User's Manual

Product : Circumferential weld Lathe

Model : CWLS25-5400Z

S / N : P14024

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NOTICE

The installation, operation and maintenance guidelines set out in this manual will enable you to maintain the equipment in peak condition and achieve maximum efficiency with your welding operation. Please read this instructions carefully to become aware of every advantage.

CAUTION

Only experienced personnel familiar with

the operation and safe practice of welding

equipment should install and/or use this equipment.

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1. General Safety

Arc Welding Safety Precautions

ARC WELDING MAY BE **HAZARDOUS.**

Protect yourself and others from possible serious injury or death!
Keep children away at all times!
Pacemaker wearers keep away until such time as you have consulted your doctor.

Welding exposes the user to certain hazards. However, welding can be safe when precautions are taken. The following safety information only summarizes the more complete safety information found in the Principal Safety Standards manuals listed at the end of this section.

Read and follow all Safety Standards!

ELECTRIC SHOCK CAN KILL

Touching live electrical parts may cause fatal shocks or severe burns. The electrode and work circuit are electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire and torch are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

1. Do not touch live electrical parts.
2. Wear dry, hole-free insulating gloves and body protection.
3. Use dry insulating mats or covers to insulate yourself from work and ground.
4. Disconnect input power before installing or servicing the equipment.
5. Properly install and ground any equipment according to its Owner's Manual and national, state, and local codes.
6. Turn off all equipment when not in use.
7. Ground the work piece to a good electrical (earth) ground.

8. Do not touch electrodes while you are in contact with the work (ground) circuit.
9. Use only well maintained equipment. Repair or replace damaged parts at once.
10. Keep all panels and covers securely in place.

ARC RAYS CAN BURN EYES AND SKIN NOISE MAY DAMAGE HEARING

Arc rays from the welding process produce intense heat and strong ultraviolet rays that will burn eyes and skin. Noise from some processes can damage hearing.

1. Wear a welding helmet fitted with a proper shade of filter (see ANSI Z49.1 listed in the Safety Standards) to protect your face and eyes when welding or watching.
2. Wear approved safety glasses. Face shields are recommended.
3. Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
4. Wear protective clothing made from durable, flame-resistant material (wool and leather) and foot protection.
5. Use approved earplugs or earmuffs if the noise level is high.

FUMES AND GASES CAN BE HAZARDOUS TO YOUR HEALTH

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

1. Keep your head out of the fumes. Do not breathe fumes.
2. If indoors, ventilate the area and/or exhaust welding fumes and gases from the arc.
3. If ventilation is poor, use an approved air-supplied respirator.
4. Read the Material Safety Data Sheet (MSDS) and the manufacturer's instructions for metals, consumables, coatings, and cleaners.
5. Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Shielding gases used for welding can displace air, causing injury or death. Be sure the breathing air is safe.
6. Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
7. Do not weld on coated metals (such as galvanized, lead, or cadmium plated steel) unless the coating is removed from the weld area, the area is well ventilated, and if

necessary, while wearing an air-supplied respirator. The coating and any metals containing these elements can give off toxic fumes if welded.

FLYING SPARKS AND HOT METAL CAN CAUSE INJURY

Chipping and grinding cause flying metal. As welds cool, they can throw slag.

1. Wear approved face shields or safety goggles. Side shields are recommended.
2. Wear proper body protection to protect skin.

WELDING CAN CAUSE FIRE OR EXPLOSION

Sparks and spatter fly off from the welding arc. The flying sparks and hot metal, weld spatter, hot work piece, and hot equipment can cause fires and burns. Accidental contact of electrode or welding wire to metal objects can cause sparks, overheating, or fire.

1. Protect yourself and others from flying sparks and hot metals.
2. Do not weld where flying sparks can strike flammable material.
3. Remove all flammables within a minimum of 35 ft. (10.7m) of the welding arc. If this is not possible, tightly cover them with approved covers.
4. Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
5. Watch for fire and keep a fire extinguisher nearby.
6. Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
7. Welding sealed containers such as tanks or drums is very dangerous. Expanding gases within the container can cause explosions.
8. Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock and fire hazards.
9. Remove stick electrode from holder or cut off welding wire contact tip when not in use.
10. Wear oil-free protective garments such as leather gloves, heavy shirt, cuff-less trousers, high shoes, and a cap.

