



## OWNER'S MANUAL



### Daniels Wing Plow

- Operating Instructions
- Illustrated Parts List

**Congratulations!** By purchasing this Daniels Wing Plow, you can now benefit by owning the latest in state-of-the-art snow plowing equipment. It may take some time to get used to your new snow plow but after a few uses you will realize all the benefits which are gained by using the Daniels Wing Plow.

**Before you begin -----**

Prior to beginning the installation process, make sure your loader meets all the requirements needed to operate the Daniels Wing Plow. Use the following chart to determine proper plow sizes for your loader. Your loader must also be equipped with an auxiliary hydraulic circuit (i.e., 3<sup>rd</sup> valve). NOTE: If your loader is not equipped with an auxiliary circuit, you will need to add a valve and plumb it into the loader's hydraulic system. Contact your loader equipment dealer or Daniels (800) 386-2932 for assistance.

**Caution:** Prior to starting the installation process, make sure appropriate safety equipment is available at the work site. Provide a fire extinguisher and have it immediately available if welding. Safety glasses, gloves, hearing protection, and protective clothing should be worn whenever welding, using grinders or cutoff saws.

**Recommended Wheel Loader Size**

<b>14'</b>	<b>10,000 to 15,000 lbs.</b>
<b>16'</b>	<b>18,000 to 23,000 lbs.</b>
<b>18'</b>	<b>20,000 to 25,000 lbs.</b>
<b>20'</b>	<b>23,000 to 32,000 lbs</b>

Wing Plow with pusher kits add 3,000 – 5,000 lbs.

## Plow Installation

Use the parts diagram drawings to aid in the installation process.

1. **Connect the Daniels Wing Plow to the loader, making sure the plow is securely locked in place:**

IMPORTANT: Check to be sure the 8" x 8" square tube (throat weldment) is parallel to the pavement, as shown in diagram 2). When the boom configuration is set to allow the throat weldment to be parallel to the pavement, create a visual reference point that is visible from the loader cab by marking or painting a straight line between the loader frame and the boom (as shown in diagram 5). This will allow the operator to always return the boom to the plowing position with the throat weldment parallel to the pavement.

2. **Hydraulic hose installation:**

Route two hydraulic hoses from the hydraulic ports on the loader to the two unused ports on the cushioning valve located on top of the throat weldment. Make sure the hoses will not be pinched when the plow is raised, lowered, or hydro turned. Secure the two hoses together with nylon ties as needed (see diagram #1). To confirm you have hoses of the appropriate length, raise the plow and roll the boom forward as if dumping a bucket. Measure your hose length from this position to ensure the hoses are not pulled or stretched during operation.

Making sure the area around the loader and plow is clear, set the parking brake and start the machine. Raise the plow a few inches off the ground by using the boom lift control in the cab, keeping the throat weldment level to the ground. Slowly cycle the plow fully to the left and right until the plow moves smoothly in both directions. Visually check for hydraulic leaks. **Warning:** Never use hands to search for fluid leaks as high pressure fluid can have sufficient energy to penetrate the skin. Hydraulic fluid entry into skin can cause blood poisoning and must be treated by professional medical personnel immediately.

## Transporting to Work Site

To raise the plow, move the bucket lever to the “roll back” position. This will cause the chain to tighten and the plow to rise.

Always transport the Daniels Wing Plow with the wings folded back and secured with the tapered pins and locking pins. It may be necessary to use a hammer to remove the tapered pins. Remove the hammer and reinsert the locking pin in the handle of the hammer. This will prevent loss of the locking pin and help keep the hammer from slipping out of the operator’s hand.

**Warning:** Always wear safety glasses when removing or installing pins with a hammer due to snow and ice build-up which may splatter when struck.

With the wings folded back, raise the plow and hydro turn the plow fully to the left, away from oncoming traffic, to minimize the width of the plow. Always use the loader’s hazard and running lights and stay as far to the right lane as possible. Transport at a safe ground speed with the plow held at a low profile to the road.

