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◀ Producto: MOTOR GRADER
 Modelo: 140H MOTOR GRADER 5HM
 Configuración: 140H Motor Grader 3306 Engine 5HM00001-UP (MACHINE)

Instrucción Especial**Installation of Circle Repair Segments{6152, 6152}**

Número de medio -SEHS7268-08

Fecha de publicación -16/04/2008

Fecha de actualización -16/04/2008

i02997967

Installation of Circle Repair Segments{6152, 6152}

SMCS - 6152-023

Motor Grader:

12G (S/N: 61M1-UP)

14G (S/N: 96U1-UP)

16G (S/N: 93U1-UP)

112 (S/N: 81C1-UP; 68E1-UP; 02M1-UP; 03M1-UP; 04M1-UP; 05M1-UP; 03U1-UP)

112E DD (S/N: 91G1-UP)

112E (S/N: 72H1-UP)

112F (S/N: 46D1-UP; 82F1-UP; 74H1-UP; 80J1-UP; 89J1-UP)

12 (S/N: 80C1-UP; 94C1-UP; 70D1-UP; 71D1-UP; 38E1-UP; 06M1-UP; 08T1-UP)

120 (S/N: 14K1-UP; 35K1-UP; 10R1-UP; 22R1-UP; 13U675-UP)

120B (S/N: 32C1-UP; 64U1-UP)

120G (S/N: 82V1-UP; 87V1-UP; 11W1-UP)

120H (S/N: CAF1-UP; 4MK1-UP; 5FM1-UP; 6NM1-UP; 6TM1-UP; 2AN1-UP; 6YN1-UP; 9FN1-UP; 3GR1-UP; 9YR1-UP; ALZ1-UP; 1241-UP)

12E (S/N: 99E1-UP; 21F1-UP; 17K1-UP)

12F (S/N: 73G1-UP; 59H1-UP; 89H1-UP; 13K1-UP; 33K1-UP)

12H (S/N: XZJ1-UP; CBK1-UP; 4XM1-UP; 5ZM1-UP; 8MN1-UP; 2LR1-UP; 2WR1-UP; 4ER1-UP; 2GS1-UP; AMZ1-UP; 1251-UP)

130G (S/N: 74V1-UP; 12W1-UP)

135H (S/N: CBC1-UP; BDJ1-UP; 3YK1-UP; 7MM1-UP; 8WN1-UP; AMX1-UP)

140 (S/N: 11R493-UP; 24R113-UP; 14U385-UP)

140G (S/N: 72V1-UP; 81V1-UP; 13W1-UP)

140H (S/N: CCA1-UP; XZH1-UP; 2ZK1-UP; APM1-UP; 5HM1-UP; 8JM1-UP; 8KM1-UP; 9TN1-UP; 9ZN1-UP; 3FR1-UP; 3AS1-UP; 1261-UP)

143H (S/N: 1AL1-UP; APN1-UP)

14H (S/N: ASE1-UP; 7WJ1-UP)

160H (S/N: ASD1-UP; 9EJ1-UP; XZK1-UP; 2FM1-UP; 3GM1-UP; 6WM1-UP; 9JM1-UP; CCP1-UP; 2HS1-UP)

163H (S/N: 5AK1-UP; ARL1-UP)

16H (S/N: 6ZJ1-UP; ATS1-UP)

16M (S/N: B9H1-UP)

212 MG (S/N: 79C1-UP; 95C1-UP; 01M1-UP; 08M1-UP; 01R1-UP; 02R1-UP; 09T1-UP; 01U1-UP)

120M (S/N: B9C1-UP; B9N1-UP; B9W1-UP; D9W1-UP)

12M (S/N: B9F1-UP; B9R1-UP)

140M (S/N: B9D1-UP; B9G1-UP; D9G1-UP; B9M1-UP)

14M (S/N: B9J1-UP)

160M (S/N: B9E1-UP; B9L1-UP; B9T1-UP; D9T1-UP)

Introduction

The following document is designed to be a guideline for installing the segments for the repair of the circle drive. The circle repair segments are used in order to install one or more segments for the repair of a damaged circle. Generally, the cracks first start in the front 120 degrees of the circle. If repairs are not made immediately, these cracks can move completely through the outer ring and the front wrapper. If more than one segment is needed, install only one segment at a time.

When one segment is installed because of damage, it is not necessary to remove the circle.

Reference Refer to Special Instruction, REHS1841, "General Welding Procedures".

