IM3016
05/2008
Rev. 01

POWERTEC
200C, 250C & 300C

OPERATOR'S MANUAL

MANUALE OPERATIVO

BEDIENUNGSANLEITUNG

MANUAL DE INSTRUCCIONES

MANUEL D'UTILISATION

BRUKSANVISNING OG DELELISTE

GEBRUIKSAANWIJZING

BRUKSANVISNING

INSTRUKCJA OBSŁUGI

KÄYTTÖOHJE

LINCOLN ELECTRIC BESTER S.A.
ul. Jana III Sobieskiego 19A, 58-260 Bielawa, Poland
www.lincolnelectric.eu

Declaration of conformity
Dichiarazione di conformità
Konformitätserklärung
Declaración de conformidad
Déclaration de conformité
Samsvars erklæring
Verklaring van overeenstemming

Försäkran om överensstämmelse
Deklaracja zgodności
Vakuutus yhteensopivuudesta

LINCOLN ELECTRIC BESTER S.A.

Declares that the welding machine:
Dichiara che Il generatore per saldatura tipo:
Erklärt, daß die Bauart der Maschine:
Declara que el equipo de soldadura:
Déclare que le poste de soudage:
Bekrefter at denne sveisemaskin:
Verklaart dat de volgende lasmachine:

Försäkrar att svetsomriktaren:
Deklaruje, że spawalnicze źródło energii:
Vakuuttaa, että hitsauskone:

POWERTEC 200C, 250C & 300C

conforms to the following directives:
è conforme alle seguenti direttive:
den folgenden Bestimmungen entspricht:
es conforme con las siguientes directivas:
est conforme aux directives suivantes:
er i samsvar med følgende direktiver:
overeenkomt conform de volgende richtlijnen:

överensstämmer med följande direktiv:
spełnia następujące wytyczne:
täyttää seuraavat direktiivit:

2006/95/EC, 93/68/CEE, 89/336/CEE, 92/31/CEE

and has been designed in compliance with the following standards:
ed è stato progettato in conformità alle seguenti norme:
und in Übereinstimmung mit den nachstehenden normen hergestellt wurde:
y ha sido diseñado de acuerdo con las siguientes normas:
et qu'il a été conçu en conformité avec les normes:
og er produsert og testet iht. følgende standarder:

en is ontworpen conform de volgende normen:
och att den konstruerats i överensstämmelse med följande standarder:
i że zostało zaprojektowane zgodnie z wymaganiami następujących norm:
ja on suunniteltu seuraavien standardien mukaan:

EN 60974-1, EN 60974-10

Paweł Lipiński
Operational Director

LINCOLN ELECTRIC BESTER S.A., ul. Jana III Sobieskiego 19A, 58-260 Bielawa, Poland

