



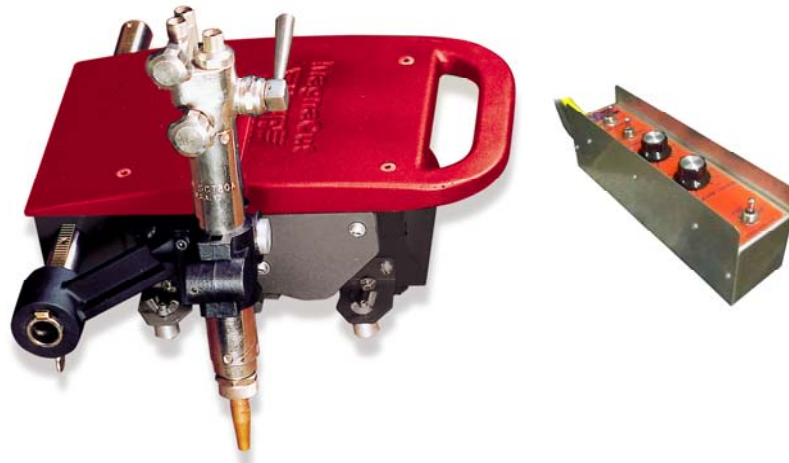
Where there's pipe, there's Mathey

P. O. Box 472110, Tulsa, OK
74147-2110 USA
Toll Free: 800-725-7311
918-447-1288 Office
918-447-0188 Fax
www.mathey.com

MagnaCut XM

Patented

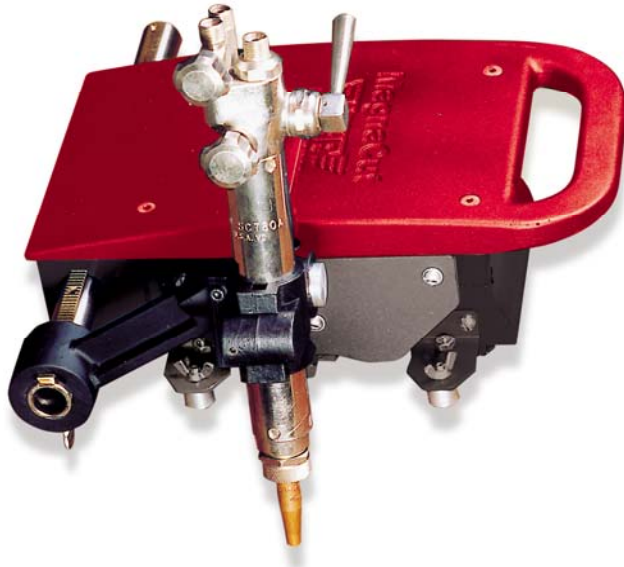
Pipe and Plate Cutting / Beveling Machine Parts and Operating Manual



_____ Machine Model

_____ Serial#

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GENERAL DESCRIPTION

The **MagnaCut XM Pipe and Plate Cutting/Beveling Machine** will attach to any *magnetic-receptive surface* using powerful permanent magnets, located in the wheel assemblies. The machine can be mounted at any point on the pipe or plate. **(Refer to Page 11, No. 7)** In the event of a power failure, the machine will not lose its magnetic pull on the material. The MagnaCut can be set-up and ready to go in approximately two minutes. This setup involves placing the machine squarely on the pipe, plate or I-beam, connecting the Motor Control Box to the Base Unit, and installing the Machine Fuel Torch.

The MagnaCut XM has a pipe cutting range of 6 5/8" (168mm) minimum to unlimited on the outside diameter of the pipe, and 24" (610mm) minimum to unlimited on the inside diameter of the pipe. The machine can also be used to make long cuts parallel to the pipe axis on pipe diameters of 16" (406mm) and larger.

MagnaCut XM can be used to cut vertical or horizontal plate. When the Machine Torch is used in the vertical position, the overall length of the torch determines the clearance required around the pipe. When the Torch is used with the Torch Angle Head Adaptor, the clearance needed above the surface of the pipe or plate is 9" (228mm). It is also designed to cut I-beams having a width of 20" (508mm) or wider. If required— a Guide Strip can be made of aluminum or steel angle iron. The MagnaCut XM is equipped with Guide Rollers to assist in cutting diagonal angles, long lengths of plate, and larger vertical diameters.

The MagnaCut XM has one of the most unique Torch Arms in the welding industry. The Motorized Torch Arm provides movement of the torch perpendicular to the line of travel of the MagnaCut XM from the Motor Control Box, which reduces the danger to the operator during the cutting process. The Torch Arm for the MagnaCut XM is 15 inches (381mm) long and has a stroke of 5" (127mm). The remote operation of the Torch Arm allows the operator to adjust the pre-drawn cut line. The Motorized Torch Arm can also be used to cut shallow miter or saddle configurations, when synchronized with the MagnaCut XM Drive Motor.

Section 2 - The MagnaCut XM Package

MagnaCut XM Unit and Motor Control Box



Section 3 - Specification/Technical Data

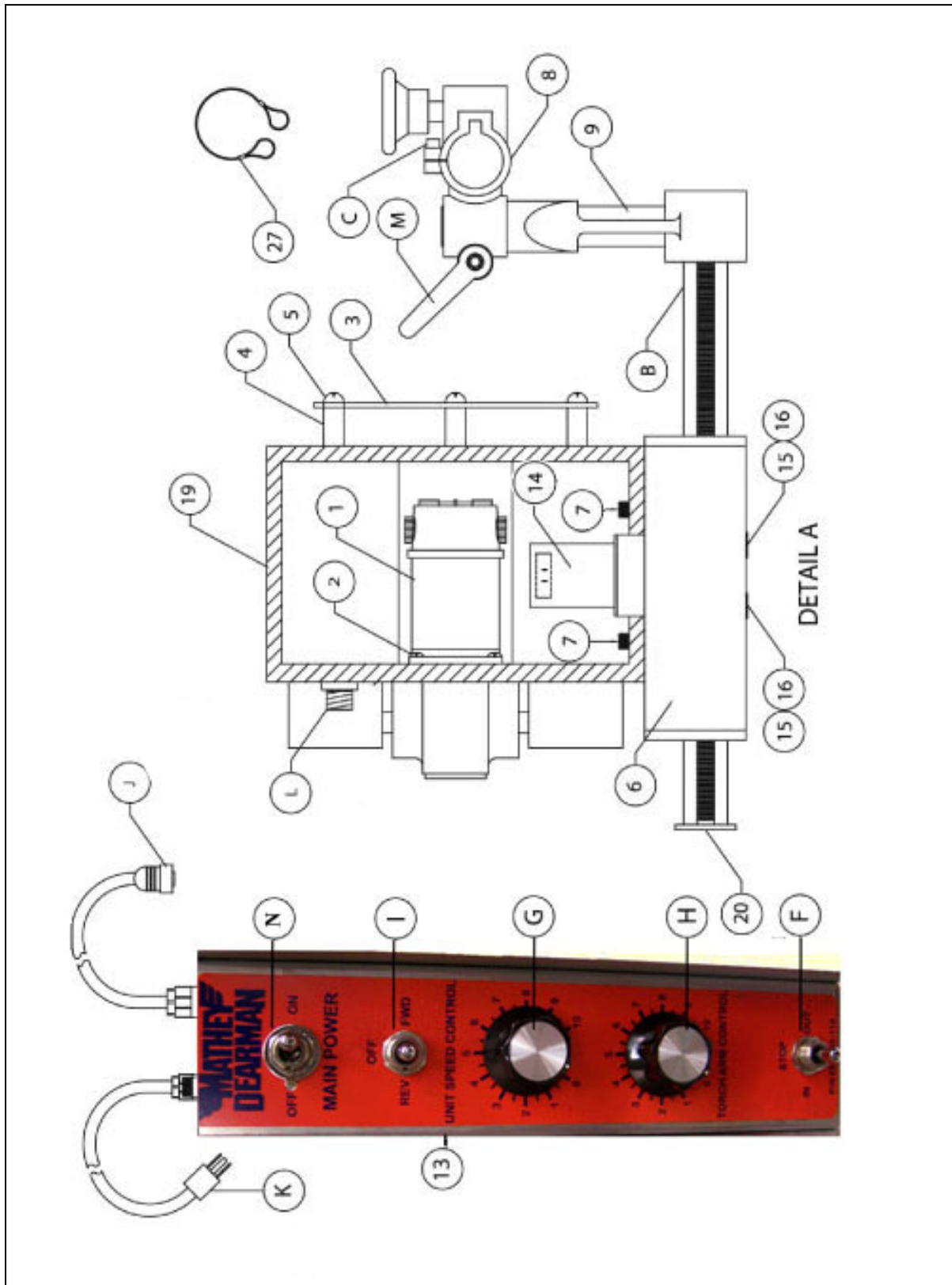
Model	Part Number	Estimated Shipping Weight (lbs. / kg)
MagnaCut XM 115vac 50/60 Hz	05-0550-000XM	60 / 27
230-115vac Step-Down Transformer	01-0759-008	5.5 / 2.5

