

1973



FIELD CULTIVATOR

WIL-RICH, INC.

BOX 1104

WAHPETON, NORTH DAKOTA

58075

READ ALL INSTRUCTIONS BEFORE OPERATING YOUR FIELD CULTIVATOR

OPERATOR'S MANUAL

AND

PARTS BOOK

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OPERATING INSTRUCTIONS

I. LUBRICATION

A. WHEEL HUB ASSEMBLIES

The wheel hubs are equipped with grease fittings. The wheels are packed with grease on assembly. It is recommended that the wheels be greased several times a season. **CAUTION:** Do not inject too much grease and push the seals out. Check the wheels for tightness several times a season.

B. AXLE BEARINGS

Grease every other day.

C. WALKING CENTER AXLE TANDEM

Grease every other day. Release pressure on the axle before greasing.

II. FLEX-POINT CULTIVATOR SHANK ASSEMBLIES

A. Recommended spring setting is $\frac{1}{2}$ " tightness.

B. The pivot bolt is equipped with a self-locking nut. Make sure these nuts are tight.

C. The spring pivot bolt is equipped with a self-locking nut.

D. Keep the U-bolt and front shank bolt tight.

III. HITCH

A. The hitch should be installed in the correct hole to match the tractor drawbar and the field depth desired. Determine the correct setting of the hitch to level the machine at working depth. Turning the hitch bar over will give a finer hitch adjustment.

IV. DEPTH CONTROL

A. The depth control is adjusted by the threaded steel sleeve stops on the main center cylinder.

B. The depth of the wings are adjusted by removing the lock pins (27) from the wing adjusting linkage. Remove the pressure from the linkage before adjusting. Making the linkage shorter will shallow out the wings. If the wings are not adjusted at equal depths, the cultivator will

pull crooked. If a wing tends to lag when going down the field, it indicates that it is set deeper than the other. The cultivator will pull even and run straight if properly adjusted. The long pole on this machine is necessary for a true trailing machine.

C. Make sure the spring lock pins are inserted in the adjusting link to prevent movement of the linkage during field use.

D. Make sure the tires are evenly inflated for a true trailing machine.

E. During periods of storage or long periods when the machine is not in use, it is recommended that the wing lift cylinders be disconnected and retracted. This will prevent rusting of the long 24" cylinder shafts. Rust on the shaft will cause deterioration of the shaft seal.

V. HYDRAULIC WING LIFT

CAUTION: DO NOT OPERATE THE WING LIFT CYLINDERS UP OR DOWN WITH THE LOCK PIN IN THE U-BRACKET. THIS MAY CAUSE BENDING OF THE BRACKET OR THE FRAME.

A. Insert the lock pins in the hole in the lock bracket arm after removal from the U-bracket.

B. Raise the wings. Make sure the bracket is set properly. Set it in place when the wing is raised and the cylinder fully retracted.

C. Insert the lock pins for road travel.

D. Do **not** release pressure on the wing cylinders during road travel.

E. To lower the wings, remove lock pins from the bracket and install in arm. Lower the wings. The restrictor in the cylinder elbow will not allow the wings to drop rapidly.

F. For field travel, extend the lift cylinders all the way out. This will allow the link to fold and the wings to flex freely over rough ground.

ASSEMBLY INSTRUCTIONS

FRAMEWORKS —

REFER TO THE ILLUSTRATIONS OF THE VARIOUS MODELS OF THE FLEX POINT FIELD CULTIVATORS.

I. MODEL 13BR

This frame is shown on page 2. It is used only on rigid frame models with the 2 ½ ft. stub wings on page 9 or the 3 ½ ft. stub wings on page 10.

- A. Place the main frame (9) on stands.
- B. Use 7:50x15 or 9Lx15 6-ply tires and install the wheels (10). Tighten bolts securely.
- C. Hoist the main axle into position and secure with bearing caps (14). Use flat shims if necessary. Axles should turn freely.
- D. Install the cylinder anchor (18) with bolts (12) in the rear set of holes.
- E. Install the pole and insert bolts (17) and (6).
- F. Install the braces (5). Leave all bolts (6) loose until they are all installed. Tighten pole bolts securely.
- G. Install the hitch bar (4) with the 1" x 6" bolt in the second hole from the top.
- H. Raise the frame off stands with jacks and install the ground lock (13).
- I. Remove jacks and stands.
- J. Install 2 ½ ft. wings to make an 18 ft. unit or 3 ½ ft. wings to make a 20 ft. unit.
- K. Install the stub wing locks (8) on page 10 as shown.
- L. A pole jack (2) may be installed on the pole.
- M. For shank installation, refer to the patterns of 18 ft. and 20 ft. machines on pages 20-21 and to "Shank Assembly" instructions.

II. MODEL 13BW

This frame (11) is shown on page 4. This frame can be used with the 2 ½ ft. stub wings or the regular 5 ¼ ft., 7 ft., or 9 ft. wings with stub wings up to 37 ft. total width.

- A. Place the frame (11) on stands.
- B. Use 11Lx15 or 9Lx15 6-ply tires. Install the wheels and tires (12) on the main axle (22) and tighten bolts securely.
- C. Install the wings with bolts (11) on page 6. Place the center bolt with the head to the rear as shown to provide clearance for the main axle arms. Install the extra 1" N. C. nut on the front bolt. Install the slotted nuts, tighten snugly, and install the cotter pins. Place the wings on stands.

- D. Hoist the main axle (22) on page 4 and secure with bearing caps (13). Use flat shims under the bearing caps. Axles should turn freely after caps are tightened.
- E. Install the cylinder anchor (21) on page 4 with the bolts (15) in the rear set of holes.
- F. Install the pole (4) on page 4 with the rear pin (19) and the bolts (8). Install the braces (7) with the bolts (8). Leave all bolts loose until they are all in place. Tighten all bolts securely.
- G. Install the hitch bar (3) with the 1" x 6" bolt in the second hole from the top.
- H. Install the pole jack (1).
- I. Use 9Lx15 or 7:50x15 tires on the wing wheels. Install the wheels (30) and tighten bolts securely.
- J. Install the wing axles (19) on page 6 and secure bearing caps (9). Use flat shims if necessary. Axle should turn freely.
- K. Install the rockshaft (10) for the correct wing. Use bearing caps (9) and shim if necessary.
- L. Install the connecting straps (18) as shown. Use the inside holes. Install bushings, flat washers, and lock washers.
- M. Install the wing lift bracket (4) as shown with U-bolts (23). Install the correct strap (20) and the cylinder link (3).
- N. Remove the ¼" spring lock pin from the wing depth adjusting link and set the centers to 10 ½". Insert the lock pin to prevent turning of the link during field use. Install the link between the main axle arms and the rockshaft (10).
- O. Install the wing lock brackets (8) on pages 9 and 10 with U-bolts. Install the lock pin (11) in the hole provided. Set the bracket so that the wing will pivot to 90° with the main frame. **WARNING:** Do not leave lock pins in the bracket when raising or lowering the wings.
- P. Install the wing lift cylinders on the main frame brackets (24) on page 4. Use the following cylinder:
3" x 24" Cylinder — 5 ½" ft. Wing
3 ½" x 24" Cylinder — 7 to 9 ft. Wing
4" x 24" Cylinder — 11 ft. Wing

The hydraulic diagram for the 13BW wing model is shown on page 16. Use a good quality hydraulic pipe thread compound on all connections to prevent leakage. Keep all fittings clean.

1. Install the ¾ to ½ NPT st. elbow (9) with restrictor on the rod end of each wing cylinder.

ASSEMBLY INSTRUCTIONS

(CONTINUED)

2. Install the T fittings (11) on the $\frac{1}{2}$ x 12 ft. pipes and the $\frac{1}{2}$ couplers (1) on the other end. Install the $\frac{1}{2}$ x 60" hoses in the couplers. Slide the pipes on top of the lower hitch pole to the rear in line with the lift cylinder (12).
3. Install the st. elbow (13) on the base of this cylinder (12).
4. Install the hoses (7) $\frac{1}{2}$ " x 36 and (2) $\frac{1}{2}$ " x 60" on the cylinder (12) and T fittings (11).

NOTE: Keep the hoses in back of the shank brackets so they are not damaged by movement of the front of the shank holder.

5. Slide the pipes ahead as far as possible.

Q. The main depth control cylinders used are 4" x 8" on the 13BW-28 model and a 5" x 8" cylinder on all larger 13BW models.

1. Install the cylinder (8) in the cylinder anchor (21) on page 4.
2. Install the $\frac{1}{2}$ " st. elbows (6) on page 6 as shown.
3. Install the $\frac{1}{2}$ " couplers on the $\frac{1}{2}$ " x 10' pipe (3).
4. Install hose (2) $\frac{1}{2}$ " x 60" to the front of (5) and $\frac{1}{2}$ " x 36" (7) as shown.
5. Insert the two pipes (5) on top of the lower pole. Connect the hoses (7) to (6).
6. Place an adjustable hose clamp around the lower pole and the pipes to hold them in place.

R. The system is now ready for use except for quick couplers.

CAUTION: Do not lower the main depth cylinder without removing the ground lock pin (17).

S. For shank installation, refer to the shank patterns shown on pages 20 thru 27. Also refer to the section IV, "Shank Installation".

III. MODEL 16BW

The same frame (11) is shown on page 4 as the 13BW. The 16BW frame has the same basic parts, but is wider and has extra reinforcement. The 16BW frame main axle uses the walking tandem (3) shown on page 14. All full sized wings; 5 $\frac{1}{2}$ ft., 7 ft., 9 ft., and 11 ft.; may be used on the 16BW frame. The 16BW has a longer heavier pole than the 13BW model.

