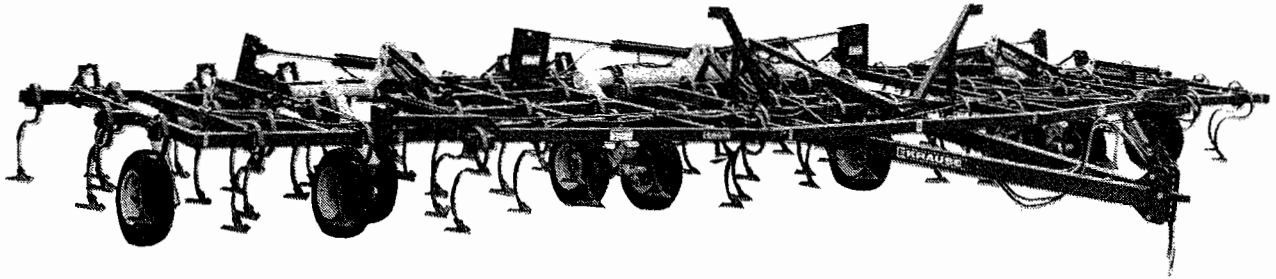




OWNER'S MANUAL

4200HR



**HIGH RESIDUE
FLEX-WING
FIELD CULTIVATOR
4200HR SERIES**

MAY 2000

KRAUSE

P.O. BOX 2707 / 305 SOUTH MONROE STREET

HUTCHINSON, KANSAS 67504-2707

Congratulations

You have just purchased a quality designed and manufactured Krause tillage tool. Advanced features have been designed into the implement for modern farming operations. As with any investment, a return is expected, and the return received from this investment will be in the form of maximum tillage performance during many years of dependable service.

In order to maintain quality performance of the new Krause implement, it is important that all of the information in the manual be reviewed and studied carefully before operation. The contents provide operating instructions, maintenance instructions, and information on how to make adjustments.

SAFETY ALERT SYMBOL



**BE ALERT TO THE POSSIBILITY OF
PERSONAL INJURY. THIS SYMBOL
IDENTIFIES IMPORTANT SAFETY
MESSAGES. CAREFULLY READ THE
MESSAGE THAT FOLLOWS.**

MODEL NUMBER _____ SERIAL NUMBER _____

PURCHASE RECORD -- DATE _____

A note to our customers, parts managers and dealers:

This manual has been prepared to assist you in the proper use, daily care, and operation of your new Krause equipment. It contains specific information on the many built-in features of your equipment, the accessories and options that are available, general specifications, and instructions for making minor adjustments.

Read this manual carefully before operating your Krause equipment, and keep it in a convenient location for later reference.

In order to ensure that you have the most current owner's manual available for your implement, we have added a revision code to each manual. Please note the information listed below and specify when placing service calls or ordering parts.

Manual for Model: 4200HR

This manual covers models beginning with Serial No. 2986

Owner's Manual #: 4200HR-1

Parts Manual #: 4200HR-2

Rev.:

ISSUED TO:

ISSUED BY:

Owner's Name

Krause Dealer

Mailing Address

City

City

State

State

Date of Purchase



Warranty Policy

(Krause Serial Numbered Wholegoods purchased subsequent to 7/1/99)

Note: All warranty work must be accomplished by a Krause Corporation Authorized Service Center rated to perform maintenance on Krause Corporation Products.

A. KRAUSE CORPORATION ("KRAUSE") LIMITED WARRANTY.

- (1) Subject to the limitations and conditions hereinafter set forth, Krause warrants, at the time of delivery by Krause to be free from (i) defects in materials or workmanship, and (ii) defects in design that in the view of the state of the art as of the date of manufacture should have been foreseen provided, however, that the defect must be discovered and reported to Krause within the periods specified as follows: For a period of one year all new serial numbered production agricultural units covered by this warranty, for a period of thirty-six (36) months the tongue weldment, center frame weldment, wing frame weldments, disc harrow gang bearings and K-Tine field cultivator shanks.
- (2) Krause does not warrant disc blades, tires, chisel shanks, hydraulic cylinders, accessories and other parts not manufactured by it, but supplied with or as a part of its products. Krause will, however, obtain and pass on any adjustments provided by the manufacturers of such parts under these manufacturer's warranties.
- (3) The entire extent of Krause's liability shall be limited to that of either reimbursing Buyer for its costs of purchasing a rebuilt, over-hauled or repaired part from either Krause or a proper Krause Authorized Service Center or, at Krause's election, reimbursing buyer for its costs of having the part repaired at a proper Krause Authorized Service Center. If Krause elects not to repair the part and if neither a rebuilt, over-hauled or repaired part is, in Krause's opinion, timely available then Krause will reimburse buyer for its costs of purchasing a new part from either Krause or a proper Krause Authorized Service Center. The labor necessary to remove from the product such part or parts and to install in the product such part or parts, as well as any repair made as the result of improper installations by Krause, shall be covered by this warranty, provided the work is performed at a proper Krause Authorized Service Center. If return of the defective part is required, it must be returned shipping prepaid to Krause. Krause's limited warranty will apply to any part repaired or replaced by a proper Krause Authorized Service Center pursuant to Krause's Limited Warranty, however, the applicable warranty for such part repaired or replaced shall be limited to the unexpired portion of Krause's Limited Warranty described in paragraph (1) or (2) above, as applicable. In other words, the warranty period of the part repaired or replaced does not start over from the date of reinstallation.
- (4) Krause Corporation will repair or replace, free of charge, any part of the product found to be defective within the specified warranty periods, after an inspection of the part has deemed it to be defective. Inspection must be performed by an authorized agent of Krause Corporation, or returned to the Krause factory for inspection and disposition. Warranty labor will be considered during the first year of warranty only. Krause Corporation will establish and publish an hourly flat rate for shop labor and reimbursement during the first year of the warranty period. Krause Corporation does not allow credit for the cost of travel time, mileage or hauling as a warranty allowance. During the remaining second and third year, when applicable, Krause will repair or replace the defective part, without consideration of labor charges.
- (4) Routine services (such as inspections, field settings, adjustments, etc.) and replacement of items which deteriorate from expected normal wear and tear or exposure (such as paint, tires, hoses, blades, sweeps, etc.) are not covered by this Limited Warranty. Such routine services and replacements required during the course of operation are not considered to be the result of any defect in the product.

B. LIMITATIONS APPLICABLE TO KRAUSE'S LIMITED WARRANTY.

- (1) Krause will be relieved of all obligations and liability under this warranty if:
 - (i) The alleged defect in the part is due to misuse or neglect on the part of someone other than Krause, or
 - (ii) Krause's identification mark or name or serial number has been removed from the part in question, or
 - (iii) The product and/or equipment have not been maintained, operated or stored either in accordance with applicable manuals, communications or other written instructions of Krause or any manufacturer of the part involved, or in accordance with applicable regulations and advisory circulars unless buyer shows that such maintenance, operation or storage was not a contributory cause of the defect, or
 - (iv) The part in question has been modified or altered after delivery other than by the manufacturer or in accordance with a modification or alteration scheme approved in writing by the manufacturer; or
 - (v) The product is used for purposes other than conventional owner/operator usage. Usage not considered conventional owner/operator includes, but is not limited to, operation conditions that consist of rocks or other obstructions.
- (2) For the purpose of this Warranty, no part of the product or equipment will be regarded as breaching the limited warranty merely because, subsequent to its delivery, some modification or alteration becomes necessary for product improvements or in order to meet a change in the requirements of any applicable regulation.
- (3) TO THE EXTENT ALLOWED BY APPLICABLE LAW, BUYER WAIVES AS TO KRAUSE ALL OTHER WARRANTIES, WHETHER OF MERCHANTABILITY, FITNESS OR OTHERWISE, THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACT HEREOF.
- (4) TO THE EXTENT ALLOWED BY APPLICABLE LAW, THE OBLIGATIONS OF KRAUSE SET FORTH HEREIN SHALL BE THE EXCLUSIVE REMEDIES FOR ANY BREACH OF WARRANTY HEREUNDER, AND TO THE SAME EXTENT, KRAUSE SHALL NOT BE LIABLE FOR ANY GENERAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY DAMAGES FOR DIMINUTION OF MARKET VALUE, LOSS OF USE OR LOSS OF PROFITS, OR ANY DAMAGES TO THE PRODUCT CLAIMED BY BUYER OR ANY OTHER PERSON OR ENTITY UPON THE THEORIES OF NEGLIGENCE OR STRICT LIABILITY IN TORT.
- (5) ANY ACTION BY BUYER FOR BREACH OF THIS WARRANTY BY EITHER KRAUSE OR SELLER MUST BE COMMENCED WITHIN (1) YEAR AFTER THE CAUSE OF ACTION ACCRUES.

Establishing Customer Warranty

Dealer's Obligation

1. It is the responsibility of the dealer to complete a **Delivery Report and Warranty Registration** form. The form should contain the model, serial number, delivery date, along with the complete dealer and customer address. This form must be signed by the dealer and customer upon physical delivery of the product to the customer. The dealer must complete the **pre-delivery check list** provided on the Delivery Report and Warranty Registration form.
2. Dealer will review the **Predelivery Check List** located in the front of the owner's manual with the customer and / or operator. This should be signed by the dealer at time of delivery to the retail customer.
3. The dealer will review the **Customer Review Sheet** located at the front of the owner's manual with the customer and / or operator. This should be signed by the dealer representative and the customer.
4. An authorized Krause dealer will submit **warranty claims** on behalf of the customer. All claims must be handled through the dealer. They will then be given to the Krause District Manager for inspection and approval. Warranty requests must be filed within 60 days from completion of the repair for consideration.
5. It is the dealer's responsibility to **service** the warranty on products sold through said dealership.

This warranty gives you specific rights, and you may also have other rights which vary from state to state.

Establishing Customer Warranty

Customer's Obligation

1. The customer is responsible for reading the operator's manual supplied with each serial numbered unit. The manual describes the safe and correct operating procedures of the specific product. The operator's manual will also instruct the user on recommended lubrication and maintenance of the product.
2. The customer will advise the dealer of the anticipated start date of the product so a dealer representative can be on hand to make necessary field adjustments.
3. The owner is also responsible for inspecting the product during and after use. If a part has failed or is in need of repair, it should be replaced. When continued use of the product would result in excessive wear of other components, the part should be replaced before operation is continued. Continued use of the product may void warranty on other parts damaged from this condition. The user must make the machine available to the dealer for a warranty repair.
4. It is the customer's responsibility to deliver his machine to an authorized Krause dealer for completion of a warranty repair. If the dealer agrees to make a service trip to the customer's residence, it is an agreement between the dealer and the customer. Krause will not allow warranty credit for the cost of travel, mileage, or hauling.
5. Warranty labor consideration will only be given during the first year of warranty. Any labor charge for the 2nd or 3rd year on the limited warranty will be at the customer's expense.

This warranty gives you specific rights, and you may also have other rights which vary from state to state.

4200HR SERIES FLEX WING FIELD CULTIVATOR DEALER PREDELIVERY CHECK SHEET

TO BE CHECKED BY DEALER

CUSTOMER _____ DATE _____

ADDRESS _____

DEALER _____

ADDRESS _____

MODEL _____ SERIAL NUMBER _____

DEALER CHECK:

1. ___ Check to see that all rocker shaft bolts are tight and pins are in place.
2. ___ Check to see that hydraulic cylinders are full of oil (air bled out of cylinders). Clevis pins with hair pin clips should be in place. Hydraulic system requires 14 Quarts for Models 4218HR & 4223HR, 24 Quarts for models 4226HR & 4231HR, and 38 Quarts for Models 4237HR & 4241HR.
3. ___ Examine hydraulic hoses to see that they are protected from damage.
4. ___ Bolts attaching the walking tandem to the wheel arms should be tight. Check to see that bearings have been adjusted and greased.
5. ___ Check lug bolts holding wheels to the hub to see that they are torqued from 90 to 95 Ft. Lbs.
6. ___ The correct size tire should be on the implement. Model 4218HR & 4223HR Center Single Tires: 11L x 15, 8-Ply with 44 P.S.I. pressure. Model 4226HR & 4231HR Center Tires: 9.5L x 15, 8-Ply with 44 P.S.I. pressure. Models 4237HR & 4241HR Center Tires: 9.5L x 15, 8-Ply with 44 P.S.I. pressure.
7. ___ Check to see that bolts attaching hitch to frame and clevis weldment to hitch are in place and tightened.
8. ___ Jack should be operational for support of tongue when implement is not attached to a tractor.
9. ___ Wing was attached with special pins and secured with self locking nuts.
10. ___ Road lock and wing lock was correctly installed and operate satisfactorily.
11. ___ Restrictor is installed in wing lift cylinder rod end ports.
12. ___ All decals are in place per page P58 of this owner's manual.
13. ___ Customer review sheet is filled out and signed.
14. ___ Review lighting requirements. Light kits are standard.
15. ___ Check to see that the Owner's Manual is in the storage tube on the implement.
16. ___ Make sure that the SMV Emblem is clean and in place.

DELIVERED BY _____

DATE _____

4200HR SERIES FLEX WING FIELD CULTIVATOR CUSTOMER REVIEW SHEET

CUSTOMER _____ DATE _____

ADDRESS _____

DEALER _____

ADDRESS _____

MODEL _____ SERIAL NUMBER _____

1. ___ Owner's manual provided.
2. ___ Warranty card filled out and mailed.
3. ___ Review safety warnings and cautions as listed in this owner's manual.
4. ___ Review recommended maximum road speed, width, and height for implement.
5. ___ Review field operational speeds, horsepower, depth and rock conditions.
6. ___ Demonstrate the proper use of road locks.
7. ___ Explain the hydraulic depth control system. To change the depth, raise cultivator out of the ground and rotate the depth stop knob in or out the same amount on every rocker.
8. ___ Review limitations of additional weight and transport speed when adding attachments.
9. ___ Explain the importance of maintaining the tools through lubrication, checking that bolts are kept tight, and replacement of worn or broken parts.
10. ___ Recommend that a safety chain be used with the implement.
11. ___ Check wheel lug bolts frequently until they become set.
12. ___ Explain lighting requirements for your area.

DEALER _____ DATE _____

CUSTOMER _____ DATE _____

Table of Contents

Revised 9/99

WARRANTY		WING FRAME (4241HR)	P21
DEALER PREDELIVERY CHECK SHEET	1	WING ROCKER ASSEMBLY	P22
CUSTOMER REVIEW SHEET	2	OUTSIDE WING FRAME (4237HR & 4241HR)	P23
TABLE OF CONTENTS	3	LIGHT KIT	P24
SPECIFICATIONS	4-5	ONE, TWO & THREE SHANK EXTENSIONS	P25
GENERAL INFORMATION DRAWING	6	CENTER WALKING BEAM ASSEMBLY	P26
TRANSPORT PHOTOGRAPH	7	WING WALKING BEAM ASSEMBLY	P27
<u>OPERATION SECTION</u>		SINGLE AXLE & HUB ASSEMBLY	P28
ABOUT YOUR FIELD CULTIVATOR	01	WING SECTION HUB ASSEMBLY	P29
PREPARING FOR OPERATION	01	WHEELS & TIRES	P30
PREPARING THE TRACTOR	02	REAR JACK MOUNT & TIRE SCRAPERS	P31
HYDRAULIC SYSTEM	02	SPRING SHANK ASSEMBLY	P33
HITCHING & UNHITCHING	02	K-TINE SHANK ASSEMBLY	P34
Hitching To The Tractor	03	2-PIECE K-TINE SHANK ASSEMBLY	P35
Unhitching From The Tractor	03	GAUGE WHEEL ASSEMBLY	P37
TRANSPORTING	04	PACKER HITCH ASSEMBLY 6" & 7" SPACING	P38 - P39
Road Lock	04	TRAIL HITCH ASSEMBLY	P40
Raising The Wings	04	HYDRAULIC HOSE W/PLASTIC GRIP ASSEMBLIES	P41
Lowering The Wings	05	HYDRAULIC HOSE GROUP (4218HR,4223HR)	P42
Transport Safety	05	HYDRAULIC HOSE GROUP (4226HR, 4231HR)	P44
Hitch Pin	06	HYDRAULIC HOSE GROUP (4237HR)	P46
FIELD ADJUSTMENTS	06	HYDRAULIC HOSE GROUP (4241HR)	P48
UNDERSTANDING DEPTH CONTROL	07	4" x 8" REPHASING CYLINDER	P49
How the depth control works	07	4-1/4" x 8" REPHASING CYLINDER	P50
Depth adjustment procedure	07	4-1/2" x 8" REPHASING CYLINDER	P51
Leveling From Front To Rear	08	4-3/4" x 8" HYDRAULIC CYLINDER	P52
Leveling From Side To Side	08	5" x 8" HYDRAULIC CYLINDER	P53
Understanding Your Rephasing System	09	4" x 16" HYDRAULIC CYLINDER	P54
Flexibility	010	4" x 32" WING LIFT CYLINDER	P55
Turning In The Field	010	4" x 24" WING LIFT CYLINDER	P56
Field Speed	010	DECALS	P57
GENERAL INFORMATION	010	<u>ASSEMBLY SECTION</u>	
SERVICING		SAFETY & BASIC ASSEMBLY INFORMATION	A3
General Maintenance	011	I. CENTER SECTION FOR (Models 4218HR-4223HR)	A4
Lubrication	011	II. CENTER SECTION FOR (Models 4226HR-4241HR)	A8
Wheel Bearings	011	III. WING FRAME & ROCKERS	A14
Walking Beam Maintenance	011	IV. MODEL 4237HR-4241HR OUTER WING HINGE	A19
Spring Shank Repair	012	V. MODEL 4237HR-4241HR OUTER WING ASS'M	A20
Models 4237HR & 4241HR Wing Fold Sequence Valve	013	VI. SHANK EXTENSION (For All Models)	A22
HYDRAULIC SAFETY - READ CAREFULLY	014	VII. SHANK ASSEMBLY	A23-A27
Storage	015	VIII. HYDRAULIC	A28
Repair Parts	015	IX. TRAIL HITCH	A34
SUGGESTED REMEDIES SECTION	015- 017	X. REAR FRAME STAND	A34
<u>PARTS SECTION</u>		XI. LEVELING THE CULTIVATOR	A35
MAIN FRAME (4218HR, 4223HR)	P3	XII. DECALS	A36
CENTER ROCKER / ROAD LOCK (4218HR,4223HR)	P5	SMV EMBLEM	A36
SELF LEVELING TONGUE ASSEMBLY (4218HR,4223HR)	P7	FINAL ASSEMBLY	A36
MAIN FRAME (4226HR - 4241HR)	P9	4200 TINE HARROW SPECIFICATIONS	A37
CENTER ROCKER /ROAD LOCK (4226HR-4241HR)	P11	4200 SPIKE HARROW SPECIFICATIONS	A38
SELF LEVELING TONGUE (4226HR - 4241HR)	P13	4200 REEL / TINE SPECIFICATIONS	A39
WING FRAME (4218HR)	P14	PLACEMENT DRAWINGS	A37-A63
WING FRAME (4223HR)	P15	LIGHT KIT INSTALLATION INSTRUCTIONS FOR:	
WING FRAME (4226HR)	P16	BASIC LIGHT KIT	A64
WING FRAME (4231HR)	P17	TRACTOR LIGHT RECEPTACLE	A64
WING FRAME (4237HR)	P19	TRAIL HITCH LIGHT RECEPTACLE	A65

4200HR FIELD CULTIVATOR TRANSPORT SPECIFICATIONS

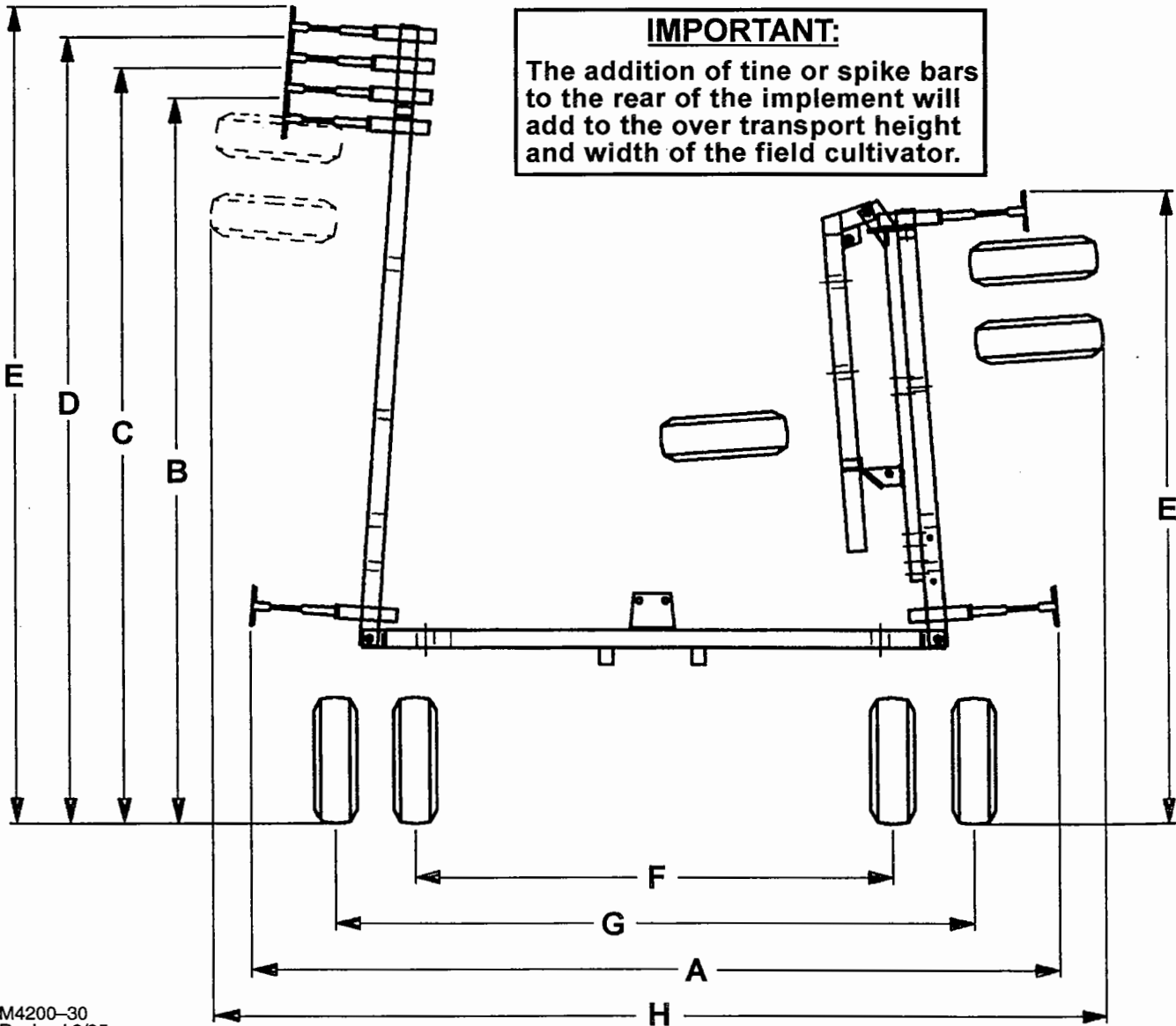
1/96

MODEL	A ROADING WIDTH	B WING LESS EXTENSION	C ONE SHANK EXTENSION	D TWO SHANK EXTENSION	E THREE SHANK EXTENSION	H OVERALL WIDTH
4218HR	11' - 8-1/2"	9' - 6-3/4"	9' - 10-1/2"	10' - 5-1/4"	11' - 0"	12' - 9-1/2"
4223HR	11' - 8-1/2"	11' - 6-3/4"	12' - 1-1/2"	12' - 8-1/4"	13' - 3"	11' - 8-1/2"
4226HR	15' - 1"	11' - 6-3/4"	12' - 1-1/2"	12' - 8-1/4"	13' - 3"	15' - 1-1/2"
4231HR	15' - 1"	13' - 10"	14' - 5"	15' - 0"	15' - 6"	15' - 6"
4237HR	15' - 1"	11' - 8"	11' - 8"	11' - 8"	11' - 8"	16' - 11-1/2"
4241HR	15' - 1"	14' - 0"	14' - 0"	14' - 0"	14' - 0"	16' - 9-1/4"

	F	G
4218HR & 4223HR (Single Wheels)	—	103"
4218HR & 4223HR (Dual Wheels)	65"	103"
4226HR, 4231HR, 4237HR & 4241HR	105-1/2"	143-1/2"

IMPORTANT:

The addition of tine or spike bars to the rear of the implement will add to the over transport height and width of the field cultivator.



M4200-30
Revised 9/95

4200HR FIELD CULTIVATOR SPECIFICATIONS

Rev. 1/96

MODEL	7" SPACING		6" SPACING		5" SPACING	
	CUT WIDTH	TOTAL SHANKS	CUT WIDTH	TOTAL SHANKS	CUT WIDTH	TOTAL SHANKS
4218HR	18' - 1"	31	17' - 9"	35	17' - 6"	43
	19' - 3"	33	18' - 9"	37	18' - 4"	45
	20' - 5"	35	19' - 9"	39	19' - 2"	47
	21' - 7"	37	20' - 9"	41	20' - 0"	49
4223HR	22' - 9"	39	22' - 6"	45	23' - 1/2"	55
	23' - 11"	41	23' - 6"	47	23' 10-1/2"	57
	25' - 1"	43	24' - 6"	49	24' 8-1/2"	59
	26' - 3"	45	25' - 6"	51	25' 6-1/2"	61
4226HR	26' - 3"	45	25' 11-3/4"	53	26' - 2"	63
	27' - 5"	47	26' 11-3/4"	55	27' - 0"	65
	28' - 7"	49	27' 11-3/4"	57	27' - 10"	67
	29' - 9"	51	28' 11-3/4"	59	28' - 8"	69
4231HR	30' - 11"	53	30' - 6"	61	31' - 3"	75
	32' - 1"	55	31' - 6"	63	32' - 1"	77
	33' - 3"	57	32' - 6"	65	32' - 11"	79
	34' - 5"	59	33' - 6"	67	33' - 9"	81
4237HR	36' - 9"	63	36' 11-1/2"	75	37' - 2"	89
	37' - 11"	65	38' - 0"	77	38' - 0"	91
	39' - 1"	67	39' - 0"	79	38' - 10"	93
	40' - 3"	69	40' - 0"	81	39' - 8"	95
4241HR	41' - 5"	71	41' 7-1/2"	83	42' - 0"	101
	42' - 7"	73	42' - 8"	85	42' 9-1/2"	103
	43' - 9"	75	43' - 8"	87	43' 7-1/2"	105
	44' - 11"	77	44' - 8"	89	44' 5-1/2"	107

MODELS 4218HR THROUGH 4231HR ARE 3-SECTION CULTIVATORS

MODELS 4237HR & 4241HR ARE 5-SECTION CULTIVATORS

HYDRAULICS

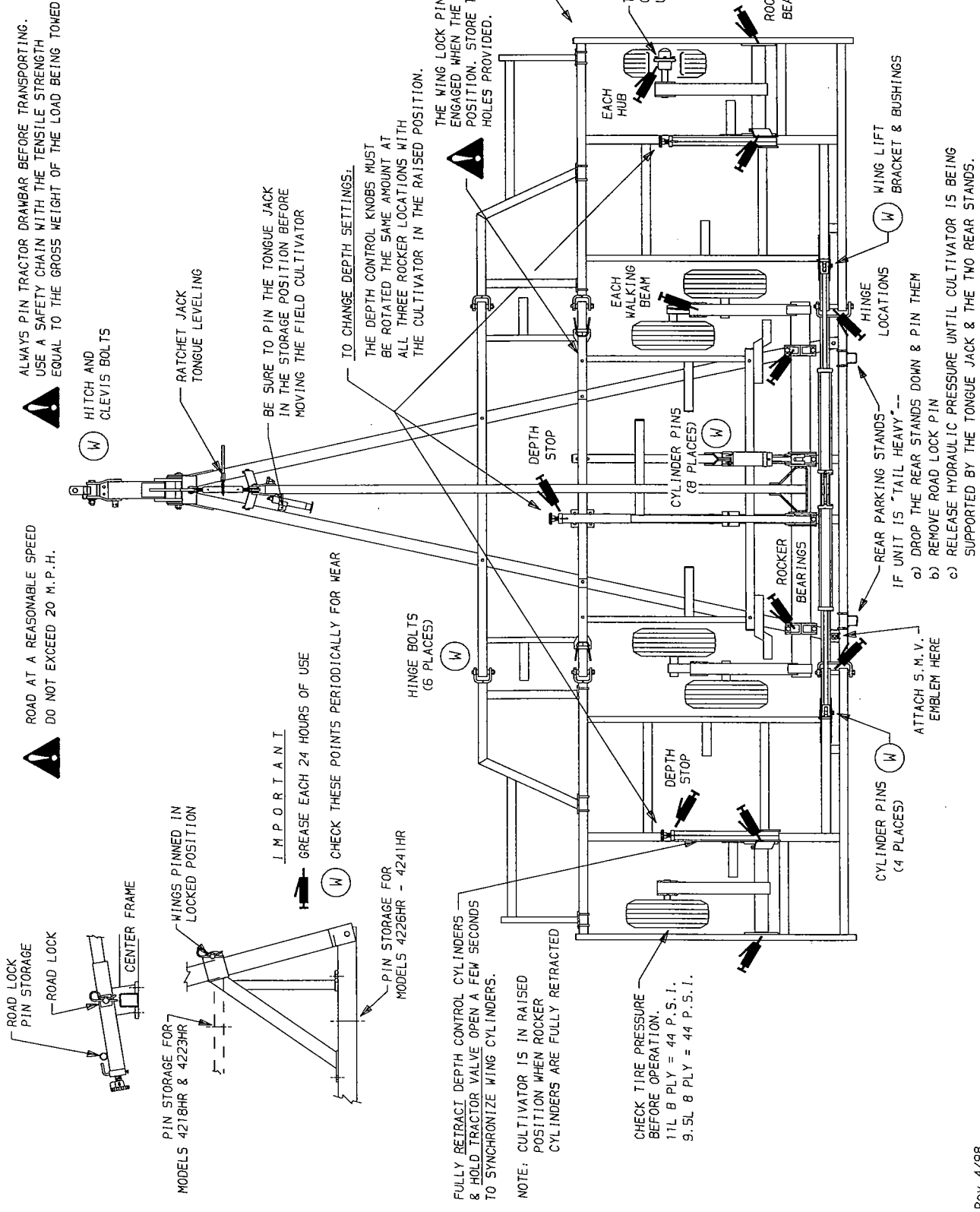
DEPTH CONTROL	5" x 8" Cylinder	28-1/4" Extended	20-1/4" Retracted
	4-3/4" x 8" Cylinder	28-1/4" Extended	20-1/4" Retracted
	4-1/2" x 8" Cylinder	28-1/4" Extended	20-1/4" Retracted
	4-1/4" x 8" Cylinder	28-1/4" Extended	20-1/4" Retracted
	4" x 8" Cylinder	28-1/4" Extended	20-1/4" Retracted

NOTE: Cylinders listed above rephase when fully retracted.

WING LIFT	4" x 16" Cylinder	47-1/2" Extended	31-1/2" Retracted
	4" x 32" Cylinder	74-3/4" Extended	42-3/4" Retracted
	4" x 24" Cylinder	(Outer Wing Fold on 5-Section Models)	

GENERAL INFORMATION

MODEL 4226HR SHOWN



ROAD AT A REASONABLE SPEED
DO NOT EXCEED 20 M.P.H.

ALWAYS PIN TRACTOR DRAWBAR BEFORE TRANSPORTING.
USE A SAFETY CHAIN WITH THE TENSILE STRENGTH
EQUAL TO THE GROSS WEIGHT OF THE LOAD BEING TOWED.

PIN STORAGE FOR
MODELS 4218HR & 4223HR

PIN STORAGE FOR
MODELS 4226HR - 4241HR

I M P O R T A N T
GREASE EACH 24 HOURS OF USE

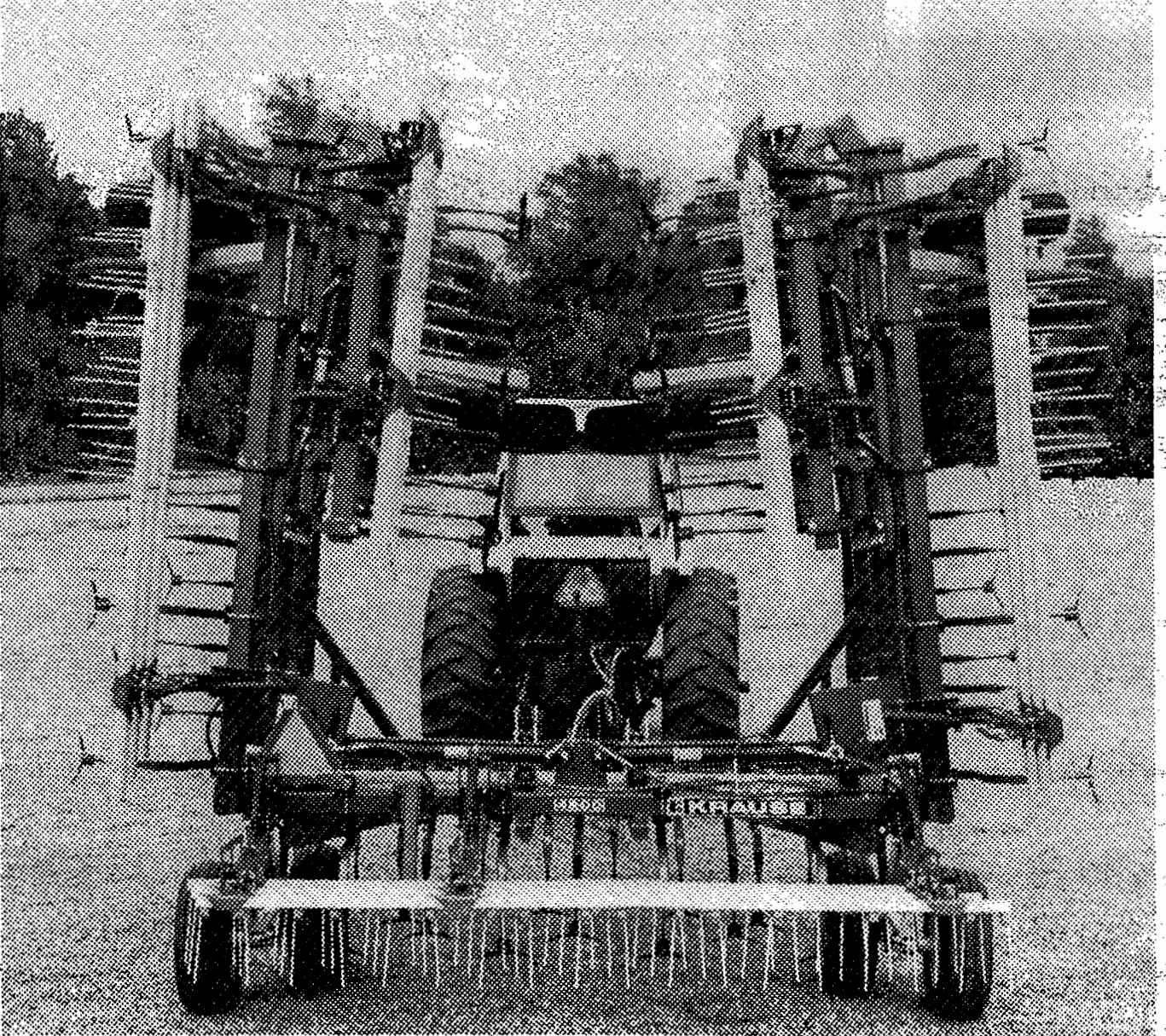
CHECK THESE POINTS PERIODICALLY FOR WEAR

FULLY RETRACT DEPTH CONTROL CYLINDERS
& HOLD TRACTOR VALVE OPEN A FEW SECONDS
TO SYNCHRONIZE WING CYLINDERS.

NOTE: CULTIVATOR IS IN RAISED
POSITION WHEN ROCKER
CYLINDERS ARE FULLY RETRACTED

CHECK TIRE PRESSURE
BEFORE OPERATION.
11L B PLY = 44 P.S.I.
9.5L 8 PLY = 44 P.S.I.

MODEL 4241HR SHOWN



SAFETY DECALS

! CAUTION

READ AND UNDERSTAND YOUR OPERATOR'S MANUAL! OBSERVE ALL CAUTION, WARNING, &/OR DANGER INSTRUCTIONS AND OTHER SAFETY PRACTICES.

1. To service machine: Park on level surface and lower wings. Set parking brake and/or place in park, shut off engine and remove key. Never work under raised equipment without adequate supports. If supports are not available, completely lower unit to the ground. Block wheels if detached from tractor.
2. Do not allow riders on implement or tractor.
3. Make certain that everyone is clear before activating any controls that may cause movement of implement, hydraulics, or any components.
4. Operate with increased caution on slopes and near ditches where there is a possibility that the tractor could overturn.
5. Before transporting, engage all transport locks and safety chain. The towing vehicle must weigh more than the implement.
6. Before transporting, check tractor and implement lights, clean reflectors and make certain SMV emblem is clearly visible.
7. Maximum transport speed is 15 MPH on best road surface.
8. Store with wings down, and implement on ground or blocks.
9. Regularly inspect bolts and pins in hitch, wheel hubs, cylinders and transport locks.

FAILURE TO OBSERVE SAFETY INSTRUCTIONS AND SAFETY PRACTICES CAN CAUSE PROPERTY DAMAGE, SERIOUS BODILY INJURY, &/OR DEATH.

74-117

! WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



INSPECT the hose assembly before each use.

REPLACE the hose assembly immediately if:

- A. The jacket of the hose appears abnormal.
- B. You have reason to believe it may be abnormal.
- C. There is any fluid leakage.
- D. The couplings are damaged.
- E. The hose is damaged or kinked.
- F. The reinforcement is visible through the jacket.

74-276

! WARNING



CONTACT WITH A POWER LINE OR OTHER OBSTRUCTION CAN CAUSE DAMAGE, SERIOUS BODILY INJURY OR DEATH.

BE AWARE OF THE IMPLEMENT TRANSPORT WIDTH AND HEIGHT. WATCH WIDTH AND HEIGHT CLEARANCES WHEN MOVING THE IMPLEMENT.

HARROW ATTACHMENTS WILL ADD TO TRANSPORT HEIGHT AND WIDTH. FOR YOUR SAFETY, MEASURE OVERALL WIDTH AND HEIGHT OF THE IMPLEMENT AFTER INSTALLING HARROWS OR ANY OTHER ATTACHMENT TO THE IMPLEMENT.

74-121

! WARNING

CYLINDERS MUST BE CHARGED WITH OIL BEFORE IMPLEMENT OR WINGS ARE LOWERED. LOWERING WITHOUT PURGING ALL AIR FROM THE HYDRAULIC CYLINDERS MAY RESULT IN PERMANENT AND EXTENSIVE DAMAGE.

1. Remove rod end pins from cylinders.
2. Block up rod end of cylinder to allow freedom of movement while extending and retracting cylinder rod.
3. Cycle cylinders sufficient times to remove all air.
4. Reconnect cylinder rod pin.

74-113

! WARNING

FAILURE OF HYDRAULIC COMPONENTS OR ACCIDENTAL OPERATION OF HYDRAULIC CONTROLS CAN ALLOW IMPLEMENT TO FALL AND CAUSE SERIOUS BODILY INJURY OR DEATH.

**FULLY RAISE CULTIVATOR
AND PIN FRONT HOLE
BEFORE CHANGING
SWEEPS OR POINTS.**

74-355

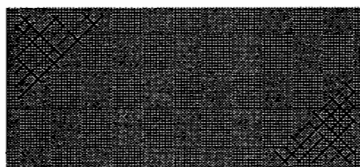
! WARNING



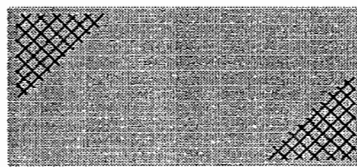
FAILURE OF HYDRAULIC COMPONENTS OR ACCIDENTAL OPERATION OF HYDRAULIC CONTROLS CAN ALLOW IMPLEMENTS OR WINGS TO FALL AND CAUSE SERIOUS BODILY INJURY OR DEATH!

1. Keep everyone clear when raising or lowering implement.
2. Install all transport lock pins when working on or under implement.
3. Check for adequate overhead and side to side clearance before raising or lowering wings.
4. Make certain all hydraulic systems are full of oil and free of air before raising or lowering wings or implement. Check operator's manual for detailed instructions.

74-102



74-108 RED REFLECTOR



74-107 AMBER REFLECTOR

See page P58 in this manual for proper location of decals.

! CAUTION

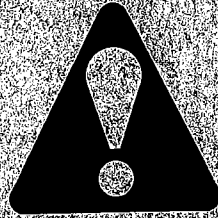
**THE TONGUE MAY RAISE RAPIDLY
WHEN UNHITCHING FROM THE TRACTOR IF THE REAR
JACK IS NOT SET IN POSITION.**

A REAR JACK STAND IS REQUIRED WHEN HEAVY ATTACHMENTS ARE ADDED TO THE BACK FRAME BEAM.

74-158

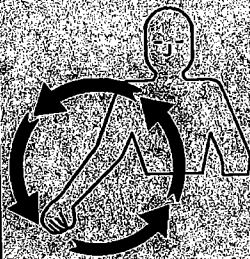
OPERATING SECTION

SAFETY ALERT SYMBOL

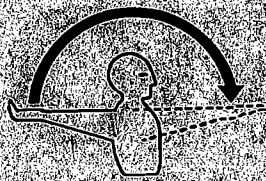


BE ALERT TO THE POSSIBILITY OF PERSONAL INJURY
THIS SYMBOL IDENTIFIES IMPORTANT SAFETY MESSAGES.
CAREFULLY READ THE MESSAGE THAT FOLLOWS.

TEN MOST COMMON HAND SIGNALS USED IN THE FIELD



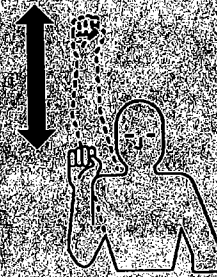
START
THE
ENGINE



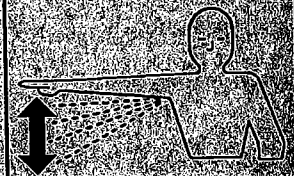
MOVE OUT
OR
TAKE OFF



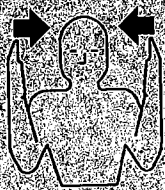
MOVE
TOWARD
ME



SPEED
IT UP



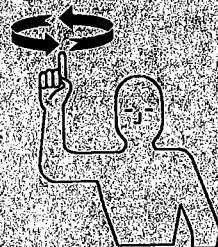
SLOW IT
DOWN



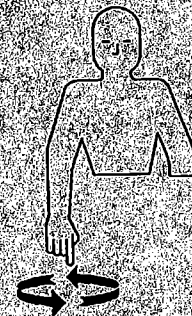
THIS FAR
TO GO



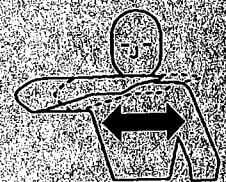
STOP



RAISE
THE
EQUIPMENT



LOWER
THE
EQUIPMENT



STOP
THE
ENGINE

OPERATING INSTRUCTIONS

Elimination of the hazards listed in this manual should not be construed as providing guarantees that the equipment will meet or exceed all standards or regulations, or will be completely safe to all personnel. The operator should inspect and review the implement after it is in his possession for adequacy in safety for the function for which it will be used.



READ ALL THE SAFETY DECALS ON THE IMPLEMENT AND REVIEW THE SAFETY FIRST SUGGESTIONS ON THE BACK OF THIS MANUAL TO REFRESH YOUR MEMORY. WATCH FOR THE SAFETY SYMBOL, AND READ THE INFORMATION THAT FOLLOWS. THIS IS FOR YOUR OWN PROTECTION.

ABOUT YOUR FIELD CULTIVATOR

This field cultivator has been designed for secondary tillage and is flexible enough to follow the contours of most field conditions.

It is designed to be used for control of weeds, volunteer plants, erosion control, chemical incorporation, and seed bed preparation. The field cultivator works best at speeds of 5 to 6-1/2 M.P.H., however, rocky conditions may require a slower field speed.

Horsepower requirements generally will be 2.5 drawbar horsepower, or 3.25 engine horsepower per shank.

Adding attachments should be limited to KRAUSE original equipment options, or light duty tine or spike harrows that weigh no more than 30 pounds per foot of cut. Additions of harrows will make the field cultivator "tail heavy" and the two rear parking stands should be used when the cultivator is parked or stored. (See "Hitching and Unhitching")

PREPARING THE FIELD CULTIVATOR FOR OPERATION



TAKE A LOOK

1. WING LOCK PINS
 - a. Place the wing lock pins in the storage holes and unfold the wings.
 - b. With the cultivator fully raised, pin the wing depth stops in the front hole.
 - c. Support the center frame with the two rear stands and the tongue jack.
2. The wing lock pins should be stored in the wing lock storage holes and not in the clevis locking ends.
3. Check for loose bolts and tighten if needed. Check again if needed. Check again for loose bolts after the first half day of operation.
4. Check the shank locations with the Placement Drawings at the back of this manual for the model being used to be sure that the unit has been set up properly.
5. Check tire pressure. Inflate 6-Ply tires to 32 PSI and 8-Ply tires to 44 PSI. Also check the wheel lug bolts to see if they are torqued from 90 to 95 Ft. Lbs., and that the wheel hub bearings do not have excessive end play.
6. Make sure that all grease zerks locations have been sufficiently greased. Grease zerks will be found on rocker shaft bearings, depth stop assemblies, walking tandem beams, wheel hubs and wing hinges. **USE EXTREME CAUTION WHEN WORKING AROUND SHAFT SHANK POINTS & SWEEPS.**

7. Check and adjust tightness of wheel bearings before operation, after the first week and periodically thereafter. (See Service Section of this book)

PREPARING THE TRACTOR

Read your tractor owner's manual. It will describe safe methods of operation. Make sure your tractor has proper added ballast, and that its hydraulic system is full of oil and working properly. Check tractor brakes and warning lights, make sure they are in working order.


HYDRAULIC SYSTEM

Inspect the hydraulic system for tell-tale leaks and loose fittings. Tighten if needed. Loose tape fragments may cause cylinder valve or O-Ring leaks that can cause drifting or poor cylinder operation. Make sure a restrictor is installed in the wing lift cylinder rod end port. If not previously filled, your hydraulic system will require approximately 14 Quarts on Models 4218HR and 4223HR, 24 Quarts on Models 4226HR and 4231HR, or 38 Quarts on Models 4237HR & 4241HR of your tractor manufacturer's recommended oil. Read "HYDRAULICS" on page O14, before filling system.

When working with rephasing rocker cylinders, be sure all of the cylinders are mounted in proper sequence. Hoses must be attached in the proper order, and all air bled from the hoses and cylinders. See page O10 under REPHASING CYLINDER SYSTEM. If, after some time, one cylinder of the series should start to close for no apparent reason, oil is probably leaking past the O-Rings and an O-Ring kit, available from Krause, should be installed.


REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER ONLY.

A HYDRAULIC HOSE AND CYLINDER SCHEMATIC CAN BE FOUND FOR EACH MODEL IN THIS SERIES ON PAGES P42 THROUGH P49 OF THE PARTS SECTION.

 **Caution:** Air in hydraulic system could allow field cultivator or wings to drop suddenly.

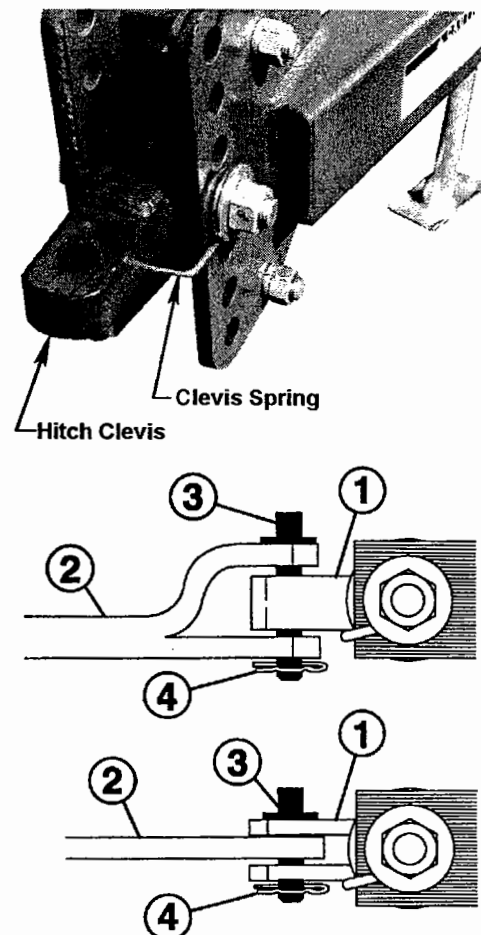
Do not operate the wing hydraulics until you have read wing lift operating instructions under "Transporting".

HITCHING & UNHITCHING

 **Danger:** Do not allow any person to stand between the tractor and implement while backing into position. Sudden loss of control could cause serious injury or death to a person caught between the tractor and implement. Tell your helper to wait until you give him the signal that the tractor is in park or neutral and the hand brake is set and engine is shut off.

Hitching To The Tractor

1. The field cultivator should be supported by the two rear stands and the tongue jack. The road lock pin is in the storage hole. The clevis spring will hold the clevis forward.
2. Unpin the tractor drawbar so it can be moved from side to side.
3. Back the tractor to the field cultivator.
4. Attach clevis **1** to tractor drawbar **2** with clevis pin **3** that fits the hole size in the tractor drawbar. Make sure pin is locked or bolted in place **4** to prevent loss.
5. Fasten safety chain and/or lights. (See "Transporting")
6. Place tongue jack in storage position.
7. Connect hydraulic hoses to tractor.
8. Raise the cultivator and engage the road lock pin.

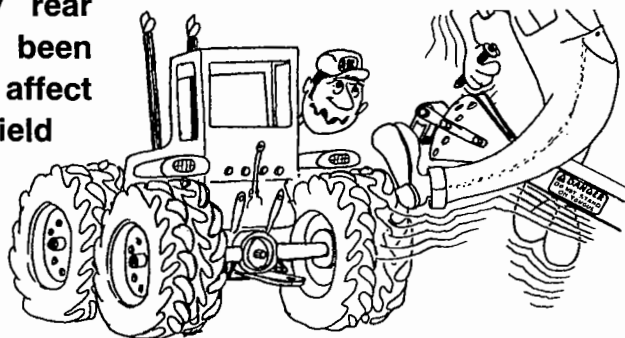


Unhitching From The Tractor

Find a level place to park. If the field cultivator is to remain parked for storage over a long period of time, be sure to read storage suggestions on page O15.

1. To unhitch the tractor from the field cultivator, place the tractor in park or neutral and set the hand brake. If you are not parking on level ground block the implement tires.
2. Drop the two rear stands down and pin them in place.
3. Raise the unit up and remove the road lock pin. Turn off the tractor engine and relieve the hydraulic pressure until the cultivator is being supported by the two rear stands.
4. Lower tongue jack and raise the tongue height until clevis pin is loose and remove pin.
5. Disconnect the hydraulic hoses, safety chain, and lights, and the tractor may be move away.

⚠ Caution: Do not stand or straddle implement tongue when unhitching. If any rear attachments have been added to unit it may affect the balance of the field cultivator, causing the tongue to come up suddenly when unhitching.



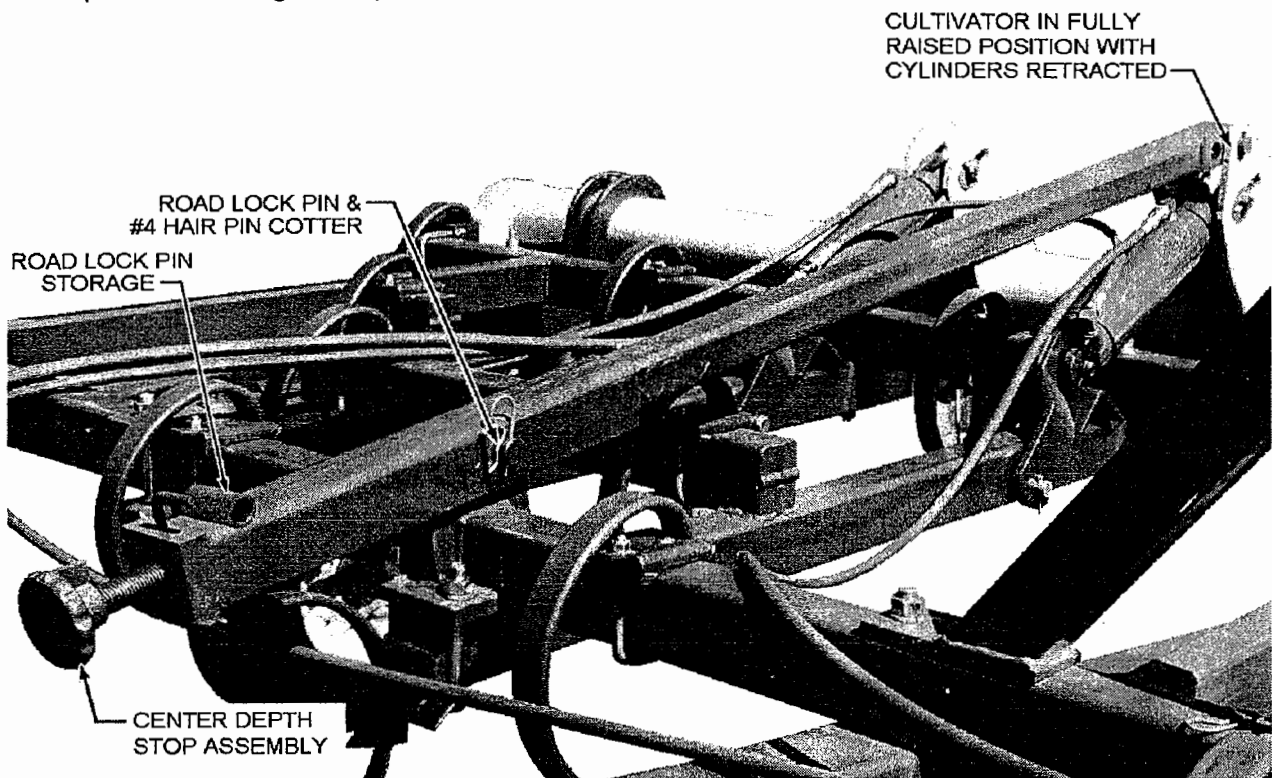
TRANSPORTING

Check specification pages and be aware of transport height and width of your model of field cultivator.

⚠ Warning: Always use transport road locks when transporting to prevent unit from falling due to hydraulic failure, or accidental activation of the operator's control. Lowering of the tool during transporting could result in loss of control or implement and / or tractor. The tractor drawbar must always be pinned for transport.

Road Lock

1. With the cultivator in the fully raised position, insert the ROAD LOCK PIN into the front hole in the center depth stop assembly. Retain it with a #4 Hair Pin Cotter.
2. Store the ROAD LOCK PIN in the storage hole provided during field operation.



M4200-33
Rev.7/97

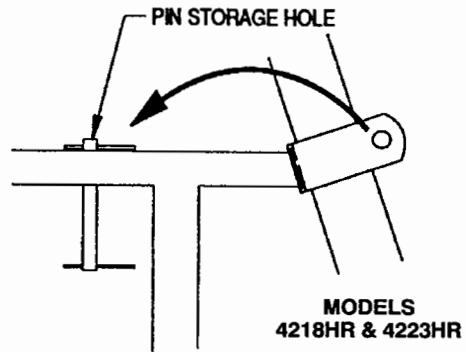
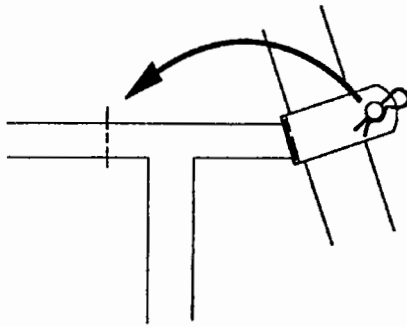
Raising The Wings

The field cultivator should be in the raised position with road lock pinned. The wings will be secured in the raised position with the locking pins. Be sure the wing lock pins are in the storage holes before lifting the wings or damage to the wing frames will occur. See the illustration the follows.

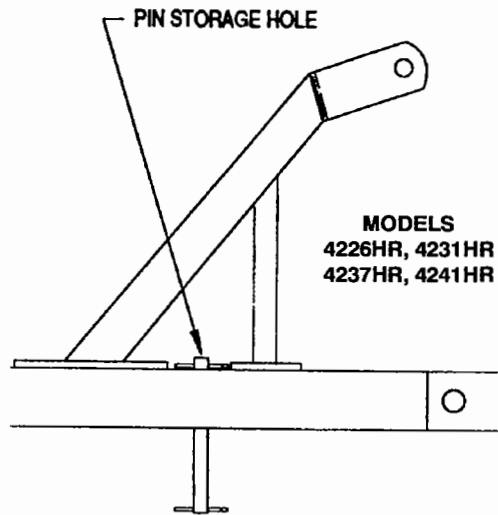
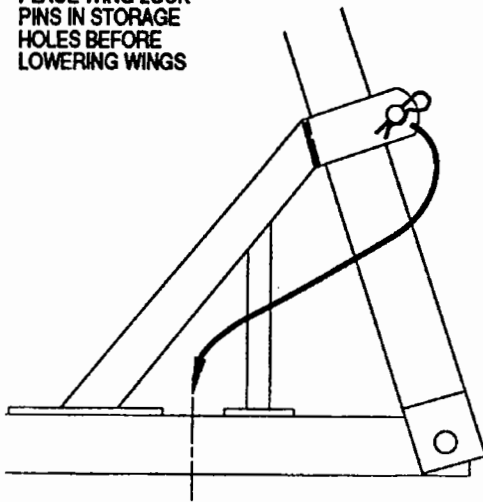
⚠ Warning: Always stand clear of wings when they are in raised position. A hydraulic failure or activation of hydraulic controls by someone could result in serious injury to anyone under the wings.

Lowering The Wings

Retract the wing lift cylinders to their minimum stroke. Remove wing lock pins and place in storage holes. Lower wings with all persons standing clear.



PLACE WING LOCK PINS IN STORAGE HOLES BEFORE LOWERING WINGS

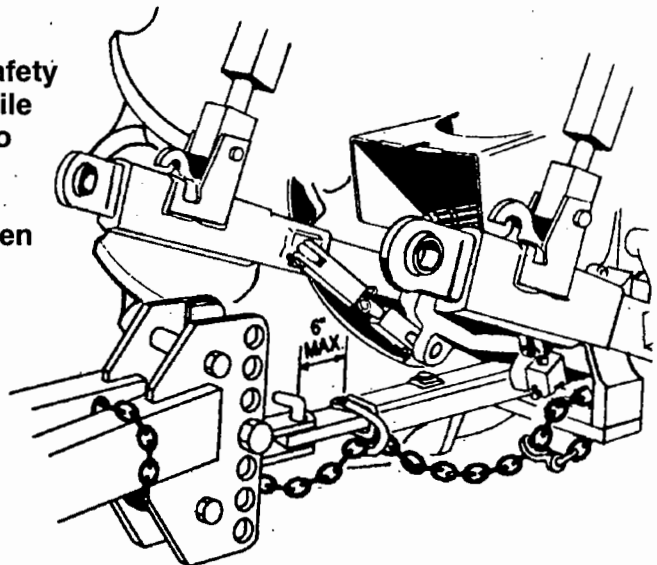


IMPORTANT: NEVER EXTEND WING LIFT CYLINDERS UNTIL LOCK PINS HAVE BEEN DISENGAGED, OR DAMAGE COULD OCCUR TO THE FRAME OR HYDRAULIC CYLINDER.

Transport Safety

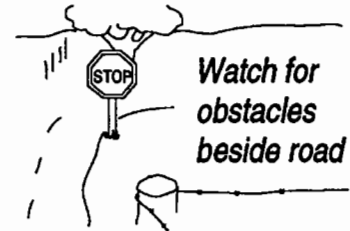
Warning: Always use a safety chain with tensile strength equal to the gross weight of the unit, plus any attachments, when transporting.

Note: A safety chain, SMV emblem, and a light kit were furnished as standard equipment with your implement. Make sure they are in place, clean and in working order.



Insert the ASAE Slow Moving Vehicle (SMV) emblem into the bracket provided. The emblem is to mounted point up in a plane perpendicular to the direction of travel ± 10 degrees. It shall be placed centrally at the rear of the vehicle, unobscured, and 2' to 6' (0.61 to 1.8m) above the ground, measured from the lower edge of the emblem. The SMV emblem should be wiped clean before entering the road or highways.

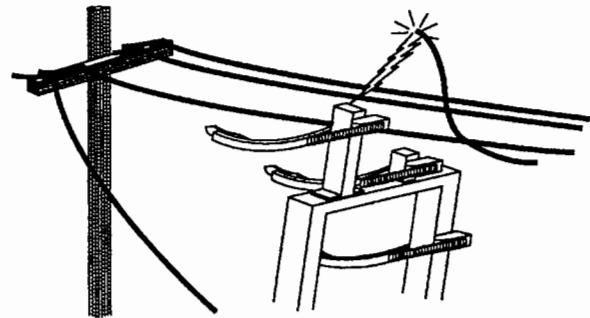
Comply with state and local laws pertaining to lighting and road widths. Turn on flashing lights whenever traveling on a highway except where it is prohibited by law. If the implement obscures the tractor warning lamp, a lamp must be added to the left of the implement. Transport during daylight hours only. Watch your clearance. Be aware of obstacles along the side of the roadway that might be caught by the field cultivator when passing by. Pull over to the side of the road to permit safe clearance for oncoming traffic. Keep the red and yellow reflectors clean and visible. Replace the reflectors if they become faded or damaged. Watch for pedestrians on the side of the road that need to be warned of your presence.



⚠ Danger: Always check conditions of transport lock pins, tires, wheels, hubs, safety chain, hitch bolts, and clevis pin before transporting the implement.

Be aware of the transport height as well as the width of your model of field cultivator. Care should be taken not to snag low hanging telephone lines or electrical service lines.

It is best to use a tractor to transport the field cultivator to another location. If using another type of towing unit it should never be allowed to exceed 15 M.P.H., since implement tires are not constructed to be operated at higher speeds. The towing vehicle should always equal or exceed the gross weight of the field cultivator and attachments.



Always check the tire pressure before transporting and look for damaged tires. Wobble the tires from side to side. If excessive play is noted, adjust the hub spindle nut before roading to prevent damage to the hub or bearings.

⚠ Caution: It is very important to check wheel lug bolts after the first half mile of initial transport (delivery). If loose, tighten to 90 to 95 Ft. Lbs. torque. Continue to check frequently until they remain firmly seated.

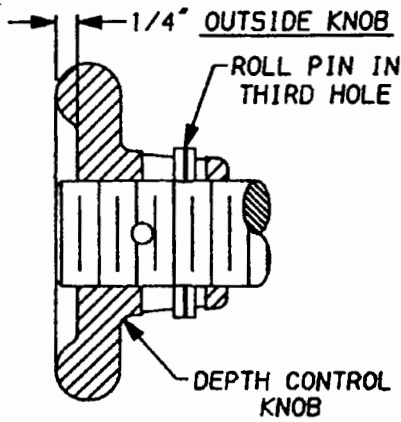
Hitch Pin

Use the proper size hitch pin with a means for holding it in place so it cannot work itself out during transport. The hitch pin should be inspected for wear or cracks before using it to transport your field cultivator.

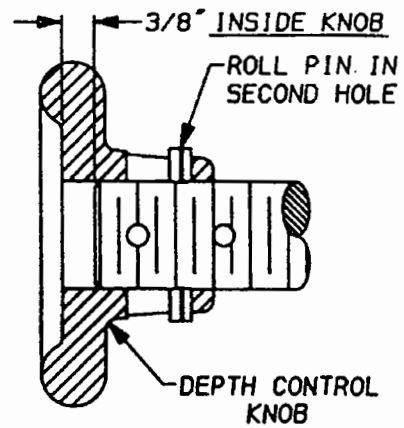
FIELD ADJUSTMENTS

The center and wing frames should have been leveled from side-to-side during cultivator assembly. (See pages A35, and A36 in the Assembly Section)

Check the center DEPTH CONTROL KNOB and make sure it is screwed on the stop bolt the right amount. If it is not, remove the roll pin and adjust the to the dimension shown below.



CENTER SECTION
WITH WALKING BEAM
DUAL WHEELS

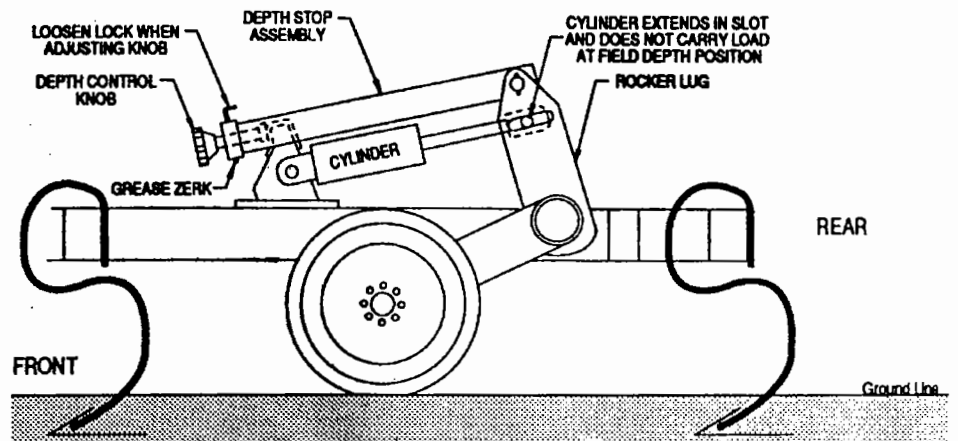


CENTER SECTION
WITH
SINGLE WHEELS

UNDERSTANDING YOUR DEPTH CONTROL SYSTEM



The 4200HR Series Field Cultivator uses a mechanical depth stop system. This eliminates the problem of depth change due to cylinder leaks because it does not depend on oil under pressure to gauge depth. Accuracy, reliability and ease of adjustment are inherent in this design.



This is how the depth control works:

1. Rephasing cylinders extend to lower the cultivator into the ground.
2. The depth stop assembly stops the rocker rotation at the desired depth.
3. The rephasing cylinders continue to extend freely into a slot in the rocker lug.

Depth Adjustment Procedure

1. Raise the cultivator out of the ground to relieve depth stop pressure.
2. Rotate the Depth Control Knob **counter-clockwise** to **increase** depth; rotate the Depth Control Knob **clockwise** to **decrease** depth.

