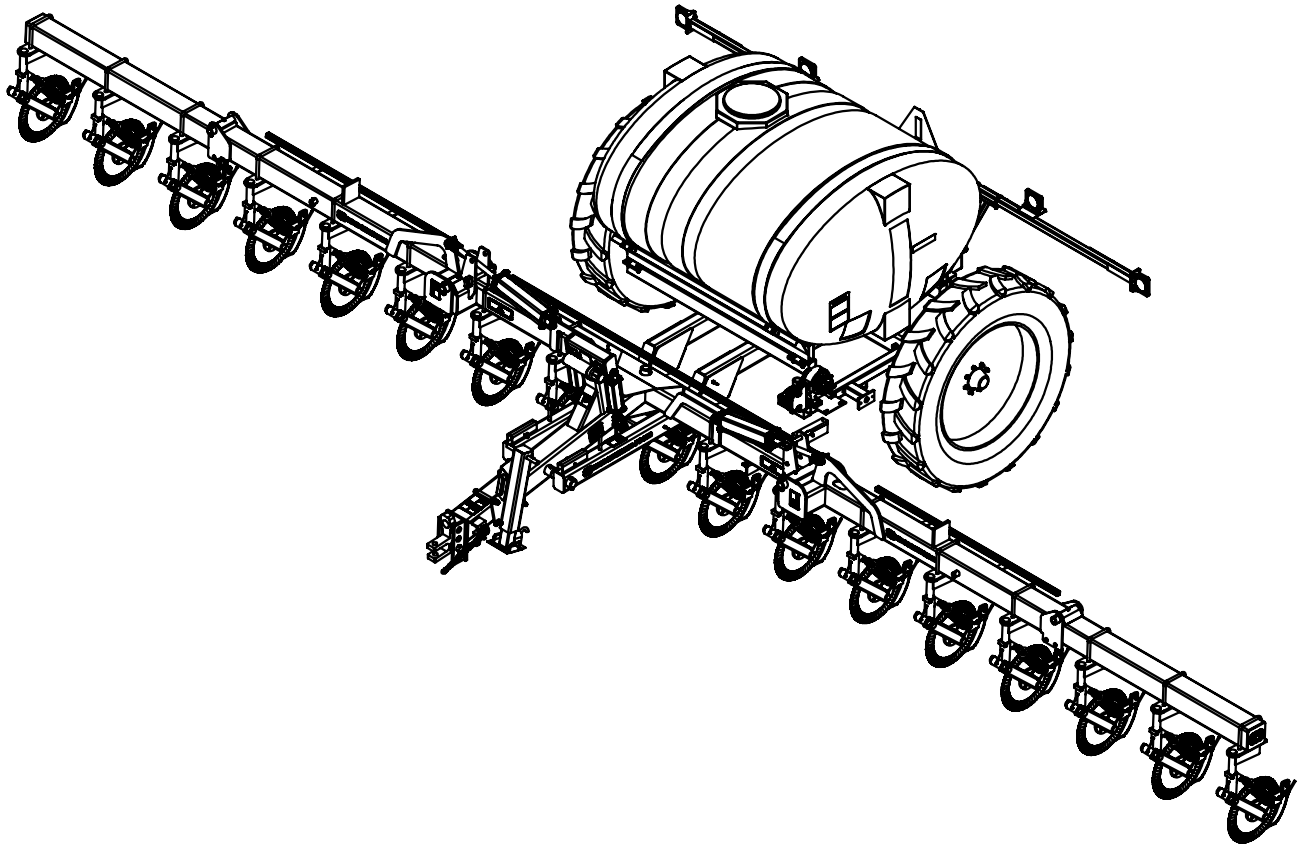


KONGSKILDE F3450

LIQUID SIDEDRESS APPLICATOR - Assembly/Parts

Kongskilde
F3450



Models

F3450

- 763400932 32.5' Liquid Sidedress Applicator
- 763400937 37.5' Liquid Sidedress Applicator
- 763400942 40.5' Liquid Sidedress Applicator

F3450T (For 27.5" or 28" Row Spacing)

- 763400937-T 37.5' Liquid Sidedress Applicator
- 763400942-T 40.5' Liquid Sidedress Applicator

*Model may not be exactly as shown.

Kongskilde reserves the right to make changes to product designs and specifications without notice or obligation to rework.

See your local Kongskilde representative for current product specifications and options.

Table of Contents

Introduction	4
 <u>Frame Assembly</u>	
Tongue/Mainframe Assembly	6
18.4 x 26 Tire & Axle Assembly	8
13.6 x 38 Tire & Axle Assembly	10
13.6 x 38 Tire & Axle Assembly (F3450T)	12
Drop Leg Jack Assembly	14
750 Gallon Tank Saddle	16
750 Gallon Tank	18
1000 Gallon Tank Saddle	20
1000 Gallon Tank	22
Inner Wing Assembly	24
Short Outer Wing (32.5')	26
Intermediate Outer Wing (37.5')	28
Long Outer Wing (40.5')	30
Lift Cylinder Assembly	32
Lift Hydraulics	34
Inner Wing Fold Cylinder Assembly	36
Wing Fold Hydraulics Without Down Pressure Valve	38
Wing Fold Hydraulics With Down Pressure Valve	40
Outer Wing Fold Cylinder Assembly	42
Outer Wing Lock Pins	44
Hose Routing	46
Light Bar & Wiring Assembly	48
 <u>Row Unit Layouts</u>	
Row Unit Placement (20" & 30" rows)	50
Row Unit Placement (38" & 40" rows)	51
Row Unit Placement (22" & 36" rows)	52
F3450 Mainframe Offset Kit	53
F3450T Row Unit Placement (27.5" & 28" rows)	54
Wing Offset Bar Kit	55

Table of Contents Cont.

Fertilizer Plumbing

Drive Engagement Arm for 18.4 x 26 & 13.6 x 38 Tires.....	56
Drive Engagement Arm for 13.6 X 38 Tires (F3450T)	58
Ground Drive Pump	60
Ground Drive Pump Assembly	62
Chain Idler Arm	64
Single Piston & Double Piston Pump Drive Chain	66
Quick Fill Plumbing Assembly	68
Single Piston Metering Pump Plumbing	70
Double Piston Metering Pump Plumbing	72
Hydraulic Pump Mounting Assembly	74
Hydraulic Pump Plumbing	76
Ball Valve Bracket	78
Two Ball Valve Assembly	80
Regulator Valve Plumbing	82
Speed Sensor and Wiring Diagram	84
Liquid Sidedress Swivel Coulter Assembly-Knife	86
Liquid Sidedress Swivel Coulter Assembly-Injector	87
Nozzle Assembly	90
Plumbing Row Units	92
Pluming Outside Wings	94

Misc Assembly

Attaching Wash Tank	96
Decal Placement.....	98
Manual Canister	100

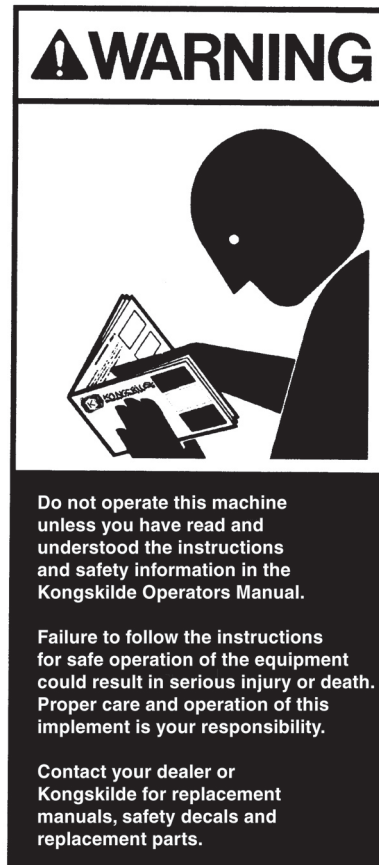
Hub and Cylinder Parts

Heavy Duty 4 Bolt Coulter Hub & Spindle	102
3" x 16" 8 Bolt Hub & Spindle	104
10 Bolt Hub & Spindle	106
Lion 2500 TL Series 3" x 8" Cylinder	108
Lion 2500 Series 3" x 16" Cylinder	110
Lion 2500 Series 4" x 16" Cylinder	112

Assembly Completion.....	113
Appendix.....	114

Introduction:

Please take the time to carefully read all the instruction booklets provided with your new Kongskilde product. Once you are finished reading do not throw these guides out. Keep them for later review.



These instruction booklets have been developed to assist you in assembling, adjusting and maintaining your new Kongskilde Product. To obtain optimal performance over the lifetime of the product read and follow these instructions carefully.

When the assembly of the unit is completed, please refer to the Owners Manual before attempting to adjust or use the product. The Owners Manual will provide you with further instructions on the proper Field Settings, Adjustments and Maintenance Procedures for Safe Operation of the unit.

If optional equipment or attachments have been ordered for your unit, please refer to the instruction booklets provided for proper installation and adjustment of these accessories.

Please take the time to fill out and return the Owners Registration and Warranty Form provided with the Owners Manual in order to activate the warranty coverage.

NOTES:

- Images in this manual are for reference only and may not exactly match actual components.
- This manual depicts "Left" and "Right" as if standing behind the unit facing forward.
- Refer to torque chart in Appendix B for proper tightening of bolts, unless otherwise noted.

PARTS AND ASSEMBLY

Tongue/Mainframe Assembly

Instructions:

- Use hardware from 761020955
- Lay chassis on ground, centering mainframe on top of it.
- Align hitch and chassis and install hinge pin.
- Install hinge pin using the hardware shown. Do not install implement jack at this point, as it could result in damage to jack. Jack is to be installed after wings and all hydraulics are assembled on bar.
- Install clevis with pin and hardware shown.
- Install safety chain to outside of chain bracket, using three washers placed in chain as spacer.

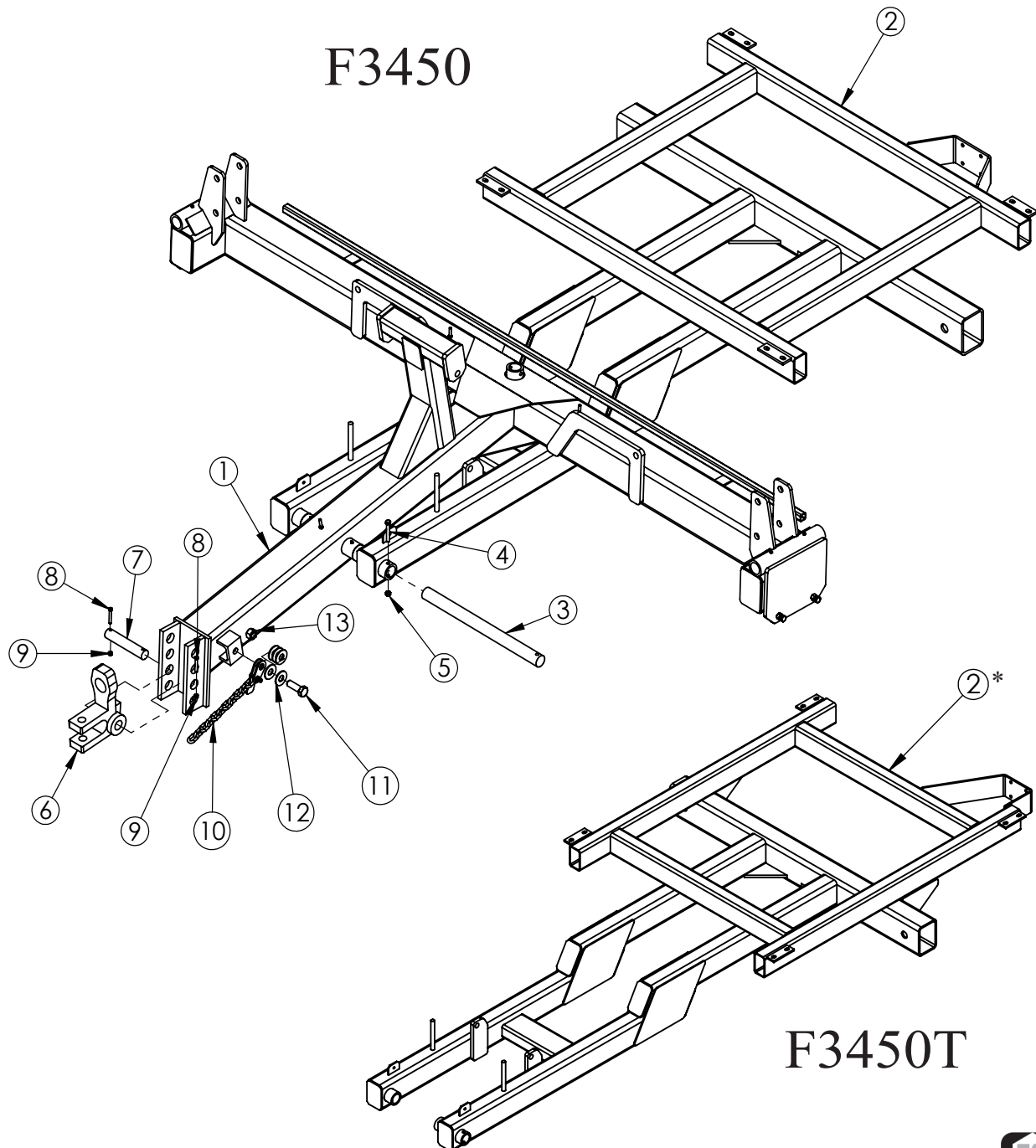
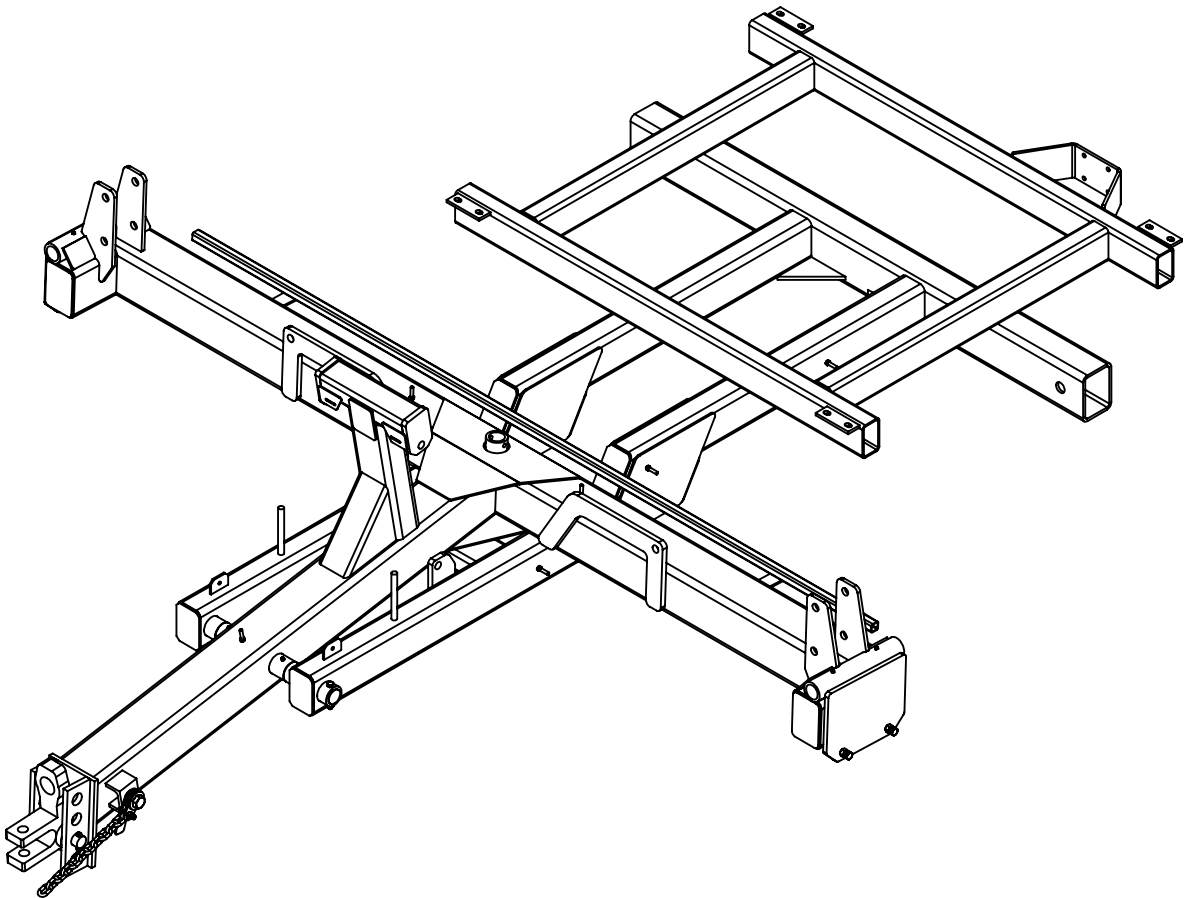


Fig.	Part no.	Qty	Description
1	762450010	1	Wdmt, F3450 Tongue/Mainframe
2	762450050	1	Wdmt, F3450 Sidedress Chassis
2*	762450083	1	Wdmt, F3450T Sidedress Chassis (27.5"/28" row spacing version)
3	76602215	1	Pin, 2" Dia x 26-1/2" Pivot
4	600356137	1	Bolt, 1/2"-13 X 3-1/2" Gr. 5
5	600366030	1	Nut, Top Lock 1/2"-13
6	76450016	1	Clevis, Combination
7	76602178	1	Pin, 1-5/8" Dia x 8-1/2"
8	600356007	2	Bolt, 3/8"-16 x 2-1/2" Gr. 5
9	600366028	2	Nut, Top Lock 3/8"-16
10	600461011	1	Chain, 3/8 Gr. 70 Safety
11	600356002	1	Bolt, 1"-8 x 3" Gr. 5
12	600381018	1	Washer, Flat 1"
13	600366032	1	Nut, Top Lock 1"



18.4 x 26 Tire and Axle Assembly

Instructions:

- Use hardware from hardware bags 761020089 and 76102242.
- Raise rear of chassis, install axles as shown. Note: Left axle has tube on top for pump arm mounting.
- If using ground drive option, install pump arm on left axle using pin and hardware as shown.
- Raise chassis in air and install tire/wheel assemblies.
- Lower chassis to rest on tires and hitch.

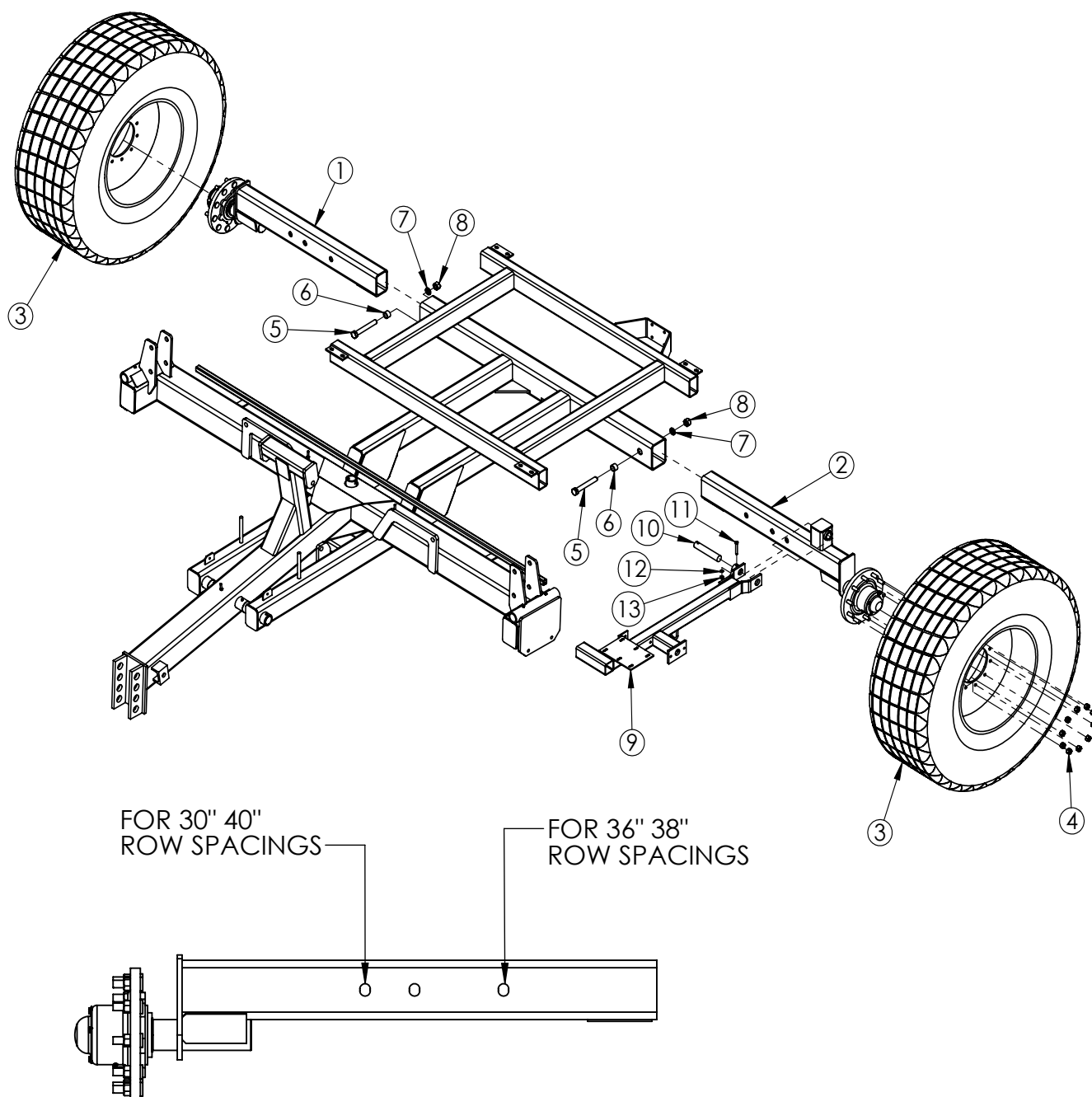
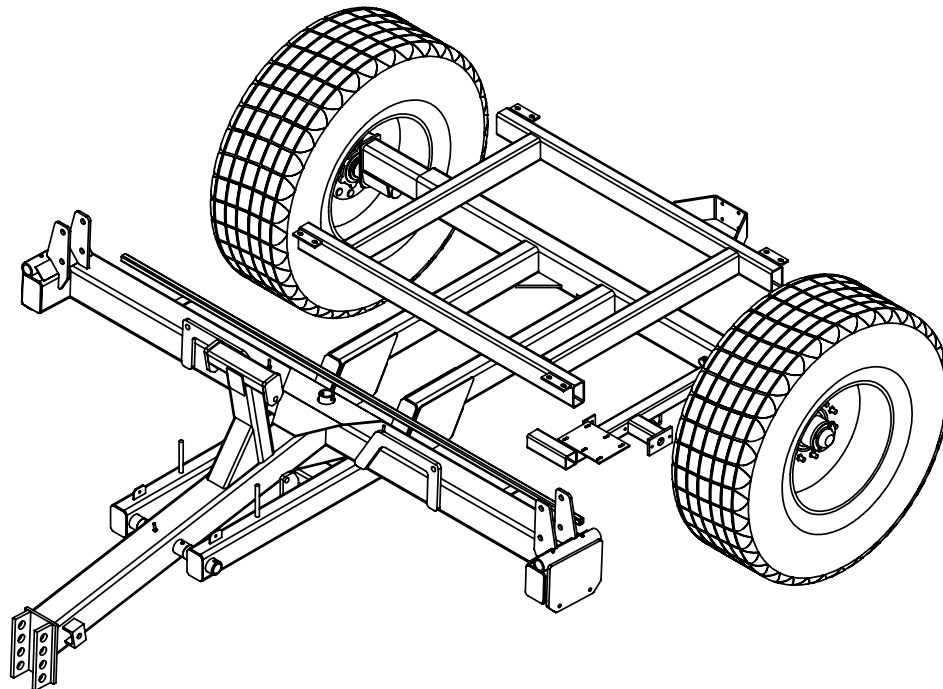


Fig.	Part no.	Qty	Description
1	762450042	1	Assy, Axle- 10 Bolt RH
2	762450043	1	Assy, Ground Drive Axle-10 Bolt LH
3	76301196	2	Assy, Tire/Wheel 18.4 x 26
4	76301235	20	Nut, Lug 5/8"-18
5	76101203	2	Bolt, 1"-8 x 7" Gr 5
6	76602104	2	Bushing, Spacer
7	600382056	2	Washer, Lock 1"
8	600365020	2	Nut, Hex 1"-8
9	76802018	1	Wdmt, Ground Drive Pump Arm
10	76602131	1	Pin, 1-1/2" Dia x 8"
11	600356132	1	Bolt, 7/16-14 x 3" Gr 5
12	76101221	1	Washer, Lock 7/16"
13	600365050	1	Nut, Hex 7/16-14



13.6 x 38 Tire and Axle Assembly

Instructions:

- Use hardware from hardware bags 761020090 and 76102242.
- Raise rear of chassis, install axles as shown. Note: Left axle has tube on top for pump arm mounting.
- If using ground drive option, install pump arm on left axle using pin and hardware as shown.
- Raise chassis in air and install tire/wheel assemblies.
- Lower chassis to rest on tires and hitch.

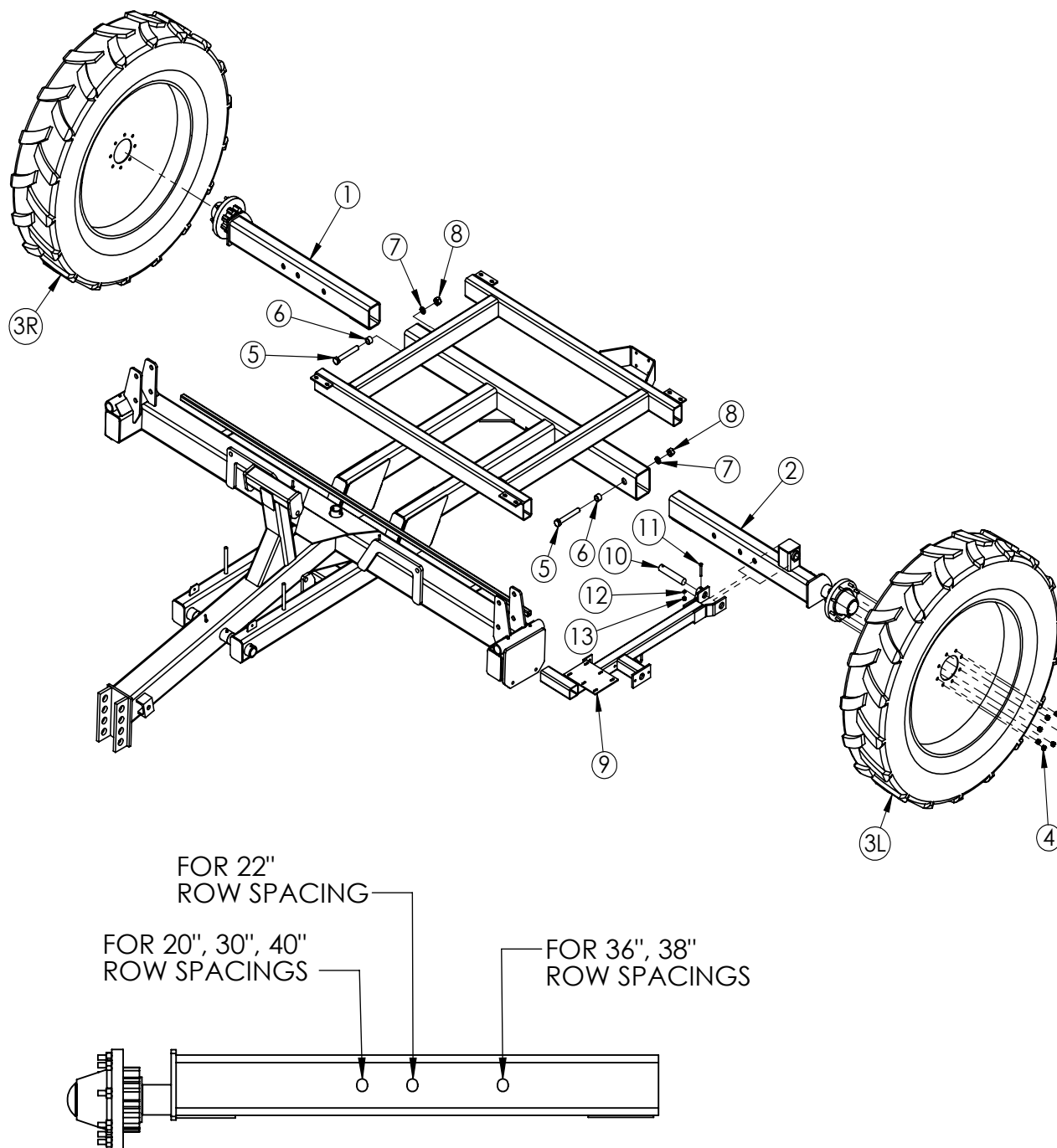
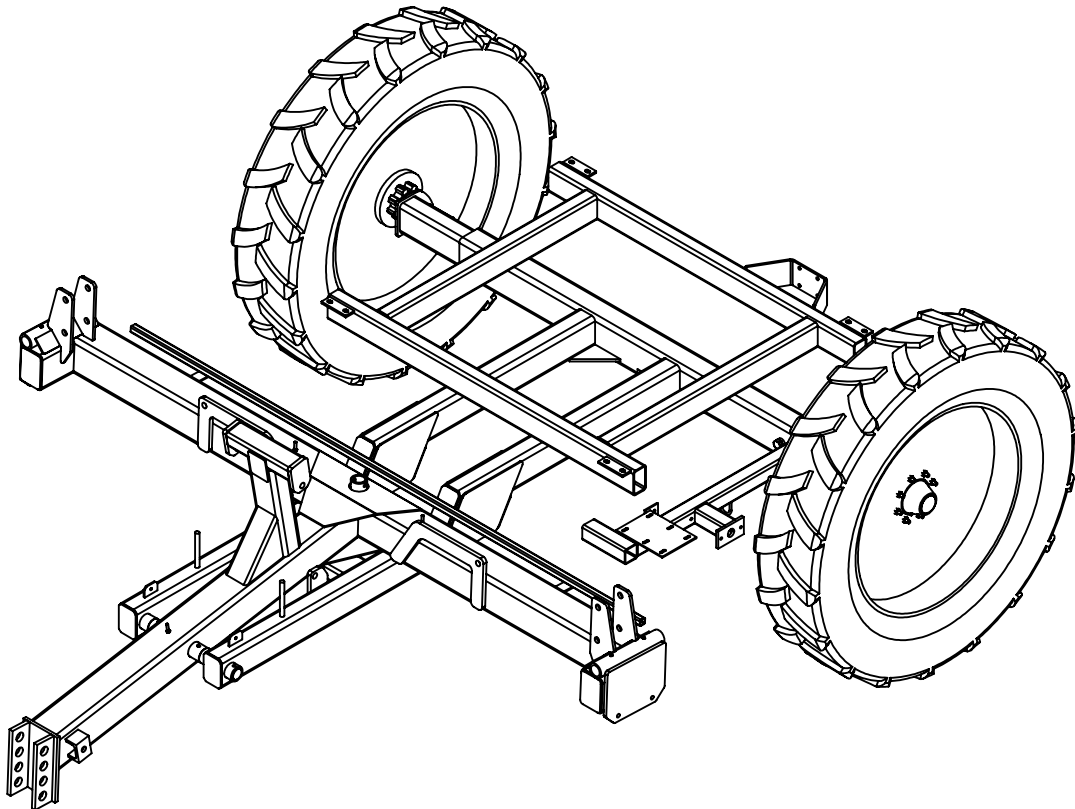


Fig.	Part no.	Qty	Description
1	762450037	1	Assy, Axle- 8 Bolt RH
2	762450038	1	Assy, Ground Drive Axle-8 Bolt LH
3L	76301222L	1	Assy, Tire/Wheel 13.6 x 38"-LH
3R	76301222R	1	Assy, Tire/Wheel 13.6 x 38"-RH
4	76601235	16	Nut, Lug 5/8"-18
5	76101203	2	Bolt, 1"-8 x 7" Gr 5
6	76602104	2	Bushing, Spacer
7	600382056	2	Washer, Lock 1"
8	600365020	2	Nut, Hex 1"-8
9	76802019	1	Wdmt, Ground Drive Pump Arm
10	76602131	1	Pin, 1-1/2" Dia x 8"
11	600356132	1	Bolt, 7/16-14 x 3" Gr 5
12	76101221	1	Washer, Lock 7/16"
13	600365050	1	Nut, Hex 7/16-14



13.6 x 38 Tire and Axle Assembly For F3450T

Instructions:

- Use hardware from hardware bags 761020090 and 76102242.
- Raise rear of chassis, install axles as shown. Note: Left axle has tube on top for pump arm mounting.
- If using ground drive option, install pump arm on left axle using pin and hardware as shown.
- Raise chassis in air and install tire/wheel assemblies.
- Lower chassis to rest on tires and hitch.

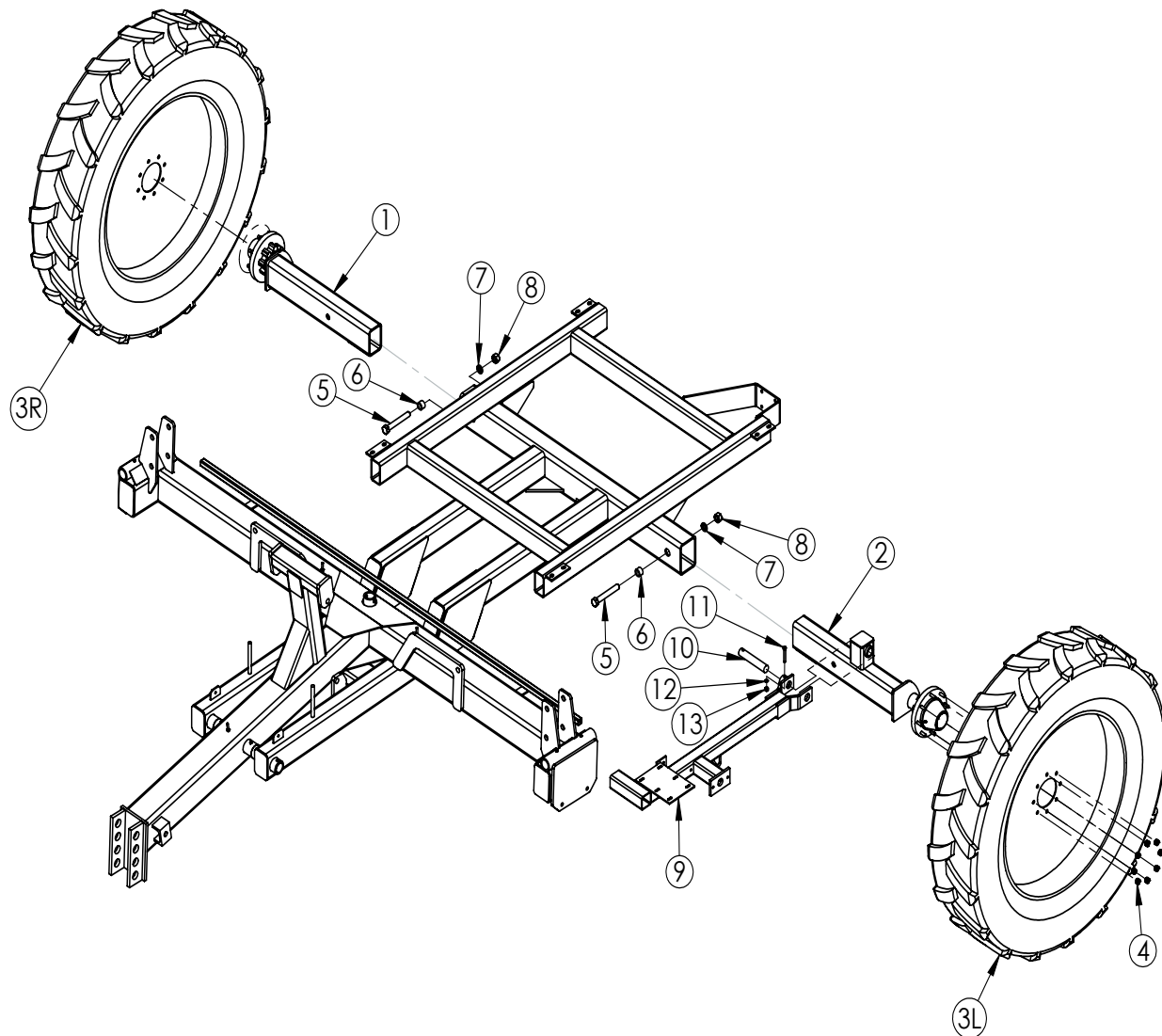
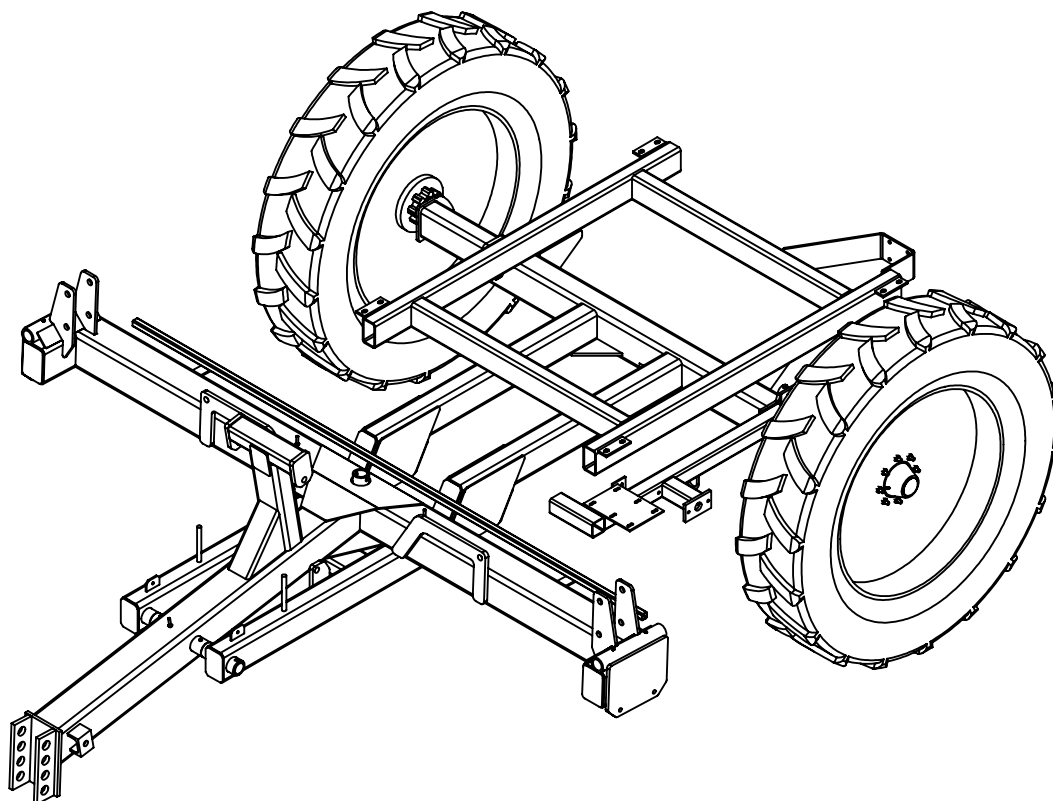


Fig.	Part no.	Qty	Description
1	76802024	1	Assy, Short Axle- 8 Bolt RH
2	76802025	1	Assy, Short Ground Drive Axle-8 Bolt LH
3L	76301222L	1	Assy, Tire/Wheel 13.6 x 38"-LH
3R	76301222R	1	Assy, Tire/Wheel 13.6 x 38"-RH
4	76601235	16	Nut, Lug 5/8"-18
5	76101203	2	Bolt, 1"-8 x 7" Gr 5
6	76602104	2	Bushing, Spacer
7	600382056	2	Washer, Lock 1"
8	600365020	2	Nut, Hex 1"-8
9	76802019	1	Wdmt, Ground Drive Pump Arm
10	76602131	1	Pin, 1-1/2" Dia x 8"
11	600356132	1	Bolt, 7/16-14 x 3" Gr 5
12	76101221	1	Washer, Lock 7/16"
13	600365050	1	Nut, Hex 7/16-14



Drop Leg Jack Assembly

Instructions:

-Attach jack as shown, using hardware on next page. Jack positioning can be adjusted according to drawbar heights, tire size, etc.