After arriving at the plowing location, return the plow to the straight position with the wing hinges positioned perpendicular to the ground. This eases wing movement. Set the parking brake and turn off the machine. Remove the hammer and secure the locking pin into the hammer handle. Remove the two tapered pins from each wing. Hold the outer edge of the wing and swing out slowly until the wing is secured next to the center section of the plow. Insert tapered pins into bushings on the top and bottom of the wing hinge and secure with locking pins.

**Warning:** When folding wings out to the plowing position, keep hands and feet clear of the hinged area where the wing matches up to the center section.

## Operation

Important: It is recommended to use the roll back lever to raise or lower the plow. The boom should only be used to raise the plow when stacking snow. Use the bucket roll back lever for raising or lowering the plow.

Position the loader boom so the throat weldment is parallel to the pavement using the reference mark created during the assembly process (see diagram #5).

Before plowing, roll back on the backing plate until the chain tightens, then roll the backing plate forward allowing approximately 2" of slack in the chain (diagram #3). Be sure the boom is set at the proper plowing position (diagram #2).

Important: If the plow is hydro turned and the throat weldment is not parallel to the ground, one end of the plow will lift up off the pavement and the other end will dig into the pavement. This will result in damage to the pavement, poor plowing performance and uneven wear on the cutting edge (diagram #4). The same result will occur when plowing in the proper position if the plow is rolled back in the hydro turned position. The plow should only be raised when the blade is in the straight position.

Do not plow with only one wing folded out in the plowing position and the other in the stored position. This will result in improper pressure applied to the plow and loader. In some conditions it may be necessary to operate the plow with both wings folded back in the stored position. Do not plow with wings in the stored position for extended periods of time; the cutting edges will not wear evenly and will result in uneven plowing when wings are folded out for plowing.

Lower the plow in a slow and smooth motion. Dropping the plow may cause the cutting edge bolts to loosen and cause damage to the plowing surface.

**Caution: Know the areas you are plowing!** Hitting manhole covers or other hidden objects can cause equipment damage or injury to the operator.

## **Transporting Away from Work Site**

After completing the job, return the plow to the straight position with the wing hinges perpendicular to the ground to ease wing movement. Set the parking brake and turn off the machine. Remove the hammer and secure the locking pin into the hammer handle. Remove the two tapered pins from the top and bottom of each wing. Wear safety glasses when inserting or removing tapered pins with the hammer. Hold the outer edge of the wing and swing the wing back to the folded position. Secure with tapered pin in locking tab. Repeat this procedure on the opposite side of the plow. Return the hammer to its storage position.

**Warning:** Keep hands and feet clear of the contact area between the back of the wing and the back of the center section of the plow.

You are now ready to proceed to the next job site.

## **Maintenance**

Before each use of the Daniels Wing Plow, check to make sure the cutting edge bolts and all hardware is securely tightened and that all hydraulic lines are secured and in good condition. Tighten or replace hardware as necessary. Check weldments for signs of fatigue and repair as necessary. Examine all surfaces for excessive wear. Apply grease to all zerk fittings periodically throughout the year. Make a visual check for fluid leaks. It is also suggested that all cutting edge bolts be checked and tightened as needed throughout the plowing season.

**Warning:** Never use hands to search for fluid leaks as high pressure fluid can have sufficient energy to penetrate the skin. Hydraulic fluid entry into skin can cause blood poisoning and must be treated by professional medical personnel immediately.

The cushioning valve is pre-set to the proper breakaway pressure to allow the plow to swing from side to side if the plow should contact an obstruction (such as a manhole cover) at the ends of the plow. This setting should not be changed as adjustments may cause performance problems and void the warranty. If you feel adjustments need to be made, please call Daniels for assistance at (800) 386-2932. The wear bar is reversible and should be reversed or replaced before the edge is completely worn away to prevent damage to the main plow.

