

Operator's Manual

Direct-Fired Air Heater

HDR155



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Language	EN



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Manufacturer

Wacker Neuson Production Americas LLC

N92W15000 Anthony Avenue

Menomonee Falls, WI 53051 U.S.A.

Tel: (262) 255-0500 · Fax: (262) 255-0550 · Tel: (800) 770-0957

www.wackerneuson.com

Original instructions

This Operator's Manual presents the original instructions. The original language of this Operator's Manual is American English.

Foreword



UL 733 4th Edition (Rev. April 22, 2010)
CSA B140.0-03 3rd Edition (R2008)
CSA B140.8-1967 (R2001)

This heater is designed and approved for use as a construction heater in accordance with the following standards.

- CSA B140.0-03 3rd Edition (R2008)
- CSA B140.8-1967 (R2001)
- UL 733 4th Edition (Rev. April 22, 2010)

CHECK WITH YOUR LOCAL FIRE SAFETY AUTHORITY IF YOU HAVE QUESTIONS ABOUT APPLICATIONS.

Other standards govern the use of fuel gases and heat producing products in specific applications. Your local authority can advise you about these standards.

THE INSTALLATION OF THE UNIT SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION.

In addition, as a standard practice for installation, Wacker Neuson recommends referencing the current issue of CSA B139, Installation Code for Oil Burning Equipment in Canada and NFPA 31 Standard for the Installation of Oil-Burning Equipment in the USA.

**WARNING**

Risk of personal injury or machine damage from improper use.

- ▶ Before using the machine, read and understand all instructions and follow them carefully.
- ▶ The manufacturer is not responsible for damages to goods or persons due to improper use of this machine.

**WARNING**

Failure to comply with the precautions and instructions provided with this machine can result in death, serious injury, and property loss or damage from fire, explosion, burns, asphyxiation, carbon monoxide poisoning, and/or electric shock.

- ▶ Before using the machine, read and understand all precautions and instructions that have been provided. Follow them carefully.
- ▶ Only persons who can understand and follow the precautions and instructions should use or service this machine.
- ▶ Contact the manufacturer if you need assistance with operating the machine or need replacement manuals or labels.

**WARNING**

Work site fire, burn, inhalation, and explosion hazards.

- ▶ Keep solid combustibles, such as building materials, paper, or cardboard at a safe distance away from the machine as recommended by the instructions.
- ▶ Never use this machine in spaces which do or may contain volatile or airborne combustibles, or products such as gasoline, solvents, paint thinner, dust particles, or unknown chemicals.

**WARNING**

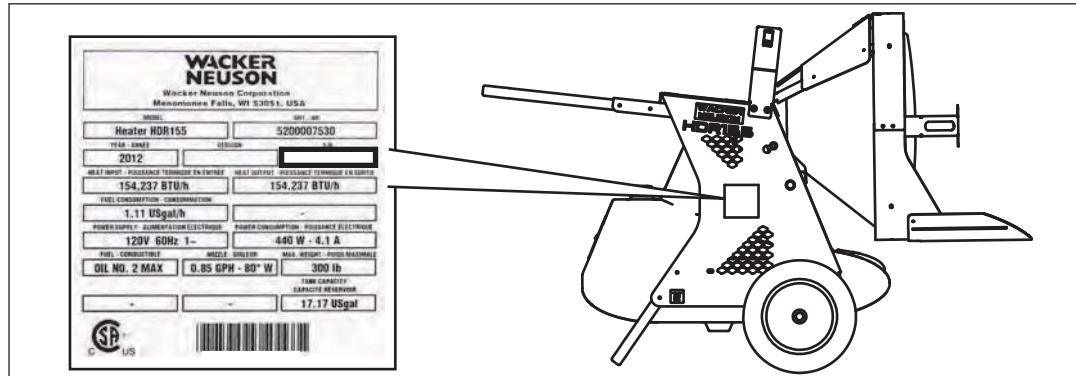
Not for use in homes or recreational vehicles. Installing this machine in a home or RV may result in fire, explosion, property damage, personal injury, or death.

- ▶ Operate the machine only for applications specified in *Machine Description and Intended Use*.

SAVE THESE INSTRUCTIONS—This manual contains important instructions for the machine model below. These instructions have been written expressly by Wacker Neuson Production Americas LLC and must be followed during installation, operation, and maintenance of the machine.

This manual covers the machine with the following item number:

Machine	Item Number
HDR 155	5200007530



wc_gr010181

Machine identification

A nameplate listing the model number, item number, revision number, and serial number is attached to this machine. The location of the nameplate is shown above.

Serial number (S/N)

For future reference, record the serial number in the space provided below. You will need the serial number when requesting parts or service for this machine.

Serial Number:

Machine documentation

- From this point forward in this documentation, Wacker Neuson Production Americas LLC will be referred to as Wacker Neuson.



**WACKER
NEUSON**

- Keep a copy of the Operator's Manual with the machine at all times.
- Use the separate Parts Book supplied with the machine to order replacement parts.
- If you are missing any of these documents, please contact Wacker Neuson to order a replacement or visit www.wackerneuson.com.
- When ordering parts or requesting service information, be prepared to provide the machine model number, item number, revision number, and serial number.

Expectations for information in this manual

- This manual provides information and procedures to safely operate and maintain the above Wacker Neuson model(s). For your own safety and to reduce the risk of injury, carefully read, understand, and observe all instructions described in this manual.
- Wacker Neuson expressly reserves the right to make technical modifications, even without notice, which improve the performance or safety standards of its machines.
- The information contained in this manual is based on machines manufactured up until the time of publication. Wacker Neuson reserves the right to change any portion of this information without notice.

Manufacturer's approval

This manual contains references to *approved* parts, attachments, and modifications. The following definitions apply:

- **Approved parts or attachments** are those either manufactured or provided by Wacker Neuson.
- **Approved modifications** are those performed by an authorized Wacker Neuson service center according to written instructions published by Wacker Neuson.
- **Unapproved parts, attachments, and modifications** are those that do not meet the approved criteria.

Unapproved parts, attachments, or modifications may have the following consequences:

- Serious injury hazards to the operator and persons in the work area
- Permanent damage to the machine which will not be covered under warranty

Contact your Wacker Neuson dealer immediately if you have questions about approved or unapproved parts, attachments, or modifications.



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1 Safety Information

1.1 Signal Words Used in this Manual

This manual contains DANGER, WARNING, CAUTION, *NOTICE*, and NOTE signal words which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.



This is the safety alert symbol. It is used to alert you to potential personal hazards.
► Obey all safety messages that follow this symbol.



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

- To avoid death or serious injury from this type of hazard, obey all safety messages that follow this signal word.
-



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

- To avoid possible death or serious injury from this type of hazard, obey all safety messages that follow this signal word.
-



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

- To avoid possible minor or moderate injury from this type of hazard, obey all safety messages that follow this signal word.
-

NOTICE: Used without the safety alert symbol, NOTICE indicates a situation which, if not avoided, could result in property damage.

Note: *A Note contains additional information important to a procedure.*

1.2 Machine Description and Intended Use

Machine description	<p>The HDR Heater is a direct-fired radiant heater. The machine operates on diesel fuel. The machine consists of the following components:</p> <ul style="list-style-type: none"> ■ Stainless steel combustion chamber ■ Blower ■ Single-stage burner ■ High-temperature shut-down device ■ Fuel tank ■ Safety tip switch <p>Fuel is consumed in a closed combustion chamber. Outside air is pulled into the machine where it is heated. This clean, dry air is blown between the walls of the combustion chamber to cool the machine. Access to the blower assembly is protected by a guard fitted on the air inlet.</p>
Intended use	<p>The HDR Heater is intended to provide heat on outdoor construction sites and in other rugged applications. Do not use this machine indoors.</p> <p>This machine has been designed and built strictly for the intended use described above. Using the machine for any other purpose could permanently damage the machine or seriously injure the operator or other persons on the work site. Machine damage caused by misuse is not covered under warranty.</p> <p>This machine has been designed and built in accordance with the latest global safety standards. It has been carefully engineered to eliminate hazards as far as practicable and to increase operator safety through protective guards and labeling. However, some risks may remain even after protective measures have been taken. They are called residual risks. On this machine, they may include exposure to:</p> <ul style="list-style-type: none"> ■ exhaust emissions ■ hot surfaces such as exhaust vents and fuel heater ■ fuel and fuel fumes when refueling ■ high voltages and arc flash <p>To protect yourself and others, make sure you thoroughly read and understand the safety information presented in this manual before operating the machine.</p>
Optional accessories	<p>Wacker Neuson offers optional accessories for the machine. These accessories include the following:</p> <ul style="list-style-type: none"> ■ Remote thermostat <p>Contact your Wacker Neuson dealer for more information.</p>

1.3 Safety Guidelines for Operating the Machine



DANGER

Carbon monoxide. Using the machine indoors CAN KILL YOU IN MINUTES. Exhaust gas contains carbon monoxide (CO). This is a deadly poison you cannot see or smell. If you can smell the exhaust, you are breathing CO. Even if you cannot smell the exhaust, you could be breathing CO.

- ▶ NEVER operate the machine inside an enclosed area, such as a home, tunnel, or garage.
 - ▶ ONLY use the machine outside and far away from windows, doors, and vents. These openings can pull in exhaust.
 - ▶ ALWAYS use a battery-powered or battery-backup CO alarm in nearby structures. Even when you use the machine correctly, CO may leak into nearby structures.
 - ▶ If you start to feel sick, dizzy, or weak after the machine has been running, move to fresh air IMMEDIATELY. See a doctor. You could have carbon monoxide poison.
-

Operator training

Before operating the machine:

- Read and understand the operating instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Contact Wacker Neuson for additional training if necessary.

When operating this machine:

- Do not allow improperly trained people to operate the machine. People operating the machine must be familiar with the potential risks and hazards associated with it.
-

Operator qualifications

Only trained personnel are permitted to start, operate, and shut down the machine. They also must meet the following qualifications:

- have received instruction on how to properly use the machine
- are familiar with required safety devices

The machine must not be accessed or operated by:

- children
 - people impaired by alcohol or drugs
-

Application area

Be aware of the application area.

- Keep unauthorized personnel, children, and pets away from the machine.
- Remain aware of changing positions and the movement of other equipment and personnel in the application area/job site.

Be aware of the application area.

- Do not operate the machine in areas that contain flammable objects, fuels, or products that produce flammable vapors.
-

Safety devices, controls, and attachments

Only operate the machine when:

- All safety devices and guards are in place and in working order.
- All controls operate correctly.
- The machine is set up correctly according to the instructions in the Operator's Manual.
- The machine is clean.
- The machine's labels are legible.

To ensure safe operation of the machine:

- Do not operate the machine if any safety devices or guards are missing or inoperative.
- Do not modify or defeat the safety devices.
- Only use accessories or attachments that are approved by Wacker Neuson.

Safe operating practices

When operating this machine:

- Remain aware of the machine's moving parts. Keep hands, feet, and loose clothing away from the machine's moving parts.

When operating this machine:

- Do not operate a machine in need of repair.

Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while operating this machine:

- Close-fitting work clothes that do not hinder movement
- Safety glasses with side shields
- Hearing protection
- Safety-toed footwear

Machine condition

Only operate the machine when:

- The combustion chamber is in proper working order.
- All safety devices and guards are in place and in working order.
- All controls operate correctly.
- The machine is set up correctly according to the instructions in the Operator's Manual.
- The machine is clean.
- The machine's labels are legible.

When operating the machine:

- Do not modify or defeat the safety devices.
- Do not use worn electrical cords.
- Do not use faulty fuel supplies.

Work space

Follow the guidelines below when placing the machine in the workspace.

- Position the machine on a firm, noncombustible, level surface.



- Keep the area immediately surrounding and underneath the machine clean, neat, and free of debris and combustible materials.
- Keep the area above the machine clear of debris that could fall on the machine.
- Do not position electrical cords under the machine or over the top of the machine.

**WARNING**

Fire hazard. Do not move the machine while it is plugged in, even if power is lost.

- ▶ Turn off the machine, wait 10 minutes, disconnect power cord, and let it cool completely.

**While
operating the
machine**

- Inspect the machine before startup, and monitor it regularly during operation.
- Do not exceed the maximum heat output of the machine.

After use

- Disconnect power from the machine.
- Store the machine properly when it is not being used.

1.4 Safety Guidelines for Operating Combustion Burners

When using the machine:

- Clean up any spilled fuel immediately.
- Replace the fuel tank cap after refueling the machine.
- Refill the fuel tank in a well-ventilated area.
- Shut down the generator, if equipped, when refueling.

When using the machine:



DANGER

Carbon monoxide. Using this machine indoors CAN KILL YOU IN MINUTES. Exhaust gas contains carbon monoxide (CO). This is a deadly poison you cannot see or smell. If you can smell the exhaust, you are breathing CO. Even if you cannot smell the exhaust, you could be breathing CO.

- ▶ NEVER operate the machine inside an enclosed area, such as a home, tunnel, or garage.
 - ▶ ONLY use the machine outside and far away from windows, doors, and vents. These openings can pull in exhaust gas.
 - ▶ ALWAYS use a battery-powered or battery-backup CO alarm in nearby structures. Even when you use the machine correctly, CO may leak into nearby structures.
 - ▶ If you start to feel sick, dizzy, or weak after the machine has been running, move to fresh air IMMEDIATELY. See a doctor. You could have carbon monoxide poisoning.
-

When refueling the machine:

- Do not fill or drain the fuel tank near an open flame or while the machine is running.
- Do not smoke when refueling the machine.
- Do not use gasoline, crankcase oil, or any oil containing gasoline.

1.5 Service Safety

Service training

Before servicing or maintaining the machine:

- Read and understand the instructions contained in all manuals delivered with the machine.
- Familiarize yourself with the location and proper use of all controls and safety devices.
- Only trained personnel shall troubleshoot or repair problems occurring with the machine.
- Contact Wacker Neuson for additional training if necessary.

When servicing or maintaining this machine:

- Do not allow improperly trained people to service or maintain the machine. Personnel servicing or maintaining the machine must be familiar with the associated potential risks and hazards.

Precautions

Follow the precautions below when servicing or maintaining the machine.

- Read and understand the service procedures before performing any service to the machine.
- All adjustments and repairs must be completed before operation. Do not operate the machine with a known problem or deficiency.
- All repairs and adjustments shall be completed by a qualified technician.
- Turn off the machine before performing maintenance or making repairs.

Machine modifications

When servicing or maintaining the machine:

- Use only accessories/attachments that are approved by Wacker Neuson.

When servicing or maintaining the machine:

- Do not defeat safety devices.
- Do not modify the machine without the express written approval of Wacker Neuson.

Replacing parts and labels

- Replace worn or damaged components.
- Replace all missing and hard-to-read labels.
- When replacing electrical components, use components that are identical in rating and performance to the original components.
- When replacement parts are required for this machine, use only Wacker Neuson replacement parts or those parts equivalent to the original in all types of specifications, such as physical dimensions, type, strength, and material.

Cleaning

When cleaning and servicing the machine:

- Keep the machine clean and free of debris such as leaves, paper, cartons, etc.
- Keep the labels legible.

When cleaning the machine:

- Do not clean the machine while it is running.

- Never use gasoline or other types of fuels or flammable solvents to clean the machine. Fumes from fuels and solvents can become explosive.

Personal Protective Equipment (PPE)

Wear the following Personal Protective Equipment (PPE) while servicing or maintaining this machine:

- Close-fitting work clothes that do not hinder movement
- Safety glasses with side shields
- Hearing protection
- Safety-toed footwear

In addition, before servicing or maintaining the machine:

- Tie back long hair.
- Remove all jewelry (including rings).

After Use

- Stop the engine when the machine is not being operated.
- Close the fuel valve on engines equipped with one when machine is not being operated.
- Ensure that the machine will not tip over, roll, slide, or fall when not being operated.
- Store the machine properly when it is not being used. The machine should be stored in a clean, dry location out of the reach of children.

1.6 Safety Guidelines for Lifting and Transporting the Machine

When lifting the machine:

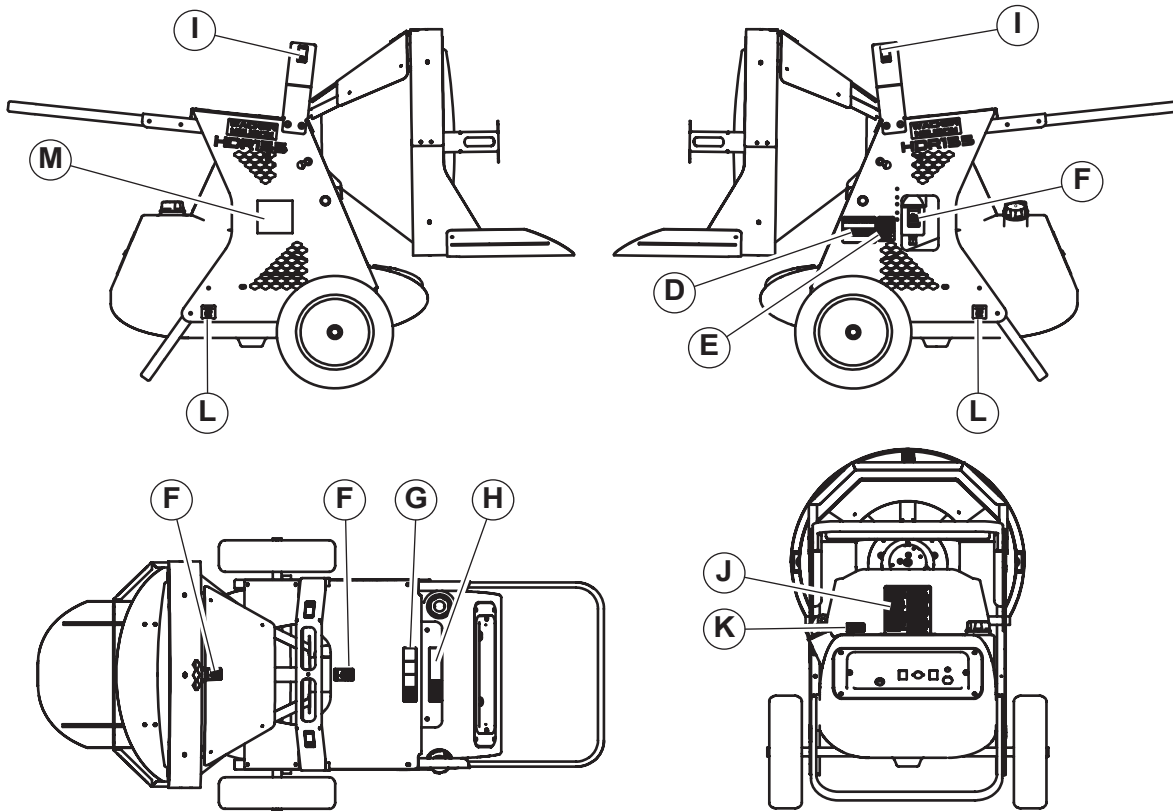
- Make sure slings, chains, hooks, ramps, jacks, forklifts, cranes, hoists, and any other type of lifting device used is attached securely and has enough weight-bearing capacity to lift or hold the machine safely. See section *Technical Data* for machine weight.
- Remain aware of the location of other people when lifting the machine.
- Only use the lifting points and tie-downs described in the Operator's Manual.
- Make sure the transporting vehicle has sufficient load capacity and platform size to safely transport the machine.

To reduce the possibility of injury:

- Do not stand under the machine while it is being lifted or moved.
- Do not get onto the machine while it is being lifted or moved.


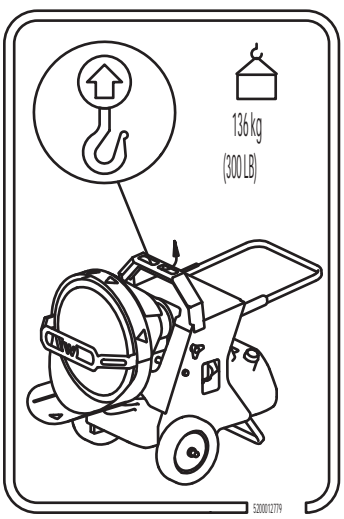
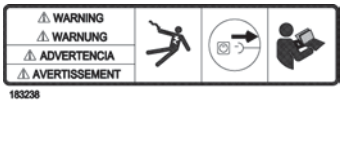
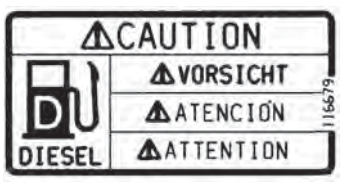
2 Labels


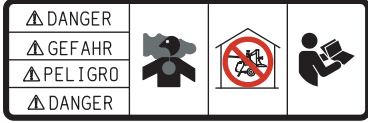

2.1 Label Locations



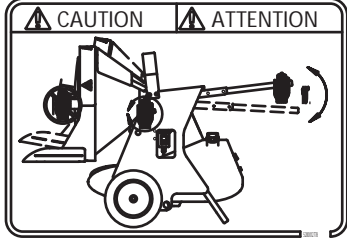
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2.2 Label Meanings

A		<p>WARNING Hot surface</p>
C		<p>NOTICE Lifting point</p>
D		<p>WARNING! Electric shock hazard. Disconnect power before servicing. Read Operator's Manual.</p>
E		<p>CAUTION This machine uses diesel fuel.</p>

F	 <p>113726</p>	Tie-down point.
G		<p>DANGER Asphyxiation hazard.</p> <p>Using this machine indoors CAN KILL YOU IN MINUTES. Burner exhaust and generator exhaust (if the machine is equipped with a generator) contains carbon monoxide. This is a poison you cannot see or smell.</p> <p>Never use inside an enclosed area even if doors and windows are open.</p> <p>Only use outside away from windows, doors, and vents.</p> <p>Read the Operator's Manual before use.</p>
H		<p>CAUTION Hot while in operation. Do not touch. Keep children, clothing, and combustibles away.</p>