NOTE: All rocker depth stops must be adjusted the same number or rotations to maintain a level unit.

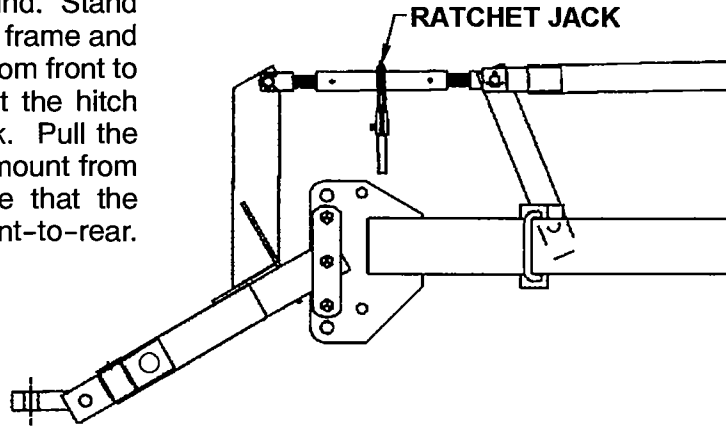
A decal has been provided to let you know how many turns are necessary for any given change in depth.

IMPORTANT: THE CULTIVATOR WILL ONLY BE LEVEL WHEN IT IS LOWERED DOWN AGAINST THE DEPTH STOPS.

WHEN THE CULTIVATOR IS RAISED HYDRAULICALLY OFF OF THE DEPTH STOPS, IT MAY NOT MAINTAIN A CONSISTENT DEPTH.

Leveling From Front To Rear

Stop with the cultivator still in the ground. Stand at a reasonable distance and view the frame and tongue to determine if they are level from front to rear. If the frame is not level, adjust the hitch height by lengthening the ratchet jack. Pull the field cultivator forward a few feet, dismount from the tractor and re-check to be sure that the implement is now level from front-to-rear. Re-level if necessary.



Leveling The Frames From Side To Side

Although the frames have been leveled during assembly, it will probably need fine tuning in the field because of cultivator tires running in tractor tracks.

IF WING IS HIGHER THAN THE CENTER SECTION:

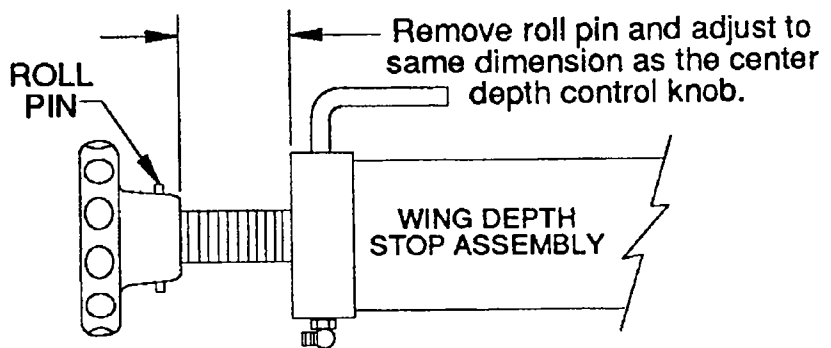
1. Raise the cultivator with tractor hydraulics to remove pressure from the depth stops.
2. Rotate the wing depth control knob counter-clockwise one or two turns.
3. Operate the cultivator with cylinders fully extended. If the wing is still too high, repeat steps a and b above.

IF WING IS LOWER THAN THE CENTER SECTION:

1. Raise the cultivator with tractor hydraulics to remove pressure from the depth stops.
2. Rotate the wing depth control knob clockwise one or two turns.
3. Operate the cultivator with cylinders fully extended. If the wing is still too low, repeat steps a and b above.

When the frames are running level, stop the cultivator in the ground with pressure on the depth stop assemblies.

Remove the roll pin in the wing depth control knob and adjust the knob in the same manner as the center depth control knob.

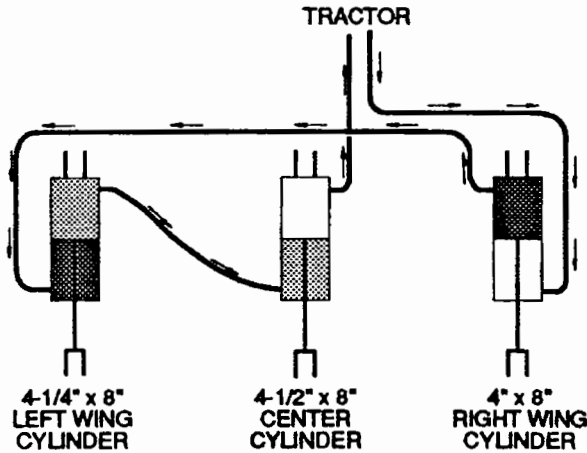


Replace the roll pin.

Understanding Your Rephasing Cylinder System

When the cultivator is raised completely out of the ground these specially designed cylinders are rephased for uniform lifting by holding the tractor remote hydraulic control lever in the raised position for 20 to 30 seconds. This allows a small volume of oil to bypass the piston seals. Consequently, all of the cylinders can be fully retracted.

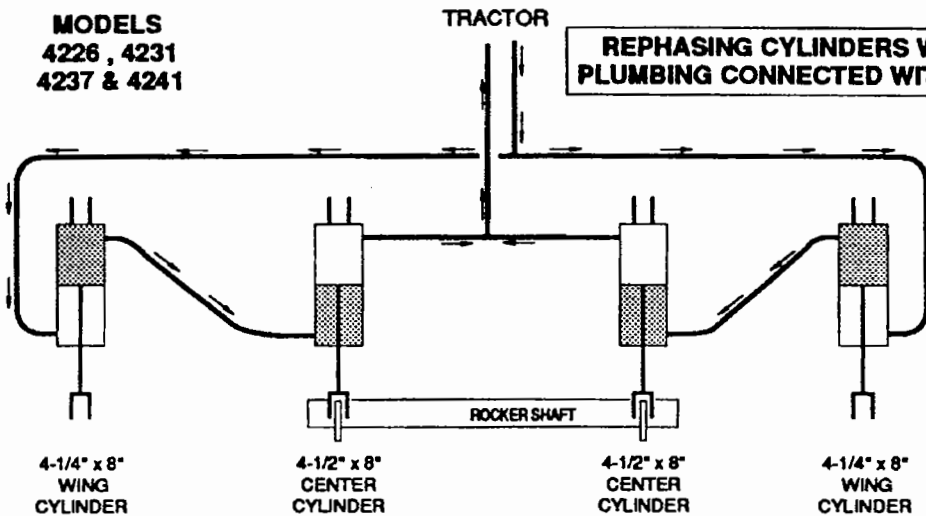
**MODELS
4218 & 4223**



**REPHASING CYLINDERS
PLUMBED IN SERIES**

NOTE: ARROWS SHOW OIL FLOW TO RETRACT CYLINDERS AND RAISE CULTIVATOR

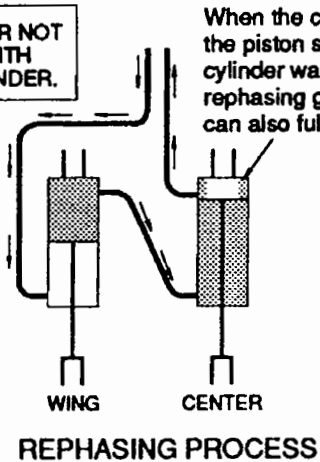
**MODELS
4226, 4231
4237 & 4241**



**REPHASING CYLINDERS WITH DUAL SERIES
PLUMBING CONNECTED WITH CENTER ROCKER**

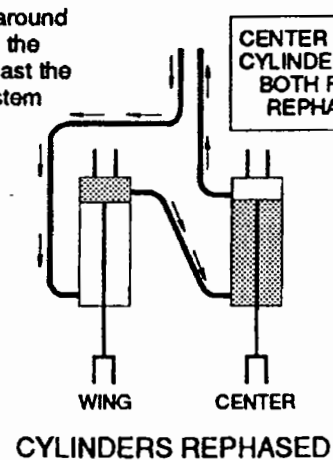
NOTE: ARROWS SHOW OIL FLOW TO RETRACT CYLINDERS AND RAISE CULTIVATOR

**WING CYLINDER NOT
IN PHASE WITH
CENTER CYLINDER.**



When the cylinder is fully retracted, oil can flow around the piston seal through the rephasing grooves in the cylinder wall. As the oil continues to be forced past the rephasing grooves, the other cylinders in the system can also fully retract

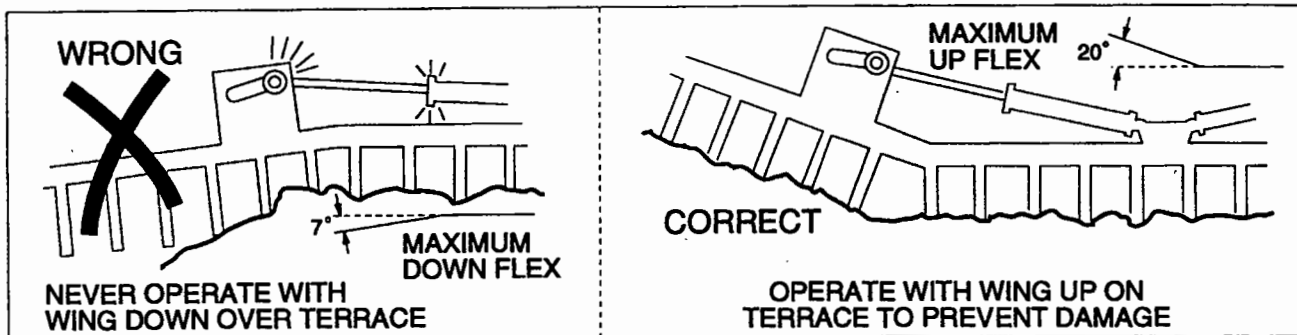
**CENTER & WING
CYLINDERS ARE
BOTH FULLY
REPHASED**



Flexibility

ALWAYS WORK WITH THE WINGS DOWN: Major damage may occur to shanks and frame members if used with the wings up. For maximum flexibility, make sure the wing hydraulic cylinders are fully extended after the wings are down.

When working terraced ground, place the wing up on the terrace, not down over the terrace, as the wing is limited in its downward movement, but not as much in its upward movement.



Turning In The Field

Short turns at working depth may result in driving the outside shanks deeper in the ground, causing damage to shanks or frame members. If short turns must be executed, raise the field cultivator out of the ground and complete the turn before engaging the tool for further tilling.

When lifting the field cultivator completely out of the ground, hold the tractor hydraulic valve open for a second or two to resynchronize the slave cylinders.

See section "UNDERSTANDING YOUR REPHASING CYLINDER SYSTEM" on page O9.

Field Speed

While high field speed of around 6-1/2 M.P.H. may be recommended for weed killing purposes in light soil and shallow depth, a slower speed is recommended for heavy soils and deep work. Slower speed will also add life to field cultivator points and sweeps.

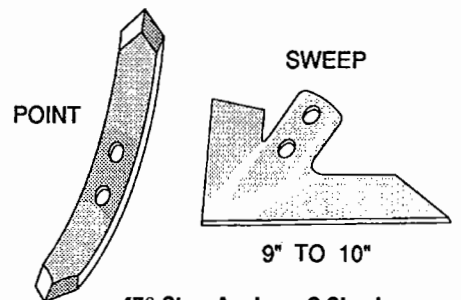
GENERAL INFORMATION

Points are recommended for light soils and when higher ridges are desired. Sweeps are for light draft cultivation and not for deep work.

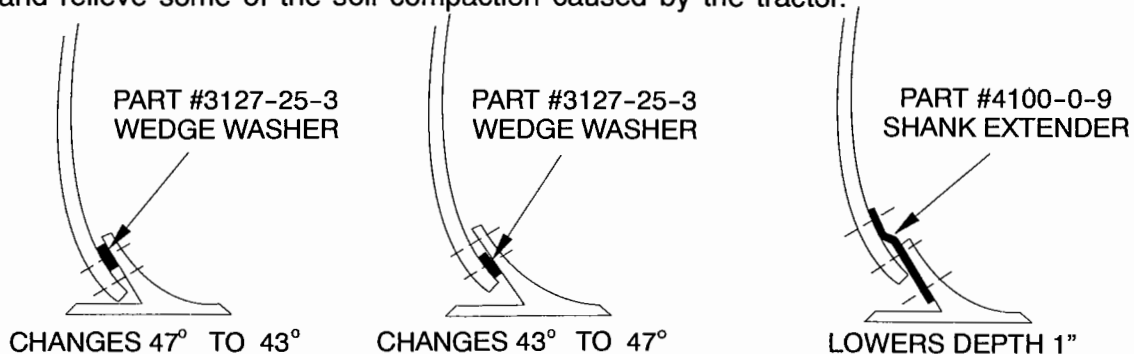
Sweeps with a 47° stem angle are recommended on units with C-Shanks, or 2-Piece K-Tines. 43° sweeps are recommended when the unit is equipped with K-Tines.

Placing a wedge washer in the top hole on the shank will change a 47° sweep to a 43° sweep. Use the wedge washer in the lower hole on the shank to change a 43° sweep to a 47° sweep if operating in extremely hard ground or if excessive shank mark is noted. NOTE: Use of a wedge washer (part #3127-25-3) is normally not needed.

Shank Extenders (Part number# 4100-0-9) are for use on C-Shanks and K-Tines, located in back of the tractor tires, to lower the depth of the shanks by approximately 1". Their use allows sweeps to run deeper and relieve some of the soil compaction caused by the tractor.



- 47° Stem Angle on C Shanks
- 43° Stem Angle on K-Tines
- 47° Stem Angle on 2-Piece K-Tines



⚠ Danger: The wing mounted shanks and points can seriously injure anyone that gets too close. Never under any circumstances should anyone be allowed to walk or work under a wing that is in the raised transport position.



SERVICING

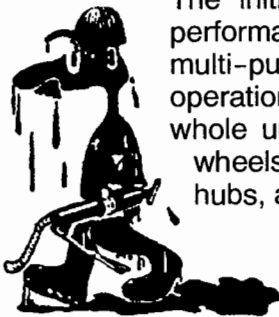
General Maintenance

All nuts should be checked and tightened during and after the first 1/2 day of operation, and periodically thereafter. Keep tires inflated to the recommended pressure, and check the wheel bolts until they are firmly seated. Hydraulic hoses should be checked for wear and pinched areas and replaced if necessary. Check shanks and mountings for breaks and turn or replace points when worn.

NOTE: When turning or replacing points, be sure to turn or replace all of the points.

⚠ Warning: Raise the cultivator and make sure that the center road lock and wing depth stops are pinned in front holes before working around cultivator point or sweeps.

Lubrication



The initial lubrication of all grease fittings will assure long life and satisfactory performance from the field cultivator. Minimum lubrication is required. Use a multi-purpose type grease at all grease zerk locations after each 24 hours of operation. Rocker shaft bearing clamps will accept grease more efficiently if the whole unit is lowered to the ground with the weight of the unit removed from the wheels. points of lubrication are: wing hinges, walking tandem bearings, wheel hubs, and depth stop assemblies.

FOR YOUR SAFETY: WHEN LUBRICATING OR ADJUSTING YOUR FIELD CULTIVATOR, WATCH FOR OBSTRUCTIONS AND PROTRUSIONS. LOWER IMPLEMENT WINGS TO THE GROUND AND ENTER FRAMEWORK BY STEPPING OVER. DO NOT WALK ON TIRES.

Wheel Bearings

Grease wheel bearings every 24 hours of use. Check for excessive end play each time bearings are greased. Once a year, clean and repack wheel bearings with EP#2 Grease. Replace seals each time bearings are removed. Replace any worn or damaged parts. After repacking, replace hub with seal and rear bearing already assembled. Use light oil on seal surface and use extreme care when pushing seal over the spindle. Install outer bearings, flat washer, and slotted nut. Tighten nut while turning hub until there is resistance to rotation. Then back off nut from 1 to 2 slots until hub turns freely without end play. Secure nut with clinched cotter pin.

Walking Beam Maintenance

Grease walking beam bearings every 24 hours of use. Check, clean, and repack walking beam bearings each year in a procedure similar to that of wheel bearings.

When reassembling the walking beam, tighten the slotted axle nut in until there is a 5 to 10 ft. lb. preload on the bearings. **Do not back the axle nut off.**

Spring Shank Repair

Check shanks periodically for loose bolts and nuts, at this time check for broken springs.

To replace a broken spring, first attach a (Part # 4122-0-14) Winch Bracket to the upper sweep boot, attach a chain to this bracket and around the cultivator frame. Pull up on the shank until the roll pin is free. See Figure 1.

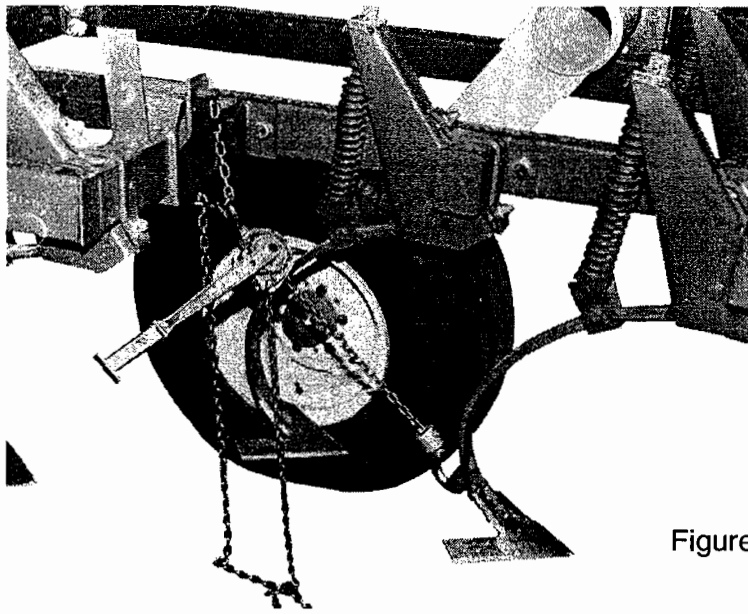


Figure 1

Remove roll pin, lower shank and replace broken spring. See Figure 2.

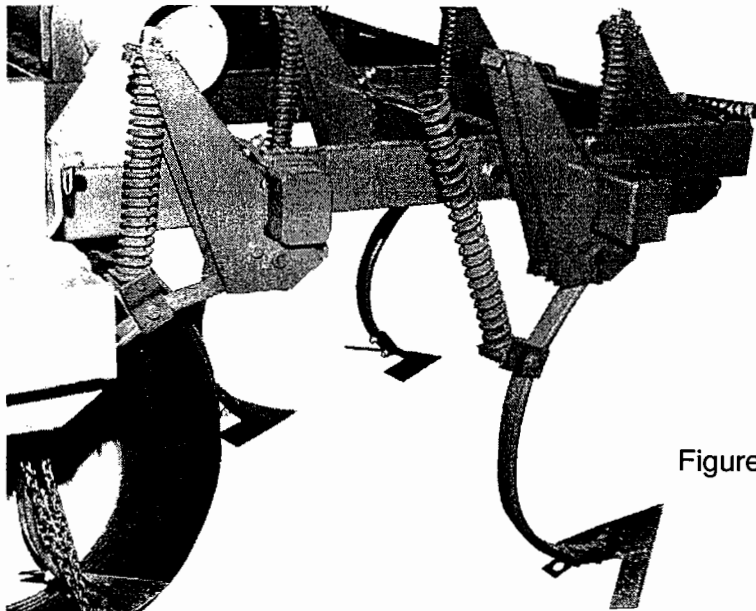
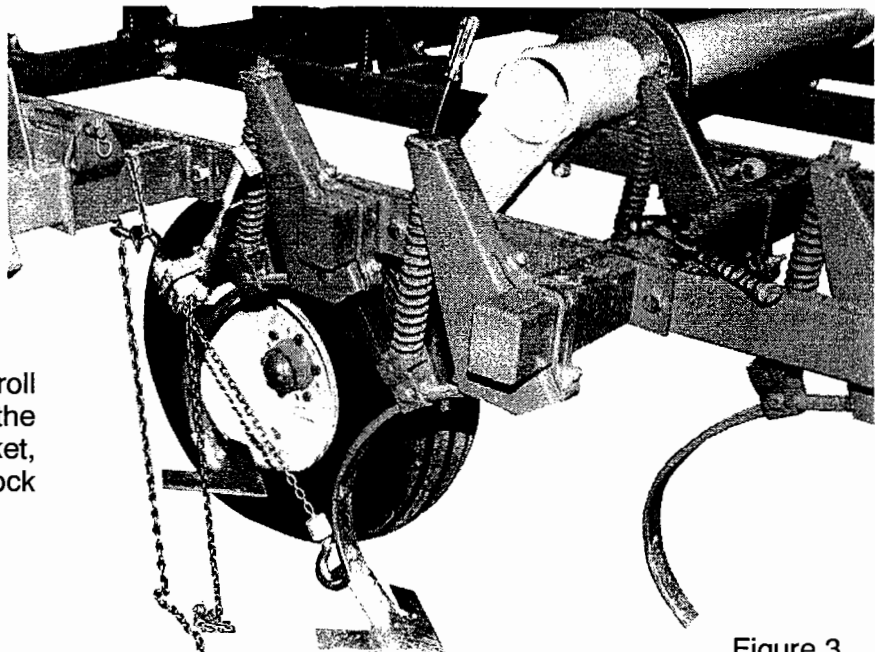


Figure 2

Guide spring rod through slot in the mounting channel with a screwdriver. See Figure 3.



Replace square washer and roll pin. Remove the winch and the 4122-0-14 winch bracket, store bracket on a spring shock clamp bolt.

Figure 3

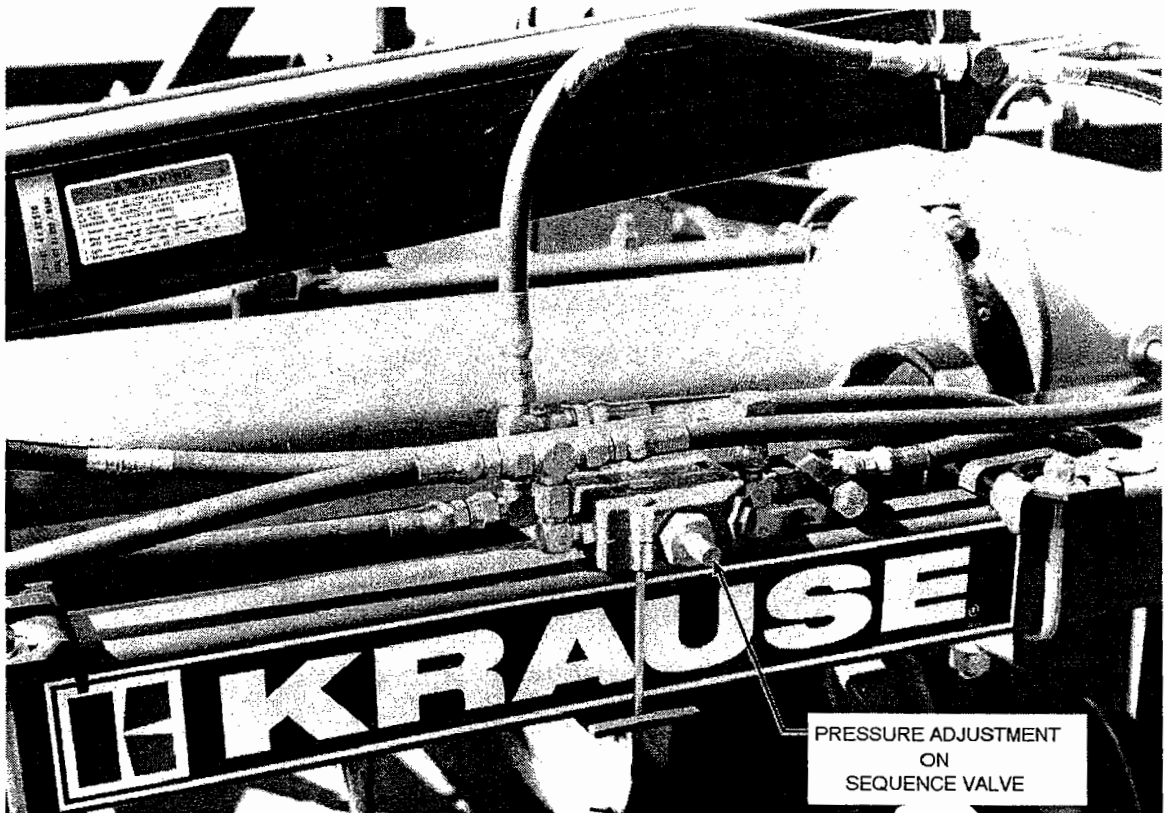
MODELS 4237HR & 4241HR WING FOLD SEQUENCE VALVE

These Models are full 5-Section field cultivator, which uses a sequence valve to cause the inside wing to unfold before the outside wing unfolds.

IMPORTANT: THE INSIDE WINGS SHOULD UNFOLD COMPLETELY BEFORE THE OUTER WINGS BEGIN TO UNFOLD. IF IT DOES NOT LET THE INSIDE WING COMPLETELY UNFOLD, CHECK AND / OR CORRECT AS DESCRIBED BELOW.

POSSIBLE CAUSE	REMEDY
1. 25-324 In-Line Restrictor is not plumbed in correct place.	Correct hydraulic plumbing as shown on page A33, P56 and P58.
2. Sequence Valve is not set properly	a. Fold outer wing only b. Increase sequence valve pressure until wing cannot be unfolded. c. Decrease valve pressure only enough to allow outer wings to unfold.
3. Internal leaks in valve	Replace valve.

⚠ Warning: Always stand clear of wings when they are in the raised position. A hydraulic failure or activation of hydraulic controls by someone could result in serious injury to anyone under the wings.



HYDRAULIC SAFETY

PLEASE READ CAREFULLY

If the implement hydraulic system has never been used, stored over a period of time or disassembled for any reason, unpin the rod ends of the cylinders and support the cylinders so the rod ends will clear frame members when fully extended. Back the tractor to the front of the implement and connect the hydraulic hoses. Check the tractor hydraulic reservoir and make sure it is full of the manufacturer's recommended oil. If you are sure the implement hydraulic hose connections are tight, begin filling the system by extending and retracting the cylinders. Hold the control lever open and pause at the end of each stroke to bleed the air from the system. Continue the cycles until the cylinders respond with immediate solid actuation. When you are sure the systems are free of air, pin the rod ends of the cylinders to the implement cylinder lugs.

Warning: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



AVOID HEATING NEAR PRESSURIZED HYDRAULIC HOSES

Flammable spray can be generated by heating near pressurized hydraulic hoses, resulting in severe burns to yourself and bystanders. Do not heat by welding, or using a torch near hoses. Hose can be accidentally cut when heat goes beyond the immediate flame area.

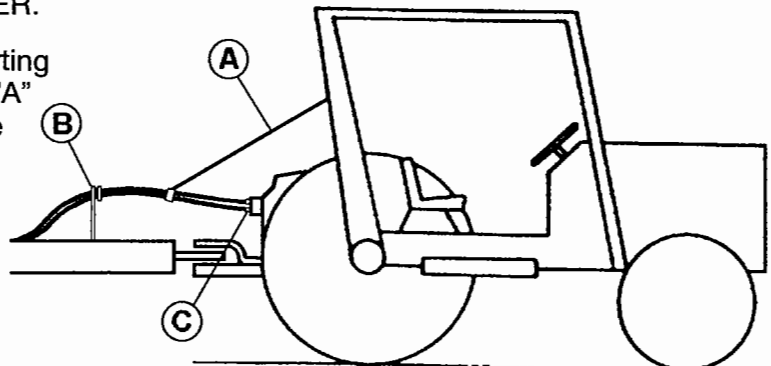
THE FOLLOWING WARNINGS PERTAIN TO THE MORE COMMON ABUSES OF HYDRAULIC HOSE:

1. **INSPECT** the hose assembly before each use.
2. **REPLACE** the hose assembly immediately if:
 - a. The jacket of the hose appears abnormal.
 - b. You have reason to believe it may be abnormal.
 - c. There is any fluid leakage.
 - d. The couplings are damaged.
 - e. The hose is damaged or kinked.
 - f. The reinforcement is visible through the jacket.
3. **DO NOT EXCEED** the maximum recommended working pressure of the hose.
4. **DO NOT KINK** the hose assembly.
5. **DO NOT BEND** the hose assembly beyond its minimum recommended bend radius of 3.25 in.
6. **DO NOT EXPOSE** to temperatures in excess of 225° Fahrenheit.
7. **DO NOT USE AS A STRENGTH MEMBER** for pulling or lifting equipment.

Caution: If replacing hydraulic hose, use only hose that meets or exceeds 3,000 PSI working pressure.

IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER.

Prevent damage to trail hoses by supporting them from the tractor with an elastic strap "A". Avoid having excess hose between the implement support "B" and the tractor connection "C". Either reposition the hose farther back on the implement or request a shorter hose from your dealer.




Storage

Select a level area, lower the wings and set the field cultivator down on blocks to prevent points from settling into the ground. Retract the gauge wheel hydraulic cylinder. Coat sweeps and wing lift cylinder rods with rust preventative. Inspect for worn or damaged parts and replace as needed to avoid delays the next season. Check to be sure hydraulic hose couplers are stored on top of the tongue and not left laying on the ground.

Repair Parts

Refer to the Assembly Section of this book when repairing or replacing parts, and follow the same procedure as used when assembling a new unit. Reverse this procedure for disassembly. The Parts Section of this book will show a breakdown of assemblies, location of parts and part numbers.

KRAUSE parts were developed and tested for these units, therefore, it is recommended that KRAUSE replacement parts be used.

 **Caution:** If replacing hydraulic hose, use only hose that meets or exceeds 3,000 PSI working pressure.

IMPORTANT: REPAIR OF HYDRAULIC CYLINDERS SHOULD BE MADE BY AN AUTHORIZED KRAUSE DEALER ONLY.

SUGGESTED REMEDIES FOR POSSIBLE FIELD PROBLEMS

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Plugging	Straw is dragging	Work deeper
	Bunched trash	Work shallow the first time
	Field is too wet	Allow field to dry
	Shanks positioned wrong	Recheck shank spacing
Not level from front to rear	Clevis height not adjusted when depth changed	Use wheels to gauge depth and adjust clevis height with unit in working position
	Some weight of unit not on wheels during leveling adjustment	Use wheels to gauge depth and adjust clevis height with unit in working position
Excessive Ridges	Loose point or sweep bolts	Tighten plow bolts or replace if missing
	Improper shank spacing or shanks located wrong	Measure and relocate. If shank is shifting on frame, make sure shank is straight front to back when tightening hex nuts
	Frame not level	Level frame at operating depth as described in operating instructions
	Bent shank	Straighten or replace shank
	Sweeps with old residue will cause soil build-up preventing necessary scouring for even flow	Remove trash and residue. Clean field cultivator after operation. Use rust preventative before storing

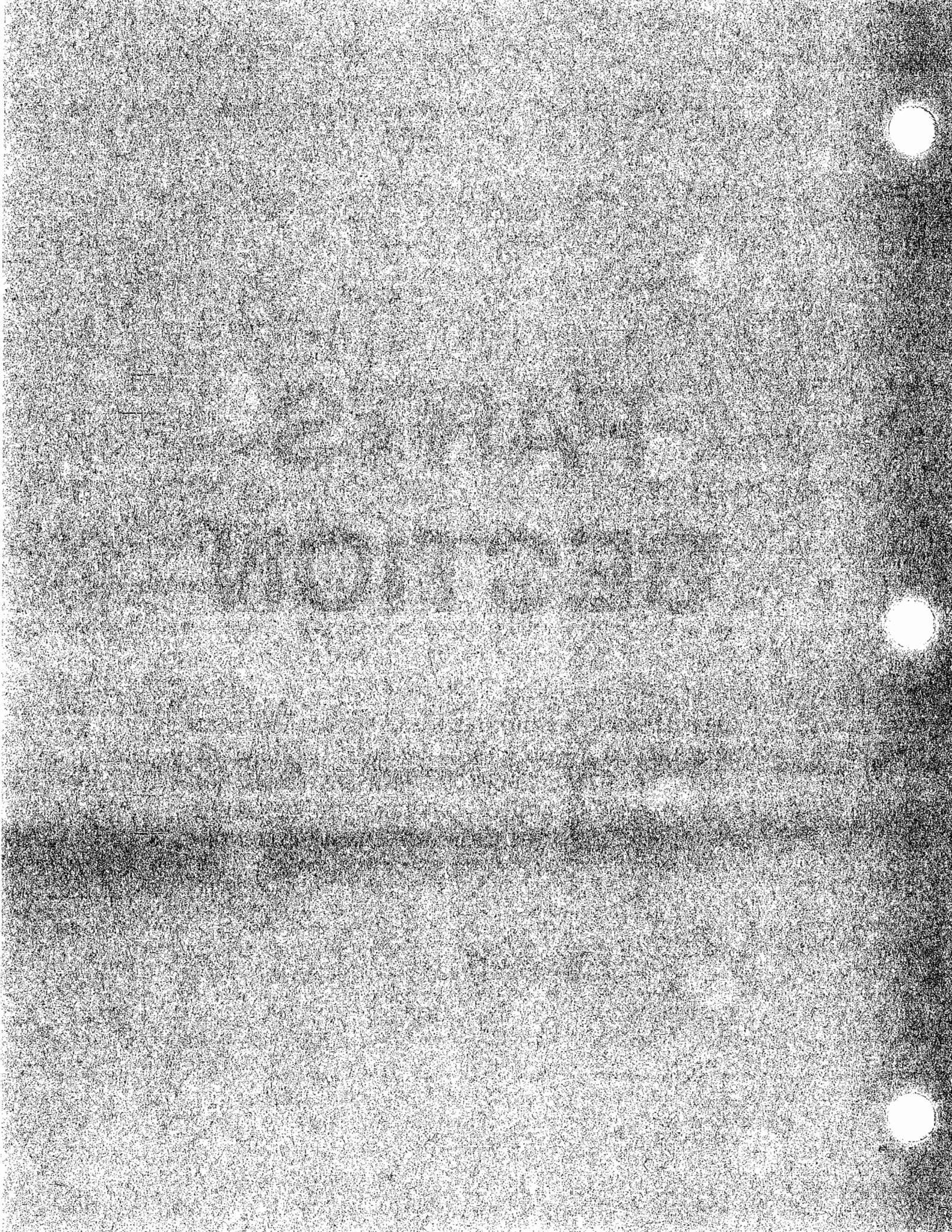
PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Field cultivator will not lower	Road lock	Extend depth cylinders; unpin road lock
	Hose couplers not locked in tractor sockets	Check hydraulic hose connectors
	Oil not flowing through system	Plugged line or cylinder Look for restrictor ell in rocker cylinder plumbing. Replace with STD. 90° ell.
Field cultivator does not follow directly behind tractor	Points are different length	Replace or turn
	Bent shanks	Replace or straighten shanks
	Wings out of adjustment	Readjust wing depth stop assemblies. See pages O7 and O8
	Bent rocker shaft	Replace or straighten
	Tire size or air pressure	All tires should be within $\pm 1/2$ " diameter
		All tires should have same air pressure. See Specification page
	Shank locations wrong	Check shank spacing. Correct if needed.
		Check shank locations. Relocate correctly. See placement pages.
Cultivator not lowered down against depth stops	Lower cultivator against stops or readjust stops. See page O7	
Slave cylinder out-of-phase	Raise unit out of ground. Hold control lever open until cylinders are completely retracted.	
Center section not level from side to side	Incorrect tire pressure	Check tire pressures. 9.5L x 15 6-Ply 32 PSI, 11L x 15 6-Ply 32 PSI, 9.5L x 15 8-Ply 44 PSI
	Bent/ twisted rocker shaft/wheel arm	Replace or straighten
	Bent frame	Replace or straighten
Wings not level from side to side	Wing too high	To lower wing; adjust wing depth stop. See pages O7 and O8
	Wing too low	To raise wing; adjust wing depth stop. See pages O7 and O8
	Wing lift cylinders not fully extended	Extend cylinder to maximum length; hold open briefly
	Slave cylinders out of phase	Raise unit out of ground, hold control lever open until cylinders are completely retracted

PROBLEM	POSSIBLE CAUSE	SUGGESTED REMEDY
Wings will not raise to transport position	Wing lift cylinder restrictors plugged	Remove, check & clear any foreign material that might plug small orifice in restrictor at rod end of cylinders
	Insufficient hydraulic pressure	Check tractor hydraulic system
Wings will not lower	Wings are locked with pins	Unpin BOTH wings
	Hose couplers not locked in tractor disconnect socket	Check hydraulic hose connectors
Wheels have excessive wobble	Loose wheel bolts	Torque wheel bolts from 90-95 Ft. Lbs.
	Loose spindle nut	Tighten spindle nut, turn back one notch and pin
Settling or continually going deeper while working	Cultivator not lowered down against depth stops	Lower cultivator against depth stops; See page O7
		Readjust stops to shallower setting
Wings will not flex down	Wing lift cylinders not fully extended	Extend wing lift cylinders to max. length
Field cultivator will not penetrate	Sweeps have wrong angle	Use 47° stem angle for spring shanks and 2-piece K-tine shanks. Use 43° stem angle for one-piece K-tine shanks.
	Ground is too hard	Wait for moisture
	Dull points	Replace or turn over
	Excessive field speed	Slow to 5 MPH or less
	Cultivator not set deep enough	To increase depth; lower all depth stops See page O7
* IMPORTANT: DO NOT REMOVE SHANKS		
* NOTE: Removing shanks to obtain additional depth will cause the remaining shanks, and frame members on which these shanks are mounted to be overloaded. This could cause bent shanks, broken bolts or clamps, or twisted frame members.		

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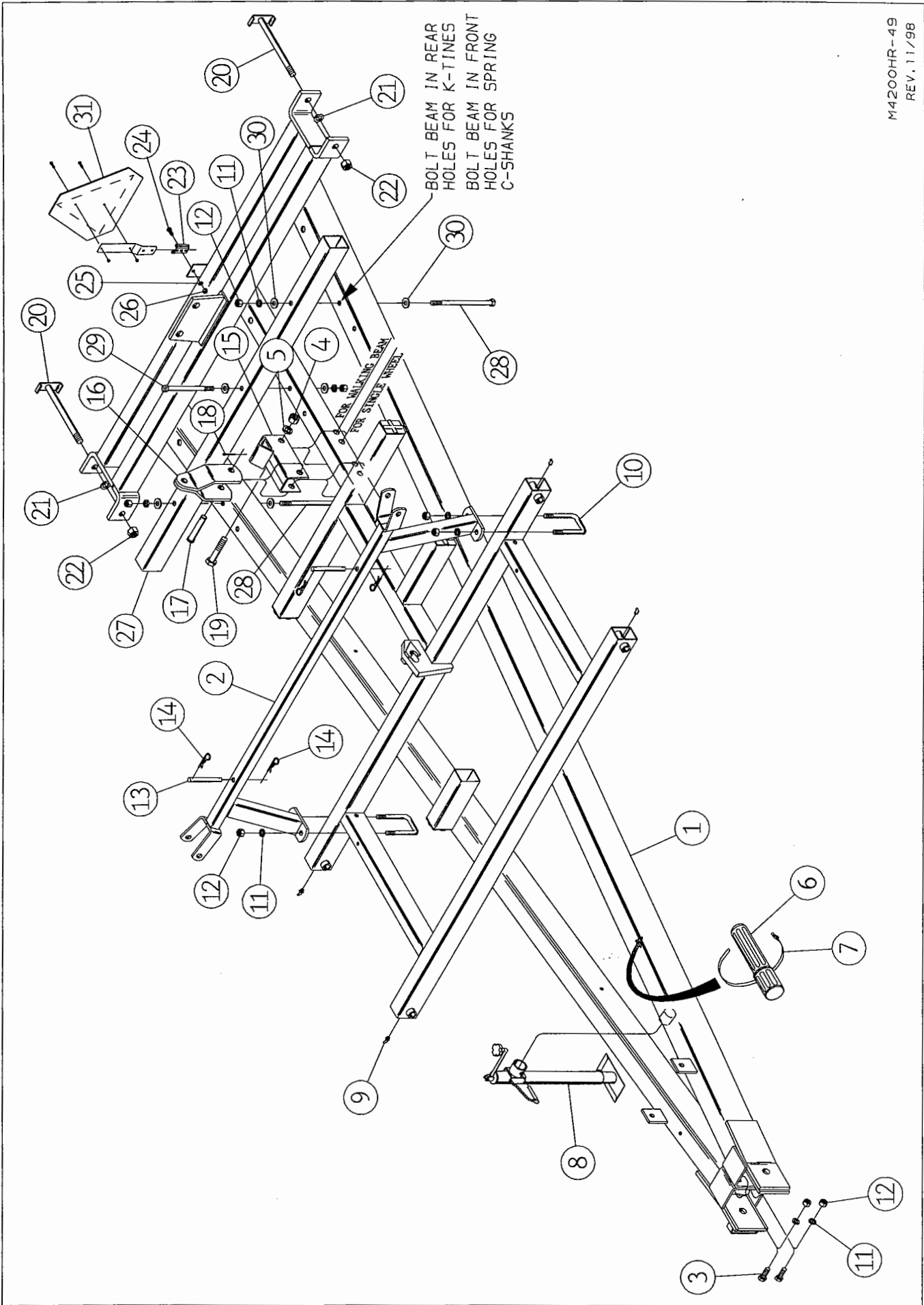
PARTS SECTION

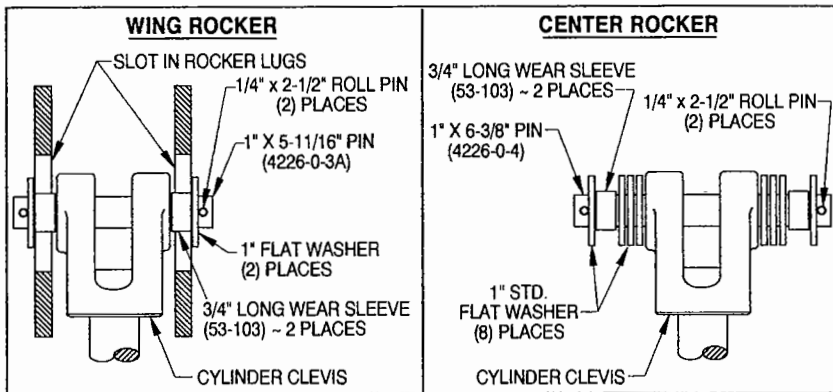
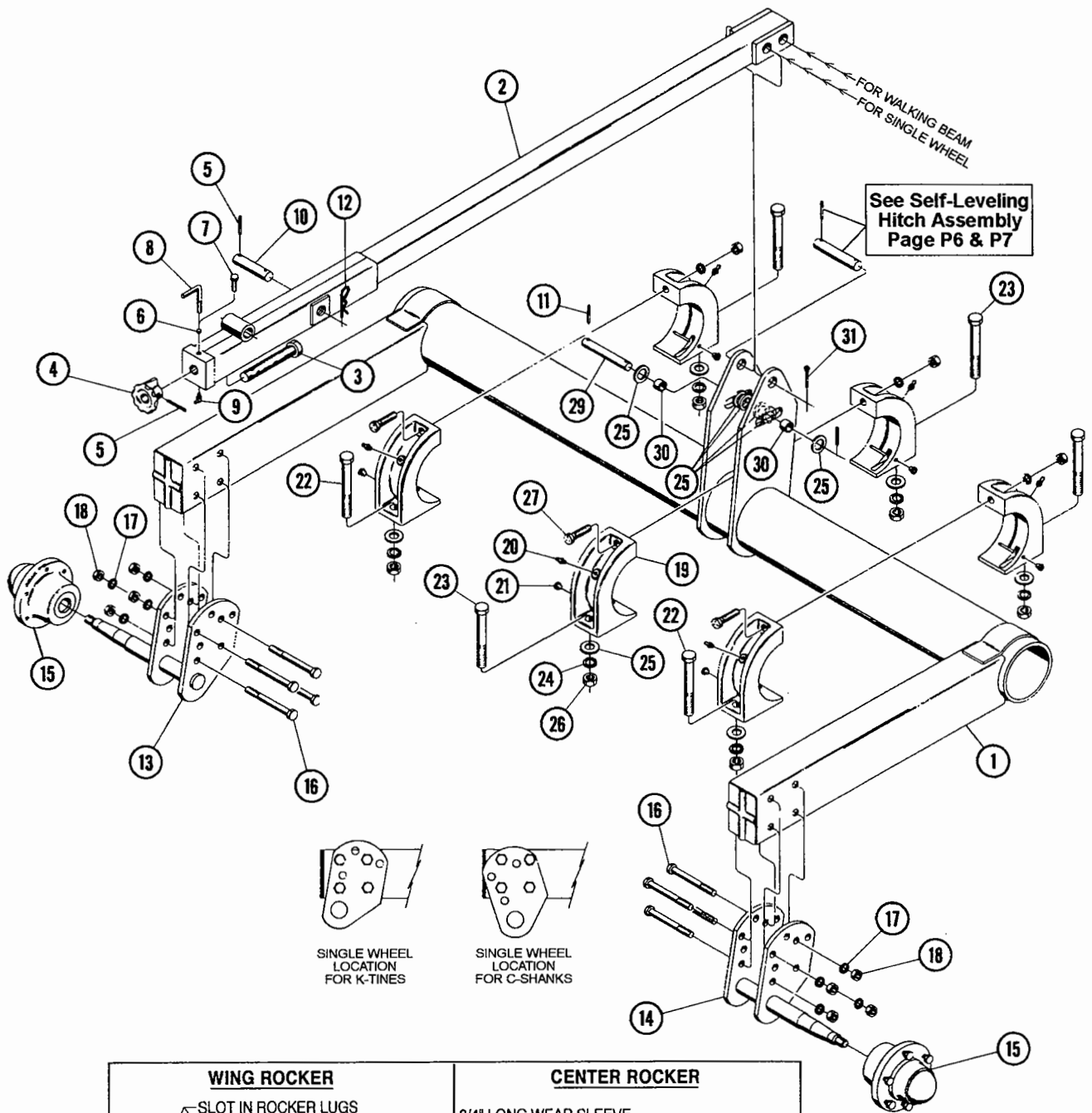
THE FOLLOWING ILLUSTRATED PARTS SECTION HAS BEEN COMPILED TO REFLECT PART NUMBERS REQUIRED TO ORDER PARTS, AND TO SUPPORT THE ASSEMBLY SECTION FOR DIMENSIONS AND DESCRIPTIONS OF ALL PARTS, BOLTS, PINS, ETC. - THE OPERATOR CAN ALSO IDENTIFY PART NAMES TO CLARIFY PROPER OPERATIONAL STEPS.

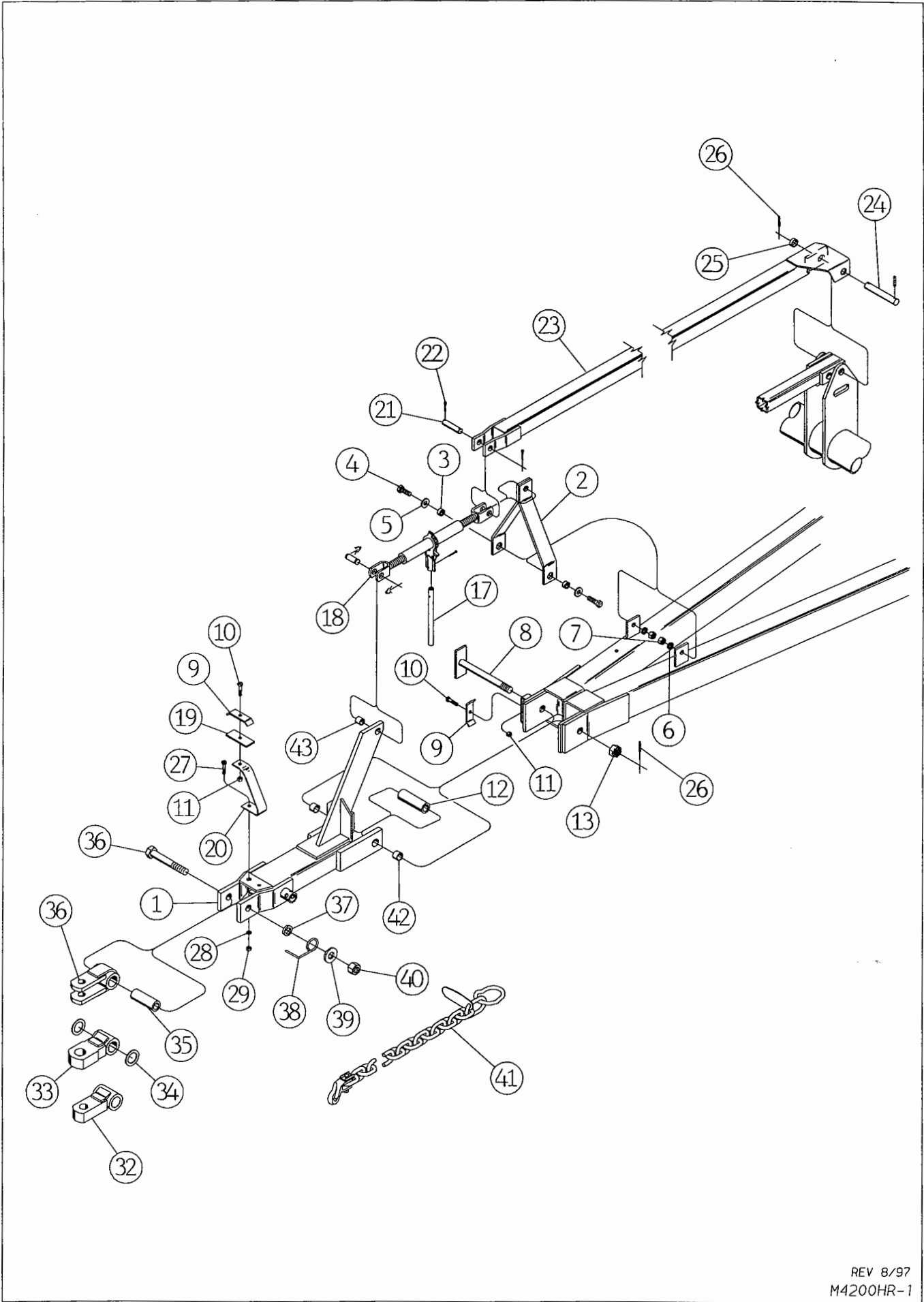


Notes

A series of horizontal lines for writing notes, arranged in a column on the right side of the page. There are 25 lines in total, starting from the top of the page and extending to the bottom. The lines are evenly spaced and cover most of the width of the page.







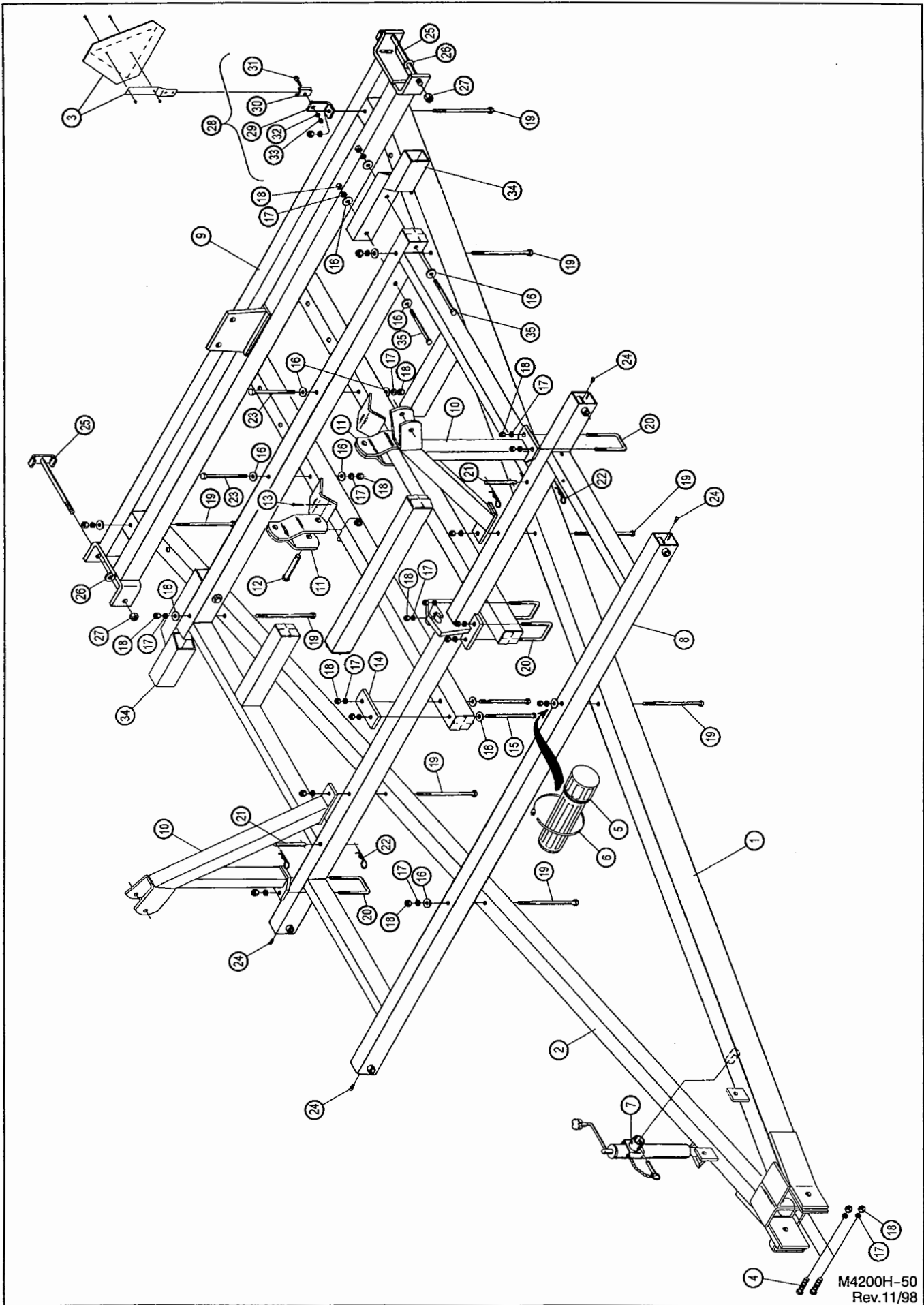
REV 8/97
M4200HR-1

SELF-LEVELING TONGUE

FOR MODELS - 4218HR, 4223HR

1/97

Item	Part Number	Part Description	Qty.
1	4226-41-0	Leveling Tongue Weldment	1
2	4218-28-0	Support Link Weldment	1
3	670-0-2	Bushing (1-1/4" x 13/16" x 9/16")	2
4	62-421	3/4NC x 2" GD. 5 Machine Bolt	2
5	64-113	3/4" STD. Flat Washer	2
6	64-112	3/4" STD. Lock Washer	2
7	63-112	3/4NC Hex Nut	2
8	4218-29-0	Hitch Pin Weldment	1
9	2426-170-5	Hose Clamp	2
10	62-343	1/2NC x 2" GD.5 Cap Screw	2
11	63-108	1/2NC Self Locking Nut	2
12	1844-0-1	Spacer (2" x 1-5/16" x 5-7/8")	1
13	63-125	1-1/4NC Slotted Hex Nut	1
14			
15			
16			
17	70-212-1	7" Handle (Included in 70-212 Assembly)	1
18	70-212	Ratchet Jack Assembly	1
19	2145-170-5	Hose Plate	1
20	4901-0-12	Hose Stand	1
21	4226-0-8	1"DIA. x 4" Pin	1
22	60-702	3/16" x 1-1/2" Cotter Pin	2
23	4223-54-0	Leveling Link Weldment	1
24	4226-0-9	1-1/4" DIA. x 7-1/16" Pin	1
25	53-109	Wear Sleeve	1
26	60-606	1/4" x 2" Roll Pin	3
27	62-569	1/2NC x 1-1/2" GD.5 Cap Screw	1
28	64-107	1/2" STD. Lock Washer	1
29	63-106	1/2NC Hex Nut	1
30	61-120	3/4" DIA. U-Bolt	2
31	770-85-0	Clevis Weldment (Standard)	1
32	770-86-0	Crawler Clevis Weldment (Optional)	1
33	1330-54-0	Crawler Clevis Weldment (Optional)	1
34	64-154	Machinery Bushing (For 1330-54-0)	2
35	1520-0-15	Hitch Tube	1
36	62-277	1-1/4NC x 8" Cap Screw	1
37	1901-0-21	Bushing	1
38	76-119	Clevis Spring	1
39	64-126	1-1/4" STD. Flat Washer	1
40	63-126	1-1/4NC Self Locking Nut	1
41	72-351	10,000# Safety Chain	1
42	53-102	Wear Sleeve	2
43	53-101	Wear Sleeve	1



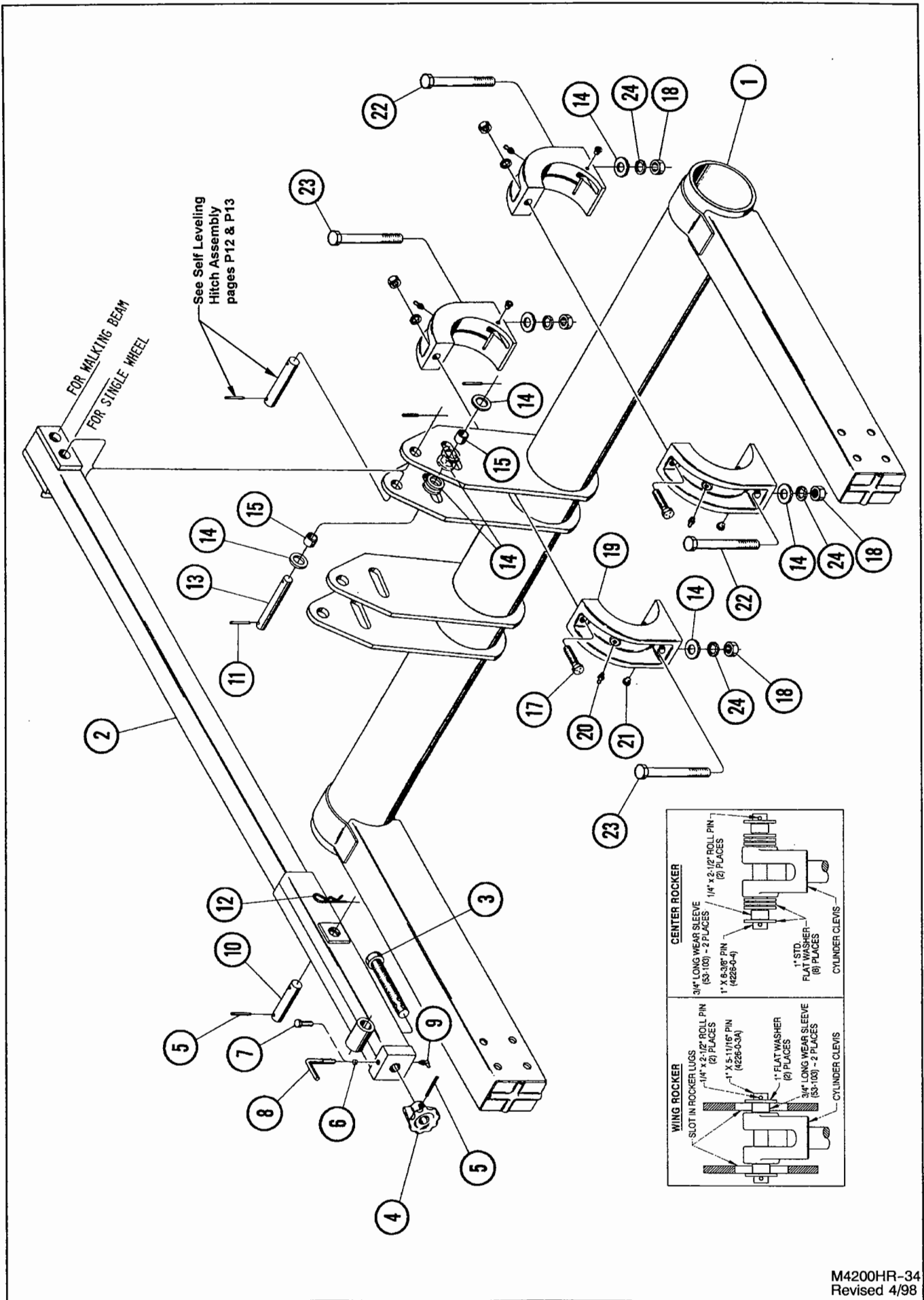
M4200H-50
Rev.11/98

MAIN FRAME ASSEMBLY

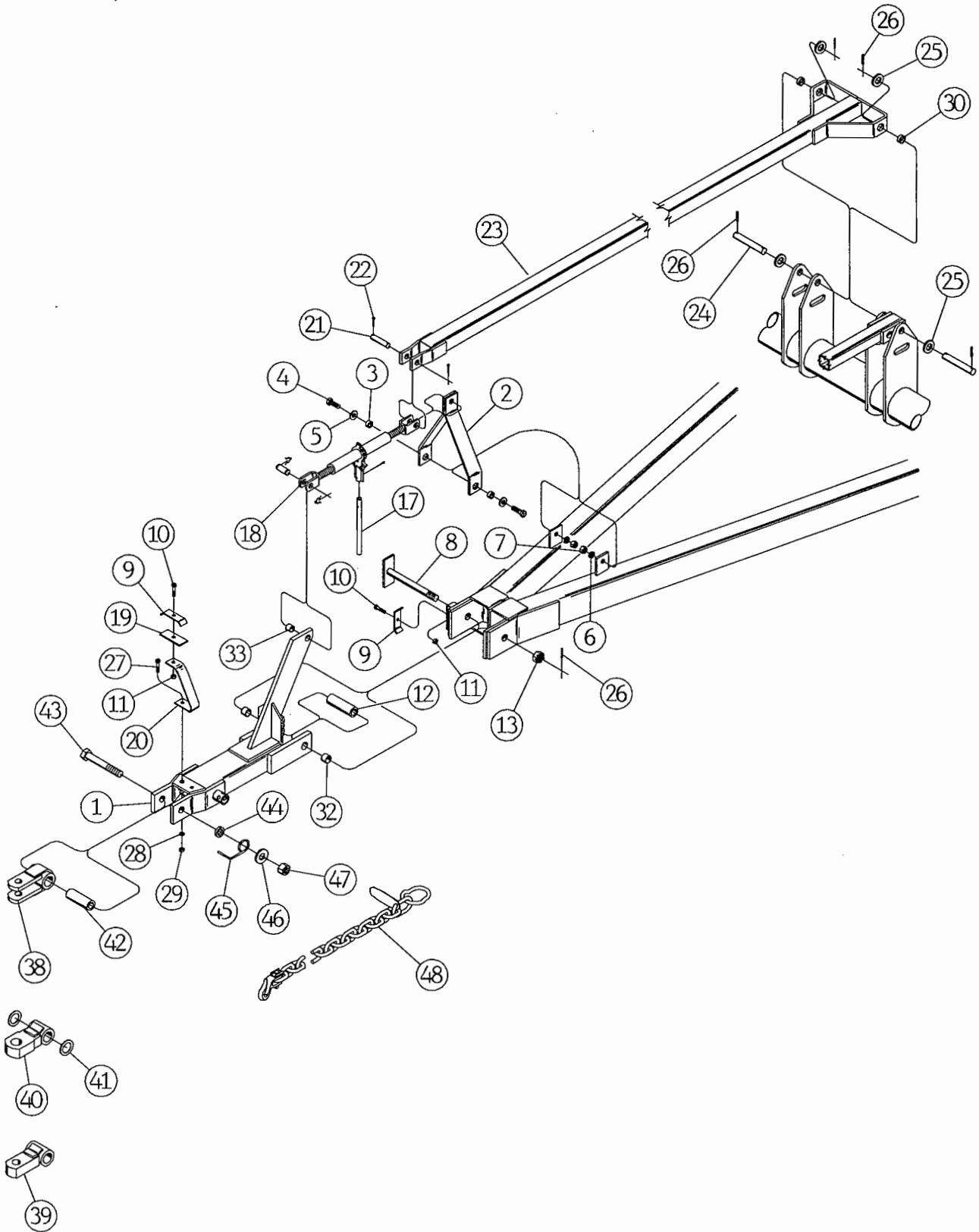
FOR MODELS - 4226HR, 4231HR, 4237HR, 4241HR

11/98

Item	Part Number	Part Description	Qty.
1	4237-5-0	Left Tongue Weldment (For Models 4237HR, 4241HR)	1
2	4237-6-0	Right Tongue Weldment (For Models 4237HR, 4241HR)	1
3	5250-175-0	SMV Sign Assembly w/ Mounting Bracket & Hardware	1
4	62-421	3/4NC x 2" GD. 5 Cap Screw	2
5	99-192	Owner's Manual Storage Canister	1
6	25-1163	Hose Clamp	1
7	73-100	Jack Assembly	1
8	4226-5-0D	Front Frame Weldment	1
9	4226-1-0	Rear Frame Weldment	1
10	4226-28-0	Wing Lock Weldment (For Model 4226HR)	2
	4231-28-0	Wing Lock Weldment (For Model 4231HR)	2
	4241-28-0	Wing Lock Weldment (For Models 4237HR & 4241HR)	2
11	4226-29-0	Cylinder Lug Weldment	2
12	60-225	1"DIA. x 5" Clevis Pin	2
13	60-704	3/16" DIA. x 2" Cotter Pin	2
14	3127-206-1A	Plate	1
15	62-224	3/4NC x 10" Machine Bolt	2
16	64-113	3/4" STD. Flat Washer	19
17	64-112	3/4" STD. Lock Washer	26
18	63-112	3/4NC Hex Nut	26
19	62-229	3/4NC x 12" Machine Bolt	8
20	61-207	3/4" DIA. U-Bolt	4
21	1505-0-5	Wing Lock Pin	2
22	60-716	#3 Hair Pin Cotter	4
23	62-221	3/4NC x 9" Machine Bolt	2
24	65-100	1/8NPT x 45° Zerk	4
25	4218-42-0	Rear Hinge Bolt Weldment	2
26	64-141	Special Washer	2
27	63-119	1NC Self Locking Nut	2
28	4515-59-0	Lamp Bracket Assembly	1
29	4515-59-1	Lamp Bracket	1
30	74-144	Socket Lamp Bracket	1
31	62-131	7/16NC x 1" Carriage Bolt	1
32	64-105	7/16" STD. Lock Washer	1
33	63-104	7/16NC Hex Nut	1
34	4226-40-0A	Offset Shank Box	2
35	62-216	3/4NC x 7-1/2" Cap Screw	4



