



Disk Harrow Field Update

Disk Leveler

Models: Manual Level Turnbuckle Kit Numbers

- 3323 557-323V UPDATE KIT 3323DH MAN LEV
- 3326 557-325V UPDATE KIT 3326-3329DH MAN LEV
- 3329 557-325V UPDATE KIT 3326-3329DH MAN LEV
- 4330 557-327V UPDATE KIT 4330-4336DH MAN LEV
- 4333 557-327V UPDATE KIT 4330-4336DH MAN LEV
- 4336 557-327V UPDATE KIT 4330-4336DH MAN LEV

Hydraulic Level Kit Numbers:

- 557-324V UPDATE KIT 3323DH HYD LEV
- 557-326V UPDATE KIT 3326-3329DH HYD LEV
- 557-326V UPDATE KIT 3326-3329DH HYD LEV
- 557-328V UPDATE KIT 4330-4336DH HYD LEV
- 557-328V UPDATE KIT 4330-4336DH HYD LEV
- 557-328V UPDATE KIT 4330-4336DH HYD LEV

General Information

These instructions explain how to install the Disk Leveler Update Kits. If your Disk has the manual level (turnbuckle) option, then follow the instructions for the manual level kit. If your Disk has the hydraulic level (cylinder) option, then follow the instructions for the hydraulic level kit.

Manual Update

Refer the Disk Harrow operator's manual for detailed information on safely precautions. Refer to parts manual for part identification.

556-100M Operator's Manual
556-100P Parts Manual

Before You Start

For safety it is best to park machine on level concrete floor. Lower the disk blades to the ground and relieve all hydraulic pressure from all circuits. Review these instructions and make sure you understand where and how the components are installed, and which existing parts are removed or re-used.

Tools Required

- Basic Hand Tools
- Cutting Torch or Cutoff wheel

Disassembly Instructions



- ☐ Start by unfolding the wings and removing the manual transport locks, if installed, from lift cylinders and lower the machine to the ground. If machine is equipped with hydraulic leveling, activate leveling cylinder (1) until the leveler "L" (2) and level bar assembly (3) is loose (see Figure 1). Attach the tongue jack (4) to front of hitch and unhook tractor from disk. Remove all the hydraulic hose components from the hitch including the hoses, hose clamps, spring hose loop (5), lock valve (6), if equipped and 4" x 2 leveling cylinder (1), if equipped.
- ☐ Remove the manual pak container (7), manual level turnbuckle (8), if equipped, safety chain (9), safety chain support (10) and hitch clevis (11) from the hitch frame (12). Do not re-use the 1x7 Gr.8 hitch clevis bolts, new longer bolts are provided in the kits. Save all other hardware for re-assembly to new hitch frame.
- ☐ Remove the hitch frame (12) by removing the two 1 ¼ x 8 Gr.8 hex bolts (13) that connect it to the center frame. Save the hardware for re-assembly. Remove the Leveler "L" (2) from the center frame, and discard the 1" x 7 hex bolt, 1 x 7 pin, level gauge pointer (14) and level link rod (15). On narrow center models, 3323 to 3329, you will have to unbolt the depth stop valve from the center frame to remove the 1" x 7 Leveler "L" bolt. You may re-attach the valve after the bolt is removed.
- ☐ Disconnect and remove the level bar assembly (3) from the torque tube (16). Keep level bar assembly (3), 1 x 7" pin (17) and keeper bolt (18) for re-assembly.
- ☐ On models 3326 to 4336, unpin and remove the front two fold cylinders (19), attach a piece of hose between cylinder fittings to prevent oil from escaping from the cylinders. Remove the front fold bracket (20) by removing the ¾ x 2 ½ hex bolts (21), save bolts for re-assembly. Disconnect any hydraulic hoses that are in the way for removal of the front fold bracket.
- ☐ On 4330 to 4336 machines, unbolt and remove the top and bottom front tie strap plates (22) that hold the two center frame halves together. Save for re-assembly.
- ☐ Finished with Disassembly. Proceed to Torching Instructions pg. 4.

