PASSION COMMITMENT QUALITY

WWW.MATTHIESENEQUIPMENT.COM
566 NORTH W.W. WHITE RD.
SAN ANTONIO, TEXAS 78219
1-800-624-8635

EQUIPMENT OWNERS MANUAL
MATTHIESEN LIVE BOTTOM BIN
FLOOR ADVANCE MODEL

INDEX

1. GENERAL SAFETY INSTRUCTION

BE SURE THAT ALL PERSONNEL OPERATING THIS EQUIPMENT READ AND UNDERSTAND THESE INSTRUCTIONS BEFORE USE.

All equipment developed by Matthiesen has been assembled and fully tested for proper alignment and safe operation, under correct usage, prior to delivery.

Many accidents occur from incorrect use or misuse of equipment or tools in all types of work situations. Listed below are some general precautions specifically related to ice processing and its environment.

1. Only properly trained and qualified personnel should be allowed to operate or service this equipment.

2. Minors must never be allowed to operate or work in close proximity to this equipment.

3. Do not ever attempt to service or clean this equipment while it is operating. Always lock out all power sources.

4. Observe all posted WARNINGS on equipment and associated systems…..to avoid personal or property damage.

5. Before re-starting any equipment, be certain all personnel and foreign objects are clear of equipment.

6. Do not, under any circumstance insert hands or feet in equipment while operating or equipment is operational. Lock out all power before servicing.

7. Be certain that proper grounding practices are maintained. Do not remove ground conductor prong from electrical plug provided.

8. Avoid accumulation of ice or water on floor where this and other equipment is in use.

9. Do not operate machine without guards in place!!!!!!!

10. Do not climb on or use machine as a ladder.

11. Equipment should have adequate work area around it to minimize accidents. Confined areas increase chances for accidents.

12. Matthiesen can not and will not be responsible for any loss or damage, including personal injury or property damage, caused by the acts or omission of parties other than Matthiesen, or in the event of changes or modifications made to the equipment without the knowledge and consent of Matthiesen. Any such changes or modifications shall cause any warranties by Matthiesen to be null and void.

B. UNPACKING EQUIPMENT

Upon receiving equipment, it is the responsibility of the customer to check for freight damage or missing parts and report immediately to Matthiesen toll free at 1-800-624-8635. Wash machine free of dirt, grease, or other debris due to shipping and handling. Machine should be sanitized before use, to avoid any contamination of product prior to powering up any and all equipment. Motors are totally fan cooled (wash down available).

Electrical is NEMA 12X.

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MATTHIESEN, warrants this equipment to be free from defects in material and workmanship under normal use and service as follows:

90 DAYS WARRANTY ON ALL PARTS: 90 Days from date of purchase to the original purchaser, **MATTHIESEN** will at it's election, repair or replace at our factory in San Antonio, Texas, such part or parts found by the manufacturer to be defective. Any part or parts of equipment sent to us for adjustment, repair or replacement, will be shipped with all transportation charges prepaid, and will be returned to the customer with all transportation charges collect.

If owner elects to have any malfunctions repaired without the consent of **MATTHIESEN** during the Warranty Period, **MATTHIESEN** will exchange only the part or parts found by our factory to be defective with new or factory reconditioned parts. No allowance for labor, transportation or product loss will be allowed.

THIS WARRANTY shall not apply to said equipment, or any part thereof, which has been subject to accident, negligence, abuse, misuse, damage by flood, fire, windstorm, or any acts of God.

THIS WARRANTY shall not be deemed to place any liability on **MATTHIESEN** for labor, time loss, and product loss or replacement part purchased by owner without the consent of **MATTHIESEN**. **MATTHIESEN** shall be obligated hereby to furnish only the replacement part or parts.

MATTHIESEN, disclaims all other warranties, expressed or implied, including warranties of merchantability and of fitness for a particular purpose. Under no circumstances shall **MATTHIESEN** be liable or responsible for initial or consequential damages caused by any defects in materials workmanship, or by failure to adhere to any warranties.

MATTHIESEN
566 North W W White Road
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Passion Commitment Quality

Thursday, July 21, 2005

SUBJECT: MATTHIESEN LIVE BOTTOM BIN GENERAL SPECIFICATIONS

European electrical standard available. Legs included in pricing.

Item #1: 5-ton live bottom bin with discharge screw**,** 12'-3" height x 8'-9" width x 9'-6" length, UHMW poly inner walls, stainless steel chain and rakes, stainless steel discharge screw and U-Trough, galvanized outer frame supports, bottom discharge height at 30" with legs, voltage (specify one) 208/3/60 or 230/3/60 or 460/3/60. Weight: 4,400 lbs

Item # 2: 10-ton live bottom bin with discharge screw, 12'-3" height x 8'-9" width x 14'-7" length, UHMW inner walls, stainless steel chain and rakes, stainless steel discharge screw and U-Trough, galvanized outer frame supports, bottom discharge height at 30" with legs, voltage (specify one) 208/3/60 or 230/3/60 or 460/3/60. Weight: 5,400 lbs

Item # 3: 15-ton live bottom bin with discharge screw, 12'-3" height x 8'-9" width x 19' – 7" length, UHMW inner walls, stainless steel chain and rakes, stainless steel discharge screw and U-Trough, galvanized outer frame supports, bottom discharge height at 30" with legs, voltage (specify one) 208/3/60 or 230/3/60 or 460/3/60. Weight: 6,400 lbs

Item # 4: 20-ton live bottom bin with discharge screw**,** 12'-3" height x 10'-9" width x 19'- 7" length, UHMW inner walls, stainless steel chain and rakes, stainless steel discharge screw and U-Trough, galvanized outer frame supports, bottom discharge height at 30" with legs, voltage (specify one) 208/3/60 or 230/3/60 or 460/3/60. Weight: 7,400 lbs

Transportation Information: The width listed for each bin is the capacity dimension only and does not reflect the actual total width of the bin for transportation purposes.
Depending on the configuration of the bin the width can be up to 2' greater. The drives and control box add 10-12" to the width. If the drives and control box are on opposite sides you then have nearly a 2' addition to the width. **We can also ship the bin unassembled to the level requested.**

Notes: The actual height of the bin listed as 12' 3" includes the 38" legs in the height. The 12' 6" height is measured at the highest point on the bin, which includes adjustment rods on the top of the rake wall that are approximately 6" above the top lip of the bin. The measurement from the ground up to the top lip of the bin is 11' 10". The standard discharge height of 30" will accommodate the standard Matthiesen VLS bagger.

LIVE BOTTOM BIN OPERATION

Product should be installed in compliance with NEC (National Electric Code), OSHA, and other regulatory agencies.

Do Not drill holes into Control Box. (consult factory)

Start Up Procedure

Turn selector switch to manual mode. Turn power (on/off) disconnect to on position. Pull start/stop button for on mode. Press for off mode.

Check rotation.

1. Auger must rotate counter clock wise toward discharge end.
2. Vertical rakes must rotate in an upward direction.
3. Floor must present product to vertical rakes. * NOTE: The floor will not run without vertical rakes operating.

Note: Refer to Bin Maintenance for alignments, if needed.

Operating Instructions:

Note: When selecting manual or auto modes you must press start/stop button to off mode. Switching between modes without pressing the stop button could cause faults in variable frequency drives.

In manual mode pull start/stop button to on mode. Press screw start button and hold to clear product from auger. Once auger has been cleared press rake start button and hold to clear rakes. Again, press screw start and hold. **The object is to clear rakes and screw before moving the floor. If unable to jog vertical rakes, consult factory.**
"DO NOT RUN FLOOR BACKWARDS."

Press start/stop button to off mode and switch selector switch to auto. Pull star/stop to on mode.

- If equipped with remote start button press and hold to discharge manually.
- If equipped with sensor, mount sensor to collection hopper, i.e. bagger hopper to detect product level. Location of sensor may vary to product type or hopper style for continuous operation.

Summary of Operation

By following the operation information procedures the Matthiesen Live Bottom Bin will function effectively. The Matthiesen Live Bottom Bin was designed for strength and durability.

When operating in automatic mode the MLB controls allow for continuous operation of vertical rakes. Floor is brake delayed by VFD allowing auger to clear out prior to floor presenting more product. This function reduces product damage and over load of product into discharge auger. Discharge auger can be controlled by optional manual remote start or sensor that will simplify dispensing in auto mode.

Trouble shooting

Screw Not Running

1. Auger overloaded
2. Reset overload
3. Check fuses in control boxes
4. Auger trip door not engaged

Rake Not Running

1. Rake jammed
2. Check fuses
3. Auger trip door switch not engaged
4. Check VFD (refer to VFD manual)

Floor Not Running

1. Floor chain jammed
2. Check fuses
3. Auger trip door not engaged
4. Check VFD (refer to VFD manual)

If after following trouble shooting procedures the Matthiesen Live Bottom Bin is still not operating properly, please contact Matthiesen technical department.

Adjusting the Torque-Limiter

The “OSD” (overload safety device) is a torque-limiter unit, which prevents costly breakdowns when equipment is overloaded by disengaging when a set maximum load is reached. The unit is re-engaged immediately when the overload is eliminated. The “OSD” is easily adjusted with wrench (provided) to the specific torque required.

The “OSD” has a single torque-adjusting nut for torque uniformity. The nut has two locking socket set screws.

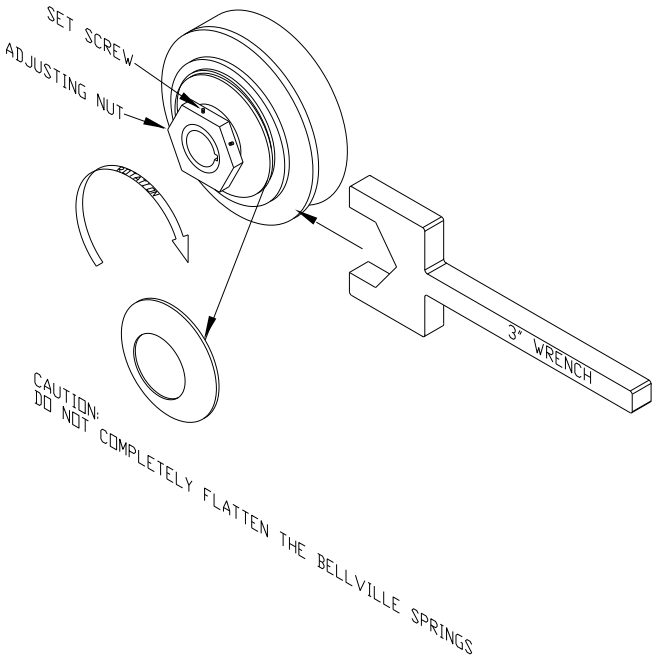
For correct adjustment, bin must be full.

1) Start bin in manual mode and advance floor forward.

2) Tighten 3” adjusting nut clockwise with wrench provided at half turn intervals until floor moves.

3) Start bin in auto mode and test bin floor movement. **Note:** If floor does not move at maximum bin capacity adjust “OSD” nut. Repeat procedure #1 and #2.

4) Stop bin floor and tighten OSD locking socket set screws on flat part of hub.



The operation instructions for the bin are located in the help screens on the control panel. I will send you a complete set of these screens in a separate email. I will only focus on the Automatic Fill Bin mode in this email to try to clarify for you how it operates.

There are two sensors that control the automatic bin filling operation. If you open the first attachment you will find a drawing that shows where the two sensors that operate the automatic bin filling operation need to be mounted. The first sensor is the BIN ICE LEVEL SENSOR and is mounted using the supplied bracket at the back of the bin where the ice is falling in from the icemaker. The second sensor is the FLOOR SENSOR and it is mounted in the front wall in the viewing panel.

Once these sensors are mounted the need to be wired into the control panel as shown on the second attachment.

Next I have attached four of the control panel screens that detail how the automatic floor operation is to work. The first screen just explains the different modes that the bin can be put in. The highlighted FILL mode is the one that enables the bin to fill automatically.

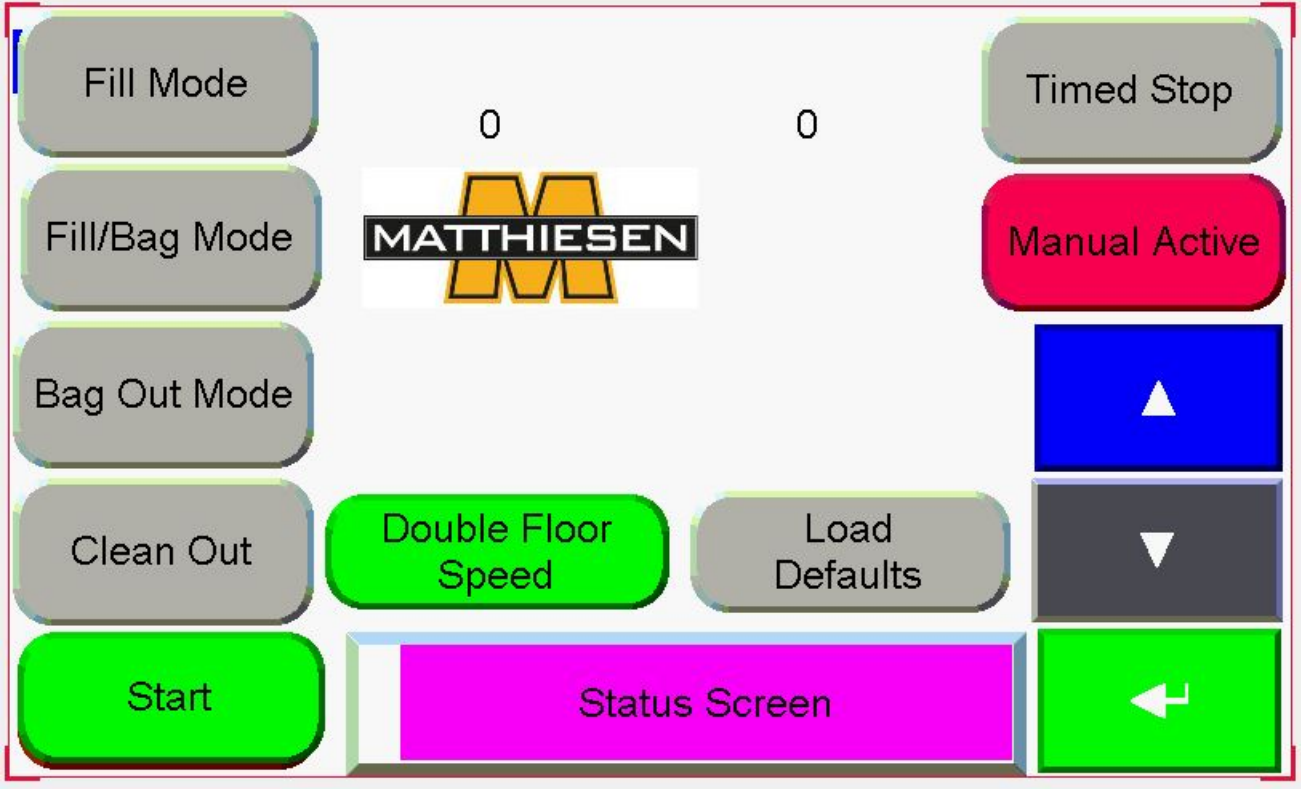
The second page describes the 2 variables that you as the user must determine the correct value. The first variable is the FLOOR START DELAY. As the ice falls into the bin the ice pile in the back will increase in height. Once the BIN ICE LEVEL SENSOR detects the ice this variable tells the bin how long to wait before it should start the floor moving forward.

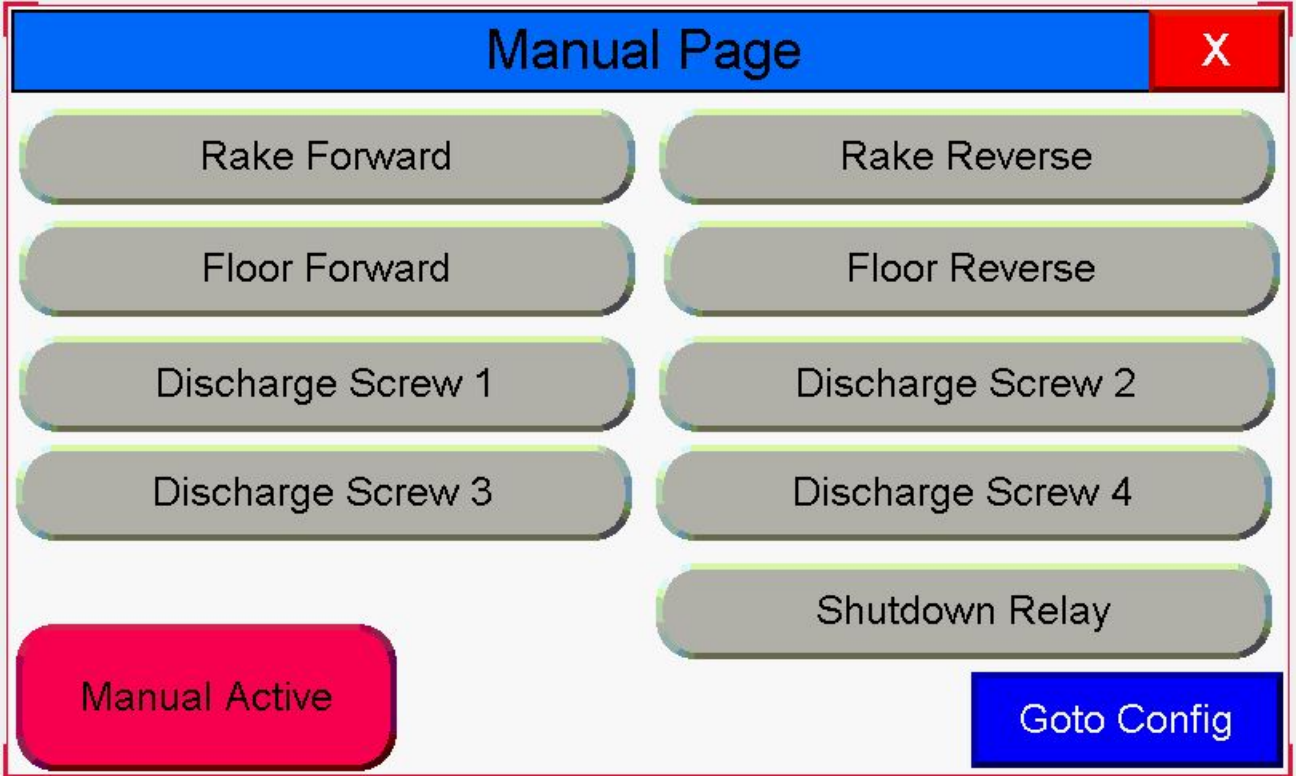
The second variable for automatic bin filling is the FLOOR RUN TIME. This variable determines how long the floor motor will stay on once the bin starts pulling the ice pile forward. You can enter these values by going to the SET UP SCREEN.

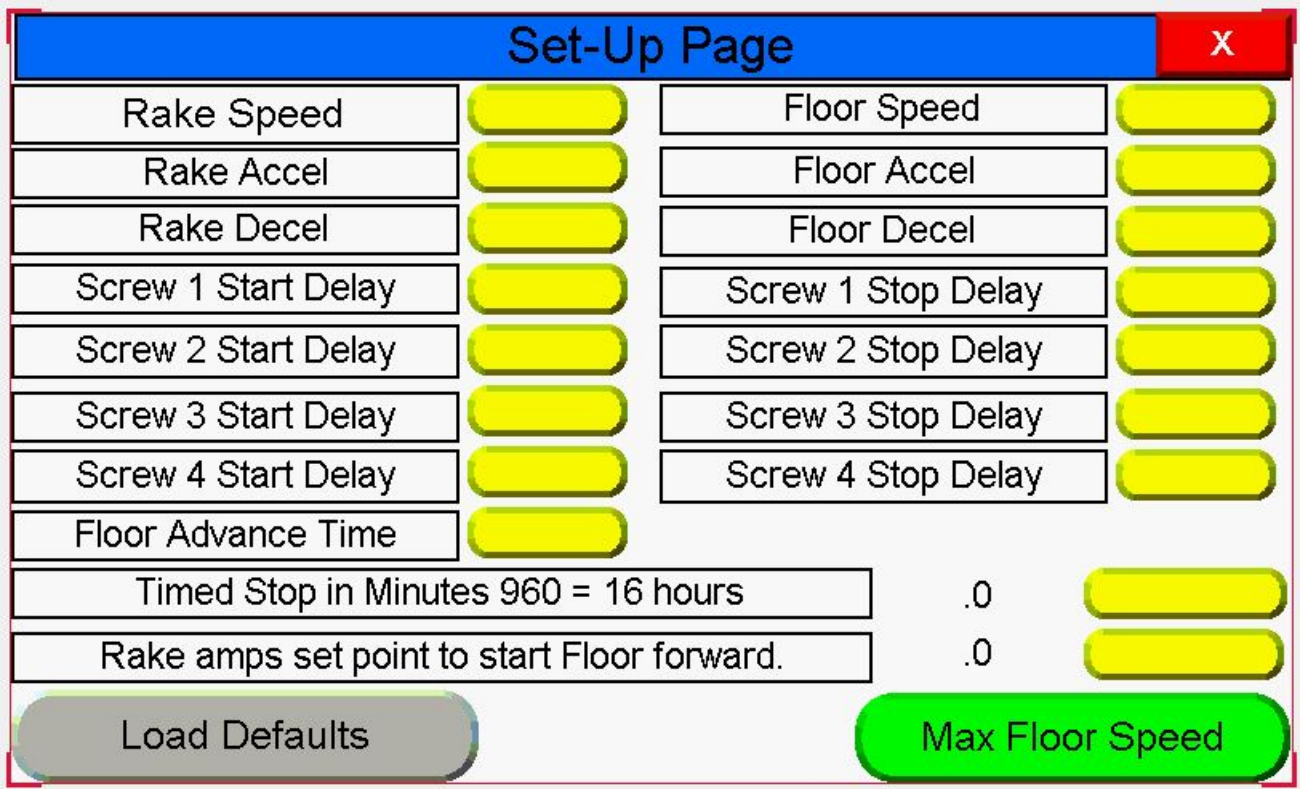
The last page shows the main screen. In order to set the bin up in the Automatic Fill mode one first needs to press the FILL MODE button and then they need to press the START button. Once this mode is selected it will allow the icemaker to keep making ice until both the FLOOR SENSOR and the BIN ICE LEVEL SENSOR have ice in front of them. At this point when both sensors detect ice the program will open the CR1-1 Relay which should be wired into the icemaker to tell it to shut down.

If you would like to take pictures of the sensor placement on the bin we would be more than happy to review them to see if they have been installed correctly.

Please review these instructions and let me know what additional questions you may have on getting this bin to fill in automatic mode.


Fill Mode
0
0
Timed Stop
Fill/Bag Mode
MATTHIESEN
Manual Active
Bag Out Mode
Clean Out
Double Floor Speed
Load Defaults
Start
Status Screen


Manual Page
X
Rake Forward
Rake Reverse
Floor Forward
Floor Reverse
Discharge Screw 1
Discharge Screw 2
Discharge Screw 3
Discharge Screw 4
Shutdown Relay
Manual Active
Goto Config


Set-Up Page
X
Rake Speed
Rake Accel
Rake Decel
Screw 1 Start Delay
Screw 2 Start Delay
Screw 3 Start Delay
Screw 4 Start Delay
Floor Advance Time
Floor Speed
Floor Accel
Floor Decel
Screw 1 Stop Delay
Screw 2 Stop Delay
Screw 3 Stop Delay
Screw 4 Stop Delay
Timed Stop in Minutes 960 = 16 hours
.0
Rake amps set point to start Floor forward.
.0
Load Defaults
Max Floor Speed

Status Page

X

Safety Contactor
Panel Door E-Stop
Screw 1 Aux
Screw 2 Aux
Screw 3 Aux
Screw 4 Aux
Screw Blow out Door
Bin Access Door
Bit Top Ice Level Sensor
Bin Front Ice Sensor
Screw 1 Sensor
Screw 2 Sensor
Screw 3 Sensor
Screw 4 Sensor

Door Red Pilot Light
Safety Relay Interlock
Screw 1 Starter
Screw 2 Starter
Screw 3 Starter
Screw 4 Starter
Output 6
Output 7
Output 8
Bin Full Shutdown

Rake Status

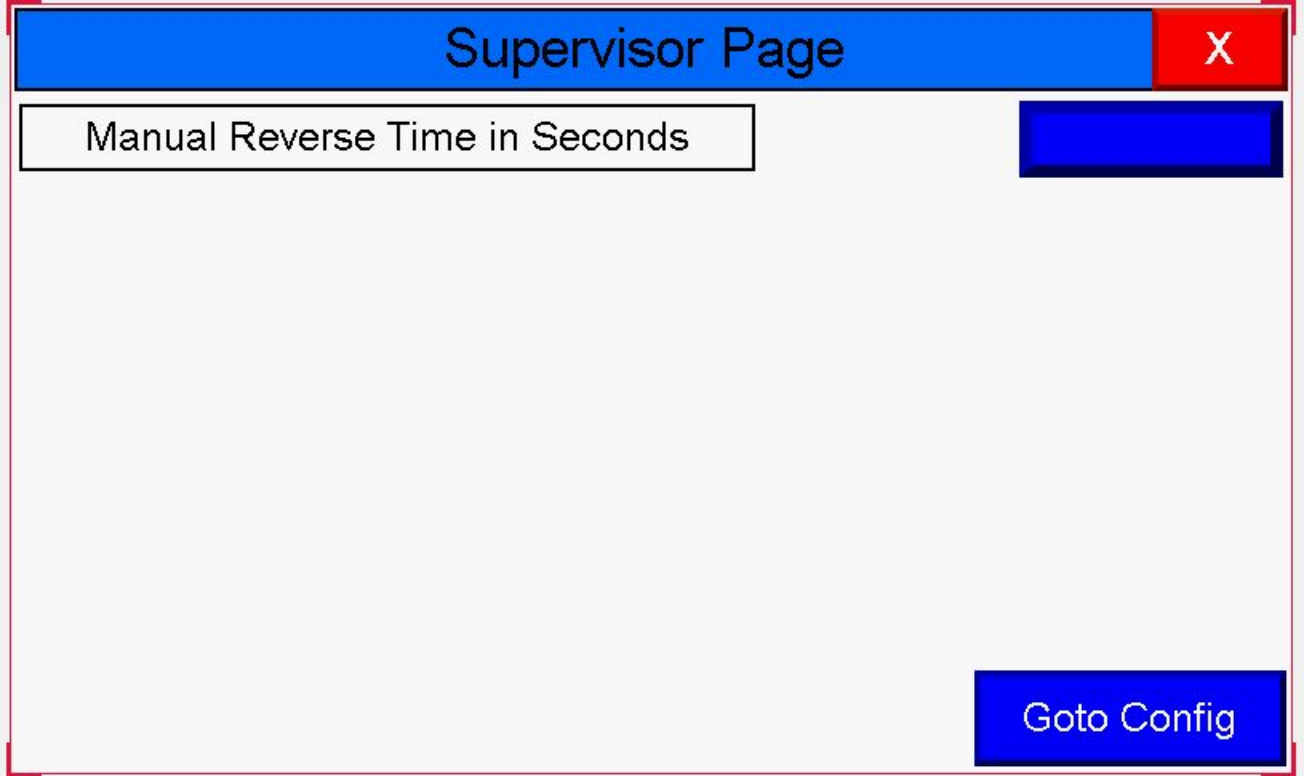
Floor Status

Are you sure you want to load defaults?
This will set all timers and counters back
to factory settings.
If so press YES then ENTER.

