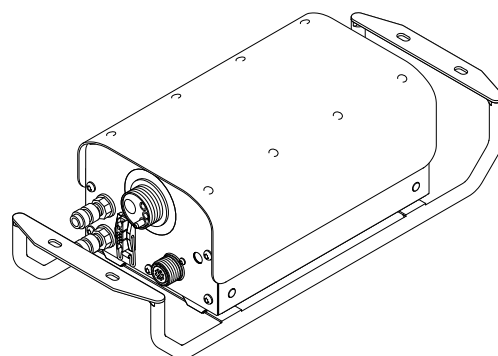


VR 143-2Z Yard

EN
Operating Instructions
Spare Parts List
Wire Feeder



Dear Reader

Introduction

Thank you for choosing Fronius - and congratulations on your new, technically high-grade Fronius product! This instruction manual will help you get to know your new machine. Read the manual carefully and you will soon be familiar with all the many great features of your new Fronius product. This really is the best way to get the most out of all the advantages that your machine has to offer.

Please also take special note of the safety rules - and observe them! In this way, you will help to ensure more safety at your product location. And of course, if you treat your product carefully, this definitely helps to prolong its enduring quality and reliability - things which are both essential prerequisites for getting outstanding results.

Safety rules

DANGER!



“**DANGER!**” indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations. This signal word is not used for property damage hazards unless personal injury risk appropriate to this level is also involved.

WARNING!



“**WARNING!**” indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. This signal word is not used for property damage hazards unless personal injury risk appropriate to this level is also involved.

CAUTION!



“**CAUTION!**” indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices that may cause property damage.

NOTE!



“**NOTE!**” indicates a situation which implies a risk of impaired welding result and damage to the equipment.

Important!

“**Important!**” indicates practical hints and other useful special-information. It is no signal word for a harmful or dangerous situation.

Whenever you see any of the symbols shown above, you must pay even closer attention to the contents of the manual!

General remarks



This equipment has been made in accordance with the state of the art and all recognised safety rules. Nevertheless, incorrect operation or misuse may still lead to danger for

- the life and well-being of the operator or of third parties,
- the equipment and other tangible assets belonging to the owner/operator,
- efficient working with the equipment.

All persons involved in any way with starting up, operating, servicing and maintaining the equipment must

- be suitably qualified
- know about welding and
- read and follow exactly the instructions given in this manual.

The instruction manual must be kept at the machine location at all times. In addition to the instruction manual, copies of both the generally applicable and the local accident prevention and environmental protection rules must be kept on hand, and of course observed in practice.

All the safety instructions and danger warnings on the machine itself:

- must be kept in a legible condition
- must not be damaged, must not be removed
- must not be covered, pasted or painted over

For information about where the safety instructions and danger warnings are located on the machine, please see the section of your machine's instruction manual headed “General remarks”.

General remarks
(continued)

Any malfunctions which might impair machine safety must be eliminated immediately - meaning before the equipment is next switched on.

It's your safety that's at stake!

Utilisation for intended purpose only



The machine may only be used for jobs as defined by the "Intended purpose".

The machine may ONLY be used for the welding processes stated on the rating plate.

Utilisation for any other purpose, or in any other manner, shall be deemed to be "not in accordance with the intended purpose". The manufacturer shall not be liable for any damage resulting from such improper use.

Utilisation in accordance with the "intended purpose" also comprises

- complete reading and following of all the instructions given in this manual
- complete reading and following of all the safety instructions and danger warnings
- performing all stipulated inspection and servicing work.

The appliance must never be used for the following:

- Thawing pipes
- Charging batteries/accumulators
- Starting engines

The machine is designed to be used in industrial and workshop environments. The manufacturer shall not be liable for any damage resulting from use of the machine in residential premises.

likewise the manufacturer will accept no liability for defective or faulty work results.

Ambient conditions



Operation or storage of the power source outside the stipulated range is deemed to be "not in accordance with the intended use". The manufacturer shall not be liable for any damage resulting herefrom.

Temperature range of ambient air:

- when operating: - 10 °C to + 40 °C (14 °F to 104 °F)
- when being transported or stored: - 20 °C to + 55 °C (-4 °F to 131 °F)

Relative atmospheric humidity:

- up to 50 % at 40 °C (104 °F)
- up to 90 % at 20 °C (68 °F)

Ambient air: Free of dust, acids, corrosive gases or substances etc.

Elevation above sea level: Up to 2000 m (6500 ft)

Obligations of owner/operator

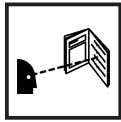


The owner/operator undertakes to ensure that the only persons allowed to work with the machine are persons who

- are familiar with the basic regulations on workplace safety and accident prevention and who have been instructed in how to operate the machine
- have read and understood this operating manual particularly the sections on "Safety rules", and have confirmed as much with their signatures
- be trained in such a way that meets with the requirements of the work results

Regular checks must be performed to ensure that personnel are still working in a safety-conscious manner.

Obligations of personnel

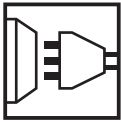


Before starting work, all persons to be entrusted with carrying out work with (or on) the machine shall undertake

- to observe the basic regulations on workplace safety and accident prevention
- to read this operating manual particularly the sections on “Safety rules” and to sign to confirm that they have understood these and will comply with them.

Before leaving the workplace, personnel must ensure that there is no risk of injury or damage being caused during their absence.

Mains connection



High-performance devices can affect the quality of the mains power due to their current-input.

This may affect a number of types of device in terms of:

- connection restrictions
- criteria with regard to maximum permissible mains impedance ^{*)}
- criteria with regard to minimum short-circuit power requirement ^{*)}

^{*)} at the interface with the public mains network

see Technical Data

In this case, the plant operator or the person using the device should check whether or not the device is allowed to be connected, where appropriate through discussion with the power supply company.

NOTE! Ensure that the mains connection is earthed properly.

Protection for yourself and other persons



When welding, you are exposed to many different hazards such as:

- flying sparks and hot metal particles
- arc radiation which could damage your eyes and skin
- harmful electromagnetic fields which may put the lives of cardiac pace-maker users at risk
- electrical hazards from mains and welding current
- increased exposure to noise
- noxious welding fumes and gases.