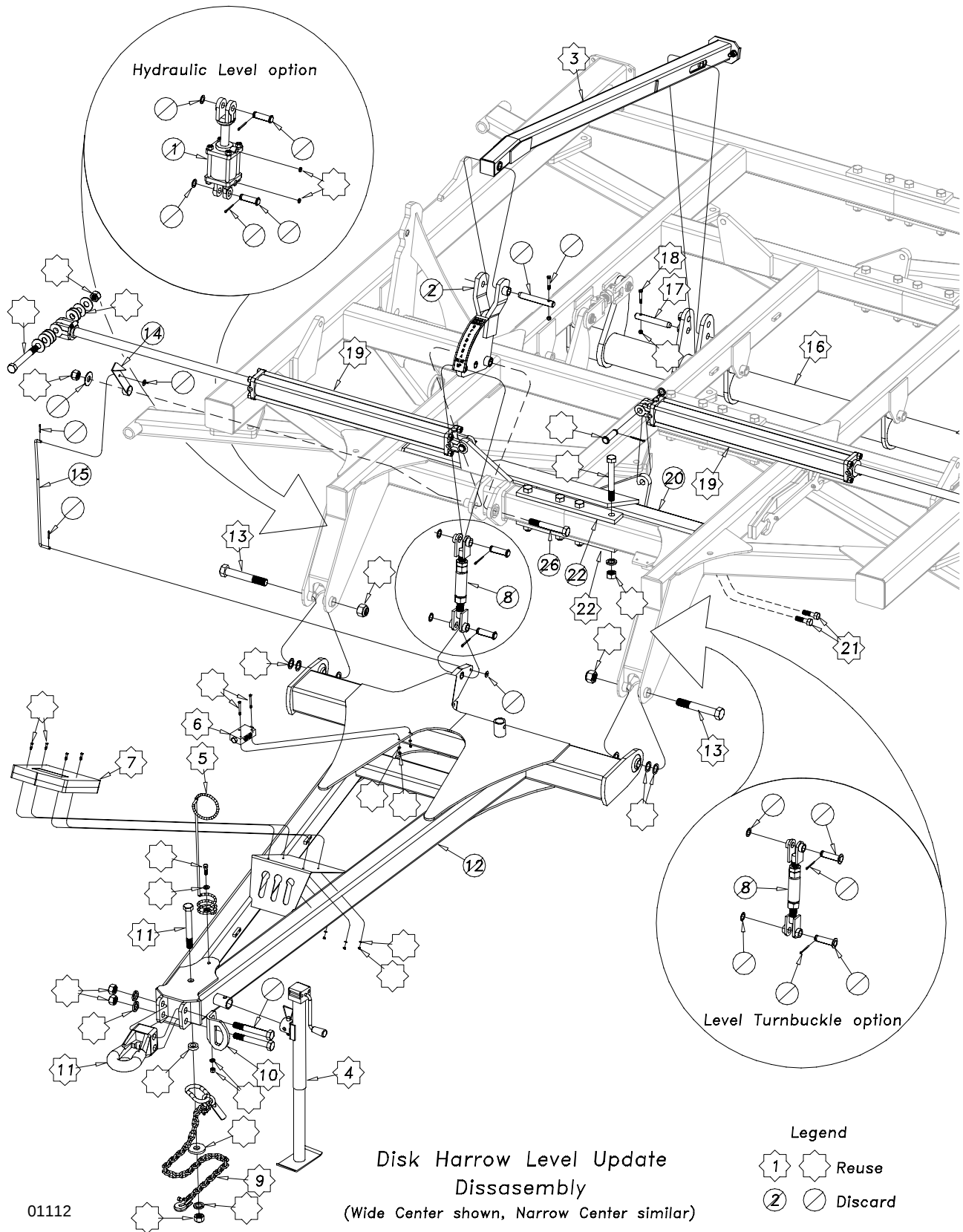
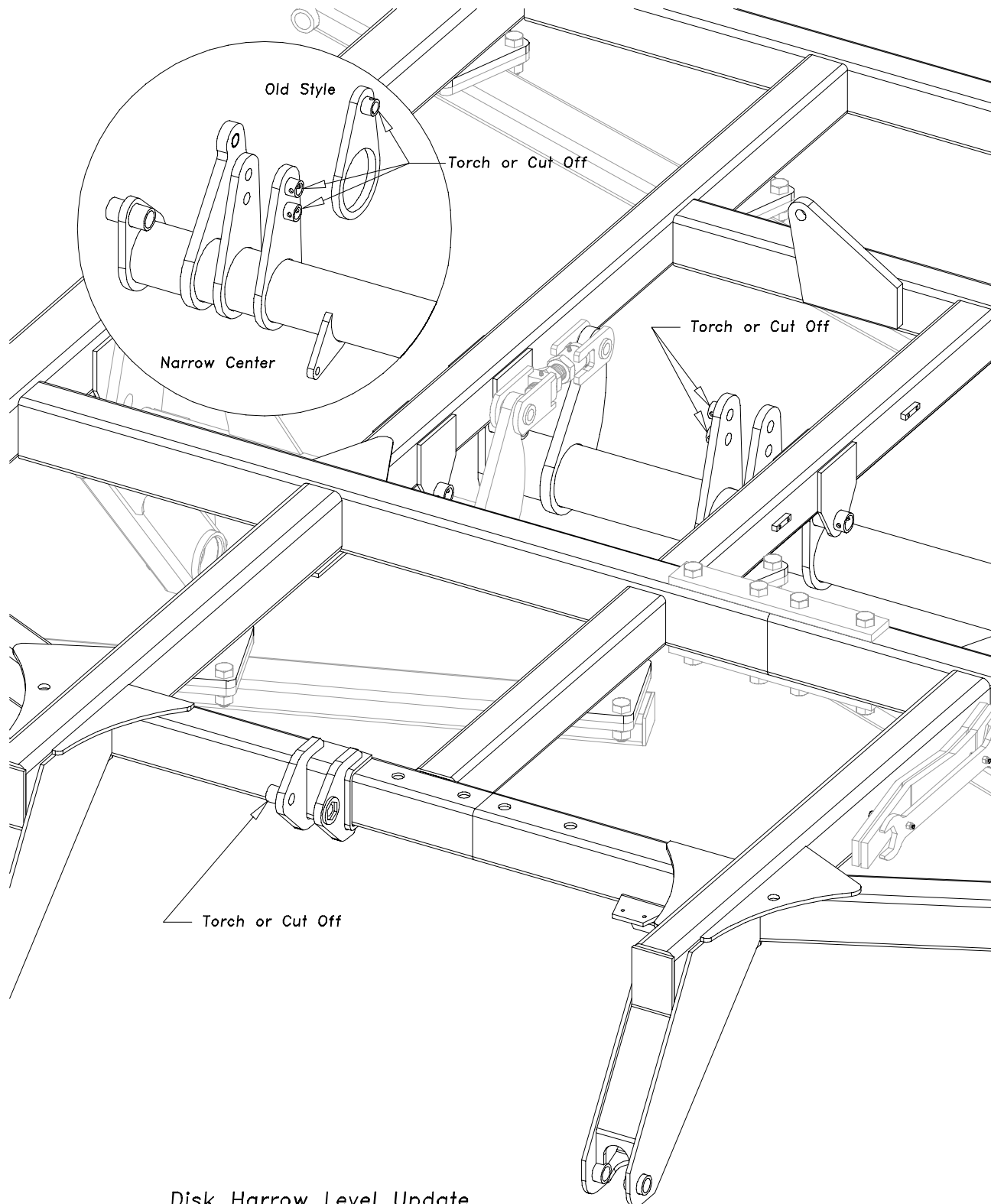