NO

YES

ENTER


Supervisor Page
X
Manual Reverse Time in Seconds
Goto Config

MAINTENANCE INFORMATION

CHAINS
BEARINGS
GEAR REDUCER OIL

1) RAKE CHAINS

Keep chain tension so that there is no slack on the chains around the bottom sprockets. To adjust, tighten the 1" bolt holding the top take up bearing by loosening the jam nut on the top channel of the bin and turning the nut to take up the slack in chain. Tighten nuts making sure the two take-ups are even for equal tracking of the chains. Adjust the center UHMW bearing with the nut on the 1" take-up bolts making sure the shaft is aligned evenly with both left and right side. Retighten nuts.

Do not over tighten chains. This will cause excess wear on sprockets and chains.

FLOOR CHAINS

Keep floor chain tension so that the chain slack doesn't ride on the I-beam underneath the bin floor. To adjust, loosen the take-up bearing bolt jam nut and tighten the nut making sure to keep the two take up bearings even from side to side keeping the chain tracking evenly. Retighten jam nuts and replace cover.

2) BEARINGS

There are five take up bearings and four 4-hole flange bearings. Three take up bearings are on the floor idler shaft and two take up bearings are on the rake drive shaft. Inspect bearings monthly and grease if necessary

There are four 4-hole flange bearings. Two are on the idler shaft on the rake and two on the drive shaft of the floor. Inspect bearings monthly and grease if necessary

3) GEAR REDUCER OIL

The gear oil used in the reducer is a synthetic (Food Grade) type oil #Mobil SHC634. This reducer was filled at the factory to the proper level. Check oil level periodically. Refer to level chart attached.

CAUTION – DO NOT MIX MINERAL OIL WITH SYNTHETIC OIL. THIS WILL REDUCE THE LIFE EXPECTANCY OF THE OIL.

LUBRICATION

The bearings are lubricated at the factory. Because of use in wet conditions they should be checked or lubricated periodically.

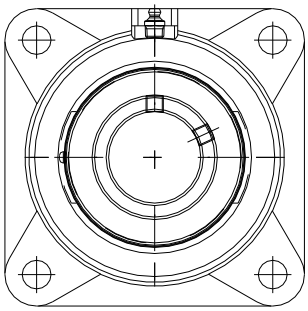
Matthiesen recommends the use of **food grade lubricants** on all necessary parts.

Flange bearing – Food grade bearing grease

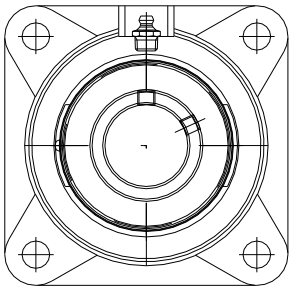
Matthiesen stocks the following Lubriplate products:
STK#
PT560 – FMO 9OO AW Food grade gear oil
RS035 – FGL – 1 Food grade grease
RS036 – FMO 350 Food grade spray

Flange bearings – Please refer to the assembly drawings for location. When establishing a maintenance schedule for lubrication, **NOTE:** A small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals.

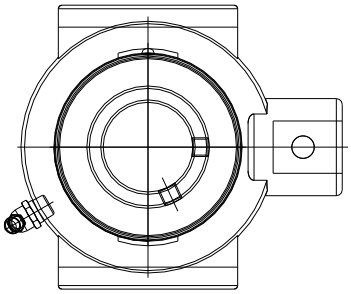
10 TON LIVE BOTTOM BIN		
BEARINGS		
QUANTITY	PART #	DESCRIPTION
1	BRG013	1 ½" NARROW SLOT TAKE-UP
2	BRG016	1 ½" 4 HOLE FLANGE
4	BRG021	1 ½" WIDE SLOT TAKE-UP
2	BRG039	2" 4 HOLE FLANGE



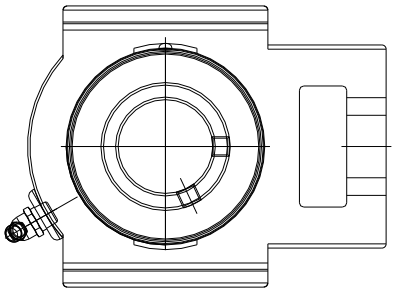
BRG 039 2" 4 HOLE FLANGE



BRG 016 1 1/2" 4 HOLE FLANGE



BRG 013 1 1/2" NARROW SLOT TAKE UP



BRG021 1 ½" WIDE SLOT TAKE UP

Matthiesen offers the following Mobil product for their gear drive motors:
STK#

10 TON LIVE BOTTOM BIN		
DRIVES		
QUANTITY	PART #	DESCRIPTION
1	MTR301	2 HP 240/460V GEARMOTOR
1	MTR302	½ HP 240/460 V GEARMOTOR
1	MTR303	2 HP 240/460 V GEARMOTOR

Gearmotors and Gear Reducers

OPERATING INSTRUCTIONS

01 805 52 US

GENERAL

These operating instructions are intended to help you install and operate the drive. For trouble free service, proper installation and operation are essential. Additionally, these instructions contain important recommendations on maintenance.

Before shipment, every SEW-Eurodrive gear unit is tested, checked and properly packed. However, please inspect the drive immediately upon arrival for shortage or transit damage. Note the damage or shortage on the freight bill of lading and file a claim with the carrier. Also, notify SEW-Eurodrive of the shortage or damage.

LUBRICANTS

All gearmotors and gear reducers are supplied with the correct grade and quantity of lubricating oil for the specified mounting position. Exceptions include reducers shipped without input assemblies. The recommended lubricants are found on page 2.

LONG TERM STORAGE

If the drive is not installed immediately, it should be stored in a dry, protected area. If the drive is to be stored for an extended period of time and was not ordered from SEW for long term storage, contact your nearest SEW assembly plant for information on Long Term Storage or request **Document #2115**.

Drives which are used for standby service should be stored as a sealed gearcase.

INSTALLATION OF COMPONENTS ON DRIVE SHAFTS

Do not hammer on the shafts. Hammering can cause brinelling of the reducer's bearings shortening the bearing life. We recommend heating the components to approximately 175°F (when possible) and sliding them on the shaft. This will reduce possible damage to the reducer's bearings. **Document #2116**.

For both standard and metric SEW shaft tolerances, refer to the SEW Catalog or request **Document #2154.**

Shaft couplings should be properly aligned to prevent vibration, coupling wear, and premature failure of the shaft bearings.

To prevent the output shaft and bearings from being subjected to excessive loads, the maximum overhung load, as shown in SEW-Eurodrive catalogs, should not be exceeded. Please consult our engineering department if the load may exceed the recommended figure given or where there are combined radial and axial loads. In such cases, the exact operating conditions must be stated including speed, direction of rotation, position, magnitude and direction of the external radial and axial loads being applied.

SHAFT MOUNTED REDUCERS

SEW-Eurodrive supplies the recommended hollowshaft mounting paste with every hollowshaft reducer. The mounting paste is to be applied on the keyed output shaft. The mounting paste is to aid in the prevention of rusting and fretting corrosion between the reducer hollowshaft and the shaft of the driven machine. The mounting paste will aid in shaft removal when necessary.

Warning! Always ensure exposed, rotating parts are properly covered to ensure safety.

For additional information on shaft mounted reducers, drive shaft configuration and tolerances, refer to the SEW-Eurodrive Catalog or request **Documents #2201 and #2202**.

INSTALLATION AND OPERATION

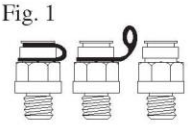
The drive installation site should be selected to ensure:

- Ambient temperatures below 40°C (104°F).
- Unimpeded flow of air to the motor and variable speed units.
- Accessibility to the drain, level and breather plugs.
- Adequate space for the removal of brakemotor fanguard for brake adjustment and maintenance.

The drive unit should be mounted on a flat, vibration damping, and torsionally rigid structure. Careful alignment is critical. Mounting to an uneven surface will cause housing distortion. The flatness tolerance of the supporting surface should not exceed:

- For gear units size 80 and smaller — 0.004 inch.
- For gear units above size 80 — 0.008 inch.

Fig. 1



For transportation, the units are supplied with the breather plug already mounted. After the unit is installed, the black rubber seal located on the breather MUST BE REMOVED (Fig. 1). In addition, the oil level should be checked. Remove the plated (non-painted) oil level plug. The oil level is correct when the surface of the oil is level with the lowest point of that tapped hole, the exception is S37. Units W10, W20 and W30 are sealed in any position.

After installation, the actual mounting position should be confirmed against the mounting postion shown on the gear reducer nameplate. Adequate lubrication is only guaranteed if the unit is mounted in the specific nameplated mounting position.

Refer to the SEW Catalog or request **Document #2111, #2112, #2113, or #2114 (R, F, K, or S, respectively)** if a specific mounting position diagram is needed.

MAINTENANCE

Warning! Always ensure equipment is secure and electrical power is off before removing or performing maintenance on the drive assembly. Oil levels and oil quality should be checked at regular intervals, determined by usage and the environment. Grease and oil should be changed per the recommendations on page 2. Check coupling alignment, chain or belt tension, and mounting bolt torque periodically. Keep the drive relatively free of dust and dirt.

For additional information, call the SEW FAXline, 1-800-601-6195, and request document number shown.

SEW EURODRIVE

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SOUTHWEST ASSEMBLY CENTER
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(214) 330-4824 Fax: (214) 330-4724

MIDWEST ASSEMBLY CENTER
2001 West Main Street, Troy, OH 45373
(937) 335-0036 Fax: (937) 332-0038

EAST COAST ASSEMBLY CENTER
200 High Hill Road, Bridgeport, NJ 08014
(856) 467-2277 Fax: (856) 330-4724

WEST COAST ASSEMBLY CENTER
30599 San Antonio Road, Hayward, CA 94544
(510) 487-3560 Fax: (510) 487-6381

ISO 9002

LUBRICANTS

	6) °C	DIN (ISO)	ISO, NLGI	Mobil®	Shell	Klüber	ARAL	BP	Tribol	Texaco	Optimol	Fuchs
R...	Standard -10 +40	CLP(CC)	VG 220	Mobilgear 630	Shell Omala 220	Klüberoil GEM 1-220	Aral Degol BG 220	BP Energol GR-XP 220	Tribol 1100/220	Meropa 220	Optigear BM 220	Renolin CLP 220
	-25 +80	CLP PG	VG 220	Mobil Glygoyle 30	Shell Tivela WB	Klübersynth GH 6-220	Aral Degol GS 220	BP Enersyn SG-XP 220	Tribol 800/220	Synlube CLP 220	Optiflex A 220	
K...(HK...)	4) -40 +80	CLP HC	VG 220	Mobil SHC 630	Shell Omala 220 HD	Klübersynth EG 4-220	Aral Degol PAS 220		Tribol 1510/220	Pinnacle EP 220	Optigear Synthetic A 220	Renolin Unisyn CLP 220
	4) -40 +40		VG 150	Mobil SHC 629		Klübersynth EG 4-150				Pinnacle EP 150		
	-20 +25	CLP (CC)	VG 150 VG 100	Mobilgear 627	Shell Omala 100	Klüberoil GEM 1-150	Aral Degol BG 100	BP Energol GR-XP 100	Tribol 1100/100	Meropa 150	Optigear BM 100	Renolin CLP 150
F...	-30 +10	HLP (HM)	VG 68-46 VG 32	Mobil D.T.E. 13M	Shell Tellus T 32	Klüberoil GEM 1-68	Aral Degol BG 46		Tribol 1100/68	Rando EP Ashless 46	Optigear 32	Renolin B 46 HVI
	4) -40 +10	CLP HC	VG 32	Mobil SHC 624		Klüber-Summit HySyn FG-32				Cetus PA O 46		
	4) -40 -20	HLP (HM)	VG 22 VG 15	Mobil D.T.E. 11M	Shell Tellus T 15	Isoflex MT 30 ROT		BP Energol HLP-HM 10		Rando HDZ 15		
S...(HS...)	Standard 0 +40	CLP (CC)	VG 680	Mobilgear 636	Shell Omala 680	Klüberoil GEM 1-680	Aral Degol BG 680	BP Energol GR-XP 680	Tribol 1100/680	Meropa 680	Optigear BM 680	Renolin CLP 680
	-20 +60	CLP PG	VG 680 1)	Mobil Glygoyle HE 680		Klübersynth GH 6-680		BP Enersyn SG-XP 680	Tribol 800/680	Synlube CLP 680		
	4) -30 +80	CLP HC	VG 460	Mobil SHC 634	Shell Omala 460 HD	Klübersynth EG 4-460				Pinnacle EP 460		
	4) -40 +10		VG 150	Mobil SHC 629		Klübersynth EG 4-150				Pinnacle EP 150		
	-20 +10	CLP (CC)	VG 150 VG 100	Mobilgear 627	Shell Omala 100	Klüberoil GEM 1-150	Aral Degol BG 100	BP Energol GR-XP 100	Tribol 1100/100	Meropa 100	Optigear BM 100	Renolin CLP 150
	-25 +20	CLP PG	VG 220 1)	Mobil Glygoyle 30		Klübersynth GH 6-220			Tribol 800/220	Synlube CLP 220	Optiflex A 220	
	4) -40 0	CLP HC	VG 32	Mobil SHC 624		Klüber-Summit HySyn FG-32				Cetus PA O 46		
R...,K...(HK...), F...,S...(HS...)	4) -30 +40	HCE	VG 460		Shell Cassida Fluid GL 460	Klüberoil 4UH1-460	Aral Eural Gear 460				Optileb GT 460	
	-20 +40	E	VG 460			Klüberbio CA2-460	Aral Degol BAB 460				Optisynt BS 460	
	Standard -20 +40	CLP PG	VG 460			Klübersynth UH1 6-460						
W...(HW...)	Standard -20 +40	SEW PG	VG 460 2)			Klüber SEW HT-460-5						
	4) -40 +10	API GL5	SAE 75W90 (~VG 100)	Mobilube SHC 75 W90-LS								
	-20 +40	CLP PG	VG 460 3)			Klübersynth UH1 6-460						
R32 R302	-25 +60	DIN 51 818 5)	00	Glygoyle Grease 00	Shell Tivela GL 00	Klübersynth GE 46-1200				Multifak 6833 EP 00		
	Standard -15 +40		000 - 0	Mobilux EP 004	Shell Alvania GL 00		Aralub MFL 00	BP Energrease LS-EP 00		Multifak EP 000	Longtime PD 00	Renolin SF 7 - 041

01 805 792 US

CLP	=	Mineral oil	1)	Helical-worm gear units with PG oil: Please contact SEW-EURODRIVE
CLP PG	=	Polyglycol (W gear units, conforms to USDA-H1	2)	Special lubricant for Spiroplan® gear units only
CLP HC	=	Synthetic hydrocarbons	3)	Recommendation: Select SEW $f_B \geq 1.2$
E	=	Ester oil (water pollution danger category WGK 1)	4)	Pay attention to critical starting behavior at low temperatures!
HCE	=	Synthetic hydrocarbons + ester oil (USDA - H1 certification)	5)	Low-viscosity grease
HLP	=	Hydraulic oil	6)	Ambient temperature
	=	Synthetic lubricant (= synthetic anti-friction bearing grease)		Lubricant for the food industry (food grade oil)
	=	Mineral lubricant (= mineral-based anti-friction bearing grease)		Biodegradable oil (lubricant for use in agriculture, forestry and water resources)

Oil levels and oil quality should be checked at frequent intervals, depending on usage. Oil changes are required at intervals of 10,000 operating hours or every two years, whichever comes first. If a synthetic oil lubricant is used, then this period can be extended to 20,000 operating hours or every four years, whichever comes first. In applications where hostile operating conditions exist, such as high humidity, corrosive environment, or large temperature changes, the lubricant should be changed at more frequent intervals.

The gear units W10, W20 and W30 are supplied with a synthetic oil which is good for the life of the reducer, independent of the mounting position.

Grease packed bearings should be cleaned and regreased every 10,000 hours or 20,000 hours for synthetic grease. Input (high speed) bearings should not be overgreased. They should be filled with grease not to exceed 1/3 of the bearing's free volume. For output bearings and bearings with replaceable grease shields, fill to 2/3 of their free volume.

ATTENTION

When the recommended lubricant is not avilable, it is permissible to use a lubricant having equivalent characteristics but we do not recommend that lubricants of different brands be mixed. Under no circumstances should synthetic lubricants be mixed with one another or with one having a mineral base.

LUBRICANTS

The approximate lubricant in US **gallons and liters** per mounting position is as follows:

Gear Unit	Mounting Positions											
	M1 [1]		M2 [1]		M3		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
RX57	0.16	0.60	0.21	0.80	0.34	1.30	0.34	1.30	0.24	0.90	0.24	0.90
RX67	0.21	0.80	0.21	0.80	0.45	1.70	0.50	1.90	0.29	1.10	0.29	1.10
RX77	0.29	1.10	0.40	1.50	0.69	2.60	0.71	2.70	0.42	1.60	0.42	1.60
RX87	0.45	1.70	0.66	2.50	1.25	4.80	1.25	4.80	0.77	2.90	0.77	2.90
RX97	0.55	2.10	0.90	3.40	1.95	7.4	1.85	7.0	1.25	4.80	1.25	4.80
RX107	1.05	3.90	1.50	5.6	3.05	11.6	3.15	11.9	2.05	7.7	2.05	7.7
RXF57	0.13	0.50	0.21	0.80	0.29	1.10	0.29	1.10	0.18	0.70	0.18	0.70
RXF67	0.18	0.70	0.21	0.80	0.40	1.50	0.37	1.40	0.26	1.00	0.26	1.00
RXF77	0.24	0.90	0.34	1.30	0.63	2.40	0.53	2.00	0.42	1.60	0.42	1.60
RXF87	0.42	1.60	0.51	1.95	1.30	4.90	1.05	3.95	0.77	2.90	0.77	2.90
RXF97	0.55	2.10	0.98	3.70	1.85	7.1	1.65	6.3	1.25	4.80	1.25	4.80
RXF107	0.82	3.10	1.50	5.7	2.95	11.2	2.45	9.3	1.90	7.2	1.90	7.2
R07	0.032	0.12	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20
R17/R17F	0.065	0.25	0.15	0.55	.090	0.35	0.15	0.55	0.09	0.35	0.11	0.40
R27/R27F	0.065 (0.11)	0.25 (0.40)	0.18	0.70	0.13	0.50	0.18	0.70	0.13	0.50	0.13	0.50
R37/R37F	0.080 (0.25)	0.30 (0.95)	0.22	0.85	0.25	0.95	0.28	1.05	0.20	0.75	0.25	0.95
R47/R47F	0.18 (0.40)	0.70 (1.50)	0.42	1.60	0.40	1.50	0.44	1.65	0.40	1.50	0.40	1.50
R57/R57F	0.21 (0.45)	0.80 (1.70)	0.50	1.90	0.45	1.70	0.55	2.10	0.45	1.70	0.45	1.70
R67/R67F	0.29 (0.61)	1.10 (2.30)	0.69 (0.92)	2.60 (3.50)	0.74	2.80	0.84	3.20	0.48	1.80	0.53	2.00
R77/R77F	0.32 (0.79)	1.20 (3.00)	1.00 (1.10)	3.80 (4.10)	0.95	3.60	1.10	4.10	0.66	2.50	0.90	3.40
R87/R87F	0.61 (1.60)	2.30 (6.0)	1.75 (2.15)	6.7 (8.2)	1.90	7.2	2.05	7.7	1.65	6.3	1.70	6.5
R97	1.20 (2.60)	4.60 (9.8)	3.10 (3.70)	11.7 (14.0)	3.10	11.7	3.55	13.4	3.00	11.3	3.10	11.7
R107	1.60 (3.60)	6.0 (13.7)	4.30	16.3	4.45	16.9	5.1	19.2	3.50	13.2	4.20	15.9
R137	2.65 (6.6)	10.0 (25.0)	7.4	28.0	7.8	29.5	8.3	31.5	6.6	25.0	6.6	25.0
R147	4.05 (10.6)	15.4 (40.0)	12.3	46.5	12.7	48.0	13.7	52.0	10.4	39.5	10.8	41.0
R167	7.1 (18.5)	27.0 (70.0)	21.6	82.0	20.6	78.0	23.2	88.0	17.4	66.0	18.2	69.0
RF07	0.032	0.12	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20	0.055	0.20
RF17	0.065	0.25	0.15	0.55	.090	0.35	0.15	0.55	0.09	0.35	0.11	0.40
RF27	0.065 (0.11)	0.25 (0.40)	0.18	0.70	0.13	0.50	0.18	0.70	0.13	0.50	0.13	0.50
RF37	0.090 (0.25)	0.35 (0.95)	0.24	0.90	0.25	0.95	0.28	1.05	0.20	0.75	0.25	0.95
RF47	0.17 (0.40)	0.65 (1.50)	0.42	1.60	0.40	1.50	0.44	1.65	0.40	1.50	0.40	1.50
RF/RM57	0.21 (0.45)	0.80 (1.70)	0.48	1.80	0.45	1.70	0.53	2.00	0.45	1.70	0.45	1.70
RF/RM67	0.32 (0.66)	1.20 (2.50)	0.71 (0.95)	2.70 (3.60)	0.71	2.70	0.69	2.60	0.50	1.90	0.55	2.10
RF/RM77	0.32 (0.69)	1.20 (2.60)	1.00 (1.10)	3.80 (4.10)	0.87	3.30	1.10	4.10	0.63	2.40	0.79	3.00
RF/RM87	0.63 (1.60)	2.40 (6.0)	1.80 (2.10)	6.8 (7.9)	1.85	7.1	1.85	7.0	1.65	6.3	1.70	6.4
RF/RM97	1.35 (2.70)	5.1 (10.2)	3.15 (3.70)	11.9 (14.0)	2.95	11.2	3.70	14.0	2.95	11.2	3.10	11.8
RF/RM107	1.65 (3.95)	6.3 (14.9)	4.20	15.9	4.50	17.0	5.1	19.2	3.45	13.1	4.20	15.9
RF/RM137	2.50 (6.6)	9.5 (25.0)	7.1	27.0	7.7	29.0	8.6	32.5	6.6	25.0	6.6	25.0
RF/RM147	4.35 (11.1)	16.4 (42.0)	12.4	47.0	12.7	48.0	13.7	52.0	11.1	42.0	11.1	42.0
RF/RM167	6.9 (18.5)	26.0 (70.0)	21.6	82.0	20.6	78.0	23.2	88.0	17.2	65.0	18.7	71.0

[1] Standard level (increased oil level) - The larger gear unit of a multi-stage unit must be filled with the larger oil volume.

For additional information on R-Series mounting positions, refer to the SEW Catalog or call the SEW FAXline, 1-800-601-6195, and request Document #2111.