NOTE: Ensure jack is mounted far enough away from hitch to ensure three point arms or quick hitch does not contact jack while turning.

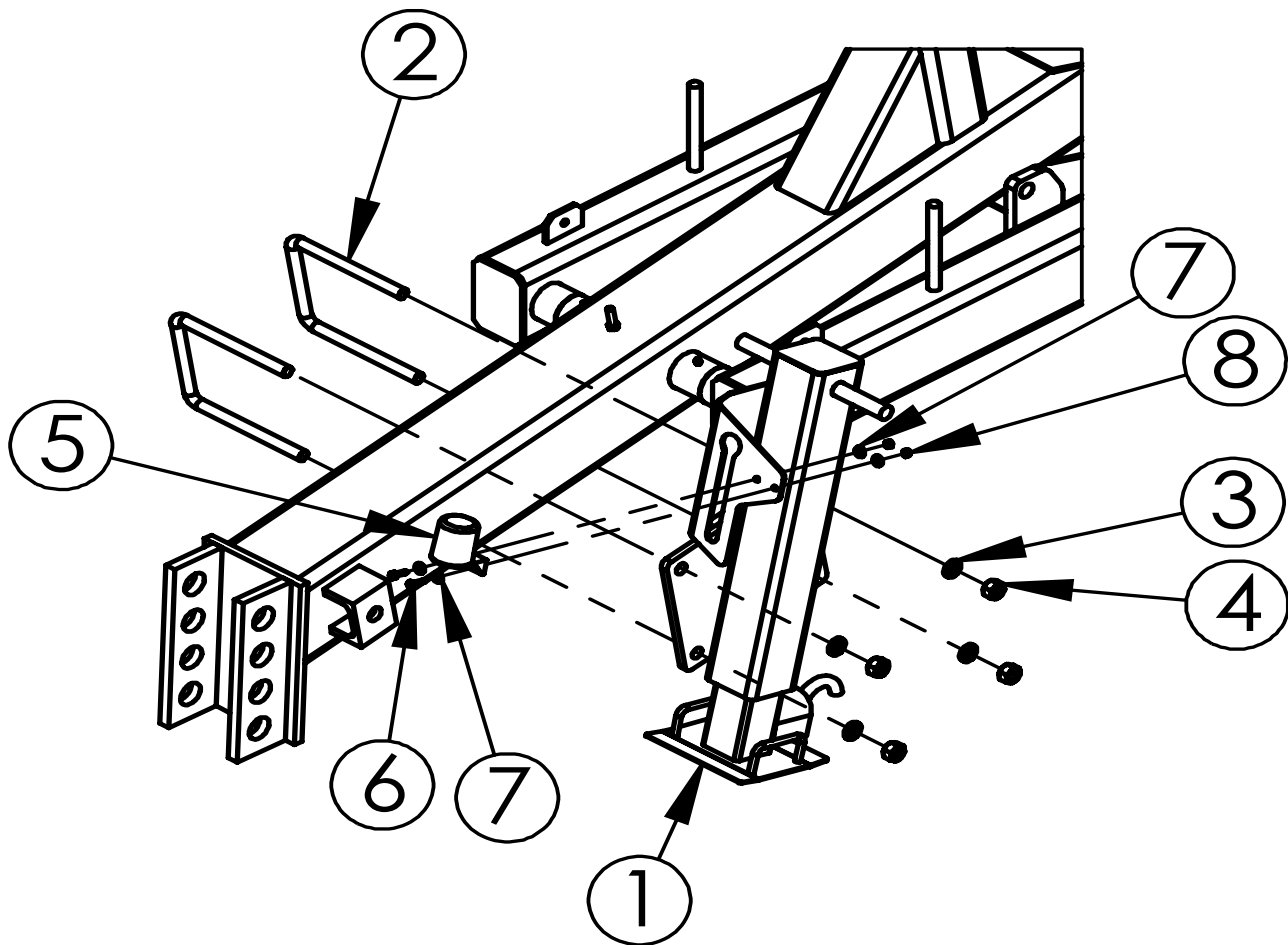


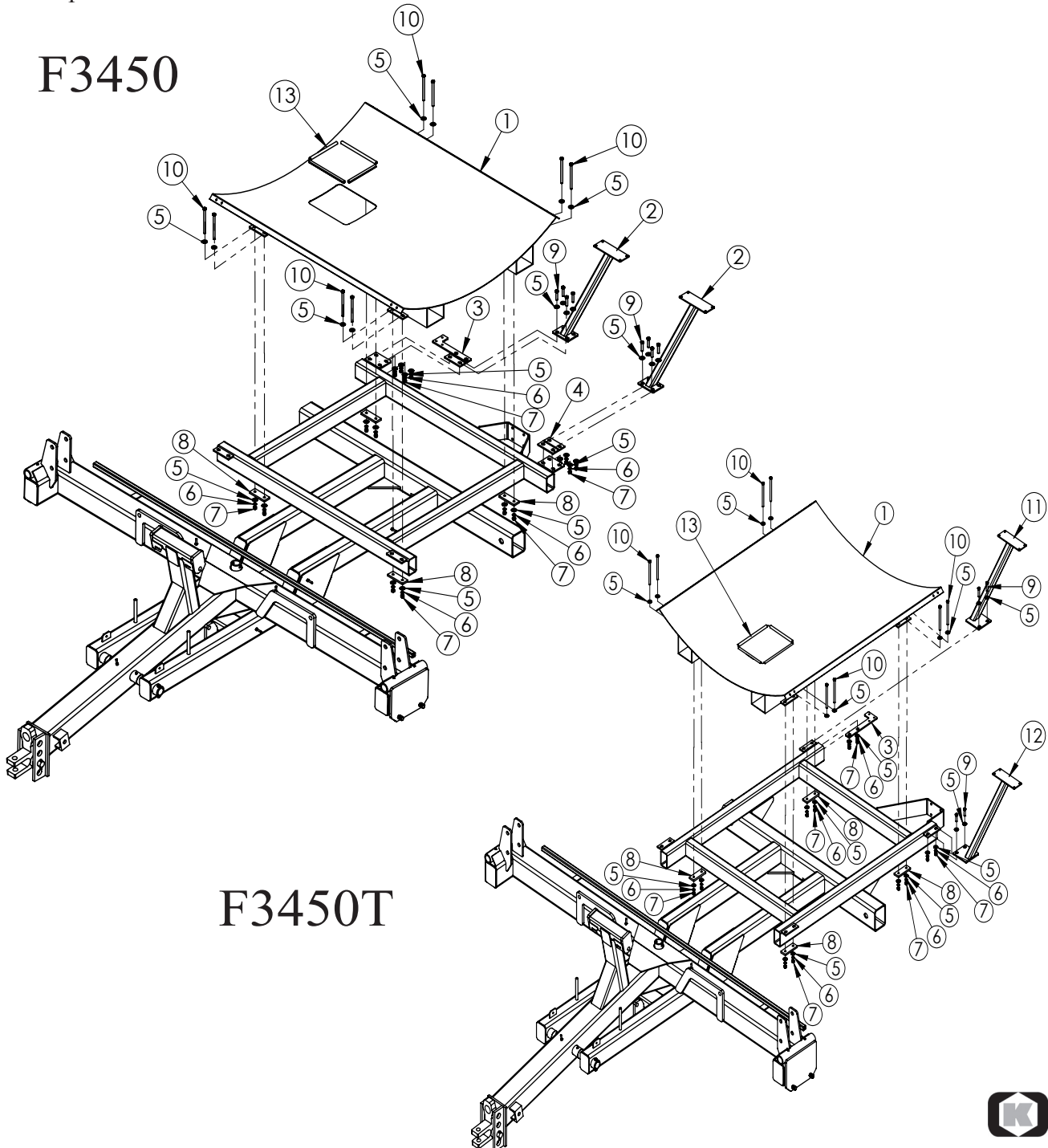
Fig.	Part no.	Qty	Description
1	762450004	1	Wdmt, HD 12,000 lb Jack
2	76101316	2	U-Bolt 3/4" x 7" x 9"
3	600382055	4	Washer, Lock 3/4"
4	600365019	4	Nut, Hex 3/4"-10
5	760001005	1	Socket, 7 Pin Light Plug Storage
6	600356138	2	Bolt, 1/4"-20 x 1" Gr 5
7	76101227	4	Washer, Flat 1/4"
8	600366026	2	Nut, Toplock 1/4"-20

750 Gallon Tank Saddle

Instructions:

- Use hardware from hardware bag 76102233.
- Install tank saddle on chassis with sump cut-out on right hand side of chassis (F3450) or towards front (F3450T). Saddle rests on frame rails and is secured with bolts and 1/2" backer plates.
- For F3450, install light bar mount brackets on mount tabs in rear with quick-fill bracket sandwiched in between bracket and right rear mount tab on chassis. Use spacer along with quick-fill bracket. Use two spacers on left hand side.
- For F3450T, install light bar mount brackets directly on top of mount tabs. Do not use spacers. Install quick-fill bracket under right hand mount tab.
- Cut 3/8" hose into two 11" and two 13" pieces. Slice hose lengthwise and insert around edges of sump cut-out.

F3450



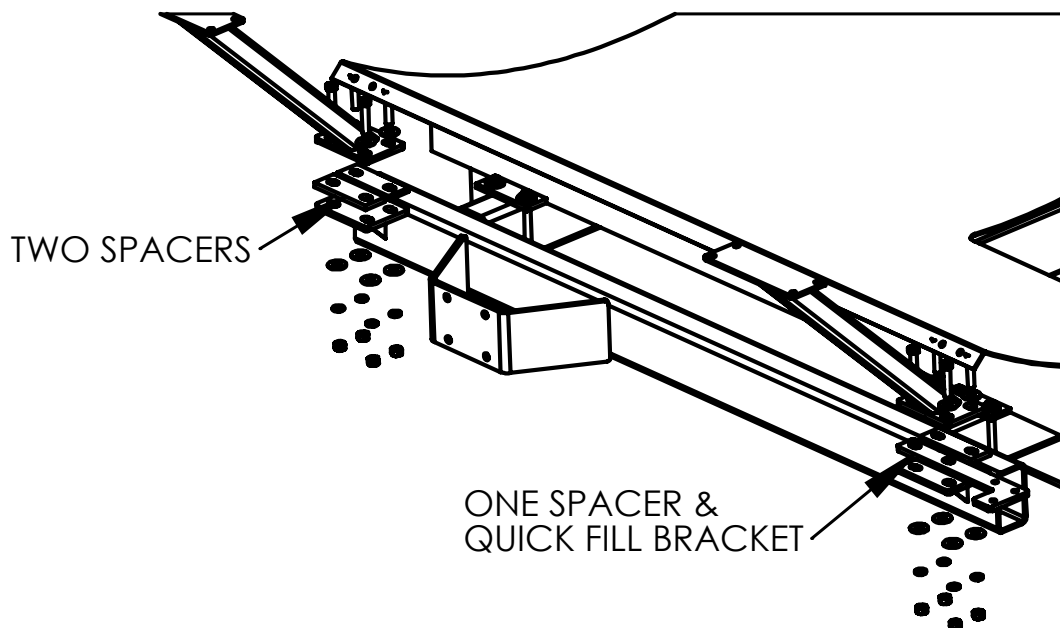
F3450T



Fig.	Part no.	Qty	Description
1	76801716	1	Wdmt, 750 Gallon Tank Saddle
2	762450076	2	Wdmt, Light Bar Mount Bracket (F3450 only)
3	76400168	1	Bracket, Quick-Fill Mount
4	7624530051	3	Spacer, Saddle Tab (F3450 only)
5	600381050	28	Washer, Flat 1/2" (F3450)
-	600381050	24	Washer, Flat 1/2" (F3450T)
6	600382053	16	Washer, Lock 1/2" (F3450)
-	600382053	12	Washer, Lock 1/2" (F3450T)
7	600365009	16	Nut, Hex 1/2"-13 (F3450)
-	600365009	12	Nut, Hex 1/2"-13 (F3450T)
8	76400210	4	Plate, Backer-1/2" x 2" x 5-9/16"
9	600356022	8	Bolt, 1/2"-13 x 2-1/2" Gr 5 (F3450)
-	600356022	4	Bolt, 1/2"-13 x 2-1/2" Gr 5 (F3450T)
10	76101383	8	Bolt, 1/2"-13 x 7-1/2" Gr 5
11	762450081	1	Wdmt, Right Light Bar Mount Bracket (F3450T only)
12	762450080	1	Wdmt, Left Light Bar Mount Bracket (F3450T only)
13*	76700122	*	Hose, 3/8" EPDM

*Item 13 is sold by the foot using part no. 76700122.

F3450 ONLY



750 Gallon Tank

Instructions:

- Place tank in saddle ensuring sump is centered in saddle hole.
- Use tank straps and hardware as shown to secure tank to saddle. First tighten bolts down with one hex nut. Then lock nut with second hex nut.

Note: Parts are same for F3450T version.

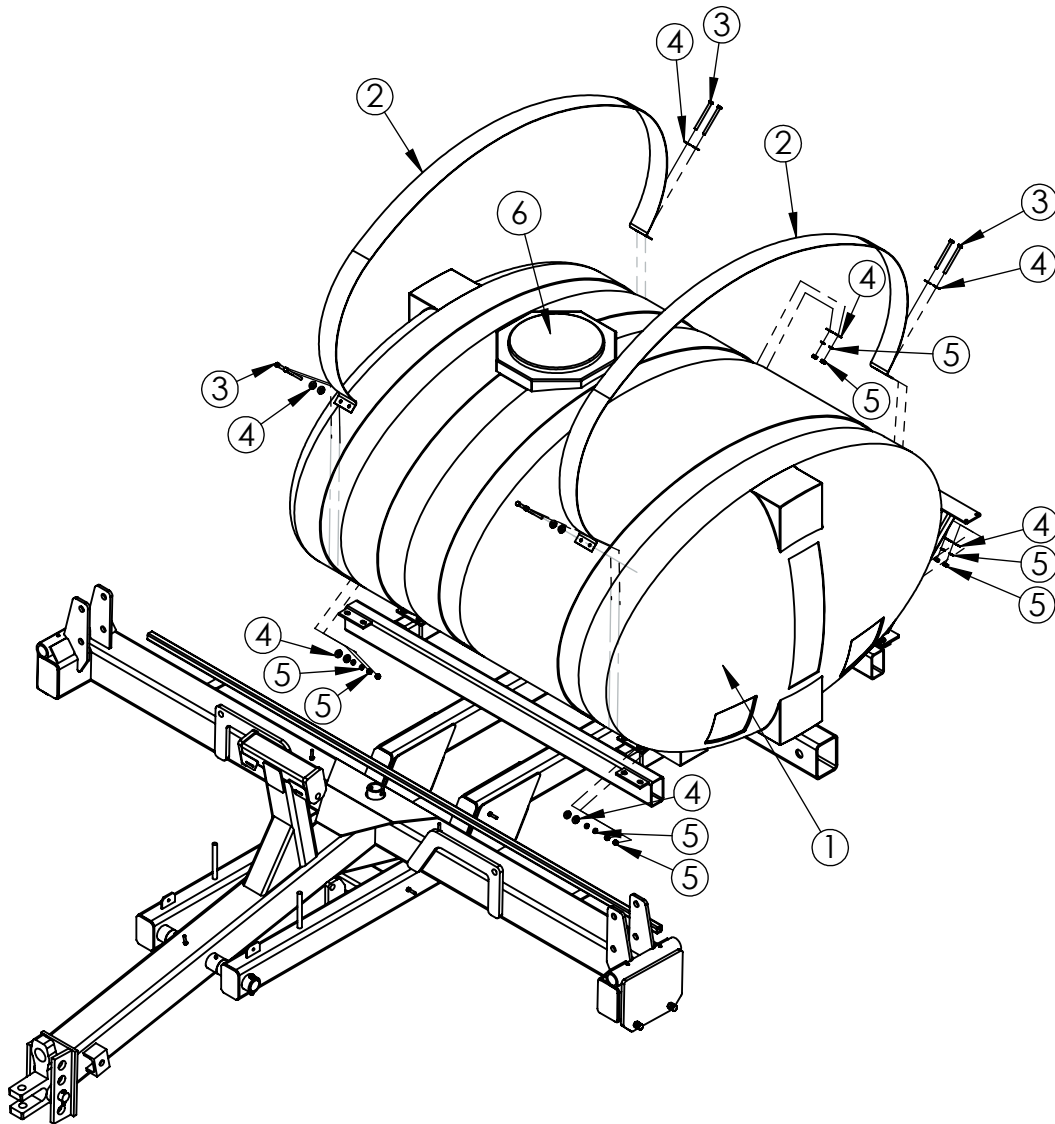
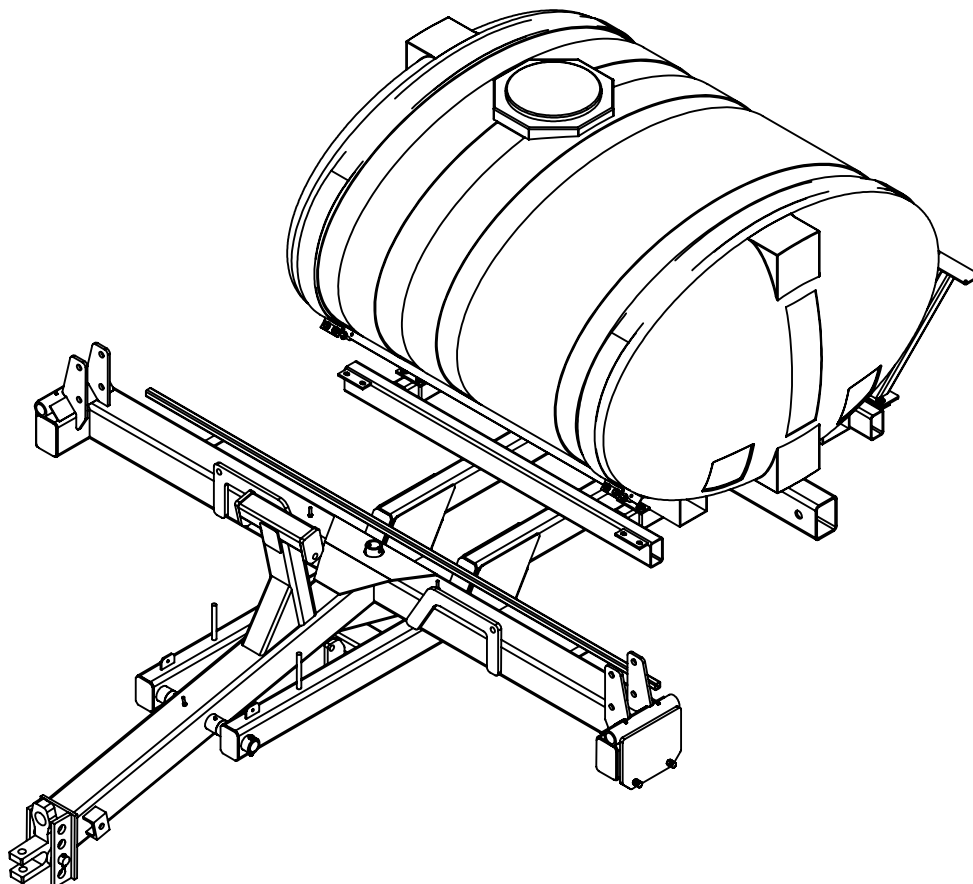


Fig.	Part no.	Qty	Description
1	76750021	1	Tank, 750 Gallon Elliptical Poly
2	76400141	2	Strap, 750 Gallon Tank
3	76801838	8	Bolt, 7/16"-14 x 5" Gr 5
4	600381007	16	Washer, Flat 7/16"
5	600365050	16	Nut, Hex 7/16"-14
6	76750033	*	Lid, Tank (Included with Tank 76750021)



1000 Gallon Tank Saddle

Instructions:

- Use hardware from hardware bag 76102234.
 - Install tank saddle on chassis with sump cut-out on right hand side of chassis (F3450) or towards front (F3450T), ensuring correct lengths of bolts as shown. Install light bar mount brackets on top of saddle mount tabs in rear.
 - For F3450, install quick-fill bracket sandwiched between right rear saddle mount plate and light bracket. Use spacer to install left hand light bracket.
 - For F3450T, install quick-fill bracket under right mount tab on chassis.
- Note: If using hydraulic pump option, install pump mount bracket at this point as shown on hydraulic pump mounting assembly page using two 1/2" x 2-1/2" bolts included in pump hardware bag in place of two 1/2" x 2" bolts.
- Cut 3/8" hose into two 11" and two 13" long pieces. Slice hose lengthwise and insert around edges of sump cut-out.

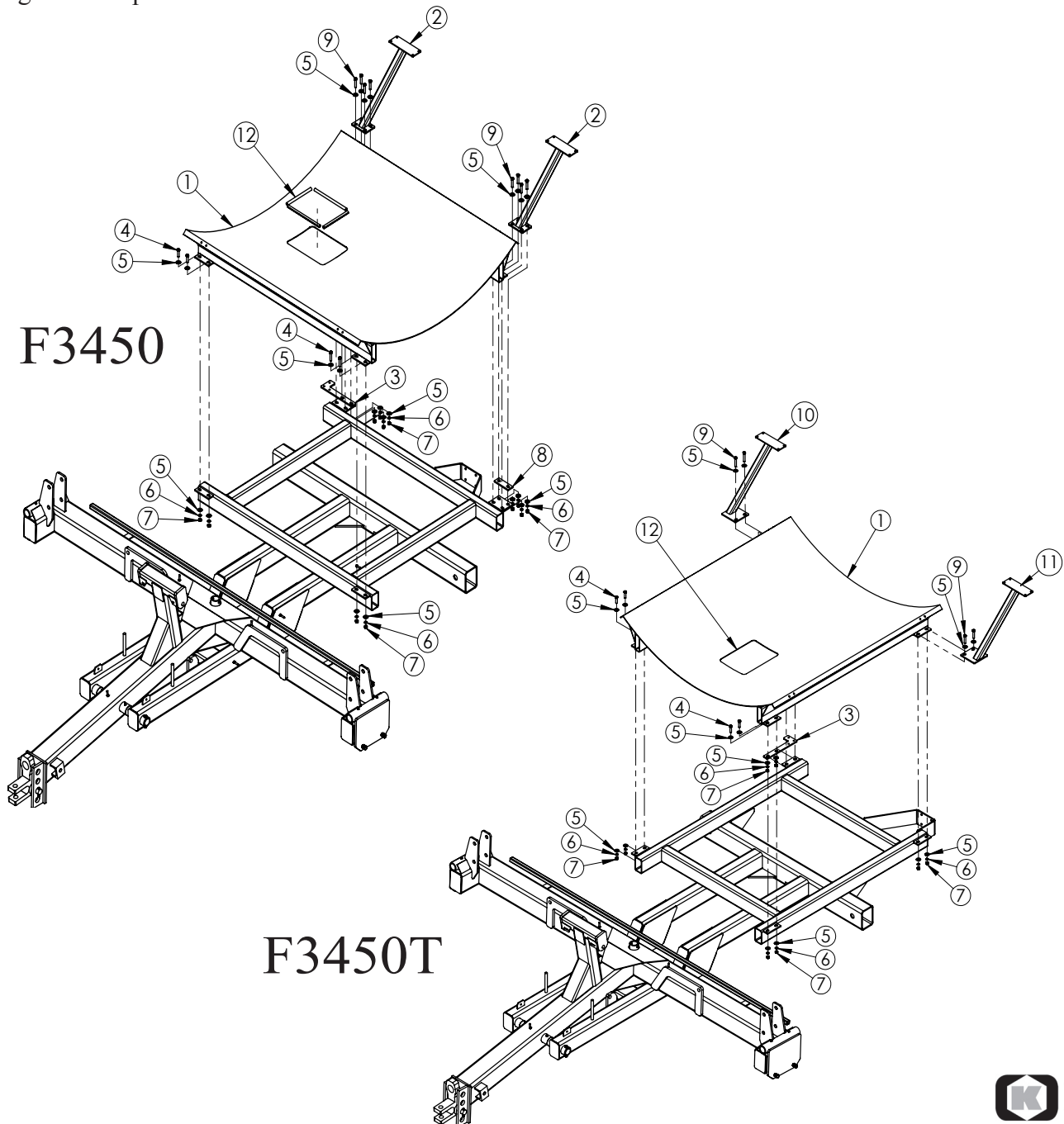
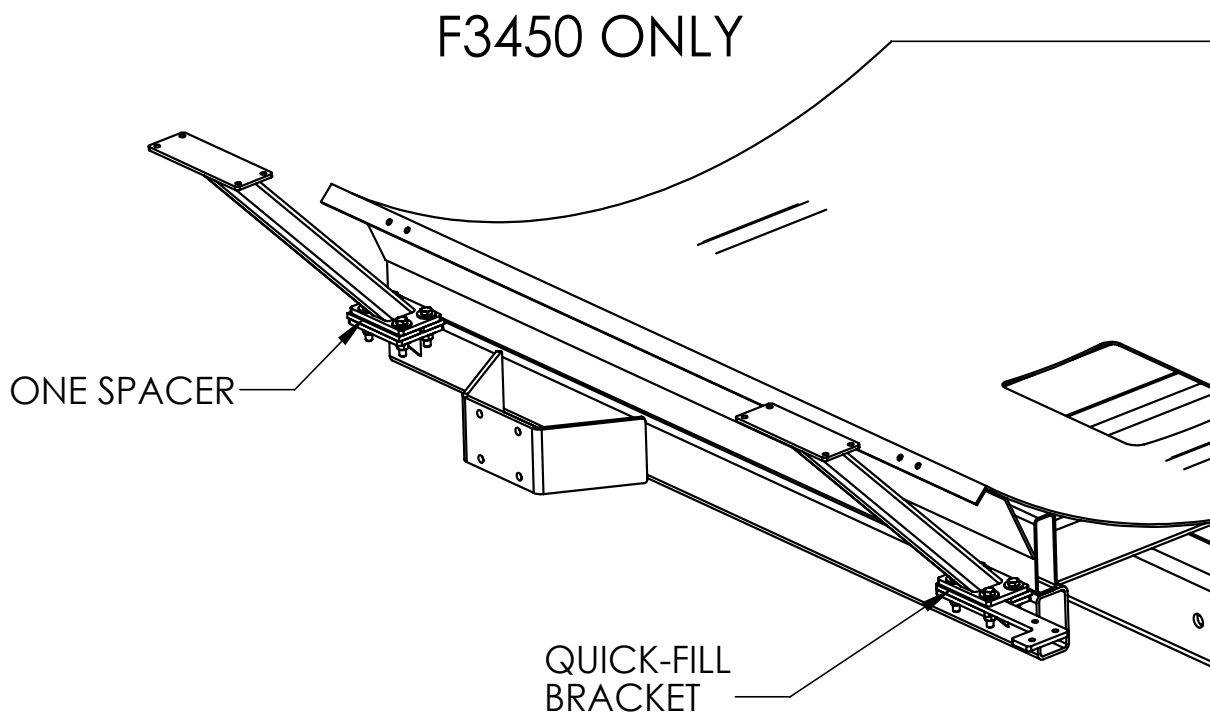


Fig.	Part no.	Qty	Description
1	76801009	1	Wdmt, 1000 Gallon Tank Saddle
2	762450076	2	Wdmt, Light Bar Mount Bracket (F3450 only)
3	76400168	1	Bracket, Quick-Fill Mount
4	600356128	4	Bolt, 1/2"-13 x 2" Gr 5
5	600381050	24	Washer, Flat 1/2" (F3450)
-	600381050	16	Washer, Flat 1/2" (F3450T)
6	600382053	12	Washer, Lock 1/2" (F3450)
-	600382053	8	Washer, Lock 1/2" (F3450T)
7	600365009	12	Nut, Hex 1/2"-13 (F3450)
-	600365009	8	Nut, Hex 1/2"-13 (F3450T)
8	7624530051	1	Spacer, Saddle Tab (F3450 only)
9	600356022	2	Bolt, 1/2"-13 x 2-1/2" Gr 5
10	762450081	1	Wdmt, Right Light Bar Mount Bracket (F3450T only)
11	762450080	1	Wdmt, Left Light Bar Mount Bracket (F3450T only)
12*	76700122	*	Hose, 3/8" EPDM

*Item 12 sold by the foot using part no. 76700122.



1000 Gallon Tank

Instructions:

- Place tank in saddle ensuring sump is centered in saddle hole.
- Use tank straps and hardware as shown to secure tank to saddle. First tighten bolts down with one hex nut. Then lock nut with second hex nut.

Note: Parts are same for F3450T version.

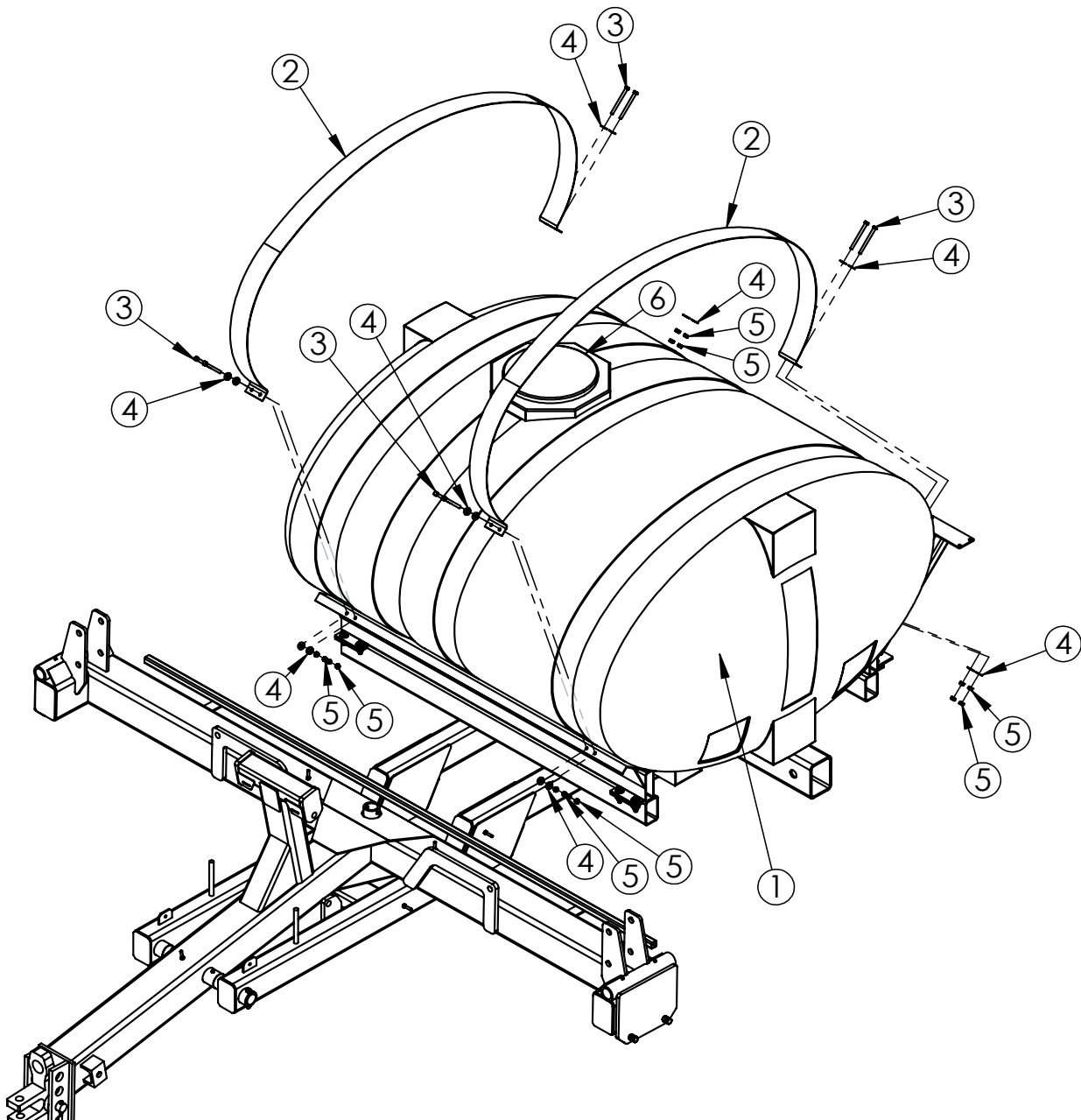
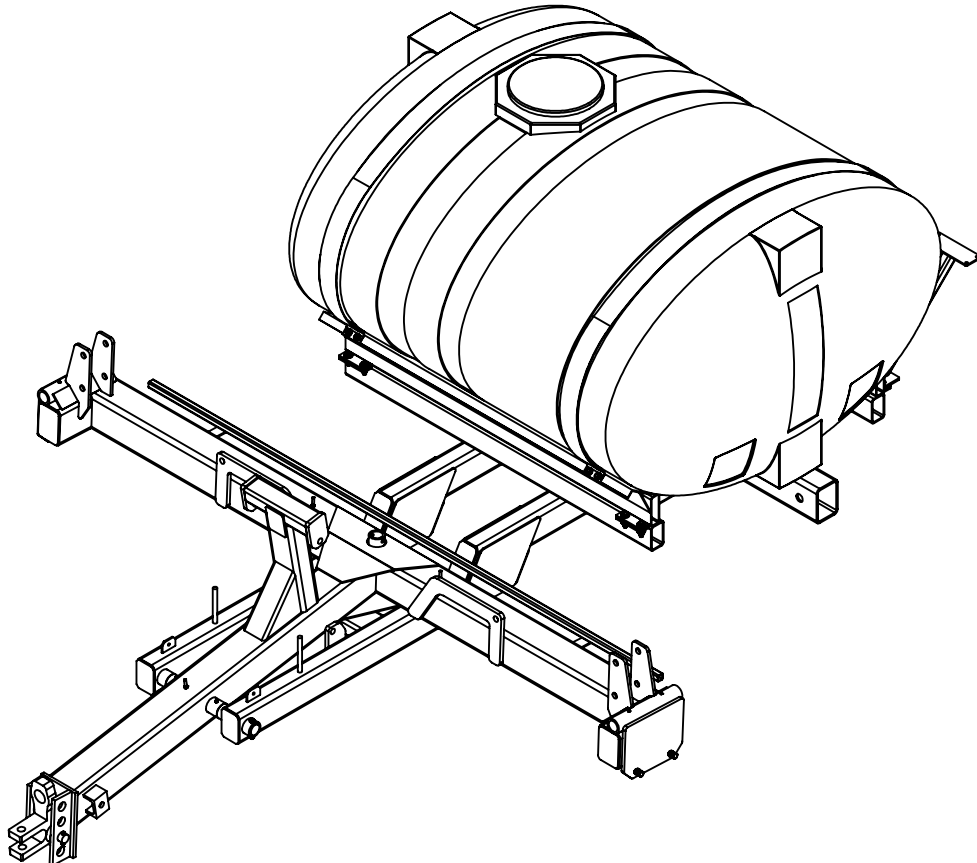


Fig.	Part no.	Qty	Description
1	76750002	1	Tank, 1000 Gallon Elliptical Poly
2	76400009	2	Strap, 1000 Gallon Tank
3	76801838	8	Bolt, 7/16"-14 x 5" Gr 5
4	600381007	16	Washer, Flat 7/16"
5	600365050	16	Nut, Hex 7/16"-14
6	76750033	*	Lid, Tank (Included with Tank 76750002)



Inner Wing Assembly

Instructions:

- Use hardware from hardware bag 761020955.
- Install 5/8" bolt and nuts into holes in end plate on mainframe with head sticking out and one nut on either side of plate. Note: Bolts are for wing level adjustment. Adjust after complete assembly of the unit.
- Install wing with hardware as shown.
- Repeat for opposite side.

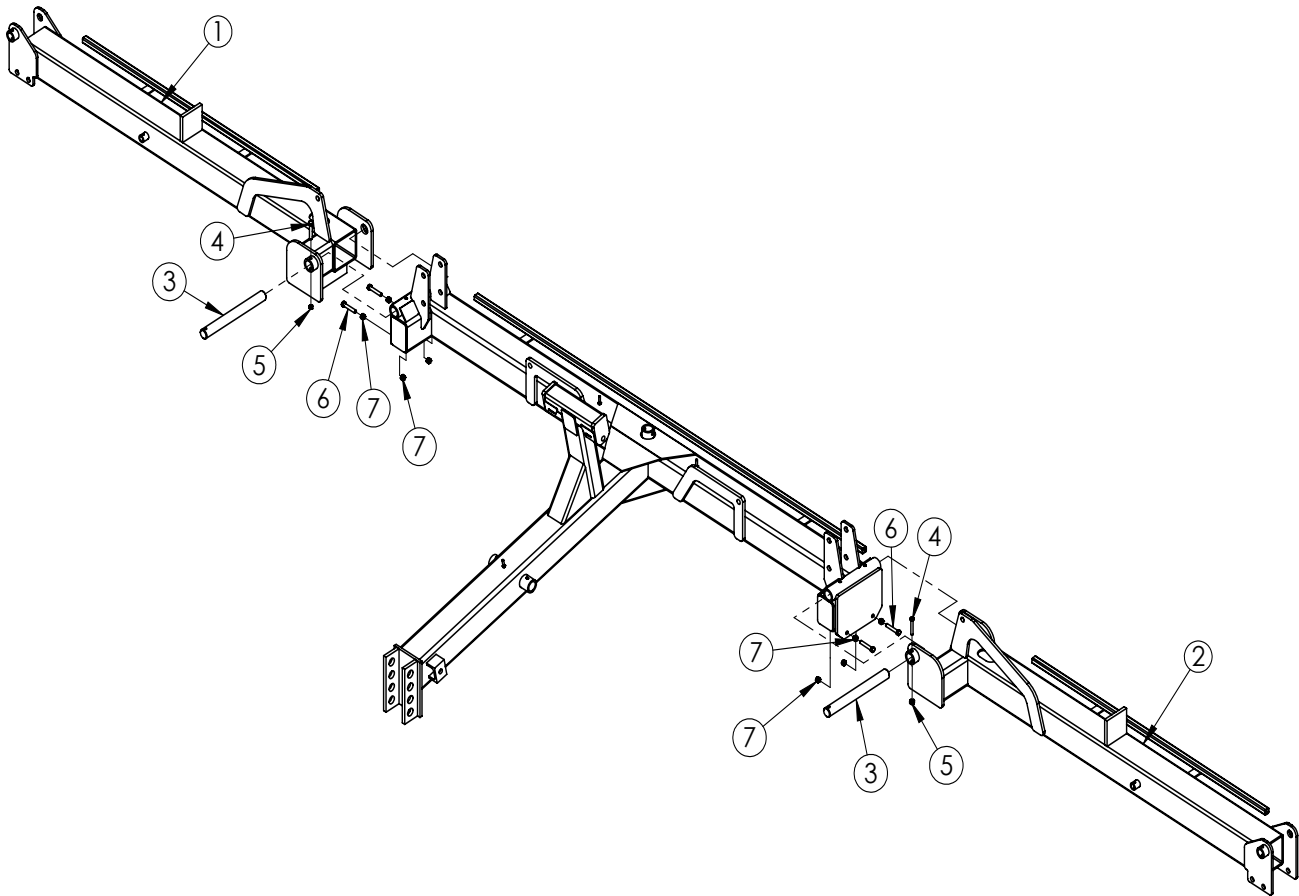
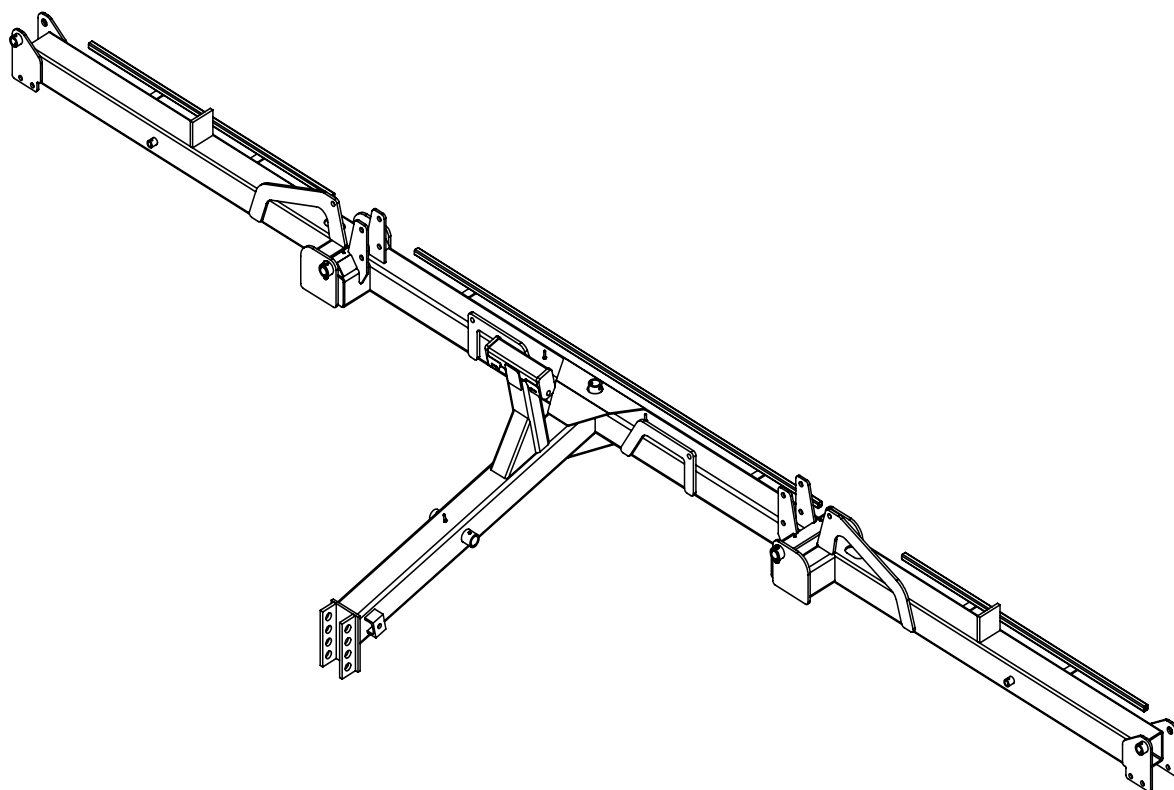


Fig.	Part no.	Qty	Description
1	762450016	1	Wdmt, F3450 Inner Wing-RH
2	762450017	1	Wdmt, F3450 Inner Wing-LH
3	766022555	2	Pin, 2" x 18.56" Plated
4	600356137	2	Bolt, 1/2"-13 x 3.5" Gr 5
5	600366030	2	Nut, Top Lock 1/2"-13
6	7600356164	4	Bolt, 5/8-11 x 3 Gr 5 Full Thread
7	600365014	8	Nut, Hex 5/8-11



Short Outer Wing (32.5')

Instructions:

- Use hardware in 761020955.
- Attach outer wing to inner wing using pins and hardware as shown.
- Repeat for opposite side.

