

3396 SHOT BLASTER

SERVICE MANUAL



Read Manual Before Servicing Machine

402967 Rev G

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Specifications



Product Specifications							
Width	Max. Length	Max. Height	Weight	Working Width	Voltage	Blasting Capacity	Speed
12.5" (32 cm)	49" (124 cm)	40.5" (103 cm)	288 lb (130.6 kg)	8" (20 cm)	230V / 60 Hz 1-phase	Up to 861 ft ² /h (80 m ² /hr)	0-98 ft/min (0-30 m/min)

GENERAL RULES FOR SAFE OPERATION

Before use, anyone operating or performing maintenance on this equipment must read and understand this manual, as well as any labels packaged with or attached to the machine and its components. Read the manual carefully to learn equipment applications and limitations, as well as potential hazards associated with this type of equipment. Keep manual near machine at all times. If your manual is lost or damaged, contact National Flooring Equipment (NFE) for a replacement.

Personal

Dress properly and use safety gear.

Do not wear loose clothing; it may be caught in moving parts. Anyone in the work area must wear safety goggles or glasses, hearing protection during extended use, and a dust mask for dusty operations. Hard hats, face shields, safety shoes, etc. should be worn when specified or necessary.

Maintain control; stay alert.

Keep proper footing and balance, and maintain a firm grip. Observe surroundings at all times and use common sense. Do not use when tired, distracted, or under the influence of drugs, alcohol, or any medication that may cause decreased control.

Keep hands away from all moving parts and/or tooling (if applicable).

Wear gloves when changing tooling. Remove tooling when machine is not in use and/or lower cutting head to the floor.

Do not force equipment.

Equipment will perform best at the rate for which it was designed. Excessive force only causes operator fatigue, increased wear, and reduced control.

Environment

Avoid use in dangerous environments.

Do not use in rain, damp or wet locations, or in the presence of explosive atmospheres (gaseous fumes, dust, or flammable materials). Remove materials or debris that may be ignited by sparks. Keep work area tidy and well-lit - a cluttered or dark work area may lead to accidents. Extreme heat or cold may affect performance.

Protect others in the work area and be aware of surroundings.

Provide barriers or shields as needed to protect others from debris and machine operation. Children and other bystanders should be kept at a safe distance from the work area to avoid distracting the operator and/or coming into contact with the machine. Operator should be aware of who is around them and their proximity. Support personnel should never stand next to, in front of, or behind the machine while the machine is running. Operator should look behind them before backing up.

Guard against electric shock.

Ensure that machine is connected to a properly grounded outlet. Prevent bodily contact with grounded surfaces, e.g. pipes, radiators, ranges, and refrigerators. When scoring or making cuts, always check the work area for hidden wires or pipes.

Maintenance & Repairs

Begin maintenance work only when the machine is shut down, unplugged, and cooled down.

Use proper cleaning agents.

Ensure that all cleaning rags are fiber-free; do not use any aggressive cleaning products.

Schedule regular maintenance check-ups.

Ensure machine is properly cleaned and serviced. Remove all traces of oil, combustible fuel, or cleaning fluids from the machine and its connections and fittings. Retighten all loose fittings found during maintenance and repair work. Loose or damaged parts should be replaced immediately; use only NFE parts.

Do not weld or flame-cut on the machine during repairs, or make changes to machine without authorization from NFE.

Equipment

Use proper parts and accessories.

Only use NFE-approved or recommended parts and accessories. Using any that are not recommended may be hazardous.

Ensure accessories are properly installed and maintained.

Do not permanently remove a guard or other safety device when installing an accessory or attachment.

Inspect for damaged parts.

Check for misalignment, binding of moving parts, loose fasteners, improper mounting, broken parts, and any other conditions that may affect operation. If abnormal noise or vibration occurs, turn the machine off immediately. Do not use damaged equipment until repaired. Do not use if power switch does not turn machine on and off. For all repairs, insist on only identical NFE replacement parts.

Maintain equipment and labels.

Keep handles dry, clean, and free from oil and grease. Keep cutting edges sharp and clean. Follow instructions for lubricating and changing accessories. Motor and switches should be completely enclosed at all times with no exposed wiring. Inspect cord regularly. Labels carry important information; if unreadable or missing, contact NFE for a free replacement.

Avoid accidental starting; store idle equipment.

When not in use, ensure that the machine is unplugged; do not turn on before plugging in. Store in a dry, secured place. Remove tooling when storing, and keep away from children.



CAUTION! ENSURE PROPER USE OF EXTENSION CORDS. IF AMP DRAW IS HIGHER THAN SHOWN ON TABLE OR CORD IS LONGER THAN 50 FT, SEE AN ELECTRICIAN.

ASSUMPTIONS: 3% ALLOWABLE VOLTAGE DROP, COPPER CONDUCTORS RATED FOR 75°C, 1.25 SAFETY FACTOR, CORD VOLTAGE RATING OF 600VAC, PROPER CORD TYPES (STO, STOW, SOOW).

Amp Draw	Gauge
0-12	14
13-16	12
14-24	10
25-40	8

Safety

SHOT BLASTER SAFETY GUIDELINES

Before use, anyone operating this equipment must read and understand these safety instructions.

Shot Blasting

Beware of hidden obtrusions.

Watch out for hidden dangers and protrusions in flooring. Do not use on largely uneven surfaces.

Avoid contact with hot shroud.

Do not touch the shroud without proper hand protection. Both become hot during operation and remain hot after stopping the machine.

Provide barriers, shields, or safety glasses as needed to protect others from debris.

Use for correct applications.

Do not force equipment to do heavier duty work than it was made for.

Use a magnetic sweep immediately after blasting.

Steel shot that is left on the walking surfaces creates a hazard for falling unexpectedly.

Use a magnetic sweep before and after blasting.

Steel shot that is left on the walking surfaces creates a hazard during and after operation.

Do not tip machine during use.

Tipping the machine may throw the abrasive material.

Dust Collection

Turn off machine before working with dust collector.

Do not switch off or remove the dust collector while the machine is running.

Use with appropriate dust collecting system.

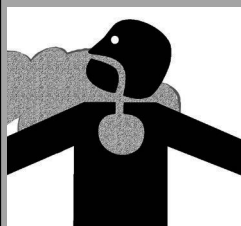
Do not operate machine designed for use with a dust collector without the dust collector. Ensure dust collector is on and operating properly while blasting.

Dispose of collected waste.

Do not leave the dust collector bag full of waste. Handle and dispose of bag and waste in accordance with all applicable local, state, and federal regulations. The dust bin of a connected dust collector must be emptied before transportation.



