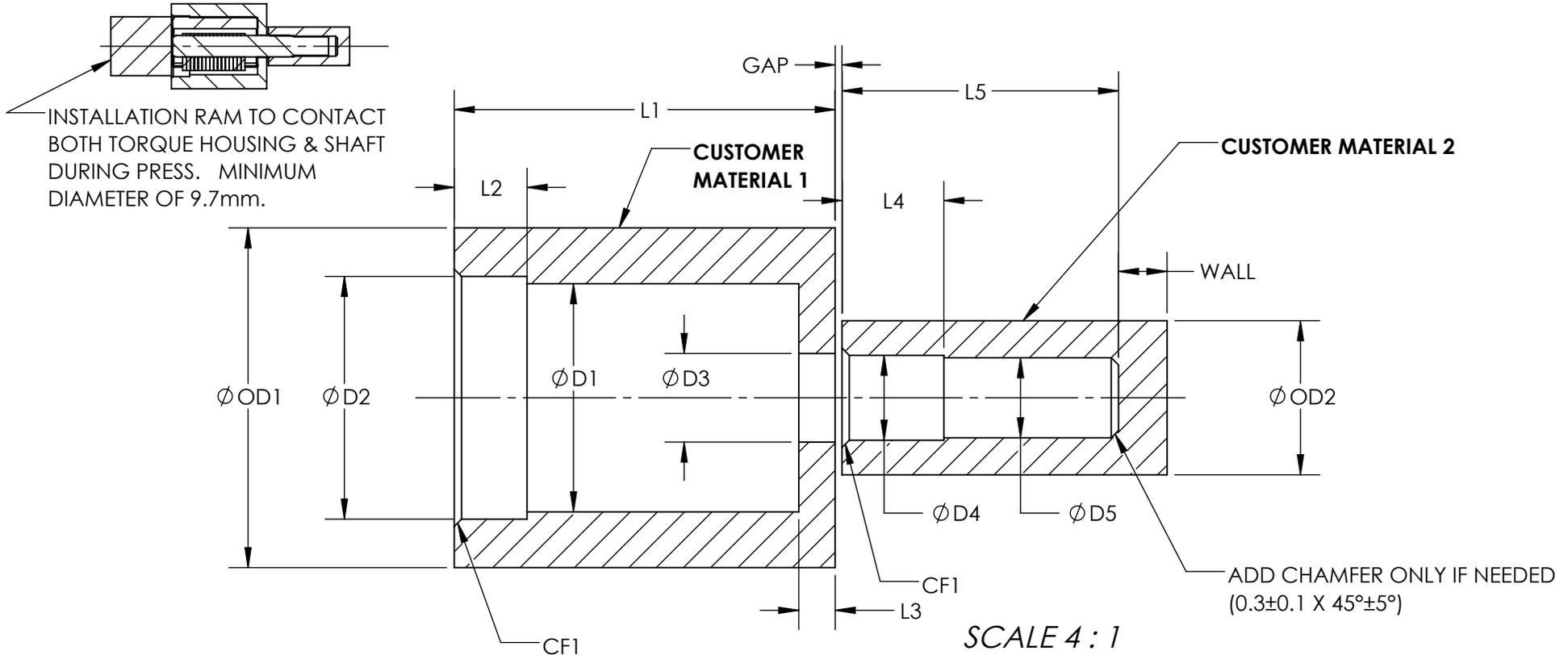
ALL DIMENSIONS ARE REFERENCE, SEE CAD MODEL FOR UNSPECIFIED FEATURES.

