-- GENERAL INFORMATION--

The contour Cutting Attachment with Template, in combination with the Short Saddle Machine, enables the welder, regardless of experience, to produce perfect miter and saddle cuts time after time with little or no grinding. The Contour Cutting Attachment mounts to the front of the Ring Gear of the Saddle Machine in the same positioning as the Saddle Machine Torch Arm.

The torch being used on the Contour Cutting Attachment is held in a fixed position so the bevel angle will not be the same around the pipe. If the torch is set at a 30° torch bevel angle on the top of the pipe, at the 3:00 o’clock position the torch will cut a 0° bevel angle on the pipe, at 6:00 o’clock position the torch will cut a bevel angle of 30°; at the 9:00 o’clock position the torch will cut a 0° bevel angle and the torch bevel angle will again be 30° as it reaches the top of the pipe. The change in bevel angle is due to the inability of the torch to articulate as it goes around the pipe.

When the Contour Cutting Attachment is used with the Motorized Short Saddle Machine you gain the optimum in performance and minimize grinding time.

Special Notes:

- A Contour Cutting Attachment is available for use with a 1 3/8” / 35mm Oxy/Fuel or Plasma torch having a 32 pitch or metric Rack.
- The Contour Cutting Attachment is not designed to be used with a Mathey Dearman Short Saddle Machine manufactured prior to 1987.
- When cutting the smaller diameter that the machine will cut it may be necessary to the torch bracket (03-0116-082 to the bottom side of the torch carriage assembly.
- The Contour Cutting Attachment is not designed for use with a 1 3/4" / 44.5mm or 2 ½” / 63.5mm Plasma machine Torch.

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1.0– CONTOUR CUTTING ATTACHMENT (03-0116-MSA or 03-0116-MSAE) FOR MSA SADDLE PIPE MACHINE
1.1 The attachment can be used with a manual or motorized MSA Pipe Beveling Machine to cut profiles and miter angles to 45 degrees on 1\(\frac{1}{2}\)-4” / 38-102mm pipe.
1.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.

2.0– CONTOUR CUTTING ATTACHMENT (03-0116-1SA or 03-0116-1SAE) FOR THE 1SA, 2SA, & SUPER “II” PIPE MACHINE
2.1 The attachment can be used with a manual or motorized Pipe Beveling Machine to cut profiles and miter angles to 45 degrees on various diameters of pipe.
2.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.
2.3 1SA Pipe Beveling Machine with Contour Cutting Attachment cuts various profiles and miter angles to 45 degrees on 3” – 8” pipe.
2.4 2SA Pipe Beveling Machine with Contour Cutting Attachment cuts various profiles and miter angles to 45 degrees on 6” to 12” pipe.
2.5 Super “II” Pipe Beveling Machine with Contour Cutting Attachment cuts various profiles and miter angles to 45 degrees on 4” to 12” pipe.
**NOTE 1** - Mathey Dearman Inc. can not insure proper operation of the Contour Cutting Attachment on 1SA and 2SA Saddle Machines manufactured prior to 1989.

3.0– CONTOUR CUTTING ATTACHMENT (03-0116-3SA or 03-0116-3SAE) FOR THE 3SA SADDLE MACHINE
3.1 The attachment can be used with a manual or motorized 3SA Pipe Beveling Machine with Contour Cutting Attachment to cut various profiles and miter angles to 45 degrees on 12” to 20” pipe.
3.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.
**NOTE 1** - Mathey Dearman Inc. will not insure proper operation of the Contour Cutting Attachment on 3SA Saddle Machines manufactured prior to 1989.

4.0– CONTOUR CUTTING ATTACHMENT (03-0116-4SA or 03-0116-4SAE) FOR THE 4SA SADDLE MACHINE
4.1 The attachment can be used with a manual or motorized 4SA Pipe Beveling Machine with Contour Cutting Attachment to cut various profiles and miter angles to 45 degrees on 20” to 26” pipe.
4.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.

5.0– CONTOUR CUTTING ATTACHMENT (03-0116-5SA or 03-0116-5SAE) FOR THE 5SA SADDLE MACHINE
5.1 The attachment can be used with a manual or motorized 5SA Pipe Beveling Machine with Contour Cutting Attachment cuts various profiles and miter angles to 45 degrees on 24” to 30” pipe.
5.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.