- A. The same setup instructions are applicable as used on the 13BW. The part numbers and descriptions are shown on page 4.
- B. Recommended tire sizes on the walking tandem are 7:50x15.
- C. The hydraulic system is shown on page 18. The 46 ft. cultivator uses two 3 x 8 hydraulic cylinders to lift the 3 $\frac{1}{2}$ ft. wings. The hydraulic system shown shows these extra cylinders.

- D. Any 16BW wing model that measures 43 ft. and less would be similar to page 18 less the two 3 x 8 cylinders and lines.

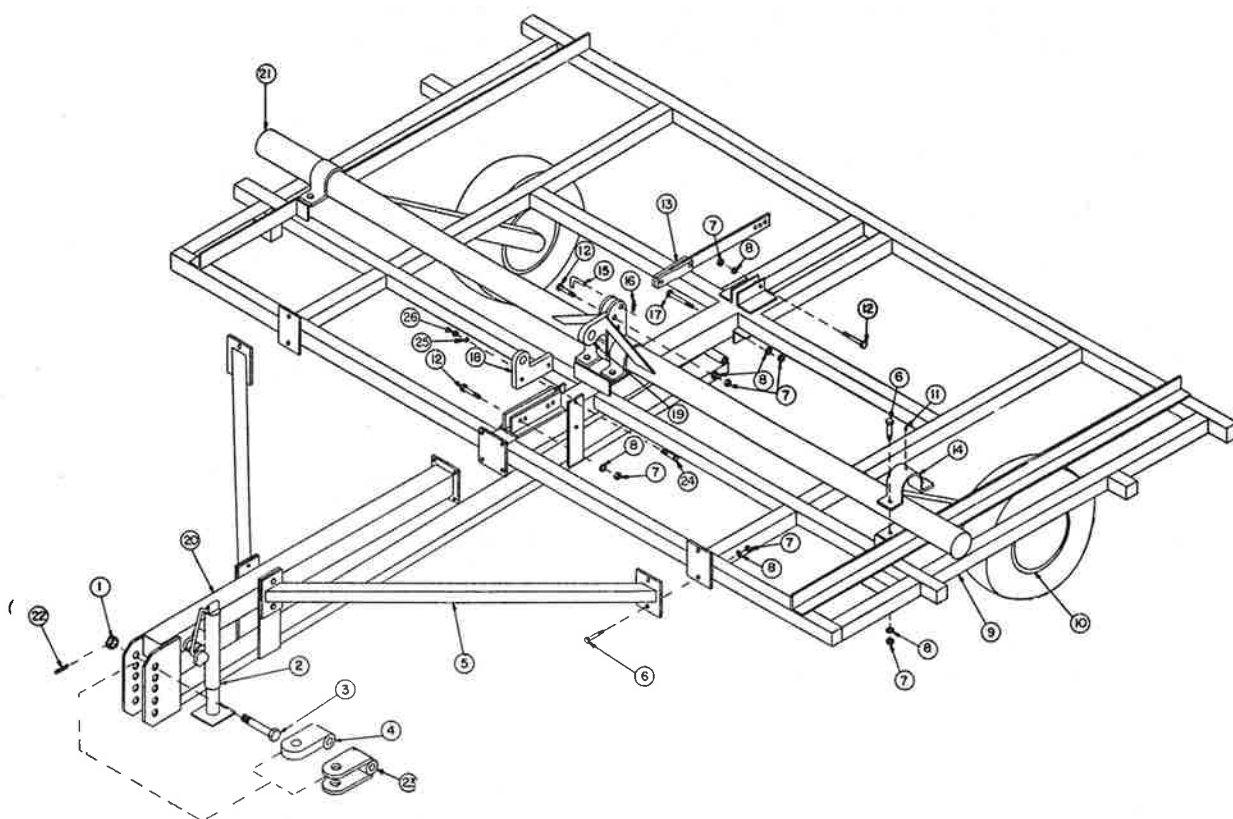
IV. SHANK PATTERN

Refer to pattern drawings on pages 20 thru 27 and to the shank assembly drawing on page 6. These shank assemblies are assembled at the factory. Only the spring bolt (7) is left loose for ease of removal.

- A. Check pattern drawing for the correct size cultivator.
- B. Install U-bolts at correct locations.
- C. Remove spring bolts and swing spring out for easy access to nuts on U-bolts.
- D. Install shanks on frame and U-bolts. Use $\frac{3}{8}$ NC nuts with lock washers and tighten securely.
- E. Install spring adjustment bolts and tighten to $\frac{1}{2}$ ".
- F. Longer U-bolts are needed on the 11 ft. wing hinge and the 3 $\frac{1}{2}$ ft. wing hinge.
- G. Self-locking nuts and grade 8HT bolts are used on the main pivot.
- H. Self-locking nuts are used on the spring pivot.
- I. Use regular Wil-Rich shovels from 2" to 9" sweeps with 7/16" bolts on 2" spacings.
- J. Use shovels with trimmed ends according to the position diagrams to eliminate any danger of damage to tires.

V. 2 $\frac{1}{2}$ and 3 $\frac{1}{2}$ WINGS

- A. 2 $\frac{1}{2}$ and 3 $\frac{1}{2}$ ft. wings will fit the 13BR model on pages 9 and 10.
- B. Insert the 1" x 5" bolts with slotted nuts in the hinge plates.
- C. Bolt the brackets solid with $\frac{3}{8}$ " bolts (5) during field use.
- D. Install wing lock brackets (8) on pages 9 and 10 if the stub wings are to be folded up. **NOTE:** These wings cannot be raised up without damage to the shank holder brackets without the regular wing locks in place.
- E. The 2 $\frac{1}{2}$ and 3 $\frac{1}{2}$ ft. wings will fit on the end of all regular wings.
- F. The 2 $\frac{1}{2}$ ft. wings must be installed with the long bar forward as shown on the 13BW-28 pattern diagram to maintain the proper pattern on all main wings.



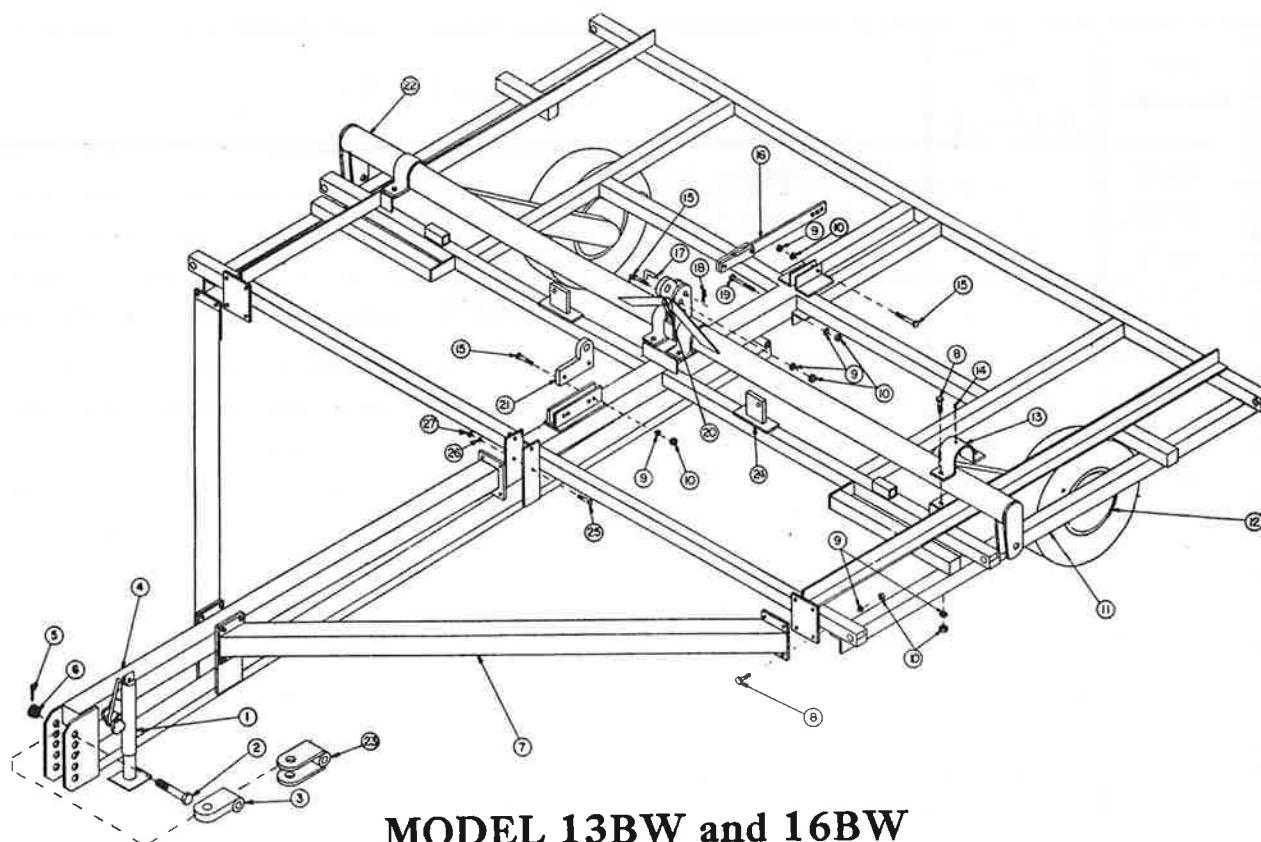
MODEL 13BR

13 Foot Flex-Point Field Cultivator

MAIN FRAME FOR BASIC THIRTEEN FOOT RIGID FIELD CULTIVATOR

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	H124	1	Nut, Castle 1-8 NC
2	B1504	1	Pole Jack (Optional)
3	H181	1	Bolt, Hex 1-8 NC 6" Lg. H.T. Special
4	B179	1	Cat Hitch (Optional)
5	B1428	2	Brace, Main Frame to Pole
6	H290	20	Bolt, Hex 3/4 - 10 NC x 2" Lg. H.T.
7	H110	26	Nut, Hex 3/4 - 10 NC
8	H130	26	Washer, Lock 3/4 I.D.
9	D1422	1	Frame, Main 13 Ft.
10	A236	2	Wheel Rim 15"x 6"
11	H143	4	Grease Fitting
12	H291	3	Bolt, Hex 3/4 - 10 NC x 3" Lg. H.T.
13	B174	1	Strap, Ground Lock -
14	B175	4	Bearing, Main Axle
15	A239	1	Pin, Lock

