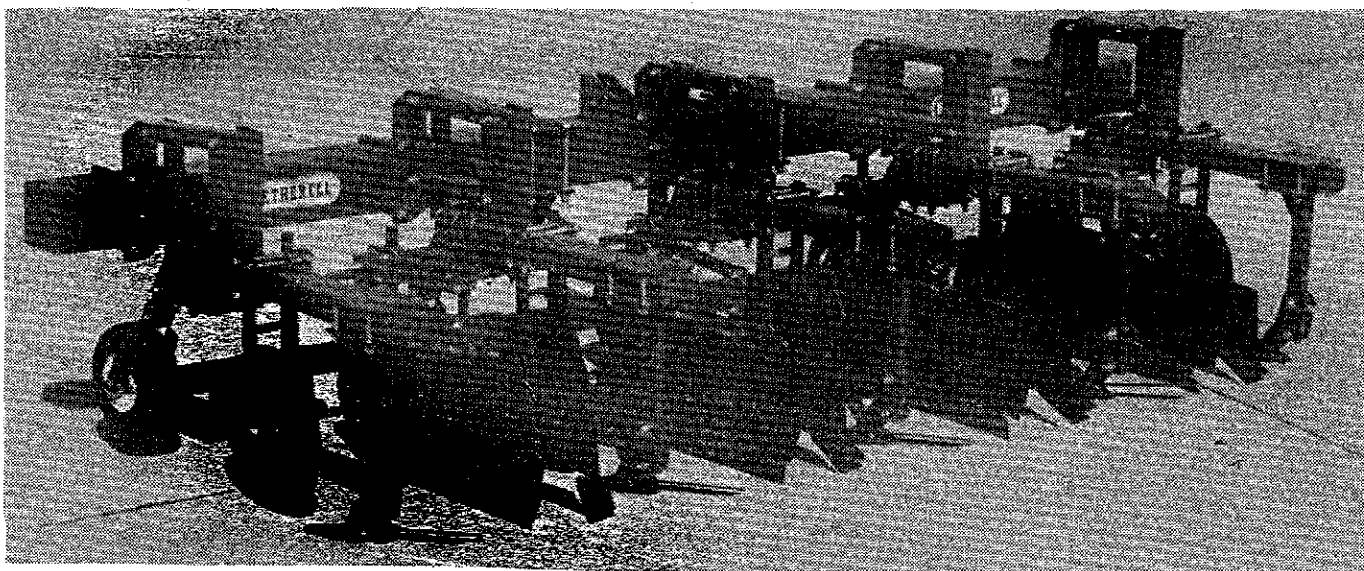




NO-TILL CULTIVATOR

4-6-8-12 ROW WIDE & NARROW
RIGID & FLAT FOLDING MODELS



OPERATING AND SET-UP INSTRUCTIONS PARTS MANUAL

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FOREWARD

Be sure to read the instructions for operating and adjusting the cultivator in this manual. Check each item referred to and acquaint yourself with the adjustments required to obtain efficient operation.

Keep this manual where it can be easily found and readily available for future reference.

The front section of this manual contains assembly, operation and service instructions for the cultivator. The rear section contains a complete list of parts available for service and repair.

CAUTION

Check your tractor manual to be certain that your tractor 3 point hitch will handle the weight of this cultivator- add the weight to the front end of your tractor to retain steering and operating control.

SAFETY RULES

Although we make every effort to insure maximum safety when using this cultivator, a careful operator is always the best insurance against an accident.

Comply with all state, federal and local laws when transporting the cultivator on highways or public roads.

Be sure you install a SMV emblem, visible from the rear when transporting the cultivator on public road ways.

Keep all persons clear of the cultivator when raising or lowering the wings.

Stop the engine or other power source before adjusting, lubricating, cleaning or unclogging machines.

Never allow anyone to ride on the cultivator.

Never work underneath a raised cultivator. Lower the cultivator when not in use.

Refrain from turning sharply when making turns. Operate at a safe and reasonable speed. Do not allow inexperienced persons to operate this cultivator.

