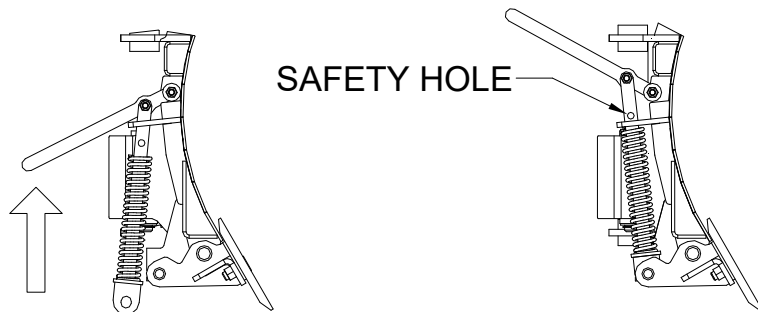
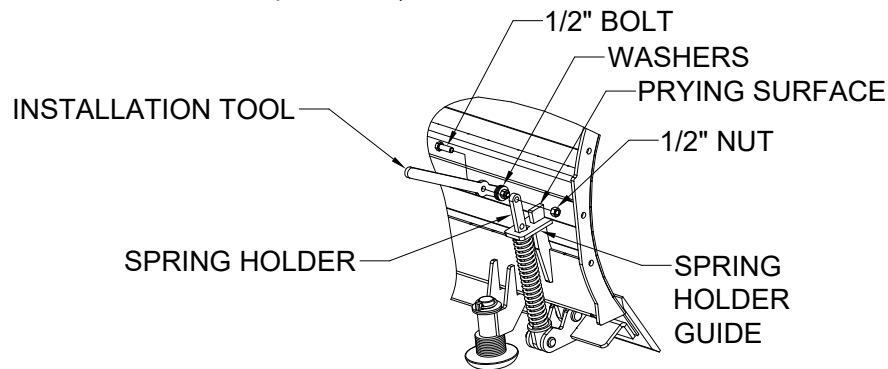


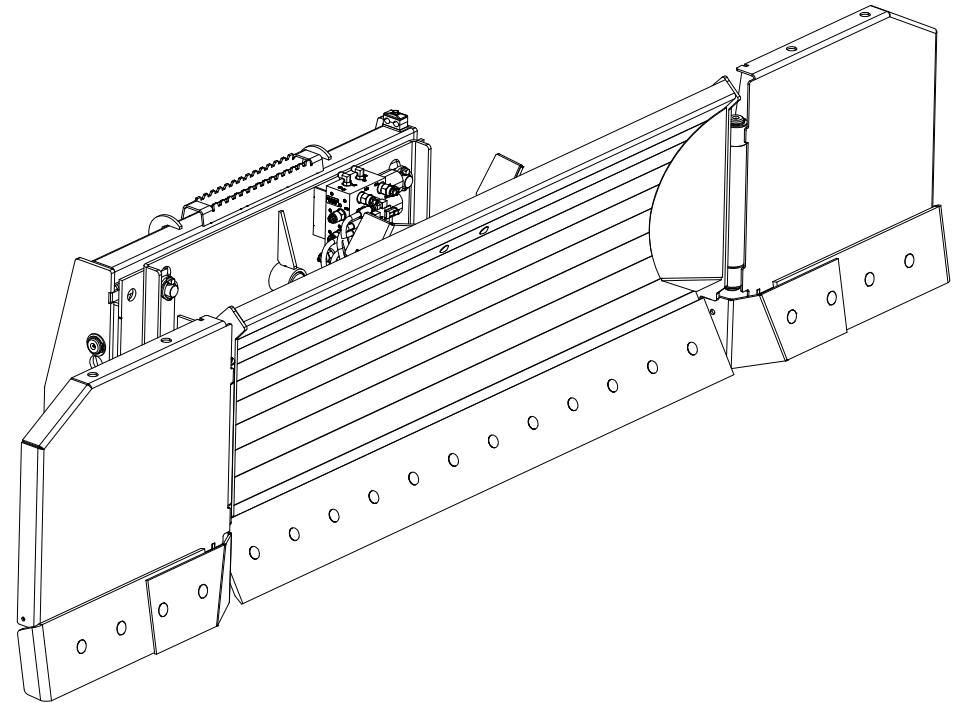
## Spring Installation Instructions

A spring installation tool (Part #11377VA) is available through service parts at no charge.

1. Remove the 3/8" hardware from the top of the spring holder. (Save hardware to reinstall after spring holder is installed.)
2. Remove the 1/2" nut from the 1/2" bolt on the installation tool.
3. With spring installed on the spring holder, insert the spring holder into the spring holder guide on the snow blade.
4. Place the 1/2" bolt through both the installation tool and the top hole of the spring holder, secure with 1/2" nut. The washers of the installation tool should rest on the prying surface.
5. Lift up on the installation tool to compress spring.
6. With the safety hole (lower hole) on the spring holder above the spring holder guide, insert a bolt (not supplied) into the safety hole to prevent the spring from extending when the lever is released.
7. Install the clevis pin to attach the spring holder to the trip edge weldment. Secure the clevis pin with a washer and cotter pin.
8. Lift up on the lever and remove the bolt in the safety hole.
9. The spring should be secure and the installation tool can be removed from the spring holder.
10. Install the 3/8" bolt and nut at the top of the spring holder. (This will prevent the spring and spring holder from becoming detached in the event of a clevis pin failure.)