CYLINDERS CAN EXPLODE IF DAMAGED

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

1. Protect compressed gas cylinders from excessive heat, mechanical shocks, and arcs.
2. Install and secure cylinders in an upright position by chaining them to a stationary support or equipment cylinder rack to prevent falling or tipping.
3. Keep cylinders away from any welding or other electrical circuits.
4. Never allow a welding electrode to touch any cylinder.
5. Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
6. Turn face away from valve outlet when opening cylinder valve.
7. Keep protective cap in place over valve except when cylinders are in use or connected for use.
8. Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.
9. Near the top of the tank each cylinder has a label, which identifies its contents by name, and a brief symbol, which identifies safety concerns.

It is very important to read and understand all the Material Safety Data Sheets (MSDS) for all substances you work with and around. This is your responsibility!

MOVING PARTS CAN CAUSE INJURY

Moving parts, such as fans, rotors, and belts can cut fingers and hands or catch loose clothing.

1. Keep all doors, panels, covers, and guards closed and secured in place.
2. Have only qualified people remove guards or covers for necessary maintenance and troubleshooting.
3. To prevent accidental starting during servicing, shutdown the entire system, which includes turning off the power supply.
4. Keep hands, hair, loose clothing, and tools away from moving parts.
5. Reinstall panels or guards and close doors when servicing is finished and before starting equipment.

HOT PARTS CAN CAUSE SEVERE BURNS

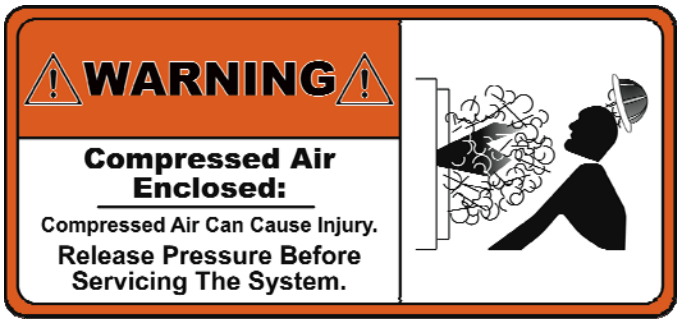
Avoid any contact with all *HOT* materials and substances.

1. Allow a cooling period before handling, moving or servicing.

Use approved techniques, tools, and safety clothing (gloves, shields, shoes, eye protection, etc.).

STEAM AND PRESSURIZED HOT COOLANT CAN BURN FACE, EYES, AND SKIN

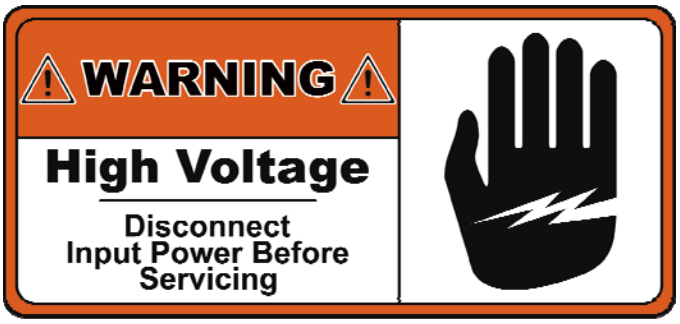
The coolant in the radiators and pressurized hoses is under pressure and can be very hot.



1. Wear gloves and put a rag over cap area when accessing system.
2. Allow pressure to escape before completely opening system.
3. Treat all hoses, hot or cold, with caution. Pressure can cause injury.

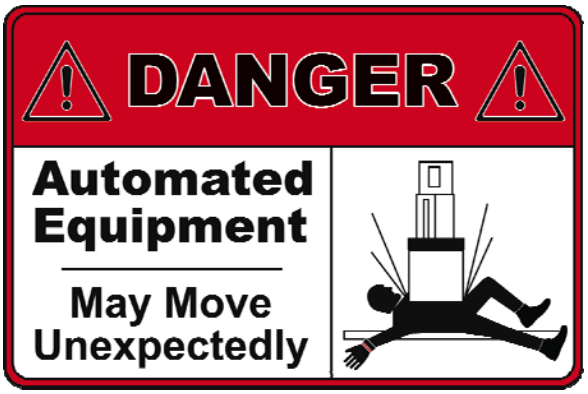
ELECTRICAL SHOCK CAN KILL

This identification label is used to call attention to immediate or imminent conditions, which if not avoided, will result in serious injury or death. Have only QUALIFIED personnel install, operate, repair, or perform any maintenance on this equipment.



AUTOMATED AND ROBOTIC EQUIPMENT MAY MOVE UNEXPECTEDLY AND CAUSE SERIOUS INJURY OR DEATH AT ANY TIME

Observe all perimeter boundaries for all automated equipment at all times.



