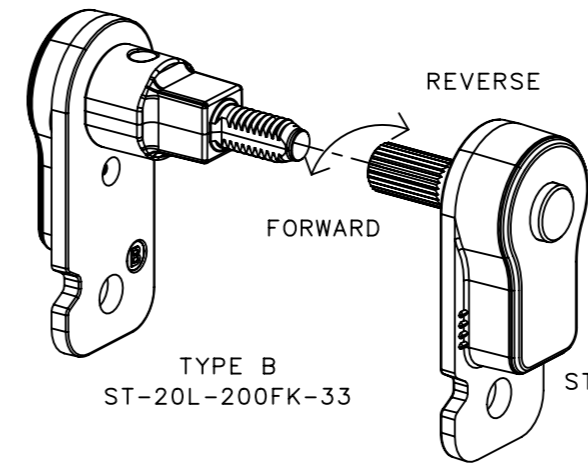
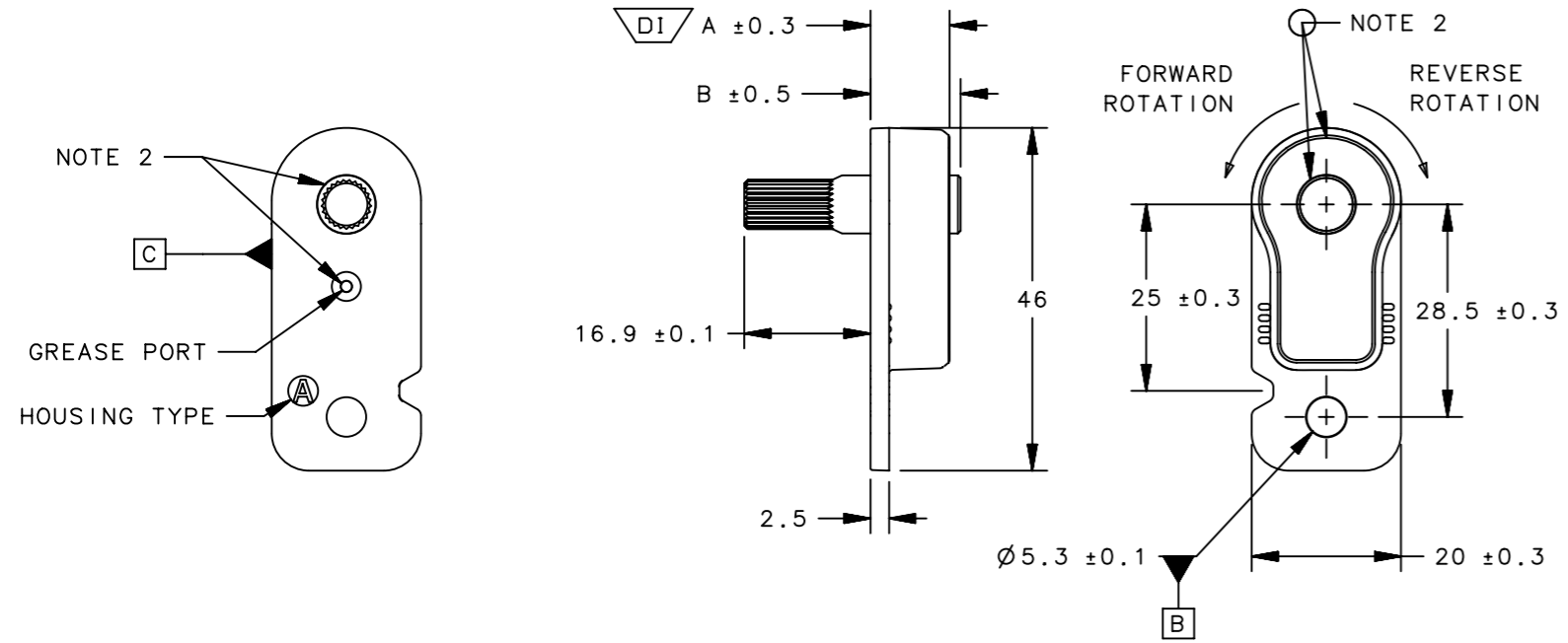


