
**LCR-4/6WT TIMER CONTROLLED
LOADING CYLINDER ROLLER**

INSTRUCTION MANUAL

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PART 1) INTRODUCTION

The LCR-WT is a loading cylinder roller equipped with an automatic reversing timer that allows the cylinder roller to automatically reverse the rolling direction according to preset time values. Cylinders are rolled on neoprene rollers mounted on heavy steel shafts. The LCR-WT series is ideal for mixing gases. The timer automatically reverses rotation direction, freeing the machine operator to perform other duties while gases are mixed. The LCR-WT is perfect for removing rust, scale and corrosion from compressed gas cylinders by tumbling with abrasive media.

One man can easily load heavy cylinders onto the LCR-WT cylinders rollers with reduced risk of back injury. Cylinders are loaded onto the LCR-WT cylinder rack in the upright position and then pivoted to the horizontal position for gas mixing or tumbling. The LCR-6-WT will accept six (6) 10^{5/8}" x 56" cylinders or six (6) standard size 9^{1/4}" x 55" cylinders. Up to twelve (12) Scuba sized cylinders can be rolled simultaneously when the LCR-6-WT is loaded in the horizontal position. The LCR-6-WT will also tumble up to eighteen (18) 7" x 20" cylinders.

The LCR-4-WT will accept four (4) 10^{5/8}" x 56" cylinders or four (4) standard size 9^{1/4}" x 55" cylinders. Up to eight (8) Scuba sized cylinders can be rolled simultaneously when the LCR-4-WT is loaded in the horizontal position. The LCR-4-WT will tumble twelve (12) 7" x 20" cylinders at the same time.

