

# MEISTER

## COLUMN MOUNTED JIB CRANES

# INSTALLATION, ASSEMBLY AND OPERATING INSTRUCTION MANUAL

CRANE SERIAL No. ....

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# 1 GENERAL SAFETY INSTRUCTIONS AND WARNINGS FOR INSTALLATION.

## Safety Instructions:

1. Use only trained experienced installers.
2. Read all the instructions first and become familiar with the equipment supplied.
3. Wear the appropriate approved PPE, fall protection where applicable.
4. Use appropriate capacity slings/lifting devices for the installation.

## Warnings:

1. Check for installation hazards such as overhead live electrical wires, pressurised gas, water or airlines and hidden live electrical cable runs on or near the where the crane is to be fixed to the supporting structure.
2. Safety clearances between crane and neighbouring parts/equipment and the operator level must comply with the Australian Standards.
3. All Meister jib cranes have a jib safety bracket around the column at the roller level. This must be fitted after the jib is installed. See Fig 4.
4. Manual slewing operation Meisters have an anti-lift security device which must be fastened in place after the jib is installed. See Fig 5.
5. Electric slewing operation Meisters have an anti-lift security angle which must be fitted after the jib is installed. See Fig 6.
6. If a jib lock is supplied and factory fitted ensure the operator job lock handle is locked in the down position before attempting to install the jib. See Fig 8.

## **2 CRANE OWNERS' RESPONSIBILITIES**

### **2.1 Information**

To supply sufficient information to allow the manufacturer/crane supplier to ascertain the suitability of the crane for the purpose intended.

REF: AS 1418.1 & 3

### **2.2 Operation**

To ensure operational instructions are available and issued to operators as part of their training. The operator must have adequate clearances to work and have sufficient headroom to the jib/moving components.

REF: AS 2550.1 & 3

### **2.3 Maintenance, Inspection & Repair**

Preventative maintenance programs shall be established.

Inspections shall be carried out at sufficient frequencies to ensure the crane is kept in a safe and satisfactory condition.

Major inspections are required during and after the crane has reached the end of its design life.

Repairs to be managed and carried out in accordance with AS 2550.1.

REF: AS 2550.1 & 3

### **2.4 Records**

Continuous working records to be kept and maintained.

REF: AS 2550.1 & 3

### 3 GENERAL SITE PREPARATION GUIDELINES

1. Ensure the supporting structure or foundation/floor slab is of adequate strength and stability in accordance with Australian Standards and is certified to support the imposed loads from the crane.
2. Ensure the area is clear for the installation, movement of installation lifting equipment and there is adequate lighting.
3. Check positioning of the crane for adequate clearances between the crane and neighbouring obstructions.
4. Check positioning of the crane that there is adequate clearance for installation and slinging of the components.
5. Check positioning of the crane relative to any datum point/orientation to ensure the crane is installed so the slew reach and range is over the desired area required.
6. Ensure all crane components are on site and are not damaged along with any fixings, shims, or grouting required.
7. Fixings, shims and grouting that is supplied by the end user needs to be of the correct quality and quantity.
8. If there any discrepancies in these instructions with any General Arrangement drawing or special project drawings supplied, please consult the crane supplier.
9. Some equipment other than the crane may be supplied with or by others for installation on the crane, such as a Hoist or Trolley, a Slew drive and or electrics.  
If this equipment is supplied it may come partly assembled and fitted to the crane, if not please refer to that equipment's instructions when installing, commissioning, and testing.

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**APPENDICES**

Appendix A – INSTALLATION FIGURES

## 4 INSTALLATION

### 4.1 Column Installation with Pre-Cast in M30 Anchors

See Figure 1 in Appendix A.

1. Remove the anchor bolt template if still present from the foundation, check and clean the pre-cast in M30 anchor threads. Install the 3 leveling nuts equally spaced around the anchor bolt P.C.D. Ensure the footing size and the number of anchors is as per the General Arrangement drawing supplied and that the footing has cured.
2. Lay the Column next to the foundation and if the hoist/trolley is required to be electrified, lead the power supply cable up through the column and out of the main isolator switch opening.
3. Lifting the column up over the foundation bolts, then lower down onto the three levelling nuts, then fit and secure the top anchor bolt nuts/washers. (See figure 2).
4. Align the column vertically within L/1000 with a spirit level on the column in all directions, using the 3 leveling nuts. Lightly tighten the fixing nuts.
5. The Anchors will be required to be torqued up later after the jib is installed, see section 5.0.

## 4.2 Column Installation with Square Base Plate

1. The square base plate with gussets is designed to for use on 180mm thick, solid substrate, continuous, horizontal, (vibration free), not suspended concrete slab floor with a compression strength of 20mPa minimum. (Refer to the General Arrangement drawing supplied for any overriding slab specifications).
2. It is the responsibility of the client/owner to establish that the supporting slab is of adequate strength and stability in accordance with Australian Standards.
3. Anchors to be used are "HILTI HSL4 M16/25" OR M16 CHEMICAL ANCHORS. Quantities as specified and the anchors are to be installed as per manufacturer's instructions.
4. Shims/packing needs to be minimal to achieve a vertical column. He maximum packer to be used with the nominated anchor is 6mm.
5. Mark out the floor with the desired bolt pattern. Drill holes as stated by the manufacturer of the anchor bolts to ensure suitability.
6. With the column lifted, lower it into position and install the anchor bolts and snug tighten to secure the column assembly.
7. Align the column vertically within L/1000 with a spirit level on the column in all directions by shimming/packing under the square base plate (shims need to be steel). Re-secure the anchors.
8. The Anchors will be required to be torqued up later after the jib is installed, see section 5.0.



### **4.3 Jib Pre-Assembly**

See Figure 3 in Appendix A.

1. Place the jib level on suitable stands ensuring the jib is secure and will not topple over.
2. Assemble the hoist and trolley onto the jib centrally and secure with clamps to prevent it from moving along the jib.
3. Ensure the end stops on the jib are securely fastened.

## 4.4 Installing the Jib to the Crane Column Assembly

See Figure 4 in Appendix A.

1. Ensure the jib lock if fitted on the column is in the locked down position, ( Fig 8), then sling the jib appropriately so it lifts horizontally and is balanced then lift the jib up with the jib end slightly tilted up as shown in Figure 4 and gently lower onto the column top taking care not to knock the slip ring or tilt the self-aligning bearing. Lower the bearing into the housing and once seated lower the jib so that the rollers become positioned against the pressure ring on the column. Fit the jib safety bracket around the column.
2. Remove the slings and rotate the jib if the jib is manual slew to ensure freedom of rotation. The jib should remain stationary when stopped at any point.
3. If the jib does not remain stationary in every position with a load of 100kg on the end, check the column vertical alignment.
4. Tighten all the nuts/anchors snug tight if the column is vertical.
5. Fill up the space between the foundation/slab and the column base plate with free-flowing expanding grout as per manufacturer's instructions.
6. For Columns with pre-cast in anchor bolts, after curing of the grout, tighten all nuts fully to the recommended torque, e.g., 491 Nm for M30 low tensile bolts.
7. For Columns with a square base plate on a concrete slab; after curing of the grout, tighten all anchors to the recommended torque, e.g.75 Nm for the M16/25 Hilti anchors as per manufactures recommendations or 95 Nm for M16 Chemset anchors as per manufacturers recommendations.

## **4.5 Jib Lock Assembly (if factory supplied).**

See Figure 8 of Appendix A.

1. The jib lock is spring loaded to operate in an upward direction in one Jib lock “position” only, so the operator handle needs to be in the down position for the jib to be installed.
2. Trial the Jib lock for ease of and engaging and disengaging of the lock with the jib in its “lock” position.

#### **4.6 Electric Slew drive Assembly. (If factory fitted).**

See Figure 7 in Appendix A.

1. Electrically connect as per the wiring diagram provided.

#### **4.7 Slip Ring Assembly. (If factory fitted).**

See Figure 5 in appendix A

## 5 PRE-COMMISSIONING

The purpose of pre-commissioning is to establish that the installation and assembly is complete before powering up, if applicable or loading up the lifting equipment and supporting structure.