J	<div data-bbox="516 178 852 592"> <div> <div>⚠ WARNING</div> <p>Read and understand the supplied operator's manual before operating this machine.</p> <p>The requirements of local authorities having jurisdiction shall be followed.</p> <p>Do not use heater in close proximity of combustible surfaces or materials.</p> <p>Ensure fresh air supply to space where heater is used.</p> <p>Equipment must be grounded.</p> <p>Use only light diesel oil No. 2 or kerosene.</p> <p>Do not use gasoline or crankcase draining.</p> <p>Do not fill the tank while the unit is operating.</p> <p>Never pull electrical socket while heater is running.</p> <p>Do not start the heater when the combustion chamber is hot.</p> <p>Do not start the heater when excess oil has accumulated in the chamber.</p> <p>Allow unit to cool before shutdown. Stop heater only at control panel switch in order to ensure automatic cooling off. Heater will stop by itself after automatic cooling off.</p> <p>Clean fuel filter regularly and drain water from fuel tank if necessary.</p> <p>When heater is first used after a long storage period it might be necessary to reset the machine once or several times by the reset button. The button will light up; wait two minutes before resetting.</p> <p>Do not tamper with the unit. Have a competent serviceman make any adjustments.</p> <p>Unplug machine before removing the cover for any maintenance.</p> <p>5200010154</p> </div> <div> <div>⚠ ADVERTISSEMENT</div> <p>Lire et comprenez la notice d'emploi fournie avec la machine avant de la mettre en service.</p> <p>Suivre les réglementations locales.</p> <p>Ne pas utiliser le réchauffeur à proximité de produits et de surfaces inflammables.</p> <p>Assurer une recirculation de l'air ou en fait fonctionner le réchauffeur.</p> <p>C'est nécessaire à mettre l'équipement à la terre.</p> <p>N'utiliser que de carburant Diesel léger de type 2 max. ou kérosène propre.</p> <p>N'utiliser pas de l'essence ou huile de vidange.</p> <p>Ne pas remplir le réservoir pendant que la machine fonctionne.</p> <p>Ne jamais déconnecter la prise pendant la marche.</p> <p>Ne mettre pas en service le réchauffeur si la chambre de combustion est encore chaude.</p> <p>Ne mettre pas en fonction le réchauffeur si il y a d'huile en excès dans la chambre de combustion.</p> <p>Arrêter seulement le réchauffeur au bouton marche arrêté pour assurer le refroidissement automatique. Après quelques minutes le réchauffeur s'arrêtera de lui-même.</p> <p>Nettoyer le filtre de carburant régulièrement et vider l'eau du réservoir si nécessaire.</p> <p>À la première mise en marche ou après une longue période de stockage il se peut que le réchauffeur ne démarre pas. Dans ce cas le bouton du carter de sécurité s'allume; après 2 minutes presser ce bouton.</p> <p>N'altérer pas le réchauffeur. Contacter le service après-vente pour la maintenance si nécessaire.</p> <p>Débrancher l'alimentation électrique avant toutes les opérations de maintenance.</p> <p>5200010154</p> </div> </div>	<p>WARNING</p> <ul style="list-style-type: none"> ■ Read and understand the supplied Operator's Manual before operating this machine. ■ The requirements of local authorities having jurisdiction shall be followed. ■ Do not use heater in close proximity of combustible surfaces or materials. ■ Ensure fresh air supply to space where heater is used. ■ Equipment must be grounded. ■ Use only light diesel oil No. 2 or kerosene. ■ Do not use gasoline or crankcase draining. ■ Do not fill the tank while the unit is operating. ■ Never pull electrical socket while heater is running. ■ Do not start the heater when the combustion chamber is hot. ■ Do not start the heater when excess oil has accumulated in the chamber. ■ Allow unit to cool before shutdown. Stop heater only at control panel switch in order to ensure automatic cooling off. Heater will stop by itself after automatic cooling off. ■ Clean fuel filter regularly and drain water from fuel tank if necessary. ■ When heater is first used after a long storage period it might be necessary to reset the machine once or several times by the reset button. The button will light up; wait two minutes before resetting. ■ Do not tamper with the unit. Have a competent serviceman make any adjustments. ■ Unplug machine before removing the cover for any maintenance.
O	<div data-bbox="495 1381 831 1684"> <div> <div>⚠ CAUTION</div> <p>Floor guard must be fully extended before operating heater.</p> <p>Minimum clearances from combustible material must be: 30" from side and rear (air inlet) of heater, 80" from surfaces above heater, 40" from air outlet of heater.</p> </div> <div> <div>⚠ ATTENTION</div> <p>La protection du plancher doit être complètement déployée avant de faire fonctionner le réchauffeur.</p> <p>Les distances minimales de tout matériau combustible doivent être: 30" de côté et à l'arrière (sortie d'air) du réchauffeur 80" de la surface au-dessus du réchauffeur 40" de la sortie d'air du réchauffeur</p> <p>5200010156</p> </div> </div>	<p>CAUTION</p> <p>Floor guard must be fully extended before operating heater.</p> <p>Minimum clearances from combustible material must be: 30" from side and rear (air inlet) of heater. 80" from surfaces above heater. 40" from air outlet of heater</p>

P		<p>CAUTION Burn hazard. The front of the machine gets very hot during operation. Do not touch the front of the machine when adjusting.</p>
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3 Lifting and Transporting

- Requirements**
- Transport vehicle capable of carrying 180 lbs (81.6 kg)
 - Crane or lift capable of carrying 180 lbs (81.6 kg)

- NOTICES**
- Do not tow this machine.
 - Do not route tie-down straps or chains over the top of the machine.
 - Fuel may leak from the fuel tank cap during transport. Clean up any leaked fuel before using the machine.



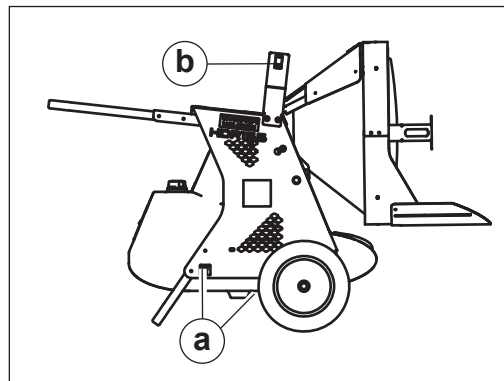
WARNING

Crushing hazard.

- Only qualified riggers should attempt aerial lifting of this machine.

- Guidelines**
- Follow the guidelines below when lifting and transporting this machine.
- Turn off the machine, disconnect the power cord, and let it cool completely.
 - Cover all openings on the machine to avoid infiltration from road debris and dust.
 - When using an aerial lifting rig, use the designated lifting point **(b)** on top of the machine.
 - Use the manual transport handle when relocating the machine within the job site.
 - When tying down the machine, route tie-down straps or chains through the lower frame only.
 - Use only the designated tie-down locations **(a)**.

Note: *There is one tie-down located behind each wheel.*



wc_gr010034

4 Operation



DANGER

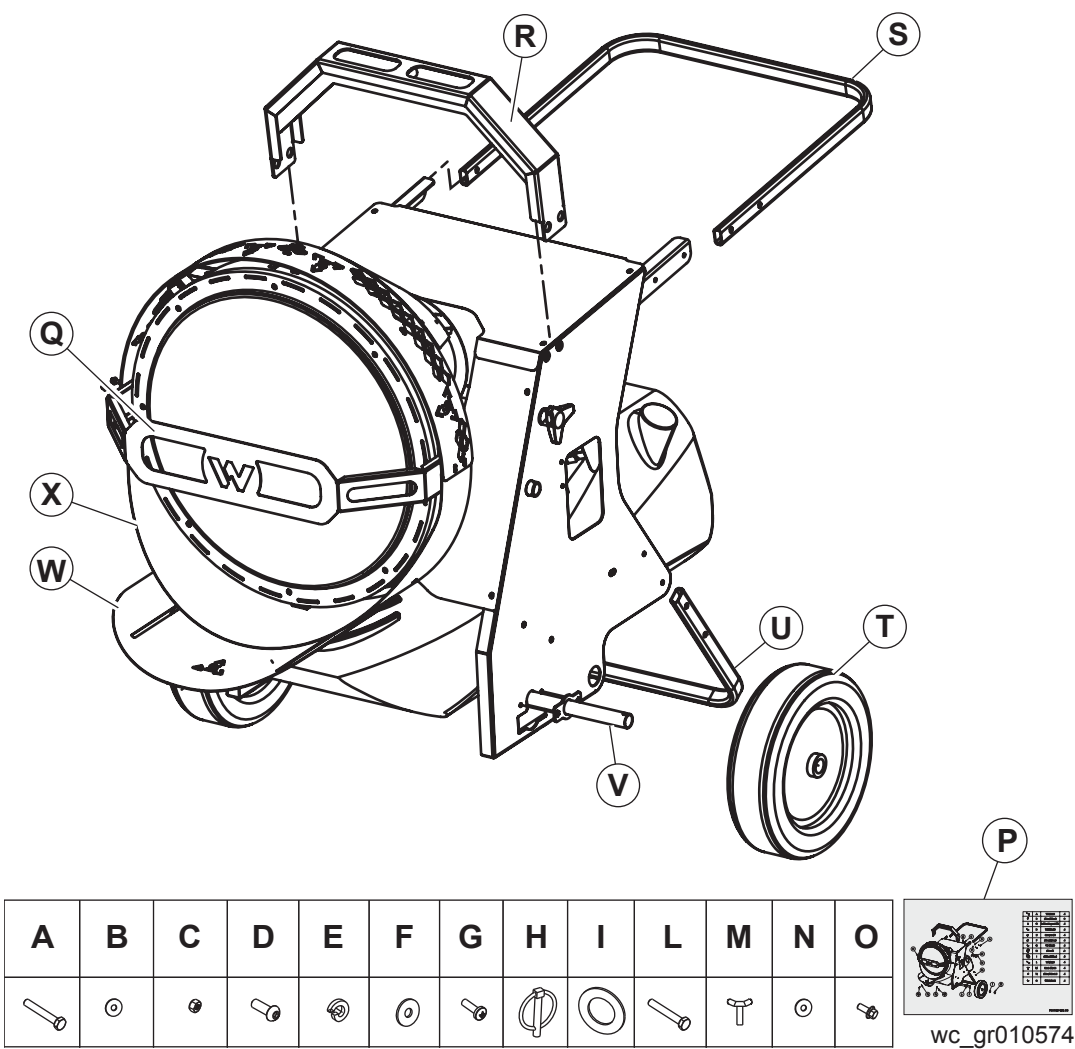
Carbon monoxide. Using the machine indoors CAN KILL YOU IN MINUTES. Exhaust gas contains carbon monoxide (CO). This is a deadly poison you cannot see or smell. If you can smell the exhaust, you are breathing CO. Even if you cannot smell the exhaust, you could be breathing CO.

