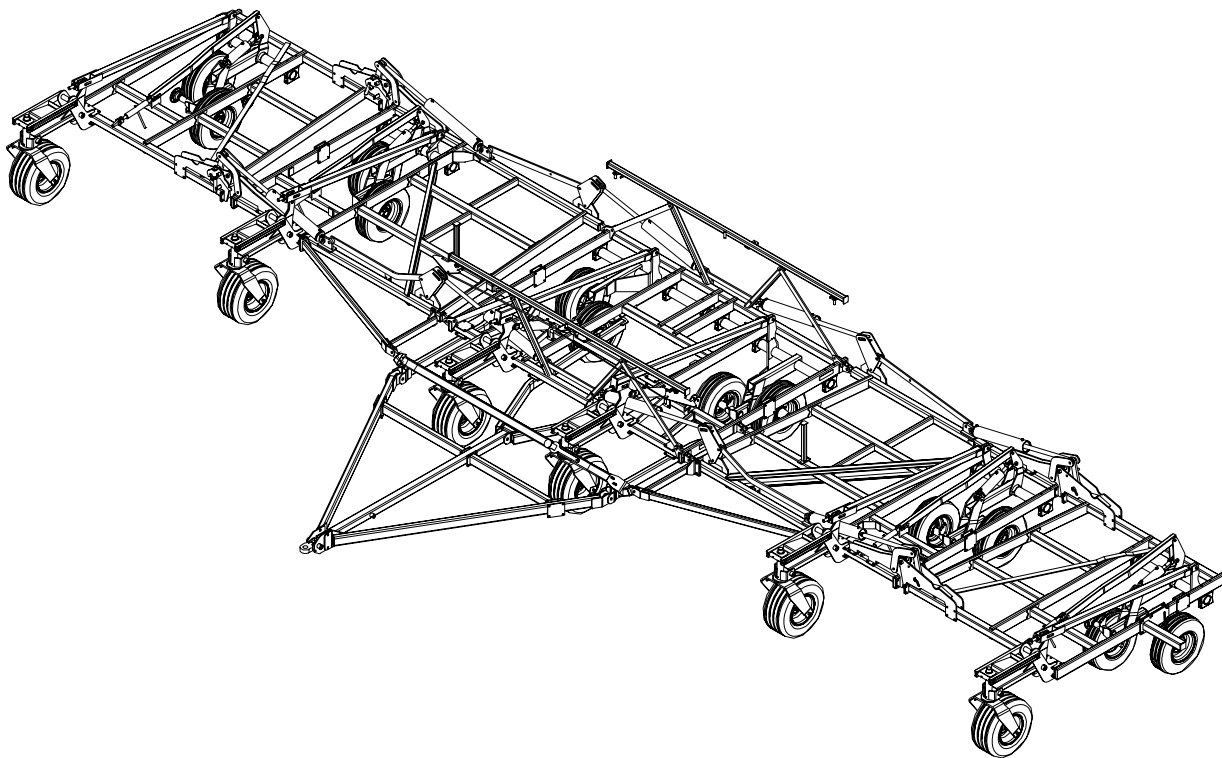




ASSEMBLY, OPERATORS PARTS MANUAL



5850 - 5 SECTION CHISEL PLOW

Printed in USA (79965) 3/10

 **WIL-RICH**

PO Box 1030
Wahpeton, ND 58074
PH (701) 642-2621
Fax (701) 642-3372



PERSONAL SAFETY IS IMPORTANT!

ALL PERSONNEL INVOLVED WITH THE ASSEMBLY AND/OR OPERATION OF THIS EQUIPMENT MUST BE INFORMED OF PROPER SAFETY PROCEDURES. OPERATOR'S AND ASSEMBLY MANUALS PROVIDE THE NECESSARY INFORMATION. IF THE MANUAL IS LOST FOR A PARTICULAR IMPLEMENT, ORDER A REPLACEMENT AT ONCE. OPERATOR'S AND ASSEMBLY MANUALS ARE AVAILABLE AT NO CHARGE UPON REQUEST.

ADDRESS INQUIRIES TO:

WIL-RICH

PO BOX 1030

WAHPETON, ND 58074

PH (701)642-2621 FAX (701)642-3372

ASSEMBLY INFORMATION

Remove all wires and arrange the parts conveniently.

NOTE: Always wear safety glasses or goggles and be careful when cutting wires and steel bands as they are under tension and will spring back when cut.

Wherever the terms "left" and "right" are used, it must be understood to mean from a position behind and facing the machine.

Lubricate all bearings and moving parts as you proceed and make sure they work freely.

Loosely install all bolts connecting mating parts before final tightening.

When tightening bolts, they must be torqued to the proper number of foot-pounds as indicated in the table unless specified. It is important that all bolts be kept tight.

On new machines, all nuts and bolts must be rechecked after a few hours of operation.

When replacing a bolt, use only a bolt of the same grade or higher. Except in shear bolt applications, where you must use the same grade bolt.

Bolts with no markings are grade 2

Grade 5 bolts furnished with the machine are identified by three radial lines on the head.

Grade 8 bolts furnished with the machine are identified by six radial lines on the head.

All U-bolts are grade 5.



THIS SYMBOL USED TO CALL YOUR ATTENTION TO INSTRUCTIONS CONCERNING YOUR PERSONAL SAFETY. BE SURE TO OBSERVE AND FOLLOW THESE INSTRUCTIONS

	GRADE 5			GRADE 8		
TORQUE IN FOOT POUNDS						
BOLT DIA	3/8	1/2	5/8	3/4	7/8	1
HEX HEAD	9/16	3/4	15/16	1-1/8	1-5/16	1-1/2
UNC GR2	18	45	89	160	252	320
UNC GR5	30	68	140	240	360	544
UNC GR8	40	100	196	340	528	792
UNF GR2	21	51	102	178	272	368
UNF GR5	32	70	168	264	392	572
UNF GR8	48	112	216	368	792	840

CAUTION

TO AVOID INJURY AND/OR MACHINE DAMAGE:

- Refer to Operator's Manual for safety instructions.
- Do not stand or climb on machine when operating.
- Use clean hazard flashers and SMV sign when transporting.
- Observe highway traffic regulations.

23325

CAUTION

Failure to follow these instructions may result in personal injury and/or equipment damage.

- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic cylinder channel lock(s) for transporting.

54374

Orientation

Any reference to left (L) or right (R) sides or components is to be understood as being viewed from behind the implement and looking forward.

Serial Number Break

Every implement has a serial number located on the frame. These serial numbers are consecutively assigned to the implements as they are manufactured. To aid in part ordering, we reference to the serial number at the point the change occurred to provide an accurate means of determining the proper parts. Serial tags a normally located on a frame member in the front left corner of the main frame.

Modifications

It is the policy of WIL-RICH Operations to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements, and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

Standard Nuts and Lock Nuts

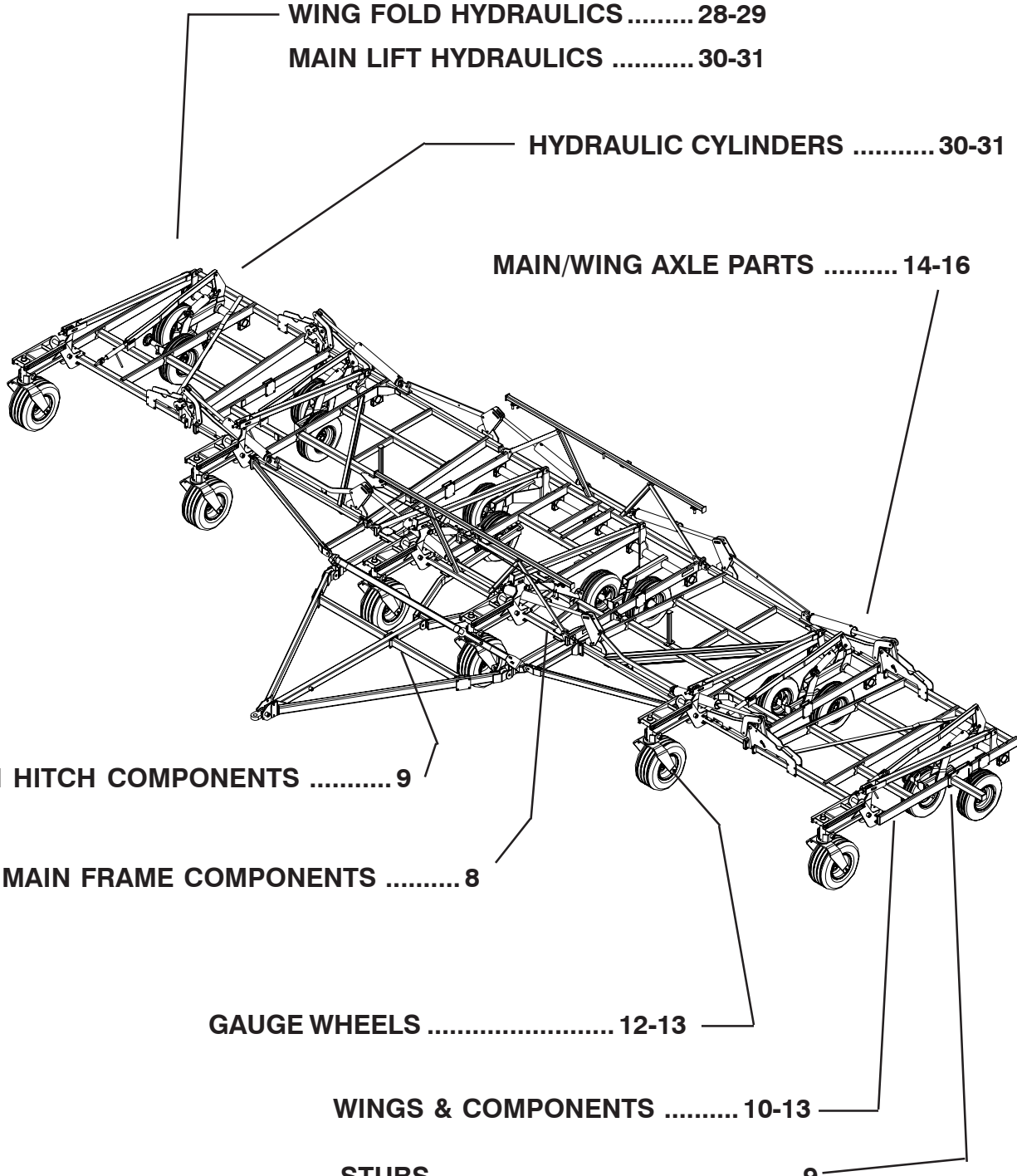
88172	1/4NC Nut	88237	1/4 NC Lock Nut
88103	3/8NC Nut	88659	3/8 NC Lock Nut
88104	1/2NC Nut	88661	1/2 NC Lock Nut
88126	5/8NC Nut	88845	5/8 NC Lock Nut
88110	3/4NC Nut	88665	3/4 NC Lock Nut
88371	7/8NC Nut	88831	7/8 NC Lock Nut
88125	1 NC Nut	88658	1 NC Lock Nut

Note: Standard nuts and lock nuts may not be called out. Anything other than standard will be called out.

CONTENTS

MAIN FRAME	6
MAIN HITCH	7
INNER 12 FT WING	8
OUTER WING HINGE	9
OUTER 6 FT WING	10
OUTER 9 FT WING	11
MAIN FRONT LIFT AXLE	12
WING FRONT LIFT AXLE	13
MAIN LIFT AXLE	14
INNER WING LIFT AXLE	15
OUTER WING LIFT AXLE	16
1' & 2' STUB ATTACHMENTS	17
MAIN FRAME 12IN SHANK PLACEMENT	18
12FT WING 12IN SHANK PLACEMENT	19
6FT & 9FT WING 12IN SHANK PLACEMENT ...	20
MAIN FRAME 15IN SHANK PLACEMENT	21
12 FT WING 15IN SHANK PLACEMENT	22
6FT WING 15IN SHANK PLACEMENT	23
9FT WING 15IN SHANK PLACEMENT	24
MAIN WING FOLD HYDRUALICS	26-27
MAIN LIFT HYDRUALICS	28-29
WING FOLD CYLINDERS	30
MAIN LIFT TOP BYPASS CYLINDER	31
1000 LB CP SHANK ASSY - PRE 2007	32
1000 LB CP SHANK ASSY - 2007 & UP	33
650 LB SHANK ASSEMBLY	34
RIGID SHANK ASSEMBLY	35
8 BOLT HUB-2-1/2" SPINDLE ASSY	36
6 BOLT HUB - 2" SPINDLE ASSY	37
GAUGE WHEEL HUB & SPINDLE	38
SPIKES	39
REAR HITCH WITH HINGED TONGUE	40
HEAVY DUTY REAR HITCH	41
LIGHTS	42
MUD SCRAPERS	43
DECALS	44
OPERATING INSTRUCTIONS CONTENTS	45
OPERATIONAL INSTRUCTIONS	46-67
WARRANTY	68

CONTENTS



WING FOLD HYDRAULICS 28-29
MAIN LIFT HYDRAULICS 30-31
HYDRAULIC CYLINDERS 30-31
MAIN/WING AXLE PARTS 14-16
MAIN HITCH COMPONENTS 9
MAIN FRAME COMPONENTS 8
GAUGE WHEELS 12-13
WINGS & COMPONENTS 10-13
STUBS 9

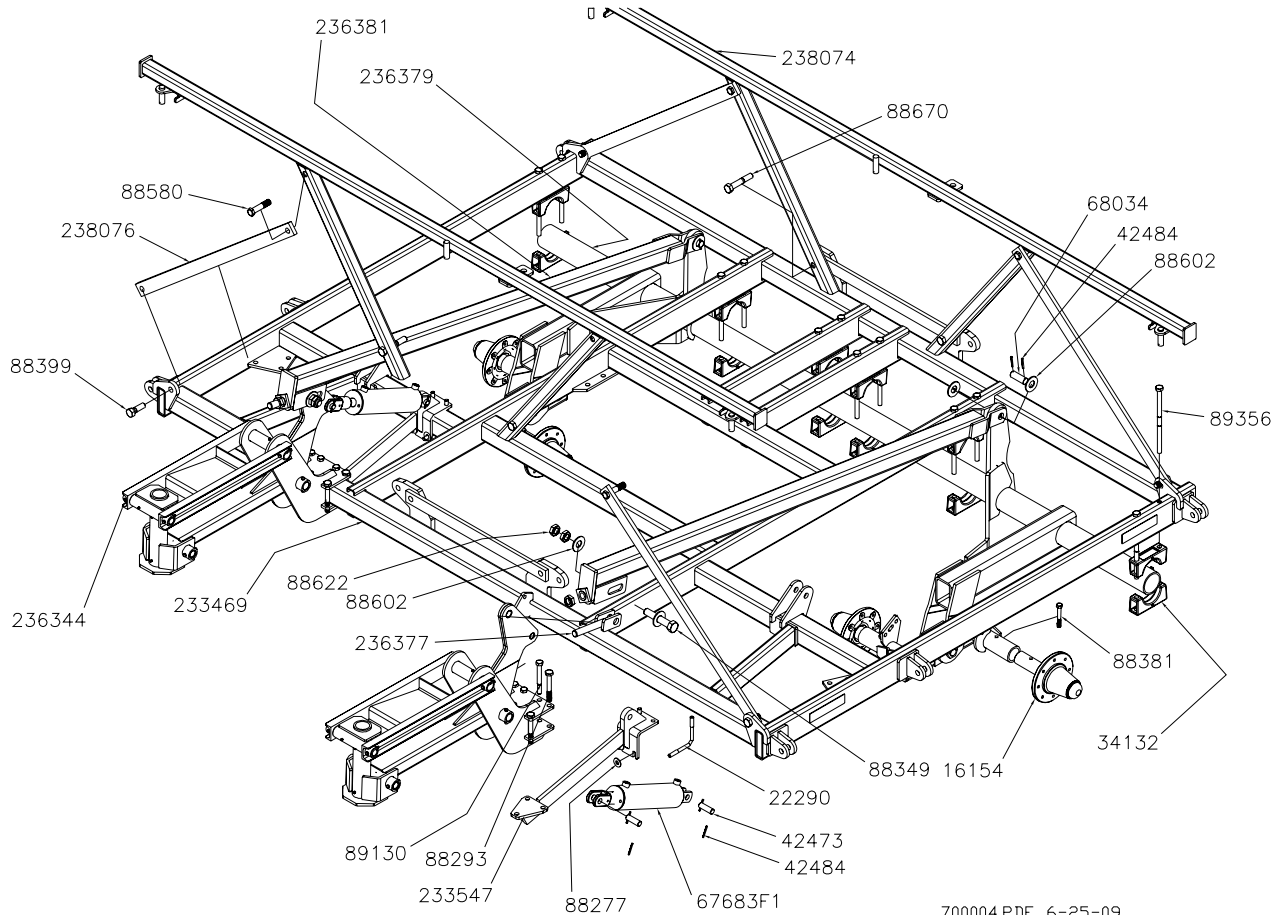
MAIN FRAME COMPONENTS

⚠ CAUTION

TO AVOID INJURY AND/OR MACHINE DAMAGE:

- Refer to Operator's Manual for safety instructions.
- Do not stand or climb on machine when operating.
- Use clean hazard flashers and SMV sign when transporting.
- Observe highway traffic regulations.

23325

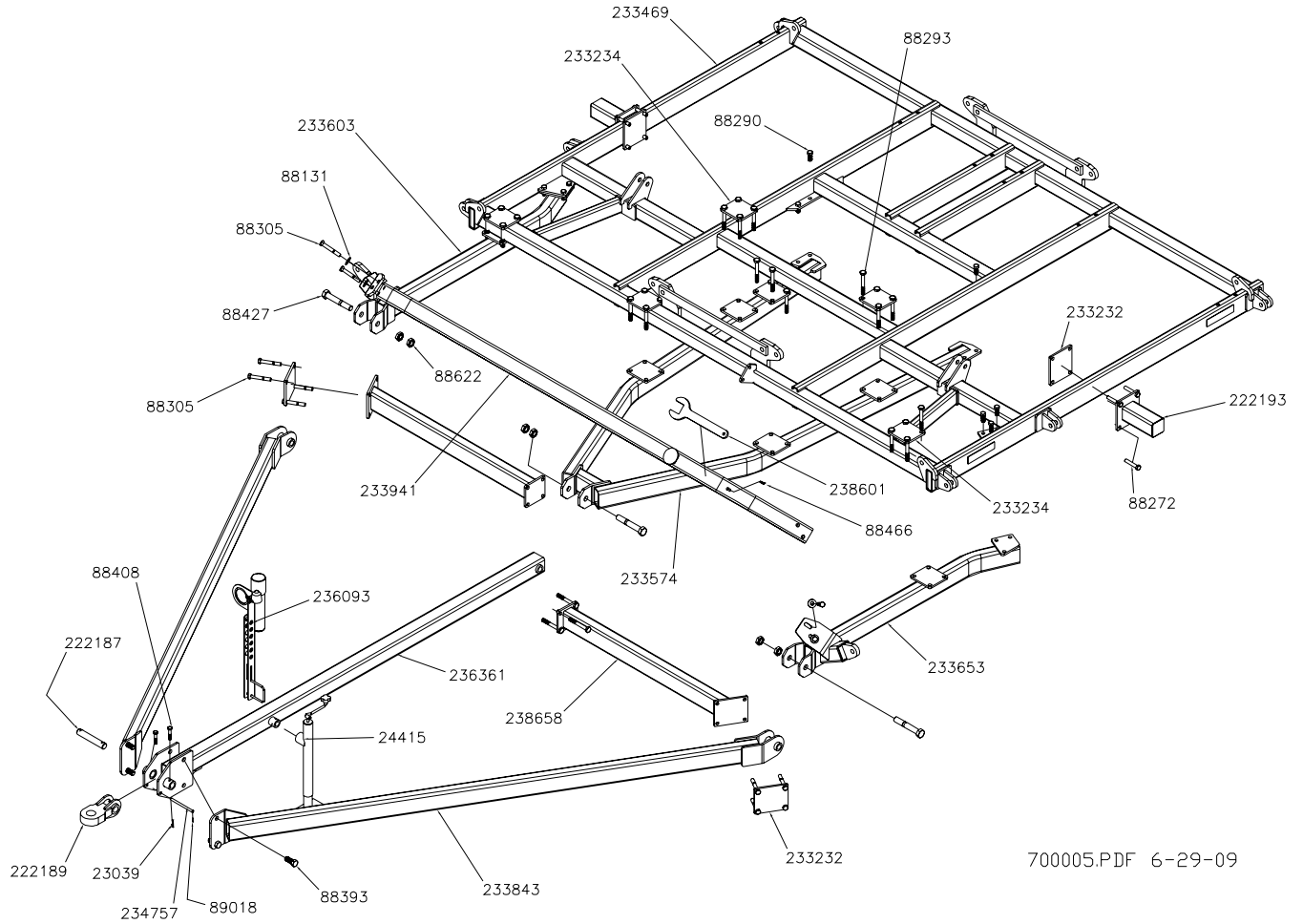


700004.PDF 6-25-09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
16154	2-1/2IN HUB&SPINDLE ASSY(LG8210011)	4	67683F1	HYD CYL 4X12.56 BP FGS A519CY24	2
22290	L-BOLT 5/8 IN FOR 4 SQ TUBE	4	68034	HEADLESS PIN(2) 1-1/4X3.38	2
233469	13'MAIN FRAME 5SEC CP	1	88277	WSHR FLAT 5/8(11/16X1-3/4ACT) Z	4
233547	MAIN TIE ANCHOR	2	88293	BLT HEX 3/4-10NCX6 5Z	8
236344	CP CENTER GAGE WHEEL ASSY	2	88349	BLT HEX 1-1/4-7NCX6-1/2 5Z	2
236377	ADJUST LINK	2	88381	BLT HEX 5/8-11NCX4-1/2 5Z	4
236379	13' MAIN AXLE ASSY 5SEC CP	1	88399	BLT HEX 1-8NCX3 5Z	4
236381	MAIN FRAME ADJUST TUBE 5SEC CP	2	88580	BLT HEX 1-8NCX4-1/2 5Z	4
238074	WING REST - 5SEC CP	2	88602	WSHR FLAT 1-1/4(1-3/8X3ACT) Z	8
238076	TRUSS STRAP	4	88622	NUT JAM 1-1/4-7NC 5Z	6
34132	AXLE CLAMP ASSEMBLY (RED)	12	88670	BLT HEX 1-8NCX5-1/2 5Z	4
42473	HEADLESS PIN (H) (2) 1X2-3/8	4	89130	BLT HEX 3/4-10NCX6-1/2 5Z	6
42484	1/4 X 2-1/4 ROLL PIN	12	89356	BLT HEX 3/4-10NC X 14 5Z	12

MAIN HITCH COMPONENTS

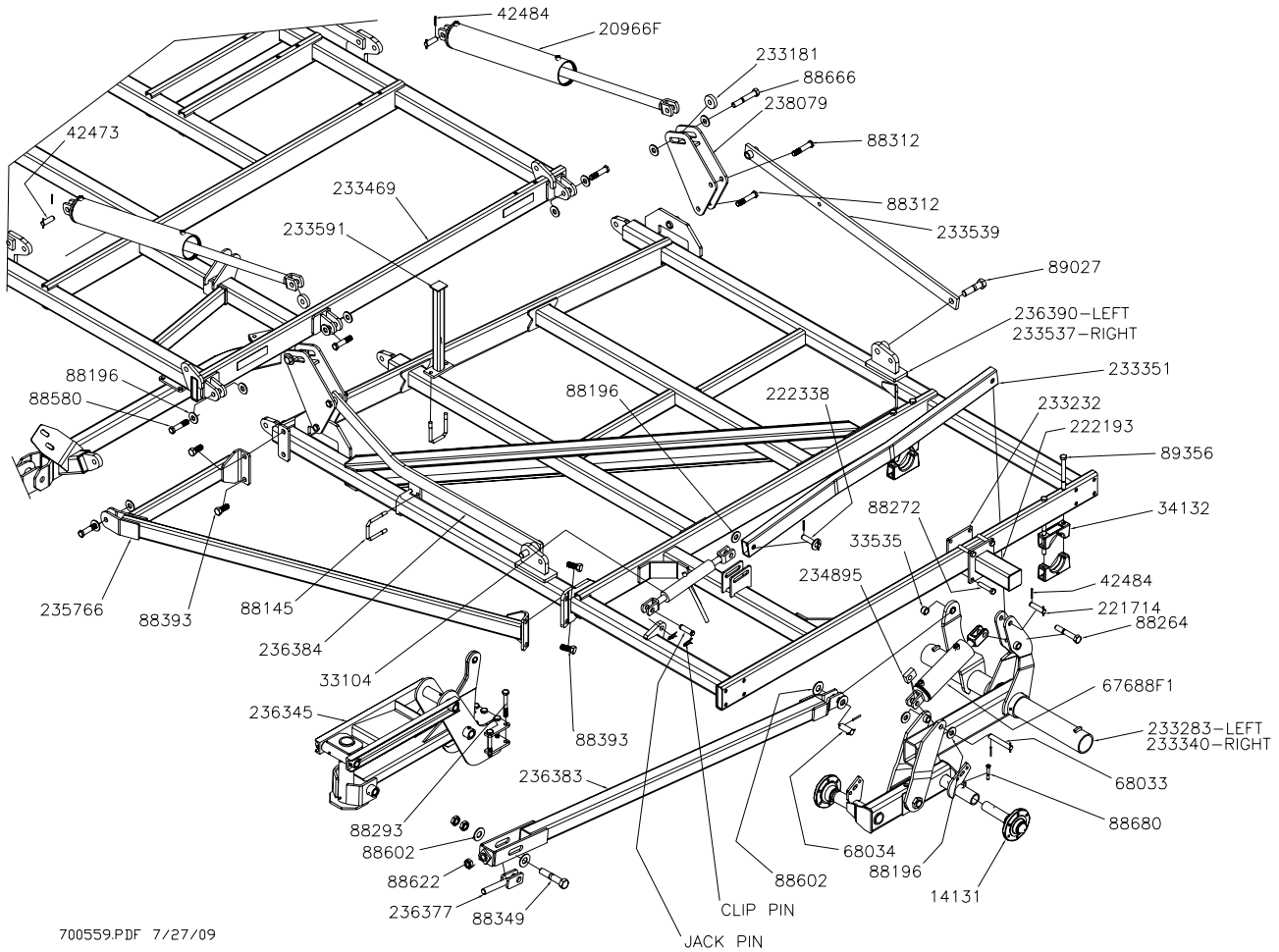


700005.PDF 6-29-09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
222187	HEADLESS PIN(2) 1-1/2X6-9/16	1	238601	ADJUST WRENCH	1
222189	CAT HITCH	1	238658	POLE BRACE 5SEC CP	2
222193	CP SHANK STUB	2	24415	JACK	1
23039	PIN-HAIR .14 X 2.69 ZP	1	88131	WSHR FLAT 3/4(13/16X2ACT) Z	4
233232	STUB PLATE PAINTED	4	88272	BLT HEX 3/4-10NCX4 5Z	8
233234	MOUNT PLATE PAINTED (221911)	6	88290	BLT HEX 3/4-10NCX2 8YZ	10
233469	13'MAIN FRAME 5SEC CP	1	88293	BLT HEX 3/4-10NCX6 5Z	28
233574	MAIN CENTER HITCH MOUNT 5SEC CP	1	88305	BLT HEX 3/4-10NCX5 5Z	12
233603	HITCH PULL TUBE R 5SEC CP	1	88393	BLT HEX 1-8NCX2-1/2 5Z	4
233653	HITCH PULL TUBE L 5SEC CP	1	88408	BLT HEX 5/8-11NCX3 5Z	2
233843	MAIN POLE BRACE 5SEC CP	2	88427	BLT HEX 1-1/4-7NCX8 5Z	3
233941	FRONT HINGE TUBE	1	88466	CLIP HAIRPIN 1/8 DIA X 1 Z	1
234757	PIN - TONGUE REST	1	88622	NUT JAM 1-1/4-7NC 5Z	6
236093	UTILITY POLE KIT 4 X 4	1	89018	PIN ROLL 1/8 DIA X 1 Z	1
236361	MAIN HITCH POLE 5SEC CP	1			

