CarouselUSA

Model 55SSV Surface Mounted Turntable

Operation and Maintenance Manual

Ver. 11 8/26/2024

MANUFACTURER'S LIMITED WARRANTY FOR CAROUSEL USA MODEL 55SSV

The limited warranty set forth below is given by Carousel USA with respect to new merchandise purchased and used in the United States, its territories and possessions, and Canada.

"Carousel USA" warrants this product (excluding its *Normal Wear Parts* as described below) against defects in material and workmanship for a period of two (2) years commencing on the date of delivery to user and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster. Damage resulting from the installation or use of any part, accessory or attachment not approved by Carousel USA for use with the product(s) covered by this manual will void your warranty as to any resulting damage.

Normal Wear Parts are warranted to be free from defects in material and workmanship for a period of (1) one year from the date of delivery to user. Normal wear parts include, but are not limited to items including: support wheels, and pinion gears.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE, through Carousel USA.

Carousel USA
15206 Ceres Avenue
Fontana, CA 92335
626-334-7190
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This limited warranty does not provide coverage in the following cases:

Routine maintenance items such as lubricants, drive adjustments, deck adjustments, running gear cleaning, and normal deterioration of the exterior finish due to use or exposure.

a. Service completed by someone other than an authorized service dealer.
b. Carousel USA does not extend any warranty for products sold or exported outside of the United States and/or Canada, and their respective possessions and territories, except those sold through Carousel USA's authorized channels of export distribution.
c. Replacement parts that are not genuine Carousel USA parts.
d. Transportation charges and service calls.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind Carousel USA. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. Carousel USA shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement turntable services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. **Alteration of safety features of the product shall void this warranty.** You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IMPORTANT: Owner must present Original Proof of Purchase to obtain warranty coverage.

Proprietary Information

Carousel USA has proprietary rights on the information in this document. It is forbidden to copy, duplicate or disclose the information herein, in whole or in part, or make use of the information, unless permission has been previously obtained, in writing, from Carousel USA.

Table of Contents

1. Scope

This manual provides a technical description, installation, and instructions for the general safety and maintenance of the *55SSV Turntable.*

2. Introduction

This turntable is designed with special features to fulfill system operation requirements as follows:

- Surface mounted turntable for installations not requiring a concrete pit
- Pin-gear drive system, providing accurate and consistent torque without slippage
- Slewing style, High-capacity main center bearing
- Roller bearing support wheels manufactured by CUSA and made from extruded Nylon 6/6 containing finely divided particles of MoS_2 offering enhanced load bearing capabilities and increased wear and friction resistance.
- 1.5 HP, commercial quality, Nord motor and helical-worm gearbox

3. Technical Description

A. Mechanical Operation

The rigid steel topped turntable is supported by and rotates on a large central slewing bearing and 30 support wheels. The turntable is powered by a 1.5 HP Nord gearmotor. The Gearbox output shaft is connected to a pinion gear. The pinion gear meshes with the pins which span the perimeter of the turntable and rotates the turntable in either direction.

B. Table of Specifications

Turntable Diameter	216.5'' [5500 mm]
Turntable Height	3.25''
Load Capacity	7,000 LB operating capacity
Top Surface	3/16'' Steel (Standard), or 3/16'' Stainless Steel or ¼'' Aluminum (optional)
Rotation Speed (CW &CCW)	0.2 to 1 RPM
Hardware	Grade 8.8 or equivalent

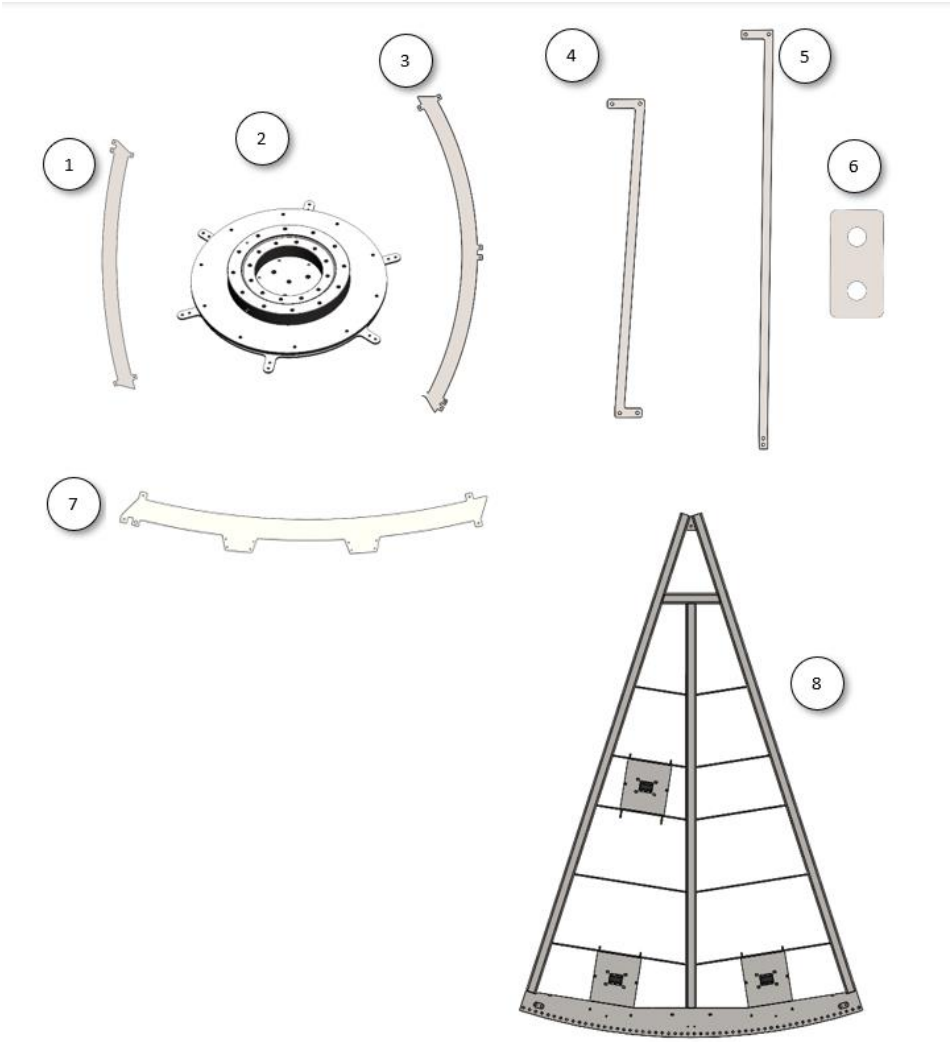
4. Installation

A. General

The turntable components should be unloaded from the packing crate or shipping pallets. Make note of any damage to the shipping crate that may have occurred during transit. Contact Carousel USA immediately if the damage appears significant enough to have affected the contents.

B. General Turntable Installation

ITEM #	PART NAME	PART NUMBER	QTY PROVIDED
1	OUTER TRACK	PTK-55SLP-O	11
2	CENTER BEARING ASSEMBLY	DCB-55SLP	1
3	INNER TRACK	PTK-55SLP-I	6
4	OUTER SPINDLE	PTK-55SLP-S2	12
5	INNER SPINDLE	PTK-55SLP-S1	6
6	OUTER TRACK CONNECTOR PLATE	PTK-55SLP-OC	12
7	OUTER TRACK-MOTOR SECTION	PTK-55SLP-M	1
8	PIE STRUCTURES	DPP-55SLP	10