* A Guide Strip made of 1 3/8" Angle Iron is available for MagnaCut XM to cut pipe 18" and larger.

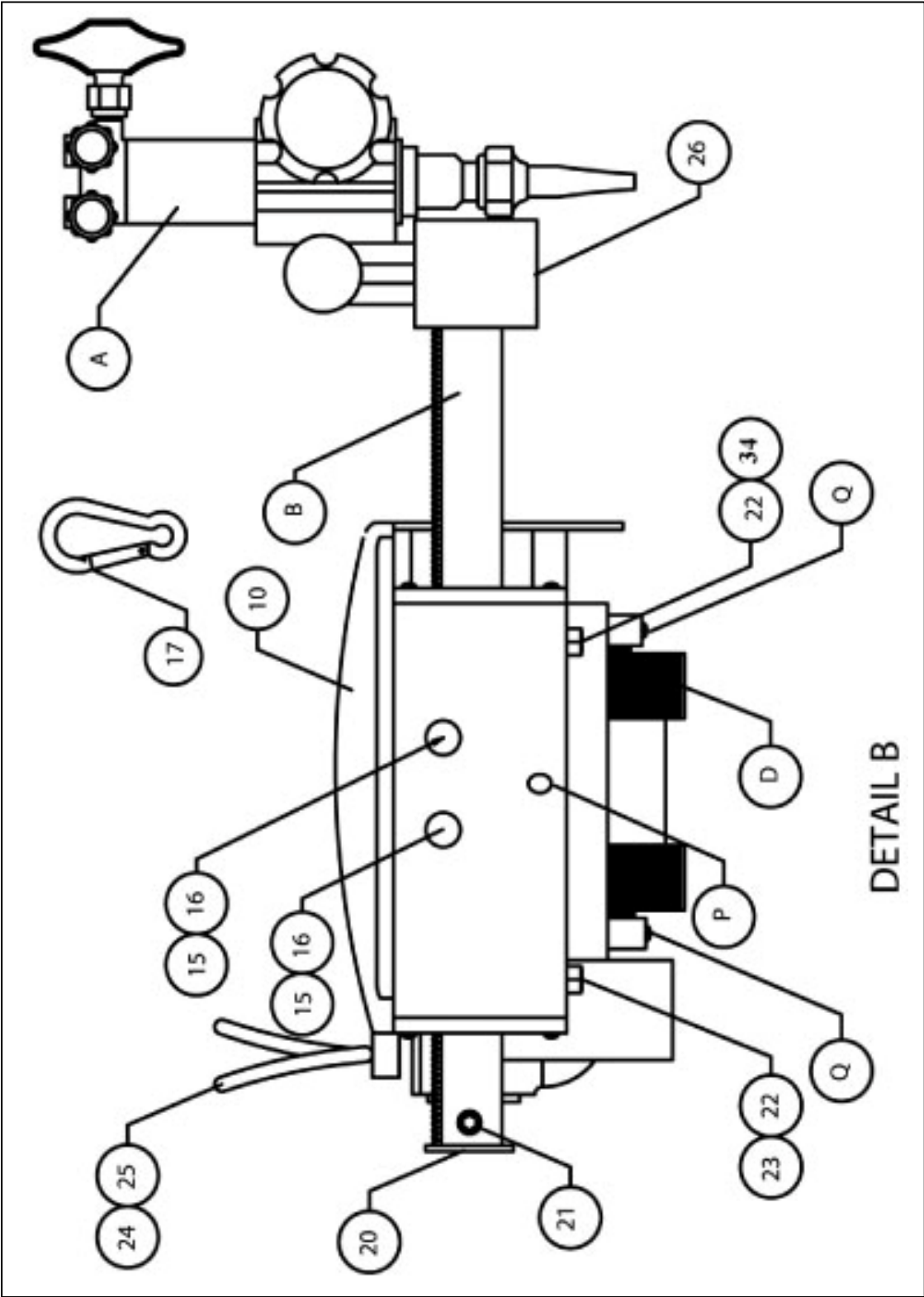
Section 3 – Technical Diagrams Cont...

Description	MagnaCut
Method of Attachment to Pipe or Plate	Rare Earth Magnets
Magnetic Pull per Wheel Assembly.	150lbs. / 68kg
Polyurethane, Carbon Zinc or Epoxy Coatings	Up to 15mils or .015 / .4mm thick
Set-Up Time	2 Minutes
Cutting Range Pipe O.D.	6 5/8" (168.3) and Up
Cutting Range Pipe I.D.	24" (609.5mm) and Up
Vertical Cutting Capability	Pipe or Plate
Horizontal Cutting Capability	Pipe or Plate
Diagonal Cutting Capability	Plate Only
Miter or Saddle Cutting Capability	Shallow Miters or Saddles Only
Minimum Speed	2" (51mm) per min.
Maximum Speed	40" (1016mm) per min.
Net Weight	37lbs (16.7kg)
Shipping Weight	60lbs (27kg)
Shipping Dimensions	20" x 9" x 25" / 508 x 229 x 635
Machine Dimensions	
Width (Torch Arm Extended)	17" (432mm)
Length	14" (356mm)
Height	5 1/4" (133mm)
Electrical Requirement	115vac or 230vac 50/60Hz (With Transformer)

Section 4 - Technical Diagrams



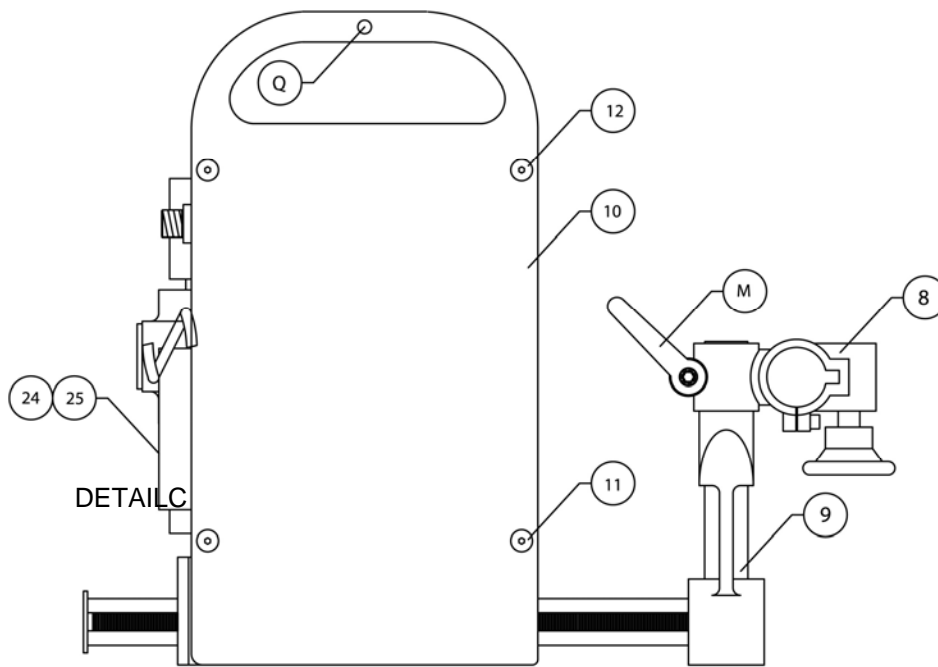
Technical Diagrams Cont...



