

# OPERATING MANUAL 1-8DM

VERSION 1.1



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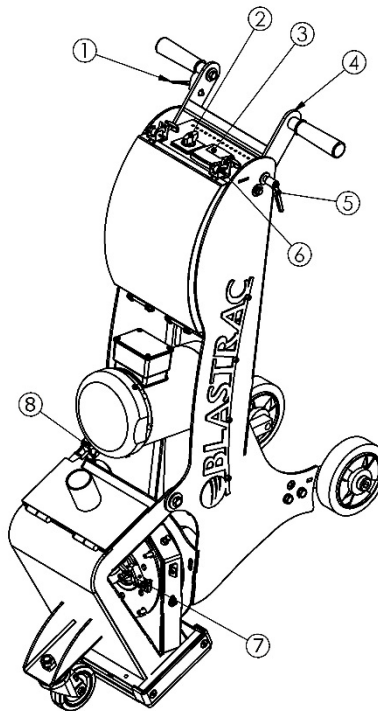
## 1. Introduction

It is important that all persons who are working with or maintaining this machine read the manual carefully and understand it fully. Keep this manual close to the machine, so it can be referred to at any time.

Only authorized and trained personnel may operate this machine.

## 2. Machine description

The Blastrac 1-8DM is a downward blasting machine with a closed abrasive circuit, designed for the pre-treatment of horizontal surfaces. The bouncing impact of metallic abrasive onto the surface to be treated, thoroughly removes surface contaminants, coats of paint, sealants and thin coatings. A suitable dust collector must be connected to the machine in order to separate the dust from the abrasive. A specially designed dust collection system ensures dust-free operation of the machine and clean air in the workspace.



1	SHOT VALVE CONTROL LEVER	5	HANDLE ADJUSTMENT LEVER
2	ON/OFF SWITCH	6	VFD LID LATCH
3	AMMETER	7	SHOT VALVE ADJUSTMENT
4	HANDLE	8	BLAST HOUSING LID LATCH



### 3. Safety

Before operating the machine, the personnel must be familiar with the safety instructions given in this manual.

Keep this manual near the machine, so it can always be consulted.

#### Safety precautions

- The surface to be treated must be swept clean to remove stones, screws etc.
- Never use the machine when the surface is not clear and if there is a risk of tripping.
- Make sure there is not any water on the surface to be treated.
- Don't get distracted while blasting.
- Remove any trailing electrical cables and or dust hoses from the surface to be treated.
- Always switch on the dust collector before blasting.

#### Safety regulations

- Persons who are not operating the machine are not permitted to stay in the surrounding area of the machine.
- Keep the machine original; Use approved cables that are free from defect. Never remove the earth ground of the supply cable and machine. Only use cables & connectors that have an earth ground.
- Connect main power supply cable to an installation with an earth-leakage circuit breaker.
- Inspect and test the electrical components of the machine regularly.
- Always call a skilled electrician when you have questions about the safety of the electrical components.
- Work on electrical equipment or operating materials may only be done by a skilled electrician or by trained persons under the guidance and supervision of a skilled electrician as well as in accordance with the electrical engineering regulations.
- Pull out the main plug during inspections and repairing on the machine.
- Never operate the machine when workplace is wet.
- Never leave the machine in the rain.

The following safety decals are placed on the machine.



Meanings of these symbols are:

- Ear and eye protection are required.
- Safety glasses with side shields are required.
- Electrical shock hazard.
- Burn hazard.



Operators must tie back long hair and not wear loose clothing or jewelry including rings.

Wear gloves, dust mask, safety glasses w/ side shields, and ear plugs during operating the machine.

**Safety instructions**

- Abrasive can escape from the sides of the blast head at high speed. Wear safety glasses with side shields and close-fitting protective clothing.
- The dust container / bag of the dust collector must be emptied regularly. Comply with the local waste treatment regulations considering the removed material.
- The weight of the 1-8DM is 230lbs. Always use a team lift to pick up the machine.





## 4. Initial operation

Before using the machine, it is of great importance to inspect the machine. It is not permitted to use the machine if the machine safety is not according the checkpoints below.

### Checkpoints power supply

- Use only extension cables for extending the main cable that are sized and marked in accordance with the overall power consumption of the machine.
- Electrical cables must be fully unwound.
- Cables must be free of damage.
- Use an electrical connection with earth grounding.

### Checkpoints of machine

- Safety functions and operating functions must work correctly.
- Check the following parts for damage and wear: blast wheel, feed spout, liners, magnet, and brush sealing.
- Ensure all nuts/bolts are tight.
- All electrical components must be free of damage.
- Dust hose must be undamaged and the connection must be reliable.
- Check the separator for wear and defects. Remove foreign bodies and dust deposits.

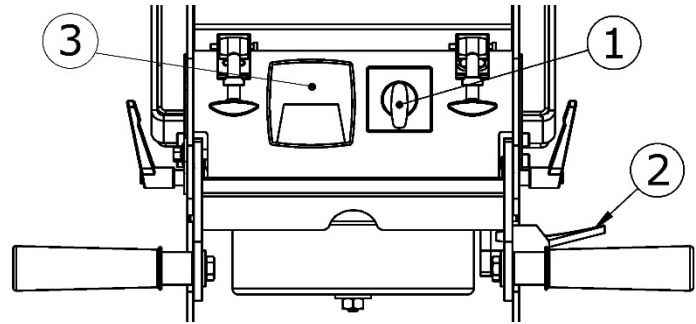




## 5. Operation

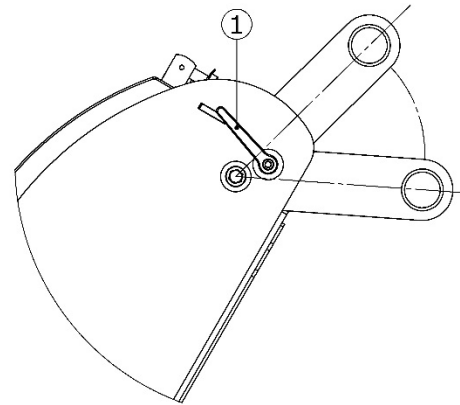
### Controls

The ON/OFF switch (1) controls the blast wheel motor. The shot valve lever (2) controls the amount of abrasive going into the blast wheel. Observe the Ammeter (3) to ensure that the proper amount of shot is being let through the shot valve.



