PANGBORN®

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

FOR

ES-1838-22 ROTOBLAST® MACHINE

CUSTOMER ORDER NO. "Verbal"
PANGBORN® ORDER NO. 108616

P & W PAINTING CONTRACTORS

TOLEDO, OHIO

WRITTEN	DWJ
CHECKED	√
APPROVED	WSJ
DATE	9/4/07

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1.0 REFERENCE DRAWINGS

General Arrangement	L-070290
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2.0 GENERAL SPECIFICATIONS

Type of work – misc. structural steel fabrications and weldments

Type of work conveyor – roller conveyor

Work size – 3'-0" wide x 5'-0" high

Rotoblast units – Eight 265DD-2 RI Rim-Loc®, total 160 HP

Abrasive flow – approximately 174,000 pounds per hour.

Total motor HP – 210.5

Ventilation requirements – 4,435 CFM at 3500 LFM

Compressed air required – approximately 18 CFM @ 80 PSI

Electrical requirements – 460 V, 3 PH, 60 HZ, approximately 270 FLA

3.0 GENERAL SYSTEM DATA

3.1 This machine can clean work up to 36" wide x 60" high and pass work up to 96" high. For maximum utilization of blast coverage, insure that work is always positioned within the work envelope as shown on M-070368 and L-070290.

WARNING:  **DO NOT ATTEMPT TO OPERATE OR INSTALL THIS EQUIPMENT UNTIL YOU HAVE READ AND UNDERSTOOD THE MACHINE OPERATING MANUAL, INSTRUCTIONS AND EMERGENCY STOP PROCEDURES. FAILURE TO READ AND COMPLY WITH THE INSTRUCTIONS OR ANY ONE OF THE LIMITATIONS NOTED HEREIN CAN RESULT IN SERIOUS BODILY INJURY, DEATH, AND/OR PROPERTY DAMAGE. THIS MANUAL CONTAINS SPECIFIC PRECAUTIONARY STATEMENTS RELATIVE TO WORKER SAFETY. PERSONNEL INVOLVED WITH THE OPERATION AND MAINTENANCE OF THIS EQUIPMENT MUST BE TRAINED BY QUALIFIED PERSONNEL BEFORE OPERATING OR MAINTAINING THIS EQUIPMENT.**

WARNING:  **ADDITIONAL SAFETY EQUIPMENT IS REQUIRED IF MACHINE IS TO PROCESS PARTS OF ALUMINUM, TITANIUM OR OTHER SIMILAR METALS AND THEIR ALLOYS. SEE HAZARDOUS MATERIALS WARNING INCLUDED IN THIS MANUAL.**

WARNING:  **THE MACHINE MUST NEVER BE ENTERED AND NO DOORS OR PANELS OPENED UNTIL THE NECESSARY Z.M.S. PROCEDURE (REF. SECTION 5.5) HAS BEEN FOLLOWED. SERVICE ACCESS DOORS MUST NOT BE USED FOR ANY PURPOSE EXCEPT INSPECTION AND MAINTENANCE OF THE BLAST MACHINE.**

NOTE: **DEPENDING UPON THE CONFIGURATION OF THE WORK, SOME PARTS MAY HAVE TO BE TURNED OVER OR REPOSITIONED AND RUN THROUGH THE MACHINE A SECOND PASS TO BE CLEANED. AN EXAMPLE WOULD BE THE BOTTOM INSIDE FLANGE OF AN I-BEAM THAT IS MASKED FROM THE TOP ROTOBLAST BY ITS OWN TOP FLANGE.**

ESTIMATED PRODUCTION:

Near-white metal finish (SSPC-10) – 2 to 20 FPM

NOTE: **ESTIMATED SPEED IS BASED ON CLEANING LOW CARBON STEEL OF "A" OR "B" CONDITION. STEEL OF A MORE SEVERE CONDITION OR HAVING A SCALE CONDITION MORE TENACIOUS THAN NORMALLY FOUND ON LOW CARBON STEEL WILL REQUIRE A REDUCED CLEAN SPEED TO ACHIEVE THE DESIRED RESULTS.**

3.0 GENERAL SYSTEM DATA – continued

3.2 The installation consists of a blast cabinet, abrasive recovery and handling system, spill hopper, ventilating duct work and a dust collector for ventilating the blast machine.