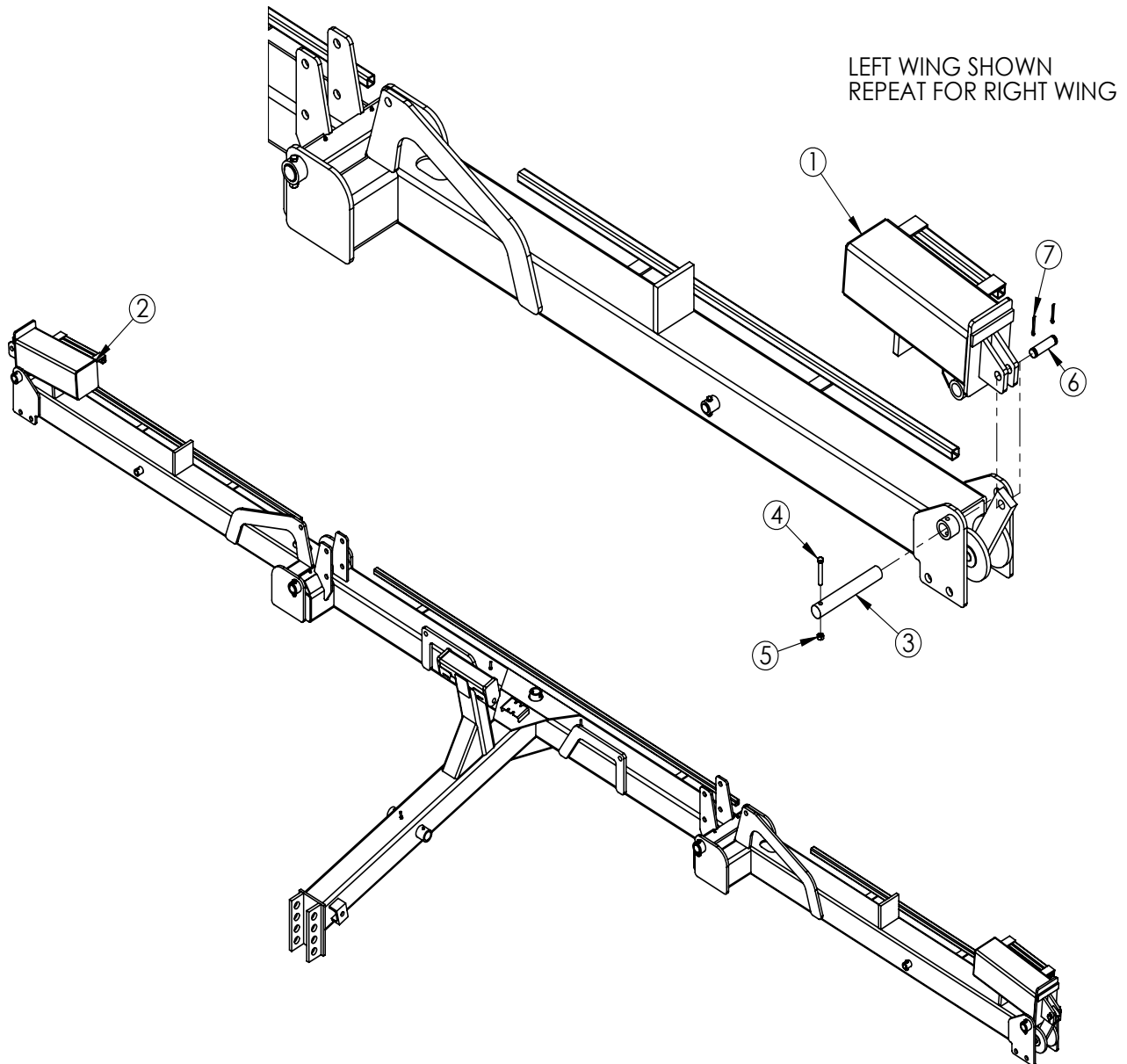


Fig.	Part no.	Qty	Description
1	760066200	1	Wing, Short Outer -LH
2	760066201	1	Wing, Short Outer -RH
3	76602204	2	Pin, Hinge 1-1/2" x 10-1/4"
4	600356132	2	Bolt, 7/16"-14 x 3" Gr. 5
5	600366100	2	Nut, Toplock 7/16"-14
6	76602112	2	Pin, Cylinder 1" x 3-3/8"
7	600383058	4	Pin, Cotter 5/32" x 2"

Intermediate Outer Wing (37.5')

Instructions:

- Use hardware in 761020955.
- Attach outer wing to inner wing using pins and hardware as shown.
- Repeat for opposite side.

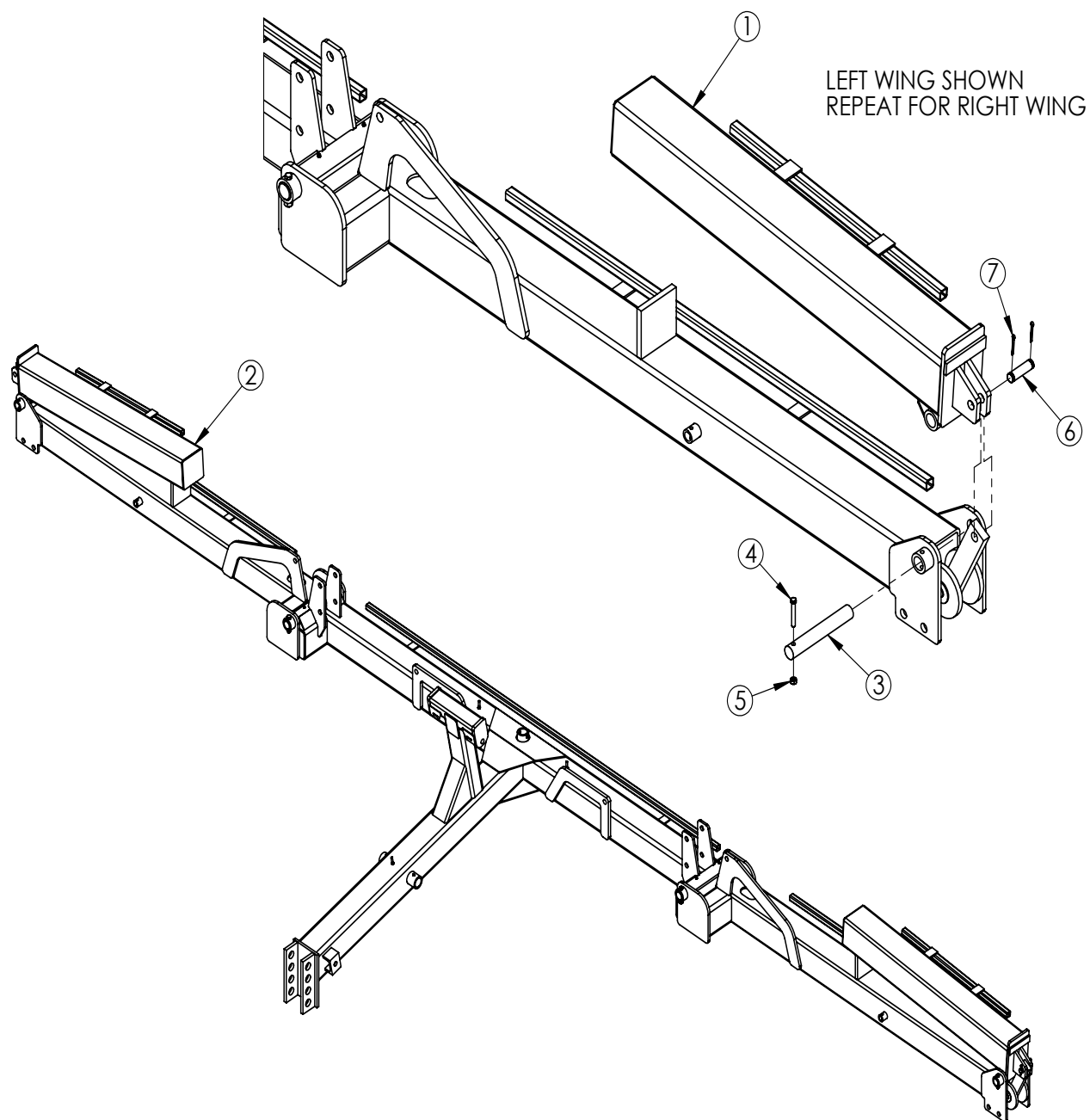


Fig.	Part no.	Qty	Description
1	762450025	1	Wdmt, Intermediate Outer Wing -LH
2	762450024	1	Wdmt, Intermediate Outer Wing -RH
3	76602204	2	Pin, Hinge 1-1/2" x 10-1/4"
4	600356132	2	Bolt, 7/16"-14 x 3" Gr. 5
5	600366100	2	Nut, Toplock 7/16"-14
6	76602112	2	Pin, Cylinder 1" x 3-3/8"
7	600383058	4	Pin, Cotter 5/32" x 2"

Long Outer Wing (40.5')

Instructions:

- Use hardware in 761020955.
- Attach outer wing to inner wing using pins and hardware as shown.
- Repeat for opposite side.

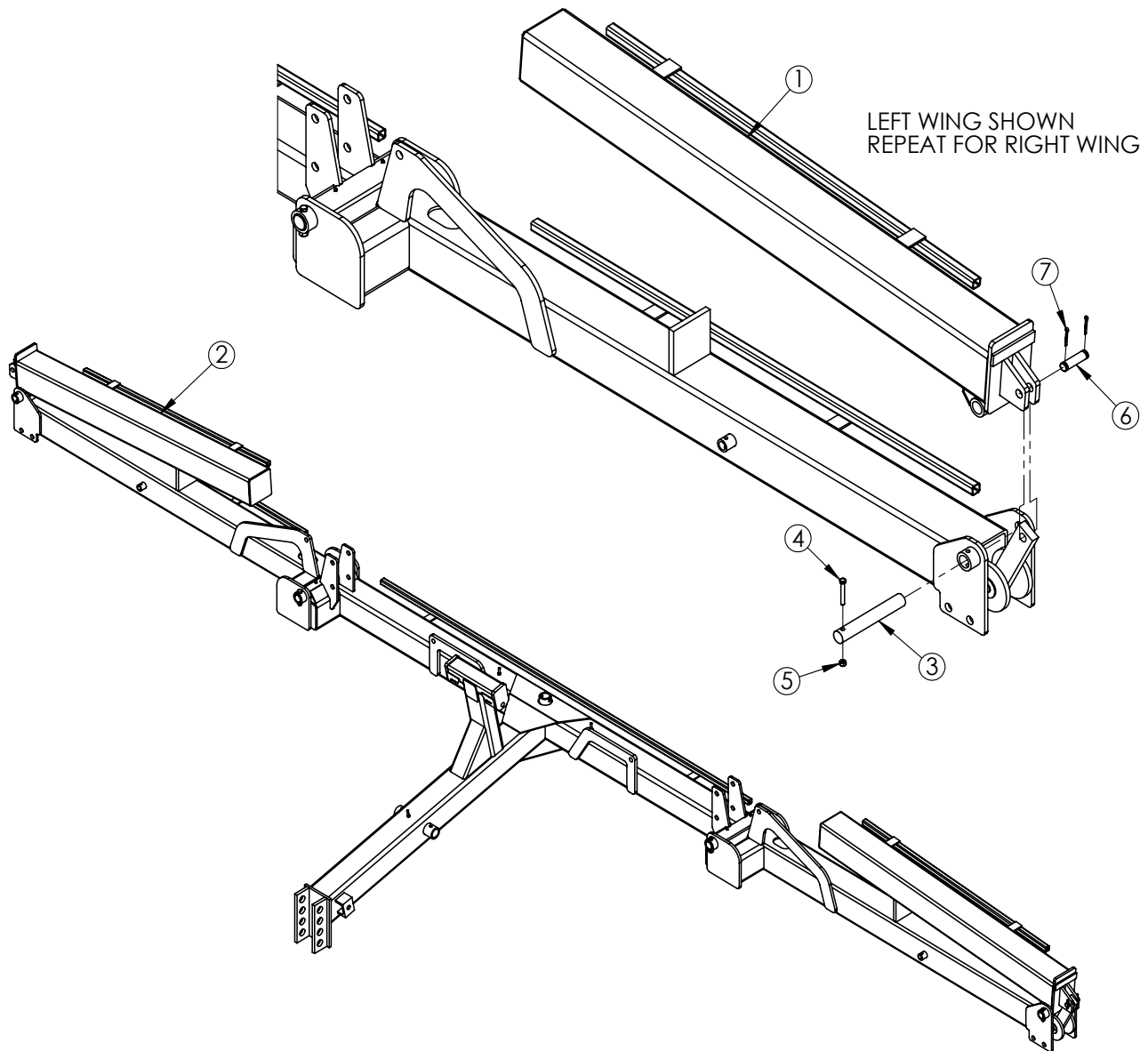
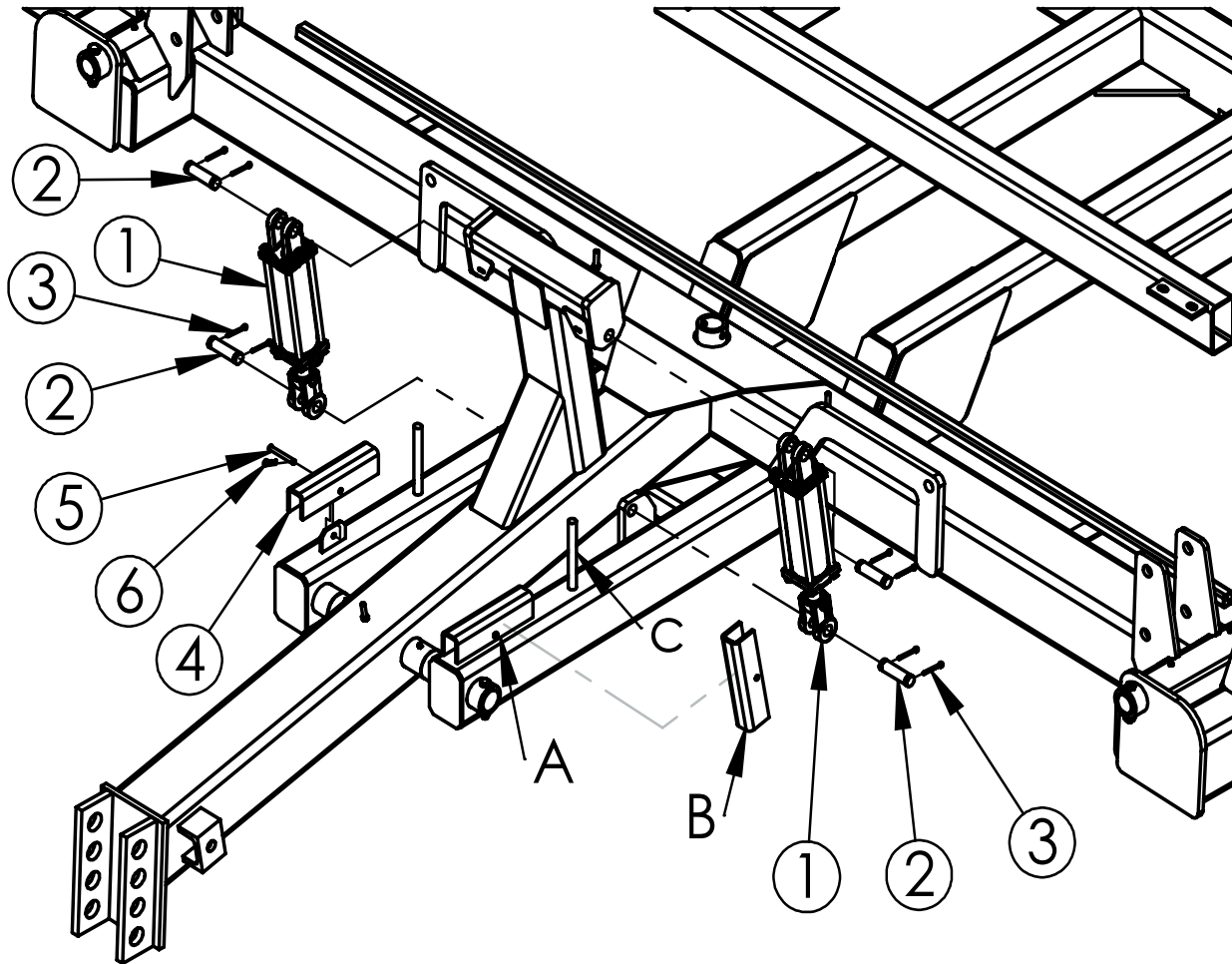


Fig.	Part no.	Qty	Description
1	768017112	1	Wdmt, Long Outer Wing -LH
2	768017111	1	Wdmt, Long Outer Wing -RH
3	76602204	2	Pin, Hinge 1-1/2" x 10-1/4"
4	600356132	2	Bolt, 7/16"-14 x 3" Gr. 5
5	600366100	2	Nut, Toplock 7/16"-14
6	76602112	2	Pin, Cylinder 1" x 3-3/8"
7	600383058	4	Pin, Cotter 5/32" x 2"

Lift Cylinder Assembly

Instructions:

- Attach 3" x 8" lift cylinder as shown with ports facing inward towards each other. Ensure base end of cylinder is attached to tongue/mainframe and rod end to chassis.
- Always use safety stops during transport. Store in position A when not in use.
- Store depth stops on rod C shown below. Note: When using depth stops, the same size stop must be used on both lift cylinders. Depth stops come in package of 4 (1-1/8" dia. to 1-3/8" dia with lengths 3/4", 1", 1-1/4", and 1-1/2")



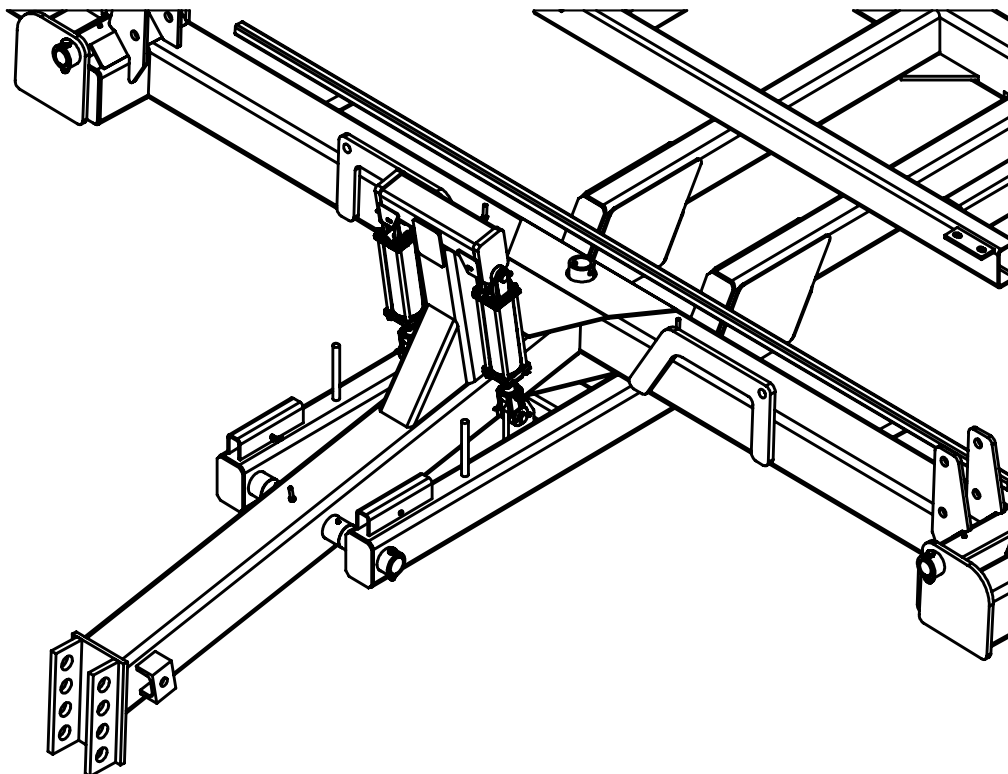
A. Safety lock storage

B. Always use Transport Safety Stops during Transport.

c. Depth Stop Storage



Fig.	Part no.	Qty	Description
1	76204002	2	Cylinder, 3" X 8"
2	76602112	4	Pin, 1" Dia x 3-3/8" Cylinder
3	600383058	8	Pin, Cotter 5/32" x 2"
4	764000831	2	Lock, 8" Stroke Cylinder Safety
5	76101257	2	Pin, Clevis 3/8" x 3"
6	76101258	2	Pin, Hair 2/32" x 1-1/2"
7	76450061	2	Stops, Depth (Package of 4, not shown)



Lift Hydraulics

Instructions:

- Install hydraulic fittings as shown.
- Install hydraulic hoses.
- Route hoses along tongue and mainframe. Route hoses from one cylinder to the next behind lift cylinder tower on tongue. Do not install hold down brackets until wing fold cylinder hoses have been installed.
- Install hydraulic couplers on end of hoses at front of implement and install colored plastic bands to denote hose function.

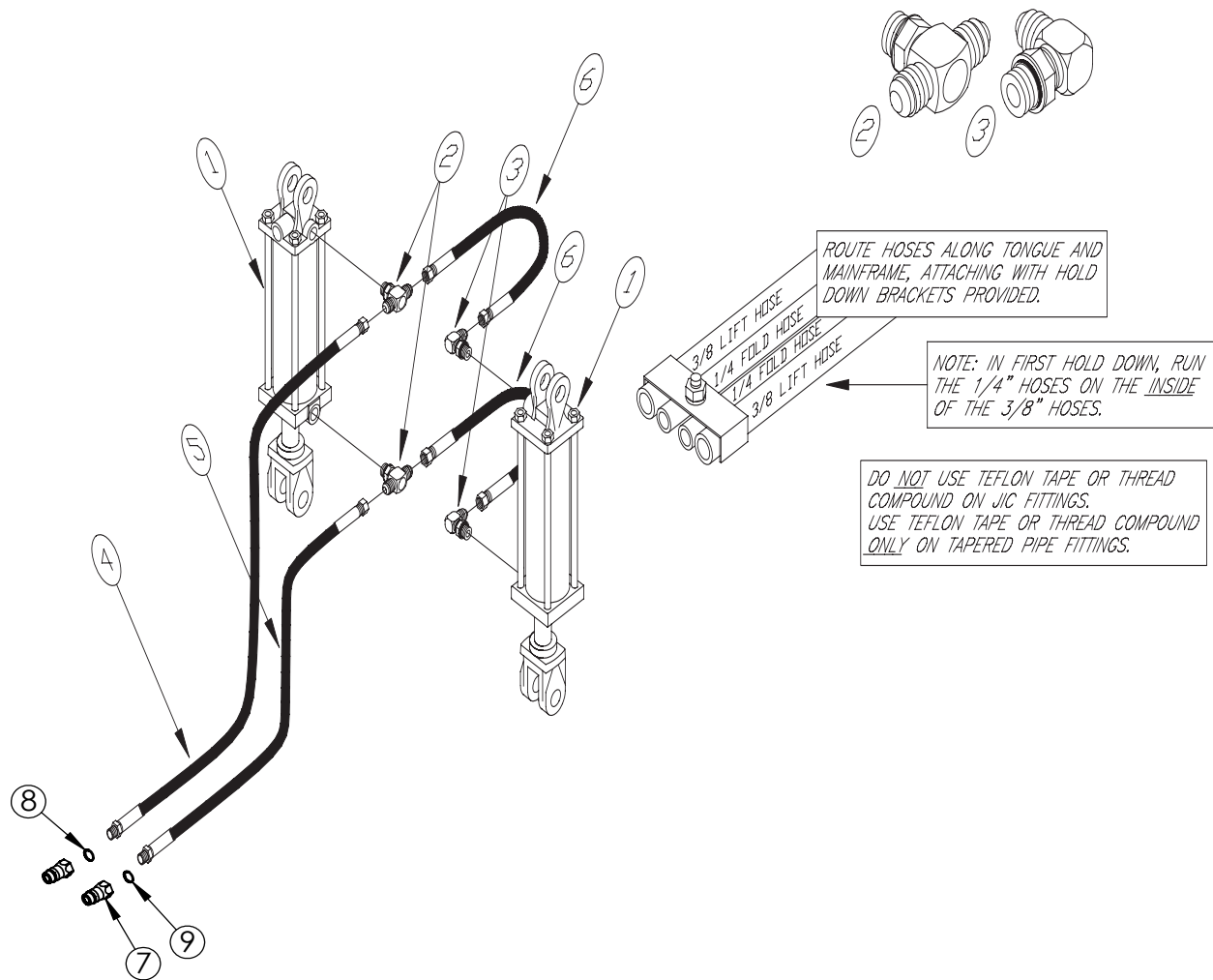
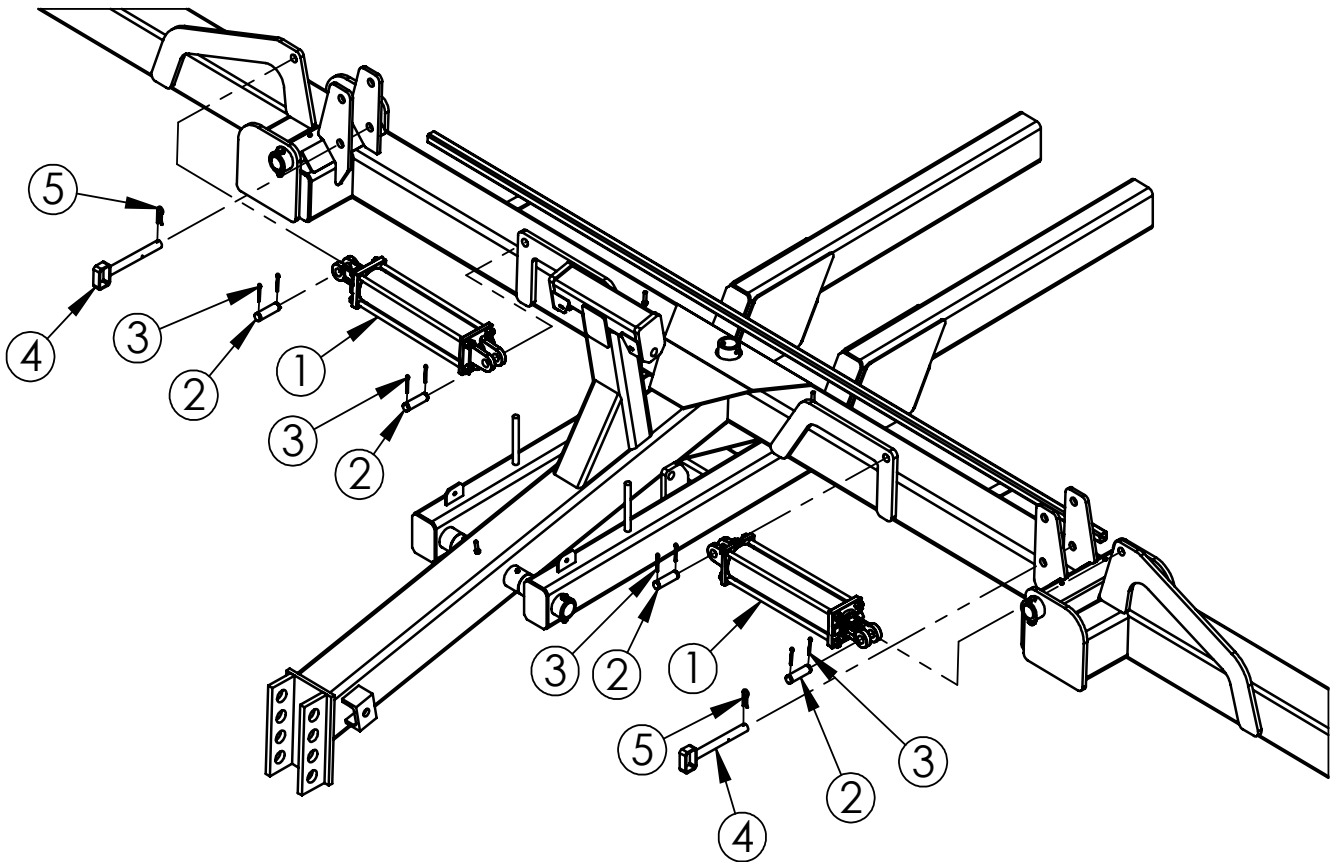


Fig.	Part no.	Qty	Description
1	76204002	2	Cylinder, Lift 3" x 8"
2	76201020	2	Fitting, Tee 8MB-8MJ-8MJ Branch
3	76201002	2	Fitting, 8MB-8MJ90
4	76202200	1	Hose, 3/8" x 120" 8FJ x 8MP
5	76202199	1	Hose, 3/8" x 108" 8FJ x 8MP
6	76202028	2	Hose, 3/8" x 20" 8FJ x 8FJ
7	600470110	2	Coupler, 1/2" Male - 1/2" FNPT
8	7600470519	1	Band, Plastic Spiral 3/4" Red
9	7600470520	1	Band, Plastic Spiral 3/4" Blue

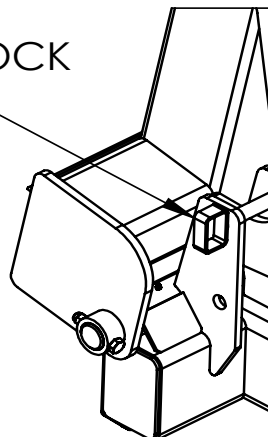
Inner Wing Fold Cylinder Assembly

Instructions:

- Install 4" x 16" wing fold cylinders using hardware as shown with ports facing towards rear of machine. Attach base end of cylinder to tongue/mainframe. Leave clevis end unattached at this point.
- Install wing transport lock pins in lower hole in storage position. Move to upper hole to engage wing lock when wings are folded.



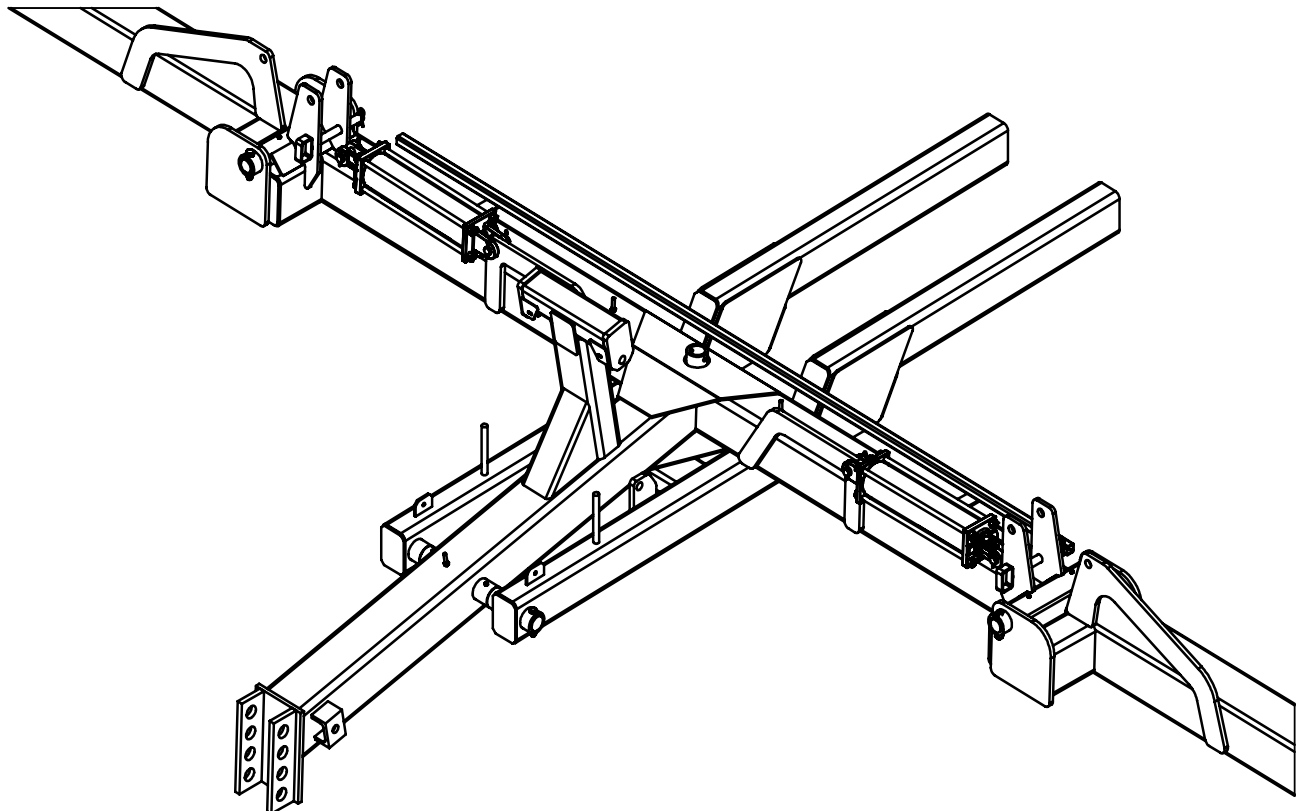
WING LOCK
PIN



Wing Lock Pin in
Locked Position



Fig.	Part no.	Qty	Description
1	76204007	2	Cylinder, 4" x 16" Hydraulic
2	76602112	4	Pin, Cylinder 1" Dia x 3-3/8"
3	600383058	8	Pin, Cotter 5/32" x 2"
4	76602219	2	Pin, 1" Dia x 9-1/4"
5	76101426	2	Pin, Hair 3/16" x 2"



Wing Fold Hydraulics Without Down Pressure Valve

Instructions:

- Plumb outer wing cylinders before installation.
- Install hydraulic fittings and hoses as shown.
- Route hoses along tongue and mainframe, attach with hold down brackets. Run 1/4" hoses for wing fold cylinders on inside of 3/8" lift cylinder hoses as shown. Leave hold down brackets loose until after purging hydraulic system.
- Route hoses for outer wing cylinders through access hole in wing. Use dry fertilizer hose (sold by the foot, part # 76202170) or alternative to prevent chafing on wing tube access hole.
- Install hydraulic couplers on end of hoses at front of implement and install colored plastic bands to denote hose function.

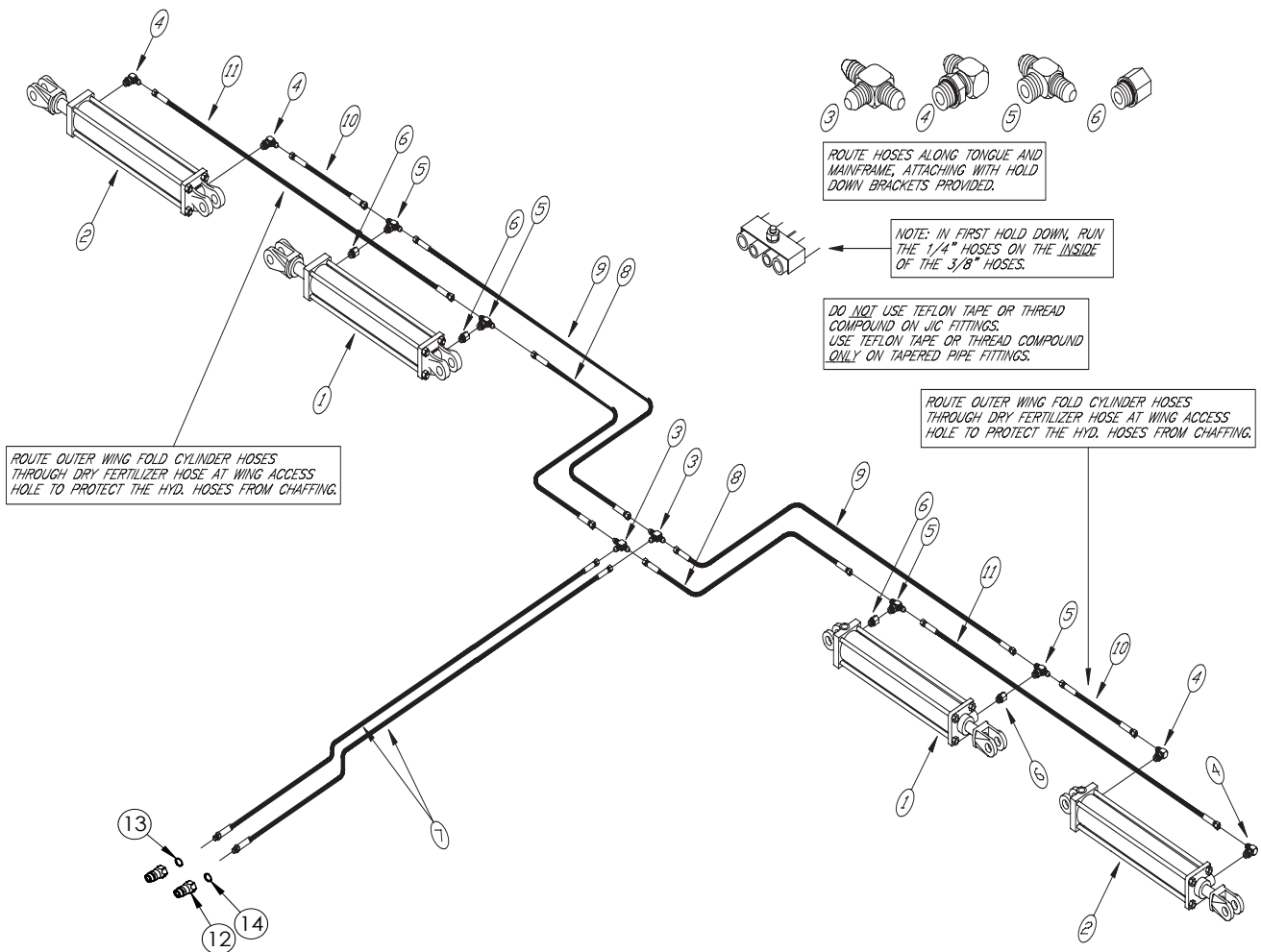


Fig.	Part no.	Qty	Description
1	76204007	2	Cylinder, 4" x 16" Hydraulic
2	76204005	2	Cylinder, 3" x 16" Hydraulic
3	76201009	2	Tee, 6MJ-6MJ-6MJ
4	76201001	4	Fitting, 8MB-6MJ90
5	76201011	4	Tee, 6MJ-1/4" MNPT Branch
6	76201012	4	Fitting, 8 MB-1/4" FNPT
7	76202209	2	Hose 1/4" x 124" -6FJ-8MP
8	76202002	2	Hose 1/4" x 36" -6FJ-6FJ
9	76202046	2	Hose 1/4" x 56" -6FJ-6FJ
10	762022803	2	Hose 1/4" x 91" -6FJ-6FJ
11	762022804	2	Hose 1/4" x 125" -6FJ-6FJ
12	600470110	2	Coupler, 1/2" Male - 1/2" FNPT
13	7600470521	1	Band, Plastic Spiral 3/4" Yellow
14	7600470522	1	Band, Plastic Spiral 3/4" Green

Wing Fold Hydraulics With Down Pressure Valve

- Plumb outer wing cylinders before installation.
- Install hydraulic fittings and hoses as shown.
- Route hoses along tongue and mainframe, attach with hold down brackets. Run 1/4" hoses for wing fold cylinders on inside of 3/8" lift cylinder hoses as shown. Leave hold down brackets loose until after purging hydraulic system.
- Route hoses for outer wing cylinders through access hole in wing. Use dry fertilizer hose (sold by the foot, part # 76202170) or alternative to prevent chafing on wing tube access hole.
- Install hydraulic couplers on end of hoses at front of implement and install colored plastic bands to denote hose function.
- Install downpressure valve to mount plate using 3/8"-16 x 3" bolts, 3/8" washers, and 3/8" nuts.
- Install 9/16" o-ring to JIC 45° elbows to front ports of downpressure valve.
- Connect 1/4" wing cylinder hoses leading to front couplers to 45° elbows in front ports of downpressure valve.
- Install 9/16" o-ring to JIC adapters in rear ports of downpressure valve.
- Attach tee fitting to orifice fitting on "REG" port and connect hoses leading to base end of inner wing cylinder.
- Attach tee fitting to adapter on "T" port and connect hoses leading to rod end of inner wing cylinder.
- Install 9/16" o-ring to female NPT adapter to top port of downpressure valve.
- Screw pressure gauge into adapter.

