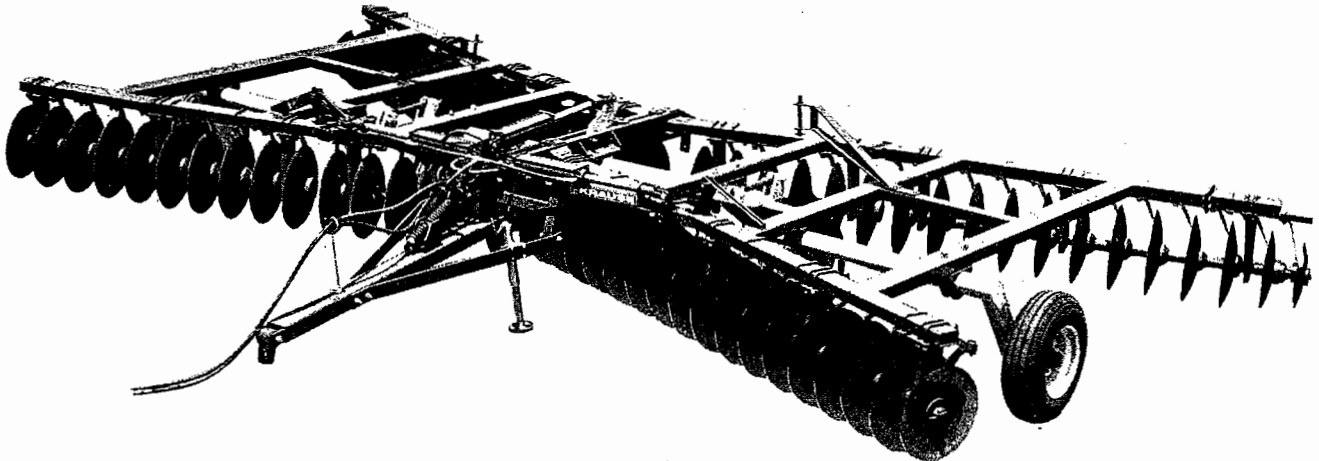


OWNER'S MANUAL
1400-1



**FLEX-WING
TANDEM
DISC HARROW**

MODELS

1401	1404	1407
1410	1413	1416
1412	1415	1418

FLEX GANG MODELS

1421	1424	1427
1422	1425	1428

KRAUSE

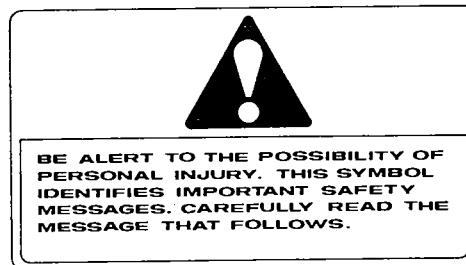
305 SOUTH MONROE STREET HUTCHINSON, KANSAS 67501

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 the information in the manual be reviewed and studied carefully before operation. The contents provide operating instructions, maintenance instructions and how to make adjustments.

SAFETY ALERT SYMBOL



MODEL NUMBER_____

SERIAL NUMBER_____

PURCHASE RECORD--DATE_____

1400 SERIES WING TANDEM
DEALER PREDELIVERY CHECK
TO BE CHECKED BY DEALER

CUSTOMER _____ DATE _____
ADDRESS _____
DEALER _____
MODEL NUMBER _____ 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 are secured with hairpin clips should be in place. The hydraulic system requires 12 Quarts/ 11.5 Liters of oil.
3. ___ Examine hydraulic hoses to see that they are protected from damage.
4. ___ Bolts attaching the hub spindle weldments to the rocker shaft should be tight. Check to see that bearings have been adjusted and greased.
5. ___ Check lug bolts holding wheels to the hubs to be sure they are torqued from 80 to 90 Foot Pounds/120 N·m.
6. ___ 10.00 X 15 8Ply tire should be on the unit with 36 to 40 PSI/ 260 kPa pressure.
7. ___ Check to see that bolts attaching tongue to frame are tight, and correct bolt holding clevis weldment, hitch tube and helper spring with washer is in place and tight.
8. ___ The jack should be operational for support of tongue when the implement is not attached to a tractor.
9. ___ Are wings attached with special pins and secured with GRADE 5 bolts and self locking nuts.
10. ___ Road lock and wing locks are correctly installed and operate satisfactorily.
11. ___ Restrictors are installed in the wing lift cylinder "Rod" end ports.
12. ___ All decals are in place per page A11 of this owner's manual.
13. ___ Customer review sheet is filled out and signed.

DELIVERED BY _____

DATE _____

1400 SERIES WING TANDEM
CUSTOMER REVIEW SHEET

CUSTOMER _____ DATE _____

ADDRESS _____

DEALER _____

MODEL NUMBER _____ 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 and wing locks.
7. _____ Explain hydraulic cylinder stroke control for depth control of tillage tool.
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 tool.
11. _____ Check wheel lug bolts frequently until they become set.

DEALER _____ DATE _____

CUSTOMER _____ DATE _____

CONTENTS

PURCHASE RECORD	Inside Cover
SPECIFICATIONS	3
GENERAL INFORMATION	6
OPERATING SECTION	
Safety First	02
Preparing the Harrow	02
Hitching	02
Transporting	02
Field Adjustments	03
Field Operation	04
Servicing	05

PARTS LISTINGS	
Main Frame, Tongue, Jack	P1
Hitches, Hose Carrier	P1
Road Lock, Cylinder Lug	P1
Wing Frames	P3
Rocker Shafts, Bearings	P4
Hubs	
1918-17-0 (standard)	P5
2135-17-0	P6
Spacer Spools	P7
Bearing Arms	P8
Tie Rods (Rigid Gang)	P10
Disc Blades, Wheels	P13
Tires, Extensions	P13
Scrapers	P14
Extension Trash Bars	P15
Center Point (Standard)	P16
Spring Center Point	P17
Trail Hitch, Filler Shank	P18
Chain Trash Guard	P18

Hydraulics	
Hose Kit for Dual	P19
Hose Kit for Wings	P19
Hose Kit for Single	P20
Selector Valve	P20
3 X 16 Cylinder	P21
4 X 16 Cylinder	P22
5 X 16 Cylinder	P23

ASSEMBLY SECTION			
Proper Bolt Use		A1	
Main Frame		A2	
Cylinder Lug		A2	
Main Rocker Shaft & Hubs		A3	
Tongue		A3	
Tongue Adjustment Screw		A4	
Clevis, Hose Carrier, Jack		A4	
Wing Frames		A5	
Wing Rocker Shafts		A5	
Adjustment Links		A6	
Wing Locks & Center Point		A6	
Trail Hitch		A6	
Disc Gangs		A6	
Bearing Arms		A7	
Disc Gang Assembly		A7	
Scrapers		A9	
Hydraulics		A10	
Decals		A11	
Rigid Gang Placement Drawings			
Model	Page	Model	Page
1401	A12	1413	A17
1401	A13	1415	A18
1407	A14	1416	A19
1410	A15	1418	A20
1412	A16		

R O C K F L E X M O D E L S E C T I O N

DESCRIPTION	ASSEMBLY PAGE	PARTS LIST PAGE
FRAMES	F1	P1 through P6
DISC GANGS	F1	
FLEX BEARING ARMS	F1	F14
DISC GANG ASSEMBLY	F1	
TRASH BARS	F2	F15
SCRAPERS	F2	F16
HYDRAULICS	F2	P19 through P23
ROCK FLEX PLACEMENT DRAWINGS		

MODEL	WITH TRASH BARS	WITH SCRAPERS
1421	F3	F3
1422	F4	F5
1424	F6	F6
1425	F7	F8
1427	F9	F9
1428	F10	F11



SPECIFICATIONS

The Krause Flex Wing Tandem Disc Harrow is built for the large tractors on today's modern farms. Construction features include a high strength tubular steel frame and large rockershafts for years of dependable service.

The flex-wing tandem will conform to field irregularities with a unique 3-section side-to-side flexibility, and the floating action tongue features front to rear flexibility.

The 1400 Series offer cut widths from 18' 1" to 25' 2" and a choice of 8", 9-1/8", or combination 9-1/8" and 8" disc spacing. 20" 9 gauge plain disc blades are standard and mount on large 1-1/2" diameter tie rods. Large triple seal, self-aligning, anti-friction ball bearings support the gangs on sturdy bearing arms that provide ample trash clearance. Adjustable scrapers offer maximum cleaning efficiency in most conditions.

Three hydraulic cylinders will provide easy operation of the harrow. Hydraulic controls offer on-the-go depth control during field operation and hydraulic wing lifts will fold the disc width for easy road travel.

Two large 11.L x 15 flotation tires will support the center section, and two 9.5L x 15 flotation tires will support the wings to provide minimum soil compaction in the field.

This series also include three rugged rock-flex models designed for rocky field conditions encountered in many parts of the country. These models feature a new tempered alloy steel "C" type bearing arm that allows flexibility in stump and rocky conditions, reducing shock loads on the disc frame and provides less disc blade breakage.

SIZES

STANDARD GANG MODELS

MODEL	Total No. of Disc Blades Less Extensions	Spacing	Disc Blade Size	ASAE Cut Width Less Ext.	Width Center Section	Width Wing Section	Wheel Spacing		Wheel Size	Tie Rod Size	Suggested Hydraulic Cylinder Size		Approx. Folded Width
							Center Section	Wing Section			Depth Con.	Wing Lift	
1401	48	9-1/8"	20"-22"	18'-1"	9'-4"	4'-4"	118"	209"	15x10"	1-1/2"	4x16	3x16	13'-10"
1404	56	9-1/8"	20"-22"	20'-11"	9'-4"	5'-9"	118"	235"	15x10"	1-1/2"	4x16	4x16	13'-10"
1407	68	9-1/8"	20"-22"	25'-2"	9'-4"	7'-11"	118"	268"	15x10"	1-1/2"	4x16	4x16	13'-10"
1410	52	9-1/8" F 8" R	20"-22"	18'-7"	9'-4"	4'-7"	118"	209"	15x10"	1-1/2"	4x16	3x16	13'-10"
1413	60	9-1/8" F 8" R	20"-22"	21'-2"	9'-4"	5'-11"	118"	235"	15x10"	1-1/2"	4x16	4x16	13'-10"
1416	72	9-1/8" F 8" R	20"-22"	24'-10"	9'-4"	7'-9"	118"	268"	15x10"	1-1/2"	4x16	4x16	13'-10"
1412	56	8"	20"-22"	18'-7"	9'-4"	4'-7"	118"	209"	15x10"	1-1/2"	4x16	3x16	13'-10"
1415	64	8"	20"-22"	21'-2"	9'-4"	5'-11"	118"	235"	15x10"	1-1/2"	4x16	4x16	13'-10"
1413	76	8"	20"-22"	24'-10"	9'-4"	7'-9"	118"	268"	15x10"	1-1/2"	4x16	4x16	13'-10"

FLEXIBLE GANG MODELS

9/76

1421	50	9-1/8"	22"	18'-1"	9'-4"	4'-4"	118"	209"	15x10"	1-1/2"	4x16	4x16	13'-10"
1424	58	9-1/8"	22"	20'-11"	9'-4"	5'-9"	118"	235"	15x10"	1-1/2"	4x16	4x16	13'-10"
1427	70	9-1/8"	22"	25'-2"	9'-4"	7'-11"	118"	268"	15x10"	1-1/2"	4x16	4x16	13'-10"
1422	58	8"	20"-22"	18'-7"	9'-4"	4'-7"	118"	209"	15x10"	1-1/2"	4x16	4x16	13'-10"
1425	66	8"	20"-22"	21'-2"	9'-4"	5'-11"	118"	235"	15x10"	1-1/2"	4x16	4x16	13'-10"
1428	78	8"	20"-22"	24'-10"	9'-4"	7'-9"	118"	268"	15x10"	1-1/2"	4x16	4x16	13'-10"

FRAMES

The structure of the one piece main frame consists of 3" x 5" x 1/4" structural steel tubing with two 2" x 5" x 1/4" steel tubes down the center. Gussets and steel plates have been included in the design for additional strength. The wing frames are constructed from the same structural steel tubing and hinge to the main frame with large diameter, regreaseable hinge pins. The wings can be raised and locked in the roading position.

ROCKER SHAFTS

The main rocker shaft is constructed from 6" standard pipe with wheel arms that are made from 5" x 5" x 1/4" steel tubing. The depth control cylinder lug is fitted with a replaceable wear sleeve that is compatible with an ASAE 16" stroke cylinder clevis pin. The wing rocker shafts are made from 4" standard pipe with wheel arms made from 3" x 5" x 1/4" steel tubing. All three rocker shafts are linked together with two adjustable links that permit each section to flex with ground contour but maintain uniform penetration with one cylinder.

TONGUE, CLEVIS & JACK

The long and wide tongue is made from 4" x 6" x 1/4" tubing with additional side braces that attach to the main frame with a low pull point. The floating action of the tongue features a heavy-duty spring loaded adjustment screw. The spring transfers weight to help keep the disc level front to rear during operation and after the initial frame leveling with the adjustment screw. A heavy-duty clevis with a 1-5/16" hole is standard with the disc. A jack is also provided to help raise or lower the tongue for hitching the clevis.

HUBS, WHEELS, & TIRES

The hubs are mounted on large diameter axles. The center hubs, or hubs that bolt to the main rocker shaft wheel arms, have six wheel bolts and are assembled to the wheel arms with 4 bolts. The wheels for these hubs are 15 x 10 flotation wheels. The hubs for the wing rocker shaft wheel arms have six wheel bolts and mount to the wheel arms with 2 bolts. The wing hubs use 15 x 8 wheels. Tires are not standard equipment but may be purchased separately. The two center 15 x 10 wheels should have 11.L x 15, 6 ply, tube or tubeless flotation tires, and the wing wheels should have 9.5L x 15, 6 ply, tube or tubeless flotation tires for minimum soil compaction.

FLEX GANG BEARING ARMS

The shank, or "C" type design, is a new tempered alloy steel that links the disc gang to the frames. Each flexible bearing arm has a rubber-encased, triple-sealed ball bearing that helps absorb shock loads.

DISC GANGS

20" disc blades are standard and 22" disc blades are offered as option. The blades are mounted on medium carbon 1-1/2" diameter tie rods with cast spacer spools that are machined on each end for a snug contoured fit against the disc blades. The gangs are carried on triple sealed, anti-friction ball bearings between two flangettes that permit self-aligning. The flangettes are bolted to a bearing arm hanger that connects the gangs to the bottom of the frames. The distance from the bottom of the frame to the center of the tie rod is 14-1/2" to provide ample trash clearance. The angles of the disc gangs are at 20° in the front and 17° in the rear to provide maximum efficiency during operation. These angles have been predetermined and incorporated in the frame structure of the tandem disc.

SCRAPERS

Scrapers are provided as standard equipment. All blades are scraped except the two outside front blades and the two inside rear blades. The blades are channel formed on one end that mounts the blade to a 1-3/4" square steel tube used as a scraper frame. The end of the scraper blade that cleans and scrapes is contoured to fit the concave side of the disc blade. Each blade can be adjusted individually or all blades at the same time.

HYDRAULICS

All hydraulics are offered as accessories. These models are designed to use ASAE 16" stroke hydraulic cylinders. (The chart reflects suggested cylinder sizes.) A selector valve is offered to permit single coupler power units to operate depth control or wing lift cylinders. A hose kit is offered for this type of system. A different hose kit is also offered for dual control power units. Two restrictors are provided in each unit's standard bolt box, and are to be used at the rod end of each wing lift cylinder to regulate and control the hydraulic fluid during the wing lifting or lowering cycles.

DEPTH & ROAD CLEARANCE

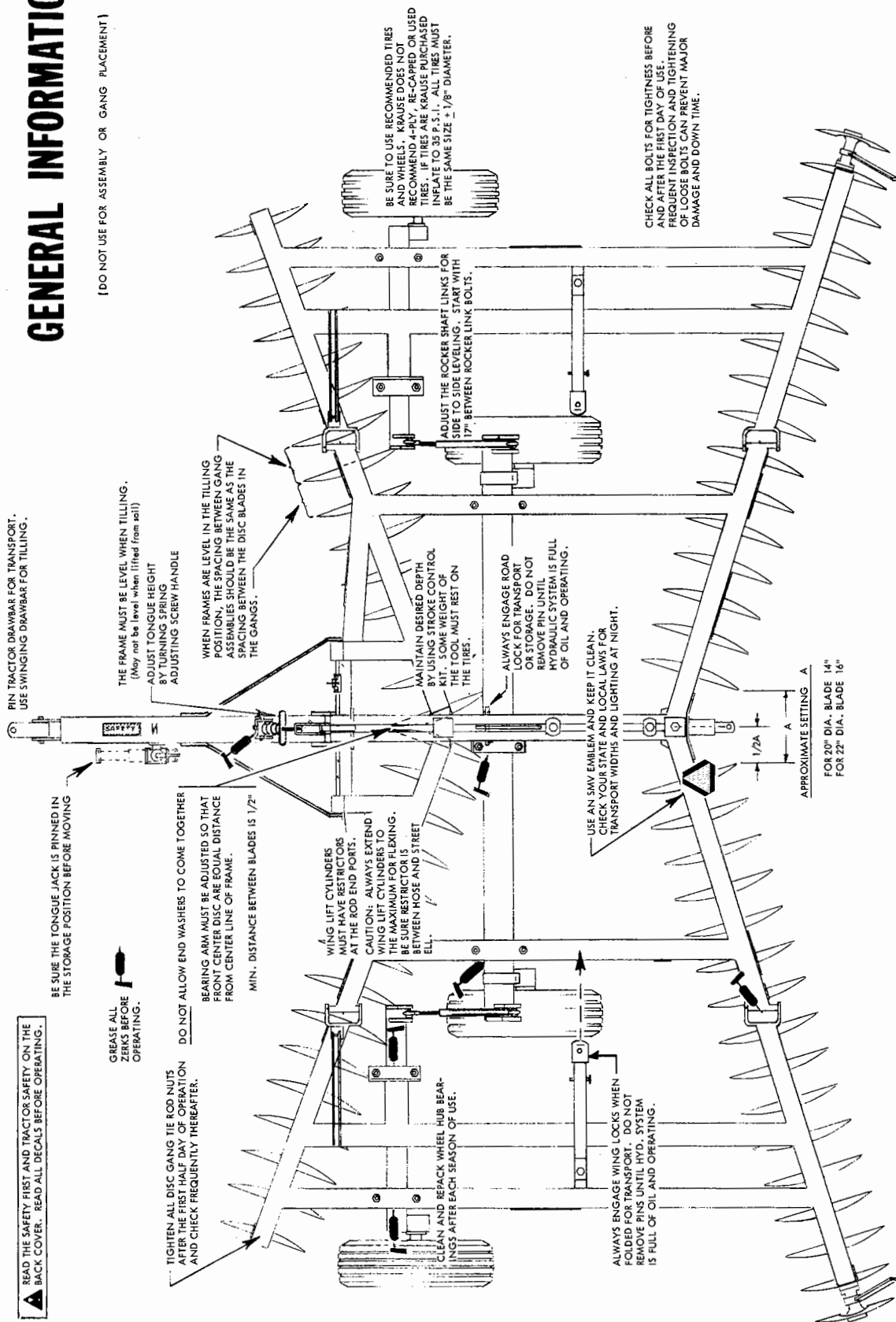
Maximum working depth with 22" disc blades is approximately 7". Rading clearance with 22" disc blades and suggested tire sizes, and the unit level, is approximately 8".

SIZES

Cut widths, less extensions, range from 18' 1" to 25' 2". These models have disc blade spacing with 8", 9-1/8", or a combination of both 9-1/8" and 8" spacing. The transport, or roading width, is approximately 13' 10".

GENERAL INFORMATION

(DO NOT USE FOR ASSEMBLY OR GANG PLACEMENT)



▲ READ THE SAFETY FIRST AND TRACTOR SAFETY ON THE BACK COVER. READ ALL DECALS BEFORE OPERATING.

GREASE ALL ZERKS BEFORE OPERATING.

TIGHTEN ALL DISC GANG TIE ROD NUTS AFTER THE FIRST HALF DAY OF OPERATION AND CHECK FREQUENTLY THEREAFTER.

BE SURE THE TONGUE JACK IS PINNED IN THE STORAGE POSITION BEFORE MOVING.

DO NOT ALLOW END WASHERS TO COME TOGETHER

BEARING ARM MUST BE ADJUSTED SO THAT FRONT CENTER DISC ARE EQUAL DISTANCE FROM CENTER LINE OF FRAME.

MIN. DISTANCE BETWEEN BLADES IS 1/2"

WING LIFT CYLINDERS MUST HAVE RESTRICTORS AT THE ROD END PORTS.

CAUTION: ALWAYS EXTEND WING LIFT CYLINDERS TO THE MAXIMUM FOR FLEXING. BE SURE RESTRICTOR IS BETWEEN HOSE AND STREET ELL.

CLEAN AND REPACK WHEEL HUB BEARINGS AFTER EACH SEASON OF USE.

ALWAYS ENGAGE WING LOCKS WHEN FOLDED FOR TRANSPORT. DO NOT REMOVE PINS UNTIL HYD. SYSTEM IS FULL OF OIL AND OPERATING.

USE AN SMI EMBLEM AND KEEP IT CLEAN. CHECK YOUR STATE AND LOCAL LAWS FOR TRANSPORT WIDTHS AND LIGHTING AT NIGHT.

APPROXIMATE SETTING A
FOR 20" DIA. BLADE 14"
FOR 22" DIA. BLADE 16"

BE SURE TO USE RECOMMENDED TIRES AND WHEELS. KRAUSE DOES NOT RECOMMEND 4-PLY, RE-CAPPED OR USED TIRES. IF TIRES ARE KRAUSE PUNCTURED INFLATE TO 35 PSI. ALL TIRES MUST BE THE SAME SIZE ± 1/8" DIAMETER.

ADJUST THE ROCKER SHAFT LINKS FOR SIDE TO SIDE LEVELING. START WITH 17" BETWEEN ROCKER LINK BOLTS.

CHECK ALL BOLTS FOR TIGHTNESS BEFORE AND AFTER THE FIRST DAY OF USE. FREQUENT INSPECTION AND TIGHTENING OF LOOSE BOLTS CAN PREVENT MAJOR DAMAGE AND DOWN TIME.

▲ WARNING: TIGHTEN ALL WHEEL BOLTS BEFORE AND SEVERAL TIMES DURING THE TRANSPORT DELIVERY OF A NEW TOOL. OR AFTER THE REPLACEMENT OF A NEW HUB OR WHEEL. THE LOSS OF A WHEEL DURING TRANSPORT CAN ENDANGER YOUR LIFE OR OTHERS. OPERATORS SHOULD CHECK WHEEL BOLTS DAILY UNTIL THEY ARE SEATED FIRMLY.

▲ DANGER
DO NOT STAND OR WALK UNDER THE WINGS FOR ANY REASON WHILE THEY ARE IN THE TRANSPORT POSITION, OR LIFTED FROM THE GROUND WITHOUT BLOCKS OR STANDS FOR SUPPORT.

▲ WARNING: IF INJURED BY ESCAPING HYDRAULIC FLUID, SEE A DOCTOR ONCE SERIOUS INFECTION OR BURNING CAN BE DEVELOPED. IF PROPER MEDICAL TREATMENT IS NOT ADMINISTERED IMMEDIATELY, ESCAPING HYDRAULIC FLUID UNDER PRESSURE CAN HAVE SUFFICIENT FORCE TO PENETRATE THE SKIN, CAUSING SERIOUS PERSONAL INJURY. BEFORE APPLYING PRESSURE TO THE SYSTEM, BE SURE ALL CONNECTIONS ARE TIGHT AND HOSES ARE NOT DAMAGED. ESCAPING FLUID FROM A SMALL HOLE CAN BE ALMOST INVISIBLE. USE CARDBOARD OR WOOD TO SEARCH FOR SUSPECTED LEAKS. DO NOT USE YOUR HANDS.

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

■ SAFETY FIRST

Read all Safety Decals on the implement and review the Tractor Safety and Safety First on the back cover of the manual to refresh your memory. Note: A new safety symbol  has been designed to relate a message of: DANGER, WARNING, CAUTION or BE CAREFUL. Watch for this symbol and read the information it relates for your protection.

■ PREPARING THE DISC HARROW

Inflate all tires to 35 p.s.i. Attach an ASAE 16" stroke hydraulic cylinder for depth control. If unit is to be equipped with wing lift cylinders, attach the ASAE 16" stroke cylinders. (Make sure wings are down and cylinders are full of hydraulic fluid. Fully extend cylinders before attaching.)

Lubricate all grease fittings on rocker shafts, wing hinges, and tongue adjustment screw. Tighten any loose nuts and bolts.

■ TRACTOR HITCHING AND UNHITCHING

The disc harrow must be in the raised road lock position before attaching it to, or detaching it from the tractor drawbar. Lowered wings will greatly reduce the weight on the tongue and aid attaching or detaching the unit. Make sure the tongue jack is in storage position before moving the disc harrow. Clean and connect the hose couplers.

When detaching the disc harrow from the tractor, be sure the tongue jack is in position, road lock pin in, wings down, and the hydraulic cylinder hoses disconnected before driving the tractor away.

■ TRANSPORTING

WHEEL BOLTS

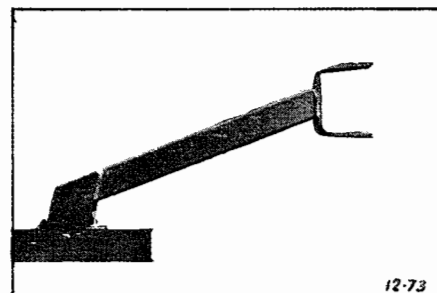
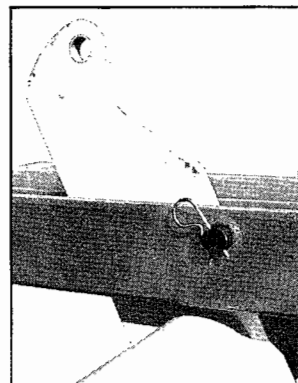
 **WARNING.** Tighten all wheel bolts before, and several times during the transport delivery of a new tool or replacement with new hub or wheel. The loss of a wheel during transporting can endanger your life or others. Operators should check bolts daily until bolts seat firmly.

Road Lock

The right side of the unit should be protected from damage that can be caused by roadside chuck holes and posts. Always provide the greatest protection for oncoming traffic. A road lock pin in front of the rocker shaft cylinder lug is provided to hold the unit in a raised position for road travel and maintenance or adjustments. Storage for this pin is behind the rocker shaft cylinder lug between the frame members during operations.

Wing Locks

The wing sections of these models fold to minimize road width. Always unpin and lower wings when unit is not in transport. Note: Make sure all road lock and wing lock pins are removed before operating the hydraulic cylinders. If not, damage may occur to the disc harrow or the hydraulic cylinders.



12-73

Speed

Road at a reasonable speed not to exceed 15 miles per hour. Pin the tractor drawbar. Use a safety chain with the tensile strength equal to the gross weight of the implement.

Moving your disc from field to field over rough terrain at high speed will result in major damage. Slow down and pull over to the right while passing oncoming traffic. **WATCH YOUR CLEARANCE** and show your SMV signs.

Comply with your state and local laws governing lighting at night and maximum width regulations.

Use an ASAE slow moving vehicle emblem when transporting on road or highway. Safety light equipment should be installed when harrow is transported on the highway. A safety light bracket is furnished with your unit. See your implement dealer for safety light equipment.

■ FIELD ADJUSTMENTS

Leveling

Front to rear and side to side leveling will affect how the unit will level the field. Running the harrow low in front may result in ridging on the outside.

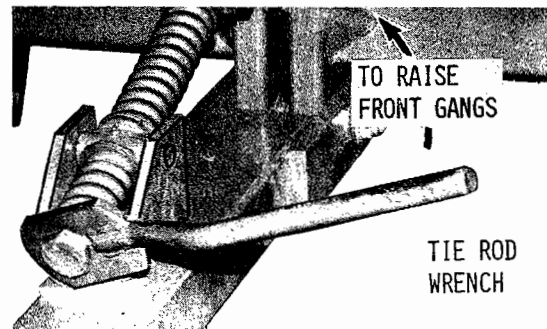
Front to Rear

The angle of the front frame members give an illusion that the front gangs are running deeper. When adjusting front to rear leveling, stand well away from the unit and view it from frame height. A leveling screw is provided to level the harrow front to rear. Adjust the leveling screw so that the frame is level when tilling, turn the leveling screw clockwise to raise the rear; turn counter clockwise to raise the front. Note: For ease of leveling adjust the leveling screw while the harrow is in the raised position. **BE SURE** the jam nut on the leveling screw is snug against the bottom of the spring to prevent excessive play.

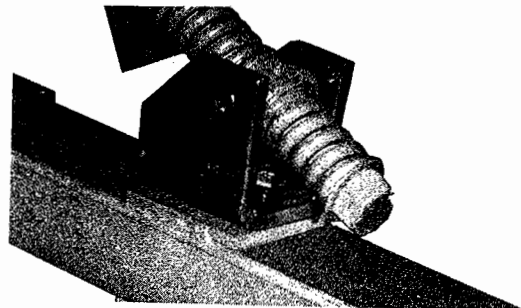
Side to Side

The adjustment links between the main rocker shaft and wing rocker shafts are provided to level the unit from side to side. Support the wings and remove a pin, adjust the screw until the wing is level with main section in working position. **NOTE: WINGS MAY NOT NECESSARILY BE LEVEL WITH MAIN SECTION WHEN THE HARROW IS IN RAISED POSITION,**

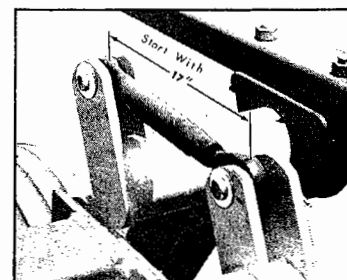
OPTIONAL Hitch Height Selection



PLACE BRACKETS IN THIS POSITION FOR DRAW BARS THAT ARE 15" OR LOWER.



PLACE BRACKETS IN THIS POSITION FOR DRAW BARS THAT ARE 15" OR HIGHER.

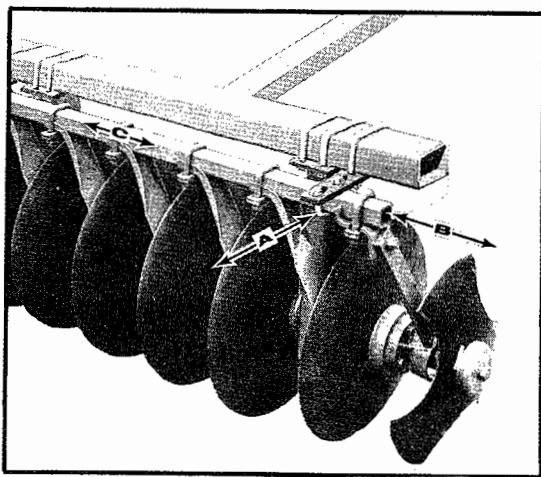


Eliminate Furrows

SPACING between inside rear blades should be set at approximately 16 inches. Certain field conditions, blade sizes, and tractor speeds will affect this setting, move gangs in or out from normal setting to eliminate a ridge or furrow between rear gangs.

Controlled Depth

For uniform penetration and leveling, you should always carry some weight on the wheels. After determining the correct depth, position the stop on your cylinder rod so the wheels will lower the frames and gangs to the same position each time.



Scrapers

The holes in each scraper bracket are slotted front to rear so that by moving the scraper frame assembly in these slots you can move all scrapers on the frame closer to, or further in from the edge of the disc blade, A. Scrapers can be adjusted closer to or further away from the blade by moving the entire assembly from side to side at the bracket location, B. Also, each scraper blade can be adjusted individually along the scraper frames, C.

When scrapers are required, adjust blades so the scraping edge of each scraper blade is flush against the disc blade but not tight enough to prevent the gang from revolving freely. When scrapers are not required, adjust the scraper frame to move scraper blades away from the disc blades. For most conditions, the scrapers

should be positioned approximately 2 inches in from the cutting edge and approximately $1/8$ inch from the surface of the disc blade.

Each field requires some individual scraper adjustment, and moving the scrapers one way or the other will help solve your individual scraper problems. Removal of the scraper blade at the bearing arm may be necessary in some conditions. Frequent examination will prevent damage to scraper assemblies and spacer spools.

THE EXTENSION DISC ASSEMBLY, when mounted to the outer end of the rear disc gangs, will level the ridge left by the front gangs and the furrow left by the rear gangs.

■ FIELD OPERATION

Working Depth

The depth of your disc harrow is controlled by the remote cylinder control lever of the tractor. The wheels will act as gauge wheels to regulate working depth. Your disc harrow will work more uniformly if some weight of the unit is carried on the wheels. Speed will affect working depth. Do not expect maximum depth at high field speeds. Other factors affecting working depth are moisture conditions, amount of trash on the surface, polish of the disc blades, blade spacing, and sharpness of disc blades.

MODELS 1422-1425-1428 - Remember to reduce speeds when working in extremely rocky conditions. Field speeds should not exceed 5 m.p.h. You will get better penetration and less blade breakage at lower speeds.

Turning in the Field

Short turns at working depth may result in driving the front blade deeper in the ground. This may cause damage to disc blades or bearings. If short turns must be executed, raise the unit out of the ground and complete the turn before engaging the tool for further tilling.

Flexibility

For maximum flexibility make sure the wing hydraulic cylinders are fully extended after the wing is down.

When working terraced ground, place the wing upon the terrace not over the terrace, as the wings are limited in their downward movement, but not in their upward movement.

Due to soil variations there will be times when the center of the disc will run high or low for short periods of time. This is common to all flexible implements and has no real affect on the quality of work.

Note: If the unit runs high in the center due to hard ground, re-check the leveling front to rear and side to side.

■ SERVICING

General Maintenance

ALL NUTS SHOULD BE CHECKED AND TIGHTENED AFTER THE FIRST DAY'S OPERATION AND PERIODICALLY THEREAFTER. CHECK DISC GANG TIE RODS FREQUENTLY AND KEEP TIGHT AT ALL TIMES. The Krause Disc is a ruggedly designed implement which will perform efficiently if properly adjusted, lubricated, and if the blades are kept sharp. Note: Disc blades should be sharpened by the grinding or shaving process and not by rolling. Blades that have been rolled are not eligible for warranty adjustment.

Lubrication

Minimum lubrication is required as all disc gang bearings have been permanently grease-packed and sealed at the factory. The rocker shaft bearings require periodic lubrication and the wheel hubs should be repacked and adjusted annually. Coat disc blades with rust preventative when harrow is not in use. Regreaseable bearings should be greased after use and before long periods of storage.

