



_____ Machine Model

_____ Serial#

Register product online @ www.mathey.com <<http://www.mathey.com>>

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

Band Crawler Parts and Operating Manual



REVISED: May 2011
Mathey Dearman, Inc. ©

**Warning: Warranty is Void if Crawler is Disassembled during
Warranty Period**

Table of Contents

	<u>Description</u>	<u>Page</u>
1.	Table 1 – Band Crawler and Accessories	3
2.	Drawing 1 – Torch Tip Selection	4
3.	Drawing 2 – Band Crawler Clearance	4
4.	Accessory Description	5
5.	Table 2.0 – Band Selector Chart	6
6.	1.0 – Operation	7
7.	2.0 – Set-Up and Operation	7
8.	2.1 – Installation of the standard latch Band on the pipe	7
9.	2.2 – Installing The Band Crawler on the Band	8
10.	2.3 – Installation of the Machine Torch in the Band Crawler	8
11.	2.4 – Installing or Replacing the Flexible Drive Cable Assembly	9
12.	Drawing 4.0 – Band Reference Drawing	10
13.	Table 4.0 – Band Parts List	10
14.	Drawing 5.0 – Crawler Parts Break Down	11
15.	Table 5.0 – Crawler Part List	12
16.	Drawing 6.0 – Crawler Motorizing Kit Parts Breakdown	13
17.	Table 6.0 – Crawler Motorizing Kit Parts List	14
18.	Table 7.0 – Suggested 1 Years Spare Parts for Band Crawler	14
19.	3.0 – Maintenance	15
20.	3.1 – Band Crawler Maintenance	15
21.	3.2 – Band Maintenance	15
22.	Table 7.0 – Trouble Shooting	16
23.	Table 8.0 – Trouble Shooting (cont.)	17
24.	3.3 – Band Crawler Repair Procedures	18
25.	3.3.1 – Wheel Spring Tension Adjustment	18
26.	3.3.2 – Removing and Replacing the Drive Wheel Assembly	18
27.	3.3.3 – Removing and Replacing the Worm Gear Assembly Shaft	19
28.	3.3.4 – Removing and Replacing the Worm Shaft Assembly	19
29.	3.3.5 – Flexible Drive Cable (will not turn)	20
30.	3.3.6 – Band Transmission (will not stay on Band	20
31.	3.3.7 – Installation of the Motorizing Kit	20
32.	3.3.8 – Replacing the Motorized Crawler Motor Shaft	21
33.	4.0 – Retrofitting New Style Latch Band with Standard Latch	22
34.	Drawing 7.0	22
35.	Drawing 8.0	22
36.	Drawing 9.0	23
37.	Drawing 10.0	23
38.	Warranty	24

General

The Mathey Portable Band Machine is engineered and designed to hold and rotate a 1-3/8" / 35mm oxy/fuel or plasma machine torch around a pipe to cut or to bevel pipe ends producing a bevel for butting and welding two (2) pipes together. The standard Torch Carrier Crawler, both manual and motorized, fits all band sizes. Bands are available with a standard latch for standard pipe sizes of 2 inch increments, from 6 to 60 inches / 152mm to 1520mm.

NOTE: Intermediate and larger size bands are available on special order.

Band Crawler

Items identified in the following Inspection and Repair Procedure can be identified by reviewing Drawing 1 on page 3 and Table 1 on page 4 of the Mathey Monarch Band Machine Repair Manual.

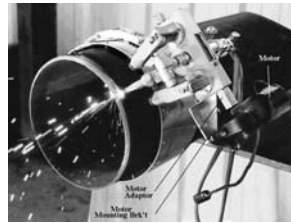


Table 1.0 – Band Crawler and Accessories

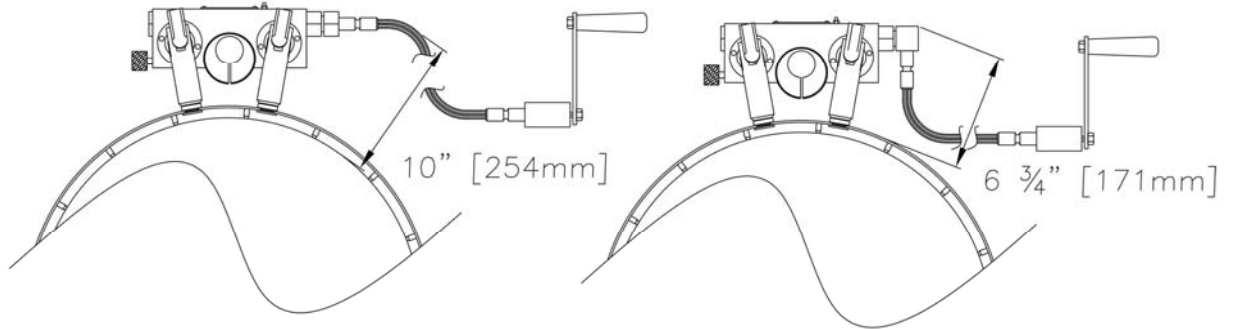
Description	Part Number	Shipping Weight (lbs/kg)
Band Crawler with 9' / 2.7m Flex Drive Cable	05-0116-009	26 / 12
Band Crawler with 14' / 4.3m Flex Drive Cable	05-0116-014	30 / 14
Right Angle Drive Adaptor (for Flex Driver Cable)	05-0117-030	1 / .5
Motorized Band Machine, 115VAC	05-0116-M07	27 / 12.4
Motorized Band Machine, 230VAC	05-0116-M08	27 / 12.4
Electric Motorizing Retrofit Kit (115VAC)	05-0116-A07	9 / 4
Electric Motorizing Retrofit Kit (230VAC)	05-0116-A08	9 / 4
230/115vac Step-Down Transformer	01-0759-008	5.5 / 2.8
Rack Adjustable Torch Arm	05-0117-032	7 / 3.2
Double Torch Arm	05-0117-039	9 / 4.1
Victor MT210A Machine Torch	05-0200-002	4 / 1.8
Victor BHA Torch Angle Adaptor	05-0200-003	1.3 / 0.6
Victor Cutting Tip, 3/4" cap. (3"/76mm lg.)	05-0201-001	.2 / .1
Victor Cutting Tip, 1"/25mm cap. (3"/76mm lg.)	05-0201-002	.2 / .1
Victor Cutting Button Tip, 3/4" Cap (3/4"/19mm lg.)	05-0201-003	.2 / .1