SPECIFICATIONS

NON-FOLDING CULTIVATORS

Model	No. of Rows	Row Spacing	No. of Gangs	Sweep Size	Tool Bar Length	Weight
NT4W	4	36" - 38"	5	22"	160"	2520
NT6N	6	30"	7	18"	190"	3360
NT6W	6	36" - 38"	7	22"	240"	3470
NT8N	8	30"	9	18"	250"	4270
NT8W	8	36" - 38"	9	22"	312"	4410

FOLDING CULTIVATORS

Model	No. of Rows	Row Spacing	No. of Gangs	Sweep Size	Tool Bar Length	Weight
NT8NHF	8	30"	9	18"	250"	4620
NT8WHF	8	36" - 38"	9	22"	312"	4798
NT12NHF	12	30"	13	18"	370"	7600

These Models come equipped with 4" X 22" Hydraulic Cylinders and hoses to the center of the tool bar.

TRACTOR HOOK-UP

See your tractor manual for adjustments to your 3 point hydraulic lift arms. Adjust them for independent operation. This will permit your cultivator to follow rough ground better.

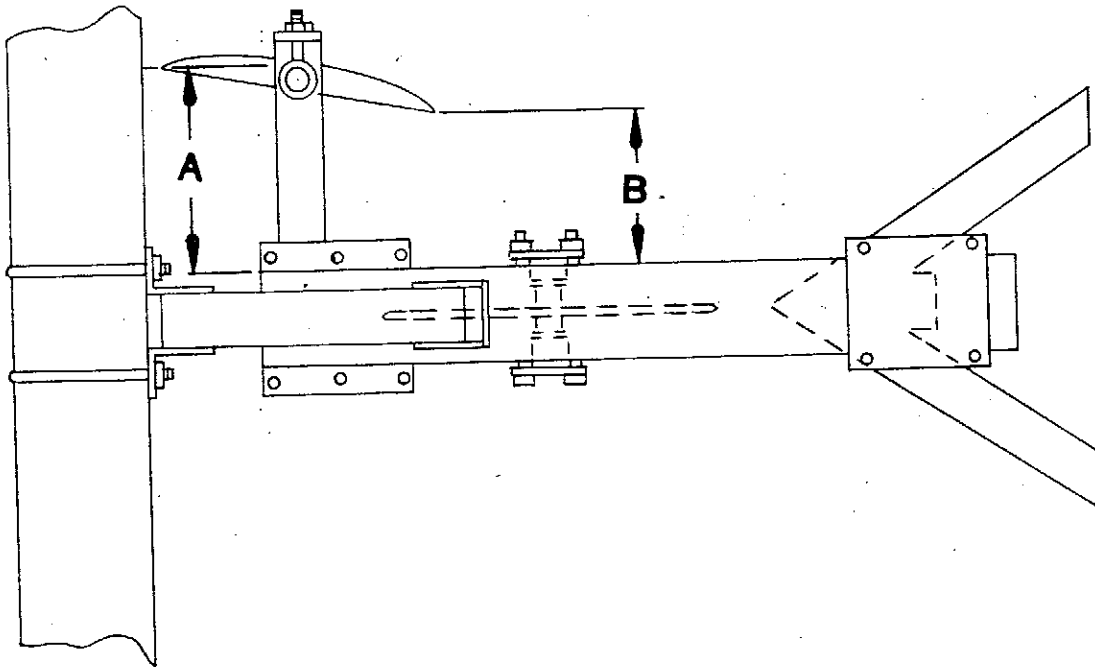
Reposition stabilizing systems on your lift arms to permit the cultivator to move freely behind your tractor and not to be forced sideways. Trash cutting coulters-1 between each row-penetrate 2½ inches (approx.) cutting trash and stabilizing the cultivator.