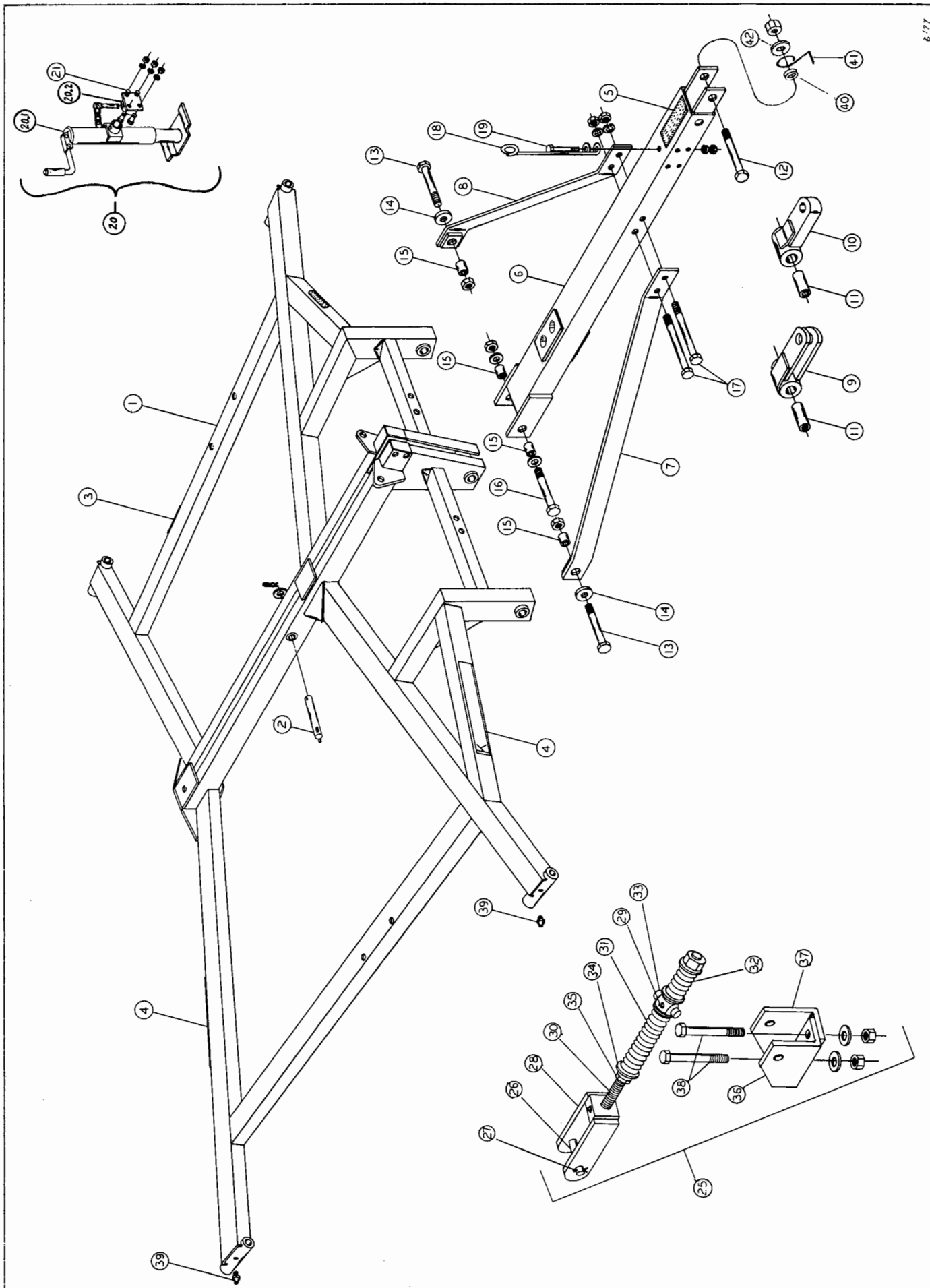
Hydraulics

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 connect the hoses to the tractor hydraulic couplers. Make sure the tractor reservoir is full of manufacturer's recommended hydraulic oil. Extend and retract the cylinders holding the control lever open and pausing at the end of each stroke. This will bleed the air from the cylinders and hoses. Continue the action several times until the cylinders respond with immediate and solid actuation. When all air has been purged from the system, pin the rod ends to the cylinder lugs and operate the depth control and wing lift thru their complete cycles. Never attach a cylinder to a wing while in a raised position, and keep all persons at a safe distance away from the unit in case of failure.

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 CLAIRIFY PROPER OPERATIONAL STEPS.

This image shows a single page of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



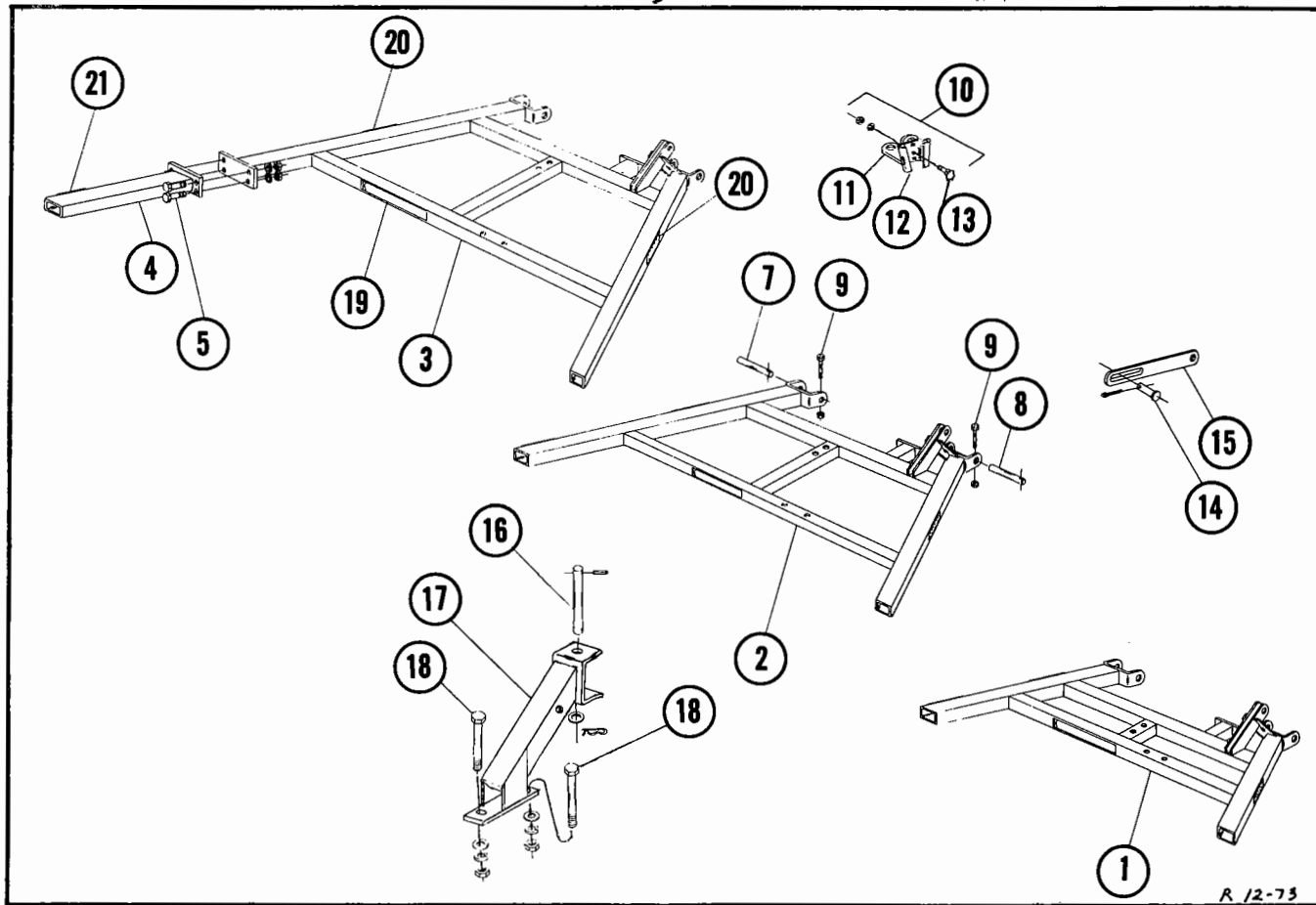
MAIN FRAME & TONGUE

FOR MODELS - ALL

6/77

ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	1402-1-0	Main Frame	1
2	960-25-0	Road Lock Pin, 1-1/4" Flat Wshr, 4 Hair Pin	1
3	1280-0-50	Red Reflector	1
4	STD 38-1	Krause Decal	2
5	1520-0-25	Implement Safety Decal	1
6	1402-30-0	Tongue	1
7	1402-32-0	Right Tongue Strap	1
8	1402-32-0	Right Tongue Strap (for left side)	1
9	270-75-0	Clevis (with 1-1/4" hole)	1
10	270-76-0	Clevis (crawler type with 1-1/2" hole)	
11	1330-0-6	Hitch Tube (2" O.D. X 3-7/8")	1
12	1-1/4ncX 7-1/2	Cap Screw, Self Locking Nut	1
13	1nc X 6-1/2	Cap Screw, Self Locking Nut	2
14	770-101-3	Flat Washer	2
15	612-41-2	Spacer	4
16	1nc X 10	Machine Bolt, 2 Flat Wshrs., Self Locking Nut	1
17	3/4ncX 8-1/2	Cap Screw, Lock Washer, Nut	2
18	312-36-1B	Hose Carrier	1
19	1/2ncX 5-1/2	Cap Screw, Flat & Lock Wshrs., Nut	1
20	1480-100-0	Jack Assembly	1
20.1	1480-99-0	Jack	1
20.2	1480-90-0	Jack Mounting Plate	1
21	1/2nc X 7	Cap Screw, Lock Washer, Nut	4
22	1402-27-0	Cylinder Lug (includes bushing)	1
23	770-9-2	Bushing (replacement)	
24	3/4ncX 6-1/2	Cap Screw, Lock Washer, Nut	4
25	1901-35-0	Tongue Adjustment Screw Assembly	1
26	960-35-2	Pin	1
27	7/32 dia X 2	Cotter Pin	2
28	960-34-0	Adjustment Screw Clevis	1
29	1/8npt	1610 Zerk	2
30	1901-33-0	Adjustment Screw	1
31	902-52-3	Spring	1
32	960-35-1	Spring	1
33	902-52-2	Trunnion	1
34	1-1/4 STD	Flat Washer	4
35	1-1/4nc	Jam Nut	2
36	1402-35-1	Right Spring Bracket	1
37	1402-35-2	Left Spring Bracket	1
38	1nc X 7-1/2	Cap Screw, Flat Washer, Self Locking Nut	2
39	1/8npt	1610 Zerk	4
40	1901-0-21	Bushing	1
41	1901-0-20	Clevis Spring	1
42	1-1/4	Flat Washer	1

WING FRAMES, EXTENSIONS



R 12-73

STANDARD

PART LOCATION; Wings hinge to main frame.
Wing lock and lift strap to wing.

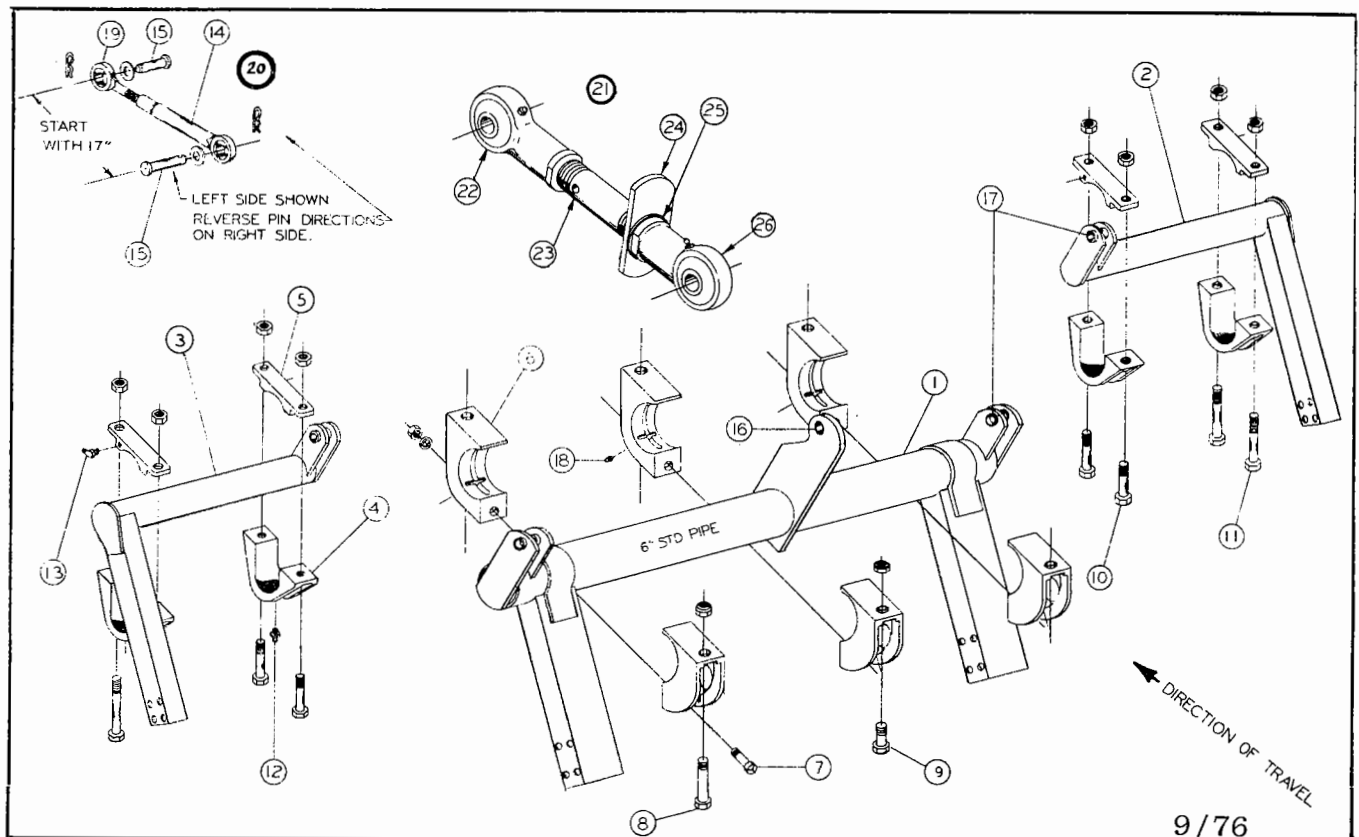
ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	1402-20-0	Right wing frame (shown)	* 1
	1402-18-0	Left wing frame	* 1
2	1405-20-0	Right wing frame (shown)	** 1
	1405-18-0	Left wing frame	** 1
3	1408-20-0	Right wing frame (shown)	***1
	1408-18-0	Left wing frame	***1
4	1408-32-0	Rear wing extension	***2
5	3/4nc X 2	Cap screw, lock washer, nut	8
7	1402-0-1	Rear hinge pin	2
8	1402-0-2	Front hinge pin	2
9	3/8nc X 3-1/2	Cap screw (G5), lock wshr, self lock nut	4
10	1067-59-0	Lamp bracket assembly	1
11	1067-59-1	Lamp bracket	1
12	670-59-3	Bracket socket	1
13	7/16nc X 1	Carriage bolt, lock wshr, nut	1
14	50-30-1	Clevis pin / 1/4 X 1-3/4 cotter pin	2
15	1402-0-7	Lift strap	2
16	1402-45-1	Lock pin flt. wshr / 1/2 X 2 rol. p / #4 h. pin cot.	2
17	1401-44-0	Wing lock weldment	2
18	3/4nc X 5	Cap screw, lock & flat washers, nut	2
19	STD 38-1	Krause decal	2
20	STD 38-4	Wing harrow emblem	4
21	1280-0-50	Red reflector	3

* Models 1401, 1410, 1412, 1422

** Models 1404, 1413, 1415, 1425

*** Models 1407, 1416, 1418, 1428

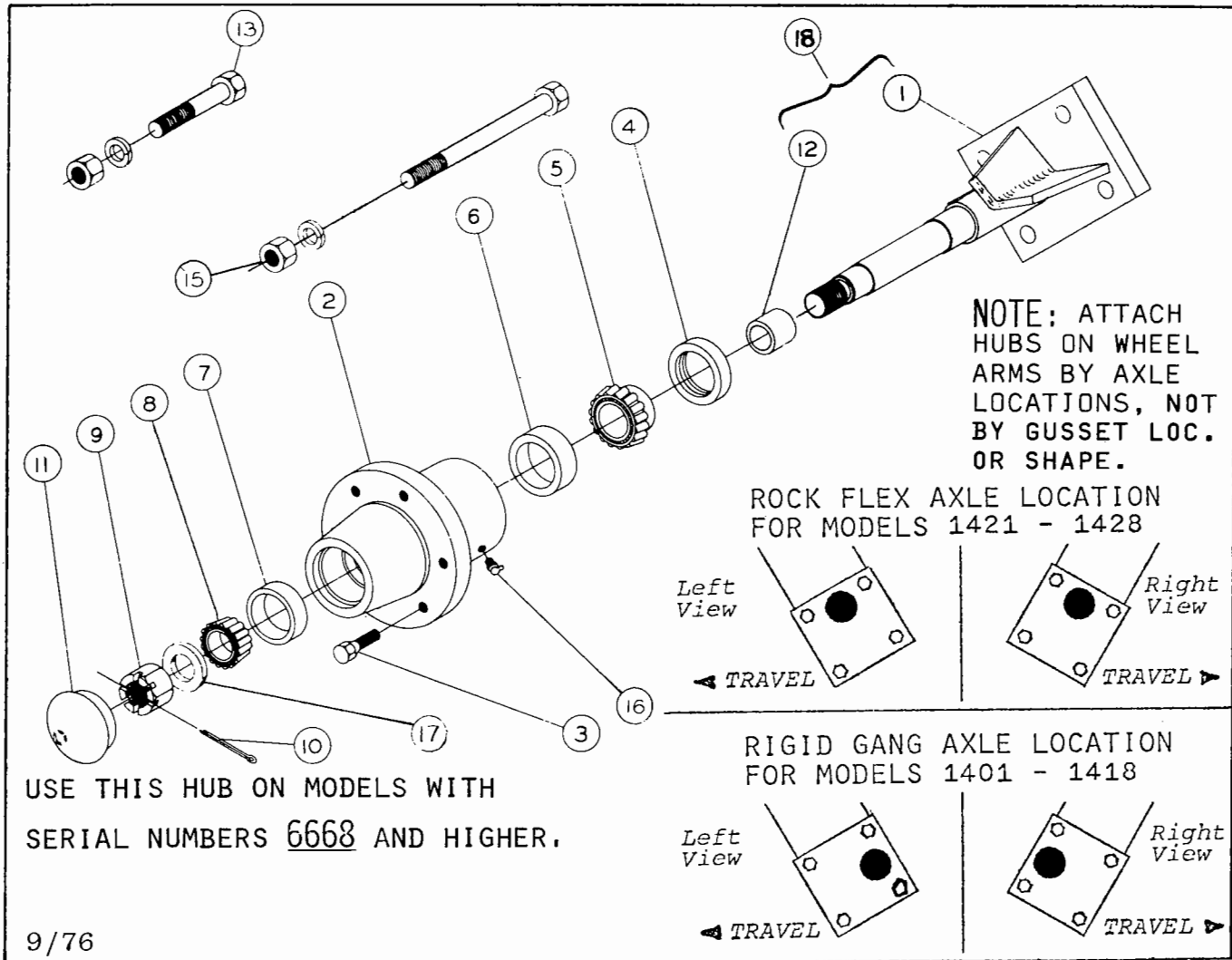
ROCKER SHAFTS



9/76

ITEM	PART NUMBER	DESCRIPTION	MODELS	NO. REQ.
1	1401-110-0	Main Rocker Shaft		1
2	1402-12-0	Right Wing Rocker Shaft for	1401,1410,1412,1422	1
	1405-12-0	Right Wing Rocker Shaft for	1404,1413,1415,1425	1
	1408-12-0	Right Wing Rocker Shaft for	1407,1416,1418,1428	1
3	1402-11-0	Left Wing Rocker Shaft for	1401,1410,1412,1422	1
	1405-11-0	Left Wing Rocker Shaft for	1404,1413,1415,1425	1
	1408-11-0	Left Wing Rocker Shaft for	1407,1416,1418,1428	1
4	1112-0-7A	Rocker Shaft Clamp		4
5	595-0-11	Rocker Bearing Plate		4
6	2145-0-16	Rocker Shaft Clamp Half		6
7	3/4ncX 2-1/2"	GRADE 5 Cap Screw, Lock Washer, Nut		3
8	1" nc X 5"	Cap Screw, Lock Nut		4
9	1" nc X 2-1/2"	Cap Screw, Lock Nut		2
10	3/4nc X 3"	Cap Screw, Lock Washer, Nut		4
11	3/4nc X 5-1/2"	Cap Screw, Lock Washer, Nut		4
12	1/4" npt	67-1/2 ^U Zerk, # 1629		4
13	1/8" npt	45 ^U Zerk, # 1688		4
16	770-9-2	Wear Sleeve (for lug repair)		SPEC.
17	905-8-1	Wear Sleeve (for link lug repair)		SPEC.
18	1/8" npt	Zerk # 1610		6
20	1402-40-0	Adjustment Link Assembly (standard)		2
14	1402-41-0	Adjustment link tube (one per assembly)		
15	1" dia X 4"	Clevis pin, flatwasher, #4 hair pin cotter (1ech)		
19	902-42-0	Adjustment link rod (one per assembly)		
21	1401-40-0	Adjustment Link Assembly (inc. 4 flat wshrs) (optn)		SPEC. 2
22	P961-40-3	Rod end (one per assembly)		
23	1401-40-1	Adjustment rod (one per assembly)		
24	961-40-4	Screw lock	" " "	
25	1241-00	Shakeproof washer	" " "	
26	P961-40-2	Rod end	" " "	

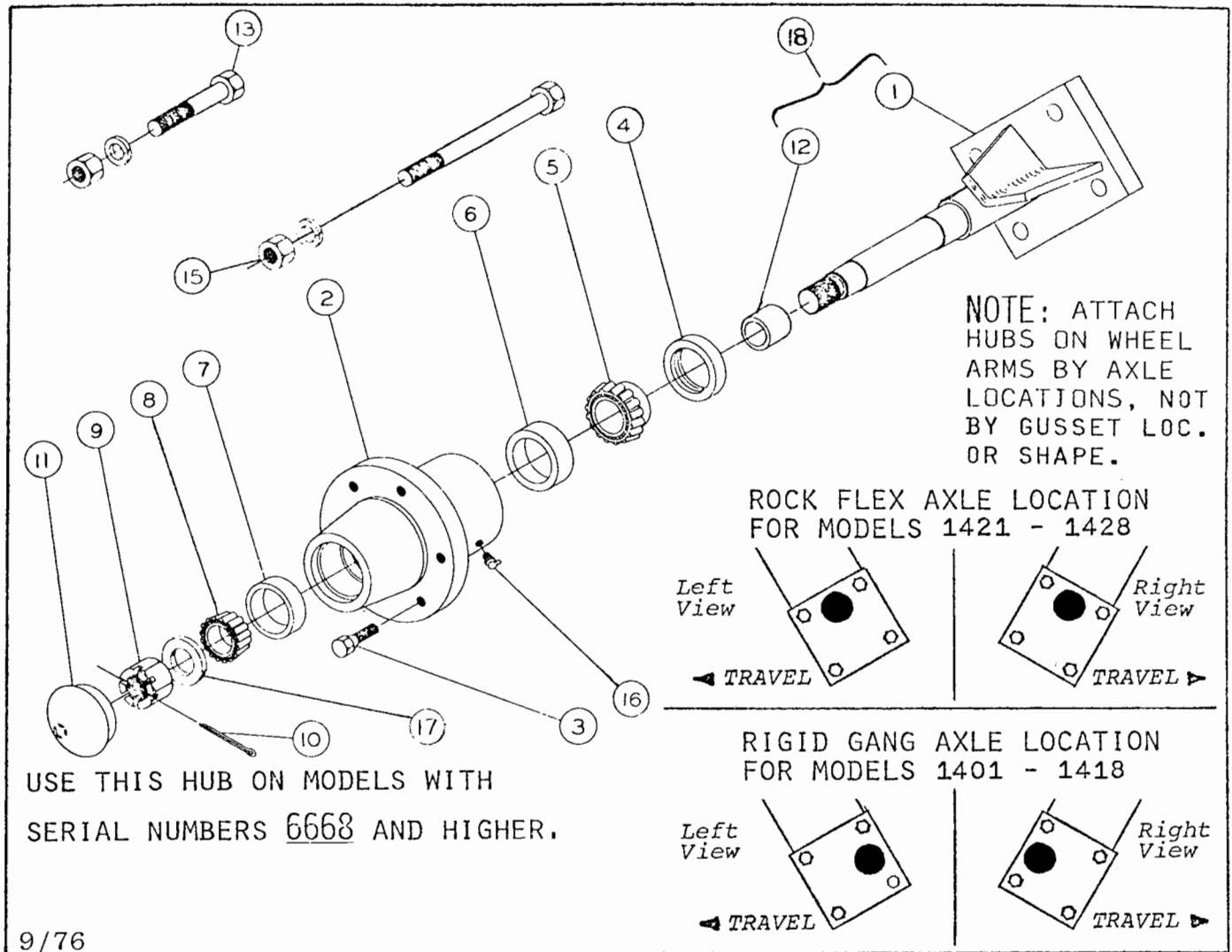
HUB ASSEMBLY



1918-17-0 HUB ASSEMBLY

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1918-17-0	Hub and Axle Assembly	
1	1918-12-0	Stub Axle Weldment	1
2	1918-8-1	Hub	1
3	411-17-2	Wheel Bolt	6
4	1918-8-7	Seal	1
5	1918-8-5	Cone	1
6	1918-8-6	Cup	1
7	1913-8-4	Cup	1
8	1918-8-3	Cone	1
9	1"-14 N.F	Slotted Nut	1
10	3/16 x 1-1/2	Cotter Key	1
11	908-8-2	Hub Cap	1
12	1913-8-9	Wear Ring	1
13	3/4-NC x 5	Cap Screw, Hex Nut and Lock Washer	4 per hub
15	3/4-NC x 7	Cap Screw, Hex Nut and Lock Washer	4 per hub
16	1/4 NPT x 90°	Zerk	1
17	1"SAE	Flat Washer	1
18	1918-15-0	Repair Spindle and Sleeve Assembly	

HUB ASSEMBLY



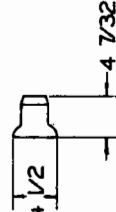
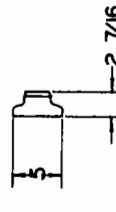
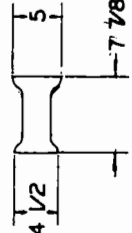
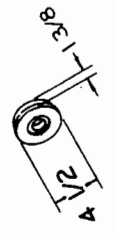
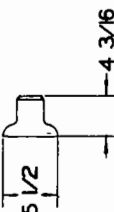
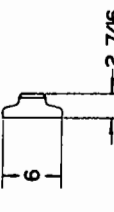
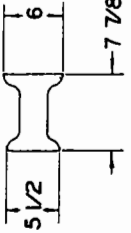
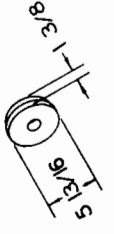
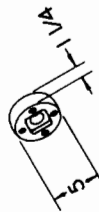
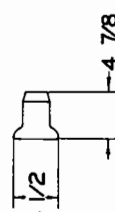
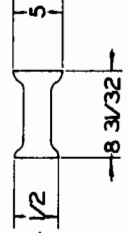
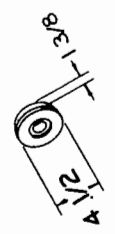
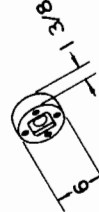
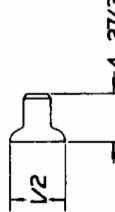
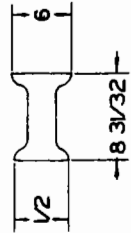
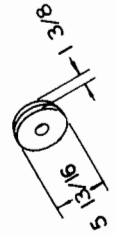
9/76

2135-17-0 HUB ASSEMBLY

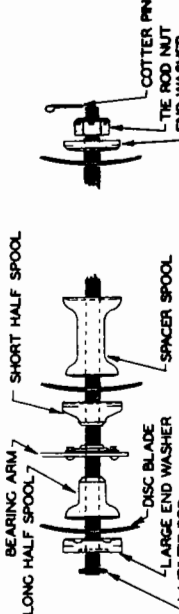
ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	2135-12-0	Stub Axle Weldment	1
2	2135-8-1	Hub	1
3	411-17-2	Wheel Bolt	6
4	2135-8-7	Seal	1
5	2135-8-5	Rear Cone	1
6	2135-8-6	Rear Cup	1
7	1918-8-4	Front Cup	1
8	1918-8-3	Front Cone	1
9	1" 14nf	Slotted Hex Nut	1
10	3/16 x 1 1/2"	Cotter Key	1
11	908-8-2	Hub Cap	1
12	2135-8-9	Wear Ring	1
13	3/4nc x 5"	Cap Screw, Hex. Nut and Lock Washer	4 per Hub
15	3/4nc x 7"	Cap Screw, Hex. Nut and Lock Washer	4 per Hub
16	1/4 npt 90°	Zerk	1
17	1" SAE	Flat Washer	1
18	2135-15-0	REPAIR Spindle & Sleeve Assembly	

SPACER SPOOLS

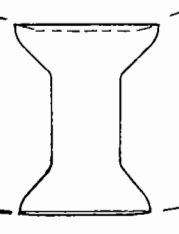
10-74 - 11/72

8" SPACING	FOR 20" DISC	412-19-4 LARGE END WASHER 	412-19-1 LONG HALF SPOOL 	1295-0-10 SHORT HALF SPOOL 	1295-0-7 SPACER SPOOL 	412-19-3 END WASHER 
	FOR 22" DISC	374-0-6 LARGE END WASHER 	374-0-9 LONG HALF SPOOL 	1280-0-10 SHORT HALF SPOOL 	1280-0-7 SPACER SPOOL 	374-0-5 END WASHER 
	FOR 20" DISC	412-19-4 LARGE END WASHER 	616-20-1 LONG HALF SPOOL 	410-20-2 SHORT HALF SPOOL 	616-0-7 SPACER SPOOL 	412-19-3 END WASHER 
	FOR 22" DISC	374-0-6 LARGE END WASHER 	364-0-9 LONG HALF SPOOL 	364-0-8 SHORT HALF SPOOL 	364-0-7 SPACER SPOOL 	374-0-5 END WASHER 

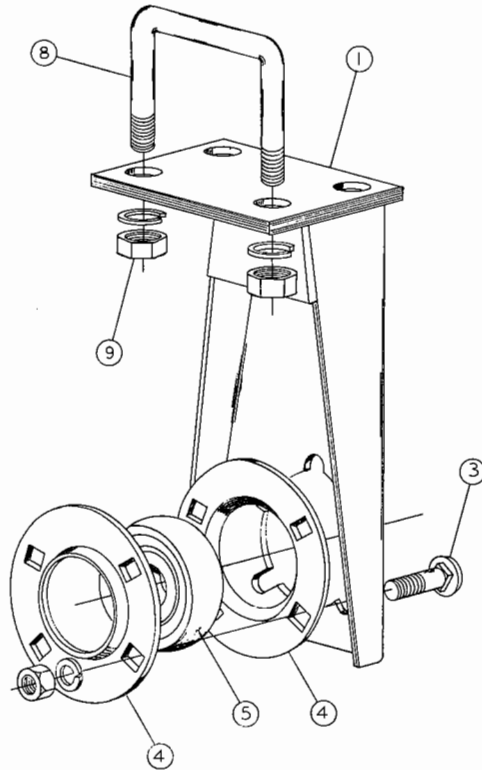
SPOOL LOCATION GUIDE



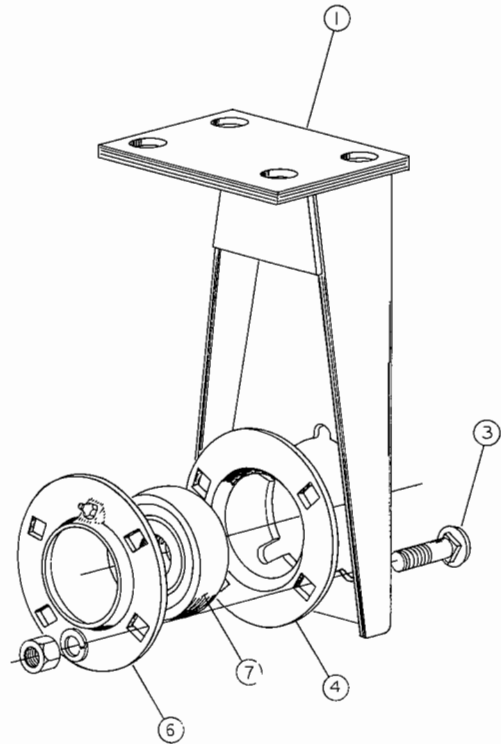
NOTE:
Spool ends are contoured to fit blades.



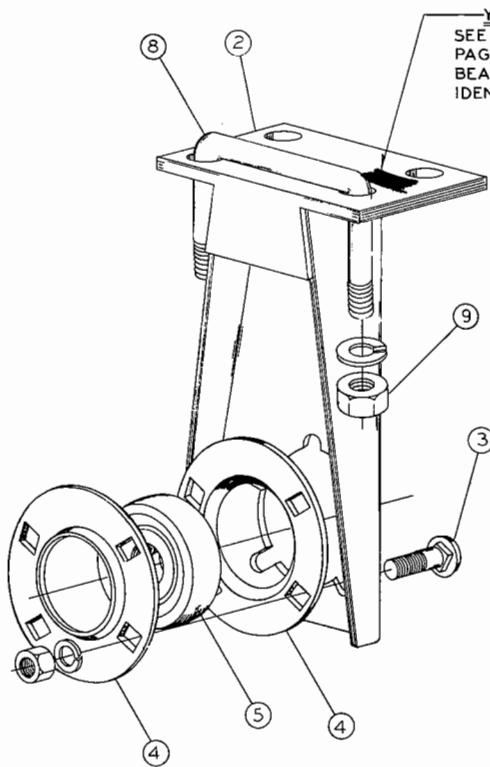
**1401-11-0
BEARING ARM**



**1401-13-0
REGREASEABLE
BEARING ARM**

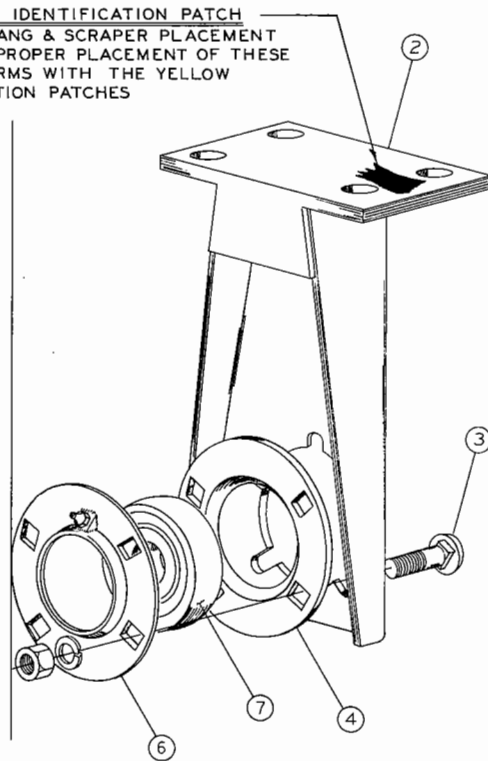


**1401-10-0
BEARING ARM**



YELLOW IDENTIFICATION PATCH
SEE DISC GANG & SCRAPER PLACEMENT
PAGE FOR PROPER PLACEMENT OF THESE
BEARING ARMS WITH THE YELLOW
IDENTIFICATION PATCHES

**1401-12-0
REGREASEABLE BEARING ARM**



BEARING ARM ASSEMBLIES

FOR MODELS -All

PART LOCATION; Disc gang hanger

STANDARD; 1401-10-0, 1401-11-0

OPTION; 1401-12-0, 1401-13-0

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1401-10-0	Bearing arm assembly	
2	1401-9-0	Bearing arm	1
3	1/2nc X 1-1/2	Carriage bolt, lock washer, nut	4
4	1520-0-20	Flangette	2
5	P412-10-2	Bearing	1
8▲	1402-0-20	U-Bolt	2
9▲	3/4nc	Lock washer, nut	4

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1401-11-0	Bearing arm assembly	
1	1401-7-0	Bearing arm	1
3	1/2nc X 1-1/2	Carriage bolt, lock washer, nut	4
4	1520-0-20	Flangette	2
5	P412-10-2	Bearing	1
8▲	1402-0-20	U-Bolt	2
9▲	3/4nc	Lock washer, nut	4

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
*	1401-12-0	Bearing arm (regreaseable)	
2	1401-9-0	Bearing arm	1
3	1/2nc X 1-1/2	Carriage bolt, lock washer, nut	4
4	1520-0-20	Flangette	1
6	1520-0-21	Flangette with zerk	1
7	P612-10-2	Bearing	1
8▲	1402-0-20	U-Bolt	2
9▲	3/4nc	Lock washer, nut	4

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
**	1401-13-0	Bearing arm (regreaseable)	
1	1401-7-0	Bearing arm	1
3	1/2nc X 1-1/2	Carriage bolt, lock washer, nut	4
4	1520-0-20	Flangette	1
6	1520-0-21	Flangette with zerk	1
7	P612-10-2	Bearing	1
8▲	1402-0-20	U-Bolt	2
9▲	3/4nc	Lock washer, nut	4

▲ Not part of assembly.