English	Do not dispose of electrical equipment together with normal waste! In observance of European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) and its implementation in accordance with national law, electrical equipment that has reached the end of its life must be collected separately and returned to an environmentally compatible recycling facility. As the owner of the equipment, you should get information on approved collection systems from our local representative. By applying this European Directive you will protect the environment and human health!
Italiano	Non gettare le apparecchiature elettriche tra i rifiuti domestici! In ottemperanza alla Direttiva Europea 2002/96/CE sui Rifiuti di Apparechiature Elettriche ed Elettroniche (RAEE) e la sua attuazione in conformità alle norme nazionali, le apparecchiature elettriche esauste devono essere raccolte separatamente e restituite ad una organizzazione di riciclaggio ecocompatibile. Come proprietario dell'apparecchiatura, Lei potrà ricevere informazioni circa il sistema approvato di raccolta, dal nostro rappresentante locale. Applicando questa Direttiva Europea Lei contribuirà a migliorare l'ambiente e la salute!
Deutsch	Werfen Sie Elektrowerkzeuge nicht in den Hausmüll! Gemäss Europäischer Richtlinie 2002/96/EG über Elektro- und Elektronik- Altgeräte (Waste Electrical and Electronic Equipment, WEEE) und Umsetzung in nationales Recht müssen verbrauchte Elektrowerkzeuge getrennt gesammelt und einer umweltgerechten Wiederverwertung zugeführt werden. Als Eigentümer diese Werkzeuges sollten sie sich Informationen über ein lokales autorisiertes Sammel- bzw. Entsorgungssystem einholen. Mit der Anwendung dieser EU Direktive tragen sie wesentlich zur Schonung der Umwelt und ihrer Gesundheit bei!
Español	No tirar nunca los aparatos eléctricos junto con los residuos en general!. De conformidad a la Directiva Europea 2002/96/EC relativa a los Residuos de Equipos Eléctricos o Electrónicos (RAEE) y al acuerdo de la legislación nacional, los equipos eléctricos deberán ser recogidos y reciclados respetando el medioambiente. Como propietario del equipo, deberá informar de los sistemas y lugares apropiados para la recogida de los mismos. Aplicar esta Directiva Europea protegerá el medioambiente y su salud!
Français	Ne pas jeter les appareils électriques avec les déchets ordinaires! Conformément à la Directive Européenne 2002/96/EC relative aux Déchets d' Équipements Électriques ou Électroniques (DEEE), et à sa transposition dans la législation nationale, les appareils électriques doivent être collectés à part et être soumis à un recyclage respectueux de l'environnement. En tant que propriétaire de l'équipement, vous devriez vous informer sur les systèmes de collecte approuvés auprès nos représentants locaux. Appliquer cette Directive Européenne améliorera l'environnement et la santé!
Norsk	Kast ikke elektriske artikler sammen med vanlig søppel. I følge det europeiske direktivet for Elektronisk Søppel og Elektriske Artikler 2002/96/EC (Waste Electrical and Electronic Equipment, WEEE) skal alt avfall kildesorteres og leveres på godkjente plasser i følge loven. Godkjente retur plasser gis av lokale myndigheter. Ved å følge det europeiske direktivet bidrar du til å bevare naturen og den menskelige helse.
Nederlandse	Gooi elektrische apparatuur nooit bij gewoon afval! Met inachtneming van de Europese Richtlijn 2002/96/EC met betrekking tot Afval van Elektrische en Elektronische Apparatuur (Waste Electrical and Electronic Equipment, WEEE) en de uitvoering daarvan in overeenstemming met nationaal recht, moet elektrische apparatuur, waarvan de levensduur ten einde loopt, apart worden verzameld en worden ingeleverd bij een recycling bedrijf, dat overeenkomstig de milieuwetgeving opereert. Als eigenaar van de apparatuur moet u informatie inwinnen over goedgekeurde verzamelsystemen van onze vertegenwoordiger ter plaatse. Door het toepassen van deze Europese Richtlijn beschermt u het milieu en ieders gezondheid!
Svenska	Släng inte uttjänt elektrisk utrustning tillsammans med annat avfall! Enligt Europadirektiv 2002/96/EC ang. Uttjänt Elektrisk och Elektronisk Utrustning (Waste Electrical and Electronic Equipment, WEEE) och dess implementering enligt nationella lagar, ska elektrisk utrustning som tjänat ut sorteras separat och lämnas till en miljögodkänd återvinningsstation. Som ägare till utrustningen, bör du skaffa information om godkända återvinningssystem från dina lokala myndigheter. Genom att följa detta Europadirektiv bidrar du till att skydda miljö och hälsa!
Polski	Nie wyrzucać osprzętu elektrycznego razem z normalnymi odpadami! Zgodnie z Dyrektywą Europejską 2002/96/EC dotyczącą Pozbywania się zużytego Sprzętu Elektrycznego i Elektronicznego (Waste Electrical and Electronic Equipment, WEEE) i jej wprowadzeniem w życie zgodnie z międzynarodowym prawem, zużyty sprzęt elektryczny musi być składowany oddzielnie i specjalnie utylizowany. Jako właściciel urządzeń powinieneś otrzymać informacje o zatwierdzonym systemie składowania od naszego lokalnego przedstawiciela. Stosując te wytyczne bedziesz chronił środowisko i zdrowie człowieka!
Suomi	Älä hävitä sähkölaitteita sekajätteiden mukana! Noudatettaessa Euroopan Unionin Direktiiviä 2002/96/EY Sähkölaite- ja Elektroniikkajätteestä (WEEE) ja toteutettaessa sitä sopusoinnussa kansallisen lain kanssa, sähkölaite, joka on tullut elinkaarensa päähän pitää kerätä erilleen ja toimittaa sähkö- ja elektroniikkaromujen keräyspisteeseen. Lisätietoja tämän tuotteen käsittelystä, keräämisestä ja kierrätyksestä saa kunnan ympäristöviranomaisilta. Noudattamalla tätä Euroopan Unionin direktiiviä, autat torjumaan kielteiset ynpäristö- ja terveysvaikutukset!

THANKS! For having choosen the QUALITY of the Lincoln Electric products.

- Please Examine Package and Equipment for Damage. Claims for material damaged in shipment must be notified immediately to the dealer.
- For future reference record in the table below your equipment identification information. Model Name, Code & Serial Number can be found on the machine rating plate.

