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

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
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

REELL PRECISION MANUFACTURING
1259 WILLOW LAKE BOULEVARD
SAINT PAUL, MINNESOTA 55110-5103, USA

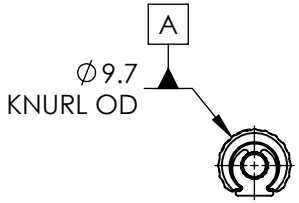
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.

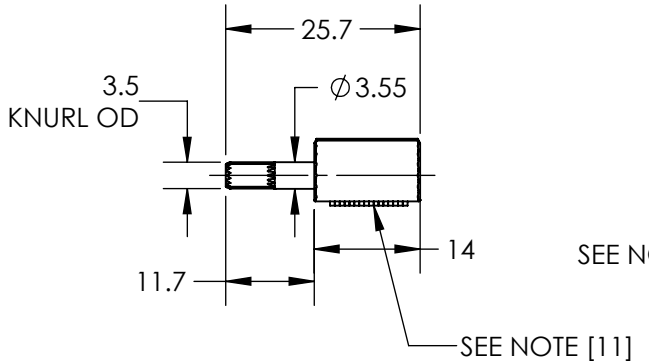
INTERPRET PRINT PER ASME Y14.5M-2009

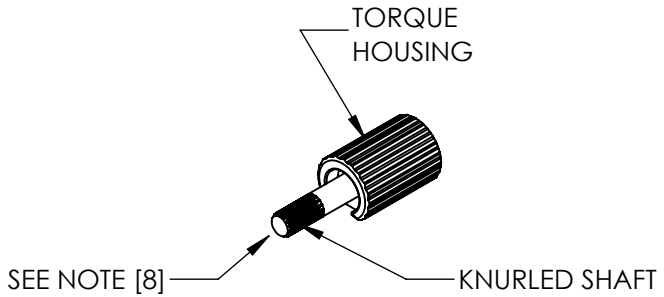
ECO NO:	03561
APPROVED BY:	DERICK OFFOR
APPROVED DATE:	06JUL21
PROJECT NO:	0
ENGINEER:	BILL WARREN
DRAWN BY:	DERICK OFFOR
THIRD ANGLE PROJECTION	
DIMENSIONS:	mm

PART LIFECYCLE:	RELEASED
DEVELOPMENT CYCLE:	PRODUCTION
DESCRIPTION:	SALES DRAWING
PART NO:	TI-320
REV:	K
SCALE: 2:1	DO NOT SCALE DRAWING
SHEET 1 OF 9	