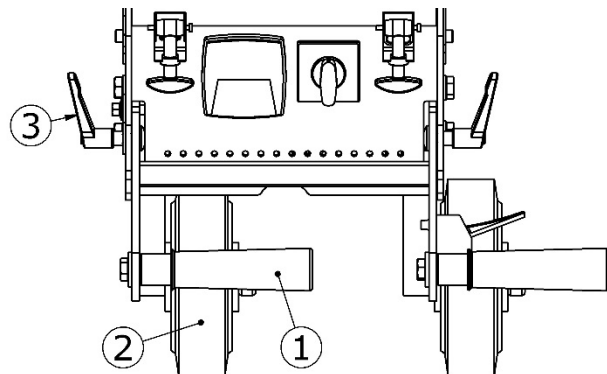
### Handle Adjustment

Adjusting the height of the handle is possible by loosening handle adjustment levers (1) and adjusting the handle to the desired height.



### Close Blasting Mode

To work as close as possible to the wall you can invert the right-side handle (1) and rear wheel (2). The handle grip can be screwed into the opposite side of the handle and the rear wheel can be screwed into the opposite side of the wheel bracket.





During operation of the 1-8DM, the following additional safety instructions must be followed closely:

#### **Before switch on**

- Check if the distance from magnet to the floor is approx. 1/4". Check this height with aluminum strips.
- Check the distance from brush sealing to the floor. This may be max. 1/32".
- Fill the separator equally with the selected abrasive up to the bottom of the separator tray. The magnetic valve must be closed while doing this.
- Connect the blast machine and dust collector with the dust hose. This connection must be reliable.
- Connect the power supply cable of the dust collector to a power source. Be sure that electrical power supply is correct.

#### **Switch on the machine**

- Before turning on the blast machine, turn on the dust collector.
- Turn power switch to "ON" and check the rotating direction of the blast motor. The correct direction is given with an arrow on the housing of the motor.
- With the machine in motion pull the abrasive control cable to open the magnetic valve. Observe the ammeter, to ensure proper amperage. After having blasted approx. 6', close the abrasive valve, stop the machine and check the blasted surface.
- If the 'hotspot' is too much on the right, turn the cage slightly clockwise. Loosen the cage clamps and turn the control cage in the suitable direction. The cast grooves on the control cage show the position of the control cage opening. Tighten the nuts of the cage clamps after adjusting.

#### **Switch off the machine**

- Close the abrasive valve
- Turn power switch to "OFF".
- Unplug the machine from the power supply.
- Switch off the dust collector.
- Wait for standstill of all drives before any inspection or maintenance works are started.





## 6. Maintenance

### Changing the liners

- Loosen the press bolt of the top liner.
- Loosen the nuts of the side liners and top liner. Take them out at the bottom of the housing.

To mount the liners, keep on the following sequence:

- First place the top liner in the housing.
- Place the side liners inside the housing. The sideliners may stick out the body for max. 1/32". Tighten the nuts.
- Tighten the pressure bolt of the top liner slightly and press the top liner against the side liners.

### Changing the tune-up kit

The tune-up kit consists of the blast wheel, the cage and a bolt.

- Remove the feed spout
- Remove the cage clamps
- Remove the cage and blast wheel cover plate
- Block the blast wheel and remove the central fixing bolt
- Take the blast wheel out of the housing

### Use a new central fixing bolt when mounting a new blast wheel

- Place the blast wheel on the hub and tighten the central fixing bolt to 45 ft./lbs.
- Install the blast wheel cover plate.
- Insert the control cage in the center and clamp the cage with the control clamps so that the blast wheel can rotate freely
- Turn the blast wheel manually. It must rotate freely.
- Place the feed spout between the abrasive valve and the cage.

Clean the machine every day with air and non-aggressive materials. Never use a high-pressure water cleaner to clean the machine.

Store the cleaned machine in a dry room. Protect the electrical motor from moisture, heat, dust and shocks. Remove the abrasive out of the abrasive storage hopper.

All repair work has to be done by qualified Blastrac personnel, this guarantees a safe and reliable machine.

Any warranty on the machine is void when:

- Original Blastrac spare parts and abrasive are not used.
- Repair work is not done by qualified Blastrac personnel.
- Changes, add-ons or conversions are performed without written permission of Blastrac NA.