WARNING: GRINDING/CUTTING/DRILLING OF MASONRY, CONCRETE, METAL AND OTHER MATERIALS CAN GENERATE DUST, MISTS AND FUMES CONTAINING CHEMICALS KNOWN TO CAUSE SERIOUS FATAL INJURY OR ILLNESS, SUCH AS RESPIRATORY DISEASE, CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. IF YOU ARE UNFAMILIAR WITH THE RISKS ASSOCIATED WITH THE PARTICULAR MATERIAL BEING CUT, REVIEW THE MATERIAL SAFETY DATA SHEET AND/OR CONSULT YOU EMPLOYER,



THE MATERIAL MANUFACTURER/SUPPLIER, GOVERNMENTAL AGENCIES SUCH AS OSHA AND NIOSH AND OTHER AUTHORITIES ON HAZARDOUS MATERIALS. CALIFORNIA AND SOME OTHER AUTHORITIES, FOR INSTANCE, HAVE PUBLISHED LISTS OF SUBSTANCES KNOWN TO CAUSE CANCER, REPRODUCTIVE TOXICITY, OR OTHER HARMFUL EFFECTS. CONTROL DUST, MIST AND FUMES AT THE SOURCE WHERE POSSIBLE. IN THIS REGARD USE GOOD WORK PRACTICES AND FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER/SUPPLIER, OSHA/NIOSH, AND OCCUPATIONAL AND TRADE ASSOCIATIONS. WHEN THE HAZARDS FROM INHALATION OF DUST, MISTS AND FUMES CANNOT BE ELIMINATED, THE OPERATOR AND ANY BYSTANDERS SHOULD ALWAYS WEAR A RESPIRATOR APPROVED BY OSHA/MSHA FOR THE MATERIAL BEING CUT.

Troubleshooting Guide

Problem	Cause	Solution
Reduced or no performance	Worn blast wheel or control cage	Replace worn items
	Belt tension	Check and adjust belts
	Valve does not close properly	Close valve, stop motor, re-adjust valve
	Too much abrasive admitted	Motor must reach max. speed before opening valve
	Feed motion too fast	Reduce speed
	Motor is rotating in the wrong direction	Turn off control power; wait for motor to stop, then turn FWD/REV switch to opposite position
Losing abrasive	Bad seals	Check base seals; readjust or replace
	Elevation adjustment of magnets	Check elevation is no higher than 5/16" (8 mm)
	Magnets lost field	Replace magnets
	Filter unit	Adjust reducing damper
Dumping or losing abrasive	Poor abrasive quality	Use quality abrasives
	Worn blast wheel or seals	Replace blast wheel or adjust/replace seals
	Control cage is not correctly adjusted	Align notches to 9:00 and 11:00 position
	Magnets at wrong elevation	Adjust elevation of magnets
	Too much dust or sand in system	Check filter
	Valve is opening too far and allowing too much shot into the blast wheel, causing the Amp draw to be over 25 Amps	Reset the valve opening so the maximum Amp draw isn't higher than 20 Amps on the meter
	Blast valve is stuck open	Inspect and remove debris
Too much dust and other particles in storage	Insufficient air flow towards filtration unit	Check rated performance of the dust collector
		Check all seats
		Check dust hose
		Check differential pressure and replace filter elements if pressure is too high
Motor does not start	Missing phase	Check power supply
	Faulty switch or relays	Diagnosis and replacement by electrician
	Emergency stop	Unlock emergency stop button
Motor stops during operation	Current is too high	Disconnect plug
	Power supply circuit breaker is disengaged	Reset circuit breaker or replace fuse
	Motor is damaged	Check motor
Inconsistent blast pattern	Control cage out of adjustment	Inspect and adjust control cage
	Blast wheel and/or control cage are worn	Replace blast wheel and/or control cage

Maintenance

MAINTENANCE AND INSPECTION

Safety and service life of the machine depend on proper maintenance. The following table shows recommendations about time, inspection, and maintenance for the normal use of the machine. The time indications are based on uninterrupted operation. When the indicated number of working hours is not achieved during the corresponding period, the period can be extended. However, a full overhaul must be carried out at least yearly. Due to different working conditions, the frequency for inspections will vary. Prepare a suitable inspection schedule adhering to the specific working conditions.

Operating Hours	Inspection and Maintenance
Every 3 hours	<ul style="list-style-type: none">• Check whether there is any foreign matter in the hopper, the feed spout, or in the blast wheel unit.
Daily, prior to operation	<ul style="list-style-type: none">• Check the hose connections for tightness.• Check the hose to the filter for damages.• Make sure that the dust collector has been emptied.• Check blast wheel, feed spout, liners, and fasteners for wear or damage.• Check the separator parts for wear and defects.• Check the level of abrasive in the storage hopper. Fill to bottom of wire mesh if necessary.• Check the magnetic and seals for wear; replace if necessary.• Check the electrical connections, motor, and separator for sediment or foreign bodies.• Check function of all safety devices.• Check tightness on all accessible screw connections.
Yearly	<ul style="list-style-type: none">• Fully overhaul and clean the machine.

TAPER LOCK BUSHINGS (FIGURE 1)

Taper lock bushings are used to fit hubs onto shafts. Mounting and demounting requires an Allen wrench of the correct size. Tightening or loosening is done with the same threaded set screws.

The taper lock bushing is cylindrical on the inside; tapered and slit longitudinally on the outside. The bushing has two blind half-holes (located across from one another) on its outer diameter that correspond with similar half-holes on the inside diameter of the pulley (F).

With the two half-holes lined up, the set screw is threaded into the blind hole (F) and will collapse the tapered bushing and tighten it onto the shaft and sheave.

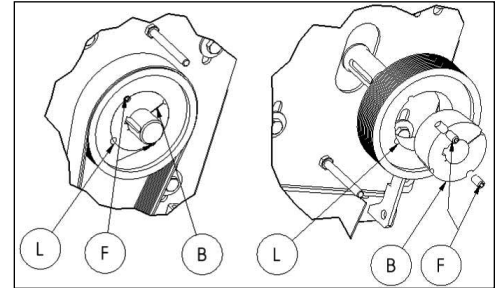


FIG. 1

Demounting

1. Remove the screws (F) from the taper lock bushing.
2. Lubricate the threads of the set screw and the threads of the 3rd half-hole (located 90 degrees from where the set screws were removed).
3. Thread the screw into the hole; turn the screw until the taper lock bushing (B) loosens on the shaft and inside the pulley.

Mounting

Ensure that all contact surfaces are free from dirt, oil, and other contaminants.

1. Place taper lock bushing into the pulley, lining up the half-holes in both and the shaft key with the key in the taper lock bushing. Place them onto the shaft.
2. Lightly thread the set screws into the holes.
3. With the pulley seated on the shaft, take a small hammer and a socket that fits inside the outside diameter of the bushing and seat the bushing into the pulley.
4. Use Allen wrench to tighten the set screws evenly; alternate tapping the bushing until the set screws are fully tightened.

