MiTek®
Machinery Division

Service Bulletin

Machinery Affected:	***RoofTracker™* Press**
Document:	**SB173**
Title:	**Installing a Bumper Bearing Retrofit Kit**
Applies To:	**Corner Bumpers on Gantry Head**

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Applicability	63826

Purpose and Scope

The corner bumpers on *RoofTracker*™ gantry heads manufactured prior to August 2008 have been redesigned. To ensure your machine remains in proper working order, it is recommended that all customers with affected machines install the bumper bearing retrofit kit. All parts and instructions required are included in the Service Bulletin kits described in Table 1 and Table 2.

Overview

Table 1 and Table 2 list the parts included with each kit. Ensure all parts are present before starting the procedure. SB173KIT-A is for use with standard *RoofTracker* gantries. SB173KIT-B is for *RoofTracker* gantries with a top-chord platform.

Refer to Drawing 63850-501 and Figure 2 on page 5 while performing the steps in the procedure.

Table 1: Parts Included in SB173KIT-A

Qty	Description	Part Number
2	Bumper, formed, left-hand	63844
2	Bumper, formed, right-hand	63851
4	Bumper mounting bar	63852-501
8	Bumper bearing shaft	63841
4	Bearing mount plate with stop holes	63848
12	Bearing mount retrofit plate	63846
4	Return stop mount retrofit plate	63849
4	Polyurethane stop	63842
16	Linear flange bearing	416003
4	Rubber bumper	446147
4	Shaft collar	541002
4	Warning label	691522
8	Socket head cap screw, 3/8-16x1"	326263
12	Lock washer, 3/8"	364042
12	Button head cap screw, 3/8-16x3/4"	321257
8	Socket head cap screw, 1/4-20x3/4"	326157
64	Socket head cap screw, #10-24x3/4"x	326085
64	Lock washer, #10	364026
32	Socket head cap screw, 1/4-20x2"	326169
40	Lock washer, 1/4"	364034
64	Flat washer, 1/4"	365115
32	Hex nut, 1/4-20	361601

Table 1: Parts Included in SB173KIT-A (Continued)

Qty	Description	Part Number
8	Socket head cap screw, 1/4-20x5/8"	326155
8	Socket head cap screw, 1/4-20x1"	326161
8	Lock nut, 1/4-20	361986
1	Service Bulletin 173	SB173
1	Drawing 63850-501	DWG63850-501

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Table 2: Parts Included in SB173KIT-B

Qty	Description	Part Number
1	Bumper, formed, left-hand	63844
1	Bumper, formed, right-hand	63851
2	Bumper mounting bar	63852-501
4	Bumper bearing shaft	63841
2	Bearing mount plate with stop holes	63848
6	Bearing mount retrofit plate	63846
2	Return stop mount retrofit plate	63849
2	Polyurethane stop	63842
8	Linear flange bearing	416003
2	Rubber bumper	446147
2	Shaft collar	541002
2	Warning label	691522
4	Socket head cap screw, 3/8-16x1"	326263
6	Lock washer, 3/8"	364042
6	Button head cap screw, 3/8-16x3/4"	321257
4	Socket head cap screw, 1/4-20x3/4"	326157
32	Socket head cap screw, #10-24x3/4"x	326085
32	Lock washer, #10	364026
16	Socket head cap screw, 1/4-20x2"	326169
20	Lock washer, 1/4"	364034
32	Flat washer, 1/4"	365115
16	Hex nut, 1/4-20	361601
4	Socket head cap screw, 1/4-20x5/8"	326155
4	Socket head cap screw, 1/4-20x1"	326161
4	Lock nut, 1/4-20	361986
1	Service Bulletin 173	SB173
1	Drawing 63850-501	DWG63850-501