M4200HR-34
 Revised 4/98



M4200HR-2

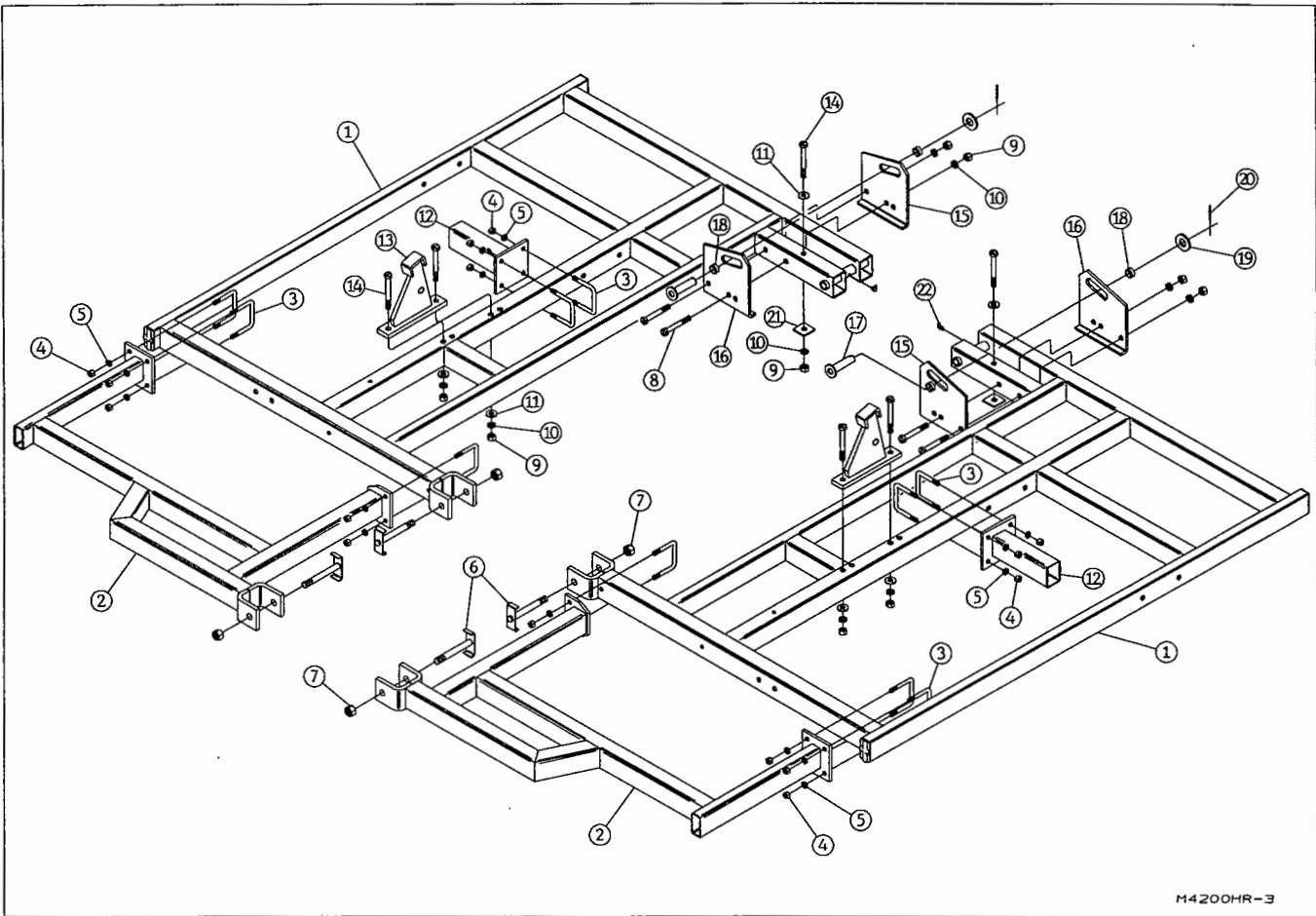
SELF-LEVELING TONGUE

FOR MODELS - 4226HR, 4231HR, 4237HR, 4241HR

1/97

Item	Part Number	Part Description	Qty.
1	4226-41-0	Leveling Tongue Weldment	1
2	4218-28-0	Support Link Weldment	1
3	670-0-2	Bushing (1-1/4" x 13/16" x 9/16")	2
4	62-421	3/4NC x 2" GD. 5 Machine Bolt	2
5	64-113	3/4" STD. Flat Washer	2
6	64-112	3/4" STD. Lock Washer	2
7	63-112	3/4NC Hex Nut	2
8	4218-29-0	Hitch Pin Weldment	1
9	2426-170-5	Hose Clamp	2
10	62-343	1/2NC x 2" GD.5 Cap Screw	2
11	63-108	1/2NC Self Locking Nut	2
12	1844-0-1	Spacer (2" x 1-5/16" x 5-7/8")	1
13	63-125	1-1/4NC Slotted Hex Nut	1
14	60-708	1/4" x 1-3/4" Cotter Pin	1
15			
16			
17	70-212-1	7" Handle (Included in 70-212 Assembly)	1
18	70-212	Ratchet Jack	1
19	2145-170-5	Hose Plate	1
20	4901-0-12	Hose Stand	1
21	4226-0-8	1"DIA. x 4" Pin	1
22	60-702	3/16" x 1-1/2" Cotter Pin	2
23	4226-46-0	Leveling Link Weldment	1
24	4226-0-9	1-1/4" DIA. x 7-1/16" Pin	2
25	64-127	1-1/4" SAE Flat Washer	4
26	60-606	1/4" x 2" Roll Pin	5
27	62-569	1/2NC x 1-1/2" GD.5 Cap Screw	1
28	64-107	1/2" STD. Lock Washer	1
29	63-106	1/2NC Hex Nut	1
30	53-109	Wear Sleeve (Pressed in)	2
31			
32	53-101	Wear Sleeve	2
33	53-102	Wear Sleeve	1
34			
35			
36			
37			
38	770-85-0	Clevis Weldment (Standard)	1
39	770-86-0	Crawler Clevis Weldment (Optional)	1
40	1330-54-0	Crawler Clevis Weldment (Optional)	1
41	64-154	Machinery Bushing (For 1330-54-0)	2
42	1520-0-15	Hitch Tube	1
43	62-277	1-1/4NC x 8" Cap Screw	1
44	1901-0-21	Bushing	1
45	76-119	Clevis Spring	1
46	64-126	1-1/4" STD. Flat Washer	1
47	63-126	1-1/4NC Self Locking Nut	1
48	72-351	10,000# Safety Chain	1

WING FRAME ASSEMBLY



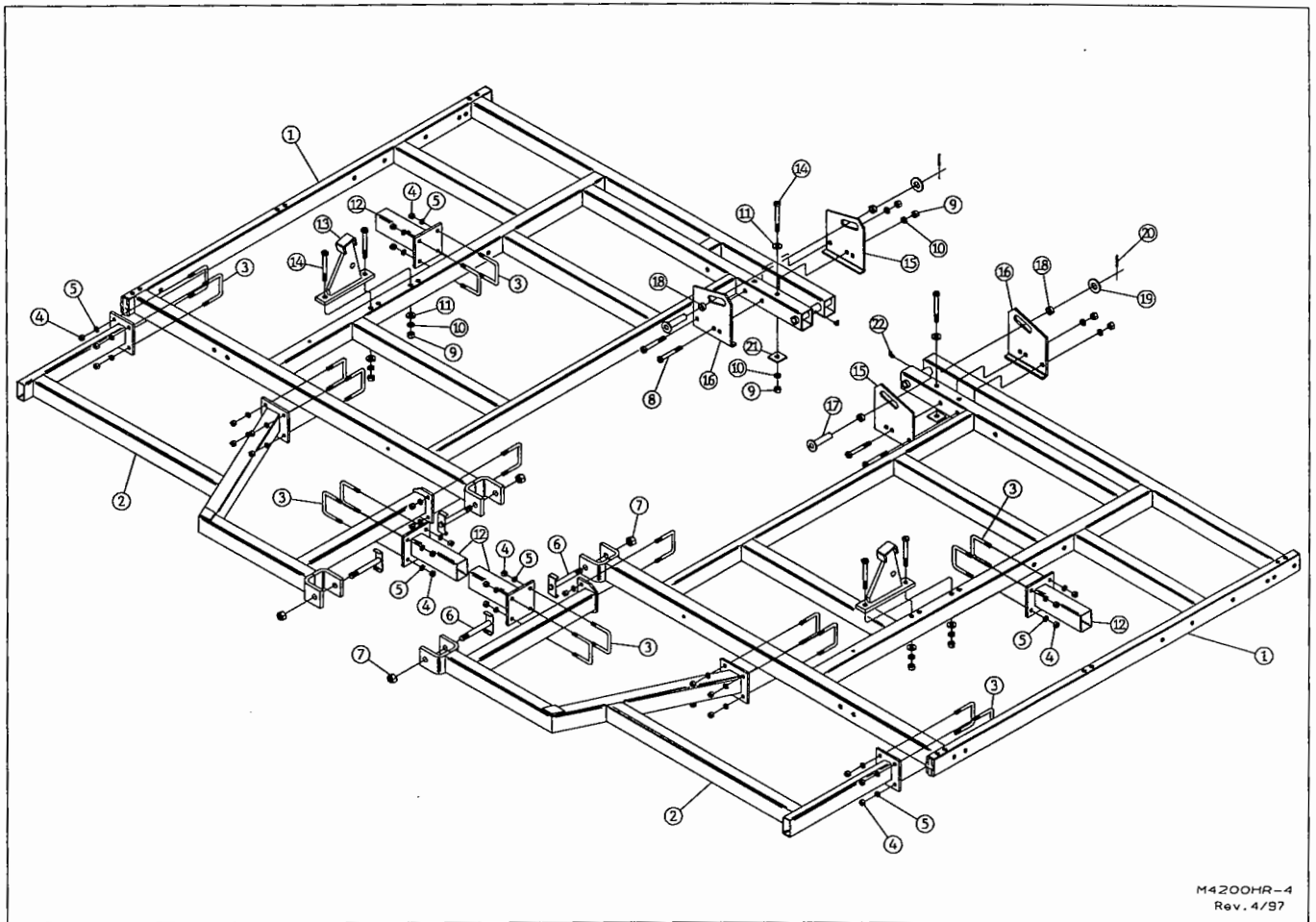
M4200HR-3

FOR MODELS - 4218HR

5/95

Item	Part Number	Part Description	Qty.
1	4218-18-0B	Wing Frame Weldment	2
2	4218-23-0	Front Frame Weldment	2
3	61-126	5/8" DIA. U-Bolt	10
4	63-109	5/8NC Hex Nut	20
5	64-109	5/8" STD. Lock Washer	20
6	4122-43-0	Hinge Bolt Weldment	4
7	63-119	1NC Self Locking Nut	2
8	62-205	3/4NC x 5" GRD. 5 Cap Screw	4
9	63-112	3/4NC Hex Nut	10
10	64-112	3/4" STD. Lock Washer	10
11	64-113	3/4" STD. Flat Washer	6
12	4236-26-0	12" Shank Extension Weldment	2
13	4218-17-0	Cylinder Lug Weldment	2
14	62-210	3/4NC x 6" GRD. 5 Cap Screw	6
15	4218-30-0A	Right Cylinder Lug	2
16	4218-31-0A	Left Cylinder Lug	2
17	3131-77-0	Cylinder Clevis Pin	2
18	53-109	Wear Sleeve	4
19	64-126	1-1/4" Flat Washer	2
20	60-608	1/4" DIA. x 2-1/2" Roll Pin	2
21	3755-12-2	Square Washer	2
22	65-102	1/8NPT x 90° Zerk	2

WING FRAME ASSEMBLY



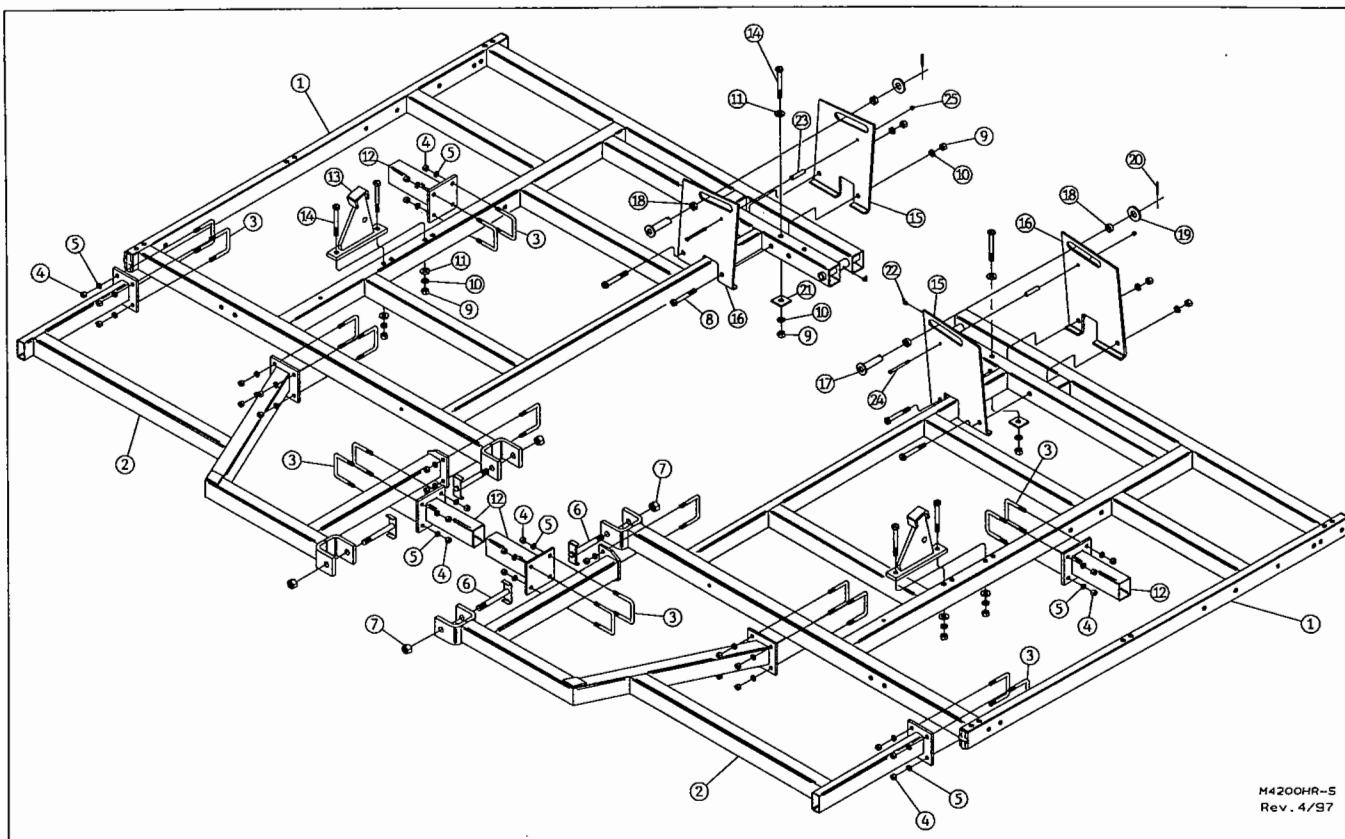
M4200HR-4
Rev. 4/97

FOR MODELS - 4223HR

9/95

Item	Part Number	Part Description	Qty.
1	4223-18-0B	Wing Frame Weldment	2
2	4237-23-0	Front Frame Weldment	2
3	61-126	5/8" DIA. U-Bolt (For 3 x 4 box)	18
4	63-109	5/8NC Hex Nut	36
5	64-109	5/8" STD. Lock Washer	36
6	4122-43-0	Hinge Bolt Weldment	4
7	63-119	1NC Self Locking Nut	2
8	62-205	3/4NC x 5" GRD. 5 Cap Screw	4
9	63-112	3/4NC Hex Nut	10
10	64-112	3/4" STD. Lock Washer	10
11	64-113	3/4" STD. Flat Washer	6
12	4236-26-0	12" Shank Extension Weldment	4
13	4218-17-0	Cylinder Lug Weldment	2
14	62-210	3/4NC x 6" GRD. 5 Cap Screw	6
15	4218-30-0A	Right Cylinder Lug	2
16	4218-31-0A	Left Cylinder Lug	2
17	3131-77-0	Cylinder Clevis Pin	2
18	53-109	Wear Sleeve	4
19	64-126	1-1/4" Flat Washer	2
20	60-608	1/4" DIA. x 2-1/2" Roll Pin	2
21	3755-12-2	Square Washer	2
22	65-102	1/8NPT x 90° Zerk	2

WING FRAME ASSEMBLY



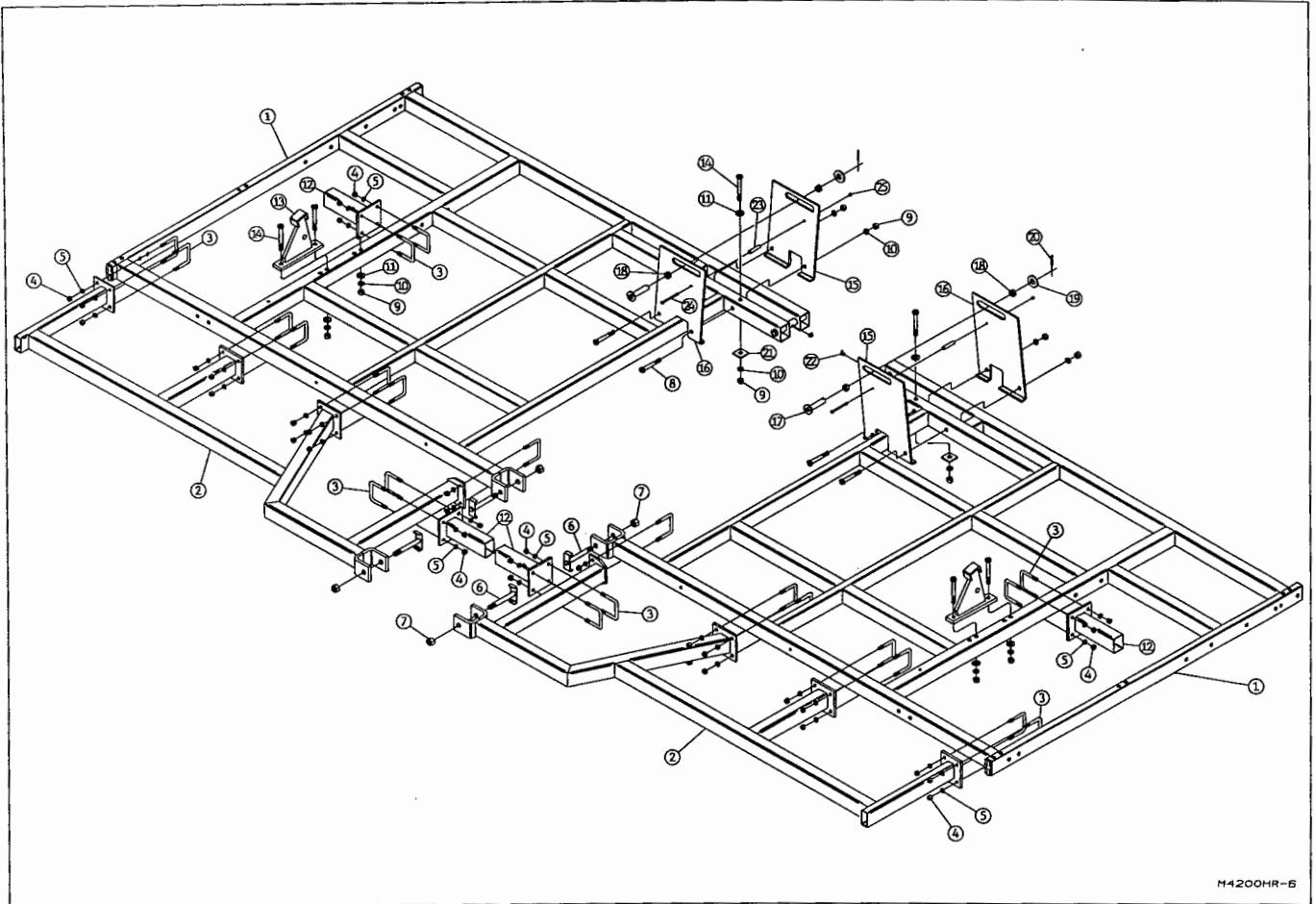
M4200HR-5
Rev. 4/97

FOR MODELS - 4226HR

1/97

Item	Part Number	Part Description	Qty.
1	4223-18-0B	Wing Frame Weldment	2
2	4237-23-0	Front Frame Weldment	2
3	61-126	5/8" DIA. U-Bolt (For 3 x 4 box)	18
4	63-109	5/8NC Hex Nut	36
5	64-109	5/8" STD. Lock Washer	36
6	4122-43-0	Hinge Bolt Weldment	4
7	63-119	1NC Self Locking Nut	4
8	62-205	3/4NC x 5" GRD. 5 Cap Screw	4
9	63-112	3/4NC Hex Nut	10
10	64-112	3/4" STD. Lock Washer	10
11	64-113	3/4" STD. Flat Washer	10
12	4236-26-0	12" Shank Extension Weldment	4
13	4218-17-0	Cylinder Lug Weldment	2
14	62-210	3/4NC x 6" GRD. 5 Cap Screw	6
15	4226-30-0	Right Cylinder Lug	2
16	4226-37-0	Left Cylinder Lug	2
17	3131-77-0	Cylinder Clevis Pin	2
18	53-109	Wear Sleeve	4
19	64-126	1-1/4" Flat Washer	2
20	60-608	1/4" DIA. x 2-1/2" Roll Pin	2
21	3755-12-2	Square Washer	2
22	65-102	1/8NPT x 90° Zerk	2
23	4241-0-2	Spacer Tube	2
24	62-562	3/8NC x 4-1/2" GD.5 Cap Screw	2
25	63-103	3/8NC Self Locking Nut	2

WING FRAME ASSEMBLY

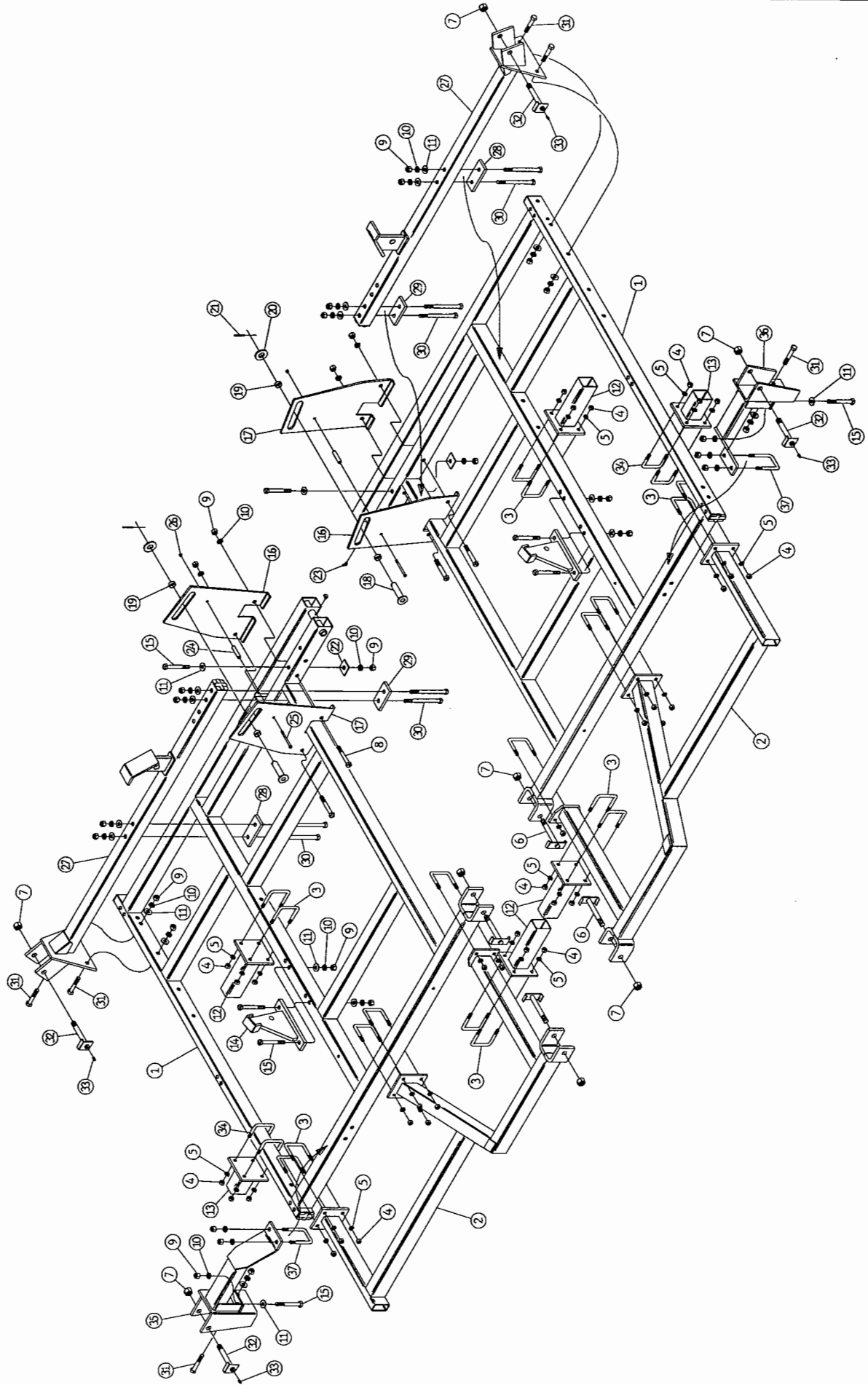


M4200HR-6

FOR MODELS - 4231HR

1/97

Item	Part Number	Part Description	Qty.
1	4231-18-0A	Wing Frame Weldment	2
2	4241-23-0	Front Frame Weldment	2
3	61-126	5/8" DIA. U-Bolt (For 3 x 4 box)	22
4	63-109	5/8NC Hex Nut	44
5	64-109	5/8" STD. Lock Washer	44
6	4122-43-0	Hinge Bolt Weldment	4
7	63-119	1NC Self Locking Nut	4
8	62-205	3/4NC x 5" GRD. 5 Cap Screw	4
9	63-112	3/4NC Hex Nut	10
10	64-112	3/4" STD. Lock Washer	10
11	64-113	3/4" STD. Flat Washer	10
12	4236-26-0	12" Shank Extension Weldment	4
13	4218-17-0	Cylinder Lug Weldment	2
14	62-210	3/4NC x 6" GRD. 5 Cap Screw	6
15	4231-36-0	Right Cylinder Lug	2
16	4231-37-0	Left Cylinder Lug	2
17	3131-77-0	Cylinder Clevis Pin	2
18	53-109	Wear Sleeve	4
19	64-126	1-1/4" Flat Washer	2
20	60-608	1/4" DIA. x 2-1/2" Roll Pin	2
21	3755-12-2	Square Washer	2
22	65-102	1/8NPT x 90° Zerk	2
23	4241-0-2	Spacer Tube	2
24	62-562	3/8NC x 4-1/2" GD.5 Cap Screw	2
25	63-103	3/8NC Self Locking Nut	2

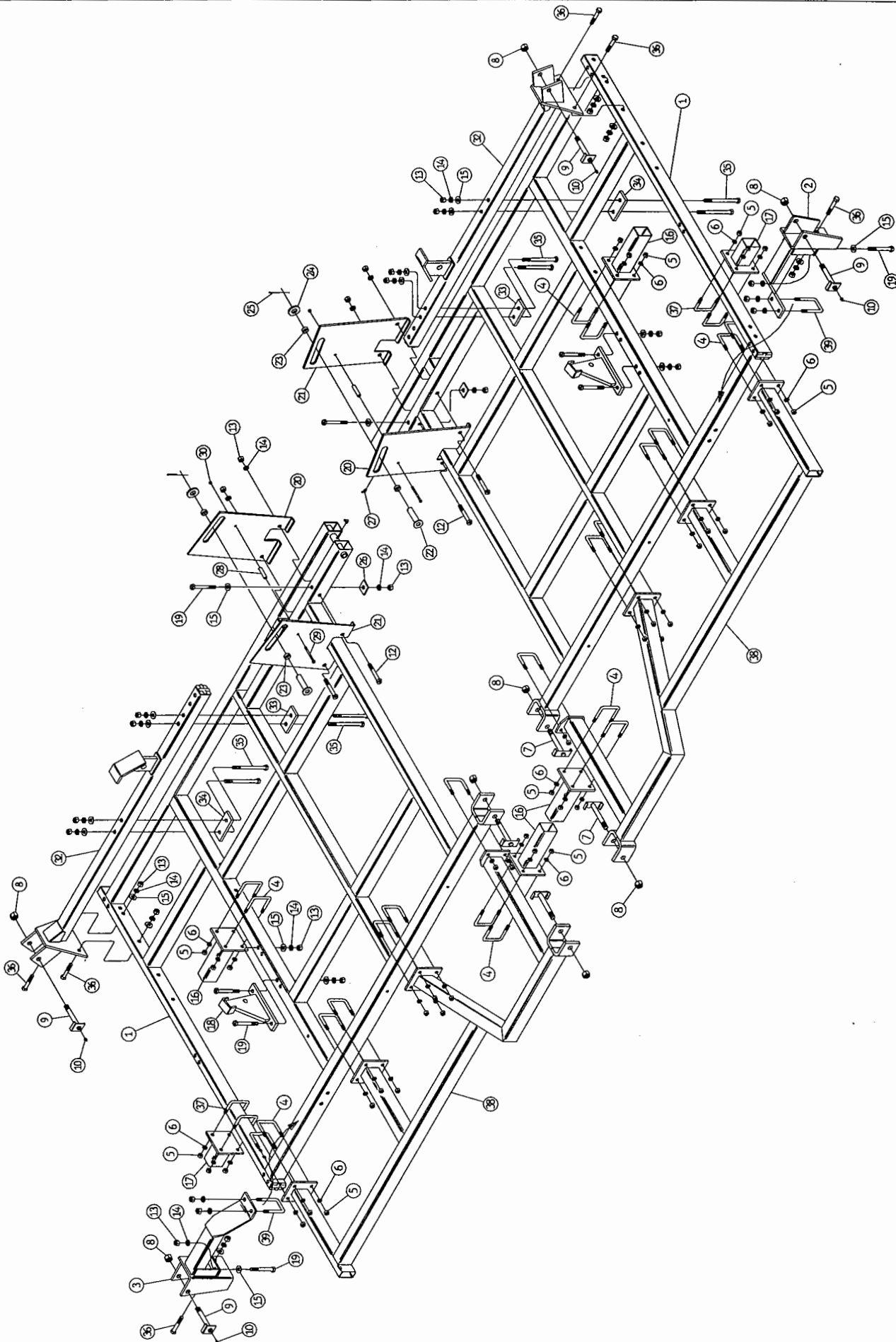


WING FRAME ASSEMBLY

FOR MODELS - 4237HR

1/97

Item	Part Number	Part Description	Qty.
1	4223-18-0B	Wing Frame Weldment	2
2	4237-23-0	Front Wing Frame Weldment	2
3	61-126	5/8" DIA. U-Bolt (For 3 x 4 Box)	18
4	63-109	5/8NC Hex Nut	44
5	64-109	5/8" STD. Lock Washer	44
6	4122-43-0	Hinge Bolt Weldment	4
7	63-119	1NC Self Locking Nut	8
8	62-205	3/4NC x 5" GD.5 Cap Screw	4
9	63-112	3/4NC Hex Nut	30
10	64-112	3/4" STD. Lock Washer	30
11	64-113	3/4" STD. Flat Washer	20
12	4236-26-0	12" Shank Extension Weldment	4
13	5660-16-0	6" Shank Extension Weldment	2
14	4218-17-0	Cylinder Lug Weldment	2
15	62-210	3/4NC x 6" GRD. 5 Cap Screw	8
16	4237-36-0	Right Cylinder Lug	2
17	4237-37-0	Left Cylinder Lug	2
18	3131-77-0	Cylinder Clevis Pin	2
19	53-109	Wear Sleeve	4
20	64-126	1-1/4" STD. Flat Washer	2
21	60-608	1/4" DIA. x 2-1/2" Roll Pin	2
22	3755-12-2	Square Washer	2
23	65-102	1/8NPT x 90° Zerk	2
24	4241-0-2	Spacer Tube	2
25	62-562	3/8NC x 4-1/2" GD.5 Cap Screw	2
26	63-103	3/8NC Self Locking Nut	2
27	4241-13-0A	Rear Hinge Weldment	2
28	3127-206-1A	Bolt Plate (For 3" Box)	2
29	4241-0-1	Bolt Plate (For 2" Box)	2
30	62-221	3/4NC x 9" Machine Bolt	8
31	62-201	3/4NC x 4" GD.5 Cap Screw	6
32	4241-45-0	Outer Hinge Pin Weldment	4
33	65-110	1/8NPT Thread Cutting Zerk	4
34	61-195	5/8" DIA. U-Bolt (For 2 x 4 Box)	4
35	4241-30-0	Right Hinge Weldment	1
36	4241-31-0	Left Hinge Weldment	1
37	61-207	3/4" DIA. U-Bolt	2



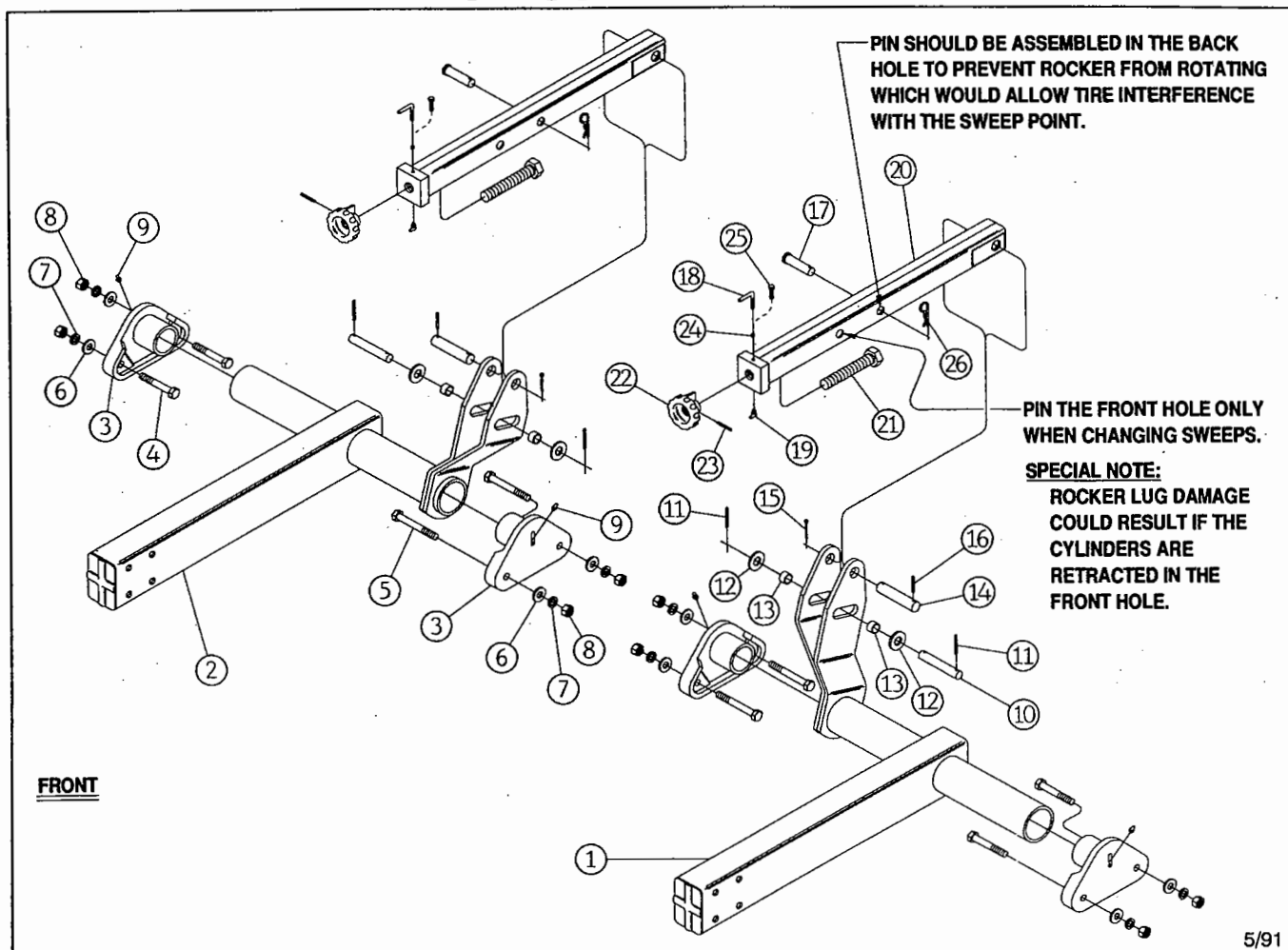
WING FRAME ASSEMBLY

FOR MODELS - 4241HR

1/97

<i>Item</i>	<i>Part Number</i>	<i>Part Description</i>	<i>Qty.</i>
1	4231-18-0A	Wing Frame Weldment	2
2	4241-31-0	Left Hinge Weldment	1
3	4241-30-0	Right Hinge Weldment	1
4	61-126	5/8" DIA. U-Bolt (For 3 x 4 Box)	22
5	63-109	5/8NC Hex Nut	52
6	64-109	5/8" STD. Lock Washer	52
7	4122-43-0	Hinge Bolt Weldment	4
8	63-119	1NC Self Locking Nut	8
9	4241-45-0	Outer Hinge Pin Weldment	4
10	65-110	1/8NPT Thread Cutting Zerk	4
11	62-210	3/4NC x 6" GD.5 Cap Screw	2
12	62-205	3/4NC x 5" GD.5 Cap Screw	4
13	63-112	3/4NC Hex Nut	38
14	64-112	3/4" STD. Lock Washer	38
15	64-113	3/4" STD. Flat Washer	28
16	4236-20-0	12" Shank Extension Weldment	4
17	5660-16-0	6" Shank Extension Weldment	2
18	4218-17-0	Cylinder Lug Weldment	2
19	62-210	3/4NC x 6" GRD. 5 Cap Screw	6
20	4241-36-0	Right Cylinder Lug (On Model 4231)	2
21	4241-37-0	Left Cylinder Lug (On Model 4236)	2
22	3131-77-0	Cylinder Clevis Pin	2
23	53-109	Wear Sleeve	4
24	64-126	1-1/4" STD. Flat Washer	2
25	60-608	1/4" DIA. x 2-1/2" Roll Pin	2
26	3755-12-2	Square Washer	2
27	65-102	1/8NPT x 90° Zerk	2
28	4241-0-2	Spacer Tube	2
29	62-562	3/8NC x 4-1/2" GD.5 Cap Screw	2
30	63-103	3/8NC Self Locking Nut	2
31	4122-60-0	Short Shank Extension Weldment	2
32	4241-13-0A	Rear Hinge Weldment	2
33	4241-0-1	Bolt Plate (For 2" Box)	2
34	3127-206-1A	Bolt Plate (For 3" Box)	2
35	62-221	3/4NC x 9" Cap Screw	8
36	62-201	3/4NC x 4" GD.5 Cap Screw	6
37	61-195	5/8" DIA. U-Bolt (For 2 x 4 Box)	4
38	4241-23-0	Front Frame	2
39	61-207	3/4" DIA. U-Bolt	2

WING ROCKER ASSEMBLY



5/91

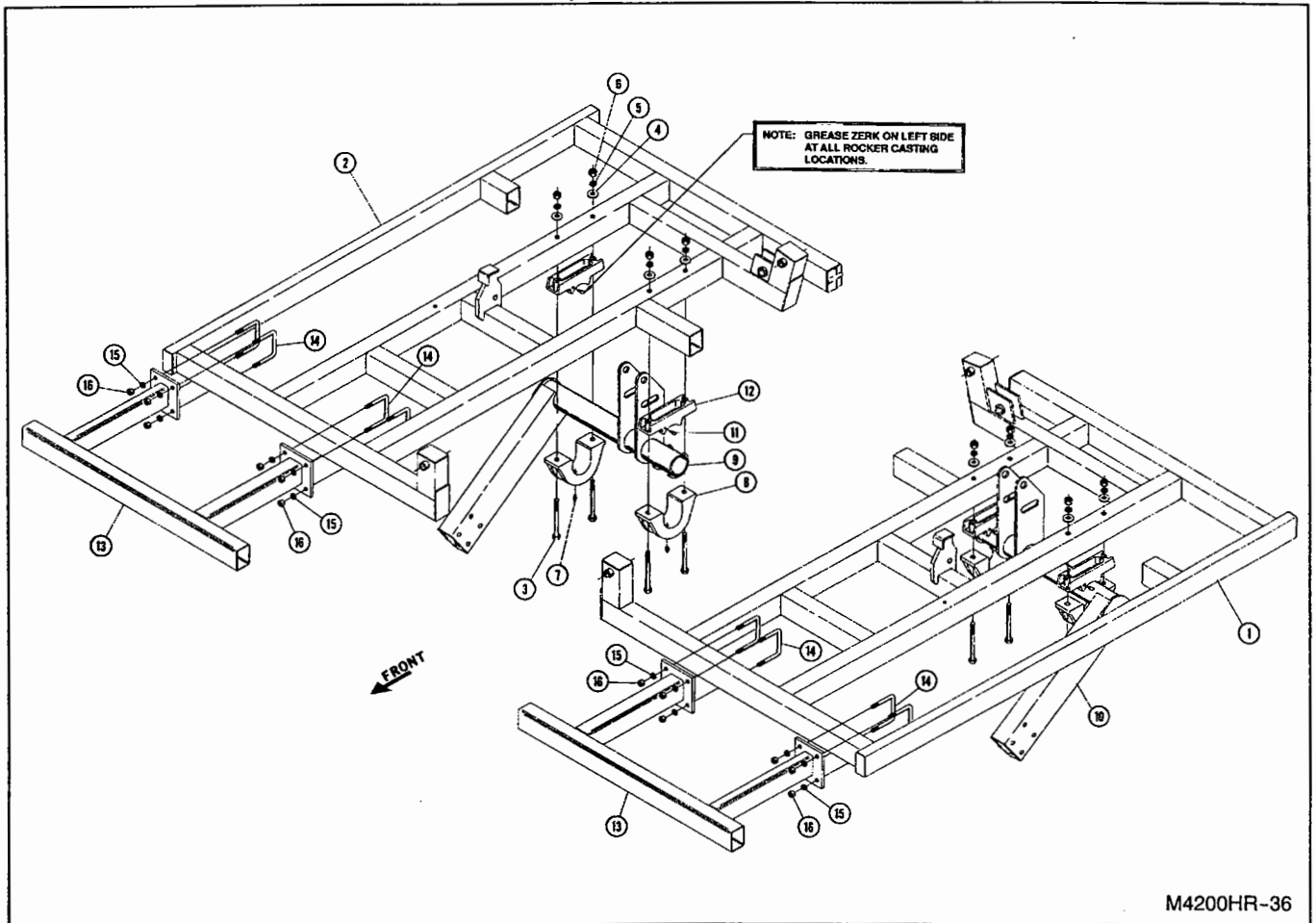
FOR MODELS - ALL

1/97

Item	Part Number	Part Description	Qty.
1	4218-34-0	Left Wing Rocker Weldment	1
2	4218-36-0	Right Wing Rocker Weldment	1
3	4260-0-7	Rocker Bearing Casting	4
4	62-201	3/4NC x 4" GD.5 Cap Screw	4
5	62-205	3/4NC x 5" GD.5 Cap Screw	4
6	64-113	3/4" STD. Flat Washer	8
7	64-112	3/4" STD. Lock Washer	8
8	63-112	3/4NC Hex Nut	8
9	65-101	1/8" STD. Zerk	4
10	4226-0-3A	Cylinder Pin (1" DIA. x 5-11/16")	2
11	60-608	1/4" DIA. x 2-1/2" Roll Pin	4
12	64-119	1" STD. Flat Washer	4
13	53-103	Wear Sleeve (1.25" O.D. x 1.02 I. D.)	4
14	4226-0-2	Depth Stop Pin	2
15	60-704	3/16" DIA. x 2" Cotter Pin	4
16	60-606	1/4" DIA. x 2" Roll Pin	2
17	60-222	1" DIA. x 3-1/2" Clevis Pin	2
18	★ 61-213	Lock Rod	2
19	65-120	1/4NF x 90° Zerk	2
20	4231-34-0A	Depth Stop Weldment	2
21	62-575	Adjustment Bolt (1-1/4NC x 7" GD.5 Special Bolt)	1
22	4231-35-3	Depth Control Knob Casting	1
23	60-606	1/4" DIA. x 2" Roll Pin	1
24	21-407	Nylon Bushing	1
25	★ 62-436	3/8NC x 1-1/4" GD.5 Cap Screw	1
26	60-717	#4 Hair Pin Cotter	2

★ 62-109 is for Shipping purposes - - Discard and use 62-213.

OUTSIDE WINGS, HINGES & EXTENSIONS

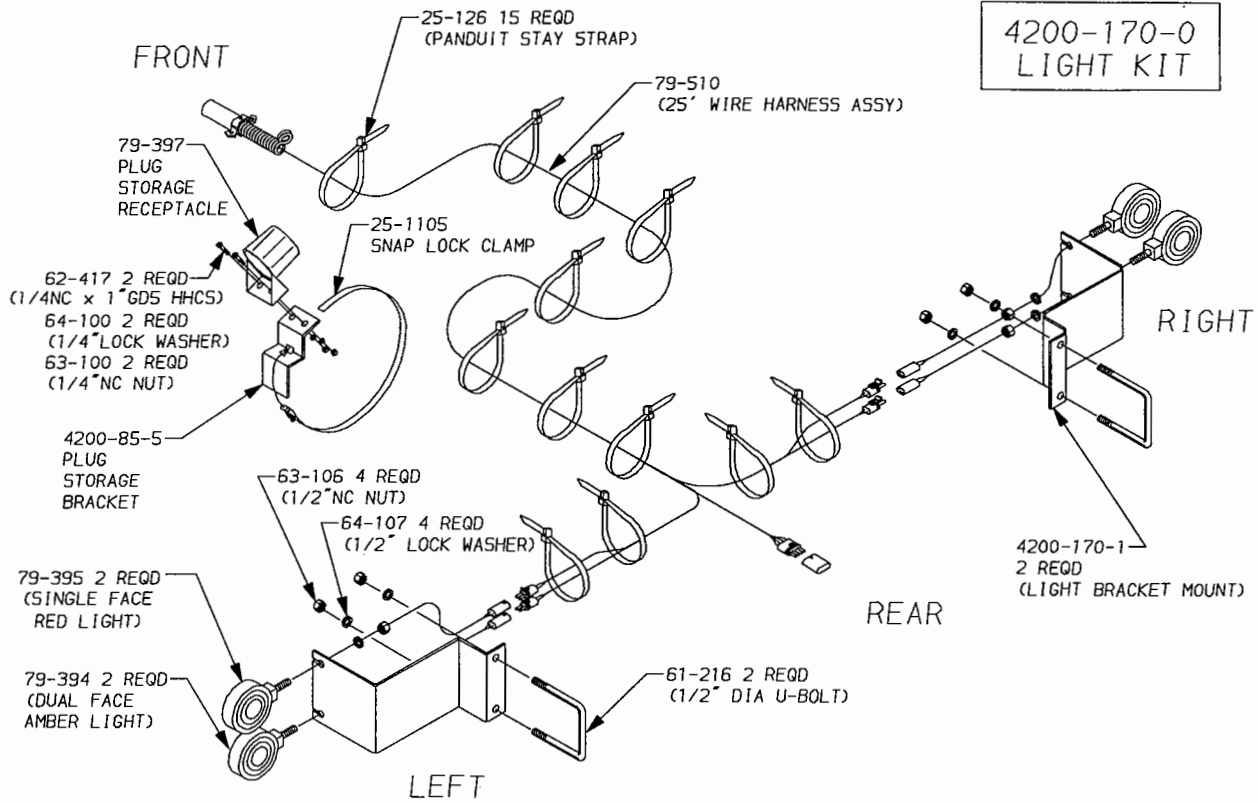


FOR MODELS - 4237HR & 4241HR

2/94

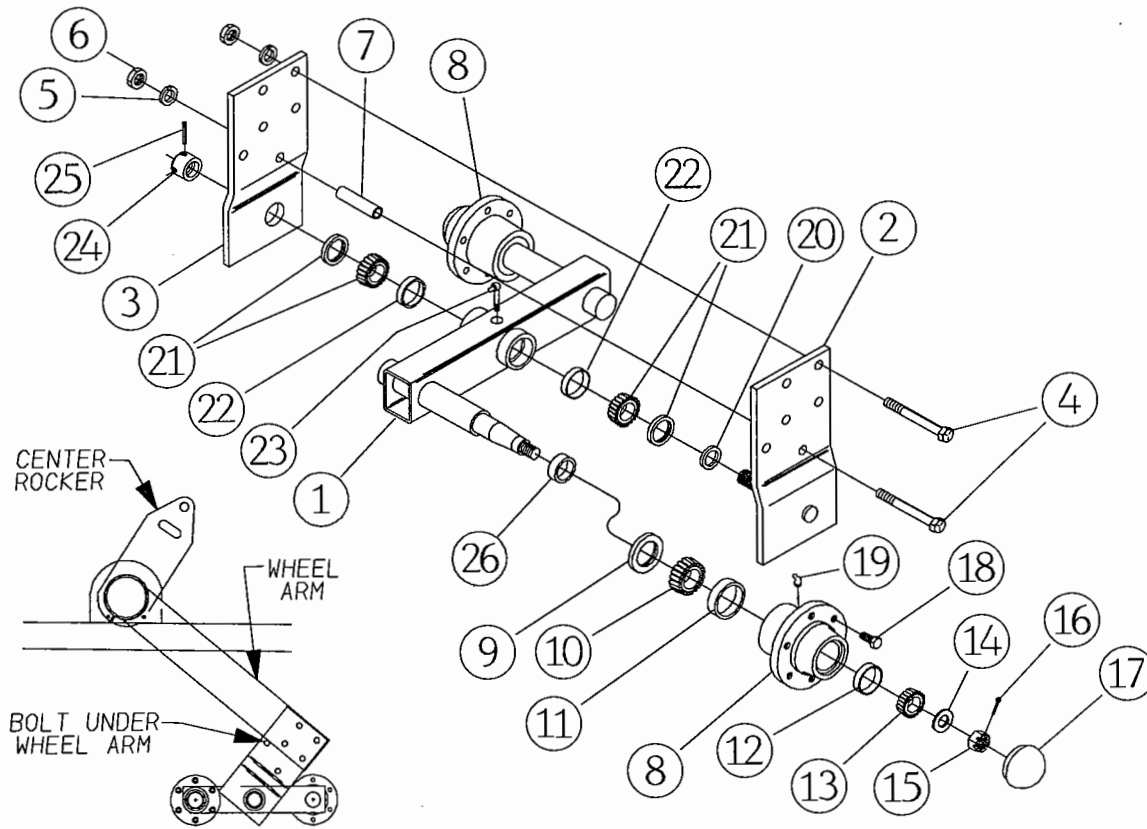
Item	Part Number	Part Description	Qty.
1	4241-18-0A	Left Outer Wing Frame Weldment	1
2	4241-20-0A	Right Outer Wing Weldment	1
3	62-218	3/4NC x 8" Cap Screw	8
4	64-113	3/4" STD. Flat Washer	8
5	64-112	3/4" STD. Lock Washer	8
6	63-112	3/4NC Hex Nut	8
7	65-103	1/4NPT STD. Zerk	4
8	1112-0-7A	Rocker Casting	4
9	4241-33-0	Right Wing Rocker Weldment	1
10	4241-34-0	Left Wing Rocker Weldment	1
11	4901-0-3	Rocker Bearing Casting	4
12	65-100	1/8NPT x 45° Zerk	4
13	4241-22-0	Outer Front Frame	2
14	61-126	5/8" DIA. U-Bolt (For 3 x 4 Box)	8
15	64-109	5/8" STD. Lock Washer	16
16	63-109	5/8NC Hex Nut	16

4200-170-0
LIGHT KIT



M4200-127
REV. 1/99

CENTER WALKING BEAM ASSEMBLIES



M4200-155
REV. 9/99

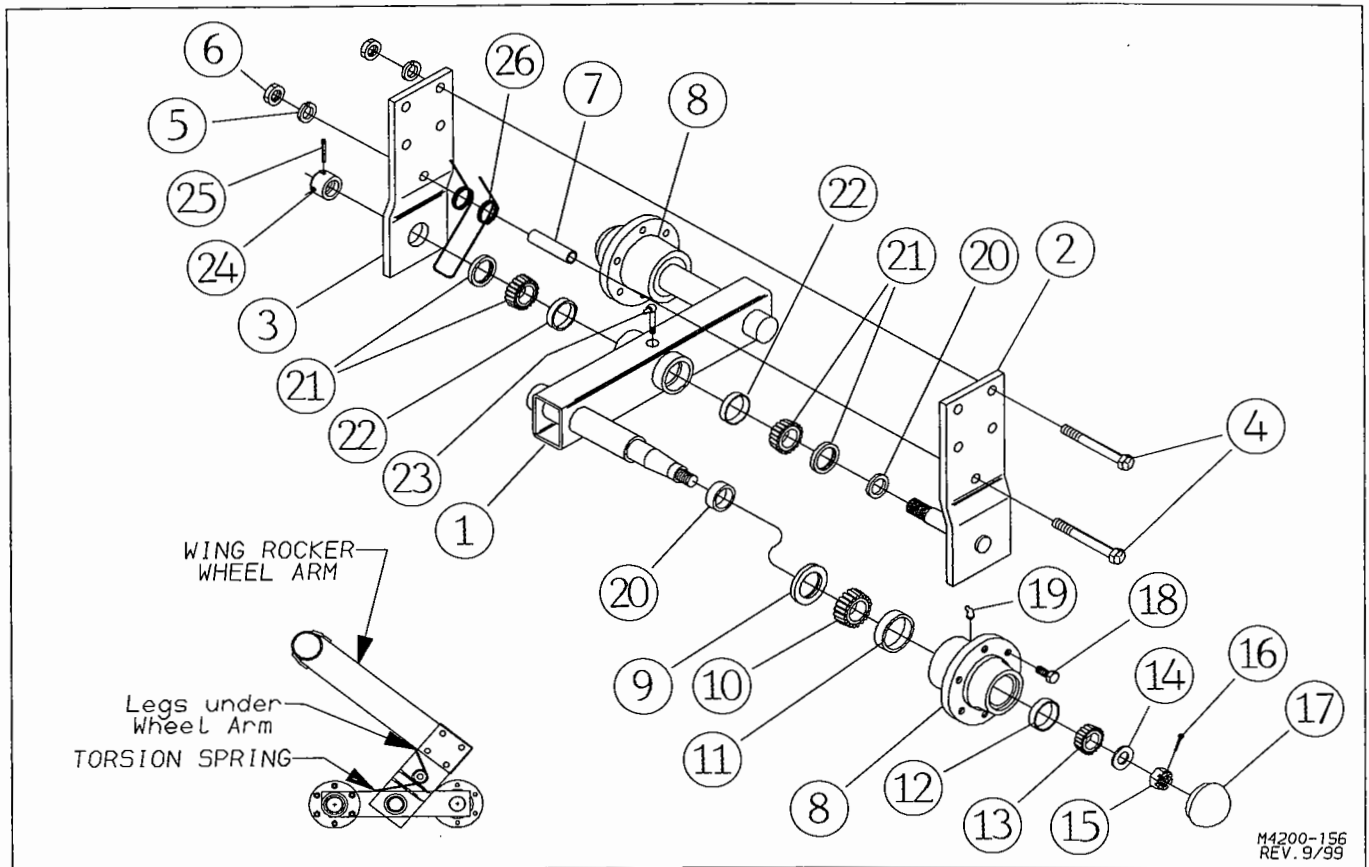
FOR MODELS - ALL

9/99

Item	Part Number	Part Description	Qty.
	4218-53-0	Left Center Walking Beam Assembly	1
	4218-54-0	Right Center Walking Beam Assembly (Shown)	1
1	4218-22-0A	Repair Left Walking Beam w/ Spindle and Sleeve	1
	4218-21-0A	Repair Right Walking Beam w/ Spindle and Sleeve	1
2	4218-49-0	Right Side Plate Weldment	1
3	4218-53-4	Left Side Plate	1
4	★ 62-210	3/4NC x 6" GD.5 Cap Screw	5
5	★ 64-112	3/4" STD. Lock Washer	5
6	★ 63-112	3/4NC Hex Nut	5
7	4218-13-1	Spacer Tube	1
8	1918-14-0A	Repair Hub Assembly (Includes Items 8, 11, 12, 18, 19)	1
9	42-108	Seal	1
10	41-113	Cone	1
11	41-209	Cup	1
12	41-208	Cup	1
13	41-112	Cone	1
14	64-120	1" SAE Flat Washer	1
15	63-204	1NF Slotted Hex Nut	1
16	60-702	3/16" DIA. x 1-1/2" Cotter Key	1
17	52-302	Hub Cap	1
18	62-295	Wheel Bolt (9/16NF x 1-1/8" GD.5)	6
19	65-122	1/4" x 65° Drive Zerk	2
20	4218-13-3	Special Washer	1
21	41-121	Cone Assembly	2
22	41-208	Cup	2
23	65-107	1/8NPT x 90° Zerk	1
24	4218-13-2	Axle Nut	1
25	60-114	1/4" DIA. x 2" Spiral Expansion Pin	1
26	53-105	Wear Ring	1
	1918-84-0	Hub Bearing Repair Kit (Includes Items 9, 10, 11, 12, 13)	

★ Not Part of Assembly

WING WALKING BEAM ASSEMBLIES



M4200-156
REV. 9/99

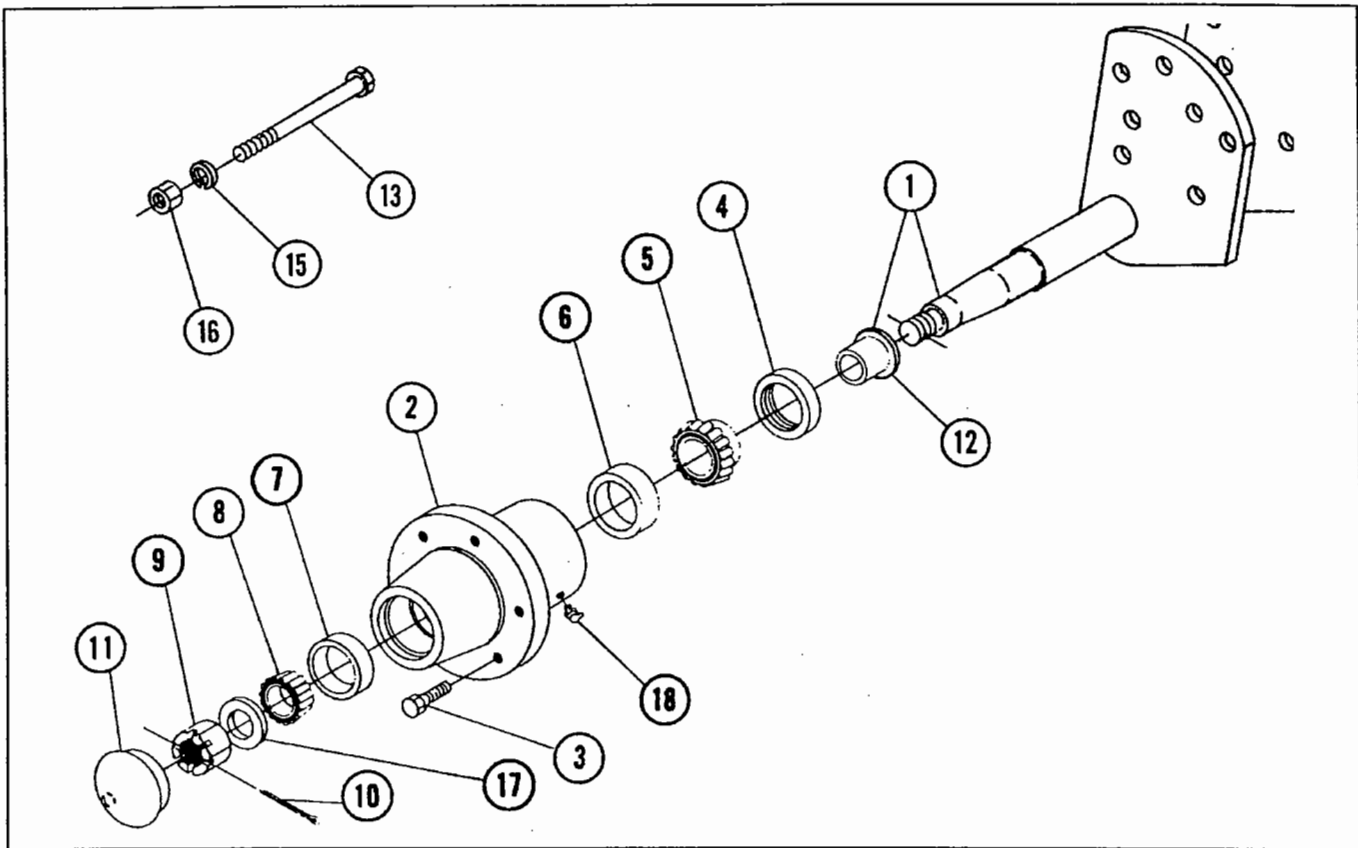
FOR MODELS - ALL

9/99

Item	Part Number	Part Description	Qty.
	4218-13-0A	Left Walking Beam Assembly	1
	4218-14-0A	Right Walking Beam Assembly (Shown)	1
1	4218-22-0A	Repair Left Walking Beam w/ Spindle and Sleeve	1
	4218-21-0A	Repair Right Walking Beam w/ Spindle and Sleeve	1
2	4218-9-0	Right Side Plate Weldment	1
3	4218-13-4	Left Side Plate	1
4	★ 62-210	3/4NC x 6" GD.5 Cap Screw	4
5	★ 64-112	3/4" STD. Lock Washer	4
6	★ 63-112	3/4NC Hex Nut	4
7	4218-13-1	Spacer Tube	1
8	1918-14-0A	Repair Hub Assembly (Includes Items 8, 11, 12, 18, 19)	1
9	42-108	Seal	1
10	41-113	Cone	1
11	41-209	Cup	1
12	41-208	Cup	1
13	41-112	Cone	1
14	64-120	1" SAE Flat Washer	1
15	63-204	1NF Slotted Hex Nut	1
16	60-702	3/16" DIA. x 1-1/2" Cotter Key	1
17	52-302	Hub Cap	1
18	62-295	Wheel Bolt (9/16NF x 1-1/8" GD.5)	6
19	65-122	1/4" x 65° Drive Zerk	2
20	4218-13-3	Special Washer	1
21	41-121	Cone Assembly	2
22	53-105	Wear Ring	2
23	65-107	1/8NPT x 90° Zerk	1
24	4218-13-2	Axle Nut	1
25	60-114	1/4" DIA. x 2" Spiral Expansion Pin	1
26	76-131	Torsion Spring	1
	1918-84-0	Hub Bearing Repair Kit (Includes Items 9, 10, 11, 12, 13,)	-

★ Not Part of Assembly

SINGLE AXLE & HUB ASSEMBLY

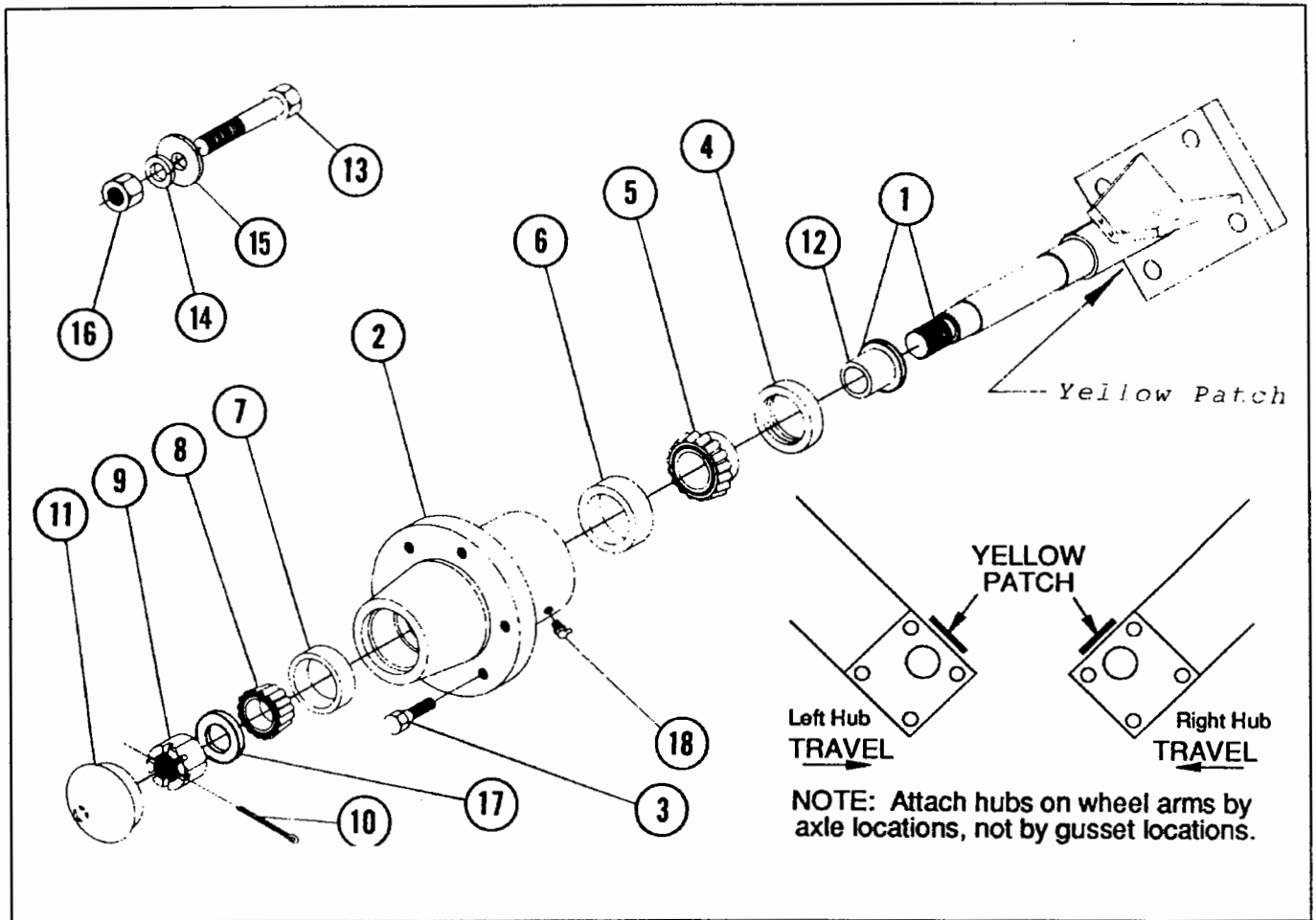


FOR MODELS - 4218HR, 4223HR, 4226HR WINGS

11/98

Item	Part Number	Part Description	Qty.
	4223-43-0	Right Single Axle and Hub Assembly	1
	4223-44-0	Left Single Axle and Hub Assembly	1
1	★ 4223-45-0	Repair Right Spindle and Sleeve (For repairs only)	
	4223-46-0	Repair Left Spindle and Sleeve (For repairs only)	
2	1918-14-0A	Repair Hub Assembly (Includes Items 2, 3, 6, 7 & 18)	1
3	62-295	Wheel Bolt - 9/16NF x 1-1/8" GD.5	6
4	42-108	Seal	1
5	41-113	Rear Cone	1
6	41-209	Rear Cup	1
7	41-208	Front Cup	1
8	41-112	Front Cone	1
9	63-204	1NF Slotted Hex Nut	1
10	60-702	3/16" DIA. x 1-1/2" Cotter Key	1
11	52-302	Hub Cap	1
12	53-105	Wear Ring	1
13	★ 62-209	3/4NC x 6" Cap Screw	4
14			
15	★ 64-112	3/4" STD. Lock Washer	4
16	★ 63-112	3/4NC Hex Nut	4
17	64-120	1" SAE Flat Washer	1
18	65-122	1/4" x 65° Drive Zerk	2
	1918-84-0	Hub Bearing Repair Kit (Includes Items 4, 5, 6, 7, 8)	
★ Not Part of Single Axle and Hub Assembly			