MODEL 13BR (Cont.)[illegible]



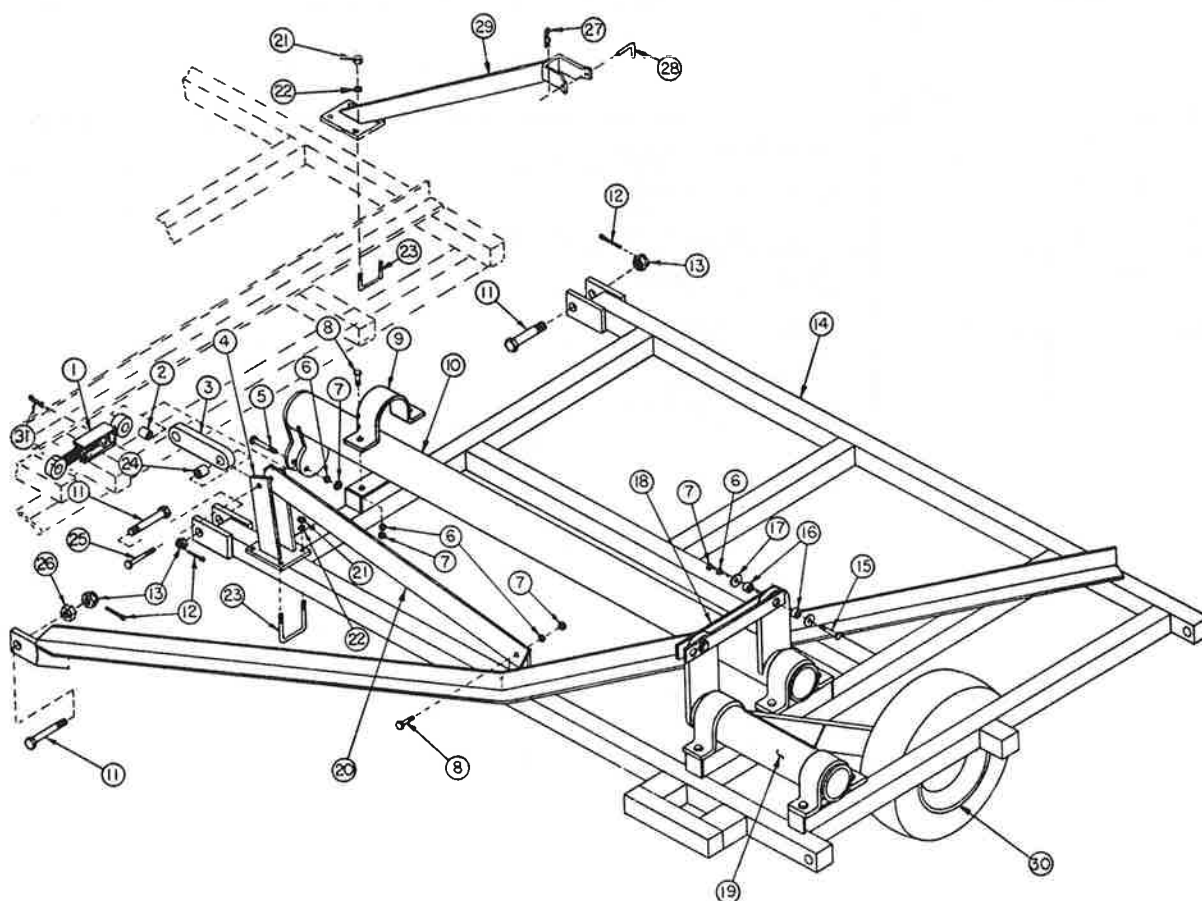
13 Ft.-16 Ft. Flex-Point Field Cultivator

MAIN FRAME FOR BASIC 13 FT.-16 FT. WING FIELD CULTIVATOR

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	B1504	1	Pole Jack (Optional)
2	H181	1	Bolt, Hex 1-8 NC - 7" Lg. H.T. Special
3	B179	1	Cat, Hitch
4	B1427	1	Hitch Pole (16 Ft)
	B1426	1	Hitch Pole (13 Ft)
5	H133	1	Pin, Cotter 3/16 x 2" Lg.
6	H124	1	Nut, Castle 1-8 NC
7	B1430	2	Brace, Main Frame to Pole (16 Ft)
	B1429	2	Brace, Main Frame to Pole (13 Ft)
8	H290	28	Bolt, Hex 3/4 - 10 NC x 2" Lg. H.T.
9	H130	34	Washer, Lock 3/4" I.D.
10	H110	34	Nut, Hex 3/4 - 10 NC
11	D1424	1	Main Frame (16 Ft)
	D1423	1	Main Frame (13 Ft)
12	A236	4	Wheel 15 x 6 (16 Ft)
	A498	2	Wheel 15 x 8 (13 Ft)

MODEL 13BW and 16BW (Cont.)

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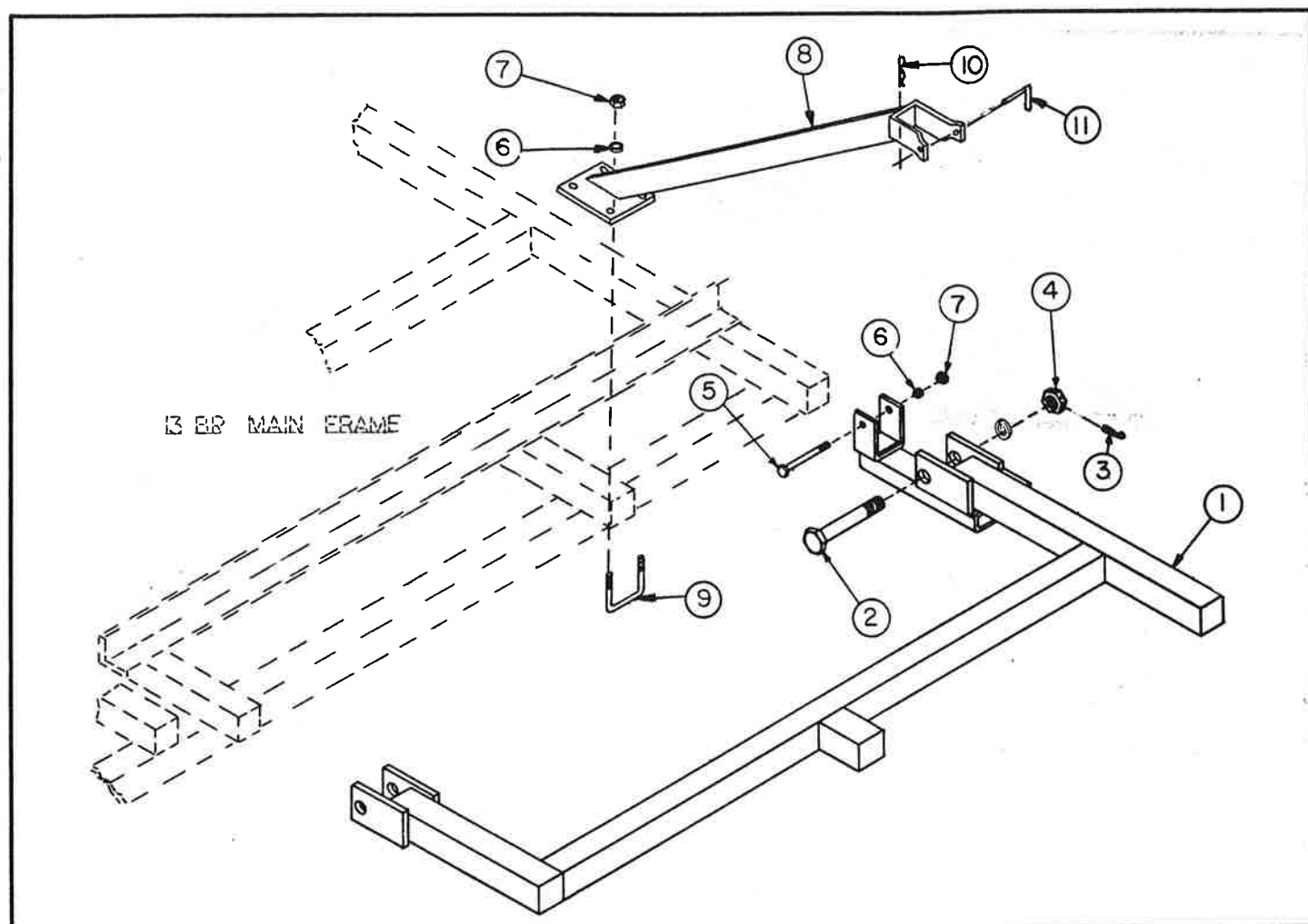
Flex-Point Wing Assembly For 13BW and 16 BW Field Cultivators

LEFT WING SHOWN—RIGHT WING SAME PARTS
UNLESS OTHERWISE SPECIFIED

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	A1484	2	Wing Adjusting Link
2	A1485	4	Wing Adjusting Link Bushing
3	A1488	2	Wing Lift Link
4	B1487	2	Wing Lift Arm
5	H111	4	Bolt, Hex 3/4 - 10 NC x 3-1/2" Lg. H.T.
6	H130	28	Washer, Lock 3/4" I.D.
7	H110	28	Nut, Hex 3/4 - 10 NC
8	H290	18	Bolt, Hex 3/4 - 10 NC x 2" Lg. H.T.
9	B175	8	Bearing, Main Axle
10	C1442	1	5 1/2 Ft. Rock Shaft (Right)
	C1443	1	5 1/2 Ft. Rock Shaft (Left)

FLEX-POINT WING ASSEMBLY (Cont.)