NOTE: Refer to any instructions supplied with any additional equipment fitted to the crane before Commissioning.

### **Check:**

1. The crane fixings to the supporting structure are fitted and secure.
2. The jib securing devices are fitted.
3. The Slew Drive or jib lock if supplied is fitted.
4. The Trolley if supplied is on the jib, adjusted correctly to suit the jib flange width.
5. The end stops for the jib are fitted and will retain the trolley on the jib.
6. The hoist if supplied is correctly fixed and retained on the trolley.
7. The electrics if supplied are fitted, check all. (Compatible power/voltage/phases/frequency and phase rotation).
8. For the Trolley/Hoist, control pendant, ensure the Emergency stop button, if provided, functions.

## 6 COMMISSIONING AND LOAD TESTING

The purpose of commissioning and load testing is to prove the installation and that the fitted equipment functions correctly, can support the maximum rated capacity, is stable and does not exceed the maximum vertical deflection limits of AS1418.

NOTE: Refer to any instructions supplied with any additional equipment fitted to the crane before Commissioning.

### 6.1 Function Testing Unloaded

1. With the trolley/hoist at the jib end against the end stops, slew the jib throughout its full range.
  - a. It should be easy to slew, and the jib should remain stationary in any position and not slew unaided.
  
2. Move the trolley/hoist along the jib until it meets the inner end stops, then return the trolley/hoist out to the jib end.
  - a. It should be easy to move, and the trolley/hoist should remain stationary in any position and not move unaided.
  
3. Operate the Hoist up its full height until the upper limit is reached then operate the Hoist down until the hook reaches the floor or the hoist down limit is reached.
  - a. The hoist should run smoothly up and down.

## 6.2 Function Testing Loaded

1. With a certified test weight of 110% of the rated capacity; with the hoist, initially lift the weight off the ground approximately 50 mm to ensure that the hoist lifts the test weight, and the hoists brakes can hold the load. If satisfactory repeat items 1 to 3 in the above.
2. With the trolley/hoist at the jib end against the end stops with the test weight lowered near the ground and the jib position mid-range of its slew, measure vertically at a suitable position the distance between the ground and the underside of the jib at the end. Record the difference in the dimensions.
3. Lower the test weight to the ground and re-measure at the same positions. Record the difference in the dimensions.
4. Repeat steps 2 & 3 with the jib fully slewed fully to one side then to the other. Record the difference in the dimensions.
5. Check that the recorded jib deflections are within the allowable AS1418 test deflection limits of:

**For cranes mounted on a rigid support the allowable test deflection is L/181**

**For crane mounted on a flexible support the allowable test deflection is L/136**

**L= the distance from the pivot point to the maximum swing reach of the load + the distance from the base of the crane to the underside of the jib. (For horizontal base mounted cranes).**

**Note: The above allowable deflection ratios are based on using 110% test weights.**



## 7 CRANE PRE-START CHECK LIST

ITEM	CHECKLIST	[✓]
1.	Check the crane is not damaged.	
2.	Check the crane capacity is clearly shown and understood.	
3.	Check the jib end stops are in place.	
4.	Check the supporting structure cranes fixings for appearance of looseness and or damaged supporting structure.	
5.	Check no outstanding issues recorded in the logbook from previous use.	
6.	Check the area that the crane is to be used is clear of obstructions/electrical hazards.	
7.	Check the additional equipment (trolley and hoist) manual documentation for additional pre-start check lists.	

## 8 CRANE OPERATIONS

### 8.1 Operational Restrictions

1. If outdoors, the maximum allowable in-service wind speed is 20 m/s.
2. Temperatures below zero degrees C and above 50 degrees C.
3. Using unskilled/trained operators without the appropriate approved PPE.
4. The use of the crane above its rated classification in regards load cycles.
5. Using a hoist/trolley on the Jib of a weight that exceeds the original design weight.
6. Lifting greater loads than that for which the crane was designed or approved for.
7. The use of the crane in an explosive atmosphere.
8. The use of crane before completion of commissioning and satisfactory load testing.
9. Off vertical lifting the load or dragging the load.
10. Using the crane to pull something free that may be jammed.
11. Lifting of lids that may be held in position by a vacuum.
12. Trying to push or pull the crane in the opposite direction to which it is driven.
13. Slewing of the jib or travelling the hoist and trolley by pulling on the pendant control even if there is no load.

## 8.2 General Operation

ITEM	CHECKLIST	[✓]
1.	Crane operators are to be suitably authorised, qualified and trained for the crane to be used and not impaired in any way due to drugs, alcohol and or any medical condition.	
2.	Appropriate approved PPE to be worn.	
3.	Be aware particularly of the hazards around connecting the hook to the lifted load in regards keeping the hook clear of the body and the hands/fingers clear of getting caught.	
4.	Correct slinging/rigging equipment to be used where applicable.	
5.	Do not use the crane/trolley or hoist for lifting personnel	
6.	Do not move loads over or near a person.	
7.	Ensure the load pathway is clear for the load to be moved.	
8.	Never leave unattended a load suspended from the hoist.	
9.	Check the load to be lifted is homogenous and will not fall apart as it is being lifted/moved.	
10.	Check all loads are within the cranes capacity before lifting with the crane/trolley/hoist.	
11.	Perform the pre-operation inspection checks before starting to use the crane for the day and or shift duration.	

## 8.3 Crane Pre-Operation Inspection Checks by the Operator.

ITEM	CHECKLIST	[✓]
1.	Check visually the crane is not damaged.	
2.	Check the crane capacity is clearly shown and understood.	
3.	Check the jib end stops are in place.	
4.	Check the supporting structure cranes fixings for appearance of looseness and or damaged supporting structure.	
5.	Check no outstanding issues recorded in the log book from previous use.	
6.	Check the area that the crane is to be used is clear of obstructions/electrical hazards.	
7.	Check the additional equipment (trolley and hoist) manual documentation for additional pre-start check lists.	
8.	Where applicable function test the isolator, operating and emergency controls, brakes, safety switches and hook safety catch.	

## 8.4 Starting Operation.

ITEM	CHECKLIST	[✓]
1.	Turn the crane's power isolator on. (If applicable)	
2.	Disengage the jib lock, if provided.	

## 8.5 Trolley Travel

ITEM	CHECKLIST	[✓]
1.	Be aware of the trolley's position on the jib in relation to its end stops, avoid running into these.	
2.	Reset the "Emergency Stop" Button. (if applicable).	
3.	Press the in / out function or operate the in / out function for the trolley to position the lifting hook above the centre of gravity of the load to be lifted.	
4.	Use initially the slow speed (if provided), then the fast speed, avoid jerky motions.	

## 8.6 Hoisting

ITEM	CHECKLIST	[✓]
1.	Be aware that the hoist has upper and lower limits, avoid using these limits to stop the hoisting motion, use the pendant control buttons.	
2.	Reset the "Emergency Stop" Button. (if applicable).	
3.	Press the down/up function or operate the down / up function for the hoist to position the lifting hook above the centre of gravity of the load to be lifted. Attach to the Hoist hook the load using appropriate slings and or the lifting point provided, ensure the sling / lifting point sits centrally on the hook with the safety catch closed.	
4.	Perform an initial lift in slow speed (If provided) to take up any slack, then lift up the load about 50mm to see if the load is being lifted evenly, the load is balanced, the brake holds and the lifting points are firmly attached, if satisfactory continue lifting using initially the slow speed (if provided) then fast speed, avoid jerky hoisting operations. <b>NOTE:</b> Best practice is to move the lifted load with it in the lowest position then lift it up to the desired position.	
5.	Once the load is in its desired position, lower it until it rests in place and is supported, then continue to lower the hook so the slings/hook can be removed from the load.	
6.	Once the load is removed raise the hook up above head height.	

## 8.7 Slewing

The slewing operation may be provided as a manual slew or with an electric slew drive with or without a jib lock.



### WARNING

**ENSURE THE JIB LOCK IS DISENGAGED BEFORE ATTEMPTING TO SLEW THE CRANE**

Be aware of the jib's position on the supporting structure/column in relation to its slew stops, avoid running into these.