NOTE: Ball Valves not used for 32.5' model

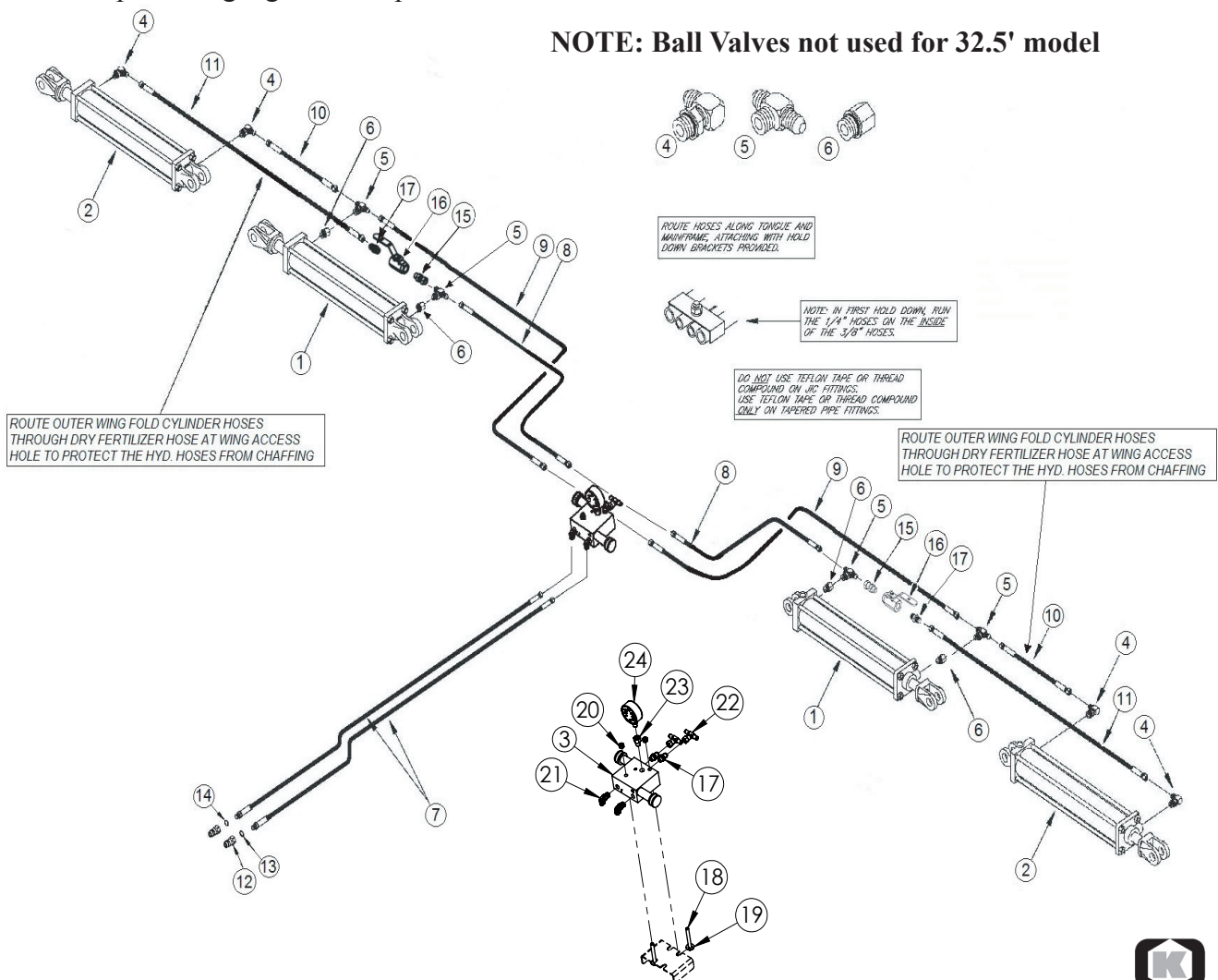
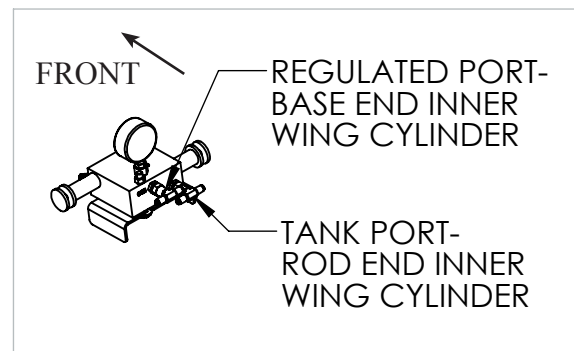
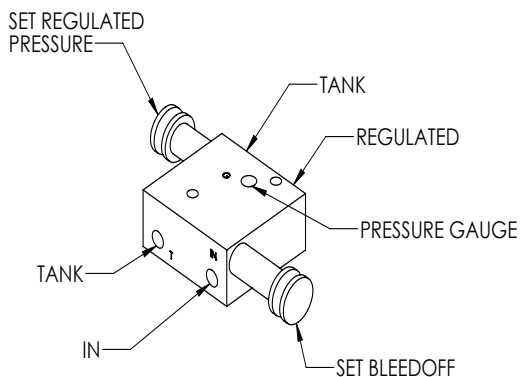


Fig.	Part no.	Qty	Description
1	76204007	2	Cylinder, 4" x 16" Hydraulic
2	76204005	2	Cylinder, 3" x 16" Hydraulic
3	762030001	1	Valve, Down Pressure
4	76201001	4	Fitting, 8MB-6MJ90
5	76201011	4	Tee, 6MJ-1/4" MNPT Branch
6	76201012	4	Fitting, 8 MB-1/4" FNPT
7	76202209	2	Hose 1/4" x 124" -6FJ-8MP
8	76202002	2	Hose 1/4" x 36" -6FJ-6FJ
9	76202046	2	Hose 1/4" x 56" -6FJ-6FJ
10	762022803	2	Hose 1/4" x 91" -6FJ-6FJ
11	762022804	2	Hose 1/4" x 125" -6FJ-6FJ
12	600470110	2	Coupler, 1/2" Male - 1/2" FNPT
13	7600470521	1	Band, Plastic Spiral 3/4" Yellow
14	7600470522	1	Band, Plastic Spiral 3/4" Green
15	7600470582	2	Fitting, 6MB-6FJX (37.5' and 40.5' Models Only)
16	7600470583	2	Valve, 3/8" Ball (37.5' and 40.5' Models Only)
17	76201007	4	Adapter, 6MB-6MJ (Qty 2 for 32.5' Model)
18	600356019	2	Bolt, 3/8"-16 x 3" Gr 5
19	600381006	2	Washer, Flat 3/8"
20	600366028	2	Nut, Toplock 3/8"-16
21	7600470529	2	Elbow, 6MB-6MJ45
22	76201050	2	Tee, 6FJX-6MJ-6MJ Branch
23	762010020	1	Adapter, 6MB-4FP
24	7600470528	1	Gauge, 3000 PSI-#4FP

NOTE: See Operator's Manual to set Down Pressure

NOTE: Down Pressure Valve compatible with "Closed Center" hydraulic systems only. If tractor does not have a closed center hydraulic system, down pressure valve must be removed and replaced with tee fittings. Hydraulic outflow to downpressure valve must be reduced to maximum 10 GPM. Failure to do so will result in damage to system and extreme heat generation.



Outer Wing Fold Cylinder Assembly

Instructions:

- Install drag link assembly before installing cylinder.
- Install 3" x 16" outer wing fold cylinders using hardware as shown with ports facing towards rear of machine. Be certain to plumb cylinder before installation, routing hoses through access hole in wing.
- Connect cylinder to inner wing with pin and hardware shown. Route hydraulic hoses UNDER the cylinder pin bushing inside the wing.

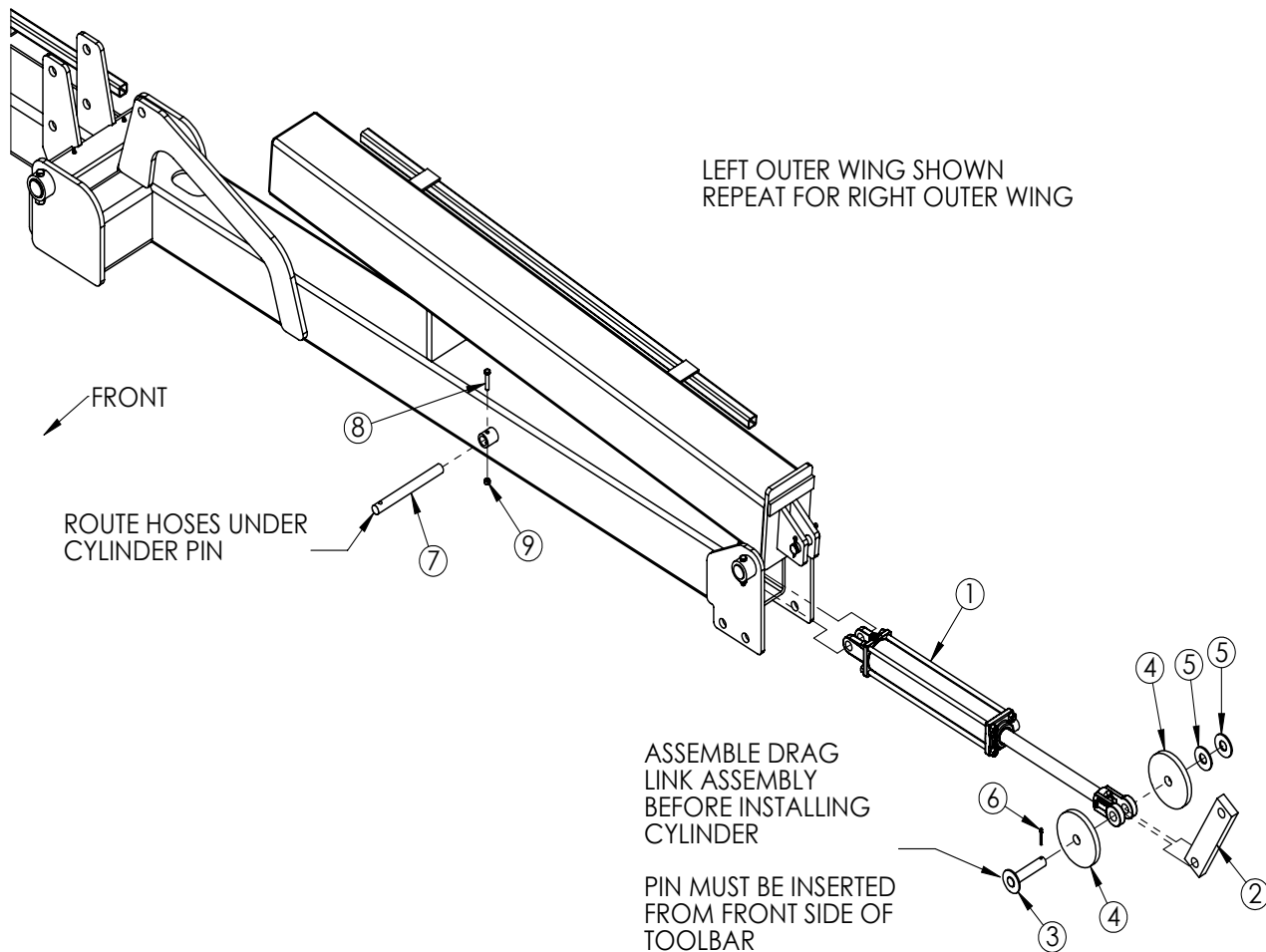


Fig.	Part no.	Qty	Description
1	76204005	2	Cylinder, 3" x 16" Hydraulic
2	76400050	2	Link, Drag 1" x 2-1/2" x 11"
3	76602193	2	Pin, Cylinder 1" x 5"
4	76400204	4	Roller, 5/8" x 6" Dia.
5	76101235	4	Washer, Flat 1"
6	76101246	2	Pin, Cotter 3/16" x 1-1/2"
7	76602166	2	Pin, 1" x 10" Pivot
8	76101127	2	Bolt, 3/8"-16 x 2" Gr. 5
9	76101238	2	Nut, Toplock 3/8"-16

Outer Wing Lock Pins

Instructions:

- Lock wings in unfolded position using outer wing lock pins.
- Store outer wing lock pins in inner holes on outer wing pivot plate when wings are folded.

-CAUTION: Do not attempt to fold wings without removing outer wing lock pins.

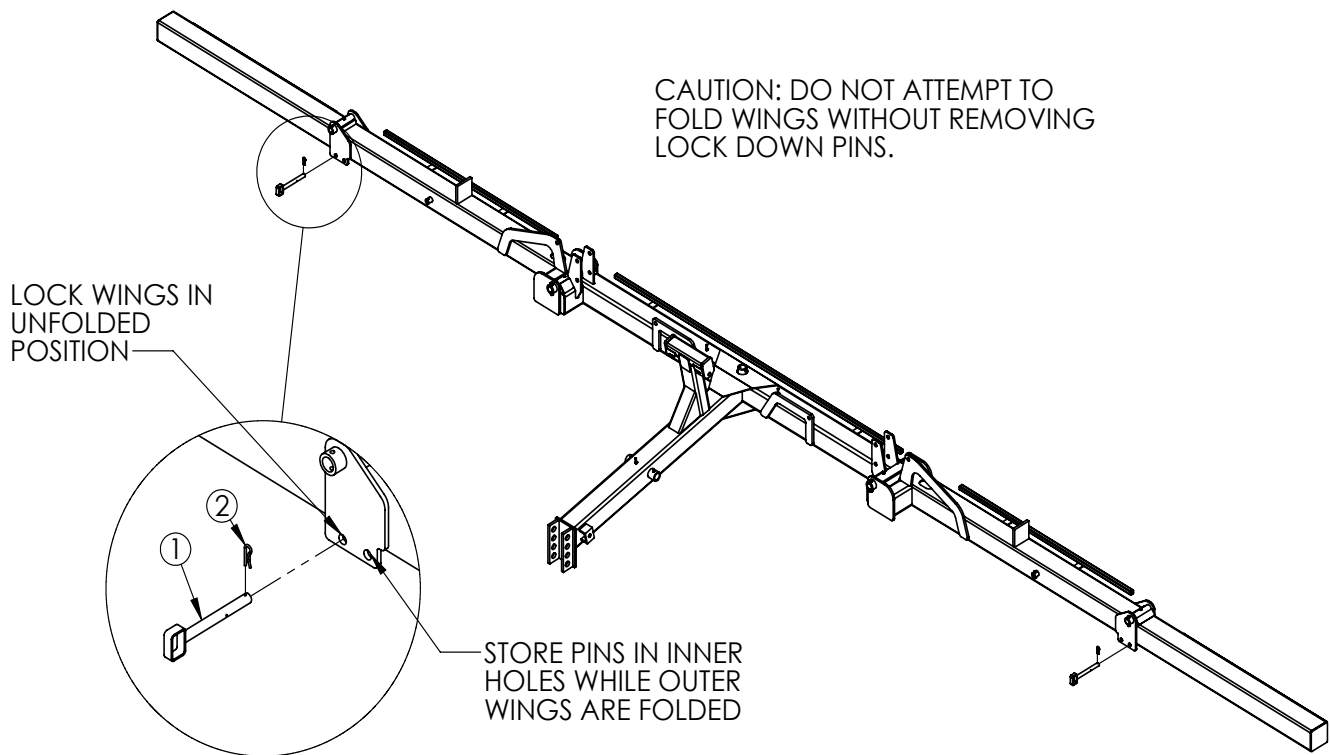


Fig.	Part no.	Qty	Description
1	76602219	2	Pin, 1" Dia x 9-1/4"
2	76101426	2	Pin, Hair 3/16" x 2"

Hose Routing

Instructions:

-Route hoses along tongue and mainframe, attach with hold down brackets. Run 1/4" hoses for wing fold cylinders on inside of 3/8" lift cylinder hoses as shown. Route outer wing hoses through access hole in inner wing. Leave hold down brackets loose until after purging hydraulic system.

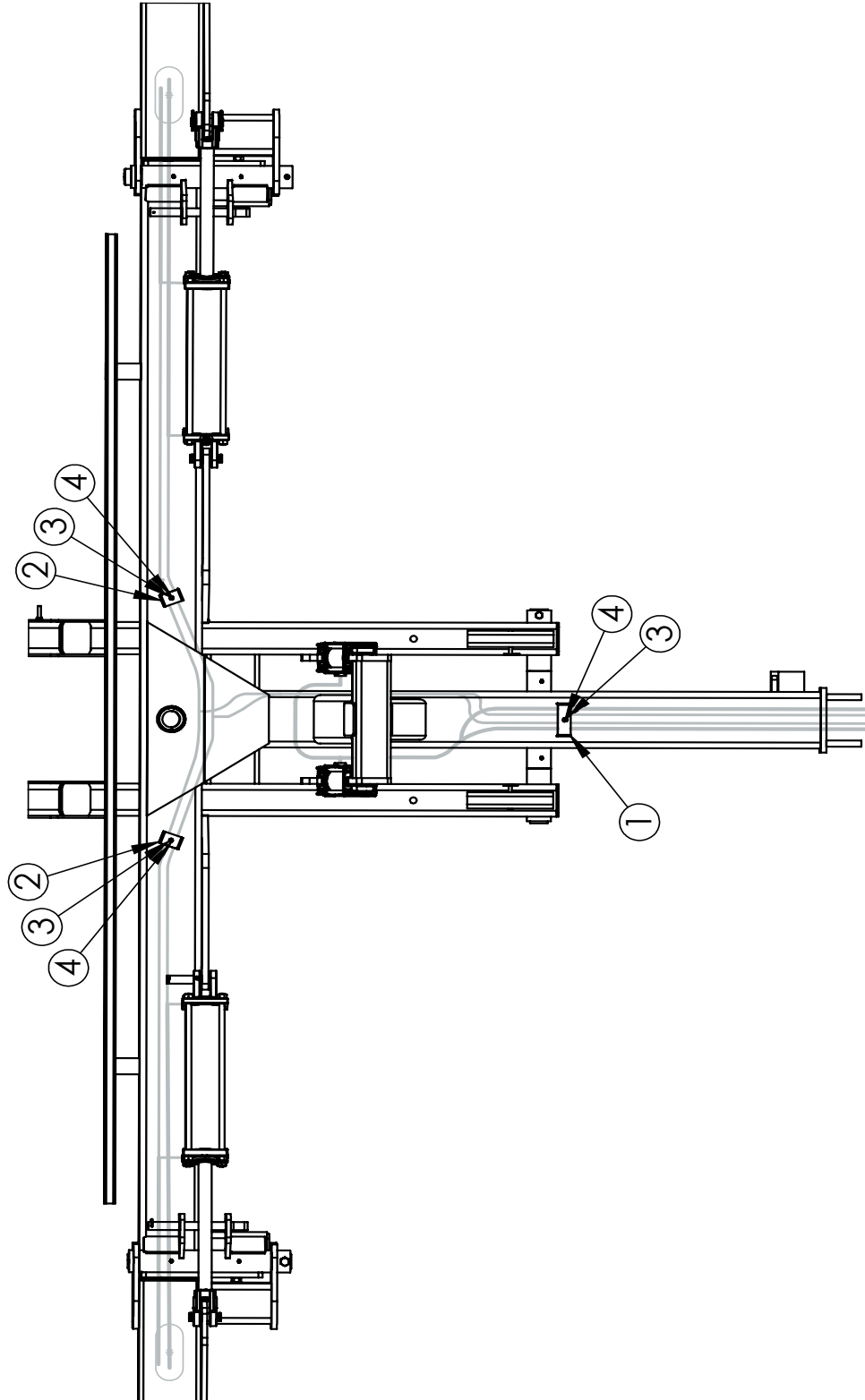


Fig.	Part no.	Qty	Description
1	76400080	1	Bracket, 4 Hose Hold Down
2	76400117	2	Bracket, 2 Hose Hold Down
3	600382051	3	Washer, Lock 3/8"
4	600365008	3	Nut, Hex 3/8-16

Light Bar and Wiring Assembly

Instructions:

- Install light bar on light bar mounts, centering bar with respect to overall machine.
- Install tail lights (red lense to rear) and amber flashing lights.
- Route main wire harness from front along tongue and mainframe. Route along chassis, under tank saddle and up left light bar mount.
- Connect 6 ft. "y" harness and route along light bar to left tail light and left flashing light.
- Connect 10 ft. "y" harness and route along light bar to right tail light and right flashing light.
- Secure wiring with cable ties.

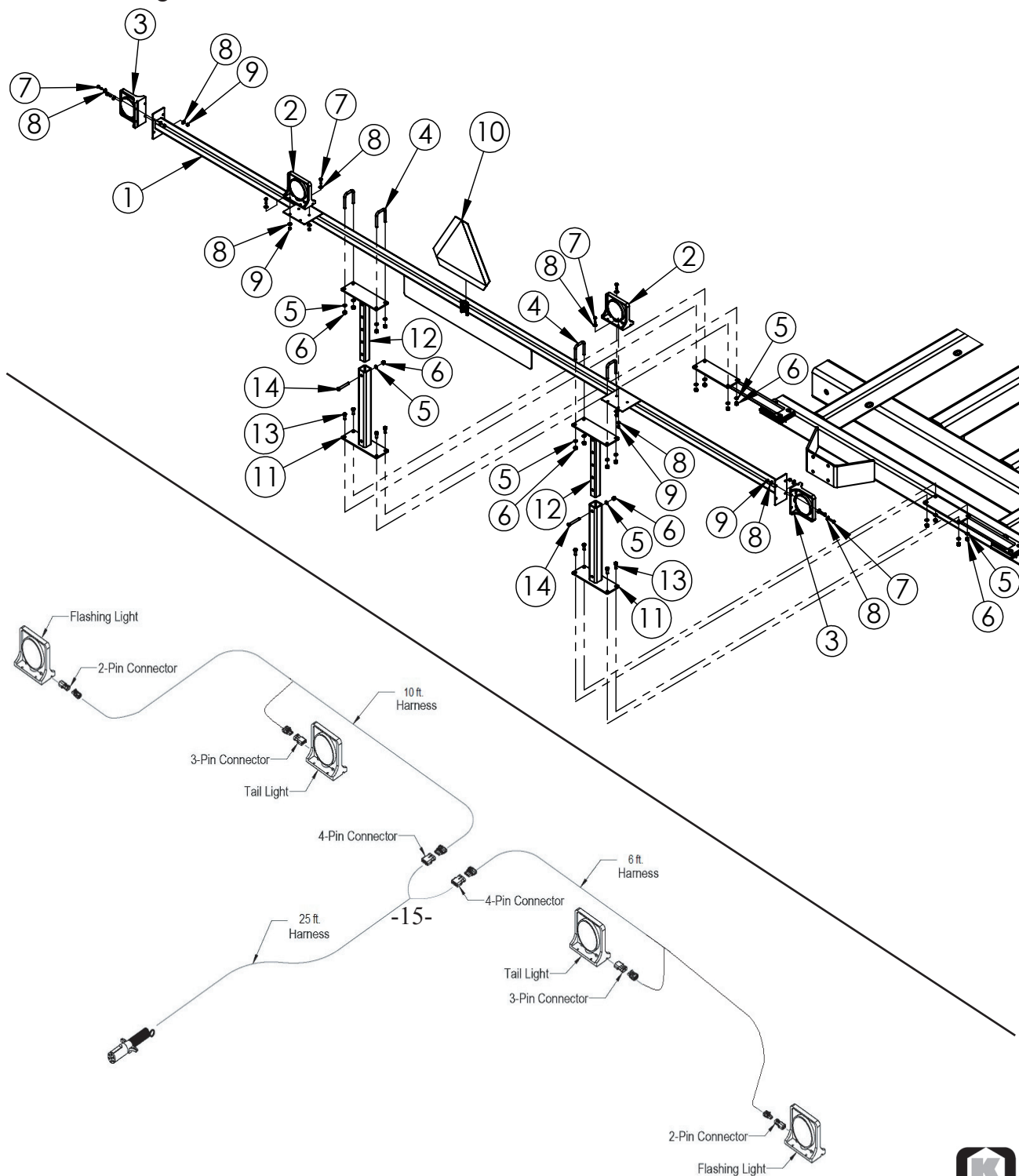
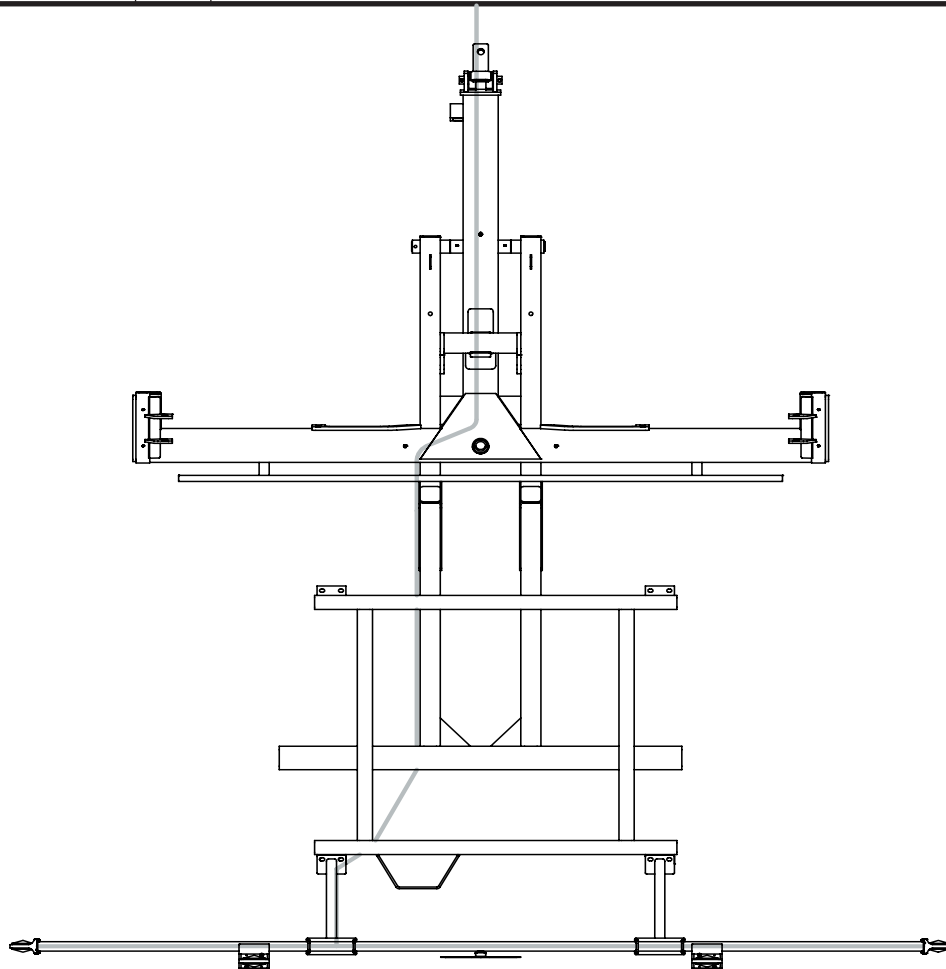


Fig.	Part no.	Qty	Description
1	762450072	1	Wdmt, Light Bar
2	*	2	Light, Tail (Included in Light Kit)
3	*	2	Light, Amber Flashing (Included in Light Kit)
4	7600373128	4	U-Bolt, 3/8"-16 x 2" x 3"
5	600382051	18	Washer, Lock 3/8
6	600365008	18	Nut, 3/8"-16
7	600356138	8	Bolt, 1/4"-20 x 1" Gr 5
8	600381023	16	Washer, 1/4"
9	600366026	8	Nut, 1/4"-20
10	601140845	1	Assy, SMV
11	762450102	2	Wdmt, Lower Light Mount Extension
12	762450104	2	Wdmt, Upper Light Mount Extension
13	600356020	8	Bolt, 3/8"-16 x 1.00 Gr. 5
14	7600356163	2	Bolt, 3/8"-16 x 2.75 Gr. 5
15	762450093	1	Kit, Light Kit (Includes Items 2 & 3 and wire harnesses)

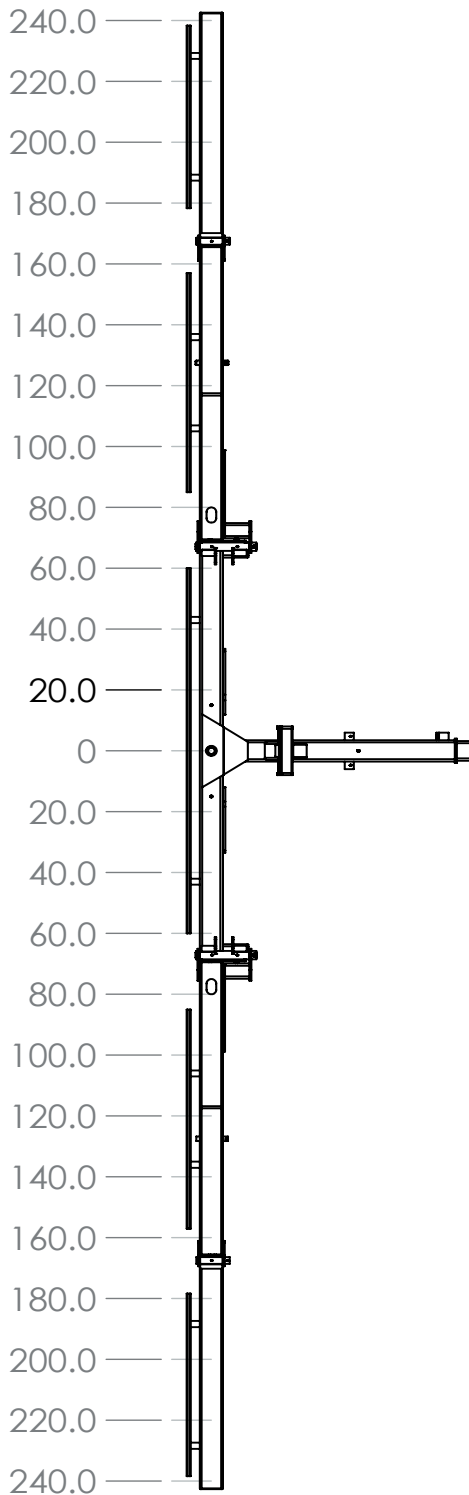


Row Unit Placement (20" and 30" rows)

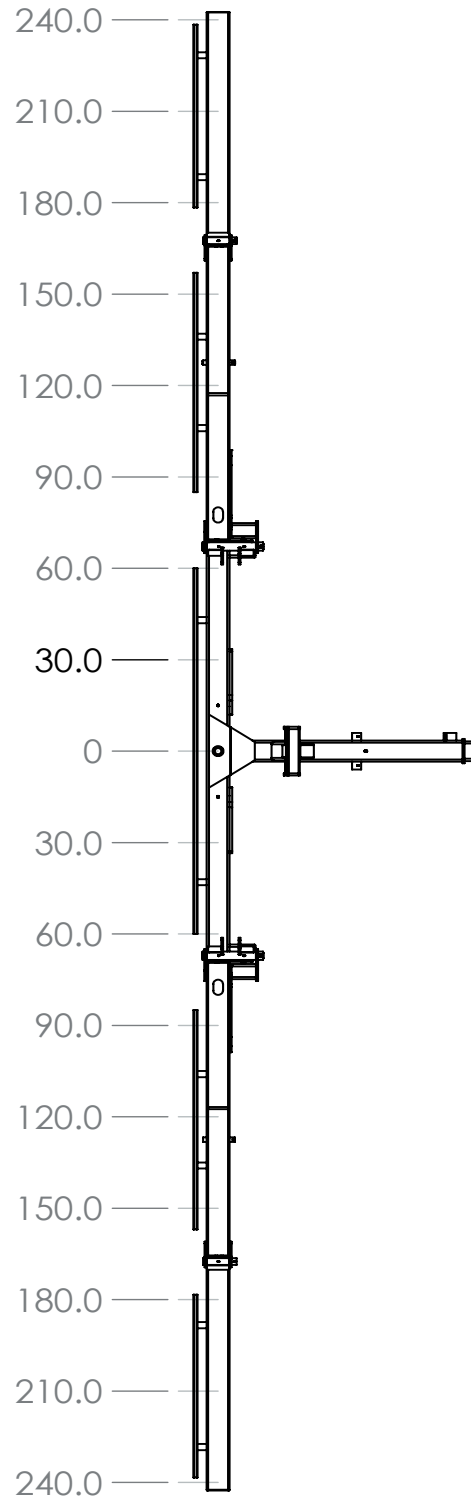
Instructions:

- Mark tool bar with marker or paint marker for locations to place row units.

20" Row Spacing



30" Row Spacing

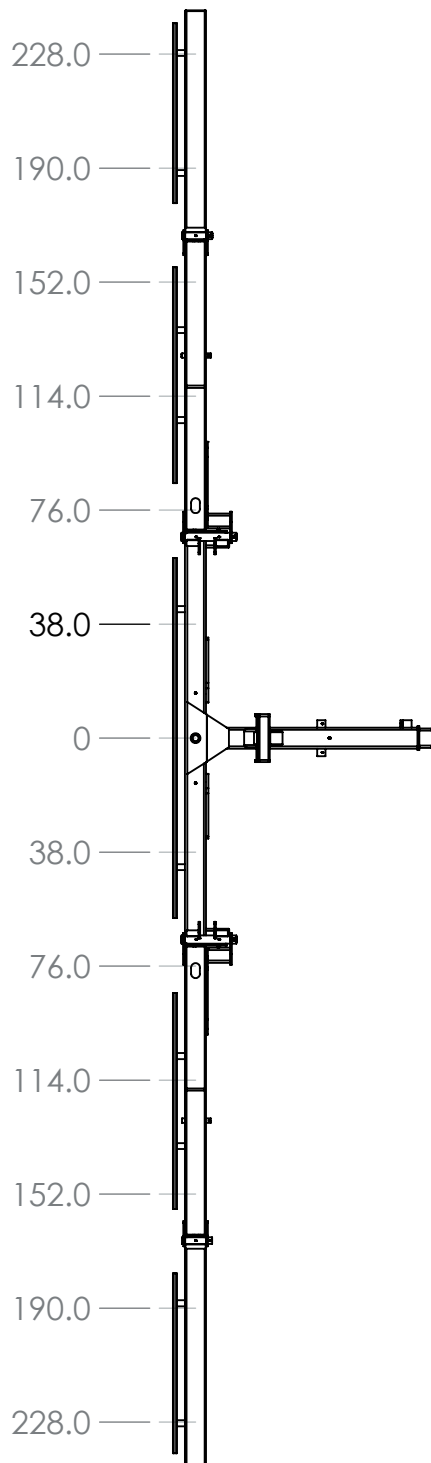


Row Unit Placement (38" and 40" rows)

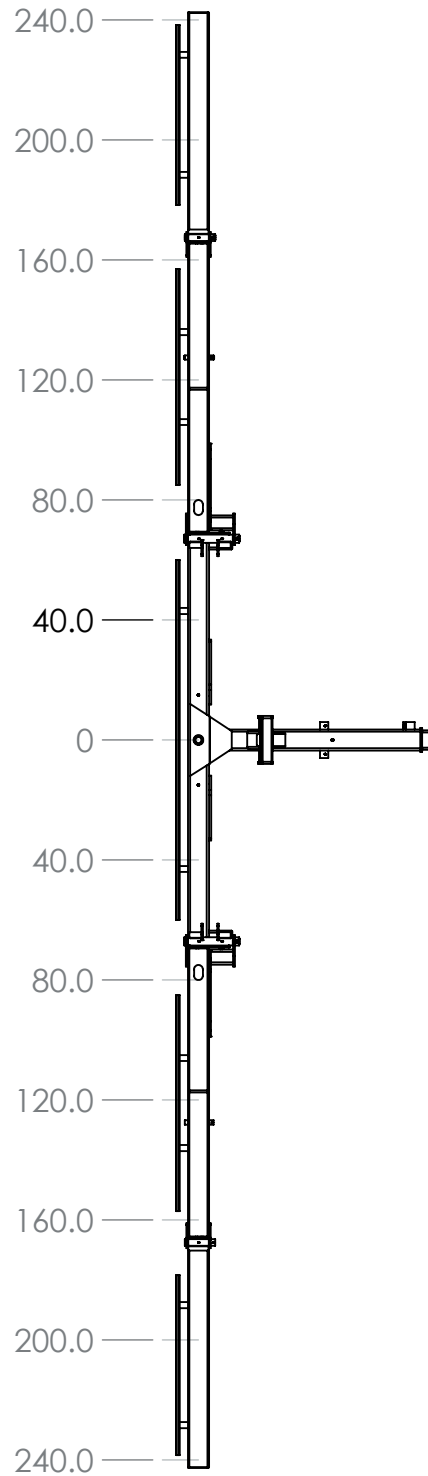
Instructions:

-Mark tool bar with marker or paint marker for locations to place row units.