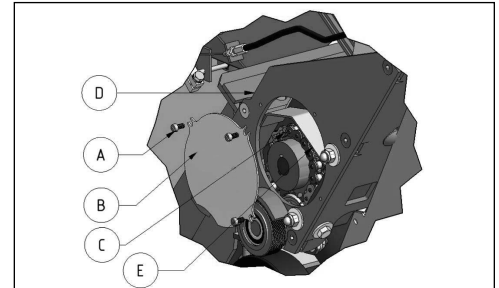


FIG. 2

CHAIN DRIVE (FIGURE 2)

Chain drives are relatively robust and reliable even under unfavourable operating conditions. Incorrect mounting and insufficient lubrication or maintenance will cause premature wear of the chain and the chain wheels. Careful fitting of the chain drives and appropriate maintenance contribute to a long service life.

In order to check the chain condition, unscrew screws (A) and remove the cover (B) from the traction drive brackets as shown.



WARNING: REMOVE THE CHAIN GUARD ONLY WHEN THE DRIVE MOTOR IS AT A STANDSTILL AND THE MACHINE IS IN THE SAFETY OFF POSITION.

Fitting Sprockets

Chain sprockets must be aligned. In order to achieve this, both the shafts and chain sprockets must be parallel and dimensioned according to the load. Check the mounting precision by putting a ruler to the chain wheels. This has to be done several times with different chain wheel positions. Incorrect mounting makes the internal chain link plates press against the external link plates and accelerates the chain wear or causes the chain wheels to lock up.

Maintenance

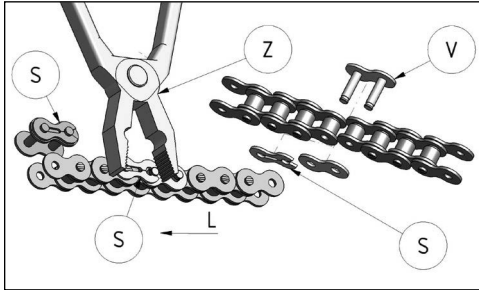


FIG. 3

Fitting the Chain (Figure 3)

Before mounting the chain, it must be degreased.

The chain is supplied as a chain string and must be prepared during mounting. This is done as follows:

1. Place chain on the sprocket so that the links lie in adjacent gaps between the teeth.
2. Close chain using a master link. With heavy chains or longer distance between the shafts, use a pre-stressing tool to bring the two end links so closer together so that the master link can be inserted without being deformed.

Note: Chain links with springs should have their closed sides pointing in the running direction (L) of the chain (S). Slide in the link adapter (V); place the link plate opposite of the spring and press it over the pin into the ring groove using a pair of tongs. Demount the spring in the reverse order.

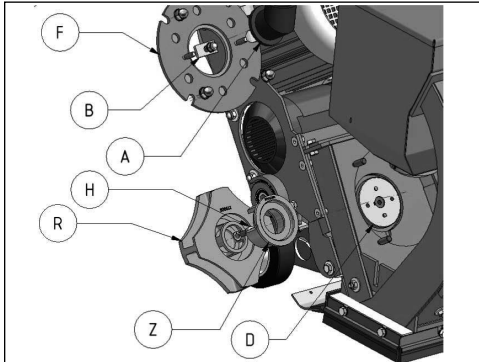


FIG. 4

Maintenance and Repairs

A chain drive needs little maintenance if the correct chain has been selected, mounted correctly for the application, and is not lubricated with grease. A chain guard protects the drive chain. The chain guard prevents excessive contamination and accidents.

The drive must be cleaned every three months; on these occasions, check the alignment of the chain sprockets and tension.

In order to clean thoroughly:

- Remove the dirt on the outside of the chain drive using a hard or wire brush.
- Wash the chain in mineral spirits or other solvent.
- Clean the dirt from the internal parts of the chain by putting the chain in mineral spirits or other solvent for approx. 24 hours. Move the chain several times back and forth while in the solvent to clean the joints.

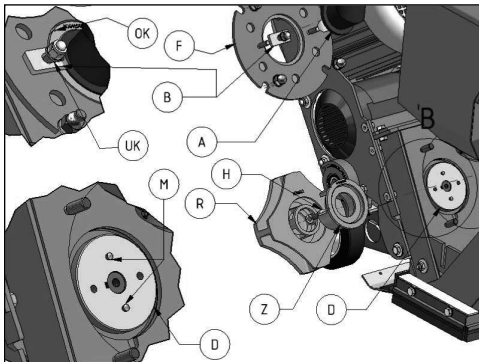


FIG. 5

REPLACING THE WHEEL KIT

The wheel kit consists of the blast wheel, control cage, lock washer, and retaining bolt.

Demounting (Figure 4)

1. Remove the feed spout (A) by pulling it out of the control cage.
2. Loosen the cage clamps (B) and remove the control cage (Z).
3. Unscrew the four acorn nuts of the front cover plate (F); remove the plate.
4. Unscrew the retaining bolt (H) of the blast wheel (R) while holding the blast wheel still. Take the blast wheel out of the housing.
5. Check the wheel adapter (D) for wear and replace if necessary.

Mounting (Figure 5)

1. Clean all threads and use a new blast wheel retaining bolt. Place blast wheel (R) on the wheel hub (D) through the blast housing opening so the wheel fits with the adapter pins (M). Tighten the blast wheel by the retaining bolt(H).
2. Re-attach the front cover plate (F) using the four washers and acorn nuts.
3. Insert the control cage (Z) in the center and clamp the control cage with the cage clamps (B) so that the blast wheel can rotate free with an overall clearance of 1/8" (3 mm) to the impeller. The blast wheel must rotate freely.
4. Preset the notches or guide lines, on the face of the control cage, to the 9:00 and 11:00 positions (OK and UK respectively) as shown in Figure 5.

- Place the feed spout (A) in the housing.

REPLACING LINERS (FIGURE 6)

Demounting

- Remove the front plate (F) and wheel kit (S).
- Slacken the set screw (A) of the top liner.
- Take of the screws of the cover (B) and remove the cover.
- Slacken the nuts (D) of both the right and left side liner and put them aside.
- Slacken the nuts (E) of the bottom liner.
- Push both side liners (SL) and (SR) inwards and remove them towards the bottom out of the housing.
- On the right or left side, push the top liner inwards (O); push it back upwards again and remove (O), turning it towards the side out of the top of the housing.
- Slacken the nuts (E) of the bottom rebound liner (U) push the liner inward.
- Fully remove the nuts (E) and remove the liner (U) downward away from the housing.
- To remove the rebound bottom (U) and top liner (V), remove the nuts and pull both downwards out of the housing.

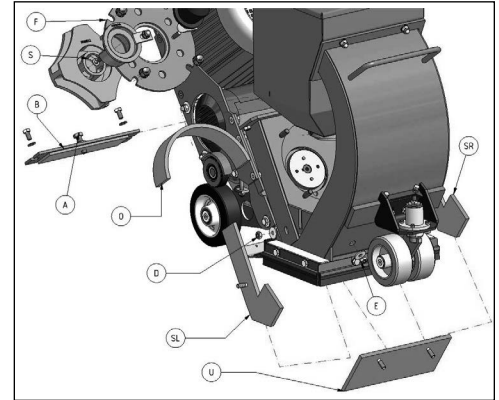


FIG. 6

Mounting

- Before fitting any new liner, check all threads to assure they are clean of dirt and abrasives. Clean where necessary.
- Place the bottom liner (U), put the nuts (E) on, but do not over tighten.
- Place both side liner (SL) and (SR) into the housing and fit washer and nuts.
- Place the top liner (O) to the top.
- Close the cover (B) and fit the screws, set the setscrew (A) cover so the top liner is forced downwards to the upper surfaces of the side liners.
- Fit the blast wheel, front plate, and control cage.