* Interchangeable with 1401-10-0 bearing arm.

** Interchangeable with 1401-11-0 bearing arm.

1 1/2" TIE RODS

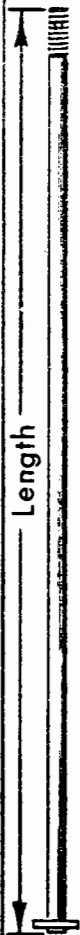


MODEL	LOCATION	LENGTH	DISC SPACING	No. of DISC	Standard HOT ROLLED	Optional COLD ROLLED
1401	Rt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Outside Ft.	40-3/4"	9-1/8"	Five (5)	388-21-0	388-94-0
	Lt.Outside Ft.	40-3/4"	9-1/8"	Five (5)	388-21-0	388-94-0
	Rt.Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt.Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Rt.Outside Rr.	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt.Outside Rr.	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
1404	Rt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Outside Ft.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Outside Ft.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt.Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Rt.Outside Rr.	68-5/8"	9-1/8"	Eight (8)	616-18-0	1053-78-0
	Lt.Outside Rr.	68-5/8"	9-1/8"	Eight (8)	616-18-0	1053-78-0
1407	Rt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Outside Ft.	86-3/8"	9-1/8"	Ten (10)	619-18-0	1055-86-0
	Lt.Outside Ft.	86-3/8"	9-1/8"	Ten (10)	619-18-0	1055-86-0
	Rt.Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt.Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Rt.Outside Rr.	95-1/2"	9-1/8"	Eleven (11)	621-18-0	1055-93-0
	Lt.Outside Rr.	95-1/2"	9-1/8"	Eleven (11)	621-18-0	1055-93-0
1410	Rt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Outside Ft.	40-3/4"	9-1/8"	Five (5)	388-21-0	388-94-0
	Lt.Outside Ft.	40-3/4"	9-1/8"	Five (5)	388-21-0	388-94-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Outside Rr.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0

1074-3/73

Tie rod number does not include nut or pin.

1 1/2" TIE RODS



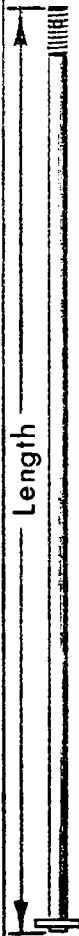
1 1/2" Slotted Hex Nut

5/16 X 3 Cotter Pin

MODEL	LOCATION	LENGTH	DISC SPACING	No. of DISC	Standard HOT ROLLED	Optional COLD ROLLED
1412	Rt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Outside Ft.	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Outside Ft.	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Outside Rr.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
1413	Rt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Outside Fr.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Outside Fr.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	76-3/4"	8"	Ten (10)	387-20-0	1056-70-0
	Lt.Outside Rr.	76-3/4"	8"	Ten (10)	387-20-0	1056-70-0
1415	Rt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Outside Ft.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Outside Ft.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	76-3/4"	8"	Ten (10)	387-20-0	1056-70-0
	Lt.Outside Rr.	76-3/4"	8"	Ten (10)	387-20-0	1056-70-0
1416	Rt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt.Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt.Outside Fr.	86-3/8"	9-1/8"	Ten (10)	619-18-0	1055-86-0
	Lt.Outside Fr.	86-3/8"	9-1/8"	Ten (10)	619-18-0	1055-86-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	100-3/4"	8"	Thirteen(13)	1283-18-0	1283-80-0
	Lt.Outside Rr.	100-3/4"	8"	Thirteen(13)	1283-18-0	1283-80-0

The rod number does not include nut or pin.

1 1/2" TIE RODS



1 1/2" Slotted Hex Nut

5/16 X 3 Cotter Pin

MODEL	LOCATION	LENGTH	DISC SPACING	No. of DISC	HOT ROLLED	Standard	Optional
1418	Rt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-18-0	1242-14-0
	Lt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-18-0	1242-14-0
	Rt.Outside Ft.	84-1/2"	8"	Eleven (11)	1280-25-0	1280-25-0	1280-85-0
	Lt.Outside Ft.	84-1/2"	8"	Eleven (11)	1280-25-0	1280-25-0	1280-85-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-18-0	963-14-0
	Rt.Outside Rr.	100-3/4"	8"	Thirteen(13)	1283-18-0	1283-18-0	1283-80-0
	Lt.Outside Rr.	100-3/4"	8"	Thirteen(13)	1283-18-0	1283-18-0	1283-80-0

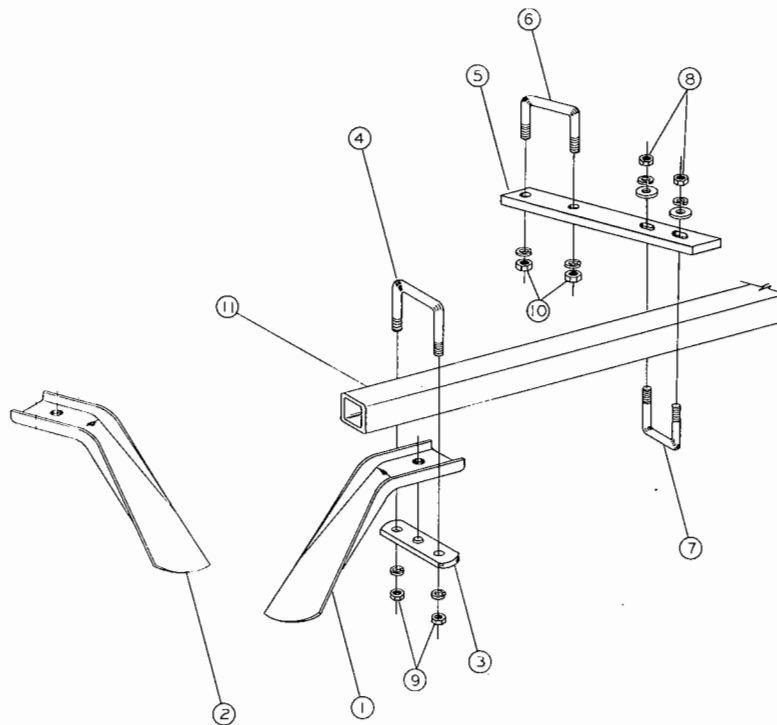
The rod number does not include nut or pin.

This diagram illustrates the assembly of a wheel. The components are numbered as follows:

- 1: A long, thin metal pin or clip.
- 2: A dark, circular hub or center cap.
- 3: A metal rim or flange.
- 4: A large, circular wheel with a central hub and the text "IMPLEMENT TYPE" around the perimeter.
- 5: A long, angled metal plate or bracket.
- 6: A square mounting plate with a central hole.
- 7: A cylindrical component, possibly a pulley or a bush.
- 8: A long bolt or screw.
- 9: A smaller bolt or screw.
- 10: A circular disc or plate.
- 11: A circular disc with a serrated or toothed outer edge.
- 12: A curved, semi-circular metal piece.

P13

SCRAPERS



FOR MODELS -All except PART LOCATION; Scraper bracket to gang frame member.
Models 1422, 1425, 1428

3/73

STANDARD

ITEM	PART NUMBER	DESCRIPTION	SPECIFY NO. REQ.
1	388-186-2	Left scraper blade (left Rr./right Ft.)	
2	388-185-2	Right scraper blade(right Rr./left Ft.)	
3	1483-286-1	Clamp	
4	1162-185-3	U-Bolt	
5	1580-187-1	Bracket	
6	1112-137-2	U-Bolt	
7	960A-187-2	U-Bolt	
8	5/8"nc	Flat washer, lock washer, nut	
9	1/2"nc	Lock Washer, nut	
10	5/8"nc	Lock washer, nut	
11	960A-185-1	Scraper Frame 40" long	
	963A-195-1	" " 56" long	
	1159-183-1	" " 60" long	
	959A-185-1	" " 62" long	
	1160-183-1	" " 68" long	
	956A-185-1	" " 76" long	
	955A-185-1	" " 80" long	
	955A-183-1	" " 86" long	
	1165-185-1	" " 108" long	

PLACEMENT DRAWING WILL REFLECT;
The No. of brackets required.
The scraper frame loc. with length.

Top view of right extension assembly

CORRECT ATTACHMENT A

WRONG ATTACHMENT B

CHANGE ASSEMBLY TO OTHER SIDE OF HARROW

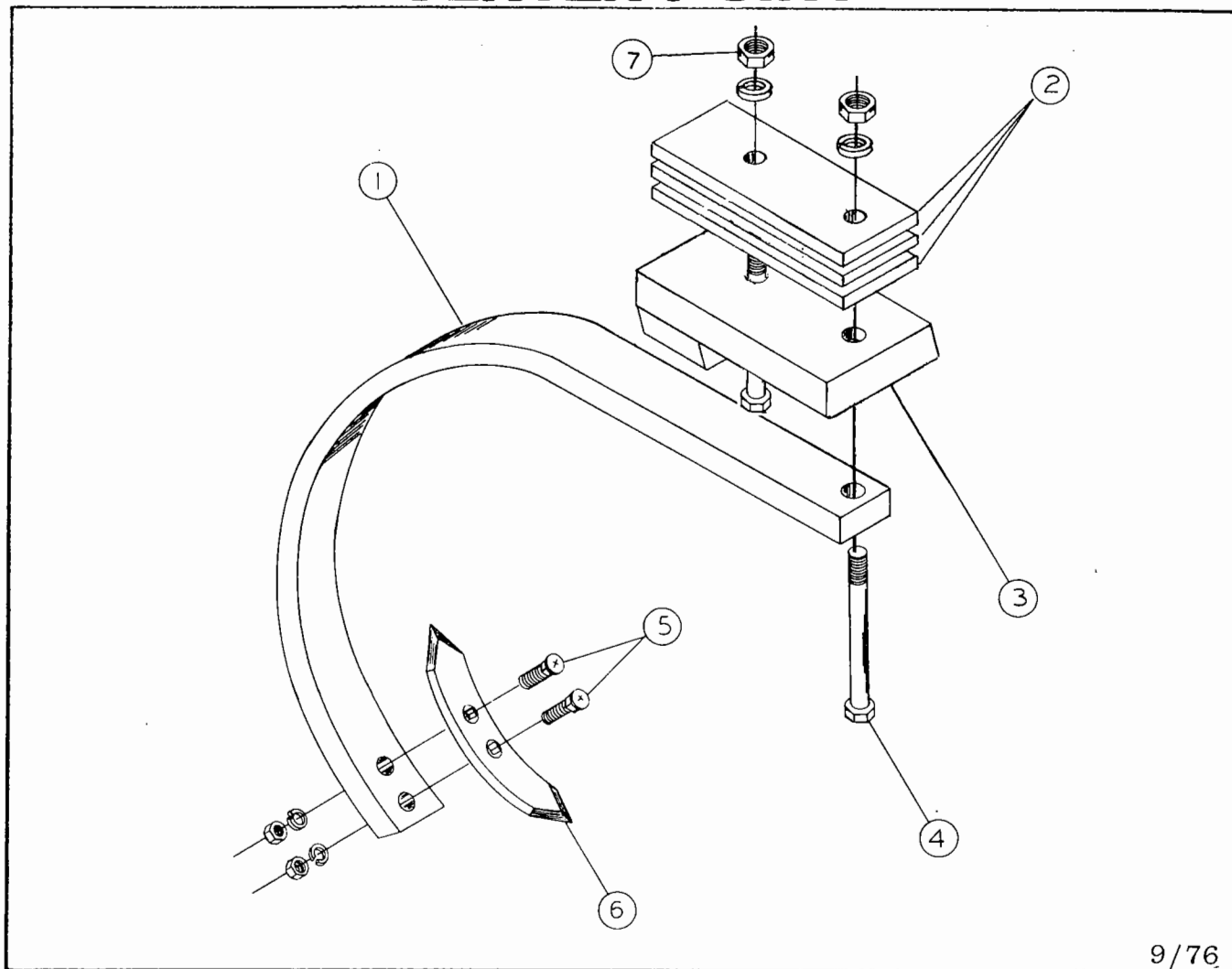
THE LOOP ON THE TRASH BAR MUST APPEAR THE SAME AS (A)

PART LOCATION ; Loop around extension spool and
attached to end of scraper frame,
right and left outside rear gangs

960A-147-0 ASSEMBLY

[illegible]

CENTER POINT



9/76

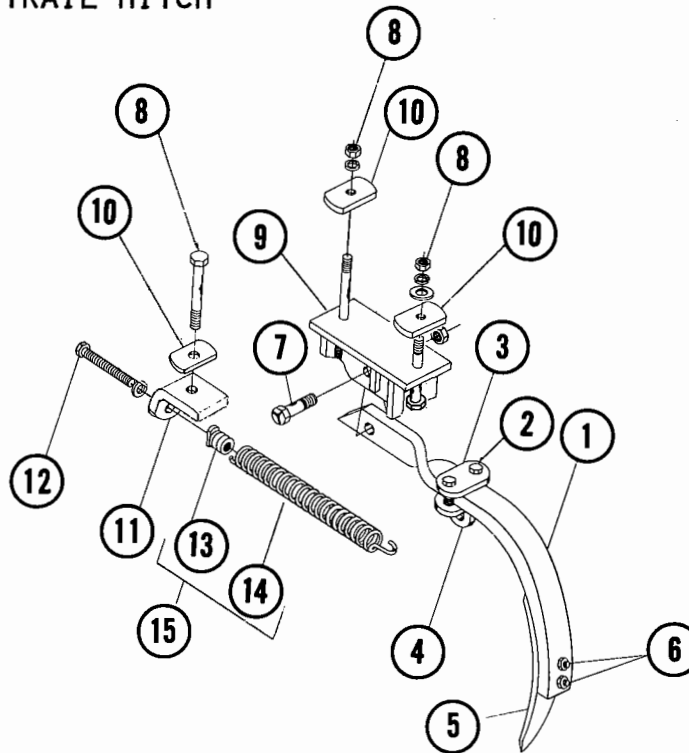
FOR MODELS -ALL
STANDARD

PART LOCATION -Under center frame member behind
Rocker Shaft.

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1407-49-0	Center Point Assembly	
1	241-21-1	Shank	1
2	1407-49-2	Spacer	3
3	1407-49-1	Center Point Casting	1
4	3/4nc X 10	Machine bolt, lock washer, nut	1
5	1/2nc X 2-1/2	Nº 3 Plow bolt, lock washer, nut	2
6	1212A	Point	1
7	3/4nc X 8-1/2	Cap screw, lock washer, nut	1

SPRING CENTER POINT

NOTE: CAN NOT BE USED
WITH TRAIL HITCH



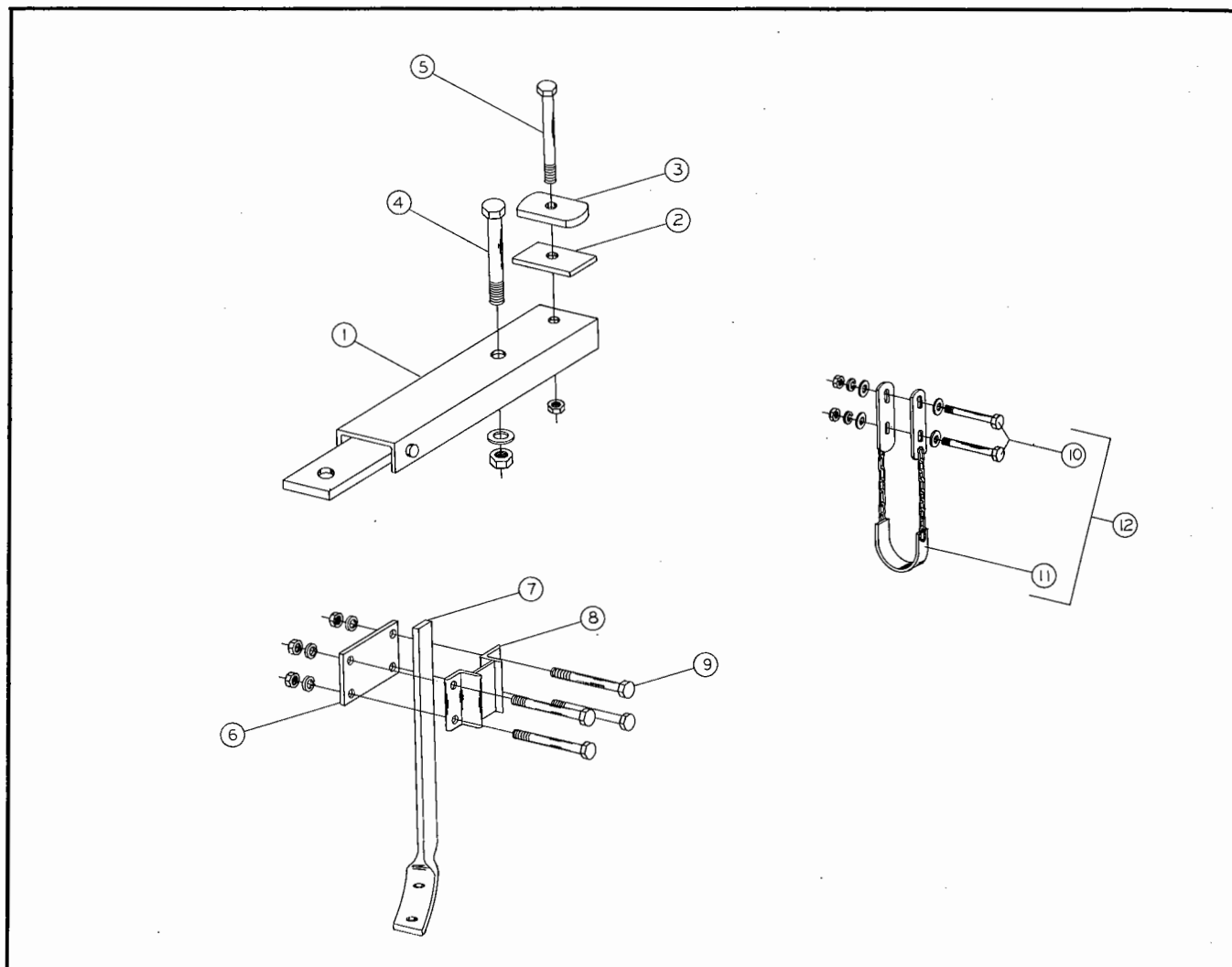
10-75

FOR MODELS - All
▲ ACCESSORY

PART LOCATION; Center frame behind rocker shaft

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1402-47-0	Spring center point assembly	
1	770-67-1	shank	1
2	5/8ncX2-1/2	Cap screw, self locking nut	2
3	770-69-1	Bracket plate	1
4	770-69-0	Spring bracket	1
5	374-67-1	Furrower shovel	1
6	7/16 X 2-1/4	#3 plow bolt, lock washer, nut	1
7	1nc X 3-1/2	Cap screw (G5), self locking nut	1
8	3/4nc X7-1/2	Cap screw, lock washer, nut	3
9	770-68-0	Shank bracket	1
10	960-49-2	Cap	3
11	1402-47-1	Spring bracket	1
12	3/4nc X 5	Tap bolt, flat wshr	1
13	809-14-2	Casting	1
14	809-14-1	Spring	1
15	809-14-0	Large Spring assembly	1

▲ Standard on all flex gang models

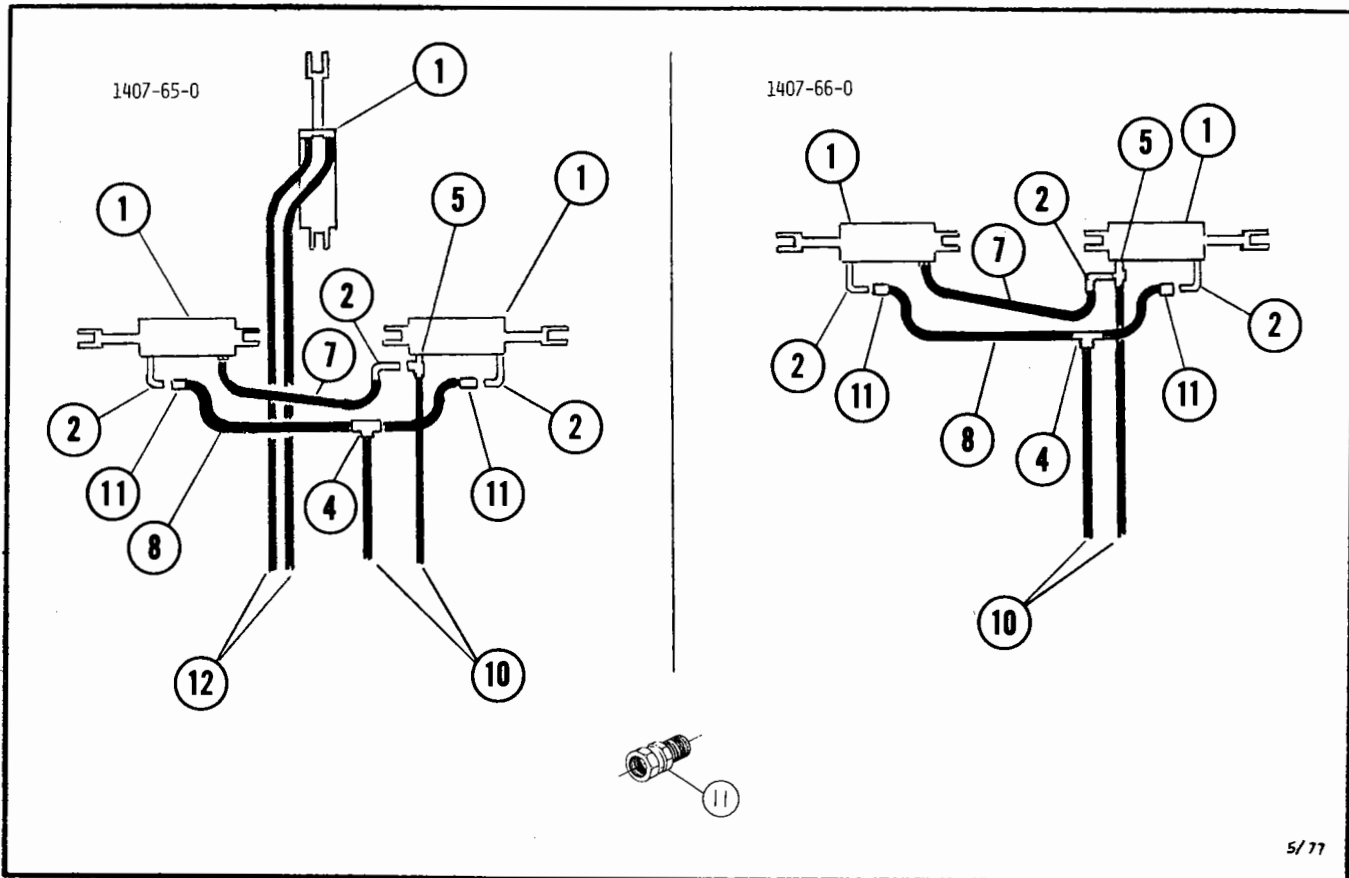


FOR MODELS -All
ACCESSORIES

3/73

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1402-52-0	Trail hitch assembly	
1	1402-53-0	Trail hitch	1
2	1402-52-1	Spacer	1
3	960-49-2	Cap	1
4	1nc X 7-1/2	Cap screw, flat washer, self lock nut	1
5	3/4nc X 7-1/2	Cap screw, self locking nut	1
	1402-36-0	Filler shank assembly	
6	1402-36-2	Clamp plate	1
7	1402-36-1	Shank	1
8	1402-37-0	Clamp	1
9	5/8nc X 7	Cap screw, lock washer, nut	4
12	1582-146-0	Chain trash guard	
10	1/2nc X 6-1/2	Cap screw, lock washer, (2)flt wshr, nut	2
11	1582-145-0	Chain trash guard	1

HYDRAULIC HOSE KITS



1407-65-0 HYDRAULIC HOSE KIT

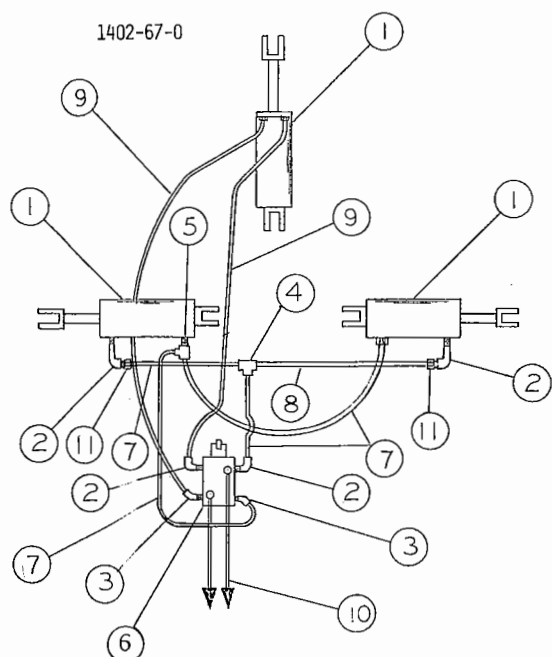
ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1407-65-0	Hydraulic hose kit for dual control	
1	See Hydraulic Cylinder Page and Specify.	Hydraulic Cylinder	
2	1/2npt	90° Street Ell	5
4	1/2npt	Pipe Tee	1
5	1/2nptf	Service Tee	1
7	686-74-0	24" Hydraulic Hose	2
8	686-73-0	30" Hydraulic Hose	1
10	1084-82-0	126" Hydraulic Hose	2
▲ 11	960-66-0	Restrictor	2
12	1084-83-0	138" Hydraulic Hose	2

1407-66-0 HYDRAULIC HOSE KIT

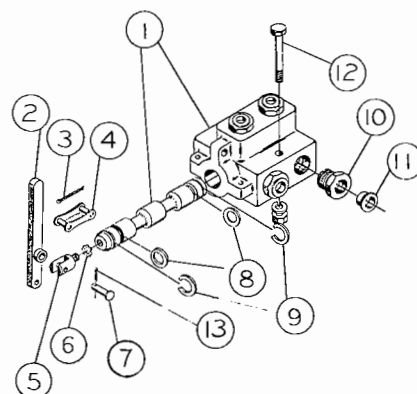
ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1407-66-0	Hydraulic Hose Kit for Wing Cylinders	
1	See Hydraulic Cylinder Page and Specify	Hydraulic Cylinder	
2	1/2npt	90° Street Ell	3
4	1/2npt	Pipe Tee	1
5	1/2npt	Service Tee	1
7	686-74-0	24" Hydraulic Hose	2
8	686-73-0	30" Hydraulic Hose	1
10	1084-82-0	126" Hydraulic Hose	2
▲ 11	960-66-0	Restrictor	2

▲ Issued in each units standard bolt box.

HYDRAULIC HOSE KIT



SELECTOR VALVE



9/76

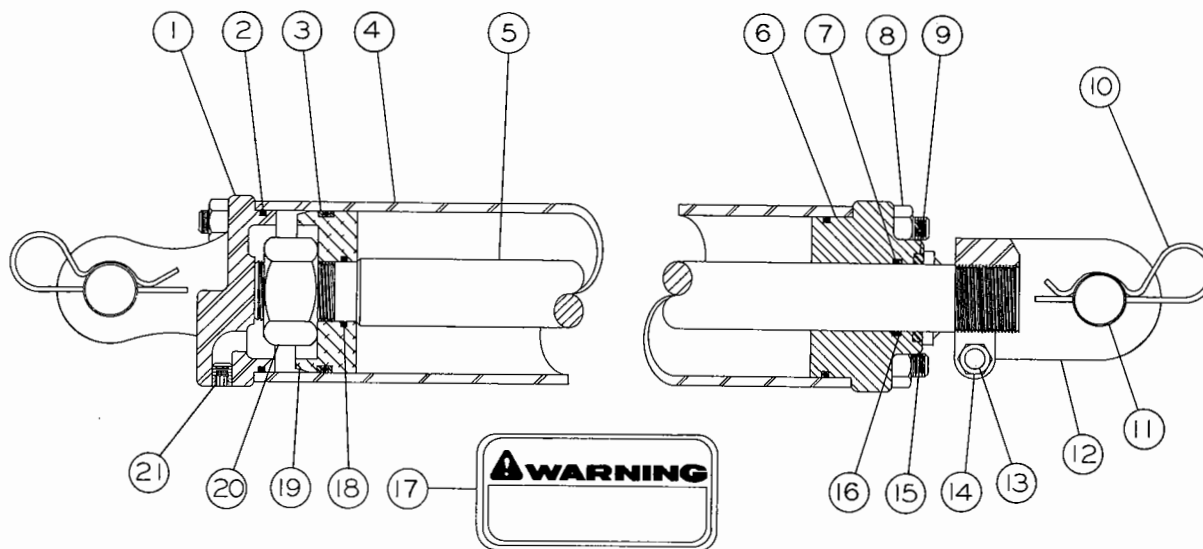
1402-67-0 HYDRAULIC HOSE KIT

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	1402-67-0	Hydraulic Hose Kit for Single Controls	
1	See Hydraulic Cylinder Page and Specify	Hydraulic Cylinder	
2	1/2npt	90 Street Ell	4
3	1/2npt	45 Street Ell	3
4	1/2npt	Pipe Tee	1
5	1/2nptf	Service Tee	1
6	571-73-0	Selector Valve Assembly	1
7	686-74-0	24" Hydraulic Hose	4
8	686-73-0	30" Hydraulic Hose	1
9	120-40-4	36" Hydraulic Hose	2
10	1084-82-0	126" Hydraulic Hose	2
11	960-66-0	Restrictor	2

571-73-0 SELECTOR VALVE

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	571-74-1	Valve housing & spool	1
2	571-74-11	Handle	1
3	571-74-10	Link cotter pin	1
4	571-74-9	Handle link	1
5	571-74-7	Handle adaptor	1
6	571-74-8	Lock washer	1
7	571-74-5	Handle pin	1
8	571-74-3	Spool seal	2
9	571-74-4	Snap ring	2
10	3/4" to 1/2"	Reducer bushing	6
11	#9	Cap plug	6
12	3/8nc X 7	Cap screw, lock washer, nut	2
13	571-74-6	Cotter pin	1

CROSS HYDRAULIC CYLINDER



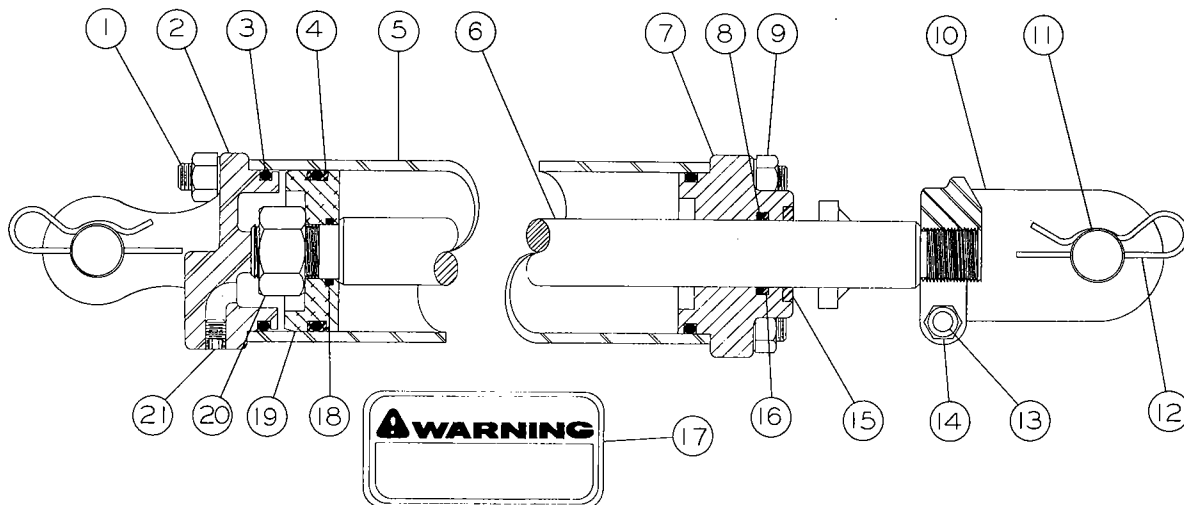
10/75

FOR MODELS All **PART LOCATION** Depth Control, Wing Lift Cylinder
 686B-55-0 Assembly 3" x 16"
 Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 1-1/4"

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	686B-55-6	Base	1
* 2	686-55-12	O-Ring	3
* 3	686-55-13	Backup	2
4	686-55-4	Tube	1
5	686-55-18	Rod Assembly	1
6	686B-55-2	Head	1
* 7	350-60-14	O-Ring	1
8	686B-55-16	Nut	8
* 9	350-60-13	Lip Type Wiper	1
10	576-25-19	Clip, Pin	2
11	570-25-7	Clevis, Pin	2
12	570-25-1	Rod Clevis	1
13	2145-100-4	Capscrew	1
14	350-60-20	Nut	1
15	686B-55-9	Tie Rod	4
* 16	350B-60-22	Backup	1
17	350A-60-25	Cylinder Warning Decal	1
* 18	686-55-14	O-Ring	1
19	686-55-5	Piston	1
20	686-55-15	Nut	1
21	350-60-21	Plug	1

* 686B-55-50 Seal Kit (star items contained in kit)

CROSS HYDRAULIC CYLINDER



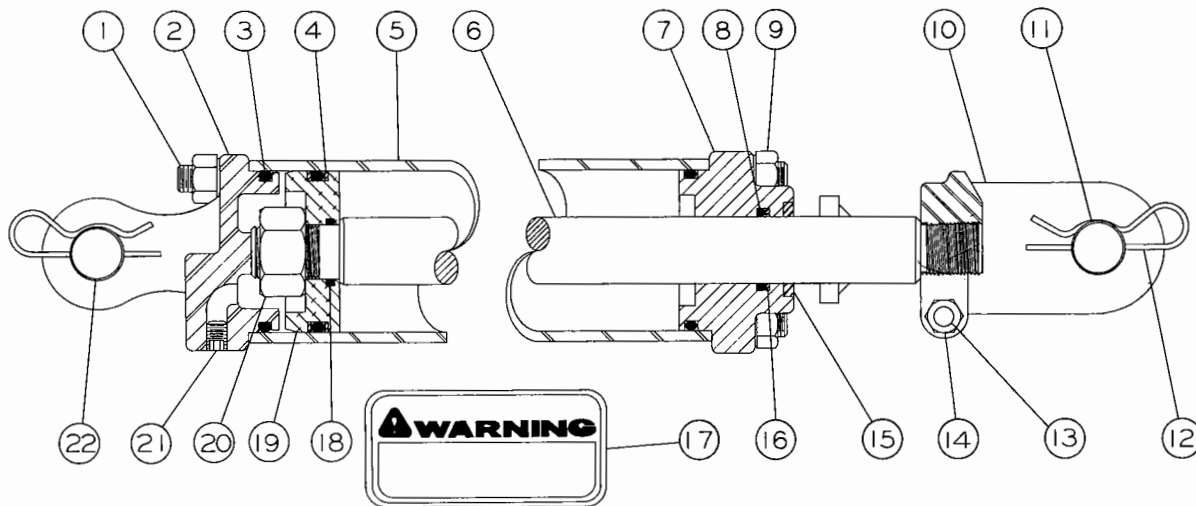
10/75

FOR MODELS All **PART LOCATION** Depth Control, Wing Lift Cylinder
 570A-25-0 Assembly 4" x 16"
 Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 2"

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	570A-25-9	Tie Rod	4
2	570A-25-6	Base	1
* 3	350-60-15	O-Ring	3
* 4	570-25-13	Backup	2
5	570-25-4	Tube	1
6	570-25-3	Rod Assembly	1
7	570A-25-2	Head	1
* 8	570-25-11	O-Ring	1
9	350B-60-18	Nut	8
10	570-25-1	Rod Clevis	1
11	570-25-7	Clevis, Pin	2
12	576-25-19	Clip Pin	2
13	2145-100-4	Capscrew	1
14	350-60-20	Nut	1
* 15	570-25-10	Lip Type Wiper	1
* 16	570A-25-14	Backup	1
17	350A-60-25	Cylinder Warning Decal	1
* 18	350B-60-23	O-Ring	1
19	350-60-8	Piston	1
20	686-55-15	Nut	1
21	350-60-21	Plug	1

* 570A-25-50 Seal Kit (star items contained in kit)