### **Removing the Plow**

To remove the plow from the loader, set the parking brake and turn off the loader. Relieve all hydraulic pressure by cycling the valves. Disconnect the hydraulic lines from the loader. Connect the hydraulic hose couplers together to keep contaminants out of the hydraulic system. Disconnect the loader from the mounting plate.

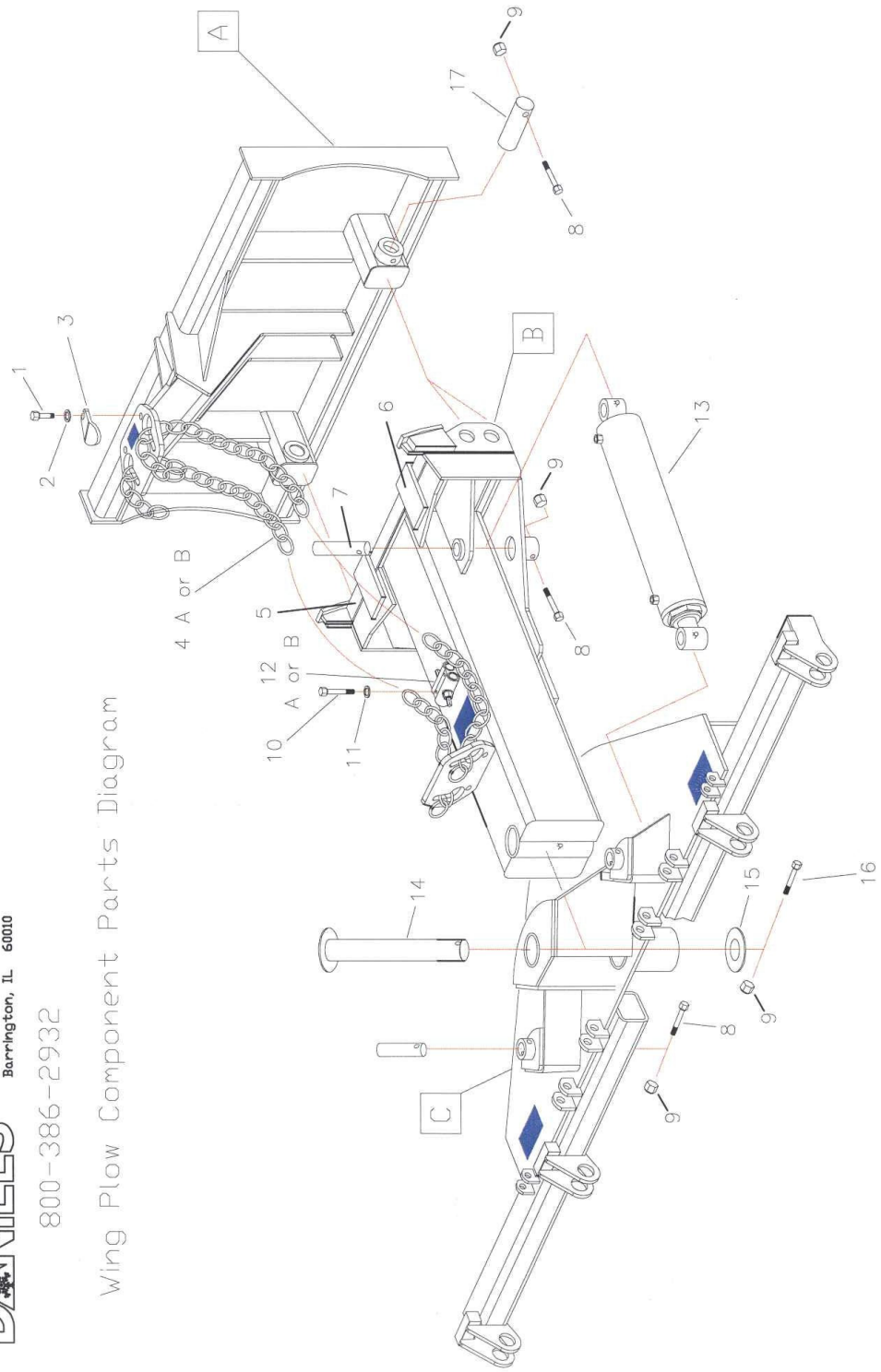
### **Off Season Storage and Maintenance**

It is recommended you store your Daniels Wing Plow indoors out of the elements with the wings folded back. Connect the hydraulic couplers together to prevent system contamination. Grease all zerks before storage, paying particular attention to the wing hinges. Do not store with the wings folded out and locked in place with the tapered pins and locking pins; the pins may seize and be difficult to remove.

