



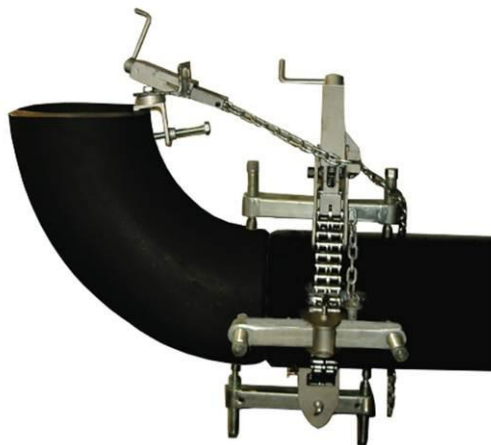
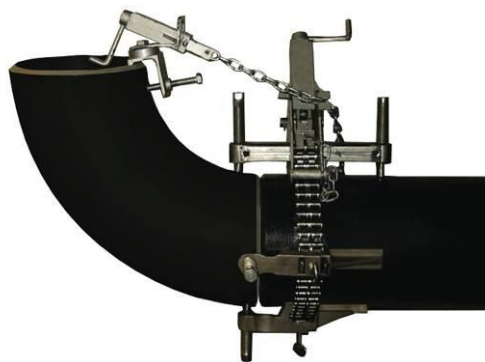
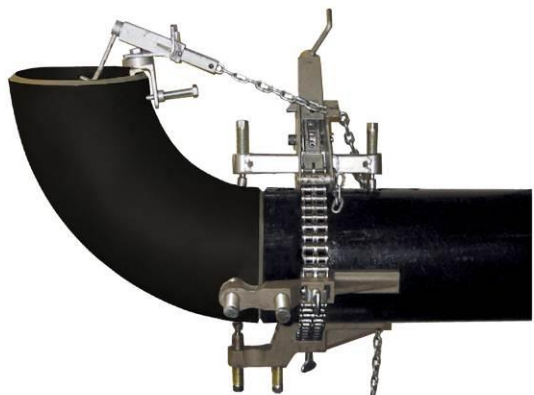
WHERE THERE'S PIPE, THERE'S MATHEY

_____ Machine Model

_____ Serial #



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



Revised: 2/28/2012
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WARNING: The Mathey Dearman Chain Clamp is designed 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.

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1.0 – SAFETY

Proper precautions should be taken when using the Single and Double Jackscrew Chain Clamp as with all heavy alignment equipment. A little common sense goes a long way towards preventing accidents involving your Mathey Dearman Chain Clamp.

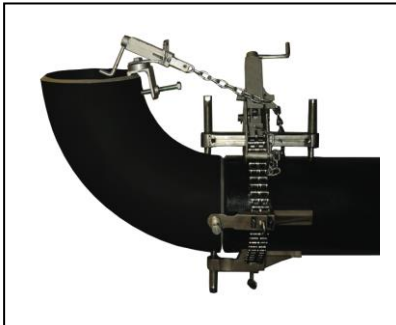
- The operator and maintenance person shall read and understand the Single and Double Jackscrew Chain Clamp parts and operating manual prior to attempting operation of the equipment.
- The operator and maintenance person shall read and understand the parts and operating manual prior to attempting operation or maintenance of the Single and Double Jackscrew Chain Clamp.
- Eye protection and protective clothing such as steel toed shoes and gloves shall be worn to protect the operator when using the chain clamp.
- Make sure loose clothing, tools, belts, etc. do not become entangled on the chain clamp.
- The periodic maintenance instructions must be followed in the Chain Clamp parts and operating manual.
- Never use the Chain Clamp for other than its intended purpose.
- Clear the general area where the Chain Clamp will be used of all trip hazards.
- The Mathey Dearman Chain Clamp is not intended to support or lift the entire length of the pipe.
- Never use the chain clamp as a ground for a plasma or welding systems
- Always check the chain clamp for defects such as arc marks, abrasions and nicks prior to operation.
- Make sure that the chain clamp will function properly prior to attempting the alignment or reforming of pipes or fittings.
- The chain clamp should never be used as the sole support of the pipe or fitting.
- When using the Chain Clamp, basic safety precautions must always be followed to reduce the risk of personal injury.
- Always operate the Chain Clamp in accordance with the operating instructions.
- The pipe must be secured to the table or pipe stand, prior to mounting the machine on the pipe.
- 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.
- Make sure the Main Block and the Jackbars are in full contact with the pipe before aligning or reforming the pipe.
- The Level and Support Device should never be used as the sole support of the pipe, fitting or valve.
- Make sure the Chain Clamp is in full contact with the mating pipe, fitting or valve.
- Use only the wrench provided with the clamp.
- Never use a cheater bar with the supplied wrench.
- Never use the clamp as a ground connection.
- Always inspect the Chain Clamp prior to use.
- The mating pipe, fitting or valve should not have a taper surface of more than 5 degrees at the point where the pad of the Jackscrew will contact the pipe.

IN ADDITION TO THE ABOVE PROCEDURES, ALL SHOP, NATIONAL AND MANUFACTURER'S SAFETY INSTRUCTION CONCERNING THE FLAME CUTTING SYSTEM SHOULD BE FOLLOWED. ALL CUTTING OPERATIONS SHOULD BE CONDUCTED IN THE BEST OF SAFETY CONDITIONS.

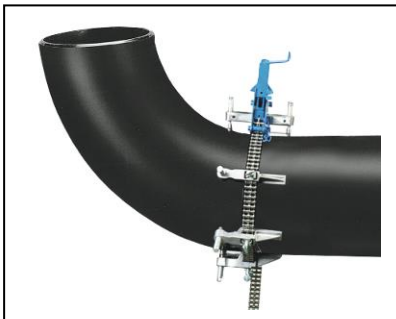
2.0 – GENERAL DISCRIPTION

The Mathey Dearman Chain Clamp is versatile: Each clamp can be used to fit-up pipes, elbows, tees, and weld-on valves, and is useful in many other pipefitting situations. Mathey Dearman Chain Clamps are available in Light Duty and Standard models.

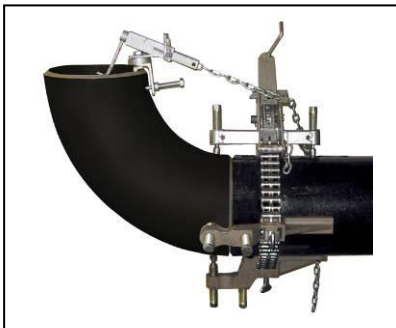
These instructions are essential to understanding how to use the Mathey Dearman Chain Clamp. If you have any questions about setting up the clamp or an application that the clamp is to perform, contact Mathey Dearman Inc. at (800) 725-7311. We'll be glad to help.



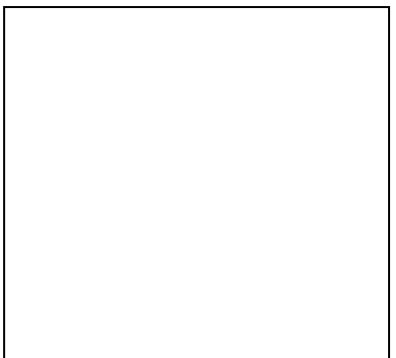
Single Jackscrew Chain Clamp - Aligns and forms out-of-round mating pipe up to Schedule 40 wall thickness. If reforming is not required, a wall thickness greater than Schedule 40 can be aligned, NOTE: The required distance between the pipe and the bottom of the raised portion of the jackscrew is less 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.



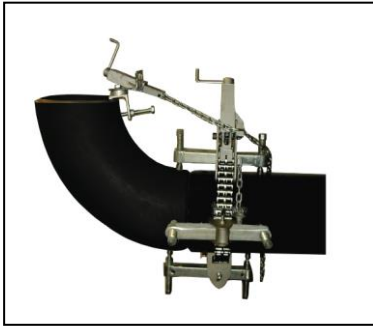
Dearman Lite Single Jackscrew Chain Clamp – Manufactured from the same type and quality of material as the standard Dearman Single Jackscrew Chain Clamp. The Dearman Lite Single Jackscrew Chain Clamp will typically align pipe up to Schedule 40 wall thickness. The Dearman Lite Clamp is capable of some limited reforming tasks (see Chart 1 for details).



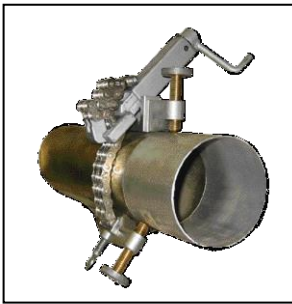
Double Jackscrew Chain Clamp - Aligns and reforms out-of-round between the mating pipe and fit-up pipe up to Schedule 40 wall thickness. This model is recommended for use where a large amount of “Hi-Lo” exists. When no reforming is required of the mating pipe or fit-up pipe, a wall thickness thicker 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 - can align pipe up to Schedule 40 wall thickness. The Dearman Lite Clamp is also capable of some reforming tasks (see Chart 1).



Universal Chain Clamp - The “Sliding Jackbar” design of the Universal Chain Clamp allows the Jackscrew to be positioned on either side of the weld. This allows 100% welding and grinding without removal of the clamp. The clamp is ideal for the alignment and reforming of pipes, elbows, tees, and mitered joints – up to Schedule 40 pipe. It is capable of aligning pipe to Schedule 80 if reforming is not required.



Mini-Fit - is used for fitting-up and aligning small diameter pipe. Its lightweight and simple design makes the Mini-Fit ideal for light duty applications, where “out-of-round” problems do not exist. The Mini-Fit is excellent for use on conduit, copper pipe, and thin wall pipe or tubing.

Chart 1 – Mathey Dearman Single Jackscrew Chain Clamp

Model	Net Weight Lbs/Kg.	Operating Range Inches/mm	Alignment Pipe Schedule	Reforming Pipe Schedule
D230	7/3	3/4"-8/19-204	40	20
D230SS	7/3	3/4"-8/19-204	40	20
D231	21/9	1-8/25-203	80	40
D231SS	21/9	1-8/25-203	80	40
D231-LT	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
D232-LT	24/11	4-20/102-508	40	20
D232-LTSS	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
D233-LT	62/28	6-36/152-914	40	20
D233-LTSS	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 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 tensile strength.