Figure 1

Torching Instructions



- ☐ Using a torch or cut-off grinding wheel, remove the collar on the front of the center frame as shown in Figure 2. Cut off flush with plate and grind away any high spots. This hole will not be used on new system.
- ☐ Using a torch or cut-off grinding wheel, remove the collar(s) on the torque tube-level bar connection lugs (see Figure 2). The narrow center torque tube lugs may have one or two collars depending on the age of the machine. Cut off flush with plate and grind smooth. These holes will be reused on the new system.
- ☐ Finished with Torching Instructions. Proceed to Assembly Instructions pg. 6.



Disk Harrow Level Update
Torch Diagram
(Wide Center shown, Narrow Center similar)

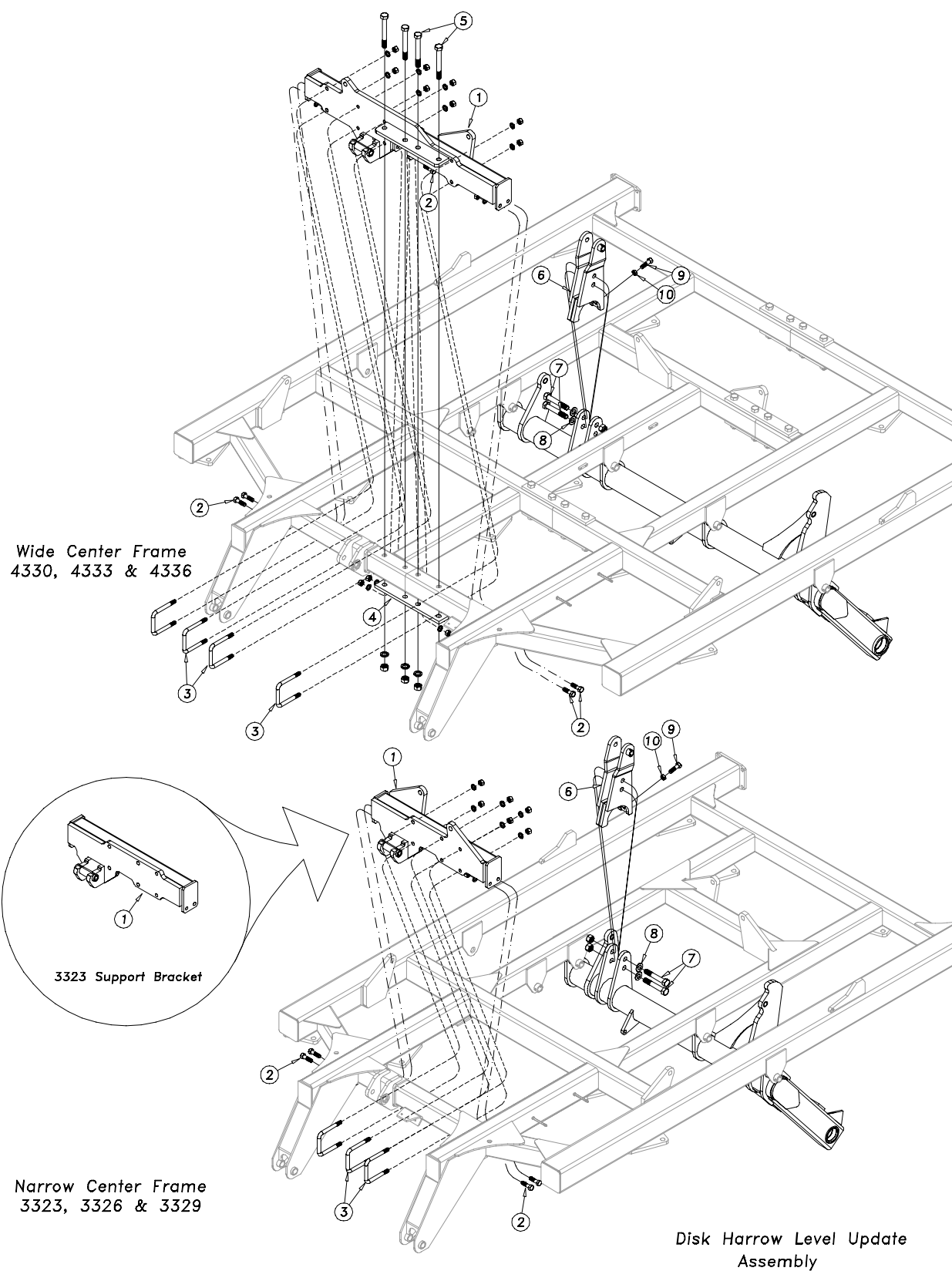
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Figure 2