1. Keep all guards, doors, covers, panels, and shields securely attached at all times.
2. Stop entire system when performing any maintenance, repair, installation, or inspections.
3. Observe all Safety Lines and Limits at all times.
4. Wear appropriate safety gear when operating any function of this equipment.
5. If a malfunction occurs:
    a. Shut down the entire system.
    b. Contact the system manager immediately.
6. If the standard system motion becomes obstructed, DO NOT ATTEMPT to clear the obstruction yourself. Follow procedures described in #5.
7. Shortcuts can cause serious injury or death and may damage the system.
8. In all situations **THINK** before you act.

Failure to follow all safety guidelines can cause serious injury or death and may damage the system.

Principal Safety Standards

- Safety in Welding and Cutting, ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami FL 33126
- Safety and Health Standards, OSHA 29 CFR 1910, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
- Recommended Safe Practices for the Preparation for Welding and Cutting of Containers That Have Held Hazardous Substances, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126
- National Electrical Code, NFPA Standard 70, from National Fire Protection Association, Batterymarch Park, Quincy, MA 02269
- Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1, from Compressed Gas Association, 1235 Jefferson Davis Highway, Suite 501, Arlington, VA 22202
- Code for Safety in Welding and Cutting, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3

- Safe Practices For Occupation And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 1430 Broadway, New York, NY 10018
- Cutting And Welding Processes, NFPA Standard 51B, from National Fire Protection Association, Batterymarch, Quincy, MA 02269

2. Overall Introduction

The weld lathe CWLS25-5400 is used to rotate the pieceparts in the rotation center for circumferential welding.

As the driver of pieceparts, the headstock spindle is driven by precision gear box with servo motor to provide precision movement. A thru hole is designed on the spindle for back gas . Also a rotary ground connection is provided.

3. Specifications

Load capacity: *2500 kg*

Maximum length of work piece *(distance between* headstock and tailstock faceplates*)*: *5400 mm*

Maximum OD of work piece: 2100 mm

Maximum clamping force of tailstock: 680 kg

Rotation motor**:** 0.85kw servo motor

Max Rotation Speed range**:** 1.5rpm

Ground Capacity: 500A

Electric power: 480V 3Phase 60Hz

Shop air pressure: 0.5Mpa

Note: See detail Dimensions from attached overall dimension drawing.

4. Major Components

1. Headstock (Figure 1, item 1）

The headstock is designed for loading and rotating the work piece precisely. It is fixed on the base frame with rotation center in alignment with machined rail of the base. It includes a base frame, a rotation gearbox with servo motor and a faceplate.

2. Tailstock (Figure 1, item 2)

Tailstock is the tail support of the work piece by supplying max. 680 kg clamping

force with 50 mm stroke. It can be moved along the machined rail way and Locked on any desired position.

3. Rail Base (Figure 1, item 3)

The head & tail stock sit on the base. The base is a stress relieved weldment which machined rails on it. It supply 5400 mm travel stroke for the tailstock and give precision linear movement of tailstock