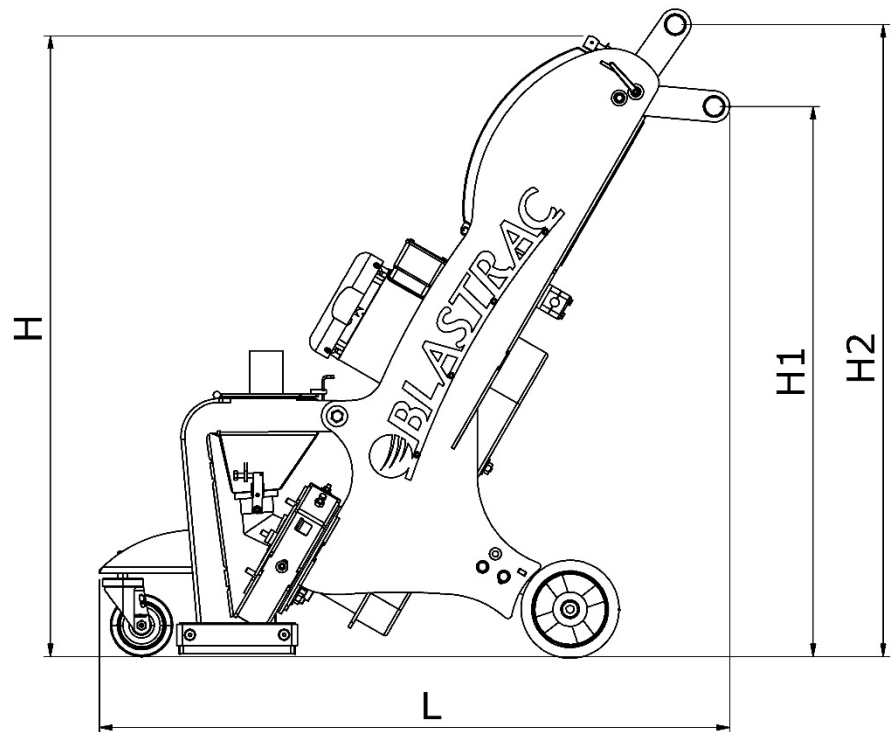
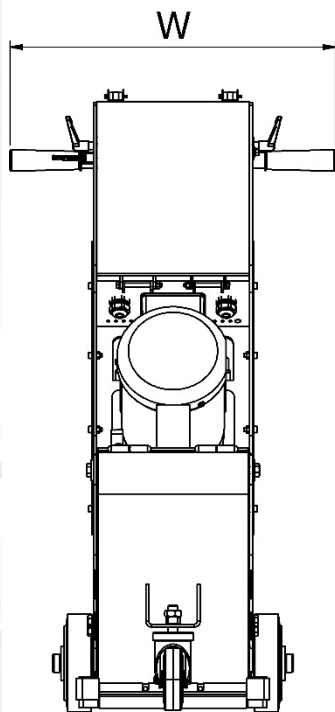
## 7. VFD Trouble Codes

Fault Code	No.	Description	Corrective Action
StoP	0x00	Drive is READY and in a stopped condition. The motor is not energised. No enable signal is present to start the drive	
P-dEF	0X0A	Factory Default parameters have been loaded	Press the STOP key, drive is ready to configure for particular application
F0001	0x03	Instantaneous Over current on the drive output. Excess load or shock load on the motor.	<b>Fault occurs immediately on drive enable or run command</b> Check the output wiring connections to the motor and the motor for short circuits phase to phase and phase to earth. <b>Fault occurs during motor starting</b> Check the motor is free to rotate and there are no mechanical blockages. If the motor has a brake fitted, check the brake is releasing correctly. Check for the correct star-delta motor wiring. Ensure the motor nameplate current is correctly entered in parameter <b>9906</b> . Increase the acceleration time in parameter <b>2202</b> . Reduce the motor boost voltage setting in parameter <b>2603</b> <b>Fault occurs when motor operating at constant speed</b> Investigate overload or malfunction. <b>Fault occurs during motor acceleration or deceleration</b> The accel/decel times are too short requiring too much power. If parameter <b>2202</b> or <b>2203</b> cannot be increased, a bigger drive may be required
F0009	0x04	Motor thermal overload protection trip. The drive has tripped after delivering >100% of value in <b>9906</b> for a period of time to prevent damage to the motor.	Ensure the correct motor nameplate current value is entered in parameter <b>9906</b> . Check for correct Star or Delta wiring configuration. Check to see when the decimal points are flashing (which indicates the output current > parameter <b>9906</b> value) and either increase acceleration ramp (parameter <b>2202</b> ) or decrease motor load. Check the total motor cable length is within the drive specification. Check the load mechanically to ensure it is free, and that no jams, blockages or other mechanical faults exist
Ol - b	0x01	Brake channel over current (excessive current in the brake resistor)	Check the cabling to the brake resistor and the brake resistor for short circuits or damage. Ensure the resistance of the brake resistor is equal to or greater than the minimum value for the relevant drive shown in the table in section 12.2
OL-br	0x02	Brake resistor thermal overload. The drive has tripped to prevent damage to the brake resistor	Only occurs if parameter <b>2020</b> = 1. The internal software protection for the brake resistor has activated to prevent damage to the brake resistor. Increase the deceleration time (parameter <b>2203</b> ) or 2 <sup>nd</sup> deceleration time (parameter <b>2206</b> ). Reduce the load inertia <b>For Other Brake Resistors</b> Ensure the resistance of the brake resistor is equal to or greater than the minimum value for the relevant drive shown in the table in section 12.2. Use an external thermal protection device for the brake resistor. In this case, parameter <b>2020</b> may be set to 2
F0004	0x05	Hardware Over Current	Check the wiring to motor and the motor for phase to phase and phase to earth short circuits. Disconnect the motor and motor cable and retest. If the drive trips with no motor connected, it must be replaced and the system fully checked and retested before a replacement unit is installed.
F0002	0x06	Over voltage on DC bus	Check the supply voltage is within the allowed tolerance for the drive. If the fault occurs on deceleration or stopping, increase the deceleration time in parameter <b>2203</b> or install a suitable brake resistor and activate the dynamic braking function with parameter <b>2020</b>
F0006	0x07	Under voltage on DC bus	The incoming supply voltage is too low. This trip occurs routinely when power is removed from the drive. If it occurs during running, check the incoming power supply voltage and all components in the power feed line to the drive.
F0003	0x08	Heatsink over temperature	The drive is too hot. Check the ambient temperature around the drive is within the drive specification. Ensure sufficient cooling air is free to circulate around the drive. Increase the panel ventilation if required. Ensure sufficient cooling air can enter the drive, and that the bottom entry and top exit vents are not blocked or obstructed.
U-t	0x09	Under temperature	Trip occurs when ambient temperature is less than -10°C. The temperature must be raised over -10°C in order to start the drive.
F0018	0x10	Faulty thermistor on heatsink.	Refer to your local ABB representative
F0014	0x0B	External trip (on digital input 3)	E-trip requested on control input terminals. Some settings of parameter <b>9902</b> DIGITAL INPUTS FUNCTION SELECT require a normally closed contactor to provide an external means of tripping the drive in the event that an external device develops a fault. If a motor thermistor is connected check if the motor is too hot.
F0010	0x0C	Comms loss trip	Check communication link between drive and external devices. Make sure each drive in the network has its unique address.
F0022	0x0E	Input phase loss trip	Drive intended for use with a 3 phase supply has lost one input phase.
SPI n-F	0x0F	Spin start failed	Spin start function failed to detect the motor speed.
F0027	0x11	Internal memory fault.	Parameters not saved, defaults reloaded. Try again. If problem recurs, refer to your local ABB representative
F0007	0x12	Analog input current out of range	Check input current in range defined by parameter <b>1300</b> .
F0021	-	Internal drive Fault	Refer to your local ABB representative
FAULT4	-	Internal drive Fault	Refer to your local ABB representative