Anybody working on the workpiece during welding must wear suitable protective clothing with the following characteristics:

- flame-retardant
- isolating and dry
- must cover whole body, be undamaged and in good condition
- protective helmet
- trousers with no turn-ups

Protection for yourself and other persons
(continued)



“Protective clothing” also includes:

- protecting your eyes and face from UV rays, heat and flying sparks with an appropriate safety shield containing appropriate regulation filter glass
- wearing a pair of appropriate regulation goggles (with sideguards) behind the safety shield
- wearing stout footwear that will also insulate even in wet conditions
- protecting your hands by wearing appropriate gloves (electrically insulating, heat-proof)
- To lessen your exposure to noise and to protect your hearing against injury, wear ear-protectors!



Keep other people - especially children - well away from the equipment and the welding operation while this is in progress. If there are still any other persons nearby during welding, you must

- draw their attention to all the dangers (risk of being dazzled by the arc or injured by flying sparks, harmful welding fumes, high noise immission levels, possible hazards from mains or welding current ...)
- provide them with suitable protective equipment and/or
- erect suitable protective partitions or curtains.

Information on noise emission values



The device generates a maximum sound power level of <80 dB(A) (ref. 1pW) when idling and in the cooling phase following operation at the maximum permissible operating point under maximum rated load conditions according to EN 60974-1.

It is not possible to provide a workplace-related emission value during welding (or cutting) as this is influenced by both the process and the environment. All manner of different welding parameters come into play, including the welding process (MIG/MAG, TIG welding), the type of power selected (DC or AC), the power range, the type of weld metal, the resonance characteristics of the workpiece, the workplace environment, etc.

Hazards from noxious gases and vapours



The fumes given off during welding contain gases and vapours that are harmful to health.

Welding fumes contain substances which may cause birth defects and cancers.

Keep your head away from discharges of welding fumes and gases.

Do not inhale any fumes or noxious gases that are given off.
Extract all fumes and gases away from the workplace, using suitable means.

Ensure a sufficient supply of fresh air.

Where insufficient ventilation is available, use a respirator mask with an independent air supply.

If you are not sure whether your fume-extraction system is sufficiently powerful, compare the measured pollutant emission values with the permitted threshold limit values.

Close the shielding gas cylinder valve or central gas supply if no welding is taking place.

Hazards from noxious gases and vapours
(continued)

The harmfulness of the welding fumes will depend on e.g. the following components:

- the metals used in and for the workpiece
- the electrodes
- coatings
- cleaning and degreasing agents and the like

For this reason, pay attention to the relevant Materials Safety Data Sheets and the information given by the manufacturer regarding the components listed above.

Keep all flammable vapors (e.g. from solvents) well away from the arc radiation.

Hazards from flying sparks



Flying sparks can cause fires and explosions!

Never perform welding anywhere near combustible materials.

Combustible materials must be at least 11 meters (36 ft. 1.07 in.) away from the arc, or else must be covered over with approved coverings.

Have a suitable, approved fire extinguisher at the ready.

Sparks and hot metal particles may also get into surrounding areas through small cracks and openings. Take suitable measures here to ensure that there is no risk of injury or fire.

Do not perform welding in locations that are at risk from fire and/or explosion, or in enclosed tanks, barrels or pipes, unless these latter have been prepared for welding in accordance with the relevant national and international standards.

Welding must NEVER be performed on containers that have had gases, fuels, mineral oils etc. stored in them. Even small traces of these substances left in the containers are a major explosion hazard.

Hazards from mains and welding current



An electric shock is potentially life-threatening, and can be fatal.

Do not touch any live parts, either inside or outside the machine.



In MIG/MAG and TIG welding, the welding wire, the wire spool, the drive rollers and all metal parts having contact with the welding wire are also live.

Always place the wirefeeder on an adequately insulated floor or base, or else use a suitable insulating wirefeeder holder.

Ensure sufficient protection for yourself and for other people by means of a dry base or cover that provides adequate insulation against the ground/frame potential. The base or cover must completely cover the entire area between your body and the ground/frame potential.

All cables and other leads must be firmly attached, undamaged, properly insulated and adequately dimensioned. Immediately replace any loose connections, scorched, damaged or underdimensioned cables or other leads.

Hazards from mains and welding current

(continued)

Do not loop any cables or other leads around your body or any part of your body.

Never immerse the welding electrode (rod electrode, tungsten electrode, welding wire, ...) in liquid in order to cool it, and never touch it when the power source is ON.

Twice the open-circuit voltage of one single welding machine may occur between the welding electrodes of two welding machines. Touching the potentials of both electrodes simultaneously may be fatal.

Have the mains and the machine supply leads checked regularly by a qualified electrician to ensure that the PE (protective earth) conductor is functioning correctly.

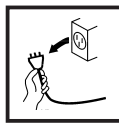
Only run the machine on a mains network with a PE conductor, and plugged into a power outlet socket with a protective-conductor contact.

If the machine is run on a mains network without a PE conductor and plugged into a power outlet socket without a protective-conductor contact, this counts as gross negligence and the manufacturer shall not be liable for any resulting damage.

Wherever necessary, use suitable measures to ensure that the workpiece is sufficiently grounded (earthed).

Switch off any appliances that are not in use.

Wear a safety harness if working at height.



Before doing any work on the machine, switch it off and unplug it from the mains.

Put up a clearly legible and easy-to-understand warning sign to stop anybody inadvertently plugging the machine back into the mains and switching it back on again.

After opening up the machine:

- discharge any components that may be storing an electrical charge
- ensure that all machine components are electrically dead.

If work needs to be performed on any live parts, there must be a second person on hand to immediately switch off the machine at the main switch in an emergency.

Stray welding currents



If the following instructions are ignored, stray welding currents may occur. These can cause:

- fires
- overheating of components that are connected to the workpiece
- destruction of PE conductors
- damage to the machine and other electrical equipment

Ensure that the workpiece clamp is tightly connected to the workpiece.

Attach the workpiece clamp as close as possible to the area to be welded.

On electrically conductive floors, the machine must be set up in such a way that it is sufficiently insulated from the floor.