Item Number	Part Number	Quantity per Machine	DESCRIPTION
	C1444	1	7 Ft. Rock Shaft (Right)
	C1445	1	7 Ft. Rock Shaft (Left)
	C1446	1	9 Ft. Rock Shaft (Right)
	C1447	1	9 Ft. Rock Shaft (Left)
	C1448	1	11 Ft. Rock Shaft (Right)
	C1449	1	11 Ft. Rock Shaft (Left)
11	A201	6	Bolt, Hex 1 - NC x 5
12	H133	6	Pin, Cotter 3/16 x 2" Lg.
13	H124	6	Nut, Castle 1-8 NC
14	C1434	1	5 1/2 Ft. Wing (Right)
	C1435	1	5 1/2 Ft. Wing (Left)
	C1436	1	7 Ft. Wing (Right)
	C1437	1	7 Ft. Wing (Left)
	C1438	1	9 Ft. Wing (Right)
	C1439	1	9 Ft. Wing (Left)
	C1440	1	11 Ft. Wing (Right)
	C1441	1	11 Ft. Wing (Left)
15	H291	4	Bolt, Hex 3/4 - 10 NC x 3" Lg. H.T.
16	A196	8	Wing Axle Linkage Bushing
17	H131	8	Washer, Flat 3/4" I.D.
18	A1486	4	Wing Axle Linkage
19	C1450	1	Wing Axle (Right)
	C1451	1	Wing Axle (Left)
20	A1592	2	5 1/2 Ft. Wing Lift Brace
	A1593	2	7 Ft. Wing Lift Brace
	A1594	2	9 Ft. Wing Lift Brace
	A1595	2	11 Ft. Wing Lift Brace
21	H126	16	Nut, Hex 5/8 - 11 NC
22	H129	16	Washer, Lock 5/8" I.D.
23	H311	8	U-Bolt 5/8 - NC
24	A190	2	Bushing, Wing Lift Link
25	H112	2	Bolt, Hex 3/4 - 10 NC x 4" Lg. H.T.
26	H125	2	Nut, Hex 1-NC
27	H137	2	Pin, Spring Lock 1/8 x 2" Lg.
28	A1483	2	Pin, Wing Lock 5/8
29	B1673	2	Wing Lock Assembly
	B1674	2	11 Ft. Wing
30	A236	12	Wheel 15 x 6
31	H318	2	Pin, Spring Lock 1/4 x 2" Lg.

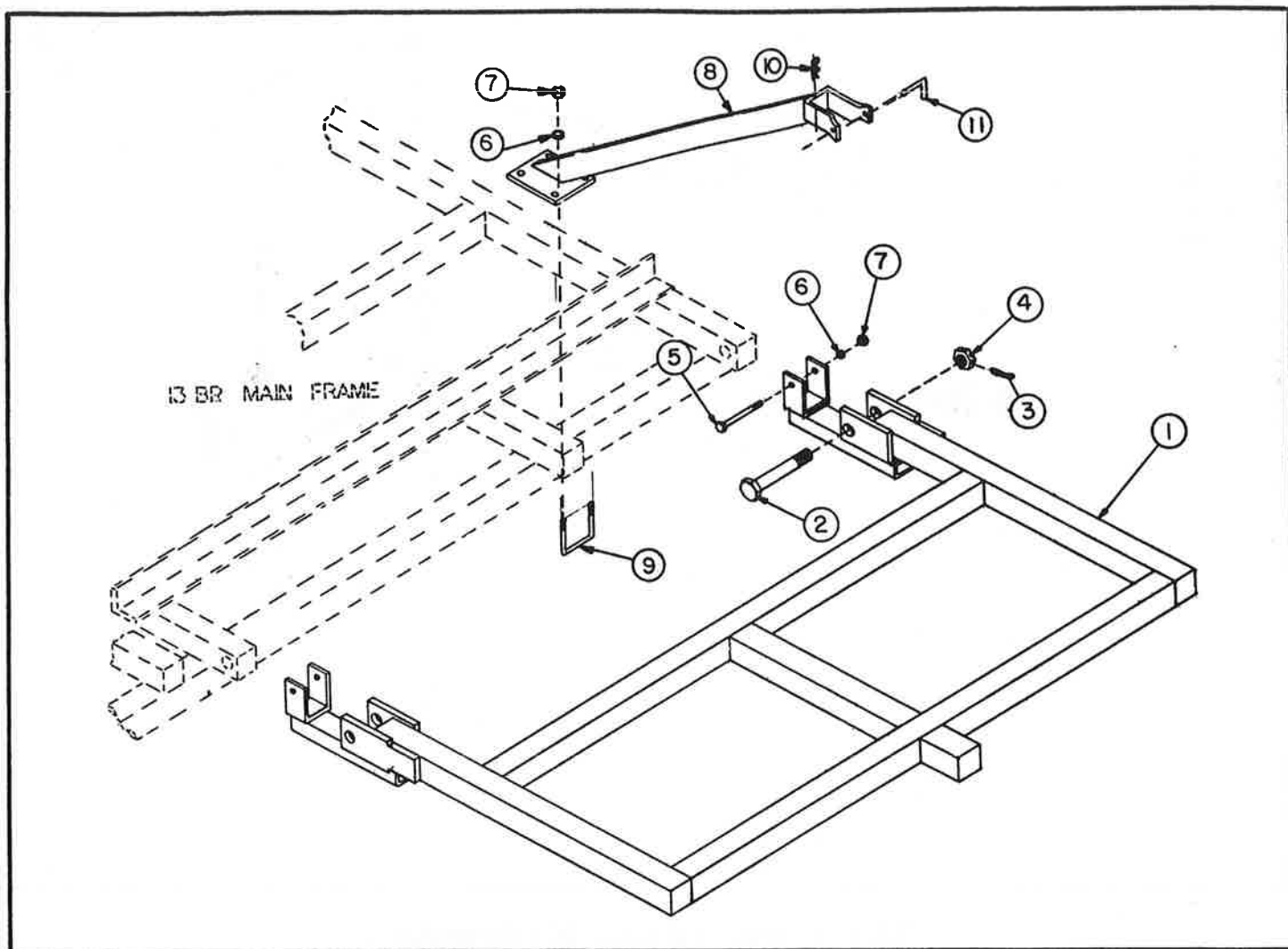


2 1/2 Foot Wing Extension

WING EXTENSION FOR 13BR16, 13BR18, 13BW24-28, 13BW27-32,
13BW30-35, 16BW30-35, 16BW34-40, 16BW39-43

LEFT WING SHOWN—RIGHT WING SAME PARTS UNLESS OTHERWISE SPECIFIED

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	C1452	1	2 1/2 Ft. Wing Extension (Right)
	C1453	1	2 1/2 Ft. Wing Extension (Left)
2	H312	4	Bolt, Hex 1 -NC x 5
3	H133	4	Pin, Cotter 3/16 x 2" Lg.
4	H124	4	Nut, Castle 1-8 NC
5	H298	2	Bolt, Hex 5/8 - 11 NC x 4" Lg. H.T.
6	H129	10	Washer, Lock 5/8" I.D.
7	H126	10	Nut, Hex 5/8 - 11 NC
8	B1457	2	Wing Lock
9	H311	4	U-Bolt 5/8 NC
10	A1483	2	Pin, Spring Lock 1/8 x 2" Lg.
11	H137	2	Pin, Wing Lock 5/8