Figure 1: Locate All Four Corner Bumpers on the Gantry Head

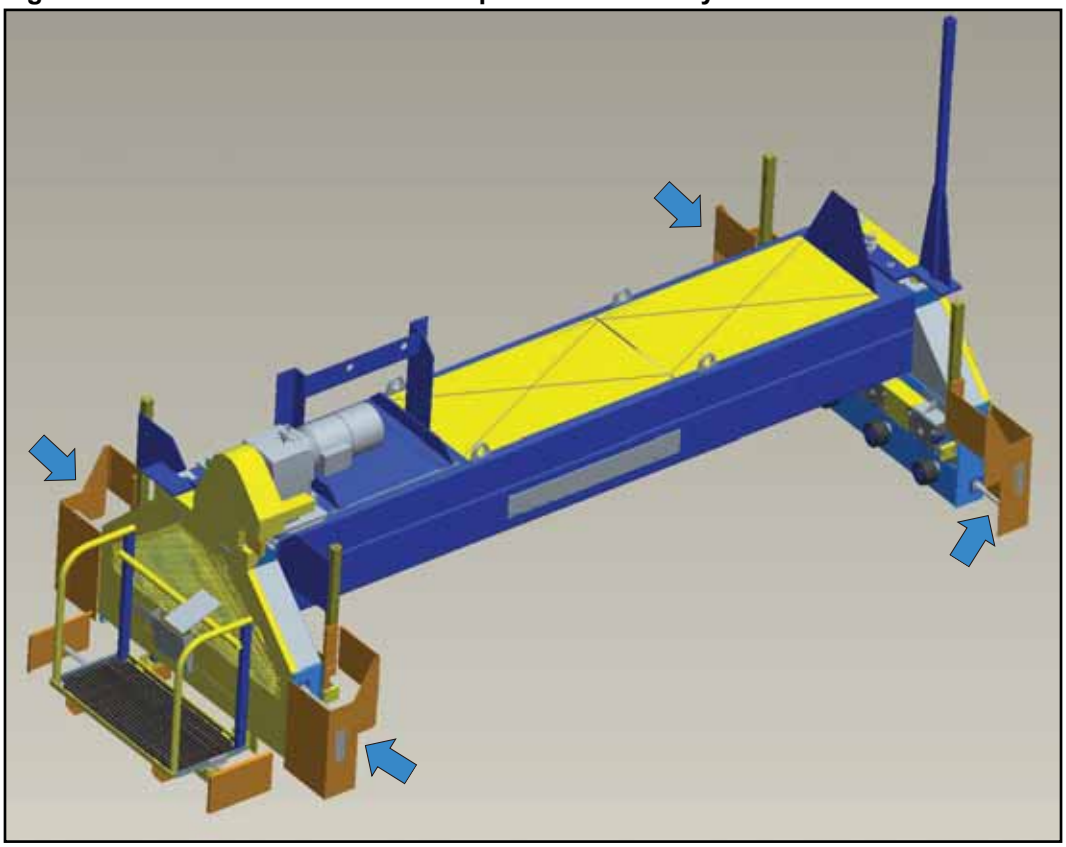
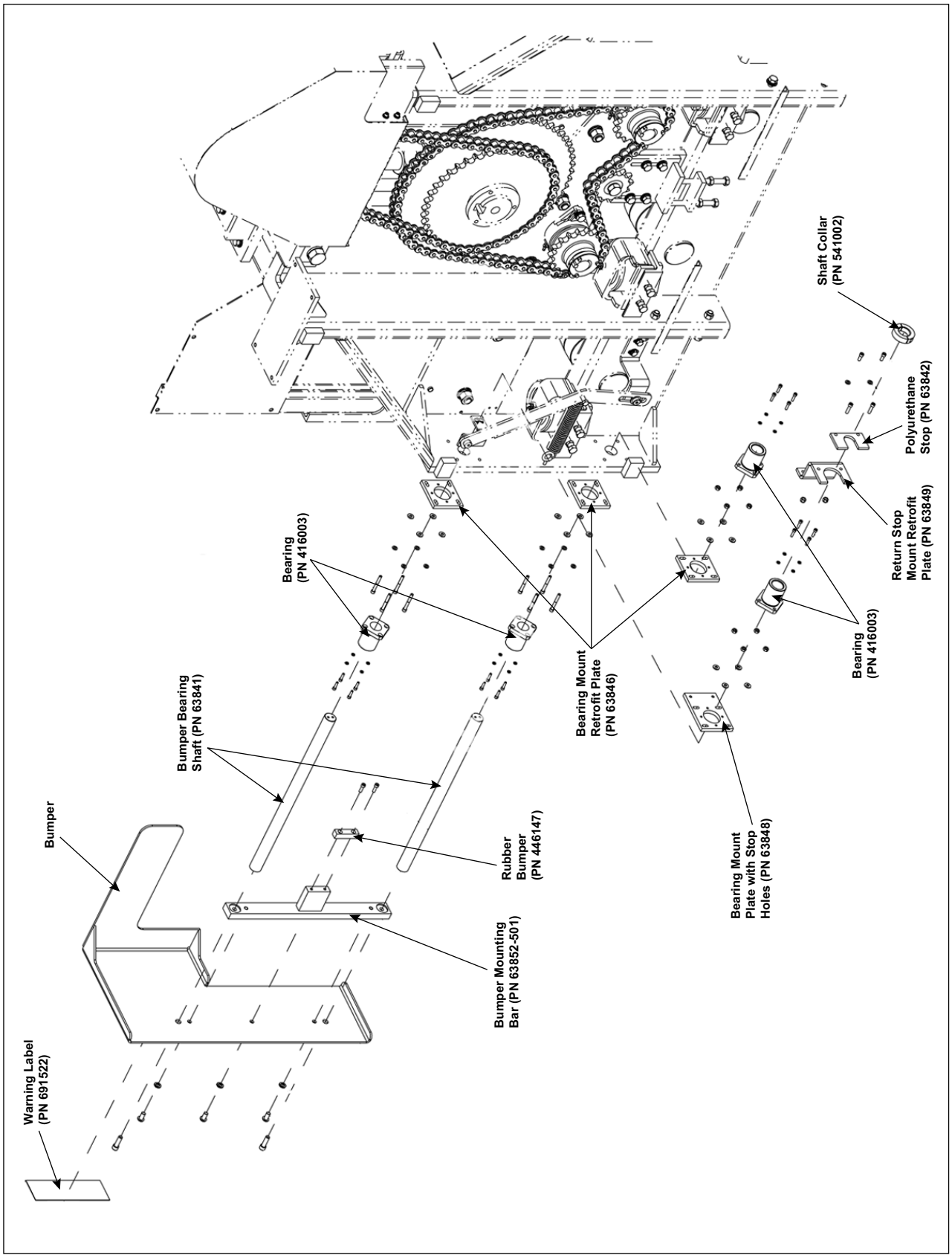


Figure 2: Part Locations



Lockout/Tagout Procedure

Before performing maintenance on any machine with electrical power, lockout/tagout the machine properly. When working on a machine outside of the machine's main electrical enclosure, not including work on the electrical transmission line to the machine, follow your company's approved lockout/tagout procedures which should include, but are not limited to the steps here.

1. Engage an E-stop on the machine.

2. Turn the disconnect switch handle on the machine's main electrical enclosure to the "off" position. For the location of the disconnect handle, see Figure 3.

Figure 3: Disconnect Switch to Lockout/Tagout

	WARNING
	ELECTROCUTION HAZARD. **When the disconnect switch is off, there is still live power within the disconnect switch's enclosure. Always turn off power at the building's power source to the equipment before opening this electrical enclosure!**

3. Attach a lock and tag that meets OSHA requirements for lockout/tagout.

Removing the Existing Bumper Assembly

1. Lockout/tagout per the instructions in the *Lockout/Tagout Procedure* on page 6.
2. Remove the bumper weldment and associated hardware.
3. Remove the bumper shafts and associated hardware.
4. Remove the bearings and bearing mounts.
5. Unhook the spring from the dog-leg assembly. Leave the spring attached to the machine at its other end.