Chart 2 – Mathey Dearman Double Jackscrew Chain Clamp

Model	Net Weight Lbs/Kg.	Operating Range Inches/mm	Alignment Pipe Schedule	Reforming Pipe Schedule
D250	27/12	1-8/25-203	80	40
D250-SS	27/12	1-8/25-203	80	40
D249	70/32	4-16/102-406	80	40
D249SS	70/32	4-16/102-406	80	40
D249-LT	29/13	4-20/102-508	40	20
D249-LTSS	29/13	4-20/102-508	40	20
D235	150/68	10-36/254-914	80	40
D235SS	150/68	10-36/254-914	80	40
D235-LT	68/31	6-36/152-914	40	20
D235-LTSS	68/31	6-36/152-914	40	20
D236	184/83	10-54/254-1372	80	40
D236SS	184/83	10-54/254-1372	80	40

Chart 3 – Mathey Dearman Universal Chain Clamp

Model	Net Weight Lbs/Kg.	Operating Range Inches/mm	Alignment Pipe Schedule	Reforming Pipe Schedule
D2250	27/12	1-8/25-203	40	20
D2250SS	27/12	1-8/25-203	40	20
D2249	70/32	4-16/102-406	40	20
D2249SS	70/32	4-16/102-406	40	20
D2235	145/65	10-36/254-914	40	20
D2235-SS	145/65	10-36/254-914	40	20



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

Chart 4 – Dearman Light Single Jackscrew Chain Clamps

Model	Net Weight Lbs./Kg.	Operating Range Inches/mm	Alignment Pipe Schedule	Reforming Pipe Schedule
D231-LT	13 / 6	1 – 12 / 25 - 305	40	20
D231-LTSS	13 / 6	1 – 12 / 25 - 305	40	20
D232-LT	31 / 14	4 – 20 / 102 - 506	40	20
D232-LTSS	31 / 14	4 – 20 / 102 - 506	40	20
D233-LT	84 / 38	6 – 36 / 152 - 914	40	20
D233-LTSS	84 / 38	6 – 36 / 152 - 914	40	20

Chart 5 – Dearman Light Double Jackscrew Chain Clamps

Model	Net Weight Lbs./Kg.	Operating Range Inches/mm	Alignment Pipe Schedule	Reforming Pipe Schedule
D249-LT	36 / 14	4 – 20 / 102 - 506	40	20
D249-LTSS	36 / 14	4 – 20 / 102 - 506	40	20
D235-LT	90 / 41	6 – 36 / 152 - 914	40	20
D235-LTSS	90 / 41	6 – 36 / 152 - 914	40	20



WARNING: Under no circumstances should additional chain (Chart 12) be added to the Dearman Lite Series to increase its operating range without contacting Mathey Dearman at 1-800-725-7311 or 1-918-447-1288.

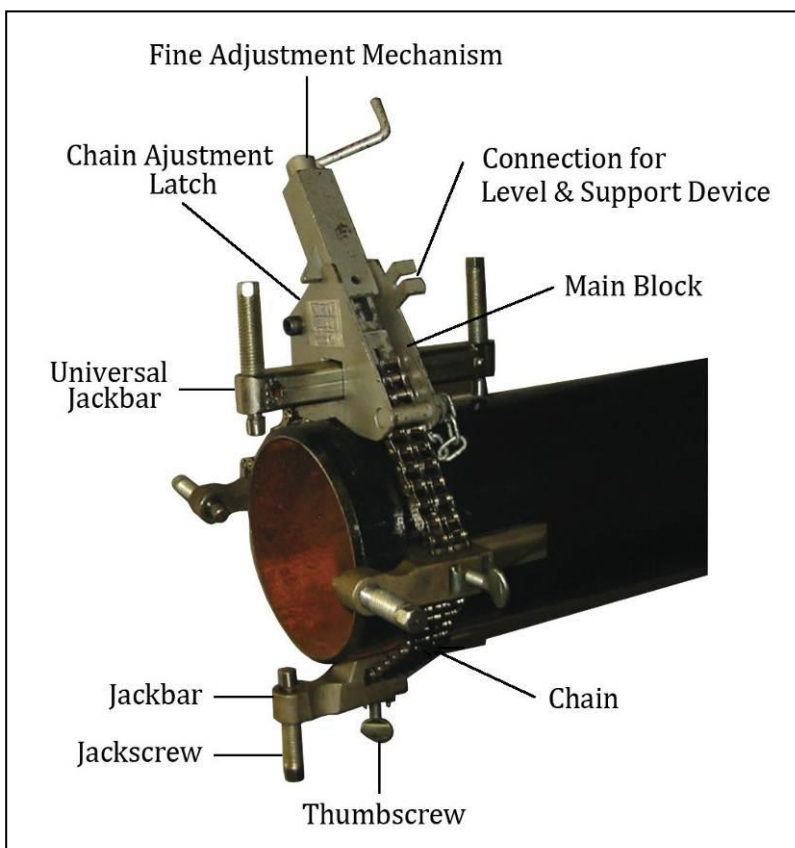


Chart 6 – Chain Clamp Subassemblies by Chain Clamp Model

Model	Main Block Qty. – 1	Jackbars	Jackbars Quantity Required	Fine Adjustment Qty. – 1	Chain	Feet of Chain Required	Level and Support Device Qty. – 1	Connecting Link Required Qty. – 1
D230	DXL-524	DXL-523	2	DXL-200	DA-300	2.7	N/A	DA-301
D230SS	DXL-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
D231-LT	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	DA-100	DB-500S	7	DB-200	DB-300S	5	DB-400	DB-301S
D232-LT	DA-100	DA-500S	7	DA-200	DA-300	7	DA-400	DA-301
D232-LTSS	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
D233-LT	DB-100	DB-500S	10	DB-200	DB-300	10	DB-400	DB-301
D233-LTSS	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	DC-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
D249-LT	DA-100	DA-600S	7	DA-200	DA-300	7	DA-400	DA-301
D249-LTSS	DA100	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
D235-LT	DB-100	DB-600S	8	DB-200	DB-300	10	DB-400	DB-301
D235-LTSS	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	.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

3.0 – PART LIST

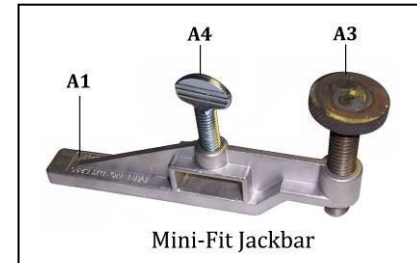
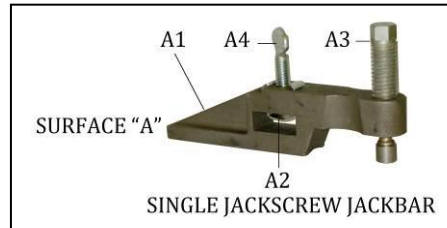
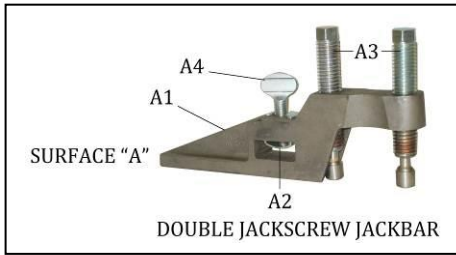


Chart 7 – Single and Double Jackbar

Part Number	Jackbar Casting (A1) 1 req.	Chain Lock (A2) 1 req.	Jackscrew* (A3) 1 req.	Thumbscrew (A4) 1 req.
DA-500S	DA-500C	DA-507	DA-501	22-38TS-034
DB-500S	DB-500C	DB-507	DA-501S	22-38TS-034
DC-500S	DC-500C	DB-507	DC-501	22-38TS-034
DA-600S	DA-600C	DA-507	DA-701	22-38TS-114
DB-600S	DB-600C	DB-507	DA-701	22-38TS-114
DC-600S	DC-600C	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	22-27TS-114

***Note:** The 600 series Jackbar requires two per assembly. All others require one per assembly.

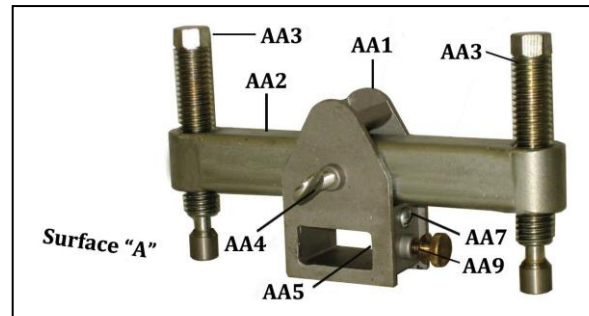


Chart 8 – Universal Jackbar

Model	Jackbar Holder (AA1)	Universal Jackbar (AA2)	Jackscrew (AA3)	Thumb Screw (AA4)	Locking Plate (AA5)	Spring (AA6)	Machine Screw (AA7)	Self-Locking Nut (AA8)	Brass Screw (AA9)
DA-800	DA-841	DA-820	DA-701	22-14TS-034	DA-842	DA-845	14-01CD-034	1L-01C0-000	DA-846
DB-800	DB-841	DB-820	DB-701	22-14TS-034	DA-842	DA-845	14-01C0-034	1L-01C0-000	DA-846
DC-800	DC-841	DC-820	DC-701	22-14TS-034	DA-842	DA-845	14-01C0-034	1L-01C0-000	DA-846