3 1/2 Foot Wing Extension

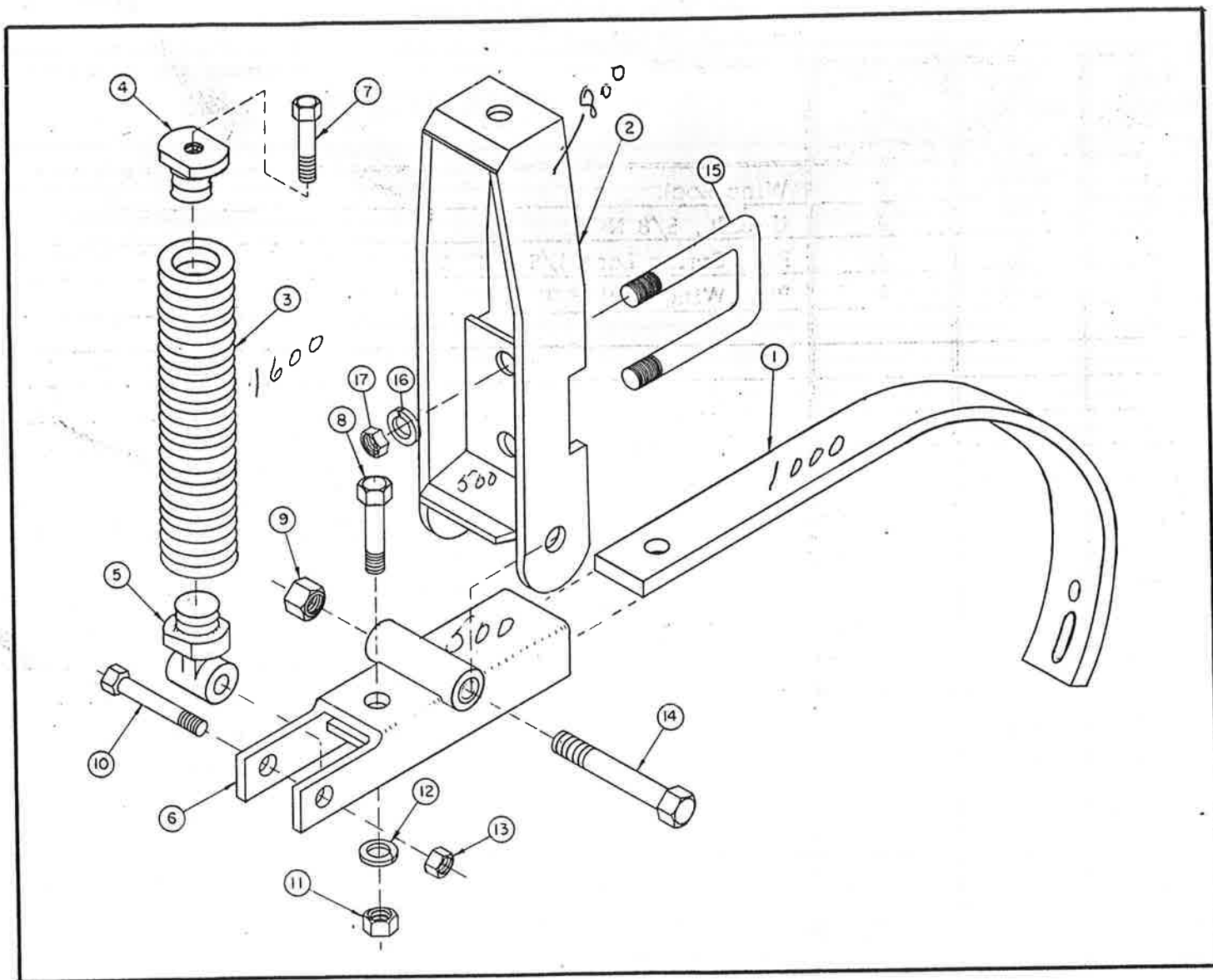
WING EXTENSION FOR 13BR20, 13BW27-34, 13BW30-37,
16BW30-38, 16BW34-41, 16BW39-46

LEFT WING SHOWN—RIGHT WING SAME PARTS UNLESS OTHERWISE SPECIFIED

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	C1454	1	3 1/2 Ft. Wing Extension (Left)
	C1454	1	3 1/2 Ft. Wing Extension (Right)
	C1616	1	3 1/2 Ft. Wing Extension 16 BW 39-46 (Right)
	C1615	1	3 1/2 Ft. Wing Extension 16 BW 39-46 (Left)
2	H312	4	Bolt Hex 1-NC x 5
3	H133	4	Pin, Cotter 3/16 x 2" Lg.
4	H124	4	Nut, Castle 1-8 NC
5	H298	4	Bolt, Hex 5/8 - 11 NC x 4" Lg. H.T.
6	H129	12	Washer, Lock 5/8" I.D.
7	H126	12	Nut, Hex 5/8 11-NC

3 1/2 FOOT WING EXTENSION (Cont.)

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Shank Assembly

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	A1511	1	Shank 1 3/4 x 9/16 with 7/16 Bolt Hole
2	B1512	1	Shank to Frame Bracket
3	A1510	1	Spring 3/8 Dia. Wire
4	A1398	1	Spring Plug Top
5	A1397	1	Spring Plug Handle
6	B1509	1	Shank Holder
7	H315	1	Cap Screw Hex 1/2 NC x 2 1/2 Lg. Special Thread
8	H294	1	Cap Screw Hex 5/8 NC x 2 Lg. GD 5
9	H306	1	Nut, Hex Lock 3/4 NF
10	H313	1	Cap Screw, Hex 1/2 NF x 3 Lg. GD 5
11	H126	1	Nut, Hex 5/8 NC

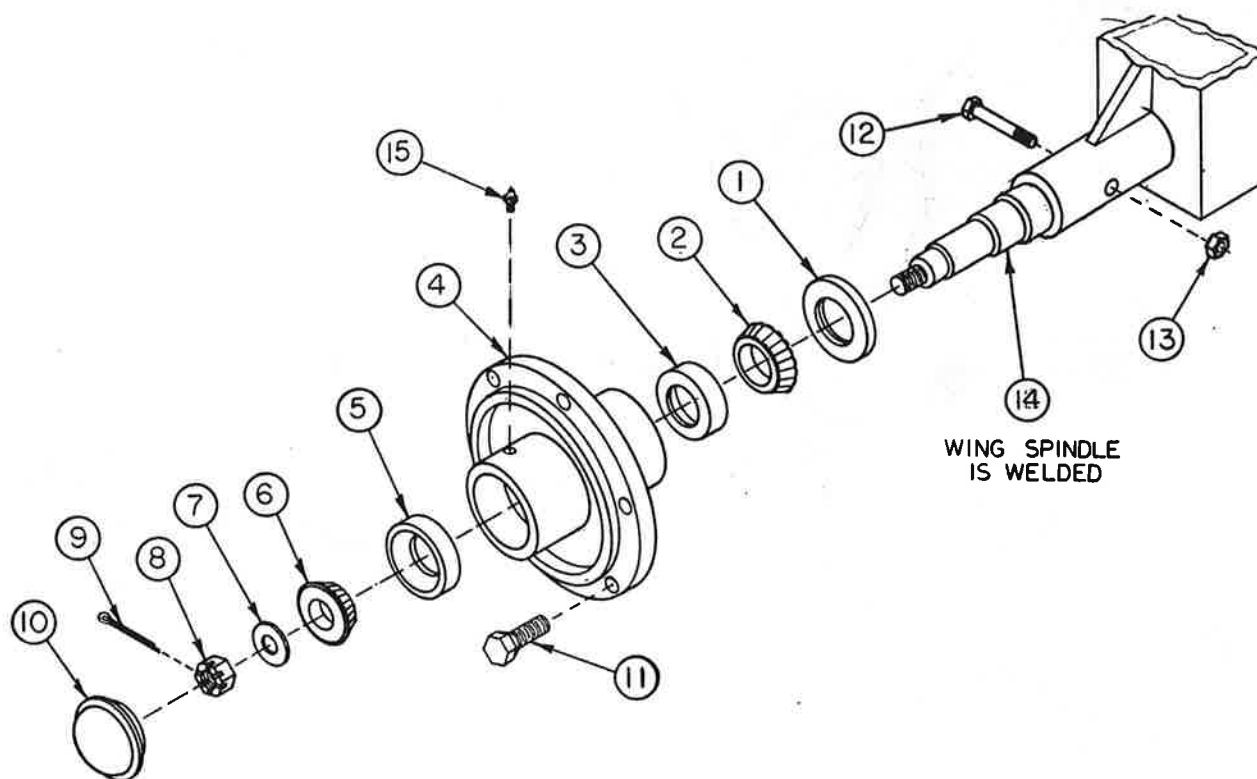
SHANK ASSEMBLY (Cont.)

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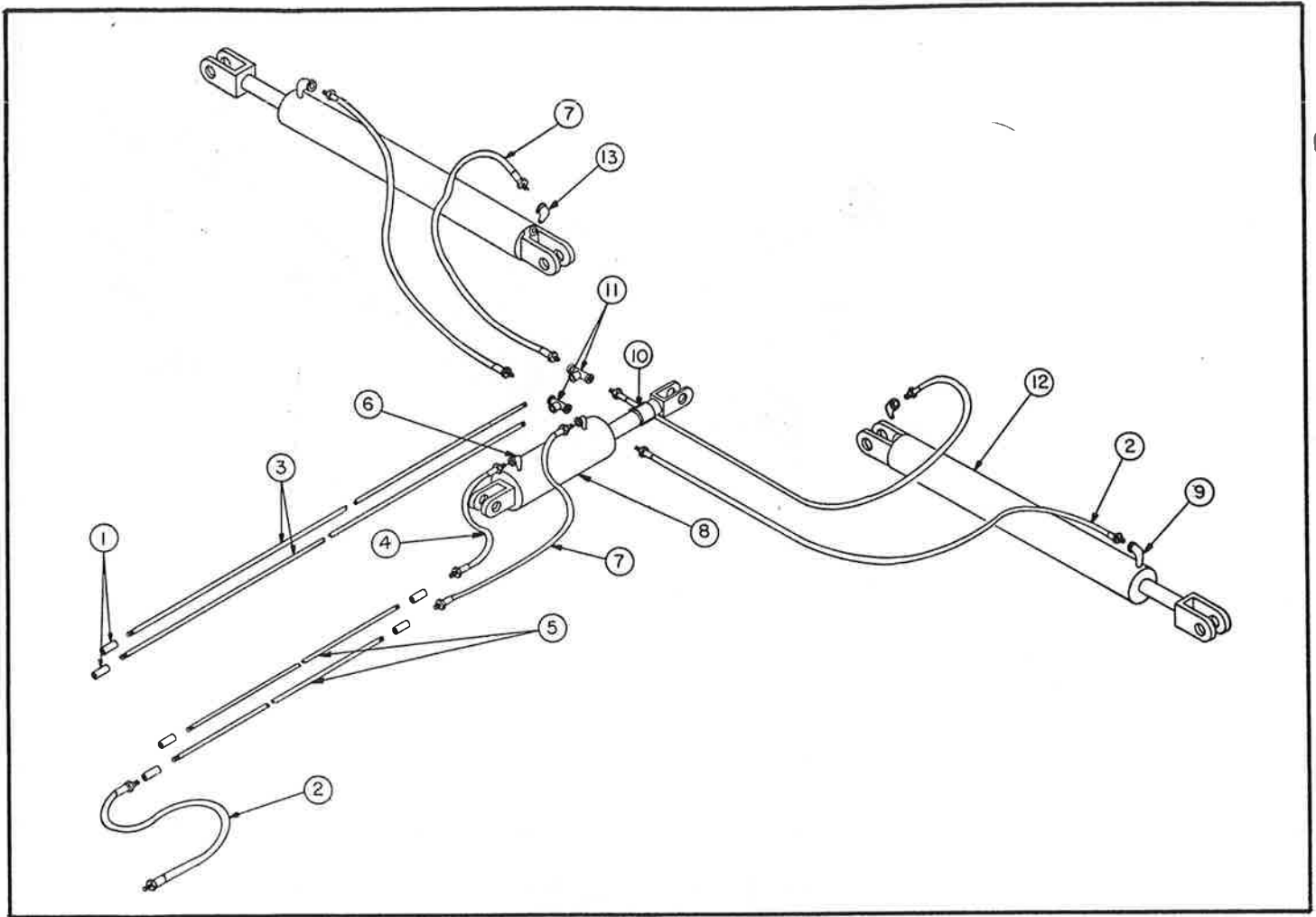
Walking Tandem For All 16 Foot Main Assemblies