- ▶ NEVER operate the machine inside an enclosed area, such as a home, tunnel, or garage.
 - ▶ ONLY use the machine outside and far away from windows, doors, and vents. These openings can pull in exhaust.
 - ▶ ALWAYS use a battery-powered or battery-backup CO alarm in nearby structures. Even when you use the machine correctly, CO may leak into nearby structures.
 - ▶ If you start to feel sick, dizzy, or weak after the machine has been running, move to fresh air IMMEDIATELY. See a doctor. You could have carbon monoxide poison.
-

4.1 Preparing the Machine for First Use

1. Make sure all loose packaging materials have been removed from the machine.
2. Check the machine and its components for damage. If there is visible damage, do not operate the machine! Contact your Wacker Neuson dealer immediately for assistance.
3. Take inventory of all items included with the machine and verify that all loose components and fasteners are accounted for.
4. Attach component parts not already attached.
5. Add fluids as needed and applicable, including fuel, engine oil, and battery acid.
6. Move the machine to its operating location.

4.2 Parts Included



Ref.	Qty.	Description	Ref.	Qty.	Description
A*	4	Bolt	N*	4	Washer
B*	8	Washer	O*	4	Bolt with washer
C*	4	Lock nut	P	1	Assembly diagram
D*	4	Allen-head screw	Q	1	Front guard
E*	4	Lock washer	R	1	Lift bar
F*	4	Washer	S	1	Handle
G*	4	Screw	T	2	Wheel
H*	2	Locking pin	U	1	Foot suport
I*	4	Washer	V	1	Axle
L*	4	Hexagonal bolt	W	1	Floor guard
M*	4	Wing nut	X	1	Bottom guard

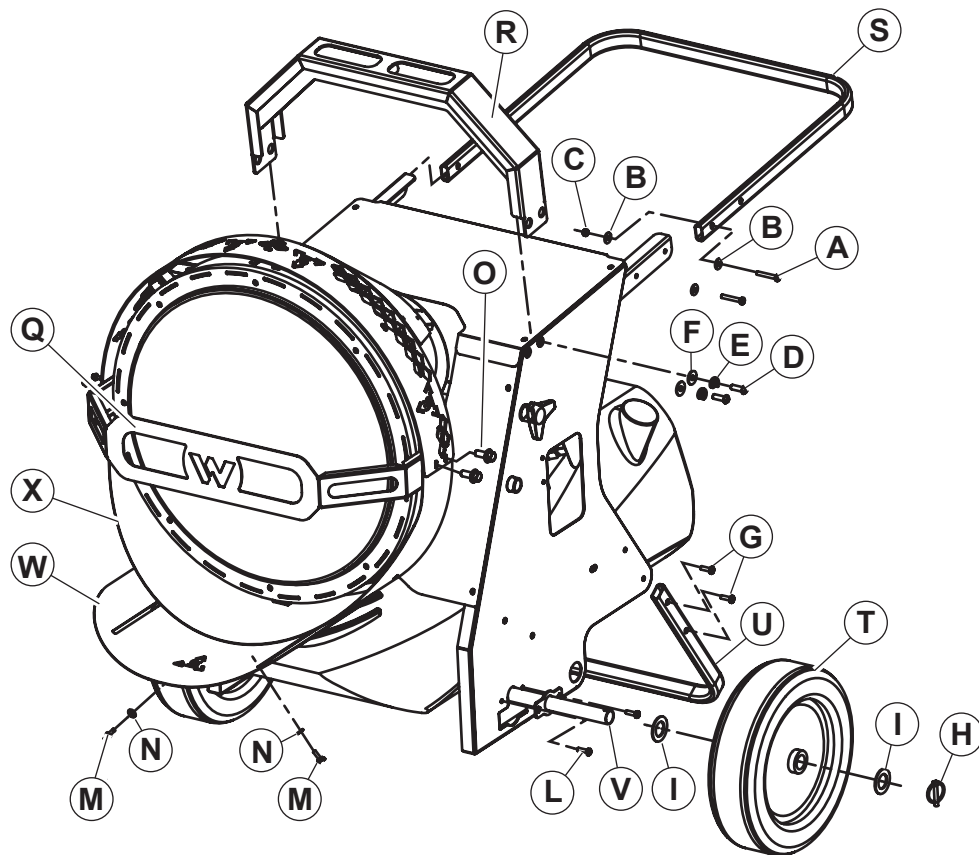
*Included in hardware bag.

4.3 Assembling the Machine

- Requirements**
- Standard tools
 - Extra person or a lifting device capable of supporting the weight of the machine

Procedure Perform the procedure below to assemble the machine.

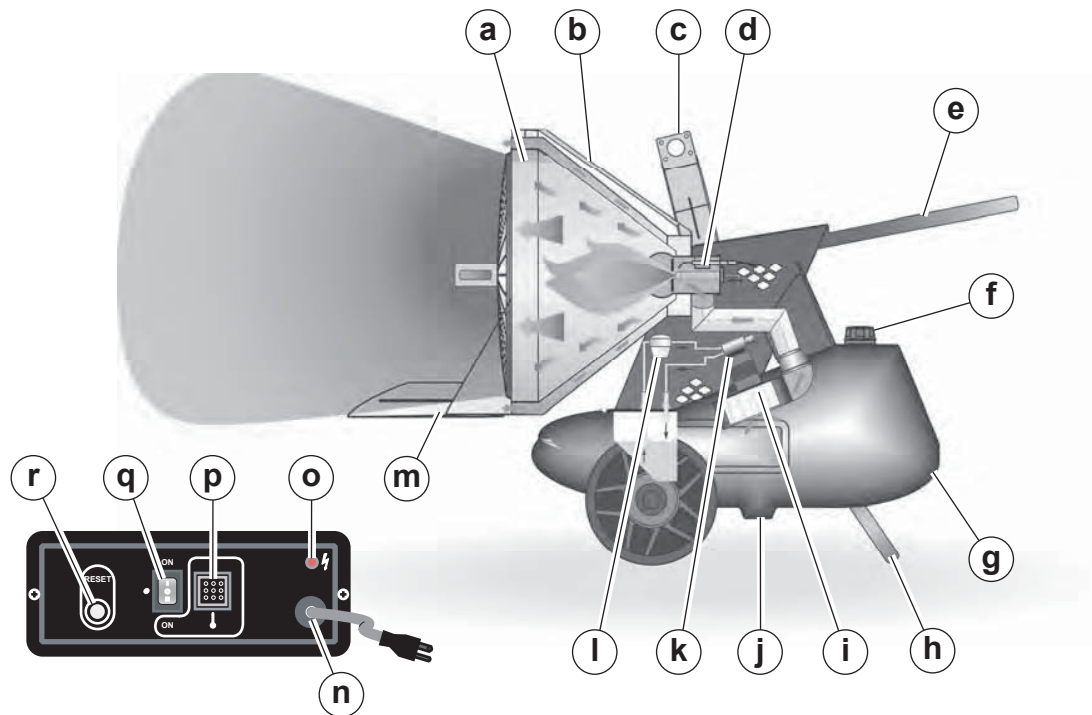
1. Install the handle (**S**) using the bolts (**A**), washers (**B**), and lock nuts (**C**).
2. Install the lift bar (**R**) using the allen-head screws (**D**), lock washers (**E**), and washers (**F**).
3. Install the front guard (**Q**) and bottom guard (**X**) using the bolts with washers (**O**).
4. Install the floor guard (**W**) using the wing nuts (**M**) and washers (**N**).
5. Install the foot support (**U**) using the screws (**G**).
6. Slide the axle (**V**) through the holes on both sides of the machine and secure it using the hexagonal bolts (**L**).
7. Install washers (**I**) on both ends of the axle then slide the wheels (**T**) onto the shaft. Secure the wheels using the remaining washers (**I**) and locking pins (**H**).



A	B	C	D	E	F	G	H	I	L	M	N	O

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4.4 Control / Component Locations



wc_gr009909

Ref	Description	Ref	Description
a	Combustion chamber	j	Drain plug
b	Upper guard	k	Fuel pump
c	Lifting device	l	Fuel filter
d	Burner (flame head)	m	Lower (floor) guard
e	Transport handle	n	Power cord
f	Fuel tank cap	o	Power indicator
g	Fuel tank	p	Thermostat receptacle
h	Support	q	Operation mode switch
i	Fan	r	Burner fault lamp and reset button

4.5 Adjusting the Heater Output Angle

Requirement Heater on a level surface.



CAUTION Pinch hazard. Several areas of the machine present pinching hazards if not properly aligned and secured.

- Be sure to align and secure the machine properly when adjusting.

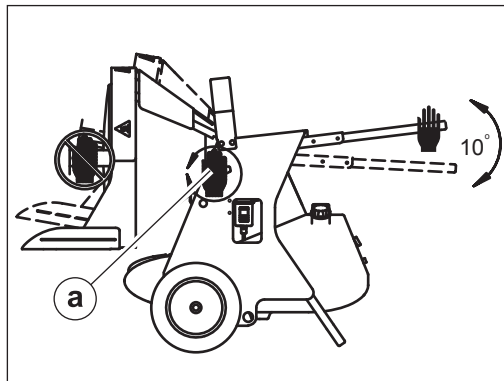


CAUTION Burn hazard. The front of the machine gets very hot during operation.

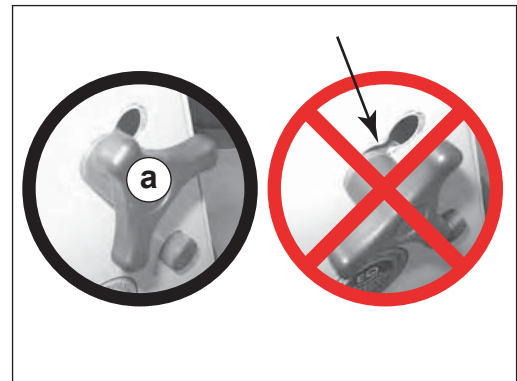
- Do not touch the front of the machine while adjusting.

Procedure Follow the procedure below to adjust the heater output angle.

1. Loosen the locking handles **(a)**.



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wc_gr010069

2. Tilt the heater up or down (maximum 10°) until the desired angle is achieved.
3. Tighten the locking handles **(a)** only when alignment is correct.

4.6 Positioning the Machine

**DANGER**

Carbon monoxide. Using the machine indoors CAN KILL YOU IN MINUTES. Exhaust gas contains carbon monoxide (CO). This is a deadly poison you cannot see or smell. If you can smell the exhaust, you are breathing CO. Even if you cannot smell the exhaust, you could be breathing CO.

- ▶ NEVER operate the machine inside an enclosed area, such as a home, tunnel, or garage.
- ▶ ONLY use the machine outside and far away from windows, doors, and vents. These openings can pull in exhaust.
- ▶ ALWAYS use a battery-powered or battery-backup CO alarm in nearby structures. Even when you use the machine correctly, CO may leak into nearby structures.
- ▶ If you start to feel sick, dizzy, or weak after the machine has been running, move to fresh air IMMEDIATELY. See a doctor. You could have carbon monoxide poison.

**WARNING**

Fire hazard. Do not move the machine while it is plugged in, even if power is lost.

- ▶ Turn off the machine, wait 10 minutes, disconnect the power cord, and let it cool completely.

**WARNING**

Fire hazard. Machines positioned on a hill or an incline may slide, break away or roll over.

- ▶ Do not position the machine on a hill or an incline.

**WARNING**

Explosion and fire hazard. Risk of severe injury or death.

