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## Double Chain Clamp Parts and Operating Manual



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Part Number	Number of Main Blocks	Number of Jackbars	Pipe Size in/mm	Estimated Shipping weight lbs. / kg
D251-1036	1	9	10-36 / 254-914	220 / 100
D251-1036SS	1	9	10-36 / 254-914	220 / 100
D251-1048	1	12	10-48 / 254-1219	278 / 126
D251-1048SS	1	12	10-48 / 254-1219	278 / 126
D251-1054	1	14	10-54 / 254-1372	300 / 136
D251-1054SS	1	14	10-54 / 254-1372	300 / 136
D251-1060	1	16	10-60 / 254-1524	328 / 149
D251-1060SS	1	16	10-60 / 254-1524	328 / 149
D251-1072	1	20	10-72 / 254-1829	387 / 176
D251-1072SS	1	20	10-72 / 254-1829	387 / 176
D251-1084	1	24	10-84 / 254-2134	442 / 200
D251-1084SS	1	24	10-84 / 254-2134	442 / 200
D251-1096	2	28	10-96 / 254-2438	498 / 226
D251-1096SS	2	28	10-96 / 254-2438	498 / 226
D251-10108	2	32	10-108 / 254-2743	554 / 251
D251-10108SS	2	32	10-108 / 254-2743	554 / 251
D251-10120	2	36	10-120 / 254-3048	610 / 277
D251-10120SS	2	36	10-120 / 254-3048	610 / 277
D251-1011F	2	39	10-132 / 254-3353	660 / 299
D251-1011FSS	2	39	10-132 / 254-3353	660 / 299
D251-1012F	2	42	10-144 / 254-3715	710 / 322
D251-1012FSS	2	42	10-144 / 254-3715	710 / 322
D251-1014F	3	48	10-168 / 254-4267	810 / 367
D251-1014FSS	3	48	10-168 / 254-4267	810 / 367
D251-1016F	3	54	10-192 / 254-4877	910 / 410
D251-1016FSS	3	54	10-192 / 254-4877	910 / 410
D251-1018F	3	60	10-216 / 254-5486	1010 / 455
D251-1018FSS	3	60	10-216 / 254-5486	1010 / 455
D251-1020F	3	66	10-240 / 254-6096	1110 / 500
D251-1020FSS	3	66	10-240 / 254-6096	1110 / 500

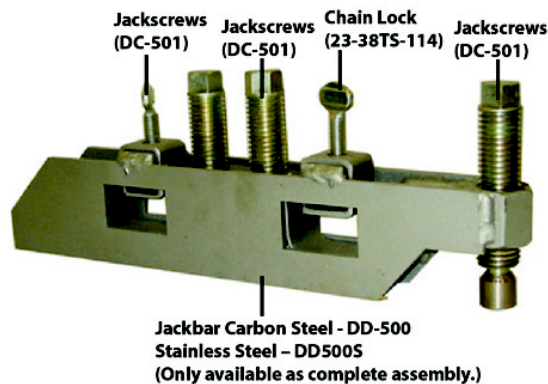
## DOUBLE CHAIN CLAMP

The Double Chain Clamp is *heavy-duty vessel clamp* designed for the alignment and reforming of large pipe and vessels. The Clamp will align and reform pipe or vessels up to 20 foot (6 meters) in diameter with Schedule 80 wall thickness. The extra heavy-duty Jackbars and Main Block provide the brute strength to accomplish almost any reforming job.

The Double Chain Clamp may have one or more Main Block Assemblies, depending on the clamps range of clamping on the pipe in order to properly and uniformly take up the slack in the Chain. Each section of the clamp has a Main Block and Fine Adjustment that by cranking the Handle of the Fine Adjustment removes the slack in the chain. Multiple Main Blocks are included with large pipe or vessels Clamps to enable the operator to remove the slack in sections of the chain (see Chart on Page 2). The use of multiple Main Blocks and Fine Adjustments greatly aid in the installation, application and function of the clamp.