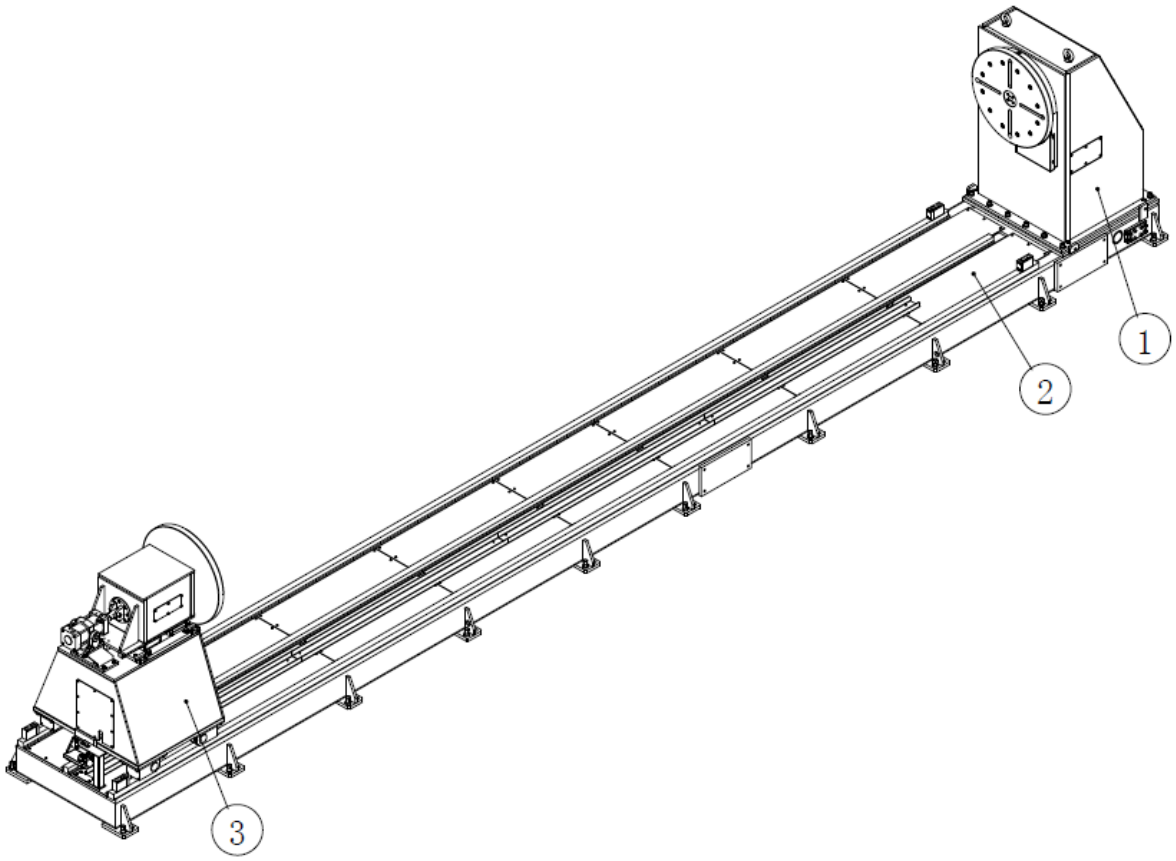


Figure 1

5. Maintenance

1. Lubrication of gearboxes for the headstock rotation

Check the oil every 6 month or 3000 hours. Change the oil after every 10000 hours' running (within 3 year). Recommended lubricant oils are Mobilgear 634(Mobil), VG460 (ISO VG) or Omala 460 (SHELL).

2. Cylinder and pneumatic system check

Check and clean the gas filter every month.

3. Ground device

Check the copper ring every 3 months.

6. Parts List

Figure	Item	Part No.	Description	Qty
Headstock				
2	1	P14024-02-02=001	Faceplate	1
2	2	32936	Tape Roll Bearing	2
2	3	P13021-02-02=029	Gear	1
2	4	S57AQH115_2 M1A 110.73	Gearbox	
2	5	SGMGV-09DDC6C	Motor	
2	6	P13021-02-02=029	Pinion Gear	
Grounding device				
3	1	P12001B-01-04=005	Spring	1
3	2	P12028-02-02=025	Electric spindle	1
3	3	P12028-02-02=026	Fixed plate	1
3	4		Maintenance free bearing JDB 4040	1
3	5		Bearing 51108 GB301	1
Tailstock				
4	1	P14024-03-03	Tailstock faceplate	1
4	2	3291	Tape roll Bearing 7	2
4	3	Y14A	Coupling	1
4	4	CS2T140-50	Air Cylinder	1
4	5	HGR35R520C	Linear rail	2
4	6	HGH35HAZ0C	Bearing block	4