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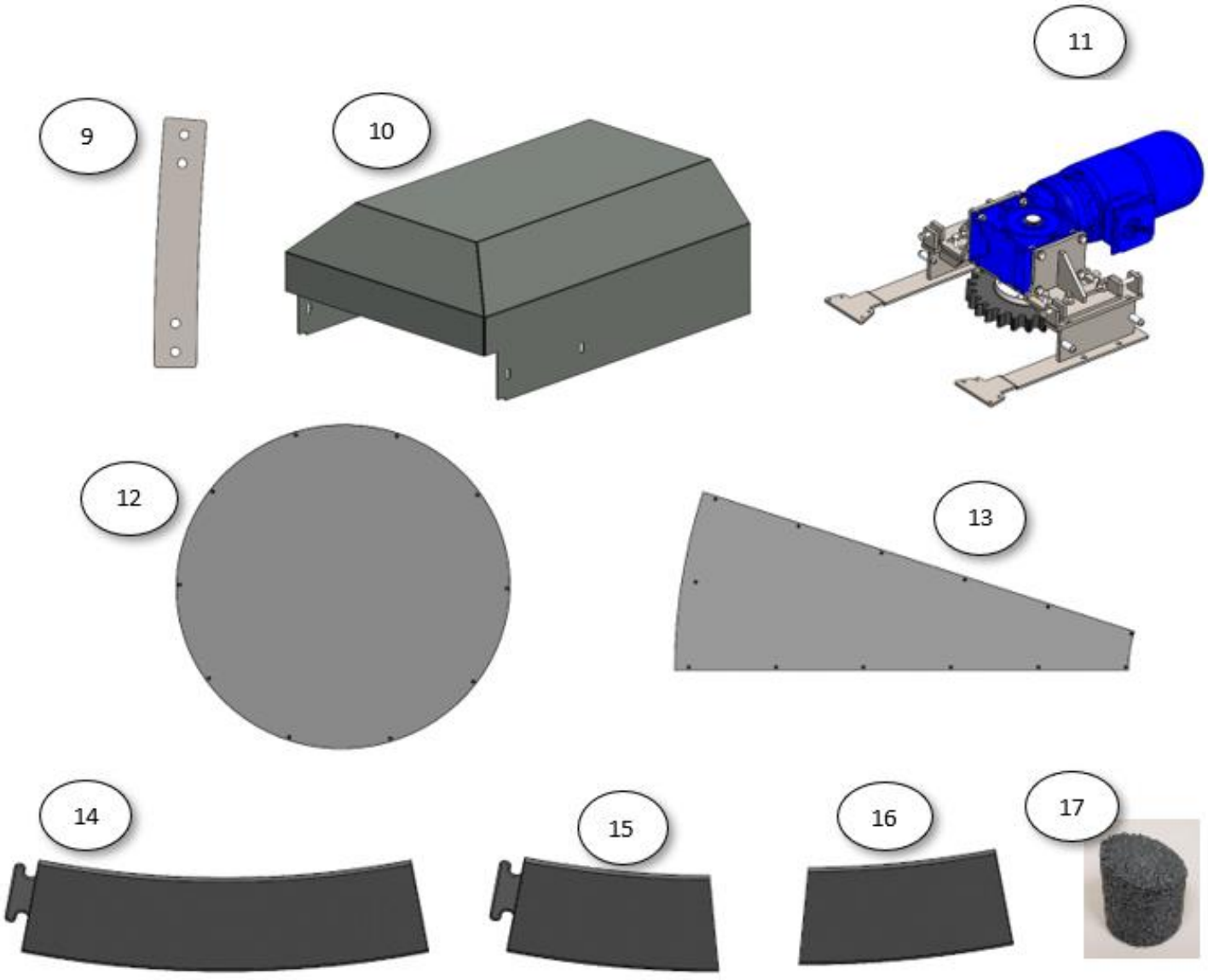
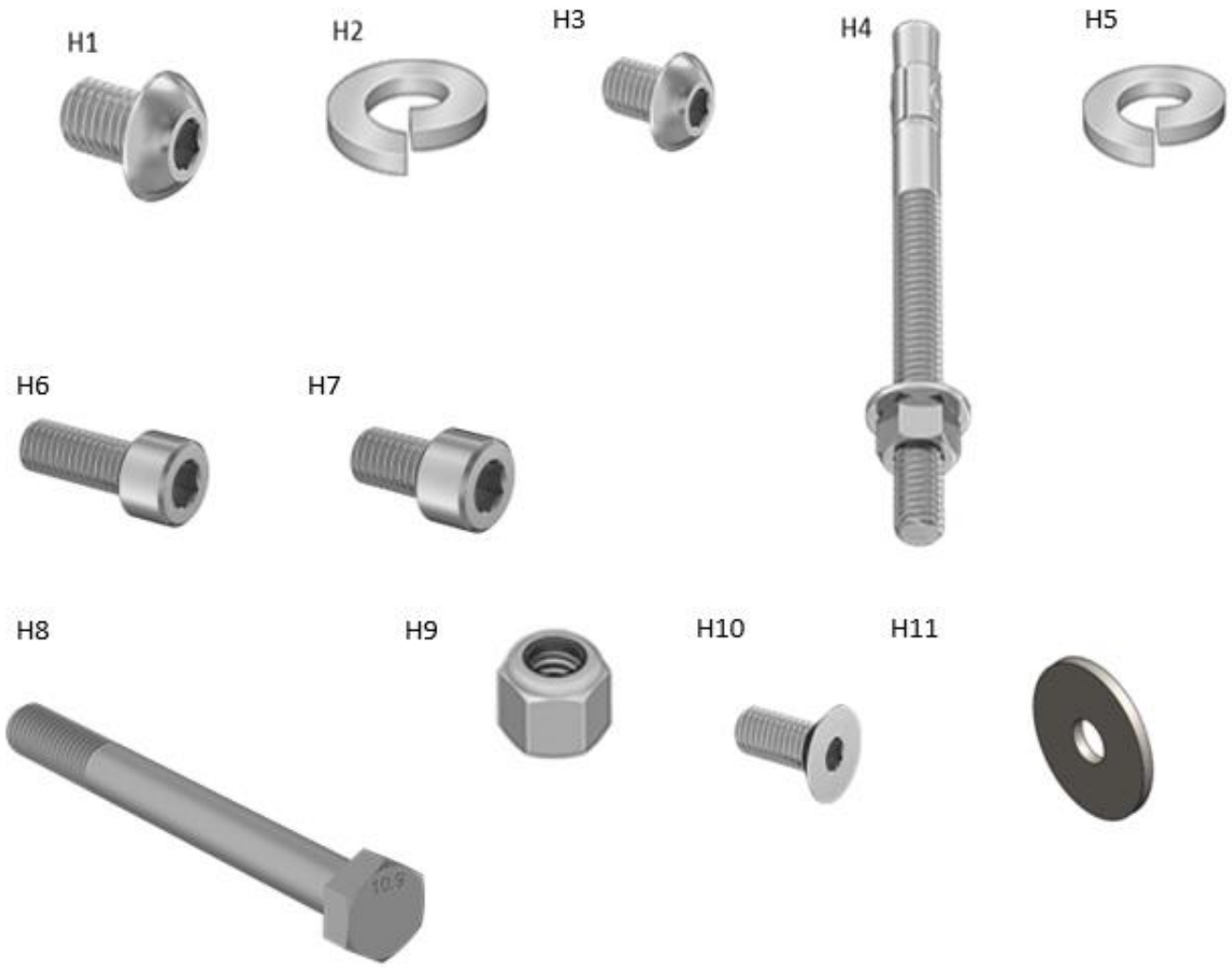
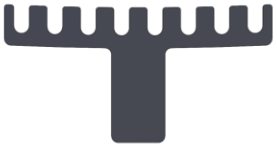
ITEM #	PART NAME	PART NUMBER	QTY PROVIDED
9	PIE-TO-PIE CONNECTOR	PPP-55SLP-CP	10
10	MOTOR COVER	PMC-IMM	1
11	MOTOR ASSEMBLY	DMM-IM	1
12	CENTER TOP PANEL	PTP-SLP55M	1
13	PIE PIECE TOP PANEL	PTP-SLP55P	20
14	CURVED RAMP	DR1-SLP	15
15	½ RAMP MALE	DR2-SLP	1
16	½ RAMP FEMALE	DR3-SLP	1
17	RAMP HOLE PLUG	DR4-SLP	64



ITEM #	PART NAME	DESCRIPTION	QTY PROVIDED
H1	M8 X 12 BUTTON HEAD CAP SCREW		96
H2	M8 SPLIT LOCK WASHER		96
H3	M6 X 12 BUTTON HEAD CAP SCREW		8
H4	3/8'' X 3-3/4''CONCRETE STUD ANCHOR		47
H5	M10 SPLIT LOCK WASHER		50
H6	M10 X 20 SOCKET HEAD CAP SCREW		10
H7	M10 X 16 SOCKET HEAD CAP SCREW		40
H8	M14 X 140 HEX HEAD CAP SCREW		30
H9	M14 NYLON -INSERT LOCKNUT		30
H10	M6 X 16 FLAT HEAD CAP SCREW		270
H11	M14 OVERSIZE FLAT WASHER		90

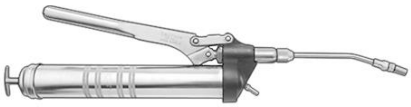


TOOL PROVIDED



PIN SPACER TOOL

TOOLS REQURIED FOR INSTALLATION



GREASE GUN WITH LITHIUM COMPLEX TYPE II EP2 GREASE

ANGLE GRINDER WITH CUT OFF WHEEL

IMPACT DRIVER

3/8''x 6" MASONRY DRILL BIT

SPANNER WRENCHES (17 mm, 19 mm)

METRIC IMPACT BIT SOCKETS (4,6,8 mm)

METRIC TEE-HANDLE KEYS (3,4,6,8 mm)

HAMMER DRILL

DEEP SOCKETS (9/16'')

SHOP VACUUM

3/8'' DRIVE TORQUE WRENCH

Step 1: Prepare installation site ensuring the surface is ***Smooth and Level,*** and in good condition to support the turntable payload. ***Floor Flatness height deviation shall be no more than 1/8''***. Recommended diameter of smooth and flat surface to be in excess of Ø 270''. ***Sloped floors are acceptable up to 10%***