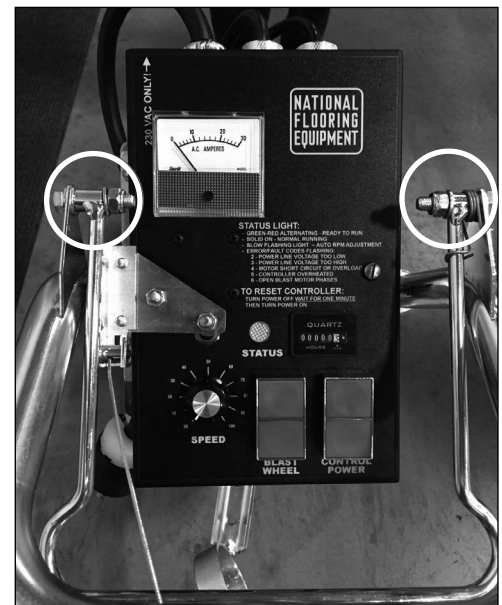
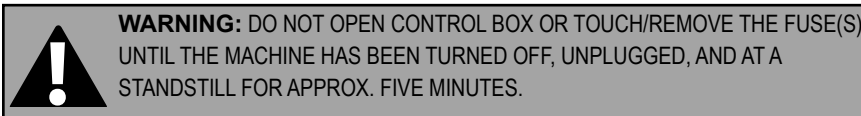


FIG. 7

CHECK/CHANGE FUSES



For any work in the controller, the handle will need to be loosened (Figure 7). The fuses are located inside the control box (Figure 8). To check the fuse, and change if necessary, complete the following steps:

- Loosen the handle (Figure 7) and hang it to the side to access the control box, then unscrew the screw on the front right side of the control box to open it.
- Remove the fuse(s) (Figure 8).
- Use a continuity tester to test the fuse(s).
- Replace any bad fuse(s) and reverse these steps.

