A Note on Back Beveling

Switching Mathey Dearman machines to back beveling is quick and easy. When back beveling, place Torch as close to Saddle as possible without placing flame directly on or near saddle. Rotate the Torch Clamp Base and Torch 180 degrees in the Torch Arm and re-tighten with thumb screw and clamp. The Torch will then be positioned for back beveling.

Caution: When back beveling, the cutting flame and "hot" zone of the pipe are directed toward the machine. It is very important that the Torch be positioned as far as possible to the opposite end of the Torch Arm to prevent the heat from damaging the machine Saddle and Ring Gear.

Warranty

If any merchandise sold hereunder (except merchandise manufactured by other persons or firms) by Mathey Dearman, Inc. (the "Company") is not in accordance with specifications shown on the order within customarily accepted tolerances, or is defective on account of workmanship or material, and if such merchandise is returned at the customer's expense and rise, to the Company's manufacturing facility (or at the Company's option, is returned to a repair facility authorized by the Company), within ninety (90) days after the Company's date of shipment thereof, the Company will, at its option, replace or repair the merchandise. This agreement, however, is upon the conditions: (A) that the customer promptly notifies the Company in writing of any claim under this agreement, setting forth in detail any such claimed defect. (B) That the Company be afforded a reasonable opportunity to examine the merchandise and to investigate the claimed defect at the Company's manufacturing facility or at an authorized repair facility, the Company shall not be, in any event, liable for damages beyond the price paid by the customer for such defective merchandise; specifically but without limitation, the Company may fulfill its obligations under this Agreement by tendering such purchase price at any time. THE COMPANY SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, PUNITITVE, OR EXEMPLARY DAMAGES. This agreement does not obligate the Company to bear any transportation charges in connection with the replacement or the repair of defective merchandise. As to any item manufactured by other persons or firms, the Company agrees to present a request for adjustment for repair to such manufacturer, and the customer agrees that the liability of the Company shall not exceed any adjustment with respect to which such manufacturer accepts responsibility. THE ABOVE AGREEMENT IS IN LIEU OF ALL WARRANTIES, EXPRESSED OR IMPLIED AND IT IS AGREED THAT THERE IS NO EXPRESSED OR IMPLIED WARRANTY BY THE COMPANY AS TO THE FITNESS, MERCHANTABILITY CAPACITY, OR EFFICIENCY OF ANY MERCHANDISE SOLD, AND THAT THERE ARE NO ORAL OR WRITTEN EXPRESSED OR IMPLIED WARRANTIES MADE IN CONNECTION WITH ANY SALE BY THE COMPANY. No modification or addition to this agreement, either before or after the contract of sale, shall be made except on written authority of the President or Vice President of the Company.

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2SA Saddle Machine
Operation & Safety Manual

Safety

Proper precautions should be taken when using this machine or any and all other heavy cutting and welding equipment. A little common sense goes a long way towards preventing accidents involving your Mathey Dearman Saddle Machine.

1. Make sure ring and pinion gears are free from obstacles, especially hands and feet, before engaging machine.
2. Watch to make sure loose clothing, tools, belts, etc. do not become entangled on the gear teeth or torch arm.
3. Fire is hot. Keep all flammable material, including hands and feet, as far from the path of the cutting torch as possible.
4. Keep all motor parts and accessories away from water to avoid electrocution.

Maintenance

Your Mathey Dearman Pipe Cutting and Beveling Machine requires only minimal maintenance; however, these are precision machines. In order to achieve proper results, make sure your machine is handled with reasonable care and it kept clean and lubricated.

The ring gear, pinion gears, and drive chains should be kept clear of slag and other trapped abrasives, especially sand and dirt. The saddle, ring gear, and cap ring should be cleaned and the ring gear track surfaces should be coated with lubricant (Lubriplate 130-AA or equal) at intervals of 30 and 60 days, and before storing. The drive chains and sprockets should be cleaned regularly and coated with a film of a light lubricant (WD-40 or similar).

During transporting or when not in use, the machine should be stored in a protective container such as a Mathey Dearman Machine Storage Box or the original factory shipping crate.