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Axle Assembly

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	A1377	1	Seal
2	A1378	1	Bearing, Cone
3	A1379	1	Bearing, Cup
4	C1380	1	Hub
5	A344	1	Bearing, Cup
6	A345	1	Bearing, Cone
7	H196	1	Washer, Flat 1 Inch I.D. x 2 OD
8	H299	1	Nut, Castle 1 - 12 NF
9	H135	1	Pin, Cotter 1/8 x 1 1/2" Lg.
10	A1381	1	Cap, Hub
11	H142	6	Bolt, Wheel 1/2 - NF x 1" Lg. 90° Head
12	H151	1	Bolt, Hex 1/2 - 13 NC x 3 Lg. H.T.
13	H104	1	Nut, Hex 1/2 - 13 NC
14	A1390	1	Axle Spindle (Basic Sixteen Foot Axle Ass'y)
14	A1388	1	Axle Spindle (Basic Eight Foot Axle Ass'y)
14	A1389	1	Axle Spindle (Wing Axle For All Wing Plows)
15	H263	1	Grease Fitting, 1/8" NPT

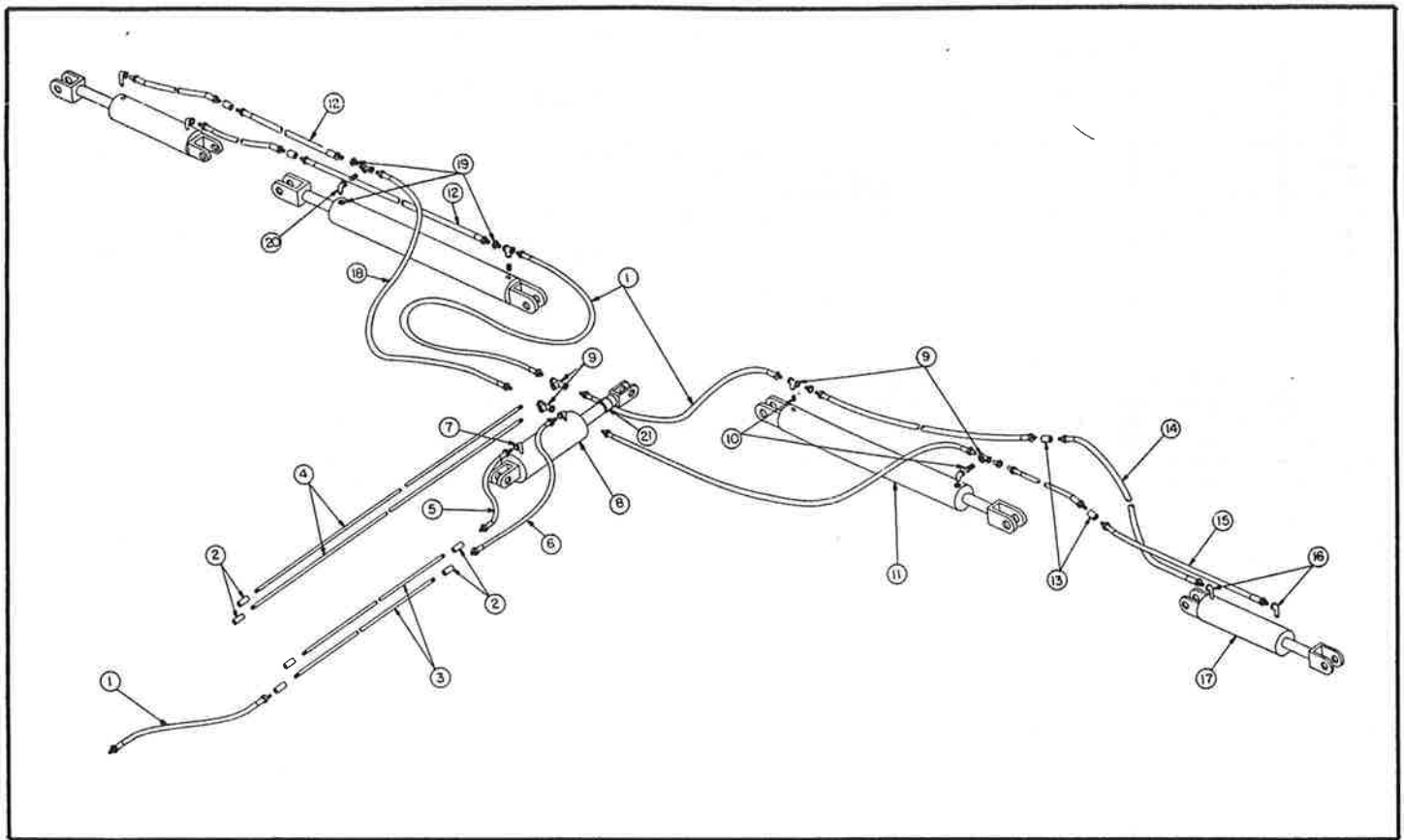


Hydraulic System For All 13BW and 16BW Field Cultivators

Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	H139	6	Coupler, Pipe 1/2" - NPT
2	A724	6	Hose, Hyd. Swivel 1/2" I.D. 1-wire x 60" Lg.
3	A1456	2	Pipe Black 1/2" x 12 Ft. Lg. (13BW)
	A1456	2	Pipe, Black 1/2" x 16 Ft. Lg. (16BW)
4	A205	1	Hose, Hyd. Swivel 1/2" I.D. 1 Wire x 36" Lg.
5	A208	2	Pipe, Black 1/2" x 10 Ft. Lg. (13BW)
	A1718	2	Pipe, Black 1/2" x 14 Ft. Lg. (16 BW)
6	H167	2	Elbow, St. 1/2" NPT
7	A205	3	Hose, Hyd. Swivel 1/2" I.D. 1 wire x 36" Lg.
8	A495	1	Cylinder Hyd. 5" Dia. x 8" Stroke
	A220	1	Cylinder Hyd. 4" Dia. x 8" Stroke (13BW 24) (13 BW 24 - 28)
9	A206	2	Elbow, St. 1/2 to 3/8" NPT w/ Restrictor

HYDRAULIC SYSTEM FOR MODELS 13BW and 16BW (Cont.)

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Hydraulic System For 16BW46 Models