Manual Band Machine with 9' / 2.7m or 14' / 4.3m Flex Drive Cable

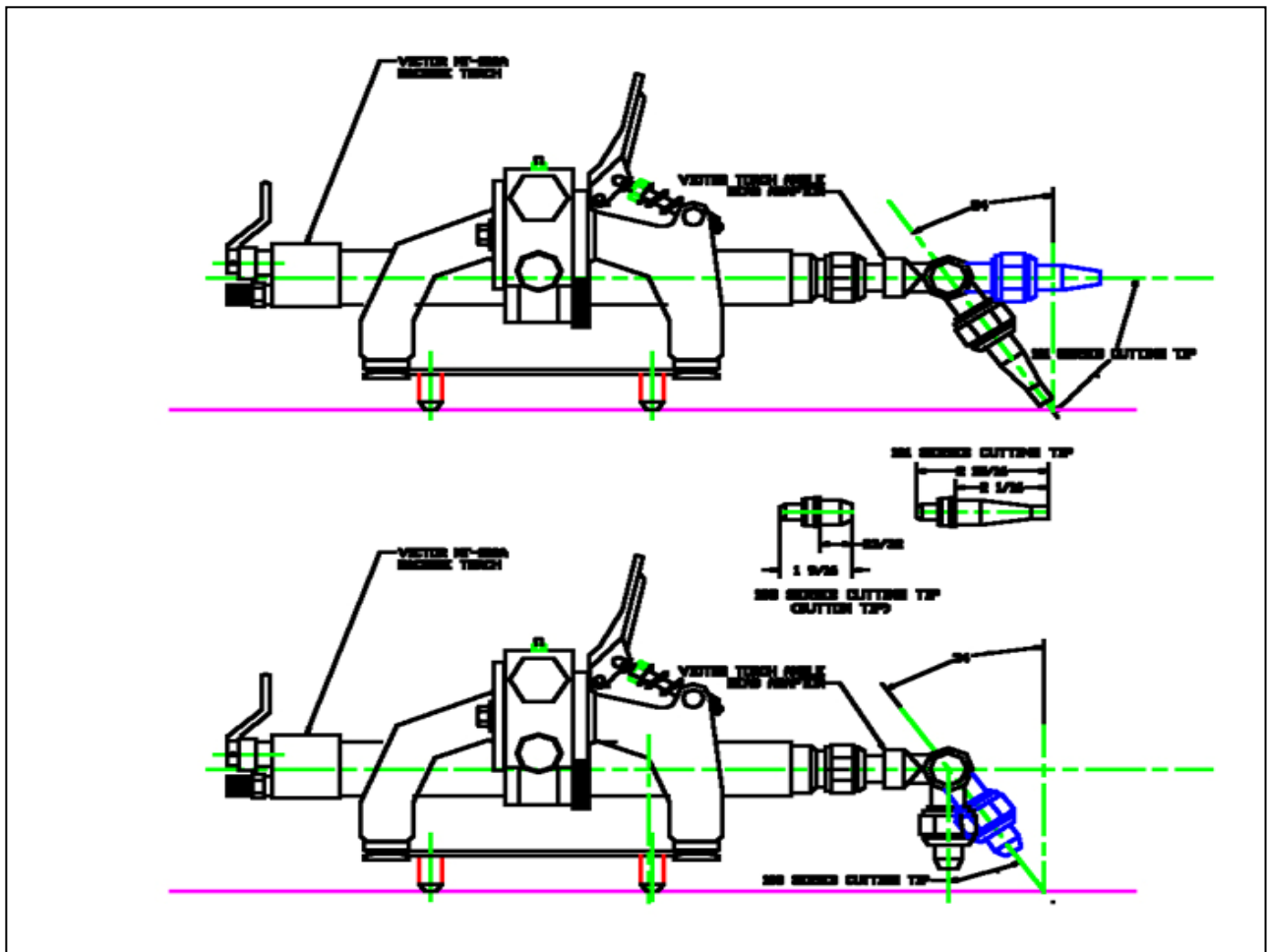
Shipping Dimensions (approx.) 23" x 23" x 12 1/2" (584 x 584 x 318mm)

110VAC Motorized Band Machine

Shipping Dimensions (approx.) 18" x 18" x 11 1/2" (457 x 457x 492mm)



Drawing 1.0 – Torch Tip Selection

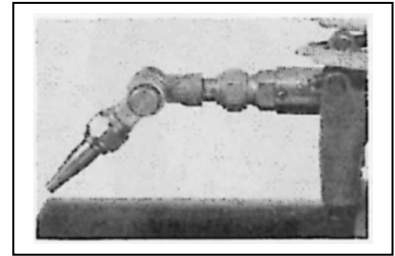


ACCESSORY DESCRIPTION

Torch Angle Head Adaptor (Part No. 05-0200-003)

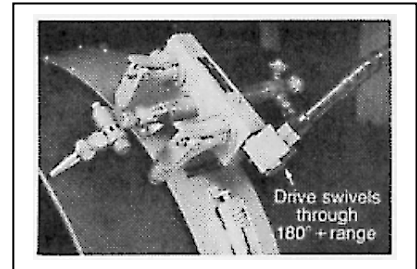
This attachment allows the Torch to be adjusted to a bevel angle up to 90-degrees and permits adjustment for a lead or lag angle of the torch.

A 3/4" Button Tip (Victor Series 108 Cutting Tip) should be used when cutting at 90 degree to pipe surface.



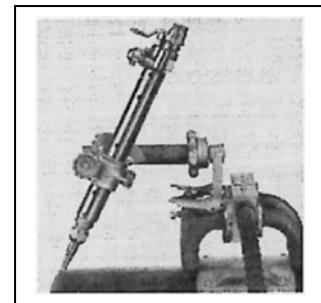
Right Angle Head Adaptor (Part No. 05-0117-030)

This Mathey attachment lets the Flexible Drive Cable Assembly swivel through 180 degrees. The feature decreases the amount of clearance needed around the pipe to approximately 6" / 152mm for tight areas where there is very little clearance.



Rack Adjustable Torch Holder (Part No. 05-0117-032)

This Mathey attachment provides adjustment of Plasma or Oxy-fuel Machine Torches and Plasma Machine Torches perpendicular to the Torch Carrier Crawler line of travel.



Double Torch Arm (Part No. 05-0117-039)

The Double Torch Arm is a device used for mounting two standard oxy-fuel or plasma torches to the Band Crawler.