GRAZIE! Per aver scelto la QUALITÀ dei prodotti Lincoln Electric.

- Esamini Imballo ed Equipaggiamento per rilevare eventuali danneggiamenti. Le richieste per materiali danneggiati dal trasporto devono essere immediatamente notificate al rivenditore.
- Per ogni futuro riferimento, compilare la tabella sottostante con le informazioni di identificazione equipaggiamento. Modello, Codice (Code) e Matricola (Serial Number) sono reperibili sulla targa dati della macchina.

VIELEN DANK! Dass Sie sich für ein QUALITÄTSPRODUKT von Lincoln Electric entschieden haben.

- Bitte überprüfen Sie die Verpackung und den Inhalt auf Beschädigungen. Transportschäden müssen sofort dem Händler gemeldet werden.
- Damit Sie Ihre Gerätedaten im Bedarfsfall schnell zur Hand haben, tragen Sie diese in die untenstehende Tabelle ein. Typenbezeichnung, Code- und Seriennummer finden Sie auf dem Typenschild Ihres Gerätes.

GRACIAS! Por haber escogido los productos de CALIDAD Lincoln Electric.

- Por favor, examine que el embalaje y el equipo no tengan daños. La reclamación del material dañado en el transporte debe ser notificada inmediatamente al proveedor.
- Para un futuro, a continuación encontrará la información que identifica a su equipo. Modelo, Code y Número de Serie los cuales pueden ser localizados en la placa de características de su equipo.

MERCI! Pour avoir choisi la QUALITÉ Lincoln Electric.

- Vérifiez que ni l'équipement ni son emballage ne sont endommagés. Toute réclamation pour matériel endommagé doit être immédiatement notifiée à votre revendeur.
- Notez ci-dessous toutes les informations nécessaires à l'identification de votre équipement. Le nom du Modèle ainsi que les numéros de Code et Série figurent sur la plaque signalétique de la machine.

TAKK! For at du har valgt et KVALITETSPRODUKT fra Lincoln Electric.

- Kontroller emballsjen og produktet for feil eller skader. Eventuelle feil eller transportskader må umiddelbart rapporteres dit du har kjøpt din maskin.
- For fremtidig referanse og for garantier og service, fyll ut den tekniske informasjonen nedenfor i dette avsnittet. Modell navn, Kode & Serie nummer finner du på den tekniske platen på maskinen.

BEDANKT! Dat u gekozen heeft voor de KWALITEITSPRODUCTEN van Lincoln Electric.

- Controleert u de verpakking en apparatuur op beschadiging. Claims over transportschade moeten direct aan de dealer of aan Lincoln electric gemeld worden.
- Voor referentie in de toekomst is het verstandig hieronder u machinegegevens over te nemen. Model Naam, Code & Serienummer staan op het typeplaatje van de machine.

TACK! För att ni har valt en KVALITETSPRODUKT från Lincoln Electric.

- Vänligen kontrollera förpackning och utrustning m.a.p. skador. Transportskador måste omedelbart anmälas till återförsäljaren eller transportören.
- Notera informationen om er utrustnings identitet i tabellen nedan. Modellbeteckning, code- och serienummer hittar ni på maskinens märkplåt.

DZIĘKUJEMY! Za docenienie JASKOŚCI produktów Lincoln Electric.

- Proszę sprawdzić czy opakownie i sprzęt nie są uszkodzone. Reklamacje uszkodzeń powstałych podczas transportu muszą być natychmiast zgłoszone do dostawcy (dystrybutora).
- Dla ułatwienia prosimy o zapisanie na tej stronie danych identyfikacyjnych wyrobów. Nazwa modelu, Kod i Numer Seryjny, które możecie Państwo znaleźć na tabliczce znamionowej wyrobu.

KIITOS! Kiitos, että olet valinnut Lincoln Electric LAATU tuotteita.

- Tarkista pakkaus ja tuotteet vaurioiden varalta. Vaateet mahdollisista kuljetusvaurioista on ilmoitettava välittömästi jälleenmyyjälle.
- Tulevaisuutta varten täytä alla oleva lomake laitteen tunnistusta varten. Mallin, Koodin ja Sarjanumeron voit löytää konekilvestä.

Model Name, Modello, Typenbezeichnung, Modelo, Nom du modèle, Modell navn, Model Naam, Modellbeteckning, Nazwa modelu, Mallinimi:

.....