It is not necessary to keep any parts removed. DO NOT remove or discard the dog-leg assembly or spring.

Installing the Bumper Retrofit Kit

Assembling the Bearings and Mount Plates

1. Attach each bearing to a bearing mount plate using four (4) 10-24x3/4-in. socket head cap screws and four (4) #10 lock washers per bearing.
   - There will be four (4) bearings and mount plate assemblies for each bumper.
   - On each bumper assembly, attach three (3) of the bearings to a bearing mount retrofit plate (PN 63846) and one (1) bearing to a bearing mount plate with stop holes (PN 63848). See Drawing 63850-501.
2. Attach the polyurethane stop to the return stop mount retrofit plate (PN 63849) using two (2) 1/4-20x1-in. socket head cap screws and two (2) 1/4-20 lock nuts.
3. Attach the polyurethane stop assembly to the bearing mount plate with stop holes using two (2) 1/4-20x5/8-in. socket head cap screws and two (2) 1/4-in. lock washers.

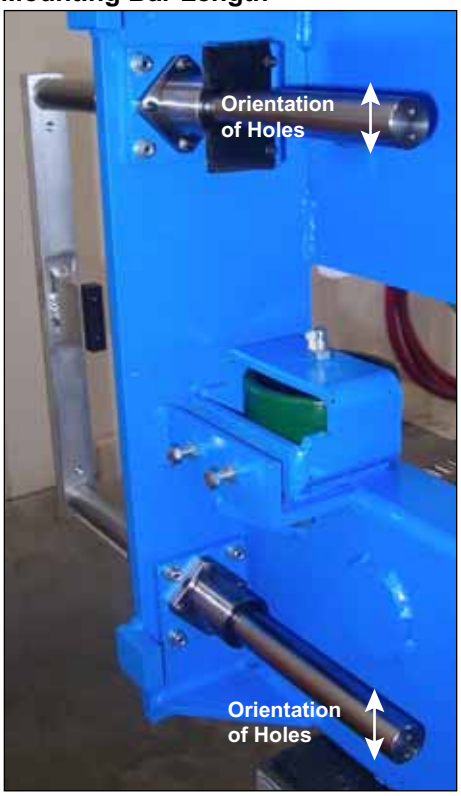
4. Attach the bearing mount plates to the *RoofTracker* end frame using four (4) 1/4-20x2-in. socket head cap screws, four (4) 1/4-in. lock washers, and four (4) 1/4-in flat washers. See Drawing 63850-501. Do not tighten the screws all the way.
   - The bottom two (2) bearing assemblies must both use the bearing mount retrofit (small) plates.
   - The top two (2) bearing assemblies must use one (1) bearing mount retrofit (small) plate and one (1) bearing mount plate with stop holes (large). The return stop plate must be on the inside of the end frame, with the stop holes facing toward the *RoofTracker* roller. See Figure 4.

Figure 4: Attach Bearing Mount Plates

Assembling the Bumper Mount Components

1. Attach the rubber bumper (PN 446147) to the bumper mounting bar using two (2) 1/4-20x3/4-in. socket head cap screws and loctite.
2. Insert the two (2) bumper bearing shafts (PN 63841) into the cutouts on the bumper mounting bar.
3. Align the two holes in each shaft so they are parallel with the length of the bar. See Figure 5.
4. Attach the shafts to the bumper mounting bar using one (1) 3/8-16x1-in socket head cap screw and loctite for each shaft.

Figure 5: Align Shaft Holes with Mounting Bar Length



Installing the Bumper Mount Assembly

1. Insert the bumper mount assembly through the bearings.
2. Slide the bumper mount assembly in and out to ensure that it moves easily through the bearings.
3. If the bumper mount assembly travel is not smooth or if it binds, the bearings are not aligned with each other. Align the bearings with each other until shaft travel is smooth.

If needed, tap the bearing mount plates lightly with a rubber hammer to move them into alignment.

4. Securely tighten the screws in the order below, applying approximately the same torque to each. After tightening each set of screws listed, make sure the bumper mount assembly still slides smoothly in and out.
   - Screws attaching lower bearing mount to gantry frame
   - Screws attaching lower bearing to bearing mount
   - Screws attaching upper bearing mount to gantry frame
   - Screws attaching upper bearing to bearing mount
5. Slide the bumper mount assembly in and out to ensure that it moves easily through the bearings. If the bumper mount assembly travel is not smooth or if it binds, the bearings are not aligned with each other. Loosen all bearing screws and repeat steps 2 through 4.
6. Slide the collar (PN541002) onto the end of the top bumper bearing shaft.
7. Adjust the collar so that the flag has minimal travel before breaking the light beam. After the collar is adjusted, the measurement from the *RoofTracker* end frame to the outside edge of the bumper mounting bar should equal 16-7/8 in.

8. Tighten the collar.
   - Re-measure from the *RoofTracker* end frame to the outside edge of the bumper mounting bar. The measurement must equal 16-7/8 in.
   - If the measurement is not 16-7/8 in., loosen the collar and repeat steps 7 and 8 until the measurement is correct.
9. Attach the top end of the dog-leg assembly to the end of the top bumper bearing shaft. See Figure 6.

Figure 6: Attach Dog-Leg Assembly to Bumper Shaft

Attaching the Bumper

1. Attach the bumper to the bumper mount assembly using three (3) 3/8-16x3/4-in. button head cap screws and three (3) 3/8-in. lock washers.
2. Reattach the spring to the dog-leg assembly.
3. Measure from the *RoofTracker* end frame to the outside edge of the bumper. The measurement should beapproximately 16-5/8 in.
4. Attach the safety label (PN 691522) to the bumper as shown on Drawing 63850-501.
5. Repeat this entire procedure, beginning with the *Removing the Existing Bumper Assembly* section on page 7 on the remaining corner bumpers until all four bumpers are complete.

