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- A. A packing list will be found attached to crate No. 1 of each shipment. The parts in the crates should be checked with this list. If there are any discrepancies, notify Dawson Metal at once.
- B. All parts are numbered. Numbering starts from left as you face the unit from the exterior side. Be sure that each part is erected in its proper position.
- C. Assemble the Frame (except Hardware Access section of Hinge Jamb) on the floor and raise into place or assemble the Frame in the opening, depending on unit construction requirements. See job drawings.
- D. Level the bottom unit, being especially careful that Base Plate (18) is level with the Saddle. This is important. Do not fasten any part of the unit to walls or floor at this time.
- E. Install Door Hinge Tube Assembly (5) as follows:
1. Loosen Set Screw (9A) and remove Lower Screw (6) from Spline Pin (7) using a 1/4" Allen Wrench and push pin down flush with top of Top Arm. Note position of Large Spline.
 2. Place One 1/16" Washer, Hinge Tube Base (171, .530 ID) and One 1/32" Washer, Hinge Tube Base (17J, .530 ID) over the Base Pin (18). Place the Hinge Tube Assy (5) Bottom Base Hub Assembly (17) Hole over Base Pin (18) on top of Washers on the Base Plate (18 A) and swing the Hinge Tube Arms around to closed position.
 3. Engage Spline Pin (7) with spline hole in unit above. To accomplish this, push up Pin Screw (6) located in shaft slot and move the shaft around until you feel the wide double tooth section of the Spline Pin fit into chamber of the hole above. With continued up pressure on Pin Screw rotate shaft back and forth until the screw slides to top of slot. The Spline Pin is then engaged. Replace second screw (6) and turn in until the head is below the outside of hinge tube shaft and attached firmly.
 4. Apply Semi-Permanent Thread Locking Fluid to Set Screw 3/8 - 16 X .625, SS (9A) and screw into top arm threaded hole which meets Spline Pin Slot. Tighten Set Screw firmly using 3/16" Hex Wrench.
- F. Evaluate Door Clearance
1. Note the clearance between Top Arm and Frame Header Member. If other than the door clearance specified (normally 1/8"), remove the Hinge Tube Assembly (5). If too low, add (171) 1/16" Washers and/or (17J) 1/32" washers. If too high, remove (171) 1/16" Washers and/or (17J) 1/32" washers by the required amount. Replace Hinge Tube Assy (5).
 2. If the Door Stop Assy (15) is not installed do so prior to hanging Doors - see Hardware Assembly Drawing PAGE 5.
- G. Hang Door
1. Loosen Set Screw (9B) in top arm using 3/16" hex wrench and remove the Top Pivot Stud (8).
 2. Check to be sure that the Door Pivots (13) and (11) and Door Roller (12) Screws are tight.

3. One 1/16" Washer, Door Pivot (16A, .760 ID) and One 1/32" Washer, Door Pivot (16B, .780 ID) onto the Stud Bottom Pivot (10) shaft.
 4. Place door in the opening in open position (perpendicular to the threshold) with the door pivots close to the jamb {hinge tube} side and the top tipped toward away from the jamb side of the door frame. Lift door and place Bottom Door Pivot (14) over Bottom Pivot Stud (10) at Hinge Tube Bottom Arm with the Hinge Tube Bottom Arm extending into the building.
 5. Straighten top of door vertically and at the same time engage Roller Assy (12) at the top of the door into guide channel (4J) in frame header.
 6. Insert Top Pivot Stud (8) into Top Arm and then down into the Door Top Pivot Bearing (11). (A ¼-20 threaded screw can be temporarily screwed into the top of the Top Pivot Stud to help assemble the part and removed after the Top Pivot Stud has been installed)
 7. Note the clearance between top of the Top Door Poor (11) and Top Arm. Also look at the clearance between bottom of the Bottom Door Poor (14) and Bottom Arm. If other than the door clearance specified (normally 1/8") or not equal amounts, remove the Door. If too low, add (16A) 1/16" Washers and/or (16B) 1/32" washers as required. If too high, remove (16A) 1/16" Washers and/or (16B) 1/32" washers as required. Replace the door.
 8. Tighten Set Screw (9B) securely applying semi-permanent (blue) locktite if necessary.
- H. Shift and shim jamb sections, Mounting Plate (18), and threshold as required to obtain perfect door alignment in all directions. **THIS IS IMPORTANT.**
- I. Keeping the above alignment, fasten threshold and jamb sections as per drawing requirements.
- J. Check Door clearances all around the Door Frame and adjust as required, shifting door pivot mountings on the door as described below.
1. Turn Closer Mechanism Valve (SS) Swing Speed out enough to allow free swing of the Door.
(APPROX. 2 TURNS FROM CLOSED)
 2. Adjust clearances as follows: (See top view of Door on separate sheet, FIG 5 on PAGE 6)
 - a. To change clearances between Door and Side Jambs or between Doors, move Door Top Pivot (11) and or Bottom Pivot (14). Slotted mounting holes parallel with the Door are provided for this purpose.