38" Row Spacing



40" Row Spacing

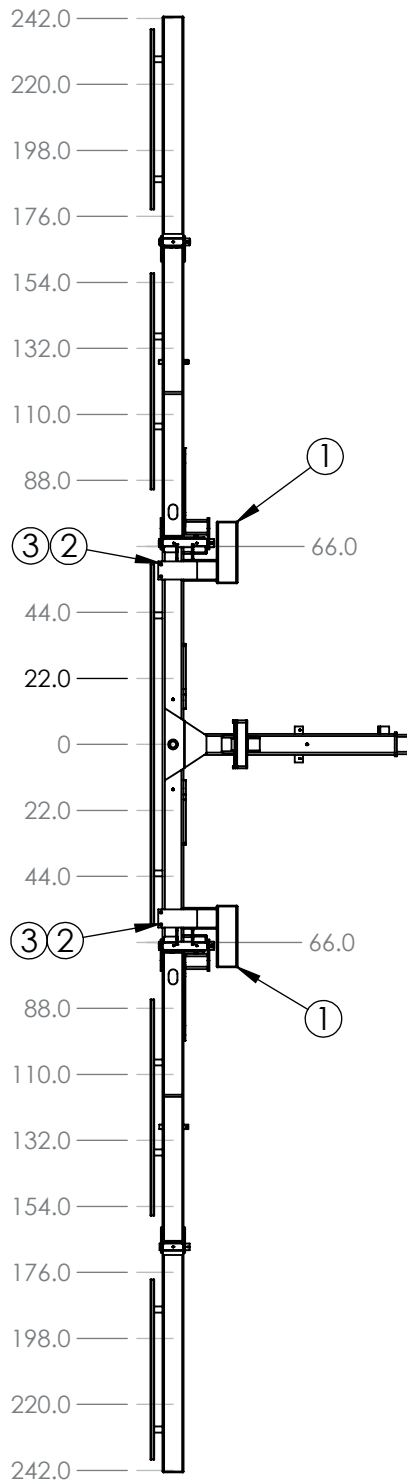


Row Unit Placement (22" and 36" rows)

Instructions:

- For 22" and 36" row spacings, install mainframe offset bar kit 762450091.
- Mark tool bar with marker or paint marker for locations to place row units.

22" Row Spacing



36" Row Spacing

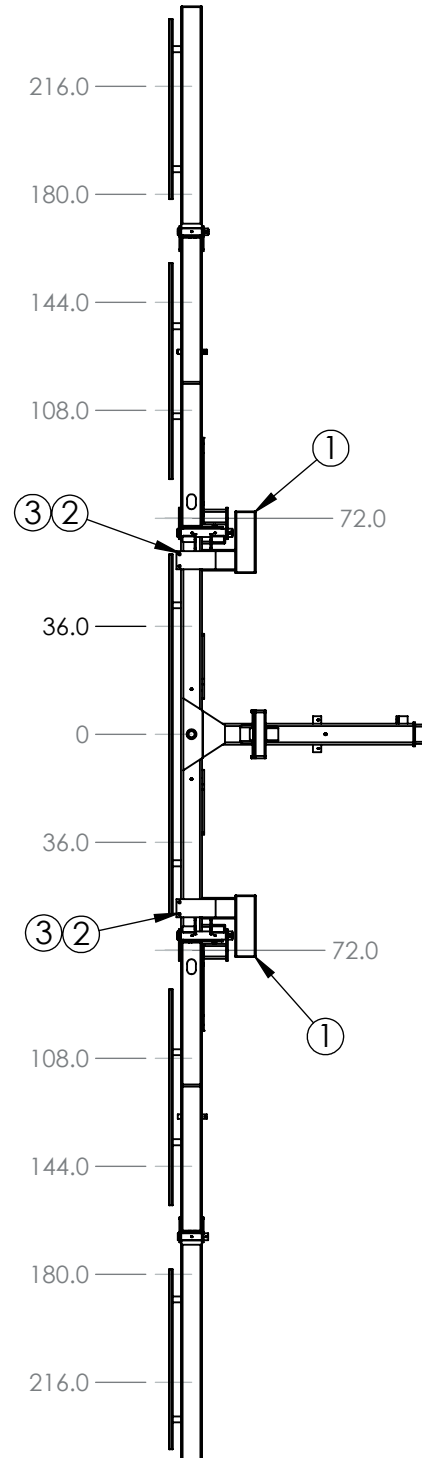
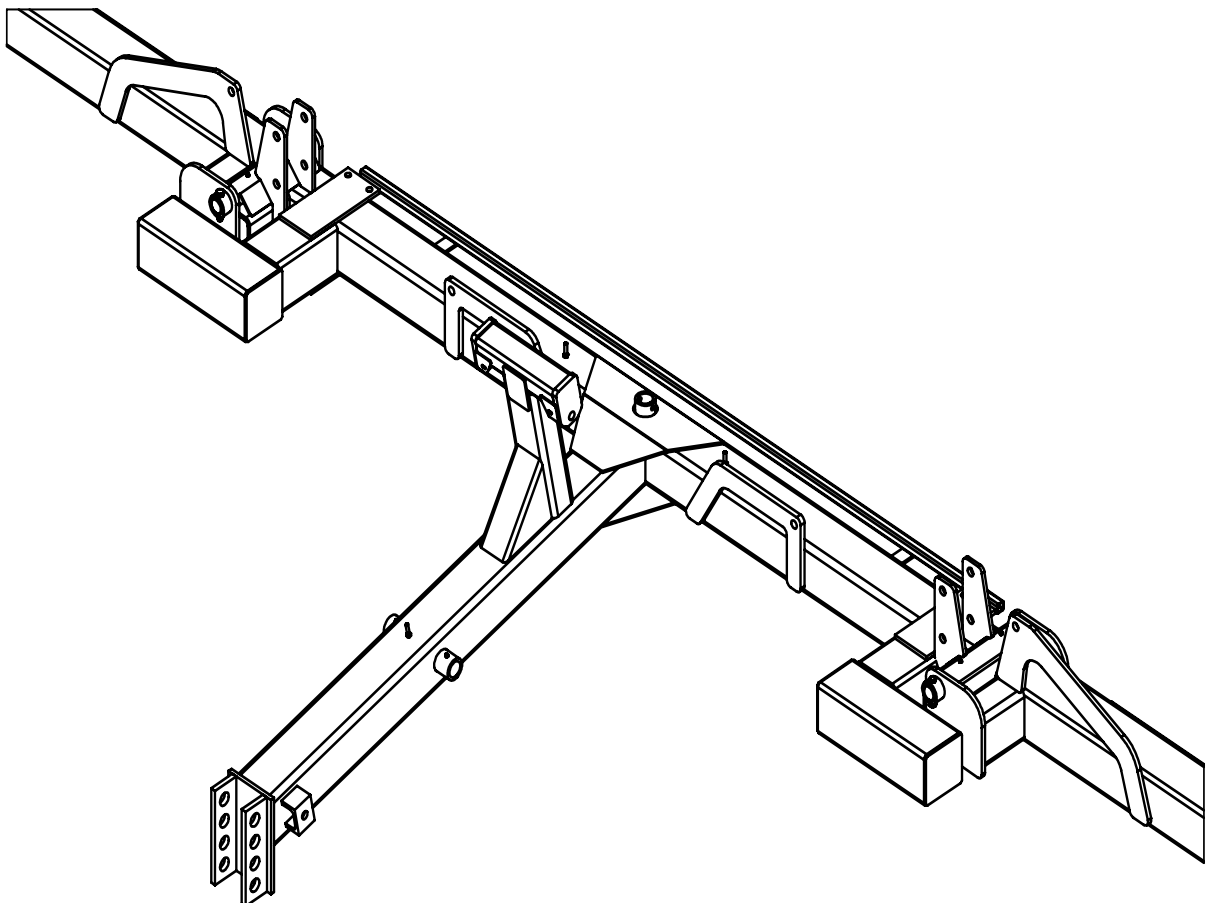


Fig.	Part no.	Qty	Description
*	762450091	1	Kit, Mainframe Offset Bar (Includes Items 1-3)
1	762450060	2	Wdmt, Mainframe Offset Bar
2	600356156	4	Bolt, 3/4"-10 x 9-1/2" Gr. 5
3	600366024	4	Nut, Lock 3/4"-10

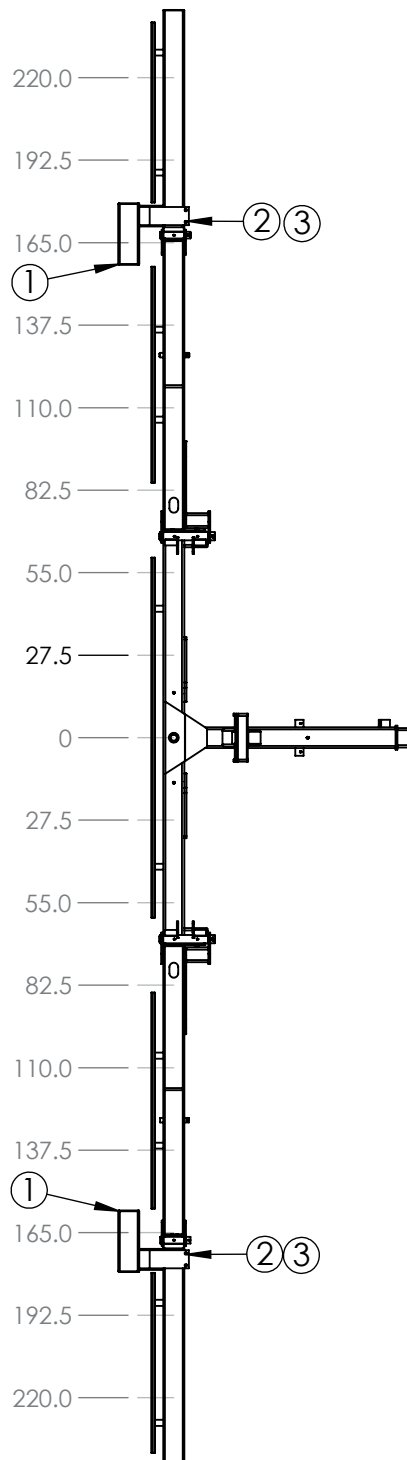


F3400T Row Unit Placement (27.5" and 28" rows)

Instructions:

-Mark tool bar with marker or paint marker locations to place row units.

27.5" Row Spacing



28" Row Spacing

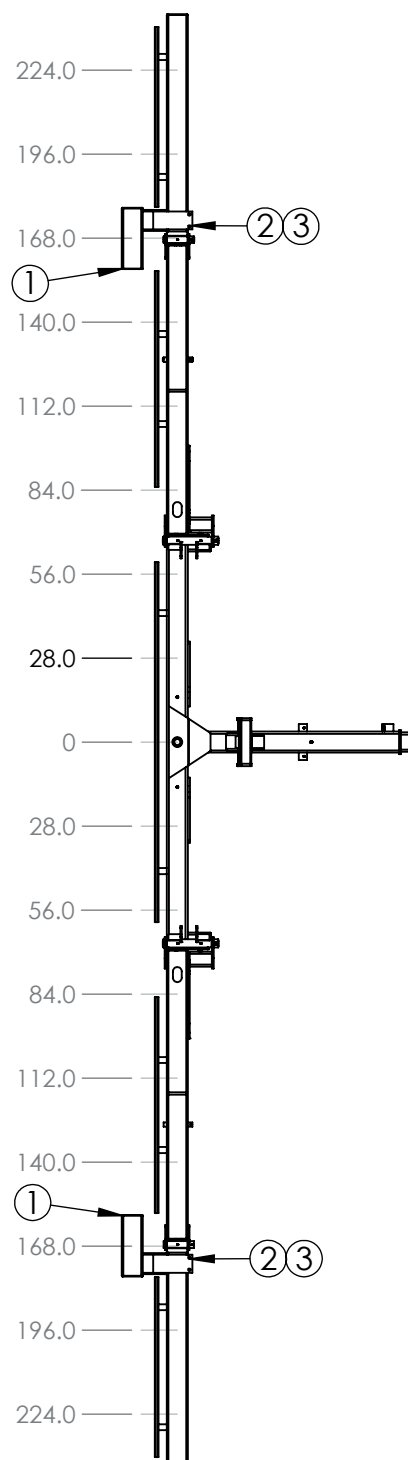
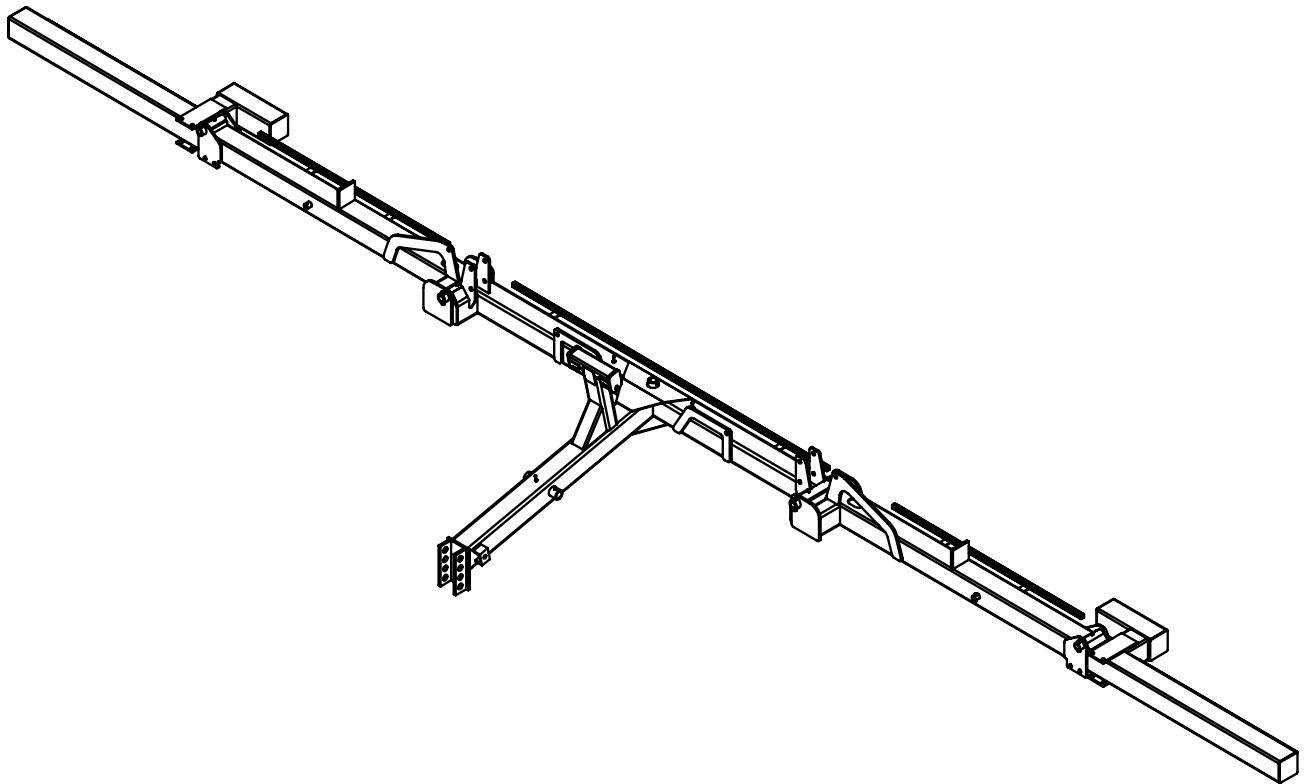


Fig.	Part no.	Qty	Description
*	762450092	1	Kit, Wing Offset Bar (Includes Items 1-3)
1	76801730	2	Wdmt, Mainframe Offset Bar
2	600356156	4	Bolt, 3/4"-10 x 9-1/2" Gr. 5
3	600366024	4	Nut, Lock 3/4"-10



Drive Engagement Arm for 18.4 x 26 and 13.6 x 38 Tires

Instructions:

- For ground drive pump option, install engagement arm after coultter spacings have been marked out.
- Install on mainframe to align with pump arm attached to left axle ensuring there will be no interference with coultter mount.

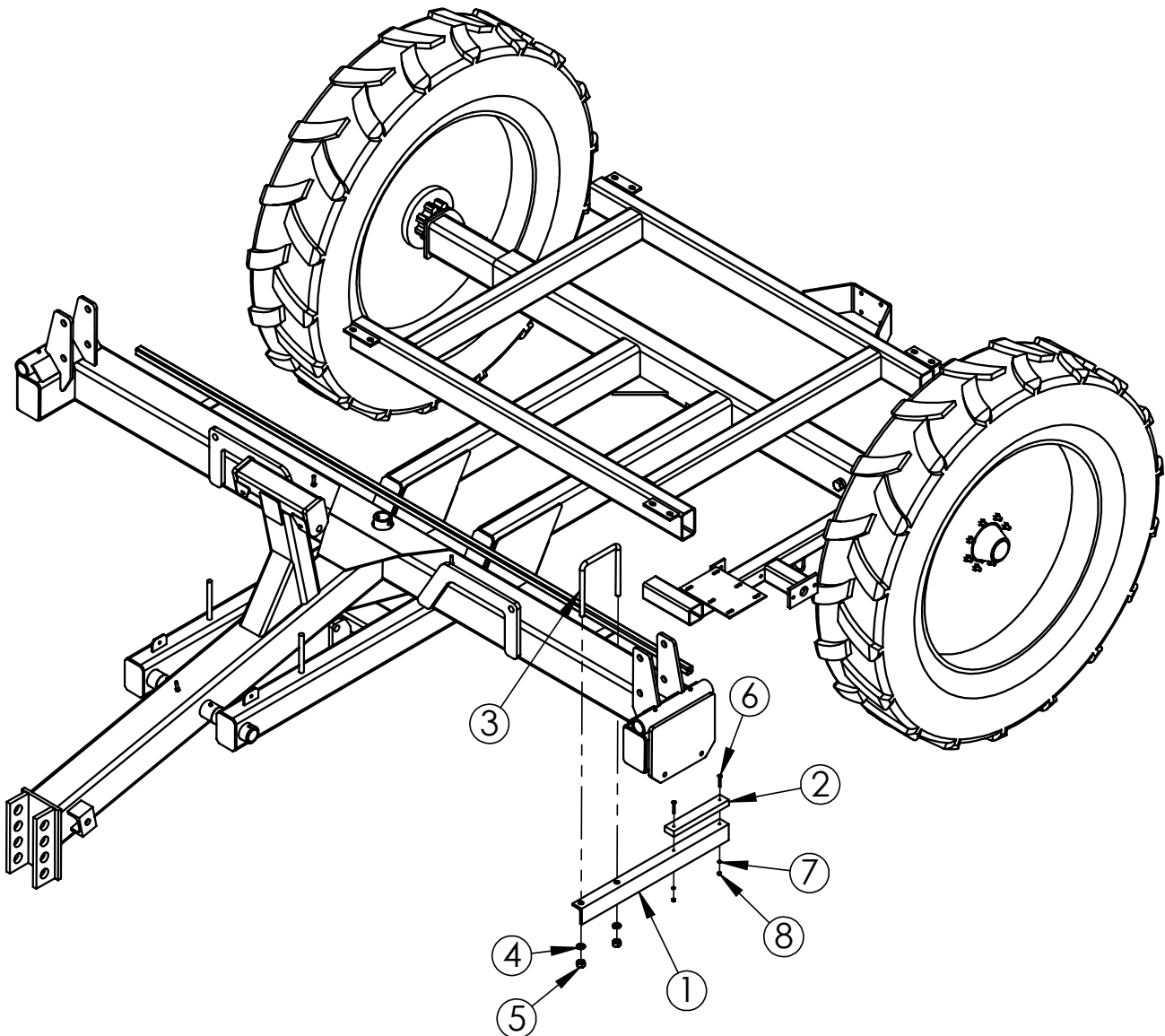
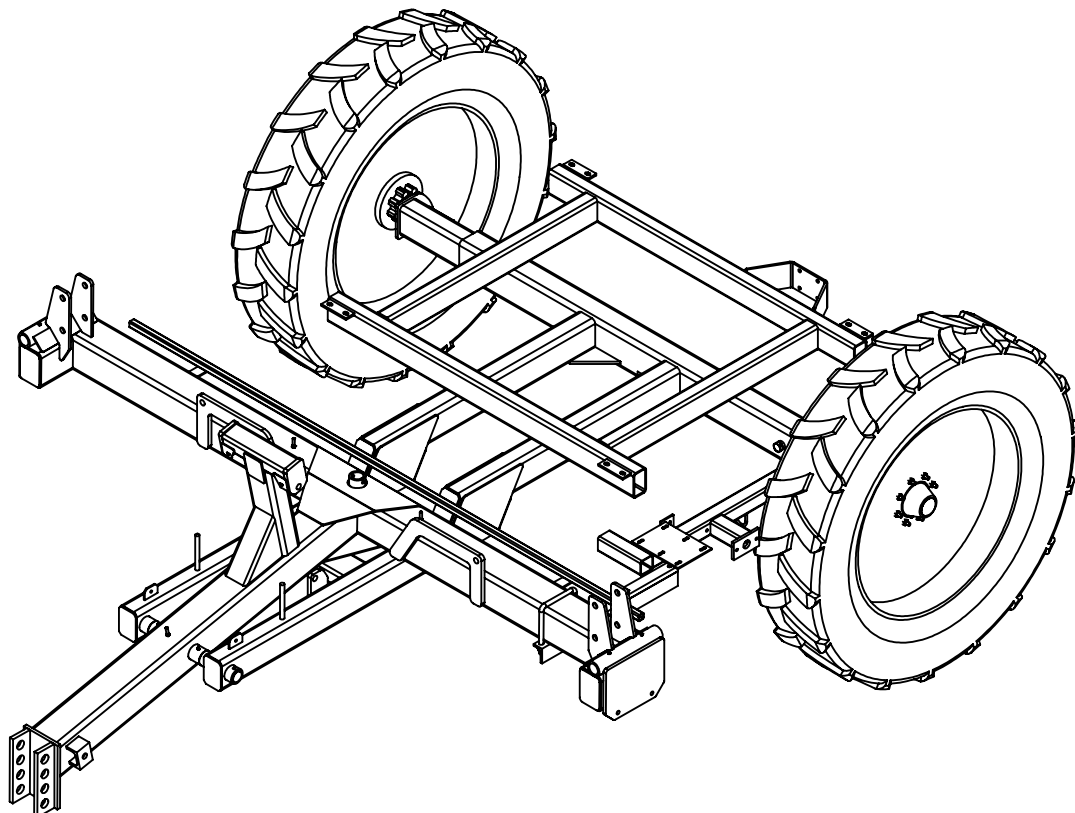


Fig.	Part no.	Qty	Description
1	76400182	1	Arm, Drive Engagement
2	76400228	1	Bumper, Plastic 1" x 2" x 12"
3	76101316	1	U-Bolt, 3/4"-10 x 7 x 8-1/2"
4	600382055	2	Washer, Lock 3/4"
5	600365019	2	Nut, Hex 3/4"-10
6	76101452	2	Bolt, Carriage 1/4"-20 x 2"
7	600382058	2	Washer, Lock 1/4"
8	600365006	2	Nut, Standard 1/4"-20



Drive Engagement Arm for 13.6 X 38 Tires (F3450T)

Instructions:

- For ground drive pump option, install engagement arm after coultter spacings have been marked out.
- Install on mainframe to align with pump arm attached to left axle ensuring there will be no interference with coultter mount.

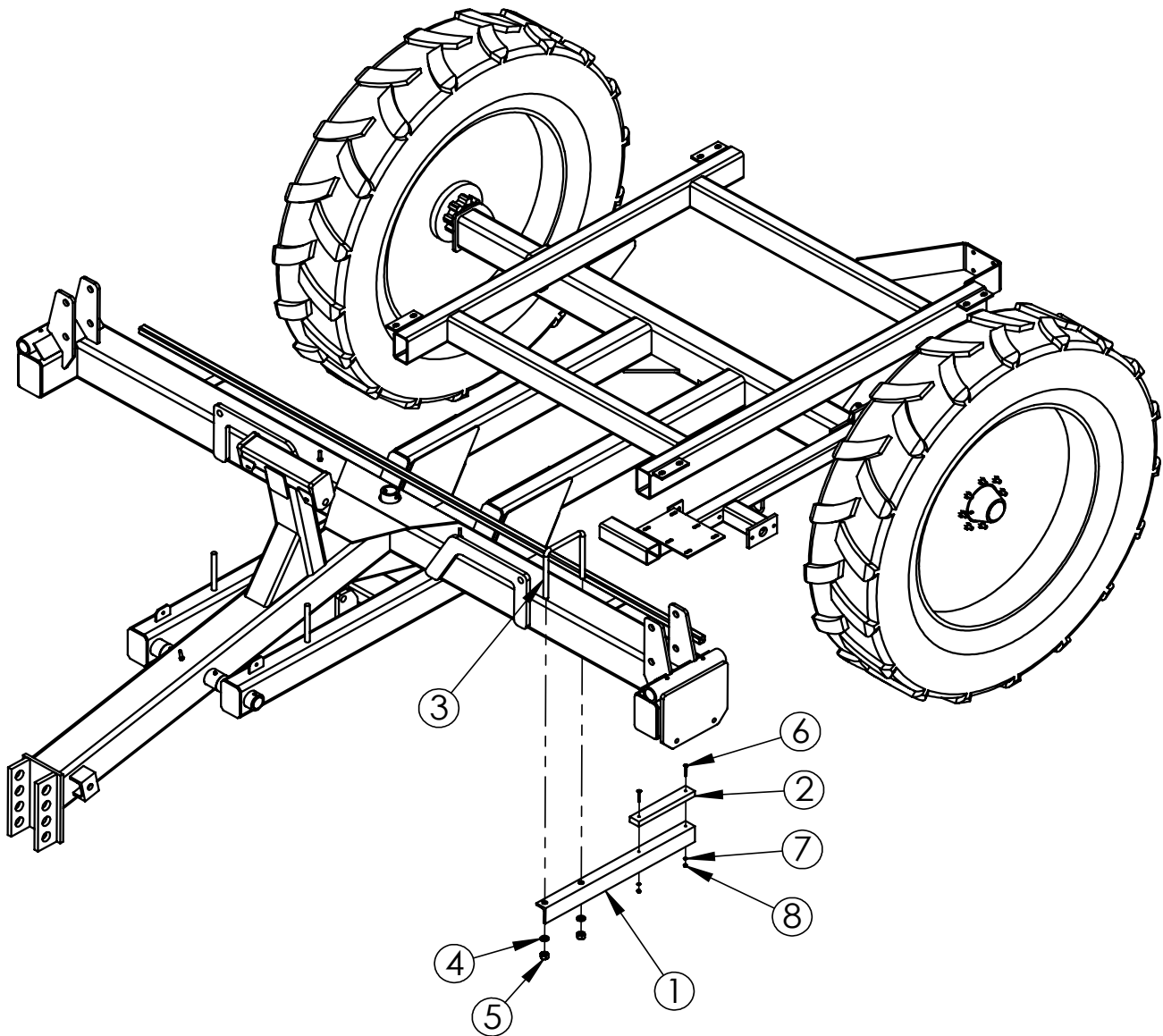
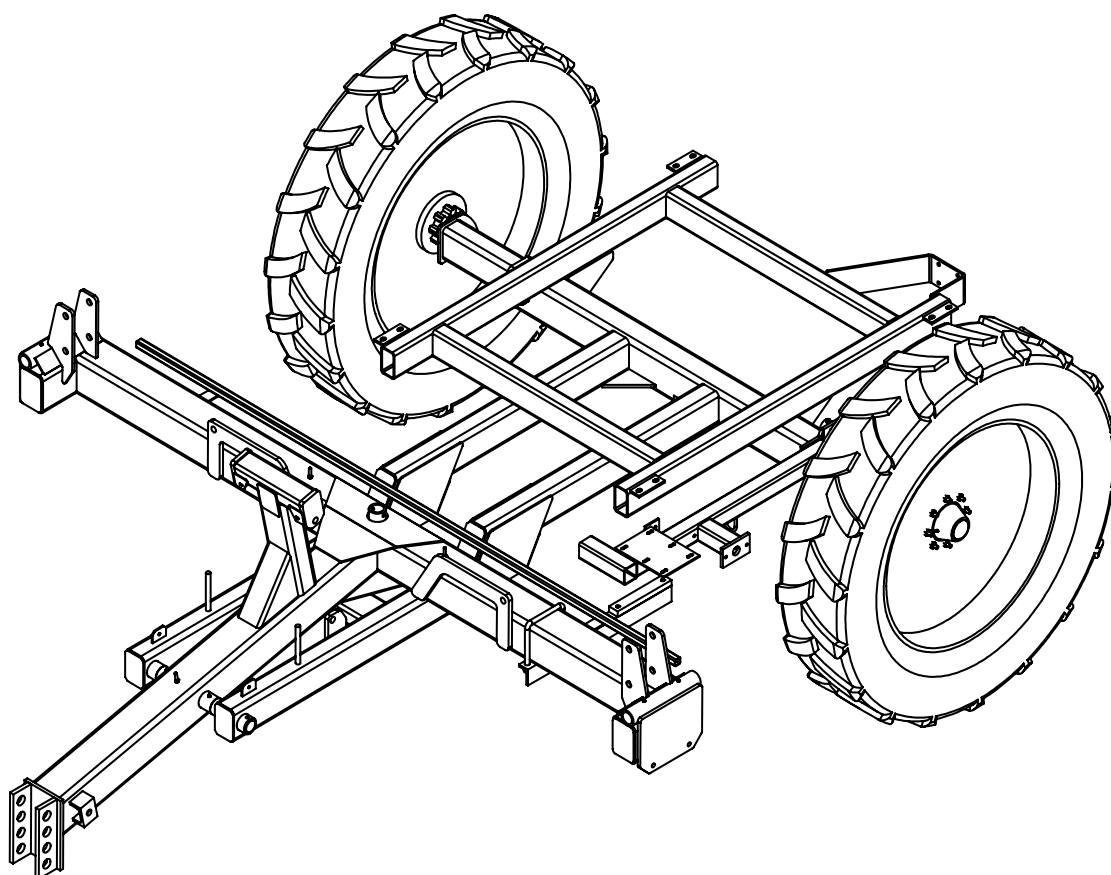


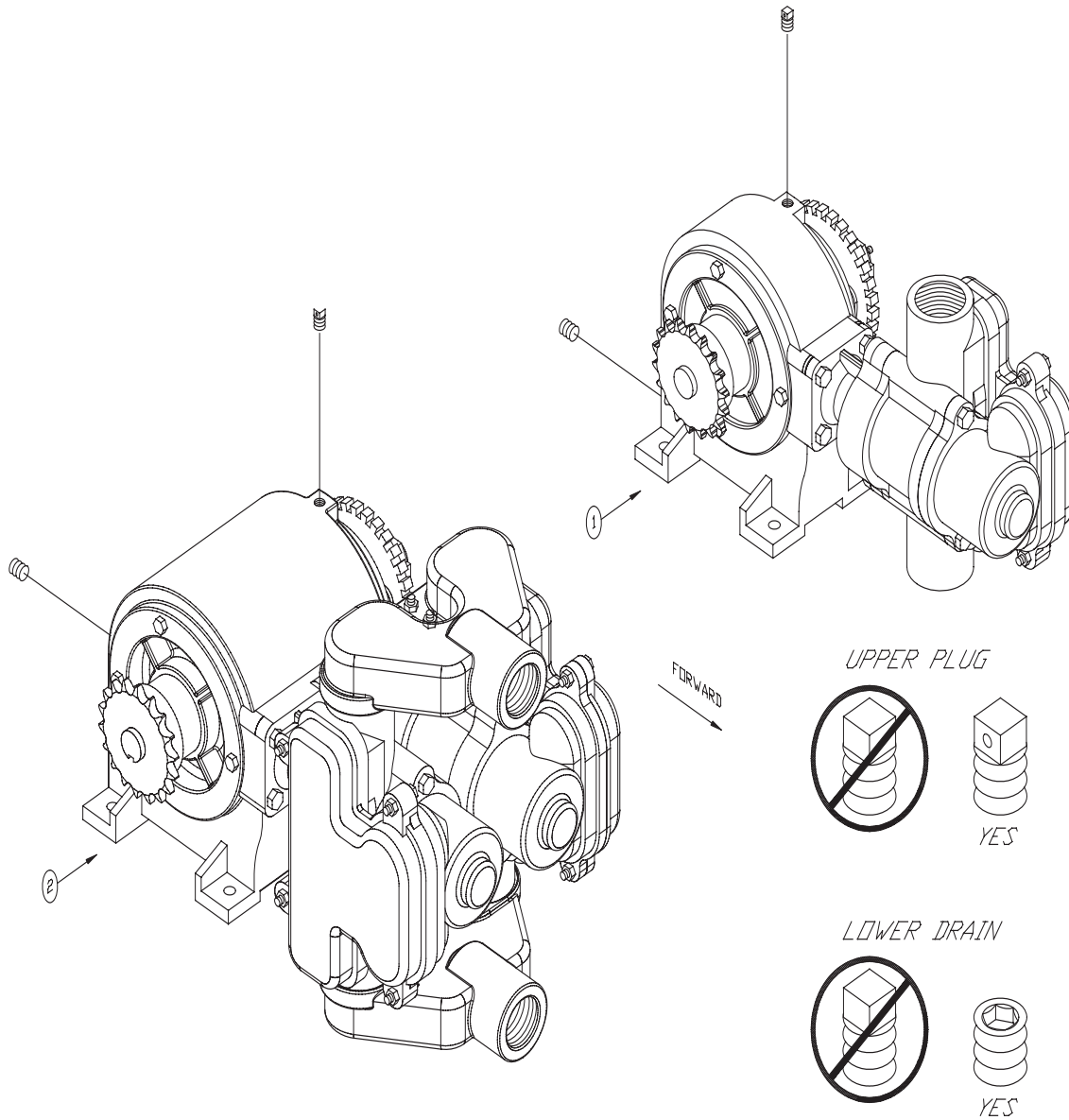
Fig.	Part no.	Qty	Description
1	76400182	1	Arm, Drive Engagement
2	76400228	1	Bumper, Plastic 1" x 2" x 12"
3	76101316	1	U-Bolt, 3/4"-10 x 7 x 8-1/2"
4	600382055	2	Washer, Lock 3/4"
5	600365019	2	Nut, Hex 3/4"-10
6	76101452	2	Bolt, Carriage 1/4"-20 x 2"
7	600382058	2	Washer, Lock 1/4"
8	600365006	2	Nut, Standard 1/4"-20



Ground Drive Pump

Instructions:

-Replace the Upper most plug with vented plug provided. Replace square head drain plug with allen head drain plug provided.



61

Ground Drive Pump Assembly

Instructions:

- For ground drive pump option, install pump and chain idler arm (shown on page 58) on ground drive arm.
- Install wheel assembly and chain sprocket.

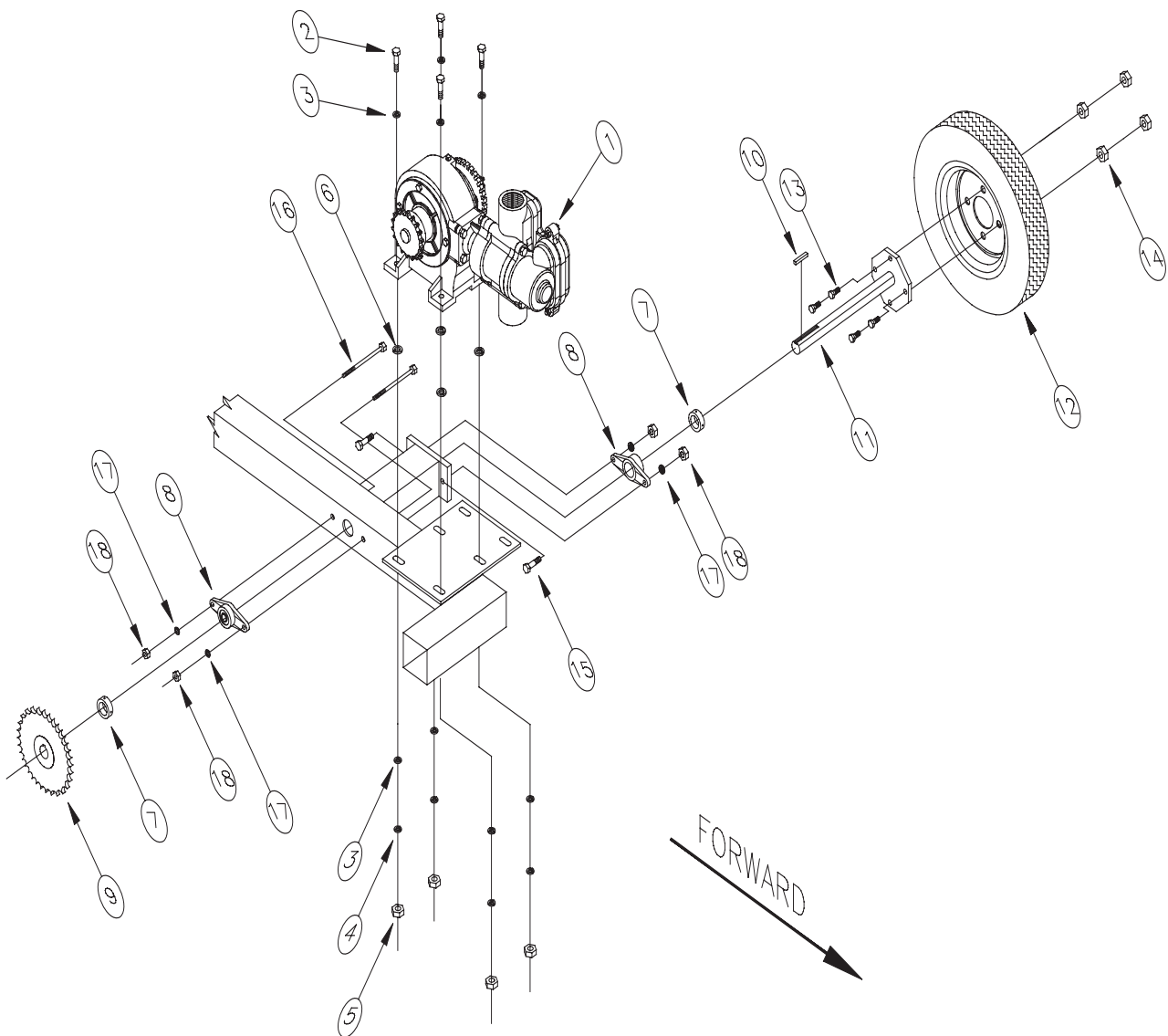


Fig.	Part no.	Qty	Description
1	76750040	1	Pump, John Blue Model NGP-7055 Single Piston
-	76750041	1	Pump, John Blue Model NGP-9055 Double Piston
2	600356115	4	Bolt, 3/8"-16 x 1-1/2" Gr. 5
3	600381006	8	Washer, Flat 3/8"
4	600382051	4	Washer, Lock 3/8"
5	600365008	4	Nut, Hex 3/8"-16
6	-	4	Washer, Rubber Mounting (Included with Pump)
7	76450066	2	Collar, 1-1/4" Bore Lock
8	76450067	2	Holder, Cast 2 Bolt Bearing (1.25" Bearing)
9	768000001	1	Sprocket, 36 x 50 x 1.25"
10	76450010	1	Key, Square .25" x .25" x 1.5"
11	76801780	1	Shaft, Drive 1-1/4" Dia x 12" (for 16.5 x 16.1 tire option)
-	76801779	1	Shaft, Drive 1-1/4" Dia x 18" (for 18.4 x 26, 13.6 x 38 and 320/85R38 tire options)
12	76301197	1	Assy, Tire and Wheel 4.8 x 8 (for 16.5 x 16.1 and 18.4 x 26 tire options)
-	76301248	1	Assy, Tire and Wheel 16.5 x 6.5 x 8 (for 13.6 x 38 and 320/85R38 tire options)
13	76301193	4	Bolt, Whiz 1/2"-20 x 1-1/4"
14	76301243	4	Nut, Lug 1/2"-20
15	76101138	2	Bolt, Hex 7/16"-14 x 2" Gr. 5 (for 18.4 x 26, 13.6 x 38 and 320/85 R38 tire options)
16	76101414	2	Bolt, Hex 7/16"-14 x 7" Gr. 5 (for 16.5 x 16.1 tire option)
-	76101143	2	Bolt, Hex 7/16"-14 x 4-1/2" Gr.5 (for 18.4 x 26, 13.6 x 38, and 320/85R38 tire options)
17	76101221	2	Washer, Lock 7/16" (for 16.5 x 16.1 tire option)
-	76101221	4	Washer, Lock 7/16" (for 18.4 x 26, 13.6 x 38 and 320/85R38 tire options)
18	600365050	2	Nut, Hex 7/16"-14 (for 16.5 x 16.1 tire option)
-	600365050	4	Nut, Hex 7/16"-14 (for 18.4 x 26, 13.6 x 38, and 320/85R38 tire options)

Chain Idler Arm

Instructions:

- If required, install chain idler mount tab along with pump (shown on previous page).
- If chain idler mount tab is present on pump arm, install chain idler directly to pump arm
- Install chain roller with hardware shown. Leave loose until chain is installed.