SETTING YOUR TRACTOR

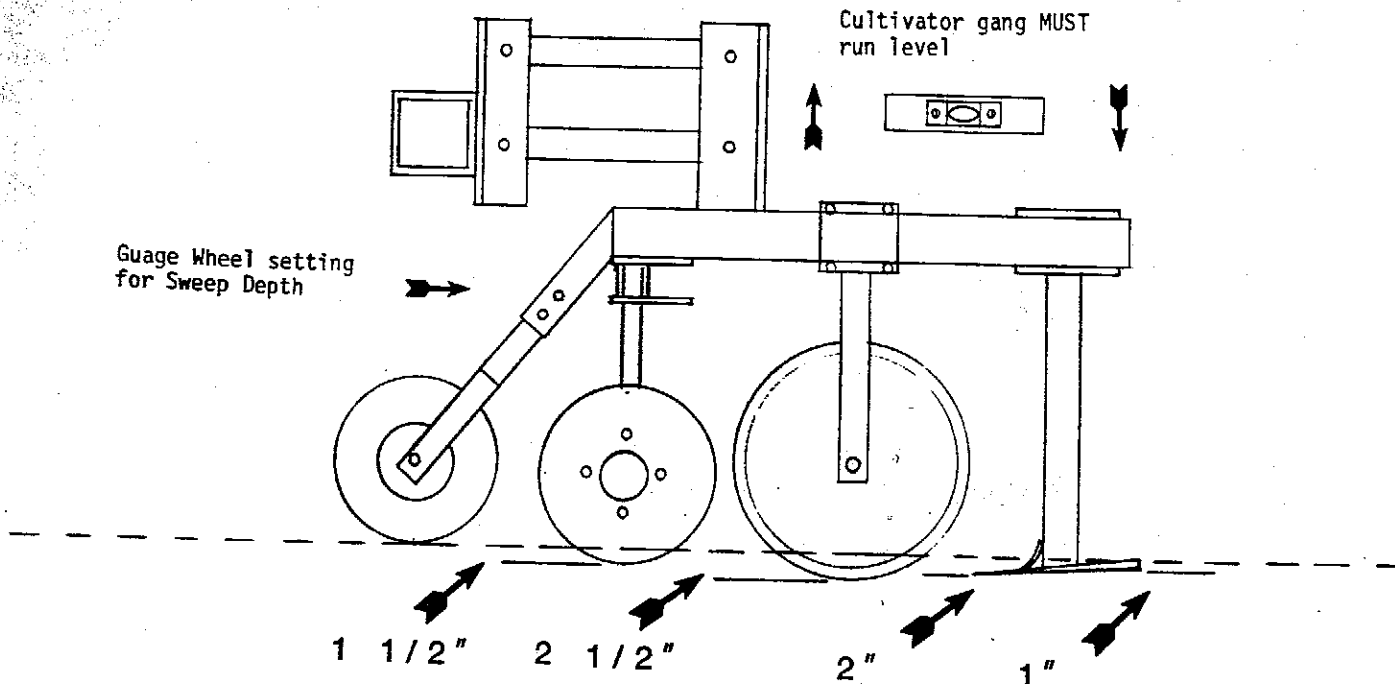
Double row width measurements- this is the required setting ℓ to ℓ of your rear tractor wheels- wide front end wheels should be set to the same ℓ to ℓ measurements.

You may need to add front weights for safer and easier operation- Do not permit the front end to raise off the ground when starting nor to bounce when turning.

SETTING & ADJUSTING DISK HILLERS



We recommend Disk Hillers to be operated on an approximate 15 degree angle. Dimension "A" should be 3 5/8" more than dimension "B" to arrive at the 15 degree angle. You may want to operate at more or less angle depending upon crop height and the speed you travel. This setting will be a reference only and will quite likely be modified in the field. Soil movement is affected by both cutting angle and cultivating speed. A cultivating speed in the 4 to 6 MPH range is recommended. To increase soil movement you must increase the angle of the hiller



Make all settings with the Cultivator on a LEVEL SURFACE. Five basic settings are required:

1. Gauge Wheel 2. Cutting Depth of Disk Hiller 3. Angle of Disk Hiller 4. Depth of Trash/Stabilizing Coulters 5. Pitch of Sweep. Starting settings are shown above, in field operation you may want to change these settings to accommodate your trash and soil conditions.

Disk Hillers should be set at an approximate 15 degree attack angle. To increase the cut, either lower the Disk Hiller or increase the attack angle. CAUTION: Too great of an attack angle increases the pressure on the Disk Hiller bearing and can shorten bearing life.

ALL MAJOR ADJUSTMENTS CAN BE MADE WITH A 15/16" WRENCH

DISK HILLER

Set Disk Hiller blade to penetrate 1 1/2" and adjust laterally to the desired proximity to the row depending on chemical band width. Too close may result in plant roots being cut and plant damage may occur. (See top view of gang for setting the blade for attack angle.)

TRASH - STABILIZER COULTER

This 18" Coulters should be set to penetrate 2 1/2". This Coulters serves several purposes

1). Slices trash 2). Stabilizes the Cultivator 3). Helps prevent the sweep from catching on rocks. For rock protection, the Stabilizer should be set as close to the tip of the sweep as possible.