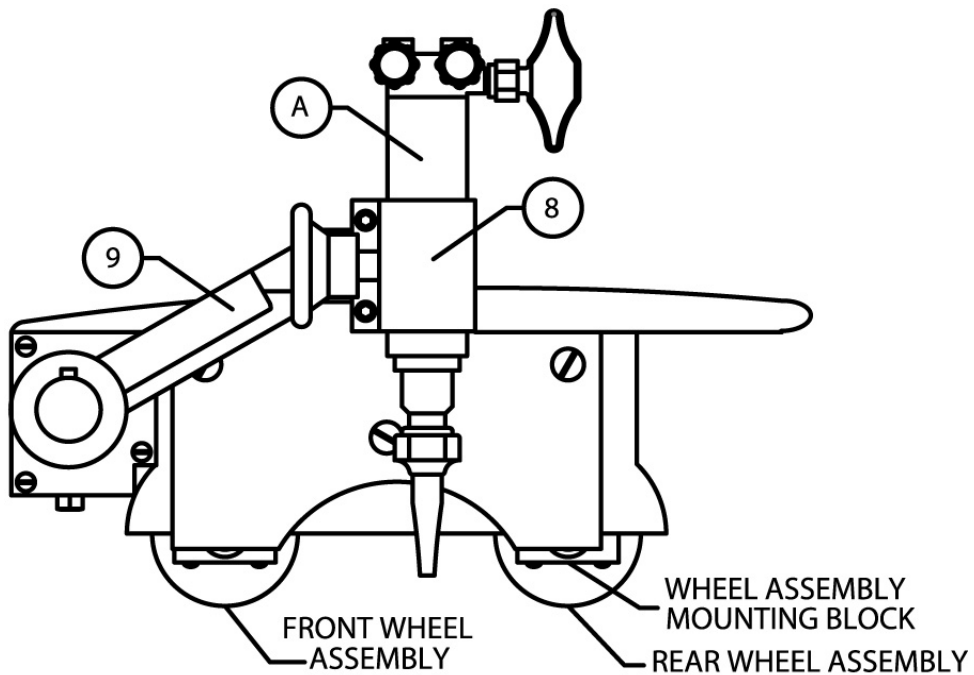
Item	Part #	Qty	Description
1	05-0550-015	1	Drive Motor, 110 Volts DC, 7,500 RPM
2	14-065M-034	4	Round Head Machine Screw, 5mm x 3/4" long (Motor Mounting)
3	05-0550-063	1	Heat Shield
4	05-0550-062	3	Spacer, Heat Shield
5	14-06mm-138	3	Round Head Machine Screw, 6mm x 1 3/8" long (Motor Mounting)
6	05-0550-018	1	Torch Arm Block Assembly
7	11-14C0-034	2	Allen Head Cap Screw, 1/4" 20NC x 3/4" Long (Torch Arm Block Assembly)
8	05-0510-117	1	Torch Holder Assembly 1 3/8" (35mm)
9	05-0550-017	1	Support, Torch Assembly
10	05-0550-009	1	Cover with Handle
11	13-14C0-112	2	Screw, Flat Head Allen, 5/16" 18NC x 1" Long (Front Cover Mounting)
12	13-14C0-112	2	Screw, Flat Head Allen, 5/16" 18NC x 1 1/2" Long (Front Cover Mounting)
13	05-0550-110	1	Motor Control Box
14	05-0550-055	1	Torch Arm Motor 24vdc
15	11-01F0-012	2	Allen Head Cap Screw, 10-32 x 1/2" Long
16	05-0550-051	2	Protective Caps (Torch Arm Block Assembly)
17	05-0550-035	2	1/4" Snap Hook
18	05-0550-BOX	1	Storage Box
19	05-0550-056	1	Base Unit Less Torch Arm and Drive Motor
20	05-0550-032	1	Stop, Torch Arm
21	19-14C0-038	1	Socket Head Setscrew, 1/4" 20NC Allen Head
22	1H-56C0-000	4	Hex Nut, 5/16" 18NC
23	05-0550-028	2	Plunger, Spring 5/16" 18NC x 1" Large
24	05-0520-1N25	1	Hose Support
25	11-01C0-100	2	Allen Cap Screw, 10-24NC x 1" Large
26	19-38C0-012	1	Allen Cap Screw, 3/8 16NC x 1" Large
27	05-0550-052	1	Safety Cable for 16" Pipe
28	05-0550-038	1	3amp Slow Blow Fuse (Not Shown)
29			
34	18-56C0-114	2	Socket Head Setscrew 5/16-18 x 1-1/4
Options			
30	05-0510-301	1	Plasma Torch Adapter, for Torch Holders with 5/8" or 3/4" Stud
31	05-0510-302	1	Plasma Torch Adapter to Elevate Height to Torch Holder
32	05-0550-040	1	Key, 5/22" Hex (Not Shown)
33	05-0550-041	1	Key, 3/16" Hex (Not Shown)
33	05-0550-071	1	Brass Brush, 1/2" x 1 1/18" (Not Shown)

Section 5 – Parts List

Technical Diagrams Cont...

