



[To visit our website, www.flow.co.za, click here](http://www.flow.co.za)

FS_INSTRUCTIONS_SORTER-RECORD_2_070727_25.DOC
E:\DOCUMENTS\SERVICE\...
2007-05-08
UPDATE: 2007-07-27

INSTRUCTIONS FOR ESTABLISHING A FLOW SORT X-RAY DIAMOND RECOVERY MACHINE SET-UP / COMPONENT RECORD.

PLEASE FOLLOW THESE GUIDELINES WHEN COMPLETING FORM
X-SORTER-RECORD_7_070504_25.XLS

GENERAL SECTION

1. Page 1 must be completed after each and every site/service visit no matter what!!!!
2. Page 2 must be completed when optic, ejector, x-ray, and feed system is updated.
3. Enter the date when this record is being made
4. Enter the FLOW SORT machine model number.
5. If this is a sorters ORIGINAL RECORD please tick this box
 - a. If this an UPDATE OF AN EXISTING RECORD please enter the date of the record that you are updating
6. Enter a CUSTOMER NAME or NAME OF A MINE that is recognized by FLOW SORT.
7. Record the HOUR COUNTER READING at the time of establishing the sorter record.
8. Clearly print your full NAME and sign in the appropriate field

CONTROL PANEL

9. Enter the serial number of the sorters control panel. Take note that in a twin stage (TSXR) configuration the first stage represents a separate machine and so does the second stage.
10. Tick the sorter STAGE number. “Box 1” if the sorter you are establishing a record for is the 1ST stage of a twin stage configuration or “Box 2” if it is the 2ND stage. If it is a single stage sorter tick box “S”.
11. Mark the SCADA box “YES” if the is sorter is controlled via a SCADA control system. If it is a stand alone operation tick the box “NO”
12. Record the E-PROM version used in the sorters control microprocessor PCB (PC62)
13. Tick the box that shows the voltage of the feeder coil voltage in use.
14. Tick the box of the ejector transformer installed (OLD trafo with 44-18-0-18-44 tapings or NEW trafo with an additional 30-0-30 taping)
15. Record the supply voltages of all three phases, R, S, and T in respect to Neutral (with the sorter switched on and the sorters feeder running).
 - a. Record the voltage between Neutral and Earth under conditions set out in 15.) above.
16. Record the X-RAY source kV meter reading as well as the mA meter reading
17. Record the security seal number that you used to seal the control panel after you finished checking / recording the control panel details.

SETUP DATA

18. The record of sorter set-up parameters for the sorters SENSITIVITY SELECTOR SWITCH POSITION 1, 2, 3 and 4 respectively.
 - a. Note: For sorters used to sort only one size fraction the other two or three selector switch positions must be set up identically to position 1.
 - b. Note: For sorters used to sort only two size fractions the third selector switch position must be set up identically to position 2.
 - c. Note: For sorters used to sort only three size fraction, the fourth setting must be the same as 3.

- d. Record Micro-Amp readings after a 5 minute 'settle-down' period and without feed passing through the sorter. This data must come from your 100% tracer test sheet.
- e. Average ejection counts must be recorded during normal sorter operation i.e. the sorter being fed with the correct material size, material type and the correct feed rate.
- f. The sorters feed rate must be established by weighing timed belt cuts etc.
- g. Feed hopper gate gap at the feed rate.
- h. Feed pot dial at the set-up feed rate.
- i. MI reading must be set on size selection 1 only. It must read 8+0-1 only! For sensitivity setting 2, 3 and 4. Only the voltage is to be recorded and no adjustments are to be made. This reading must be taken after 5min of feeding.
- j. Record the feed sensor left and right without feed!
- k. Make sure that the 'see-through' control panel door is locked after the setup data has been recorded.

OPTIC BOX

- 19. Enter the optic box serial number
- 20. Record the security seal number that you used to seal the optic box after recording all the required optic box information.
- 21. Enter the serial number of the sorter in which the optic box is installed
- 22. Mark (tick) the sorter stage (1 or 2) in which this box is installed.
 - a. If it is a single stage sorter tick box "S".
- 23. Record the serial numbers of the photomultipliers installed (left & right)
- 24. Record the basic 200 ampere per lumen voltage for each PM tube.
- 25. Record the average voltage peak recorded (by means of an oscilloscope) from 10 standard FLOW SORT marbles during a tracer test done with the sorters SENSITIVITY SELECTOR SWITCH in position "1".

26. Tick the appropriate PRE AMPLIFIER box.

27. Indicate if K45 filters are installed or not.

28. Indicate if K42 filters are installed or not.

EJECTOR

29. Record the ejector's serial number

30. Tick the box of the ejector type installed (Silver cover – 2/19W; Green cover – 15/35W; Blue cover – 15/50W)

31. Enter the serial number of the sorter in which the ejector is installed

32. Tick box “S” “1” or “2” indicating in which position the ejector is used

33. Record the E-Prom version that is installed in the two ejector microprocessor PCB's (PCAVC II)

a. Record the serial number of the ejector software (left & right)

34. Record the stepper motor driver card model installed.

35. Record the security seal number of the seal used to secure the ejector cover.

36. X-RAY COMPARTMENT

37. Record the sorters serial number

38. Mark (tick) the sorter stage in which this box is installed.

a. If it is a single stage sorter tick box “S”

39. Tick the box of the manufacturer of the X-ray tube.

a. Record the x-ray tube serial number

b. If a Seifert tube also record the tube's “head-number”

40. Record if the x-ray tube is directly or indirectly cooled and record the appropriate cooling head serial number.

41. Record the security seal number of the seal used to secure the x-ray tube

42. Record the security seal number of the seal used to secure the cooling water flow switch
43. Record the security seal number of the seal used to secure the x-ray department cover.
44. Record the security seal number of the x-ray generator cover.

FEED SYSTEM

45. Record the security seal number at the x-ray generator cover. Tick box “S” “1” or “2” indicating in which position the feed system is used.
46. Record the water pressure at the water inlet to the sorter (with the sorter fully operational)
47. Record the x-ray tube cooling water pressure (with the sorter fully operational)
48. Record the feed water pressure (with the sorter fully operational)
 - a. Record the security seal number of the seal used to secure the feed water flow switch
49. Tick the box with the voltage of the feeder magnet coil.
50. Tick with the type of feed slide used.
51. Record the security seal number of the seal used to secure the feed upper section.
52. Record the feeder amputure.
53. Measure the impedance (in kilo Ohm) of the Light Dependent Resistors (LDR) of the over-feed-protection sensor (left & right).
 - a. Take this measurement with the LDR’s disconnected from the control panel!
 - b. Take this measurement with the sorter in operation but with the feeder switched off!
 - c. Use a ‘FLUKE’ multi-meter for this measurement.

COMMENTS SECTION

54. Record any comments appropriate for the sake of establishing a complete record for this sorter model / sorter installation.

Rather record too much then too little!

IT IS OF UTMOST IMPORTANCE THAT ALL RECORDS (COMMISSIONING RECORD, SORTER SETUP RECORDS TRACER TEST RECORDS, REPAIR HISTORY ETC) ARE KEPT SECURELY IN A DEDICATED SEPARATE FILE FOR EACH SORTER!