Code & Serial number, Code (codice) e Matricola, Code- und Seriennummer, Code y Número de Serie, Numéros de Code et Série, Kode & Serie nummer, Code en Serienummer, Code- och Serienummer, Kod i numer Seryjny, Koodi ja Sarjanumero:

..... | .....

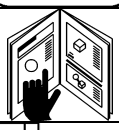
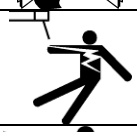
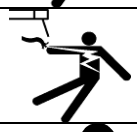
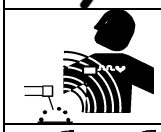
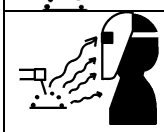
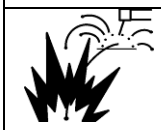
Date & Where Purchased, Data e Luogo d'acquisto, Kaufdatum und Händler, Fecha y Nombre del Proveedor, Lieu et Date d'acquisition, Kjøps dato og Sted, Datum en Plaats eerste aankoop, Inköpsdatum och Inköpsställe, Data i Miejsce zakupu, Päiväys ja Ostopaikka:

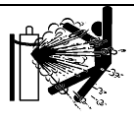
..... | .....

Safety

WARNING

This equipment must be used by qualified personnel. Be sure that all installation, operation, maintenance and repair procedures are performed only by qualified person. Read and understand this manual before operating this equipment. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment. Read and understand the following explanations of the warning symbols. Lincoln Electric is not responsible for damages caused by improper installation, improper care or abnormal operation.

	WARNING: This symbol indicates that instructions must be followed to avoid serious personal injury, loss of life, or damage to this equipment. Protect yourself and others from possible serious injury or death.
	READ AND UNDERSTAND INSTRUCTIONS: Read and understand this manual before operating this equipment. Arc welding can be hazardous. Failure to follow the instructions in this manual could cause serious personal injury, loss of life, or damage to this equipment.
	ELECTRIC SHOCK CAN KILL: Welding equipment generates high voltages. Do not touch the electrode, work clamp, or connected work pieces when this equipment is on. Insulate yourself from the electrode, work clamp, and connected work pieces.
	ELECTRICALLY POWERED EQUIPMENT: Turn off input power using the disconnect switch at the fuse box before working on this equipment. Ground this equipment in accordance with local electrical regulations.
	ELECTRICALLY POWERED EQUIPMENT: Regularly inspect the input, electrode, and work clamp cables. If any insulation damage exists replace the cable immediately. Do not place the electrode holder directly on the welding table or any other surface in contact with the work clamp to avoid the risk of accidental arc ignition.
	ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS: Electric current flowing through any conductor creates electric and magnetic fields (EMF). EMF fields may interfere with some pacemakers, and welders having a pacemaker shall consult their physician before operating this equipment.
	CE COMPLIANCE: This equipment complies with the European Community Directives.
	FUMES AND GASES CAN BE DANGEROUS: Welding may produce fumes and gases hazardous to health. Avoid breathing these fumes and gases. To avoid these dangers the operator must use enough ventilation or exhaust to keep fumes and gases away from the breathing zone.
	ARC RAYS CAN BURN: Use a shield with the proper filter and cover plates to protect your eyes from sparks and the rays of the arc when welding or observing. Use suitable clothing made from durable flame-resistant material to protect you skin and that of your helpers. Protect other nearby personnel with suitable, non-flammable screening and warn them not to watch the arc nor expose themselves to the arc.
	WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION: Remove fire hazards from the welding area and have a fire extinguisher readily available. Welding sparks and hot materials from the welding process can easily go through small cracks and openings to adjacent areas. Do not weld on any tanks, drums, containers, or material until the proper steps have been taken to insure that no flammable or toxic vapors will be present. Never operate this equipment when flammable gases, vapors or liquid combustibles are present.
	WELDED MATERIALS CAN BURN: Welding generates a large amount of heat. Hot surfaces and materials in work area can cause serious burns. Use gloves and pliers when touching or moving materials in the work area.
	SAFETY MARK: This equipment is suitable for supplying power for welding operations carried out in an environment with increased hazard of electric shock.

	CYLINDER MAY EXPLODE IF DAMAGED: 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. Always keep cylinders in an upright position securely chained to a fixed support. Do not move or transport gas cylinders with the protection cap removed. Do not allow the electrode, electrode holder, work clamp or any other electrically live part to touch a gas cylinder. Gas cylinders must be located away from areas where they may be subjected to physical damage or the welding process including sparks and heat sources.

Installation and Operator Instructions

Read this entire section before installation or operation of the machine.