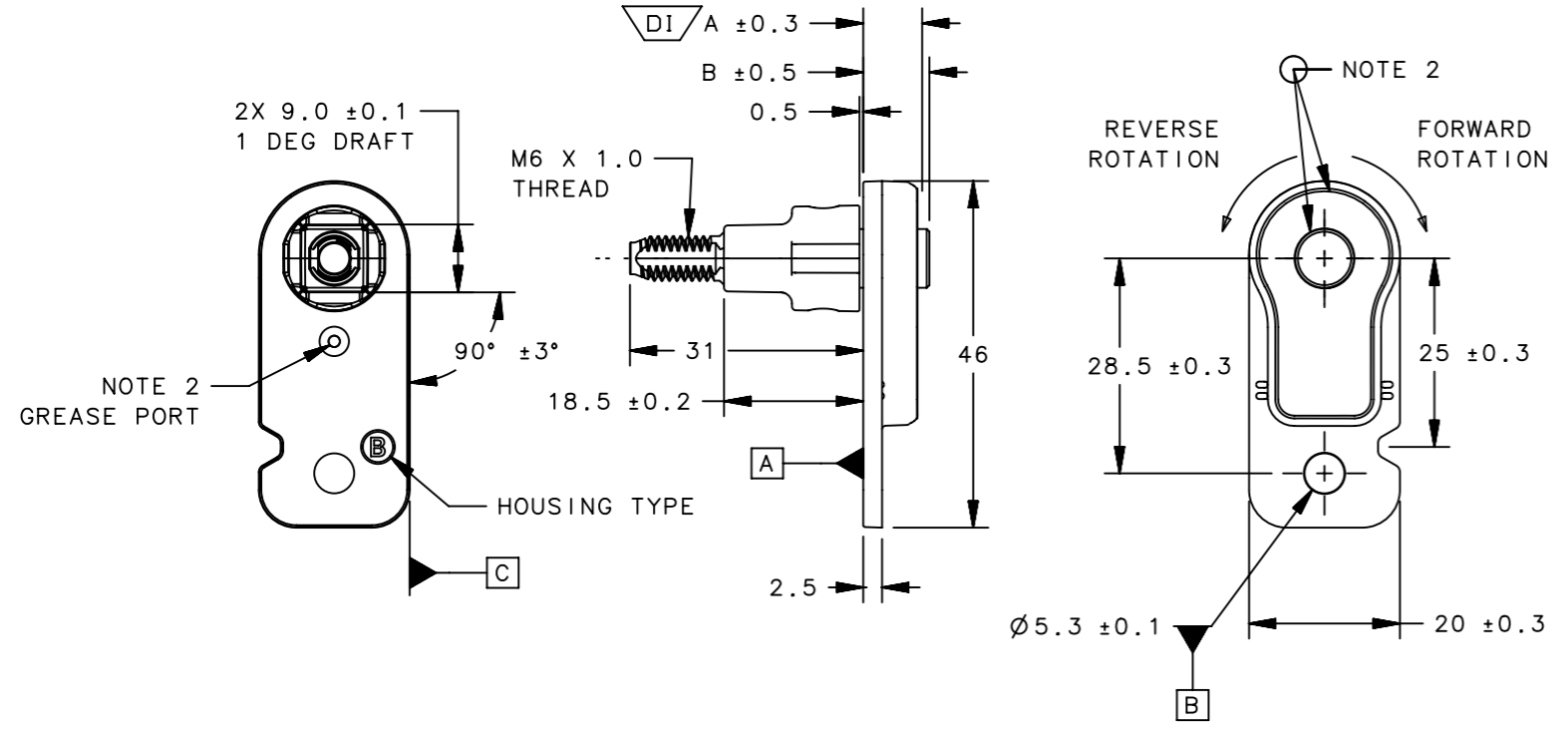
REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
E	07DEC2023	MTH/DAM	PRN: P2023-2277



