creative conners, inc.

Revolver V2

Reference Manual, version 1.1

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Getting Started

Congratulations on your purchase of the Revolver V2 turntable machine (referred to simply as "Revolver" moving ahead) from Creative Conners, Inc. The Revolver is a friction drive machine designed to meet the demands of scenic automation for turntables.

This manual will direct you through:

1. Unpacking
2. Installing & testing
3. Operation procedures

If you need help along the way contact us either on our website (www.creativeconners.com), via email (support@creativeconners.com), or by phone (401.289.2942)

Word about safety

The Revolver is designed to work seamlessly with Creative Conners *Showstopper* system, and *Spikemark* to help you move large and heavy turntables. As with any machine proper safety precautions should always be observed when installing and operating a Revolver. The Revolver has several pinch points and rotating parts. During installation or removal, do not wear loose fitting clothing or jewelry, tie hair back and be mindful of the moving parts. Before working on the Revolver be sure to remove power to the Stagehand or disconnect the E-Stop cable from the Stagehand to ensure the machine will not move.

Turntables present unique safety hazards compared to other stage equipment. Since turntables are often installed flush to the show floor, stepping on or off a moving turntable can be dangerous and a common source of falls. The safest way to avoid falls is to step on or off the turntable only when it is stopped. Stepping on or off a turntable while it is moving is very risky and represents a serious potential for injury.

If your set has elements that are affixed to the turntable, and elements that are affixed to the stationary portion of the stage, there is a risk of crushing people or scenery between the moving elements and the stationary elements. Make certain that performers and crew are aware of the danger and trained to avoid all pinch points.

Unpacking

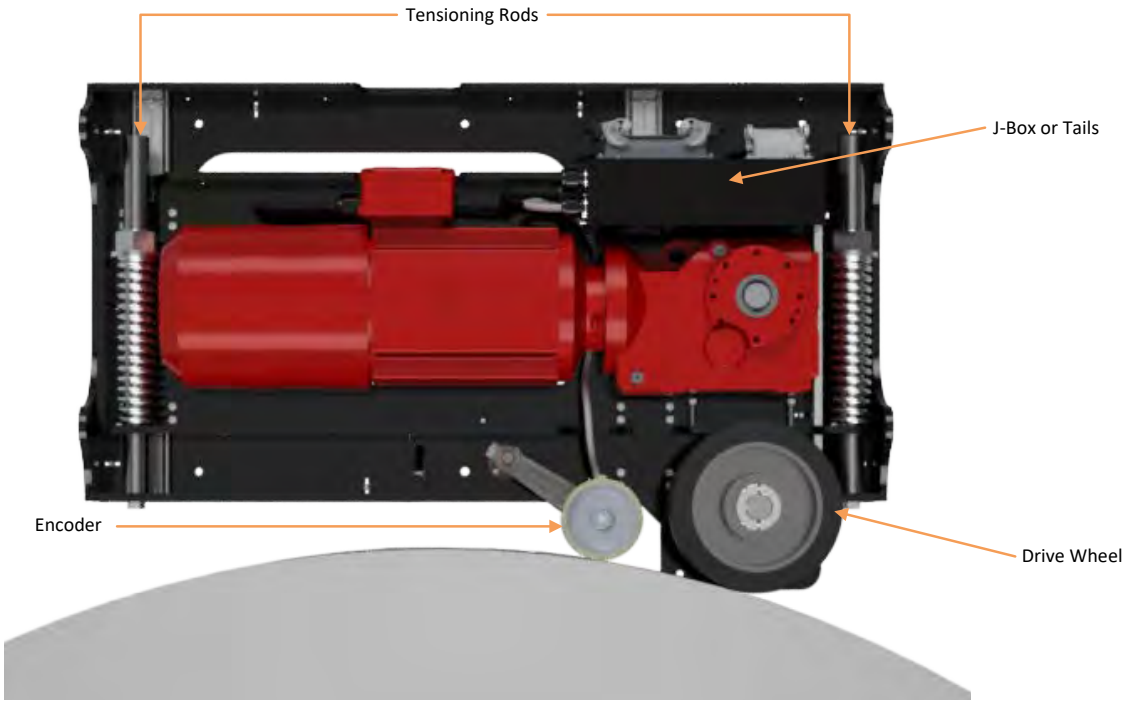
The Revolver ships on a pallet weighing approximately 275lbs, the machine weighs approximately 230lbs. The motor and wheel assembly slides on rails, the Revolver ships with locking bolts installed between the motor assembly and frame base. Do not remove these bolts until the Revolver is ready to be installed against the turntable.

The Revolver ships in several configurations and all configurations include two wheels for the encoder: a hard rubber wheel (factory installed) and knurled aluminum wheel. Double check there is no visible damage to the Revolver or encoder wheel. If anything appears damaged or missing snap a photo and email it to support@creativeconners.com.