PART 1a) SPECIFICATIONS

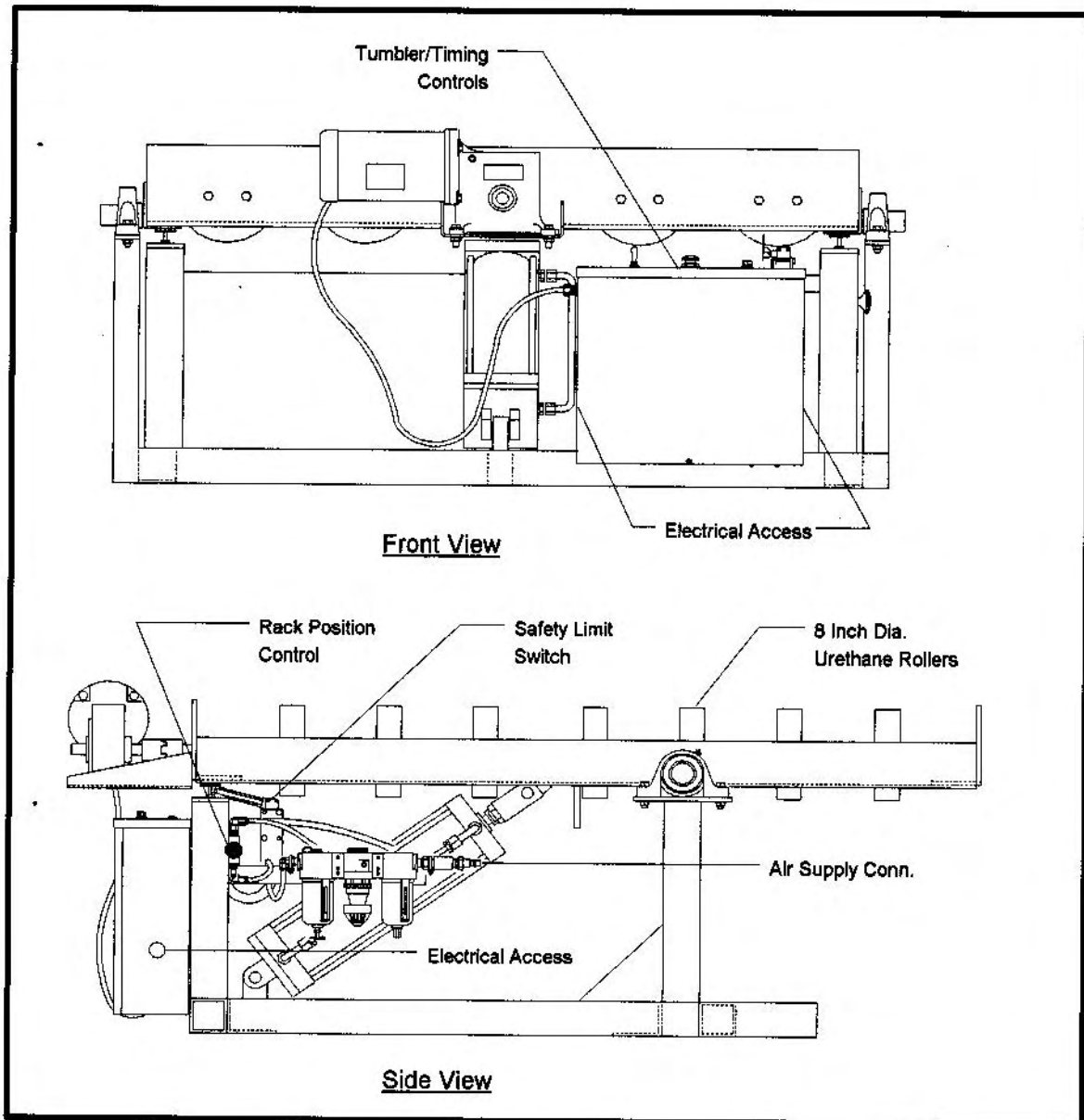


FIGURE 1) LCR-4-WT FOUR CYLINDER ROLLER WITH TIMER

SPECIFICATIONS FOR LCR-WT SERIES:

Electrical Requirements: 120/220 Single Phase, 60 Hz and 220/440 Three Phase, 50/60 Hz.

Compressed Air Requirements: 10 cfm at 90 psig minimum, Filtered and Lubricated.

Dimensions: LCR-4-WT - 76"l x 64"w x 32"h

PART 2) SAFETY

1. Read all instructions before attempting uncrate, install or operate the LCR-WT. GALISO INC. CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY CAUSED BY UNSAFE USE, MAINTENANCE OR APPLICATION OF THIS MACHINE. Please contact Galiso for guidance when you are in doubt as to the proper safety precautions to be taken when installing or operating this machine.
2. **!! WARNING !!:** When tumbling with etchant media, face shield, goggles, head protection and gloves must be worn.
3. **NOTE:** Plugs used to seal the cylinder should be equipped with a vent hole to prevent pressure from accumulating inside the cylinder during the tumbling process.
4. **NOTE:** Do Not attempt to tumble aluminum cylinders with Scale Cut HD Etchant or Poly Fast Cut Neutralizer.
5. **!! DANGER !!:** To avoid injury from electric shock, the LCR-WT and the area around it should be kept as clean and dry as possible.
6. **!! DANGER !!:** The LCR-WT starts and stops automatically. The operator must stay clear of all rotating parts and cylinders while the rotation cycle is in progress. Make certain that the rotation cycle is complete and cylinders have come to a **COMPLETE STOP** before attempting to remove cylinders.
7. **!! WARNING !!:** Use proper lifting techniques to prevent strain to your back when lifting heavy, abrasive filled cylinders.
8. **!! WARNING !!:** The area occupied by the LCR-WT cylinder rack should be marked off with yellow and black safety tape. The operator must stand clear of this area while the machine is in use.
9. **!! WARNING !!:** The LCR-WT is equipped with a safety switch to prevent rotation when the cylinder rack is in any position other than fully lowered.
10. **!! DANGER !!:** Do Not wear loose fitting clothing or jewelry near the LCR-WT. Excessively long hair should be covered with a hairnet or a hat.

(continued)

PART 2) SAFETY, (Continued)

11. **NOTE:** When tumbling more than four (4) small cylinders on the LCR-4WT or six (6) small cylinders on the LCR-6WT, cylinders must be loaded and unloaded in the horizontal position.
12. **NOTE:** Main power supply must meet National Electrical Code Requirements. Use an adequate size wire for the recommended load requirement.
13. **!! DANGER !!:** After cylinders have been placed on the rollers, operator must follow proper safety precautions by standing clear of the LCR before start of tumbling, during process cycle, and until cylinders come to a **COMPLETE STOP.**
14. **!! DANGER !!:** **DO NOT USE THIS EQUIPMENT TO PURGE TOXIC OR FLAMMABLE GASES. DO NOT USE THIS EQUIPMENT UNDER FLAMMABLE, VOLATILE OR TOXIC CONDITIONS.**

PART 3) INSTALLATION

1. Read all instructions before attempting to install or operate this machine.
2. Carefully uncrate the LCR-WT and remove all banding and padding materials.
3. The LCR-WT should be located on a flat, level surface that evenly supports the base of the machine. If not, adjust the foot pads to make it level. Lag or clip the LCR-WT to the shop floor.
4. Hook up main power supply (See Part 2, Article 12). Do not use an extension cord to connect the LCR-WT to the electrical outlet.
5. Connect the "**Air Supply**" Line to the LCR-WT. There must be a minimum of 90 PSI filtered, lubricated air to the LCR-WT.
6. The floor space surrounding the LCR-WT must be marked off at this time with yellow and black safety tape. This area will be off-limits while machine cycle is in progress.
7. Check for proper operation of the cylinder rack Limit Switch. The motorized roller shaft should not turn, if the cylinder rack is in any position other than COMPLETELY horizontal.

