

DDG 1220

User Manual

“BEAST”



DYNAMIC**DIAMOND**
TOOLING

www.DynamicDiamondTooling.com

DYNAMICDIAMOND TOOLING

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To our valued Customer,

Congratulations on your decision to purchase a Dynamic Diamond Grinder (DDG). You have purchased a diamond grinder that has proven itself as a solid and reliable machine. Thank you for your purchase.

Our goal at Dynamic Diamond Tooling is to provide you with excellent customer service and timely shipping for any parts or supplies that you may need. Our Sales team is available Monday to Friday from 8:30am to 5:00pm for any questions, troubleshooting or support.

On behalf of the entire DDT team, we thank you for your valued business and we look forward to servicing your tooling and equipment needs.

Sincerely,

Ron Yagur

Pat Pollitt

Important Information

This User Manual is only to be used with the DDG 1220. The DDG 1220 may only be used for grinding horizontal surfaces approved by Dynamic Diamond Tooling.

If the DDG 1220 is used for other purposes or handled in ways other than that described in this User Manual, Dynamic Diamond Tooling disclaims all responsibility and machine warranty is voided.

Read the User Manual before using the DDG 1220 floor-grinding machine. Pay special attention to the safety information and operation of the machine. Maintenance/repair, spare parts, and grinding plates that are to be used on the DDG 1220 must be approved by Dynamic Diamond Tooling.

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1. Specifications

1.1 Electrical Specifications

The DDG 1220 is available with different power supplies. The table below lists the various power supplies that are available according to your needs.

The specifications for your machine are listed on the inside of the inverter cabinet.



Always connect the DDG 1220 to the voltage and number of phases that is specified for your machine. Failure to do so will cause damage to your machine.

Model	1220/1	1220/2	1220/3	1220/4
Power Supply	230 V / 3 Phase	230 V / Single Phase	440 V / 3 Phase	440 V / 3 Phase
Voltage	208 - 240 V	208 - 240 V	420 - 480 V	380 - 410 V
Current	17.9 A	17.9 A	8.97 A	10.5 A
Frequency	60 Hz	60 Hz	60 Hz	50 Hz
Motor	5.5 kW (7.5 hp)	5.5 kW (7.5 hp)	5.5 kW (7.5 hp)	5.5 kW (7.5 hp)
Breaker Fuse	30 A	50 A	30 A	30 A

Table 1-1 Electrical specifications

If using a generator, see 2.4.2 “Using a Generator”

1.2 Mechanical Specifications

Model	DDG 1220
Grinding Diameter	292 mm (11.5”) / 490 mm (19.25”)
Grinding Plate Diameter	280 mm (11”) / 476 (18.75”)
Grinding Plate Speed	575 – 1800 RPM
Weight	159 Kg (350 lbs.)

Table 1-2 Mechanical specifications

DDG 1220 Dimensions

Length	1588	mm	(62.50”)
Width	464	mm	(18.25”)
Height	1200	mm	(47.25”)

Table 1-3 Machine dimensions

1.3 Tooling

The DDG 1220 must be fitted with tooling plates approved by Dynamic Diamond Tooling. See “Grinding Guide” for available tooling plates and tooling for the DDG 1220.

2. Safety Information



Please read this entire owner’s manual. Failure to comply with safety information may result in serious injury or damage to the machine.

2.1 Legend

	<p style="text-align: center;">ELECTRICAL SAFETY</p> <p style="text-align: center;">Failure to comply may result in personal injury or damage to equipment</p>
	<p style="text-align: center;">CAUTION</p> <p style="text-align: center;">Failure to comply with an operating procedure, technique, etc., may result in damage to equipment if not carefully followed.</p>
	<p style="text-align: center;">WARNING</p> <p style="text-align: center;">Failure to comply with an operating procedure, technique, etc., that may result in personal injury and/or damage to equipment if not carefully followed.</p>
	<p style="text-align: center;">HEALTH HAZARD</p> <p style="text-align: center;">Dust Forms when grinding and can cause injuries if inhaled. Use an approved breathing mask. Always ensure good ventilation.</p>
	<p style="text-align: center;">ALWAYS USE</p> <p style="text-align: center;">Approved protective helmet, approved hearing protection, protective goggles or a visor, protective dust mask or respirator.</p>

2.2 Safety Precautions

The DDG 1220 must be used in accordance with the safety information provided. Failure to comply with this manual may cause personal injury and/or damage to the machine.

- Never operate the machine unless it is in the upright position.
- Ensure that there is no debris present in the work area.
- Check the work area surface for screws or other hard objects that may be in the concrete floor. Such objects must be removed prior to using the machine.
- Modifications, add-ons and changes to the machine must not be made. This will void the manufacturer’s warranty and can potentially cause injury to personnel and/or damage to the machine.
- All safety devices must be in operation and adherence to safety regulations must be followed at all times.
- Spare parts must comply with the technical requirements as specified by the manufacturer.
- Intervals for recurring checks and inspections as specified in this owner’s manual must be complied with.

2.3 Maintenance and Repair Qualification

Maintenance and repair of the machine must only be made by a Dynamic Diamond Tooling certified service technician or authorized representative.

2.4 Electrical Safety



The electrical power source must be equipped with fuses as specified in the “*Electrical Specifications*” (Table 1-1). All cables must be marked and rated according to the fuses used.

Never connect the machine to a power source that does not provide protective earth.

Work on electrical equipment should only be undertaken by a skilled electrician or by a trained person under the supervision of a skilled electrician as well as in accordance with local electrical regulations.

Use extension cables that are used for extending the main cable and are sized and marked in accordance with the overall power consumption of the machine.

Use tools that are insulated against electricity.

2.4.1 Electrical Cables

Only use cables that are marked and rated according to the specifications in “*Electrical Specifications*”(Table 1-1). Do not use excessive length of electrical cables. Never lay the cable in a loop when operating the machine, this will cause the cable to heat up and may cause a fire. See “*Figure 2-1*” for explanation.

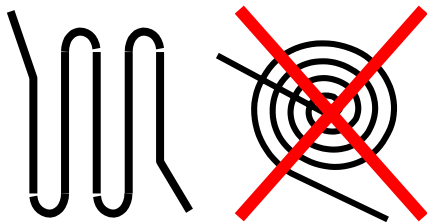


Figure 2-1 Recommended way to handle excessive cable length

2.4.2 Using a Generator



It is imperative to ensure that the Generator Voltage/Phase Selector switch is correctly matched to the machine voltage/phase as shown in the “*Electrical Specifications*” (Table 1-1).

2.5 Definition of “SAFETY POWER OFF” position

The machine is secured in a safe condition and cannot present a hazard.

How to set the machine in the SAFETY POWER OFF position:

1. Switch off the machine
2. Wait for all grinding drives to come to a complete stop
3. Disconnect the main power
4. Secure against unintended restart



Always disconnect the main power at the machine end to be able to prevent other persons from accidentally reconnecting the main power while working on the machine.

2.6 Safety regarding maintenance

Set the machine to the “SAFETY POWER OFF” position before beginning any work/maintenance on the machine.



When the machine has been operated, the tooling and tooling plate along with other parts in the drum may be hot. Take extra care to prevent burn injuries.



The machine must not be connected to any power source while cleaning.

2.7 Safety regarding transport



It is recommended to transport the machine with diamond tooling installed. This will prevent the bottom plate from being damaged during transport.

3. Machine Overview

3.1 Machine Overview – Right Side



Figure 3-1 Machine overview – Right Side

Item	Description
1	Handle
2	Power Supply Inlet
3	Vacuum Inlet
4	Inverter
5	Grinding Head Swivel Lock
6	Wheel

Item	Description
7	Grinding Head Adjustment Bolt
8	Floating Dust Shroud with Rubber Skirt
9	Operator Control Panel
10	Motor
11	Grinding Head Alignment Indicator
12	Grinding Head Lock Bolt