Overview

The Revolver V2 is an update to the original Creative Conners Revolver. Key features of the Revolver are:

- Lightweight aluminum frame design
- Spring tensioned 8” drive wheel
- Integrated spring loaded dancer wheel encoder, including a factory installed hard rubber wheel and an optional aluminum wheel for superior accuracy.
- 1200lb linear thrust at a brisk 36"/sec max speed – approx. 1 revolution per 21 seconds on a 20’ turntable
- Compact – you only need 8-1/4” below your show deck.



Wiring Configurations

The Revolver is offered in 3 wiring configurations:
Stagehand Pro
Stagehand Apprentice
Stagehand Classic

Installation and Connections

Mounting the Revolver

The fundamental principle to observe when installing Revolver is that the scenery should move and the machine should not. To uphold this maxim, secure the Revolver to your stage well. There are 8 mounting holes in the base plate for fastening to the floor. You can lag or bolt the base of the Revolver to the floor with 3/8" hardware (not included).

Connecting the Revolver to a Stagehand

Although the Revolver is offered in several wiring configurations, the basic principles are the same for all versions. Any Stagehand requires input power, Network and Showstopper connections to function. Connect the Revolver motor & brake power to the power connections and signal to the signal connections. The Revolver Pro utilizes a machine mounted J-Box while the Apprentice and Classic configurations include 10' tails for the motor, brake and encoder connections.

Stagehand Pro

You will need a Pro Power cable and a Pro Signal cable to connect the Revolver to the Stagehand Pro. There is no reason for limit jumpers on the Pro configuration, the limits are jumped in the J-Box.

Stagehand Apprentice

The Revolver ships with 10' tails for both the motor/brake power and the encoder connections. These can be plugged directly into the Stagehand Apprentice or can be connected to extension cables. There is no reason for limit jumpers on the Apprentice configuration, the limits are jumped in the tails from the Revolver.

Stagehand Classic

The Revolver ships with 10' tails for the motor, brake and encoder connections. These can be plugged directly into the Stagehand or can be connected to extension cables. Limit jumpers will need to be utilized when operating the Revolver with a Stagehand Classic.

Testing the brake

The Stagehand Pro AC is equipped with a brake testing feature. This feature allows the end user to check the functionality of the brake from the Stagehand. The Revolver is equipped with a motor side brake only and although not required, it is a good idea to perform this test on a regular basis. For directions on operating the test please refer to the Stagehand AC Pro manual.

Testing the motor

Before testing the motor, confirm the Revolver is not engaging the edge of the turntable. To confirm that your motor is properly connected to the Stagehand Pro AC you should test these conditions:

- **E-Stop** – Release the E-Stop button on Showstopper. You should hear a "click" from inside the Stagehand, this is the E-Stop contactor closing. The LCD display should show that the E-Stop is released by switching the status display to:

"Not Connected" indicates that the Stagehand is not communicating with a computer running Spikemark.

- **Brake test** – This option is only available on the Stagehand Pro. Press and hold the Brake Test button and press the Motor Brake button. There will be an audible click from the Revolver.
- **Brake release** – Press the FWD jog button. You should hear a distinct "click" from your motor brake. This is the sound of the brake releasing. Release the FWD jog button. You should hear a click of the brake engaging.
- **Motor Motion** – Press the FWD jog button and slowly turn the knob clockwise. The motor should begin moving. Turn the knob counterclockwise to slow the motor to a stop, then release the jog button. Repeat with the rev jog button.
- **Encoder** – When jogging the motor from a Stagehand Pro, the LCD will display the encoder counts. While jogging the motor verify the counts are increasing while running in the forward direction and decreasing while running in the reverse direction.
- **Manually releasing the brake** - The motor brake is able to be released manually if needed. The release handle is stored on the motor and is screwed into the side of the end of the motor.

Driving your turntable with the Revolver

Once you have confirmed that the motor is operating correctly, you can start moving your turntable with Revolver. Push the motor toward the turntable edge until it makes contact. Now tighten up the Friction Drive Tension Nuts to apply some force to keep the Friction Drive Wheel pressed into the turntable. The Revolver doesn't require huge amounts of spring tension to operate, however there needs to be enough tension in the springs to absorb any out of round-ness in the turntable. A good place to begin is by compressing the springs by 1", which should be achievable without a wrench.

Once the drive wheel has tension it is time to do the same with the encoder wheel. To adjust the encoder spring tension, loosen the 2 cap screws securing the encoder to the shaft. Adjust the ender wheel height to be in the center of the face of the turntable. While maintaining the height adjustment add tension to the leaf spring by using the hex bolt at the end of the shaft assembly. When sufficient tension has been achieved lock down the 2 cap screws.