Required Parts

Table 1

Replacement Parts		
Model	Pt. No.	Description
112 112E 112F 12 120 120G 12E 140	8W-0288	Circle Segment
120B	2Y-8776	Circle Segment
120H 12F 12G 12H 12M 120M 130G 135H 140G 140H 140M 143H 160H 160M 163H	5T-4267	Circle Segment
14G	5T-2332	Circle Segment
14H 14M 16G	5T-2333	Circle Segment

16H		
16M		

Required Tooling

Table 2

Required Tooling		
Model	Pt. No.	Description
112 112E 112F 12 12E 12F 12G 12H 12M 120 120B 120G 120H 120M 130G 135H 140 140G 140H 140M 143H 160H 160M 163H 212	6V-7808	Template
14G	6V-6039	Template
14H 14M 16G 16H 16M	6V-6037	Template

Repair Procedure

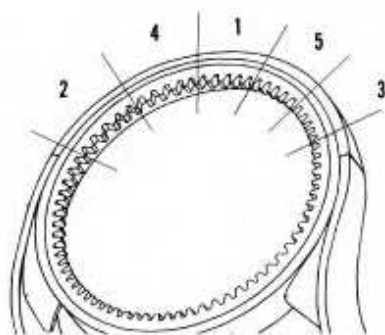


Illustration 1

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Illustration 1 is for the following models: 112, 12, 120, 130, 135, 140, 143, 160, 163 and 212.

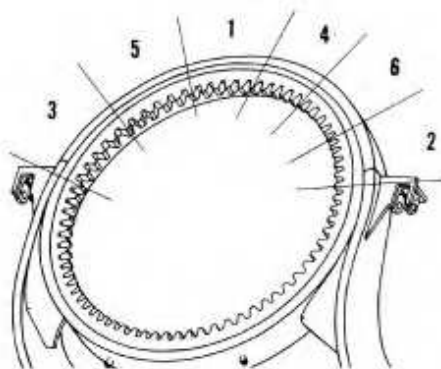


Illustration 2

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Illustration 2 is for the following models: 14G.

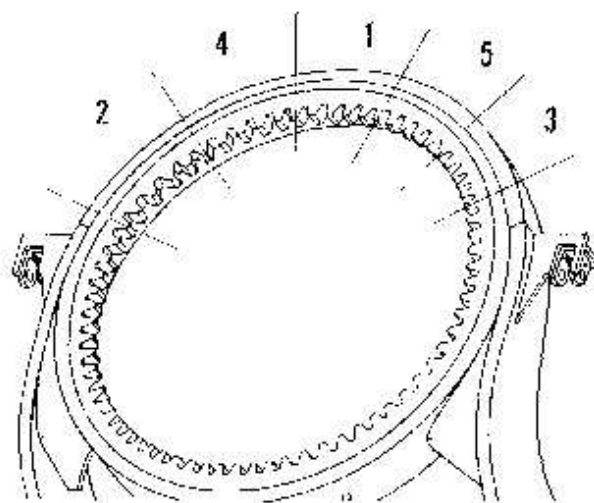


Illustration 3

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Illustration 3 is for the following models: 14H and 16.

1. Place marks on the front 120 degrees of the circle for five segments. Use this pattern for the following models:

- 12

- 112
- 120
- 130
- 140
- 212
- 14H
- 16

Note: The 120B uses **2Y-8776** Circle Segment . The **2Y-8776** Circle Segment has 4 teeth per segment. The **2Y-8776** Circle Segment will require marking the circle accordingly.

2. Place marks on the front 120 degrees of the circle for six segments. Use this pattern for the following models:
 - 14G
3. Install the circle segments in the correct order. Refer to the appropriate illustration for your machine.

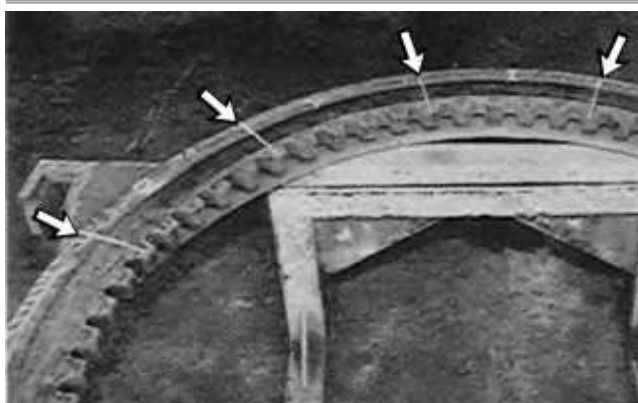


Illustration 4 g01364598

The left side of the circle for the model 16 is shown.