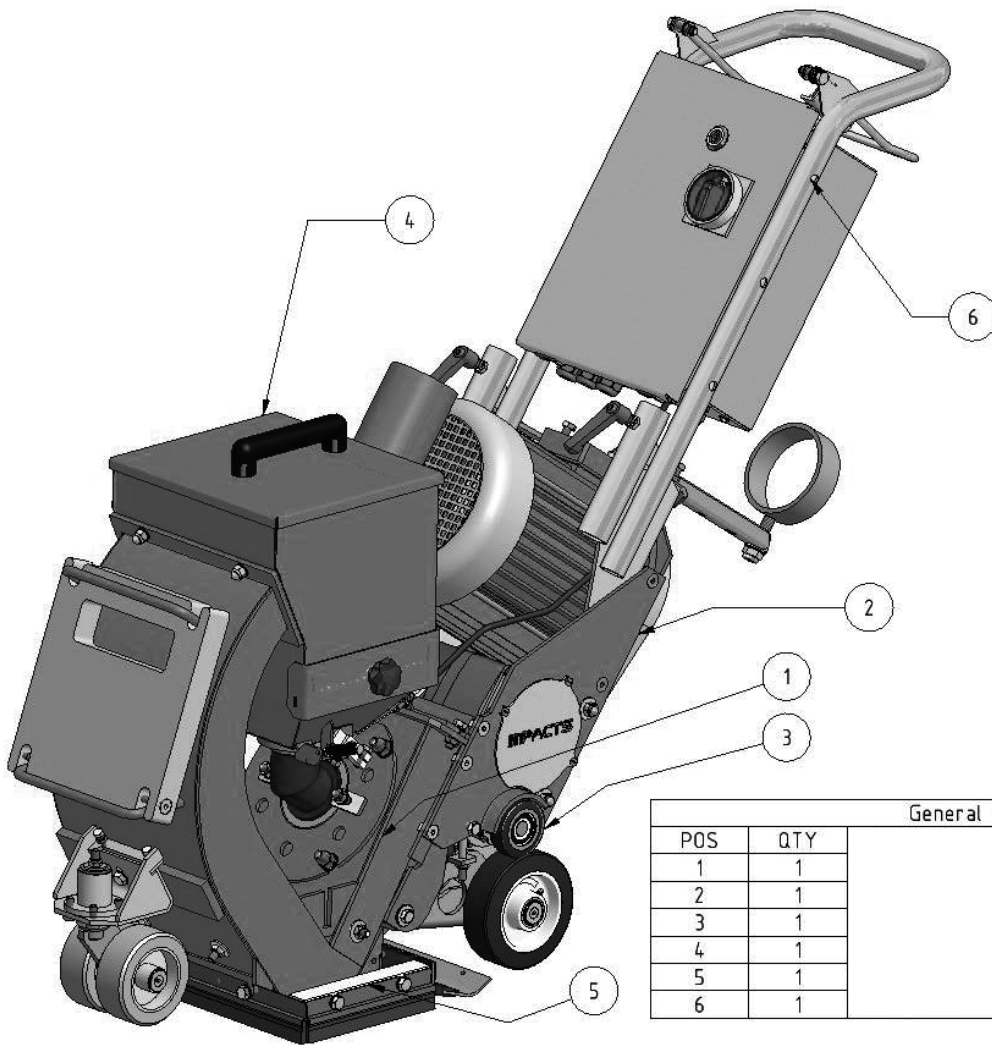


FIG. 8

Service Parts

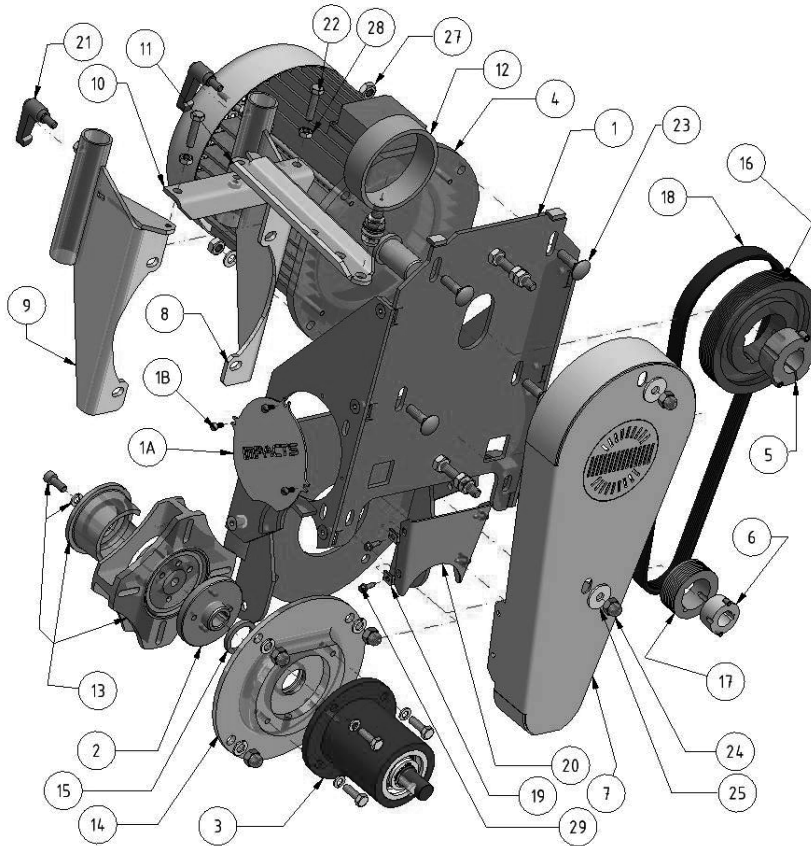
PART#	DESCRIPTION	PART#	DESCRIPTION
1	3396-201000002 SERVICE KIT, BLAST WHEEL, 10MM X 165MM	36	3396-201000811 SUPPORT, CROSS BAR
2	3396-201000069 LINER, REBOUND, BOTTOM	37	3396-201000812 HOSE, SUPPORT BAR
3	3396-201000070 LINER, SIDE, LEFT	38	3396-201000813 GUIDE, HOSE
4	3396-201000071 LINER, SIDE, RIGHT	39	3396-201000814 SPRING, LEG
5	3396-201000072 LINER, TOP	40	3396-201000816 SPRING, COMPRESSION
6	3396-201000091 COVER, WHEEL HOUSING	41	3396-201001721 LINER, REDUCTION, 6"
7	3396-201000092 BRACKET, SUPPORT, CONTROL CAGE	42	3396-201001722 LINER, REDUCTION, 4"
8	3396-201000098 LID, SEPERATOR	43	3396-201001723 LINER, REDUCTION, 2"
9	3396-201000099 TRAY, SEPERATOR	44	3396-301000013 V BELT, FLAT EUR
10	3396-201000109 SEAL, FELT	45	3396-302000010 SHEAVE, 140
11	3396-201000129 SPOUT, FEED	46	3396-303000008 BUSHING, TAPER LOCK
12	3396-201000141 PLATE, SUPPORT, BEARING UNIT	47	3396-303000010 BUSHING, TAPER LOCK
13	3396-201000149 DEFLECTOR	48	3396-303000011 SHEAVE, 60, EUR
14	3396-201000231 ADJUSTER, CABLE	49	3396-309000003 CHAIN, DRIVE, 2921G, 23 LINK
15	3396-201000389 BEARING UNIT	50	3396-309000004 LINK, CHAIN
16	3396-201000428 ADAPTER, WHEEL	51	3396-309000013 LINKAGE, CHAIN
17	3396-201000564 PLATE, SPACER	52	3396-310000002 HANDLE
18	3396-201000586 BRACKET, WHEEL, FRONT	53	3396-310000005 KNOB, STAR
19	3396-201000590 SEAL, REAR	54	3396-311000018 SCREW, SET, M8
20	3396-201000591 COVER, GUARD, REAR BELT	55	3396-601000031 MOTOR, ZEP
21	3396-201000601 HOUSING, WHEEL	56	3396-601000034 MOTOR, DRIVE, GEARED
22	3396-201000634 BRACKET, DRIVE MOTOR	57	401410 WEIGHT, FRONT, SHOT BLASTER
23	3396-201000636 BRACKET, DRIVE MOTOR	58	401643 HANDLE, TOP
24	3396-201000640 SUPPORT, HANDLE, LEFT	59	401645 PLATE, CLAMPING
25	3396-201000641 SUPPORT, HANDLE, RIGHT	60	401650 GASKET, SEPARATOR
26	3396-201000643 PLATE, COVER	61	401867 PULLEY, 71 J8 US
27	3396-201000647 HANDLE	62	401868 BELT, DRIVE US
28	3396-201000649 GUARD, BELT	63	402123 SHEAVE, 60, US
29	3396-201000651 HOUSING, SEPERATOR	64	402403 RING, FEED SPOUT
30	3396-201000652 LEVER, ABRASIVE VALVE	65	402571 POTENTIOMETER, GROUND SPEED CONTROL
31	3396-201000796 SPROCKET	66	402683 SWITCH, ON/OFF, ILLUMINATED
32	3396-201000799 BRUSH, SIDE, LEFT	67	402684 SWITCH, ON/OFF, NON-ILLUMINATED
33	3396-201000800 BRUSH, SIDE, RIGHT	68	402874 KIT, ASSEMBLY, CONTROLLER, 3396
34	3396-201000803 ASSEMBLY, DRIVE SHAFT	69	403063 METER, HOUR
35	3396-201000805 CABLE, COMPLETE, VALVE CONTROL		

Parts List and Diagrams



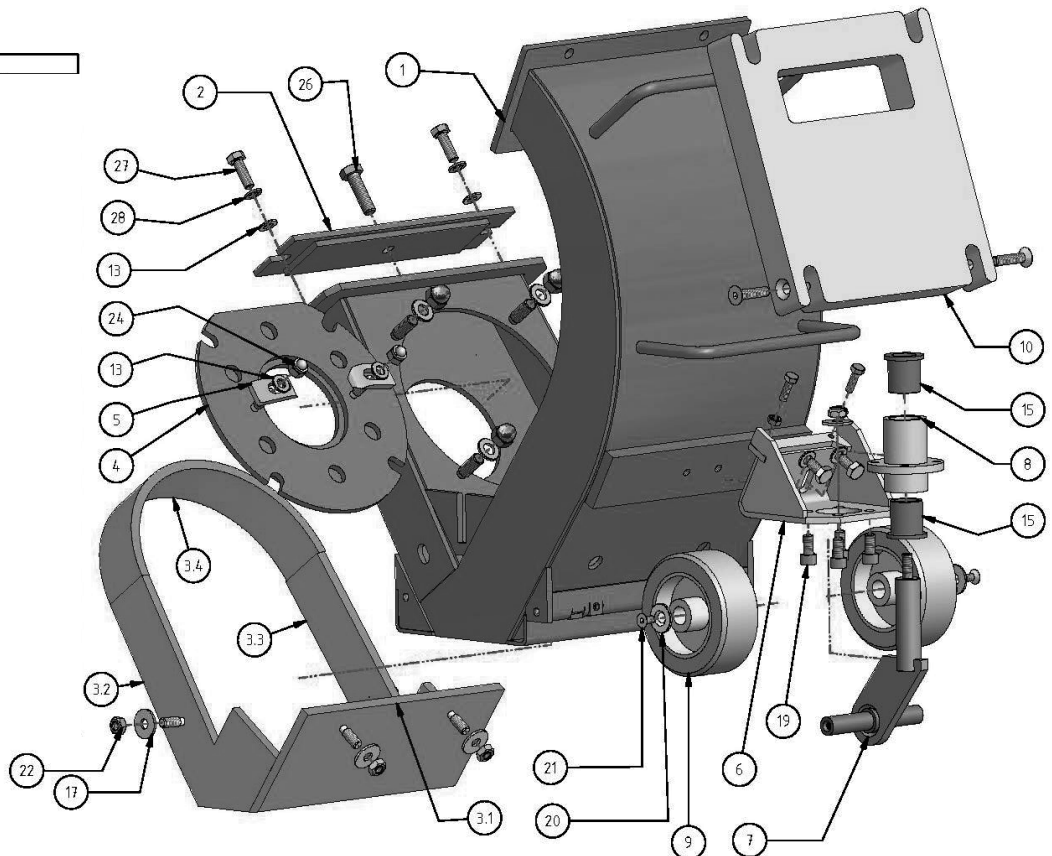
General Arrangement		
POS	QTY	DESCRIPTION
1	1	WHEELHOUSING ASSEMBLY
2	1	WHEEL DRIVE ASSEMBLY
3	1	TRACTION DRIVE ASSEMBLY
4	1	SEPARATOR ASSEMBLY
5	1	BASE SEAL ASSEMBLY
6	1	TOP HANDLE ASSEMBLY

