

# Attachment Assembly Instructions

## Magnatrac® RS1000

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**BEFORE YOU BEGIN YOUR ASSEMBLY...  
... a few important facts  
should be brought to your attention:**

A) References of right & left are determined by standing behind your Crawler and looking forward.

B) Though the following instructions are inclusive, some of the Steps have already been completed at the factory...just go on if you find a particular step has already been completed for you.

C) Photos of various assembly Steps are located throughout the instructions and we've tried to keep the more timely photos next to the instructions of the components they describe. NOTE: some photos show completion of Steps that will come later in the instructions.

You will find it helpful though, to look at photos from other sections of these instruction to see different views of particular parts you are presently assembling.

D) As many of the components you will be working with are awkward and occasionally heavy, it's a good idea to have a helper available for assistance.

E) It can never be mentioned too much; always work on your Crawler with it's Parking Brake on, the Engine shut off, the Ignition Key removed [or ignition switch turned to STOP] and the (-) Ground Cable removed from Battery [if so equipped].

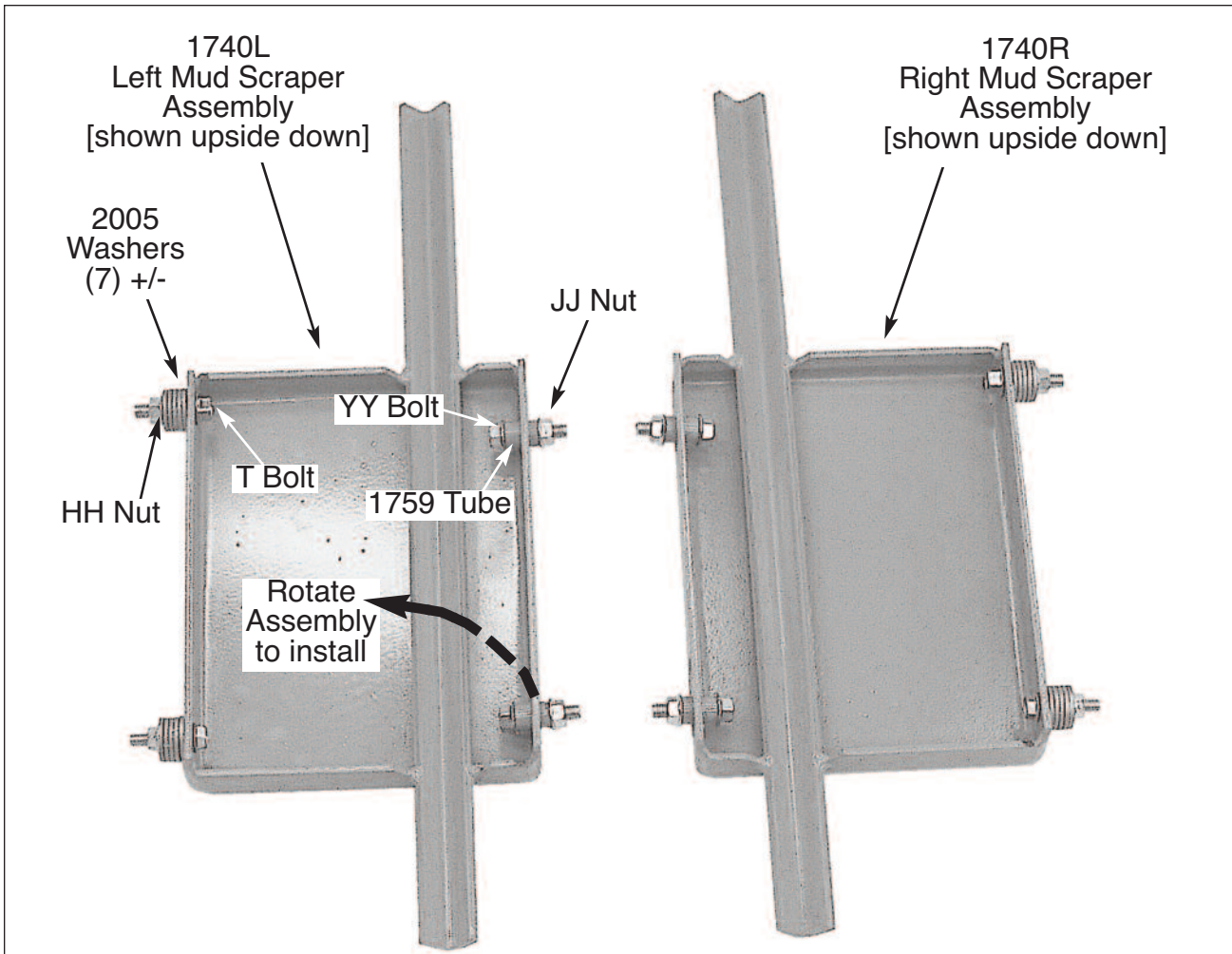
F) The length of a Bolt is determined by measuring the threaded shank below the Bolt's head.

# Mud Scraper Kit MS90

## Fastener & Parts List

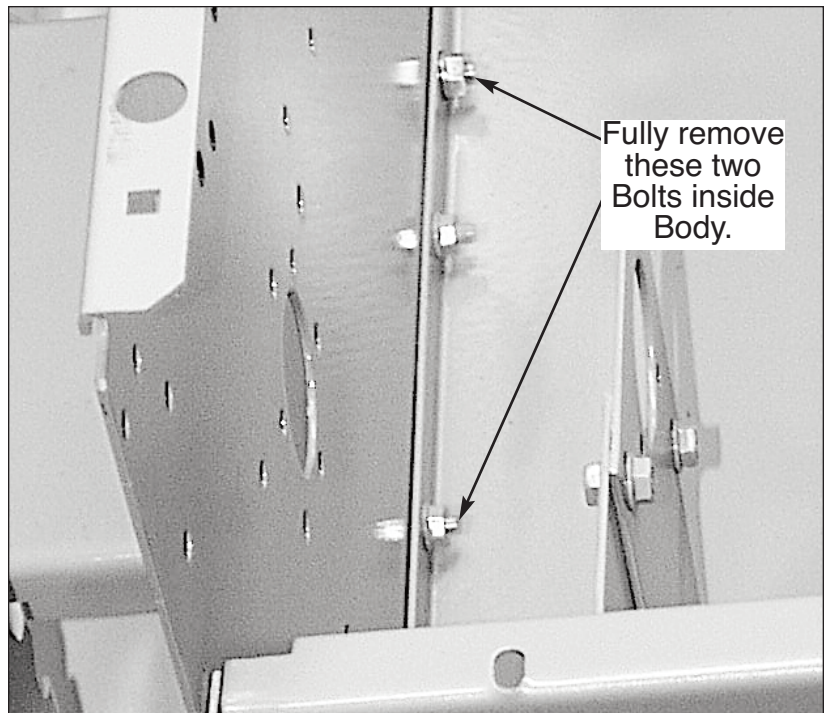
001740R	Mud Scraper, right	(1)	T	5/16-18x1-1/2 Spin Lock Bolt	(4)
001740L	Mud Scraper, left	(1)	HH	5/16-18 Spin Lock Nut	(4)
001759	Tube	(4)	YY	3/8-16x1-1/2 Spin Lock Bolt	(4)
002005sfp	Washer, 3/8IDx1OD	(32)	JJ	3/8-16 Spin Lock Nut	(4)

**Pre-Assembly:** Before beginning actual assembly, loosely assemble the Right and Left Mud Scrapers as shown in Photo below... Mud Scrapers have been turned upside down in Photo to give clarity to your assembly. When you install your Mud Scrapers on your Magnatrac, keep one assembled as you install the other... the assembled one will help you keep your bolts, washers, etc. in their proper positions. Remember, left & right are always determined from the *rear* of your RS196K Magnatrac.



**NOTE:** The following instructions will show you in detail how to mount your #1740L Left Mud Scraper. When completed, you will be asked to repeat the similar assembly for the #1740R Right Mud Scraper.

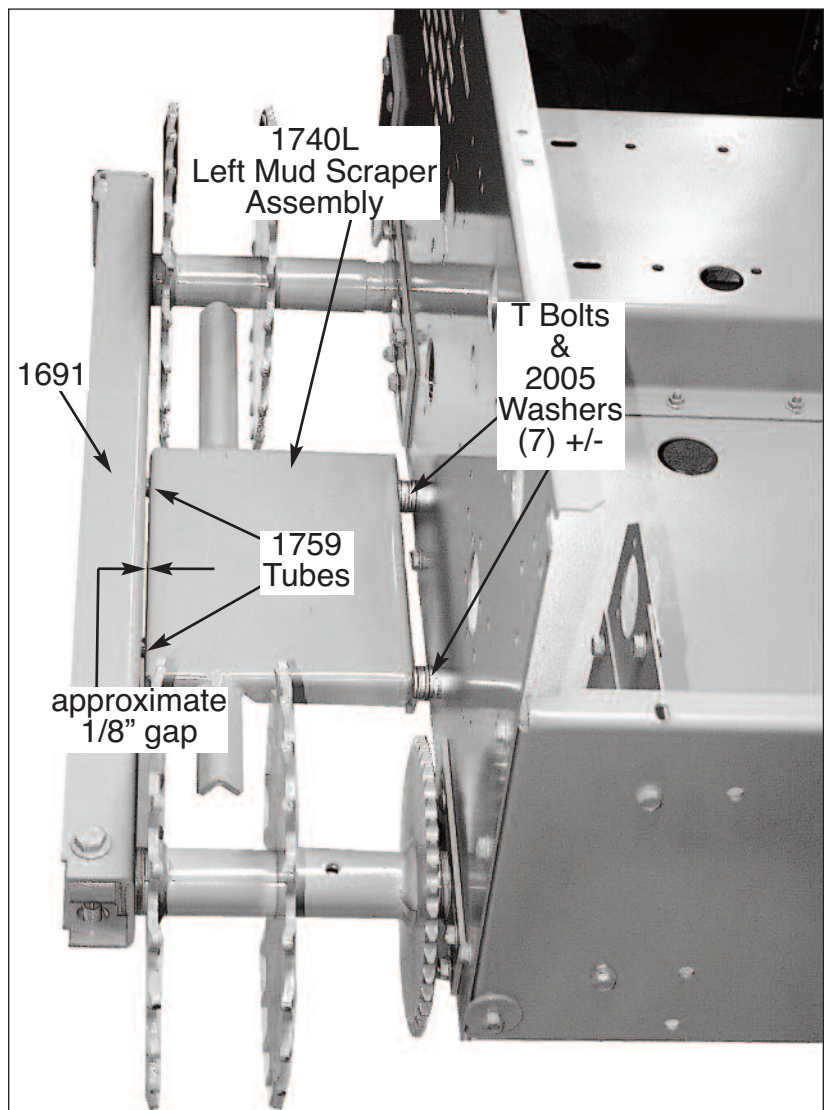
**STEP 1.** Locate the two (2) Bolts in *lower left rear inside corner* of your Body and totally remove them... check Photo at right.



**STEP 2.** Disassemble the #1740L Left Mud Scraper you assembled [above].

Following Photo at right, "rotate" and reassemble your "Left" Mud Scraper". Two #T Bolts are inserted into 5/16 holes on right side of Scraper followed by approximately seven (7) #2005 Washers and then inserted into the mating 5/16 holes you provided by removing the two (2) Bolts in STEP 1 (above).

**NOTE:** The number of #2005 Washers used on each #T Bolt will vary between 6 and 8... use the number that will hold an approximate 1/8" gap between mating faces of #1691 Expander and #1740L Mud Scraper after #T Bolts are tightened... apply #HH Nuts inside Body, leave #T bolts finger tight.



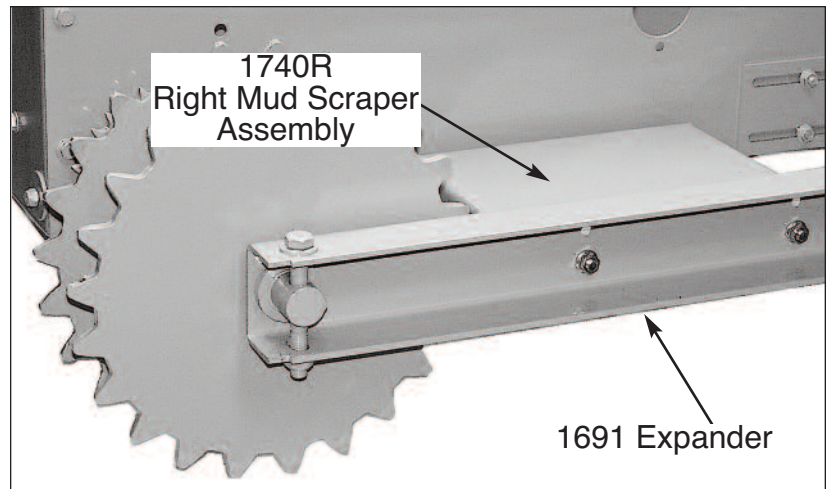
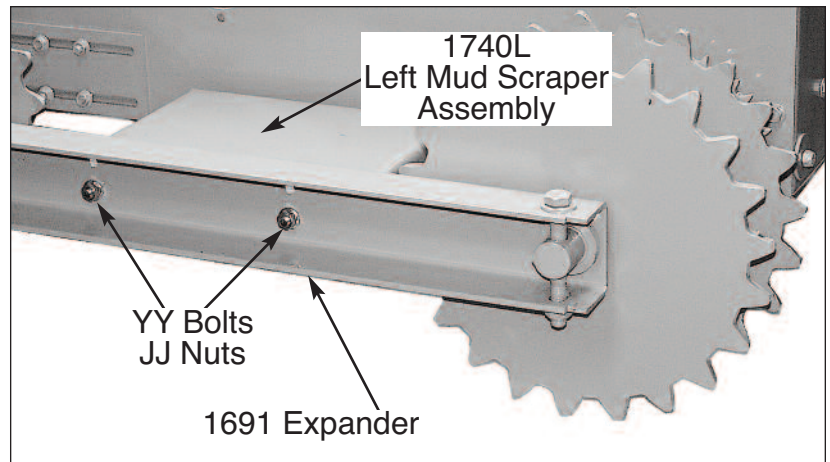


**STEP 3.** Slip #1759 Tubes into 7/8" slots in outside face of #1740L Mud Scraper. Align Tubes with mating "lower" 3/8" holes on *inside face* of #1691 Expander. [See Photo bottom of page above]

From outside, insert a YY Bolt into each of the aligned Tubes. Secure each Bolt with #JJ Nuts... tighten.

Tighten T Bolts and #HH Nuts assembled in STEP 2 (above).

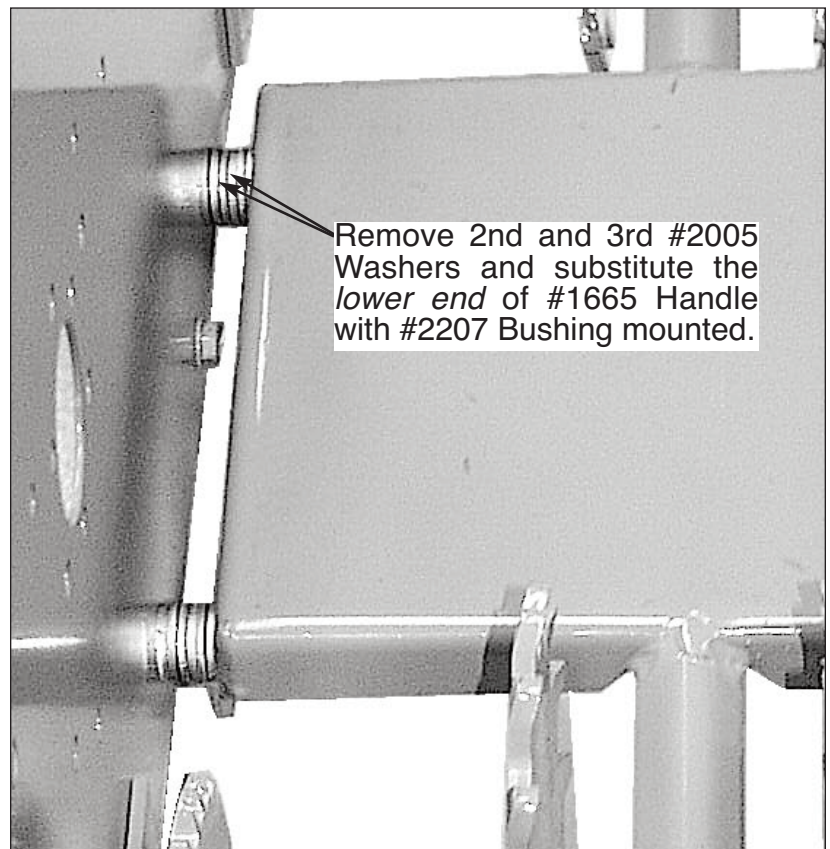
**STEP 4.** Repeat the procedures from STEPS 1, 2, and 3 above, this time installing the #1740R Right Mud Scraper... Photo at right.



**NOTE:** To mount your #1665 Handle [from your MFH15 Front Hitch] while using your Mud Scrapers, make this following substitution...

**A.** Remove 2nd and 3rd #2005 Washers [shown in Photo at right]... keep original #T Bolt.

**B.** In place of the two (2) #2005 Washers you removed, substitute the lower end of #1665 Handle with it's #2207 Bushing. Reassemble and tighten original #T Bolt.

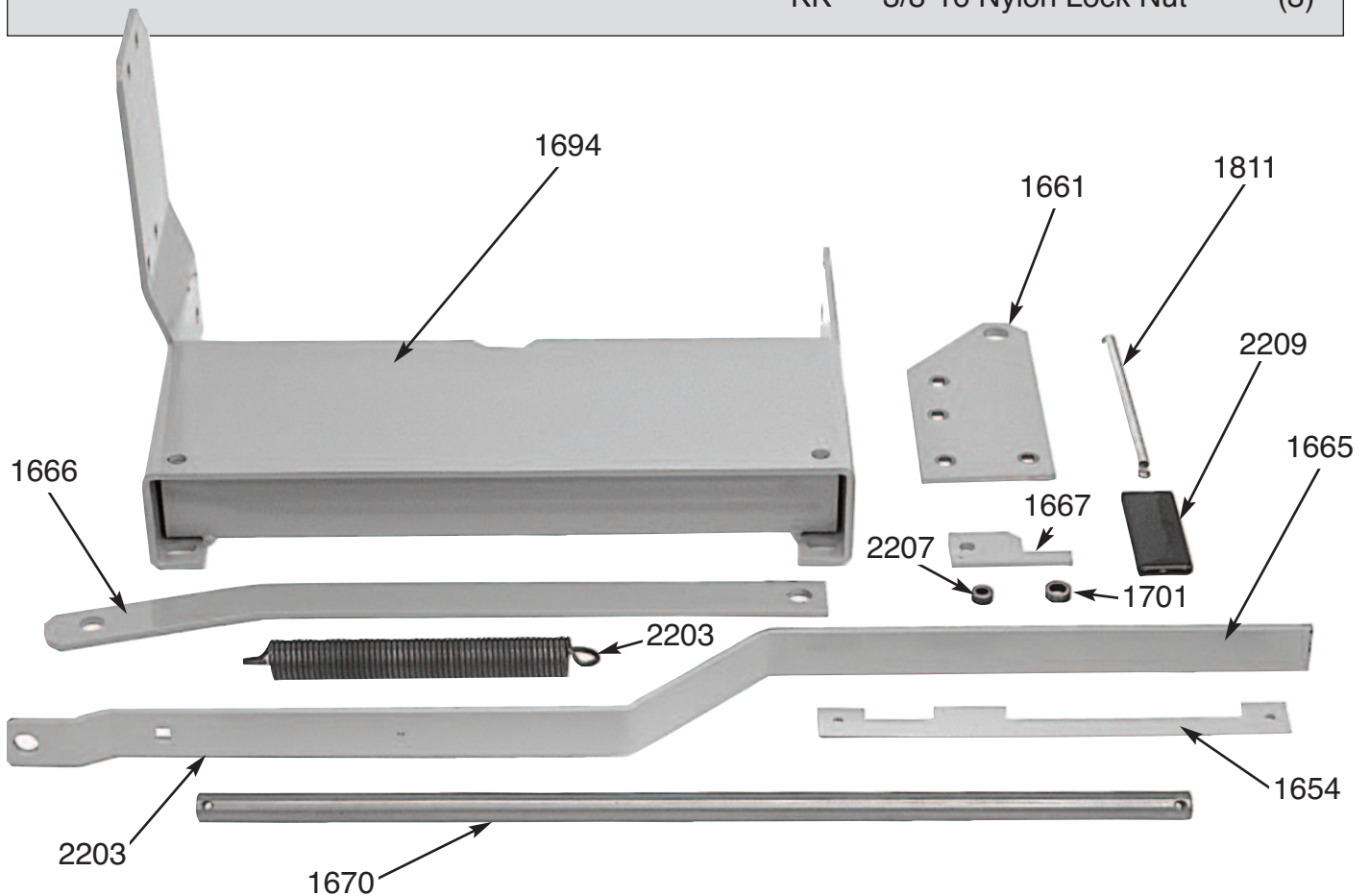


# Manual Front Hitch Kit

## MFH15

### Parts & Fastener List

001654	Latch Plate	(1)	V	3/8-16x1-1/2 Carriage Bolt	(2)
001661	Plate <i>[shipped mounted to RS1000]</i>	(2)	AB	3/8-16 Dot Lock Nut	(2)
001665	Handle	(1)	AC	3/8-16x1 Carriage Bolt	(1)
001666	Lift Linkage	(1)	AD	3/8-16x1-1/2 Bolt	(1)
001667	Arm Latch	(1)	AE	1/2-13x1-1/4 Bolt	(2)
001670sfp	Pin	(1)	AF	1/2-13x4-1/2 Bolt	(2)
001694	Front Hitch	(1)	AG	1/4-20x1-1/4 Bolt	(2)
001701	Bushing, 1/2IDx3/4OD	(2)	AO	3/8-16x2-1/2 Carriage Bolt	(2)
001811	Spring	(1)	HH	5/16-18 Spin Lock Nut	(8)
001906	Cotter Pin, 1/8x1-1/4	(2)	II	1/2-13 Dot Lock Nut	(2)
002005sfp	Washer, 3/8IDx1OD	(4)	JJ	3/8-16 Spin Lock Nut	(4)
002203	Spring, 10 long	(4)	MM	1/2-13 Spin Lock Nut	(2)
002207	Bushing, 3/8IDx5/8ODx5/16	(6)	NN	1/4-20 Spin Lock Nut	(2)
002209	Grip	(1)	OO	1/4-20 Nylon Lock Nut	(2)
I	1/4-20x1/2 Spin Lock Bolt	(2)	RR	1/4 Flat Washer	(4)
M	5/16-18x3/4 Carriage Bolt	(8)	VV	1/2 Flat Washer	(4)
			ZZ	3/8-16x1-1/4 Carriage Bolt	(2)
			KK	3/8-16 Nylon Lock Nut	(3)







## CAUTION

The #2203 Springs used in this assembly are common “extension springs”. Their assembly requires that the assembler wears gloves and has sufficient arm strength to pull on the Spring with approximately 30 lbs. of vertical force. For safety, an “able bodied helper” is recommended to be present for assistance during the assembly of this Attachment.

**NOTE: Do Not** get ahead of the following Step by Step instructions... following this proper sequence of assembly, protects the assembler from having to deal with *very strong* Spring forces.

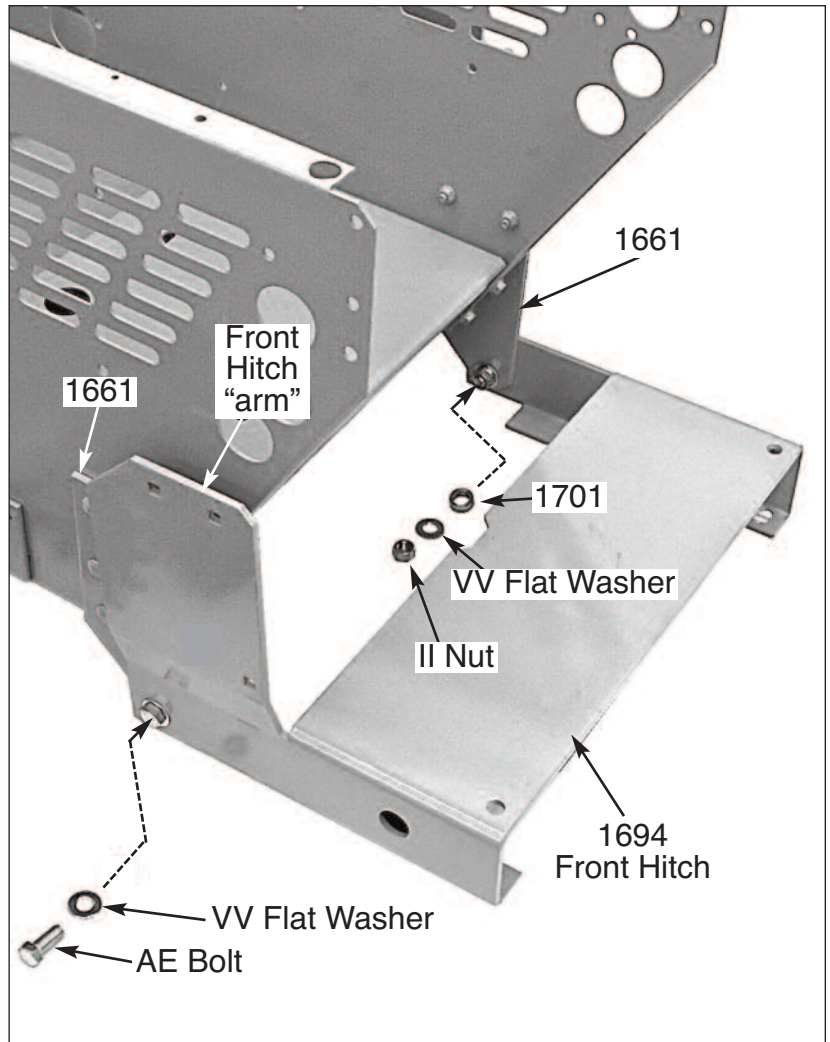
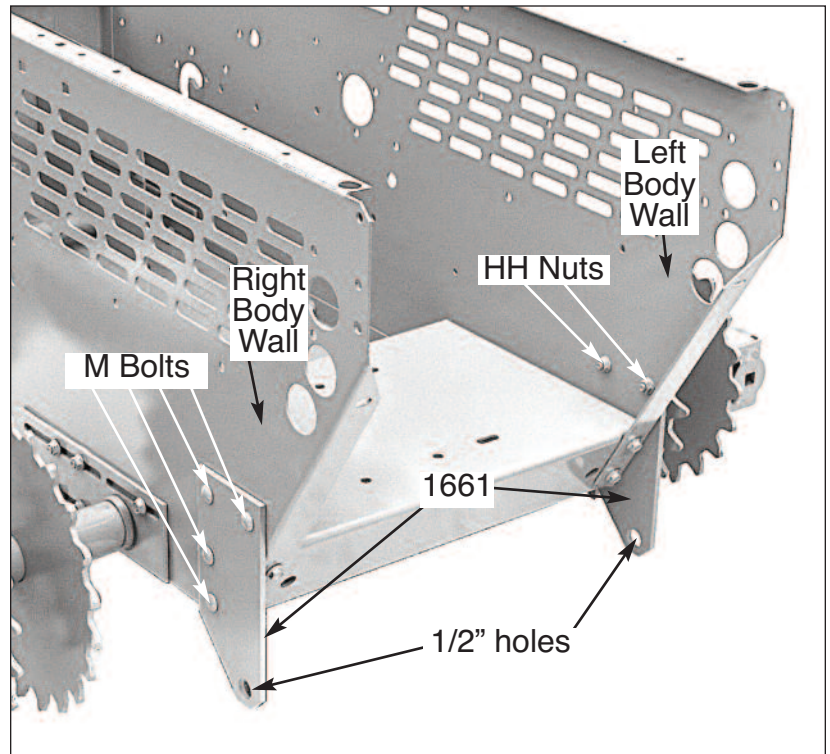
**STEP 1.** Using M Bolts, mount a #1661 Plate to the *lower front outside corner* of the Right and Left Body Walls. Secure inside Body with HH Nuts... tighten... see Photo at upper right.

**STEP 2.** Align 5/8” holes in *left & right* #1661 Plates with mating 1/2” holes in *lower rear* of #1694 Front Hitch.

On each side, insert an #AE Bolt into #VV Washer and then into its aligned 1/2” and 5/8” holes on left & right.

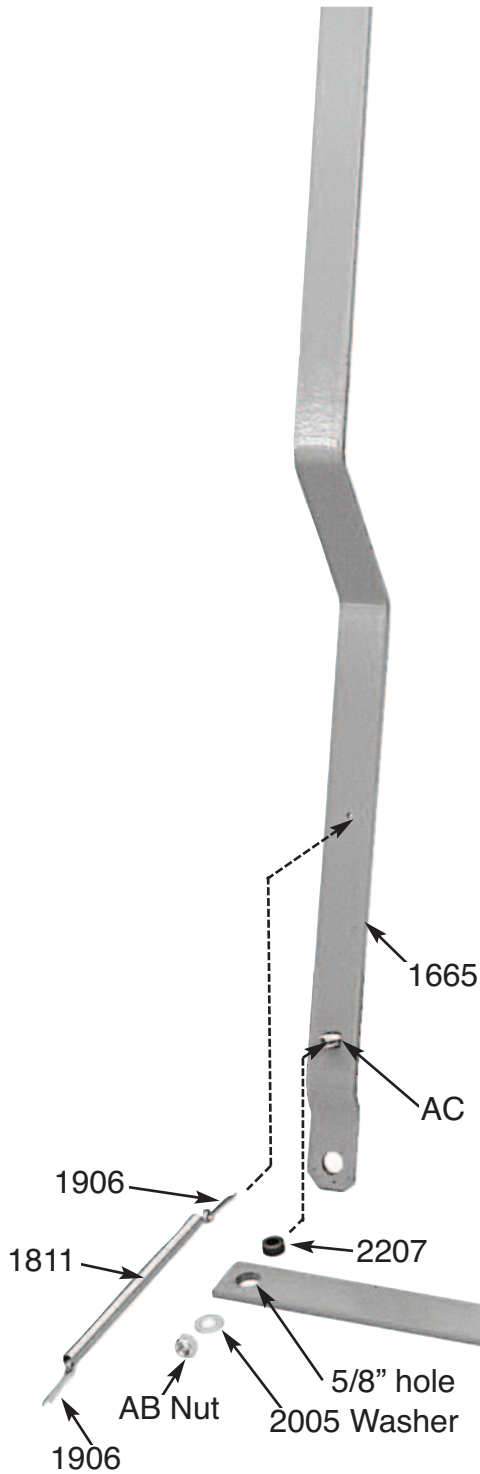
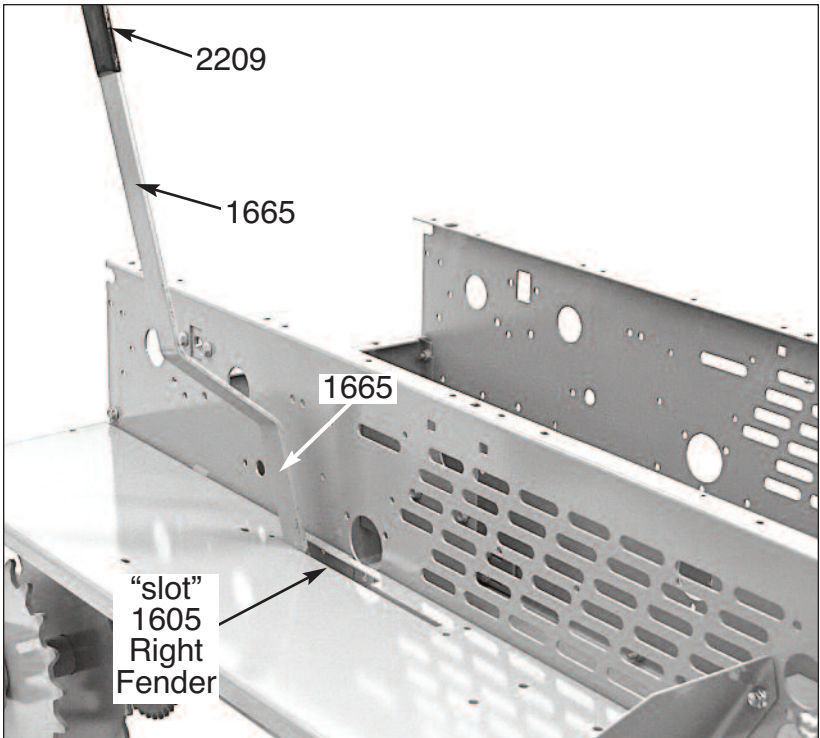
Inside, slip a #1701 Bushing over end of *each* #AE Bolt... Bushing goes inside 1/2” holes of #1661 Plates.

Secure inside on each side with #VV Washer and #II Nut...fully tighten both Nuts... see Photo at right.



**STEP 3.** From above, insert #1665 Handle into slot in #1605 Right Fender... see Photo at right.

Slip #2209 Grip over #1665 Handle on *right side* of Body... see Photo at right.



**STEP 4.** Below #1605 Right Fender, Insert #AC Bolt into 3/8" square hole on *inside face* of #1665 Handle... threads point *outward*.

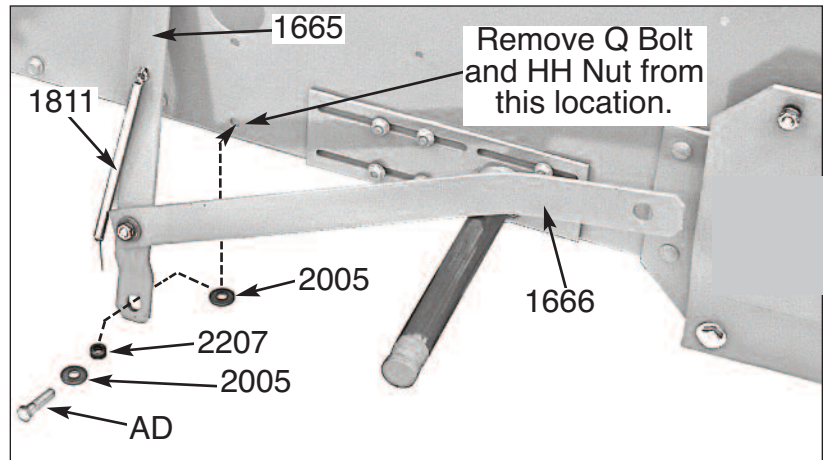
Outside, over protruding threads, slip on in order: #2207 Bushing, #1666 Lift Linkage, #2005 Washer and secure with #AB Nut... check Photo below... tighten securely.

**NOTE:** When assembled, the *forward end* of #1666 Linkage should curve downward... see Photo next page.

**STEP 5.** Spread ends of two #1906 Cotter Pins and insert each into a "loop" on ends of #1811 Spring... close Cotter Pin Ends. Insert one Cotter Pin into 3/16" hole in *center outside face* of #1665 Handle... spread Pin ends *behind* Handle to secure.

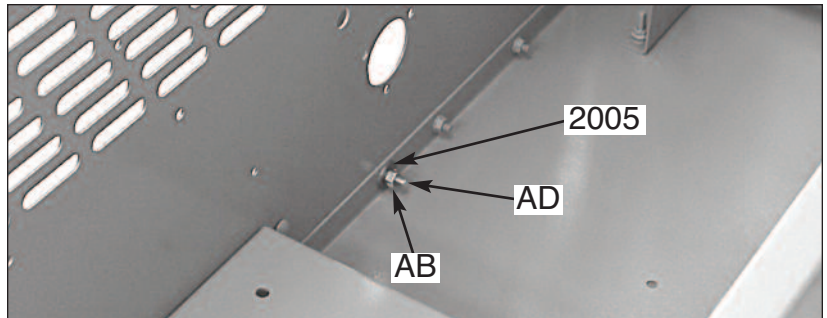


**STEP 6.** Remove #Q Bolt and #HH Nut from location in *lower center of Right Wall*... see Photo at right.

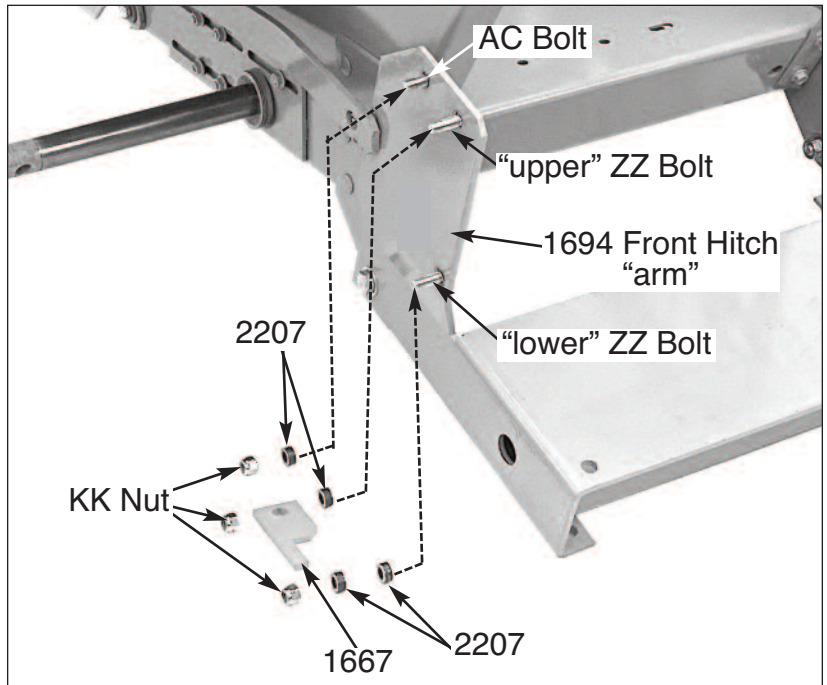


**STEP 7.** In the following order: Insert #AD Bolt into #2005 Washer, #2207 Bushing, 5/8" hole lower end of #1665 Handle, #2005 Washer and finally into 5/16" hole "created" in STEP 6 above.

**STEP 8.** Locate protruding #AD Bolt on *inside lower center of Right Body Wall*... secure with #2005 Washer and #AB Nut... fully tighten... see Photo at right.



**STEP 9.** Following Photo [second from bottom], insert one (1) AC Bolt and two (2) ZZ Bolts into the three 3/8" square holes on *inside face of #1694 Front Hitch "arm"*.

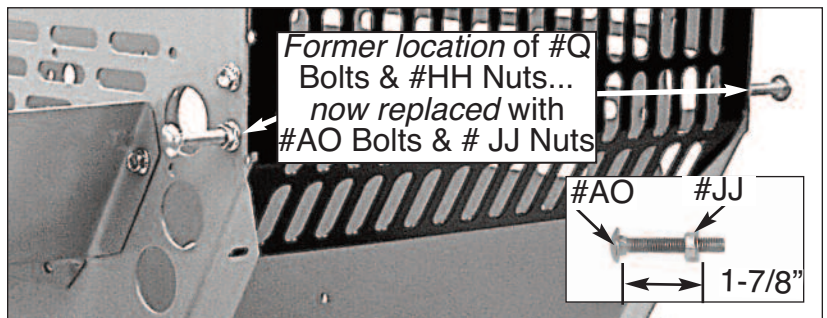


Slip #2207 Bushing over end of #AC Bolt... secure with #KK Nut... tighten.

Slip #2207 Bushing, #1667 Arm Latch over end of "upper" #ZZ Bolt... secure with KK Nut... leave Bolt *loose* to be tightened later.

Slip two (2) # 2207 Bushings over end of "lower" #ZZ Bolt... secure and tighten with #KK Nut... check your "assembly" against Photo next page.

**STEP 10.** Form two #AO Carriage Bolt assemblies with #JJ Nuts applied so that "flange" of Nut points away from head of Bolt by 1-7/8"... see *inset* Photo at right.



Remove "original" #Q Bolts and #HH Nuts and replace with #AO Carriage Bolt assemblies [formed above]... secure *inside Body* with #JJ Nuts... fully tighten... see Photo at right.

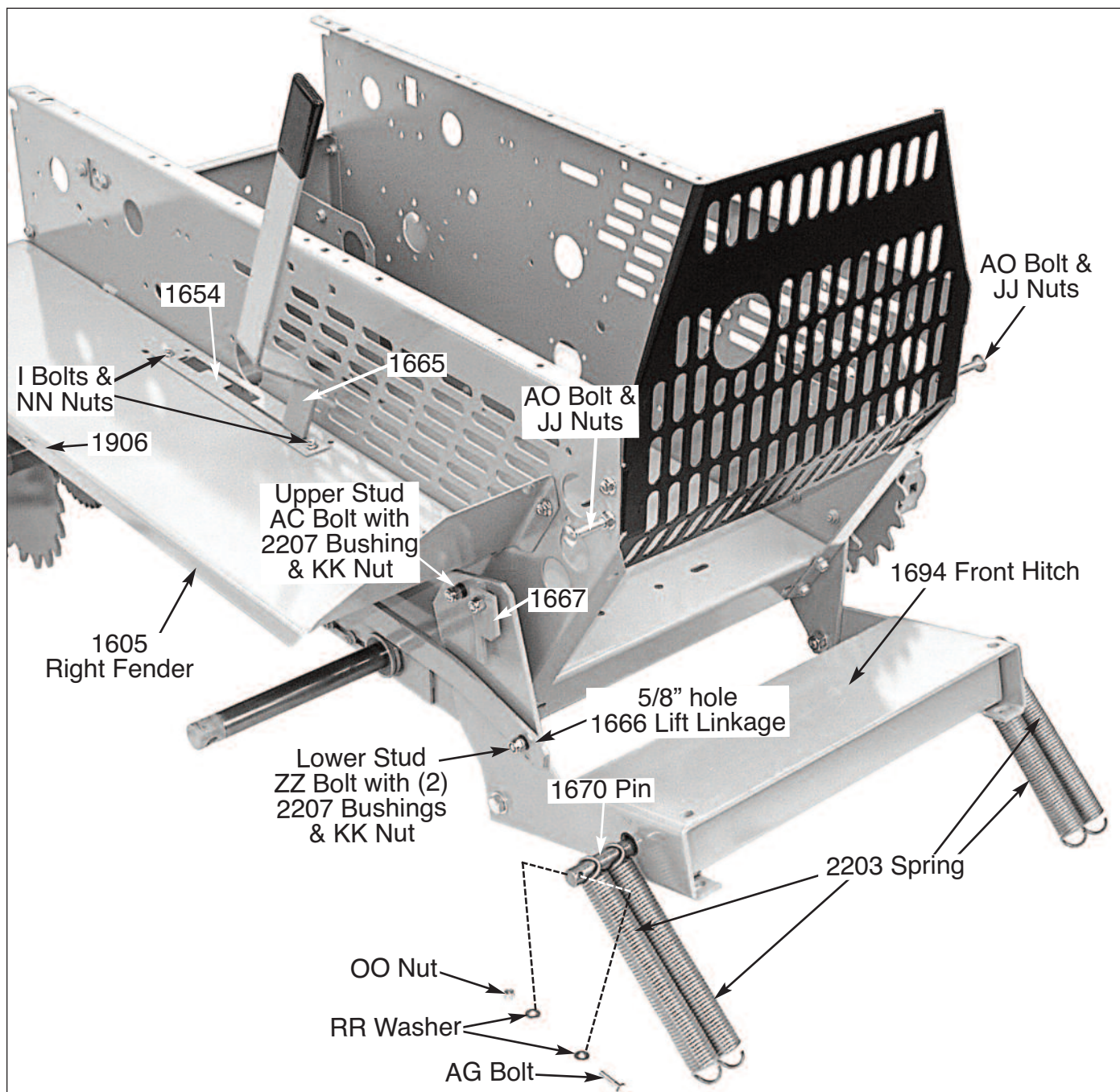
**STEP 11.** Following Photo below, slip #1654 Latch Plate *around* #1665 Handle... secure with two (2) #I Bolts and #NN Nuts... finger tight.

Slip 5/8" hole in *end* of #1666 Lift Linkage over *Lower Stud* [#ZZ Bolt with *two mounted* #2207 Bushings and KK Nut].

Slip #1670 Pin through the two 1" holes on *outside faces* of #1694 Front Hitch, *center* the Pin.

Slip two (2) #2203 Springs over *each end* of #1670 Pin. Secure *each end* with #AG Bolt, #RR Washer, second #RR Washer and secure with #OO Nut.... tighten... see Photo below.

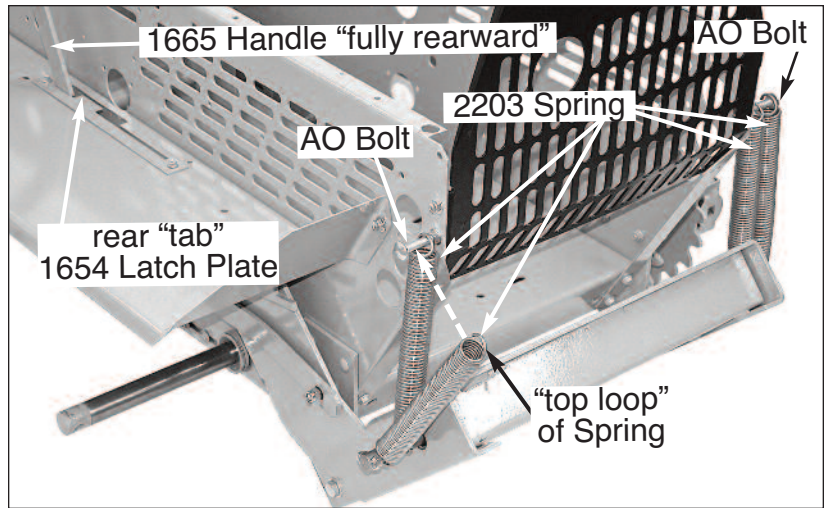
**STEP 12.** From under Right Fender, insert remaining #1906 Cotter Pin through 3/16" hole and "clinch" on *outside face* of #1605 Right Fender.



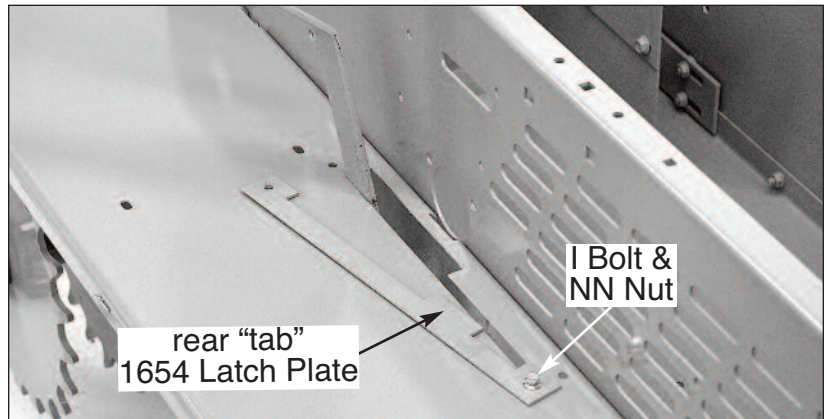


**STEP 13.** Pull #1665 Handle *fully rearward* and secure it behind rear “tab” of its #1654 Latch Plate... see Photo at right.

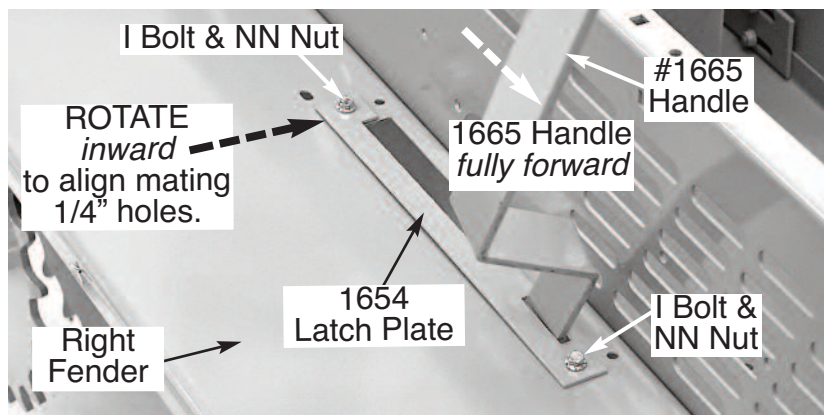
**STEP 14.** With “gloved” hands, rotate each #2203 Spring *rearward* and loop the *top loop* of each Spring *over the head* of its appropriate #AO Bolt... all four “top loops” should be over their appropriate #AO Bolts... see Photo at right.



**STEP 15.** Remove #I Bolts and #NN Nuts from #1654 Latch Plate. *Invert* Latch Plate [rear “tab” is now forward] and replace it per Photo at right... On *forward end*, secure it with only one (1) #I Bolt and one (1) #NN Nut... finger tight... see Photo at right.



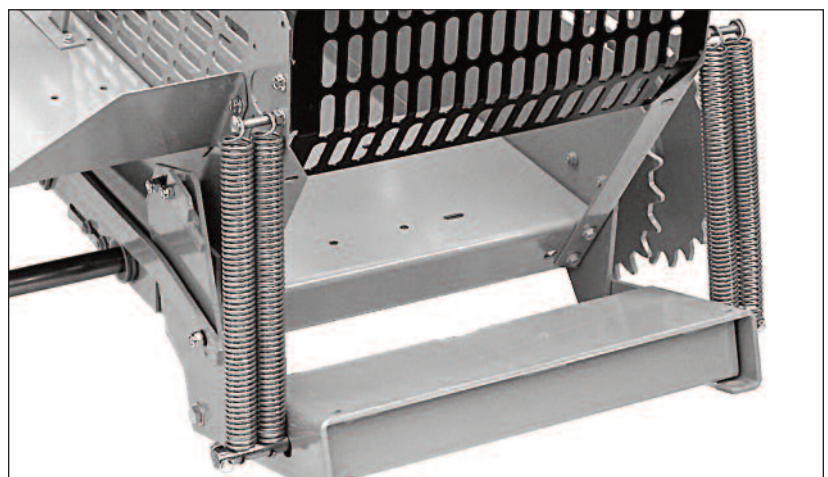
**STEP 16.** Push #1665 Handle *fully forward* and simultaneously *rotate* the #1654 Latch Plate *inward* aligning 1/4” hole in *rear* of Latch with mating 1/4” hole in rear of Right Fender. Insert #I Bolt in mating 1/4” holes and secure below with #NN Nut... finger tight... see Photos at upper & lower right.



**NOTE:** For Safety [with #1654 Latch Plate in *above* position] your Spring’s “pressure” is safely contained... see Photo at right.

You will now attach your Dozer Blade, Bucket Mouth and place approximately 90 pounds of weight in the Bucket Mouth to hold it down against the floor.

For *weights* in our Photos (STEP 21 below) we used two (2) 45 pound bags of sand. The assembler could use any type of “stable weight”... concrete chunks, stones, etc... it’s safer to have a greater weight to keep Bucket Mouth down on the floor, than less!

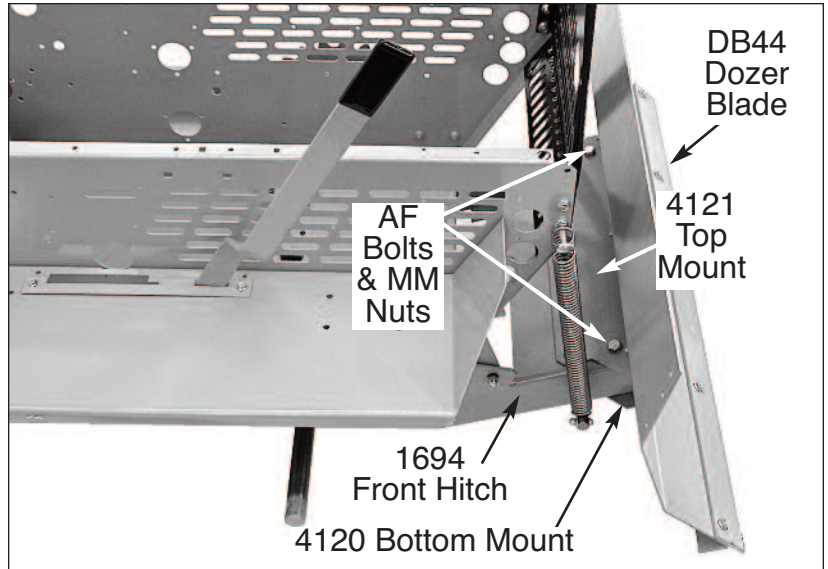


**STEP 17.** Following the instructions closely, completely assemble your DB44 Dozer Blade.

When completed, slip DB44 Dozer Blade's "Top Mount and Bottom Mount" around #1694 Front Hitch.

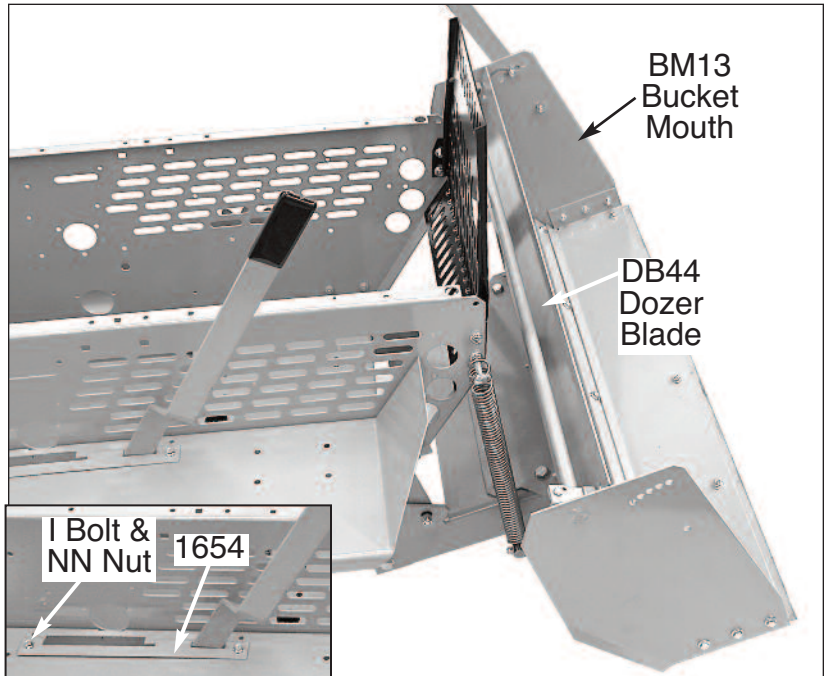
Align 1/2" holes in Top & Bottom Mounts with mating 1/2" holes in #1694 Front Hitch.

From above, insert #AF Bolts into mating 1/2" holes... secure below with #MM Nuts... tighten... see Photo at right.



**STEP 18.** Following the instructions closely, completely assemble your BM13 Bucket Mouth.

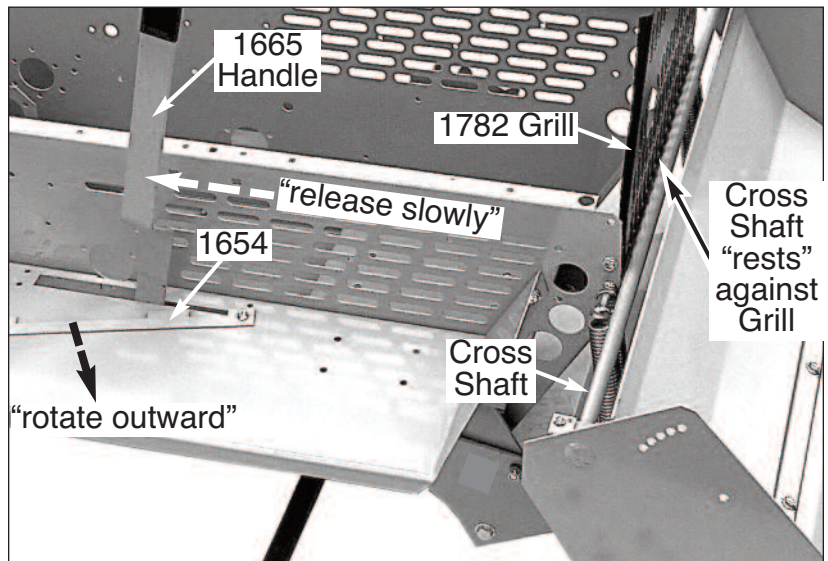
When completed, install it per the instructions onto your previously installed DB44 Dozer Blade.



**STEP 19.** Remove #1 Bolt & #NN Nut at rear of #1654 Latch Plate... see inset Photo at right.

Simultaneously, while pushing forward on the #1665 Handle, rotate the #1654 Latch Plate outward... see Photo at right.

Release pressure on the Handle and allow it to slowly go rearward until the Cross Shaft of the Bucket Mouth rests against the #1782 Grill... Photo at right.



