

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

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Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

General Description

The Mathey Dearman is versatile: each clamp can be used to fit-up Pipes, elbows, Tees, Elbows, Weld-on Valves and other pipefitting. Mathey Dearman clamps are available in Light Duty, Heavy Duty and Extra-Heavy Duty Models.

Read and understand these instructions prior to using the Mathey Dearman Chain Clamp. If there a doubt about the set-up of the clamp or an application that the clamp is to perform, Contact Mathey Dearman Inc. at (800) 725-7311.

Picture of the Single Screw Chain Clamp

- **Single Jackscrew Chain Clamp**

Will typically align and reform out of round mating pipe up to schedule 40 wall thickness. Where not reforming is required of mating pipe, wall thickness thicker than schedule 40 can be aligned. The distance between the pipe and the bottom of the raised portion of the Jackscrew is less than the Double jackscrew chain clamp and universal chain clamp. This makes it a little more difficult if you are running your root pass with a Mig or Tig torch.

- **Dearman Lite Single Jackscrew Chain Clamp**

Is made from the same type and quality material as the standard Dearman Lite Single Jackscrew Chain Clamp. The Dearman Lite Single Jackscrew Chain Clamp will typically align pipes to schedule 40 wall thickness. The Dearman Lite clamp is capable of some reforming see the Specification chart 1 for details.

Picture of the Double Screw Chain Clamp

- **Double Jackscrew Chain Clamp**

Will typically align and reform out of round the mating pipe and fit-up pipe up to schedule 40 wall thickness. This model is recommended for use where a large degree of “Hi-Lo” exists. When no reforming is required of mating pipe or fit-up pipe, wall thicknesses thicker than schedule 40 can be aligned. This is an excellent clamp to use where full circle welding is required

- **Dearman Lite Double Jackscrew Chain Clamp**

Is made from the same type and quality material as the standard Dearman Lite Double Jackscrew Chain Clamp. The Dearman Lite Double Jackscrew Chain Clamp will typically align pipes to schedule 40 wall thickness. The Dearman Lite clamp is capable of some reforming see the Specification chart 1 for details.

Picture of the Universal Chain Clamp

- **Universal Chain Clamp**

The “Sliding Jackbar” design of the Universal Chain Clamp allows the Jackscrew to be positioned on either side of the weld. Allows 100% weld and grind without removal of the clamp. The clamp is ideal for the alignment and reforming pipes, elbows, tees and mitered joints to schedule 40. It is capable of aligning pipe to schedule 80, where reforming is not required.

Picture of the Mini-Fit Chain Clamp

- **Mini-fit**

Is used to fit-up and align small diameter pipes and fitting for subsequent welding operation. The lightweight and simple design makes the Mini-Fit ideal for light duty applications, where “out-of-round” problems do not exist. Excellent for use on conduit, copper pipes and thin wall pipe or tubing.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp Specifications

Chart 1 **Mathey Dearman Single Screw Chain Clamp**

Model	Net Weight/ KG	Operating Range Inches - MM	Alignment Pipe Schedule *	Reforming Pipe Schedule *	Clearance Required around pipe	Clearance Required on mating pipe or fitting	Clearance Required on fit-up pipe
D230-A	7 / 3	¼ - 4 / 6 - 102	40	20			
D230-ASS	7 / 3	¼ - 4 / 6 - 102	40	20			
D230	7 / 3	¾ - 8 / 19 - 204	40	20			
D230-SS	7 / 3	¾ - 8 / 19 - 204	40	20			
D231	21 / 9	1 - 8 / 25 - 203	80	40			
D231SS	21 / 9	1 - 8 / 25 - 203	80	40			
D231LT	11 / 5	1 - 12 / 25 / 305	40	20			
D232	43 / 19	4 - 16 / 102 - 406	80	40			
D232SS	43 / 19	4 - 16 / 102 - 406	80	40			
D232LT	24 / 11	4 - 20 / 102 - 508	40	20			
D232LTSS	24 / 11	4 - 20 / 102 - 508	40	20			
D233	108 / 49	10 - 36 / 254 - 914	80	40			
D233SS	108 / 49	10 - 36 / 254 - 914	80	40			
D233LT	62 / 28	6 - 36 / 152 - 914	40	20			
D233LTSS	62 / 28	6 - 36 / 152 - 914	40	20			
D234	170 / 77	10 - 54 / 254 - 1372	80	40			
D234SS	170 / 77	10 - 54 / 254 - 1372	80	40			

Warning: The Mathey Dearman Chain Clamp is designed as tool for the reforming and accurate alignment of pipe, pipe fittings, flanges and weld-on valves for welding. It is not intended to support or lift the entire length of the pipe. Always exercise extreme caution when using this product.

* **Warning:** Reforming and Alignment capacity will vary depending on pipe diameter, wall thickness and pipe Tensile strength.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Chart 2 Mathey Dearman Double Screw Chain Clamp

Model	Net Weight/ KG	Operating Range Inches - MM	Alignment Pipe Schedule *	Reforming Pipe Schedule *	Clearance Required around pipe	Clearance Required on mating pipe or fitting	Clearance Required on fit- up pipe
D250	27 - 12	1 – 8 / 25 - 203	160	40			
D250SS	27 - 12	1 – 8 / 25 - 203	160	40			
D249	70 - 32	4 – 16 / 102 - 406	160	40			
D249SS	70 - 32	4 – 16 / 102 - 406	160	40			
D249LT	29 /13	4 –20 / 102- 508	40	20			
D249LTSS	29 /13	4 –20 / 102- 508	40	20			
D235	150 / 68	10 – 36 / 254 - 914	160	40			
D235SS	150 / 68	10 – 36 / 254 - 914	160	40			
D235LT	68 / 31	6 – 36 / 152 - 914	40	20			
D235LTSS	68 / 31	6 – 36 / 152 - 914	40	20			
D236	184 / 83	10 – 54 254 - 1372	160	40			
D236SS	184 / 83	10 – 54 254 - 1372	160	40			

Warning: The Mathey Dearman Chain Clamp is designed as tool for the reforming and accurate alignment of pipe, pipe fittings, flanges and weld-on valves for welding. It is not intended to support or lift the entire length of the pipe. Always exercise extreme caution when using this product.

* **Warning:** Reforming and Alignment capacity will vary depending on pipe diameter, wall thickness and pipe tensile strength.

Chart 3 Mathey Dearman Universal Chain Clamp

Model	Net Weight/ KG	Operating Range Inches - MM	Alignment Pipe Schedule *	Reforming Pipe Schedule *	Clearance Required around pipe	Clearance Required on mating pipe or fitting	Clearance Required on fit- up pipe
D2250	27 - 12	1 – 8 / 25 - 203	80	40			
D2250SS	27 - 12	1 – 8 / 25 - 203	80	40			
D2249	70 - 32	4 – 16 / 102 - 406	80	40			
D2249SS	70 - 32	4 – 16 / 102 - 406	80	40			
D2235	145 / 65	10 – 36 / 254 - 914	80	40			
D2235SS	145 / 65	10 – 36 / 254 - 914	80	40			

Warning: The Mathey Dearman Chain Clamp is designed as tool for the reforming and accurate alignment of pipe, pipe fittings, flanges and weld-on valves for welding. It is not intended to support or lift the entire length of the pipe. Always exercise extreme caution when using this product.