Stray welding currents

(continued)

When using current supply distributors, twin head wire feeder fixtures etc., please note the following: The electrode on the unused welding torch/ welding tongs is also current carrying. Please ensure that there is sufficient insulating storage for the unused welding torch/tongs.

In the case of automated MIG/MAG applications, ensure that only insulated filler wire is routed from the welding wire drum, large wirefeeder spool or wirepool to the wirefeeder.

EMC device classifications



Devices with emission class A:

- are only designed for use in an industrial setting
- can cause conducted and emitted interference in other areas.

Devices with emission class B:

- satisfy the emissions criteria for residential and industrial areas. This also applies to residential areas in which power is supplied from the public low-voltage grid.

EMC device classification as per the rating plate or technical specifications

EMC measures



In certain cases, even though a device complies with the standard limit values for emissions, it may affect the application area for which it was designed (e.g. when there is sensitive equipment at the same location, or if the site where the device is installed is close to either radio or television receivers).

If this is the case, then the operator is obliged to take appropriate action to rectify the situation.

Examine and evaluate any possible electromagnetic problems that may occur on equipment in the vicinity, and the degree of immunity of this equipment, in accordance with national and international regulations:

- safety features
- mains, signal and data-transmission leads
- IT and telecoms equipment
- measurement and calibration devices

Ancillary measures for preventing EMC problems:

a) Mains supply

- If electromagnetic interference still occurs, despite the fact that the mains connection is in accordance with the regulations, take additional measures (e.g. use a suitable mains filter).

b) Welding cables

- Keep these as short as possible
- Arrange them so that they run close together (to prevent EMI problems as well)
- Lay them well away from other leads.

c) Equipotential bonding

d) Workpiece grounding (earthing)

- where necessary, run the connection to ground (earth) via suitable capacitors.

e) Shielding, where necessary

- Shield other equipment in the vicinity
- Shield the entire welding installation.

EMI Precautions



Electromagnetic fields may cause as yet unknown damage to health.

- Effects on the health of persons in the vicinity, e.g. users of heart pace-makers and hearing aids
- Users of heart pacemakers must take medical advice before going anywhere near welding equipment or welding workplaces
- Keep as much space as possible between welding cables and head/body of welder for safety reasons
- Do not carry welding cables and hose pack over shoulder and do not loop around body or any part of body

Particular danger spots



Keep your hands, hair, clothing and tools well away from all moving parts, e.g.:

- fans
- toothed wheels, rollers, shafts
- wire-spools and welding wires

Do not put your fingers anywhere near the rotating toothed wheels of the wirefeed drive.

Covers and sideguards may only be opened or removed for as long as is absolutely necessary to carry out maintenance and repair work.

While the machine is in use:

- ensure that all the covers are closed and that all the sideguards are properly mounted ...
- ... and that all covers and sideguards are kept closed.



When the welding wire emerges from the torch, there is a high risk of injury (the wire may pierce the welder's hand, injure his face and eyes ...).



For this reason, when feeder-inching etc., always hold the torch so that it is pointing away from your body (machines with wirefeeder) and wear suitable protective goggles.



Do not touch the workpiece during and after welding - risk of injury from burning!


Slag may suddenly "jump" off workpieces as they cool. For this reason, continue to wear the regulation protective gear, and to ensure that other persons are suitably protected, when doing post-weld finishing on workpieces.

Allow welding torches - and other items of equipment that are used at high operating temperatures - to cool down before doing any work on them.



Special regulations apply to rooms at risk from fire and/or explosion. Observe all relevant national and international regulations.



Power sources for use in spaces with increased electrical danger (e.g. boilers) must be identified by the  (for "safety") mark. However, the power source should not be in such rooms.

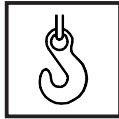
Particular danger spots
(continued)



Risk of scalding from accidental discharge of hot coolant. Before unplugging the connectors for coolant forward flow and return flow, switch off the cooling unit.



Observe the information on the coolant safety data sheet when handling coolant. The coolant safety data sheet may be obtained from your service centre or downloaded from the manufacturer's website.

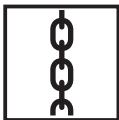


When hoisting the machines by crane, only use suitable manufacturer-supplied lifting devices.

- Attach the chains and/or ropes to **all** the hoisting points provided on the suitable lifting device.
- The chains and/or ropes must be at an angle which is as close to the vertical as possible.
- Remove the gas cylinder and the wirefeed unit (from MIG/MAG and TIG units).

When hoisting the wirefeed unit by crane during welding, always use a suitable, insulating suspension arrangement (MIG/MAG and TIG units).

If a machine is fitted with a carrying strap or carrying handle, remember that this strap is **ONLY** to be used for lifting and carrying the machine by hand. The carrying strap is **NOT** suitable for transporting the machine by crane, fork-lift truck or by any other mechanical hoisting device.

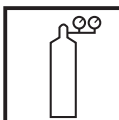


All lifting accessories (straps, handles, chains, etc.) used in connection with the device or its components must be tested regularly (e.g. for mechanical damage, corrosion or changes caused by other environmental factors). The testing interval and scope of testing must comply with applicable national standards and directives as a minimum.



Danger of colourless and odourless inert gas escaping unnoticed, when using an adapter for the inert gas protection. Seal the adapter thread for the inert gas connection using Teflon tape before assembly.

Factors affecting welding results



The following requirements with regard to shielding gas quality must be met if the welding system is to operate in a correct and safe manner:

- Size of solid matter particles <math><40\mu\text{m}</math>
- Pressure dew point <math><-20^\circ\text{C}</math>
- Max. oil content <math><25\text{mg}/\text{m}^3</math>

Filters must be used if necessary.



NOTE! There is an increased risk of soiling if ring mains are being used

Danger from shielding-gas cylinders



Shielding-gas cylinders contain pressurized gas and may explode if they are damaged. As shielding-gas cylinders are an integral part of the overall welding outfit, they also have to be treated with great care.

Protect shielding-gas cylinders containing compressed gas from excessive heat, mechanical impact, slag, naked flames, sparks and arcs.

Mount the shielding-gas cylinders in the vertical and fasten them in such a way that they cannot fall over (i.e. as shown in the instruction manual).

Keep shielding-gas cylinders well away from welding circuits (and, indeed, from any other electrical circuits).