6.0– CONTOUR CUTTING ATTACHMENT (03-0116-6SA or 03-0116-6SAE) FOR THE 6SA SADDLE MACHINE
6.1 The attachment can be used with a manual or motorized 6SA Pipe Beveling Machine with Contour Cutting Attachment cuts various profiles and miter angles to 45 degrees on 28” to 36” pipe.
6.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.

7.0– CONTOUR CUTTING ATTACHMENT (03-0116-8SA or 03-0116-8SAE) FOR THE 8SA SADDLE MACHINE
7.1 The attachment can be used with a manual or motorized 8SA Pipe Beveling Machine with Contour Cutting Attachment cuts various profiles and miter angles to 45 degrees on 40” to 48” pipe.
7.2 The Attachment can be used with a plasma or fuel torch having a barrel diameter of 1 3/8” / 35mm.
MITER AND CONTOUR TEMPLATES
The contour and miter templates are made for a specific Saddle Machine size, pipe diameter, pipe schedule and angle. The templates are designed for these particular combined features only. They cannot be used for another machine size, pipe diameter, pipe schedule or angle.
8.0 – TEMPLATE INSTALLATION TO SHORT SADDLE CUTTING & BEVELING MACHINE

Read all instructions prior to assembly.
Tools Required:
MSA - 3/8” ratchet, 8” extension bar and 7/16” socket
ISA – 8SA – 3/8” ratchet, 8” extension bar and 1/2” socket

Use caution when working with the Mathey Saddle Machine, Contour Cutting Attachment and Template to not over torque the Hex Head Cap Screws, as all major components of the pipe machine and contour cutting attachments are made of aluminum.

WARNING: When installing the Shape Template on the Saddle Machine, only loosen the Hex Head Cap Screws in the cap ring that are specified. It may affect the accuracy of the machine if ALL Hex Head Cap Screws are loosened at once.

Note: During shipping the templates can be knocked out of round; therefore, some force to round the templates may be required for alignment of attachment holes of the template to the cap ring of the Saddle Machines.

SADDLE, CAP RING & RING GEAR ASSEMBLY
8.1 – **MSA** - Remove the 2 bottom Hex Head Cap Screws (A) from the cap ring (the part that holds the rotating ring gear to the saddle assembly). Place the holes in flanges of the template over holes in the cap ring, where the screws are designated to be removed and reinstall the hex head screws.

8.2 – **1SA** - Remove the 2 bottom (A) and the top (D) center Hex Head Cap Screws from the cap ring (part which holds the rotating ring gear to the saddle). Place the holes in the flanges of the template over holes in the cap ring, where the screws were removed and reinstall the Hex Head Cap Screws.

8.3 – **2SA** - Remove the 2 upper (C) and 2 lower (A) Hex Head Cap Screws from the cap ring (part which holds the rotating ring gear to the saddle). Place the holes in flanges of the template over holes in the cap ring, where the screws were removed and reinstall the hex screws.

8.4 – **Super “II”** - Remove the 2 upper (C) and the 2 lower (A) center Hex Head Cap Screws from the cap ring (part which holds the rotating gear to saddle). Place the holes in flanges of the template over holes in the cap ring, where the screws were removed and reinstall the hex head screws.

8.5 – **3SA** - Remove the 2 bottom (A) and the top (D) center Hex Head Cap Screws from the cap ring (the part that holds the rotating gear to saddle). Place the holes in flanges of the template over the holes in the cap ring, where the screws were designated to be removed and reinstall the hex head screws.

8.6 – **4SA** - Remove the 2 upper (C) and the 2 lower (A) Hex Head Cap Screws from the cap ring (the part which holds the rotating gear to saddle). Place the holes in flanges of the template over the holes in the cap ring, where the screws were designated to be removed and reinstall the hex head screws.

8.7 – **5SA** - Remove the 2 upper (C) and the 2 lower (A) Hex Head Cap Screws from the cap ring (part which holds the rotating gear to saddle). Place the holes in flanges of the template over holes in the cap ring, where the screws were removed and reinstall the hex head screws.

8.8 - **6SA** – Remove the 2 upper (C) and the 2 lower (A) Hex Head Cap Screws from the cap ring (the part that holds the rotating gear to saddle). Place the holes in flanges of the template over holes in the cap ring, where the screws were designated to be removed and reinstall the hex head screws.

8.9 – **8SA** – Remove the 2 upper (C) and the 2 lower (A) Hex Head Cap Screws from the cap ring (the part that holds the rotating gear to saddle). Place the holes in flanges of the template over holes in the cap ring, where the screws were designated to be removed and reinstall the hex head screws.