Parts List and Diagrams

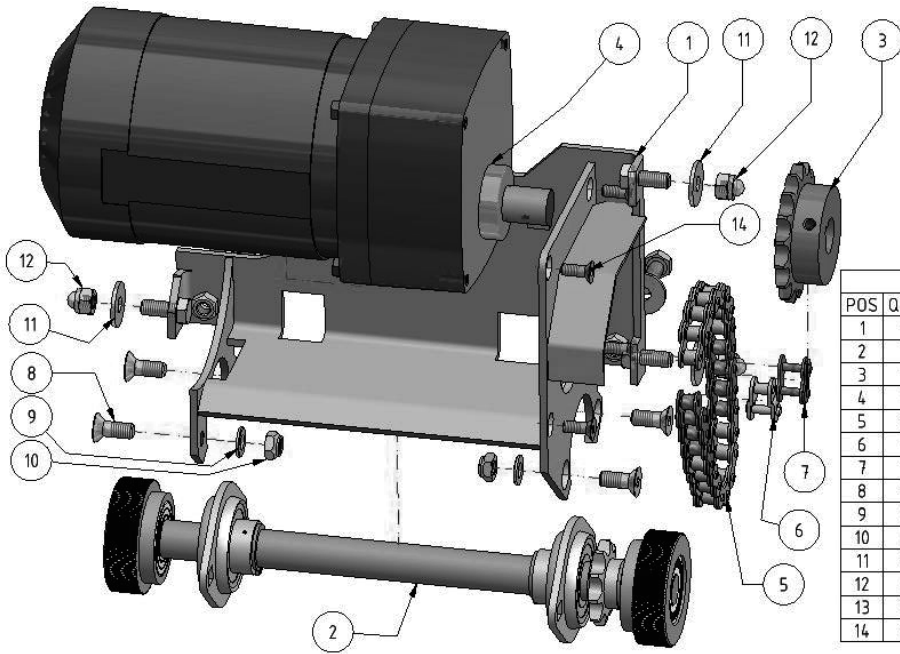


WHEEL DRIVE ASSEMBLY		
POS	QTY.	DESCRIPTION
1	1	DRIVE BRKT.
1A	1	COVER PLATE
1B	3	SL. CYL.HD. SCREW
2	1	WHEEL ADAPTER S200S S210-XX
3	1	BEARING UNIT
4	1	ZEP MOTOR
5	1	T LOCK BUSH
6	1	TAPER LOCK BUSH
7	1	BELT GUARD S210-XX
8	1	RH HANDLE SUPPORT
9	1	LH HANDLE SUPPORT
10	1	CROSS BAR HOSE SUP.
11	1	HOSE SUP. BAR
12	1	HOSE GUIDE
13	1	BLAST WHEEL KIT
14	1	BEARING UNIT SUP PLATE
15	1	FELT SEAL
16	1	SHEAVE 140
17	1	SHEAVE 60
18	1	FLAT V BELT
19	4	PLATE NUT 1,7mm
20	1	REAR B GUARD COVER
21	2	CLAMPING LEVER
22	2	HEX HEAD BOLT
23	4	BOLT W. SQRD.HEAD SEC.
24	6	CAP NUT M10
25	2	WASHER
26	4	WASHER
27	4	HEX NUT M10
28	2	HEX NUT M8
29	4	TAPPING SCREW
30	4	HEX HEAD BOLT
31	4	LOCK WASHER
32	4	LOCK WASHER 10mm

WHEELHOUSING ASSEMBLY		
POS	QTY.	DESCRIPTION
1	1	WHEELHOUSING
2	1	WHEELHOUSING COVER
3	1	LINER SET
3.1	1	BOTTOM LINER RBC
3.2	1	SIDE LINER LH
3.3	1	SIDE LINER RH
3.4	1	TOP LINER
4	1	CAGE SUP BRKT.
5	2	CLAMP CONTROL CAGE
6	1	FRONT WHEEL BRKT.
7	1	SWIVEL BRACKET
8	1	SWIVEL BUSH
9	2	WHEEL
10	1	ADD ON WEIGHT
11	2	HEX NUT M6
12	2	HEX HEAD BOLT
13	6	WASHER
14	2	HEX HEAD BOLT
15	2	BUSHING
16	1	BOLT M8x30
17	5	WASHER
18	1	LOCK NUT M8
19	4	HEX SOCK HEAD CAP SCREW
20	2	WASHER
21	2	C.S.HEAD SCREW
22	4	HEX NUT M8
23	4	CAP NUT M10
24	2	CAP NUT
25	4	WASHER
26	1	HEX HEAD BOLT
27	2	HEX HEAD BOLT
28	2	LOCK WASHER