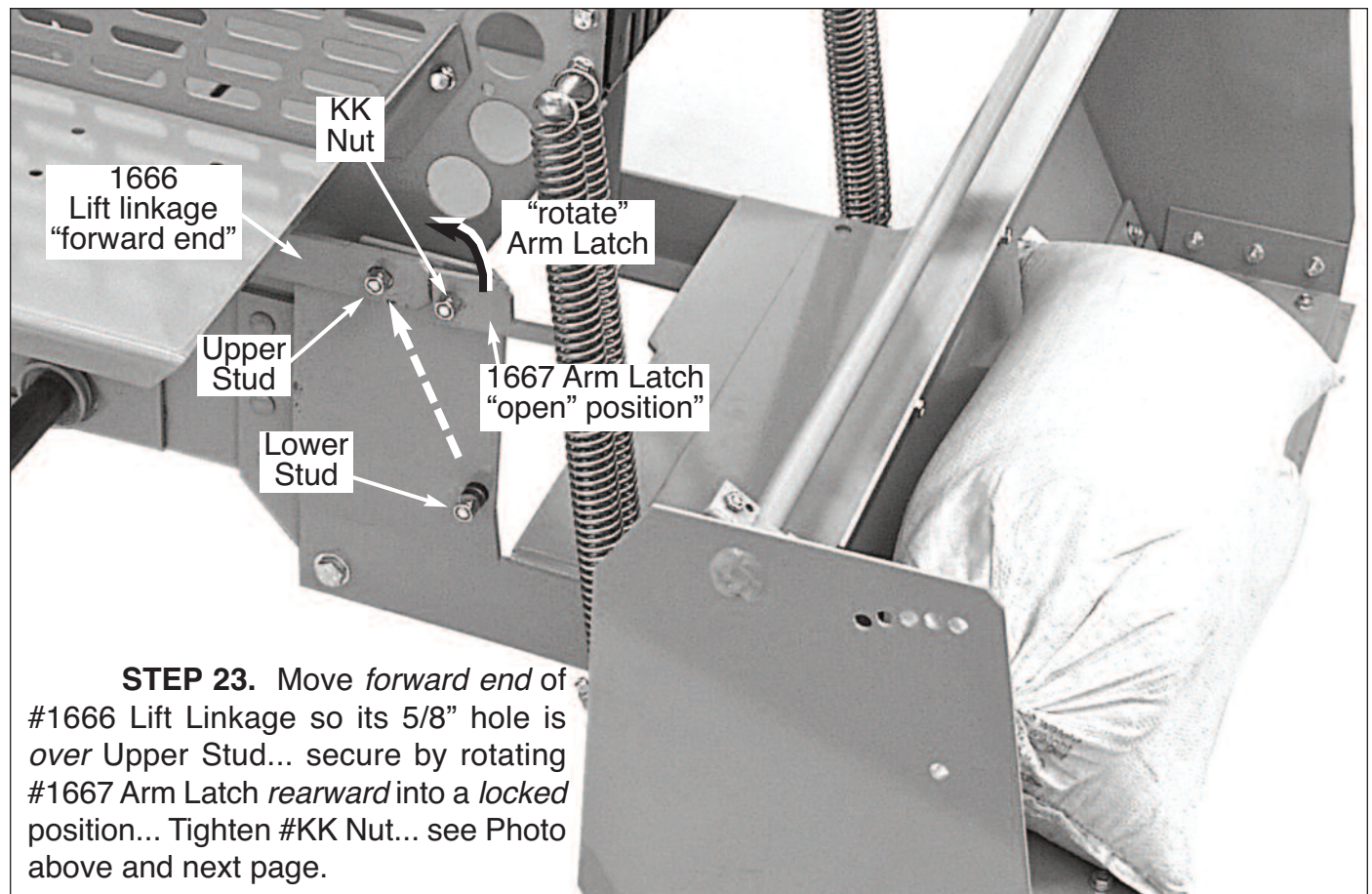
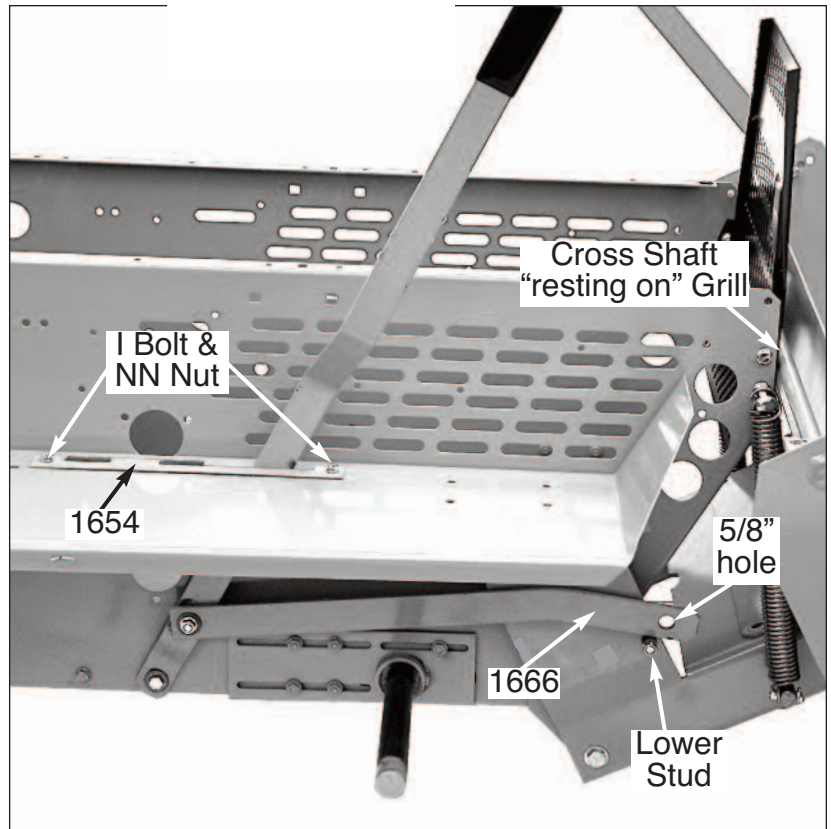


**STEP 20.** Totally remove #1654 Latch Plate. *Invert it* and turn it “end to end”. Remount it per Photo at right... use original #1 Bolts & #NN Nuts... tighten... see Photo at right.

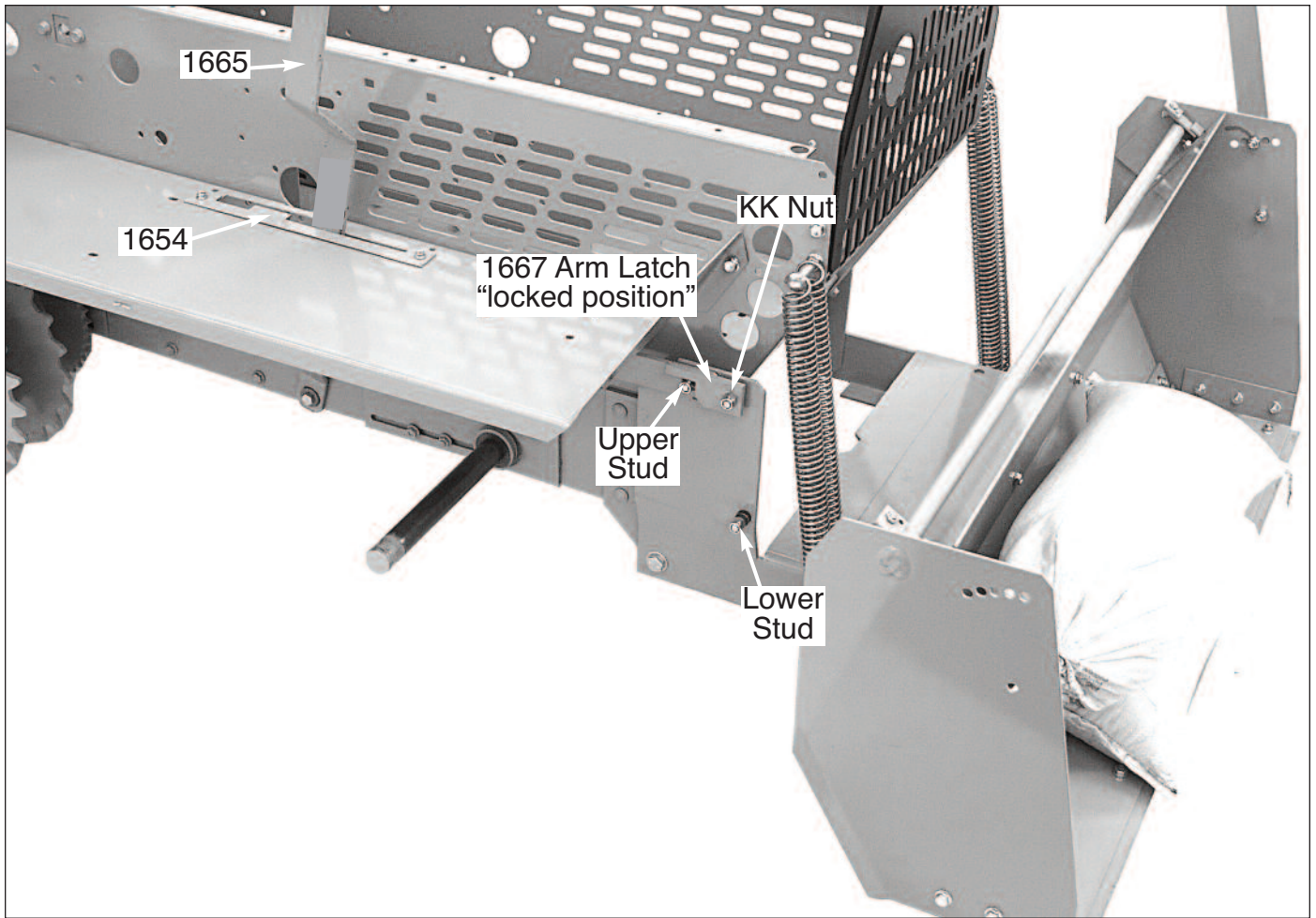
Slip 5/8” hole *end* of #1666 Lift Linkage *off* Lower Stud... Photo at right.

**STEP 21.** Load Bucket Mouth with approximately 90 pounds of sand bags, rocks, broken concrete, etc... set #1665 Handle so that when you have finished loading the Bucket Mouth that the Bucket lies *firmly* on the floor... see Photo below.

**STEP 22.** Move *forward end* of #1666 Lift Linkage so its 5/8” hole is *over* Upper Stud... secure by rotating #1667 Arm Latch *rearward* into a *locked* position... Tighten #KK Nut... see Photo below and next page.

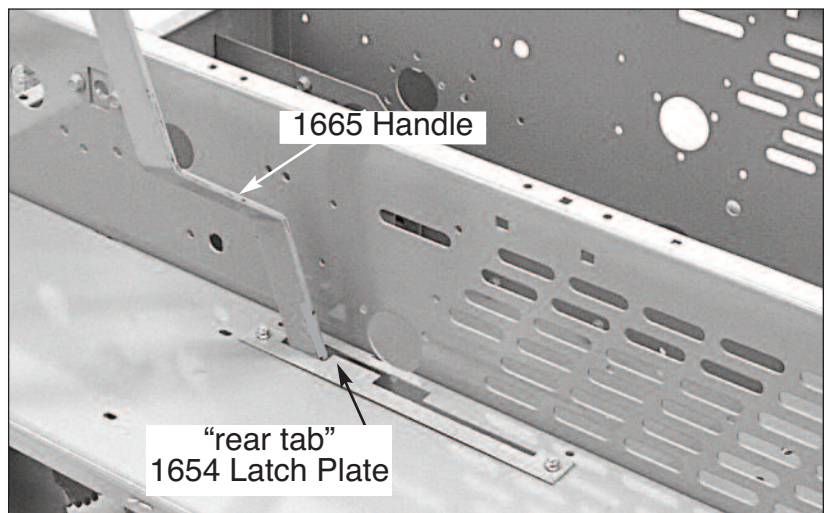


**STEP 23.** Move *forward end* of #1666 Lift Linkage so its 5/8” hole is *over* Upper Stud... secure by rotating #1667 Arm Latch *rearward* into a *locked* position... Tighten #KK Nut... see Photo above and next page.



**SAFETY NOTE:**

For transporting, you should always have the #1665 Handle [Front Hitch] in the "Rearward Locked" position... Handle should be behind "rear tab" of #1654 Latch Plate....see Photo at right.

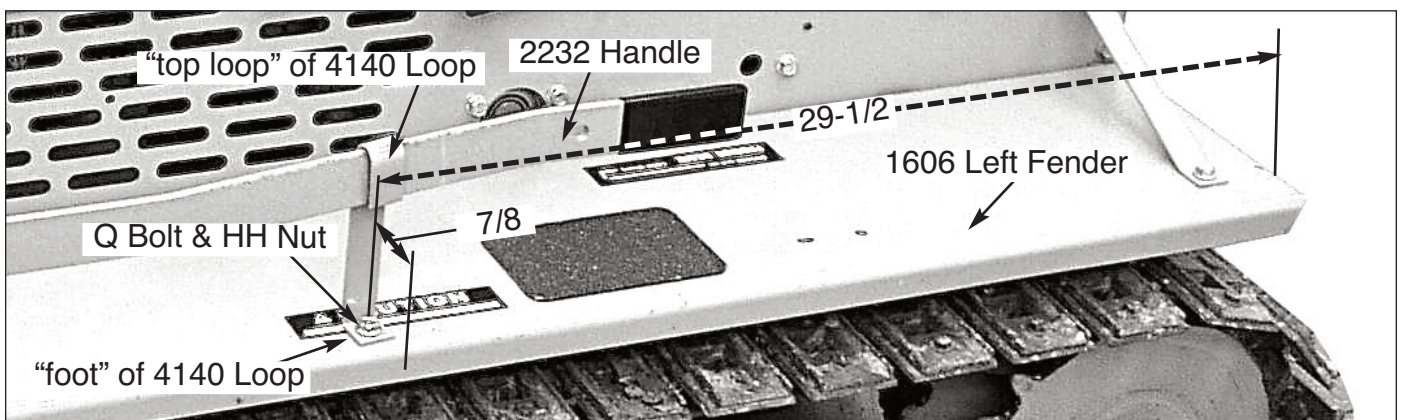
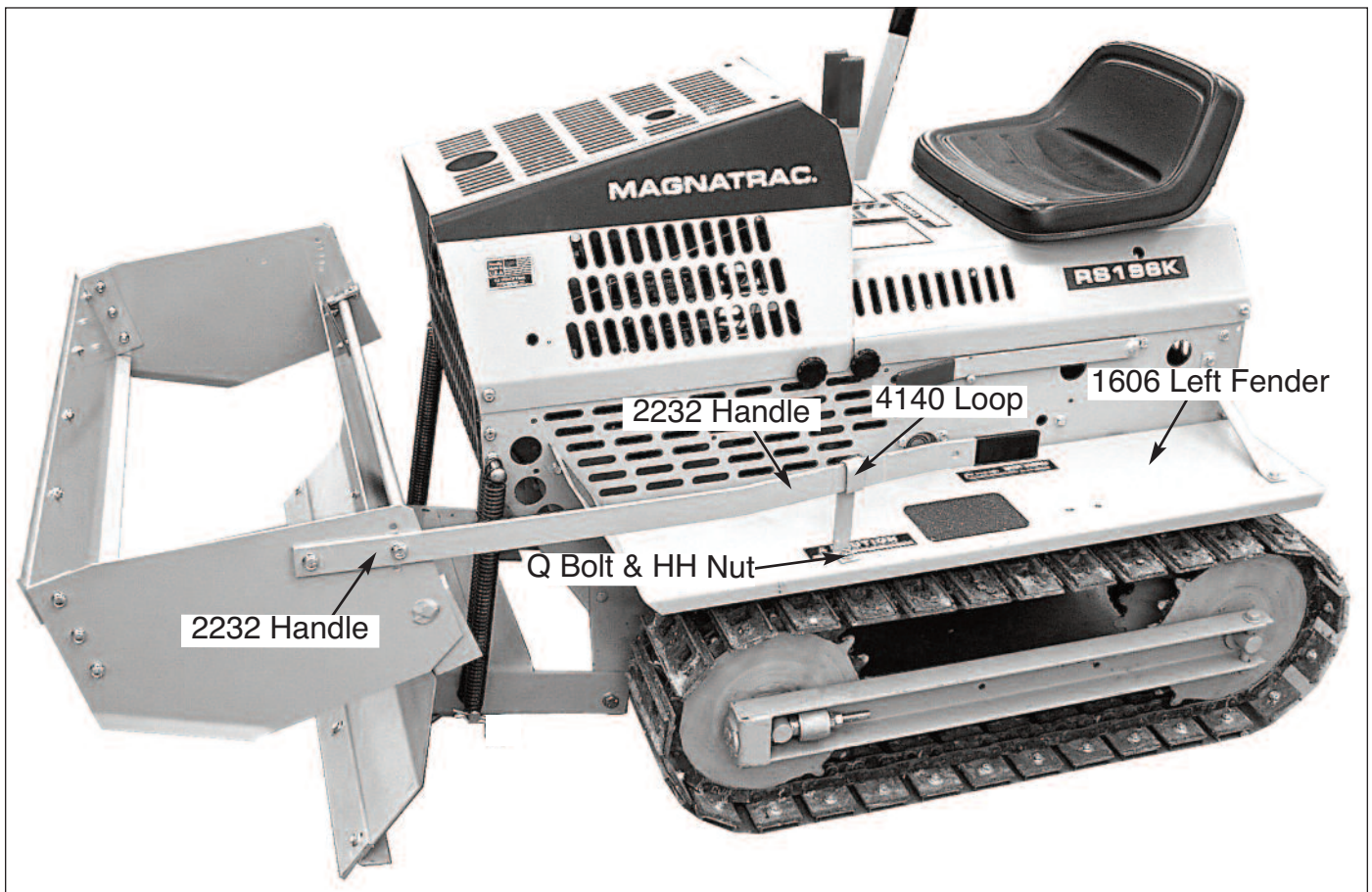




**STEP 24.** On *top front face* of #1606 Left Fender, locate a point  $29\frac{1}{2}$ " *forward* of rear edge and  $\frac{7}{8}$ " *inward* of left edge... see Photos below. At this point, accurately drill a  $\frac{5}{16}$ " hole if it has not already been provided.

Locate  $\frac{5}{16}$ " hole in *foot* of #4140 Loop [#4140 Loop shipped with BM13 Bucket Mouth] *over* mating  $\frac{5}{16}$ " hole provided above... secure with Q Bolt and HH Nut... tighten. **NOTE:** "*top loop*" and "*foot*" of #4140 Loop face *outwardly*.

**OPERATING NOTE:** The #4140 Loop provides a firm support for the #2232 Handle when you want the Bucket Mouth "up and out of the way" to do Blade work... YOU CAN remove the Bucket Mouth entirely, but it's removal [due to the loss of the "counter-balancing" effect of the BM13 Bucket Mouth's weight] will require greater *operator force* to keep the Blade on the ground.

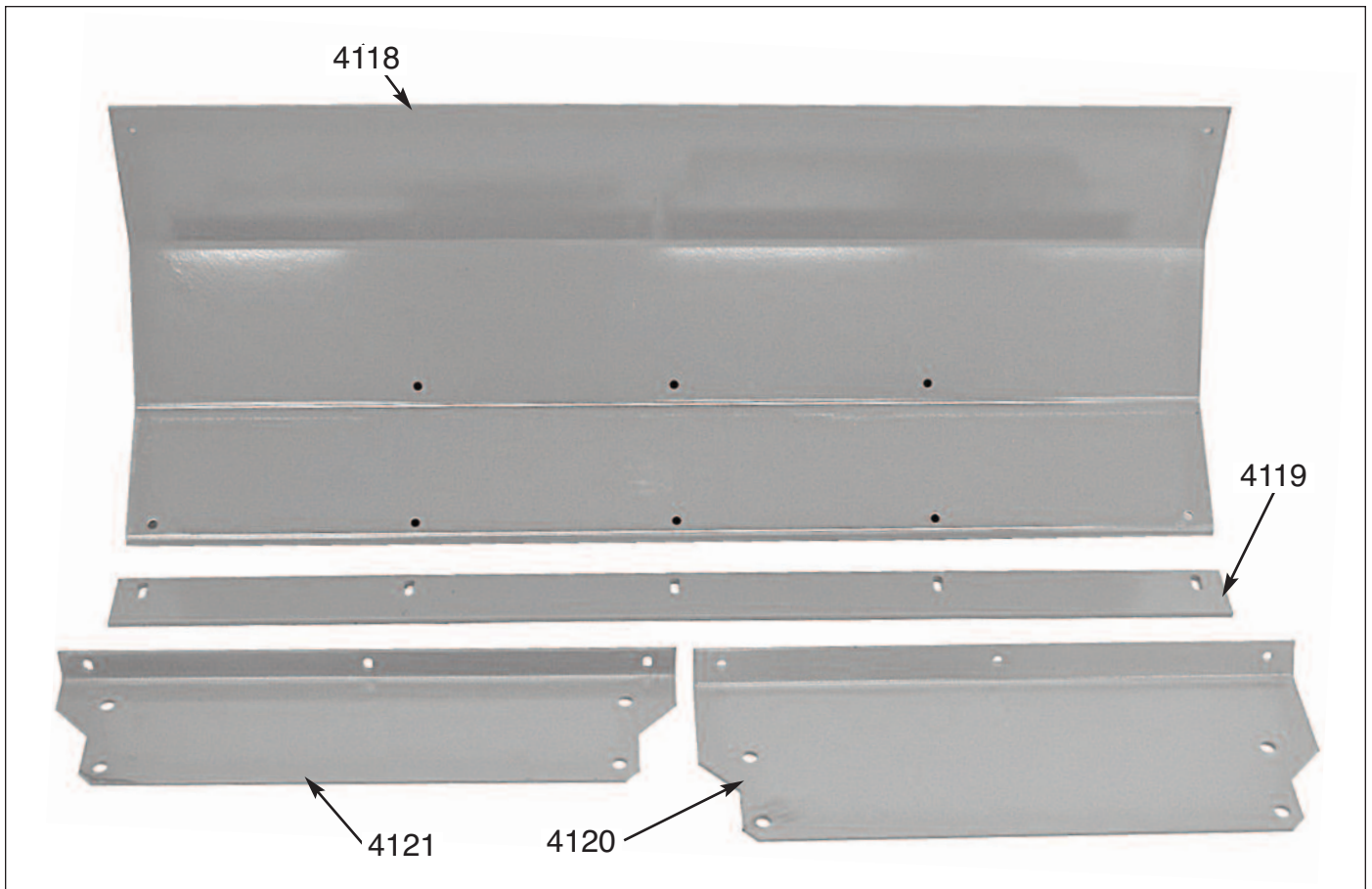


# Dozer Blade Kit

## DB44

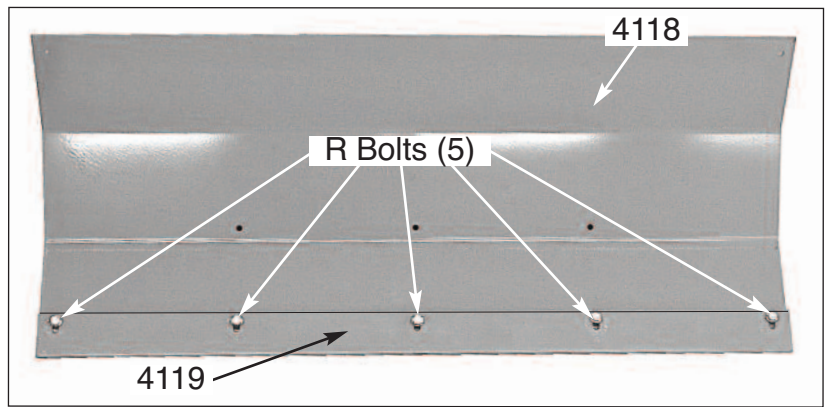
### Parts & Fastener List

R	5/16-18x1 Spin Lock Bolt	(8)
HH	5/16-18 Spin Lock Nut	(8)
004118	Blade, 42" wide	(1)
004119	Edge, 42" wide	(1)
004120	Bottom Blade Mount	(1)
004121	Top Blade Mount	(1)

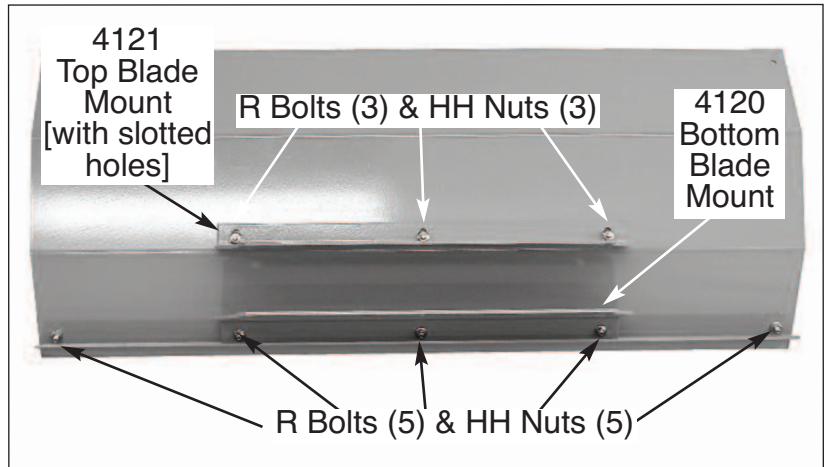




**STEP 1.** Locate the five (5) 5/16" slots in #4119 Edge with mating five 5/16" holes in *lower edge* of #4118 Blade. From the *front*, slip a #R Bolt into each of these mating five slots & holes.



**STEP 2.** Rotate Blade. On the *reverse side* align the three 5/16" holes in *edge* of #4120 Bottom Blade Mount with the *three* mating #R Bolts in *center* of Blade... see Photo at right.



**NOTE:** Holes in #4119 Edge are slotted to allow horizontal movement to square bottom of Edge with ground if needed.

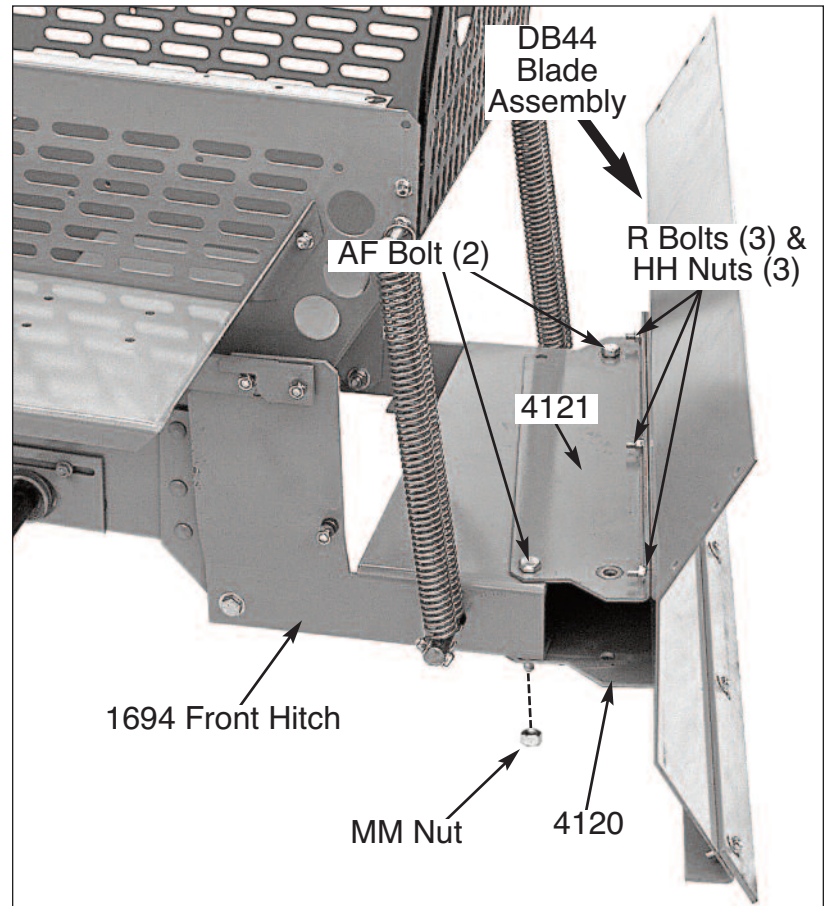
Secure all five #R Bolts [from STEPS 1 & 2] with #HH Nuts on *rear* of Blade... tighten... see Photo at right.

**STEP 3.** Insert three (3) #R Bolts into remaining three 5/16" holes in *front face* of #4118 Blade.

*Behind* Blade, slip the three mating 5/16" *slotted holes* of *top edge* of #4121 Top Blade Mount over the three protruding #R Bolts... secure with three (3) #HH Nuts... leave Nuts loose... see Photo upper near right.

**Mounting Blade to Front Hitch:**

Slip Blade Assembly onto #1694 Front Hitch... align 1/2" holes in #4121 Top and #4120 Bottom Mounts with mating 1/2" holes in Front Hitch. Insert #AF Bolts into mating holes... secure below with II Nuts.



**NOTE:** [#AF Bolts & #II Nuts are remaining from assembly of Front Hitch]

Tighten the #R Bolts (3) and #HH Nuts (3) on #Top Blade Mount.

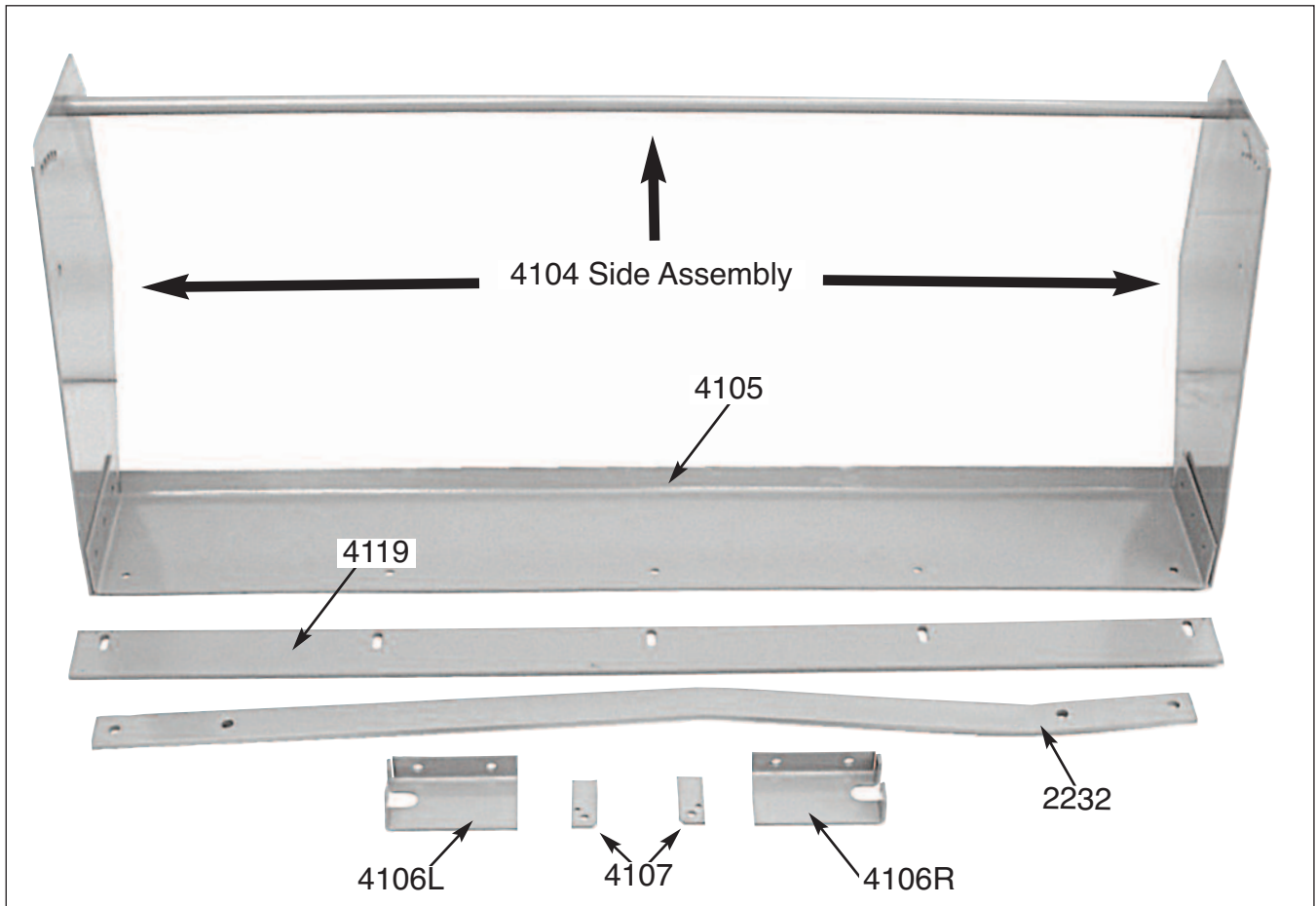
**NOTE:** Blade angle can be set to push straight ahead or cast material to left or right. [Photo shows angle to the left]

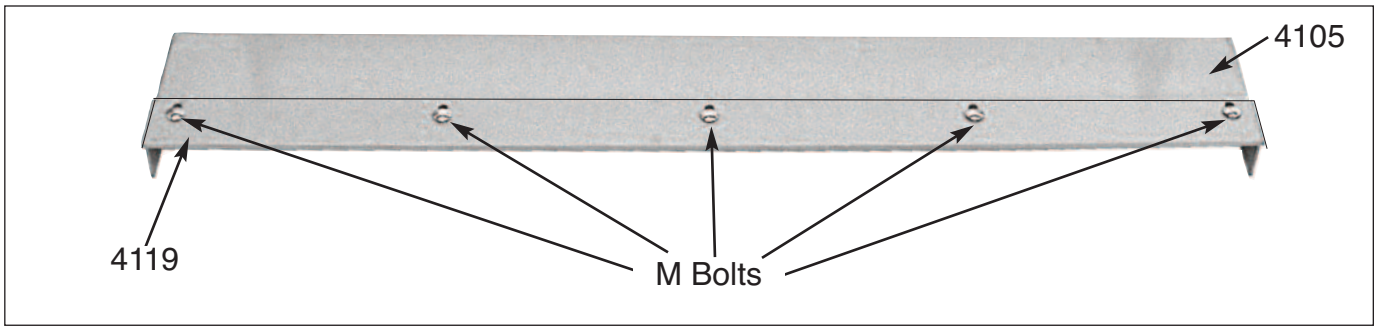
# Bucket Mouth Kit

## BM13

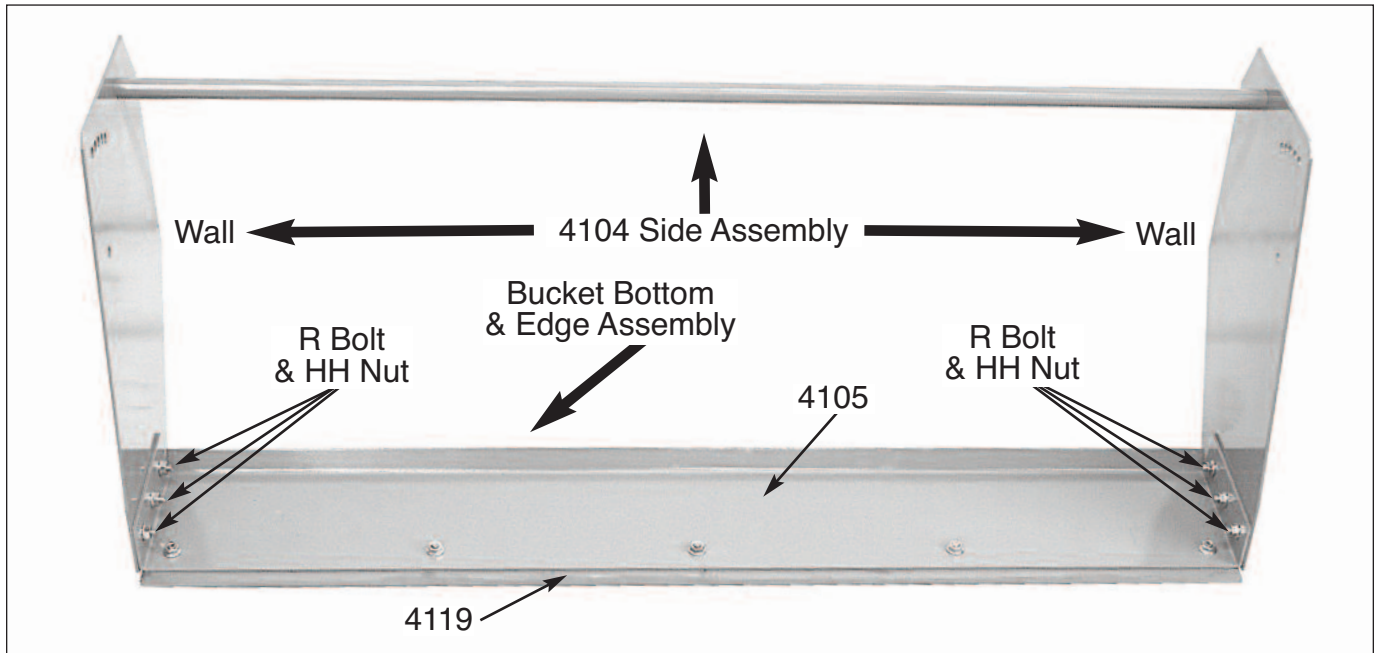
### Parts and Fastener List

001168	Hitch Pin, #8	(2)	E	1/4-20x3/4 Bolt	(2)
002209	Grip	(1)	M	5/16-18x3/4 Carriage Bolt	(5)
002232	Handle	(1)	R	5/16-18x1 Spin Lock Bolt	(7)
004104	Side Assembly	(1)	AL	3/8-16x1 Bolt	(2)
004105	Bucket Bottom	(1)	HH	5/16-18 Spin Lock Nut	(12)
004106L	Dump Bracket, left	(1)	KK	3/8-16 Nylon Lock Nut	(2)
004106R	Dump Bracket, right	(1)	OO	1/4-20 Nylon Lock Nut	(2)
004107	Flat Lock	(2)			
004119	Edge, 42"	(1)			
004140	Loop [see Photo page BM15]	(1)			





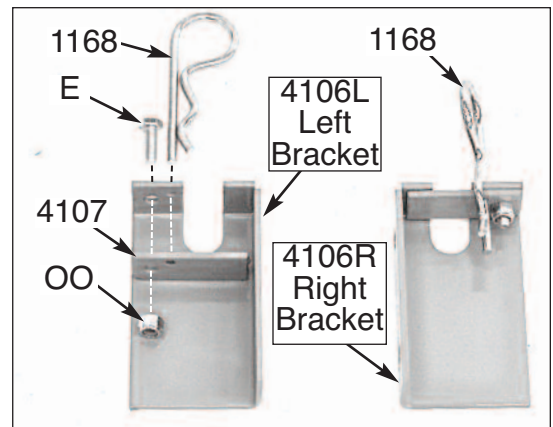
**STEP 1.** Invert #4105 Bucket Bottom. Locate #4119 Edge over *forward edge* of Bucket Bottom. Align the five (5) 5/16" wide slots in Edge with mating five (5) 5/16" holes in Bucket Bottom. Insert a #M Bolt in each set of 5/16" holes and slots. Secure *inside* with #HH Nuts. Push Edge evenly to the rear... tighten #HH Nuts... see Photo above.



**STEP 2.** Slip Bucket Bottom & Edge Assembly between the two Walls of the #4104 Side Assembly. Align the three (3) 5/16" holes at *ends* of *each* Wall with mating 5/16" holes in left & right edges of #4105 Bucket Bottom. From *outside*, Insert #R Bolt into each set of aligned 5/16" holes above... secure *inside* with #HH Nuts... tighten... see Photo above.

**STEP 3.** Create a #4106L Left & a #4106R Right Bracket assembly. Photo at right shows the components of the #4106L Left Bracket. To assemble it, insert #E Bolt through 1/4" hole in *top* of #4106L Bracket and then through 1/4" hole in #4107 Lock. Secure with #OO Nut... fully tighten, but leave a little "play" so #4107 Lock can be easily rotated.

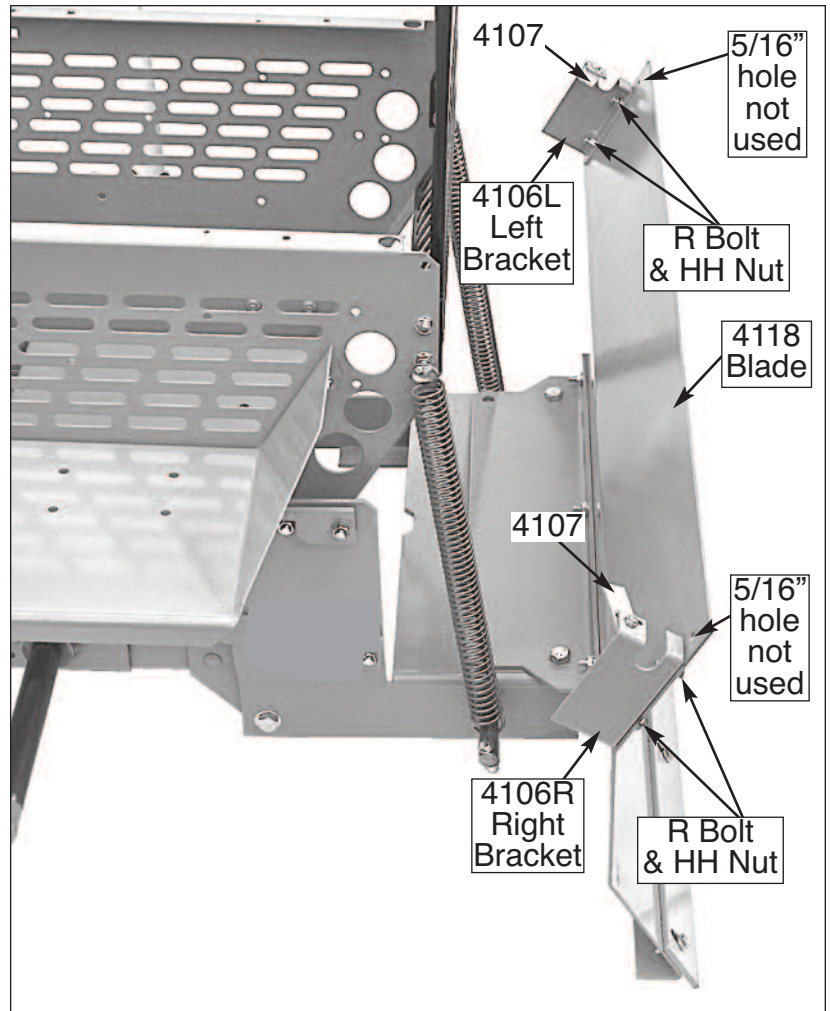
The "assembled version" of #4106R Right Bracket is shown at *far left* in Photo at right.



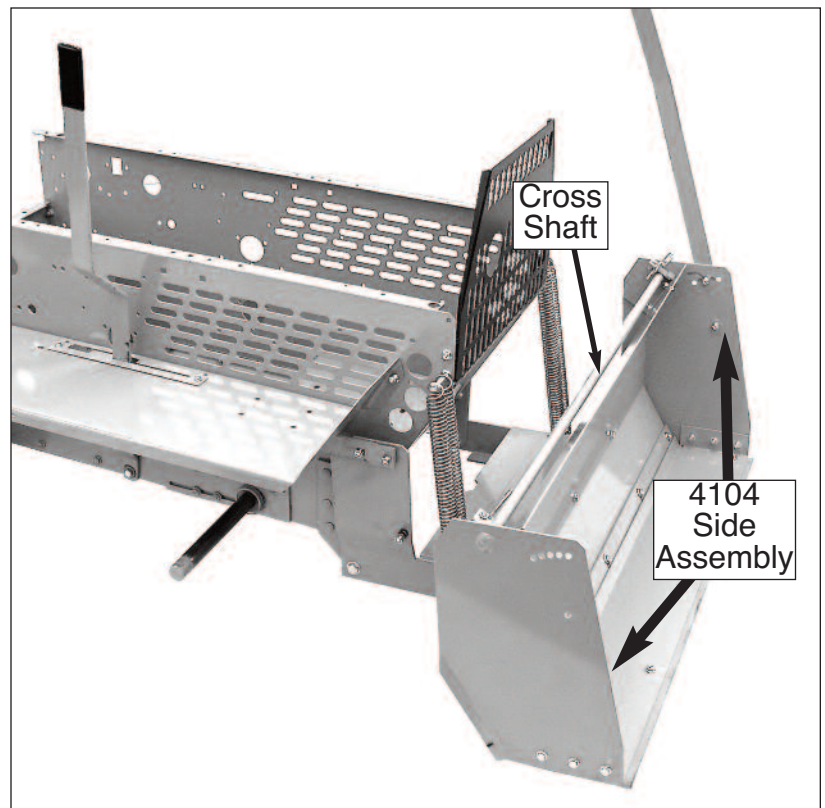


**STEP 4.** Per Photo at right, align the two (2) 5/16" holes of #4106L Left Bracket with mating holes in *top left front* of #4118 Blade. Insert #R Bolt into each pair of mating holes and secure behind with HH Nuts... check Photo at right; note "top" 5/16" hole is not used.

In a similar manner, align the two (2) 5/16" holes of #4106R Right Bracket with mating holes in *top right front* of #4118 Blade. Insert #R Bolt into each pair of mating holes and secure behind with HH Nuts... check Photo at right; note "top" 5/16" hole is not used.



**STEP 5.** Rotate both #4107 Locks *rearward*. Lower Cross Shaft of #4104 Side Assembly into "slotted mouth" of #4106L Left & #4106R Right Brackets. Rotate the #4107 Locks *forward* to secure Cross Shaft in its Brackets... see Photos at right and top next page.



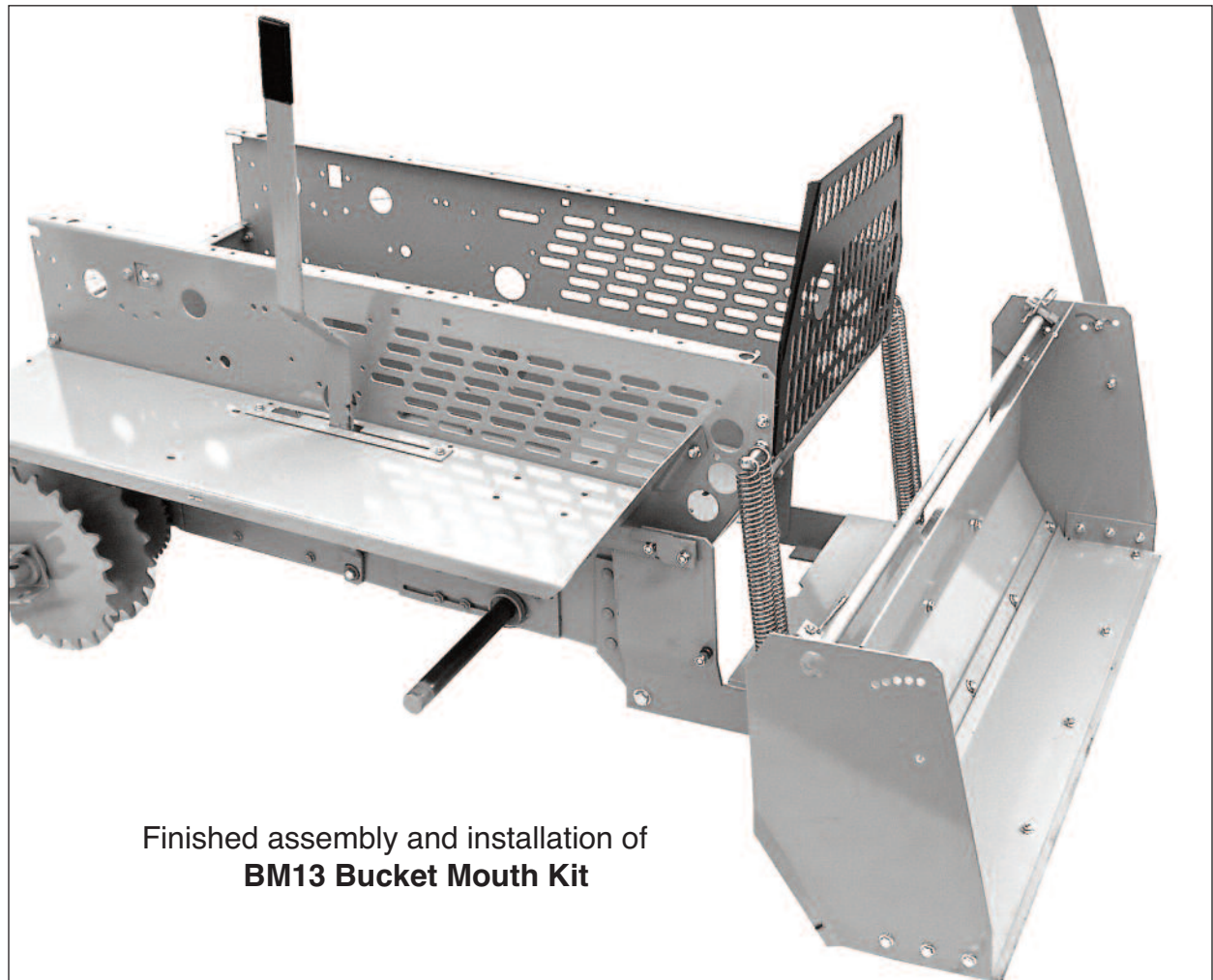
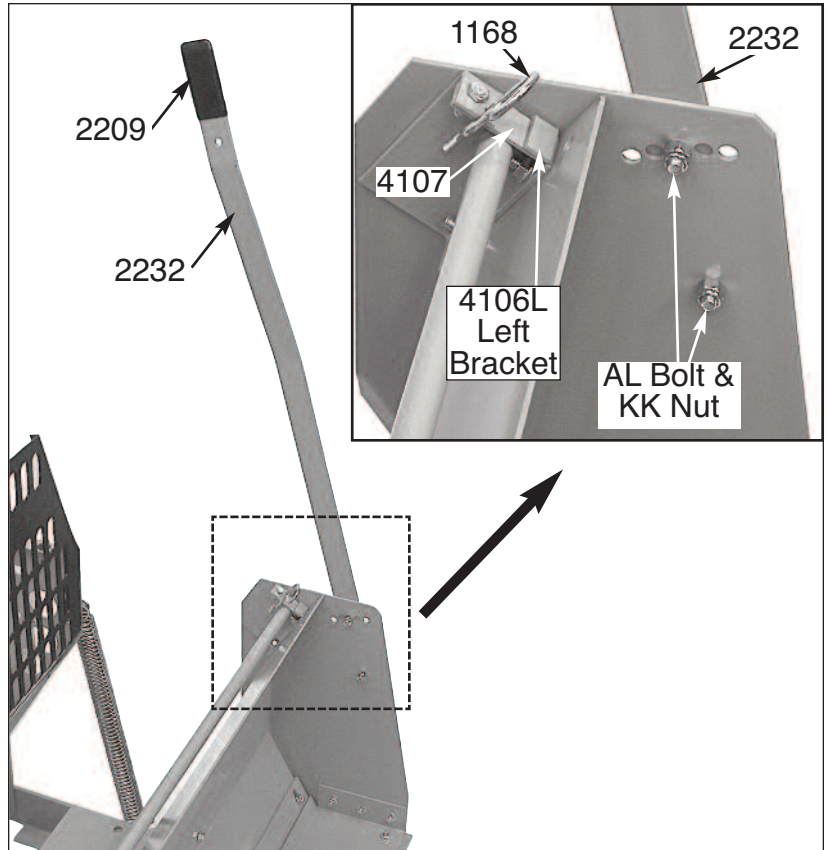


**STEP 6.** When both #4107 Locks are fully closed, secure each with a #1168 Hitch Pin... inset Photo at far right.

**STEP 7.** Your installation of the #2232 Handle is strictly “operator preference”. It is installed to the *outside surface* of the *left wall* of the #4140 Side Assembly with #AL Bolts and #KK Nuts.

Its orientation and angle should be adjusted so that the operator can easily reach and manipulate it... Photos at right show a typical installation.

**STEP 8.** Slip #2209 Grip over top end of #2232 Handle.

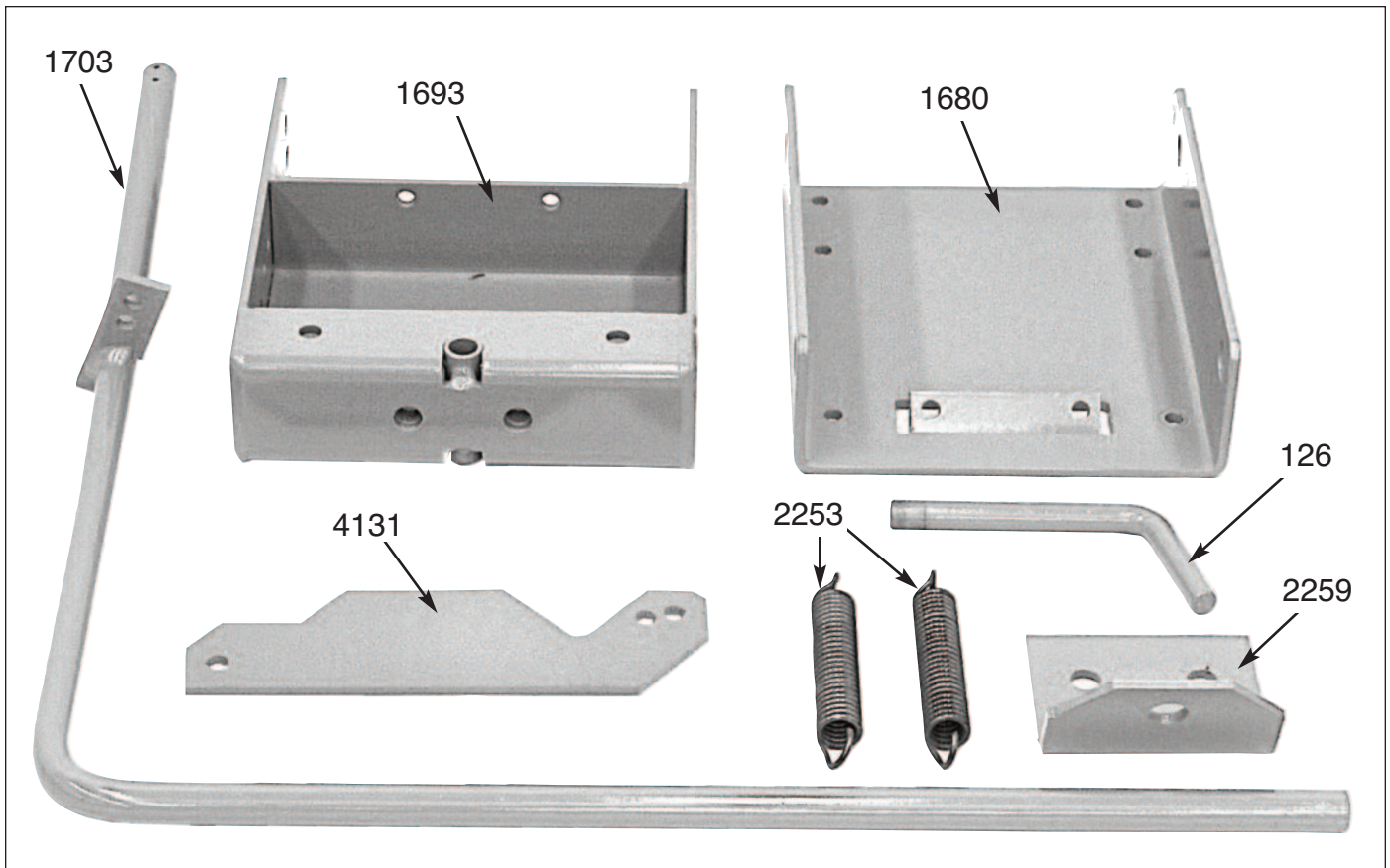


# Rear Hitch Kit

## MRH35

### Parts & Fastener List

000126	Pin, attachment	(1)	AD	3/8-16x1-1/2 Bolt	(2)
001172	Lynch Pin	(1)	AE	1/2-13x1-1/4 Bolt	(2)
001680	Hitch Channel	(1)	AF	1/2-13x4-1/2 Bolt	(2)
001693	Bail	(1)	AH	3/8-16x1 Spin Lock Bolt	(6)
001701sfp	Bushing, 1/2IDx3/4OD	(2)	AI	5/8-11x1-1/2 Bolt	(2)
001703	Handle	(1)	II	1/2-13 Dot Lock Nut	(2)
001906	Cotter Pin, 1/8x1-1/4"	(2)	JJ	3/8-16 Spin Lock Nut	(6)
002253	Spring	(2)	KK	3/8-16 Nylon Lock Nut	(2)
002255	Handgrip, 7/8"	(1)	MM	1/2-13 Spin Lock Nut	(2)
002259	Drawbar	(1)	TT	3/8 Washer	(6)
002579	7/8" ID Plain Washer	(4)	VV	1/2 Washer	(4)
004131	Link	(1)			





**STEP 1.** Align the six (6) 3/8" Holes in #1680 Hitch with mating six (6) 3/8" Holes in rear surface of #1601 Body Pan.

From *outside*, insert a #AH Bolt into each of the six 3/8" holes aligned above. *Inside* Body, secure Bolts with #JJ Nuts... tighten... see Photo at right.