INNER 12FT WING COMPONENTS

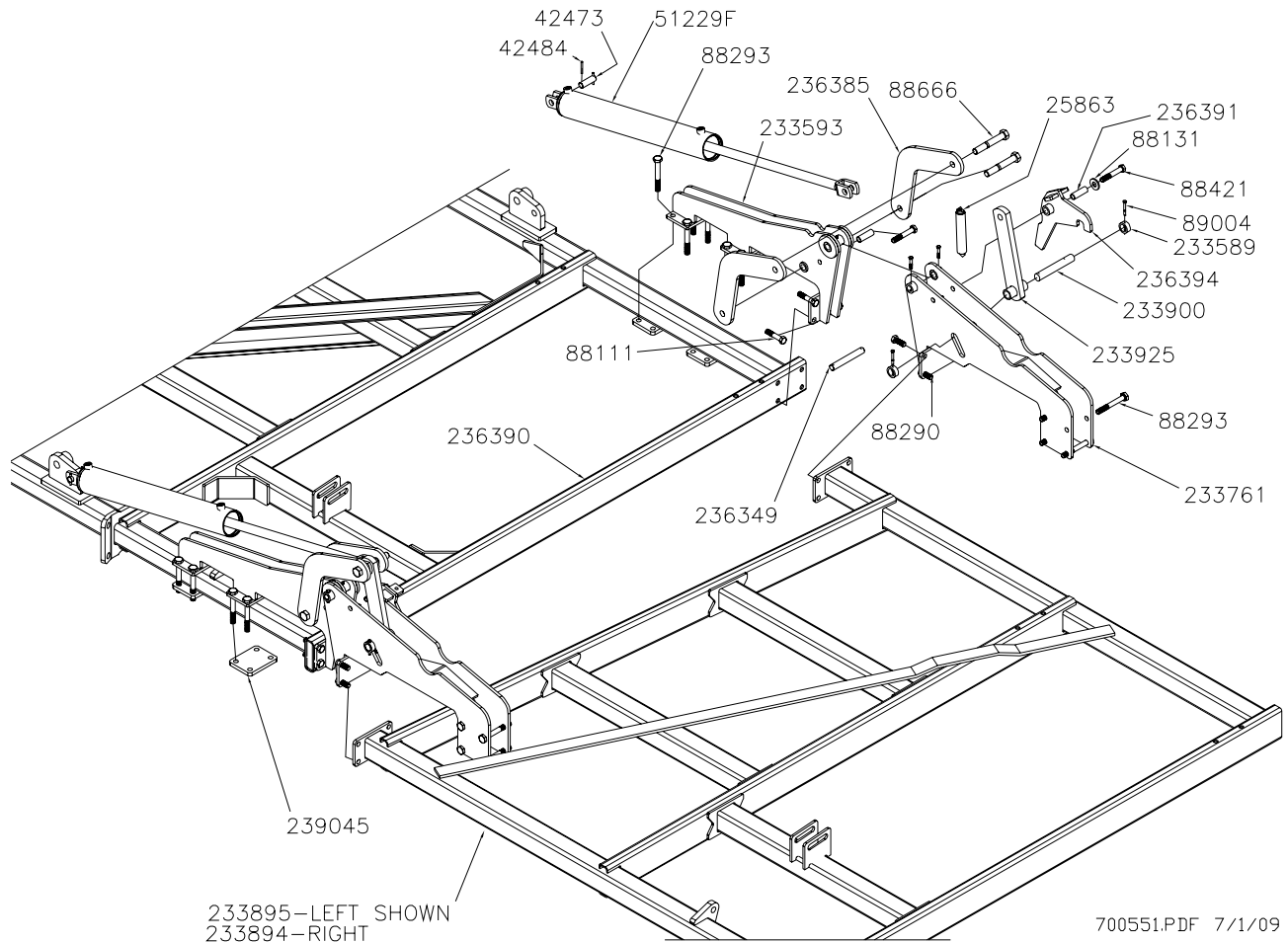


700559.PDF 7/27/09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
14131	2IN HUB & SPINDLE (LG7830015)	1	33104	GAUGE WHEEL JACK (A52407)	1
220761F1	HYD CYL 4X9.3 W/TOP BP FGS A519CY35	1	33535	SPRING TENSION BUSHING (1-1/4")	1
221714	HEADLESS PIN(2) 1X4.00	1	34132	AXLE CLAMP ASSEMBLY (RED)	4
222193	CP SHANK STUB	2	42473	HEADLESS PIN (H) (2) 1X2-3/8	3
222338	HEADLESS PIN(2) 1X4-1/8	1	42484	1/4 X 2-1/4 ROLL PIN	8
233232	STUB PLATE PAINTED	2	68034	HEADLESS PIN(2) 1-1/4X3.38	1
233263	2FT CHISEL PLOW STUB (2X5/6)	2	88196	WSHR FLAT 1(1-1/16X2-1/2ACT) Z	2
233264	PAINTED PLATE (233226)	2	88264	BLT HEX 1-8NCX6 5Z	1
233351	WING MAST TUBE 5800	1	88293	BLT HEX 3/4-10NCX6 5Z	7
236345	CP OUTER GAGE WHEEL ASSY	1	88349	BLT HEX 1-1/4-7NCX6-1/2 5Z	1
236377	ADJUST LINK	1	88602	WSHR FLAT 1-1/4(1-3/8X3ACT) Z	2
236383	WING LIFT TUBE 5SEC CP	1	88622	NUT JAM 1-1/4-7NC 5Z	3
238087	R OUTER SINGLE WING AXLE 5SEC CP	1	88680	BLT HEX 1/2-13NCX3-1/4 5Z	1
238090	L OUTER SINGLE WING AXLE 5SEC CP	1	89356	BLT HEX 3/4-10NC X 14 5Z	4
238091	6' OUTER WING R 5SEC CP	1	CLIP PIN	CLIP PIN-PROVIDED W/JACK	2
238092	6' OUTER WING L 5SEC CP	1	JACK PIN	JACK PIN- PROVIDED W/JACK	1

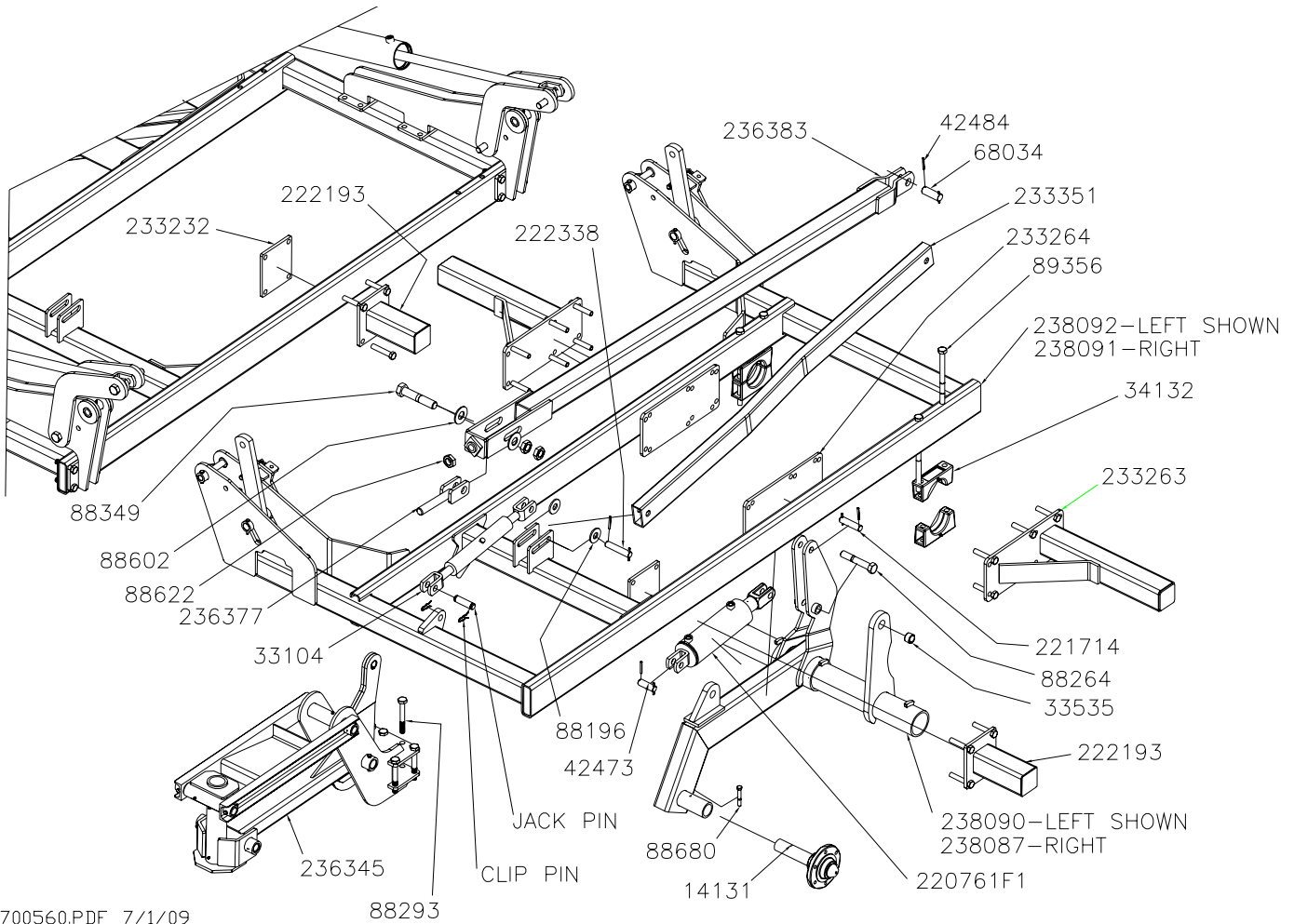
OUTER WING HINGE COMPONENTS



UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
233589	PIN BUSHING (ZINC)	4	25863	SPRING	2
233593	INNER WING HINGE PIVOT	2	42473	HEADLESS PIN (H) (2) 1X2-3/8	2
233761	OUTER WING FOLD BRACKET	2	42484	1/4 X 2-1/4 ROLL PIN	4
233894	9' OUTER WING R 5SEC CP	1	51229F	HYD CYL 4X30 FGS #A519CY02	2
233895	9' OUTER WING L 5SEC CP	1	88111	BLT HEX 3/4-10NCX3-1/2 5Z	8
233900	LOCK PIN	2	88131	WSHR FLAT 3/4(13/16X2ACT) Z	1
233925	OUTER LINK	2	88290	BLT HEX 3/4-10NCX2 8YZ	8
236349	HINGE PIN (ZINC)	2	88293	BLT HEX 3/4-10NCX6 5Z	24
236385	OUTER LINK	4	88421	BLT HEX 3/4-10NCX4-1/2 5Z	4
236390	12' INNER WING L 5SEC CP	1	88666	BLT HEX 1-8NCX6-1/2 5Z	4
236391	PIVOT TUBE (ZINC)	4	89004	BLT HEX 5/16-18NCX2-1/2 5Z	4
236394	OUTER WING LATCH BRACKET	2	89011	BLT HEX 3/8-16NC X 2 5Z	4
239045	HINGE TIE PLATE - PAINTED	4			

OUTER 6 FT WING COMPONENTS

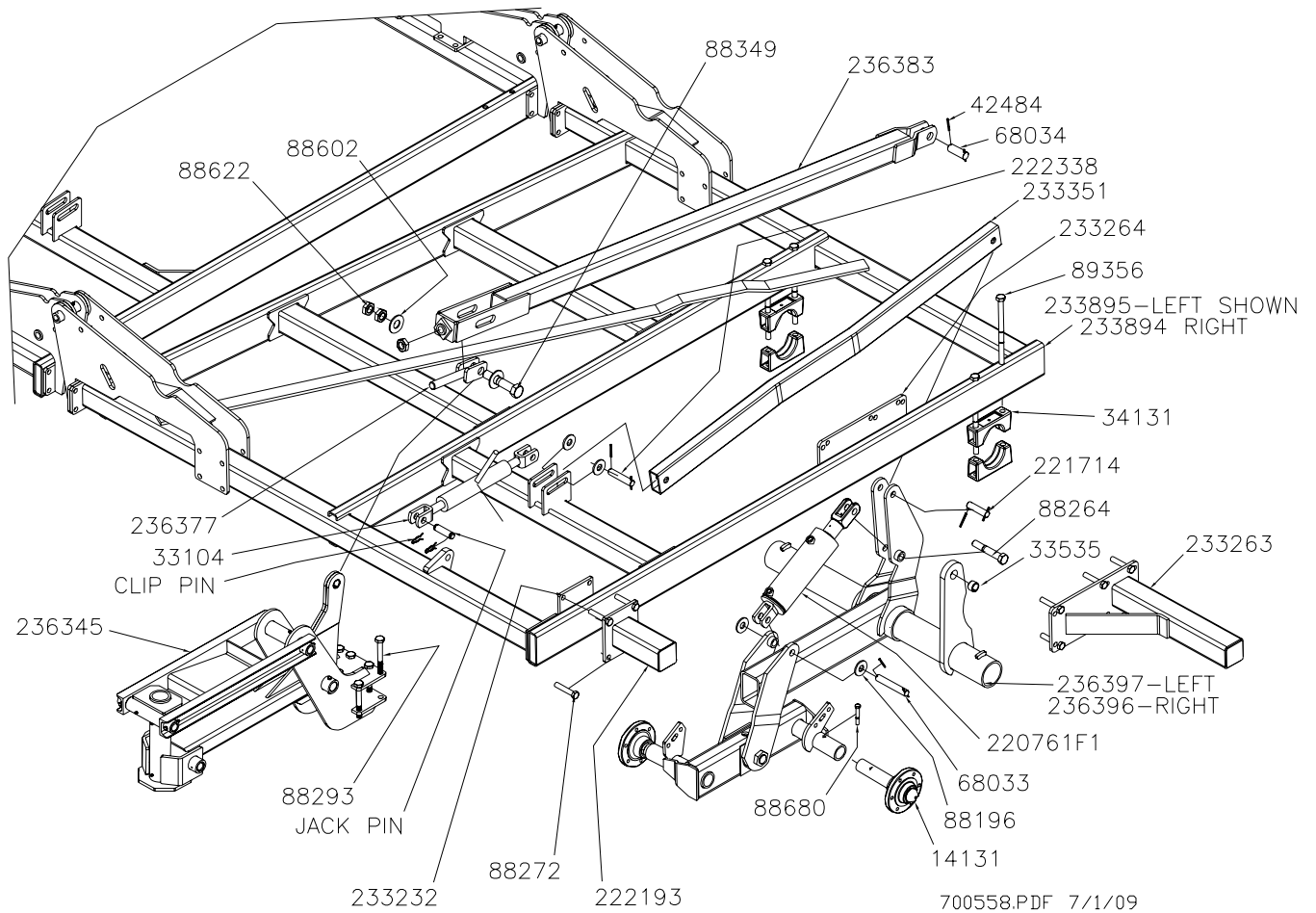


700560.PDF 7/1/09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
14131	2IN HUB & SPINDLE (LG7830015)	1	33104	GAUGE WHEEL JACK (A52407)	1
220761F1	HYD CYL 4X9.3 W/TOP BP FGS A519CY35	1	33535	SPRING TENSION BUSHING (1-1/4")	1
221714	HEADLESS PIN(2) 1X4.00	1	34132	AXLE CLAMP ASSEMBLY (RED)	4
222193	CP SHANK STUB	2	42473	HEADLESS PIN (H) (2) 1X2-3/8	3
222338	HEADLESS PIN(2) 1X4-1/8	1	42484	1/4 X 2-1/4 ROLL PIN	8
233232	STUB PLATE PAINTED	2	68034	HEADLESS PIN(2) 1-1/4X3.38	1
233263	2FT CHISEL PLOW STUB (2X5/6)	2	88196	WSHR FLAT 1(1-1/16X2-1/2ACT) Z	2
233264	PAINTED PLATE (233226)	2	88264	BLT HEX 1-8NCX6 5Z	1
233351	WING MAST TUBE 5800	1	88293	BLT HEX 3/4-10NCX6 5Z	7
236345	CP OUTER GAGE WHEEL ASSY	1	88349	BLT HEX 1-1/4-7NCX6-1/2 5Z	1
236377	ADJUST LINK	1	88602	WSHR FLAT 1-1/4(1-3/8X3ACT) Z	2
236383	WING LIFT TUBE 5SEC CP	1	88622	NUT JAM 1-1/4-7NC 5Z	3
238087	R OUTER SINGLE WING AXLE 5SEC CP	1	88680	BLT HEX 1/2-13NCX3-1/4 5Z	1
238090	L OUTER SINGLE WING AXLE 5SEC CP	1	89356	BLT HEX 3/4-10NC X 14 5Z	4
238091	6' OUTER WING R 5SEC CP	1	CLIP PIN	CLIP PIN-PROVIDED W/JACK	2
238092	6' OUTER WING L 5SEC CP	1	JACK PIN	JACK PIN- PROVIDED W/JACK	1

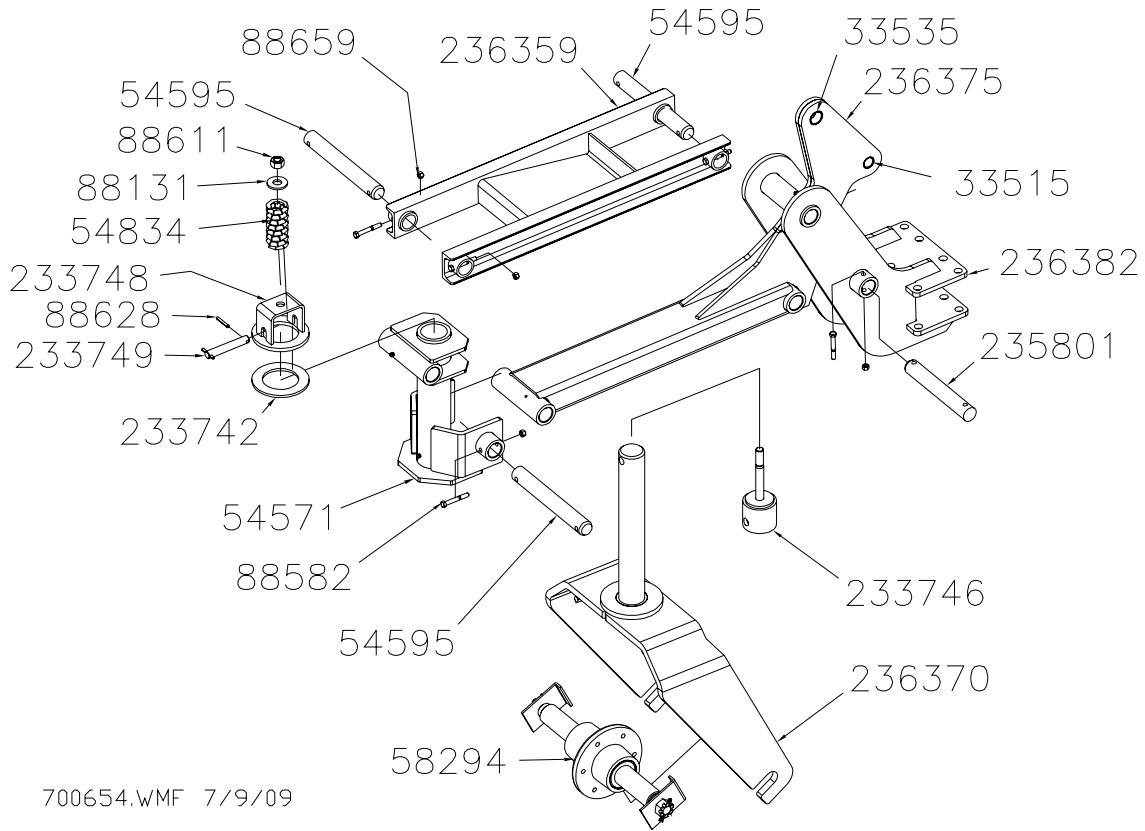
OUTER 9 FT WING COMPONENTS



UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
14131	2IN HUB & SPINDLE (LG7830015)	2	33104	GAUGE WHEEL JACK (A52407)	1
220761F1	HYD CYL 4X9.3 W/TOP BP FGS A519CY35	1	33535	SPRING TENSION BUSHING (1-1/4")	1
221714	HEADLESS PIN(2) 1X4.00	1	34131	AXLE CLAMP ASSEMBLY	4
222193	CP SHANK STUB	1	42484	1/4 X 2-1/4 ROLL PIN	8
222338	HEADLESS PIN(2) 1X4-1/8	1	68033	HEADLESS PIN(2) 1X6.38	1
233232	STUB PLATE PAINTED	1	68034	HEADLESS PIN(2) 1-1/4X3.38	1
233263	2FT CHISEL PLOW STUB (2X5/6)	1	88196	WSHR FLAT 1(1-1/16X2-1/2ACT) Z	4
233264	PAINTED PLATE (233226)	1	88264	BLT HEX 1-8NCX6 5Z	1
233351	WING MAST TUBE 5800	1	88272	BLT HEX 3/4-10NCX4 5Z	10
233761	OUTER WING FOLD BRACKET	2	88293	BLT HEX 3/4-10NCX6 5Z	7
233894	9'OUTER WING R 5SEC CP	1	88349	BLT HEX 1-1/4-7NCX6-1/2 5Z	1
233895	9'OUTER WING L 5SEC CP	1	88602	WSHR FLAT 1-1/4(1-3/8X3ACT) Z	2
236345	CP OUTER GAGE WHEEL ASSY	1	88622	NUT JAM 1-1/4-7NC 5Z	3
236377	ADJUST LINK	1	88680	BLT HEX 1/2-13NCX3-1/4 5Z	2
236383	WING LIFT TUBE 5SEC CP	1	89356	BLT HEX 3/4-10NC X 14 5Z	4
236396	R OUTER WING AXLE ASSY 5SEC CP	1	CLIP PIN	CLIP PIN-PROVIDED W/JACK	2
236397	L OUTER WING AXLE ASSY 5SEC CP	1	JACK PIN	JACK PIN-PROVIDED W/JACK	1

MAIN FRONT LIFT AXLE COMPONENTS

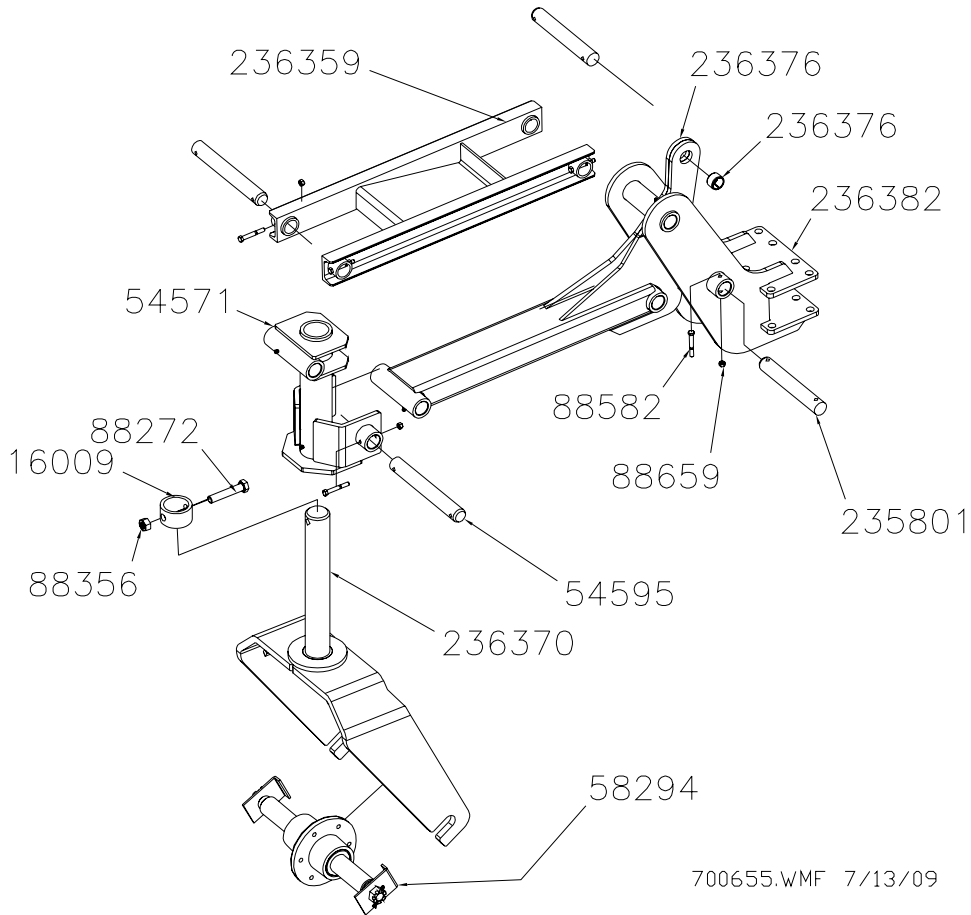


700654.WMF 7/9/09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
233742	DAMPER BRAKE PAD	1	54571	GAUGE WHEEL PIVOT	1
233746	DAMPER CAP	1	54595	HEADLESS PIN(2) 1-1/2X9-19/32	3
233748	TOP DAMPER BRACKET	1	54834	RED 4-1/2" COMPRESSION SPRING	1
233749	PIN (ZINC)	1	58294	YOKE HUB ASSEMBLY (22" SPINDLE)	1
235801	PIVOT PIN (1-1/2 X 10)	1	88131	WSHR FLAT 3/4(13/16X2ACT) Z	1
236359	TOP LINK ARM	1	88550	FTG GRS 1/4-28 3038-B	1
236370	NEW GAUGE WHEEL YOKE	1	88582	BLT HEX 3/8-16NCX2-3/4 5Z	8
236375	MAIN LOWER GAGE ARM	1	88611	NUT NLK 3/4-10NC 5Z	1
236382	FRONT GAUGE WHEEL MAST	1	88628	PIN ROLL 1/4DIAX1-3/4 Z	2
33515	SPRING TENSION BUSHING (1")	1	88659	NUT TOP LK 3/8-16NC 5Z	8
33535	SPRING TENSION BUSHING (1-1/4")	1			

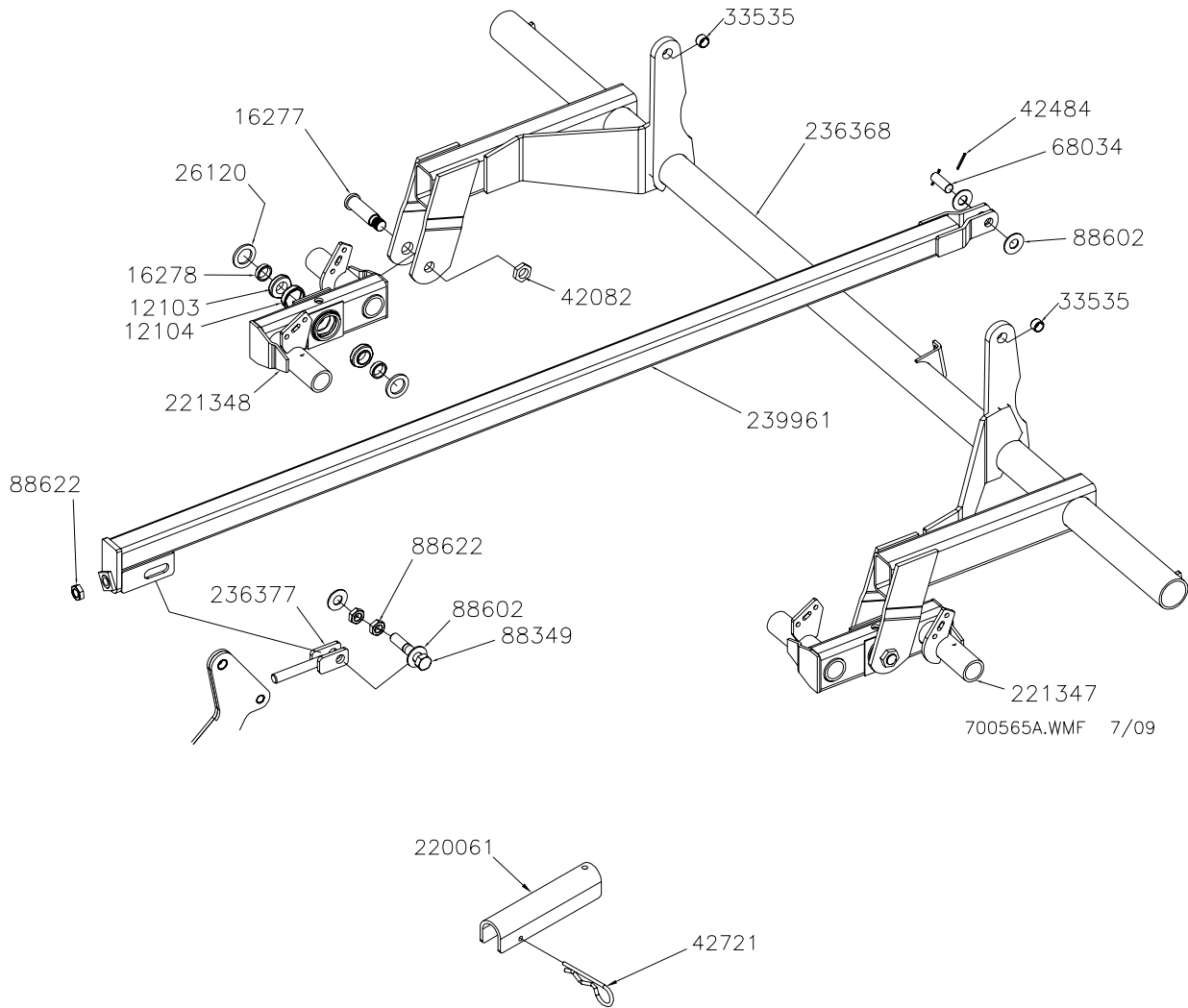
WING FRONT LIFT AXLE COMPONENTS



UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY
16009	COLLAR	1
235801	PIVOT PIN (1-1/2 X 10)	2
236359	TOP LINK ARM	1
236370	NEW GAUGE WHEEL YOKE	1
236376	OUTER FRONT MAST ARM	1
236382	FRONT GAUGE WHEEL MAST	1
54571	GAUGE WHEEL PIVOT	1
54595	HEADLESS PIN(2) 1-1/2X9-19/32	2
58294	YOKE HUB ASSEMBLY (22" SPINDLE)	1
88272	BLT HEX 3/4-10NCX4 5Z	1
88356	NUT 2POSLK 3/4-10NC 5Z	1
88550	FTG GRS 1/4-28 3038-B	1
88582	BLT HEX 3/8-16NCX2-3/4 5Z	8
88659	NUT TOP LK 3/8-16NC 5Z	8

MAIN LIFT AXLE COMPONENTS

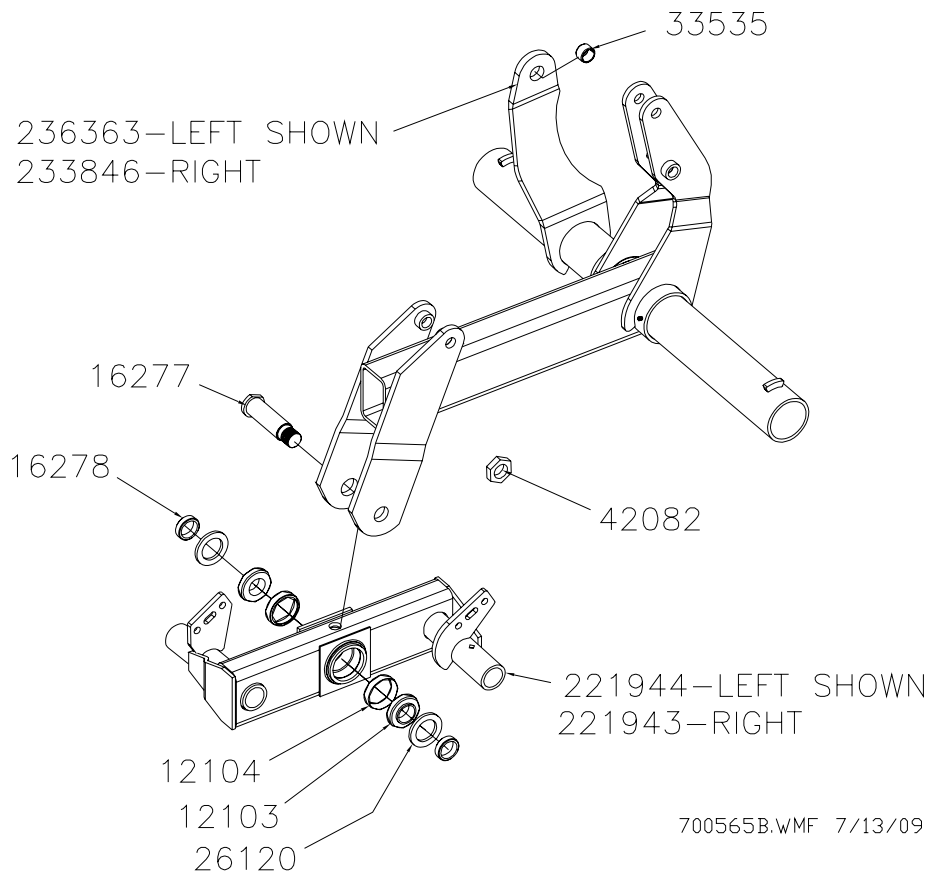


700565A.WMF 7/09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
12103	BEARING CONE 1-3/4ID (25580)	4	26120	2.25ID X 3.40 OD TRIPLE LIP SEAL	4
12104	BEARING CUP 3.265OD (25520)	4	33535	SPRING TENSION BUSHING (1-1/4")	2
16277	TANDEM SHAFT	3	42082	1-1/2NF HYDRA JAM LOCK NUT	2
16278	BEARING BUSHING	4	42484	1/4 X 2-1/4 ROLL PIN	4
220061	1-1/2" CHNL LOCK 10" (BLK)	2	42721	1/4 X 5 SPRING LOCK PIN	2
221347	LEFT 5SEC HD WALKING TANDEM	1	68034	HEADLESS PIN(2) 1-1/4X3.38	2
221348	RIGHT 5SEC HD WALKING TANDEM	1	88349	BLT HEX 1-1/4-7NCX6-1/2 5Z	2
236368	MAIN AXLE	1	88602	WSHR FLAT 1-1/4(1-3/8X3ACT) Z	8
236377	ADJUST LINK	2	88622	NUT JAM 1-1/4-7NC 5Z	6
239961	MAIN FRAME MAST TUBE - LONG	2			