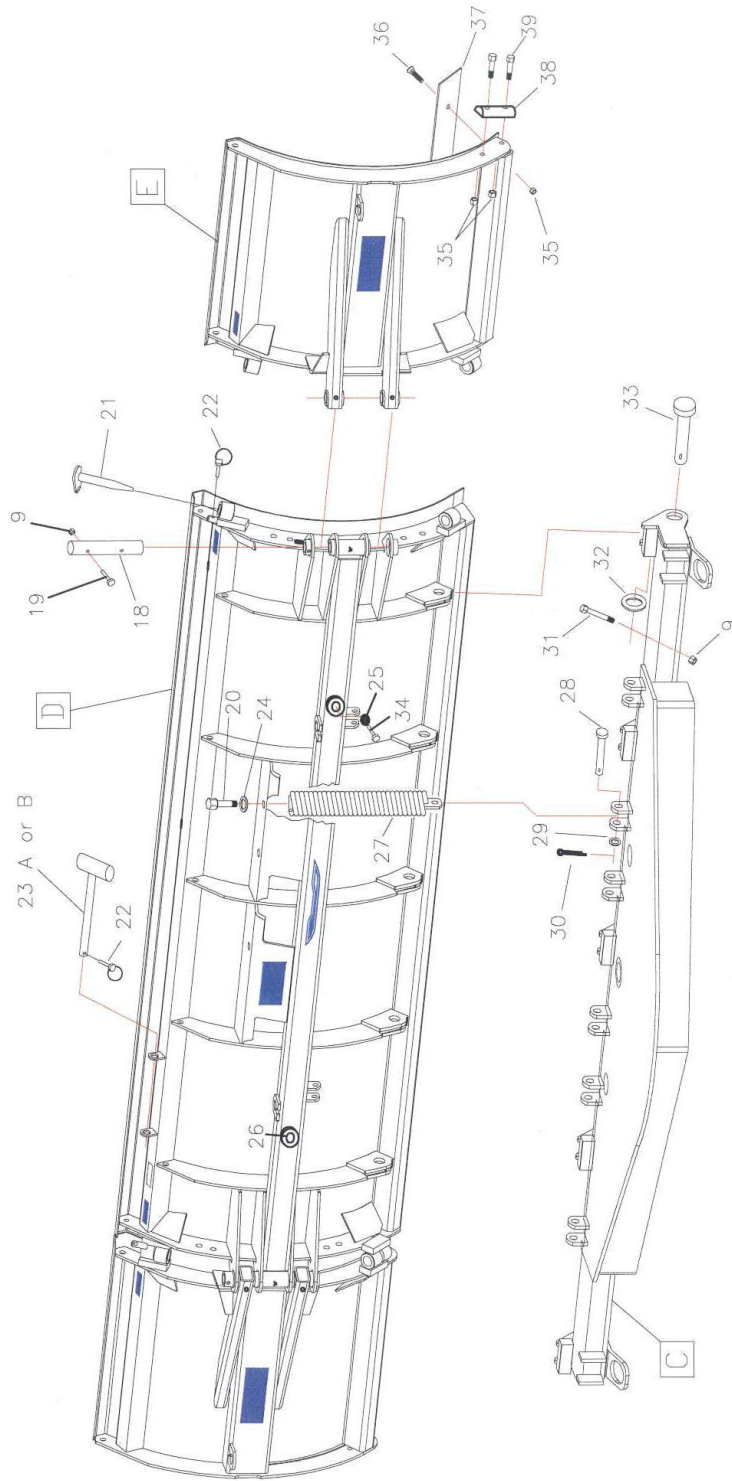


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## Wing Plow Component Parts Diagram