	ECO NO: 06213	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-320
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY: DERICK OFFOR	
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1
	DIMENSIONS: mm	DO NOT SCALE DRAWING
		SHEET 4 OF 10

SPECIFICATION SUBJECT TO CHANGE

TI-320-X.XX-01 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	CF1	OD1	OD2	WALL	GAP
DIE CAST ZINC	9.55±0.05	10±0.03	3.65±0.03	3.5±0.03	3.3±0.03	15.7±0.1	3±0.1	1.5±0.1	4.2±0.1	12.5 MIN	0.3±0.1 X 45°±5°	12 MIN	6 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM				3.63±0.03	3.38±0.015										
MILD STEEL	9.6±0.025			3.63±0.03	3.38±0.015										
WROUGHT ALUMINUM				3.63±0.03	3.38±0.015										



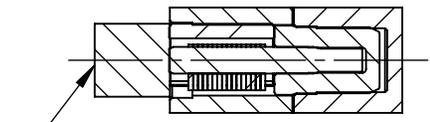
CUSTOMER MATERIAL 1 AND CUSTOMER MATERIAL 2 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION TO ENSURE PRODUCT PERFORMANCE.

SPECIFICATION SUBJECT TO CHANGE

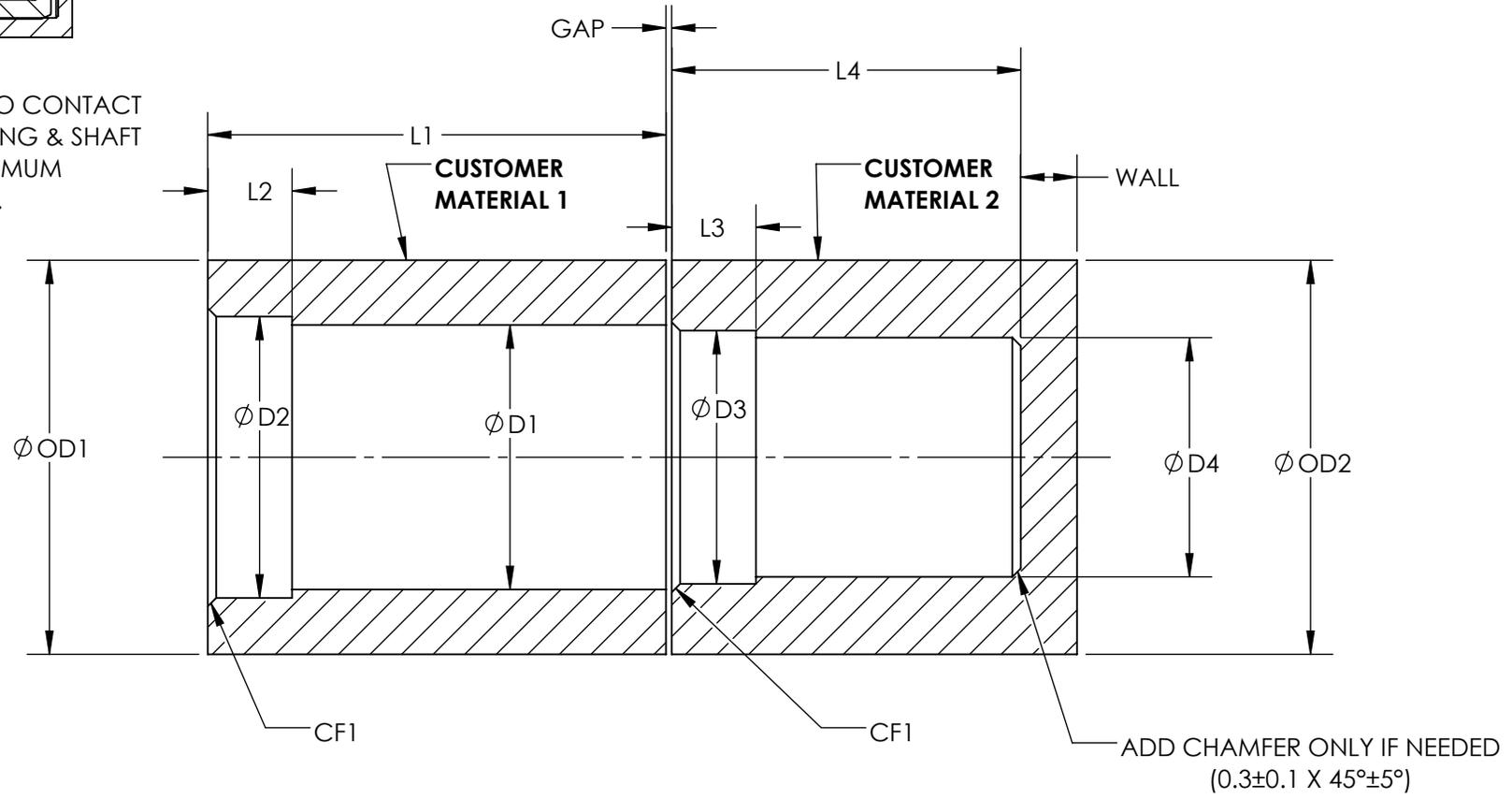
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	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-320
	DRAWN BY: DERICK OFFOR	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION 	
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 5 OF 10