Mathey Dearman
2SA Pipe Cutting & Beveling Machine

Install Spacers on the 2SA Machine Saddle

Install the correct length Spacer Bolts (4 bolts) in the four holes in the 2SA Machine Saddle, with the Spacer end of the bolts on the bore (I.D.) side of the saddle. Secure Spacer Bolts with washer and hex nut on the top side of saddle.

The correct size Spacers for the pipe to be cut or beveled must be used to align the machine firmly around the pipe. Spacer I.D. surfaces must be in solid contact with the O.D. pipe surface.

4. Rotate the Single and Double Bearing Bracket Assemblies(4 & 5) toward the center of Saddle Assembly
5. Place the Drive Chain (6) on the Sprocket (2) of the Single Bearing Bracket Assembly (4) and on the Sprocket of the Crank Gear and Sprocket (4) of the Double Bearing Bracket Assembly (5).
6. Move the Single and Double Bearing Bracket (4 & 5) downward and install the outer Hex Head Cap Screws (10) in the Bearing Bracket Assemblies and tighten them snugly.
7. Move the Single and Double Bearing Bracket (4&5) outward until the chain (6) is stretched tight.

   Note: When pressure is applied to the top of the chain, it should flex about 3/16" – 3/16".
8. Adjust the Single and Double Bearing Bracket Assemblies (4&5) so there is .007" – .010" play between the Ring Gear (3) and Pinion Gear (3) of the Single Bearing Bracket Assembly and the Pinion Gear (6) of the Double Bearing Bracket Assemblies.
9. Rotate the Ring Gear clockwise (as view from the front of the machine) until the gap in the ring gear is at the 12:00 position.
10. Rotate the Pinion Gears (3 & 6) of the Single and Double brackets (4&5) so that they are evenly spaced in the teeth of the Ring Gear
11. Tighten the Socket Head Set Screw (6) in the Sprocket (2) of the single Bearing Bracket Assembly (4).
16. Rotate the Ring Gear (3) on full revolution in the clockwise and counterclockwise direction checking the entry of the Ring Gear (3) into the Pinion gears (3&6).

    Note: The entry of the Pinion Gears into the Ring Gear should be smooth and without hesitation.
17. Check the tightness of the Hex Head Cap Screw (10) that hold the Single and Double Bearing Brackets to the Saddle Assembly.

    Note: Care should be taken not to over torque the Hex Head Cap Screw as there is only 3 – 4 threads of engagement in the Saddle Assembly
18. Place the Tie Rod Handle (9) on the backside of the Single and Double Bearing Bracket (4&5) and inset the 2 Hex Head Cap Screws (11) in the holes of the Tie Rod Handle and tighten.
19. Recheck the entry of the Ring Gear into the Pinion gear.

TROUBLESHOOTING – MOTORIZED MACHINE

Symptom	Possible Cause(s)	Corrective Action
Gear motor does not rotate	No electrical power at outlet.	Select another electrical outlet.
	Wire broken between plug and motor.	Replace electrical cord.
	DC Cord had electrical short.	Replace motor control box (part # 03.0203.009)
	Fuse blown	Replace fuse with 2 amp fuse (part # 01.0427.008)
Motor lugs at low speed	Motor operating below power curve.	Increase size of cutting tip so that motor speed can be increased.
Machine vibrates	Motor mounting screws are loose.	Tighten motor mounting screws.
	Motor and Pinion shafts are out of alignment.	Realign motor to coupling.

Timing the Ring Gear to the Pinion Gears

1. Loosen the Socket Set Screw (6) in the Sprocket of the Single Bearing Bracket (4).
2. Rotate the Ring Gear clockwise (as view from the front of the machine) until the gap in the ring gear is at the 12:00 position.
3. Rotate the Pinion Gears (3 & 6) of the Single and Double brackets (4&5) so that they are evenly spaced in the teeth of the Ring Gear.
4. Tighten the Socket Head Set Screw (6) in the Sprocket (2) of the single Bearing Bracket Assembly (4).
5. Rotate the Ring Gear (3) on full revolution in the clockwise and counterclockwise direction checking the entry of the Ring Gear (3) into the Pinion gears (3&6).