4.0 SYSTEM DESCRIPTION

4.1 ROTOBLAST CABINET AND WEAR PLATING

The cabinet is approximately 16'-8" long including the blast compartment, entrance and exit vestibules.

The cabinet consists of a manganese steel blast compartment on which eight Rotoblast units are mounted. Half inch thick wear-resist plates are provided in line with the streams of the Rotoblasts. Access to the interior of the cabinet and vestibules is through the work openings at entry or exit end of machine.

WARNING:  **MAKE SURE ROTOBLAST UNITS ARE STOPPED AND Z.M.S. PROCEDURE (REF. 5.3) HAS BEEN FOLLOWED BEFORE ENTERING BLAST COMPARTMENT OR VESTIBULES. THIS IS EXTREMELY IMPORTANT FOR PERSONNEL ENTERING VESTIBULES OR BLAST COMPARTMENT SINCE THERE ARE NO OTHER SAFETY FEATURES TO PREVENT ACCIDENTAL STARTING OF MACHINE.**

The floor of the cabinet vestibule and spill hopper is 1" x 3/16" type 1R4 bar grating designed for 250 pounds per square foot maximum load.

WARNING:  **THE WORK MUST NEVER BE REVERSED ONCE IT HAS ENTERED THE SEALS. THE WORK CAN ONLY BE REVERSED WHEN IT HAS COMPLETELY CLEARED THE CABINET AND SEALS.**

Two vestibules, one on either end of the blast compartment, each containing three sets of polycarbonate and urethane finger type seals to contain the abrasive. These seals must be inspected periodically for wear and replaced when necessary to maintain a proper seal.

4.2 WORK CONVEYOR

A powered roll conveyor system is provided through the blast machine and includes a 30'-0" entrance end conveyor and a 30'-0" exit end conveyor. Each conveyor is powered by a 1-1/2 HP variable speed drive providing line speed of 2 to 20 feet per minute. The blast cabinet and vestibule work rolls are powered by the entrance and exit conveyor drives.

4.0 SYSTEM DESCRIPTION – continued

4.3 ABRASIVE SYSTEM

The bottom of the cabinet converges into a hopper containing a 12" diameter "JH" spiral screw conveyor. As the spent abrasive falls into the hopper, it is conveyed by the screw to a 12" diameter cross screw conveyor to the boot of a #6 "IG" bucket elevator. The elevator discharges the abrasive into a #4 "BEI" airwash separator, which separates the refuse from the good abrasive. The good abrasive falls into a trough containing a 12" diameter "JH" spiral screw conveyor, which conveys the abrasive to two storage bins. The abrasive remains there until it is used by the Rotoblast units.

The air stream through the separator is controlled by blast gates mounted on the separator casing. As the air is pulled through the falling abrasive, the fine refuse is separated out and deposited in a fine refuse pipe, which leads to a container (**by customer**) at floor level. The finer airborne particles are pulled by the air stream into the duct leading to the dust collector and conveyed to same. The cleaned abrasive falls into the screw conveyor trough.

On the bottom of each storage bin there are four (4) spouts, and below each spout there is an air-operated, sound abatement, abrasive gate to control the flow of abrasive to the Rotoblast unit. Each gate assembly is an individually air operated, slide type, two-position gate which may be adjusted to regulate the abrasive flow to the Rotoblasts. The gates are totally enclosed to reduce source noise. Compressed air at approximately 80 PSI **must** be maintained at the gate for proper operation.

Eight (8) ammeters are provided to register power consumption of the Rotoblast motors for the cleaning operation. These ammeters, when operating normal load, should register at or slightly below the value stamped on the motor nameplate. Any significant variation of the amperage indicates a change in load on the motor.

Adjust abrasive flow as required.

More detailed instructions on the operation and maintenance of the elevator and separator are contained elsewhere in this manual.

4.4 ROTOBLAST UNITS

The descaling action is accomplished by the use of eight 265DD-2RI Rim-Loc® Rotoblast units, each driven by a 20 HP, 1800 RPM motor. More detailed instructions on the operation and maintenance of these Rotoblast units are contained elsewhere in this manual.

