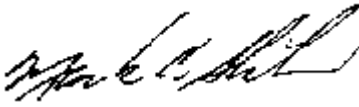



ISSUE DATE: 05/16/07

PROGRAM INFORMATION BULLETIN NO. P07-15

FROM: MARK E. SKILES 
Director of Technical Support

KEVIN G. STRICKLIN 
Administrator for
Coal Mine Safety and Health

FELIX A. QUINTANA 
Administrator for Metal and Nonmetal
Mine Safety and Health

SUBJECT: Potential Safety Hazard on Permissible Mobile Diesel-Powered
Transportation Equipment with Sandvik (formerly EJC Mining
Equipment, Inc.) Wet Scrubber Systems

Who needs this information?

Mine Safety and Health Administration (MSHA) personnel, underground coal mine operators, underground metal and nonmetal operators, miner's representatives, and repair shop facilities should have this information.

Why is MSHA issuing this Program Information Bulletin?

This Program Information Bulletin (PIB) is issued to inform mine operators of a potential safety hazard on the Sandvik (formerly EJC Mining Equipment, Inc.) wet scrubber system. This PIB also provides information regarding mandatory periodic inspection of the wet scrubber system insert.

What permissible mobile diesel-powered transportation equipment does this PIB address?

This PIB addresses permissible mobile diesel-powered transportation equipment that uses a permissible power package (safety component system) manufactured by Sandvik. The power package is equipped with a wet scrubber system that contains an

insert mounted inside an exhaust conditioner enclosure. The table below provides the MSHA permissible equipment approval number and the corresponding power package Part 36 certification number or Part 7 Subpart F approval number.

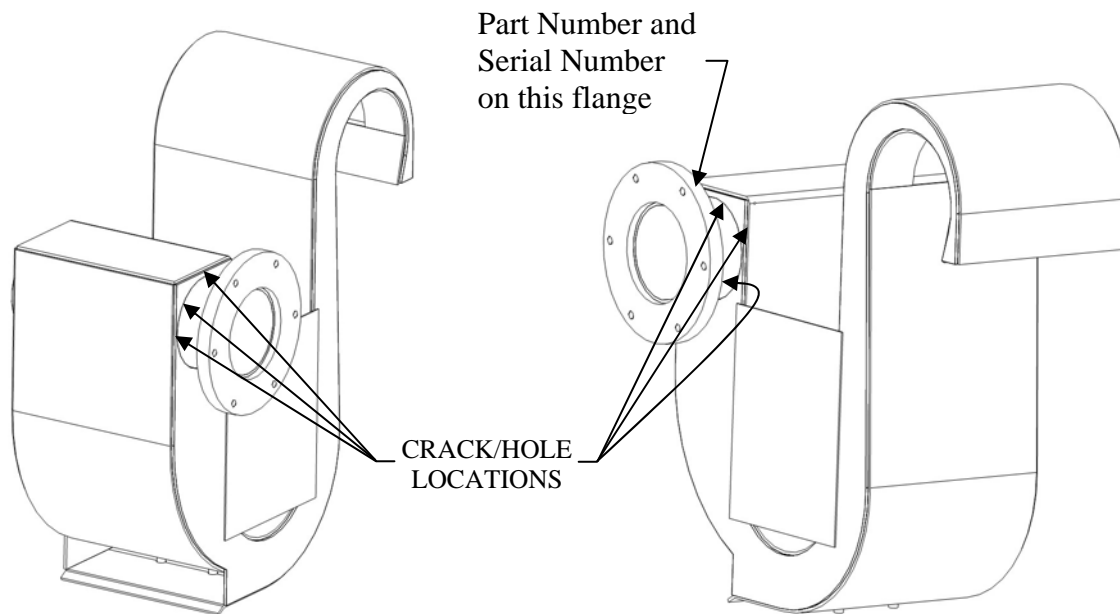
PERMISSIBLE EQUIPMENT APPROVAL NO.	POWER PACKAGE CERTIFICATION NO.	PERMISSIBLE EQUIPMENT MODEL NO.	EQUIPMENT TYPE
31-103	31/D101	936M	SHIELD HAULER/SCOOP
31-110	31/D108	935-2NL	SCOOP
31-117	31/D111	975A	UTILITY TRACTOR
31-120	31/D111	975A	PERSONNEL CARRIER
31-121	31/D110	80LHD	LHD
31-124	31/D111	G600U	GRADER
31-125	31/D101	EJC-130	LHD
31-126	31/D111	975A	BOOM TRUCK
31-128	31/D116	544-MV4	UTILITY VEHICLE
31-131	31/D118	975A	LUBE TRUCK
31-132	31/D111	975A	ROCKDUSTER
31-135	31/D120	980L31	FIFTH WHEEL TRACTOR
31-137	31/D111	975A	LUBE TRUCK
31-202	31/D108	935-2NL	LHD
31-203	31/D111	975A	FIFTH WHEEL UTILITY TRUCK
31-204	31/D111	975A	PERSONNEL CARRIER
31-205	31/D111	975A	BOOM TRUCK
31-206	31/D111	975A	LUBE TRUCK
31-207	31/D101	936M	SHIELD HAULER/SCOOP
31-208	31/D101	130-21 LHD	LHD
31-211	31/D120	980L31	FIFTH WHEEL TRACTOR
31-216	31/D111	975A	ROCKDUSTER
31-217	31/D110	EJC80	LHD
31-228	31/D101	915E	LHD
31-26-3	31/D101	915E	LHD
36C-002	7F-007	913	LHD
36C-003	7F-009	980L31	FIFTH WHEEL TRACTOR
36C-004	7F-013	975A	LUBE TRUCK
36C-005	7F-017	936M	SHIELD HAULER/SCOOP
36C-006	7F-017	130-21	LHD
36C-008	7F-007	PEC22	ROOF DRILL

What is the potential safety hazard with this permissible mobile diesel-powered transportation equipment with a Sandvik power package?

A weld bead crack failure may allow flames, sparks, or hot diesel engine exhaust gas to bypass the flame proofing, spark arresting, and engine exhaust gas cooling effects of the scrubber system and enter the mine atmosphere.