Location and Environment

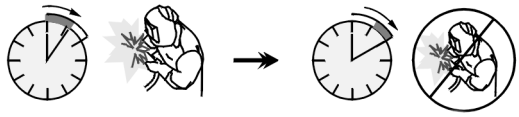
This machine will operate in harsh environments. However, it is important that simple preventative measures are followed to assure long life and reliable operation.

- Do not place or operate this machine on a surface with an incline greater than 15° from horizontal.
- Do not use this machine for pipe thawing.
- This machine must be located where there is free circulation of clean air without restrictions for air movement to and from the air vents. Do not cover the machine with paper, cloth or rags when switched on.
- Dirt and dust that can be drawn into the machine should be kept to a minimum.
- This machine has a protection rating of IP23. Keep it dry when possible and do not place it on wet ground or in puddles.
- Locate the machine away from radio controlled machinery. Normal operation may adversely affect the operation of nearby radio controlled machinery, which may result in injury or equipment damage. Read the section on electromagnetic compatibility in this manual.
- Do not operate in areas with an ambient temperature greater than 40°C.

Duty cycle and Overheating

The duty cycle of a welding machine is the percentage of time in a 10 minute cycle at which the welder can operate the machine at rated welding current.

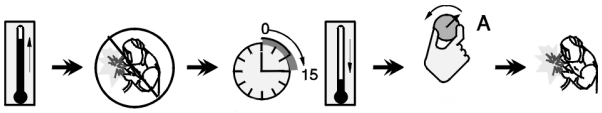
35% duty cycle:



Welding for 3.5 minutes. Break for 6.5 minutes.

Excessive extension of the duty cycle will cause the thermal protection circuit to activate.

The welding transformer in the machine is protected from overheating by a thermostat. When the machine is overheated the output of the machine will turn “OFF“, and the Thermal Indicator Light will turn “ON“. When the machine has cooled to a safe temperature the Thermal Indicator Light will go out and the machine may resume normal operation. Note: For safety reasons the machine will not come out of thermal shutdown if the trigger on the welding gun has not been released.



Minutes or decrease duty cycle

Input Supply Connection

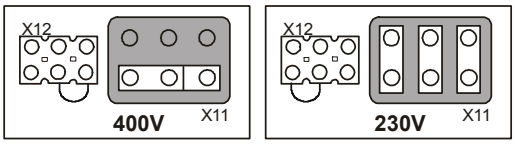
Installation and mains outlet socket shall be made and protected according to appropriate rules.

Check the input voltage, phase, and frequency supplied to this machine before turning it on. Verify the connection of grounding wires from the machine to the input source.

For machines having CODE 50091; 50092; 50093; 50094: the allowable input voltage is 3x400V 50/60Hz. For machines having CODE 50119; 50120; 50121; 50122: the allowable input voltages are 3x230V and 3x400V 50/60Hz (400V: factory default). For more information about input supply refer to the technical specification section of this manual and to the rating plate of the machine.

If it is necessary to change the main supply voltage:

- Ensure that the input cable must be disconnected from the main supply and the machine switched OFF.
- Remove the big side cover from the machine.
- Reconnect X11 and X12 according to the diagram below.



- Replace the big side cover.

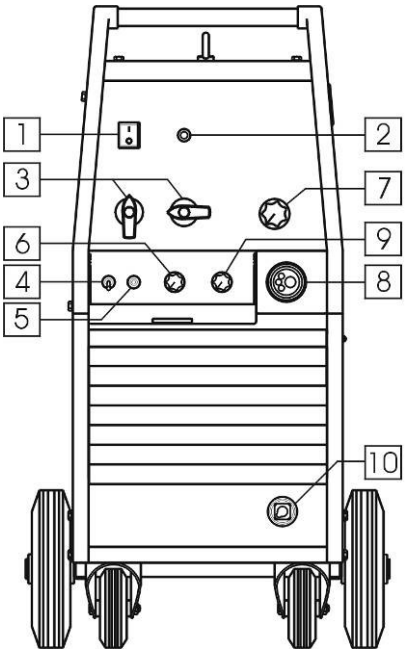
Make sure the amount of power available from the input connection is adequate for normal operation of the machine. The necessary delayed fuse (or circuit breaker with ”D” characteristic) and cable sizes are indicated in the technical specification section of this manual.

Refer to points 1 and 12 of the images below.

Output Connections

Refer to points 8 and 10 of the images below.