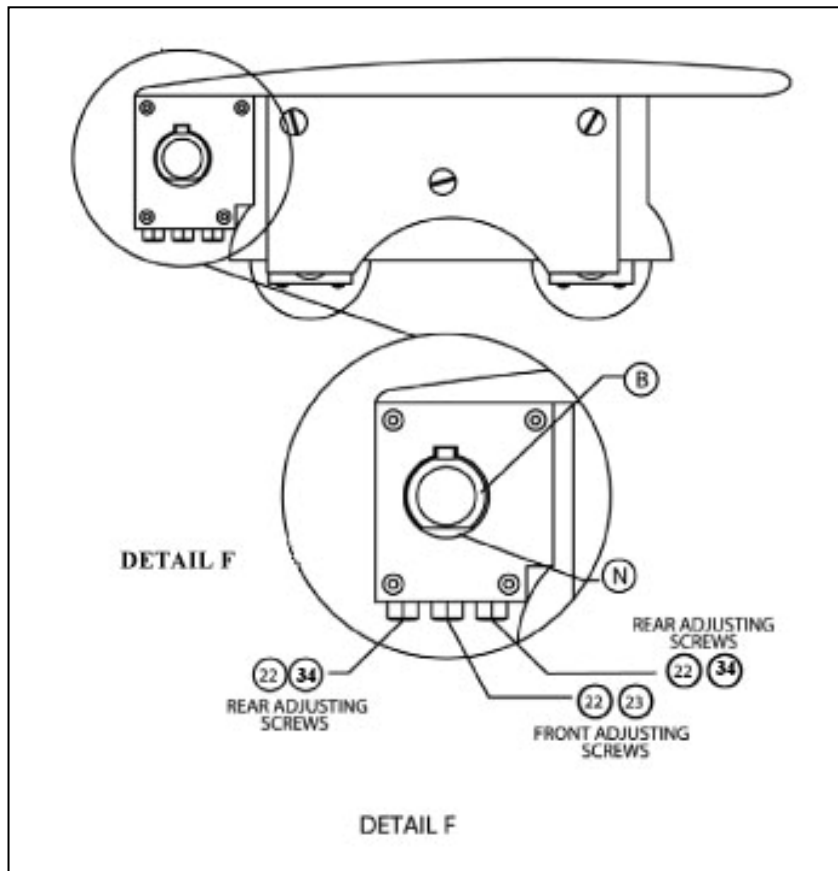
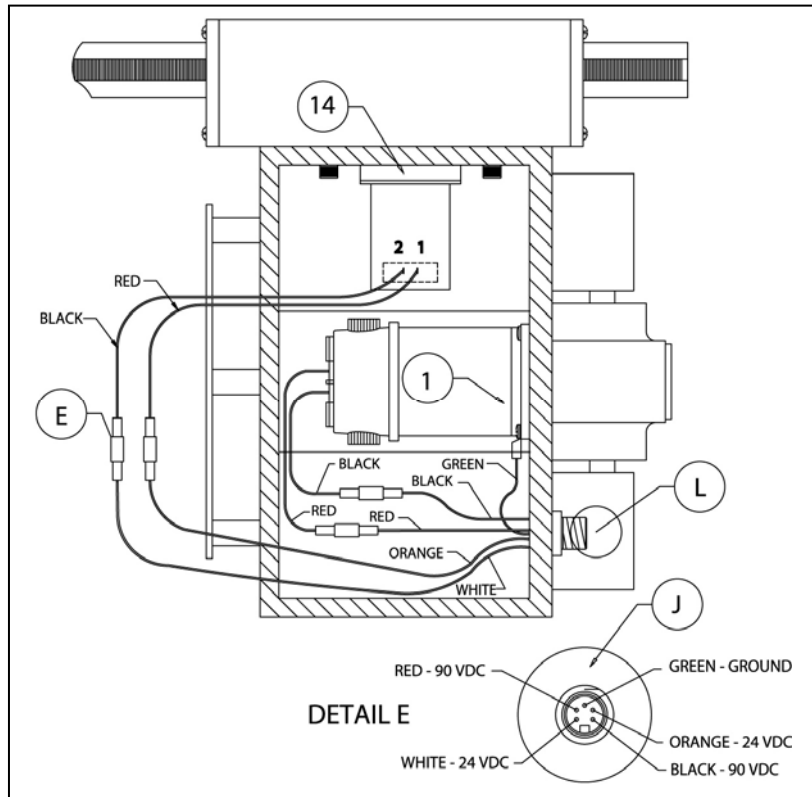


DETAIL C



DETAIL D

Technical Diagrams *Cont...*



Section 6

MagnaCut XM and Motor Control Box Warranty

1. The Mathey Dearman, Inc. Sales Department should be contacted prior to performing any maintenance on the MagnaCut XM. The disassembly or adjustment of any part of the MagnaCut XM or the components of the MagnaCut XM Motor Control Box will void the Machine's Warranty unless authorization from Mathey Dearman, Inc.
2. If it is necessary to replace the DC Cord (J), the Motor Control Box (13) should be returned to Mathey Dearman, Inc.
3. The Wheel Mounting Brackets (Q) are not to be removed from the machine. Removing the Wheel Mounting Brackets will affect the tracking and may cause the Drive Motor (1) to overheat.
4. The MagnaCut XM should be returned to Mathey Dearman for replacement of any parts not listed in the Parts List.

Section 7 - Safety Tips

1. The MagnaCut XM should not be used on pipe or plate with a wall thickness of Three (3) inches / 76mm. The heat generated by the torch when cutting thick wall pipe will cause the wheels of the MagnaCut XM to lose magnetism- disengaging it from the pipe or plate.
2. The use of a hammer or other object to strike the torch arm or to move the torch to the cut line is strongly discouraged. If there is evidence that a hammer or other object is used to move the torch to the cut line, the *Warranty will be voided.*
3. A Safety Cable should always be used with the MagnaCut XM to avoid injury to the operator and damage to the machine should it become disengaged from the pipe. *It is recommended to use a Safety Rope or Cable, not a Safety Chain.* The Chain may become engaged in the wheels of the MagnaCut XM, causing the machine to become disengaged from the pipe or plate.
4. Do not operate MagnaCut XM in an explosive environment.
5. The MagnaCut XM should not be used in an extremely moist environment or rain due to the risk of electrical shock.
6. The use of the MagnaCut XM to cut pipe or plate having a wall thickness less than 3/8 of an inch (9.5mm) or more than a 3" (76mm) thickness is not recommended.
7. The MagnaCut XM must contact the seam weld at a 90° angle. The seam must be *between 11:00 and 1:00 Position.* The machine should be placed on the pipe so it completes the cut after crossing the weld seam. In no event should the weld seam height exceed 3/32 of an inch /2.3mm in height.
8. The MagnaCut XM cannot be used on pipe having an Epoxy, Carbo-Zinc, Plastic or other synthetic coating up to .015 of an inch or 15 mils in thickness. The grooves in the Wheels should be kept clean or the machine will suffer a loss in magnetism.
9. Make sure the Oxy/Fuel Torches or the Plasma Torches are installed through the Hose Support (24), so the hoses do not become engaged in the wheels of the machine causing the machine to become disengaged from the pipe or plate.
10. The DC Cord (J) between the Motor Control Box and the MagnaCut XM Base Unit is to be installed through the Hose Support (25), so the cord does not become engaged in the wheels of the MagnaCut XM causing the machine to become disengaged from the pipe or plate. *(Use Safety Cable at all times.)*
11. When cutting pipe or plate there should be sufficient slack in the Oxy/Fuel or Plasma Hoses so that the MagnaCut XM can make a square cut without becoming disengaged from the pipe or plate to drag the hoses around the pipe or plate.
12. The machine is not designed to support the weight of the hoses. To help support the weight of the hoses when cutting pipe, the Oxy/Fuel Hoses of the Machine Torch or Plasma Torch (A) should be wrapped one (1) full turn around the pipe,. The rotation of the machine around the pipe should be opposite the direction of the wrapped hoses so that the hoses are unwrapped as it goes around the pipe.
Warning: Never allow the hoses to be dragged through the molten slag.
13. When using the 12 Foot Extension Cord between the MagnaCut XM Base Unit and the Motor Control Box, make sure the Oxy/Fuel or Plasma and Extension Cord are supported. Failure to do this will cause the machine to drift from the cut line or become disengaged from the pipe.

14. The MagnaCut XM should not be used without a Guide Strip when working on vertical pipe. Contact the Mathey Dearman Sales Department when application is for a Machine Torch longer than 12 inches.
15. Due to there being several sizes and weights of Plasma Machine Torches, Mathey Dearman should be contacted prior to using a Plasma Machine Torch with the MagnaCut XM.
16. Do not operate the MagnaCut XM with the Cover (10) removed from the Base Unit (19).
17. To position the Machine Torch at 90° to the pipe or plate surface, the Torch (A) should be at a minimum distance of 5 inches from the MagnaCut XM Heat Shield (3).
18. MagnaCut XM should at no time be operated without the Heat Shield (3). Failure to do so may damage magnetism and may cause the machine to release from the pipe.
19. The Warranty will be voided if the machine is used for a purpose other than cutting and beveling (i.e. welding) without the Authorization of Mathey Dearman, Inc.
20. Always follow the Torch Manufacturers Operating Instruction when using the Machine Torch and Torch Angle Head Adapter.
21. Never use a cigarette lighter to ignite the cutting torch.
22. A Heat-Resistant Shield should be used to protect nearby walls from sparks and hot material.
23. Adequate ventilation is required to prevent the concentration of oxygen/fuel, gas and/or other toxic fumes.
24. Always use eye protection to protect your eyes from sparks, flying slag and the brilliant flame.
25. Do not store grease, gasoline or other flammable material in the area where the pipe or plate is being cut.
28. Flame should not be directed toward the oxygen or fuel cylinders.
29. Always have a fire extinguisher of the proper size and type in the work area.
30. Inspect the general area for flame or smoldering materials when work has been completed.

Section 8 - Set-up and Operation

Read and understand the operating instruction prior to operating the MagnaCut XM.

