

**ROTATOR™**

REFERENCE MANUAL V1.0

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# GETTING STARTED

Congratulations on your purchase of the Rotator from Creative Conners, Inc. The Rotator is a center driven, rotating machine that is designed to meet the demands of scenic automation in non-lifting applications. Perfect for turntables, periaktos, or install it on a wagon and pair it with our Pushstick Deck Winch to make a turtle). To get started, simply connect the Rotator to an accompanying Stagehand controller that is connected to a Showstopper Base and you will be ready to Make It Move!

This manual will direct you through:

1. Unpacking
2. Installing & Testing
3. Operation Procedures

If you need help along the way, contact us on our website ([creativeconners.com](http://creativeconners.com)), via email ([support@creativeconners.com](mailto:support@creativeconners.com)), or by phone (401-289-2942 x2). We want your automation to succeed and we are eager to help you through any head-scratching issues.

## A Word About Safety

The Rotator is constructed to be a rugged and versatile machine used for rotary motion applications. Do not let the small footprint fool you. The Rotator can move incredible loads at fast speeds. It is the responsibility of the operator to ensure a safe environment when moving scenery around on stage. The Rotator is not intended for lifting, so **don't** install it sideways or at an angle with an imbalanced load (e.g. a turntable with a large scenic element located on the perimeter). If you have any questions or need help integrating the Rotator for your scenery application please reach out to [support@creativeconners.com](mailto:support@creativeconners.com).

## What's included

1. Just the Rotator, no need to keep track of other accessories.

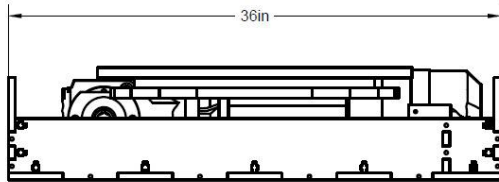
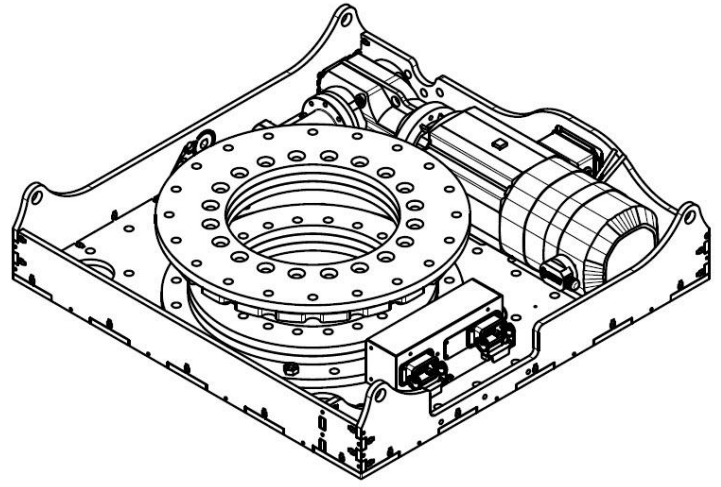
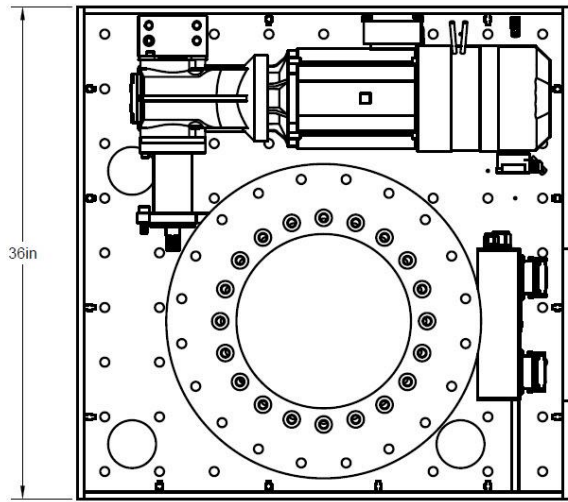
## Required Tools

1. 15/16" Open End Wrench or Sockets

## Features

- Max Axial Load @ Center: 10,000 lbs
- Max Torque: 8,140 ft-lbs
- Max Speed: 1.5 RPM