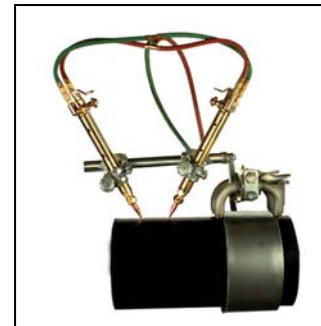


Table 2.0 – Band Selector Chart

Pipe Size		Latch Type Standard	Weight (approx.)	
Inches	mm		lbs.	kg.
6	152	05-0104-006	5	2
8	203	05-0104-008	6	3
10	254	05-0104-010	7	3
12	304	05-0104-012	7	3
14	356	05-0104-014	11	5
16	406	05-0104-016	12	5
18	457	05-0104-018	13	6
20	508	05-0104-020	14	6
22	559	05-0104-022	15	7
24	610	05-0104-024	24	11
26	660	05-0104-026	25	11
28	711	05-0104-028	25	11
30	762	05-0104-030	25	11
32	813	05-0104-032	26	12
34	864	05-0104-034	27	12
36	914	05-0104-036	29	13
38	965	05-0104-038	31	14
40	1016	05-0104-040	33	15
42	1067	05-0104-042	36	16
44	1118	05-0104-044	39	18
46	1168	05-0104-046	43	20
48	1219	05-0104-048	90	41
50	1270	05-0104-050	92	42
52	1321	05-0104-052	96	44
54	1372	05-0104-054	100	45
56	1422	05-0104-056	106	48
58	1473	05-0101-058	110	50
60	1524	05-0104-060	115	52

Mathey Dearman Monarch Band

Machines consist of two (2) main assemblies:

1. Flexible Stainless Steel Band installs around the pipe to be cut or beveled. The Band will form around the pipe even in the most out-of-round conditions and cut a consistent bevel to the pipe outside diameter.
2. Torch Carrier Crawler installs on flexible Stainless Band after the band is mounted on the pipe. The Crawler can be rotated around the pipe by means of a 9' or 14' Flexible Drive Cable or it can be motorized.

CAUTION: The Torch Carrier Crawler is a factory-sealed assembly and should only be repaired by Mathey Dearman, Inc. or a Mathey Dearman Authorized Service Center.

WARRANTY: If the Torch Carrier Crawler is under Warranty it should not be opened or dismantled by users, but should be returned to Mathey Dearman, Inc.

1.0 OPERATION

1.1 Manual Band Crawler

Manual operation is controlled by cranking the Crank Handle of the Flexible Drive Cable Assembly. It can be cranked in either direction, for either *clockwise* or *counterclockwise* rotation of Torch Carrier Crawler around the pipe.

1.2 Motorized Band Crawler

Motorized operation is controlled with the Mathey Motor Control Box. *Forward and Reverse Positions* on Motor Control Box determines *clockwise* and *counterclockwise* rotation of Torch Carrier Crawler around the pipe. The Speed Control Dial controls speed of travel (inches per minute).

Warning: Do not change direction of rotation while Gear Motor is running. Always move the switch to *OFF Position* first, then to *Forward and Reverse Positions*.

2.0 – SET-UP AND OPERATION

2.1 - Installation of Standard Latch Band on Pipe

- 2.1.1 Select proper size Band for pipe size to be cut or beveled. The size of the Band is marked near the Duckbill of the Band. (See Figure 1)

Open the Band by lifting the Handle of the Latch Handle Assembly (6).

Note: Sometimes it is necessary to **push** the Handle over center in order to separate the Band Ends.

- 2.1.2 **Lift** the Latch Handle Assembly (6) **out** from the Latch Anchor (4).

- 2.1.3 **Pull** the Band Handles (7) **upward** spreading the ends of the Band apart and place it around the pipe.

- 2.1.4 **Pull** the Band Handles (7) **together- insert** the band end with the tangs into the Duckbill.

- 2.1.5 **Insert** end of the Latch Handle Assembly (6) into the Latch Anchor (4).

- 2.1.6 **Place** the Band at a distance from the cut line, which is determine by the distance from the center hole of the Torch Tip to the backside Drive Wheel Assemblies (14) nearest the Torch Tip.
- 2.1.7 **Close** the Latch Handle Assembly (6) by pushing the Handle of the Latch Handle Assembly (6) *downward*.
- Note:** The Latch Handle can be adjusted by opening and turning it **clockwise** to loosen or **counterclockwise** to tighten.
- 2.1.8 **Make sure** that all Rest Pins of the Band are making contact with the pipe.
- Note:** All Rest Pins of the Band not making contact with the pipe may be an indication that the Band is out of square with the pipe and the Band must be re-squared to the pipe.
- 2.1.9 The Band is now ready to mount the Crawler onto the Band.
- Note:** There is no need for an out-of-round coping device because of the flexibility of the band allows it to conform to the contour of the out- of-round pipe when locked into position on pipe.

2.2- Installing the Band Crawler on the Band

- 2.2.1 **Turn** the Hex Head Cap Screws (12) **counterclockwise** with a 7/16 open End or Box End Wrench until the Front and Rear Ball Leg Assemblies (8 10) rotate.
- 2.2.2 **Move** both Ball Legs (8 &10) **inward or outward** until the groove in the Wheel of Drive Wheel Assembly (14) matches the radius of the Band.
- 2.2.3 **Turn** the Hex Head Cap Screws (12) **clockwise** with a 7/16 Open End or Box End Wrench until the Hex Head Cap Screws (12) are snug.
- Note:** Do not tighten the Hex Head Cap Screws –damage may be cause if these screws are over tightened.
- 2.2.4 **Lift** the levers (Item A) of the Two (2) Ball Leg Assemblies (8 &10) to *unlock* the Ball Legs, and **tilt** them slightly **outward** to an open position.
- 2.2.5 **Position** the Crawler on the Band so that the Drive Wheel Assembly Grooves (14) are engaged on the edge of the Band. The Wheels should **roll freely** along the edge of the Band.
- 2.2.6 **Tilt** the Ball Legs (8 &10) back into a closed position so the Ball Leg Drive Wheel Grooves are engaged on the front edge of the Band. Then **depress** the Levers to lock the Ball Legs back in the **closed** position. The Levers should **lock** the legs securely, but not so tightly that the Wheels bind against the Band. Ball Leg tension is adjusted, either **tightened** or **loosened**, with the Hex Nuts (Fig. 2, Item B) on the Lever Springs.

CAUTION: The Two (2) Hex head Cap Screws (12) in the Flanges of the Two (2) Flanged Legs must be left “snug” only, as they come from Mathey. **DO NOT** over tighten them with a Wrench: to do so will damage the machine and void the Warranty.

2.3- Installation of the Machine Torch in the Band Crawler

- 2.3.1 **Turn** the Set Screw (7) **counterclockwise** until the Torch Holder Eccentric (9) rotates.
- 2.3.2 **Rotate** the Torch Holder Eccentric (9) until the hole for the torch in the Torch Holder Eccentric (9) is at its **furthermost** point from the Drive Wheel Assemblies (14).
- 2.3.3 **Install** the machine torch through the bore of the Torch Holder Eccentric (9).

Note: This installation requires an Angle Head Adaptor for the Torch Tip
(See Mathey Part # 05-0200-003 in Accessory Section of this manual).

