

# IDEALARC CV 420 & CV 505

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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](http://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:

**IDEALARC CV 420**

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:

**73/23/CEE, 89/336/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**

(2005)

Paweł Lipiński  
Operations Director

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

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|                    |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>English</b>     |    | Do not dispose of electrical equipment together with normal waste!<br>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.<br>By applying this European Directive you will protect the environment and human health!                                                                                                                         |
| <b>Italiano</b>    |    | Non gettare le apparecchiature elettriche tra i rifiuti domestici!<br>In ottemperanza alla Direttiva Europea 2002/96/CE sui Rifiuti di Apparecchiature 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.<br>Applicando questa Direttiva Europea Lei contribuirà a migliorare l'ambiente e la salute!                                                                                         |
| <b>Deutsch</b>     |    | Werfen Sie Elektrowerkzeuge nicht in den Hausmüll!<br>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.<br>Mit der Anwendung dieser EU Direktive tragen sie wesentlich zur Schonung der Umwelt und ihrer Gesundheit bei!                                                                                                                             |
| <b>Español</b>     |    | No tirar nunca los aparatos eléctricos junto con los residuos en general!<br>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.<br>Aplicar esta Directiva Europea protegerá el medioambiente y su salud!                                                                                                                                                                                                        |
| <b>Français</b>    |  | Ne pas jeter les appareils électriques avec les déchets ordinaires!<br>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.<br>Appliquer cette Directive Européenne améliorera l'environnement et la santé!                                                                                                                           |
| <b>Norsk</b>       |  | Kast ikke elektriske artikler sammen med vanlig søppel.<br>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.<br>Godkjente retur plasser gis av lokale myndigheter.<br>Ved å følge det europeiske direktivet bidrar du til å bevare naturen og den menneskelige helse.                                                                                                                                                                                                                                                                                       |
| <b>Nederlandse</b> |  | Gooi elektrische apparatuur nooit bij gewoon afval!<br>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.<br>Door het toepassen van deze Europese Richtlijn beschermt u het milieu en ieders gezondheid! |
| <b>Svenska</b>     |  | Släng inte uttjänt elektrisk utrustning tillsammans med annat avfall!<br>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 återvinningsssystem från dina lokala myndigheter.<br>Genom att följa detta Europadirektiv bidrar du till att skydda miljö och hälsa!                                                                                                                                                 |
| <b>Polski</b>      |  | Nie wyrzucać sprzętu elektrycznego razem z normalnymi odpadami!<br>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 powinniście otrzymać informacje o zatwierdzonym systemie składowania od naszego lokalnego przedstawiciela.<br>Stosując te wytyczne bedziesz chronił środowisko i zdrowie człowieka!                                                                                                                              |
| <b>Suomi</b>       |  | Älä hävittää sähkölaitteita sekajätteiden mukana!<br>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.<br>Noudattamalla tätä Euroopan Unionin direktiiviä, autat torjumaan kielteiset ympäristö- ja terveysvaikutukset!                                                                                                                                            |