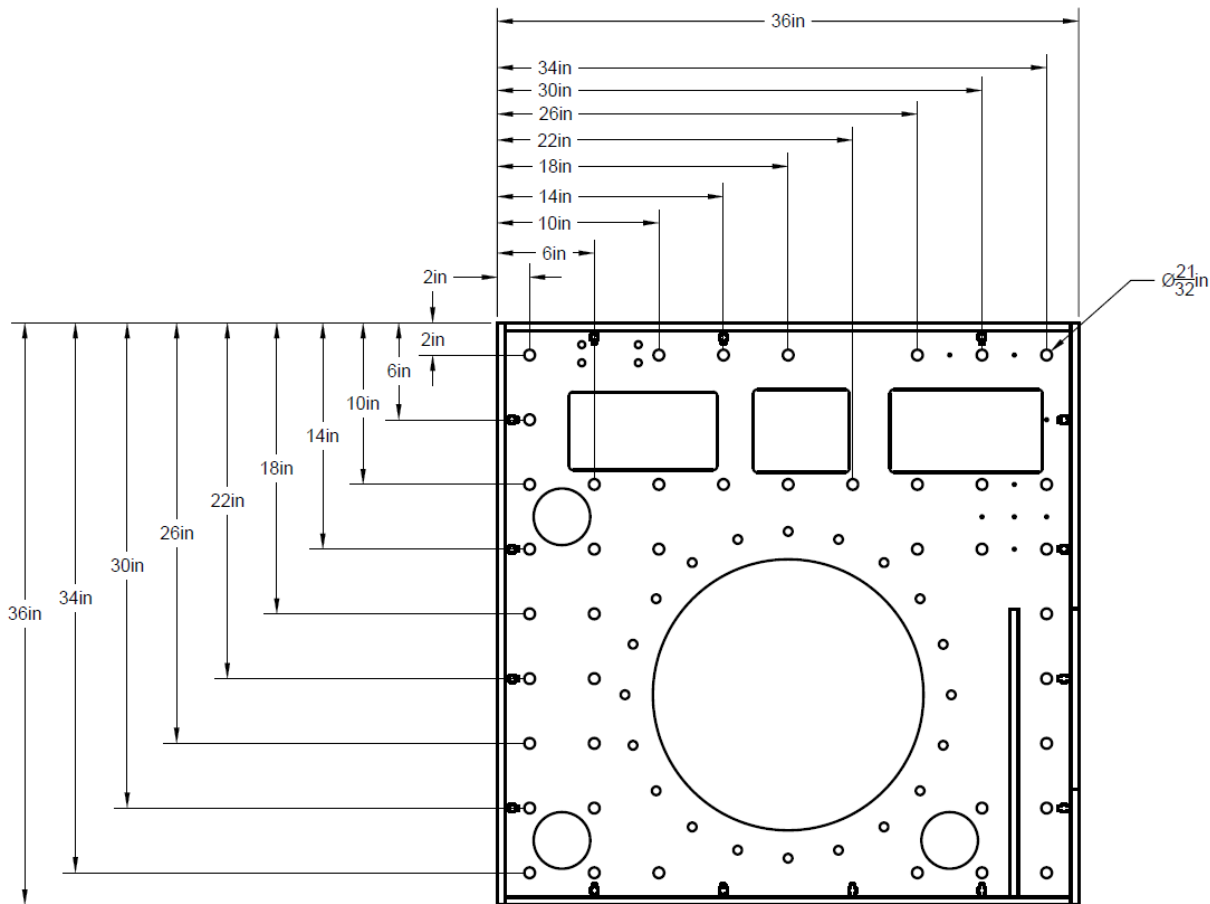
## Overview



# INSTALLATION

## Installation Rotator To Your Stage Floor

When installing your Rotator, the first thing you need to consider is space. The Rotator is 36"(L) x 36"(W) x 8-1/4"(H). You will need to make sure the Rotator fits where you want. The Rotator should only be installed in one orientation with the base of the Rotator installed and fastened to your Stage Floor. (\*DO NOT mount the Rotator inverted, the slew drive at the center of the Rotator must stay upright or else it's lubricant will leak out\*). The base of the Rotator comes with a grid of holes for 5/8" hardware spaced 4" apart and 2" from each side. Depending on how large of a scenic piece you plan on moving, you may not need to use all the holes to secure the Rotator to your floor, deck, or platform system.



**Important Note:** The Rotator can move impressive loads generating up to 8140 ft-lbs of torque. It is the responsibility of the end user to provide adequate hardware connections between the Rotator and the floor, such that the machine remains attached to the floor during a Category-0 stop.

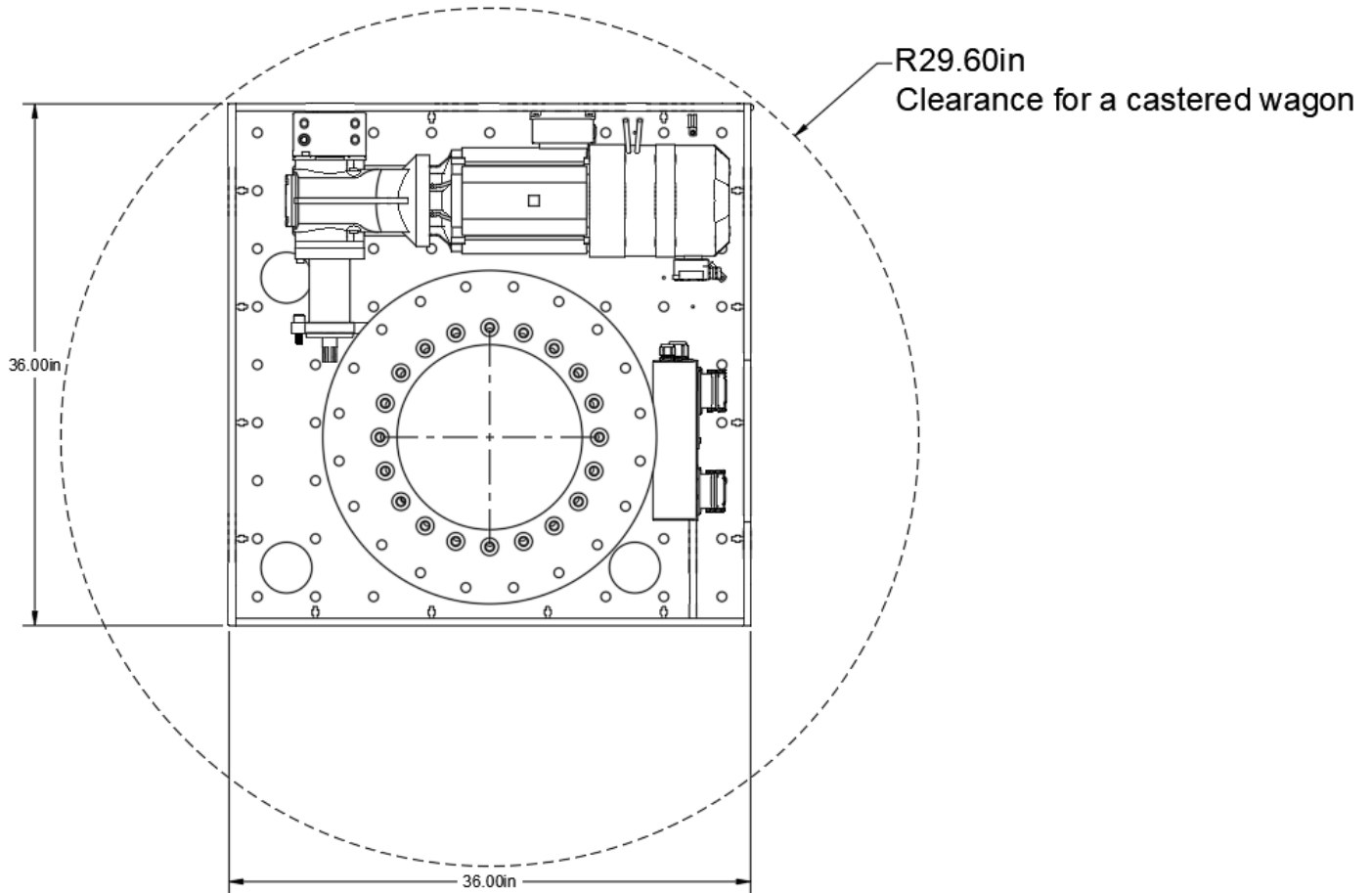
Additionally, the Rotator, itself, weighs just over 500lbs. Take careful consideration when handling and transporting your machine. It is handy to store the machine on a pallet or crate and to use a pallet jack to move it around your space. To lift the machine into place, the rotator is built with 4 lifting points for you to use a chain fall, chain hoist, a couple butch crew members, or other lifting device designed to lift more than 500lbs in order to move the machine into place.