INNER WING LIFT AXLE COMPONENTS

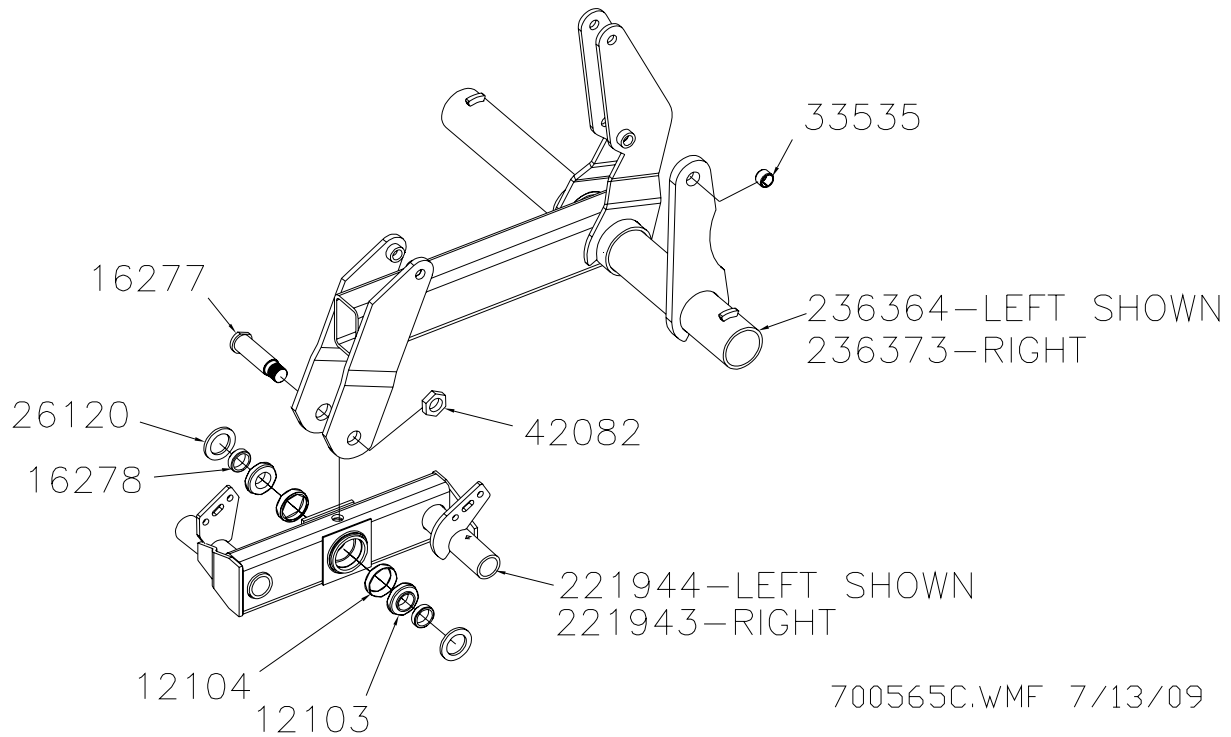


700565B.WMF 7/13/09

UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY
12103	BEARING CONE 1-3/4ID (25580)	2
12104	BEARING CUP 3.265OD (25520)	2
16277	TANDEM SHAFT	1
16278	BEARING BUSHING	2
221943	RIGHT 3X20 WALKING TANDEM	1
221944	LEFT 3X20 WALKING TANDEM	1
233846	WING AXLE - RIGHT INNER	1
236363	WING AXLE - LEFT INNER	1
26120	2.25ID X 3.40 OD TRIPLE LIP SEAL	2
33535	SPRING TENSION BUSHING (1-1/4")	1
42082	1-1/2NF HYDRA JAM LOCK NUT	1

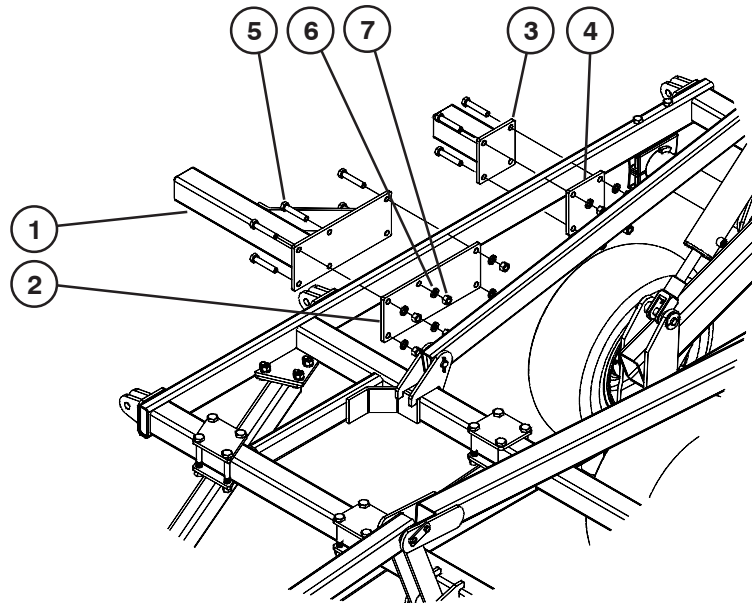
OUTER WING LIFT AXLE COMPONENTS



UNLESS SPECIFIED ALL BOLTS ARE SECURED WITH MATCHING LOCK NUTS

PART NO.	DESCRIPTION	QTY
12103	BEARING CONE 1-3/4ID (25580)	2
12104	BEARING CUP 3.265OD (25520)	2
16277	TANDEM SHAFT	1
16278	BEARING BUSHING	2
221943	RIGHT 3X20 WALKING TANDEM	1
221944	LEFT 3X20 WALKING TANDEM	1
236364	WING AXLE - LEFT OUTER	1
236373	WING AXLE - RIGHT OUTER	1
26120	2.25ID X 3.40 OD TRIPLE LIP SEAL	2
33535	SPRING TENSION BUSHING (1-1/4")	1
42082	1-1/2NF HYDRA JAM LOCK NUT	1

1' & 2' STUB ATTACHEMENTS - FITS 2X5 & 2X6 FRAME TUBES



233292_A.PLT

**233265 2' STUB GRP W/MTG HDW
FITS 2X5 & 2X6 FRAME TUBES**

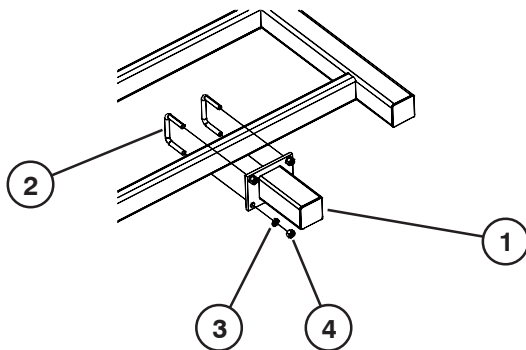
**233268 BOP 1' STUB GRP W/MTG HDW
FITS 2X5 & 2X6 FRAME TUBES**

ITEM	PART NO.	DESCRIPTION
1	233263	2FT CHISEL PLOW STUB (2x5/6)
2	233226	STUB PLATE
3	222193	CP SHANK STUB
4	233232	STUB PLATE PAINTED
5	88272	3/4NCx4 GR5 BOLT
6	88130	WSHR HLK 3/4ID(13/16ACT)
7	88110	NUT HEX 3/4NC

1' STUB ATTACHMENT - FITS 2x4 FRAME TUBES

65123 1' STUB GRP L/MTG HDWE (2x4)

**STUB GROUPS CONTAIN PAIRS OF STUBS WITH
HARDWARE**

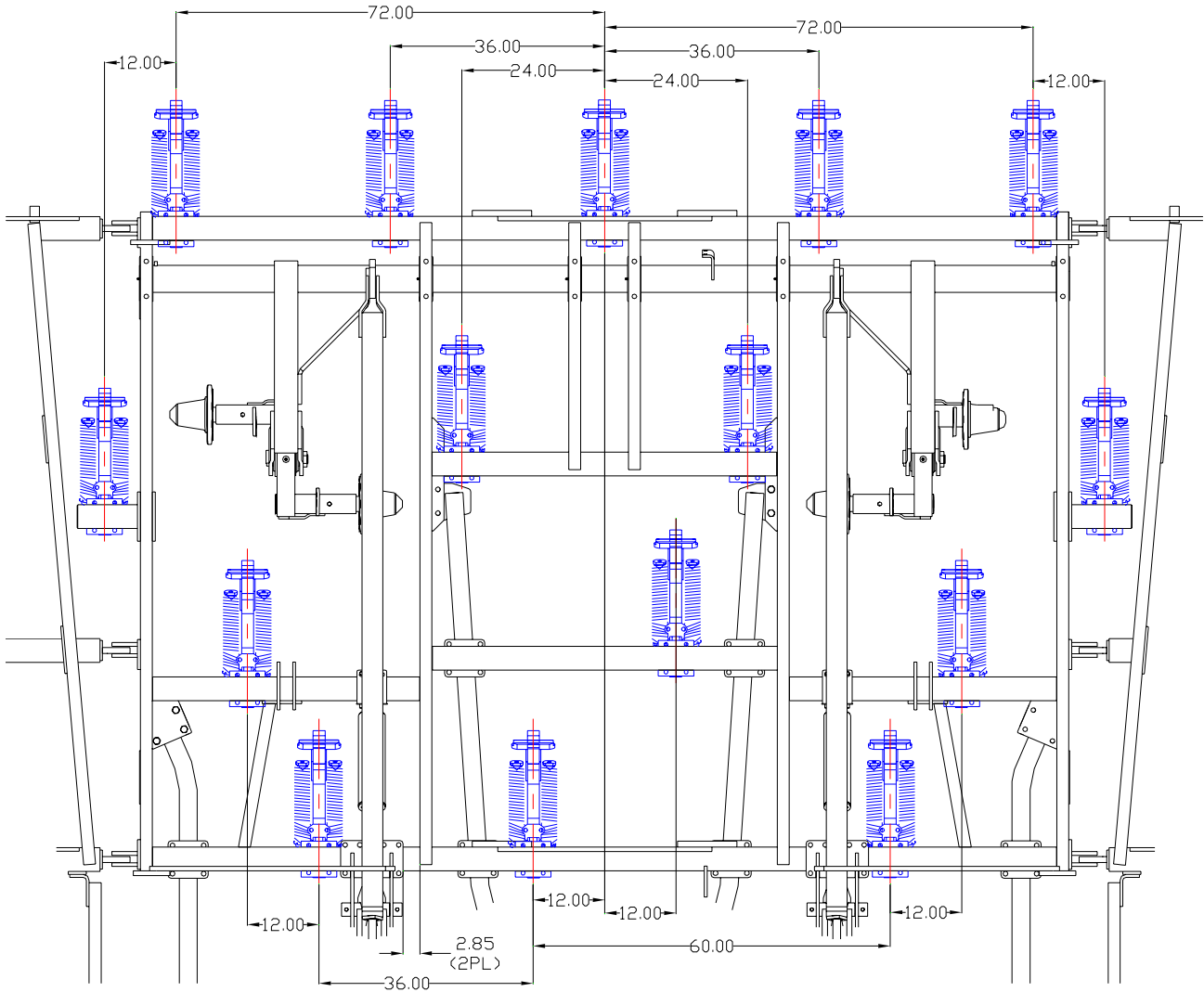


ITEM	PART NO.	DESCRIPTION
1	13963	MAIN FRAME 1FT STUB
2	88388	5/8NCx4x3-1/4 U-BOLT
3	88129	WSHR HLK 5/8ID(11/16ACT)
4	88126	NUT HEX 5/8NC

233279_C.PLT

SHANK PLACEMENT - 12 IN SPACING

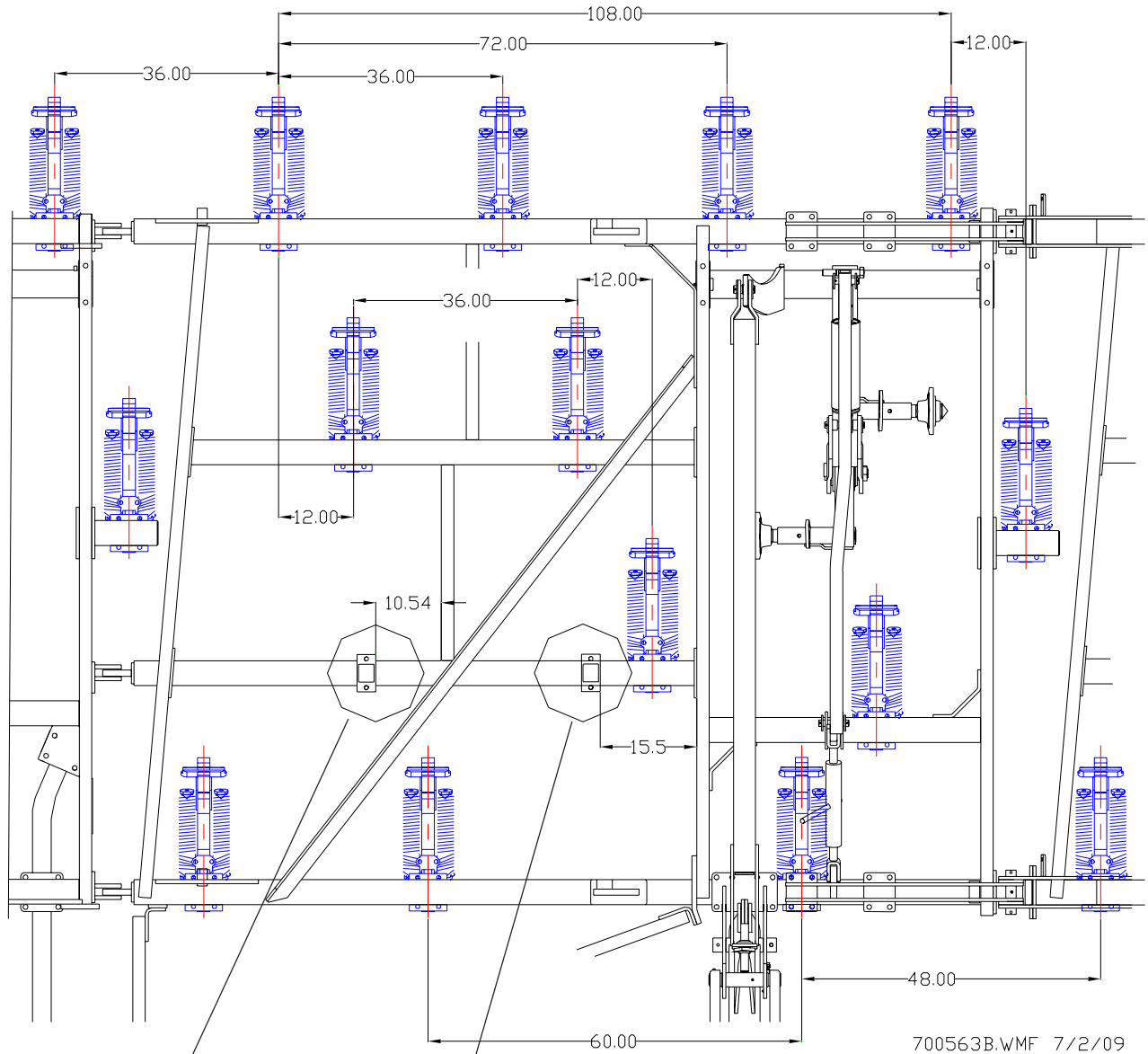
13 FT MAIN FRAME



700563A.WMF 7/2/09

SHANK PLACEMENT - 12 IN SPACING

12 FT INNER WING

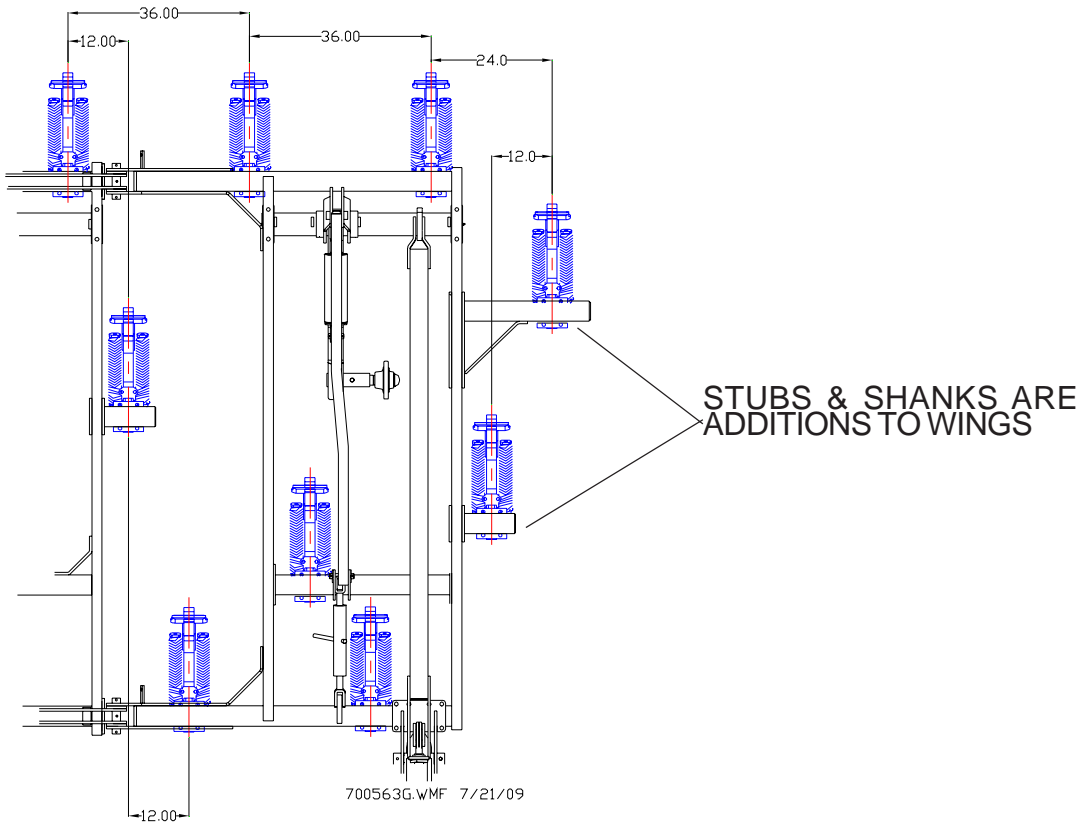


9 FT OUTER WING
REST LOCATION

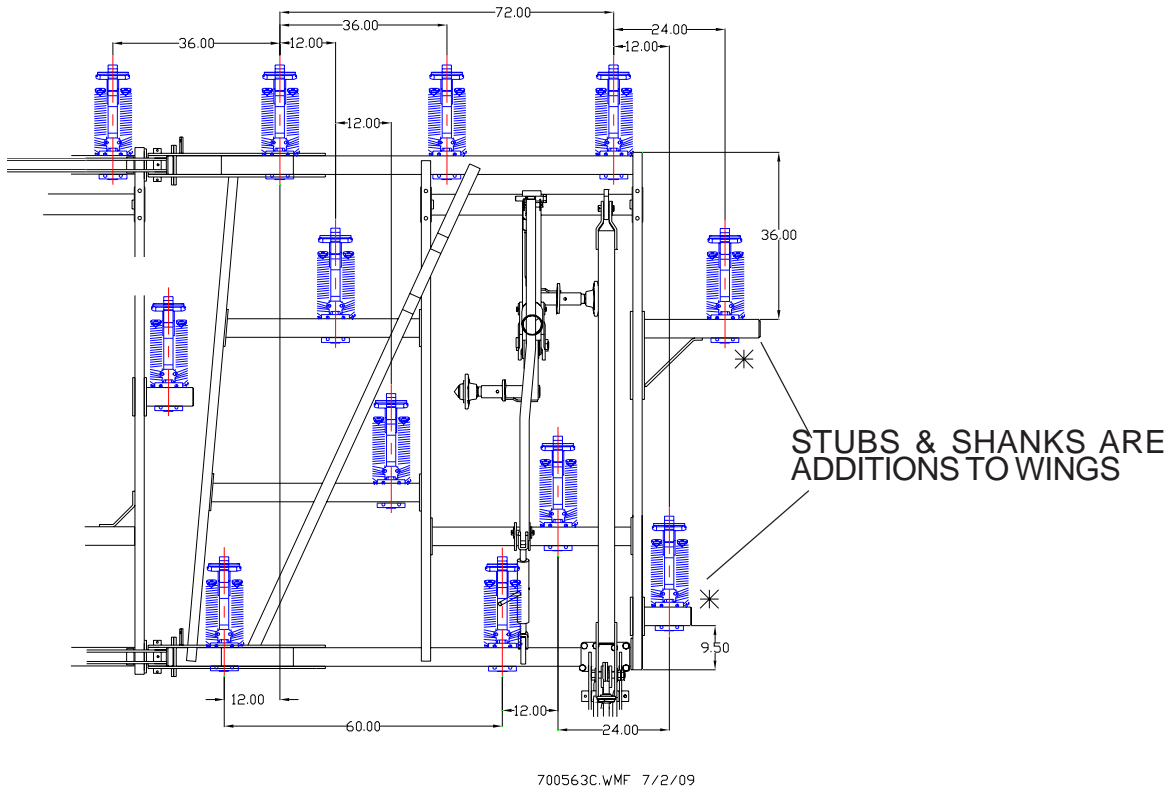
6 FT OUTER WING
REST LOCATION

SHANK PLACEMENT - 12 IN SPACING

6 FT OUTER WING

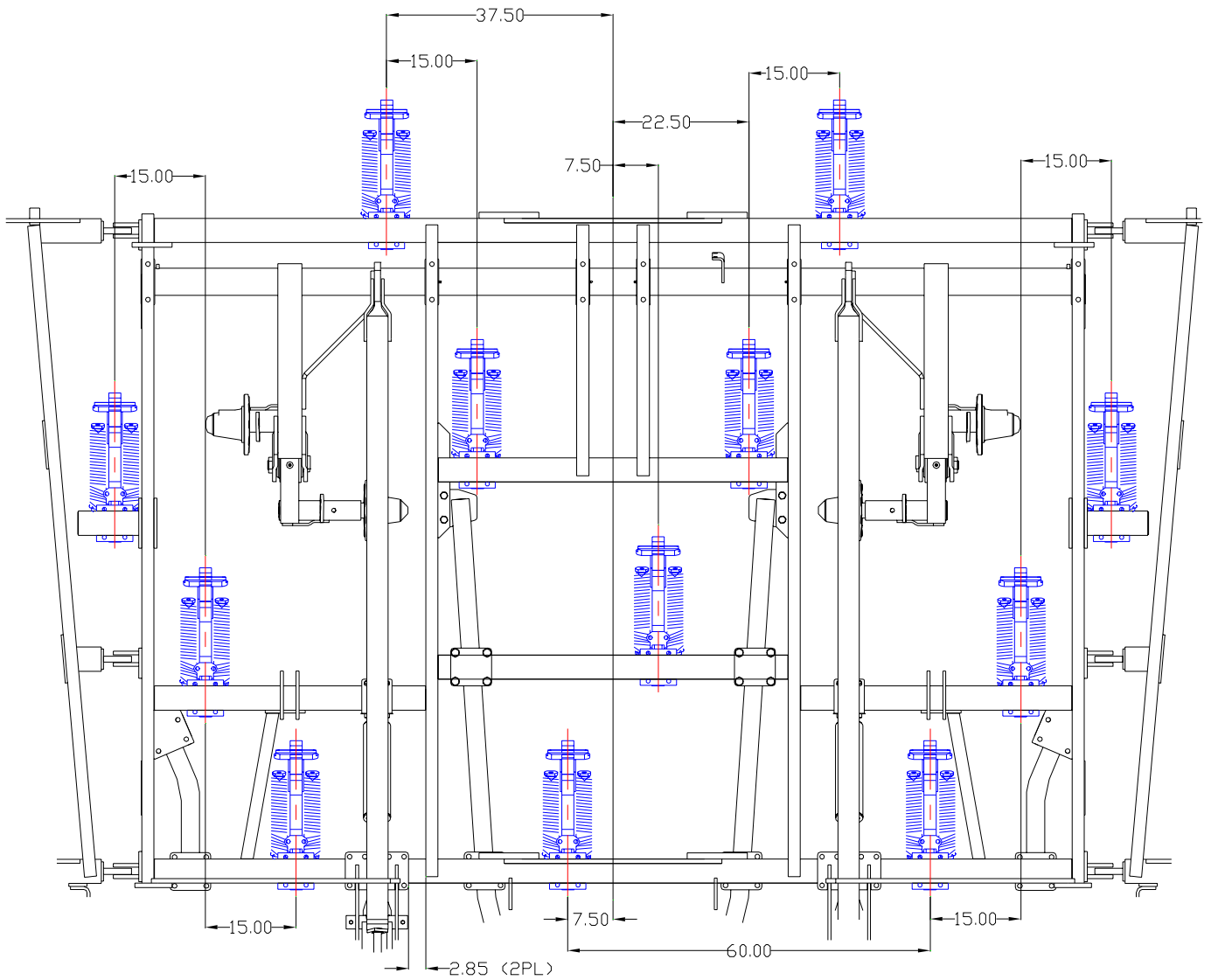


9 FT OUTER WING



SHANK PLACEMENT - 15 IN SPACING

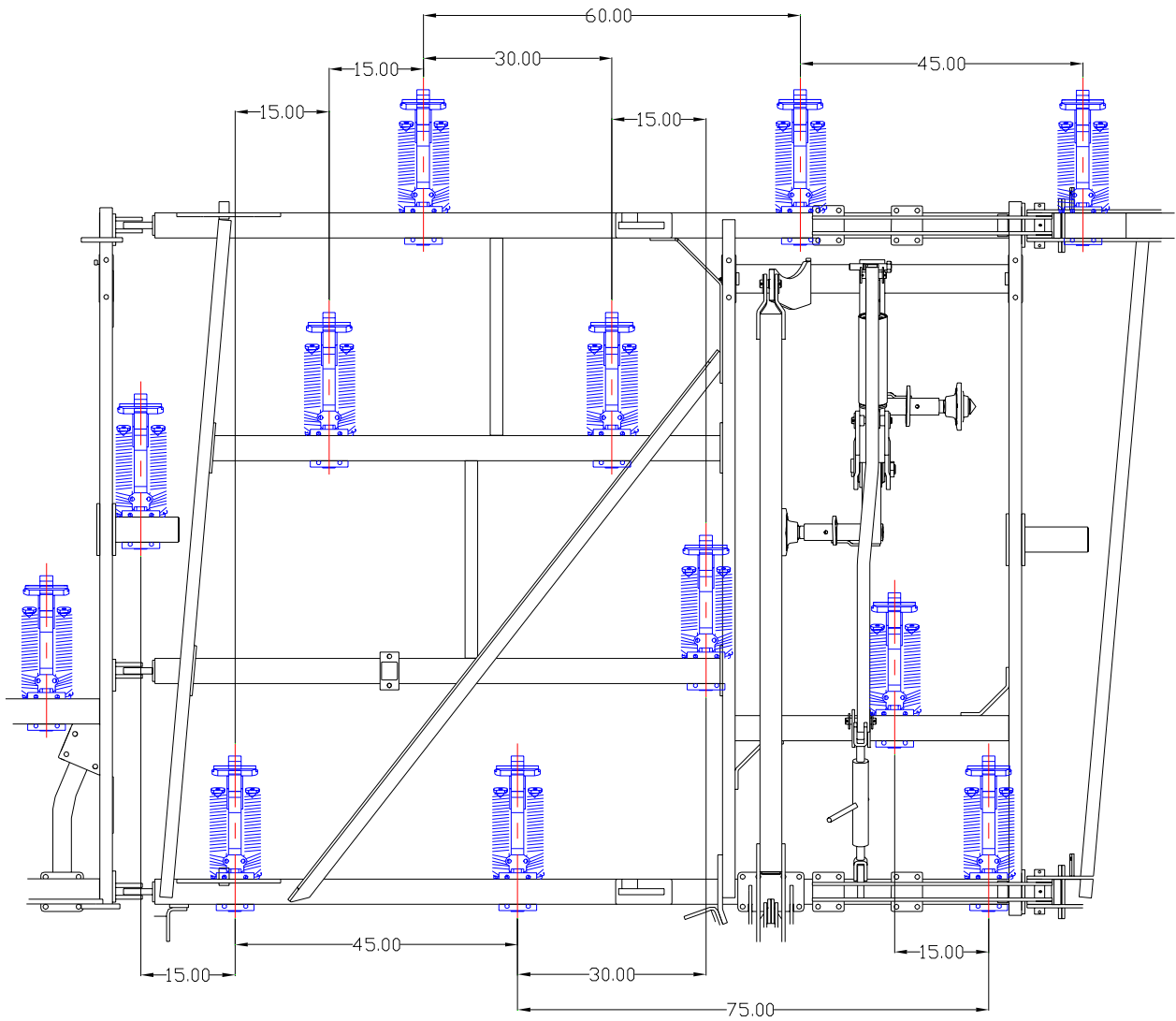
13 FT MAIN FRAME



700563D.WMF 7/2/09

SHANK PLACEMENT - 15 IN SPACING

12 FT INNER WING

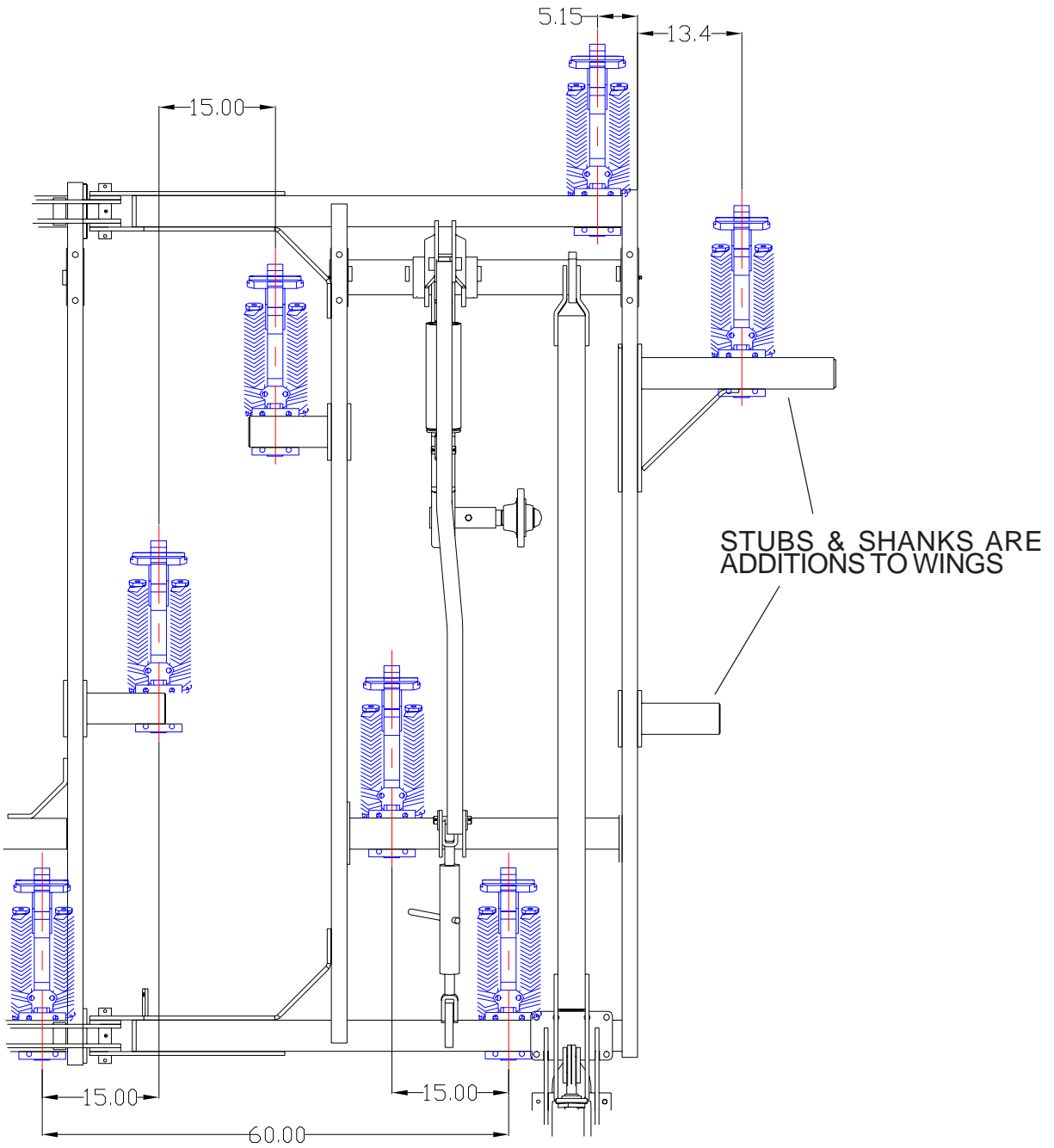


700563E.WMF 7/2/09

DIMENSIONS SHOW TRUE LOCATION,
SHANKS MAY NEED TO BE SHIFTED
LATERALLY TO ALLOW FIT.