	CAUTION
	**CRUSH HAZARD.** **Re-attach all guards before returning power to the equipment**

6. Customers with a bottom chord platform must cut an angle on the bottom chord platform before operating the machine. Cutting this angle allows the bottom bearing shaft to clear the platform completely so the bumper can depress properly. See Sheet 5 of Drawing 63850-501.
7. Remove the lockout/tagout devices and restart the machine.

Testing the Bumpers

1. Place a large, heavy, freestanding object (such as a trash can) in the path of the right, operator-end bumper, but at least 10 ft away from the bumper.
2. Press and hold the RIGHT/REVERSE directional button (or joystick and white button) until it hits the heavy object in its path. The gantry head should stop within 13 in. when the bumper hits the object.
3. Test the remaining three (3) bumpers in this manner.
4. If any of the bumpers fail this test, complete the following steps to repair the problem, then repeat the test.
   - Examine the bumper for bent or damaged parts.
   - Examine all bearings.
   - Examine the location of the collars.
   - Examine the point of intersection between the bumper and the light bar beam.
   - Repair, re-align, or adjust any questionable components.
   - Repeat the bumper test.

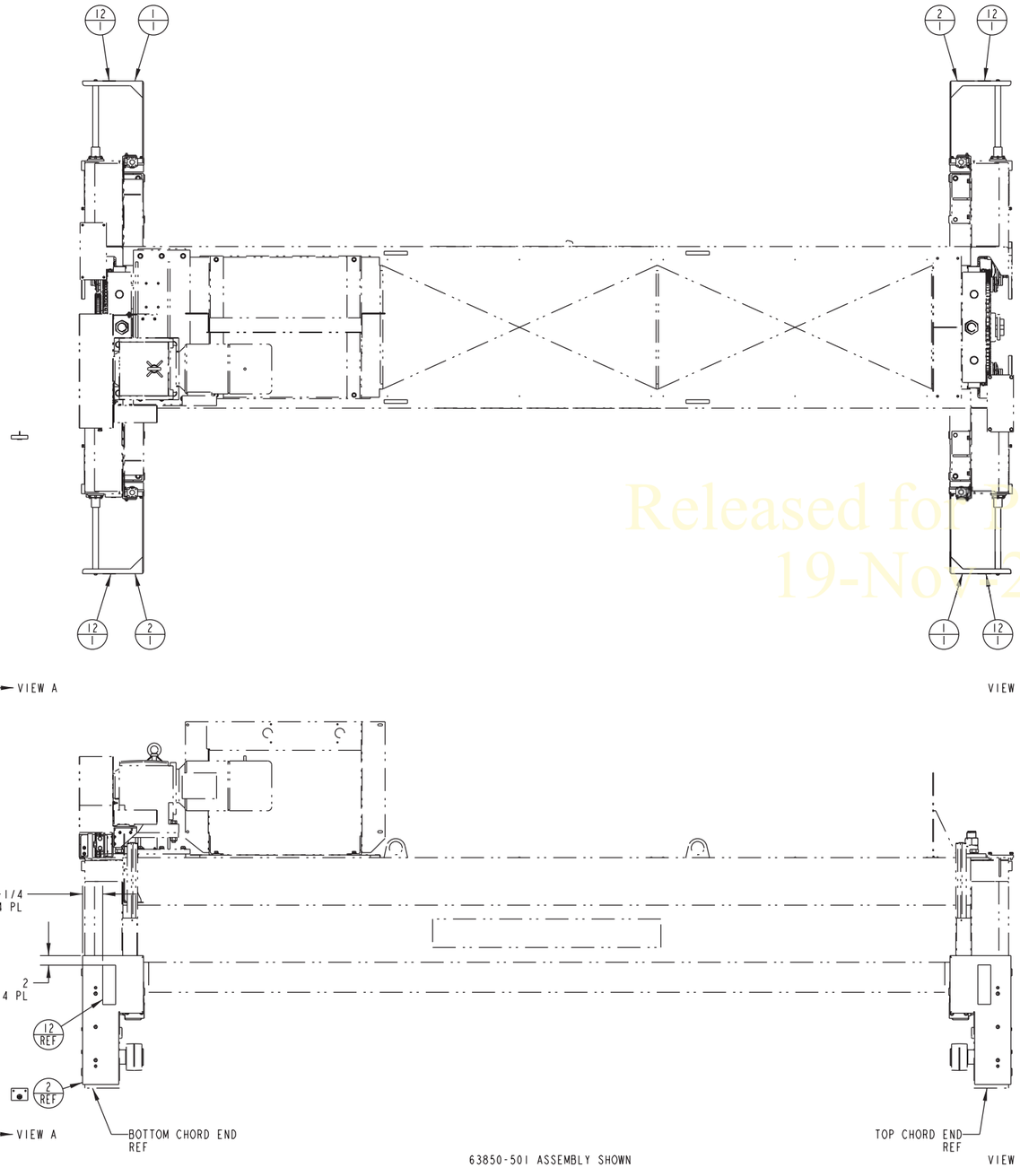
END OF SERVICE BULLETIN

SHEET	63850-501

REVISIONS			
REV	DESCRIPTION	DATE	DESIGNER
A	PN 326263 WAS PN 326265 ECO #6539	2007-09-28	RSM

NOTES:

1. SET LOCATION OF SHAFT COLLAR, PN 541002, SO THAT LIGHT BEAM IS BROKEN WITHIN 1/4" OF BUMPER TRAVEL.
2. ASSEMBLY PN 63850-502 USES EXACTLY 1/2 THE QUANTITY OF EACH ITEM SHOWN FOR TEH 63850-501 ASSEMBLY.
3. NOTCH PLATFORM ANGLE, SEE SHT 5
4. SEE SERVICE BULLETIN SB173 FOR MORE INFORMATION.