* **Warning:** Reforming and Alignment capacity will vary depending on pipe diameter, wall thickness and pipe tensile strength.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Chart 4 Chain Clamp Assemblies

Model	Main Block Qty. Req. - 1	Jackbar	Qty of Jackbars Req.	Fine Adjustment Qty. Req. - 1	Chain	Feet of Chain Req.	Level and Support Device Qty. Req. - 1	Connecting link Qty. Req. - 1
D230-A	DXL-524	DXL-523	2	DXL-200	DA-300	1.7	N/A	DA-301
D230-ASS	DXL-524	DXL-523S	2	DXL-200	DA-300S	1.7	N/A	DA-301
D230	DXL-524	DXL-523	2	DXL-200	DA-300	2.7	D/A	DA-301
D230-SS	DX-524	DXL-523S	2	DXL-200	DA-300S	2.7	N/A	DA-301
D231	DA-100	DA-500S	3	DA-200	DA-300	2.7	DA-400	DA-301
D231SS	DA-100	DA-500S	3	DA-200	DA-300S	2.7	DA-400	DA-301S
D231LT	DXL-524	DXL-523	5	DXL-200	DA-300	4	N/A	DA-301
D232	DB-100	DB-500S	7	DB-200	DB-300	5	DB-400	DB-301
D232SS	DB-100	DB-500S	7	DB-200	DB-300S	5	DB-400	DB-301S
D232LT	DA-100	DA-500S	7	DA-200	DA-300	7	DA-400	DA-301
D232LTSS	DA-100	DA-500S	7	DA-200	DA-300S	7	DA-400	DA-301S
D233	DC-100	DC-500S	8	DC-200	DC-300	10	DC-400	DC-301
D233SS	DC-100	DC-500S	8	DC-200	DC-300S	10	DC-400S	DC-301S
D233LT	DB-100	DB-500S	10	DB-200	DB-300	10	DB-400	DB-301
D233LTSS	DB-100	DB-500S	10	DB-200	DB-300S	10	DB-400	DB-301S
D234	DC-100	DC-500S	13	DC-100	DC-300	15	DC-400	DC-301
D234SS	DC-100	DC-500S	13	DC-100	DC-300S	15	DC-400S	DC-301S
D250	DA-100	DA-600S	3	DA-200	DA-300	2.7	DA-400	DA-301
D250SS	DA-100	DA-600S	3	DA-200	DA-300S	2.7	DA-400	DA-301S
D249	DB-100	DB-600S	7	DB-200	DB-300	5	DB-400	DB-301
D249SS	DB-100	DB-600S	7	DB-200	DB-300S	5	DB-400	DB-301S
D249LT	2DA-100	DA-600S	7	DA-200	DA-300	7	DA-400	DA-301
D249LTSS	DA-100	DA-600S	7	DA-200	DA-300S	7	DA-400	DA-301S
D235	DC-100	DC-600S	8	DC-200	DC-300	10	DC-400	DC-301
D235SS	DC-100	DC-600S	8	DC-200	DC-300S	10	DC-400S	DC-301S
D235LT	DB-100	DB-600S	8	DB-200	DB-300	10	DB-400	DB-301
D235LTSS	DB-100	DB-600S	8	DB-200	DB-300S	10	DB-400	DB-301S
D236	DC-100	DC-600S	13	DC-200	DC-300	15	DC-400	DC-301
D236SS	DC-100	DC-600S	13	DC-200	DC-300S	15	DC-400S	DC-301S
D2250	DA-100	DA-800	3	DA-200	DA-300	2.7	DA-400	DA-301
D2250SS	DA-100	DA-800	3	DA-200	DA-300S	2.7	DA-400	DA-301S
D2249	DB-100	DB-800	7	DB-200	DB-300	5	DB-400	DB-301
D2249SS	DB-100	DB-800	7	DB-200	DB-300S	5	DB-400	DB-301S
D2235	DC-100	DC-800	8	DC-200	DC-300	10	DC-400	DC-301
D2235SS	DC-100	DC-800	8	DC-200	DC-300S	10	DC-400S	DC-301S

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Picture 1 - Similar to the front page of the Chain Clamp flyer (orange top). You must be able to see and identify the following by the following letter series (i.e.: A, B, C, D, E, f & G Only).

Picture 2 - Single screw Jackbar

Picture 3 - Double Screw Jackbar

Chart 5 Jackbar - A

Part Number	Jackbar Casting (A-1) 1 Req. per assembly	Chain Lock (A-2) 1 Req. per Assembly	Jackscrew (A-3) Requires 1 Per Assembly *	Thumbscrew (A-4) 1 Req. per assembly
DA-500S	DA-500C	DA-507	DA-501	22-38TS-034
DB-500S	DB-500C	DB-507	DA-500S	22-38TS-034
DC-500S	DC-500C	DB-507	DC-501	22-38TS-034
DA-600S	DA-600-C	DA-507	DA-701	22-38TS-114
DB-600S	DB-600-C	DB-507	DA-701	22-38TS-114
DC-600S	DC-600-C	DB-507	DC-501	22-38TS-114
DXL-523	DXL-523-C	N/A	DXL-525	22-38TS-114
DXL-523S	DXL-523-C	N/A	DXL-525S	22-38TS-114

* Note: 600 series Jackbar requires 2 per assembly all others require 1 per assembly

Picture 4 - Universal Jack Bar

Chart 6 Universal Jackbar - AA

Model	Jackbar Holder (AA-1)	Universal Jackbar (AA-2)	Jackscrew (AA-3) *	Thumb Screw (AA-4)	Locking Plate (AA-5)	Spring (AA-6)	Machine Screw (AA-7)	Self-locking Nut (AA-8)	Brass Screw (AA-9)
DA-800	DA-841	DA-820	DA-701	22-14TS-034	DA-842	DA-845	14-01C0-034	1L-01C0-000	DA-846
DB-800	DB-841	DB-820	DA-701	22-14TS-034	DB-842	DA-845	14-01C0-100	1L-01C0-000	DA-846
DC-800	DC-841	DC-820	DC-501	22-14TS-034	DA-842	DA-845	14-01C0-034	1L-01C0-000	DA-846

*Note: 2 of the AA-3 Jackscrew are required per assembly. All other assemblies require 1 each

Picture 5 - Main Block

Chart 7 Main Block - B

Model	Main Block (B1)	Chain Adj. Mech. (B-2)	Spring (B-3)	Chain Lock Pin (B-4)	Jackbar (B-5)	Jackscrew	Thumb Screw	SHCS Screw (B-8)	Self Locking Nut (B-9)	Safety Pin (B-10)
DA-100	DA-101	DA-102	DA-103	DA-131	DA-501	DA-820	22-14TS-034	11-38C0-200	1L-38C0-000	N/A
DB-100	DB-101	DB-102	DB-103	DB-131	DA-701	DB-820	22-14TS-034	11-12C0-300	1L-12C0-000	N/A
DC-100	DC-101	DC-102	DB-103	DC-131	DC-820	DC-501	22-14TS-034	11-58C0-312	1L-58C0-000	DC-120

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Picture 6 - Fine Adjustment Mechanism

Chart 8 Fine Adjustment Mechanism - C

Model	Crank Housing (C-1)	Piston (C-2)	Crank Handle (C-3)	Stud (C-4)	Flat Washer (C-6)	Collar (C-7)
DA-200	DA-201	DA-202	DB-426	DB-424	12-0012-F00	DB-425
DB-200	DB-201	DB-202	DC-426	DC-402	12-0058-F00	
DC-200	DC-201	DC-206	DC-205	DC-202	12-0100-F00	DC-203