## Hydraulic Snow Blade/Pusher Combo



Model Number HSBP

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

Serial Numbers 149168 and Greater  
Manufacture Date 08/16/19 – Current

Phone: 320-818-4040

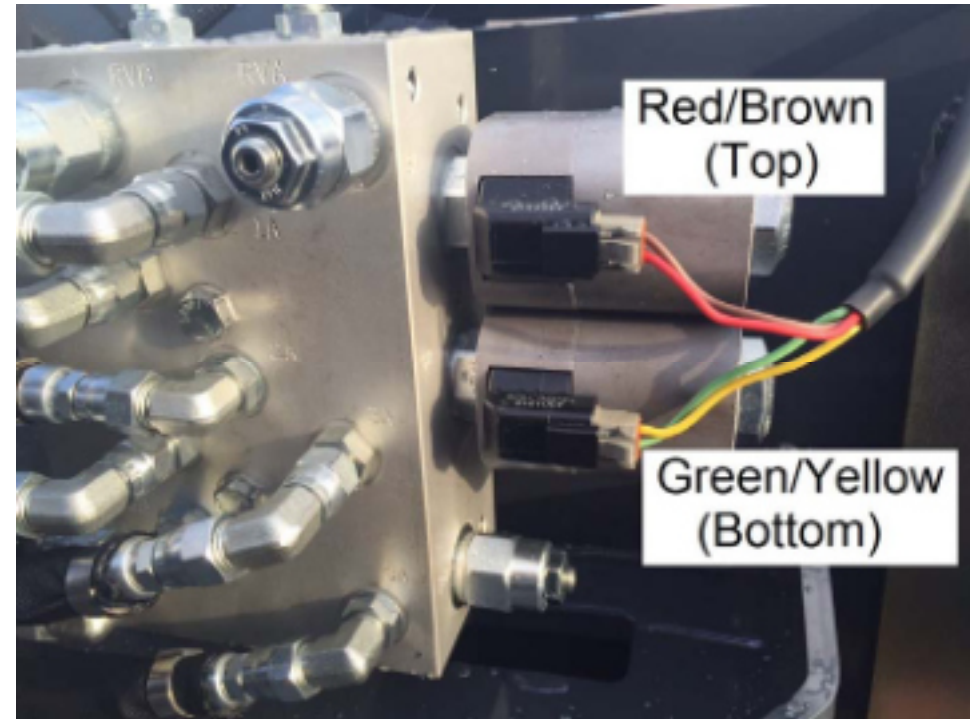
06/04/15  
Revised 08/16/19

HSBP

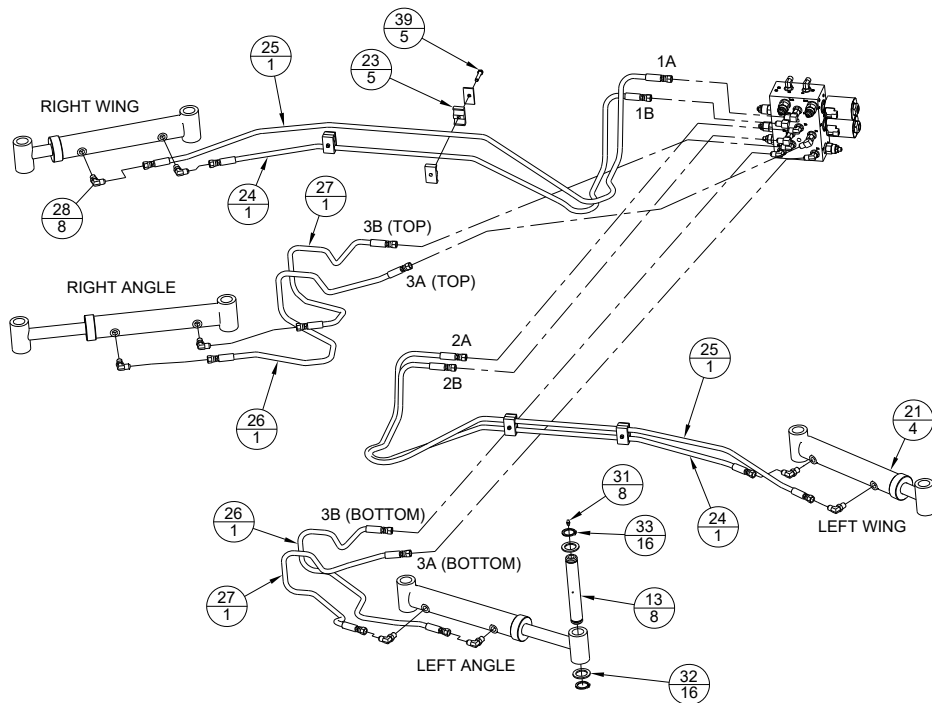
## Features of Virnig Mfg. Inc. Hydraulic Snow Blade/Pusher Combo include:

- 2" bore, 8 3/8" stroke cylinders with 1 1/4" rods and 1 1/4" cylinder pins.
- 1 9/16" diameter pivot pins, 2 1/4" diameter oscillation pin.
- Heavy duty frame with float link, oscillation and adjustable skid shoes.
- Trip edge design featuring 4 main edge compression springs with 2 additional compression springs on each wing.
- 5/8" x 8" double bevel, reversible main wear edge. 1/2" reversible wing wear edges. Replaceable steel wing angled edge sections at wing pivot pins.
- Hydraulic manifold with electronic solenoids controls 30° blade angle for left or right discharge as well as 60° forward angle of each wing using either the machine's electrical controls or a Switch Control Box to be located inside the cab of the machine. Blade and wings move independently.
- Variable blade angle as well as variable positioning of each wing.
- The main angle of the blade (left or right discharge) is controlled only by the auxiliary hydraulics of the skid loader.
- Simultaneous actuation of the auxiliary hydraulics and an electric hydraulic valve is used to control the angle of each wing using either the skid loaders auxiliary electrical pin connector outlet (if equipped) or an optional Control Box Assembly.
- Double dual cross over relief smooths operation and protects plow from impacts in all blade/wing configurations.
- Adjustable height for use on skid loaders with oversized tires. (See Float Height Adjustment section in this manual.)
- Recommended for skid loaders with a lift capacity greater than 1800 lb.

## Electrical Harness Connections



## Hydraulic Installation (cont.)



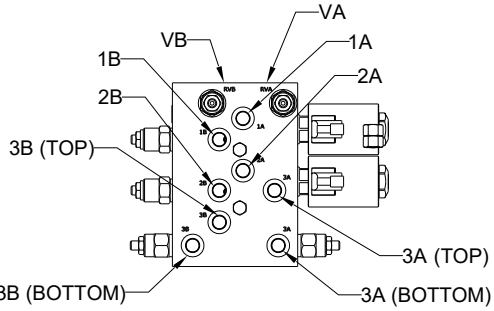
## Initial Use

- See following pages for suggested hose routing.
- Check that the quick-tach of the Hydraulic Snow Blade/Pusher Combo fits onto skid loader properly. Pins must engage through 3/8" plates at bottom of quick-tach.
- With bottom of the blade touching ground/floor, slowly roll back attachment. Make sure there is no interference between attachment and loader.
- Connect the hydraulic hoses to the standard flow auxiliary hydraulic couplers.
- Do not connect this attachment to high flow couplers.
- Connect the wiring harness to either the machines auxiliary electrical pin connector outlet or install the Control Box Assembly.
- Make sure hoses and cable do not pinch during roll back.
- Slowly roll attachment forward. Check that hoses and cable are long enough so they do not stretch or bind.
- Cycle the blade angle left/right by engaging the machines auxiliary hydraulics.
- Cycle each wing by engaging the machines auxiliary hydraulics and one electrical control simultaneously.
- To avoid excessive amp draw of electrical components, only operate one wing at a time. DO NOT actuate two electrical control buttons at the same time.
- After operating either wing, there may be slight movement of the main blade due to residual hydraulic pressure in the circuit.
- Mount holes of the wing edges are slotted and can be adjusted to match the main plow edge.
- If hydraulic functions are opposite of preferred hydraulic control operation, the couplers can be switched.
- If electrical control functions are opposite of preferred operation, plugs of the wire harness can be swapped at the coils.
- If above control adjustments do not allow for preferred operation (hydraulic movement or electrical control buttons used), please contact factory for additional options.
- If the blade is not fully contacting the ground with both wings fully forward and the machine boom arms fully down see the Float Height Adjustment section in this manual.
- Never exceed the maximum attachment operating pressure of 3500 psi.
- Read and understand all warning information in this manual before operating this attachment.

# Hydraulic Installation



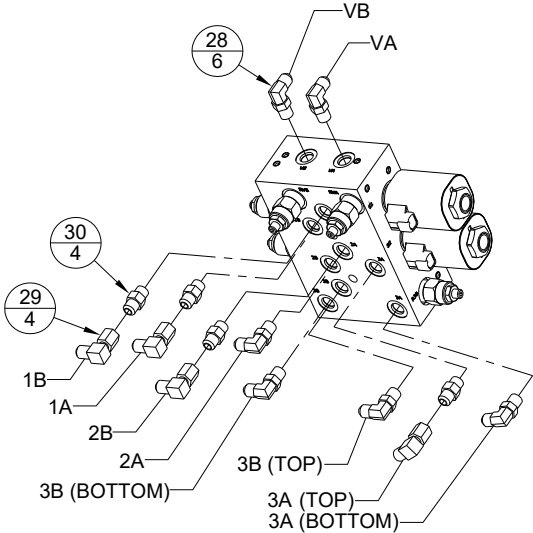
MANIFOLD PORT	HOSE LOCATION
1A	RIGHT WING ROD
1B	RIGHT WING BARREL
2A	LEFT WING ROD
2B	LEFT WING BARREL
3A (TOP)	RIGHT ANGLE ROD
3B (TOP)	RIGHT ANGLE BARREL
3A (BOTTOM)	LEFT ANGLE BARREL
3B (BOTTOM)	LEFT ANGLE ROD
VA	MALE COUPLER
VB	FEMALE COUPLER