WING SECTION HUB ASSEMBLY



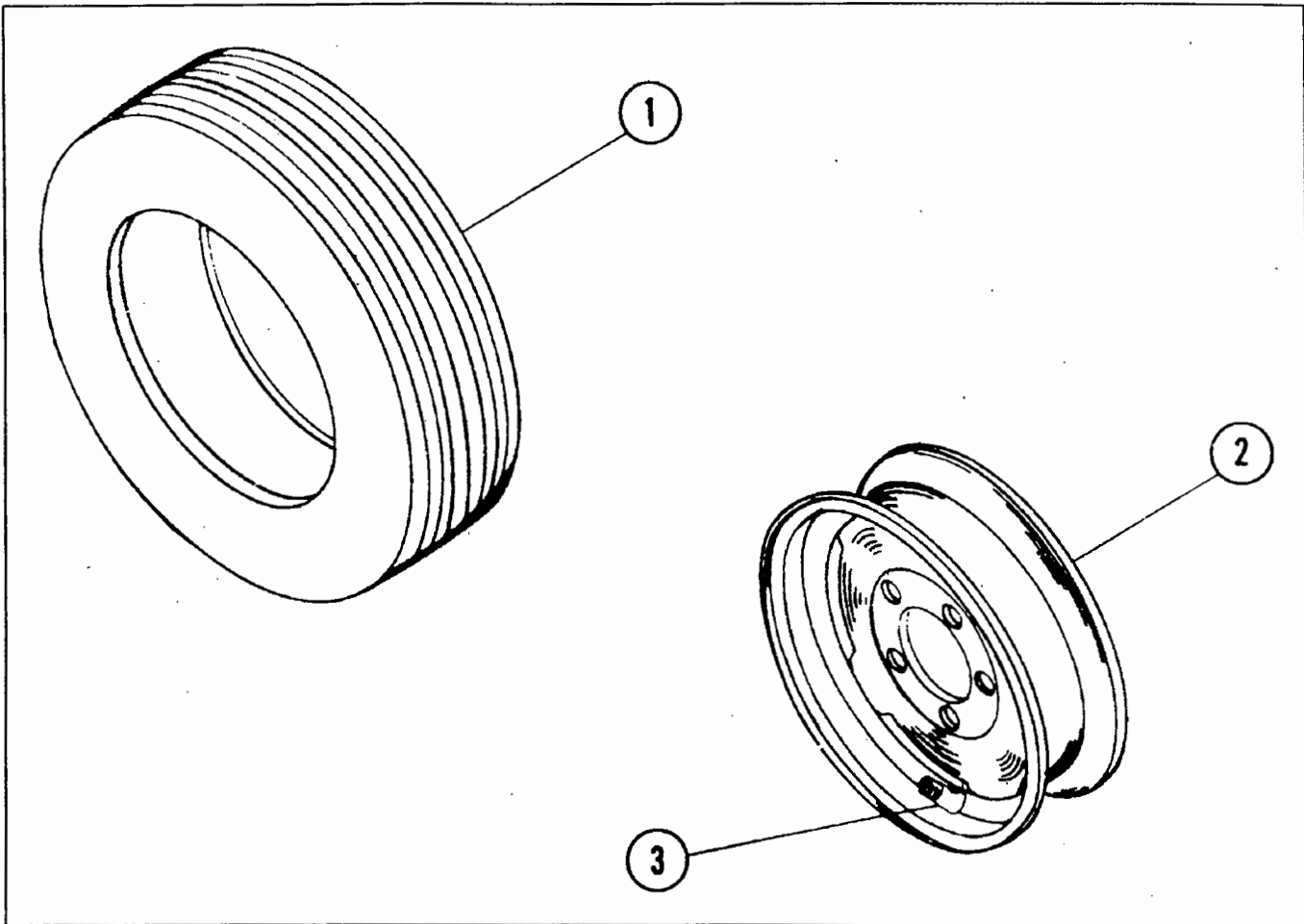
FOR MODELS - 4241HR OUTER WING

9/99

Item	Part Number	Part Description	Qty.
	1918-17-0	Hub and Axle Assembly	1
1	1918-15-0	Repair Spindle & Sleeve Assembly	1
2	1918-14-0A	Repair Hub Assembly (Includes Items 2, 3, 6, 7 & 18)	1
3	62-295	Wheel Bolt - 9/16NF x 1-1/8" GD.5	6
4	42-108	Seal	1
5	41-113	Rear Cone	1
6	41-209	Rear Cup	1
7	41-208	Front Cup	1
8	41-112	Front Cone	1
9	63-204	1NF Slotted Hex Nut	1
10	60-702	3/16" DIA. x 1-1/2" Cotter Key	1
11	52-302	Hub Cap	1
12	53-105	Wear Ring	1
13	★ 62-205	3/4NC x 5"GD5 Cap Screw	4/hub
14	★ 64-112	3/4" STD. Lock Washer	4/hub
15	★ 64-113	3/4" STD. Flat Washer	4/hub
16	★ 63-112	3/4NC Hex Nut	4/hub
17	64-120	1" SAE Flat Washer	1
18	65-122	1/4" x 65° Drive Zerk	2
	1918-84-0	Hub Bearing Repair Kit (Includes Items 4, 5, 6, 7, 8)	

★ Not Part of Hub Assembly

WHEELS & TIRES

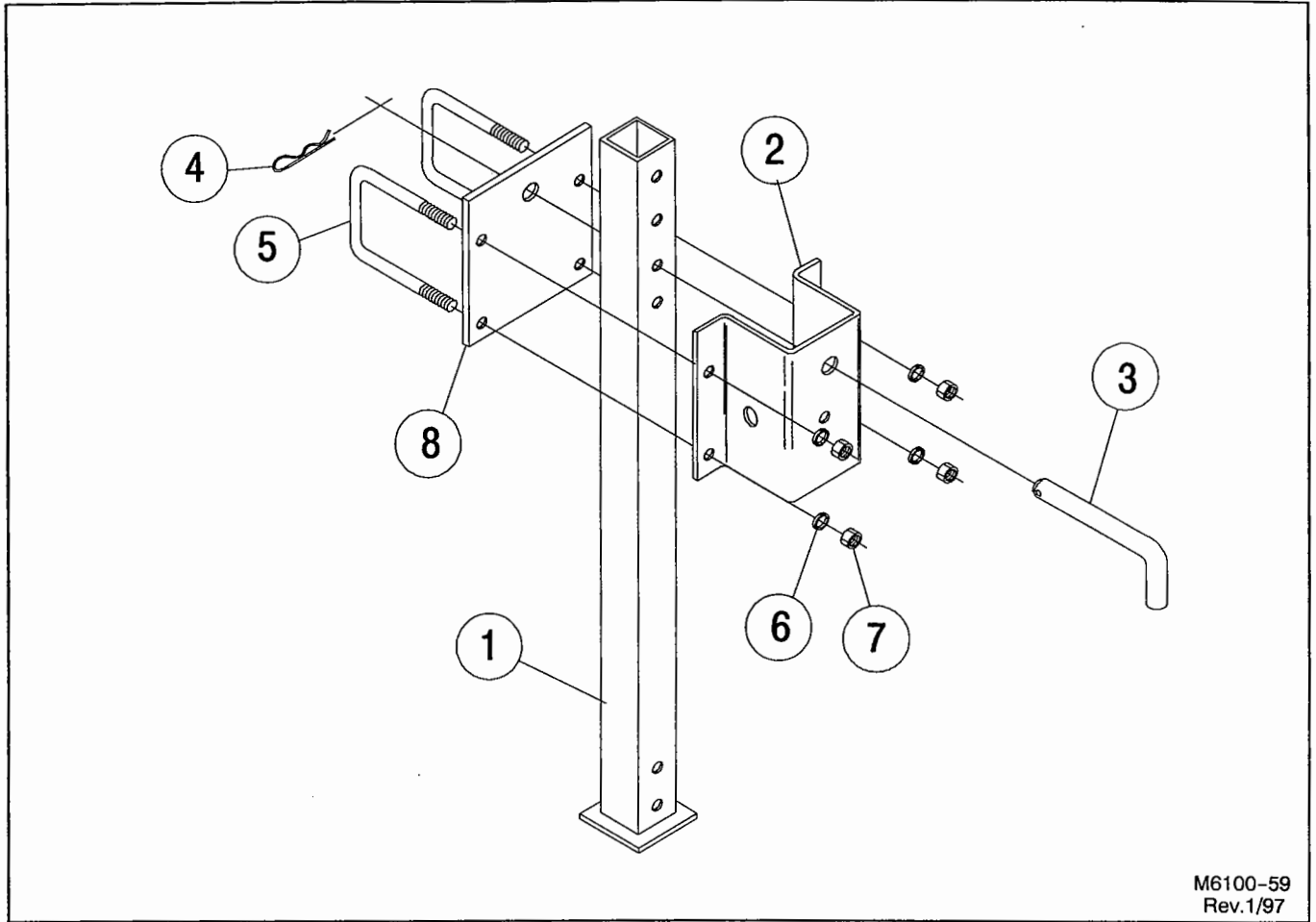


FOR MODELS - ALL

7/96

Item	Part Number	Part Description	Qty.
	1000-11580-0	Wheel Assembly	Specify
1	51-106	Tire 11L x 15, 8-Ply	1
2	52-103	Wheel 15" x 10"	1
3	51-107	Valve Stem #415	1
	1000-95588-0	Wheel Assembly	Specify
1	51-102	Tire 9.5L x 15, 8-Ply	1
2	52-102	Wheel 15" x 8"	1
3	51-107	Valve Stem #415	1

REAR STAND ASSEMBLY

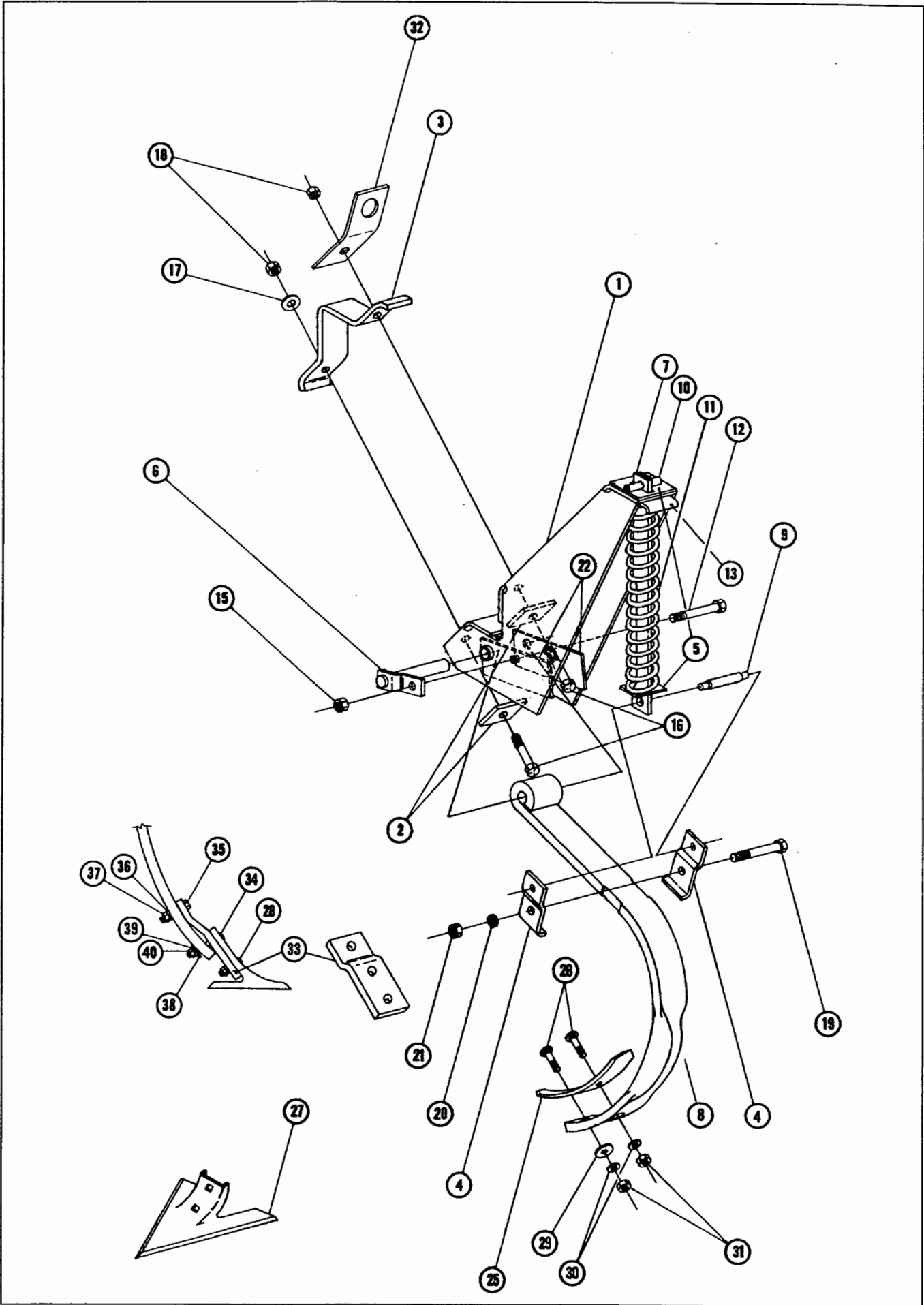


M6100-59
Rev.1/97

FOR MODELS - ALL

1/97

Item	Part Number	Part Description	Qty.
1	4218-27-0A	Stand Weldment	2
2	4218-0-5A	Stand Bracket	2
3	4600-0-28	Stand Pin	2
4	60-716	#3 Hair Pin Cotter	2
5	61-160	1/2" DIA. U-Bolt	4
6	64-107	1/2" STD. Lock Washer	8
7	63-106	1/2NC Hex Nut	8
8	4218-0-6	Stand Plate	1



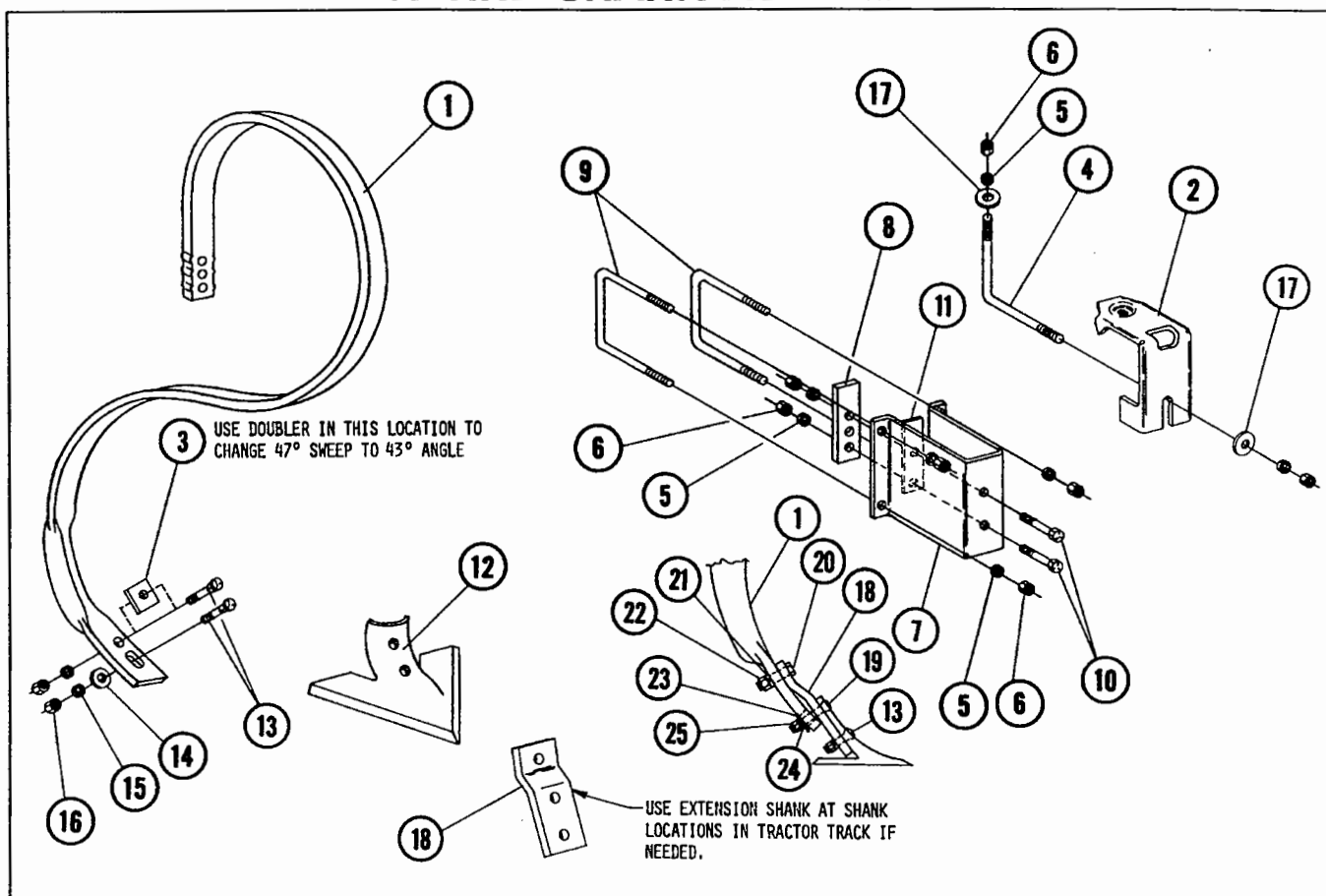
SPRING SHANK ASSEMBLY

FOR MODELS - ALL

7/97

Item	Part Number	Part Description	Qty.
	3127-25-0B	Spring Shank Assembly	1
1	3127-24-0	Mounting Channel (For Repairs only)	1
2	★ 3127-25-3	Doubler	2
3	★ 3127-25-5	Mounting Strap	1
4	3127-25-8	Shank Clamp	2
5	3127-39-2	Slotted Washer	2
6	3127-37-0A	Pin Assembly	1
7	3127-39-1A	Guide Bar	1
8	31-157	Edge-On Shank	1
9	60-105	Pivot Pin	1
10	60-624	1/2" DIA. x 2" Roll Pin	1
11	76-134	Spring	1
12	62-462	1/2NC x 3-1/4" GD.5 Cap Screw	1
13	3127-24-2A	Slot Doubler	1
14			
15	63-107	1/2NC Self Locking Nut	1
16	★ 62-550	1/2NC x 2" GRADE 8 Cap Screw	2
17	★ 64-108	1/2" STD. Flat Washer	1
18	★ 63-107	1/2NC Self Locking Nut	2
19	62-148	1/2NC x 2-3/4" GD.5 Cap Screw	1
20	64-107	1/2" STD. Lock Washer	1
21	63-106	1/2NC Hex Nut	1
22	3127-25-7	Shank Guide	2
23			
24			
25	★ 33-100	Point	1
26			
27	★ 33-189	9" Sweep 47° Stem Angle - 1/4" Thick	1
	33-190	10" Sweep 47° Stem Angle - 1/4" Thick	1
28	★ 62-317	7/16NC x 1-1/2" GRADE 5 #3 Plow Bolt	3
29	★ 64-106	7/16" STD. Flat Washer	1
30	★ 64-105	7/16" STD. Lock Washer	3
31	★ 63-104	7/16NC Hex Nut	3
32	★ 4122-0-14	Winch Bracket (Shown in storage position)	1
	4100-10-0	Extension Shank and Bolt Assembly	1
33	★ 4100-0-9	Extension Shank	1
34	★ 62-132	7/16NC x 2-1/4" GRADE 5 #3 Plow Bolt	1
35	★ 62-407	7/16NC x 1-1/2" GRADE 5 Cap Screw	1
36	★ 64-105	7/16" STD. Lock Washer	1
37	★ 63-104	7/16NC Hex Nut	1
38	★ 64-106	7/16" STD. Flat Washer	1
39	★ 64-105	7/16" STD. Lock Washer	1
40	★ 63-104	7/16NC Hex Nut	1
★ Not Part of 3127-25-0B Spring Shank Assembly			

K-TINE SHANK ASSEMBLY

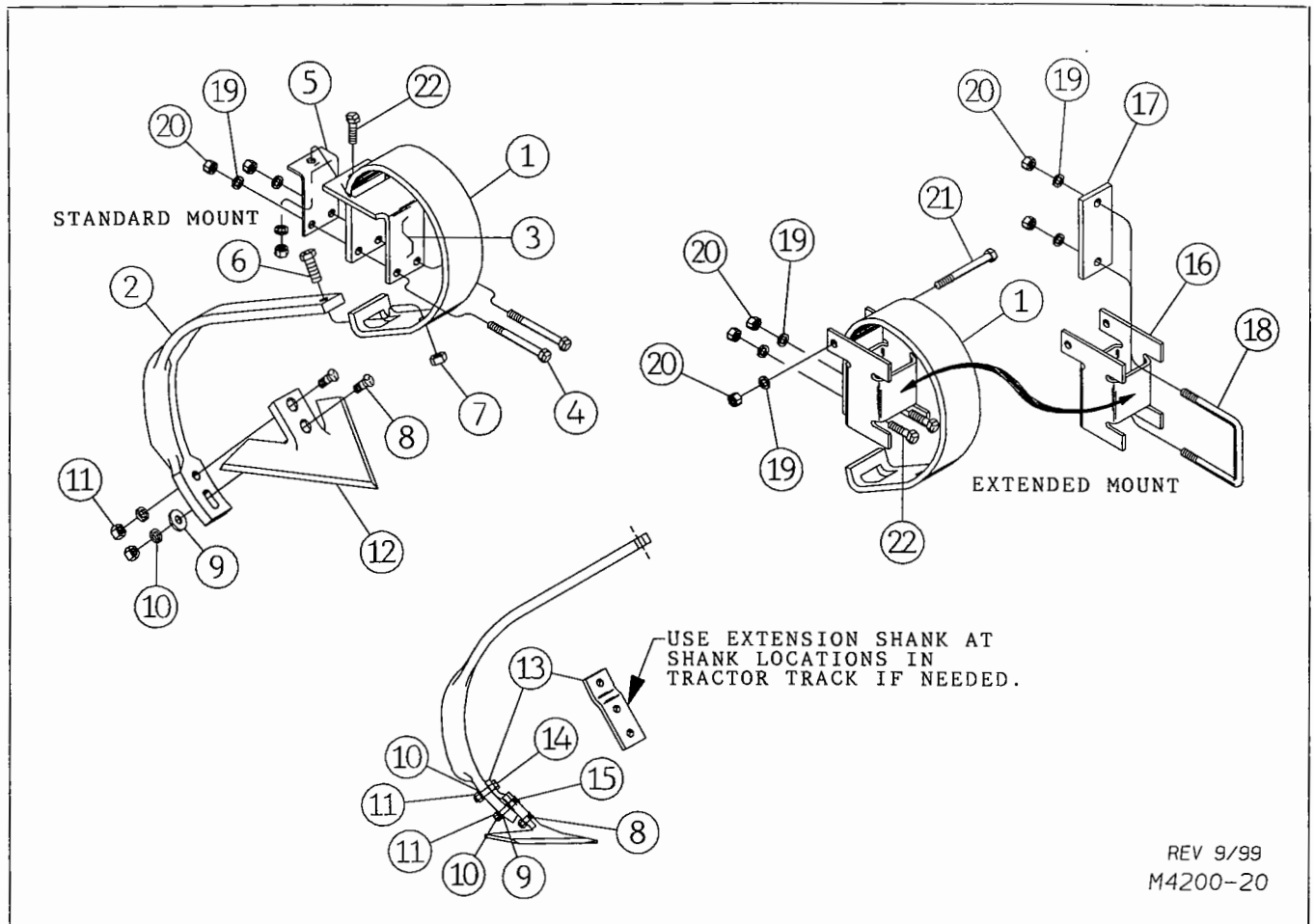


FOR MODELS - ALL

6/95

Item	Part Number	Part Description	Qty.
1	31-177	K-Tine Shank	1
2	3127-0-14	Shank Clamp	1
3	3127-25-3	Doubler	1
4	61-159	L-Bolt	1
5	64-107	1/2" STD. Lock Washer	8
6	63-106	1/2NC Hex Nut	8
7	3127-0-21	Extended Bracket	1
8	31-151	Reinforcement Plate	1
9	61-160	U-Bolt	2
10	62-343	1/2NC x 2" GRADE 5 Cap Screw	2
11	4218-0-3	Spacer Plate (For Front Extended Brackets)	2
12	33-136	10" Sweep 43° Stem Angle	1
13	62-317	7/16NC x 1-1/2" GRADE 5 #3 Plow Bolt	3
14	64-106	7/16" STD. Flat Washer	1
15	64-105	7/16" STD. Lock Washer	3
16	63-104	7/16NC Hex Nut	3
17	64-108	1/2" STD. Flat Washer	2
	4100-10-0	Extension Shank and Bolt Assembly	1
18	4100-0-9	Extension Shank	1
19	62-132	7/16NC x 2-1/4" GRADE 5 #3 Plow Bolt	1
20	62-407	7/16NC x 1-1/2" GRADE 5 Cap Screw	1
21	65-105	7/16" STD. Lock Washer	1
22	63-104	7/16NC Hex Nut	1
23	64-106	7/16" STD. Flat Washer	1
24	64-105	7/16" STD. Lock Washer	1
25	63-104	7/16NC Hex Nut	1

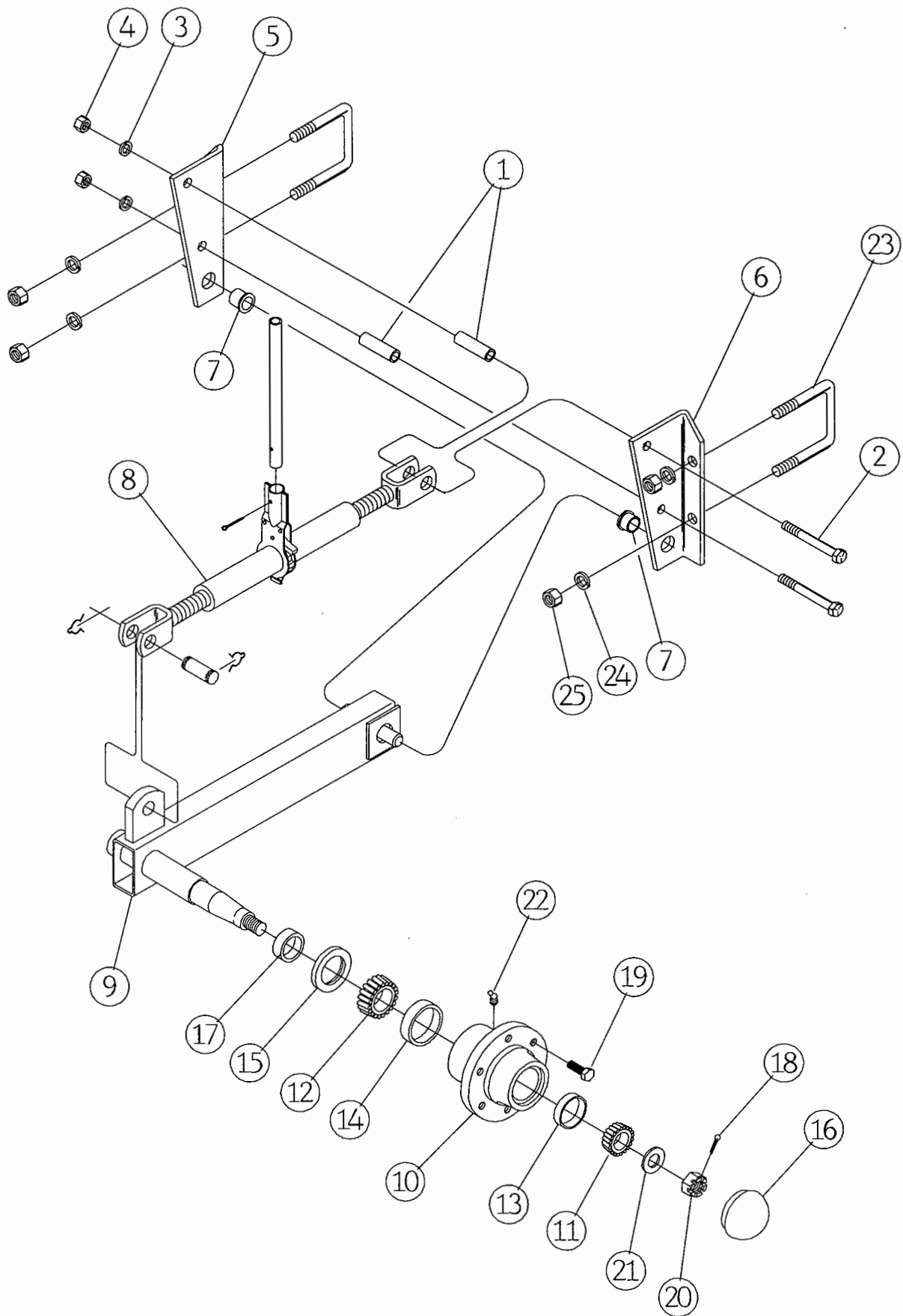
2-PIECE K-TINE SHANK ASSEMBLY



FOR MODELS - ALL

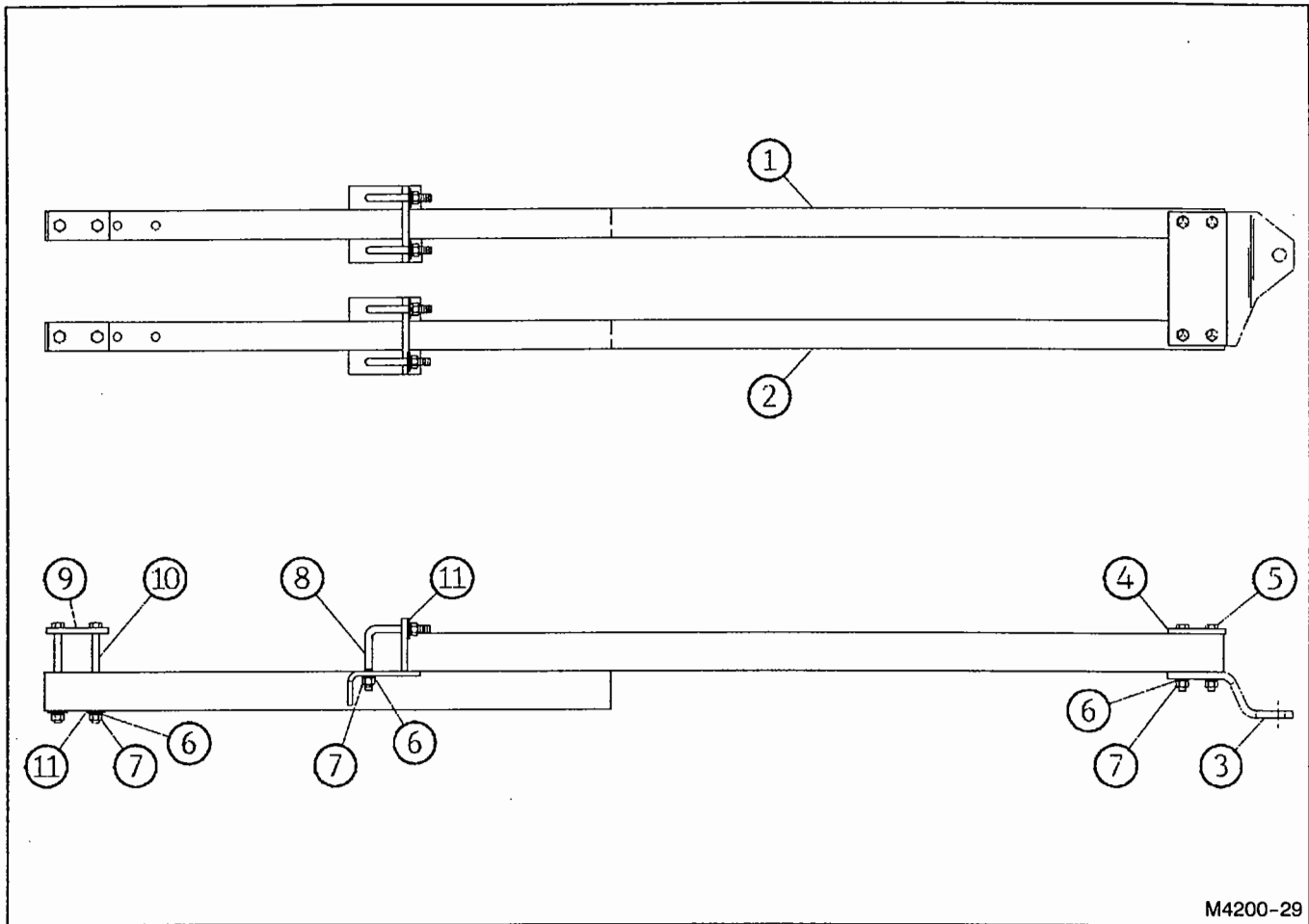
1/97

Item	Part Number	Part Description	Qty.
1	31-179	Shank Mount	
2	31-180	Shank	
3	6127-0-14A	Shank Mount Clamp	
4	62-458	1/2NC x 5" GD. 5 Cap Screw	
5	6127-0-15	Clamp	
6	62-169	5/8NC x 2" GD. 5 Cap Screw	
7	63-110	5/8NC Self Locking Nut	
8	62-317	7/16NC x 1-1/2" GD. 5 #3 Plow Bolt	
9	64-106	7/16" STD. Flat Washer	
10	64-105	7/16" STD. Lock Washer	
11	63-104	7/16NC Hex Nut	
12	33-190	10" Sweep 47° Stem Angle - 1/4" Thick	
	33-189	9" Sweep 47° Stem Angle - 1/4" Thick	
13	4100-0-9	Extension Shank	
14	62-407	7/16NC x 1-1/2" GD. 5 Cap Screw	
15	62-132	7/16NC x 2-1/4" GD. 5 #3 Plow Bolt	
16	4226-0-10	Extended Bracket	
17	4226-0-11	Bolt Plate	
18	61-216	1/2" DIA. U-Bolt (4.25" Leg)	
19	64-107	1/2" STD. Lock Washer	
20	63-106	1/2NC Hex Nut	
21	62-351	1/2NC x 4-1/2" GD. 5 Cap Screw	
22	62-569	1/2NC x 1-1/2" GD. 5 Cap Screw	



REV. 1/99
M5650-53

PACKER HITCH ASSEMBLY FOR 7" SPACING



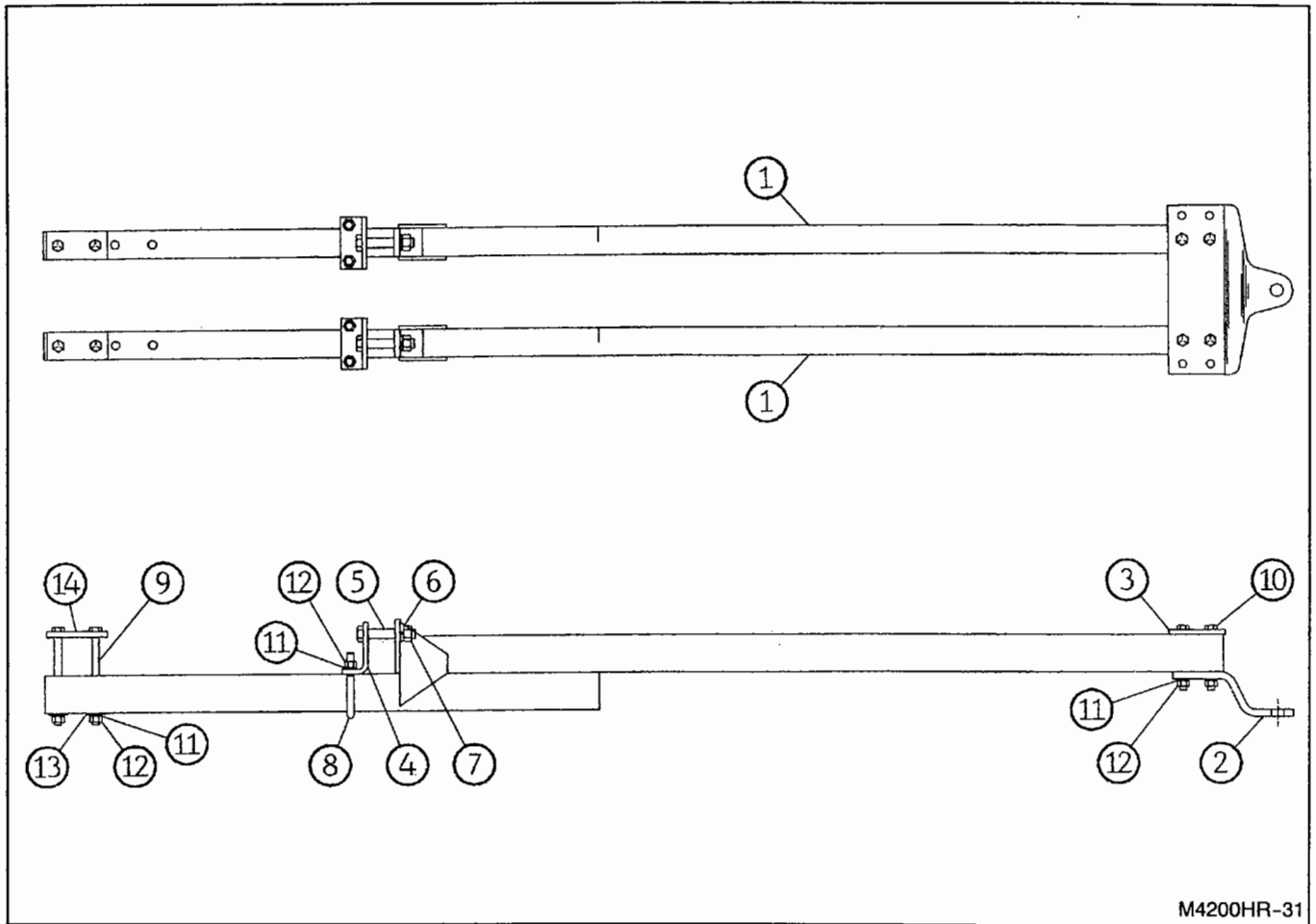
M4200-29

FOR MODELS - Accessory for all models with 7" Spacing

2/94

Item	Part Number	Part Description	Qty.
	4223-400-0	Packer Hitch Assembly (For Models 4218HR, 4223HR)	1
	4226-400-0	Packer Hitch Assembly (For Models 4226HR, 4231HR, 4237HR, 4241HR)	1
1	4223-410-0	Right Hitch Box Weldment	1
2	4223-411-0	Left Hitch Box Weldment	1
3	4223-400-2	Drop Plate (Used for 4223-400-0)	1
	6112-400-2	Drop Plate (Used for 4226-400-0)	1
4	4223-400-1	Bolt Plate (Used for 4223-400-0)	1
	6112-400-1	Bolt Plate (Used for 4226-400-0)	1
5	62-213	3/4NC x 6-1/2" GD. 5 Cap Screw	4
6	64-112	3/4" STD. Lock Washer	Spec.
7	63-112	3/4NC Hex Nut	Spec.
8	61-221	3/4" DIA. L-Bolt	4
9	3127-571-1	Bolt Plate	2
10	62-224	3/4NC x 10" Machine Bolt	4
11	64-113	3/4" STD. Flat Washer	8

PACKER HITCH ASSEMBLY FOR 6" SPACING



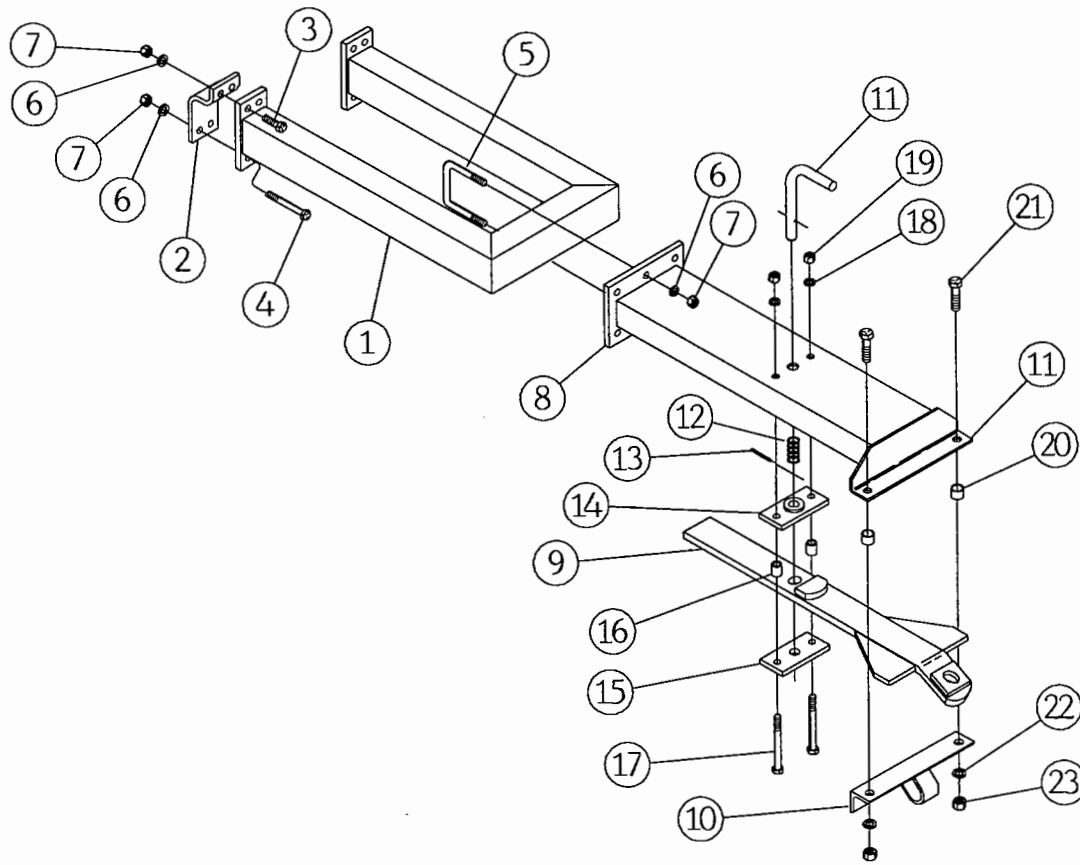
M4200HR-31

FOR MODELS - All 6" Spacing Models

2/94

Item	Part Number	Part Description	Qty.
	4223-401-0	Packer Hitch Assembly (All Models) 6" Spacing	1
1	4223-402-0	Hitch Box Weldment	2
2	4223-401-4	Drop Plate	1
3	4223-401-5	Bolt Plate (Used for 4223-401-0)	1
4	4223-401-6	Angle Plate	2
5	62-504	1NC x 5-1/2" GD. 5 Cap Screw	2
6	64-118	1" STD. Lock Washer	2
7	63-117	1NC Hex Nut	2
8	61-207	3/4" DIA. U-Bolt	2
9	62-225	3/4NC x 10" GD. 5 Machine Bolt	4
10	62-213	3/4NC x 6-1/2" GD. 5 Cap Screw	4
11	64-112	3/4" STD. Lock Washer	Spec.
12	63-112	3/4NC Hex Nut	Spec.
13	64-113	3/4" STD. Flat Washer	8
14	3127-571-1	Bolt Plate	2

TRAIL HITCH ASSEMBLY



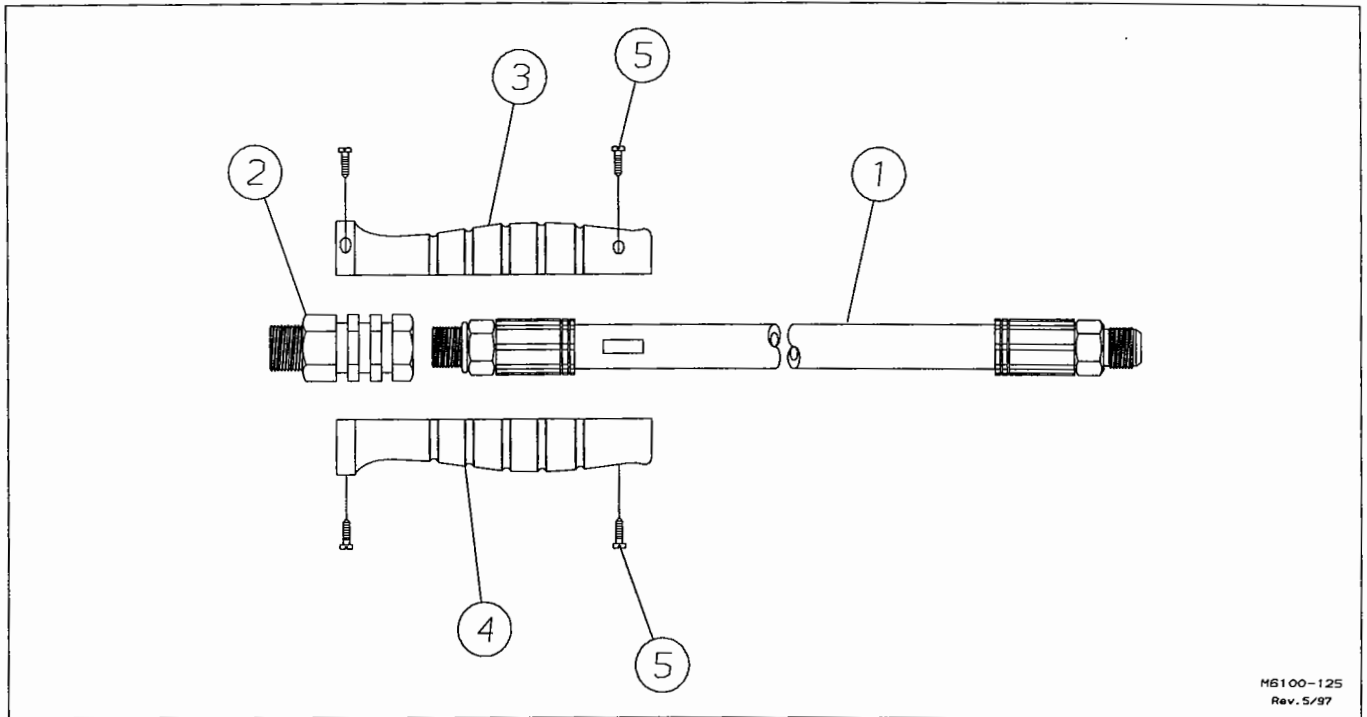
REV. 9/99
M4200-157

FOR MODELS - ALL

5/00

Item	Part Number	Part Description	Qty.
	4100-313-0	Hitch Extension Assembly	1
1	3755-310-0	Hitch Extension Weldment	1
2	4100-313-1	Mounting Plate	2
3	62-169	5/8NC x 2" GD.5 Cap Screw	4
4	62-439	5/8NC x 5" GD.5 Cap Screw	4
5	61-126	5/8" DIA. U-Bolt	3
6	64-109	5/8" STD. Lock Washer	14
7	63-109	5/8NC Hex Nut	14
	3755-302-0A	Hitch Assembly	1
8	3755-303-0A	Hitch Frame Weldment	1
9	3755-304-0A	Swing Tongue Weldment	1
10	3755-307-0	Angle Support Weldment	1
11	3755-302-1	Spring Pin	1
12	76-137	Spring	1
13	60-606	1/4" DIA. x 2" Roll Pin	1
14	3755-305-0	Pin Guide Weldment	1
15	3755-302-2	Pin Guide	1
16	3755-302-3	Spacer	2
17	62-393	5/8NC x 6" GD.5 Cap Screw	2
18	64-109	5/8" STD. Lock Washer	2
19	63-109	5/8NC Hex Nut	2
20	3755-302-4	Spacer	2
21	62-195	3/4NC x 2-1/2" GD.5 Cap Screw	2
22	64-112	3/4" STD. Lock Washer	2
23	63-112	3/4NC Hex Nut	2

HYDRAULIC HOSE WITH PLASTIC GRIP ASSEMBLIES

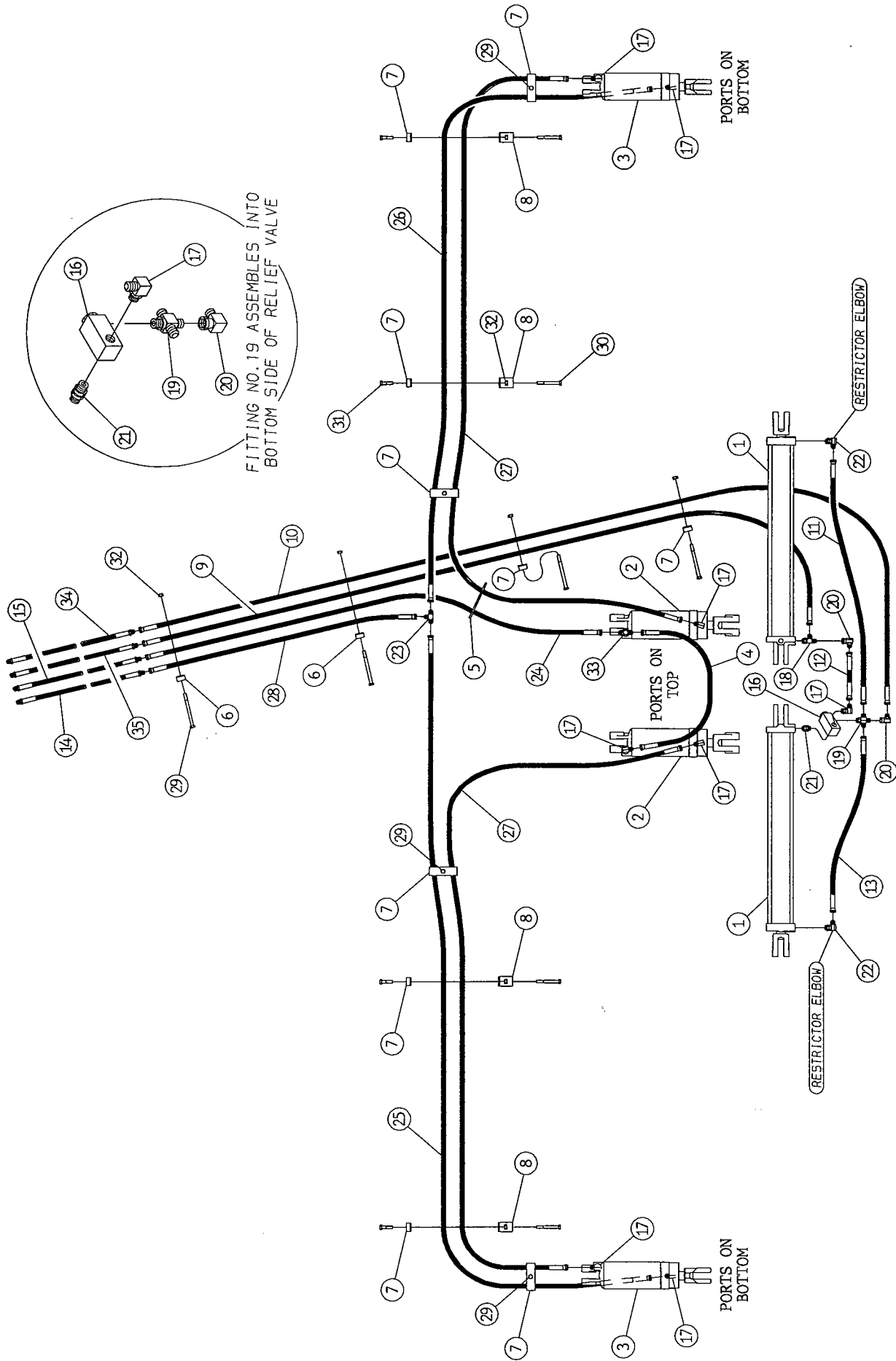


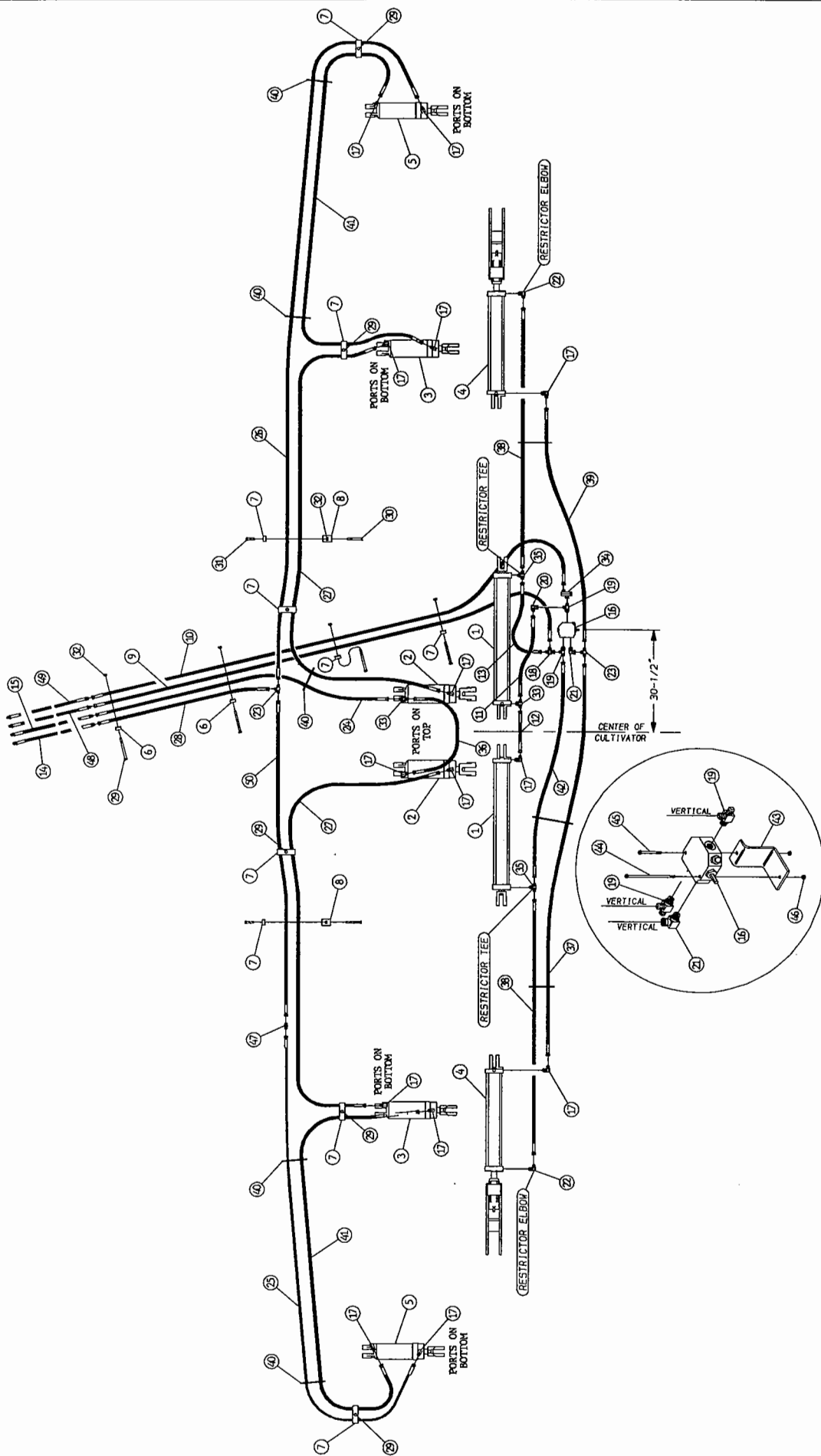
M6100-125
Rev. 5/97

FOR MODELS - 4241

7/97

Item	Part Number	Part Description	Qty.
	4990-75-0	1/2" x 92" 100R2 Hose with Red/Red Grip Assembly	1
1	24-330R	1/2" DIA. x 92" JIC/ORB 100R2 Hose	1
2	25-2295	3/4 ORB to 1/2 NPT Hydraulic Fitting	1
3	25-2289	Hose Grip Half - Red	1
4	25-2289	Hose Grip Half - Red	1
5	62-656	Screw	4
	4990-76-0	1/2" x 92" 100R2 Hose with Yellow/Yellow Grip Assembly	1
1	24-330R	1/2" DIA. x 92" JIC/ORB 100R2 Hose	1
2	25-2295	3/4 ORB to 1/2 NPT Hydraulic Fitting	1
3	25-2290	Hose Grip Half - Yellow	1
4	25-2290	Hose Grip Half - Yellow	1
5	62-656	Screw	4
	4990-77-0	3/8" x 92" 100R2 Hose with Red/Black Grip Assembly	1
1	24-2105R	3/8" DIA. x 92" JIC/ORB 100R2 Hose	1
2	25-2295	3/4 ORB to 1/2 NPT Hydraulic Fitting	1
3	25-2289	Hose Grip Half - Red	1
4	25-2291	Hose Grip Half - Black	1
5	62-656	Screw	4
	4990-78-0	3/8" x 92" 100R2 Hose with Yellow/Black Grip Assembly	1
1	24-2105R	3/8" Dia. x 92" JIC/ORB 100R2 Hose	1
2	25-2295	3/4 ORB to 1/2 NPT Hydraulic Fitting	1
3	25-2290	Hose Grip Half - Yellow	1
4	25-2291	Hose Grip Half - Black	1
5	62-656	Screw	4





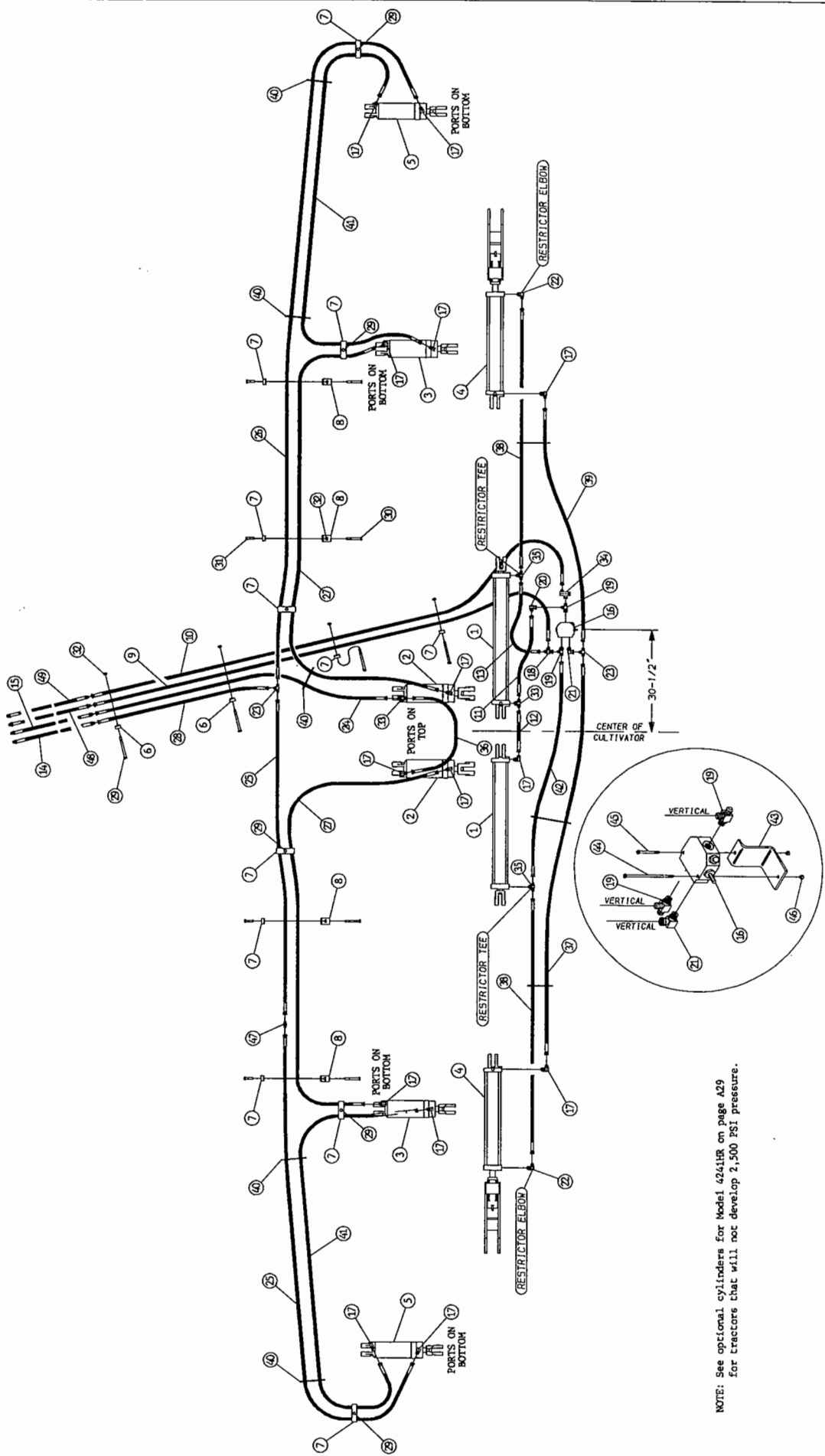
HYDRAULIC HOSE GROUP

FOR MODEL - 4237HR

5/00

Item	Part Number	Part Description	Qty.
1	21-172	Prince Hydraulic Cylinder 4" x 32"	2
2	21-1026	Prince Hydraulic Series Cylinder 4-1/2" x 8"	2
3	21-1025	Prince Hydraulic Series Cylinder 4-1/4" x 8"	2
4	4241-80-0	Outer Wing Lift Cylinder Assembly 4" x 24"	2
5	21-1024	Prince Hydraulic Series Cylinder 4" x 8"	2
6	2426-170-5	Hose Clamp	2
7	3514-0-2	Hose Clamp	10
8	4122-0-1	Hose Bracket	2
9	24-263R	Hose 3/8" DIA. x 227" (3/4" Swivel Both Ends)	1
10	24-262R	Hose 3/8" DIA. x 233" (3/4" Swivel Both Ends)	1
11	24-246R	Hose 3/8" DIA. x 28" (3/4" Swivel Both Ends)	1
12	24-264R	Hose 3/8" DIA. x 13" (3/4" Swivel Both Ends)	1
13	24-266R	Hose 3/8" DIA. x 21" (3/4" Swivel Both Ends)	1
14	■ 4990-75-0	Hose 1/2" DIA. x 92" (RED Wire Braid)	1
15	■ 4990-76-0	Hose 1/2" DIA. x 92" (YELLOW Wire Braid)	1
16	25-144	Sequence Valve	1
17	25-301	O-Ring 37° Flare 90° Adapter	14
18	25-307	37° Flare Male / Female Tee	1
19	25-302	O-Ring 37° Flare Flare Tee	2
20	25-310	37° Flare Male / Female 90° Elbow	1
21	25-320	O-Ring 37° Flare / 90° Female Elbow	1
22	4956-75-0	O-Ring 37° Flare 90° Restrictor (YELLOW)	2
23	25-303	37° Flare Male Tee	2
24	24-342R	Hose 1/2" DIA. x 178" (3/4" Swivel Both Ends)	1
25	24-228R	Hose 3/8" DIA. x 149" (3/4" Swivel Both Ends)	1
26	24-263R	Hose 3/8" DIA. x 227" (3/4" Swivel Both Ends)	1
27	24-234R	Hose 3/8" DIA. x 207" (3/4" Swivel Both Ends)	2
28	24-339R	Hose 1/2" DIA. x 119" (3/4" Swivel Both Ends)	1
29	62-395	1/2NC x 6" GD.5 Cap Screw	10
30	62-377	1/2NC x 4" GD.5 Cap Screw	2
31	62-343	1/2NC x 2" GD.5 Cap Screw	2
32	63-107	1/2NC Self Locking Nut	14
33	25-309	O-Ring 37° Flare Male Tee	2
34	25-324	37° Flare Male / Female In-Line Restrictor	1
35	3775-75-0	O-Ring 37° Flare Tee Restrictor (YELLOW)	2
36	24-380R	Hose 1/2" DIA. x 33" (3/4" Swivel Both Ends)	1
37	24-265R	Hose 3/8" DIA. x 135" (3/4" Swivel Both Ends)	1
38	24-236R	Hose 3/8" DIA. x 98" (3/4" Swivel Both Ends)	2
39	24-212R	Hose 3/8" DIA. x 79" (3/4" Swivel Both Ends)	1
40	25-126	Panduit Stay Strap (Use as needed)	8
41	24-391R	Hose 1/2" DIA. x 167" (3/4" Swivel Both Ends)	2
42	24-210R	Hose 3/8" DIA. x 74" (3/4" Swivel Both Ends)	1
43	4241-0-3	Mounting Bracket	1
44	62-512	1/4NC x 6-1/2" GD. 5 Cap Screw	1
45	62-513	1/4NC x 2-3/4" GD. 5 Cap Screw	1
46	63-101	1/4NC Self Locking Nut	2
47	25-304	37° Flare Male Coupler	1
48	■ 4990-77-0	Hose 3/8" DIA. x 92" 100R2 w/ Red & Black Grip	1
49	■ 4990-78-0	Hose 3/8" DIA. x 92" 100R2 w/ Yellow & Black Grip	1
50	24-265R	Hose 3/8" DIA. x 135" (3/4" Swivel Both Ends)	1

■ See page P41 for parts listing



NOTE: See optional cylinders for Model 4241HR on page A29 for tractors that will not develop 2,500 PSI pressure.