3.2 Machine Overview – Left Side

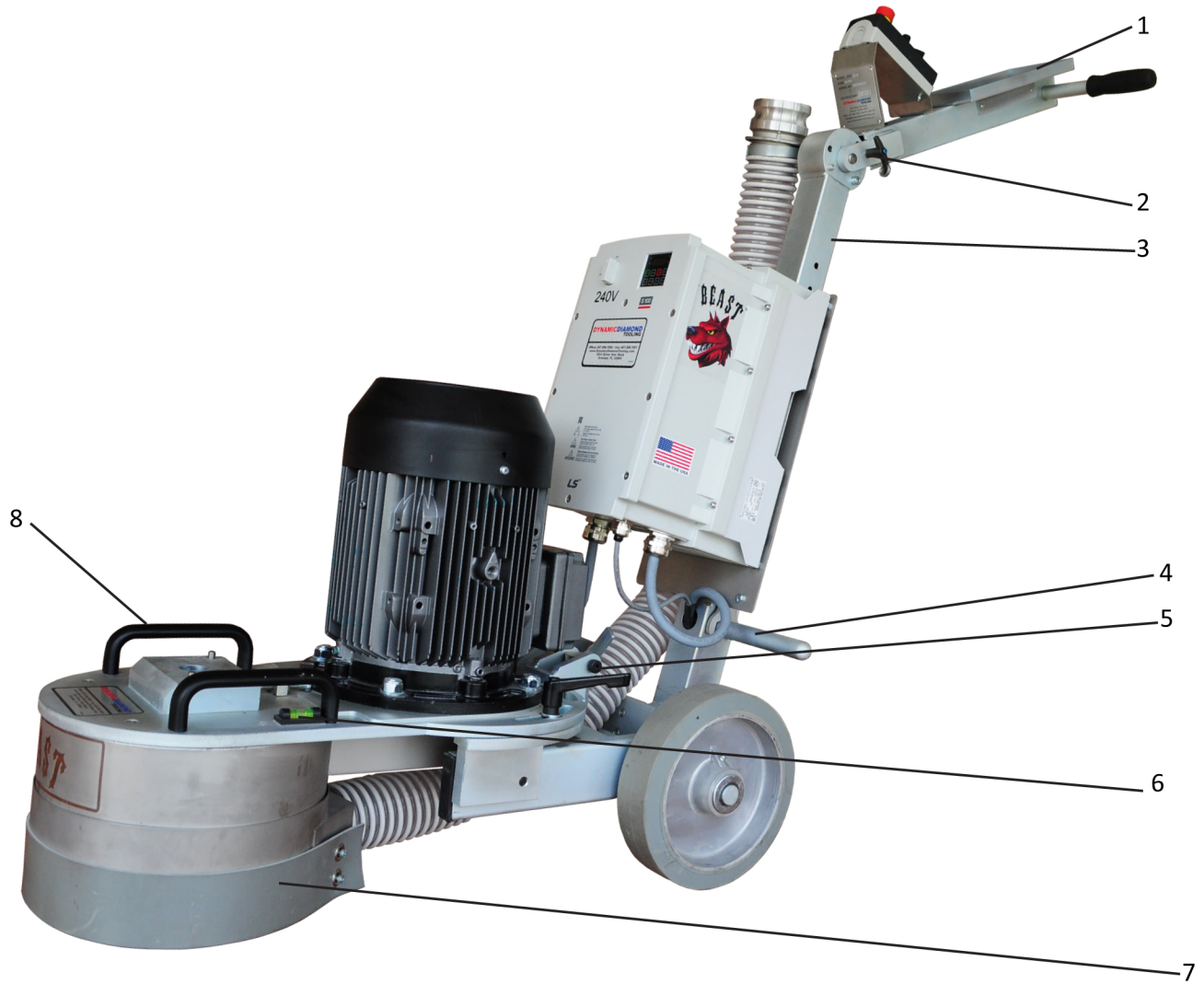


Figure 3-2 Machine overview – Left Side

Item	Description
1	Tray
2	Handle Tilt Adjustment
3	Handle Height Adjustment
4	Foot Hold to Tilt Machine back
5	Grinding Head Level Adjustment Bolt
6	Grinding Head Level Indicator
7	Grinding Head
8	Transport Handle

4.1 Controls and Indicators

4.1.1 Operator Control Panel

The operator control panel is ergonomically fitted so as to provide the operator with the necessary controls to operate the machine at an arms reach.

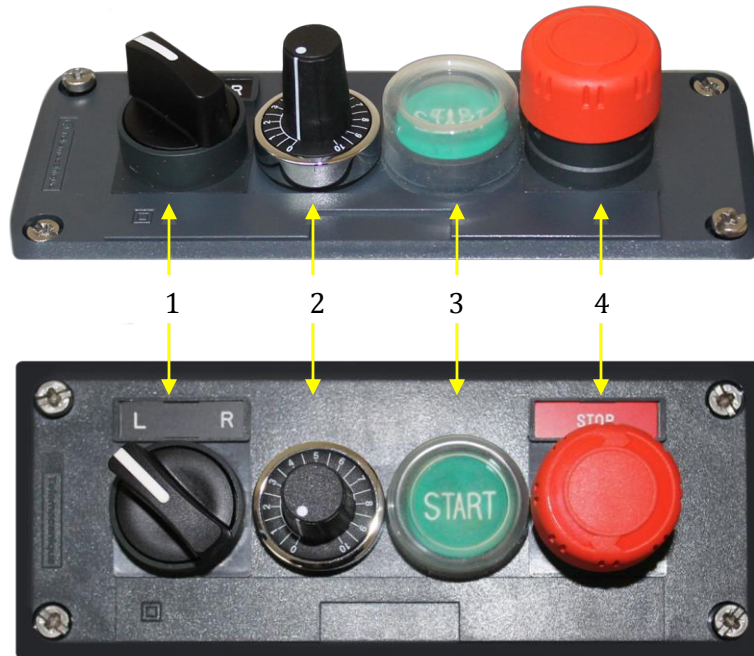


Figure 4-1 Control Panel

Item	Text	Description
1	L/R	Selects rotation direction
2	SPEED CONTROL	Speed of rotation
3	START	Starts the machine
4	STOP	Stops the machine

Table 4-1 Description of the Control Panel

BEAST DDG 1220P PROPANE



3. Machine Overview

3.1 Machine Overview – Right Side

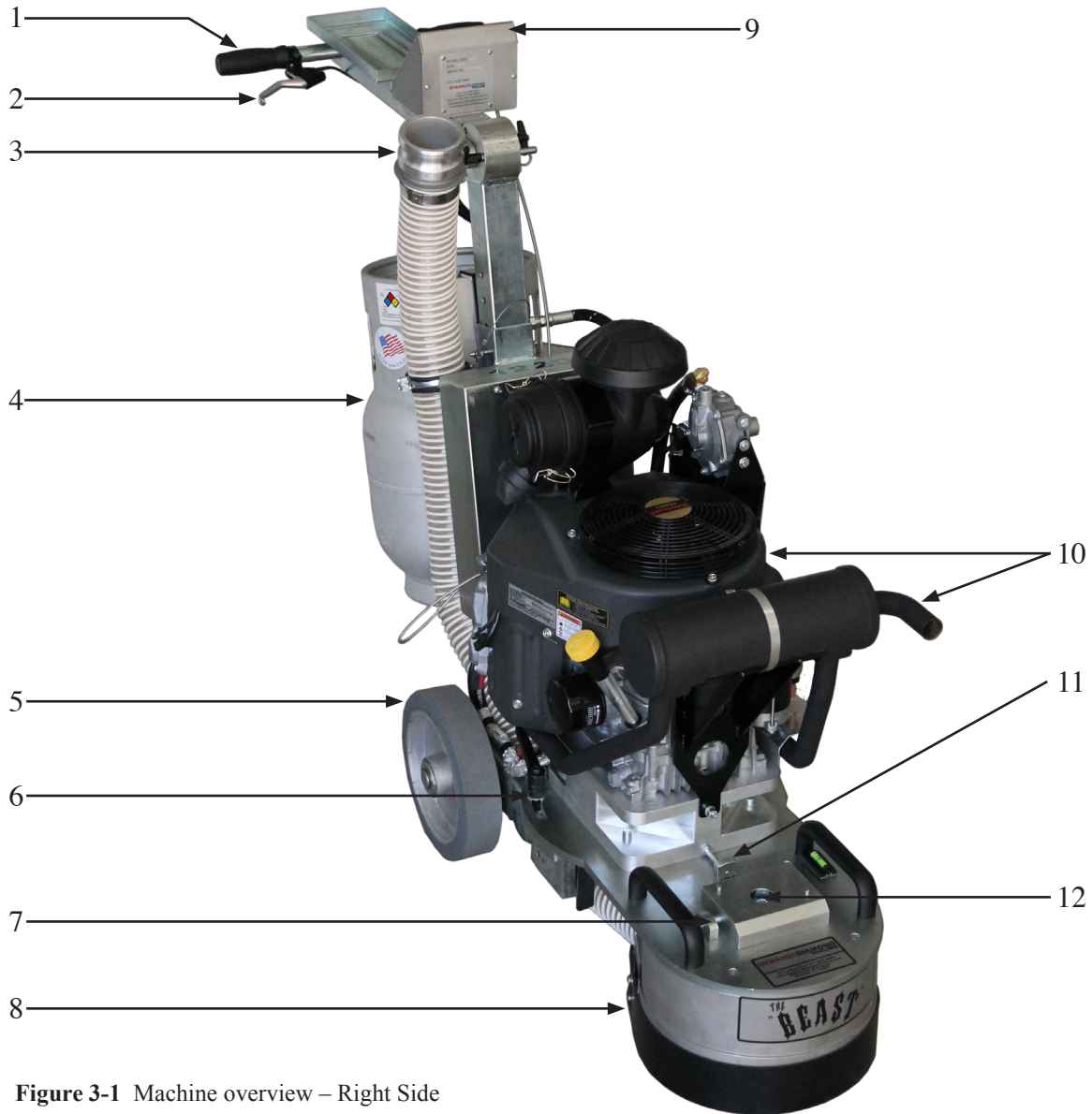


Figure 3-1 Machine overview – Right Side

Item	Description
1	Handle
2	Clutch
3	Vacuum Inlet
4	Propane Tank
5	Wheel
6	Grinding Head Swivel Lock