MagnaCut XM is designed for use with a 2 Hose Machine Fuel Torch (A) having a 1 3/8-inch /35mm barrel diameter with 32-pitch rack or metric rack. (I.e.: Harris 98-6E with 32-pitch rack, Victor MT210A with 32-pitch rack, Smith SC770 with 32-pitch rack or equivalent). **Refer to the Torch Manufacturer's Cutting Tip and Tip Flow Charts for the correct tip, regulator pressures, and travel speed.**

Set-Up

- Step 1:** Remove the MagnaCut XM from its Polyurethane Storage Box.
(Do not remove by holding/or pulling on the Torch Arm.)
- Step 2:** Set the machine on a clean, non-magnetic surface to avoid the collection of grinding fines, slag and other debris in the wheels.
- Step 3:** If the MagnaCut XM was previously used, check the Gear Rack of the Torch Arm (B) for slag or other debris and remove it with the Stainless Steel or Brass Brush provided in the Storage Box.
- Note:** Do not use air to remove the slag or other debris from the Gear Rack of the Torch Arm as this may cause the Torch Arm (B) not to function Due to slag lodging in the gear rack.
- Step 4:** Install Torch Support (9) on the Torch Arm (B) until it is flush with the end of the Torch Arm.
- Step 5:** Use a 3/16-inch Allen Wrench furnished with the MagnaCut XM to tighten the Setscrew (26) in the Torch Support (9) to secure it to the Torch Arm (B).
- Step 6:** Install the Torch Holder Assembly (8) on Torch Support (9) and turn the Ratchet Handle (M) clockwise, until the Torch Holder Assembly is held in a fixed position on the Torch Support.
- Step 7:** Mount the Torch Hose Support (24) to the side of the Cover (10) with the #10-24NC x 1 inch long Socket-Head Allen Screws (25) provided in the Storage Box. Tighten both Socket-Head Allen Screws (25) until snug with the 5/32 inch Allen Wrench (provided in the Storage Box).

- Step 8:** Move the Master Switch (N) to the OFF position
- Step 9:** Move the Directional Control Switch (F) to the OFF Position and the Unit Speed Control Rheostat (G) is in the "0" Position before connecting DC Cord.
- Step 10:** Connect Power Cord (K) of the Motor Control Box to 115vac at 50 or 60 Hertz Power Source.
- Note:** *The 115vac MagnaCut XM can be used with a 230–115 VAC Step-Down Transformer (01-0759-008) to operate on 230 VAC Current.*
- Warning:** The MagnaCut XM Motor Control Box is not designed for use with a 110 VDC Power Source.
- Step 11:** Move the Master Switch (N) to the ON position.
- Step 12:** Move the Torch Arm speed Rheostat to the 5 position on the dial
- Step 13:** Move the Torch Arm In and Out Switch (F) to the IN Position and hold it in that position to make sure the torch arm is function properly.
- Warning:** Avoid bottoming out the Torch Arm Stop (20) against the Torch Arm Block Assembly (6).
- Note:** The Torch Arm In and Out Switch (F) should be in the STOP Position for at least one (1) full second before changing motor direction.
- Step 14:** Move the Unit Directional Control Switch (I) in the direction the MagnaCut should travel.
- Note:** The Unit Directional Control Switch (I) should always be moved to the STOP position for at least one (1) full second before changing drive motor direction.
- Step 14:** Rotate the Unit Speed Control Rheostat (G) to the desired position for the torch if known. If this is the first time that the MagnaCut is used, rotate the Unit Speed Control Rheostat to the 4 Position. Adjust the Rheostat until the desired speed is achieved.
- Step 15:** The Machine is now ready for operation.

Section 9 – Straight-line Cutting

- Step 1:** Clear the plate or pipe surface of obstruction, slag and other debris.
- Step 2:** Set the MagnaCut XM on the pipe or plate and move the machine in a twisting motion until all wheels are in full contact with the pipe or plate.
- Note:** When cutting pipe, which has a welded seam running parallel to the pipe axis, place the welded seam between the 11:00 and 1:00 o'clock Position. Place the MagnaCut XM on the pipe so that it will cross the welded seam just prior to completing the cut.
- Warning:** The MagnaCut XM is not designed for use on non-magnetic, heavily painted or wrapped pipes or plate (Consult Mathey Dearman for Special Application).
- Warning:** The MagnaCut XM is not designed for use on spiral welded pipe as it will lose contact with the pipe surface.
- Warning:** Do not start the cutting operation with the machine between the 3:00 through the 9:00 o'clock Position on the pipe or plate as the piece being cut off will separate the machine from the surface of the material causing damage to the machine.
- Warning:** Never place the machine on the piece of pipe or plate that is being cut off.
- Warning:** The MagnaCut XM must contact a seam weld at 90-degree. When cutting seam welded pipe, the seam must be between the 11:00 and 1:00 Position as viewed from the end of the pipe. The machine should be placed on the pipe so it completes cut after crossing the weld seam. The weld height exceeds 3/16 of an inch in height.
- Step 3:** Attach the Safety Snaps (17) to the MagnaCut XM at points (P & Q).
- Step 4:** Attach the Safety Cable (27) provided with the MagnaCut XM to the Safety Snaps (17).
- Warning:** To avoid injury or damage to the machine, always use a safety cable, rope or belt with MagnaCut XM. Do not use a safety chain as the chain may become engaged in the wheels of the MagnaCut XM causing the machine to become disengaged from the pipe or plate.

- Step 5:** Check both Socket-Head Allen Screws (C) to ensure these are loose enough for the Machine Fuel Torch to slip into the Torch Holder
Warning: *Never use a cigarette lighter to light the cutting torch.*
- Step 6:** Turn the Ratchet Handle (M) of the Torch Holder Assembly (8) counterclockwise and adjust the torch to the desired bevel angle. Once the torch is set to the desired bevel angle, turn the Ratchet Handle clockwise to hold the torch at that bevel angle.
- Step 7:** Adjust the Torch Tip to material distance per the Torch Manufacturer's Operating Instructions.
Warning: The MagnaCut XM should not be used to back bevel pipe or plate. If enough heat is generated by the cutting torch when back beveling, it will cause the Wheels of the MagnaCut XM to temporary loss magnetism disengaging the machine from the pipe or plate.
- Step 8:** Preheat the material per the Torch Manufacturer's Operating Instructions.
- Step 9:** Turn the Oxygen-Cutting Valve of the Fuel Torch to the cutting position to penetrate the material per the Torch Manufacturer's Operating Instructions.
- Step 10:** Rotate the Torch Arm Rheostat (H) to the desired position.
- Step 11:** Move the Torch Arm In and Out Switch (F) in the direction required to move the torch to the cut line.
Note: The Torch Arm In and Out Switch (F) should be in the Stop Position for at least one (1) full second before changing motor direction.
- Step 18:** To move machine in required direction - move the Forward and Reverse Switch (I) to the Forward or Reverse position.
Note: The Forward and Reverse Switch (I) should be in the Stop Position for at least one (1) full second before changing motor direction.
- Step 19:** **Turn** Drive Rheostat switch (G) to desired speed.
Note: Refer to the Manufacturer's Oxygen Fuel Cutting Reference Chart for cutting trouble-shooting illustrations.

Shutting OFF the Machine after complete cut is made.