PART 4) OPERATION; MIXING GASES

1. If the cylinder rack is in horizontal position, pull out on the Rack Position Control Valve to rotate the Cylinder Rack to the load (vertical) position.
 - A. With the Power Switch in the "OFF" position and the cylinder rack in the loading (vertical) position, load the gas filled cylinders into the LCR-WT cylinder rack.
 - B. Rotate the cylinder rack to the tumbling (horizontal) position by pushing in on the "Rack Position Control Valve".

!! DANGER !!: WHEN TUMBLING MORE THAN FOUR SMALL CYLINDERS, THE LCR-WT MUST BE LOADED AND UNLOADED IN THE HORIZONTAL POSITION.

2. Set the Total Cycle Timer for the desired time value (Zero to 100 minutes) and push the Power Switch to the "ON" position, the "POWER ON" Indicator will light.
3. Press the Start Switch. After a five (5) second pause, the cylinders will begin to rotate in the forward direction and the "CYCLE IN PROGRESS" Indicator will light.
 - A. When the forward rotation time has elapsed, the cylinders will stop rotating for approximately five (5) seconds and then the rotation direction will automatically reverse.
 - B. When the reverse rotation time has elapsed, the LCR-WT will continue to alternate rotation direction until the Total Cycle Time has elapsed. The rotation of the cylinders will automatically stop when the Total Cycle Time has elapsed.
4. Allow the cylinders to come to a **COMPLETE STOP** and then push the Power Switch to the "OFF" position. Pull out on the Rack Position Control Valve to rotate the cylinder rack to the upright position.

!! DANGER !!: DO NOT ATTEMPT TO ROTATE THE CYLINDER RACK TO THE LOAD (VERTICAL) POSITION WHILE A ROTATION CYCLE IS IN PROGRESS. (The cylinder rack is equipped with a Limit Switch to prevent the motorized shaft from turning if the cylinder rack is in any other position other than completely horizontal.)

PART 4a) OPERATION; TUMBLING WITH ABRASIVE MEDIA

1. Face shield, goggles, head protection and gloves should be worn when tumbling with Scale Cut HD.
 - A. When tumbling with abrasive media, fill cylinders at least half full with tumbling media. A tight fitting plug should be screwed into the neck threads of the cylinder. The plug should be equipped with a vent hole to prevent pressure generated by the tumbling process from accumulating inside the cylinder.
2. When tumbling with Scale Cut Etchant, mix a solution of two ounces of etchant to one gallon of water, pour it into the cylinder, cap the cylinder and tumble for approximately thirty minutes.
 - A. After tumbling with etchant, cylinders must be washed and then tumbled with Poly Fast Cut neutralizer to remove any acid residue and to prevent flash rusting.
 - B. **NOTE: DO NOT TUMBLE ALUMINUM CYLINDERS WITH SCALE CUT HD ETCHANT OR POLY FAST CUT NEUTRALIZER.**
3. Pull out on the Rack Position Control Valve to rotate the Cylinder Rack to the Load (vertical) position.
 - A. With the Power Switch in the "OFF" position and the cylinder rack in the loading (vertical) position, load the abrasive filled cylinder into the LCR-WT cylinder rack.
 - B. Rotate the cylinder rack to the tumbling (horizontal) position by pushing in on the Rack Position Control Valve.
 - C. **!! DANGER !!: WHEN TUMBLING SMALL CYLINDERS (SCUBA SIZE), THE LCR-WT MUST BE LOADED AND UNLOADED IN THE HORIZONTAL POSITION.**
4. Set the Total Cycle Timer for the desired time value (Zero to 100 minutes) and push the Power Switch to the "ON" position, the "POWER ON" Indicator will light.

PART 4a) OPERATION; TUMBLING WITH ABRASIVE MEDIA, (Continued)

5. Press the Start Switch. After a five (5) seconds pause, the cylinders will begin to rotate in the forward direction and the "CYCLE IN PROGRESS" Indicator will light.
 - A. When the forward rotation time has elapsed, the cylinders will stop rotating for approximately five (5) seconds and then the rotation direction will automatically reverse.
 - B. When the reverse rotation time has elapsed, the LCR-WT will continue to alternate rotation direction until the Total Cycle Time has elapsed.
 - C. When the Total Cycle Time has elapsed, the rotation of the cylinders will automatically stop.
6. Allow the cylinders to come to a COMPLETE STOP and then push the Power Switch to the "OFF" position. Pull out on the Rack Position Control Valve to rotate the cylinder rack to the loading (vertical) position.
7. To remove abrasive media after tumbling, place the cylinder in a Galiso EDR-1 Dump Rack or PCT Cylinder Inverter/Drier remove the vented plug from the cylinder neck and invert the cylinder over a perforated pan to catch the abrasive media.
 - A. Flush the cylinder with water or a suitable cleansing solution.
 - B. Dry the cylinder to prevent rust from forming.
8. After tumbling, cylinders should be Hydrostatically Tested.