- ▶ Do not operate the machine near flammable vapors, fuels, or combustibles.

CO Alarms

Because this machine produces carbon monoxide (CO), Wacker Neuson recommends that CO alarms be installed in all structures in close proximity to the machine. CO alarms provide an extra measure of protection against this poison that you cannot see or smell.

Install battery-operated CO alarms or plug-in CO alarms with battery backup, according to the manufacturer's instructions. CO alarms should be certified to the requirements of the latest safety standards (UL 2034, IAS 6-96, or CSA 6.19.01). Test the CO alarm batteries monthly.

This procedure continues on the next page.

Continued from the previous page.

Requirements	<p>Position the machine:</p> <ul style="list-style-type: none">■ So that burner exhaust will not enter nearby structures.■ So that the machine does not block traffic.■ So that the machine is not close to any combustibles or flammable vapor.■ So that the machine is not exposed to high levels of dust or airborne debris.■ So that all of the machine's access doors/panels may be accessed.■ So that the cord does not pose a tripping hazard, and so the cord cannot be damaged by machines or other equipment on the job site.■ So that the machine is not sitting in pooled water or deep snow.■ Machine must be on flat, firm surface.
Guidelines	<p>Observe the following guidelines when positioning the machine for operation.</p> <ul style="list-style-type: none">■ Installer must be familiar with all applicable laws, codes, regulations, or other restrictions regarding installation of direct-fired radiant heaters.■ Install wedge blocks under the wheels to prevent movement.■ Installation must adhere to proximity restrictions.
Tip-over protection	<p>This machine features tip-over protection. Operation is disabled if the machine tips past thirty five degrees from the horizontal. Return the machine to a horizontal position to resume operation.</p>
Proximity restrictions	<p>The machine must be located a safe distance from any other structures, vehicles, materials or other combustible surfaces. The following proximity restrictions apply for all machine installations.</p> <ul style="list-style-type: none">■ 30" (0.76 m) from side and rear (air inlet) of heater■ 80" (2.03 m) from surfaces above heater■ 40" (1.02 m) from air outlet of heater■ 20' (6 m) from outlet to external fuel container

4.7 Electrical and Grounding

**WARNING**

Fire and electric shock hazards. The use of an inappropriate power supply, or undersized extension cords, can lead to fire and electric shock. Fire and electric shock can cause severe injury.

- ▶ Before use, ensure that the machine is properly connected to an appropriate power source and grounded per the requirements provided below.
- ▶ Do not use undersized extension cords.

Electrical requirements

- Ensure that the machine is connected to a reliable, consistent source of electric power.
- The electric power source must be grounded per the requirements below and connected to a freely accessible circuit breaker.
- Ensure that extension cords (if used) are properly sized for the installation. Do not use worn, bare, or frayed cords!

Restrictions for extension cords:

- Use only 3-wire type extension cords with heavy-duty plugs.
- The maximum length of extension cord usage per circuit is 30 m (100 ft).
- Use 12-gauge extension cords for lengths up to 15 m (50 ft).
- Use 10-gauge extension cords for lengths up to 30 m (100 ft).

Grounding requirements

- Electrical grounding must comply with the National Electric Code ANSI/NFPA 70 or the CSA C22.1 Canadian Electrical Code, Part 1.

**CAUTION**

Burn hazard. The self-regulating fuel heater, located inside the fuel filter canister, will initiate when power is connected to the machine. The surface of the fuel filter canister may become very hot.

- ▶ Use caution when working with the fuel filter canister.

Connecting power

Perform the procedure below to connect power to the machine.

1. Verify that the operation mode switch is in the OFF (0) position.
2. Connect the main power cord cord to a properly-rated power source.

Note: *If the ambient temperature is below freezing, wait 10–30 minutes before proceeding.*

4.8 Recommended Fuels and Fuel Blending Guide

Low ambient temperatures cause diesel fuels to gel. Gelled fuels will cause burner ignition failure and/or burner fuel pump damage. Always use the proper fuel for the conditions.

Fuel Blend Guide		
Lowest expected ambient temperature °F (°C)	Generator-powered	Shore-powered
Below 5 (-15)	50-50 blend of #2 diesel and #1 diesel, plus additives OR 50-50 blend #2 diesel and K1 kerosene, plus additives	100% #1 diesel plus additives OR 100% K1 kerosene, plus additives
5 to 25 (-15 to -4)	70-30 blend of #2 diesel and #1 diesel, plus additives OR 70-30 blend of #2 diesel and K1 kerosene, plus additives	
Above 25 (-4)	Winter-blend diesel	

NOTICE: Do not use B20 or any other type of biodiesel fuel in this machine.



CAUTION

Fire hazard.

- Do not use gasoline, crankcase oil, or any oil containing gasoline.

4.9 Preliminary Checks

Checks Before starting the machine, check the following items.

- ☐ Fuel tank full
- ☐ Fuel tank cap secure
- ☐ Operation mode switch in the OFF position
- ☐ Power supply connected
- ☐ Remote thermostat (if applicable) installed
- ☐ Lower (floor) guard fully extended
- ☐ Reset button illuminated green

Note: If the button is illuminated red, it must be pressed to reset the machine.

4.10 Starting the Machine in Extremely Cold Weather

Cold weather In temperatures below 32°F (0°C), it may be necessary to preheat the fuel inside the fuel filter canister. The fuel filter canister is equipped with a low-wattage heating element specially designed for this purpose. See below for instructions.



WARNING

Burn hazard. The external surface of the machine and fuel filter may be hot.

- Wear safety gloves when handling the machine components.
-

Note: *Excess heating may increase the need for maintenance. See topics “Replacing the Fuel Filter” and “Replacing the Burner Nozzle”.*

Preheating the fuel

To preheat the fuel, carry out the following procedure.

1. Connect power to the machine. See topic *Connecting Power to the Machine (Preheating)*.
2. Wait 20–30 minutes—longer for colder temperatures.
3. Start the machine. See topic *Starting the Machine*.

Note: *In extreme wind, the machine may need to be temporarily blocked from the wind in order to start.*

Troubleshooting

1. If the burner does not start on the first attempt, allow the power-on sequence to cycle again.
2. If, after the second power-on sequence completes, the machine will not fire, move the power switch to the OFF position.
3. Wait another 20–30 minutes and attempt to start the machine again.

4.11 Starting the Machine

- Requirements**
- Machine properly positioned
 - Power connected
 - Pre-starting checks completed



WARNING

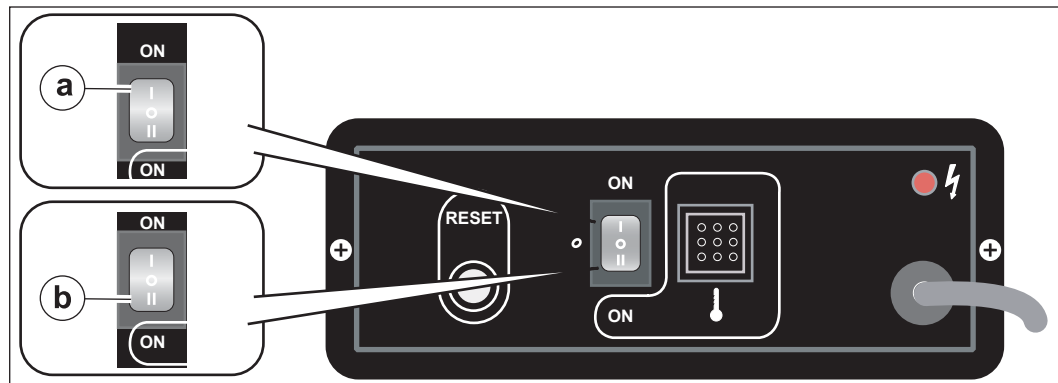
Burn hazard. The external surface of the machine and fuel filter may be hot.

- Wear safety gloves when handling the machine components.

Procedure

To start the machine, follow the procedure below.

1. Select an operation mode.
 - a. Continuous heat mode (I)
 - b. thermostat mode (II)



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Operational sequence

The following sequence of events will occur.

1. The burner blower will start.
2. The burner will start firing.
 - In applications in which the remote thermostat is not being used (I), the burner will fire continuously.
 - In applications in which the remote thermostat is being used (II), the burner will fire until the air temperature of the application area reaches the target temperature set by the remote thermostat. At that time, the burner will shut off. When the air temperature of the application area falls below the target temperature set by the remote thermostat, the burner will refire. The process continues as long as there is fuel for the burner.

4.12 Stopping

Procedure Follow the procedure below to stop the machine.

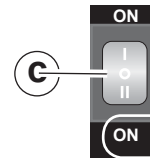


WARNING

Electric shock hazard. Electric power is still active at the blower even when the machine is turned OFF.

- Remove all electric power to the machine before servicing the machine.

1. Turn the operation mode switch to the OFF (0) position **(c)**.



Shut-down sequence

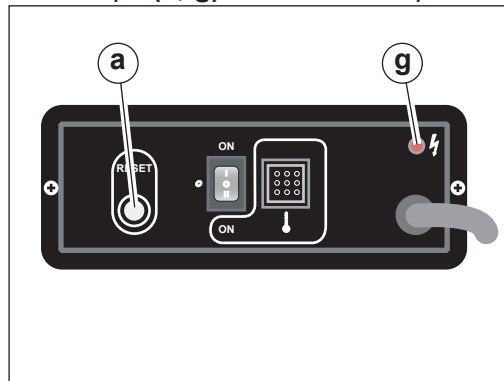
The following sequence of events will occur after turning the machine off.

1. The burner will shut down.
2. The blower will stop when the machine is sufficiently cool.

4.13 Operating Status Indicators

Overview

Two lamps **(a, g)** on the control panel display the operating status of the machine.



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Burner fault lamp

The burner fault lamp / reset button **(a)** is illuminated while the machine is operating.

- If the burner fault lamp / reset button is green, the machine is operating normally.
- If the burner fault lamp / reset button is red, the machine is in a burner lock-out state. The burner lock-out must be cleared before machine operation can resume.

To clear a burner lock-out, press and hold the burner fault lamp / reset button until the lamp goes out.

Power indicator

The power indicator **(g)** illuminates if the supply power is present.

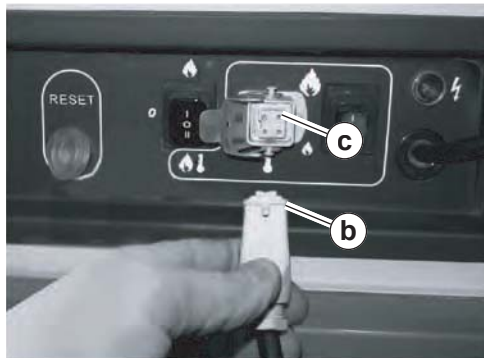
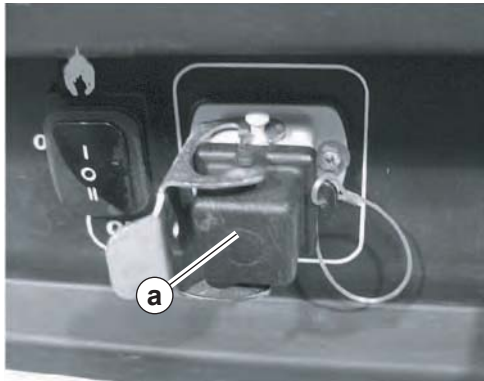
See *Basic Troubleshooting* or contact Wacker Neuson for additional help if necessary.