63850-501 ASSEMBLY SHOWN

APPLICABLE EQUIPMENT FOR 63850-501	
PART NUMBER	DESCRIPTION
63600-501	ROOFTRACKER ASSEMBLY
63750-501-208V	ROOFTRACKER ASSEMBLY 208 VOLT
63750-501-230V	ROOFTRACKER ASSEMBLY 230 VOLT
63750-501-460V	ROOFTRACKER ASSEMBLY 460 VOLT
63826-501-208V	ROOFTRACKER ASSEMLBY W/PLATFORM, 208 VOLT
63826-501-230V	ROOFTRACKER ASSEMLBY W/PLATFORM, 230 VOLT
63826-501-460V	ROOFTRACKER ASSEMLBY W/PLATFORM, 460 VOLT
65174-501-208V	12' ROOFTRACKER, 208V
65174-501-230V	12' ROOFTRACKER, 230V
65174-501-460V	12' ROOFTRACKER, 460V
APPLICABLE EQUIPMENT FOR 63850-502	
65551-501-208V	ROOF TRACKER, ASSY, 208V TOP CHORD SIDE PLATFORM
65551-501-230V	ROOF TRACKER, ASSY, 230V TOP CHORD SIDE PLATFORM
65551-501-460V	ROOF TRACKER, ASSY, 460V TOP CHORD SIDE PLATFORM
65551-601-208V	ROOF TRACKER, ASSY, 208V TOP CHORD PLATF,TB WOODS
65551-601-230V	ROOF TRACKER, ASSY, 230V TOP CHORD PLATF,TB WOODS
65551-601-460V	ROOF TRACKER, ASSY, 460V TOP CHORD PLATF,TB WOODS

ITEM	QTY	UM	PART NUMBER	PART NAME	NOMENCLATURE / MATL DESC	MATERIAL NO	NOTES
25	8	EA	361986	LOCKNUT	ESNA, 1/4-20		
24	8	EA	326161	SHCS,1/4-20 UNCx1,GR 5,ST,BO	-		
23	8	EA	326155	SHCS,1/4-20 UNCx5/8,GR 5,ST,BO	-		
22	32	EA	361601	HEX NUT, 1/4-20,GR 5,ST,BO	-		
21	64	EA	365115	FLAT WASHER, 1/4,SAE,ST,ZP	-		
20	40	EA	364034	LOCK WASHER,1/4,ST,ZP	-		
19	32	EA	326169	SHCS,1/4-20 UNCx2,GR 5,ST,BO	-		
18	64	EA	364026	LOCK WASHER,#10,ST,ZP	-		
17	64	EA	326085	SHCS,#10-24 UNCx3/4,GR 5,ST,BO	-		
16	8	EA	326157	SHCS,1/4-20 UNCx3/4,GR 5,ST,BO	-		
15	12	EA	321257	BHCS	3/8-16X3/4		
14	12	EA	364042	LOCK WASHER	3/8 REGULAR		
13	8	EA	326263	SHCS,3/8-16 UNCx1-1/4,GR 5,ST,BO	-		
12	4	EA	691522	LABEL,WARNING,2.7x8.3			
11	4	EA	541002	SHAFT COLLAR, 2 PC, 30MM,#CCM302S			
10	4	EA	446147	RUBBER, BUMPER			
9	16	EA	416003	BRG,LINEAR,FLNG,SMK-30GUU,30MMID			
8	4	EA	63842	POLYURETHANE STOP	RUBBER,SHT,1/4"x12"x12",40 SHORE, A	84200160768	
7	4	EA	63849	RETURN STOP MOUNT,RETROFIT	PL,HR-A36,1/4	8000163072	
6	12	EA	63846	BEARING MOUNT,RETROFIT	FLAT,HR-A36,3/8x3-1/2	100240224	LG = 3-1/4 IN
5	4	EA	63848	BEARING MOUNT,W/ STOP HOLES	FLAT,HR-A36,3/8x3-1/2	100240224	LG = 4-7/8 IN
4	8	EA	63841	BUMPER BEARING SHAFT,30MM, RETROFIT	SHAFT,30MM DIA.60-65C		LG = 20-11/16 IN
3	4	EA	63852-501	BUMPER MOUNTING,BAR WELDMENT	ASSY		
2	2	EA	63851	BUMPER, FORMED, RH	SHT,HR-A36,3/16" (WxL)	8000123072	
1	2	EA	63844	BUMPER, FORMED, LH	SHT,HR-A36,3/16" (WxL)	8000123072	

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DIM TOL UNLESS OTHERWISE SPECIFIED
FRACTIONS . . . . . ±1/32
DECIMALS . . . . .XX ±0.03
. . . . .XXX ±0.010
. . . . .XXXX ±0.005
ANGLES . . . . . ±0.5
MACHINED SURFACES NOT SPECIFIED... 125