## 8. Technical Data

1-8DM	
BLAST WHEEL MOTOR POWER (110V/220V)	1.32 kW/1.67kW
APPLICATION	CONCRETE
LENGTH (L)	41"
WIDTH (W)	21"
MINIMUM HEIGHT HANDLE (H1)	36"
MAXIMUM HEIGHT HANDLE (H2)	41"
WEIGHT	230





# SERVICE MANUAL 1-8DM

VERSION 1.1





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# 1. Spare Parts

Fig. 01

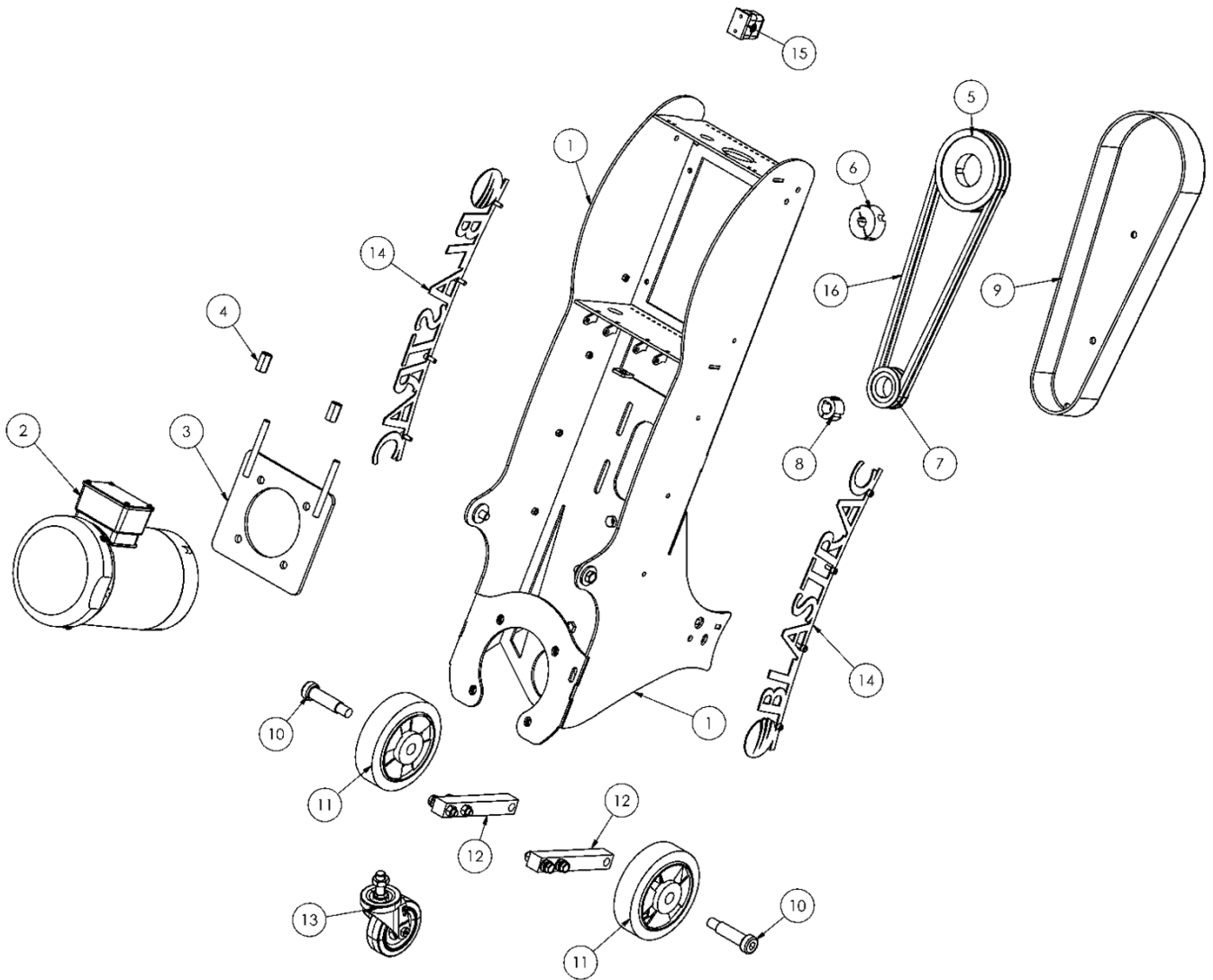






Fig. 01

Item	Part Number	Description	QTY.
1	PG-10522	CHASSIS - 1-8DM	1
2	PG-10889	MOTOR – 110V	1
	PG -10890	MOTOR – 220V	1
3	6908170-EU	MOTOR BASE PLATE	1
4	PG -10846	NUT/COUPLING	2
5	6908190	SHEAVE	1
6	6908380	BUSHING/ TAPER LOCK	1
7	6908200	SHEAVE	1
8	6908370	TAPERLOCK BUSHING	1
9	P000107-EU	BELT GUARD	1
10	PG -10759	SHOULDER BOLT	2
11	E03603	WHEEL	2
12	PA-11204	REAR WHEEL BRACKET	2
13	PG -10884	FRONT CASTER	1
14	E07380	BLASTRAC LOGO (RADIUS)	2
15	999-9159	STRAIN RELIEF	1
16	06100006	BELT	2