***Note:** Two of the AA-3 Jackscrews are required per assembly. All other assemblies require one Jackbar.

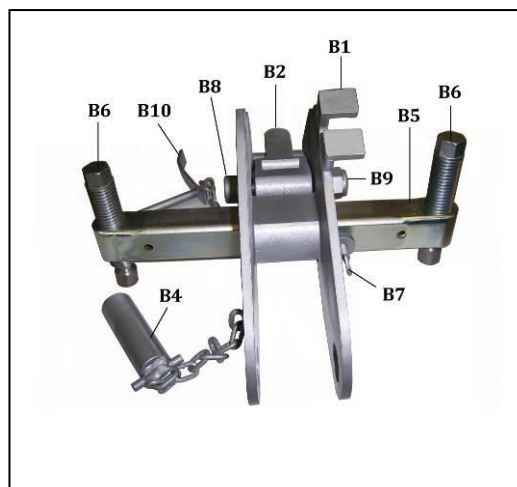
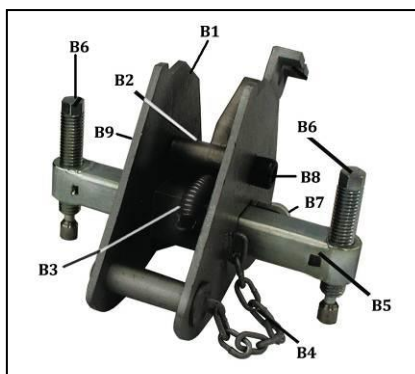
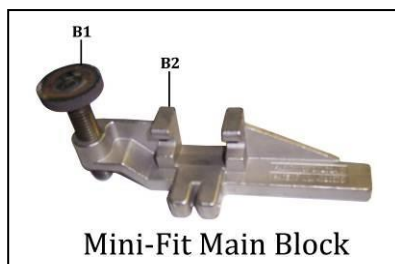


Chart 9 – Main Block

Model	Main Block (B1)	Chain Adj. Mech. (B2)	Spring (B3)	Chain Lock Pin (B4)	Universal Jackbar (B5)	Jack screw (B6)	Thumb screw (B7)	Socket Head Cap Screw (B8)	Self-Locking Nut (B9)	Safety Pin (B10)
DA-100	DA-101	DA-102	DA-103	DA-131	DA-820	DA-501	22-14TS-034	11-38C0-200	1L-38C0-000	N/A
DB-100	DB-101	DB-102	DB-103	DB-131	DB-820	DB-501	22-14TS-034	11-12C0-300	1L-38C0-000	N/A
DC-100	DC-101	DC-102	DB-103	DC-131	DC-820	DC-501	22-14TS-034	11-58C0-312	1L-38C0-000	DC-120
DXL-524	DXL-524C	—	—	—	—	DXL-525	—	—	—	—
DXL-524S	DXL-524C	—	—	—	—	DXL-525S	—	—	—	—

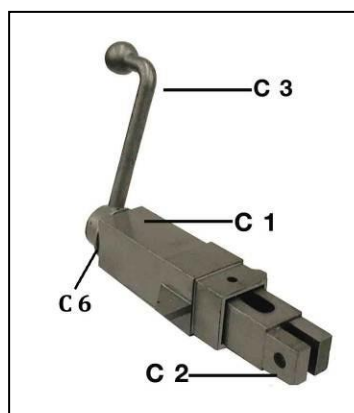
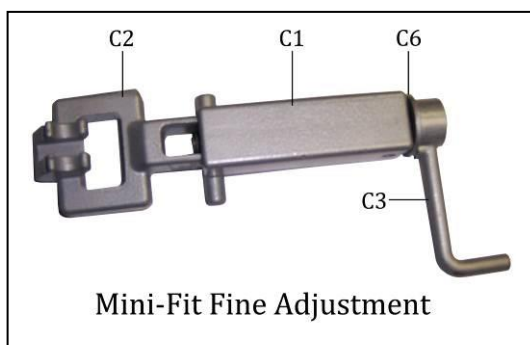


Chart 10 - Fine Adjustment Mechanism

Model	Crank Housing (C 1)	Piston (C 2)	Crank Handle (C 3)	Stud (Not Shown) (C 4)	Flat Washer (C 6)	Collar (Not Shown) (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-425
DC-200	DC-201	DC-202	DC-205	DC-202	12-0100-F00	DC-203
DXL-200	DXL-521	DXL-522	DB-426	DXL-526	12-0012-F0	DB-425

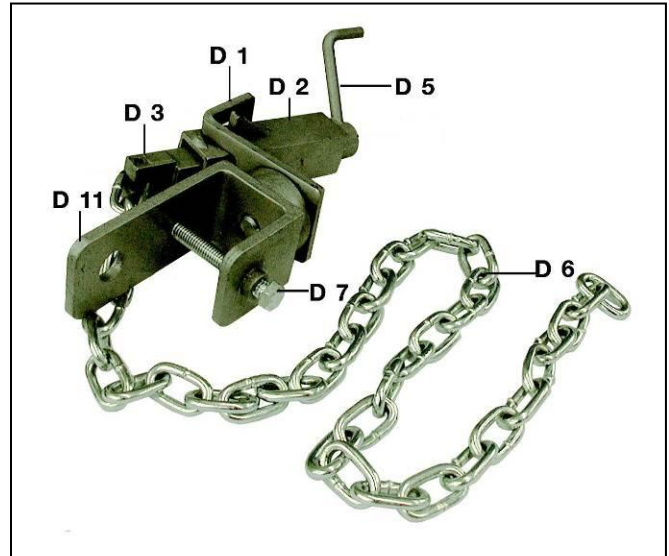


Chart 11 – Level and Support Device

Model	L&S Frame (D 1)	Crank Housing (D 2)	L&S Piston (D 3)	Stud (D 4) Not Shown	Crank Handle (D 5)	Chain (D 6)	Clamp Screw (D 7)	Cap Screw (D 8) Not Shown	Flat Washer (D 9) Not Shown	Collar (D 10) Not Shown	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	10-38C0-034	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

Chart 12 – Chain and Connecting Links

Chain	Connecting Link	Standard Chain Clamp
DA-300	DA-301	D230, D231, D250, D2250, D231-LT, D232-LT, D249-LT
DA-300S	DA-301S	D230SS, D231SS, D250SS, D2250SS, D231-LTSS, D232-LTSS, D249-LTSS
DB-300	DB-301	D232, D249, D2249, D235-LT, D233-LT
DB-300S	DB-301S	D232SS, D249SS, D2249SS, D233-LT, D235-LT
DC-300	DC-301	D233, D234, D235, D236, D2235, D251 Series Clamps
DC-300S	DC-301S	D233SS, D234SS, D235SS, D236SS, D2235SS, D251- Series Stainless Clamps



Chart 13 – Chain Stop

Chain	Spacer (E1)	Machine Screw or Allen Head Screw (E2)	Lock Nut (E3)
DA-300 , DA-300S	DA-620	14-06C0-134	1L-06C0-000
DB-300, DB-300S	DB-320	14-01C0-212	1L-01-C0-212
DC-300, DC-300S	01-0185-004	10-38C0-234	1L-38C0-000

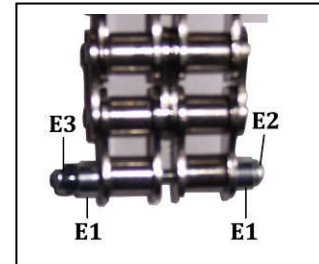


Chart 14 – Add-on Jackbar

Add-On Jackbar	Jackscrew (F1) 2 Req.	Jackbar Holder (F2) 2 Req.	Knurled Nut (F3) 1 Req.	Jackbar Sub- Assembly (F4)	Allen Head Screw (F5) (Not Shown)	Lock Nut (F6)	Thumbscrew (F7)
DA-900	DA-701	DA-941	DA-945	DB-820	10-38C0-200	1L-38C0-000	22-14TS-034
DB-900	DA-701	DA-941	DA-945	DB-820	10-38C0-314	1L-38C0-000	22-14TS-034
DC-900	DC-501	DC-841	DA-945	DC-820	10-38C0-314	1L-38C0-000	22-14TS-034

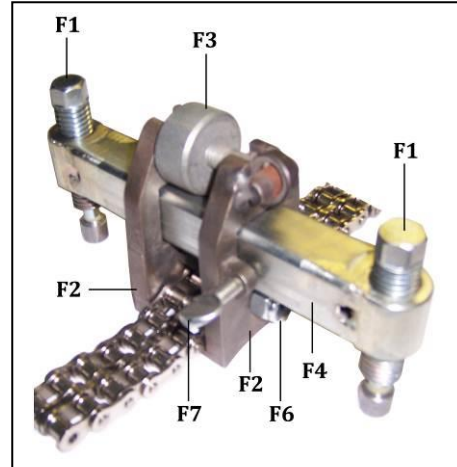


Chart 15 – Chain Clamp Wrench

Part Number	Wrench Size	Chain Clamp
D900-01	9/16"	D233-Ltss, D235-LT, D235-LTSS, D249, D249-LT, D249SS, D250, D253SS, D2249, D2249SS, D2250, D2250SS, D231, D231SS, D232, D232-LT, D232-LTSS, D232SS, D233-LT
D900-02	3/4"	D233, D233SS, D234, D234SS, D235, D235SS, D236, D236SS, D2235, D2235SS



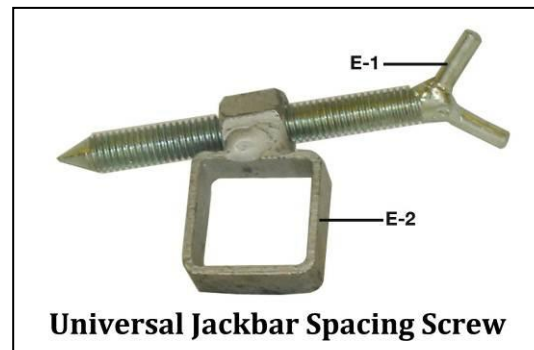
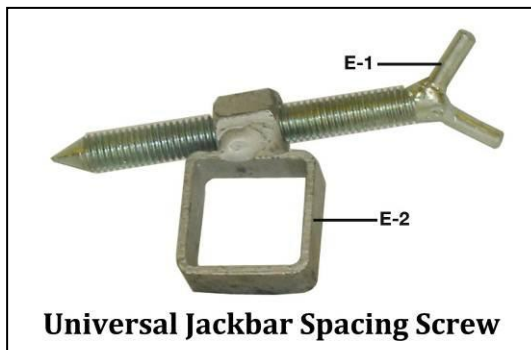