Press the slew left/slew right function or operate the slew left / slew right function for the crane to position the lifting hook above the centre of gravity of the load to be lifted.

Use initially the slow speed (if provided), then the fast speed, avoid jerky motions.

## 8.8 Shut Down

ITEM	CHECKLIST	[✓]
1.	Without a load, raise the hoists hook up way above head height	
2.	Move the trolley in against the inner end stops and slew the jib to one side or to its lock position. (If provided).	
3.	Engage the jib lock. (If provided).	
4.	Press the Emergency Stop button (If applicable).	
5.	Turn off the crane's power isolator. (If applicable).	
6.	Report/log any faults experienced with the crane.	

## **9 CRANE LIFE/DESIGN WORKING PERIOD AND MAJOR INSPECTIONS INFORMATION**

### **9.1 10 Yearly or 25 Year Assessment (Subject to Methodology of Record Keeping)**

Cranes, when due for a major assessment of “suitability for continued safe operation”, should be inspected as per the requirements of AS2550 as a guide. This needs to be done by competent persons. NOTE: Each crane is fitted with equipment from various suppliers, the original supplier should be consulted if required.

### **9.2 Overview**

1. Full mechanical / structural / electrical inspection report on the current condition.
2. Review and report on the service history logbooks for any anomalies.
3. Review and report on the working environment to see if any changes have occurred since the original installation (look at the current and future Loadings, Load position and Duty cycle).
4. Evaluate and report the system meets the latest Standards/Safety requirements (Access, guarding and electrics).

The report will need to be analysed and assessed in as to what repairs, upgrades, NDT inspections are warranted, recommendations and the expected costs.

The equipment Manager/Owner to decide if they want to proceed with the report.

### 9.3 Checklist (Ref AS2550 Where Applicable)

ITEM	CHECKLIST	[✓]
1.	Crane Column Base fixing integrity and security. The Base supporting footing/structure integrity.	
2.	NDT welds as per attached.	
3.	Top Head plate bearing service limit.	
4.	-----	-----
5.	Roller bearing service limit.	
6.	Critical fasteners/pins.	
7.	Electrical cabling, limit switches/controls and Emergency devices. All functions and their controls and isolators.	
8.	Components being lubricated adequately and with the correct lubrication.	
9.	Motors/Gearboxes, transmission components serviceability.	
10.	Corrosion and adequate surface treatment.	
11.	Adequate clear signage notification/data plate/warnings and capacity.	
12.	General Cleanliness/Oil leaks.	
13.	Operating instructions available with prestart check lists.	
14.	Service manual and service records available.	
15.	Guarding and other covers.	
16.	Smooth running.	
17.	Weather protection if applicable.	

## 9.4 Testing

If the Crane has been repaired and or upgraded as part of the 25 year assessment then the Crane requires the following tests to confirm its adequacy for continued use.

1. Full function test no load.
2. Full function test with capacity
3. Static 110% overload test at the maximum reach/swing. Deflection to be measured and recorded.

On completion of satisfactory testing the Crane can be put back into service and the record of all repairs, upgrades and testing to be kept with the service history logbooks.



## 10 CRANE SPARE PARTS

NOTE: Refer to any Spare Parts manuals supplied for any additional equipment fitted to the crane.

When requesting spare parts please advise the cranes serial number.

1. Slip rings. (if applicable).
2. Top head plate bearing.
3. Rollers bearing.
4. Slew drive components. (if applicable).
5. Electrical components. (if applicable).

## 11 MAINTENANCE AND SERVICING

NOTE: Refer to any Manuals supplied for any additional equipment fitted to the crane.

When requesting Maintenance/Servicing advice please advise the cranes serial number.

All maintenance or service work done is required to be recorded.

### 11.1 General

Initially (about 3 months maximum) after the crane has been installed, commissioned and load tested, check all components and tightness of fasteners/bolting/anchors and for any oil leaks where applicable.

### 11.2 Crane

#### 11.2.1 Six Monthly

1. Visually check the supporting structure for anything untoward.
2. Check the fasteners/bolting/anchors for tightness, the crane for ease of operation and no undue noise.
3. Check the end stops are secure.
4. Check signs are in place and readable.
5. Check for corrosion or paint damage, treat or touch up as required.
6. Electric Slew (If Fitted).
  - 6 monthly check the fasteners for tightness, for ease of operation and no undue noise.
  - Refer to the Slew Drive 'Clutch' maintenance instructions if clutch slip is experienced.
  - Check the motor/gearbox for oil leaks.
7. Jib Lock (If Fitted).
  - 6 monthly check the fasteners for tightness and the jib locks ease of engaging and disengaging operation.

#### 11.2.2 Annual Inspections (Periodic 3rd Party). As Per AS2550

#### 11.2.3 10 Yearly Inspection.

Note this may be reduced to 7.0 years, this depends on the record keeping method for the crane.

In addition to the above 6 monthly.

8. Support structure integrity.
9. NDT the critical welds and inspect all welds.
10. Pivot bushes serviceability.
11. Pivot pin serviceability.

#### 11.2.4 25 Year Inspection. (End Of Design Life).

In addition to the 10 yearly a full crane assessment for the suitability for continued safe operation.

## 11.3 Lubrication Schedule

NOTE: Refer to any Manuals supplied for any additional equipment fitted to the crane.

When requesting lubrication advice please advise the cranes serial number.

1. Crane
  - The top bearing and lower Roller bearings are lubricated for life.
  - The slewing ring gear and drive pinion if provided must be greased periodically to ensure coverage, avoid excess lubrication. Lubrication type is open gear spray.
  
2. Electric Slew (If Fitted)
  - The gearbox and motor bearings are lubricated for life.
  
3. Jib Lock (If Fitted).
  - No lubrication requirements.

## 11.4 Slew Drive Maintenance

The slew drive if fitted to this crane is equipped with an integrated safety slip clutch (that is factory set for maximum torque) and is externally adjustable as a protection against accidental stoppage of the jib or to limit the output torque.

There are large demands put on the slew drive for a jib crane and the slew drive must provide gentle acceleration and de-acceleration under all load conditions.

If the slewing drive does not work or runs too long, the slipping clutch must be adjusted according to the instructions.

Note: Worm Drive Self Locking Feature

Self-locking can take place when the unit is at rest.



### 11.4.1 Slipping Clutch Adjustment

A self-locking nut adjusts the sliding clutch in the gearbox shown.

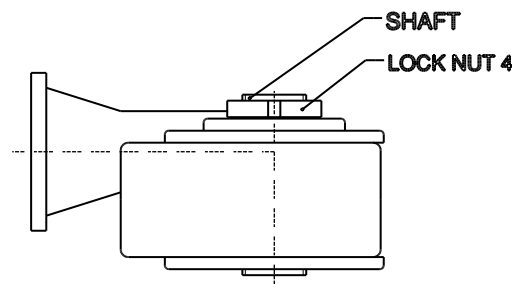
Ensure the column is plumb.

1. Remove the yellow plastic cover/cap to expose the output shaft and self-locking nut and mark the position of the self-locking lock and shaft nut (4) with chalk or pen marker.

2. Turn the self-locking nut (4) with a “C” spanner, left 5 turns - this will release the sliding clutch.
3. Rotate the jib by hand. Regardless of where the jib is stopped it must not rotate of its own accord. If it does the crane must be re-plumbed.
4. Turn the self-locking nut (4) right 5 turns to its original position.

#### 11.4.2 Slipping Clutch Fine Adjustment

1. Actuate the slew drive to see how it operates, if it lags, tighten the self-locking nut in  $\frac{1}{4}$  turn increments to achieve the performance is required.
2. If it is too abrupt, loosen the self-locking nut in  $\frac{1}{4}$  increments to achieve the performance required.



3. If acceptable, replace the yellow plastic cover/cap.
4. If the clutch is tightened fully and the slew drive fails to perform correctly, the clutch may have worn beyond its service limit, therefore it may require replacing.

## 11.5 Record Keeping

Records are to be kept for each individual crane, either hard copies or soft copies and they are to be readily accessible and up to date.