- b. To adjust Door against the Door Stops, move Door Top Roller (12) in or out as required. The Roller position should be located at "A" and "B" dimension as shown on PAGE 5 Door Top View and DOOR HARDWARE SCHEDULE Table, for Short Arm or Long Arm type Hardware.

CAUTION: DIMENSION "A" MUST NOT EXCEED THE SPECIFIED DIMENSION FROM THE DOOR PIVOT CENTER LOCATION BY MORE THAN 1/16 INCH, THIS CAN CAUSE DAMAGE TO THE BALANCED DOOR HARDWARE AND FAILURE.

Move the Roller toward the pull side if the Door hits the Hinge Jamb Stop but not the Strike Side. Move the Roller toward the Push Side if the door hits the Strike Side but leaves too much clearance at Hinge Jamb Stop. The Slotted Mounting Holes located perpendicular to the Door are provided for this purpose.

- c. To raise the Hinge Tube (11) add Shim Washers (171), (17J) onto Base Pin (18A).

NOTE: Hinge Tube (5) must be taken down to do this.

- d. To raise the Door add Shim Washers (16A), (16B) on top of Bottom Pivot Stud (10).

NOTE: Door must be taken down to make the above adjustments.

- K. Door closing adjustment: Set the **Swing Speed (SS)** and **Latch Speed (LS)** valves shown in Fig. 10, by turning each valve fully closed clockwise then opening the valve 2 turns counter-clockwise (1-1/2 turns minimum) using a 3/32" Allen hex wrench.

1. Let the door close and observe the door speed.

Swing Speed (SS) controls door motion from: Door fully open to 20° open position.

Latch Speed (LS) door motion from: Door 20° open to closed position.

Adjust the swing speed and latch speed valves:

- To **decrease** door speed, turn the valve on clockwise ¼ to ½ turn.
- To **increase** door speed, turn the valve out counter-clockwise ¼ to ½ turn.

*** - CHECK THAT DOOR DOES NOT STOP WHEN PUSHED CLOSED FIRMLY. THE DOOR SHOULD ONLY BE SLOWED DOWN BY THE CLOSER WHEN ADJUSTED PROPERLY, ALLOWING THE DOOR TO CLOSE FULLY IN 7 SECONDS OR LESS.

(CAUTION: NEVER ADJUST THE VALVE CLOSED MORE THAN 1-1/2 THIS MAY CAUSE THE DOOR TO STOP WHILE BEING PUSHED CLOSED, THIS CAN CAUSE DAMAGE TO THE BALANCED DOOR HARDWARE AND FAILURE. VOIDING WARRANTY)

DELAY TIME:

Insert a 3/16" straight blade Screwdriver in Delay Valve Hole. To increase delay time turn valve clockwise. To decrease the delay time turn counterclockwise.

(CAUTION: NEVER FORCE THE DOOR CLOSED WHEN THE DELAY IS HOLDING THE DOOR OPEN, THIS CAN CAUSE DAMAGE TO THE BALANCED DOOR HARDWARE AND FAILURE. VOIDING WARRANTY)

CLOSING FORCE:

Adjust Spring Force in Header by using a 5/32" Allen Wrench in hole near center of Door Opening and end of Roller Slot.