Item	Description
7	Grinding Head Adjustment Bolt
8	Floating Dust Shroud with Rubber Skirt
9	Operator Control Panel
10	Motor & Catalytic Converter
11	Grinding Head Alignment Indicator
12	Grinding Head Lock Bolt

3.2 Machine Overview – Left Side

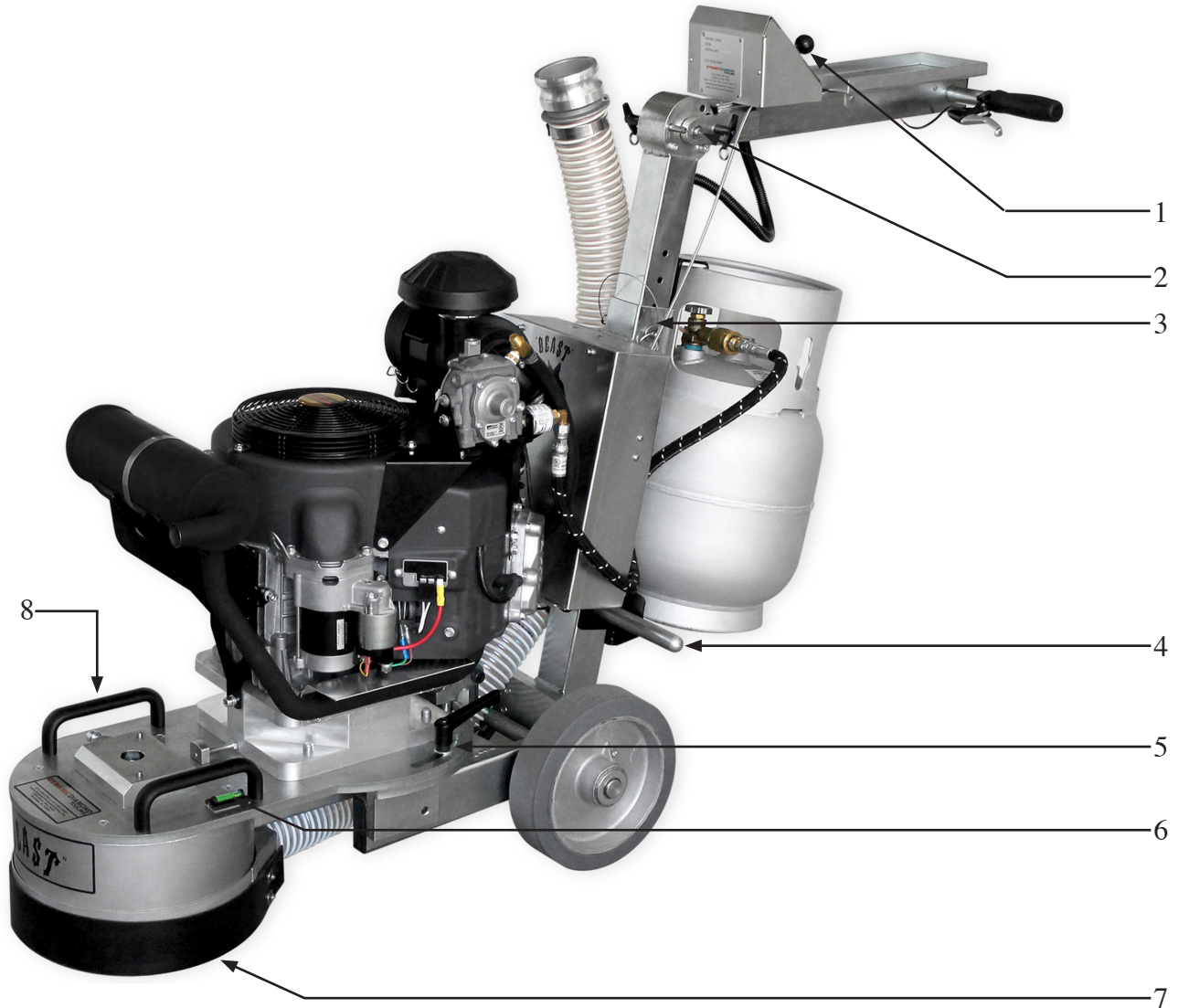


Figure 3-2 Machine overview – Left Side

Item	Description
1	Throttle Control
2	Handle Tilt Adjustment
3	Handle Height Adjustment
4	Foot Hold to Tilt Machine back
5	Grinding Head Level Adjustment Bolt
6	Grinding Head Level Indicator
7	Grinding Head
8	Transport Handle

4.1 Controls and Indicators

4.1.1 Operator Control Panel

The operator control panel is ergonomically fitted so as to provide the operator with the necessary controls to operate the machine at an arms reach.

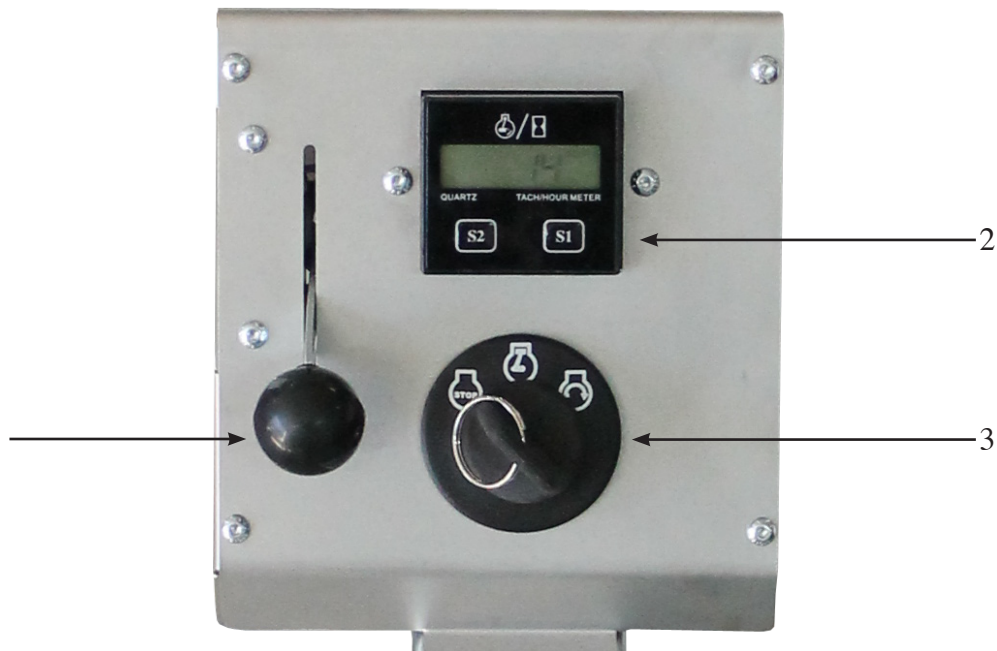


Figure 4-1 Control Panel

Item	Description
1	Throttle Control
2	Tach & Hour -ometer
3	Key Start On & Off

Table 4-1 Description of the Control Panel

4.2 Operation of Machine

4.2.1 Dust Shroud Installation

How to install the 12" shroud

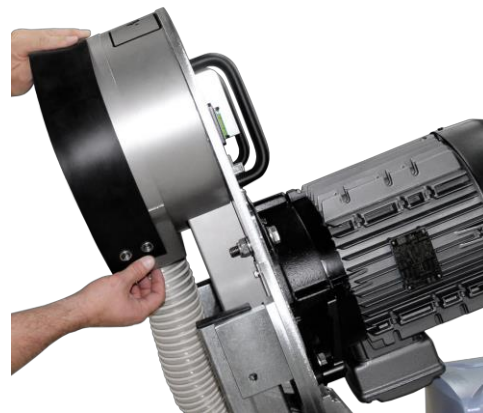
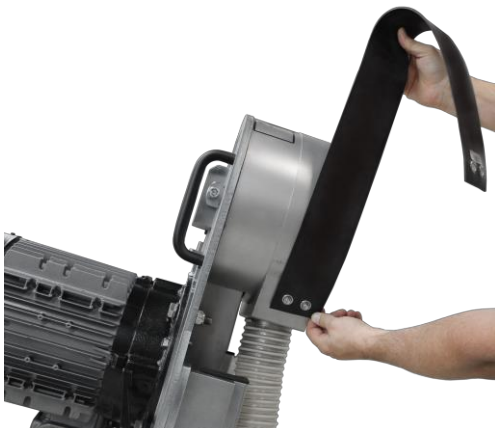
- Secure 3" hose to dust port inlet on shroud
- Place shroud over grinding head casing



Rubber Dust Shroud Installation

How to install the 12" rubber dust shroud

- Secure rubber shroud holes onto shroud pins on shroud
- Pull the rubber dust shroud over the grinding head casing and secure onto shroud pins on opposite side of shroud



How to install the 20" shroud

- Secure 3" hose to dust port outlet on shroud
- Place shroud over grinding head casing
- Secure 20" shroud with T-Bolt lock