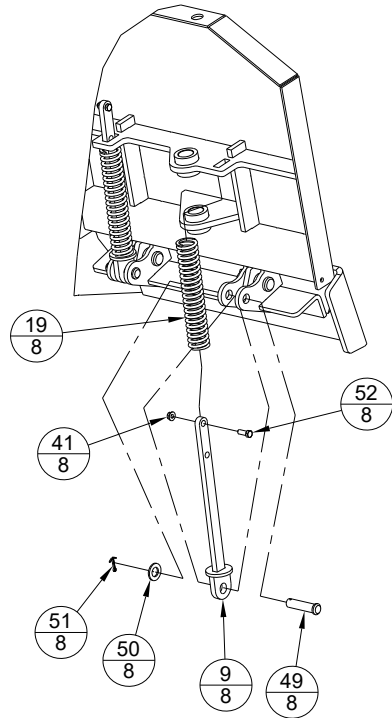
Attachment shown Center Plumb works for Case, John Deere, New Holland, Mustang, Takeuchi, and Gehl skid loaders.

Hoses need to be secured so they do not get damaged during operation. Hoses can be routed as shown in the picture above. Hoses can also be tied or bungeed to the skid loader cross member (close to the lower pivot) to hold them from getting pinched or stretched.

Hydraulic Snow Blade/Pusher Combo can also be Left Side Plumbed. Hydraulic Snow Blade/Pusher Combo can be converted to Left Side Plumb by using clamp near quick-tach on Frame Weldment (Item 1). Allow enough slack in hose to allow for movement of the Knuckle Weldment (Item 2). Please see picture on the next page showing Left Side Plumb. Hoses should be run through the bracket on the skid loader arm, as shown, or the hoses can be tied or bungeed to the skid loader arm.

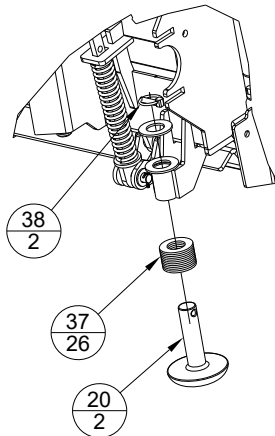


## Spring Installation



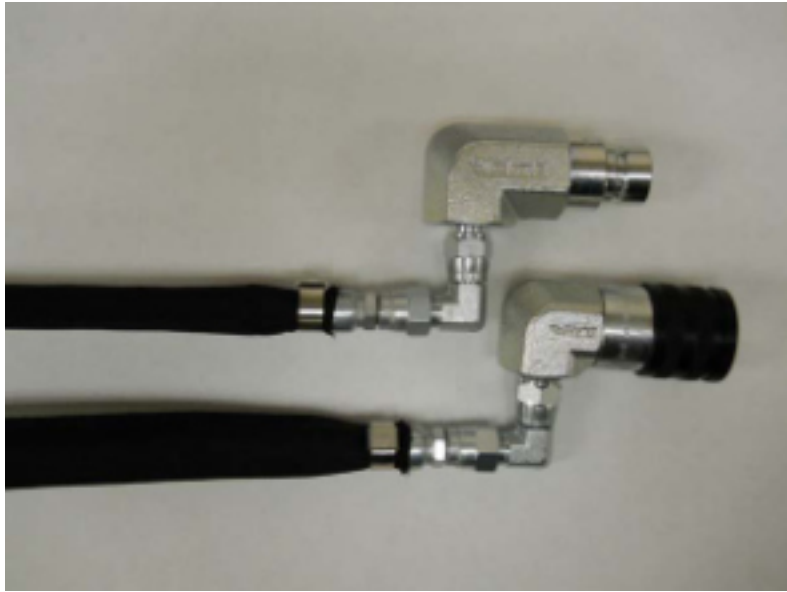
\*\*See Spring Installation Instructions at the back of this manual.

## Wear Shoe Installation



Attachment shown Left Side Plumb, works for Cat, Bobcat, Kubota, Terex and ASV.

If there is too much slack hose, the amount of slack can be adjusted using the clamp on the attachment near the mount plate.