1. Crane manuals including any additional equipment supplied with the crane.
2. Crane drgs including dimensions and technical data.
3. Supporting structure information and specifications.
4. Cranes serial number.
5. Installation date.
6. Commissioning and testing documents.
7. Maintenance records.
8. Servicing records.
9. Major Inspection records.

## 11.6 Bolt Tightening Torques

For pre-assembled equipment from the factory, all bolting is already tightened, and the assembly only requires inspection before fitting to check for any loose or missed fixings.

Generally, for miscellaneous fasteners M4 to M6 where applicable, “snug” tight is sufficient for ensuring security of the fastener.

For Structural and other critical fasteners, these are to be torqued. See below chart.

Check fasteners for the correct size, length, grade, and treatment before fitting and tightening.

## 11.7 Torques for Tightening in Nm.

Note: All figures are based on the fasteners being lightly oiled.

THREAD SIZE	CLASS 4.6	CLASS 8.8
M8	8.5	22
M10	17	44
M12	30	77
M16	73	190
M20	143	370
M24	248	640
M30	491	1310

## 11.8 Base Anchors Torques for Tightening in Nm.

Note: All figures are based on the fasteners being lightly oiled.

THREAD SIZE	Nm
M16/25 Hilti HSL4	75
M16 Chemset	95



## 12 WARRANTY

Vector Lifting will warrant that in the event of any defect in any item occurring or being discovered within 12 months from the date of delivery to the original purchaser as a result of a faulty design, material or workmanship attributable to Vector Lifting, then we shall repair or supply a replacement part at our option, free of charge subject to the conditions specified herein.

The original purchaser is responsible for any transportation and insurance costs of replacement parts if the product has to be returned for repair to our workshop or service centre. The cost of repair by our service personnel, if the equipment is more than 50km from our workshop will be at the original purchaser's expense.

### The warranty applies only if:

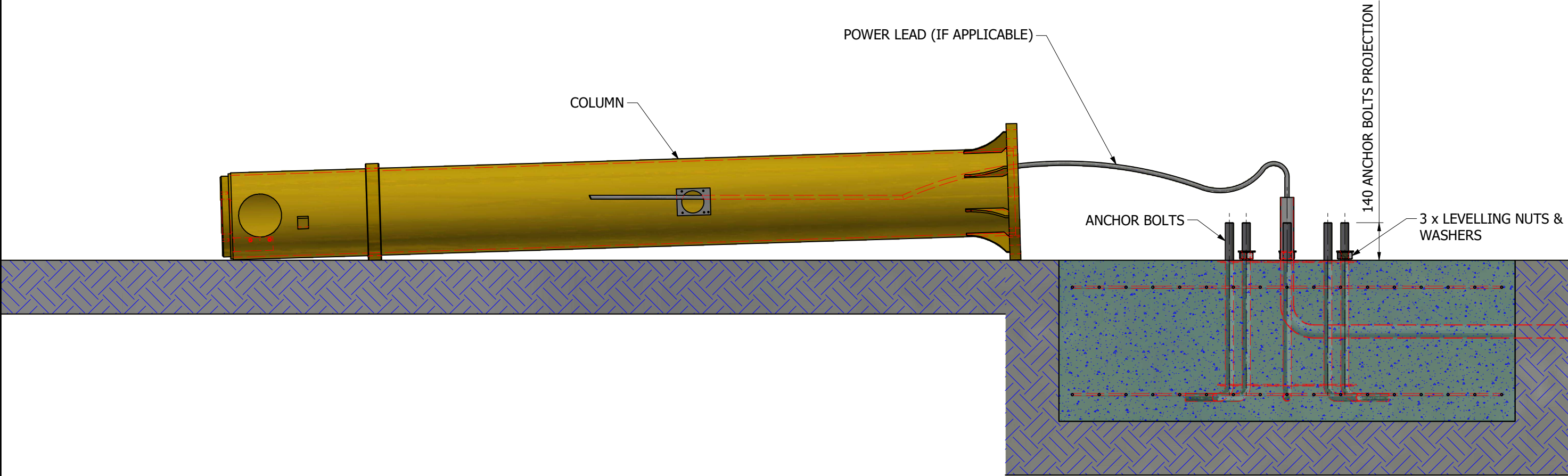
- Neither the item nor the equipment of which that item forms part has been misused or overloaded or used for other than its intended purpose.
- Used by an authorised person or repaired by an authorized person
- The item has been properly serviced and maintained by a qualified person as per AS2550.
- The defect is not in design or specification specially stipulated or required by the original purchaser.
- The original purchaser gives us notice of the defect as soon as he becomes aware of it.

Items not manufactured by our company shall only have the benefit of such warranty as Vector Lifting has from the manufacturer of that item and then only to the extent that, that warranty is honoured by that manufacturer.

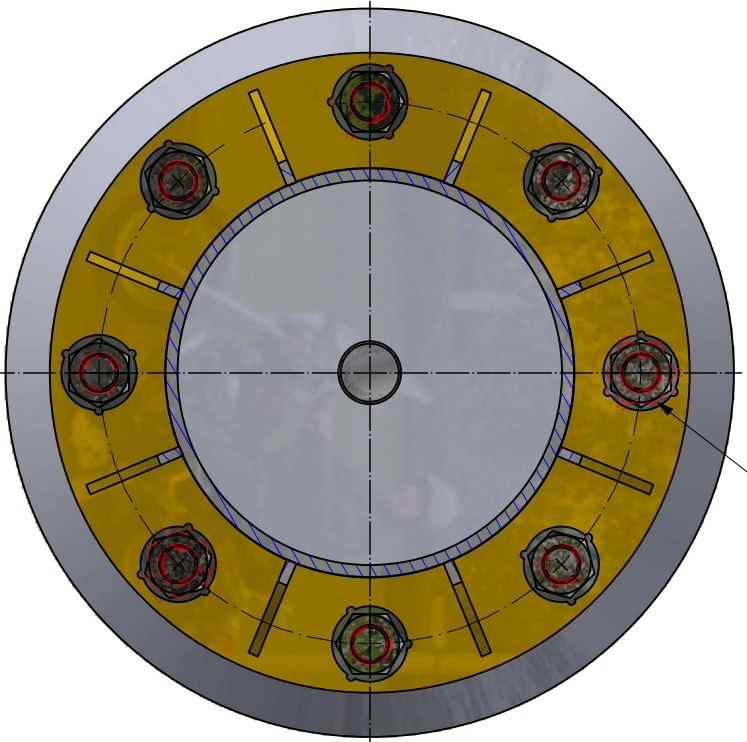
We will not accept liability for consequential losses, damage or any expenses whatsoever arising out of or in consequence of any fault or defects.

The suitability of the purchaser's buildings, foundations and any other structures is the responsibility of the purchaser.