CROSS HYDRAULIC CYLINDER

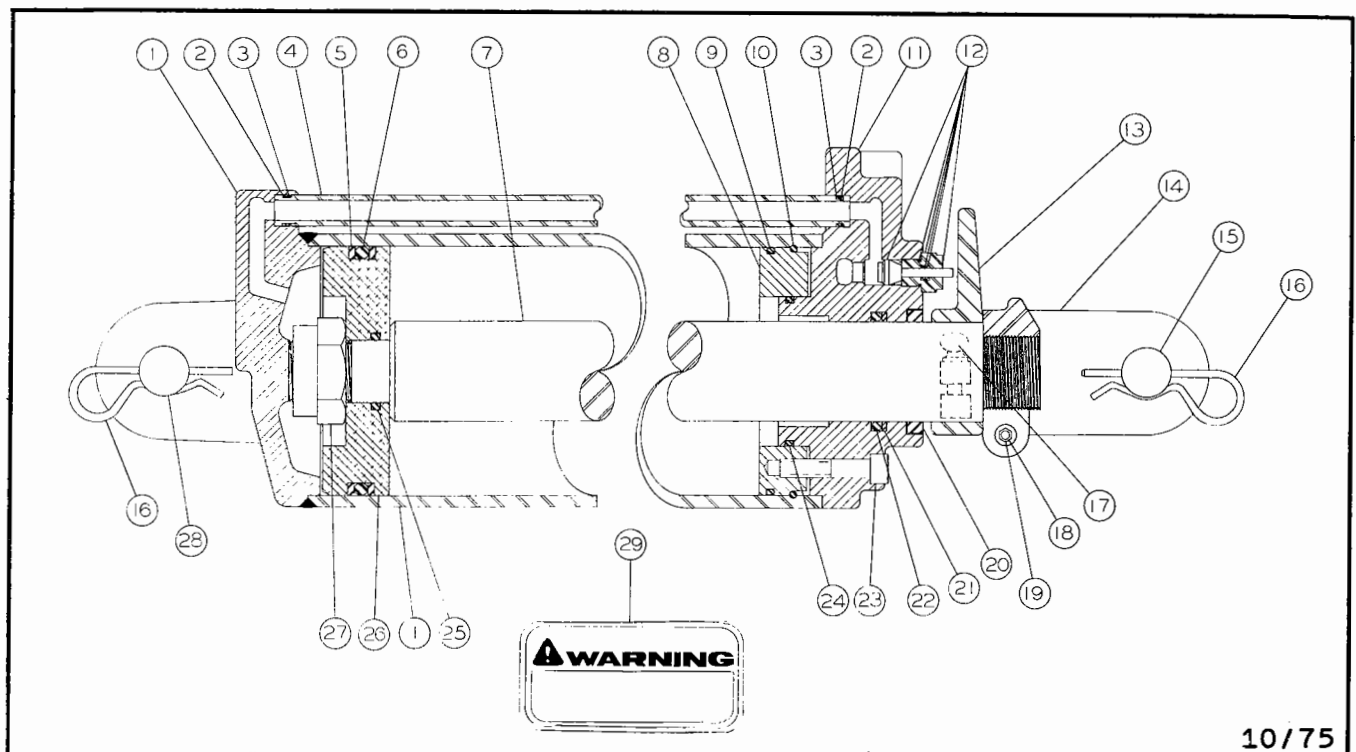


FOR MODELS All **PART LOCATION** Depth Control, Wing Lift Cylinder
 576A-25-0 Assembly 5" x 16"
 Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 2"

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	576A-25-9	Tie Rod	4
2	576A-25-6	Base	1
* 3	576-25-12	O-Ring	3
* 4	576-25-13	Backup	2
5	576-25-4	Tube	1
6	576-25-3	Rod Assembly	1
7	576A-25-2	Head	1
* 8	570-25-11	O-Ring	1
9	576A-25-16	Nut	8
10	570-25-1	Rod Clevis	1
11	570-25-7	Clevis Pin	1
12	576-25-19	Clip Pin	2
13	2145-100-4	Capscrew	1
14	350-60-20	Nut	1
*15	570-25-10	Lip Type Wiper	1
*16	570A-25-14	Backup	1
17	350A-60-25	Cylinder Warning Decal	1
*18	576-25-14	O-Ring	1
19	576-25-5	Piston	1
20	576-25-15	Nut	1
21	350-60-21	Plug	1
22	576-25-17	Clevis Pin	1

* 576A-25-50 Seal Kit (star items contained in kit)

CROSS HYDRAULIC CYLINDER



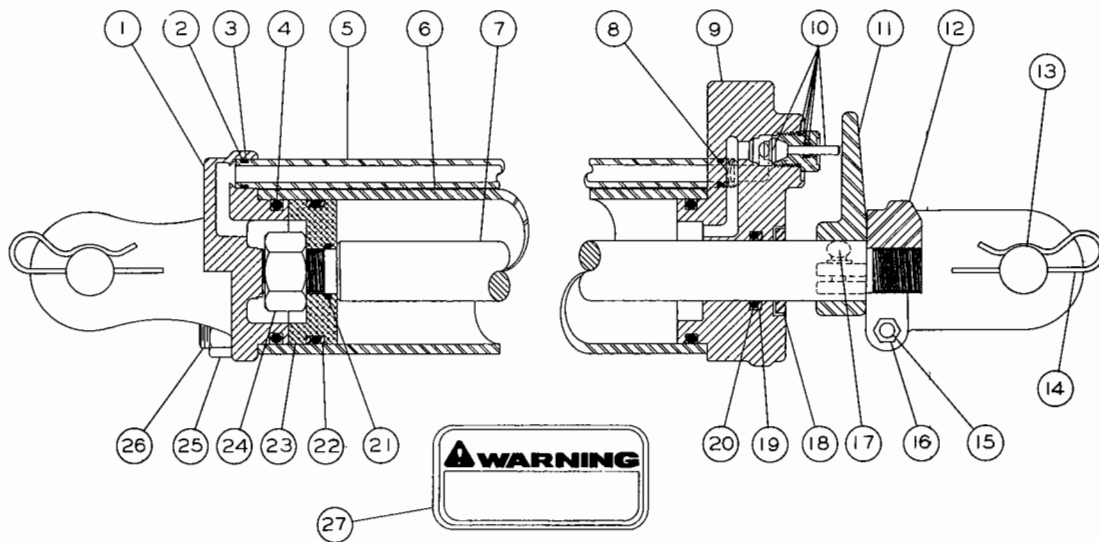
10/75

FOR MODELS All PART LOCATION Depth Control
1401-500-0 Assembly 5"X 16" With hydraulic stroke control
Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 2"

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	1401-500-1	Tube Assembly	1
2	1330f105-11	O-Ring	2
3	1401-500-13	Back-Up	2
4	1401-500-7	Feed Tube	1
5	P576-25-13	Back-Up	2
6	P576-25-12	O-Ring	1
7	1401-500-2	Rod	1
8	1401-500-3	Retainer	1
9	1401-500-12	O-Ring	1
10	1401-500-9	Retaining ring	1
11	1401-500-4	Head	1
12	1401-301-0	Poppet Assembly	1
13	1401-500-6	Actuator Stop	1
14	1401-500-14	Clevis	1
15	1401-300-8	Clevis Pin	1
16	P576-25-19	Clip Pin	2
17	1330-105-15	Thumbscrew	1
18	P350-60-20	Nut	1
19	2145-100-4	Capscrew	1
20	P570-25-10	Wiper	1
21	P570A-25-14	Back-Up	1
22	P570-25-11	O-Ring	1
23	1401-500-10	Capscrew	5
24	1401-500-11	O-Ring	1
25	P576-25-14	O-Ring	1
26	1401-500-5	Piston	1
27	P576-25-15	Nut	1
28	1401-500-8	Clevis Pin	1
29	P350A-60-25	Cylinder Warning Decal	1

* 1401-500-50 Seal Kit (star items contained in kit)

CROSS HYDRAULIC CYLINDER



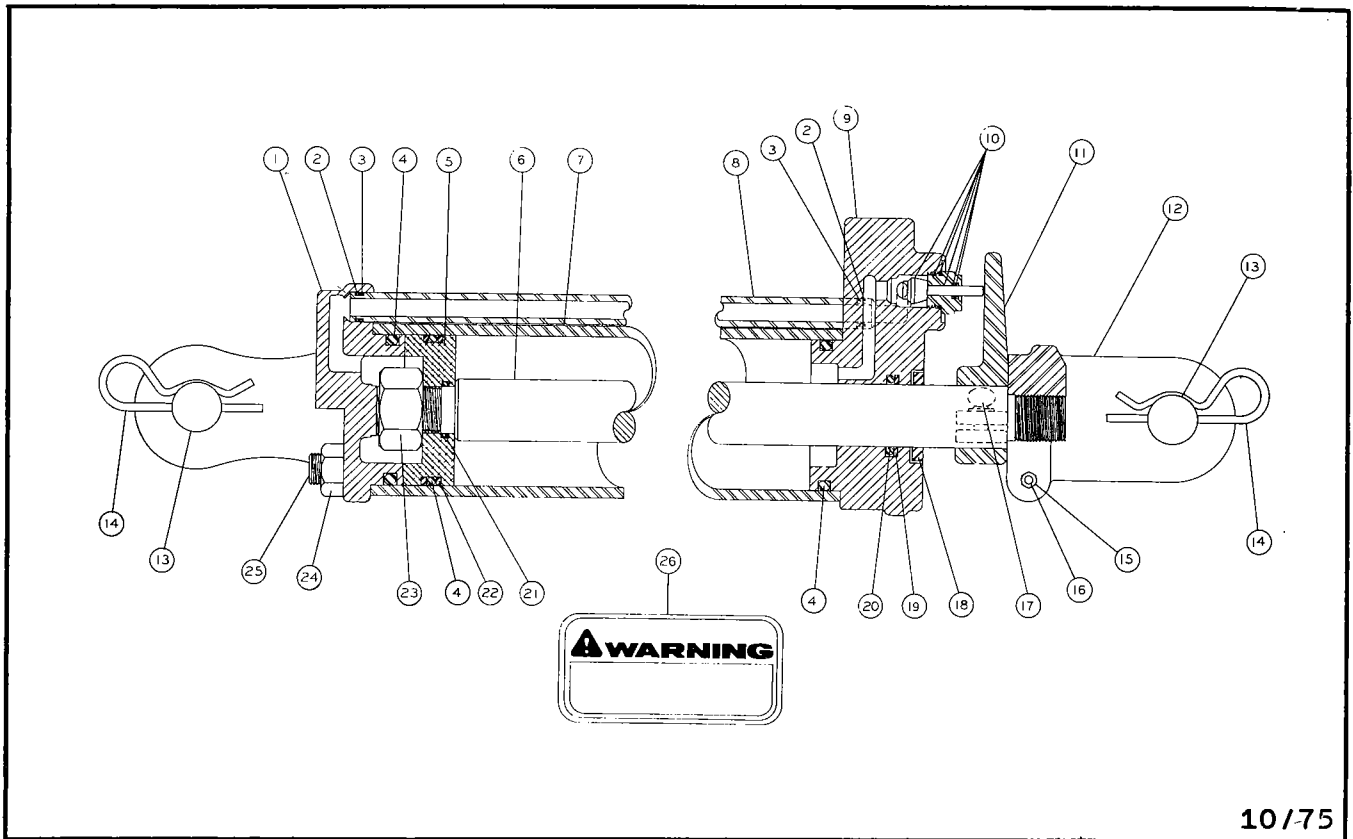
10/75

FOR MODELS All **PART LOCATION** Depth Control
 1401-300-0 Assembly 3" X 16" With Hydraulic Stroke Control
 Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 1-1/4"

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	1401-300-6	Base	1
* 2	1330-105-11	O-Ring	2
* 3	1330-105-12	Back-Up	2
* 4	P686-55-12	O-Ring	3
5	1401-300-9	Feed Tube	1
6	1401-300-1	Tube	1
7	1401-300-2	Rod	1
8	1401-300-10	Washer	1
9	1401-300-5	Head	1
10	1401-301-0	Poppet Assembly	1
11	1330-105-5	Actuator	1
12	1401-300-3	Rod Clevis	1
13	1401-300-8	Clevis Pin	2
14	P576-25-19	Clip Pin	2
15	2145-100-4	Capscrew	1
16	P350-60-20	Nut	1
17	1330-105-15	Thumbscrew	1
*18	P350-60-13	Lipe Type Wiper	1
*19	P350B-60-22	Back-Up	1
*20	P350-60-14	O-Ring	1
*21	P350B-60-23	O-Ring	1
22	P686-55-13	Back-Up	2
23	1330-100-5	Piston	1
24	P350-60-17	Nut	1
25	P686B-55-16	Nut	8
26	1401-300-4	Tie Rod	4
27	P350A-60-25	Cylinder Warning Decal	1

* 1401-300-50 Seal Kit (star items contained in kit)

CROSS HYDRAULIC CYLINDER

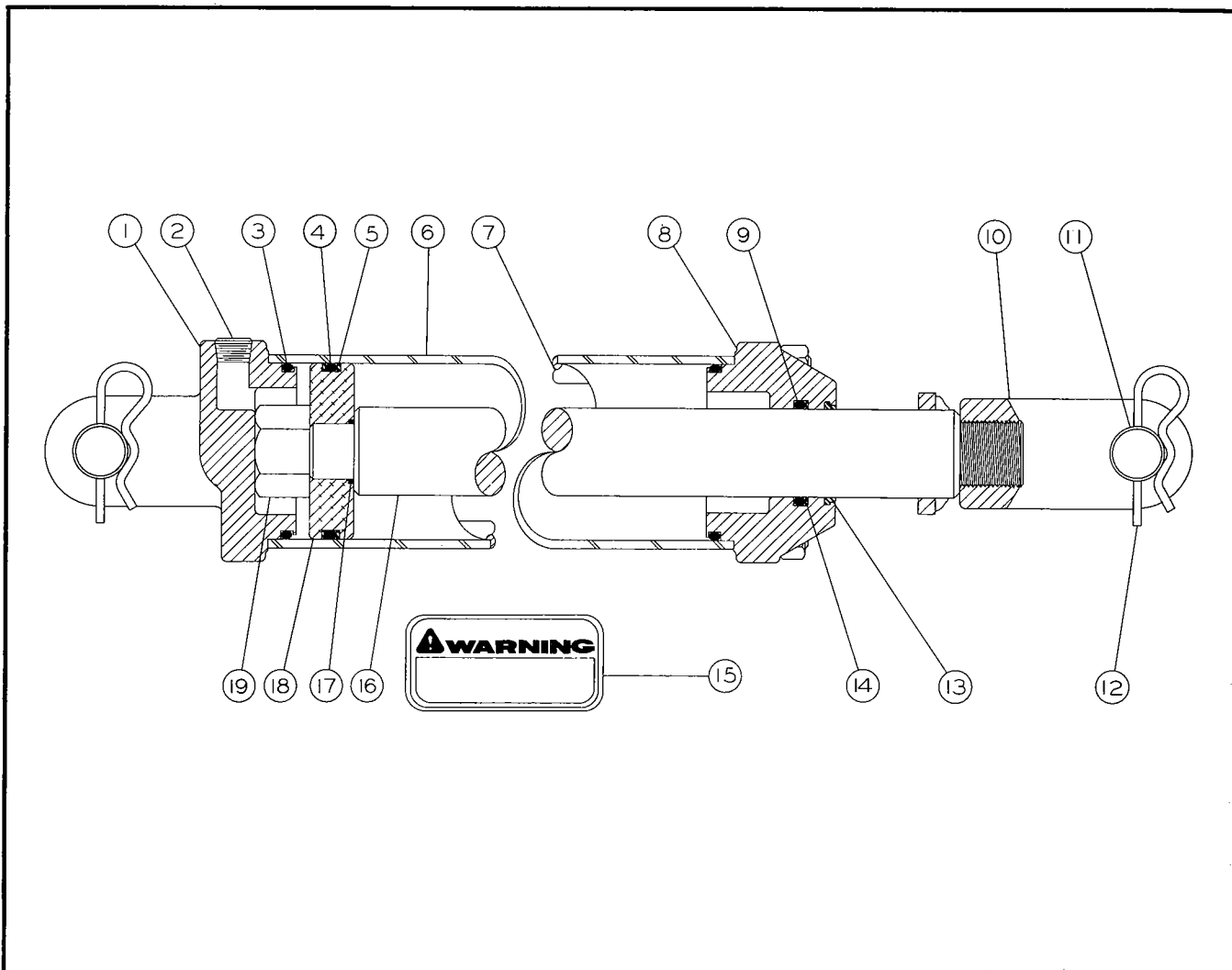


FOR MODELS All **PART LOCATION** Depth Control
 1401-400-0 Assembly 4" x 16" With Hydraulic Stroke Control
 Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 1-3/4"

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	1401-400-4	Base Clevis	1
* 2	1330-105-11	O-Ring	2
* 3	1330-105-12	Back-Up	2
* 4	P350-60-15	O-Ring	3
5	P350-60-8	Piston	1
6	1401-400-1	Rod	1
7	P570-25-4	Tube	1
8	1401-300-7	Feed Tube	1
9	1401-400-3	Head	1
10	1401-301-0	Poppet Assembly	1
11	1401-400-5	Actuator Stop	1
12	1401-300-3	Rod Clevis	1
13	1401-300-8	Clevis Pin	2
14	P576-25-19	Clip Pin	2
15	P350-60-20	Nut	1
16	2145-100-4	Capscrew	1
17	1330-105-15	Thumbscrew	1
*18	1401-400-6	LiPe Type Wiper	1
*19	1401-400-7	Back-Up	1
*20	1401-400-8	O-Ring	1
*21	P350B-60-23	O-Ring	1
*22	P350-60-16	Back-Up	2
23	P350-60-17	Nut	1
24	P350B-60-18	Nut	8
25	1401-400-2	Tie Rod	4
26	P350A-60-25	Cylinder Warning Decal	1

* 1401-400-50 Seal Kit (star items contained in kit)

PRINCE HYDRAULIC CYLINDER



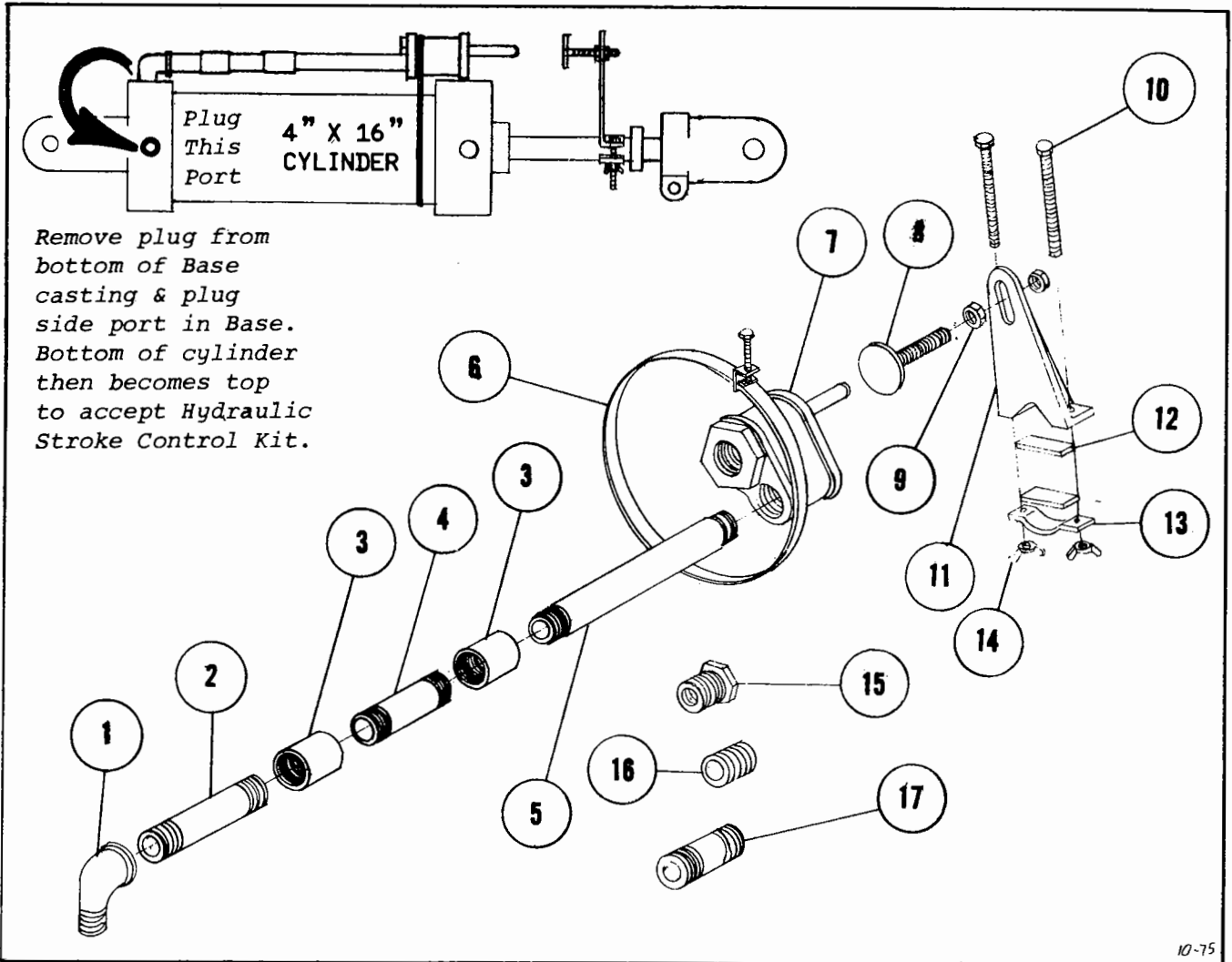
FOR MODELS All PART LOCATION Wing Lift, Depth Control
 2145-400-0 Assembly 4" x 16"
 Retracted 31-1/2" Stroke 16" Extended 47-1/2" Rod 2"

10-75

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	2145-400-4	Base	1
2	2145-400-2	Pipe Plug	1
* 3	2145-400-10	O-Ring	2
* 4	2145-400-11	O-Ring	1
* 5	2145-400-12	Backup	2
6	2145-400-3	Tube	1
7	2145-400-9	Tie Rod	4
8	2145-400-5	Head	1
* 9	2145-400-14	O-Ring	1
10	2145-400-3	Clevis Assembly	1
11	2145-400-17	Clevis Pin	2
12	2145-400-18	Hairpin Clip	4
* 13	2145-400-16	Wiper	1
* 14	2145-400-15	Backup	1
15	350A-60-25	Cylinder Warning Decal	1
16	2145-400-1	Rod Assembly	1
* 17	2145-400-13	O-Ring	1
18	2145-400-6	Piston	1
19	2145-400-7	Lock Nut	1

* 2145-402-0 Seal Kit (star items contained in kit)

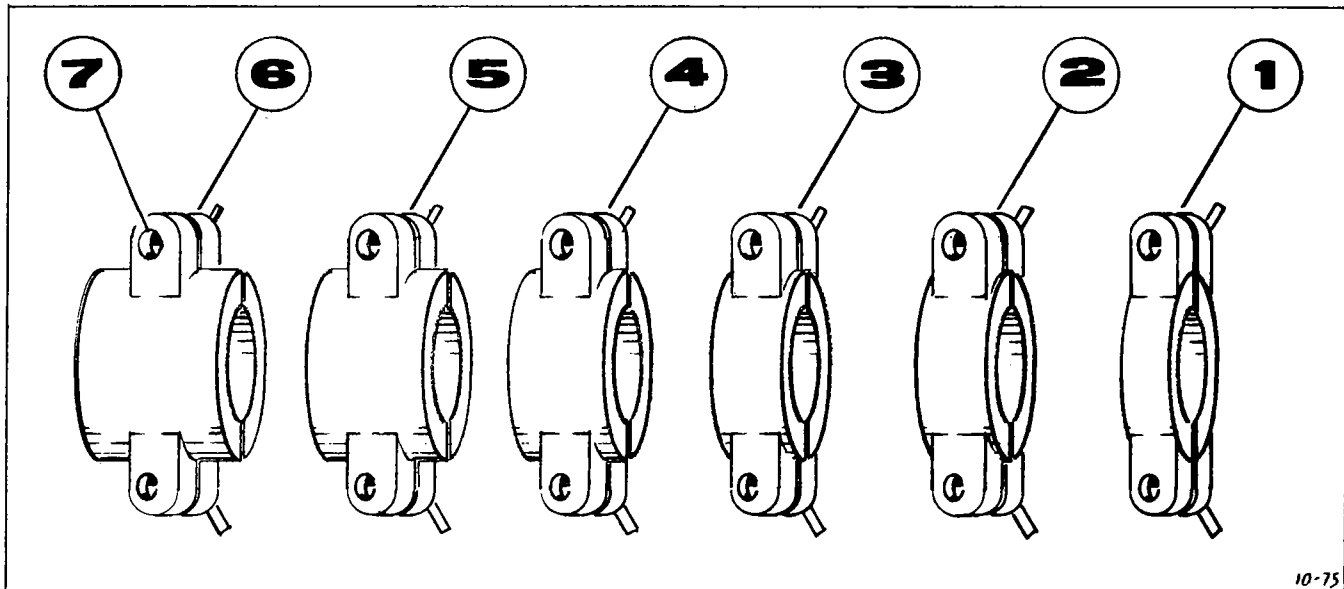
STROKE CONTROL KIT



ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
	2145-401-0	Prince hydraulic stroke control kit	
1	1/2 N.P.T.	90° Street elbow	1
*2	1/2 N.P.T.	Nipple (3" long)	1
3	1/2 N.P.T.	Pipe coupler	2
4	1/2 N.P.T.	Nipple (4" long)	1
5	1/2 N.P.T.	Nipple (8" long)	1
6	2145-401-1	Band clamp	1
7	2145-401-2	Body	1
8	2145-401-3	Striker bolt	1
9	3/8nc	Hex nut	2
10	1/4nc x 2-3/4	Cap screw (all thread)	2
11	2145-401-4	Striker plate	1
12	2145-401-6	Rubber bushing	2
13	2145-401-5	Striker base	1
14	1/4nc	Wing nut	2
*15	5/8-1/2N.P.T.	Reducer bushing	1
*16	1/2 N.P.T.	Close nipple	1
17	1/2 N.P.T.	Nipple (2" long)	1

* Note: Items marked are not used on a 4" x 16" Prince cylinder

MECHANICAL STROKE CONTROL KIT



FOR HYDRAULIC CYLINDER WITH 1-1/4" ROD DIAMETER.

P755-26-0 MECHANICAL STROKE CONTROL KIT

P755-26-0 MECHANICAL STROKE CONTROL KIT			Quantity
ITEM	PART NUMBER	DESCRIPTION	Per Kit
1	770-26-1	3/4" STOP BUSHING HALF	2
2	770-26-2	7/8" STOP BUSHING HALF	2
3	770-26-3	1" STOP BUSHING HALF	2
4	770-26-4	1-1/4" STOP BUSHING HALF	2
5	770-26-5	1-1/2" STOP BUSHING HALF	2
6	770-26-6	2" STOP BUSHING HALF	2
7	1/8" X 2"	COTTER PIN	12

FOR HYDRAULIC CYLINDER WITH 2" ROD DIAMETER.

P570-26-0 MECHANICAL STROKE CONTROL KIT

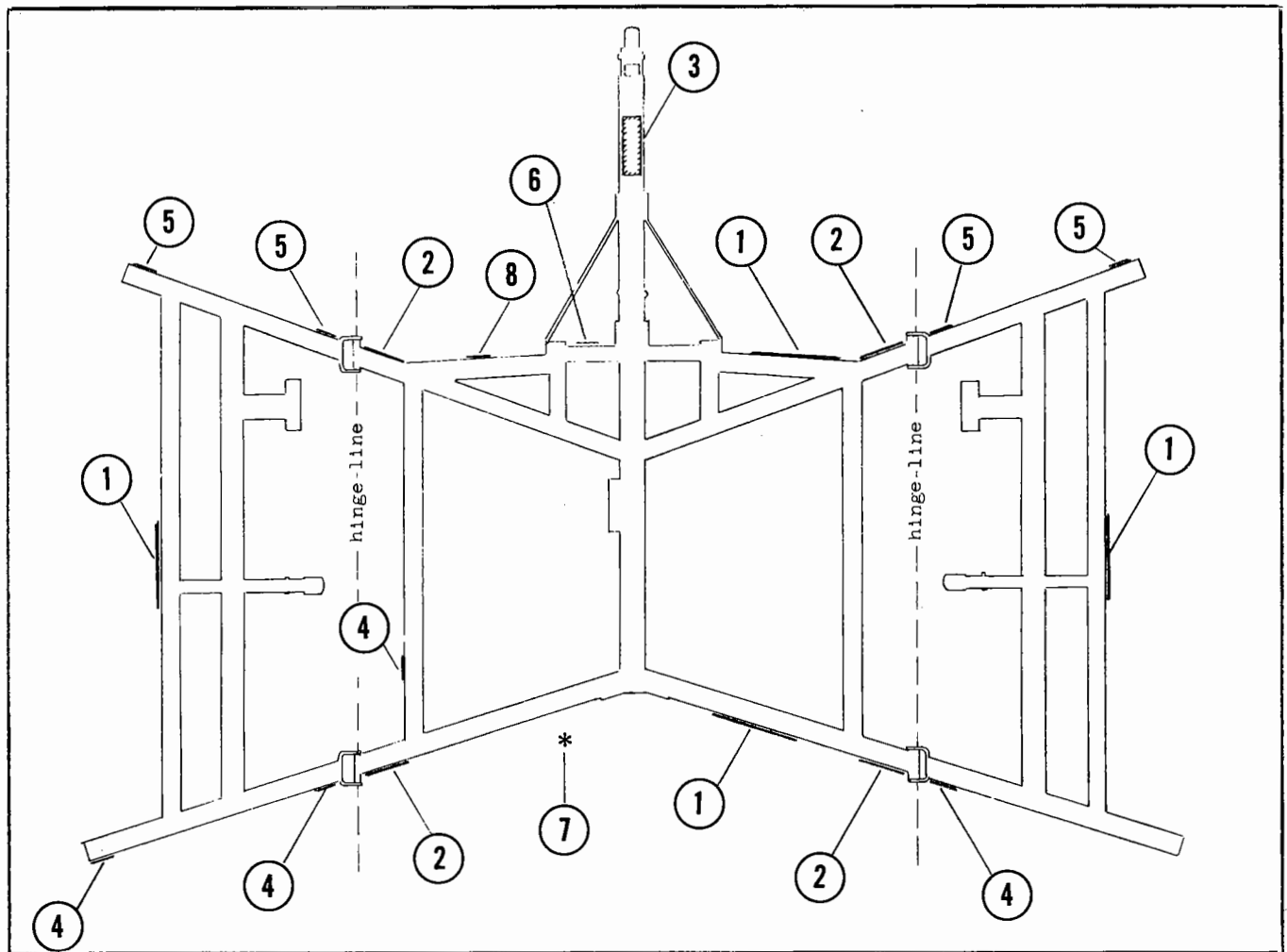
ITEM	PART NUMBER	DESCRIPTION	
1	570-26-1	3/4" STOP BUSHING HALF	2
2	570-26-2	1" STOP BUSHING HALF	2
3	570-26-3	1-1/4" STOP BUSHING HALF	2
4	570-26-4	1-1/2" STOP BUSHING HALF	2
5	570-26-5	1-3/4" STOP BUSHING HALF	2
6	570-26-6	2" STOP BUSHING HALF	2
7	1/8" X 2"	COTTER PIN	12

FOR HYDRAULIC CYLINDER WITH 1-1/2" ROD DIAMETER.

P908-26-0 MECHANICAL STROKE CONTROL KIT

ITEM	PART NUMBER	DESCRIPTION	
1	908-26-1	3/4" STOP BUSHING HALF	2
2	908-26-2	7/8" STOP BUSHING HALF	2
3	908-26-3	1" STOP BUSHING HALF	2
4	908-26-4	1-1/4" STOP BUSHING HALF	2
5	908-26-5	1-1/2" STOP BUSHING HALF	2
6	908-26-0	2" STOP BUSHING HALF	2
7	1/8" X 2"	COTTER PIN	

DECALS



ITEM	PART NUMBER	PART DESCRIPTION	QUANTITY
1	STD 38-1	Krause Decal	4
2	STD 38-4	Danger Decal	4
3	1520-0-25	Safety Decal	1
4	1280-0-50	Red Reflector	4
5	2145-0-50	Yellow Reflector	4
6	1844-0-25	Caution Decal	1
7*	1067-59-0	Lamp Bracket Assembly	1
8**	900-0-5	Name Plate	1

* Attach to inside rear scraper bracket.

** Factory attached with two #4 drive screws.

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.

PROPER BOLT USE

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

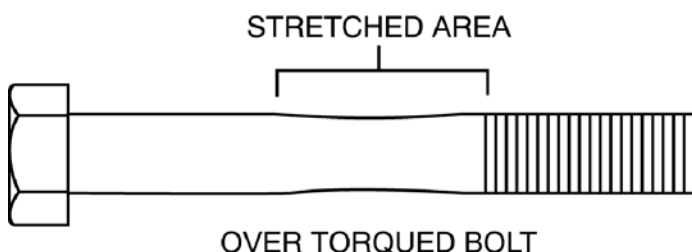
Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Tighten plastic insert or crimped steel-type lock nuts to approximately 110 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

NOTE: "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication. **Tighten lubricated bolts to approximately 80% of dry bolts.**

BOLT SIZE	WRENCH SIZE	GRADE 2		GRADE 5		GRADE 8	
		ft-lbs	N • m	ft-lbs	N • m	ft-lbs	N • m
3/8"	9/16"	20	27	33	45	45	61
7/16"	5/8"	32	43	52	71	70	95
1/2"	3/4"	50	68	80	108	105	142
5/8"	15/16"	100	136	150	203	210	285
3/4"	1-1/8"	160	217	260	353	375	508
7/8"	1-5/16"	175	237	415	563	600	813
1"	1-1/2"	250	339	625	847	880	1193
1-1/8"	1-11/16"	375	508	850	1152	1400	1898
1-1/4"	1-7/8"	530	719	1100	1491	1765	2393
1-1/2"	2-1/4"	930	1261	1400	1898	2540	3444



SAE
GRADE 2



SAE
GRADE 5



SAE
GRADE 8

ASSEMBLY

Start the assembly by selecting a large level hard surface area, and the proper tools and equipment needed to assemble this unit.

MAIN FRAME

Place the main frame on suitable stands or blocks approximately 30" high in the center of the assembly area with the front of the frame facing a direction that will permit future hitching to a tractor. Figure 1.

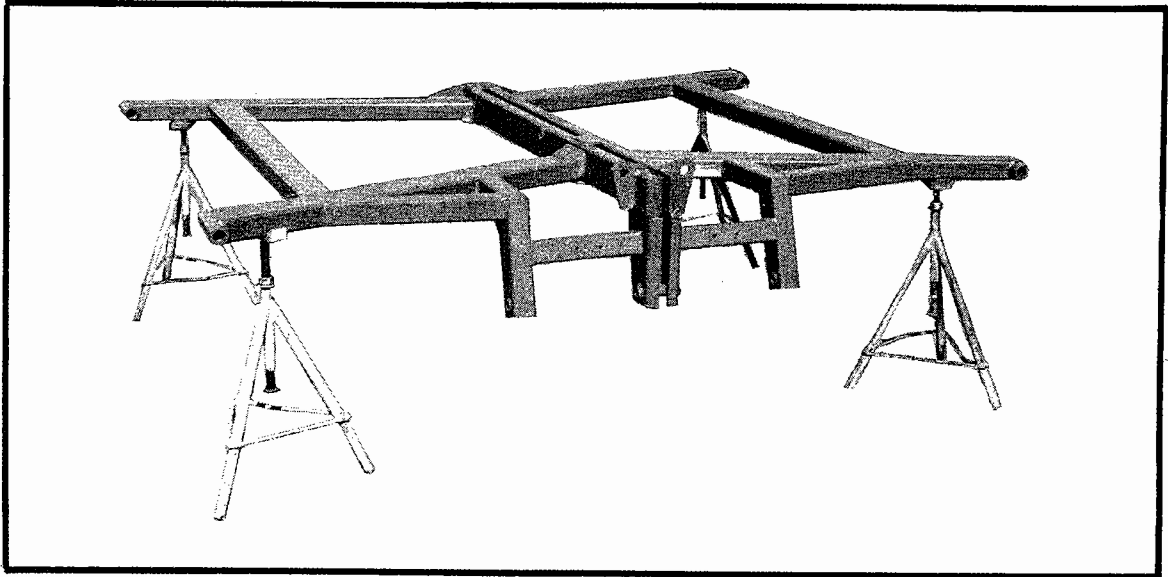


Fig. 1

CYLINDER LUG

Attach the depth control cylinder lug to the front of the main frame as shown in Figure 2.