Never hang a welding torch on a shielding-gas cylinder.

Never touch a shielding-gas cylinder with a welding electrode.

Explosion hazard - never perform welding on a pressurized shielding-gas cylinder.

Use only shielding-gas cylinders that are suitable for the application in question, together with matching, suitable accessories (pressure regulators, hoses and fittings, ...). Only use shielding-gas cylinders and accessories that are in good condition.

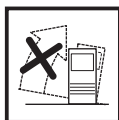
When opening the valve of a shielding-gas cylinder, always turn your face away from the outlet nozzle.

Close the shielding-gas cylinder valve when no welding is being carried out.

When the shielding-gas cylinder is not connected up, leave the cap in place on the shielding-gas cylinder valve.

Observe the manufacturer's instructions and all relevant national and international rules applying to shielding-gas cylinders and accessories.

Safety precautions at the installation site and when being transported



A machine that topples over can easily kill someone! For this reason, always place the machine on an even, firm floor in such a way that it stands firmly.
- An angle of inclination of up to 10° is permissible.



Special regulations apply to rooms at risk from fire and/or explosion. Observe all relevant national and international regulations.

By means of internal instructions and checks, ensure that the workplace and the area around it are always kept clean and tidy.

The appliance must only be installed and operated in accordance with the protection type stated on the specifications plate.

When installing the appliance, please ensure a clearance radius of 0.5 m (1.6ft.) , so that cool air can circulate freely.

When transporting the appliance, please ensure that the valid national and regional guidelines and accident protection regulations are followed. This applies in particular to guidelines in respect of dangers during transportation and carriage.

Safety precautions at the installation site and when being transported
(continued)

Before transportation, completely drain any coolant and dismantle the following components:

- Wire feed
- Wire wound coil
- Gas bottle

Before commissioning and after transportation, a visual check for damage must be carried out. Any damage must be repaired by trained service personnel before commissioning.

Safety precautions in normal operation



Only operate the machine if all of its protective features are fully functional. If any of the protective features are not fully functional, this endangers:

- the life and well-being of the operator or other persons
- the equipment and other tangible assets belonging to the owner/operator
- efficient working with the equipment.

Any safety devices that are not fully functional must be put right before you switch on the machine.

Never evade safety features and never put safety features out of order.

Before switching on the machine, ensure that nobody can be endangered by your doing so.

- At least once a week, check the machine for any damage that may be visible from the outside, and check that the safety features all function correctly.
- Always fasten the shielding-gas cylinder firmly, and remove it altogether before hoisting the machine by crane.
- Owing to its special properties (in terms of electrical conductivity, frost-proofing, materials-compatibility, combustibility etc.), only original coolant of the manufacturer is suitable for use in our machines.
- Only use suitable original coolant of the manufacturer.
- Do not mix original coolant of the manufacturer with other coolants.
- If any damage occurs in cases where other coolants have been used, the manufacturer shall not be liable for any such damage, and all warranty claims shall be null and void.
- Under certain conditions, the coolant is flammable. Only transport the coolant in closed original containers, and keep it away from sources of ignition.
- Used coolant must be disposed of properly in accordance with the relevant national and international regulations. A safety data sheet is available from your service centre and on the manufacturer's homepage.
- Before starting welding - while the machine is still cool - check the coolant level.

Preventive and corrective maintenance



With parts sourced from other suppliers, there is no certainty that these parts will have been designed and manufactured to cope with the stressing and safety requirements that will be made of them. Use only original spares and wearing parts (this also applies to standard parts).

Do not make any alterations, installations or modifications to the machine without getting permission from the manufacturer first.

Replace immediately any components that are not in perfect condition.

When ordering spare parts, please state the exact designation and the relevant part number, as given in the spare parts list. Please also quote the serial number of your machine.

Safety inspection



The manufacturer recommends that a safety inspection of the device is performed at least once every 12 months.

The manufacturer recommends that the power source be calibrated during the same 12-month period.

A safety inspection should be carried out by a qualified electrician

- after any changes are made
- after any additional parts are installed, or after any conversions
- after repair, care and maintenance has been carried out
- at least every twelve months.

For safety inspections, follow the appropriate national and international standards and directives.

Further details on safety inspection and calibration can be obtained from your service centre. They will provide you on request with any documents you may require.

Disposal



Do not dispose of this device with normal domestic waste!

To comply with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment and its implementation as national law, electrical equipment that has reached the end of its life must be collected separately and returned to an approved recycling facility. Any device that you no longer require must be returned to our agent, or find out about the approved collection and recycling facilities in your area.

Ignoring this European Directive may have potentially adverse effects on the environment and your health!

Safety markings

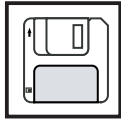


Equipment with CE-markings fulfils the basic requirements of the Low-Voltage and Electromagnetic Compatibility Guideline (e.g. relevant product standards according to EN 60 974).



Equipment marked with the CSA-Test Mark fulfils the requirements made in the relevant standards for Canada and the USA.

Data security



The user is responsible for the data security of changes made to factory settings. The manufacturer is not liable, if personal settings are deleted.

Copyright



Copyright to this instruction manual remains the property of the manufacturer.

The text and illustrations are all technically correct at the time of going to print. The right to effect modifications is reserved. The contents of the instruction manual shall not provide the basis for any claims whatever on the part of the purchaser. If you have any suggestions for improvement, or can point out to us any mistakes which you may have found in the manual, we should be most grateful for your comments.

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General remarks

Appliance concept



Fig.1 VR 143-2Z Yard wirefeeder

The VR 143-2Z Yard is an extra, auxiliary wirefeed unit (intermediate drive) for use in situations where the main wirefeeder (e.g. VR 4000) has to be located a long distance away from the welding process.

The wirefeeders come as standard with a 4-roller drive, which provides excellent wirefeed properties. The VR 143-2Z Yard is also suitable for use with very long hosepacks of up to 25 m (82 ft.).

The compact design of the VR 143-2Z Yard suits it for many and varied possible areas of use.

The VR 143-2Z Yard can be run in conjunction with any of the following power sources:

- TransSynergic 4000 / 5000
- TransPuls Synergic 4000 / 5000

The VR 143-2Z Yard can be combined with either of the following wirefeeders:

- VR 4000
- VR 7000

The VR 143-2Z Yard can be used for all types of MIG/MAG welding work. The wirefeed unit is suitable for all customary shielding gases.