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

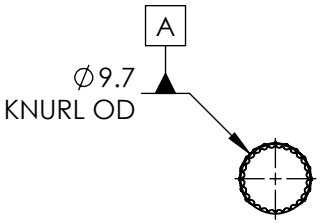


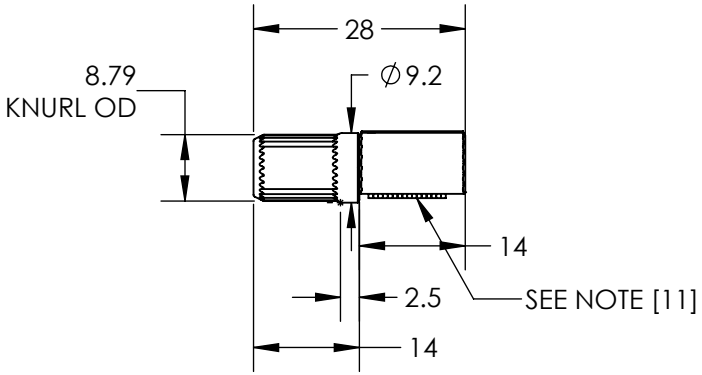


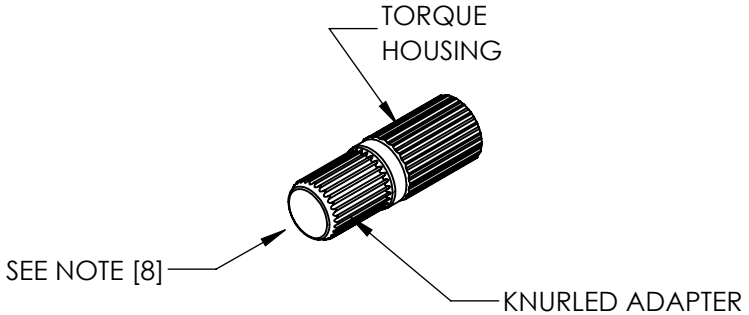


- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 6.5 GRAMS

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







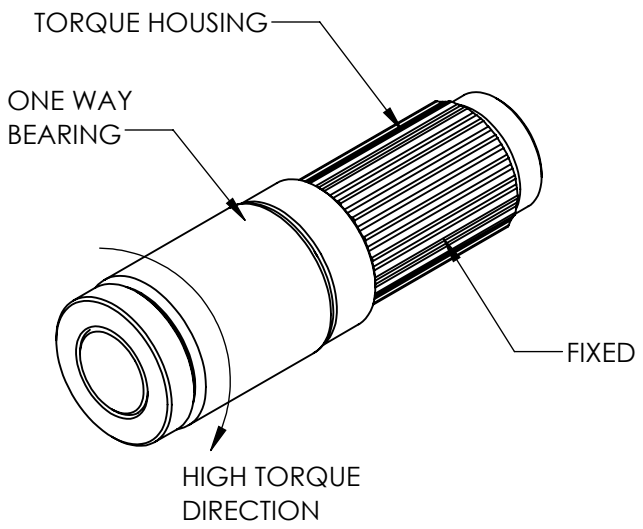
- INTENDED FOR PRESS FIT INTO PLASTICS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 11.85 GRAMS

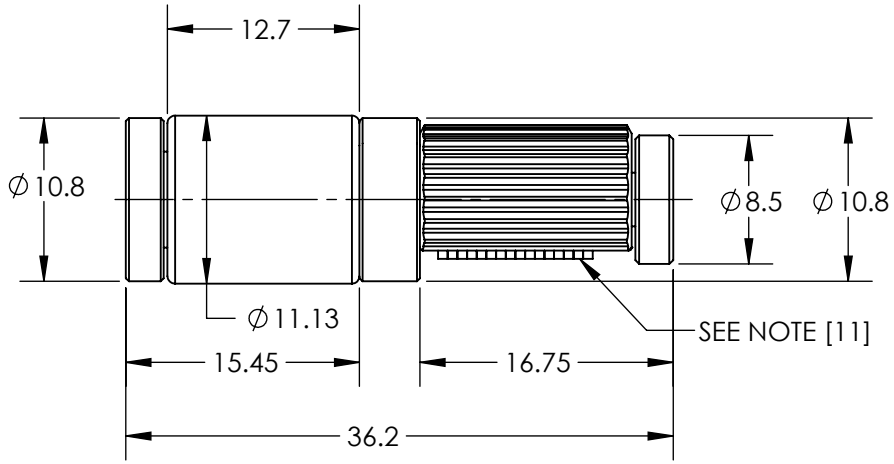
ALL DIMENSIONS ARE REFERENCE,
SEE CAD MODEL FOR UNSPECIFIED FEATURES.

SPECIFICATION SUBJECT TO CHANGE

REELL	ECO NO: 03561	PART LIFECYCLE: RELEASED
	APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
	PROJECT NO: 0	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	
	DRAWN BY: DERICK OFFOR	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 2 OF 9