## APPENDIX A – INSTALLATION FIGURES

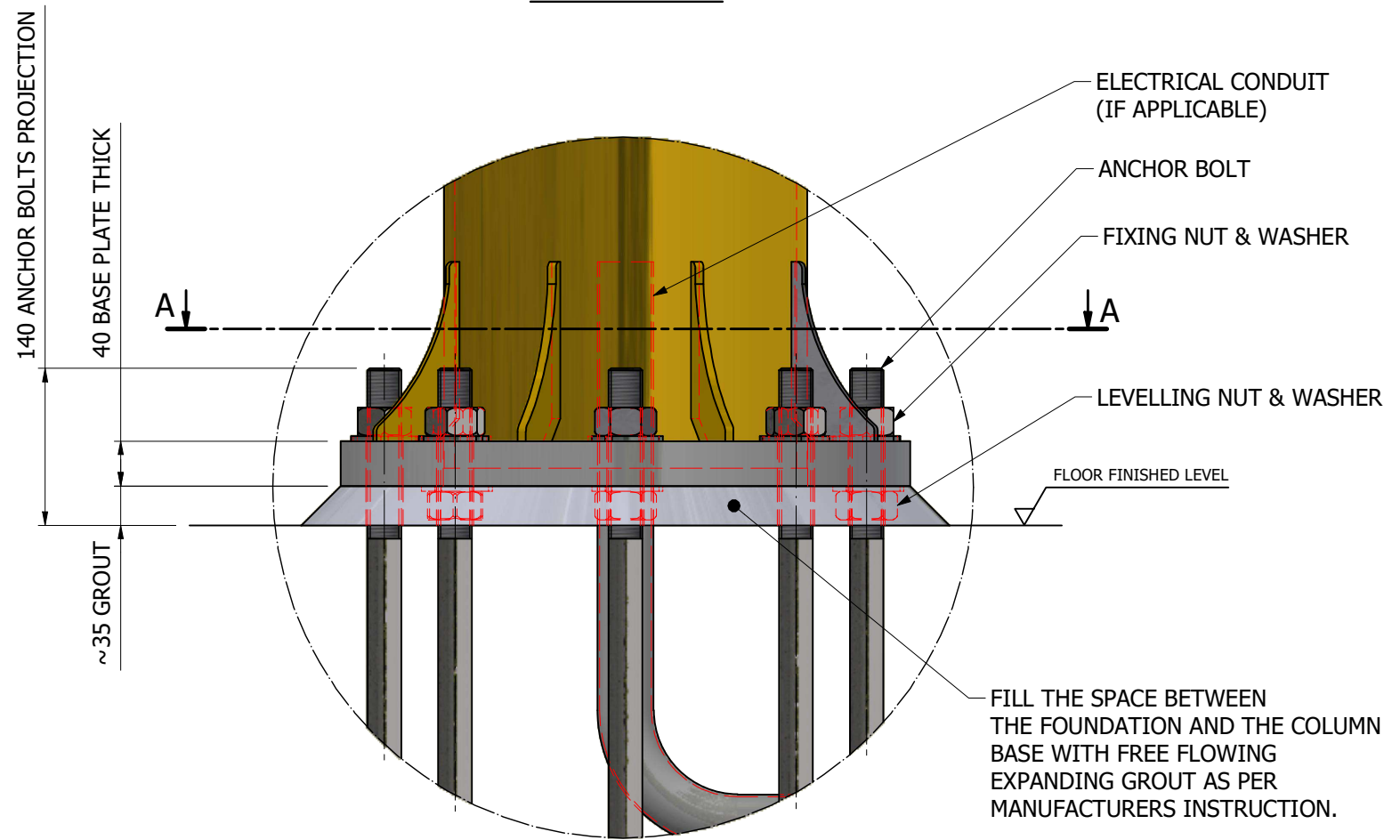


COLUMN MOUNTED - ROUND BASE  
COLUMN INSTALLATION



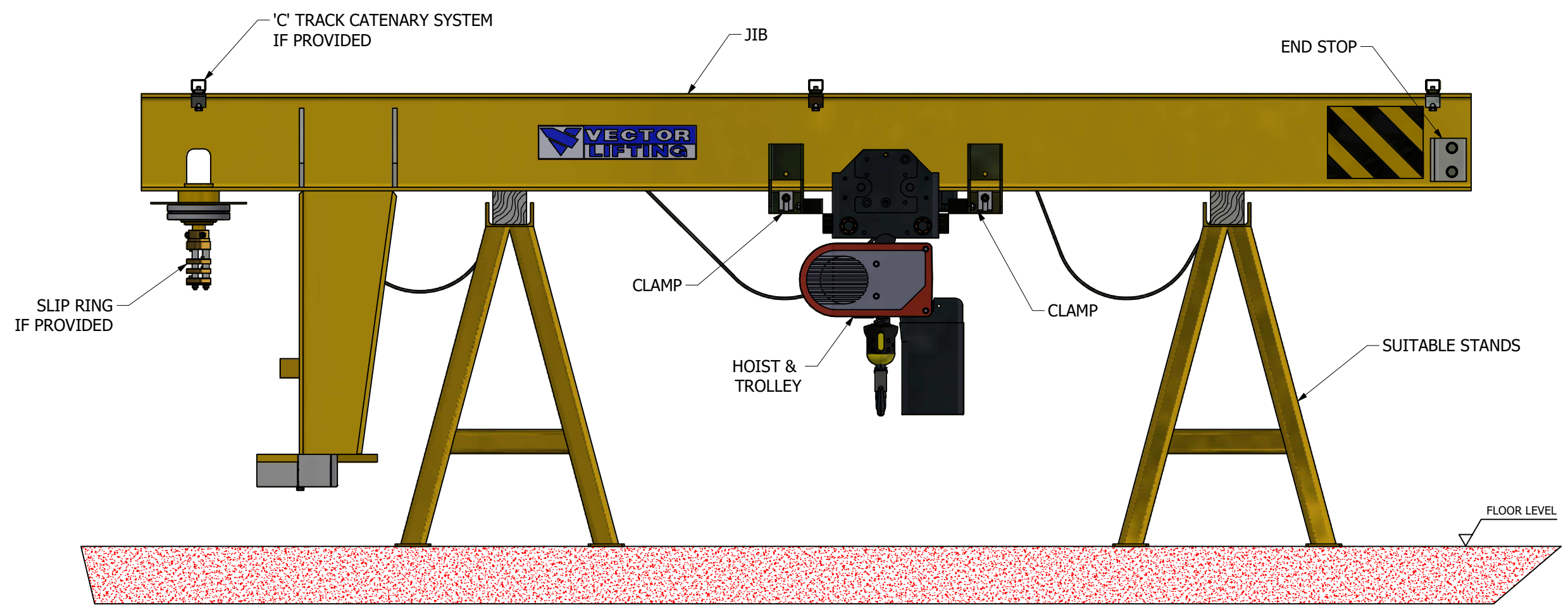
3 LEVELLING NUTS  
EQUALLY SPACED ON PCD