## HOUSING TYPE A WITHOUT ADAPTER



## HOUSING TYPE B WITH ADAPTER



- NOTES:
- MATERIAL & FINISH  
HOUSING AND ADAPTER - ZINC ALLOY  
SHAFTS AND TORQUE ELEMENT - HARDENED STEEL  
COVER PLATE - GALVANIZED STEEL
  - LUBRICANT MAY BE PRESENT ON EXPOSED SURFACES.
  - LUBRICANT IS HYDRO-CARBON BASED.
  - LIMIT INSTALL TORQUE ON M6 NUT OF ADAPTER TO  $3 \pm 0.4$  Nm.

PART NUMBER	HOUSING	ADAPTER	DIM A mm	DIM B mm	FORWARD ROTATION	REVERSE ROTATION	DYNAMIC TORQUE Nm
ST-20L-100FA-33	A	-	7.2	8.8			
ST-20L-100FB-33	B	-	7.2	8.8			
ST-20L-100FJ-33	A	YES	7.2	8.8	1.15 ± 30%	(0.85)	
ST-20L-100FK-33	B	YES	7.2	8.8			
ST-20L-100RA-33	A	-	7.2	8.8			
ST-20L-100RB-33	B	-	7.2	8.8	(0.85)	1.15 ± 30%	
ST-20L-100RJ-33	A	YES	7.2	8.8			
ST-20L-100RK-33	B	YES	7.2	8.8			
ST-20L-200FA-33	A	-	7.2	8.8			
ST-20L-200FB-33	B	-	7.2	8.8	2.20 ± 30%	(1.75)	
ST-20L-200FJ-33	A	YES	7.2	8.8			
ST-20L-200FK-33	B	YES	7.2	8.8			
ST-20L-200RA-33	A	-	7.2	8.8			
ST-20L-200RB-33	B	-	7.2	8.8	(1.75)	2.20 ± 30%	
ST-20L-200RJ-33	A	YES	7.2	8.8			
ST-20L-200RK-33	B	YES	7.2	8.8			
ST-20L-200SA-33	A	-	7.2	8.8			
ST-20L-200SB-33	B	-	7.2	8.8			
ST-20L-200SJ-33	A	YES	7.2	8.8	2.00 ± 30%		
ST-20L-200SK-33	B	YES	7.2	8.8			
ST-20L-300FA-33	A	-	8.9	12.1			
ST-20L-300FB-33	B	-	8.9	12.1	3.45 ± 25%	(2.45)	
ST-20L-300FJ-33	A	YES	8.9	12.1			
ST-20L-300FK-33	B	YES	8.9	12.1			
ST-20L-300RA-33	A	-	8.9	12.1			
ST-20L-300RB-33	B	-	8.9	12.1	(2.45)	3.45 ± 25%	
ST-20L-300RJ-33	A	YES	8.9	12.1			
ST-20L-300RK-33	B	YES	8.9	12.1			
ST-20L-400FA-33	A	-	10.6	12.1			
ST-20L-400FB-33	B	-	10.6	12.1	4.45 ± 25%	(3.20)	
ST-20L-400FJ-33	A	YES	10.6	12.1			
ST-20L-400FK-33	B	YES	10.6	12.1			
ST-20L-400RA-33	A	-	10.6	12.1			
ST-20L-400RB-33	B	-	10.6	12.1	(3.20)	4.45 ± 25%	
ST-20L-400RJ-33	A	YES	10.6	12.1			
ST-20L-400RK-33	B	YES	10.6	12.1			
ST-20L-400SA-33	A	-	10.6	12.1			
ST-20L-400SB-33	B	-	10.6	12.1			
ST-20L-400SJ-33	A	YES	10.6	12.1	3.95 ± 30%		
ST-20L-400SK-33	B	YES	10.6	12.1			