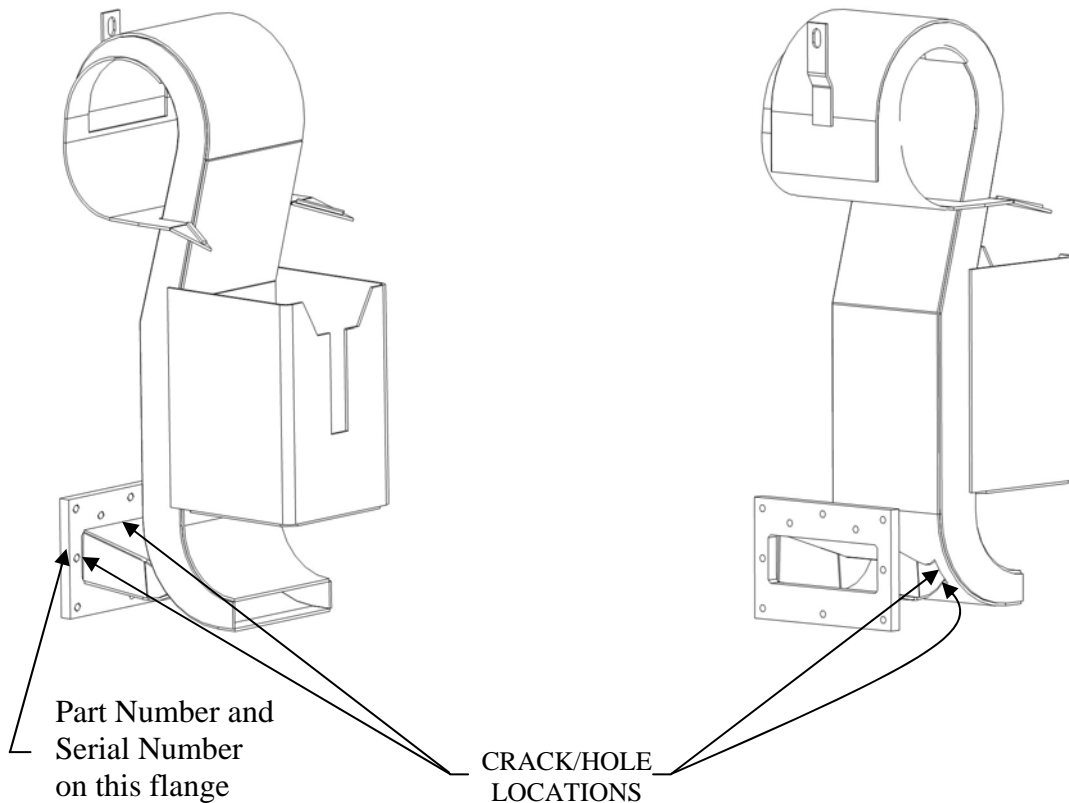
The scrubber system consists of an insert that is mounted inside an exhaust conditioner enclosure (tank partially filled with water). The crack failure developed in and near the inlet flange weld bead of the insert. Some of the weld bead cracks enlarged enough to produce a hole in the weld and surrounding material. The Sandvik wet scrubber system is used on permissible mobile diesel-powered transportation equipment to prevent propagation of flame or discharge of heated particles to the surrounding mine atmosphere and to cool the diesel engine exhaust gas at the discharge from the exhaust conditioner. The wet scrubber system is required to cool the diesel engine exhaust gas to a maximum of 170 degrees Fahrenheit per 30 C.F.R. §§ 7.98(s)(4)(i) and 36.25(c), and arrest spark and flame per 30 C.F.R. § 7.98(s)(2) and 30 C.F.R. § 36.25(b)(3).

Figure No. 1 and Figure No. 2 below can be referenced for a general view of the wet scrubber insert and the location of the cracks/holes that have been found on inserts in the field.



Wet Scrubber Insert used on the following Equipment Approval Numbers: 31-103, 31-110, 31-125, 31-135, 31-202, 31-207, 31-208, 31-211, 31-228, 31-26-3, 36C-003, 36C-005, 36C-006

Figure No. 1



Wet Scrubber Insert used on the following Equipment Approval Numbers: 31-121, 31-117, 31-217, 31-120, 31-124, 31-126, 31-128, 31-131, 31-132, 31-137, 31-203, 31-204, 31-205, 31-206, 31-216, 36C-002, 36C-004, 36C-008

Figure No. 2

What action is required on the Sandvik wet scrubber inserts?

All permissible mobile diesel-powered transportation equipment with a Sandvik wet scrubber system must be inspected for weld failure in the wet scrubber insert. The insert inspection should be conducted during the next scheduled weekly maintenance examination. Inserts that are found defective must be replaced with an acceptable insert. Sandvik has issued a technical bulletin to inform their customers on the proper procedure to remove and inspect the wet scrubber insert. See Attachment to view Sandvik's technical bulletin.

How often must the wet scrubber inserts be inspected?

Inserts that are inspected and found acceptable must be inspected on a quarterly basis until otherwise indicated on the Power System Checklist Addendum. New replacement inserts must be inspected after one year in operation. After this first year inspection, the inserts must be inspected quarterly until otherwise indicated on the

Power System Checklist Addendum. Sandvik has included, as an addendum, an insert inspection requirement to their Power System Checklist.

Inspections conducted in accordance with the Power System Checklist Addendum that identify a defective insert (crack, hole, or other damage) must be recorded to comply with 30 C.F.R. § 75.1914(f)(2).

The results of the initial and subsequent inspections should be sent to Sandvik. Sandvik and MSHA will monitor the inspection results to track the performance of the inserts. Based on the inspection results, Sandvik and MSHA will determine if the inspection frequency should be changed and if additional corrective action is needed.

The inspection results sent to Sandvik should include the permissible equipment approval number; type; model number; and identification number (serial number); the wet scrubber insert part number; serial number; and if support brackets are installed on the insert.

Who can I contact at Sandvik?

Adrian Gillies
Sandvik Mining and Construction Canada, Inc.
4445 Fairview Street,
Burlington, Ontario
Canada L7L 2A4
Phone: 905-333-2338
Fax: 905-632-1344
adrian.gillies@sandvik.com

How can the addendum to the Power System Checklist be obtained?

The Power System Checklist Addendums can be obtained by any of the following methods:

- Click on one of the attachments for the applicable equipment approval number.
- The addendums are available on MSHA's website:
<http://www.msha.gov/s&hinfo/diesel.htm>
Under General Information choose Sandvik Power System Checklist Addendums.
- Contact one of the Approval and Certification Center (A&CC) contacts below.

- Contact Sandvik. In addition, Sandvik is responsible for distributing the addendum to their customers.

Power System Checklist Addendums

PERMISSIBLE EQUIPMENT APPROVAL NUMBER	MODEL NUMBER
See Attachment: 31-117, 31-120, 31-121, 31-124, 31-126, 31-128, 31-132, 31-137, 31-203, 31-204, 31-205, 31-206, 31-216, 31-217, 36C-002, 36C-004, 36C-008	975A 913 PEC 22 80 544-MV4 G600U
See Attachment: 31-103, 31-125, 31-207, 31-208, 31-263, 31-228, 36C-005, 36C-006	915E 936M 130
See Attachment: 31-110, 31-131, 31-202	935-2NL 975A (Isuzu)
See Attachment: 31-135, 31-211, 36C-003	980L

Can defective inserts be repaired?

Defective inserts must not be repaired. A defective insert must be replaced with an acceptable insert. A repaired insert may not cool the diesel engine exhaust gas or arrest spark and flame. The Sandvik technical bulletin provides contact information for Sandvik authorized distributors.