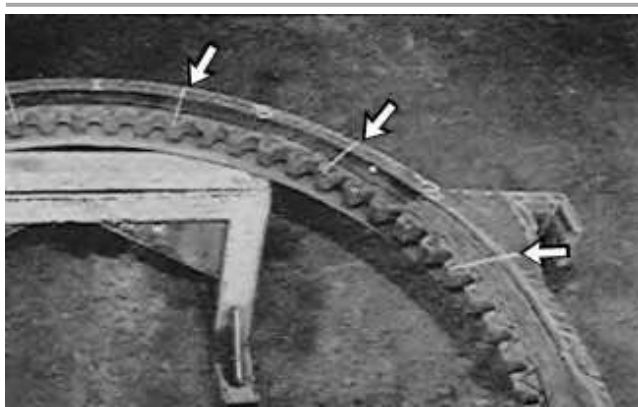


Illustration 5 g01364612

The right side of the circle for the model 16 is shown.

4. Remove the circle from the Motor Grader. See the Service Manual. Put the circle in a level position. Clean the circle before the segments are installed. Place marks on the circle at the locations for the five segments, as shown.



Illustration 6

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Illustration 7

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5. Measure the diameter of the circle in several places. Keep a record of each measurement for future reference. When a new segment is installed, the diameter must be checked for the acceptable tolerance of 1.59 mm (0.0625 inch).

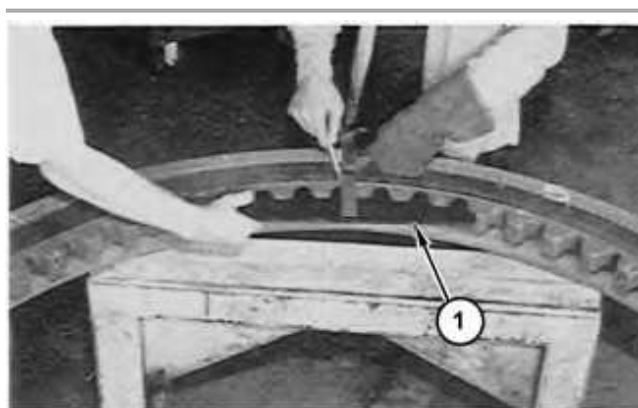


Illustration 8

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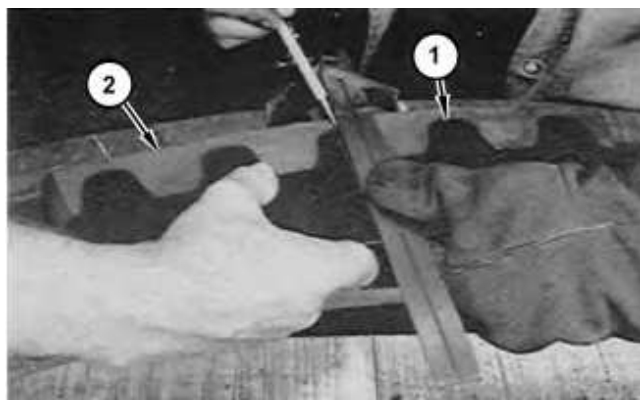


Illustration 9

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6. Position template (1), as shown. Make a line on the circle even with the centerline of the template. Use template (1) in order to put a mark at the center of segment (2). The lines are used in order to put segment (2) in the correct position when the segment is installed on the circle.

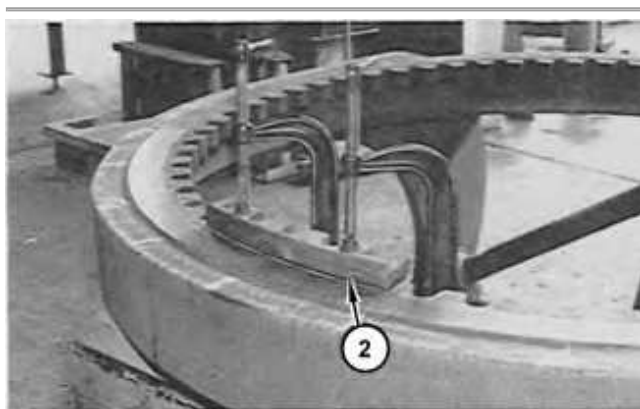


Illustration 10

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Illustration 11

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7. Position segment (2) so the teeth are aligned with the teeth in the circle. Make marks around the segment, as shown. Remove the segment.