4.2.3 Head Leveling System

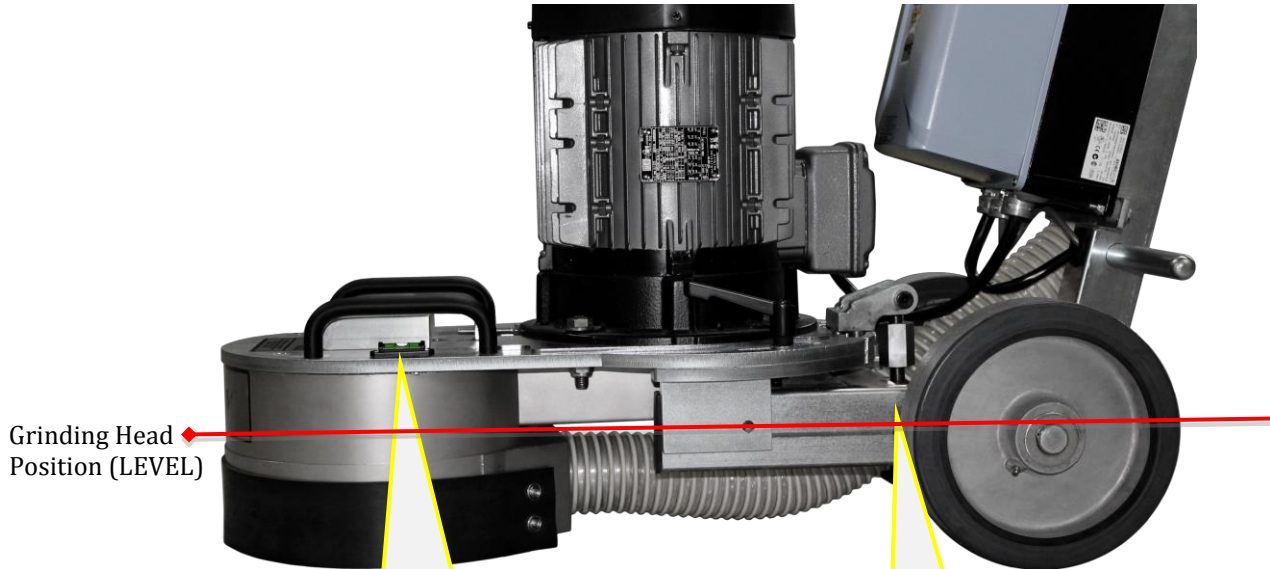
Description

The DDG 1220 is incorporated with a Head Leveling System. Its primary purpose is to keep the grinding head level with the grinding surface when using a variety of tooling. The grinder is fitted with a level on the grinding head in order to show if an adjustment is needed. Leveling the grinding head is achieved by adjusting the Head Leveling Adjustment Nut until the level indicator bubble is centered.

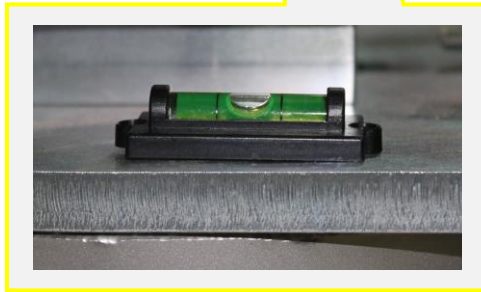
How to adjust the level of the Grinding Head

1. Fit the machine with the tooling you desire.
2. Check to see if the level indicator is indicating a level position (bubble centered).
3. If an adjustment is needed, use the adjustment wrench (included and found by the foot hold) and adjust the Head Leveling Adjustment Nut so as to center the bubble in the level indicator.

Head Leveling System Grinding Head Shown in **LEVEL** position



Grinding Head
Position (LEVEL)



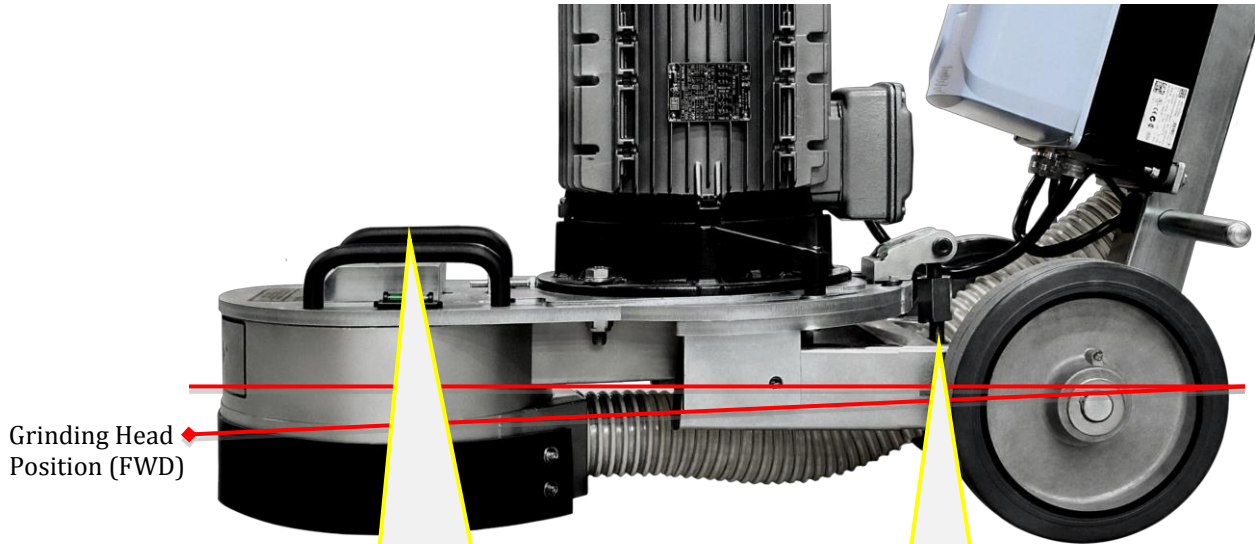
Grinding Head shown Level
depicted by *level bubble* in
centered position.



Grinding Head Leveling Adjustment
Nut shown in the adjusted position
in order to level the grinding head.

Head Leveling System

Grinding Head Shown in **FORWARD** position



Grinding Head
Position (FWD)

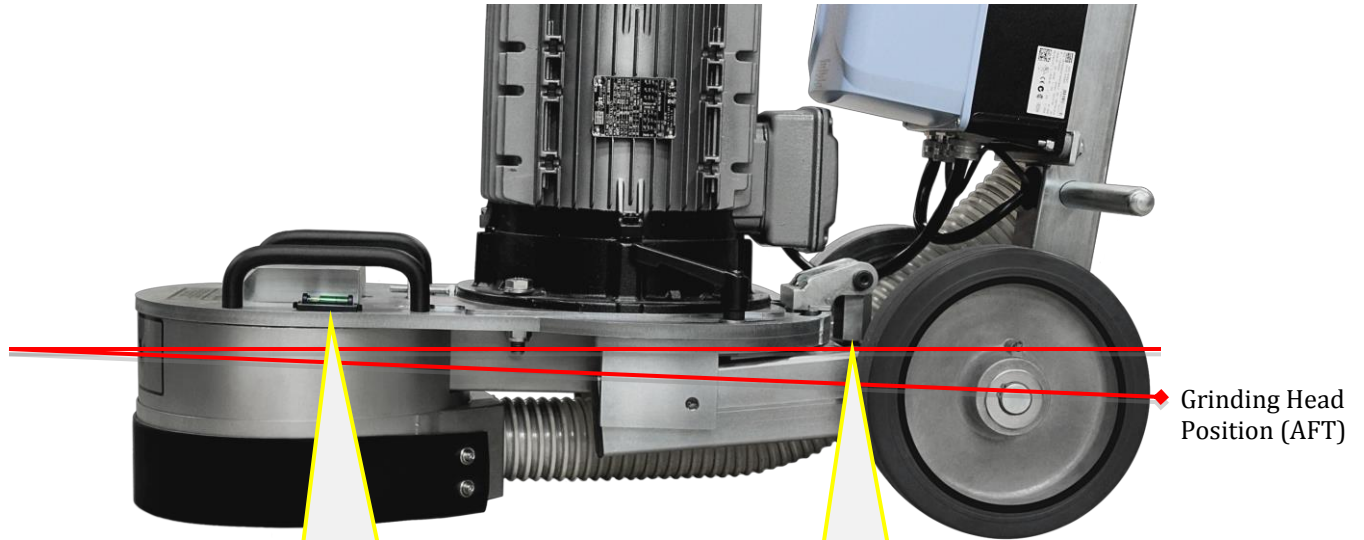


Grinding Head shown in a forward tilt position depicted by *level bubble* in AFT position.



Grinding Head Leveling Adjustment Nut shown adjusted in a forward position depicted by adjustment nut being fully extended.

Head Leveling System Grinding Head Shown in AFT position



Grinding Head shown in an AFT tilt position depicted by *level bubble* in FWD position.