### Installing the Clamp on Pipe *without* Cable Puller

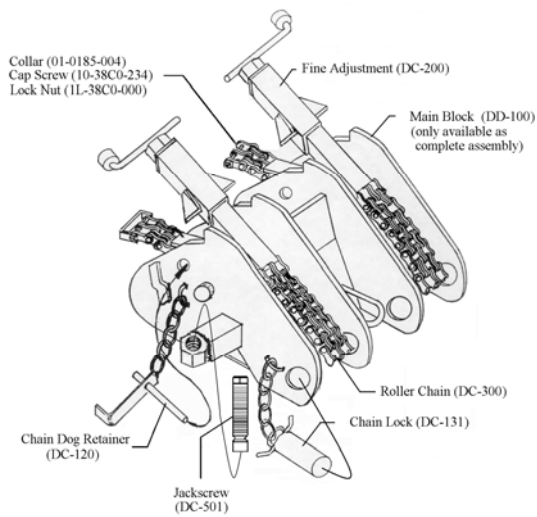
1. Lay out the clamp on the floor or table with Jackbars facing down (See Figure 1). Make sure all Jackscrews are lightly touching the floor and the Jackbars are not elevated. (See Figure 1 & 3)



**Figure 1: Jackbar**

## DOUBLE CHAIN CLAMP

### Double Chain Clamp Main Block



**Figure 2: Main Block**

The Double Chain Clamp has 1 or more **Double Main Blocks** containing 2 Chain Dogs, Chain Dog Retainers and Chain Locks. A Jackbar protrudes out of the side of the Main Block to assist with the alignment and reforming processes. The Eye of the Main Block is used as an attachment point for the Cable Puller or a crane. The Main Block and all parts attached to the Main Block are made from 1018 steel. A 3/16" X 3/16" square bar is welded to the bottom of the Main Block for stainless steel and specialty alloy applications.

2. Evenly space the Jackbars (DD-500 or DD-500S) along the Chain (DC-300-See Figure 3) as shown below and tighten both Chain Locks (22-38TS-114 Thumbscrew) located on the Jackbar (See Figure 1) to secure the Jackbars in position on the Chain. Adjust all Jackscrews (DC-501) to make sure they are lightly touching the floor and the Jackbar (DD-500 or DD-500S) is not elevated. (See Figure 3)

## DOUBLE CHAIN CLAMP



**Figure 3**

3. Take the Chain Dog Retainers (DC-120-See Figure 2) and Chain Locks (DC-131- See Figure 2) that are located on both side of the Main Block out of the support holes and leave dangling until it is time to lock the Chain in position.
4. Lower the clamp over each side of the pipe. Pull the clamp over the pipe if there is not enough clearance above the pipe to lower the clamp down on the pipe with a crane.  
**Note:** Instructions for making a “*spread bar*” to assist in lowering the clamp on the pipe or vessel with a crane is located in the back of this manual.
5. Fit the clamp on pipe with the end of the Jackbars (DC-500 or DD-500S) protruding past the end of the pipe approximately 1” (25mm).
6. Adjust the clamp so the Main Block is at a convenient height (waist high).
7. Place the ears of the Fine Adjustments (DC-200) into the notches of the Main Block. (See Figure 2)
8. Install the Chain Locks (DC-131) into the Main Block over the chains. (See Figure 2)
9. Pull both Chains (DC-300) through the Chain Dogs (DC-102) of the Main Block until both chains are tight against the side of the pipe or vessel. The lengths of each chain should be even with each other.
10. Install Chain Dog Retainers (DC-120) back into the Main Block slots. (See Figure 2)

## DOUBLE CHAIN CLAMP

11. Move the other section of the pipe forward until pipe rest on the Jackscrews (DC-501). If too much HI-LOW exists, it may be necessary to remove some of the out-of-roundness of the mating pipe to fit the pipe in the clamp. (When aligning fabricated shells with an out-of-round condition, it may be necessary to place a brace, about 1" (25mm) smaller than the inside diameter, into the shell to remove a majority of the out-of- round condition). The brace(s) can be easily removed after you make the fit-up.

**Caution:** It should never be necessary to tighten all Jackscrews (DC-501). Tighten only those Jackscrews (DC-501) where the HIGHS in the pipe exist. When adjusting the pipe diameters to match up to each other, it may be necessary to loosen some Jackscrews (DC-501) that were tightened previously.