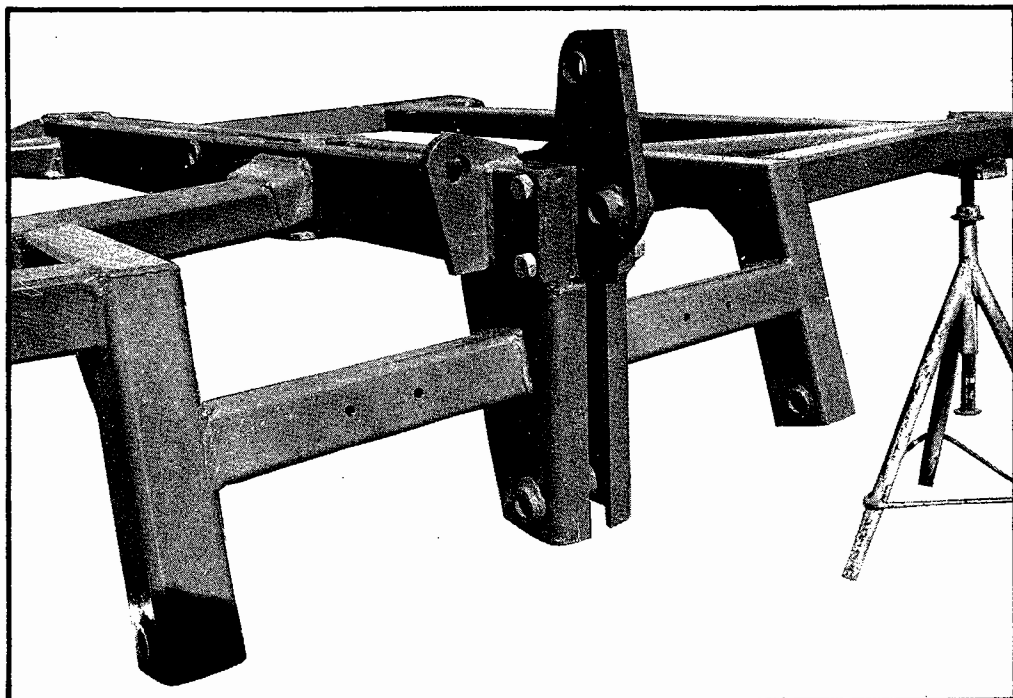


Fig. 2

MAIN ROCKER SHAFT

Position the main rocker shaft under the main frame with the rocker shaft cylinder lug on top and the wheel arms pointing to the back. Raise the rocker shaft under the frame to approximately 2". Be sure the rocker cylinder lug is between the two center frame members. Screw the grease zerks in the bearing plates. Apply grease to the bearing surfaces. Place the bearing plates between the frame and rocker shaft and bolt the bearing caps, rocker shaft and bearing plates to the frame. Figure 3 shows the right side of the rocker shaft clamped in place.

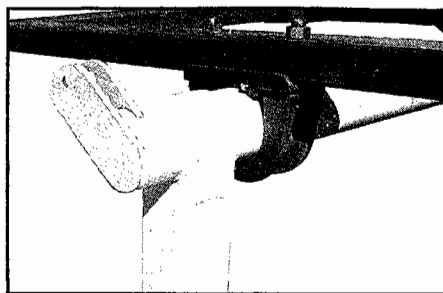
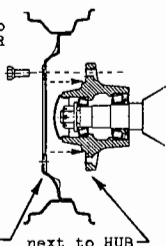


Fig. 3

Bolt the hubs, wheels and tires to the wheel arms as shown in Figure 4. Be sure the hub is positioned correctly. The parts section will clarify if in doubt.

ALWAYS bolt the wheel to the hub thru the COUNTER SUNK wheel bolt holes.

TORQUE
80-90
ft.lbs.



Note conture of WHEEL next to HUB

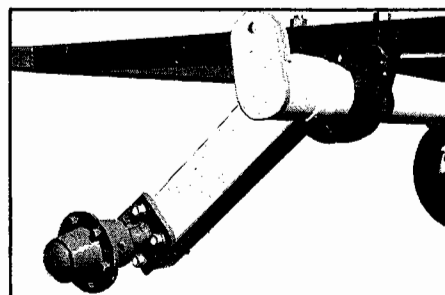


Fig. 4

TONGUE

Attach the tongue weldment and tongue straps loosely to the front of main frame as shown in Figure 5. Bolt the tongue straps to the tongue and then tighten all bolts.

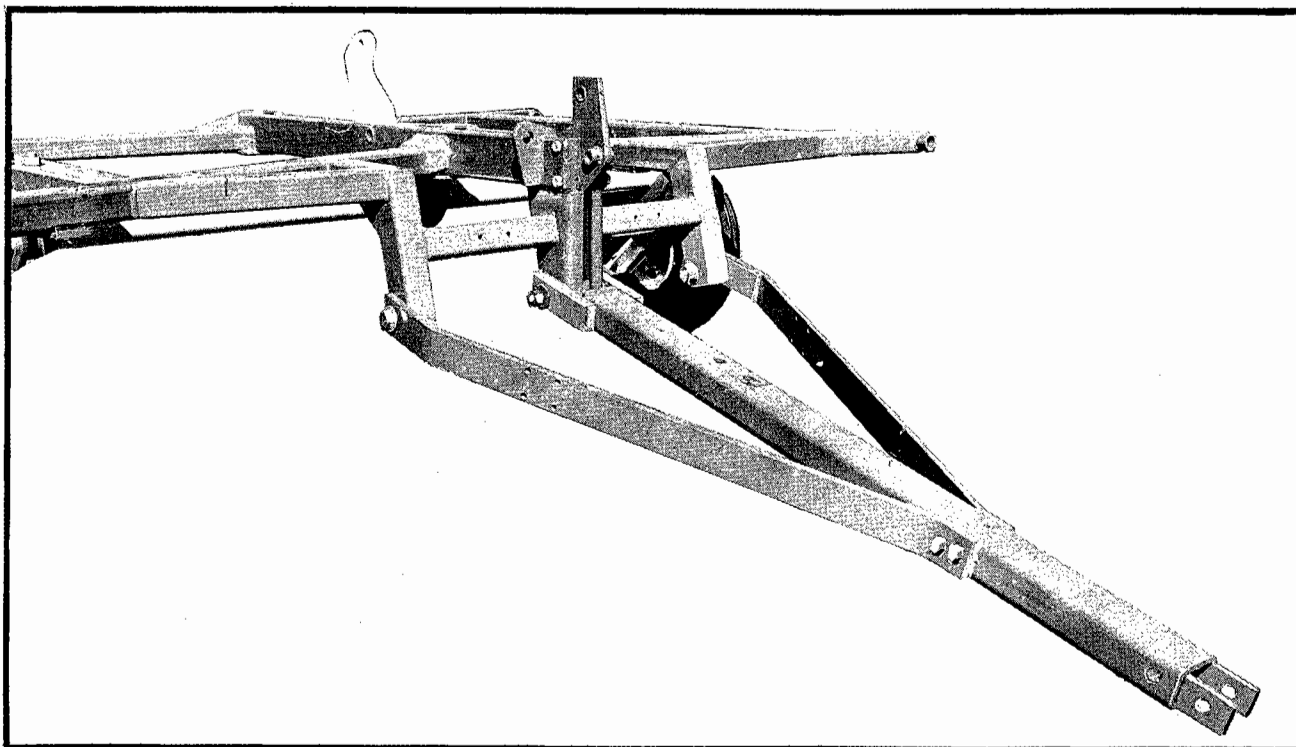
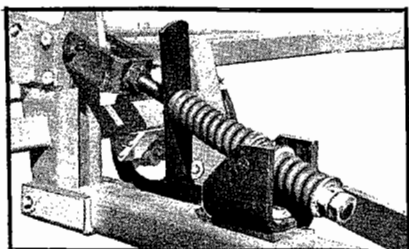


Fig. 5

TONGUE ADJUSTMENT SCREW

Place the left spring bracket over the two holes on top of the tongue. Position the right spring bracket on top of the left bracket and drop the mounting bolts down through both brackets and tongue, but do not thread nuts on the bolts. Remove tape and paint from the adjustment screw threads and apply grease. Place the trunnion guide between the two spring brackets with the zerk on top and secure the bracket bolts to the tongue with lock washers and nuts. Raise and block the front of the tongue at an approximate 10° angle from the level frame. (This is not a permanent setting, but will aid in future assembly of the unit. Soil conditions will require field adjustments.) Unscrew the clevis of the adjustment screw and pin to the front of the cylinder lug on the frame.



for high hitch ▲ for low hitch ▼

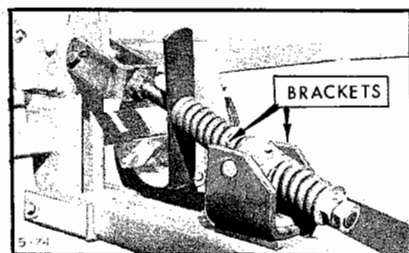


Fig. 6

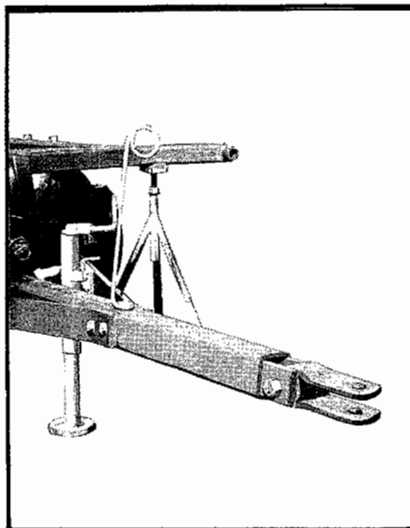


Fig. 7

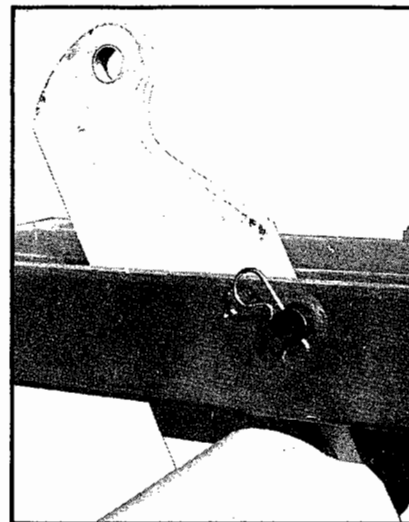
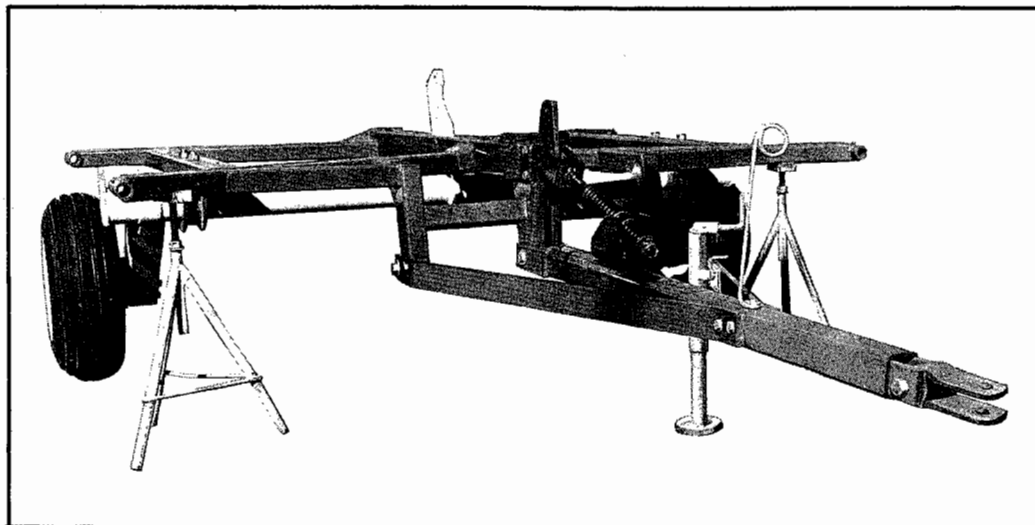


Fig. 8

CLEVIS, HOSE CARRIER, AND JACK

Attach these parts to the tongue as shown in Figure 7, but do not pin the jack in the supporting position. Remove the block from the tongue, and with the jack in the storage position, raise the back of the main frame until the road lock pin can be inserted through the frame members in front of the rocker shaft cylinder lug. See Figure 8. The jack may be lowered and the self-supporting frame leveled. Screw zerks into each wing hinge point.



WING FRAMES

Attach the left and right wings to the main frame with hinge pins. Be sure the wing lift cylinder lugs are at the front of the unit. See Figure 9. Each hinge pin is held in position with a $\frac{3}{8}$ " grade 5 bolt. See inset, Figure 9. Use a small pipe wrench or alignment pin to insure hole alignment for the bolt. Use blocks or stands to level the wing frames with the main frame.

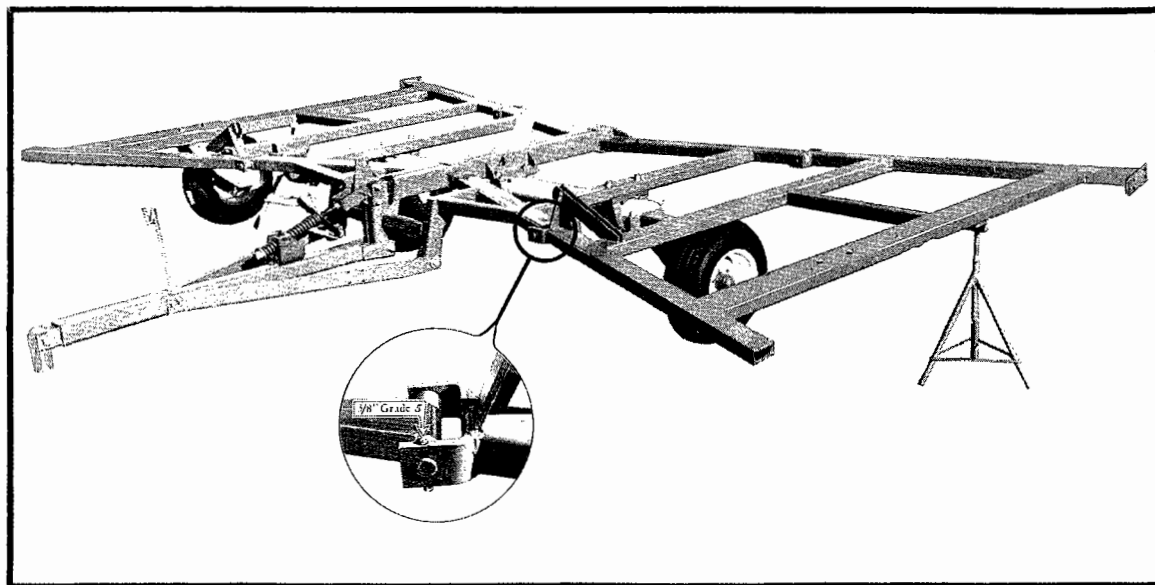


Fig. 9

WING ROCKER SHAFTS

Raise the left rocker shaft under the left wing making sure the adjustment link lugs are on top with the wheel arms to the back. Figure 10. Grease the bearing surfaces and clamp the rocker shaft to the wing frame with bearing spacers and clamps.

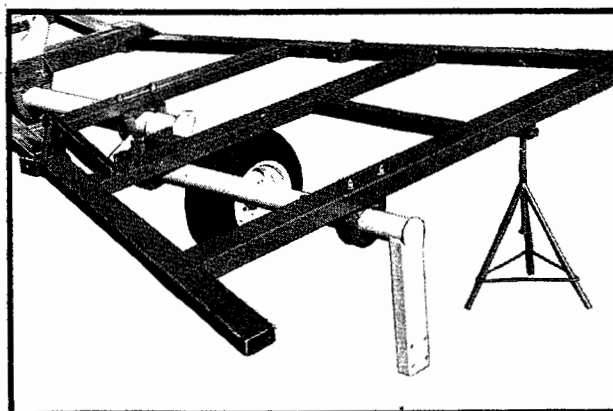


Fig. 10

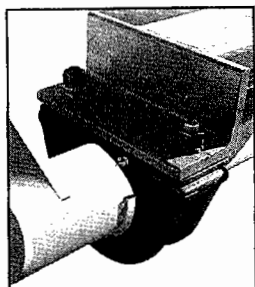


Fig. 11

Figure 11 reflects the inside left wing rocker plate and clamp. Note the location of the zerk. Attach the right rocker shaft in the same manner.

WING HUBS

Bolt the wing wheel hubs to the wheel arms of the wing rocker shafts. Note the position of the support pad in Figure 12. Bolt the wheels and tires to the hubs.

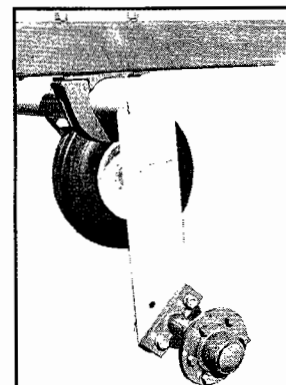
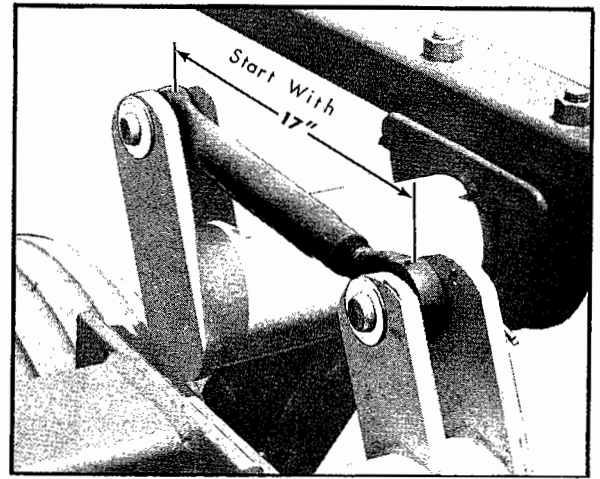


Fig. 12

ROCKER SHAFT ADJUSTMENT LINK

Figure 13 shows the adjustment link between the main rocker shaft and right wing rocker shaft. Unscrew the link to approximately 17" from center to center of pin holes and pin the links between the rocker shafts as shown. Stands and blocks can now be removed from the self-supporting wing frames.



WING LOCKS, CENTER POINT AND TRAIL HITCH

These parts should be attached to the unit before disc gang attachment to provide ample work space and reduce possible injury that could be caused by torquing nuts in a cramped congested work space. The wing locks attach to the wing frames as shown in figure 14. The center point assembly attaches to the center frame behind the rocker shaft. Figure 15 reflects the center point attached to the frame that carries 20" blades. Note that all 3 spacers are on top. To install the center point for 22" disc blade models, place 2 spacers between center point casting and the bottom of the frame. The 3rd spacer should be on top. Figure 16 shows the correct location and attachment of the trail hitch if used.

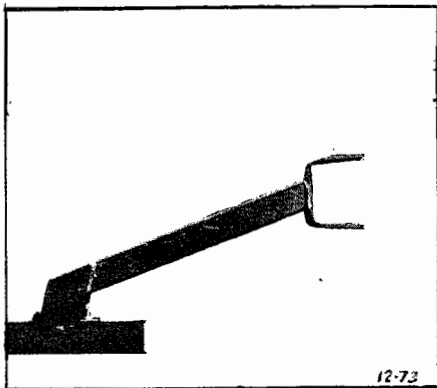


Fig. 14

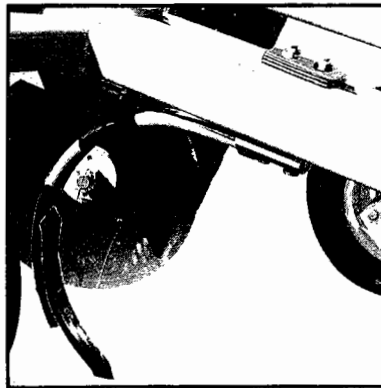


Fig. 15

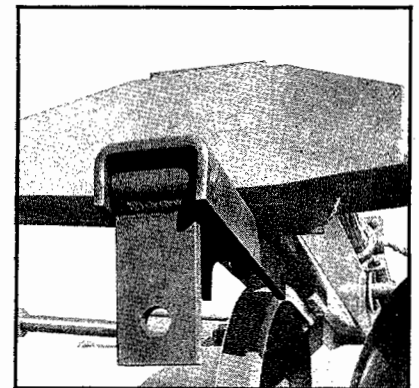


Fig. 16

The assembly of the self-supporting frame, or backbone of the harrow, is now complete and ready for disc gangs, scrapers and hydraulics. It would be wise to go back and check each part for correct attachment and make sure all bolts are tight.

DISC GANGS

Before starting the disc gang assemblies, check the model number stamped on the name plate located on the front of the main frame. If the name plate reads "Model 1422, 1425, or 1428," you must turn to the last section in the book. These are flex gang models. All other model assemblies continue in this section. Turn to the location drawing that pertains to the model being assembled, between pages A12 thru A20 and study the drawing. The drawing will reflect the number of blades per gang, the location of the bearing arms (plain and yellow patched), middle bearing arm location, if applicable, and where the gang assemblies are located on the unit.

BEARING ARMS

Figure 17 is a back view of a bearing arm assembly on the right rear tie rod and attached to the wing frame with U-bolts. All models except 1402, 1405 and 1408 will have two different bearing arm assemblies. The second bearing arm assembly will have a yellow patch on the top mounting surface. These bearing arms have a special location on the gangs that permit correct attachment to the frames. Identify and separate these bearing arms from the other plain bearing arms. All bearing arms are designed to support the thrust loads exerted by the plowing disc blades and rotating tie rods during normal use. Each bearing arm has a triple-sealed, precision made bearing that is held in place by two flangettes that permit self-alignment. LOOSEN the four flangette carriage bolts on all bearing arms before gang assemblies.*

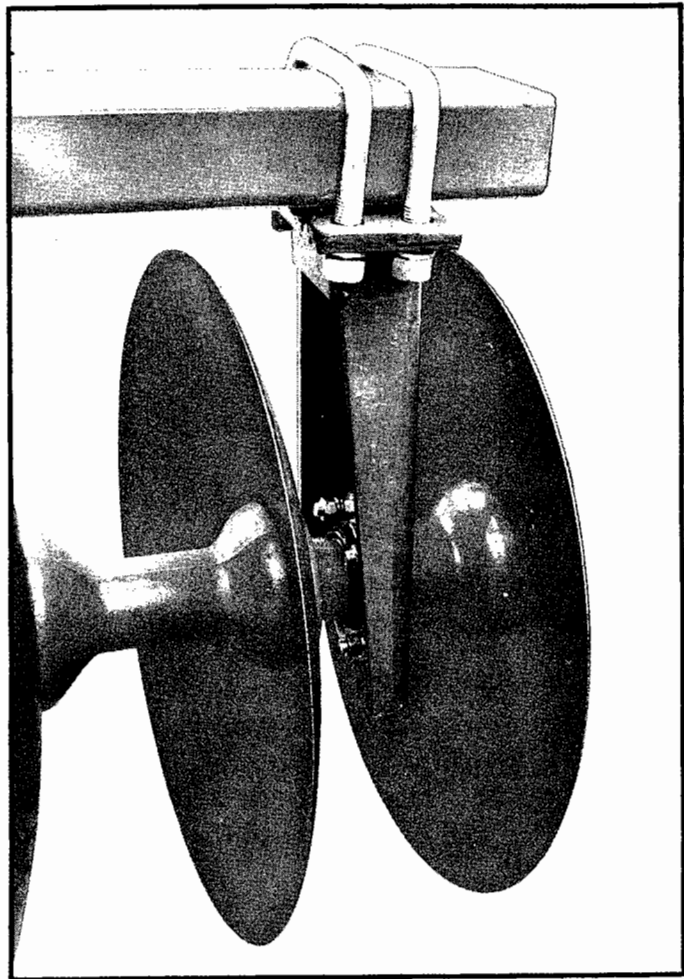
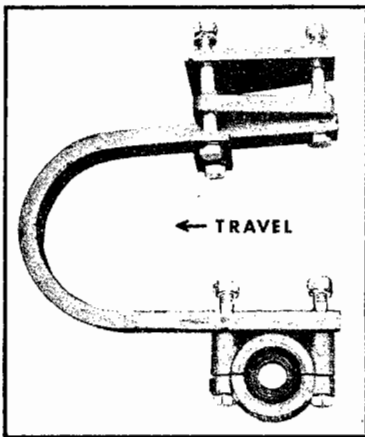


Fig. 17



FLEXIBLE BEARING ARMS: The same procedure for a flex gang assembly may be used as follows, however you must pay special attention to the different bearing arm and the direction of travel.

DISC GANG ASSEMBLY

The following pictures on the next page reflect the correct procedure for disc gang assembly. There are several important steps to consider as you assemble each gang. Separate the front tie rod assemblies from the rear tie rod assemblies and place them in a convenient location near disc blades and bearing arms. ALWAYS handle bearing arms with care. They contain precision-made bearings.

* Always loosen the flangette bolts before assembly, adjustments, or repairs on a disc gang assembly. Never hammer or strike a bearing arm for any reason or damage will occur to the ball bearings and raceways, resulting in bearing failure.



BE CAREFUL

The handling of disc blades and gangs can inflict serious lacerations to the body if care is not taken. Respect them for what they are designed for, sharp cutting tools.

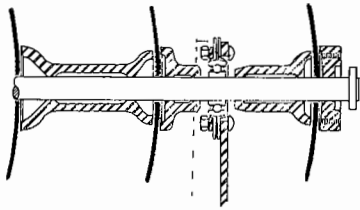


Fig.18

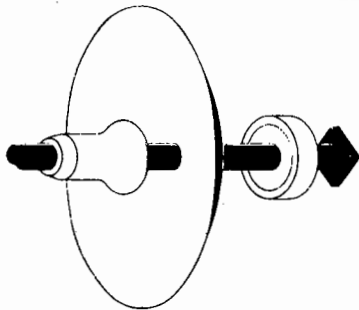


Fig.19

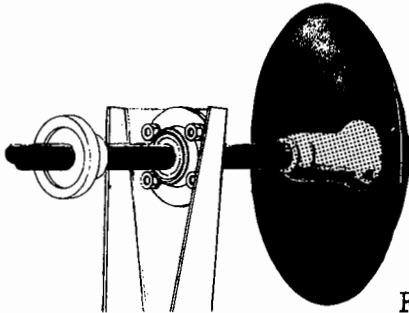


Fig.20

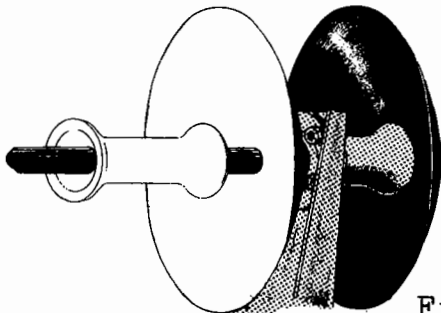


Fig.21

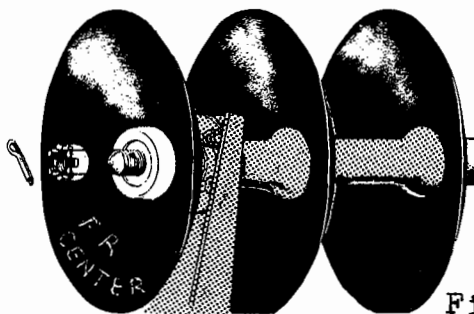


Fig.22

Figure 18 is a cut-a-way drawing that shows how the end washer, half spools, bearing arms and spacer spools are assembled on a tie rod. Note how the ends of the spools and end washer are contoured to fit flush against the curved sides of the disc blades, and the bearing arm flanges are on the short half spool side with loose flange bolts.

Figure 19. Select the first tie rod for assembly and remove the cotter pin, tie rod nut, end washer and spools. Leave the large end washer that fits the square end of the tie rod. Check the placement drawing and place the correct disc blade or a taper blade on the tie rod as shown, followed by a long half spool. **ALWAYS** wipe the contact surfaces of the spools clean.

Put a bearing arm assembly on the tie rod as shown in Figure 20. Notice the direction of the bearing arm flanges in relation to the other parts. Place a short half spool on the tie rod and push the bearing arm down the tie rod with the half spool. If the bearing arm is placed on the tie rod incorrectly, damage may occur to bearings or flanges.

Continue the assembly with disc blade and spacer spool as shown in Figure 21. When two or three blades are on the tie rod, take out as much slack in the assembly as possible. Check the square end of the tie rod to make sure it is snug in the end washer. Be sure to add the middle bearing arm and half spools at the correct location, if applicable. (Check placement drawing)

Check the placement drawing for the last blade size and place it on the tie rod. Put the end washer and nut on the tie rod. Be sure the convex side of the end washer is flush against the concave side of the blade. Figure 22. Tighten the tie rod nut with a tie rod wrench and secure with the cotter pin. Never loosen a nut to insert the pin. Tighten the nut to the next hole.

Mark the end disc for the location on the unit for easy identification, such as FR for Front Right. Continue the disc gang assemblies until all gangs are finished and ready for attachment to the unit. The extension spools may be bolted on, but do not attach the cut out disc at this time.

Place the completed disc gangs under the frames in their respective marked positions. Raise each gang under the frame until the bearing arms almost touch and attach them loosely with U-bolts.

After all disc gangs have been attached to the frame members, turn back to the placement drawing. This drawing will show the location or dimension of the disc gangs for the initial or average settings.

Shift a gang to the dimension required and tighten all U-bolts uniformly until the bearing arm top plates are within $1/8$ " from the bottom of the frame. Check the location dimension for accuracy and correct if needed. Make sure the bearing arm top plate is square with the gang beam and the bearing arm is not cocked to one side or the other.* It should draw up flat against the gang beam without being forced or hammered. Tighten the bearing arm U-bolts. With all bearing arms aligned and secured tightly to the frame members, rotate each gang a few turns in the direction of travel. When the motion stops, the bearings will be aligned inside the loose flangettes. Tighten all flangette bolts at that time.

SCRAPERS

Figure 23 shows scrapers attached to a right rear gang. Pre-assembled scraper frames are bundled in pairs with brackets. Break the bands on the bundles, and place the correct scraper frame assembly behind each gang. This information is obtained from the placement drawing. Remove both U-bolts from the scraper brackets, Figure 24, and attach a bracket with a large u-bolt to the frame at each location shown on the placement drawing. Do not tighten. Raise the scraper frame assembly to the bottom of the scraper brackets and attach with the smaller U-bolts. Shift the scraper frame right or left so the curved scraper blade fits and touches the concave side of the disc blades. Adjust the brackets on the harrow frame until the bracket is between scraper blades. Tighten the large U-bolt nuts. Move the scraper frame until one blade touches the disc or is within $1/8$ " from the disc blade. Tighten the small bracket U-bolts. Turn the disc gang to be sure it will turn freely. Check the remaining scraper blades and adjust if not within $1/8$ " of the blade.

LOOP-TYPE SCRAPER FOR OUTRIGGER

With scrapers attached and adjusted, slide the loop-type scrapers over the extension spools and clamp to the end of the scraper frames with the loop in the center of the extension spool. (Right rear and left rear.) The cut-out blades and washers may be attached at this time.

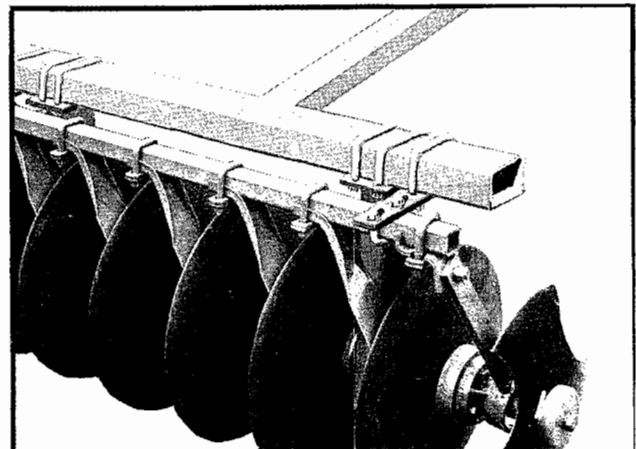


Fig. 23

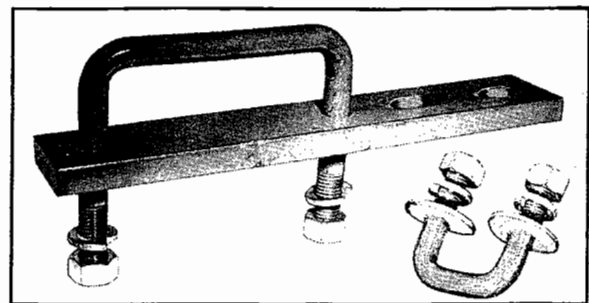
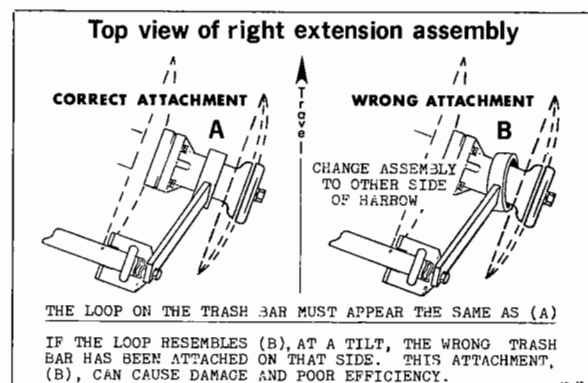


Fig. 24



* "CAUTION: If a bearing arm is forced flat against the beam, you have created a levering action with the bearing arm that will cause preloading on the bearings, shortening bearing life."

HYDRAULICS

Figure 25 reflects all hydraulics required for these models. The parts section has a page that reflects cylinder hose schematics with or without a selector valve. Hose lengths are noted in the parts lists.

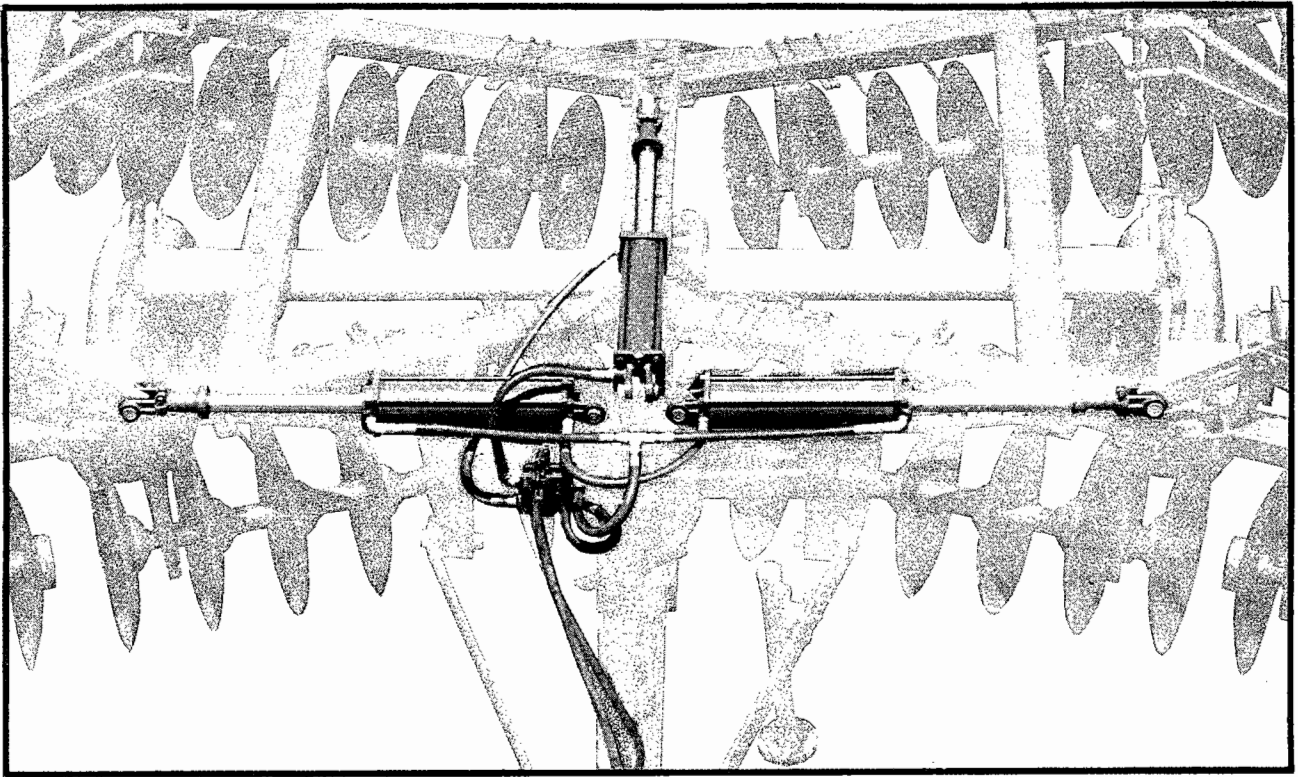


Fig. 25

Pin the base of the wing lift cylinders to the front of the main frame with the hose connecting ports to the front. Pin the lift straps to the wing lift lugs. Do not pin the rod end of the cylinder until all hydraulics are assembled and purged of air. Figure 26 shows the right wing lift cylinder attached, purged of air, pinned to the lift strap and ready for operation. (NOTE: Tightly screw a street ell into the rod end port of the cylinders. The restrictors screw into the street ells and the hose couplings into the restrictors.)