You must move the Rotator into place keeping the base of the Rotator parallel to the floor. Standard rigging practices should be used when lifting and positioning the Rotator.

## Machine Clearance

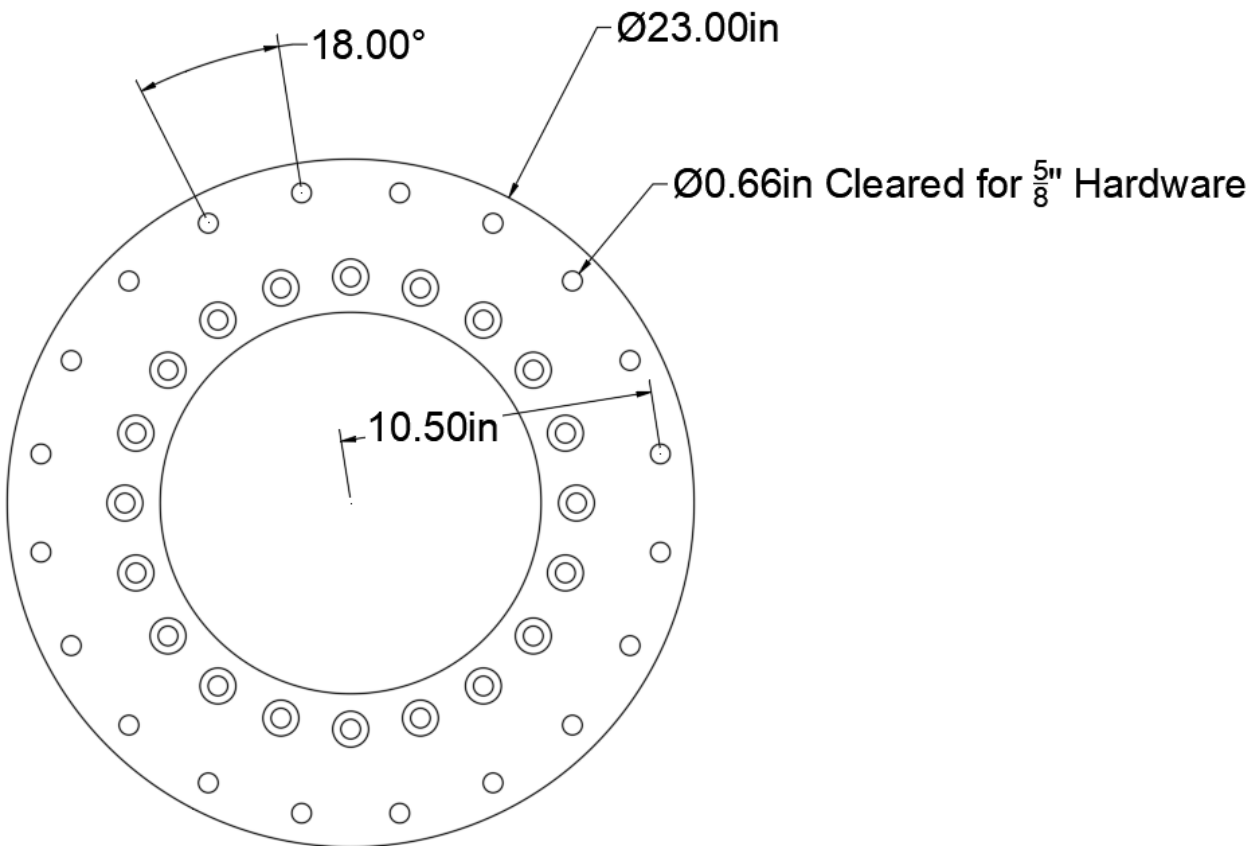
In your pre-planning and design of scenery, pay attention to any parts of scenery that are located in the same vertical plane as the machine, i.e., Casters, Baseboards, Trim, etc. The center pivot is not centered on the machine, so pay careful attention that any under-hanging components of your scenery (e.g. bolt heads, cable swags, etc.) will not catch or collide with your Rotator.





## Installing Scenery Onto Your Rotator

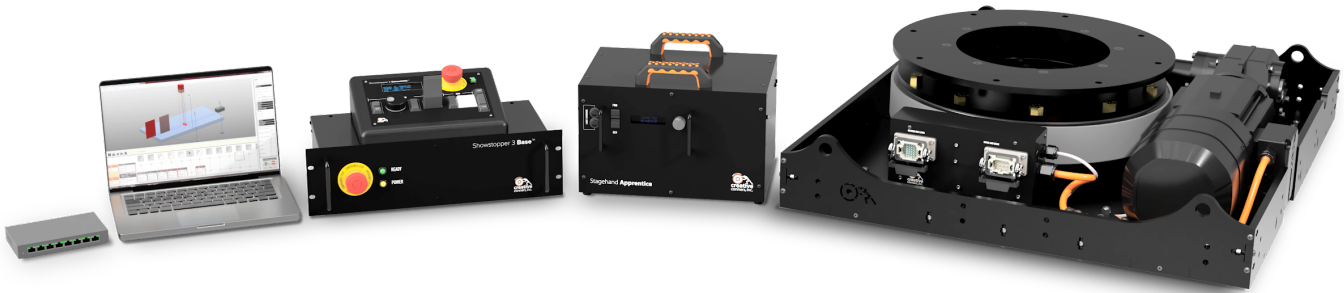
Your Rotator comes with a top plate for you to attach your scenery to. Like securing the Rotator to the floor, the top attachment plate come with many holes for  $\frac{5}{8}$ " hardware to attach your scenery. You may find that you do not need to use that many fasteners, but pay attention to how heavy your scenery is when choosing how many fasteners you use.