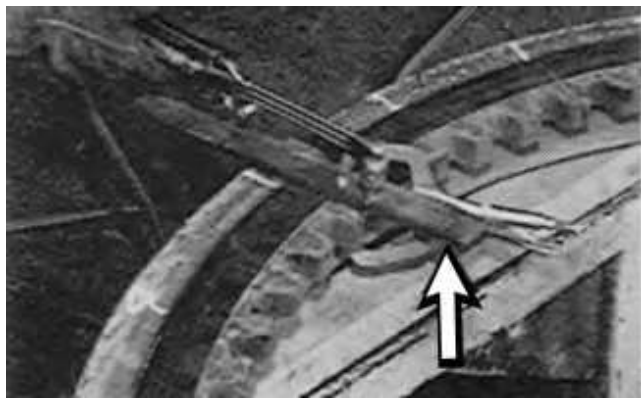


Illustration 12

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Illustration 13

g01364653



Illustration 14

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8. Use a guide in order to ensure that the cutting torch will be exactly over the mark. Make a straight cut through the end of the marks.
-

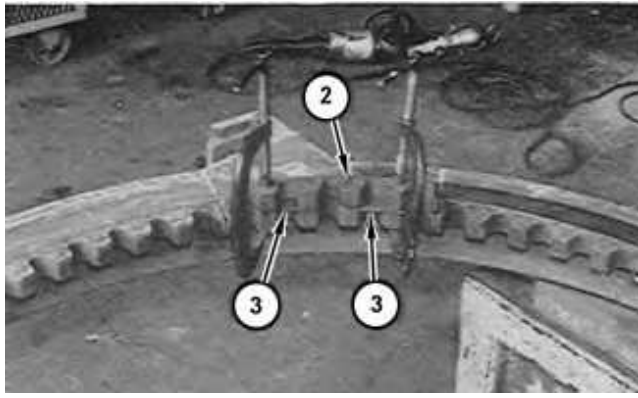


Illustration 15

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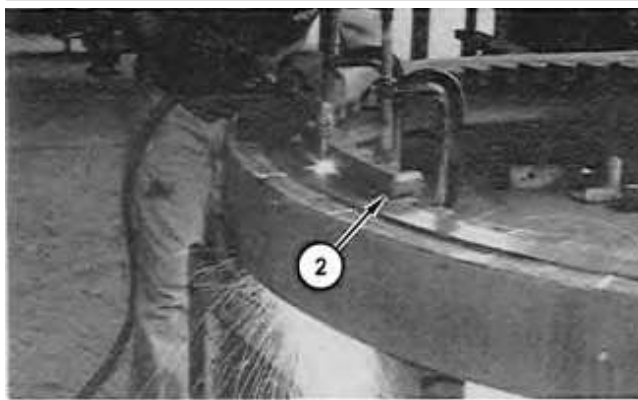


Illustration 16

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9. Use segment (2) as a guide and shims (3) in order to lift segment (2) so that the segment is firm against the circle. Use the cutting tip of the torch as a guide and move segment (2) so the cutting tip of the torch is exactly over the location of the mark that was previously made. Hold segment (2) in place with clamps. Use the torch in order to cut the segment from the circle.



Illustration 17

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10. After removal of each segment, check for cracks that have extended into both the outer ring and the front wrapper. Any cracks in the outer ring or the front wrapper must be cut out with an Arcair torch. Weld the cracks and grind the surfaces flat. Remove all weld splatter.