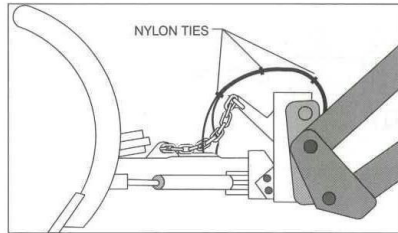




**DANIELS®**

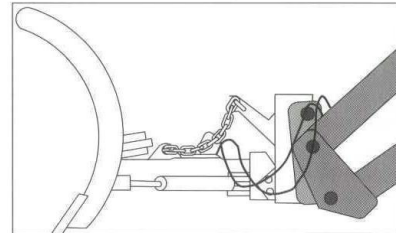
Daniels Pull Plow  
15N365 Old Sutton Rd.  
Barrington, IL 60010

**1A**



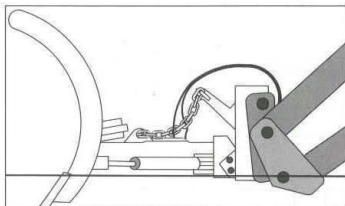
**CORRECT  
HOSE INSTALLATION**

**1B**



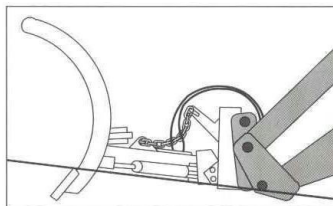
**INCORRECT  
HOSE INSTALLATION**

**2A**



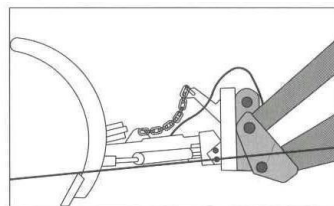
**SQUARE TUBE PARALLEL WITH  
PAVEMENT — CORRECT OPER-  
ATING POSITION**

**2B**



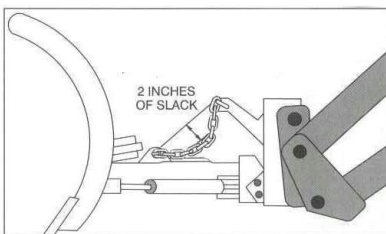
**SQUARE TUBE NOT PARALLEL  
WITH PAVEMENT — INCORRECT  
OPERATING POSITION**

**2C**

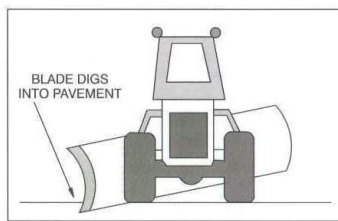


**SQUARE TUBE NOT PARALLEL  
WITH PAVEMENT — INCORRECT  
OPERATING POSITION**

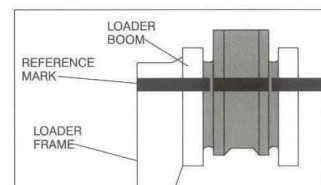
**3**



**4**



**5**



**Daniels Plows, Inc.**

Diagram #	2009 - 2001 Parts Diagram List for 3400 & 4200 Models	Daniels Part #
A	Backing Plate - Blank for 3400 & 4200 Models	78020
B	Throat Weldment for 3400 & 4200 Models	78030
C1	Turntable for 3414 & 3416 and 4214 & 4216 Models	78040
C2	Turntable for 3418 & 3420 and 4218 & 4220 Models	78042
D1	9' Center Board for 3414 Model	34014
D2	10' Center Board for 3416 Model	34016
D3	12' Center Board for 3418 & 3420 Models	34018
D4	9' Center Board for 4214 Model	42014
D5	10' Center Board for 4216 Model	42016
D6	12' Center Board for 4218 & 4220 Models	42018
E1L	2 1/2' Wing (Left) for 3414 Model	34251
E1R	2 1/2' Wing (Right) for 3414 Model	34252
E2L	3' Wing (Left) for 3416 & 3418 Models	34301
E2R	3' Wing (Right) for 3416 & 3418 Models	34302
E3L	4' Wing (Left) for 3420 Model	34401
E3R	4' Wing (Right) for 3420 Model	34402
E4L	2 1/2' Wing (Left) for 4214 Model	42251
E4R	2 1/2' Wing (Right) for 4214 Model	42252
E5L	3' Wing (Left) for 4216 & 4218 Models	42301