There is no longer a need for a 18” long machine torch when cutting the smaller diameters that the machine will cut. To facilitate a 12” machine torch for all diameters, the Torch Carriage Assembly now has torch bracket mounting holes at the top and bottom of the assembly.
CONTOUR CUTTING ATTACHMENT (CCA)
INSTALLATION INSTRUCTIONS

Read all instructions prior to assembly.
Tools required:
1 – 3/8” ratchet, 8” extension bar and 1/2” socket

9.0 – MSA Contour Cutting Attachment

9.1 – Remove the Torch Arm and Torch Carrier Assembly from the Ring Gear of the MSA Saddle Machine.
9.2 – If the Template is not installed, it should be installed at this time.
9.3 – Set the Saddle Machine on the pipe to be cut and tighten thumb screw of the boomer assembly to pipe.
9.4 – Remove the Follower Assembly from the Contour Cutting Attachment.
9.5 – Align the holes of the Beam Mounting Block over the Studs on the Ring Gear and push forward exposing the threaded studs.
9.6 – Secure the Contour Cutting Attachment to the ring gear with the 2 - 5/16” x 18NC Hex Nuts provided with the attachment.
9.7 – Loosen the Wing Screw located on the backside of the Carriage Block.
9.8 – The Torch Carriage should travel freely along the entire length of the Beam Shaft.
9.9 – Move the Torch Carriage along the Beam Shaft until it clears the Template and then retighten the Wing Screw.
9.10 – Install the Follower Assembly in the follower mounting block so the roller of the follower assembly is centered on the template.
9.11 – Tighten the Wing Screw against the shaft so that holds the Follower Assembly is held in position.
9.12 – Loosen the Wing Screw located on the backside of the Carriage Block and release the Carriage Block so that it contacts the template.
9.13 – Install Oxy/fuel or plasma machine torch (not furnished) into the torch holder on the CCA. If rapid torch height adjustment is required a rack is required for the machine torch.

Note: A Torch Holder is available for 1 3/8” / 35mm diameter oxy/fuel or Plasma machine torch with a 32 pitch rack or a metric torch rack. The Contour Cutting Attachment is not designed for use with a 1 3/4” / 44.5mm or 2 ½” / 63.5mm Plasma machine Torch.

9.14 – The torch height adjustment is made by simply loosening the 2 screws in the torch holder and turning the Knob clockwise or counterclockwise and retightening the Allen screws with a 3/16” Allen wrench.
9.15 – Install the Plasma manufacturer’s plasma torch with torch holder by removing the CCA Torch holder assembly and insert the stud on the side of the plasma machine torch into the hole where the CCA Torch Holder was removed. After the fuel or plasma torch is installed, rotate the CCA around the pipe to make sure it is maintains a preset distance. Loop the torch leads or hoses of the plasma or fuel torch around the contour attachment so that the hoses or leads are on the Saddle Machine side of the torch.
9.16 - Light the torch per the manufacturer’s instructions then loosen the Ratchet Handle located at the top of the Torch Holder and rotate the torch correct bevel angle and retighten the Ratched handle
9.17 – Adjust the torch to pipe height.
9.18 – The MSA Contour Cutting Attachment is now ready.
NOTES:
UPON COMPLETION OF ASSEMBLY PUT COAT OF
DIOCTRON III ON BEAM SHAFTS AND WRAP WITH
BROWN PAPER PRIOR TO BRING TO THE WAREHOUSE
3SA SADDLE MACHINE CONTOUR CUTTING ATTACHMENT
4SA SADDLE MACHINE CONTOUR CUTTING ATTACHMENT
6SA SADDLE MACHINE CONTOUR CUTTING ATTACHMENT
Torch Carriage for MSA thru 3SA
Torch Carriage for 4SA thru 8SA
10.0 – 1SA and Up Contour Cutting Attachment (CCA)

Tools Require:
1 – 3/8” ratchet, 8” extension bar and 1/2” socket
2 – 7/16” combination wrenches

10.1 – Remove the Torch Arm and Torch Carrier Assembly from the Ring Gear of the Saddle Machine.

10.2 – If the Template is not installed, it should be installed at this time.

10.3 – Set-up the Saddle Machine on the pipe to be cut.

10.4 – Place a level on the pipe, check for level.

10.5 – Remove the Follower Assembly from the CCA.

10.6 – Screw the R.H. Thd. Swivel Stud Ass’y of the support rods into the Ring Gear.