Fig. 02

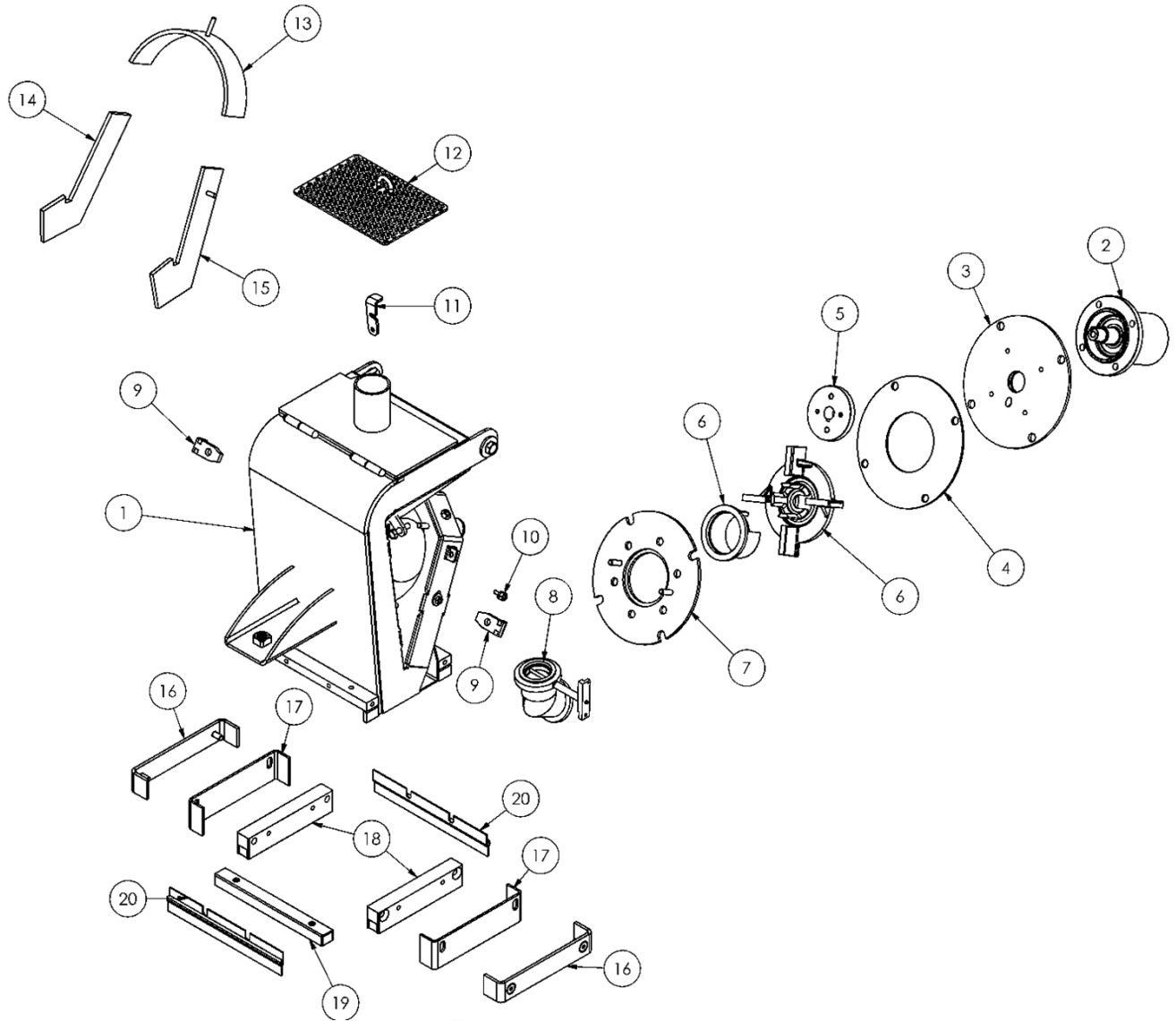




Fig. 02

Item	Part number	Description	Qty.
1	PG-10521	BLAST HOUSING	1
2	979085	BEARING UNIT	1
3	9790660	BRACKET/ALUM BRG MTG	1
4	PA-11203	SEAL/BEARING MOUNTING PLATE	1
5	9763100	HUB	1
6	4923050-EU	WHEEL-KIT 6.50"	1
7	9763240-EU	CONTROL CAGE BRACKET	1
8	P000001	MAGNETIC VALVE ASSY	1
9	9700120	CLAMP/CONTROL CAGE	2
10	6916120	NIPPLE/ THROTTLE & NUT	1
11	PA-11206	LATCH/BLASTHOUSING LID	1
12	PA-11211	SHOT TRAY	1
13	4973070-EU	LINER/TOP	1
14	6908260-EU	LINER/RIGHT HAND SIDE HATCHET	1
15	6908250-EU	LINER/LEFT HAND SIDE HATCHET	1
16	6811540-EU	RETAINER/SIDE SKIRT	2
17	6811550	SKIRT/SIDE	2
18	9697800	MAGNET/SIDE	2
19	9697630	MAGNET/FRONT	1
20	6908300	BRUSH/FRONT & REAR	2