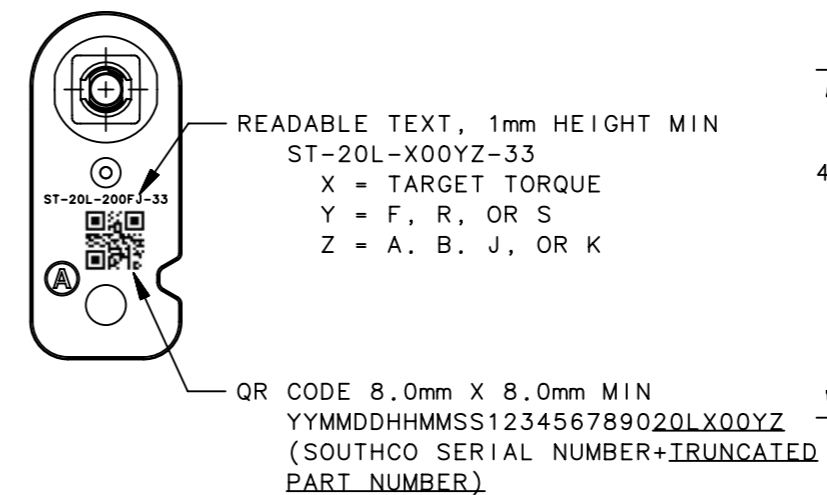
CPB NUMBER 2019-0663	THIRD ANGLE PROJECTION	
SURFACE AREA	MILLIMETERS [IN]	
VOLUME	TOLERANCES UNLESS OTHERWISE NOTED	<b>HINGE &amp; CONTROLLED MOTION DEVICE</b> <b>LOW PROFILE CONSTANT TORQUE HINGE</b>
PROPRIETARY ITEM	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	PER ASME Y14.5M-2009	SIZE A3 SYSTEM NX DWG NO. J-ST-20L DRAWN BY MTH DATE 18SEP2020 SCALE 1:1 SHEET 1 OF 2