Picture 7 - Level and Support Device

Chart 9 Level and Support Device - D

Model	L & S Frame (D-1)	Crank Housing (D-2)	L & S Piston (D-3)	Stud (D-4)	Crank Handle (D-5)	Chain (D-6)	Clamping Screw (D-7)	Cap Screw (D-8)	Flat Washer (D-9)	Collar (D-10)	Yoke (D-11)
DA-400	DA-402	DA-420	DA-411	DA-424	DA-426	DA-440	DA-406	10-38C0-034	12-0038-F00	DA-425	DA-408
DB-400	DB-402	DA-201	DB-411	DB-424	DB-426	DB-440	DA-406	10-12C0-114	12-0012-F00	DB-425	DB-409
DC-400	N/A	DB-201	DC-411	DC-424	DC-426	DC-440	DC-501	N/A	12-58C0-F00	DC-425	DC-409
DC-400S	N/A	DB-201	DC-411	DC-424	DC-426	DC-440	DC-501	N/A	12-58C0-F00	DC-425	DC-409

Picture 8 - Jackbar Spacing Screws

Picture 9 – Universal Jackbar Spacing Screw

Chart 10 Spacing Screw – E *

Model	Where used	Bracket E-1	Spacing Screw (E-2)	Cap Screw (E-3)	Lock Nut (e-4)
DA-570	Use with DA-500S and DA-600S single or double Jackbars when working with carbon steel	DA-572	DA-571	10-14C0-112	1L-14C0-000
DA-570S	Use with DA-500S and DA-600S single or double Jackbars when working with stainless steel	DA-572	DA-571S	10-14C0-112	1L-14C0-000
DB-570	Use with DB-500S and DB-600S single or double Jackbars when working with carbon steel	DB-572	DB-571	10-14C0-200	1L-14C0-000
DB-570S	Use with DB-500S and DB-600S single or double Jackbars when working with stainless steel	DB-572	DB-571S	10-14C0-200	1L-14C0-000
DC-570	Use with DC-500S and DC-600S single or double Jackbars when working with carbon steel	DC-572	DB-571	10-14C0-200	1L-14C0-000
DC-570S	Use with DC-500S and DC-600S single or double Jackbars when working with stainless steel	DC-572	DB-571S	10-14C0-200	1L-14C0-000
DA-870	Use on DA-100 Main Block and DA-800 Universal Jackbar when working with carbon Steel	DA-875	DA-571	N/A	N/A
DA-870S	Use on DA-100 Main Block and DA-800 Universal Jackbar when working with stainless Steel	DA-875	DA-571S	N/A	N/A
DB-870	Use on DB-100 Main Block and DB-800 Universal Jackbar when working with carbon Steel	DB-875	DB-571	N/A	N/A
DB-870S	Use on DB-100 Main Block and DB-800 Universal Jackbar when working with stainless Steel	DB-875	DA-571S	N/A	N/A
DC-870	Use on DC-100 Main Block and DC-800 Universal Jackbar when working with carbon Steel	N/A	DB-571	N/A	N/A
DC-870S	Use on DC-100 Main Block and DC-800 Universal Jackbar when working with stainless Steel	N/A	DB-571S	N/A	N/A

*Note The D230 series and the D231LT series is not available with spacing screws.

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Adding and Removing Chain and Jackbars

The Chain Clamp is adjustable to over 100 fit-ups on a variety of pipe sizes, fittings weld on valves and flanges. Jackbars (A) may be added or removed as required. Remove the chain stop (H) located at the end of the chain (E) opposite the Fine Adjustment Mechanism (C), disengage the Chain Adjustment Mechanism (B-2) and remove the chain from the main block (B-1). Add additional Chain to the Clamp by using the Chain Connecting Link (F) specified for the clamp, and then slide the required number of additional Jackbars required on the chain. Rethread chain through the block, making sure the Chain Adjustment is in proper contact with the chain and replace chain stop. Remove Jackbars in the same manner.

To determine the chain needed for a particular use the following formula.

Pipe Diameter (inches) X 3.1416 (π) = Circumference of pipe + 12" = Chain Length required

A Jackbar should be added for every foot of chain that is added.

Warning: Under no circumstance should additional chain should be added to the Dearman Lite Series to increase it's operating range.

Initial Chain Clamp Set-up and Operation

Set-up and operation of all Mathey Dearman Chain Clamps are the same with a few changes.

- Step 1** Remove the Chain Clamp from its storage container. Place the clamp on the floor or table. Place the Fine Adjustment Assembly (C) to your right if you are right handed and opposite if you are left handed.
- Step 2** Determine the circumference of the pipes, fittings or valves that you are going to align or reform. Release the Chain Adjustment Mechanism (B-2) and pull out enough chain to go around the pipes, fittings or valves that you are going to align or reform. You may need to remove some the Jackbar Assemblies (A) depending on the diameter of pipe that you are working with.
- Note:** On the 10 - 36 and 10 – 54 inch clamps it is necessary to remove the Chain Adjustment Mechanism Safety Pin (B-10) from the Main Block Assembly (B) in order to pull the chain out of the main block.
- Step 3** Loosen the Thumbscrew (A-4) on the Jackbar Assemblies. Place the Jackbar Assemblies an equal distance apart along the chain and retighten the Thumbscrew.
- Note:** For the Universal Jackbar Clamp, Loosen the Brass Knurled Head Screw (AA-9) located underneath the universal jackbar
- Step 4** If necessary rotate the Jackscrews (A-3) until they do not extend below the bottom of the Jackbar Assembly.
- Note:** Loosen the Thumbscrew (AA-4) of the Universal Jackbar Assembly (AA) and center the Universal Jackbar (AA-2) in the Jackbar Holder Assembly (AA-1).
- Step 5** Place the Chain Lock Pin (B-4) over the Universal Jack bar (B-5). In the case of the 10 – 36 and 10 – 54 inch clamps place the Chain Adjustment Mechanism Safety Pin over the Universal Jackbar.

Picture illustration such as page 25 top of page

- Step 6** Grasp the Main Block and the Fine Adjustment Assembly and wrap it around the pipe, making sure the Jackscrew (A-4) is on the pipe facing the area to be welded.
- Note:** When installing the clamp on the pipe make sure the Chain Lock Pin or the Chain Adjustment Mechanism Safety Pin does not get caught under the universal Jackbar.
- Note: Universal Chain Clamp** – Make sure the Brass Knurled Head Screw is facing away from the weld joint.
- Step 7** Place the ears of the Fine Adjustment Assembly in the notch portion of the main block

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Picture illustration such as page 25 top of page

Step 8 Place the Chain Lock Pin into the Main Block.

Note: Make sure the chain is under the Chain Lock Pin as viewed from the top of the main block.

Picture illustration such as page 25 bottom of page

Step 9 Grasp Main Block with the left hand and the end of the Chain (E) with the left hand. Pull chain through the Main Block until the Jackbars make contact with the pipe.

Warning: Jackbars at this time should be spaced at an equally distance around the pipe. If Jackbars are not equally spaced around the pipe, space them at an equal distance at this time.

Step 10 Rotate the Crank Handle (C-3) of the Fine Adjustment Assembly clockwise until the clamp is tight on the pipe.