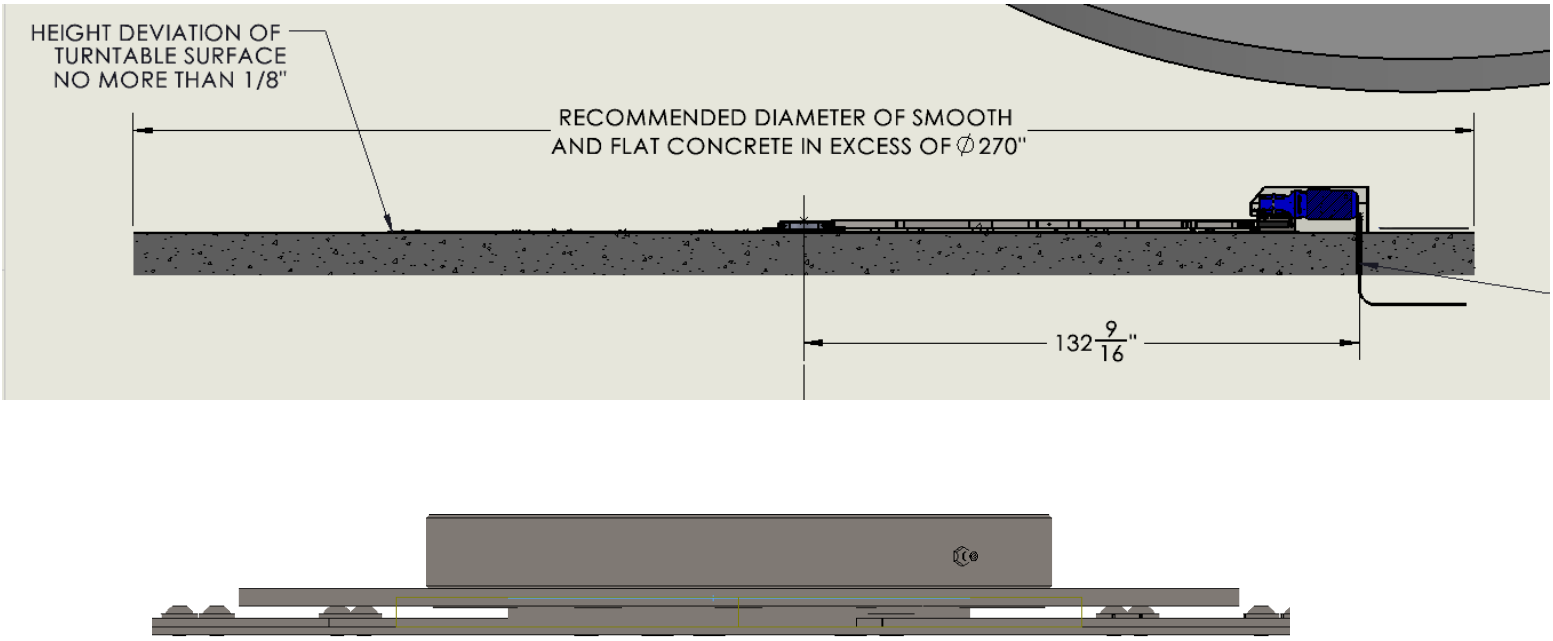


Figure 1: Place the center bearing/hub assembly in the desired center of turntable installation site.

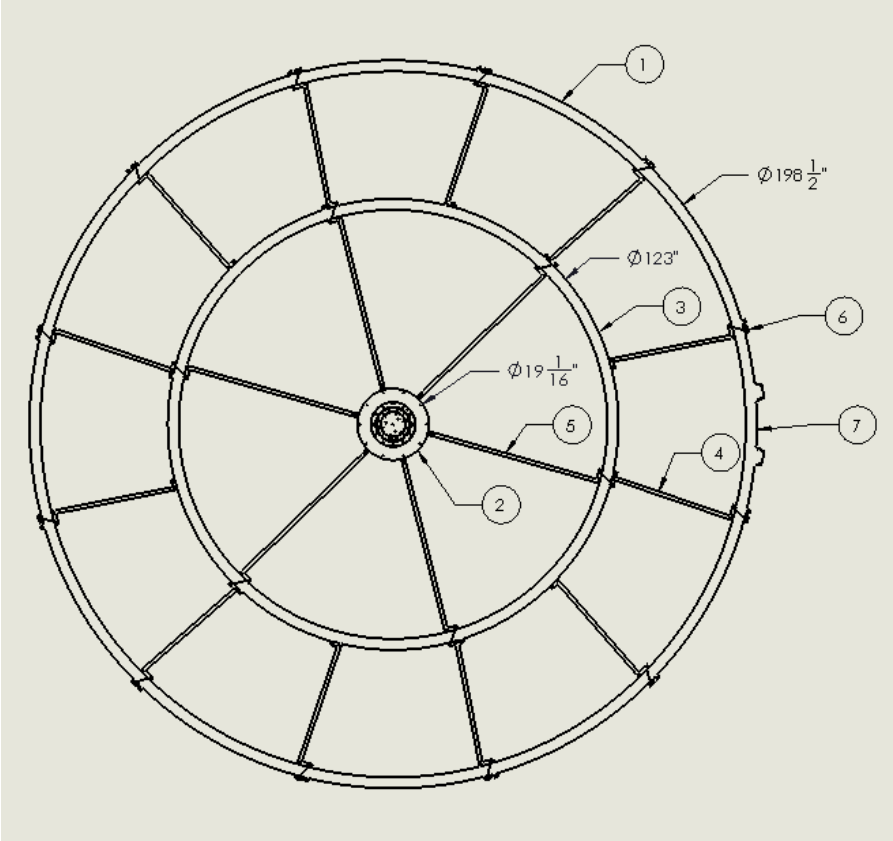


Figure 2: Track component layout (Refer to component tables for identification)

Step 2: ***At this time, the installer must locate the outer track motor location plate (Item 7) and place the part at the desired location keeping in mind where the motor/motor cover will be optimally placed. One thing to consider is where the vehicles will be shot for photography: locating the motor at 180 degrees from the camera location.*** Lay out the remaining parts in the orientation as shown in Figure 2 above. After all components are set in place, loosely fasten (do not tighten) the M8x16 screws with an M8 lock washer (H1, H2). Once the components in figure 2 are fully connected, tighten all the screws to 17 ft-lb.

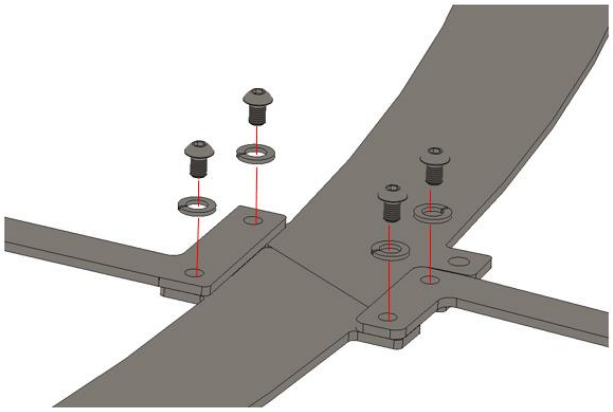


Figure 3: M8 x 16mm screws and lock washers installed in track

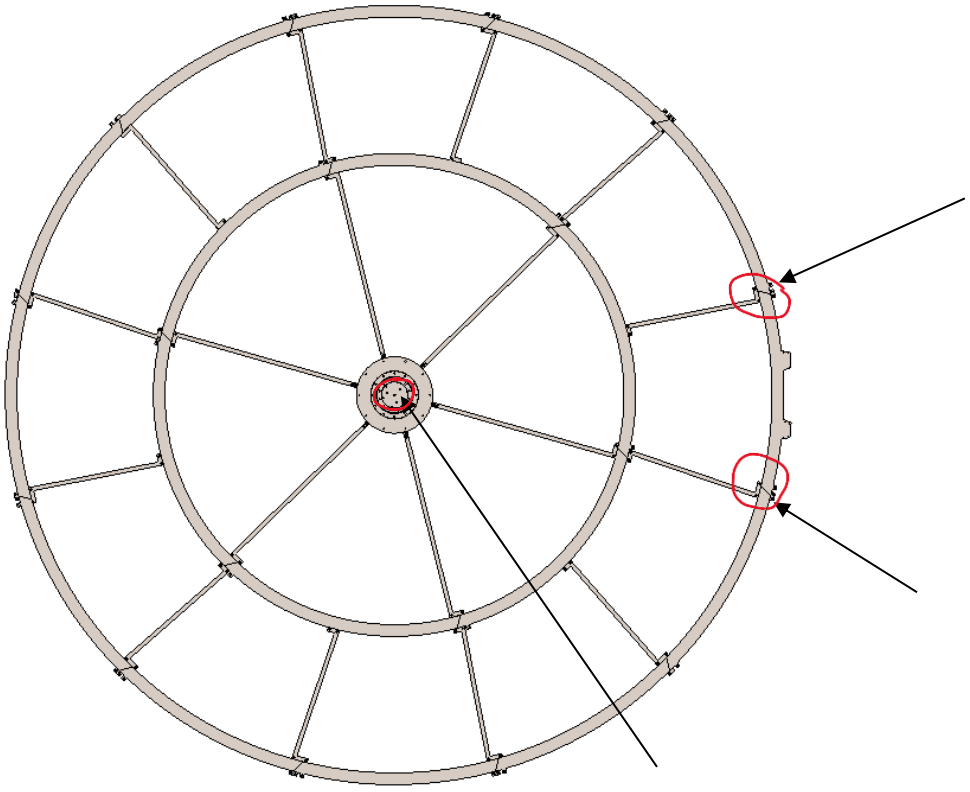


Figure 4: Center bearing and motor track anchoring

Step 3: Once the tracks are fully assembled, bore 3 holes thru the center bearing plate into the floor using the 3/8'' masonry bit at a depth of 5''. Use a shop vacuum to remove chips and dust from the bored holes. Install three 3/8" x (H4) anchors to secure the center bearing assembly to the floor. Repeat the drilling and installation of anchors to fasten the motor track plate (see arrowed circles on fig.4) to the floor surface. The center bearing and motor track anchors ***are required*** to keep the positioning of the turntable true to the desired location, and to prevent damage to the motor. It is recommended (not required) to anchor all the remaining tracks. The anchors will firmly hold the tracks to the un-even ground surfaces and prevent unwanted noise as the turntable rotates. Once all anchors are tightened to 28 ft-lb, ***it is required and imperative to cut and remove the exposed threads of the concrete anchors above the nut (see illustrations below). If the threads are not cut properly the stud will interfere with the rotating turntable and cause damage to the turntable structure. The center bearing anchors typically do not need to be cut .***