4.0 SYSTEM DESCRIPTION – continued

4.5 SUPERSTRUCTURE

The superstructure is equipped to support the upper abrasive system.

4.6 VENTILATING SYSTEM

This machine requires 4,435 CFM of air for proper ventilation. Vent piping and blast gates to cabinet are to be furnished **by customer**. See general arrangement for pipe sizing and location.

4.7 SPILL HOPPER

At the exit end of the machine is a 10'-0" spill hopper with a 6" diameter "JH" screw conveyor. Abrasive carried out by the work can fall into the sloped sides of the spill hopper and be returned to the cabinet for reuse.

5.0 OPERATING AND SAFETY INSTRUCTIONS

WARNING:  **DO NOT ATTEMPT TO OPERATE OR INSTALL THIS EQUIPMENT UNTIL YOU HAVE READ AND UNDERSTOOD THE MACHINE OPERATING MANUAL, INSTRUCTIONS AND EMERGENCY STOP PROCEDURES. FAILURE TO READ AND COMPLY WITH THE INSTRUCTIONS OR ANY ONE OF THE LIMITATIONS NOTED HEREIN CAN RESULT IN SERIOUS BODILY INJURY, DEATH, AND/OR PROPERTY DAMAGE. THIS MANUAL CONTAINS SPECIFIC PRECAUTIONARY STATEMENTS RELATIVE TO WORKER SAFETY. PERSONNEL INVOLVED WITH THE OPERATION AND MAINTENANCE OF THIS EQUIPMENT MUST BE TRAINED BY QUALIFIED PERSONNEL BEFORE OPERATING OR MAINTAINING THIS EQUIPMENT.**

WARNING:  **DO NOT OPERATE WITHOUT APPROVED EYE PROTECTION WITH SIDE SHIELDS. DUE TO THE NATURE OF A "BLAST" MACHINE, AIRBORNE PARTICLES ARE CREATED BY THE BLAST STREAM. THE WEARING OF APPROVED EYE PROTECTION WITH SIDE SHIELDS IS REQUIRED OF ALL OPERATORS AND ANY PERSONNEL IN THE VICINITY OF THIS MACHINE.**

WARNING:  **MAKE SURE THAT Z.M.S. PROCEDURE (REF. 5.3) HAS BEEN FOLLOWED BEFORE PERFORMING ANY SERVICE OR MAINTENANCE WORK ON ANY PART OF THE BLAST MACHINE.**

WARNING:  **MAKE SURE THAT THE ROTOBLAST UNITS ARE STOPPED, AND FOLLOW Z.M.S. PROCEDURES (REF. 5.3) BEFORE PERFORMING ANY SERVICE OR MAINTENANCE WORK ON ANY PART OF THE BLAST MACHINE.**

WARNING:  **THE MACHINE MUST NEVER BE ENTERED AND NO DOORS OR PANELS OPENED UNTIL THE NECESSARY Z.M.S. PROCEDURE HAS BEEN FOLLOWED. SERVICE ACCESS DOORS MUST NOT BE USED FOR ANY PURPOSE EXCEPT INSPECTION AND MAINTENANCE OF THE BLAST MACHINE.**

WARNING:  **DO NOT USE HANDS TO REMOVE ABRASIVE. DUE TO THE ELEVATOR BELT BEING STRETCHED, PERSONAL INJURY COULD OCCUR WHEN THE TENSION CAUSED BY THE JAM IS RELEASED.**

5.1 SAFETY AND CAUTIONARY

5.1.1 Do not operate this machine unless all of the drive guards are in place covering the belts and chains.

5.1.2 Due to the nature of the machine, high velocity particles may escape during the blast cycle, especially when the length of the workpiece exceeds the length of the vestibules, allowing all seals to be held open. Areas near the entrance and exit of the machine should be avoided and personnel protection exercised.

5.1.3 Before operating the machine, careful inspection of the following items **must** be made:

5.1.3.1 Ensure that limit switches are in operating condition.

5.1.3.2 Access door in elevator boot, elevator section, and discharge spout cover **must** be in place. Access covers on the cabinet **must** be in place.