Controls and Operational Features

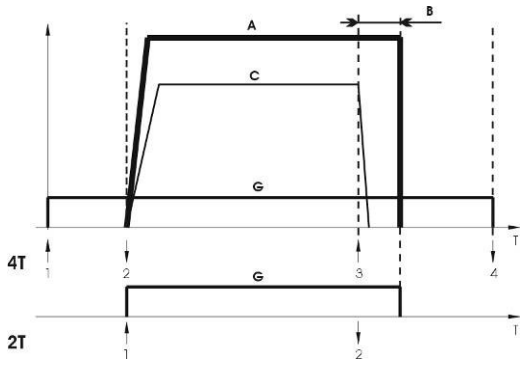


1. Power Switch and Power Indicator: After input power is connected and the power switch is turned on, the indicator will light up to indicate the machine is ready to weld.

2. Thermal Overload Indicator: This lamp will light up when the machine is overheated and the output has been turned off. Leave the machine on to allow the internal components to cool, when the lamp turns off normal operation is possible.

3. Welding Voltage Changing Switch: POWERTEC 200C has one switch (10 steps). The POWERTEC 250C and 300C have 2 switches (2 and 10 steps).

4. Torch Mode Switch: It enables selection of 2-step or 4-step torch mode. The functionality of 2T/4T mode is shown in the picture below:



↑ Trigger pressed

↓ Trigger released

A. Welding Current.
B. Burnback time.
C. WFS.
G. Gas.

5. Cold Inch / Gas Purge Switch: This switch enables wire feeding or gas flow without turning on output voltage.

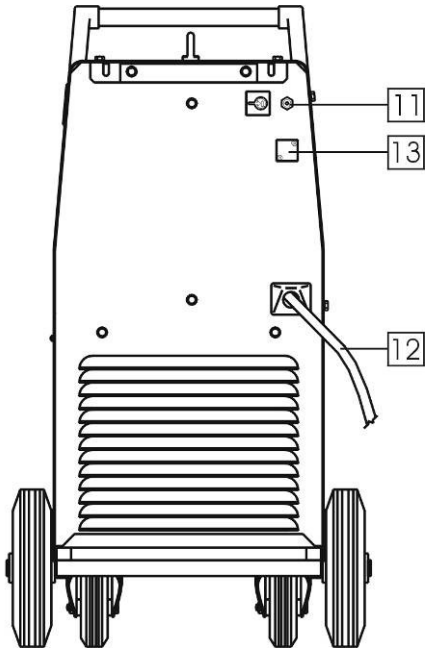
6. Spot Welding Time Control Knob: It enables time control in the range from 0.2 to 6.5 s.

7. Wire Feeding Speed Control Knob: It enables continuous control of wire feeding speed in the range from 1 to 20 m/min.

8. EURO Socket: For connecting welding torch.

9. Burnback Time Control Knob: It enables to obtain the desired length of electrode wire, which protrudes from the tip of the torch after ending welding; adjusting range from 20 to 330 ms.

10. '-' Socket: Negative output connector, for the return welding cable.



11. Socket: For connecting gas supplying hose (2m).

12. Power Input Cable: Connect the proper plug to the input cable to the rated output and according to appropriate rules. Only qualified personnel shall connect this plug.

13. Hole Covered: For CO2 gas heater socket (24VAC/80W).

14. AV – meters: accessible as a kit K14049-1

Welding Cables Connections

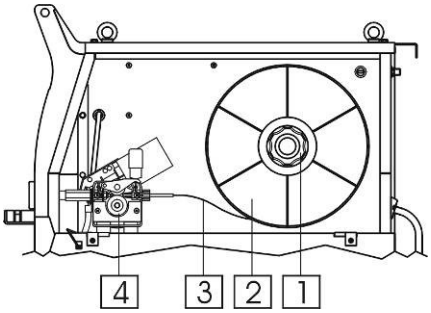
Insert the plug of the ground cable into the socket "-". The other end of this cable connects to the work piece with the work clamp.

Connect the Euro connector to the welding torch with the contact tip and torch liner suitable for the wire diameter and material welded.

Loading the Wire Spool

Load the wire spool on the sleeve such that the spool turns clockwise when the wire is fed into the wire feeder.

Machine is designed to use 15kg (300mm) wire spool.



1. Sleeve
2. Wire spool
3. Electrode wire
4. Feeding unit

Make sure that the spool locating pin on sleeve goes into the fitting hole on the spool.

Free the end of the wire and cut off the bent end making sure it has no burr.

Rotate the wire spool clockwise and thread the end of the wire into the entrance guide tube pushing it into the wire guide of the welding torch.

Feeding the Electrode Wire

Rise side cover of the machine.

Put on the drive roll using the correct groove corresponding to the wire diameter.