SWEEP

18" Sweeps are standard for narrow rows - 22" Sweeps are standard for wide rows. Initially set the Sweep Point for 2" cultivating depth, tilt the Sweep so the rear of the Sweep penetrates 1".

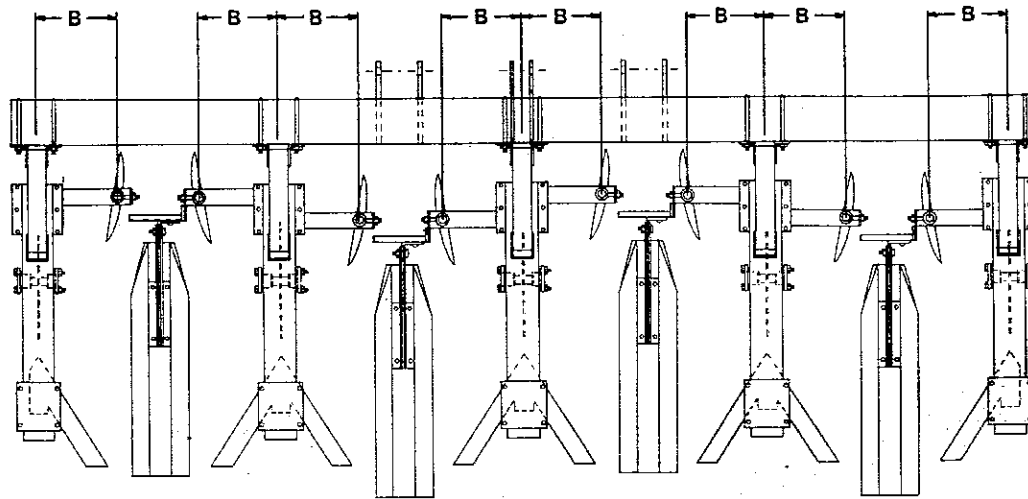
GAUGE WHEEL

Adjust the gauge wheel to run on the ground while maintaining the settings described above.

All of the above settings may be adjusted for your cultivating conditions.

Setting your disk-hillers for 1st and 2nd cultivation. Refer to the drawing below- note the reference measuring points-- Refer to the chart for the proper disk hiller setting for your row spacing.

Plant Row Width	30"	36"	38"
1st Cultivation Disk Hiller Setting (B)	9"	11½"	12½"

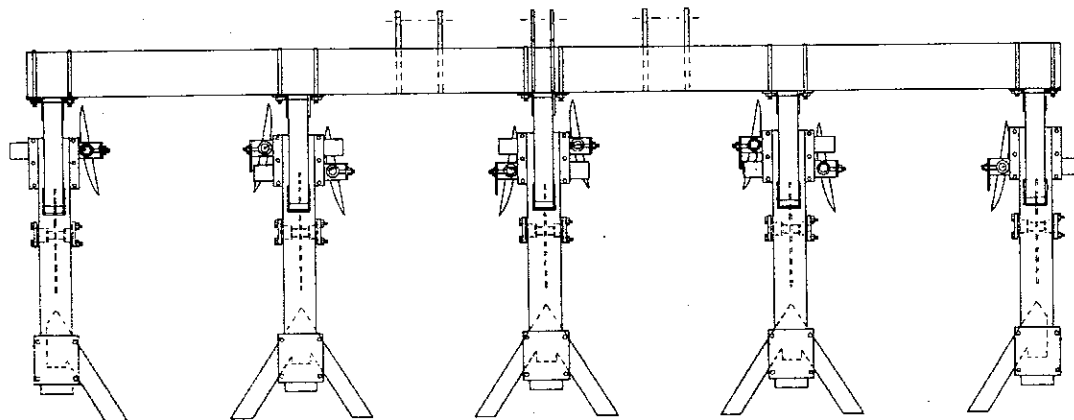


**FOR
SMALL
CROPS**

Operating disk hillers too deep may result in cutting off plant roots.

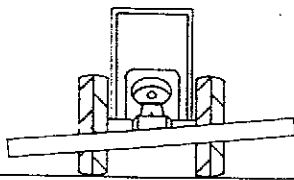
Setting your disk hillers for 2nd cultivation refer to the drawing below- again note the reference measuring points- set the disk hiller as shown permitting you to build seed beds hill crops or prepare trenches.