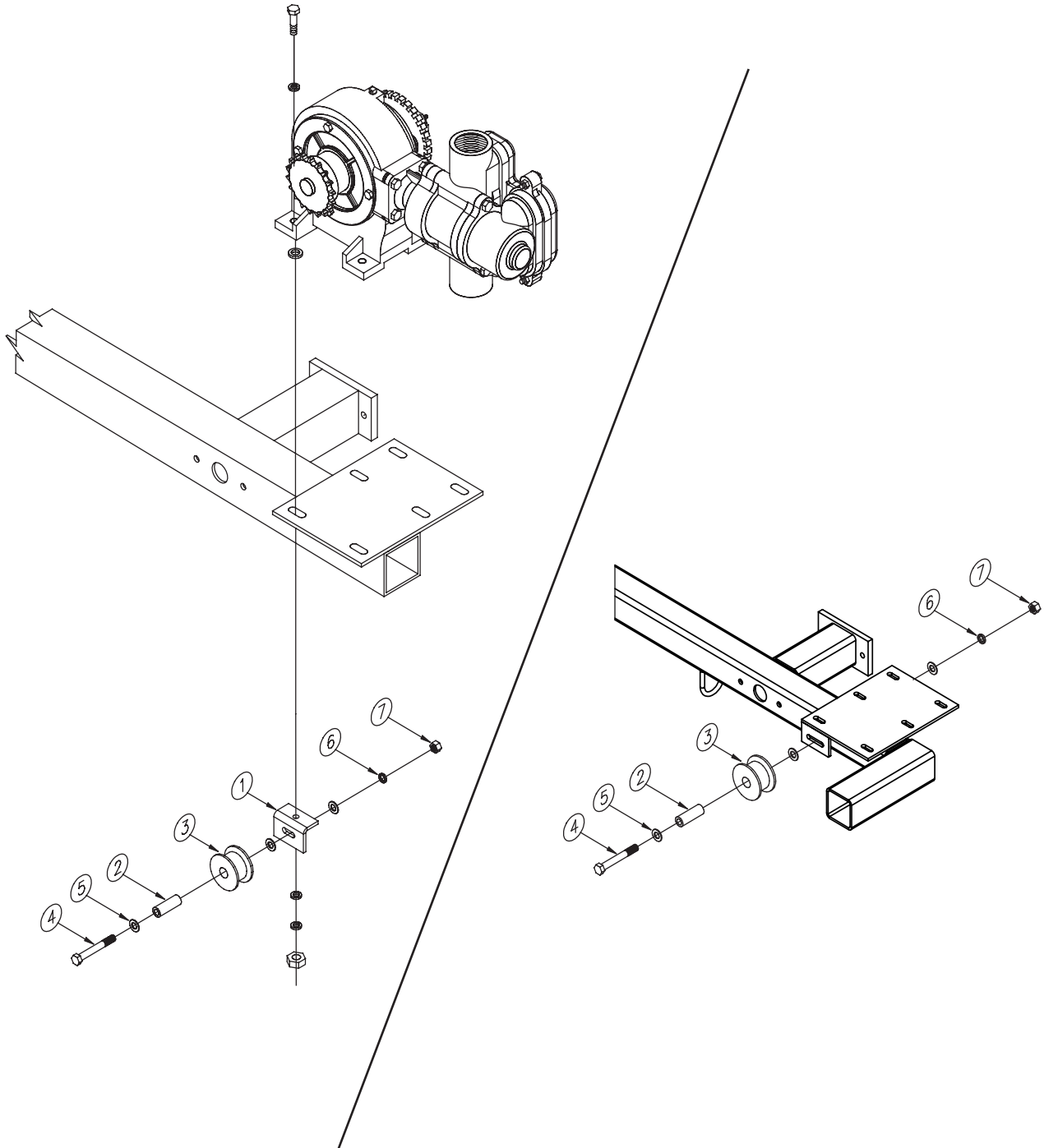


Fig.	Part no.	Qty	Description
1	760000121	1	Arm, Chain Idler
2	76400053	1	Bushing, Roller
3	76400054	1	Roller, Chain
4	600356019	1	Bolt, 3/8"-16 x 3" Gr. 5
5	600381006	3	Washer, Flat 3/8"
6	600382051	1	Washer, Lock 3/8"
7	600365008	1	Nut, Hex 3/8"-16

JB 7055 (Single Piston) and JB 9055 (Double Piston) Pump Drive Chain

Instructions:

- Install chain on pump and sprocket ensuring chain is routing to outside of chain roller.
- Tighten chain by moving chain roller. Tighten hardware on chain roller to ensure chain stays tightened.

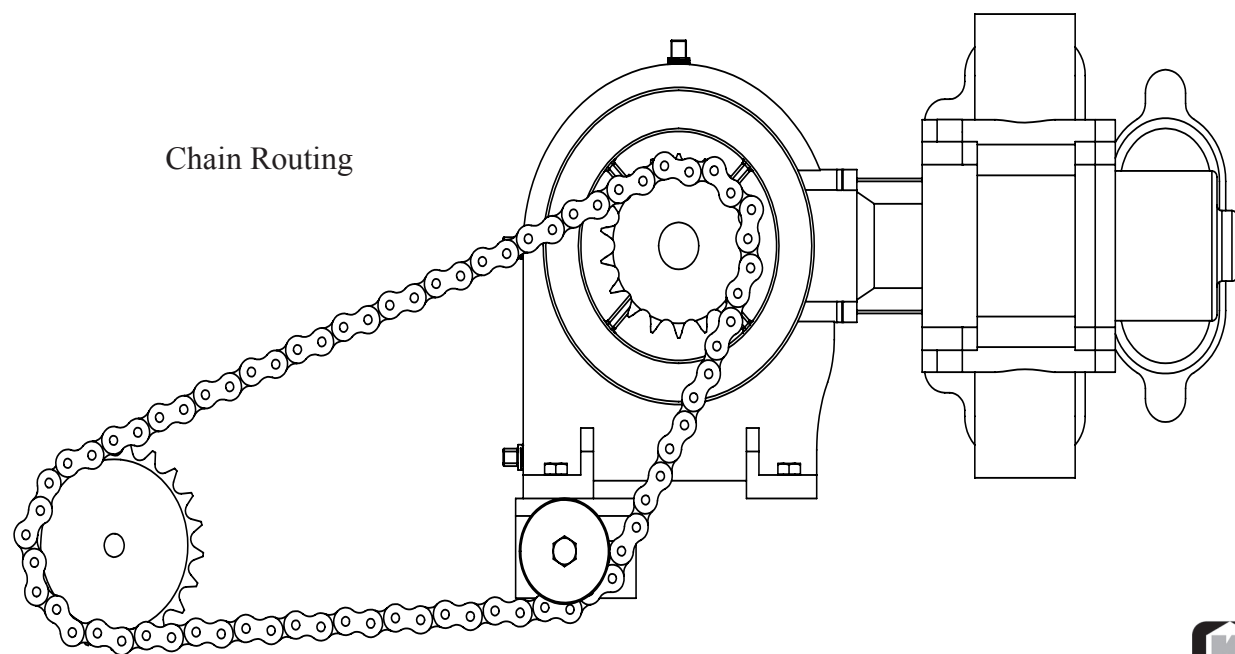
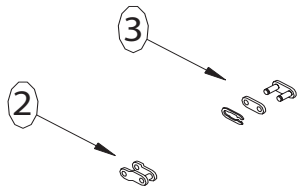
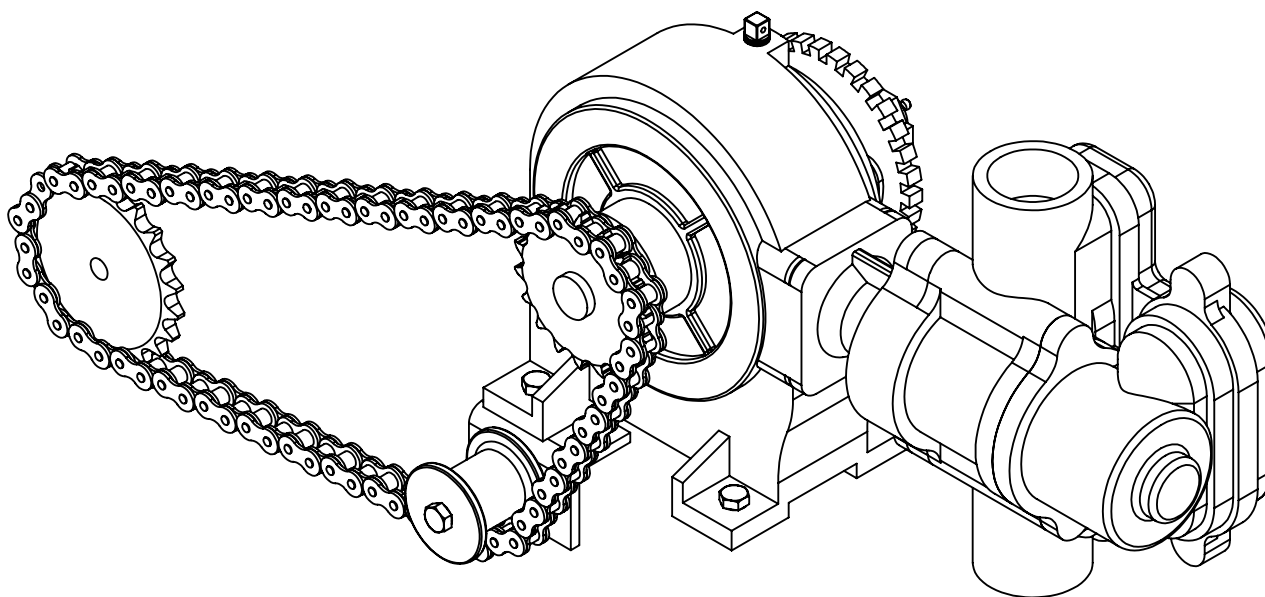


Fig.	Part no.	Qty	Description
1	76101432	1	Chain, No. 50 Stainless Roller Chain- 42-1/4" (requires half link)
2	76202277	1	1/2 Link, No. 50 Stainless Roller Chain
3	7600470479	1	Master Link, No. 50 Stainless Roller Chain



Quick Fill Plumbing Assembly

Instructions:

- Install mount angle bracket to quick fill mouting bracket located underneath tank saddle on right hand side at rear of machine.
- Install plumbing to tank sump and route hose to right rear of machine.
- Use rectorseal no. 5, no. 7, or no. 21 on pipe threads instead of teflon tape.
- Remove top nuts and washers from ball valve and attach mounting bracket on bolts. Reinstall washers and nuts.

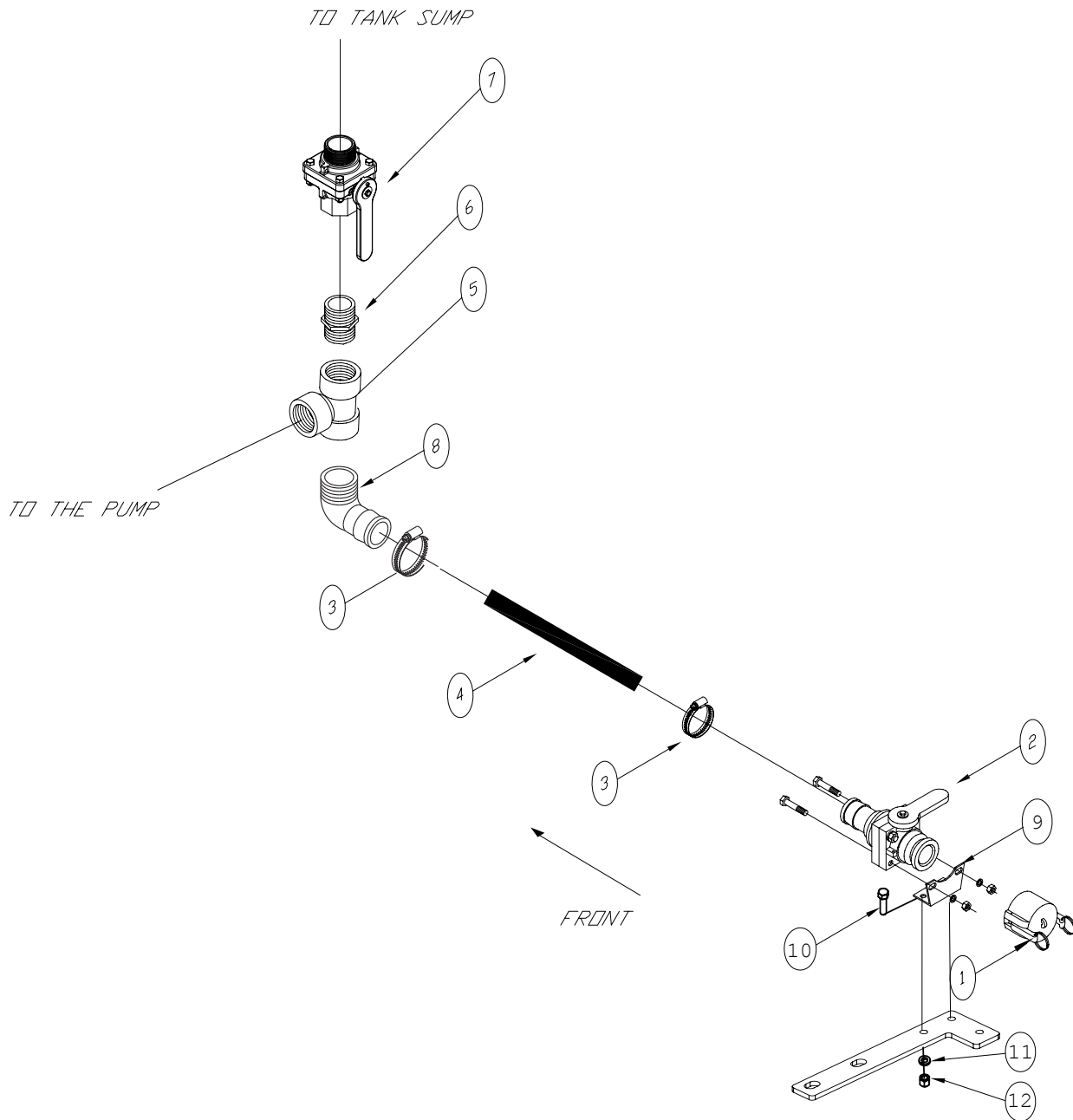


Fig.	Part no.	Qty	Description
1	76700191	1	Cap, 2" Male Adapter
2	76700321	1	Valve, Ball 2" M-M x 2" M-C Flange
3	76700130	2	Clamp, 2" Stainless Hose
4*	76700124	1	Hose, 2" x 60" EPDM
5	76700077	1	Tee, 2" NPT
6	76700038	1	Nipple, 2" NPT Close
7	767805251	1	Valve, Ball 2" MNPT x 2" FNPT
8	76700027	1	Hose Barb, 2" NPT x 2" 90 deg
9	76700192	1	Bracket, Mount Angle
10	600356020	2	Bolt 3/8"-16 x 1" Gr. 5
11	600382051	2	Washer, Lock 3/8"
12	600365008	2	Nut, Standard 3/8"-16
			*Item 4 is sold by the foot using part no. 76700124

Single Piston Metering Pump Plumbing

Instructions:

- Install 2" to 1-1/2" reducer nipple in tank sump 2" tee fitting.
- Attach filter and elbow hose barb.
- Attach elbow hose barb inlet port on pump, install 1-1/2" inlet hose.
- Attach fittings and gauge to outlet port on pump.
- Attach 1" outlet hose to barb and route to sub-boom on mainframe.

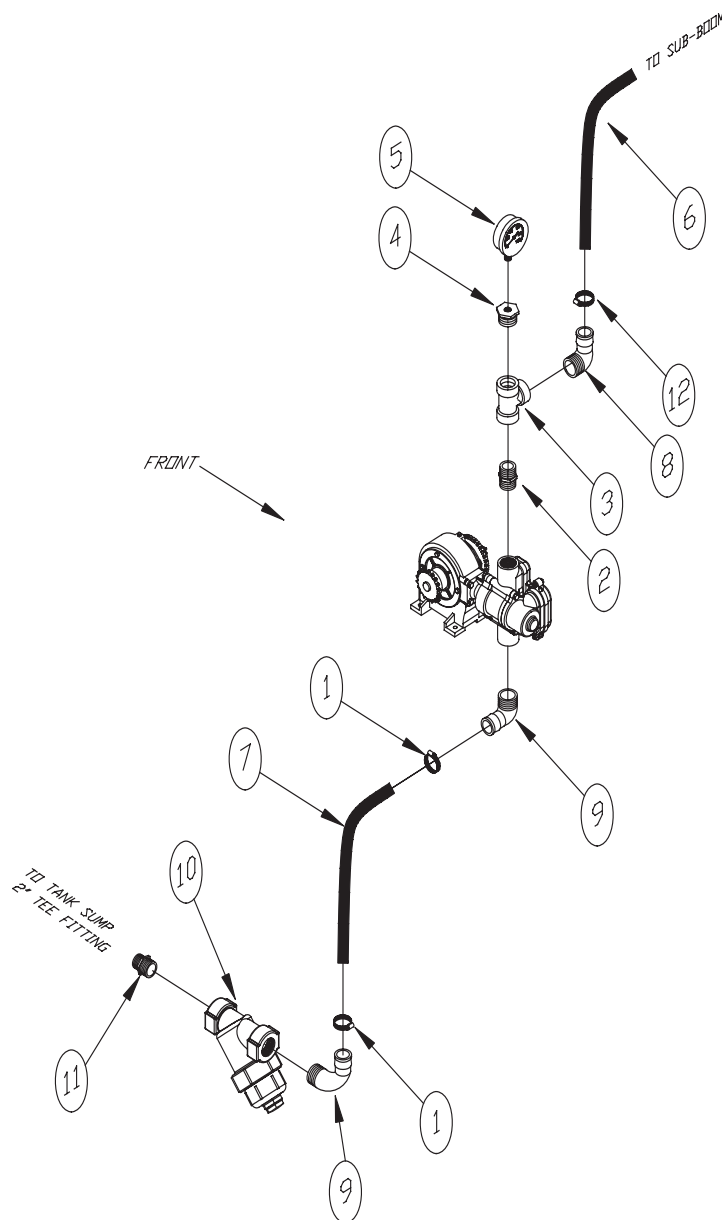


Fig.	Part no.	Qty	Description
1	76700129	2	Clamp, 1-1/2" Stainless Hose
2	767001151	1	Bushing, 1-1/2" x 1" Reducer
3	76700074	1	Tee, 1" NPT
4	76700290	1	Bushing, 1" NPT x 1/4" NPT Reducing
5	76700237	1	Gauge, 4" Glycerin Filled Pressure
6*	76700119	1	Hose, 1" x 48" EPDM
7*	76700121	1	Hose, 1-1/2" x 96" EPDM
8	76700022	1	Hose Barb, 1" NPT x 1"-90 deg
9	76700026	2	Hose Barb, 1-1/2" NPT x 1-1/2" -90 deg
10	76700214	1	Filter, 1-1/2" NPT Banjo
11	76700186	1	Nipple, 2" MNPT x 1-1/2" MNPT Reducer
12	76700128	1	Clamp, 1" Stainless Steel Hose
			*Item 6 is sold by the foot using part no. 76700119
			Item 7 is sold by the foot using part no. 76700121

Double Piston Metering Pump Plumbing

Instructions:

- Install 2" to 1-1/2" reducer nipple in tank sump 2" tee fitting.
- Attach filter and elbow hose barb.
- Attach elbow hose barb inlet port on pump, install 1-1/2" inlet hose.
- Attach fittings and gauge to outlet port on pump.
- Attach 1" outlet hose to barb and route to sub-boom on mainframe.

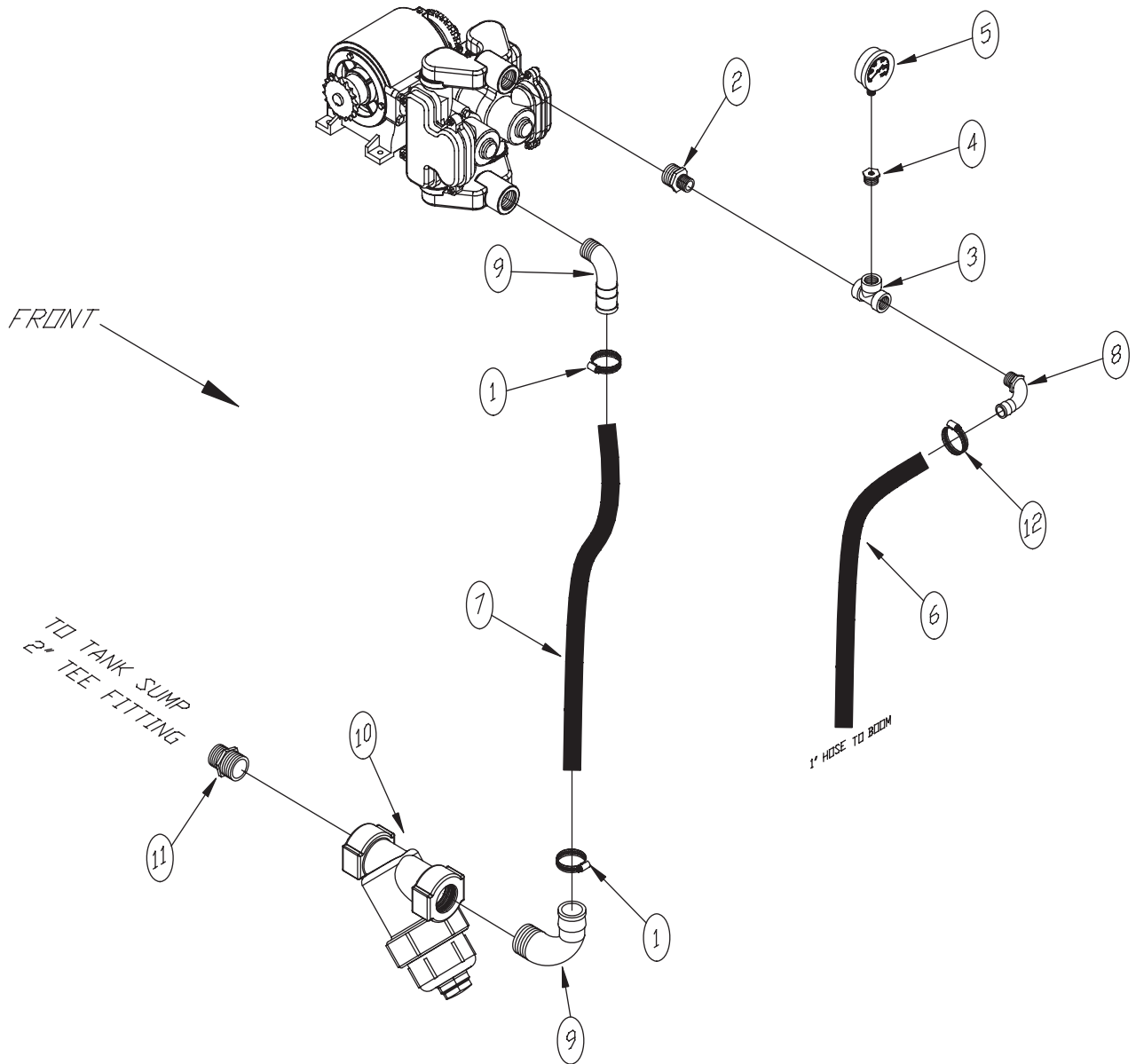


Fig.	Part no.	Qty	Description
1	76700129	2	Clamp, 1-1/2" Stainless Hose
2	767001151	1	Bushing, 1-1/2" x 1" Reducer
3	76700074	1	Tee, 1" NPT
4	76700290	1	Bushing, 1" NPT x 1/4" NPT Reducing
5	76700237	1	Gauge, 4" Glycerin Filled Pressure
6*	76700119	1	Hose, 1" x 48" EPDM
7*	76700121	1	Hose, 1-1/2" x 96" EPDM
8	76700022	1	Hose Barb, 1" NPT x 1"-90 deg
9	76700026	2	Hose Barb, 1-1/2" NPT x 1-1/2" -90 deg
10	76700214	1	Filter, 1-1/2" NPT Banjo
11	76700186	1	Nipple, 2" MNPT x 1-1/2" MNPT Reducer
12	76700128	1	Clamp, 1" Stainless Steel Hose
			*Item 6 is sold by the foot using part no. 76700119
			Item 7 is sold by the foot using part no. 76700121

Hydraulic Pump Mounting Assembly

Instructions:

- If using hydraulic pump option, install hydraulic pump on mount bracket (bracket installed with the saddle for 1000 gallon model).
- Install fittings and hoses on hydraulic pump.
- Install couplers on end of hoses and install colored bands to denote hose function.
- Place hydraulic motor/pump color code decal next to existing hose color code decal at front of machine in visible location.

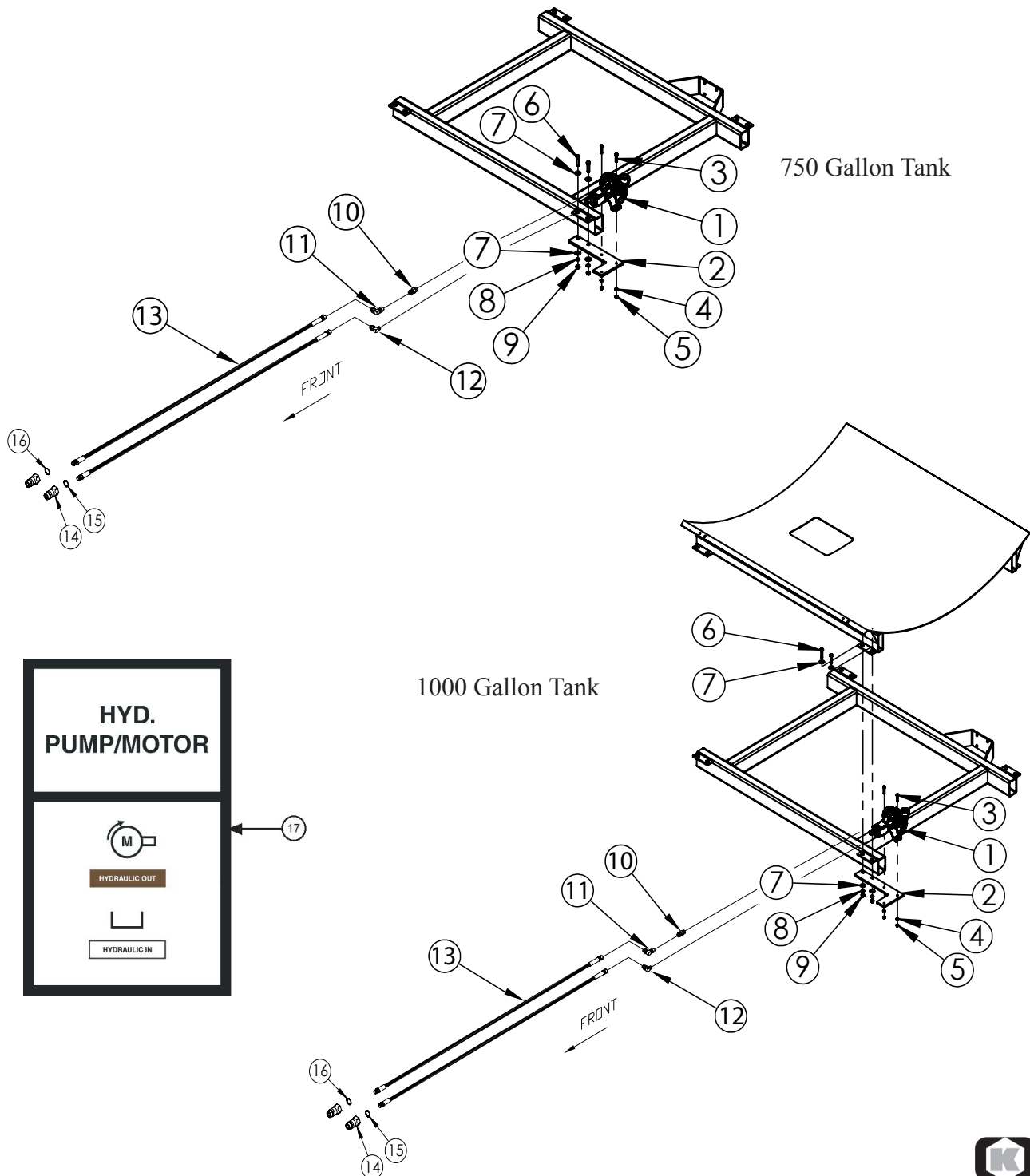


Fig.	Part no.	Qty	Description
1	76750039	1	Pump, Hydraulic
2	762450006	1	Mount, Hydraulic Pump
3	600356111	2	Bolt, 3/8"-16 x 2" Gr. 5
4	600382051	2	Washer, Lock 3/8"
5	600365008	2	Nut, Hex 3/8"-16
6	600356022	2	Bolt, 1/2"-13 x 2-1/2" Gr. 5
7	600381050	4	Washer, Flat 1/2"
8	600382053	2	Washer, Lock 1/2"
9	600365009	2	Nut, Hex 1/2"-13
10	76201057	1	Fitting, 8MJIC x 1/2" MNPT Straight
11	76201059	1	Fitting, 8MJIC x 8FJIC Swivel 90 deg
12	76201034	1	Fitting, 8MJIC x 1/2" MNPT 90 deg
13	762022802	2	Hose, 1/2" x 186" 1/2" MNPT x 8FJIC
14	600470110	2	Coupler, 1/2" Male - 8FNPT
15	7600470543	1	Band, Plastic Spiral 3/4" Brown
16	7600470544	1	Band, Plastic Spiral 3/4" White
17	7600475284	1	Decal, Hyd. Pump/Motor Color Code

Hydraulic Pump Plumbing

Instructions:

-If using the hydraulic pump option, plumb the pump to the tank as shown.

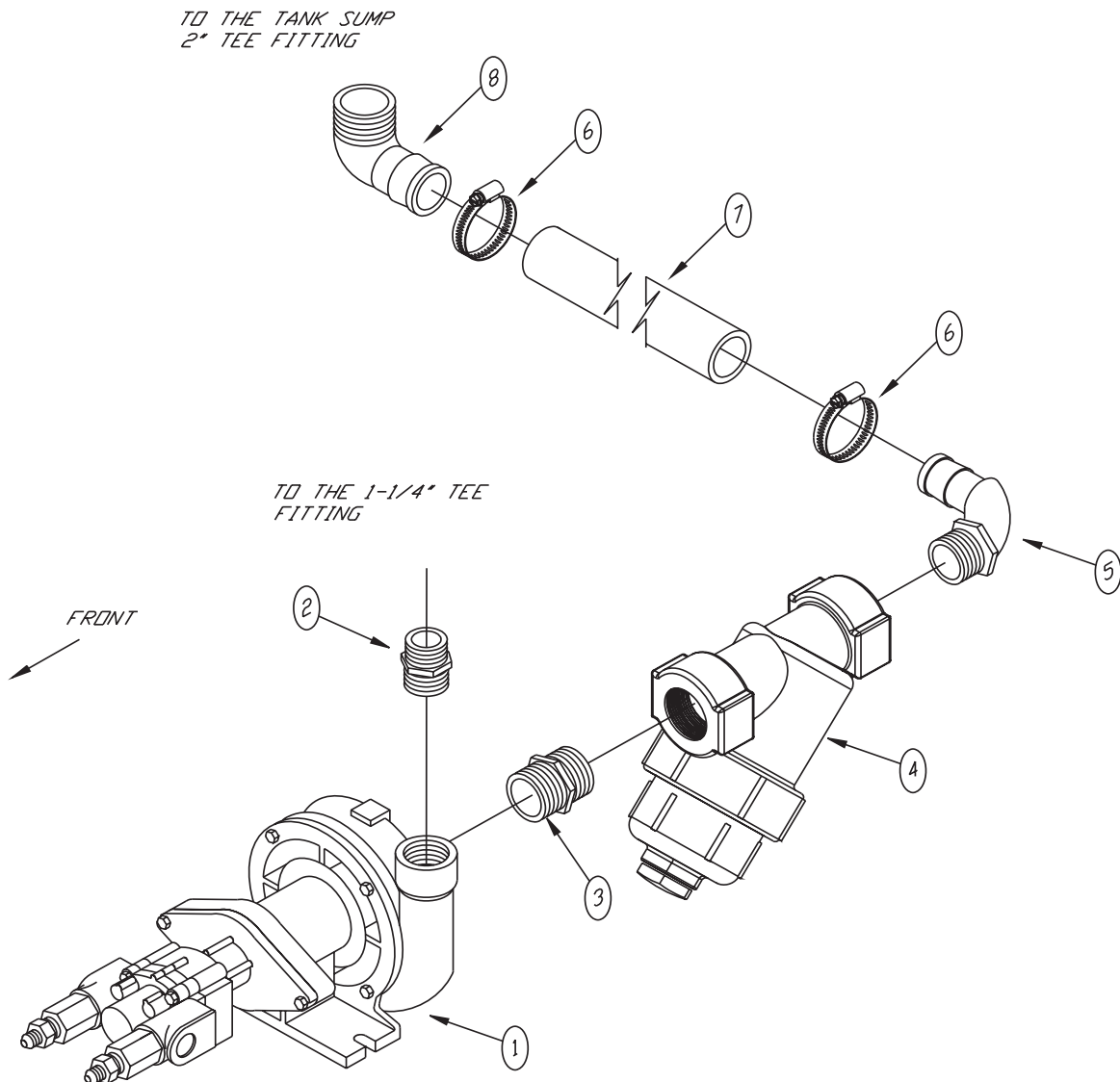


Fig.	Part no.	Qty	Description
1	76750039	1	Pump, Hydraulic
2	76700036	1	Nipple, 1-1/4" NPT Close
3	76700037	1	Nipple, 1-1/2" NPT Close
4	76700214	1	Filter, 1-1/2" NPT Banjo
5	76700026	1	Elbow, 1-1/2" NPT x 1-1/2" Barb 90 deg
6	76700130	2	Clamp, 1-1/2" Stainless Steel Hose
7*	76700121	1	Hose, 1-1/2 x 42" EPDM
8	76700186	1	Elbow, 2" MNPT x 1/2" Barb 90 deg
			*Item 7 is sold by the foot using part no. 76700121

Ball Valve Bracket

Instructions:

-For hydraulic pump option, install ball valve mount bracket to mainframe.

NOTE: For 40.5' model, ball valve bracket must be place between cylinder deadhead and wing hinge to avoid interference with outer wing when wings are folded.

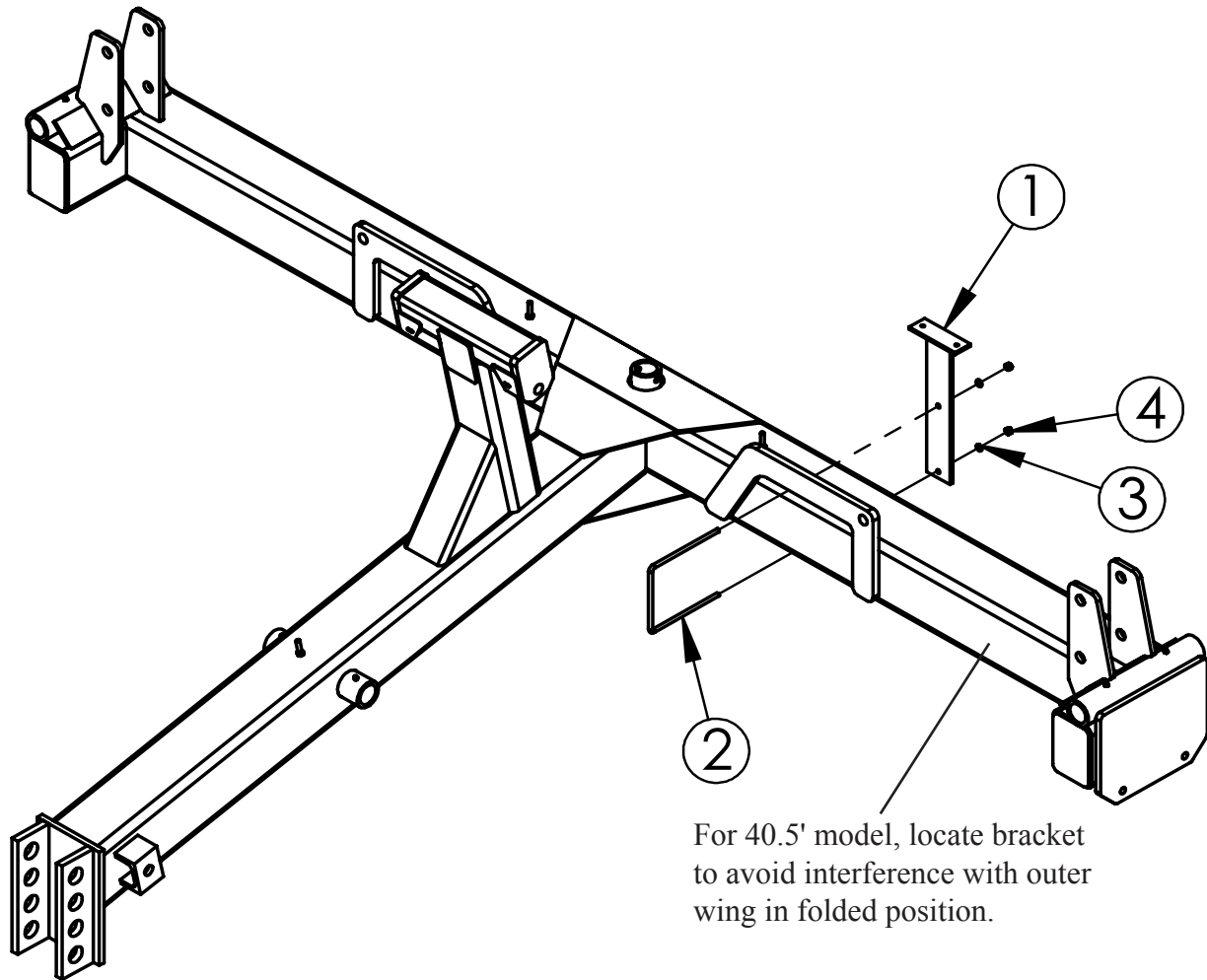
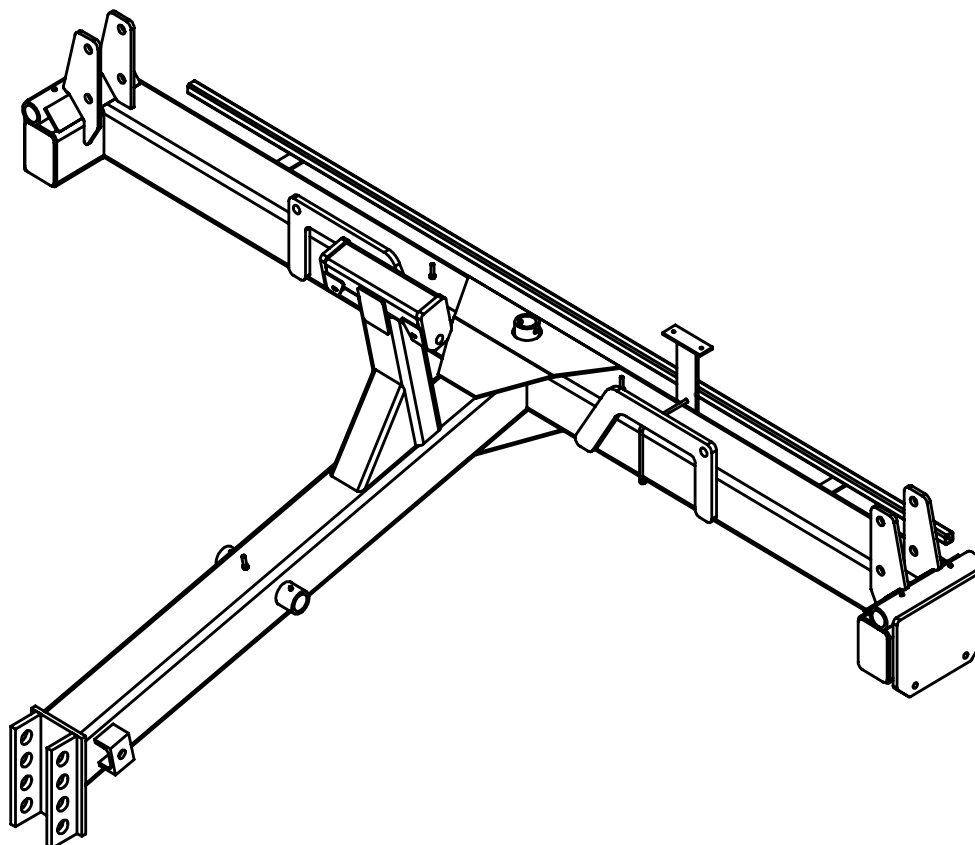


Fig.	Part no.	Qty	Description
1	760000117	1	Bracket, Ball Valve Mounting
2	76101329	1	U-Bolt, 3/8"-16 x 7" x 8.5"
3	600382051	2	Washer, Lock 3/8
4	600365008	2	Nut, Hex 3/8"-16



Two Ball Valve Assembly

Instructions:

- For hydraulic pump option only.
- Install two ball valves on valve mount plate attached to mainframe as shown.