SECTION A-A



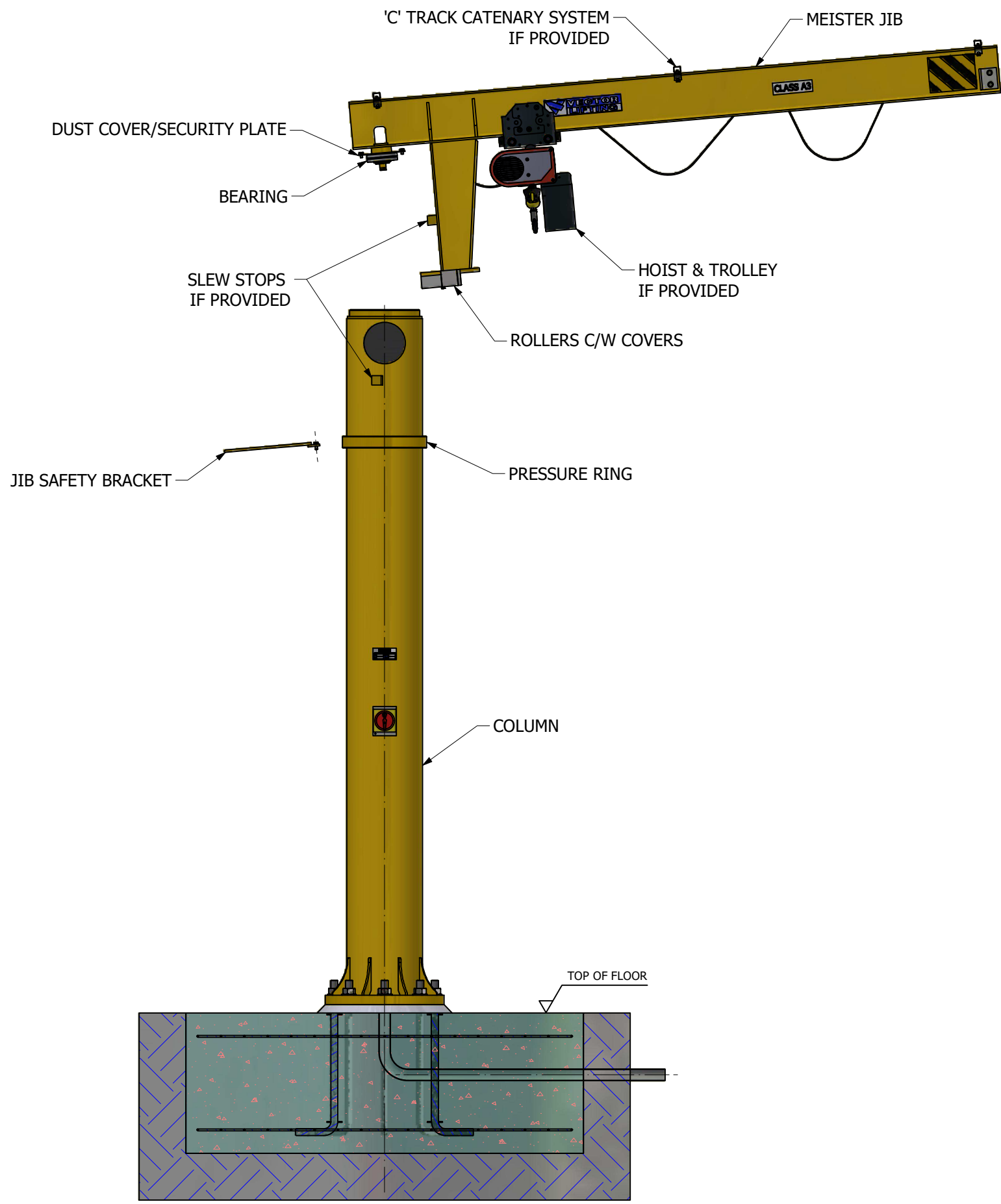
COLUMN MOUNTED - JIB CRANE  
PLAN LAYOUT OF LEVELLING NUTS

FIG. 2

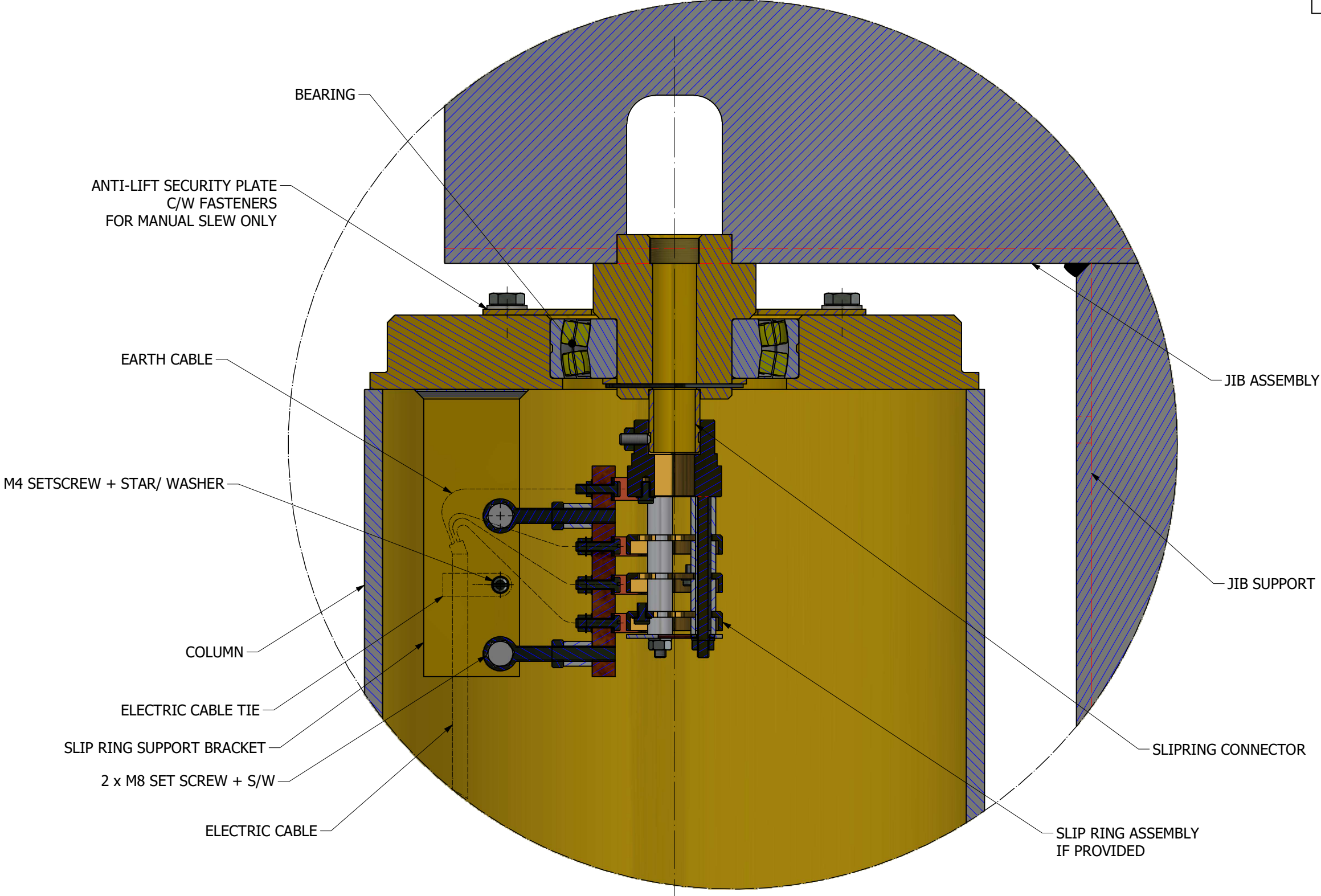


MEISTER  
JIB PRE-ASSEMBLING

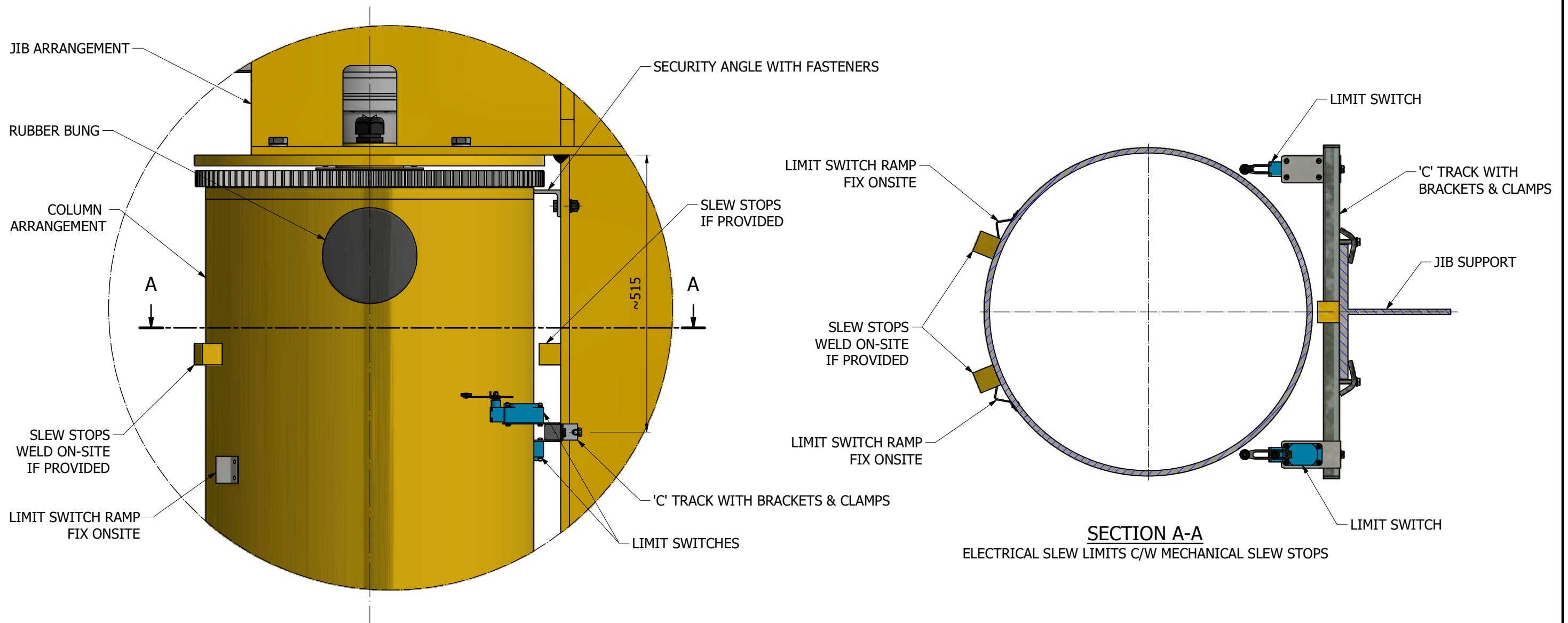
FIG. 3



**MEISTER**  
JIB INSTALLATION