For 30" plant row spacings operate disk hillers as close together as possible maintaining throwing angle- for 36" and 38" plant row spacings widen disk separation

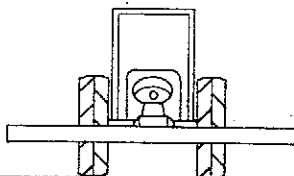


TROUBLE SHOOTING GUIDE

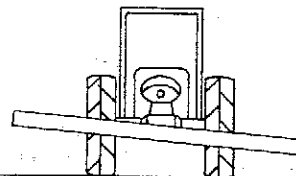
PROBLEM	POSSIBLE CAUSE
Sweeps will not penetrate Soil	<ol style="list-style-type: none"> 1. Tractor Hydraulics not set in Heavy Draft Position. 2. Gangs not level 3. Sweeps not pitched forward 4. Gang wheel set too low 5. Cultivator 7 X 7 Bar not level.
Cultivator Plugging	<ol style="list-style-type: none"> 1. Gangs running to shallow 2. Sweeps not Scouring 3. Disk Hillers set at less than 15 degrees 4. Trash/Stabilizer Coulter Set to shallow
Crop Being Covered Up	<ol style="list-style-type: none"> 1. Improper Setting on Tunnel Shield 2. Travel too fast 3. Disk Hillers Set past 15 degrees 4. Crop too small 5. Sweep too large
Excessive breakage & wear on Disk Hiller	<ol style="list-style-type: none"> 1. Disk Hiller not set at 15 degrees 2. Too much pressure on blade