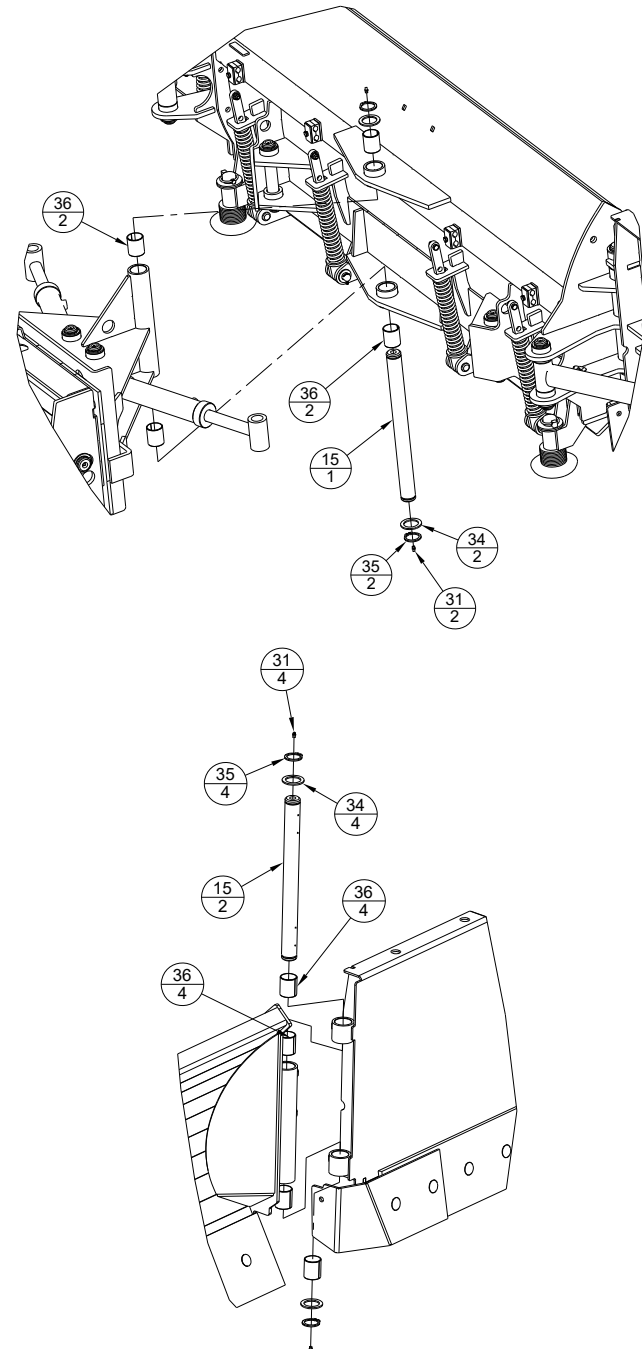


If needed, additional small elbows (Part No. 1012PP) are zip tied to the attachment and can be installed between hoses and couplers, as shown above, to improve hose routing at hydraulic coupler interface on loader. The additional elbows will not be required for most brands of skid loaders.

## Operation

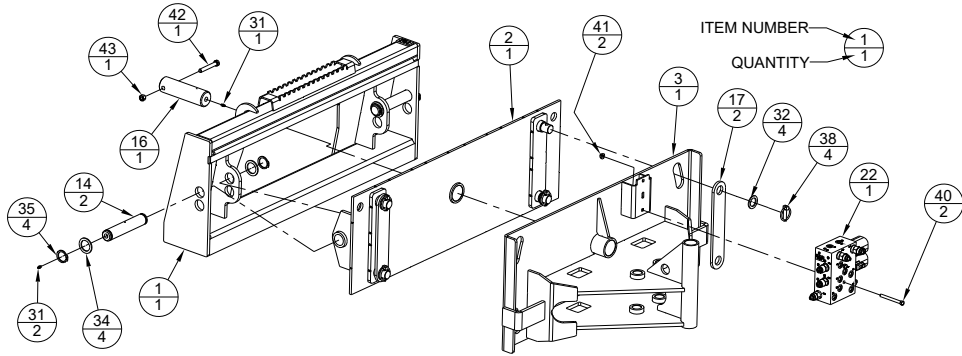
- Always follow safety information.
- Keep bystanders back 50 feet.
- Always follow all safety and operating instructions of skid loader.
- Always relieve pressure before disconnecting hydraulic hoses.
- Never hit or pound couplers.
- Never ram piles, damage to blade and/or skid loader may occur.
- Care should be taken to avoid hidden obstructions (curb, posts, etc.), damage to blade and/or skid loader may occur.
- Never use this attachment to push any material other than snow.
- Never hook a chain on this attachment.
- Check for debris in quick-tach area before each hook-up.