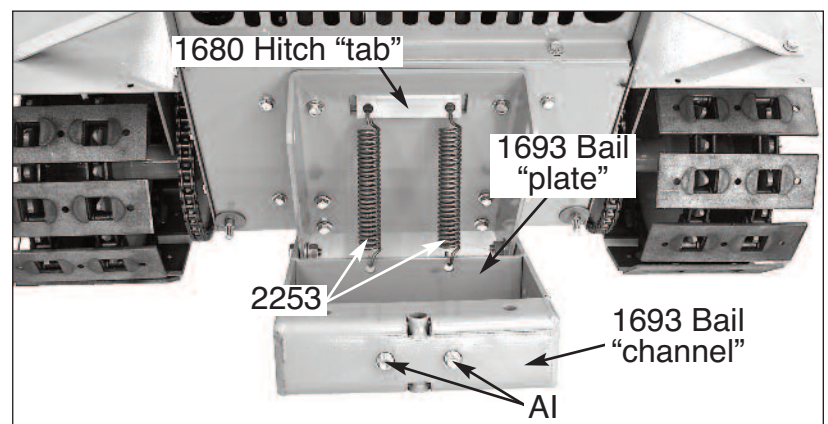
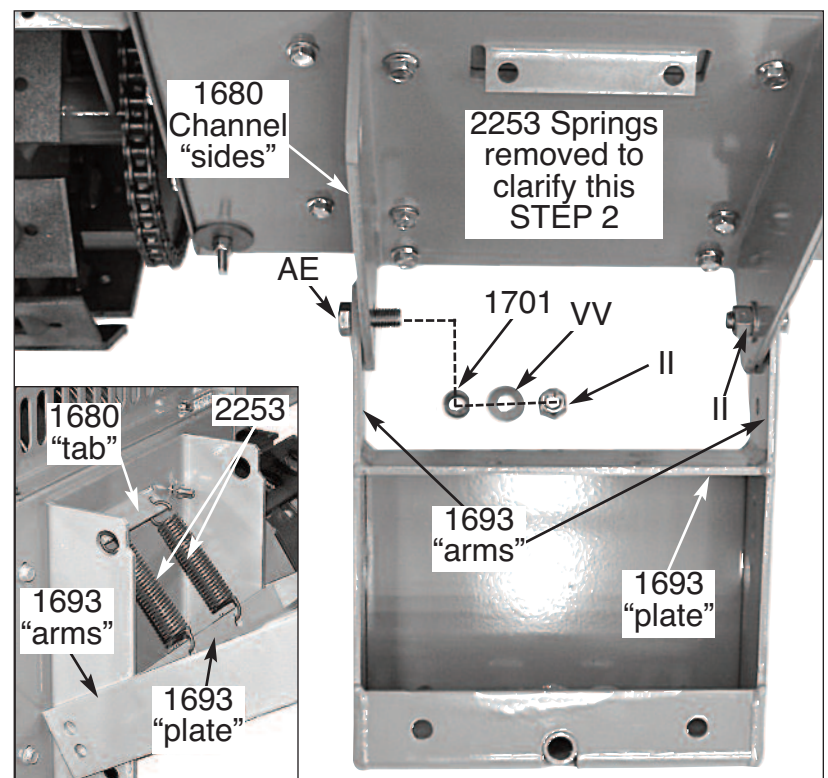
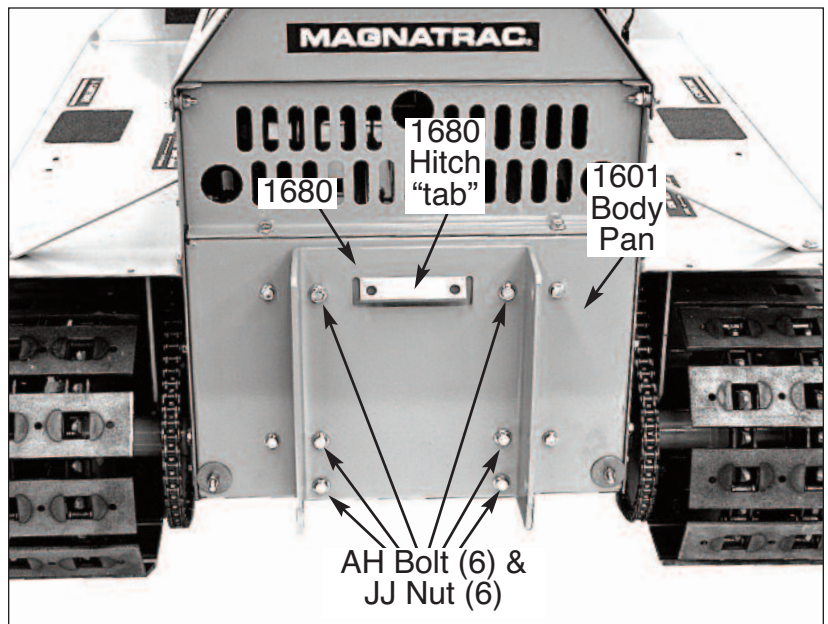
**STEP 2.** Slip "arms" of #1693 Bail around "sides" of #1680 Hitch Channel. Connect the "loops" of two (2) #2253 Springs to the 3/8" holes in "tab" of #1680 Hitch and the other end of each Spring to mating 3/8" holes in "plate" of #1693 Bale.

**STEP 3.** Align the lower 1/2" holes in #1693 Bail "arms" with mating 5/8" holes in "sides" of #1680 Channel.

**NOTE:** Use the lower 1/2" holes in #1693 Bail to start with; the other set of 1/2" holes will be useful with any "after market" attachments you use in the future.

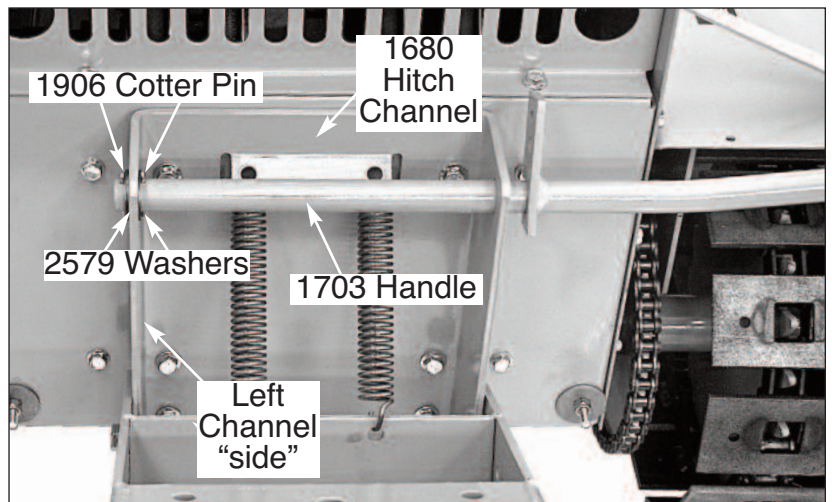
From *outside*, insert an #AE Bolt into each pair of aligned 1/2" and 5/8" holes above. Over each protruding Bolt slip on in order: #1701 Bushing, #VV Washer and secure with #II Nut... tighten.

**STEP 4.** Inside #1693 Bail channel, screw an #AI Bolt into each Nut welded inside... let 1/2" protrude out rearward [You are doing this to store the #AL Bolts for future use]... see Photo at right.



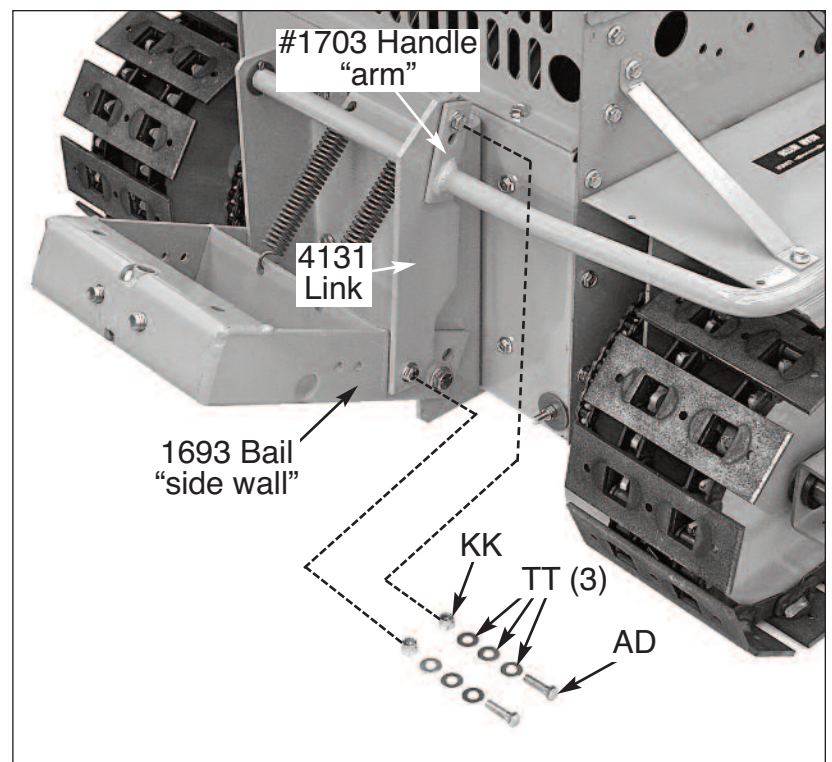
**STEP 5.** Per Photo at right, insert *end* of #1703 Handle into two (2) parallel 7/8" holes in *top* of #1680 Hitch Channel.

Secure *left end* of Handle with two (2) #1906 Cotter Pins on *left and right face* of Left Channel "side"... add #2579 Washers on either side of left Channel "side" to stop left to right movement... "clinch" both Cotter Pins.



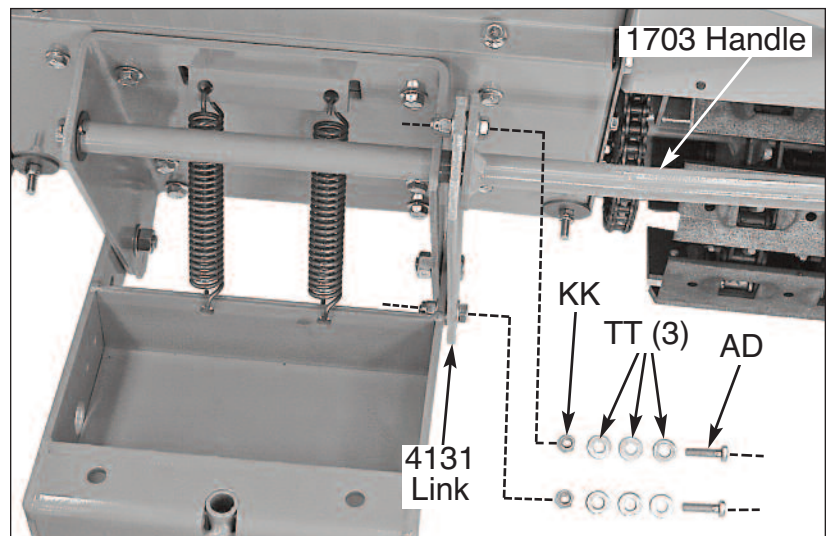
**STEP 6.** Slip #AD Bolt into #TT Washer and insert into *upper 3/8"* hole in *outside face* of "arm" of #1703 Handle. On reverse side, slip Bolt into second #TT Washer and then into top 3/8" hole of #4131 Link... secure with #KK Nut... leave loose.

In a similar manner, Slip second #AD Bolt into #TT Washer and then into *lower 3/8"* hole in *outside face* of #4131 Link. On reverse side, slip Bolt into second #TT Washer and then into the third 3/8" hole from the rear on *outside face* of "side wall" of #1693 Bail... see Photo at right... add third #TT Washer and secure with #KK Nut... leave loose.



Rotate #1703 Handle and tighten the two #KK Nuts [you installed above] so the rotary action is not *pinched*, but still is a "snug" fit. Check Photos above and near right!

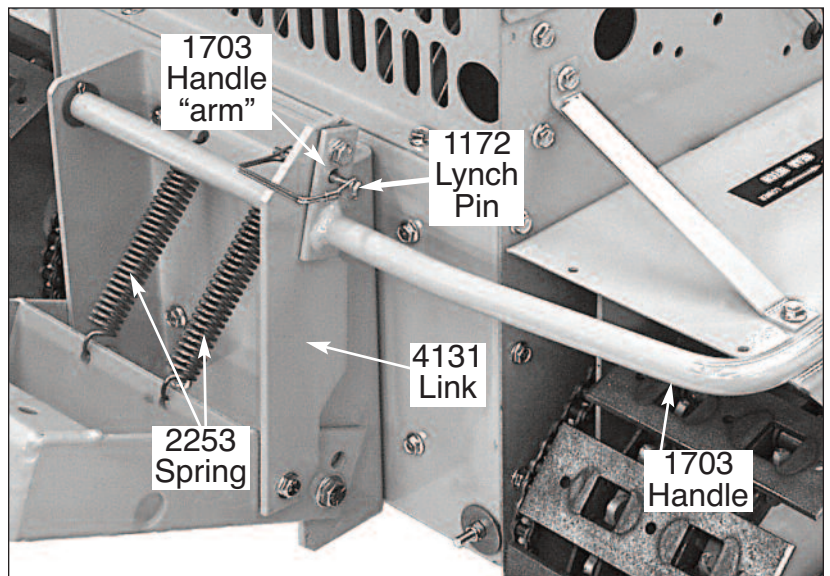
**NOTE:** Save your #126 Pin for securing future Attachments you wish to mount to your Rear Hitch.





**STEP 7.** With #1703 Handle rotated fully forward, insert “opened” #1172 Lynch Pin into aligned 3/8” hole in #1703 Handle “arm” and #4131 Link... close Lynch Pin... see Photo at right.

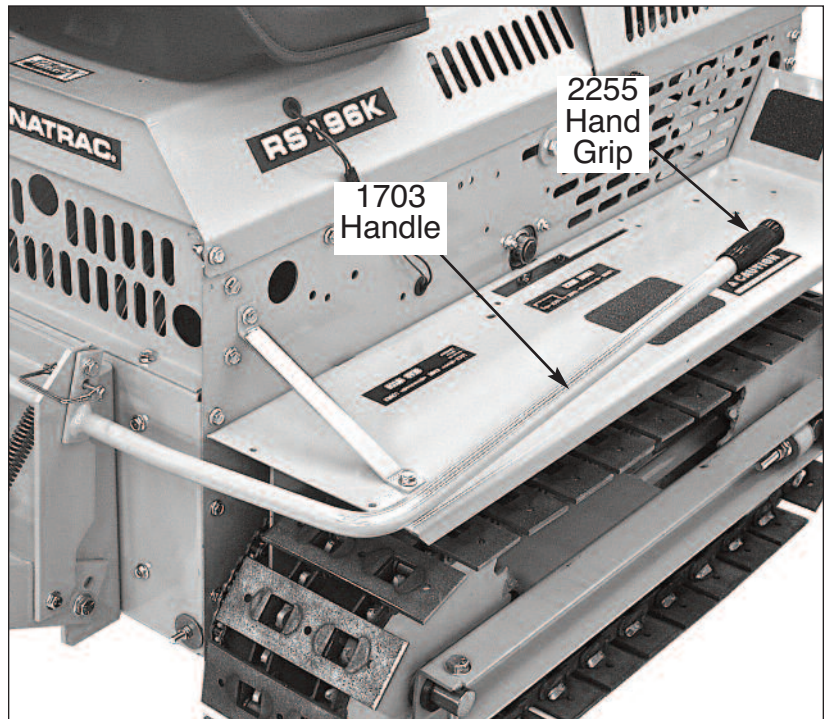
**NOTE:** #1172 Lynch Pin is used as a “safety device” to keep your Rear Hitch from falling during travel. When not needed, close Lynch Pin and slip it down length of #1703 Handle to store.



**STEP 8.** Using liquid soap, lightly “lubricate” the inside of your #2255 Hand Grip and slip it over forward end of #1703 Handle... slide it down as far as it will go.



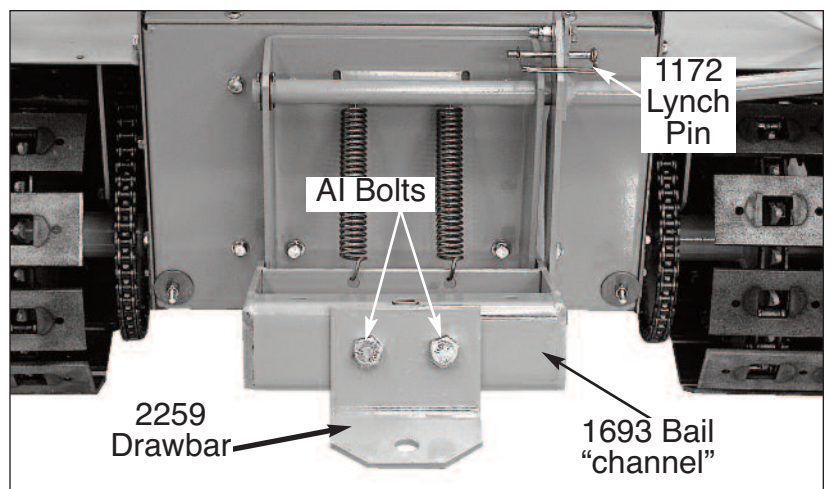
**CAUTION:** Be Aware that the #2253 Springs can force the #1703 Handle forward *rapidly* and *forcefully* if you don’t have the #1703 Handle under *full hand control* when it’s not “locked” with #1172 Lynch Pin.



**STEP 9.** Remove the two (2) #A1 Bolts installed in STEP 4 above.

Locate the two 5/8” holes in #2259 Drawbar with mating 5/8” holes in rear of #1693 Bale “channel”. Secure with two (2) #A1 Bolts removed above... tighten.

**NOTE:** For safety, you must have your #1172 Lynch Pin in place per instructions in “CAUTION” notice above.

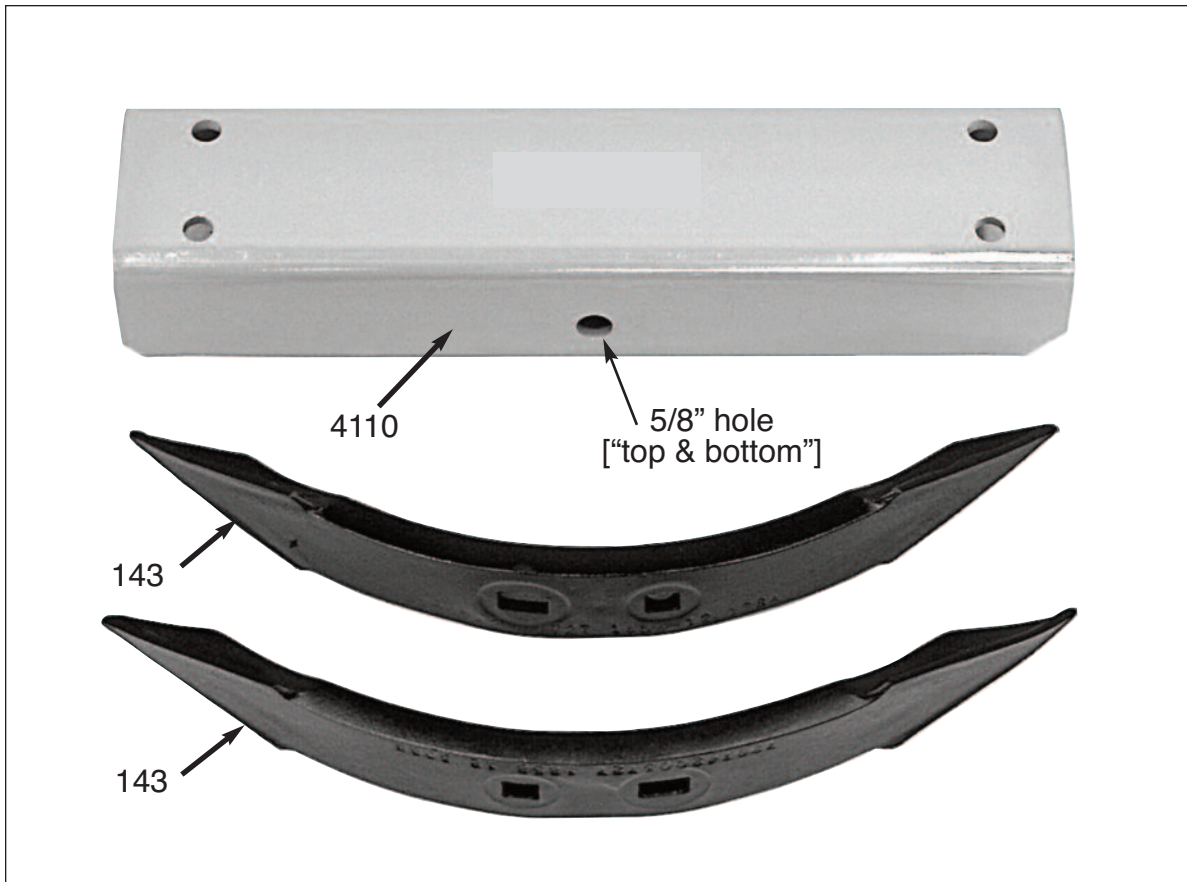


# Double Ripper Kit

## DR30

### Parts & Fastener List

000143	Chisel Tooth	(2)
004110	Ripper Channel	(1)
AJ	1/2-13x1-1/2 Spin Lock Bolt	(4)
AK	1/2-13 Spin Lock Nut	(4)



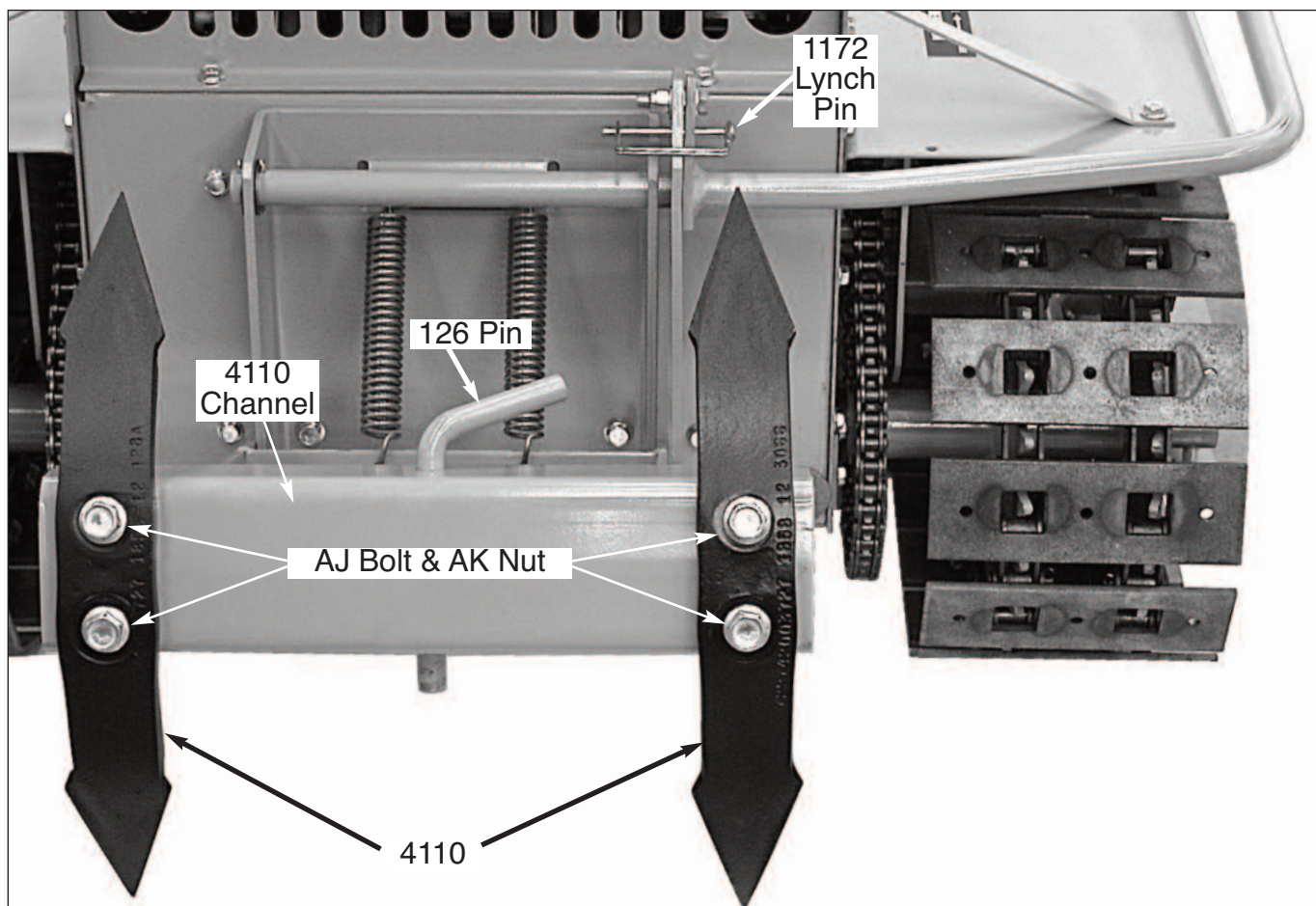
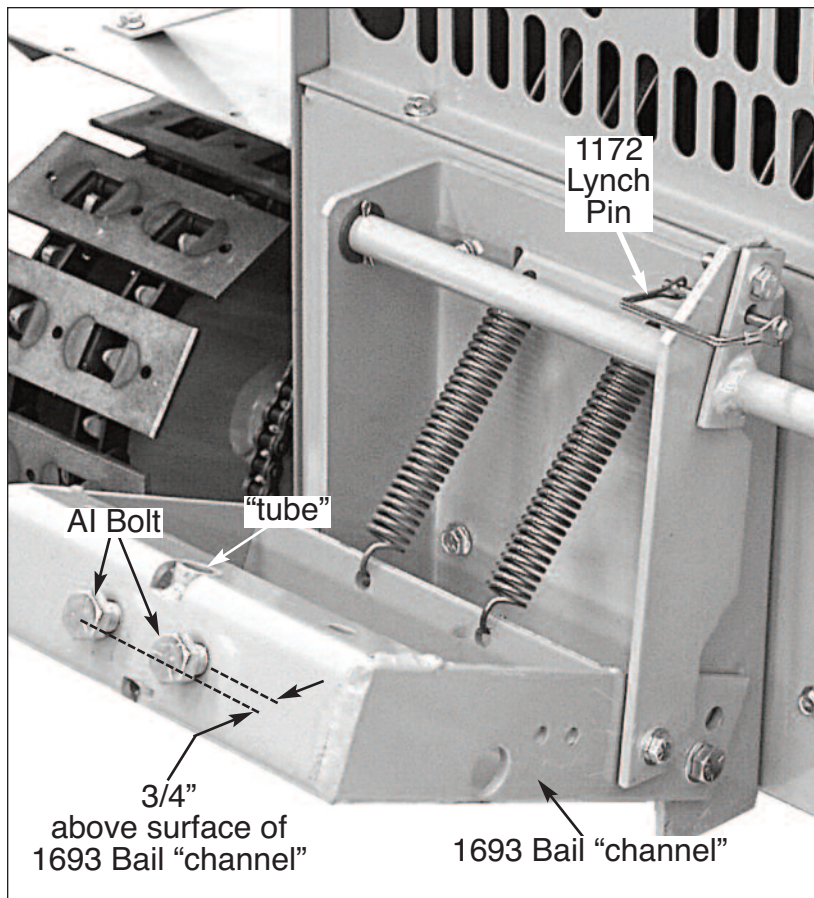


**STEP 1.** From *outside*, screw your two (2) #A1 Bolts into 5/8" Nuts welded inside #1693 Bail "channel"... leave approximately 3/4" of each Bolt exposed... see Photo at right.

**STEP 2.** Slip #4110 Channel around #1693 Bail "channel"... align 5/8" holes in #4110 Channel with mating "tube" in Bail "channel". Insert #126 Pin into this mating tube and 5/8" holes ... Adjust #A1 bolts to allow #126 Pin to slip in with reasonable ease... see Photo at right and below.

**STEP 3.** Mount and secure with AJ Bolts & AK Nuts a #143 Chisel Tooth at each end of #4110 Channel... tighten.

**NOTE:** For safety, It's strongly recommended to always have your #1172 Lynch Pin in place when traveling with your Rear Hitch.



# Drawbar Kit BD23

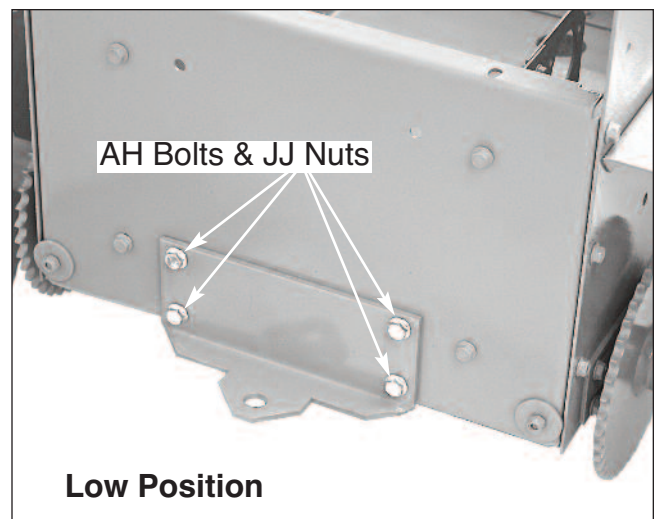
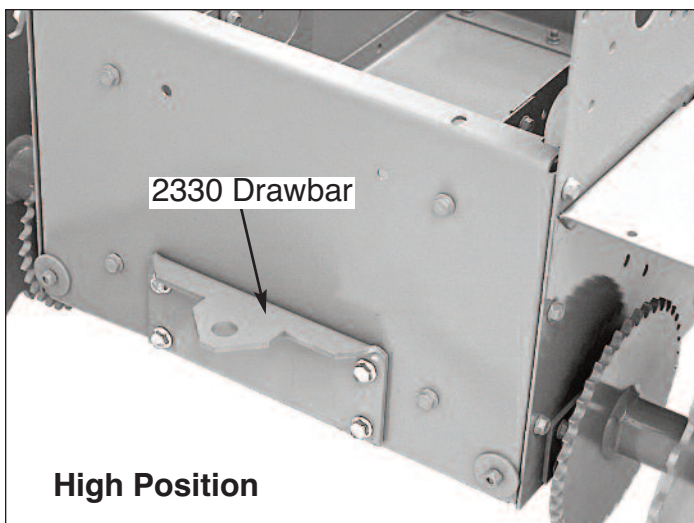
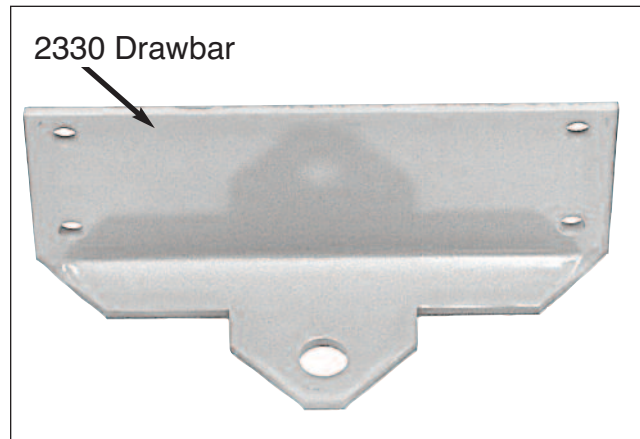
## Parts & Fastener List

002330	Drawbar	(1)
AH	3/8-16x1 Spin Lock Bolt	(4)
JJ	3/8-16 Spin Lock Nut	(4)

**NOTE:** depending on your use, the #2330 Drawbar is able to be mounted in a *low position* [5-1/2" above ground level] or a *high position* [9-1/2" above ground level].

**STEP 1.** Locate the pattern of Four (4) 3/8" holes in #2330 Drawbar with mating pattern of four (4) 3/8" holes in the *lower center rear* of Body.

**STEP 2.** From outside, insert #AH Bolts into the four *mating* 3/8" holes located above. Secure inside with #JJ Nuts... tighten... see Photos below.





# Grouser Track Shoe Kit

## TSO58

### Parts & Fastener List

001161sfp	Grouser Shoe	(58)
Q	5/16-18x3/4 Spin Lock Bolt	(174)
HH	5/16-18 Spin Lock Nut	(174)

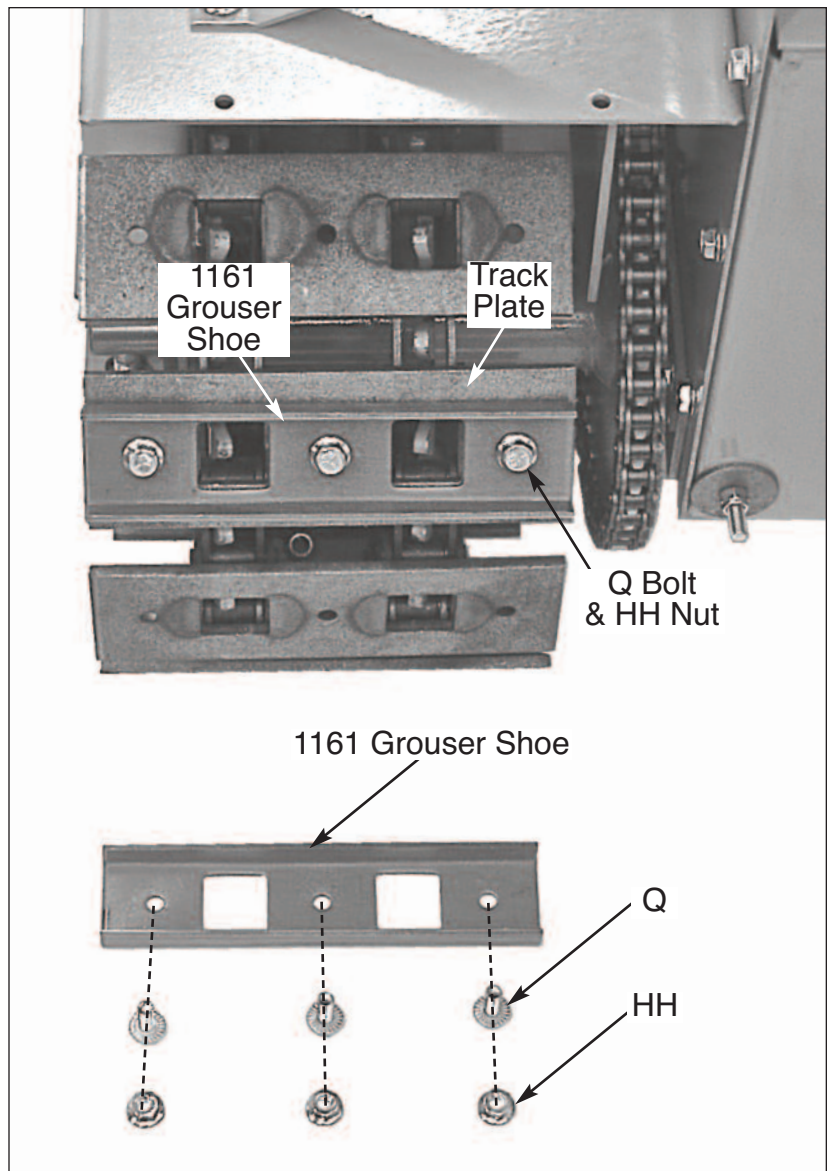
**NOTE:** To clarify the assembly procedure, the following Photos show the Grouser Track Shoe being installed on the *rear end* of the Track.

Actual assembly should be done on *top* of Track Plates where you can easily tighten Nuts from below.

**STEP 1.** Align the three (3) 3/8" holes in a #1161 Grouser over the *mat- ing* three (3) 3/8" holes in *mat- ing* Track Plate.

From above, insert a #Q Bolt into each pair of mated holes. From below Track Plate, secure each Bolt with a #HH Nut... tighten Nuts firmly.

**STEP 2.** Follow this procedure, moving Track periodically, until all 29 Shoes of each Track have been in- stalled... and firmly tightened.



# Rubber Track Shoe Kit

## RS58

### Parts & Fastener List

001641sfp	Channel	(58)
001642	Rubber Shoe	(58)
N	5/16-18x1 Carriage Bolt	(174)
HH	5/16-18 Spin Lock Nut	(174)

#### NOTE:

To clarify the assembly procedure, the following Photos show the Rubber Track Shoe being installed on the *rear end* of the Track.

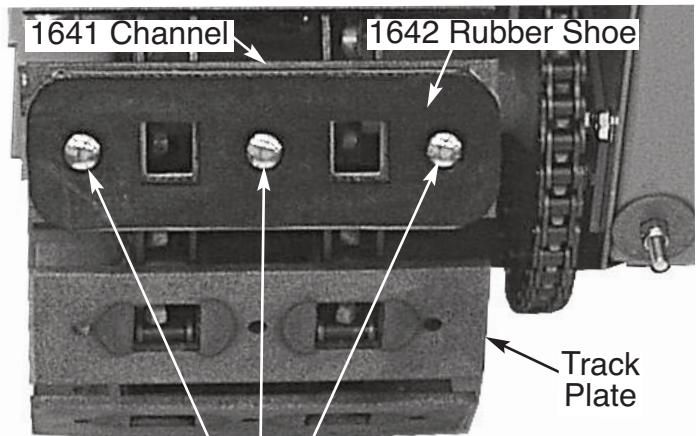
Actual assembly should be done on *top* of Track Plate where you can easily tighten Nuts from below.

**STEP 1.** Insert a #1642 Rubber Shoe *into* a #1641 Channel. Align the three (3) 3/8" holes in #1642 Rubber Shoe with *mating* three (3) 3/8" holes in #1641 Channel and then with the *mating* three (3) 3/8" holes in Track Plate.

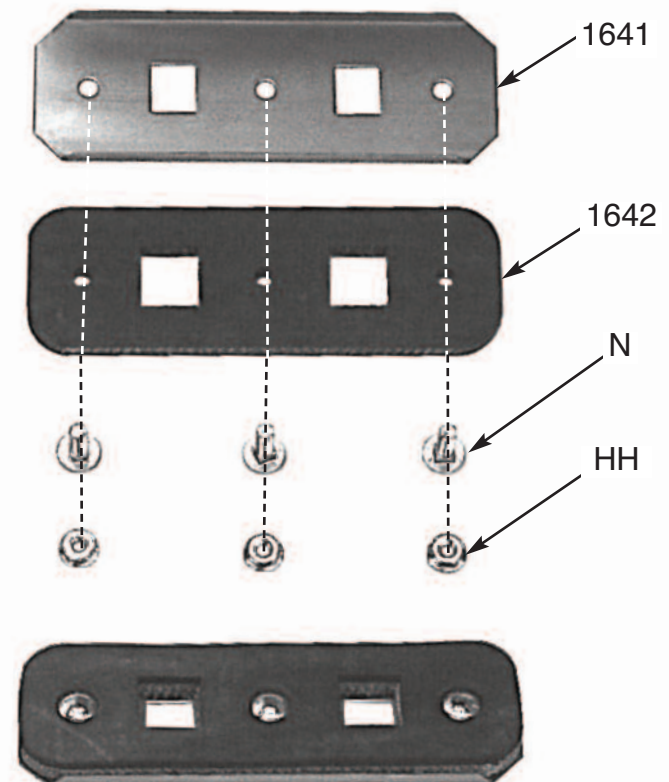
From above, insert a #N Bolt into each series of mated 3/8" holes. From below Track Plate, secure each Bolt with a #HH Nut.

**NOTE:** Tighten each #N Bolt until its "head" is drawn *below* surface of *outer face* of #1642 Rubber Shoe.

**STEP 2.** Follow this procedure, moving Track periodically, until all 29 Rubber Shoes and Channels of each Track have been installed and firmly tightened.



"Head" of #N Bolts *pulled below* surface of #1642 Rubber Shoe.



Sample after tightening Bolts



# Hitch Adapter Kit HA14

## Parts & Fastener List

001750

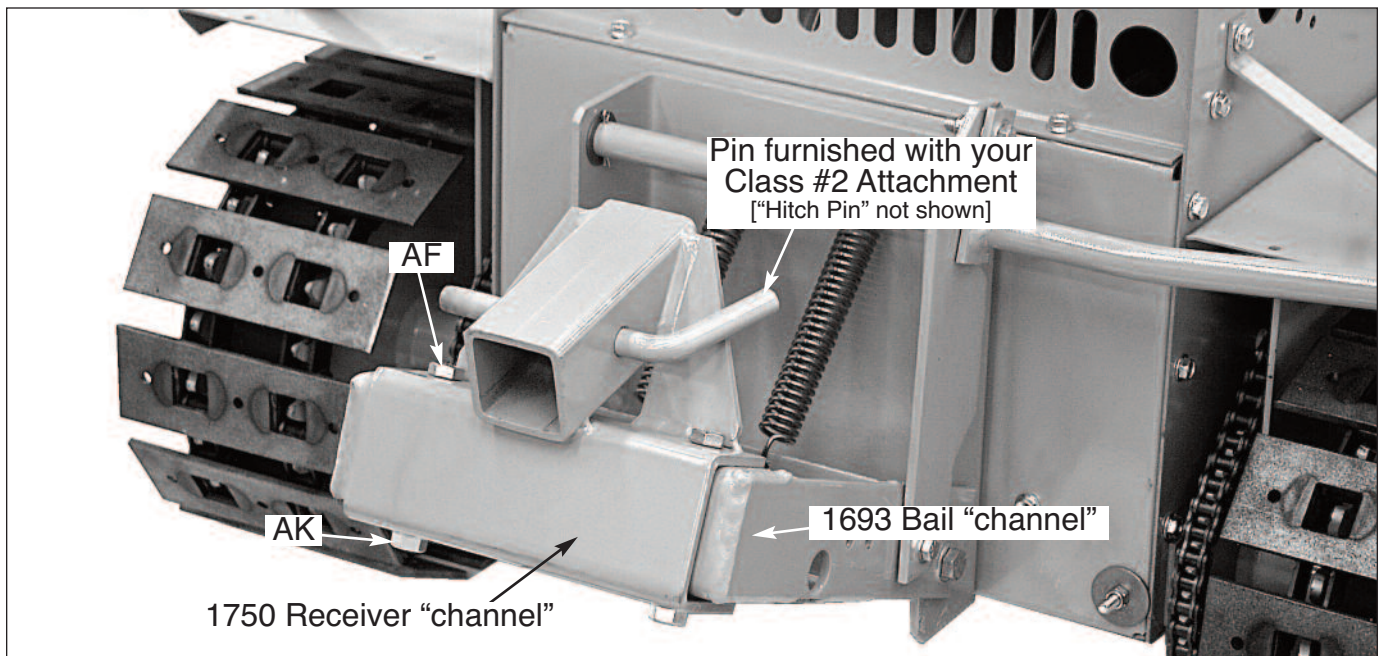
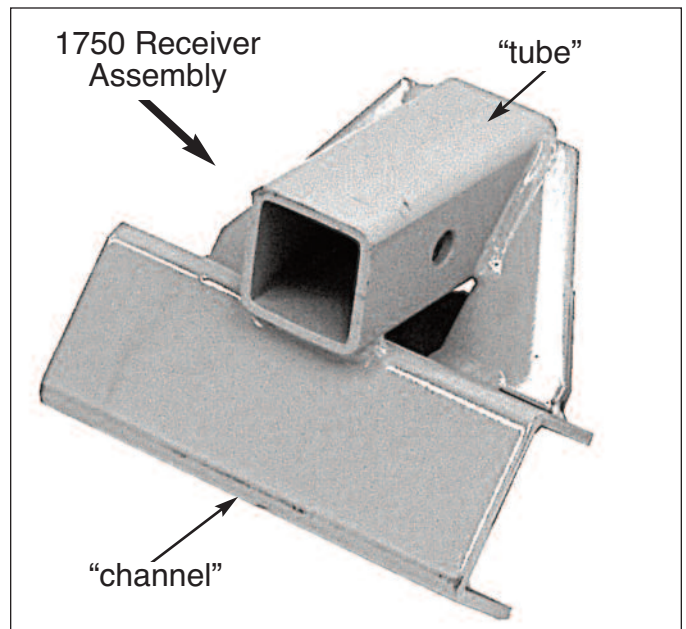
Receiver Assembly [Class #2 opening] (1)

**NOTE:** AF Bolts and AK Nuts described and shown below are provided with your MRH35 Manual Rear Hitch Kit.

**STEP 1.** Slip “channel” portion of #1750 Receiver Assembly around mating “channel” of #1693 Bail... align mating 1/2” holes... see Photo at right and below.

**STEP 2.** From above, insert #AF Bolt into each set of mating 1/2” holes... secure below with #AK Nuts... tighten... see Photo below.

**NOTE:** After mounting your Class #2 Attachment to the “tube” of your #1750 Receiver, use the “Pin” that comes with the Attachment to secure it... “lock” the Pin with the “Hitch Pin” also furnished with your Class #2 Attachment.



# Log Crane Adaptor/Drawbar Kit LCA9

## Parts & Fastener List

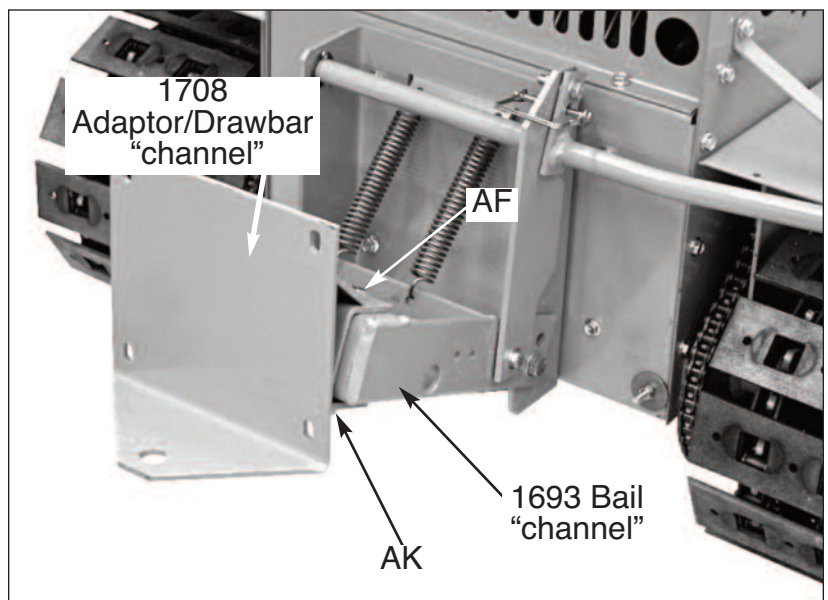
001708 Adaptor, Drawbar (1)

### NOTE:

1. AF Bolts and AK Nuts described and shown below are provided with your MRH35 Manual Rear Hitch Kit.
2. AH Bolts and JJ Nuts described and shown below are provided with the LW228 Kit.

**STEP 1.** Slip “channel” portion of #1708 Adaptor/Drawbar around mating “channel” of #1693 Bail... align mating 1/2” holes... see Photo at right.

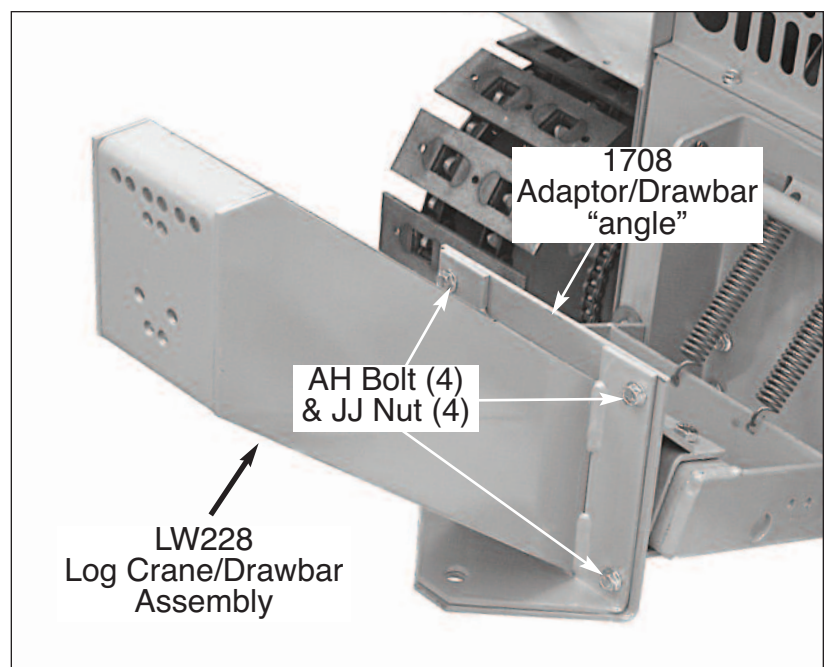
**STEP 2.** From above, insert #AF Bolt into both sets of mating 1/2” holes... secure below with #AK Nuts... tighten... see Photo at right.



### Attaching optional #LW228 Log Crane/Drawbar Assembly

**STEP 1.** Align the pattern of four (4) 3/8” holes in #LW228 Log Crane/Drawbar Assembly with mating 3/8” slots in #1708 Adaptor/Drawbar assembly.

**STEP 2.** Secure with four (4) AH Bolts and JJ Nuts [furnished with your LW228 Kit]... tighten... see Photo at right.

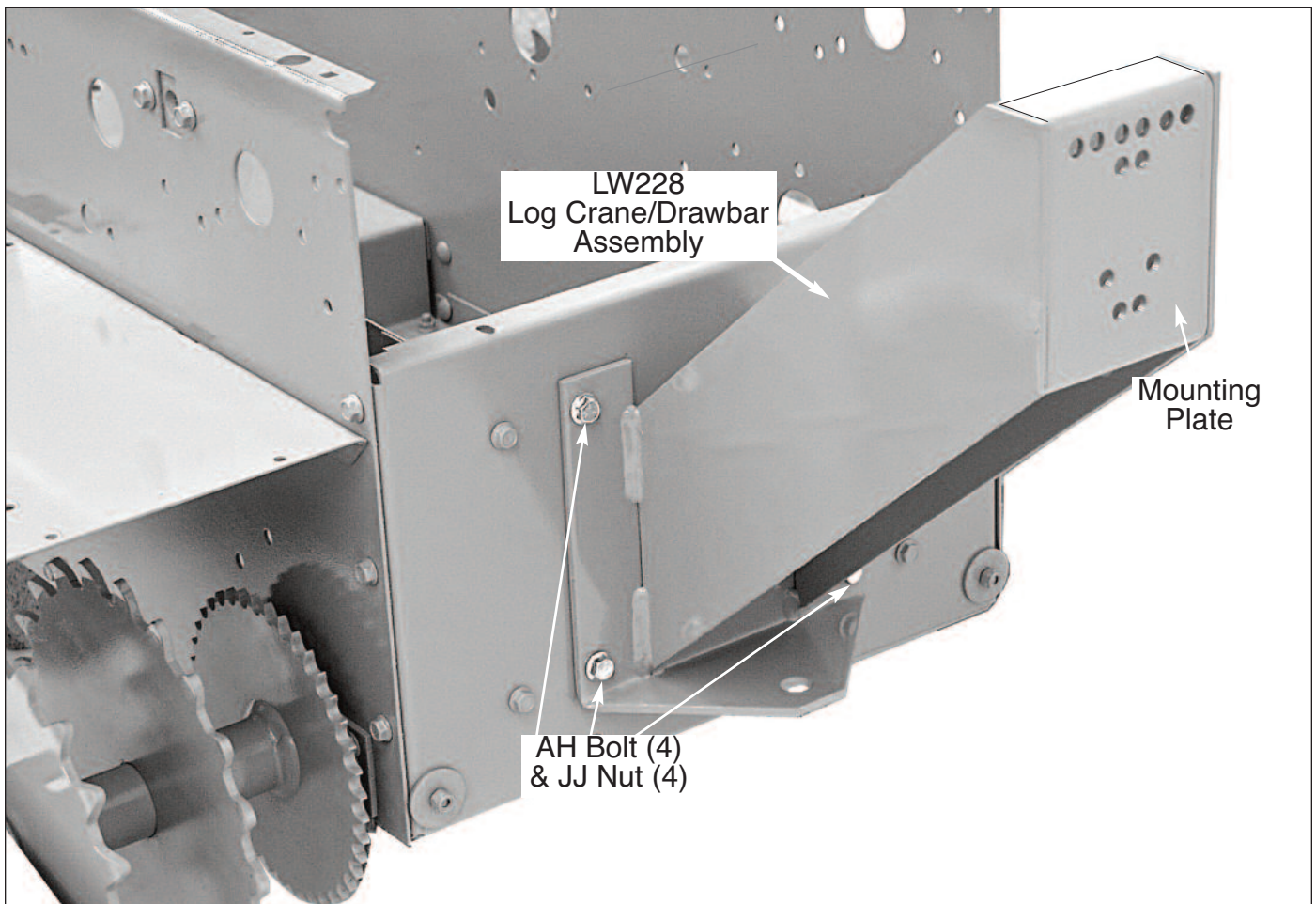




# Log Crane/Drawbar Kit LW228

## Parts & Fastener List

002270	Crane Assembly	(1)
AH	3/8-16x1 Spin Lock Bolt	(4)
AJ	3/8-16 Spin Lock Nut	(4)



**STEP 1.** Align the pattern of four (4) 3/8" holes in #LW228 Log Crane/Drawbar Assembly with mating 3/8" holes in rear of Body.

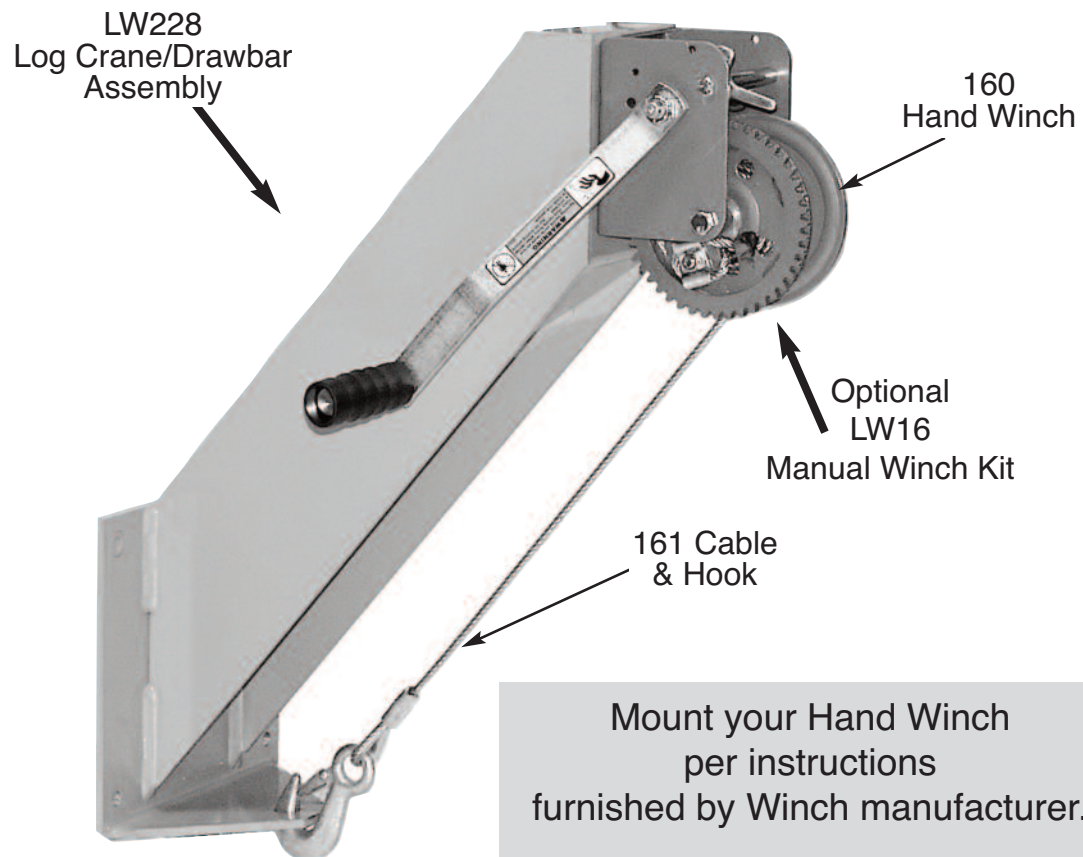
**STEP 2.** Secure *outside* with four (4) AH Bolts and inside Body with four (4) AJ Nuts... tighten... see Photo above.

**NOTE:** Hole pattern on Crane's Mounting Plate will fit our LW16 Manual Winch and many other popular Winches.

# Manual Winch Kit LW16

## Parts & Fastener List

000160	Hand Winch	(1)
000161	Cable & Hook	(1)
AH	3/8-16x1 Spin Lock Bolt	(4)
AJ	3/8-16 Spin Lock Nut	(4)



**NOTE:** If you are mounting an Electric Winch to your LW228 Log Crane/Drawbar Assembly, use the instructions and components furnished by the manufacturer of your Electric Winch. Customer is responsible for all mounting and electrical power per instructions of Electric Winch manufacturer.

