

SUBJECT BLASTING WITH STEEL GRIT

SUPERSEDED DATE

Supersedes former 9-6-1 & 9-6-4.

Process described herein for blasting plates with steel grit is standard. Treatment may be applied to carbonized plates to remove excess carbon or to plain smooth plates to roughen their surfaces. Treatment consists of subjecting plates to a pressure air flow which propels fine particles of steel grit onto the plates at different directions.

The extent to which parts must be treated by a steel blasting operation varies with such respects as the following: Size and shape of parts, character of materials used in making parts, surface condition of parts before steel blasting, and desired surface condition of parts after steel blasting. Due to variables such as density of carbon coating, relation of position of parts to blasting jets, etc., it may be necessary sometimes to deviate from the specified number of passes in order to produce the desired results.

1. EQUIPMENT

- a. 6 ft. Pangborn sand blaster, Model No. 13137 (type LE) or equivalent.
- b. Abrasive Reclaimer, type C, size #10.
- c. Dust collector, type CD, equipped with exhauster fan type KB-7, size #22.
- d. Plate racks made up of a trapezium () shaped frame to which are welded straight horizontal pieces of #14 iron wire at suitable spacings. Plate holders are made in the form of loops () from #14 iron wire welded to the straight pieces of wire. Loops on racks are made in two different widths to hold various size plates. Each loop holds one plate. To hold plates with small barrels, U-shaped wires of suitable length are welded to the straight wires and the plates are placed over one leg of the U-shaped wire.
- e. Wire meshed baskets and covers made in same shape as plate racks for curved or odd shaped plates which cannot be held in plate racks.
- f. Suitable loading table covered with 1/8" mesh screening so that when carbonized plates are emptied onto table excess carbon will separate from the plates.
- g. Iron or nickel wire (about 25 mil) to string parts to be blasted. Load a 3 to 3-1/2 ft. length alternately with plates to be blasted and with suitable separators, the length of the latter being such that the plates will be spaced about 3/4" apart. Defective plates may be used as spacers. Fasten the end pieces or stops securely enough so that plates will not turn on wire. Assembly may be placed in the form of a loop over other parts which are being blasted. Turn loop over between passes.

2. MATERIAL

33-S-104 Pangborn certified angular steel grit. Original quantity of grit required for 6 ft. unit 1,600 lb. Store steel grit in a dry place.



SUBJECT BLASTING with Steel Grit

STANDARDIZING NOTICE 34-22-4A

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3. OPERATING CONDITIONS

Unless otherwise specified it is to be understood that the steel blasting machines shall be operated under the following conditions, viz:

	6 ft. Machine	8 ft. Machine
1. Air Jet Size (Blasting Guns)	5/16"	5/32"
2. Discharge Jet Size (Blasting Guns)	5/8"	1/2"
	Reject when worn to 11/16" diam.	Reject when worn to 9/16" diam.
3. Grit:		
Original Charge	1:1 #90 & #60 #60	#90 #60
4. Speed of Table	1/5 R.P.M.	1/2 R.P.M.
5. Theoretical Prod./hr/pass	144 X Capacity of basket or tray	240 X Capacity of basket or tray

§While not in use at present, carried as a matter of record.

4. PROCEDURE

- a. Empty carbonized plates from carbonizing boats onto loading screens. Load plates from screen onto suitable rack or basket.
- b. Open the air line at pressure gauge on side of table and let some air escape so as to carry off from line between water trap and table any moisture which may have been trapped or condensed in line while standing.
- c. Turn on air and adjust to specified pressure as read by gauge at table.
- d. Start exhauster and table.
- e. Load table continuously with racks as table revolves and unload racks after plates have passed through blasting chamber the specified number of times. If basket is used, pass at least twice through blasting unit, turning basket over between passes. For specified air pressure and number of passes refer to consolidated blasting schedules on p. 8 of 34-1-1.
- f. Remove plates from racks by dumping into a suitable box and inspect casually as follows:

Class of Rejection	Disposition
Non-uniform or insufficient blasting	Reblast
Light carbon	Recarbonize
Spotted carbon	Recarbonize
Light carbon on one side, heavy carbon on other side	Recarbonize
Crushed plates	Scrap or salvage
If rejections run high for crushed plates, give 100% inspection.	

CB-35

★ CHANGE
★★ ADDITION
★★ DELETION

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4. PROCEDURE (Cont'd)

Note: When a table is first put into operation or when changing to a different type of cleaning, it is necessary to regulate the flow of abrasive. This is done by moving abrasive hose in or out of feed box. The flow of abrasive is increased as hose is inserted further into feed box. When hose is in too far it will clog, the beginning of which is indicated by the hose being moved intermittently. There is no adjustment of air jet or nozzle to affect abrasive flow.

When plates are being adjusted adjust abrasive reclaimer slide so that a minimum quantity of dust is being deposited into reclaimer and a minimum amount of abrasive of particle size sufficiently large to be used is being carried over to dust collector. Also adjust gate in pipe between exhauster and dust collector by opening the gate until dust is being discharged from the exhauster and then closing it until no dust is emitted. At these conditions the exhauster and reclaimer will be operating most efficiently.

5. MAINTENANCE based on 24 hr., 7 day week.

a. Once every 2 days clean dust collector screens by removing accumulated carbon and abrasive dust. While exhauster and table are not running, shake vigorously for ten minutes lever located near lower end of dust collector after which empty hopper.

b. Once every 2 days empty abrasive reclaimer. If dust flows from blasting unit at loading position (this means that reclaimer is clogged) wrap sharply on the sides of the reclaimer with any convenient instrument to dislodge the obstruction.

c. Occasionally as experience dictates, clean screens in hopper of blasting table cleaned since plates, which fall from the racks, become lodged on them and cause uneven flow of abrasive to hose. Abrasive may be removed from screens with small scoop.

d. Replace blasting gun nozzles when they are worn to increase the diameter about 10%, i.e. a 5/8" diameter nozzle when it has increased to 11/16" diameter. The nozzles of both guns should be changed at the same time. A larger opening results in spotty blasting.

e. Always keep hopper under table full at all times.

STANDARDIZING SECTION
RESEARCH & ENGINEERING DEPT.