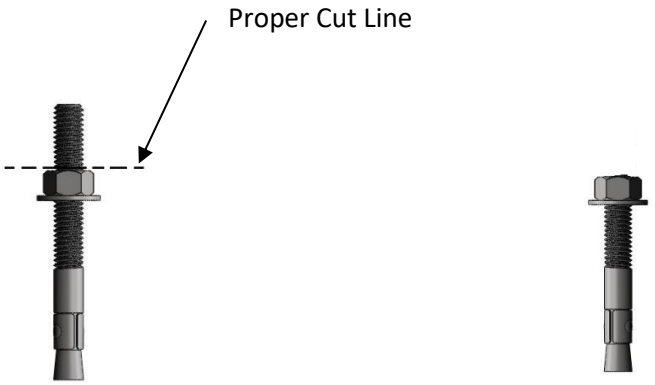


Figure 5: Exposed thread anchor cutting diagram

Step 4: Lay Pie Structure (item #8) atop the tracks and center bearing, aligning with the center bearing plate mounting hole. Fasten a M10x20mm screw with an M10 split lock washer (H5, H6) and leave loose for adjustment. Repeat this for 9 of the other pie structures in a counterclockwise ascending order. The identification number is located on the curved surface, at the perimeter of each pie piece. ***Arranging the pies in their numerical counterclockwise fashion is critical for proper alignment.***

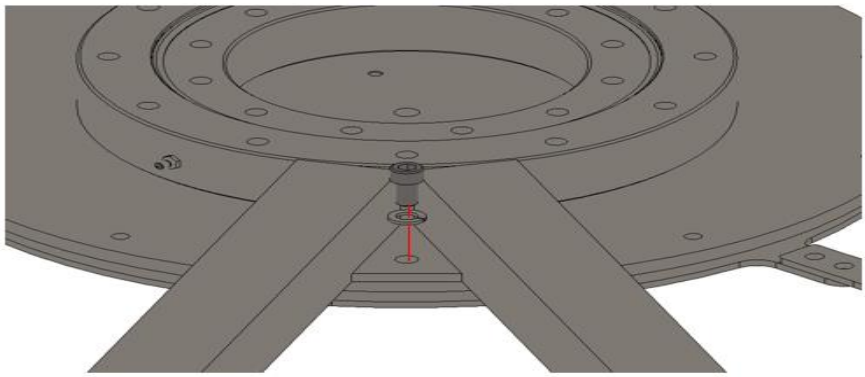
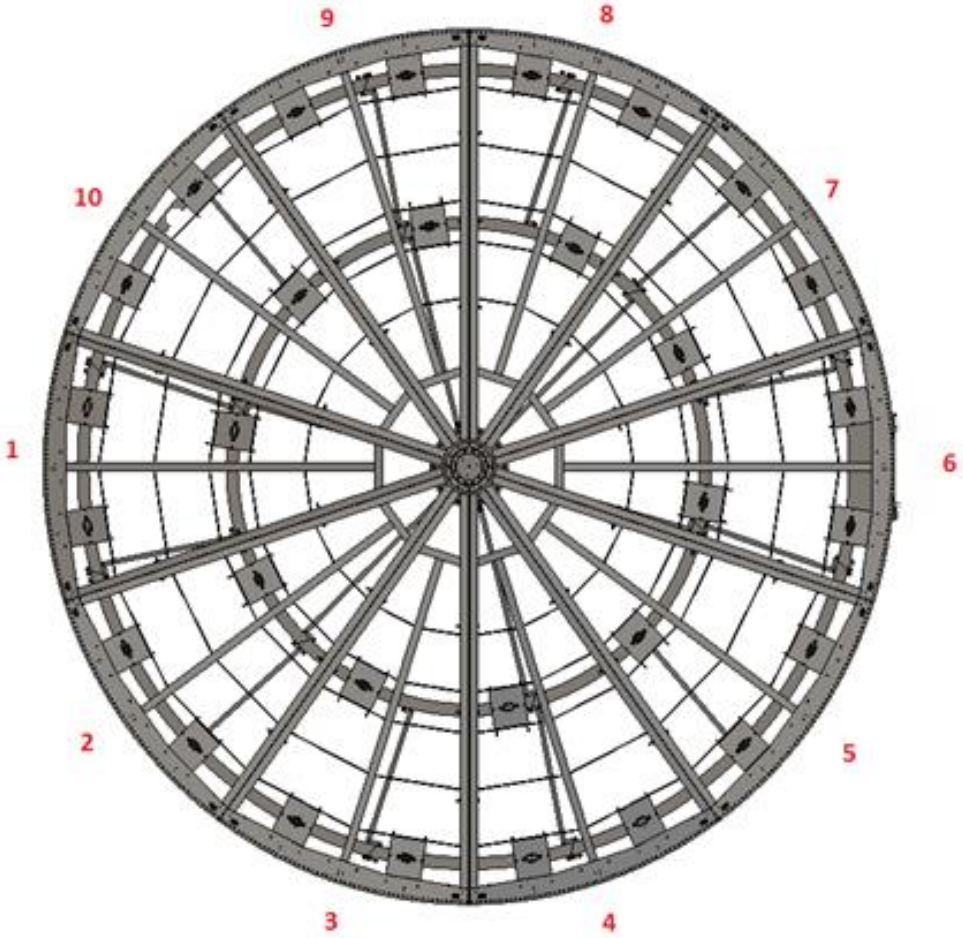


Figure 6: Pie structure layout sequence diagram



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Step 5: After all the pies are in place, insert three sets of M14x 140 Hex bolts with oversize washers (H8, H11) through the sides of each pair of pie structures. Secure the Bolts with M14 nylon insert lock nut and another oversize washer (H9, H11). Thread on but leave the nuts loose for now. Repeat this process for the remaining pie structures.

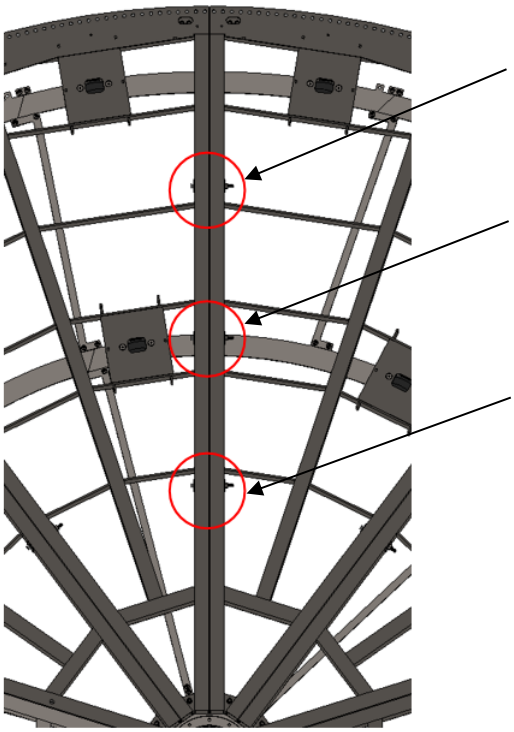


Figure 7: M14 x 140mm crossbolt location diagram

Step 6: Fasten the pie-to-pie connector at the seam of each pie piece (Item 9) located at the perimeter of the turntable shown in Figure 8. This attaches to the underside of the turntable with M10 x 16 Socket head cap screws and M10 split lock washer (H5, H7). Fasten the hardware but leave loose until all connecting plates are attached.

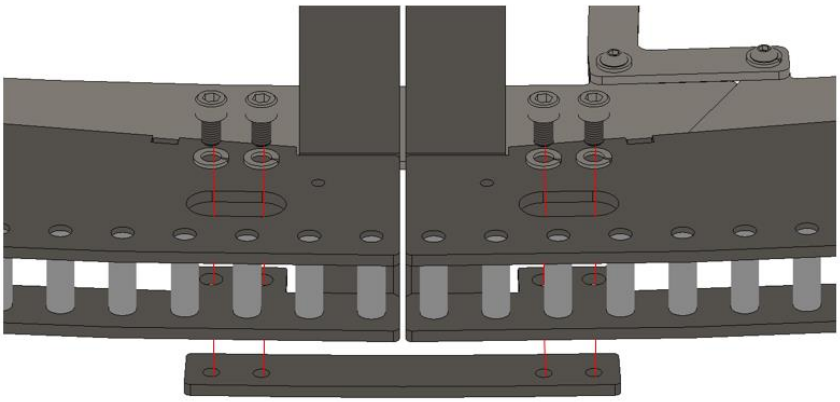


Figure 8: Pie-to-pie connector screw and plate installation

Step 7: Place the provided pin spacer tool as shown in figure 9 below, and tighten the four screws (Step 6) for that seam to 35 ft-lb. With the tool still in place, tighten the three long bolts that span the same seam (Step 5) to 30 ft-lb. ***Do not over tighten these bolts as it will cause the jig tool to be pinched with the pins, and lead to misalignment***. Lastly, tighten the center screws (Step 4) that fasten the pie structure to the center bearing to 35 ft-lb. Again, repeat this for the remaining screws.