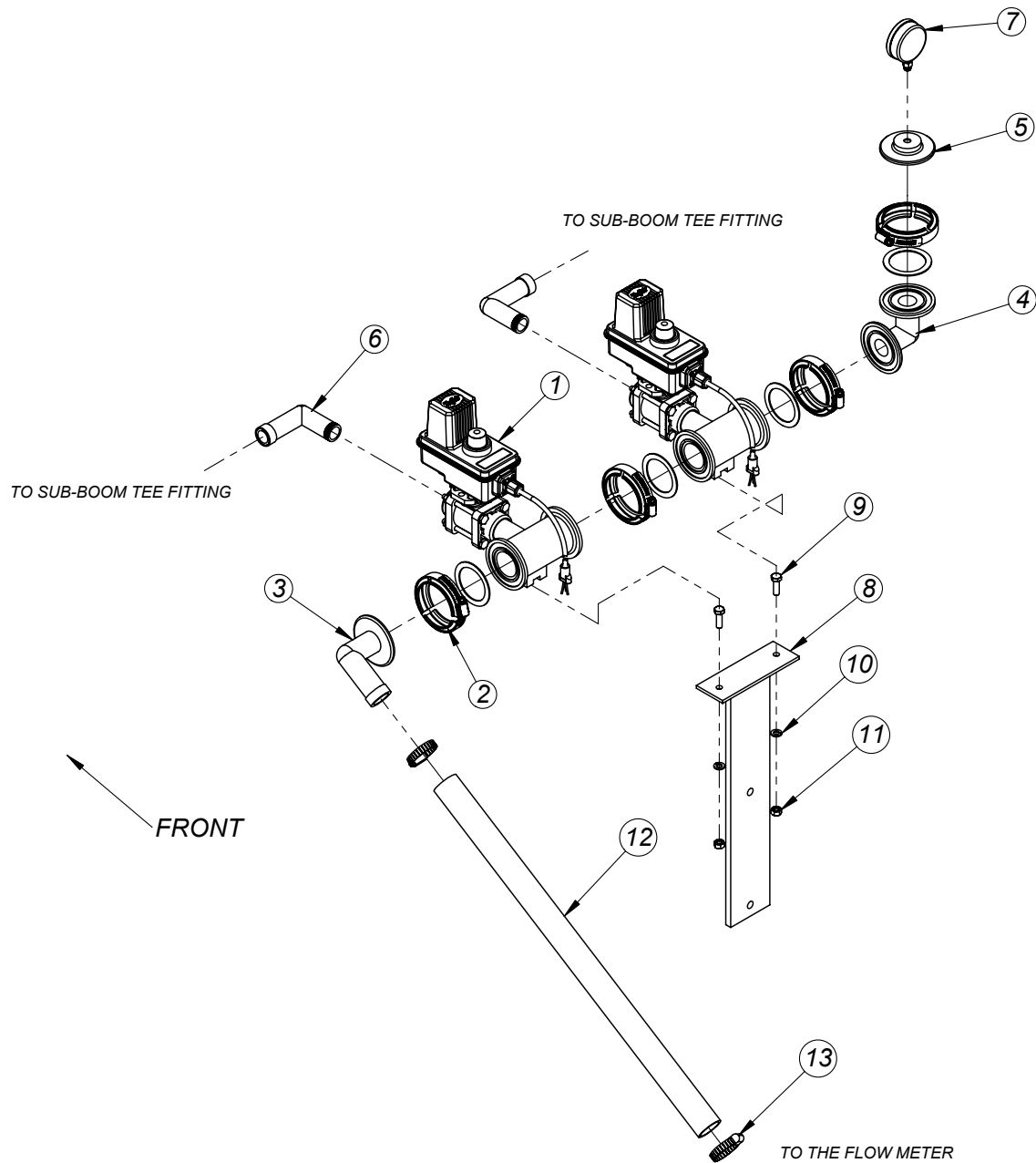


Fig.	Part no.	Qty	Description
1	767800364	1	Valve, Ball (2) -452
**	767800362	**	Valve, Ball(1)-451
2	767002904	4	Clamp, S.S. Flange
3	767002901	1	Flange, 1-1/4" Barb Elbow
4	767002902	1	Elbow, 1-1/4" Flange
5	767002903	1	Adapter, 1-1/4" Flange
6	76700022	2	Barb, 1" MNPT x 1" 90 deg
7	76700237	1	Gauge, 4" Pressure (0-100 PSI)
8	760000117	1	Mount, Valve
9	76101114	2	Bolt, 5/16"-18 x 1" Gr. 5
10	76101219	2	Washer, Lock 5/16"
11	76101210	2	Nut, Hex 5/16"-18
12*	767001191	1	Hose, 1-1/4"
13	76700128	2	Clamp, 1-1/4" Hose
			*Item 12 sold by the foot using part no. 767001191
			**Unit comes with two ball valves together, to order just one, use 767800362

Regulator Valve Plumbing

Instructions:

- If using hydraulic pump with regulator option, install regulator valve to the top of hydraulic pump.
- Drill 1-5/8" hole in top of tank and install 3/4" tank fitting.
- Install flow meter near ball valves.
- Install plumbing as shown.

Note: Items found in bag 762121533.

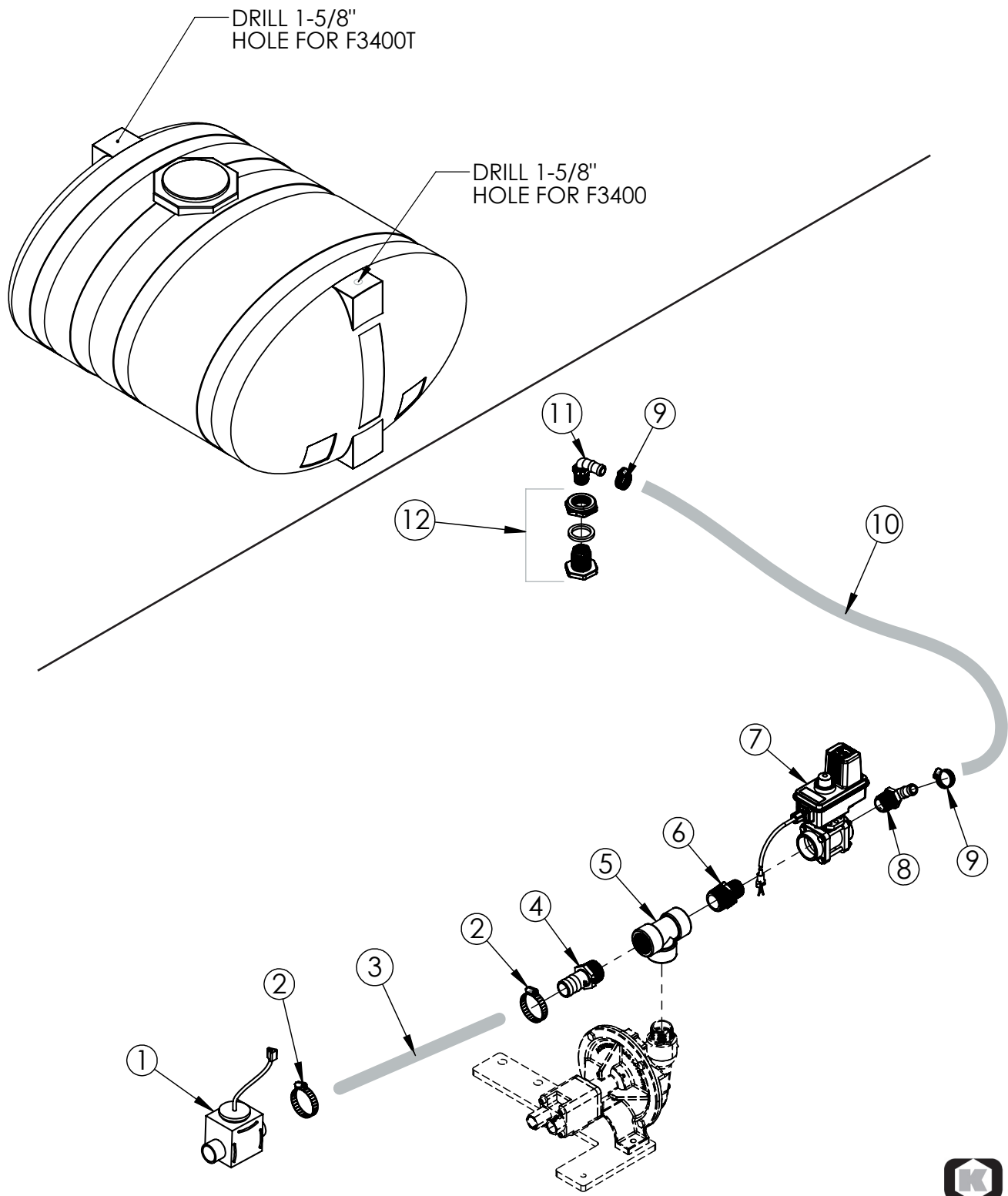


Fig.	Part no.	Qty	Description
1	767800371	1	Meter, 1-1/4" Flow
2	767800128	2	Clamp, 1-1/4" Stainless Steel Hose
3*	767001191	1	Hose, 1-1/4" EPDM
4	76700011	1	Adapter, 1-1/4" NPT x 1-1/4" Barb Straight
5	76700075	1	Tee, 1-1/4" NPT Female
6	76700115	1	Nipple, 1-1/4" x 1" Reducing
7	76780038	1	Valve, Regulator
8	76700021	1	Elbow, 1" NPT x 3/4" Barb 90
9	76700127	2	Clamp, 3/4"-1" Stainless Steel Hose
10*	76700118	1	Hose, 3/4 x 76" EPDM
11	76700019	1	Elbow, 3/4" NPT x 3/4" Barb 90
12	76700233	1	Fitting, 3/4" Tank
			* Item 3 is sold by the foot using part no. 767001191
			Item 10 is sold by the foot using part no. 76700118

Speed Sensor Assembly and Wiring Diagram

Instructions:

- For hydraulic pump option only.
- Install speed sensor on left wheel spindle. Place mounting bracket so sensor is approximately 1/8" from wheel hub. Secure bracket with hose clamp around spindle.
- Starting at hitch, run main cable along tongue.
- Attach junction box to ball valve mount bracket.
- Route to ball valves, pressure regulator, flow meter, and speed sensor.

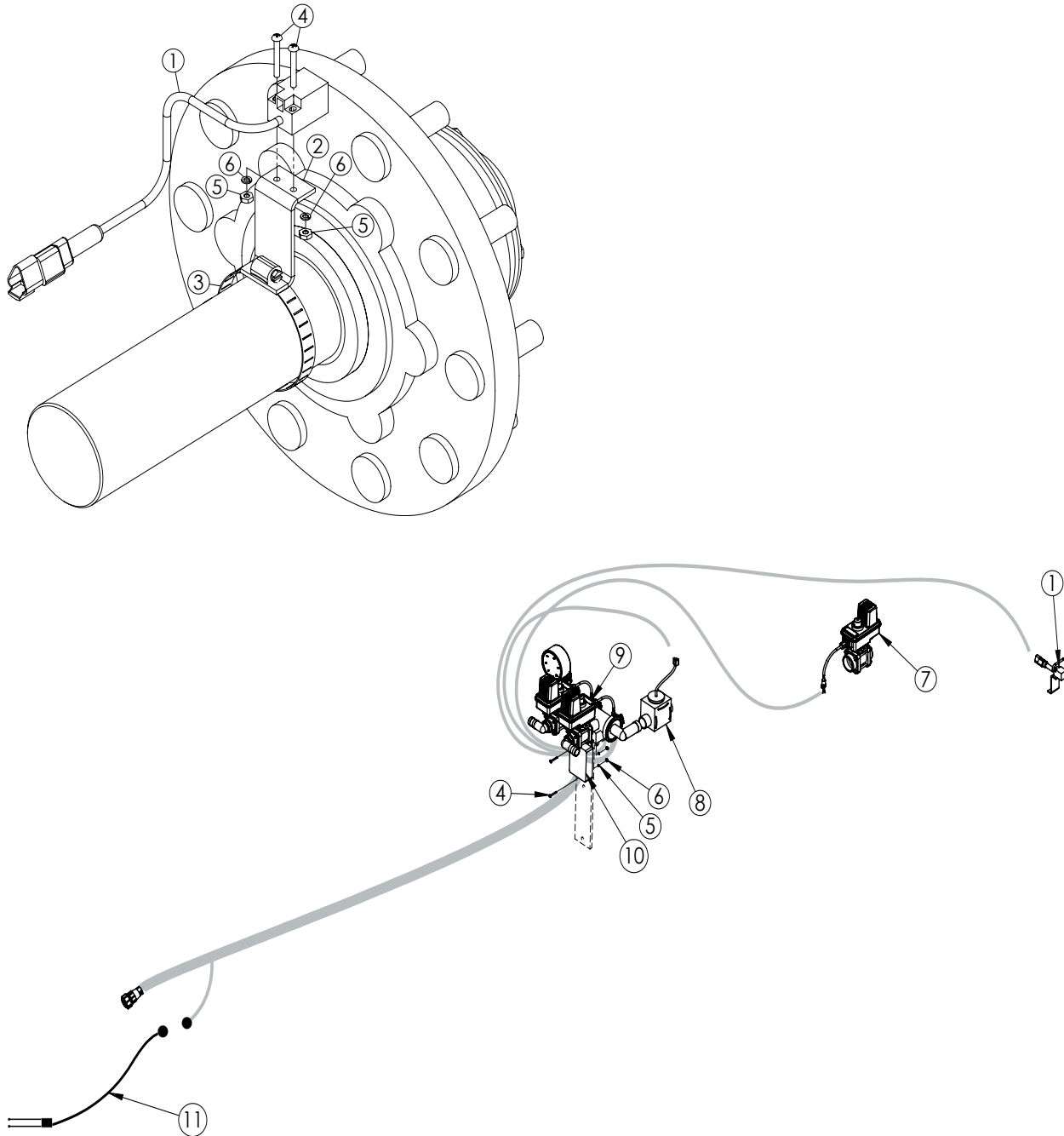


Fig.	Part no.	Qty	Description
1	76780034	1	Sensor, Speed
2	764004632	1	Bracket, Speed Sensor Mounting
3	76700131	1	Clamp, 3" Stainless Steel Hose
4	7600373130	4	Screw, Machine #8 x 1-1/4" UNC
5	600365021	4	Nut, Machine #8
6	7600382103	4	Washer, Lock #8
7	76780038	1	Regulator, 1" Teejet 344
8	767800371	1	Meter, Flow 1-1/4" Teejet 801
9	76700364	1	Valves, Ball (2)-452
10	767800333	1	Cable, Main 26'
	Options		
11	767800041	-	Cable, Power - 12' (Included in TeeJet 844E Monitor Kit)
-	767805255	-	Kit, TeeJet 844E Monitor
-	767805257	-	Kit, Kongkilde ISOBUS Solution
-	767805259	-	Adapter, TeeJet to Raven

LIQUID SIDEDRESS SWIVEL COULTER ASSEMBLY-KNIFE

Instructions:

- Install sidedress coulters row units on toolbar using U-bolts and nuts as shown.
- Adjust knife according to instructions in Operator's Manual. Use shims if necessary to ensure knife is centered with coulter.

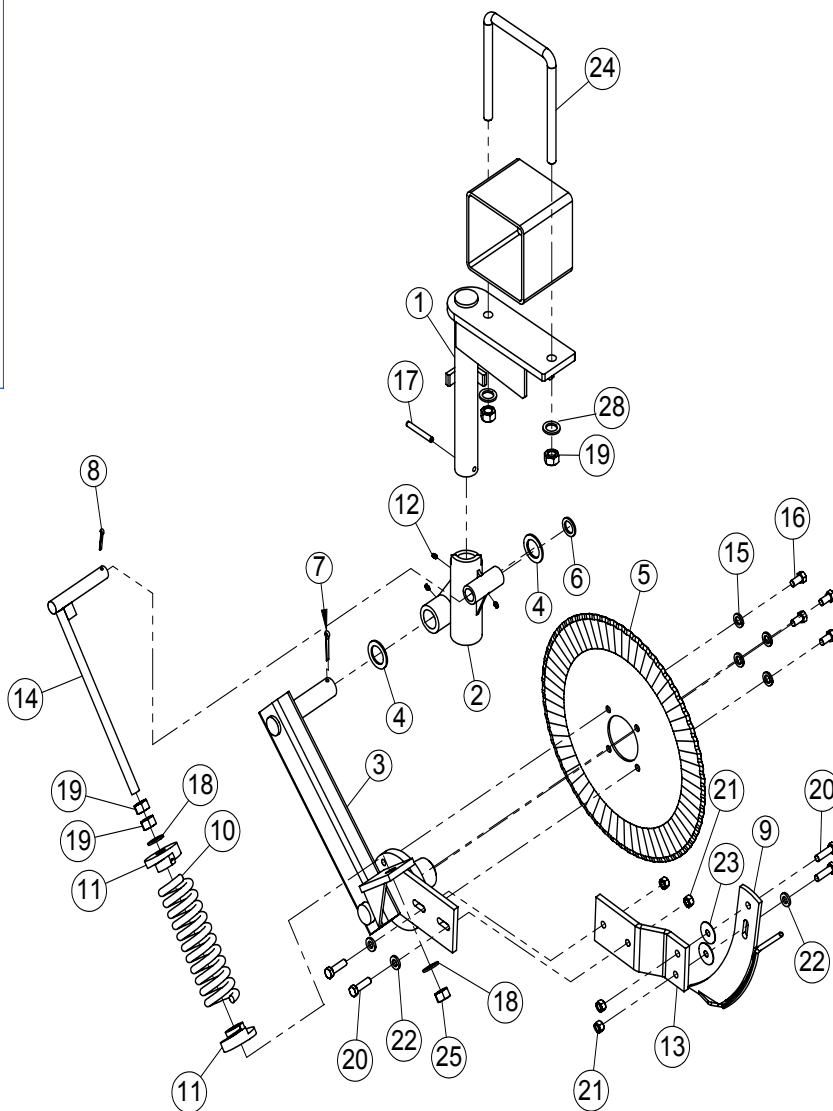
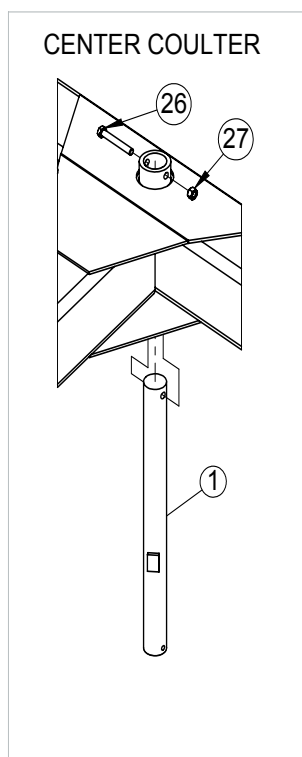
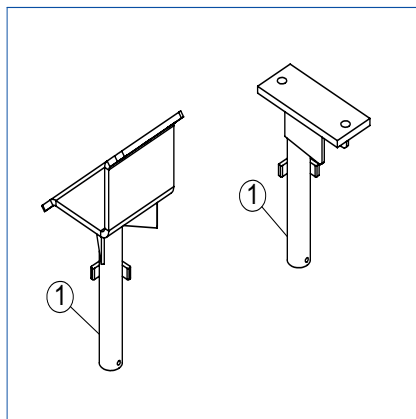
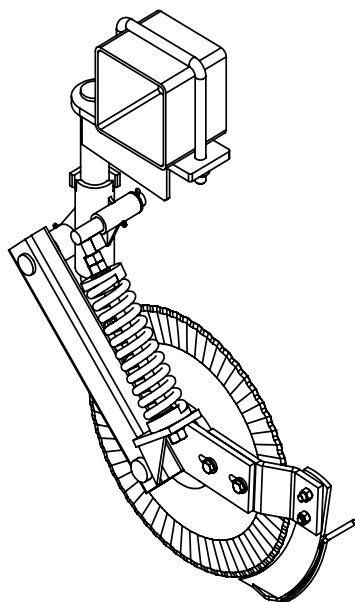


Fig.	Part no.	Qty	Description
1	76801698	1	Weldment, Swivel Coulter Mounting Bracket
-	76802076	-	Mount, Swivel Coulter Offset Mount
-	76801884	-	Weldment, Wheel Clamp
-	76801701	-	Weldment, Center Swivel Coulter Pin
2	76450063	1	Swivel, Liquid Coulter Cast
3	768017881	1	Weldment, Liquid Coulter Arm
4	76101462	2	Washer, Machine 10 Ga. x 1-1/2"
5	76400101	1	Blade, 20" Straight Coulter-Rippled
-	76400097	-	Blade, 20" Straight Coulter-Smooth
6	76101435	1	Washer, Machine 10 Ga x 1"
7	76101265	1	Pin, Cotter 1/4" x 2"
8	76101246	1	Pin, Cotter 3/16" x 1-1/2"
9	76450078	1	Knife, Liquid Sidedress
10	76400095	1	Spring, 10-1/4" Coulter Compression
11	76400096	2	Casting, Spring
12	76101252	3	Zerk, Grease 1/4"-28 Straight
13	760000134	1	Bracket, Knife
14	76801789	1	Weldment, Tension Rod
15	600382053	4	Washer, Lock 1/2"
16	76301193	4	Bolt, 1/2"-20 x 1-1/4" Gr. 5 (UNF)
17	76101425	1	Pin, Roll 3/8" x 3"
18	76101233	2	Washer, Flat 3/4"
19	600365019	4	Nut, Standard 3/4"
20	7600356139	4	Bolt, 1/2"-20 x 1-3/4" Gr. 5 (UNF)
21	7600366050	4	Nut, Stover Lock 1/2" Type C (UNF)
22	7600381055	3	Washer, Flat 1/2" (.172" Thick)
23	7600381015	2	Washer, Flat 1/2" x 1-3/4" OD x .062" Thick
24	76101316	1	U-Bolt, 3/4"-10 x 7" x 9"
25	600366024	1	Nut, Stover Lock 3/4" Type C (UNC)
26	600356137	1	Bolt, 1/2" x 3-1/2" Gr. 5
27	600366030	1	Nut, Stover Lock 1/2" Type C (UNC)
28	600382055	2	Washer, Lock 3/4"



LIQUID SIDEDRESS SWIVEL COULTER ASSEMBLY-INJECTOR

Instructions:

- Install sidedress coulters row units on toolbar using U-bolts and nuts as shown.
- Adjust injector according to instructions in Operator's Manual. Use shims if necessary to ensure injector is centered with coulters.

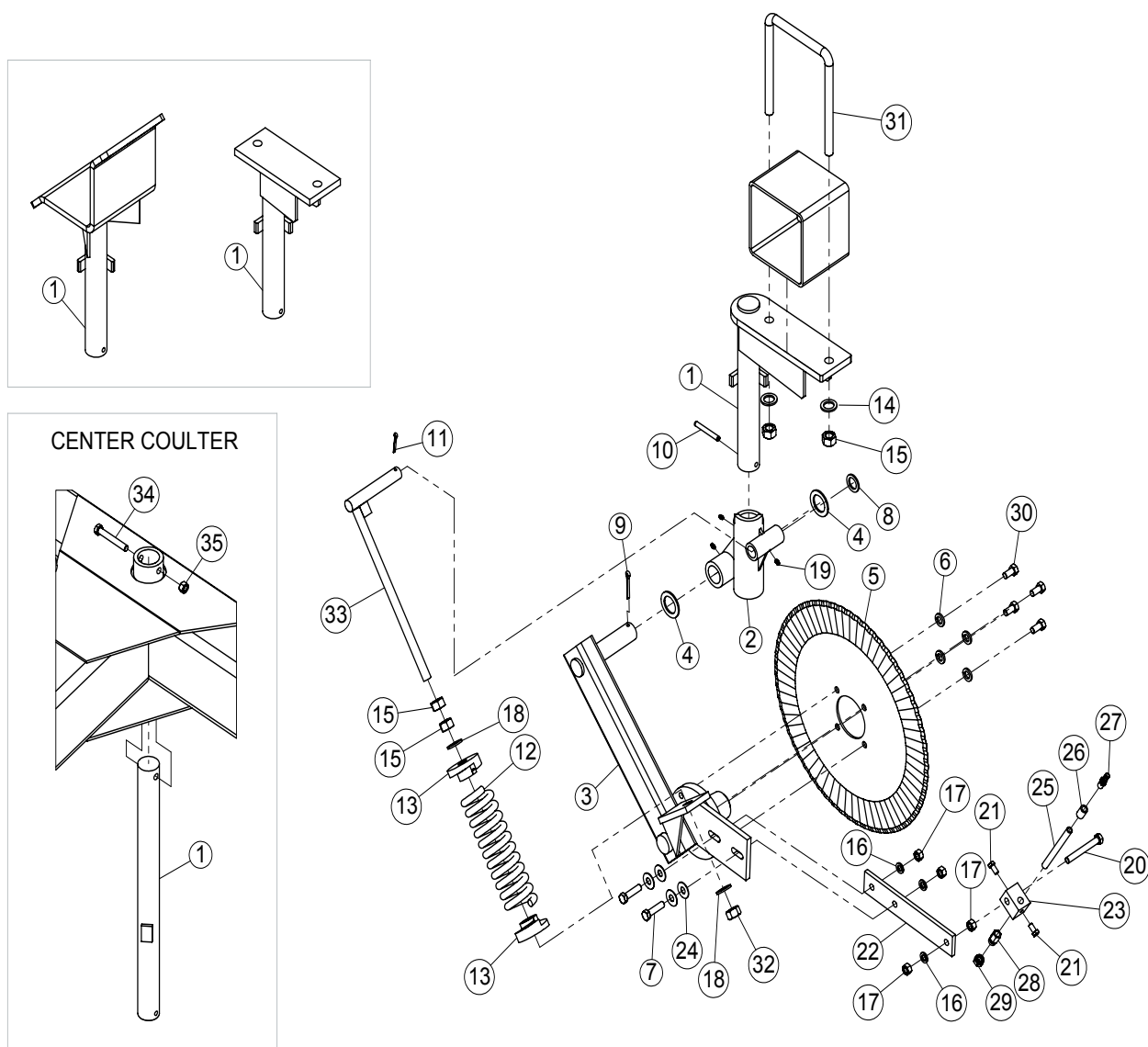
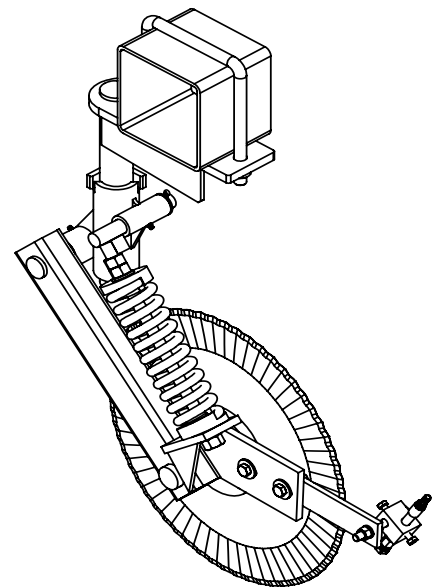


Fig.	Part no.	Qty	Description
1	76801698	1	Weldment, Swivel Coulter Mounting Bracket
-	76802076	-	Mount, Swivel Coulter Offset Mount
-	76801884	-	Weldment, Wheel Clamp
-	76801701	-	Weldment, Center Swivel Coulter Pin
2	76450063	1	Swivel, Liquid Coulter Cast
3	768017881	1	Weldment, Liquid Coulter Arm
4	76101462	2	Washer, Machine 10 Ga. x 1-1/2"
5	76400101	1	Blade, 20" Straight Coulter-Rippled
-	76400097	-	Blade, 20" Straight Coulter-Smooth
6	600382053	4	Washer, Lock 1/2"
7	76101149SS	2	Bolt, 1/2"-13 x 2" Stainless Steel
8	76101435	1	Washer, Machine 10 Ga x 1"
9	76101265	1	Pin, Cotter 1/4" x 2"
10	76101425	1	Pin, Roll 3/8" x 3"
11	76101246	1	Pin, Cotter 3/16" x 1-1/2"
12	76400095	1	Spring, 10-1/4" Coulter Compression
13	76400096	2	Casting, Spring
14	600382055	2	Washer, Lock 3/4"
15	600365019	4	Nut, Standard 3/4"-10
16	76101222SS	3	Washer, Lock 1/2" Stainless Steel
17	76101213SS	4	Nut, Hex 1/2"-13 Stainless Steel
18	76101233	2	Washer, Flat 3/4"
19	76101252	3	Zerk, Grease 1/4"-28 Straight
20	76101153SS	1	Bolt, 1/2"-13 x 4" Stainless Steel
21	76101281SS	2	Bolt, 3/8"-16 x 3/4" Stainless Steel
22	760000136	1	Arm, Coulter Injection
23	76400103	1	Block, Injection Tube Mounting
24	76101231SS	4	Washer, Flat 1/2" Stainless Steel
25	76700279	1	Nipple, 1/4 NPT x 6 Stainless Steel
26	76700307	1	Bushing, 1/4" NPT x 6 Stainless Steel
27	76700277	1	Barb, Hose 1/4" NPT x 3/8"
28	76700289	1	Fitting, Teejet Body
29	76700288	1	Cap, Teejet S.S. -CP1325-SS
30	76301193	4	Bolt, 1/2"-20 x 1-1/4" Gr. 5 (UNF)
31	76101316	1	U-Bolt, 3/4"-10 x 7" x 9"
32	600366024	1	Nut, Stover Lock 3/4" Type C (UNC)
33	76801789	1	Weldment, Tension Rod
34	600356137	1	Bolt, 1/2" x 3-1/2" Gr. 5
35	600366030	1	Nut, Stover Lock 1/2" Type C (UNC)



Nozzle Assembly

Instructions:

- Assemble nozzles as shown below. Note: Hose barb is to be placed into the o ring.
- Elbow nozzles located in bag included with center coupler.
- Elbow nozzles used on outside rows, tee nozzles used on all other rows.

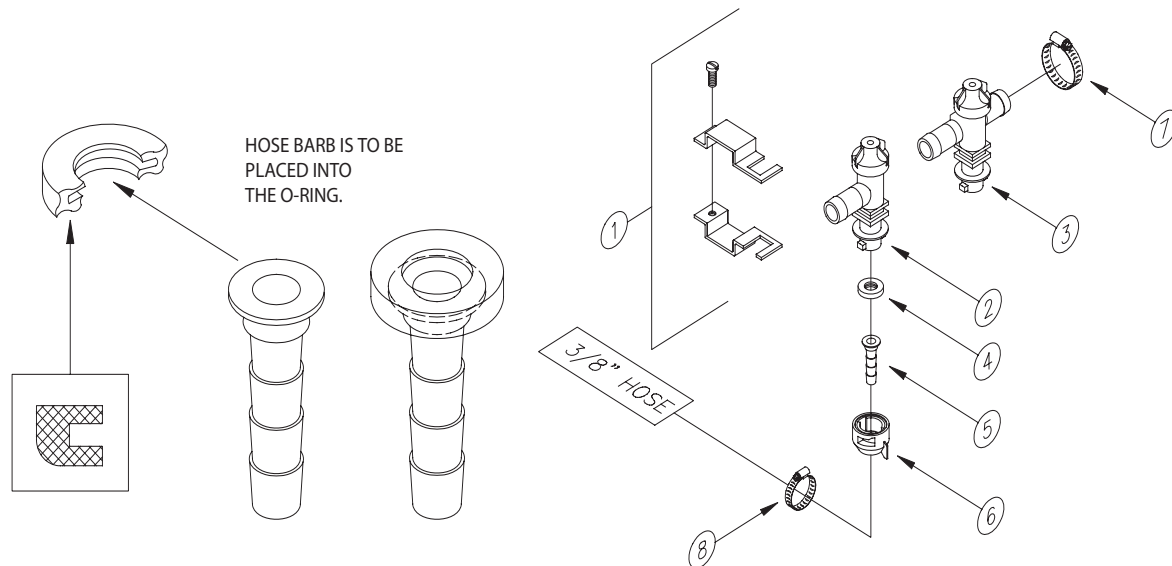
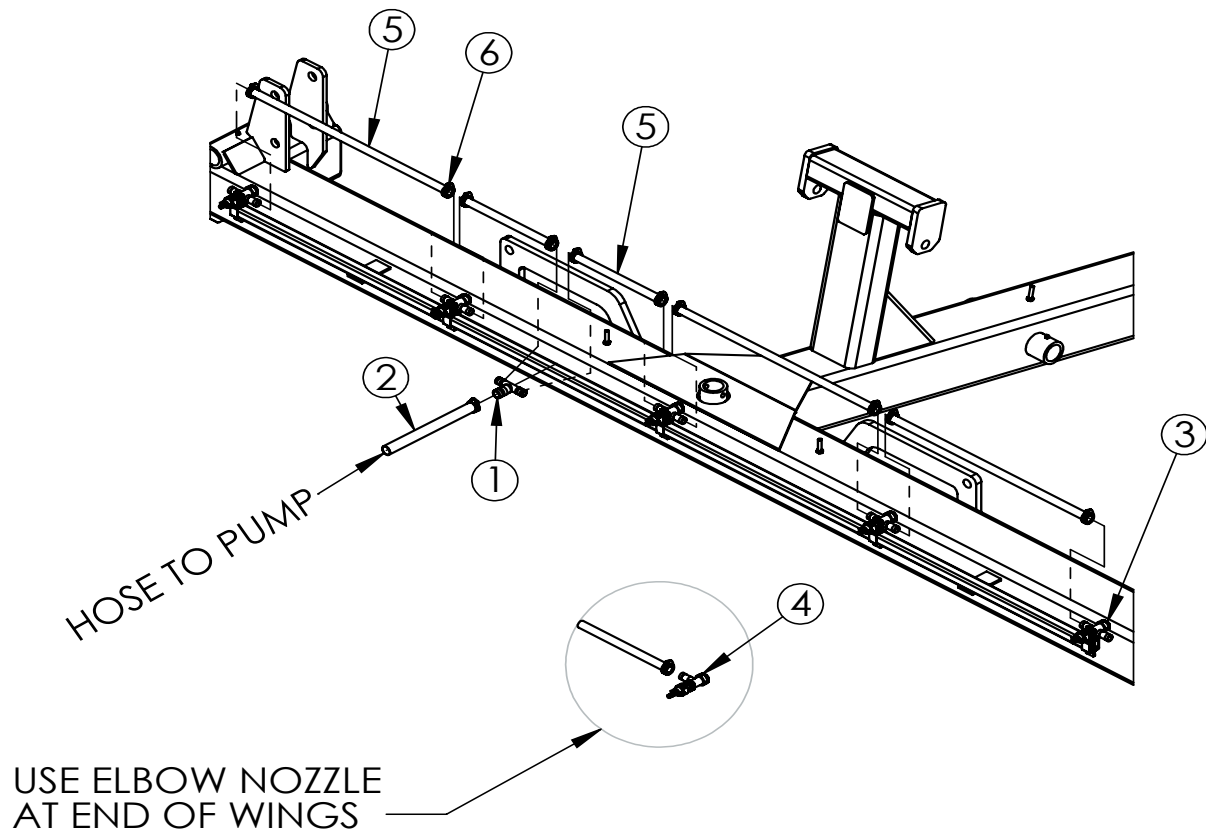


Fig.	Part no.	Qty	Description
1	76700203	1	Clamp, 1-1/4" Square Nozzle
2	76700199*	1	Elbow, 3/4" Diaphragm Nozzle
3	76700201*	1	Tee, 3/4" Diaphragm Nozzle
4	76700305	1	O-Ring, Split Hose Barb
5	76700302	1	Barb, Hose-1/4" for nozzle cap
6	76700303	1	Cap, Nozzle - Blue
7	76700127	1 or 2**	Clamp, Hose- 3/4" Stainless
8	76700126	1	Clamp, Hose -3/8-1/2" Stainless
			*Elbow used on outside rows, Tee used on all other rows.
			**One clamp for elbow, two clamps for tee fitting
			Note: Quantities listed are for one nozzle only.

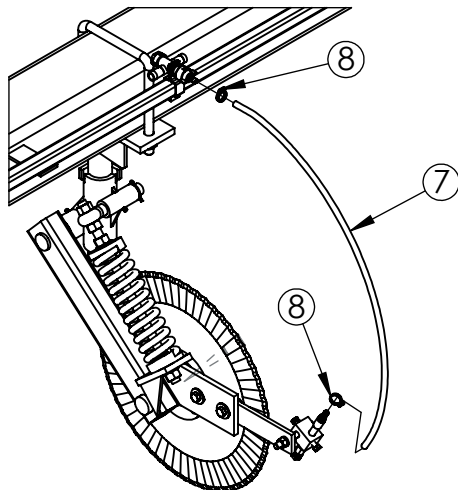
PLUMBING ROW UNITS

Instructions:

- Install nozzles on sub-boom as close to row units as possible. Install 1" tee fitting on hose from pump and place between center coulters and first coulters to left of center. Use elbow fittings for coulters at each end of bar.
- Cut 3/4" EPDM hoses to length to fit between fittings. Note: Make hoses longer at hinge to allow for folding of bar.
- Cut 3/8" EPDM hoses to length ensuring enough hose to allow coulters to swivel.
- Install hoses and secure with hose clamps.