Assembly Instructions (Part 1)



- ☐ Start by inserting the new front fold bracket (1) into the front of the center frame (see Figure 3). Note: 3323 disks have a new frame support bracket that bolts into the front fold bracket position. Insert the $\frac{3}{4}$ x 2 $\frac{1}{2}$ hex bolts (2) underneath the frame but do not tighten. *(On wide center units 4330-4336, the center holes for the $\frac{3}{4}$ x 2 $\frac{1}{2}$ " hex bolts may not line up properly. It is OK to substitute (2) $\frac{5}{8}$ x 6" Gr.5 hex bolts to replace the (4) $\frac{3}{4}$ " x 2 $\frac{1}{2}$ hex bolts.)* Insert the $\frac{3}{4}$ x 5 x 6 $\frac{1}{2}$ u-bolts (3) around the center frame front tube and into the holes of the new bracket. On wide center models 4330-4336, re-install the bottom tie-plate (4) and tie-plate bolts (5) that connect the two center frame halves. After all bolts and u-bolts are in you can tighten the lock washers and hex nuts.
- ☐ Bolt the leveler extension bracket (6) to the torque tube leveler ears with the threaded hole orientated to the back of the machine. Use one (two on some machines) new 1 x 6 (long thread) Gr.8 hex bolt(s) (7) with 1" SAE flat washer (8) against head of bolt. Secure with 1" lock nut. Insert a $\frac{3}{4}$ x 2 $\frac{1}{2}$ " hex bolt (9) with $\frac{3}{4}$ " jam nut (10) into the threaded hole in the bracket and tighten down to remove slack in the assembly. Tighten jam nut (10) to secure.
- ☐ At this time you will want to reinstall the front fold cylinders and re-connect any disconnected hydraulic hoses (refer to the attached hydraulic schematics, pgs 10 & 12 for proper hose plumbing). Use the same cylinder hardware as before. **Do not connect rod end of fold cylinders at this time, block fold cylinders up for purge procedure.**
- ☐ Proceed to Assembly Instructions (Part 2) pg. 8.



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Figure 3



Assembly Instructions (Part 2)

- ☐ Connect the back of the existing level bar assembly (Item 11, Figure 4) to the top of the torque tube extension bracket with the same 1 x 7 pin (12) and keeper bolt (13) as used before.
- ☐ **Especially on narrow center units, you will need to pre-assemble the leveler assembly bracket (14) to the turnbuckle (15) or optional Hydraulic Cylinder (16) with the 1 x 9 Gr.8 hex bolt (17). Be sure to insert in direction shown.** Snug tight with nylon locknut. Attach the preassembled parts to the new front fold/support bracket (18) with a new 1 x 9 Gr.8 hex bolt (19) and nylon lock nut (20), snug this bolt but do not torque. Connect the top of the leveler assembly bracket (14) to the front of the existing level bar assembly (11) with a new 1 x 9 Gr.8 hex bolt (21) and nylon lock nut. Snug but do not torque.
- ☐ You are now ready to attach the new hitch frame (22) to the front of the disk. Use the existing 1 ¼ x 8 Gr.8 bolts (23) with top lock nuts (24) to attach the hitch. Use the 1 ¼" SAE flat washers (25) next to the ball joint to take out the slack in the connection. All slack must be removed for best connection wear life (add additional washers if necessary). Transfer the existing tongue jack (26) from the old hitch to the new one.
- ☐ Connect the level turnbuckle (15) or Hydraulic Cylinder (16) to the back of the hitch frame (22) using a new 1 x 6 Gr.8 (special 1 ¾" thread length) hex bolt (27) and nylon lock nut. The new hydraulic leveling cylinder requires two new longer hoses and a new straight adaptor fitting between the lock valve (35) and the cylinder. **Remove the two restrictor orifices (28) from the old cylinder with a screwdriver and install into the new cylinder ports before attaching hoses.** (see schematic on page 14). Check Hydra Grip hose handles to verify that the extended hose handle goes to the base end of the cylinder (see page 14).
- ☐ Install the level gauge pointer (29) onto the leveler assembly bracket (14). Secure with 1 1/2" machine washer and 3/16 x 2 cotter pin (30). Connect the level gauge link rod (31) between the back of the hitch frame (22) and the level gauge pointer (29) as shown with two 1/8 x 1 cotter pins and 3/8 flat washers.
- ☐ Finish by re-installing the manual pak container (32), safety chain (33), spring hose loop (34) and hydraulic hoses & hose clamps to the hitch frame (22) (see Figure 4).
- ☐ Attach the original hitch clevis (36) to the new hitch frame (22) along with the safety chain support (37) using two new 1 x 8 Gr.8 hex bolts (for narrow center disks) or 1 x 10 Gr.8 hex bolts (for wide center disks)(38). Use the original 1" lock washers and hex nuts. Torque these hex nuts until the hitch clevis is tight in the assembly.
- ☐ After all parts are assembled, double check bolts and nuts for tightness and re-connect the tractor to the disk harrow. Connect the hydraulic fold hoses first and cycle the unpinned front fold cylinders (if equipped) two or three times and check for leaks. Extend the fold cylinders and connect them to the wing frames with the hardware from before.
- ☐ Connect the lift and hydraulic level hoses (if equipped) to the tractor. Lift the machine up all the way. Slowly activate the hydraulic level cylinder in and out four or five times to purge the air in the level cylinder, also check for leaks. Lower and raise the machine a couple of times with the lift system to verify operation and check for leaks.
- ☐ Finished with Update.