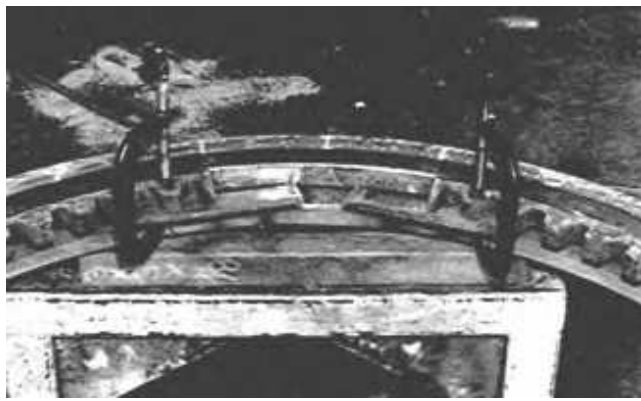


Illustration 18

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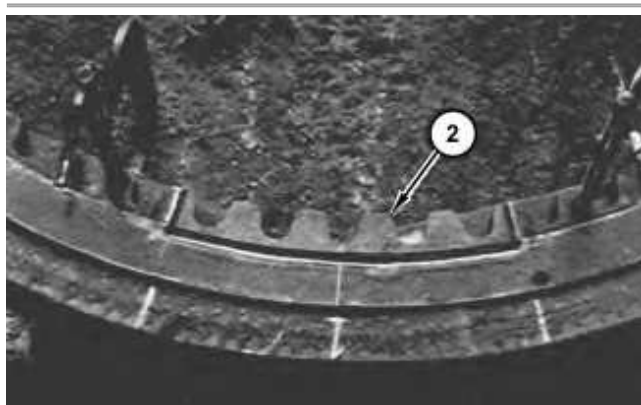


Illustration 19

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11. Use clamps in order to hold the two pieces of metal under the teeth of the circle, as shown. Place segment (2) in position so the tips of the half teeth on each end are even with the half teeth in the circle and the center marks are in alignment. If adjustment is needed, grind material from the circle or use spacers between segment (2) and the circle.

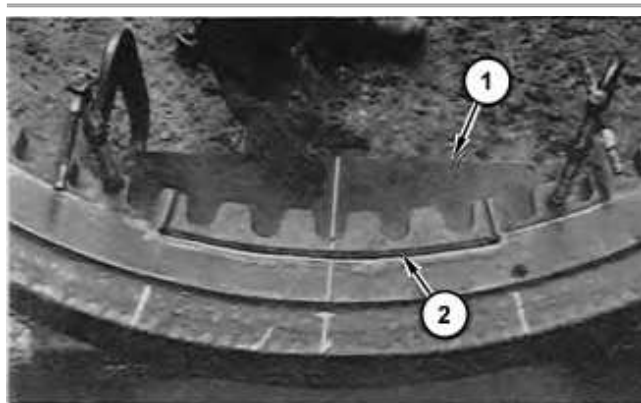


Illustration 20

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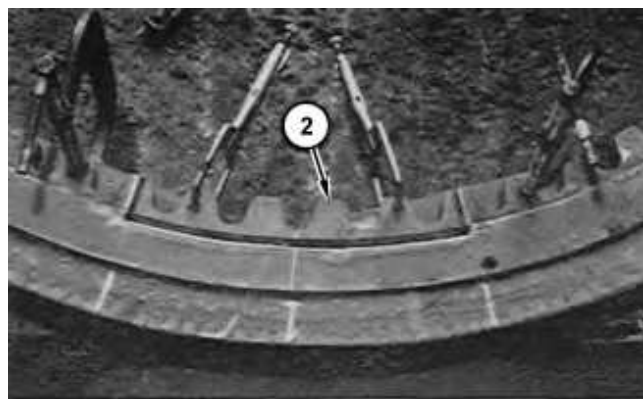


Illustration 21

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12. Use template (1) in order to put segment (2) in the correct position. Use clamps to hold the segment in place.

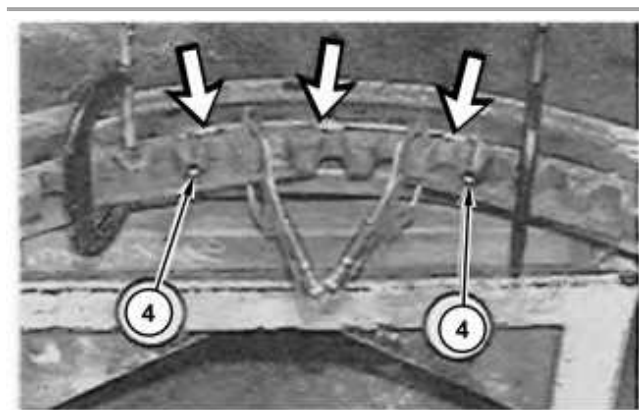


Illustration 22

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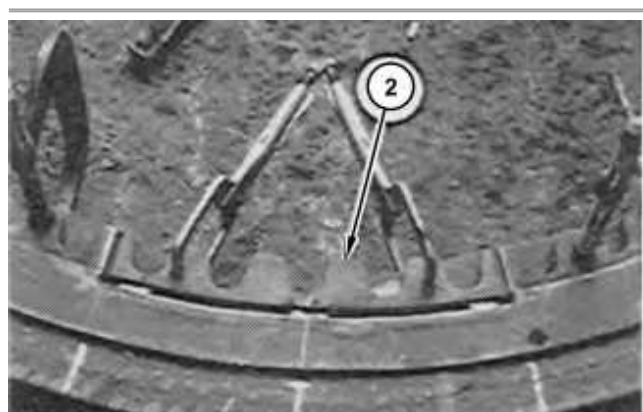