SHANK PLACEMENT - 15 IN SPACING

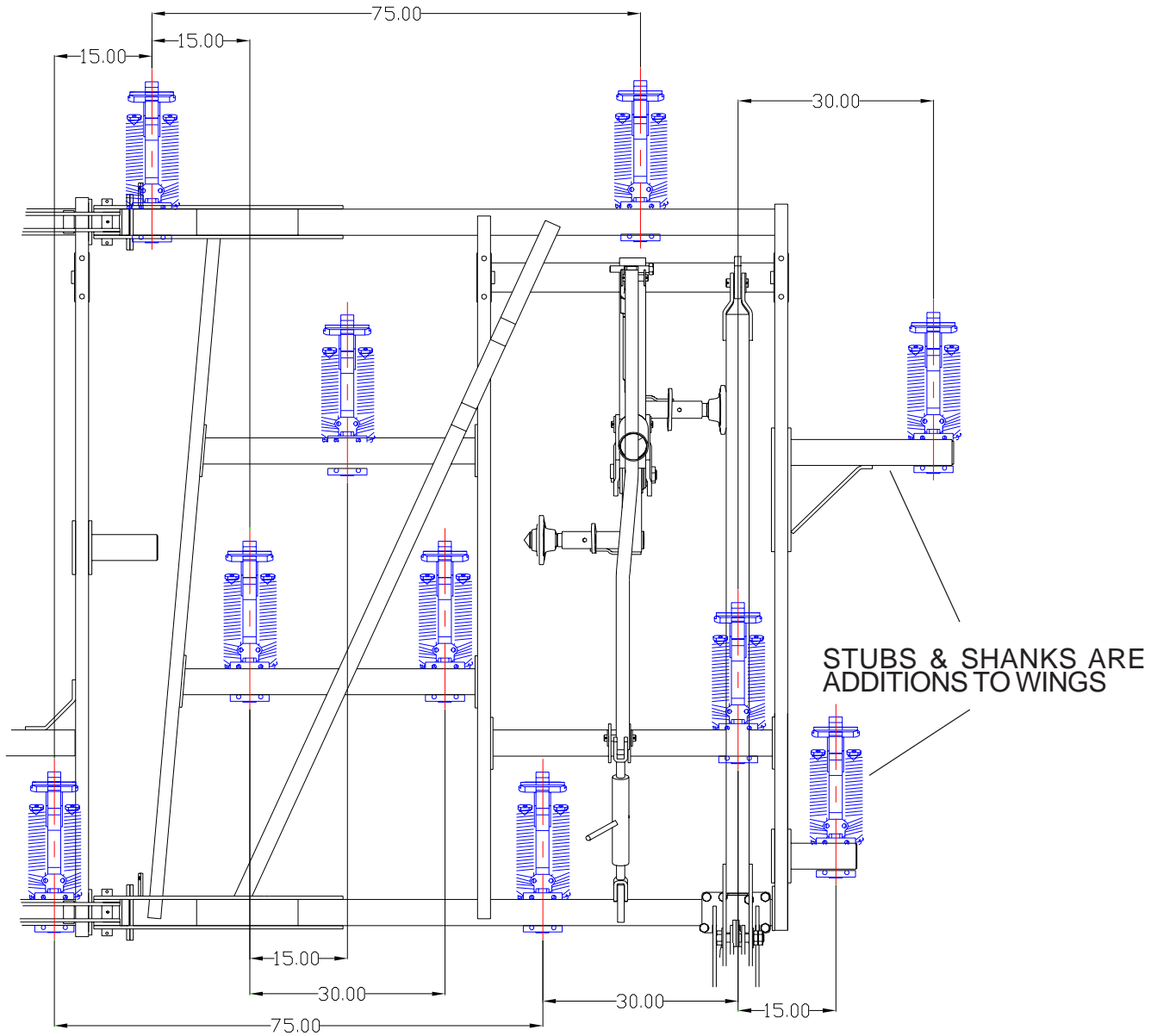
6 FT OUTER WING



DIMENSIONS SHOW TRUE LOCATION,
SHANKS MAY NEED TO BE SHIFTED
LATERALLY TO ALLOW FIT.

SHANK PLACEMENT - 15 IN SPACING

9 FT OUTER WING

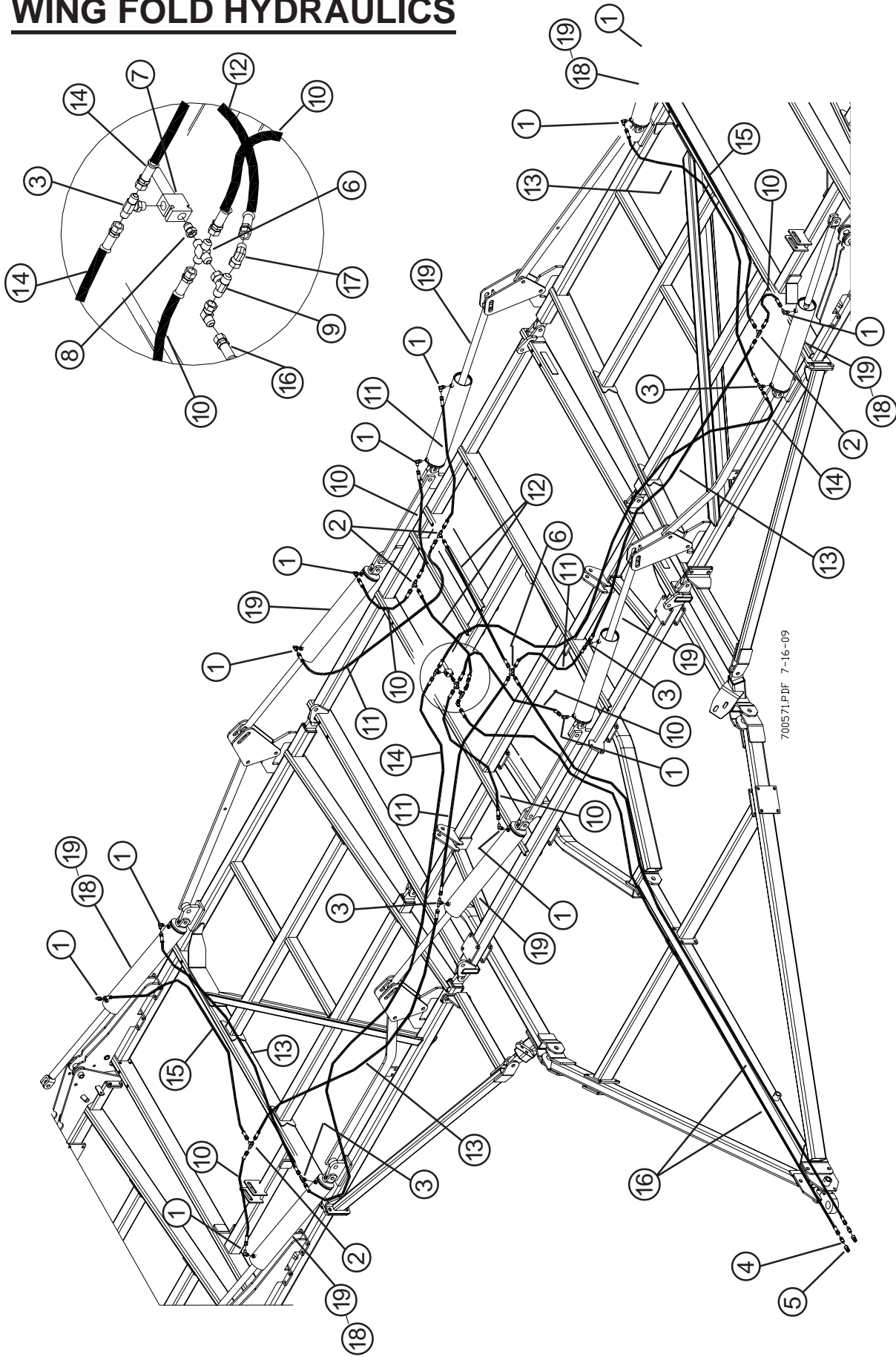


700563F.WMF 7/2/09

DIMENSIONS SHOW TRUE LOCATION,
SHANKS MAY NEED TO BE SHIFTED LAT-
ERALLY TO ALLOW FIT.

THIS PAGE INTENTIONALLY LEFT BLANK

WING FOLD HYDRAULICS



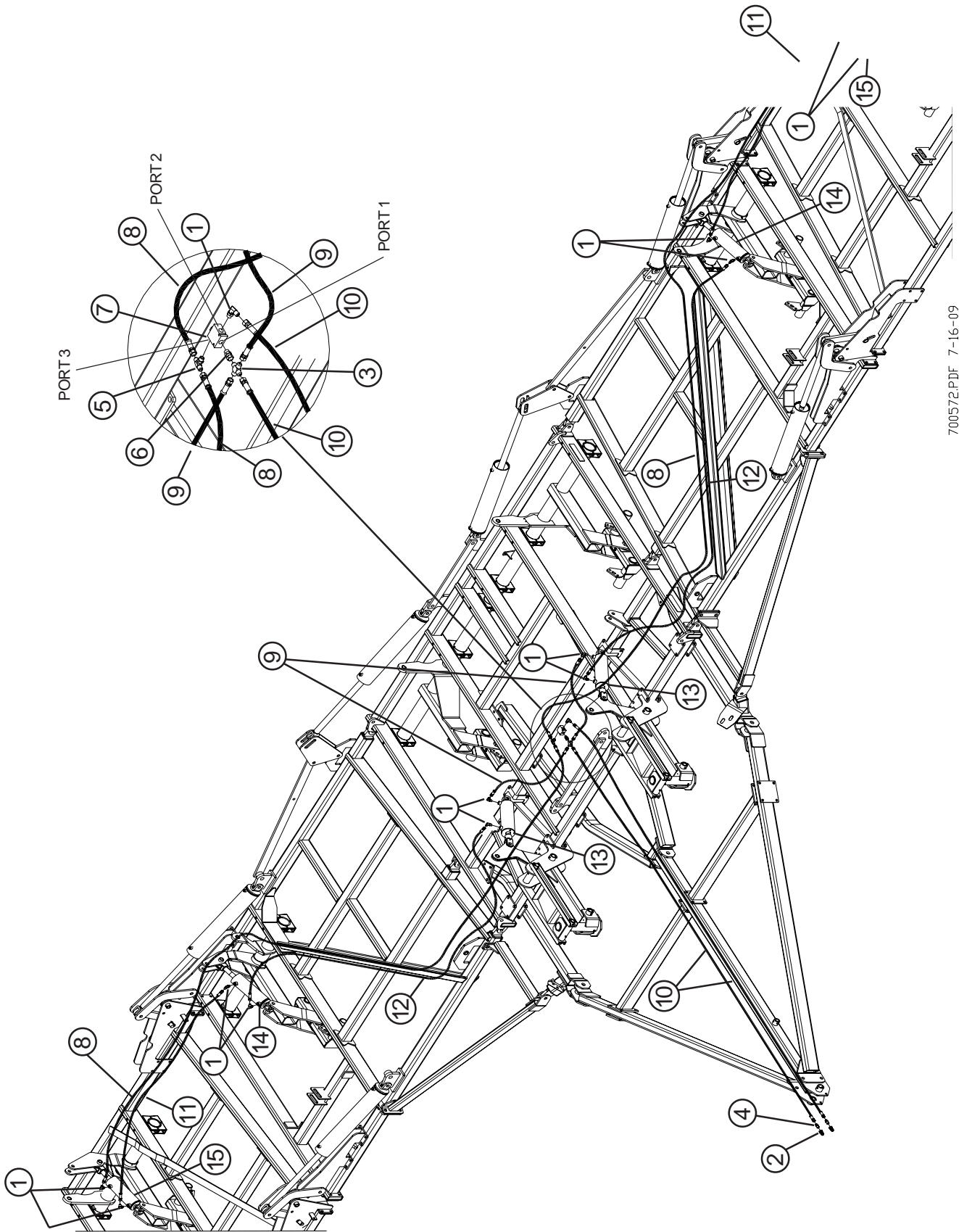
Route hoses as shown along appropriate frame members, loosely securing with the nylon ties provided. Make certain that the hoses clear any pinch point or obstacles when folding and operating. Once unit has been fully hosed and hoses are properly placed tighten the nylon ties.

When first charging the system it is critical to attach the base of the wing fold cylinders only. Support the fold cylinders with a wood block so the cylinders rods can fully extend without interference with the unit. Charge the system to fully extend and retract all wing fold cylinders to properly fill the cylinders with oil. Once all cylinders have been charged retract and secure the rod ends to the specified anchor points.

NOTE: To function properly this wing fold circuit must be connected to the tractor float circuit. This is critical to ensure that the wing will properly float in operation and to minimize trapped system pressure. Modern hydraulic valves can maintain pressure on both sides of the cylinder circuit which may force unplanned cylinder movement. **Always put the circuit into float to relieve any system pressure trapped in the cylinders when storing the unit overnight, transporting or before disconnecting the hoses from the tractor for storage. Failure to relieve system pressure in this circuit can cause unexpected wing movement with possible equipment damage and personnel injuries.**

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	25580	ELB 8MORB X 8MJ	12
2	13238	TEE 8MJ X 8MJ X 8MJ	4
3	56534	TEE 8MJ X 8MJ X 8MORB	5
4	13234	ADP 8MJ X 8MPT	2
5	60640	QUICK DISCONNECT COUPLER	2
6	15910	CROSS 8MJ X 8MJ X 8MJ X 8MJ	2
7	65870	SEQUENCE VALVE	1
8	24004	ADP 8MORB X 8FJX	1
9	69080	TEE 8MJ X 8MJ X 8FJX	1
10	13261	HSE 3KPSI 3/8X30 8FJX-8FJX	6
11	15515	HSE 3KPSI 3/8X62 8FJX-8FJX	4
12	13482	HSE 3KPSI 3/8X108 8FJX-8FJX	2
13	13483	HSE 3KPSI 3/8X120 8FJX-8FJX	4
14	233689	HSE 3KPSI 3/8X180 8FJX-8FJX	2
15	235386	HSE 3KPSI 3/8X137 8FJX-8FJX	2
16	234940	HSE 3KPSI 1/2X216 8FJX-8FJX	2
17	25591	ELB 8MJ X 8FJX	2
18	51229F	HYD CYL 4X30 ILP (A519CY02) (6FT WING)	4
19	20966F	HYD CYL 5X30 ILP (A519CY07) (6FT WING)	4
19	20966F	HYD CYL 5X30 ILP (A519CY07) (9FT WING)	8

MAIN LIFT HYDRAULICS



700572.PDF 7-16-09

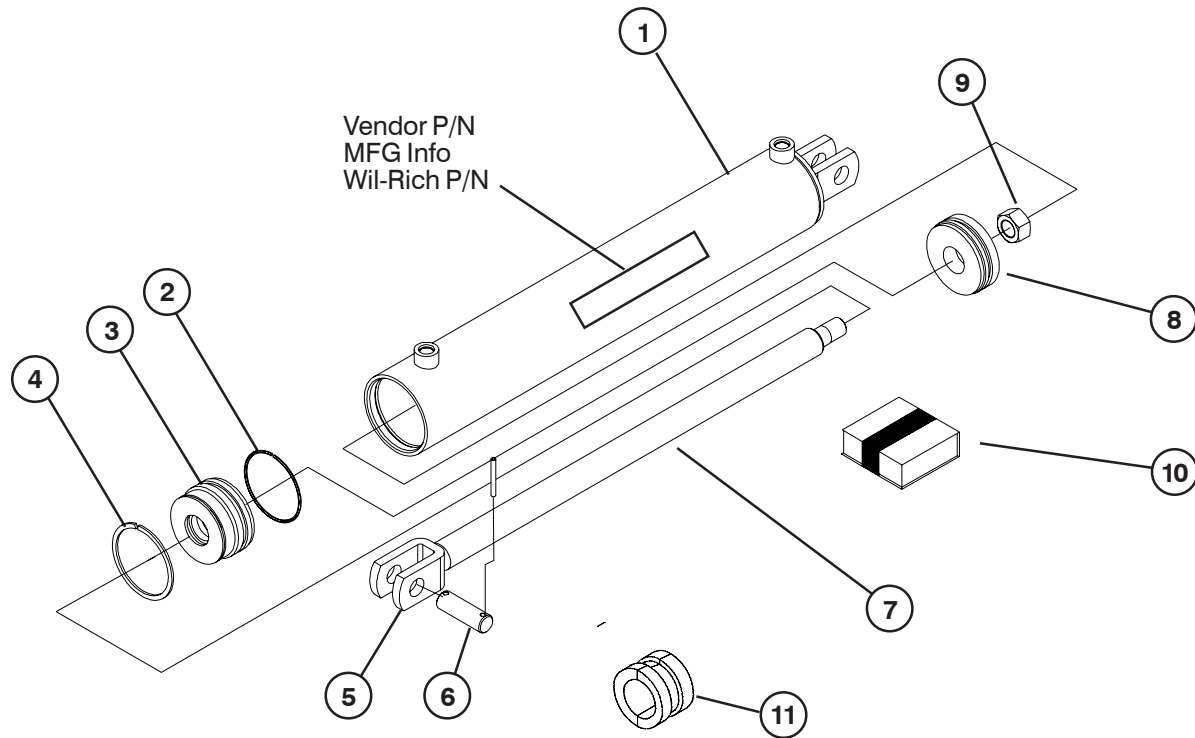
MAIN LIFT HYDRAULICS

Route hoses as shown, making certain that hoses clear all pinch point when operating or folding the unit. Secure the hoses to appropriate frame members with the nylon ties provided. Tighten all hoses and fittings to a snug fit, do not overtighten.

It is critical to charge and sequence the lift system before securing the lift cylinders. Before mounting any of the lift cylinders place the cylinders near their anchor points on the unit. Temporarily secure the cylinders to the frame and support so that the cylinders can be fully extended and retracted without interference. Charge and sequence the system before securing the base and rod ends of the cylinders to the specified anchor points.

ITEM	PART NO.	DESCRIPTION	QTY
1	25580	ELB 8MORB X 8MJ	13
2	60640	QUICK DISCONNECT COUPLER	2
3	15910	CROSS 8MJ X 8MJ X 8MJ X 8MJ	1
4	13234	ADP 8MJ X 8MPT	2
5	56534	TEE 8MJ X 8MJ X 8MORB	1
6	24004	ADP 8MORB X 8FJX	1
7	241317	CHECK VALVE	1
8	237913	HSE 3KPSI 3/8X460 8FJX-8FJX (9FT WING)	2
8	238618	HSE 3KPSI 3/8X420 8FJX-8FJX (6FT WING)	2
9	15515	HSE 3KPSI 3/8X62 8FJX-8FJX	2
10	208612	HSE 3KPSI 1/2X204 8FJX-8FJX	2
11	13484	HSE 3KPSI 3/8X156 8FJX-8FJX (9FT WING)	2
11	13483	HSE 3KPSI 3/8X120 8FJX-8FJX (6FT WING)	2
12	67576	HSE 3KPSI 3/8X276 8FJX-8FJX	2
13	67683F1	HYD CYL 4"X12.56" BP FGS A519CY24	2
14	67688F1	HYD CYL 4"X10.8" BP FGA A519CY25	2
15	220761F1	HYD CYL 4"X9.3" BP FGS A519CY31	2
16	239904	SEAL KIT 4" BP (FGS SK-ACXL4Q1S)	

WING FOLD CYLINDERS



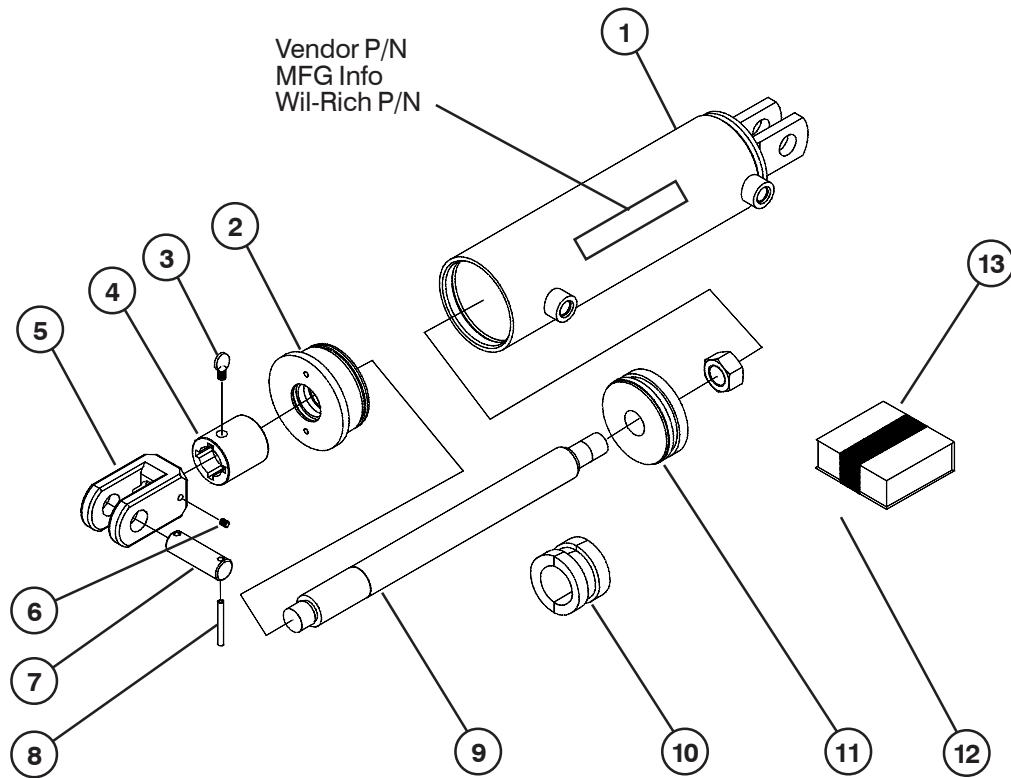
FGS STANDARD CYL ILL.PLT

COLUMN	WIL-RICH PART NO.	SIZE	ROD DIA.	PIN DIA.
A	51242F	3 x 30	1-1/2"	1"
B	51235F	3.5 x 24	1-1/2"	1"
C	51226F	4 x 24	1-1/2"	1"
D	51229F	4 x 30	1-1/2"	1"
E	12062F	5 x 24	2"	1"
F	20966F	5 x 30	2"	1"
G	51241F	3 x 24	1-1/2"	1"

ITEM	DESCRIPTION	REQ.	A	B	C	D	E	F	G
1	Barrel	1	233709	233812	233818	233716	233817	233723	233803
2	Retainer Ring	1	233711	233814	233718	233718	233724	233724	233711
3	Ext. Snap Ring	1	233712	233816	233720	233720	233727	233727	233712
4	Snap Ring Head	1	233713	233815	233719	233719	233726	233726	233713
5	Rod	1	233710	233813	233813	233717	233819	233725	233804
6	Clevis Pin	2	42473	42473	42473	42473	42473	42473	42473
7	Roll Pin 1/4x2-1/4	2	42484	42484	42484	42484	42484	42484	42488
8	Piston	1	233714	233811	233715	233715	233722	233722	233714
9	Lock Nut	1	233700	233700	233700	233700	233721	233721	233700
10	Seal kit	1	233729	233810	233730	233730	233731	233731	233729
11	Stop collar	1	15113	15113	15113	15113	15116	15116	15113

**THOUGH IDENTIFIED, ALL PARTS MAY NOT BE SERVICEABLE.
CHECK WITH WIL-RICH LLC SERVICE PARTS FOR AVAILABILITY.**

MAIN LIFT TOP BYPASS CYLINDER



FGS STANDARD CYL ILL.PLT

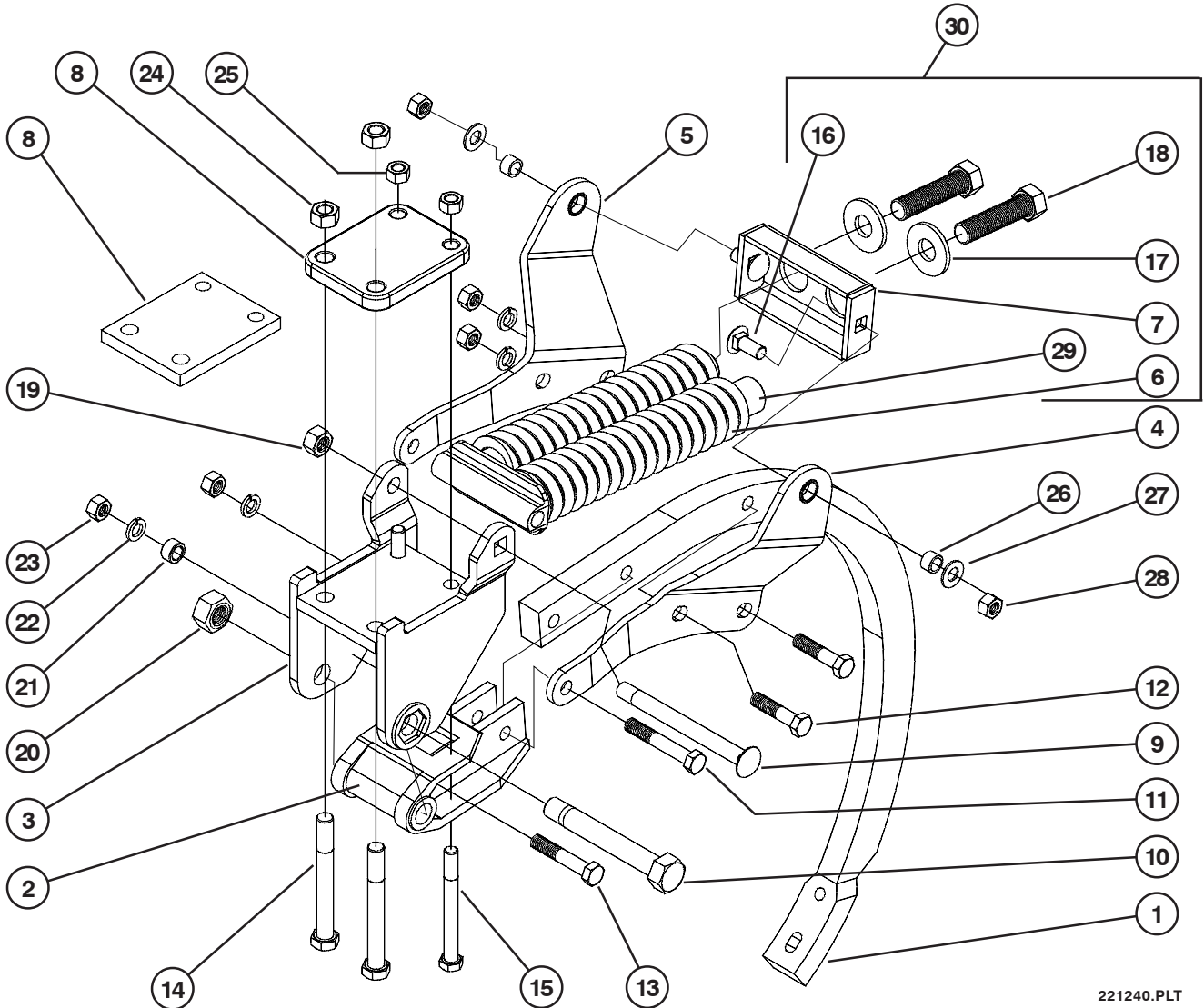
CHECK THE WIL-RICH PART NO. ON THE CYLINDER WHEN ORDERING REQUIRED PARTS

COLUMN	WIL-RICH PART NO.	SIZE	ROD DIA.	PIN DIA.
A	67687F1	4 x 9.3	1-1/2"	1"
B	67688F1	4 x 10.8	1-1/2"	1"
C	67683F1	4x12.6	1-1/2"	1"

ITEM	DESCRIPTION	REQ.	A	B	C
1	Barrel	1	239095	239096	239098
2	Internal Head	1	233704	233704	233704
3	Thumb Screw	1	88387	88387	88387
4	Screw Collar	1	55665	55665	55665
5	Rod End Clevis	1	67657	67657	67657
6	Set Screw	1	88706	88706	88706
7	HDLS Pin 1x2-3/8	2	42473	42473	42473
8	Roll Pin 1/4x3.12	4	42484	42484	42484
9	Cylinder Rod	1	233703	233706	233708
10	Stop Collars	1	15113	15113	15113
11	Piston	1	239094	239094	239094
12	Rod Nut	1	233700	233700	233700
13	Seal Kit	1	239904	239904	239904

THOUGH IDENTIFIED, ALL PARTS MAY NOT BE SERVICABLE. CHECK WITH WIL-RICH LLC SERVICE PARTS FOR AVAILABILITY.