Permissible mobile diesel-powered transportation equipment with a Sandvik wet scrubber system that contains a repaired insert, or an insert with cracks, holes, or other damage, WILL NOT be considered approved by MSHA.

How are existing and new replacement inserts identified?

Existing inserts are identified with the “old” insert part number. The old insert part numbers are provided in the Sandvik technical bulletin. New replacement inserts will be identified with a new part number as shown in the Sandvik technical bulletin. In addition, the new replacement inserts will be identified with a serial number with the following format:

“XXXX-XX”

Example: 1234-07, where 1234 is a unique tracking number and 07 is the year of manufacture. The part number and serial number for new replacement inserts are

located on the inlet flange of the insert as shown in Figure No. 1 and Figure No. 2 above.

Are the new replacement inserts different from the old inserts?

Sandvik submitted a design modification to correct the weld crack problem to the A&CC for approval. The design modification has been evaluated and meets MSHA requirements for permissible power packages (safety component systems).

What is the background for this PIB?

The A&CC discovered weld cracks in a Sandvik wet scrubber insert during an equipment field modification evaluation.

The A&CC subsequently notified MSHA enforcement of the potential safety hazard and requested the inserts be visually inspected during the next scheduled weekly maintenance examination. The insert inspection revealed that 22% of the inspected inserts were defective with cracks and/or holes.

What is MSHA's authority for this PIB?

The Federal Mine Safety and Health Act of 1977; 30 C. F. R. §§ 7.98(s)(4)(i); 36.25(c); 7.98(s)(2); 36.25(b)(3); and 75.1914(f)(2).

Internet Availability

This PIB may be viewed on the Internet by accessing MSHA's home page at <http://www.MSHA.gov> and then choosing Compliance Info, and Program Information Bulletins.

Who are the MSHA contact persons for this PIB?

Coal Mine Safety and Health, Safety Division
Terry Bentley, (202) 693-9521
E-mail: Bentley.Terry@dol.gov

Metal and Nonmetal Safety and Health
Neal H. Merrifield, (202) 693-9640
E-mail: Merrifield.Neal@dol.gov

Technical Support, Approval and Certification Center
Gary Clark, (304) 547-2068
E-mail: Clark.Gary@dol.gov

or

Steve Cole, (304) 547-2304
E-mail: Cole.Stephen@dol.gov

Who will receive this PIB?

MSHA Program Policy Manual Holders

Miners' Representatives

Underground Mine Operators

Manufacturers of Mine Equipment and Mining Products

Special Interest Groups

Attachments

- [Sandvik's technical bulletin](#)

Sandvik Power System Checklist Addendums relating to Permissible Equipment Approval Numbers:

- [31-117, 31-120, 31-121, 31-124, 31-126, 31-128, 31-132, 31-137, 31-203, 31-204, 31-205, 31-206, 31-216, 31-217, 36C-002, 36C-004, 36C-008](#)
- [31-103, 31-125, 31-207, 31-208, 31-26-3, 31-228, 36C-005, 36C-006](#)
- [31-110, 31-131, 31-202](#)
- [31-135, 31-211, 36C-003](#)

|



Fatigue in Exhaust Conditioner Unit

Unless otherwise specified, Sandvik and EJC Mining Equipment Inc. accept no responsibility for changes, labour or replacements incurred from this bulletin.

NUMBER:	272
TYPE:	Safety
RELEASE DATE:	11/12/2006
AFFECTS:	Refer to Affected Machines
REQUIRED ACTION:	Inspect and Replace the Exhaust Conditioner Insert If Required

STANDARD NOTATIONS

The following notations may be used throughout this bulletin to emphasise important safety information, mechanical concerns, and other important information. It is highly recommended that the reader review and follow all of these messages.

DANGER	Danger messages indicate an imminently hazardous situation, which, if not avoided, will result in death or serious injury. All Danger messages feature a standard ISO safety alert symbol followed by the signal word 'Danger' in capitalised black lettering on a red background.
WARNING	Warning messages indicate a potentially hazardous situation, which, if not avoided, could result in death or serious injury. All Warning messages feature a standard ISO safety alert symbol followed by the signal word 'Warning' in capitalised black lettering on an orange background.
CAUTION	Caution messages indicate a potentially hazardous situation, which, if not avoided, could result in death or serious injury. All Caution messages feature a standard ISO safety alert symbol followed by the signal word 'Caution' in capitalised black lettering on a yellow background.
CAUTION	Caution messages that do not include the ISO safety alert symbol indicate a potentially hazardous situation for the machine only, which, if not avoided, could result in damage to the machine.
NOTE	Note messages provide information, such as reminders, general information about a previous statement, or additional guidelines that do not fit into the flow of the preceding text. All Note messages include the signal word 'Note' in capitalised white lettering on a blue background.

GENERAL

Cracks have been found on the exhaust conditioner "wet scrubber" insert used in EIMCO coal machines. These inserts must be inspected and replaced if defective, so as to maintain the flame-proofing.

In order to identify any further potential failures, Sandvik Mining and Construction and EIMCO request the support and diligence of their customers in identifying and replacing these inserts. The part numbers for the exhaust conditioner inserts in question are listed in the section [Affected Machines](#).

Machines equipped with these inserts must be inspected and returned to operation only after proper corrective action has

been taken, if necessary. To assist customers in identifying which machines must be inspected, a list of machines with the above part numbers has also been included under [Affected Machines](#).

A list of Sandvik Mining and Construction approved distributors has also been provided under [Contact Information](#). Contact these distributors for replacement information.

WARNING
Repair of the exhaust conditioner inserts is prohibited. Repaired exhaust conditioner inserts do not meet Sandvik certification requirements.

RECOMMENDED INSPECTION PROCEDURE

Use the following procedure to inspect the exhaust conditioner insert.

- 1) Park the machine in a well-lit area and apply the park/emergency brake. Ensure the machine is isolated, locked out, and the air supply has been depleted to prevent engine start-up.

CAUTION

All inspections must be performed in fresh air and when the machine is shut down.

- 2) Display an OUT OF SERVICE sign in a visible location in the operator's compartment.

NOTE

In addition, follow the lock-out procedure defined by the mine site if one has been adopted.