DESIGN STATE WIP

APPROVED FOR RELEASE TO CUSTOMER

DESIGNER	DATE
RSM	2007-09-20
DRAWN BY	
RSM	2007-09-24

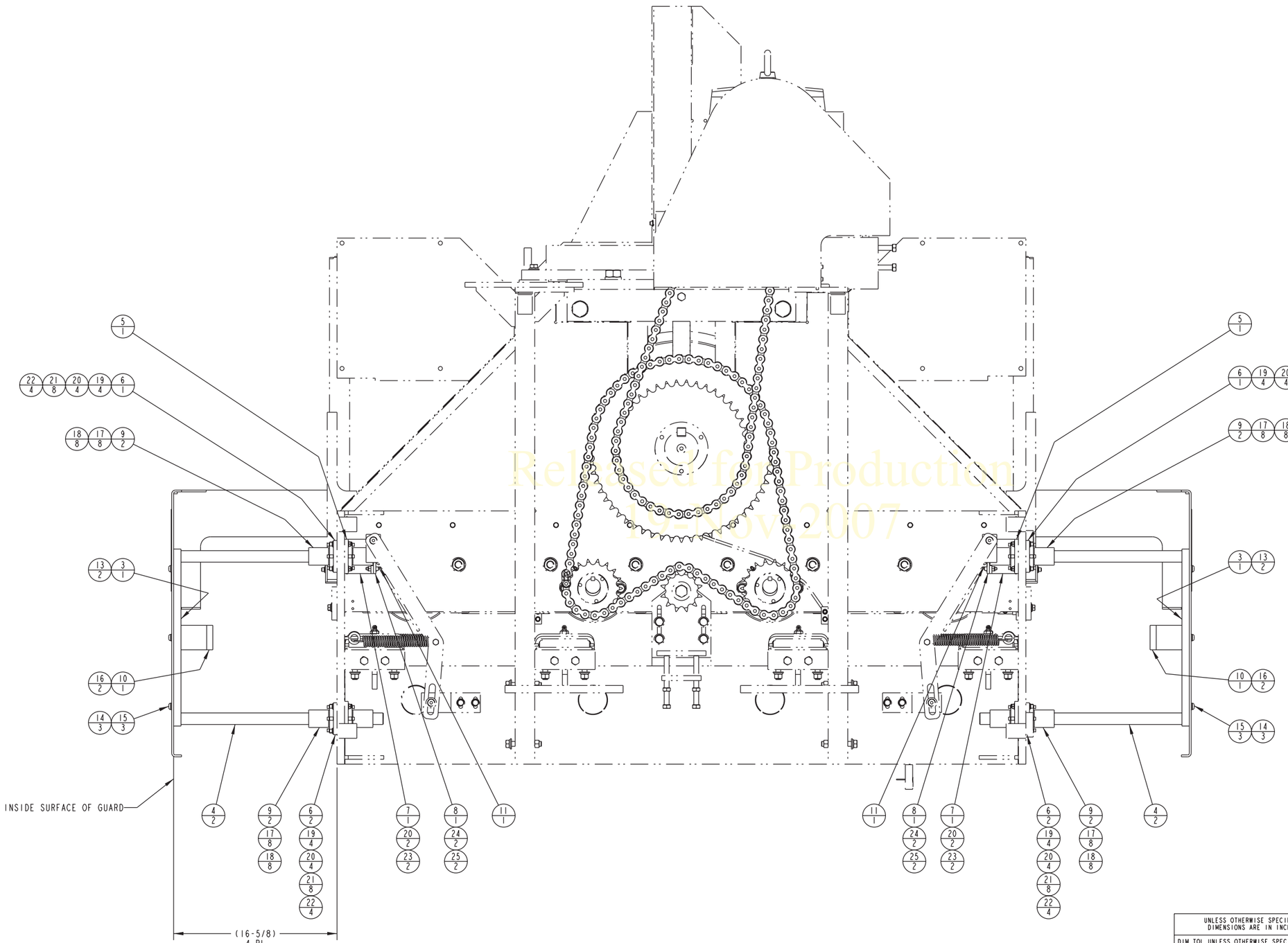
PROJECTION

MiTek Industries, Inc.
301 FOUNTAIN LAKES INDUSTRIAL DRIVE
ST. CHARLES, MO 63301

TITLE: ROOFTRACKER BUMPER RETROFIT KIT

SIZE D | DWG NO 63850-501 | REV A

SCALE: NONE | WEIGHT: 141926886302.62 | SHEET 1 OF 5



VIEW A
BOTTOM CHORD REF
SHT 1

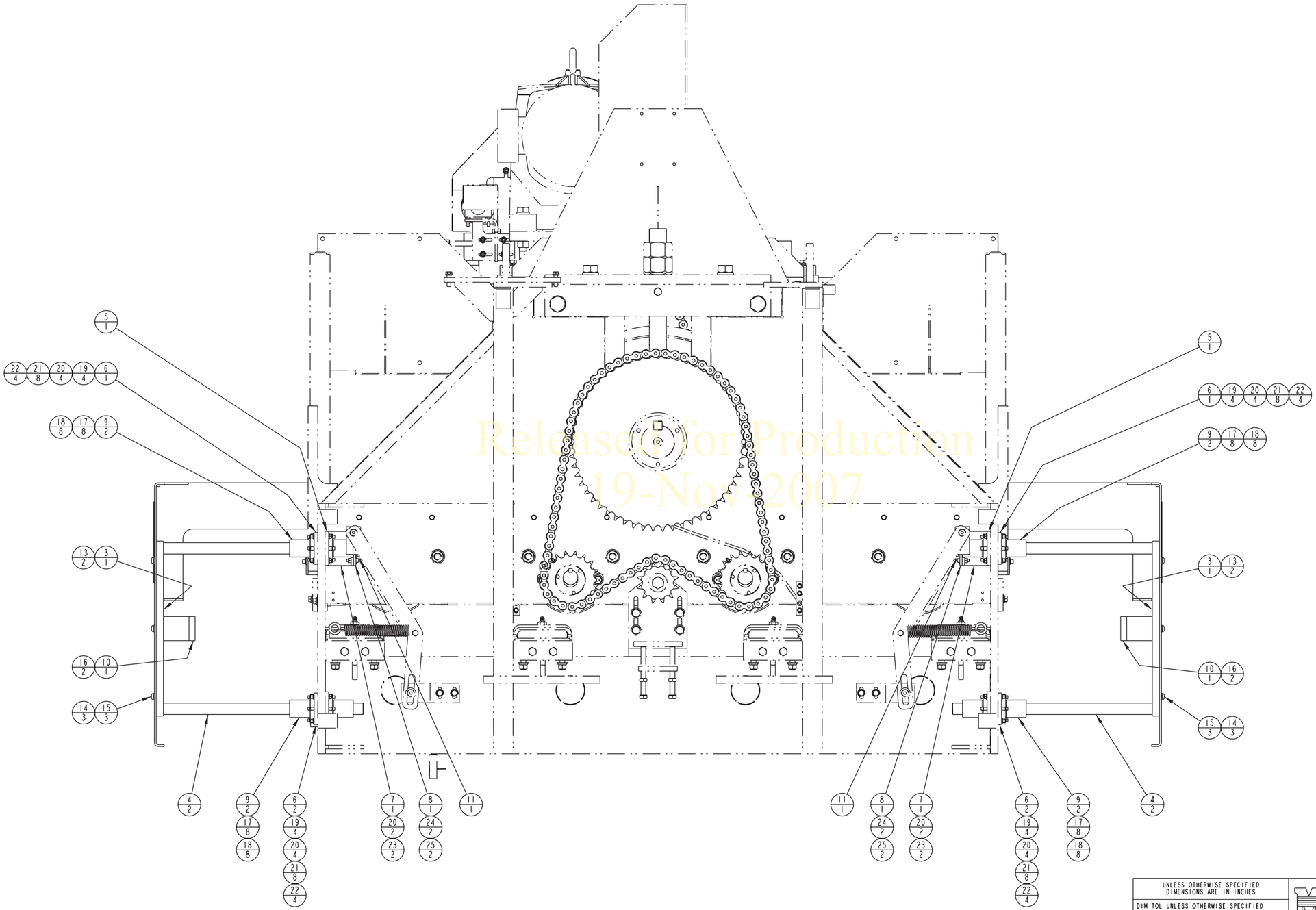
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