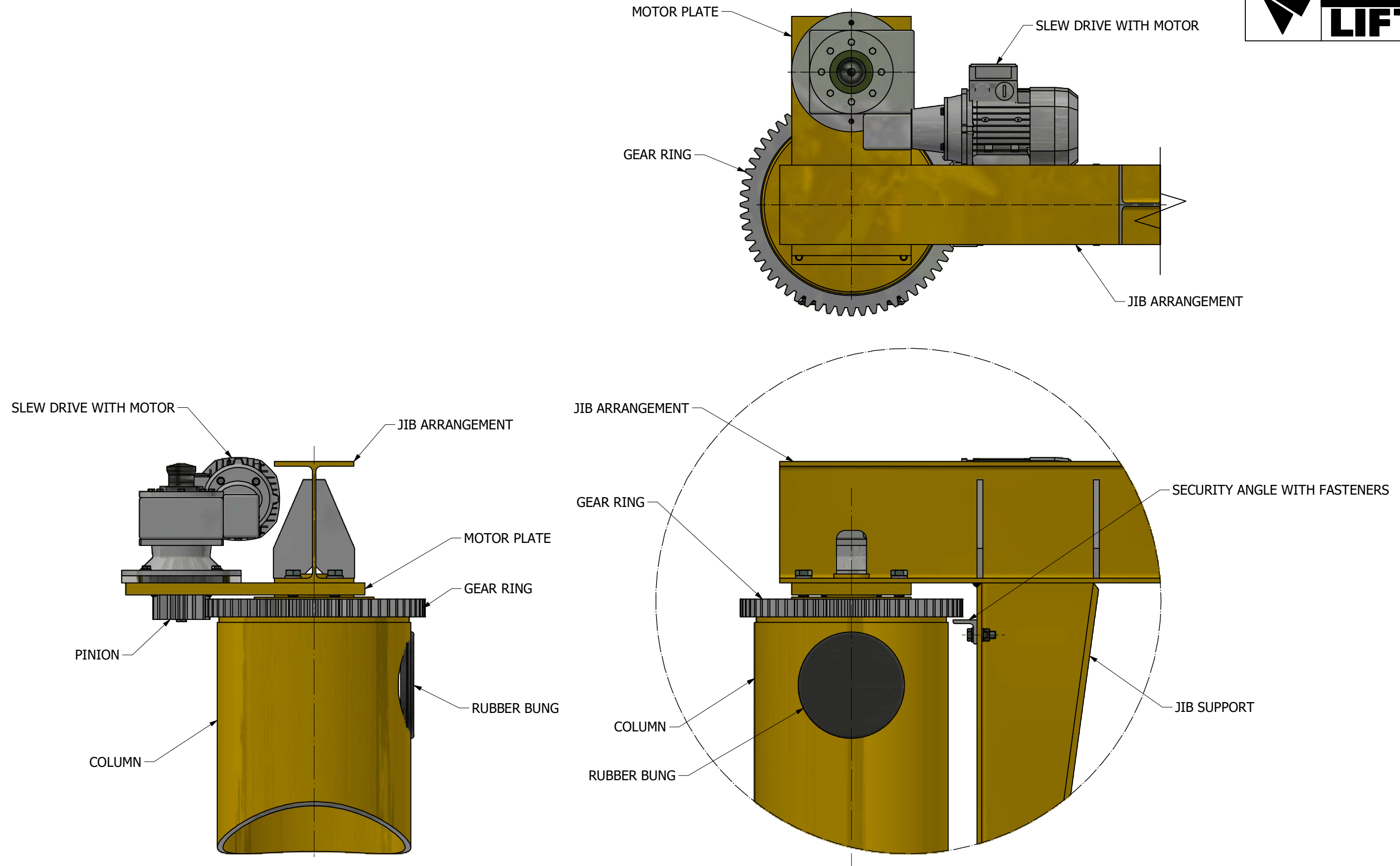


**MEISTER JIB CRANE**  
ELECTRICAL ASSEMBLY - SLIP RING

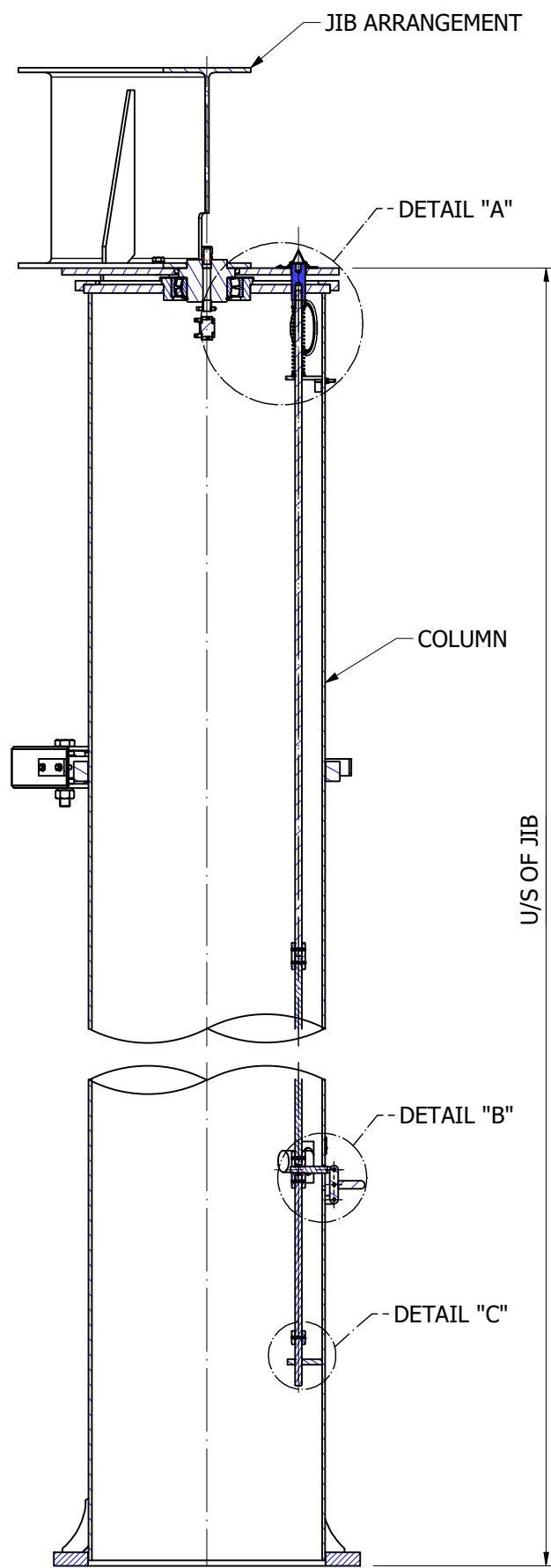


**MEISTER JIB CRANE (MOTORISED SLEWING)**  
ELECTRICAL SLEW LIMITS WITH SLEW STOPS- IF FITTED

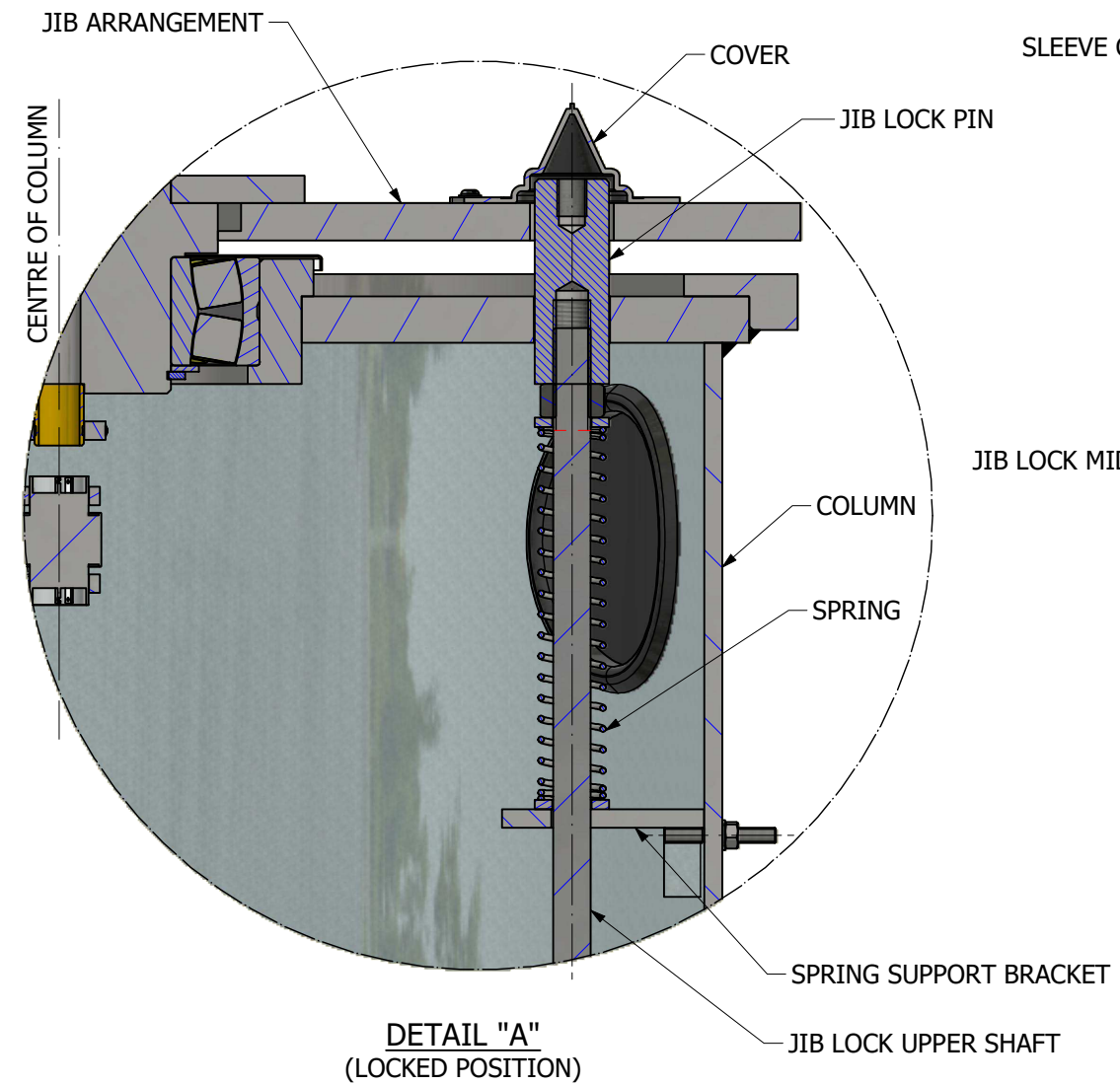