- Step 1:** Once the cut is complete, shut off the Oxygen-Cutting Valve of the Machine Fuel Torch per the torch manufacturer's instructions.
Note: Shut off the Oxygen-Cutting Valve as soon as possible to avoid under cutting the material.
- Step 2:** Turn off Oxygen and Fuel Valves of the Machine Fuel Torch per the torch Manufacturer's instructions.
- Step 3:** Move the Forward /Reverse Switch (I) to the OFF or CENTER position.
- Step 4:** Move the Master Switch (N) to the OFF position
- Step 5:** Disconnect AC Power Cord (K) from the 115vac Power Source.
- Step 5:** Disconnect the DC Cord with Connector Plug (J) from the DC Connector Receptacle (L).
- Step 6:** Remove the Machine Fuel Torch (A) from the Torch Holder (8).
- Step 7:** The MagnaCut XM is now ready to be removed from the pipe. To remove MagnaCut XM from the pipe, grasp the Cover Handle (10) and the Torch Block (6), and twist the machine while lifting upward. To remove MagnaCut from the flat plate, grasp the cover handle and pull upward.
Note: Do not hold on to the Torch Arm (B) to disengage from pipe or plate.)
- Step 8:** Check the Gear Rack of the Torch Arm (B) after each cut for slag or other debris and remove it with the Brush provided in the Storage Box.
Note: Do not use air to remove the slag or other debris from the Gear Rack of the Torch Arm as this may cause the Torch Arm Motor not to function.

Section 10 - MagnaCut XM Maintenance and Repair

Warning: Before performing any maintenance on the MagnaCut XM, contact Mathey Dearman, Inc. Sales Department. The disassembly of any part of the MagnaCut XM or adjustment of the components in MagnaCut XM Motor Control Box will void the Machine's Warranty.

Warning: The Wheel Mounting Brackets should not be removed from the machine. Removing the Wheel Mounting Brackets may affect the tracking and may cause the motor to overheat. Disassembly of the Wheel Mounting Brackets from the machine will void the Warranty.

Warning: The MagnaCut XM should be returned to Mathey Dearman, Inc. for replacement of parts not listed in the Parts List.

Adjustment of the Play in the Torch Arm Assembly

- Step 1:** Move Master Switch (N) to the OFF position.
- Step 2:** Connect the DC Cord with Connector Plug (J) to the DC Connector Receptacle (L).
- Step 2:** Move the In / Out Switch to make sure it is in the center or STOP position.
- Step 3:** Connect the AC Power Cord of the Motor Control Box to a 115vac Power Source
- Step 4:** Move Master Switch (N) to the ON position.
- Step 5:** Move the Torch Arm Directional Control Switch (F) and Torch Arm Speed Control Rheostat (H) as necessary to test the travel of the Torch Arm.
- Step 5:** Check and remove for burrs, slag or other debris from the Torch Arm and Torch Arm Rack.
- Step 6:** If it is determined that there is excessive play in the Torch Arm, use a 1/2-inch wrench to rotate the 5/16-18NC Hex Nuts (22) at the Torch Arm Stop (20) end clockwise one (1) full turn, as viewed from the top of the MagnaCut.
- Step 7:** Insert a 5/32-inch Allen Wrench (provided in the Storage Box) into the 5/16-18 X 1 inch Socket Head Spring Plunger Screws (23) (located near the Torch Arm Stop) and rotate Socket Head Spring Plunger Screws (2) until the Gibs (N) located inside the Torch Arm block no longer make contact with the bottom of the Torch Arm.

Adjustment of the Rear Gib nearest Torch Arm Stop (Always adjust first).

- Step 8:** Rotate both 5/16-18NC X 1/2-inch Socket Head Spring Plunger Screw (23) located at the Torch Arm Stop end until you feel resistance. **(SEE Detail E)**
- Step 9:** While holding the 5/16-18NC X 1/2-inch Socket Head Spring Plunger Screw (23) with 5/32-inch Allen Wrench, tighten the 5/16-18 Hex Nuts (22) with a 1/2" wrench.

Adjustment of the Front Gib nearest Torch Holder

- Step 10:** Using a 1/2-inch wrench rotate the 5/16-18NC Hex Nuts (22) at the Torch Holder (8) end clockwise one (1) full turn, as viewed from the top of the MagnaCut.
- Step 11:** Insert a 5/32-inch Allen Wrench (provided in the Storage Box) into the 5/16-18 X 1-1/4 inch Socket Head Cap Screws (34) (located near the Torch holder) and rotate Socket Head Cap Screws (34) until the Gibs (N) located inside the Torch Arm block no longer make contact with the bottom of the Torch Arm.
- Step 12:** Rotate both 5/16-18NC X 1/2-inch Socket Head Cap Screw (23) until you feel resistance. **(SEE Detail E)**
- Step 13:** Move the torch arm in an out while checking the torch Arm Support for up and down movement.
- Step 14:** Tighten the 5/16-18NC X 1/2-inch Socket Head Cap Screw (23) until up and down movement in minimal.
- Step 15:** While holding the 5/16-18NC X 1/2-inch Socket Head Spring Plunger Screw (23) with 5/32-inch Allen Wrench, tighten the 5/16-18 Hex Nuts (22) with a 1/2" wrench.

Removal of the Torch Arm Motor

- Step 1:** Disconnect the AC Power Cord (K) of the Motor Control Box from the 115vac Power Source.
- Step 2:** Disconnect the DC Cord with Connector (J) of the Motor Control Box from the DC Connector (L) of the MagnaCut XM.
- Step 3:** Remove the Torch Arm Support (9) and the Torch Holder Assembly (8) from the Torch Arm (B).
- Step 4:** Remove the Flat-Head Allen Screws (11 & 12) from the Cover (10) with the 5/32-inch Allen Wrench provided.
- Step 5:** Remove the Cover (10) from the top of the Base Unit.
- Step 6:** Loosen 5/16-18 Hex Nut (22) 1 full turn with a 1/2" wrench

- Step7:** Back off Socket Head Set Screws (34) 1 full turn with the 3/16-inch Allen Wrench provided.
- Step 8:** Label the wires that connect the Torch Arm Motor (14) to the DC Connector Receptacle (L).
- Step 9:** Disconnect the two quick disconnects between the DC Connector (L) and the Torch Arm Motor (14).
Note: Extreme care should be taken not to damage electrical wire connected to the Torch Arm Drive Motor (14).
- Step 10:** Support the Torch Arm Block Assembly (6) and remove Socket-Head Allen Screws (7) with a 3/16-inch Allen Wrench provided.
- Step 11:** Remove Torch Arm Motor (14) of the Torch Arm Block Assembly (6) from the hole in the Base Unit (19).
- Step 12:** Remove the two Protective Caps (16) from the front of the Torch Arm Block Assembly (6).
- Step 13:** Insert a 5/32-inch long Arm Allen Wrench into the hole, where the protective caps (16) were installed, and rotate the Socket-Head Allen Screws (15) counterclockwise as viewed from the front of the Torch Arm Block.
- Step 14:** Remove the Torch Arm Motor (14) from the Torch Arm Block Assembly (6).
- Step 15:** Remove the Torch Arm (B) from the Torch Carriage Block Assembly (6)