T1-320-X.XX-02 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	L1	L2	L3	L4	CF1	OD1	OD2	WALL	GAP
DELTRIN	9.3±0.03	10±0.03	9.1±0.03	8.3±0.03	16.3±0.1	3.0±0.1	3.0±0.1	12.5 MIN	0.3±0.1 X 45°±5°	13.5 MIN	13.5 MIN	2 MIN	(0.3)



INSTALLATION RAM TO CONTACT BOTH TORQUE HOUSING & SHAFT DURING PRESS. MINIMUM DIAMETER OF 9.7mm.



SCALE 4 : 1

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

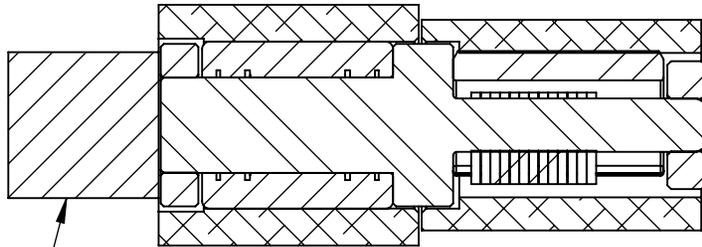
SPECIFICATION SUBJECT TO CHANGE

	ECO NO: 06213	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	PART NO: TI-320
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY: DERICK OFFOR	
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1
	DIMENSIONS: mm	DO NOT SCALE DRAWING
		SHEET 6 OF 10

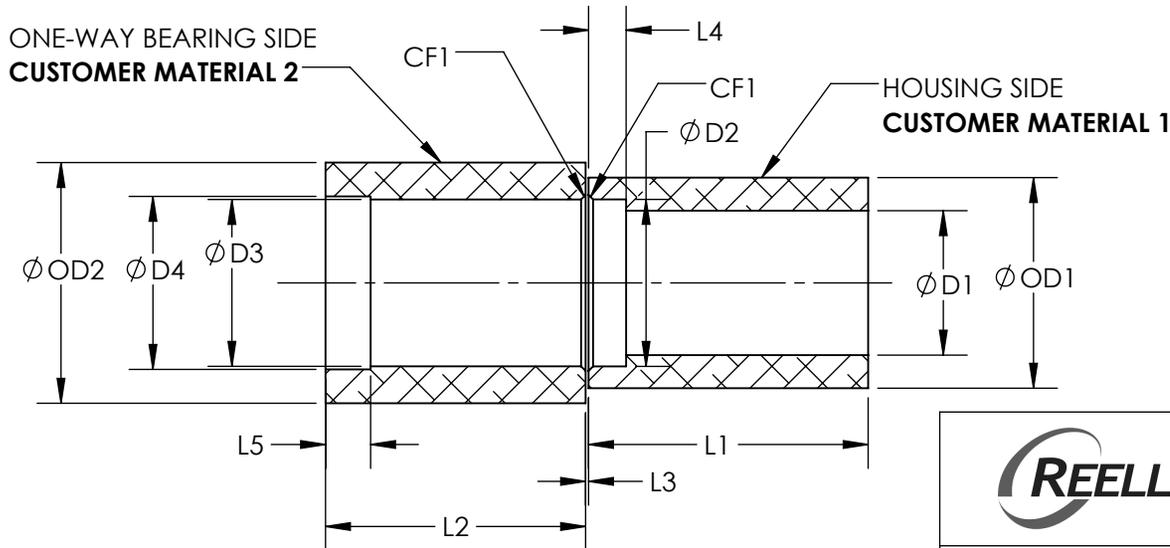
TI-320-X.XX-03/04 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	L1	L2	L3	L4	L5	CF1	OD1	OD2
DIE CAST ZINC	9.55±0.05	11.1±0.05	11.09±0.015	11.5±0.05	18.6±0.1	17.3±0.1	0.1 MIN	2.5±0.1	3.0±0.1	0.3±0.1 X 45°±5°	14 MIN	16 MIN
DIE CAST ALUMINUM												
MILD STEEL												
WROUGHT ALUMINUM	9.6±0.025											

