

July 2023

**CTW RD design improvements over the Roehrig-VS tabletop shock dyno**

**[RD2](#) – [RD3](#) – [RD5](#)**

In designing our RD, rotational “shock” dyno, we took the many years of experience we have and improved where we felt needed. Based on user feedback and service issues, we built our shock dynos to go to the next level over the Roehrig design. While we still maintain the simple driveline we fixed and updated weak points of the Roehrig machines.



Pictured: RD2 / RD3 shock dyno

Here are 12 examples of improvements we designed into the CTW designed shock dynos.

1. Front vertical plate is thicker for low bleed dampers – strength

This supports the crank bearing for the high loads encountered with “zero” or low-bleed rebound dampers.

## CTW Automation - News and info

### 2. Yoke is stiffer – less deflection / hysteresis in graphs

Again, we knew this was an issue and we designed accordingly. Any deflection will be seen in the data in various ways including “lag” or hysteresis.

### 3. Yoke bearing guides based on a 4-point system to provide long term linear motion

Roehrig yoke used 3-points and was able to rock side-to-side over time.

### 4. Displacement on centerline to avoid excess motion from off axis sensors

Roehrig system had outboard sensors that are not on the centerline of actuation. Any mechanical play will be seen in the data as the sensors can tend to “rock” as a result of being mounted off centerline.

### 5. Slightly narrower columns – makes crossbar stiffer for less deflection.

Deflection in any part of the system means the true damper measurements are compromised.

### 6. Smaller diameter columns – lighter and better sized for actual loading.

Keep in mind, Roehrig 20VS (20HP) machines used the same size columns as the 2VS (2HP). Something was not designed correctly.

### 7. Front cover removes quickly for stroke changes – simply slides up and off

No more button heads to remove, lose, drop, etc.

### 8. Less exposed connections

With inboard electrical connections, no exposed electronics.

### 9. Easily visible light for “power-on” indication

Neat, small light on front of the machine.

### 10. Side plates designed to protect displacement sensors from damage when moving

Our side plates extend forward of the sensor so that you cannot damage it when moving. Roehrig dynos, when moved, could easily damage, and bend the velocity and displacement sensors as well as the front and rear covers.

### 11. No velocity sensor

Many Roehrig designs were limited on velocity due to the velocity sensor’s range.

### 12. Quick release crossbar stop as well as spring loaded IR-temperature sensor mount.

This was a customer request, early on, and it saves time and effort.

## CTW Automation - *News and info*

### Current dealers for CTW Products

#### Australia

##### Performance Wholesale

6 Cronulla Court  
Slacks Creek, QLD 4127  
Ph: +61 7 38081986  
Email: sales@pwa-au.com.au  
Website: www.performancewholesale.com.au

##### Queensland Speedway Spares

2 Cronulla Court  
Slacks Creek, QLD 4127  
Ph: +61 7 38084333  
Email: qss@pwa-qss.com  
Website: www.speedwayspares.com.au

#### Japan

##### Enable-apg

224-1 Haneo, Odawara, Kanagawa 256-0804  
Contact sales: Shingo Sobu  
Ph: +81-465-46-7408  
Email: info@enable-apg.jp  
Website: www.enable-apg.jp

#### China

##### 深圳市力耐格科技有限公司

Shenzhen Lynag Technology Co., Ltd  
地址：深圳市龙岗区横岗社区富康路92号A栋110  
Ph: +86-0755-28507276  
Email: info@lynag.com  
Website: www.lynag.com

## CTW Automation - *News and info*

All CTW Automation products come with:

- \* 1-year warranty

- \* 1-year Support contract that allows the owner to have unlimited phone, e-mail, and TeamViewer remote access so that CTW can make sure you have the answers to questions quickly and easily.

\*\* These can also be purchased by current Roehrig dyno owners as we can help with those as well.

Places to find CTW Automation....

Website: [www.CTWAutomation.com](http://www.CTWAutomation.com)

Facebook: [fb - CTW Automation](#)

Facebook CTW Group: [CTW Automation – Shock and Damper Dyno Group](#)

- For the advanced user and common questions

YouTube: [CTW YouTube](#)

- Home for training videos
- Demonstrations and teaching

Instagram: [ctw\\_automation](#)

Sales: [sales@ctwautomation.com](mailto:sales@ctwautomation.com)

Support: [support@ctwautomation.com](mailto:support@ctwautomation.com)