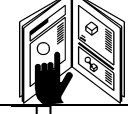
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>THANKS!</b> For having chosen the QUALITY of the Lincoln Electric products.</p> <ul style="list-style-type: none"> <li>Please Examine Package and Equipment for Damage. Claims for material damaged in shipment must be notified immediately to the dealer.</li> <li>For future reference record in the table below your equipment identification information. Model Name, Code &amp; Serial Number can be found on the machine rating plate.</li> </ul>                                                                                              |
| <p><b>GRAZIE!</b> Per aver scelto la QUALITÀ dei prodotti Lincoln Electric.</p> <ul style="list-style-type: none"> <li>Esamini Imballo ed Equipaggiamento per rilevare eventuali danneggiamenti. Le richieste per materiali danneggiati dal trasporto devono essere immediatamente notificate al rivenditore.</li> <li>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.</li> </ul> |
| <p><b>VIELEN DANK!</b> Dass Sie sich für ein QUALITÄTSPRODUKT von Lincoln Electric entschieden haben.</p> <ul style="list-style-type: none"> <li>Bitte überprüfen Sie die Verpackung und den Inhalt auf Beschädigungen. Transportschäden müssen sofort dem Händler gemeldet werden.</li> <li>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.</li> </ul>                                         |
| <p><b>GRACIAS!</b> Por haber escogido los productos de CALIDAD Lincoln Electric.</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>                                     |
| <p><b>MERCI!</b> Pour avoir choisi la QUALITÉ Lincoln Electric.</p> <ul style="list-style-type: none"> <li>Vérifiez que ni l'équipement ni son emballage ne sont endommagés. Toute réclamation pour matériel endommagé doit être immédiatement notifiée à votre revendeur.</li> <li>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.</li> </ul>                                                      |
| <p><b>TAKK!</b> For at du har valgt et KVALITETSPRODUKT fra Lincoln Electric.</p> <ul style="list-style-type: none"> <li>Kontroller emballsjen og produktet for feil eller skader. Eventuelle feil eller transportskader må umiddelbart rapporteres dit du har kjøpt din maskin.</li> <li>For fremtidig referanse og for garantier og service, fyll ut den tekniske informasjonen nedenfor i dette avsnittet. Modell navn, Kode &amp; Serie nummer finner du på den tekniske platen på maskinen.</li> </ul>                                                 |
| <p><b>BEDANKT!</b> Dat u gekozen heeft voor de KWALITEITSPRODUCTEN van Lincoln Electric.</p> <ul style="list-style-type: none"> <li>Controleert u de verpakking en apparatuur op beschadiging. Claims over transportschade moeten direct aan de dealer of aan Lincoln electric gemeld worden.</li> <li>Voor referentie in de toekomst is het verstandig hieronder u machinegegevens over te nemen. Model Naam, Code &amp; Serienummer staan op het typeplaatje van de machine.</li> </ul>                                                                   |
| <p><b>TACK!</b> För att ni har valt en KVALITETSPRODUKT från Lincoln Electric.</p> <ul style="list-style-type: none"> <li>Vänligen kontrollera förpackning och utrustning m.a.p. skador. Transportskador måste omedelbart anmälas till återförsäljaren eller transportören.</li> <li>Notera informationen om er utrustnings identitet i tabellen nedan. Modellbeteckning, code- och serienummer hittar ni på maskinens märkplåt.</li> </ul>                                                                                                                 |
| <p><b>DZIĘKUJEMY!</b> Za docenienie JASKOŚCI produktów Lincoln Electric.</p> <ul style="list-style-type: none"> <li>Proszę sprawdzić czy opakownie i sprzęt nie są uszkodzone. Reklamacje uszkodzeń powstałych podczas transportu muszą być natychmiast zgłoszone do dostawcy (dystrybutora).</li> <li>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.</li> </ul>                                                     |
| <p><b>KIITOS!</b> Kiitos, että olet valinnut Lincoln Electric LAATU tuotteita.</p> <ul style="list-style-type: none"> <li>Tarkista pakkaus ja tuotteet vaurioiden varalta. Vaateet mahdollisista kuljetusvaurioista on ilmoitettava välittömästi jälleenmyyjälle.</li> <li>Tulevaisuutta varten täytä alla oleva lomake laitteen tunnistusta varten. Mallin, Koodin ja Sarjanumeron voit löytää konekilvestä.</li> </ul>                                                                                                                                    |

|                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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: |



## 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.

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <b>WARNING:</b> 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.                                                                                                                                                                                                                                                                                                             |
|    | <b>READ AND UNDERSTAND INSTRUCTIONS:</b> 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.                                                                                                                                                                                                                                                            |
|    | <b>ELECTRIC SHOCK CAN KILL:</b> 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.                                                                                                                                                                                                                                                                                  |
|    | <b>ELECTRICALLY POWERED EQUIPMENT:</b> 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.                                                                                                                                                                                                                                                                                                                     |
|   | <b>ELECTRICALLY POWERED EQUIPMENT:</b> 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.                                                                                                                                                                                               |
|  | <b>ELECTRIC AND MAGNETIC FIELDS MAY BE DANGEROUS:</b> 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.                                                                                                                                                                                                                                        |
|  | <b>CE COMPLIANCE:</b> This equipment complies with the European Community Directives.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | <b>FUMES AND GASES CAN BE DANGEROUS:</b> 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.                                                                                                                                                                                                                                                            |
|  | <b>ARC RAYS CAN BURN:</b> 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.                                                                                                         |
|  | <b>WELDING SPARKS CAN CAUSE FIRE OR EXPLOSION:</b> 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. |
|  | <b>WELDED MATERIALS CAN BURN:</b> 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.                                                                                                                                                                                                                                                                                                               |
|  | <b>SAFETY MARK:</b> 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

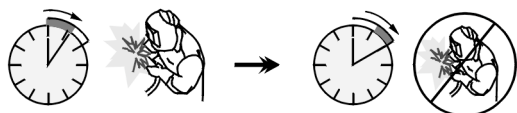
This machine will operate in harsh environments. However, it is important that simple preventative measures are followed to assure long life and reliable operation:

- 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.

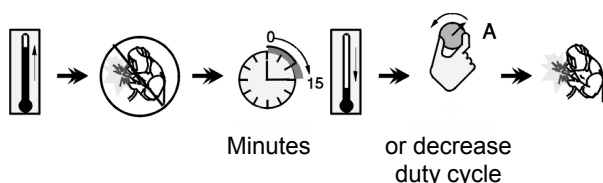
Example: 60% duty cycle:



Welding for 6 minutes.