## Pivot Pin Installation





# Main Component Assembly



## Maintenance

\*Every 10 hours of operation

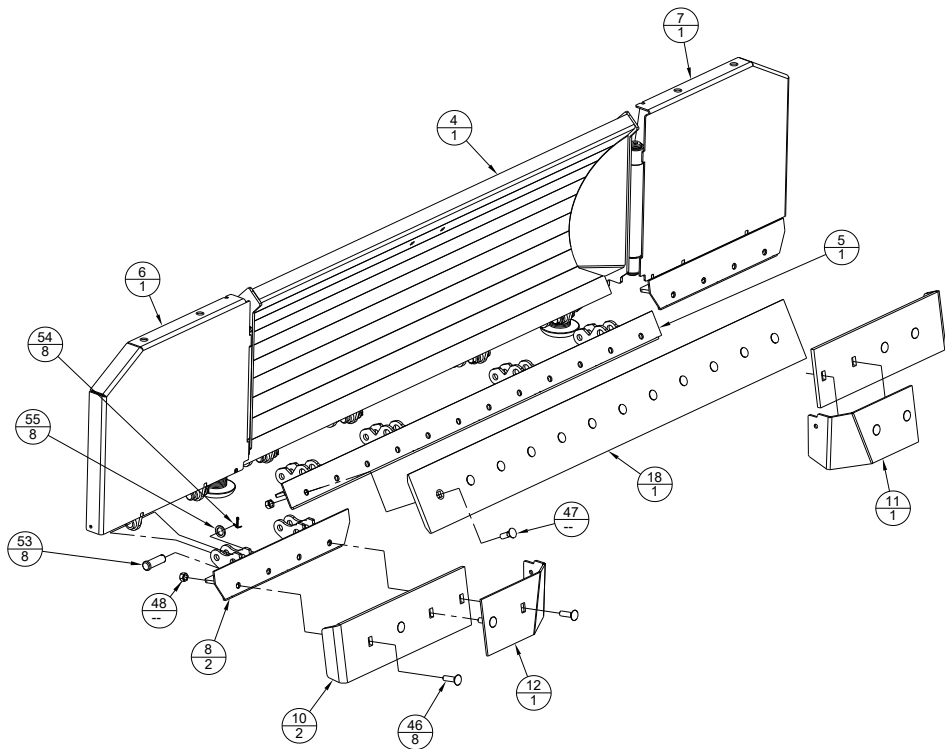
- Grease pivot pins (2 fittings each), oscillation pin, and cylinder pins (17 grease fittings total).
- Inspect springs and fasteners. Make sure they are in place and holding mating parts securely.
- Inspect cylinders, hydraulic fittings, and hoses for leaks and damage. Replace as needed. Make sure skid loader is shut off and hydraulic pressure is relieved before checking for leaks. **Never** use hands to check for high pressure hydraulic leaks.

\*Every 50 hours of operation

- Check that cylinder, pivot and oscillation pins are secure.
- Check for loose, worn, or missing parts. Repair or replace as needed.
- Check cutting edge wear. Reverse or replace edge as needed.
- Contact your dealer for replacement parts.

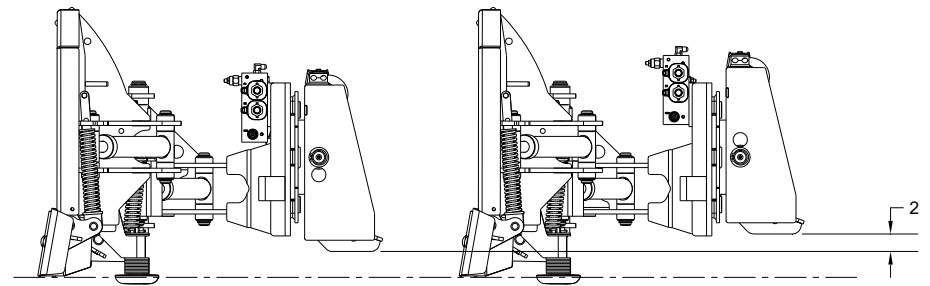
## Float Height Adjustment

If the skid loader is equipped with oversized tires, the SBV Frame Weldment (Item #1) can be repositioned to provide an additional 2" of height adjustment to ensure that the edges of the Hydraulic Snow Blade/Pusher Combo are making contact with the surface to be plowed (See the following sketch).



STANDARD UPPER FLOAT PIN LOCATION

OPTIONAL LOWER FLOAT PIN LOCATION

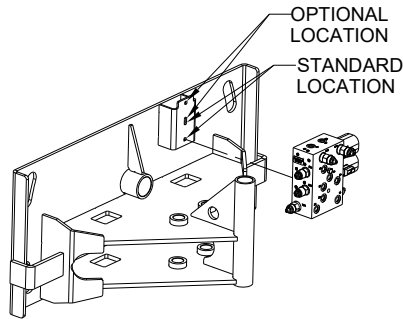


To make the adjustment, do the following:

1. Remove the External Snap Rings (Item #35) and Machinery Bushings (Item #34) from the outer end of the Hinge Pins (Item #14).
2. Remove the Hinge Pins. Be careful as the SBV Frame Weldment weighs approximately 175lbs.
3. Lift the SBV Frame Weldment and reinstall the Hinge Pins in the lower hole location.

## Float Height Adjustment (cont.)

4. Reinstall Machinery Bushings and Snap Rings.
5. The Plow Manifold (Item #22) needs to be relocated on the SBS Oscillation Weldment (Item #3). Remove the 3/8" Top Lock Flange Nuts (Item #41) and 3/8" X 3 3/4" Lg Hex Head Capscrews (Item #40) holding the Manifold and move to the Optional Location as shown in the following figure. (The standard location uses the lower hole and slot for mounting while the optional location uses the upper hole and slot.) The manifold needs to be relocated to ensure that the hydraulic fittings on the top of the manifold are not damaged during use.