Load the spool of wire onto the sleeve of the machine.

Free the end of the wire and cut off the bent end making sure it has no burr.

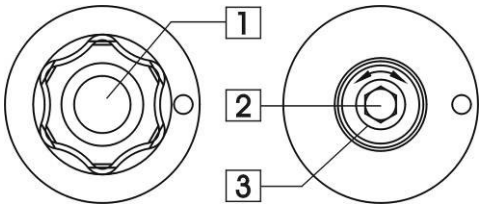
Insert the electrode wire into to the wire feeder and into the Euro socket.

Properly adjust the wire tension arm of the feeder.

Adjustments of Brake Torque of Sleeve

To avoid spontaneous unrolling of the welding wire the sleeve is fitted with a brake.

Adjustment is carried by rotation of its screw M10, which is placed inside of the sleeve frame after unscrewing the fastening cap of the sleeve.



1. Fastening cap.
2. Adjusting screw M10.
3. Pressing spring.

Turning the screw M10 clockwise increases the spring tension and you can increase the brake torque.

Turning the screw M10 counterclockwise decreases the spring tension and you can decrease the brake torque.

After finishing of adjustment, you should screw in the fastening cap again.

Adjusting of Force of Pressure Roll Force

Before welding you should understand how to properly set the wire tension.

Pressure force is adjusted by turning the adjustment nut clockwise to increase force, counterclockwise to decrease force.

⚠ WARNING

If the roll pressure is too low the roll will slide on the wire. If the roll pressure is set too high the wire may be deformed, which will cause feeding problems in the welding gun. The pressure force should be set properly. Decrease the pressure force slowly until the wire just begins to slide on the drive roll and then increase the force slightly by turning of the adjustment nut by one turn.

Inserting Electrode Wire into Welding Torch

Remove the gas diffuser and contact tip from the welding gun.

Set wire feeding speed knob in its central position.

After switching the machine “ON” (power switch in position “I”) and wire test (gas test switch set in position “wire test”) until the electrode wire leaves the contact tip of the welding torch.

⚠ WARNING

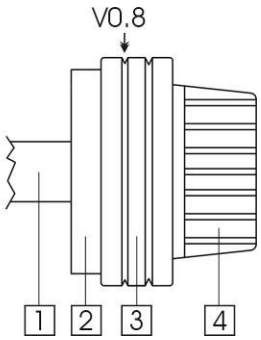
Take precaution to keep eyes and hands away from the end of the torch while feeding wire.

⚠ WARNING

Once the wire has finished feeding through the welding gun turn the machine “OFF“ before replacing to contact tip and gas diffuser.

Assembling of the Drive Roll of the Wire Feeder

The machine has V0.8/V1.0 drive roll in standard. The picture below shown the assembly of drive roll for 0.8 solid wire.



1. Motor shaft.
2. Mount ring.
3. Drive roll.
4. Cap.

To disassemble the drive roll you should:
- Release the wire tension arm of the wire feeder.
- Unscrew the fastening cap.
- Take off the drive roll from the mount ring.

To assemble the drive roll you should:
- Put on the drive roll onto the mounting ring.
- Screw in the fastening cap onto the mount ring.
- Insert the electrode wire.
- Engage the wire tension arm of the feeder.

Gas Supplying

Connect the gas hose to the gas supplying socket located on the rear panel of the machine.

Put the gas cylinder on the machine shelf secure it with the chain.

Take off the safety cap from the shielding gas cylinder and install the flow regulator on it.

Connect the gas hose of the machine to the regulator with the clamp band.

Welding with MIG / MAG method

To begin welding process with MIG/MAG method you should:
- Insert the plug of input supply cable into the main socket.
- Switch ON the machine with the “Power Switch” (it should light on).
- Insert the electrode wire into the torch using ”Cold Inch“ switch.
- Check gas flow with ”Gas Purge” switch.
- According to selected welding mode and material thickness set proper welding voltage and wire feeding speed.
- Obeying the appropriate rules, you can begin to weld.

Maintenance

⚠ WARNING

For any maintenance or repair operations it is recommended to contact the nearest technical service center or Lincoln Electric. Maintenance or repairs performed by unauthorized service centers or personnel will null and void the manufacturers warranty.

The frequency of the maintenance operations may vary in accordance with the working environment where the machine is placed.

Any noticeable damage should be reported immediately.

Routine maintenance (everyday)

- Check cables and connections integrity. Replace, if necessary.
- Remove the spatters from the welding gun nozzle. Spatters could interfere with the shielding gas flow to the arc.
- Check the welding gun condition: replace it, if necessary.
- Check condition and operation of the cooling fan. Keep clean its airflow slots.