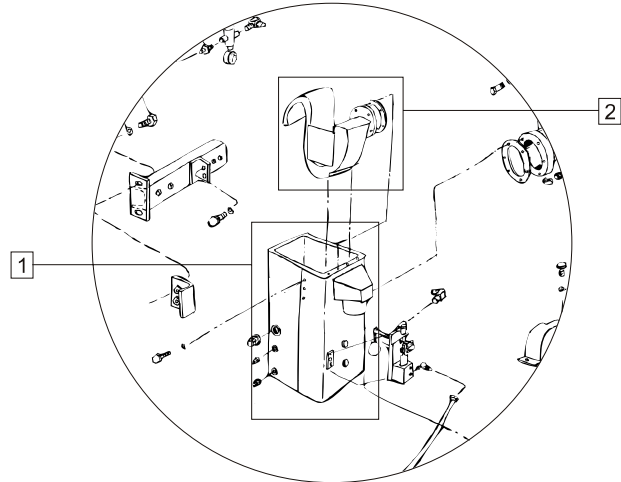
- 3) Install wheel chocks on all four wheels.
- 4) Install a frame lock or transit link between the front and rear frames.
- 5) Locate the exhaust conditioner enclosure on the left- or right-hand side of the rear frame.

Figure 1: Exhaust Conditioner Enclosure (Example)



- 6) Remove the top plate of the exhaust conditioner enclosure.
- 7) Locate the exhaust conditioner insert and remove the bolts from the mounting flange.

Figure 2: Exhaust Conditioner Unit (Example)



- 1 Exhaust Conditioner Enclosure
- 2 Exhaust Conditioner Insert (Insert Design May Vary)

NOTE

When reassembling the exhaust conditioner insert and enclosure, ensure all bolts are made of stainless steel.

- 8) Remove the exhaust conditioner insert from the enclosure. Clean the unit thoroughly. Inspect the unit, including welds, for cracks or holes. Thoroughly inspect the unit visually and/or by using a non-destructive inspection method, such as a "crack check" or Liquid Penetrant Inspection (LPI).

CAUTION

The insert unit is defective if any cracks, holes, or other damage are detected. Contact your local Sandvik Mining and Construction regional office for more information on obtaining a replacement insert (refer to [Contact Information](#)).

WARNING

Do not operate a machine in a permissible area if it has not been properly inspected and/or the exhaust conditioner insert has not been replaced. Corrective action must be taken before the machine is put into service.

Machines that have not been inspected for exhaust conditioner insert damage and/or have not had the defective exhaust conditioner insert replaced may be used with the existing insert ONLY if the MSHA approval



TECHNICAL BULLETIN: Fatigue in Exhaust Conditioner Unit

Unless otherwise specified, Sandvik and EJC Mining Equipment Inc. accept no responsibility for changes, labour or replacements incurred from this bulletin.

tag is removed from the machine AND the machine is not operated in areas of an underground coal mine or metal/nonmetal mine where permissible electric equipment is required. Only machines with acceptable inserts may be operated in areas of an underground coal mine or metal/nonmetal mine where permissible electric equipment is required.

INSPECTION FREQUENCY

The exhaust conditioner insert must be inspected as soon as possible upon receipt of this bulletin.

New replacement inserts must be inspected after one year in operation. After this first year inspection, the new inserts must be inspected quarterly until otherwise indicated on the permissibility checklist.

Inserts that are inspected and found acceptable must be inspected on a quarterly basis, until otherwise indicated on the permissibility checklist, to ensure that they remain free of defects.

Follow the **Recommended Inspection Procedure** above for all inspections.

CONTACT INFORMATION

All defective exhaust conditioner inserts should be sent to one of the following Sandvik Mining and Construction approved distributor locations for replacement. Contact your local Sandvik Mining and Construction distributor for more information if a defect is found.

Sandvik Mining and Construction Distributor	Contact Information
Sandvik Mining and Tunnelling Warehouse (Norton, VA)	Phone: 276-679-0194 Fax: 276-679-5806
Sandvik Mining and Construction (Rock Springs, Wyoming)	Phone: 307-362-7295 Fax: 307-362-7296
Voest Alpine (Brier Hill, PA)	Phone: 724-246-2901 Fax: 724-246-2907

AFFECTED MACHINES

The table on the following page identifies, by machine approval number, power package certification number, and old insert part number, the exhaust conditioner inserts that require inspection. Owners with machines that have the exhaust conditioner inserts listed below must follow the inspection procedure to determine if the insert requires replacement.

NOTE
The part number and serial number (XXXX-XX) of the exhaust conditioner insert will be stamped on the inlet flange of the insert.

Corresponding replacement insert part numbers are also provided for those machines whose exhaust conditioner inserts are damaged and require replacement.

NOTE
Replacement inserts provided by Sandvik Mining and Construction will be identified with a new part number and a serial number stamped on the inlet flange of the insert.



TECHNICAL BULLETIN: Fatigue in Exhaust Conditioner Unit

Unless otherwise specified, Sandvik and EJC Mining Equipment Inc. accept no responsibility for changes, labour or replacements incurred from this bulletin.

Machine Approval Number	Power Package Certification Number	Machine Model Number	Old Insert Part Number	Replacement Insert Part Number
31-26-3	31/D101	915E	915-3109881	64569714 Rev. 1
31-103	31/D101	936M	915-3109881	64569714 Rev. 1
31-125	31/D101	EJC 130	915-3109881	64569714 Rev. 1
31-207	31/D101	936M	915-3109881	64569714 Rev. 1
31-208	31/D101	130-31	915-3109881	64569714 Rev. 1
31-228	31/D101	915E	915-3109881	64569714 Rev. 1
31-110	31/D108	935-2NL	0902590	900-256077 Rev. 1
31-202	31/D108	935-2NL	0902590	900-256077 Rev. 1
31-121	31/D110	80LHD	900-3119930	900-3119930 Rev. 3
31-217	31/D110	EJC 80	900-3119930	900-3119930 Rev. 3
31-117	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-120	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-124	31/D111	G600U	900-3119930	900-3119930 Rev. 3
31-126	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-132	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-137	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-203	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-204	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-205	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-206	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-216	31/D111	975A	900-3119930	900-3119930 Rev. 3
31-128	31/D116	544-MV4	900-3119930	900-3119930 Rev. 3
31-131	31/D118	975A	900-256077	900-256077 Rev. 1
31-135	31/D120	980L31	64395303	64595303 Rev. 2
31-211	31/D120	980L31	64395303	64395303 Rev. 2
36C-002	7F-007	913	900-3119930	900-311930 Rev. 3
36C-008	7F-007	PEC22	900-3119930	900-311930 Rev. 3
36C-003	7F-009	980L31	64395303	64595303 Rev. 2
36C-004	7F-013	975A	900-3119930	900-3119930 Rev. 3
36C-005	7F-017	936M	915-3109881	64569714 Rev. 1
36C-006	7F-017	130-21	915-3109881	64569714 Rev. 1

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Power System Checklist Addendum

To be used in conjunction with the following Eimco, Drawing, Model and Approval Numbers:

Drawing Number	Model Number	Approval Number
6220024	913	36C-002
	PEC 22	36C-008
900-3122033	975A	31-117, 31-120, 31-126,
		31-132, 31-137, 31-203,
		31-204, 31-205, 31-206,
		31-216
	80	31-121, 31-217
	G600U	31-124
544-887006	544-MV4	31-128
64395328	975A	36C-004

Inspection Frequency:

Inserts that are inspected and found acceptable must be inspected on a **quarterly basis** until otherwise indicated on this addendum. New replacement inserts must be inspected **after (1) one year of operation**. Following the first year, the inserts must be inspected **quarterly** until otherwise indicated on this addendum.