**RECOMMENDED MOUNTING FOR
TI-320-X.XX-03 (ONE WAY FORWARD)
TI-320-X.XX-04 (ONE WAY REVERSE)**



INSTALLATION RAM TO CONTACT BOTH RETAINING RING & SHAFT DURING PRESS. MINIMUM DIAMETER OF 9.7mm.



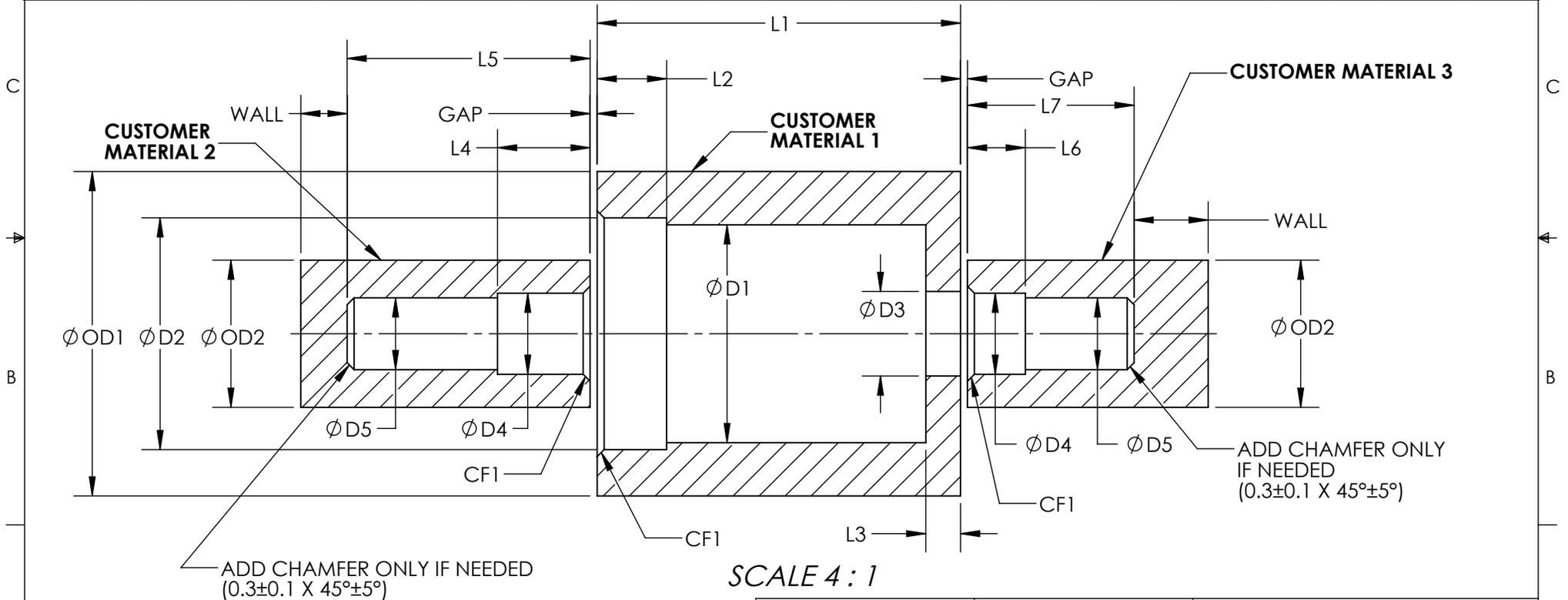
CUSTOMER MATERIAL 1 AND CUSTOMER MATERIAL 2 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION TO ENSURE PRODUCT PERFORMANCE.