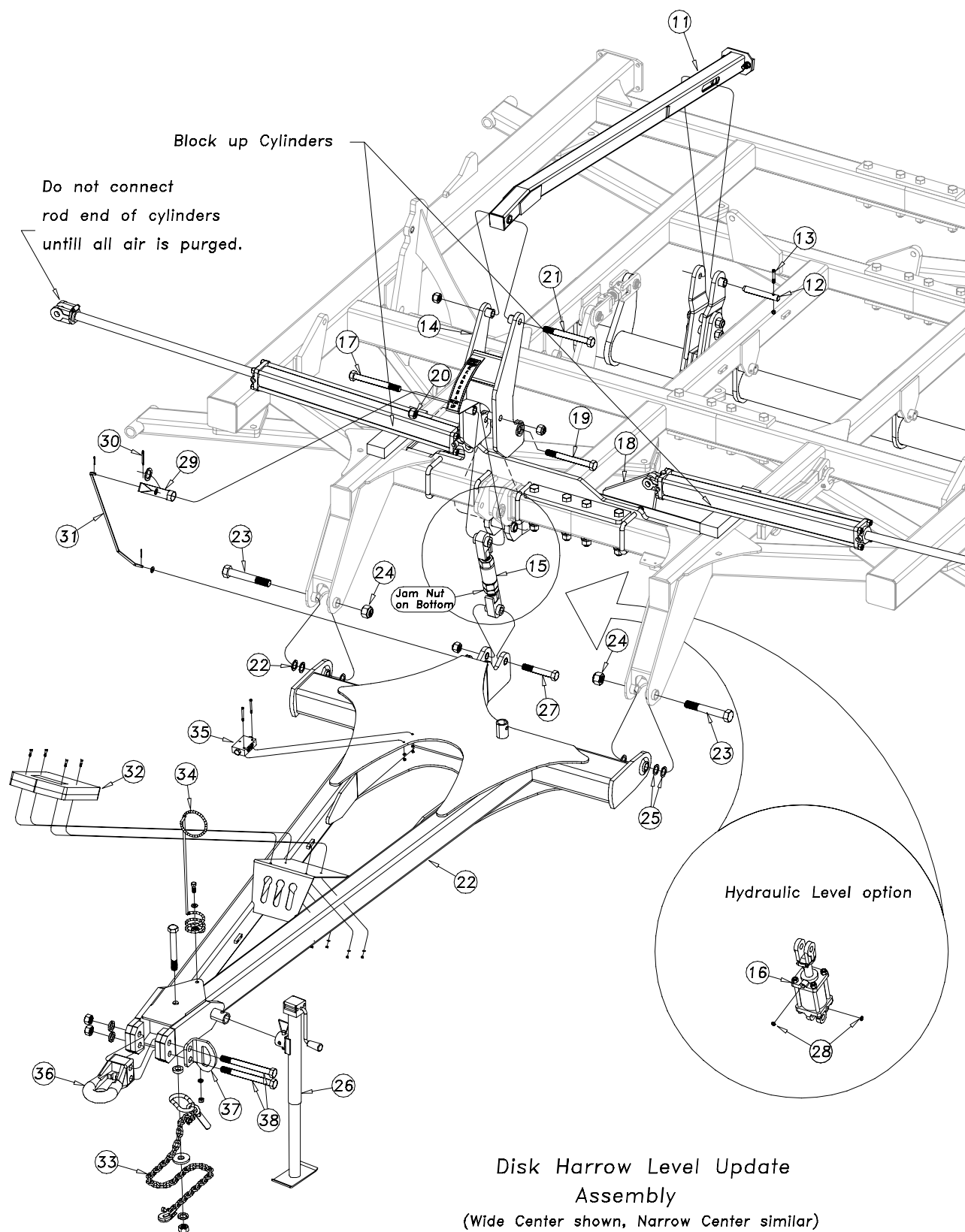