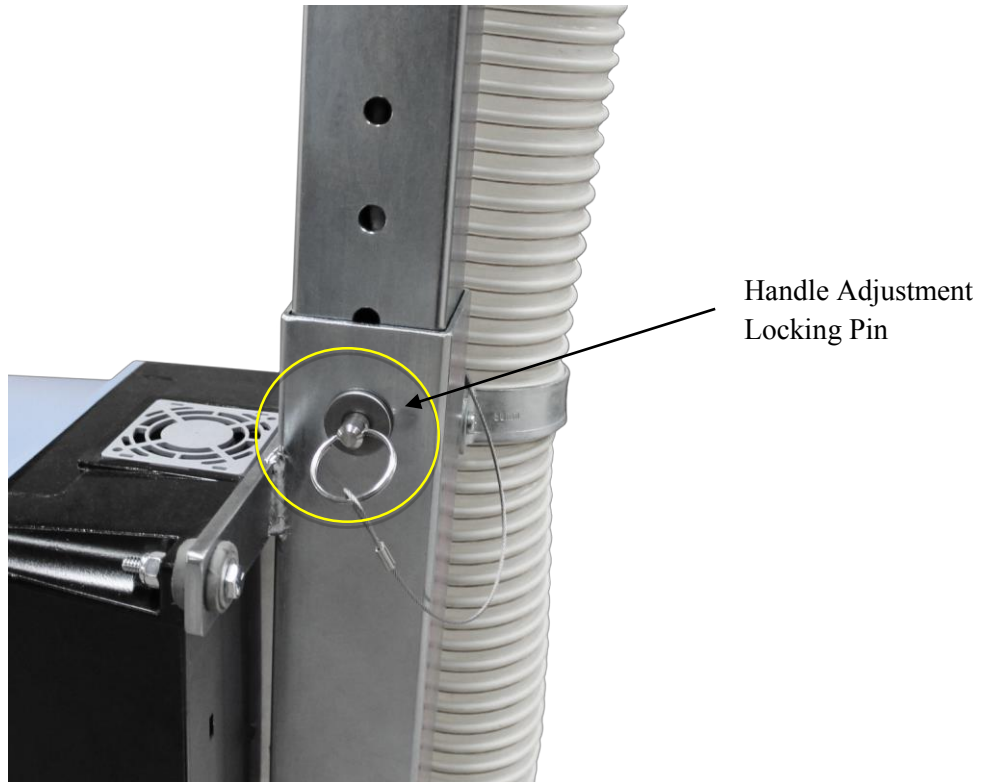


Grinding Head Leveling Adjustment Nut shown adjusted in a AFT position depicted by adjustment nut in a compressed position.

4.2.3 Handle Height Adjustment

How to adjust the handle height for operation

- Pull the adjustment-locking pin and position the handle to the desired operating position.

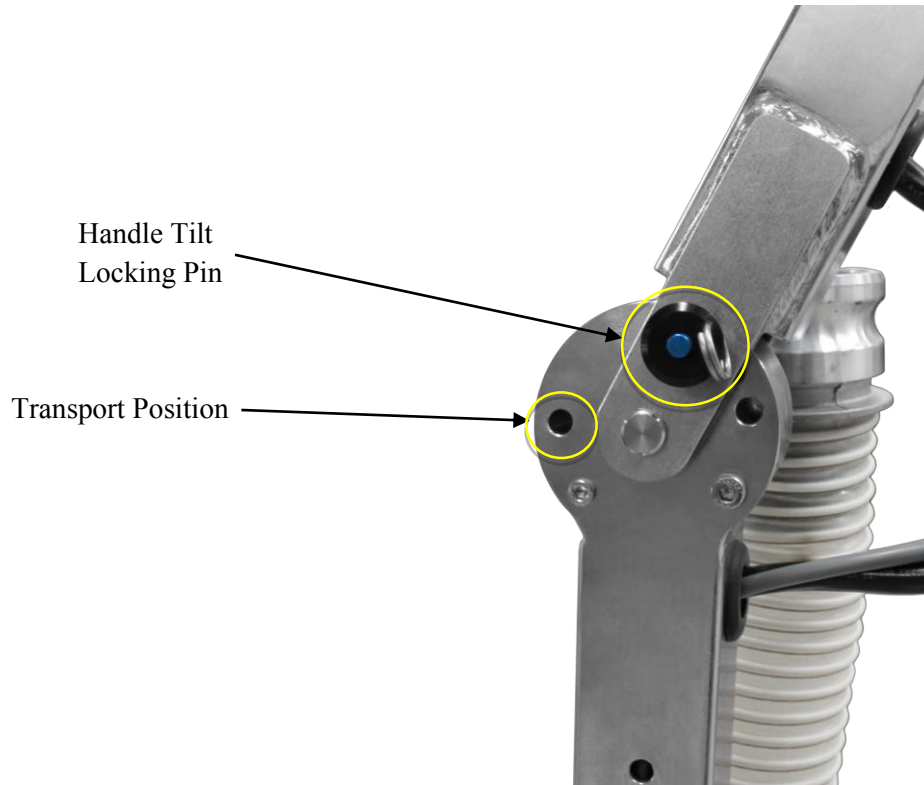


4.2.4 Handle Tilt Adjustment

How to adjust the tilt of the handle for operation

- Push-in the quick release locking-pin that secures the handle tilt position and pull the locking-pin out and move the handle to the desired operating position.

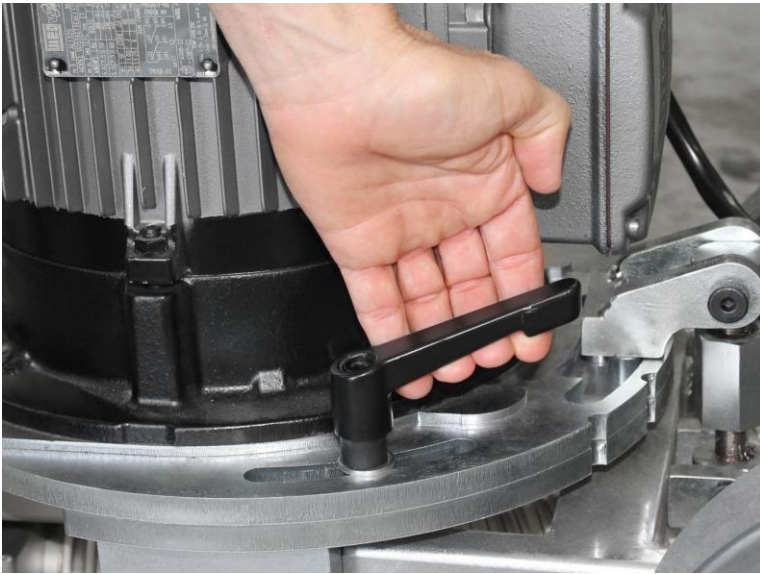
NOTE: The handle can be positioned to the 180-degree position for transport.



4.2.5 Grinding Head Swivel Adjustment

How to adjust the grinding head to swivel left or right

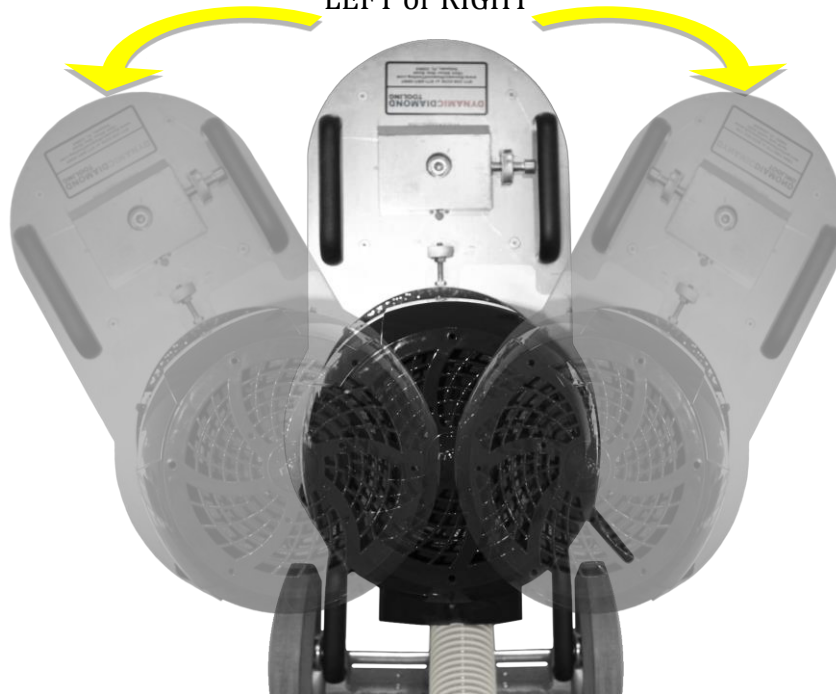
- With the grinding head flat on the floor, loosen the grinding head swivel lock on either side of the machine.
- With both hands on the handle, apply slight down pressure and move the handle left or right in order to swivel the head left or right respectively.
- Check the grinding head swivel notches on the frame plate and motor plate are aligned.
- Tighten the grinding head swivel lock on either side of the machine and ensure swivel lock handles are tucked towards the inside of the frame.