DIM TOL UNLESS OTHERWISE SPECIFIED
FRACTIONS . . . . ±1/32
DECIMALS . . . .XX ±0.03
. . . .XXX ±0.010
. . . ..XXXX ±0.005
ANGLES . . . . ±0.5
MACHINED SURFACES NOT SPECIFIED... 125/
DESIGN STATE WIP

MiTek Industries, Inc.
301 FOUNTAIN LAKES INDUSTRIAL DRIVE
ST. CHARLES, MO 63301

TITLE ROOFTRACKER BUMPER RETROFIT KIT

SIZE D | DWG NO 63850-501 | REV A
SCALE: NONE | WEIGHT: 141926886302.62 | SHEET 2 OF 5



VIEW B
TOP CHORD REF
SHT 1
NOT APPLICAPABLE FOR 63850-502 ASSEMBLY

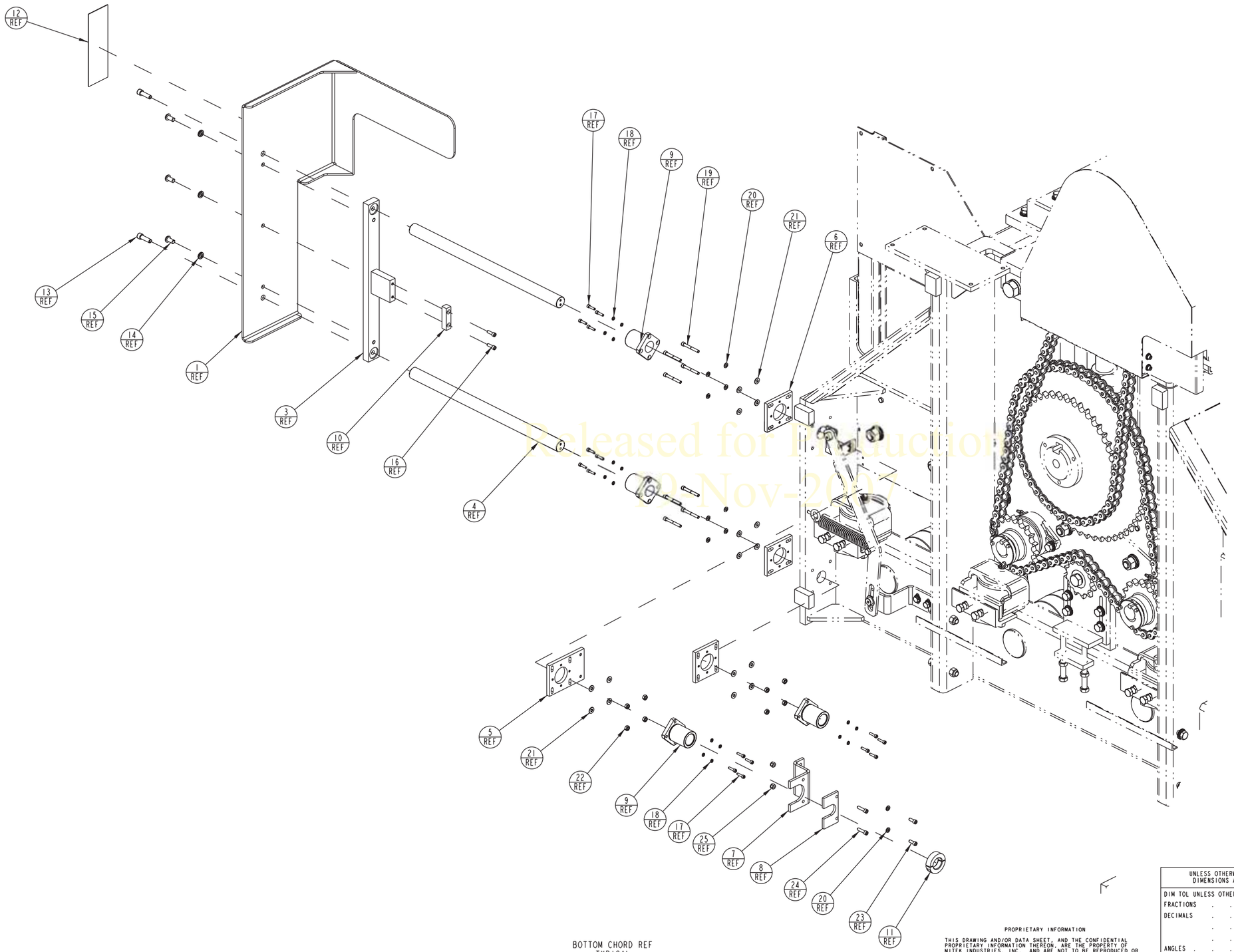
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