Chart 16 – Spacing Screws

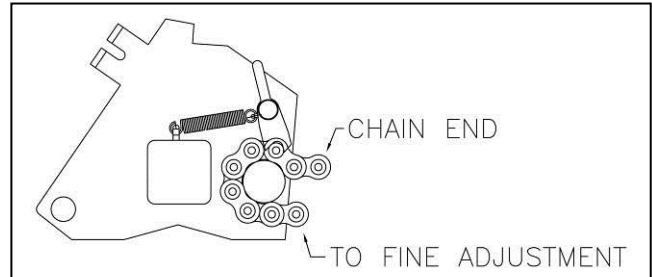
Model	Where Used	Bracket (E-1)	Spacing Screw (E-2)	Cap Screw (E-3)	Lock Nut (E-4)
Jackbar Spacing Screws					
DA-570	DA-500S and DA-600S single or double Jackbars when working with carbon steel	DA-572	DA-571	10-14C0-112	1L-14C0-000
DA-570S	DA-500S and DA-600S single or double Jackbars when working with stainless steel	DA-572	DA-571S	10-14C0-112	1L-14C0-000
DB-570S	DB-500S and DB-600S single or double Jackbars when working with stainless steel	DB-572	DB-571	10-14C0-112	1L14C0-000
DB-570	DB-500S and DB-600S single or double Jackbars when working with carbon steel	DB-572	DB-571S	10-14C0-112	1L-14C0-000
DC-570	DC-500S and DC-600S single or double Jackbars when working with carbon steel	DC-572	DB-571	10-14C0-112	1L-14C0-000
DC-570S	DC-500S and DC-600S single or double Jackbars when working with stainless steel	DC-572	DB-571-S	10-14C0-112	1L-14C0-000
Main Block & Universal Jackbar Spacing Screws					
DA-870	DA-100 Main Block and DA-800 universal Jackbars when working with carbon steel	DA-875	DA-571	N/A	N/A
DA-870S	DA-100 Main Block and DA-800 universal Jackbars when working with stainless steel	DA-875	DA-571S	N/A	N/A
DB-870	DA-100 Main Block and DB-800 universal Jackbars when working with carbon steel	DB-875	DB-571	N/A	N/A
DB-870S	DA-100 Main Block and DB-800 universal Jackbars when working with stainless steel	DB-875	DA-571S	N/A	N/A
DC-870	DA-100 Main Block and DC-800 universal Jackbars when working with carbon steel	N/A	DB-571	N/A	N/A
DC-870S	DA-100 Main Block and DC-800 universal Jackbars when working with stainless steel	N/A	DB-571S	N/A	N/A

***Note: Spacing Screws are not available for the D230 series and the D231-LT series Chain Clamps.**

4.0 – ADDING AND REMOVING CHAIN AND JACKBARS

Mathey Dearman Chain Clamps can perform more than 100 types of fit-ups on a variety of pipe sizes, fittings, and are useful in holding pipes, fittings, valves and flanges in place for welding.

- 4.1 Jackbars (See Chart 7) may be added or removed as required.
- 4.2 Remove the Chain Stop (Chart 13) located at the end of the Chain (Chart 12) opposite the Fine Adjustment Mechanism (Chart 10).
- 4.3 Disengage the Chain Adjustment Mechanism (Chart 9 item B2) and remove the Chain from the Main Block (Chart 9).
- 4.4 Add additional Chain (Chart 12) to the Clamp by using the Chain Connecting Link (Chart 12) specified for the Clamp, and then slide the required number of additional Jackbars required on the Chain.
- 4.5 Reinsert Chain (Chart 12) through the Main Block (Chart 9), making sure the Chain Adjustment Mechanism (Chart 9 item B2) is in proper contact with the Chain (Chart 12) and replace the Chain Stop (Chart 13).
- 4.6 Remove Jackbars (Chart 7) in the same manner.



To determine the Chain needed for a particular task, use the following formula:

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

A Jackbars (Chart 7) should be added for every foot of Chain (Chart 12) that is added.



WARNING: Under no circumstances should additional chain (Chart 12) be added to the Dearman Lite Series Chain Clamp to increase its operating range without contacting Mathey Dearman at

5.0 – INITIAL SET-UP OF THE CHAIN CLAMP ON THE PIPE

Set-up and operation of all Mathey Dearman Chain Clamps are virtually the same, except for a few minor changes.

- 5.1 Remove the Chain Clamp from its storage container. Place the Clamp on the floor or table. Place the Fine Adjustment Assembly (Chart 10) on the right if right handed, and on left if left handed.
- 5.2 Determine the circumference of the pipes, fittings, or valves that is going to align or reform. Release the Chain Adjustment Mechanism (Chart 9 item B2) and pull out enough Chain (Chart 12) to go around the pipe, fittings, or valves that you are going to align or reform. Jackbars Assemblies (Chart 7) may need to be added or removed depending on the diameter of pipe.
- 5.3 The Chain Stop (Chart 13) must be removed to add or remove Jackbars (Chart 7).
Note: For the 10 – 36" and 10 – 54" Chain Clamps it is necessary to remove the Chain Adjustment Mechanism Safety Pin (Chart 9 item B10) from the Main Block Assembly (Chart 9) in order to pull the Chain (Chart 12) through the Main Block.
- 5.4 Loosen the all Thumbscrews (Chart 7 item A-4) on the Single and Double Jackbars Assemblies (Chart 7 & 8). Place the Jackbars Assemblies an equal distance apart along the chain (Chart 12) and retighten the Thumbscrews.
Note: For the Universal Jackbars Chain Clamp, loosen the Brass Screw (Chart 8 item AA-9), located beneath the universal Jackbars, distribute the universal Jackbar Assemblies (Chart 8A-2) and equal distance apart along the chain (Chart 12) and retighten the Thumbscrews. Loosen Thumbscrew (Chart 8 item AA-4) and distribute the Universal Jackbars (Chart 8 item AA-2) at an equal distance in the Jackbar holder (Chart 8 item AA-1).

5.5 If necessary rotate all the Jackscrews (Chart 7 item A-3) in the Jackbars until they clear the bottom of the Surface "A".

5.6 Place the Chain Lock Pin (Chart 9 item B-4) over the Universal Jackbar (Chart 9 item B-5) so it does not become trapped under the Jackbar when placing the Chain Clamp on the pipe.

Note: For the 10 – 36" and 10 – 54" Chain Clamps, place the Safety Pin (Chart 9 item B-10) and Chain Lock (Chart 9 item B4) over the Universal Jackbar so it does not become trapped under the Jackbar when placing the Chain Clamp on the pipe.

5.7 Grasp the Main Block (Chart 9) and the Fine Adjustment Assembly (Chart 10) and wrap clamp around the pipe, making sure all Jackscrews (Chart 7 item A-3) of the Jackbar (Chart 7) are on the pipe surface facing the area to be welded.

Note: Universal Chain Clamp – Make sure the Brass Knurled Head Screw is facing away from the weld joint.

5.8 Place the ears of the Fine Adjustment Assembly (Chart 10) in the notch portion of the Main Block (Chart 9) as shown in the picture at right.

5.9 Place the Chain Lock Pin (Chart 9 item B-4) into the Main Block (Chart 9) over the Chain (Chart 12).

5.10 Grasp the Main Block (Chart 9) with your Right hand and the end of the Chain (Chart 13) with your left hand. Pull Chain through the Main Block until all Jackbars are as close to the pipe as possible.



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



5.11 Rotate the Crank Handle (Chart 10 item C-3) of the Fine Adjustment Assembly (Chart 10) clockwise until the Chain Clamp is tight on the pipe.

5.12 Rotate the Jackscrews (Chart 7 item A3 & Chart 9 item B6) in the Jackbars (Chart 7 item A1) and Main Block clockwise until they make contact with the pipe

5.13 Loosen the Jackscrew (Chart 9 item B6) in the Main Block on the side of the pipe that is to receive the pipe or fitting one full turn. This distance may vary depending on the out of round condition of the pipes, fittings, or valves that you are aligning or reforming.

5.14 Loosen enough of the Jackscrews (Chart 9 item A3) in the Jackbars (Chart 7 item A1) one full turn to receive the Pipe or fitting or until there is adequate room to receive the mating pipe or fitting. This distance may vary depending on the out of round condition of the pipes, fittings, or valves that you are aligning or reforming.

5.15 Rotate the Crank Handle (Chart 10 item C3) of the Fine Adjustment Assembly (Chart 10) counterclockwise until the Chain Clamp is loose on the pipe.

5.16 Slide the Clamp out over the edge of the pipe until:

- **Single Screw Chain Clamp** – The Single Jackbars (Chart 7) should be placed on the pipe, fitting or valve so that the distance between the Jackscrew (Chart 7 item A3) and the base of the Jackbars (Chart 7 item A-1) is equal.
- **Double Screw Chain Clamp** – The Jackscrews (Chart 7 item A3) of the Double Jackbars Assemblies (Chart 7) should be placed at an equal distance on either side of the weld joint.
- **Universal Chain Clamp** – The Universal Jackbars Assembly (Chart 8) should be placed over the weld joint so that the distance between the Jackscrew (Chart 8 item AA-3) and the Jackbars Holder (Chart 8 item AA-1) are equal.

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

5.17 Rotate the Crank Handle (Chart 10 item C3) of the Fine Adjustment Assembly (Chart 10) clockwise until the clamp is as tight as possible on the pipe. Apply as much force to the Crank Handle (Chart 10 item C3) as possible without the use of any mechanical advantage.

- 5.18 The Clamp is now ready to accept mating pipe, fitting or valve which is the same size as the fit-up pipe,



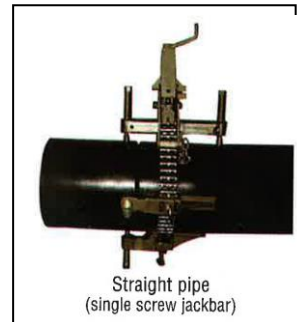
WARNING: The Mathey Dearman Chain Clamp is designed as a tool for the reforming and accurate alignment of pipe, pipe fittings, flanges and weld-on valves for welding. It is not intended to support or lift the entire length of the pipe. Always exercise extreme caution when using this product.

