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Export Rev. 02

LWF™-22 & LWF™-24 PLUS Wire Feeder

Product Number：	LWF-22	K60084-2 / 76202
	LWF-24 PLUS	K60086-2 / 76204

Date of Purchase: _____
Serial Number: _____
Code Number: _____
Model: _____
Where Purchased: _____

Safety Depends on You

Lincoln arc welding and cutting equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation and thoughtful operation on your part. **DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.** And, most importantly, think before you act and be careful.

OPERATOR'S MANUAL

ISO 9001
Designed and Manufactured Under a Quality Program Certified by ABS Quality Evaluations, Inc. to ISO 9001 Requirements.
CERTIFICATE NUMBER: 30273

LINCOLN® ELECTRIC

Shanghai Lincoln Electric Company
No195, Lane 5008, HuTai Road Shanghai 201907
Tel: (021) 6673 4530 Fax: (021) 6602 6621

WARNING

ARC WELDING CAN BE HAZARDOUS. PROTECT YOURSELF AND OTHERS FROM POSSIBLE SERIOUS INJURY OR DEATH. KEEP CHILDREN AWAY. PACEMAKER WEARERS SHOULD CONSULT WITH THEIR DOCTOR BEFORE OPERATING.

Read and understand the following safety highlights. For additional safety information, it is strongly recommended That you purchase a copy of " Safety in Welding & Cutting – ANSI Standard Z49.1 " from the American Welding Society, P.O. Box 351040, Miami, Florida 33135 or CSA Standard W117.2-1974. A Free copy of "Arc Weld Safety " booklet E205 is available from the Lincoln Electric Company, 22801 St. Clair Avenue, Cleveland, Ohio 44117-1199.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES PERFORMED ONLY BY QUALIFIED INDIVIDUALS.

ELECTRIC AND MAGNETIC FIELDS
May be dangerous

1.a. Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around welding cables and welding machines.

1.b. EMF fields may interfere with some pacemakers, and welders having a pacemaker should consult with their physician before welding.

1.c. Exposure to EMF fields in welding may have other health effects which are now not known.

1.d. All welders should use the following procedures in order to minimize exposure to EMF fields from the welding circuit:

1.d.1. Route the electrode and work cables together. Secure them with tape when possible.

1.d.2. Never coil the electrode lead around your body.

1.d.3. Do not place your body between the electrode and work cables. If the electrode cable is on your right side, the work cable should also be on your right side.

1.d.4. Connect the work cable to the workpiece as close as possible to the area being welded.

1.d.5. Do not work next to welding power source.

ELECTRIC SHOCK can Kill.

2.a. The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing. Wear dry, hole-free gloves to insulate Hands.

2.b. Insulate yourself from work and ground using dry insulation. Make certain the insulation is large enough to cover your full area of physical contact with work and ground.

In addition to the normal safety precautions, if welding must be performed under electrically hazardous conditions (in damp locations or while wearing wet clothing; on metal structures such as floors, gratings or scaffolds; when in cramped positions such as sitting, kneeling or lying, if there is a high risk of unavoidable or accidental contact with the workpiece or ground) use the following equipment:

- **Semiautomatic DC Constant Voltage Wire Welder.**
- **DC Manual (Stick) Welder.**
- **AC Welder with Reduced Voltage Control.**

2.c. In semiautomatic or automatic wire welding, the electrode electrode reel, welding head, nozzle or semiautomatic welding gun are also electrically “hot”.

2.d. Always be sure the work cable makes a good electrical connection with the metal being welded. The connection should be as close as possible to the area being welded.

2.e. Ground the work or metal to be welded to a good electrical (earth) ground.

2.f. Maintain the electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. Replace damaged insulation.

2.g. Never dip the electrode in water for cooling.

2.h. Never simultaneously touch electrically “hot” parts of electrode holders connected to two welders because voltage between the two can be the total of the open circuit voltage of both welders.

2.i. When working above floor level, use a safety belt to protect yourself from a fall should you get a shock.