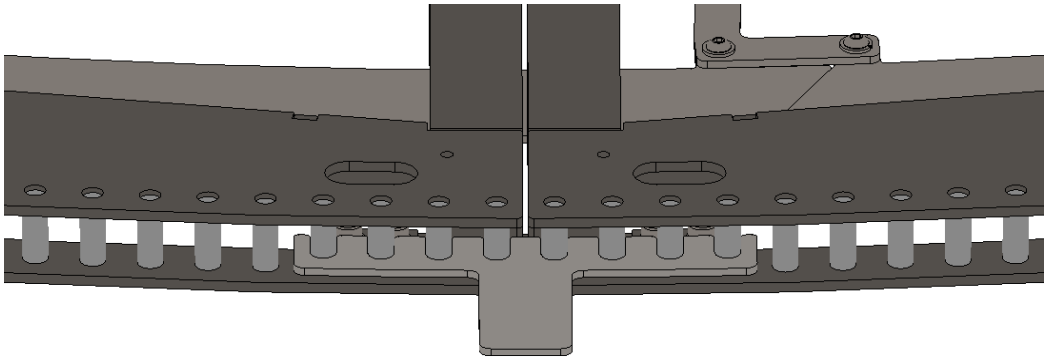


Figure 9: Displayed used of pin spacing alignment tool

Step 8: Grease must be applied to the circular tracks to reduce wheel wear, noise, and vibration. Use a grease gun and apply a generous bead of grease along the center of the inner and outer tracks. This is where the support wheels roll along as the turntable rotates. Do not ride on the turntable while rotating. Severe injury may occur. Use lithium type II grease. Grease the tracks around the entire turntable in the shaded areas shown in figure 11 below.

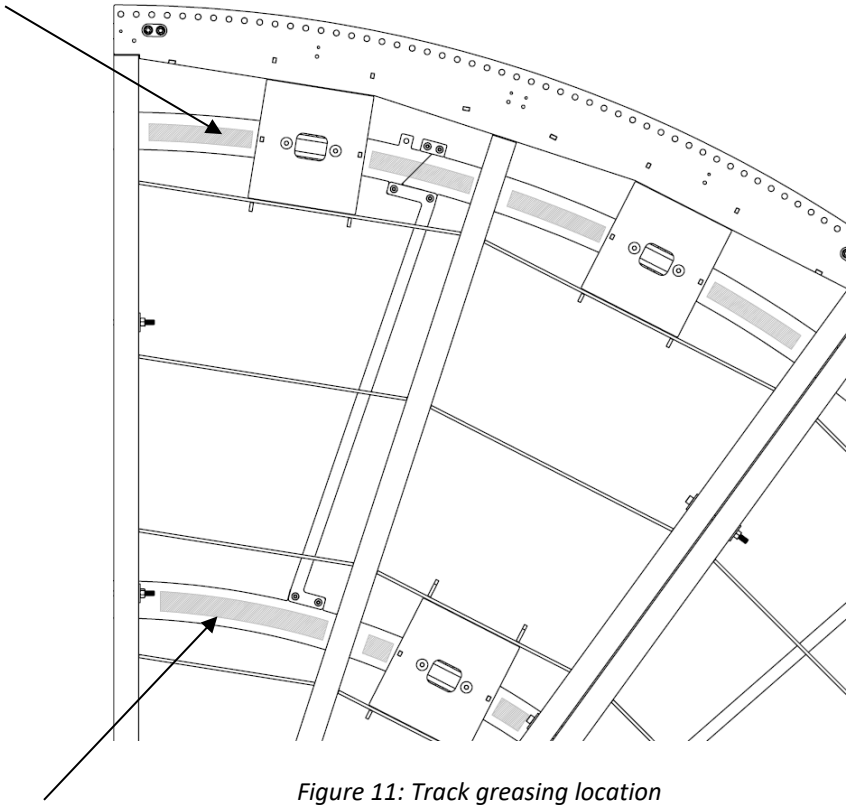
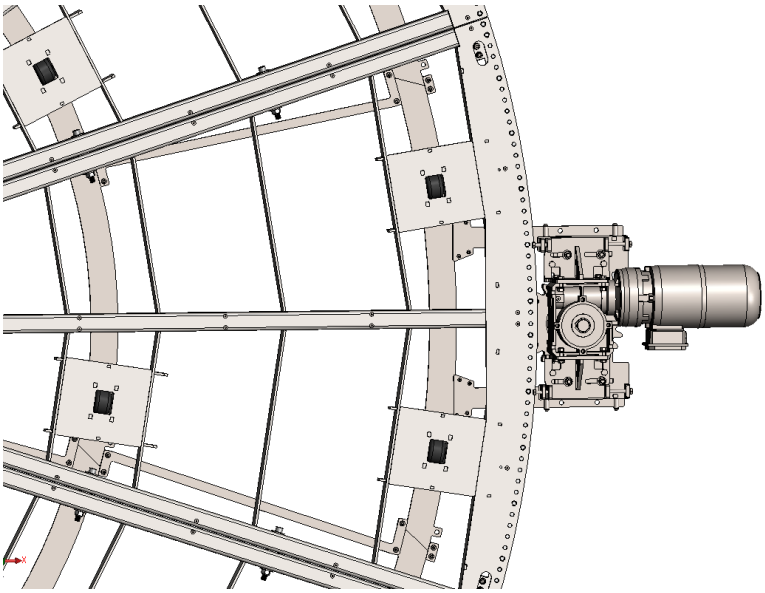
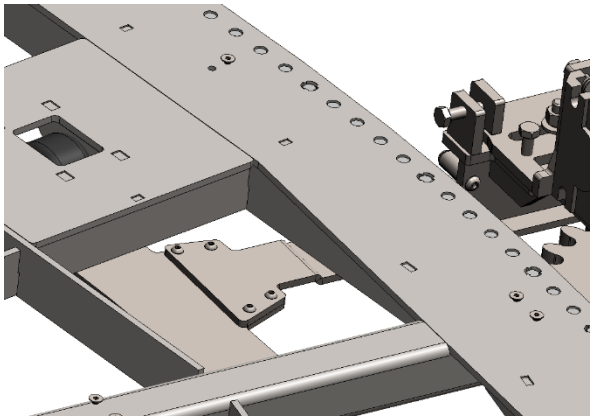


Figure 11: Track greasing location

Step 9: Attach the motor and drive unit to the tracks: Position the Turntable that gives clear access to the tabs of the motor track (item 7) Slide the motor mount arms beneath the turntable and align the 8 holes with the track. Install 8 of the M8x12mm button head cap screws and torque them to 15 ft-lb.





Step 10: The top panels can now be installed beginning with the center panel. Align the top panel holes with the corresponding threaded holes located on the pie piece**.** Fasten with the M6x16mm screws (H10) but leave loose until all panels are placed. With the center placed and secured loosely, begin placing the pie panels. ***The pie panels are stamped on the underside, left hand side, numbered 1 through 20. Install the panels in numerical order, in a counterclockwise fashion. For example: Panel 1 and 2 should be on pie 1, and panel 3 and 4 should be on pie 2… etc (shown in figure 12).*** Fasten panels with the M6x 16mm screws and leave loose until all panels are in place. Once all panels have screws threaded, proceed to torque them down to 18 Ft-lb.

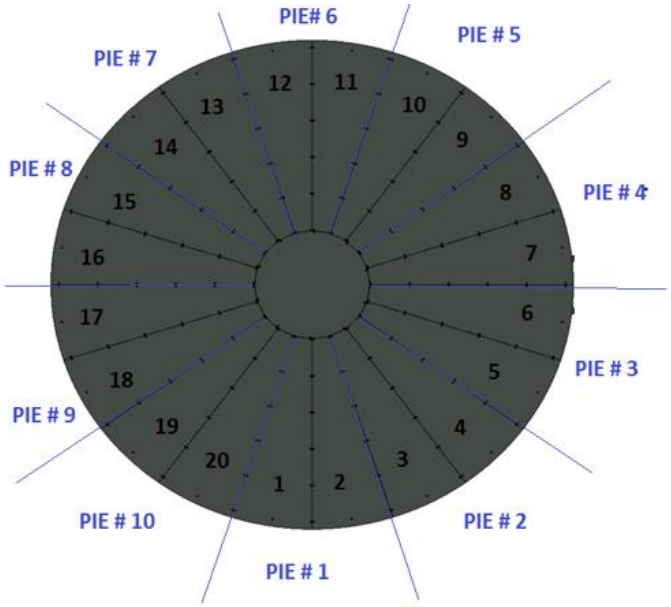


Figure 12: Top panel layout diagram

Step 11: Finalize the motor installation: Install and tighten four 3/8'' anchors (H4) securing the motor mount to the floor. Use the same anchoring process in step 3. Loosen the horizontal and vertical adjustment screws labeled "A" and "C". Loosen the 4 vertical adjustment nuts "B". Back out the table-side horizontal adjustment bolts "A", to allow the motor to move as far in as possible. (Move the gear inward so it fully engages with the pins.) Use the vertical adjusting screws ("C") on the mount to adjust the gear so its horizontal center is slightly below the center of the pins (Make sure the gear is level when doing this, adjusting bolts "C" till this is accomplished). Now use the motor side horizontal adjustment screws ("A") to back the motor out of the pins about 1/8" for gear backlash. Now tighten vertical adjustment nuts "B". Confirm level of the gear. Snug up then tighten all 4 of the vertical adjustment screws ("A") to lock the motor in place. Finally, grease all pins around the perimeter of the turntable with the appropriate grease. Do not spin the turntable while applying grease. **Severe injury may occur.**