1000 LB CP SHANK ASSEMBLY - FLAT MOUNT



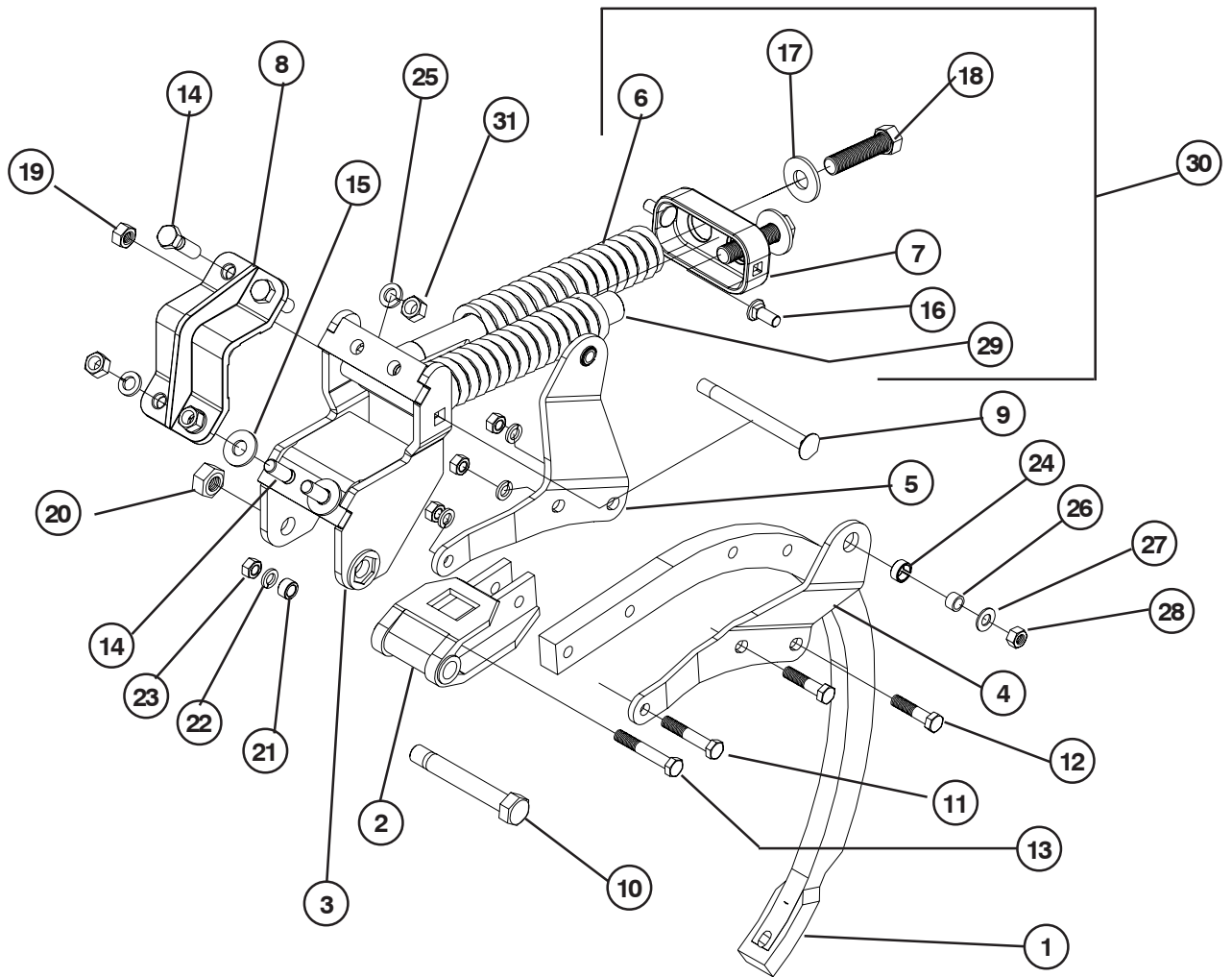
221240.PLT

1000 LB SHANK AVAILABLE ON 15 IN SPACING ONLY

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	64977	SHANK (GRAY)	15	88933	5/8NCx6 GR8 BOLT
2	67196	CAST SHANK HOLDER	16	89154	5/8NCx1-1/2SHTNCK CARRIAGE BOLT
3	221193	SHANK BRACKET	17	88196	WSHR FLAT 1(1-1/16x2-1/2ACT)
4	221194	SIDE PLATE LH	18	66226	1NCx4 GR2 HVY HEX BLT W/NYLK
5	221195	SIDE PLATE RH	19	88356	NUT 2POS LK 3/4NC
6	23378	COMPRESSION SPRING (GRAY)	20	88169	NUT 2POS LK 1NF
7	65373C	SPRING RETAINER	21	56932	9/16 x 1 SPACER
8	234084	CAST TOP PLATE (GRAY)	22	88129	WSHR HLK 5/8ID(11/16ACT)
	221196	MOUNT PLATE - PAINTED	23	88126	NUT HEX 5/8NC
9	69030	3/4NC-2A GR8 CARRIAGE BOLT	24	89386	NUT NYL 3/4NF
10	14987	PIVOT BOLT (CP SHANK)	25	88627	NUT NLK 5/8NC
11	88945	5/8NCx4 GR GR8 BOLT	26	64978	BUSHING
12	88949	5/8NCx2-3/4 GR8 BOLT	27	88630	WSHR FLT 5/8SAE(21/32X1-5/16)
13	88292	5/8NCx3-1/2 GR5 BOLT	28	89158	NUT TOP LK 5/8NC
14	89385	3/4NFx6-1/2 GR8 BOLT	29	222037	SPRING BRACKET
			30	223527	COMPRESSION SPRING PACKAGE

COMPARE THE SHANK COMPONENTS TO DEFINE SERVICE PARTS REQUIRED

1000 LB CP SHANK ASSEMBLY - CORNER MOUNT



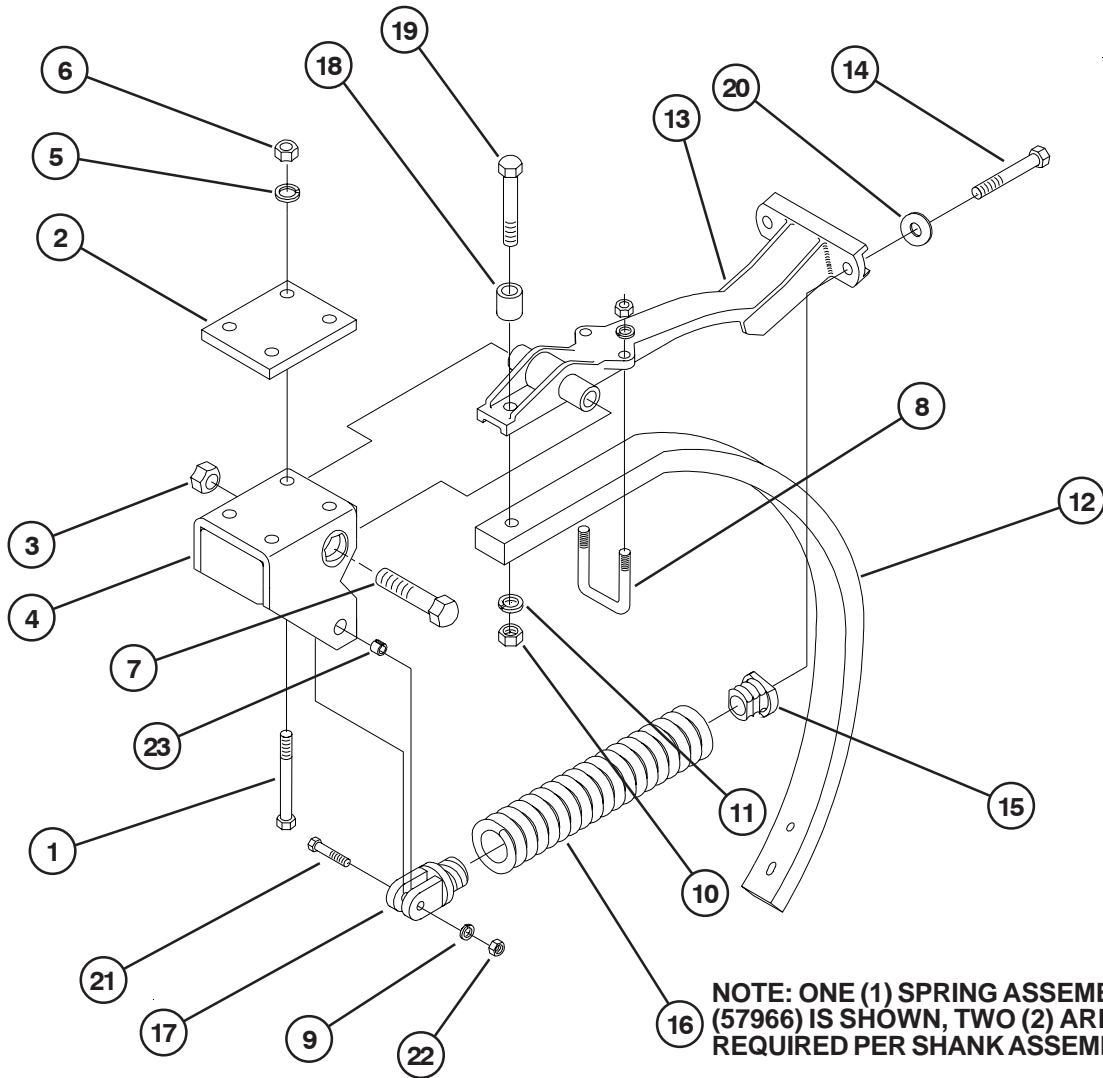
221240.PLT

1000 LB SHANK AVAILABLE ON 15 IN SPACING ONLY

ITEM	PART NO.	DESCRIPTION
1	64977	SHANK (GRAY)
2	67196	CAST SHANK HOLDER
3	235773	CHISEL PLOW SHANK HOLDER
4	221194	SIDE PLATE LH
5	221195	SIDE PLATE RH
6	23378	COMPRESSION SPRING (GRAY)
7	65373C	SPRING RETAINER
8	235768	CAST CORNER CAP (GRAY)
9	69030	3/4NC-2A GR8 CARRIAGE BOLT
10	14987	PIVOT BOLT (CP SHANK)
11	88945	5/8NCx4 GR GR8 BOLT
12	88949	5/8NCx2-3/4 GR8 BOLT
13	88292	5/8NCx3-1/2 GR5 BOLT
14	89433	3/4NCx2-1/4 GR5 BOLT
15	88131	WSHR FLAT 3/4 (13/16X2ACT) Z

COMPARE THE SHANK COMPONENTS TO DEFINE SERVICE PARTS REQUIRED

650 LB CP SHANK ASSEMBLY

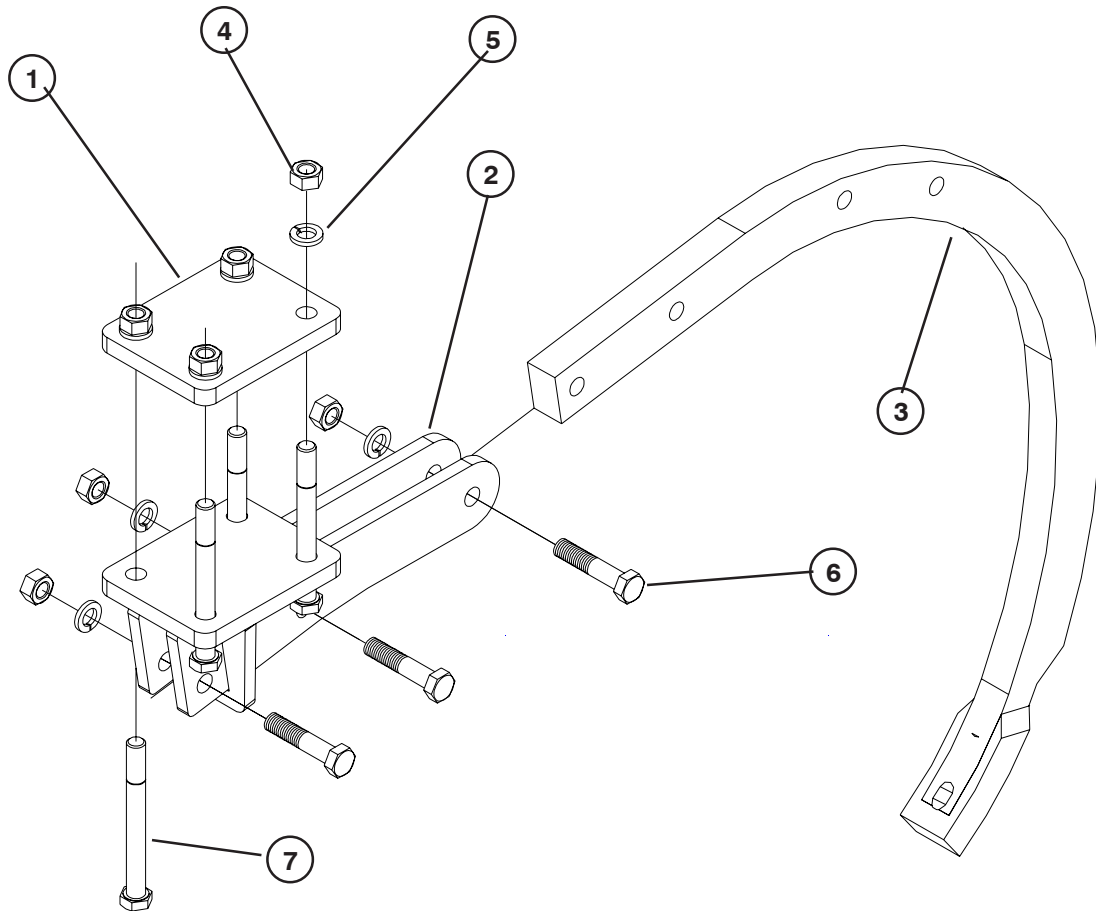


NOTE: ONE (1) SPRING ASSEMBLY (57966) IS SHOWN, TWO (2) ARE REQUIRED PER SHANK ASSEMBLY

ITEM	PART NO	DESCRIPTION
	57969	32" 5/4 CP Shank Assembly
	57945	16.12 Spring Assembly (32") (Includes Items 15-17)
1	88295	5/8NCx6 GR5 Bolt
2	12751	Frame Plate
3	88169	1NF Lock Nut
4	57941	Shank Holder Frame
5	88129	5/8 Lock Washer
6	88126	5/8NC Nut
7	14987	Pivot Bolt
8	88441	5/8NCx2x3-1/4 U-Bolt
9	88303	1/2 Lock Washer

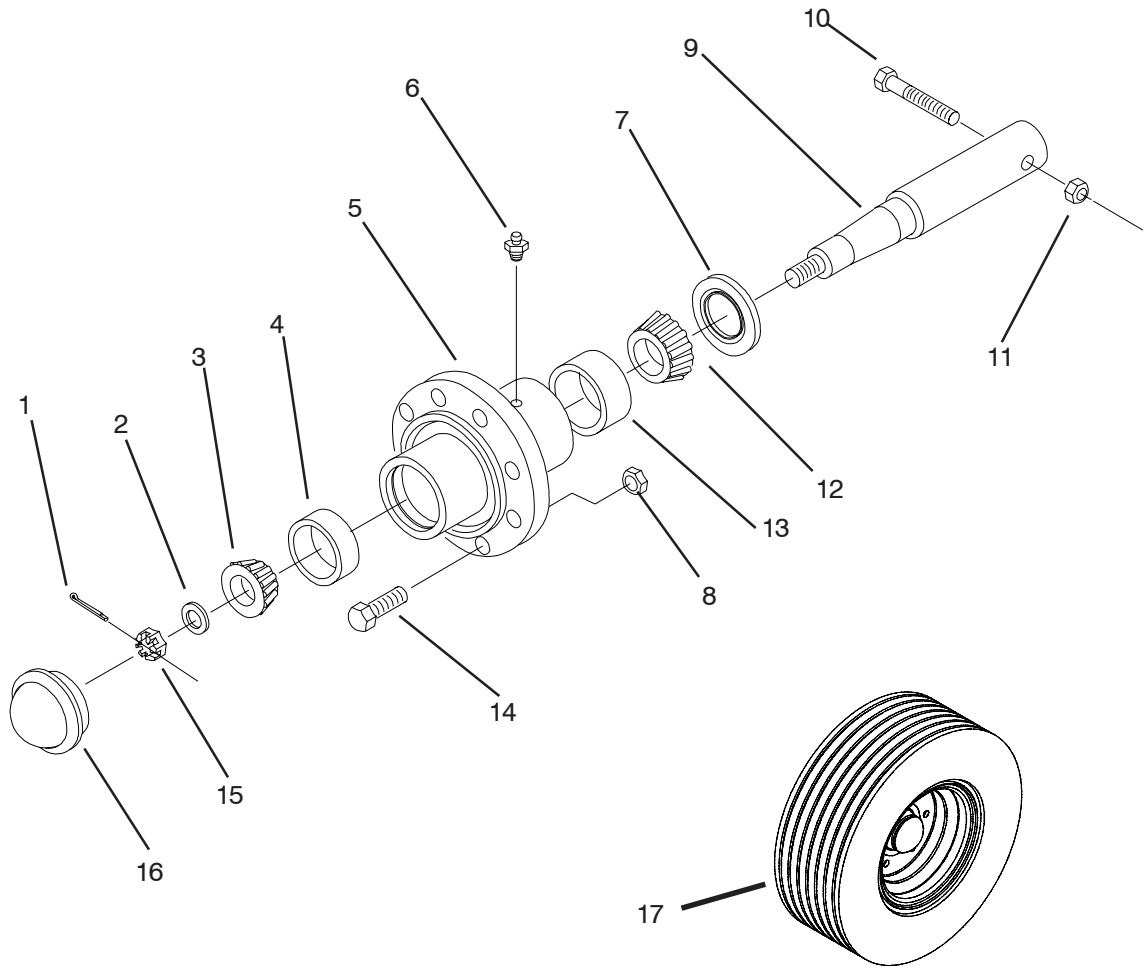
ITEM	PART NO	DESCRIPTION
10	89080	3/4NC Nut
11	88130	3/4 Lock Washer
12	55484	32" 5/4 CP Shank
13	62591	Shank Holder
14	10210	Adjustment Bolt
15	57948	Cast Spring Plug
16	57961	13-15/16 Extension Spring (32")
17	57946	Spring Clevis
18	62639	Stop Collar
19	88421	3/4NCx4-1/2 GR5 Bolt
20	88548	3/4 SAE Flat Washer(13/16x1-1/2)
21	58032	1/2NCx2-1/2 HDN Bolt
22	88621	1/2NC Nylock Nut
23	56908	1/2 Spring Tension Bushing

RIGID CP SHANK ASSEMBLY



ITEM	PART NO	DESCRIPTION
	220090	32" 54° RIGID CP SHANK ASSEMBLY
1	220084	4HOLE BOLT PLATE(3.19X4.63)GRY
2	220089	RIGID CP SHANK BRACKET
3	64977	SHANK (GRAY)
4	88126	NUT HEX 5/8-11NC 5Z
5	88129	WSHR HLK 5/8ID(11/16ACT) Z
6	88282	BLT HEX 5/8-11NCX3-1/2 5Z
7	88933	BLT HEX 3/4-10NCX6 5Z

8-BOLT HUB & 2-1/2" SPINDLE

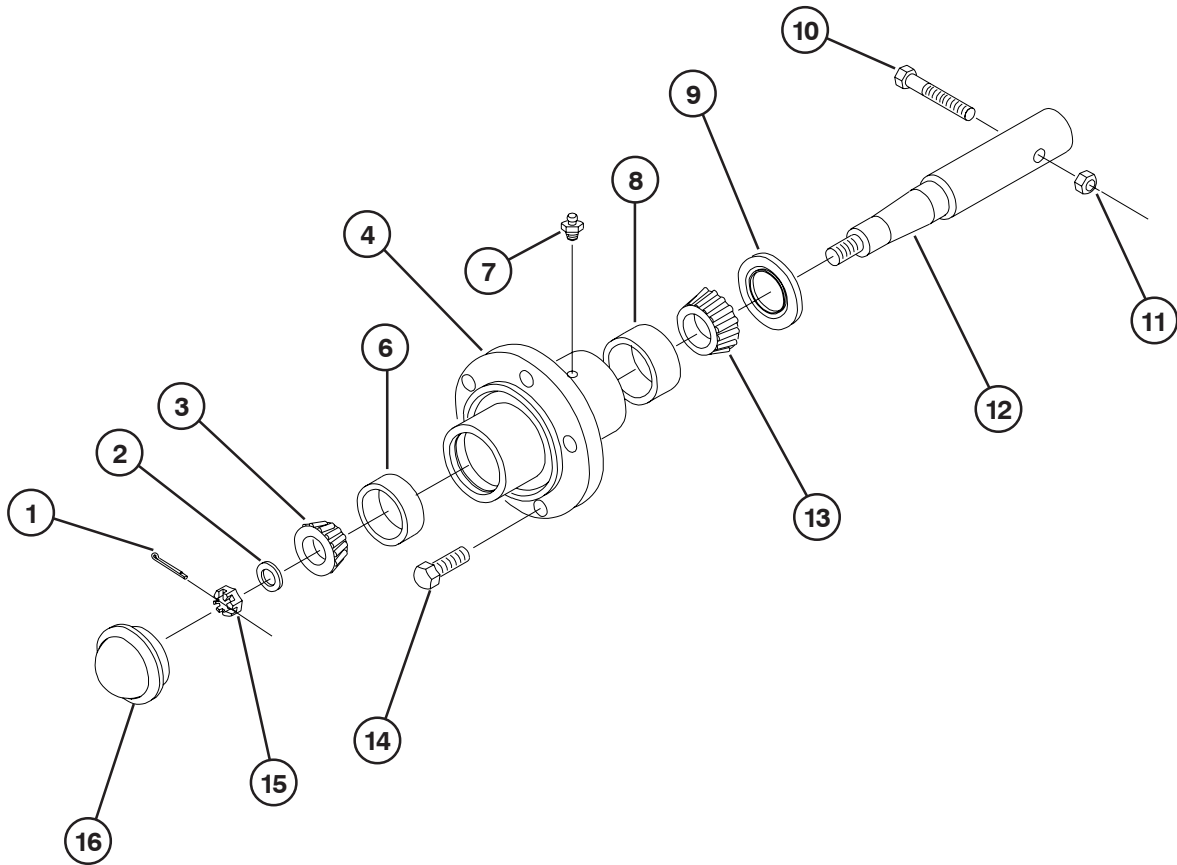


78195A

ZE

ITEM	PART NO	DESCRIPTION	ITEM	PART NO	DESCRIPTION
	16154	8-BOLT HUB & SPINDLE (RED) (INCLUDES ITEMS 1-7,9,12-16)	9	16156	2-1/2" AXLE SPINDLE (14-3/4)
1	88301	3/16x1-1/2 COTTER PIN	10	88298	5/8NCx4 GR5 BOLT
2	64050	2-1/2ODx1-1/16ID SPINDLE WASHER	11	88369	5/8NC LOCK NUT
3	16081	OUTER BEARING CONE (TIMKIN# 2790)	12	16083	INNER BEARING CONE (TIMKIN# 3780)
4	16082	OUTER BEARING CUP (TIMKIN# 2720)	13	16084	INNER BEARING CUP (TIMKIN# 3720)
5	41054	8-BOLT PRESSED HUB (RED) (INCLUDES ITEMS 4, 6 & 12)	14	63831	9/16NFx1-1/8 90° WHEEL BOLT
6	88143	1/4NPT GREASE FITTING	15	88299	1NF SLOTTED NUT
7	235298	2-1/2" SINGLE LIP SEAL	16	16077	DUST CAP
8	89458	9/16NF JAM NUT	17	222259	31x13.5 12 PLY 8 BOLT WHEEL ASSY
				203196	15x10 WHEEL RIM
				57908	VALVE ASSEMBLY
				222088	31x13.5 12PLY TIRE

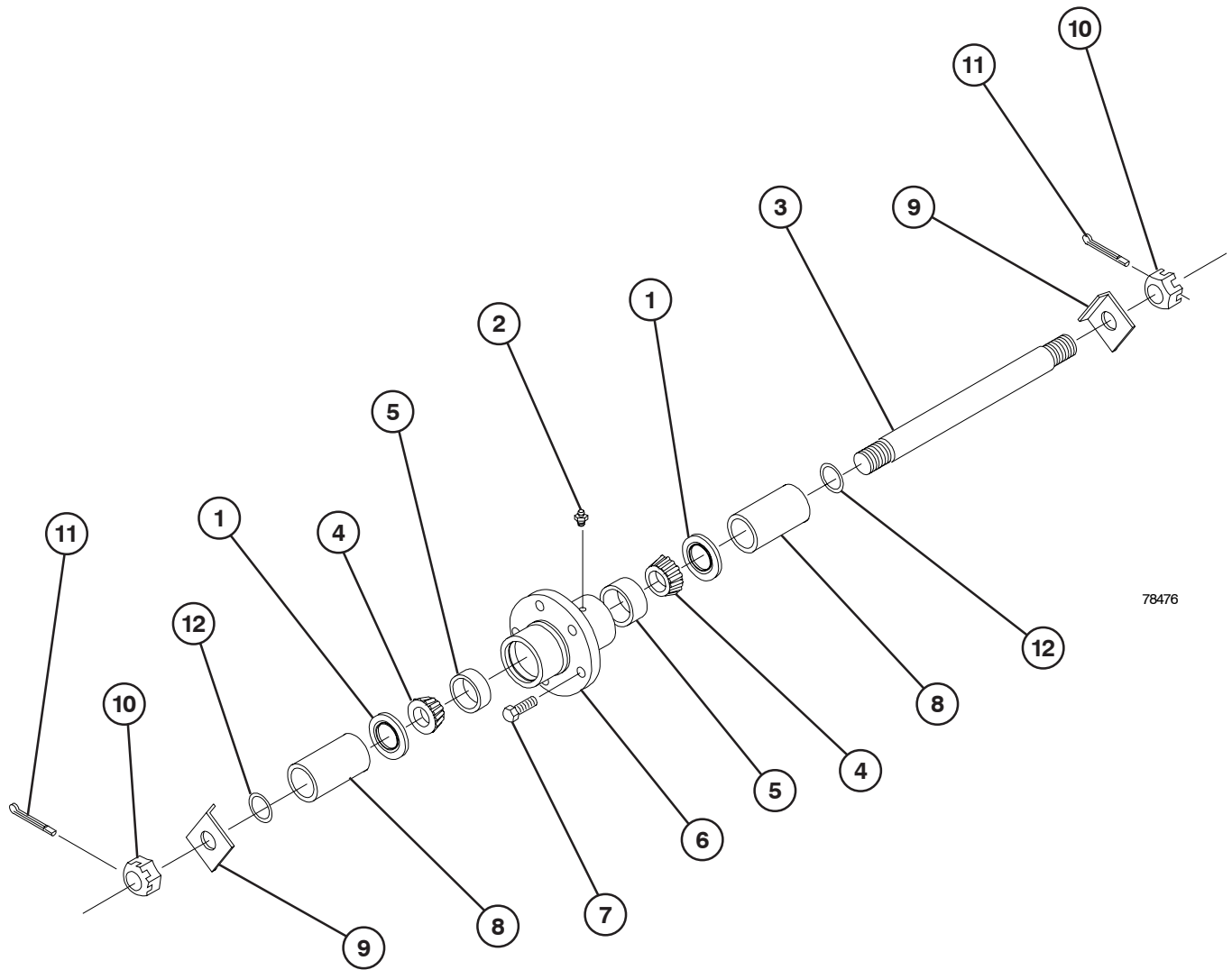
6 BOLT HUB WITH 2" SPINDLE



77836.PLT

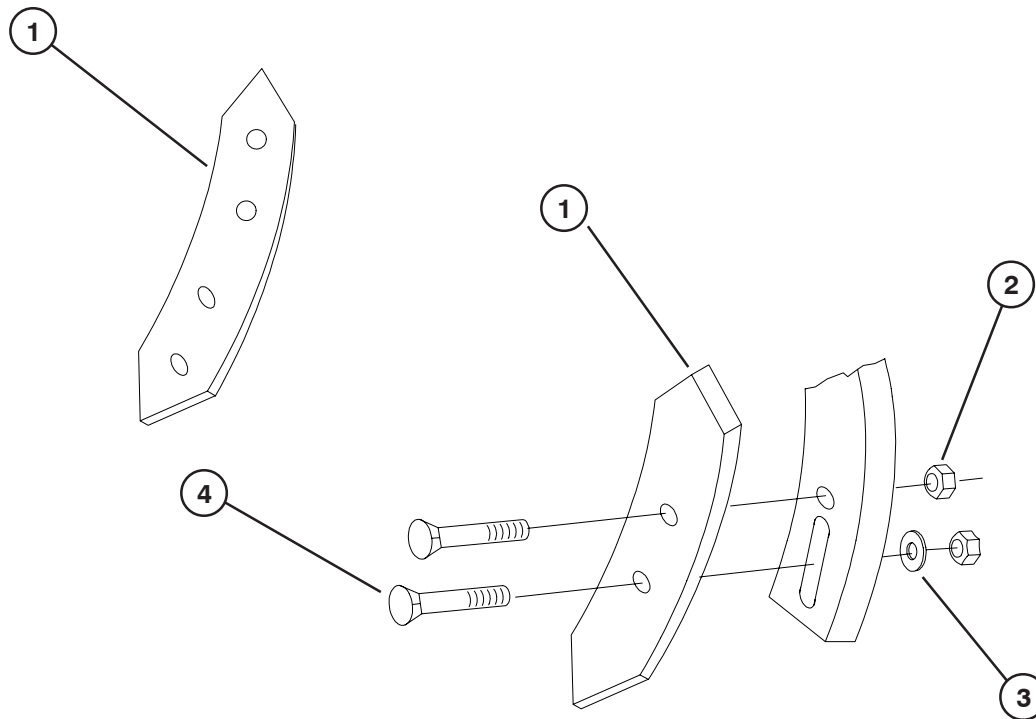
ITEM	PART NO.	DESCRIPTION
	14131	6 BOLT HUB & 2" SPINDLE ASSY (INCLUDES 1-4 & 9-16)
1	88301	PIN COT 3/16DIAx1-1/2
2	16094	SPINDLE WASHER 7/8ID
3	10345	BEARING CONE 1-1/4ID (LM67048)
4	24097	2IN PRESSED HUB W/ CUPS
5	10344	BEARING CUP 2.328 OD (LM67010)
6	88263	FTG GRS 1/8NPT 1610-BL(11/16")
7	14249	BEARING CUP 2.891 OD (LM501310)
8	58546	2" TRIPLE LIP SEAL
9	88429	1/2NFx3-1/4 GR5 BOLT
10	88304	NUT 2POSLK 1/2NF
11	14251	2" AXLE SPINDLE
12	14248	BEARING CONE 1-5/8ID (LM501349)
13	88142	WHEEL BOLT 1/2NFx1 (13/16 HEAD)
14	88340	NUT SLTD 7/8NF
15	11381	DUST CAP
16	11381	DUST CAP