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

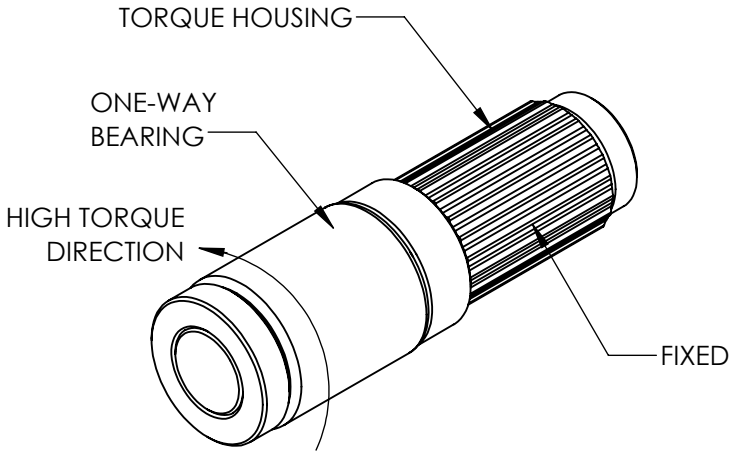


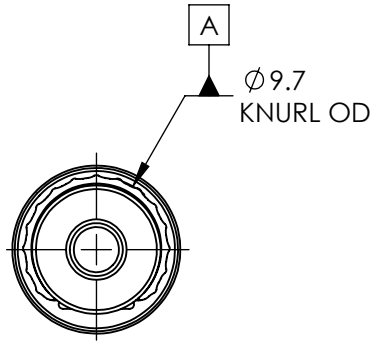


- INTENDED FOR PRESS FIT INTO METALS. CONTACT REELL FOR OTHER MOUNTING OPTIONS.
- APPROXIMATE WEIGHT: 19.2 GRAMS

SPECIFICATION SUBJECT TO CHANGE

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

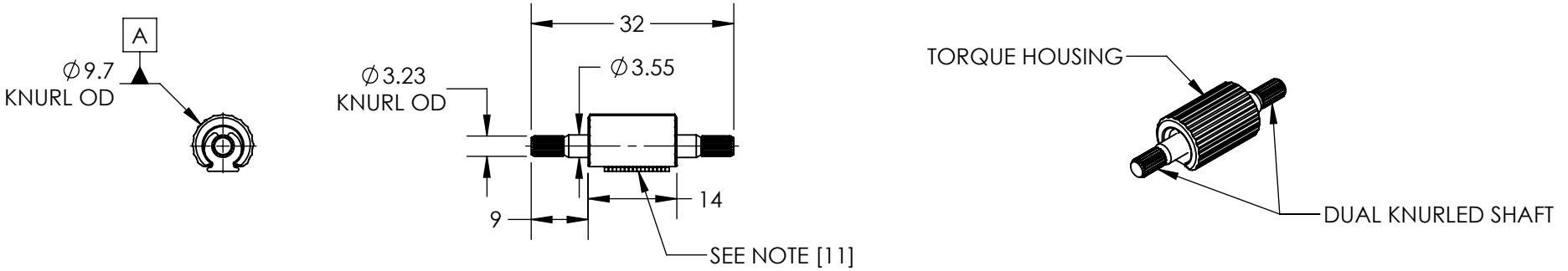




ALL DIMENSIONS ARE REFERENCE,
SEE CAD MODEL FOR UNSPECIFIED FEATURES.

REELL	ECO NO: 03561	PART LIFECYCLE: RELEASED
	APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
	PROJECT NO: 0	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	
	DRAWN BY: DERICK OFFOR	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 2:1 DO NOT SCALE DRAWING SHEET 3 OF 9

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

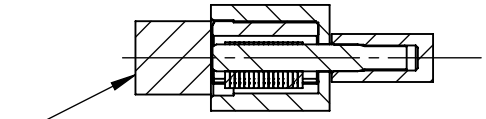
ALL DIMENSIONS ARE REFERENCE,
SEE CAD MODEL FOR UNSPECIFIED FEATURES.