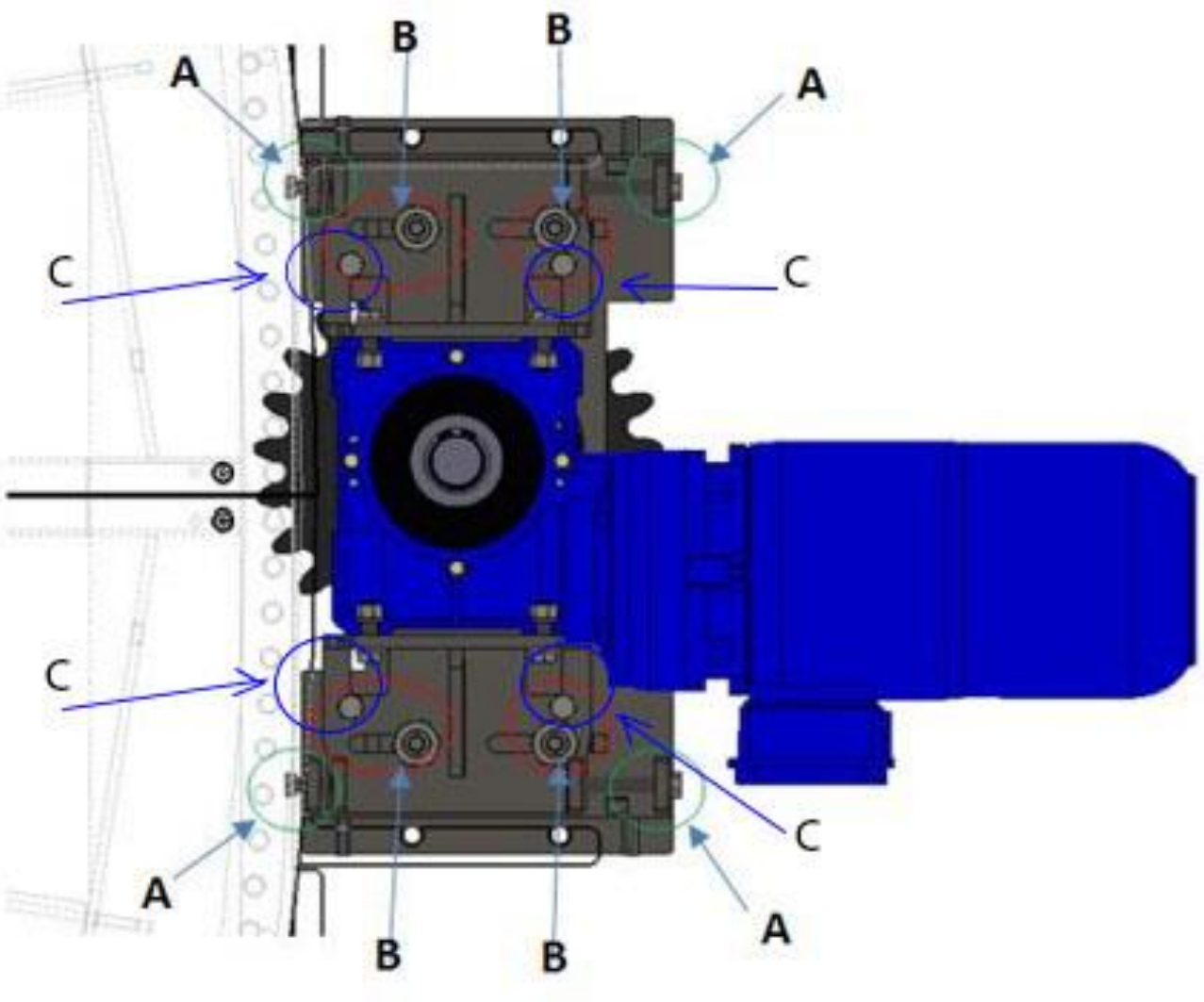


Figure 13: Motor placement and adjustment diagram

Step 12: Place the motor cover over the motor shown in figure 14 and secure in place with the four M8x12mm screws into the M8 standoffs on the motor mount. These screws are shipped from the factory attached to the motor mount. Torque the screws to 8 ft-lb. You may choose to omit this step and leave the cover off if the electrician is to perform the electrical connections to the motor.

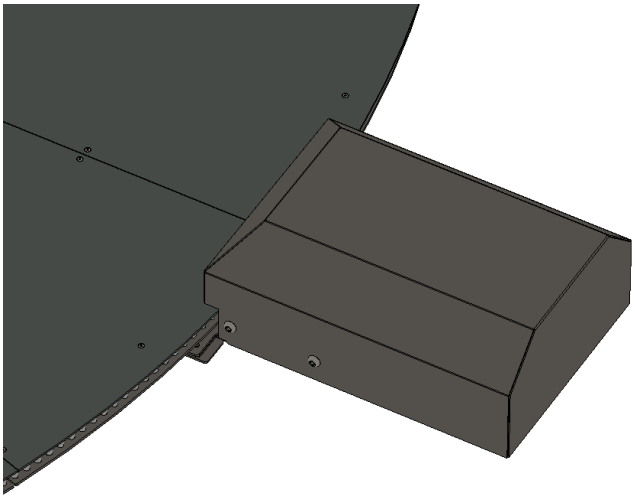


Figure 14: Motor cover installed

Step 13: Lay out the ramp pieces around the turntable. Start with one regular ramp 180 degrees from the motor cover as a reference point (1) then place seven ramp parts on each side of the turntable. Finish laying out the two ½ cut ramp parts (15 & 16). There should be a 1-2'' gap between the motor cover and the ramps. See image below.

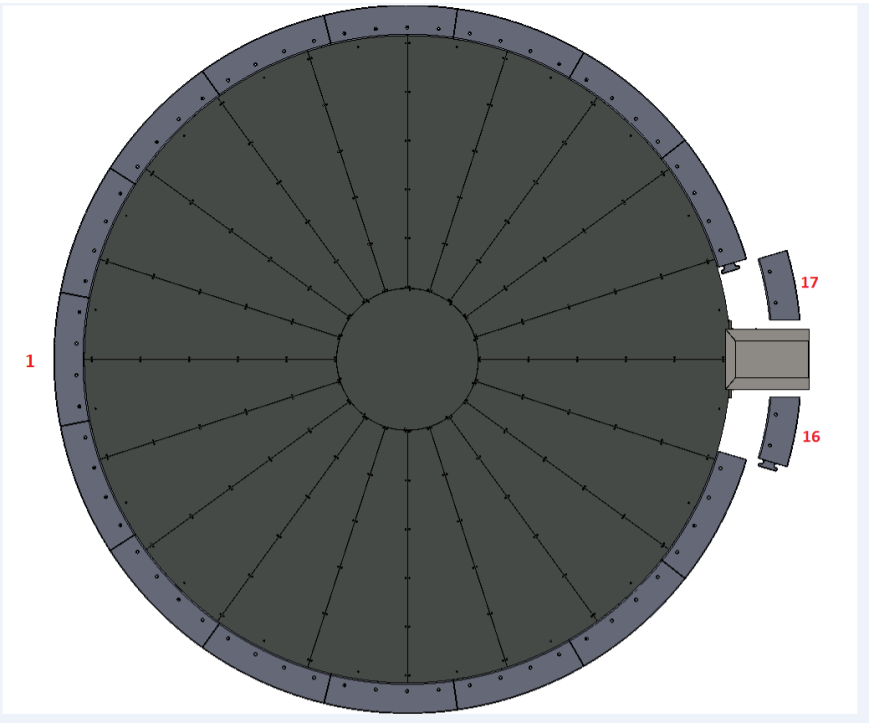


Figure 15: Ramp layout diagram

Step 14: Manipulate the ramps to achieve a consistent 3/16'' gap between the turntable top panels and the inside edge of the ramps. Check all around the turntable using the narrow end of the pin spacer tool and verify that there is proper clearance.