5.1.3.3 Access cover on Rotoblast unit **must** be closed and secured.

5.1.3.4 All drives **must** have guards in place and securely fastened.

5.2 SAFETY FEATURES

5.2.1 All drives are guarded.

5.2.2 Safety signs are provided wherever a possible hazard exists.

5.0 OPERATING AND SAFETY INSTRUCTIONS – continued

5.3 Z.M.S. (ZERO MECHANICAL STATE) PROCEDURES.

5.3.1 Follow normal operating sequence and remove the workpiece from the cabinet.

5.3.2 Follow normal shutdown sequence insuring abrasive system has run sufficiently long enough to clear elevator of abrasive (approximately three minutes).

5.3.3 Turn main electrical disconnect switch to "OFF" position and lock out with a padlock. Perform the following test to insure power is off.

Push "ABRASIVE SYSTEM START" pushbutton and insure abrasive system components are not energized.

5.3.4 Close main compressed air line valve and lock out with a padlock. (Three-way lock out valve with machine side-vented to atmosphere shall be provided by the customer.)

5.4 INITIAL START-UP OF MACHINE

For initial start-up of machine, the following procedure should be observed:

5.4.1 Check lubrication level of all reducers and, if necessary, fill to the manufacturers' instructions. The Rotoblast units are pre-lubricated and require lubrication per instructions contained elsewhere in this manual. All other bearings are greased for life.

5.4.2 Check all drives for proper operation. Check rotation and guarding.

5.4.3 Check elevator belt tension. Operating instructions are contained elsewhere in this manual.

5.4.4 Start exhauster. Adjust blast gates or dampers in the vent pipes to half open to start; then adjust to the required air flow (CFM). Check by a water gauge (approximately 1.52" W.G.). The readings should be taken 18" from where the pipe is connected to the unit. It is better to make a more complete adjustment to the blast gate settings after the machine has been operating for several hours and an initial amount of dust has reached the collector. Secure blast gates after final setting.

5.4.5 Start abrasive system.

5.4.6 Slowly pour clean, dry abrasive into each vestibule. The abrasive will be conveyed into the elevator boot and be carried up to the storage bins. A small gap has been provided between the storage bin and separator at the overflow spout. When the abrasive level in the storage bins start to overflow, through this gap, the system is adequately filled with abrasive. Approximately 11 tons of abrasive is required for initial charge of abrasive.

* WE WERE TOLD 15 TONS?

5.5 STARTING SEQUENCE

5.5.1 Insure all guards and covers are in place, all doors are closed, all safety warning signs have been observed and that all personnel near the machine are wearing approved safety glasses with side shields.

5.5.2 Start dust collector exhauster. "Exhauster ON" pilot light will illuminate. A collector pressure high pilot light is provided to let the operator know if collector pressure is high.

5.5.3 Start abrasive system. Hold pushbutton in until abrasive system light illuminates.

5.5.4 Start #1 through #8 Rotoblasts.

5.5.5 Start entrance and exit work conveyors.

5.5.6 Set blast on delay timer "1T" for 37 seconds @ 8 FPM (initially only unless a change is required).

5.5.7 Set blast off delay timer "2T" for 94 seconds @ 8 FPM (initially only unless a change is required).

5.5.8 Insure blast selector switch is on if operator wishes to blast.

5.5.9 Start work thru cabinet. As the work enters the cabinet, the work present photo-eye is tripped starting timer "1T". After pre-set time on timer, it times out. The blast gates open.

When the trailing edge of the work passes the work present photo-eye, timer "2T" starts timing. After pre-set time on timer, "2T" times out, "2T" resets "1T" and turns off blast gates.

5.0 OPERATING AND SAFETY INSTRUCTIONS – continued

5.6 STOPPING SEQUENCE

5.6.1 Insure machine is empty of work.

5.6.2 Stop work conveyors.

5.6.3 Stop Rotoblasts

5.6.4 Stop abrasive system.

5.6.5 Stop dust collector exhauster.

5.7 PHOTO-EYE MAINTENANCE INFORMATION

The work present photo-eye should be checked everyday to insure it is aligned and operational. This is crucial to the operation of the machine. A pilot light is supplied on the operator's panel to let the operator know when the work present photo-eye is tripped. Put something in front of the photo-eye and insure the pilot light illuminates on the operator's panel. If the pilot light does not illuminate, check the following:

5.7.1 Insure the photo-eye is set to dark operate. Light/dark operate pot is located on the receiver.

5.7.2 Check excess gain. Try increasing it by turning the pot clockwise. Pot is located on the receiver.

5.7.3 Insure aperture is located on the receiver only if an aperture is present. Apertures are only used on work applications where a small light beam is required to sense the work. Apertures should never be on the emitter.