NO



OK

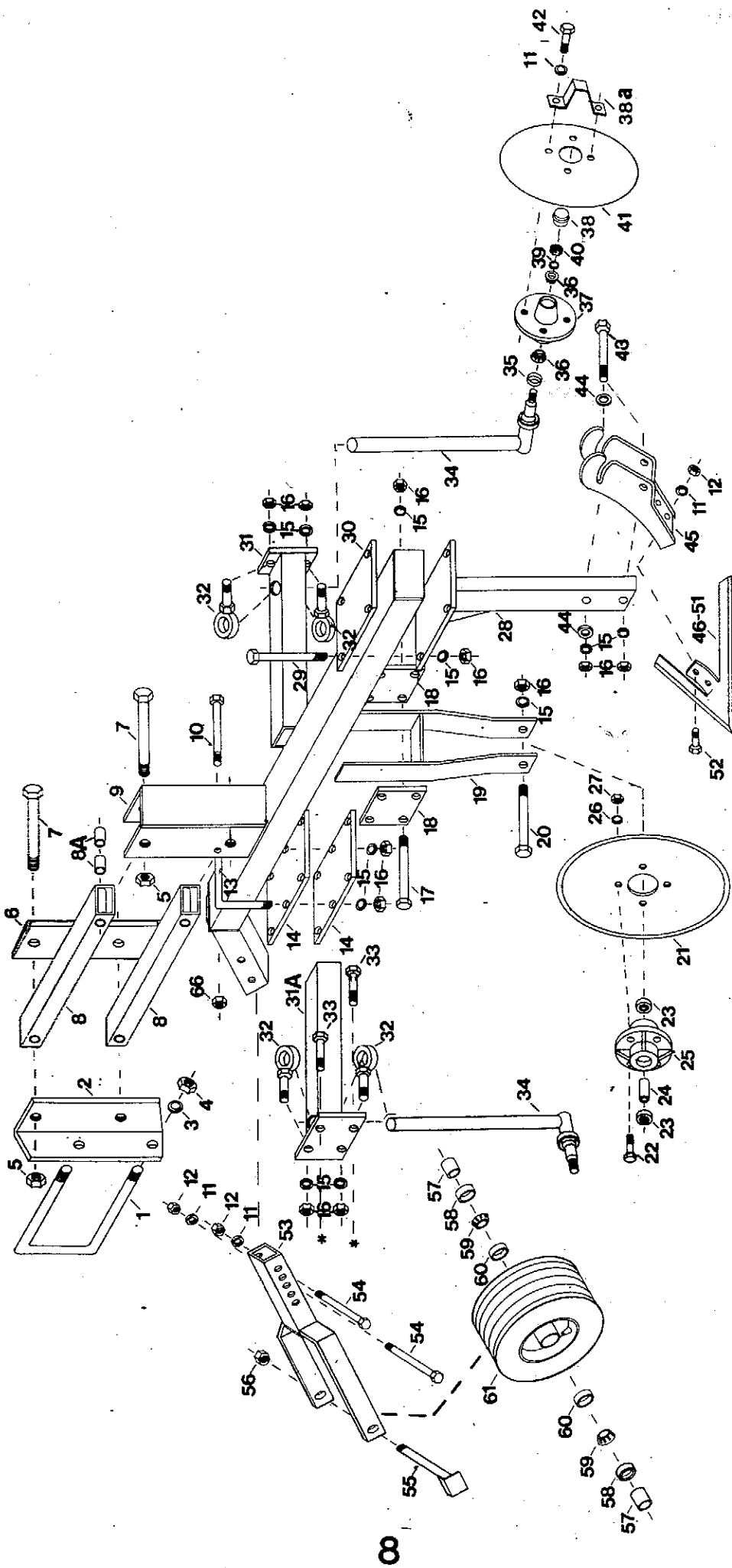


NO

GANG ASSEMBLY

ITEM	PART NO.	DESCRIPTION	PER GANG	ITEM	PART NO.	DESCRIPTION	PER GANG
1.	B-11322	3/4" U-Bolt 7 x 7	2	32.	A-11305	Disc Hiller Axle Clamp	4
2.	B-11313	Left Angle	1	33.	002-00179	5/8" N.C. x 1 1/2" Machine Bolt GR#2	2
3.	015-00045	3/4" Lockwasher	8	34.	B-11315	Disc Hiller Axle	2
4.	012-00035	3/4" Hexnut	8	35.	CR-12437	Seal	2
5.	014-00014	3/4" N.C. Locknut	4	36.	NTN-4T-L44643	Bearing	2
6.	B-11313-1	Right Angle	1	37.	058-H-28010L	Hub	4
7.	002-00240	3/4" N.C. x 5 Machine Bolt GR# 2	4	38.	A-11325	Dust Cap	2
8.	B-11301	Gang Arm	2	38A.	A-11409	Dust Cap Holdown	2
8A.	A-11300	Inner Bushing	8	39.	016-00055	3/4" Flatwasher	2
9.	C-11314	Gang Weldment	1	40.	013-00005	3/4" N.F. Castle Nut	2
10.	002-00156	1/2" N.C. x 4 1/2" Machine Bolt GR# 2	1	41.	A-11324	Hiller Disc	2
11.	015-00043	1/2" Lockwasher	1	42.	002-00139	1/2" N.F. x 1 Machine Bolt GR#5	8
12.	012-00033	1/2" N.C. Hexnut	10	43.	002-00182	5/8" N.C. x 3 Machine Bolt GR#2	2
13.	B-11323	5/8" N.C. U-Bolt x 5 x 8	4	44.	016-00054	5/8" Flatwasher	2
14.	A-11293	Tine tube mounting plate	3	45.	B-11316	Sweep Adjuster	1
15.	015-00044	5/8" Lockwasher	2	46.	22505-F	22" Sweep	1
16.	012-00034	5/8" N.C. Hexnut	23	47.	22505-L	22" Sweep (Left)	1
17.	002-00210	5/8" N.C. x 8 Machine Bolt	23	48.	22505-R	22" Sweep (Right)	1
18.	A-11303	Coulter Support Plate	4	49.	225-F	18" Sweep	1
19.	B-11294	Coulter Mounting Bkt.	2	50.	225-L	18" Sweep (Left)	1
20.	002-00185	5/8" N.C. x 5 1/2 Machine Bolt	1	51.	225-R	18" Sweep (Right)	1
21.	W2047	18" Dia. Coulter	1	52.	001-00127	1/2" N.C. x 2 1/2 No. 3 Plowbolt	2
22.	002-00073	3/8" N.C. x 1 1/4 Machine Bolt	1	53.	C-11317	Gauge Wheel Mounting Bracket	1
23.	W2048	5/8" I.D. Sealed Bearing	4	54.	002-00148	1/2" x 3 Machine Bolt GR#2	2
24.	W2052	Hub Bushing	2	55.	B-11318	Gauge Wheel Bolt	1
25.	W2053	Hub, Coulter	1	56.	013-00025	3/4" N.F. Locknut	1
26.	015-00041	3/8" Lockwasher	1	57.	A-11319	Gauge Wheel Bushing	2
27.	012-00031	3/8" N.C. Hexnut	4	58.	NOK-4247	Seal	2
28.	B-11297	Sweep Mounting Leg	4	59.	LML1949	3/4" I.D. Taper Bearing	2
29.	002-00090	5/8" N.C. x 5 Machine Bolt	1	60.	LML1910	Bearing Cup	2
30.	A-11296	Sweep Mounting Plate	4	61.	W-0135	13 x 5.00 - 6 2-Ply Tire	1
31.	B-11290	Disc Hiller Adjuster	1		063-00136	13 x 6" Rim	1
31A.	B-11292	Disc Hiller & Row Shield Adj.	1		067-00010	Standard Valvestem	1