2.j. Also see items 5.c. and 8.

ARC RAYS can burn.

3.a. Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc welding or observing open arc welding. The headshield and filter lens should conform to ANSI Z87.I standards.

3.b. Use suitable clothing made from durable flame-resistant material to protect your skin and that of your helpers from the arc rays.

3.c. Protect other nearby personnel with suitable, non-flammable screening and/or warn them not to watch the arc nor expose themselves to the arc rays or to hot spatter or metal.

FUMES AND GASES can be dangerous.

4.a. Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. When welding, keep your head out of the fume. Use enough ventilation and/or exhaust at the arc to keep fumes and gases away from the breathing zone.
When welding with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and below Threshold Limit Values (TLV) using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.

4.b. Do not weld in locations near chlorinated hydrocarbon vapors coming from degreasing, cleaning or spraying operations. The heat and rays of the arc can react with solvent vapors to form phosgene, a highly toxic gas, and other irritating products.

4.c. Shielding gases used for arc welding can displace air and cause injury or death. Always use enough ventilation, especially in confined areas, to insure breathing air is safe.

4.d. Read and understand the manufacturer’s instruction for this equipment and the consumables to be used, including the material safety data sheet (MSDS) and follow your employer’s safety practices. MSDS forms are available from your welding distributor or from the manufacturer.

WELDING SPARKS can cause fire or explosion.

5.a. Remove fire hazards from the welding area. If this is not possible, cover them to prevent the welding sparks from starting a fire. Remember that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas. Avoid welding near hydraulic lines. Have a fire extinguisher readily available.

5.b. Where compressed gases are to be used at the job site, special precautions should be used to prevent hazardous situations. Refer to “Safety in Welding and Cutting” (ANSI Standard Z49.1) and the operating information for the Equipment being used.

5.c. When not welding, make certain no part of the electrode circuit is touching the work or ground. Accidental contact can cause overheating and create a fire hazard.

5.d. Do not heat, cut or weld tanks, drums or containers until the proper steps have been taken to insure that such procedures will not cause flammable or toxic vapors from substances inside. They can cause an explosion even though they have been “cleaned”. For information, purchase “Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping That Have Held Hazardous Substances”, AWS F4.1 from the American Welding Society (see address above).

5.e. Vent hollow castings or containers before heating, cutting or welding. They may explode.

5.f. Sparks and spatter are thrown from the welding arc. Wear oil free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes and a cap over your hair. Wear ear plugs when welding out of position or in confined places. Always wear safety glasses with side shields when in a welding area.

5.g. Connect the work cable to the work as close to the welding area as practical. Work cables connected to the building framework or other locations away from the welding area increase the possibility of the welding current passing through lifting chains, crane cables or other alternate circuits. This can create fire hazards or overheat lifting chains or cables until they fail.

CYLINDER may explode if damaged.

6.a. Use only compressed gas cylinders containing the correct shielding gas for the process used and properly operating regulators designed for the gas and pressure used. All hoses, fittings, etc. should be suitable for the application and maintained in good condition.

6.b. Always keep cylinders in an upright position securely chained to an undercarriage or fixed support.

6.c. Cylinders should be located:

- Away from areas where they may be struck or subjected to physical damage.
- A safe distance from arc welding or cutting operations and any other source of heat, sparks, or flame.

6.d. Never allow the electrode, electrode holder or any other electrically “hot” parts to touch a cylinder.

6.e. Keep your head and face away from the cylinder valve outlet when opening the cylinder valve.

6.f. Valve protection caps should always be in place and hand tight except when the cylinder is in use or connected for use.

6.g. Read and follow the instructions on compressed gas cylinders, associated equipment, and CGA publication P-I, “Precautions for Safe Handling of Compressed Gases in Cylinders,” available from the Compressed Gas Association 1235 Jefferson Davis Highway, Arlington, VA 22202.

FOR ELECTRICALLY Powered Equipment.