6.0 – FIT-UP WITHOUT USE OF LEVEL AND SUPPORT DEVICE

- 6.1 Steps 5.1 through 5.18 must be completed before using the following procedure
6.2 Determine if inside or outside diameter is required.

Note: To check HI-LO on the inside diameter pipes, the best tool to use is the Mathey Dearman English or Metric Q. C. Welders Gauge

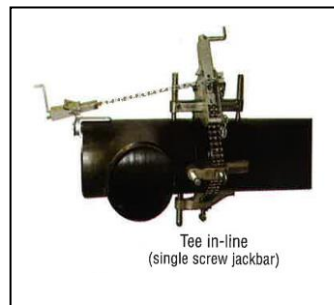
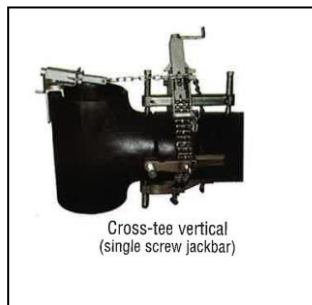
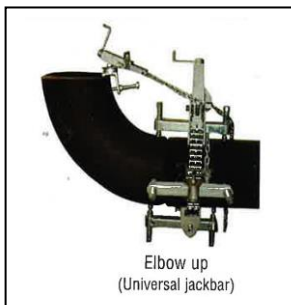
- 6.3 Move the Pipe, fitting or valve into the Jackbars of the chain clamp.
6.4 Loosen the Thumbscrew (Chart 9 item B7) in the Main Block (Chart 9) and move the Universal Jackscrew (Chart 9 item B5) to the side of the weld where it is needed and retighten the Thumbscrew.



WARNING: Failure to support the pipe, fitting or valve properly will result in personal injury.

- 6.5 Check the fit-up pipe and the mating pipe to find the section of the two pipes which is the farthest from the pipe centerline. Tighten the Jackscrew or Jackscrews (Chart 7 item A3) over this point until the outside or inside diameters of the pipes are in alignment. It may be necessary to loosen the Jackscrew or Jackscrews 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.
6.6 The pipes are now ready for welding.

7.0 – FIT-UP WITH LEVEL AND SUPPORT DEVICE



- 7.1 Steps 5.1 through 5.18 must be completed before using the following procedure
7.2 Turn the Crank Handle (Chart 11 item D-5) counterclockwise of the Level and Support Device until the Level and Support Piston (Chart 11 item D-3) extends out of the Crank Housing (Chart 11 item D-2) Piston about 1-1/2" to 2".



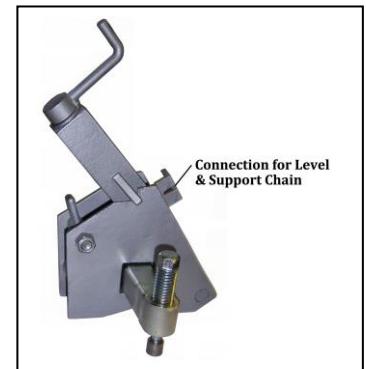
WARNING: If a solid surface appears in the opening of the Crank Housing, rotate the Crank Handle clockwise until the solid surface can no longer be seen.

- 7.3 Place the elbow, tee or other fitting inside of the Yoke (Chart 11 item D-11) of Level and Support as shown in the adjacent picture and tighten the Clamping Screw (Chart 11 item D-7) with the provided wrench (Chart 15).
- 7.4 Mount the short pipe, elbow, tee or other fitting into the Jackbars of the chain clamp.
- 7.5 Put the Chain (Chart 11 item D6) of the Level and Support Device into the Level and Support Device Hook located on the upper back portion of the Main Block. (Picture at left)



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

- 7.6 Rotate the Crank handle (Chart 11 Item D5) 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. (Picture on right)
- 7.7 Loosen the Thumbscrew (Chart 9 item B7) in the Main Block and move the Universal Jackbars (Chart 9 item B5) to the other side of the weld joint where it is needed and retighten the Thumbscrew.
- 7.8 Rotate the Main Block Jackscrews (Chart 9 item B6) and Jackbar Jackscrews (Chart 7 item A3) until they contact the fit-up pipe.
- 7.9 Check the relationship of the fit-up pipe to the main pipe to determine which direction the fit-up pipe must be moved to obtain alignment with the main pipe.
- 7.10 Tighten the Jackscrew over high point until the desired outside or inside alignment of the pipes or fittings is achieved. 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.



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

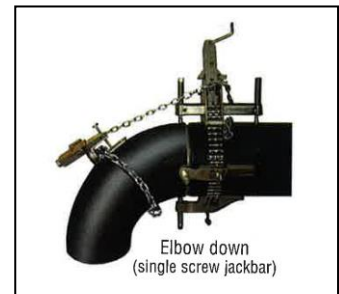
- 7.11 The pipes are now ready for welding.

8.0 – FIT-UP OF ELBOW TO PIPE WITH ELBOW FACING DOWNWARD

- 8.1 Steps 5.1 through 5.18 must be completed before using the following procedure.
- 8.2 Turn the Crank Handle (Chart 11 item D-5) counterclockwise until the Level and Support Piston (Chart 11 item D-3) extends out of the Crank Housing (Chart 11 item D-2) Piston about 1-1/2 to 2 inches.



WARNING: If a solid surface appears in the opening of the Crank Housing, rotate the Crank Handle clockwise until the solid surface can no longer be seen.



- 8.3 Attach the Yoke (Chart 11 item D-11) of the Level and Support Frame to the back of the elbow with a Hold-Down Clamp part number D244 or D245) as illustrated in the picture at bottom right.
- 8.4 Mount the elbow into the Jackbars of the Chain Clamp with the elbow facing downward.



WARNING: To avoid injury the Level and Support Device should never be used as the sole support of the mating Elbow.

- 8.5 Put the Chain (Chart 11 item D-6) of the Level and Support Device into the Level and Support Device connection located on the upper portion on the Main Block.
- 8.6 Rotate the Crank handle (Chart 11 item D5) of the Level and Support device 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.



WARNING: If a solid surface appears in the opening of the Crank Housing, rotate the Crank Handle clockwise until the solid surface can no longer be seen.

- 8.7 Loosen the Thumbscrew (Chart 9 item B7) in the Main Block and move the Universal Jackbars (Chart 6 item B5) 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 7 degrees at the point where the pad of the Jackscrew will contact the pipe.

- 8.8 Check the fit-up pipe and the mating elbow to find the section of the two parts which is the farthest point from pipe centerline. Tighten the Jackscrew (Chart 7 item A3) over this point until the outside or inside diameters of the two pipes or pipe and fitting are in alignment. This process may need to be repeated with several of the Jackbars until the correct alignment or reforming is accomplished. 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.

Note: 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.

- 8.9 The pipe and elbow are now ready for welding.

9.0 – FIT-UP OF HORIZONTAL CROSS TEE TO PIPE

- 9.1 Steps 5.1 through 5.18 must be completed before using the following procedure.
- 9.2 Turn the Crank Handle (Chart 11 item D-5) counterclockwise until the Level and Support Piston (Chart 11 item D-3) extends out of the Crank Housing (Chart 11 item D-2) Piston about 1-1/2 to 2 inches.

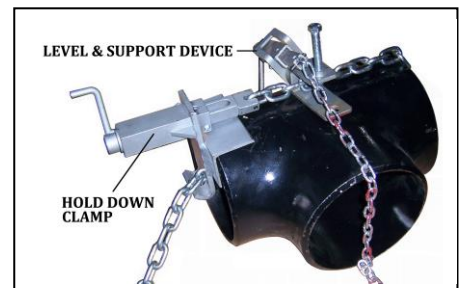


WARNING: If a solid surface appears in the opening of the Crank Housing, rotate the Crank Handle clockwise until the solid surface can no longer be seen.

- 9.3 Place the tee on its side and attach Hold-Down Clamp (D244 for pipes 2" – 16" / D245 10" – 48") to the tee as shown at right. Place the long portion of the Yoke (Chart 11 item D11) of the Level and Support Frame (Chart D-11) under the Chain of the Hold-Down Clamp and tighten the tension adjustment on the Hold Down Clamp.
- 9.4 Mount the short portion of the Tee into the Jackbars of the Chain Clamp with the Level and Support Device facing upward.



Cross-tee horizontal
(single screw jackbar)





WARNING: To avoid injury the Level and Support Device should never be used as the sole support of the mating Tee.

- 9.5 Put the Chain (Chart 11 item D-6) of the Level and Support Device into the Level and Support Device connection located on the upper portion on the Main Block.
- 9.6 Rotate the Crank handle (Chart 11 item D5) clockwise or counterclockwise until the tee is at the desired Hi-Lo to the outside or inside diameter of the mating pipe, fitting or valve.
- 9.7 Loosen the Thumbscrew (Chart 9 item B7) in the Main Block and move the Universal Jackbars to the side of the weld where it is needed and retightened the Thumbscrew.



WARNING: The mating pipe, fitting or valve should not have a taper surface of more than 7 degrees at the point where the pad of the Jackscrew will contact the pipe.



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

Note: 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.

- 9.9 The pipe and tee are now ready for welding.

10.0 – INSPECTION OF CHAIN CLAMP SUBASSEMBLIES

Equipment Required:

- Straight Edge
- Small Magnifying Glass
- Threat Gauge: 7/8 – 9NC Allen Head Cap Screw x 2" long (Used to test jackscrew thread hole in Jackbars in DD-500, DC-500S, DC-600S and DC-820)
- Thread Gauge: 5/8 – 11NC grade 8 Allen Head Cap Screw x 2" long (Used to test jackscrew thread hole in Jackbars in DA-500S, DB-500S, DA-820, DB-820, DA-600S and DB-600S.
- Thread Gauge: 3/8 – 16NC grade 8 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)
- Thread Gauge: 1/4 – 20NC grade 8 Allen Head Cap Screw x 2" long (Used to test jackscrew thread hole in Main Block)
- 12" machinist's rule
- 6" dial calipers

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

10A Jackbar Assembly (Chart 7)

10A.1.1 Check the surface of the Jackbars (Chart 7 item A1) with a straight edge (item "A" of required equipment list) to determine if the Jackbars is bent. The surfaces to check are:

- The surface "A" of the Jackbars that makes contact with the pipe.
- The surface "B" into which the jackscrew(s) (A3) fit.