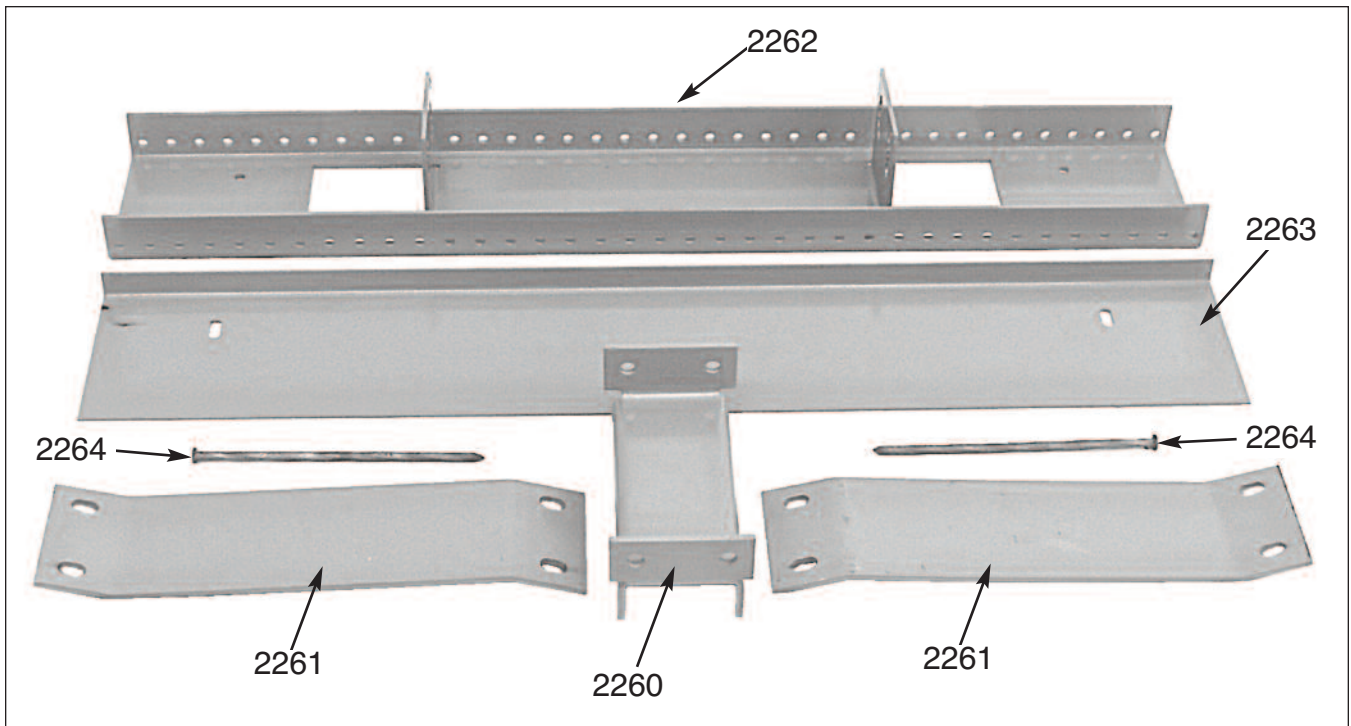


# Rake Kit

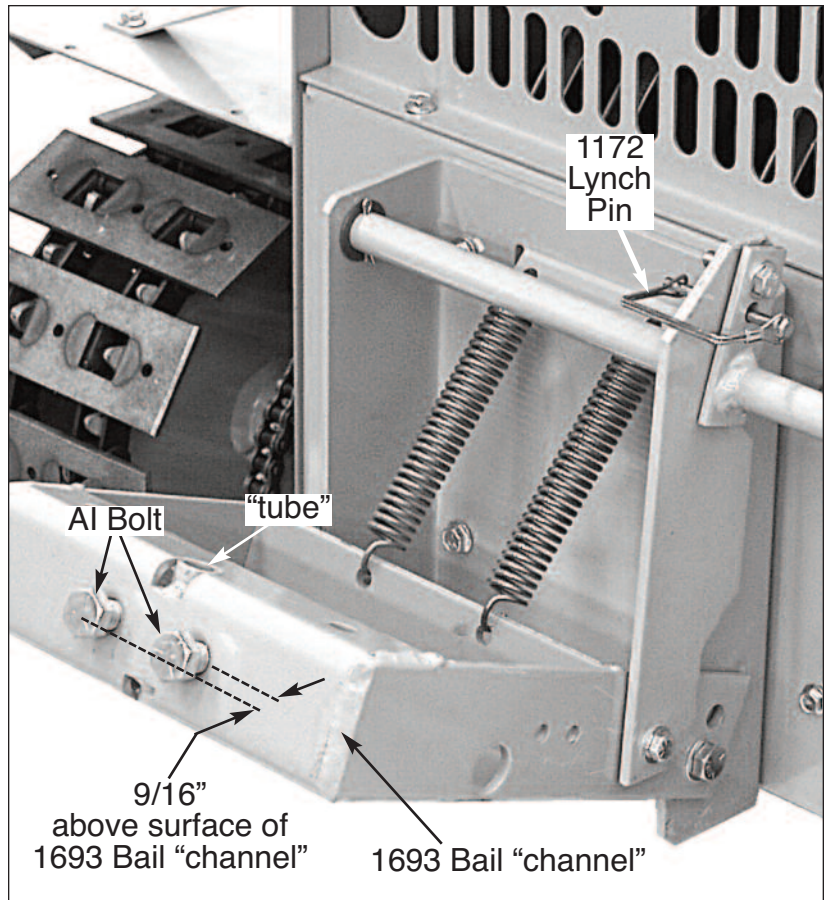
## RK26

### Parts & Fastener List

002260	Yoke	(1)
002261	Arm	(2)
002262	Channel	(1)
002263	Angle	(1)
002264	Spikes	(40)
JJ	3/8-16 Spin Lock Nut	(2)
MM	1/2-13 Spin Lock Nut	(8)
AH	3/8-16x1 Spin Lock Bolt	(2)
AN	1/2-13x1 Spin Lock Bolt	(8)

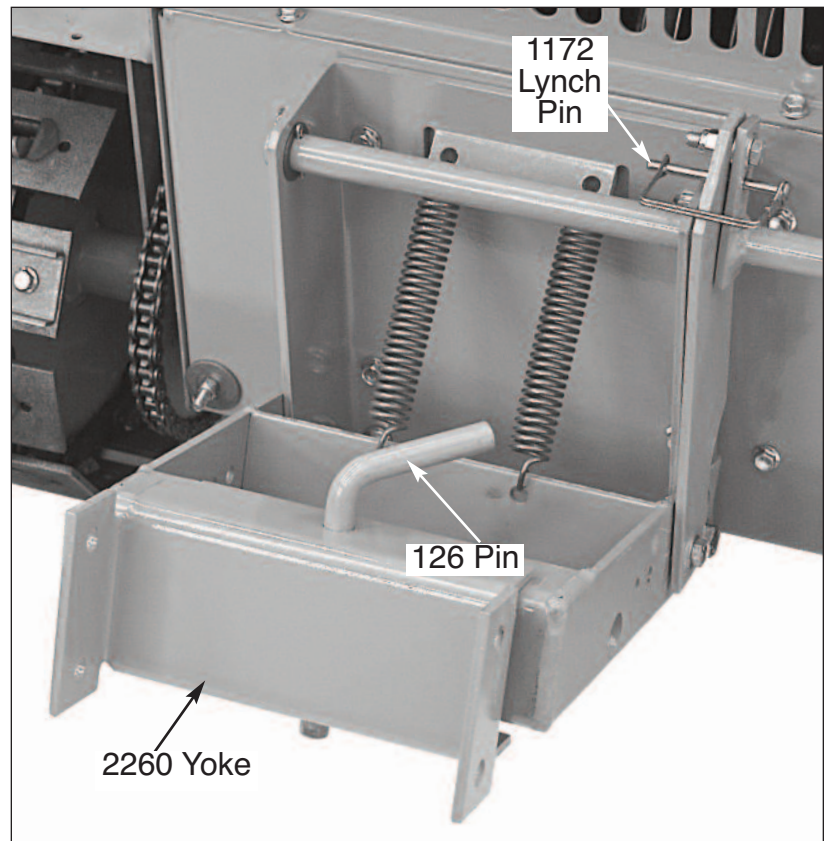


**STEP 1.** From *outside*, screw your two (2) #A1 Bolts into 5/8” Nuts welded inside #1693 Bail “channel”... leave approximately 9/16” of each Bolt exposed... see Photo at right.



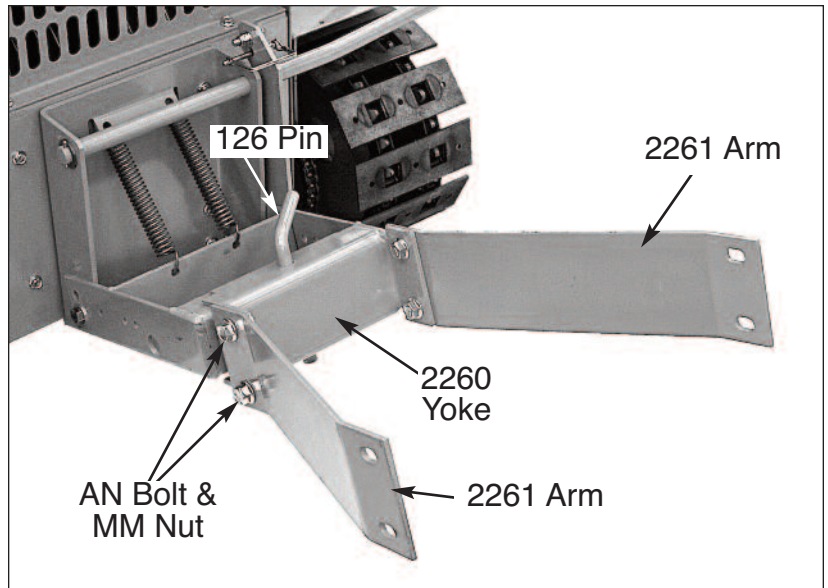
**STEP 2.** Slip #2260 Yoke around #1693 Bail “channel”... align 5/8” holes in #4110 Channel with mating “tube” in Bail “channel”. Insert #126 Pin into this mating tube and 5/8” holes .... Adjust #A1 bolts to allow #126 Pin to slip in with reasonable ease... see Photo at right and below.

**NOTE:** For safety, It’s strongly recommended to always have your #1172 Lynch Pin in place when traveling with your Rear Hitch.





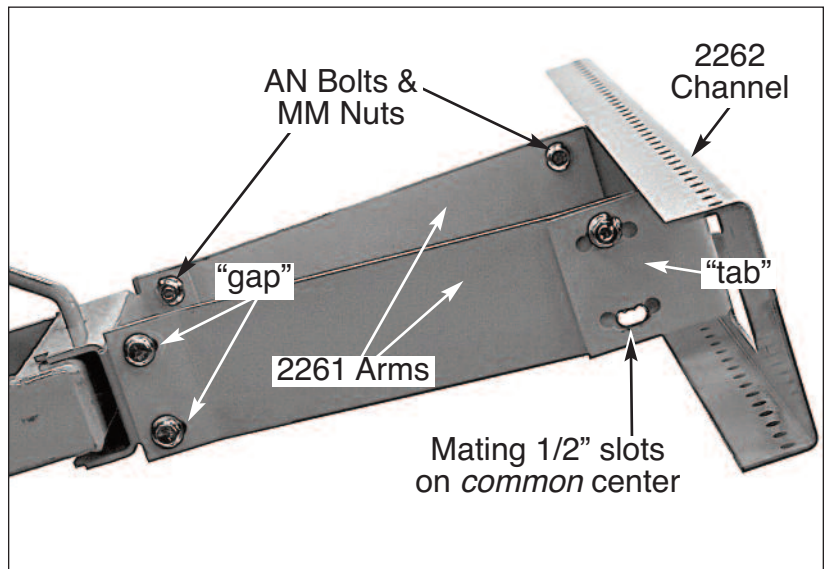
**STEP 3.** Mount and secure with AN Bolts & MM Nuts a #2261 Arm on *outside face* of each ear of #2260 Yoke... leave Nuts loose.



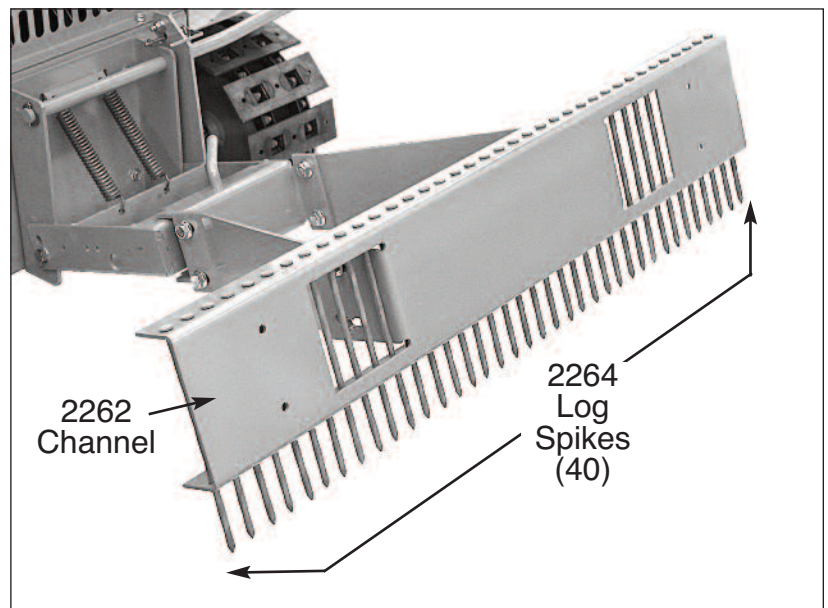
**STEP 4.** Slip each “tab” of #2262 Channel *around* the mating *outside face* of each #2261 Arm. On each side, align *short slot* of the #2261 Arms with mating *circular slot* on “tabs” of #2262 Channel.

From outside, insert #AN Bolts into each of the eight (8) aligned pairs of 1/2” slots... secure inside with #MM Nuts.

**STEP 5.** Square your assembly so that it’s “top edges” are basically all in the same “plane”... then tighten all eight (8) #MM Nuts.



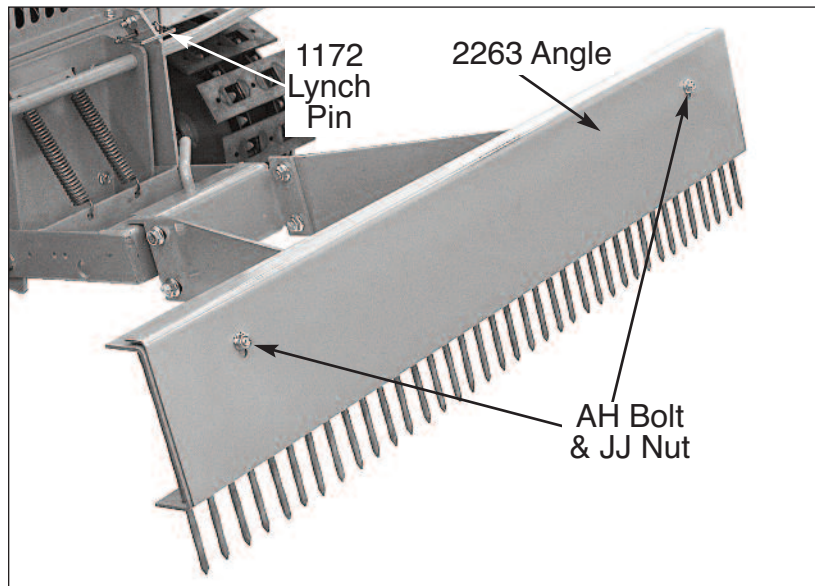
**STEP 6.** Insert forty (40) #2264 Log Spikes into holes provided in #2262 Channel... use Photo at right as your guide.



**STEP 7.** Cover rear of your “rake assembly” with #2263 Angle.

Align two (2) 3/8” slots in #2263 Angle with mating *top* two 3/8” holes in #2262 Channel. Secure with #AH Bolts and #JJ Nuts... tighten... see Photo at right.

**NOTE:** All the “bolt connections” of your Rake Kit are done utilizing “slots”. This feature allows you to loosen specific Bolts and “re-angle” your Rake to better conform to the ground conditions you are raking.

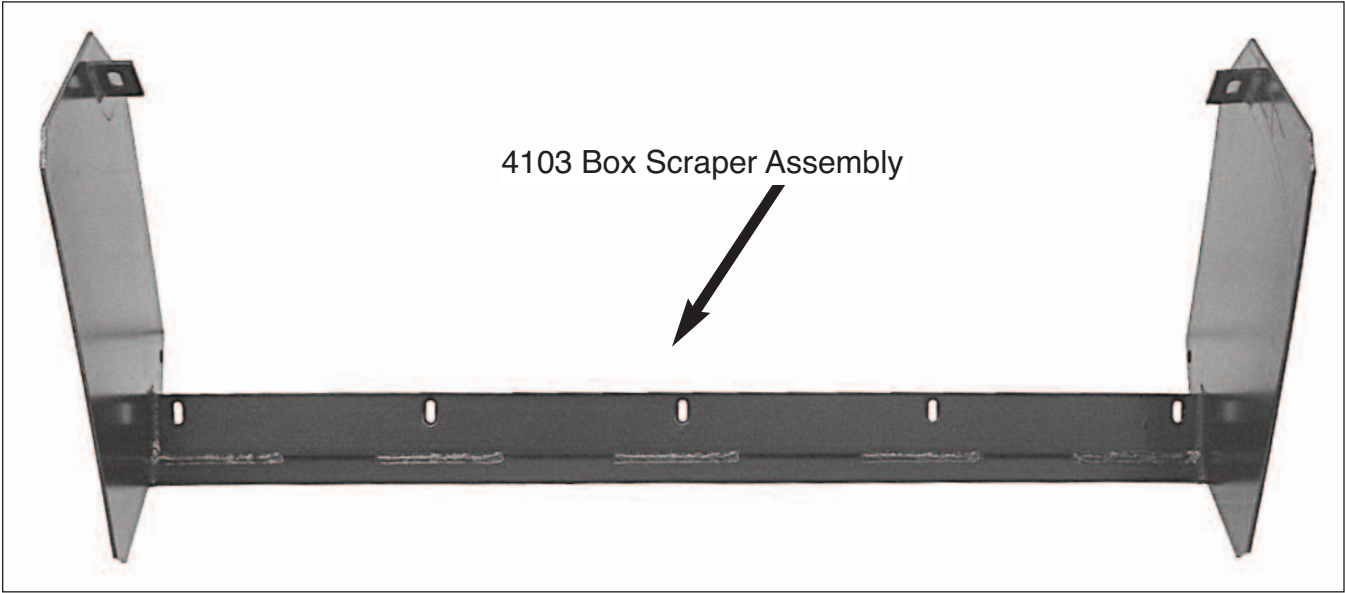




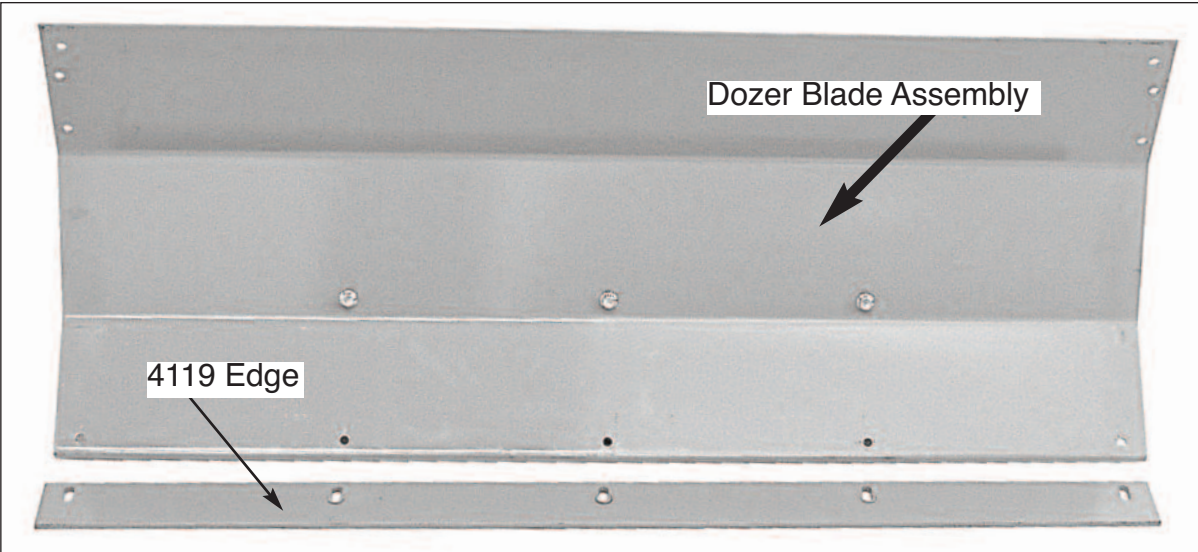
# Box Scraper Kit BS40

## Parts & Fastener List

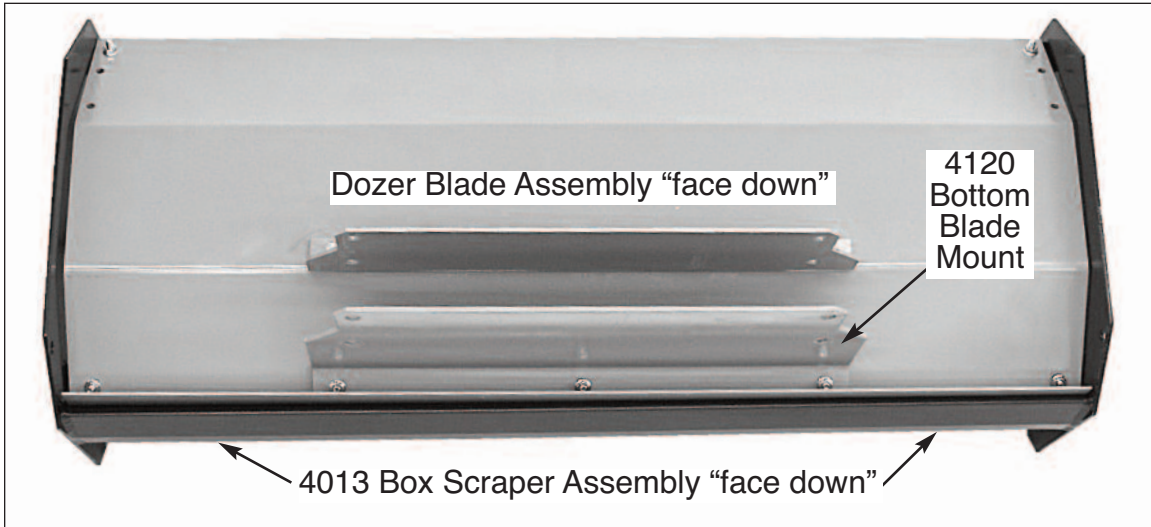
004103	Box Scraper Assembly	(1)
R	5/16-18x1 Spin Lock Bolt	(2)
HH	5/16-18 Spin Lock Nut	(2)



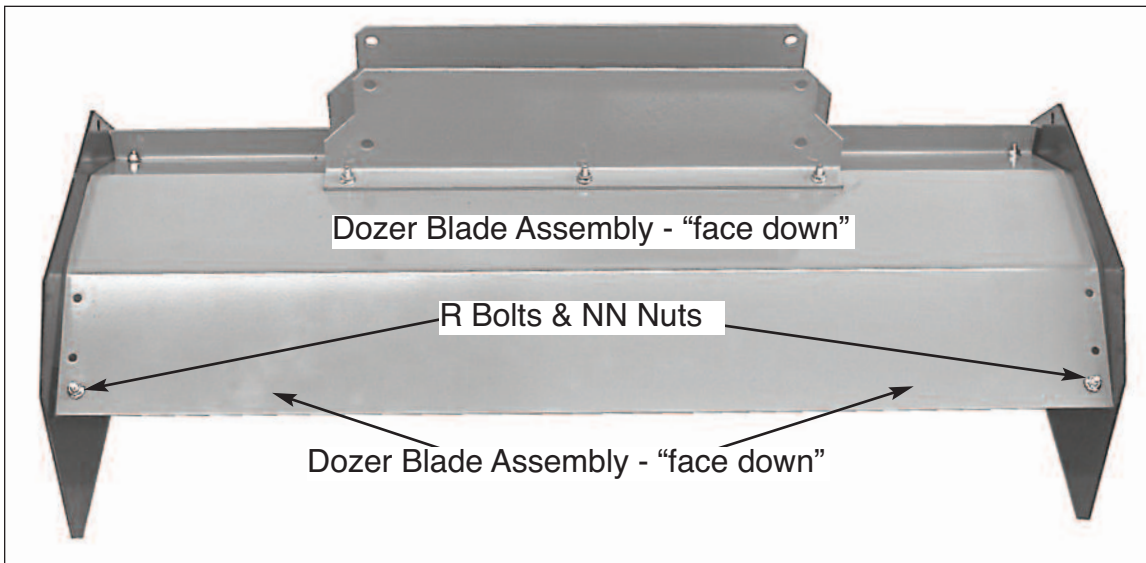
**STEP 1.** Remove #4119 Edge from Dozer Blade Assembly... save #4120 Bottom Blade Mount, #R Bolts and HH Nuts for reassembly later... see Photo below and next page.



**STEP 2.** Turn #4103 Box Scraper Assembly “face down”. Lower Dozer Blade Assembly “face down” into the Box Scraper Assembly... align five (5) 3/8” slots in “lower edge” of Box Scraper Assembly with mating five (5) 3/8” holes in “lower edge” of Dozer Blade Assembly. From *front face* of Blade, insert original five (5) #R Bolts into aligned holes & slots.

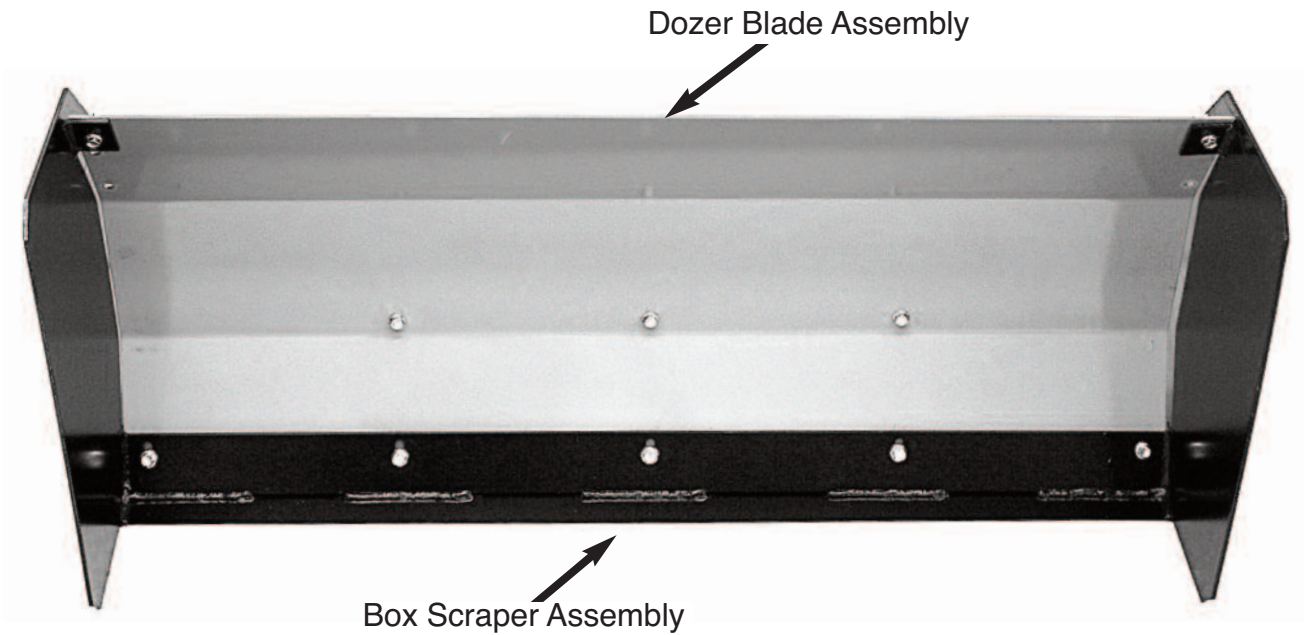


**STEP 3.** Replace #4120 Bottom Blade Mount by slipping its three (3) 3/8” holes onto the three (3) protruding Bolts in *center* of Dozer Blade Assembly... Secure all five (5) #R Bolts in lower edge of Blade Assembly with #HH Nuts... finger tight... see Photo above.



**STEP 4.** Align 3/8” holes in *top right & left* corners of Dozer Blade Assembly with mating 3/8” slots in *top right & left* corners of Box Scraper Assembly. Insert #R Bolts into aligned 3/8” holes & slots and secure with #NN Nuts. Tighten all seven (7) #HH Nuts installed in this “assembly”... see Photo next page.





Dozer Blade Assembly

Box Scraper Assembly

# Hydro Front Hitch Kit

## HFH15

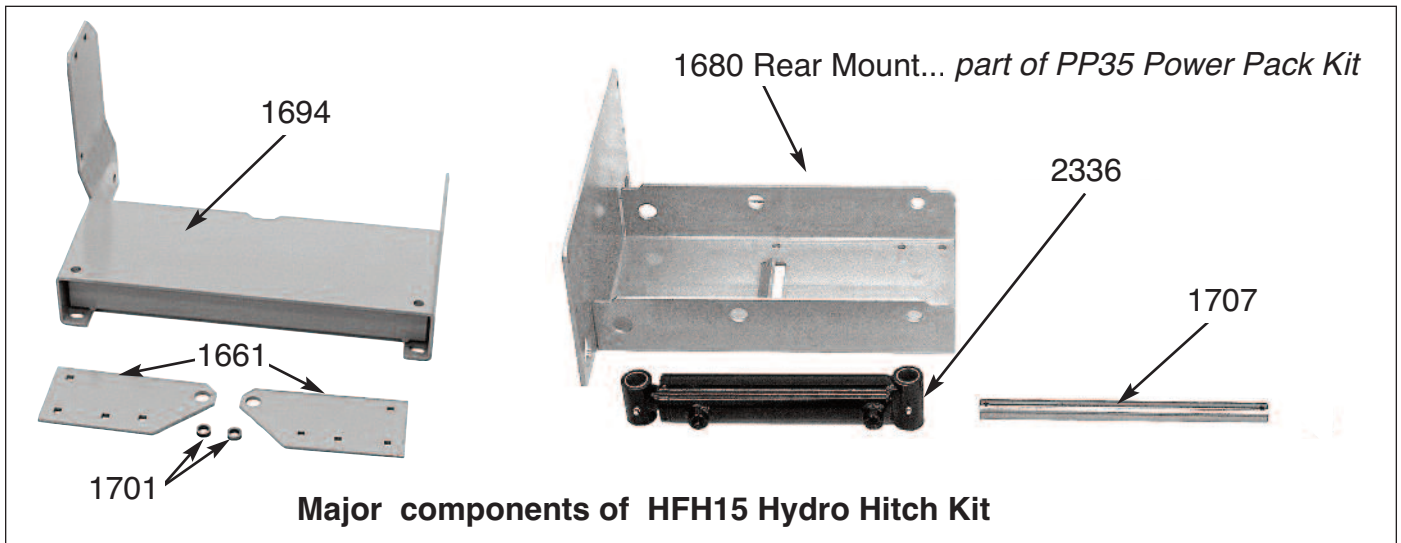
To properly install your *HFH15 Hydraulic Front Hitch Kit*, begin by completing **STEPS 1 thru 4** below. When completed, go to your *PP35 Power Pack Kit* for instructions for proper installation of the #2336 Cylinder, Hoses, etc.

### Parts & Fastener List

000054	Fitting	(2)
000069	Coated Clip	(4)
000244	Spring Pin 1/4x1	(3)
000676	Fitting 879-FS-06	(2)
000716	Washer 1 ID	(30)
001489	Zerk, 90 deg.	(1)
001661	Plate <i>[shipped mounted to RS1000]</i>	(2)
001664	Cylinder Mount	(1)
001694	Front Hitch	(1)
001701sfp	Bushing, 1/2IDx3/4OD	(2)
001707sfp	Rod 1 dia.	(1)
001736	Hose, 105"	(1)
001737	Hose, 94-1/2"	(1)
001739XX	Edging	(1)
002005sfp	Washer	(4)
002336XX	Cylinder	(1)
AE	1/2-13x1-1/4 Bolt	(2)
AF	1/2-13x4-1/2 Bolt	(2)
G	1/4-20x1-1/2 Carriage Bolt	(1)
HH	5/16-18 Spin Lock Nut <i>[shipped mounted to RS1000]</i>	(8)
II	1/2-13 Dot Lock Nut	(2)
M	5/16-18x3/4 Carriage Bolt <i>[shipped mounted to RS1000]</i>	(8)
MM	1/2-13 Spin Lock Nut	(2)
NN	1/4-20 Spin Lock Nut	(1)
R	5/16-18x1 Spin Lock Bolt	(6)
VV	1/2 Flat Washer	(4)

See next page for Photo of major components of HFH15 Hydro Front Hitch Kit

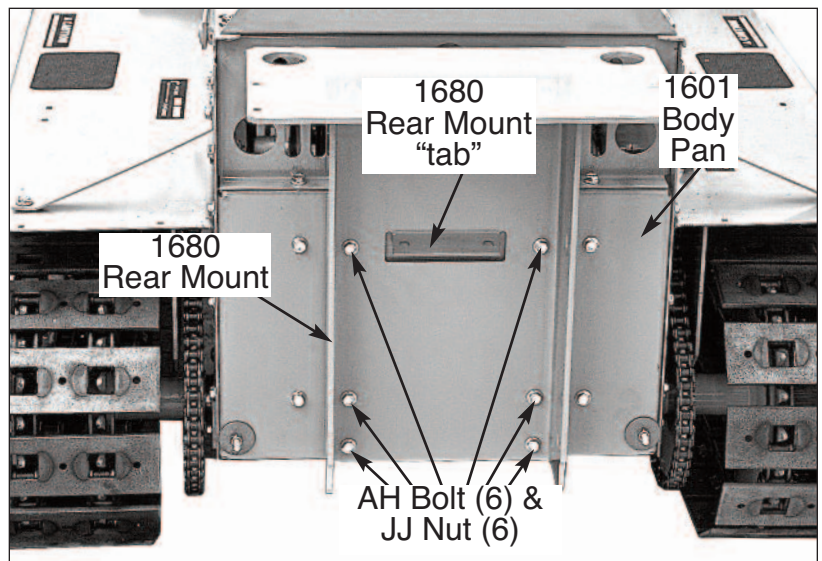




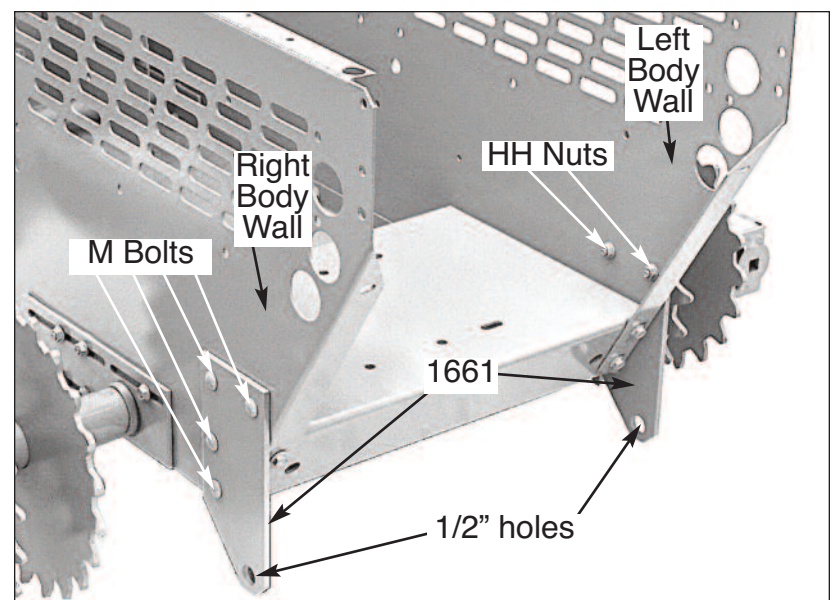
**NOTE:** The following STEPS 1 & 2 [below] may have been completed at the Factory, if so continue by going to STEP 3 below.

**STEP 1.** Align the six (6) 3/8" Holes in #1680 Rear Mount with mating six (6) 3/8" Holes in rear surface of #1601 Body Pan.

From *outside*, insert a #AH Bolt into each of the six 3/8" holes aligned above. *Inside* Body, secure Bolts with #JJ Nuts... tighten... see Photo at right



**STEP 2.** Using M Bolts, mount a #1661 Plate to the *lower front outside corner* of the Right and Left Body Walls. Secure inside Body with HH Nuts... tighten... see Photo at upper right.

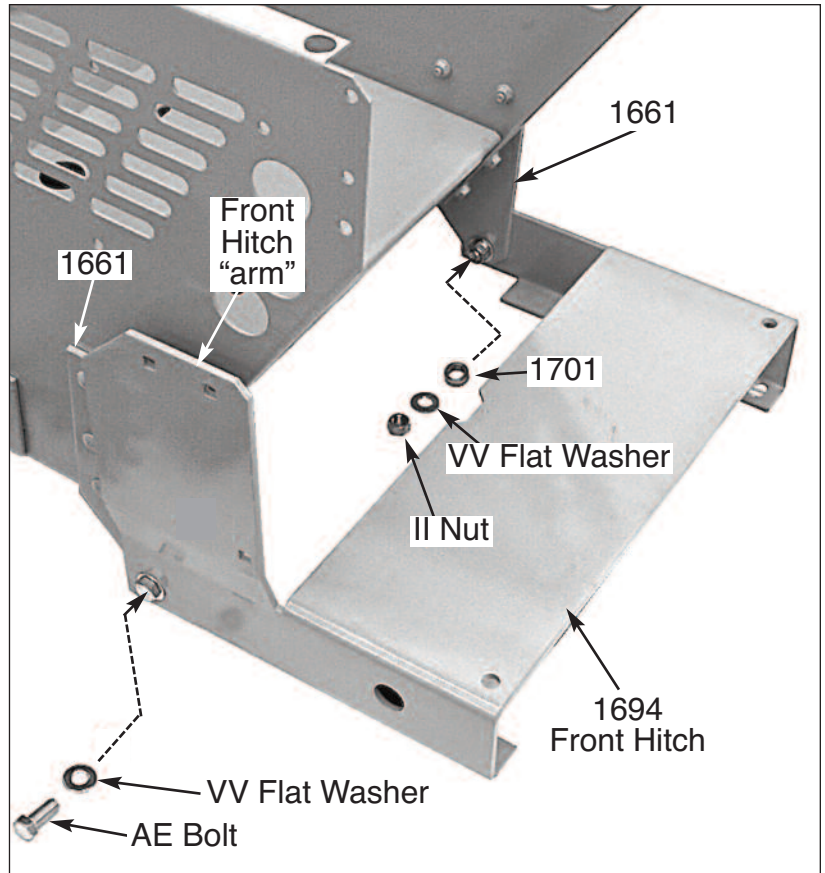


**STEP 3.** Align 5/8" holes in *left & right* #1661 Plates with mating 1/2" holes in *lower rear* of #1694 Front Hitch.

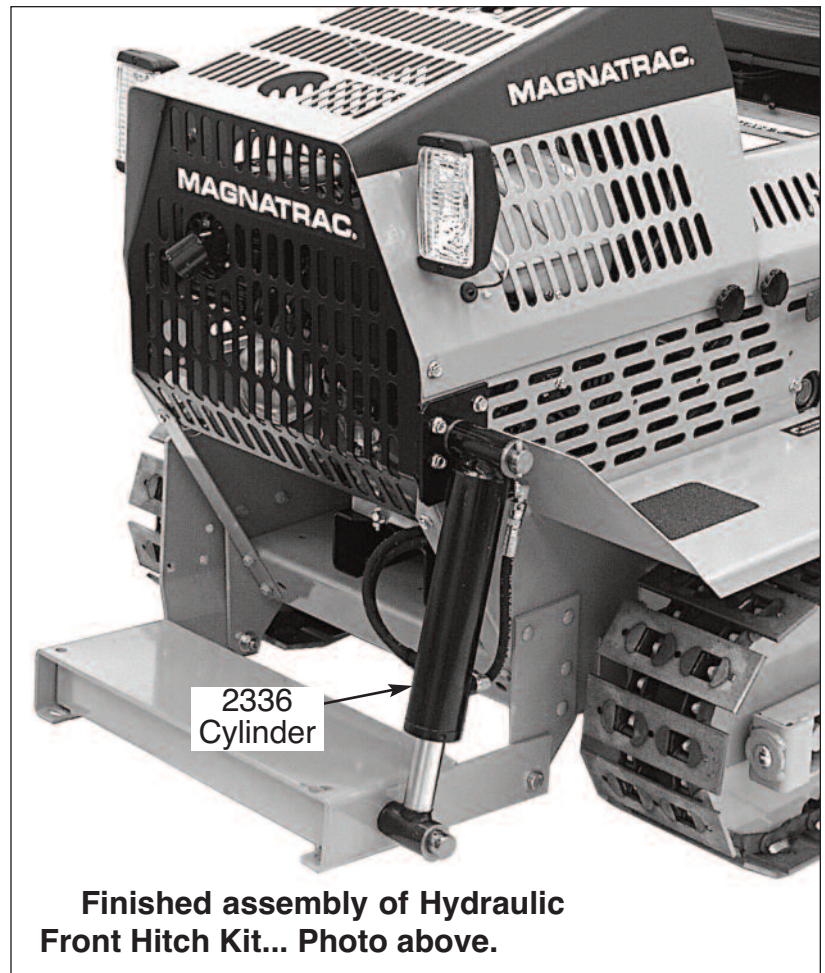
On each side, insert an #AE Bolt into #VV Washer and then into its aligned 1/2" and 5/8" holes on left & right.

**STEP 4.** Inside, slip a #1701 Bushing over end of *each* #AE Bolt... Bushing goes inside 1/2" holes of #1661 Plates.

Secure inside on each side with #VV Washer and #II Nut...fully tighten both Nuts... see Photo at right.



**STEP 5.** Follow your **PP35 Power Pack Kit** for remaining instructions for proper installation of the #2336 Cylinder, Hoses, etc.



**Finished assembly of Hydraulic Front Hitch Kit... Photo above.**



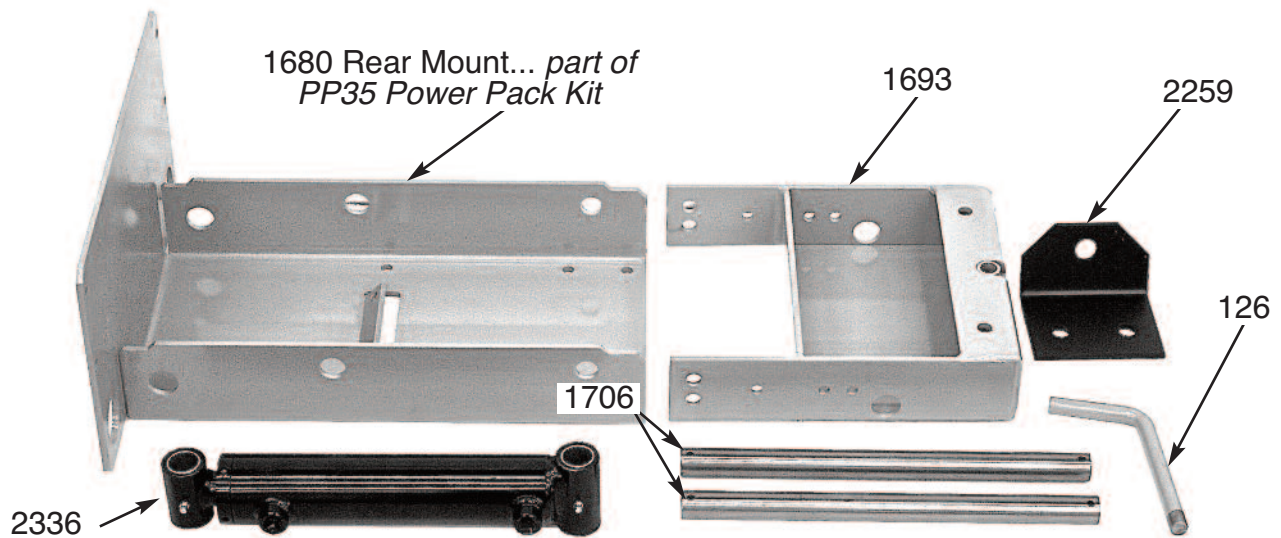
# Hydro Rear Hitch Kit

## HRH35

To properly install your *HRH Hydraulic Rear Hitch Kit*, begin by completing **STEPS 1 thru 5** below. When completed, go to your *PP35 Power Pack Kit* for instructions for proper installation of the #2336 Cylinder, Hoses, etc.

### Parts & Fastener List

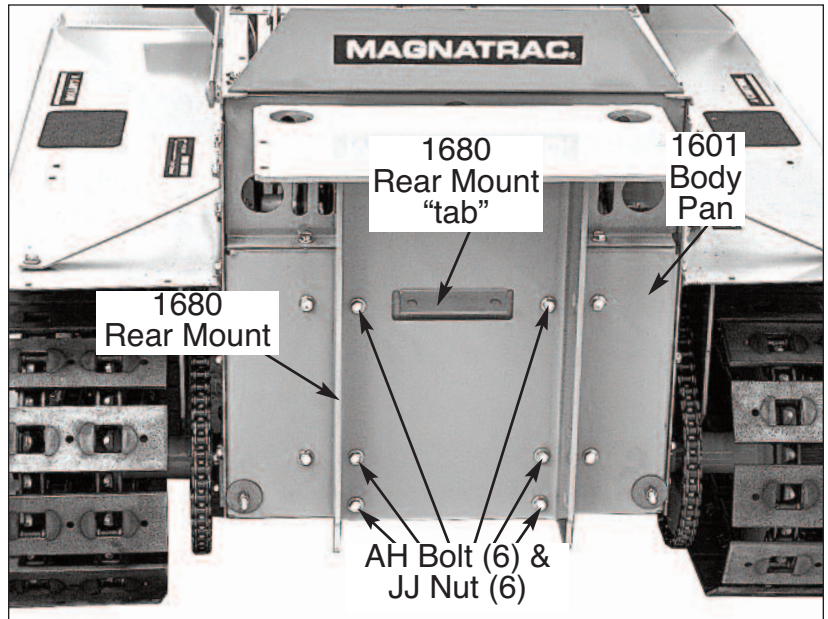
000054	Fitting	(2)		
000126	Pin, attachment	(1)		
000244	Spring Pin 1/4x1	(4)		
000676	Fitting 879-FS-06	(2)		
000716	Washer 1 ID	(30)		
000793	Tie, plastic, standard	(2)		
001489	Zerk, 90 deg.	(1)		
001693	Bail	(1)		
001701sfp	Bushing, 1/2IDx3/4OD	(2)		
001706sfp	Shaft	(2)		
001731	Hose, 1/4, 31	(1)		
001732	Hose, 1/4, 33-1/2	(1)		
002259	Drawbar	(1)		
002336XX	Cylinder	(1)		
AD	3/8-16x1-1/2 Bolt	(2)	JJ	3/8-16 Spin Lock Nut (6)
AE	1/2-13x1-1/4 Bolt	(2)	KK	3/8-16 Nylon Lock Nut (2)
AF	1/2-13x4-1/2 Bolt	(2)	MM	1/2-13 Spin Lock Nut (2)
AH	3/8-16x1 Spin Lock Bolt	(6)	TT	3/8 Washer (6)
AI	5/8-11x1-1/2 Bolt	(2)	VV	1/2 Washer (4)
II	1/2-13 Dot Lock Nut	(2)		



**NOTE:** STEP 1 [below] may have already been completed at the Factory... if so, go on to STEP 2. below.

**STEP 1.** Align the six (6) 3/8" Holes in #1680 Rear Mount with mating six (6) 3/8" Holes in rear surface of #1601 Body Pan.

From *outside*, insert a #AH Bolt into each of the six 3/8" holes aligned above. *Inside* Body, secure Bolts with #JJ Nuts... tighten... see Photo at right.

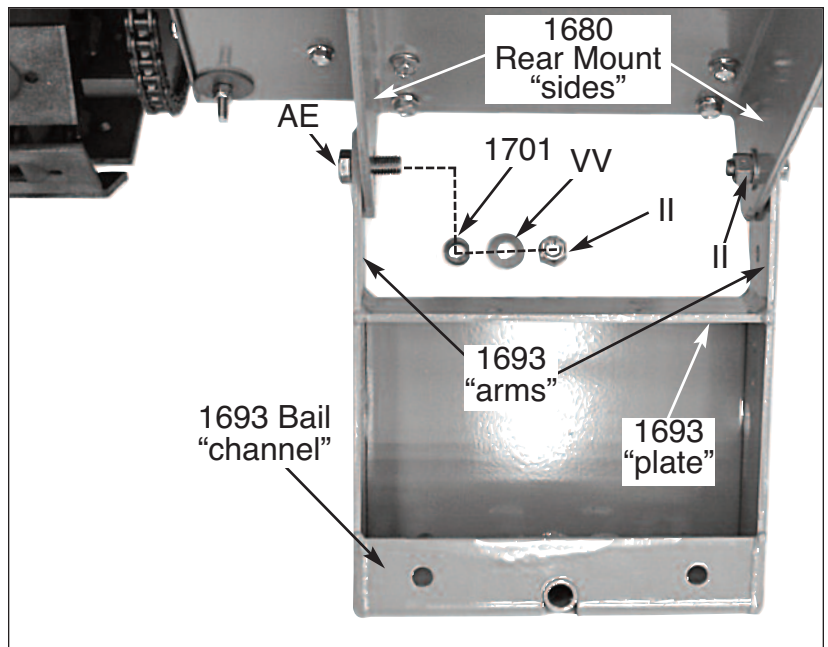


**STEP 2.** Slip "arms" of #1693 Bail around "sides" of #1680 Hitch Channel.

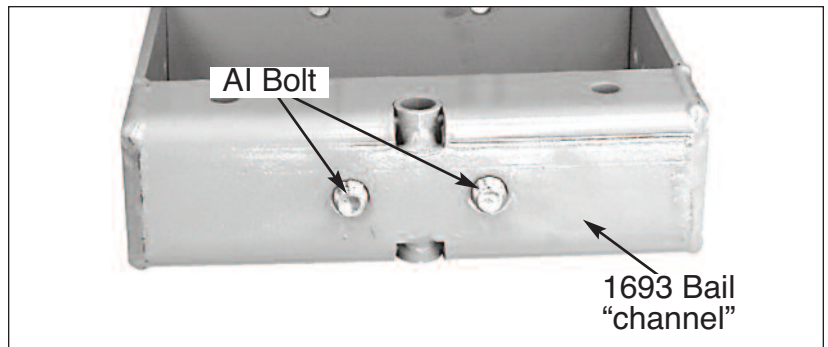
**STEP 3.** Align either the *lower or upper 1/2"* holes in #1693 Bail "arms" with mating 5/8" holes in "sides" of #1680 Channel.

**NOTE:** You can experiment with the *two hole positions* to "fine tune" the Rear Hitch rasing & lowering characteristics to the job you're doing.

From *outside*, insert an #AE Bolt into each pair of *aligned 1/2"* and 5/8" holes *above*. Over each protruding Bolt slip on in order: #1701 Bushing, #VV Washer and secure with #II Nut... tighten.

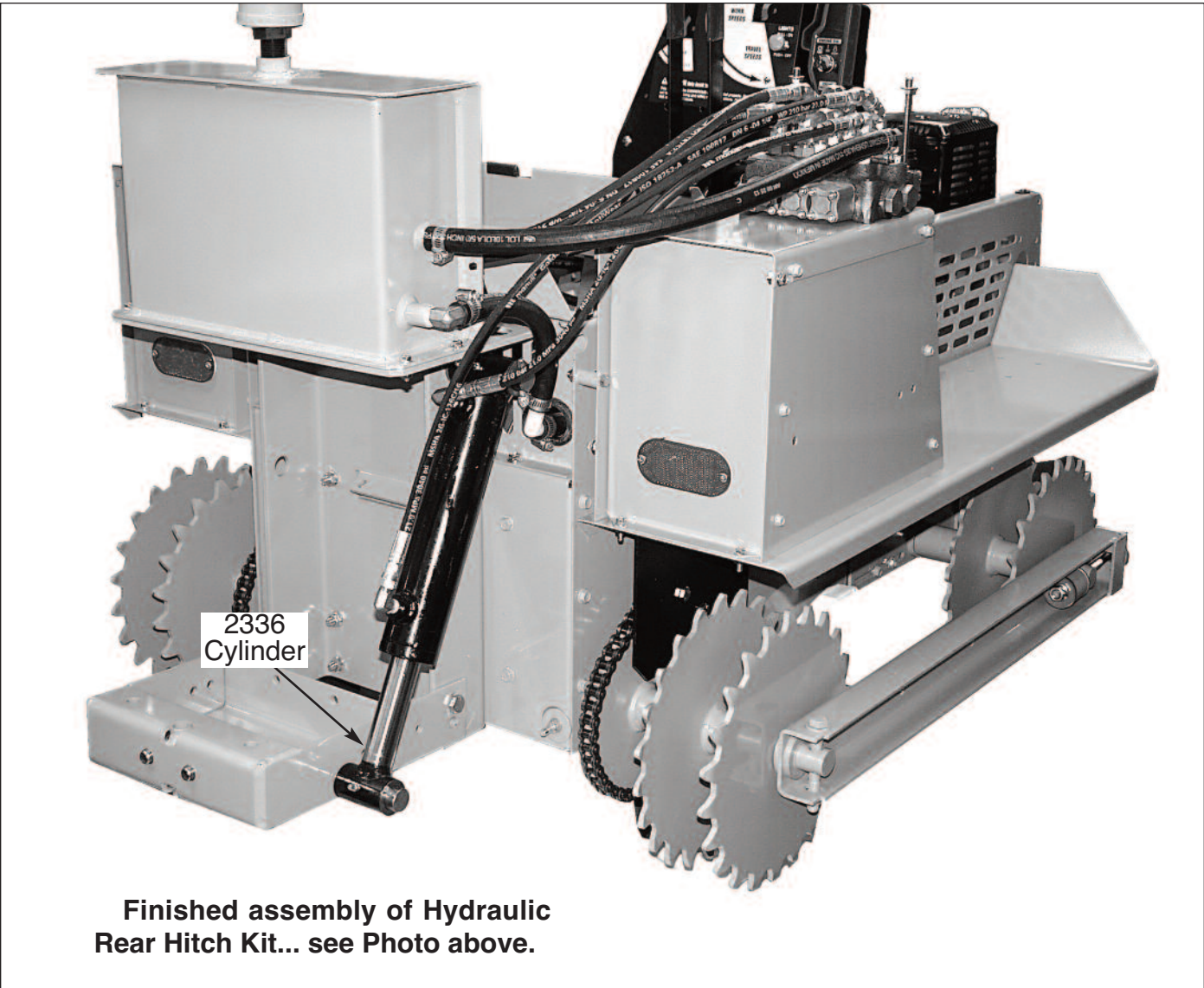


**STEP 4.** Inside #1693 Bail *channel*, screw an #AI Bolt into each Nut *welded inside*... let 1/2" protrude out rearward [You are doing this to store the #AL Bolts for future use]... see Photo at right.





**STEP 5.** Follow your PP35 Power Pack Kit for remaining instructions for proper installation of the #2336 Cylinder, Hoses, etc.



# Power Pack Kit

## PP35

### Parts List

000057	Cap	830-FS-06	(4)
000228	Key	1/4 x 1/4 x 1	(2)
000279	Grommet, 1/8 groove	1-1/2 OD	(2)
000416XX	Hose, 5/8, 2"		(1)
000616	Breather		(1)
000619	Fitting, 90 deg.	KF10-06PS	(1)
000793	Tie, plastic, standard		(3)
000931	Hose Clamp		(8)
001680	Rear Mount		(1)
001717	Mounting Plate		(1)
001718	Valve Cover		(1)
001719	Tank, oil		(1)
001720	Rod, threaded		(2)
001721	Pump		(1)
001723	Pulley, pump, 1/2 bore		(1)
001724	Pulley, engine, 1 bore		(1)
001725	Belt, A24 or 4L260		(1)
001726	Fitting, 45 deg.	4603-08-08	(1)
001727	Fitting, 90 deg.	849-FSO-06-06	(1)
001728XX	Hose, 5/8, 11"	Tank to Elbow	(1)
001729XX	Hose, 5/8, 22"	Tank to Valve	(1)
001730XX	Hose, 5/8, 35-3/4"	Pump to Elbow	(1)
001733	Hose, 3/8, 84-1/2"	Pump to Valve	(1)
001734	Hose Elbow, 90 deg.	28624	(2)
001860	Tie, plastic, serrated end		(1)
001880	Grommet, 1/4 groove	1-1/2 OD	(1)
001904	Coated Clip	3/4 ID	(2)
001920XX	Valve, 3 bank, assembly		(1)
-001920	Valve, 3 bank		(1)
-000790	Fitting, 848-FSO-06-08		(7)
-000794	Fitting, "O" Ring Plug, 721-FSO-10		(1)
-000676	Fitting, 90 degree, 879-FS-06		(4)
-001738	Fitting, 90 degree, 4601-10-08		(1)
-002582	Fitting, 45 degree, 889-FS-06		(6)

# Power Pack Kit

PP35

[continued]

## Fastener List

1/4-20x3/4	Flange Bolts	(4)
1/4-20	Flange Nut	(4)
5/16-18x1/2	Flange Bolt	(1)
5/16-18x1-1/2	Flange Bolt	(1)
5/16-18x1-1/2"	Carriage Bolt	(1)
15/16-18	Flange Nut	(15)
5/16-24x3/4	Flange Bolt	(4)
3/8-16x1	Flange Bolt	(6)
3/8-16x1-1/4	Flange Bolt	(2)
3/8-16	Flange Nut	(8)



**If you're going to be connecting your PP35 Power Pack to a HFH15 Front Hitch and/or a HRH35 Rear Hitch, *complete* those KIT assembly steps FIRST!**

**NOTE: Before you begin your assembly, a few important facts should be brought to your attention:**

A) References of right & left are determined by standing behind your Crawler and looking forward.

B) Though the following instructions are inclusive, some of the Steps have already been completed at the factory...just go on if you find a particular step has already been completed for you.

C) Photos of various assembly Steps are located throughout the instructions and we've tried to keep the more timely photos next to the instructions of the components they describe. NOTE: some photos show completion of Steps that will come later in the instructions.

You will find it helpful though, to look at photos from other sections of these instruction to see different views of particular parts you are presently assembling.

D) As many of the components you will be working with are awkward and occasionally heavy, it's a good idea to have a helper available for assistance.

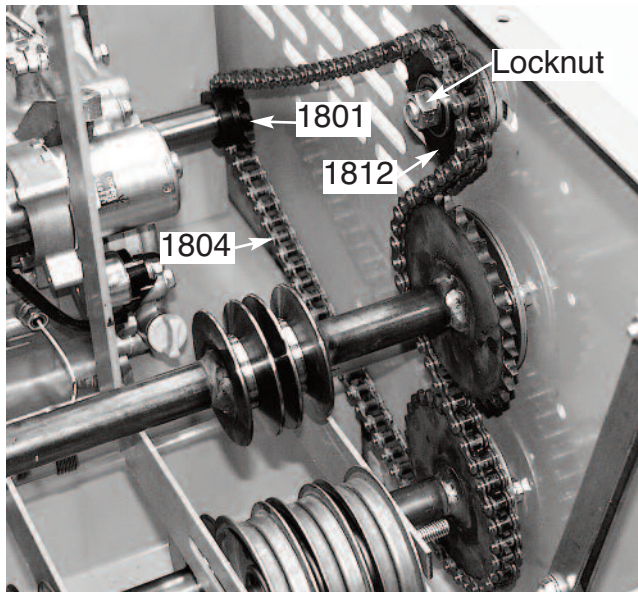
E) It can never be mentioned too much; always work on your Crawler with it's Parking Brake on, the Engine shut off, the Ignition Key removed and the (-) Ground Cable removed from Battery.

F) Several pages of photos are published at the end of these Instructions. They are fully labeled and act as a full reference of all the parts you will deal with in your assembly. They are an excellent resource to get an overview of the whole project if you meet a "snag" in your assembly

G) The length of a Bolt is determined by measuring the threaded shank below the Bolt's head.