## Setting the Limits

It is important to note: The Rotator has been designed without limit switches. This way, you can rotate your scenery forever and ever. However, you may decide to use the Rotator to pivot a large piece of scenery, and your risk assessment may dictate that limits are necessary. If this is the case, drop us a line. We can build you a breakout squid to incorporate external limits switches into your system.

# MAKING THE CONNECTIONS



To get your Rotator connected and spinning, you only need a few things: Your Rotator, of course!, a Stagehand Apprentice 5HP motion controller, a Showstopper Base e-stop system, and to start programming your show, a Windows Laptop or Computer networked to your Stagehand Apprentice with an ethernet switch and cable. For additional control, order a Showstopper consolette too in order to have your GO button and E-stop in a convenient location.

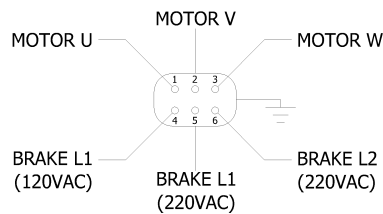
Once you got all your gear:

1. Connect your Apprentice Motor cable and Signal cable from your Stagehand Apprentice to your Rotator
2. Make sure you showstopper cable is connected from your Showstopper Base to your Apprentice
3. Power up your Stagehand
4. Release your E-stop

And you're ready *Make it Move!* Check out the details for the motor and signal pin-outs below.

## Motor & Brake

Power output for both the motor and brake have been combined into a single IRC - 44mm X 27mm (6B) 6P 16A Male Pins connector. The motor and brake connectors are available from several manufacturers and suppliers. The wiring of the connector will vary slightly depending on the Stagehand Apprentice Model. The 5HP, 208VAC three phase Stagehand Apprentice power cord will output 220VAC across pins 5 & 6. Refer to the following diagram for details. The pins for the motor cables are Han E style, with the motor output(pins 1-3) being 12AWG and the brake output(pins 4-6) being 16AWG

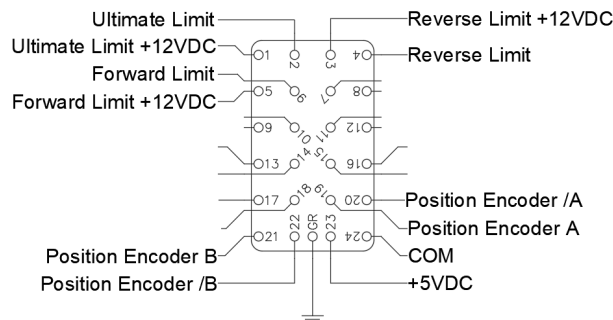


## Signal

Connecting the Encoder, Forward/Reverse/Ulimate limits is accomplished through a single locking connector (IRC - 44mm X 27mm (6B) 24P 10A).

The limit switch inputs are used to protect against the motor traveling too far in any direction. This prevents damage to the machine and scenery and can prevent injury. When running your machine, this keeps you from accidentally traveling too far. In the Rotator, the limits are jumped out to allow you to spin your rotator as many revolutions as you would like. If you have a requirement to be able to add limits into your system, drop us a line or give us a call. We can manufacture breakout adapters(squids) that can allow you to incorporate limits into your system.

The encoder connected to the machine uses a quadrature differential line driver encoder to give incremental position feedback to Spikemark.



# TROUBLESHOOTING

## MOTION

Issue	Checkpoint
Motion is not smooth	Confirm stage floor is clear of obstructions
	Check that your VFD parameters are correct. You can check the correct parameters here: <a href="http://cci.fyi/restore">http://cci.fyi/restore</a>
	Check PID tuning in Spikemark. You can also check PID tuning here: <a href="https://cci.fyi/PID">https://cci.fyi/PID</a>
	Check that the Slewing Drive is lubricated. Lubrication should be checked every 300hr of operation or every 6 months. Recommended Slewing Drive Lubricant is Rhenus LKP2" from Rhenus or "Avialith 2 EP" from Avia
	Confirm your position scale is correct
Staghand Displays Drive Fault	Confirm that your Motor and Signal Cable is plugged in.
	Check that your VFD parameters are correct. You can check the correct parameters here: <a href="http://cci.fyi/restore">http://cci.fyi/restore</a>

## TECHNICAL SUPPORT

If you get stuck, we're here to help. The best way to get in touch with a tech expert is via email - even during normal business hours - because most days we are spread around the shop and may not be near the phone. There's someone in the office from 8:30a-5pm EST Monday - Friday and will return an email or phone call quickly. After hours (honestly when most tech support issues arise) we have a crack team monitoring email and voicemail who will respond quickly to help get you moving.