HYDRAULIC HOSE GROUP

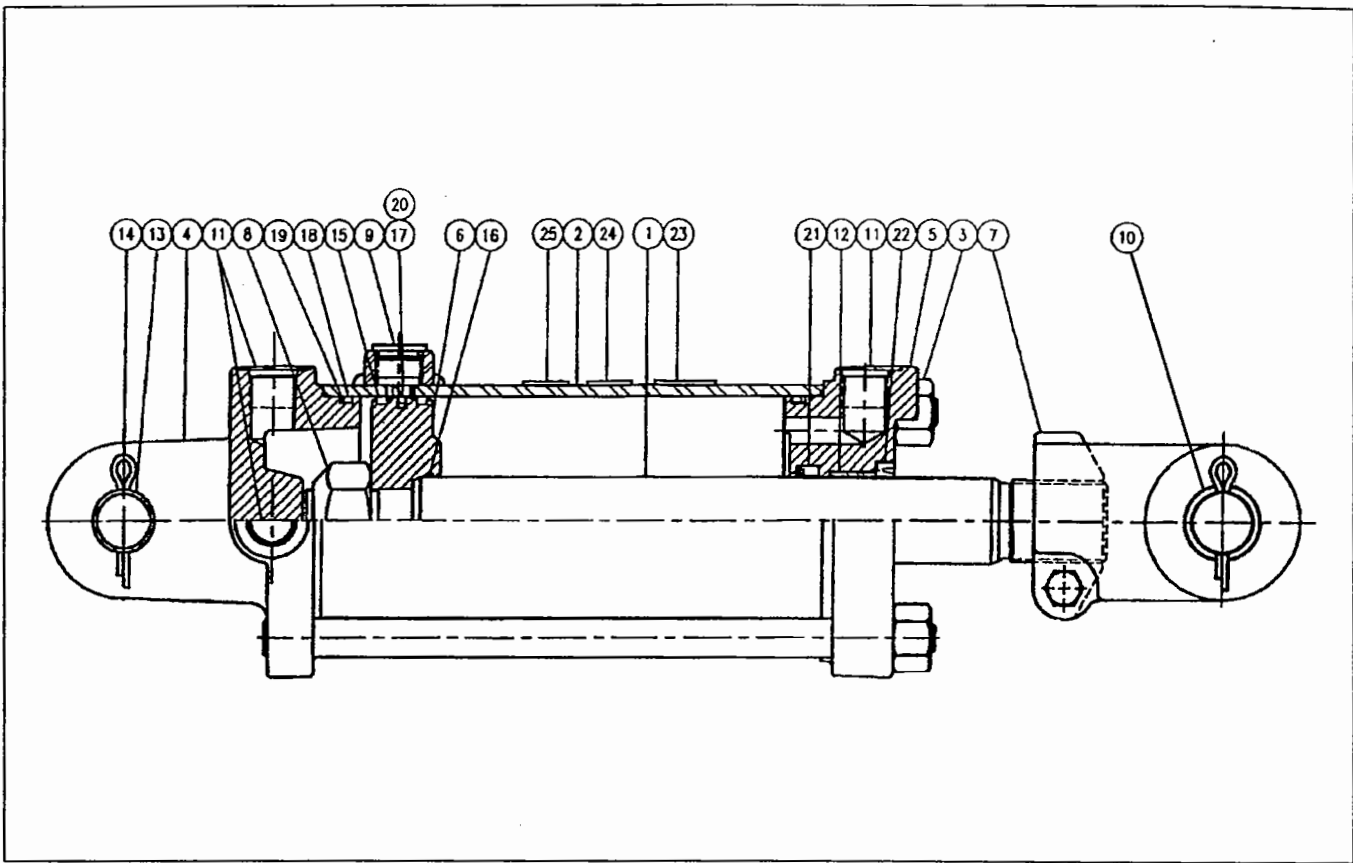
FOR MODEL - 4241HR

5/00

Item	Part Number	Part Description	Qty.
1	21-172	Prince Hydraulic Cylinder 4" x 32"	2
2	21-1026	Prince Hydraulic Series Cylinder 4-1/2" x 8"	2
3	21-1025	Prince Hydraulic Series Cylinder 4-1/4" x 8"	2
4	4241-80-0	Outer Wing Lift Cylinder Assembly 4" x 24"	2
5	21-1024	Prince Hydraulic Series Cylinder 4" x 8"	2
6	2426-170-5	Hose Clamp	2
7	3514-0-2	Hose Clamp	12
8	4122-0-1	Hose Bracket	4
9	24-263R	Hose 3/8" DIA. x 227" (3/4" Swivel Both Ends)	1
10	24-262R	Hose 3/8" DIA. x 233" (3/4" Swivel Both Ends)	1
11	24-246R	Hose 3/8" DIA. x 28" (3/4" Swivel Both Ends)	1
12	24-264R	Hose 3/8" DIA. x 13" (3/4" Swivel Both Ends)	1
13	24-266R	Hose 3/8" DIA. x 21" (3/4" Swivel Both Ends)	1
14	■ 4990-75-0	Hose 1/2" DIA. x 92" (RED Grip Assembly)	1
15	■ 4990-76-0	Hose 1/2" DIA. x 92" (YELLOW Grip Assembly)	1
16	25-144	Sequence Valve	1
17	25-301	O-Ring 37° Flare 90° degree Adapter	14
18	25-307	37° Flare Male / Female Tee	1
19	25-302	O-Ring 37° Flare Tee	2
20	25-310	37° Flare Male / Female 90° Elbow	1
21	25-320	O-Ring 37° Flare 90° Female Elbow	1
22	4956-75-0	O-Ring 37° 90° Restrictor (YELLOW)	2
23	25-303	37° Flare Male Tee	2
24	24-342R	Hose 1/2" DIA. x 178" (3/4" Swivel Both Ends)	1
25	24-2115R	Hose 3/8" DIA. x 156" (3/4" Swivel Both Ends)	2
26	24-2118R	Hose 3/8" DIA. x 256" (3/4" Swivel Both Ends)	1
27	24-356R	Hose 1/2" DIA. x 233" (3/4" Swivel Both Ends)	2
28	24-339R	Hose 1/2" DIA. x 119" (3/4" Swivel Both Ends)	1
29	62-395	1/2NC x 6" GD.5 Cap Screw	10
30	62-377	1/2NC x 4" GD.5 Cap Screw	4
31	62-343	1/2NC x 2" GD.5 Cap Screw	4
32	63-107	1/2NC Self Locking Nut	18
33	25-309	O-Ring 37° Flare Male Tee	2
34	25-324	37° Flare Male / Female In-Line Restrictor	1
35	3775-75-0	O-Ring 37° Flare Male Tee Restrictor (YELLOW)	2
36	24-380R	Hose 1/2" DIA. x 33" (3/4" Swivel Both Ends)	1
37	24-242R	Hose 3/8" DIA. x 161" (3/4" Swivel Both Ends)	1
38	24-222R	Hose 3/8" DIA. x 125" (3/4" Swivel Both Ends)	2
39	24-240R	Hose 3/8" DIA. x 107" (3/4" Swivel Both Ends)	1
40	25-126	Panduit Stay Strap (Use as needed)	8
41	24-391R	Hose 1/2" DIA. x 167" (3/4" Swivel Both Ends)	2
42	24-210R	Hose 3/8" DIA. x 74" (3/4" Swivel Both Ends)	1
43	4241-0-3	Mounting Bracket	1
44	62-512	1/4NC x 6-1/2" GRADE 5 Cap Screw	1
45	62-513	1/4NC x 2-3/4" GRADE 5 Cap Screw	1
46	63-101	1/4NC Self Locking Nut	2
47	25-304	37° Flare Male Coupler	1
48	■ 4990-77-0	Hose 3/8" DIA. x 92" 100R2 w/ Red & Black Grip Assembly	1
49	■ 4990-78-0	Hose 3/8" DIA. x 92" 100R2 w/ Yellow & Black Grip Assembly	1

■ See page P41 for parts listing

PRINCE HYDRAULIC CYLINDER ASSEMBLY



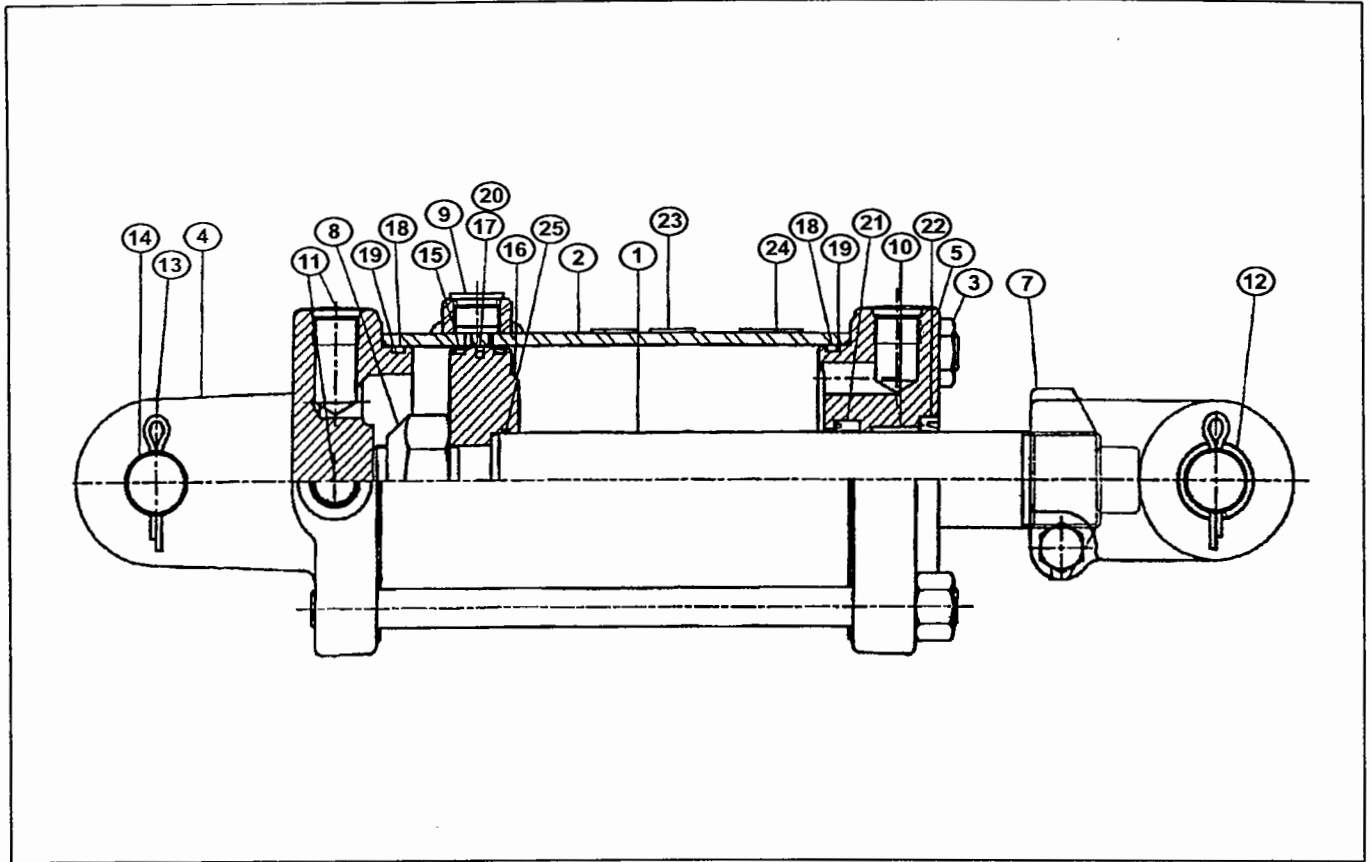
21-1024 4" X 8" Prince Hydraulic Cylinder Assembly (D.A.)

5/00

Retracted - 20-1/4" Extended - 28-1/4" Stroke - 8" Rod Diameter - 1-3/8"

Item	Part Number	Part Description	Qty.
1	21-2128	Piston Rod	1
2	21-2129	Tube Assembly	1
3	21-272	Tie Rod Assembly	4
4	21-337	Butt	1
5	21-810	Gland	1
6	21-811	Piston	1
7	21-2126	Clevis Assembly	1
8	21-225	Lock Nut	1
9	21-702	Plug	1
10	21-2127	Bushing	2
11	21-404	Plug	3
12	21-807	Bushing	1
13	21-260	Clevis Pin	2
14	21-639	Cotter Pin	4
15	*	Bearing Ring	1
16	*	O-Ring	1
17	*	O-Ring	1
18	*	O-Ring	2
19	*	Back-Up Washer	2
20	*	Teflon Seal	1
21	*	U-Cup	1
22	*	Wiper	1
23		Decal, Series CAUTION	1
24	74-552	Decal, Seal Kit Part Number	1
25	74-113	Decal, Cylinder WARNING	1
	21-2059	Seal Kit (* Items Included in Kit)	

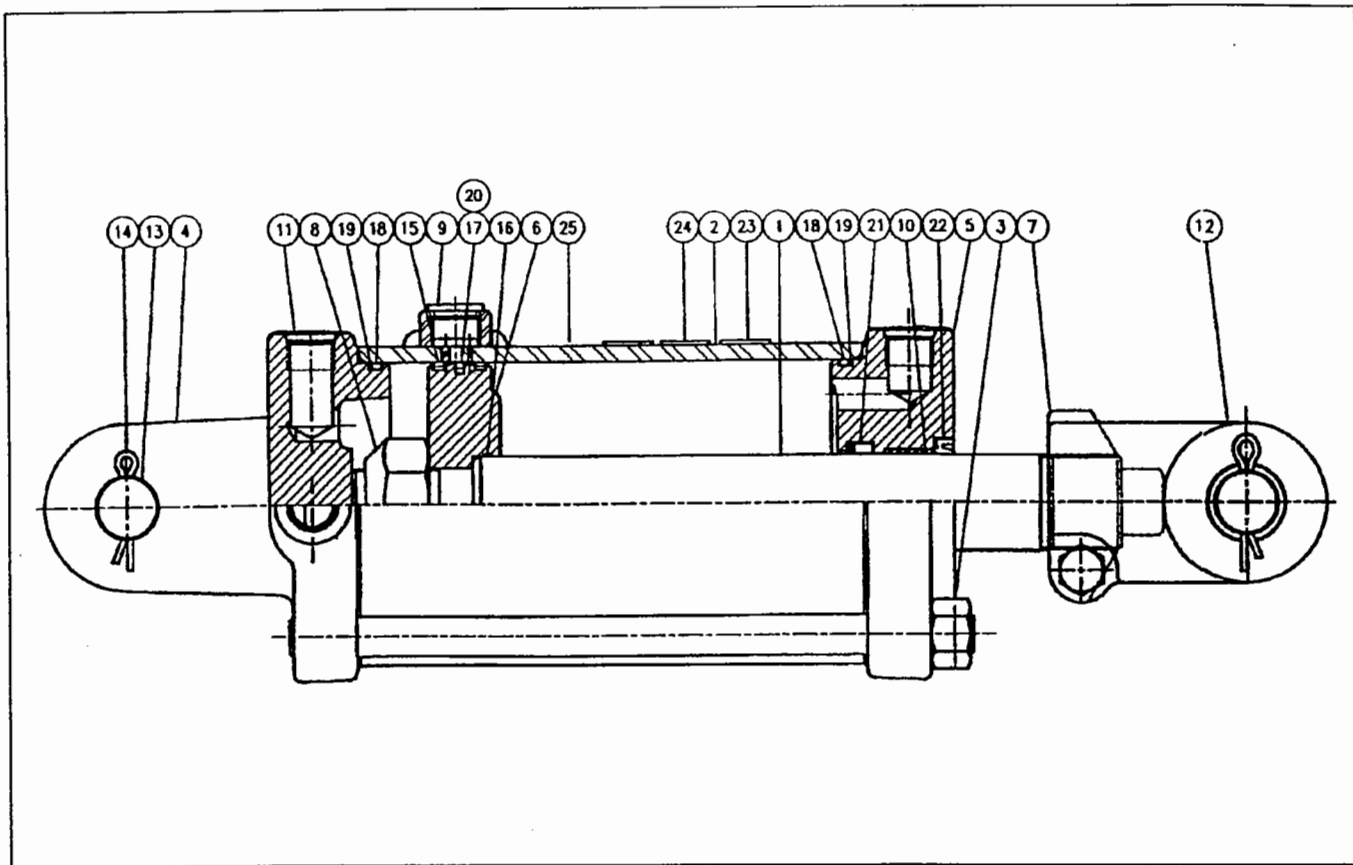
PRINCE HYDRAULIC CYLINDER ASSEMBLY



21-1025 4-1/4" X 8" Eaton Hydraulic Cylinder Assembly (Rephase) 5/00
Retracted - 20-1/4" Extended - 28-1/4" Stroke - 8" Rod Diameter - 1-1/2"

Item	Part Number	Part Description	Qty.
1	21-2122	Piston Rod	1
2	21-2123	Tube Assembly	1
3	21-259	Tie Rod Assembly	4
4	21-2072	Butt	1
5	21-2073	Gland	1
6	21-2074	Piston	1
7	21-2125	Clevis Assembly	1
8	21-819	Lock Nut	1
9	21-702	Plug	1
10	21-2127	Bushing	2
11	21-404	Plug	3
12	21-2069	Bushing	1
13	21-260	Clevis Pin	2
14	21-639	Cotter Pin	4
15	*	Bearing Ring	2
16	*	O-Ring	1
17	*	O-Ring	1
18	*	O-Ring	2
19	*	Back-Up Washer	2
20	*	Teflon Seal	1
21	*	U-Cup	1
22	*	Wiper	1
23		Decal, Series CAUTION	1
24	74-553	Decal, Seal Kit Part Number	1
25	74-113	Decal, Cylinder WARNING	1
	21-2060	Seal Kit (* Included in Seal Kit)	

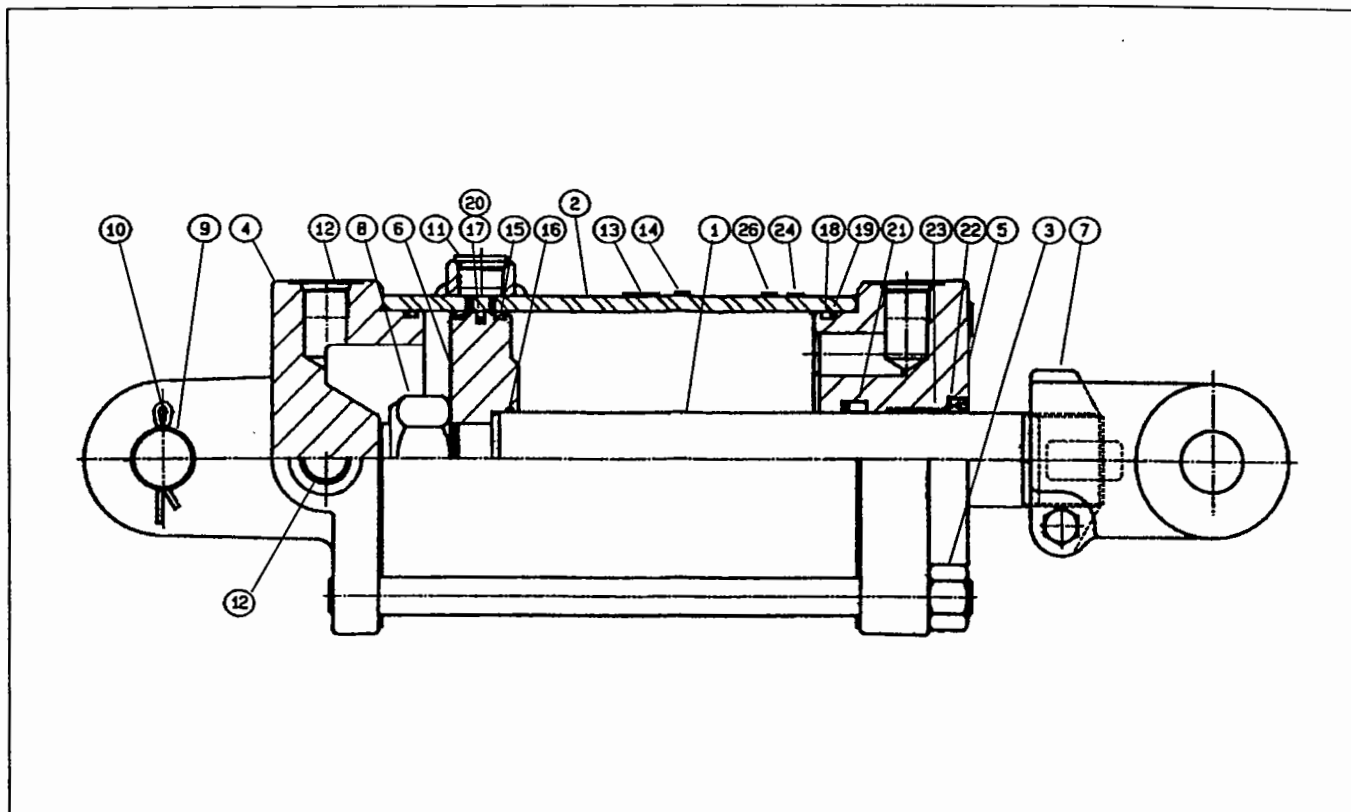
PRINCE HYDRAULIC CYLINDER ASSEMBLY



21-1026 4-1/2" X 8" Eaton Hydraulic Cylinder Assembly (D.A. T/R Series) 5/00
Retracted - 20-1/4" Extended - 28-1/4" Stroke - 8" Rod Diameter - 1-1/2"

Item	Part Number	Part Description	Qty.
1	21-2122	Piston Rod	1
2	21-2124	Tube Assembly	1
3	21-715	Tie Rod Assembly	4
4	21-2083	Butt	1
5	21-2084	Gland	1
6	21-2085	Piston	1
7	21-2125	Clevis Assembly	1
8	21-819	Lock Nut	1
9	21-702	Plug	1
10	21-2069	Bushing	1
11	21-404	Plug	3
12	21-2127	Bushing	2
13	21-260	Clevis Pin	2
14	21-639	Cotter Pin	4
15	*	Bearing Ring	2
16	*	O-Ring	1
17	*	O-Ring	1
18	*	O-Ring	2
19	*	Back Up Washer	2
20	*	Teflon Seal	1
21	*	U-Cup	1
22	*	Wiper	1
23		Decal, Series CAUTION	1
24	74-554	Decal, Seal Kit Part Number	1
25	74-113	Decal, Cylinder WARNING	1
	21-2080	Seal Kit (* Items Included In Seal Kit)	

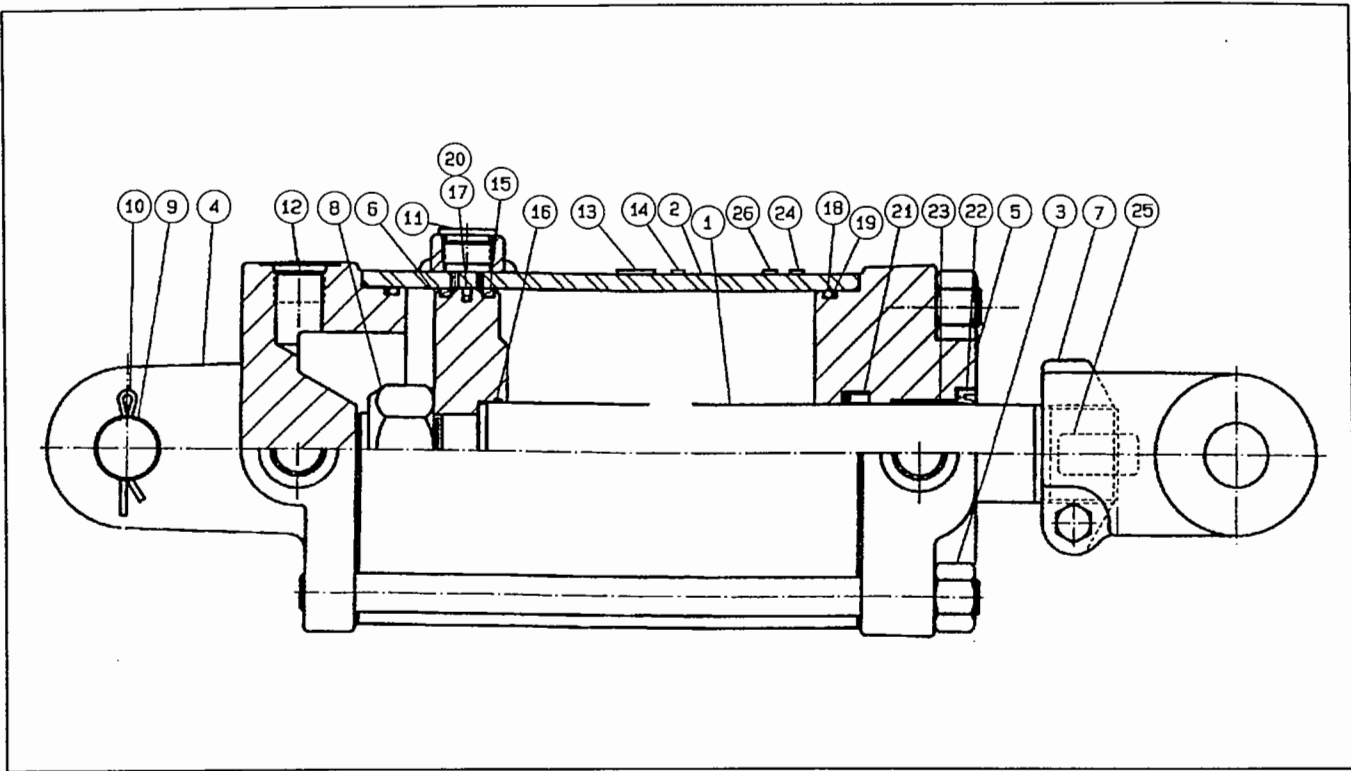
PRINCE HYDRAULIC CYLINDER ASSEMBLY



FOR 21-163 4-3/4" X 8" Prince Hydraulic Cylinder Assembly 5/00
Retracted - 20-1/4" Extended - 28-1/4" Stroke - 8" Rod Diameter - 1-1/2"

Item	Part Number	Part Description	Qty.
1	21-814	Piston Rod	1
2	21-815	Tube Assembly	1
3	21-715	Tie Rod Assembly	4
4	21-816	Butt Assembly	1
5	21-817	Gland Assembly	1
6	21-818	Piston	1
7	21-506	Clevis Assembly	1
8	21-819	Lock Nut	1
9	21-696	Clevis Pin	1
10		3/16" DIA. x 1-3/4" Cotter Pin	2
11	21-702	Port Plug	1
12	21-831	Port Plug	1
13	21-444	Decal	1
14	21-443	Decal	1
15	☆	Bearing Ring	2
16	☆	O-Ring	1
17	☆	O-Ring	1
18	☆	O-Ring	2
19	☆	Back-Up Washer	2
20	☆	Teflon Seal	1
21	☆	U-Cup	1
22	☆	Wiper	1
23	21-828	Bushing	1
24	74-113	Cylinder Pin Warning Decal	1
26	21-830	Seal Kit Decal	- 1
	21-813	Seal Kit (☆ Items Included In Kit)	

PRINCE HYDRAULIC CYLINDER ASSEMBLY



FOR 21-191 5" X 8" Prince Hydraulic Cylinder Assembly

5/00

Retracted - 20-1/4"

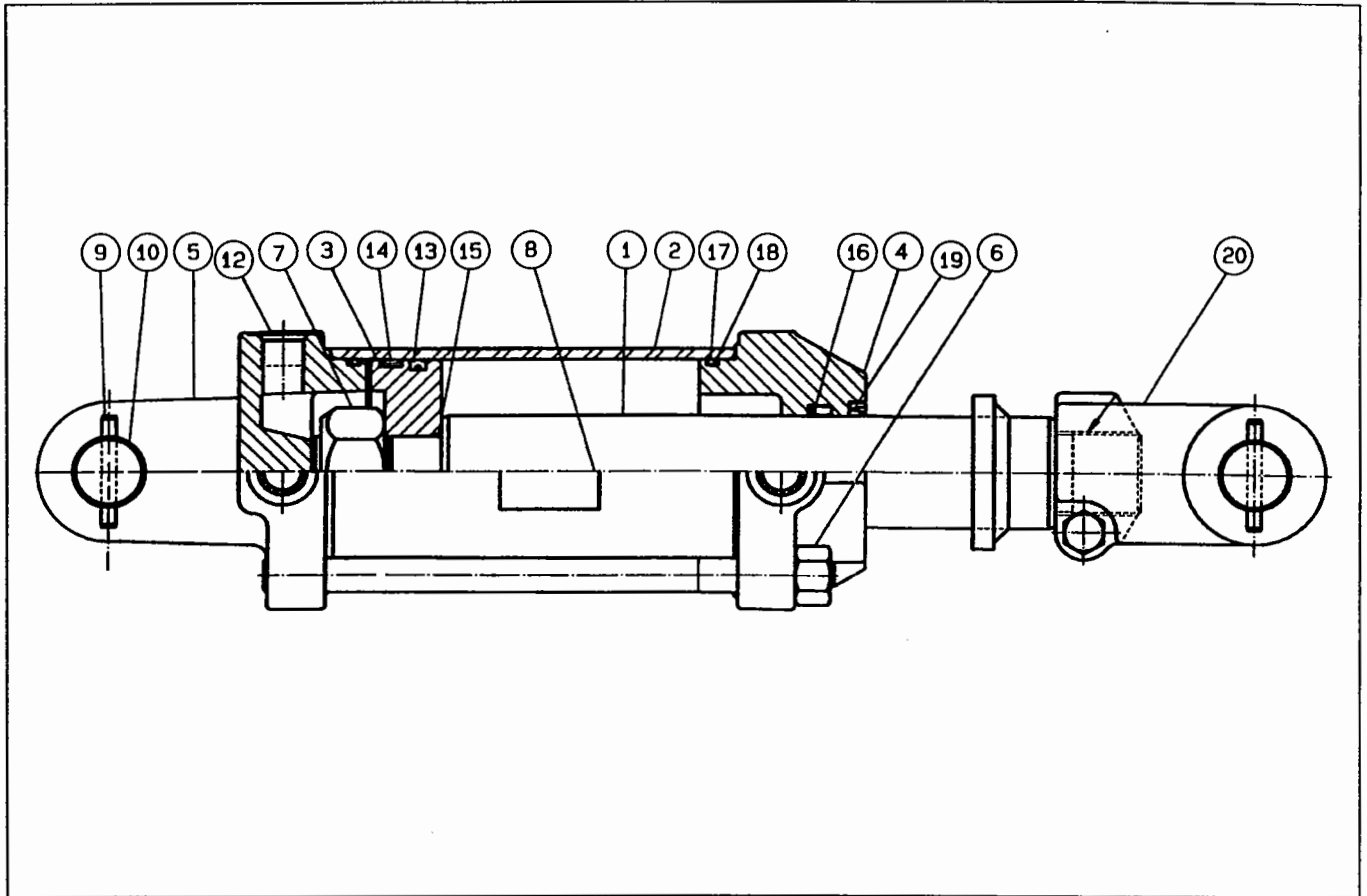
Extended - 28-1/4"

Stroke - 8"

Rod Diameter - 1-1/2"

Item	Part Number	Part Description	Qty.
1	21-814	Piston Rod	1
2	21-998	Tube Assembly	1
3	21-715	Tie Rod Assembly	4
4	21-999	Butt	1
5	21-2000	Gland Assembly	1
6	21-2001	Piston	1
7	21-506	Clevis Assembly	1
8	21-819	Lock Nut	1
9	21-696	Clevis Pin	1
10		3/16" DIA. x 1-3/4" Cotter Pin	2
11	21-831	Port Plug	3
12	21-702	Port Plug	1
13	21-444	Decal	1
14	21-443	Decal	1
15	★	Bearing Ring	2
16	★	O-Ring	1
17	★	O-Ring	1
18	★	O-Ring	2
19	★	Back-Up Washer	2
20	★	Teflon Seal	1
21	★	U-Cup	1
22	★	Wiper	1
23	21-828	Bushing	1
24	74-113	Cylinder WARNING Decal	1
25	21-829	Decal	1
26	21-2003	Decal	1
	21-997	Seal Kit (★ Included in Kit)	1

PRINCE HYDRAULIC CYLINDER ASSEMBLY

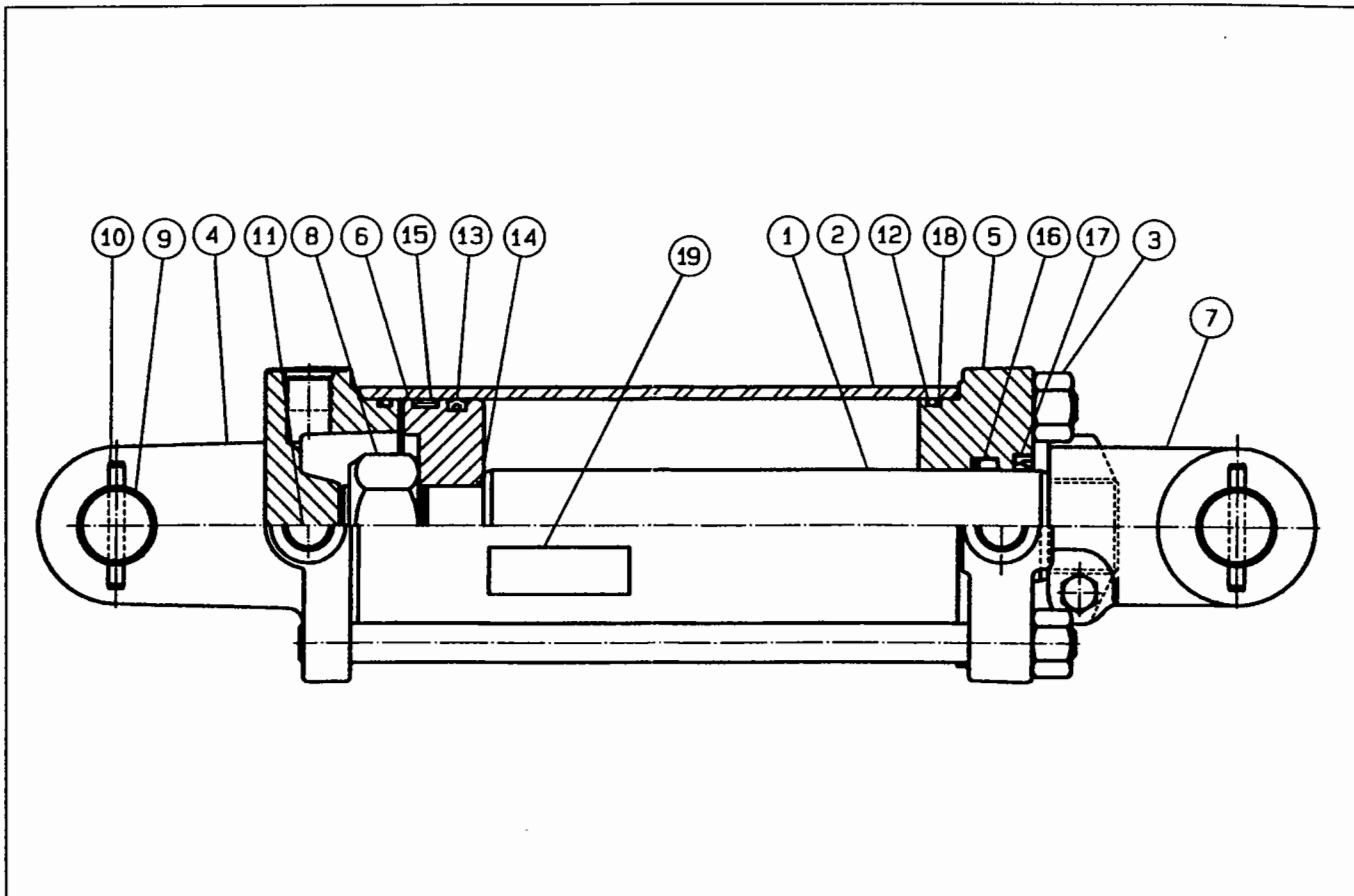


FOR 21-171 4 X 16" Prince Hydraulic Cylinder Assembly
 Retracted - 31-1/2" Extended - 47-1/2" Stroke - 16" Rod Diameter - 2"

9/99

Item	Part Number	Part Description	Qty.
1	21-893	Piston Rod Assembly	1
2	21-282	Tube	1
3	21-879	Piston	1
4	21-894	Gland	1
5	21-738	Butt Casting	1
6	21-288	Tie Rod	4
7	21-286	1-1/4NC Lock Nut	1
8	74-113	Cylinder WARNING Decal	1
9		1/4" DIA. x 2" Roll Pin	4
10	21-859	Clevis Pin	2
11			
12	21-404	#8 SAE Plug	3
13	☆	Crown Seal	1
14	☆	Bearing Ring	1
15	☆	O-Ring	1
16	☆	U-Cup	1
17	☆	O-Ring	2
18	☆	Back-Up Washer	2
19	☆	Wiper	1
20	21-685	Clevis Assembly	1
	21-895	Seal Kit (☆ Items Included In Kit)	-

PRINCE HYDRAULIC CYLINDER ASSEMBLY



FOR 21-172 4" X 32" Prince Hydraulic Cylinder Assembly

9/99

Retracted - 42-3/4"

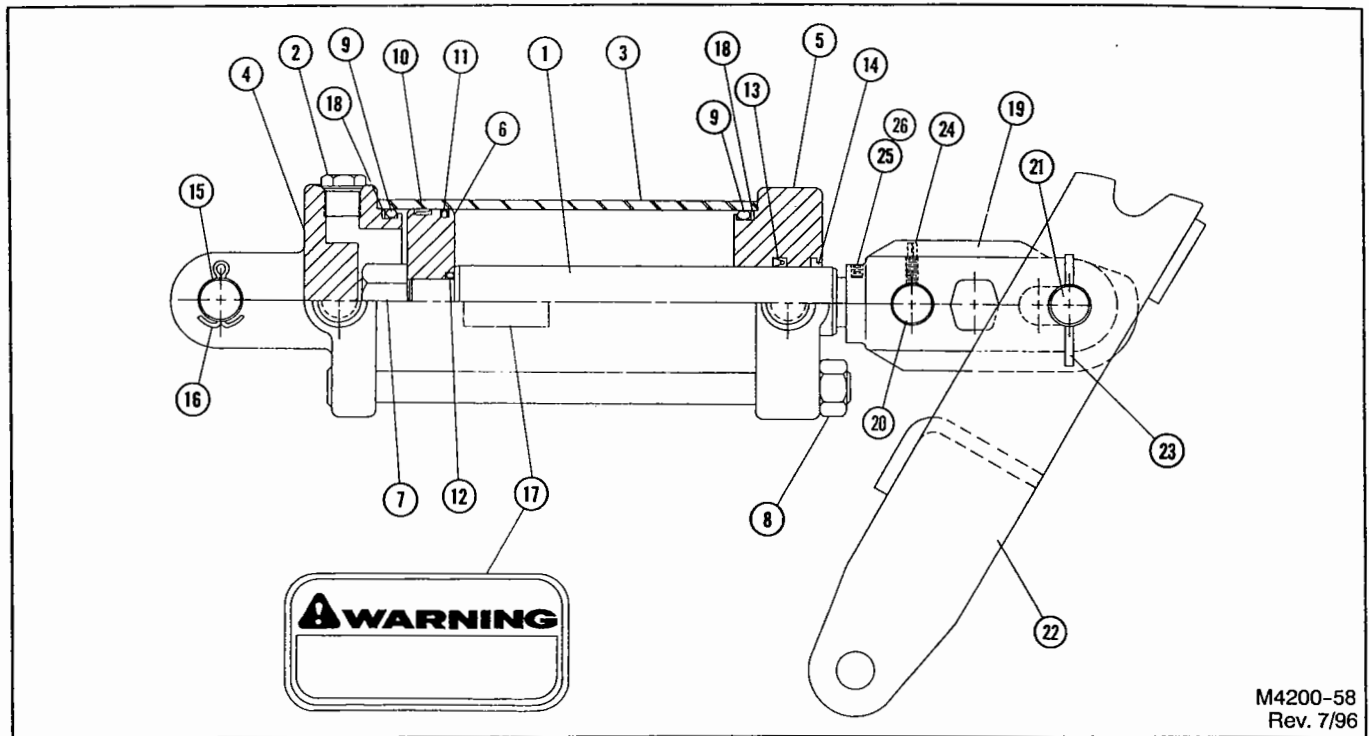
Extended - 74-3/4"

Stroke - 32"

Rod Diameter - 1-3/4"

Item	Part Number	Part Description	Qty.
1	21-900	Piston Rod	1
2	21-266	Tube	1
3	21-526	Tie Rod	4
4	21-738	Butt	1
5	21-878	Gland	1
6	21-879	Piston	1
7	21-507	Clevis Assembly	1
8	21-286	Lock Nut	1
9	21-859	Clevis Pin	2
10		1/4" DIA. x 2" Roll Pin	4
11	21-404	#8 SAE Plug	3
12	☆	O-Ring	2
13	☆	Crown Seal	1
14	☆	O-Ring	1
15	☆	Bearing Ring	1
16	☆	U-Cup	1
17	☆	Wiper	1
18	☆	Back-Up Washer	2
19	74-113	Cylinder WARNING Decal	1
	21-857	Seal Kit (☆ Items included in kit)	

PRINCE HYDRAULIC CYLINDER ASSEMBLY



M4200-58
Rev. 7/96

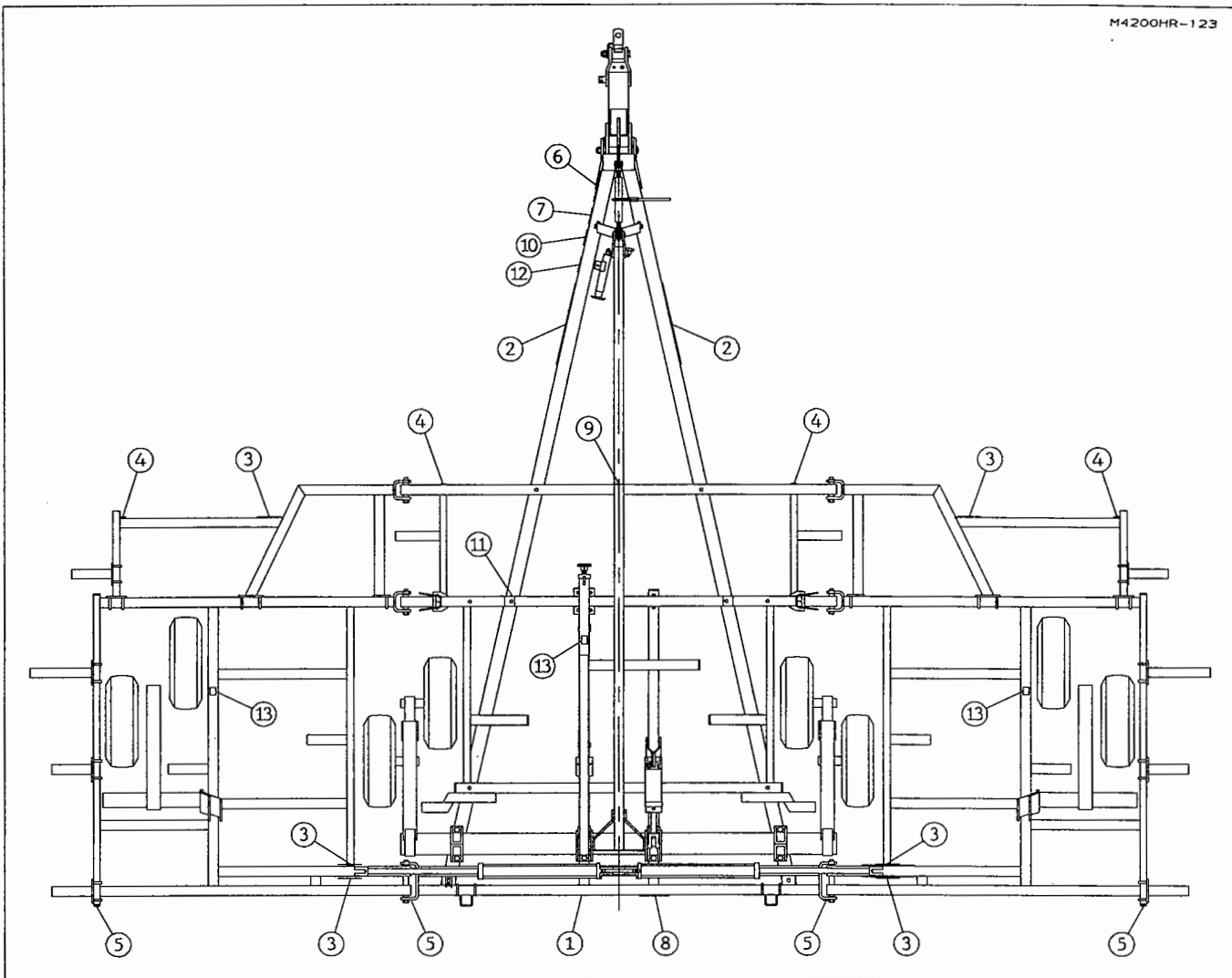
FOR 4241-80-0 4" X 24" Prince Hydraulic Wing Lift Cylinder Assembly

9/99

Item	Part Number	Part Description	Qty.
	21-174	4" x 24" Hydraulic Cylinder Assembly	1
1	21-896	Piston Rod	1
2	21-831	Plug	1
3	21-222	Tube	1
4	21-738	Butt	1
5	21-898	Gland	1
6	21-879	Piston	1
7	21-286	Lock Nut	1
8	21-897	Tie Rod Assembly	4
9	★	O-Ring	2
10	★	Bearing Ring	1
11	★	Crown Seal	1
12	★	O-Ring	1
13	★	U-Cup	1
14	★	Wiper	1
15	21-741	Clevis Pin	1
16		3/16" X 1-3/4" Cotter Pin	2
17	74-113	Cylinder WARNING Decal	1
18	★	Back-Up Washer	2
19	4260-80-1	Rod End	1
20	4260-81-1	1-1/4"DIA. x 5" Pin	1
21	4260-80-3	Pin	1
22	4241-87-0	Lift Arm Weldment	1
23	60-618	3/8" x 3" Roll Pin	2
24	60-608	1/4"DIA. x 2-1/2" Roll Pin	1
25	62-324	3/8NC x 3/8" Cup Point Set Screw	1
26	21-407	Nylon Bushing	1
	21-895	Seal Kit (★ Items included in kit)	-

DECALS

M4200HR-123



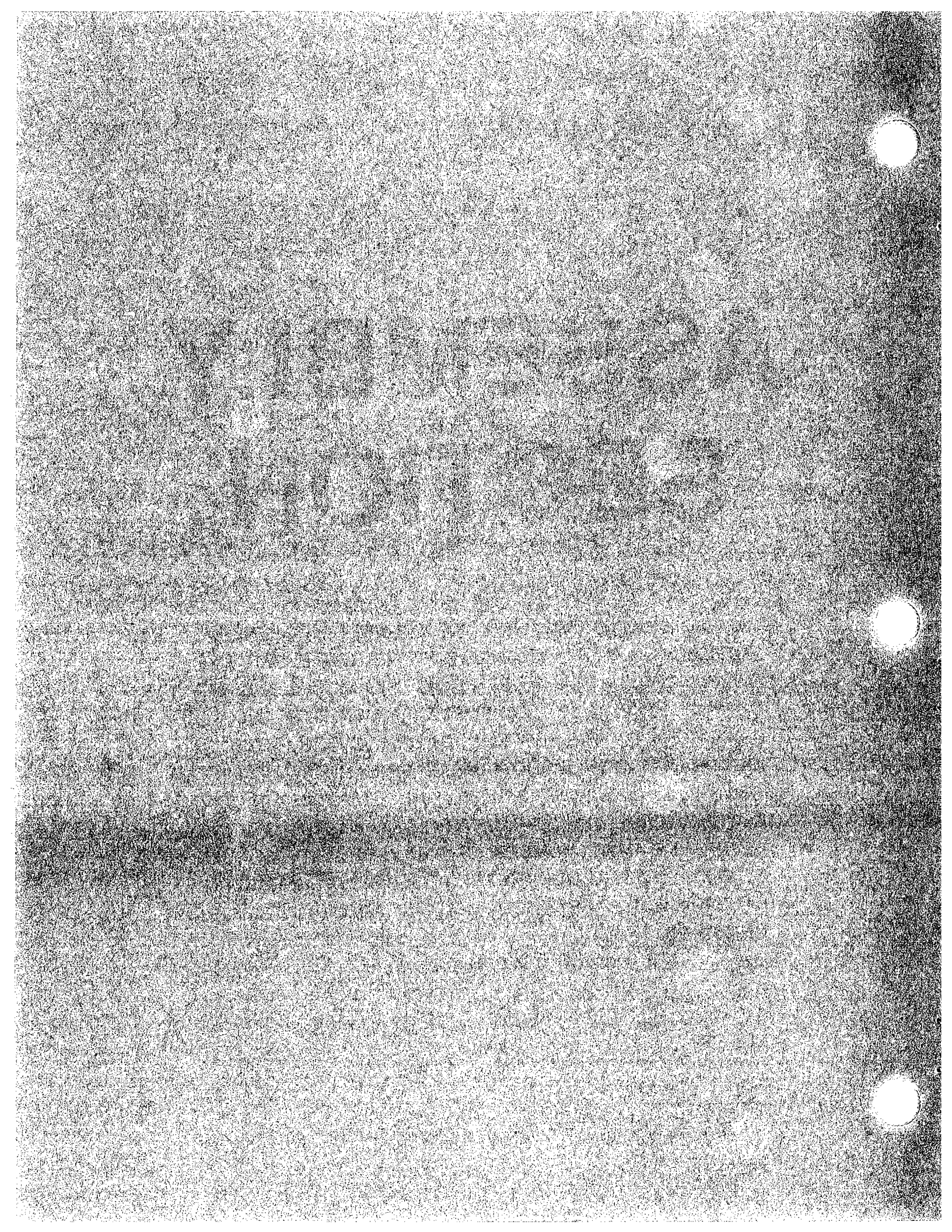
FOR MODELS - ALL (Model 4226HR Shown)

4/90

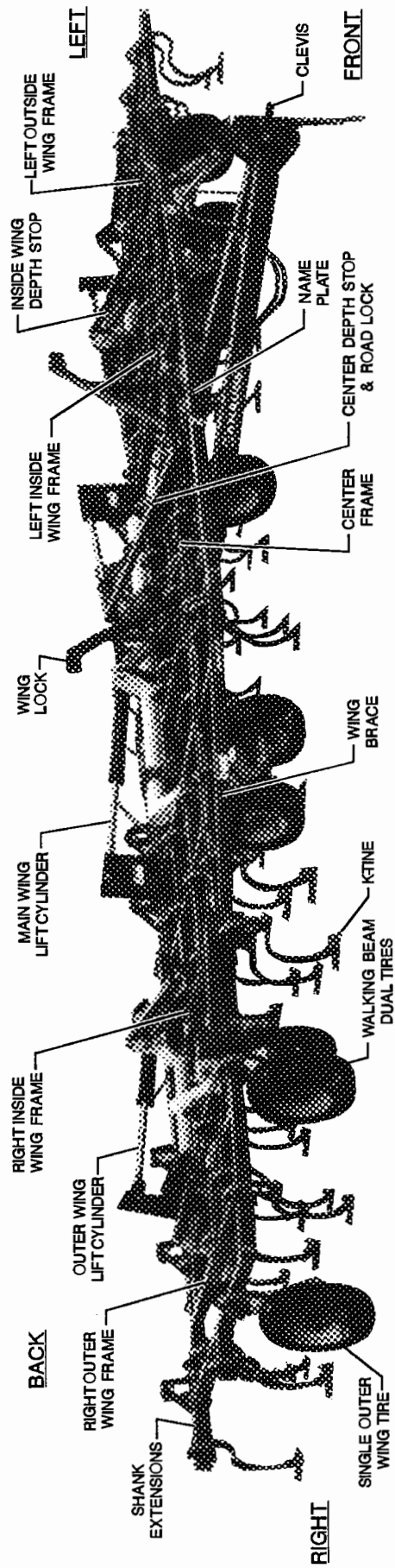
Item	Part Number	Part Description	Qty.
1	74-100	KRAUSE Decal (Small)	1
2	74-101	KRAUSE Decal (Large)	2
3	74-102	Stand Clear Of Wing Decal	6
4	74-107	Amber Reflector	4
5	74-108	Red Reflector	4
6	74-117	Implement Safety Decal	1
7	74-121	CAUTION Width / Height Decal	1
8	74-159	4200 SERIES Decal	1
9	74-162	K-Tine Decal	1
10	74-276	WARNING High Pressure Decal	1
11	74-312	Depth Adjustment Decal	1
12	74-158	Tongue Light Decal	1
13	74-355	WARNING Pin When Changing Sweeps Decal	3

ASSEMBLY SECTION

THE FOLLOWING SECTION ILLUSTRATES A GENERAL METHOD FOR THE ASSEMBLY OF THIS SERIES KRAUSE TILLAGE TOOL. YOU MUST KNOW THE MODEL NUMBER OF THE UNIT BEING ASSEMBLED WHENEVER MAKING REFERENCE TO THIS SECTION. THE FOLLOWING PICTURES AND DRAWINGS WILL SHOW BOLTS, PINS, NUTS AND ETC., WITH THE DESCRIPTIVE SIZE AND LENGTHS IN THE ACCOMPANYING PARAGRAPH AND A PARTS LISTING REFERENCE PAGE NUMBER. IF ANY DIFFICULTY SHOULD BE ENCOUNTERED DURING THE ASSEMBLY, RECHECK THE ILLUSTRATIONS, ASSEMBLY STEPS AND PARTS LIST DRAWINGS.



NOTE: MODEL 4241 SHOWN



ASSEMBLY

STUDY THE NAMES AND LOCATIONS OF THE PARTS AND FAMILIARIZE YOURSELF WITH THE FIELD CULTIVATOR BEFORE STARTING THE ASSEMBLY. READING THE STEP BY STEP INSTRUCTIONS THAT FOLLOW WILL BE HELPFUL.

SAFETY



READ ALL THE SAFETY NOTATIONS IN THE ASSEMBLY INSTRUCTIONS FOR YOUR OWN PROTECTION. ACCIDENTS CAN BE PREVENTED BY RECOGNIZING THE CAUSE OF AN ACCIDENT BEFORE IT CAN HAPPEN.

ASSEMBLY

Select an area for the assembly that will be large enough to accommodate the completed field cultivator. The surface of the work area should be as level as possible. Use the proper hand tools to insure proper bolt tightness. Refer to the page titled "Proper Bolt Use" for the recommended torque values of different size bolts.

PART LOCATIONS


FRONT - The front of the frame can be determined by the location of the name plate that has been attached to the front frame member.

RIGHT and **LEFT** sides can be established by standing behind the frame looking toward the front, or the direction of travel.

TOP - To be sure the frame is right side up, position the frame with the wing lift hydraulic cylinder lug on top.

ASSEMBLY STEPS

Shown here is one method of assembly that can be accomplished with a small crew of assemblers. Each step of assembly is accompanied with a picture or illustration with part names and bolt sizes listed.

 **Warning:** Always attach chains securely. If a chain would break, the recoil action could cause the loose end to whip in any direction and injury any person nearby.

Proof load rating of chain must equal or exceed 5 times the weight being lifted.

THE HEAVIEST COMPONENT TO BE LIFTED INTO PLACE IS THE NARROW CENTER FRAME WHICH WEIGHS 985 LBS.

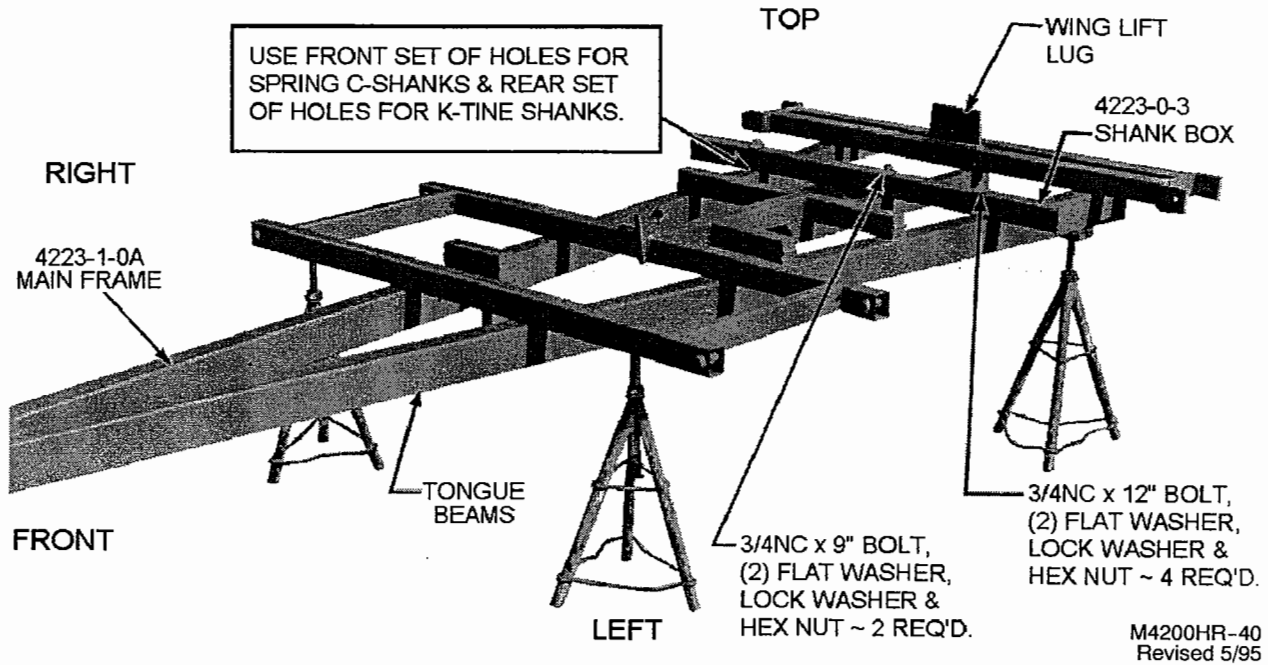
MODEL NUMBERS

Know the model number of the field cultivator being assembled. Use the model number whenever referring to the assembly, parts listing pages or placement drawings. The number is stamped on the NAME PLATE located on the front frame member.

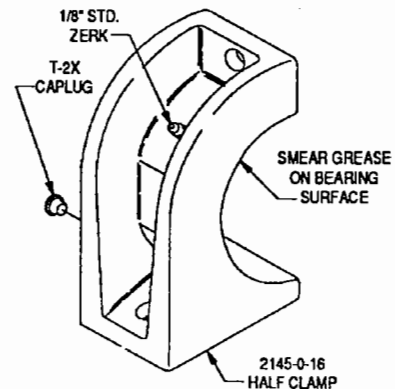


I. CENTER FRAME, ROCKER, ROAD LOCK & WING LOCK ASSEMBLY (FOR MODELS 4218HR & 4223HR)

1. Position frame on stands approximately 30" high with wing lift hydraulic cylinder lug on top and tongue beams underneath.
Fasten tongue jack to the left tongue member.

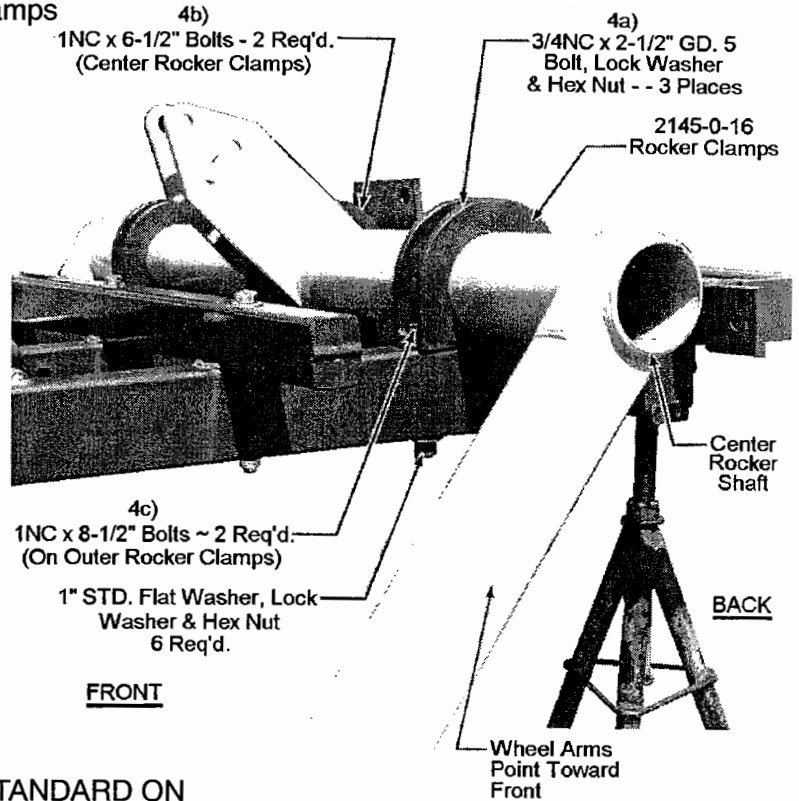


2. Attach the Shank Box (4223-0-3) to the center frame. Use the **REAR** set of holes for K-Tines and the **FRONT** set of holes for Spring C-Shanks.
3. Six cast HALF CLAMPS (2145-0-16) will be needed to assemble the center rocker.
 - a. Screw in 1/8" STD. Zerks in upper threaded holes.
 - b. Insert T-2X Caplugs into lower side holes.
 - c. Smear grease on bearing surface.



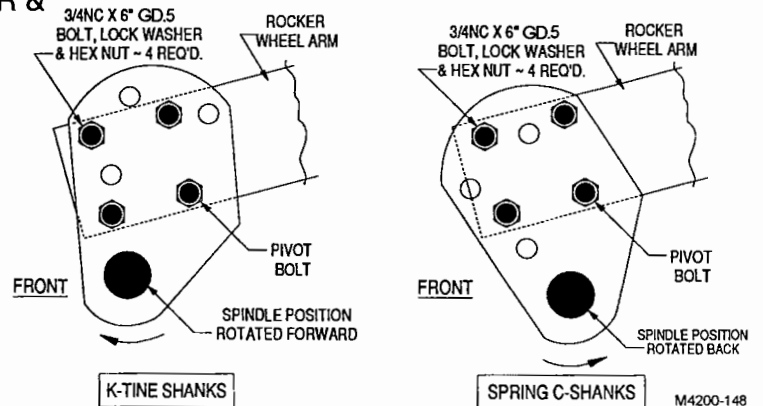
4. CENTER ROCKER CLAMPS
 - a. Assemble rocker clamp castings together with 3/4NC x 2-1/2" GRADE 5 bolts, Lock Washers and Hex Nuts.
 - b. Fasten the center rocker clamps to the frame with 1NC x 6-1/2" Bolts.

- c. Fasten the outer rocker clamps with 1NC x 8-1/2" Bolts.



5. SINGLE HUB ASSEMBLY (STANDARD ON MODELS 4218 & 4223 CENTER & WINGS)

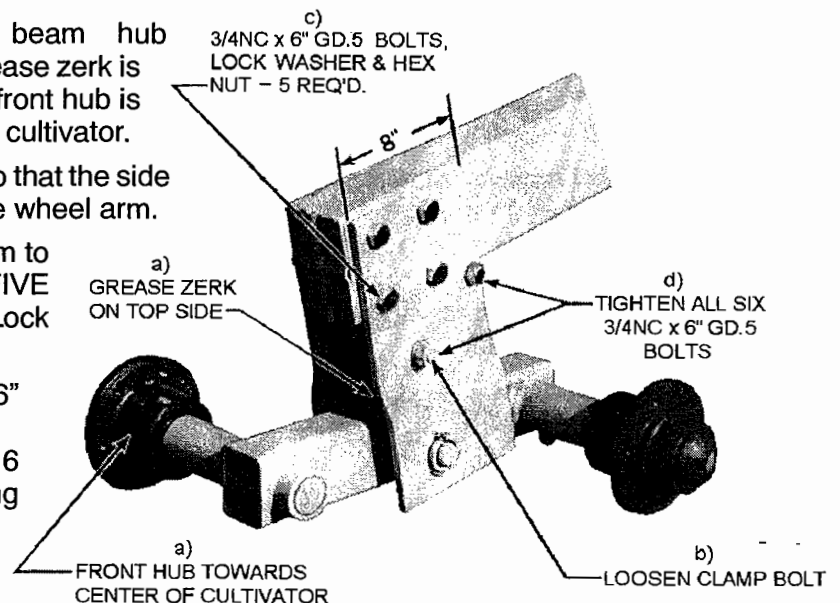
- a. There are two different single wheel hub positions depending on the type of shank used. (See accompanying illustration)



6. WALKING BEAM DUAL HUB ASSEMBLY (OPTIONAL ON 4218 & 4223 CENTER & ROCKER)

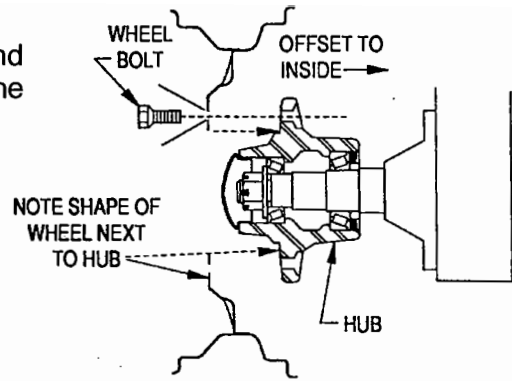
- a. Locate the walking beam hub assembly so that the grease zerk is on the top side and the front hub is toward the center of the cultivator.
- b. Loosen the clamp bolt so that the side plates can slide onto the wheel arm.
- c. Fasten the walking beam to the wheel arm with FIVE 3/4NC x 6" GD.5 Bolts, Lock Washers and Hex Nuts.
- d. Tighten all SIX 3/4NC x 6" GD.5 Bolts.

NOTE: See page A16 for Optional Wing Walking Beam Assembly.



7. WHEELS & TIRES

- Remove the WHEEL BOLTS from the hubs and attach the WHEEL & TIRE ASSEMBLIES to the hubs.
- Torque all wheel bolts from 90 to 95 Foot Pounds. Note: See the placement pages at the back of this manual for correct tire size for center and wing locations.