7.a. Turn off input power using the disconnect switch at the fuse box before working on the equipment.

7.b. Install equipment in accordance with the U.S. National Electrical Code, all local codes and the manufacturer’s recommendations.

7.c. Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer’s recommendations.

Thank You -----

Please Examine Carton and Equipment For Damage Immediately

When this equipment is shipped, title passes to the purchaser upon receipt by the carrier. Consequently, Claims for material damaged in shipment must be made by the purchaser against the transportation company at the time the shipment is received.

Please record your equipment identification information below for future reference. This information can be found on the nameplate of your machine.

Model Name & Number _____

Code & Serial Number _____

Date of Purchase _____

Whenever you request replacement parts for or information on this equipment always supply the Information you have recorded above.

Read this Operators Manual completely before attempting to use this equipment. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. The level of seriousness to be applied to each is explained below:

⚠ WARNING

This statement appears where the information **must** be followed **exactly** to avoid **serious personal injury** or **loss of life.**

⚠ CAUTION

This statement appears where the information **must** be followed to avoid **minor personal injury** or **damage to this equipment.**

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TECHNICAL SPECIFICATIONS – LWF™ Wire Feeders

MODEL
LWF™-22, LWF™-24 PLUS
INPUT POWER
Supplied by power source
RECOMMENDED WIRE SIZES
0.8mm, 1.0mm, 1.2mm, 1.4mm, 1.6mm,2.0mm
WIRE FEED SPEED
1.5 to 18m/min

WELDING WIRE SPOOL (Max. load 20 kg)		
SHAFT DIAMETER	**OUTSIDE DIAMETER**	**WIDTH**
50mm	280mm	105mm

DIMENSIONS & WEIGHT (Without Welding Wire Spool)				
Specification / Model	HEIGHT	WIDTH	DEPTH	WEIGHT
LWF™–22	350mm	280mm	450mm	10. 5kg
LWF™–24 PLUS	350mm	280mm	450mm	12. 5kg

Note: Please only use this wire feeder with specified power sources, otherwise no output will be produced and the machine may be damaged.

SAFETY PRECAUTIONS

⚠ WARNING

ELECTRIC SHOCK can kill.

- **Only qualified personnel should perform this installation, maintenance and troubleshooting work.**
- **Turn off the input power at the fuse box before working on other equipment connected to the welding system at the disconnect switch or fuse box before working on this equipment.**
- **Do not touch electrically hot parts.**

INSTALLATION INSTRUCTION

▪ WELDING CABLE

The needed cable assembly for the LWF™ feeders includes a control cable, welding cable and gas hose. The lengths are made based on to the specific requirements from end users. The feeder has a stud being used to connect the welding cable.

For self-shielded wire, the welding cable should be bolted to either the "+" or "-"output stud on power source.

For Gas shielded wire, the power cable should be bolted to "+" output stud on power source.

▪ GAS HOSE

The LWF™ interconnection cable assembly has a gas hose which connect to the rear panel in the feeder. Another end of the hose connects to gas flow regulator with a clip for locking. Shielding gas such as CO2, Ar, and blend gas can be used and the gas pressure cannot be more than 0.7 MPa).

▪ CONTROL CABLE

The control cable is included in the interconnection cable assembly. When it is used with DURAWELD & OPTIMARC, the 6-pin connector on the control cable will be linked to the rear panel of wire feeder and 6-pin connector on the power source.