All Inspections and Tests Shall be Performed in Fresh Air

Before starting inspection procedure of the exhaust conditioner insert perform the following safety measures:

- Shutoff engine and apply the park/emergency brake
- Deplete air supply to prevent engine start-up
- Install wheel chocks on all four wheels.

This Drawing NOT to be changed without MSHA Approval

Revision 2 - 26/01/07
Sheet 1 of 3

P/N – 64582107

Sandvik Mining and Construction Canada Inc.

4445 Fairview Street, Burlington, Ontario, L7L 2A4 Telephone: 905-632-4940
<http://www.sandvik.com>

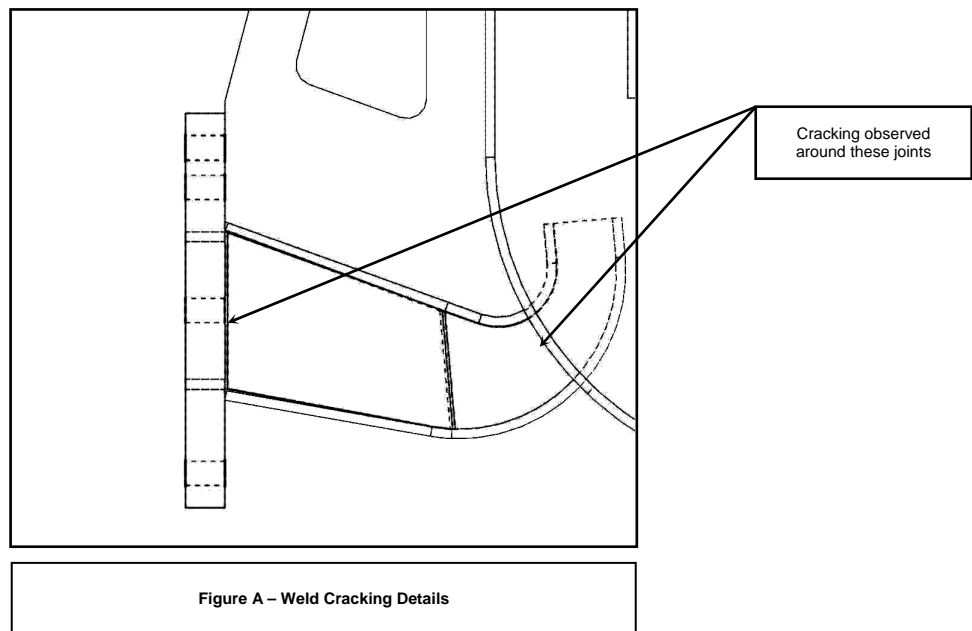


Exhaust System:

1. () Locate exhaust Conditioner on the left-or-right hand side of machine near engine.
2. () Remove Exhaust Conditioner Cover.
3. () Locate the exhaust conditioner insert and remove the insert from the mounting flange.

Note: Some float system components will need to be removed in order to Remove the insert.

4. () Remove the Exhaust Conditioner Insert from the enclosure. Clean outside surface area of Insert for visual examination. Visually inspect the entire unit, including welds, for cracks, holes and other damage. A non-destructive inspection method such as “crack check” or Liquid Penetration Inspection (LPI) may be used to verify the condition of suspect areas. [See Figure A for shows the location of cracks/holes that have been found on inserts in the field.



This Drawing NOT to be changed without MSHA Approval

Revision 2 - 26/01/07
Sheet 2 of 3

P/N – 64582107

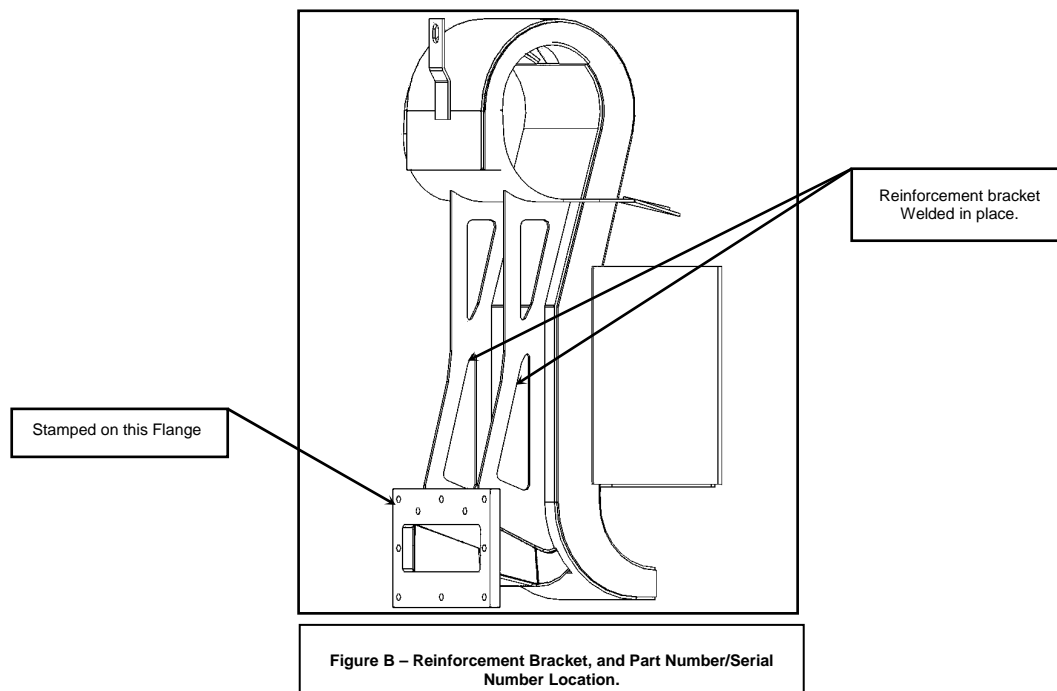
Sandvik Mining and Construction Canada Inc.

4445 Fairview Street, Burlington, Ontario, L7L 2A4 Telephone: 905-632-4940
<http://www.sandvik.com>



5. () If any cracks, holes or other damage are detected, the Insert must be replaced with an Eimco Insert marked as shown in Figure B with reinforcement bracket and a part number and serial number prior to putting the machine back in service. If no cracks, holes or other damage are detected reinstall the Insert including internal copper flange gasket, any float system hardware and exhaust conditioner cover that was removed.

Note: When reassembling the exhaust conditioner, insert and enclosure, ensure all bolts are the proper size, length and material (stainless steel). After reassembling the exhaust conditioner perform the low water shutdown test as described in the machine's applicable Power System Checklist.