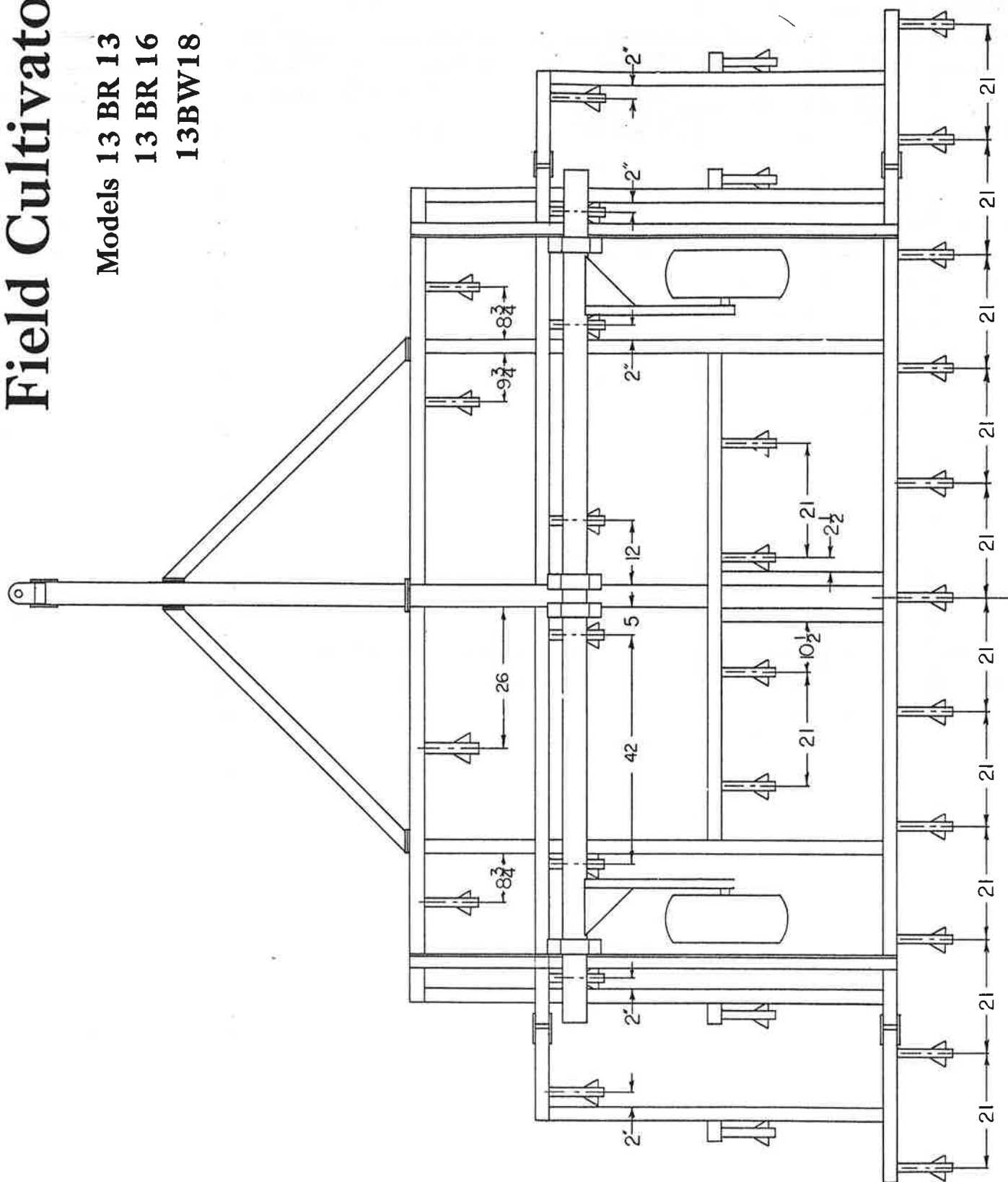
Item Number	Part Number	Quantity per Machine	DESCRIPTION
1	A724	6	Hose, Hyd. Swivel 1/2" ID. 1 Wire x 60" Lg.
2	H139	6	Coupler, Pipe 1/2" NPT
3	A1715	2	Pipe, Black 1/2" x 14 Ft. Lg.
4	A1456	2	Pipe, Black 1/2" x 16 Ft. Lg.
5	A205	1	Hose, Hyd. Swivel 1 Wire x 36" Lg.
6	A205	1	Hose, Hyd. Swivel 1 Wire x 36" Lg.
7	H167	2	Elbow, St. 1/2" NPT
8	A495	1	Cylinder, Hyd. 5" Dia. x 8" Stroke
9	H138	6	Tee, Pipe 1/2" NPT Female
10	H274	4	Nipples, Close 1/2" NPT
11	A1490	2	Cylinder, Hyd. 4" Dia. x 24" Stroke
12	A894	4	Hose, Hyd. Swivel 3/8" ID. 1 Wire x 144" Lg.
13	H147	4	Coupler, Pipe 3/8" NPT
14	A138	2	Hose, Hyd Swivel 3/8 " ID. 1 Wire x 60" Lg.
15	A145	2	Hose, Hyd. Swivel 3/8" ID. 1 Wire x 36" Lg.
16	H193	4	Elbow, St. 3/8" NPT
17	A1492	2	Cylinder, Hyd. 3" Dia. x 8" Stroke
18	A723	2	Hose, Hyd. 1/2" ID. Swivel 1 Wire x 84" Lg.

HYDRAULIC SYSTEM FOR 16BW46 MODELS (Cont.)

[illegible]