(CAUTION: Door must be open only a small amount when adjusting Closing Force. Open only enough to allow Allen Wrench to be turned)

- Turning clockwise to increase Closing Force. Turning counter clockwise to decrease Spring Force.
 - To comply with building assess codes the Pull Force to open the Door must not exceed 8.0lb.
- L. If possible, arrange to have Doors glazed at this point. Door clearances and adjustments should be rechecked after glazing.
- M. Install hardware access section of jamb.
- N. Install any finish material and clean entire unit as required to complete the installation.
- O. Obtain a written acceptance of the material, finish and installation from the owner or his representative.

ITEM NO.	NO. PER ASSEMBLY	PART NO.	PART NAME
1A	1	1901000	HEADER BLOCK ASSM LEFT (Header block only pn: 1901000-2B)
1B	1	1901001	HEADER BLOCK ASSM RIGHT (Header block only pn: 1901001-2B)
1C-1	1	1220911	FASTENER BAG #1, HEADER & HINGE TUBE
1C-2	1	1220912	FASTENER BAG #2, DOOR HDWRE MOUNTING
2	1	1220500	HINGE HEADER ASSEMBLY (FIXED)
2B	1	1220503	HINGE TOP PLATE ASSY
2C	1	1220702	NEEDLE BEARING, HEADER TOP SCE 88
2D	4	1510096	SHCS 1/4-20 X .625 FOR TOP PLATE
2E	1	1220601-5M	HINGE ARM #5 (Jobs before 12/2003, -1) (Jobs after 12/2003, -2)
2F	1	1520554	WASHER, HINGE ARM BOTTOM
2G	2	1510096	SHCS 1/4-20 X .625, SS, (Alum. Frame) 3510097 X .75
2H	2	1520214	LOCK WASHER, SS 1/4"
2I	2	1510092	SHCS 1/4-20 X 1.50, SS (JOBS BEFORE 12/2003)
2J	2	1520244	LOCK WASHER 1/4" HI-COLLAR, SS
2K	1	1220801	CATCH BLOCK ASSEMBLY
2L	1	1520954	SPRING, BACK CATCH
2M	1	1220701	NEEDLE BEARING, HEADER BOTTOM SCE-1612
3	1	1220754-1	CLOSER MECHANISM, MACHINED
3A	4	1510312	FHCS 1/4-20 X 2.50
3B	2	1510746	SPRING PIN, SLOTTED 1/4 DX 1 1/4 L, SS
3CR	1	1220512	SPRING DRIVE RIGHT ANGLE (RIGHT)

OR

3CL	1	1220511	SPRING DRIVE RIGHT ANGLE (LEFT)
3E	2	1510117	SHCS #10-32 X 1.0"
4	1		GUIDE BLOCK ASSEMBLY PARTS
4A	1	1220611-2	CHECK ARM ASSY #2 (JOBS AFTER 12/2003)
4A	1	1220611-1	CHECK ARM ASSY #1 (JOBS BEFORE 12/2003)
4B	1	1220537	WASHER CHECK ARM, WASHER WITH INTERNAL HEX
4B-1	1	1520214	LOCK WASHER 1/4", SS
4C	1	1510423	SET SCREW 1/4-20 X .375
4D	1	1511047	HEX HEAD MACH. SCREW 1/4-20 X .75, GRADE 8
4E5	1	1220605	CHECK STUD #1 (JOBS BEFORE 12/2003)
4E8	1	1220608	CHECK STUD #2 (JOBS AFTER 12/2003)
4E1	1	1220606-1	LOCKING STUD #8-32 x .125"; (SHCS: 1510115, AFTER 10/2009)
4E2	1	1520238	INT TOOTH LOCK WASHER #8, SS
4ER	1	1220603-1	CHECK BAR ASSY (RIGHT) - DAWSON'S LHRB -S newer
4EL	1	1220603-2	CHECK BAR ASSY (LEFT) - DAWSON'S RHRB -A- older
4G	1	1220703	ROD END BEARING, (ROD END -M10 THO, 1220709, AFTER 10/2011)