Installation of the Torch Arm Motor

- Step 1:** Insert in the Torch Arm Motor (14) in large cavity of the Torch Arm Block Assembly (6).
- Step 2:** Align the threaded holes in the Torch Arm Motor (14) with the holes where the Protective Caps (16) were removed.
- Step 3:** Insert the Socket-Head Allen Screws (15) into the holes where the Protective Caps (16) were removed.
- Step 4:** Tighten the Allen Head Cap Screws (15) with the 5/32-inch long Arm Allen Wrench.
- Step 5:** Install the two (2) Protective Caps (16) into the Torch Arm Block Assembly (8).
- Step 6:** Connect the two (2) electrical connectors between the DC Connector (L) and the Torch Arm Motor (14).
- Step 7:** Make sure the Master Switch (N) is in the OFF position.
- Step 9:** Connect the AC Power Cord (K) of the Motor Control Box to an 115vac Power Source.
- Step 10:** Connect the DC Cord with Connector (J) of the Motor Control Box to DC Connector (L) of the Base Unit.
- Step 11:** Rotate the Torch Arm Speed Control Rheostat to the 3 Position.
- Step 12:** Insert the Torch Arm (B) with Torch Arm Stop (20) into the Torch Arm Block Assembly (6) on the side opposite the Heat Shield.
- Step 13:** Move the Torch Arm Directional Switch (f) to the OUT Position and hold in that position.
- Step 14:** Push the Torch Arm (B) into the Torch Arm Block Assembly (6) until it meets the Gear of the Torch Arm Motor (14).
- Step 15:** Follow the procedure "Adjustment of the Play in the Torch Arm Assembly."
- Step 16:** Turn the Master Switch (N) to the OFF position
- Step 17:** Disconnect the AC Power Cord (K) of the MagnaCut XM from the 115vac Power Source.
- Step 18:** Disconnect the DC Cord with connector (J) of the Motor Control Box from the DC Connector (L) of the MagnaCut XM.
- Step 19:** Place Cover on top of the MagnaCut XM Body and align countersunk screw holes with the threaded holes in the top of the body.
- Step 20:** Install the Flat Head Allen Screws (11 & 12) and tighten with a 5/32-inch Allen Wrench.
- Step 21:** Install the Torch Arm Support (9) on to the Torch Arm (B).
- Step 22:** Tighten Setscrew (C) with a 3/16 inch Allen Wrench.
- Step 23:** Install the Torch Holder Assembly (8) on to the Torch Arm Support (9).
- Step 24:** The MagnaCut XM is now ready for operation.

Removal of the Drive Motor

- Step 1:** Disconnect the AC Power Cord (K) from the 115vac power source.
- Step 2:** Disconnect the DC Cord with Connector (J) of the Motor Control Box from the DC Connector (L) of the MagnaCut XM.
- Step 3:** Remove the Flat Head Allen Screws (11 & 12) with a 5/32-inch Allen Wrench from the Cover (10).
- Step 4:** Remove the Cover (10) from the top of the Base Unit.
- Step 5:** Label the electrical wiring between the DC connector (L) the Torch Arm Motor (N) and the Drive Motor (1).
- Step 6:** Disconnect the electrical connectors between the DC Connector (L), the Torch Arm Motor (N) and the Drive Motor (1).
- Step 7:** Remove the Heat Shield (3) from MagnaCut by removing the three Round Head Machine Screws (5).
Note: Care should be taken not to lose the Heat Shield Spacers (4), when removing the three (3) Round Head Machine Screws from the Heat Shield.
- Step 8:** Remove the two (2) lower Machine Screws (2) from the Flange of the Drive Motor (1) by inserting a long reach Phillips Screwdriver into the two holes that are located behind the Heat Shield.
- Step 9:** Remove the two (2) upper Machine Screws (2) from the Flange of the Drive Motor (1).
- Step 10:** The Motor is now ready to remove from the MagnaCut XM.

Installation of the Drive Motor

- Step 1:** Align the Tang on the shaft of the Drive Motor (1) with the slot in the Transmission Shaft.
- Step 2:** Install the two (2) lower Head Machine Screws (2) into the Flange of the Drive Motor (1) by inserting a long reach Phillips Screwdriver into the two holes that is located behind the Heat Shield. Do not tighten.
- Step 3:** Install the two (2) upper Round Head Machine Screws (2) in to the Flange of the Drive Motor (1).
Note: Make sure the Grounding Lug is underneath one of the upper Screws (2).
- Step 4:** Tighten all Round Head Machine Screws (2) evenly, so the Flange of the Drive Motor is seated against the housing of the Transmission, which protrudes into the inner cavity of the Base Unit.
- Step 5:** Reconnect all Electrical Connectors between the DC Connector (L), the Torch Arm Motor (N) and the Drive Motor (1).
- Step 6:** Connect the DC Cord with Connector (J) to the DC Connector (L). Connect the AC Power Cord (K) to 115vac power source.
- Step 7:** Set the MagnaCut Unit on a surface so that both the front and rear wheels of the MagnaCut XM turn freely.
- Step 8:** Move the Master Switch to the ON position
- Step 9:** Move the Unit Speed Control Switch (G) to the Forward or Reverse Position.
- Step 10:** Rotate the Unit Speed Control Rheostat to the 50% Position.
- Step 11:** Let the Drive Wheels of the MagnaCut XM turn for about 15 minutes. Check for overheating of the Drive Motor, change of wheel speed or changes in the sound of the motor. These are all indicators the Tang of the Motor Shaft is not properly aligned with the slot in the Transmission Shaft.
- Step 12:** Turn the Master Switch (N) to the OFF Position.
- Step 13:** Disconnect the AC Power Cord (K) from the 115vac power source.
- Step 13:** Disconnect the DC Cord with Connector (J) from the DC Connector (L).
- Step 14:** Place the Cover (12) (as shown in Detail C) on top of the Base Unit and align countersunk screw holes with the threaded holes in the top of the Body.
- Step 15:** Install the Flat-Head Allen Screws (11 & 12) and tighten 5/32-inch Allen Wrench.
- Step 16:** The MagnaCut XM is now ready for operation.

Section 11 – Troubleshooting

SYMPTOMS	POSSIBLE CAUSES	CORRECTIVE ACTION
Unit fails to operate.	No electrical power at Power Source.	Check Circuit Breaker
	Cord with Plug (J) is not to Receptacle (L).	Connect Cord with Plug (J) to Receptacle (L).
	Voltage too low at Power Source.	Plug into Power Source that meets the electrical requirement.
	Blown Fuse.	Replace blown fuse with 3-amp Slow Blow Fuse (PN: 05-0550-038).
Torch Arm does not move - moves in only one direction or moves slowly.	Gibs are not adjusted correctly.	Follow the procedure "Adjustment of the Play in the Torch Arm Assembly".
	Electrical Connector (E) has been disconnected.	Reconnect Electrical Connect.
	24 Volt DC Circuit is adjusted improperly.	Return the MagnaCut XM to Mathey Dearman for adjustment of the 24 Volt DC Circuit.
	Electrical Cord with Plug (J) is burnt.	Return the MagnaCut XM to Mathey Dearman for Replacement of the Electrical Cord (J).
	Plug of Electrical Cord with Plug (J) is separated from the Cord.	Return the MagnaCut XM to Mathey Dearman for Replacement of the Electrical Cord (J).
	Torch Arm Motor (14) is bad.	Return the MagnaCut XM to Mathey Dearman for Replacement of the 24 Volt DC Motor.
	Slag in Teeth of Torch Arm Rack (B).	Remove Slag.
Unit will not move forward or reverse.	Electrical Connector (E) has become disconnected.	Reconnect Electrical Connection
	Drive Motor (1) thermal overload is tripped.	Wait 10 minutes.
	Output of the 100 Volt DC Circuit is less than 100 Volt	Output of the 100 Volt DC Circuit is less than 100 Volt DC.
	Drive Motor (1) is Bad.	Replace Defective Drive Motor.
Drive Motor (1) is making excessive noise.	Bearing is worn or damaged.	Replace Motor.
	Motor Brushes are worn.	Replace Motor.
	Tang on Motor Shaft is misaligned with slot in the Transmission.	Realign Drive Motor. (See procedure for "Installation of Drive Motor".)
	Motor Commutator worn.	Replace Motor.
Drive Motor (1) overheats.	Tang of Motor shaft is misaligned with slot in the Transmission.	Re-align Drive Motor. (See "Installation of Drive Motor".)