NOTE:	**A POWER INTERRUPTION WILL CAUSE THE TIMERS TO RESET TO ZERO.**

5.8 EMERGENCY SHUTDOWN

Make all emergency stops using the "MASTER STOP" pushbutton. Locate and correct the cause for the emergency stop before proceeding. Restart using the Normal Start-up Procedure. Do not use "Master Stop" pushbutton for normal shutdown except as noted.

Note: A power interruption will cause the timers to reset to zero.

5.0 OPERATING AND SAFETY INSTRUCTIONS – continued

5.9 TARGETING THE ROTOBLAST ABRASIVE STREAM

5.9.1 Place the machine in Z.M.S. (ref. 5.3).

5.9.2 Enter cabinet through vestibule seals. Securely fasten a steel plate perpendicular to the Rotoblast stream to be targeted and directly in line with the centerline of the Rotoblast vane.

5.9.3 Unlock and turn main panel disconnect switch to "ON."

5.9.4 Start exhauster.

5.9.5 Start abrasive system.

5.9.6 With blast selector switch off, start the Rotoblast unit to be targeted.

5.9.7 Turn blast selector switch on for approximately 10 seconds.

5.9.8 Stop Rotoblast.

5.9.9 Stop abrasive system.

5.9.10 Stop exhauster.

5.9.11 Follow Z.M.S. Procedure (ref. 5.3).

5.9.12 Be sure Rotoblast unit has stopped spinning, then inspect target.

5.9.13 Adjust impeller case as required referring to operating and maintenance instructions for Rim-Loc type Rotoblast and the blast stream diagram.

5.9.14 Repeat procedure as necessary to recheck targeting after adjustment.

5.9.15 Repeat targeting procedure for remaining Rotoblast units.

6.0 TROUBLESHOOTING AND MAINTENANCE

6.1 GENERAL INSTRUCTIONS

6.1.1 Before performing any internal inspection or maintenance on <u>ANY PART</u> of the machine, make sure that the proper shutdown procedure has been executed, and Z.M.S. procedure (ref. 5.3) has been followed.

6.1.2 Be sure to read all Pangborn and component manufacturers' instructions before performing any maintenance work.

6.1.3 A good inspection and maintenance program is the best assurance of a productive machine.

6.1.4 For safety and performance, always use genuine Pangborn replacement parts.

6.2 INSPECTION AND MAINTENANCE

Reduce maintenance and operating costs by preventing breakdowns before they occur.

Preventive maintenance is that part of overall maintenance, which deals with this problem. Regularly (each day) machines must be checked, notes made on what may be wrong and how corrections should be made. Periodic inspection determines what maintenance is advisable and whether or not a maintenance operation should be performed immediately or may safely be deferred until the next scheduled maintenance period.

The intervals between inspections should be determined by local operating and atmospheric conditions, but should not exceed the times specified on the checklist in Section 6.3.

The inspection should be performed by experienced personnel. Inspectors should be thoroughly instructed and experienced in both the function and adjustment of the various components.

6.3 GUIDELINES FOR PROPERLY MAINTAINING BLAST MACHINES

6.3.1 GENERAL

Check Daily - Machine **IN** Operation

Record hour meter reading.

Record blast wheel motor amperage readings.

Check fine refuse spout to see if it is clogged, if good abrasive is in refuse, or if hopper is too full.

Check airwash separator abrasive curtain to see that it is full width.

Insure that fine refuse primary skimmer plate is adjusted for maximum fine refuse removal.

Check Daily - Machine **NOT IN** operation

Clean airwash separator screen or screen trays.

Report any unusual conditions to foreman.

See that all V-belt drives are in good working condition. Belts must be reasonably tight with belts in all sheave grooves.