- Online: [www.creativeconners.com](http://www.creativeconners.com)
- Email: [support@creativeconners.com](mailto:support@creativeconners.com)
- Phone: 401-289-2942 x2

# SPECIFICATIONS

## Physical Specifications

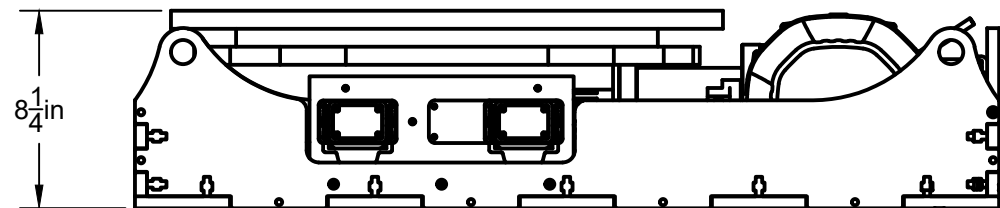
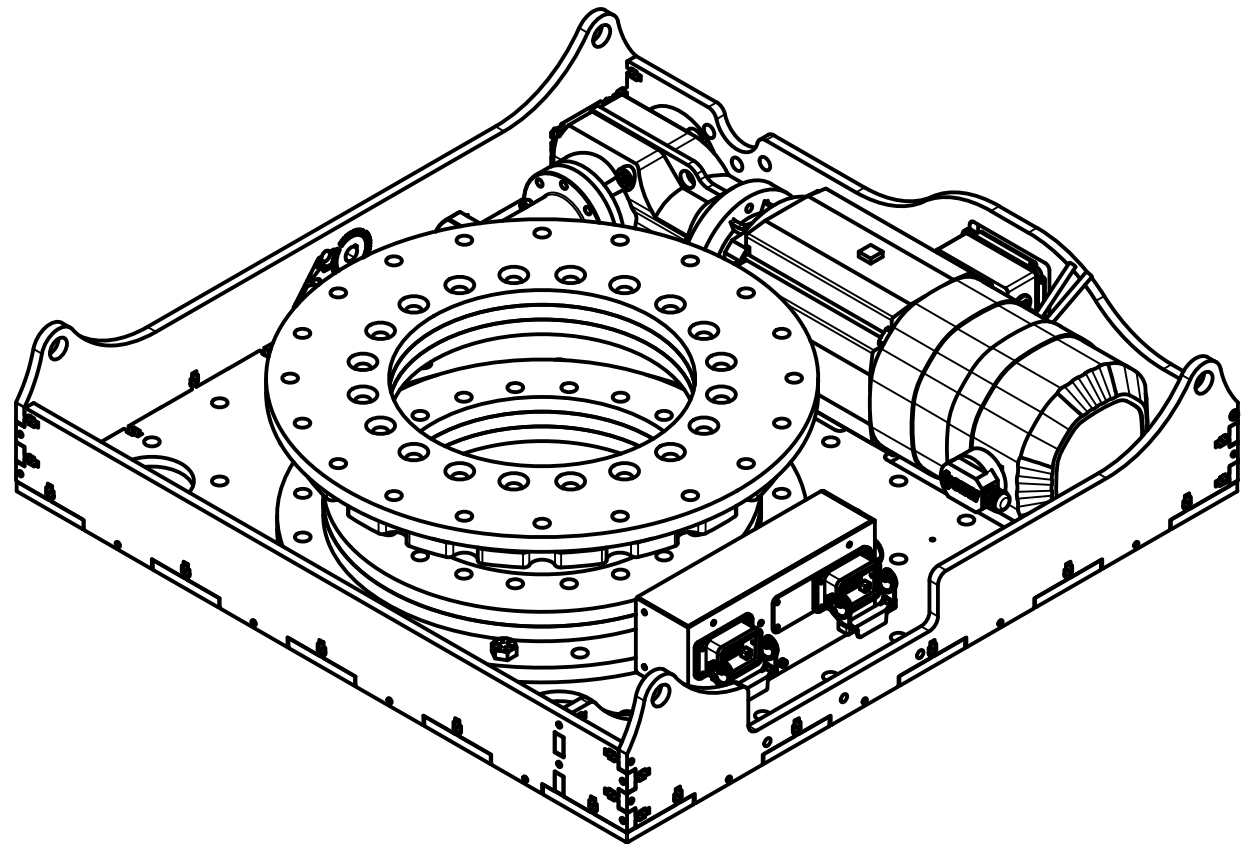
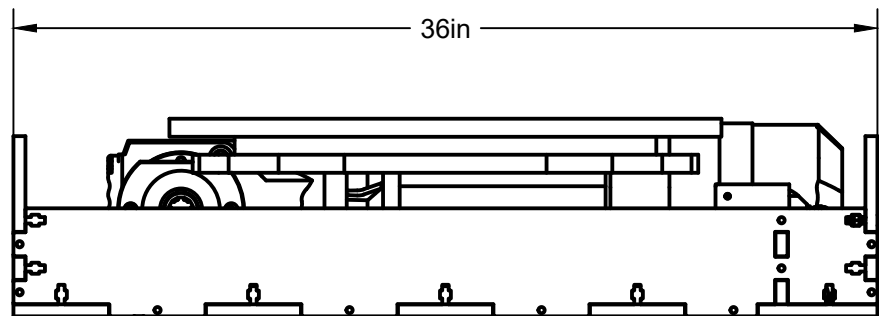
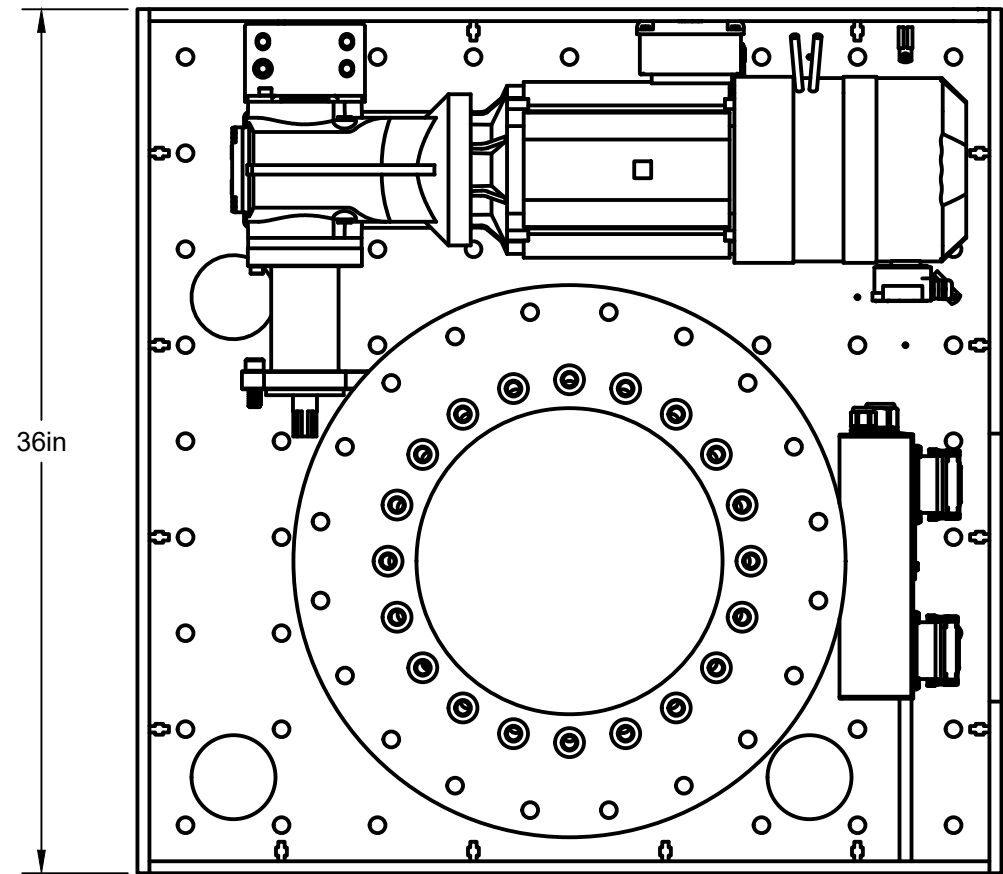
Description	Value
Overall Dimensions	36" L x 36" W x 8 ¼" H
Weight	515lbs
Motor	5HP AC Induction Motor
Max Torque	8,140 ft-lb
Max Speed	1.5 RPM or 9.5 deg/sec
Max Axial Load	10,000lbs evenly balanced over the rotational center