- 2.3.4 **Adjust** Torch Tip to desired bevel angle.
- 2.3.5 **Adjust** torch horizontally in Eccentric Torch Holder (9) for proper Tip alignment with cut line; *rotate* Eccentric in Carrier Body (5) to set Tip stand-off to the pipe.
- 2.3.6 **Tighten** Set Screw (7) to lock Torch and Eccentric Torch Holder in position.

Note: A Rack Adjustable Torch Arm (Mathey Part No. 05-0200-032) is available to hold the Fuel or Plasma Machine Torch eliminating the need for the Torch Angle Head Adaptor.

Warning: A Short Barrel Machine Torch should never be used with the Torch Carrier Crawler. If the Cutting Tip is too close to the Drive Wheel Assemblies, it may cause the Bearings of the Drive Wheel Assemblies to seize.

Special Note: If the Torch Carrier Crawler is going to be used to create a back bevel, the distance between the Torch Tip and Drive Wheel Assemblies (14) should be far enough apart to minimize the heating of the Bearings of the Drive Wheel Assemblies (14).

- 2.3.7 **Tighten** the Set Screw (7) **clockwise** until the Torch Holder Eccentric (9) does not rotate.
- 2.3.8 **Rotate** Torch Carrier Crawler *one (1) full turn* around pipe so the Wheels of the Drive Wheel Assemblies (14) roll smoothly without binding and the Torch Tip will clear all the way around.

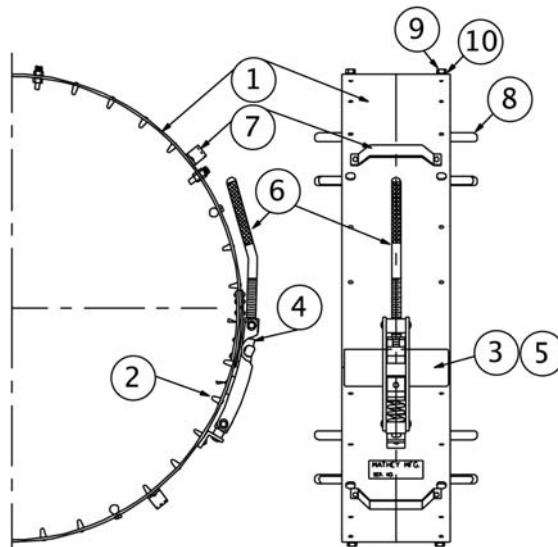
Note: Check the Groove of the Drive Wheel Assemblies (14) for grooving by the edge of the band. If there is noticeable grooving read instructions for tension adjustment of the Front and Rear Ball Leg Assemblies (8 & 10).

Note: If the Torch Carrier Crawler slips on the Band follow instructions for tension adjustment of the Front and Rear Ball Leg Assemblies (8 & 10).

2.4 – Installing or Replacing Flexible Drive Cable Assembly

The Manual Torch Carrier Crawler is shipped with the Flexible Drive Cable Assembly installed; however, if there is a need to change the Drive Cable, follow this re-installation procedure.

- 2.4.1 The Flexible Shaft inside the Flexible Drive Cable Assembly (19A or 19B) extends approximately 1 ½ inches beyond the Swivel Nut (E), and is inserted into the Torch Carrier Crawler through the Connector (6) (See Figure 3).
- 2.4.2 The Flexible Shaft inside the Flexible Drive Cable Assembly (19A or 19B) **must be turned** so the Keyway (Groove) on the exposed end aligns with the Key on the Worm Shaft (11) located inside the Connector (6).
- 2.4.3 When the Key and Keyway Groove are aligned, the Swivel Nut (E) of the Drive Cable will be **in position to be screwed** onto the Connector (6).
- 2.4.4 **Hand tighten** the Drive Cable until it stops; then **tighten just snugly** with a Wrench. **DO NOT FORCE THE WRENCH.**



Drawing 4.0

Table 4.0 – Band Parts List

Item No.	Part Description	Part No.	Qty. Req'd
1	Band	See Note 1	1
2	Locating Pins	See Note 2	See Note 3
3	Cam Anchor Block	05-0103-115	See Note 1
4	Upper and Lower Duck Bill	05-0103-118	See Note 1
5	Standard Band Latch Assembly, 6" – 12"	05-0103-100	See Note 1
	Standard Band Latch Assembly, 14" – Up	05-0103-102	See Note 1
6	Band Handle	05-0103-001	See Note 3
7	Band Stiffener	05-0103-007	See Note 3
8	Hex Head Cap Screw, 1/4-28NF x 1/2" Lg.	10-14F0-012	See Note 3
9	Internal Locking Washer, 1/4"	12-0014-I00	See Note 3

Note 1: All Bands sizes are slightly different, contact Mathey Dearman, Inc. for parts information.

Note 2: Locating Pins and Upper or Lower Duckbills is an integral part of the Band and are not field-replaceable. The Band must be returned to Mathey Dearman Inc. for replacement of these parts.

Note 3: Quantity of Locating Pins is different for each Band Size.