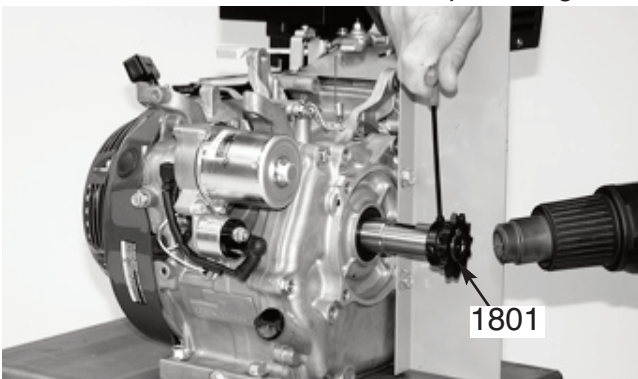
1) Loosen and remove Locknut and Bolt holding #1812 Idler Sprocket. **[IMPORTANT: Record the order of Washers around the Idler Sprocket and "right" Body Wall for later reassembly.]** Remove Idler Sprocket from #1804 Chain. Loop Chain off #1801 Drive Sprocket.

2) Remove four Flange Bolts holding Engine to #1602 Engine Mount. **[IMPORTANT: Record the order of Bolts, Washers & Lock Nuts for later re-assembly.]**



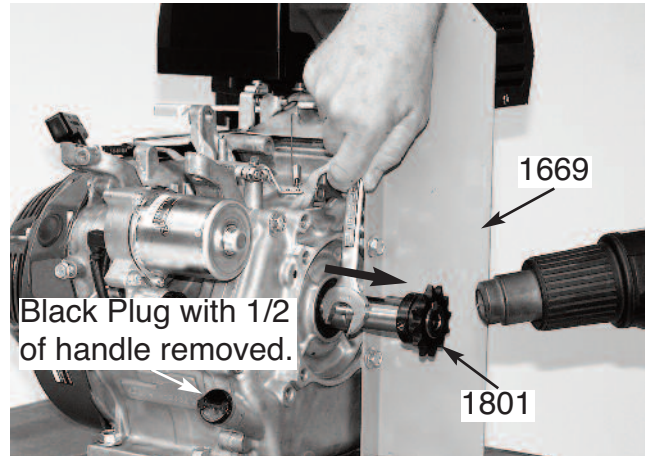
3) Revolve Engine until it's #1801 Drive Sprocket is approximately 1" away from right Body Wall. **Rotate Engine with care; do not pull on the Engine wiring, disconnect any Wires or disturb Choke & Throttle controls.**

4) Using a heat gun (or similar "non-flame" heating device) thoroughly heat the #1801 Sprocket until each of its Set Screws can be rotated and removed with an Allen Wrench; be patient, give it



time to fully warm up! [Pull up on Engine's recoil start to gain access to Set Screws].

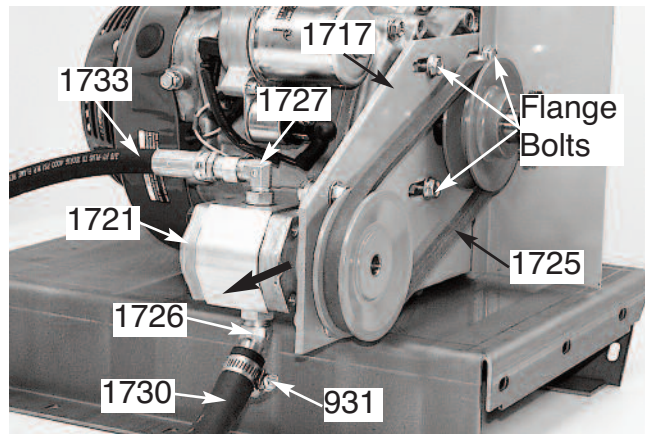
5) When thoroughly heated, repeatedly strike the "hub" of the Sprocket with a flat, hard object [we used a large open end wrench]. Safely rotate the crankshaft so you are striking the Sprocket at different points. **[NOTE: Keeping the Sprocket hot**



during this step is very helpful.]

6) Remove #1801 Sprocket & Set Screws and #1669 Baffle & Flange Bolts for later reassembly. Clean crankshaft of any previous Loctite residue to make sure Sprocket will slide on during later installation...you may store original shaft key.

7) Reverse the Oil Plugs on the front and rear of Engine crankcase such that the "gray" Plug (has dipstick end) is in the front and the "black" Plug is

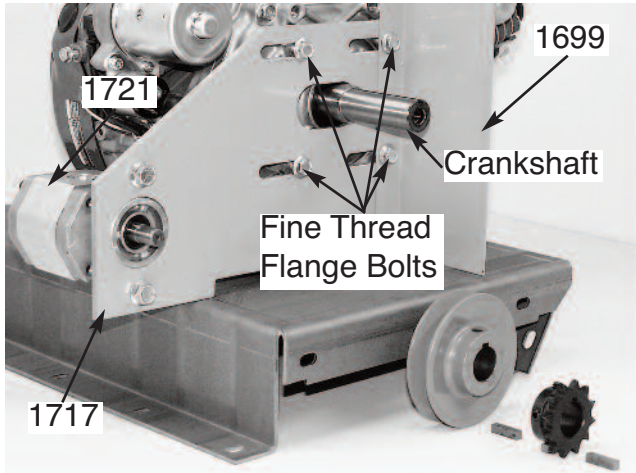


in the rear [Note: with a hacksaw cut off 1/2 of the "black" Plug's handle length]

Mount #1721 Pump to #1717 Mounting Plate with two 3/8" x 1-1/4" long Flange Bolts & Flange Nuts...tighten! Install #1727 - 90 deg. Fitting to "top port" of Pump...finger tighten. Install #1726 - 45 deg. Fitting to underside port of Pump...finger tighten.

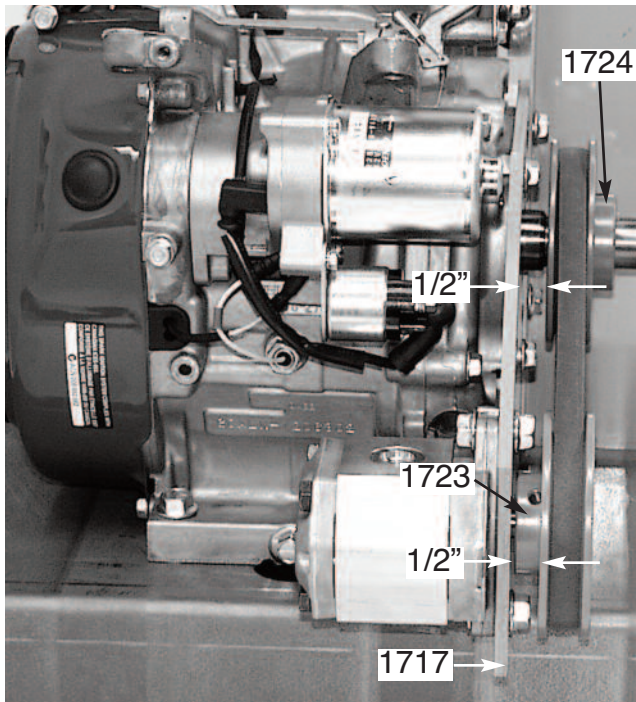


8) Using four 5/16" x 3/4" long special "fine thread" Flange Bolts "loosely secure" #1717 Mounting Plate & #1669 Baffle to the four threaded mounting holes in Engine's "crankshaft face" mounting pads. **[NOTE: Baffle goes over**



Mounting Plate.]

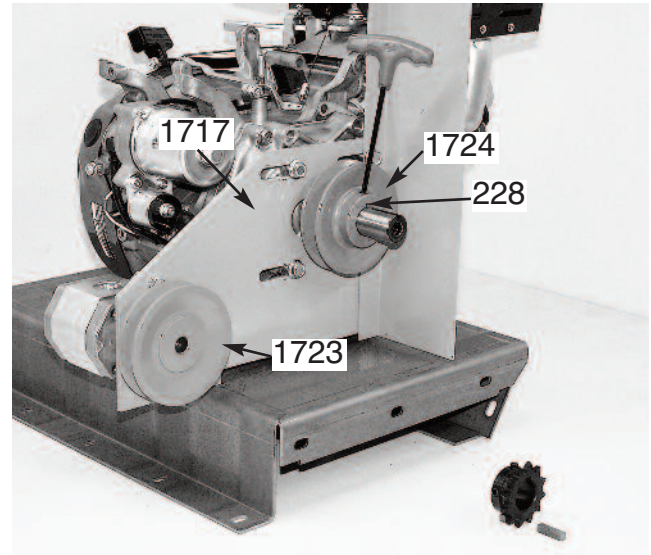
9) Remove it's Set Screw and slip #1723 Pulley "hub first" over 1/2" shaft of Pump engaging its



1/8" Key with Pulley hub's 1/8" keyway. Slide on until the "inside face" of the Pulley is 1/2" away from surface of #1717 Mounting Plate. Put a drop or two of "red" Loctite sealant down the threaded hole of Pulley and reinstall Set Screw, check your 1/2" dimension and tighten Set Screw.

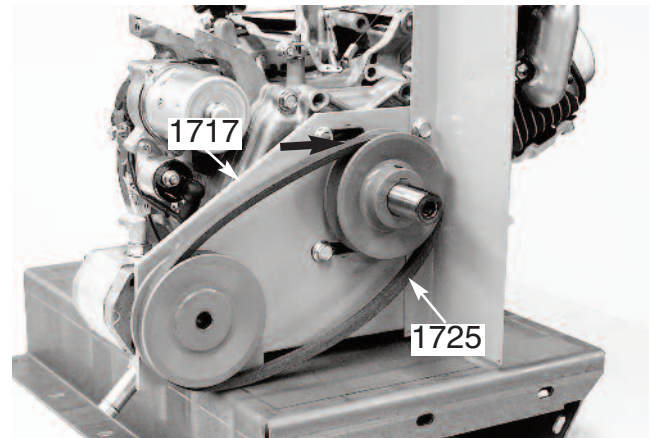
10) Remove it's Set Screws and slip # 1724 Pulley "hub last" over Engine crankshaft until it's "inside face" is 1/2" from #1717 Mounting Plate

surface. Align keyway in crankshaft with mating keyway in Pulley hub and slip a single #228 Key into this pair of aligned keyways. Put a drop or two of "red" Loctite sealant down the threaded holes



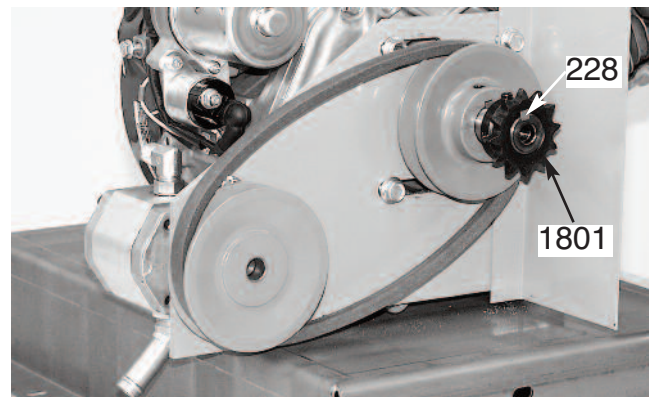
of Pulley hub and reinstall Set Screws; check your 1/2" dimension and tighten Set Screws.

11) Push "fully forward" on the #1717 Mounting Plate and slip the #1725 Belt around the two



mounted Pulleys. **Do not** tighten the four 5/16" x 3/4" "fine thread" Flange Bolts at this time!.

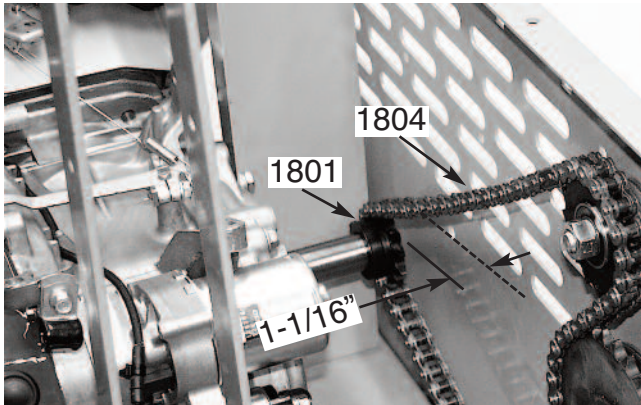
12) Replace #1801 Sprocket "hub first" over end of crankshaft. Align keyway of sprocket with mating keyway in crankshaft. Insert #228 Key into





aligned keyways and center it on sprocket. **Do not** tighten set screws at this time!

13) "Carefully" rotate engine back to it's original position. Slip #1804 Chain over #1801 Drive Sprocket and engage teeth. Relocate Engine over original mounting holes. From "above" replace the four Flange Bolts, "below" secure with original Washers and Locknuts. **Before** Locknuts start to tighten, locate Engine by pushing it "toward" & "parallel" to the "left" Body Wall as far as it will go. Then, without twisting the Engine, slide it to the



rear as far as it will go...fully tighten Engine Bolts at this time.

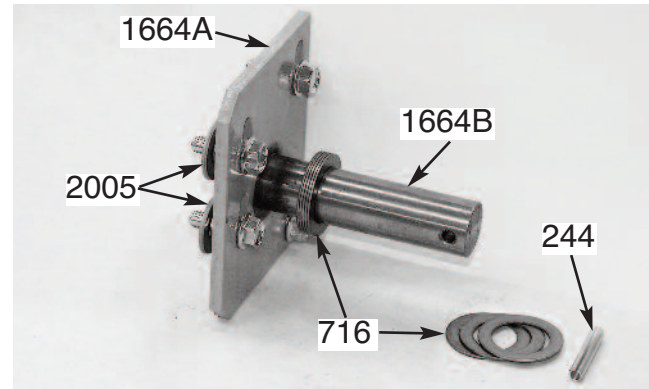
14) With Engine fully secured, locate the #1801 Sprocket such that it's "outside face" is 1-1/16" from the "right" Body Wall. Center Key in Sprocket, put a drop or two of "red" Locktite sealant in both threaded holes, replace Set Screws, recheck your 1-1/16" dimension... tighten Set Screws!

15) Using the "notes" you made in Step (1) above, reassemble and locate the #1812 Idler Sprocket. Properly tension your Chain per the Chain Adjustment section of your Operator's Manual.

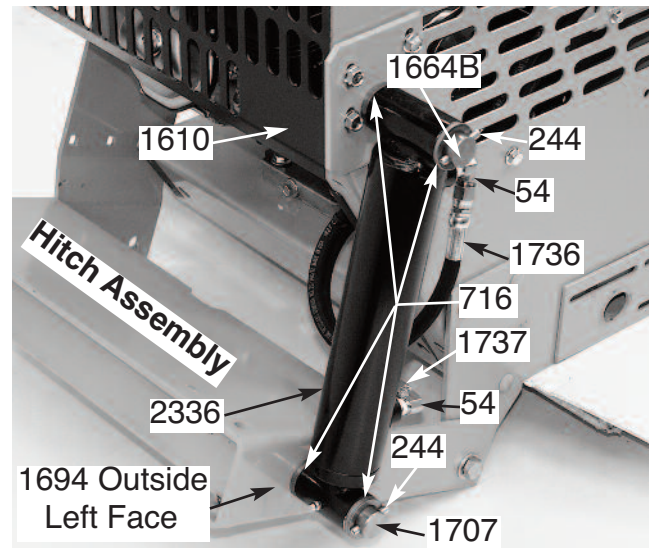
**For INSTALLATION of HFH15 Hydraulic Front Hitch KIT: FIRST... complete Steps in the HFH15 KIT section of this Manual. When completed, return to this section and continue remaining STEPS [below] to finish your HFH15 Front Hitch assembly.**

16) Remove the two Flange Bolts securing the "flange tab" of the "lower left" side of #1610 Front Grill. In their place, using four 5/16" x 1" long Flange Bolts and Flange Nuts and four #2005 Washers, mount the #1664 Cylinder Mount... tighten! **[NOTE: four #2005 Washers are placed**

between "inside face" of #1664A Plate and "out-



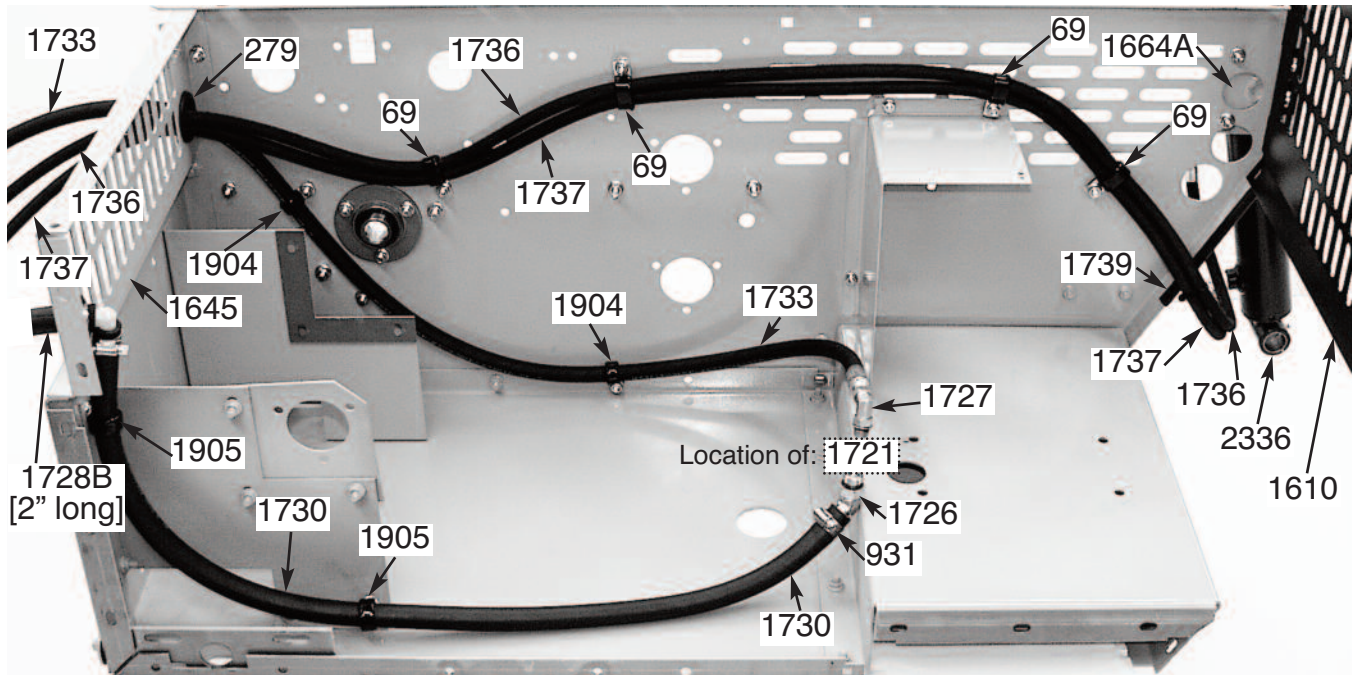
side face" of "left" Body Wall. Also for greatest final "lift height" push #1664A Plate as high as it will go as you tighten the four Flange Bolts.]



17) Slip five #716 Washers over end of #1664B Mounting Pin followed by "upper tube" of #2336 Cylinder. Fill out remaining space on Pin with Washers and secure "end" by "driving in" a #244 Spring Pin. **[NOTE: Body of Cylinder is "up" and hydraulic fittings point to the "rear" ]**

18) Determine number of #716 Washers to fill space between "outside left face" of Front Hitch Assembly and "inside face" of Cylinder's "lower tube". Pass #1707 Rod through "outside face" of Cylinder's "lower tube", through the Washers determined above, and then through the 1" hole in "left face" of Hitch Assembly, coming out the mating 1" hole on "right face" of Hitch. Center the Rod, shim out Rod ends with Washers and secure by "driving in" #244 Spring Pins into each end.

19) Insert #279 Grommet in each 1- 3/4" dia. hole in #1645 Rear Brace. **[NOTE: #279 Grommet has a thinner groove around edge compared to the**



edge of the #1880 Grommet you will use later.] From “outside rear” slip one end of #1736 & #1737 Hoses into left Grommet and pass completely forward connecting #1736 Hose to top #54 Fitting on Cylinder and #1737 Hose to lower #54 Fitting...finger tighten both Hoses! Slip #1739 Edging on “left forward” lower edge of “left” Body Wall to protect hoses.

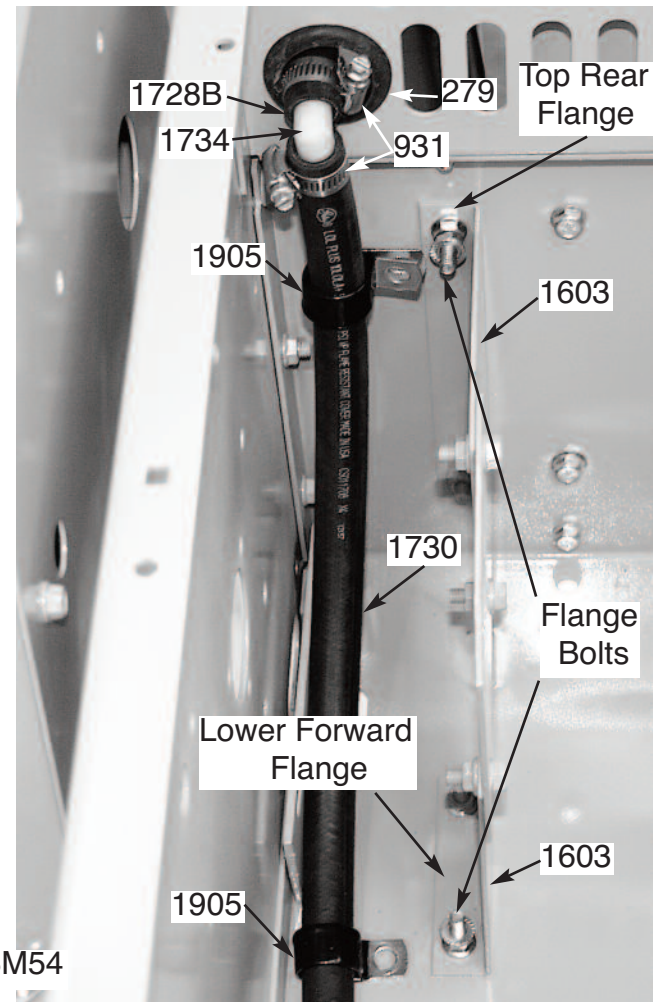
20) Using Photos as guide, loosely route both Hoses “front to rear” along left Body Wall. Insert this “pair” of Hoses into a series of #69 Coated Clips and orient them “up or down” at locations indicated. Remove Nuts from Bolts that are to hold Clips. Attach each Clip to its appropriate Bolt and apply Nuts finger tight. Note how the Hoses are stacked #1736 on top of #1737. Use care to follow the hose path shown in the photo as it will eliminate damage to other components. **[NOTE: longer Bolts are provided if you feel original ones are too short to work with.]**

21) Remove the Flange Bolt from the “top rear flange” of #1603 Right Support and the Carriage Bolt from the “lower forward” flange of #1603 Right Support. From “outside” the Body replace these Bolts with 5/16” x 1-1/2” long Flange Bolts and secure “inside” with Flange Nuts...tighten securely! Screw a second Flange Nut [flange out] over threads of each Bolt...allow 7/16” of thread to show. [Check Photo for location and orientation of the above bolts.]

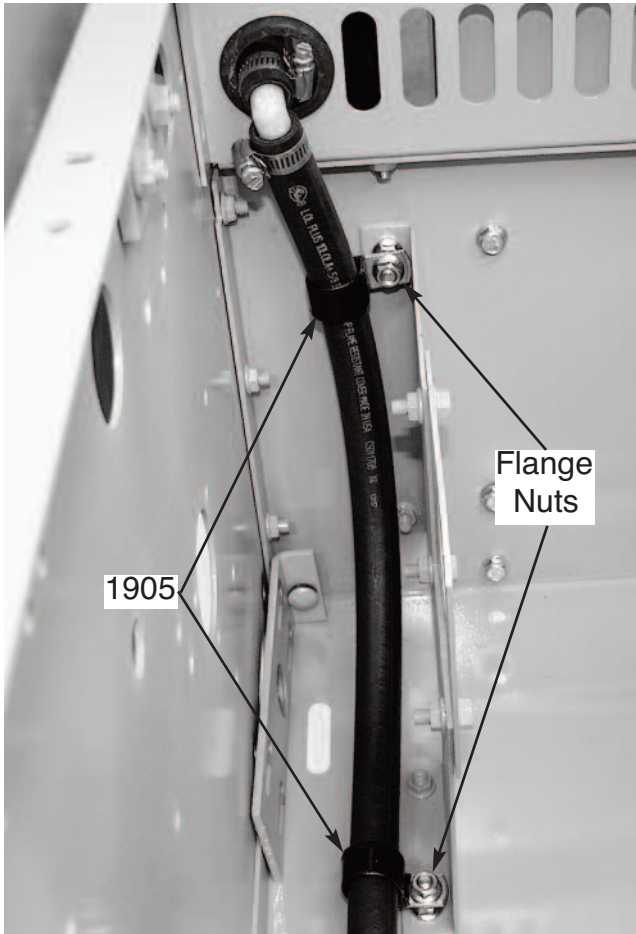
22) Assemble #1730 & #1728B Hoses together with #1734 - 90 deg Elbow and two #931 Hose

Clamps...”center” each Clamp and tighten! From “inside” Body slide remaining end of #1728B Hose through #279 Grommet. Slip two #1905 Coated Clips over remaining end of #1730 Hose.

With #931 Hose Clamp (of #1728B Hose) against the “inside face” of #279 Grommet, align #1905

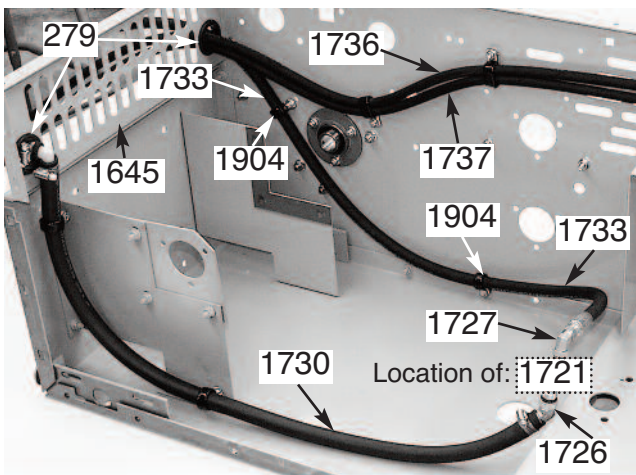






Coated Clips over threads of the two bolts installed in Step #21 above. Secure both #1905 Coated Clips with Flange Nuts...finger tighten.

23) From “outside” #279 Grommet on “left end” of #1645 Rear Brace, slide one end of #1733 Hose into Grommet and “behind” #1736 & 1737



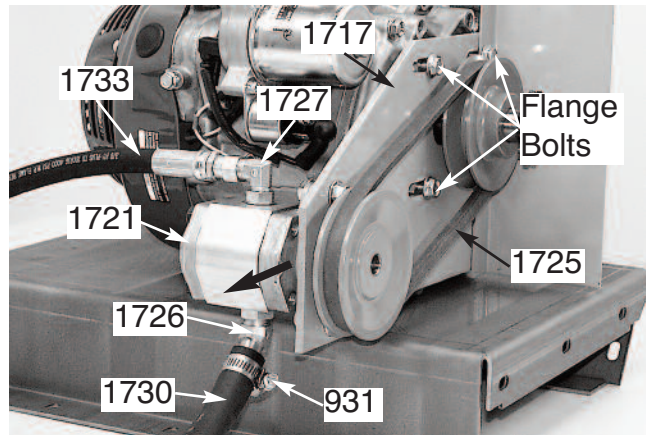
Hoses previously installed. Route it down, forward and to the right toward #1721 Pump.

Check that #1727 - 90 deg. Fitting on “top port” of Pump points toward “left” Body Wall and #1726 - 45 deg. Fitting on underside port of Pump points to “right rear” body corner. **[Note: Do not tighten**

lock-nut of either of these Fittings at this time.]

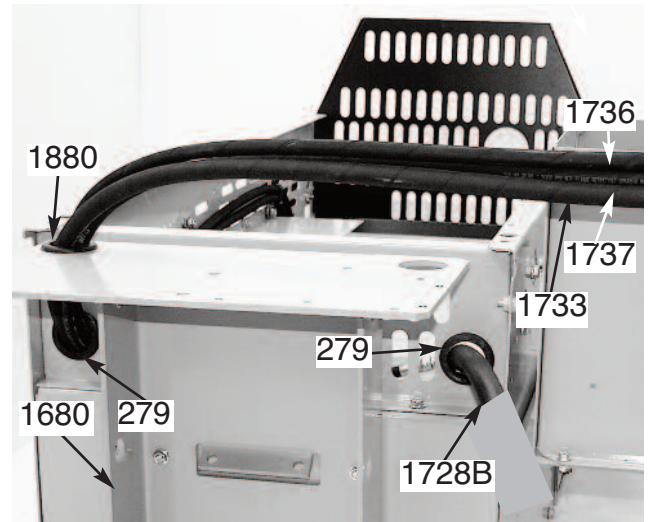
Install two #1904 Coated Clips around #1733 Hose and loosely secure to Bolts indicated in photos.

24) Slip a #931 Hose Clamp over remaining end of #1730 Hose and slip that end onto the #1726 Fitting below #1721 Pump...tighten Clamp only. Attach end of #1733 Hose to #1727 Fitting above Pump... tighten Hose only.



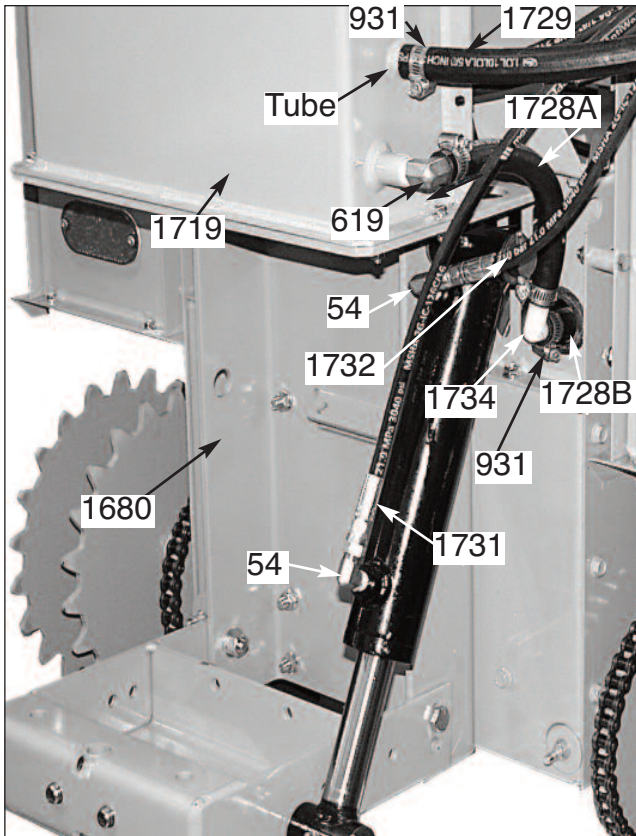
Slide #1717 Plate “rearward” to tighten #1725 Belt and secure by tightening the four “fine thread” Flange Bolts.

25) Use Photo (below) to clarify and identify critical parts and to further check your work.



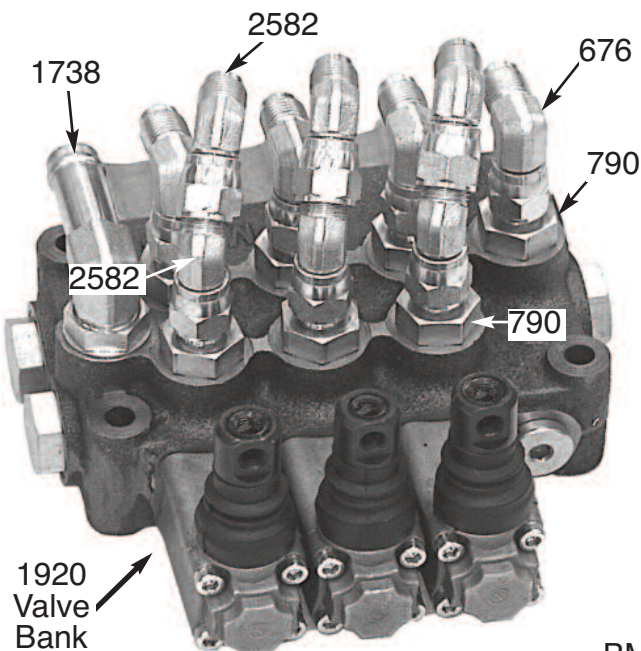
26) Using four 1/4” x 3/4” long Flange Bolts and Flange Nuts mount the #1719 Oil Tank to “top rear” of the #1680 Rear Mount...tighten! Slip a #931 Hose Clamp over remaining end of #1728B Hose protruding from Grommet in Rear Brace. Insert one end of a #1734 Elbow into #1728B Hose.





27) Slip two (2) #931 Hose clamps around #1728A Hose. Attach one end of Hose to #619 Fitting on #1719 Tank and the other to remaining #1734 Elbow... tighten Hose Clamps.

28) Screw #1738 Fitting into threaded port on right side of #1920 Valve Bank. Turn until tight ... stop with tube of Fitting pointing rearward... tighten lock-nut on Fitting.



29) Screw seven (7) #790 Straight Fittings into the remaining seven threaded holes... tighten.

Screw four (4) #676 Right Angle Fittings over each of the *rearward* four #790 Fittings and point them rearward... tighten.

Screw three (3) #2582 45 deg Fittings on the remaining three *forward* #790 Fittings and point them rearward... tighten

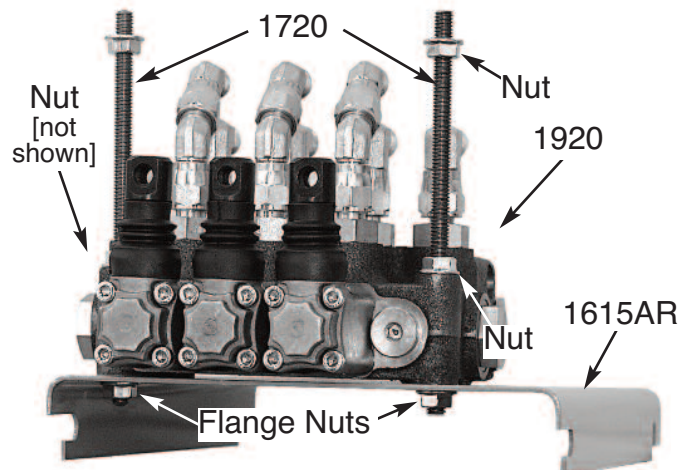
Screw a second #2582 Fitting on the three #2582 Fittings installed above... point them rearward and tighten.

**NOTE:** All Fittings installed *above* should point to the rear... Photo at lower left has them in different positions to clarify assembly!

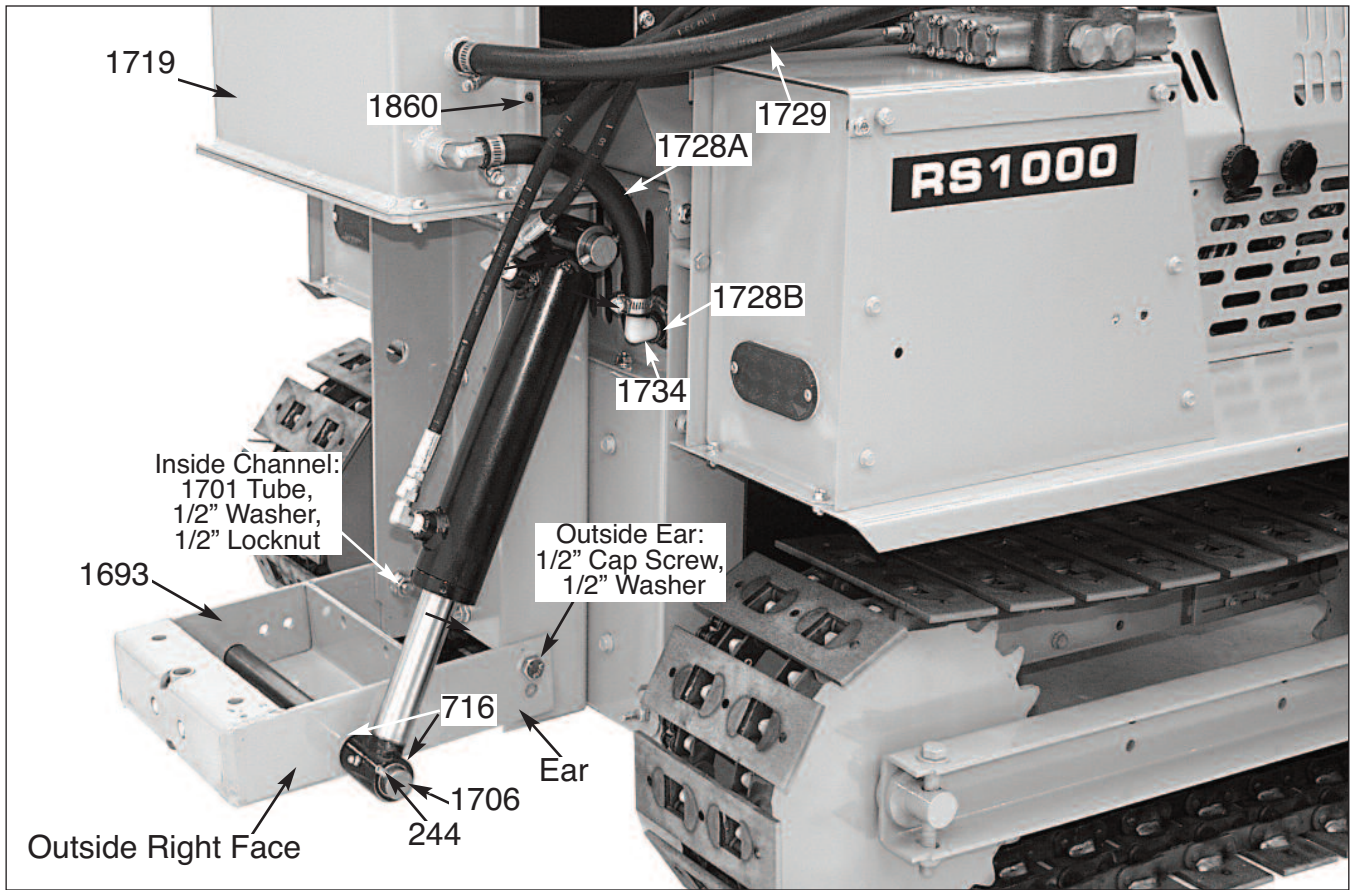
30) Slip a #931 Hose Clamp over each end of #1729 Hose. Slip one end of Hose over "Tube" on right side of Tank and connect remaining Hose end onto #1729 Fitting mounted to right side of Valve. Center each #931 Clamp ...tighten both!

31) Mount #1920 Valve over two 5/16" holes on *forward end* of #1615 AR Right Cover using #1720 Threaded Rods as bolts.

Note Flange Nuts are mounted flush with each Shaft end "under" Cover. A second Flange Nut is screwed on both Shafts from above to hold Valve...square Valve with #1615AR Cover, then tighten Nuts. Lastly, apply a Flange Nut upside-down on each Rod leaving about 1/2" of thread exposed. Check that #1615AR Box Cover is closed and in it's new operating position! [Check Photos]



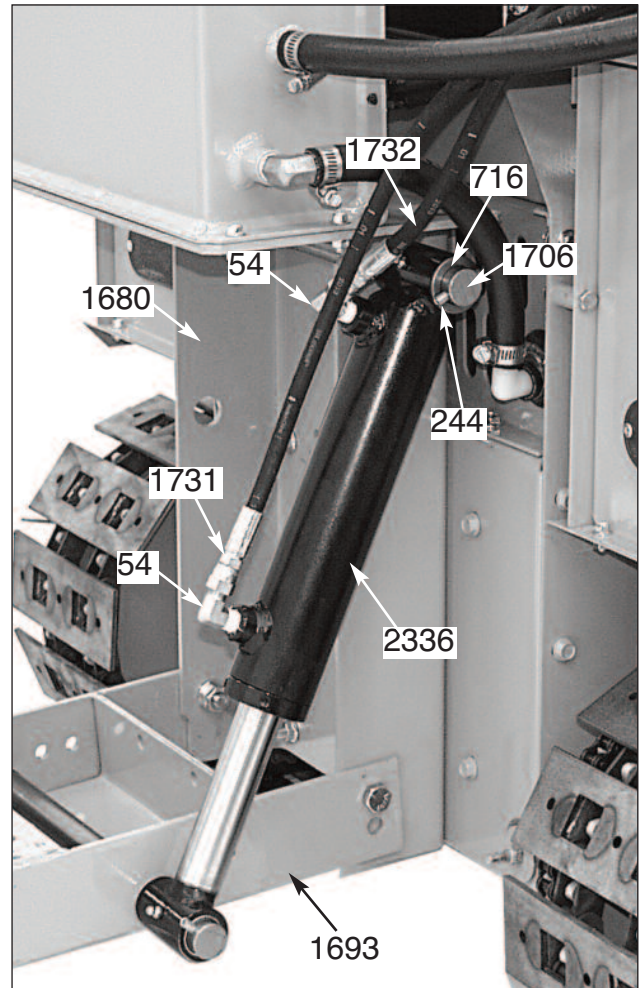




**For INSTALLATION of  
HRH35 Hydraulic Rear Hitch KIT:  
FIRST... complete Steps in the HRH35 KIT  
section of this Manual. When completed,  
return to this section and complete re-  
maining STEPS [below] to finish your  
HRH35 Rear Hitch assembly.**

A) Slide #1706 Shaft into top two 1" holes in #1680 Rear Channel. Over shaft end on "right side" slip on ten #716 Washers followed by "upper tube end" of #2336 Cylinder, followed by two more Washers. Center and "drive" a #244 1/4" x 1-1/2" Spring Pin into "right end" of shaft. Shim out remaining *left* shaft end with Washers and secure with second Spring Pin. **[NOTE: Cylinder *body* is "up" and Fittings point to the *rearward*..]**

B) Align tube on "piston end" of Cylinder with 1" hole on "outside right face" of #1693 Hitch Bail and determine number of #716 Washers required to shim out distance. In manner similar to above, pass a second #1706 Shaft through the tube, #716 Washers and both sides of Bail. Center the Shaft in this complete assembly, shim both ends and secure with #244 Spring Pins each end.. see Photo above and right.





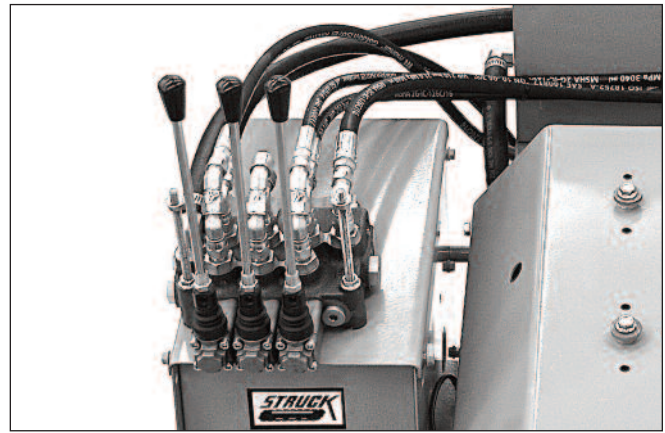
C) Attach one end of #1731 Hose to *lower* #54 Fitting on Cylinder and the other end to #676 Fitting at *lower right rear* of #1920 Valve. Attach one end of #1732 Hose to upper Fitting on Cylinder and the other end to *upper right rear* #2582 Fitting on Valve... tighten both Hoses!

29) Loop #1737 Hose & #1736 Hose around and attach #1737 Hose to #676 Fitting at *second from left lower rear* of #1920 Valve and #1736 Hose to #2582 Fitting at *upper left rear* of #1920 Valve... tighten both Hoses. Loop #1733 Hose around and on left side attach to #676 Fitting at *far left* of Valve...tighten.

30) Take Hoses #1731, 1732, 1737 & 1736, gather them together and bind them with a #1860 Plastic Tie [not shown in Photos]. On #1920 Valve tighten Hoses on all four of the #676 Fittings and the two #2582 Fittings with an open end wrench!

31) Take the time now to follow the route of the "pair" of #1736 & 1737 Hoses and the single #1733 Hose:

A) Check that they follow a smooth, slack & obstruction free path and pass properly "over & under" other hoses and tractor parts as shown in photos.

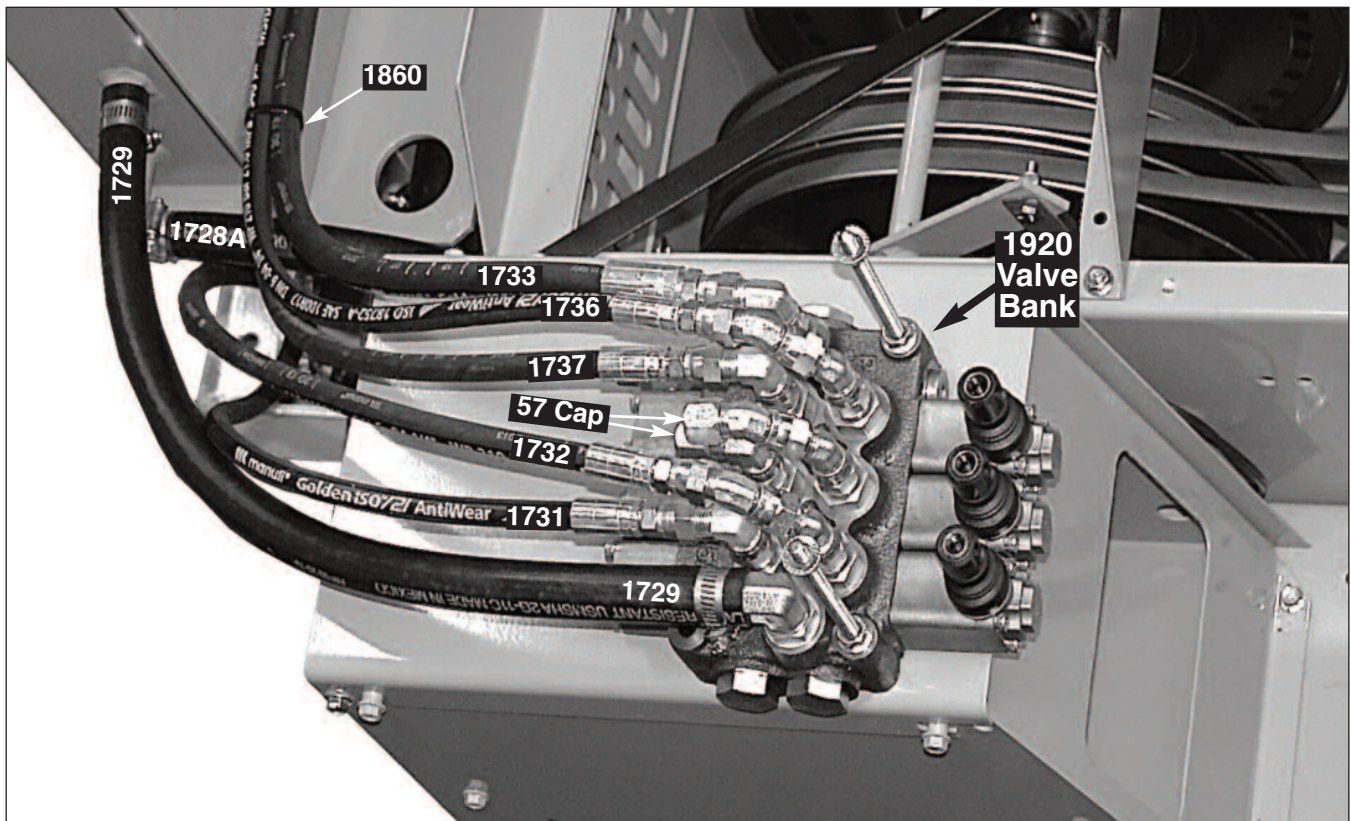


B) Check that they are held by the proper Coated Clips which are oriented in the proper direction.

C) Check that any "slack" in the Hoses accumulates in front of the #1719 Oil Tank, not along their path.

D) If you are not going to use the two "ports" in *center* Valve section, for safety close them both off with #57 Caps... see Photo below.

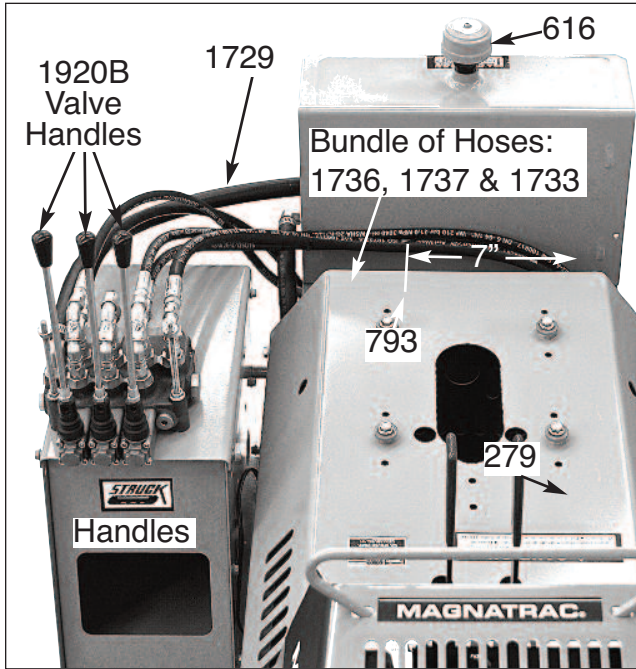
32) Bundle and secure with #1860 Plastic Tie Hoses #1736, 1737 & 1733 at a point about 7" to the right of the "left edge" of Oil Tank. Using a #1860 Plastic Tie, bundle Hoses #1736, 1737 & 1733 in front of the 1/4" hole in "right front edge" of





Oil Tank and secure by inserting Tie's "serrated" end into the 1/4" hole provided. Secure #1731 & 1732 Hoses with #793 Plastic Tie. (Check Photos)

33) Thread each of the three (3) Handles into threaded shafts in forward end of #1920 Valve Bank. Secure with lock nuts on each Handle shaft.



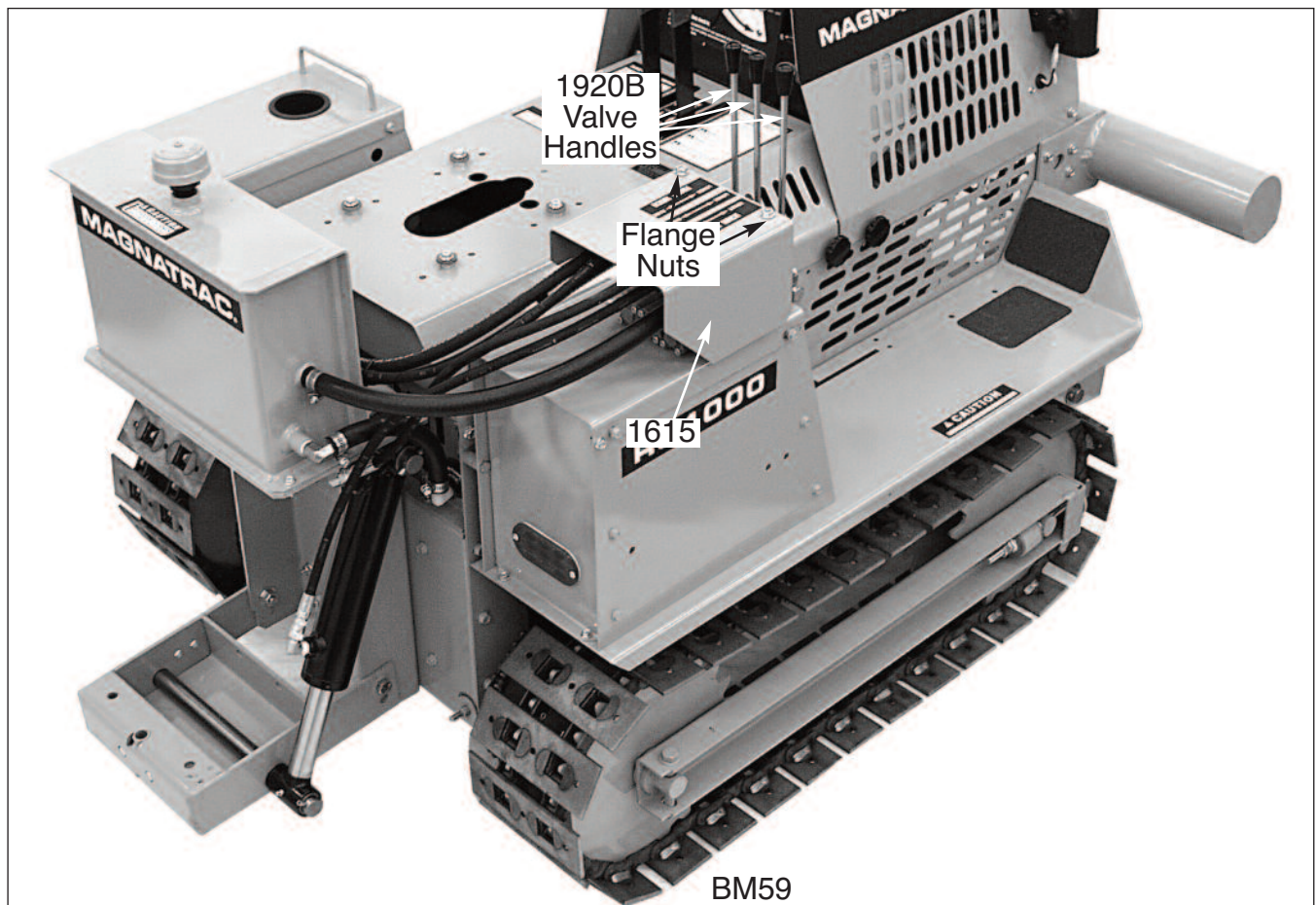
34) Locate the two 5/16 holes in #1615 Cover over mating # 1720 Rods... secure above with Flange Nuts... tighten.

At this point, go through your completed assembly Instructions and properly align and "finish tighten" all Hose & Fitting connections and all mounting Bolts & Clips. "Finish tighten" **both** the items you had tightened previously and those items you were told "not to tighten" during your assembly steps.

34) Align the 5/16" holes in #1718 Cover with protruding #1720 threaded studs in #1722 Valve. Secure above with 5/16" Flange Nuts.

35) Screw ends of #192B Valve Handles into "vertical" or "horizontal" positions on threaded ends of each Valve spool...secure with nut provided.

36) Carefully fill #1719 Oil Tank with #10 Wgt. Hydraulic Oil to approximately 3" to the top of Tank. Close top of Tank with #616 Breather Cap...don't over tighten!. Replace (-) Ground Wire on (-) Negative post of Battery.



**\*\*Assembly of PP35 Power Pack is complete!\*\***

1) Go to instructions for the Attachment (Front or Rear Hitch) that you wish to operate with your Power Pack.

2) Check with factory for approval and recommendations on using the Power Pack with any Attachments not listed by our factory for use with the Power Pack!

3) After installation of your Attachments, return to these instructions for the following "Operation" suggestions and Safety Tips!

## **OPERATION**

### Oil Level:

1. Drive your Crawler to a clear, level work area; preferably a concrete floor. With engine running, operate your #1920 Valve such that all cylinders controlled by Valve are in the fully closed position...all cylinder "rods" should be drawn into their respective "cylinders" as far as possible. Shut off engine and engage the Crawler's brake!

2. Using a wrench at its base, remove the #616 Breather from the Oil Tank by rotating the total assembly counter-clockwise. By observation note the oil level inside the Oil Tank. It should be approximately 3" from the top of Tank. Replenish if necessary with standard #10 weight Hydraulic Oil, AW32.

3. When satisfied that oil level is correct, replace #616 Breather and tighten clockwise.

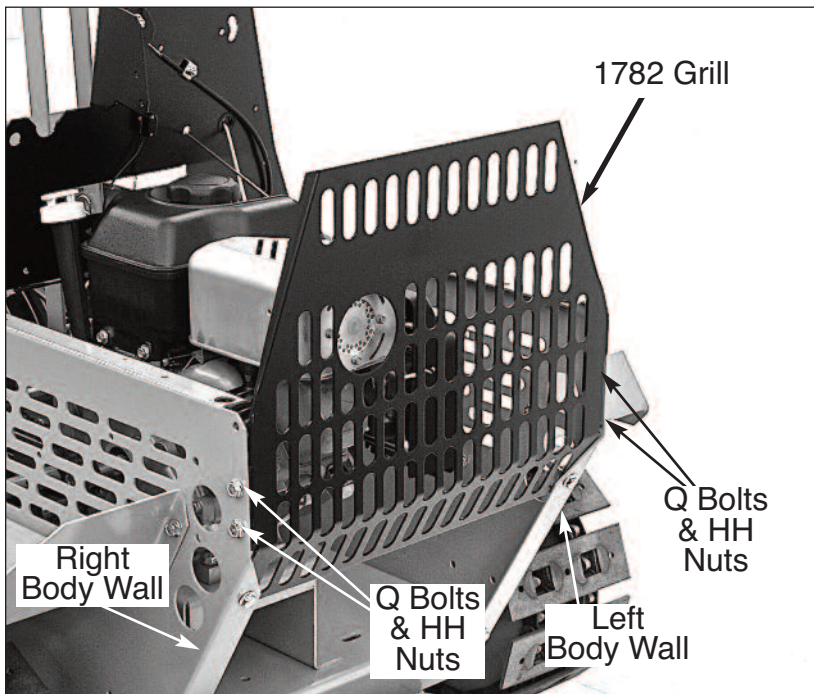
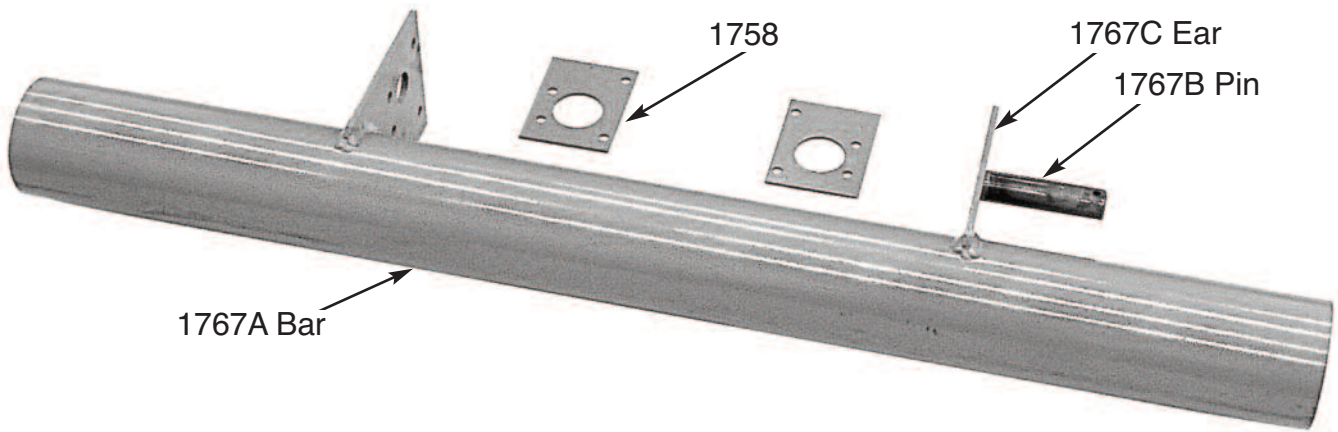
NOTE: Breather's base is plastic, don't over-tighten!!