4.14 Installing and Using the Remote Thermostat

- Requirements**
- Remote thermostat
 - Pre-starting checks complete

Procedure Follow the procedure below to install and use the remote thermostat.

1. Remove the thermostat receptacle plug (a) from the control panel receptacle.
2. Connect the remote thermostat (b) to the control panel receptacle (c).
3. Set the sensor end (d) within the area to be heated.
4. Adjust the target temperature with the dial (e).



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Thermostat adapter

An adapter is available to convert the proprietary thermostat connection to an Edison plug-style connection for use with commonly available thermostats. This adapter can be purchased using Wacker Neuson part #5200007098.

NOTICE: The thermostat adapter is designed for use ONLY with a thermostat. To avoid damaging the machine, do not plug any other equipment into the thermostat adapter.

5 Burner Setup

5.1 Removing and Installing the Burner Assembly

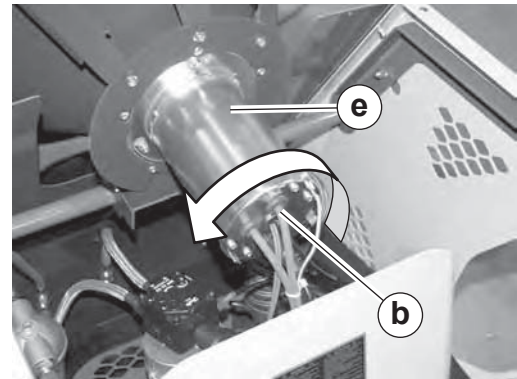
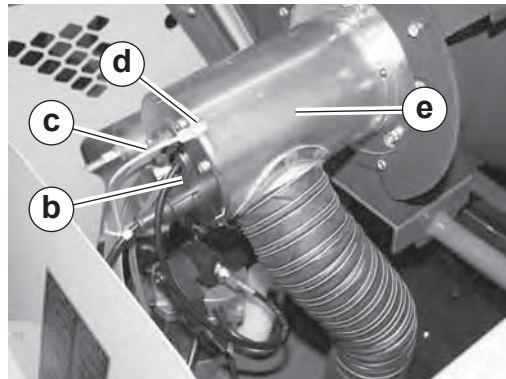
- Requirements**
- Machine shut down and cool
 - Machine properly positioned



CAUTION Hot surface hazard. The machine surfaces may be hot.
► Allow the machine to cool for a minimum of ten minutes before touching it.

Procedure Before performing any maintenance on the burner assembly, it must be removed from the machine. To remove or install the burner assembly, perform the following procedures.

- Removal**
1. Shut down the machine and allow it to cool.
 2. Disconnect the power cord.
 3. Remove the access panel. See *Removing the Access Panel*.



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4. Remove the screw (d) to disconnect the ground wire (c) from the burner assembly (b).
5. Rotate the burner assembly counter-clockwise and remove it from the flame head and air tube assembly (e).
6. Perform the required maintenance.

Note: Refer to the maintenance procedures in this manual.

7. Reinstall the burner assembly. Refer to the steps below to install the burner assembly.

- Installation**
1. Place the burner assembly into the flame head and air tube assembly.
 2. Rotate the burner assembly clockwise to lock into place.
 3. Install the ground wire using the screw (d).
 4. Reinstall the access panel.

5.2 Setting Up the Burner

Factory settings

Machine	Nozzle size	Fuel pressure		Air damper
		psi	bar	
HDR 155	0.85 (80°W) gph	174	12	2

5.3 Checking and Adjusting the Electrodes

- Requirements**
- Machine shut down
 - Power disconnected
 - Burner cool

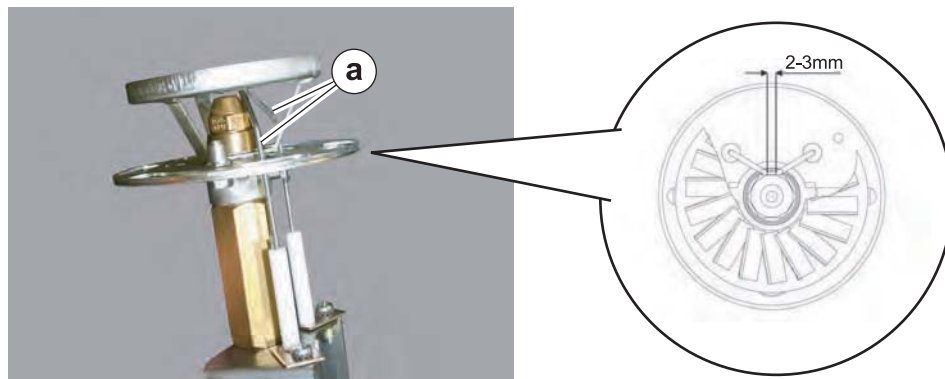
When to inspect

Inspect the electrodes on your machine every two weeks or after every 50 hours of operation. The condition of the electrodes will drastically affect your machine's ability to fire efficiently.

Procedure

Perform the procedure below to inspect or adjust the electrodes.

1. Remove the burner assembly. See topic *Removing and Installing the Burner*.
2. Inspect the condition of the electrode tips (**a**). Replace any damaged or worn electrodes.
3. Verify the electrode gap is set to the recommended measurement.



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Refer to the table below to determine the condition of the electrode tips.

Condition	Task
	None; ok as is
	None; ok as is
	Replace

5.4 Replacing the Burner Nozzle

When Replace the burner nozzle annually, or if it is damaged.

Requirements

- Machine shut down and cool to the touch
- Machine properly positioned



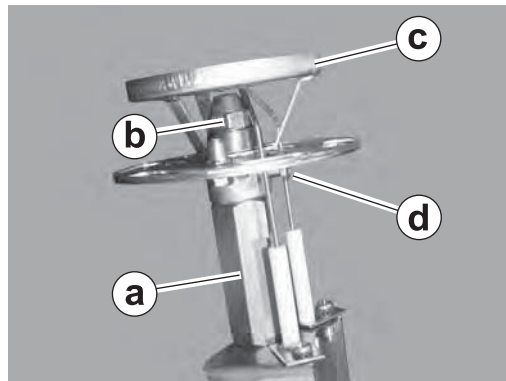
CAUTION

Hot surface hazard. The machine surfaces may be hot.

► Allow the machine to cool for a minimum of ten minutes before touching it.

Procedure To replace the burner nozzle, perform the following procedure.

1. Remove the burner. See topic *Removing and Installing the Burner Assembly*.
2. Loosen the screw **(d)** and remove the turbulator **(c)**.
3. Place an adjustable wrench on the nozzle base **(a)**.
4. Place another adjustable wrench on the nozzle **(b)**.
5. Rotate the nozzle counter-clockwise and remove it from the assembly.



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6. Install the new nozzle **(b)** onto the nozzle base **(a)**.
7. Tighten the nozzle **(b)** using an adjustable wrench. Rotate the wrench clockwise.
8. Re-install the turbulator **(c)** and tighten the screw **(d)**.
9. Reinstall the burner assembly. See topic *Removing and Installing the Burner Assembly*.

Result The burner nozzle has been replaced.

5.5 Adjusting the Air Damper

When Adjust the air damper when burner performance is in question.

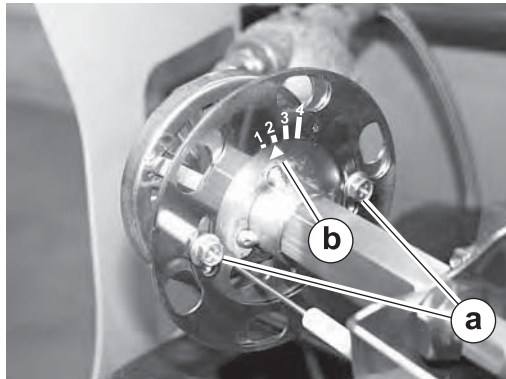
Factory settings Air damper: 2
Note: *This parameter is factory-set.*

Effects The air setting has the following effects on combustion.

- Higher O₂ percentage (excess air settings) lowers soot production but raises stack temperature and reduces efficiency: lean mixture.
- Lower O₂ percentage (inadequate air settings) increases efficiency and lowers stack temperature but may cause soot build-up: rich mixture.

Procedure Follow the procedure below to adjust the air damper.

1. Initial setting of the air damper should be performed with the machine shut down.
2. Remove the burner. See topic *Removing and Installing the Burner Assembly*.
3. Loosen the screws **(a)**.



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4. Using the position pointer **(b)** to determine position, rotate the air damper
 - to a higher number to decrease air volume.
 - to a lower number to increase air volume.
 5. Tighten the screws **(a)**.
 6. After the air damper has been adjusted, reinstall the burner. See topic *Removing and Installing the Burner Assembly*.
-

Result The air damper has now been adjusted.

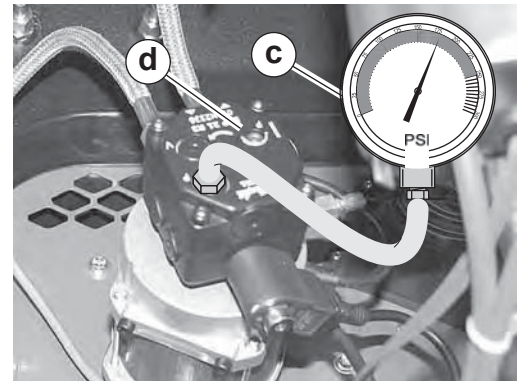
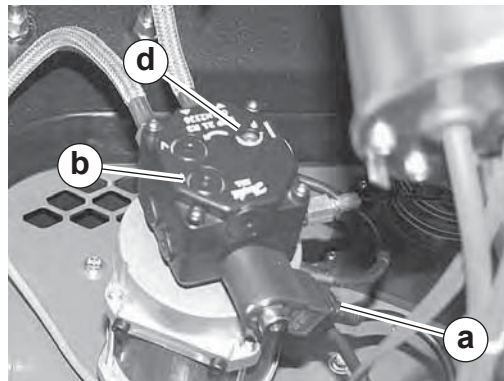
5.6 Checking and Adjusting the Fuel Pressure

When Check the fuel pressure if the machine emits smoke during operation.

- Requirements**
- Machine shut down and cool to the touch
 - Power disconnected
 - Fuel pressure gauge

Background The information below will show you how to check the fuel pressure on your machine. Incorrect fuel pressure will result in too much fuel, or too little fuel, to be supplied to the burner. This will cause the machine to smoke during operation.

- Procedure** To check and/or adjust the fuel pressure, carry out the following procedure.
1. Remove the access panel. See topic *Removing the Access Panel*.
 2. Disconnect the wire from the solenoid valve **(a)**.
 3. Remove the threaded plug **(b)** from the pressure test port using a hex key wrench. Set the plug aside to be re-installed later.