REVISION HISTORY			
REV	DATE	BY	DESCRIPTION
E	07DEC2023	MTH/DAM	PRN: P2023-2277

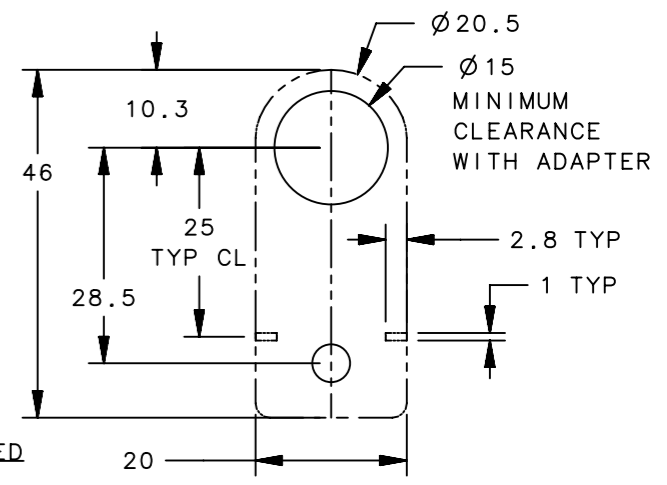
NOTES SHEET 2

- ASSEMBLY
  - CUSTOMER ASSEMBLY DESIGN MUST LIMIT AXIAL TRAVEL TO 0.5 mm.
- HINGE HOUSING DESIGN CONSTRAINTS
  - SECURE HINGE HOUSING A DATUM TO SUBSTRUCTURE WITH FASTENER TO PREVENT ROTATION, MAINTAIN AXIAL ALIGNMENT AND PREVENT HOUSING FROM MOVING AXIALLY ON SHAFT. RECOMMEND M5 OR 3/16 INCH FASTENERS.
  - INCLUDE FEATURES TO PREVENT HOUSING FROM ROTATING.
    - FOR PLASTIC AND DIE CAST MATERIALS, USE (A) HARD STOP AND (B) CRUSH RIBS PRESSED-IN PIN TO PREVENT HINGE HOUSING FROM ROTATING.
    - FOR SHEET METAL MATERIAL, USE LANCE AND/OR PRESSED-IN PINS TO PREVENT HINGE HOUSING FROM ROTATING.
  - USE POKA-YOKE FEATURE TO IDENTIFY PROPER DIRECTION OF HINGE AND TORQUE DIRECTION.
- HINGE ROTATING ARM DESIGN CONSTRAINT
  - HINGE WITH ADAPTER - INTENDED FOR PLASTIC MATERIAL. UTILIZE 2 SIDES OF SQUARE ADAPTER AS HARD STOPS AND CRUSH RIBS ON OPPOSING SURFACES.
  - HINGE WITHOUT ADAPTER - INTENDED FOR SHEET METAL AND DIE CAST MATERIALS. USE SUGGESTED INTERFERENCE HOLE TO PRESS KNURLED SHAFT INTO. REQUEST PRODUCT SAMPLE FOR TESTING TO DETERMINE SUITABILITY OF PRODUCT IN PARTICULAR APPLICATION.