Note: The entry of the Pinion Gears into the Ring Gear should be smooth and without hesitation.

Note: If there is more than .010" play between the Pinion Gears (3&6) of the Single and Double Bearing Bracket Assemblies (4&5) or the Drive Chain is replace use the following procedure.

Installation of a new Drive Chain

1. Insert the Hex Head Cap Screw (10) in the hole of the Single Bearing Bracket Assembly (4) closest to the center of the rear of Saddle Assembly and hand tighten only.
2. Loosen the Socket Set Screw (6) in the Sprocket of the Single Bearing Bracket (4).
3. Insert the Hex Head Cap Screw (10) in the hole of the Double Bearing Bracket Assembly (5) closest to the center of the rear of the Saddle Assembly and hand tighten only at this time.

Note: The use of the Hex Head Cap Screws (10) of the proper length is very important, if the screws are too long they will contact Ring Gear and you will not be able to rotate the Ring Gear.

Bore (inside diameter) of 2SA Saddle	Machine	13"	(330mm)
Subtract actual OD of pipe		8 5/8"	(219mm)
Difference		4-3/8"	(111mm)
Divide Difference by two (2)		4-3/8" ÷ 2 = 2- 3/16"	(55.5mm)

The correct Spacer length (between outside diameter of pipe and inside diameter of saddle) is **2-3/16" (55.5mm).**

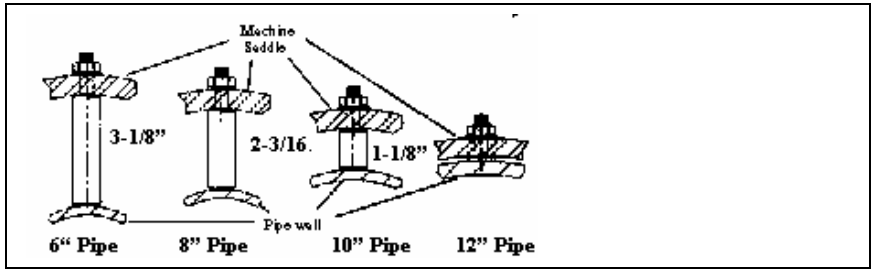
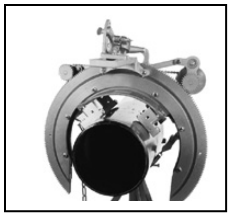


Figure 1: Spacer Configuration for 6", 8", 10", & 12" pipe

Item #	Part Description	Part #	Quantity
1	Spacer for 6" / 152mm pipe	03-0110-022	4
2	Spacer for 8" / 203mm pipe	03-0110-002	4
3	Spacer for 10" / 254mm pipe	03-0110-002	4
4	Spacer for 12" / 304mm pipe	03-0110-001	4
5	Spacer Bolt Kit (includes all of the above)	03-02SA-KIT	1

Step Spacers

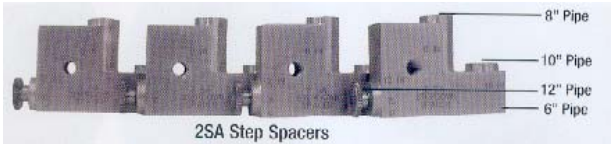
2SA on 6" / 152mm pipe



2SA on 8" / 203mm pipe

2SA on 10" / 254mm pipe

2SA on 12" / 304mm pipe



2SA Step Spacers

Part Description	Part #	Quantity Req.
1SA Step Spacer	03-0110-1SA	4

Install 2SA Machine on Pipe

Install the 2SA Machine Saddle squarely on the pipe, as close as possible to the cut line.

Place the Boomer Assembly (Figure 2) around the pipe and attach to the Boomer Eye on the Machine Saddle. Place the Spring Snap (4) into the Boomer Eye on one side of the Machine Saddle.

In order to get a stable installation, the Chain (3) must be adjusted on the Spring (2) is stretched approximately 3/4" (19mm) when the Boomer is closed.