SPECIFICATION SUBJECT TO CHANGE

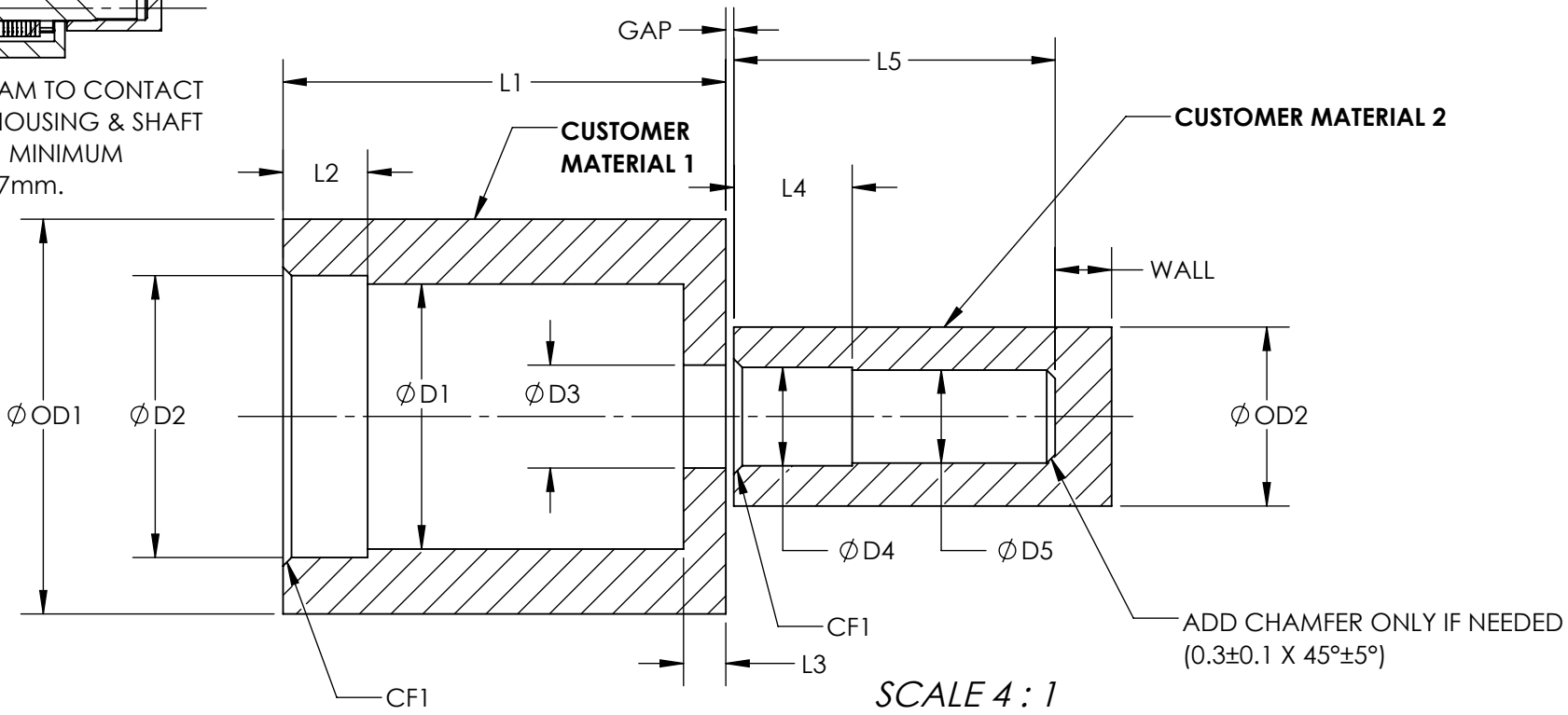
REELL	ECO NO: 03561	PART LIFECYCLE: RELEASED
	APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
	PROJECT NO: 0	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	
	DRAWN BY: DERICK OFFOR	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 4 OF 9

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															
MILD STEEL	9.6±0.025			3.63±0.03	3.38±0.015										
WROUGHT ALUMINUM															



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

REELL

REELL PRECISION MANUFACTURING
1259 WILLOW LAKE BOULEVARD
SAINT PAUL, MINNESOTA 55110-5103, USA

THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.

INTERPRET PRINT PER ASME Y14.5M-2009

ECO NO: 03561
APPROVED BY: DERICK OFFOR
APPROVED DATE: 06JUL21
PROJECT NO: 0
ENGINEER: BILL WARREN
DRAWN BY: DERICK OFFOR
THIRD ANGLE PROJECTION
DIMENSIONS: mm

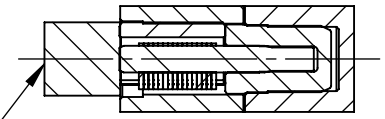
PART LIFECYCLE: RELEASED
DEVELOPMENT CYCLE: PRODUCTION
DESCRIPTION:

SALES DRAWING

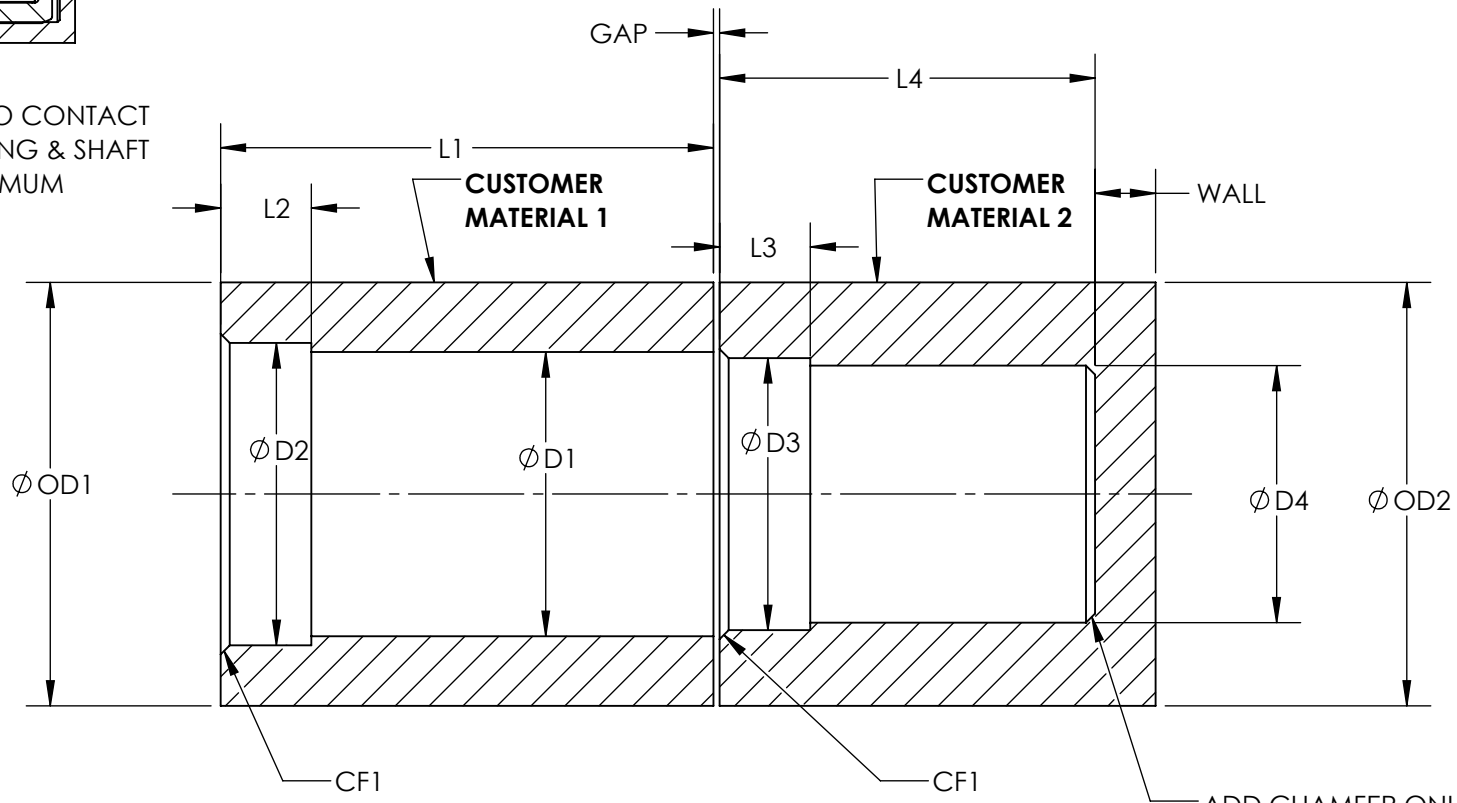
PART NO: TI-320
REV: K
SCALE: 1:1
DO NOT SCALE DRAWING
SHEET 5 OF 9

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

CUSTOMER MATERIAL	D1	D2	D3	D4	L1	L2	L3	L4	CF1	OD1	OD2	WALL	GAP
DELRIN	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

REELL

REELL PRECISION MANUFACTURING
1259 WILLOW LAKE BOULEVARD
SAINT PAUL, MINNESOTA 55110-5103, USA

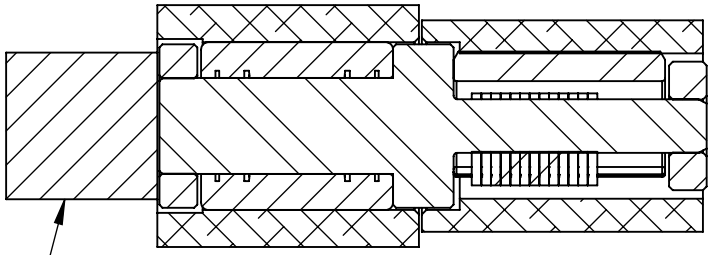
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.