Step 11 Rotate the Jackscrew clockwise until they make contact with the pipe and back off 1 full turn. This distance may vary depending on the out of round condition of the pipes, fittings or valves that you are working with.

Step 12 Rotate the Crank Handle of the Fine Adjustment Assembly counterclockwise until the clamp is loose on the pipe.

Step 13 Slide the Clamp out over the edge of the pipe until:

13-A Single Screw Chain Clamp - The Single Jackbars should be placed on the pipe, fitting or valve, so that the distance between the jackscrews and the base of the Jackbars (A-1) is equal.

13-B Double Screw Chain Clamp - The Jackscrews of the Double Jackbar Assemblies should be placed at an equal distance on either side of the weld joint.

13-C Universal Chain Clamp - The Universal Jackbar Assemblies should be placed over the weld joint so that the distance between the Jackscrew and the weld joint and the distance between the Jackbar Holder Assembly and the weld joint are equal.

Note: Distance may vary slightly depending on how much working area there is on the fit-up pipe, fitting or valve.

Picture illustration such as page 27 bottom of page

Step 14 Rotate the Crank Handle of the Fine Adjustment Assembly clockwise until the clamp is tight on the pipe. The clamp is now ready to accept any pipe, fitting or valve the same size as the fit-up pipe, fitting or valve.

Warning: Make sure the Main Block and the Jackbars are in full contact before doing any of the following procedures. If Main Block and Jackbars are not in contact loosen clamp and adjust The Main Block and Jackbar until they are in full contact and retighten clamp.

Warning: The Mathey Dearman Chain Clamp is designed as tool for the reforming and accurate alignment of pipe, pipe fittings, flanges and weld-on valves for welding. It is not intended to support or lift the entire length of the pipe. Always exercise extreme caution when using this product.

Picture Chain Clamp doing straight pipe fit-up as on page 4 of Literature for chain clamps

Fit-up of pipe to pipe without use of the Level and Support Device

Step 15 Mount the Pipe into the Jackbars of the chain clamp.

Step 16 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

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Step 17 Check the fit-up pipe and the mating pipe to find the section of the 2 pipes is the farthest point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the pipes are in alignment.

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

To check HI- LO on the inside or outside diameter pipes, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E Metric – D253M

Step 18 The pipes are now ready for welding

Picture of Clamp such as on page 24 at the top of the page

Fit-up of pipe to pipe using the Level and Support Device

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Place Pipe into throat of the Level and Support Frame (D-1) with the Clamping Screw (D-7) facing outward and tighten the Clamping screw.

Step 17 Mount the Pipe into the Jackbars of the chain clamp.

Warning: The Level and support Device should never be used as the sole support of the mating Pipe.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block.

Step 19 Rotate the Crank handle clockwise or counterclockwise until the end of the pipe makes the desired amount of contact with the end of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

Step 21 Check the fit-up pipe and the mating pipe to find the section of the 2 pipes is the farthest point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the pipes are in alignment.

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

To check HI- LO on the inside or outside diameter pipes, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E Metric – D253M

Step 22 The pipes are now ready for welding.

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Picture Chain Clamp doing fit-up as on page 4 of Literature for chain clamps

Fit-up of Elbow with Elbow turned Upward

Follow procedures in Initial Setup and Operation to this point.

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Place Elbow into throat of the Level and Support Frame (D-1) with the Clamping Screw (D-7) facing outward and tighten the Clamping screw.

Step 17 Mount the elbow into the Jackbars of the chain clamp with the elbow facing upward.

Warning: The Level and support Device should never be used as the sole support of the mating Elbow.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block

Step 19 Rotate the Crank handle clockwise or counterclockwise until the end of the elbow makes the desired amount of contact with the end of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

Warning: The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Step 21 Check the fit-up pipe and the mating elbow to find the section of the 2 parts, that is the farthest point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the 2 parts are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment.

To check HI- LO on the inside or outside diameter of the pipe and elbow, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E / Metric – D253M

The Pipefitter's Protractor and Square can be used to check the squareness of the top of the elbow to the outside of the fit-up pipe. Small PPS – D239S / Large PPS / D239L

Step 22 The pipe and elbow is now ready for welding.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Picture Chain Clamp doing fit-up as on page 4 of Literature for chain clamps

Fit-up of Elbow with Elbow turned Downward

Follow procedures in Initial Setup and Operation to this point.

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Attach the Outside of the elbow to the backside of the Level and Support Frame (D-1) with a Hold-Down Clamp as illustrated in the photograph.

Step 17 Mount the elbow into the Jackbars of the chain clamp with the elbow facing downward.

Warning: The Level and support Device should never be used as the sole support of the mating Elbow.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block

Step 19 Rotate the Crank handle clockwise or counterclockwise until the end of the elbow makes the desired amount of contact with the end of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

Warning: The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Step 21 Check the fit-up pipe and the mating elbow to find the section of the 2 parts, that is the farthest point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the 2 parts are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment.

To check HI- LO on the inside or outside diameter of the pipe and elbow, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E / Metric – D253M

The Pipefitter's Protractor and Square can be used to check the squareness of the top of the elbow to the outside of the fit-up pipe. Small PPS – D239S / Large PPS / D239L

Step 22 The pipe and elbow is now ready for welding.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Picture Chain Clamp doing fit-up as on page 4 of Literature for chain clamps

Fit-up of Flange

Follow procedures in Initial Setup and Operation

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Place one of the holes of the flange into throat of the Level and Support Frame (D-1) with the Clamping Screw (D-7) facing the side away from the face of the flange and tighten the Clamping screw.

Step 17 Mount the side opposite the flange face into the Jackbars of the chain clamp with the elbow facing upward.

Warning: The Level and support Device should never be used as the sole support of the mating Flange.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block

Step 19 Rotate the Crank handle clockwise or counterclockwise until the Face of the flange is at the desire angle to the outside or inside diameter of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

Warning: The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Step 21 Check the fit-up pipe and the mating flange to find the section of the 2 parts, that is the farthestmost point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the 2 parts are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment.

To check HI- LO on the inside or outside diameter of the pipe and elbow, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E / Metric – D253M

The Pipefitter's Protractor and Square can be used to check the squareness of the top of the elbow to the outside of the fit-up pipe. Small PPS – D239S / Large PPS / D239L

The Flange Line-up Pins or the 2 Hole Leveler can be used to check the alignment of the flange holes. Flup – 05-0100-000 / Threaded Flup – 05-0100-007 / Small 2 Hole Leveler – D246 / Large 2 Hole Leveler – D247

Step 22 The pipe and elbow is now ready for welding.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Picture Chain Clamp doing fit-up as on page 4 of Literature for chain clamps

Fit-up of In-line Tee

Follow procedures in Initial Setup and Operation

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Place one end of the longest portion of the tee into the throat of the Level and Support Frame (D-1) with the Clamping Screw (D-7) facing upward and tighten the Clamping screw.

Step 17 Mount the side opposite side of the tee into the Jackbars of the chain clamp with the elbow facing upward.

Warning: The Level and support Device should never be used as the sole support of the mating Tee.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block

Step 19 Rotate the Crank handle clockwise or counterclockwise until the Face of the tee is at the desire angle to the outside or inside diameter of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

Warning: The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Step 21 Check the fit-up pipe and the mating tee to find the section of the 2 parts, that is the farthest point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the 2 parts are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment.