This Drawing NOT to be changed without MSHA Approval



Power System Checklist Addendum

To be used in conjunction with the following Eimco, Drawing, Model and Approval Numbers:

Drawing Number	Model Number	Approval Number
915-3112943	915E	31-26-3, 31-228
	936 M	31-103
	130	31-125, 31-208
6220021	936 M	31-207
6220028	936 M	36C-005
64395329	130	36C-006

Inspection Frequency:

Inserts that are inspected and found acceptable must be inspected on a **quarterly basis** until otherwise indicated on this addendum. New replacement inserts must be inspected **after (1) one year of operation**. Following the first year, the inserts must be inspected **quarterly** until otherwise indicated on this addendum.

All Inspections and Tests Shall be Performed in Fresh Air

Before starting inspection procedure of the exhaust conditioner insert perform the following safety measures:

- Shutoff engine and apply the park/emergency brake
- Deplete air supply to prevent engine start-up
- Install wheel chocks on all four wheels.

This Drawing NOT to be changed without MSHA Approval

Revision 2 - 07/28/06
Sheet 1 of 3

P/N – 64582117

Sandvik Mining and Construction Canada Inc.

4445 Fairview Street, Burlington, Ontario, L7L 2A4 Telephone: 905-632-4940
<http://www.sandvik.com>

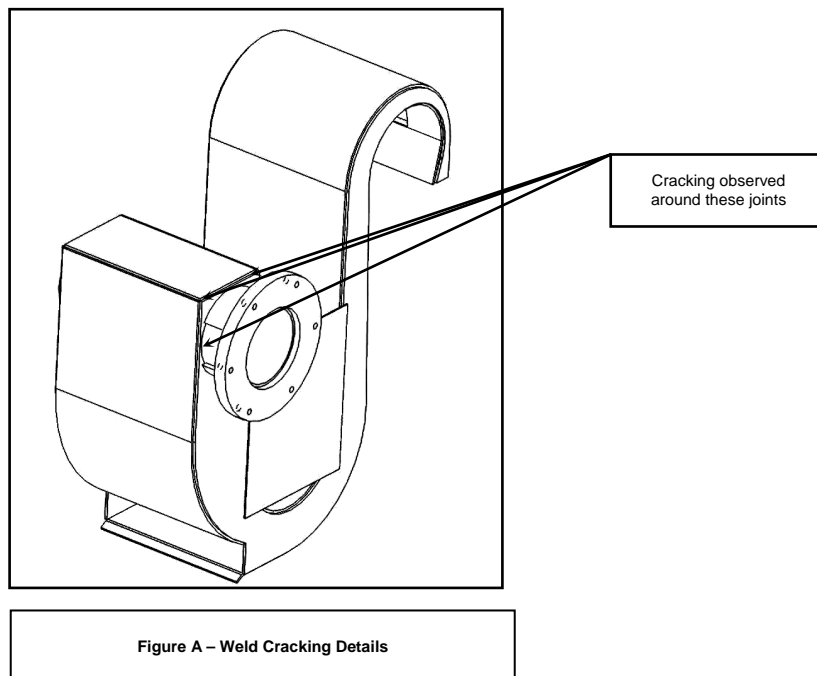


Exhaust System:

1. () Locate exhaust Conditioner on the left-or-right hand side of machine near engine.
2. () Remove Exhaust Conditioner Cover.
3. () Locate the exhaust conditioner insert and remove the insert from the mounting flange.

Note: Some float system components will need to be removed in order to Remove the insert.

4. () Remove the Exhaust Conditioner Insert from the enclosure. Clean outside surface area of Insert for visual examination. Visually inspect the entire unit, including welds, for cracks, holes and other damage. A non-destructive inspection method such as “crack check” or Liquid Penetration Inspection (LPI) may be used to verify the condition of suspect areas. [See Figure A for shows the location of cracks/holes that have been found on inserts in the field.



This Drawing NOT to be changed without MSHA Approval

Revision 2 - 07/28/06
Sheet 2 of 3

P/N – 64582117

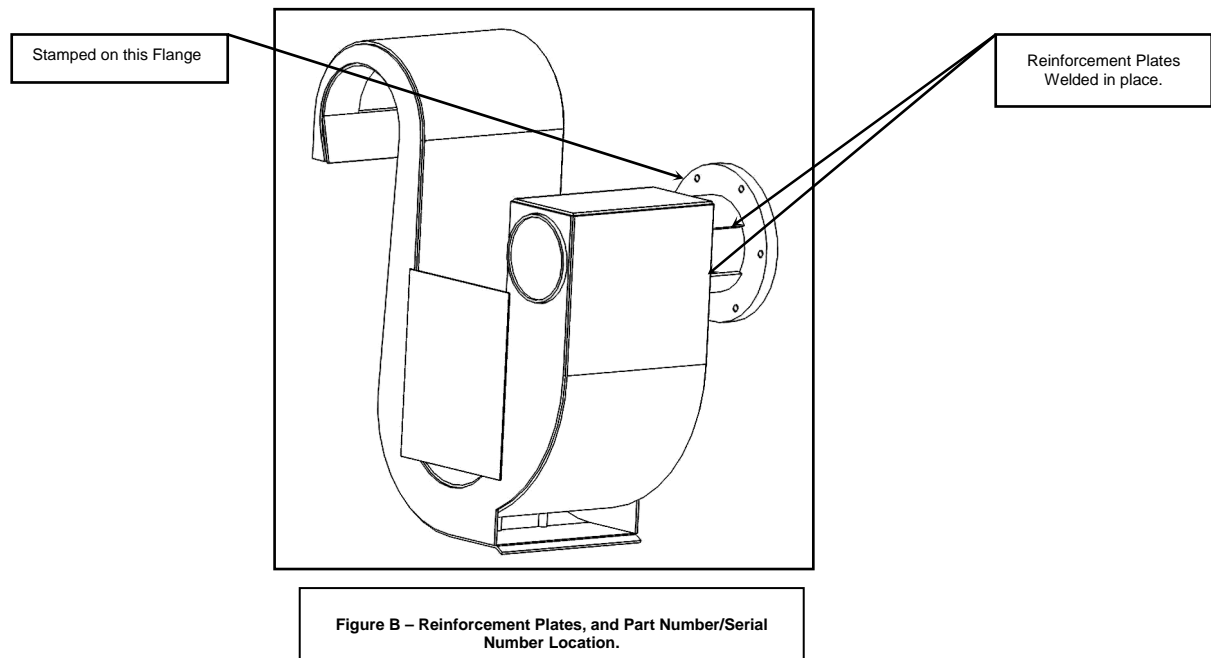
Sandvik Mining and Construction Canada Inc.