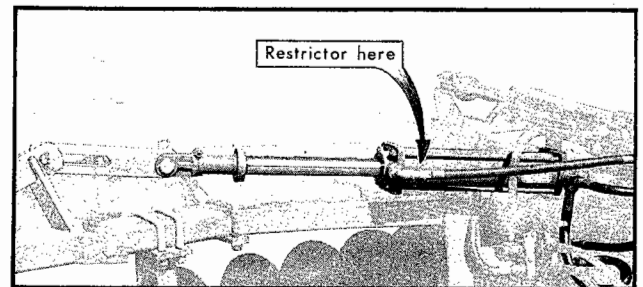
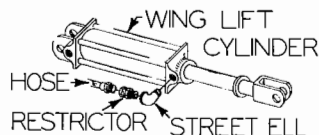


Fig. 26

Figure 27 shows a depth control cylinder attached and purged ready for the field. Be sure the system is full of fluid and no air is in the system before pinning the rod end of the cylinder to the rocker shaft.

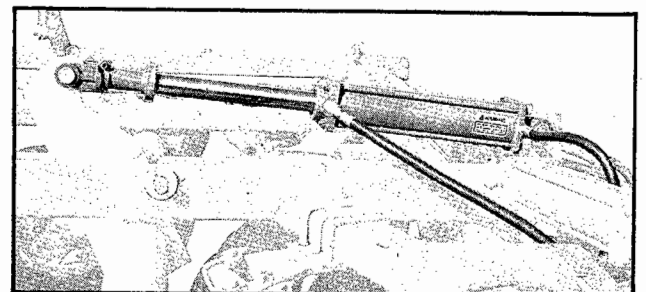


Fig. 27

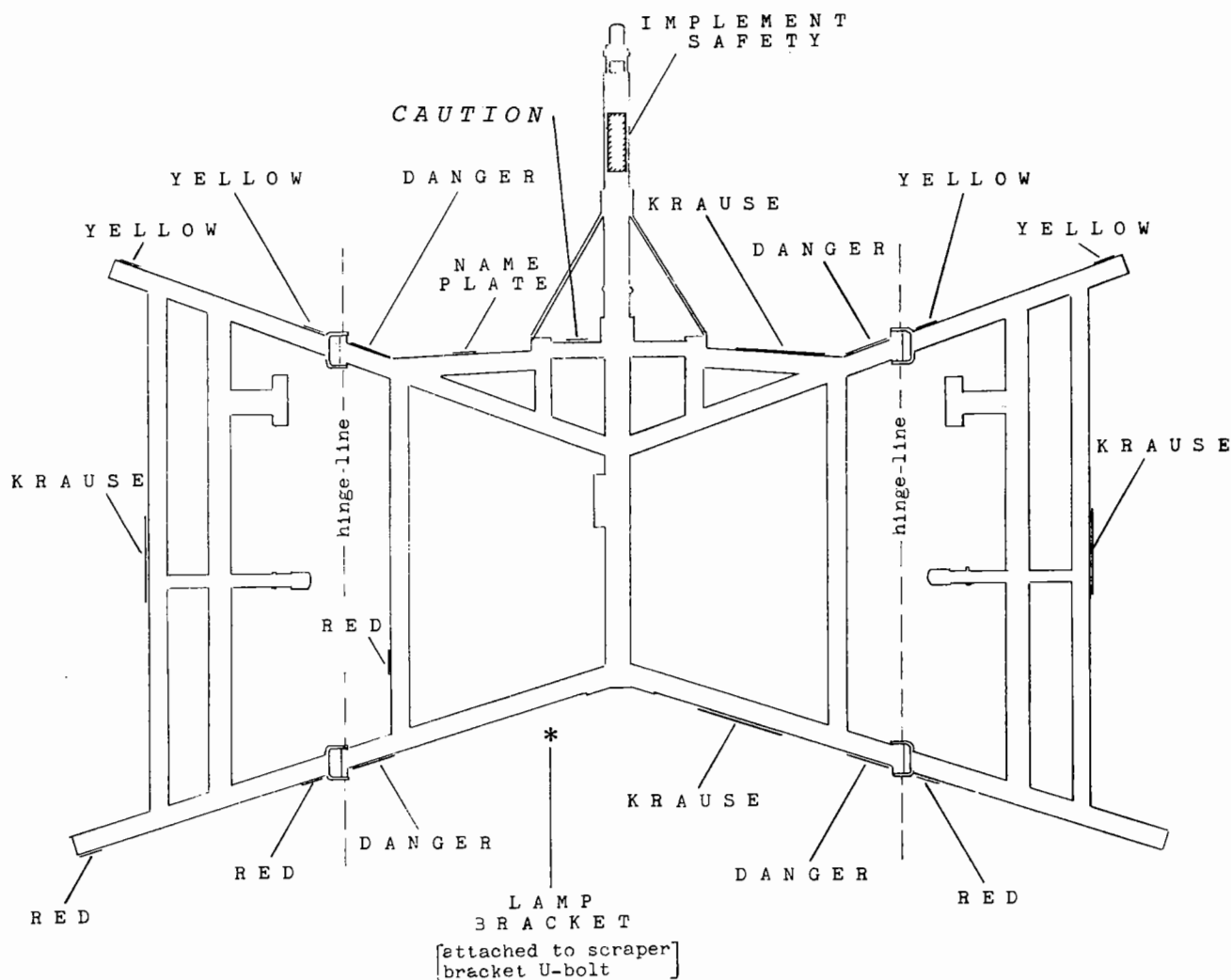
CHECK ALL NUTS AND BOLTS for Tightness.

The Flex Wing Offset should now be complete and ready for the field. Return Owner's Manual to dealer or new owner. If hydraulics were not attached, tape the restrictors to the hose carrier.

DECALS

It is very important that all decals be placed on the frame at the locations shown.

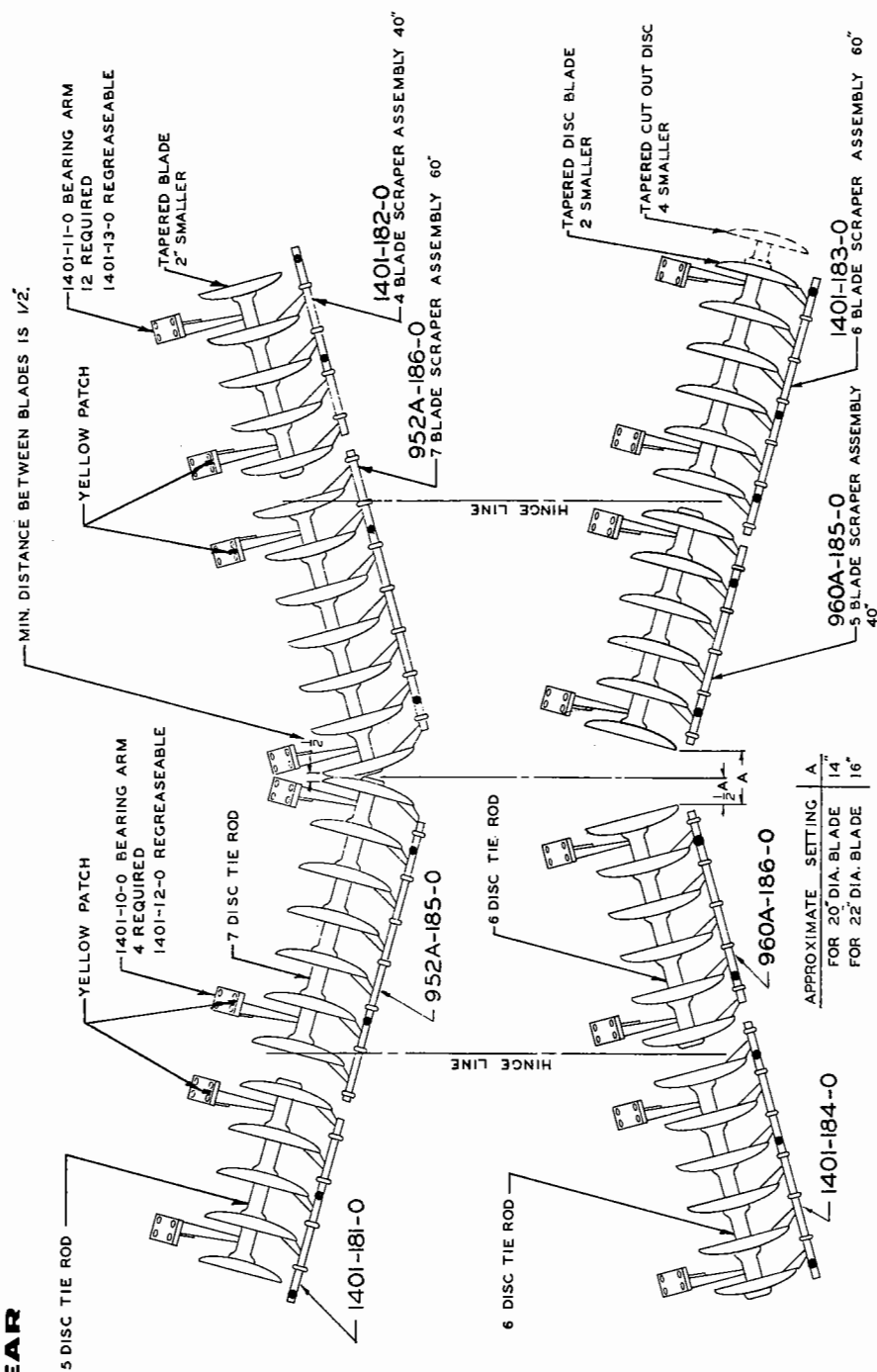
Four STD 38-2	K R A U S E
Four STD 38-4	D A N G E R
One 1520-0-25	S A F E T Y
Four 1280-0-50	R E D R E F L E C T O R
Four 2145-0-50	Y E L L O W R E F L E C T O R
One 1844-0-25	C A U T I O N



READ OPERATING SECTION
BEFORE HITCHING TO
A TRACTOR

MODEL 1401 **DISC GANG AND SCRAPER LOCATIONS**

SPACING
9 1/8 FRONT
9 1/8 REAR



SPACING No.	OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8"	7	614-18-0	614-16-0	59"
9-1/8"	5	388-21-0	388-94-0	40-1/2"
9-1/8"	6	901-18-0	901-28-0	49-7/8"

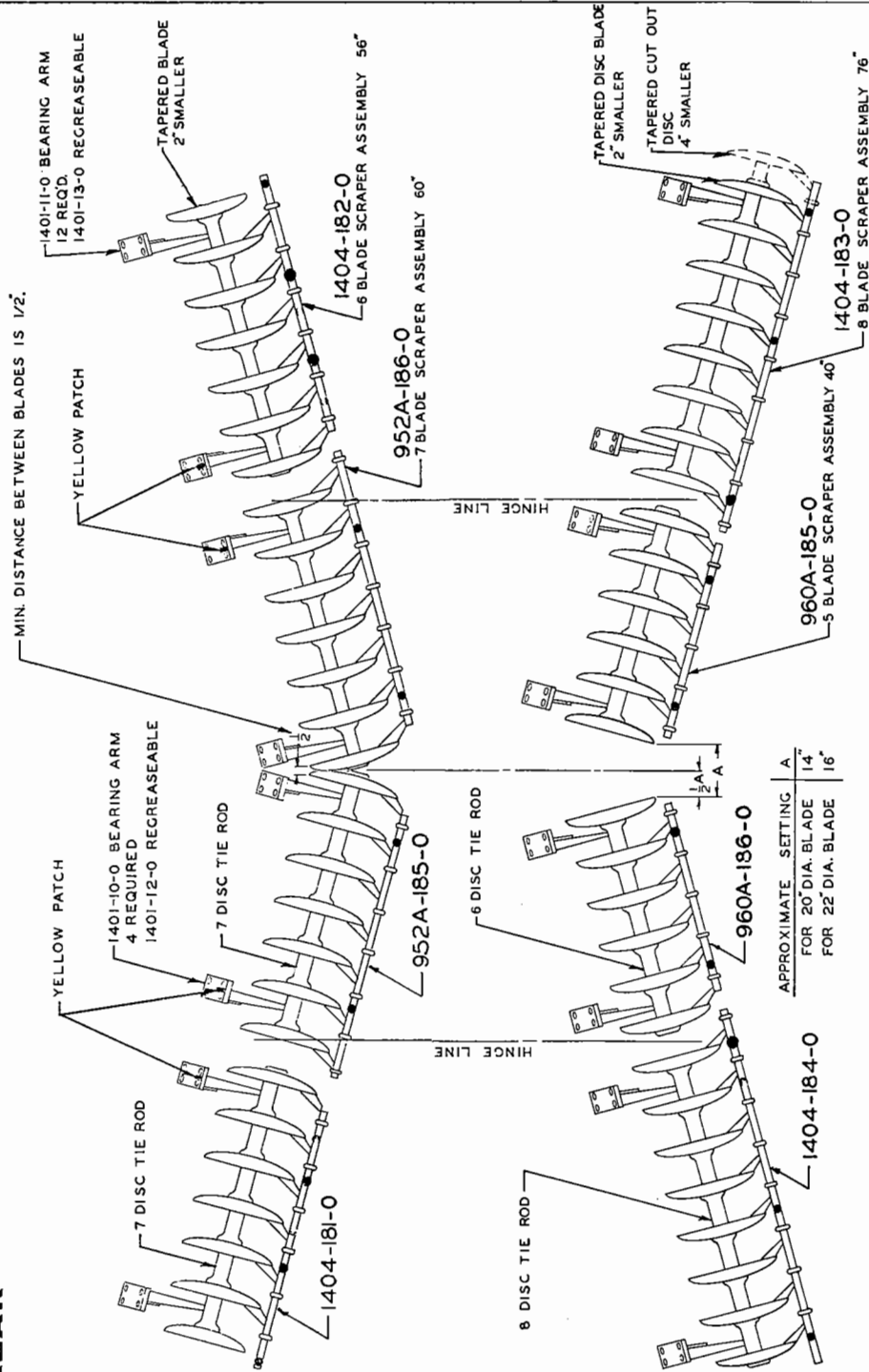
● SCRAPER BRACKET PLACEMENT

SPACING

9 1/8 FRONT
9 1/8 REAR

MODEL 1404

DISC GANG AND SCRAPER LOCATIONS



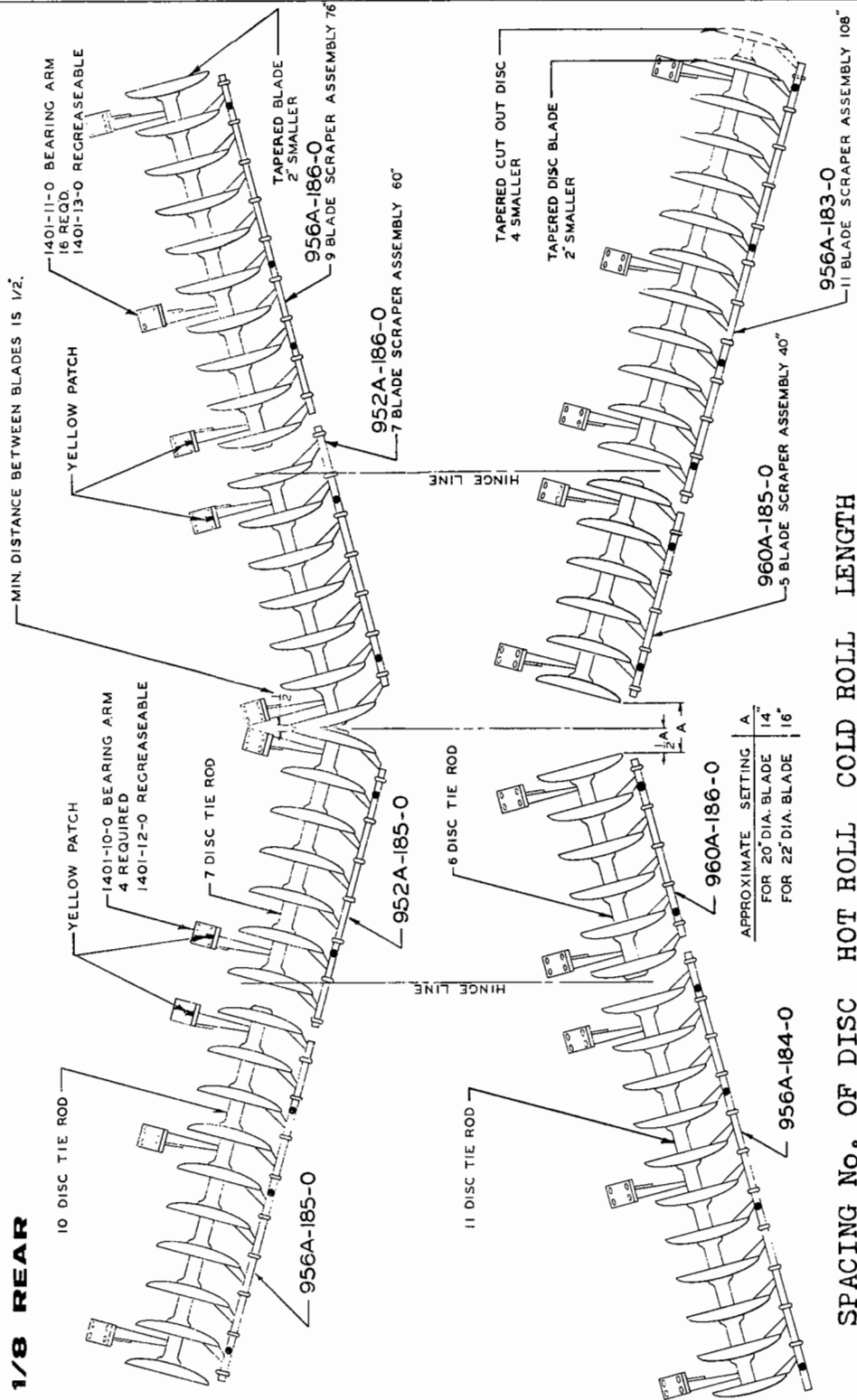
SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8"	7	614-18-0	614-16-0	59"
9-1/8"	6	901-18-0	901-28-0	49-7/8"
9-1/8"	8	616-18-0	1053-78-0	68-5/8"

● SCRAPER BRACKET PLACEMENT

R 10-74

MODEL 1407
DISC GANG AND SCRAPER LOCATIONS

SPACING
9 1/8 FRONT
9 1/8 REAR

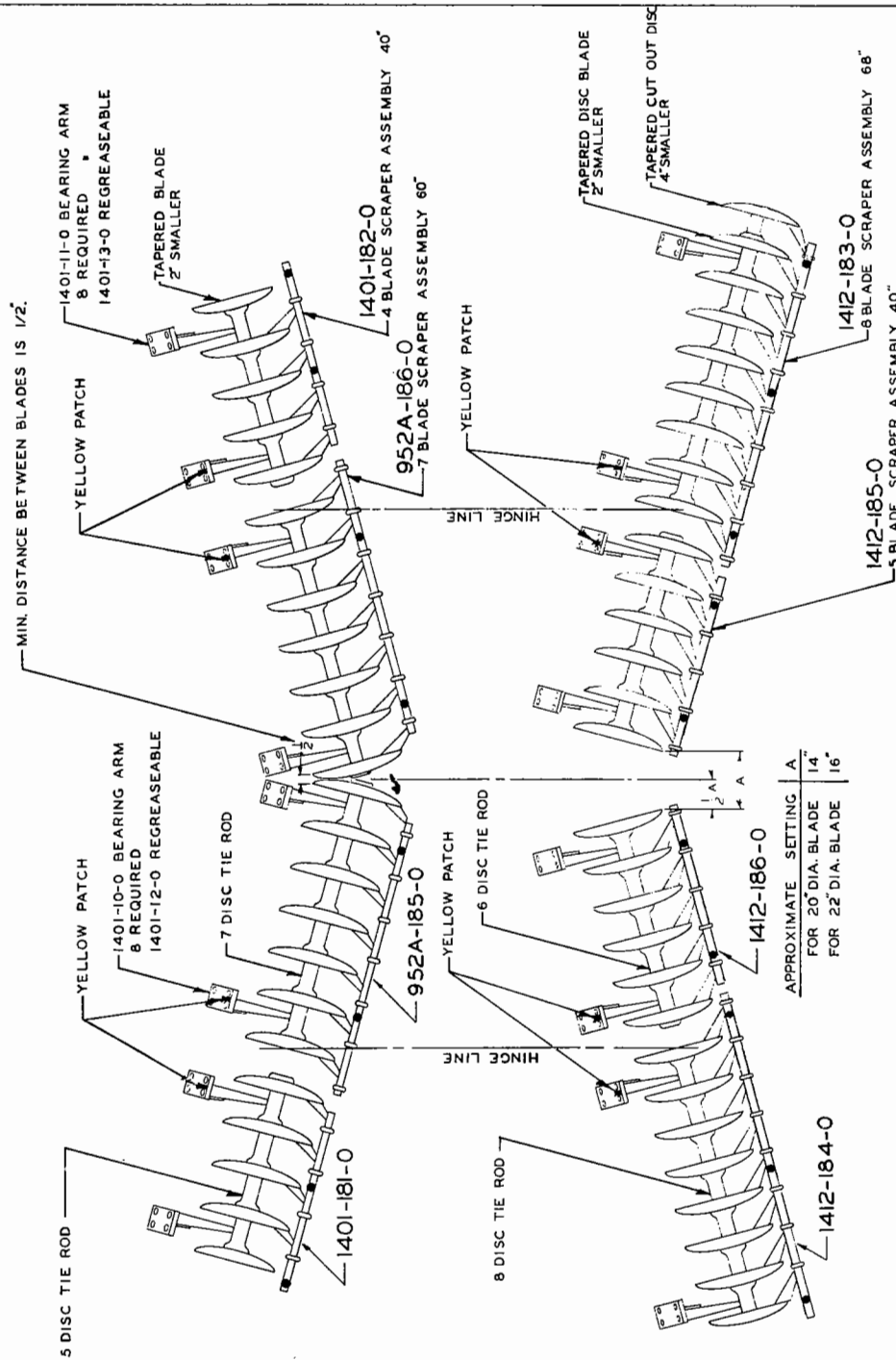


SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8"	7	614-18-0	614-16-0	59"
9-1/8"	10	619-18-0	1055-86-0	86-3/8"
9-1/8"	6	901-18-0	901-28-0	49-7/8"
9-1/8"	11	621-18-0	1055-93-0	95-1/2"

● **SCRAPER BRACKET PLACEMENT**

**SPACING
9 1/8 FRONT
8 REAR**

**MODEL 1410
DISC GANG AND SCRAPER LOCATIONS**



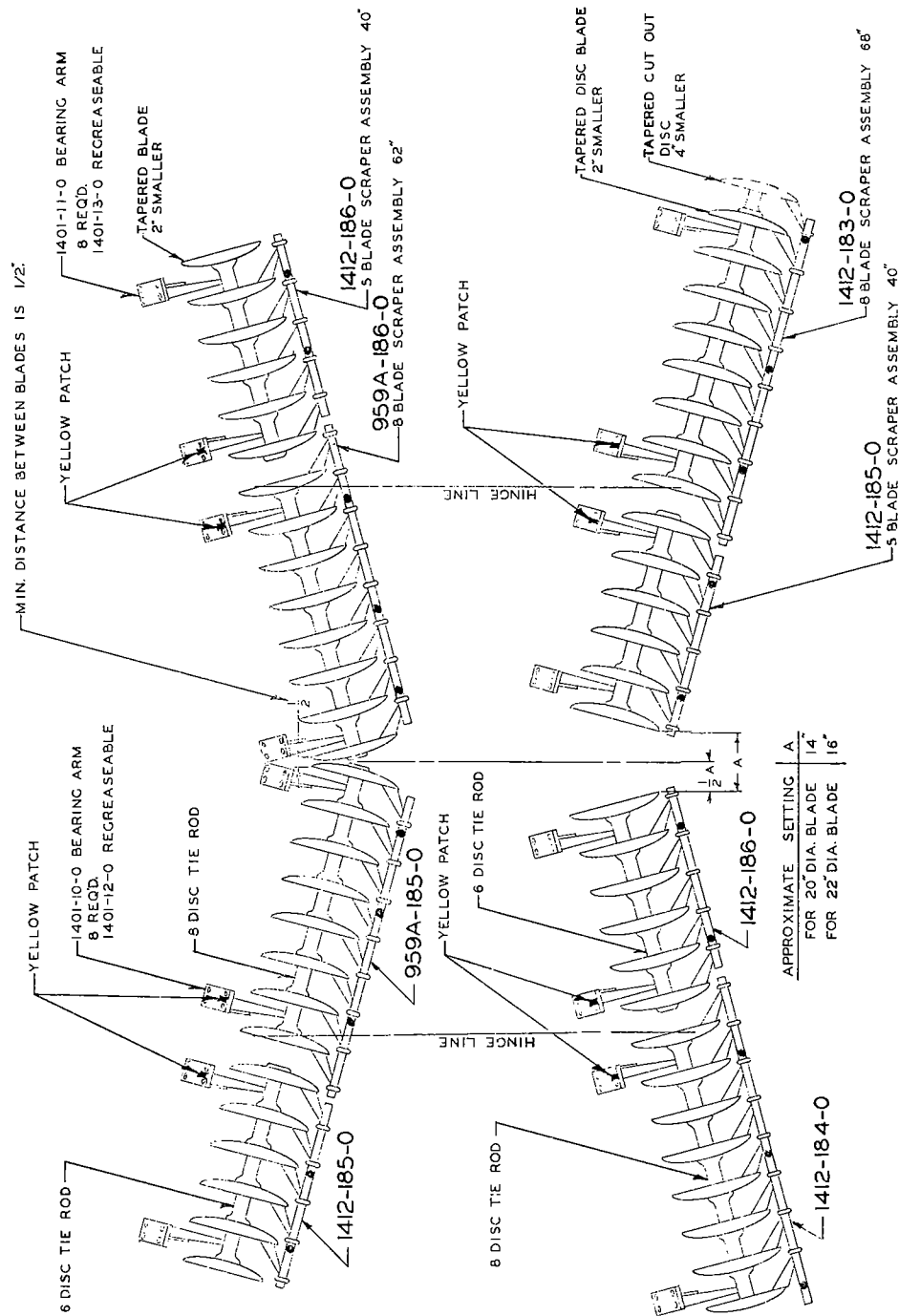
SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8"	7	614-18-0	614-16-0	59"
9-1/8"	5	388-21-0	388-94-0	40-1/2"
8"	6	963-18-0	963-14-0	44-1/4"
8"	8	1242-18-0	1242-14-0	60-1/4"

● SCRAPER BRACKET PLACEMENT

10-74

SPACING
8 FRONT
8 REAR

MODEL 1412 **DISC GANG AND SCRAPER LOCATIONS**



SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
8"	8	1242-18-0	1242-14-0	60-1/4"
8"	6	963-18-0	963-14-0	44-1/4"

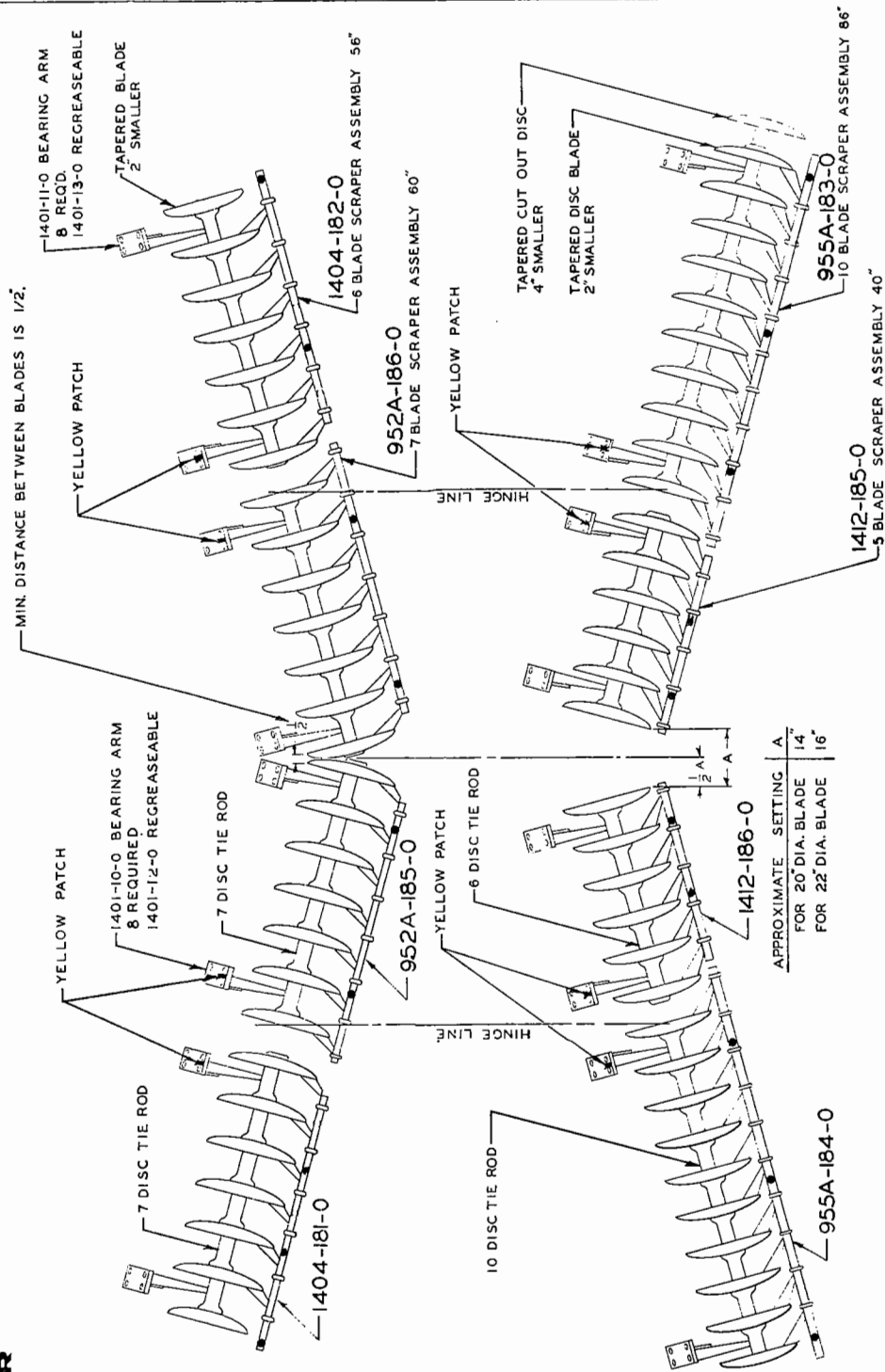
● **SCRAPER BRACKET PLACEMENT**

SPACING

9 1/8 FRONT
8 REAR

MODEL 1413

DISC GANG AND SCRAPER LOCATIONS



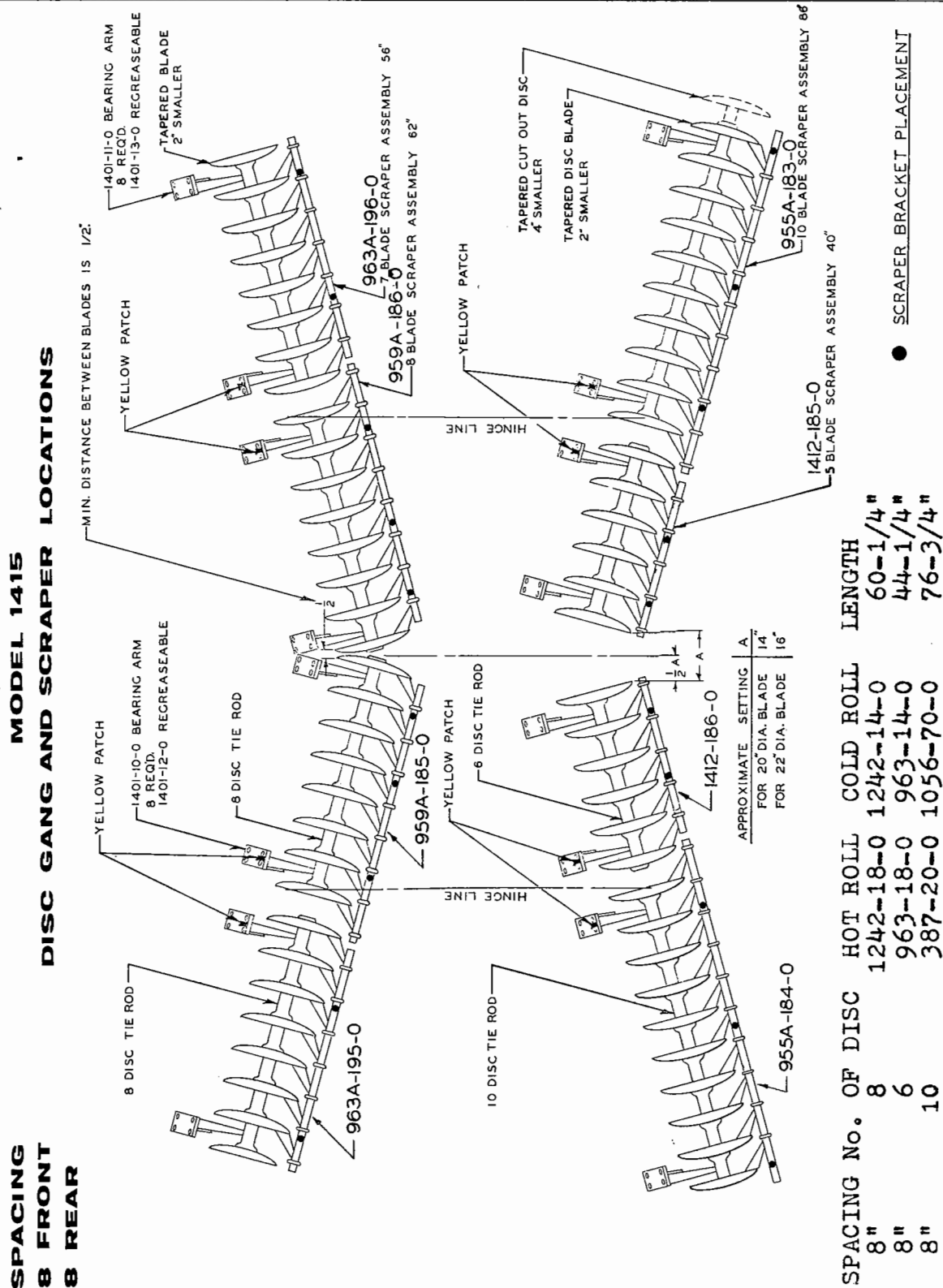
LENGTH

59"
44-1/4"
76-3/4"