Frame Plate and Motor Plate notches aligned; indicate grinding head in 20° offset swivel position



20°
LEFT or RIGHT



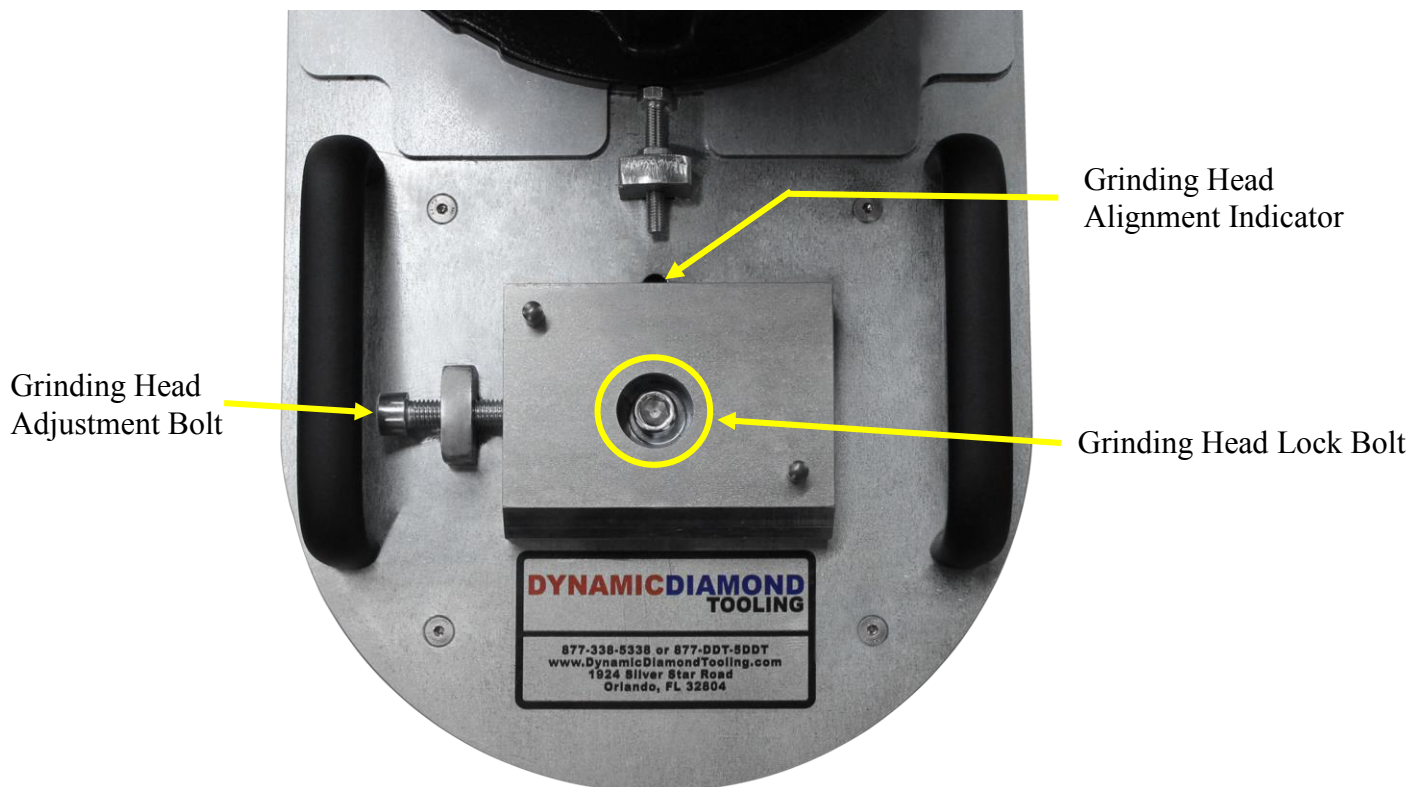
4.2.7 Grinding Head Adjustment for Edging

How to adjust the grinding head left or right for edging

- Tilt the grinder so that the handle is resting firmly on the floor with the grinding head off the floor.
NOTE: ensure that one person is securing the handle at all times when the grinder is tilted so as to rest on its handle.

Follow the following steps in order to adjust the grinding head:

1. Loosen the Grinding Head Lock Bolt with a 10mm Allen wrench.
2. Turn the Grinding Head Adjustment Bolt with a 10mm Allen wrench in the direction you desire to move the grinding head. Screwing the Grinding Head Adjustment Bolt clockwise will move the grinding head LEFT. Screwing the Grinding Head Adjustment Bolt counter clockwise will move the grinding head RIGHT.
3. The Grinding Head Alignment Indicator shows when the grinding head in its full LEFT or RIGHT position.
4. Tighten the Grinding Head Lock Bolt with a 10mm Allen wrench when adjustment is complete.



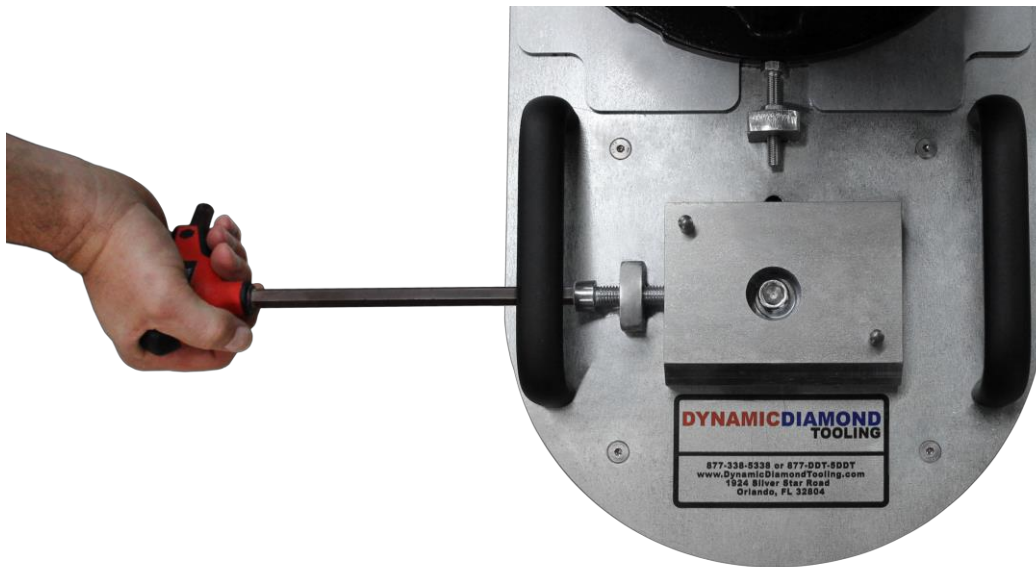
STEP 1

Loosen the Grinding Head Lock Bolt



STEP 2

Turn the Grinding Head Adjustment Bolt



STEP 3

Grinding Head Alignment Indicator shows position of head

NOTE: Black or Blue Line indicates position of head.



Grinding Head position CENTERED
(black line aligned with hole)



Grinding Head position full LEFT
(black line aligned with left black notchmark)



Grinding Head position full RIGHT
(black line aligned with right black notch mark)

STEP 4

Tighten the Grinding Head Lock Bolt

NOTE: failing to tighten the Grinding Head Lock Bolt could cause damage to the machine.



4.2.7 Installing Additional Weight

4.2.7.1 Installing additional weight to the head of the machine

This illustration below shows how to install additional weight to the head of the machine.

- Grasp the weight with the handles and align the two holes on the bottom of the weight with the two securing pins on the head block of the machine
- The weight is fitted with magnets and will therefore snap into place and remain secure

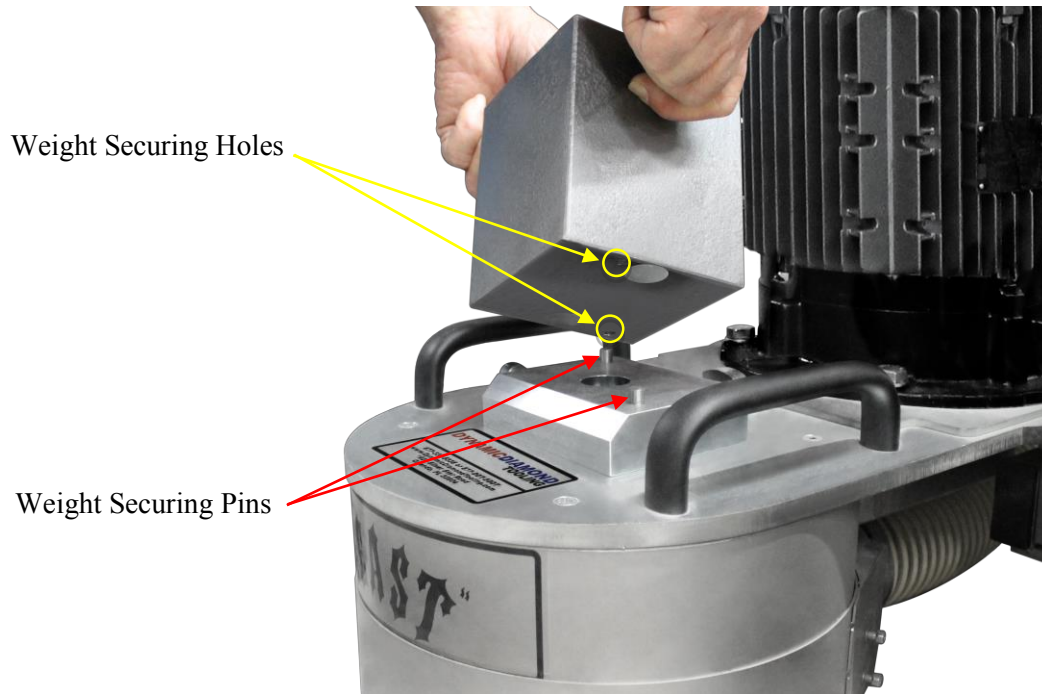


Figure 4-1 How to install additional weight to the head of the machine



4.2.7.2 Installing additional weight onto the handle of the machine

This illustration below shows how to install additional weight onto the handle of the machine.