**Caution:** Do not attempt to adjust all Jackscrews at the same to time to remove the high points.

12. Tighten each Jackscrew a little at a time. Go around the Vessel as many times as necessary until you have a good fit-up.

**Caution:** Do not tack weld the vessels before a good fit-up is achieved all the way around the vessel.

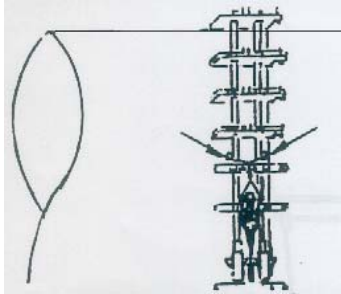
13. When possible, completely weld the weld joint on inside of the vessel before removing the clamp. This eliminates the tacking of the weld joint on the outside pipe or vessel. When inside welding of the weld joint is not possible, the Jackbars should be arranged to obtain an 80% weld joint on the outside of the vessel.

**Note:** If it is not possible to weld the inside first, we suggest that all unrestricted areas weld joint be welded on the outside of the pipe or vessel, before removing the clamp. This will help prevent cracking of the skip-welds.

14. Raise the Jackscrews about a 1/4" (6mm) off the vessel surface before removing the clamp.
15. Reverse the procedure used to install the clamp to remove the clamp.

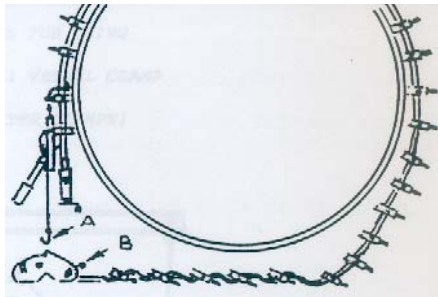
## DOUBLE CHAIN CLAMP

### Instructions for mounting the Double Chain Clamp using a Heavy-Duty Cable Puller (Come-A-Long)



**Figure 4**

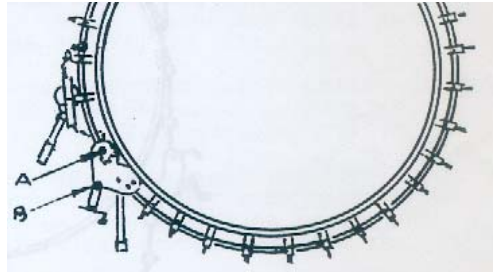
1. With the Dearman Double Chain Clamp resting over the pipe, place 2 hooks (A & B) of the Heavy-Duty Cable Puller on the outside of the Double Chain above one of the Jackbars. Bring the Cable of the Cable Puller to center between the Jackscrews. (See Figure 12: Cable Puller Detail in back of manual)



**Figure 5**

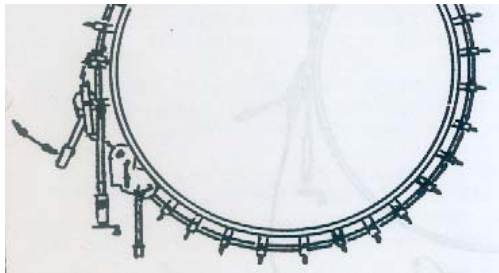
2. Place the Hook (A) on the end of the Cable Puller to eye (B) in the center of the Main Block. (See Figure: 5)

## DOUBLE CHAIN CLAMP



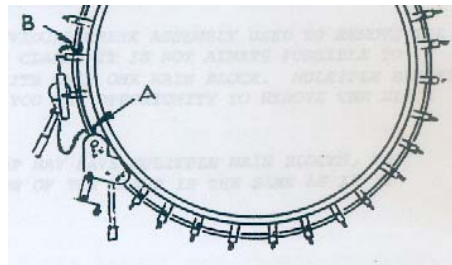
**Figure 6**

3. Ratchet the handle (C) of Cable Puller to move the Main Block into position on the pipe. (See Figure 7 below & Figure 12: Cable Puller Detail in back of manual)



**Figure 7**

4. Place the Ears of the Fine Adjustment (DC-200) into the notches of the Main Block. (See Figure 2)
5. Pull the excess chain (DC-300) through the Chain Dog (DC-102) and put the Chain Lock (DC-131) into the Main Block over chains. The Chains should be as close to the same length as possible. (See Figure 2)
6. Install the Chain Dog Retainers (DC-120). (See Figure 2)
7. The Cable Puller is now ready for removal.