SPACING No. OF DISC	HOT ROLL	COLD ROLL
9-1/8"	614-18-0	614-16-0
8"	963-18-0	963-14-0
8"	387-20-0	1056-70-0

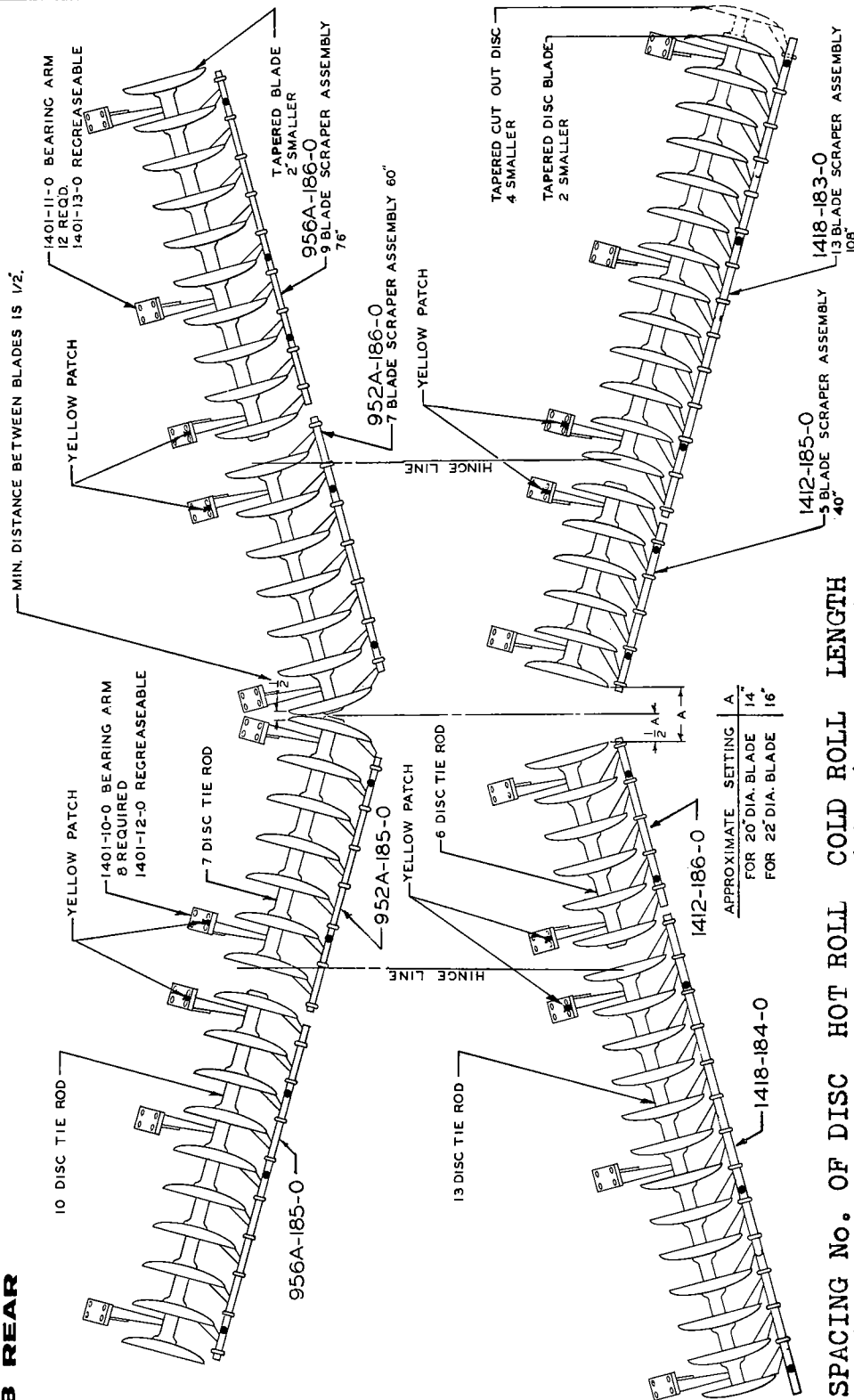
● SCRAPER BRACKET PLACEMENT

10-74



MODEL 1416
DISC GANG AND SCRAPER LOCATIONS

SPACING
9 1/8 FRONT
8 REAR



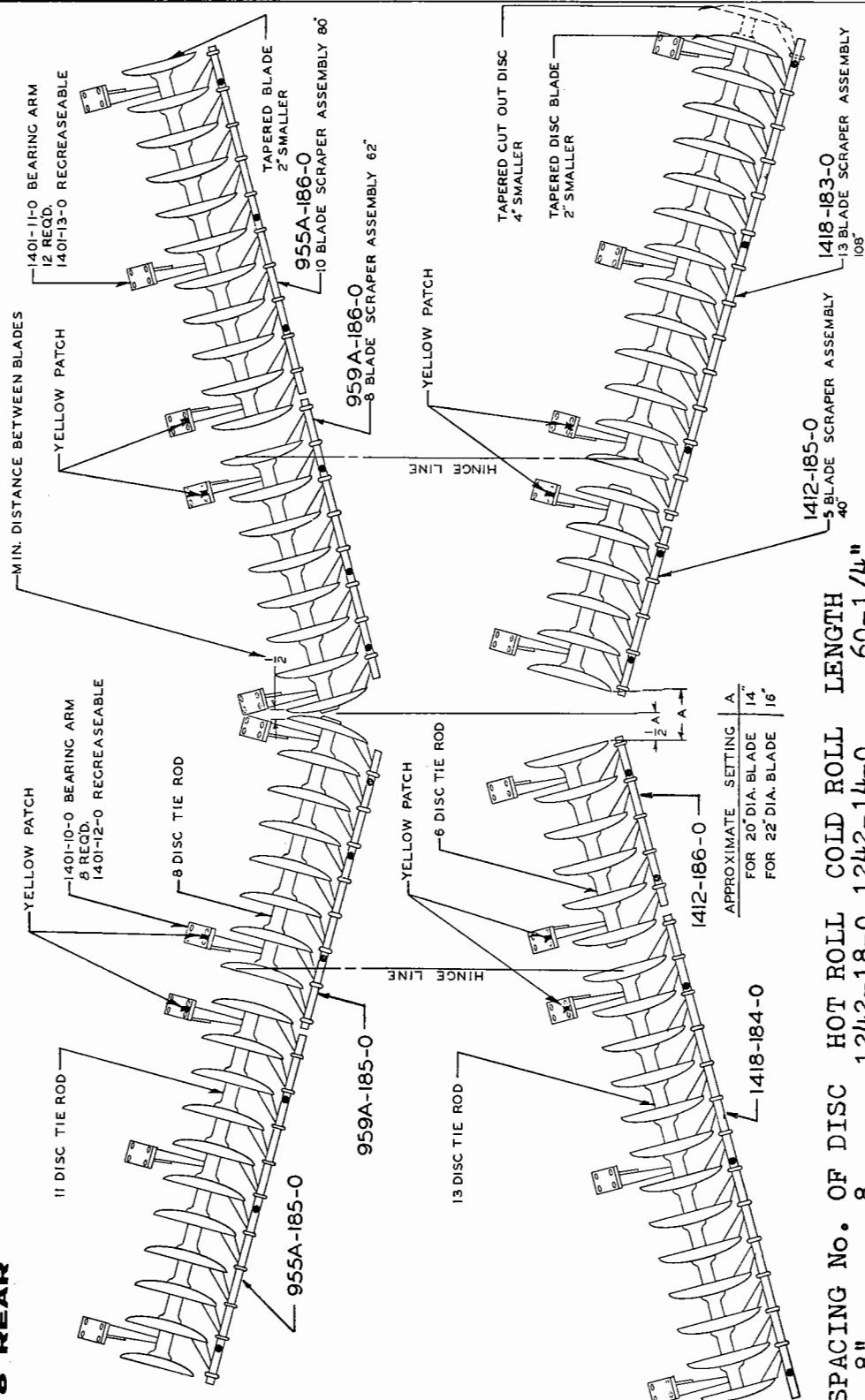
SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8"	7	614-18-0	614-16-0	59"
9-1/8"	10	619-18-0	1055-86-0	86-3/8"
8"	6	963-18-0	963-14-0	44-1/4"
8"	13	1283-18-0	1283-80-0	100-1/4"

● **SCRAPER BRACKET PLACEMENT**

**SPACING
8 FRONT
8 REAR**

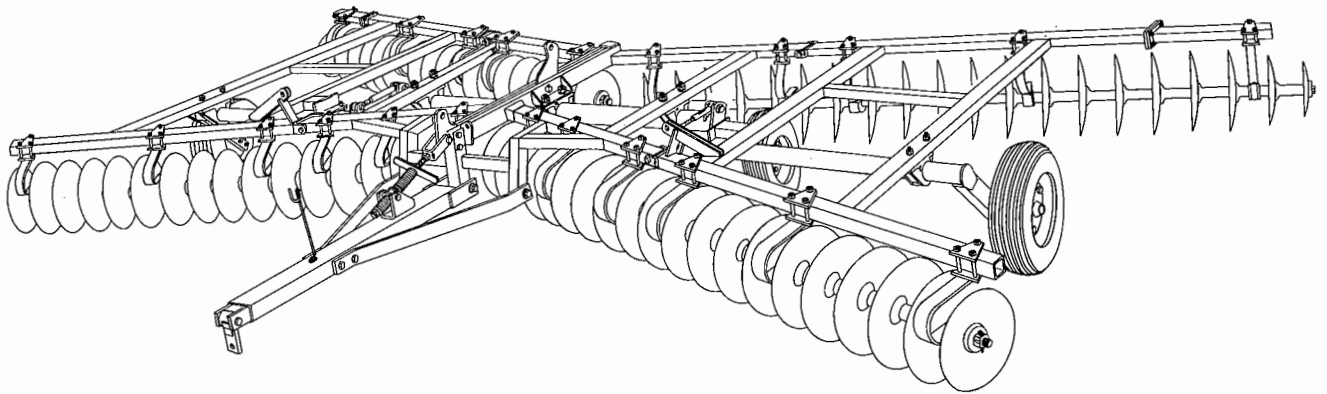
MODEL 1418

DISC GANG AND SCRAPER LOCATIONS



SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
8"	8	1242-18-0	1242-14-0	60-1/4"
8"	11	1280-25-0	1280-85-0	84-1/2"
8"	6	963-18-0	963-14-0	44-1/4"
8"	13	1283-18-0	1283-80-0	100-1/4"

● SCRAPER BRACKET PLACEMENT



FLEX GANG SECTION

The following section illustrates a general method for assembling and adjusting the Flex Gang models of the Krause Flex Wing Tandem Disc Harrow models. You should know the model number of the unit before assembling and whenever making reference to this manual.

The basic self-supporting frames and attaching parts are the same as the standard models in the previous sections. The gang assemblies, trash bar, and scraper assemblies are different and are clearly defined in this section with special placement drawings and parts lists to reflect these variations.

The right and left side of the unit is determined by looking from the back of the unit toward the direction of travel.

Assemblers should disregard any yellow part numbers. Use only the black part numbers for correct identification and location of parts.

ASSEMBLY FOR FLEX GANG MODELS

FRAMES

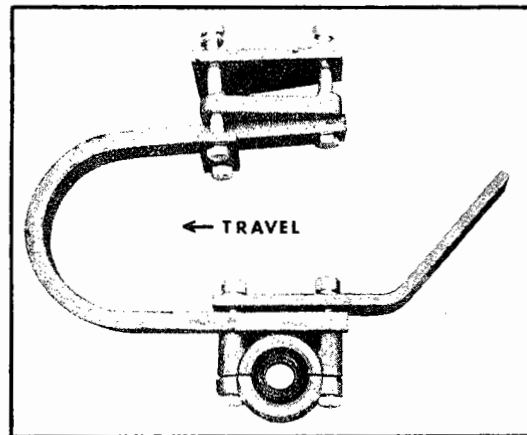
The initial assembly instructions for the basic, self-supporting frames of these models may be obtained from the standard model Assembly Section, pages A1 thru A5 and the parts lists preceding this section. Refer to this section when the basic unit is ready for disc gang assemblies.

DISC GANGS

Before starting the disc gang assembly, turn to the placement drawings, pages F3 thru F5 that pertains to the model being assembled. Note that there are two drawings for your model. One drawing will reflect your model with trash bars and the other will show your model with scrapers. These drawings tell you where a tie rod is located, how many blades and bearing arms are on each tie rod and where the trash bar or scraper brackets are located.

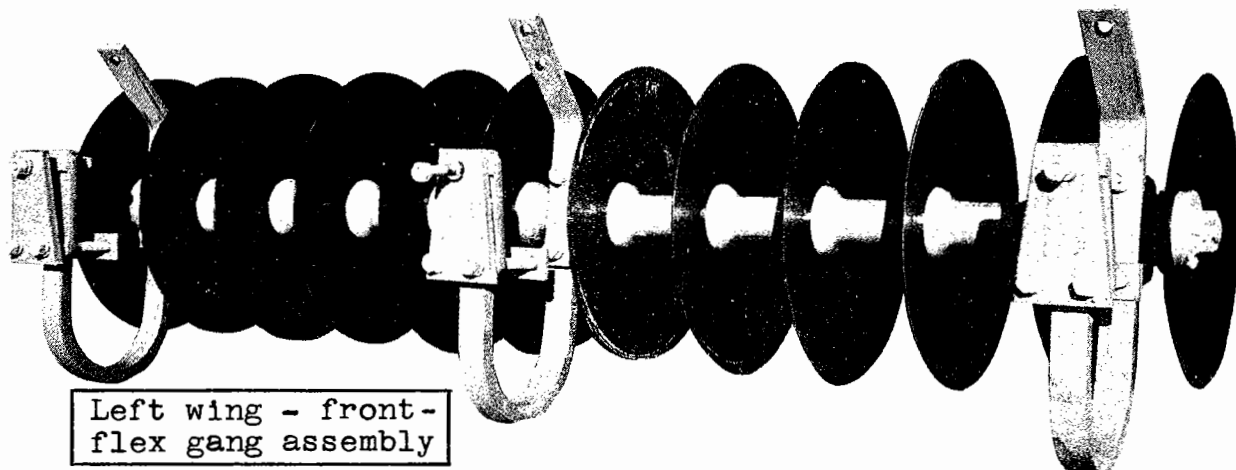
FLEXIBLE BEARING ARMS

Figure 1 shows a flexible bearing arm. Note the direction of travel and the bracket that has been attached to the arm with the bearing housing bolts. It is safer to attach the brackets to the arms at this time in assembly, than after the gangs have been attached to the beams. **NO NOT** torque the two bearing bolts until trash bar assembly is complete. The brackets will determine the location of each bearing arm on a gang assembly, as there are rights, lefts and possible center brackets.



DISC GANG ASSEMBLY

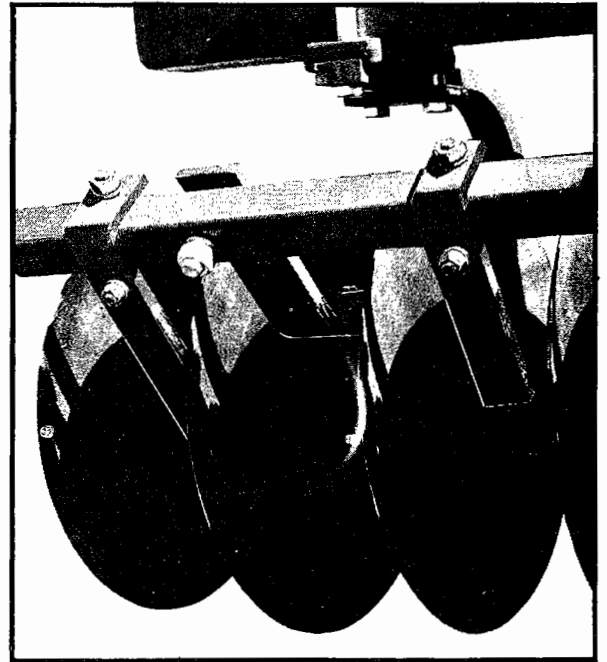
The same procedure for disc gang assembly may be used as described on pages A7 and A8, however, you must pay special attention to the attachment of the bearing arm during assembly. Know the direction of travel for each gang as you assemble it, and be sure the bracketed bearing arms are correctly located. Figure 2 shows a typical flex gang assembly ready to be attached to the frame. The bearing arm locations and the taper blades have been assembled to the tie rod according to the placement drawing information.



When all gangs have been assembled, attach them to the frames of the unit. Attach the front gangs first to prevent a balance problem. The initial settings for adjusting and tightening gangs on the frames at the correct location can be found on the placement drawings.

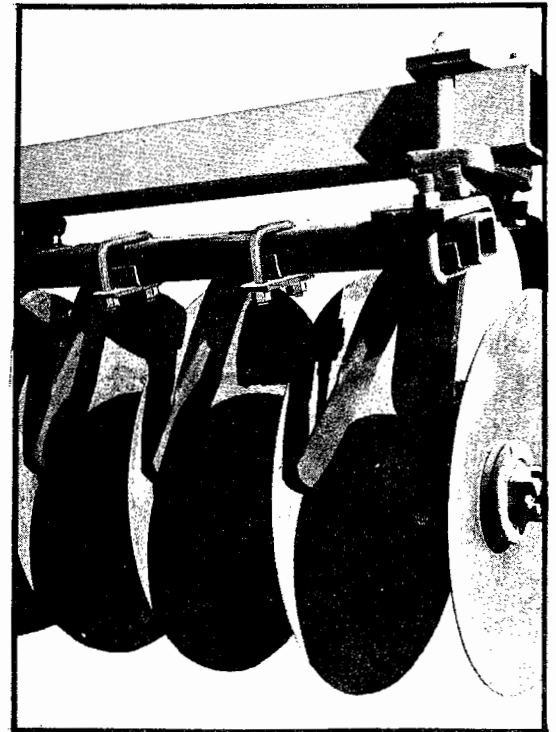
TRASH BARS

Figure 4 shows trash bars attached to a left rear gang. Separate the trash bars and place them behind the correct gangs. Place the necessary bolts, spacers and etc. on the frame just in front of each bracket for trash bar frame attachment. Raise one end of the frame and bolt it to the back of the end bracket. DO NOT tighten. Loosely attach a spacer and clamp plate in the bottom hole of the center bracket on the front side. Raise the frame up and over the bracket, resting on the spacer. Bolt the loose end of the clamp plate and a second spacer in the top hole. Attach the remaining end of the frame to the last bracket in the same manner as the first. Tighten all bolts. DO NOT forget the two bolts holding the bearing housing and bracket to the bearing arms.



SCRAPERS

Figure 5 shows scrapers attached to a right front gang. The brackets should have been attached to the bearing arms during gang assembly. Tighten the bearing housing casting bolts. Separate the scraper frames, and place them behind the correct gangs. Loosely attach the bracket clips to the brackets and raise the scraper frames under the clips. Attach the frames to the clips with U-bolts. Shift the frames so the scraper blades touch the disc blades. Place a scraper blade between the bracket clip U-bolt and bottom of the scraper frame. Tighten the bracket clip U-bolts but DO NOT compress the lock washers. Turn the disc gang to make sure the scraper blades touch the disc blades, but do not restrict the rotation. When the blades are positioned, tighten the frame in place. NOTE: Some scraper blades may require individual adjustment. This may be accomplished by loosening the scraper blade U-bolt nuts and tapping the blade into position.



HYDRAULICS

The information for hydraulic cylinder and hose attachment are the same as described on Pages A10.

IMPORTANT

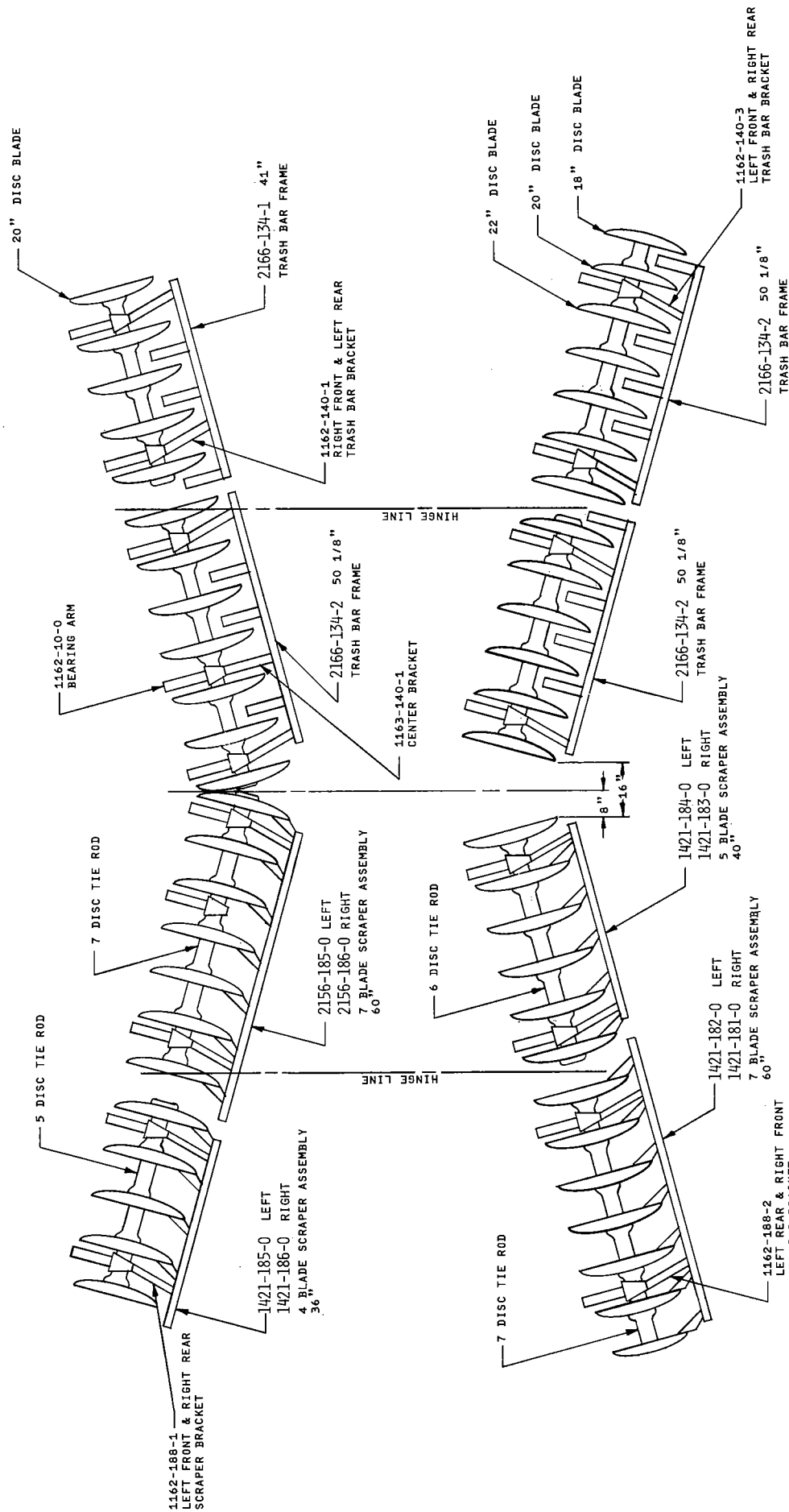
Place all red reflectors, Krause decals, wing caution and implement safety decals on the unit as shown in the preceding parts section P, after the assembly is complete.

9 1/8 SPACING 22" DISC BLADES

MODEL 1421

LEFT SIDE SHOWN WITH SCRAPERS

RIGHT SIDE SHOWN WITH TRASH BARS

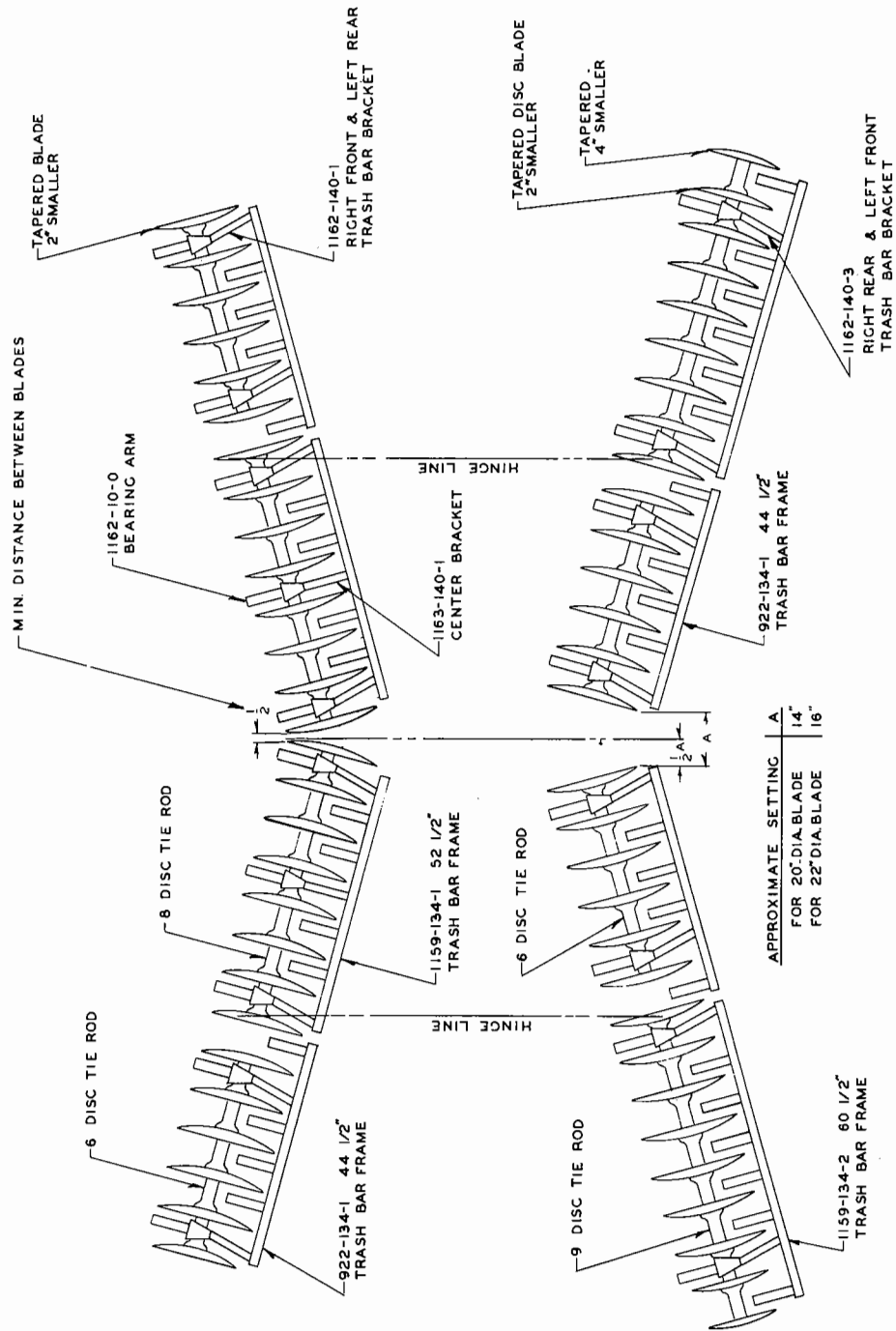


TIE RODS

SPACING	NO. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8	5	388-21-0	388-94-0	40-3/4"
9-1/8	6	901-18-0	901-28-0	49-7/8"
9-1/8	7	614-18-0	614-16-0	59"

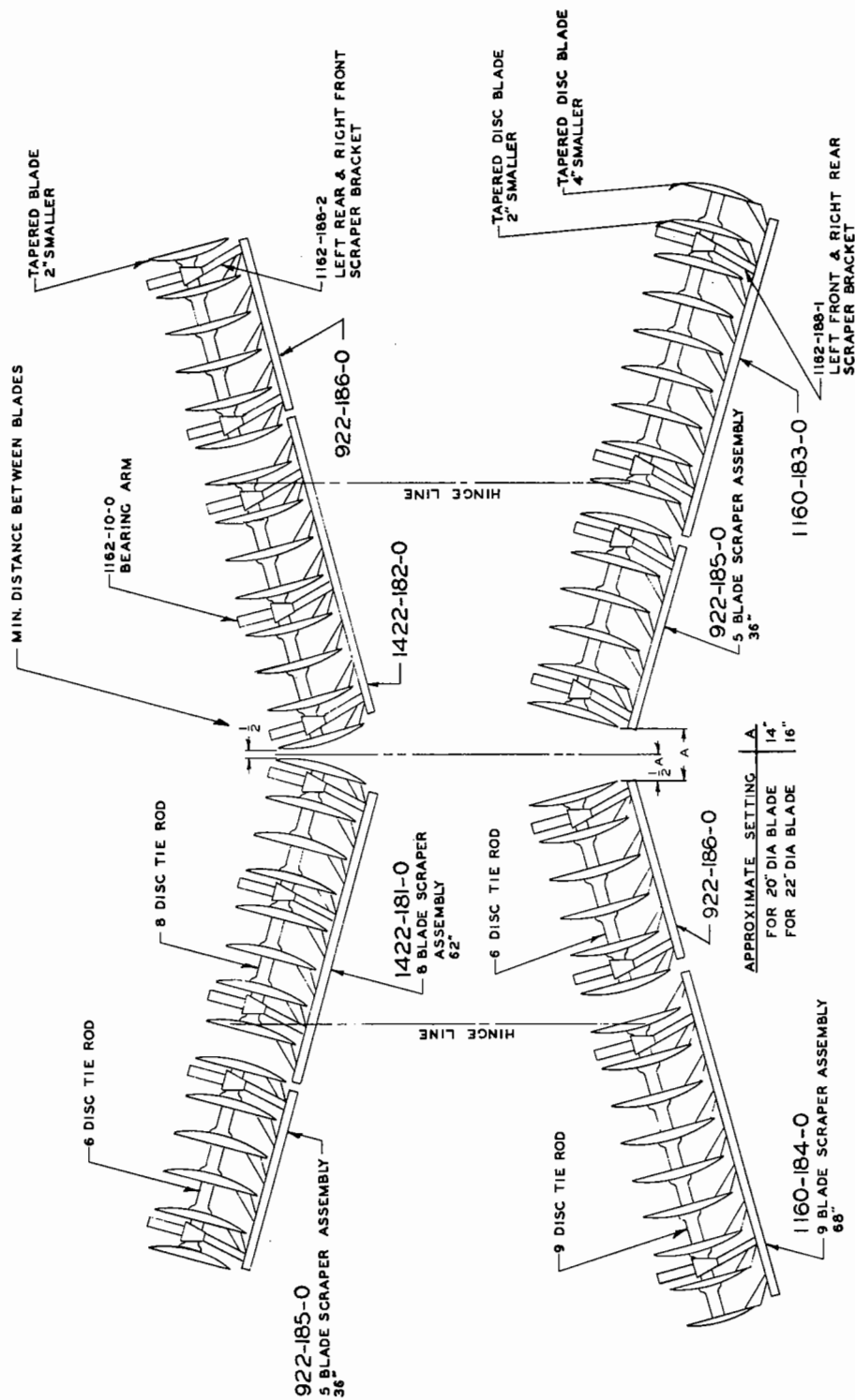
**SPACING
8 FRONT
8 REAR**

**MODEL 1422
DISC GANG AND TRASH BAR PLACEMENT**



SPACING
8 FRONT
8 REAR

MODEL 1422
DISC GANG AND SCRAPER LOCATION



SPACING	No. OF DISC	HOT ROLL	COLD ROLL	LENGTH
8"	8	1242-18-0	1242-14-0	60-1/4"
8"	6	963-18-0	963-14-0	44-1/4"
8"	9	616-18-0	1053-78-0	68-5/8"

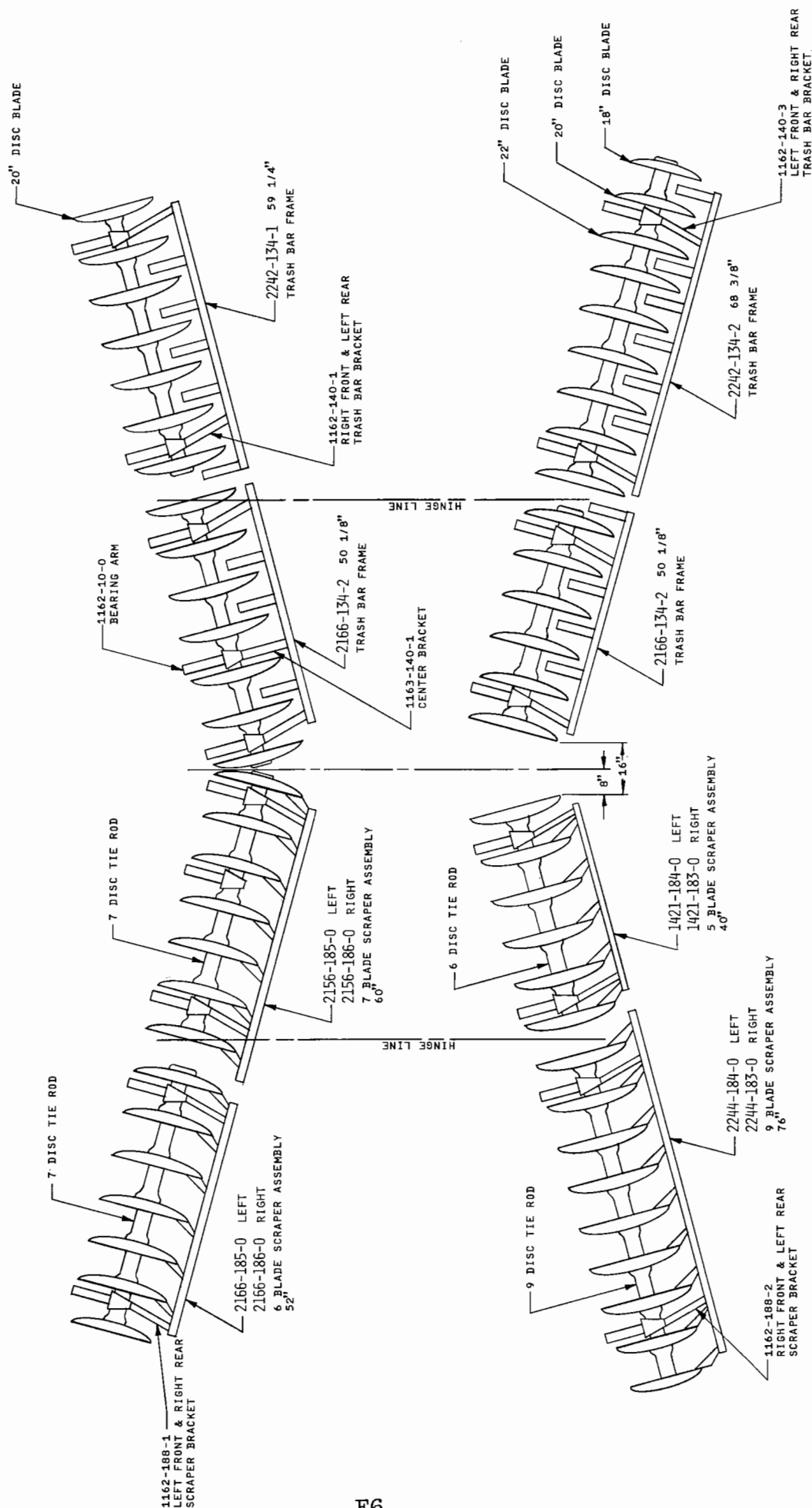
APPROXIMATE SETTING
 FOR 20" DIA BLADE 14"
 FOR 22" DIA BLADE 16"