# Front Counterweight FW15

## Parts & Fastener List

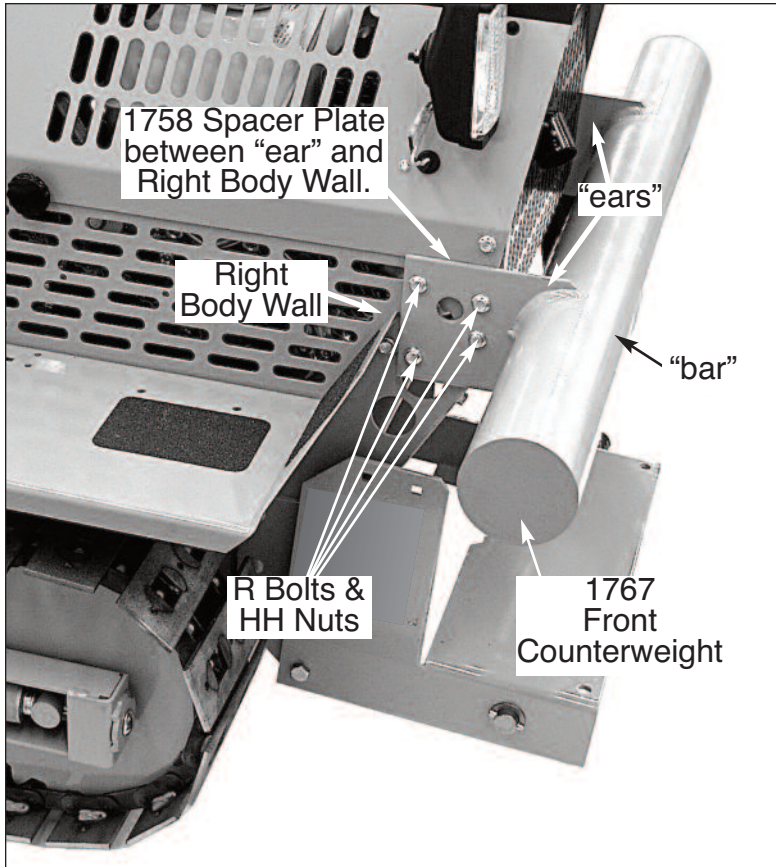
001758	Spacer Plate	(2)
001767	Front Counterweight	(1)
R	5/16-18x1 Spin Lock Bolt	(8)
HH	5/16-18 Spin Lock Nut	(8)



### CAUTION:

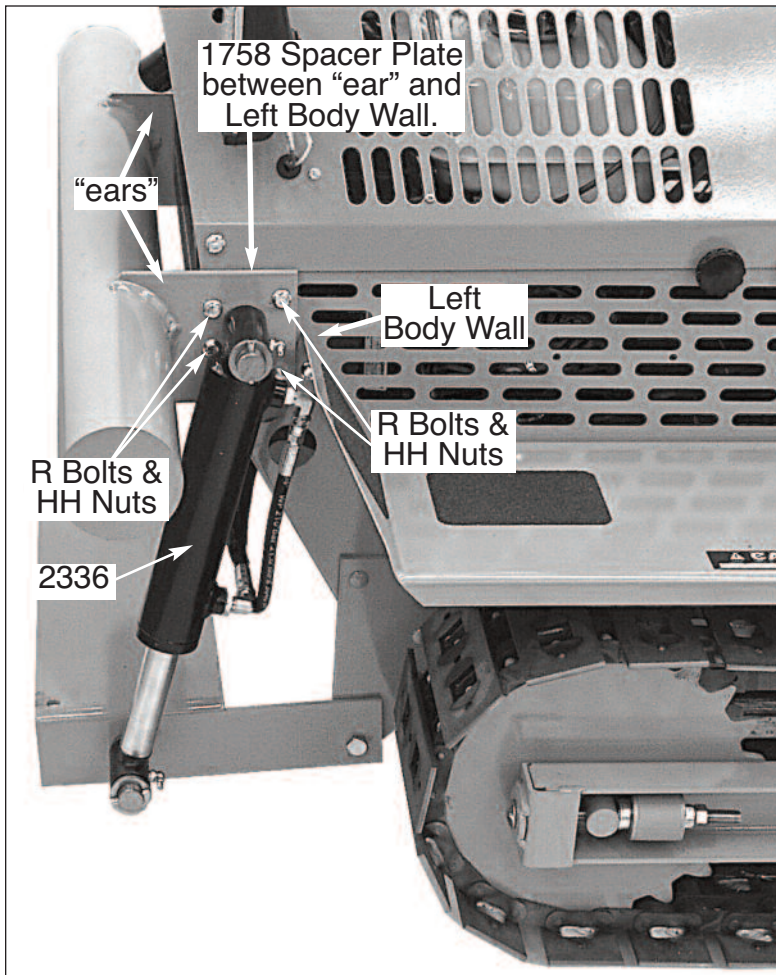
The #1767 Front Counterweight that you will be assembling is extremely heavy and requires a “helper” to lift it to complete the full assembly.

**STEP 1.** Remove the two (2) Q Bolts & HH Nuts on each side holding #1782 Grill to Left & Right Body Walls... do not remove Grill... see Photo at left.



**STEP 2.** Raise the #1767 Counterweight into position such that the "ears" of the "bar" cradled the Right & Left Body Walls.

**STEP 3.** Insert a #1758 Spacer Plate between each "ear" and its mating Right or Left Body Wall. Align the four (4) 5/16 holes in each "ear" with 5/16 holes in its respective Right or Left Body Wall and 5/16 holes in right and left ends of #1782 Grill... see Photos at left and lower left.



**STEP 4.** From *outside*, slip an R Bolt into each aligned set of 5/16 holes... secure inside Body & Grill with HH Nuts... tighten all eight Bolts.

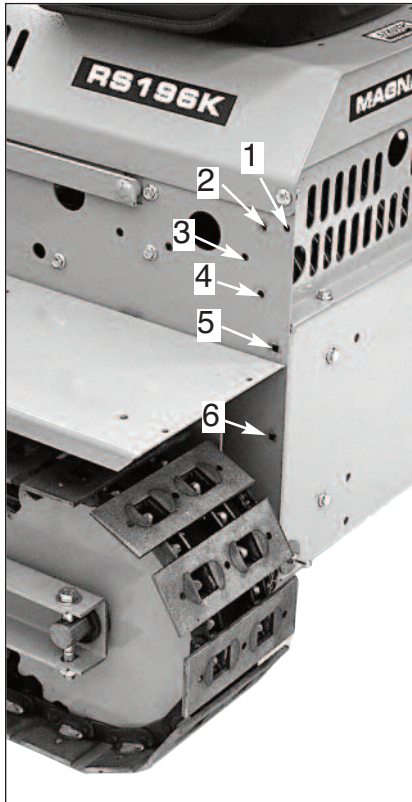
**STEP 5.** Follow your PP35 Power Pack Kit for remaining instructions for proper installation of the #2336 Cylinder, Hoses, etc.

Finished assembly of a Hydraulic Front Hitch Kit... see Photo at left.



# ANGLE MOUNTS

## AM39

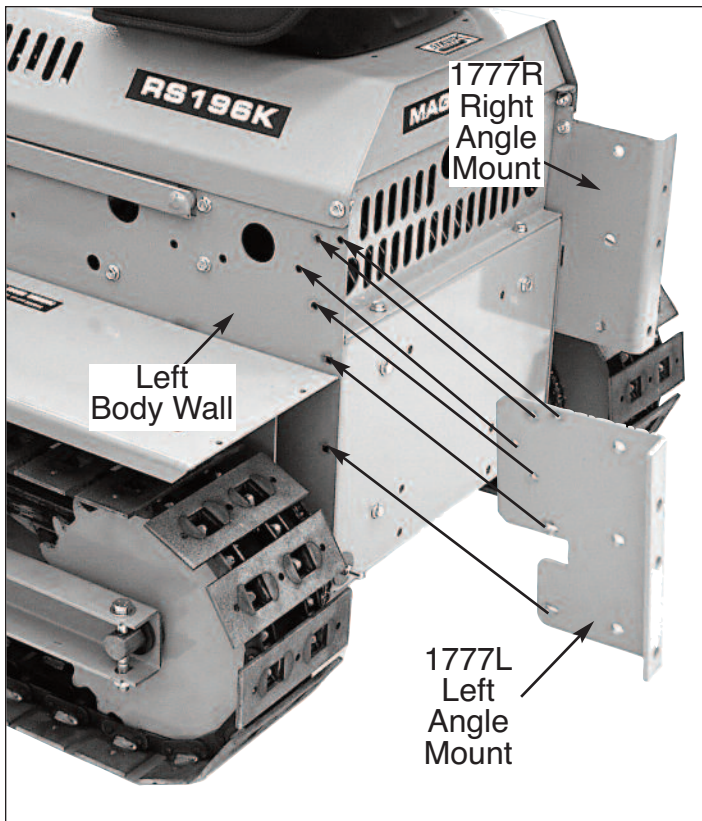


### Parts & Fastener List

001759	Tube	(2)
001777R	Right Angle Mount	(1)
001777L	Left Angle Mount	(1)
AP	5/16-18x1-1/4 G8 Bolt	(12)
AQ	5/16-18 G8 Nut	(12)
SS	5/16 Flat Washer	(12)
AU	5/16 Lock Washer	(12)
AJ	1/2-13x1-1/2 Spin Lock Bolt	(6)
MM	1/2-13 Spin Lock Nut	(6)

**STEP 1.** Remove the Bolts that are occupying the six (6) 5/16" holes indicated by "white arrows" that are located at the rear of **both** the Left & the Right Body Walls... Photo at left shows only Left Body Wall.

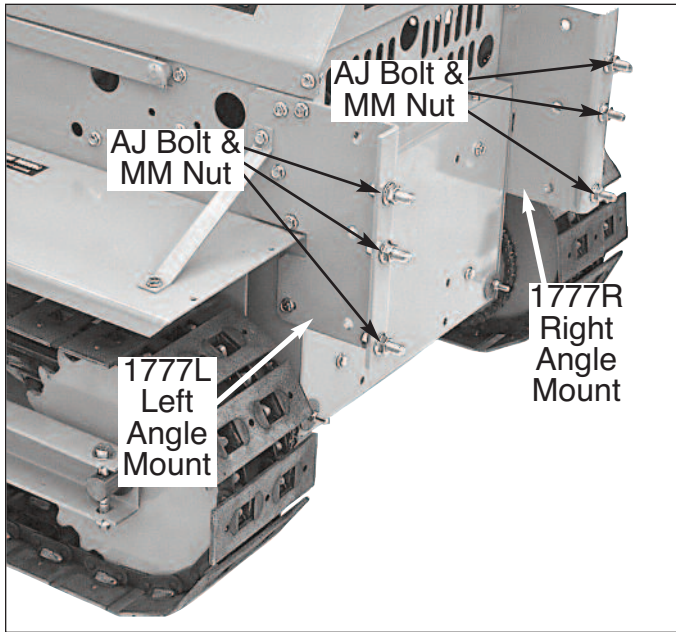
**NOTE:** As there is more than one model of the RS series Magnatrac, not all holes noted [at left] will be occupied with 5/16 Bolts... your only responsibility is to clear all twelve (12) of the 5/16 holes to prepare for next assembly STEP.



**STEP 2.** Mount #1777R and #1777L Right & Left Angle Mounts to their respective Right & Left Body Walls... note that the "lip" of Mount points outwardly... see Photo at left.

**STEP 3.** Insert six (6) #AP Bolts into six (6) #SS Washers. Align 5/16" holes of Left Angle Mount with mating 5/16" holes in Left Body Wall. "Inside" Body secure with #AU Lock Washers and #AQ Nuts... leave "finger tight" if you are going to add a ROPS and/or a Backhoe now, otherwise fully tighten.

**STEP 4.** In a similar manner as STEP 3 above, mount the #1777R Right Angle Mount to the "outside face" of Right Body Wall. "Inside" Body secure with #AU Lock Washers and #AQ Nuts... leave "finger tight" if you are going to add a ROPS and/or a Backhoe now, otherwise fully tighten.



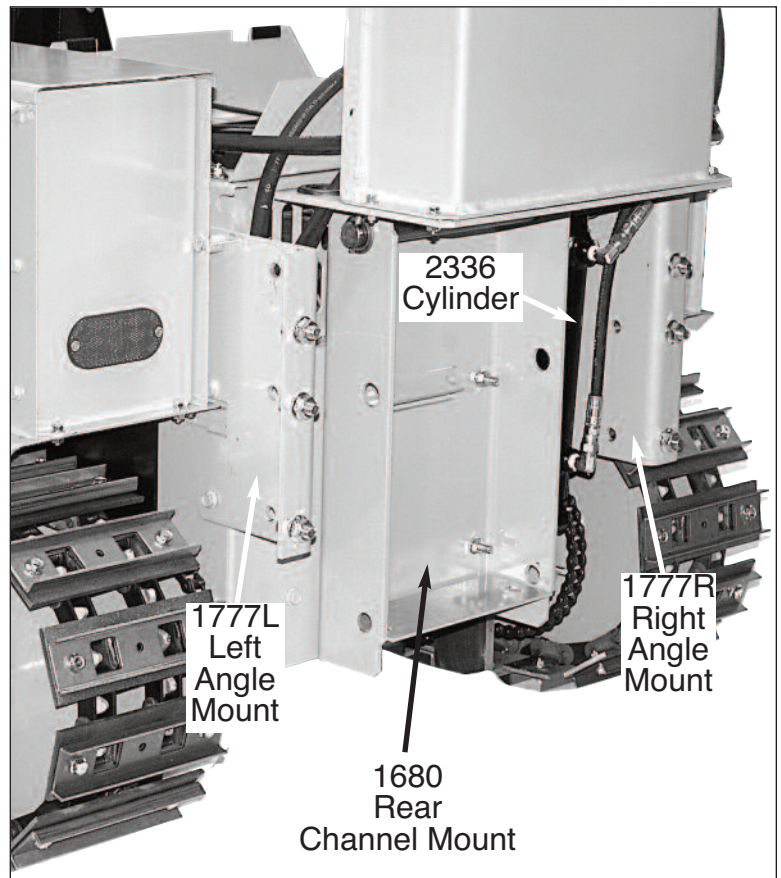
**STEP 3.** Insert #AJ Bolt into “forward face” of each of the 1/2” holes in “bent edge” of #1777R Right and #1777L Left Angle Mounts.

**STEP 4.** Secure each #AJ Bolt at “rear” with #MM Nut... “finger tight” if you are going to add a D1060 Backhoe and/or ROPS10 Rollover Protective Structure now... otherwise, fully tighten at this time.

**NOTE:** At this time, complete the instructions for installing a D1060 Backhoe and/or ROPS10 Rollover Protective Structure... fully tighten your #MM Nuts after mounting these above Attachments.

**NOTE:**

Photo at right shows how components of an HRH35 Hydraulic Rear Hitch [#1680 Rear Channel and #2336 Cylinder] can remain mounted to rear of your RS1000 Magnatrac while you are installing your #1777R Right & #1777L Left Angle mounts required for a future D1060 Backhoe and/or ROPS10.



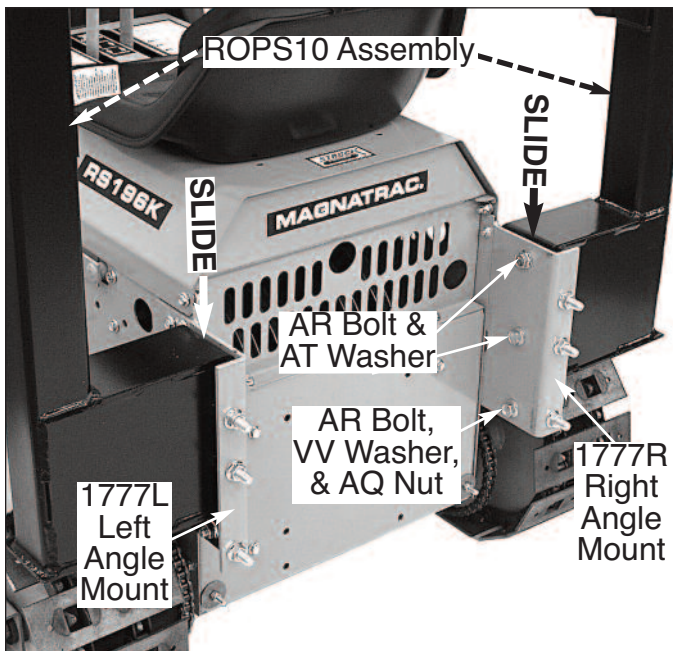


# ROLLOVER PROTECTIVE STRUCTURE

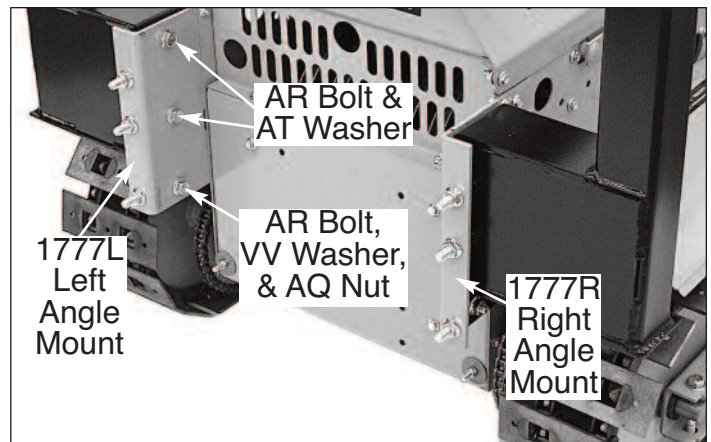
## ROPS10

### Parts & Fastener List

001793	ROPS Assembly	(1)	VV	1/2 Flat Washer	(4)
-001793A	-Plate	(2)	AT	1/2 Lock Washer	(2)
-001793D	-Loop	(1)	TT	3/8 Flat Washer	(2)
-001793E	-Plate	(2)	AV	3/8 Lock Washer	(2)
000303	Seat Belt	(1)	AW	3/8-16x1 G8 Bolt	(2)
AR	1/2-13x1-1/2 G8 Bolt	(6)	AX	3/8-16 G8 Nut	(2)
AS	1/2-13 G8 Nut	(4)			



**STEP 1.** Lower the ROPS10 Assembly so that the *inside faces* of its #1793A Plates on Right & Left side *slide* against their respective *outside face* of #1777 Right & Left Angle Mounts.

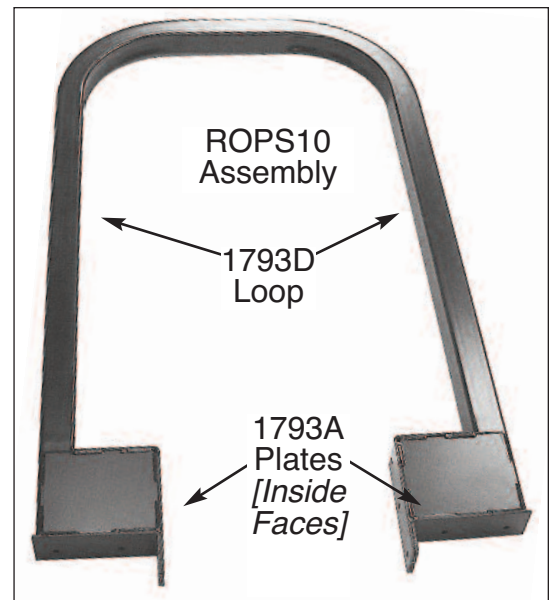


**STEP 2.** Align set of three (3) 1/2" holes in Right & Left Angle Mounts with mating three (3) holes in ROPS Assembly... see Photo above and at right.

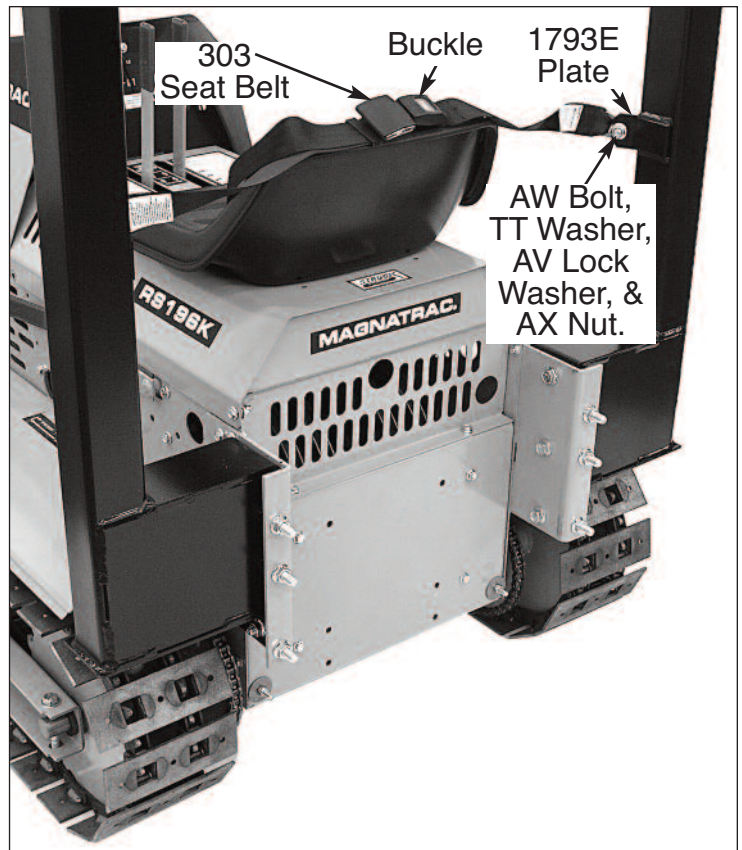
**STEP 3.** Insert four (4) AR Bolts into AT Washers. Secure the *mating* top two 1/2" holes of each #1777 Angle Mount ... leave loose.

**STEP 4.** Insert two (2) AR Bolts into VV Washers and then into remaining *bottom aligned* hole in each Angle Mount... secure outside with AT Washers and AS Nuts.

**STEP 5.** Tighten all six (6) AR Bolts installed above. Tighten all AQ Bolts installed in STEPS 3 & 4 of AM39 Angle Mounts "assembly" above.

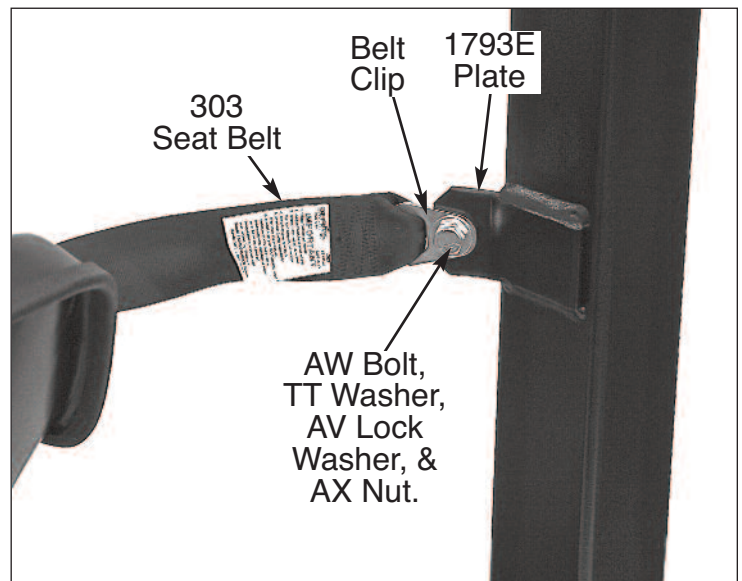


**STEP 6.** Insert two (2) AW Bolts into TT Washers and then insert *one* into 3/8" hole in each Belt Clip.



**STEP 7.** Insert remaining end of each AW Bolt into the 3/8" hole in its respective Clip on each side of ROPS Assembly... see Photo above and right.

**STEP 8.** Secure each AW Bolt with AV Lock Washer and AX Nut.



**Check your assembly:** The *buckle* of the #303 Seat Belt should be facing forward when it is around operator!



# BACKHOE KITS D1060 & D1060UG

## [SET-UP PROCEDURE FROM SHIPPING PALLET]

**SPECIAL NOTE:** For proper *balance* and *safety* your RS1000 Magnatrac must have a mounted #FW15 Front Counterweight before you begin your Backhoe Kit Assembly Instructions. Refer to #FW15 Front Counterweight Instructions and proceed with its' installation at this time.

A) In the following instructions, Left & Right are determined by standing behind your Crawler/Backhoe and looking forward.

B) The following Photos are placed in a somewhat random order because they display assembly views that are helpful in more than one assembly step. The following assembly steps will note "Photos" that would aid parts identification for your assembly.

### Seat Mounting

**STEP 1.** Disconnect the "mating" #1824 & 1825 Seat Wires at their common "plug". Remove #1688 Seat Pin. Remove #933A Seat & #1674 Mounting Bracket Assembly and #1625 Arm Rests. (Photo 1).

**STEP 2.** Mount Body Mount in place of #1625 Arm Rests (above) and secure with #1688 Pin (above). Insert tube of Seat Mount into mating tube of Body Mount... secure with Anchor Pin. [Note: Anchor Pin can be inserted at other levels for final seat height. In addition, seat can be rotated and secured in rearward position for "backhoeing".] (Photos 2 & 3)

**STEP 3.** Connect Extension Wire to "open plug end" of #1825 Seat Wire. Connect remaining end of Extension Wire to "open plug end" of #1824 Seat Wire. (Photo 3)

**STEP 4.** Mount #1674 Mounting Bracket (with #933A Seat attached) to the top of Seat Mount. Secure with second #1688 Pin. (Photo 3)

**STEP 5.** Locate Seat so that operator faces rearward, and is at a comfortable height. (Photo 4)

### Backhoe Set Up

**STEP 1.** Unwrap your RS1000 Crawler/ D1060 Backhoe. Remove strapping holding it to shipping pallet. Slide Bucket/Dipper Assembly off pallet. (Photo 5)

**STEP 2.** Following your RS1000 Operator's Manual, mount and safely start your tractor. Using the Backhoe's Swing control lever, rotate your Boom so it points directly to the rear. Pull back on Boom control lever (moving Boom toward you) such that Upper Boom Pin welded to middle (right side) of Boom is approximately centered in its slot in top end of # 1285 Bar. (Photos 5 & 10)

**STEP 3.** Shut off your tractor and dismount. Remove the Lynch Pin from Yoke Pin. Remove lower end of Bar. Replace Lynch Pin. Remove Hitch Pin from Lower Boom Pin welded to lower end (right side) of Boom. Slide hole in lower end of Bar over this exposed pin; secure with Washer and Hitch Pin. (Photo 10)

**STEP 4.** From the operator's seat, use the Boom control lever and lower Boom's end to approximately 15" off floor. Slide Bucket/ Dipper assembly forward and align 1" hole in "tube end" of Boom with mating 1" holes in Dipper. Insert 1542 Pin ("loop end" on left) into above aligned holes keeping the "loop end" pointing downward... secure on right side with Lynch Pin. [Note: Lynch Pin must be located such that the 1/2 washer welded to Dipper end will keep Pin from rotating.] (Photos 5,7 & 11)

**STEP 5.** Align 3/4" hole in remaining "tube end" of 1522 Cylinder (attached to Boom) with mating 3/4" holes in top of Dipper. Insert a #1291 Pin into these aligned holes from left side and secure on right side with Lynch Pin. [Note: Pin must be located such that 1/2 washer welded to Dipper end will keep pin from rotating.] (Photos 7, 8 & 11)

**STEP 6.** Cut the "tie" securing #1548 & 1549 Hoses and release small parts bag. Remove #58 Plug from end of each Hose and #57 Cap from end of each #54 Fitting on #1283 Cylinder... save in parts bag for future reuse when "dismounting" Dipper/ Bucket Assembly (see below). (Photo 7)

**NOTE:** Substitute 1/4" dia. x 1-1/2" long Roll Pins (provided in small parts bag) for Lynch Pins used in Steps 4 & 5 above when permanent mounting of Bucket/Dipper assembly is desired. Lynch Pins are substituted to allow convenient dismounting of Dipper/ Bucket Assembly. Dismounting Dipper/ Bucket Assembly is recommended when greater weight is desired on front mounted attachments. Reuse the Plugs & Caps removed in Step 6 above.

**STEP 7.** Remove #670 Clip on Dipper. Route #1548 & 1549 Hoses through "loop" of 1542 Pin. Smoothly route the Hose ends and attach them to their respective #54 Fittings on #1283 Cylinder mounted to Dipper. (Photo 9)

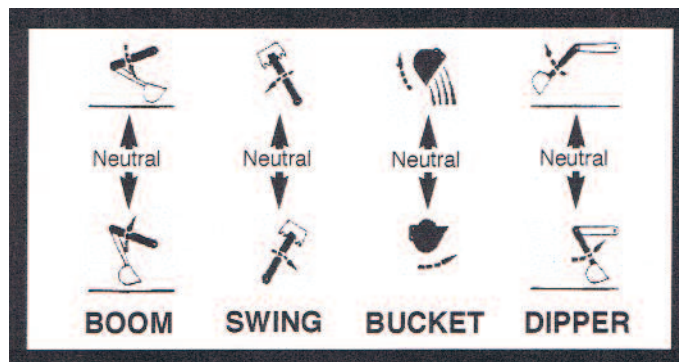
**STEP 8.** Loosely reinstall the #670 Clip (removed above) making sure not to strip the "bolt threads" in Dipper. Follow (Photo 9) closely so you achieve the same Hose "slackness and curl" shown. Tighten the Clip to hold position.

**STEP 9.** Rotate (counter-clockwise) handle on each #1769 Stabilizer Jack... raise each Stabilizer Jack as high as it will go. Place blocking in "front" of the pallet to form a modest down ramp.

**STEP 10.** Remount your Crawler and start engine. Pull the Boom control and begin to raise the Boom and in a coordinated move pull the Bucket control, rolling the Bucket toward the Dipper as far as it will go. When completed, your Backhoe will be in a fully upright traveling position. Shut off engine and dismount.

**STEP 11.** Reverse Step 3 (above). Move "lower end" of #1285 Bar to it's original "shipping position" and secure with Lynch Pin. (Photo 5)

**STEP 12.** Reposition Seat for forward travel and restart engine. With care, drive forward off pallet. Apply Brake and shut off engine.





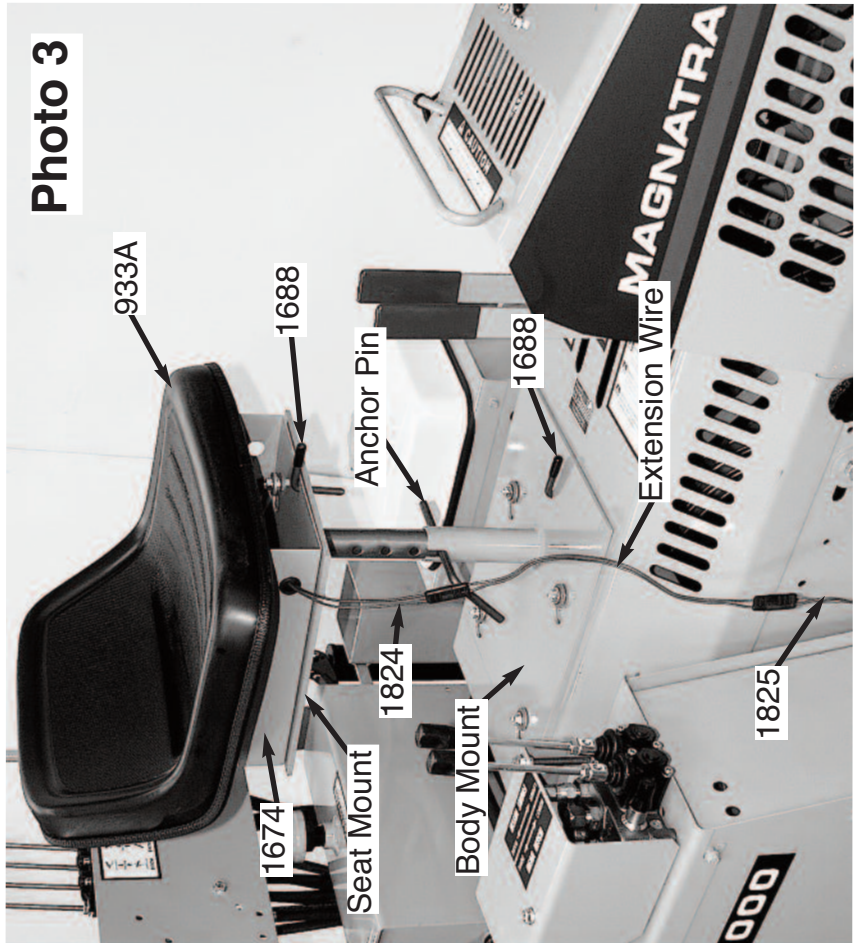
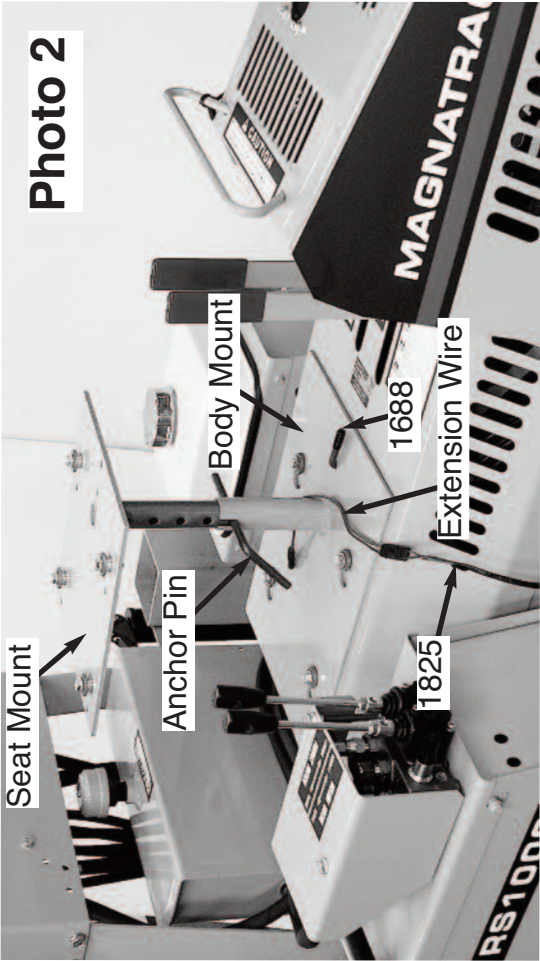
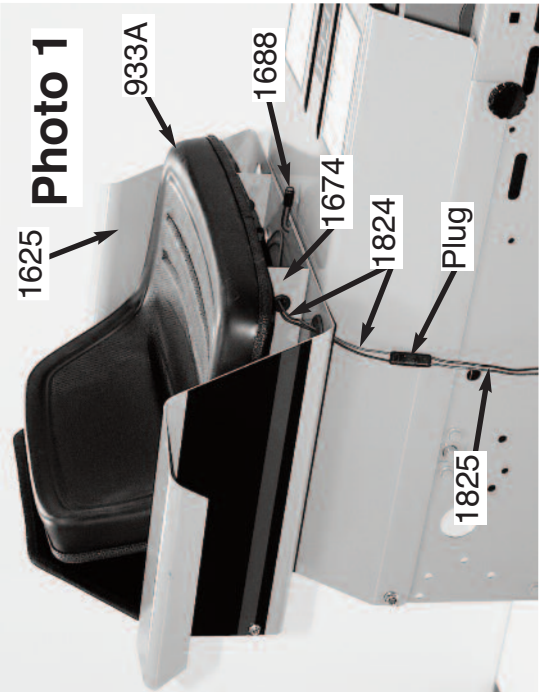




Photo 6

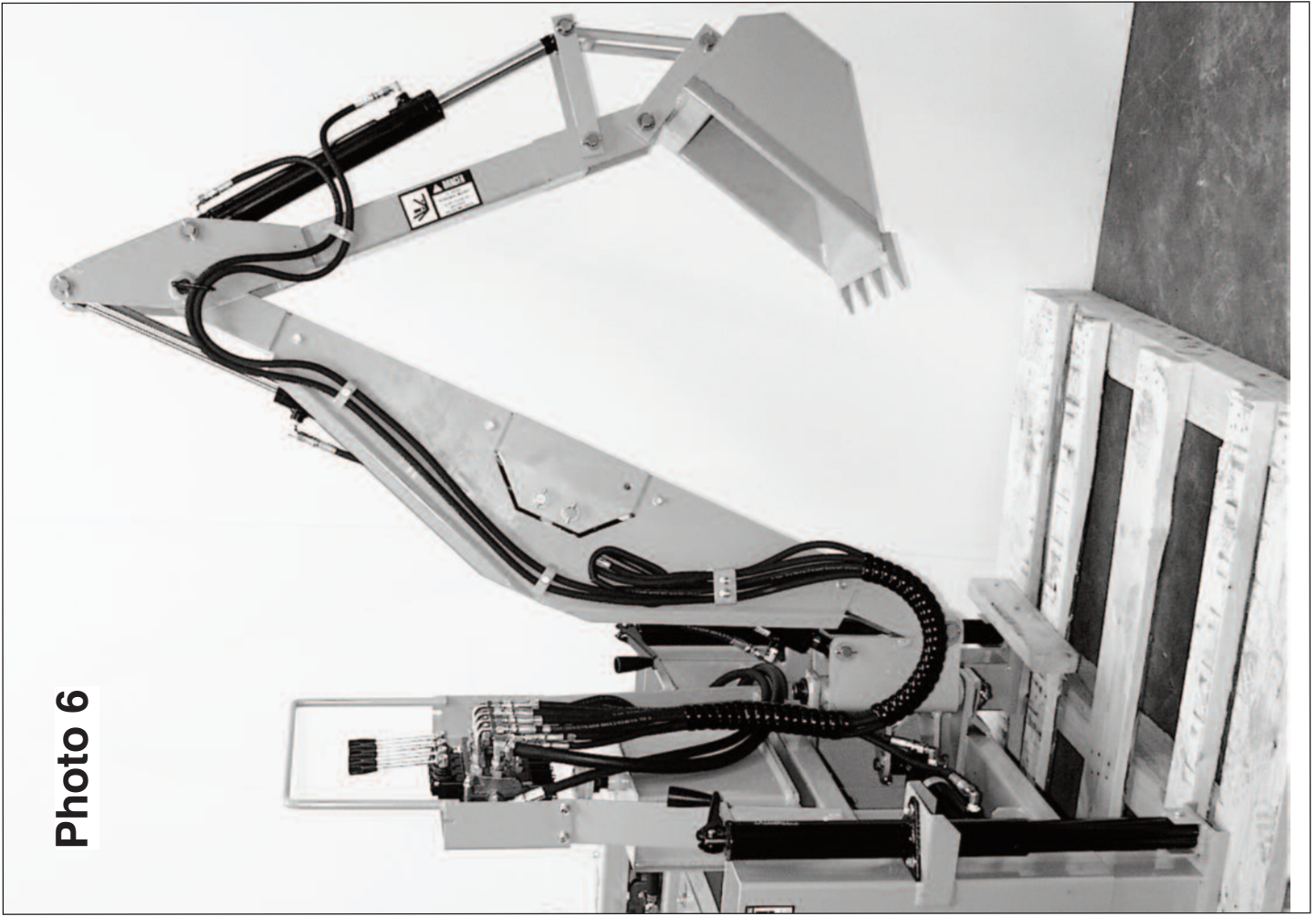
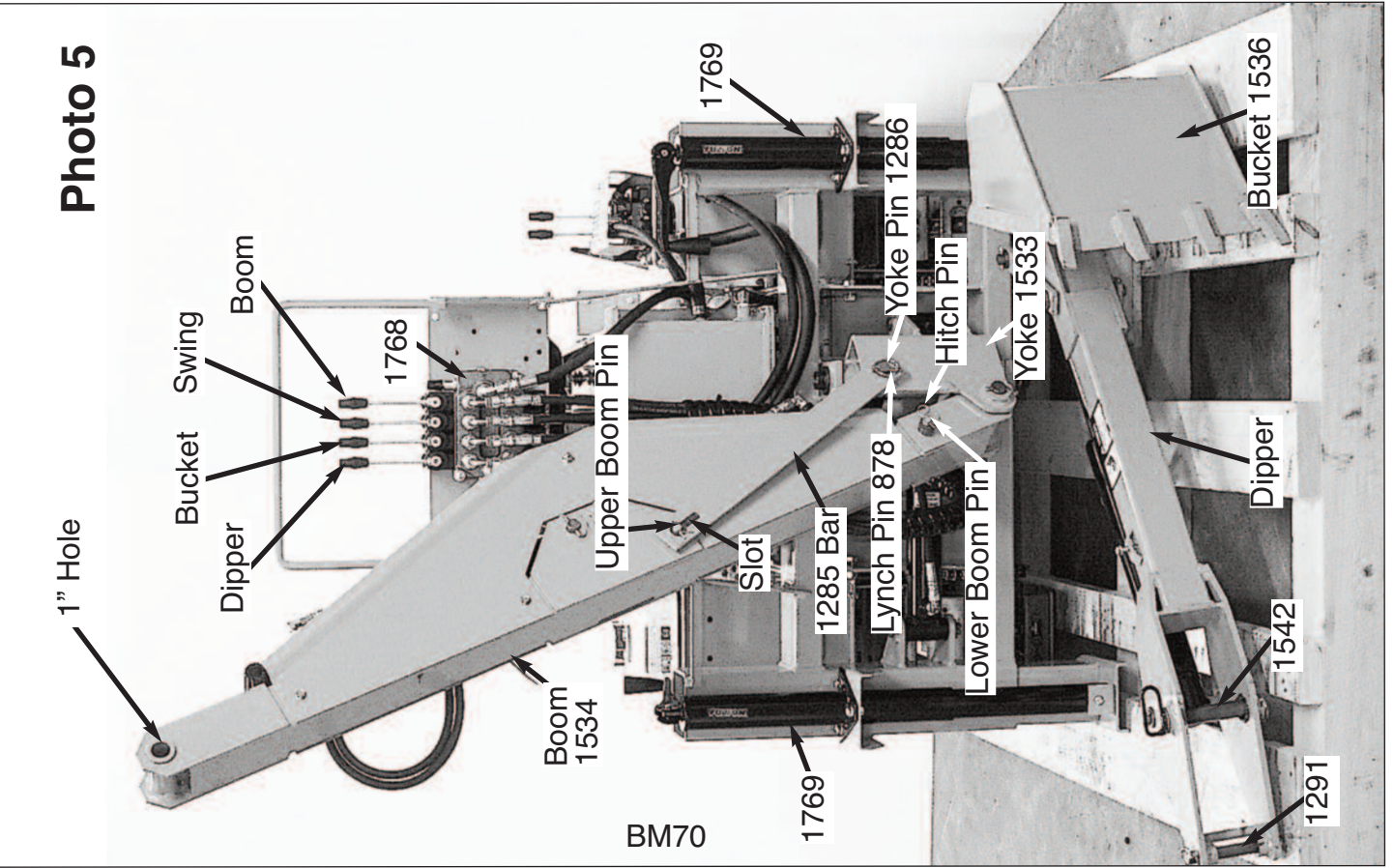
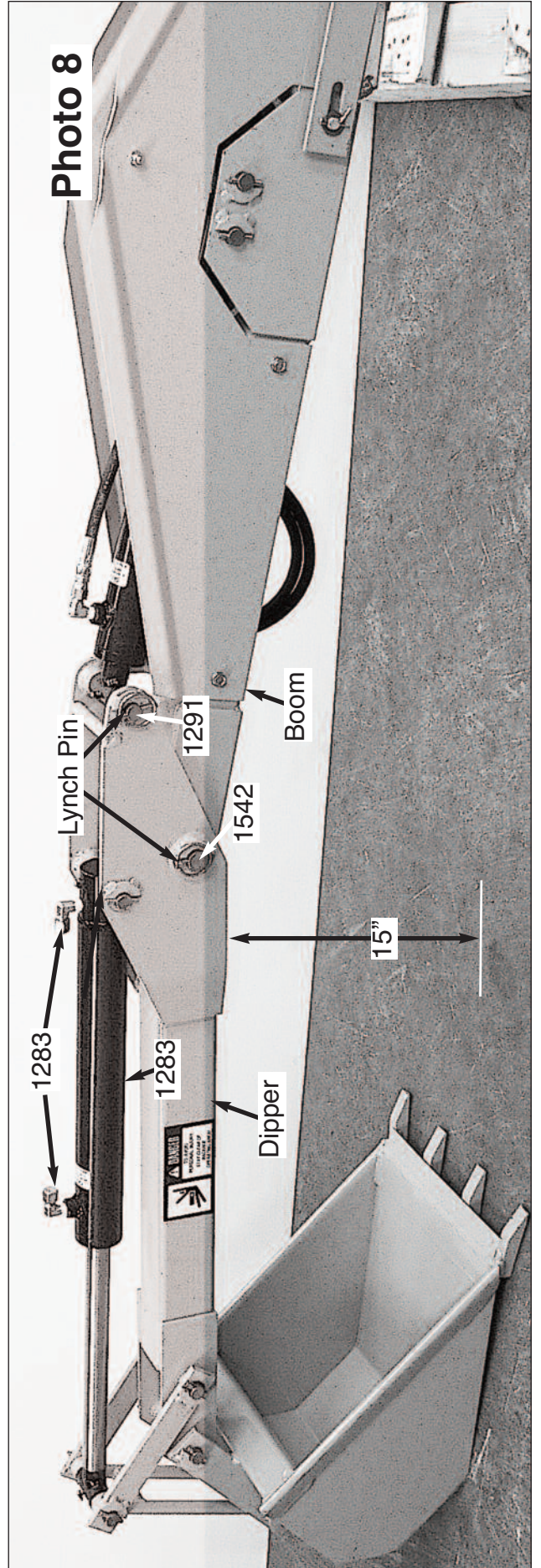
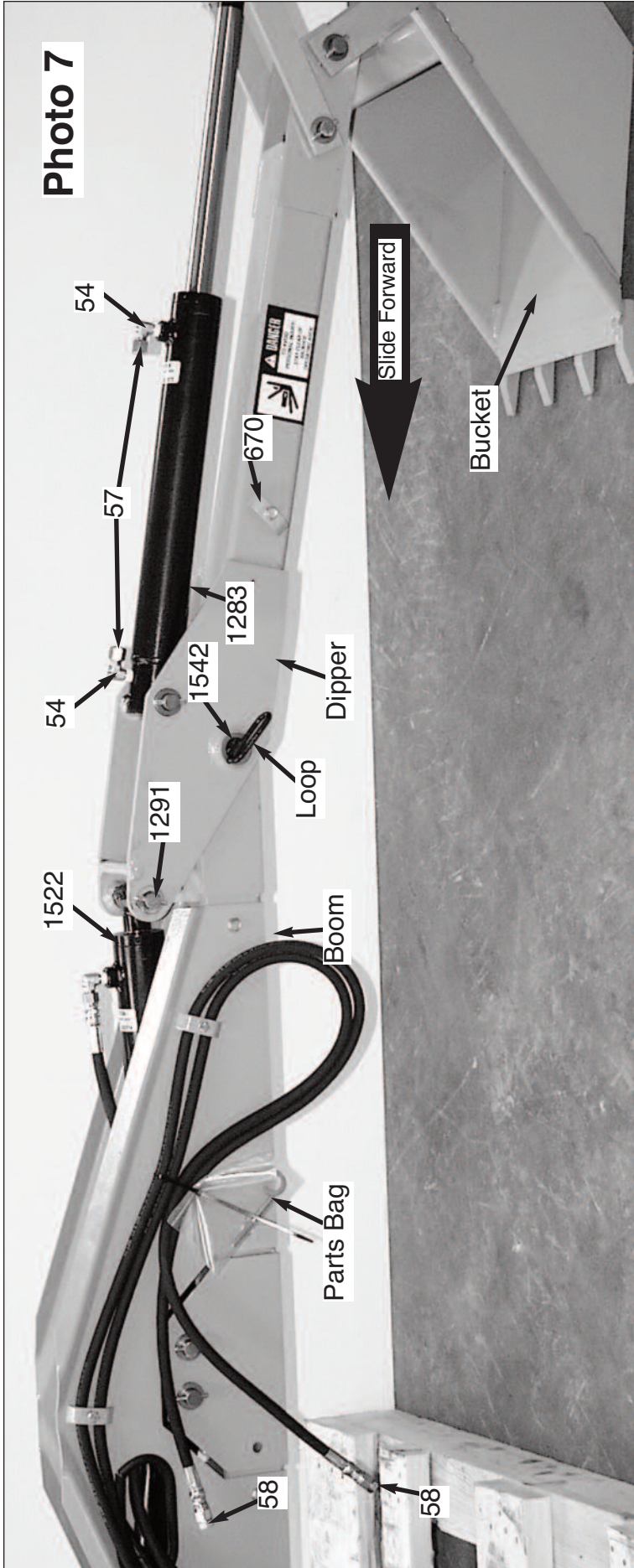


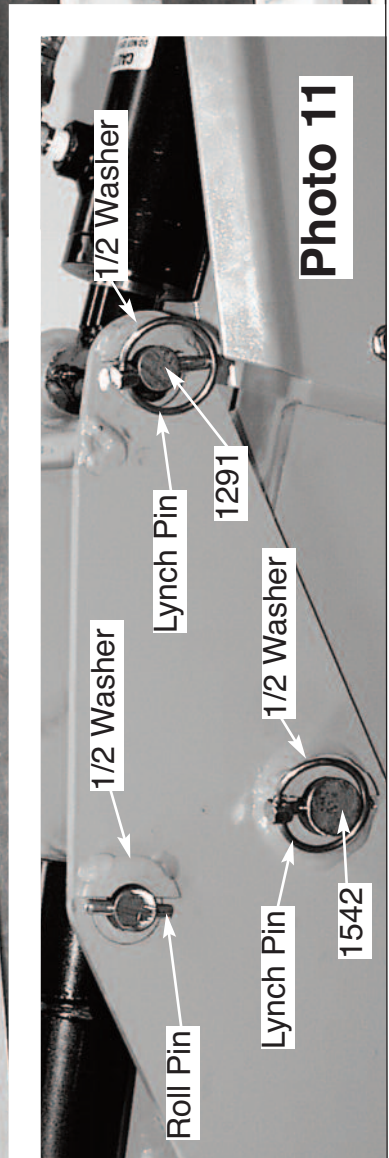
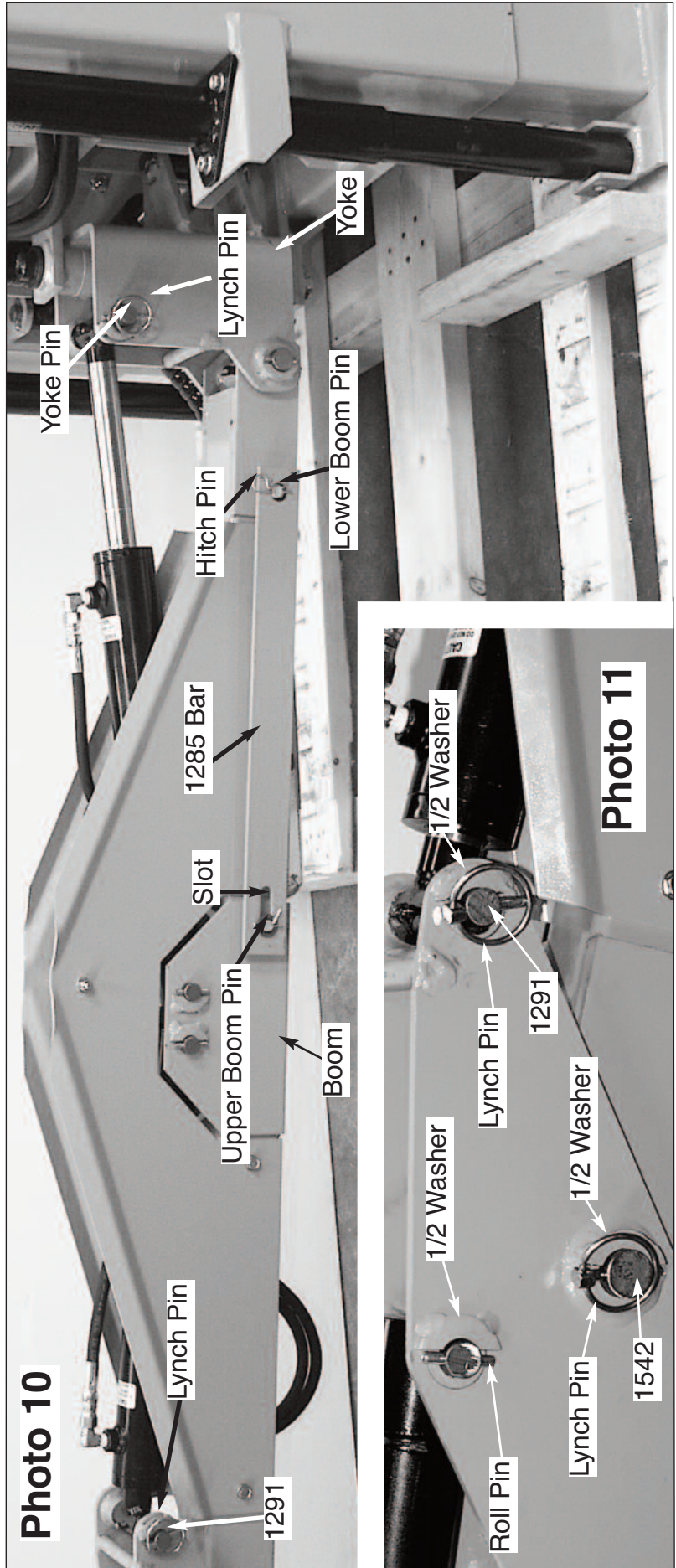
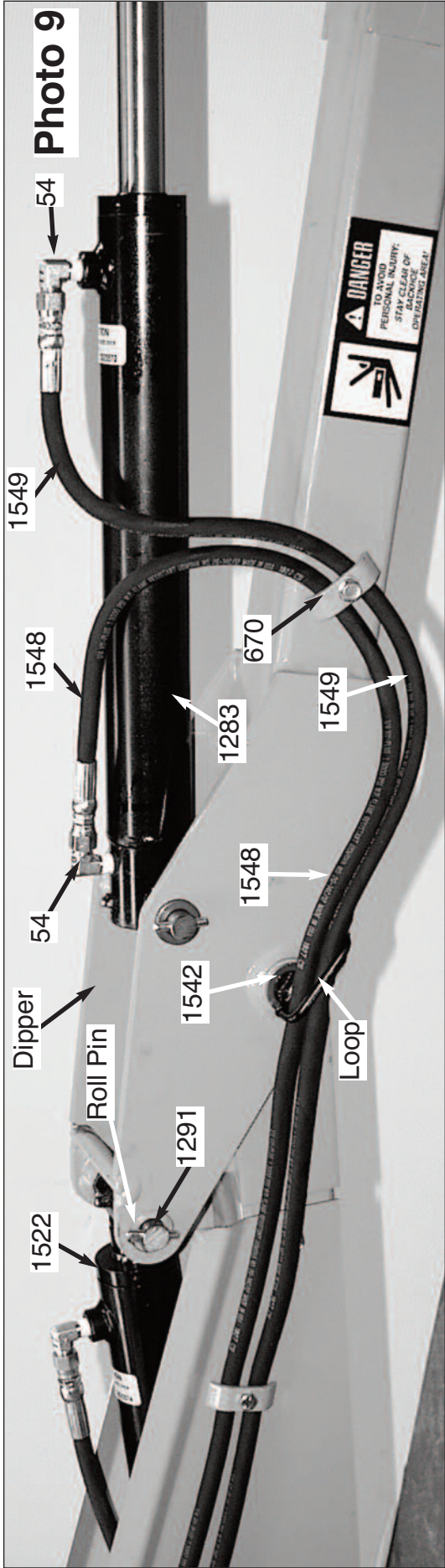
Photo 5











The following Parts Lists and Identification Photos are included to help identify various components and their relationship to each other for later service or adjustment.