8. CENTER CYLINDER LUG & ROAD LOCK ASSEMBLY (MODELS 4218 & 4223)

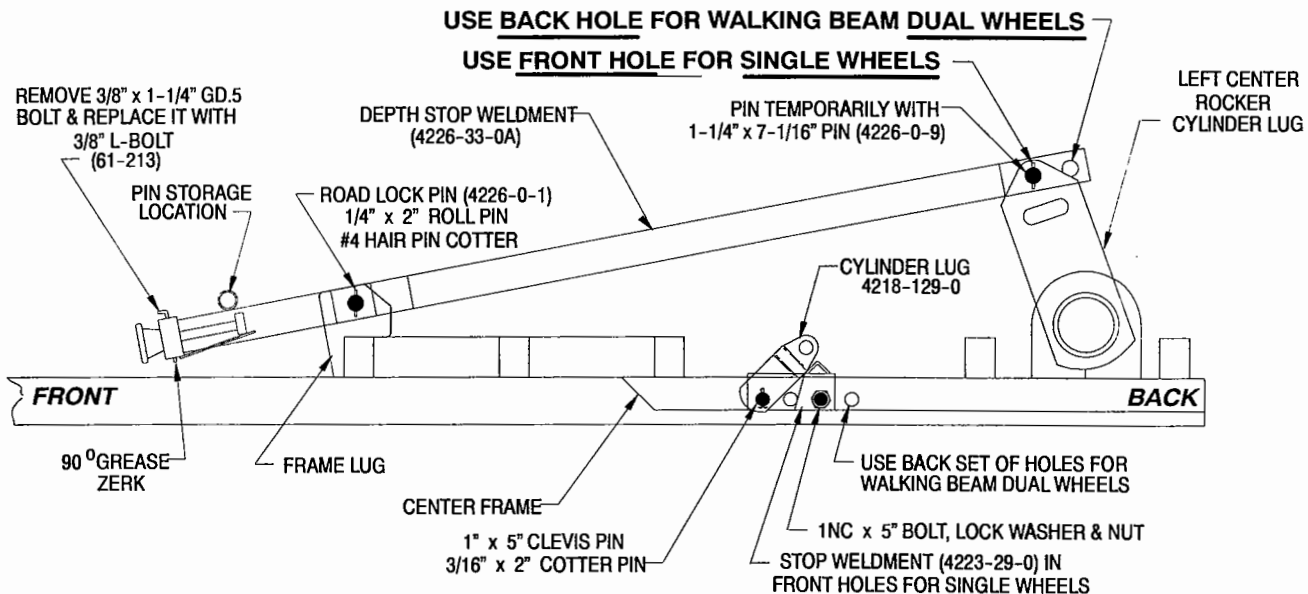
- Fasten the STOP WELDMENT (4223-29-0) and the CYLINDER LUG (4218-129-0) with a 1NC x 5" Bolt and a 1" x 5" Clevis Pin.

NOTE: The Stop Weldment (4223-29-0) is assembled in the front set of holes for single wheels and in the back set of holes for walking beam dual wheels.

- Temporarily pin the back end of the DEPTH STOP WELDMENT (4226-33-0A) to the center rocker cylinder lug with a 1-1/4" x 7-1/16" PIN (4226-0-9).

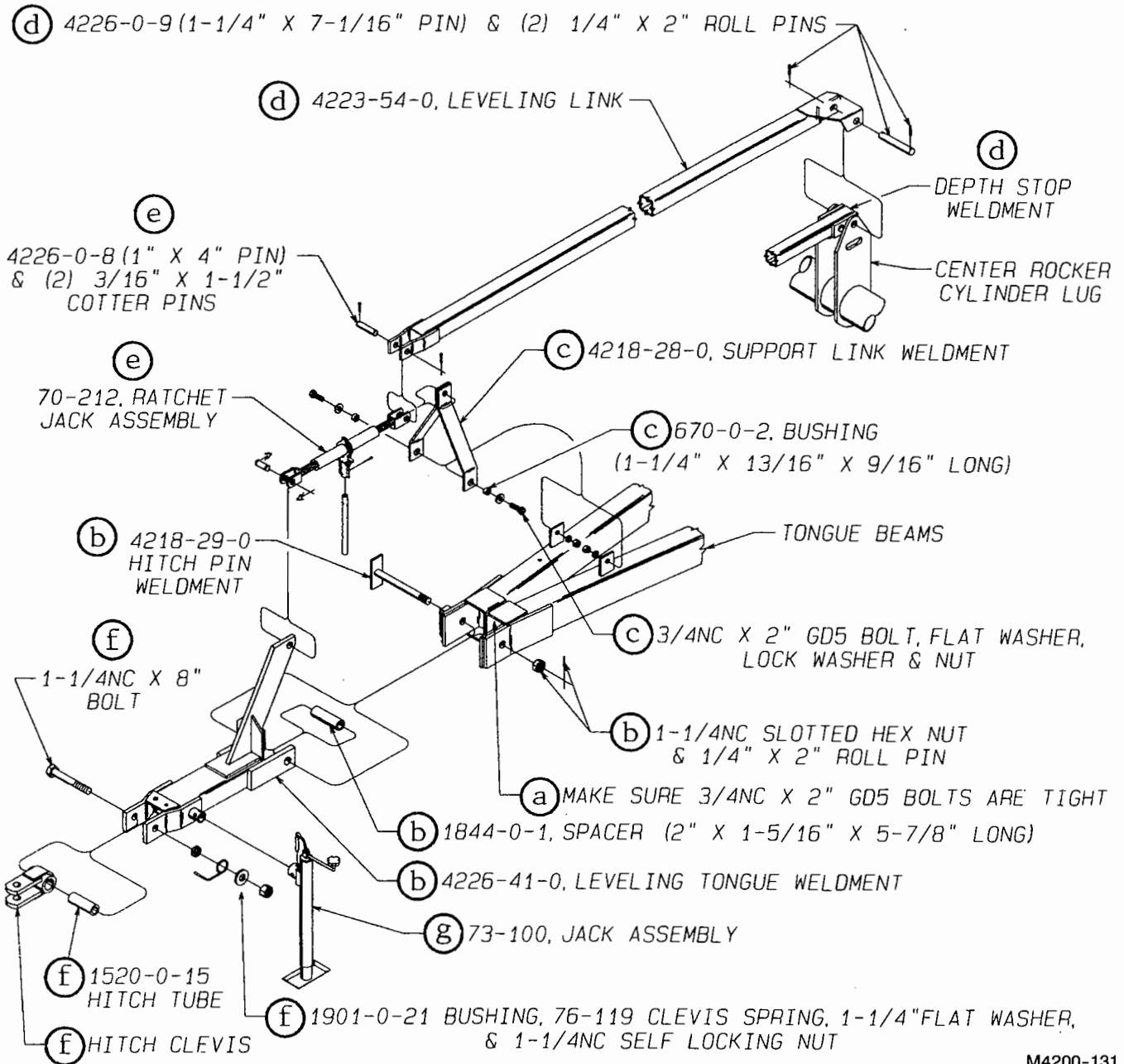
NOTE: The front holes is for single wheels and the back hole is for walking beam dual wheels.

- Insert the ROAD LOCK PIN (4226-0-1) through the DEPTH STOP WELDMENT and the front frame lug and retain it with a 1/4" x 2" Roll Pin and a #4 Hair Pin Cotter.



M4200-138
Rev.1/97

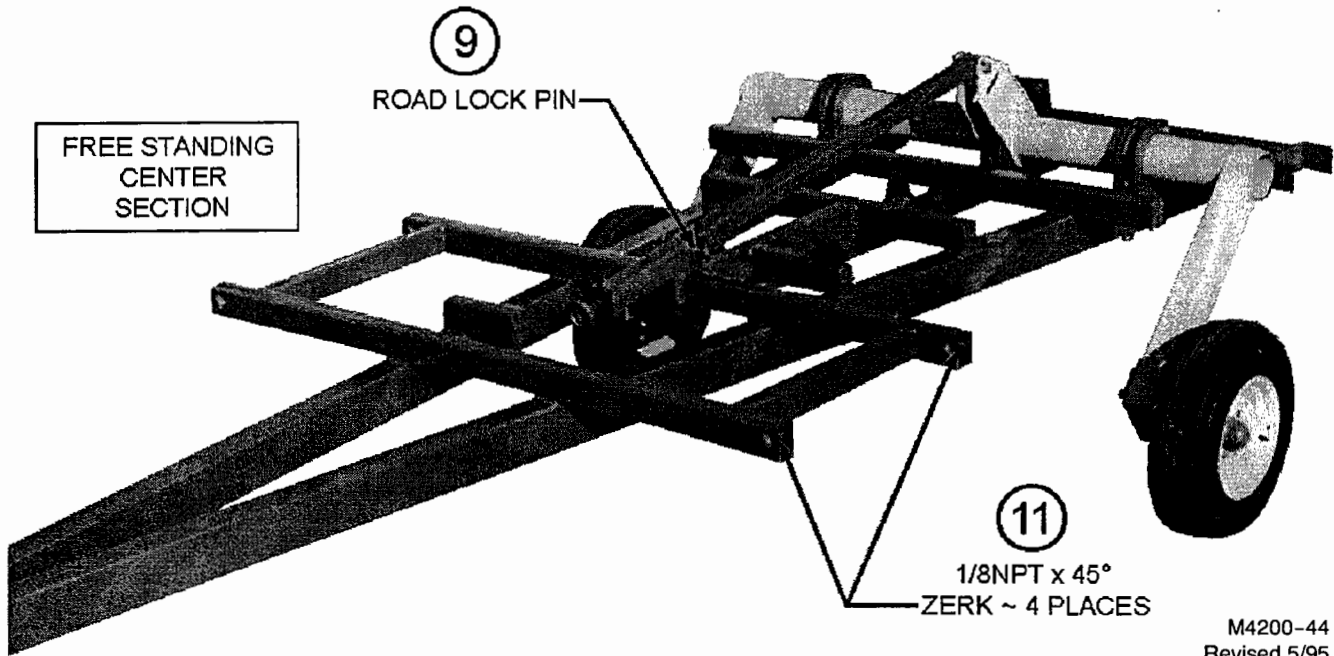
9. SELF-LEVELING TONGUE



M4200-131

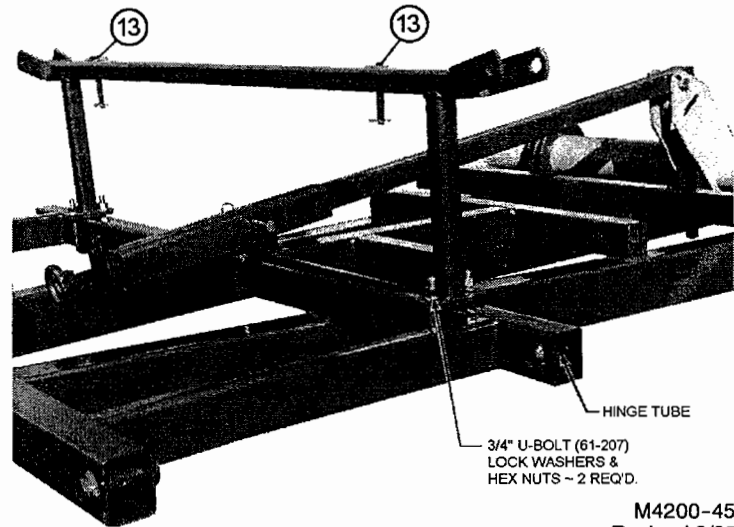
- a. Make sure preassembled hitch bolts are tight.
- b. Assemble LEVELING TONGUE WELDMENT to HITCH PLATES.
- c. Fasten SUPPORT LINK WELDMENT to TONGUE BEAMS.
- d. Pin DEPTH STOP WELDMENT and LEVELING LINK to CENTER ROCKER CYLINDER LUG.
- e. Assemble RATCHET JACK to LEVELING LINK, SUPPORT LINK, and LEVELING TONGUE WELDMENT.
- f. Attach HITCH CLEVIS to LEVELING TONGUE WELDMENT.
- g. Pin JACK to LEVELING TONGUE WELDMENT.

10. After the ROAD LOCK PIN has been properly installed, and all bolts have been tightened, the stands can be removed and the center should be "free standing".



M4200-44
Revised 5/95

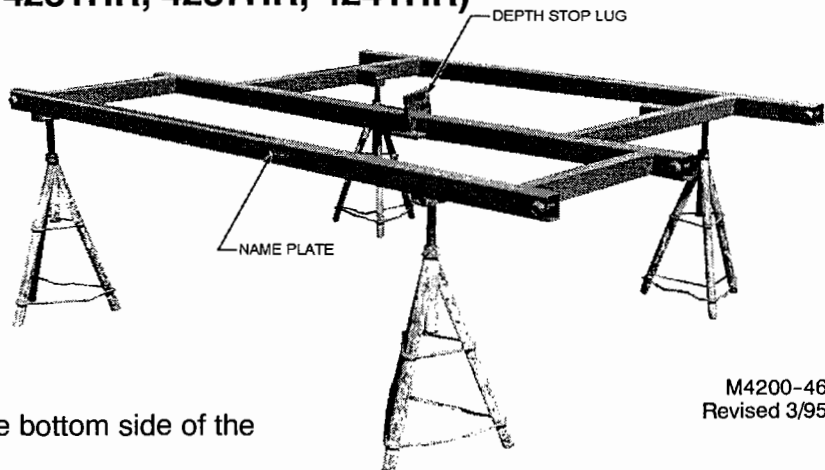
11. Assemble the SMV LAMP BRACKET (74-144) to the mounting strap which is welded to the rear frame tube with a 7/16NC x 1" Carriage Bolt, Lock Washer and Hex Nut.
12. Screw in FOUR 1/8NPT x 45° zerks at the front hinge locations.
13. Position the Wing Lock so that it is centered between the hinge tubes. Fasten it in place with 3/4" U-Bolts (61-207), Lock Washers and Hex Nuts.
14. Fasten the TWO WING LOCK PINS (1505-0-5) in the storage holes with #3 Hair Pin Cotters.



M4200-45
Revised 3/95

II. CENTER FRAME, TONGUE, ROCKER, ROAD LOCK & WING LOCK (FOR MODELS 4226HR, 4231HR, 4237HR, 4241HR)

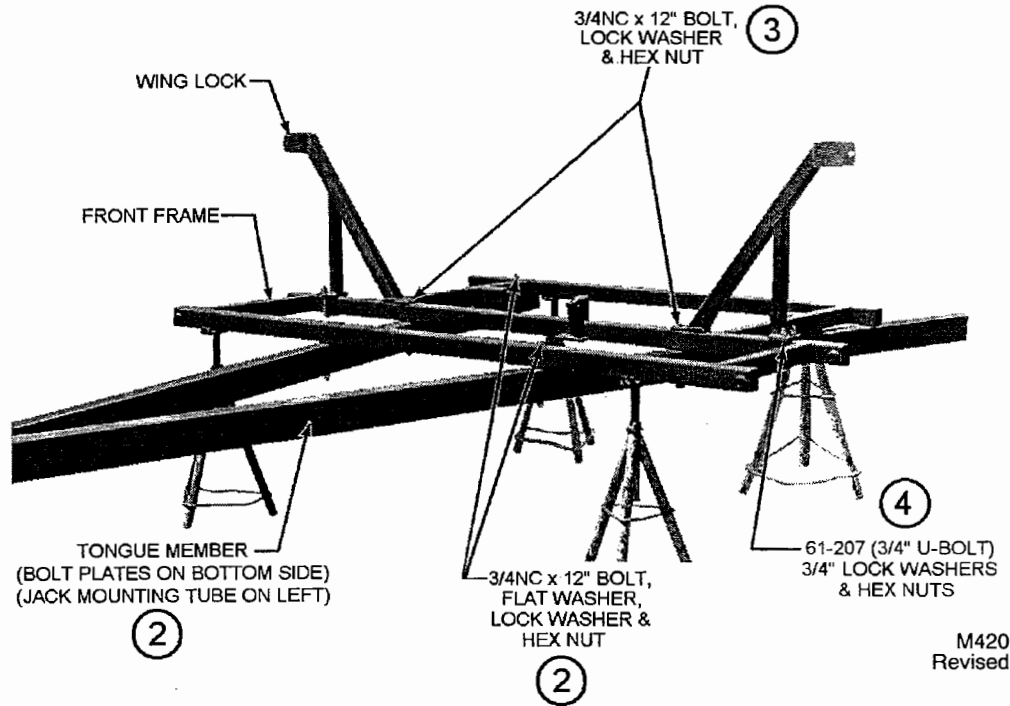
1. Position front frame on stands approximately 30" high with the name plate to the front and the depth stop lug on top.
2. Attach the left and right tongue members to the front and rear beams with 3/4NC x 12" Bolts, Flat Washers, Lock Washers and Hex Nuts.



M4200-46
Revised 3/95

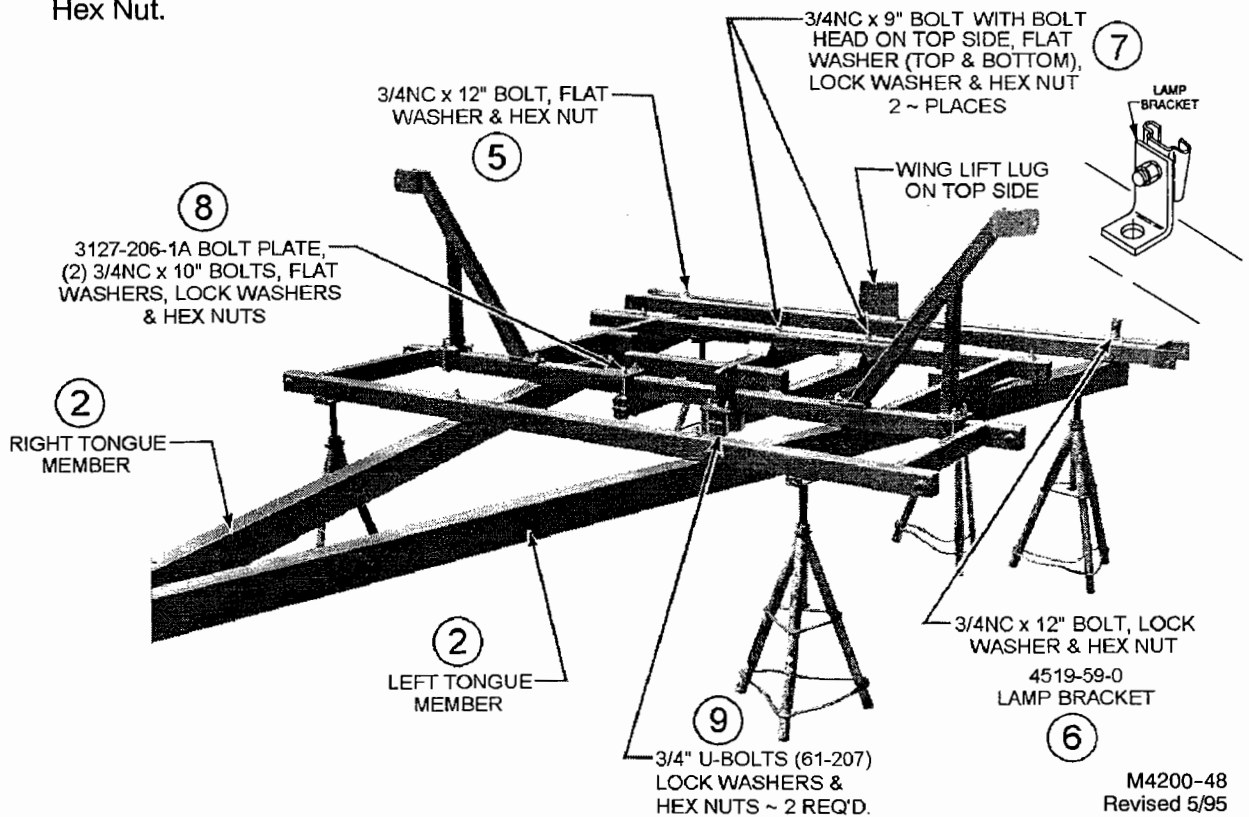
NOTE: Bolt plates are on the bottom side of the tongue members.

3. Fasten the tongue members, frame, and wing locks together with 3/4NC x 12" Bolts, Lock Washers and Hex Nuts.
 4. Fasten the outer end of each wing lock with a 3/4 U-Bolt (61-207), Lock Washer and Hex Nuts.
- NOTE: DO NOT TIGHTEN BOLT UNTIL STEP 9 HAS BEEN COMPLETED.



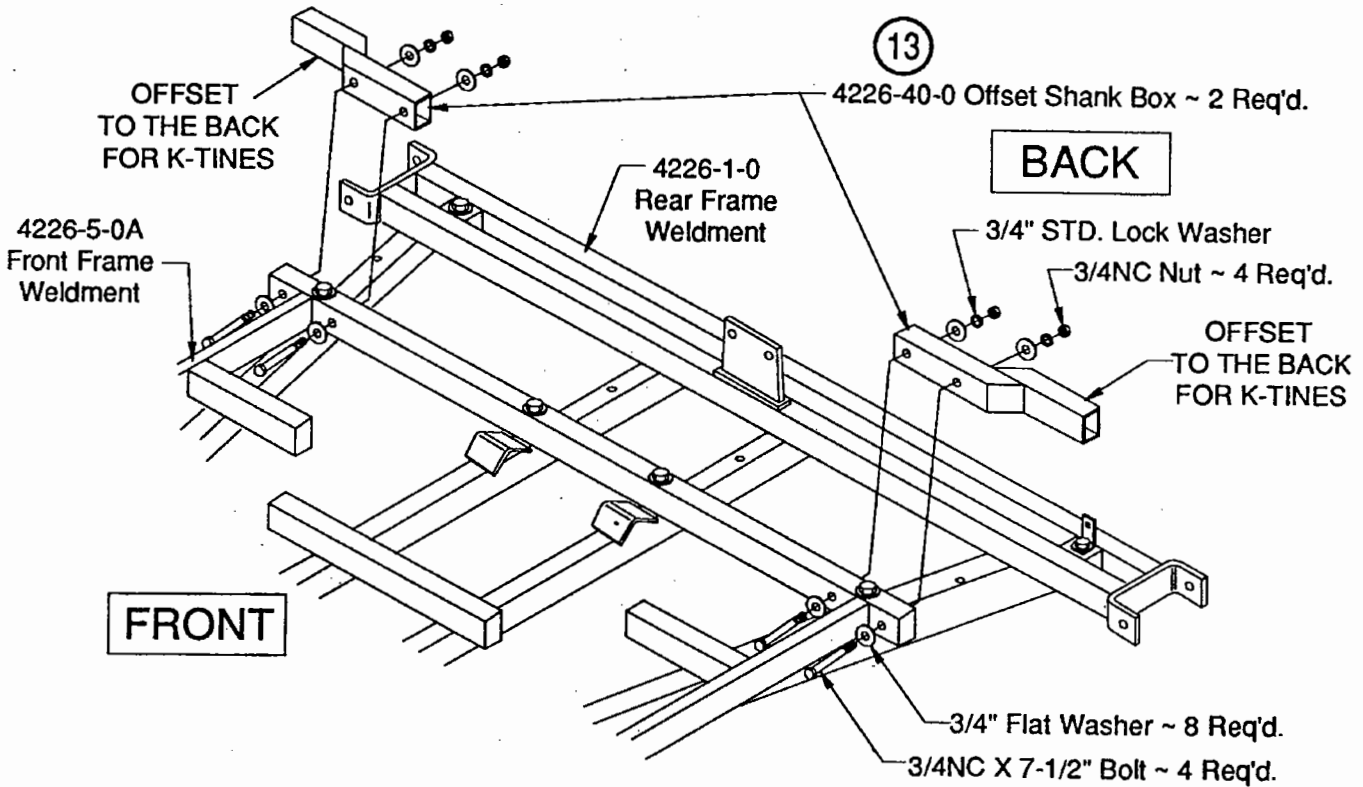
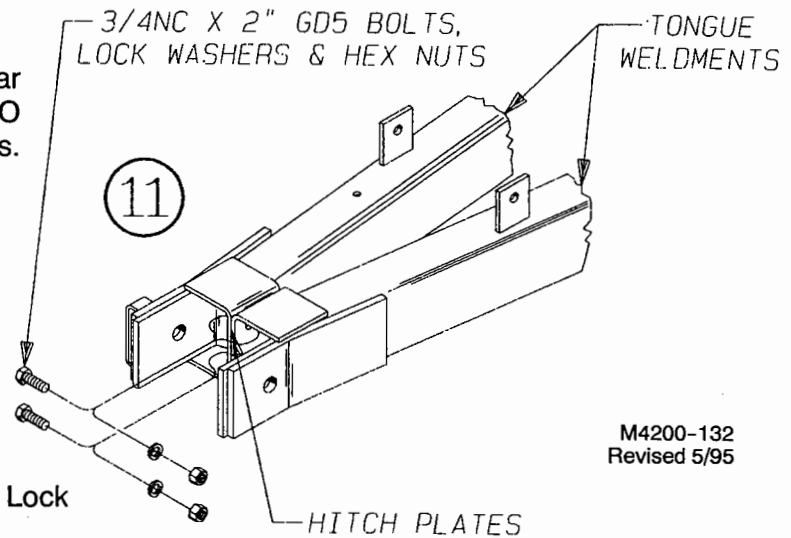
M4200-47
Revised 5/95

5. Slide the rear frame in from the back until it is resting on top of the tongue members. Fasten the right side to the tongue with a 3/4NC x 12" Bolt, Flat washer, Lock Washer and Hex Nut.
6. Fasten a LAMP BRACKET (4515-59-0) to the LEFT SIDE 3/4NC x 12" Bolt, Lock Washer and Hex Nut.

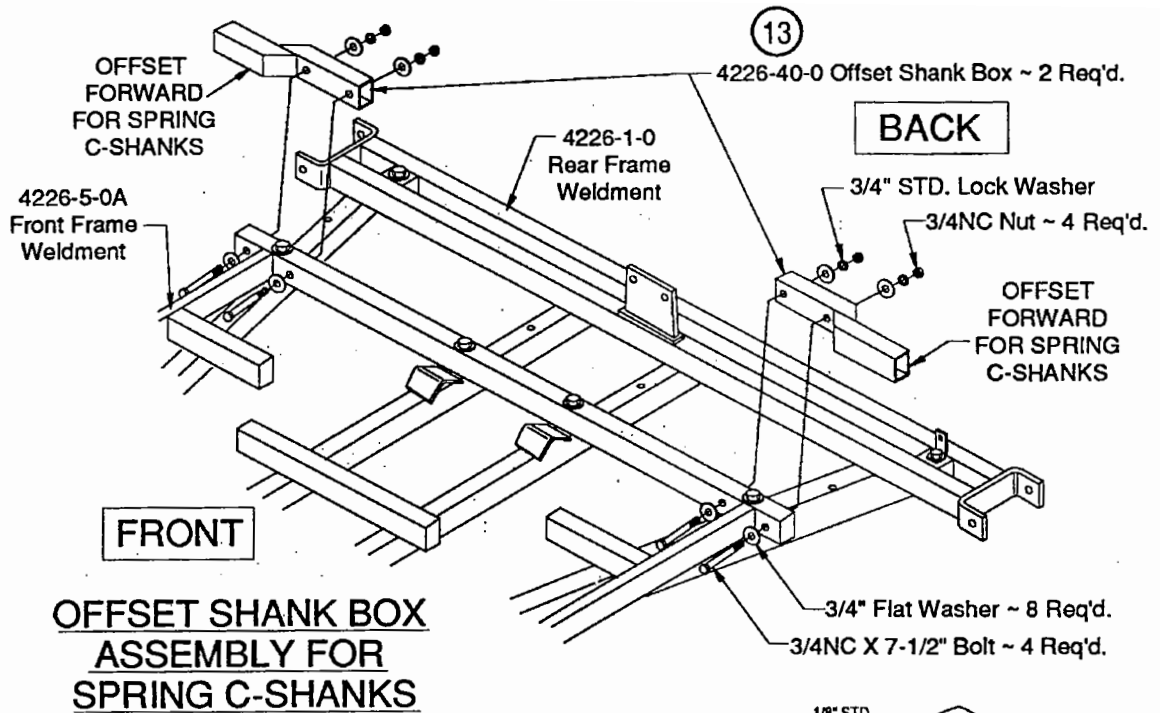


M4200-48
Revised 5/95

7. Assemble the rear frame to the front frame at TWO locations with a 3/4NC x 9" Bolts, TWO Flat Washers (top and bottom), Lock Washers and Hex Nuts.
8. Fasten the front end of the rear frame on the left side with TWO 3/4NC x 10" Bolts Flat Washers. Lock Washers and Hex Nuts.
9. Fasten the front end of the rear frame on the right side with TWO 3/4" U-Bolts (61-207), Lock Washers and Hex Nuts.
10. Tighten all frame bolts.
11. Bolt Hitch Plates together using 3/4NC x 2" GD. 5 Bolts, Lock Washers and Hex Nuts.
12. Fasten each offset shank box to the back side of the front frame weldment as shown. NOTE: The shank box is offset to the back for K-Tines and to the front for Spring C-Shanks.

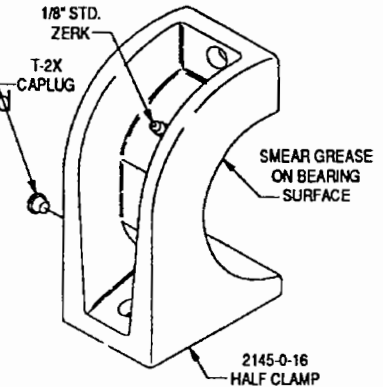


OFFSET SHANK BOX ASSEMBLY FOR K-TINES



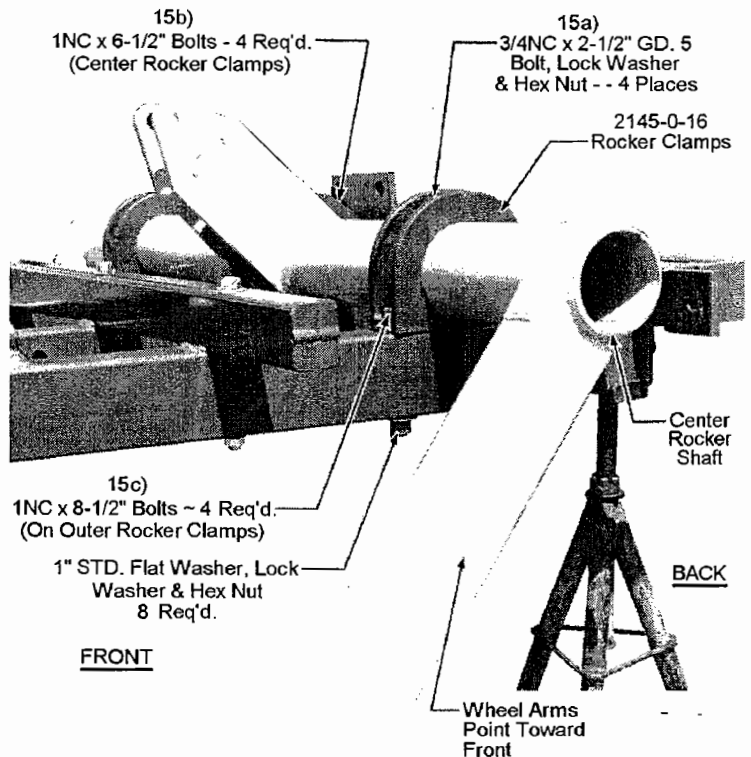
**OFFSET SHANK BOX
ASSEMBLY FOR
SPRING C-SHANKS**

13. EIGHT cast HALF CLAMPS (2145-0-16) will be needed to assemble the center rocker.
- Screw in 1/8" STD. Zerks in upper threaded holes.
 - Insert T-2X Caplugs into the lower side holes.
 - Smear grease on bearing surface.



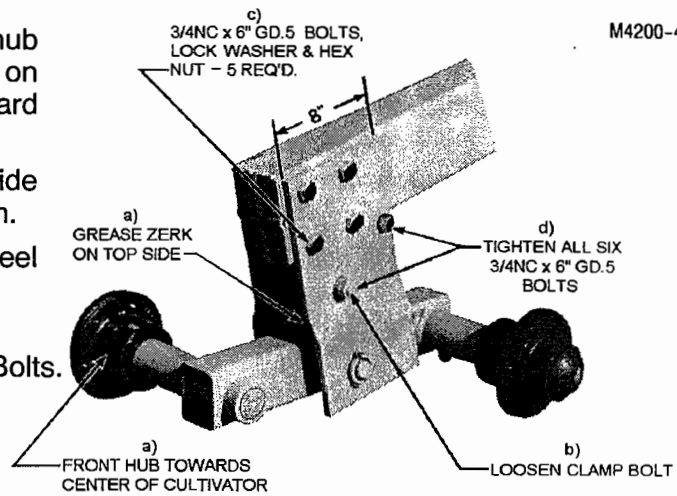
14. ROCKER CLAMPS

- Assemble rocker clamp castings together with 3/4NC x 2-1/2" GRADE 5 Bolts, Lock Washers and Hex Nuts.
- Fasten the center rocker clamps to the frame with 1NC x 6-1/2" Bolts.
- Fasten the outer rocker clamps with 1NC x 8-1/2" Bolts.

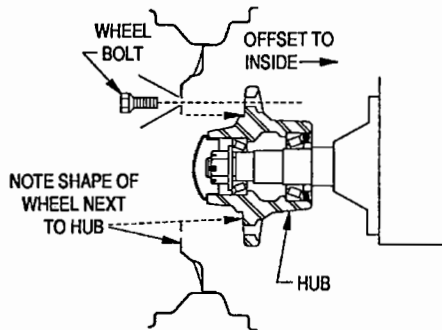


15. CENTER WALKING BEAM DUAL HUB ASSEMBLY (STANDARD ON MODELS 4226, 4231, 4237 & 4241 CENTER ROCKER)

- Locate the walking beam hub assembly so that the grease zerk is on the top side and the front hub is toward the center of the cultivator.
- Loosen the clamp bolt so that the side plates can slide onto the wheel arm.
- Fasten the walking beam to the wheel arm with FOUR 3/4NC x 6" GD.5 Bolts, Lock Washer and Hex Nut.
- Tighten all FIVE 3/4NC x 6" GD.5 Bolts.



M4200-43

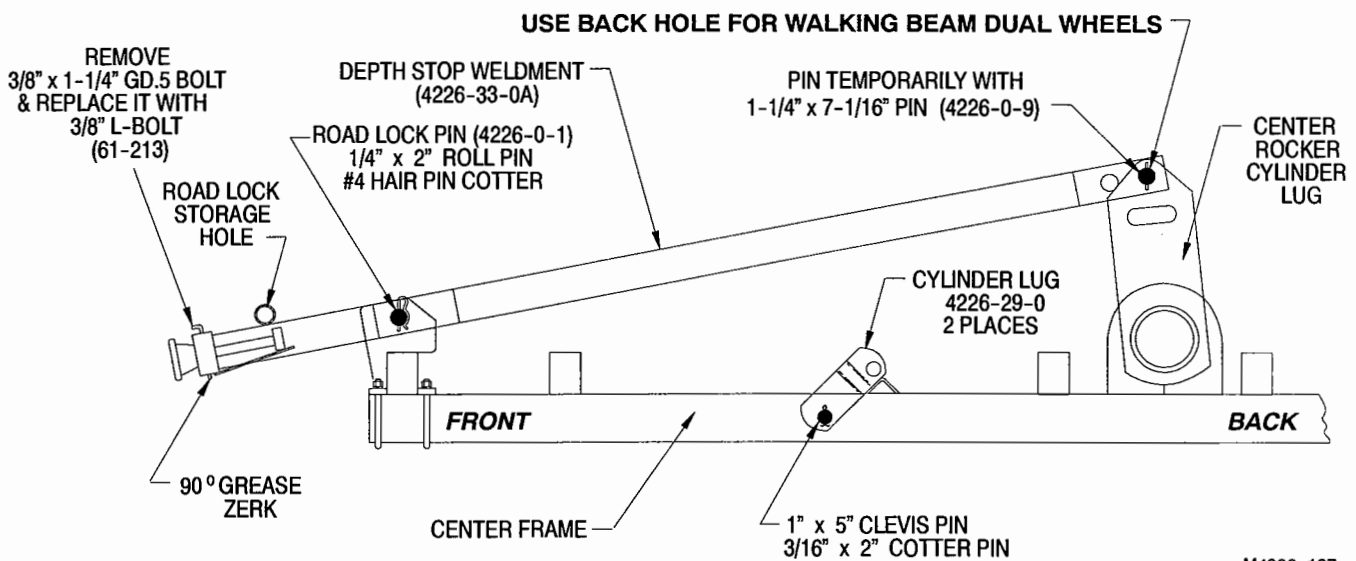


- Remove the WHEEL BOLTS from the hubs and attach the WHEEL & TIRE ASSEMBLIES to the hubs. TORQUE ALL WHEEL BOLTS FROM 90 TO 95 FOOT POUNDS.

NOTE: See placement pages at back of this book for correct tire size and wing wheels.

17. CYLINDER LUG & ROAD LOCK ASSEMBLY (MODELS 4226, 4231, 4237 & 4241)

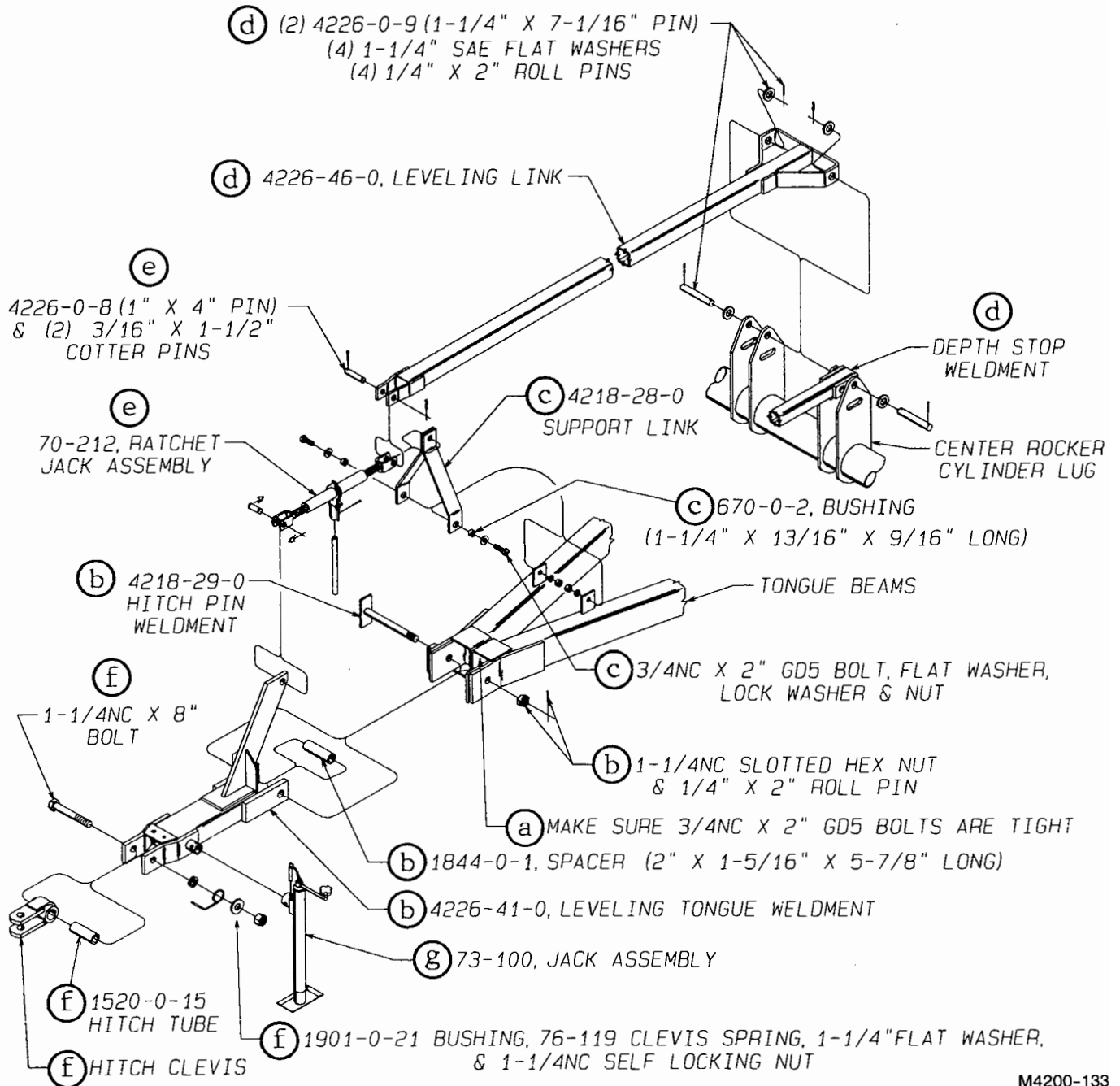
- Fasten both CYLINDER LUGS (4226-29-0) to the frame with 1" x 5" Clevis Pins and 3/16" x 2" Cotter Pins.
- Temporarily pin the back end of the DEPTH STOP WELDMENT (4226-33-0A) to the LEFT CENTER ROCKER cylinder lug with a 1-1/4" x 7-1/16" PIN (4226-0-9).



M4200-137
Rev.1/97

- Insert the ROAD LOCK PIN (4226-0-1) through the depth stop weldment and the front frame lug and retain it with a 1/4" x 2" Roll Pin & #4 Hair Pin Cotter.

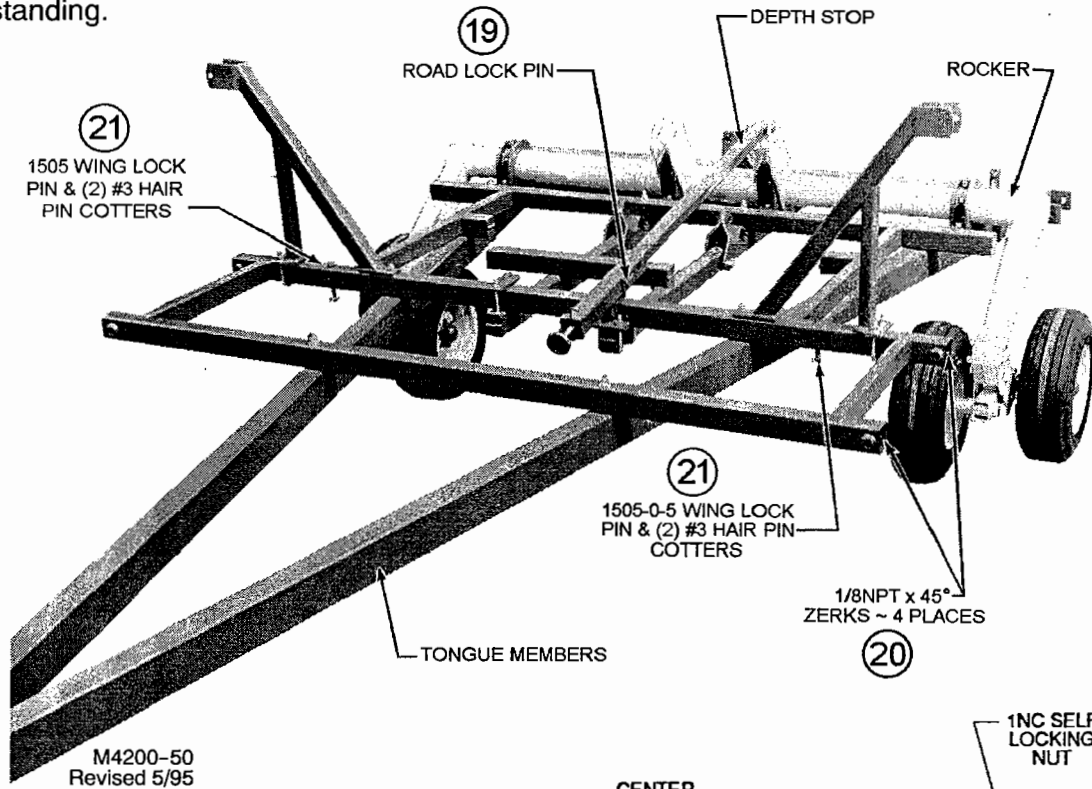
18. SELF-LEVELING TONGUE ASSEMBLY



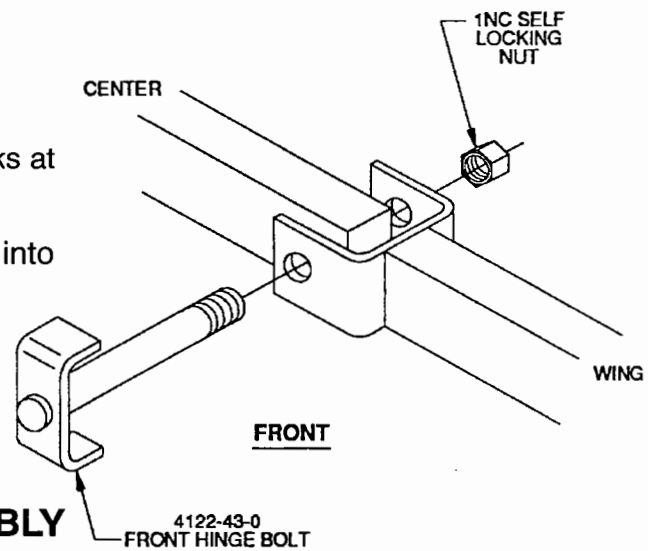
M4200-133

- a. Make sure preassembled hitch bolts are tight.
- b. Assemble LEVELING TONGUE WELDMENT to HITCH PLATES.
- c. Fasten SUPPORT LINK WELDMENT to TONGUE BEAMS.
- d. Pin DEPTH STOP WELDMENT and LEVELING LINK to CENTER ROCKER CYLINDER LUGS.
- e. Assemble RATCHET JACK to LEVELING LINK, SUPPORT LINK, and LEVELING TONGUE WELDMENT.
- f. Attach HITCH CLEVIS to LEVELING TONGUE WELDMENT.

19. After the Road Lock Pin has been properly installed, all bolts have been tightened, and the tongue jack is in place, the stands can be removed and the center frame should be free standing.

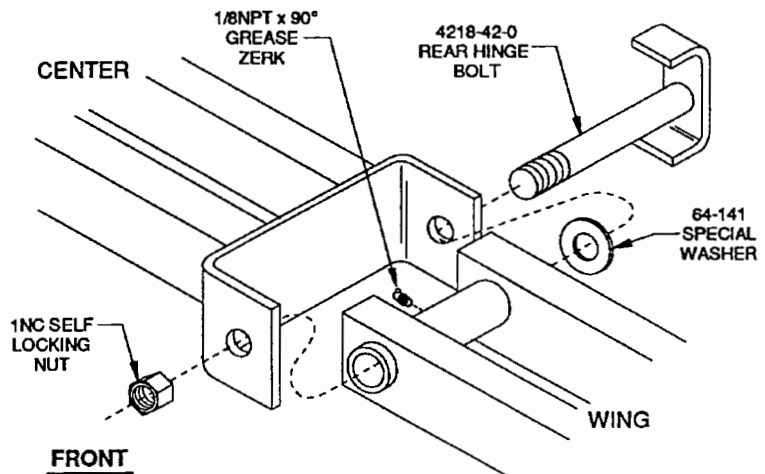


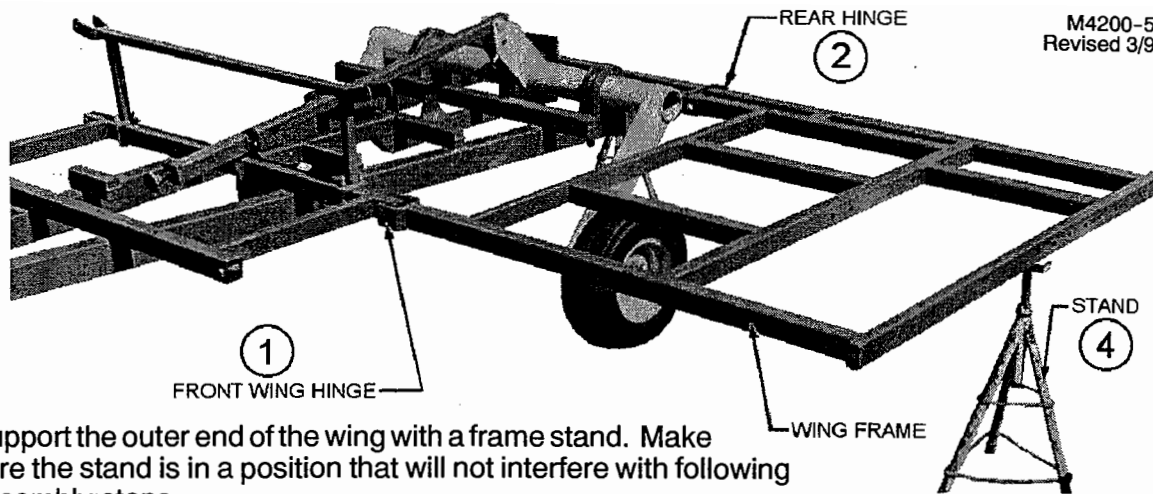
20. Screw in FOUR 1/8NPT x 45 degree zerks at the front hinge locations.
21. Assemble WING LOCK PINS (1505-0-5) into the storage holes below the wing locks and retain it with TWO #3 Hair Pin Cotter.



III. WING FRAME & ROCKER ASSEMBLY

1. Attach the center wing hinge to the center frame with a HINGE BOLT (4122-43-0) and a 1NC Self Locking Nut.
2. Use HINGE BOLT (4218-42-0), SPECIAL WASHER (64-141), and a 1NC Self Locking Nut to fasten the rear wing hinge to the center frame.
3. Screw a 1/8NPT x 90 degree zerk into the rear hinge as shown.

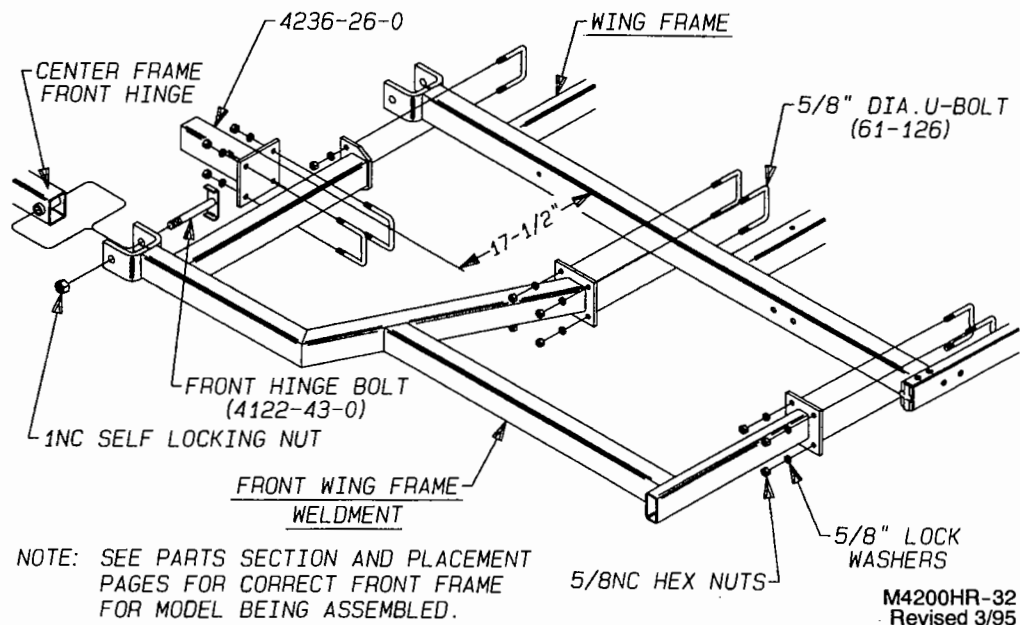




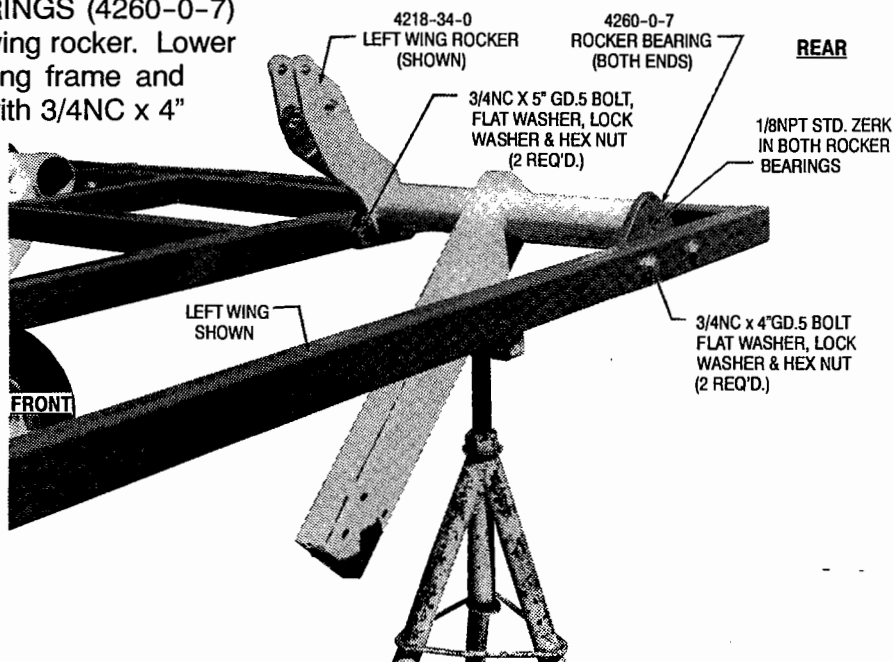
4. Support the outer end of the wing with a frame stand. Make sure the stand is in a position that will not interfere with following assembly steps.

5. **WING FRAME (ALL MODELS)**

Fasten the wing brace from the front center frame hinge to the wing frame as shown.

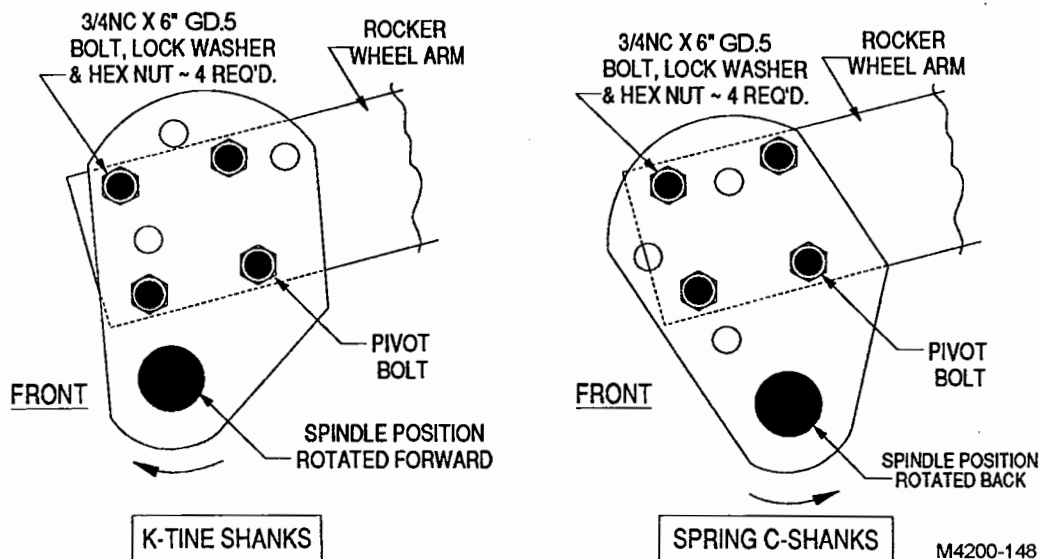


6. Insert **ROCKER BEARINGS (4260-0-7)** into both ends of the wing rocker. Lower the rocker into the wing frame and fasten the outer end with 3/4NC x 4" GD.5 bolts. Fasten the inside end with 3/4NC x 5" GD.5 bolts. Screw a 1/8NPT STD. Zerk into the rocker bearing castings.



7. SINGLE HUB ASSEMBLY (STANDARD ON 4218, 4223 & 4226 WINGS)

There are TWO different single wheel hub positions depending on the type of shank used.



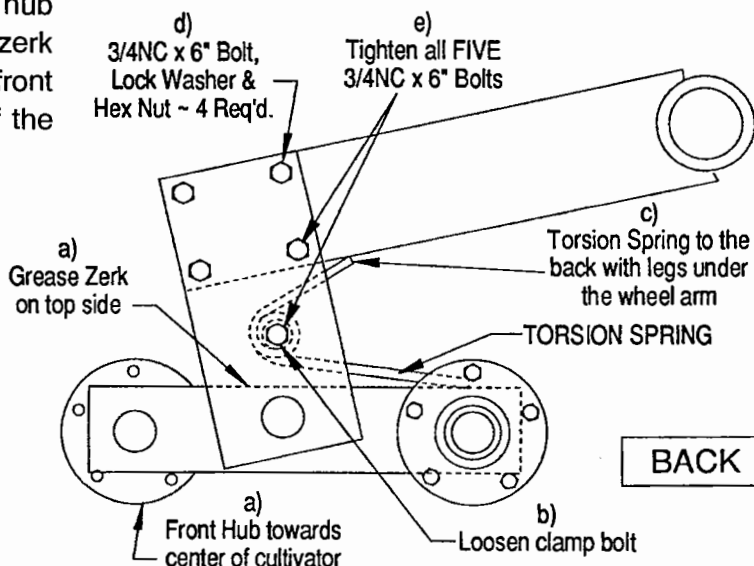
8. WING WALKING BEAM DUAL HUB ASSEMBLY (STANDARD ON 4231, 4236, 4241 WINGS / OPTIONAL ON 4218, 4223 & 4226 WINGS)

a. Locate walking beam hub assembly so that the grease zerk is on the top side and the front hub is toward the center of the cultivator.

b. Loosen the clamp bolt so that the side plates can slide onto the wheel arm.

c. Position the torsion spring toward the back with the legs under the wheel arm.

d. Fasten the walking beam to the wheel arm with FOUR 3/4NC x 6" GD.5 Bolts, Lock Washers and Hex Nuts.

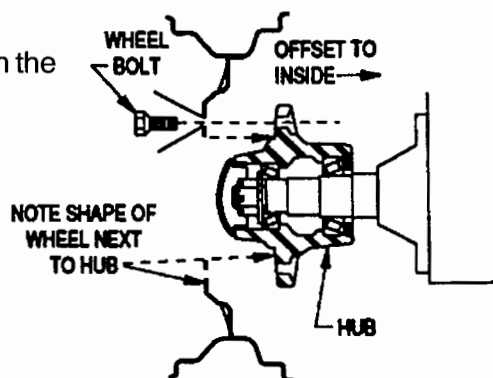


e. Tighten all FIVE 3/4NC x 6" GD.5 bolts.

9. Remove the WHEEL BOLTS from the hubs and attach the WHEEL & TIRE ASSEMBLIES to the hubs.

TORQUE ALL WHEEL BOLTS FROM 90 TO 95 FOOT POUNDS.

NOTE: Models 4218HR & 4223HR with Center Single tires use: 11L x 15, 8-Ply with 44 P.S.I. pressure. All other Models use 9.5L x 15, 8-Ply tires with 44 P.S.I. pressure at all locations.

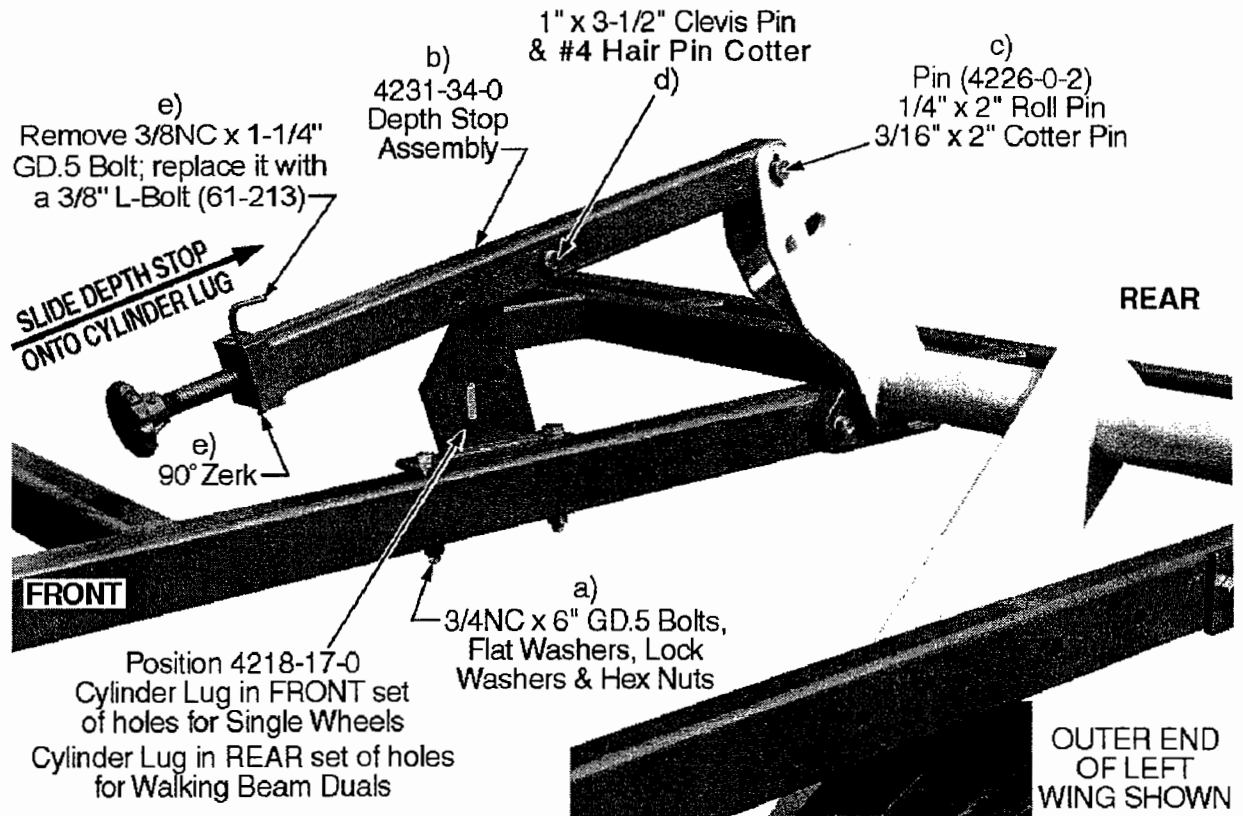


10. DEPTH STOP ASSEMBLY

- a. Attach the wing CYLINDER LUG to the frame with 3/4NC x 6" **GRADE 5** Bolts.

NOTE: Position 4218-17-0 Cylinder lug in **front** set of holes for single wheels. Position 4218-17-0 Cylinder lug in **rear** set of holes for walking beam dual wheels.

- b. Slide the depth stop assembly onto the top of the cylinder lug and in between the lug plates on the wing rocker.

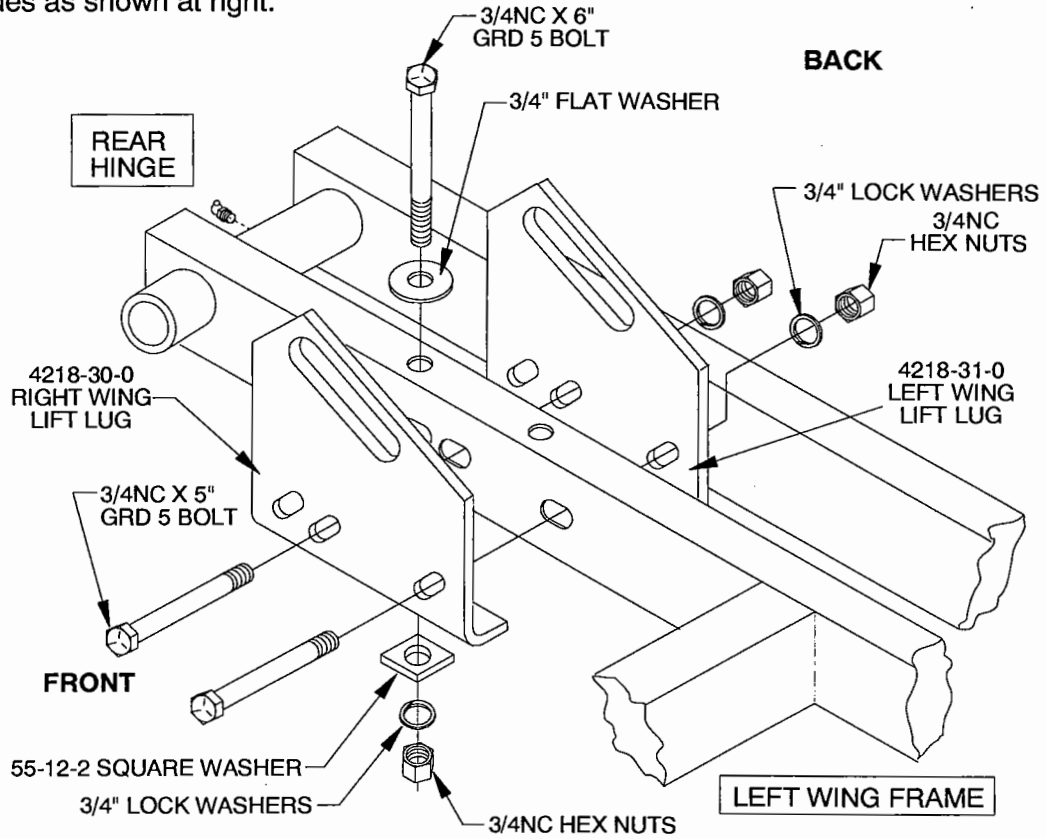


M4200-53
Rev. 9/99

- c. Pin the depth stop assembly to the rocker lug with a PIN (4226-0-2), a 1/4" x 2" Roll Pin, and a 3/16" x 2" Cotter Pin.
- d. Insert a 1" x 3-1/2" Clevis Pin through the depth stop assembly and retain it with a #4 Hair Pin Cotter.
- e. Remove the 3/8" x 1-1/4" GD.5 Bolt in the depth stop assembly and replace it with a 3/8" L-BOLT (61-213).