LUBRICANTS

The approximate lubricant in US **gallons and liters** per mounting position is as follows:

Gear Unit	Mounting Position											
	M1		M2		M3		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
F27	0.16	0.60	0.21	0.80	0.17	0.65	0.18	0.70	0.16	0.60	0.16	0.60
F37	0.25	0.95	0.33	1.25	0.18	0.70	0.33	1.25	0.26	1.00	0.29	1.10
F47	0.40	1.50	0.48	1.80	0.29	1.10	0.50	1.90	0.40	1.50	0.45	1.70
F57	0.69	2.60	0.92	3.50	0.55	2.10	0.92	3.50	0.74	2.80	0.77	2.90
F67	0.71	2.70	1.00	3.80	0.50	1.90	1.00	3.80	0.77	2.90	0.84	3.20
F77	1.55	5.9	1.95	7.3	1.15	4.30	2.10	8.0	1.60	6.0	1.65	6.3
F87	2.85	10.8	3.45	13.0	2.05	7.7	3.65	13.8	2.85	10.8	2.90	11.0
F97	4.90	18.5	5.9	22.5	3.35	12.6	6.7	25.2	4.90	18.5	5.3	20.0
F107	6.5	24.5	8.4	32.0	5.1	19.5	9.9	37.5	7.1	27.0	7.1	27.0
F127	10.7	40.5	14.4	54.5	9.0	34.0	16.1	61.0	12.2	46.3	12.4	47.0
F157	18.2	69.0	27.5	104.0	16.6	63.0	27.7	105.0	22.7	86.0	20.6	78.0
FF27	0.16	0.60	0.21	0.80	0.17	0.65	0.18	0.70	0.16	0.60	0.16	0.60
FF37	0.26	1.00	0.33	1.25	0.18	0.70	0.34	1.30	0.26	1.00	0.29	1.10
FF47	0.42	1.60	0.49	1.85	0.29	1.10	0.50	1.90	0.40	1.50	0.45	1.70
FF57	0.74	2.80	0.92	3.50	0.55	2.10	0.98	3.70	0.77	2.90	0.79	3.00
FF67	0.71	2.70	1.00	3.80	0.50	1.90	1.00	3.80	0.77	2.90	0.84	3.20
FF77	1.55	5.9	1.95	7.3	1.15	4.30	2.15	8.1	1.60	6.0	1.65	6.3
FF87	2.85	10.8	3.50	13.2	2.05	7.8	3.70	14.1	2.90	11.0	2.95	11.2
FF97	5.00	19.0	5.9	22.5	3.35	12.6	6.8	25.6	5.00	18.9	5.4	20.5
FF107	6.7	25.5	8.4	32.0	5.1	19.5	10.2	38.5	7.3	27.5	7.4	28.0
FF127	11.0	41.5	14.7	55.5	9.0	34.0	16.6	63.0	12.2	46.3	12.9	49.0
FF157	19.0	72.0	27.7	105.0	16.9	64.0	28.0	106.0	23.0	87.0	20.9	79.0
FA/FH/FV27 FAF/FHF/FVF27 FAZ/FHZ/FVZ27	0.16	0.60	0.21	0.80	0.17	0.65	0.18	0.70	0.16	0.60	0.16	0.60
FA/FH/FV37 FAF/FHF/FVF37 FAZ/FHZ/FVZ37 FT37	0.25	0.95	0.33	1.25	0.18	0.70	0.33	1.25	0.26	1.00	0.29	1.10
FA/FH/FV47 FAF/FHF/FVF47 FAZ/FHZ/FVZ47 FT47	0.40	1.50	0.48	1.80	0.29	1.10	0.50	1.90	0.40	1.50	0.45	1.70
FA/FH/FV57 FAF/FHF/FVF57 FAZ/FHZ/FVZ57 FT57	0.71	2.70	0.92	3.50	0.55	2.10	0.90	3.40	0.77	2.90	0.79	3.00
FA/FH/FV67 FAF/FHF/FVF67 FAZ/FHZ/FVZ67 FT67	0.71	2.70	1.00	3.80	0.50	1.90	1.00	3.80	0.77	2.90	0.84	3.20
FA/FH/FV77 FAF/FHF/FVF77 FAZ/FHZ/FVZ77 FT77	1.55	5.9	1.95	7.3	1.15	4.30	2.10	8.0	1.60	6.0	1.65	6.3
FA/FH/FV87 FAF/FHF/FVF87 FAZ/FHZ/FVZ87 FT87	2.85	10.8	3.45	13.0	2.05	7.7	3.65	13.8	2.85	10.8	2.90	11.0
FA/FH/FV97 FAF/FHF/FVF97 FAZ/FHZ/FVZ97 FT97	4.90	18.5	5.9	22.5	3.35	12.6	6.7	25.2	4.90	18.5	5.3	20.0
FA/FH/FV107 FAF/FHF/FVF107 FAZ/FHZ/FVZ107	6.5	24.5	8.4	32.0	5.1	19.5	9.9	37.5	7.1	27.0	7.1	27.0
FA/FH/FV127 FAF/FHF/FVF127 FAZ/FHZ/FVZ127	10.3	39.0	14.4	54.5	9.0	34.0	16.1	61.0	11.9	45.0	12.3	46.5
FA/FH/FV157 FAF/FHF/FVF157 FAZ/FHZ/FVZ157	18.0	68.0	27.2	103.0	16.4	62.0	27.5	104.0	22.4	85.0	20.3	77.0

For additional information on F-Series mounting positions, refer to the SEW Catalog or call the SEW FAXline, 1-800-601-6195, and request Document #2112.

LUBRICANTS

The approximate lubricant in US **gallons and liters** per mounting position is as follows:

Gear Unit	Mounting Position											
	M1		M2		M3		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
K37	0.13	0.50	0.26	1.00	0.26	1.00	0.33	1.25	0.25	0.95	0.25	0.95
K47	0.21	0.80	0.34	1.30	0.40	1.50	0.53	2.00	0.42	1.60	0.42	1.60
K57	0.32	1.20	0.61	2.30	0.66	2.50	0.74	2.80	0.69	2.60	0.63	2.40
K67	0.29	1.10	0.63	2.40	0.69	2.60	0.91	3.45	0.69	2.60	0.69	2.60
K77	0.58	2.20	1.10	4.10	1.15	4.40	1.55	5.8	1.10	4.20	1.15	4.40
K87	0.98	3.70	2.10	8.0	2.30	8.7	2.90	10.9	2.10	8.0	2.10	8.0
K97	1.85	7.0	3.70	14.0	4.15	15.7	5.3	20.0	4.15	15.7	4.10	15.5
K107	2.65	10.0	5.5	21.0	6.7	25.5	8.8	33.5	6.35	24.0	6.35	24.0
K127	5.5	21.0	11.0	41.5	11.6	44.0	14.3	54.0	10.6	40.0	10.8	41.0
K157	8.2	31.0	16.4	62.0	17.2	65.0	23.8	90.0	15.3	58.0	16.4	62.0
K/KH167	8.7	33.0	25.1	95.0	27.7	105.0	32.5	123.0	22.4	85.0	22.2	84.0
K/KH187	14.0	53.0	40.1	152.0	44.1	167.0	53.0	200	37.8	143.0	37.8	143.0
KF37	0.13	0.50	0.29	1.10	0.29	1.10	0.40	1.50	0.26	1.00	0.26	1.00
KF47	0.21	0.80	0.34	1.30	0.45	1.70	0.58	2.20	0.42	1.60	0.42	1.60
KF57	0.34	1.30	0.61	2.30	0.71	2.70	0.83	3.15	0.77	2.90	0.71	2.70
KF67	0.29	1.10	0.63	2.40	0.74	2.80	0.98	3.70	0.71	2.70	0.71	2.70
KF77	0.55	2.10	1.10	4.10	1.15	4.40	1.55	5.9	1.20	4.50	1.20	4.50
KF87	0.98	3.70	2.15	8.2	2.40	9.0	3.15	11.9	2.20	8.4	2.20	8.4
KF97	1.85	7.0	3.90	14.7	4.55	17.3	5.70	21.5	4.15	15.7	4.35	16.5
KF107	2.65	10.0	5.8	21.8	6.8	25.8	9.3	35.1	6.7	25.2	6.7	25.2
KF127	5.5	21.0	11.0	41.5	12.1	46.0	14.5	55.0	10.8	41.0	10.8	41.0
KF157	8.2	31.0	17.4	66.0	18.2	69.0	24.3	92.0	16.4	62.0	16.4	62.0
KA/KH/KV37 KAF/KHF/KVF37 KAZ/KHZ/KVZ37 KT37	0.13	0.50	0.26	1.00	0.26	1.00	0.37	1.40	0.26	1.00	0.26	1.00
KA/KH/KV47 KAF/KHF/KVF47 KAZ/KHZ/KVZ47 KT47	0.21	0.80	0.34	1.30	0.42	1.60	0.57	2.15	0.42	1.60	0.42	1.60
KA/KH/KV57 KAF/KHF/KVF57 KAZ/KHZ/KVZ57 KT57	0.34	1.30	0.61	2.30	0.71	2.70	0.83	3.15	0.77	2.90	0.71	2.70
KA/KH/KV67 KAF/KHF/KVF67 KAZ/KHZ/KVZ67 KT67	0.29	1.10	0.63	2.40	0.71	2.70	0.98	3.70	0.69	2.60	0.69	2.60
KA/KH/KV77 KAF/KHF/KVF77 KAZ/KHZ/KVZ77 KT77	0.55	2.10	1.10	4.10	1.20	4.60	1.55	5.9	1.15	4.40	1.15	4.40
KA/KH/KV87 KAF/KHF/KVF87 KAZ/KHZ/KVZ87 KT87	0.98	3.70	2.15	8.2	2.30	8.8	2.95	11.1	2.10	8.0	2.10	8.0
KA/KH/KV97 KAF/KHF/KVF97 KAZ/KHZ/KVZ97 KT97	1.85	7.0	3.90	14.7	4.15	15.7	5.30	20.0	4.15	15.7	4.15	15.7
KA/KH/KV107 KAF/KHF/KVF107 KAZ/KHZ/KVZ107	2.65	10.0	5.4	20.5	6.3	24.0	8.6	32.4	6.3	24.0	6.3	24.0
KA/KH/KV127 KAF/KHF/KVF127 KAZ/KHZ/KVZ127	5.5	21.0	11.0	41.5	11.4	43.0	13.7	52.0	10.6	40.0	10.6	40.0
KA/KH/KV157 KAF/KHF/KVF157 KAZ/KHZ/KVZ157	8.2	31.0	17.4	66.0	17.7	67.0	23.0	87.0	16.4	62.0	16.4	62.0

For additional information on K-Series mounting positions, refer to the SEW Catalog or call the SEW FAXline, 1-800-601-6195, and request Document #2113.

LUBRICANTS

The approximate lubricant in US **gallons and liters** per mounting position is as follows:

Gear Unit	Mounting Position											
	M1		M2		M3 [1]		M4		M5		M6	
	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters	Gallons	Liters
S37	0.065	0.25	0.11	0.40	0.13	0.50	0.15	0.55	0.11	0.40	0.11	0.40
S47	0.090	0.35	0.21	0.80	0.18 (0.24)	0.70 (0.90)	0.26	1.00	0.21	0.80	0.21	0.80
S57	0.13	0.50	0.32	1.20	0.26 (0.32)	1.00 (1.20)	0.38	1.45	0.34	1.30	0.34	1.30
S67	0.26	1.00	0.53	2.00	0.58 (0.82)	2.20 (3.10)	0.82	3.10	0.69	2.60	0.69	2.60
S77	0.50	1.90	1.10	4.20	0.98 (1.45)	3.70 (5.4)	1.55	5.9	1.15	4.40	1.15	4.40
S87	0.87	3.30	2.15	8.1	1.80 (2.75)	6.9 (10.4)	3.00	11.3	2.20	8.4	2.20	8.4
S97	1.80	6.8	3.95	15.0	3.55 (4.75)	13.4 (18.0)	5.8	21.8	4.50	17.0	4.50	17.0
SF37	0.065	0.25	0.11	0.40	0.13	0.50	0.15	0.55	0.11	0.40	0.11	0.40
SF47	0.11	0.40	0.24	0.90	0.24 (0.28)	0.90 (1.05)	0.28	1.05	0.26	1.00	0.26	1.00
SF57	0.13	0.50	0.32	1.20	0.26 (0.40)	1.00 (1.50)	0.41	1.55	0.37	1.40	0.37	1.40
SF67	0.26	1.00	0.58	2.20	0.61 (0.79)	2.30 (3.00)	0.84	3.20	0.71	2.70	0.71	2.70
SF77	0.50	1.90	1.10	4.10	1.05 (1.55)	3.90 (5.8)	1.70	6.5	1.30	4.90	1.30	4.90
SF87	1.00	3.80	2.10	8.0	1.85 (2.65)	7.1 (10.1)	3.15	12.0	2.40	9.1	2.40	9.1
SF97	1.95	7.4	3.95	15.0	3.65 (4.95)	13.8 (18.8)	6.0	22.6	4.75	18.0	4.75	18.0
SA/SH37 SAF/SHF37 SAZ/SHZ37 ST37	0.065	0.25	0.11	0.40	0.13	0.50	0.13	0.50	0.11	0.40	0.11	0.40
SA/SH47 SAF/SHF47 SAZ/SHZ47 ST47	0.11	0.40	0.21	0.80	0.18 (0.24)	0.70 (0.90)	0.26	1.00	0.21	0.80	0.21	0.80
SA/SH57 SAF/SHF57 SAZ/SHZ57 ST57	0.13	0.50	0.29	1.10	0.26 (0.40)	1.00 (1.50)	0.40	1.50	0.32	1.20	0.32	1.20
SA/SH67 SAF/SHF67 SAZ/SHZ67 ST67	0.26	1.00	0.53	2.00	0.48 (0.69)	1.80 (2.60)	0.77	2.90	0.66	2.50	0.66	2.50
SA/SH77 SAF/SHF77 SAZ/SHZ77 ST77	0.48	1.80	1.05	3.90	0.95 (1.30)	3.60 (5.0)	1.55	5.8	1.20	4.50	1.20	4.50
SA/SH87 SAF/SHF87 SAZ/SHZ87 ST87	1.00	3.80	1.95	7.4	1.60 (2.30)	6.0 (8.7)	2.85	10.8	2.10	8.0	2.10	8.0
SA/SH97 SAF/SHF97 SAZ/SHZ97 ST97	1.85	7.0	3.70	14.0	3.00 (4.20)	11.4 (16.0)	5.4	20.5	4.15	15.7	4.15	15.7

[1] Standard level (increased oil level) - The larger gear unit of a multi-stage unit must be filled with the larger oil volume.

The approximate lubricant in US **gallons and liters** for **ALL** mounting positions for the W-Series is as follows

Gear Unit	Gallons	Liters
W/WF/WA/WAF10	0.042	0.116
W/WF/WA/WAF20	0.065	0.24
W/WF/WA/WAF30	0.11	0.40

Note: The Spiroplan® series gear units are mounting position indepedent of oil filling.

For additional information on S-Series mounting positions, refer to the SEW Catalog or call the SEW FAXline, 1-800-601-6195, and request Document #2114.

MATTHIESEN EQUIPMENT

CLEANING AND SANITIZING INSTRUCTIONS

Equipment: The Matthiesen Live Bottom Bin

- **Materials Required**
  - Water hose with spray nozzle attached to potable water source.
  - Pressurized detergent spray unit with application hose and spray nozzle.
  - Portable, hand operated pressure sprayer (2-3 gallon size).
  - Auxiliary equipment: Brooms and brushes, sponges, wipes, plastics sheets to cover sensitive equipment.
  - Personnel/supplies – plastic or rubber gloves, boots, head cover, aprons/coveralls, eye safety glasses.
  - Moderately alkaline detergent (Mix per vendor instructions) (Must be safe to use on galvanized or aluminum surfaces)
  - Sanitizer: Quaternary ammonium (Mix per vendor instructions)
- **Special Instructions**
  - Avoid eye and skin contact with chemicals
  - Maintain adequate ventilation.
- **Recommended Frequency of Cleaning**
  - Semi-annual or more often when indicated by inspection.
- **Procedure**
  1. Shut down and lock out unit (electrical).
  2. Remove ice and drain.
  3. Loosen the rake chains/bars and rinse inside walls, floor, rake mechanism, and when included, the top cover with potable water.
  4. Spray the detergent solution on all pre-rinsed surfaces with detailed brushing, as required, until free of debris.
  5. Rinse free of detergent with warm water (< 130°F) and inspect for cleanliness. Repeat cleaning if required.
  6. Spray sanitizer (quaternary ammonium) at 200 ppm and allow to dry.
  7. Lock in and restart unit. Reduce temperature to below freeing before adding ice.

W13005

ELECTRICAL SCHEMATICS

ifm electronic

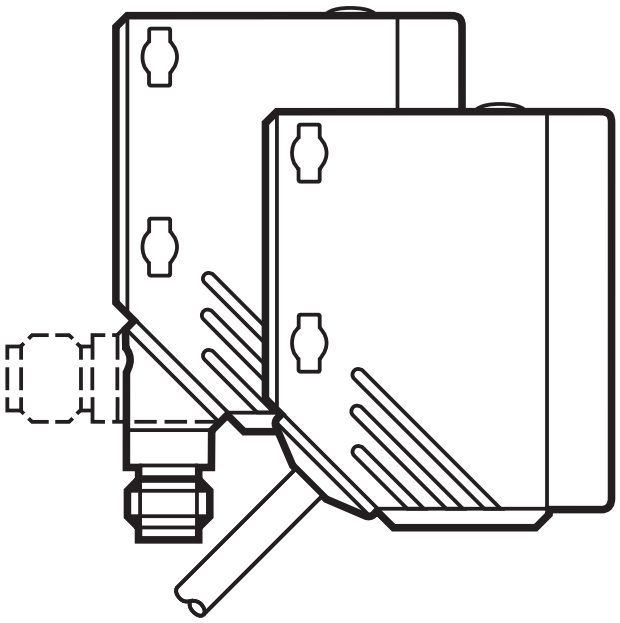
CE

Operating instructions
Through-beam sensor

efector200

O5E5xx / O5S5xx

UK



701999 / 02 02 / 2010

1 Preliminary note

1.1 Symbols used

▶ Instruction

> Reaction, result

[…] Designation of pushbuttons, buttons or indications

→ Cross-reference

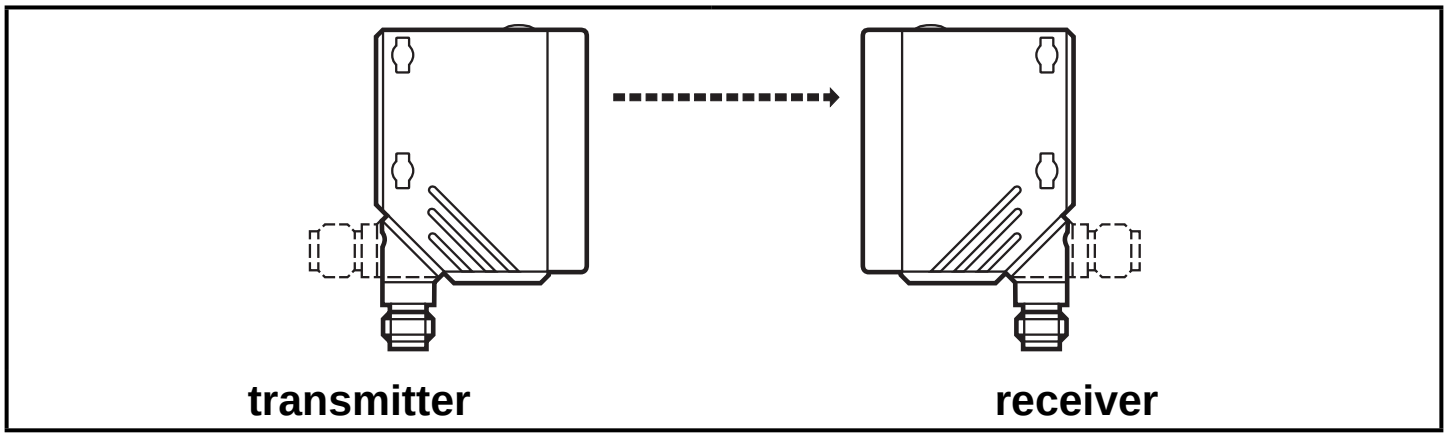
Important note
Non-compliance can result in malfunctions or interference.

2 Functions and features

The through-beam sensor detects objects and materials without contact and indicates their presence by a switching signal.

Range: → type label.

3 Installation

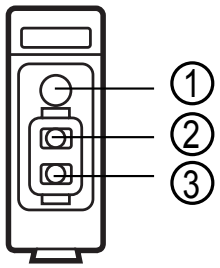


▶ Install the receiver (O5E...) and secure it to a bracket.

▶ Align the transmitter (O5S...) to the receiver and fix it.

Maximum range only with accurate alignment.

4 Operating and display elements



receiver

1: LED yellow
2: [OUT on] button
3: [OUT off] button

5 Electrical connection

UK

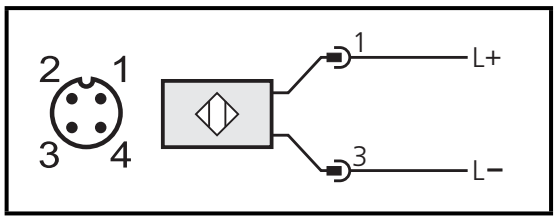
The unit must be connected by a qualified electrician.

- ▶ The national and international regulations for the installation of electrical equipment must be adhered to.
- ▶ Ensure voltage supply to EN 50178.

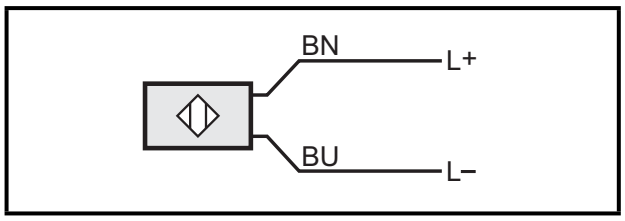
▶ Disconnect power.

▶ Connect the unit as follows:

Transmitter connector

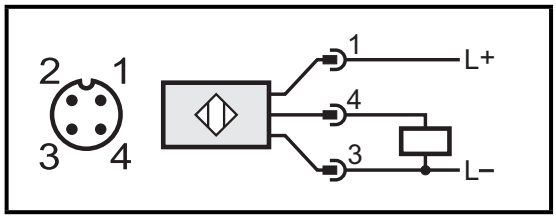


Transmitter cable *

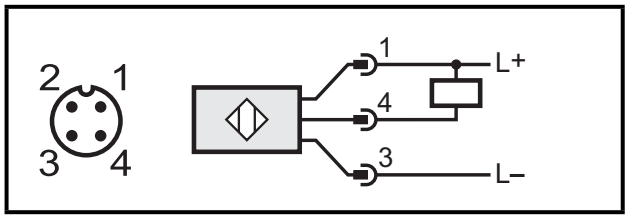


Receiver connector

PNP

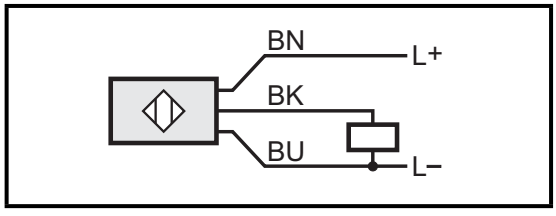


NPN

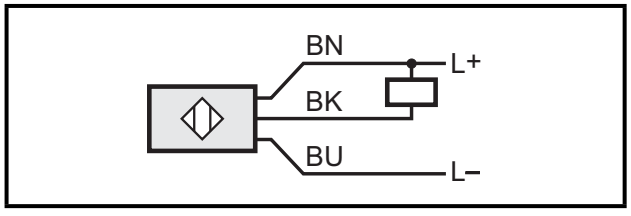


Receiver cable *

PNP



NPN



* Core colours: BN = brown, BU = blue, BK = black

6 Settings

6.1 Sensitivity setting

The sensor is to switch when the object is detected

1	▶ Position the object.  receiver transmitter ▶ Press [OUT on] for 2 s. > The sensitivity is set to the object. The yellow LED flashes.
2	▶ Remove the object.  receiver transmitter ▶ Press [OUT off]. > The sensitivity is set without object. > The yellow LED goes out. The setting operation is completed.

The sensor is not to switch when the object is detected

▶ Position the object (see figure 1) and press [OUT off].

▶ Remove the object (see figure 2) and press [OUT on].

You can carry out the setting first without object (step 1) and then with object (step 2).

6.2 Setting of maximum sensitivity

▶ Interrupt the light beam.

The sensor is to switch when the object is detected.

▶ First press [OUT on], then [OUT off].

The sensor is to switch when the object is not detected

▶ First press [OUT off], then [OUT on].

6.3 Setting unsuccessful

> The LED flashes quickly, 8 Hz.

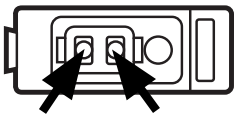
> The sensor returns to the normal operating mode with unchanged values.

Possible causes

- Insufficient difference in measurements
- Max. programming time of 15 min. exceeded

6.4 Electronic lock

The unit can be locked electronically to prevent unauthorised setting. On delivery the unit is not locked.

▶ Press [OUT on] and [OUT off] simultaneously for 10 s. > Acknowledgement is indicated by a change of the LED status. ▶ To unlock repeat this step.	 receiver

7 Operation

▶ Check whether the unit operates correctly.

> The green LED (transmitter) is lit when the sensor is ready for operation.

> The output is switched when the object is present. The yellow LED (receiver) is lit.

8 Maintenance, repair, disposal

▶ Keep the lens of the sensor free from soiling.