Applicational principle

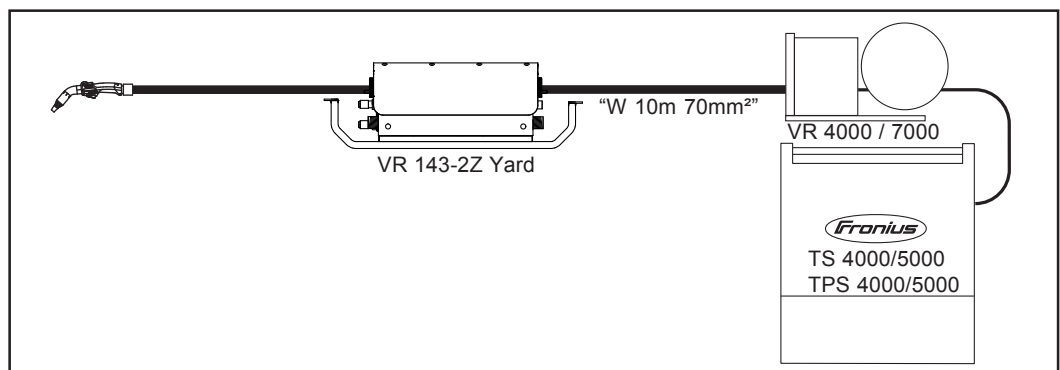


Fig.2 Applicational principle

System requirements

Power source:

- Software version V3.10.1
- Optional "Enhanced motor supply 55 V / 8 A"

Main wirefeeder (e.g.: VR 4000):

- Software version V1.50.38
- Optional "PMR 4000 PullMig TS/TPS 2700-5000"
- Option "Intermediate drive 143-2"

In addition:

- "W 10m 70mm²" interconnecting hosepack, for linking the main wirefeeder to the VR 143-2Z Yard

Warning labels on the unit

The wirefeed unit comes with safety symbols on the rating plate. These safety symbols must NOT be removed or painted over. The symbols warn against incorrect operation, as this may result in serious injury and damage.

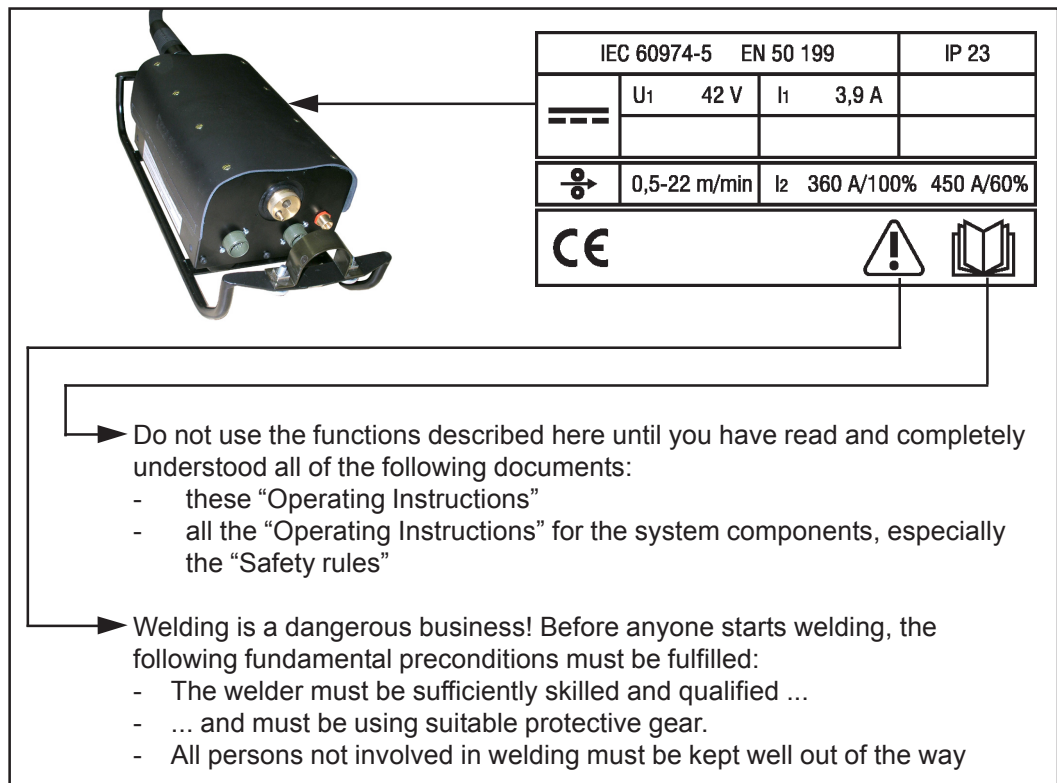


Fig.3 Warning labels on the wirefeeder

Before putting the unit into service

Safety



Warning! Operating the equipment incorrectly can cause serious injury and damage. Do not use the functions described here until you have read and completely understood all of the following documents:

- these "Operating Instructions"
- all the "Operating Instructions" for the system components, especially the "Safety rules"



Warning! A machine that topples over or falls from its stand can easily kill someone! Place equipment on an even, firm floor in such a way that it stands firmly. The VR 143-2Z Yard is not suitable for being hoisted by crane.



Note! Arrange the interconnecting hosepack in a straight line (without "looping"). If any damage is done to the interconnecting hosepack, contact After-Sales Service.

Connecting up the VR 143-2Z Yard

Safety

Caution! There is a risk of injury from wire emerging at speed from the torch if the torch trigger or the "Feeder inching" button are pressed accidentally. Only carry out any work on the equipment if

- the mains switch of the power source is in the "O" position, and
- the power source has been disconnected from the mains.