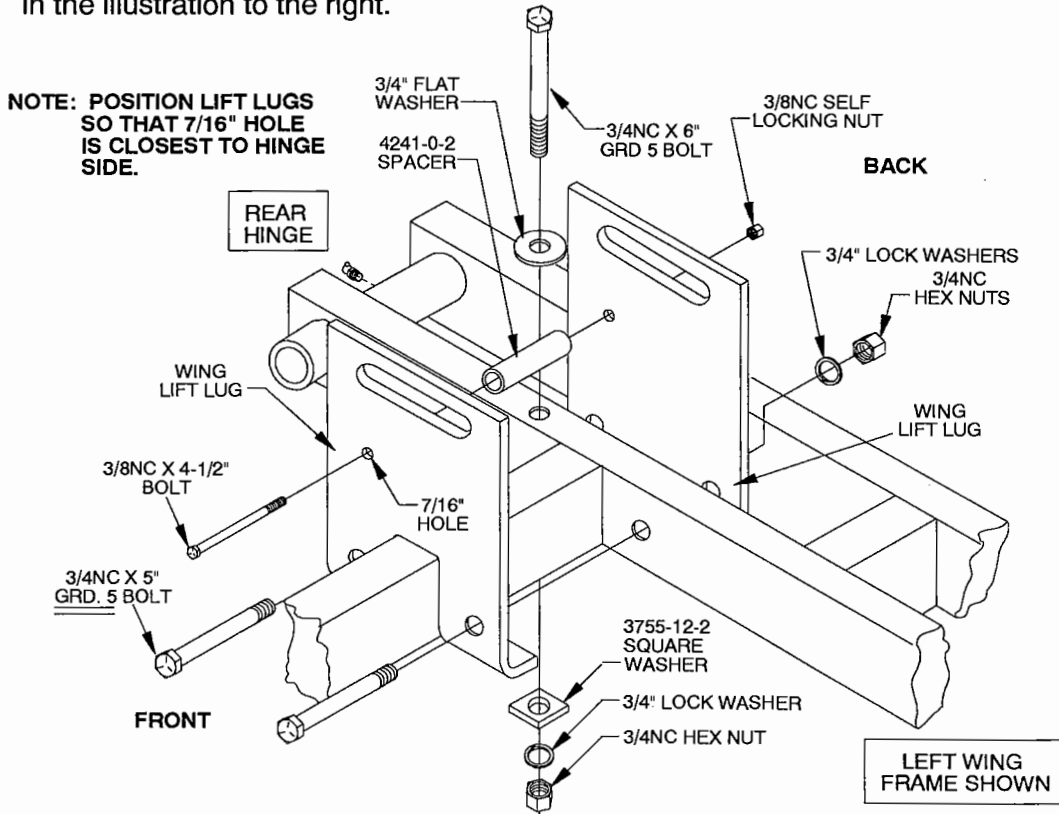
11. WING LIFT LUG ASSEMBLY

- a. MODELS 4218HR & 4223HR Use GRADE 5 Bolts to fasten the wing lift lugs to the wing frames as shown at right.

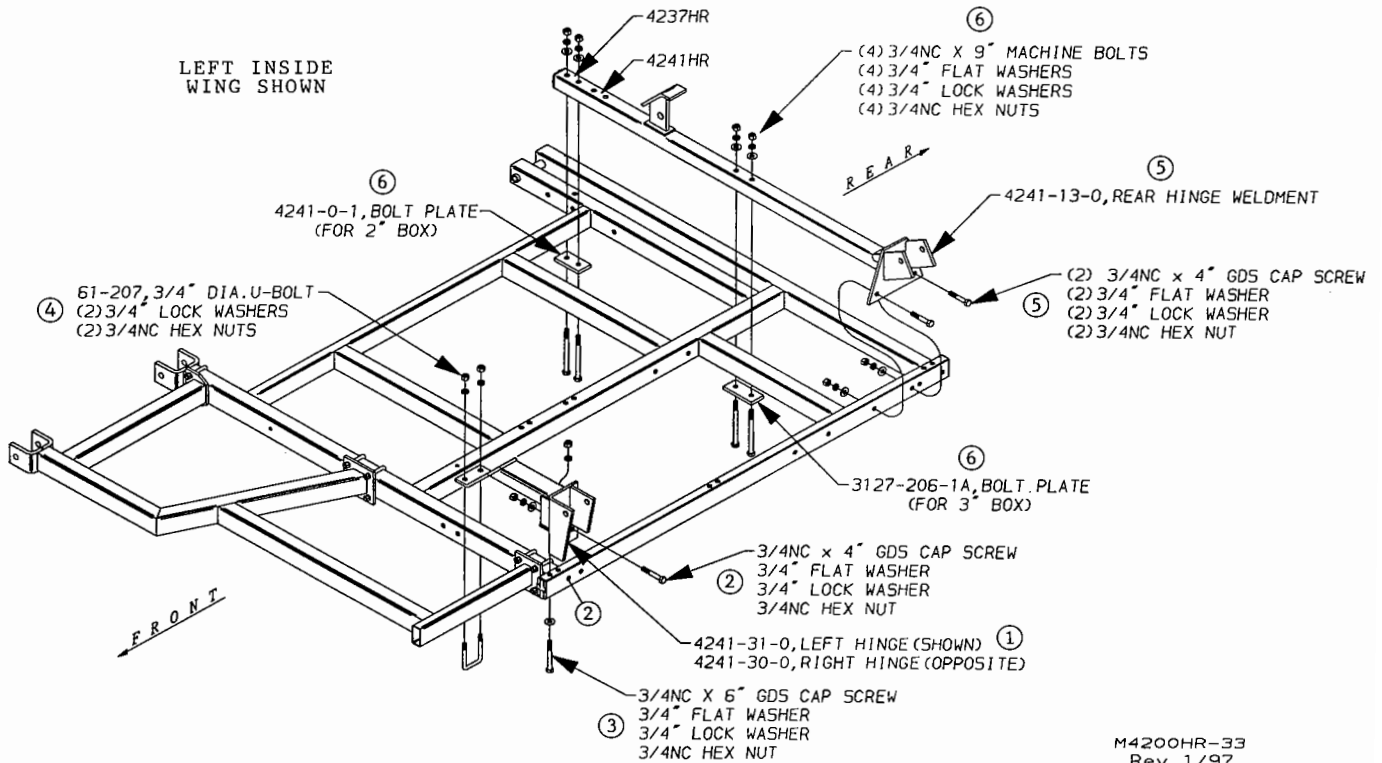


- b. MODELS 4226HR, 4231HR, 4237HR & 4241HR

Use 3/4NC GRADE 5 Bolts to fasten the wing lift lugs to the wing frames as shown in the illustration to the right.

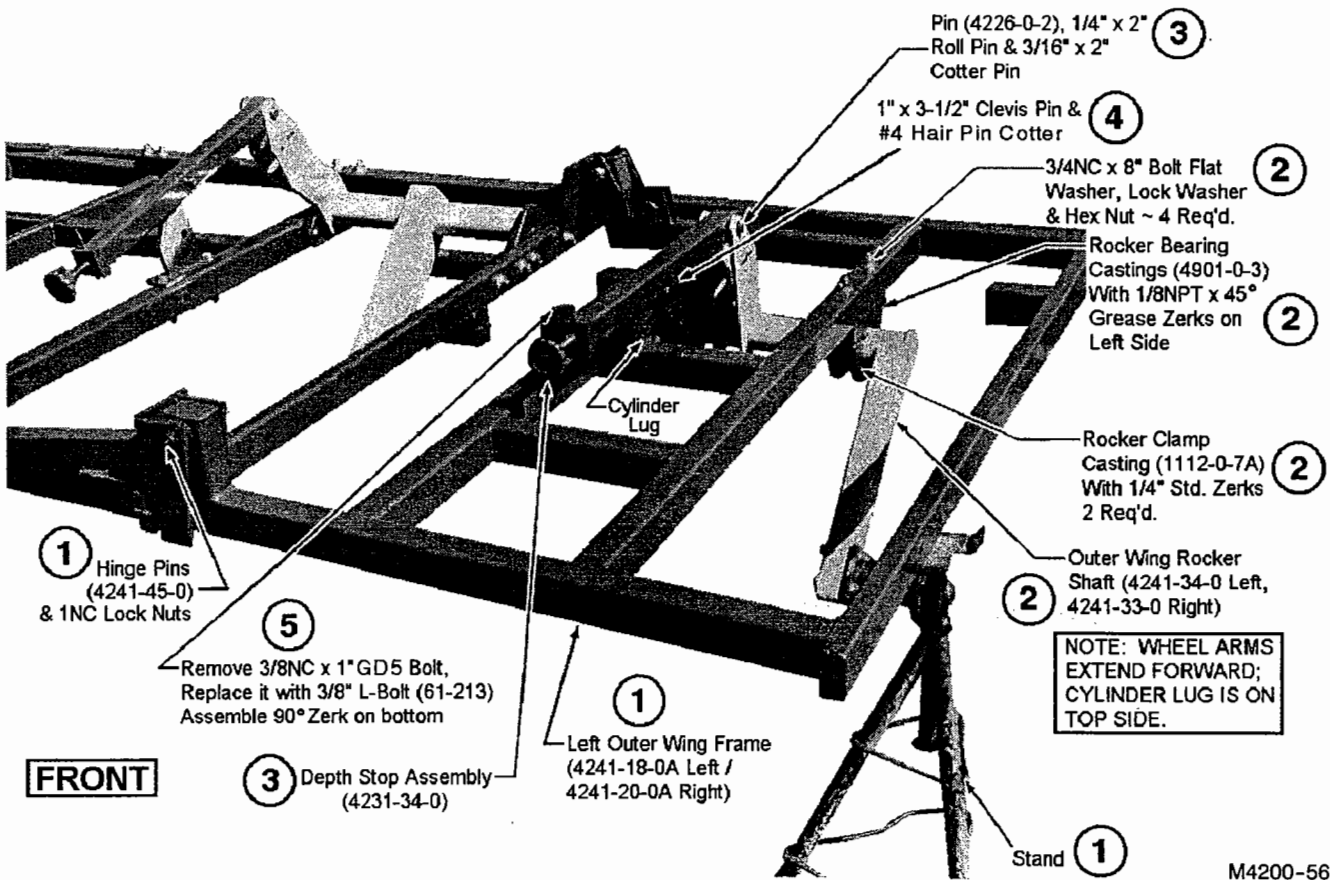


IV. MODEL 4237HR & 4241HR OUTER HINGE ASSEMBLY



1. Position the FRONT WING HINGE onto the frame.
2. Fasten the HINGE to the outer frame tube with a 3/4NC x 4" GD.5 Cap Screw, Flat Washer, Lock Washer and Hex Nut. (DO NOT TIGHTEN)
3. Assemble a 3/4NC x 6" GD.5 Cap Screw, Flat Washer, Lock Washer & Hex Nut vertically through the frame and HINGE WELDMENT.
4. Attach the inside end with a 61-207 (3/4" DIA. U-Bolt), Lock Washers and Hex Nuts.
5. Fasten the REAR HINGE to the outer frame box with (2) 3/4NC x 4" GD.5 Cap Screws, Flat Washers, Lock Washers and Hex Nuts.
6. Finish the REAR HINGE ASSEMBLY by clamping it with a 3127-206-1A BOLT PLATE, a 4241-0-1 BOLT PLATE, (4) 3/4NC X 9" Machine Bolts, Flat Washers, Lock Washers, and Hex Nuts.
7. Tighten all bolts.

V. MODEL 4237HR & 4241HR OUTER WING ASSEMBLY

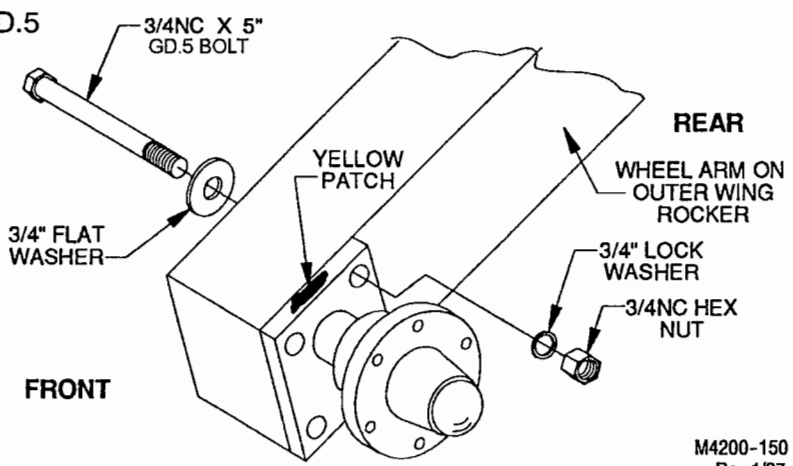


M4200-56
Rev.9/99

1. Attach the outer wing frame with HINGE PINS (4241-45-0) and 1NC Self Locking Nuts. Support the outer end of the frame with a stand.
2. Screw in 1/8NPT x 45° zerks into the ROCKER BEARING CASTINGS (4901-0-3). Screw in 1/4NPT STD. zerks into the ROCKER CLAMP CASTINGS (1112-0-7A). Attach the wing rocker to the frame with 3/4NC x 8" Bolts, Flat Washers, Lock Washers and Hex Nuts.
3. Slide the depth stop assembly onto the top of the cylinder lug and in between the lug plates on the rocker shaft. Fasten it in place with a PIN (4226-0-2), a 1/4" Roll Pin and a 3/16" x 2" Cotter Pin.
4. Insert a 1" x 3-1/2" Clevis Pin through the depth stop assembly and retain it with a #4 Hair Pin Cotter.

5. Remove the 3/8NC x 1-1/4" GD.5 Bolt in the depth stop assembly and replace it with a 3/8" L-BOLT (61-213).
6. Fasten HUB ASSEMBLY (1918-17-0) to outer wing wheel arm with 3/4NC x 5" GD.5 Bolt, Flat Washers, Lock Washers and Hex Nuts.

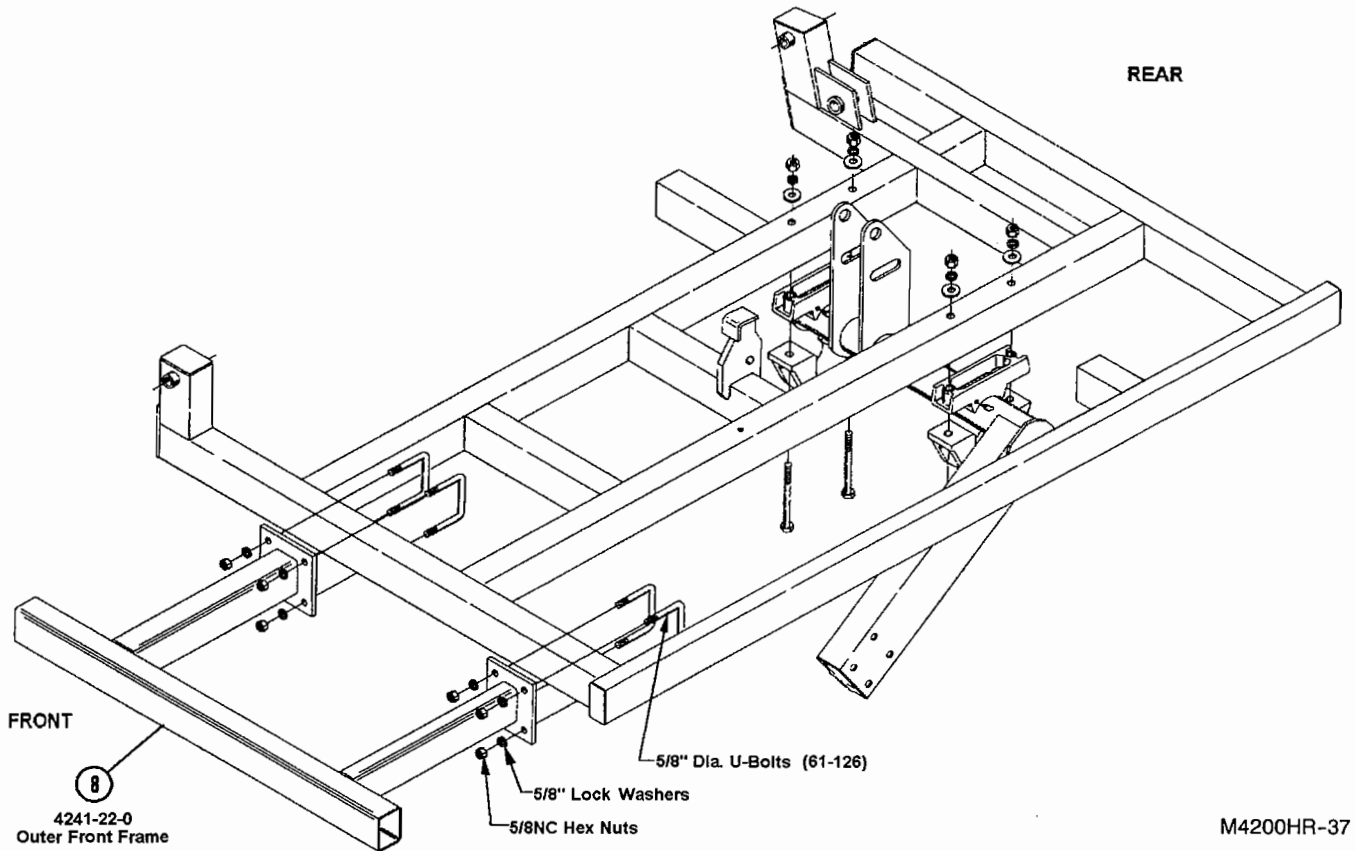
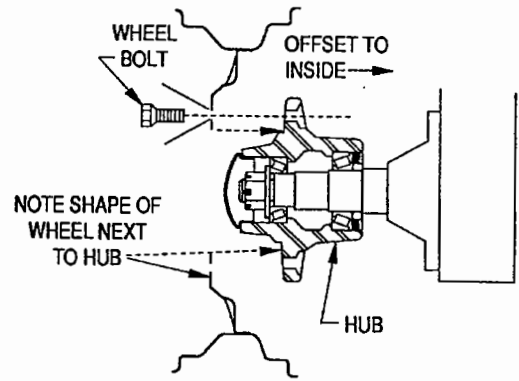
NOTE: YELLOW PATCH IS ON THE TOP SIDE OF THE WHEEL ARM.



M4200-150
Rev.1/97

7. Remove WHEEL BOLTS from the hubs and attach the WHEEL & TIRE ASSEMBLIES to the hubs.

TORQUE ALL WHEEL BOLTS FROM 90 TO 95 FOOT POUNDS.



M4200HR-37

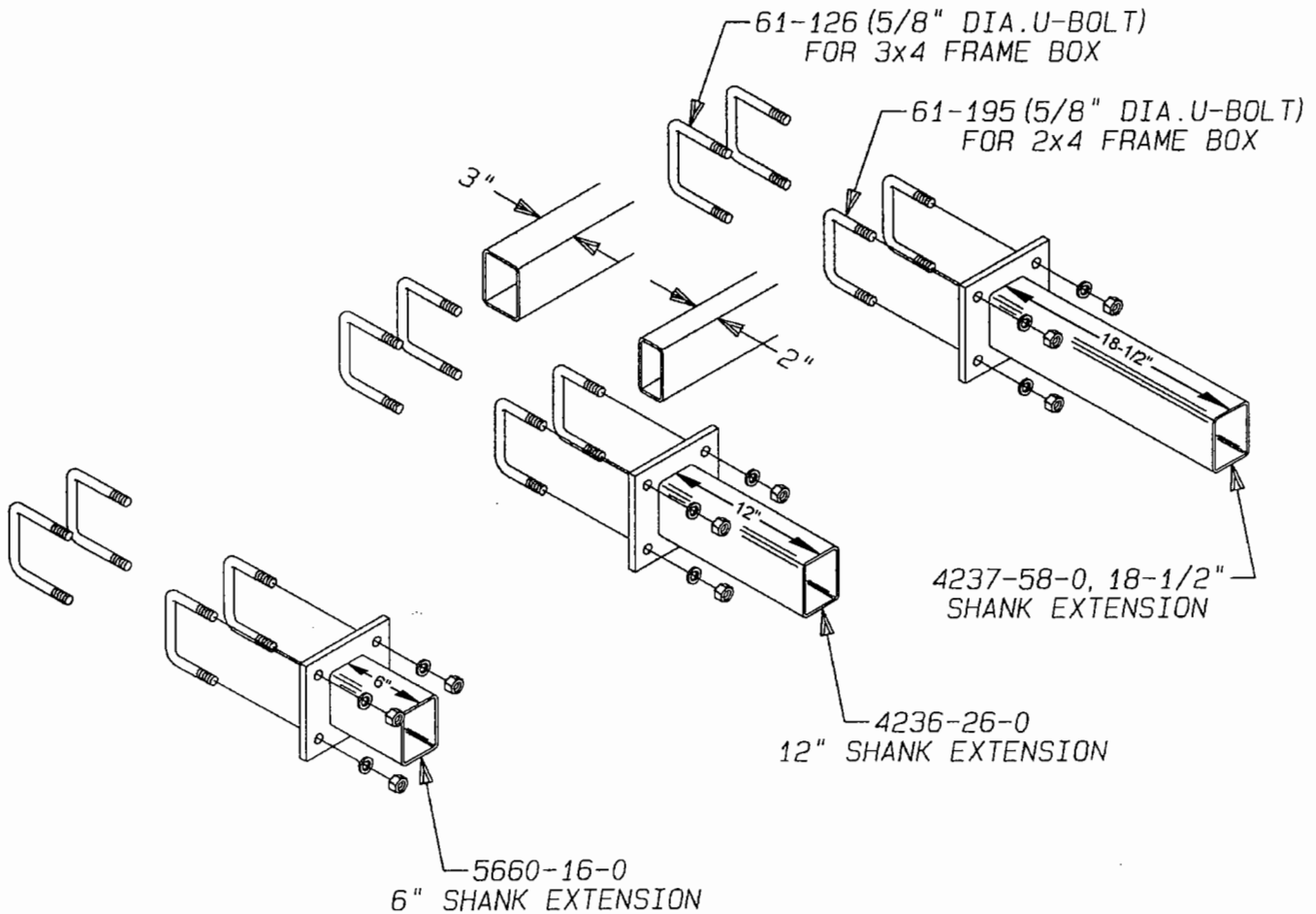
8. Assemble the FRONT FRAME (4241-22-0) to the front of the OUTER WING as shown. See the placement pages at the back of this book for correct location.

VI. SHANK EXTENSION ASSEMBLY (ALL MODELS)

U-Bolted SHANK EXTENSIONS are used as needed at various locations within the frame as well as for add-on extensions to the wings.

There are (3) different EXTENSIONS -- 6", 12" and 18-1/2".

There are (2) different U-Bolts -- for a 2 x 4 frame box, -- for a 3 x 4 frame box.

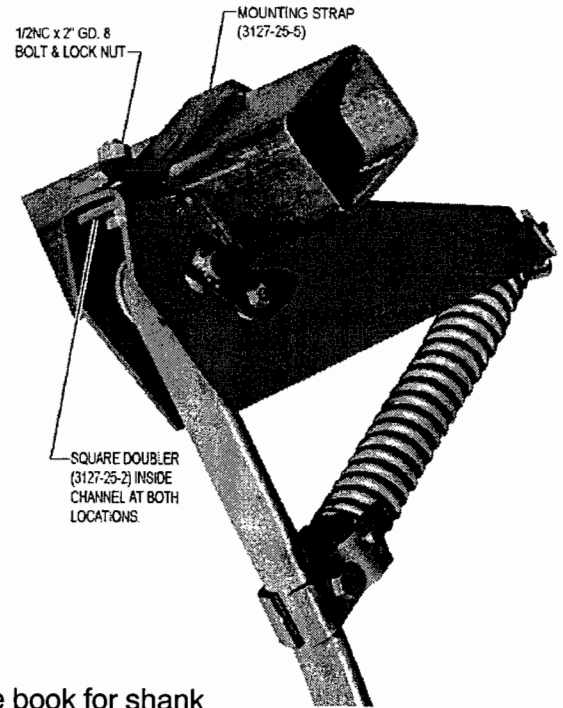


The shank placement pages at the back of this manual will show the locations for extensions. Determine the extension length and the U-Bolts required and assemble as shown in the placement drawing for your model.

VII. SHANK ASSEMBLY

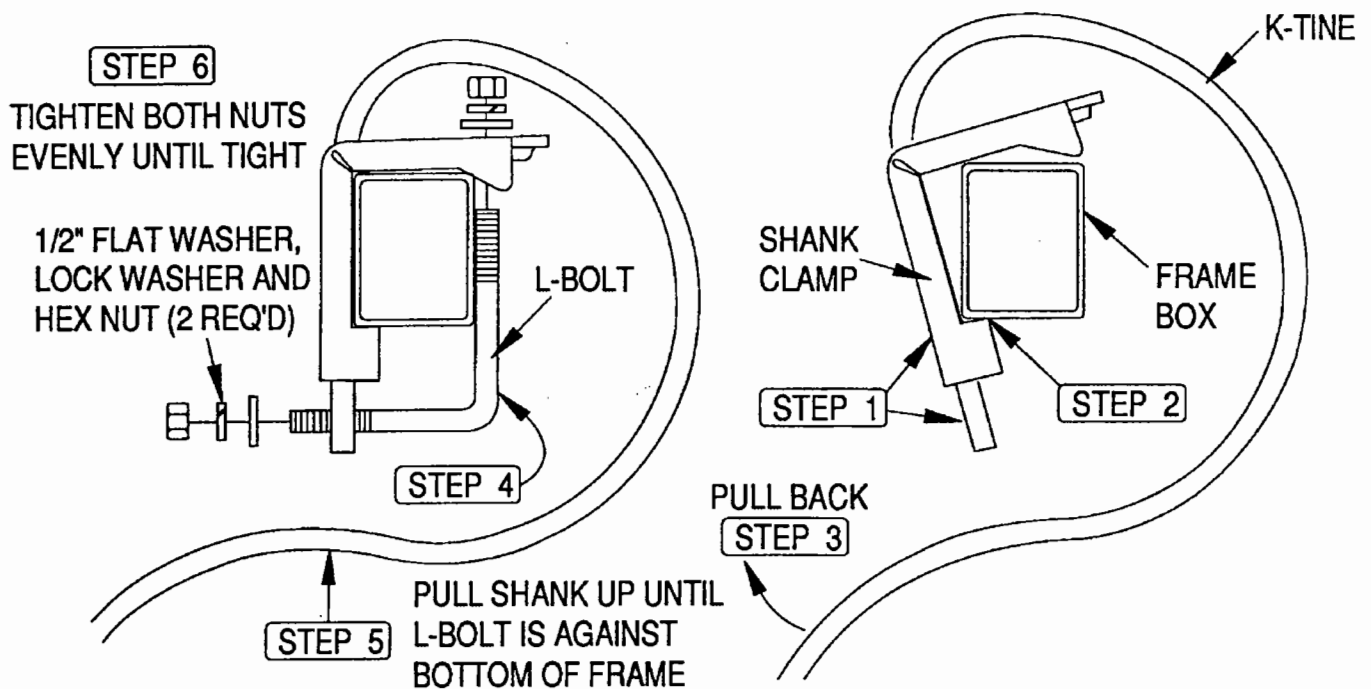
SPRING C-SHANKS

1. Refer to the placement drawing at the back of the book for shank locations.
2. Bolt Sweep or Point to Shank with TWO 3/8NC x 1-1/2" GRADE 5 Plow Bolts. A 3/8" Flat Washer is required next to the slotted hole.
3. Clamp the shank assembly to the frame box with a Mounting Strap (3127-25-2), 1/2NC x 2" GRADE 8 Bolts, SQUARE DOUBLERS (3127-25-3), and 1/2NC Self Locking Nuts.

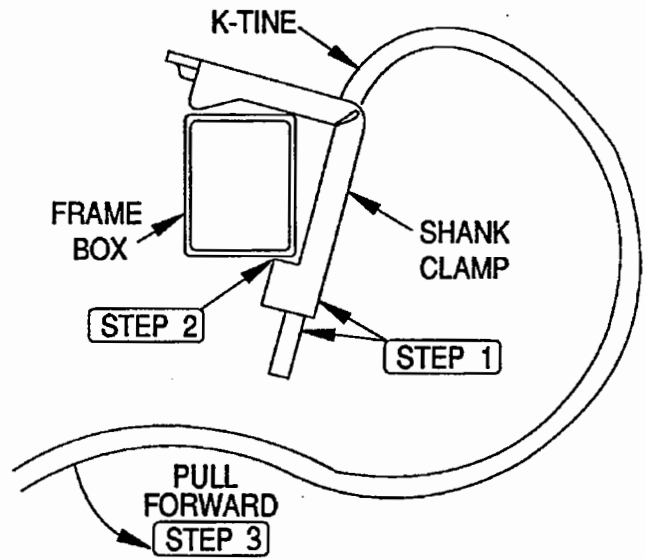
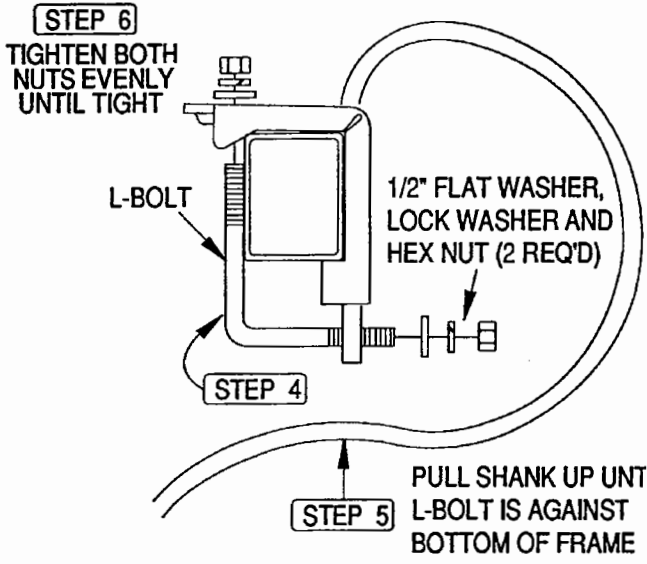


K-TINE SHANKS

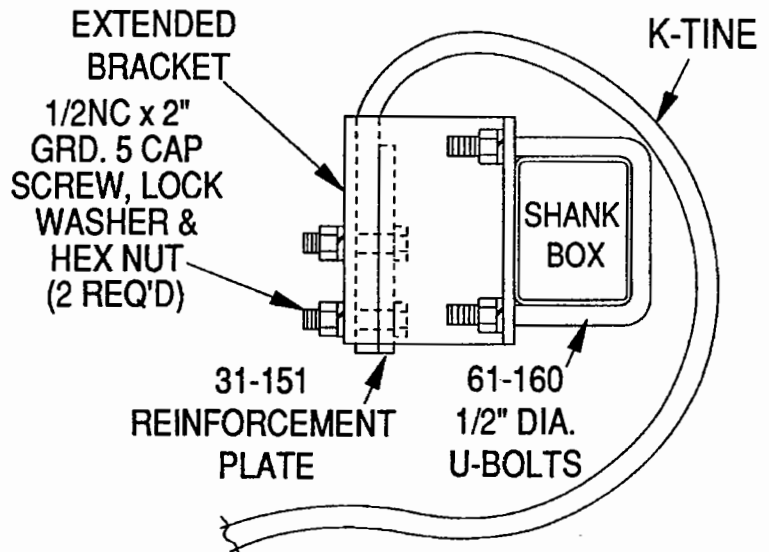
- a. Refer to the placement drawing at the back of the book for shank location and type of mounting.
- b. Bolt Sweep or Point to the shank with TWO 3/8NC x 1-1/2" GRADE 5 Plow Bolts. A 3/8" Flat Washer is required next to the slotted hole.
- c. There are FOUR different types of K-Tine Mountings.
 - a. Standard Rear Mount



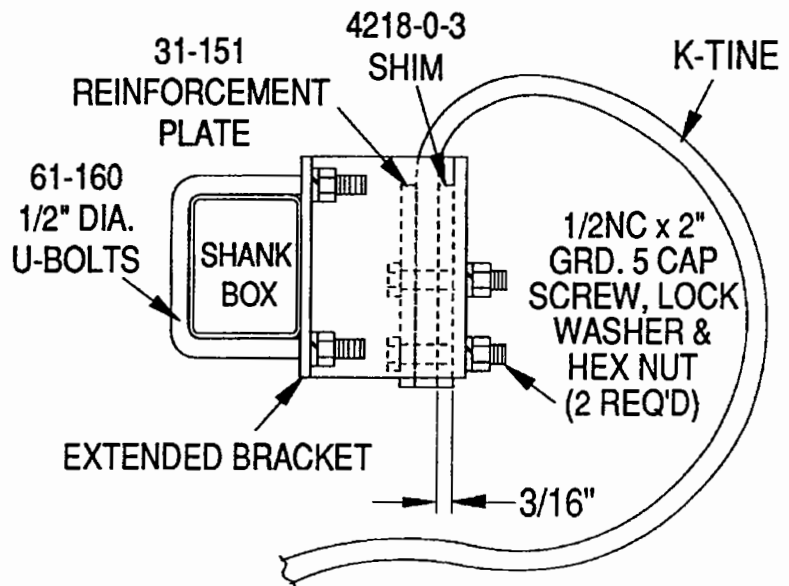
b. Front Mount



c. Rear Extended Mount

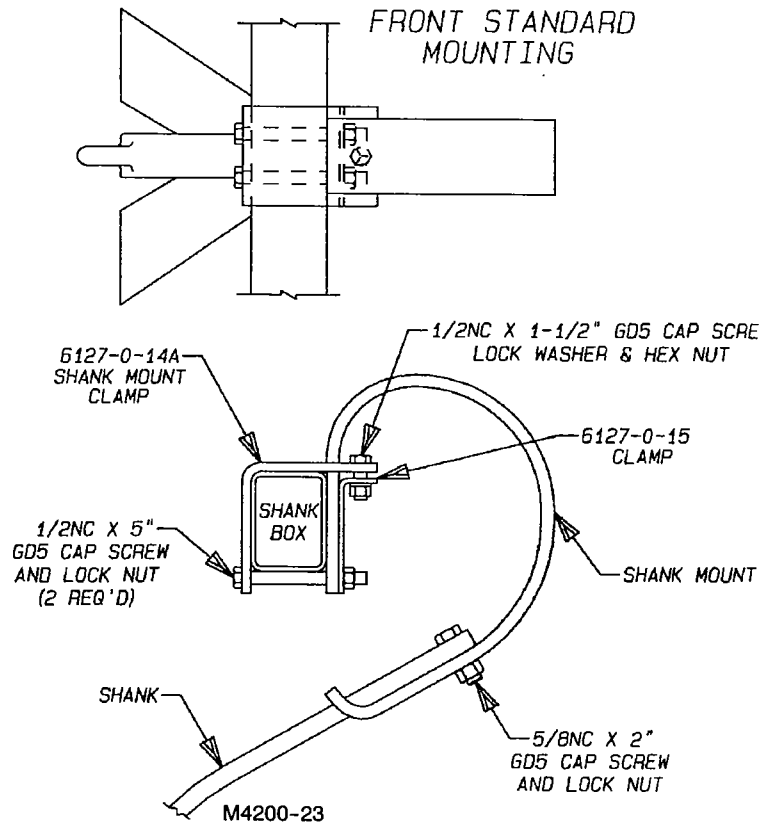


d. Front Extended Mount

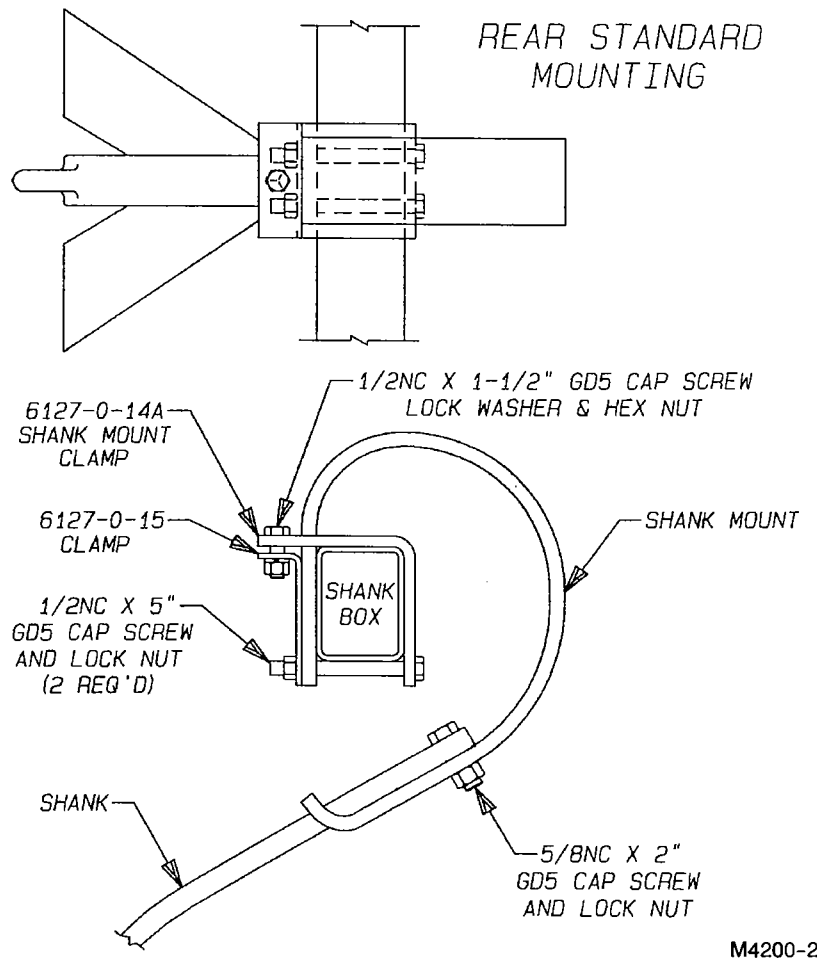


2-PIECE K-TINE SHANKS

a. Front Standard Mounting



b. Rear Standard Mounting



c.

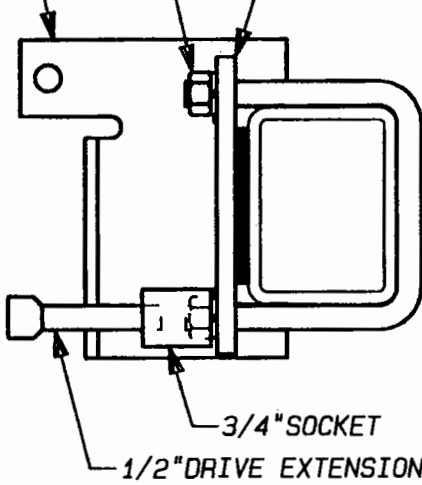
REAR EXTENDED MOUNT

4226-0-10 (EXTENDED BRACKET)

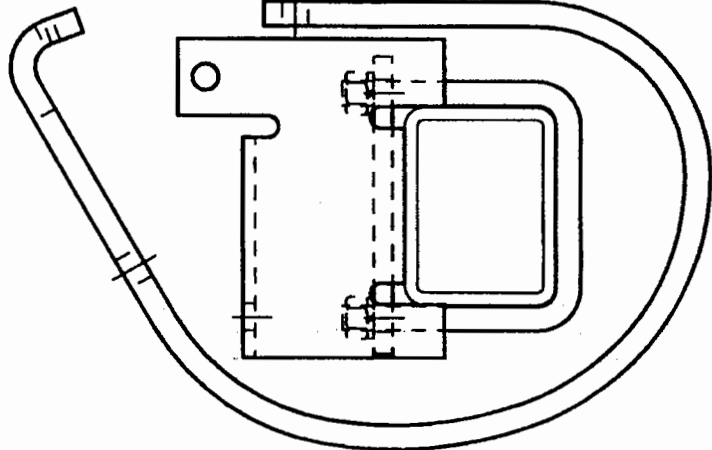
61-216 (U-BOLT 1/2" X 4-1/16" X 4-1/4")
(2) 1/2" LOCK WASHERS
(2) 1/2" NC HEX NUTS

4226-0-11 (BOLT PLATE)

31-179 (SHANK MOUNT)

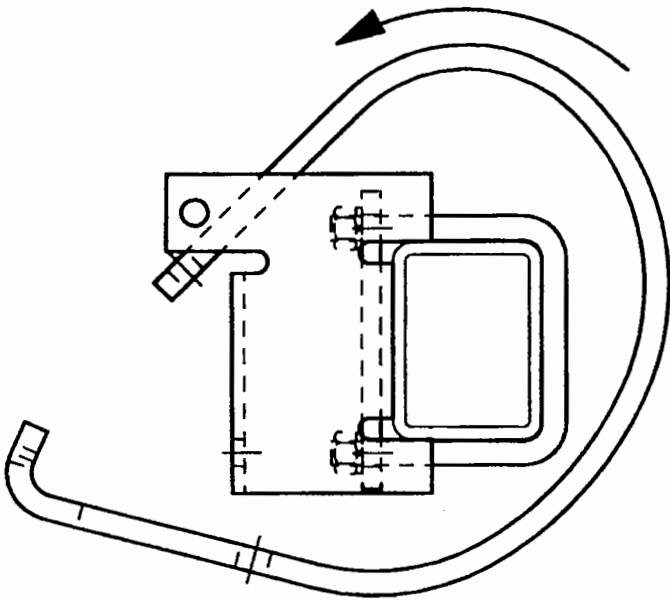


STEP 1



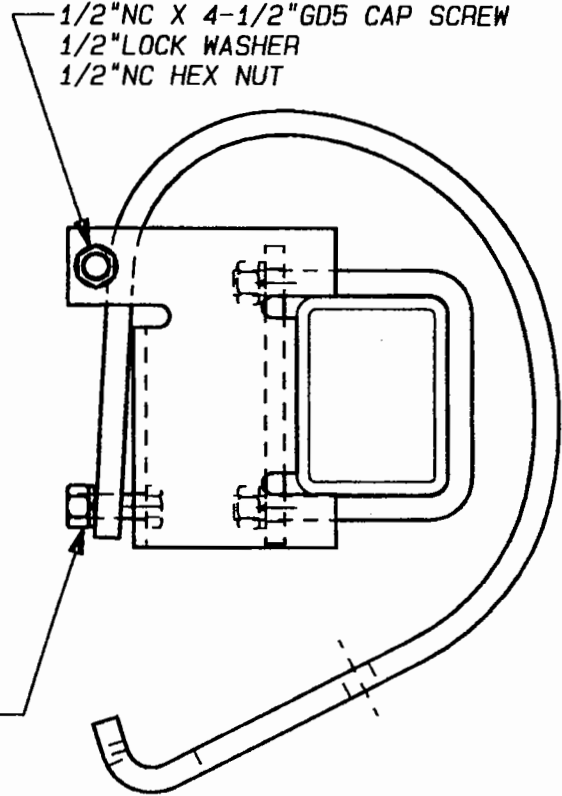
STEP 2

ROTATE INTO CLAMP



STEP 3

1/2" NC X 4-1/2" GD5 CAP SCREW
1/2" LOCK WASHER
1/2" NC HEX NUT



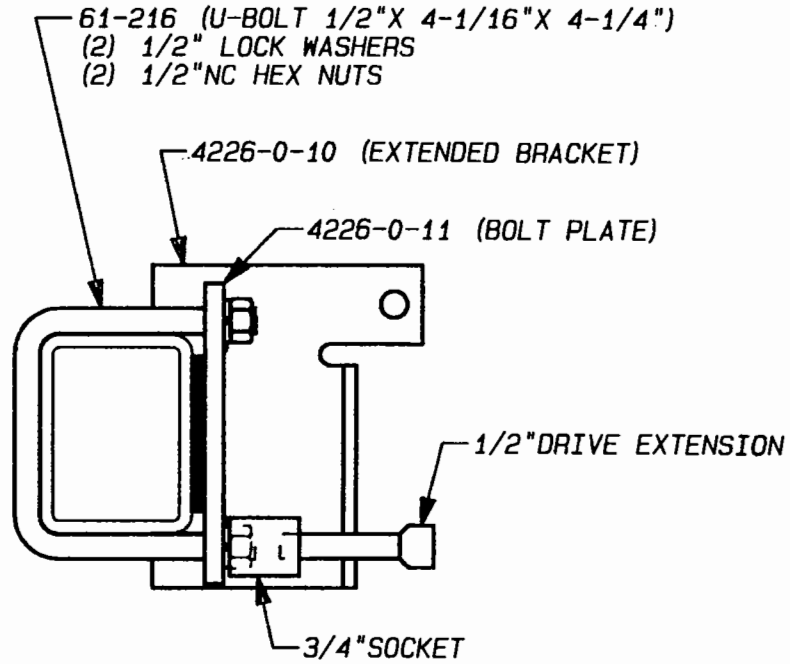
STEP 4

(2) 1/2" NC X 1-1/2" GD5 CAP SCREWS
(2) 1/2" LOCK WASHERS
(2) 1/2" NC HEX NUTS

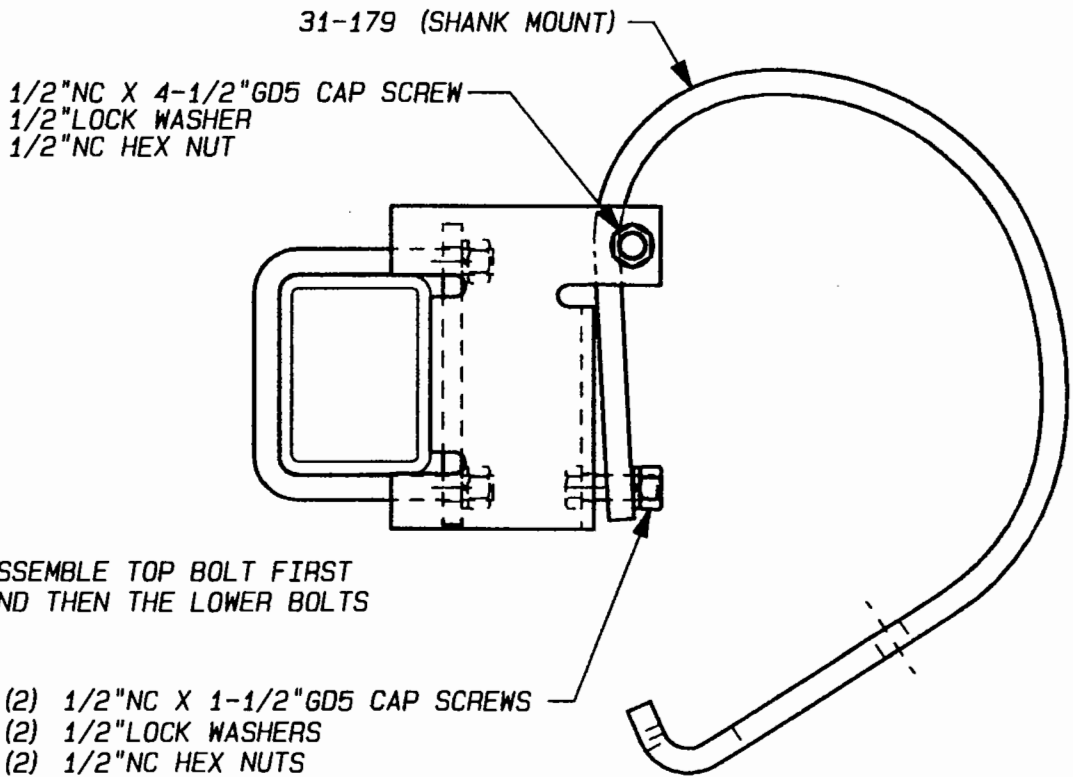
NOTE: ASSEMBLE TOP BOLT FIRST
AND THEN THE LOWER BOLTS

d.

FRONT EXTENDED MOUNT



STEP 1



NOTE: ASSEMBLE TOP BOLT FIRST
AND THEN THE LOWER BOLTS

STEP 2

VIII. HYDRAULICS

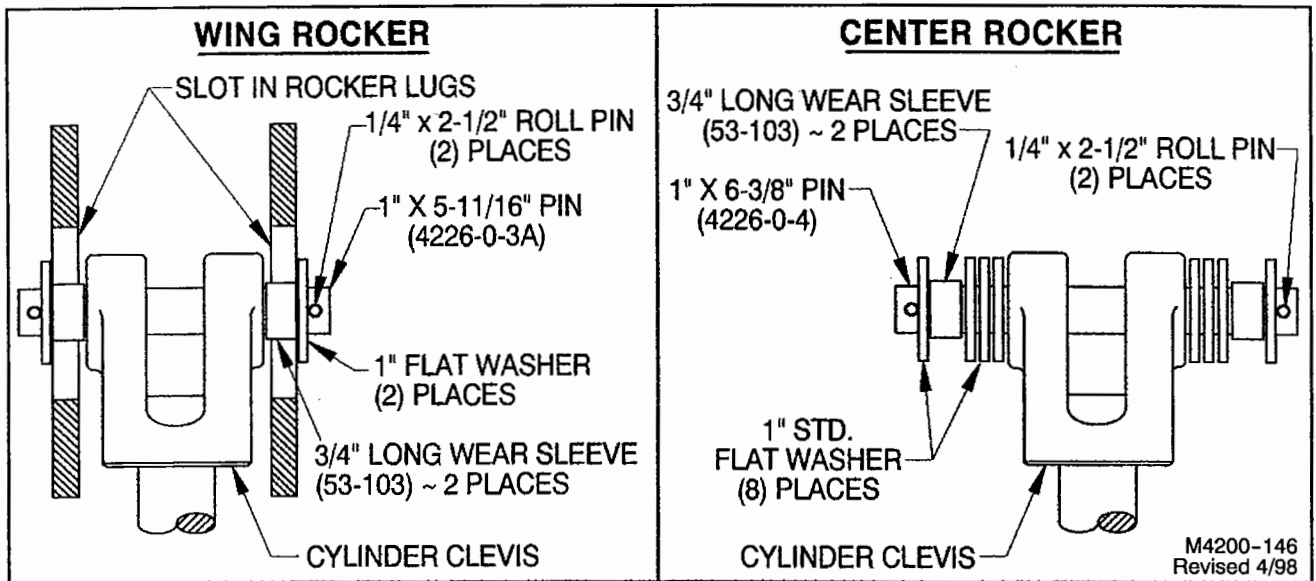
- Determine the correct size and location of the rocker and wing lift cylinders from the chart below.

Revised 5/00

CYLINDER SELECTION CHART							
CYLINDER LOCATION	FOR MODELS:						
	4218HR	4223HR	4226HR	4231HR	4237HR	4241HR	4241HR OPTION
CENTER ROCKER	(1) 21-191 5 x 8	(1) 21-191 5 x 8	(2) 21-1026 4-1/2 x 8	(2) 21-1026 4-1/2 x 8	(2) 21-1026 4-1/2 x 8	(2) 21-1026 4-1/2 x 8	(2) 21-163 4-3/4 x 8
LEFT WING ROCKER	(1) 21-163 4-3/4 x 8	(1) 21-163 4-3/4 x 8	21-1025 4-1/4 x 8	21-1025 4-1/4 x 8	21-1025 4-1/4 x 8	21-1025 4-1/4 x 8	21-1026 4-1/2 x 8
RIGHT WING ROCKER	(1) 21-1026 4-1/2 x 8	(1) 21-1026 4-1/2 x 8	21-1025 4-1/4 x 8	21-1025 4-1/4 x 8	21-1025 4-1/4 x 8	21-1025 4-1/4 x 8	21-1026 4-1/2 x 8
LEFT OUTER WING ROCKER	-----	-----	-----	-----	-----	21-1024 4 x 8	21-1025 4-1/4 x 8
RIGHT OUTER WING ROCKER	-----	-----	-----	-----	-----	21-1024 4 x 8	21-1025 4-1/4 x 8
WING LIFT	(2) 22-171 4 x 16	(2) 22-171 4 x 16	(2) 21-172 4 x 32	(2) 21-172 4 x 32	(2) 21-172 4 x 32	(2) 21-172 4 x 32	(2) 21-172 4 x 32
OUTER WING LIFT	-----	-----	-----	-----	21-174 4 x 24	21-174 4 x 24	21-174 4 x 24

- Pin the base end of each rocker hydraulic cylinder to the frame lug using cylinder pin.

- Loosen the plastic port plugs on the rocker cylinders and extend them until the rod end clevis aligns with the slot in the rocker lug. Pin the rod end with Krause supplied pins and roll pins as shown in the drawing below.

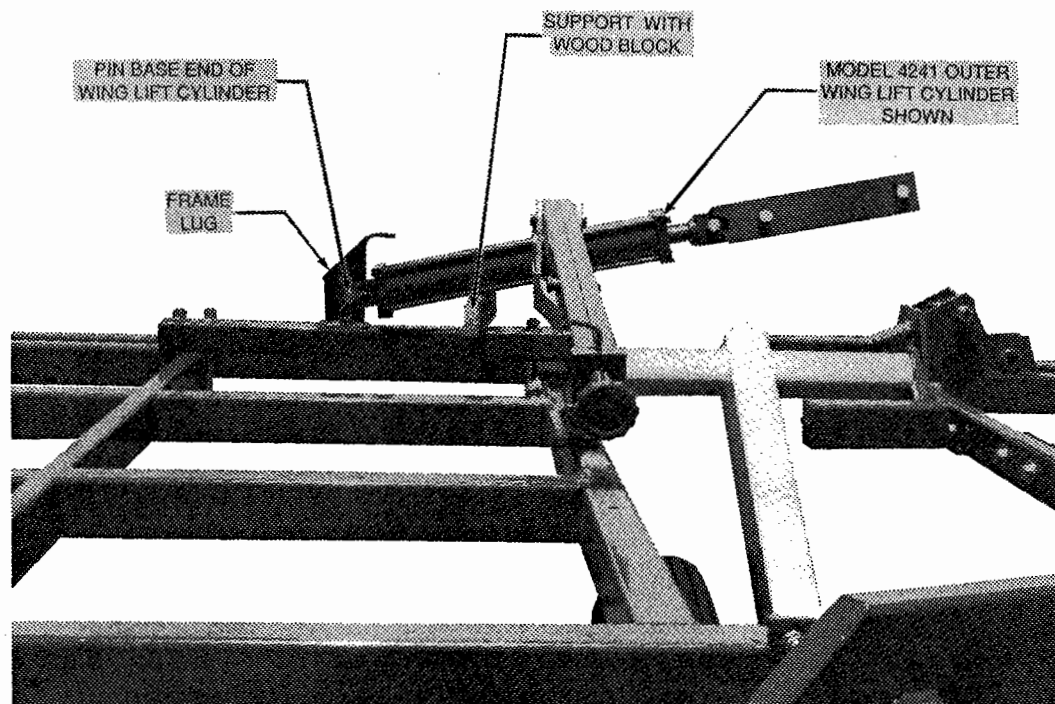


- Pin the base end of each wing lift hydraulic cylinder to the frame lug using a cylinder pin.

NOTE: a) The ports should face the rear of the cultivator.

b) Support the cylinder with a wood block so that the rod end can extend without being obstructed.

IMPORTANT: DO NOT PIN THE ROD ENDS OF THE CYLINDERS TO THE LIFT LUGS UNTIL ALL HYDRAULIC ASSEMBLY IS COMPLETE AND THE SYSTEMS HAVE BEEN PURGED OF AIR AND FILLED AND WITH OIL.

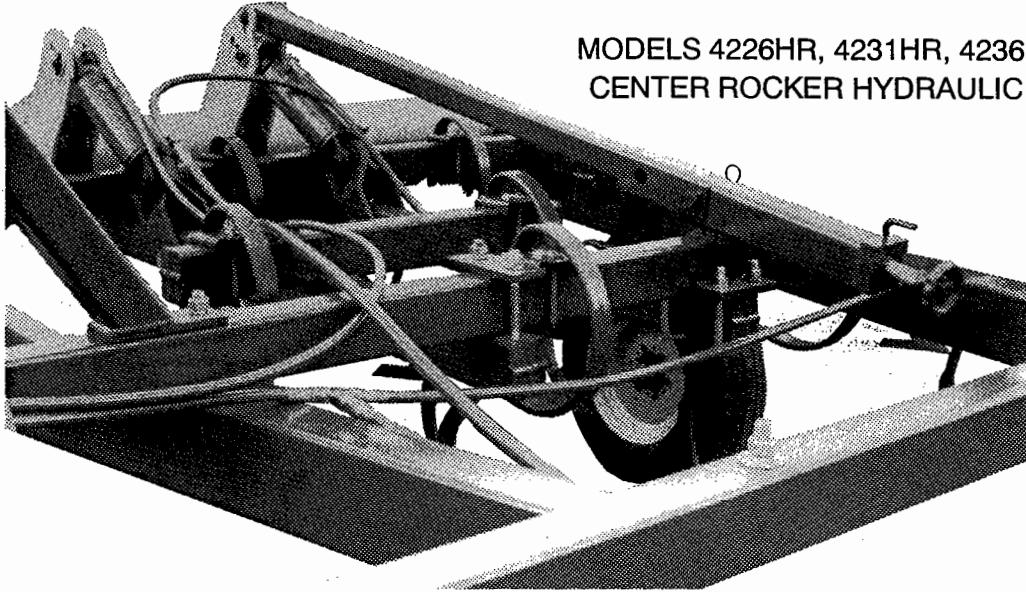


⚠ Caution: Use only hose that meets or exceeds 3,000 PSI working pressure.

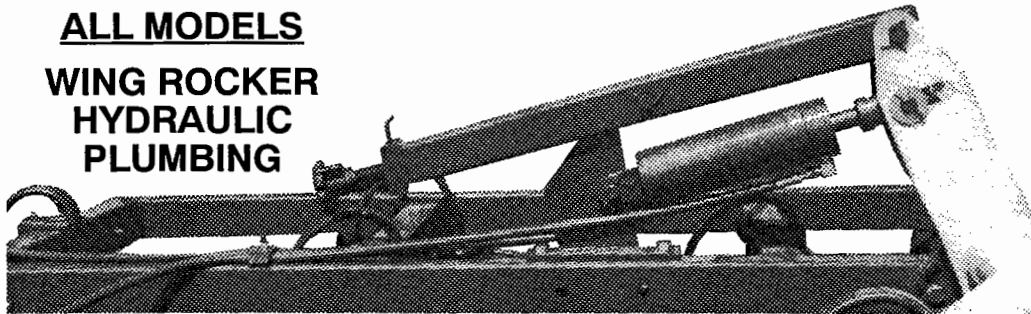
5. Using the hose drawings in the Parts Section, assemble all hoses, fittings and hose clamps as shown.

IMPORTANT: MAKE SURE WING FOLD CYLINDERS ARE ASSEMBLED WITH RESTRICTORS IN THE ROD END PORTS.

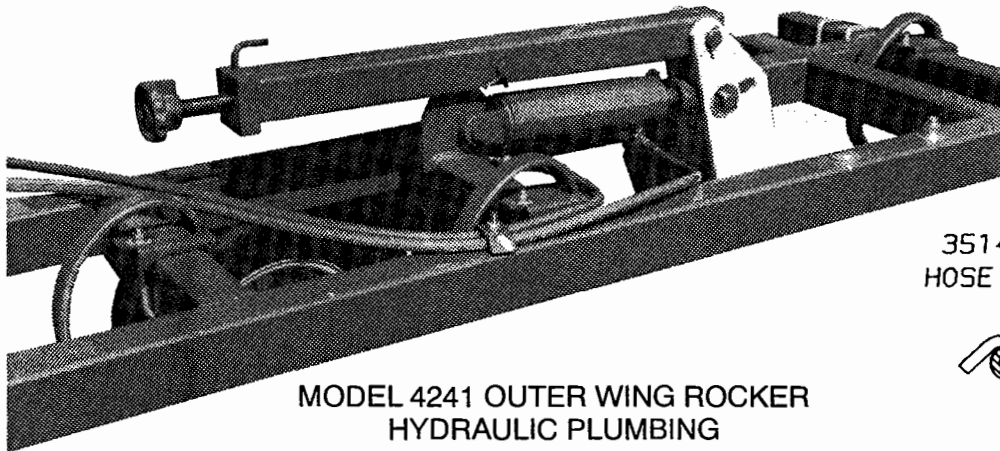
6. Use the following photographs to aid in hose assembly and clamping.



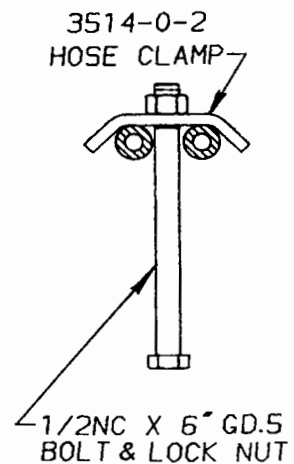
MODELS 4226HR, 4231HR, 4236HR, 4241HR
CENTER ROCKER HYDRAULIC PLUMBING



ALL MODELS
WING ROCKER
HYDRAULIC
PLUMBING



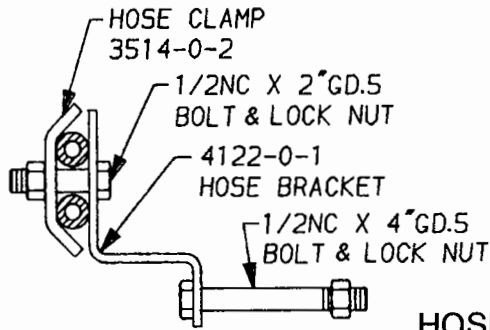
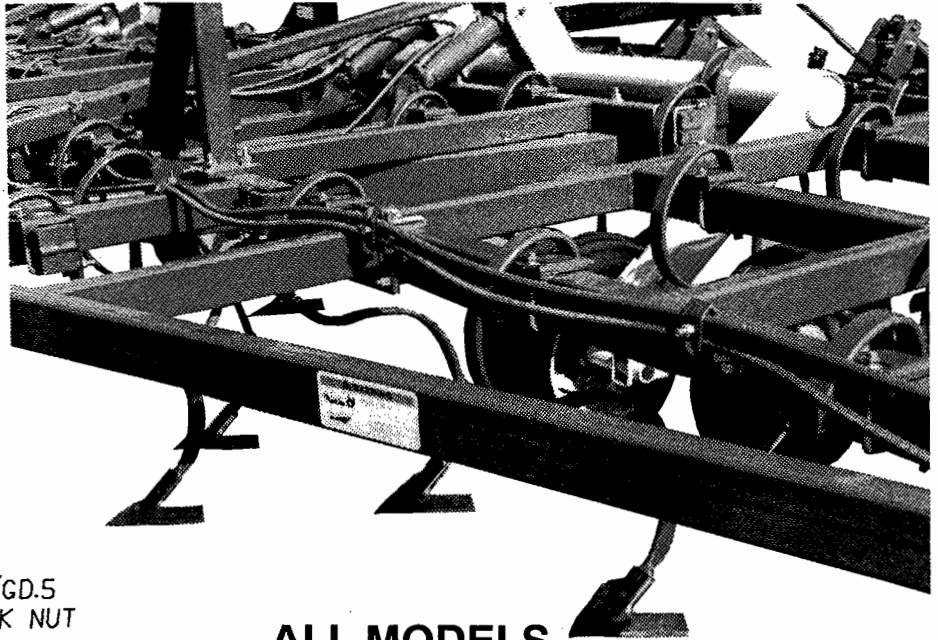
MODEL 4241 OUTER WING ROCKER
HYDRAULIC PLUMBING



MODEL 4241

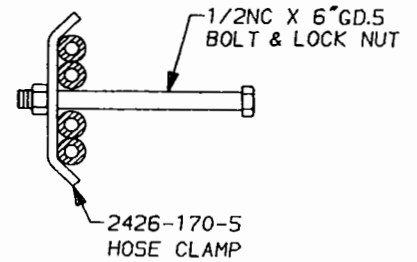
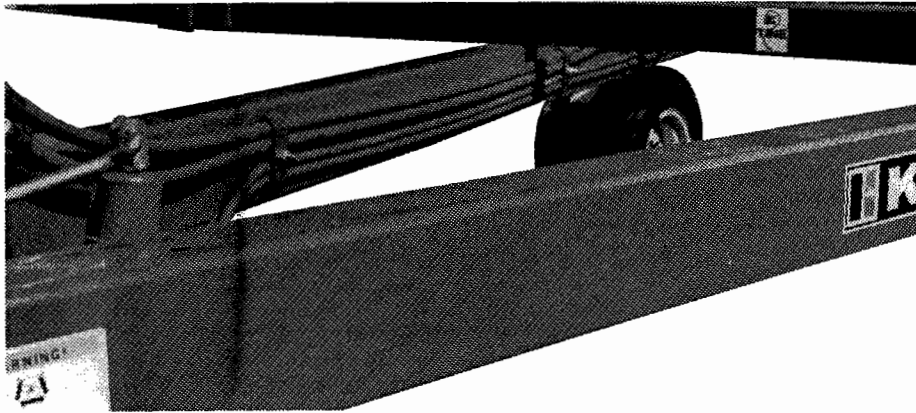
(Similar on other models)

HOSE CLAMP ASSEMBLY ALONG FRONT WING FRAME BOX

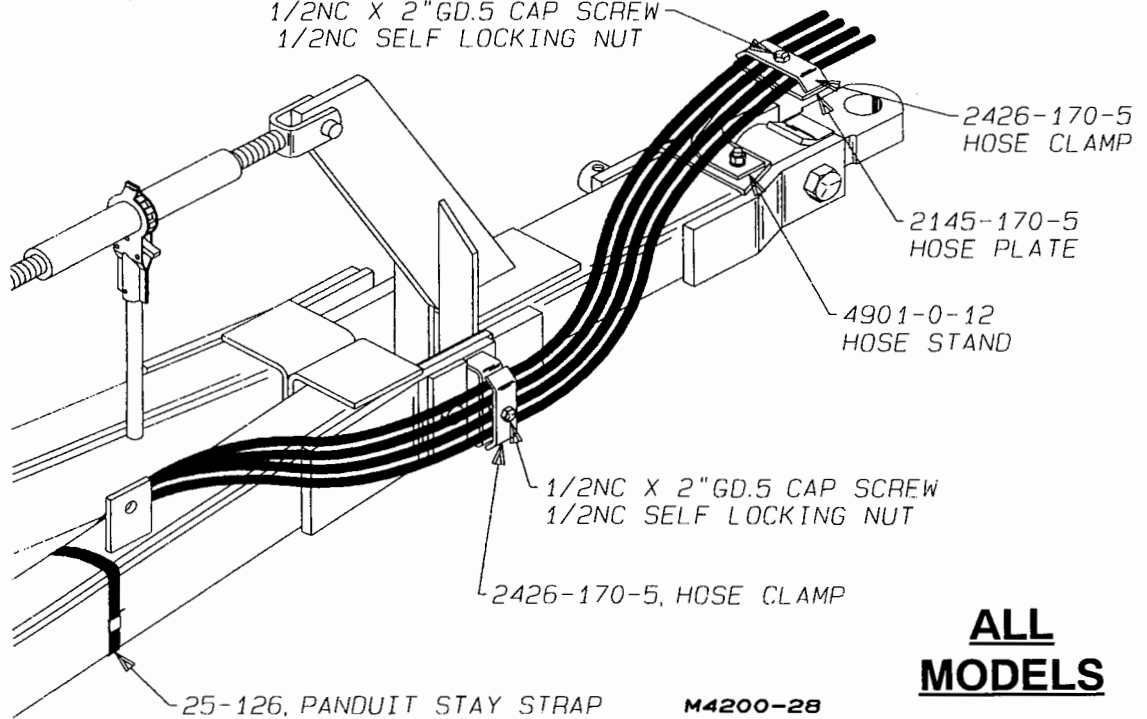


ALL MODELS

HOSE CLAMPS ALONG INSIDE OF RIGHT TONGUE BEAM



1/2NC X 2"GD.5 CAP SCREW
1/2NC SELF LOCKING NUT

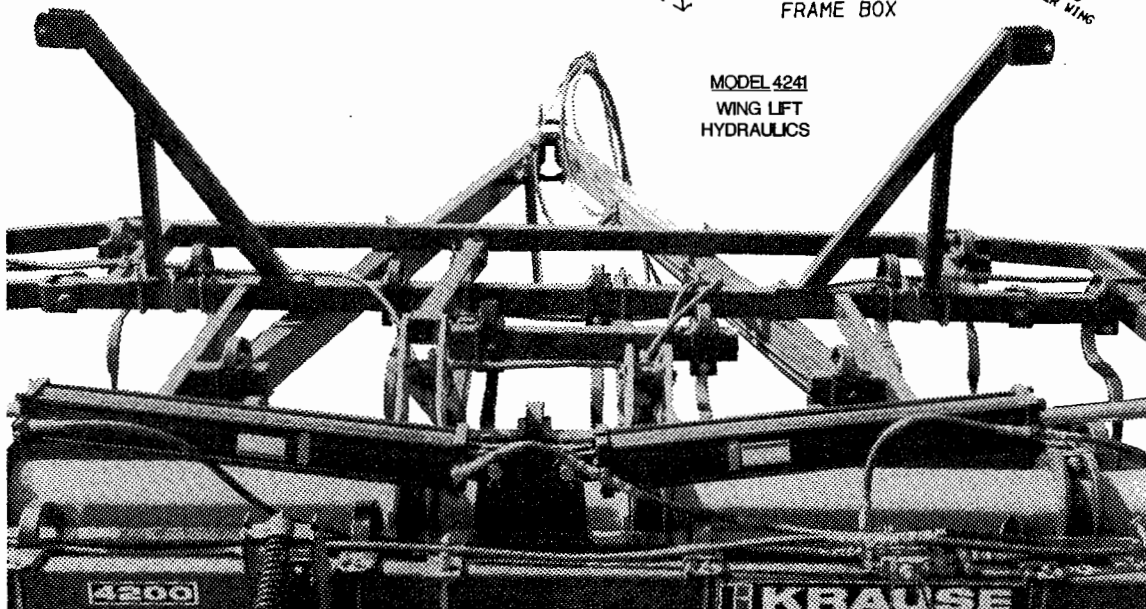
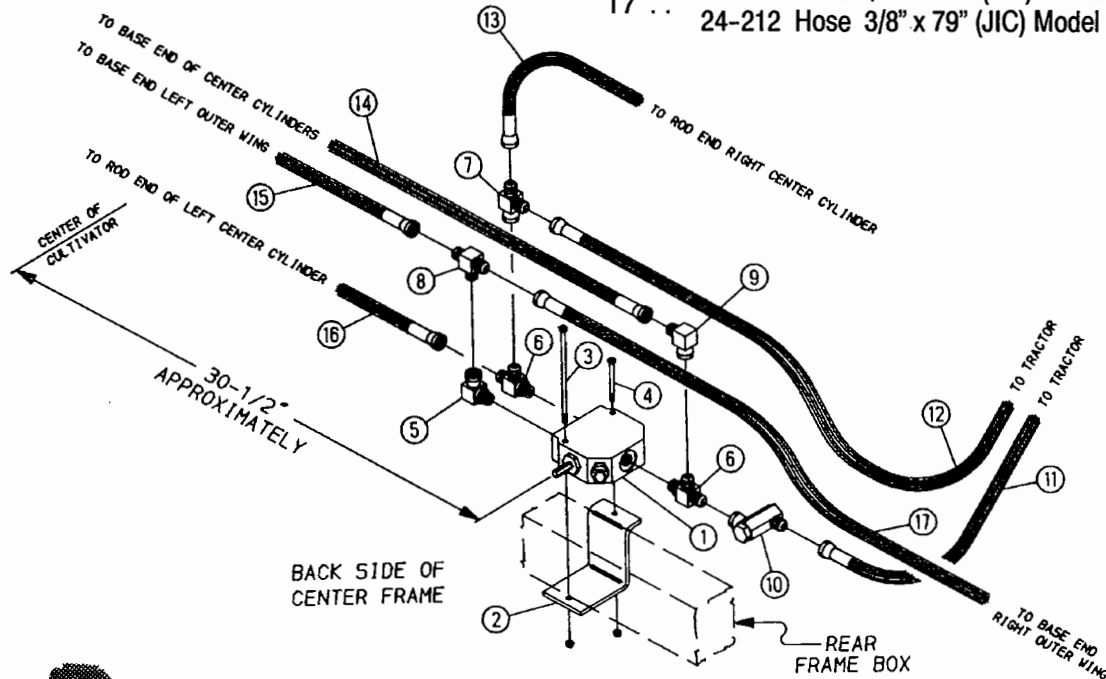


ALL MODELS

M4200-28
Rev.1/97

7. MODEL 4237HR & 4241HR WING FOLD
Sequence Valve Assembly (See parts listing below)

- | | | | |
|-------|-------------------------------------|-------|--|
| 1 ... | 25-144 Sequence Valve | 9 .. | 25-310 37° Flare Male / Female 90 Ell |
| 2 ... | 4241-0-3 Mounting Bracket | 10 .. | 37° Flare In-Line Restrictor |
| 3 ... | 1/4" x 6-1/2" GD. 5 Bolt & Lock Nut | 11 .. | 25-324 Hose 3/8" x 207" (JIC) |
| 4 ... | 1/4" x 2-3/4 GD. 5 Bolt & Lock Nut | 12 .. | 25-248 Hose 3/8" x 214" (JIC) |
| 5 ... | 25-320 O-Ring 37° Flare 90° Female | 13 .. | 25-266 Hose 3/8" x 21" (JIC) |
| 6 ... | 25-302 O-Ring 37° Flare Tee | 14 .. | 24-246 Hose 3/8" x 28" (JIC) |
| 7 ... | 25-307 37° Flare Male / Female Tee | 15 .. | 24-242 Hose 3/8" x 161" (JIC) Model 4241HR |
| 8 ... | 25-303 37° Flare Male Tee | 16 .. | 24-265 Hose 3/8" x 135" (JIC) Model 4237HR |
| | | 17 .. | 24-210 Hose 3/8" x 74" (JIC) |
| | | | 24-240 Hose 3/8" x 107" (JIC) Model 4241HR |
| | | | 24-212 Hose 3/8" x 79" (JIC) Model 4237 HR |



VIEW FROM BEHIND CULTIVATOR

SEQUENCE VALVE
LOCATION

2. CHARGING THE CYLINDERS -

- a. After all hose and fittings are assembled, check the blocks under the wing cylinders. Make sure they are raised high enough to clear any attaching lugs.
- b. Attach hydraulic hoses to the tractor. Check the tractor hydraulic reservoir and make sure it is full of the manufacturer's recommended oil.
- c. If you are sure all connections are tight and leakproof, begin filling the system by extending and retracting the cylinders.
- d. The rocker shaft cylinders have rephasing grooves that will allow the oil to pass by the piston when the cultivator is fully raised. Hold the control lever open during each cycle when the cultivator is raised and the cylinders are fully retracted for 30 to 45 seconds. This will force oil through the rephasing grooves and allow the series cylinder to be charged with oil.
- e. Continue the cycles until the cylinders respond with immediate solid actuation.