GAUGE WHEEL HUB & SPINDLE



ITEM	PART NO	DESCRIPTION
	58294	YOKE HUB ASSEMBLY (22" SPINDLE)
1	208981	2" INTERNAL TRIPLE LIP SEAL
2	88263	1/8"NPT GREASE FITTING
3	58204	1-1/2" DIAx22" SPINDLE
4	54731	BEARING CONE
5	16082	BEARING CUP
6	62389	6-BOLT HUB W/CUPS (INCLUDES ITEM 5) REPLACE BY 54729

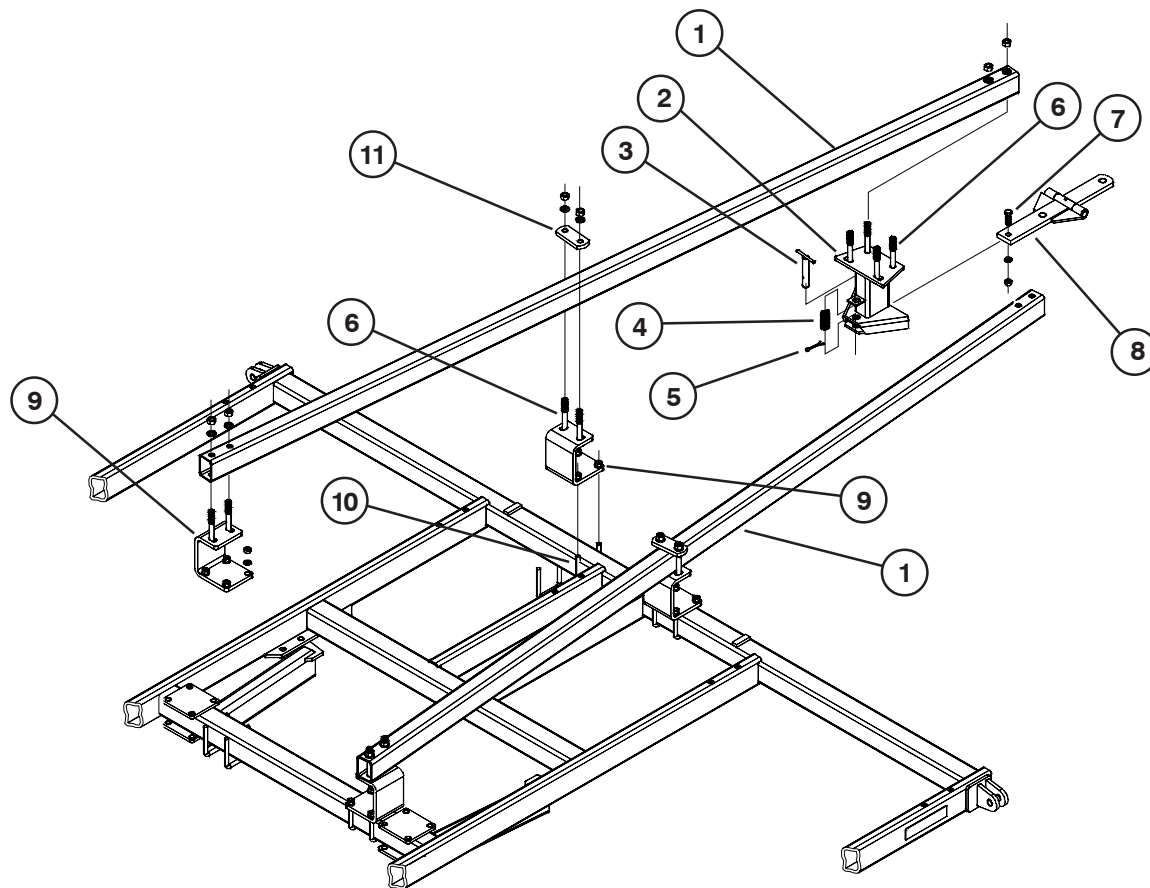
ITEM	PART NO	DESCRIPTION
7	63831	9/16"NFx1-1/8" WHEEL BOLT
8	62400	2"ODx6" SEALED SPINDLE TUBE MUST ORDER ITEM 12 WITH TUBE
9	55150	SPINDLE LOCK
10	88299	1"NF SLOTTED NUT
11	88133	3/16"x2" COTTER PIN
12	12456	SHAFT SEAL O-RING (REQ. W/62400)



77905A

ITEM	PART NO	DESCRIPTION
1	222696	5/8x2x15 Spike w/ Hrwe Pkg
	240690	3" Twisted Concave LH Spike w/ Hrwe Pkg
	240691	3" Twisted Concave RH Spike w/ Hrwe Pkg
	223817	Spike, 5/8"x2"x15 (Plain)
2	88346	NUT HVY 1/2-13NC 5P
3	88347	WSHR FLAT 1/2(9/16X1-3/8ACT) Z
4	88384	BLT PLW 1/2-13NCX2-1/2NO3 P

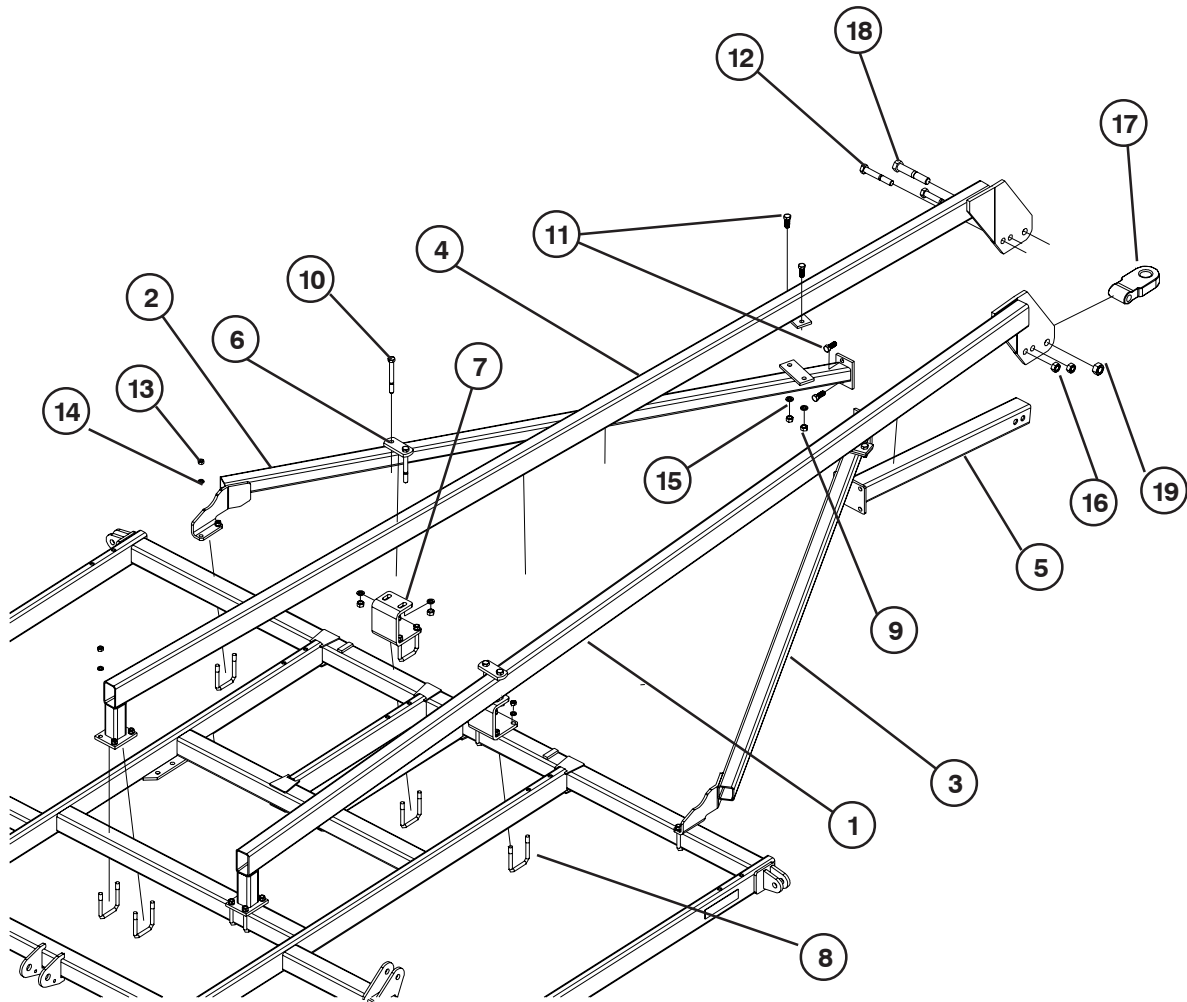
REAR HITCH W/HINGED TONGUE



ITEM	PART NO.	DESCRIPTION
1	233371	REAR HITCH TUBE (164")
2	58281	HITCH MOUNT
3	58284	HITCH PIN(1x2-27/32)
4	15940	SPRING
5	88101	COTTER PIN (1/4x2-1/2)
6	88293	3/4NCx6 GR5 BOLT
7	88294	5/8NCx2 GR5 BOLT
8	18443	HINGE TONGUE ASSEMBLY
9	233375	HITCH TUBE MOUNT
10	88145	5/8NCx4x5-1/4 U-BOLT
11	233372	TUBE STRAP

THIS HITCH FITS ONLY 5830 AND 5850 13FT MAIN FRAMES AND MAY PREVENT USE OF OTHER OPTIONS.

HEAVY DUTY REAR HITCH

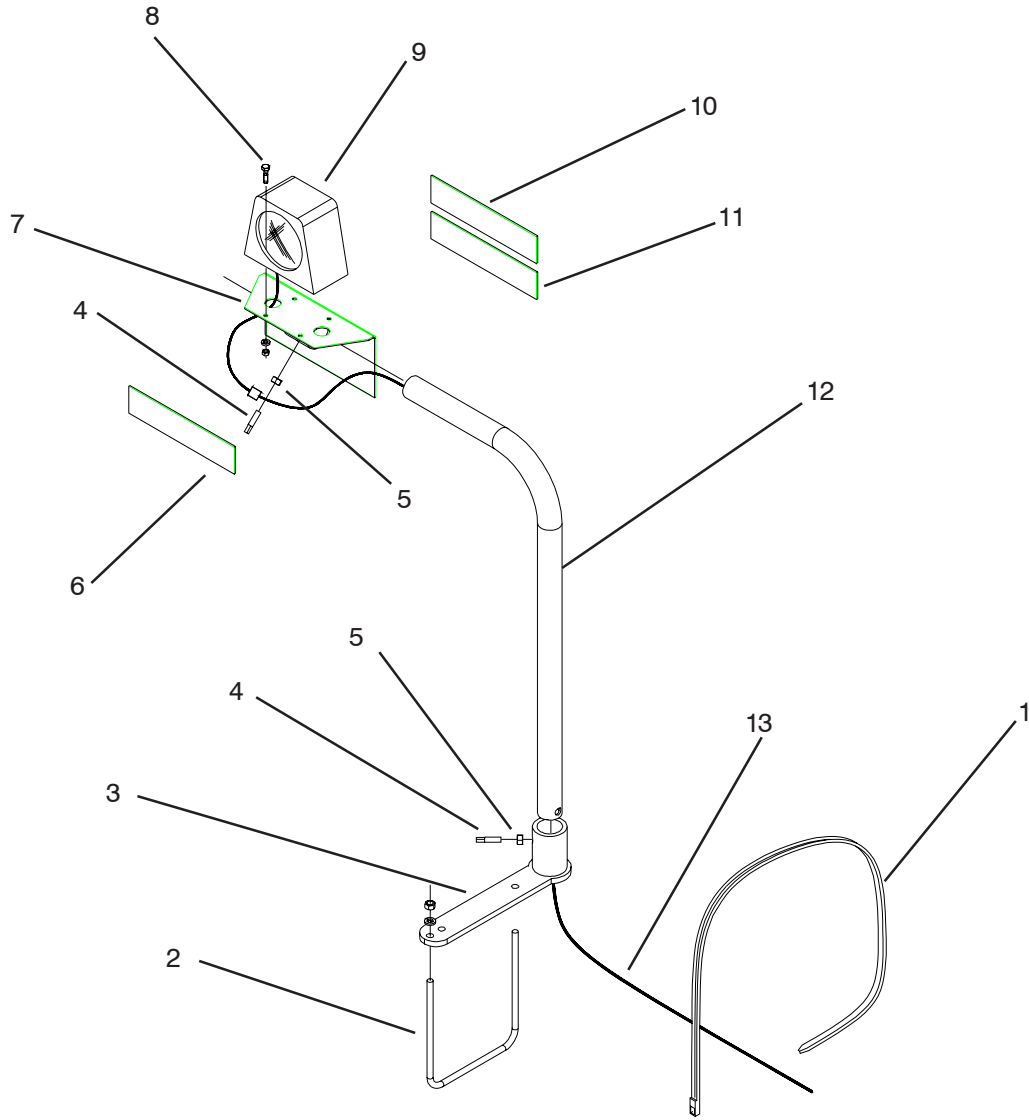


THIS HITCH FITS ONLY 5830 AND 5850 13FT MAIN FRAMES AND MAY PREVENT USE OF OTHER OPTIONS.

ITEM	PART NO	DESCRIPTION
1	233398	LEFT INNER HITCH TUBE
2	233400	RIGHT OUTER HITCH BRACE
3	233401	LEFT OUTER HITCH BRACE
4	233402	RIGHT INNER HITCH BRACE
5	233408	HITCH DOWN TUBE
6	233372	TUBE STRAP
7	233375	HITCH MOUNT
8	88145	BLT-U 5/8-11NCX4X5-1/4 Z
9	88110	NUT HEX 3/4-10NC 5Z
10	88335	BLT HEX 3/4-10NCX7 5Z

ITEM	PART NO	DESCRIPTION
11	88290	BLT HEX 3/4-10NCX2 8YZ
12	88666	BLT HEX 1-8NCX6-1/2 5Z
13	88126	NUT HEX 5/8-11NC 5Z
14	88129	WSHR HLK 5/8ID(11/16ACT) Z
15	88130	WSHR HLK 3/4ID(13/16ACT) Z
16	88658	NUT TOP LK 1-8NC 5Z
17	18237	CAST HITCH
18	89134	BLT HEX 1-1/4-7NCX7 5Z
19	88430	NUT 2PosLK 1-1/4-7NC 5Z

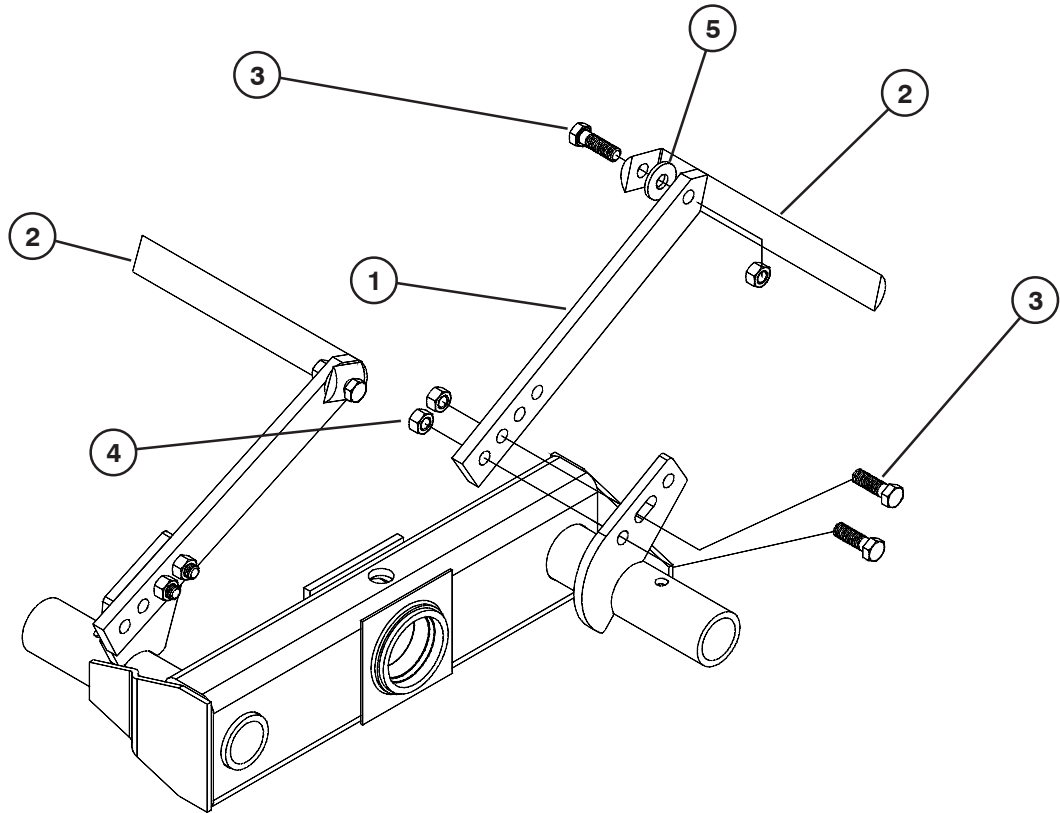
LIGHTS



ITEM	PART NO	DESCRIPTION
	223163	LIGHT KIT (RIDGID)
	234606	LIGHT KIT (4, 6 WING)
	223780	LIGHT KIT (9, 12 WING)
1	13479	4" SQUARE TIE LOOP
2	88385	3/8NCx4x4-3/4 U-BOLT
3	223130	SHORT BASE PIVOT
4	88702	3/8NCx3/4 SQ HEAD SET SCREW
5	88103	3/8NC NUT
6	22372	YELLOW DECAL
7	223126	LIGHT/REFLECTOR BRACKET
8	88203	1/4NCx1 BOLT
9	223143	AMBER LIGHT
	223144	RED LIGHT
10	22371	RED DECAL

ITEM	PART NO	DESCRIPTION
11	223118	RED/ORANGE FLUORESCENT DECAL
12	223140	12x12 LIGHT ARM
	223156	27x33 LIGHT ARM
	223121	48" OFFSET LIGHT ARM
13	223330	AG LIGHT KIT
	223145	AG MODULE
	223146	WISHBONE 4 LEAD
	64597	35' HARNESS

MUD SCRAPERS



ITEM	PART NO	DESCRIPTION
	61851	TIRE SCRAPER KIT (PR)
1	61835	SCRAPER BAR
2	61837	5/8 DIAx13-1/2 SCRAPER BAR
3	88294	5/8NCx2 GR5 BOLT
4	88845	5/8NC LOCK NUT
5	88277	5/8 FLAT WASHER

NOTE: 1 Kit does two (2) tires.

DECALS



3

WARNING

HIGH PRESSURE FLUID HAZARD
To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

5

BY-PASS THIS END

4

CAUTION

TO AVOID INJURY AND/OR EQUIPMENT DAMAGE:

- This cylinder has an integral restricting orifice and must be replaced with an identical cylinder.

6

7

DANGER

STAND CLEAR AT ALL TIMES:

- Never walk or stand in the path of the wings.
- Completely lower the wings before performing service or adjustments.
- Failure to do so will result in serious injury or death.

ASSEMBLE SO DECAL IS READ FROM THE IMPLEMENT REAR.

8

CAUTION

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic cylinder channel lock(s) for transporting.

9

DANGER

STAND CLEAR AT ALL TIMES:

- Never walk or stand in the path of the wings.
- Completely lower wings before performing service or adjustments.
- Failure to do so will result in serious injury or death.

10

WINGS UP

11

WINGS DOWN

12

MAIN UP

13

MAIN DOWN

14

17

CAUTION

TO AVOID INJURY AND/OR MACHINE DAMAGE:

- Refer to Operator's Manual for safety instructions.
- Do not stand or climb on machine when operating.
- Use clean hazard flashers and SMV sign when transporting.
- Observe Highway traffic regulations.

18

MANUAL

WIL-RICH
5810-5830
LEVEL LIFT
CHISEL PLOW

19

ITEM	PART NO	DESCRIPTION
1	65342	WIL-RICH DECAL (3-5/8X23-7/8)
2	235004	5800 DECAL
3	60711	HIGH PRESSURE FLUID HAZARD
4	20121	INTEGRAL RESTRICTOR DECAL
5	20339	BYPASS DECAL
6	41345	SMV KIT
7	41508	WING LOCK DANGER DECAL
8	53334	CAUTION DECAL
9	49163	WING LOCK DANGER DECAL
10	54900	WINGS UP DECAL

ITEM	PART NO	DESCRIPTION
11	54901	WINGS DOWN DECAL
12	54902	MAIN UP DECAL
13	54903	MAIN DOWN DECAL
14	49165	CAUTION DECAL
15	22372	AMBER REFLECTOR
16	22371	RED REFLECTOR
17	23325	CAUTION DECAL - READ
18	74244	5810/5830 ASSEMBLY MANUAL
	74245	5810/5830 OPERATORS MANUAL
19	64594	CLEARANCE LIGHT PACKAGE

WIL-RICH 5850 5 SECTION CHISEL PLOW INSTRUCTIONS (79965) 3/10

44

TO THE OWNER	46
<i>SERIAL NUMBER BREAK</i>	46
<i>MODIFICATIONS</i>	46
<i>PREPARATION</i>	46
GENERAL INFORMATION	47
<i>FASTENERS</i>	47
<i>TIRE INFLATION</i>	47
<i>WHEEL BOLTS</i>	47
<i>LUBRICATION</i>	47
<i>HYDRAULICS</i>	47
TRACTOR REQUIREMENTS	48
<i>WHEELS AND TIRES</i>	48
<i>METERING VALVES</i>	48
<i>FRONT BALLAST</i>	48
<i>TRANSPORTING</i>	48
<i>BEARING ASSEMBLIES</i>	48
SAFETY	49-55
<i>PERSONAL SAFETY</i>	49
<i>INFORMATION</i>	50
<i>GENERAL SAFETY INFORMATION</i>	50
<i>HYDRAULIC SAFETY</i>	51
<i>STORAGE SAFETY</i>	51
<i>TIRE SAFETY</i>	51
<i>TRANSPORT SAFETY</i>	52
<i>SMV</i>	52
<i>SAFETY CHAINS</i>	53
<i>SAFETY DECALS</i>	53
<i>SAFETY DECAL PLACEMENT</i>	54-55
SIGN-OFF FORM	56
WING LIFT CIRCUITRY	57
DEPTH CONTROL CIRCUITRY	58

OPERATIONAL ADJUSTMENTS	59-64
<i>PRELIMINARY SETTINGS</i>	59
<i>MAIN FRAME LEVELING</i>	
<i>FRONT TO REAR</i>	59
<i>WING LEVELING</i>	
<i>Front to Rear & Side to Side</i>	60
<i>FIELD SETTINGS</i>	61
<i>SEQUENCE CYLINDER</i>	
<i>OPERATION</i>	62-63
<i>Shank Assy Info</i>	63-64
MAINTENANCE	64-65
<i>CYLINDER SHAFTS</i>	64
<i>AXLE CAPS</i>	64
<i>HUB AND SPINDLE ASSEMBLIES</i>	64
<i>WALKING TANDEM ASSEMBLIES</i>	64
<i>HYDRAULICS</i>	65
<i>STORAGE</i>	65
OPTIONAL ATTACHMENTS	66
<i>MOLDBOARDS AND SPIKES</i>	66
<i>SWEEPS</i>	66
GENERAL	
TROUBLE SHOOTING	67
WARRENTY	68

TO THE OWNER

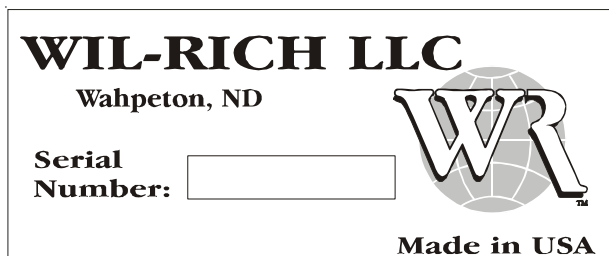
It is the responsibility of the user to read the Operator's Manual and comply with the safe and correct operating procedures as pertains to the operation, lubrication and maintenance of the product according to the information outlined in the Operator's Manual.

If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating, is instructed in safe and proper use and reviews and understands the Operator's Manual.

The user is responsible for inspecting his/her machine and for having parts repaired or replaced when continued use of this product would cause damage or excessive wear to the other parts. The word **NOTE** is used to convey information that is out of context with the manual text; special information such as specifications, techniques, reference information of supplementary nature.

SERIAL NUMBER BREAK

Every implement has a serial number located on the forward left corner of the main frame. These serial numbers are consecutively assigned to the implements as they are manufactured. To aid in part ordering, we reference the serial number at the point the change occurred to provide an accurate means of determining the proper parts.



When in need of parts, always specify the model and serial number. Write this number in the space provided. The serial number plate is located on the top left area of the main toolbar.

MODIFICATIONS

It is the policy of **WIL-RICH** to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring obligation to make such changes, improvements on any equipment sold previously.



THIS SYMBOL USED TO CALL YOUR ATTENTION TO INSTRUCTIONS CONCERNING YOUR PERSONAL SAFETY. BE SURE TO OBSERVE AND FOLLOW THESE INSTRUCTIONS

PREPARATION

Before operating the **WIL-RICH** Chisel Plow, a careful inspection must become routine. A check must be made to ensure that all hardware and fasteners are securely tightened and moving parts properly lubricated.

Remove all wires and/or banding material. The parts have been conveniently arranged on the pallet for ease of assembly.

NOTE: Always wear safety glasses or goggles and be careful when cutting wires and steel bands as they are under tension and will spring back when cut.

Wherever the terms "left" and "right" are used, it must be understood to mean from a position behind and facing the machine.

Lubricate all bearings and moving parts as you proceed and make sure they work freely.

GENERAL INFORMATION

FASTENERS

Loosely install all bolts connecting mating parts before final tightening.

When tightening bolts, they must be torqued to the proper number of foot-pounds as indicated in the table unless specified. It is important that all bolts be kept tight.

On new machines, all nuts and bolts must be rechecked after a few hours of operation.

When replacing a bolt, use only a bolt of the same grade or higher. Except in shear bolt applications, where you must use the same grade bolt. Bolts with no markings are grade 2. Grade 5 bolts furnished with the machine are identified by three radial lines on the head.

Grade 8 bolts furnished with the machine are identified by six radial lines on the head.

All U-bolts are grade 5.

	GRADE 2		GRADE 5		GRADE 8	
TORQUE IN FOOT POUNDS						
BOLT DIA	3/8	1/2	5/8	3/4	7/8	1
HEX HEAD	9/16	3/4	15/16	1-1/8	1-5/16	1-1/2
UNC GR2	18	45	89	160	252	320
UNC GR5	30	68	140	240	360	544
UNC GR8	40	100	196	340	528	792
UNF GR2	21	51	102	178	272	368
UNF GR5	32	70	168	264	392	572
UNF GR8	48	112	216	368	792	840

TORQUE.EPS

Note: Do not inflate tires beyond the specified tire pressure.

TIRE INFLATION

The use of proper air pressure is the most important factor in satisfactory performance and maintenance of implement tire. Under inflation will damage the cord body of the tire and cause a series of diagonal breaks in the fabric sidewall area. Check the noted operating pressure on the side of the tire. If the tire buckles or wrinkles, the air pressure must be increased to the point where the sidewall remains smooth while operating.

Check the air pressure every two or three weeks and do not allow the pressure to drop to a point where buckling or wrinkling of the tire may be possible.

WHEEL BOLTS

It is recommended that all wheel bolts be checked for tightness before using and again after one day of use. Check periodically to be sure the wheel bolts are tight.

LUBRICATION

Make sure the chisel plow is properly lubricated.

HYDRAULICS

Check wing lift and depth control cylinders for proper alignment and operation. On any machine, check that the hydraulic system has been properly charged and purged.

CAUTION

FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.

- Just before and during operation be sure no one is on or around the implement.
- Before activating the hydraulic system, check hoses for proper connections.
- Before lowering the wings for the first time, make sure the entire system has been charged with oil.
- With wings down always install hydraulic cylinder channel lock(s) for transporting.