See that all motor and gear reducers are firmly bolted to their bases and all bolts are in place and tight.

Lubricate the machine in accordance with the Lubrication Chart. Check oil level in reducers; add oil as required to maintain level.

Check compressed air line filters and lubricator for proper operation (by customer). See that all air-operated devices are working properly.

6.3.2 CABINET

Check Daily - Machine **IN** Operation

Check for abrasive leakage. Repairs should be made promptly.

Check the work doors, curtains or seals for proper operation, wear and leaking abrasive.

Check Daily - Machine **NOT IN** Operation

Check the inside of the machine for worn, broken or loose wear plates, bolts and nuts, floor screens, perforated plates and bar grating. Also, check the seals through which the work passes.

Remove any scrap accumulation from the floor to permit the abrasive to drain back into the system.

Repair or replace worn screens or grating to prevent scrap from getting into the abrasive handling system. Scrap in the system could damage the wheel feed parts, jam the elevator bucket belt, screw conveyor, separator, etc.

6.3.3 ABRASIVE HANDLING SYSTEM

Check Daily - Machine **IN** Operation

Maintain proper abrasive level in the storage bin. Add abrasive to the system regularly in small amounts to maintain a good uniform operating mix. If this system has a replenisher, additions are made automatically under the control of a bindicator located in the abrasive storage hopper. When the low level of abrasive reaches the bindicator, the abrasive flow gate at the bottom of the replenisher opens to admit abrasive to the system. See that all controls are operating properly. Keep replenisher full of abrasive.

See that screw and/or oscillating abrasive return conveyors are working properly.

Check Daily - Machine **NOT IN** Operation

Check elevator bucket belt alignment and tension, buckets for wear and loose bolts, and belt splice.

Check the condition of the screw and/or oscillating abrasive return conveyors and their drives.

6.3.4 "BE" ABRASIVE SEPARATOR

It is important that the abrasive separator be properly adjusted and maintained to assure that clean abrasive is going to the Rotoblast wheels.

Check Daily - Machine **IN** Operation

See that the abrasive is clean and of proper size. The abrasive should be screened once each week to make sure a good operating mix is maintained.

See that the ventilation piping gates are set properly and not disturbed.

See that the fine refuse is being discharged from the fine refuse pipe. Check for any loss of abrasive and correct source of abrasive leakage.

6.3.5 ROTOBLAST WHEELS

To clean effectively, the work must be positioned correctly, the Rotoblast wheels properly targeted, wheels up to speed and a constant flow of abrasive fed to the wheels. Abrasive feed parts must be in good condition.

Check Daily - Machine **IN** Operation

Check the wheel indicator settings.

Make certain hoses, pipes and spouts are not leaking.

See that the abrasive gates are operating and properly set by observing the Rotoblast ammeters. Do not set abrasive gates to exceed full load rating of the Rotoblast wheel motor.

Check Daily - Machine **NOT IN** Operation

Check the condition of the wheel runnerhead, vanes, impeller cases, deflector ring and spouts. Replace worn parts as required. Worn parts will not project the abrasive on target. Machine parts will wear out prematurely.

Runnerheads should be replaced when badly worn, or pieces broken off, resulting in excess vibration. Worn runners could throw vanes and damage other parts.

Vanes are considered worn when deep pockets develop. These pockets prevent abrasive sliding on the vane surface. Abrasive in pockets is discharged out of control and causes premature wear on other parts of the machine. The abrasive is then not thrown properly on the work.

Impellers are worn when the webs are deeply grooved; the abrasive is then not spread evenly across the vane surface.

Impeller cases are worn when they are deeply grooved around the inside of the case and when the discharge slot is worn back approximately 3/8". When this occurs, the wheel stream pattern is not aimed properly on the work.

The deflector ring should be discarded when worn thin. Worn deflector rings can cause premature wear to the runnerhead dovetail section, vane spring and pins.

Inspect the wheel housing liners; replace when worn. Worn or cracked liners will wear the housing prematurely. Close up any gaps between liners.

6.3.6 FLOOR

Check Daily - Machine **IN** Operation

Check for abrasive leakage, condition of hoppers, chutes, elevator casing, etc.

Operation and condition of screw return conveyors.