## Electrical Specifications

Description	Value
Motor Voltage	230VAC 0-60Hz 3-Phase
Max Input Current	14.3A
Brake Voltage	200-240VAC

## Drawings

See attached.

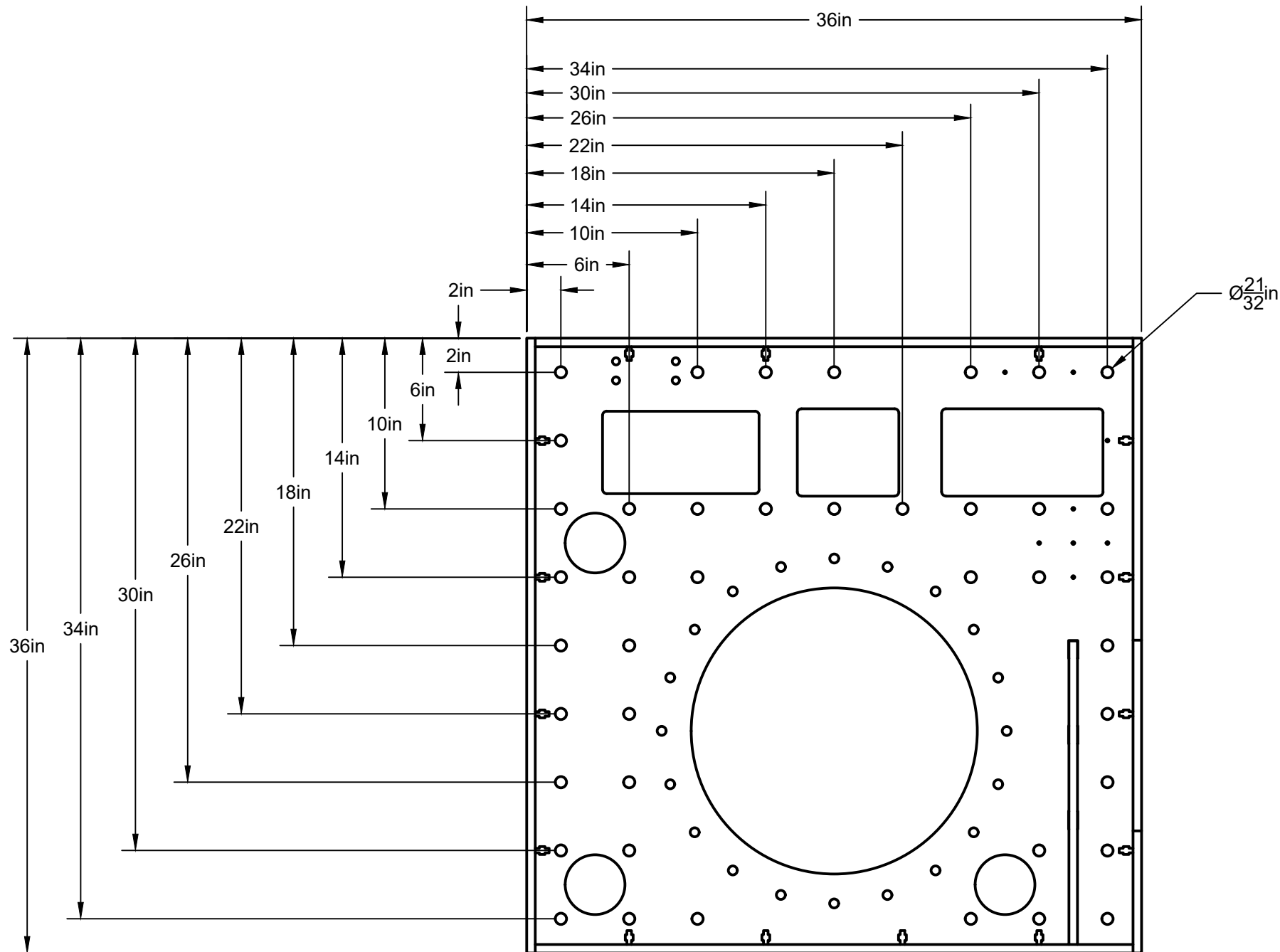


Rev.	Drawn	Date	Revisions

tolerances:  
%x :  $\pm \frac{1}{16}$ "  
.xx :  $\pm 0.010$   
.xxx :  $\pm 0.003$

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contained in the  
drawing is the  
property of creative  
conners inc.