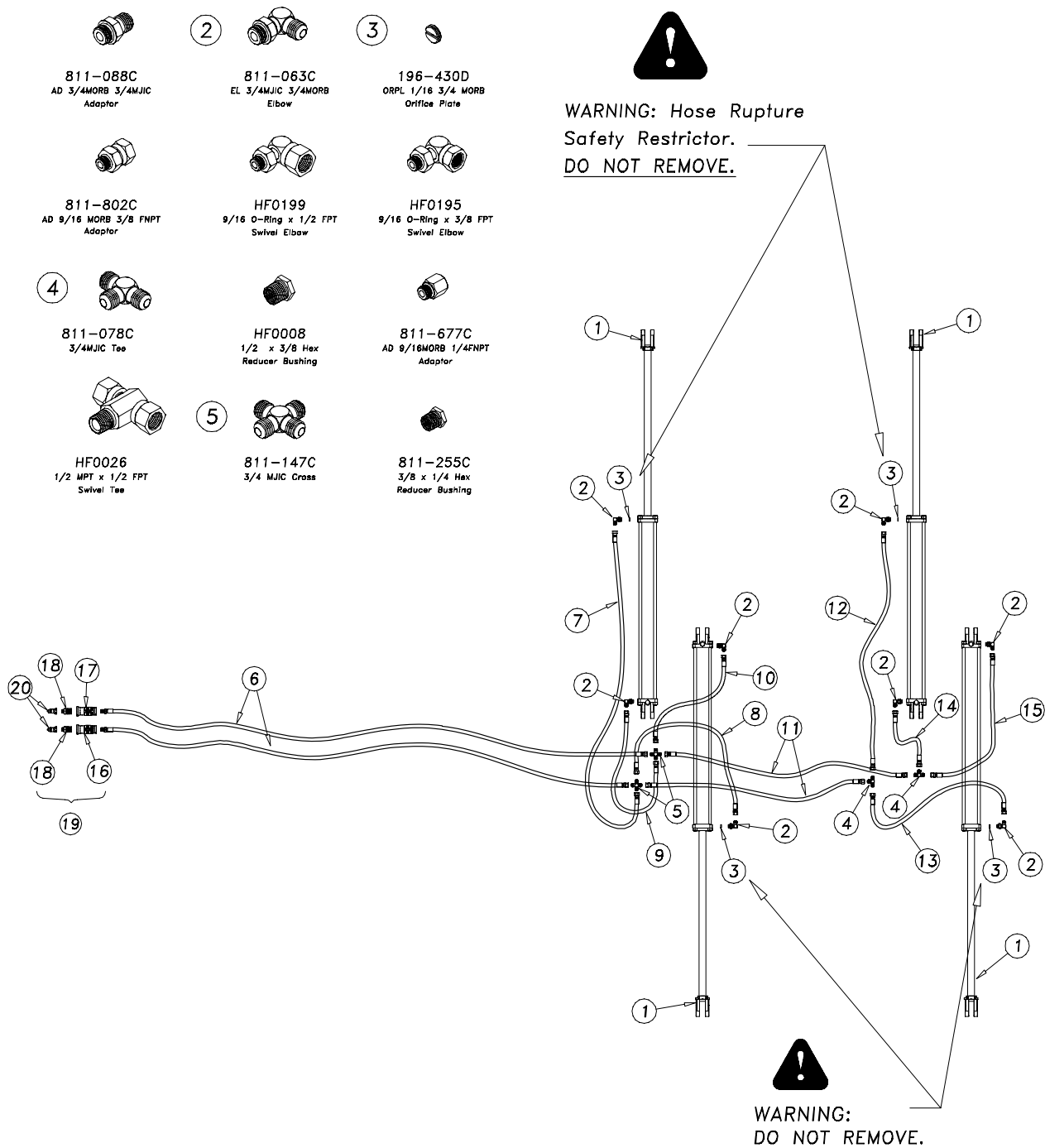