Break for 4 minutes.

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



### Input Supply Connection

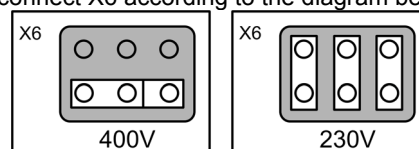
Installation and mains outlet socket shall be made and

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. The allowable input voltages are 3x230V and 3x400V 50Hz (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 input voltage:

- The input cable must be disconnected from the mains supply and the machine switched OFF.
- Remove the big side cover from the machine.
- Reconnect X6 according to the diagram below.



- Replace the big side cover.

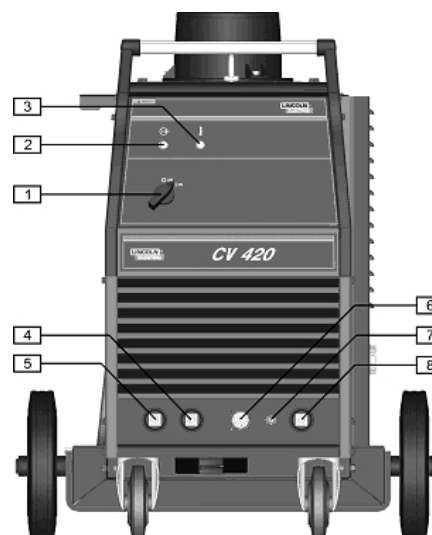
Make sure that the amount of mains power available from the input supply (connection) is adequate for normal operation of the machine. The necessary delayed fuse (or circuit breaker with "D" characteristic) and cable sizes are indicated in the technical specification section of this manual.

Refer to points [1] and [11] of the images below.

### Output Connections

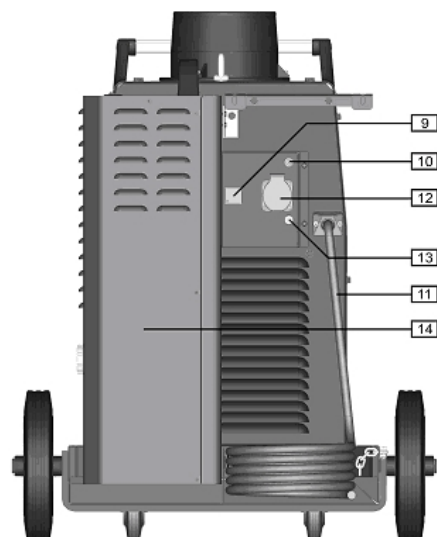
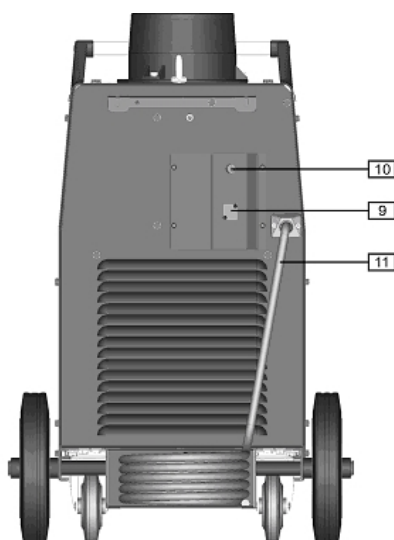
Refer to points [4], [5], [6] and [8] of the images below.

### Controls and Operational Features





1. Power Switch ON/OFF (O/I): It controls the machine power input. Be sure the power source is connected to the mains supply before turning power on ("I").
2. Power Indicator Light: It indicates that the power is on.
3. Thermal Indicator Light: It indicates that the machine is overloaded or that the cooling is not sufficient.
4. Low Inductance Negative Output Socket: The low inductance connection is typically used for short arc welding of mild steel, particularly on thin materials or when using CO<sub>2</sub> shielding gas.
5. High Inductance Negative Output Socket: The high inductance connection is more suitable for short arc welding in heavier work or when using 75% Argon / 25% CO<sub>2</sub> shielding gas. The connection produces a softer arc and a flatter bead with more wash-in than the low inductance connection. Spray type transfer is possible with either connection.
6. Wire Feeder Receptacle: 14-pins receptacle for wire feeder. Provides connections for auxiliary power of wire feeder.
7. Wire Feeder Voltmeter Switch: This switch selects the polarity of the wire feeder voltmeter, if so equipped. When the welding torch is positive (MIG, Outershield and some Innershield processes), set the switch to "+". When the welding torch is negative (most Innershield applications), set the switch to "-".
8. Positive Output Socket: Allows the connection, with the power cable, to the wire feeder.