48185

TRACTOR REQUIREMENTS

The **WIL-RICH** Chisel Plow requires approximately 6 to 10 horsepower per foot. Two remote cylinder outlets and controls are required.

WHEELS AND TIRES

Dual tractor rear wheels are recommended for use with the chisel plow. See your tractor's operator's manual for tire inflation and instructions for wheel ballast where required.

METERING VALVES

The metering valve may be set to provide varying amounts of hydraulic oil flow to the cylinders (see your tractor operator's manual.)

It is recommended the wing lift cylinders run as slow as possible to prevent damage to the implement, persons and property. Turn wing lift hydraulics metering valves to slow position.

FRONT BALLAST

Tractor front end stability is necessary for safe and efficient operation. Therefore, it is important that the proper amount of weight be installed on the front of the tractor as recommended in your tractor operator's manual.



Note: Ballast recommendations provide for adequate transport stability at recommended speeds. Additional front ballast may be required for satisfactory field operation due to sudden or extreme forces on the chisel plow. These forces may occur when removing the chisel plow from the ground and turning at rows end, or during field transport over very rough ground.

TRANSPORTING

A SMV (Slow Moving Vehicle) emblem **must** be used at all times while traveling on public roads.

The implement must always be placed in transport position and the cylinder channel locks used when traveling on public roads. Never depend on your tractor's hydraulic system to carry the weight while transporting.



Note: Use extreme caution when working around overhead power transmission lines.

Note: Always install lock channels in the main lift cylinders for road transport.

Reduce speed when cornering and when traveling over rough and/or uneven ground. Drive at a reasonable speed to maintain complete control of the machine at all times.

Comply with your state and local laws governing highway safety when moving machinery on a highway.

BEARING ASSEMBLIES

IMPORTANT: The spindle nuts on the wheel assemblies are preset at the factory.

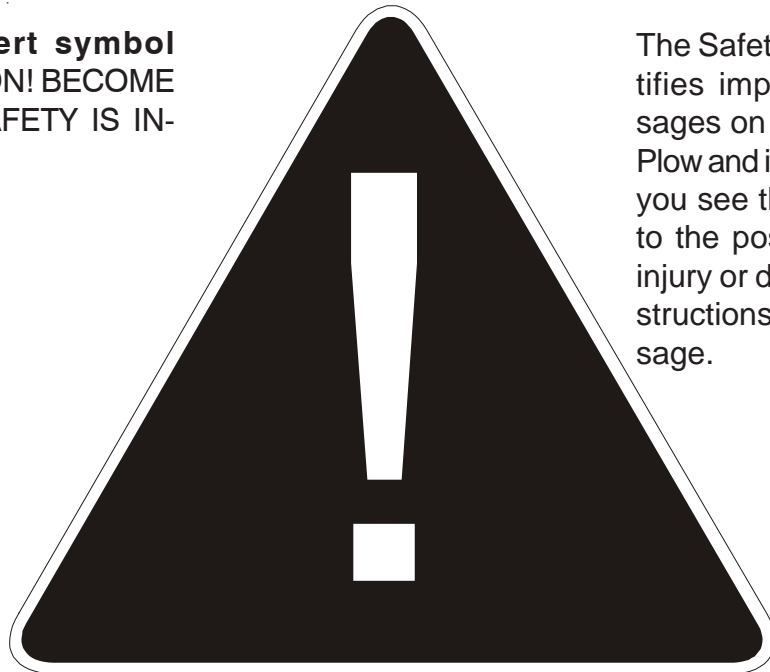
Road transport and field working will seat the bearings and will require additional adjustment. After 20 hours of machine operation remove the grease cap and check the bearing tightness.

Remove the cotter pin and rotate the tire while tightening the spindle nut. Tighten until the drag on the tire stops the rotation. Locate the cotter pin hole in the spindle and loosen the spindle nut just enough to allow insertion of the cotter pin. Replace cotter pin and grease cap.

PERSONAL SAFETY IS IMPORTANT!

ALL PERSONNEL INVOLVED WITH THE ASSEMBLY AND/OR OPERATION OF THIS EQUIPMENT MUST BE INFORMED OF PROPER SAFETY PROCEDURES. OPERATOR'S/ASSEMBLY MANUALS PROVIDE THE NECESSARY INFORMATION. IF THE MANUAL IS LOST FOR A PARTICULAR IMPLEMENT, ORDER A REPLACEMENT AT ONCE. OPERATOR'S AND ASSEMBLY MANUALS ARE AVAILABLE AT NO CHARGE UPON REQUEST.

This Safety Alert symbol means ATTENTION! BECOME ALERT YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the Wil-Rich Chisel Plow and in this manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill

Accidents Cost

Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER

An immediate and specific hazard which **WILL** result in severe personal injury or death if the proper precautions are not taken.

WARNING

A specific hazard or unsafe practice which **COULD** result in severe personal injury or death if the proper precautions are not taken

CAUTION

Unsafe practices which **COULD** result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

ADDRESS INQUIRIES TO:
WIL-RICH
PO BOX 1030
WAHPETON, ND 58074
PH (701) 642-2621 FAX (701) 642-3372

SAFETY

INFORMATION

YOU are responsible for SAFE operation and maintenance of your Wil-Rich Chisel Plow. YOU must ensure that anyone who is going to operate, maintain or work around the Chisel Plow be familiar with the operating and maintenance procedures and related safety information contained in this manual. This manual will take you step by step through your working day, alerts you to all good safety practices that should be adhered to while operating this equipment.



Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

Chisel Plow owners must give operating instructions to operators and employees before allowing them to operate the field cultivator, and at least annually thereafter per OSHA regulation 1928.57.

The most important safety device on this equipment is a safe operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow them. All accidents can be avoided.

A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes themselves and bystanders to possible serious injury or death.

Do not modify the equipment in any way. Unauthorized modifications may impair the function and/or safety and could affect the life of the equipment.

Think SAFETY! Work SAFELY!

GENERAL SAFETY BEFORE OPERATING

Read and understand the operator's manual and all safety signs before operating, maintaining or adjusting the Chisel Plow.

Review safety related items with all operators annually.

Use extreme care when making adjustments.

When working under or around the machine, always lower the Chisel Plow to the ground.

After servicing, install and properly secure all shields and guards before operating. Remove all tools, parts, and service equipment from the machine.

Have a first-aid kit available for use should the need arise and know how to use it.

Have a fire extinguisher available for use should the need arise and know how to use it.

Clear the area of people and remove foreign objects from the machine before starting and operating.

Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hair, hands, and head. Wear suitable ear protection for prolonged exposure to excessive noise.

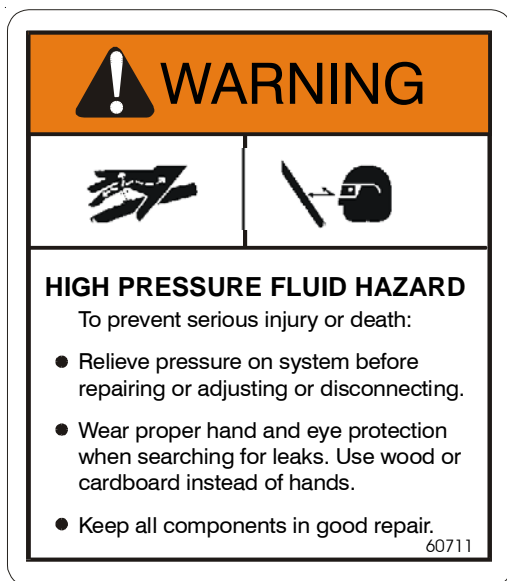
Stop tractor engine, place all controls in neutral, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging. Do not attempt to remove any obstruction while machine is in motion.

HYDRAULIC SAFETY

Always place all tractor hydraulic controls in neutral before dismounting.

Make sure that all components in the hydraulic system are kept in good condition and are clean.

Relieve pressure before working on hydraulic system.



Replace any worn, cut, abraded, flattened or crimped hoses and metal lines.

Before applying pressure to the system, make sure all components are tight and that lines, hoses and couplings are not damaged.

NOTE: Wing fold hydraulic circuit must always be connected to a tractor float valve to relieve pressure on the wing fold cylinders. Failure to relieve the wing fold circuit pressure can allow the wing to move in an unplanned manner with resultant equipment damage or personnel injury

Do not attempt any makeshift repairs to the hydraulic lines, fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.

Wear proper hand and eye protection when searching for high pressure leaks. Use a piece of cardboard as a backstop instead of hands to isolate and identify a leak.

If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.

STORAGE SAFETY

Store unit in an area away from human activity.

Do not permit children to play around the stored unit.

Store in a dry, level area. Support the base with planks if required.

TIRE SAFETY

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.

Have a qualified tire dealer or repair service perform required tire maintenance.

TRANSPORT SAFETY

Read and understand ALL the information in the Operator's Manual regarding procedures and SAFETY when moving the Chisel Plow in the field, yard or on the road.

Check with local authorities regarding transportation on public roads. Obey all applicable laws and regulations.

Always travel at a safe speed. Reduce speed and use caution when making corners or meeting traffic.

Make sure SMV (Slow Moving Vehicle) emblem and all lights and reflectors that are required by the local highway and transport authorities are in place, are clean and can be seen clearly by all overtaking and oncoming traffic

Use a drawbar pin with provisions for a mechanical retainer.

Attach a safety chain before moving (see safety chain information.)

Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the road shoulder, if permitted by law.

Always use hazard warning flashers on tractor when transporting unless prohibited by law.

Do not allow riders.

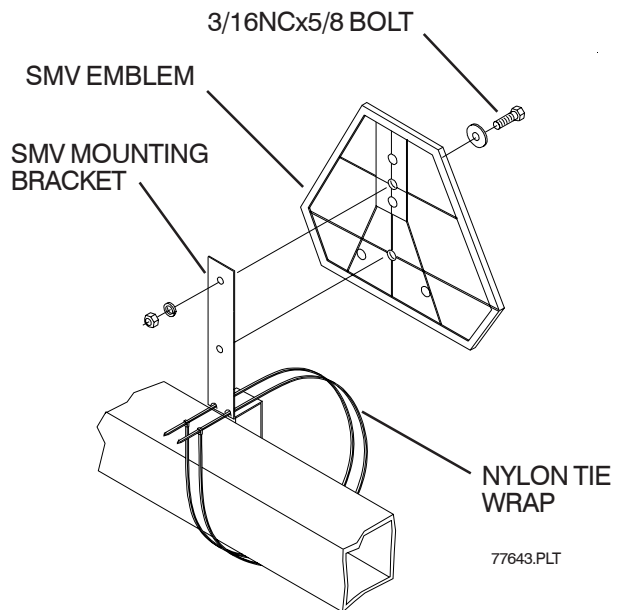
Do not exceed 20 m.p.h. during transport.

SMV

The SMV emblem is to be secured as near to the rear and centered, or as near to the left center of the implement as possible.

The bracket provided is designed to mount to numerous frame sizes and can be orientated in numerous positions to avoid interference with implement components.

Emblem is to be 2 to 6 feet above the ground measured from the bottom edge of the emblem.

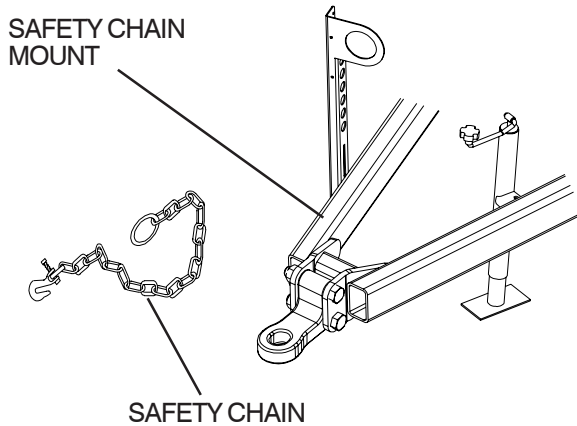


Keep safety decals clean. Replace any safety decals that are damaged, destroyed, missing, painted over or can no longer be read. Replacement safety decals are available through your dealer.

SAFETY DECALS

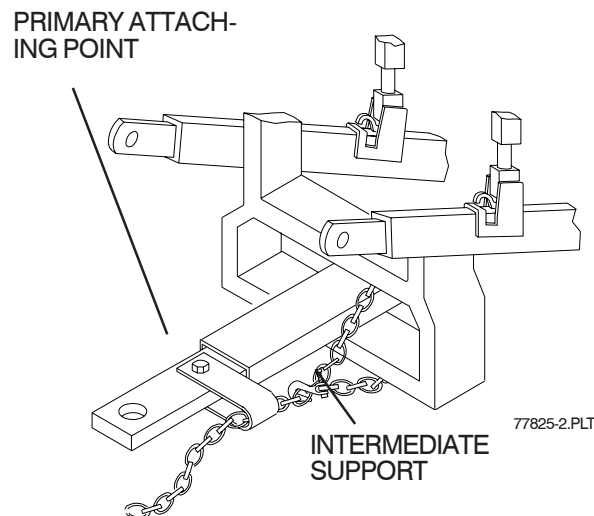
SAFETY CHAINS

The purpose of the safety chain is to provide an auxiliary attaching system to retain the connection between towing and towed machine in the event of separation of the primary attaching system. Attach safety chain to mount loop on main hitch.



The safety chain should be hooked long enough to permit full turns. Unnecessary slack should be taken up.

The intermediate support is to be used if there is more than 6" of unsupported chain on either side of the primary attaching point.



The intermediate support must not be mounted more than 6" from the primary attaching point (see illustration)

Safety decals appear at various locations on your machine. These decals are provided for your safety, your family's safety and your employee's safety. Replace any decal that becomes worn, damaged, painted over or difficult to rear.

Keep safety decals and signs clean and legible at all times.

Replace safety decals and signs that are missing or have become illegible.

Replaced parts that displayed a safety sign should also display the current sign.

Safety decals or signs are available from your Dealer Parts Department.

How to install Safety Decals:

Be sure that the installation area is clean and dry.

Decide on the exact position before you remove the backing paper.

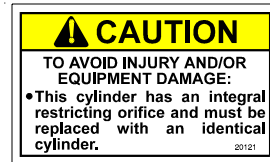
Remove the smallest portion of the split backing paper.

Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.

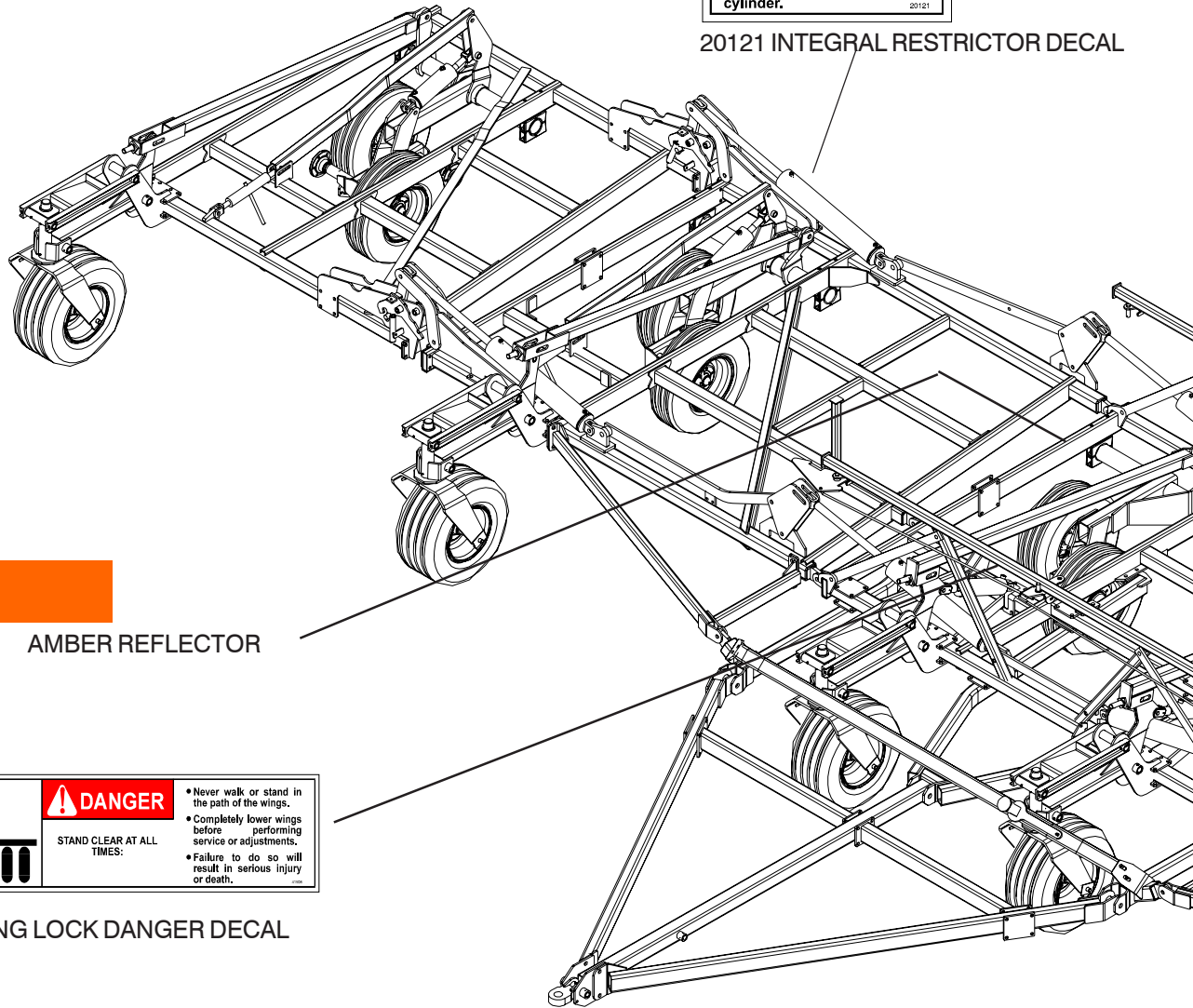
Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.

SAFETY DECAL PLACEMENT



20121 INTEGRAL RESTRICTOR DECAL



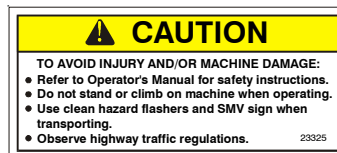
22372 AMBER REFLECTOR



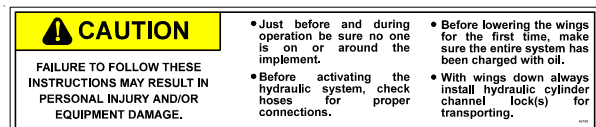
49163 WING LOCK DANGER DECAL

WINGS UP	WINGS DOWN	MAIN UP	MAIN DOWN
WINGS UP	WINGS DOWN	MAIN UP	MAIN DOWN
WINGS UP	WINGS DOWN	MAIN UP	MAIN DOWN
WINGS UP	WINGS DOWN	MAIN UP	MAIN DOWN
WINGS UP	WINGS DOWN	MAIN UP	MAIN DOWN
WINGS UP	WINGS DOWN	MAIN UP	MAIN DOWN

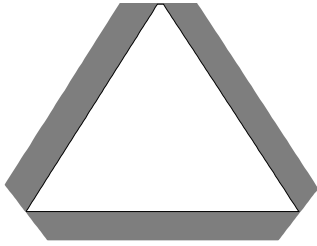
- 54900 WINGS UP DECAL
- 54901 WINGS DOWN DECAL
- 54902 MAIN UP DECAL
- 54903 MAIN DOWN DECAL



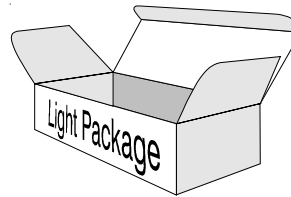
23325 CAUTION DECAL - READ



49165 CAUTION DECAL



41345 SMV KIT



64594 CLEARANCE LIGHT PACKAGE

	⚠ DANGER	<ul style="list-style-type: none"> • Never walk or stand in the path of the wings. • Completely lower the wings before performing service or adjustments. • Failure to do so will result in serious injury or death. 	ASSEMBLE SO DECAL IS READ FROM THE IMPLEMENT REAR.
	STAND CLEAR AT ALL TIMES:		

41508 WING LOCK DANGER DECAL

⚠ CAUTION	FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY AND/OR EQUIPMENT DAMAGE.	<ul style="list-style-type: none"> • Just before and during operation be sure no one is on or around the implement. 	<ul style="list-style-type: none"> • Before activating the hydraulic system, check hoses for proper connections. 	<ul style="list-style-type: none"> • Before lowering the wings for the first time, make sure the entire system has been charged with oil. 	<ul style="list-style-type: none"> • With wings down always install hydraulic cylinder channel lock(s) for transporting.

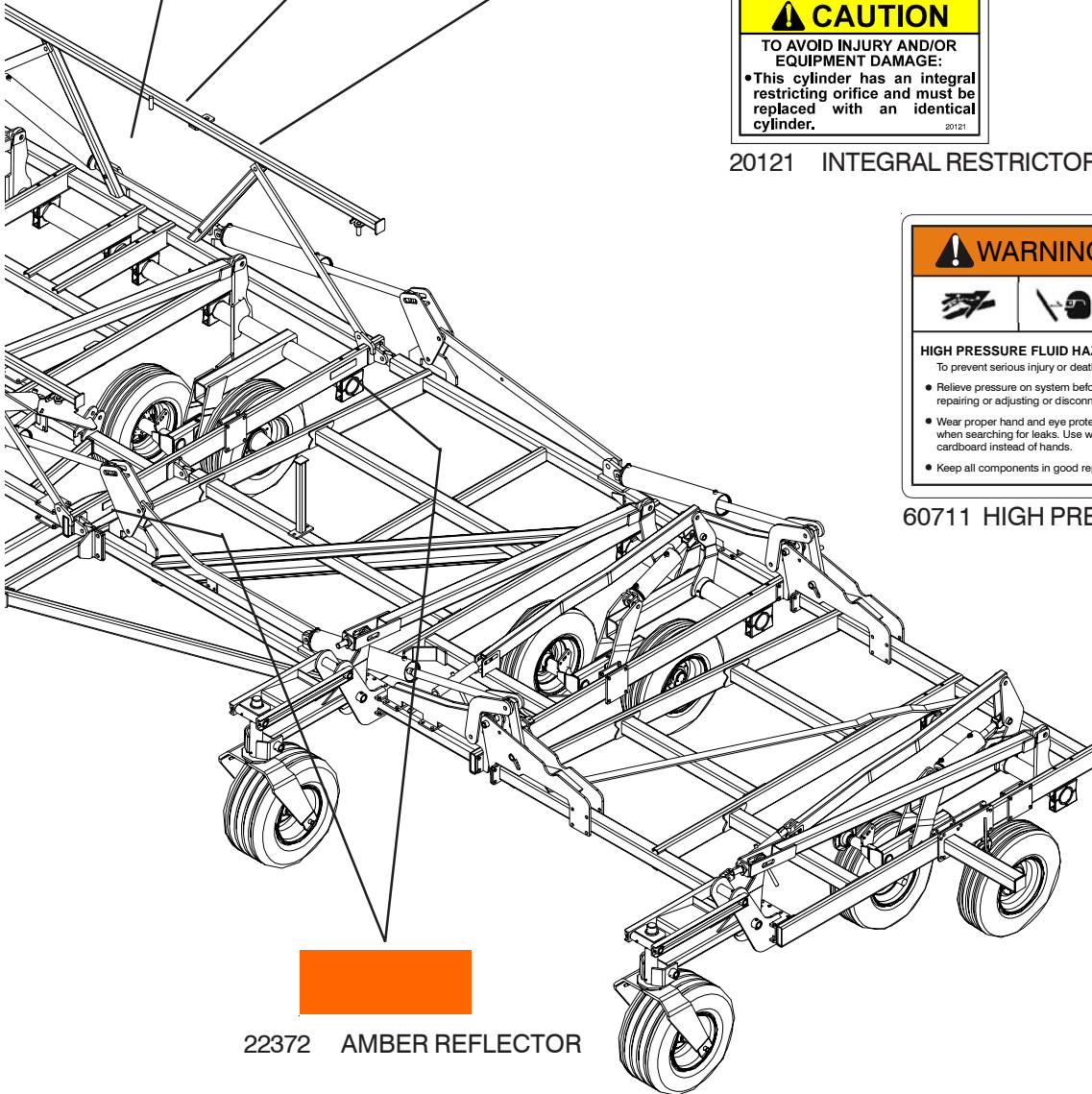
53334 CAUTION DECAL

⚠ CAUTION
TO AVOID INJURY AND/OR EQUIPMENT DAMAGE: <ul style="list-style-type: none"> • This cylinder has an integral restricting orifice and must be replaced with an identical cylinder.

20121 INTEGRAL RESTRICTOR DECAL

⚠ WARNING
HIGH PRESSURE FLUID HAZARD To prevent serious injury or death: <ul style="list-style-type: none"> • Relieve pressure on system before repairing or adjusting or disconnecting. • Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands. • Keep all components in good repair.

60711 HIGH PRESSURE FLUID HAZARD



22372 AMBER REFLECTOR

SIGN-OFF FORM

WIL-RICH follows the general standard specified by the American Society of Agricultural Engineers (ASAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the Chisel Plow must read and understand ALL Safety, Operation, and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information is reviewed. Annually review this information before the season start-up.

Make periodic reviews of SAFETY and OPERATION a standard practice for all your equipment. We feel that an untrained operator is unqualified to operate this machine.

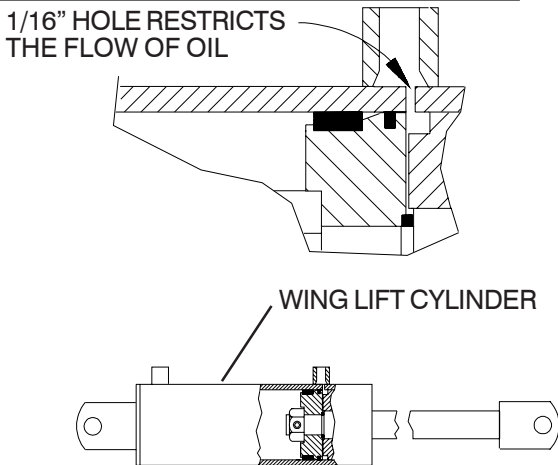
A sign-off sheet is provided for all personnel who will be working with equipment have read and understood the information in the operators manual and have been instructed in the operation of the equipment.

DATE	EMPLOYEE'S SIGNATURE	EMPLOYER'S SIGNATURE

Wil-Rich Chisel Plows equipped with folding wings have hydraulic wing lift cylinders to fold the implement for road transport.

Wing lift cylinders are equipped with an integral restrictor on the rod end cylinder port (see fig. 2.) This allows the wings to lower at a slower rate and prevents the wings from falling too fast should there be some type of hydraulic failure.

WING LIFT CIRCUITRY



77851

Fig. 2 Wing Lift Cylinder
 Fig. 3 shows a simple two (2) cylinder circuit used to fold a pair of wings. This system is used on Wil-Rich Chisel Plows with a single pair of folding cylinders.

When lowering the wings, hold the tractor control lever until all cylinders are completely extended. Fully extending the cylinders allows the wings to flex properly in the field.

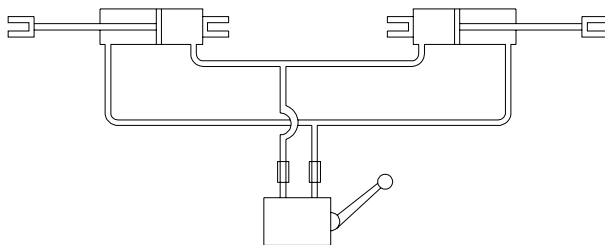


Fig. 3 Two Cylinder Wing Lift Circuit

77827_2

⚠ CAUTION

TO AVOID INJURY AND/OR EQUIPMENT DAMAGE:

- **This cylinder has an integral restricting orifice and must be replaced with an identical cylinder.**

20121

When raising the wings be sure the wing rest is properly positioned to allow the wings to fold. Fold the main wings until they contact the wing rest.

Fig. 4 Shows a simple four (4) cylinder circuit used to fold a pair of wings. This system is used on Wil-Rich Chisel Plows with a single pair of 9'4" or 11'8" folding wings.

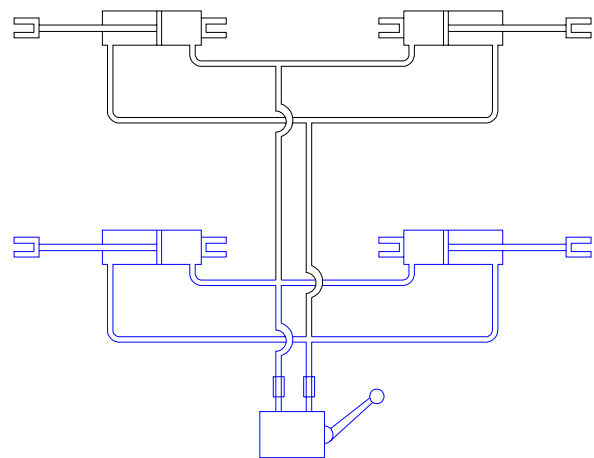
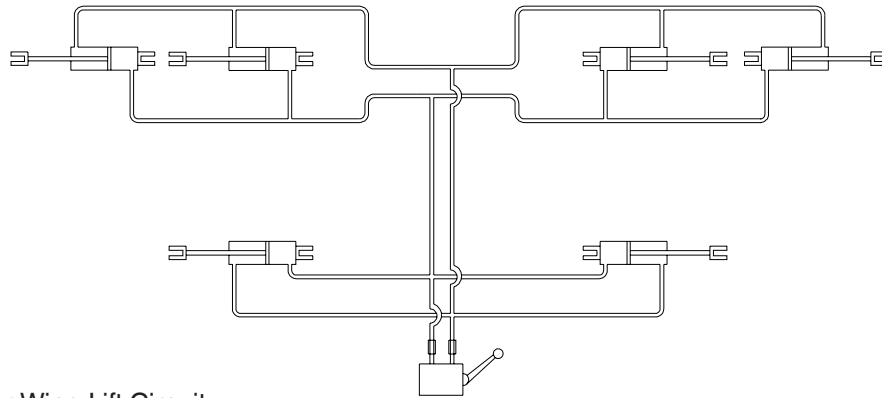


Fig. 4 Four Cylinder Wing Lift Circuit
 When lowering the wings, hold the tractor control lever until all cylinders are completely extended. Fully extending the cylinders allows the wings to flex properly in the field. When raising the wings be sure the wing rest is properly positioned to allow the wings to fold. Fold the main wings until they contact the wing rest.