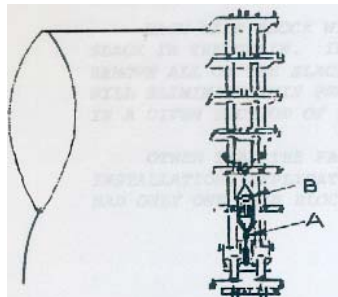




## DOUBLE CHAIN CLAMP

**Figure 8**

8. Move Latch (D) of the Cable Puller to the down position. Pull back on the latch (E) of the cable puller and with the other hand pull the cable downward to obtain slack in the cable. (See Figure 12: Cable Puller Detail in back of manual)



**Figure 9**

9. Unhook Snap Hook (A) of Cable Puller from eye of the Main Block (B). Remove hook (B) from the double Chain of Double Chain Clamp.
10. Move the other section of the pipe forward until pipe rest on the Jackscrews (DC-501). If too much HI-LOW exists, it will be necessary to remove some of the out-of-roundness of the pipe in order fit the pipe into the clamp. (When aligning fabricated shells with an out of round condition, it may be necessary to place a brace about 1" (25mm) smaller than the inside diameter into the shell to remove some of the out of round condition). The brace can be easily removed after making the fit-up.  
**Caution:** Tighten only those jackscrews (DC-501) where the HIGHS exist. It may be necessary to loosen some jackscrews that were tightened previously when adjusting the pipe diameters to match.  
**Caution:** Do not attempt to adjust all Jackscrews at the same to time to remove the high points.
11. Tighten each Jackscrew (DC-501) a little at a time and tighten each Jackscrew as many times as necessary until good fit-up is achieved.  
**Caution:** Do not tack weld vessels together before a good fit-up has been achieved all the way around the vessel.
13. When possible, weld the inside of the weld joint before removing the clamp to eliminate tacking the outside of the weld joint. When inside welding is not possible, Jackbars should be arranged to give an 80% weld of the weld joint.

## **DOUBLE CHAIN CLAMP**

**Note:** If it is not possible to weld the inside first, it is suggested that all unrestricted areas of the weld joint be welded before removing the clamp to help prevent cracking of the skip-welds.

14. Before removing the clamp, raise the jackscrews about a ¼” (6mm) of the vessel surface.
15. To remove the clamp, reverse the procedure used to install the clamp.

### **To loosen the Roller Chain**

1. Rotate the Crank Handle on the Fine Adjustment (DC-200) until the Piston is at its outer most point if additional slack in the Chain (DC-300) is needed.

**Warning:** Do not extend the Piston past the hole in the Fine Adjustment Housing.

2. Position the Fine Adjustment ears in the recess of the Main Block
3. Remove the Chain Dog Retainers (DC-120) from the Main Block.
4. Lift the Chain Dogs and pull the chains (DC-300) through the Main Block.

**Note:** The length of the Chains protruding out of the Chain Dogs should be as even as possible.

### **To Tighten the Roller Chain**

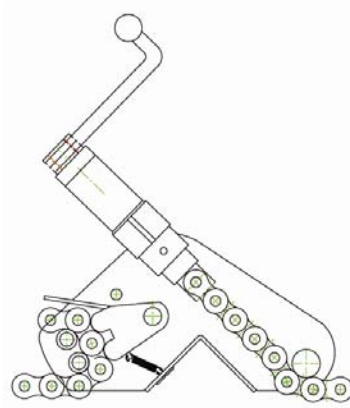
1. Remove the Chain Dog Retainers (DC-120) from Main Block.
2. Pull the Chain through the Chain Dog to take up the slack in the Roller Chain.
3. Pull the ends of the chains through the Chain Dogs (DC-102) keeping them as even as possible.
4. The Chain Dog is spring-loaded to clamp the Roller Chain automatically when the trigger is released. Lift the trigger on the Chain Dog to let the chain go through the Main Block if the chain needs to be released.
5. Use the Cable Puller (See Figure 12 in the back of the manual) to tension the Roller Chain. Install the Fine Adjustment in the notches of the Main Block and reinstall the Chain Dog Retainers.