## D1060 BACKHOE PARTS LIST

000029xx	#20007 Cylinder, burnished	1
000054	Fitting, 90 degree, 849-FS-06x04	6
000214	Rear Axle	1
000244	Spring pin, 1/4" dia. X 1 1/2"	24
000504sfp	Seat pin	1
000670	Clip, painted	3
000672Bsfp	Pin, 5" short	2
000673A	Zerk, straight	5
000704	Washer, steel, 1 3/16" ID x 1 7/8" OD	8
000716	Washer, steel, 1" ID x 1 1/2" OD	8
000727	Snap ring, 1 3/16" ID	1
000878	Lynch pin, 1/4 pin w/ wire lock handle	1
000910	Hitch Pin	1
000913	Cap, steel, hex	1
000929	Spiral Wrap, 4ft section	1
000931	Hose clamp, 5/8"	4
000956	Fitting, 90 degree w/ restrictor	2
001276	Link	1
001277	Arm, (set of two)	1
001283	Cylinder	2
001285	Bar	1
001286sfp	Pin, 3/4x6-1/2"	1
001289sfp	Pin	2
001291sfp	Pin	6
001522	Cylinder, boom lift	1
001533	Yoke. w/bushings	1
001534	Boom	1
001535	Dipper Arm	1
001537	Boom Side	1
001538	Clip	1
001539	Tube	1
001540sfp	Pin, 1x6-5/8"	1
001541	Dipper Side	1
001542	Pin, with painted end	1
001544	Hose, 1/4 x 65"	1
001545	Hose, 1/4 x 61"	1
001546	Hose, 1/4 x 65"	1
001547	Hose, 1/4 x 81"	1
001548	Hose, 1/4 x 119"	1
001549	Hose, 1/4 x 119"	1



# D1060 BACKHOE

## PARTS LIST [continued]

001673sfp	Washer	4
001688sfp	Pin	1
001759	Tube Spacer	2
001757	Fitting, 842-FS-06	1
001762	Lower body angle mount	1
001763	Stabilizer leg	2
001764	Seat mount – upper	1
001765	Seat mount – lower	1
001766	Valve mount	1
001768XX	Backhoe Valve Assembly	1
-000676	-Fitting, 879-FS-06, 90 deg	6
-000790	-Fitting, 848-FSO-06x08, straight	11
-001041F	-Power Beyond Plug, 24SR-04	1
-001775	-Fitting, 60SB-10x06	1
-001768	-Valve, 4-spool, monoblock	1
-002370	-Fitting, 63UC-06x06	4
001769	Jack leg	2
001770	Hose, 3/8 x 53”	1
001771	BIP plug, 3/8	1
001772	Hose, HP104-6FJX-6FJX-38”	1
001773	Hose, HP104-6FJX-6FJX-28”	1
001774	Return dump hose, 5/8 soft x 45”	1
001776	Plastic tee connector	1
001778	D1060 frame	1
001851	12” loop, molded 2 contact seat wire	1
001867	Vinyl cap, 5/16 x 38”	1
001907	Cotter pin, 1/8 x 1”	1
002061	Zerk, 1/8 pipe thread	1
002077	Shim washer, 3/4” ID	38
002579	Shim washer, 7/8” ID	20
002582	Fitting, 889-FS-06, 45 degree	1

# D1060 BACKHOE

## FASTENER LIST

MAT-000052	Edging, black, per foot	1
DEC-001972	Decal set, D106, D1060. D1065	1
Bolt-5/16-8	5/16x18x1-1/2 G5 Cap Screw	1
Bolt-5/16-9	5/16x18x1-3/4 G5 Cap Screw	1
Bolt-5/16-10	5/16X18X2 G5 Cap Screw	2
Bolt-5/16-11	5/16x18x2-1/2 G5 Cap Screw	4
Bolt-5/16-15	5/16 x 18 x 4 1/2 G5 Cap Screw	1
Bolt-5/16-123	5/16 x 18 x 1 HX Spin Lock Bolt	4
Bolt-5/16-124	5/16 x 18 x 1 1/4 HX Spin lock bolt	12
Bolt-5/16-193	5/16 x 18 x 3/4 HX Spin lock self-tap	8
Bolt-5/16-199	5/16 x 18 x 1-1/2 HX Spin lock self-tap	1
Bolt-3/8-131	3/8 x 16 x 1-3/4 Spin lock bolt	10
Bolt-1/2-133	1/2 x13 x 1 Spin lock bolt	8
Nut-5/16-221	5/16 x 18 Nylon lock nut	7
Nut-5/16-231	5/16 x 18 Spin lock nut	16
Nut-3/8-232	3/8 x 16 Spin lock nut	10
Nut-1/2-234	1/2 x 13 Spin lock nut	8
Wash-5/16-261	5/16 Flat washer	20
Wash-1/2-264	1/2 Flat Washer	5



The following Parts Lists and Identification Photos are included to help identify various components and their relationship to each other for later service or adjustment.

## D1060UG BACKHOE PARTS LIST

000029xx	#20007 Cylinder, burnished	1
000054	Fitting, 90 degree, 849-FS-06x04	10
000214	Rear Axle	1
000244	Spring pin, 1/4" dia. X 1 1/2"	24
000504sfp	Seat pin	1
000670	Clip, painted	3
000672Bsfp	Pin, 5" short	2
000673A	Zerk, straight	5
000704	Washer, steel, 1 3/16" ID x 1 7/8" OD	8
000716	Washer, steel, 1" ID x 1 1/2" OD	8
000727	Snap ring, 1 3/16" ID	1
000821	Valve Mount	1
000878	Lynch pin, 1/4 pin w/ wire lock handle	1
000910	Hitch Pin	1
000913	Cap, steel, hex	1
000929	Spiral Wrap, 4ft section	1
000931	Hose clamp, 5/8"	4
000956	Fitting, 90 degree w/ restrictor	2
001128ZZ	Valve Assembly, D1060UG	1
-001128	-Valve, 6 Bank section 1	1
-001041F	-Power Beyond Plug, 24R-04	1
-002525	-Fitting, 848-FSO-06x10	2
-000790	-Fitting, 848-FSO-06x08, straight	11
-002370	-Fitting, 63UC-06x06, 90 degree	6
-000676	-Fitting, 879-FS-06, 90 degree	8
001275	Leg, right & left	1
001276	Link	1
001277	Arm, (set of two)	1
001283	Cylinder	4
001285	Bar	1
001286sfp	Pin, 3/4 x 6-1/2"	1
001289sfp	Pin, 3/4 x 4-5/8"	6
001291sfp	Pin	6
001522	Cylinder, boom lift	1
001533	Yoke. w/bushings	1
001534	Boom	1
001535	Dipper Arm	1
001537	Boom Side	1
001538	Clip	1
001539	Tube	1
001540sfp	Pin, 1x6-5/8"	1

# D1060UG BACKHOE

## PARTS LIST [continued]

001541	Dipper Side	1
001542	Pin, with painted end	1
001544	Hose, 1/4 x 65"	1
001545	Hose, 1/4 x 61"	1
001546	Hose, 1/4 x 65"	1
001547	Hose, 1/4 x 81"	1
001548	Hose, 1/4 x 119"	1
001549	Hose, 1/4 x 119"	1
001550	Hose, 1/4 x 47"	1
001551	Hose, 1/4 x 47"	1
001552	Hose, 1/4 x 35"	1
001553	Hose, 1/4 x 26"	1
001554	Hose, 1/4 x 47"	1
001555	Hose, 1/4 x 47"	1
001673sfp	Washer	4
001688sfp	Pin	1
001759	Tube Spacer	2
001762	Lower body angle mount	1
001763	Stabilizer leg	2
001764	Seat mount – upper	1
001765	Seat mount – lower	1
001766	Valve mount	1
001769	Jack leg	2
001770	Hose, 3/8 x 53"	1
001771	BIP plug, 3/8	1
001772	Hose, HP104-6FJX-6FJX-38"	1
001773	Hose, HP104-6FJX-6FJX-28"	1
001774	Return dump hose, 5/8 soft x 45"	1
001776	Plastic tee connector	1
001778	D1060 frame	1
001851	12" loop, molded 2 contact seat wire	1
001867	Vinyl cap, 5/16 x 38"	1
001907	Cotter pin, 1/8 x 1"	1
001794	Backhoe Frame	1
002061	Zerk, 1/8 pipe thread	1
002077	Shim washer, 3/4" ID	38
002579	Shim washer, 7/8" ID	20
002582	Fitting, 889-FS-06, 45 degree	1



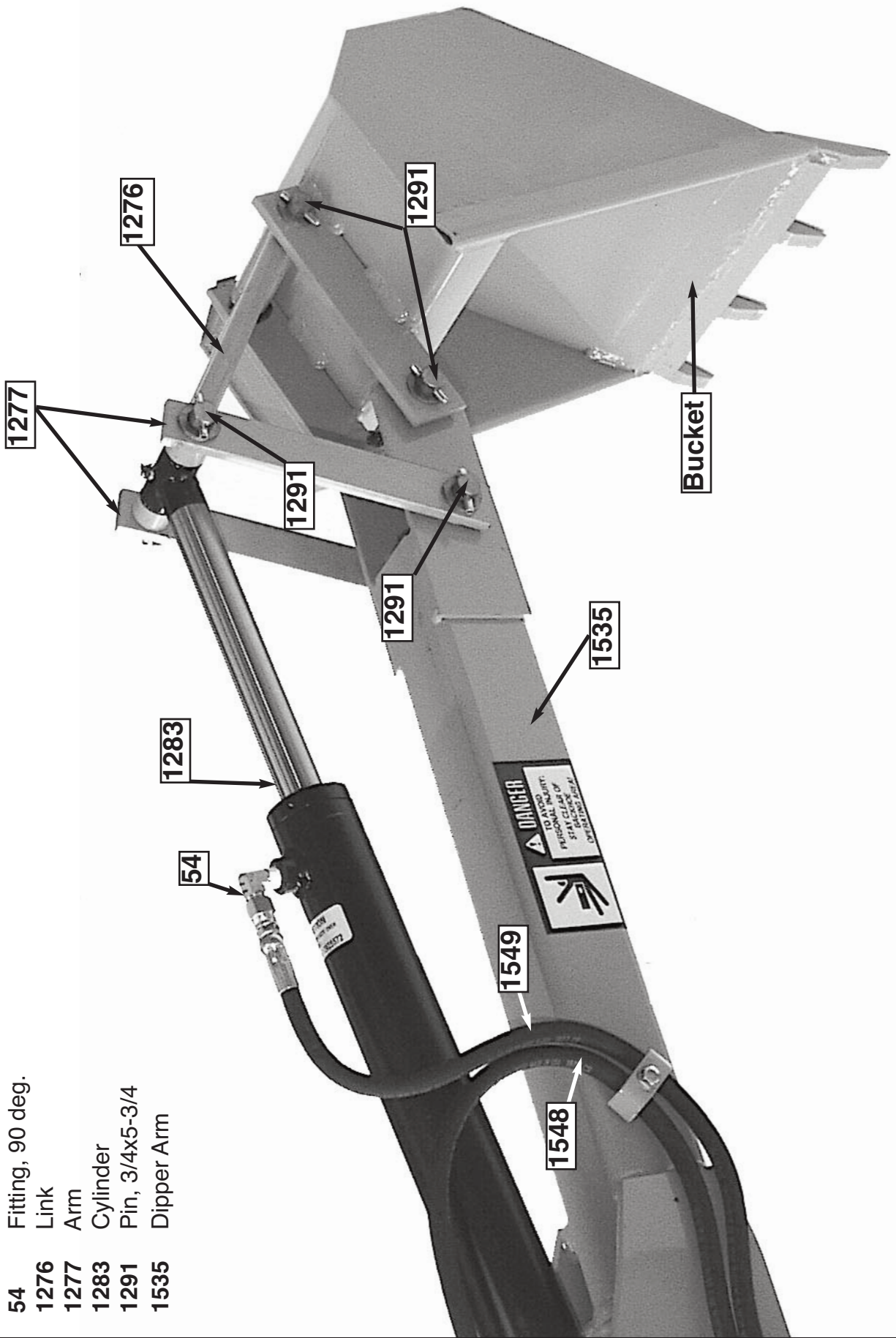
# D1060UG BACKHOE

## FASTENER LIST

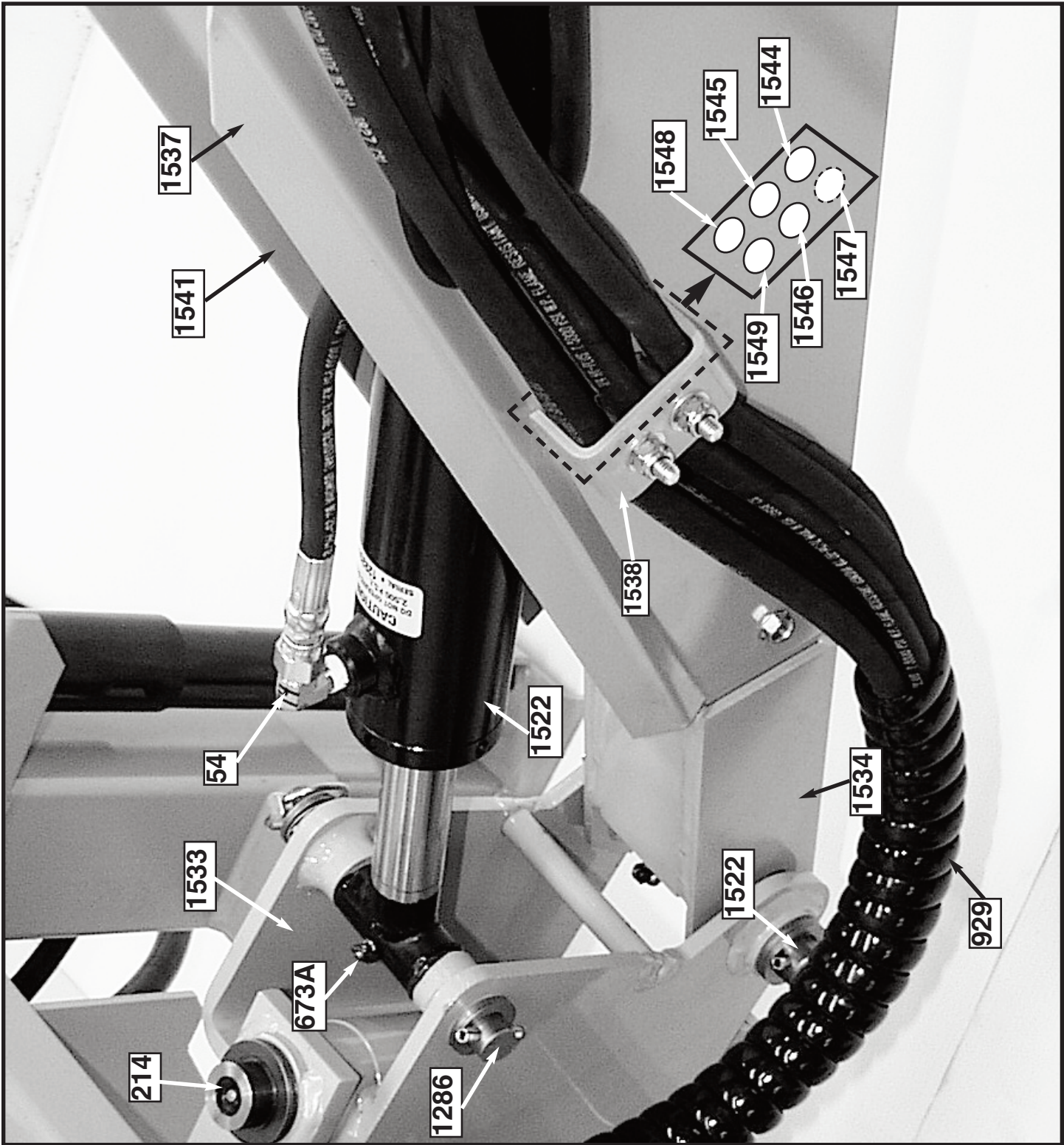
MAT-000052	Edging, black, per foot	1
DEC-001972	Decal set, D106, D1060. D1065	1
Bolt-5/16-8	5/16x18x1-1/2 G5 Cap Screw	1
Bolt-5/16-9	5/16x18x1-3/4 G5 Cap Screw	1
Bolt-5/16-10	5/16X18X2 G5 Cap Screw	2
Bolt-5/16-11	5/16x18x2-1/2 G5 Cap Screw	4
Bolt-5/16-15	5/16 x 18 x 4 1/2 G5 Cap Screw	1
Bolt-5/16-123	5/16 x 18 x 1 HX Spin Lock Bolt	4
Bolt-5/16-124	5/16 x 18 x 1 1/4 HX Spin lock bolt	12
Bolt-5/16-193	5/16 x 18 x 3/4 HX Spin lock self-tap	8
Bolt-5/16-199	5/16 x 18 x 1-1/2 HX Spin lock self-tap	1
Bolt-3/8-131	3/8 x 16 x 1-3/4 Spin lock bolt	10
Bolt-1/2-133	1/2 x13 x 1 Spin lock bolt	8
Nut-5/16-221	5/16 x 18 Nylon lock nut	7
Nut-5/16-231	5/16 x 18 Spin lock nut	16
Nut-3/8-232	3/8 x 16 Spin lock nut	10
Nut-1/2-234	1/2 x 13 Spin lock nut	8
Wash-5/16-261	5/16 Flat washer	20
Wash-1/2-264	1/2 Flat Washer	5

# D1060

- 54 Fitting, 90 deg.
- 1276 Link
- 1277 Arm
- 1283 Cylinder
- 1291 Pin, 3/4x5-3/4
- 1535 Dipper Arm





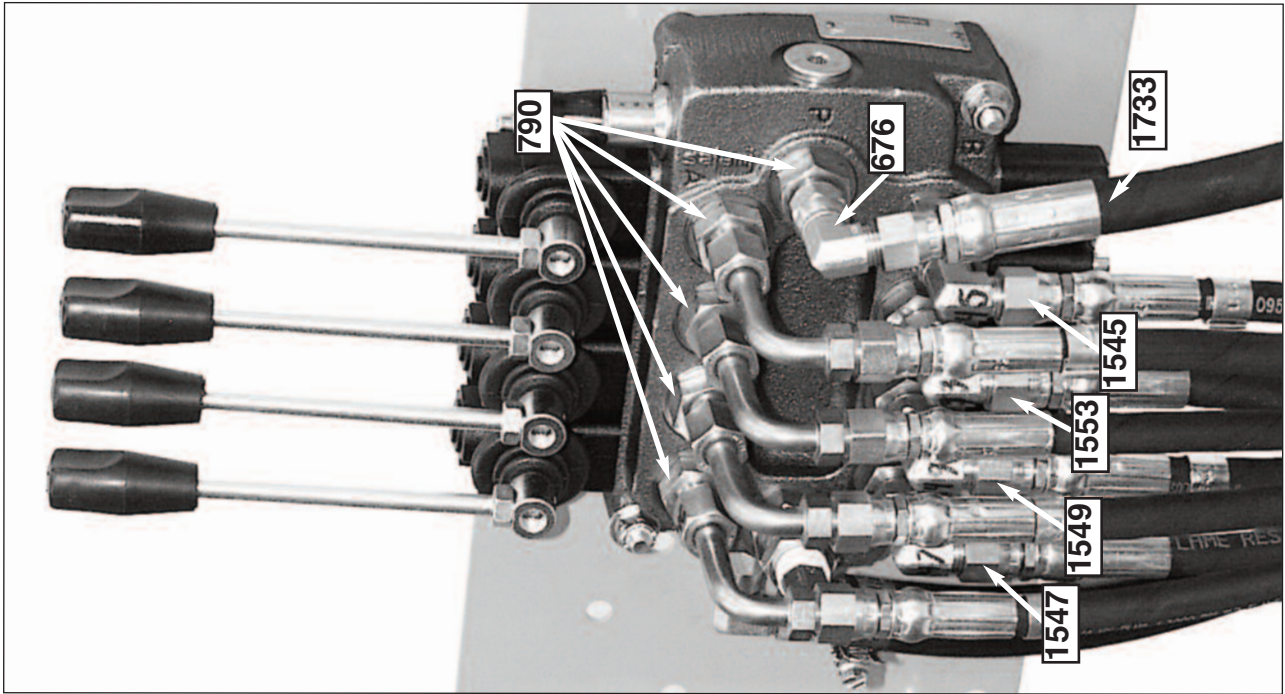


# D1060

- 54 Fitting, 90 deg.
- 214 Rear Axle
- 673A Zerk
- 929 Spiral Wrap
- 1286 Pin, 3/4x5-3/4
- 1522 Cylinder
- 1533 Yoke
- 1534 Boom
- 1537 Side Wall, right
- 1538 Clip, Hose
- 1541 Side Wall, left
- 1544 Hose
- 1545 Hose
- 1546 Hose
- 1547 Hose
- 1548 Hose
- 1549 Hose

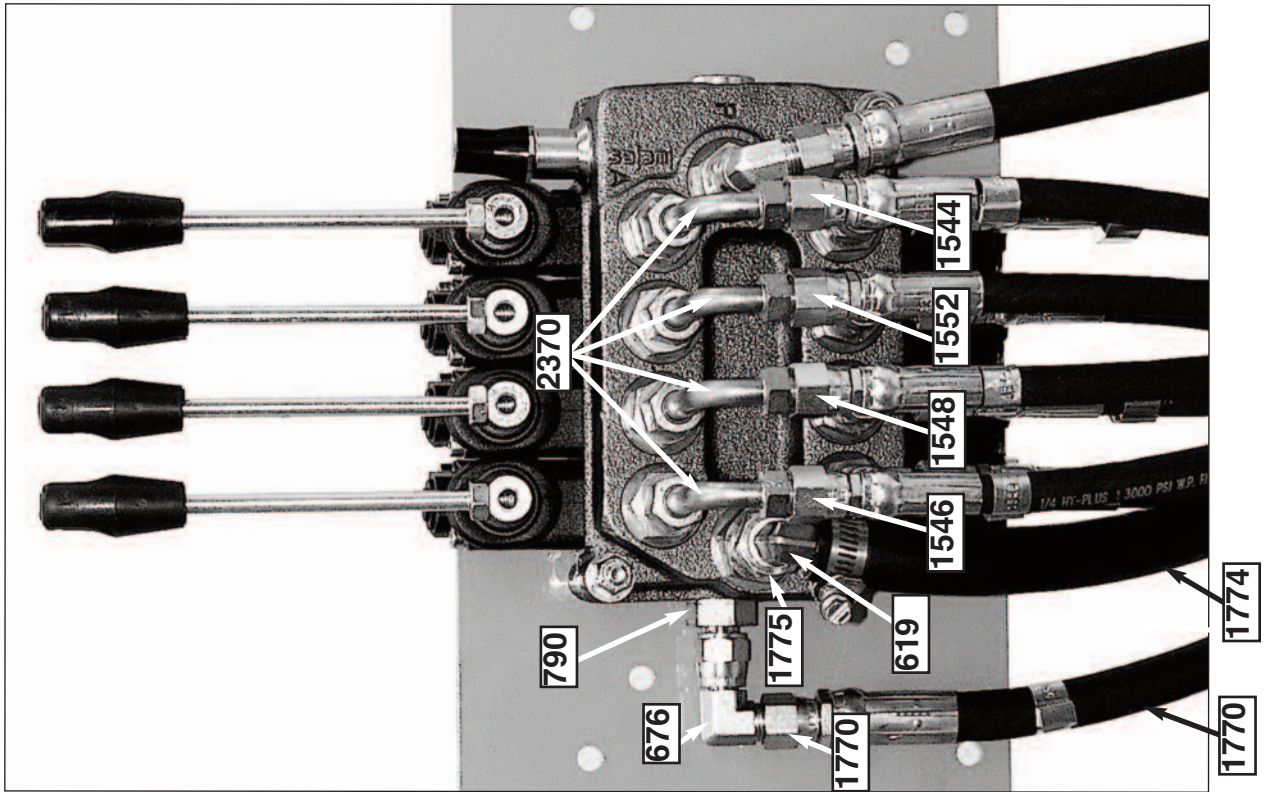






# D1060

- 54 Fitting, 90 deg.
- 1276 Link
- 1277 Arm
- 1283 Cylinder
- 1291 Pin, 3/4x5-3/4
- 1535 Dipper Arm
- 1536 Bucket



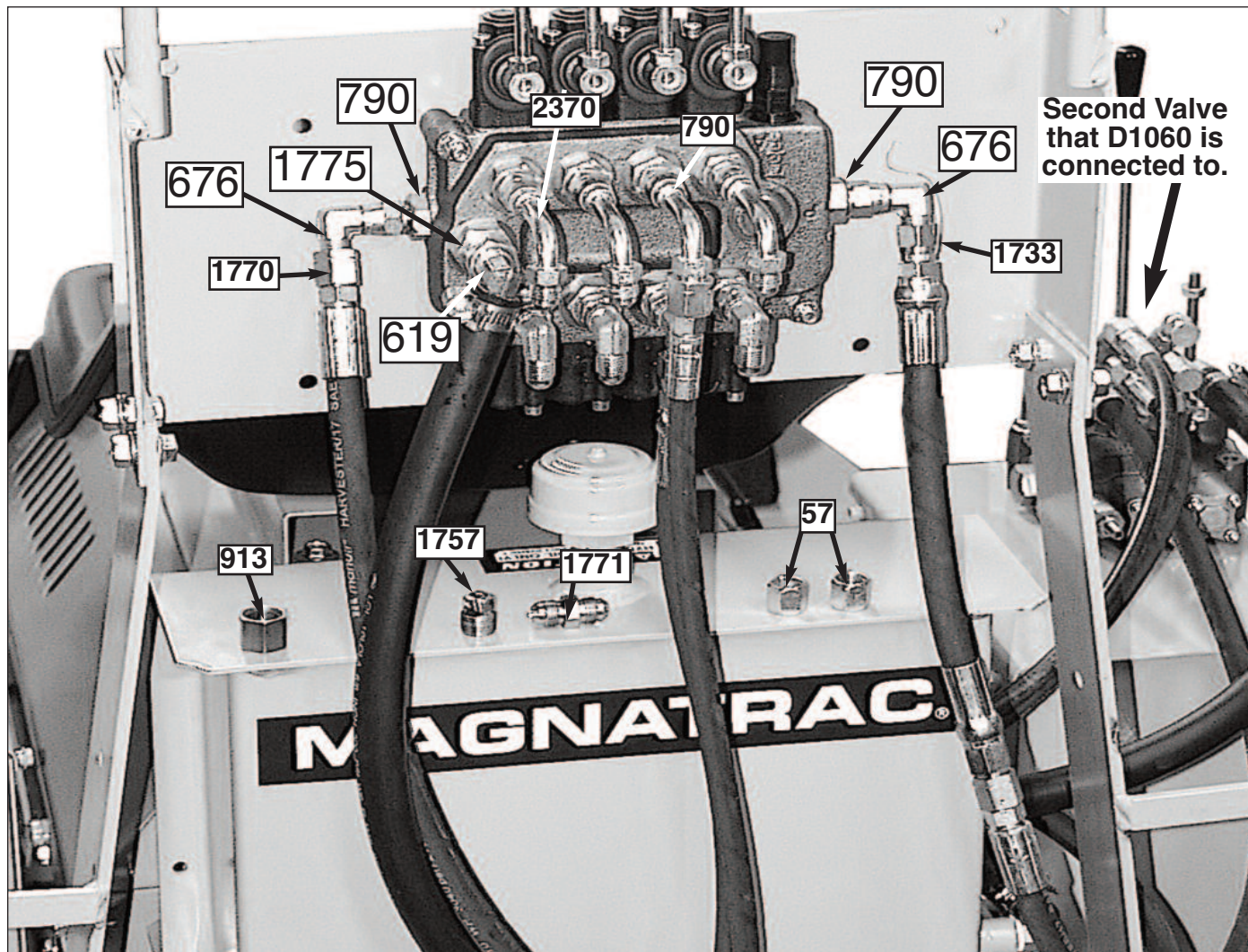


## Disconnecting the Hydraulic System for removal of D1060 Backhoe.

Disconnecting the Hydraulic System of your D1060 can be “potentially dangerous” if you are careless about “bleeding” all the pressure out of your hydraulic system. All Cylinders must be relaxed with no forces pushing or pulling that could “pressurize” them.

With engine off, you need to move **every** “Hydro” Control Lever fully back and forth until the component that it specifically operates no longer moves... **this also includes** the Control Levers of Valves that may also be connected to the Hydro system of the D1060.

**Always feel free to call our Service Department with any questions you may have!**



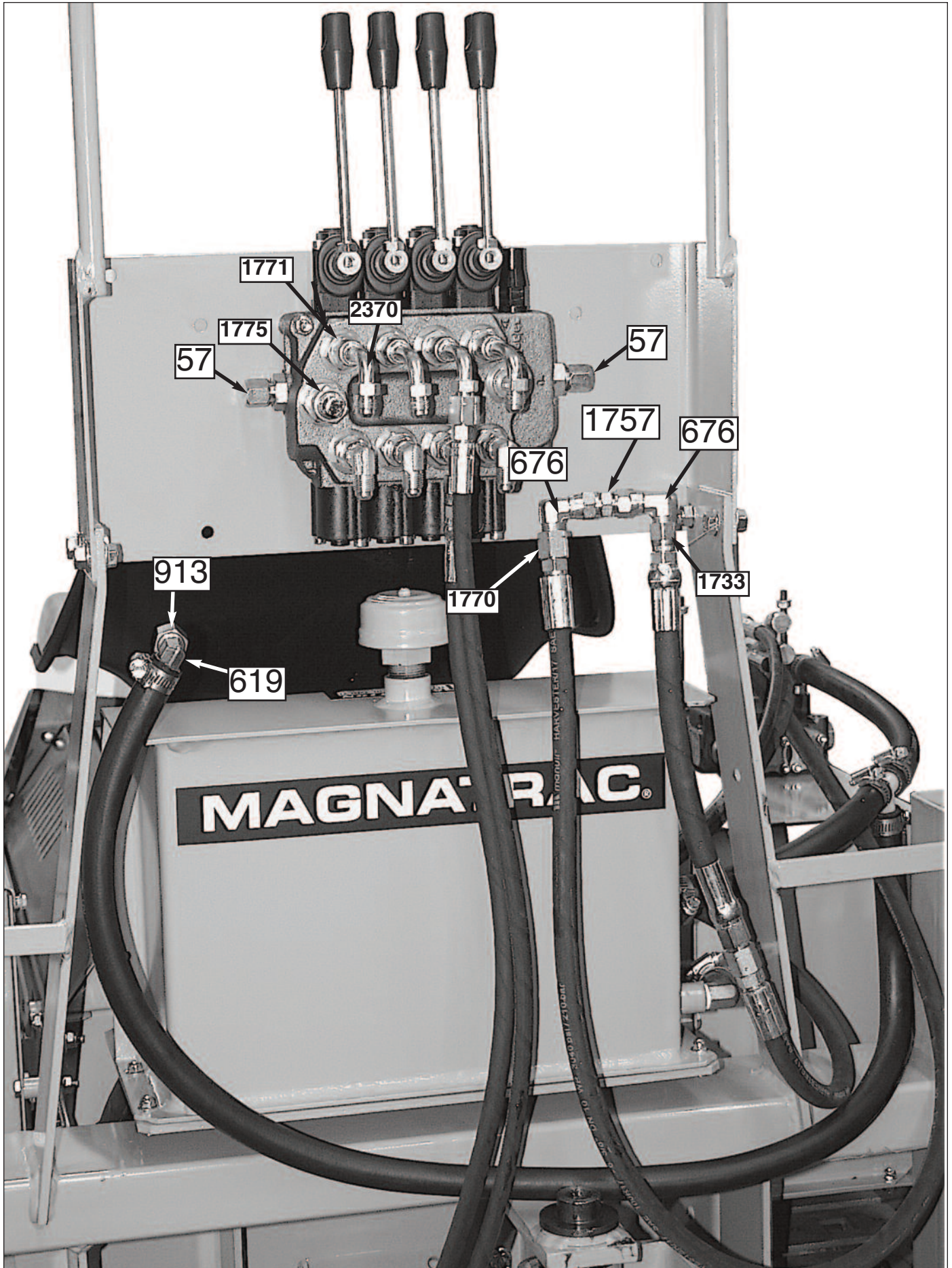
**NOTE:** The Photo above will help you identify each part you will be changing... the Photo [next page] will show you how it looks after the change.

**STEP 1.** Disconnect #676 Fitting [45 deg] from #790 Fitting on *left side* of Valve Bank. Disconnect #676 Fitting [45 deg] from *right side* of Valve Bank. “Cap” each of above #790 Fittings [on either side of Valve] with #57 Caps... tighten.

**STEP 2.** Join the two #676 Fittings (disconnected above) with a #1757 Fitting [straight]... tighten... Photo next page.

**STEP 3.** Disconnect #619 Fitting [45 deg] from #1775 Fitting [straight]. Plug #619 Fitting with #1757 Plug... tighten... Photo next page.





BM84



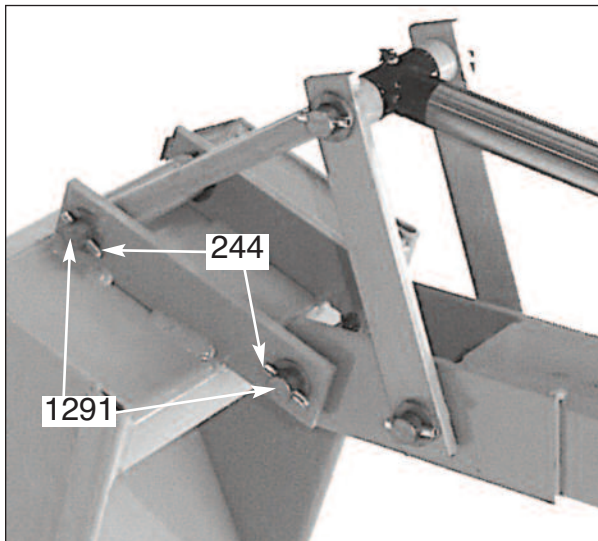
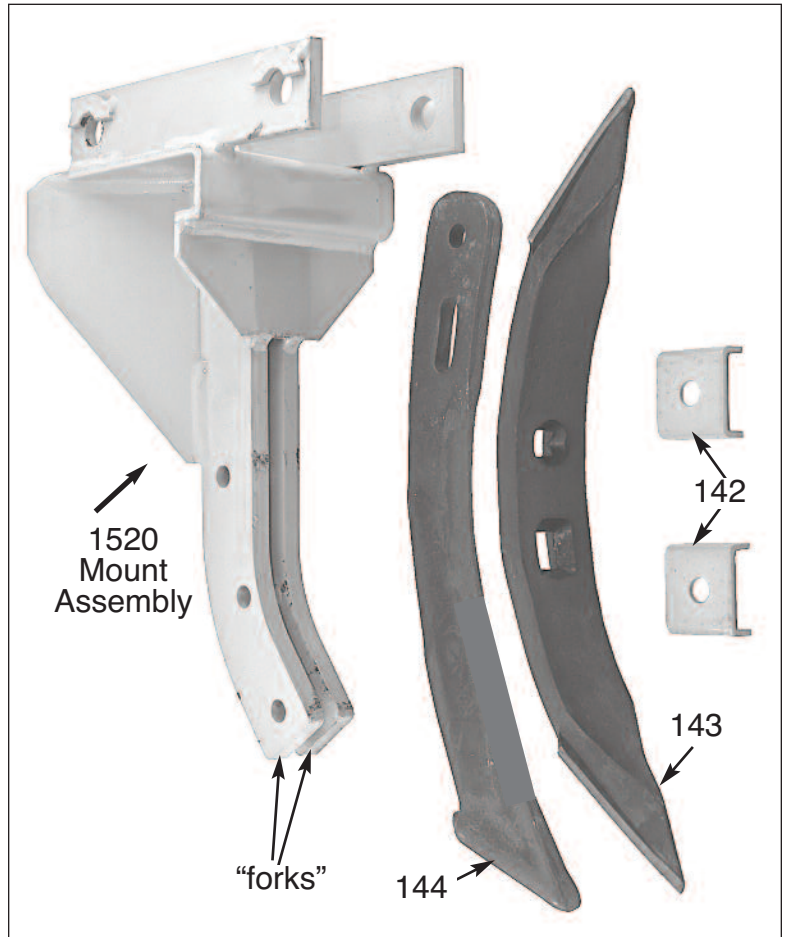
# Frost/Chisel Tooth Kit BR50

## PARTS LIST

000142	Bracket	(2)
000143	Chisel Tooth	(1)
000144	Ripper Tooth	(1)
001520	Mount	(1)

## FASTENER LIST

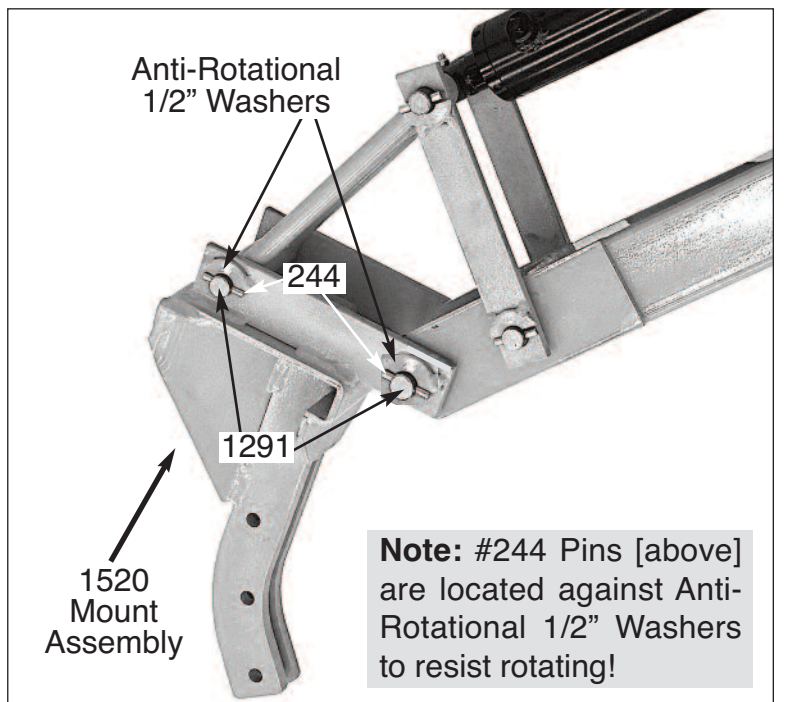
AA	1/2-13x2 G5 Bolt	(2)
BB	1/2-13x3-1/2 G5 Plow Bolt	(2)
AK	1/2-13 Spin Lock Nut	(4)



**STEP 1.** Drive out the #244 Press Pins securing each of the two (2) #1291 Pivot Pins... see Photo above.

**STEP 2.** Drive out the two (2) #1291 Pivot Pins and release Bucket... Photo above.

**STEP 3.** Install #1520 Mount in identical manner as Bucket was installed... secure in same way with #1291 Pivot Pins and #244 Press Pins... see Photo at right.

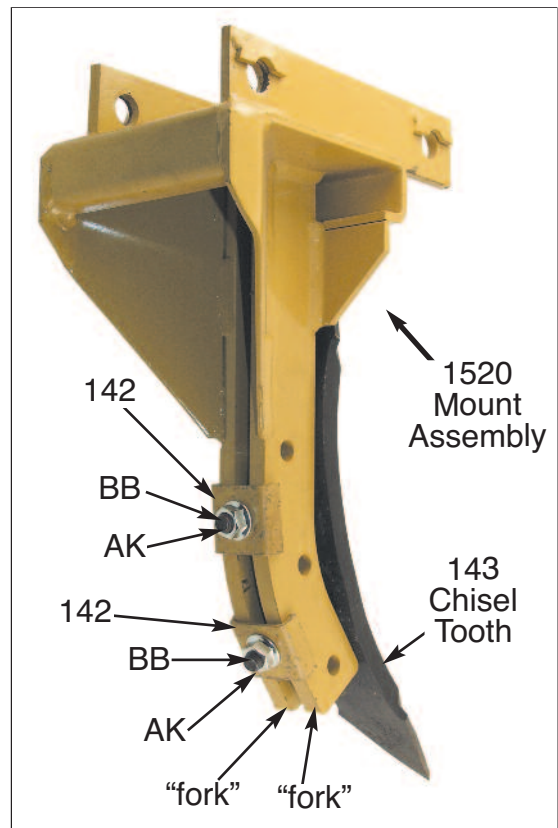


**Note:** #244 Pins [above] are located against Anti-Rotational 1/2" Washers to resist rotating!

## Chisel Tooth Installation

**STEP A.** Following Photo at right closely, lay #143 Chisel Tooth against the two “forks” matching the curve of the Chisel Tooth with curve of “forks”.

**STEP B.** Align two (2) holes in Chisel Tooth with mating slot formed by the two “forks”. Insert #BB Plow Bolt into each 1/2” hole of Chisel Tooth and through “forks”... secure behind with #142 Brackets and #AK Lock Nuts... tighten.



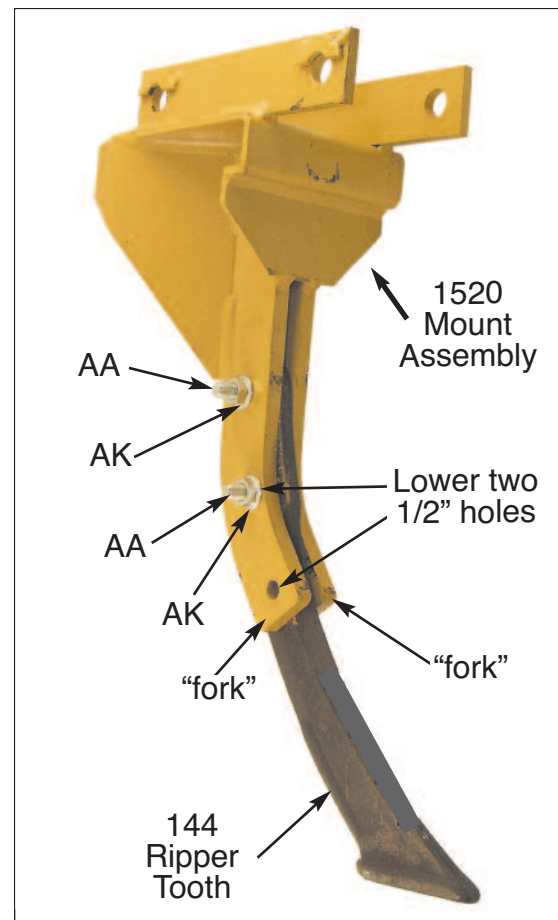
## Ripper Tooth Installation

**STEP A.** Following Photo at right closely, slip the top of the “slotted end” of the #144 Ripper Tooth between the two “forks” of the #1520 Mount Assembly.

**STEP B.** Align the 1/2” slots in Ripper Tooth with matching 1/2” holes in “forks” of #1520 Mount Assembly.

Slip #AA Bolts into these aligned 1/2” slots and holes and secure on reverse side with #AK Nuts.

**NOTE:** You may use the lower two 1/2” holes to give the Ripper Tooth a different working angle.





# Material Bucket Kit - *Hydro Dump* BK45

**STEP 1.** Fully insert an AY Bolt into a VV Washer and then into a 1743 Bushing... make (2) of these *Assemblies*.

**STEP 2.** Following Photo below, align 1/2" hole in #1921 Left Ear with mating 1/2" hole in #1712 Left Bucket Wall.

**STEP 3.** In a similar fashion, align the 1/2" hole in #1921 Right Ear with mating 1/2" hole in #1712 Right Bucket Wall... see Photo below.

## PARTS LIST

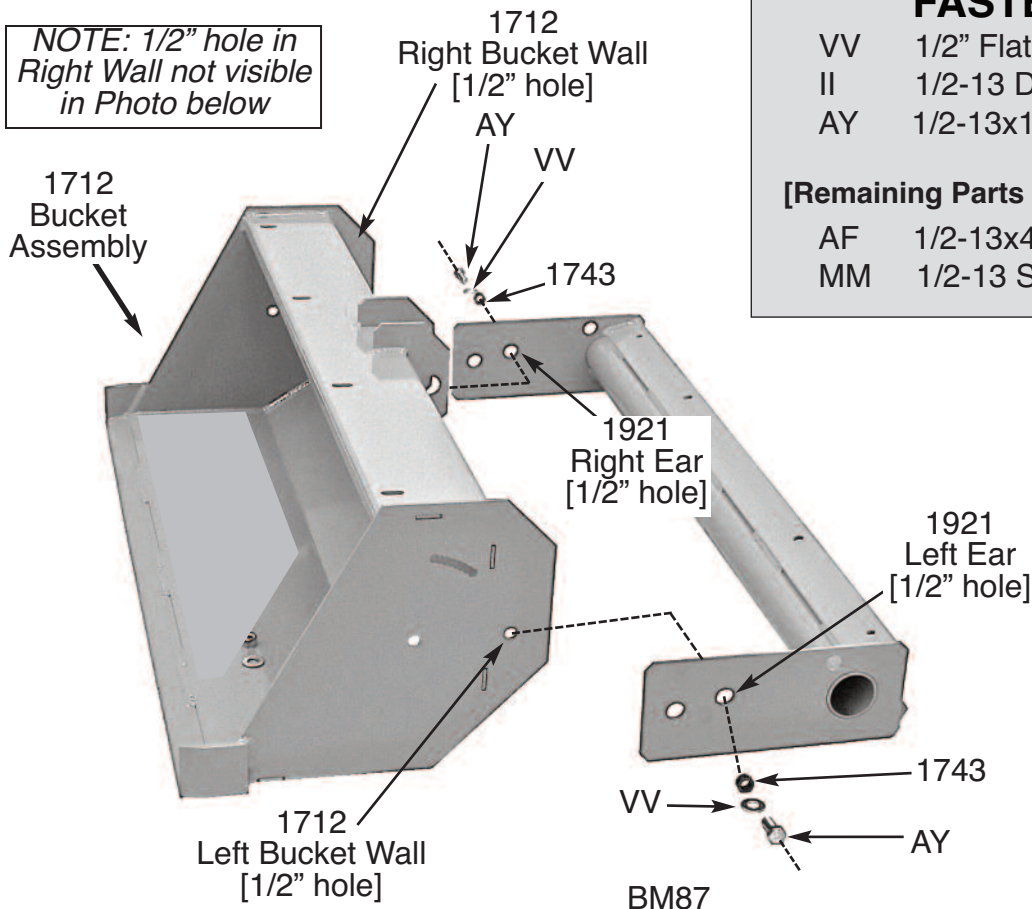
000054	Fitting, 90 degree, 849-FS-06x04	(2)
000244	Spring Pin, 1/4"x1-1/2"	(2)
000279	Grommet, 1-1/2" ID	(1)
000878	Lynch Pin, 1/4" pin w/lock wire	(2)
001712	Bucket Assembly	(1)
001743sfp	Bushing, 1/2"	(2)
001795sfp	Pin, 1" x 5" long	(2)
001796	Straight Swivel, #6505-04x06	(2)
001921	Bucket Hitch	(1)
001922	Hose, 1/4" ID x 84" long	(1)
001923	Hose, 1/4" x 90" long	(1)
002336XX	Cylinder	(1)
002370	Fitting, 90 degree, gooseneck	(1)
002573	Fitting, female, 4050-2P	(2)
002574	Fitting, male, 4010-2P	(2)
002582	Fitting, 889-FS-06, 45 degree	(3)
MAT-000037	Spiral Wrap, 24" long	(1)

## FASTENER LIST

VV	1/2" Flat Washer	(4)
II	1/2-13 Dot Lock Nut	(2)
AY	1/2-13x1-1/4" G5 Bolt	(2)

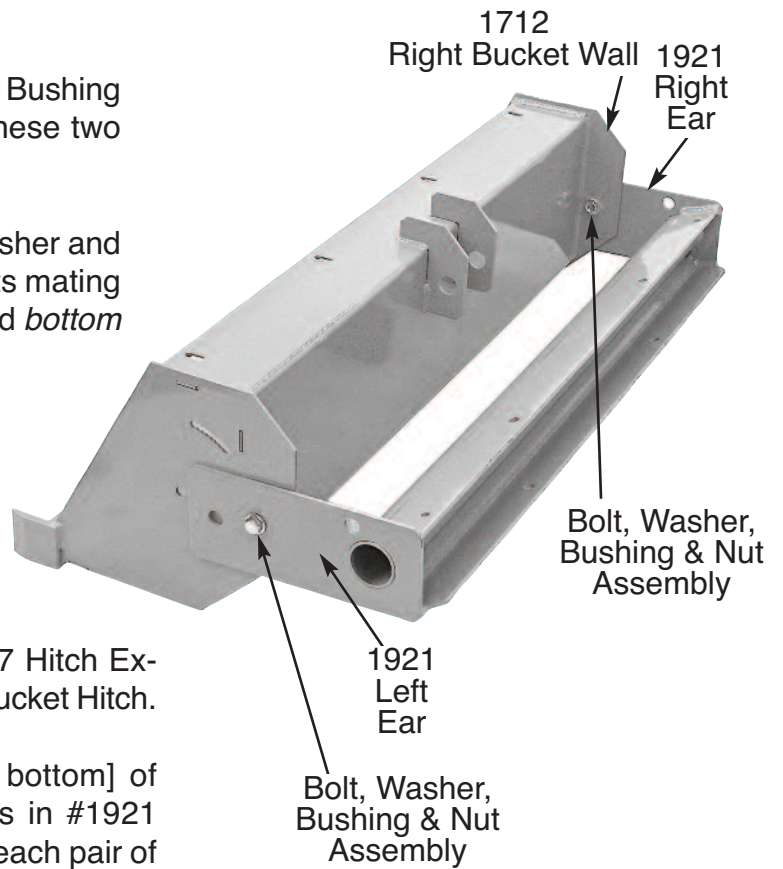
### [Remaining Parts from Hitch Extender Kit]

AF	1/2-13x4-1/2 Bolt	(2)
MM	1/2-13 Spin Lock Nut	(2)



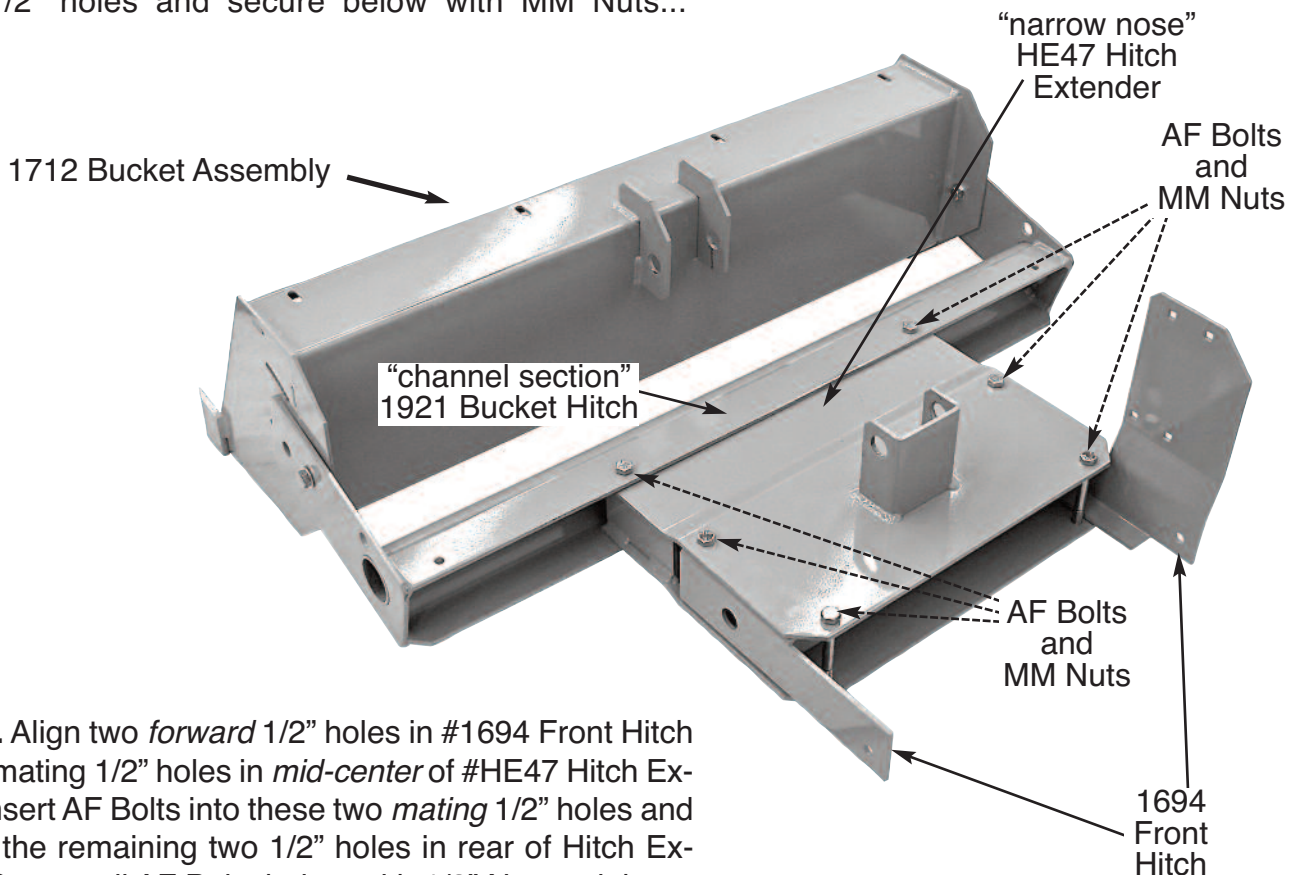
**STEP 4.** From outside, insert a Bolt, Washer & Bushing Assembly [from STEP 1 above] into each of these two sets of *aligned 1/2"* holes.

**STEP 5.** Secure each Assembly with a VV Washer and II Nut... tighten so Bucket can *easily* rotate on its mating #1921 Right & Left Ears... see Photo at right and *bottom* of previous page.



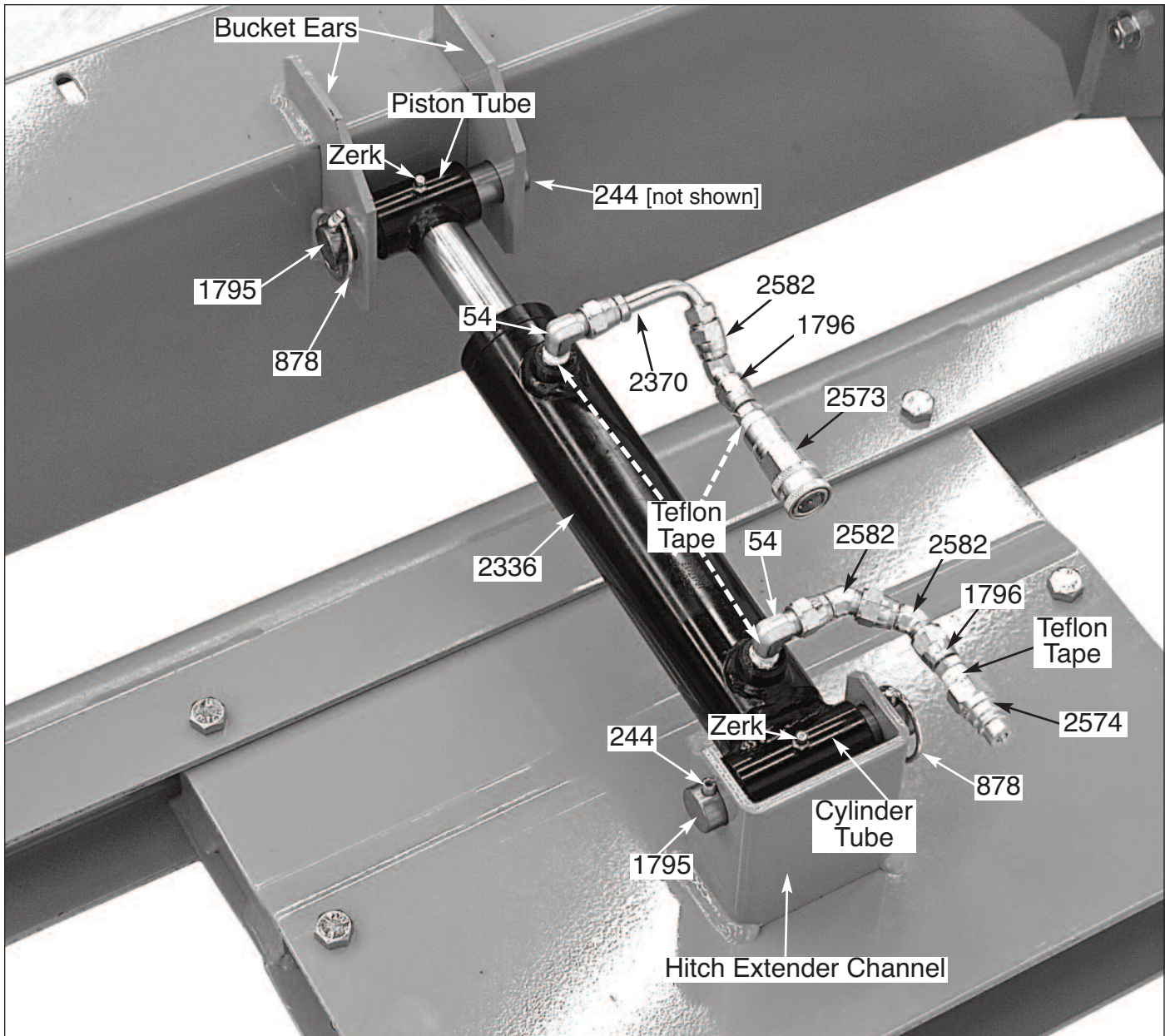
**STEP 6.** Slip the “narrow nose” of the #HE47 Hitch Extender into the “channel” section of the #1921 Bucket Hitch.

**STEP 7.** Align the two 1/2” holes [top and bottom] of #HE47 Hitch Extender with mating 1/2” holes in #1921 Bucket Hitch. From above, slip an AF Bolt into each pair of mating 1/2” holes and secure below with MM Nuts... tighten.



**STEP 8.** Align two *forward 1/2"* holes in #1694 Front Hitch with two mating 1/2” holes in *mid-center* of #HE47 Hitch Extender. Insert AF Bolts into these two *mating 1/2"* holes and also into the remaining two 1/2” holes in rear of Hitch Extender. Secure all AF Bolts below with 1/2” Nuts... tighten.





**STEP 9.** Keeping Zerks upward, install Cylinder Tube end of #2336 Cylinder into Hitch Extender Channel and Piston Tube end of Cylinder between Bucket ears.

**STEP 10.** Drive #244 Spring Pin into one end of each #1795 Pin... center Spring Pins. Using #1795 Pins, secure ends of Cylinder to their respective Hitch Extender Channel and Bucket Ears. Lock each Pin with a #878 Lynch Pin.