▪ OPTION EXTENSION CABLES

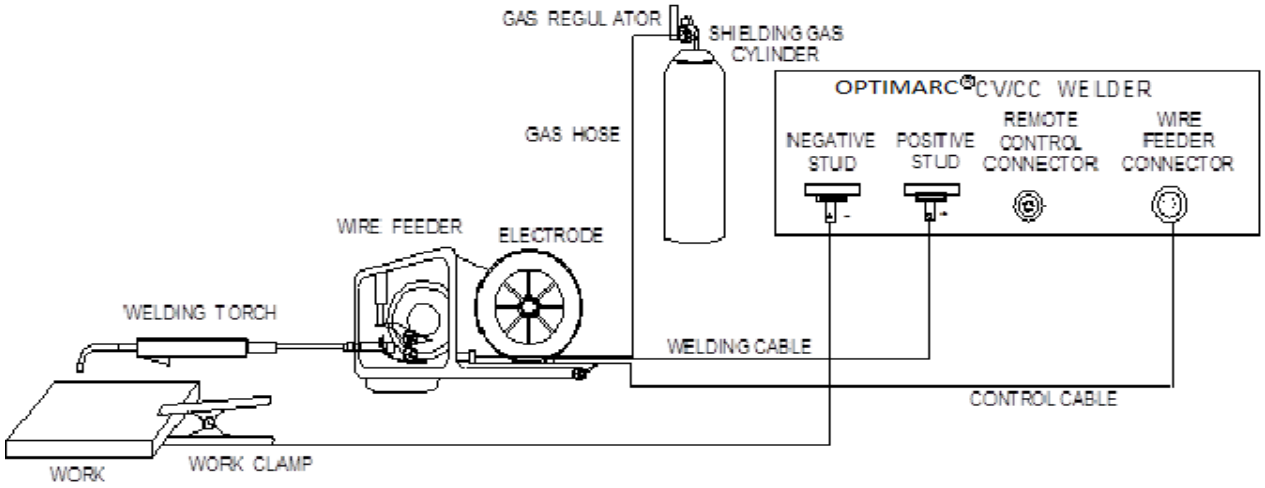
The LWF™ wire feeders can also be used with extension welding cables/ control cable /gas hoses if the customers hope to get various length.

Notes: please fix the hose and cables into the holding bracket on the rear of the feeder after your connection.

▪ WELDING GUN

Loosen the hex screw on the gun block of the feeder with the hex wrench being provided by the feeder. Install the gun into the feeder. Tighten the gun block with the hex wrench. A Euro adapter is an available option for connecting Euro style guns.

CONNECTION DIAGRAM: LWF™ Feeder to Lincoln OPTIMARC



INSTALLING DRIVE ROLLS

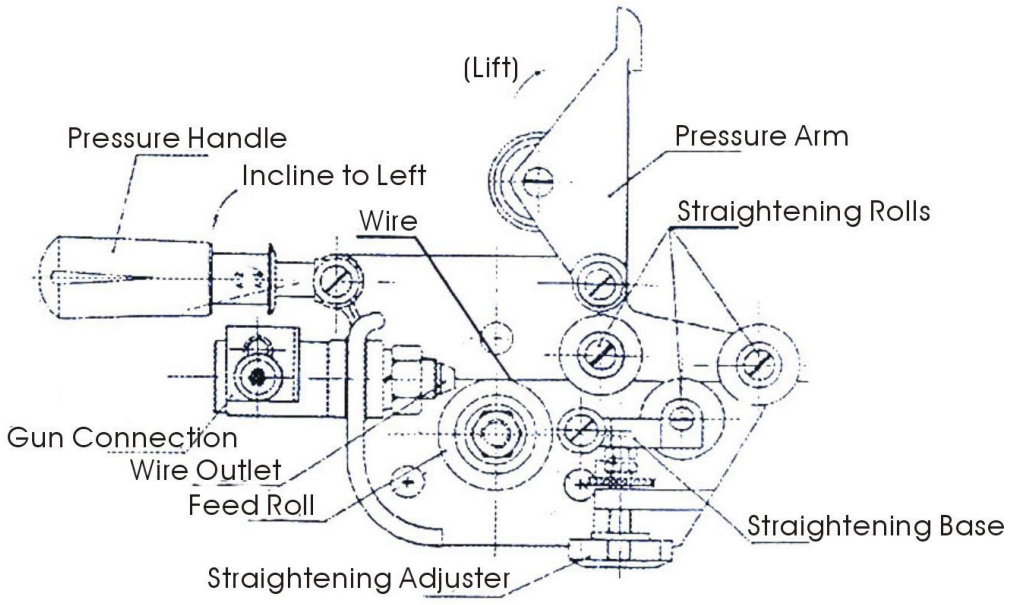
LWF™-22: One reversible drive roll needs to be installed on each LWF™-22 wire feeder. Normally each drive roll has two different size grooves for feeding different diameter wire. One groove is for feeding 0.8/1.0/1.2mm and the other groove is for feeding 1.0/1.2/1.6mm. Ensure that the drive roll is installed using the correct groove for the wire diameter being used.