▶ For cleaning do not use any solvents or cleaning agents which could damage the plastic parts.

▶ After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.

Faulty sensors must only be repaired by the manufacturer.

Technical data and further information at

www.ifm.com → Select your country → Data sheet direct:

ifm electronic

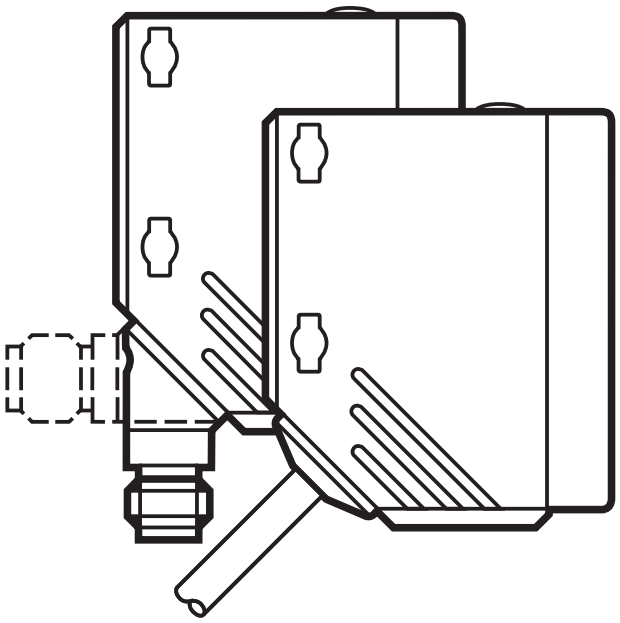
CE

Operating instructions
Through-beam sensor

efector200

O5E5xx / O5S5xx

UK



701999 / 02 02 / 2010

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2 Functions and features

The through-beam sensor detects objects and materials without contact and indicates their presence by a switching signal.

Range: → type label.

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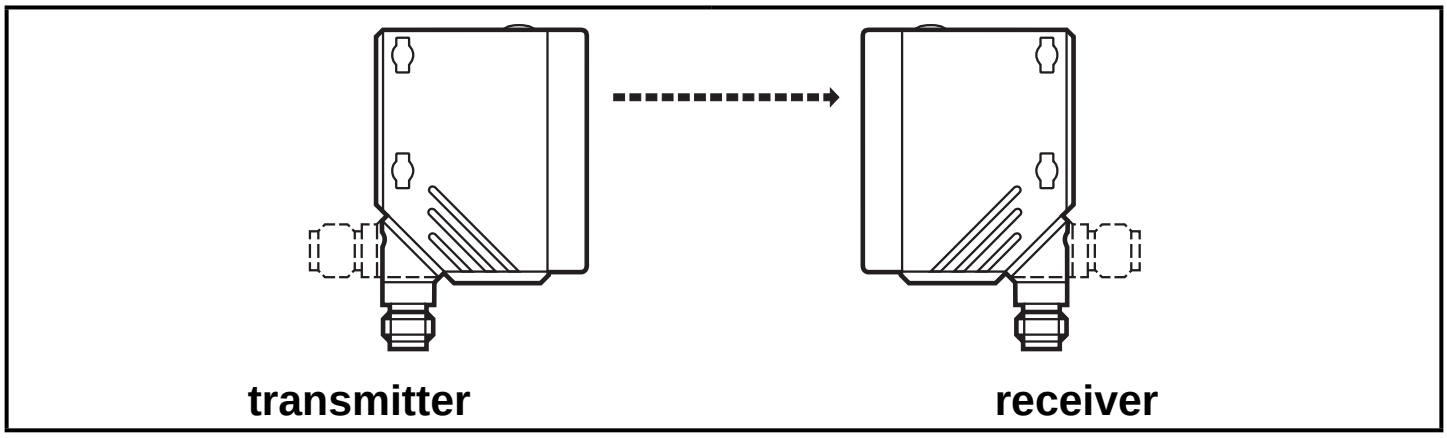

▶ Install the receiver (O5E...) and secure it to a bracket.

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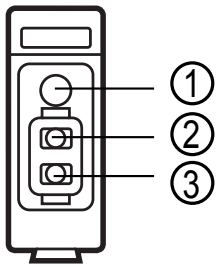
Maximum range only with accurate alignment.

4 Operating and display elements



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▶ Disconnect power.

▶ Connect the unit as follows:

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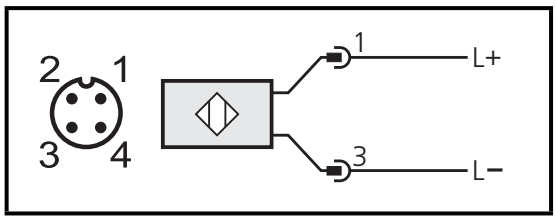
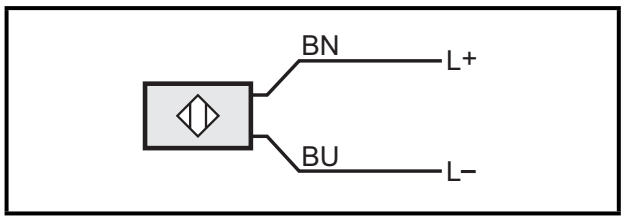
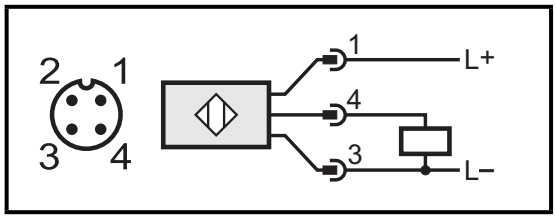


Transmitter cable *

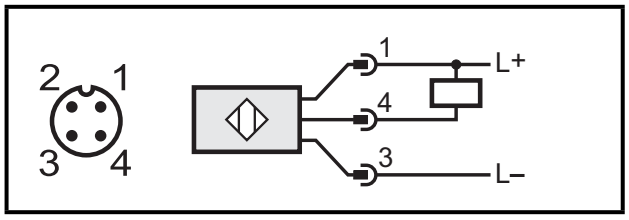


Receiver connector

PNP



NPN



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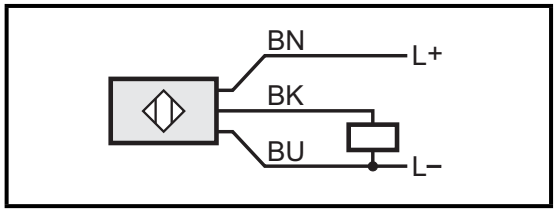
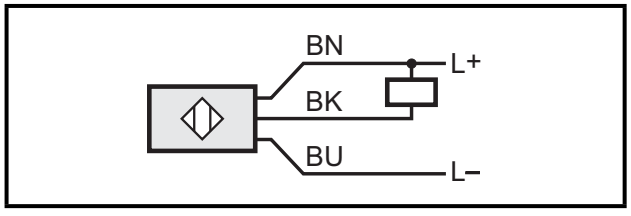
PNP



NPN



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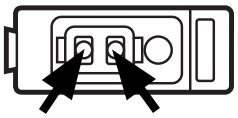
▶ Press [OUT on] and [OUT off] simultaneously for 10 s. > Acknowledgement is indicated by a change of the LED status. ▶ To unlock repeat this step.	 receiver

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▶ Check whether the unit operates correctly.

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▶ Keep the lens of the sensor free from soiling.

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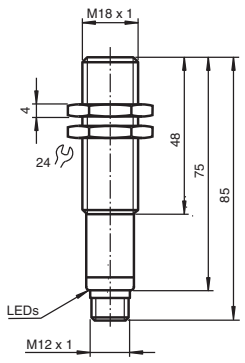
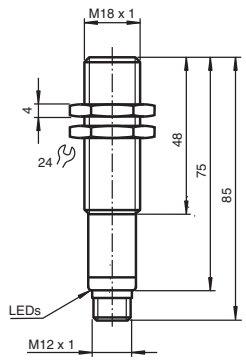
Technical data and further information at

www.ifm.com → Select your country → Data sheet direct:

Abmessungen



Dimensions



Ultraschallsensor
Ultrasonic sensor

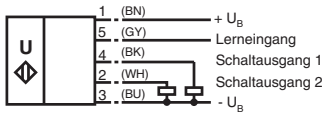
UB500-18GM75-E23-V15

Doc. No.: 45-00037C DIN A3 -> DIN
Part. No.: 130227 Date: 10/28/2010

PEPPERL+FUCHS
SENSING YOUR NEEDS

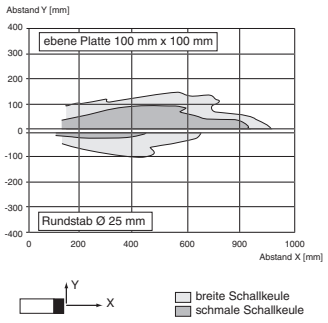
Elektrischer Anschluss/Kurven/Zusätzliche Informationen

Normsymbol/Anschluss:
(Version E23, pnp)

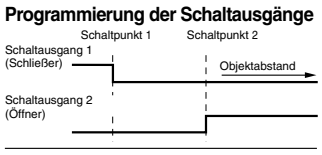


Adernfarben gemäß EN 60947-5-2.

Charakteristische Ansprechkurve



Programmierung der Schaltausgänge

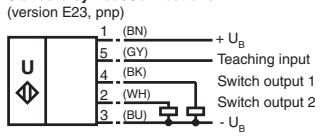


Schaltpunkt 1 -> ∞: Schaltausgang 1, (Schließer) Detektion auf Objektanwesenheit
Schaltpunkt 2 -> ∞: Schaltausgang 2, (Öffner) Detektion auf Objektanwesenheit

Steckverbinder V15

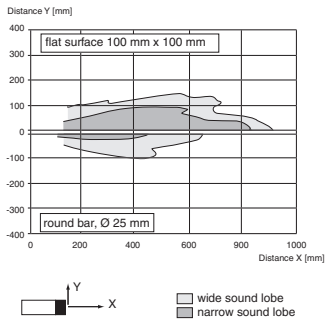
Electrical Connection / Curves / Additional Information

Standard symbol/Connections:
(version E23, pnp)

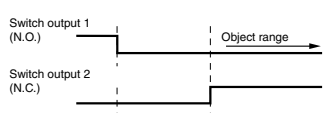


Core colours in accordance with EN 60947-5-2.

Characteristic response curve



Programmed switching output function



Switch point 1 -> ∞: Switch output 1, (N.O.) Detection of object presence
Switch point 2 -> ∞: Switch output 2, (N.C.) Detection of object presence

Connector V15

Technische Daten

Allgemeine Daten		
Erfassungsbereich		30 ... 500 mm
Einstellbereich		50 ... 500 mm
Blindzone		0 ... 30 mm
Normmessplatte		100 mm x 100 mm
Wandlerfrequenz		ca. 380 kHz
Ansprechverzug		ca. 50 ms
Anzeigen/Bedienelemente		
LED gelb		Schaltzustandsanzeige blinkend: Lernfunktion Objekt erkannt
LED rot		"Störung", Objekt unsicher in Lernfunktion: kein Objekt erkannt
Elektrische Daten		
Betriebsspannung	U_B	10 ... 30 V DC , Welligkeit 10 %$_{SS}$
Leerlaufstrom	I_0	≤ 50 mA
Eingang		
Eingangstyp		1 Lerneingang Schaltabstand 1: -U_B ... +1 V, Schaltabstand 2: +4 V ... +U_B Eingangsimpedanz: > 4,7 kΩ Lernimpuls: ≥ 1 s
Ausgang		
Ausgangstyp		2 Schaltausgänge pnp, Schließer/Öffner, parametrierbar
Bemessungsbetriebsstrom	I_e	2 x 100 mA , kurzschluss-/überlastfest
Spannungsfall	U_d	≤ 3 V
Reproduzierbarkeit		≤ 1 %
Schaltfrequenz	f	max. 8 Hz
Abstandshysterese	H	1 % des eingestellten Schaltabstandes
Temperatureinfluss		± 1,5 % vom Endwert
Umgebungsbedingungen		
Umgebungstemperatur		-25 ... 70 °C (-13 ... 158 °F)
Lagertemperatur		-40 ... 85 °C (-40 ... 185 °F)
Mechanische Daten		
Anschlussart		Gerätestecker M12 x 1 , 5-polig
Schutzart		IP65
Material		
Gehäuse		Messing, vernickelt
Wandler		Epoxidharz/Glashohlkugelgemisch; Schaum Polyurethan, Deckel PBT
Masse		60 g
Normen- und Richtlinienkonformität		
Normenkonformität		
Normen		EN 60947-5-2:2007 IEC 60947-5-2:2007

Technical data

General specifications		
Sensing range		30 ... 500 mm
Adjustment range		50 ... 500 mm
Unusable area		0 ... 30 mm
Standard target plate		100 mm x 100 mm
Transducer frequency		approx. 380 kHz
Response delay		approx. 50 ms
Indicators/operating means		
LED yellow		indication of the switching state flashing: program function object detected
LED red		"Error", object uncertain in program function: No object detected
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC , ripple 10 %$_{SS}$
No-load supply current	I_0	≤ 50 mA
Input		
Input type		1 program input, operating range 1: -U_B ... +1 V, operating range 2: +4 V ... +U_B input impedance: > 4.7 kΩ; program pulse: ≥ 1 s
Output		
Output type		2 switch outputs PNP, NO/NC, programmable
Rated operational current	I_e	2 x 100 mA , short-circuit/overload protected
Voltage drop	U_d	≤ 3 V
Repeat accuracy		≤ 1 %
Switching frequency	f	max. 8 Hz
Range hysteresis	H	1 % of the set operating distance
Temperature influence		± 1.5 % of full-scale value
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		Device connector M12 x 1 , 5-pin
Protection degree		IP65
Material		
Housing		brass, nickel-plated
Transducer		epoxy resin/hollow glass sphere mixture; foam polyurethane, cover PBT
Mass		60 g
Compliance with standards and directives		
Standard conformity		
Standards		EN 60947-5-2:2007 IEC 60947-5-2:2007

Einstellen der Schaltpunkte
Der Ultraschallsensor verfügt über zwei Schaltausgänge mit je einem einlernbaren Schaltpunkt. Die Schaltpunkte werden durch Anlegen der Versorgungsspannung $-U_B$ bzw. $+U_B$ an den Lerneingang eingelernt. Die Versorgungsspannung sollte mindestens 1 s am Lerneingang anliegen. Während des Einlernvorgangs wird mit den LEDs angezeigt, ob der Sensor das Target erkannt hat. Mit $-U_B$ wird der Schaltpunkt von Schaltausgang 1 und mit $+U_B$ der Schaltpunkt von Schaltausgang 2 eingelernt.

Ein Einlernen der Schaltpunkte ist nur unmittelbar nach dem Zuschalten der Spannungsversorgung möglich. Ein Zeitschloss sichert 5 Minuten nach dem Einschalten die eingestellten Werte gegen ungewolltes Verändern. Sollen die Schaltpunkte zu einem späteren Zeitpunkt verändert werden, so ist dies erst nach einem erneuten Power On möglich.

Einlernen Schaltpunkt für Schaltausgang 1
- Target auf gewünschten Schaltpunkt für Schaltausgang 1 stellen
- Schaltpunkt für Schaltausgang 1 mit $-U_B$ einlernen

Einlernen Schaltpunkt für Schaltausgang 2
- Target auf gewünschten Schaltpunkt für Schaltausgang 2 stellen
- Schaltpunkt für Schaltausgang 2 mit $+U_B$ einlernen

Einlernen Detektion auf Objektanwesenheit
- Sensor mit der Handfläche abdecken oder alle Objekte aus dem Erfassungsbereich des Sensors entfernen
- Schaltpunkt für Schaltausgang 1 mit $-U_B$ einlernen
- Schaltpunkt für Schaltausgang 2 mit $+U_B$ einlernen

Bemerkung
Es kann auch nur ein Schaltausgang für die Detektion auf Objektanwesenheit konfiguriert werden. In dieser Konfiguration schaltet der Schaltausgang, wenn vom Sensor innerhalb des maximalen Erfassungsbereichs ein Objekt erkannt wird.

Voreinstellung der Schaltpunkte
Schaltausgang 1: Nahbereich
Schaltausgang 2: Nennabstand

LED-Anzeige

Anzeigen in Abhängigkeit des Betriebszustandes	LED rot	LED 1 gelb	LED 2 gelb
Schaltpunkt 1 einlernen			
Objekt erkannt	aus	blinkt	aus
kein Objekt erkannt	blinkt	aus	aus
Objekt unsicher (Einlernen ungültig)	ein	aus	aus
Schaltpunkt 2 einlernen:			
Objekt erkannt	aus	aus	blinkt
kein Objekt erkannt	blinkt	aus	aus
Objekt unsicher (Einlernen ungültig)	ein	aus	aus
Normalbetrieb	aus	Schaltzustand 1	Schaltzustand 2
Störung	ein	letzter Zustand	letzter Zustand

Einstellen der Ultraschallkeulen-Charakteristik:

Der Ultraschall-Sensor bietet 2 verschiedene Schallkeulenformen.

1. Schmale Ultraschallkeule
- Spannungsversorgung abschalten
- Teach-Eingang mit $-U_B$ verbinden
- Spannungsversorgung zuschalten
- die rote LED blinkt einfach, gefolgt von einer Pause
- gelbe LED: permanent ein: signalisiert Objekt/Störobjekt im Erfassungsbereich vorhanden
- Teach-Eingang von $-U_B$ trennen

2. Breite Ultraschallkeule
- Spannungsversorgung abschalten
- Teach-Eingang mit $+U_B$ verbinden
- Spannungsversorgung zuschalten
- die rote LED blinkt doppelt, gefolgt von einer Pause
- gelbe LED: permanent ein: signalisiert Objekt/Störobjekt im Erfassungsbereich vorhanden
- Teach-Eingang von $+U_B$ trennen

Einbaubedingungen
Bei einem Einbau des Sensors an Orten, an denen die Betriebstemperatur unter 0 °C sinken kann, müssen zur Montage die Befestigungsflansche BF18, BF18-F oder BF 5-30 verwendet werden.
Soll der Sensor direkt in einer Durchgangsbohrung montiert werden, so ist unter Verwendung der beiliegenden Stahlmuttern die Befestigung in der Mitte der Sensorhülse vorzunehmen. Für eine Verschraubung im vorderen Bereich der Gewindehülse sind die als Zubehör erhältlichen Kunststoffmuttern mit Zentrierring zu verwenden.

Adjusting the switching points
The ultrasonic sensor features two switch outputs with one teachable switching point. The switching points are set by applying the supply voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s. LEDs indicate whether the sensor has recognised the target during the TEACH-IN procedure. Switching point A1 is taught with $-U_B$, A2 with $+U_B$.

Switching points may only be specified directly after Power on. A time lock secures the adjusted switching points against unintended modification 5 minutes after Power on. To modify the switching points later, the user may specify the desired values only after a new Power On.

TEACH-IN switching point for switch output 1
- Set target of desired switching point for switch output 1
- TEACH-IN switching point for switch output 1 with $-U_B$

TEACH-IN switching point for switch output 2
- Set target of desired switching point for switch output 2
- TEACH-IN switching point for switch output 2 with $+U_B$

TEACH-IN detection of object presence
- Cover the sensor with your hand, or remove all objects from the sensing range
- TEACH-IN switching point for switch output 1 with $-U_B$
- TEACH-IN switching point for switch output 2 with $+U_B$

Comments
Only one switch output can be configured for detection of presence of objects. If the sensor detects an objects within the maximum detection range, the switch output switches.

Default setting of switching points
Switch output 1: unusable area
Switch output 2: nominal sensing range

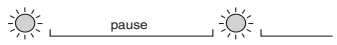
LED Displays

Displays in dependence on operating mode	Red LED	LED 1 yellow	LED 2 yellow
TEACH-IN switching point 1			
Object detected	off	flashes	off
No object detected	flashes	off	off
Object uncertain (TEACH-IN invalid)	on	off	off
TEACH-IN switching point 2:			
Object detected	off	off	flashes
No object detected	flashes	off	off
Object uncertain (TEACH-IN invalid)	on	off	off
Normal operation	off	switch state 1	switch state 2
Fault	on	previous state	previous state

Adjusting the sound cone characteristics:

The ultrasonic sensor enables two different shapes of the sound cone, a wide angle sound cone and a small angle sound cone.

1. Small angle sound cone
- switch off the power supply
- connect the Teach-input wire to $-U_B$
- switch on the power supply
- the red LED flashes once with a pause before the next.
- yellow LED: permanently on: indicates the presence of an object or disturbing object within the sensing range
- disconnect the Teach-input wire from $-U_B$ and the changing is saved



2. Wide angle sound cone
- switch off the power supply
- connect the Teach-input wire with $+U_B$
- switch on the power supply
- the red LED double-flashes with a long pause before the next.
- yellow LED: permanently on: indicates an object or disturbing object within the sensing range
- disconnect the Teach-input wire from $+U_B$ and the changing is saved

Installation conditions
If the sensor is installed at places, where the environment temperature can fall below 0 °C, for the sensors fixation, one of the mounting flanges BF18, BF18-F or BF 5-30 must be used.
In case of direct mounting of the sensor in a through hole using the steel nuts, it has to be fixed at the middle of the housing thread. If a fixation at the front end of the threaded housing is required, plastic nuts with centering ring (accessories) must be used.

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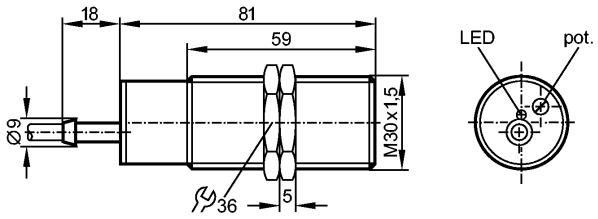
efectorISO

KI5209

KI-3015-FPKG/NI/0.10M/PH/US100

Capacitive sensors



Made in USA

Product characteristics		
Capacitive sensor		
Plastic thread M30 x 1.5		
Cable with connector		
Sensing range 15 mm; adjustable 3...15 mm; [nf] non-flush mountable		
Electrical data		
Electrical design		DC PNP
Operating voltage	[V]	10...36 DC
Current consumption	[mA]	< 15
Protection class		II
Reverse polarity protection		yes
Outputs		
Output function		normally open / closed programmable
Voltage drop	[V]	< 2.5
Current rating		
- Current rating (continuous)	[mA]	250
- Current rating (peak)	[mA]	250
Short-circuit protection		Yes (non-latching)
Overload protection		yes
Switching frequency	[Hz]	40
Monitoring range		
Sensing range	[mm]	15, adjustable 3...15 mm
Real sensing range (Sr)	[mm]	15 ± 10 %
Operating distance	[mm]	0...12.1
Accuracy / deviations		
Correction factors		water = 1 / glass approx. 0.4 / ceramics approx. 0.2 / PVC approx. 0.2
Hysteresis	[% of Sr]	1...15
Switch-point drift	[% of Sr]	-15...15
Environment		
Ambient temperature	[°C]	-25...80
Protection		IP 65
Tests / approvals		
MTTF	[Years]	692
Mechanical data		
Mounting		non-flush mountable
Housing materials		PBT
Weight	[kg]	0.11
Displays / operating elements		

KI5209

KI-3015-FPKG/NI/0.10M/PH/US100

Output status indication	LED	red

Electrical connection

Connection	PUR cable / 0.1 m; with M12 connector

Wiring

Accessories

Accessories (included)	2 lock nuts; screwdriver

Remarks

Pack quantity	[piece]	1

ASSEMBLY INDEX

FOR SAFETY AND PROPER OPERATION!

BIN MUST BE ASSEMBLED AND ERECTED SQUARE AND LEVEL. IT IS THE RESPONSIBILITY OF THE PURCHASER, TO INSURE ALL SUPPORT AND MOUNTING SURFACES ARE LEVEL AND ALIGNMENT OF COMPONENTS ARE ACCURATE.

LIVE BOTTOM BIN ASSEMBLY

1) Floor Structure Assembly:
Place I beam support (bin600, bin601, and bin602) in order as marked: right, left, and center. Place 5" perlin (iron572) on tabs aligning hole and bolt with 3/8 x 1 hex bolts. Place z cap (pt100) on 5" perlin (iron572) and bolt with 1/4x3/4 flat head bolts. Place uhmw floor sheets (pt733) marked: right and left on top of perlin. Place uhmw 2" strip on uhmw floor sheets centered on seam. Attach with 3/8X1 ½ button head cap screw and nylon lock nut, typical at each perlin location. I beam and perlin shall be square prior to installation of uhmw floor. Insure all fasteners have been tightened.

2) I Beam Leg Assembly
Lift floor structure high enough to place all six (6) I beam legs in place. (There is not a bottom or top to leg structure) Fasten leg structure to floor I beam with 5/8 x 1 ½ hex bolts. Place cross brace (2x2 angles) on each side of leg. Fasten angle cross brace with 3/8 x 1 ¼ hex bolts. Insure I beam leg and floor structure is square and level.

3) Wall Perlin Assembly
Place 4" x 96" wall perlin (iron571) referenced mark. (Ex. A to A, B to B, etc.) Attach with 3/8 x 1 hex bolts. Apply protection to uhmw floor (cardboard, paper, etc.) Prior to installation of wall perlin (iron571)

4) UHMW Wall Sheet Assembly
Place left bottom wall sheet on left side of bin. Attach zee clip (pt107) on top of bottom wall sheet. Place top left uhmw wall sheet on zee clip (pt107). Bolt assembly to 4" wall perlin (iron571) with 3/8 x1 flat head bolt and nylon lock nuts. Repeat instructions for the right side. Insure wall studs are square and level prior to installation of wall sheet. Insure uhmw floor is protected prior to access.