When the Chain is properly adjusted, close the Boomer (1).

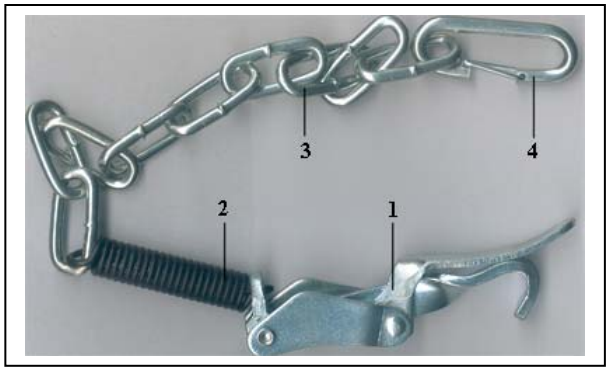


Figure 2: Boomer Assembly Part # 03.0102.011

Item #	Part Description	Part #	Quantity
1	Boomer	01-0258-001	1
2	Spring	01-0184-002	1
3	Chain	01-0577-003	1
4	Spring Snap	01-0258-003	1

TROUBLESHOOTING – MANUAL MACHINE

Symptom	Possible Cause(s)	Corrective Action
Machine is cutting out of square	Incorrect spacer bolts	Use only Mathey spacer bolts.
	Washer is installed between the saddle and the spacer bolt.	Install washer on the threaded portion of the spacer bolt protruding out of the saddle.
	Pipe is over or under size or out-of-round.	Use the PRO-Model to compensate for over or under size and out-of-round pipe.
	Customer is cutting tubing.	Contact Mathey Dearman Sales Department for Spacer Bolts for tubing.
	Customer is back beveling the pipe.	Use of the Double Torch Arm Attachment is strongly recommended. Save time and money by making both bevels simultaneously.
	All 4 spacer bolts are not in contact with pipe.	Reposition machine so that all 4 spacer bolts make contact with pipe and re-latch boomer.
	Torch, torch arm or torch carrier is loose.	Tighten wing nuts or thrumbscrews.
	Hoses are binding.	Wrap the hose 1 full turn around the pipe. Rotate the ring gear of the machine so the hoses unwrap during the cutting process.
	Machine has been dropped.	Send the machine to a certified repair station for resizing cap ring, ring gear and saddle.
	Torch is at end of torch arm.	Move the torch closer to the ring gear.
	The Pinion Gears too shallow in the large ring gear.	Readjust the bearing brackets so the pinion gear is at the correct depth per the repair instructions.
Machine hesitates or stops as the pinion gear enters the ring gear.	The timing of the pinion gears to the ring gear is off.	Readjust the timing per the repair instructions.
	The drive chain is stretched.	Readjust the bearing brackets to eliminate the slack in the chain per the repair instructions. If the slack can not be eliminated replace the drive chain.

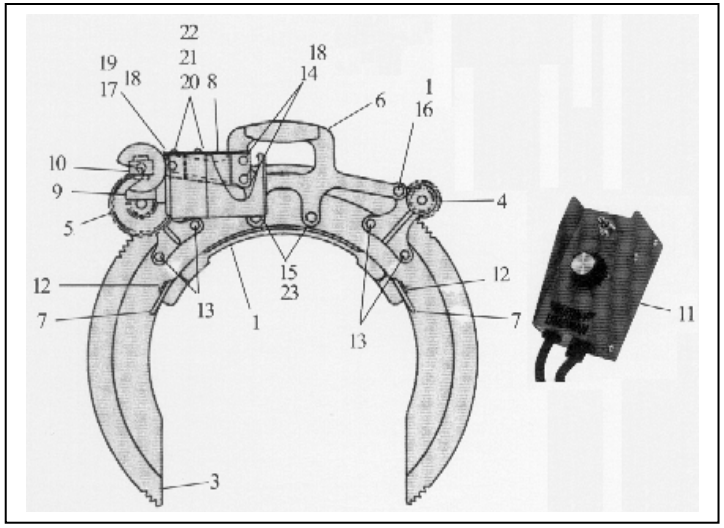
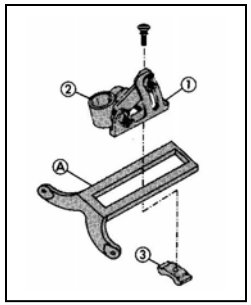