INTERPRET PRINT PER ASME Y14.5M-2009

ECO NO: 03561	PART LIFECYCLE: RELEASED
APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
PROJECT NO: 0	
ENGINEER: BILL WARREN	
DRAWN BY: DERICK OFFOR	
THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 6 OF 9

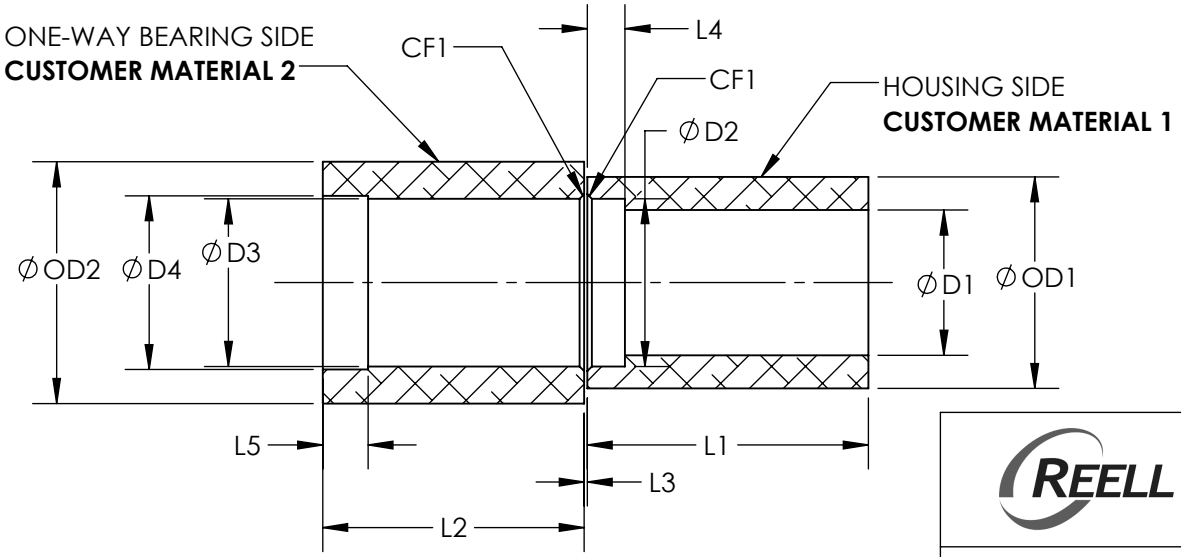
TI-320-X.XX-03/04 CUSTOMER INSTALLATION GEOMETRY

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	9.6±0.025											
WROUGHT ALUMINUM												