5) UHMW Back wall Sheet Assembly
Attach marked bottom uhmw back wall sheet against left and right wall perlin and align holes. Place marked back wall perlin (iron573) horizontal and bolt to both left and right wall perlin. Use 3/8 x 1 ¼ hex bolts and nylon lock nuts for attachment of uhmw and back wall perlin to left and right perlin. Use 3/8 X 1 button head bolts and lock nuts for attachment of uhmw to back wall perlin. Confirm uhmw back wall sheet is cut square to inure proper alignment during installation. Uhmw sheets (walls and floor) shall be free of dirt, oil, scuff marks, etc. prior to step 6

6) Front Drive Wall Assembly
Position and support left side drive/vertical rake structure (bin2004/bin2005) to left floor beam end plate (bin601). Use ½ x 3 ½ hex bolts and tighten. With left structure in place bolt top and bottom uhmw sheet wall to drive structure using 3/8 x 1 button head cap bolts. Repeat procedure for right side. Insert top rake shaft with sprockets from either side of structure. Insert bottom idler rake shaft and sprockets through bottom bearing plate and align. Do not tighten setscrews on sprocket or bearings until steps 9 and 11 have been completed. Left and right vertical rake structure shall be square with bin structure to insure proper alignment of components.

7) Floor Drive and Idler Shafts Assembly
Insert front floor shaft idler with sprockets form either side of structure. Insert back floor shaft idler with sprockets from either side of structure. Once sprocket alignment is confirmed, tighten setscrews of bearings and sprockets with keyways in place.

8) Vertical Chain Wall Assembly
Position and support vertical chain wall (bin2009). Use 3/8 x 3 ½ hex bolts and tighten. With vertical chain wall (bin2009) in place, attach nylon bearing (brg013); keep loose for adjustment on chain.

9) Floor Chain Assembly
Thread floor chain one side at a time with angle leg out toward back of bin. Attach the master link. Repeat for the right side. Adjust take-up bearing on floor idler shaft. Adjust slack in chain so the chain floor sweeper angle is not dragging the bottom of floor I beam under bin. Assure the idler shaft is even so chain will track evenly. Sprockets shall be aligned with chain and floor. Upon completion of alignment tighten set screws with keyways in place.

10) Top Rail Channel Attachment
Attach marked left rail (iron343lt) on top of perlin and over uhmw wall sheets aligning holes. Fasten with 3/8 x 1 hex bolt and nylon lock nuts. Repeat for right rail (iron 343rt).

11) Rake Chain Assembly
Thread rake chain assembly. Attach the master link. Adjust take-up bearing on idler shaft of rake, until all excess slack has been removed. Assure the idler shaft is even so chain will track evenly. Adjust center uhmw bearing with the 1" diameter take up bolt. Align sprocket with the rake chain. After completion of alignment tighten set screws with the keyways in place.

12) Discharge Screw Conveyor
Raise main trough (conv089) under take and floor drive structure, mount through 2 ½" tube of the drive support structure frame. Attach with ½ x 3 hex bolts and nuts. Discharge can be changed to either side by rotating trough, re-drilling and mounting rubber swipe on opposite side transferring measurements directly across.

13) Trough Shield Panel Attachment
Insert auger (iron201) into trough. Align shaft of auger with hole on end plates. Attach bearing (brg021) to left side. Attach with 3/8 x 1 hex bolt (both ends). Attach motor (mtr303) Slide trough shield panel between upper right rake support structure to the u-trough. Attach with 3/8 x 1 hex bolt through u-trough and diagonal angle welded to support structure. Auger shall be inspected and adjusted for straightness prior to installation.

14) Vertical Rake Cover Installation
Attach bottom vertical rake panel (iron098). Use 3/8 x ¾ hex bolts, washer and nut. Attach to rake support structure through tapped holes. Repeat steps for mid and top vertical rake panel. Rake wall covers shall be protected while drilling. (Eliminate drill chuck scarring)

15) Motor Attachment
Attach mtr444 onto floor shaft drive. Attach mtr302 onto mtr444. Attach spr129 onto rake shaft drive. Attach mtr301 onto bracket. Attach spr130 onto motor shaft. Align spr129 and spr130 (adjust as required). Attach vb131. Attach vb134. Insure proper alignment of drive mount plates. Lubricate top of rake chain coupler prior to installation of cover. All tension shall be released from coupler.

16) Floor Idler Cover Attachment
Attach marked cover to bottom perlin. Attach hinges using #14 sheet metal screws to holes in bottom perlin.

17) Control Box
Mount control box on wall perlin. Take each end of marked electrical conduit and connect to correct motor. Attach to motor diagram inside electrical conduit box on motor. **Leave conduit box uncovered until rotation is verified.**

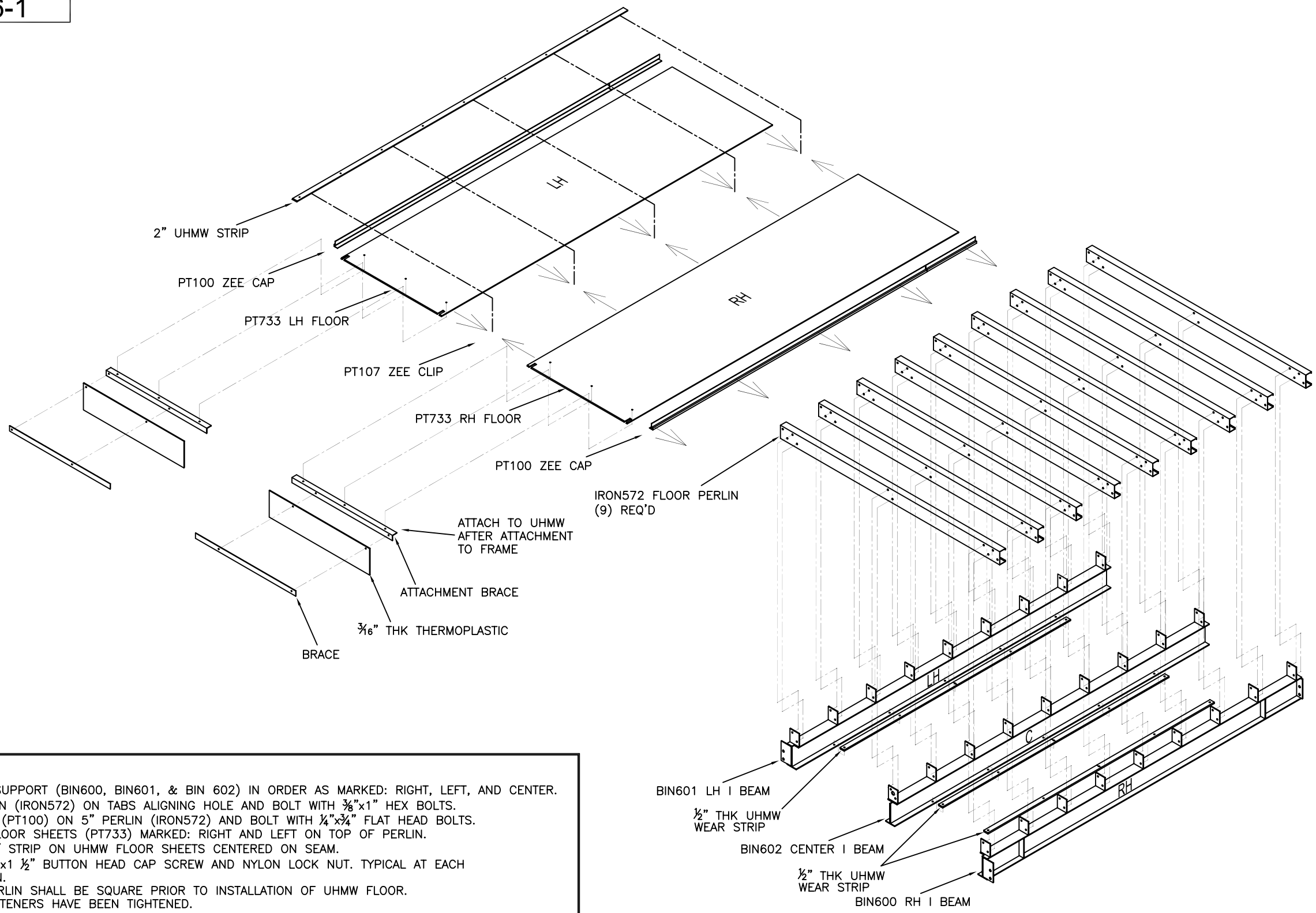
LOCK OUT ALL POWER SOURCES PRIOR TO CHANGING ROTATION OF MOTOR DIRECTION!

ALL PERSONEL SHOULD REMAIN CLEAR OF ALL MOVING PARTS!

18) Rotating Check On control panel selector check floor in manual mode forward direction. If running in reverse, change lead in motor electrical conduit box and close. Check rake in manual mode forward direction. Rake chain should run up in a CW direction when looking inside bin. If not, change leads inside conduit box and close. Check screw to run CCW. If not, change in conduit box and close.

ASSEMBLY DRAWINGS

IN011006-1



NOTES:

1. PLACE I BEAM SUPPORT (BIN600, BIN601, & BIN 602) IN ORDER AS MARKED: RIGHT, LEFT, AND CENTER.
2. PLACE 5" PERLIN (IRON572) ON TABS ALIGNING HOLE AND BOLT WITH ⅜"x1" HEX BOLTS.
3. PLACE "Z" CAP (PT100) ON 5" PERLIN (IRON572) AND BOLT WITH ¼"x¾" FLAT HEAD BOLTS.
4. PLACE UHMW FLOOR SHEETS (PT733) MARKED: RIGHT AND LEFT ON TOP OF PERLIN.
5. PLACE UHMW 2" STRIP ON UHMW FLOOR SHEETS CENTERED ON SEAM.
6. ATTACH WITH ⅜"x1 ½" BUTTON HEAD CAP SCREW AND NYLON LOCK NUT. TYPICAL AT EACH PERLIN LOCATION.
7. I BEAM AND PERLIN SHALL BE SQUARE PRIOR TO INSTALLATION OF UHMW FLOOR.
8. INSURE ALL FASTENERS HAVE BEEN TIGHTENED.

MATTHIESEN EQUIPMENT INC.
566 N. W.W. White Road
San Antonio, TX 78219
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TOLL: +1 (800) 624-8635
www.matthiesenequipment.com

REV.	DATE	REVISION RECORD	DRW	CHK	APV.
A	01/10/06	SUBMITTED FOR FABRICATION	RON		

MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 1 FLOOR STRUCTURE ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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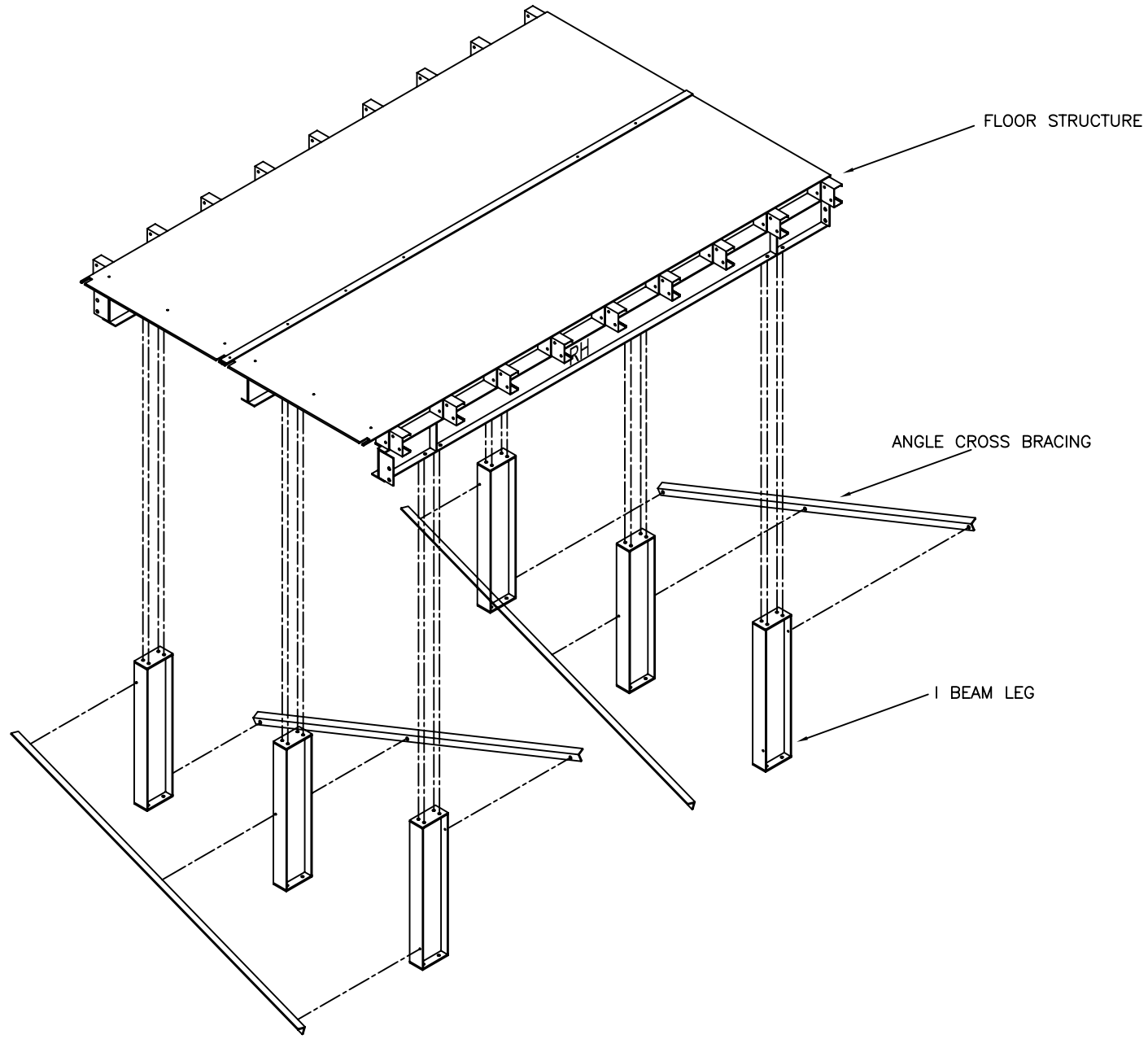
IN011006-2



NOTES:

1. LIFT FLOOR STRUCTURE HIGH ENOUGH TO PLACE ALL SIX (6) I BEAM LEGS IN PLACE. (THERE IS NOT A BOTTOM OR TOP TO LEG STRUCTURE)
2. FASTEN LEG STRUCTURE TO FLOOR I BEAM WITH ⅝"x1 ½" HEX BOLTS.
3. PLACE CROSS BRACE (2X2 ANGLE) ON EACH SIDE OF LEG.
4. FASTEN ANGLE CROSS BRACE WITH ⅜"x 1 ¼" HEX BOLTS.
5. INSURE I BEAM LEG AND FLOOR STRUCTURE IS SQUARE AND LEVEL.

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MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 2 I BEAM LEG ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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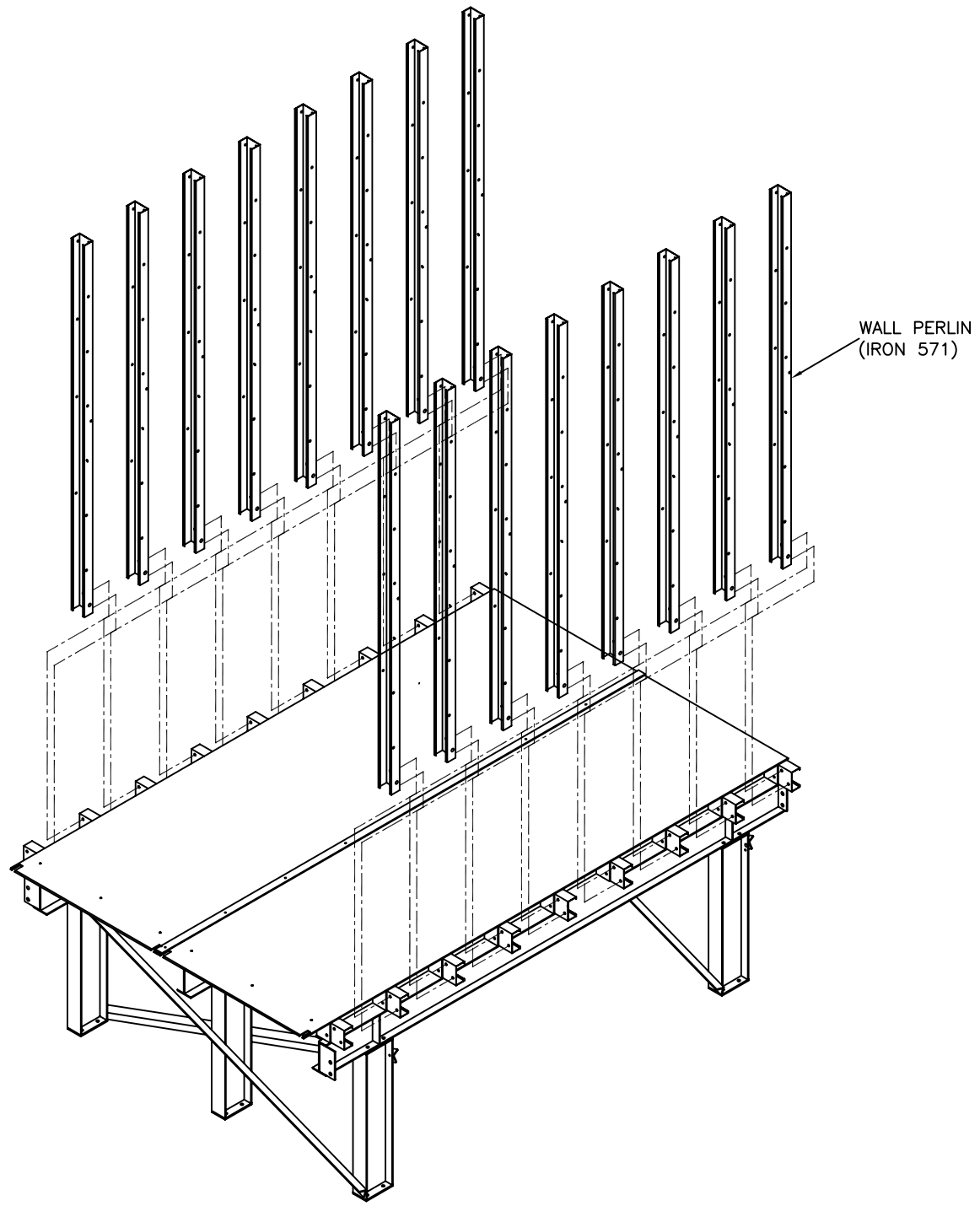
IN011006-3



NOTES:

1. ATTACH 4"x 96" WALL PERLIN (IRON 571) ON REFERENCED MARK. (EX. A TO A, B TO B etc.) BOLT WITH ⅜" x 1" HEX BOLTS.
2. APPLY PROTECTION TO UHMW FLOOR (CARDBOARD, PAPER, etc.) PRIOR TO INSTALLATION OF WALL PERLIN (IRON 571).

MATTHIESEN EQUIPMENT INC.
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REV.	DATE	REVISION RECORD	DRW	CHK	APV.
A	01/10/06	SUBMITTED FOR FABRICATION	RON		

MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 3 WALL PERLIN ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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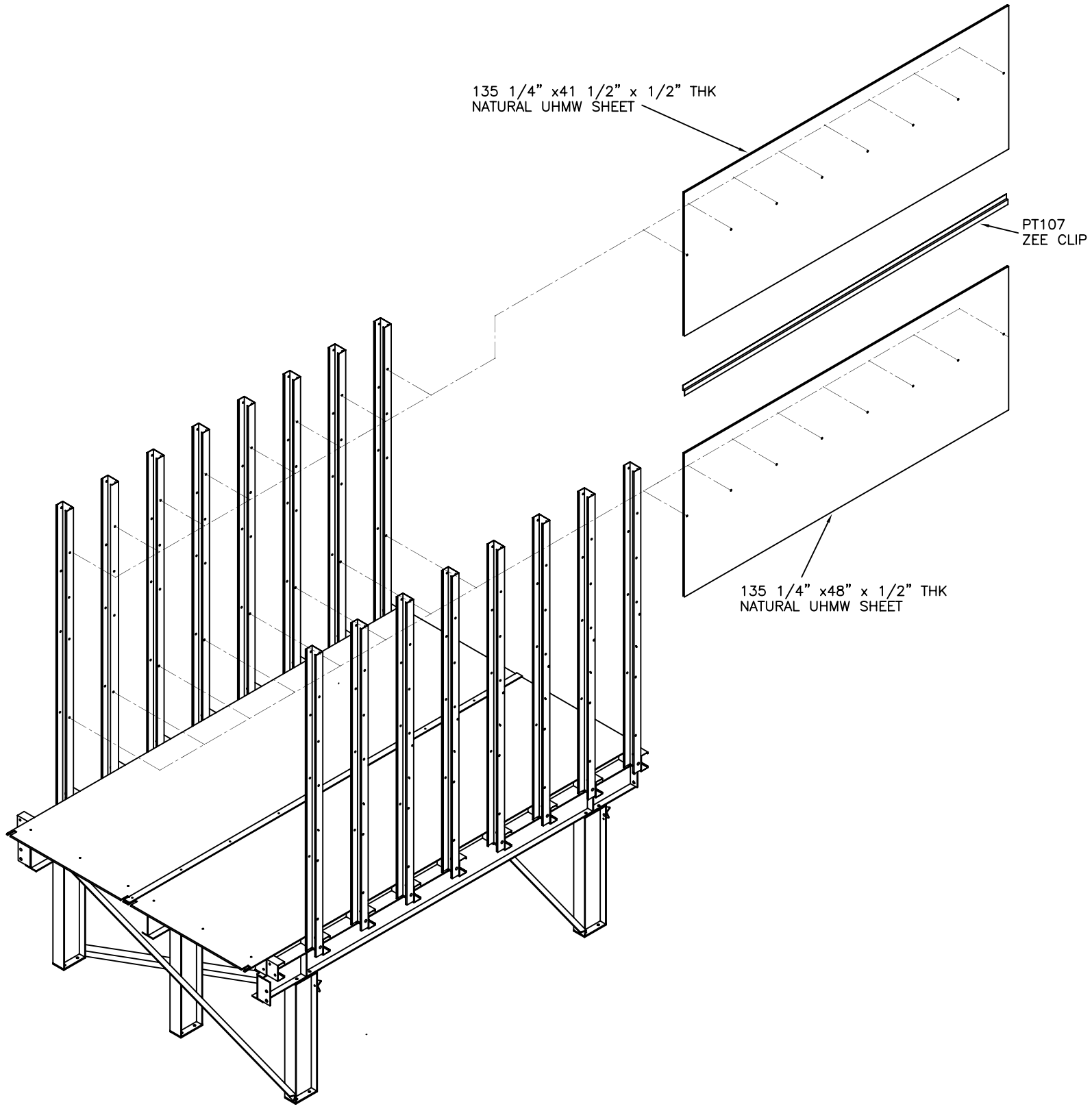
IN011006-4



NOTES:

1. PLACE LEFT BOTTOM WALL SHEET ON LEFT SIDE OF BIN.
2. ATTACH ZEE CLIP (PT107) ON TOP OF BOTTOM WALL SHEET.
3. PLACE TOP LEFT UHMW WALL SHEET ON ZEE CLIP (PT107)
4. BOLT ASSEMBLY TO 4" WALL PERLIN (IRON571) WITH ⅜" x 1" FLAT HEAD BOLT AND NYLON LOCK NUTS.
5. REPEAT INSTRUCTIONS 1–4 FOR THE RIGHT SIDE.
6. INSURE WALL STUDS ARE SQUARE AND LEVEL PRIOR TO INSTALLATION OF WALL SHEET.
7. INSURE UHMW FLOOR IS PROTECTED PRIOR TO ACCESS.