Connecting up the interconnecting hosepack to the main wire-feeder

1. Shift the mains switch of the power source into the "O" position

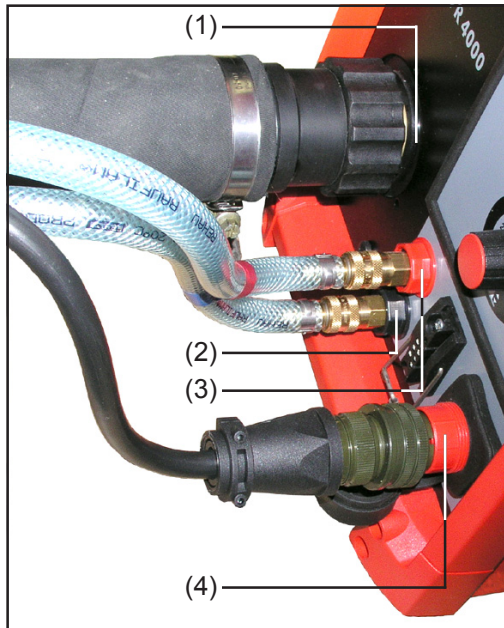


Fig.4 Front of the wirefeeder (e.g. VR 4000):
Connecting up the interconnecting hosepack

Front of the main wirefeeder (e.g. VR 4000):

2. Insert either end of the interconnecting hosepack - infeed tube first - into the welding-torch connector (1)
3. Tighten the swivel nut by hand to fix the interconnecting hosepack in place
4. Plug the coolant hoses of the interconnecting hosepack onto the (black) plug-type connector for coolant forward-flow (2), and onto the red one for coolant return-flow (3)
5. Plug the (6-pole) control plug of the interconnecting hosepack onto the control-plug jack(5)

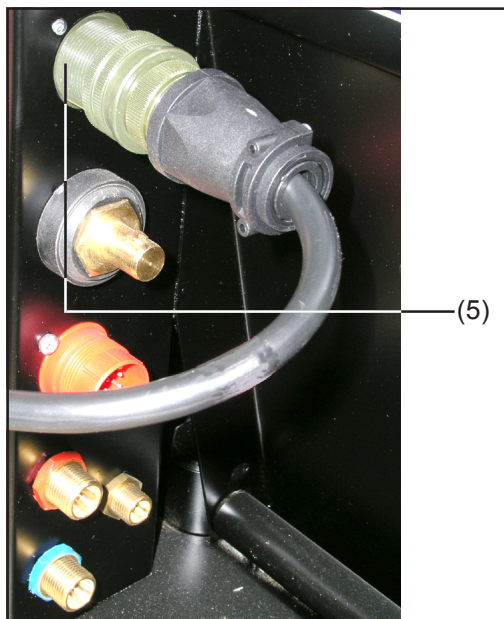


Fig.5 Rear of the wirefeeder (e.g. VR 4000):
Connecting up the interconnecting hosepack

Rear of the main wirefeeder (e.g. VR 4000):

6. Plug the (10-pole) LocalNet plug of the interconnecting hosepack to the LocalNet connection jack (4)

Connecting up the interconnecting hosepack to the VR 143-2Z Yard

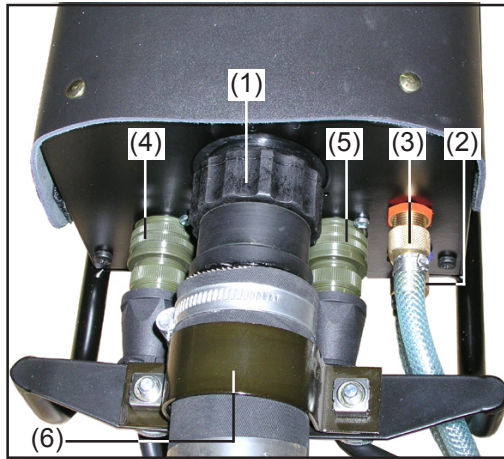


Fig.6 VR 143-2Z Yard: Connecting up the interconnecting hosepack

1. Shift the mains switch of the power source into the "O" position
- On the side of the VR 143-2Z Yard shown here (Fig.6):
2. Insert the other end of the interconnecting hosepack - infeed tube first - into the welding-torch connector (1)
 3. Tighten the swivel nut by hand to fix the interconnecting hosepack in place
 4. Plug the (10-pole) LocalNet plug of the interconnecting hosepack to the LocalNet connection jack (4)

5. Plug the (6-pole) control plug of the interconnecting hosepack onto the control-plug socket (5)
6. Plug the coolant hoses of the interconnecting hosepack onto the (black) plug-type connector for coolant forward-flow (2), and onto the red one for coolant return-flow
7. Fix the interconnecting hosepack in place with a hose clamp (6)

Connecting up the welding torch to the VR 143-2Z Yard

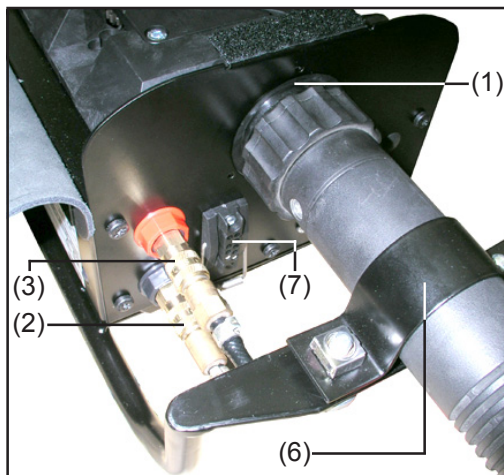


Fig.7 VR 143-2Z Yard: Connecting up the (standard) welding torch

1. Shift the mains switch of the power source into the "O" position

On the side of the VR 143-2Z Yard shown here (Figs. 7 and 8):

2. Check that the torch is correctly and completely tooled up. Insert it - infeed tube first - into the welding-torch connector (1).
3. Tighten the swivel nut by hand to fix the interconnecting hosepack in place
4. Plug the coolant hoses of the interconnecting hosepack onto the (black) plug-type connector for coolant forward-flow (2), and onto the red one for coolant return-flow
- 5a. Standard welding torch (Fig.7): Plug the welding torch to the torch connection jack (7)
- 5b. Up/Down or JobMaster welding torch (Fig.8): Plug the LocalNet plug of the welding torch onto the LocalNet connection jack (4)
6. Fix the interconnecting hosepack in place with a hose clamp (6)