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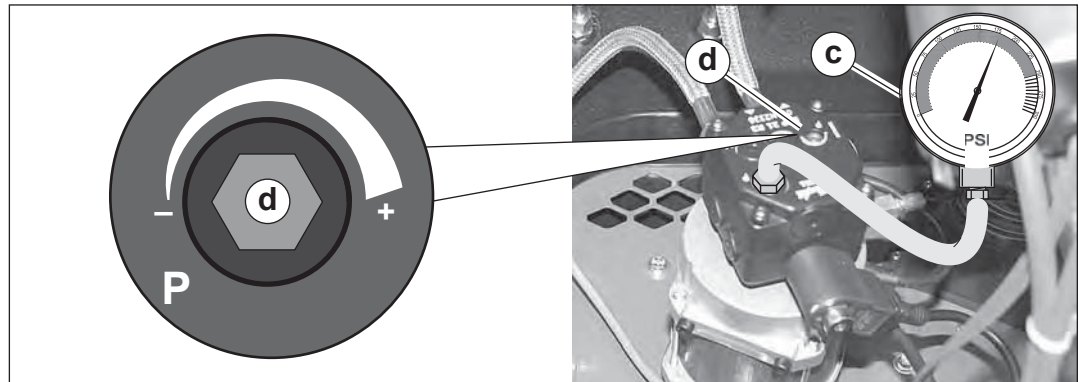
4. Install a pressure gauge with adapter **(c)** in the pressure test port.
5. Start the machine. See topic *Starting the Machine*.
6. Observe the fuel pressure setting during the first 15 seconds of operation. Refer to topic *Technical Data* for the recommended settings.

If	Then
The fuel pressure needs adjustment,	continue to step 7.
The fuel pressure is within specifications	skip to step 10.

Note: *The machine will shut down at this point and enter safety lock-out mode. This procedure continues on the next page.*

Continued from the previous page.

7. Adjust the fuel pressure using the adjusting screw **(d)**.
 - Clockwise increases fuel pressure
 - Counter-clockwise decreases fuel pressure



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NOTICE: Do not adjust the fuel pressure to a setting outside the operational parameters.

8. Press the reset button.
9. Repeat steps 5–6 to re-check the settings.
10. Remove the pressure gauge **(c)** from the pressure test port and re-install the threaded plug **(b)**.
11. Re-connect the solenoid wire.
12. Re-install the access cover.

Result

The fuel pressure has been adjusted.

6 Maintenance

6.1 Periodic Maintenance Schedule

Task	Interval* (Hours of service)			
	Daily ---	2 Weeks (50)	6 Months (1000)	Yearly (1200)
Inspect and clean the machine.	✓			✓
Inspect the fuel hoses.	✓			
Check fuel level and pressure.	✓			
Clean the fuel filter.		✓		
Inspect electrical components.			✓	
Replace the burner nozzle.				✓
Replace the fuel heater filter.				✓
Clean and check/adjust burner electrode settings; replace if necessary.	As needed or upon changing job sites; see chapter <i>Burner Setup</i> .			
* Use whichever comes first, calendar time or service hours.				

6.2 Inspecting and Cleaning the Machine

When Every 50 hours or as needed.

- Requirements**
- Machine shut down
 - Machine cool
 - Machine properly positioned
-



DANGER

Fire and explosion hazard. Residue from flammable materials such as solvents or gasoline could ignite and cause a fire or an explosion.

- ▶ Do not use flammable materials or solvents to clean the machine.
-



WARNING

Electric shock hazard. A machine with power connected can cause electric shock.

- ▶ Unplug the machine before servicing.
-



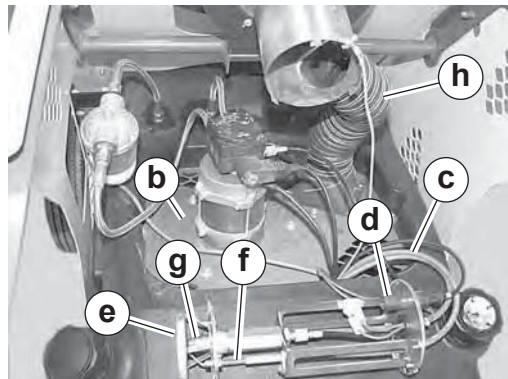
CAUTION

Hot surface hazard. The external surface of the machine or fuel filter canister may be hot.

- ▶ Allow the machine to cool before servicing.
-

The following internal components of the machine require regular cleaning to maintain optimum performance.

- ☐ Enclosure (all areas must be free of dirt and debris)
- ☐ Ventilator **(b)**
- ☐ High-tension connectors **(c)**
- ☐ CAD (Cadmium) cell **(d)**
- ☐ Flame head **(e)**
- ☐ Electrodes **(f)**
- ☐ Burner nozzle **(g)**
- ☐ Air tube **(h)**



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Procedure Perform the procedure below to clean the interior components of the machine.

1. Remove the access cover. See topic *Removing the Access Panel*.
 2. Use compressed air to clean the enclosure and ventilator (b).
 3. Inspect and clean the high-tension connectors and wires (d). Replace any damaged or worn components.
 4. Remove the burner assembly. See topic *Removing and Installing the Burner Assembly*.
 5. Check/clean the CAD cell. See topic *Inspecting and Cleaning the CAD Cell*.
 6. Check electrodes. See topic *Checking and Adjusting the Electrodes*.
 7. Check the burner nozzle. See topic *Replacing the Burner Nozzle*.
-

Result The machine has been cleaned.

6.3 Removing the Access Panel

- Requirements**
- Machine shut down and cool
 - Machine properly positioned



CAUTION

Hot surface hazard. The machine surfaces may be hot.

- Allow the machine to cool for a minimum of ten minutes before touching it.

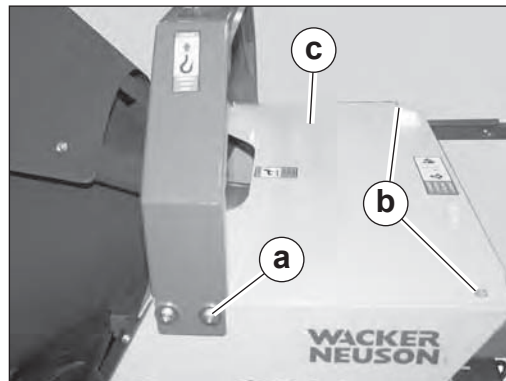
Overview

Your machine is equipped with removable access panels. The access panels must be removed in order to maintain and repair certain machine components such as the burner, electric motor, and fuel pump.

Procedure

Follow the procedure below to remove the access panel.

1. Shut down the machine and allow it to cool.
2. Disconnect the power cord from the power source.
3. Remove the four bolts that fasten the lift bar **(a)**, remove the lift bar, and set it aside.
4. Remove the four screws **(b)** that fasten the access panel **(c)**, remove the panel and set it aside.



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5. Perform the required maintenance.
6. When maintenance is complete, re-install the access panel and fasten it with the screws.

6.4 Replacing the Fuel Heater Filter

Requirement Machine shut down and cool



CAUTION Hot surface hazard.

The external surface of the fuel filter canister may be hot.

- ▶ Allow the machine to cool before servicing.



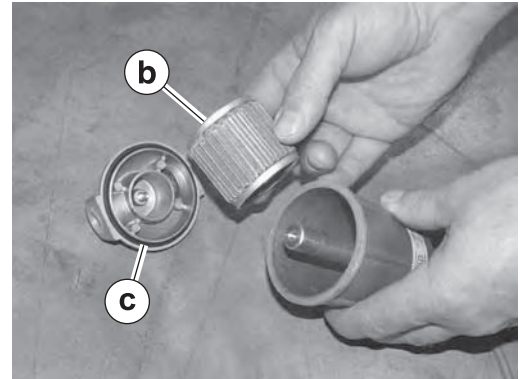
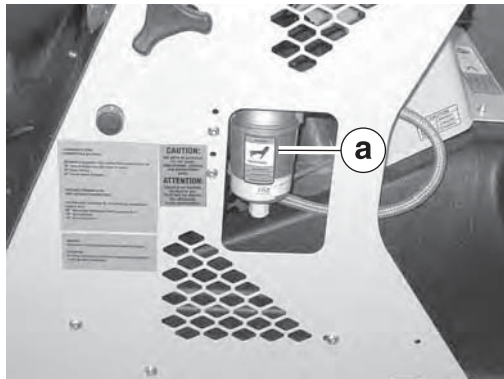
WARNING Hot fluids.

The fuel inside the fuel filter canister may be hot.

- ▶ Wear safety glasses.

Procedure Follow the procedure below to change the fuel heater filter.

1. Shut down the machine and allow it to cool.
2. Remove the screw that secures the cover to the housing (**a**).



wc_gr010015

3. Remove the filter (**b**).
4. Inspect the O-ring (**c**). Replace it if it is cracked, damaged, or deformed.
5. Install the new filter.
6. Re-install the cover.

Result The procedure to replace the fuel heater filter is now complete.

6.5 Inspecting and Cleaning the Cadmium (CAD) Cell

- Requirements**
- Machine shut down and cool to the touch
 - Machine properly positioned



CAUTION

Hot surface hazard. The machine surfaces may be hot.

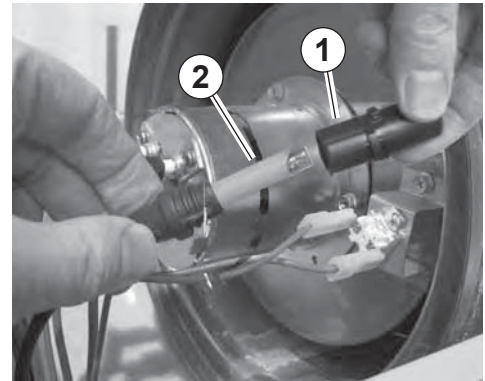
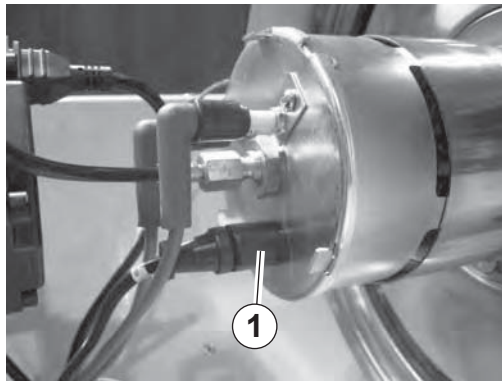
- Allow the machine to cool for a minimum of ten minutes before touching it.

When

Inspect and clean the CAD cell as needed, or while performing other scheduled maintenance procedures.

To inspect and clean the CAD cell, carry out the following procedure.

1. Remove the access panel. See topic *Removing the Access Panel*.
2. Twist and pull out the plastic protective holder **(1)** off the base of the burner assembly. The CAD cell **(2)** is inside this plastic holder.



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3. Inspect the CAD cell for cleanliness. Be sure the cell is free of debris or soot.
4. Clean the CAD cell if necessary.

NOTICE: Do not use solvents or liquids to clean the CAD cell; use a soft dry cloth.

5. Reinstall the plastic protective holder onto the base of the burner assembly.

Result

The CAD cell is now clean.