To check HI- LO on the inside or outside diameter of the pipe and elbow, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E / Metric – D253M

The Pipefitter's Protractor and Square can be used to check the squareness of the top of the elbow to the outside of the fit-up pipe. Small PPS – D239S / Large PPS / D239L

Step 22 The pipe and elbow is now ready for welding.

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Picture Chain Clamp doing fit-up as on page 4 of Literature for chain clamps

Fit-up of Cross-tee vertical

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Place one end of the longest portion of the tee into the throat of the Level and Support Frame (D-1) with the Clamping Screw (D-7) facing away from the short side of the tee and tighten the Clamping screw.

Step 17 Mount the short portion of the tee into the Jackbars of the chain clamp with long portion of the tee to which the Level and Support Device is mounted facing upward.

Warning: The Level and support Device should never be used as the sole support of the mating Tee.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block

Step 19 Rotate the Crank handle clockwise or counterclockwise until the Face of the tee is at the desire angle to the outside or inside diameter of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal to the side of the weld where it is needed and retighten the Thumbscrew.

Warning: The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Step 21 Check the fit-up pipe and the mating tee to find the section of the 2 parts, that is the farthermost point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the 2 parts are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment.

To check HI- LO on the inside or outside diameter of the pipe and elbow, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E / Metric – D253M

The Pipefitter's Protractor and Square can be used to check the squareness of the top of the elbow to the outside of the fit-up pipe. Small PPS – D239S / Large PPS / D239L

Step 22 The pipe and elbow is now ready for welding

Parts and Operating Manual for Mathey Dearman Single and Double Screw Chain Clamp

Picture Chain Clamp doing fit-up as on page 4 of Literature for chain clamps

Fit-up of Cross-tee horizontal

Step 15 Turn the Crank Handle (C-3) counterclockwise until the Level and Support Piston (D-3) is Extending out of the Crank Housing (D-2) Piston about 2 to 3 inches

Note: The Crank housing has a small hole at the end where the ears protrude from the Crank Housing. If a Solid surface should appear in the opening, rotate the Crank Handle clockwise until the solid surface no longer is seen in the hole.

Step 16 Place the tee on its side and lay the back of the Level and Support Frame (D-1) on the Tee with the throat facing the short side of the tee. Attach the Level and Support Device to the tee with a Hold-Down Clamp (Small – D244 or Large – D245)

Step 17 Mount the short portion of the tee into the Jackbars of the chain clamp with side of the tee to which the Level and Support Device is mounted facing upward.

Warning: The Level and support Device should never be used as the sole support of the mating Tee.

Step 18 Put the Chain (D-8) of the Level and Support Device into the Level and Support Device Hook located on the upper portion on the Main Block

Step 19 Rotate the Crank handle clockwise or counterclockwise until the side of the tee is at the desire angle to the outside or inside diameter of the mating pipe, fitting or valve.

Step 20 Loosen the Thumbscrew in the Main Block and move the Universal Jackbar to the side of the weld where it is needed and retighten the Thumbscrew.

Warning: The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Step 21 Check the fit-up pipe and the mating tee to find the section of the 2 parts, that is the farthermost point from pipe centerline. Tighten the Jackscrew over this point until the outside or inside diameters of the 2 parts are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished

Note: It will be necessary to loosen the Jackscrew(s) opposite the high point to bring the outside or inside diameters of the pipes into alignment.

To check HI- LO on the inside or outside diameter of the pipe and elbow, the best tool to use is the Mathey Dearman Q. C. Welders gauge. English – D253E / Metric – D253M

The Pipefitter's Protractor and Square can be used to check the squareness of the top of the elbow to the outside of the fit-up pipe. Small PPS – D239S / Large PPS / D239L

Step 22 The pipe and elbow is now ready for welding

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Safety

1. The Mathey Dearman Chain Clamp is not intended to support or lift the entire length of the pipe.
2. Reforming and Alignment capacity will vary depending on pipe diameter, wall thickness and pipe tensile strength. If in doubt contact Mathey Dearman Inc. at (800) 725-7311.
3. Make sure the Main Block and the Jackbars are in full contact before doing any of the following procedures. If Main Block and Jackbars are not in contact loosen clamp and adjust The Main Block and Jackbar until they are in full contact and retighten clamp.
4. The Level and support Device should never be used as the sole support of the pipe, fitting or valve.
5. Make sure the Chain Clamp is in full contact with the mating pipe, fitting or valve.
6. Use only the wrench provided with the clamp.
7. Never use a cheater bar in conjunction
8. Never use the clamp as a ground connection.
9. Always inspect the Chain Clamp prior to use.
10. The Level and support Device should never be used as the sole support of the pipe, fitting or valve.
11. The mating pipe, fitting or valve should not have a taper surface of more than 10 degrees at the point where the pad of the Jackscrew will contact the pipe.

Repair and testing procedures for Dearman Chain Clamps.

All assemblies referred to in this manual are in the Chain Clamp Brochure.

Inspection and repair Procedures

Equipment Required:

- a. Straight Edge
- b. Small Magnifying Glass
- c. Thread Gauge: 7/8 - 9NC Allen Head Cap Screw x 2" long (Used to test jackscrew thread hole in Jackbar in DD-500, DC-500S, DC-600S and DC-820).
- d. Thread Gauge: 5/8 - 11NC Allen Head Cap Screw x 2" long (Used to test jackscrew thread hole in Jackbar in DA-500S, DB-500S, DA-820, DB-820, DA-600S and DB-600S).
- e. Thread Gauge: 3/8 - 16NC Allen Head Cap Screw x 2" long (Used to test the thumbscrew hole for Chain Lock in DD-500, DC-500S, DC-600S, DC-820, DA-500S, DB-500S, DA-820, DB-820, DA-600S and DB-600S).
- f. Thread Gauge: 1/4 - 20NC Allen Head Cap Screw x 2" long (Used to test the thumbscrew hole in Main Block).
- g. 12" Machinist rule
- h. 6" Dial Calipers

Note:

Only Grade 8 Allen Head Cap Screws should be used for the Thread Gauges, as these are the most resistant to wear.

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A Jackbar Assembly

A-1 Jackbar

- A-1-1 Check the surface of the Jackbar with a straight edge (item “a” of required equipment) to determine if the Jackbar is bent. The surfaces to check are:
- The surface “A” of the Jackbar that makes contact with the pipe.
 - The surface “B” into which the jack screw(s) (A-3) fit.

If the Jackbar is bent, the Jackbar should be replaced or it should be checked with x-ray or magnetic-particle testing to determine if there are any cracks prior to any further use.

- A-1-2 Check the threaded hole into which the Thumbscrew (A-2) and Jackscrew (A-3) fit for galled or missing threads.

If the threaded holes in the Jackbar for the Thumbscrew (A-2) or Jackscrew(s) (A-3) are galled or have missing thread, replace the Jackbar.

- A-1-3 Screw the appropriate Thread Gauge (items “c” and “d” of equipment required list) into the threaded hole of the Jackbar (A-1) into which the Jackscrew (A-3) threads. The Thread Gauge when screwed into the Jackbar should not exceed .010 thousands of an inch of play when moved in any direction.

If the play exceeds the maximum allowable tolerance replace the Jackbar.