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TOLL: +1 (800) 624-8635
www.matthiesenequipment.com

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MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 4 UHMW WALL SHEET ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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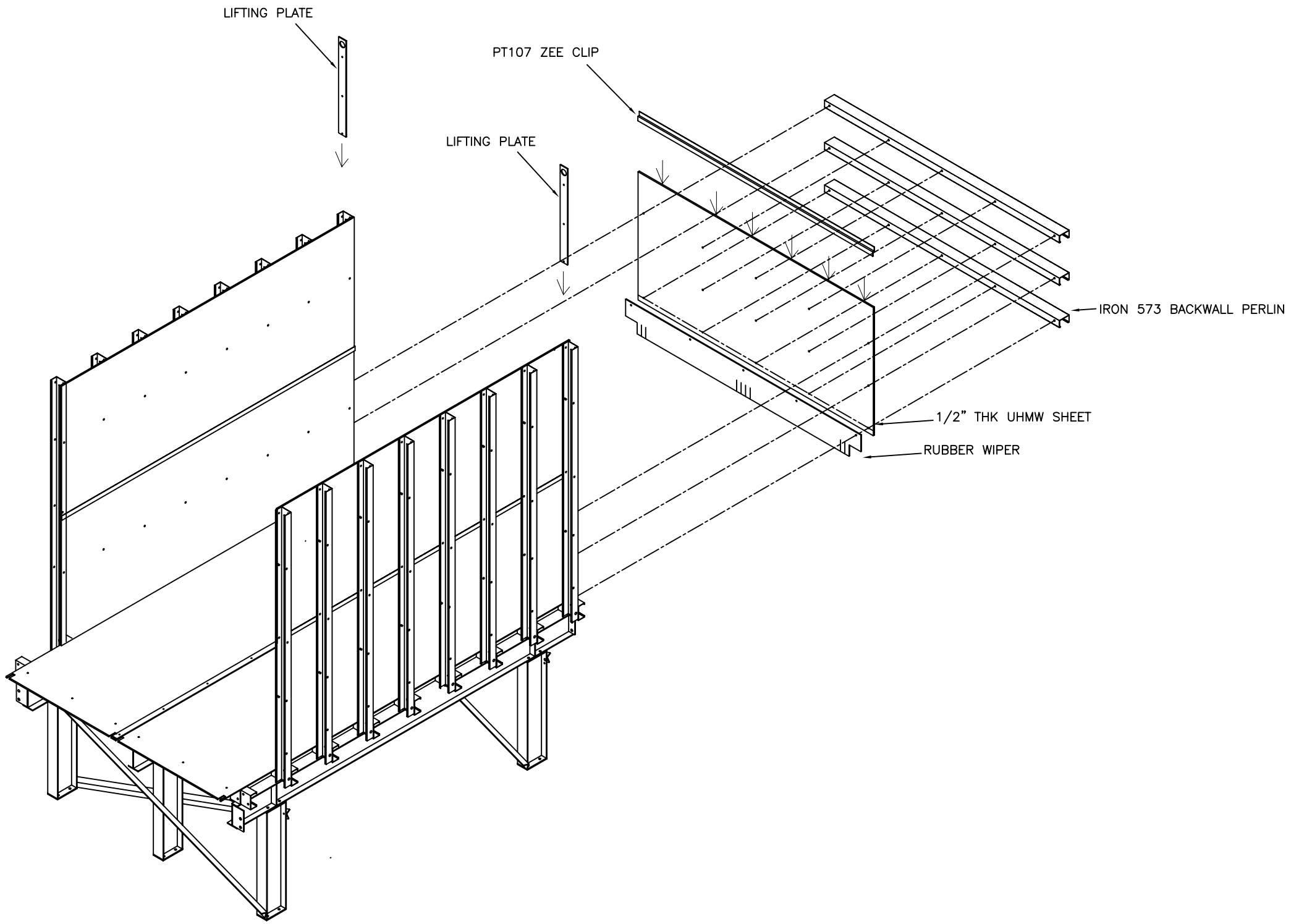
IN011006-5



NOTES:

1. ATTACH MARKED BOTTOM UHMW BACK WALL SHEET AGAINST LEFT AND RIGHT WALL PERLIN AND ALIGN HOLES.
2. PLACE MARKED BACKWALL PERLIN (IRON 573) HORIZONTAL AND BOLT TO BOTH LEFT AND RIGHT WALL PERLIN.
3. ATTACH LIFTING PLATE ON INSIDE OF LEFT AND RIGHT WALL PERLIN.
4. USE ⅜"x1 ¼" HEX BOLTS AND NYLON LOCK NUTS FOR ATTACHMENT OF UHMW AND BACKWALL PERLIN TO LEFT AND RIGHT PERLIN.
5. USE ⅜"x1" BUTTON HEAD BOLTS AND LOCK NUTS FOR ATTACHMENT OF UHMW TO BACKWALL PERLIN.
6. CONFIRM UHMW BACKWALL SHEET IS CUT SQUARE TO INSURE PROPER ALIGNMENT DURING INSTALLATION.
7. UHMW SHEETS (WALLS AND FLOOR) SHALL BE FREE OF DIRT, OIL, SCUFF MARKS, etc. PRIOR TO STEP 6.

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SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 5 UHMW BACKWALL SHEET ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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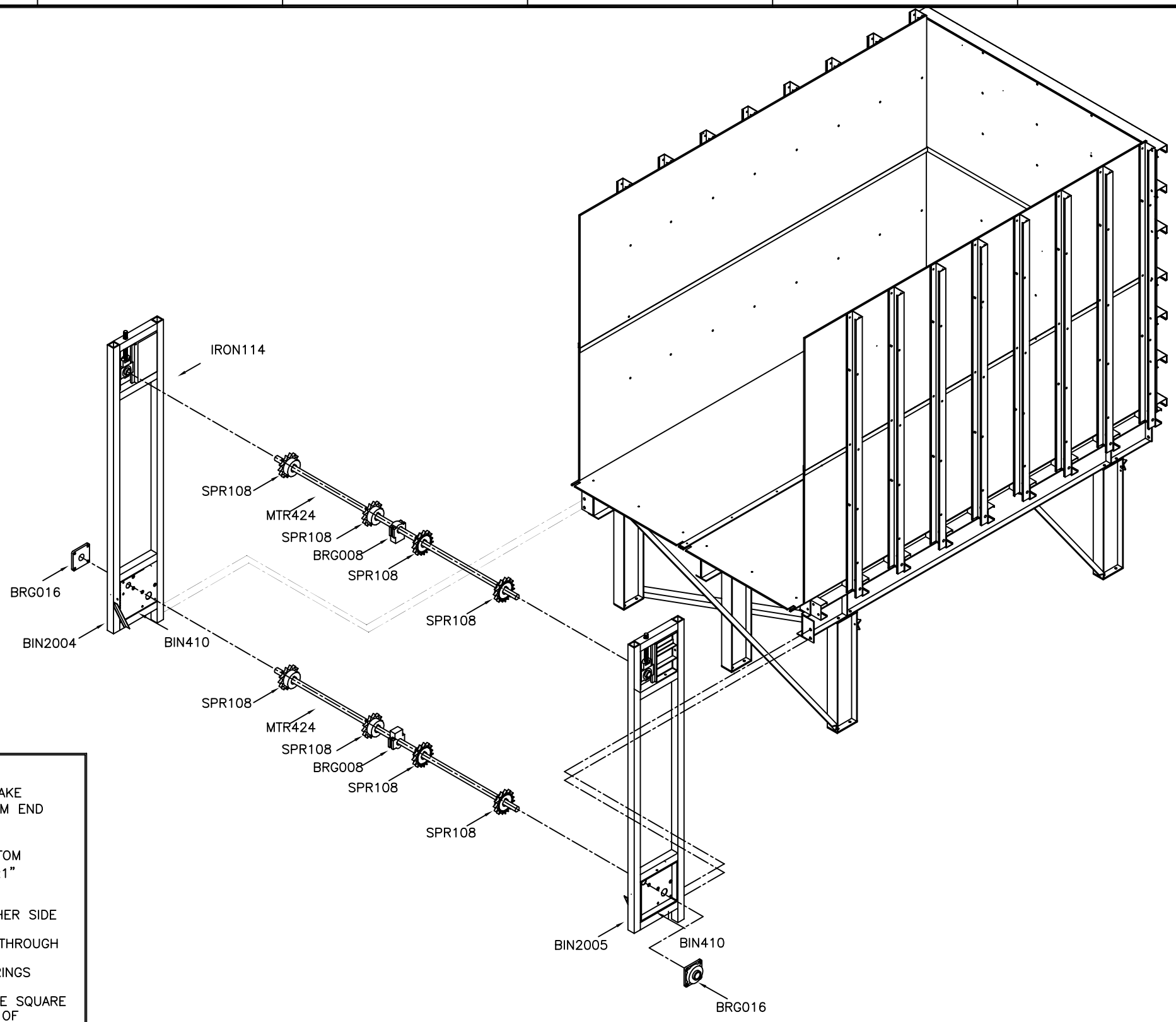
IN011006-6



NOTES:

1. POSITION AND SUPPORT LEFT SIDE DRIVE/VERTICAL RAKE STRUCTURE (BIN2004/BIN2005) TO LEFT FLOOR BEAM END PLATE (BIN601).
2. USE ½"x3 ½" HEX BOLTS AND TIGHTEN.
3. WITH LEFT STRUCTURE IN PLACE BOLT TOP AND BOTTOM UHMW SHEET WALL TO DRIVE STRUCTURE USING ⅜"x1" BUTTON HEAD CAP BOLTS.
4. REPEAT PROCEDURE FOR RIGHT SIDE.
5. INSERT TOP RAKE SHAFT WITH SPROCKETS FROM EITHER SIDE OF STRUCTURE.
6. INSERT BOTTOM IDLER RAKE SHAFT AND SPROCKETS THROUGH BOTTOM BEARING PLATE AND ALIGN.
7. DO NOT TIGHTEN SETSCREWS ON SPROCKET OR BEARINGS UNTIL STEPS 9 AND 11 HAVE BEEN COMPLETED.
8. LEFT AND RIGHT VERTICAL RAKE STRUCTURE SHALL BE SQUARE WITH BIN STRUCTURE TO INSURE PROPER ALIGNMENT OF COMPONENTS.

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MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 6 FRONT DRIVE WALL ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

IN011006-6

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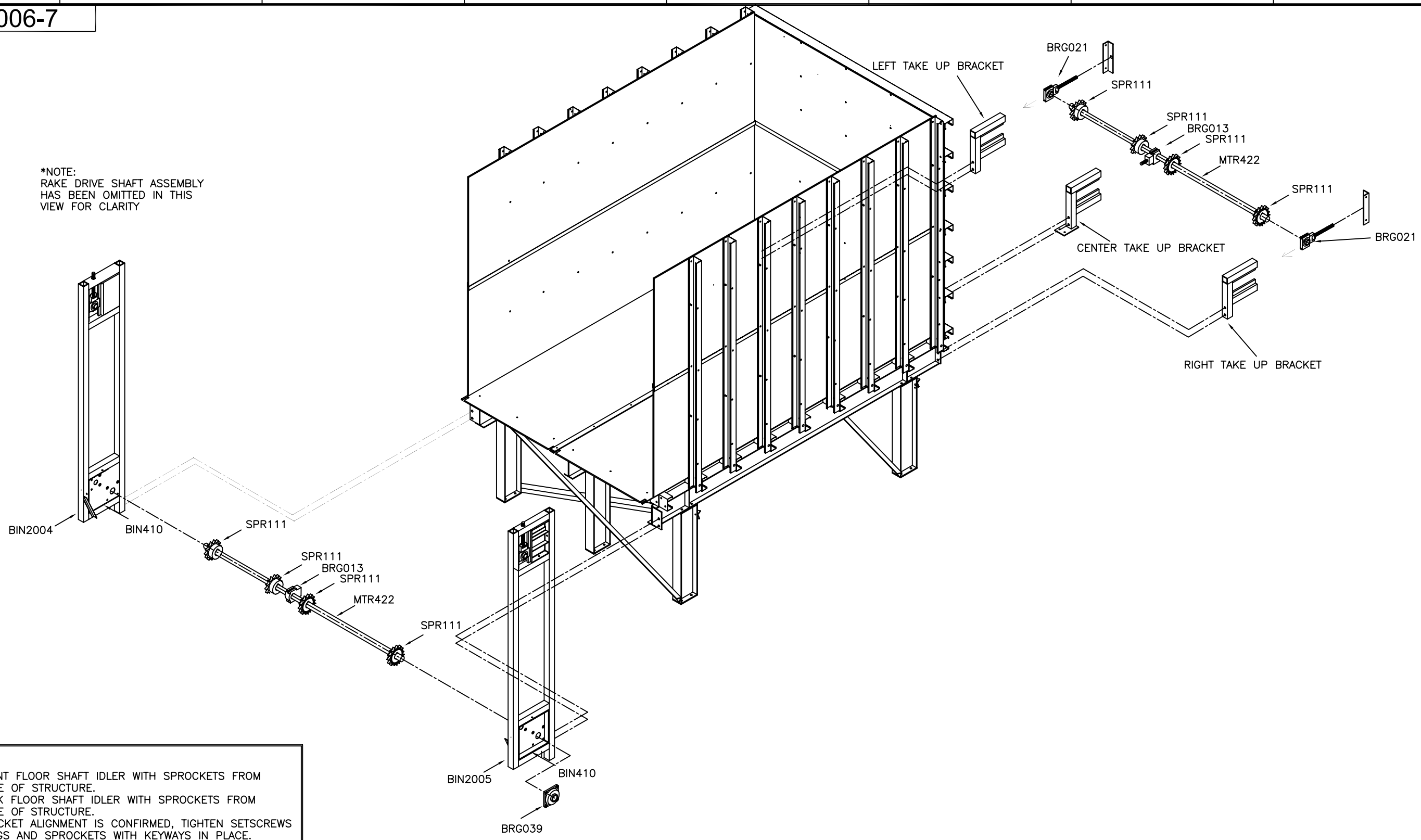
*NOTE:
RAKE DRIVE SHAFT ASSEMBLY
HAS BEEN OMITTED IN THIS
VIEW FOR CLARITY



NOTES:

1. INSERT FRONT FLOOR SHAFT IDLER WITH SPROCKETS FROM EITHER SIDE OF STRUCTURE.
2. INSERT BACK FLOOR SHAFT IDLER WITH SPROCKETS FROM EITHER SIDE OF STRUCTURE.
3. ONCE SPROCKET ALIGNMENT IS CONFIRMED, TIGHTEN SETSCREWS OF BEARINGS AND SPROCKETS WITH KEYWAYS IN PLACE.

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SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 7 FLOOR DRIVE AND IDLER SHAFTS INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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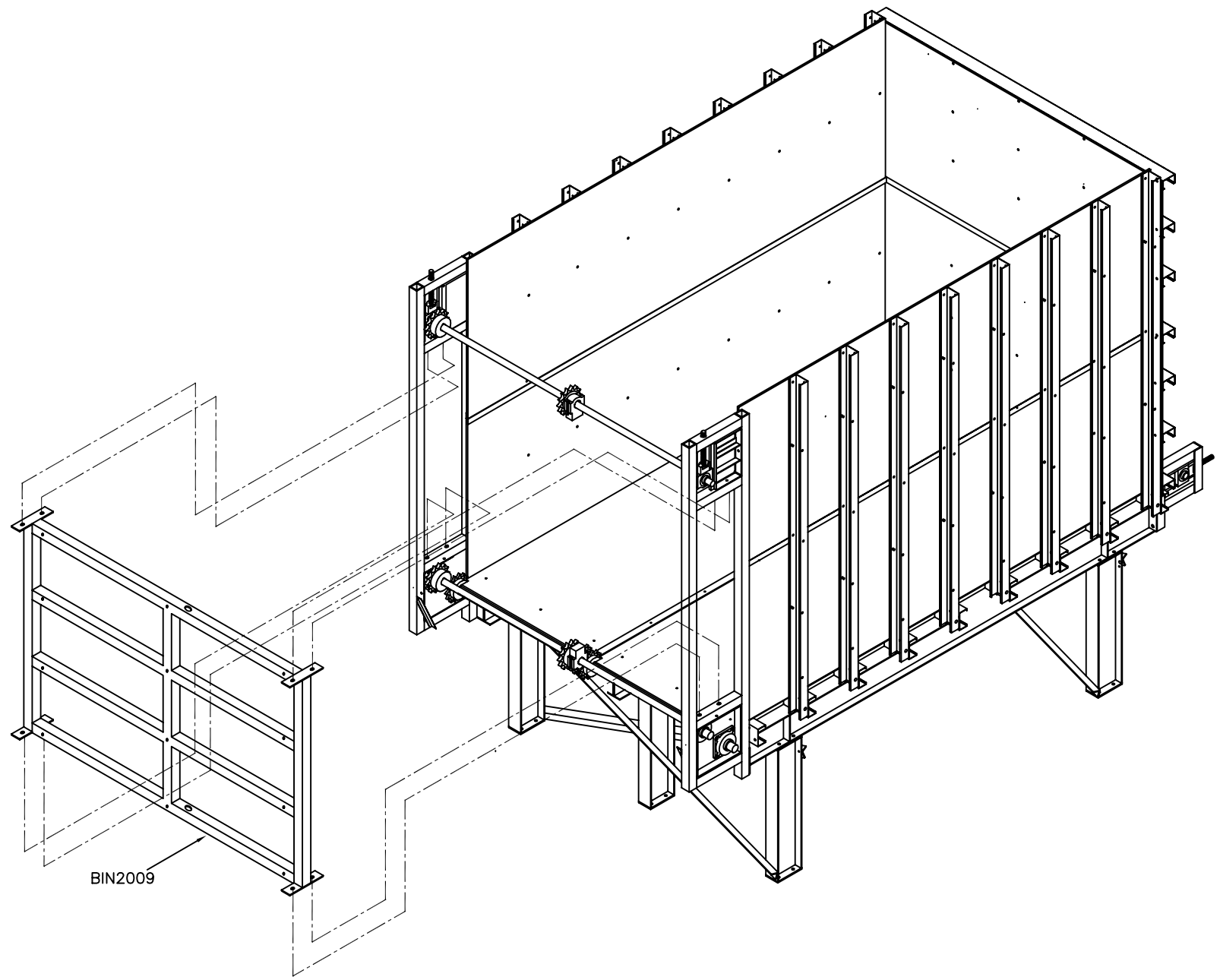
IN011006-8



NOTES:

1. POSITION AND SUPPORT VERTICAL CHAIN WALL (BIN2009)
2. USE ⅜"x3 ½" HEX BOLTS AND TIGHTEN.
3. WITH VERTICAL CHAINWALL (BIN2009) IN PLACE, ATTACH NYLON BEARING (BRG013) KEEP LOOSE FOR ADJUSTMENT ON CHAIN.

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MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 8 VERTICAL CHAINWALL ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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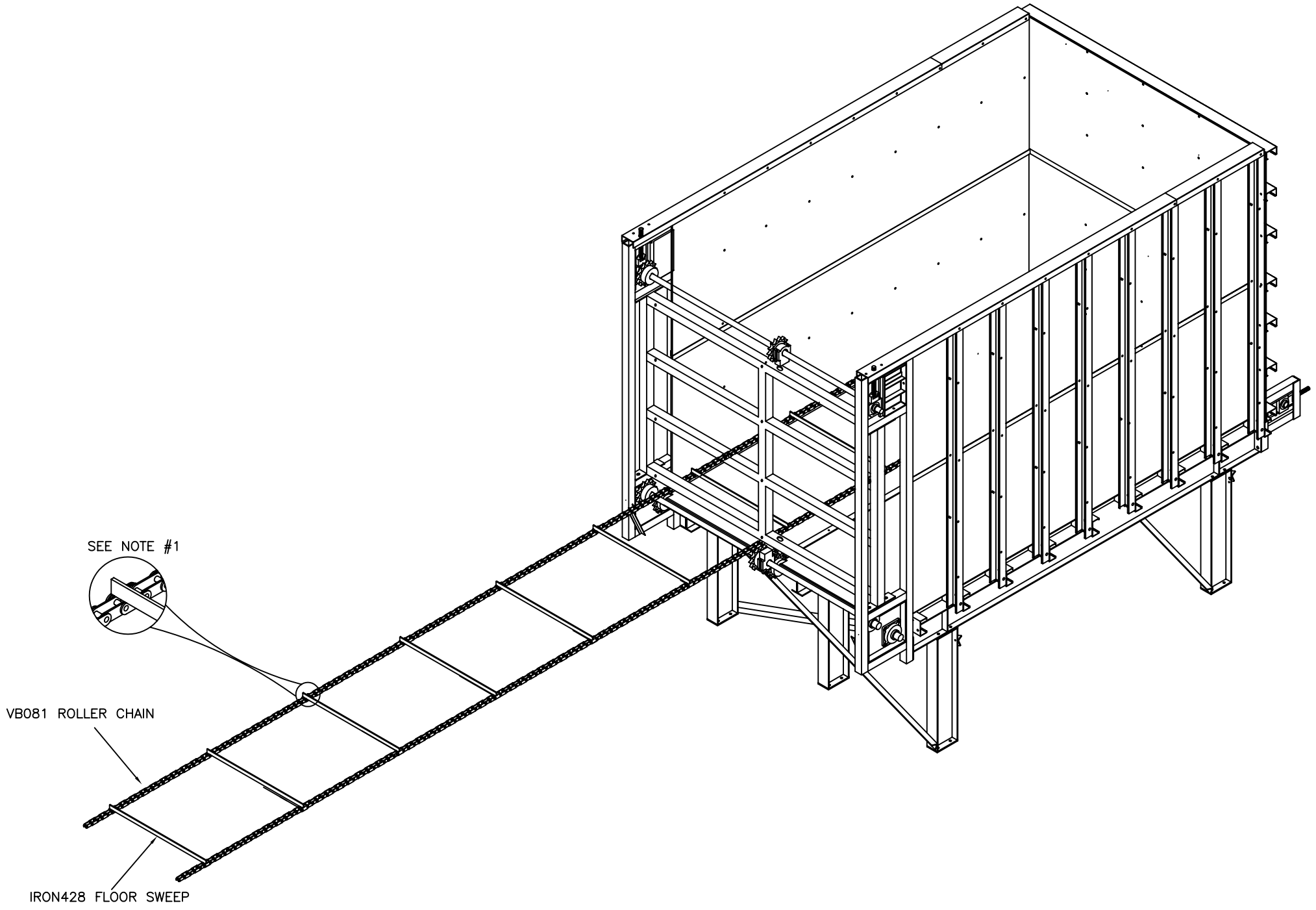
IN011006-9



NOTES:

1. THREAD FLOOR CHAIN ONE SIDE AT A TIME WITH ANGLE LEG OUT TOWARD BACK OF BIN.
2. ATTACH MASTER LINK.
3. REPEAT FOR RIGHT SIDE.
4. ADJUST TAKE–UP BEARING ON FLOOR IDLER SHAFT.
5. ADJUST SLACK IN CHAIN SO THE CHAIN FLOOR SWEEPER ANGLE IS NOT DRAGGING THE BOTTOM OF FLOOR I BEAM UNDER BIN.
6. ASSURE THE IDLER SHAFT IS EVEN SO CHAIN WILL TRACK EVENLY.
7. SPROCKETS SHALL BE ALIGNED WITH CHAIN AND FLOOR. UPON COMPLETION OF ALIGNMENT TIGHTEN SET SCREWS WITH KEYWAYS IN PLACE.