- Grasp the weight with the handles and install the additional weight anywhere along the weight tray. Positioning the weight further aft will lighten the head pressure
- The weight is fitted with magnets and will therefore snap into place and remain secure

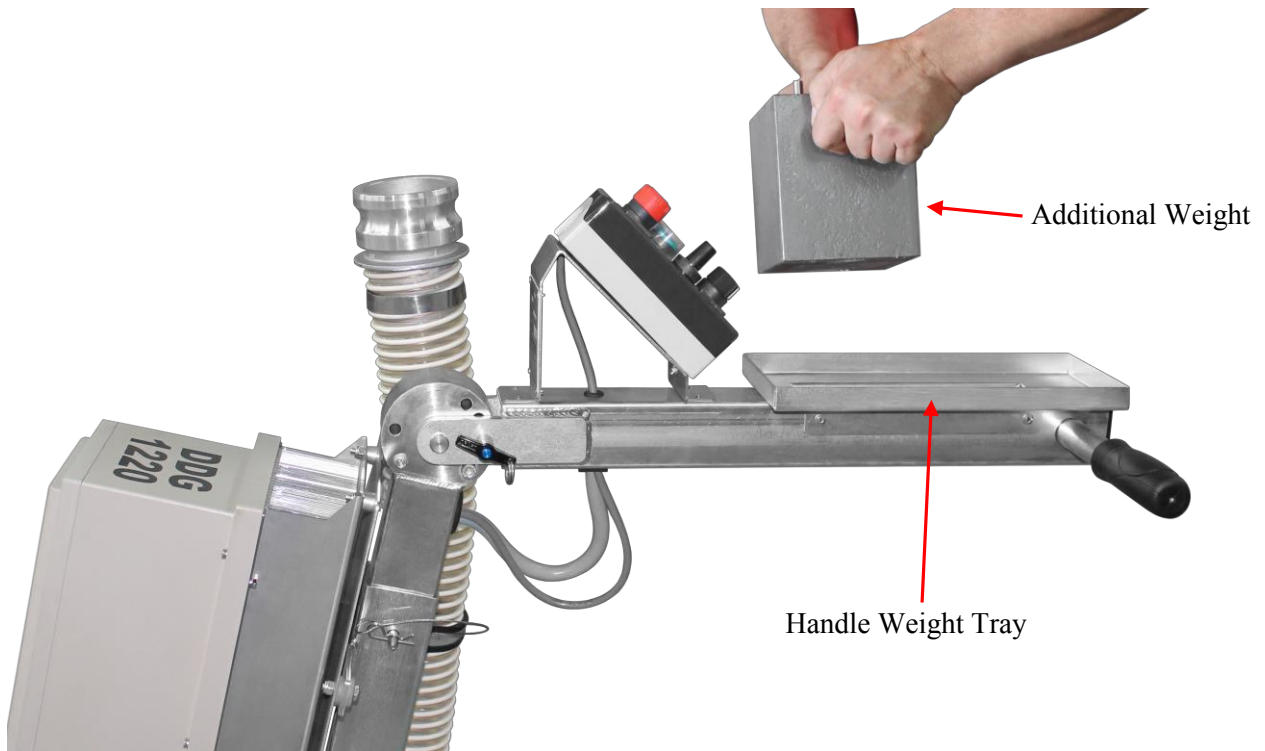
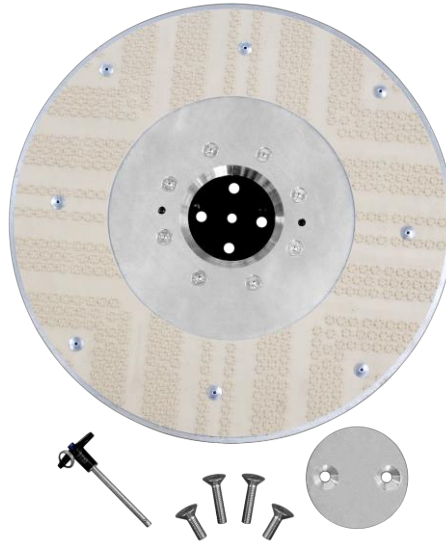


Figure 6-2 How to install additional weight onto the handle of the machine

4.2.8 Installing the 20" Burnishing Pad Driver and Lock

How to install the 20" Burnisher Pad Driver and Lock



- Using an 8 mm Allen wrench and **TWO** M12 x 1.75 x 25 screws (SHORT screws), secure the driver pad to the grinding head. Once secure, remove the locating pin
- Insert the locating pin into the driver pad lock and into the burnisher pad of your choice and insert the locating pin into the center hole of the grinding head
- The driver pad lock and burnishing pad can now be left hanging with no holding assistance
- Using an 8 mm Allen wrench and **TWO** M12 x 1.75 x 50 screws (LONG screws), secure the driver pad lock and burnishing pad to the grinding head. Once secure, remove the locating pin



STEP 1

Using an 8 mm Allen wrench and **TWO** M12 x 1.75 x 25 screws (SHORT screws), secure the driver pad to the grinding head. Once secure, remove the locating pin

**STEP 2**

Using an 8 mm Allen wrench and **TWO** M12 x 1.75 x 50 screws (LONG screws), secure the driver pad lock and burnishing pad to the grinding head. Once secure, remove the locating pin



4.2.6 Running the Machine

4.2.6.1 START

How to start the machine

- Ensure that the power plug and dust collector hose are connected to the machine.
- Turn the dust collector ON if used.
- Set the Speed Control Knob to its lowest speed setting.
- Make sure that the “STOP” button (4) is in its upper most position. If not, release it by turning it a quarter turn clockwise until it rises.
- Push the handle downwards to lift the machine about 10 cm (4”) from the ground.
- Press the “START” (3) button.
- Lower the machine down to the floor.

4.2.6.2 STOP

How to stop the machine

- Press the “STOP” (4) button.
- Wait for the machine to come to a complete stop before letting go of the handle.
- Turn OFF the dust collector if used.

4.2.6.3 Adjusting grinding speed

Turn the “SPEED CONTROL” knob (2) clockwise to increase the grinding speed and counter clockwise to decrease the grinding speed.

4.2.6.4 Change grinding direction

Use the “L/R” switch (1) to change the rotation of the motor and thereby selecting the grinding direction. Turn the machine OFF and ensure that it has come to a complete stop and then, restart in the selected direction.

4.3.7 Running the Machine Overview

CHECKLIST

- Ensure the machine is plugged in to the correct power supply
- Ensure the vacuum hose is connected and the vacuum turned ON
- Ensure STOP switch is in its upper most position
- Ensure SPEED CONTROL switch does not exceed 7
- With the machine flat on the floor, ensure that the dust shroud is flat to the floor and has a good seal on the floor.
- Ensure that the grinding head LEVEL BUBBLE is in the centered position.
- Set the operator handle to the most comfortable working height and tilt using the handle adjustment settings.
- Push the handle downwards to lift the machine about 10 cm (4") from the ground.
- Press the "START" button
- Lower the machine down to the floor and begin GRINDING

5. Grinding Guide

5.1 Installing tooling onto 12” Grinding Plate

This illustration below shows how to install tooling to the grinding plate.



Figure 5-1 How to install tooling onto a 12” grinding plate

1. Align the holes in the tooling trapezoid plate with the holes in the grinding plate.
2. Screw three M6 x 1 x 14 screws into the grinding plate and into the tooling trapezoid holes using a 4mm Allen wrench.

5.2 Installing 12” Grinding Plate to Bottom Plate of machine

This illustration below shows how to install the 12” grinding plate to the bottom plate of the machine.



Figure 5-2 How to install a 12” grinding plate to the bottom plate of the machine

1. Screw four M12 x 1.75 x 25 screws into the grinding plate to the bottom plate of the machine using a 8mm Allen wrench.

5.3 Installing tooling onto a 20" Grinding Plate

This illustration below shows how to install tooling to the 20" grinding plate.