PART 5) ADJUSTMENT OF DIRECTIONAL ROTATION TIMER

The Directional Rotation Timer is used to control the amount of time for which the LCR-WT rotates in either the forward or reverse direction. Although the LCR-WT is preset at the factory, the Directional Rotational Timer is located inside the Timer Box. Proceed as follows to adjust Directional Rotation Time:

1. Disconnect Power to the LCR-WT and open the Timer Box.
2. The Directional Rotation Time is located in the upper right-hand corner of the Timer Box. Refer to the enclosed literature for a complete description of the timer.
3. The Timer consists of two banks of switches, the upper bank of switches controls the forward rotation time and the lower bank of switches controls the reverse rotation time. Each bank of switches consists of 8 binary switches. Pushing the switch to the "ON" position will add the labeled time value to the Directional Rotation Time. For instance, if the switches labeled 10, 40, and 80 are pushed to the "ON" position the Directional Rotation Time will be the total of three values (130 seconds).
4. After adjusting the Forward and Reverse Rotation Times, close the Timer Box and reconnect the LCR-WT to the electrical supply.

PART 6) MAINTENANCE

1. Lubricate the Bearings once a week with Moly Grease.
2. Check the air supply line filter and lubricator twice a week for proper operation.
3. Galiso® recommends that the Air Filter element be replaced every six (6) months. The Air Filter element may be purchased from Galiso.
4. Check Limit Switch Adjustment once a month. The motorized roller shaft should not turn, if the cylinder rack is in any position other than completely horizontal.
5. If cylinders creep toward either end of rack, adjust foot pad(s) to level the cylinder rack.



PRODUCT WARRANTY

1. **DURATION:** Galiso extends a one-year warranty from date of purchase, to the original purchaser, for all its manufactured products. For all spare parts purchases, Galiso extends the manufacturer's warranty or 90 days, whichever is longer. Soft goods parts, such as speed seals, washers, and O-rings, which are subject to wear in the normal course of operation, are not covered under this warranty. Collar Tooling products are warranted for six months.
2. **COVERAGE:** Galiso manufactured equipment is warranted against defective materials or workmanship. THIS WARRANTY IS VOID IF:
 - A) THE EQUIPMENT HAS BEEN DAMAGED BY ACCIDENT OR UNREASONABLE USE, IMPROPER SERVICE/MAINTENANCE, IMPROPER INSTALLATION, ABNORMAL OPERATING CONDITIONS, NEGLIGENCE, REPAIR BY ANY PERSON NOT AUTHORIZED BY GALISO, INC. OR OTHER CAUSES NOT RELATED TO MATERIAL DEFECTS OR WORKMANSHIP.
 - B) THE SERIAL NUMBER HAS BEEN ALTERED OR DEFACED.
3. **PERFORMANCE:** Galiso reserves the right to make warranty determination only after inspecting the item at the Galiso manufacturing facility. If the warranty determination indicates that the defective item is covered under warranty, the item will be repaired or replaced with same parts/items or parts/items of equivalent quality, at the option of Galiso. In the event of replacements, the replacement unit will continue under the original equipment warranty or carry a 90-day warranty, whichever is longer. No charge will be made for warranty repairs, and/or replacements. All freight charges are the responsibility of the customer requesting warranty service.

If the warranty determination indicates that the item is not covered by warranty, a repair/replacement cost estimate will be submitted to the purchaser for approval prior to initiating any repair work.

4. **CLAIMS:** In the case of equipment malfunction, notify Galiso (1-800-854-3789) and provide the Model Name, Model Number, Serial Number and a description of the problem. Return Authorization Number, shipping and/or service information will be provided on receipt of the required information.
5. **SERVICE EQUIPMENT:** Galiso attempts to make available, whenever possible, a limited amount of service equipment at a minimal use charge, plus freight expense, for those customers wishing to avoid downtime during repair of their equipment. Such items are available on a first come, first served basis and are billable at the specific service charge applying with a one-month minimum.
6. **MODEL CHANGES:** Galiso reserves the right to make changes in materials and specifications, without notice. Galiso may offer, for a stipulated fee, the opportunity to upgrade your equipment to the latest configuration.
7. **DISCLAIMERS:** Galiso provides technical data and assistance to aid customers in the selection and use of our products. There are no implied warranties of merchantability nor suitability for a particular purpose associated with the transmittal of technical data and/or customer assistance.

Galiso does not assume liability for any consequential, incidental, or special damages. Liability under this warranty is limited to repairing, or replacing Galiso equipment items returned to the factory or an authorized facility.