WARNING: To insure the safety of the operator all bent Jackbars should be replaced or tested with some means of nondestructive testing to determine if there are cracks prior to any further use. Jackbars with cracks should not be used under any circumstance.

10A.1.2 Check the threaded hole into which the Thumbscrew (Chart 11 item A4) and Jackscrew (Chart 11 item A3) fit for loose threads, galled or missing threads.



WARNING: To insure the safety of the operator, the Jackbar (Chart 7 item A1) should be replaced, if threaded holes for the Thumbscrew (Chart 7 item A4) or Jackscrew (Chart 7 item A3) have loose, galled or missing thread.

10A.1.3 Screw the appropriate Thread Gauge from the equipment required list) into the threaded hole for Thumbscrew (Chart 11 item A4) and Jackscrew (Chart 11 item A3). If play exceeds .010 thousands of an inch of play between the thread gauge and threaded hole of the Jackbar replace the Jackbar.

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



WARNING: Heating, welding and straightening of New Style Cast Jackbars or Old Style Jackbars may cause failure of the Jackbar result in injury to the operator.

10A.2 Chain Lock (Chart 7 item A2)

10A.2.1 The Jackbars (Chart 7 item A1) must have a Chain Lock to function properly and avoid damaging the chain. If the Chain Lock is missing, install a new Chain Lock before using the clamp

10A.2.1 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, replace the Chain Lock.

10A.3 Jackscrew (Chart 7 item A3)

10A.3.1 The Jackscrew should never be used without the stainless steel swivel pad. If the swivel pad is missing replace the Jackscrew.

10A.3.2 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 it will mar the pipe. If marring of the pipe or pipe coating is a concern, replace the Jackscrew.

10A.3.3 Check threads of the Jackscrew for galled or missing threads. If the threads are galled or missing threads, replace the Jackscrew.

10A.3.4 Screw the Jackscrew into the Jackbars (Chart 7 item A-1). If play Between Jackscrew and Jackbars (Chart 7 item A1) exceeds .010 of an inch, perform repair step 11A.3. If testing in repair step 11A.3 is within tolerance, replace the Jackscrew. If testing in 11A.3 proves the Jackbars threads are out of tolerance, replace the Jackbars.

10A.3.5 Check the Jackscrew for straightness. A Bent Jackscrew will not function properly and should never be used. If it is bent, replace the Jackscrew.



10A.4 Thumbscrew (Chart 7 item A4)

- 10A.4.1 Check Thumbscrew for galled or missing threads. If there are galled or missing threads, replace the Thumbscrew.
- 10A.4.2 Screw the Thumbscrew into the Jackbars (Chart 7 item A1). If play of the Thumbscrew and the Jackbars exceeds .010 of an inch, perform repair step 11A.3. If testing in repair step 11A.3 is within tolerance, replace the Thumbscrew. If testing in 11A.3 the thumbscrew is worn replace the thumbscrew.

10B Main Block Assembly (Chart 6 item B1)

10B.1 Main Block

- 10B1.1 Check inside distance between side plates of Main Block. The inside distance between the side plates of the main block are:

Main Block	Distance
DA-100	1 5/16"
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 straighten or replaced the Main Block. The distance between the side plates should never be less than the above distances listed.



WARNING: If the inside distance between the side plates spreads more than a 1/8", the Main Block (Chart 9 item B1) should be straighten or replaced the Main Block, The Chain Lock Pin (Chart 9 item B4) will not insert into the other side of the main block.

- 10B.1.2 Check the Main Block squareness to the pipe by setting the Main Block 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. If the surfaces are not perpendicular to the pipe surface replace the Main Block.
- 10B.1.3 Screw the appropriate Thread Gauge (item "E" of equipment required list) into the hole of the Main Block into which the Thumbscrew (Chart 9 item B7) threads. The Thread Gauge, when screwed into the Main Block should not exceed .015 of an inch of play when moved in any direction. If the play exceeds the maximum allowable tolerance replace the Main Block.



WARNING: Operator injury will result if 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 as the Main Block will fail to hold the chain during the aligning and reforming process.

Warranty Note: Mathey Dearman Inc. will not warranty or accept any responsibility for heating, welding or straightening of the Main Block.

10B.2 Chain Adjustment Mechanism (Chart 9 item B2)

- 10B.2.1 Check the Chain Adjustment Mechanism (Chart 9 item B2) for cracks at the point the chain (Chart 12) contact the Chain Adjustment Mechanism. If cracks are found replace the Chain Adjustment Mechanism.
- 10B.2.2 Chain the hole for Socket Head Cap Screw (Chart 9 item B8) in the Chain Adjustment Mechanism (Chart 9 item B2) for cracks. If cracks are found replace the Chain Adjustment Mechanism.

10B.3 Spring (Chart 9 item B3)

- 10B.3.1 Check spring to see if it is stretched. If the Spring is stretched, replace the Spring.
- 10B.3.2 Check the Spring for nicks and dents. If nicks or dents in the spring are deeper than 25% of the diameter of the Spring wire, replace the Spring.

10B.4 Chain Lock Pin Assembly (Chart 9 item B4)

- 10B.4.1 Check the bar of the Chain Lock Pin Assembly to make sure it is not bent. If the pin is bent more than 3-32", replace the Chain Lock Pin Assembly.

Warranty Note: Mathey Dearman Inc. will not warranty or accept any responsibility for heating, welding or straightening of the Chain Lock Pin Assembly.

- 10B.4.2 Check the area where the Chain Lock Pin joins the washer and chain for cracks. If cracks are found, reweld the Chain Lock Pin to the washer and chain.

10B.5 Universal Jackbar (Chart 9 item B5)

- 10B.5.1 Check the Universal Jackbar for cracks. If cracks are found, replace the Universal Jackbar.
- 10B.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 straightened and checked with some means of non-destructive testing determine if there are any cracks. If cracks are found, replace the Universal Jackbar.
- 10B.5.3 Screw the appropriate Thread Gauge from the equipment required list into the threaded hole of the Universal Jackbar. There should be no more than .010 thousands of an inch of play between Thread Gauge and the threaded hole in the Jackbar when moved in any direction.

10B.6 Jackscrew (Chart 9 item B6)

- 10B.6.1 The Jackscrew (Chart 9 item B6) should never be used without the stainless steel swivel pad. If the swivel pad is missing replace the Jackscrew.
- 10B.6.2 Check the Jackscrew (Chart 9 item B6) 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 it will mar the pipe. If marring of the pipe or pipe coating is a concern, replace the Jackscrew.
- 10B.6.3 Check the Jackscrew (Chart 9 item B6) for galled or missing threads. If the threads are galled or missing threads, replace the Jackscrew.
- 10B.6.4 Screw the Jackscrew (Chart 9 item B6) into the Universal Jackbar (Chart 9 item B5). If play between Jackscrew and the Universal Jackbar (Chart 9 item B5) exceeds .010 of an inch, screw the appropriate Thread Gauge from the equipment required list into the threaded hole for and Jackscrew (Chart 9 item B6). If play exceeds .010 thousands of an inch of play between the thread gauge from the required equipment list and threaded hole of the Jackbar replace the Jackbar. If play is within acceptable limits replace the jackscrew.
- 10B.6.5 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 bent Jackscrew will not function properly and should never be used. If it is bent, replace the Jackscrew.

10B.7 Thumbscrew (Chart 9 item B7)

- 10B.7.1 Check the threads of the Thumbscrew for galled or missing threads. Replace the Thumbscrew, if there are galled or missing threads,
- 10B.7.2 Check the Thumbscrew for straightness. If it is bent, replace the Thumbscrew.
- 10B.7.3 Screw the Thumbscrew into the Main Block (Chart 9 item B-1). If play between Thumbscrew and the threaded hole in the Main Block (Chart 9 item B1) exceeds .010 of an inch, screw the appropriate Thread Gauge from the equipment required list into the threaded hole of the Main Block. If play exceeds .010 thousands of an inch of play between the thread gauge from the required equipment list and threaded hole of the Main Block replace the Main Block. If play is within acceptable limits replace the Thumbscrew.

10B.8 Sock Head Cap Screw (Chart 9 item B8)

- 10B.8.1 Check the Sock Head Cap Screw for galled or missing threads. If there are galled or missing threads, replace the Sock Head Cap Screw.
- 10B.8.2 Check the shaft of the Sock Head Cap Screw for straightness. A Bent shaft of the Socket Head Cap Screw will not allow the Chain Adjustment Mechanism (Chart 9 item B8) to hold the chain under tension. If the shaft of the Socket Head Cap is bent, replace the Sock Head Cap Screw.

10B.9 Self-locking Nut (Chart 9 item B9)

- 10B.9.1 Check the Self-Locking Nut threads for galled or missing threads. If there are galled or missing threads, replace the Self-Locking Nut.
- 10B.9.2 Check the Self-Locking Nut to make sure it will lock on the threads of the Socket Head Cap Screw. If the Self-Locking Nut is not locking on the threads of the Socket Head Cap screw, replace the Self-Locking Nut.

10C Fine Adjustment (Chart 10)

10C.1 Crank Housing (Chart 10 item C1)

- 10C.1.1 Check the Crank Housing with some means of non-destructive testing to determine if there are any cracks. If cracks are found, replace the Crank Housing.
- 10C.1.2 Check the Crank Housing for any deformation. If deformation is noted, check the Crank Housing with some means of non-destructive testing to determine if there are any cracks. If any crack is noted, the Crank Housing should be replaced.