Revisions

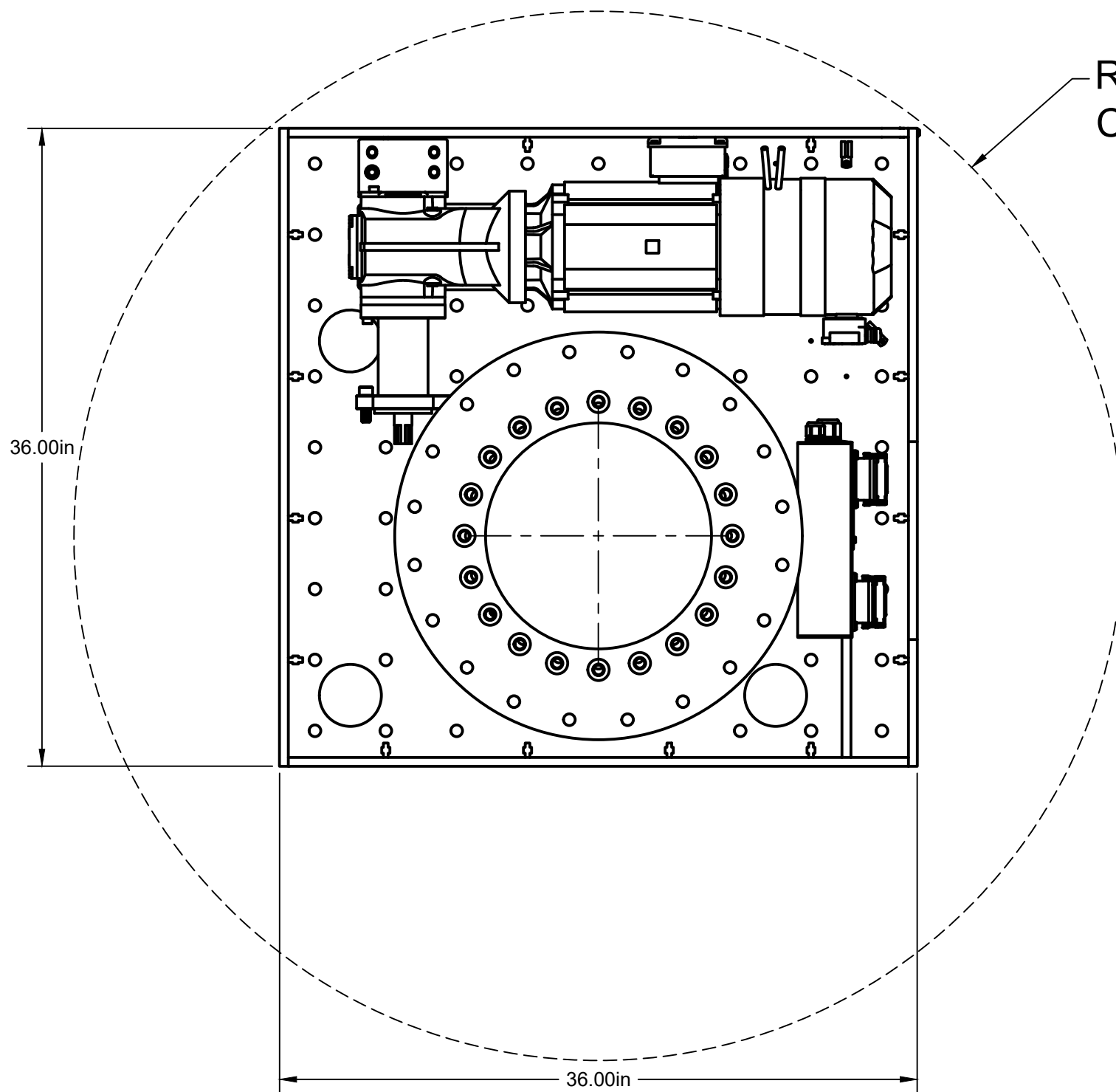
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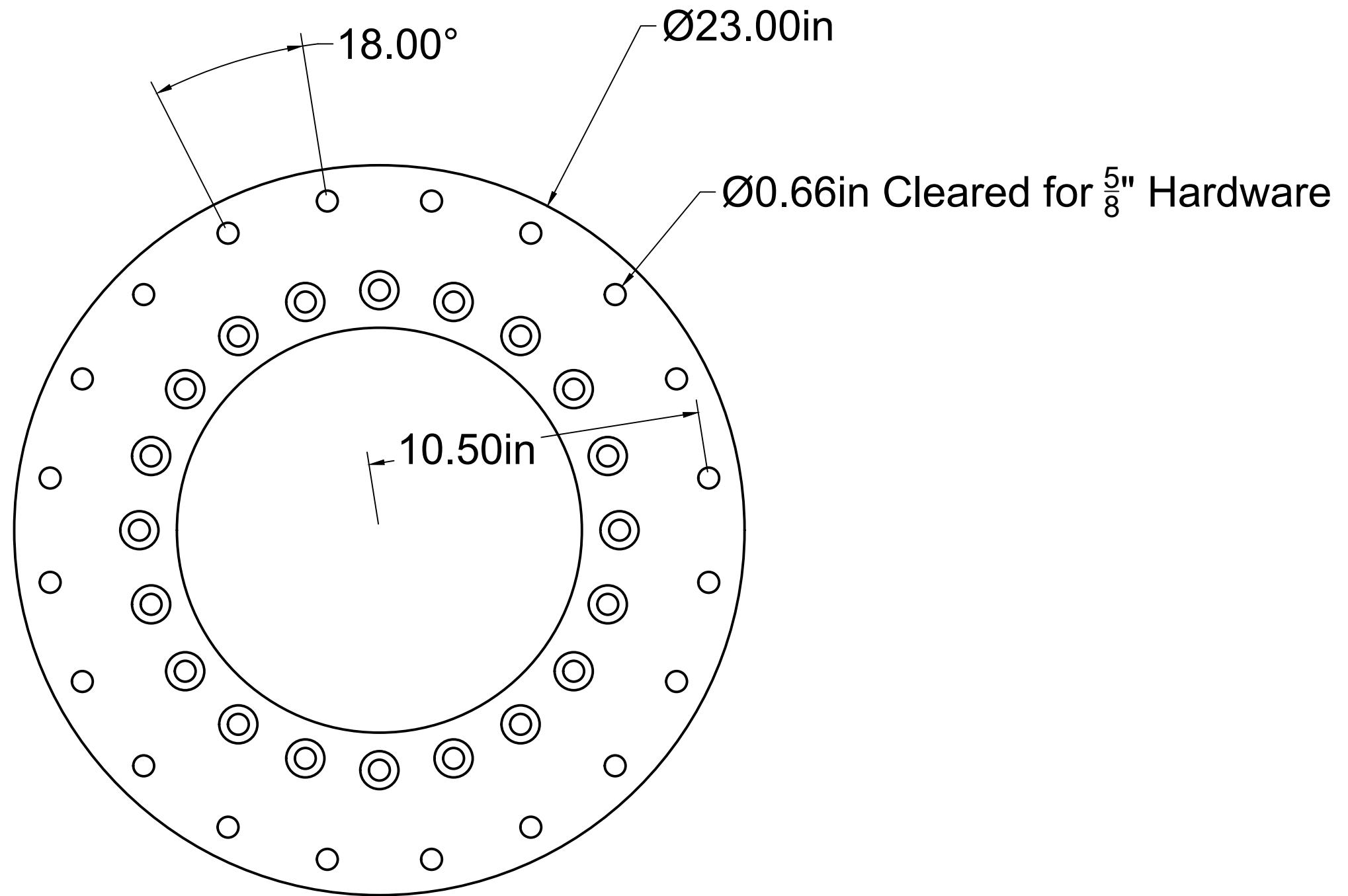