Any accumulation of abrasive should be put back into the system promptly. Wet or dirty abrasive is detrimental to the proper operation of blast cleaning machines.

6.3.7 DUCT WORK

Check Daily - Machine **IN** Operation

Check for abrasive leakage.

Check for proper adjustment of all blast gates.

Check Daily - Machine **NOT IN** Operation

Check for accumulation of abrasive in duct work and clean out as required.

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PANGBORN®
100 Years of Continuous Service to the Surface Preparation Markets

Dear Pangborn Customer:

The following checklist is a very simple formula for knowing if your Pangborn Rotoblast Machine is ready for start-up after the installation of the machine. These items are commonly overlooked, but when not complete will prevent the machine from being commissioned properly or at all. Please review the checklist and check off the items as they are completed.

CUSTOMER CHECK LIST

ITEMS TO BE COMPLETED BEFORE A SERVICE TECH ARRIVES

☐ Has all electrical wiring been completed including connection to the main power source?

☐ Has all ventilation piping been completed including installation of the customer supplied blast gates (ventilation dampers)?

☐ Has all pneumatic piping been completed including the installation of customer supplied filter/regulator/lubricator?

☐ Are customer supplied conveyors completed and integrated into the blast cleaning system?

☐ Is there an adequate supply of the proper size and type of abrasive on hand?

ORDERING REPAIR PARTS

Your Pangborn blast cleaning equipment is designed and manufactured in sections or units basically as follows:

Unit Level	Description
001	Cabinet or Room
002	Wear Plates
003	Work Conveyor
004	Abrasive Conveyor
005	Elevator
006	Electricals
007	Rotoblast
008	Separators
009	Storage Bin, Spouts and Gates
010	Superstructure and Support

Immediately following this page you will find a drawing titled "Equipment Summary Sheet" which lists, by unit level, all of the main assembly drawing numbers that were used to manufacture your particular Pangborn machine.

The operating and maintenance manual is also arranged in sections corresponding to the descriptions above.

By turning to the proper section of your manual you will find at the beginning of the section the main assembly drawing listed on the "Equipment Summary Sheet." In the upper right hand corner of this drawing is the Bill of Material. (May be on a separate sheet immediately following assembly drawing on some older equipment drawings.) The Bill of Material lists parts, sub-assemblies, hardware, etc. that make up the complete unit shown on the drawing. If the part you are trying to locate is not identified on the main assembly, refer to the proper sub-assembly drawing listed on the main assembly. All sub-assembly drawings are included in the parts manual following the main assembly.

Once the desired part has been identified on the face of the appropriate drawing, refer to the Bill of Material (upper right hand corner of drawing or separate sheet) for that drawing and identify the PART NUMBER for the required part.

When ordering repair parts, be sure to order by PART NUMBER and specify the serial number of the machine. The serial number can be found on the cover page of this manual.

Mail orders to: The Pangborn Company
Aftermarket Sales
P.O. Box 380
Hagerstown, MD 21741-0380

Or phone toll free: 1-800-638-3046
e-mail address: Aft-inside@pangborn.com

WRITTEN _WSJ___ REVISED RJS 4/3/85
CHECKED _V_____ RJS 8/2/00
APPROVED_DGC___
DATE 12/13/84

Pangborn reserves the right to make equipment changes and improvements, which may not be reflected in this manual.

It is recommended that this document be read in its entirety before any attempt is made to operate or make any adjustment to the equipment.

Although every attempt has been made to present information which is both complete and current, variations either in equipment configurations or in equipment application, or both, make it impossible to cover all contingencies in a single document.

Pangborn will not be responsible for the accuracy of the manual with respect to any changes or alterations made by the customer.

PROPRIETARY NOTICE

This document contains proprietary information and such information may not be disclosed to others for any purpose or used for manufacturing purposes without written permission from the Pangborn Company.