Illustration 23

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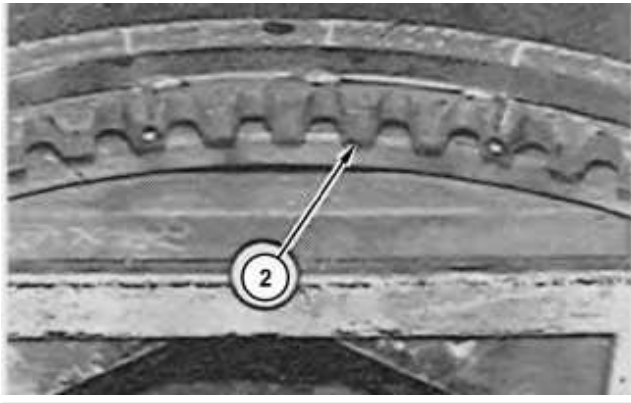


Illustration 24

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13. Tack weld the end faces of teeth (4), as shown. Tack weld segment (2) to the circle with three tack welds on the top and three tack welds on the bottom. Use the template to check the position of segment (2) .



Illustration 25

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14. Repeat Step 6 through Step 13 in order to install each additional segment. After all segments have been installed, check each segment again with the template. Check if the diameter of the circle is within the tolerance that was given in Step 5.

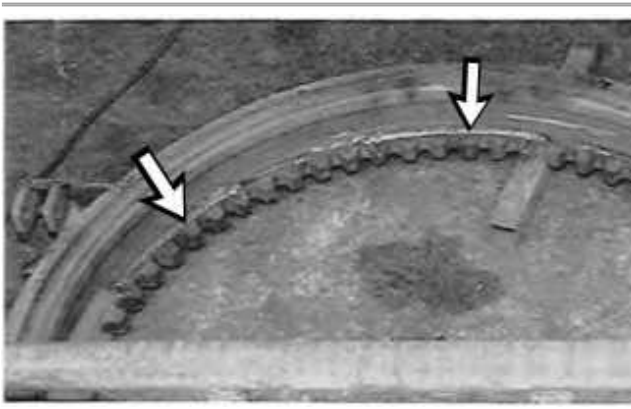


Illustration 26

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15. Place the circle in a level position. Use low heat and weld segments one, three, five, two, and four in this order with small welds. Do not weld the end of the teeth of the segments at this time.

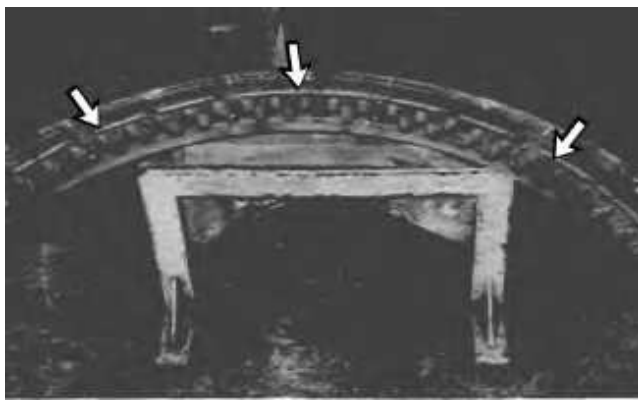


Illustration 27

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16. Turn over the circle and place the circle in a level position. Use low heat and weld segments one, three, five, two, and four in this order with small welds. Do not weld the end of the teeth of the segments at this time.



Illustration 28

g01364806

17. Make a 6.0 mm (0.25 inch) continuous bevel groove weld across all of the segments. Be sure that the weld does not extend into the wear surface. Check the welds for cracks. Remove any cracks with an Arcair torch. Weld the grooves. Remove all weld splatter.