Drawing 5.0 - Crawler Parts Break Down

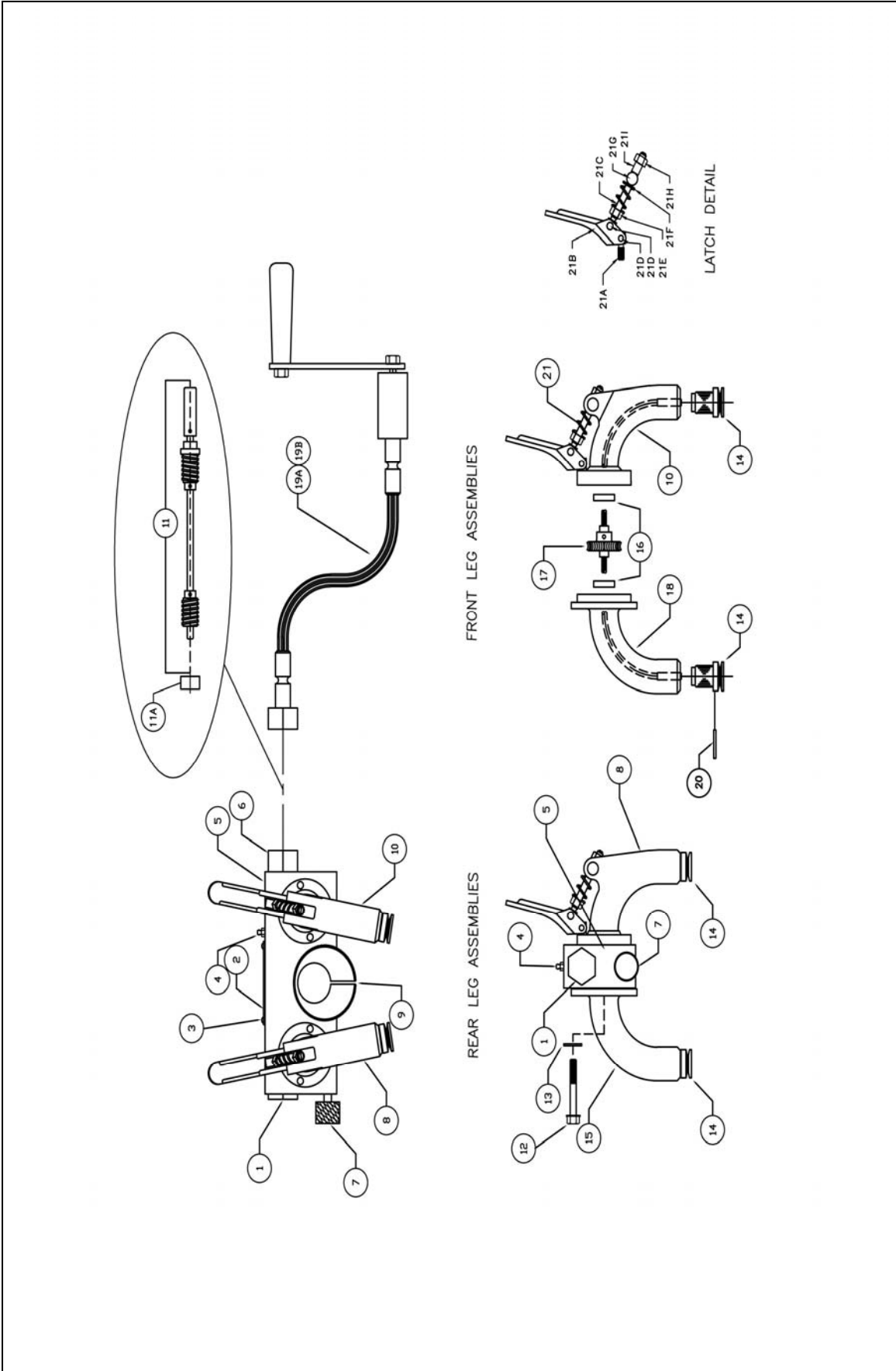


Table 5.0 - Crawler Parts Breakdown

Item #	Part Description	Part #	Quantity Req.
1	End Plug	05-0116-021	1
2	Name Plate	01-0209-025	1
4	Grease Zerk	01-0469-003	1
5	Crawler Body	05-0116-013	1
6	Connector	05-0116-012	1
7	Set Screw	05-0116-011	1
8	Rear Ball Leg Assembly	05-0116-010	1
9	Eccentric Torch Holder	05-0116-008	1
10	Front Ball Leg Assembly	05-0116-020	1
11	Worm Shaft Assembly	05-0116-007	1
11A	Bearing Housing	05-0116-117	1
12	Hex Head Cap Screw, 1/4-28NF x 2" Lg.	10-14F0-200	4
13	Flat Washer, 1/4"	12-0014-F00	4
14	Drive Wheel Assembly	05-0116-083	4
15	Rear Flange Leg Assembly	05-0116-001	1
16	Bearings, Worm Gear Shaft Assembly	05-0116-003	4
17	Worm Gear Assembly Shaft	05-0116-002	2
18	Front Flange Leg Assembly	05-0116-004	1
19A	9 Foot Flexible Drive Shaft Assembly	05-0116-022	1
19B	14 Foot Flexible Drive Shaft Assembly	05-0116-031	1
20	Spring Pin, 3/32" Diameter x 1" Lg.	19-08C0-014	4
21	Latch Assembly	05-0116-040	2
21A	Short Anchor Block	05-0116-061	1
21B	Latch Handle	05-0116-016	1
21C	Long Anchor Block	05-0116-046	1
21D	Rivet	17-3160-100	2
21E	Tension Nut	1H-14F0-000	1
21F	Latch Spring	01-0183-013	1
21G	Anchor Pin	05-0116-036	1
21H	Long Latch Pin	1L-14FO-000	1
21I	Anchor Pin	04-0106-023	1
22	Shim	05-0116-030	1