Figure 4

Hydraulic Fold Layout, 3323, 3326, 3329



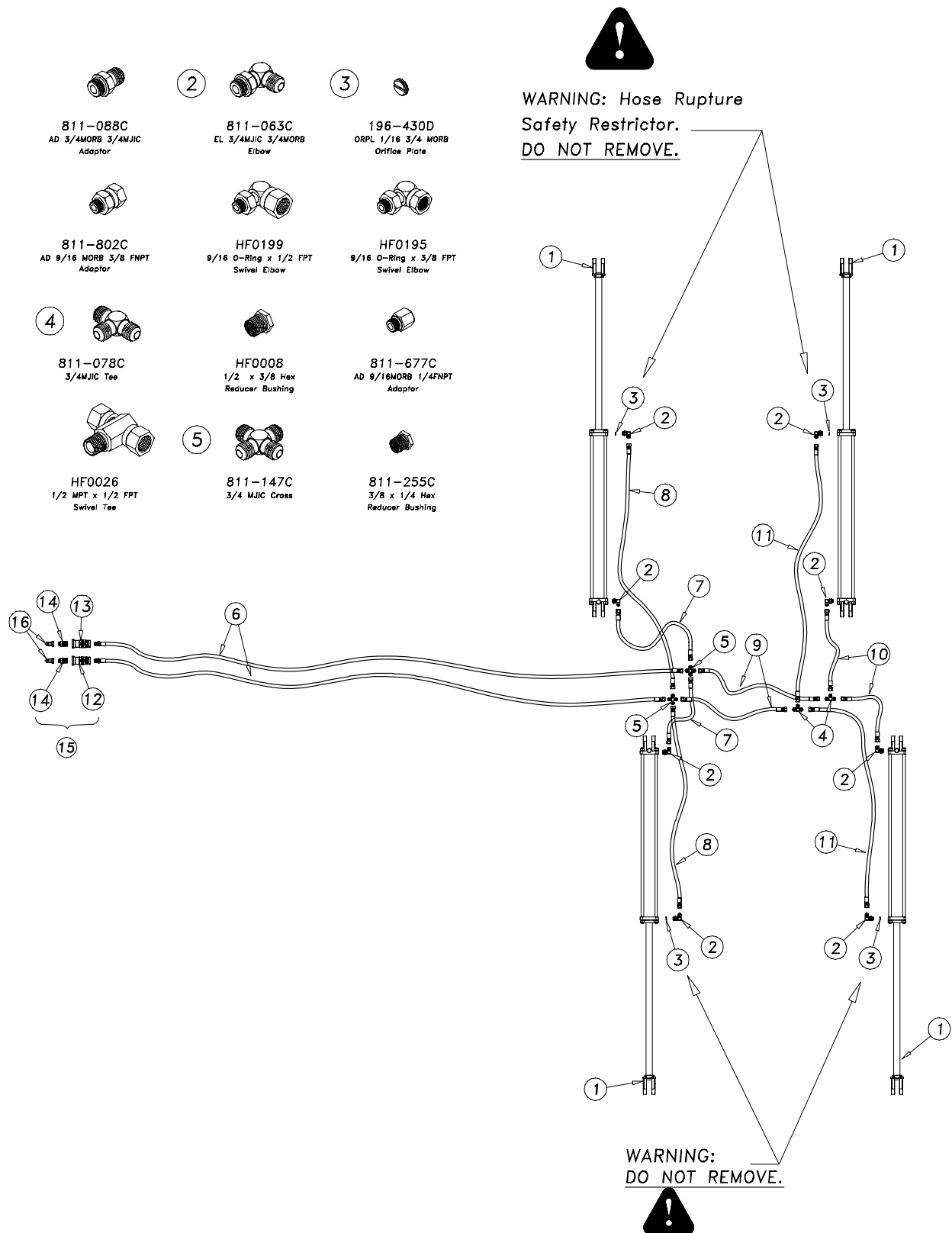
NOTE: Model 3323DH uses (2) Two (rear) fold cylinders.
Model 3326DH & 3329DH uses (4) Four fold cylinders.

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Hydraulic Fold Layout, 3323, 3326, 3329

Ref.	Part No.	Part Description	Comments
1.	810-589C	CYL 3 1/2x36x1.50 rod 46.63CL	3326 & 3329 Seal Kit# 810-059C
	810-598C	CYL 4x36x1.50 rod 46.63CL	3323 Seal Kit# 810-060C
2.	811-063C	Elbow, EL 3/4MJIC 3/4MORB	
3.	196-430D	Orifice Plate .1/16 3/4MORB	
4.	811-078C	Tee, TE 3/4MJIC	
5.	811-147C	Cross, CR 3/4MJIC	Models 3326 & 3329
6.	841-208C	HH3/8R2 290 3/4MORB 3/4FJIC	Models 3323
	811-965C	HH3/8R2 207 3/4MORB 3/4FJIC	Models 3326 & 3329
7.	811-985C	HH3/8R2 078 3/4FJIC	Models 3326 & 3329
8.	811-939C	HH3/8R2 039 3/4FJIC	Models 3326 & 3329
9.	811-939C	HH3/8R2 039 3/4FJIC	Models 3326 & 3329
10.	811-841C	HH3/8R2 024 3/4FJIC	Models 3326 & 3329
11.	841-006C	HH3/8R2 087 3/4FJIC	
12.	811-977C	HH3/8R2 053 3/4FJIC	
13.	811-329C	HH3/8R2 022 3/4FJIC	
14.	811-639C	HH3/8R2 013 3/4FJIC	
15.	811-645C	HH3/8R2 030 3/4FJIC	
16.	811-915C	Hydra Grip Handle, Green Extend	
17.	811-916C	Hydra Grip Handle, Green Retract	
18.	811-919C	Adaptor, AD 3/4 MORB 3/4 FORB (HG)	
19.	548-003S	HG Pair Green MORB-FORB	Includes items 16, 17 & 18
20.	811-394C	Coupler, CP 3/4 FORB MALE QD Poppet	

Hydraulic Fold Layout, 4330, 4333, 4336



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Hydraulic Fold Layout, 4330, 4333, 4336