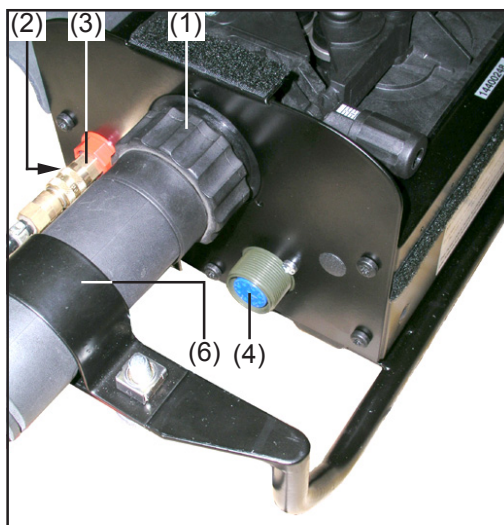


Fig.8 VR 143-2Z Yard: Connecting up the (JobMaster, Up/Down) welding torch

Inserting / changing the feed rollers

General remarks In order to achieve optimum wire travel, the feed rollers must be suitable for the diameter and alloy of the wire to be welded.

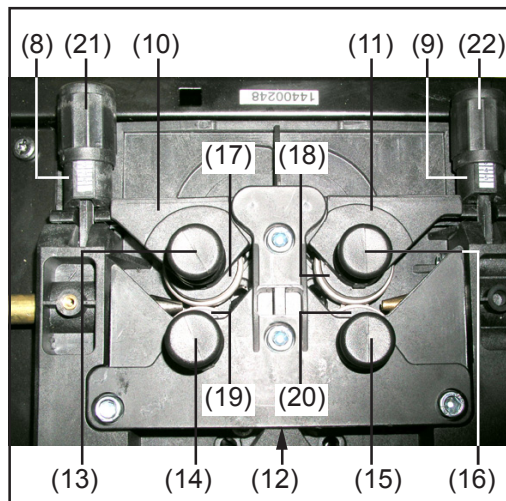
The VR 143-2Z Yard is supplied without feed rollers.

Important! Use only feed rollers that are suitable for the welding wire!

Please see the spare-parts lists for an overview of the available feed rollers and of their possible areas of use.

Inserting / changing the feed rollers

1. Shift the mains switch of the power source into the "O" position
2. Open the wirefeeder cover on the VR 143-2Z Yard
3. Pivot clamping devices (8) and (9) forward
4. Pull pressure levers (10) and (11) upward



5. Remove the protective cover (12) (if there is one):
 - Gently push the protective cover (12) downward
 - Pull out the protective cover (12) towards the front
6. Detach axles (13) - (16)
7. Only where the feed rollers are being changed: Remove feed rollers (17) to (20)
8. Insert the new feed rollers

Note! Insert feed rollers in such a way that the toothed rim of the feed roller faces the motor plate.

Fig.9 Changing the feed rollers

9. Push axles (13) - (16) back in again - the anti-twist lock of each axle must latch into place
10. Mount the protective cover (12), if there is one:
 - Position the recess of the protective cover over the plastic guide - the fixing nibs must be facing upwards
 - Press down on the protective cover until this clicks into place
11. Push pressure levers (10) and (11) downward
12. Pivot clamping devices (8) and (9) into the vertical position
13. Set the contact pressure by means of clamping nuts (21) and (22)
14. Close the wirefeeder cover on the VR 143-2Z Yard

Feeding in the welding wire

Feeding in the welding wire

1. Open the wirefeeder cover on the VR 143-2Z Yard

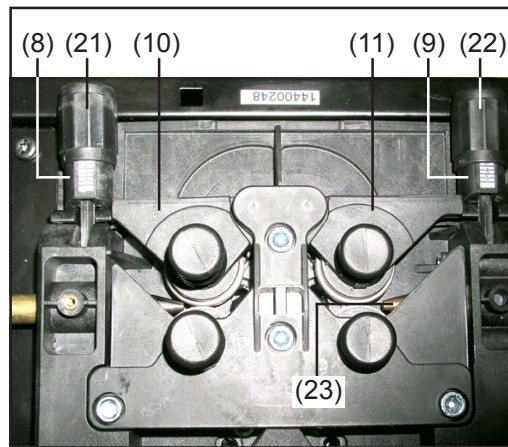


Fig.10 Feeding in the welding wire

2. Pivot clamping devices (8) and (9) forward
3. Pull pressure levers (10) and (11) upward
4. Feed the welding wire into the main wirefeeder (e.g. VR 4000):
 - until the wire has emerged around 5 cm (2 in.) from the VR 143-2Z Yard and into the wire-guidance nozzle (23) of the welding torch
5. Push pressure levers (10) and (11) downward
6. Pivot clamping devices (8) and (9) into the vertical position

7. Set the contact pressure by means of clamping nuts (21) and (22)



Note! Set a contact pressure that is high enough to ensure smooth wire travel, but not so high that the welding wire is deformed.

8. Arrange the torch hosepack in as straight a line as possible
9. Detach the gas nozzle from the torch
10. Unscrew the contact tube



Caution! Risk of injury from welding wire emerging at speed from the torch. Hold the torch so that it points away from your face and body.

11. Press the "Feeder inching" button on the control panel of the power source and hold it until the wire emerges from the torch.
12. To end the feeder-inching operation, release the "Feeder inching" button



Note! The wire spool of the main wirefeed unit must not continue to unreel after you release the torch trigger. Re-adjust the brake if necessary.

13. Shift the mains switch of the power source into the "O" position
14. Screw the contact tube back in
15. Replace the gas nozzle
16. Close the wirefeeder cover on the VR 143-2Z Yard

Care, maintenance and disposal

General remarks Under normal operating conditions, the VR 143-2Z Yard needs only a minimum of care and maintenance. However, to ensure continued trouble-free operation of your equipment for years to come, there are a few basic points that you should observe.



Warning! An electric shock can be fatal. Before opening up the machine

- Shift the mains switch into the "O" position
- Unplug the machine from the mains
- Put up an easy-to-understand warning sign to stop anybody inadvertently switching it back on again
- Using a suitable measuring instrument, check to make sure that electrically charged components (e.g. capacitors) have been discharged

Every time before starting up

- Inspect the torch, interconnecting hosepack and earth connection for any signs of damage
- Do a sight check of the wirefeed rollers and inner liners for any signs of damage
- Check the contact pressure of the wirefeed rollers and adjust this if necessary

Every 6 months

- Remove the side panels and blow clean the inside of the unit with dry, reduced-blow compressed air



Note! Risk of damage to electronic components. Do not aim air-jets at electronic components from too close a range.