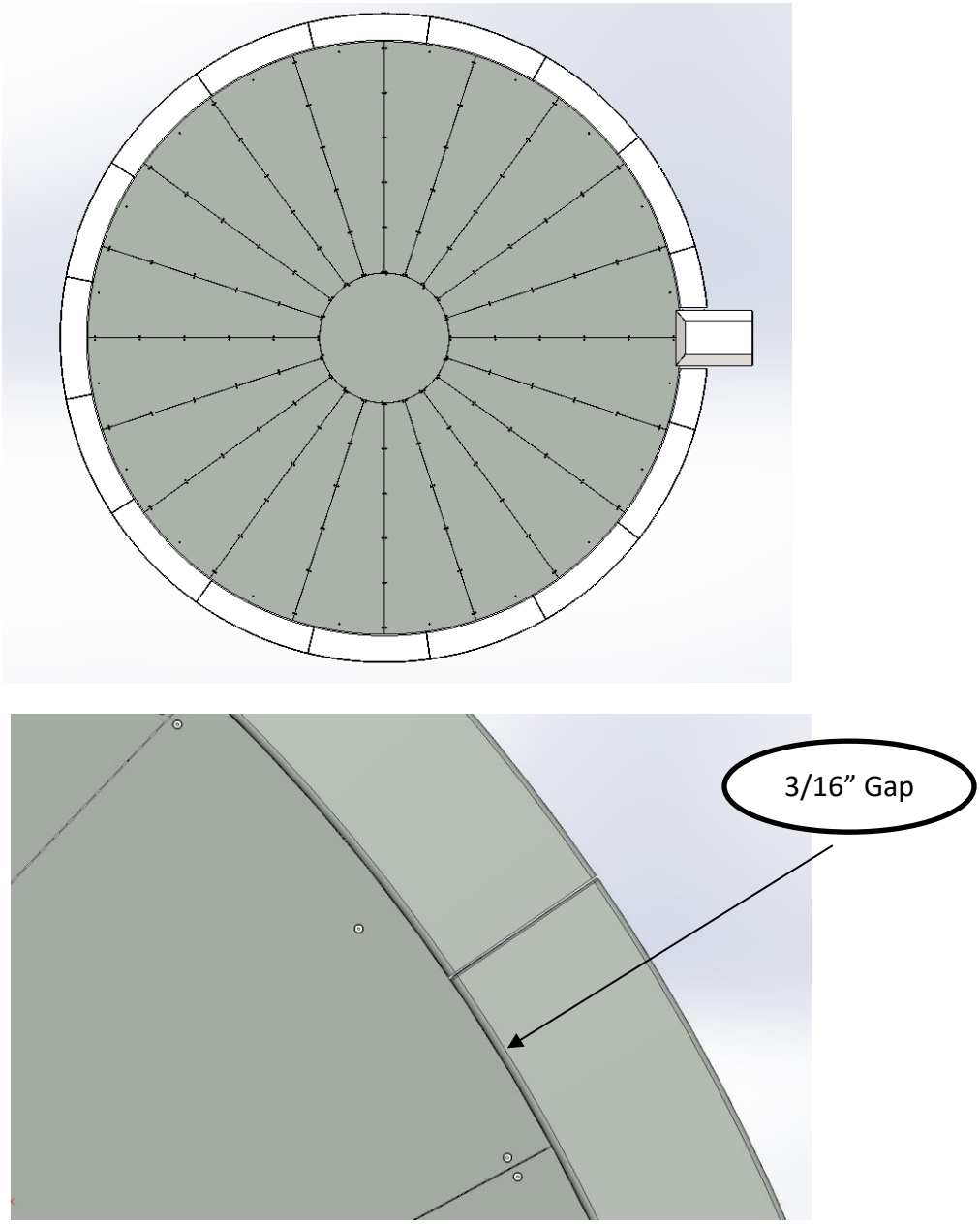


Figure 16: Ramp-to-panel spacing around circumference of turntable

Step 16: Use concrete anchors to secure the ramp pieces that will only see regular use (see image below). It is not required to anchor all the ramp pieces. Drill a 3/8'' hole into the floor on the desired ramp sections. Again, use a shop vac to remove dust and floor particles while drilling. Install hole Inserts onto ramps, lining up the inclined planes.

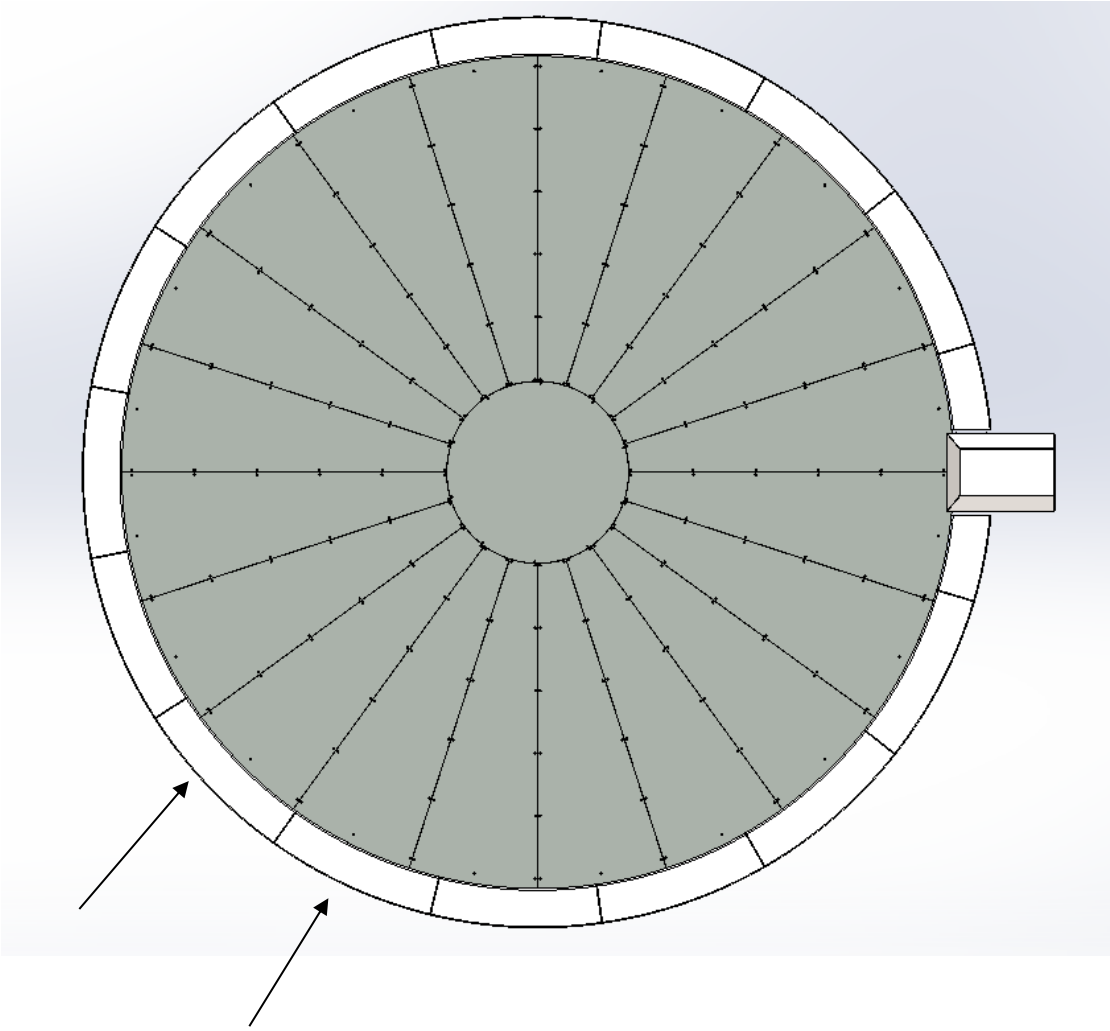


Figure 17: Ramp-to-panel spacing around circumference of turntable

For example: If car enters/exits here, then anchor the ramp pieces that will be used to transition the car onto the turntable. Typically, this means anchoring 2-3 ramps with 4 anchors each.

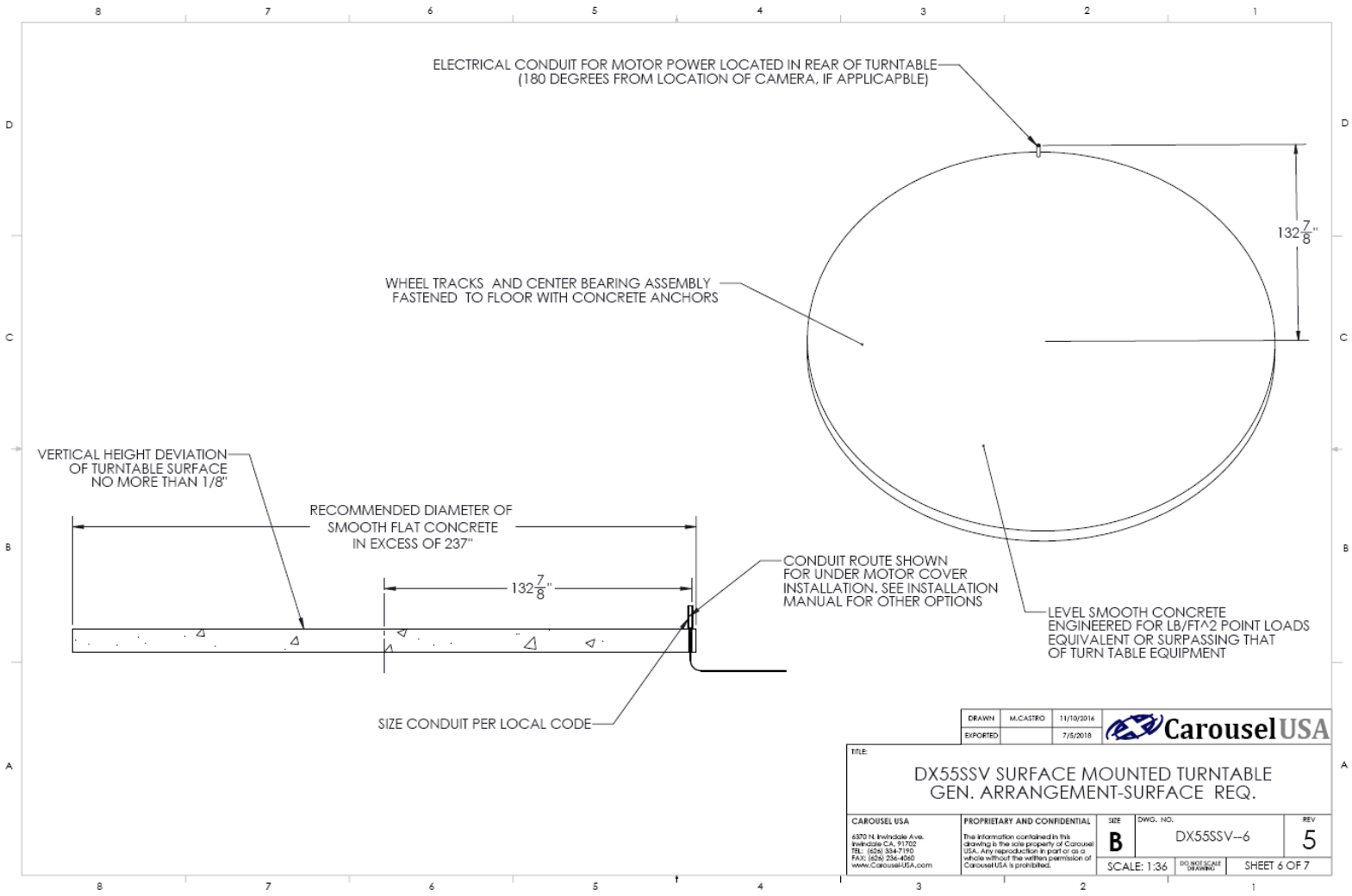
5. Electric Motor Connections

WARNING

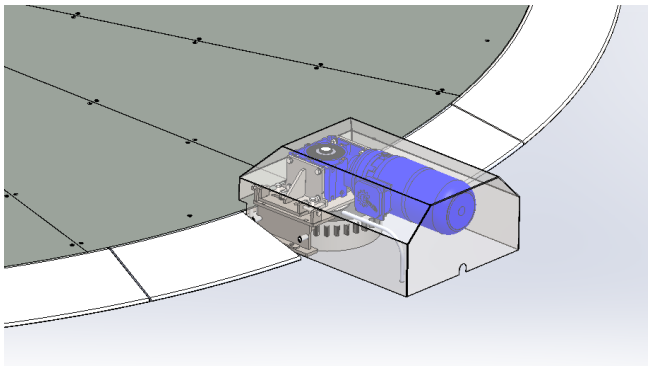
THE FOLLOWING INSTRUCTIONS ON THIS SECTION SHALL BE PERFORMED BY AN ELECTRICIAN ONLY.