Drawing 6.0 - Crawler Motorizing Kit Parts Breakdown

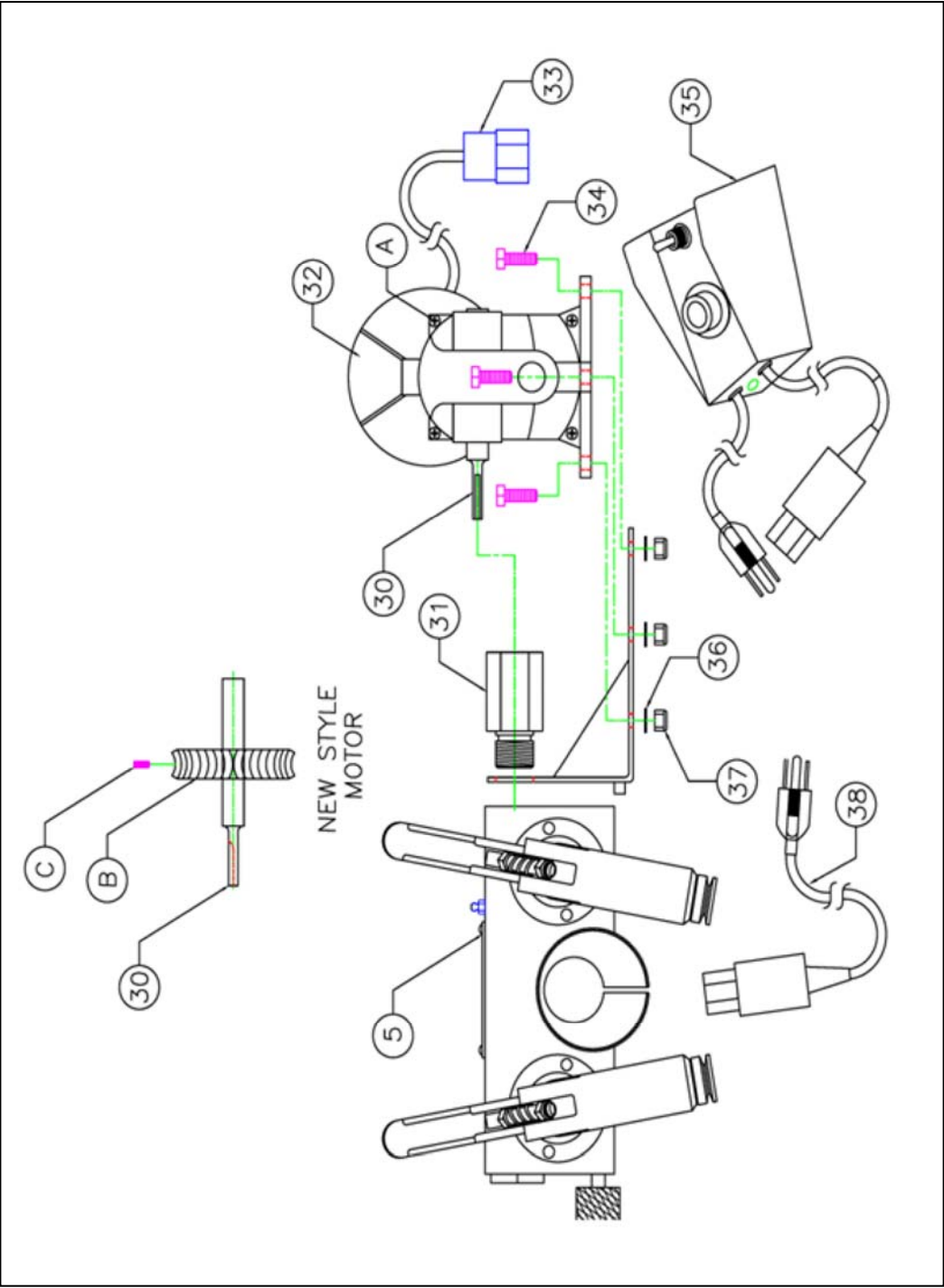


Table 6.0 - Crawler Motorizing Kit Parts List

Item #	Part Description	Part No.	Quantity Req.
~	115VAC Motorized Crawler	05-0116-M07	~
~	230VAC Motorized Crawler	05-0116-M08	~
30	Motor Shaft	05-0116-081	1
31	Motor Coupling	05-0116-080	1
32	Crawler Motor	03-0201-056	1
33	Beldon Coupling	03-0203-011	1
34	Hex Cap Screw, 1/4-20 x 1"	10-14C0-100	3
35	115VAC Motor Control Box	03-0203-009	1
35	230VAC Motor Control Box	03-0203-003	1
36	1/4" Flat Washer	12-0014-F00	3
37	1/4" Self Locking Nut	1L-14C0-000	3
38	15 Foot Cord	03-0203-020	1
39	Motor Mounting Bracket	05-0116-082	1

Table 7.0 – Suggested 1Years Spare Parts per Crawler

Manual Crawler			
Item #	Part Description	Part No.	Suggested Qty.
17	Worm Gear Shaft Assembly	05-0116-002	8
14	Drive Wheel Assembly	05-0116-083	8
9	Eccentric Torch Holder	05-0116-008	1
20	#8-32x1/4 Sck't Set Screw	19-08C0-014	8
Motorized Crawler Spare Parts			
17	Worm Gear Shaft Assembly	05-0116-002	8
14	Drive Wheel Assembly	05-0116-083	8
9	Eccentric Torch Holder	05-0116-008	1
20	#8-32x1/4 Sck't Set Screw	19-08C0-014	8
30	Motor Shaft	05-0116-081	1
32	Crawler Motor	03-0201-056	1
35	Motor Control Box	03-0203-009	1

3.0 – Maintenance

Mathey Band Machines require only minimal maintenance. However, they are precision machines and in order to achieve precision results with them, they should be used and handled with reasonable care, and be kept clean and lubricated.

3.1 – Band Crawler Maintenance

The Ball Legs, Flanged Legs, Drive Wheels and Torch Holder Eccentric should be kept clear of slag and other trapped abrasives, particularly sand and dirt. Use a soft rag and non-flammable solvent to clean the machine.

Warning: Do not use air when cleaning the machine.

The Grease Zerk on top of the Crawler Body should be greased once a month if used periodically and once a week if used heavily, and before storing. The Crawler Body should be lubricated with gun grease (example: Lubriplate™ 130AA).

During transportation, or when not in use, the Torch Carrier Crawler should be stored in a protective container such as a Carrying Case or the original factory shipping carton.

Flexible Drive Cable on the Manual Machine, and the Electrical Cords and Connections on the Motorized Machines, should be kept clean and protected from kinking as well as from sharp objects that could cause cuts or punctures.

3.2 – Band Maintenance

The Bands should be kept clean. The Latch Assembly, Latch Handle Assemblies and the slot between the Upper and Lower Duckbills should be kept clear of trapped slag, abrasives, particularly sand and dirt. Bands should be laid on their sides rather than hanging or standing during transportation, or when not in use.

Table 7.0 – Trouble Shooting

Symptom	Probable Cause	Corrective Action
Crawler Legs rotate and Crawler will not move	1. Tension Springs (23) have improper adjusted	1. Adjust Spring Tension. See Instruction “A”
	2. Wheel is heavily grooved	2. Replace Wheel Assembly(14) See Instruction “B”
	3. Crawler is trying to carry to much weight around the pipe	3. Use a 1 3/8” diameter machine torch with a 10” long barrel.
	4. Edges of Band are rounded or Band Edge is uneven	4. File band end to produce a sharp Edge or replace Band.
The Wheel(s) will not Rotate When Turning the Crank Handle	1. Swivel Nut is loose	1. Tighten Swivel Nut on Crank Handle Assembly (26)
	2. Tip in side bore of Coupling on the Worm Gear Shaft Assembly (11).	2. Replace the Worm Shaft Assembly (11). See Instruction “D”
	3. The Cables of Worm Gear Shaft Assembly(S) (17) is sheared.	3. Replace Worm Shaft Assembly (11) See Instruction “D”
	4. The Setscrew in Brass Gear of the Worm Shaft Assembly(S) is sheared.	4. Tighten Setscrew in Brass Gear. See Instruction “B”
	5. Spring Pin connecting the Worm to the Worm Shaft Assembly (11) is sheared.	5. Replace the Worm Shaft Assembly. See Instruction “D”
	6. The inner Cable of the 9’ or 14’ Flexible Drive Cable is not connected correctly to the handle end or the Crawler Body.	6. Disconnect the Flexible Drive Cable from the Crawler Body. See Instruction “E”
	7. Torch is too close to the wheel(s) causing the bearing to seize because of too much heat. .	7. Replace the Worm Gear Shaft Assembly(s) (17). See Instruction “B”
Wheels are heavily Grooved	1. To much Spring (23) tension on the legs	1. Use only enough spring tension to rotate the Crawler around the Band. See Instruction “A”
		2. Replace Wheel Assemblies (14). See Instruction “A”

Table 8.0 – Trouble shooting (cont.)