CUSTOMER: P&W PAINTING CONTRACTORS INC.
ADDRESS 3031 FRONT STREET
TOLEDO, OH 43605

CUST. ORDER NO. VERBAL-E. BRANSTUTTER

S.O.- 108616

EQUIPMENT (BLAST) ES-1838-22

EQUIPMENT (DUST) PC02-8

GEN. ARRGMT. BLAST L-070290	B.S. DIAG. M-070368	REF. DWGS.
FOUNDATION BLAST M-070367	ELEC. DEVICES	
GEN. ARRGMT. DUST	PROPOSAL NUMBER. DS-7713-II	
FOUNDATION DUST	OPER. INSTR. S-070168	

WORK, PROCESS & MAX. PRODUCTION RATE 2-20 FPM	WORK HANDLING TYPE AND WORK SIZE ROLL CONVEYOR MISC STRUCTURAL FABRICATIONS	BLAST (NO. WHLS., HP., RPM) NO. NOZZLES (8) 265DD-2RI RIM-LOC 20HP @ 1800RPM

CUST. SPECS. ☐ YES ☐ NO

SPEC. FEATURES

QUAN.	UNIT LEVEL	DRAWING NUMBER	DESCRIPTION	DATE REL.	S OR C	B.M. NO.
1	001	L-070292-1	CABINET ASSY	7/3/07		
			SERIAL NO ES-1838-22/S-070150			
1	002	L-070294-1	WEARPLATE ASSY	7/3/07		
1	003	M-070371-1	WORK CONVEYOR	7/3/07		
1	004	L-070295-1	SCREW CONVEYOR ASSY	7/3/07		
1	005	M-050128-3	ELEVATOR ASSY	7/3/07		
1	006	M-070426-1	ELECTRICALS	7/19/07		
1	046	M-070426-2	ELECTRO-MECHANICAL	7/19/07		
1	056	M-070426-3	ELEC. DUST COLLECTOR	7/19/07		
1	106	M-070426-4	CONTROL AND OPERATOR PANEL	7/19/07		
8	007	M-060145-1	ROTO ASSY 265DD-2RI/RIM-LOC 20HP @1800 RPM	7/3/07		
1	008	L-070296-1	SEPARATOR ASSY	7/3/07		

EQUIPMENT SUMMARY SHEET HX

LAST REVISION				
DRAWN		APPR.		DATE
DESCRIPTION				

DRAWN	DWJ	TITLE: ESS ROLL CONVEYOR (8)265DD/20 RIM-LOC L-070290 FABRICATIONS P&W PAINTING	
CHK.	HLK		
APP.	WSJ		
DATE	6/13/07	MACHINE: ES-1838-22	S.O.# 108616
SCALE: NONE		PANGBORN	DWG. NO. S-070150 REV
TOLERANCES UNLESS OTHERWISE SPECIFIED ARE PER DWG. S-830150 DO NOT SCALE DRAWING		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES	SHEET 1 OF 2

S.O.- 108616

QUAN.	UNIT LEVEL	DRAWING NUMBER	DESCRIPTION	DATE REL.	S OR C	B.M. NO.
1	009	L-070296-2	BINS AND SPOUTS	7/3/07		
1	010	L-070297-1	PLATFORM ASSY.	7/3/07		
1	017	M-040009-1	SPILL HOPPER	7/3/07		
1	018	S-860544	PAINT	7/3/07		
1	022	M-070369-1	LOAD CONV (REQ #66551)	7/3/07		
1	023	M-070369-2	UNLOAD CONV (REQ #66551)	7/3/07		
1	025	H-070206-1	BAR GRATING	7/3/07		
1	028	L-070298-1	NAMEPLATES AND SAFETY SIGNS	7/3/07		
1	051	S-070166	DUST COLLECTOR	7/3/07		
			REQ #66552			

EQUIPMENT SUMMARY SHEET

HX

LAST REVISION					
DRAWN		APPR.		DATE	
DESCRIPTION					

DRAWN	DWJ	TITLE: ESS (8)265DD/20 RIM-LOC FABRICATIONS	ROLL CONVEYOR L-070290 P&W PAINTING
CHK.	HLK		
APP.	WSJ		
DATE	6/13/07	MACHINE: FS-1838-22	S.O.# 108616
SCALE: NONE		PANGBORN	DWG. NO. S-070150 REV
TOLERANCES UNLESS OTHERWISE SPECIFIED ARE PER DWG. S-830150 DO NOT SCALE DRAWING		UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES	SHEET 2 OF 2