Final disposal At the end of its useful life, only dispose of equipment in accordance with all applicable national and local regulations.

Technical data

General remarks



Note! Inadequately dimensioned electrical installations can lead to serious damage to (or loss of) property. The mains supply lead, and its fuse protection, must be dimensioned accordingly. The technical data shown on the rating plate shall apply.



VR 143-2Z Yard

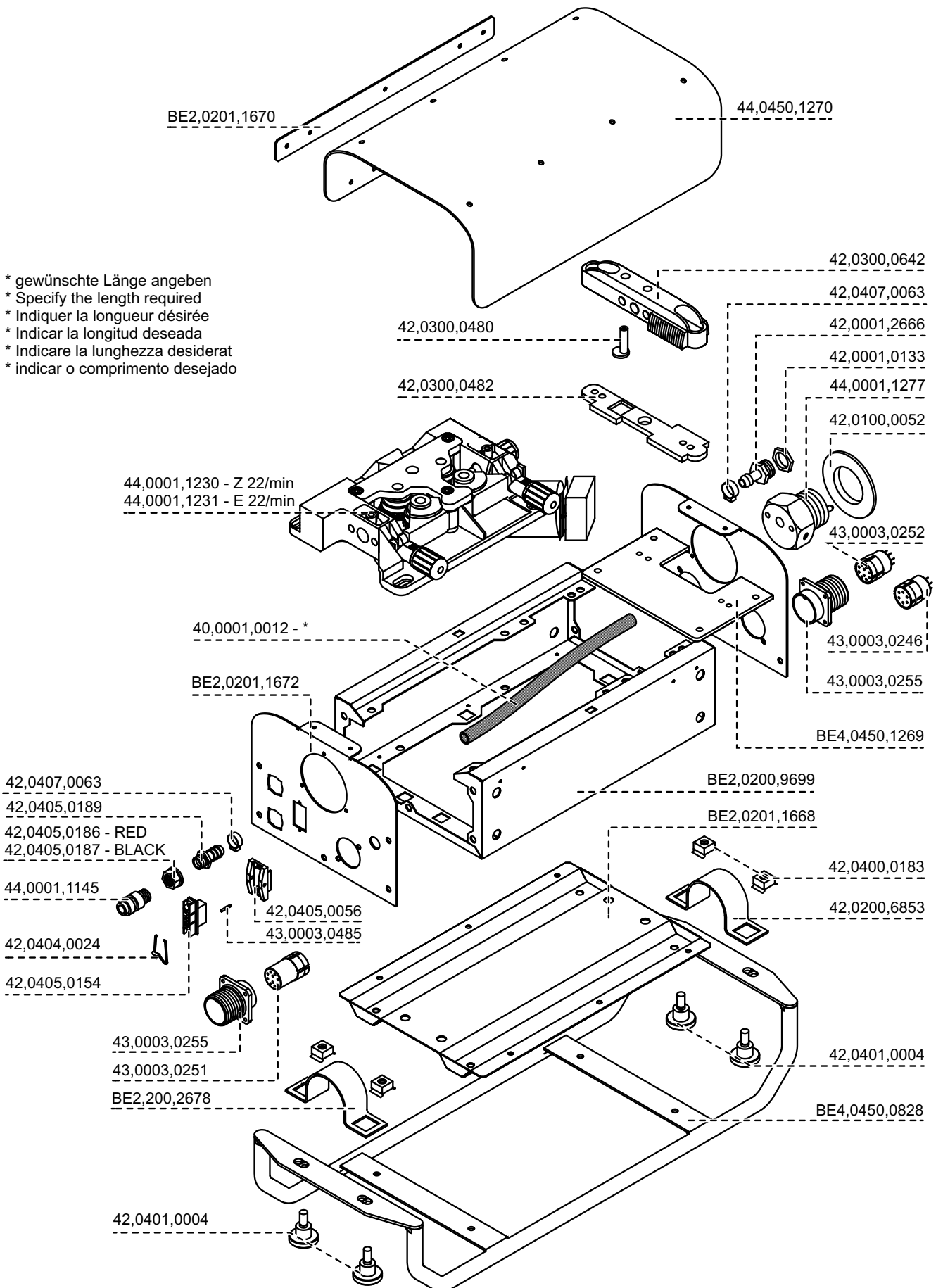
Supply voltage (from the power source)	42 V DC
Rated current	3.9 A
Wirefeed speed	0.5 - 22 m/min (19.69 - 866.14 ipm.)
Degree of protection	IP 23
Dimensions (L x W x H)	560 x 180 x 230 mm (22.06 x 7.09 x 9.06 in.)
Weight	10 kg (22 lb.)
Wire diameter	0.8 - 1.6 mm (0.03 - 0.06 in.)
Drive	4-roller drive
Max. shielding-gas pressure	7 bar (101 psi.)
Coolant	Standard Fronius coolant (40,0009,0046)
Max. coolant pressure	4.2 bar (61 psi.)

DE	Ersatzteilliste
EN	Spare Parts List
FR	Liste de pièces de rechange
IT	Lista parti di ricambio
ES	Lista de repuestos
PT-BR	Lista de peças sobresselentes
NL	Onderdelenlijst
NO	Reservdelsliste
CS	Seznam náhradních dílů
RU	Список запасных частей
SK	Zoznam náhradných dielov
SV	Reservdelslistan
TR	Parça Listesi
PL	Czyszczenie palnika

VR 143-2Z 4R/F++ Yard
 VR 143-2Z 4R/Z/E Yard

4,045,646,630
 4,045,646,631

* gewünschte Länge angeben
 * Specify the length required
 * Indiquer la longueur désirée
 * Indicar la longitud deseada
 * Indicare la lunghezza desiderat
 * indicar o comprimento desejado



VR 143 - 2 Z

Ersatzteilliste / Spare parts list / Listes de pièces de rechange / Lista de repuestos / Lista de peças sobresselentes / Lista dei Ricambi

1/1



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of our Sales & service partners and Locations.