4445 Fairview Street, Burlington, Ontario, L7L 2A4 Telephone: 905-632-4940
<http://www.sandvik.com>



5. () If any cracks, holes or other damage are detected, the Insert must be replaced with an Eimco Insert marked as shown in Figure B with reinforcement bracket and a part number and serial number prior to putting the machine back in service. If no cracks, holes or other damage are detected reinstall the Insert including internal copper flange gasket, any float system hardware and exhaust conditioner cover that was removed.

Note: When reassembling the exhaust conditioner, insert and enclosure, ensure all bolts are the proper size, length and material (stainless steel). After reassembling the exhaust conditioner perform the low water shutdown test as described in the machine's applicable Power System Checklist.



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P/N - 64582117

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Power System Checklist Addendum

To be used in conjunction with the following Eimco, Drawing, Model and Approval Numbers:
(Small Insert)

Drawing Number	Model Number	Approval Number
6220018	935-2NL	31-110, 31-202
975-257092	975A (Isuzu)	31-131

Inspection Frequency:

Inserts that are inspected and found acceptable must be inspected on a **quarterly basis** until otherwise indicated on this addendum. New replacement inserts must be inspected **after (1) one year of operation**. Following the first year, the inserts must be inspected **quarterly** until otherwise indicated on this addendum.

All Inspections and Tests Shall be Performed in Fresh Air

Before starting inspection procedure of the exhaust conditioner insert perform the following safety measures:

- Shutoff engine and apply the park/emergency brake
- Deplete air supply to prevent engine start-up
- Install wheel chocks on all four wheels.

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P/N – 64585473

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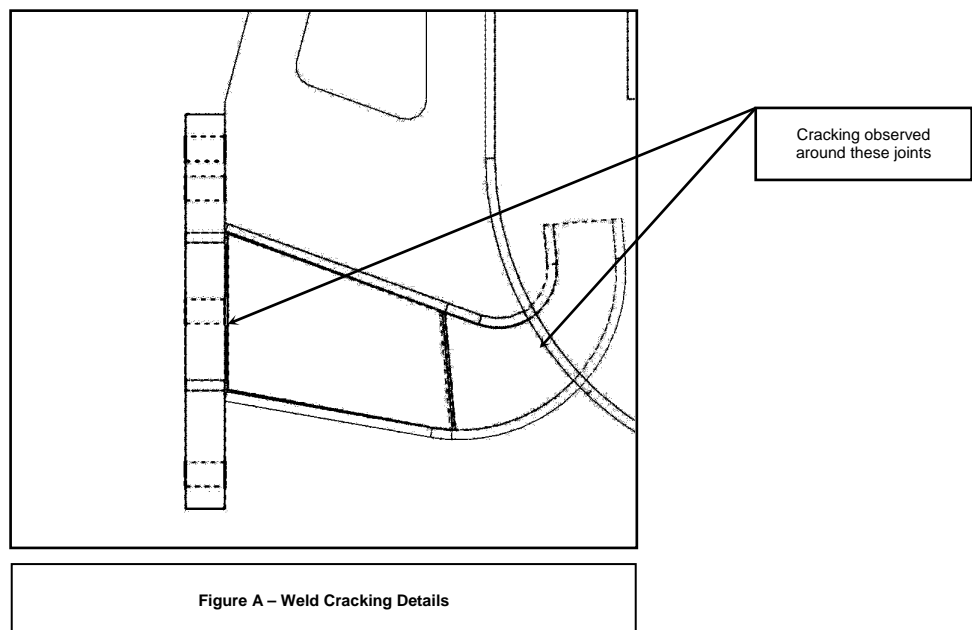


Exhaust System:

1. () Locate exhaust Conditioner on the left-or-right hand side of machine near engine.
2. () Remove Exhaust Conditioner Cover.
3. () Locate the exhaust conditioner insert and remove the insert from the mounting flange.

Note: Some float system components will need to be removed in order to Remove the insert.

4. () Remove the Exhaust Conditioner Insert from the enclosure. Clean outside surface area of Insert for visual examination. Visually inspect the entire unit, including welds, for cracks, holes and other damage. A non-destructive inspection method such as “crack check” or Liquid Penetration Inspection (LPI) may be used to verify the condition of suspect areas. [See Figure A for shows the location of cracks/holes that have been found on inserts in the field.



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P/N – 64585473

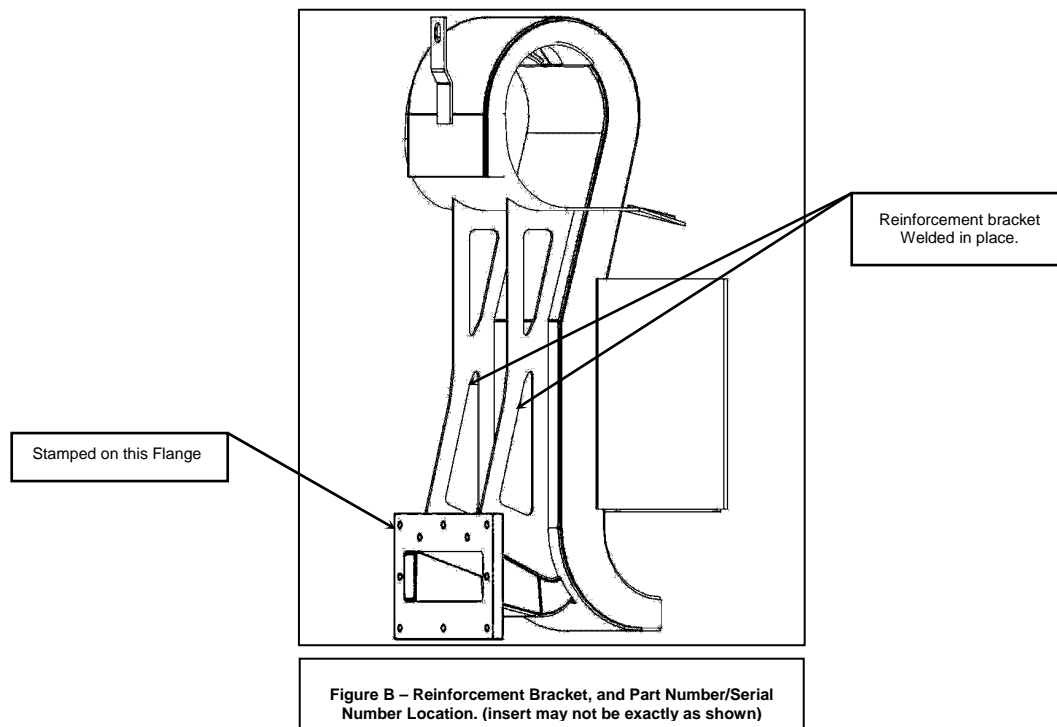
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5. () If any cracks, holes or other damage are detected, the Insert must be replaced with an Eimco Insert marked as shown in Figure B with reinforcement bracket and a part number and serial number prior to putting the machine back in service. If no cracks, holes or other damage are detected reinstall the Insert including internal copper flange gasket, any float system hardware and exhaust conditioner cover that was removed.