**Note:** The length of the Chains protruding out of the Chain Dogs should be as even as possible.

6. Replace the Chain Dog Retainers.
7. Rotate the Crank Handle of the Fine Adjustment to tension the Chain.

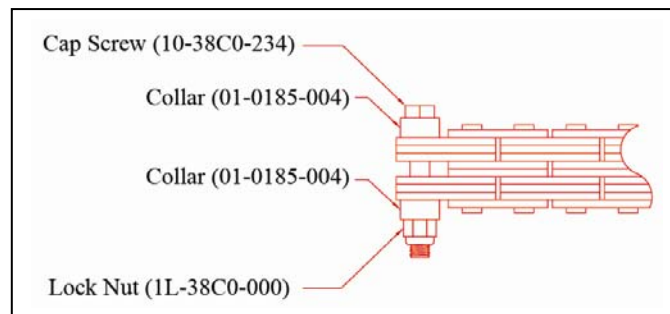
## DOUBLE CHAIN CLAMP

### Remove the Jackbars from the Clamp



**Figure 10: Chain Routing thru Main Block**

1. Remove Lock Nut (1L-38C0-234), Collar (01-0158-004) and Hex Head Cap Screw (10-38C0-234) from the end of the chain. Save these Items as they will be needed later. (See Figure 11: Chain End)



**Figure 11: Chain End**

2. Run the end of the Roller Chain from which Lock Nut (1L-38C0-234), Collar (01-0158-004) and Hex Head Cap Screw (10-38C0-234) were removed through the bottom side of the Main Block and underneath the chain dog. (See Figure 10)
3. Press down on the Chain Dog and pull the Chain out of the Main Block. (See Figure 2)
4. Remove the number of Jackbar required. See Chart on page 2 for the number of Jackbars required for a particular pipe or vessel diameter.

## DOUBLE CHAIN CLAMP

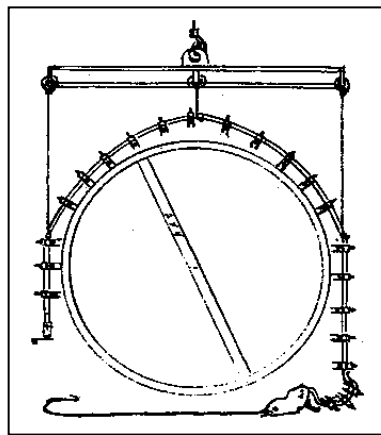
5. Reinstall the Chain through the Main Block. (See Figure 10)
6. Reinstall Lock Nut (1L-38C0-234), Collar (01-0158-004) and Hex Head Cap Screw (10-38C0-234) on the end of the chain.



**Figure 12:  
Cable Puller Detail**

**A Spreader bar  
design that will  
make installation**

**of the Double Chain Clamp on the pipe easier.**



**Figure 13: Spreader Bar**

**Approximate dimensions of the spreader bar cable  
for use on 15' diameter vessel:**

Center cable 2' long, end cables 9'6" long.

When hooking to the clamp,  
space hook at 11'7" from center of hook.

## **DOUBLE CHAIN CLAMP**

### **Maintenance**

- 1.** All Jackscrews should be inspected after each clamping operation for splatter and other foreign debris. Any slag, splatter and other foreign debris should be removed prior to the next clamping operation.
- 2.** Check all Jackscrews for damaged threads. If the threads are damaged, they should be filed smooth so that the Jackscrew will rotate smoothly in and out of the Jackscrew Nut.
- 3. Anti-seize should be applied to all Jackscrews daily.**
- 4.** Check Segments of the Chain for welding arc marks. If chain exhibits arc marks replace the chain.

### Warranty

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



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