NOTE: Wing fold hydraulic circuit must always be connected to a tractor float valve to relieve pressure on the wing fold cylinders. Failure to relieve the wing fold circuit pressure can allow the wing to move in an unplanned manner with resultant equipment damage or personnel injury.

DEPTH CONTROL CIRCUITRY



78358

Fig. 5 Six Cylinder Wing Lift Circuit

The depth control cylinders are hooked in series. Each cylinder is a top bypass cylinder and when fully extended will pass oil by the piston into the next cylinder charging the system.

Top bypass cylinders will bypass oil when the cylinder is fully extended. This bypass condition will exist when the implement is raised to maximum ground clearance. At this time oil will pass through a 1/16" dia. hole and go on to the next cylinder. See Fig. 6 & 7.

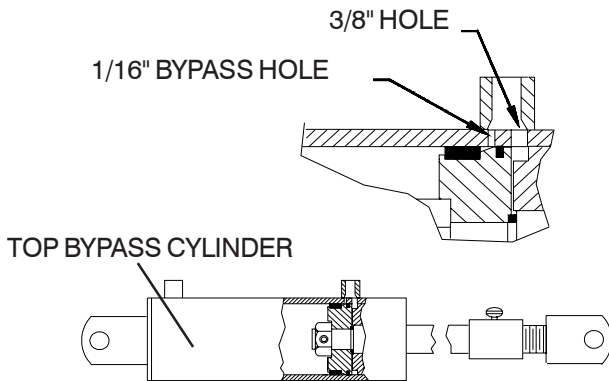
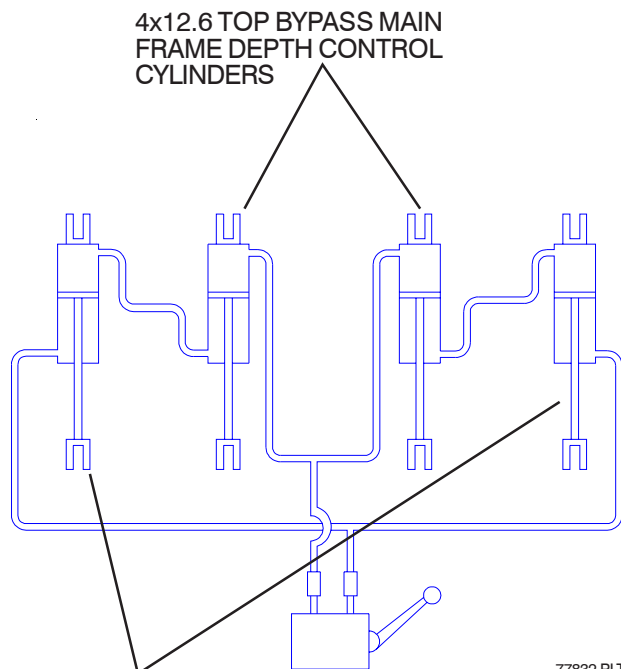


Fig. 6 Top Bypass Cylinder

77646.PLT

Note: This system requires periodic raising of the unit and holding of the tractor valve to expel air or contaminants. Holding the hydraulic valve with the unit fully raised is the only way to re-sequence the lift circuit

Note: To synchronize or re-synchronize the bypass system, the tractor control valve must be held in the raised position until the entire implement is raised and any air that may be in the lines has been expelled.



77832.PLT

4x10.8 TOP BYPASS WING FRAME DEPTH CONTROL CYLINDERS

Fig. 7 Lift Hydraulic Circuit

OPERATIONAL ADJUSTMENTS

The preliminary operational setting of the unit can be completed in the yard or a level area of a field. Final front to rear and side to side adjustments must be made at operational depth.

PRELIMINARY SETTINGS

Proper preliminary and field settings will require the use of a measuring device. Once the unit has been properly assembled and hitched to the tractor that will be powering the unit, **make certain all hydraulic circuits have been charged and cycled a number of times.**

Position the unit on a level surface and unfold the wing, **checking to ensure that there are no obstructions or personnel in the path of the wings.**

NOTE: Cycle the main lift hydraulic circuit a number of times to purge air from the circuit. Hold the hydraulic control lever in the "RAISE" position for a 1-5 minute period to clear air from the circuit.

Remove the stop collars from all main lift cylinders and turn the screw stop collars up to the clevis end of the cylinders. Lower the unit so that the front shovels or spikes are 1" –2" above the ground. Measure the frame height at the front corners from the ground to the bottom of the frame tube. Compare this to the distance from the ground to the bottom of the frame tube at the rear of the unit. See Fig. 8.

MAIN FRAME LEVELING FRONT TO REAR

Front to rear leveling of the main frame is controlled by the adjustment screw located at the front lift wheels (see Fig. 8.) If the front of the unit is higher than the rear you need to lower the front by adjusting the screw adjustment to shorten the main lift tube. Turn the screw clockwise to lower the front of the unit or counterclockwise to raise the front of the unit. Measure and compare the front and rear frame heights and readjust the screw as needed.

Set both front lift wheel adjustment screws to the same relative length. Check the front and rear measurement on each side of the main frame and readjust as required. Once set, secure with a jam nut. The level may need to be checked in the working position and readjusted as required.

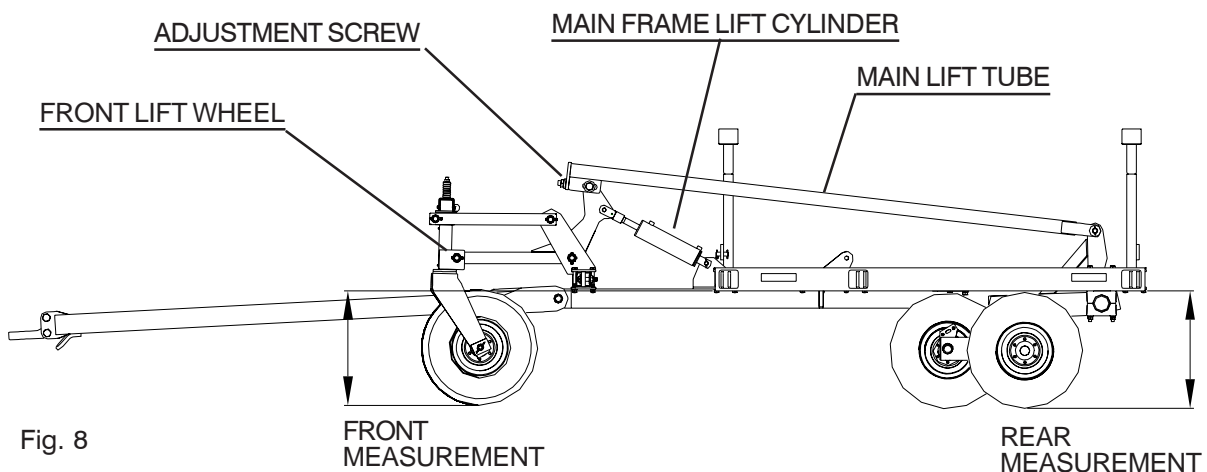


Fig. 8

Once the wing has been set level “Side to Side” with the main frame, the front lift wheel can be set to carry the front of the wing. Adjust the adjustment screw on the wing lift tube to carry the front of the wing. Once set secure the adjustment screw with a jam nut.

Follow the same procedure to level the outer wing on both sides of the unit relative to the inner wings. Final field adjustments will need to be made once the unit is set to operational depth..

Repeat procedure with opposite inner wing. NOTE: these settings may need to be adjusted once the unit is taken to the field. On units with shorter wings either the front lift wheel or rear tandem axles can carry the full weight of the wing.

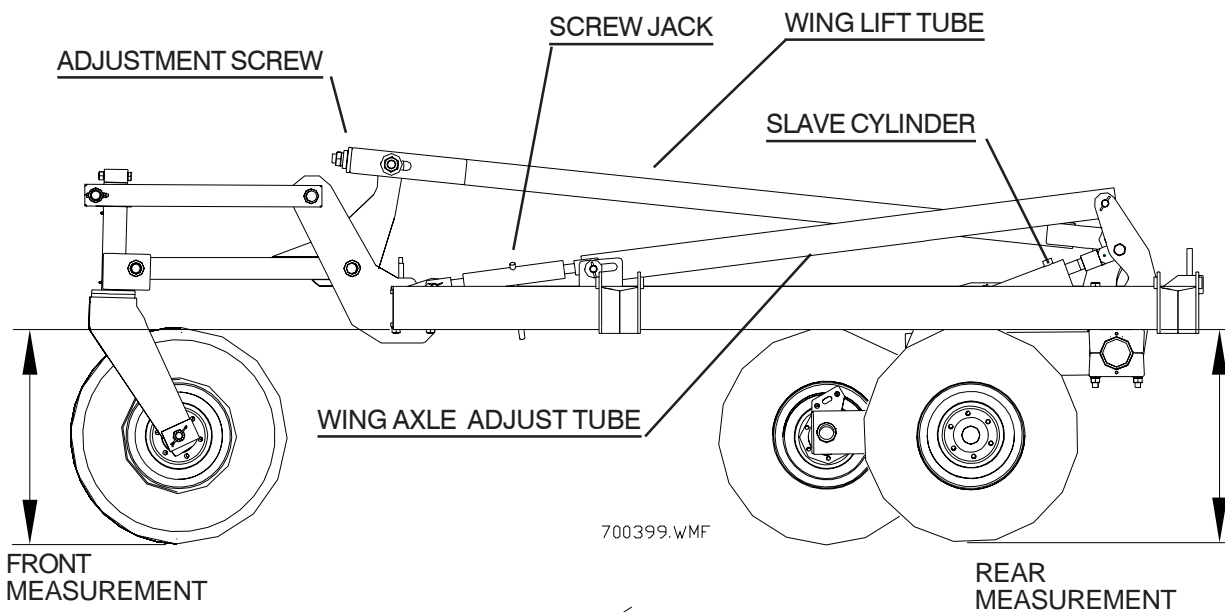


Fig. 9

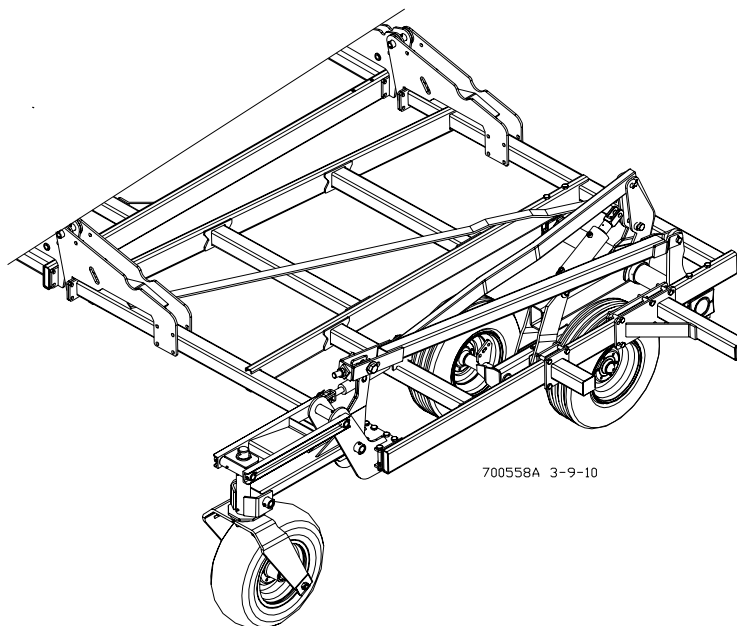


Fig. 10

FIELD SETTINGS

Even if the unit has been leveled in the yard, it should never be assumed that the unit will operate level in the field without checking or adjustments. Changing field conditions, loading of the shank and attachments will impact the functional level and working in the field.

Move to the field and stop the unit in a level area. Unfold the wings; making certain that there is adequate room, with no person or obstruction in the wing fold area. Activate the main lift hydraulics and remove the transport channel locks from the main lift cylinders. Make a visual inspection of the unit to ensure that all hardware is properly tightened, hoses are clear and that the unit is ready for field operation. Stop collars should have been removed for yard adjustment and all screw collars should be turned to the clevis end. Cycle and hold the main lift hydraulics in the full up position a few times to purge any air from the system.

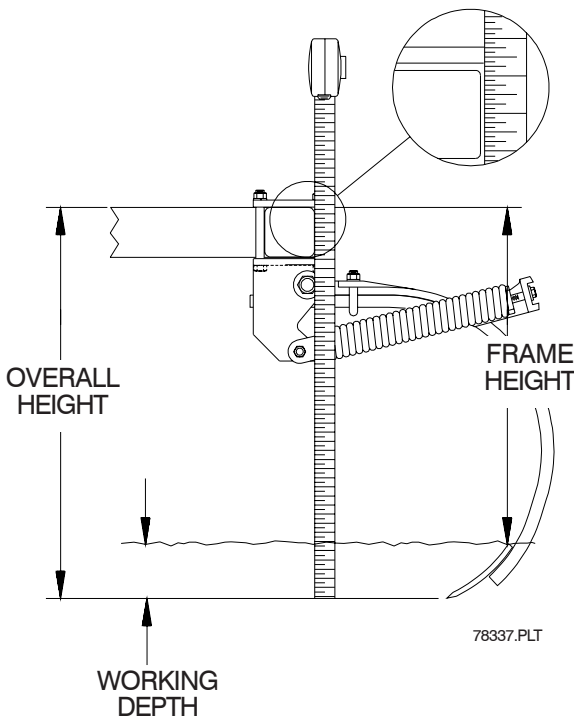


Fig. 11 Shank Settings

Move forward in the field at a moderate speed and lower the unit into the ground. Stop and measure the frame height at the rear of the main frame. As noted in Fig. 11, the working depth is equal to the overall height minus the frame height. By use of the screw stop and stop collars on the main frame lift cylinders set the desired working depth of the main frame. You may need to set a depth, pull forward through the field, stop, check the depth and adjust the depth a number of times. Once the rear shanks are at the required depth measure the frame height at the front of the main frame. By adjusting the main frame front adjust screw as outlined on Pg. 18 the front of the unit can be raised or lowered to adjust the level of the unit.

Once the main frame has been leveled move into the field at operational depth and stop the unit. Measure the frame height of the wing at the rear of the wing and compare to the frame height at the main frame. Adjust the front wing screw jack to level the wing to the main frame. Repeat the same procedure for the opposite wing.

The front hydraulic gage wheels are critical to the operation of the unit by maintaining the front to rear level of the wings and counteracting the front dip of the wings due to the shank loading. Once the unit has been leveled front to rear and side to side move into the field at operational depth. With the unit not moving forward adjust the wing gage wheels screw adjust so that the wheel cannot be turned by hand or will not pivot freely. Once you began to move forward the shank loading will increase the loading on these wheels and provide proper depth control. As you operate the unit the front gage wheels should provide support but not carry the front of the wings. Adjust as required.

SEQUENCE CYLINDER OPERATION

This unit is equipped with a lift system that utilizes sequencing cylinders. In a sequencing system the cylinders are sized to operate in series and provide a level lift to the unit. The WIL-RICH sequencing system utilizes 4" bore cylinders with varying stroke length. On this unit the main lift cylinders have a 12.6" stroke length with a 10.8" inner wing .

See Fig. 12 .

The cylinders are connected in series with the rod end of the main (MASTER) cylinders connected to the base end of the wing cylinders. Because of the rod in the main cylinder there is less volume in the rod end versus the base end. The next cylinder in the series (SLAVE) needs to be shorter because of the less volume, hence the 10.8" stroke. On 5 section units, the circuit utilizes a 9.4" outer wing cylinder.

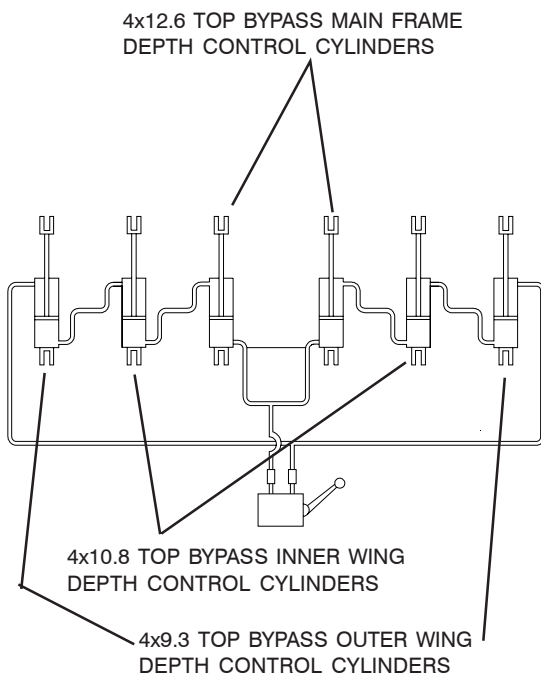
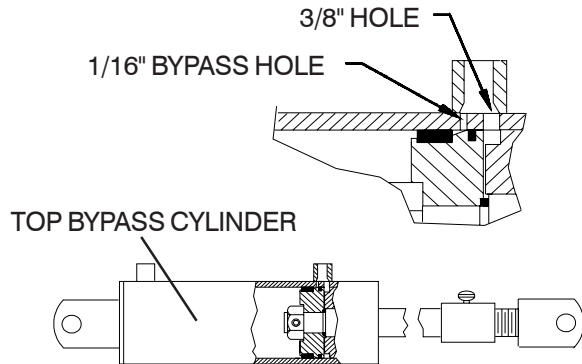


Fig. 12 Sequencing Lift Hydraulic System

As the main cylinder extends the oil is forced out of the rod end and into the base end of the wing cylinder. If there were an additional wing with a 9.4" stroke cylinder the oil would be routed from the rod end of the 10.8" stroke cylinder to the base of the 9.4" cylinder.



77646.PLT

Fig. 13 Top Bypass Cylinder

As hydraulic oil is pumped into the base end of the master cylinders, oil is forced out of the rod ends of these cylinders to the base ends of the first slave cylinder. The oil forced out of the rod ends of the first slave cylinder goes to the base ends of the next slave cylinder or back to the tractor.

As the machine is raised and the cylinders are completely extended, the slave cylinders will become sequenced with the master cylinder. Because of the varying stroke lengths the cylinder anchor positions on the lift mast and axles is designed to provide even rotation of the axle and a level lift.

Synchronization is accomplished by allowing oil to pass from the base end of the cylinder to the rod end through a small orifice at the rod end of each cylinder. When the piston seal passes by the orifice (cylinder fully extended) oil passes from the base of the BASE end of the master cylinder to the base - (continued on next page)

end of the slave cylinders. When the slave cylinder rods are fully extended, oil passes from the BASE end of the slave cylinders back to the tractor.

For synchronization to be accomplished, depth control must be held for a few period of time with the cylinders fully extended, to allow passage of oil through the system.

After oil has “rephased” the system, leave depth control in neutral position at least three seconds to allow cylinders to move far enough to close the rephase passages and completely synchronize the system.

NOTE: The depth of the unit is controlled by the screw stop settings of the main lift cylinders.

Depth will be reached when the main lift cylinder screw collars contact the cylinder end plate. Follow the main frame setting instructions noted above to set the operational depth and level. Once the mainframe screw stops have been set you can turn the screw collars on the wing cylinders down to just contact the wing cylinders end plates. This provides a backup to maintain a consistent unit depth if the seals should leak. Do not use the wing cylinder screw stops collars to control the overall depth of the unit. For example – if a wing is low, you cannot turn the screw stop on that wing cylinder to hold the wing; you will need to adjust the front screw jack to raise the wing. With a sequencing lift system, the first cylinder to be stopped will stop the movement of all cylinders in the system. If a wing needs to be adjusted side to side to be level with the main frame, the adjustment must be made at the front screw jack on the wing, not at the wing cylinder screw stops.

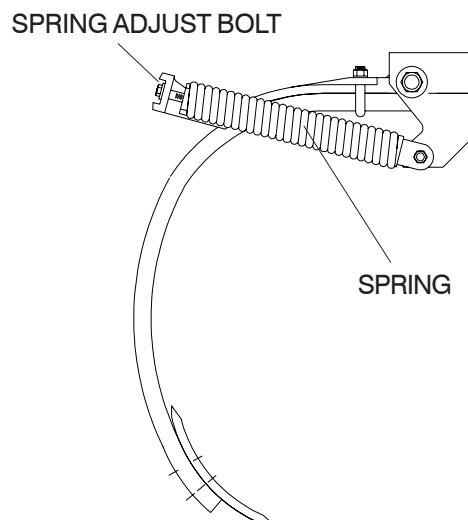
On units equipped with single point depth control, the single point valve is used to control the depth of the unit. This single point valve essentially acts as a valve and controls the amount of oil in the main lift cylinders. In this case the screw collars on all cylinders can be positioned as close as possible to the clevis end of the cylinder. If you want to set a maximum depth of the unit you can adjust the stop collars to that depth setting to function as a backup in case of single point depth control malfunction.

SHANK ASSEMBLIES

Each shank comes fully assembled from the factory. Install the shanks in their proper location and securely tighten the mounting hardware.

Note: Spring adjust bolt (650 lb. shank only) should be tightened just enough to crack the paint between spring coils. If more point pressure is required the spring adjust bolt can be tightened. The 1000 lb shank assembly point pressure cannot be adjusted.

The mounting bolts, and shank bolts should be checked after a few days work and kept tight. The mounting bolts must not be overtightened, but kept tight enough to allow free movement of the shank.



Wil-Rich field Chisel Plows are available with 1000 lb. and 650 lb. shank assemblies. The 1000 lb shank assemblies are recommended for heavy duty use.

Note: Be sure to maintain adequate tire/shovel clearance on shanks located in or around the wheel well when machine is fully raised or lowered.

MAINTENANCE

Note: Grease fitting decals are included in the hardware kit. Locate grease fitting points and place decals in position to indicate a grease fitting.

Periodic checks must be made to assure that all nuts and bolts remain securely tightened. Loose hardware is easily bent or lost and can cause excessive wear on parts. Replace any bent or broken bolts as soon as they are discovered.

Clean off any dirt or grease that may accumulate on moving parts at regular intervals. This will prevent any abrasive action which could cause excess or premature wear. Thoroughly inspect the implement for loose or broken parts and adjust or replace as necessary.

It is important that the implement be regularly lubricated as recommended to obtain the most efficient operation. Proper lubrication helps prevent down time due to excessive wear and increase machine life.

CYLINDER SHAFTS

If the cylinder shafts are left exposed for any extended period of time, they should be coated with grease to protect them from rust and corrosion.

AXLE CAPS

All axle caps must be greased once a day with a good quality grease. Lower machine onto the shovel points to relieve pressure on the caps which will make greasing easier.

HUB AND SPINDLE ASSEMBLIES

Each hub and spindle assembly comes with a grease fitting installed in the hub. These must be greased once a week during steady usage. *See note below for lubricating.

Tighten spindle nut so that there is a slight drag on the wheel when turned by hand.

WALKING TANDEM ASSEMBLIES

Periodically check each walking tandem assembly for looseness and tighten spindle nut if the bearings show any evidence of side play. *See note below for lubricating.

The spindle nut should be tightened to allow a heavy drag when assembly is rotated by hand.

***Note: Transport wheel hubs and walking tandem hubs are not fully filled with grease when assembled. Though these hubs are usually equipped with grease fittings, pumping a few shots of grease on a regular interval into these hubs will not ensure that the grease enters or flushes the bearing. If desired, hubs can be fully filled with grease or bearings packed on a yearly basis or as required.**

HYDRAULICS

Inspect all hydraulic hoses and fittings for cracks and abrasion at least once a year. Tighten or replace as needed.

When connecting the hoses to the cylinders, tubing, or fittings; always use one wrench to prevent the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten the hose life.

Do not overtighten hydraulic fittings, excessive torque may cause them to crack.

Care must be taken to prevent twisting when tightening hose connections. Straighten any hose that appears twisted immediately. A twisted hose can burst under operating pressure.

NOTE: The inner and outer wings should never be folded without the unit fully raised. Failure to fully raise the unit before folding the wings will cause damage to the outer wing fold cylinders.

Channel locks on the main frame lift cylinders must always be used to store the unit in the raised position.

Never attempt to lower or raise the unit when the wings are folded. Always unfold all wings before lowering or raising the main frame for maintenance and operation.

STORAGE

Note: If possible store your Chisel Plow inside.

At the end of a season, clean the implement thoroughly to remove any trash, soil or dirty grease which could hold moisture and cause premature rusting. Repaint any chipped, bare, or rusted areas to prevent any further deterioration. Inspect the machine for any worn or broken parts and adjust or replace as required.

See your Wil-Rich dealer for any parts and/or service which may be needed.

Thoroughly lubricate all grease fittings at the end of the season's use and again before the first operation of the next season.

It is advisable, if possible to store larger field cultivators with the wings down. With the wings completely lowered, the rod end cylinder pins of the wing lift cylinders should be removed and cylinders carefully retracted.

Avoid possible damage to the hydraulic system by lowering the machine onto the shanks and relieve the pressure on the system. Doing this will also prevent damage to the tires by removing the field cultivator's weight.

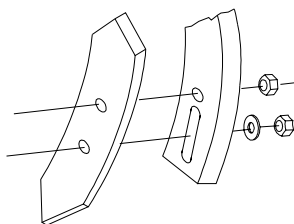
Coat the shovels with grease and place boards under the points to prevent the shovels from settling into the ground.

OPTIONAL ATTACHMENTS

MOLDBOARDS AND SPIKES

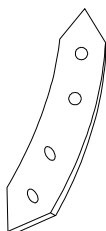
Moldboards and Spikes are recommended for deep penetration, hard soil conditions, killing off quack grass and other grassy weeds. For turning more soil over, use the moldboards.

2" Reversible Spike:



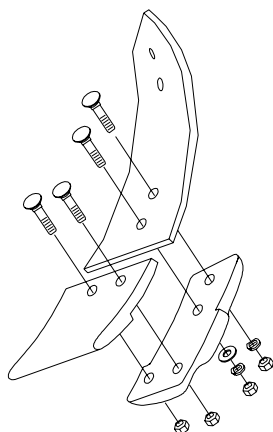
77905-4A.WMF

3" (RH & LH) Plain Twisted Spike:



77905A-2A.WMF

4" (RH & LH)
Moldboard Assembly:

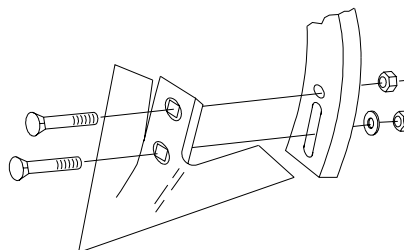


78960.WMF

SWEEPS

Sweeps or shovels should be used for general tillage, seedbed preparation and weed eradication. 50 degree sweeps are generally standard.

12", 14", 16" and 18" plain shovels.



77905-3A.WMF

GENERAL TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Machine will not pull straight (skewing or dog tracking.)	Chisel Plow not level. Incorrect shank placement. Tires not equally inflated.	See leveling page. Check shanks for proper location, see assembly manual. See tire inflation.
Settling of entire implement from raised position.	Leaking cylinder. Leaking tractor hydraulic control valve.	Replace cylinder seals (see locating leaking cylinders.) See tractor manual.
Wings lowering too rapidly.	Incorrect cylinder installed, should have 1/16" dia. integral restrictor cylinder.	See wing lift circuitry and install correct cylinder.
Poor or uneven penetration. Cylinders are getting out of synch.	Incorrect sweep stem angle Incorrect leveling adjustments on main frame or wings. Hydraulic malfunction - air in lines, cylinders or hoses leaking, or hydraulic cylinders and hoses are not installed properly. Worn shovel points. Tires not equally inflated	Use 50 degree sweeps. See leveling page. Make sure wing fold cylinders are fully extended. Check for oil leakage in cylinders, hoses and fittings. Make sure all hydraulic cylinders and hoses are properly connected. Resynchronize cylinders. Adjust stop collar of main lift cylinder(s) to compensate for wear. Replace shovels if wear is severe. See tire inflation.

WIL-RICH, LLC

WARRANTY

Wil-Rich's products are warranted to the original non-commercial purchaser to be free from defects in material and workmanship for a minimum period of twelve (12) months from the original date of purchase.

Additional Field Cultivator Warranty: Wil-Rich warrants to the original purchaser of each new Wil-Rich Field Cultivator unit (Excel and QuadX), and Disk Field Cultivators that the product be free from defects in material and workmanship for the period of three (3) years on the main frames and shank assemblies. All other components are covered by the twelve (12) month warranty period.

Commercial Use: Warranty for commercial, rental or custom use of any Wil-Rich product is limited to 90 days, parts and labor.

We warrant products sold by us to be in accordance with our published specifications or those specifications agreed to by us in writing at time of sale. Our obligation and liability under this warranty is expressly limited to repairing, or replacing, at our option, within 12 months after date of retail delivery, any product not meeting the specifications. **We make no other warranty, express or implied and make no warranty of merchantability or of fitness for any particular purpose.** If requested by us, products or parts for which a warranty claim is made are to be returned transportation prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by us, or any alteration or repair by others in such manner as in our judgment affects the product materially and adversely shall void this warranty. **No employee or representative is authorized to change this warranty in any way or grant any other warranty.**

Wil-Rich reserves the right to make improvement changes on any of our products without notice.

When warranty limited or not applicable: Warranty on hydraulic hoses, hydraulic cylinders, hubs, spindles, engines, valves, pumps or other trade accessories are limited to the warranties made by the respective manufacturers of these components. Rubber tires and tubes are warranted directly by the respective tire manufacturer only, and not by Wil-Rich.

This warranty shall not be interpreted to render Wil-Rich liable for injury or damages of any kind or nature to person or property. This warranty does not include claims for, or extend to the loss or damage of crops, loss because of delay in seeding/planting or harvesting, or any expense or loss incurred for labor, substitute machinery, rental, and transportation expense or for any other reason.

A Warranty Validation and Delivery Report Form must be filled out and received by Wil-Rich to initiate the warranty coverage.

WARRANTY CLAIMS PROCEDURE

1. The warranty form must be returned to Wil-Rich within thirty (30) working days from the repair date.
2. Parts returned to Wil-Rich without authorization will be refused. The parts must be retained at the dealership for ninety (90) days after the claim has been filed. If the Service Department would like to inspect the parts, a packing slip will be mailed to the dealer. The packing slip must be returned with the parts. The parts must be returned prepaid within thirty (30) days of receiving authorization. After the parts are inspected and warranty is verified, credit for the return freight will be issued to the dealer.
3. Parts that will be scrapped at the dealership will be inspected by a Wil-Rich Sales Representative, District Sales Manager or Service Representative within the ninety (90) day retaining period.