LWF™-24 PLUS: Two reversible drive rolls need to be installed on each LWF™-24 PLUS wire feeder. Normally each drive roll has two different size grooves for feeding different diameter wire. One groove is for feeding 1.0/1.2mm and the other groove is for feeding 1.2/1.6mm. Ensure that the drive roll is installed using the correct groove for the wire diameter being used.

Notice: make sure the specifications of the 2 symmetrical feed rolls are same. And don't make any mistake about it!

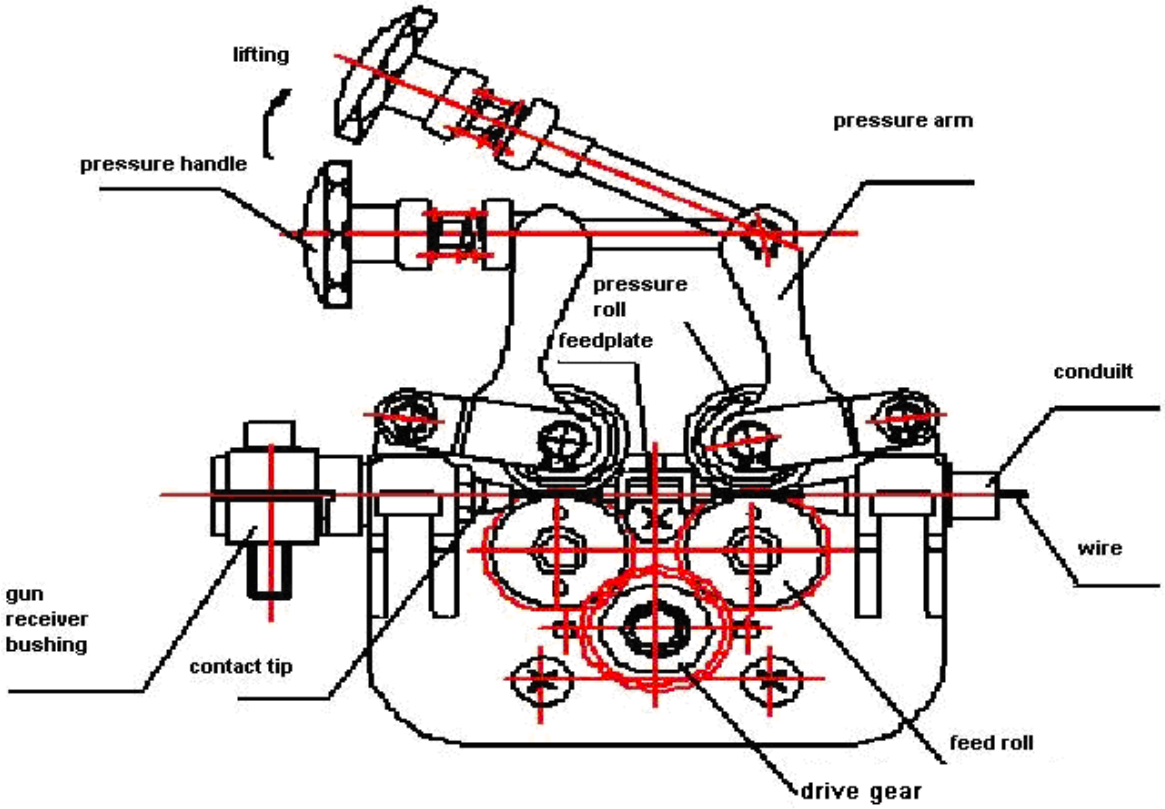
▪ LOADING THE WIRE SPOOL

- **LWF™-22**



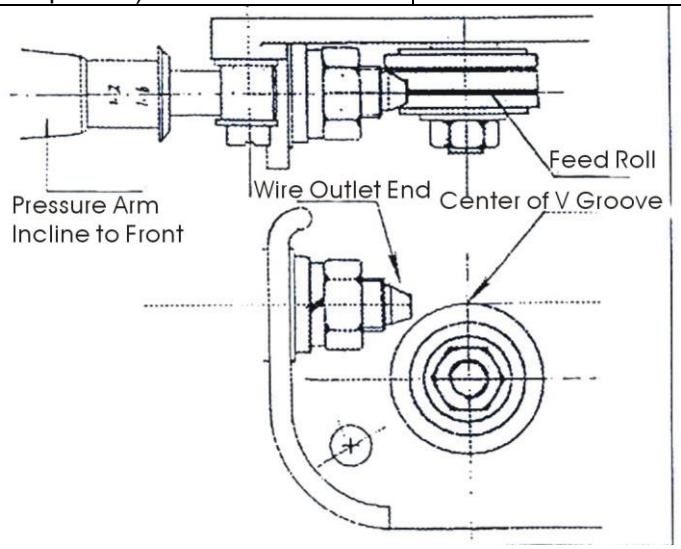
Loosen the retainer on the spindle and put on the welding wire spool. Next, replace the retainer and tighten the screw. Release the pressure handle and lift the pressure arm, then insert the welding wire into the inlet straightening rolls 2-3cm (1/4 – 1 inch). Now, replace the pressure arm and tighten with the pressure handle noting that the pressure scale should suit the wire diameter. Using the cold-inch button on the feeder, begin feeding wire. Release the cold-inch button when the wire comes out 1-2cm (1/2-1 inch) from the contact tip. The installation of the welding wire is now completed.