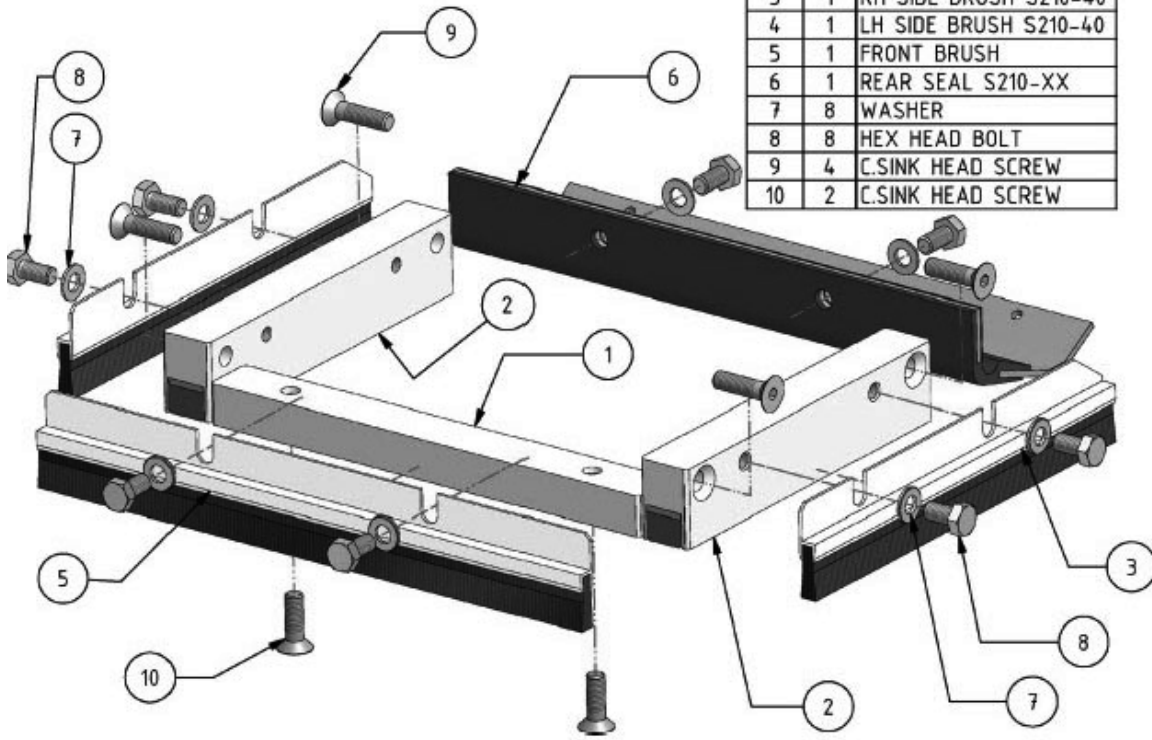


Parts List and Diagrams

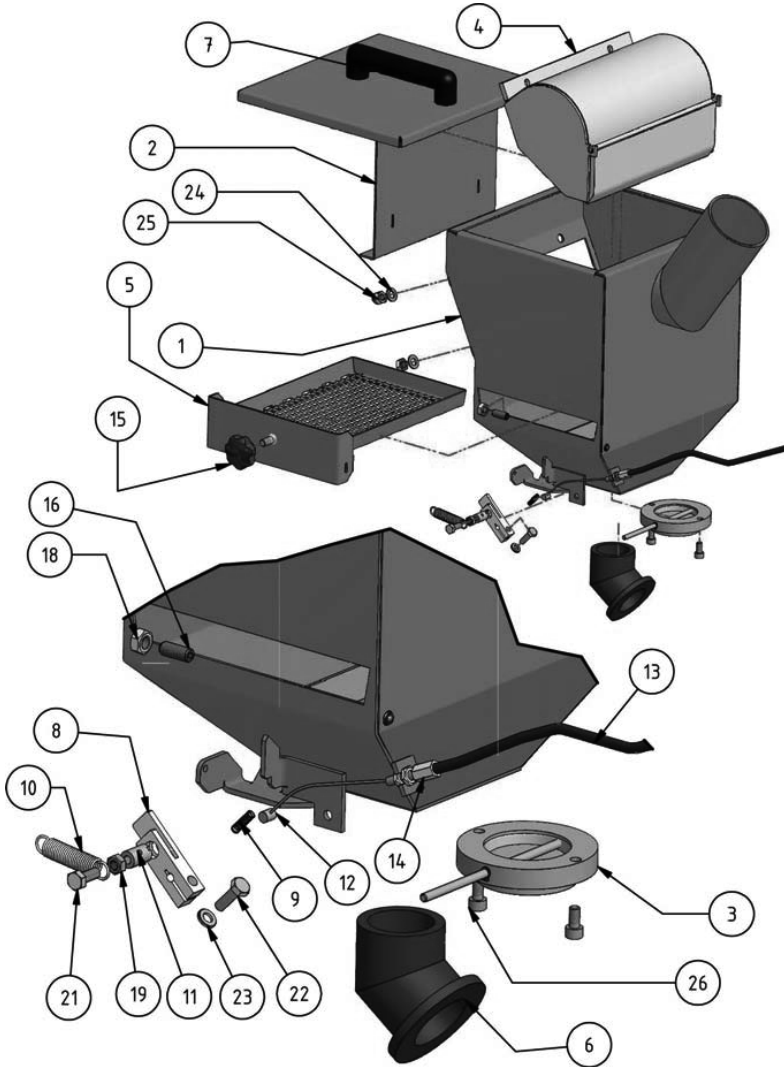


TRACTION DRIVE ASSEMBLY		
POS	QTY	DESCRIPTION
1	1	DR.MOT.BRKT
2	1	DRIVE SHAFT ASSEMBLY
3	1	SPROCKET
4	1	GEARED MOTOR
5	2	DRIVE CHAIN 292lg 23 LINK
6	1	CHAIN LINCKAGE
7	1	CHAIN LINK
8	4	COUNTERSINK HEAD SCREW
9	4	WASHER
10	4	LOCK NUT M8
11	6	WASHER
12	4	CAP NUT
13	2	HEX HEAD BOLT
14	4	C.SINK HD. SCREW

BASE SEAL ASSEMBLY		
POS	QTY	DESCRIPTION
1	1	FRONTMAGNET S210
2	2	SIDE MAGNET
3	1	RH SIDE BRUSH S210-40
4	1	LH SIDE BRUSH S210-40
5	1	FRONT BRUSH
6	1	REAR SEAL S210-XX
7	8	WASHER
8	8	HEX HEAD BOLT
9	4	C.SINK HEAD SCREW
10	2	C.SINK HEAD SCREW