Periodic maintenance (every 200 working hours but not more rarely than once a year)

Perform the routine maintenance and, in addition:
- Keep clean the machine. Using a dry (and low pressure) airflow, remove the dust from the external case and from inside of the cabinet.
- Check and tighten all screws.

⚠ WARNING

Mains supply network must be disconnected from the machine before each maintenance and service. After each repair, perform proper tests to ensure safety.

Electromagnetic Compatibility (EMC)

This machine has been designed in accordance with all relevant directives and standards. However, it may still generate electromagnetic disturbances that can affect other systems like telecommunications (telephone, radio, and television) or other safety systems. These disturbances can cause safety problems in the affected systems. Read and understand this section to eliminate or reduce the amount of electromagnetic disturbance generated by this machine.

This machine has been designed to operate in an industrial area. To operate in a domestic area it is necessary to observe particular precautions to eliminate possible electromagnetic disturbances. The operator must install and operate this equipment as described in this manual. If any electromagnetic disturbances are detected the operator must put in place corrective actions to eliminate these disturbances with, if necessary, assistance from Lincoln Electric.

Before installing the machine, the operator must check the work area for any devices that may malfunction because of electromagnetic disturbances. Consider the following.
- Input and output cables, control cables, and telephone cables that are in or adjacent to the work area and the machine.

- Radio and/or television transmitters and receivers. Computers or computer controlled equipment.
- Safety and control equipment for industrial processes. Equipment for calibration and measurement.
- Personal medical devices like pacemakers and hearing aids.
- Check the electromagnetic immunity for equipment operating in or near the work area. The operator must be sure that all equipment in the area is compatible. This may require additional protection measures.
- The dimensions of the work area to consider will depend on the construction of the area and other activities that are taking place.

Consider the following guidelines to reduce electromagnetic emissions from the machine.

- Connect the machine to the input supply according to this manual. If disturbances occur if may be necessary to take additional precautions such as filtering the input supply.
- The output cables should be kept as short as possible and should be positioned together. If possible connect the work piece to ground in order to reduce the electromagnetic emissions. The operator must check that connecting the work piece to ground does not cause problems or unsafe operating conditions for personnel and equipment.
- Shielding of cables in the work area can reduce electromagnetic emissions. This may be necessary for special applications.

Technical Specifications

POWERTEC 200C, 250C & 300C

INPUT				
Input Voltage 400V ± 10% 230/400V ± 10% Three Phase		Input Power at Rated Output	EMC Group/Class II/A	Frequency 50/60 Hz
	200C:	7.5 kVA @ 35% Duty Cycle		
	250C:	10.8 kVA @ 35% Duty Cycle		
	300C:	14.4 kVA @ 35% Duty Cycle		

RATED OUTPUT AT 40°C			
	Duty Cycle (Based on a 10 min. period)	Output Current	Output Voltage
200C:	35%	200A	24.0 Vdc
	60%	150A	21.5 Vdc
	100%	115A	19.7 Vdc
250C:	35%	250A	26.5 Vdc
	60%	190A	23.5 Vdc
	100%	145A	21.2 Vdc
300C:	35%	300A	29.0 Vdc
	60%	225A	25.2 Vdc
	100%	175A	22.7 Vdc

OUTPUT RANGE			
	Welding Current Range		Maximum Open Circuit Voltage
200C:	25A - 200A	**200C:**	37 Vdc
250C:	25A - 250A	**250C:**	41 Vdc
300C:	30A - 300A	**300C:**	43 Vdc

RECOMMENDED INPUT CABLE AND FUSE SIZES			
	Fuse or Circuit Breaker Size		Input Power Cable
200C:	25A (for 230V) Superlag	**200C:**	4 Conductor, 2.5mm^2
	16A (for 400V) Superlag		4 Conductor, 1.5mm^2
250C:	32A (for 230V) Superlag	**250C:**	4 Conductor, 4mm^2
	16A (for 400V) Superlag		4 Conductor, 1.5mm^2
300C:	40A (for 230V) Superlag	**300C:**	4 Conductor, 4mm^2
	25A (for 400V) Superlag		4 Conductor, 2.5mm^2

PHYSICAL DIMENSIONS				
Height	Width	Length	Weight	
815 mm	460 mm	925 mm	**200C:**	84 Kg
			250C:	94 Kg
			300C:	96 Kg
Operating Temperature -10°C to +40°C		Storage Temperature -25°C to +55°C		