- **LWF™-24 PLUS:**

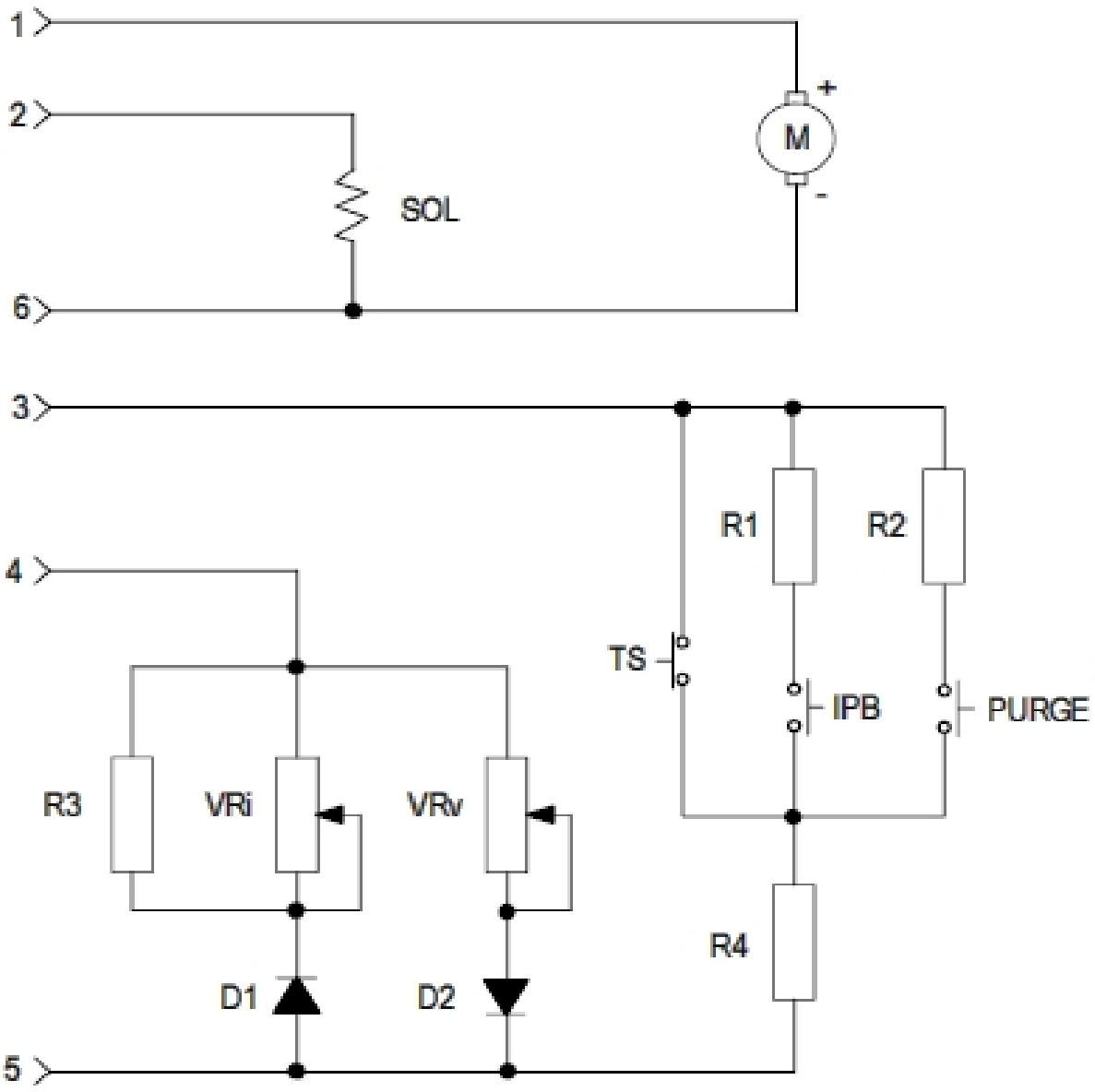


Loosen the retainer on the spindle and put on the welding wire spool. Next, replace the retainer and tighten the screw. Release the pressure handle and lift the pressure arm, insert the welding wire into conduit and V groove of feed roll, then insert it into the feedplate. Then insert the welding wire into V groove of another feed roll and contact tip. Push down the pressure handle at last. Adjust the pressure to feed wire smoothly. Then using the cold-inch button on the feeder, begin feeding wire. Release the cold-inch button when the wire comes out 1-2cm (1/2-1 inch) from the contact tip. The installation of the welding wire is now completed.

Note: Motor and gear box are maintenance free products, do not open them for maintaining, repairing or oiling. Contact your nearest Lincoln Electric Service Center if a fault occurs.

<table>
<tr><th>Location</th><th>Inspection Points</th><th>Note</th></tr>
<tr><td rowspan="4">Wire Outlet</td><td>• Check if there is any dust and powder accumulated at the entrance of the wire outlet and on the surface of the feed rolls.</td><td>Clean the dust and powder and find out the cause.</td></tr>
<tr><td>• Check if the diameter of the outlet suits the wire diameter.</td><td>If not suitable, erratic arc or powder will occur.</td></tr>
<tr><td>• Check if the end of the wire outlet is lined up with the V groove of the feed roll. (Visual inspection)</td><td>If they are not lined up, erratic arc or powder will occur.</td></tr>
<tr><td colspan="2"> 
</td></tr>
<tr><td>Feed Rolls</td><td>• Check if the diameter of the feed roll is suitable for the diameter of the wire used.
• Check if there is any fragment sticking in the groove.</td><td>• Powder and jam in liner will cause erratic arc.
• Replace if abnormal.</td></tr>
</table>

SCHEMATIC DIAGRAM



Shanghai Lincoln Electric Company
No195, Lane 5008, HuTai Road Shanghai 201907
Tel: (021) 6673 4530 Fax: (021) 6602 6621