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MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 9 FLOOR CHAIN ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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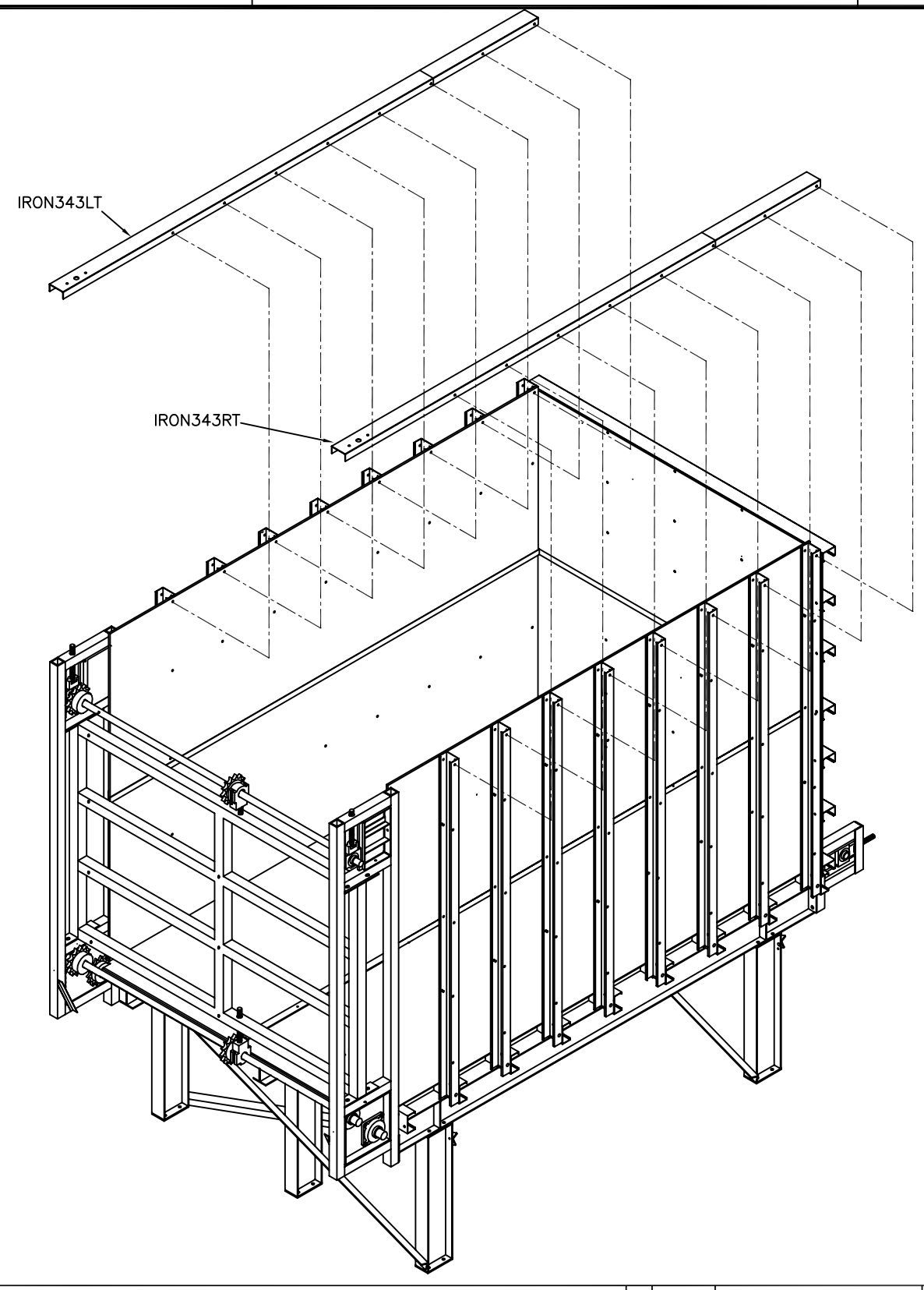

NOTES:

1. ATTACH MARKED LEFT RAIL (IRON343LT) ON TOP OF PERLIN AND OVER UHMW WALL SHEETS ALIGNING HOLE.
2. FASTEN WITH ⅜"x1" LG HEX BOLT AND NYLON LOCK NUTS.
3. REPEAT STEPS ONE AND TWO FOR RIGHT RAIL (IRON 343RT)

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SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 10 TOP RAIL CHANNEL ATTACHMENT INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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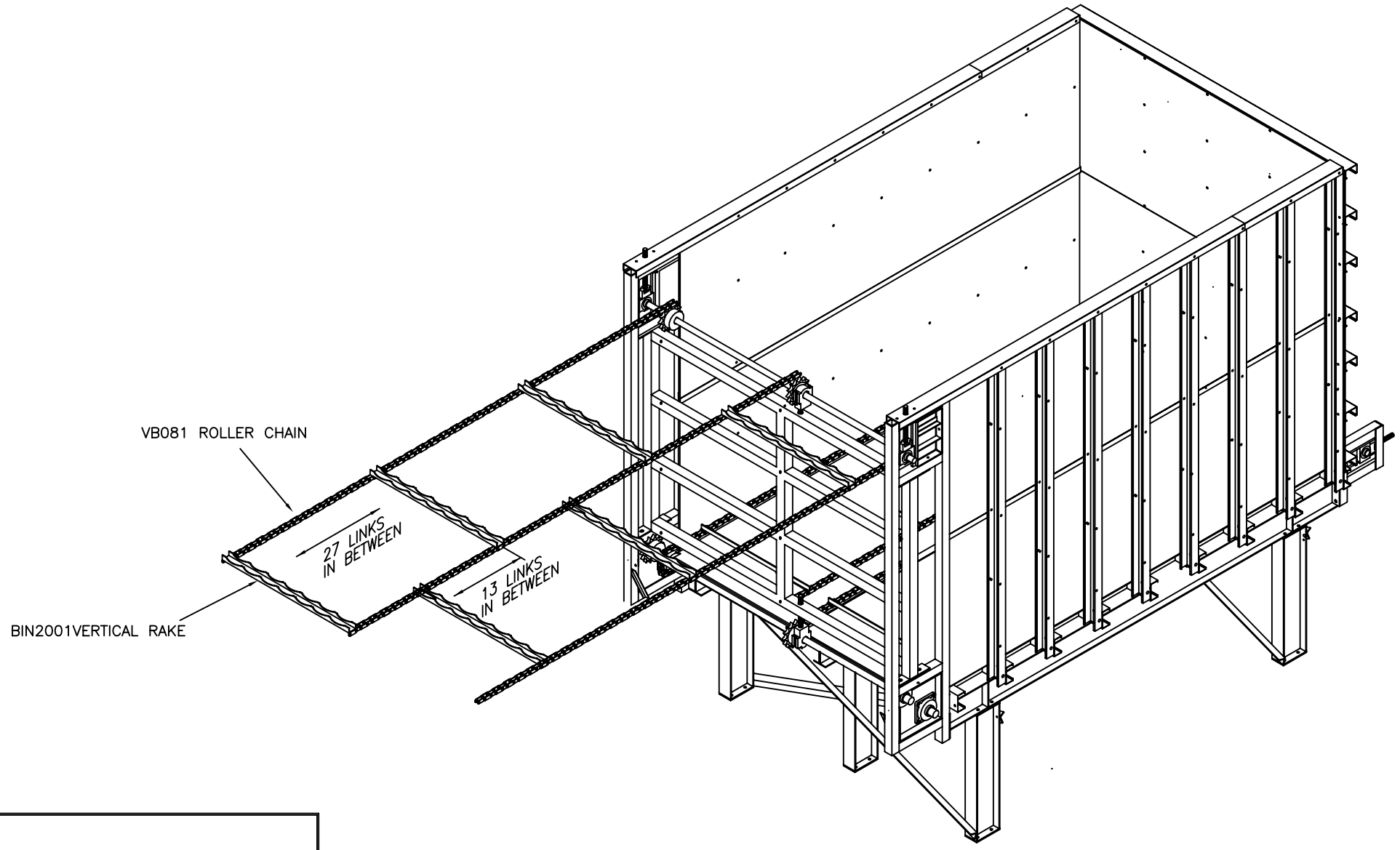

NOTES:

1. THREAD RAKE CHAIN ASSEMBLY.
2. ATTACH MASTER LINK.
3. ADJUST TAKE–UP BEARING ON IDLER SHAFT OF RAKE, UNTIL ALL EXCESS SLACK HAS BEEN REMOVED.
4. ASSURE THE IDLER SHAFT IS EVEN SO CHAIN WILL TRACK EVENLY.
5. ADJUST CENTER UHMW BEARING WITH THE 1"ø TAKE UP BOLT.
6. ALIGN SPROCKET WITH RAKE CHAIN. AFTER COMPLETION OF ALIGNMENT TIGHTEN SET SCREWS WITH KEYWAYS IN PLACE.

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PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 11 RAKE CHAIN ASSEMBLY INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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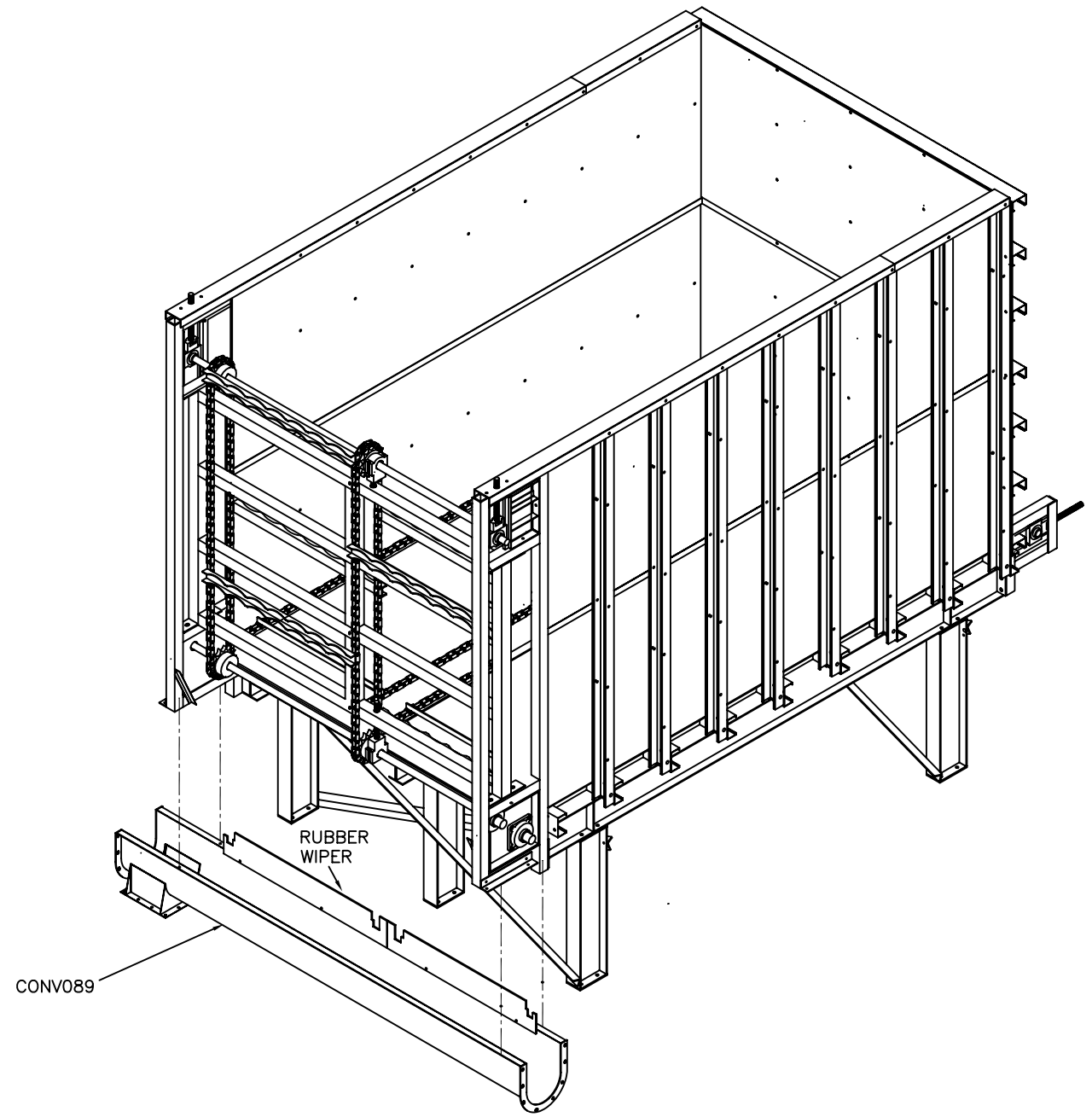

NOTES:

1. RAISE MAIN TROUGH (CONV089) UNDER RAKE AND FLOOR DRIVE STRUCTURE MOUNT THROUGH 2 ½" TUBE OF DRIVE SUPPORT STRUCTURE FRAME.
2. ATTACH WITH ½"x3" LG HEX BOLTS AND NUTS.
3. DISCHARGE CAN BE CHANGED TO EITHER SIDE BY ROTATING TROUGH, RE–DRILLING AND MOUNTING RUBBER SWIPE ON OPPOSITE SIDE TRANSFERRING MEASUREMENTS DIRECTLY ACROSS.

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SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 12 DISCHARGE SCREW CONVEYOR INSTALLATION INSTRUCTIONS
ENGINEER	PLANT CODE SA
DESIGN	MATTHIESEN
SCALE NTS	ORIGIN MEI
CATEGORY ST	DRAWN RDELEON
IN011006-12	CHECKED PETE RUIZ
	APPROVED S NIESTROY

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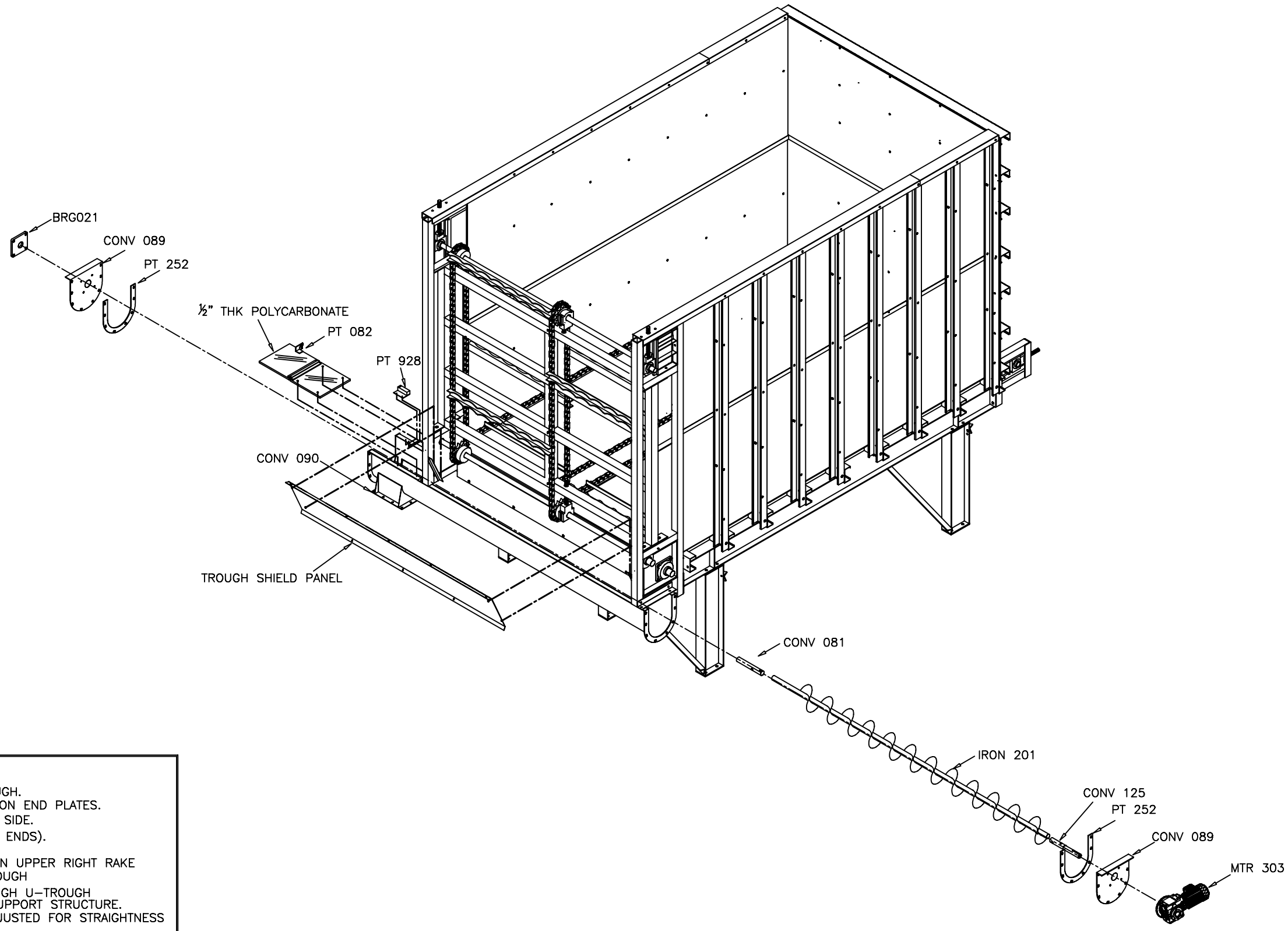

NOTES:

1. INSERT AUGER (IRON 201) INTO TROUGH.
2. ALIGN SHAFT OF AUGER WITH HOLE ON END PLATES.
3. ATTACH BEARING (BRG 021) TO LEFT SIDE.
4. ATTACH WITH ⅜"x1" HEX BOLT (BOTH ENDS).
5. ATTACH MOTOR (MTR 303).
6. SLIDE TROUGH SHIELD PANEL BETWEEN UPPER RIGHT RAKE SUPPORT STRUCTURE TO THE U–TROUGH
7. ATTACH WITH ⅜"x1" HEX BOLT THROUGH U–TROUGH AND DIAGONAL ANGLE WELDED TO SUPPORT STRUCTURE.
8. AUGER SHALL BE INSPECTED AND ADJUSTED FOR STRAIGHTNESS PRIOR TO INSTALLATION.

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PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 13 TROUGH SHIELD PANEL ATTACHMENT INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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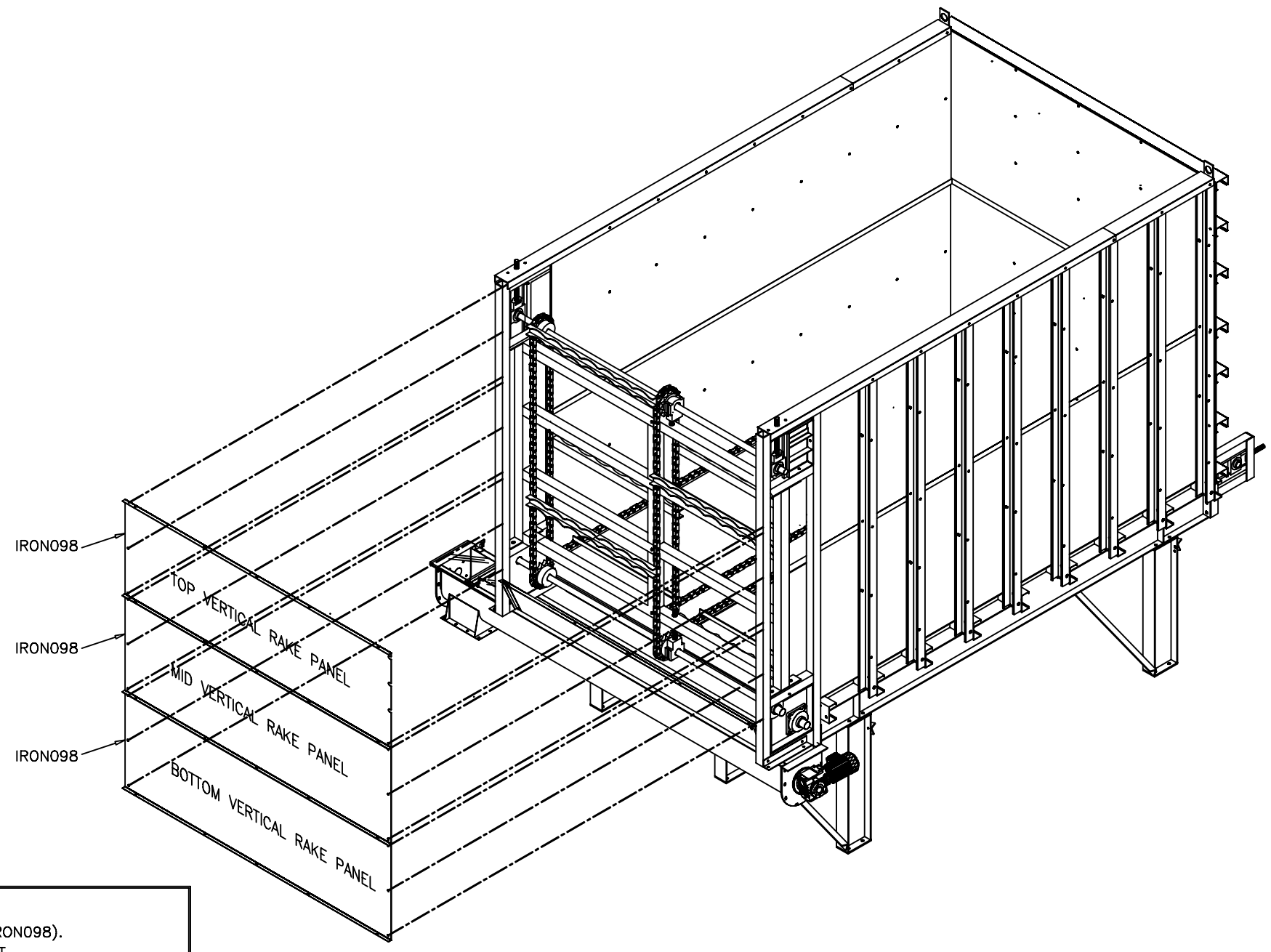

NOTES:

1. ATTACH BOTTOM VERTICAL RAKE PANEL (IRON098).
2. USE ⅜"x¾" HEX BOLTS, WASHER AND NUT.
3. ATTACH TO RAKE SUPPORT STRUCTURE THROUGH TAPPED HOLES.
4. REPEAT STEPS 1–3 FOR MID AND TOP VERTICAL RAKE PANEL.
5. RAKE WALL COVERS SHALL BE PROTECTED WHILE DRILLING (ELIMINATE DRILL CHUCK SCARRING)

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MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 14 VERTICAL RAKE COVER INSTALLATION INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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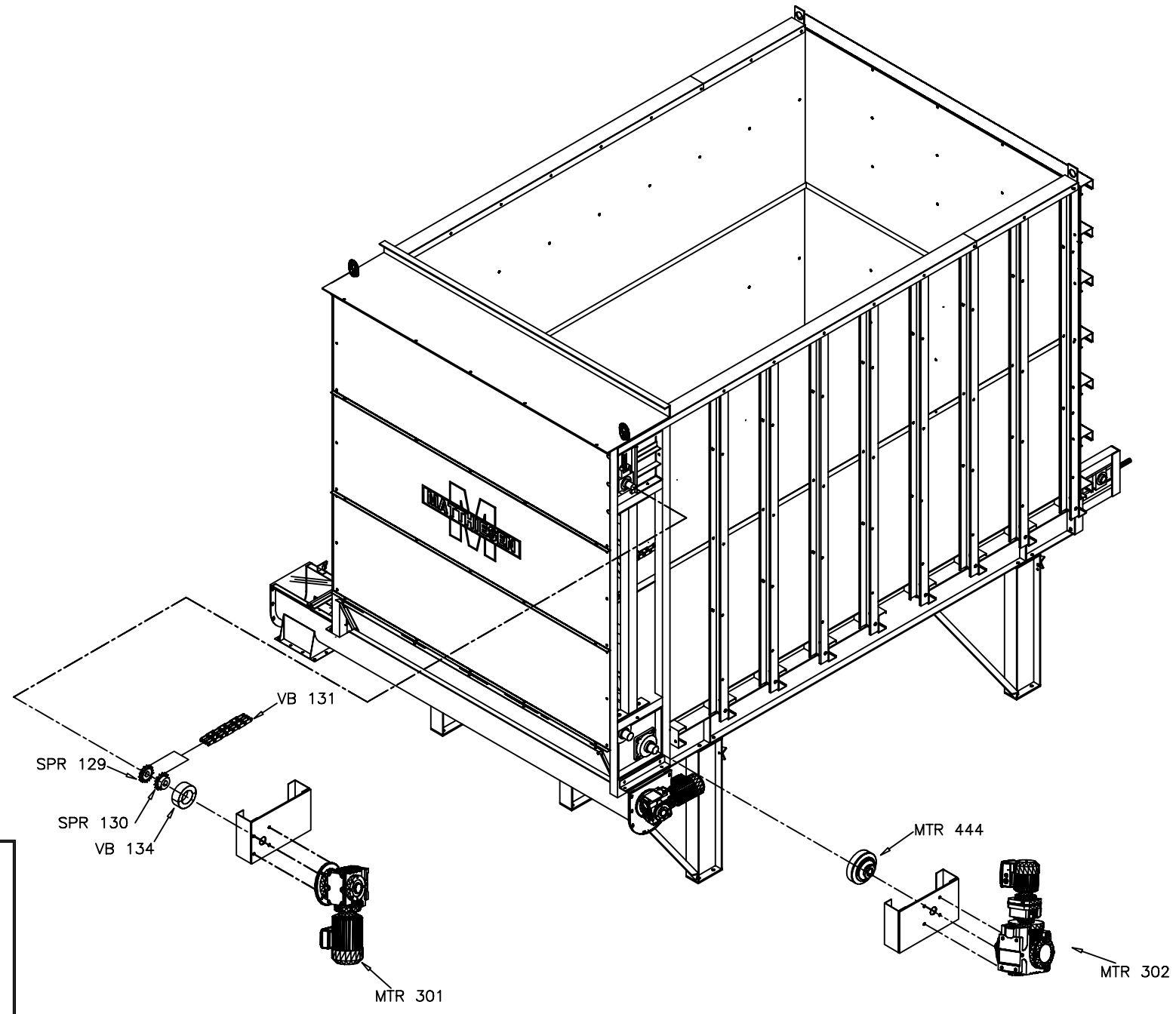

NOTES:

1. ATTACH MTR 444 ONTO FLOOR SHAFT DRIVE.
2. ATTACH MTR 302 ONTO MTR 444.
3. ATTACH SPR 129 ONTO RAKE SHAFT DRIVE.
4. ATTACH MTR 301 ONTO BRACKET.
5. ATTACH SPR 130 ONTO MOTOR SHAFT.
6. ALIGN SPR 129 AND SPR 130 (ADJUST AS REQUIRED)
7. ATTACH VB 131
8. ATTACH VB 134
9. INSURE PROPER ALIGNMENT OF DRIVE MOUNT PLATES.
10. LUBRICATE TOP RAKE CHAIN COUPLER PRIOR TO INSTALLATION OF COVER.
11. ALL TENSION SHALL BE RELEASED FROM COUPLER.