SPECIFICATION SUBJECT TO CHANGE

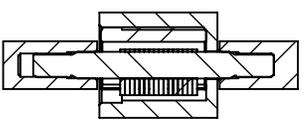
	ECO NO: 06213	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	TI-320
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	DRAWN BY: DERICK OFFOR	
INTERPRET PRINT PER ASME Y14.5M-2009	THIRD ANGLE PROJECTION 	SCALE: 1:1
	DIMENSIONS: mm	DO NOT SCALE DRAWING
		SHEET 7 OF 10

TI-320-X.XX-05 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	L6	L7	CF1	OD1	OD2	WALL	GAP
DIE CAST ZINC	9.55±0.05	10±0.03	3.65±0.03	3.5±0.03	3±0.03	15.7±0.1	3±0.1	1.5±0.1	4.0±0.1	10.5 MIN	2.5±0.1	7.2±0.1	0.3±0.1 X 45°±5°	12 MIN	6 MIN	2 MIN	(0.3)
DIE CAST ALUMINUM																	
MILD STEEL	9.6 ±0.025	10±0.03	3.65±0.03	3.63±0.03	3.08±0.015	15.7±0.1	3±0.1	1.5±0.1	4.0±0.1	10.5 MIN	2.5±0.1	7.2±0.1	0.3±0.1 X 45°±5°	12 MIN	6 MIN	2 MIN	(0.3)
WROUGHT ALUMINUM																	