GANG ASSEMBLY



HINGE & HYDRAULIC ASSEMBLY

Item	Part No.	Description	Qty.
1.	A-11188-8	Pin	2
2.	B-10338	Link	2
3.	A-10992-1	Bellcrank Pin	2
4.	C-10336	Bellcrank	2
5.	A-10329	Hinge Pin	2
6.	A-11189-6	Lower Pin	4
7.	061-00375	90° Black Street Elbow	2
8.	C-10359-1	Hyl. Cyl. 4x22 (8-Row)	2
9.	C-10328-1	Hyl. Cyl. 5x22 (12-Row)	2
10.	SK-40	Seal Kit 8-Row Cyl.	Optional
	SK-5015	Seal Kit 12-Row Cyl.	Optional
	A-11328	3/8 Hyl. Hose x25" 8-Row(N)	2
	A-11329	3/8 Hyl. Hose x42" 8-Row(W)	2
	A-11330	3/8 Hyl. Hose x57" 12-Row(N)	2
11.	070-00006	3/8 Tee	2
12.	A-11328-1	3/8 Hyl. Hose x50" 8-Row(N)	2
	A-11329-1	3/8 Hyl. Hose x67" 8-Row(W)	2
	A-11330-1	3/8 Hyl. Hose x81" 12-Row(N)	2

ROW SHIELD ASSEMBLY

Item	Part No.	Description	Qty.
62.	002-00143	1/2xx1 3/4 Machine Bolt GR#2	6
63.	B-11295	Row Shield Adjuster	1
64.	A-11304	Row Shield Mount	1
65.	A-11302	Row Shield Strap	4
66.	014-00009	1/2" Locknut	5
67.	C-11331	Row Shield Holder	1
67A.	A-11084	Row Shield	1
68.	002-00036	5/16 x 3/4 Machine Bolt	4
69.	016-00050	5/16 Flat Washer	4
70.	015-00040	5/16 Lock Washer	4
71.	012-00030	5/16 Hexnut	4

PARKING STAND ASSEMBLY

Item	Part No.	Description	Qty.
72.	B-10970	5/8 V-Bolt 7 x 7	2
73.	A-11320	Park Stand Pin	1
74.	C-11321	Park Stand	1
75.	056-000303	No. 4 Hairpin	2 8-12 Row 1

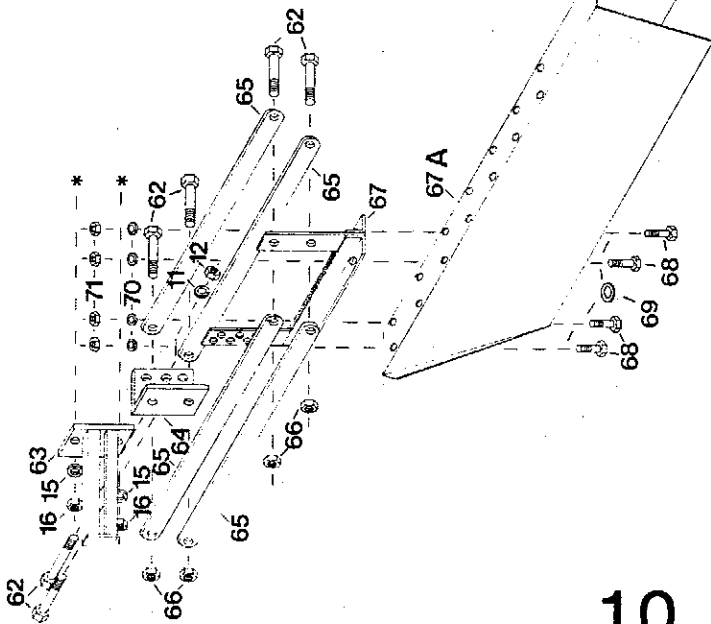
CATEGORY PINS ASSEMBLY

Item	Part No.	Description	Qty.
76.	C-11291-1	Lower 3 Point Pin	2
77.	C-11291-2	Lower 3 Point Pin	2
78.	065-00005	7/16-14 Lynch Pin	2