Warning: Escaping fluid under pressure can penetrate the skin causing serious injury. Avoid the hazard by relieving pressure before disconnecting hydraulic lines. Tighten all connections before applying pressure.

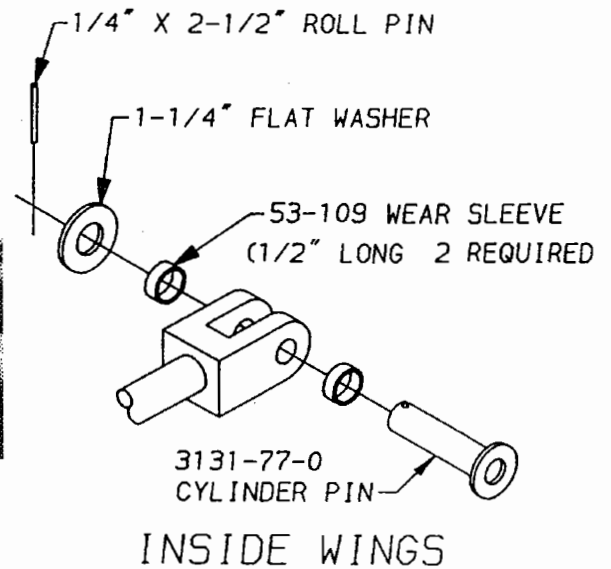
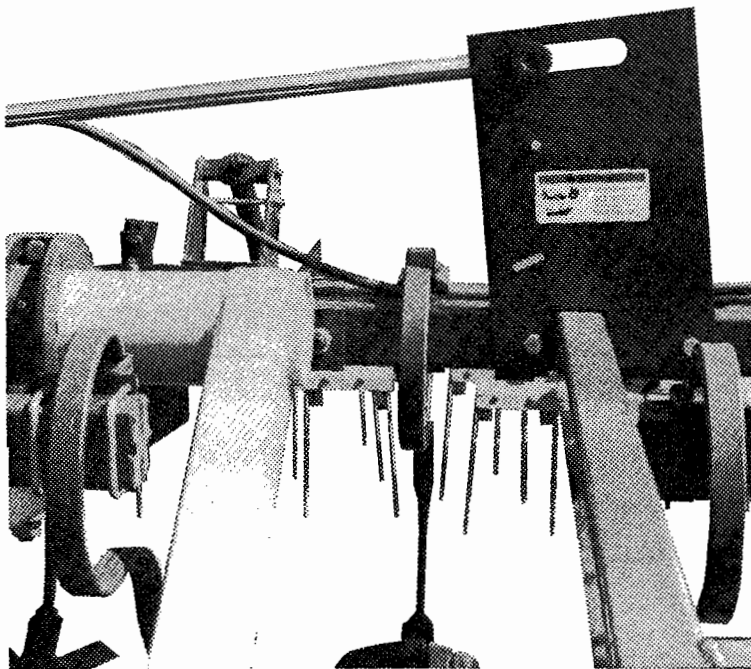
Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.



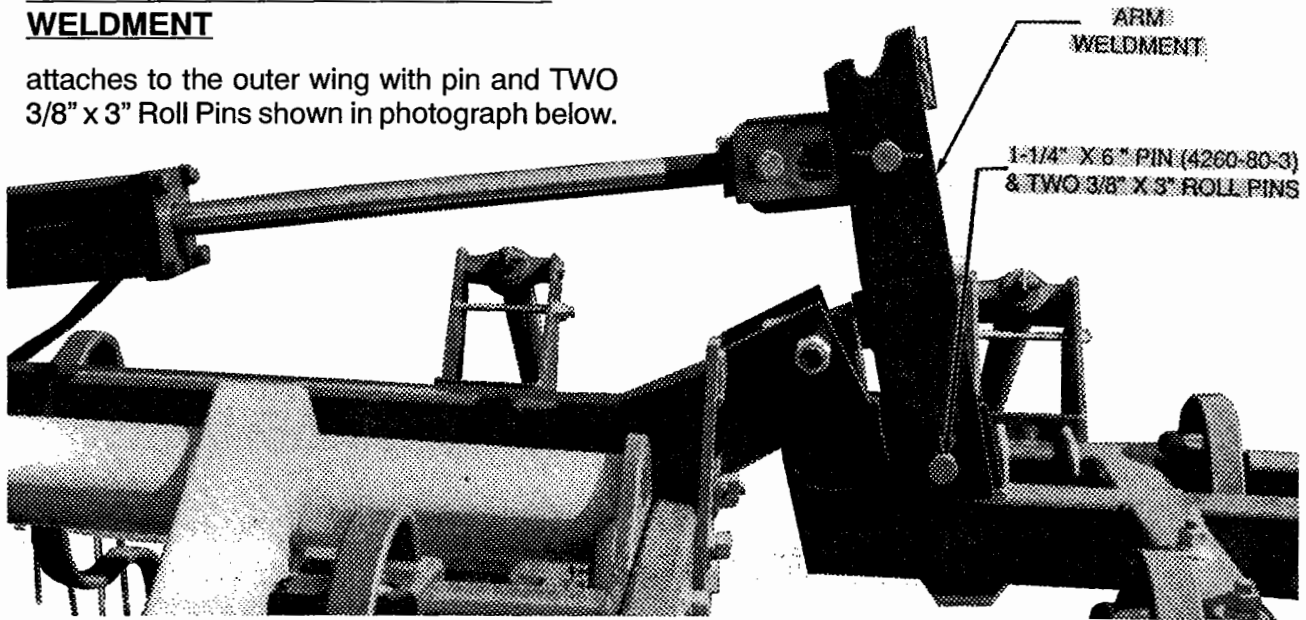
- f. After the wing cylinders are full, extend them to maximum length and remove the wood blocks.

Pin the rod end of the wing cylinders to the wing lugs using the special pins, wear sleeves, 1-1/4" STD. Flat Washers, and 1/4" DIA. x 2-1/2" Roll Pins as shown in the drawing below.

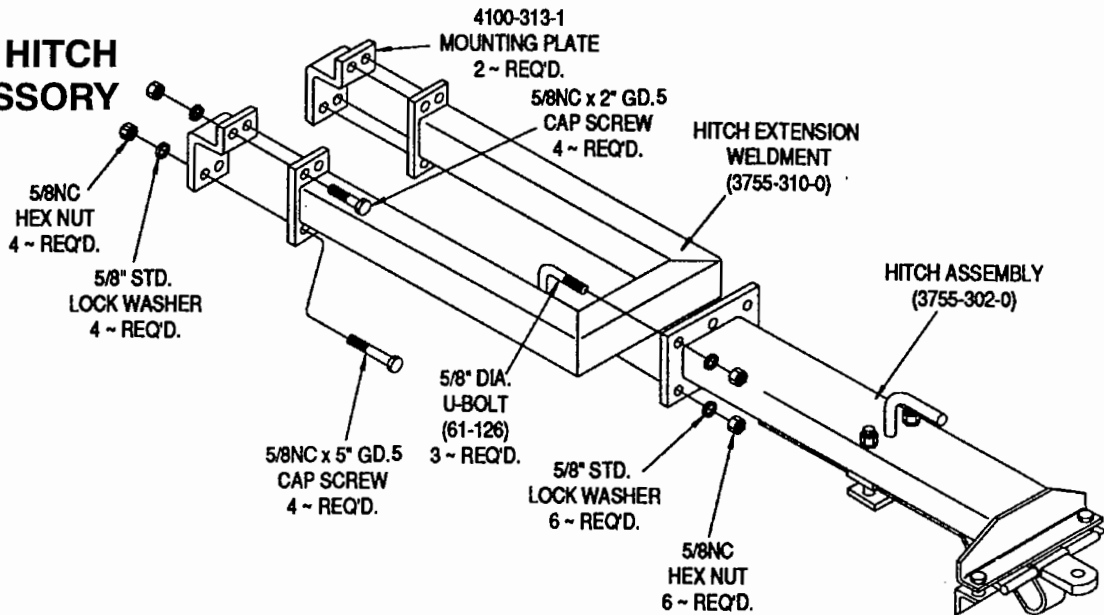


**MODEL 4241 OUTER WING LIFT ARM
WELDMENT**

attaches to the outer wing with pin and TWO 3/8" x 3" Roll Pins shown in photograph below.

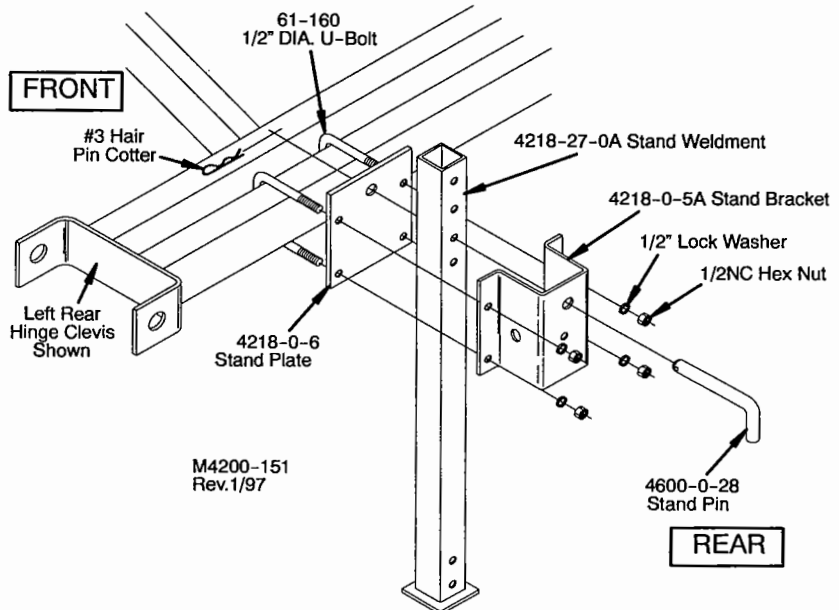


IX. TRAIL HITCH ACCESSORY



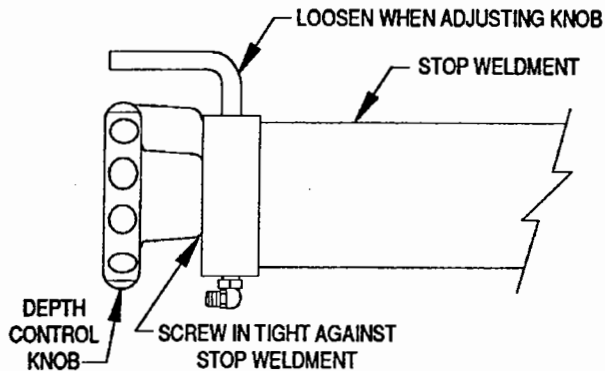
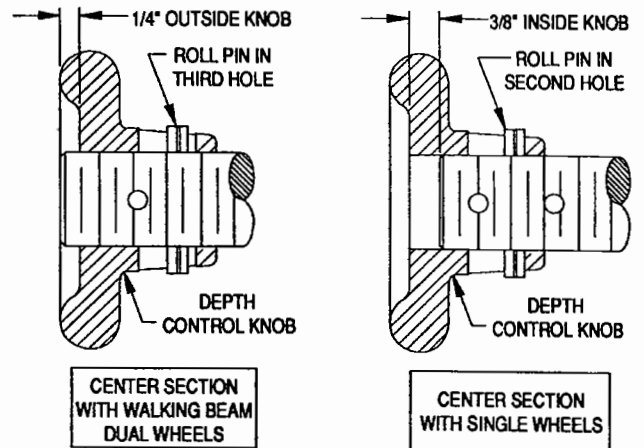
X. REAR FRAME STAND

Two Rear Parking Stands have been provided because rear attachments cause the cultivators to be "tail heavy".



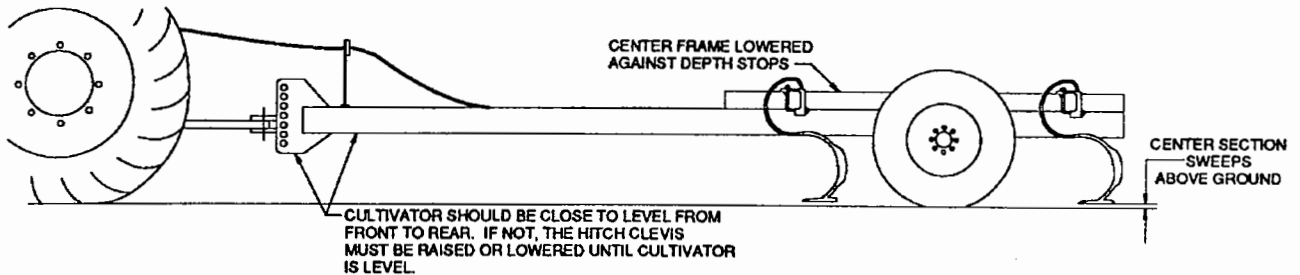
XI. LEVELING THE CULTIVATOR

- Retract the rocker cylinders and raise the cultivator.
- Check the Depth Control Knob on the center section.
 - If equipped with Walking Beam Dual Wheels, there should be 1/4" of thread outside the cast knob.
 - If equipped with single wheels, remove the roll pin and rotate the knob until the threaded rod ends 3/8" inside of the knob. Drive the roll pin back into place.

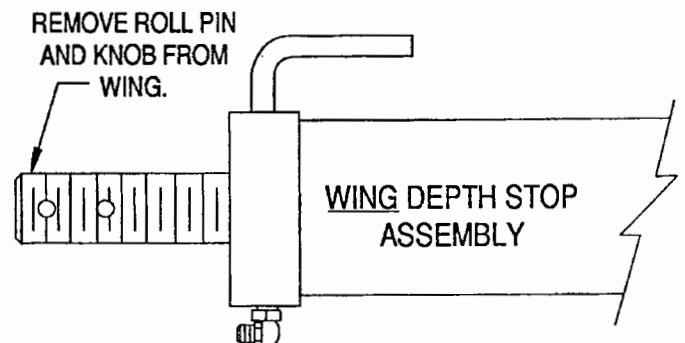


- After the center knob has been adjusted and the roll pin is in place, screw the Depth Knob in tight against the end of the stop weldment.

- Lower the cultivator by fully extending the rocker cylinders. The depth stop should hold the center section sweeps slightly above the ground.



- With the cultivator still in the lowered position, remove the roll pin in the wing depth stop knob and unscrew the knob from the depth stop assembly.

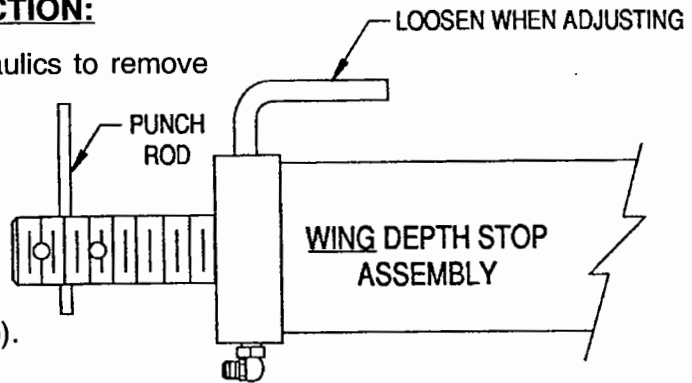


- Note whether the wings are higher or lower than the center section.

SPECIAL NOTE: When leveling Model 4241HR out of the ground, adjust the outer end of the outer wing 3/8" lower than the center and inside wing.

IF WING IS HIGHER THAN CENTER SECTION:

- Raise cultivator with tractor hydraulics to remove pressure from the depth stops.
- Rotate the threaded stop counter-clockwise one or two turns with a rod or punch.
- Lower cultivator against stops and check sweep height. If wing is still too high, repeat steps a) & b).

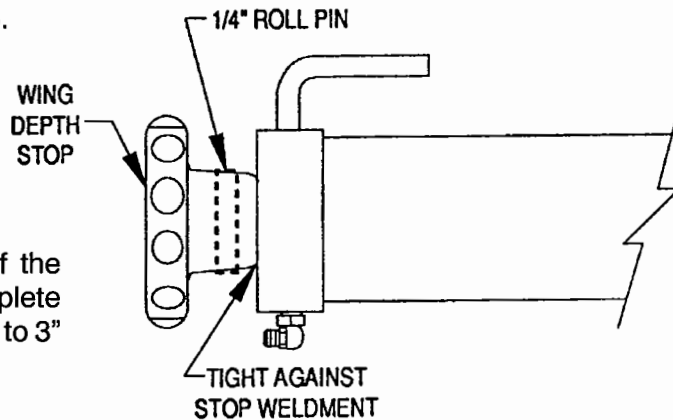


IF WING IS LOWER THAN CENTER SECTION:

- Raise cultivator with tractor hydraulics to remove pressure from the depth stops.
- Rotate the threaded stop clockwise one or two turns with a rod or punch.
- Lower cultivator against stops and check sweep height. If wing is still too low, repeat steps 1 & 2.

IMPORTANT: THE CULTIVATOR WILL ONLY BE LEVEL WHEN IT IS LOWERED DOWN AGAINST THE DEPTH STOPS.

- When the cultivator is level and still in the lowered position, screw the wing depth stop knobs on tight against the stop weldment and retain it with the 1/4" Roll Pin.
- Raise the cultivator and turn ALL of the Depth Adjustment Knobs out 10 complete turns. This will set the cultivator to a 2" to 3" plowing depth.

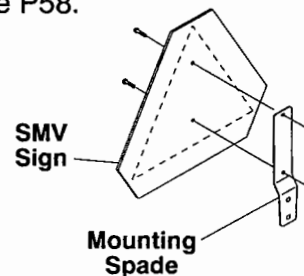


XIX. DECALS

The DECALS are important to the safety of the operators and to others and must be attached to the cultivator at the proper locations. Some DECALS are applied to the proper location at the factory; however, these should be checked for location, and to be sure that they have not been damaged in shipping or set-up. Remove the protective backing from each remaining decal, and attach to the field cultivator at the locations shown on the parts drawing on page P58.

SMV EMBLEM

Insert the SMV Mounting Spade into the SMV Bracket at the rear of the center frame.

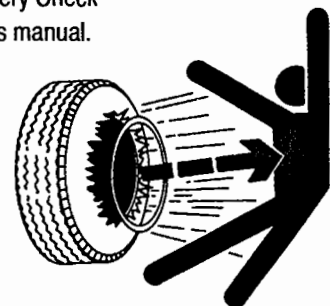


FINAL CHECK

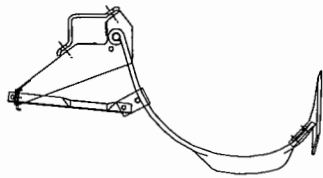
- | | |
|--|--|
| 1. Check the hydraulic system for leaks. | 5. Lower tongue jack. |
| 2. Lubricate all grease points. | 6. Check tire pressure and wheel bolt torque. |
| 3. Check torque of all bolts. | 7. Perform final inspections. See Dealer Predelivery Check Sheet following the Warranty at the front of this manual. |
| 4. Fully extend the depth control cylinders. | |

⚠ Caution: Explosive separation of a tire and rim parts can cause serious injury or death.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Inspect tires and wheels daily. Do not operate with low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

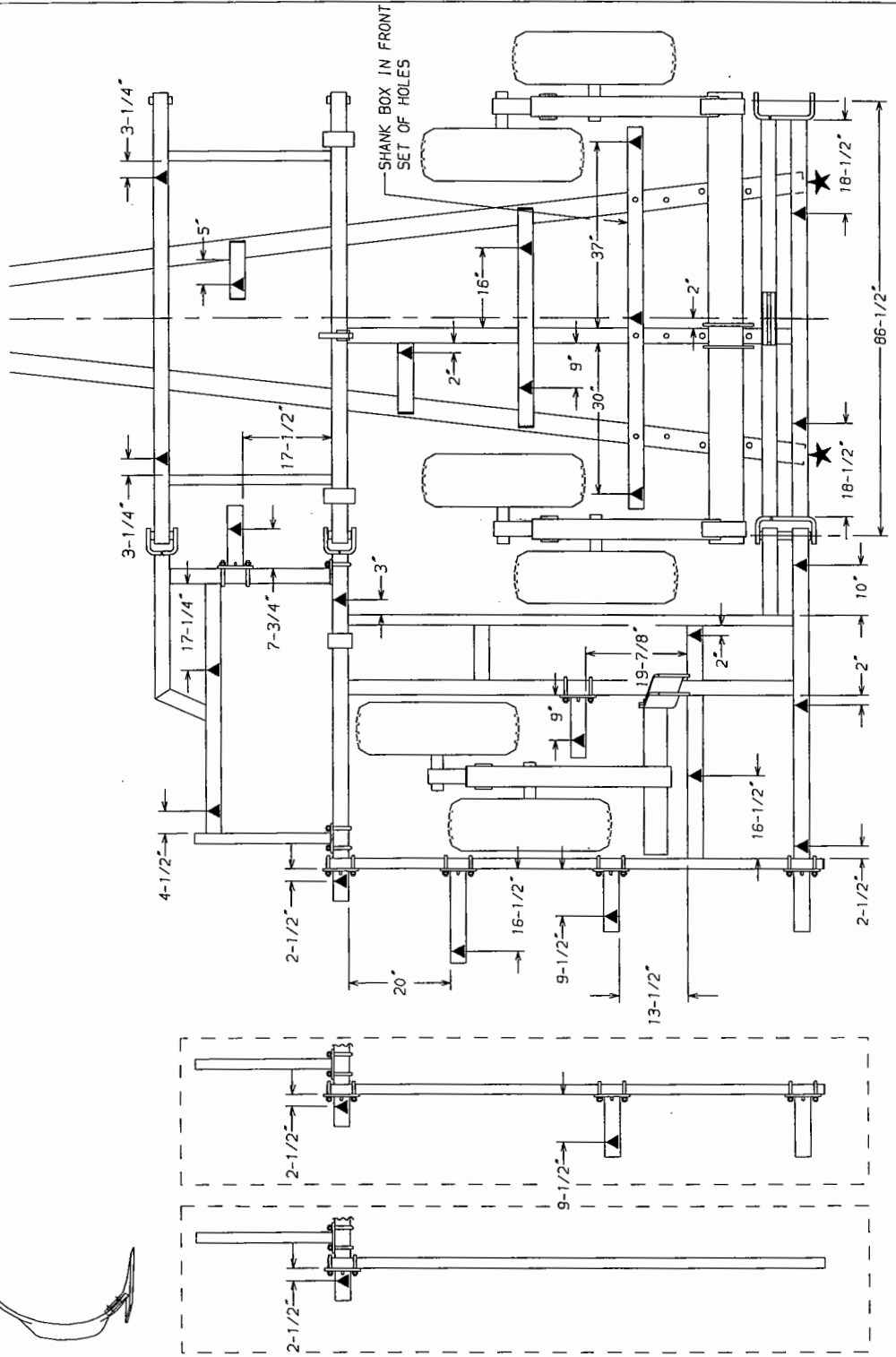


M O D E L 4 2 1 8 H R
EQUIPPED WITH SPRING CUSHIONED SHANKS



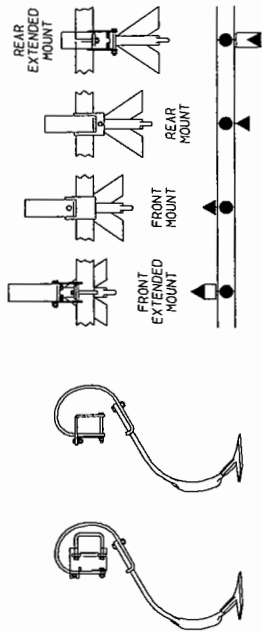
7" SPACING

★ REAR STAND LOCATIONS

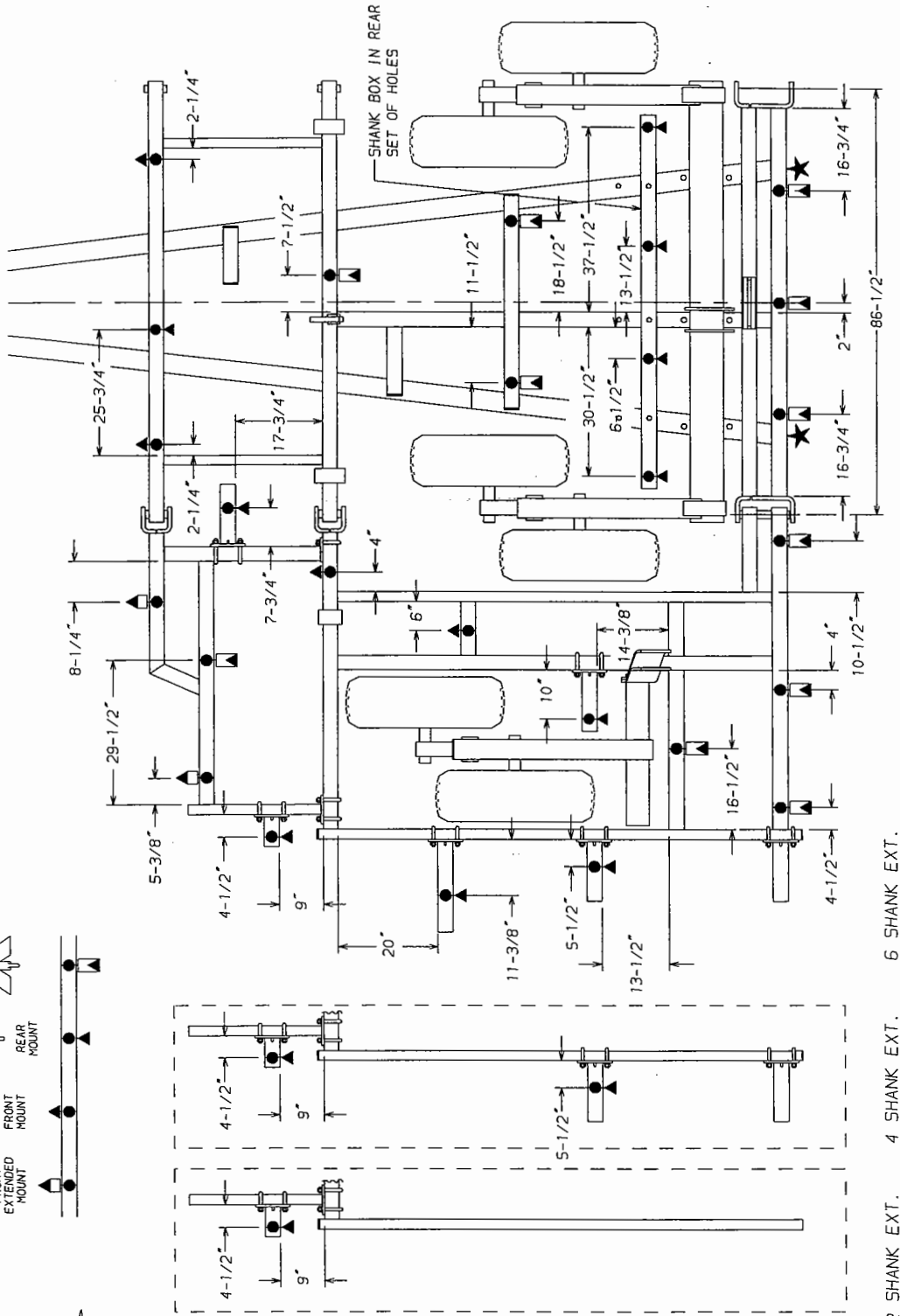


- 2 SHANK EXT. 4218HR-55-07
- 4 SHANK EXT. 4218HR-68-07
- 6 SHANK EXT. 4218HR-74-07

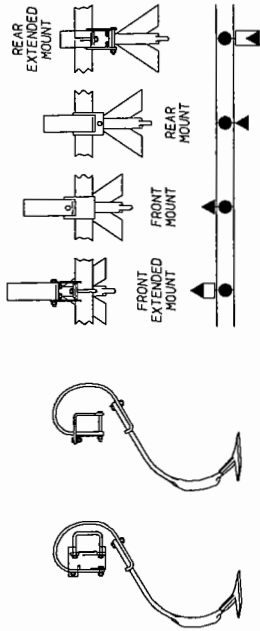
M O D E L 4 2 1 8 H R
EQUIPPED WITH 2-PIECE K-TINE SHANKS



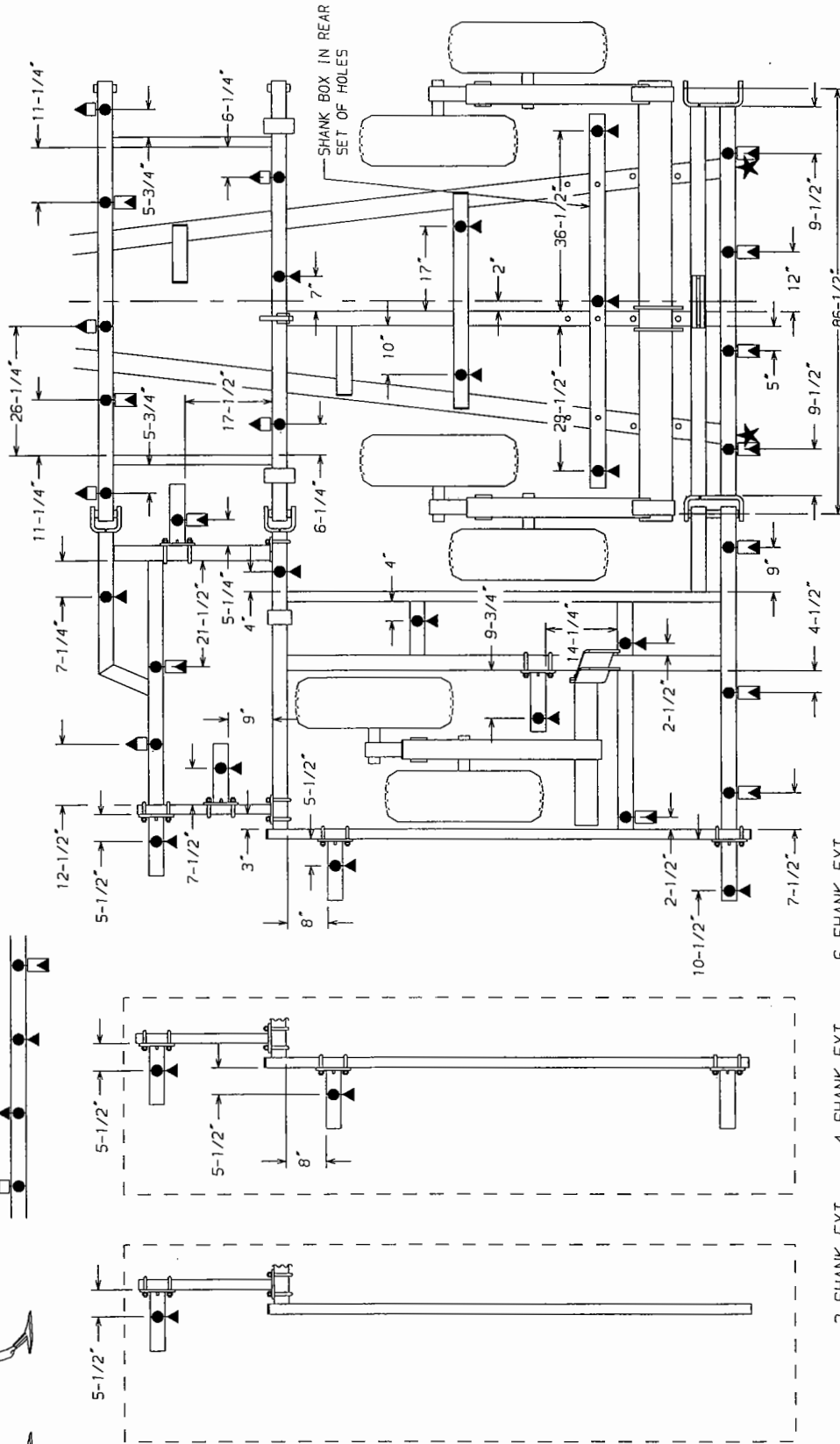
6" SPACING
 ★ REAR STAND LOCATIONS



M O D E L 4 2 1 8 H R
EQUIPPED WITH 2-PIECE K-TINE SHANKS



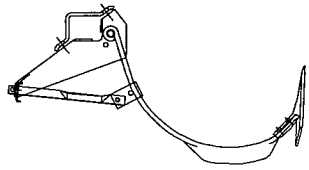
5" SPACING
★ REAR STAND LOCATIONS



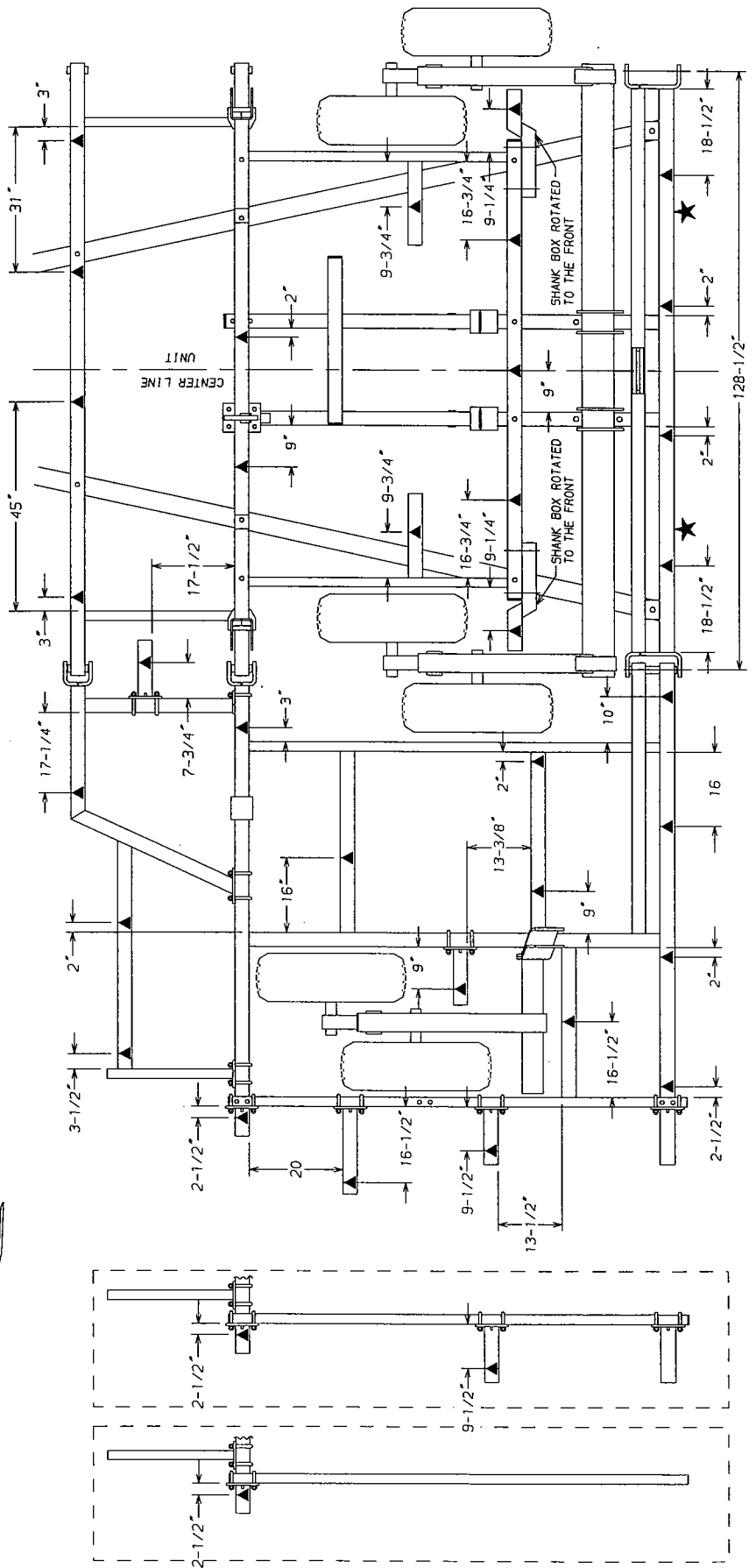
- 2 SHANK EXT. 4218-77-05
- 4 SHANK EXT. 4218-79-05
- 6 SHANK EXT. 4218-85-05

M4200-94

M O D E L 4 2 2 6 H R
EQUIPPED WITH SPRING CUSHIONED SHANKS

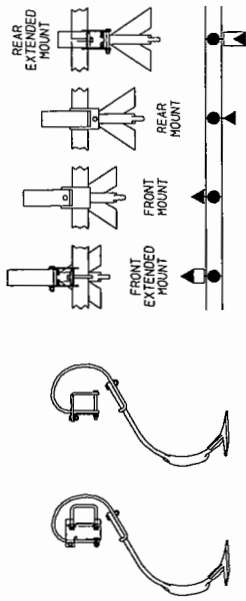


7" SPACING
★ REAR STAND LOCATIONS



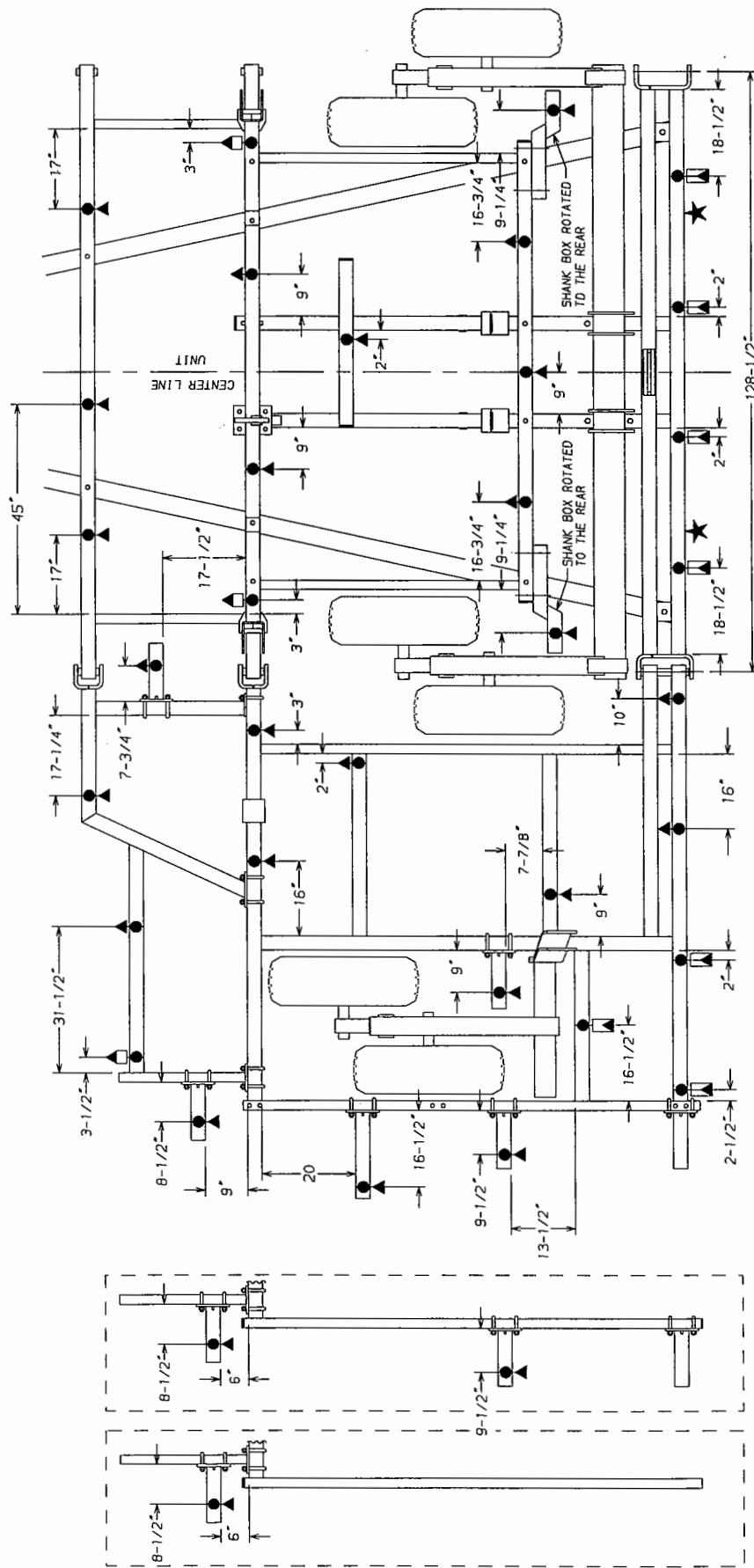
- 2 SHANK EXT. 4218HR-66-07
- 4 SHANK EXT. 4218HR-68-07
- 6 SHANK EXT. 4218HR-74-07

MODEL 4226HR EQUIPPED WITH 2-PIECE K-TINE SHANKS



7" SPACING

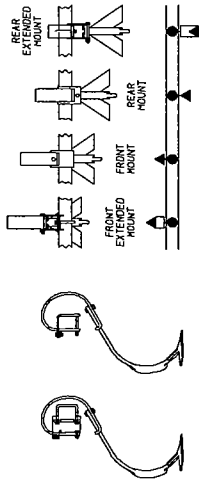
★ REAR STAND LOCATIONS



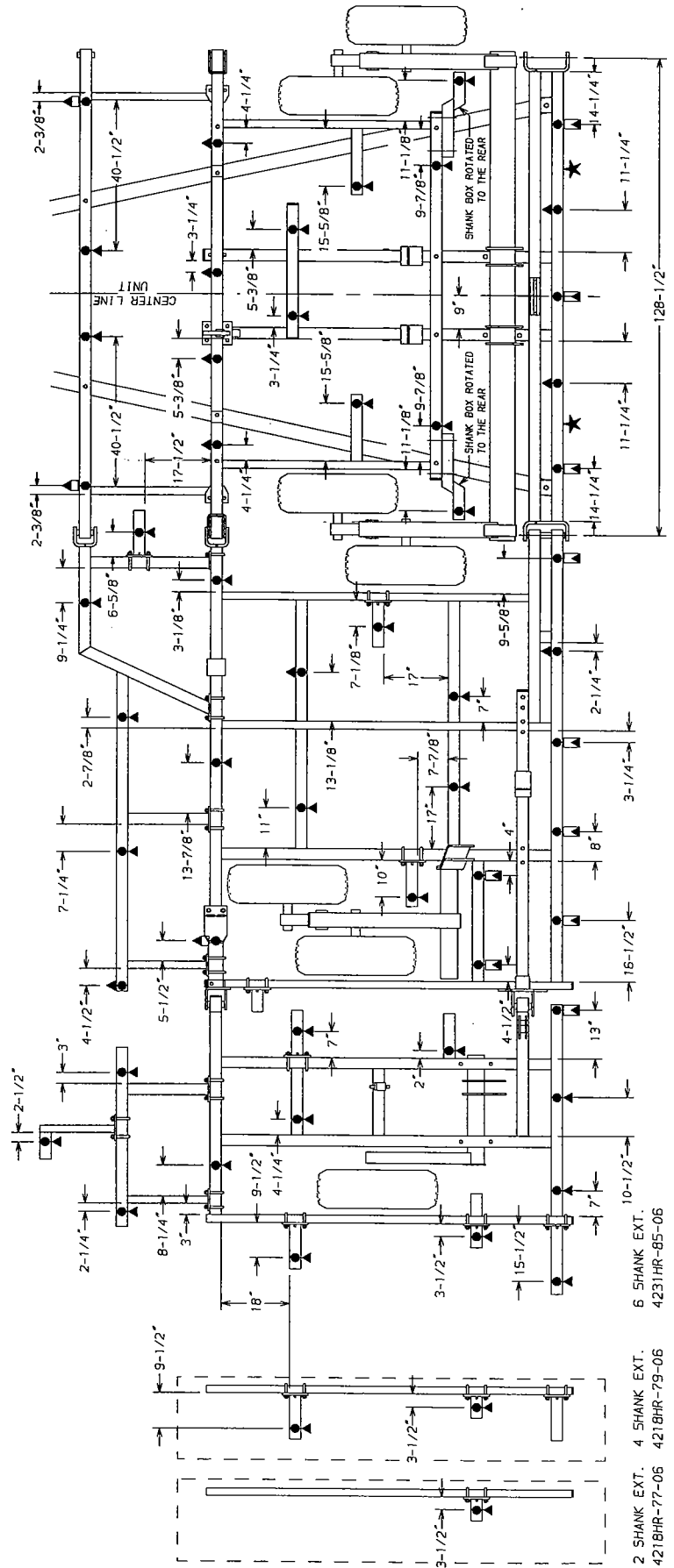
- 2 SHANK EXT. 4218HR-77-07
- 4 SHANK EXT. 4218HR-79-07
- 6 SHANK EXT. 4218HR-85-07

M O D E L 4 2 4 1 H R

EQUIPPED WITH 2-PIECE K-TINE SHANKS

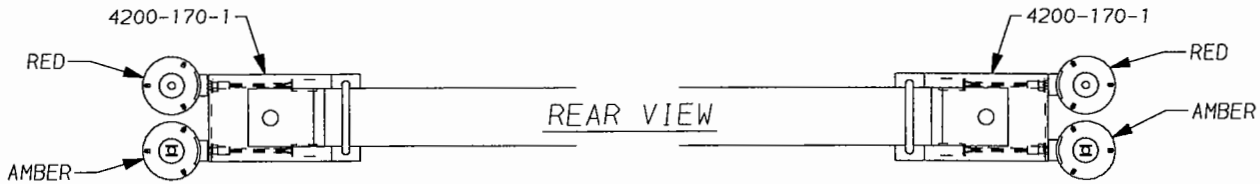
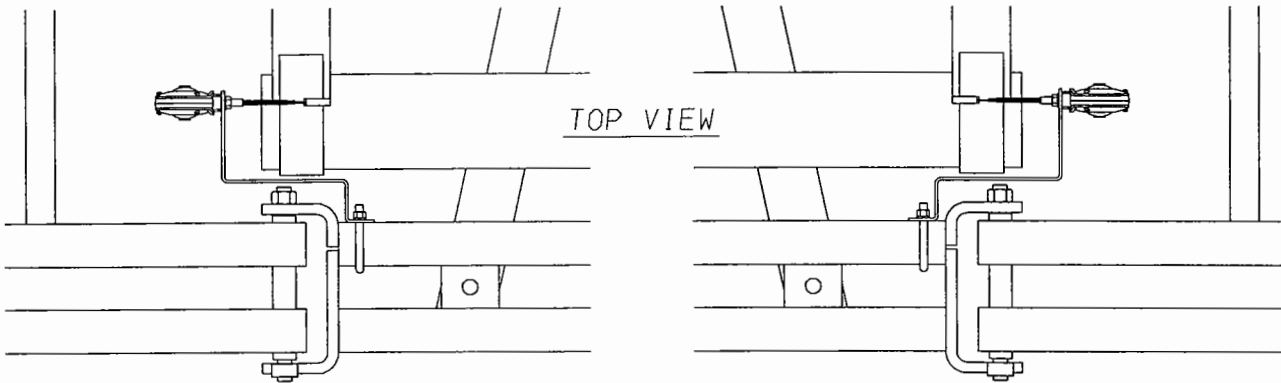


6" SPACING
★ REAR STAND LOCATIONS



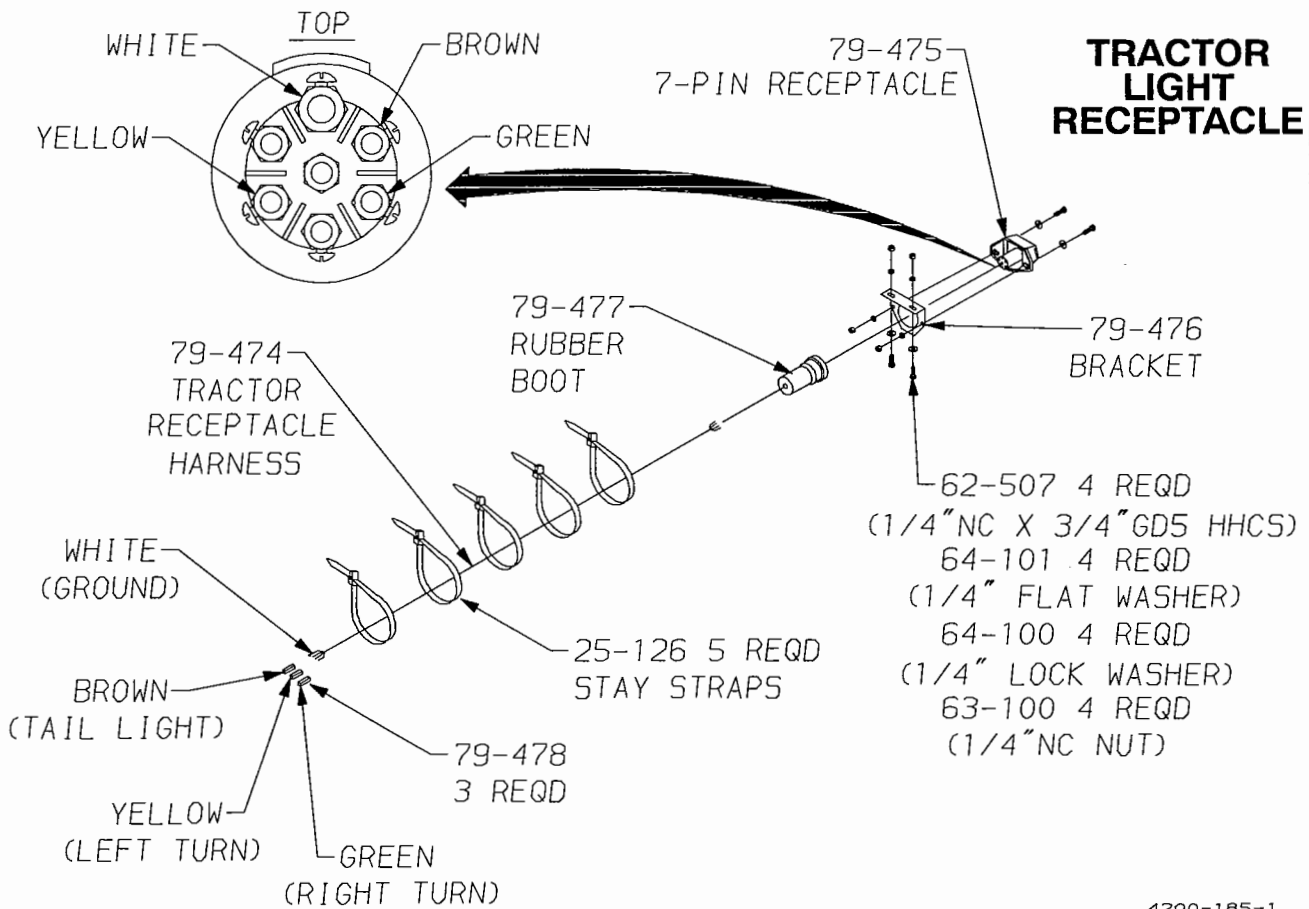
4200
LEFT REAR HINGE

4200
RIGHT REAR HINGE

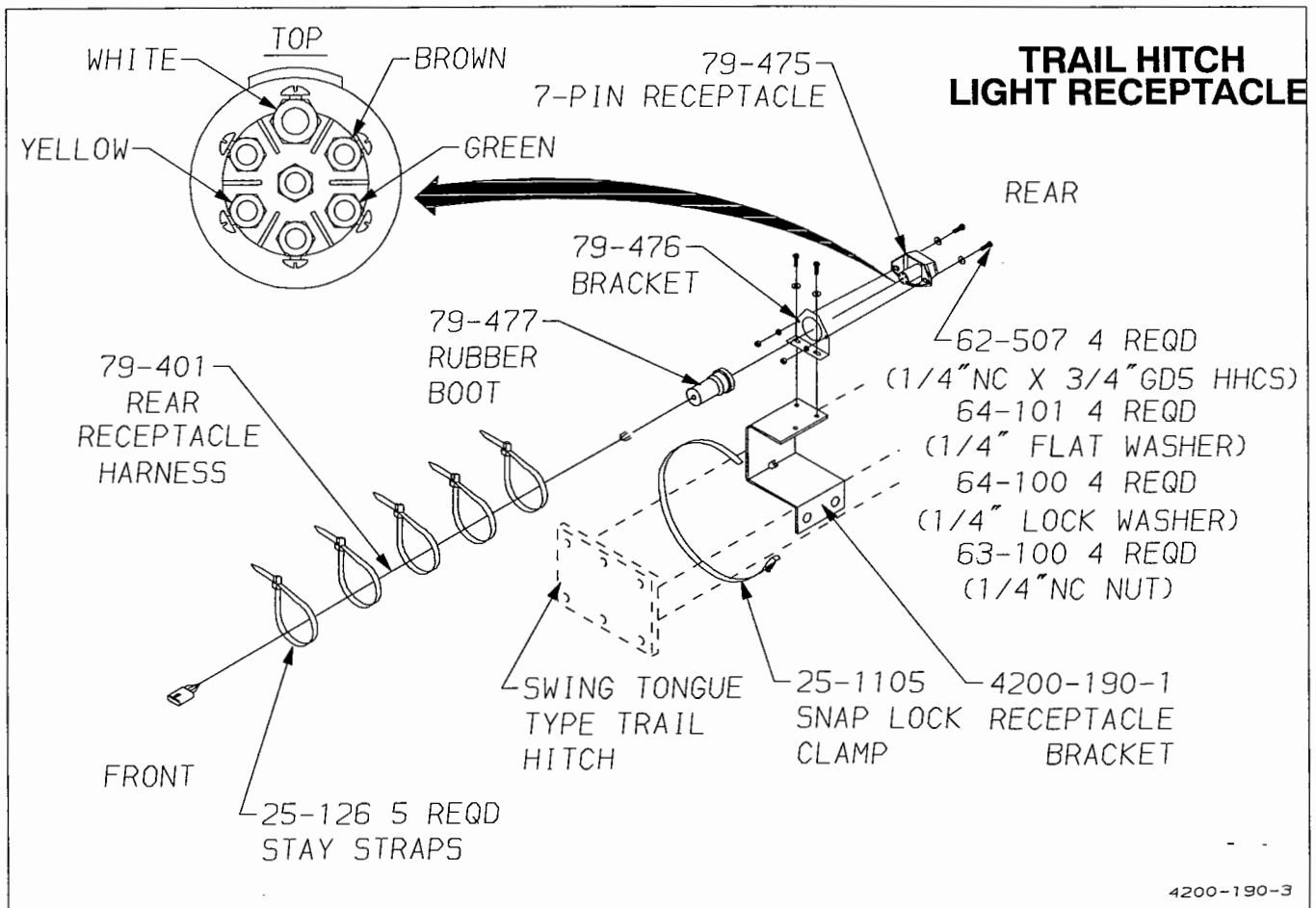
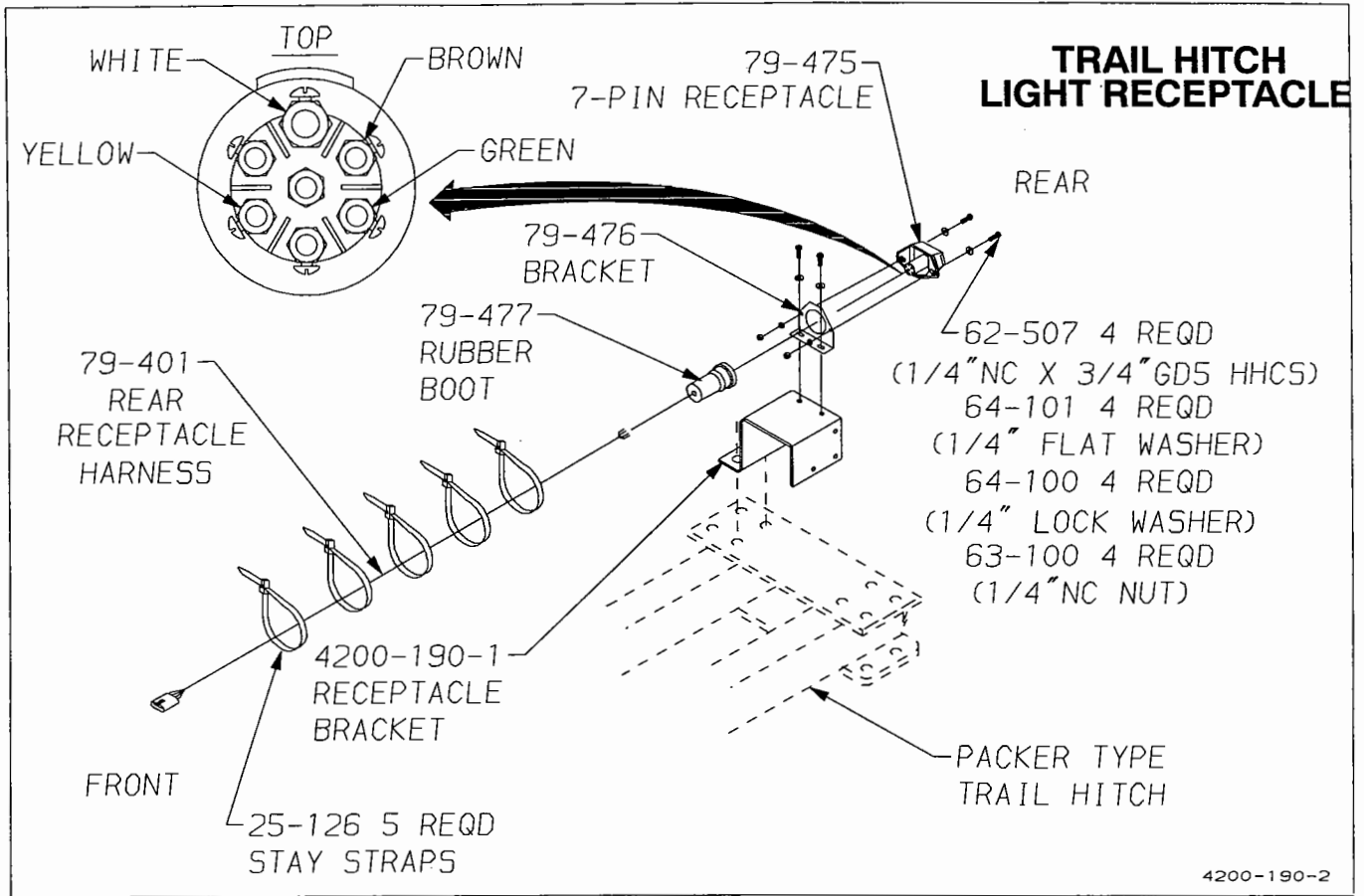


4200-170-2
REV. 1/99

TRACTOR LIGHT RECEPTACLE



4200-185-1



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SAFETY FIRST

Be observant and safety minded. Recognize and correct or avoid hazardous conditions before an accident can happen. Most accidents can be prevented by practicing simple fundamental safety rules.

1. Read and understand the implement and tractor owner's manuals before operating.
2. Be sure safety decals and reflectors are clean and in place.
3. Do not climb or walk on gangs or frames or tires.
4. Never position yourself under any portion of implement unless the transport lock is engaged or entire unit is lowered to the ground.
5. Stop engine before leaving the operator's position to adjust, lubricate, clean or unclog the machine.
6. Do not stand between the implement and tractor unless the tractor brakes are locked and engine is shut off.
7. Do not stand on or straddle a tongue when unhitching.
8. Always store a winged implement with the wings down.
9. Never remove locking pins until hydraulic cylinders and lines are full of oil and free of air. See Operating Instructions for proper method of removing air.
10. Never use machinery until all safety devices are in place.
11. Release all hydraulic pressure before shutdown periods.
12. Comply with Federal, State and local laws.
13. Use a Slow-Moving-Vehicle (SMV) emblem when transporting.
14. Always use a safety chain of tensile strength equal to the gross weight of the implement and attachments when roading.
15. Towing vehicle weight must exceed weight of towed implement.
16. Check wheel bolts before and during transport.
17. Always use wing locks and road locks to hold raised positions.
18. Never permit riders on implement.
19. Do not road an implement over 15 miles per hour on the best surface conditions. Reduce speed when going up or down hills and when approaching ditches.
20. Keep small children away from farm equipment.
21. Never modify an implement without permission from the Krause Engineering Department.
22. Always use authorized Krause parts.