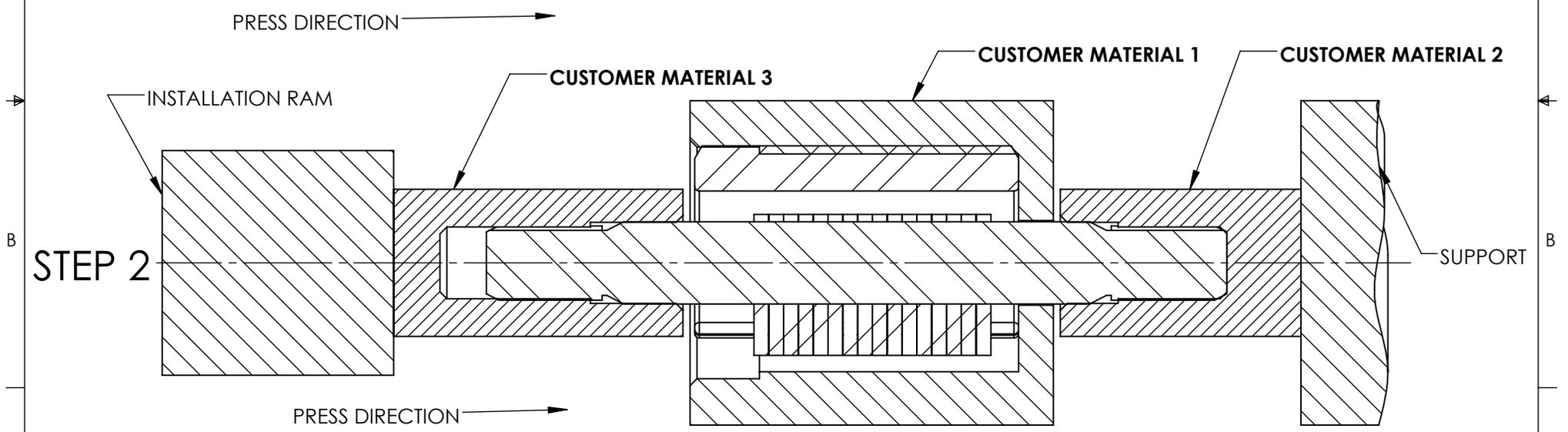
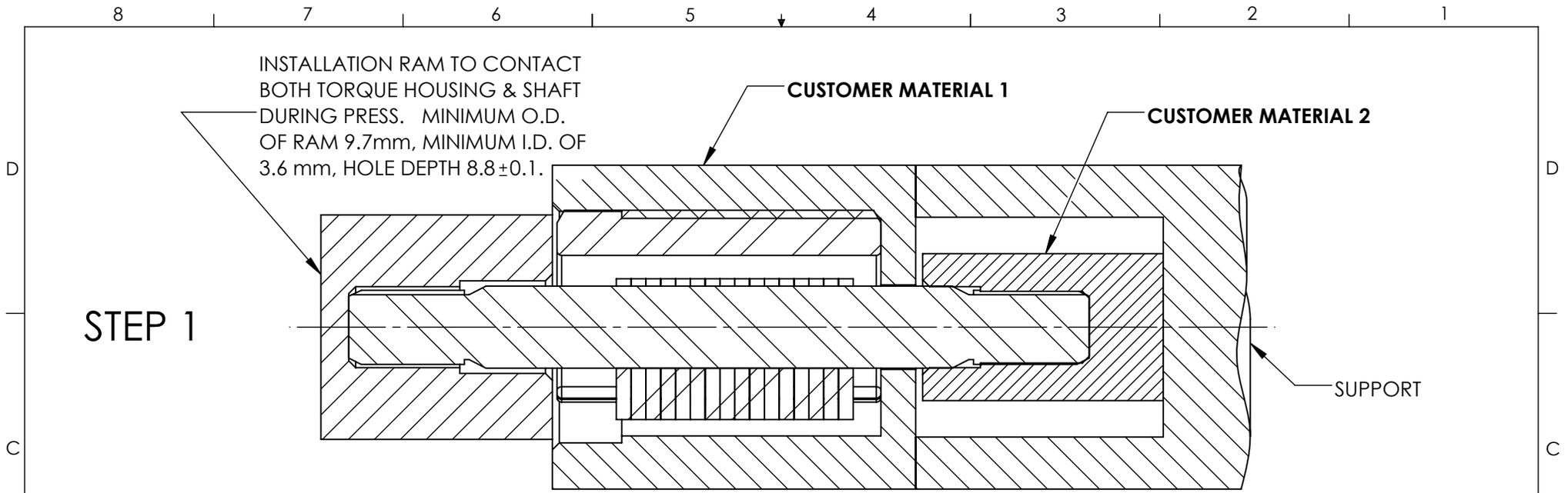
SCALE 4 : 1



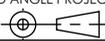
CUSTOMER MATERIAL 1, CUSTOMER MATERIAL 2 AND CUSTOMER MATERIAL 3 ALIGNMENT TO BE WITHIN 0.15mm IN ANY DIRECTION TO ENSURE PRODUCT PERFORMANCE.

SPECIFICATION SUBJECT TO CHANGE

<p>REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA</p> <p>THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.</p> <p>INTERPRET PRINT PER ASME Y14.5M-2009</p>	ECO NO: 06213	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
ENGINEER: BILL WARREN	PART NO: TI-320	REV: N
DRAWN BY: DERICK OFFOR	SCALE: 1:1	DO NOT SCALE DRAWING
THIRD ANGLE PROJECTION	SHEET 8 OF 10	
DIMENSIONS: mm		



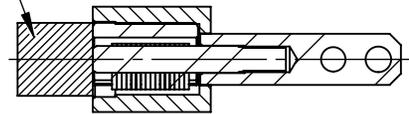
SPECIFICATIONS SUBJECT TO CHANGE

 REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ECO NO: 06213	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
ENGINEER: BILL WARREN	PART NO: TI-320	REV: N
DRAWN BY: DERICK OFFOR	SCALE: 1:1	DO NOT SCALE DRAWING
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION 	SHEET 9 OF 10
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	

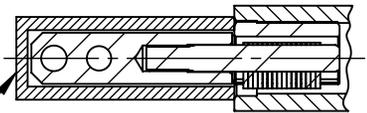
TI-320-X.XX-06 CUSTOMER INSTALLATION GEOMETRY