**STEP 11.** Wrap *two layers* of "Teflon tape" over the threads of the two right angle #54 Fittings and over the threads of the two #1796 Fittings.

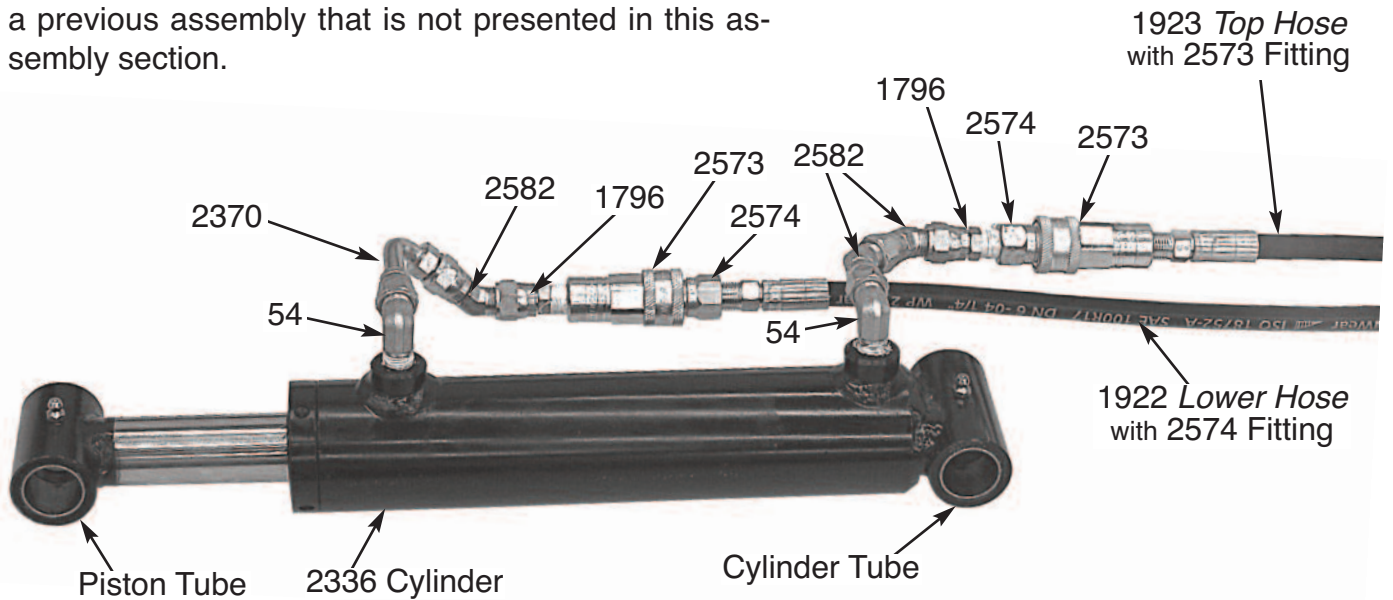
**STEP 12.** Install a #54 Fitting into each *threaded tube* on ends of #2336 Cylinder. Tighten each Fitting stopping when the Fittings is at right angles to the Cylinder... see Photo above.

**STEP 13.** Install a #1796 Fitting *into* #2574 Fitting... tighten... Photo above and next page.

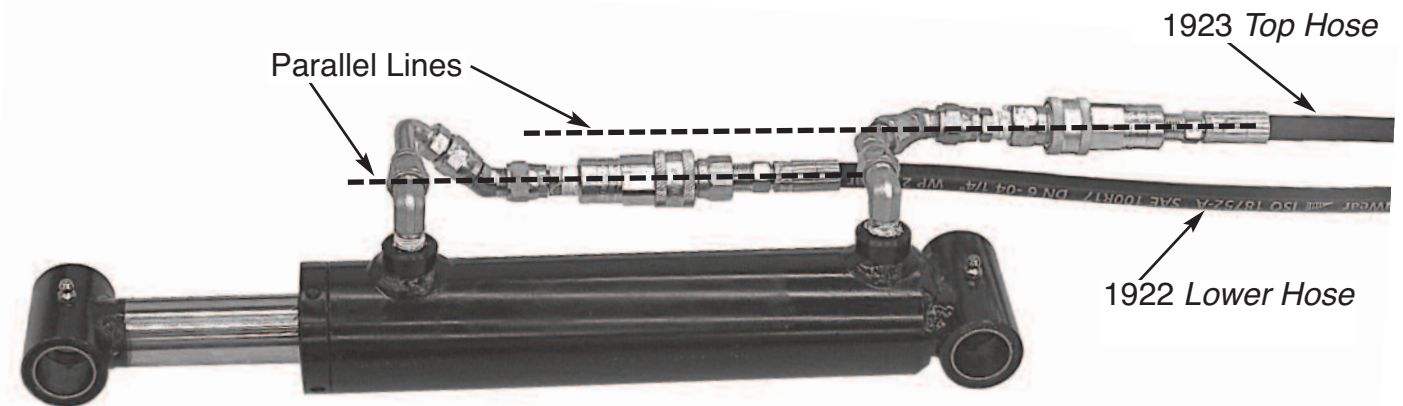
**STEP 14.** Install #2582 Fitting *into* #1796 Fitting... finger tight. Install second #2582 *into* previous #2582... finger tight. Install #54 Fitting *into* previous #2582... finger tight.

**STEP 15.** Install a #1796 Fitting into #2573 Fitting... tighten. Install a #2582 Fitting into #1796 Fitting above... finger tight. Install #54 Fitting into #2370 Fitting above... finger tight.

**NOTE:** #1923 Top Hose with #2573 Fitting and #1922 Lower Hose with #2574 Fitting are the result of a previous assembly that is not presented in this assembly section.



**STEP 15.** Loosen all the Fittings installed above that you left *fingertight*. Reorient their path such that they both take a *parallel path*... see Photo below. Finish tighten all the “finger tight” Fittings that you have installed.





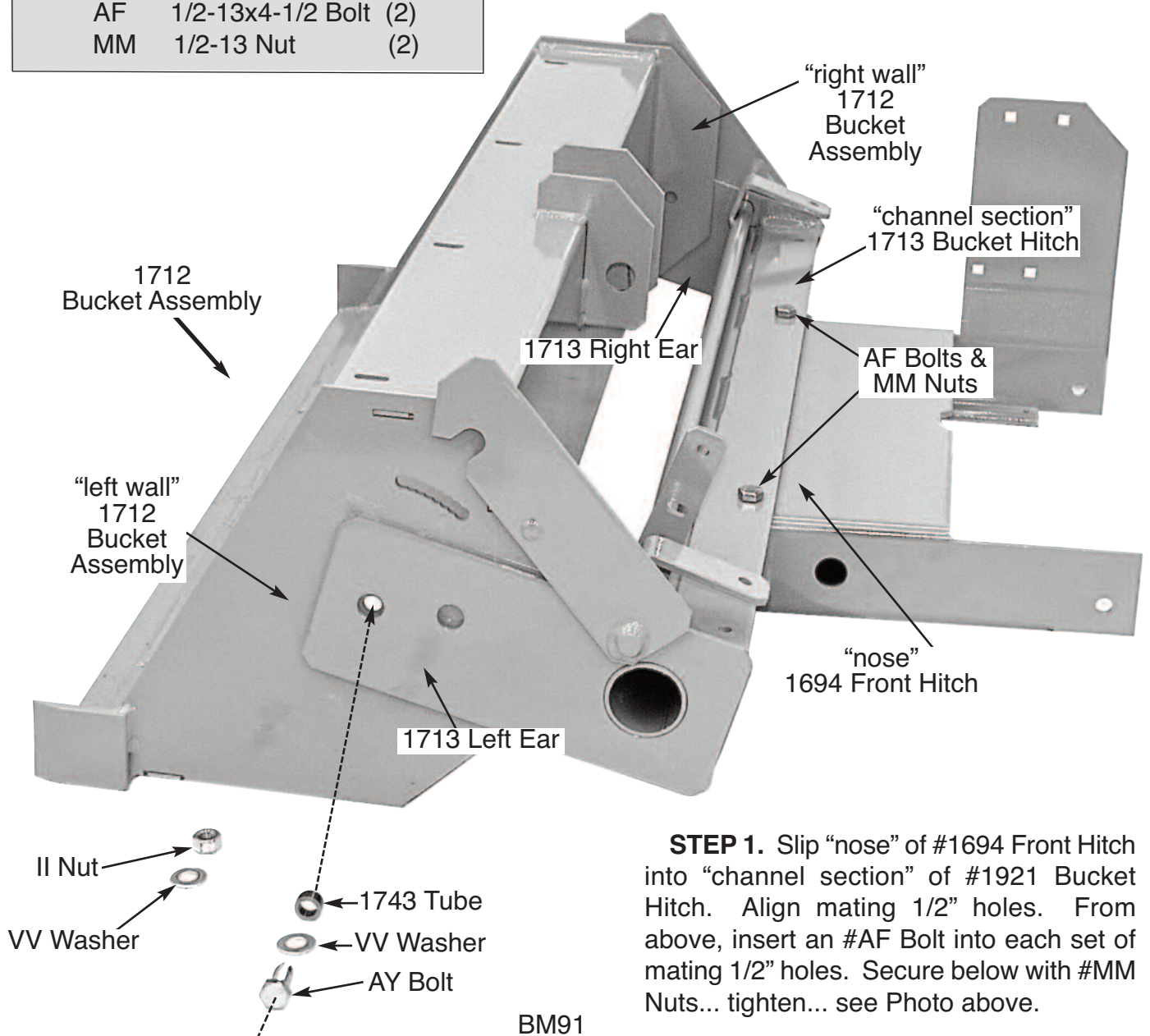
# Material Bucket Kit - *Mechanical Dump* BK44

## PARTS & FASTENER LIST

001755	Spring	(2)	AZ	3/8-16x1-3/4 G5 BOLT	(2)
001690sfp	Washer	(8)	BA	3/8-16x3-1/2 G5 BOLT	(2)
001712	Bucket Assembly	(1)	KK	3/8-16 NYLON LOCK NUT	(4)
001713	Bucket Hitch	(1)	Q	5/16-18x3/4 SPIN LOCK BOLT	(2)
001714	Trip Handle	(1)	HH	5/16-18 SPIN LOCK NUT	(2)
001741sfp	Tube Spacer, 3/8"	(2)	AY	1/2-13x1-1/4 G5 BOLT	(2)
001743sfp	Tube Spacer, 1/2"	(2)	II	1/2-13 DOT LOCK NUT	(2)
002060	Handgrip, red	(1)	VV	1/2 FLAT WASHER	(4)

### [Remaining Parts from Front Hitch]

AF	1/2-13x4-1/2 Bolt	(2)
MM	1/2-13 Nut	(2)



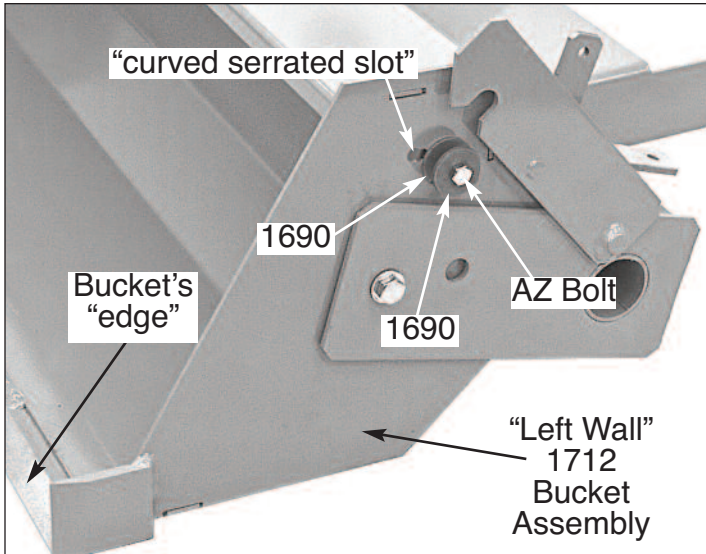
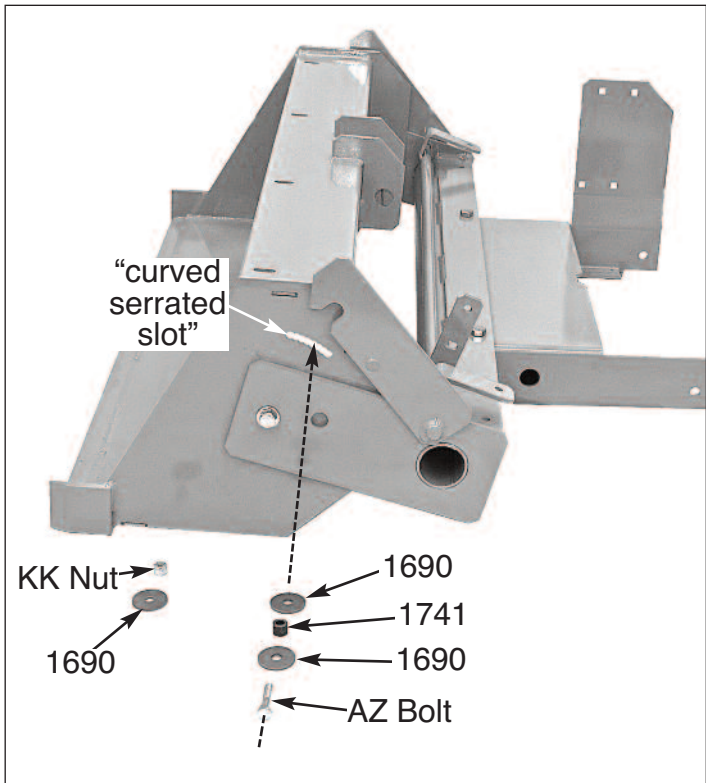
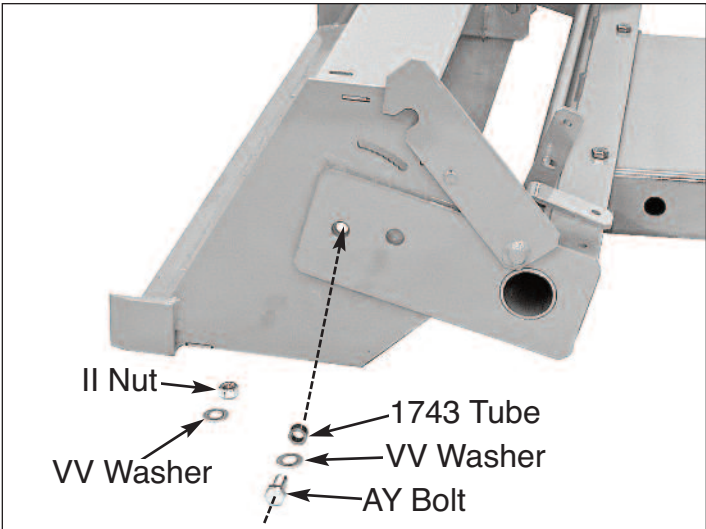
**STEP 2.** Per Photo above and at right, insert an #AY Bolt into a #VV Washer and then into a #1743 Tube... make two (2) “assemblies” like this.

**STEP 3.** Align 3/4” hole in Left and Right Ears of #1713 Bucket Hitch with mating 1/2” hole in Left and Right Walls of #1712 Bucket Assembly. From *outside*, insert a Bolt, Washer and Tube “assembly” [made in STEP 2 above] into each set of 1/2” & 3/4” Holes aligned above. Secure each inside Bucket with VV Washer and II Nut... tighten. See Photo at right.

**STEP 4.** Per Photo at right, insert an AZ Bolt into a #1690 Washer, #1741 Tube and second #1690 Washer... make two (2) of these “assemblies”.

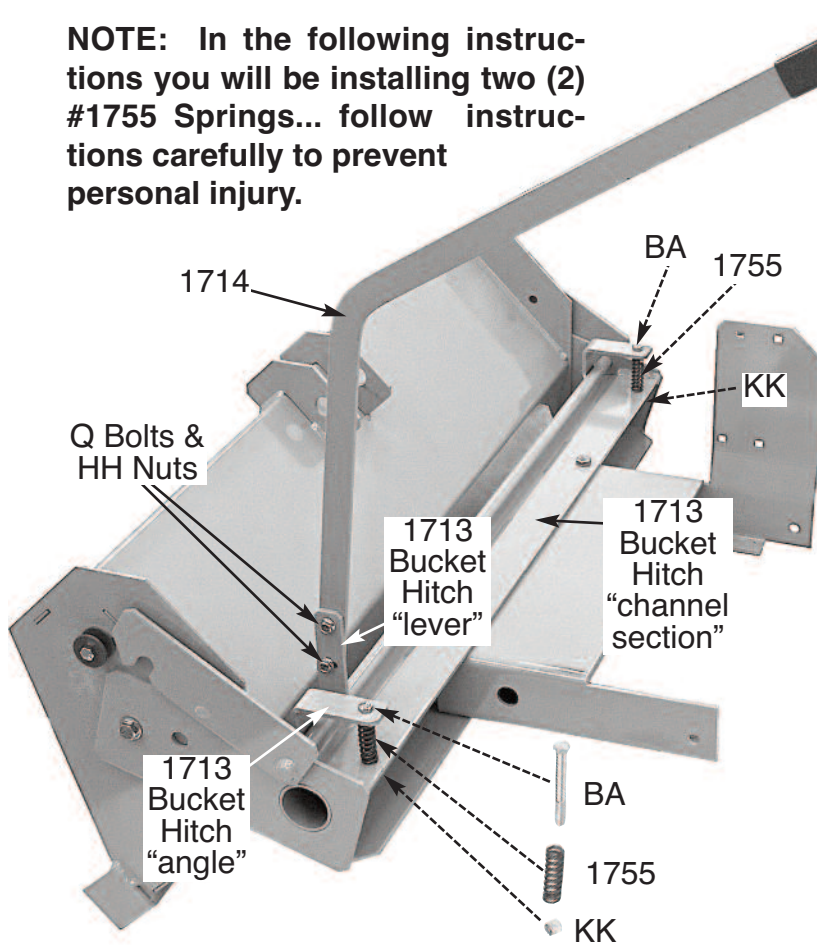
**STEP 5.** Insert threads of each of these “assemblies” into center of their respective 3/8” wide, “*curved serrated slots*” in Left & Right Walls of #1712 Bucket Assembly. Secure each bolt assembly inside Bucket with #1690 Washer and #KK Nut... tighten both Nuts. See Photo of “Left Wall” at right... “Right Wall should appear identical.

**NOTE:** The *location* of the Bolt, Washer, Tube Assemblies on their “curved slot” will determine the Bucket’s angle relative to the ground... located “further ahead” lowers the Bucket’s “edge” for more aggressive digging.





**NOTE:** In the following instructions you will be installing two (2) #1755 Springs... follow instructions carefully to prevent personal injury.



**STEP 6.** Using two (2) #Q Bolts and #HH Nuts assemble *lower end* of #1714 Trip Handle to *inside face* of #1713 Bucket Hitch “lever”... rotate Trip Handle [front to rear] to fit you the best... tighten both #HH Nuts.

**STEP 7.** Have a “helper” pull up and HOLD #1714 Trip Handle. On *left end* of #1713 Bucket Hitch “channel section”, insert a #1755 Spring between *underside* of “angle” and *top side* of “channel section”... align 3/8” hole in “angle” with mating 3/8” hole in top of “channel section”.

**STEP 8.** Per Photo at left, insert a #BA Bolt through the 3/8” holes and Spring *aligned* above... secure Bolt below with #KK Nut... tighten.

**STEP 9.** Repeat STEP 8 above and install a #1755 Spring on right end of #1713 Bucket Hitch “channel section”.

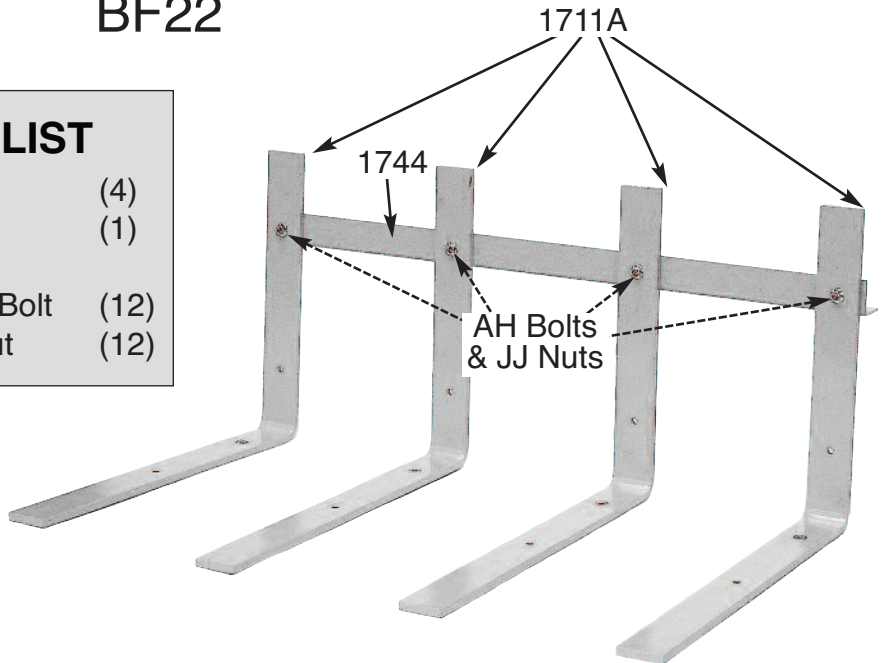
# Bucket Forks Kit

## BF22

### PARTS & FASTENER LIST

001711A	Fork	(4)
001744	Angle	(1)
AH	3/8-16x1 Spin Lock Bolt	(12)
JJ	3/8-16 Spin Lock Nut	(12)

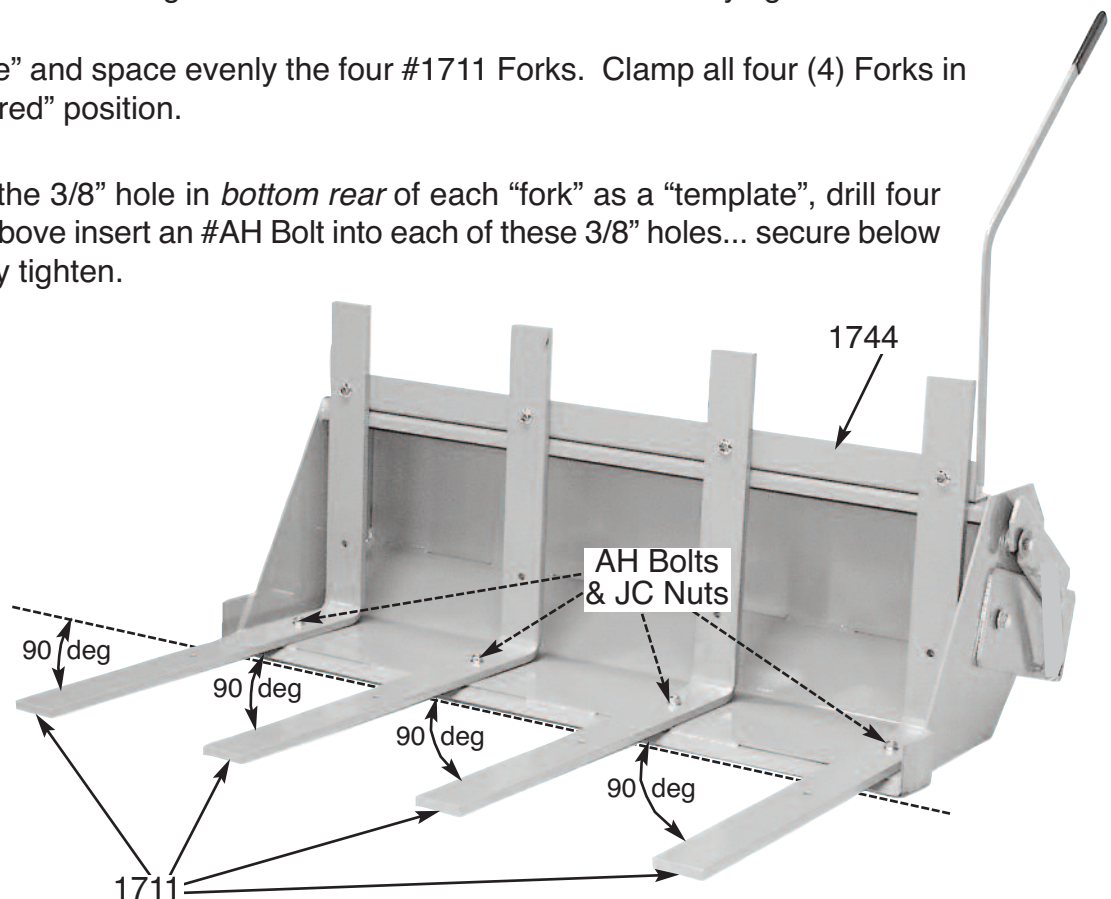
**STEP 1.** Insert an #AH Bolt into top 3/8" hole of each #1711 Fork. Then insert these #AH bolts into mating 3/8" holes in #1744 Angle... secure *loosely* on reverse side with #JJ Nuts... see Photo above right.



**STEP 2.** Slide this "Fork/Angle" Assembly into Bucket until holes in bottom of #1744 Angle align with "3/8 slots" in *top edge* of Bucket. Push #1744 Angle fully rearward until Forks are against *top front lip* of Bucket... secure Angle inside Bucket with #JJ Nuts... loosely tighten.

**STEP 3.** "Square" and space evenly the four #1711 Forks. Clamp all four (4) Forks in a 90 degree "squared" position.

**STEP 4.** Using the 3/8" hole in *bottom rear* of each "fork" as a "template", drill four 3/8" holes. From above insert an #AH Bolt into each of these 3/8" holes... secure below with JC Nuts... fully tighten.





# Hitch Extender Kit

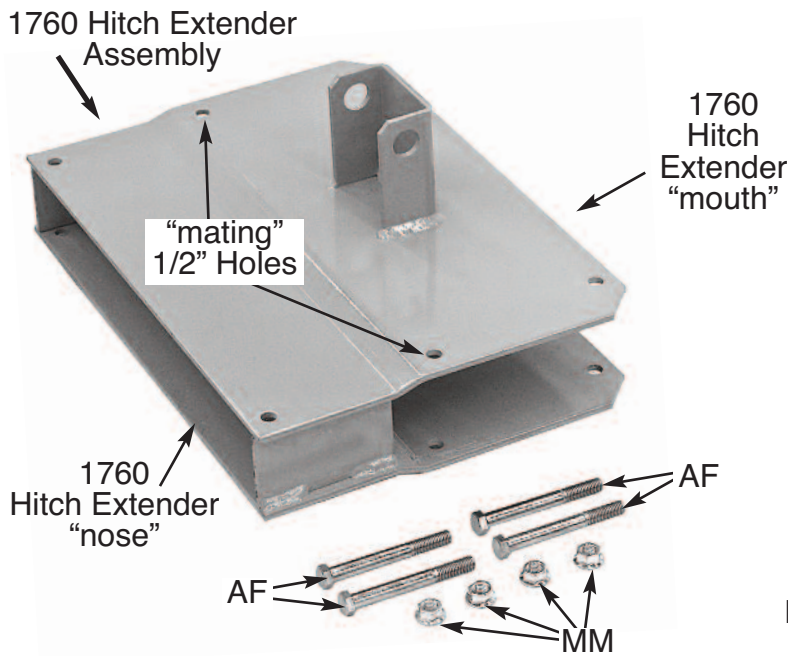
## HE47

### PARTS & FASTENER LIST

001760	Hitch Extender Assembly	(1)
AF	1/2-13x4-1/2 Bolt	(4)
MM	1/2-13 Spin Lock Nut	(4)

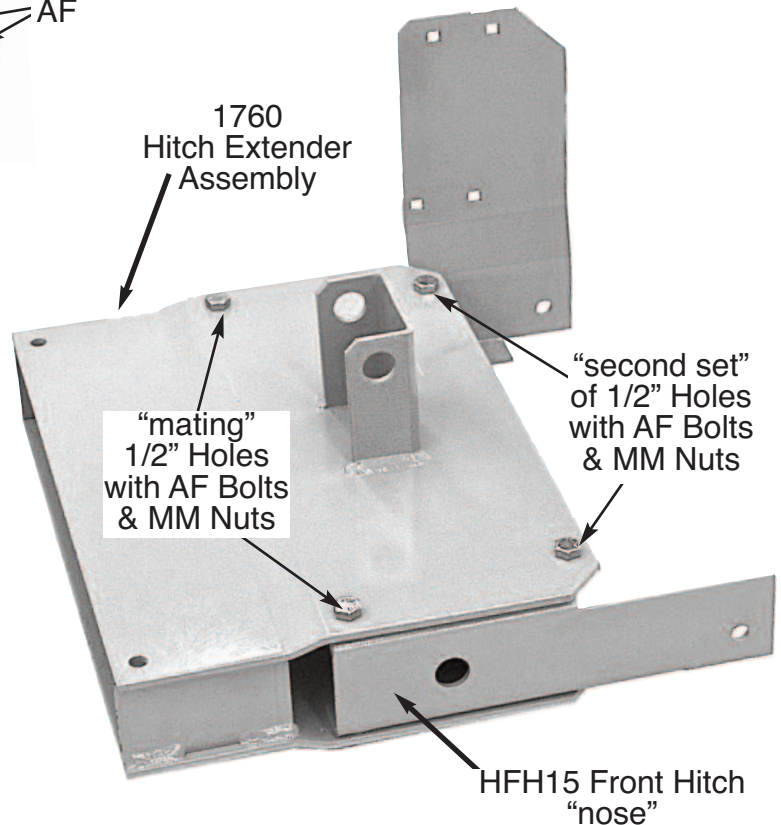
### [Remaining Parts from Front Hitch Kit]

AF	1/2-13x4-1/2 Bolt	(2)
MM	1/2-13 Nut	(2)



**STEP 1.** Slide the "nose" of your HFH15 Front Hitch into mating "taller" rear end of your #1760 Hitch Extender... see Photo below.

**STEP 2.** Align two (2) 1/2" holes at mid-point of #1760 Hitch Extender with mating 1/2" holes in "nose" of HFH15 Front Hitch.



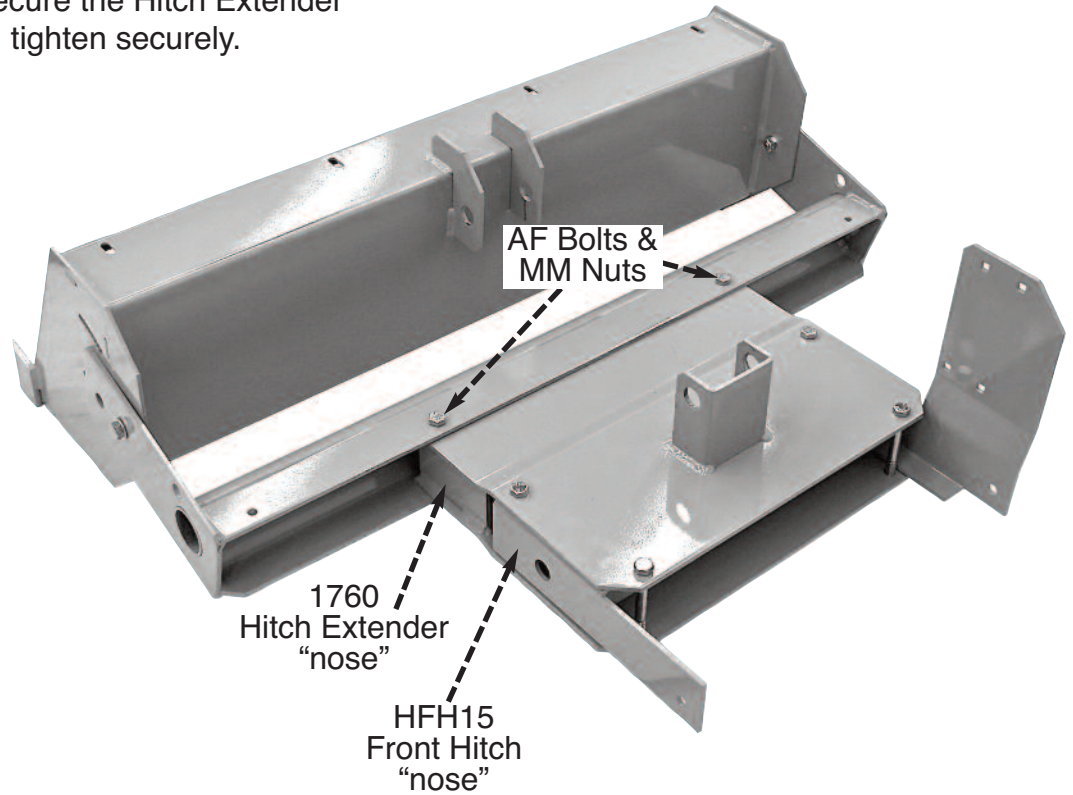
**STEP 3.** Insert an #AF Bolt into each of these two sets of mating 1/2" holes... secure below with #MM Nuts... tighten.

**STEP 4.** Insert a "second set" of #AF Bolts secured with MM Nuts into the two remaining rear 1/2" holes of #1760 Hitch Extender Assembly.... fully tighten.

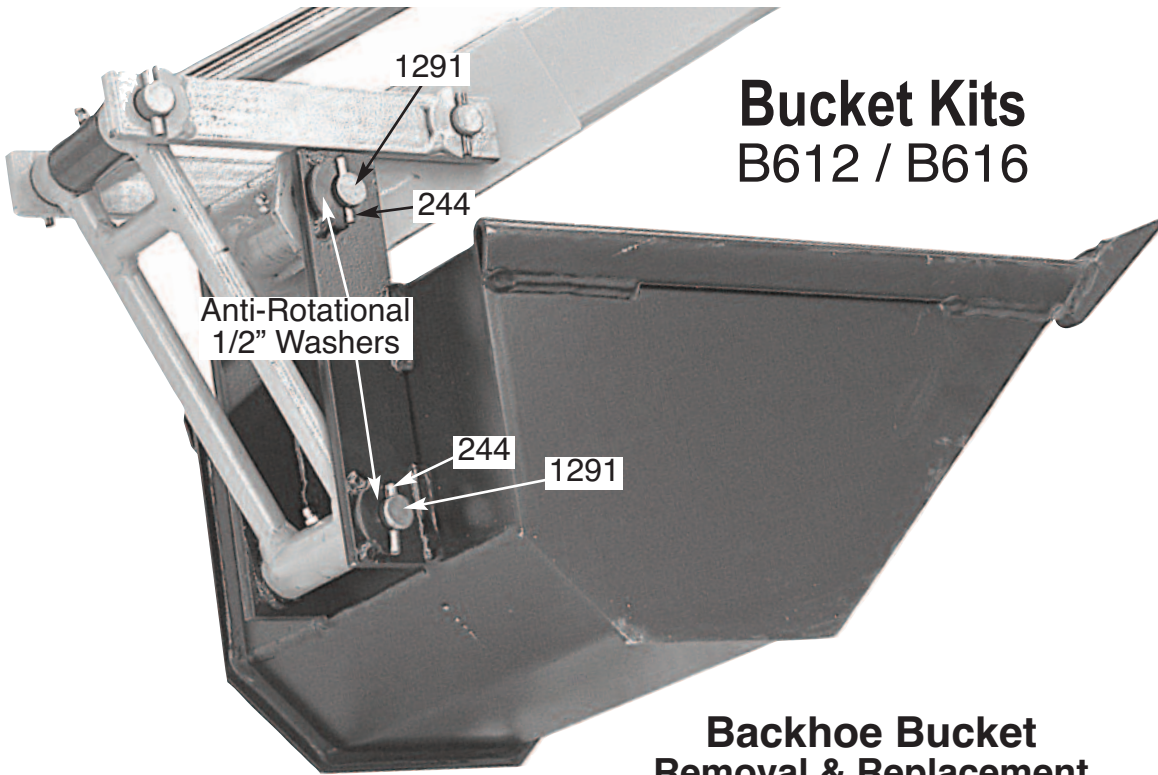
## Using the Hitch Extender

**NOTE:** In use, the “nose” of the new #1760 Hitch Extender will now replace the former “nose” of the HFH15 Front Hitch... note the application *below* using the Hitch Extender with a BK44 Bucket.

Using the two (2) AF Bolts and MM Nuts remaining from your Front Hitch Kit, secure the Hitch Extender to BK44 Bucket... tighten securely.







## Bucket Kits B612 / B616

### Backhoe Bucket Removal & Replacement

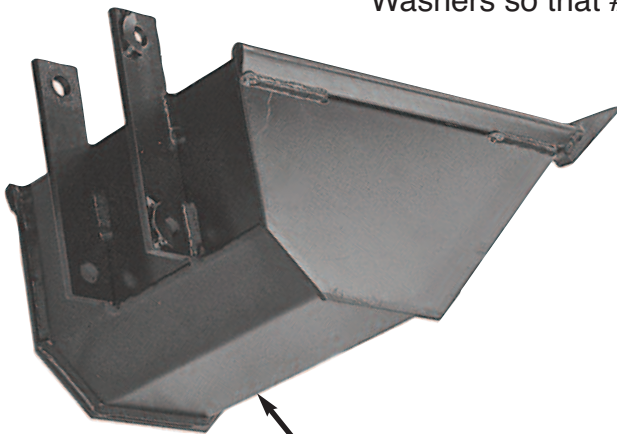
**B612  
Bucket Kit**  
[001536]

**STEP 1.** Drive out the #244 Press Pins securing one end of each of the two (2) #1291 Pivot Pins... see Photo above.

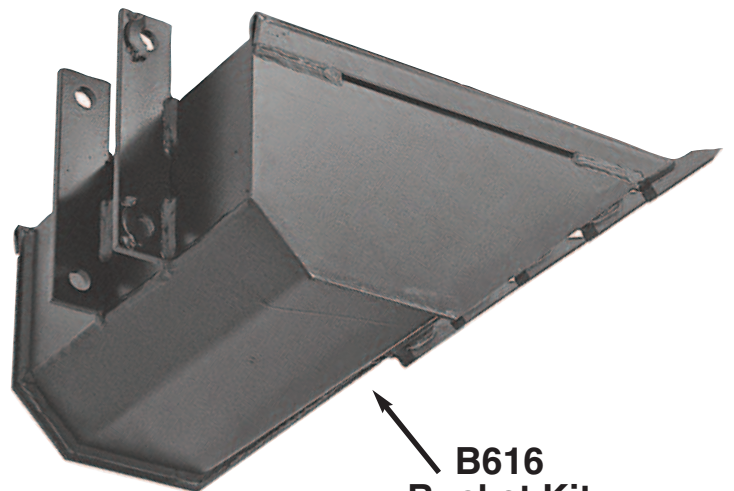
**STEP 2.** Drive out the two (2) #1291 Pivot Pins and release the Bucket... see Photo above.

**STEP 3.** Install "new" Bucket and secure in same way as previous Bucket with #1291 Pivot Pins and #244 Press Pins... see Photo above.

**NOTE:** Both #244 Pins [on one side] are trapped by Anti-Rotational 1/2" Washers so that #244 Pins can't rotate.



**B612  
Bucket Kit**  
[001536]



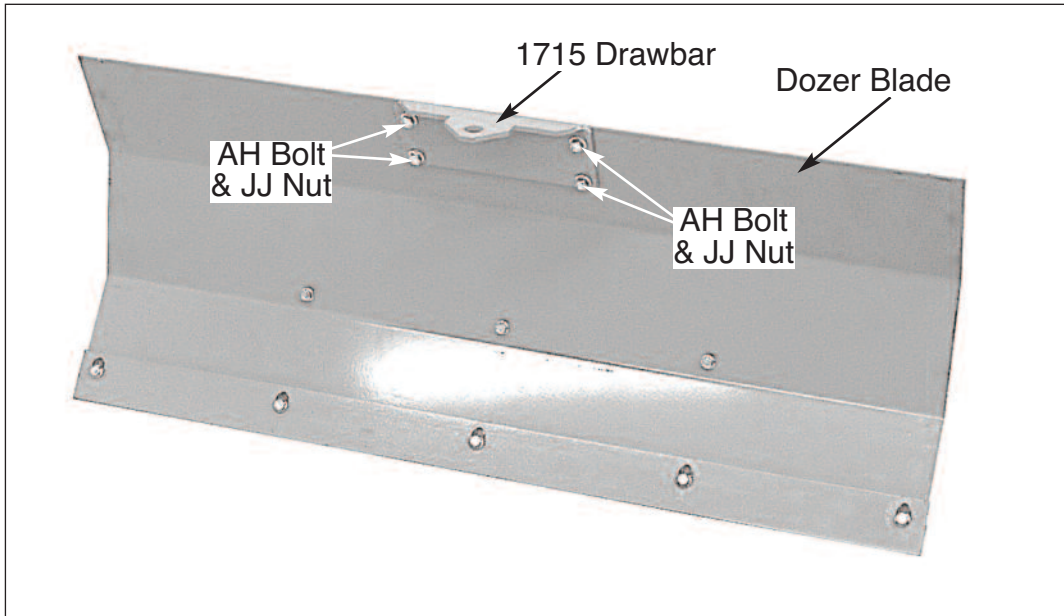
**B616  
Bucket Kit**  
[001278]

# Blade Drawbar Kit

## BD7

### PARTS & FASTENER LIST

001715	Drawbar	(1)
AH	3/8-16x1 Spin Lock Bolt	(4)
JJ	3/8-16 Spin Lock Nut	(4)



**STEP 1.** Per Photo above, align top of #1715 Drawbar with “top edge” of Dozer Blade.

**STEP 2.** Clamp Drawbar in position and using the four (4) 3/8” holes in Drawbar as a template, drill four 3/8” holes in Dozer Blade.

**STEP 3.** Using AH Bolts & JJ Nuts secure Drawbar to Dozer Blade top edge... fully tighten Nuts.

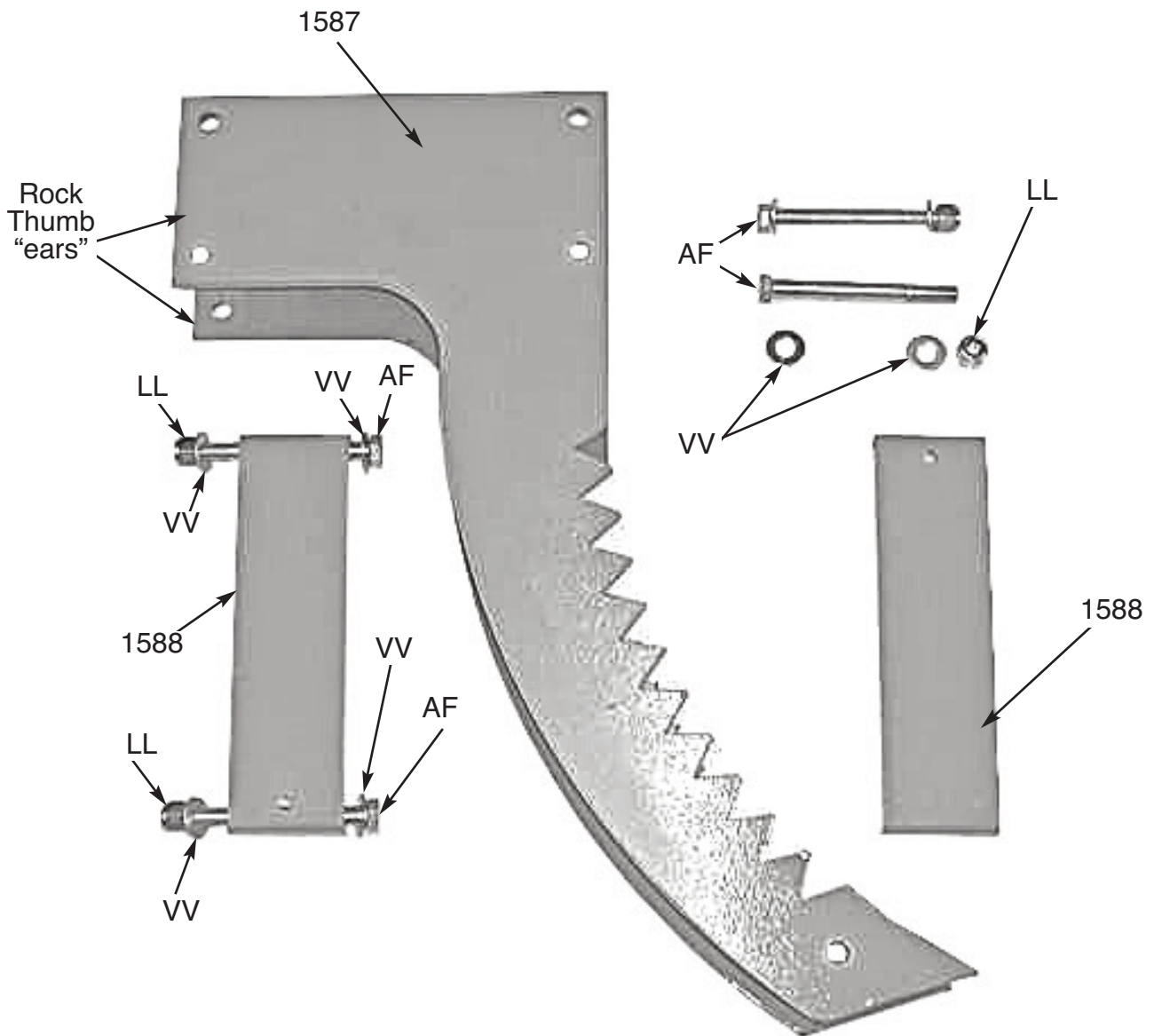


# Rock/Debris Thumb Kit

## RT24

### PARTS & FASTENERS LIST

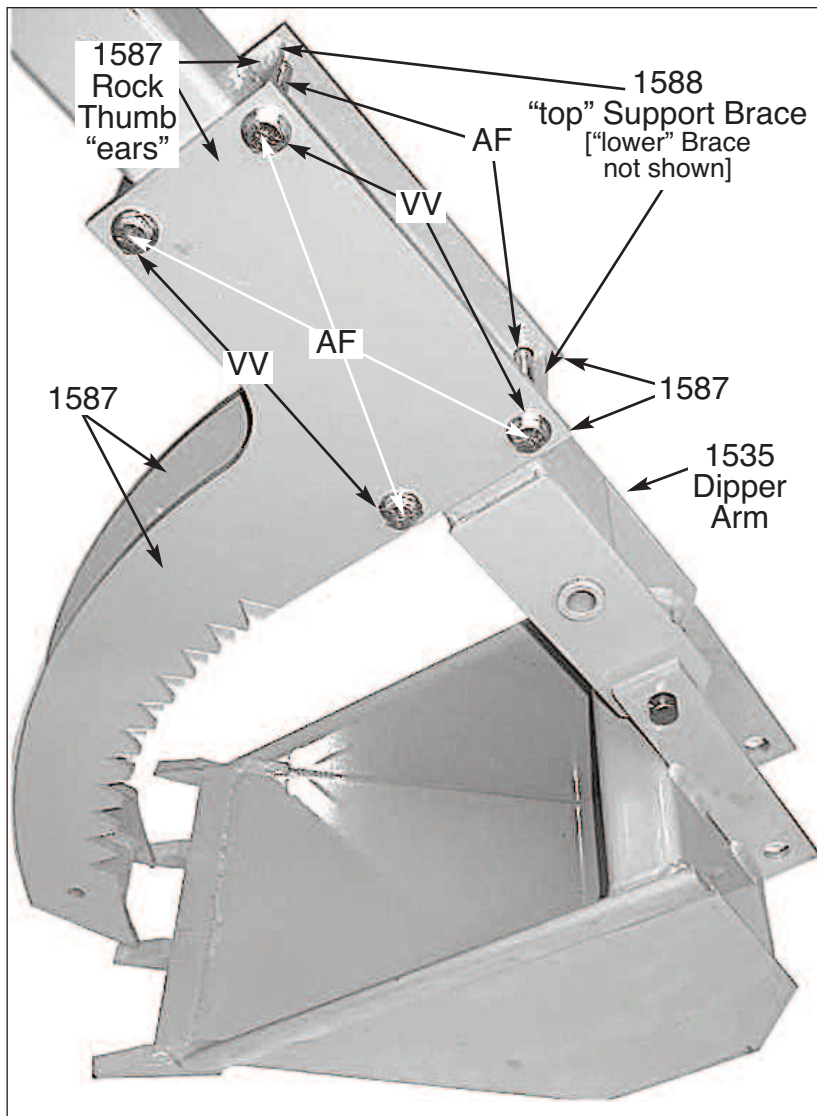
001587	Adjustable Rock Thumb Assembly	(1)
001588	Support Brace	(2)
AF	1/2-13x4-1/2 Bolt	(4)
LL	1/2-13 Nylon Lock Nut	(4)
VV	1/2 Flat Washer	(8)



**STEP 1.** Slip #1587 Rock Thumb “ears” around “lower end” of #1535 Dipper Arm. Slip #1588 Support Braces *between* Rock Thumb “ears” top and bottom.

**STEP 2.** Slip a #VV Washer over ends of four (4) AF Bolts. Insert them into the 1/2” holes provided in Rock Thumb “ears”. Have each Bolt go over and *cradle* the *right angle end* of their respective #1588 Support Brace top and bottom.

**STEP 3.** Secure end of each #AF Bolt with #VV Washer and #LL Nut... leave loose.



**STEP 4.** By “experimentation”, determine location [forward or back] of Rock Thumb “ears” to accommodate the general size of objects you plan on picking up and moving. When satisfied with location fully tighten all four (4) #LL Nuts... see Photo at right.



# Stone Boat Kit SB18

## Parts & Fasteners List

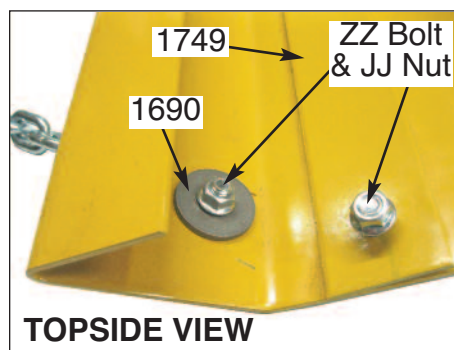
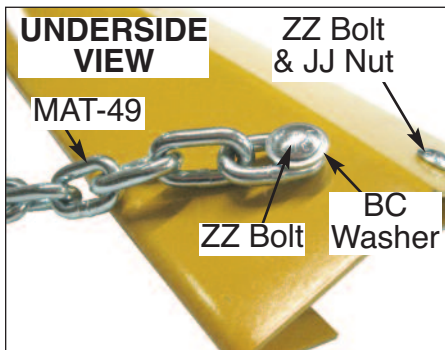
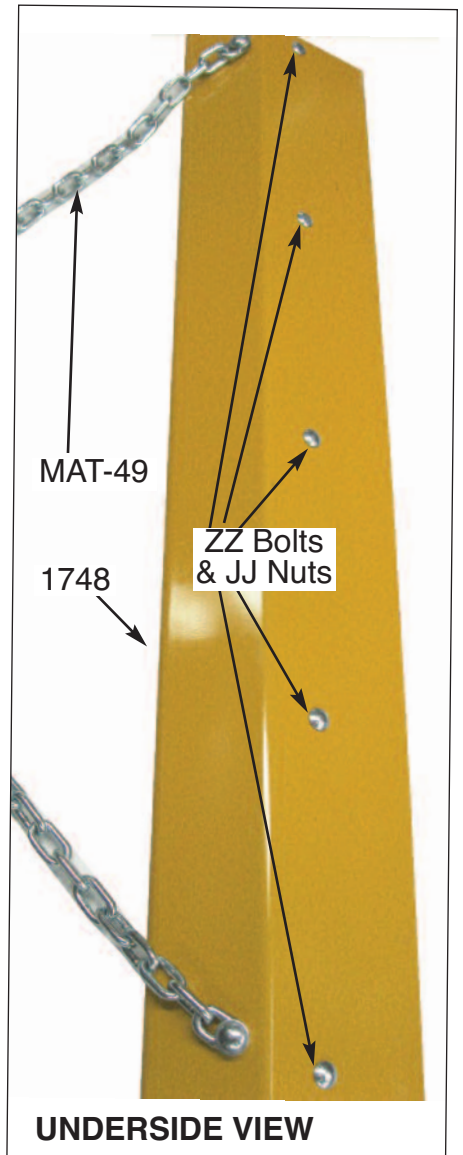
001690sfp	Washer, large, oversized	(2)
001748	Angle	(1)
001749	Strip	(1)
MAT-49	Chain, #49 [10 ft.]	(1)
ZZ	3/8-16x1-1/4 Carriage Bolt	(7)
BC	7/16 Flat Washer	(6)
JJ	3/8-16 Spin Lock Nut	(7)

[48 x 96 x 3/4 Sheet of "outdoor grade" of Plywood required... provided locally]

**STEP 1.** Make two assemblies of a #ZZ Bolt into a #BC Washer... insert one assembly into each end of #Mat-49 Chain.

**STEP 2.** Insert ZZ Bolt of each Chain end into 3/8" hole in *underside front lip* on right & left ends of #1748 Angle. Secure on reverse side with #1690 Washer and #JJ Nut... tighten... see Photos below *left & center*.

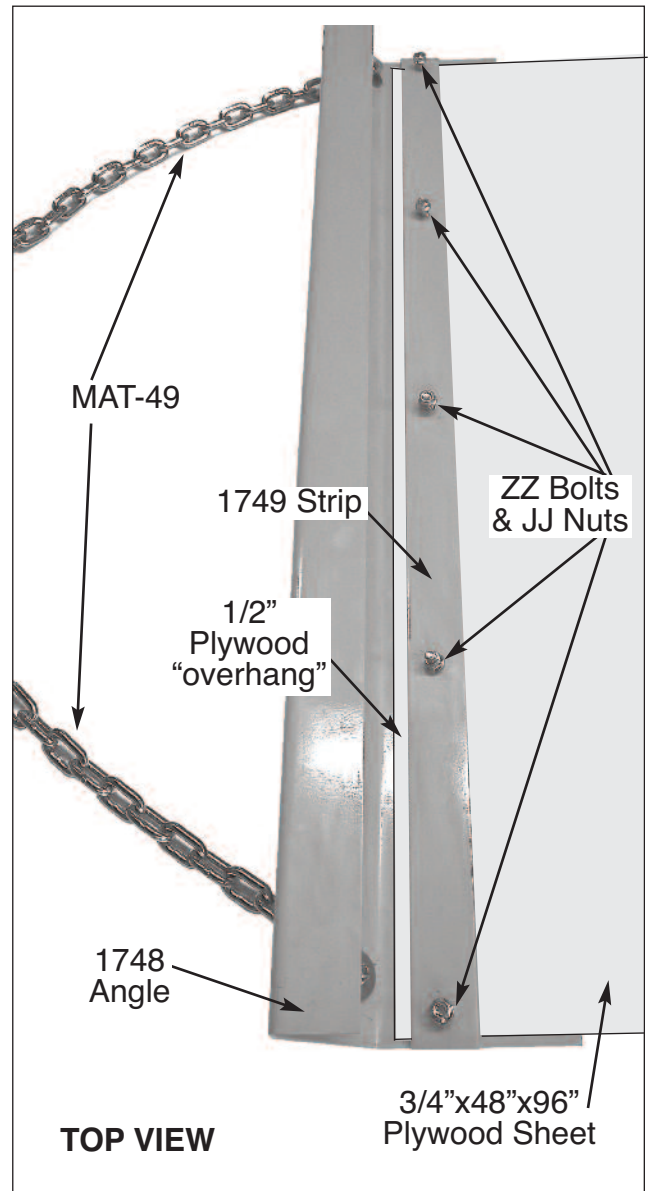
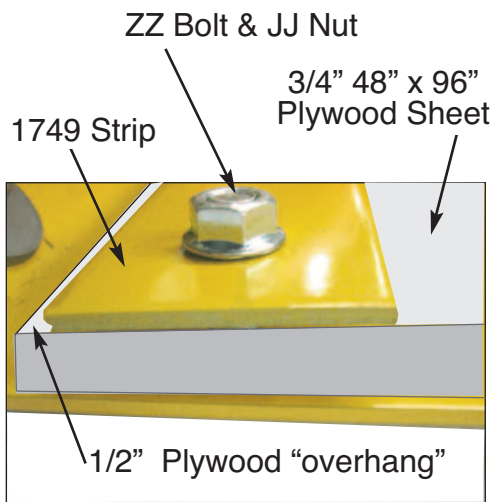
**STEP 3.** Locate a 48 x 96 3/4 sheet of "outdoor grade" plywood over *top side of rear edge* of #1748 Angle. Using #1749 Strip as a template, locate five (5) 3/8" holes in forward edge of Plywood such that in final assembly you've provided a 1/2" Plywood "overhang"... see Photos next page.





**STEP 4.** Assemble your Stone Boat such that Plywood Sheet in over *rear top edge* of #1748 Angle, #1749 Strip is over Plywood and mating 3/8" holes are in alignment... see Photo below and at right.

**STEP 5.** From below #1748 Angle, insert #ZZ Bolts thru all 3/8" holes aligned above and secure with JJ Nuts... tighten... see Photo below and at right.



**OPERATION:**

Stone Boat is pulled by its Chain bolted to Tractor drawbar or connected through the use of a clevis around Chain and then attached to Tractor drawbar... see Video for actual use of the Stone Boat.

# Tripple Shank Ripper Kit TR23

## Parts & Fasteners List

001676	Rear Mount Assembly	(1)
001677	Tine Bar	(3)
000143	Chisel Tooth	(3)
AJ	1/2-13x1-1/2 Spin Lock Bolt	(6)
MM	1/2-13 Spin Lock Nut	(12)
AA	1/2-13x2 G5 Bolt	(6)

**NOTE:** For ease of assembly, it's suggested at this time to mount your #1676 Rear Mount Assembly to your Rear Hitch.

**STEP 1.** Using #AJ Bolts & #MM Nuts mount the three #1677 Tine Bars to there respective "end caps" and "plates"... see Photo at right... fully tighten.

**STEP 2.** Using #AA Bolts and #MM Nuts mount a #143 Chisel Tooth to rear face of each #1677 Tine Bar... see Photo at right... fully tighten.