Motorized Only		
Symptom	Probable Cause	Corrective Action
Motor rotates and Wheels do not turn	1. Tip in side bore of Coupling on the Worm Gear Shaft Assembly (11).	1. Replace the Worm Shaft Assembly. See Instruction “D”.
	2. The Cables of Worm Gear Shaft Assemblies (17) are sheared.	2. Replace the Worm Shaft Assembly(s). See Instruction “C”.
	3. The Setscrew in Brass Gear of the Worm Shaft Assemblies (17) are sheared.	3. Tighten Setscrew in Brass Gear. See Instruction “C”.
	4. Spring Pin connecting the Worm Gear to the Worm Shaft Assembly (11) is sheared.	4. Replace the Worm Shaft Assembly. See Instruction “D”.
	5. Torch is too close to the wheel(s) causing the bearing to seize because of too much heat. .	5. Replace the Worm Gear Shaft Assembly(s) (17). See Instruction “D”.
	6. Motor Shaft is sheared.	6. Replace Motor Shaft (PN: 05-0116-017)
Motor does not rotate	1. No Power at electrical connect.	1. Use another electrical source
	2. Fuse is Blown	2. Replace fuse (PN: 01-0427-008)
	3. AC Power cord is cut	3. Return Motor Control Box to Mathey Dearman for Repair.
	4. DC Cord between Motor Control Box and Crawler has open circuit	4. Return Motor Control Box to Mathey Dearman for Repair.
	5. Forward – Stop – Reverse switch is broken	5. Return Motor Control Box to Mathey Dearman for Repair.
Machine will only rotate in one direction	1. Rheostat is broken	1. Return Motor Control Box to Mathey Dearman for Repair

Note: Circuit Board of the Motor Control Box is extremely thin and excessive heat will severely damage the circuit board.

Note: Individual components of the circuit are not available from the factory.

Warning: *The WARRANTY IS VOID if any attempt is made to repair the Motor Control Box. Please send to factory for any repairs needed.*

3.3 Band Crawler Repair Procedures

3.3.1 Wheel Spring Tension Adjustment

- 3.3.1.1 Lift up the Levers (21) on the Front and Rear Front Ball Leg Assemblies (3&10) to **open** the Crawler Legs Assemblies.
- 3.3.1.2 **Turn** the Spring Tension Nut (22) located nearest the hinge point of the Lever (21) **counterclockwise 2 turns to release** the spring tension.
- 3.3.1.3 **Turn** 4 Hex Head Cap Screws (12) **counterclockwise** until front and rear legs rotate.
- 3.3.1.4 **Rotate** the legs to match the radius of the Band.
- 3.3.1.5 **Mount** the Band Transmission on the Band.
- 3.3.1.6 **Adjust** the Drive Wheel Assemblies so that the groove is **parallel** as possible to the Band.
- 3.3.1.7 **Adjust** the spring tension until the groove of the Wheel Assembly (14) of the Front and Rear Ball Leg Assemblies (8 & 10) **make contact** with band.
- 3.3.1.8 **Mount** the Torch and any Accessories that will be used on the Band Transmission.
- 3.3.1.9 **Adjust** the Spring Tension Nut **clockwise in 1/8 turn increments** until the Crawler goes around the Band without slipping with all Accessories attached.

Note: **Do not tighten** the Spring Tension Nut more than is necessary to stop the Band Transmission from slipping on the band as this may cause damage to the wheels.

3.3.2 Removing & Replacing Drive Wheel Assembly (14).

If there is uneven wear in the Groove of the Drive Wheel Assembly (14) or the wear in the Groove is more than 1/16", the Drive Wheel Assembly should be replaced.

- 3.3.2.1 With a drift punch, **drive** the 3/32" Spring Pin (20) out of the Drive Wheel Assembly.
- 3.3.2.2 **Heat** the Crawler Leg (8, 10, 15 or 18) just enough to remove the Drive Wheel Assembly with a Propane Torch on low flame.
- 3.3.2.3 **Grab** the Drive Wheel Assembly with a pair of pliers and **remove** from the Crawler Leg. If the Drive Wheel comes off by itself, **grab** the inner bearing race and **remove** it from the Crawler Leg.
- 3.3.2.4 **Place** the 3/32" hole of the Wheel of the Drive Wheel Assembly perpendicular to the hole in the Worm Gear Assembly Shaft (17).
- 3.3.2.5 **Warm** Crawler Leg (8, 10, 15 or 18) just enough to slide the Drive Wheel Assembly into the Crawler Leg over the Worm Gear Assembly Shaft (17).

Note: It is helpful to use a strong Magnet, such as a rare earth magnet, to draw the Worm Gear Assembly Shaft (17) through the Drive wheel Assembly.

- 3.3.2.6 With a 3/32" **drill** thru the Drive Wheel inner race and Worm Gear Assembly Shaft (17) until the drill comes out of the other side of the Drive Wheel.
- 3.3.2.7 **Apply** Lithium grease to the Grease Zerk (4) at the top of the Crawler Body (5) until it **starts to come out between** the Leg and

the Drive Wheel of the Assembly. Great should be applied slowly and do not over apply.

- 3.3.2.8 **Rotate** the Crank Handle Assembly (26) to make sure all wheels are turning.

Follow the instructions for the Adjustment of the Wheel Spring Tension (Section A).

3.3.3 - Replacement of the Worm Gears Assembly Shaft (17)

If one of the Drive Wheel Assemblies (14) in the Leg Assemblies (8, 10, 15 or 18) is not turning, it is an indication that the Worm Gear Assembly Shaft (17) is sheared. The Worm Gear Assembly Shaft (17) should be replaced.

- 3.3.3.1 To determine which Leg Assembly (3, 4, 5 & 6) is binding **unscrew the Connector** (6) from the Crawler Body (5).
- 3.3.3.2 **Remove** the Worm Shaft Assembly (11) from the Body (2).
- 3.3.3.3 **Grip** the Wheel of the Wheel Assembly (7) and **rotate** the wheel with a pair of common pliers
- Note:** Care should be taken when using the common pliers to not damage the groove of the wheel that contacts the edge of the band.
- 3.3.3.4 **Remove** Hex Head Cap Screws (12) from Crawler Legs that are not turning.
- 3.3.3.5 **Follow the instruction** in the portion of Section **B** that pertain to the removal of the Drive Wheel Assembly.
- 3.3.3.6 **Remove** the Front and Rear Flange Leg Assembly (15 &/or 18) from the Crawler Body (5).
- 3.3.3.7 **Remove** the Front and Rear Ball Leg Assembly (8 &/or 10) from the Crawler Body (5).
- 3.3.3.8 **Place** the Crawler Body with Grease Zerk (4) facing **downward** in a soft jaw vice.
- 3.3.3.9 **Place** the end of the Worm Gear Assembly Shaft having the Gear without shoulder thru the Bearing (16) in the Crawler Body (5).
- 3.3.3.10 **Run** the end of the Worm Gear Assembly Shaft **through** the Front or Rear Ball Leg Assembly (8 or 10) until it comes out the end. It may be necessary to use a piece of wire or offset pick to thread the end around the bend in the Front or Rear Ball Leg Assembly.
- 3.3.3.11 **Screw** the Connector (6) into the Crawler Body (5).
- 3.3.3.12 **Screw** the Flexible Drive Shaft Assembly (19A) (19B) onto the Connector (6)

Follow the instruction in the portion of Section **B** that pertain to the installation of the Drive Wheel Assembly.