Fig. 03

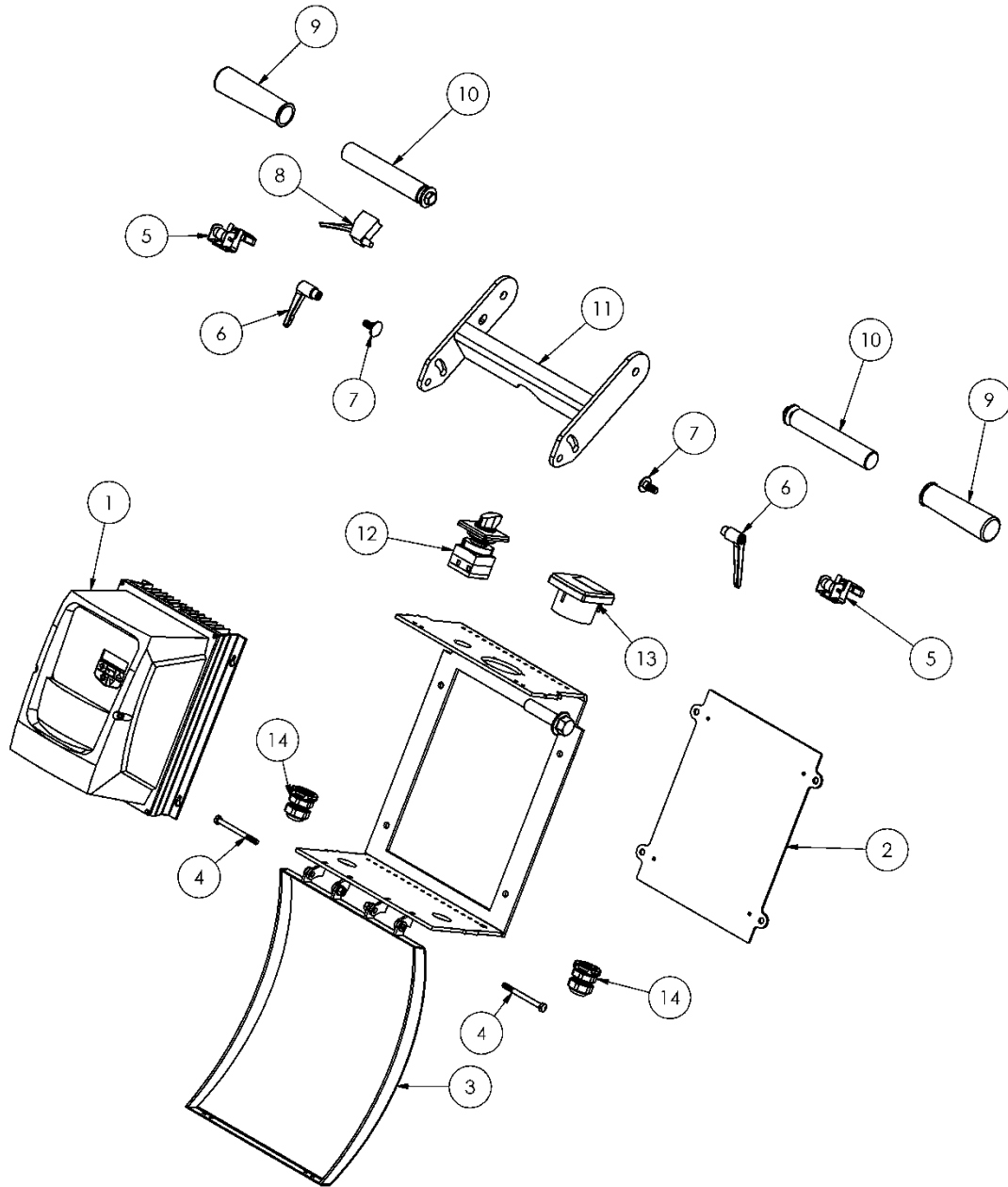
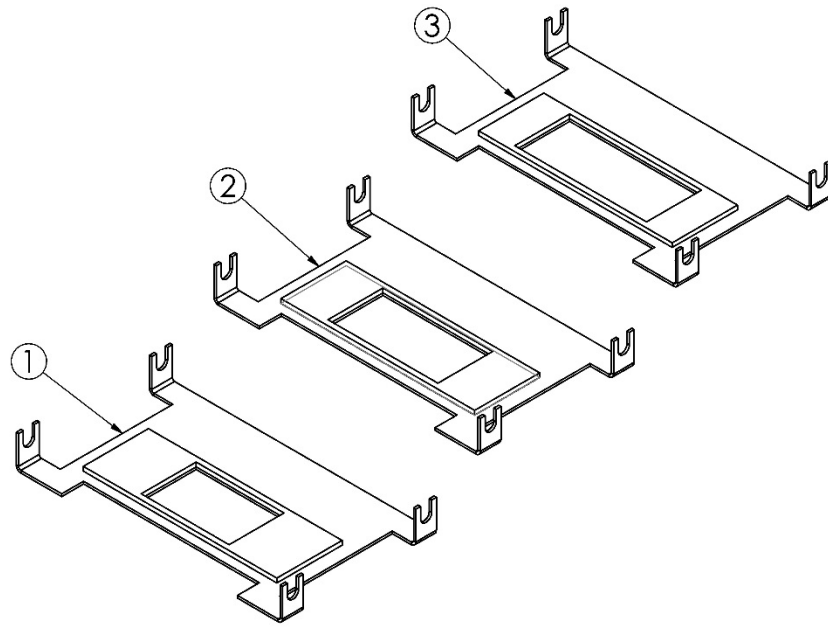