ITEM NO.	NO. PER ASSEMBLY	PART NO.	PART NAME
4H	1	1220602-3	HINGE STUD, MACHINES #3
41-1	1	1510115	SHCS #10-32 x 5/16", SS; & 1520209 LOCK WASHER #10 (AFTER 10-09')
41-2	1	1520256	LOCK WASHER 5/16", SS, (BEFORE 11-2009)
4JR	1	1220552	GUIDE BLOCK (RIGHT)
4JL	1	1220502	GUIDE BLOCK (LEFT)
4L	4	1510091	SHCS 1/4-20 X 1.0", SS
4M	4	1520244	LOCK WASHER 1/4", HI-COLLAR, SS
4N	2	1220609	STUD, GUIDE TO HINGE
5R	1	1220400	HINGE TUBE ASSY (RIGHT): MAT'L, LENGTH, FINISH
5L	1	1220450	HINGE TUBE ASSY (LEFT): MAT'L, LENGTH, FINISH
6	2	1220408-1	SPLINE PIN BOLT, 5/16x1.0 SS W/.32 SPACER
7	1	1220404-1	SPLINE PIN
8	1	1220407	STUD, TOP PIVOT
9	2	1510429	SOCKET SET SCREW 3/8-16 X .625, SS
10	1	1220406	STUD, BOTTOM PIVOT
10A	1	1220735	GREASE SEAL, BOTTOM PIVOT
10B	1	1220725	THRUST BEARING, BOTTOM PIVOT SBB 12
10C	1	1220705	NEEDLE BEARING, BOTTOM PIVOT SCE 128
10D	1	1220745	THRUST WASHER, BOTTOM PIVOT TWO 1220
11A-1	1	1220220-1	DOOR PIVOT, TOP ASSEMBLY: SS, FINISH
11A-2	1	1220221-1	DOOR PIVOT, TOP ASSEMBLY: BRONZE, FINISH
11A	1	1220715	RADIAL BEARING TOP PIVOT, SBB 12
11B	1	1220706	NEEDLE BEARING TOP PIVOT, SCE 910
12	1	1220902-1	ROLLER CASTING Assy #1, SS & BRONZE Hdwr (Before 2/2006: 2x spacer)
12	1	1220902-5	ROLLER CASTING Assv, ALUM DOOR & FRAME (Before 2/2006: 2x spacer)
12A	1	1220903	SPACE, BASE ROLLER (JOBS BEFORE 2/2006 USE 2 SPACERS)
12B	1	1220750	NEEDLE CAM FOLLOWER 11/4 D
12C	1	1510744	ROLL PIN 3/16 DX 1 1/4 L, SS
13	16	1510058	SHCS 5/16-18x1.0", SS
13A	16	1520256	SPLIT LOCK WASHER 5/16, SS

ITEM NO.	NO. PER ASSEMBLY	PART NO.	PART NAME
14A-1	1	1220220-2	DOOR PIVOT, BOTTOM ASSY: SS, FINISH
14A-2	1	1220221-2	DOOR PIVOT, BOTTOM ASSY: BRONZE, FINISH
14A	1	1220715	RADIAL BEARING TOP PIVOT, SBB 12
15A	1	1220422	HOLD OPEN (DOOR STOP) ASSEMBLY, SS & BRONZE HDWR
15B	1	1220907	HOLD OPEN ASSEMBLY, ALUMINUM DOOR & FRAME HDWR
16A	2	1520550	WASHER, DOOR PIVOT 1/16, SS
16B	2	1520551	WASHER, DOOR PIVOT 1/32, SS
17	1	1220415-1	BASE HUB ASSEMBLY
17A	1	1220415	BASE HUB
17NT	1	1220430-1	BASE HUB ASSEMBLY, NO THRESHOLD OR 1/4" THRESHOLD
17B	1	1220724	THRUST BEARING, BOTTOM ARM: TC 1423
17C	2	1220744	THRUST WASHER, BOTTOM ARM: TWO 1423
17D	1	1220704	NEEDLE BEARING, BOTTOM ARM: SCE 1112
17E	1	1520611	EXTERNAL RETAINING RING 11/16 SHAFT
17G	1	1520610	EXTERNAL RETAINING RING 1.00 SHAFT, SS
17H	1	1220731	SEAL, BASE HUB
17I	2	1520552	WASHER, HINGE TUBE BASE, 1/16, SS
17J	2	1520553	WASHER, HINGE TUBE BASE, 1/32, SS
17K	1	1510424	SOCKET SET SCREW, PLASTIC TIP 1/4-20 X 3/8
18	1	1220412-1	BASE PLATE
18A	1	1220412	BASE PIN