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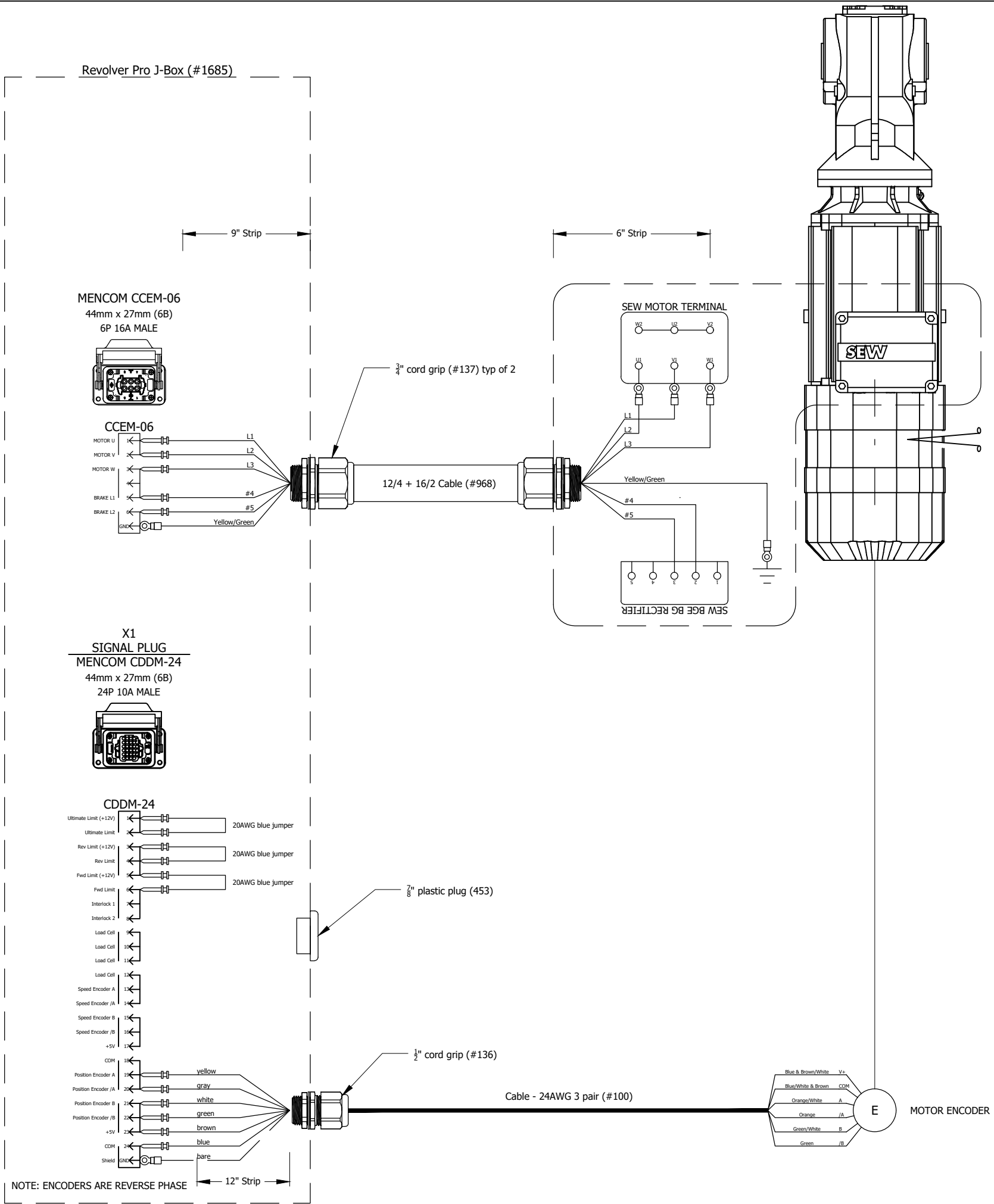


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