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SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 15 MOTOR ATTACHMENT INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	01
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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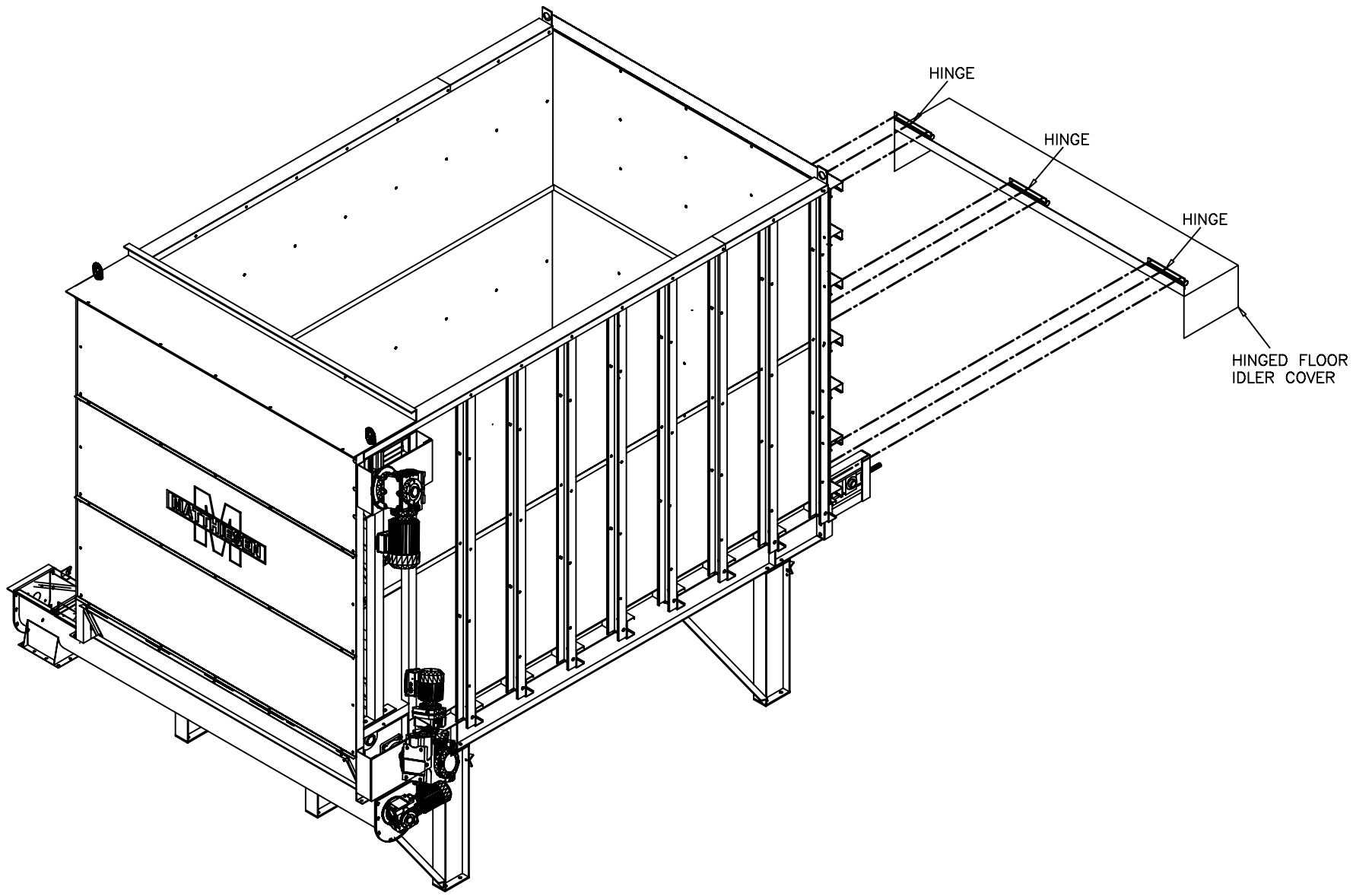

NOTES:

1. ATTACH MARKED COVER TO BOTTOM PERLIN.
2. ATTACH HINGES USING #14 SHEET METAL SCREWS TO HOLES IN BOTTOM PERLIN.

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PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 16 FLOOR IDLER COVER ATTACHMENT INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

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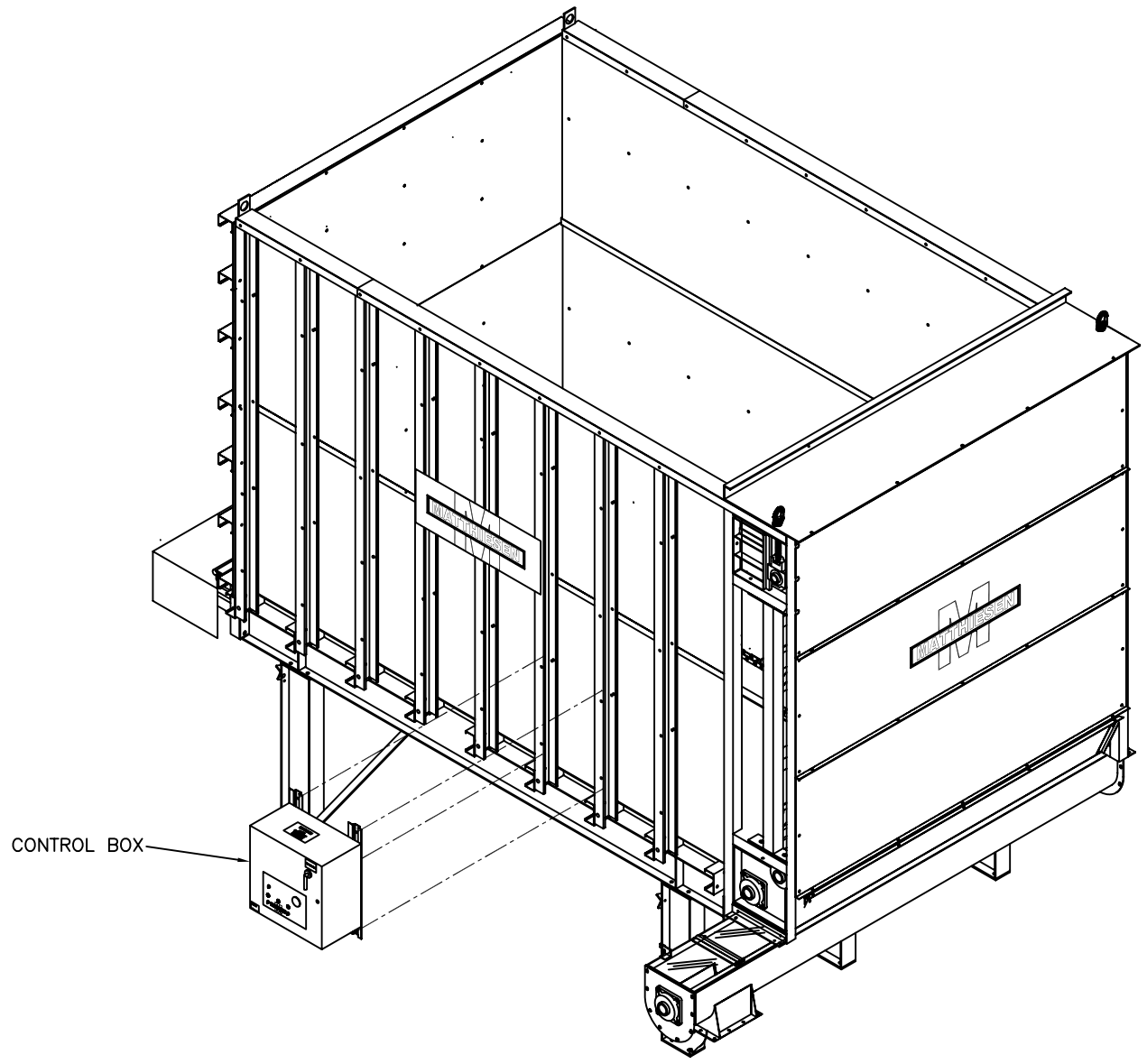

NOTES:
1. MOUNT CONTROL BOX ON WALL PERLIN.
2. TAKE EACH END OF MARKED OF MARKED ELECTRICAL CONDUIT AND CONNECT TO CORRECT MOTOR.
3. ATTACH TO MOTOR DIAGRAM INSIDE ELECTRICAL CONDUIT BOX ON MOTOR.

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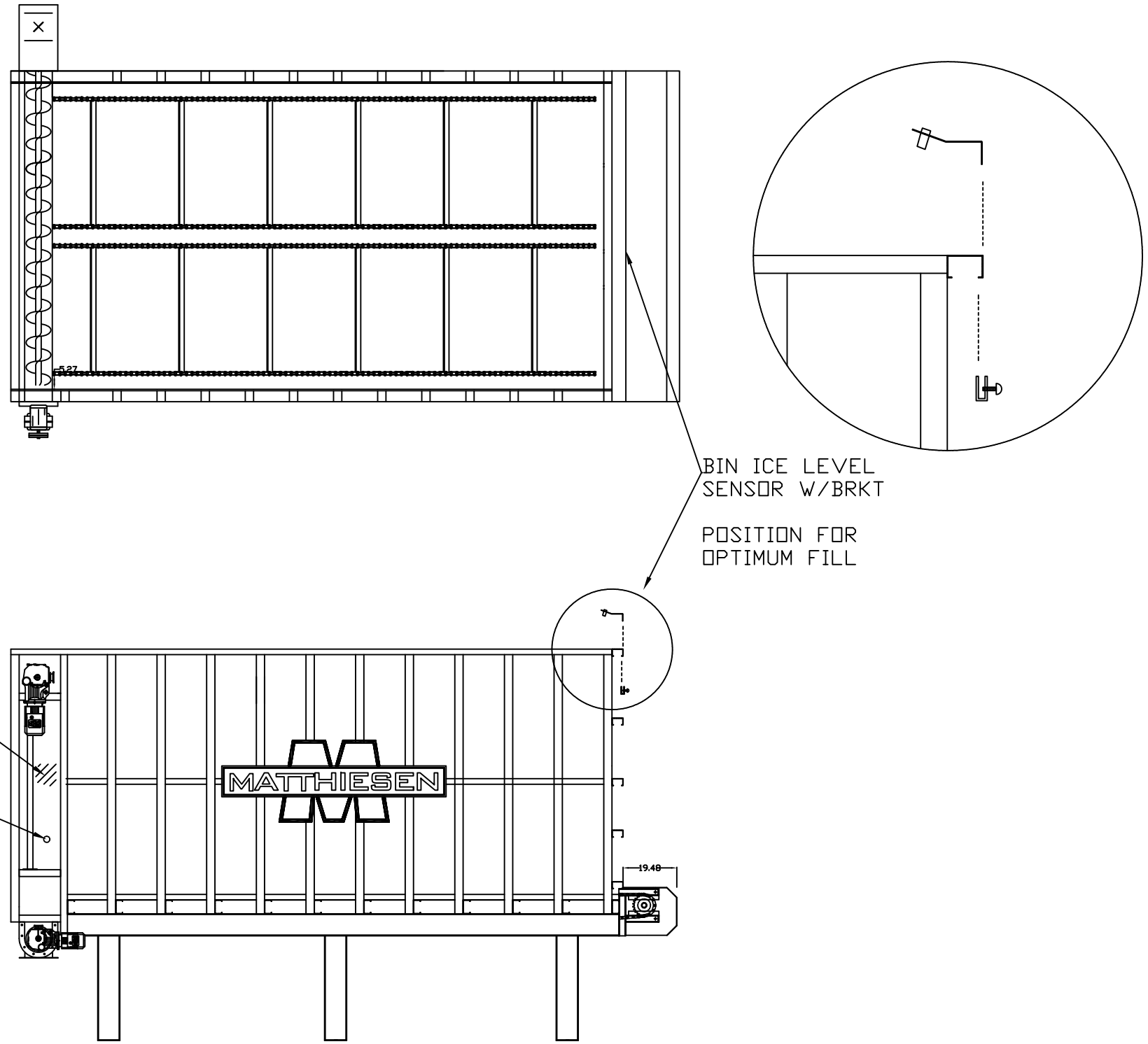
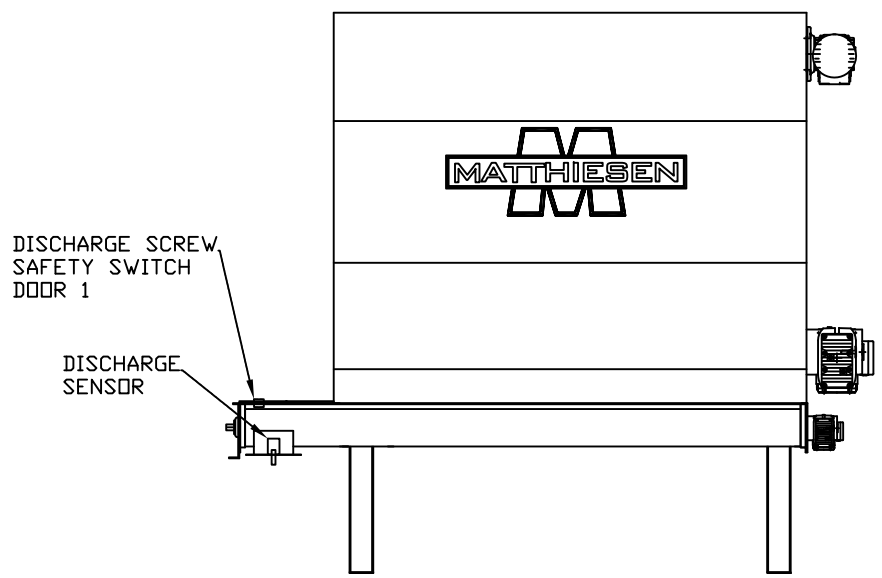
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 17 CONTROL BOX INSTALLATION INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

IN011006-17

GENERAL





NOTES:

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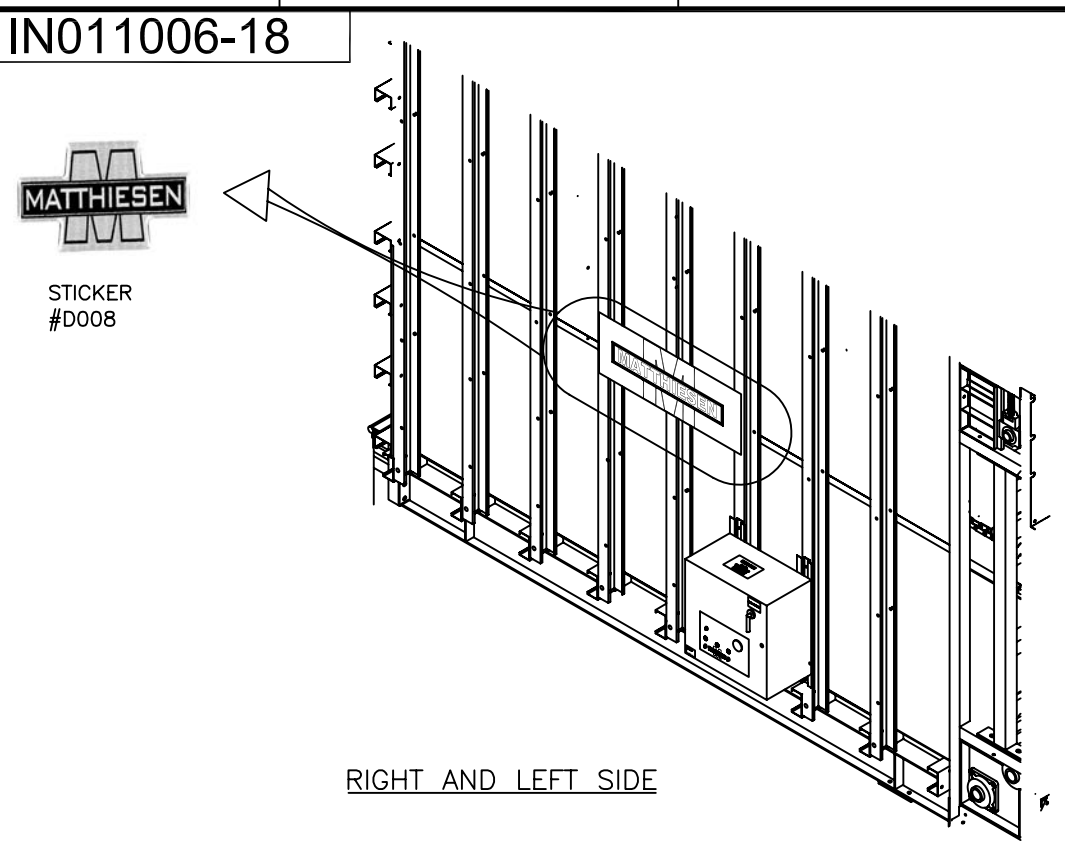
A	04/17/13	SENSOR ILLUSTRATION	PR	.	

MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	GENERAL
DWG. DESC.	LIVE BOTTOM BIN
ENGINEER	MATT
PLANT CODE	SA
DESIGN	MEI
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	PR
CHECKED	
APPROVED	MEI

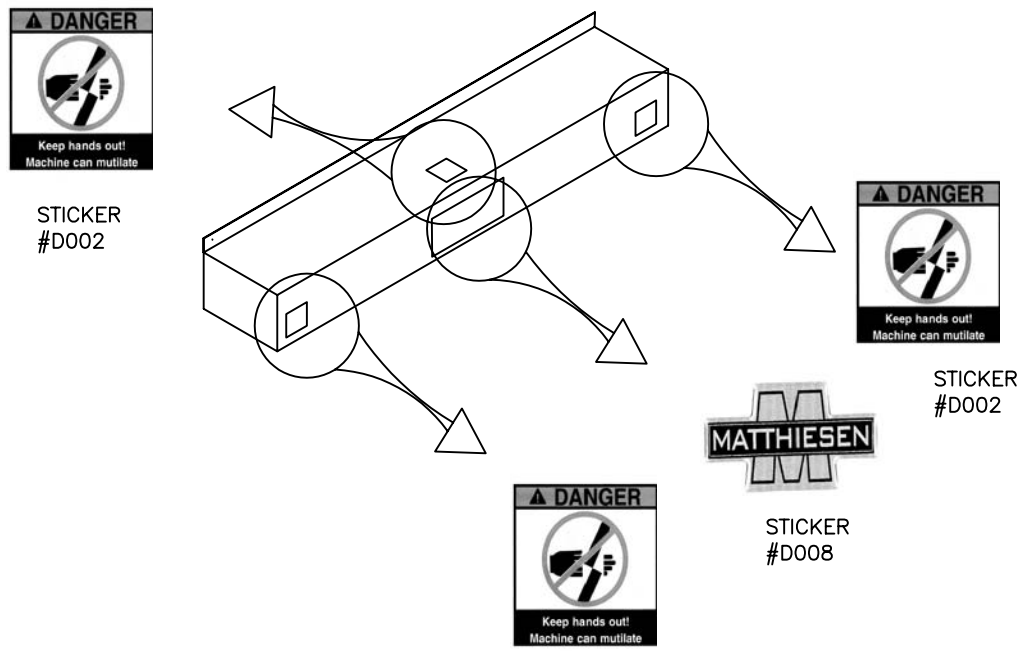
MATT001

IN011006-18



STICKER
#D008

RIGHT AND LEFT SIDE



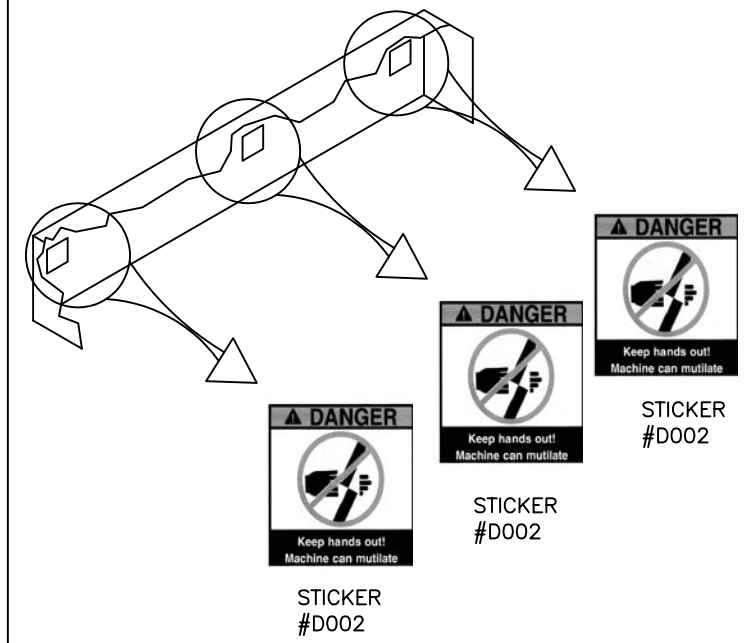
STICKER
#D002

STICKER
#D008

STICKER
#D002

STICKER
#D002

OUTSIDE IDLER COVER

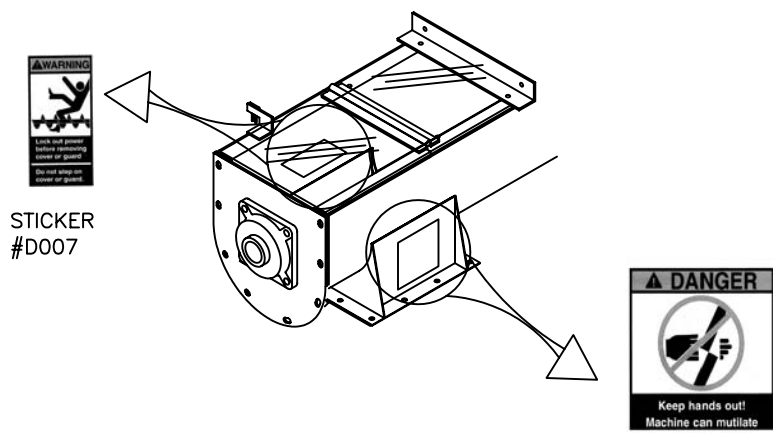


STICKER
#D002

STICKER
#D002

STICKER
#D002

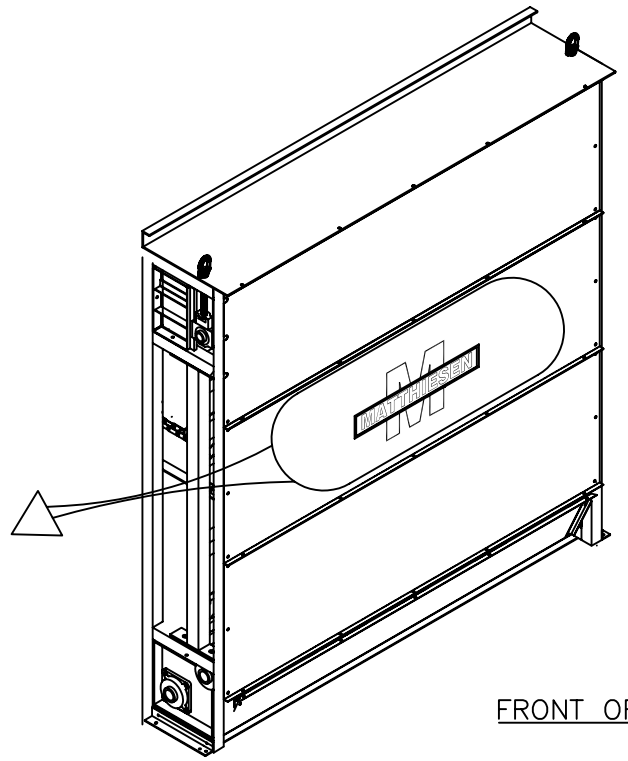
INSIDE IDLER COVER



STICKER
#D007

STICKER
#D002

DISCHARGE TROUGH



STICKER
#D008

FRONT OF BIN

MATTHIESEN EQUIPMENT INC.
566 N. W.W. White Road
San Antonio, TX 78219
OFC: (210) 333-1510 FAX: (210) 333-1563
TOLL: +1 (800) 624-8635
www.matthiesenequipment.com

REV.	DATE	REVISION RECORD	DRW	CHK	APV.
A	3/29/06	SUBMITTED FOR FABRICATION	RON		

MATTHIESEN
SAN ANTONIO, TEXAS

PART NAME & NUMBER	10 TON LIVE BOTTOM BIN
DWG. DESC.	STEP 18 DECAL LOCATION INSTALLATION INSTRUCTIONS
ENGINEER	
PLANT CODE	SA
DESIGN	MATTHIESEN
SCALE	NTS
ORIGIN	MEI
CATEGORY	ST
DRAWN	RDELEON
CHECKED	PETE RUIZ
APPROVED	S NIESTROY

IN011006-18

DECAL REORDER SHEET

DECAL NUMBER IDENTIFICATION **DECAL**

D001 ....

D002 ....

.....

D003.....

.....

D004 .....

.....

D005 ....

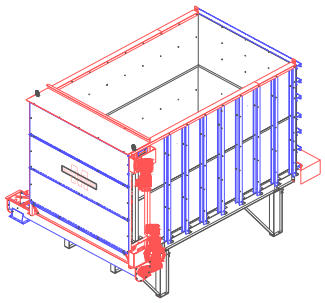
DECAL REORDER SHEET

DECAL NUMBER IDENTIFICATION **DECAL**

D007 ....

D008 .... ……

D009 .... ……



INSPECTION REPORT

VISUAL:

CLEANLINESS:

INTERIOR	☐PASS	☐FAIL
EXTERIOR	☐PASS	☐FAIL

DECALS:

SEE DWG #IN011006-18 FOR LOCATION	☐PASS	☐FAIL

MECHANICAL:

MOTORS	☐PASS	☐FAIL
SAFETY SWITCHES	☐PASS	☐FAIL

CHAIN TENSION:

RAKE	☐PASS	☐FAIL
FLOOR	☐PASS	☐FAIL

NOTE: IF FLOOR IS NOT MOVING, ADJUST TENSION ON COUPLER.

VFD PARAMETERS:

RAKE	☐PASS	☐FAIL
FLOOR	☐PASS	☐FAIL

FINAL INSPECTION:

DRY TEST RUN	☐PASS	☐FAIL
VISUAL	☐PASS	☐FAIL
FASTENERS FOR TIGHTNESS	☐PASS	☐FAIL

COMMENTS:_____

_____

_____

INSPECTED BY_____DATE:_____

SERIAL NUMBER_____