- A-1-4 Screw the appropriate Thread Gauge (item “e” of equipment required list) into the threaded hole of the Jackbar (A-1) into which the Thumbscrew (A-4) threads. The Thread Gauge when screwed into the Jackbar should have no more than .010 thousands of an inch of play when moved in any direction.

If the play exceeds the maximum allowable tolerance replace the Jackbar.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating, welding and straightening of New Style Cast Jackbars or Old Style Jackbars.

A-2 Chain Lock

- A-2-1 The Jackbar (A-1) must have a Chain Lock (A-2) to function properly.

If the Chain Lock is missing, install a new Chain Lock (A-2).

- A-2-2 Check the Chain Lock, to make sure the points of the Chain Lock that contact the chain are not worn through.

If the Chain Lock is worn through, install a new Chain Lock (A-2).

A-3 Jackscrew

- A-3-1 Check the Jackscrew to make sure the tip, that contacts the pipe, will rotate freely without binding.

If the tip will not rotate or is difficult to turn, replace the Jackscrew.

- A-3-2 Check threads of the Jackscrew for galled or missing threads.

If there are galled or missing threads, replace the Jackscrew.

- A-3-3 Screw the Jackscrew (A-3) into the Jackbar (A-1). If play of the Jackscrew (A-3) in the Jackbar (A-1) exceeds 10 thousands of an inch do repair step A-1-3. If testing in repair step A-1-3 is within tolerance

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replace the Jackscrew. If testing in A-1-3 proves the Jackbar threads are out of tolerance replace the Jackbar.

Note: You should be able to turn the Jackscrew with your fingers.

A-3-4 Check the Jackscrew for straightness.

A bent Jackscrew will not function properly and should never be used. If it is bent, replace the Jackscrew.

A-4 Thumbscrew

A-4-1 Check threads of the Thumbscrew for galled or missing threads.

If there are galled or missing threads, replace the Thumbscrew.

A-4-2 Screw the Thumbscrew (A-4) into the Jackbar (A-1). If play of the Thumbscrew (A-4) in the Jackbar (A-1) exceeds 10 thousandths of an inch do repair step A-1-4. If testing in repair step A-1-4 is within tolerance replace the Thumbscrew (A-4). If testing in A-1-4 proves the threaded hole for Thumbscrew is out of tolerance replace the Jackbar.

* Not Required.

** Clamp has to be disassembled to replace. Not recommended and warranty will be voided.

B Main Block Assembly

B-1 Main Block

B-1-1 Check inside distance between side plates of Main Block. The inside distance between the side plates are:

Main Block	Distance
DA-100	1 1/4"
DB-100	2"
DC-100	2"

If the inside distance between the side plates spreads more than a 1/8", the Main Block (B) should be replaced. The distance between the side plates should never be less than the above distances listed. If the Main Block (B-1) is bent, the Main Block Assembly (B) should be replaced or it should be checked with x-ray or magnetic-particle testing to determine if there are any cracks prior to any further use.

B-1-2 Check the Main Block (B-1) wear, squareness to pipe surface and spreading of the side plates of the Main Block. The measurement for squareness can be taken by setting the Main Block (B-1) on a flat surface, as it would sit on a pipe. The side plates of the Main Block should sit flat on the pipe and should be perpendicular to the flat surface.

B-1-3 Screw the appropriate Thread Gauge (item "e" of equipment required list) into the hole of the Main Block (B-1) into which the Thumbscrew (B-7) threads. The Thread Gauge when screwed into the Main Block should not exceed .015 thousandths of an inch of play when moved in any direction.

If the play exceeds the maximum allowable tolerance replace the Main Block.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating, welding or straightening of the New Style Welded Main Block or Old Style Welded Main Blocks.

Health Hazard Warning: If there is excessive wear, the side plates of the Main Block are not square with each other or there is spreading of the side plates beyond the tolerance specified, it can cause the Main Block to

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fail or can cause damage to the Piston (C-2) of the Fine Adjustment (C). The result is possible failure of the Chain Clamp.

B-2 Chain Adjustment Latch

B-2-1 Check the Chain Adjustment Latch for visible cracks especially in the hole through which the Socket Head Cap Screw fits and the area that contacts the Chain (E).

If visible cracks are found, replace the Chain Adjustment Latch.

B-3 Spring

B-3-1 Check spring to see if it is stretched.

If Spring is stretch, replace Spring.

B-3-2 Check Spring for nicks and dents.

If nicks or dents are deeper than 25% of the diameter of the Spring wire replace the Spring.

B-4 Chain Lock Pin

B-4-1 Check the bar of the Chain Lock Pin Assembly to see if it is bent.

If the pin is bent more than 3-32", replace the Main Block Assembly (B).

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for any heating or welding of the Main Block Casting (B-1).

B-4-2 Check the area of the Chain Lock Pin joins the washer and chain for cracks.

If a crack is found, replace the Main Block Assembly (B).

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for any heating or welding to the Main block (B-1).

B-5 Universal Jackbar

B-5-1 Visibly check the Jackbar for cracks.

If cracks are found, replace the Universal Jackbar.

B-5-2 Check the Jackbar surfaces with a straight edge to determine if the Jackbar is bent.

If the Jackbar is bent, the Jackbar should be replaced or it should be checked with x-rayed or magnetic-particle testing to determine if there are any cracks.

B-5-3 Screw the appropriate Thread Gauge (items "c" and "d" of equipment required list) into the hole of the Universal Jackbar (B-5) into which the Jackscrew (B-6) threads. The Thread Gauge when screwed into the Jackbar should not exceed .010 thousands of an inch of play when moved in any direction.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for any heating, welding or straightening of the Universal Jackbar.

B-6 Jackscrew

B-6-1 Check the Jackscrew to make sure the tip, which contacts the pipe, will rotate freely without binding.

If the tip will not rotate or is difficult to turn, replace the Jackscrew.

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B-6-2 Check threads of the Jackscrew for galled or missing threads.

If there are galled or missing threads, replace the Jackscrew.

B-6-3 Screw the Jackscrew (B-6) into the Universal Jackbar (B-5). If play of the Jackscrew (B-6) in the Jackbar (B-5) exceeds 10 thousandths of an inch do repair step B-5-3. If testing in repair step B-5-3 is within tolerance replace the Jackscrew. If testing in B-5-3 proves the Jackbar threads are out of tolerance replace the Jackbar.

B-6-4 Check the Jackscrew for straightness

A bent Jackscrew will not function properly and should never be used. If it is bent, replace the Jackscrew.

B-7 Thumbscrew

B-7-1 Check threads of the Thumbscrew for galled or missing threads.

If there are galled or missing threads, replace the Thumbscrew.

B-7-2 Check the Thumbscrew for straightness.

If it is bent, replace the Thumbscrew.

B-7-3 Screw the Thumbscrew (A-4) into the Main Block (B-1). If play of the Thumbscrew (B-7) in the Main Block (B-1) exceeds 15 thousandths of an inch do repair step B-1-3. If testing in repair step B-1-3 is within tolerance replace the Thumbscrew (B-7). If testing in B-1-3 proves the threaded hole for Thumbscrew is out of tolerance replace the Main Block (B-1).

B-8 Socket Head Cap Screw

B-8-1 Check threads of the Socket Head Cap Screw for galled or missing threads.

If there are galled or missing threads, replace the Socket Head Cap Screw.

B-8-2 Check the shaft of the Socket Head Cap Screw for straightness. A bent shaft of the Socket Head Cap Screw will not allow the Chain Adjustment Latch to actuate properly.