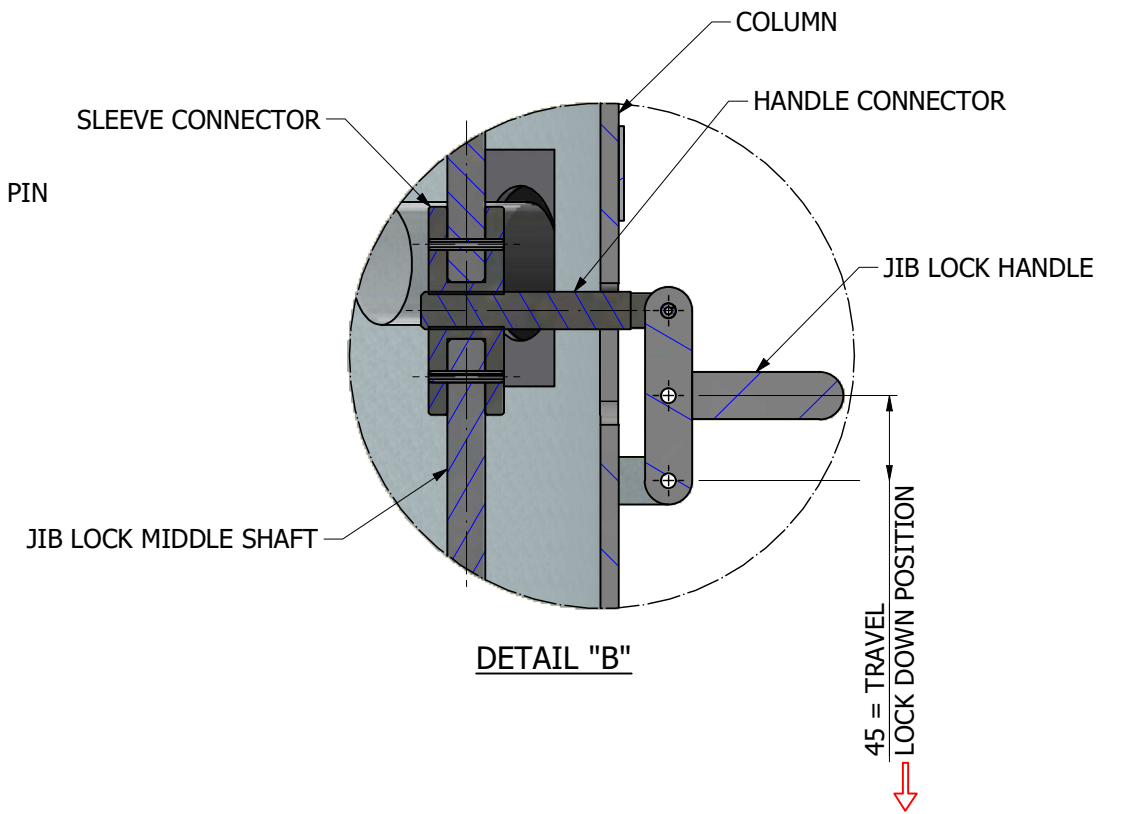
MEISTER JIB CRANE  
ELECTRICAL SLEW DRIVE - IF FITTED



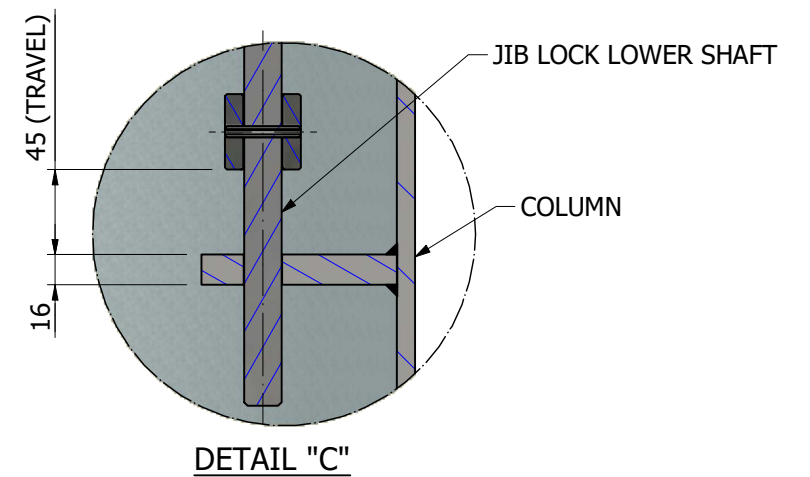
**JIB LOCKED POSITION**  
PARTIAL SECTION



**MEISTER JIB CRANE**  
JIB LOCK



**DETAIL "B"**



**DETAIL "C"**