Fig. 03

Item	Part number	Description	Qty.
1	CP-10888	VARIABLE FREQUENCY DRIVE – 120V	1
	CP-10887	VARIABLE FREQUENCY DRIVE – 220V	1
2	PA-11212	VFD MOUNTING PLATE	1
3	PG-10529	VFD LID	1
4	800931	HEX CAP SCREW	2
5	CP-10879	DRAW LATCH	2
6	CP-10882	NYLON ADJUSTABLE HANDLE	2
7	CP-10880	CARRIAGE BOLT	2
8	CP-10886	SHOT CABLE	1
9	CP-10874	HANDLE/GRIP	2
10	PA-11210	BAR/HANDLE	2
11	PG-10527	HANDLE	1
12	CP-10883	SWITCH/ ON/OFF	1
13	P000443	AMMETER/AC	1
14	P003739	CORD GRIP	2



## 2. Accessories

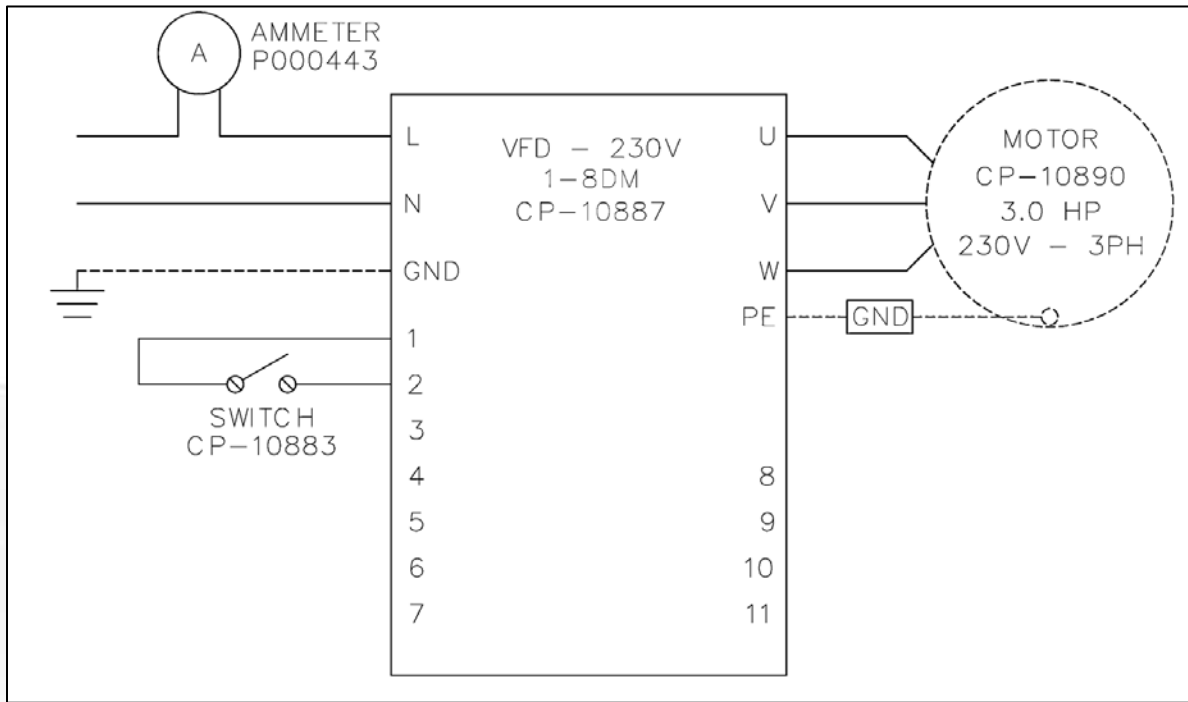


Item	Part number	Description	Qty.
1	PG-10539	4" Edge Pattern Reducer	1
2	PG -10540	5" Edge Pattern Reducer	1
3	PG -10541	6" Edge Pattern Reducer	1