CUSTOMER MATERIAL	D1	D2	D3	L1	L2	L3	CF1	OD1
DIE CAST ZINC	9.55±0.05	10±0.03	6.9±0.03	15.7 MIN	3±0.1	1.5 MIN	0.3±0.1 X 45°±5°	12 MIN
DIE CAST ALUMINUM								
MILD STEEL	9.6±0.025	10±0.03	6.9±0.03	15.7 MIN	3±0.1	1.5 MIN	0.3±0.1 X 45°±5°	12 MIN
WROUGHT ALUMINUM								
DELTRIN	9.3±0.03			17.2 MIN		3 MIN		13.5 MIN

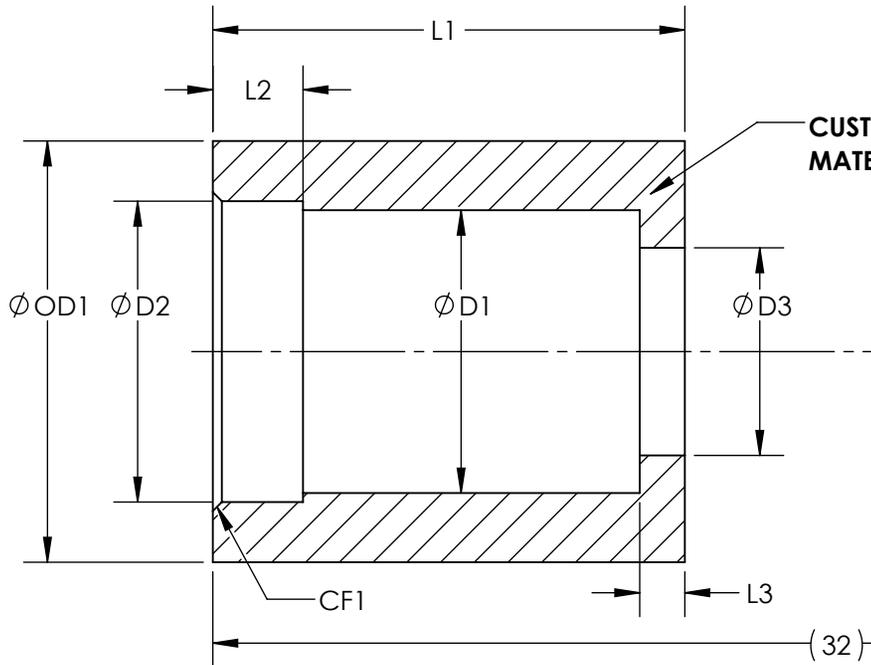
INSTALLATION RAM TO CONTACT BOTH TORQUE HOUSING & SHAFT DURING PRESS. MINIMUM DIAMETER OF 9.7mm.



PRESS DIRECTION →



INSTALLATION RAM TO CONTACT HOUSING ONLY DURING PRESS. MINIMUM ID OF 7 mm WITH POCKET DEPTH OF 27.5 mm.



CUSTOMER MATERIAL 1

2X M3 SCREWS RECOMMENDED

CUSTOMER MATERIAL 2

MOUNTING CONFIGURATIONS WILL VARY

INSTALL AFTER MATERIAL 1

6±0.15

SCALE 4 : 1

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

SPECIFICATIONS SUBJECT TO CHANGE

<p>REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA</p> <p>THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.</p> <p>INTERPRET PRINT PER ASME Y14.5M-2009</p>	ECO NO: 06213	PART LIFECYCLE: RELEASED
	APPROVED BY: BILL WARREN	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 14JUL23	DESCRIPTION:
	PROJECT NO: 0	SALES DRAWING
ENGINEER: BILL WARREN	PART NO: TI-320	REV: N
DRAWN BY: DERICK OFFOR	SCALE: 2:1	DO NOT SCALE DRAWING
THIRD ANGLE PROJECTION 	SHEET 10 OF 10	