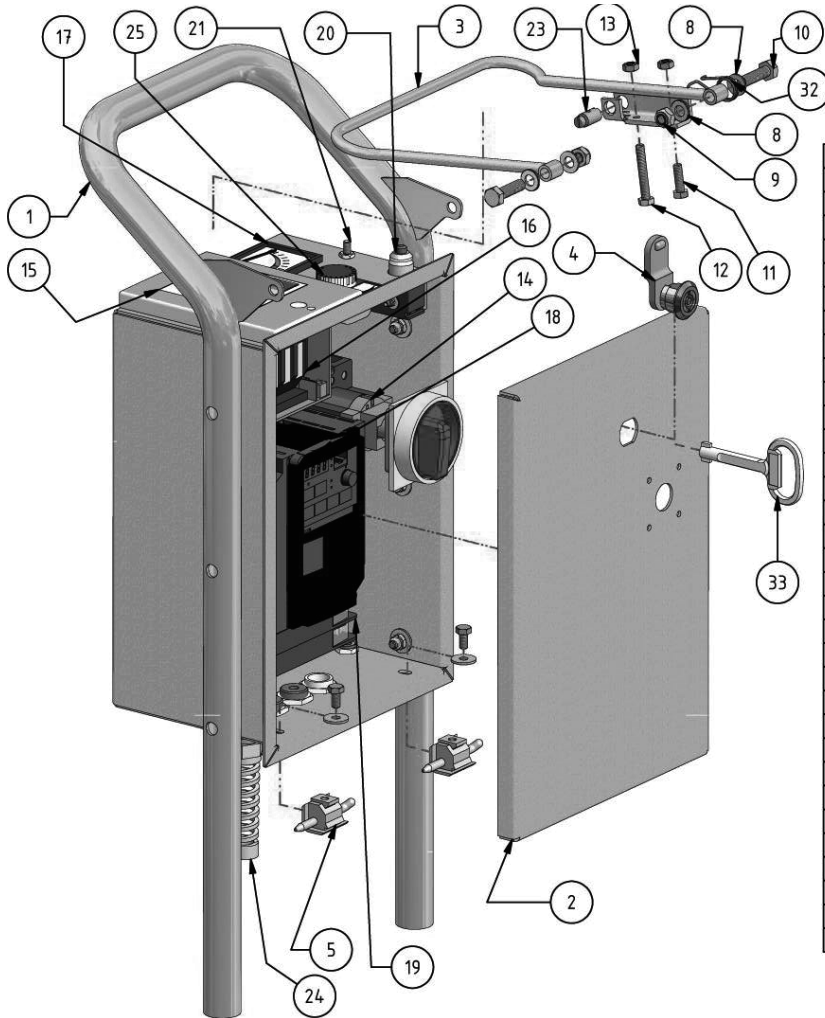


Parts List and Diagrams



SEPARATOR ASSEMBLY		
POS	QTY	DESCRIPTION
1	1	SEP HOUSING
2	1	SEP LID
3	1	FEED VALVE
4	1	DEFLECTOR
5	1	SEP TRAY
6	1	FEED SPOUT
7	1	HANDLE
8	1	VALVE LEVER
9	1	COMPRESSION SPRING
10	1	TENSION SPRING
11	1	CLAMP NIPPLE
12	1	C CABLE
13	1	SLEEVE 690lg
14	1	ADJUSTER NIPPLE
15	1	STAR KNOB
16	2	SET SCREW M8
17	2	CAP NUT
18	4	HEX NUT M8
19	1	HEX NUT M6
20	2	HEX HEAD BOLT
21	1	HEX HEAD BOLT
22	1	HEX HEAD BOLT
23	1	WASHER
24	6	WASHER
25	2	CAP NUT
26	2	CYL.HD.SCREW

Parts List and Diagrams



TOP HANDLE ASSEMBLY		
POS	QTY	DESCRIPTION
1	1	HANDLE
2	1	SWITCH BOARD
3	1	SWITCH LEVER S210-XX
4	1	DOOR LOCK
5	2	HINGE
6	6	HEX. SOCK.Hd. CAP SCREW
7	8	WASHER
8	4	WASHER
9	2	LOCK NUT M8
10	2	HEX HEAD BOLT
11	1	HEX HEAD BOLT
12	1	HEX HEAD BOLT
13	2	HEX NUT M6
14	1	MAINS CONNECTOR
15	1	INSTALLATION HOUSING
16	1	MOTORPROTECTION-SWITCH
17	1	AMPMETER
18	1	INVERTER
19	1	LINE FILTER
20	1	MICRO SWITCH
21	1	ADJUSTER NIPPLE
22	1	SPACER PLATE
23	1	NIPPLE
24	1	CABLE-ANTIKINK
25	1	POTENTIOMETER
26	1	LOW VOLTAGE RELEASE
28	2	CABELGLAND
29	2	SLOTTED CYL.HD. SCREW
30	2	WASHER
31	2	LOCK NUT
32	1	LEG SPRING
33	1	DOOR KEY

Warranty

National Flooring Equipment Inc. (referred to as "the Company") warrants that each new unit manufactured by The Company, to be free from defects in material and workmanship in normal use and service for a period of twelve (12) months from date of shipment from the Company. For administrative ease, will honor warranty for a period of fifteen (15) months from date of shipment from the company. Accessories or equipment furnished and installed on the product by the Company but manufactured by others, including but not limited to: engines, motors, electrical components, transmissions etc., shall carry the accessory manufacturers own warranty. Battery warranties are prorated over the warranty period. Customer is responsible for the inspection of equipment / parts upon delivery. Freight damages reported beyond authorized time frame will not be honored.

The Company, at its determination of defect, will repair or replace any product or part deemed to be defective in material or workmanship within specified warranty time period. All product determinations and / or repairs will take place at the designated Company repair facility, or at a certified warranty location designated by the Company. The Company will coordinate and be responsible for all freight expenses associated with valid warranty claims. Freight and shipping expenses associated with abuse or misuse will be back charged to the Distributor/Customer. The Company reserves the right to modify, alter or improve any part / parts without incurring any obligation to replace any part / parts previously sold without such modified, altered or improved part / parts. In no event shall the seller or manufacturer of the product be liable for special, incidental, or consequential damages, including loss of profits, whether or not caused by or resulting from the negligence of seller and / or the manufacturer of the product unless specifically provided herein. This warranty shall not apply to any products or portions there of which have been subjected to abuse, misuse, improper installation or operation, lack of recommended maintenance, electrical failure or abnormal conditions and to products which have been tampered with, altered, modified, repaired, reworked by anyone not approved or authorized by the Company or used in any manner inconsistent with the provisions of the above or any instructions or specifications provided with or for the product. Any and all unauthorized onsite warranty work conducted by unauthorized personnel or any outside person(s), is not covered by the Company unless the work has been pre-authorized by a predetermined manufacturer representative. This excludes wearable parts and/or consumables.

Defective or failed material or equipment shall be held at the purchaser's premises until authorization has been granted by the Company to return or dispose of defective products. Products returned for final inspection must be returned with a manufacturer authorized Return Material Authorization (RMA). Any unauthorized return of equipment will be declined at the dock by the Company. Any non-approved items returned with approved returned items are subject to rejection and will not be credited. Credit will be issued for material found to be defective upon the Company's inspection based on prices at time of purchase.

TO OBTAIN SERVICE CONTACT NATIONAL FLOORING EQUIPMENT, INC. TOLL FREE AT 800-245-0267 FOR A REPAIR AUTHORIZATION NUMBER. COD FREIGHT RETURNS WILL NOT BE ACCEPTED. FREIGHT COLLECT SHIPMENTS WILL NOT BE ACCEPTED. WARRANTY REPAIRS MUST BE ACCOMPANIED BY DATE OF PURCHASE RECEIPT AND A RETURN/ REPAIR AUTHORIZATION NUMBER.

RETURN/REPAIR AUTHORIZATION NUMBER: _____

MACHINE SERIAL NUMBER: _____



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