Ref.	Part No.	Part Description	Comments
1.	810-589C	CYL 3 1/2x36x1.50 rod 46.63CL	4330 & 4333 Seal Kit# 810-059C 4336 Seal Kit# 810-060C
	810-598C	CYL 4x36x1.50 rod 46.63CL	
2.	811-063C	Elbow, EL 3/4MJIC 3/4MORB	
3.	196-430D	Orifice Plate .1/16 3/4MORB	
4.	811-078C	Tee, TE 3/4MJIC	
5.	811-147C	Cross, CR 3/4MJIC	
6.	841-223C	HH3/8R2 212 3/4MORB 3/4FJIC	
7.	811-643C	HH3/8R2 021 3/4FJIC	
8.	811-670C	HH3/8R2 062 3/4FJIC	
9.	811-985C	HH3/8R2 078 3/4FJIC	
10.	811-128C	HH3/8R2 025 3/4FJIC	
11.	841-025C	HH3/8R2 067 3/4FJIC	
12.	811-915C	Hydra Grip Handle, Green Extend	
13.	811-916C	Hydra Grip Handle, Green Retract	
14.	811-919C	Adaptor, AD 3/4 MORB 3/4 FORB (HG)	
15.	548-003S	HG Pair Green MORB-FORB	Includes items 16, 17 & 18
16.	811-394C	Coupler, CP 3/4 FORB MALE QD Poppet	

3 811-063C
EL 3/4MJIC 3/4MORB
Elbow

4 556-313D
ORPL .025 3/4 MORB
Orifice Plate

5 811-088C
AD 3/4MORB 3/4MJIC
Adaptor

6 811-150C
EL 3/4FJIC 3/4MJIC
Elbow

Level Update Changes:

Install New 4x3 Cylinder (1), longer hoses (8) and new adaptor fitting (5). Reuse orifice restrictors (4) from old cylinder.

Level Update Changes:

Check Hydra Grip Handles. Red extend handle (9) should be routed to base end of cylinder (1) as shown. Red retract (10) routed to rod end of cylinder.

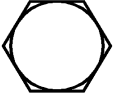
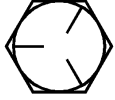
Hydraulic Level Layout - Update, optional

Ref.	Part No.	Part Description	Comments
1.	810-626C	CYL 4x3x1.50 rod	GP Seal Kit# 810-060C
2.	810-599C	Lock Valve	
3.	811-063C	Elbow, EL 3/4MJIC 3/4MORB	
4.	556-313D	Orifice Plate .025 3/4MORB	
5.	811-088C	Adaptor, AD 3/4MORB 3/4MJIC	
6.	811-150C	Elbow, EL 3/4FJIC 3/4MJIC	
7.	811-822C	HH3/8R2 152 3/4MORB 3/4FJIC	
8.	811-939C	HH3/8R2 039 3/4FJIC	
9.	811-914C	Hydra Grip Handle, Red Extend	
10.	811-827C	Hydra Grip Handle, Red Retract	
11.	811-919C	Adaptor, AD 3/4 MORB 3/4 FORB (HG)	
12.	548-002S	HG Pair Red MORB-FORB	Includes items 9, 10 & 11
13.	811-394C	Coupler, CP 3/4 FORB MALE QD Poppet	



Appendix

Torque Values Chart for Common Bolt Sizes

Bolt Size (inches)	Bolt Head Identification					
						
	Grade 2	Grade 5	Grade 8			
in-tpi ¹	N · m ²	ft-lb ³	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12
1/4" - 28	8.5	6	13	10	18	14
5/16" - 18	15	11	24	17	33	25
5/16" - 24	17	13	26	19	37	27
3/8" - 16	27	20	42	31	59	44
3/8" - 24	31	22	47	35	67	49
7/16" - 14	43	32	67	49	95	70
7/16" - 20	49	36	75	55	105	78
1/2" - 13	66	49	105	76	145	105
1/2" - 20	75	55	115	85	165	120
9/16" - 12	95	70	150	110	210	155
9/16" - 18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" - 18	150	110	230	170	325	240
3/4" - 10	235	170	360	265	510	375
3/4" - 16	260	190	405	295	570	420
7/8" - 9	225	165	585	430	820	605
7/8" - 14	250	185	640	475	905	670
1" - 8	340	250	875	645	1230	910
1" - 12	370	275	955	705	1350	995
1-1/8" - 7	480	355	1080	795	1750	1290
1 1/8" - 12	540	395	1210	890	1960	1440
1 1/4" - 7	680	500	1520	1120	2460	1820
1 1/4" - 12	750	555	1680	1240	2730	2010
1 3/8" - 6	890	655	1990	1470	3230	2380
1 3/8" - 12	1010	745	2270	1670	3680	2710
1 1/2" - 6	1180	870	2640	1950	4290	3160
1 1/2" - 12	1330	980	2970	2190	4820	3560

Bolt Size (metric)	Bolt Head Identification					
						
	Class 5.8	Class 8.8	Class 10.9			
mm x pitch ⁴	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

¹ in-tpi = nominal thread diameter in inches-threads per inch

² N · m = newton-meters

³ ft-lb = foot pounds

⁴ mm x pitch = nominal thread diameter in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

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