6.6 Inspecting the Flame Head

- Requirements**
- Machine shut down and cool to the touch
 - Machine properly positioned



CAUTION

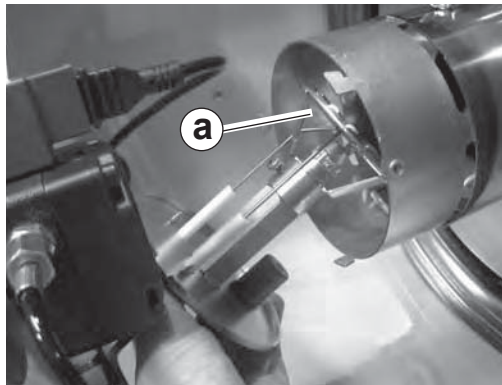
Hot surface hazard. The machine surfaces may be hot.

- Allow the machine to cool for a minimum of ten minutes before touching it.

When Inspect the flame head prior to the first seasonal use, during regular maintenance, and as needed.

Procedure To inspect the flame head (a), carry out the following procedure.

1. Remove the access panel. See topic *Removing the Access Panel*.
2. Remove the burner assembly. See topic *Removing and Installing the Burner Assembly*. The flame head is attached.



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3. Inspect the flame head for the following:
 - Wear. Replace if necessary.
 - Cleanliness. Clean the flame head if necessary.
 - Thermal stress. Replace if necessary.
4. Re-install the burner assembly. See topic *Removing and Installing the Burner Assembly*.

6.7 Inspecting the Electrical Connections

After disconnecting the power cord, check all electrical connections for the following:

- Proper connections. Be sure that all connections are complete and tight.
- Corrosion. Clean or replace if necessary.
- Damaged wires/connectors. Replace if necessary.
- Proper ground.

6.8 Long Term Storage

Introduction	Extended storage of equipment requires preventative maintenance. Performing these steps helps to preserve machine components and ensures the machine will be ready for future use. While not all of these steps necessarily apply to this machine, the basic procedures remain the same.
When	Prepare your machine for extended storage if it will not be operated for 30 days or more.
Preparing for storage	<p>Follow the procedures below to prepare your machine for storage.</p> <ul style="list-style-type: none">■ Complete any needed repairs.
Stabilizing the fuel	<p>After completing the procedures listed above, fill the fuel tank completely and add a high-quality stabilizer to the fuel.</p> <ul style="list-style-type: none">■ Choose a stabilizer that includes cleaning agents and additives designed to coat/protect the cylinder walls.■ Make sure the stabilizer you use is compatible with the fuel in your area, fuel type, grade and temperature range. Do not add extra alcohol to fuels which already contain it (for example, E10).■ Use a stabilizer with a biocide to restrict or prevent bacteria and fungus growth.■ Add the correct amount of stabilizer per the manufacturer's recommendations.
Storing the machine	<p>Perform these remaining steps to store your machine.</p> <ul style="list-style-type: none">■ Wash the machine and allow it to dry.■ Move the machine to a clean, dry, secure storage location. Block or chock wheels to prevent machine movement.■ Use touch-up paint as needed to protect exposed metal against rust.■ Cover the machine. Tires and other exposed rubber items should be protected from the weather. Either cover them or use a readily available protectant.

7 Basic Troubleshooting

Note: The following symptoms and remedies are some of the more common issues that have arisen during the history of these machines. These do not represent all the possibilities. If you need advanced troubleshooting assistance, please contact Wacker Neuson Product Support.

Problem	Cause	Remedy
Motor does not start, no ignition	Electrical current is not present	Check the electrical supply connection.
		Check proper positioning and functioning of switch.
		Check fuse.
	Control setting is below ambient temperature (main, thermostat, or other control)	Check setting of heater control. If thermostat, make sure selected temperature is higher than room temperature.
	Thermostat or other control is malfunctioning	Replace control device.
	Electric motor is malfunctioning	Replace electric motor.
	Electric motor bearings are malfunctioning	Replace electric motor.
Motor starts, no ignition, or cuts out	Electric igniter is malfunctioning	Replace condenser.
		Check connection of high-tension leads to electrodes and transformer.
		Check electrodes setting.
		Check electrodes for cleanliness.
	Burner controller is malfunctioning	Replace high-voltage transformer.
		Replace control box.
		Replace photocell.
		Check condition of motor-pump plastic coupling.
		Check fuel line system including fuel filter for possible leaks.
		Clean or replace oil nozzle.

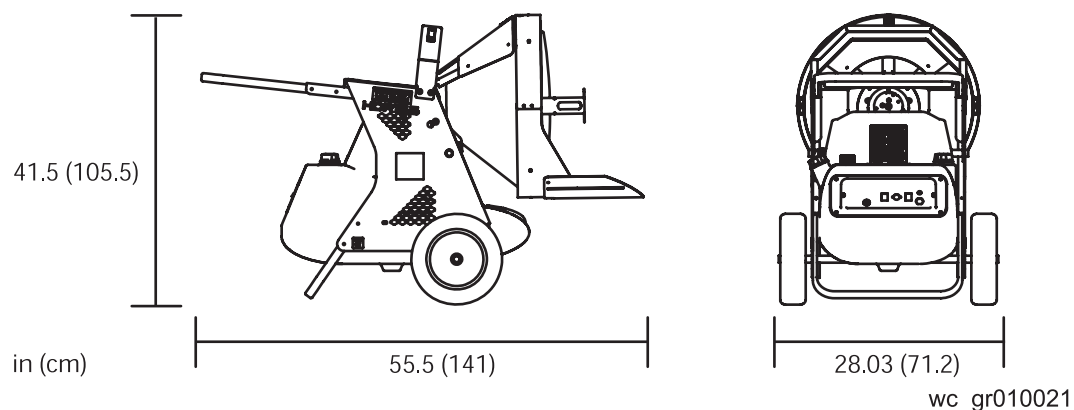
Problem	Cause	Remedy
Motor starts, heater emits smoke	Air supply is insufficient	Make sure air inlet and outlet are unobstructed.
		Check setting of combustion air flap.
		Clean burner disc.
	Air supply is overly sufficient	Check setting of combustion air flap.
	Fuel is contaminated	Replace fuel.
		Clean or replace oil filter.
	Air leaks present in fuel circuit	Check fuel line and filter for possible leaks.
	Fuel supply is insufficient at burner	Check pump pressure.
		Clean or replace fuel nozzle.
	Fuel supply is overly sufficient at burner	Check pump pressure.
		Replace nozzle.
Heater does not stop	Solenoid malfunctioning	Replace solenoid coil or entire solenoid.

8 Technical Data

8.1 Machine

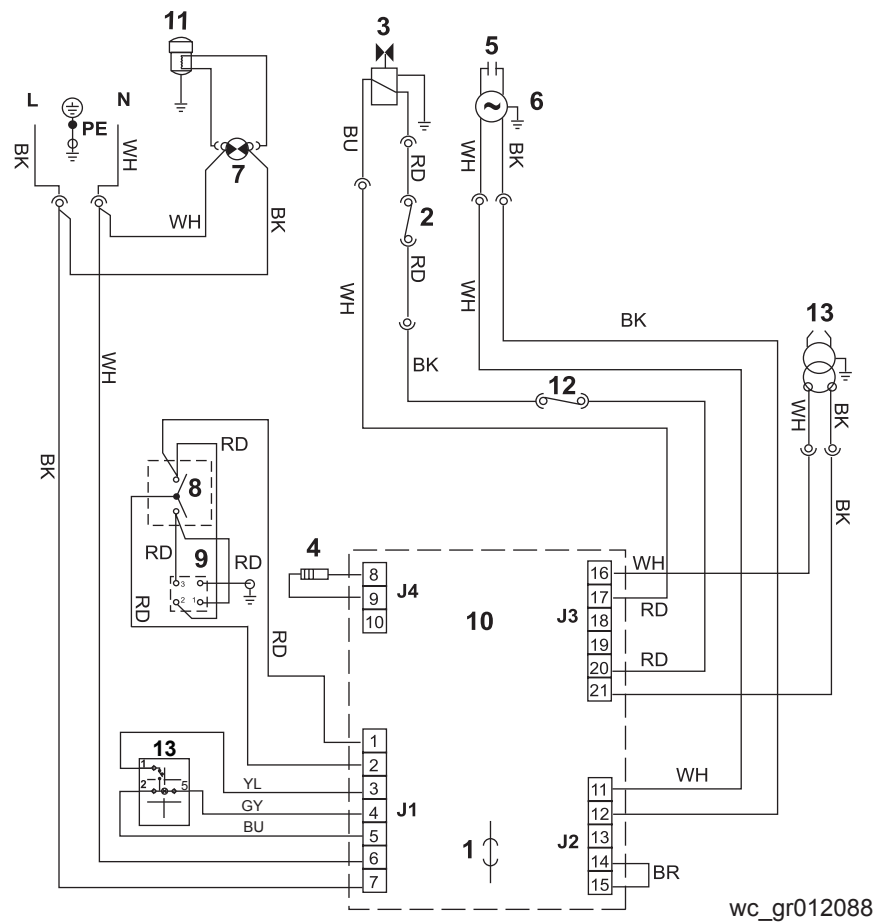
Model		HDR 155 - 5200007530
	Units	
Max. heat output	BTU/h	154,000
Fuel pressure	psi	174
Fuel consumption	gal/h (L/h)	1.1 (4.16)
Power supply	Φ/V/Hz	1/120/60
Power consumption	W	440
Fuel tank capacity	gal/L	17.17 (65)
Noise level at 1m	dBA	72
Weight	lb(kg)	180 (81.6)

8.2 Dimensions



9 Schematics

9.1 HDR 155



Ref	Description	Ref	Description
1	Fuse	8	Control
2	Overheat thermostat	9	Remote thermostat plug
3	Solenoid valve	10	Control box
4	CAD cell	11	Heated fuel filter
5	Capacitor	12	Tip switch
6	Fan motor	13	Reset switch
7	Electric pilot lamp	—	—

Wire Colors							
BK	Black	RD	Red	YL	Yellow	OR	Orange
GN	Green	TN	Tan	BR	Brown	PU	Purple
BU	Blue	VIO	Violet	CL	Clear	SH	Shield
PK	Pink	WH	White	GY	Gray	LB	Light blue

Important: For spare parts information, please see your Wacker Neuson Dealer, or visit the Wacker Neuson website at <http://www.wackerneuson.com/>.

Wichtig! Informationen über Ersatzteile erhalten Sie von Ihrem Wacker Neuson Händler oder besuchen Sie die Wacker Neuson Website unter <http://www.wackerneuson.com/>.

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Wacker Neuson Produktion GmbH & Co. KG, Preußenstraße 41, D-80809 München,

Tel.: +49-(0)89-3 54 02-0 Fax: +49 - (0)89-3 54 02-390

Wacker Neuson Production Americas LLC, N92W15000 Anthony Ave., Menomonee Falls, WI. 53051

Tel.: (262) 255-0500 Fax: (262) 255-0550 Tel.: (800) 770-0957

Wacker Neuson Limited - Room 1701-03 & 1717-20, 17/F. Tower 1, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hongkong. Tel: (852) 3605 5360, Fax: (852) 2758 0032