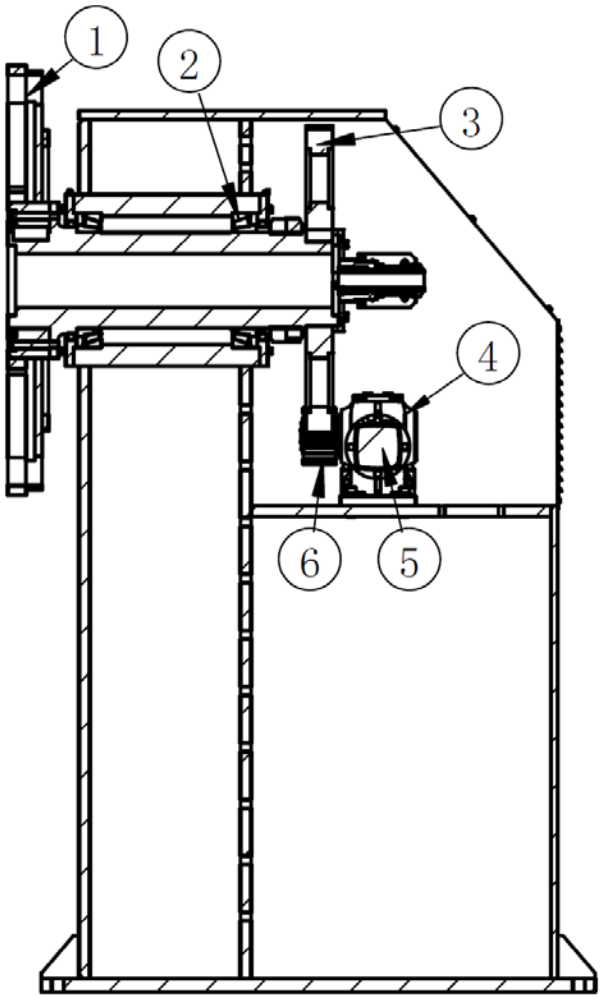


Figure 2

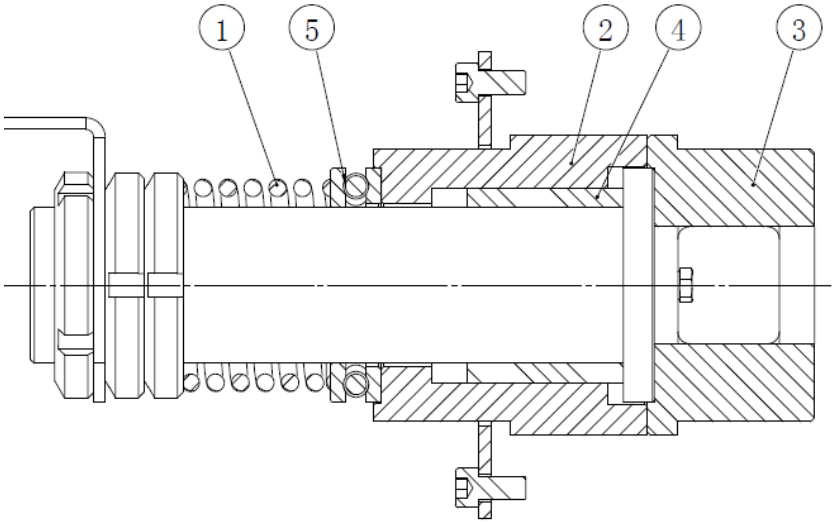


Figure 3

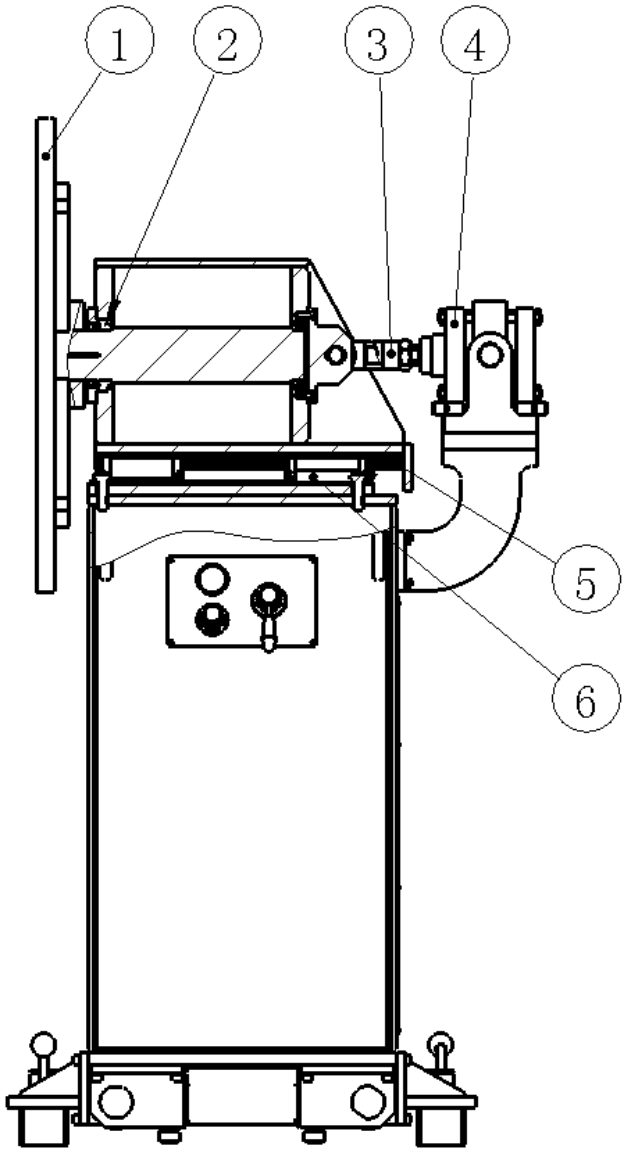


Figure 4