10.7 – Align the holes of the Beam Mounting Block over the studs in the Ring Gear and push. Secure the contour attachment with the 2 hex nuts (5/16” x 18NC) that are provided with CCA. The L.H. Thd. Swivel Stud Ass’y of the support rods should be installed simultaneously into the Beam End Bar.

Note: If removal of the Beam End Bar is required make sure the end of the CCA is supported.

10.8 – Place a level on the top beam shaft and twist the Shaft Support Rod until the top Beam Shaft is at the same level of plumb as the pipe.

Note: Adjust the Shaft Support Rods evenly so the CCA will not become twisted, affecting the operation and accuracy of the machine.

10.9 – The Torch Carriage Assembly should travel freely along the entire length of the Beam Shaft. It may be necessary to adjust the Support Rods until free movement of the Torch Carriage is attained. Then tighten all nuts and lock nuts.

10.10 – Install the Follower Assembly in the follower mounting block so the roller of the follower assembly is centered on the template. Tighten the thumb screw in the follower mount block.

10.11 – Release the Wing Screw on the back side of the Carriage Assembly

10.12 – Rotate the torch around the pipe. Check Ring Gear as it enters and leaves the Saddle and Cap Ring assembly to make sure there should be a minimum amount of deflection of the Ring Gear as it enters or leaves the Saddle and Cap Ring. To avoid knocking the Saddle Machine out of time, it may be necessary to adjust the Shaft Support Rods until Ring Gear enter the Saddle and Ring Gear properly.

10.13 – Rotate the torch around the pipe. If the Follower Assembly does not follow the Template, adjust the Shaft Support Rods in or out until Carriage Block moves freely.

10.14 – Install the oxy/fuel or plasma torch (not furnished) in the Torch Holder. A Torch Holder is available for 1 3/8” / 35mm diameter oxy/fuel or Plasma machine torch with a 32 pitch rack or a metric torch rack.

Note 1 – To install the plasma torch, simply remove the torch holder assembly and insert the stud on the side of the plasma machine torch into the hold left by the removal of the torch holder assembly.

Note 2 – If rapid torch height adjustment is required, you will need to purchase a torch rack for machine torch.

Note 3 – The Contour Cutting Attachment is not designed for use with a 1 3/4” / 44.5mm or 2 ½” / 63.5mm Plasma machine Torch.

10.15 – Increase friction of the torch in the Torch Holder by tightening Allen Head Cap Screws with a 5/32” Allen wrench.

10.16 – After the fuel or plasma torch is installed, rotate the CCA around the pipe to make sure it is maintaining the preset distance around the pipe.

Note: When cutting the smaller diameter that the machine will cut it may be necessary to the torch bracket (03-0116-082 to the bottom side of the torch carriage assembly.

10.17 – Light the torch by loosening the Wing Nut located at the top of the Torch Carriage and rotating the torch outward; retighten the Wing Nut.

10.18 – After the torch is lit and the flame is adjusted, loosen the Wing Screw, move the torch to the proper torch bevel angle on the Degree Plate and adjust torch to pipe height.

10.19 – Tighten the Wing Nuts to hold the torch at the proper bevel angle.

You are now ready to cut with the Mathey Contour Attachment
11.0 **MAINTENANCE INSTRUCTIONS**

11.1 - **Beam Shafts**

The Carriage Block Slides back and forward on the Beam Shaft by means of a precision linear Bearing.

A. The steel beam shafts should be checked after each cut for slag and other debris.
B. The steel beam shafts should be clean and oiled regularly with a light weight machine oil for best operation.
C. If the Contour Cutting Attachment is to be stored for a period of time, a heavy coat of light machine oil should be applied to the beam shaft. The CCA should be stored in a cool dry place.

**NOTE:** Applying a heavy coat of oil or grease on the steel beam shafts will attract slag and smoke film.

11.1 - **Constant Force Springs**

The Constant Force Springs located in the Carriage Assembly maintains constant pressure of the follower assembly against the Template.

A. Daily check the Constant Force Springs for trapped Slag and other debris. If necessary clean the tape springs with a dry cloth. It is not necessary to apply a coat of oil to the springs.
B. Keep film and slag from stainless steel tape springs by wiping with a clean dry cloth regularly.
C. Check the Springs for kinks that could affect the Follower Assembly from following the Template.

11.3 - Make sure that the templates are in good working order and that there are no nicks or dents in the area, where the follower assembly makes contact with the template.

**Warranty**

For Warranty Information visit www.mathey.com