Field Cultivator

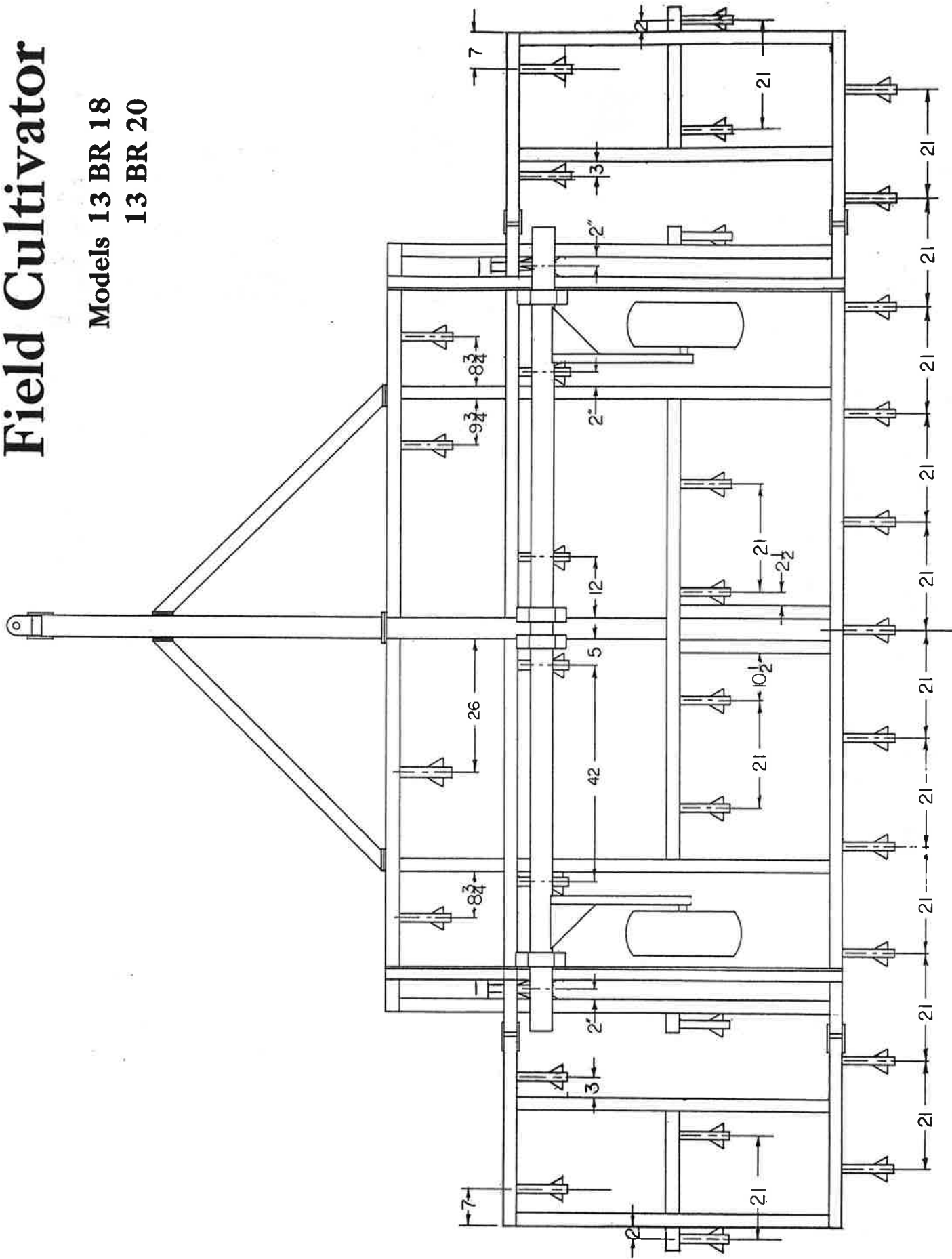
Models 13 BR 13
13 BR 16
13BW18



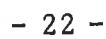
Field Cultivator

Models 13 BR 18

13 BR 20



**Wing Models 13 BW 24
13 BW 24-28**

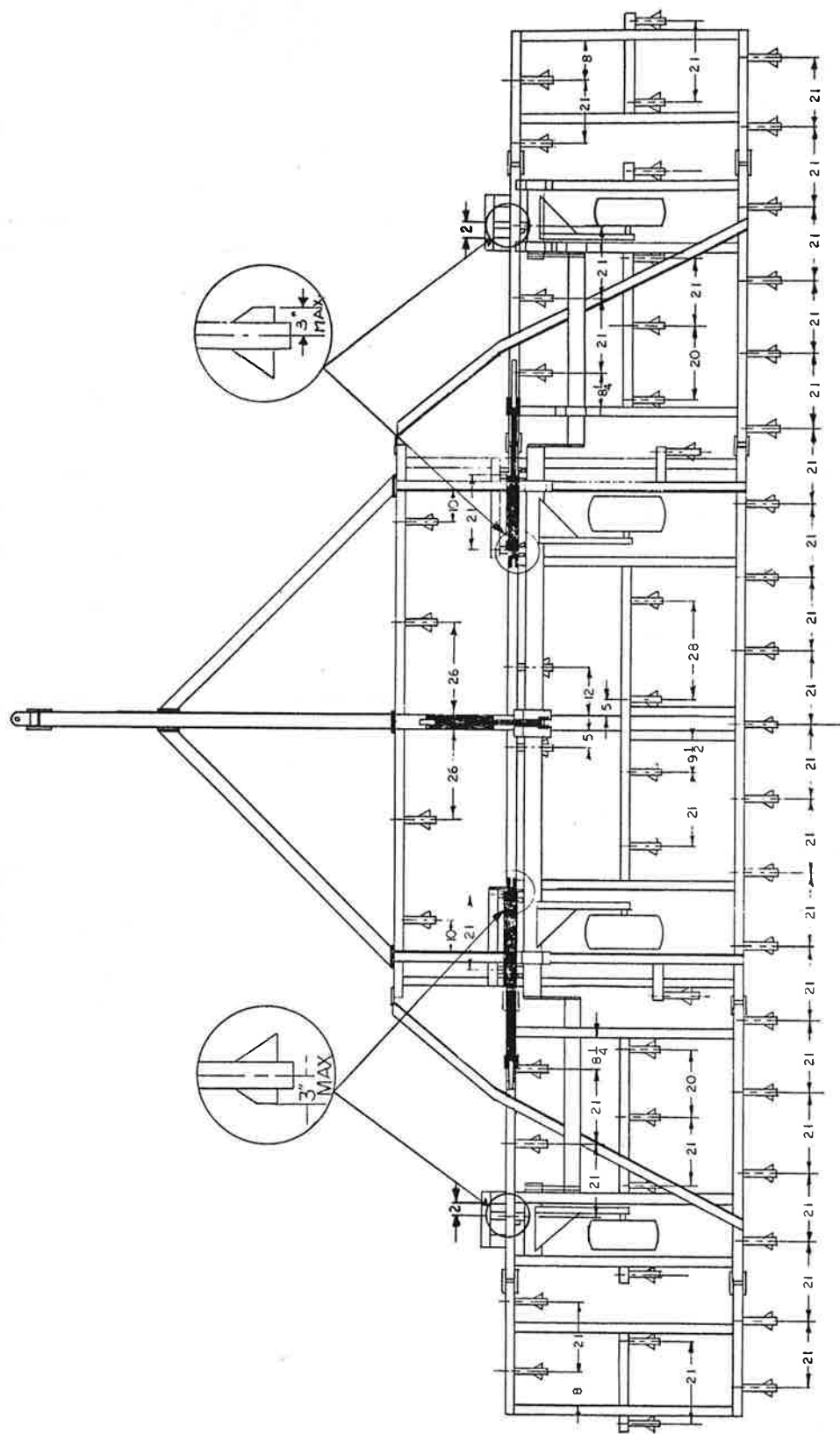


Field Cultivator

Wing Models 13 BW 27

13 BW 27-32

13 BW 27-34

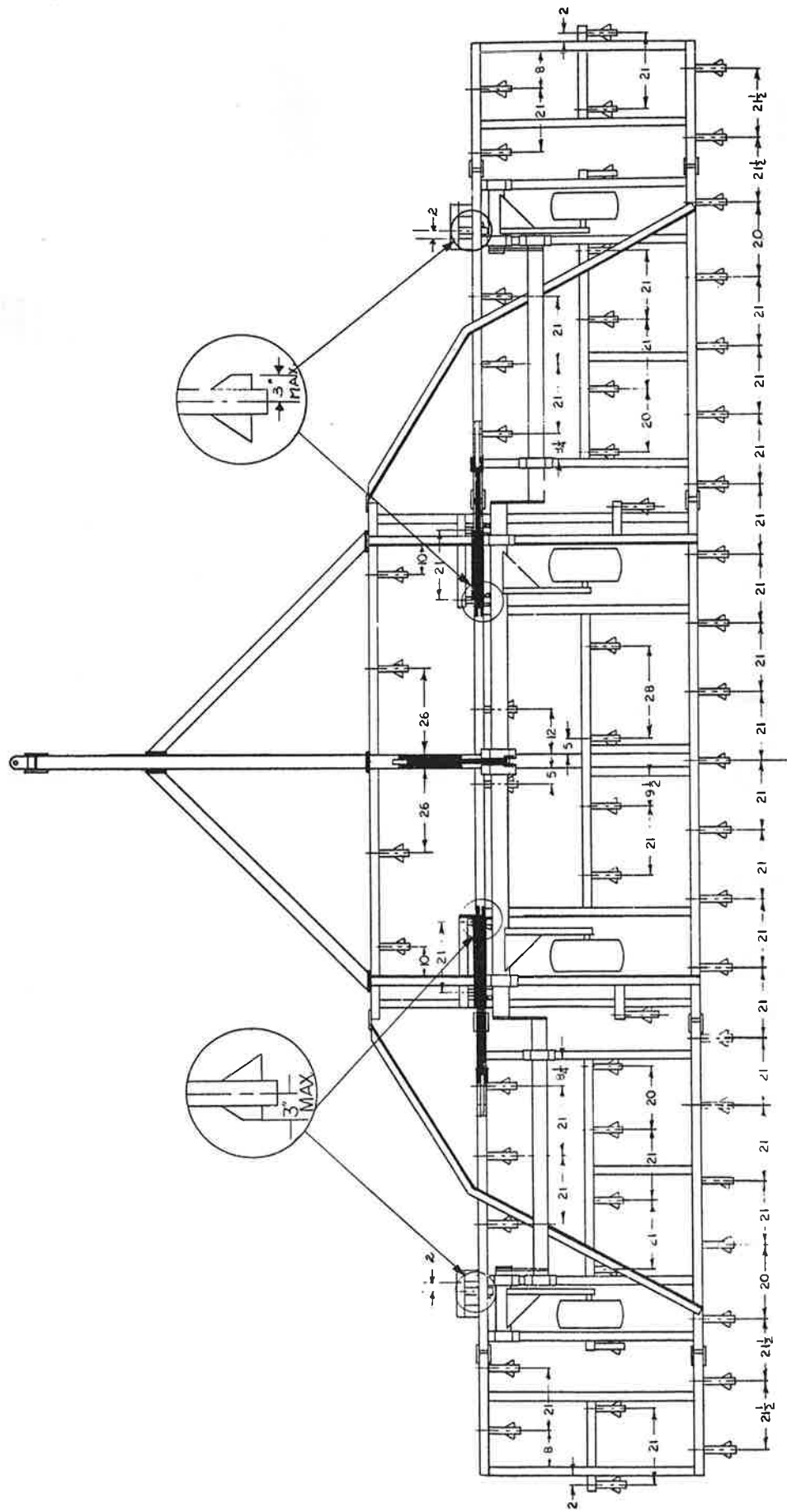


Field Cultivator

Wing Models 13 BW 30

13 BW 30-35

13 BW 30-37

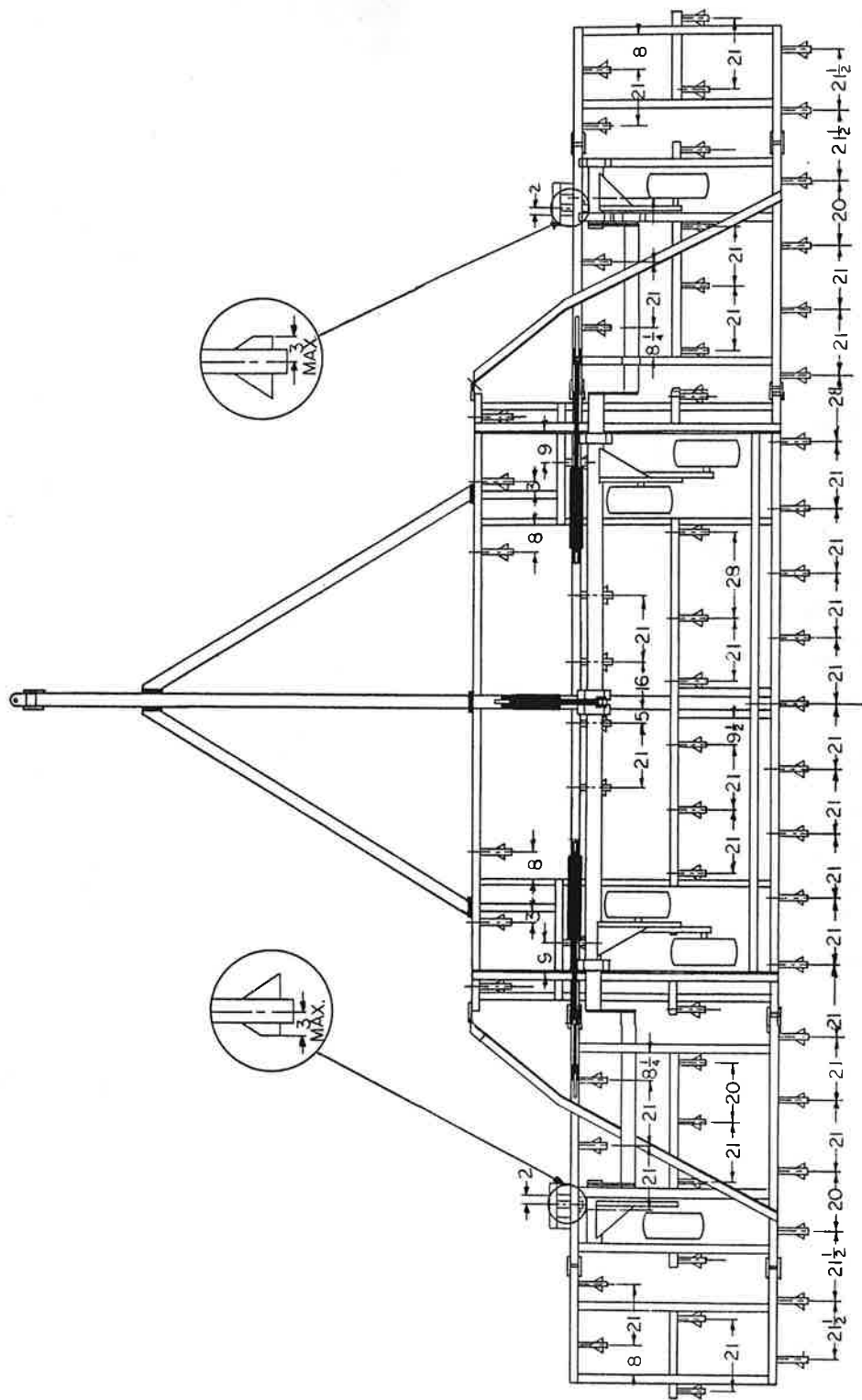


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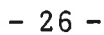
Wing Models 16 BW 30

16 BW 30-35

16 BW 30-38



Wing Models 16 BW 34
16 BW 34-40
16 BW 34-41



Wing Models 16 BW 39
16 BW 39-43
16 BW 39-46