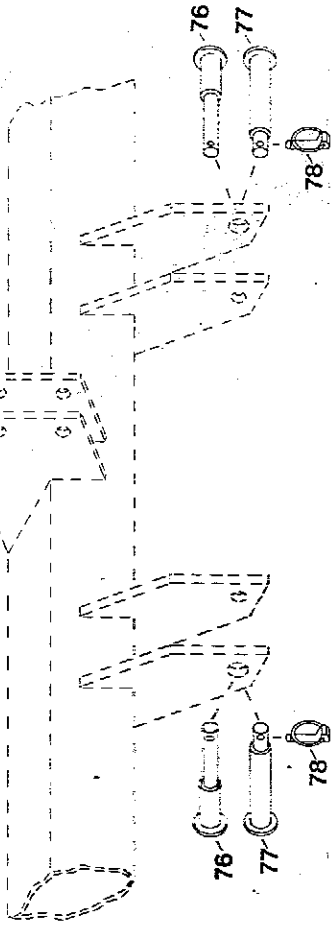
TOOLBAR GAUGE WHEEL ASSEMBLY

Item	Part No.	Description	Qty.
1.	C-11326	Mounting Bracket	1
2.	C-11327	Leg, Gauge wheel	1
3.	B-11322	U-Bolt, 3/4-7x7	2
4.	015-00045	3/4 Lock Washer	4
5.	012-00035	3/4 Hexnut	4
6.	002-00114	7/16 x3 Machine Bolt	1
7.	012-00032	7/16 Hexnut	1
8.	W2027	Seal	1
9.	W2028	Inner Bearing	1
10.	W2029	Inner Cup	1
11.	W2030	Hub, with cups	1
12.	W2031	Outer Cup	1
13.	W2032	Outer Bearing	1
14.	W2033	Flat Washer	1
15.	W2034	Castle Nut	1
16.	W2035	Cotter Pin	1
17.	W2036	Hub Cap	1
18.	W2037	Wheel Bolt	1
19.	W2038	15" Rim, 4-Hole	1
20.	W2039	15" Tire	1
21.	015-00042	7/16 Lock Washer	1

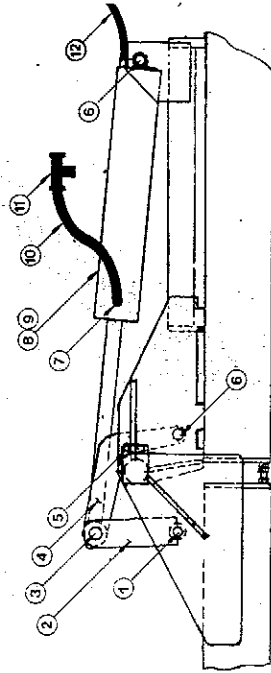
ROW SHIELD ASSEMBLY



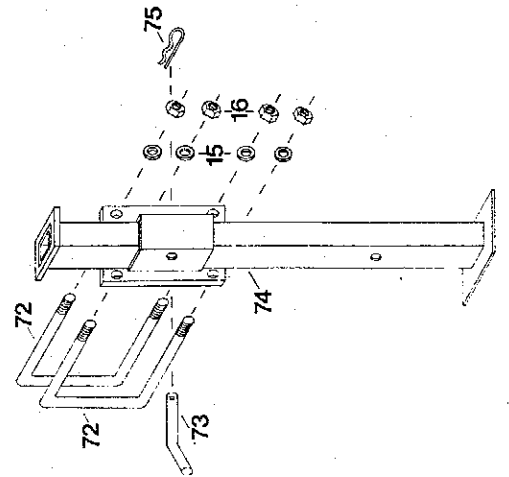
CATEGORY PINS ASSEMBLY



HINGE & HYDRAULIC ASSEMBLY



PARKING STAND ASSEMBLY



20 TOOLBAR GAUGE WHEEL ASSEMBLY