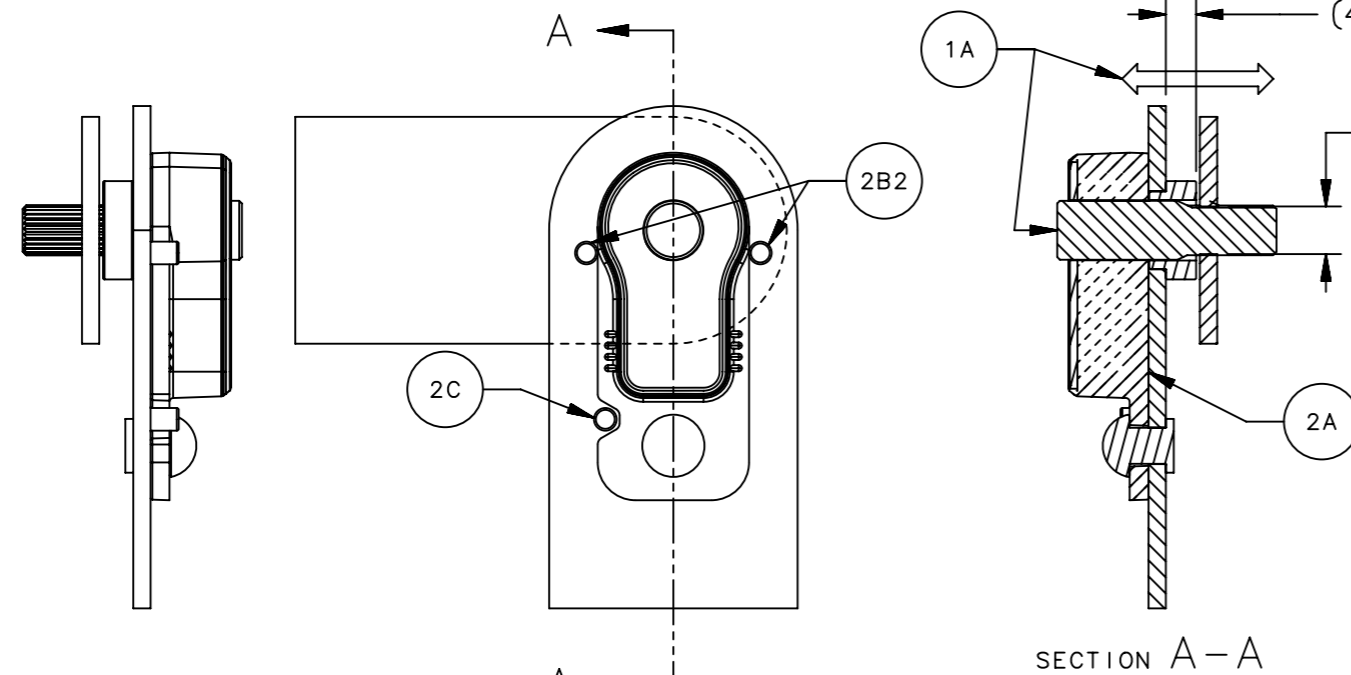
PART MARKING



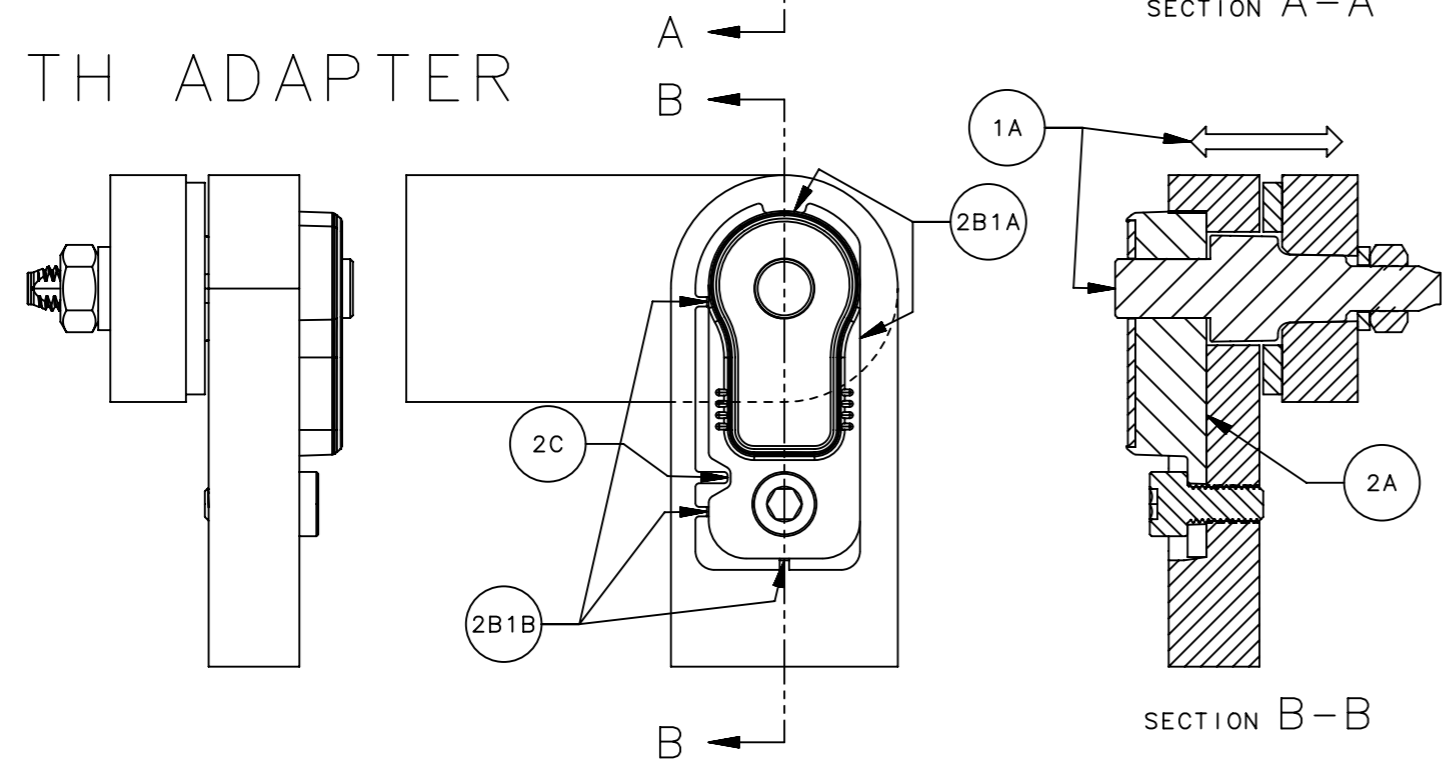
PANEL PREP



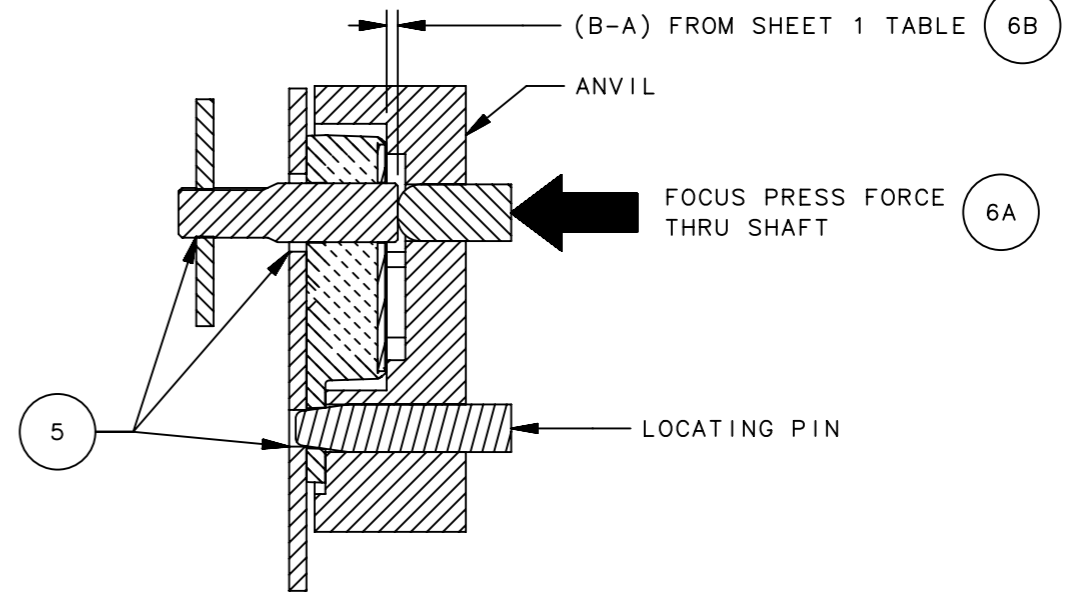
WITHOUT ADAPTER



WITH ADAPTER



PRESS KNURLED SHAFT



- PRESS NON-ADAPTER ASSEMBLIES NOTES:
- FOR INITIAL PROGRAMS, CONTACT SOUTHCO ENGINEERING FOR DESIGN SUPPORT.
  - LOCATE BASE AND ARM FOR PROPER HINGE ALIGNMENT.
  - ANVIL/PUNCH GEOMETRY TO:
    - FOCUS PRESS FORCE THROUGH SHAFT.
    - KEEP HINGE ASSEMBLY DIMENSION IN ANVIL GEOMETRY AND SHAFT RAM POSITION.

CPB NUMBER 2019-0663	THIRD ANGLE PROJECTION	
SURFACE AREA	MILLIMETERS [IN]	
VOLUME	TOLERANCES UNLESS OTHERWISE NOTED	DESCRIPTION HINGE & CONTROLLED MOTION DEVICE LOW PROFILE CONSTANT TORQUE HINGE
PROPRIETARY ITEM	ALL DIMENSIONS WITHOUT TOLERANCES ARE FOR REFERENCE ONLY.	SIZE SYSTEM A3 NX
EXCEPT FOR USES EXPRESSLY GRANTED IN WRITING, INFORMATION DISCLOSED HEREON IS CONFIDENTIAL AND ALL RIGHTS, PATENT AND OTHERWISE, ARE RESERVED BY SOUTHCO, INC.	PER ASME Y14.5M-2009	DWG NO. J-ST-20L
		DRAWN BY MTH
		DATE 18SEP2020
		SCALE 1:1
		SHEET 2 OF 2