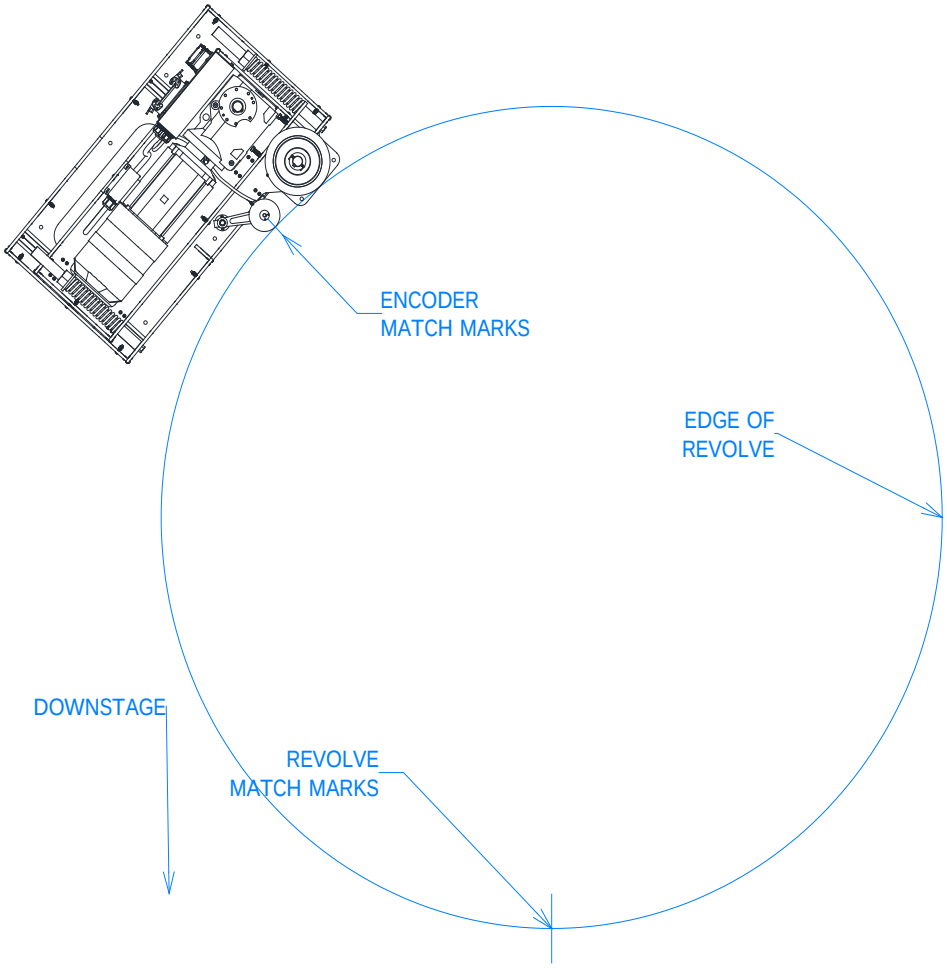
One of the most common issues encountered with a revolver is encoder accuracy. Before writing your first cue, follow these steps to check for any encoder slippage.

- Confirm the encoder wheel is parallel with the top of the revolve surface. If it is out of alignment, shim the revolver base.
- Add Match marks
    - Mark the top of the revolve and the revolve surround with matching tape marks. These will be your main reference marks.

    - Mark the top of the encoder wheel and a matching mark on the top of the revolve. These will be your encoder reference marks.
- Run the revolver manually from the face of the Stagehand 360 degrees, lining up your revolve match marks.
- Run the revolver back 360 degrees, lining up your main reference marks once again.
    - Once the revolve match marks are lined up look at the encoder reference marks.
        - If they are aligned, your encoder is making good contact with the turn table and you can now set the position scaling.
        - If the encoder marks are not aligned, add some additional tension to the encoder spring, realign your encoder marks and repeat the testing process.
    - Repeat these steps until the encoder reference marks are aligned.

After confirming there is no drive wheel or encoder wheel slippage you are ready to *Make It Move™!* Connect to the Stagehand through Spikemark, set your position scale and begin programming it like any other machine.

Pro Tip: Before executing your first cue, ensure the "Abort on Position Error" box is checked in Spikemark. This will stop any movement if there are any errors.



Troubleshooting

Issue	Solution
Motor is Jerky	Confirm the drive wheel is fully engaged against the edge of the turntable, and there is no slippage. Confirm the Encoder wheel is fully engaged against the edge of the turntable. Run the auto-tune process outlined in the Stagehand manual Ensure the motor brake is disengaging Adjust the motor tuning parameters as outline in the Spikemark manual
Turntable stops unexpectedly while running in cue and a position fault error is displayed in Spikemark	There is slippage on the encoder wheel. Refer to page 5 in this manual on how to solve.
Turntable rotates full speed in the wrong direction	Check encoder is counting positive when jogging the Revolver FWD from the Stagehand Swap any 2 hot legs of motor power between the Stagehand and Revolver
Will not respond in Spikemark but can jog manually from the Stagehand	Confirm Stagehand IP Address Confirm Spikemark is in LIVE mode Check CAT5 cable connection
Stagehand displays "Limit Fault"	Check limit jumpers (Stagehand Classic) Call Creative Conners
VFD Beeps and displays Fault Code	Refer to Stagehand manual

Technical Support

Phone

You can call our technical support at 401-289-2942 Monday-Friday from 8am – 5:30pm EST. Rest assured there is a support technician on call every evening and will return any emergency call immediately.