E5R	3' Wing (Right) for 4216 & 4218 Models	42302
E6L	4' Wing (Left) for 4220 Model	42401
E6R	4' Wing (Right) for 4220 Model	42402
1	Bolt, Hex Head 1/2 X 1	18170
2	Washer, Lock 1/2	18815
3	Chain Keeper	14506
4A	3/8 Transport Chain for 3414	14521
4B	1/2 Transport Chain for 3416	14531
5	Swivel Plate	78134
6	Retainer for Swivel Plate (SET)	78136
7	Cylinder Pin for 3400 & 4200 Models	14747
8	Bolt, Hex Head 1/2 X 3	18200
9	Lock Nut, Nylon 1/2	18425

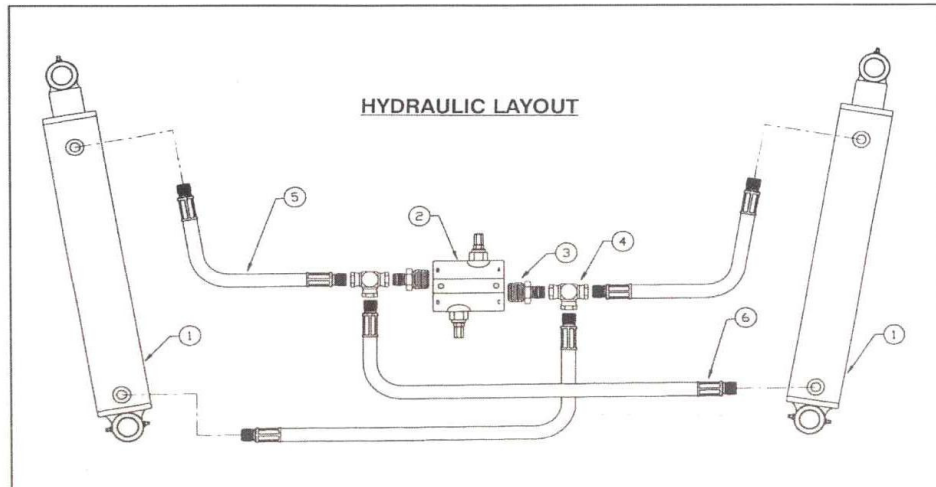
Diagram #	2009 - 2001 Parts Diagram List for 3400 & 4200 Models	Daniels Part #
10	Bolt, Hex Head 5/16 X 2 1/2	18155
11	Washer, Lock 5/16	18805
12A	Cushion Relief Valve 2000 PSI for 3414 & 3416	16127
12B	Cushion Relief Valve 2500 PSI for 3418 & 3420	16129
13	Hydraulic Cylinder 3 X 16 for 3400 & 4200 Models	16155
14	King Pin 2 1/2" for 3400 & 4200 Models	14745
15	Washer, Flat 2 1/2"	18759
16	Bolt, Hex Head 1/2 X 3 1/2	18205
17	Backing Plate Pin for 3400 & 4200 Models	14751
18	Wing Hinge Pin for 3400 & 4200 Models	14739
19	Bolt, Hex Head 1/2 X 4	18210
20	Bolt, Hex Head 1 X 3	18265
21	Tapered Wing Lock Pin	14733
22	Retaining Lynch Pin, Klik Pin	18620
23A	Standard Wing Plow Hammer	14735
23B	Wing Plow Hammer for Pusher Kit Attachment	10901
24	Washer, Lock 1	18825
25	Washer, Flat 3/8	18710
26	Rubber Wing Bumper	14717
27	Trip Spring for 3400 & 4200 Models	14680
28	Pin, Clevis 3/4 X 3	18540
29	Washer, Flat 3/4	18740
30	Pin, Cotter 1 1/2	18567
31	Bolt, Hex Head 1/2 X 2 1/2	18235
32	Washer, Flat 1 1/2	18757
33	Moldboard Trip Pin for 3400 & 4200 Models	14737
34	Bolt, Hex Head 3/8 X 1	18160
35	Lock Nut, Nylon 5/8	18435
36	Bolt, Carriage 5/8 X 2 1/2	18110
37	Wing Plow Cutting Edge (4 Pieces) - See Diagram	
38	Curb Guard	14507
39	Bolt, Hex Head 5/8 X 2 1/2	18235