Illustration 29

g01364816

18. Turn over the circle and place the circle in a level position. Make a 6.0 mm (0.25 inch) continuous bevel groove weld across all the segments. Be sure that the weld does not extend

into the wear surface. Check the welds for cracks. Remove any cracks with an Arcair torch. Weld the grooves. Remove all weld splatter.

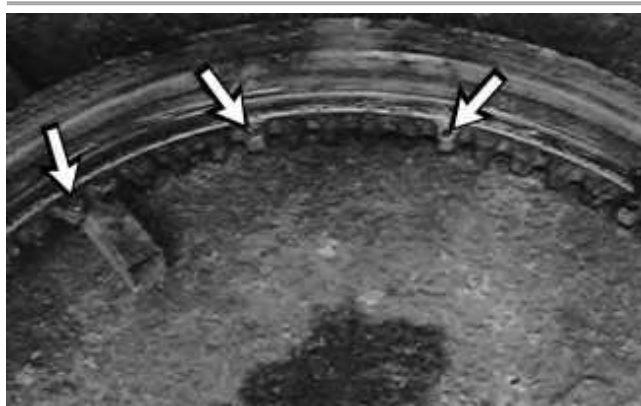


Illustration 30

g01364818



Illustration 31

g01364820

View showing the grooves of the tooth.

19. Weld the grooves on the end of the teeth and grind the welds until the welds are flat and smooth. Remove all weld splatter from the circle.

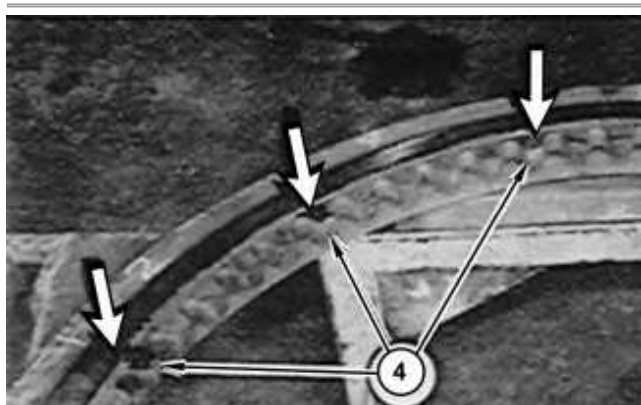


Illustration 32

g01364848

Right view

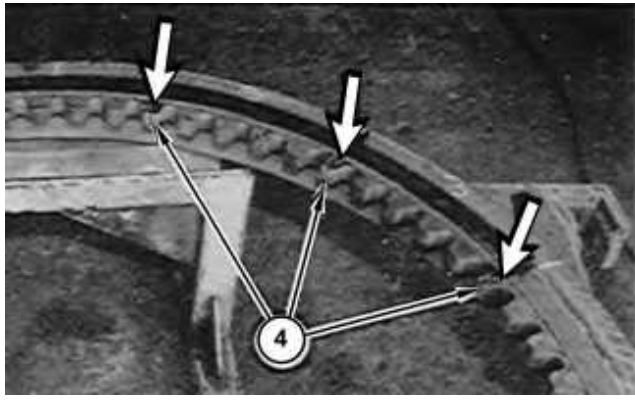


Illustration 33

g01364849

Left view

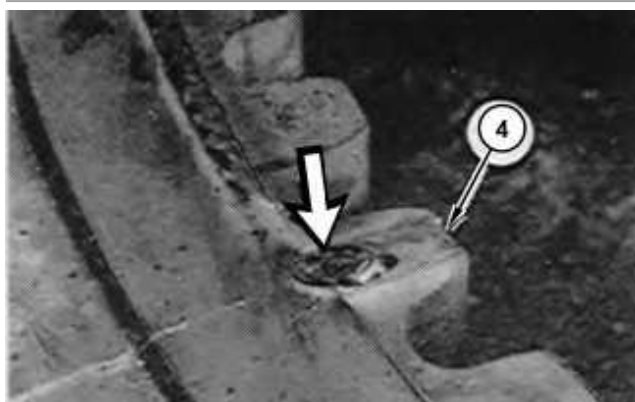


Illustration 34

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Detailed view

20. Turn over the circle and place the circle in a level position. Weld the end of the teeth. First weld the top grooves of the end of teeth (4). Next weld the inner faces of end of teeth (4). Grind all the welds until the welds are flat and smooth. Remove all weld splatter.
21. Install the circle. Refer to the Service Manual. Check the operation of the circle.