## Hydraulic Snow Blade/Pusher Combo (HSBP) Parts List (cont.)

Table 1

MODEL	HSBP120	HSBP132	HSBP144	HSBP156
HSBP MOLDBOARD WELDMENT	11318VW	11320VW	11322VW	11324VW
SBS EDGE HOLDER WELDMENT	10606VW	9664VW	9667VW	9670VW
INNER HYD HOSE PART # / LENGTH	9749PP / 59 1/2"	1125PP / 64"	11017PP / 72"	11018PP / 80"
OUTER HYD HOSE PART # / LENGTH	1125PP / 64"	11017PP / 72"	11018PP / 80"	11019PP / 88"
BOLT ON EDGE, 5/8" X 8"	1327VP	1329VP	1331VP	1332VP
NUMBER OF FLOW BOLTS	10	12	14	16
NUMBER OF 5/8" TOP LOCK NUTS	18	20	22	24
REPLACEMENT EDGE KIT	HSBPEK120	HSBPEK132	HSBPEK144	HSBPEK156
WEIGHT (LBS.)	1590	1650	1710	1770

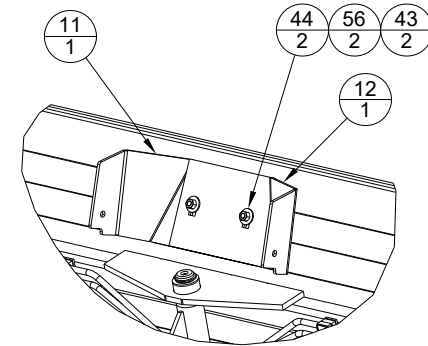
Items 10, 11, 12, 18, 46, 47 and 48 are available as a Replacement Edge Kit. Replacement Edge Kit part numbers are listed in Table 1. Replacement Edge Kits include width specific steel cutting edge components and all required mounting hardware.

## Labels on Hydraulic Snow Blade/Pusher Combo Attachment



5263PP – PINCH POINT WARNING LABEL

Always keep hands clear of snow blade when skid loader hydraulic system is operational.



Extra pair of Wing Angled Edges (Items 11 & 12) are shipped on the Hydraulic Snow Blade/Pusher Combo as shown above. They will be used when the cutting edge is flipped to the unused edge. The Wing Angled Edges can be removed and stored until they are needed.



## Hydraulic Snow Blade/Pusher Combo (HSBP) Parts List (cont.)

ITEM	PART NO.	QTY	DESCRIPTION	
	37	6862PP	26	1 3/8" SAE FLAT WASHER
	38	6863PP	6	7/16" X 1-3/4" LG LYNCH PIN
E	39	1117PP	5	5/16"-18 X 1 1/2" LG HHCS
	40	8468PP	2	3/8"-16 X 3 3/4" LG HHCS
	41	6140PP	10	3/8"-16 TOP LOCK FLANGE NUT
	42	1077PP	1	1/2"-13 X 3 1/2" LG HHCS
	43	1003PP	3	1/2"-13 REVERSE LOCK NUT
	44	5148PP	2	1/2" USS FLAT WASHER
B,D	45	9600PP	2	DOZER COIL W/DEUTSCH PLUG
	46	7334PP	8	5/8"-11 X 2 1/4" LG CB
A	47	1036PP	--	5/8"-11 X 2" LG PLOW BOLT
A	48	1008PP	--	5/8"-11 TOP LOCK NUT
	49	11376PP	8	3/4" X 3" CLEVIS PIN
	50	7725PP	8	3/4" SAE FLAT WASHER
	51	10972PP	8	1/8" X 1 1/4" COTTER PIN
	52	7849PP	8	3/8"-16 X 1" LG HHCS
	53	10339PP	8	1" X 3" CLEVIS PIN
	54	10567PP	8	3/16" X 1 1/2" COTTER PIN
	55	5146PP	8	1" X 10GA MACHINERY BUSHING
	56	7964PP	2	1/2"-13 X 1 1/4" LG CB
B	57	1144PP	2	ELBOW 90 MALE 6MJ TO 8MB
B	58	9498PP	2	ADAPTER 12MB TO 8FB
B	59	8734PP	1	COUPLER FEMALE 12FB CUP
B	60	8735PP	1	COUPLER MALE 12FB CUP
B	61	1127PP	2	HYD HOSE 1/4" X 72" LG 6FJX TO 6FJX
		1126PP		HYD HOSE 1/4" X 80" LG 6FJX TO 6FJX
		1128PP		HYD HOSE 1/4" X 88" LG 6FJX TO 6FJX
B	62	9602VA	1	BROOM WIRE HARNESS

A - See Table 1.

B - Item not shown.

C - One each installed on plow, second set to be used when steel edges are reversed.

D - Coil, replacement part only.

E - Qty 3 used on HSBP120.

## Labels on Hydraulic Snow Blade/Pusher Combo Attachment (cont.)



5264PP – CRUSH HAZARD WARNING LABEL

Always stay clear of moldboard. Never inspect attachment with skid loader running or with the blade raised off of the ground/pavement.