Figure 7: 2SA Machine – motorized, Part #03-0102-M00

Item #	Part Description	Part #	Qty
1	Saddle	03-0102-002	1
2	Cap Ring	03-0102-003	1
3	Ring Gear	03-0102-002	1
4	Single Bearing Bracket Assembly	See pg. 3	1
5	Double Bearing Bracket Assembly	See pg. 3	1
6	Handle	03-0102-010	1
7	Boomer Eye	03-0101-017	2
8	Motor Mounting Bracket	03-0102-013	1
	Motor Adaptor (not show)	03-0100-035	1
9	Gear Motor	03-0201-056	1
10	Flexible Coupling	03-0204-001	1
11	Motor Control Box	03-0203-009	1
12	Cap Screw, hex head, 5/16”, 18NC x ½”	10-56C0-012	2
13	Cap Screw, hex head, 5/16”, 18NC x 5/8”	10-56C0-058	10
14	Cap Screw, hex head, 5/16”, 18NC x 3/4”	10-56C0-034	2
15	Cap Screw, hex head, 5/16”, 18NC x 7/8”	10-56C0-078	2
16	Cap Screw, hex head, 5/16”, 18NC x 1”	10-56C0-100	1
17	Cap Screw, hex head, ¼”, 20NCx5/8”	10-14C0-058	2
18	Nut, hex, 5/16”	1H-14C0-000	2
19	Washer, flat, 5/16”	12-0516-F00	2
20	Machine Screw, round head	14-1032-012	4
21	Washer, flat, #10	12-0010-F00	4
22	Washer, external lock, #10	12-0010-E00	4
23	Screw, socket set, ¼”, 20NC	19-14C0-014	2
24	5/16” Internal Lock Washer	12-0056-100	2
25	Threaded Stud (not shown)	01-0194-003	2
	Wing Nut, 5/16”-18NC (not shown)	1W-56C0-000	2

Figure 3
Torch Arm **Torch Carrier Assembly**
Part Number: 03-0101-001 Part #: 03-0100-002



Item #	Part Description	Part #	Qty
A	Torch Arm	03-0101-001	1
B	Torch Carrier Assembly	03-0100-002	1
1	Torch Clamp Base	03-0100-003	1
2	Torch Clamp	03-0100-005	1
3	Clamp	03-0100-004	1
4	Screw Kit	03-0100-029	1
	Double Torch Arm Kit	03-0101-030	Optional

Install Torch Arm, Torch Carrier Assembly and Torch

Install Torch Arm (Fig. 3, Item A) by attaching it to the two threaded studs in the face of the 2SA Machine Ring Gear at the 12 o’clock position. Secure with the wing nuts on the studs.

Install and secure Torch Carrier (Fig. 3, Item B) with hole for Torch outward on Torch Arm. Insert Torch in Torch Clamp (Fig. 3, Item 2) and adjust to a stand off distance recommended by the Torch manufacturer.

The Torch Clamp Base (Fig. 3 Item 1) is marked 0, 60, and 90. Use 0 position for square cuts (no bevel). Positions 60 and 90 make the appropriate bevel to produce a V groove of 60 and 90 degrees respectively when the two pipe ends are butted together.

Install Torch in Torch Clamp (Fig. 3, Item 2) and adjust to stand off distance recommended by the Torch manufacturer.

Note: Before starting to cut or bevel, rotate Torch one full turn around the pipe to be sure Torch tip will clear all the way.