Drive Motor (1) overheats.	Unit is carrying larger amount of weight than it is designed to carry.	Replace with a 12" Machine Torch. (Weight not to exceed 10lbs.	
	Transmission Helical Gear and Wheel Drive Gears are binding.	Return the MagnaCut XM to Mathey Dearman for adjustment.	
	Wheel Mounting Blocks (Q) are out of adjustment.	Return the MagnaCut XM to Mathey Dearman for adjustment.	
Torch is closer at the top of the pipe than it is at the bottom of the pipe.	Set Screw (26) is loose in Torch Support.	Tighten Set Screw (16) in Torch Support. (Refer to Page 6.)	
	Torch Arm (B) is out of adjustment.	Adjust play in Torch Arm, see procedure: "Adjustment of the Play in the Torch Arm Assembly".	
MagnaCut XM is not cutting square.	Machine is dragging Oxygen and Fuel Hoses	Wrap the Oxygen and Fuel Hoses at least one full turn around the pipe.	
	Wheel Mount Blocks (Q) are out of adjustment.	Return the MagnaCut XM to Mathey Dearman for adjustment.	
	Unit is carrying larger amount of weight than it is designed to carry.	Replace with a 12" Machine Torch. (Weight not to exceed 10 lbs.).	
	Slag and other debris on the Drive Wheel. (D)	Remove debris from Wheels and Pipe with Brass brush provided.	
Torch Arm moves in or out intermittently.	Damaged Intermediate caused by shock load.	Replace Motor and avoid shock load.	
	Input Motor Brushes worn or not making contact with Commutator.	Replace Motor.	
	Worn Motor Commutator.	Replace Motor Commutator.	Check Motor connection and replace if needed.
	Output of 24 Volt DC Circuit of Motor Control Box is not constant.	Return the Motor Control Box to Mathey Dearman for evaluation.	
Drive Motor works intermittently.	Damaged Intermediate damaged by shock load.	Replace Drive Motor (1) and avoid shock.	
	Input Motor Brushes worn or not making contact with Commutator.	Replace Motor.	
	Worn Motor Commutator.	Replace Motor.	
	Loose Motor Commutator.	Check Motor Connection and replace if needed.	
	Output of 24 Volt	Return the Motor Control Box	

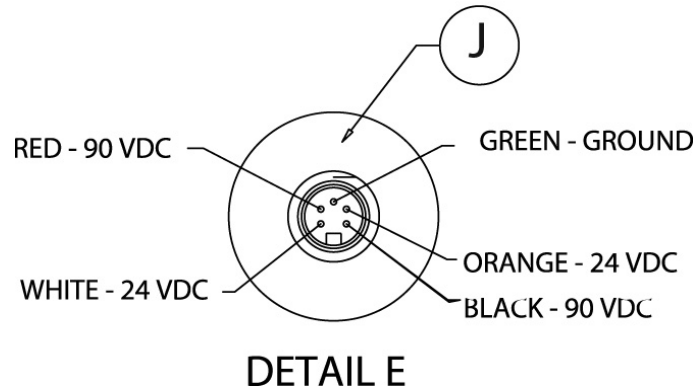
	DC Circuit of Motor Control Box is not constant. Torch improperly adjusted.	to Mathey Dearman.
The MagnaCut XM is moving up and down as it moves along the pipe or plate causing a rough-cut.	Slag and other debris are on the Drive Wheels and/or pipe.	Remove debris from Wheels and Pipe with Brass Brush provided.
The Torch is producing a rough finish.	Unit Speed Control Rheostat (G) is improperly adjusted.	Adjust the Unit Speed Control up or down until the desired quality of cut is achieved.
	Torch Cutting Tip is dirty.	Clean or replace the Torch Cutting Tip.
	Torch Improperly adjusted	Set the Torch Manufacturer's Operating Instruction for the Cutting Torch.

SYMPTOMS	POSSIBLE CAUSES	CORRECTIVE ACTION
Torch Bevel Angle changes as the machine moves along the pipe or plate.	Ratchet Handle (M) not tight enough.	Tighten Ratchet Handle tight enough to maintain bevel angle.
Drive Motor (1) does not rotate	Power Source Voltage is low.	Adjust Power Source Voltage or connect to another power source.
	The Unit Directional Control Switch (F) is faulty.	Replace the Unit Directional Switch. (Note: The switch should be replaced by an experienced electrician.)
	Unit is carrying larger amount of weight than it is designed to carry.	Replace with a 12" Machine Torch.
	Output of the 100 Volt DC Circuit is less than 100 Volt DC.	Return the MagnaCut XM to Mathey Dearman for replacement of the 24 Volt DC Motor.
	Drive Motor Defective	Replace Drive Motor.
	Current limit of the Drive Motor Circuit is set too low.	Return the MagnaCut XM to Mathey Dearman for adjustment.
Torch Arm Motor does not move the Torch Arm in or out.	Power Source Voltage is too low.	Adjust Power Source Voltage or connect to another power source.
	The Torch Arm Directional Control Switch (I) is faulty.	Replace the Torch Arm Directional Switch (Note: the switch should be replaced by an experienced electrician.)
	Unit is carrying larger amount of weight than it is designed to carry.	Replace with a 12" Machine Torch (Weight not to exceed 10 lbs).
	Output of the 100 Volt DC circuit is less than 100 Volt DC	Return the MagnaCut XM to Mathey Dearman for replacement of the 24 volt DC Motor.
	Torch Arm Motor (14) Defective.	Replace Torch Arm Motor.
	Current limit of the Drive Motor Circuit is set too low.	Return the MagnaCut XM to Mathey Dearman for adjustment.
	Gibs are not adjusted correctly.	Follow the procedure: "Adjustment of the Play in the Torch Arm Assembly".
Torch Arm Motor runs the same speed regardless of the position of the Rheostat.	The Torch Arm Speed Control Rheostat (H) is faulty.	Replace the Torch Arm Speed Control Rheostat. (Note: The switch should be replaced by an experienced electrician.)
Drive Motor runs the same speed regardless of the position of the Rheostat.	The Unit Speed Control Rheostat (G) is faulty	Replace the Unit Speed Control Rheostat (G) (Note: The switch should be replaced by an experienced electrician.)
Unit does not come up to speed or takes too long to accelerate.	Power Source Voltage is too low.	Adjust Power Source Voltage or connect to another power source.
	Unit is carrying larger amount of weight than it is designed to carry.	Replace with a 12" Machine Torch (Weight not to exceed 10 lbs).
	Defective Drive Motor (1)/	Replace Drive Motor.
	Current limit of the Drive troubleshooting Motor Circuit is set too low.	Return MagnaCut XM to Mathey Dearman for adjustment.

Section 12 – MagnaCut Motor Control Box **Electrical Adjustment**

There is no adjustment of the new version of the Motor Control Box.

If it is not known if the Motor Control Box is putting out the correct voltage check at the end of the yellow cord as shown below.



****A Guide Strip is required to cut vertical pipe or plate, contact Mathey Dearman, Inc. Sales Department for details.***

Section 13 – WARRANTY

Mathey Dearman, Inc. and C.I.A. Mathey, Inc. Warranty and Terms and Conditions of Sale

LIMITED WARRANTY Subject to the provisions contained herein, if any merchandise sold hereunder (except merchandise manufactured by other persons or firms) by Mathey Dearman, Inc. ("Mathey Dearman") or C.I.A. Mathey, Inc. ("CIA Mathey"), (either as the seller of the merchandise sometimes referred to herein as 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 risk, 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 "Warranty Period"), the Company will, at its option, replace or repair the merchandise. This warranty, however, is subject to 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, and (B) That the Company be afforded a reasonable opportunity to examine the merchandise and to investigate and verify 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. **THE COMPANY SHALL NOT BE LIABLE TO CUSTOMER UNDER ANY THEORY OR CIRCUMSTANCES FOR CONSEQUENTIAL, INCIDENTAL, AS INDIRECT, PUNITIVE, 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 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 MERCHANDISE'S FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, CAPACITY, OR EFFICIENCY AND THAT THERE ARE NO ORAL OR WRITTEN EXPRESSED OR IMPLIED WARRANTIES MADE IN CONNECTION WITH ANY SALE BY THE COMPANY OTHER THAN AS EXPRESSED HEREIN. 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.



C.I.A. Mathey Italiana S.r.l.

Via Isonzo, 26 - 20050 S. Damiano di Brugherio (MI)
Phone: +39 039 831019/2020021 • Fax: +39 039 2020079
ciamathey@promo.it • www.ciamathey.com