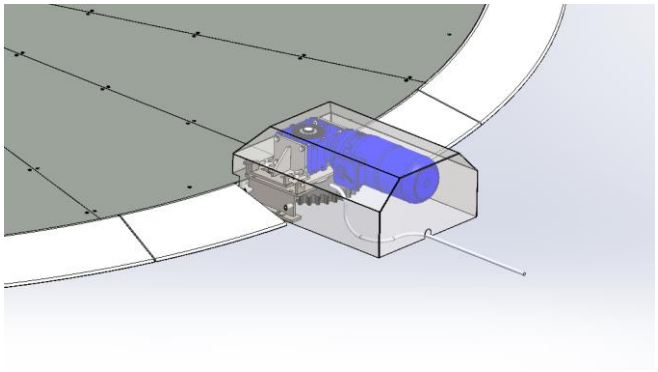
The motor power wires shall be housed in a protective conduit. They can be routed underground and terminated inside the motor cover, or surface mounted and passed through motor cover opening. One may choose to shape metal or plastic conduit or use Liquatite Flexible Conduit.

- If surface mounting the conduit is not desirable, excavate and bury the conduit according to your local code. Drawings below for conduit termination location.

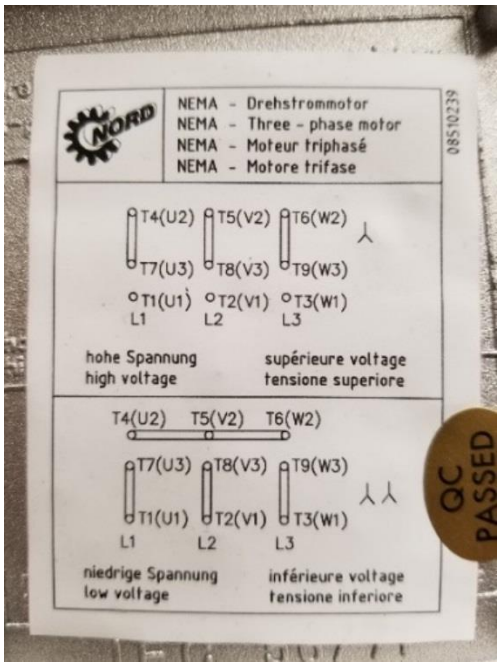


- The images below are the two possible ways to route the conduit to the motor. Under ground conduit terminating under the motor cover (left), surface mounted conduit passed through motor cover hole (right)

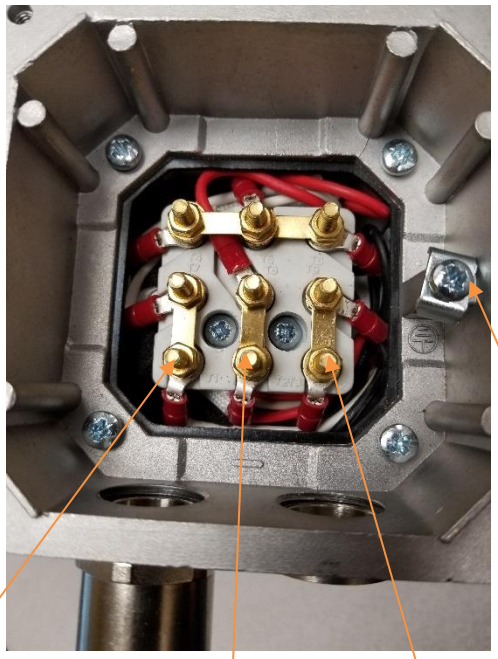




1. Open the motor terminal box and observe the orientation of the brass link jumpers. There is a schematic of the high and low voltage layouts on the terminal box cover, and one below.



2. If the configuration is setup for low voltage, proceed to step 3. If the configuration is set for high voltage, remove the brass nuts and re-orient the brass jumpers to low voltage as seen on the image below.



3. Route 4 wires through the conduit to the motor. Size the wires according to motor full load amperage, and local code. Connect line wires L1, L2, L3 TO T1, T2, T3 terminals respectively. Connect the ground wire to the earth terminal. Cover terminal box and install motor cover.

   - 1.5 HP motor @230/3/60: 4.5 FLA

6. Maintenance

WARNING

TO PREVENT INJURY TO MAINTENANCE PERSONNEL OR DAMAGE TO EQUIPMENT, ALWAYS VERIFY THAT NO EXTERNAL VOLTAGE IS SUPPLIED TO THE TURNTABLE AND THAT THE SAFE/OPERATE SWITCH IS IN THE SAFE POSITION PRIOR TO PERFORMING ANY MAINTENANCE WORK.

IF POWER MUST BE APPLIED FOR TEST PURPOSES, TAKE ALL THE STEPS THAT ARE NECESSARY IN ORDER TO AVOID INJURIES AS A RESULT OF ELECTRICAL SHOCKS AND MOVEMENT OF MECHANICAL UNITS.

A. Summary of Maintenance Schedule

	Type of Maintenance	*Recommended Time Period*
B	Visual/Audible Inspection	Weekly
C	Cleaning Program	As required
D	Track Lubrication	100 operating hours
E	Center Bearing Lubrication	100 operating hours or every 12 months
F	Pin-Gear Lubrication	100 operating hours
G	Center Bearing Seals Inspection	12 months
H	Gearbox Replace oil	N/A

B. Visual/Audible Inspection

Inspect the motor, drive gear, electrical components, wiring and wire connections for signs of damage or wear. Continued monitoring of equipment appearance, noise, roughness, and vibration during operation can assist in early detection of poor or unsafe components, structural failure, or poor bearing performance. The operator should be very familiar with the typical operating conditions generated by the equipment. Investigate and resolve any noted changes.

C. Cleaning Program

The turntable should be cleaned as often as operating conditions require. All outside/exterior surfaces of the turntable require no maintenance, other than what is cosmetically necessary. Compressed air should not be used to clean out particulate matter that may become trapped as airborne particles will adhere to the lubricated teeth if blown toward the inside. Do not expose the center bearing and support wheel seal areas to pressurized cleaning.

DO NOT ATTEMPT to clean the turntable top surface with mops or any method that will result in water being trapped in between the top surface panels. Rust will eventually form.

We recommend using *microfiber towels* and cleaning spray such as ***Simple Green***, Ammonia based spray, or a simple mixture of a mild soap and water (spray). **Avoid spraying any liquids directly into the cracks or seams of the top panels.**

D. Track Lubrication

CAUTION: Eye and lung protection is essential when using aerosol lubricants. Extreme caution must be exercised when working under and around rotating equipment. Do not place hands or feet inside or near the mechanical components of the turntable while the equipment is in motion. Disconnect the electrical power when working underneath the turntable's top surface.

The surface of the support wheels rides along flat plates of steel known as the track. Proper lubrication of this surface is important to reduce excessive wear on the wheel surfaces. Lubrication should occur at intervals of no more than 100 hours of turntable operation. A synthetic, non-petroleum-based product is recommended, such as ***Mobil 1 Synthetic Grease*** or similar.

E. Center Bearing Lubrication

Lubrication of the bearing is recommended every 100 operating hours for relatively slow rotating or oscillating applications. Idle equipment should not be neglected. Grease dries out and "breathing," due to temperature changes, can cause condensation within the bearing. Whether used or not, the bearing should have grease introduced every 12 months. The bearing should then be rotated a few times to coat all surfaces with fresh grease. The bearing is filled with Red Lithium Complex type EP2 grease. Do not attempt to disassemble the bearing or remove the ball retaining plug.

F. Pin-Gear Lubrication

The meshing action and usual position of the gear tends to purge the lubricant; thus, the gear should be greased frequently with a small amount of lubricant. A well-maintained gear will provide smooth, quiet, and long service.

Center Bearing Seals

Seals should be inspected during routine maintenance as recommended by the designer, but the interval should not exceed 12 months. Check for tears, breaks, or other signs of damage. Depending on the lubrication frequency and protection, it may be necessary to clean some areas to conduct this inspection. Carefully remove any buildup of debris around the seal and lubricate the bearing. For the main bearing seal, there should be a small bead of grease around the seal edge indicating the bearing is receiving sufficient lubrication.

G. Gearbox

The Nord gearbox attached to the drive motor is sealed for life and does NOT require oil changes.

7. Maintenance Log

Date	*Maintenance Description*	*Notes*	*Initials*