9. Covered Hole: For CO<sub>2</sub> gas heater socket (see accessories, K14009-1 CO<sub>2</sub> Socket Kit).
10. Fuse: This fuse protects the wire feeder supply circuit (see Spare Parts).
11. Power Input Cable: Connect the proper plug to the input cable then into the rated output according to appropriate rules. Only qualified personnel shall connect this plug.
12. Cooler Power Supply Socket (For water cooled model only): For supplying the cooler unit. The socket has an output of 230V, 2.5A and is protected by the circuit breaker [13].
13. Circuit Breaker (For water cooled model only): Protects the Cooler Power Supply socket [12]. It shuts off the power supply when the current exceeds 2.5A. Press it to restore the power supply.
14. Cooler (For water cooled model only): It refrigerates the water cooled welding torch. The cooler works continuously.

#### **WARNING**

Read and understand the cooler manual before connecting it to the machine.

### **Welding Cables Connections**

Insert the plug of the work cable into the socket [4] or [5]. The other end of this cable connects to the work piece with the work clamp.

Connect the wire feeder LINC FEED 33 to the power source:

- insert the positive welding cable into the output socket [8].
- insert the wire feeder control cable into the socket [6] (see Accessories, Source/wire feeder cable K10347-PG-xM or K10347-PGW-xM).

Use the shortest possible cable lengths.

### **Machine and Circuit Protection**

The CV420 / CV505 is protected against overheating, overload and accidental short-circuits.



If the machine is overheated, the thermal protection circuit will decrease the output current to 0. The thermal protection indicator [3] will turn on. The thermal protection circuit will turn on the output current again, when the machine is cooled.

The CV420 / CV505 is also electronically protected against overload and accidental short-circuit. The overload and short-circuit protection circuit automatically reduces the output current to a safe value when it detects an overload.

## 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 manufacturer's 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 at list once every year)**

Perform the routine maintenance and, in addition:

- Keep the machine clean. Using a dry (and low pressure) airflow, remove the dust from the external case and from the cabinet inside.
- 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)

11/04

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 it 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

### IDEALARC CV 420 & CV 505

| INPUT                                                                                                                                |                                                                                                           |                                       |                            |                  |
|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------|------------------|
| Input Voltage<br>230 / 400V ± 10%<br>Three Phase                                                                                     | Input Power at Rated Output<br><b>420:</b> 22 kVA @ 60% Duty Cycle<br><b>505:</b> 30 kVA @ 60% Duty Cycle |                                       | Frequency<br>50 Hertz (Hz) |                  |
| RATED OUTPUT AT 40°C                                                                                                                 |                                                                                                           |                                       |                            |                  |
| Duty Cycle<br>(Based on a 10 min. period)                                                                                            | Output Current                                                                                            |                                       | Output Voltage             |                  |
| <b>420:</b> 60%<br>100%                                                                                                              | 420A<br>325A                                                                                              |                                       | 35.0 Vdc<br>30.3 Vdc       |                  |
| <b>505:</b> 60%<br>100%                                                                                                              | 500A<br>385A                                                                                              |                                       | 39.0 Vdc<br>33.3 Vdc       |                  |
| OUTPUT RANGE                                                                                                                         |                                                                                                           |                                       |                            |                  |
| Welding Current Range                                                                                                                |                                                                                                           | Maximum Open Circuit Voltage          |                            |                  |
| <b>420:</b> 30A - 420A<br><b>505:</b> 40A - 500A                                                                                     | <b>420:</b> 45 Vdc<br><b>505:</b> 48 Vdc                                                                  |                                       |                            |                  |
| RECOMMENDED INPUT CABLE AND FUSE SIZES                                                                                               |                                                                                                           |                                       |                            |                  |
| Fuse or Circuit Breaker Size                                                                                                         |                                                                                                           | Input Power Cable                     |                            |                  |
| <b>420:</b> 63A (for 230V) Superlag<br>32A (for 400V) Superlag<br><br><b>505:</b> 63A (for 230V) Superlag<br>40A (for 400V) Superlag | <b>420:</b> 4 Conductor, 6mm <sup>2</sup><br><br><b>505:</b> 4 Conductor, 6mm <sup>2</sup>                |                                       |                            |                  |
| PHYSICAL DIMENSIONS                                                                                                                  |                                                                                                           |                                       |                            |                  |
|                                                                                                                                      | Height                                                                                                    | Width                                 | Length                     | Weight           |
| <b>420:</b><br><b>420</b> (water version):                                                                                           | 870 mm<br>870 mm                                                                                          | 565 mm<br>700 mm                      | 1030 mm<br>1030 mm         | 134 kg<br>155 kg |
| <b>505:</b><br><b>505</b> (water version):                                                                                           | 870 mm<br>870 mm                                                                                          | 565 mm<br>700 mm                      | 1030 mm<br>1030 mm         | 149 kg<br>170 kg |
| Operating Temperature<br>-10°C to +40°C                                                                                              |                                                                                                           | Storage Temperature<br>-25°C to +55°C |                            |                  |