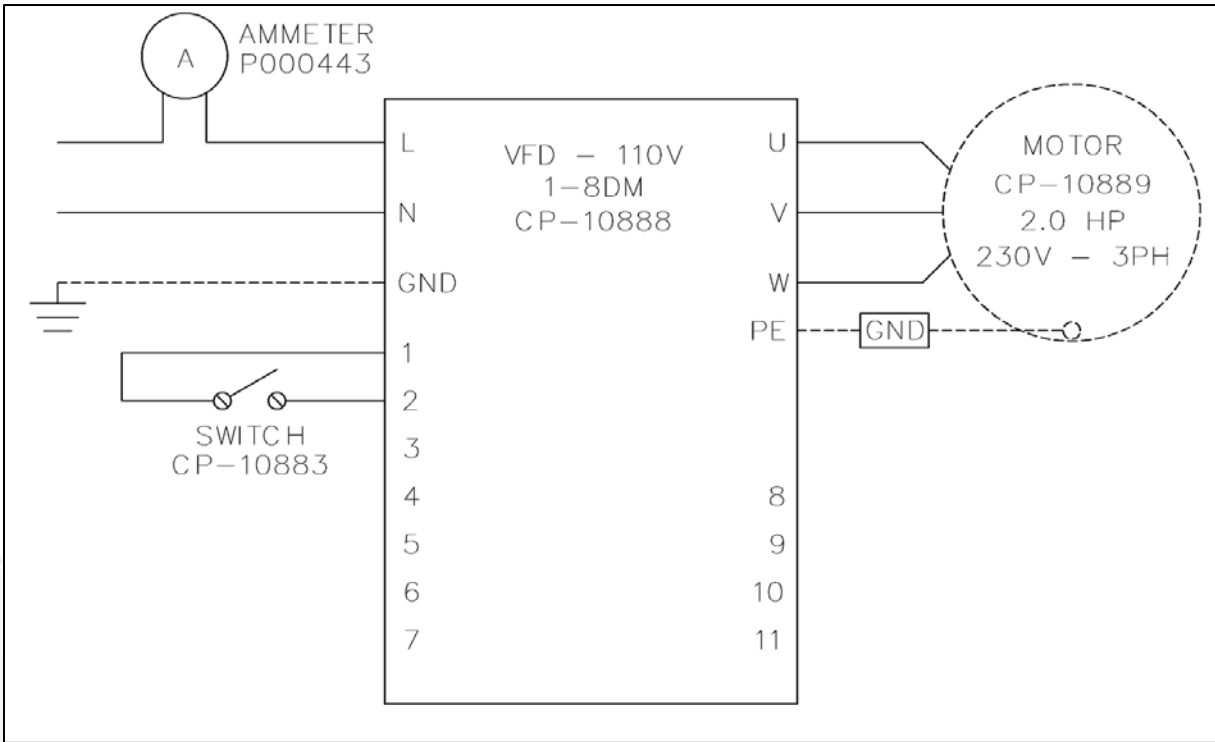
### 3. Electrical

**Fig. 04**  
**220V**





**Fig. 05**  
**110V**





# IMPORTANT!

## TO THE DELIVERING DISTRIBUTOR OR END USER

To ensure the proper warranty coverage is extended to the owner of this machine, fill in the necessary information below **COMPLETELY** and **ACCURATELY** and retain for your records. **Go to [www.blastrac.com](http://www.blastrac.com) and register online.** Click on the Register icon in the left column of the homepage, and fill out the product registration form with the same information that will be recorded here.

**The warranty period will start upon the delivery date of the machine.**

The distributor or the end user must provide the machine warranty information when the machine is delivered. Registration of the machine will extend the warranty period from the recorded delivery date entered with product registration. **Failure to comply will make any and all warranties on the equipment void after 6 months.**

### OWNER/END USER'S REFERENCE INFORMATION

Delivery Date _____	Machine Model No. _____
Delivering Distributor's Name and Address _____	Machine Serial No. _____
_____	Modifications _____
_____	_____
_____	_____
_____	_____
_____	_____

Signature of Delivering Distributor's Representative

Blastrac is a registered trademark of Blastrac,NA  
Fold and Detach Here if Mailing

## Warranty Registration

**IMPORTANT!** To ensure that your Blastrac® machine is covered under warranty, please provide the information recorded here by registering online at [blastrac.com](http://blastrac.com), or complete this page and fax to 866-485-1046, or if you prefer, detach and mail to:

**Blastrac, 13201 North Santa Fe Avenue, Oklahoma City, OK 73114-9901**

(Please print legibly)

Company \_\_\_\_\_

Address \_\_\_\_\_

City, State, & Zip \_\_\_\_\_

Telephone No. \_\_\_\_\_ Contact Person \_\_\_\_\_

Date of Purchase \_\_\_\_\_ Date Received \_\_\_\_\_

Machine Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Distributor Name \_\_\_\_\_

End User Name \_\_\_\_\_

End User E-mail \_\_\_\_\_



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(Please print legibly)

Company \_\_\_\_\_

Address \_\_\_\_\_

City, State, & Zip \_\_\_\_\_

Telephone No. \_\_\_\_\_ Contact Person \_\_\_\_\_

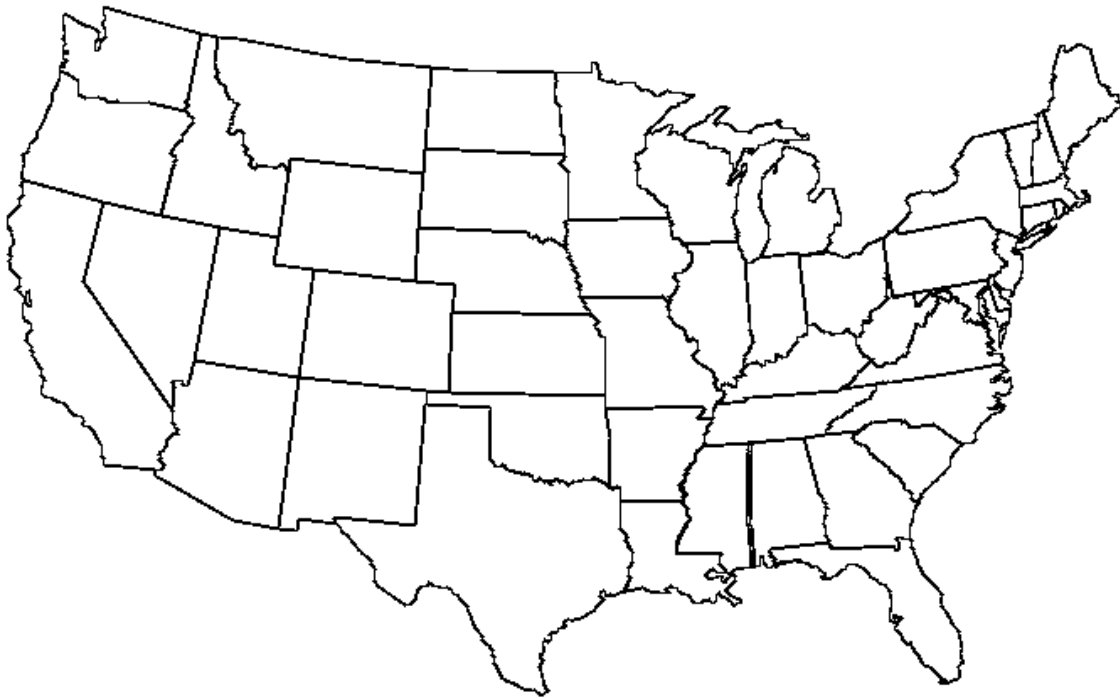
Date of Purchase \_\_\_\_\_ Date Received \_\_\_\_\_

Machine Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_

Distributor Name \_\_\_\_\_

End User Name \_\_\_\_\_

End User E-mail \_\_\_\_\_



### **Contact**

Blastrac NA  
13201 North Santa Fe Avenue  
Oklahoma City, OK 73114  
Tel: 800-256-3440  
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[www.blastrac.com](http://www.blastrac.com)