If the shaft of the Socket Head Cap is bent, replace Socket Head Cap Screw.

B-9 Self-locking Nut

B-9-1 Check threads of the Self-locking Nut for galled or missing threads.

If there are galled or missing threads, replace the Self-locking Nut.

B-9-2 Check the Self-locking Nut to make sure it will lock on the threads of the Socket Head Cap Screw.

Warning: If the Self-locking Nut is not locking on the threads of the Socket Head Cap Screw, replace threads of the Self-locking Nut.

C Fine Adjustment

C-1 Crank Housing

C-1-1 Check the Crank Housing for any visible cracks.

If cracks are found, replace the Crank Housing.

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C-1-2 Check the Crank Housing for any deformation. If deformation is noted, check for cracks using x-ray or magnetic-particle testing.

If any crack is noted, the Crank Housing should be replaced.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating, welding or straightening of the Crank Housing.

C-2 Piston

C-2-1 Check the Piston with a straight edge for straightness.

If the Piston is bent, it should be replaced immediately.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for any heating, welding or straightening done to the Piston.

Health Hazard Warning: The use of a bent Piston (C-2) in the Fine Adjustment (C) can cause a Failure, with the result being failure of the Chain Clamp.

C-2-2 Check the threaded hole in the Piston for galled or missing threads. If the threads are galled or missing replace the Piston.

C-2-3 Check the hole in the Piston (C-2) at the point where the Chain (E) attaches for elongation.

If the hole in the Piston is elongated, the Piston should be replaced.

C-2-3 Screw the appropriate Thread Gauge (item "c", "d" or "e" of equipment required list) into the threaded hole of the Piston (C-2) into which the Threaded Stud (C-4) threads. The Thread Gauge when screwed into the Piston (C-2) should not exceed .010 thousands of an inch of play when moved in any direction.

C-3 Crank Handle

C-3-1 Check the Crank Handle for cracks especially in the area where the threaded shaft (C-4) is welded to the Crank Housing.

If the cracks are found in the area of the Crank Handle, replace the Fine Adjustment (C).

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for any heating, straightening or welding of the Crank Handle (C-3).

C-4 Threaded Stud

C-4-1 Check the threads of the Threaded Stud for galled or missing threads.

If the Threaded Stud is found to be galled or has missing threads, replace the Fine Adjustment (C).

C-4-2 Check the threads of the Threaded Stud (C-4) to see if it is bent. A bent Threaded Stud can make it difficult to turn the Crank Handle (C-3) to move the piston inward and outward in the Crank Housing (C-1).

If the Threaded Stud is bent and it is difficult to turn the Crank Handle (C-3), replace the Fine Adjustment (C).

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D Level and Support

D-1 Level and Support Frame

D-1-1 Check the Level and Support Frame for visible cracks.

If cracks are found, replace the Level and Support (D).

D-1-2 Check the Level and Support Frame for any deformation. If deformation is noted, check for cracks using x-rayed or magnetic-particle testing.

If any crack is noted, the Crank Housing should be replaced.

D-1-2 Screw the appropriate Thread Gauge (item “c”, “d” or “e” of equipment required list) into the threaded hole of the Level and Support Frame (D-1) into which the Clamping Screw (D-7) threads. The Thread Gauge when screwed into the Level and Support Frame (D-1) should not exceed .010 thousands of an inch of play when moved in any direction.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating of, welding or straightening of the Level and Support Frame.

D-2 Crank Housing

D-2-1 Check the Crank Housing for visible cracks.

If cracks are found, replace the Crank Housing.

D-2-2 Check the Crank Housing for any deformation. If deformation is noted, check for crack using x-rayed or magnetic-particle testing.

If any crack is noted, the Crank Housing should be replaced.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating , welding or straightening of the Crank Housing.

D-3 Level and Support Piston

D-3-1 Check the Piston with a straight edge for straightness.

If the Piston is bent, it should be replaced or it should be checked with x-rayed or magnetic-particle testing to determine if there are any cracks prior to any further use.

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating , welding or straightening of the Level and Support Piston

D-3-2 Check the threaded hole in the Piston for galled or missing threads.

If the threads are galled or missing replace the Piston.

D-3-3 Check the hole in the Piston (C-2) at the point where the Chain (E) attaches for elongation.

If the hole in the Piston is elongated , the Piston should be replaced.

D-4 Threaded Stud

D-4-1 Check the threads of the Threaded Stud for galled or missing threads.

If the Threaded Stud is found to be galled or has missing threads, replace the Fine Adjustment (C).

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- D-4-2 Check the threads of the Threaded Stud (C-4) to see if it is bent. A bent threaded stud can make it difficult
To turn the Crank Handle (C-3) to move the Piston inward and outward in the Crank Housing.

If the Threaded Stud is bent, replace the Level and Support (D).

D-5 Crank Handle

- D-5-1 Check the Crank Handle for cracks especially in the area where the threaded shaft (C-4) is welded to the Crank Housing.

If the area around the Crank Handle is cracked, replace the Level and Support (D).

Warning: Mathey Dearman Inc. will not warranty or accept any responsibility for heating, welding or straightening of the Crank Handle.

D-6 Level and Support Chain

- D-6-1 Check all links of the Chain for arc marks, which are made by welding machine.

If any arc marks are found at any point along the length of entire Chain, the entire length of the Chain should be replaced.

D-7 Clamping Screw

- D-7-1 Check the threads of the Clamping Screw for galled or missing threads.

If the Clamping Screw is found to be galled or has missing threads, replace the Clamping Screw (D-7).

- D-7-2 Check the threads of the Threaded Stud (C-4) to see if it is bent. A bent Threaded Stud can make it difficult to turn the Crank Handle (C-3) to move the Piston inward and outward in the Crank Housing.

If the Clamping Screw is bent galled or has missing threads, replace the Clamping Screw (D-7).

E Chain

- E-1 Lay the Chain on a flat surface. Grasp 2 sections of the Chain and pull inward and outward. Continue this process entire length of the Chain. The play in the outer plates of the 2 sections on either side of the Chain as measured with a 6" dial caliper (item "h" of equipment required list) should not exceed .010 thousands of an inch

If play between the outer plates on either side of the Chain exceeds the tolerance, the Chain should be replaced as the Chain adjustment Latch (B-2) will not properly engage into the Chain (E) causing the Chain Clamp to fail during operation.

- E-2 Check all links of the Chain for arc marks, which are made by welding machine.

If there are arc marks found at any point along the length of the entire Chain, the entire length of the Chain should be replaced.

- E-3 Check the Chain for open or missing rollers.
If there are open or missing roller in the Chain, replace the entire Chain.

- E-4 Check all link plates of the Chain for cracks.
If cracks are noted in the like plates, replace the entire Chain.

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- E-5 Check all Pins in the links of the Chain for cracks.
If cracks are noted in the Pins in the links of the Chain, replace the entire Chain.

Warning: The most common type of link plate failure is through the pitch hole or either the pin link plate or roller link plate. The most common cause of Chain failure is the Chain has been used beyond its ultimate tensile strength.

Warranty: Use of any Roller Chain or Conn-Link (F) other than the Chain supplied by Mathey Dearman Inc. will void the warranty of the Chain Clamp.

F Conn-Link

The Conn-Link connecting the Fine Adjustment (C) and the Chain (E) should never be reused.