**Barrington, IL 60010**

**www.danielsplows.com**

**847-426-1150**

**Daniels Plows, Inc.**

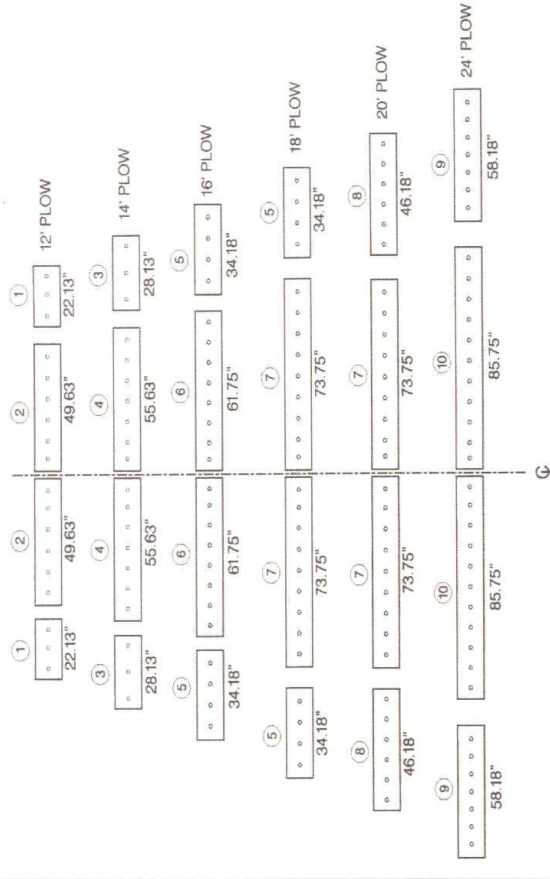


Hydraulic Layout Diagram Parts List		
Diagram #	Description	Daniels Part #
1	Hydraulic Cylinder (#13)	16155
2	Cushion Relief Valve (#12A or #12B)	16127 or 16129
3	3/4 to 1/2 Reducer Fitting	16103
4	Fitting, 'T'	16107
5	3000 psi Hose (Assembly)	16109
6	1/2 Male Hose Fitting (Assembly)	16109



**Daniels Plows, Inc.**

**CUTTING EDGES**



Cutting Edge Diagram Parts List (#37 from Wing Plow Diagram)		Daniels 3400 Part #	Daniels 4200 Part #
Diagram #	Description		
1	2' Wing Edge for 3412 Model (Special Order)	14075	N/A
2	4' Center Edge for 3412 Model (Special Order)	14005	N/A
3	2 1/2' Wing Edge for 3414 & 4214 Models	14090	14085
4	4 1/2' Center Edge for 3414 & 4214 Models	14020	14015
5	3' Wing Edge for 3416 & 4216 and 3418 & 4218 Models	14100	14105
6	5' Center Edge for 3416 & 4216 Models	14030	14035
7	6' Center Edge for 3418 & 4218 and 3420 & 4220 Models	14050	14055
8	4' Wing Edge for 3420 & 4220 Models	14155	14120
9	5' Wing Edge for 4224 Model (Special Order)	N/A	14130
10	7' Center Edge for 4224 Model (Special Order)	N/A	14065



## **Daniels Plows, Inc. Warranty Information**

Daniels Plows warrants to the original purchaser of a Daniels snow plow that the snowplow sold by Daniels will be free of defects in workmanship and material for 24 months from the date of delivery.