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

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



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

SPECIFICATION SUBJECT TO CHANGE

REELL

REELL PRECISION MANUFACTURING
1259 WILLOW LAKE BOULEVARD
SAINT PAUL, MINNESOTA 55110-5103, USA

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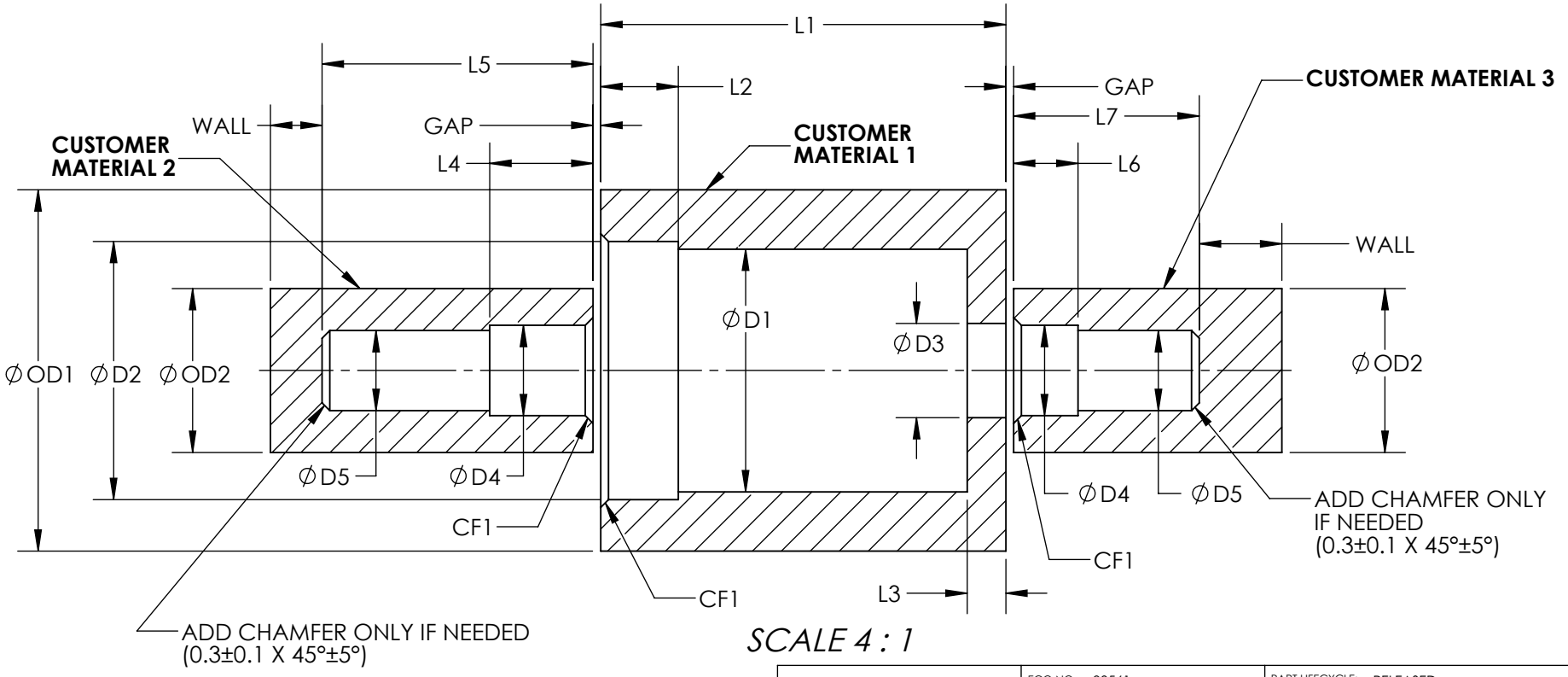
INTERPRET PRINT PER ASME Y14.5M-2009

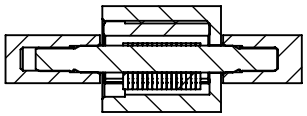
ECO NO: 03561	PART LIFECYCLE: RELEASED
APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
PROJECT NO: 0	
ENGINEER: BILL WARREN	
DRAWN BY: DERICK OFFOR	
THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 7 OF 9

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			3.63±0.03	3.08±0.015												
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

REELL

REELL PRECISION MANUFACTURING
1259 WILLOW LAKE BOULEVARD
SAINT PAUL, MINNESOTA 55110-5103, USA

THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.

INTERPRET PRINT PER ASME Y14.5M-2009

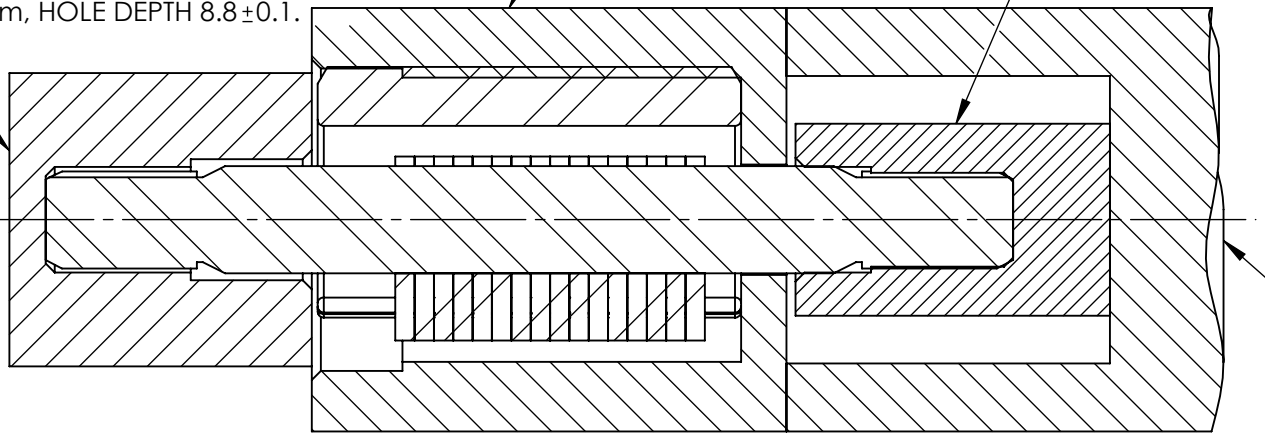
ECO NO: 03561	PART LIFECYCLE: RELEASED
APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
PROJECT NO: 0	
ENGINEER: BILL WARREN	
DRAWN BY: DERICK OFFOR	
THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 8 OF 9