Web

There is an active user support forum on our website.
http://www.creativeconners.com/phpBB2/index.php

Email

If you have a technical question you can email technical support support@creativeconners.com. This is the best way to get a quick response, especially after hours.

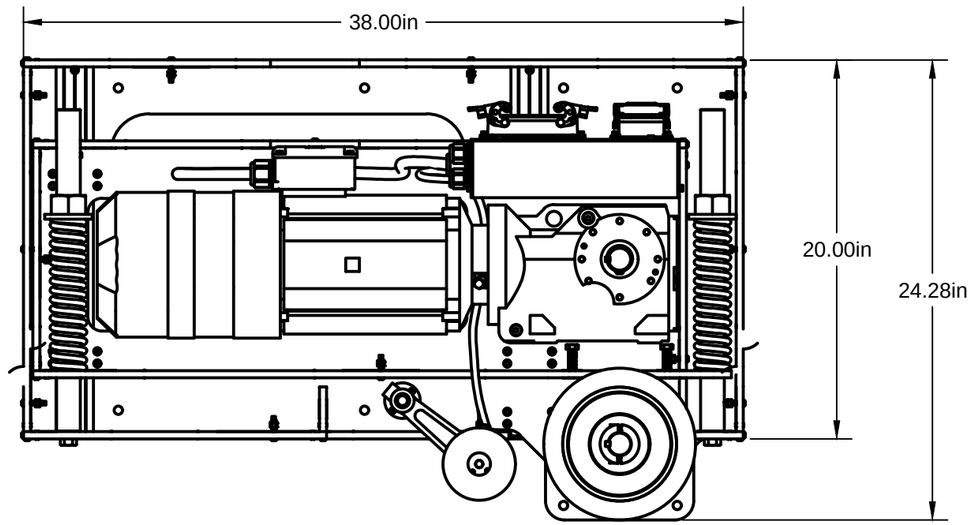
Specifications

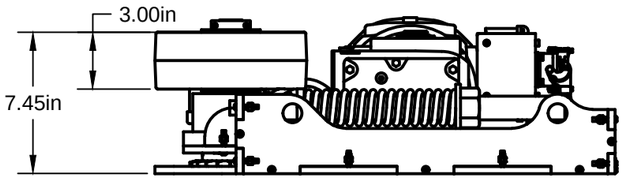
Technical Specifications

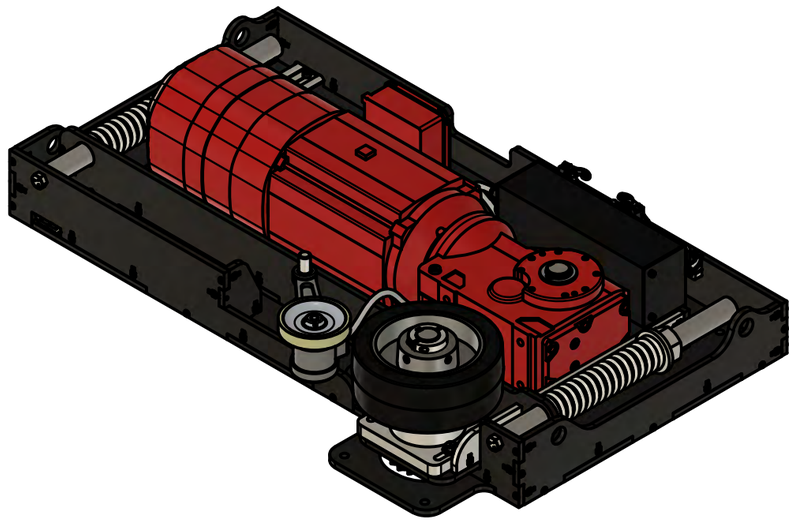
Horsepower	5HP
Motor voltage	230V 60Hz 3-phase
Max input current	13.6 amps
Brake Voltage	230V 60Hz 1-phase
Max Linear Thrust	1200 lbs.
Max linear speed	36”/sec.
Machine weight	235 lbs.
Shipping weight	275 lbs.
Dimensions (H/W/D)	38”x24.38”x8.25”

Physical Specifications

See attached drawing







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PROJECT
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TITLE
Revolver v2 Overview