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

10C.2 Piston (Chart 10 item C-2)

- 10C.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 of accept any responsibility for heating, welding or straightening of the Piston.



WARNING: The use of defective Piston in the Fine Adjustment (Chart 10) can cause a failure of the Chain Clamp injuring the operator and by standers.

- 10C.2.2 Check the threaded hole in the Piston for galled or missing threads. If the threads are galled or missing replace the Piston.
- 10C.2.3 Check the hole in the Piston at the point where the Chain (E) attaches for elongation. If the hole in the Piston is elongated, the Piston should be replaced.
- 10C.2.4 Screw the appropriate Thread Gauge (item "C", "D" or "D" of equipment required list) into the threaded hole of the Piston into which the Threaded Stud (C-4) threads. The Thread Gauge when screwed into the Piston should not exceed .010 of an inch of play when moved in any direction.

10C.3 Crank Handle (Chart 10 item C3)

- 10C.3.1 Check the Crank Handle for cracks especially in the area where the threaded shaft (Chart 10 item C-4) is welded to the Crank Housing. If the cracks are found in the area of the Crank Handle, replace the Fine Adjustment (Chart 10).

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

10C.4 Threaded Stud (Chart 10 item C4)

- 10C.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 (Chart 10).
- 10C.4.2 *Check* the Threaded Stud to see if it is bent. A bent Threaded Stud can make it difficult to turn the Crank Handle (Chart 10 item C4) to move the piston inward and outward in the Crank Housing (Chart 10 item C1). If the Threaded Stud is bent and it is difficult to turn the Crank Handle (Chart 10 item C4), replace the Fine Adjustment (Chart 10).

10D Level and Support Device (Chart 11)

10D.1 Level and Support Frame (Chart 11 item D1)

10D.1.1 *Check* the Level and Support Frame for visible cracks. If cracks are found replace the Level and Support.

10D.1.2 *Check* the Level and Support Frame for any deformation. If deformation is noted, check for cracks with some means of non-destructive testing. If any crack is noted, the Crank Housing should be replaced.

10D.1.3 *Screw* the appropriate Thread Gauge from equipment required list into the threaded hole of the Level and Support Frame into which the Clamping Screw (Chart 11 item D-7) threads. The thread gauge when screwed into the Level and Support Frame *should not exceed .010 thousands of an inch of play* when moved in any direction.

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

10D.2 Crank Housing (Chart 11 item D2)

10D.2.1 *Check* the Crank Housing for visible cracks. If the cracks are found, replace the Crank Housing.

10D.2.2 *Check* the Crank Housing for any deformation. *If deformation* is noted, check for cracks with some means of non-destructive testing. If any crack is noted, the Crank Housing should be replaced.

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

10D.3 Level and Support Piston (Chart 11 item D3)

10D.3.1 *Check* the Piston (with a straight edge) for straightness. If the Piston is bent, it should be replaced or it should be check 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 of accept any responsibility for heating, welding or straightening of the Level and Support Piston.

10D.3.2 *Check* the threaded hole in the Piston for galled or missing threads. If the threads are galled or missing, replace the Piston

10D.3.3 *Check* the hole in the Piston at the point where the Chain (Chart 12) attaches for elongation. If the hole in the Piston is elongated, the Piston should be replaced.

10D.4 Threaded Stud (Chart 11 item D4)

10D.4.1 *Check* the threads of the Threaded Stud for galled or missing threads. If the Threaded Stud has galled or has missing threads, replace the Level and Support Assembly (Chart 11).

10D.4.2 *Check* the Threaded Stud (C-4) to see if it is bent. A bent threaded stud can make it difficult to turn the Crank Handle (Chart 11 item D5) to move the Piston inward and outward in the Crank Housing. If the Threaded Stud is bent, replace the Level and Support (D).

10D.5 Crank Handle (Chart 11 item D5)

10D.5.1 *Check* the Crank Handle for crack especially in the area where the threaded shaft (D-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 of accept any responsibility for heating, welding or straightening of the Crank Handle.

10D.6 Level and Support Chain (Chart 11 item D6)

10D.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.

10D.7 Clamping Screw (Chart 11 item D7)

10D.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.

10D.7.2 *Check* the Clamping Screw to see if it is bent. If the Clamping Screw is bent galled or has missing threads, replace the Clamping Screw.

10E Chain (Chart 12)

- 10E.1 Lay the Chain on a flat surface. Grasp two 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 two sections on either side of the Chain as measured with a 6" dial caliper from the list of required equipment *should not exceed .010 of an inch.*



WARNING: If play in Chain exceeds the tolerance, the Chain adjustment Latch (Chart 9 item B-2) may not properly engage the Chain, causing the Chain Clamp to fail during operation, resulting injury to the operator or bystanders.

- 10E.2 Check all links on the Chain for arc marks that may be caused by using the chain as a ground for a welding machine. The Chain should be replaced, if there are arc marks found at any point along the length of the Chain.
- 10E.3 Check the Chain for open or missing rollers. Replace the entire Chain, if there are open or missing Chain rollers.
- 10E.4 Check all link plates of the Chain for cracks. Replace the entire Chain, if cracks are noted in the link plates.
- 10E.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.



WARNING: The aligning and reforming capacity of the Mathey Dearman Chain Clamp is based on the use of Mathey Dearman Chain. Use of Roller Chain or Conn-Link (F) other than the Chain and Conn-Link supplied by Mathey Dearman Inc. may affect the aligning and reforming capacity of the Chain Clamp causing injury to the operator.

10F Conn-Link (Chart 12)

- 10F.1 If disassembled the Conn-Link connecting the Fine Adjustment (Chart 10) and the Chain (Chart 12) *should never be reused.*



WARNING: The Conn-Link should never be used without all of the linking plates as this will cause a loss the strength chain clamp, possible causing injury to the operator or bystanders.

10G Spacing Screws Assembly [Optional Accessory] (Chart 16)

10G.1 Bracket Assembly

- 10G.1.1 Check the Bracket Assembly for cracks at the point where the nut welds to the Bracket. Replace the Bracket Assembly, if cracks are found.
- 10G.1.2 Check the Nut for galled or missing threads. Replace the Bracket Assembly, if there are galled or missing threads.

10G.2 Spacing Screw

- 10G.2.1 Check the Spacing Screw for galled or missing threads. Replace the Spacing Screw, If there are galled or has missing threads.
- 10G.2.2 Check the Spacing Screw to see if it is bent. A bent Spacing Screw can make it difficult to turn or achieve the precise weld spacing between the pipes or fittings. Replace the Spacing Screw if it bent, galled or has missing threads.

11.0 ASSEMBLY OF CHAIN CLAMP SUBCOMPONENTS

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

11A Assembly Equipment Required:

- 6" Needle Nose Pliers
- 5/16" Allen Wrench
- 3/8" Allen Wrench
- 1/2" Allen Wrench
- Flathead Screw Driver
- 6" Adjustable Wrench
- Hammer
- Chain Breaker
- 1/8" Drift Punch
- 3/16" Drift Punch
- 5/16" Drift Punch
- Small Disc Grinder
- 9/16" Combination Wrench
- Combination Wrench

11B Jackbar Assembly (Chart 10)

- 11B.1 *Lay* the Jackbar on the table with Surface "A" making contact with the table.
- 11B.2 *Insert* the Chain Lock (Chart 11 item A2) with the opening facing upward into the rectangular hole of the Jackbar (Chart 11 Item A1).
- 11B.3 *Close the opening* of the Chain Lock (Chart 11 item A2) so that it is retained on the Jackbar (A-1) and cannot become separated from the Jackbar.
- 11B.4 *Thread* the Thumbscrew (Chart 11 item A4) into the threaded hole above the Chain Lock 3 or 4 Turns.
- 11B.5 *Lubricate* the Jackscrew(s) (Chart 11 item A3) with a light coat of copper-based anti-seize lubricant such as Loctite C5-A.
- 11B.6 *Insert* the Jackscrew (Chart 11 item A3) into the threaded hole of the Jackbar (Chart 11 item A-1). The Jackscrew should be able to be screwed into the Jackbar without the use of tools.
- 11B.7 Repeat steps 1 – 5 until all Chain Clamp Jackbars are assembled.

11C Main Block (Chart 9)

- 11C.1 Remove both of the Jackscrews (Chart 9 item B6) from the Universal Jackbar (Chart 9 item B5).
- 11C.2 *Insert* the Universal Jackbar (Chart 9 item B5) into the square hole located in the side of the Main Block (Chart 9 item B1) until the Universal Jackbar extends an equal distance from the sides of the Main Block.
- 11C.3 *Lubricate* the threads of the Jackscrews (B-6) with a light coat of copper-based anti-seize lubricant such as Loctite C5-A.
- 11C.4 Screw both Jackscrews (Chart 9 item B6) back into the Universal Jackbar (Chart 9 item B5).
- 11C.5 *Insert* the Thumbscrew (Chart 9 Item B7) into threaded hole in the tab located next to the square shaped hole in the Main Block (Chart 9 item B1).
- 11C.6 *Tighten* the Thumbscrew (Chart 9 Item B7) against the Universal Jackbar (Chart 9 item B5). The Thumbscrew should only be tight enough to hold the Universal Jackbar in position.
- 11C.7 *Install* and *loop* portion of the Spring (Chart 9 item B3) into the loop at the bottom of the Chain Adjustment Mechanism (Chart 9 item B2).

- 11C.8 *Install* the loop portion at the other end of the Spring (Chart 9 item B3) into the loop, which is welded, to the square tube between the Main Block (Chart 9 item B1) side plates using needle-nose pliers (item "A" of assembly equipment required).
- 11C.9 *Install* the Chain Adjustment Latch (Chart 9 item B2) between the side plates with the Chain Adjustment Mechanism Handle (Chart 9 item B2) facing the opposite direction of the Chain Lock Pin (Chart 9 item B4).
- 11C.10 *Align* the holes in the side plates of the Main Block (Chart 9 item B1) with the hole in the Chain Adjustment Mechanism (Chart 9 item B2).
- 11C.11 *Insert* the Socket Head Cap Screw (Chart 9 item B8) into the aligned holes of the Main Block (Chart 9 item B1) and the Chain Adjustment Mechanism (Chart 9 item B2), until the head of the Socket Head Cap Screw is flush with the side plate of the Main Block.
- 11C.12 *Install* the Self Locking Nut (Chart 9 item B9) on the threaded portion of the Socket Head Cap Screw (Chart 9 item B8) sticking out of the side plate of the Main Block.
- 11C.13 *After tightening* the Self Locking Nut (Chart 9 item B9), move the Chain Adjustment Mechanism (Chart 9 item B2) *back and forward* to make sure it operates freely.
- 11C.14 Assembly of the Main Block is now completed.