In the event any Daniels snowplow fails to comply with this warranty during the warranty period, and purchaser notifies Daniels in writing of the defect and provides proof of the original purchase date, Daniels, at its sole and absolute discretion shall authorize its designated representative to repair or replace the defective part(s), or shall correct such nonconformity by shipment of parts from the factory in repair or replacement of the defective part(s) provided that the snowplow has been stored, installed, operated and maintained in accordance with Daniels' instructions, has not been subject to abuse or misuse, including but not limited to any modification to or installation of the snowplow by anyone other than Daniels or an authorized Daniels representative, has not been subject to any repair work or replacement parts not authorized in writing by Daniels, and has not been used in any way other than its intended purpose. This warranty does not apply to any "wear parts" such as cutting edges, springs, wear shoes and curb guards.

The purchaser's remedy in respect to any defect in the snowplow or any loss or damage arising directly or indirectly from any defect, nonconformity or defective workmanship in the snowplow is limited to providing the repair or replacement of parts thereof. The snowplow or the applicable part thereof must be returned to Daniels by purchaser F.O.B. unless, in Daniels' sole discretion, Daniels authorizes its designated representative to repair or replace the part at the designated representative's site. The snowplow or the applicable part thereof will be returned to purchaser by Daniels F.O.B. In any event, labor charges shall not be included in this warranty and shall be due and payable by purchaser immediately upon receipt of invoice. Field



replaceable spare parts supplied by Daniels are warranted for the later of the unexpired portion of the snowplow warranty or 30 days.

The foregoing warranties set forth are exclusive and no other warranty is expressed or implied. Daniels specifically disclaims all other warranties whether statutory, express or implied, including all warranties of merchantability and fitness for particular purpose and all warranties arising from course of dealing or usage of trade, including but not limited to the acts or omissions of dealers, distributors, agents, contractors, suppliers and any tier or other designated representatives of Daniels.

Attachment of a snowplow to motor vehicles is at the risk and expense of the purchaser. Compliance with applicable motor vehicle regulations is the responsibility of the installer. Daniels does not assume any liability for any damage to a motor vehicle resulting from the attachment or from the use of a snowplow. Daniels does not assume any liability for the cost of modification of the snowplow or the vehicle required to attach the snowplow.

Daniels, and any of its agents, contractors, suppliers and any tier shall not be liable in contract, in tort (including negligence and strict liability), or otherwise for damage or loss of property, loss of profits or revenue, loss of use of equipment or cost of capital, claims of purchaser or any and all of its' customers, vendees, etc., or for any special, indirect, incidental, or consequential damages whatsoever.

The attached warranty registration form must be completed and returned to Daniels by purchaser to activate this warranty.



## Daniels Snowplow Warranty Registration Form

To activate and validate the warranty, this form must be completed and returned to Daniels Plows, Inc. within 30 days of original purchase.

Date Purchased: \_\_\_\_\_

Dealer Name/Address: \_\_\_\_\_

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Company Name: \_\_\_\_\_ Owner: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_

ZIP: \_\_\_\_\_ Phone: \_\_\_\_\_ Mobile: \_\_\_\_\_

FAX: \_\_\_\_\_ Email: \_\_\_\_\_

Was this snowplow assembled and installed by the dealer? Yes/No

Was safe operation of this snowplow reviewed by the dealer? Yes/No

Was the owner's manual included with the snowplow? Yes/No



Please mail completed form to:

Daniels Plows, Inc.

15N365 Old Sutton Rd.

Barrington, IL 60010 ♦ Office: 847-426-1150 ♦ Fax: 847-426-1171