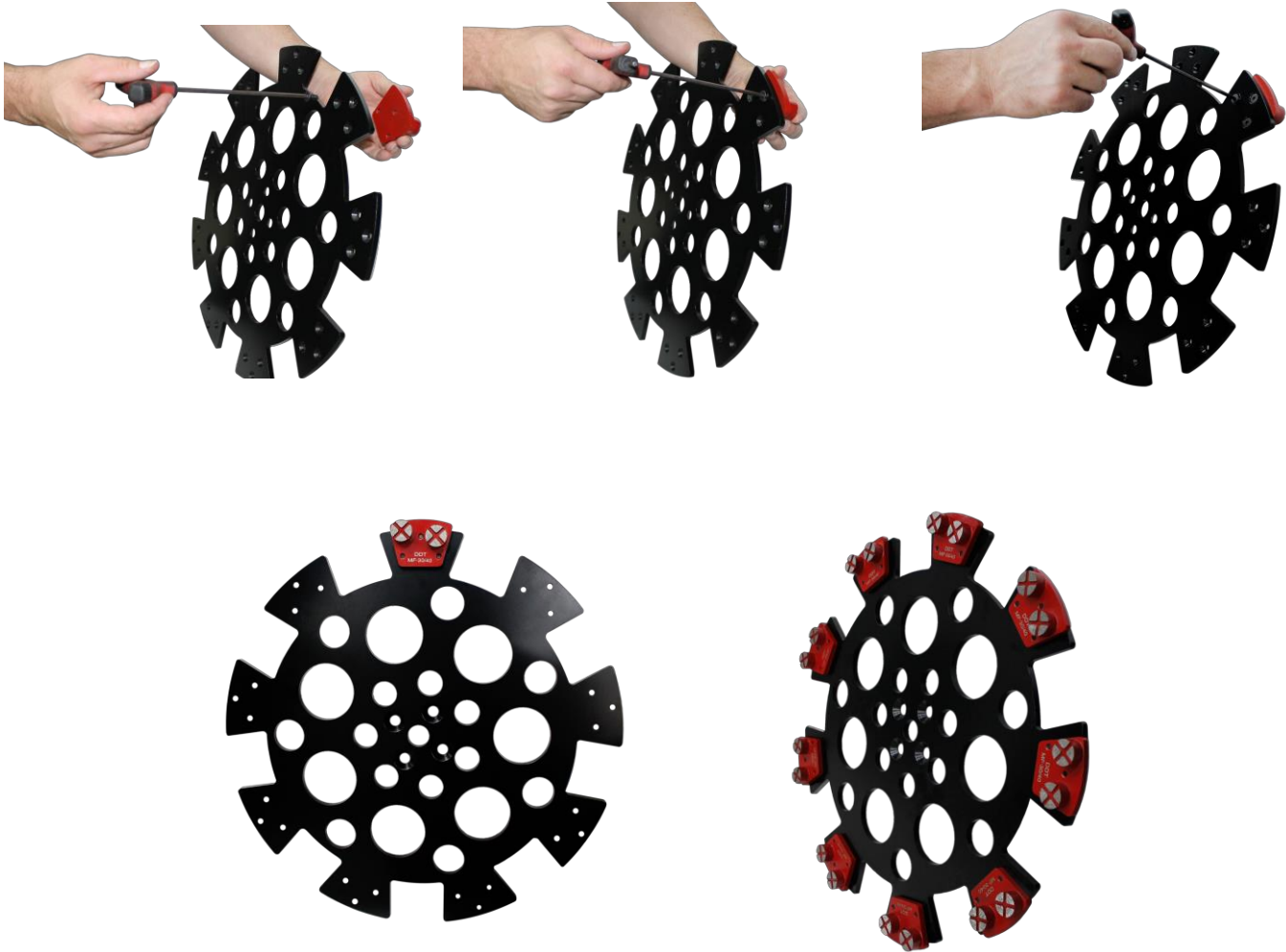


Figure 5-3 How to install tooling to the 20" grinding plate

1. Align the holes in the tooling trapezoid plate with the holes in the grinding plate.
2. Screw three M6 x 1 x 14 screws into the grinding plate and into the tooling trapezoid holes using a 4mm Allen wrench.

5.4 Installing 20" Grinding Plate to Bottom Plate of machine

This illustration below shows how to install the 20" grinding plate to the bottom plate of the machine.



Figure 5-4 How to install a 20" grinding plate to the bottom plate of the machine

1. Screw four M12 x 1.75 x 25 screws into the grinding plate to the bottom plate of the machine using a 8mm Allen wrench.

6. Maintenance



Ensure the machine is in the SAFETY POWER OFF position before beginning any maintenance or cleaning on the machine.

When the machine has been operated, the tooling and tooling plate along with other parts in the drum may be hot. Take extra care to prevent burn injuries.

6.1 Daily inspection prior to operation

Inspect the following items prior to operation:

- Inspect the wheels for damage.
- Inspect the grinding head and remove any dirt that may be present.
- Inspect all screws and ensure they are tightened.
- Look over the machine for any damage.

6.2 Cleaning the machine

Before starting to clean the machine, make sure it is in its "SAFETY POWER OFF" position.

- Do not use highly pressurized water to clean the machine.
- It is recommended to use soap and water on a damp cloth for cleaning the machine.

6.3 Troubleshooting

Common faults

Symptom	Cause	Correction
The machine will not start	▪ There is a power failure from the power supply	▪ Inspect the breaker/fuse in the worksites electrical panel ▪ Check that all three phases are present and correct voltage
	▪ The STOP button is depressed	▪ Release the STOP button by turning it counter clockwise until it rises
	▪ Damaged connection at plug	▪ Inspect male and female portion of plug ▪ Replace damaged plug
	▪ Damaged Cord	▪ Inspect cord for damage and replace if needed
	▪ Internal error	▪ If possible, read the fault code on the inverter display. ▪ Refer to the fault code list provided in the inverter user guide.
	▪ The grinding speed is to high due to undulations in the floor	▪ Lower the speed using the SPEED CONTROL knob
The machine vibrates a lot	▪ The tooling may be damaged	▪ Inspect the tooling ▪ Replace tooling
	▪ Grinding head may be worn-out or damaged	▪ Check grinding head for broken parts or excess movement
	▪ Diamonds may not be fitted correctly or different height diamonds may be on the grinding heads	▪ Diamonds may not be fitted correctly or different height diamonds may be on the grinding heads
	▪ Grinder Head Bolts may be loose or missing	▪ Check to ensure that all grinding head bolts are intact and secure

Table 7-1 Common faults

7. Warranty

This product from Dynamic Diamond Tooling comes with a twelve-month (12) warranty. If the product does not function satisfactorily during this period, Dynamic Diamond Tooling will return the product to full working order for normal use, which the product is intended for with no charge for labor or spare parts, according to the following conditions:

1. The warranty only applies to persons that have legal right to the equipment during the warranty period.
2. The manufacturer's undertaking is limited to the repair of defective parts or the replacement of these according to the manufacturer's assessment. Costs and risks for transport as well as dismantling and reinstallation of the product / products and other direct or indirect costs, associated with the repair in question, are not covered by this warranty.
3. Periodic inspections, adjustments, maintenance work and changes are not covered by the warranty.
4. Dynamic Diamond Tooling is not liable for any damages to grinding discs or other similar equipment.
5. The warranty only applies to material and design deficiencies and does not apply in the following cases:
 - a. Damage caused through accidents, carelessness, changes or modifications, use of spare parts or grinding tools that are not original components, or incorrect use and installation.
 - b. Damage caused by lightning, water, fire, vandalism, incorrect mains voltage, incorrect ventilation or other causes that lie outside of the manufacturer's control.
 - c. Dynamic Diamond Tooling reserves the right to modify the design or make improvements without obligation to change previously manufactured products.
 - d. Dynamic Diamond Tooling reserves the right to modify the design or make improvements without obligation to change previously manufactured products.
 - e. All warranty repairs must be carried out by Dynamic Diamond Tooling or by a Dynamic Diamond Tooling accredited repair workshop. Dynamic Diamond Tooling will not reimburse costs for repairs carried-out by an unauthorized workshop. If such repairs damage this product, these damages, are not covered by the warranty agreement.

1 PHASE GENERATOR PLUG

G - GREEN

Y - WHITE



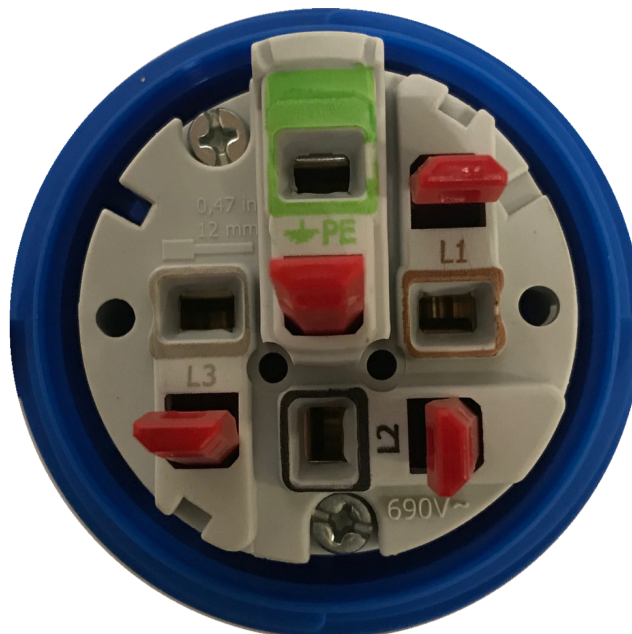
X - BLACK

W - NO WIRE

3 PHASE PLUG

PE GREEN

L3 WHITE



L1 BLACK

L2 RED