9 1/8 SPACING 22" DISC BLADES

MODEL 1424

LEFT SIDE SHOWN WITH
SCRAPERS

RIGHT SIDE SHOWN WITH
TRASH BARS



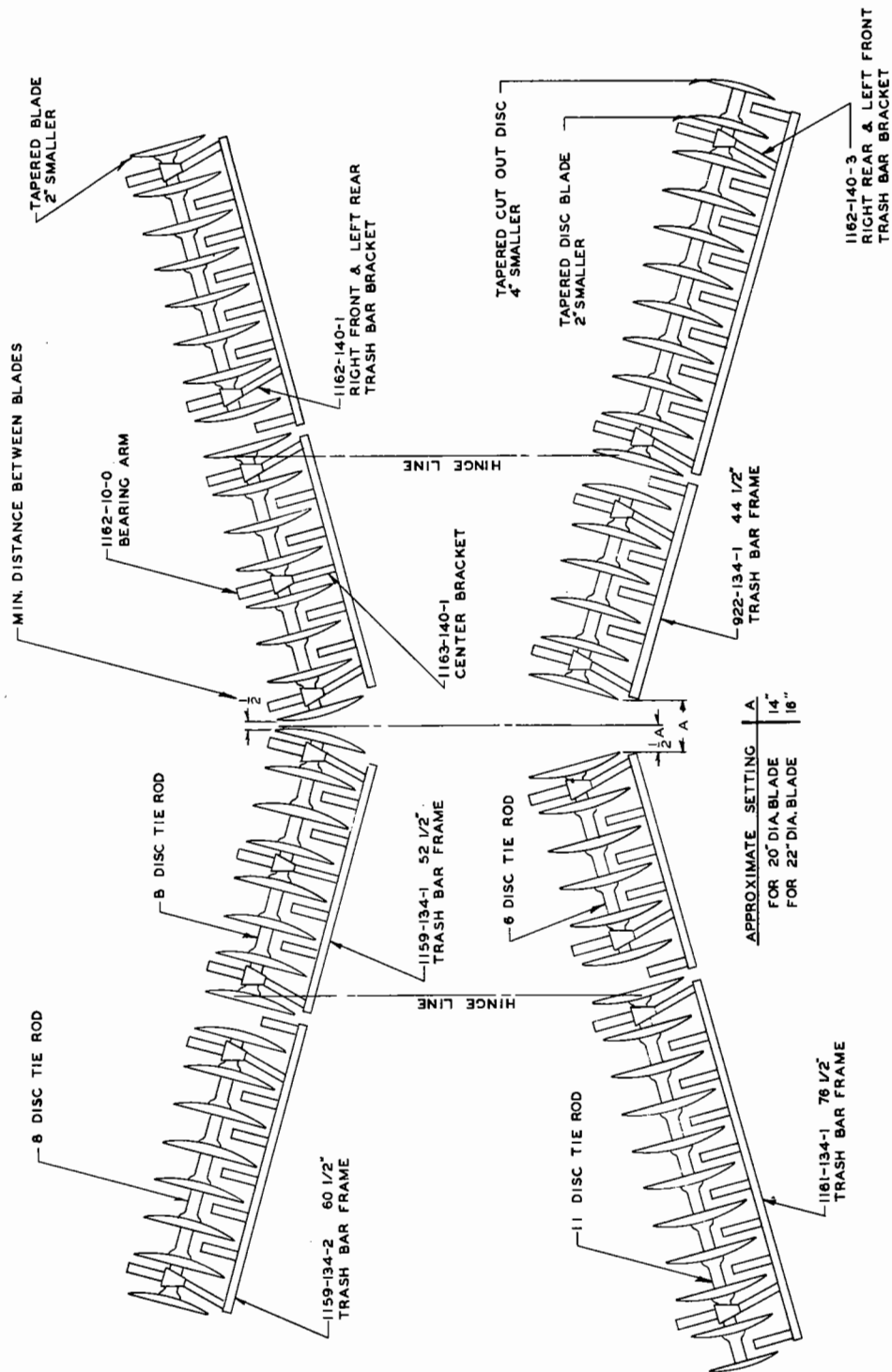
F6

TIE RODS

SPACING	NO. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8	6	901-18-0	901-28-0	49-7/8"
9-1/8	7	614-18-0	614-16-0	59"
9-1/8	9	618-18-0	1054-78-0	77-3/4"

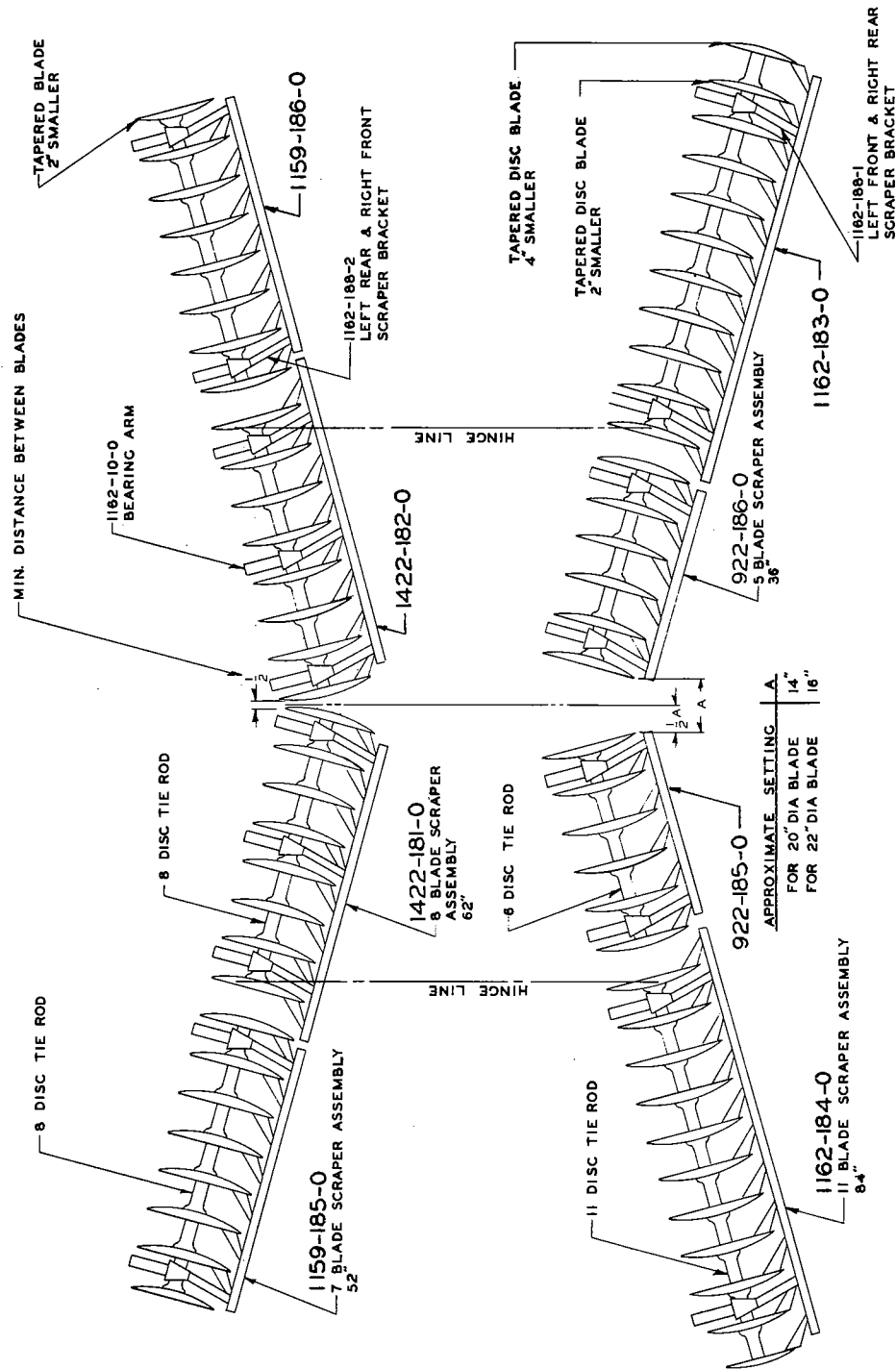
**SPACING
8 FRONT
8 REAR**

MODEL 1425 DISC GANG AND TRASH BAR PLACEMENT



SPACING
8 FRONT
8 REAR

MODEL 1425
DISC GANG AND SCRAPER LOCATION



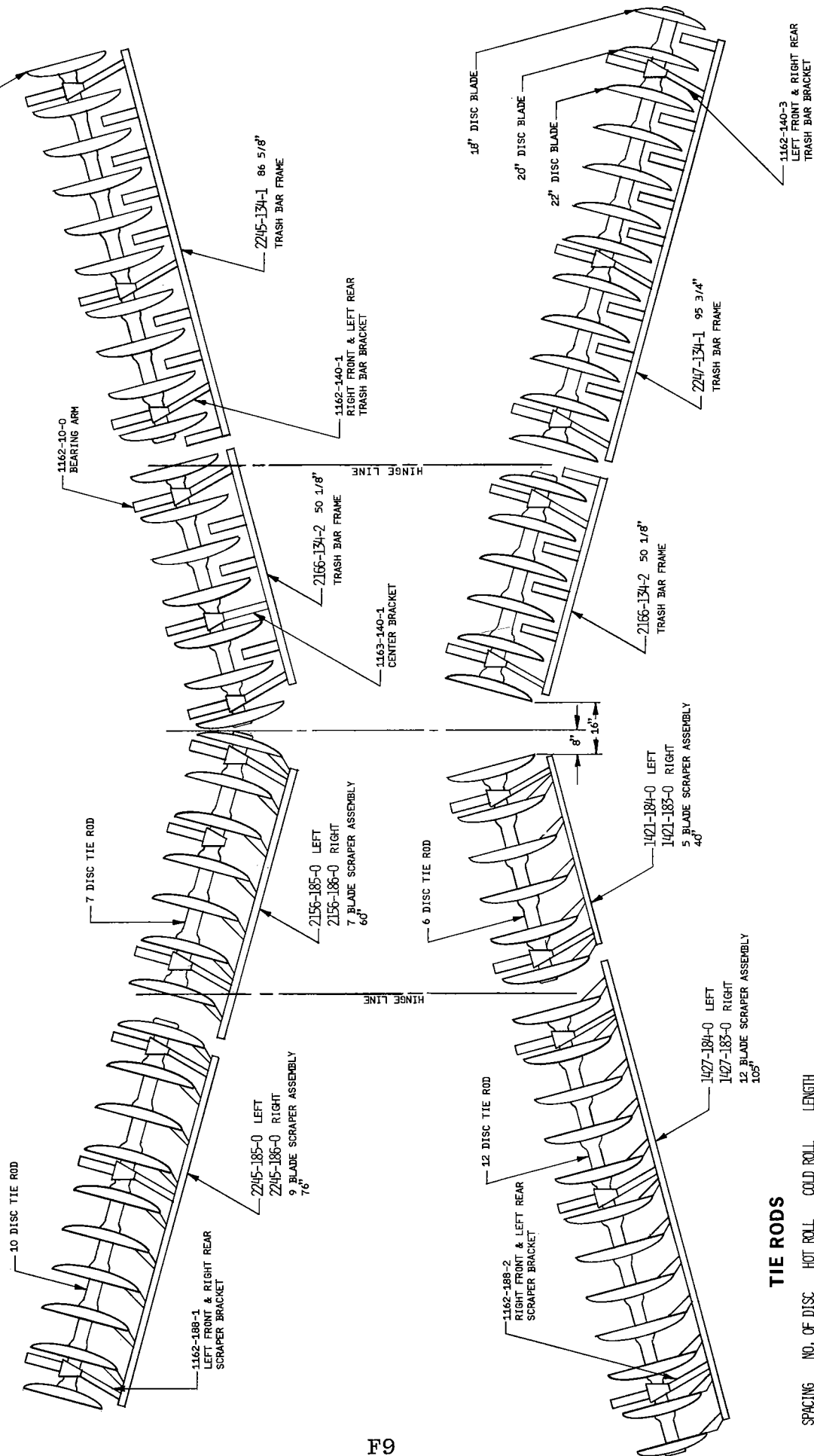
SPACING	No. OF DTSC	HOT ROLL	COLD ROLL	LENGTH
8"	8	1242-18-0	1242-14-0	60-1/4"
8"	6	963-18-0	963-14-0	44-1/4"
8"	11	1280-25-0	1280-85-0	84-1/2"

9 1/8 SPACING 22" DISC BLADES

MODEL 1427

LEFT SIDE SHOWN WITH
SCRAPERS

RIGHT SIDE SHOWN WITH
TRASH BARS

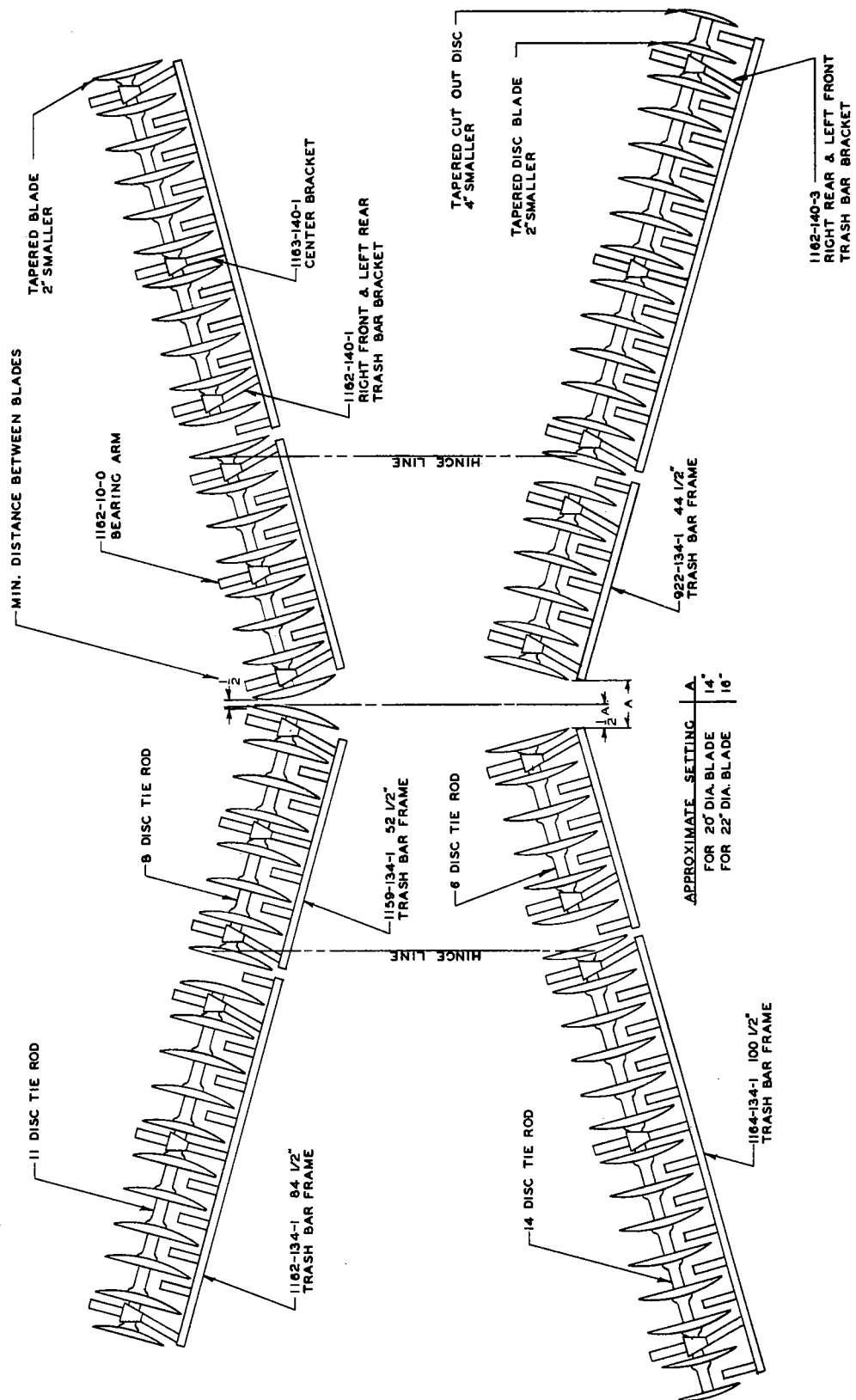


TIE RODS

SPACING	NO. OF DISC	HOT ROLL	COLD ROLL	LENGTH
9-1/8	6	901-18-0	901-28-0	49-7/8"
9-1/8	7	614-18-0	614-16-0	59"
9-1/8	10	619-18-0	1055-86-0	86-3/8"
9-1/8	12	362-18-0	1056-79-0	104-3/4"

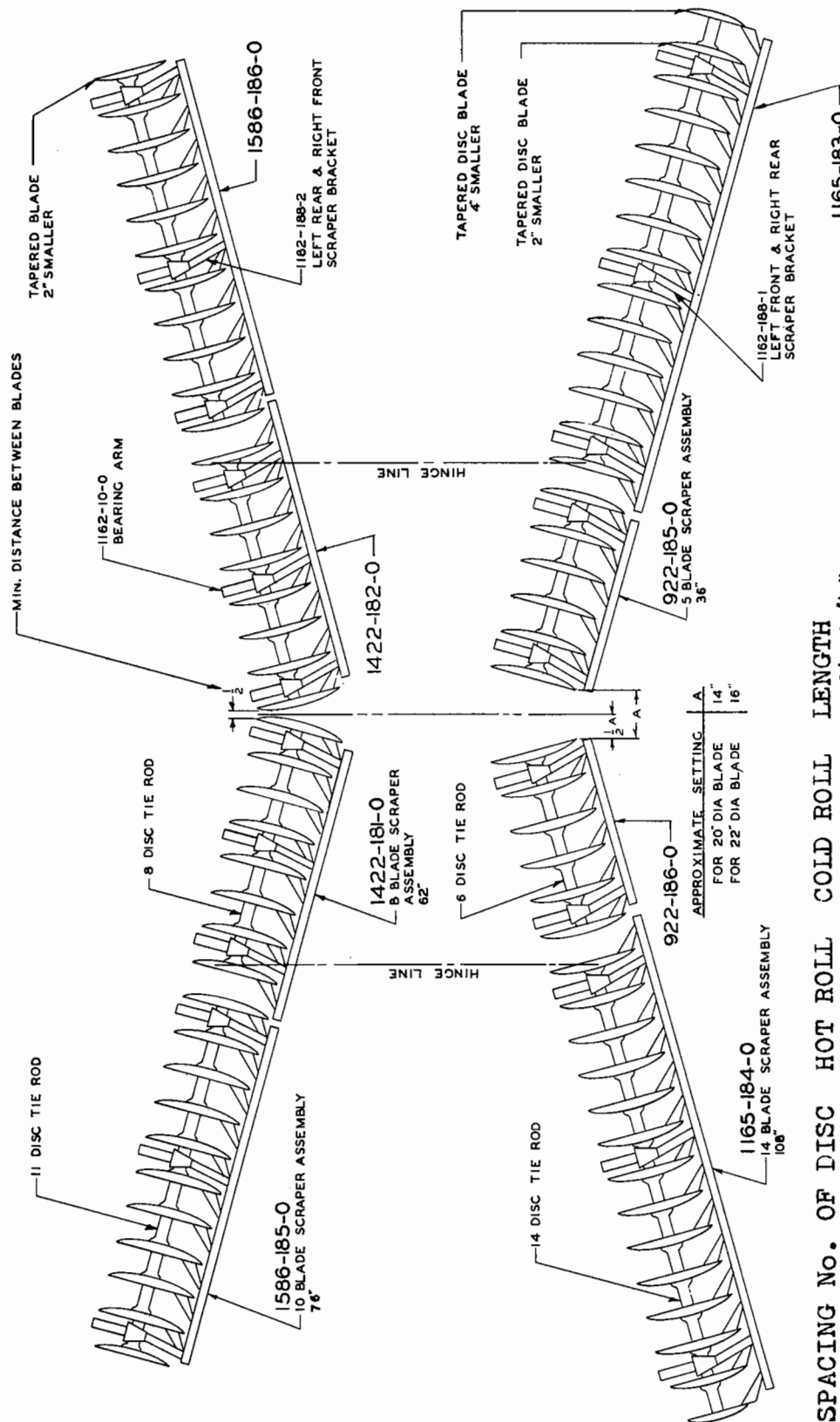
**SPACING
8 FRONT
8 REAR**

**MODEL 1428
DISC GANG AND TRASH BAR PLACEMENT**

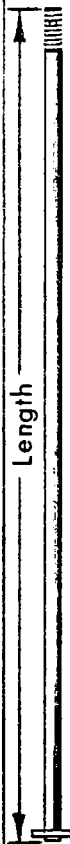


SPACING
8 FRONT
8 REAR

MODEL 1428
DISC GANG AND SCRAPER LOCATION



1 1/2" TIE RODS



1 1/2" Slotted Hex Nut

5/16 X 3
Cotter Pin

MODEL	LOCATION	LENGTH	DISC SPACING	No. of DISC	Optional HOT ROLLED	Standard COLD ROLLED
1422	Rt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Outside Ft.	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Outside Ft.	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	68-5/8"	8"	Nine (9)	616-18-0	1053-78-0
	Lt.Outside Rr.	68-5/8"	8"	Nine (9)	616-18-0	1053-78-0
1425	Rt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Outside Ft.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Outside Ft.	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	84-1/2"	8"	Eleven (11)	1280-25-0	1280-85-0
	Lt.Outside Rr.	84-1/2"	8"	Eleven (11)	1280-25-0	1280-85-0
1428	Rt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Lt.Ctr. Front	60-1/4"	8"	Eight (8)	1242-18-0	1242-14-0
	Rt.Outside Ft.	84-1/2"	8"	Eleven (11)	1280-25-0	1280-85-0
	Lt.Outside Ft.	84-1/2"	8"	Eleven (11)	1280-25-0	1280-85-0
	Rt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Lt.Ctr. Rear	44-1/4"	8"	Six (6)	963-18-0	963-14-0
	Rt.Outside Rr.	108-3/4"	8"	Fourteen(14)	1283-20-0	1283-84-0
	Lt.Outside Rr.	108-3/4"	8"	Fourteen(14)	1283-20-0	1283-84-0

Tie rod number does not include nut or pin.

SPACER SPOOLS

8"

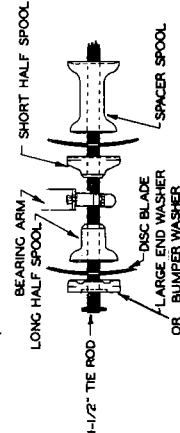
SPACING

FOR 20' DISC OR 22' DISC

442-19-1 BUMPER WASHER	412-19-4 LARGE END WASHER	412-19-1 LONG HALF SPOOL	1295-0-10 SHORT HALF SPOOL	1295-0-7 SPACER SPOOL	412-19-3 END WASHER

NOTE:

Spool ends are contoured to fit blades.



SPOOL LOCATION GUIDE

9/76

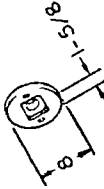
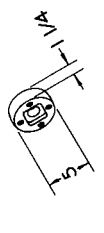
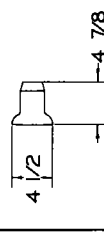
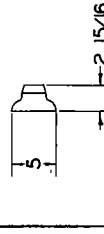
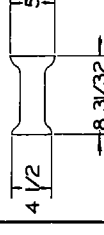
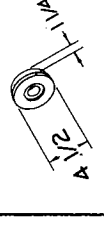
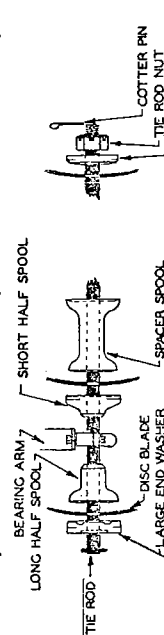
* Use Bumper washer 442-19-1 in place of large end washers on all center front flex gang assemblies.

1 1/2" TIE RODS

Length 1 1/2" Slotted Hex Nut 5/16 X 3 Cotter Pin						
MODEL	LOCATION	LENGTH	DISC SPACING	No. of DISC	OPTIONAL HOT ROLLED	STANDARD COLD ROLLED
1421	Rt. Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt. Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt. Outside Ft.	40-3/4"	9-1/8"	Five (5)	388-21-0	388-94-0
	Lt. Outside Ft.	40-3/4"	9-1/8"	Five (5)	388-21-0	388-94-0
	Rt. Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt. Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Rt. Outside Rr.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt. Outside Rr.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
1424	Rt. Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt. Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt. Outside Ft.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt. Outside Ft.	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt. Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt. Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Rt. Outside Rr.	77-3/4"	9-1/8"	Nine (9)	618-18-0	1054-78-0
	Lt. Outside Rr.	77-3/4"	9-1/8"	Nine (9)	618-18-0	1054-78-0
1427	Rt. Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Lt. Ctr. Front	59"	9-1/8"	Seven (7)	614-18-0	614-16-0
	Rt. Outside Ft.	86-3/8"	9-1/8"	Ten (10)	619-18-0	1055-86-0
	Lt. Outside Ft.	86-3/8"	9-1/8"	Ten (10)	619-18-0	1055-86-0
	Rt. Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Lt. Ctr. Rear	49-7/8"	9-1/8"	Six (6)	901-18-0	901-28-0
	Rt. Outside Rr.	104-3/4"	9-1/8"	Twelve (12)	362-18-0	1056-79-0
	Lt. Outside Rr.	104-3/4"	9-1/8"	Twelve (12)	362-18-0	1056-79-0

Tie rod number does not include nut or pin.

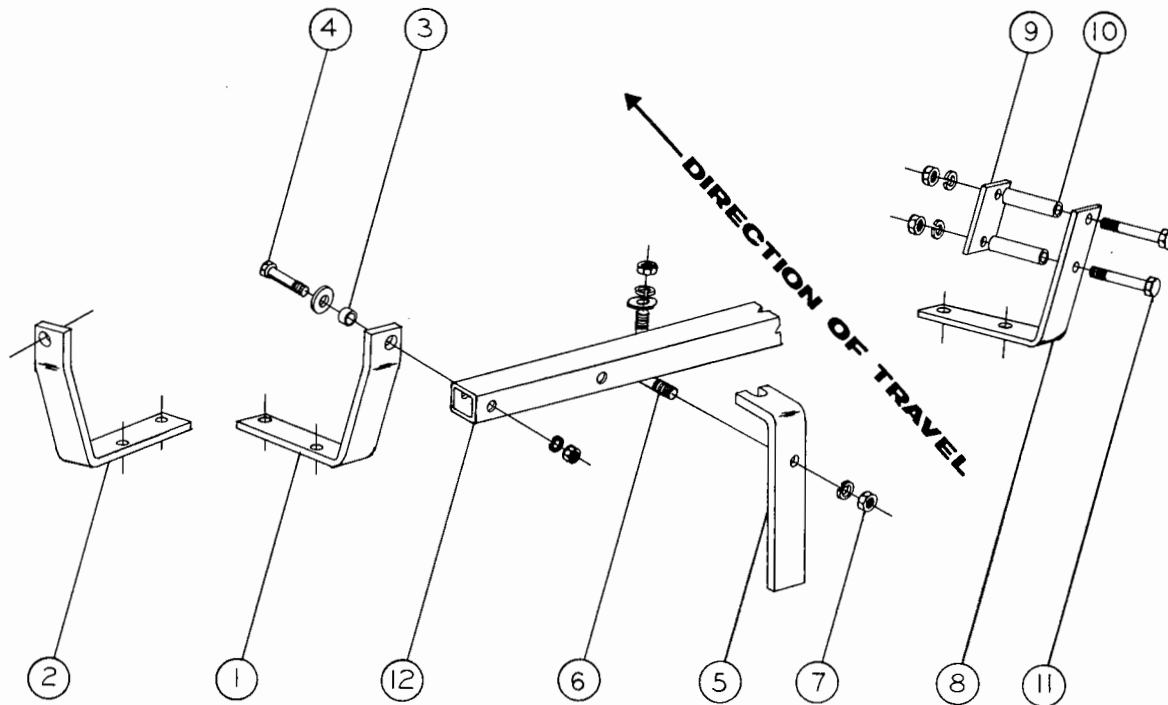
SPACER SPOOLS

9 1/8" SPACING					
FOR 20" DISC OR 22" DISC					
442-19-1 BUMPER WASHER	412-19-4 LARGE END WASHER	616-20-1 LONG HALF SPOOL	410-20-2 SHORT HALF SPOOL	616-0-7 SPACER SPOOL	412-19-3 END WASHER
					
SPOOL LOCATION GUIDE  NOTE: Spool ends are contoured to fit blades.					
					9/76

* Use Bumper washer 442-19-1 in place of large end washers on all center front flex gang assemblies.

[illegible]

TRASH BAR

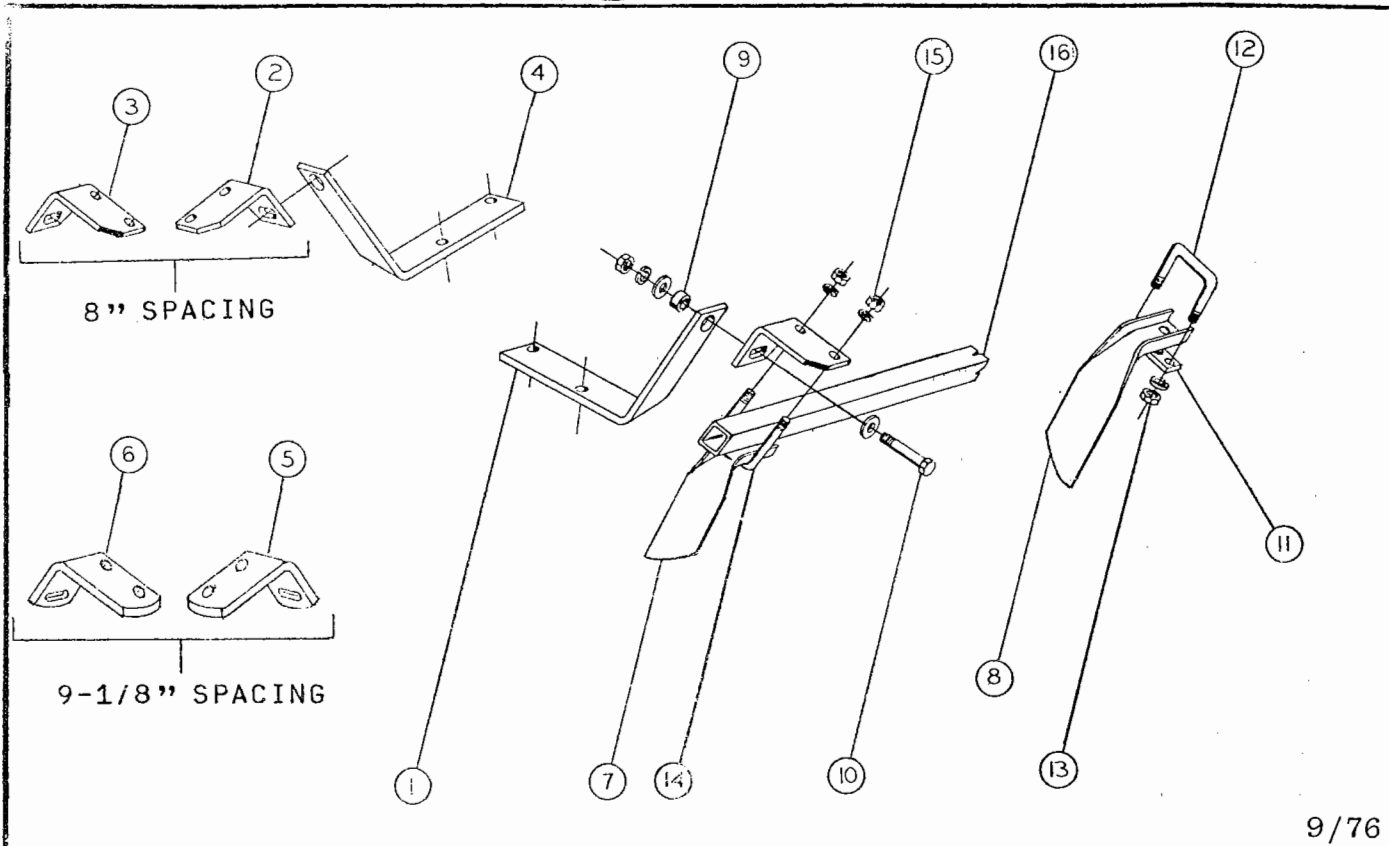


9/76

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	1162-140-1	Left Rear & Right Front Trash Bar Bracket	
2	1162-140-3	Right Rear & Left Front Trash Bar Bracket	
3	1162-140-2	Bushing	
4	3/4NC.X 4	Cap Screw,Lock Washer,Hex Nut & 1 Flat W.	
5	922-136-1	Trash Bar	
6	950-20-4	L-Bolt	
7	5/8 NC.	Lock Washer,Hex Nut & 2 Flat Washer	
8	1163-140-1	Center Bracket	
9	1163-140-2	Clamp Plate	
10	1163-140-3	Spacer	
11	1/2NC. X 4	Cap Screw,Hex Nut & Lock Washer	
12	1159-134-1	Trash Bar Frame 8" Spacing 52-1/2" long	
	922-134-1	" " " " " 44-1/2" long	
	1159-134-2	" " " " " 60-1/2" long	
	1161-134-1	" " " " " 76-1/2" long	
	1162-134-1	" " " " " 84-1/2" long	
	1164-134-1	" " " " " 100-1/2" long	
	2166-134-1	Trash Bar Frame 9-1/8" Spc. 41" long	
	2166-134-2	" " " " " 50-1/8" long	
	2242-134-1	" " " " " 59-1/4" long	
	2242-134-2	" " " " " 68-3/8" long	
	2245-134-1	" " " " " 86-5/8" long	
	2247-134-1	" " " " " 95-3/4" long	

SEE PLACEMENT DRAWING

SCRAPER



9/76

FOR MODELS 1421-1428
FLEX GANG

PART LOCATION Scraper bracket to bearing arm.

ITEM	PART NUMBER	DESCRIPTION	NO. REQ.
1	1162-188-2	Left Rear & Right Front Scraper Bracket	
2	1162-185-2	R.Rear & L.Front Bracket Clip (8 Spc.)	
3	1162-186-2	L.Rear & R.Front Bracket Clip (8 Spc.)	
4	1162-188-1	Right Rear & Left Front Scraper Bracket	
5	2244-186-2	R.Front & L.Rear Bracket Clip (9 1/8 Spc.)	
6	2244-185-2	L.Front & R.Rear Bracket Clip (9 1/8 Spc.)	
7	388-186-2	Scraper Blade (Left Rear & Right Front)	
8	388-185-2	Scraper Blade (Right Rear & Left Front)	
9	1162-140-2	Bushing	
10	3/4NC X 2 1/2	Cap Screw, Hex Nut, Lock & (2) Flat Washer	
11	1483-286-1	Clamp	
12	1162-185-3	U-Bolt	
13	1/2 NC.	Hex Nut & Lock Washer	
14	950-138-2	U-Bolt	
15	5/8 NC.	Hex Nut & Lock Washer	
16	959A-185-1	Scraper Frame 62" long	
	960A-185-1	" " 40" long	
	922-185-1	" " 36" long	
	1160-183-1	" " 68" long	
	1159-185-1	" " 52" long	
	955A-183-1	" " 86" long	
	955A-185-1	" " 80" long	
	1165-183-1	" " 108" long	
	1159-183-1	" " 60" long	
	956A-185-1	" " 76" long	
	1408-183-1	" " 105" long	

SEE PLACEMENT DRAWING

SAFETY FIRST

Most accidents are caused by the failure of some individual to observe simple and fundamental safety rules. For this reason, accidents can be prevented by recognizing the cause of the accident and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of equipment, there are many points that cannot be completely safeguarded without interfering with accessibility and efficient operation.

1. Read and understand the Krause owner's manual and tractor owner's manual before operating implement.
2. Be sure safety decals and reflectors are in place.
3. Do not climb or walk on gangs or frames or tires.
4. Never get underneath any portion of implement unless transport lock is installed or entire unit is lowered to the ground.
5. Stop engine before leaving operator's position to adjust, lubricate, clean or unclog the machine.
6. Do not stand between the implement and tractor unless 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 implement locking pins until hydraulic cylinders and lines are full of oil and free of air. See operating instructions in this book for proper method of removing air from system.
10. Never use machinery until all safety devices are in place.
11. Release all hydraulic pressure before shutdown periods.
12. Comply with all Federal, State and local laws.
13. Use a slow-moving emblem when roading.
14. Always use a safety chain of tensile strength equal to gross weight of the implement and attachments when roading.
15. Weight of implement should not exceed weight of towing vehicle.
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 condition. Reduce speed when going up or down hills and approaching ditches and corners.
20. Keep small children away from farm equipment.
21. Never modify an implement without permission of the Krause Engineering Department.
22. Always use authorized Krause parts.