G Spacing Screws (Optional)

G-1 Bracket Assembly

- G-1-1 Check the Bracket Assembly for cracks at the point where the Nut welds to the Bracket.

If cracks are found, replace the Bracket Assembly.

- G-1-2 Check threads of the Nut for galled or missing threads.

If there are galled or missing threads, replace the Bracket Assembly.

G-2 Spacing Screw

- G-2-1 Check the threads of the Spacing Screw for galled or missing threads.

If the Spacing Screw is galled or has missing threads, replace the Spacing Screw.

- G-2-2 Check the threads of the Spacing Screw to see if it is bent. A bent Spacing Screw can make it difficult to achieve the weld spacing between the pipes.

If the Spacing Screw is bent galled or has missing threads, replace the Level and Support (D).

Assembly Procedures for Chain Clamps

Assembly Equipment Required:

- | | | | |
|----|--------------------------|----|-------------------------|
| a. | 6" Needle Nose Pliers | b. | 5/16" Allen Wrench |
| c. | 3/8" Allen Wrench | d. | 1/2" Allen Wrench |
| e. | Flat head Screw Driver | f. | 6" Adjustable Wrench |
| g. | Hammer | h. | Chain Breaker |
| i. | 1/8" Drift Punch | j. | 3/16" Drift Punch |
| k. | 5/16" Drift Punch | l. | Small Disc Grinder |
| m. | 9/16" Combination wrench | n. | 3/4" Combination wrench |

Instruction for assembly of Chain Clamp Subassemblies.

Prior to any assembly of any Subassemblies of the Chain Clamp, all steps of the Inspection and Testing Procedures should be completed.

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A Jackbar Assembly

1. Lay the Jackbar on the table with Surface “A” making contact with the table.
2. Insert the Chain lock (A-2) with the opening facing upward into the rectangular hole of the Jackbar (A-1).
3. Close the open of the Chain Lock (A-2), so that it is retained on the Jackbar (A-1) and can not become separated from the Jackbar.
4. Thread the Thumbscrew (A-4) into the threaded hole above the Chain Lock 3 or 4 Turns.
5. Lubricate the Jackscrew(s) (A-3) with a light coat of a heat resistant grease such as Lubriplate 130-AA.
6. Insert the Jackscrew (A-3) into the threaded hole of the Jackbar (A-1). The Jackscrew should be able to be screwed into the Jackbar without the use of tools .
7. Repeat steps 1 – 5 until all Jackbars (A) for the Chain Clamp are assembled.

B Main Block

1. Insert the Thumbscrew (B-7) into threaded hole in the tab, which sticks out of the Main Block next to the square shaped hole in the side of the Main Block (B-1). Screw the Thumbscrew until the flush with the inside of the tab nearest the square hole.
2. Insert the Universal Jackbar (B-5) into the square hole in the side of the Main Block (B-1) until the Universal Jackbar extends an equal distance from the Main Block side plates.
3. Tighten the Thumbscrew (B-7) against the Universal Jackbar (B-5). The Thumbscrew should only be tightened enough to hold the Universal Jackbar in position.
4. Lubricate the Jackscrews (A-3) with a light coat of a heat resistant grease such as Lubriplate 130-AA.
5. Thread the Jackscrews (B-6) into the Universal Jackbar (B-5) until the pad sticks out about 1-inch.
6. Install loop portion of the Spring (B-3) into the loop at the bottom of the Chain Adjustment Latch.
7. Install the loop portion at the other end of the Spring (B-3) into the loop, which is welded, to the square tube between the Main Block (B-1) side plates using needle nose pliers (item “a” of assembly equipment required).
8. Install the Chain Adjustment Latch (B-2) between the side plates so that the Chain Adjustment Latch Handle is facing in the same direction as the Head of Thumbscrew (B-7).
9. Align the holes in the side plates of the Main Block (B-1) with the hole in the Chain Adjustment Latch (B-2).
10. Insert the Socket Head Cap Screw (B-8) into the aligned holes of the Main Block (B-1) and the Chain Adjustment Latch (B-2), until the head of the Socket Head Cap Screw (B-8) is flush with the side plate of the Main Block (B-1).
11. Install the Self Locking Nut (B-9) on the threaded portion of the Socket Head Cap Screw (B-8) sticking out of the side plate of the Main Block.
12. After tightening the Self Locking Nut (B-9), move the Chain Adjustment Latch (B-2) back and forward to make sure it operates freely.
13. Assembly of the Main Block is now completed

C Fine Adjustment

1. Lubricate the Threaded Stud (C-4) with a light coat of a heat resistant grease such as Lubriplate 130-AA.
2. Align the Slot of the Piston (C-2) with the hole in the Crank Housing (C-1).
3. Thread the Piston (C-2) on the Treaded Stud (C-4) by turning Crank Handle (C-3).
4. Assembly of the Fine Adjustment is now complete.

D Level and Support

1. Lubricate the Threaded Stud (C-4) with a light coat of a heat resistant grease such as Lubriplate 130-AA.
2. Align the Slot of the Piston (C-2) with the hole in the Crank Housing (C-1).

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3. Thread the Piston (C-2) on the Treaded Stud (C-4) by turning Crank Handle (C-3).
4. Align the Link at the end of the chain between the ears of the Piston (C-2) and press in the New Spring Pin (C-5).
5. Lubricate the Clamping Screw (D-7) with a light coat of a heat resistant grease such as Lubriplate 130-AA.
6. Thread the Clamping I Screw (D-7) into the thread hole of the Level and Support Frame (D-1).
7. The Level and Support Assembly is now completed.

E Chain

1. Check each link of the Chain to make sure it is moving freely. If the Chain is not moving freely, soak the Chain in lightweight machine oil.

Spacing Screws (Optional)

1. Screw the Spacing Screw (F-2) into the nut of the Bracket assembly. Do not use oil or grease to lubricate the Spacing Screw as this may contaminate the weld.

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Instruction for Assembly of Chain Clamp

Installing the Chain (E) in the Main Block Assembly (B)

1. Place the Main Block with the surface, which contacts the pipe facing upward.
2. Pull Chain Adjustment Latch (B-2) toward you to open Chain Adjustment Latch.
3. Insert the Chain (E) between the large round bar and the square bar until about 3 inch of chain is lying on the table.
4. Turn Main Block (B) over.
5. Install the Spacers (1 on either side of the Chain), Spacer Screw and Lock Nut to the Chain (E), which sticks out of the Main Block (B) about 3 inches.
6. Rotate the Main Block (B) counterclockwise, until the 3-inch piece of the Chain (E) sticking out of the Main Block is on your Left.
7. Install the Jackbars (A) on the Chain (E) with the Jackscrews facing toward you.
8. The installation of the Fine Adjustment (C) to the Chain (E) is as Follows:
 - a. Insert 2 of the connecting plates furnished with the Conn-Link (G) into the center of the Chain (E) and between the ears of the Piston (C-2) at the same time.
 - b. Insert the side plate with the 2 studs of the Conn-Link (G) into the Chain (C) and the Piston (C-2) of the Fine Adjustment (C) at the same time.
 - c. Insert the remaining connecting plate over the studs of the Conn-Link.
 - d. Roll the Chain (E) and Fine Adjustment with the side plate with the 2 studs lying flat on the table.
 - e. Peen with a Hammer the 2 studs until the studs are 25% bigger than studs were prior to peening.