Follow the instruction for the Adjustment of the Wheel Spring Tension (Section A)

3.3.4 Replacement of the Worm Shaft Assembly (11)

- 3.3.4.1 **Disconnect** the Flexible Drive Cable (19A) (19B) from the Connector (6).
- 3.3.4.2 **Unscrew** Connector (6) from the Crawler Body (5).

- 3.3.4.3 **Remove** the Worm Shaft Assembly by rotating **counterclockwise** to remove it from the Crawler Body.
- 3.3.4.4 **Install** the Worm Shaft Assembly in the Crawler Body by **rotating** it clockwise.
- 3.3.4.5 **Screw** the Connector (6) into the Crawler Body (5).
- 3.3.4.6 **Align** the Slot in the Inner Cable of the Flexible Drive Cable (19A) (19B) with the Tang in the bore of the Worm Shaft Assembly (11).
- 3.3.4.7 **Screw** the Flexible Drive Cable (19A) (19B) onto the Connector (6). Rotate The Crank Handle Assembly (26) as you are screwing the Flexible Drive Cable to make sure the slot in the Inner Cable is engaged in Tang in the bore of the Worm Shaft Assembly (11).
- 3.3.4.8 **Apply** Lithium grease to the Grease Zerk (4) at the top of the Crawler Body (5) **until it starts to come out between** the Leg and the Drive Wheel of the Drive Wheel Assembly. The grease **should be applied slowly** taking care not to over apply the grease.

3.3.5 Flexible Drive Cable (19A) (19B) will not turn.

- 3.3.5.1 **Disconnect** the Flexible Drive Cable from the Connector (11).
- 3.3.5.2 **Turn** the crank Handle of the Flexible Drive Cable and **check** for binding.
- 3.3.5.3 If the Inner Cable of the Flexible Drive Cable is binding, **disassemble** the Flexible Drive Cable, clean and lubricate the Flexible cable with Lubriplate 130-AA.
- 3.3.5.4 **Align** the Slot in the Inner Cable of the Flexible Drive Cable (19A) (19B) with the Tang in the bore of the Worm Shaft Assembly (11).
- 3.3.5.5 **Screw** the Flexible Drive Cable (19A) (19B) onto the Connector (6) and **rotate** the Crank Handle Assembly (26) to make sure the slot in the Inner cable is engaged in Tang in the bore of the Worm Shaft Assembly (11).

3.3.6 Band Transmission will not stay on Band

- 3.3.6.1 **Adjust** the Wheel Spring Tension. **Follow the instruction** for the Adjustment of the Wheel Spring Tension (**Section A**).
- 3.3.6.2 **Readjust** the Groove of the Drive Wheel Assembly (14) so the groove is **parallel** with the Band edge.
- 3.3.6.3 **If Band Edge is rounded or has a gash in it that causes the Crawler Wheel to leave the Band. The band should be replaced, if the band edges are rounded or has hammer marks that prohibit the Crawler rotation around band or cause the Crawler to become disengaged from the band.**

3.3.7 Installation of Motorizing Kit (03-0116-A01)

- 3.3.7.1 **Remove** connector (6).
- 3.3.7.2 **Align** Slot in Motor Shaft (30) with the Tang in the bore of the Worm Shaft Assembly (11).
- 3.3.7.3 **Align** bar at the bottom of the Motor Mounting bracket with the bottom of the Crawler Body (5).
- 3.3.7.4 **Screw** the Motorized Crawler Connector (31) into the Crawler Body and tighten.
- 3.3.7.5 **Connect** the Motor Control Box (35) to Beldon Cord Connector (33).

- 3.3.7.6 Move the Forward/Stop/Reverse to the STOP position.
- 3.3.7.7 Turn the Rheostat counterclockwise to the “0” position.
- 3.3.7.8 **Connect** the Motor Control Box (35) to the power source.
- 3.3.7.9 Move the Forward/Stop/Reverse to the FORWARD or REVERSE position.
- 3.3.7.10 **Slowly rotate** the Rheostat Clockwise.
- 3.3.7.11 **Check** for Crawler and motor for noise, hesitation and binding.
- 3.3.7.12 **Adjust** as needed.
- 3.3.7.13 **Move** the Forward/Stop/Reverse to the STOP position.

The Motorized Crawler is ready for operation.

3.3.8 Replacing the Motorized Crawler Motor Shaft (30).

- 3.3.8.1 **Disconnect** the Motor Control Box (35) from the power source.
- 3.3.8.2 **Unscrew** Motorized Crawler Connector (31) from the Crawler Body (5).
- 3.3.8.3 **Unscrew** 1/4"-20 Self Lock Nut (37) from the 1/4"-20 X 1" Hex Head Cap Screws.
- 3.3.8.4 **Unscrew** and **remove** the 4 screws (A) from the front of the transmission of the 90vdc Motor (32).
- 3.3.8.5 **Remove** the 90vdc Motor (32) from the Motor Mounting Bracket (38).
- 3.3.8.6 **Remove** the transmission from the 90vdc Motor (32).
- 3.3.8.7 **Loosen** Setscrew (C).
- 3.3.8.8 **Slide** the Helical Gear (B) off the Motor Shaft (30)
- 3.3.8.9 **Slide** the Helical Gear (B) on to the new Motor Shaft (30).
- 3.3.8.10 **Align** the dimple on the new Motor Shaft (30) with the Helical Gear (B) in the Helical Gear (B).
- 3.3.8.11 **Tighten** Helical Gear (B)
- 3.3.8.12 **Install** the transmission onto the 90vdc Motor (32).
- 3.3.8.13 **Install** and **tighten** the 4 screws (A) in the front of the transmission of the 90vdc Motor (32).
- 3.3.8.14 **Place** the Motorized Crawler Connector (31) in the hole of the Motor Mounting Bracket (38).
- 3.3.8.15 **Place** the Motor Shaft (30) into the Motorized Crawler Connector (31) and **align** holes in Motor Mounting Bracket (38) with holes in feet of 90vdc Motor (32).
- 3.3.8.16 **Fasten** the 90vdc Motor (32) to the Mounting Bracket (38) using the 1/4"-20 Self Lock Nut (37) from the 1/4"-20 X 1" Hex Head Cap Screws that were previously removed.

Follow the Instruction 3.3.7 for Installation of Motorizing Kit (03-0116-A07, A08)

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 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 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 details 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, 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. 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.



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