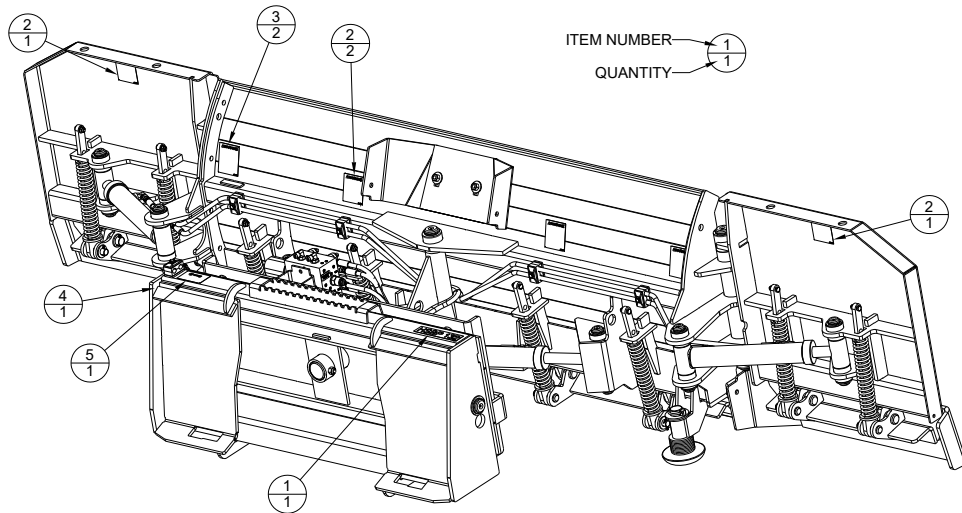


5265PP – HYDRAULIC WARNING LABEL

This label has several important instructions that must be followed for safe operation of this attachment.

## Hydraulic Snow Blade/Pusher Combo (HSBP) Label Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	10599PP	1	120 WIDTH LABEL FOR HSBP
	10017PP		132 WIDTH LABEL FOR HSBP
	10018PP		144 WIDTH LABEL FOR HSBP
	10019PP		156 WIDTH LABEL FOR HSBP
2	5263PP	4	PINCH POINT WARNING LABEL
3	5264PP	2	CRUSH HAZARD WARNING LABEL
4	5265PP	1	HYDRAULIC WARNING LABEL
5	SERIALTAG	1	SERIAL NUMBER TAG



## Hydraulic Snow Blade/Pusher Combo (HSBP) Parts List

ITEM	PART NO.	QTY	DESCRIPTION
1	6802VW	1	SBV FRAME WELDMENT
2	11194VW	1	KNUCKLE WELDMENT WITH PINS
3	11283VW	1	SBS OSCILLATION WELDMENT
A 4	-----	1	HSBP MOLDBOARD WELDMENT
A 5	-----	1	SBS EDGE HOLDER WELDMENT
6	11315VW	1	HSBP WING WELDMENT RH
7	11316VW	1	HSBP WING WELDMENT LH
8	9805VW	2	HSBP WING EDGE HOLDER WDT
9	10969VW	8	SNOW SPRING GUIDE WDT
10	9811VP	2	HSBP WING EDGE
C 11	9812VP	2	HSBP WING ANGLED EDGE LH
C 12	9813VP	2	HSBP WING ANGLED EDGE RH
13	2137VP	8	CYLINDER PIN
14	5194VP	2	CLAMP PIVOT PIN
15	6673VP	3	SNOW BLADE PIVOT PIN STRAIGHT
16	6674VP	1	SNOW BLADE OSCILLATION PIN
17	6675VP	2	SNOW BLADE OSC RETENTION PLATE
A 18	-----	1	BOLT ON EDGE 5/8" X 8"
19	6684PP	8	SPRING COMPRESSION SNOW BLADE
20	6854PP	2	SNOW BLADE WEAR SHOE
21	10137PP	4	CYL 2" BORE X 8 3/8" STROKE
22	10057PP	1	PLOW MANIFOLD 3 FUNCT SELECTOR
E 23	1067PP	5	HOSE CLAMP FOR 1/4" HOSES
A 24	-----	2	INNER HYD HOSE 1/4" 6FJX TO 6FJX
A 25	-----	2	OUTER HYD HOSE 1/4" 6FJX TO 6FJX
26	1137PP	2	HYD HOSE 1/4" X 47 1/2" LG 6FJX TO 6 FJX
27	7797PP	2	HYD HOSE 1/4" X 41 1/2" LG 6FJX TO 6 FJX
28	6997PP	14	ELBOW 90 6MJ TO 6MB
29	1012PP	4	ELBOW 90 6FJX TO 6MJ
30	7796PP	4	ADAPTER 6MJ TO 6MB
31	1034PP	17	1/4"-28 STRAIGHT GREASE ZERK
32	1094PP	20	1 1/4" X 10GA MACH BUSHING
33	1095PP	16	1 1/4" EXTERNAL SNAP RING
34	1097PP	10	1 9/16" X 10GA MACH BUSHING
35	1098PP	10	1 9/16" EXTERNAL SNAP RING
36	1112PP	12	1 9/16" DIA X 2" LG BUSHING