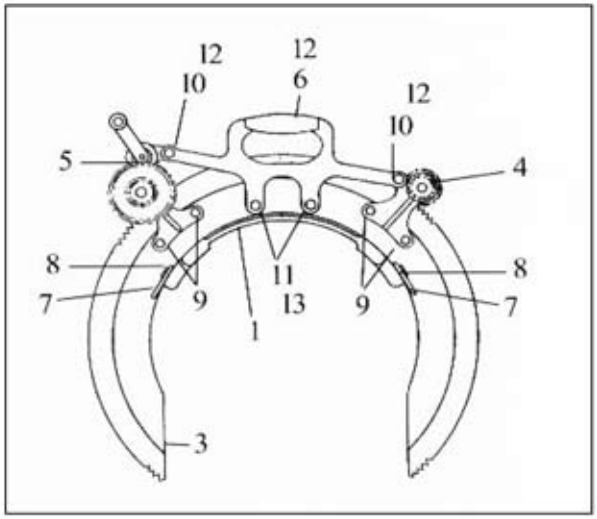
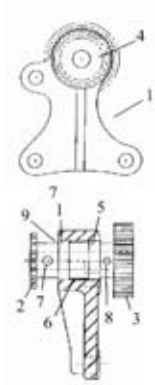


Figure 4: 2SA Machine – Manual Part # 03-0102-000

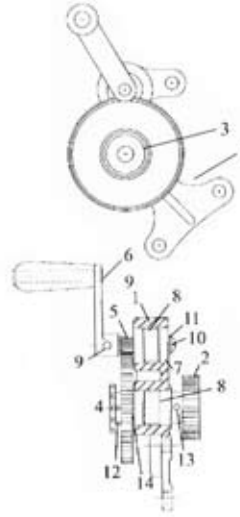
Item #	Part Description	Part #	Qty.
1	Saddle	03-0102-001	1
2	Cap Ring	03-0102-003	1
3	Ring Gear	03-0102-002	1
4	Single Bearing Bracket Assembly	03-0102-004	1
5	Double Bearing Bracket	03-0102-007	1
6	Handle	03-0102-010	1
7	Boomer Eye	03-0101-017	2
8	Cap Screw, hex head, 5/16", 18NC x ½"	10-56C0-012	2
9	Cap Screw, hex head, 5/16", 18NC x 5/8"	10-56C0-058	10
10	Cap Screw, hex head, 5/16", 18NC x 7/8"	10-56C0-078	2
11	Cap Screw, hex head, 5/16", 18NC x 1"	10-56C0-100	2
12	Nut, Hex 5/16" - 18NC	1H-56C0-000	2
13	Nut, Hex 3/8", 16NC	1H-38C0-000	2
14	Threaded Stud (not shown)	01-0194-003	2
15	Wing Nut, 5/16"-18NC (not shown)	1W-56C0-000	2
16	Drive Chain (not shown)	03-0102-009	2

Figure 5: Single Bearing Bracket Assembly, Part # 03.0102.004



Item #	Part Description	Part #	Qty.
1	Bracket	03-0102-005	1
2	Sprocket	03-0101-008	1
3	Pinion Gear	03-0102-006	1
4	Axle	03-0101-009	2
5	Bearing	01-0196-012	2
6	Spacer	04-0106-010	1
7	Screw, socket set, ¼"- 20NCx1/4"	19-14C0-014	1
8	Spring pin, 1/8" x ¾"	18-1800-034	1
9	Spiral Ring	01-0179-014	1

Figure 6: Double Bearing Bracket Assembly, Part # 03.0102.007



Item #	Part Description	Part #	Qty
1	Bracket	03-0102-008	1
2	Pinion Gear	03-0102-006	1
3	Axle	03-0101-009	1
4	Crank Gear and Sprocket	03-0101-012	1
5	Crank Pinion	03-0101-013	1
6	Crank handle Assembly	03-0101-014	1
7	Bearing	01-0196-012	4
8	Spacer	04-0106-010	2
9	Screw, socket set, ¼"- 20NC	19-14C0-010	3
10	Machine Screw, round head, ¼"- 20NC x 1/2"	14-14C0-012	1
11	Washer, flat, ¼"	12-0014-F00	1
12	Spring Pin, 1/8" x 1"	18-1800-100	1
13	Spring Pin, 3/16" x 1"	18-3160-100	1
14	Spiral Ring, ½"	01-0179-014	1