11D. Fine Adjustment

- 11D.1 *Lubricate* the Threaded Stud (Chart 10 item C4) with a light coat of copper-based anti-seize lubricant such as Loctite C5-A as much as possible.
- 11D.2 *Align* the slot or hole in the Piston (Chart 10 item C2) with the hole in the Crank Housing (Chart 10 item C1).
- 11D.3 *Thread* the Piston (Chart 10 item C2) on the Threaded Stud (Chart 10 item C4) by turning Crank Handle (Chart 10 item C3).
- 11D.4 Assembly of the Fine Adjustment is now complete.

11E Level and Support

1. *Lubricate* the Threaded Stud (Chart 11 item D4) with a light coat of heat resistant grease such as Lubriplate 130-AA.
2. *Align* the Slot of the Piston (Chart 11 item D3) with the hole in the Crank Housing (Chart 11 item D2).
3. *Thread* the Piston (Chart 11 item D3) on the Threaded Stud (Chart 11 item D4) by turning Crank Handle (Chart 11 item D5).
4. *Align* the Link at the end of the chain (Chart 11 item D6) between the ears of the Piston (Chart 11 item D3) and press in the new Spring Pin (Chart 11 item D12).
5. *Lubricate* the Clamping Screw (Chart 11 item D7) with a light coat of a heat resistant grease such as Lubriplate 130-AA and *thread* into the thread hole of the Level and Support Frame (Chart 11 item D1).
7. The Level and Support Assembly is now completed.

12.0 CHAIN CLAMP ASSEMBLY

12A The installation of the Fine Adjustment (Chart 10) to the Chain (Chart 12).

- 12A.1 Place the Chain end (Chart 12) over the Fine Adjustment Piston (Chart 10 item C2)
- 12A.2 *Insert* 2 of the connecting plates furnished with the Conn-Link (Chart 12) into the center of the Fine Adjustment Piston (Chart 10 item C2).
- 12A.3 *Insert* the side plate with the 2 studs of the Conn-Link (Chart 12) into the Chain (Chart 12) and the Adjustment Piston (Chart 10 item C2).
- 12A.4 *Insert* the remaining connecting plate over the studs of the Conn-Link (Chart 12).
- 12A.5 *Install the Chain lock* on the studs of the Conn-Link (Chart 12).

12B Installing the Jackbars (Chart 7) on the Chain (Chart 12)

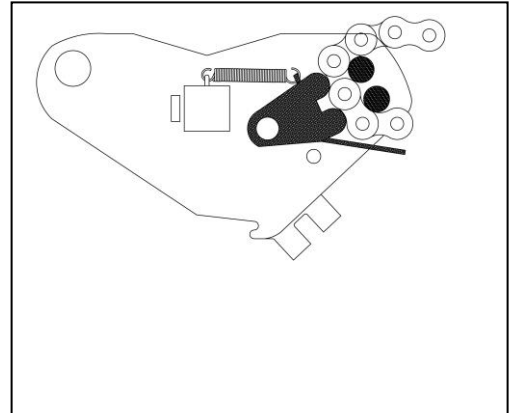
- 12B.1 Lay the Chain (Chart 12) on a flat surface with the Fine Adjustment (Chart 10) on the right.

- 12B.2 Loosen the Thumbscrew (Chart 7 item 4A) so that the Chain Lock (Chart 7 item A2) moves up and down freely in the Jackbar (Chart 7).
- 12B.3 *Install* the Jackbars (Chart 7) on the Chain (Chart 12) with the Jackscrews (Chart 7 item A3) facing forward.

Note: If installing the universal Jackbar (Chart 8) on the Chain (Chart 12) the Brass Screw (Chart 8 item AA9) should be on the backside of the chain.

12C Installing the Chain (Chart 12) in the Main Block Assembly (Chart 9)

- 12C.1 Place the Main Block (Chart 9) near the Chain (Chart 12) with the surface that contacts the pipe is facing upward.
- 12C.2 *Push* the arm of the Chain Adjustment Mechanism (Chart 9 item B2) downward to open Chain Adjustment Mechanism.
- 12C.3 *Insert* the Chain (Chart 12) between the round bars and Chain Adjustment Mechanism (Chart 9 item B2) until about 5 inches of chain is protruding out of the Main Block (Chart 9).
- 12C.4 *Install* the Spacers on each end of the Chain and insert Spacer Screw and Lock Nut.
- 12C.5 *Rotate* the Main Block (B) *counterclockwise*, until the 5 inch piece of the Chain (E) sticking out of the Main Block is on your left.



12D Installation of the Chain Stop (Chart 13)

- 12D.1 Place Spacer (Chart 13 item E1) onto the Machine Screw or Allen Head Screw (Chart 13 item E2).
- 12D.2 Insert the Screw (Chart 13 item E2) with spacer (Chart 13 item E1) through the holes in the leafs on the chain end that is protruding 5 inches out of the Main Block (Chart 9).
- 12D.3 Install the self-locking hex Nut (Chart 13 item E3) on the Screw (Chart 13 item E2) and tighten

The Clamp is now ready for the Alignment or reforming process.

13.0 – WARRANTY

13.1 – GENERAL CONDITIONS

Mathey Dearman, Inc. Warranty and Terms and Conditions of Sale

LIMITED WARRANTY Subject to the provisions contained herein, if any merchandise sold hereunder (except merchandise manufactured by other persons or firms) by Mathey Dearman, Inc. ("Mathey Dearman"), (either as the seller of the merchandise sometimes referred to herein as the "Company") is not in accordance with specifications shown on the order within customarily accepted tolerances, or is defective on account of workmanship or material, and if such merchandise is returned at the customer's expense and risk, to the Company's manufacturing facility (or at the Company's option, is returned to a repair facility authorized by the Company), within one (1) year after the Company's date of shipment thereof (the "Warranty Period"), the Company will, at its option, replace or repair the merchandise. This warranty, however, is subject to the conditions: (A) that the customer promptly notifies the Company in writing of any claim under this agreement, setting forth in detail any such claimed defect, and (B) That the Company be afforded a reasonable opportunity to examine the merchandise and to investigate and verify the claimed defect at the Company's manufacturing facility or at an authorized repair facility. The Company shall not be, in any event, liable for damages beyond the price paid by the customer for such defective merchandise. THE COMPANY SHALL NOT BE LIABLE TO CUSTOMER UNDER ANY THEORY OR CIRCUMSTANCES FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE, OR EXEMPLARY DAMAGES. This agreement does not obligate the Company to bear any transportation charges in connection with the replacement or the repair of defective merchandise. 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 MERCHANDISE'S FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, CAPACITY, OR EFFICIENCY AND THAT THERE ARE NO ORAL OR WRITTEN EXPRESSED OR IMPLIED WARRANTIES MADE IN CONNECTION WITH ANY SALE BY THE COMPANY OTHER THAN AS EXPRESSED HEREIN. No modification or addition to this agreement, either before or after the contract of sale, shall be made except on written authority of the President or Vice President of the Company.

The Company shall have no liability for warranty claims if the merchandise has been abused, misused, vandalized, or operated beyond its specifications after delivery. Further, the Company shall also have no liability for Warranty Claims if the merchandise is from the Company's CGM Pipe Cutting and Beveling product line and has been used in any manner not in compliance with the "Conditions of Use", as applicable.

13.2 – Limitations

Mathey Dearman, Inc. is not responsible for the following:

- Improper use of the machine.
- Use against the national and/or international regulation in force.
- Improper or wrong connection.
- Bad fault on maintenance.
- Unauthorised modifications and/or services.
- Use of non-original spare-parts or specific components called for in this operating manual.
- Non-observance of the instruction, also partially.
- Unusual events like natural disasters.

14.0 – NOT RECOMMENDED FOR USES

- Mini Jolli Chain Machine is specially designed to cut and bevel pipes.
- Never to be used in presence of gas or inflammable liquid or solid.
- All obstacles must be removed before operation to insure proper clearance around the pipe.
- Flame torch must not be positioned in direction to the operator or other people.
- Never use torch with inappropriate gas.
- For proper use of Torch and Tip refer to the specific Manual for proper use.
- Switch off the cutting machine and torch prior to machine maintenance.

15.0 – STORAGE

18.1 - General information

- Lubricate threads of the Jackscrew with a light coat of copper-based anti-seize lubricant such as Loctite C5-A.
- Store the Chain Clamp in a clean, dry, and safe environment.
- Store the Chain Clamp in the Chain Clamp storage box, if the clamp will not be used for an extended period of time.

19.0 – RECYCLING OF COMPONENTS

19.1 - Separation of the components

- Separate the components by category for a possible re-use or separate waste.
- Reference local regulations concerning disposal of components.
- The components of Chain Clamp are:

Stainless steel	Jackbar, Jackscrew swivel pad, Main Block, Level and Support Yoke, Stainless Steel Roller Chain, Stainless Steel Connecting Link
1025 cast steel	Universal Jackbar Holder, Level and Support Crank Housing, Level and support Piston, Level and Support Crank Handle (The Crank Housing, Piston and Crank Handle are also used as part of the Fine Adjustment)
Carbon Steel	Level and Support Frame, Universal Jackbar, Cap Screw, Hex Nut, Flat Washer, Nickel plated Roller Chain, Nickel plated Connecting Link, Chain Clamp Wrench, Level and Support Collar, Level and support threaded Stud
Brass	Universal Jackbar Screw