INSTALLATION RAM TO CONTACT BOTH TORQUE HOUSING & SHAFT DURING PRESS. MINIMUM O.D. OF RAM 9.7mm, MINIMUM I.D. OF 3.6 mm, HOLE DEPTH 8.8±0.1.

CUSTOMER MATERIAL 1

CUSTOMER MATERIAL 2

STEP 1



SUPPORT

PRESS DIRECTION →

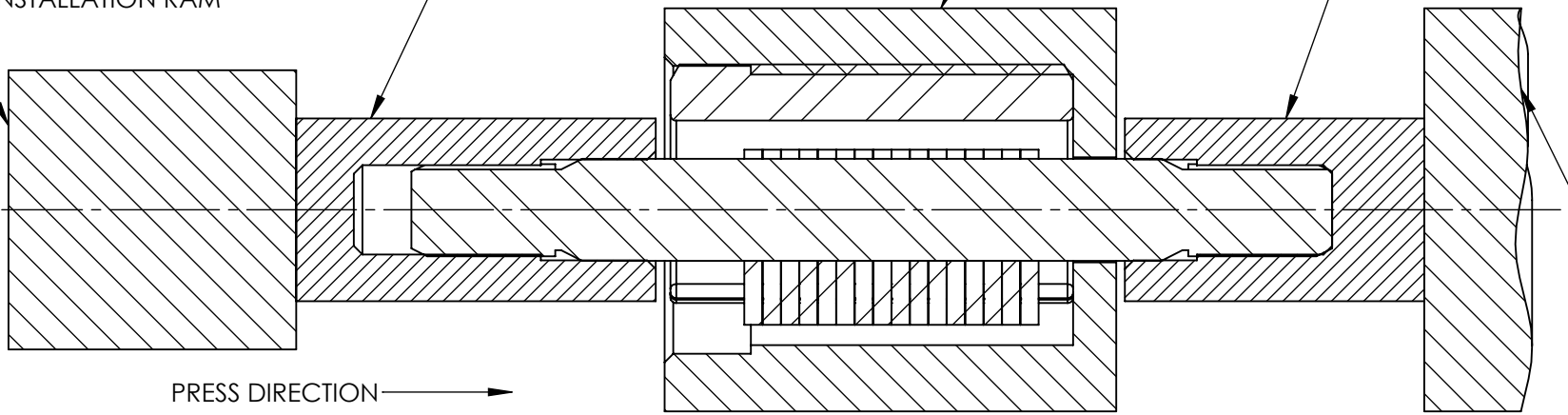
CUSTOMER MATERIAL 1

CUSTOMER MATERIAL 2

CUSTOMER MATERIAL 3

INSTALLATION RAM

STEP 2



SUPPORT

PRESS DIRECTION →

SPECIFICATIONS SUBJECT TO CHANGE

REELL	ECO NO: 03561	PART LIFECYCLE: RELEASED
	APPROVED BY: DERICK OFFOR	DEVELOPMENT CYCLE: PRODUCTION
	APPROVED DATE: 06JUL21	DESCRIPTION: SALES DRAWING
	PROJECT NO: 0	
REELL PRECISION MANUFACTURING 1259 WILLOW LAKE BOULEVARD SAINT PAUL, MINNESOTA 55110-5103, USA	ENGINEER: BILL WARREN	
	DRAWN BY: DERICK OFFOR	
THIS PRINT IS THE CONFIDENTIAL PROPERTY OF REELL PRECISION MFG.	THIRD ANGLE PROJECTION	PART NO: TI-320 REV: K
INTERPRET PRINT PER ASME Y14.5M-2009	DIMENSIONS: mm	SCALE: 1:1 DO NOT SCALE DRAWING SHEET 9 OF 9