Note: When reassembling the exhaust conditioner, insert and enclosure, ensure all bolts are the proper size, length and material (stainless steel). After reassembling the exhaust conditioner perform the low water shutdown test as described in the machine's applicable Power System Checklist.



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Power System Checklist Addendum

To be used in conjunction with the following Eimco, Drawing, Model and Approval Numbers:
(Large Insert)

Drawing Number	Model Number	Approval Number
64395307	980L	31-135, 31-211
64395315	980L	36C-003

Inspection Frequency:

Inserts that are inspected and found acceptable must be inspected on a **quarterly basis** until otherwise indicated on this addendum. New replacement inserts must be inspected **after (1) one year of operation**. Following the first year, the inserts must be inspected **quarterly** until otherwise indicated on this addendum.

All Inspections and Tests Shall be Performed in Fresh Air

Before starting inspection procedure of the exhaust conditioner insert perform the following safety measures:

- Shutoff engine and apply the park/emergency brake
- Deplete air supply to prevent engine start-up
- Install wheel chocks on all four wheels.

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P/N – 64585474

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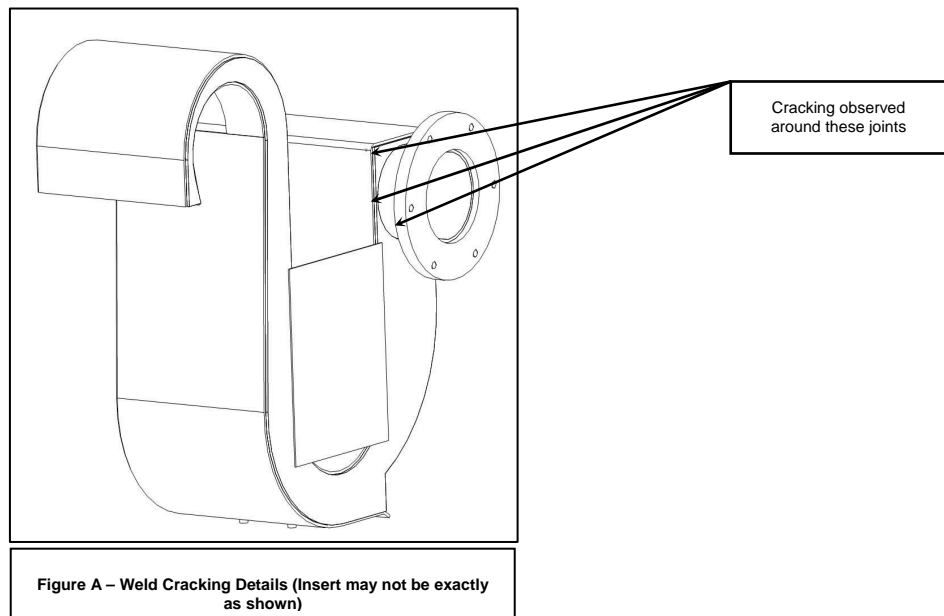


Exhaust System:

1. () Locate exhaust Conditioner on the left-or-right hand side of machine near engine.
2. () Remove Exhaust Conditioner Cover.
3. () Locate the exhaust conditioner insert and remove the insert from the mounting flange.

Note: Some float system components will need to be removed in order to Remove the insert.

4. () Remove the Exhaust Conditioner Insert from the enclosure. Clean outside surface area of Insert for visual examination. Visually inspect the entire unit, including welds, for cracks, holes and other damage. A non-destructive inspection method such as “crack check” or Liquid Penetration Inspection (LPI) may be used to verify the condition of suspect areas. [See Figure A for shows the location of cracks/holes that have been found on inserts in the field.



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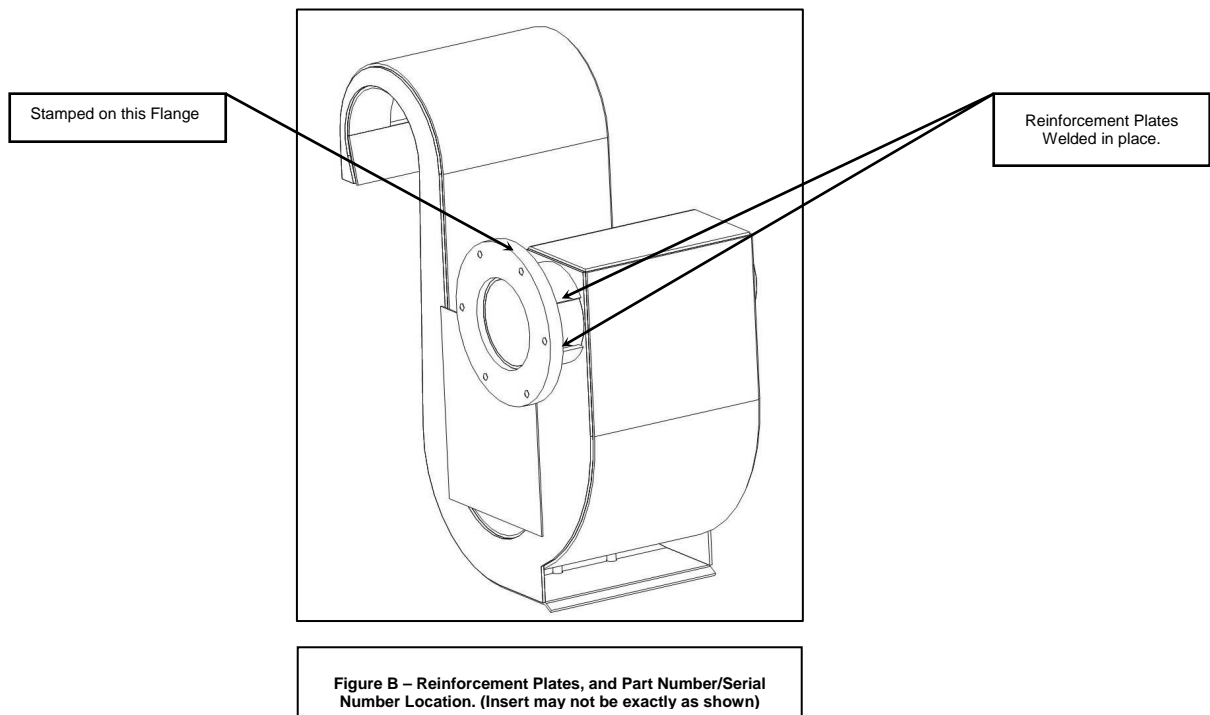
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Note: When reassembling the exhaust conditioner, insert and enclosure, ensure all bolts are the proper size, length and material (stainless steel). After reassembling the exhaust conditioner perform the low water shutdown test as described in the machine's applicable Power System Checklist.



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