DIM TOL UNLESS OTHERWISE SPECIFIED
FRACTIONS . . . . ±1/32
DECIMALS . . . .XX ±0.03
. . . .XXX ±0.010
. . . ..XXXX ±0.005
ANGLES . . . . . ±0.5
MACHINED SURFACES NOT SPECIFIED... 125/√
DESIGN STATE WIP

MiTek Industries, Inc.
301 FOUNTAIN LAKES INDUSTRIAL DRIVE
ST. CHARLES, MO 63301

TITLE
ROOFTRACKER BUMPER
RETROFIT KIT

SIZE D | DWG NO 63850-501 | REV A
SCALE: NONE | WEIGHT: 141926886302.62 | SHEET 3 OF 5



BOTTOM CHORD REF
TYPICAL

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

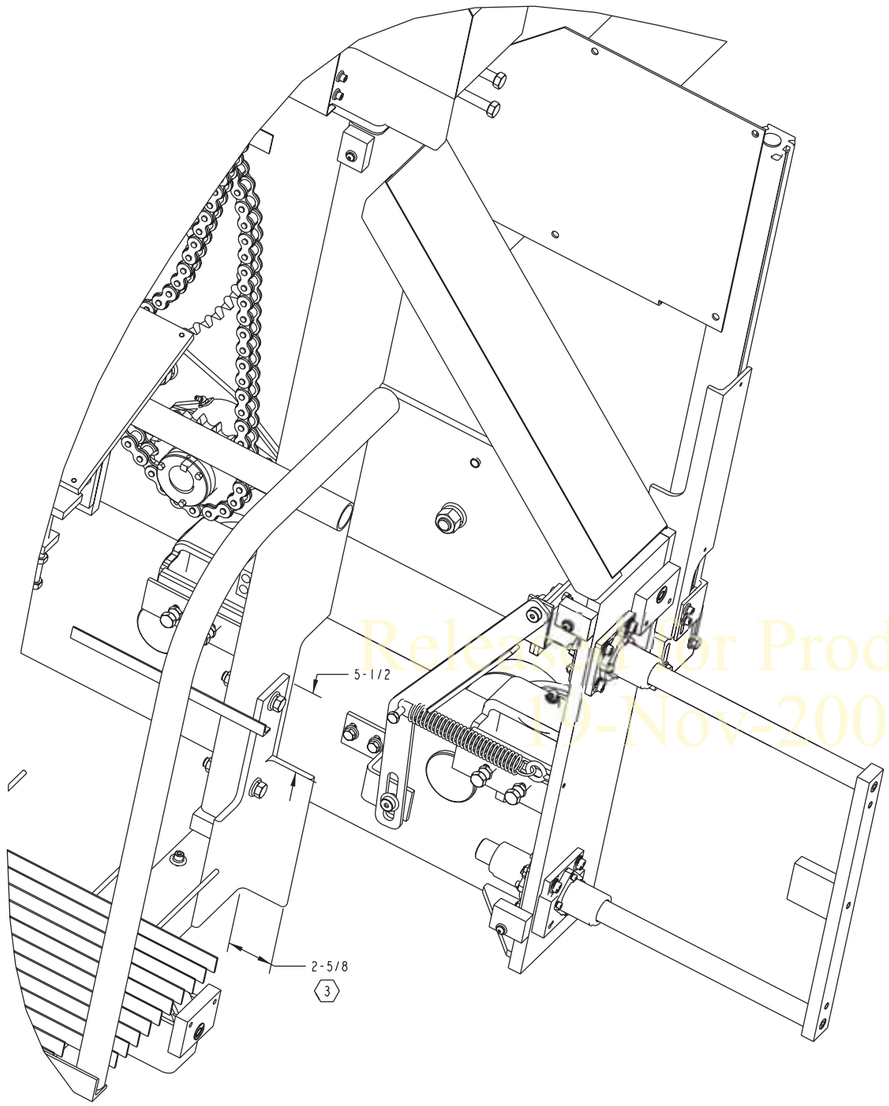
DIM TOL UNLESS OTHERWISE SPECIFIED
FRACTIONS . . . . ±1/32
DECIMALS . . . .XX ±0.03
. . . .XXX ±0.010
. . . ..XXXX ±0.005
ANGLES . . . . ±0.5
125
MACHINED SURFACES NOT SPECIFIED...
DESIGN STATE WIP

MiTek Industries, Inc.
301 FOUNTAIN LAKES INDUSTRIAL DRIVE
ST. CHARLES, MO 63301

TITLE
ROOFTRACKER BUMPER
RETROFIT KIT

SIZE	DWG NO	REV
D	63850-501	A

SCALE: NONE | WEIGHT: 141926886302.62 | SHEET 4 OF 5



NOTCH PLATFORM ANGLE AS SHOWN, 2 PL
NOTCH IS NEEDED SO THE BOTTOM SHAFT
CLEARS WHEN THE BUMPER IS FULLY COLLAPSED.
FOR BOTTOM CHORD PLATFORM ONLY.

SCALE 0.250

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
DIM TOL UNLESS OTHERWISE SPECIFIED	
FRACTIONS	±1/32
DECIMALS xx	±0.03
. xxx	±0.010
. xxxx	±0.005
ANGLES	±0.5
MACHINED SURFACES NOT SPECIFIED...	125
DESIGN STATE	WIP

MiTek Industries, Inc.
301 FOUNTAIN LAKES INDUSTRIAL DRIVE
ST. CHARLES, MO 63301

TITLE: ROOFTRACKER BUMPER RETROFIT KIT

SIZE	DWG NO	REV
D	63850-501	A

SCALE: NONE | WEIGHT: 141926886302.62 | SHEET 5 OF 5