INJECTOR



KNIFE

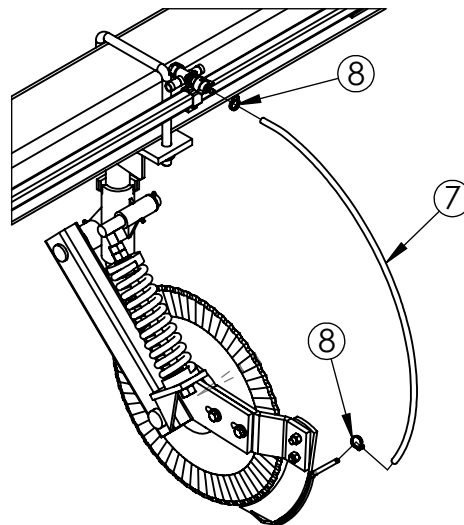
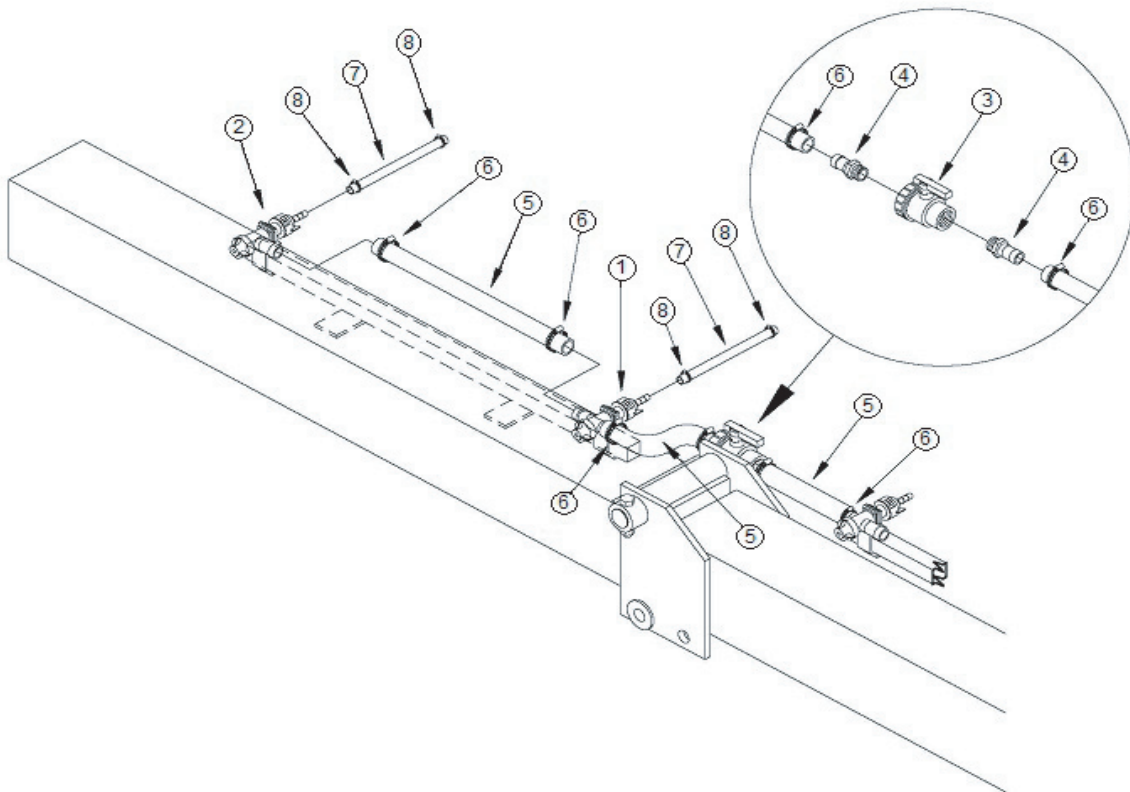


Fig.	Part no.	Qty	Description
1	76700197	1	Barb, 1 x 3/4 x 3/4 Tee
2	76700119*	*	Hose, 1" EPDM
3	767002011	**	Assy, 3/4" Diaphragm Tee (includes nozzle, o-ring, and cap)
4	767001991	2	Assy, 3/4" Diaphragm Elbow (includes nozzle, o-ring, and cap)
5	76700118*	*	Hose, 3/4" EPDM
6	76700127	**	Clamp, Hose-3/4-1" Stainless
7	76700122*	*	Hose, 3/8" EPDM
8	76700126	**	Clamp, Hose -3/8-1/2" Stainless
			*Items sold by the foot.
			**Qty depends on number of row units
			One tee fitting per non-outside row
			One 3/4" clamp per elbow, two 3/4" clamps per tee fitting
			Two 3/8 clamps per row unit

PLUMBING OUTER WINGS

Instructions:

- Install nozzles on sub-boom as close to row units as possible. Use elbow fittings for coulters at each end of bar.
- Cut 3/4" EPDM hoses to length to fit between fittings. Note: Make hoses longer at hinge to allow for folding of bar.
- Install valve using hose barbs at hinge of outer wings.
- Cut 3/8" EPDM hoses to length ensuring enough hose to allow coulters to swivel.
- Install hoses and secure with hose clamps.



NOTE: Ball Valves not used for 32.5' model



Fig.	Part no.	Qty	Description
1	767002011	**	Assy, 3/4" Diaphragm Tee (includes nozzle, o-ring, and cap)
2	767001991	2	Assy, 3/4" Diaphragm Elbow (includes nozzle, o-ring, and cap)
3	76700168	2	Valve, 3/4" Poly Gate (37.5' and 40.5' Models Only)
4	76700005	4	Adapter, 3/4" MNPT x 3/4" Hose Barb (37.5' and 40.5' Models Only)
5	76700118*	*	Hose, 3/4" EPDM
6	76700127	**	Clamp, Hose-3/4-1" Stainless
7	76700122*	*	Hose, 3/8" EVA
8	76700126	**	Clamp, Hose -3/8-1/2" Stainless
			*Items sold by the foot.
			**Qty depends on number of row units
			One tee fitting per non-outside row
			One 3/4" clamp per elbow, two 3/4" clamps per tee fitting
			Two 3/8 clamps per row unit

ATTACHING WASH TANK

Instructions:

- Install wash tank mount bracket to mount plate at rear of tank frame using hardware shown.
- Insert wash tank into bracket before installing fittings and hose.
- Install fittings and hose to wash tank.

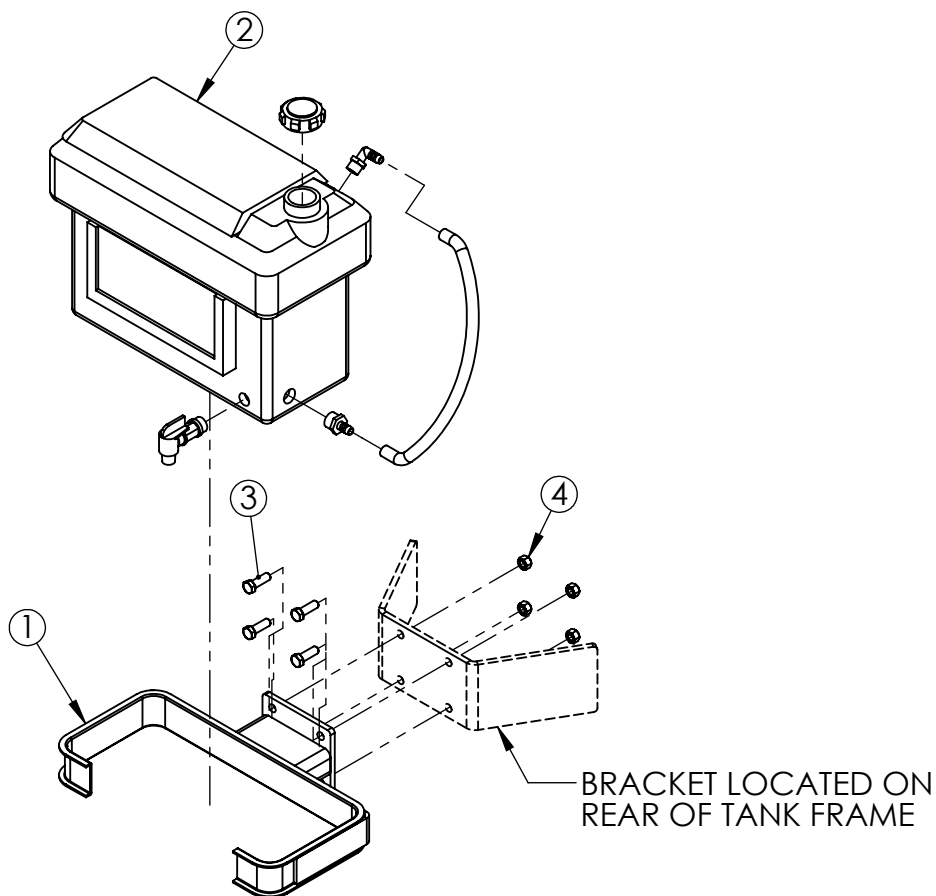


Fig.	Part no.	Qty	Description
1	762450078	1	Bracket, Wash Tank Mount
2	767500030	1	Tank, Wash (includes cap, fittings, and hose)
3	600356109	4	Bolt, 1/2"-13 x 1-1/2" Gr. 5
4	600366030	4	Nut, Top Lock 1/2"-13

DECAL PLACEMENT

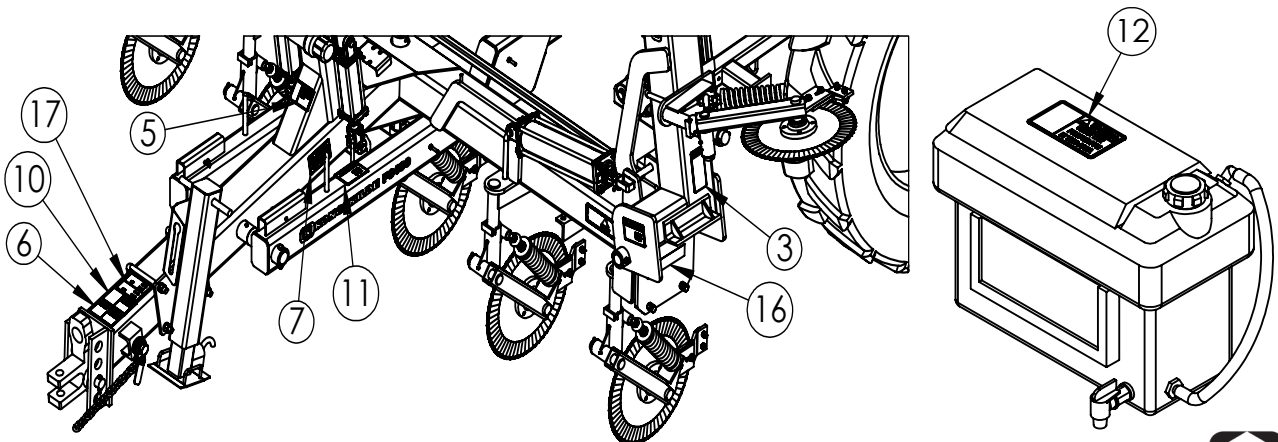
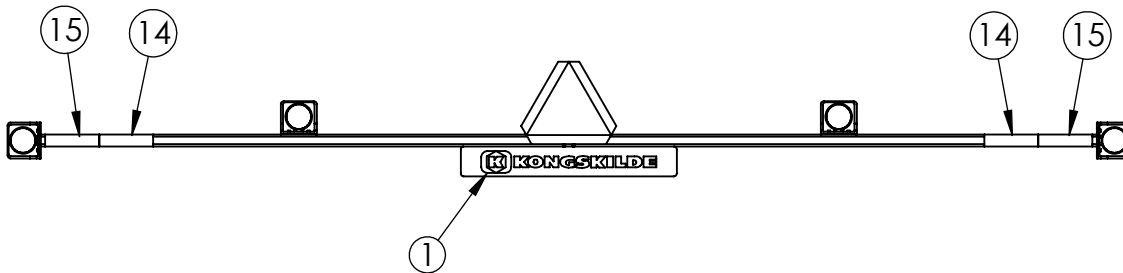
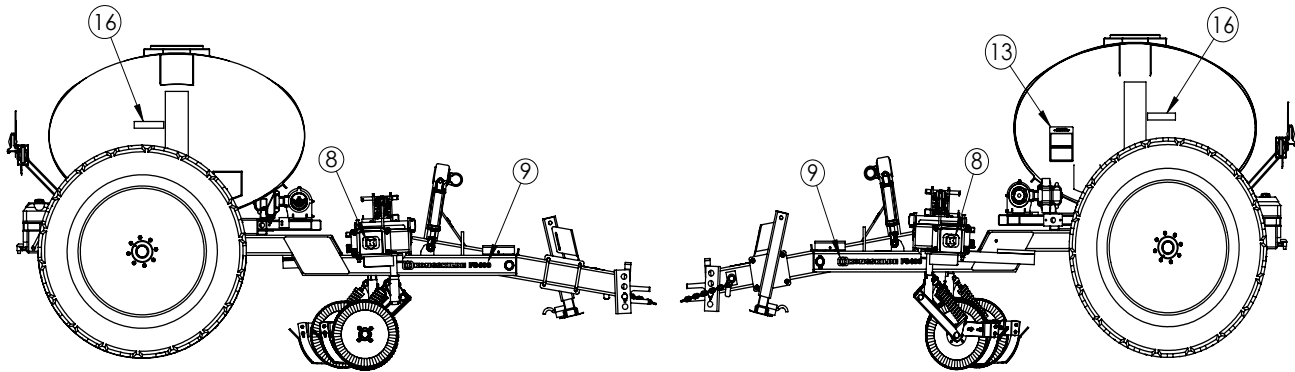
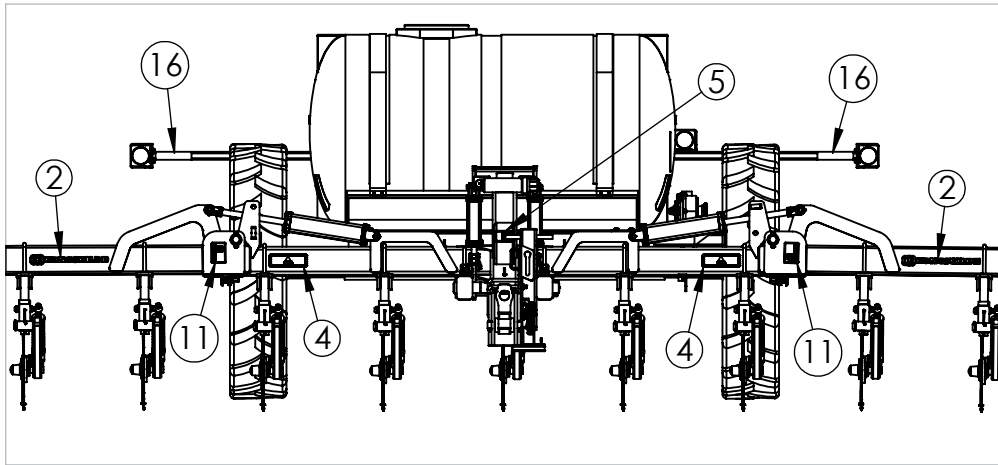


Fig.	Part no.	Qty	Description
1	7600475267	1	Decal, Kongskilde - White 4" x 30"
2	600475237	2	Decal Kongskilde - White 3" x 20"
3	600475039	2	Decal, Wing Safety
4	600475176	2	Decal, Wing Fold Lock
5	7600475276	1	Decal, Read Operator's Manual
6	600475170	1	Decal, Max Speed
7	76900804	2	Decal, Transport Lock
8	7600475272	2	Decal, Kongskilde K Logo - White
9	7600475269	2	Decal, Kongskilde F3450
10	600475160	1	Decal, Tipping Hazzard
11	7600475273	3	Decal, Pinch Point Warning
12	7600475274	1	Decal, PPE Fertilizer Warning
13	7600475275	1	Decal, Pump Chart 8" Tire
14	600475178	2	Strip, Red-Orange Fluorescent
15	600475179	2	Strip, Red Reflective
16	600475180	6	Strip, Yellow Reflective
17	7600475277	1	Decal, Hose Color Code
-	762450096	-	Kit, Complete F3450 Decal (Includes all items 1-16)

Manual Canister

Instructions:

- Install manual canister on lift cylinder tower using hardware shown.
- Store Operator's and Parts manual in canister. Read Operator's manual before operating implement.

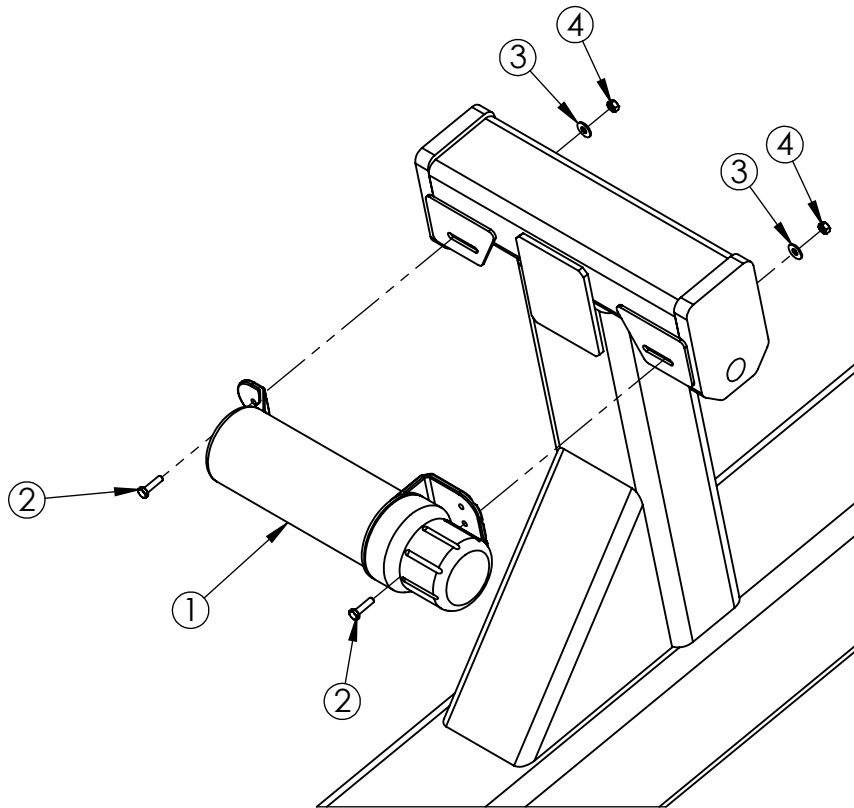


Fig.	Part no.	Qty	Description
1	600600268	1	Canister, Manual
2	600356138	2	Bolt, 1/4"-20 x 1 Gr. 5
3	600381023	2	Washer, Flat 1/4"
4	600366026	2	Nut, Toplock 1/4"-20

HEAVY DUTY 4 BOLT COULTER HUB & SPINDLE

Instructions:

- Install bearing cups into hub casting.
- Pack bearing cones with grease, insert inner bearing and seal.
- Slide hub onto spindle ensuring proper bearing and seal seating.
- Install outer bearing, washer and nut.
- Spin hub and fully tighten nut by hand. Tighten with wrench 1/4 turn while aligning castellated nut with hole in spindle.
- Install cotter pin.
- Place grease in dust cap and tap into place ensuring it is fully seated.

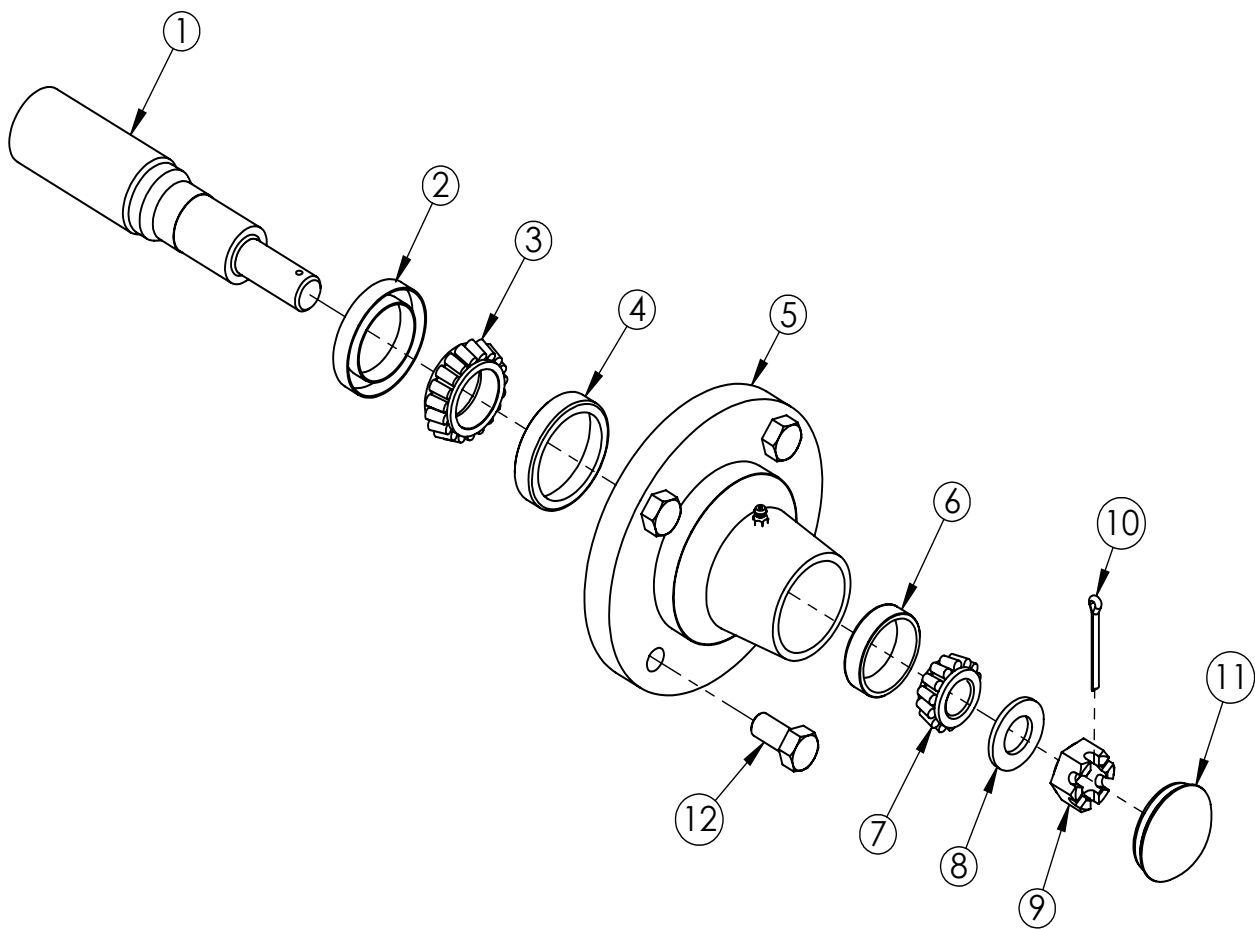


Fig.	Part no.	Qty	Description
-	76301188	-	Assy, Spindle (includes items 1, 8, 9, 10)
-	76301187	-	Assy, Hub (includes items 2-7, 11, 12)
1	76301181	1	Spindle, 1.625" x 8.0"
2	76301183	1	Seal, CR 14975
3	76301132	1	Cone, Bearing LM67048
4	76301134	1	Cup, Bearing LM67010
5	76301182	1	Hub, 4 Bolt W/ 5" Bolt Circle
6	76301184	1	Cup, Bearing LM11910
7	76301185	1	Cone, Bearing LM11949
8	76301142	1	Washer, Thrust 1.5" OD x .8125" ID
9	76301153	1	Nut, Castellated 3/4-16 (UNF)
10	76301152	1	Pin, Cotter 5/32" x 1-3/4"
11	76301186	1	Cap, Dust
12	76301150	4	Bolt, Lug 1/2"-20 x 1" (UNF)

3" X 16" 8 BOLT HUB & SPINDLE

Instructions:

- Install bearing cups into hub casting.
- Pack bearing cones with grease, insert inner bearing and seal.
- Slide hub onto spindle ensuring proper bearing and seal seating.
- Install outer bearing, washer and nut.
- Spin hub and fully tighten nut by hand. Tighten with wrench 1/4 turn while aligning castellated nut with hole in spindle.
- Install cotter pin.
- Place grease in dust cap and tap into place ensuring it is fully seated.

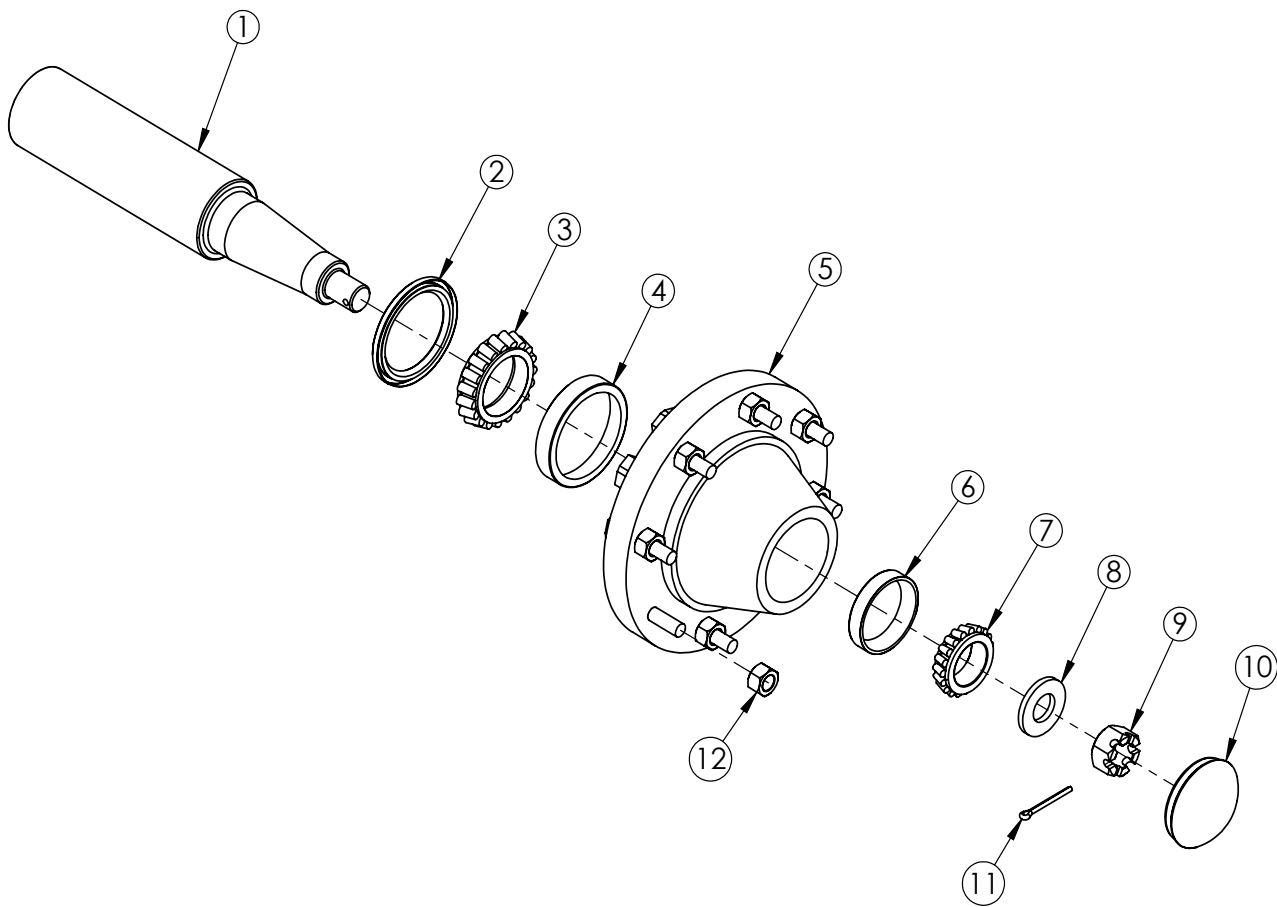


Fig.	Part no.	Qty	Description
-	76301221	-	Assy, Spindle (includes items 1, 8, 9, 11)
-	76301232	-	Assy, Hub (includes items 2-7, 10, 12)
1	76301220	1	Spindle, 3" x 16" #8000
2	76301225	1	Seal, TCM 30402VH
3	76301226	1	Cone, Bearing Koyo 387AS
4	76301227	1	Cup, Bearing LM 603011
5	76301228	1	Hub, 8 Bolt W/ 8" Bolt Circle (G75-8)
6	76301135	1	Cup, Bearing LM501310
7	76301129	1	Cone, Bearing LM501349
8	76301229	1	Washer, Thrust 2-1/8" OD x 1-1/16" ID x 7/32"
9	76301218	1	Nut, Slotted 1-14 (UNF)
10	76301230	1	Cap, Dust
11	76101387	1	Pin, Cotter 3/16" x 3-1/4"
12	76301235	8	Nut, Lug 5/8"-18 (UNF)

10 BOLT HUB & SPINDLE

Instructions:

- Install bearing cups into hub casting.
- Pack bearing cones with grease, insert inner bearing and seal.
- Slide hub onto spindle ensuring proper bearing and seal seating.
- Install outer bearing, washer and nut.
- Spin hub and fully tighten nut by hand. Tighten with wrench 1/4 turn while aligning castellated nut with hole in spindle.
- Install cotter pin.
- Place grease in dust cap and install with hardware shown.

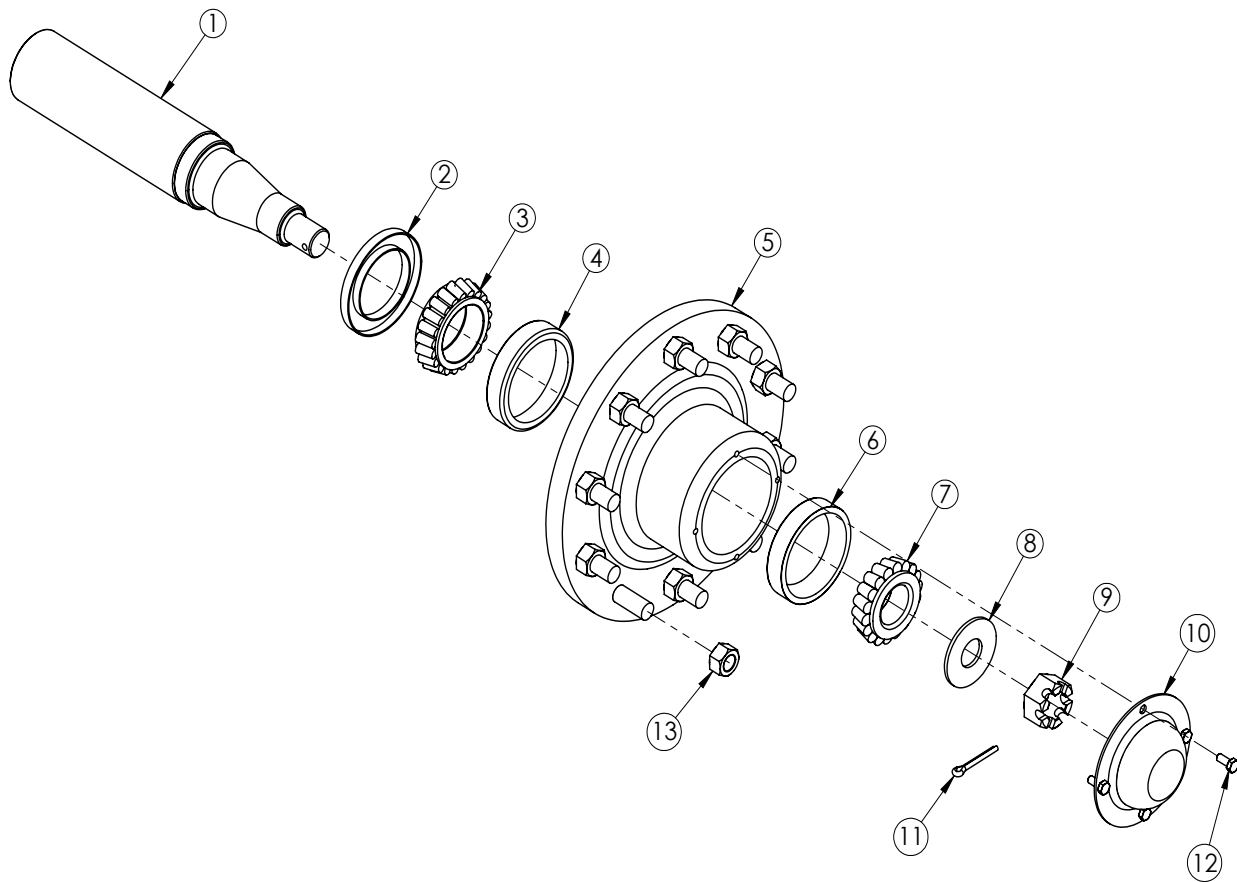


Fig.	Part no.	Qty	Description
-	76301166	-	Assy, Spindle (includes items 1, 8, 9, 11)
-	76301162	-	Assy, Hub (includes items 2-7, 10, 12, 13)
1	76301171	1	Spindle, 3-1/8" x 17-3/8"
2	76301156	1	Seal, TCM 30454SA
3	76301172	1	Cone, Bearing TAM39585
4	76301173	1	Cup, Bearing 69520
5	76301174	1	Hub, 10 Bolt
6	76301175	1	Cup, Bearing Timken 453A
7	76301176	1	Cone, Bearing Timken 460
8	76301177	1	Washer, Thrust 3" OD x 1-1/4" ID x .160"
9	76301178	1	Nut, Slotted 1-1/4-12 (UNF)
10	76301179	1	Cap, Dust
11	76101265	1	Pin, Cotter 1/4" x 2"
12	76101113	4	Bolt, Hex 5/16"-18 x 3/4"
13	76301189	10	Nut, Lug 3/4"-16

LION 2500 TL SERIES 3" X 8" CYLINDER

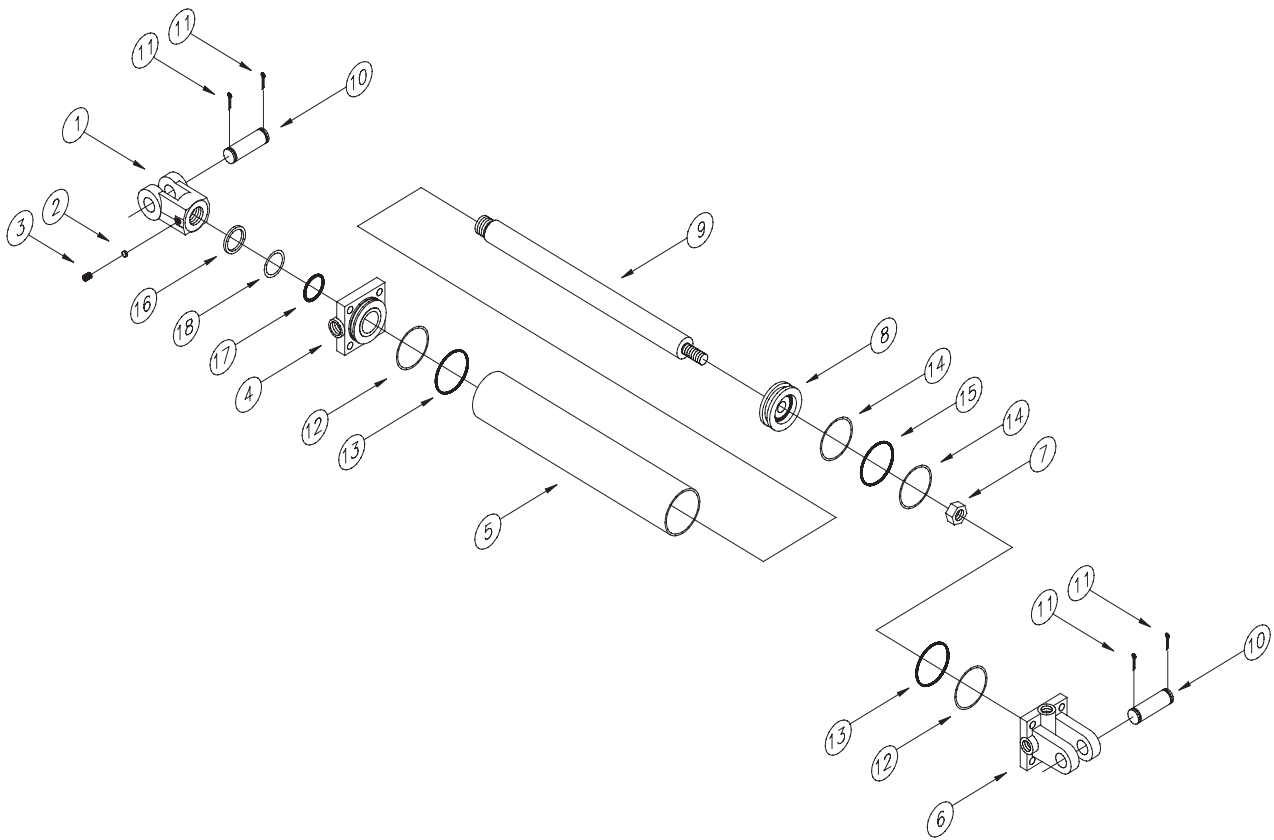


Fig.	Part no.	Qty	Description
-	76204002	-	Cylinder, 3" x 8"
1	76205100	1	Clevis, Rod - 492652
2	76205101	1	Lock, Thread - 498006
3	76205102	1	Screw, Set 3/8"-16 - 148390
4	76205103	1	Cap, Rod - 492812
5	76205163	1	Sleeve, Cylinder - 491738
6	76205105	1	Cap, Clevis - 492810
7	76205106	1	Nut, Lock 1-1/2"-12 - 129110
8	76205107	1	Piston - 492520
9	76205162	1	Rod, Cylinder - 492700
10	76602112	2	Pin, Cylinder 1" x 3-3/8"
11	600383058	4	Pin, Cotter 5/32" x 2"
12	76205017	2	O-Ring, B.U. - #40
13	76205018	2	O-Ring - #10
14	76205019	2	O-Ring, B.U. - #14
15	76205020	1	O-Ring - #12
16	76205021	1	Wiper - #13
17	76205022	1	O-Ring, Rod - #11
18	76205023	1	B.U., Rod - #24
-	76205016	-	Kit, Complete Seal

LION 2500 TL SERIES 3" X 16" CYLINDER

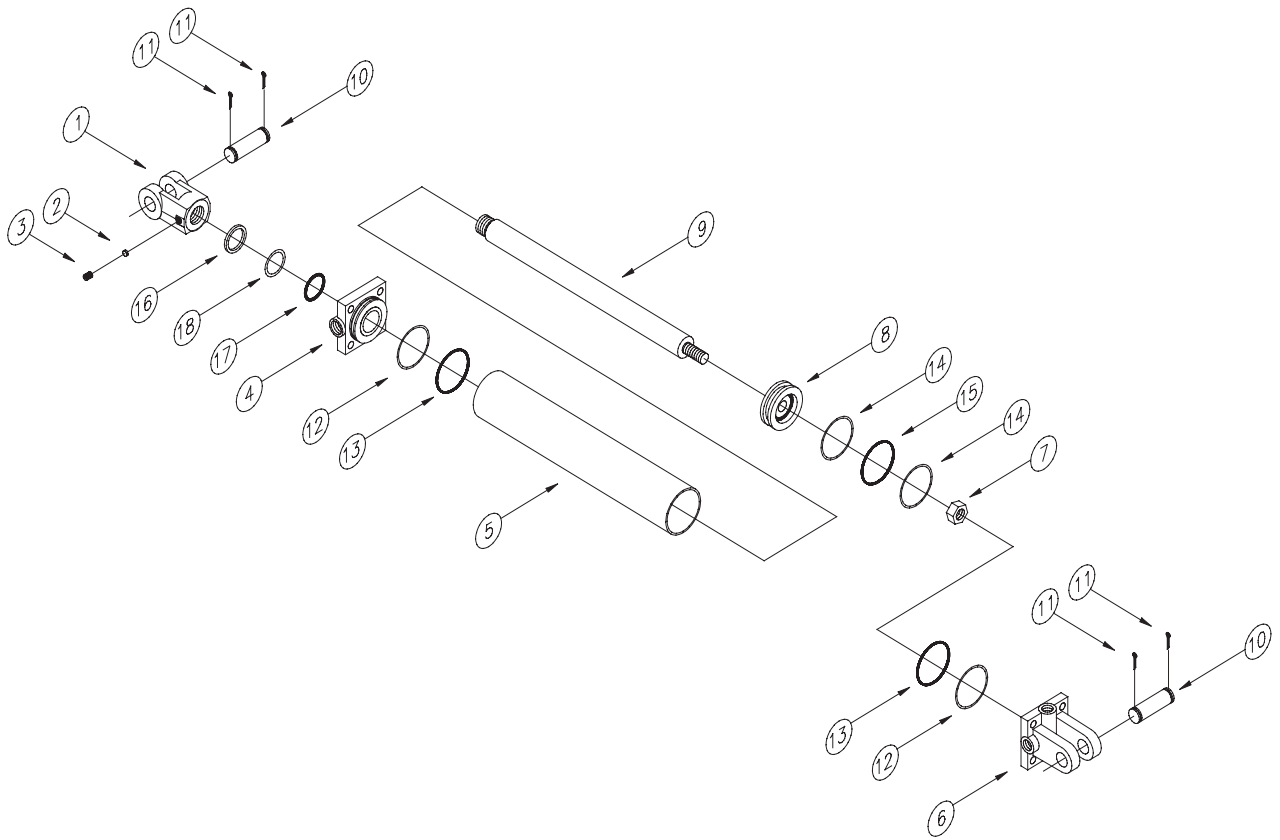


Fig.	Part no.	Qty	Description
-	76204004	-	Cylinder, 3" x 16"
1	76205100	1	Clevis, Rod - 492652
2	76205101	1	Lock, Thread - 498006
3	76205102	1	Screw, Set 3/8"-16 - 148390
4	76205103	1	Cap, Rod - 492812
5	76205104	1	Tube, Cylinder - 491746
6	76205105	1	Cap, Clevis - 492810
7	76205106	1	Nut, Lock 1-1/2"-12 - 129110
8	76205107	1	Piston - 492520
9	76205108	1	Rod, Cylinder - 492873
10	76602112	2	Pin, Cylinder 1" x 3-3/8"
11	600383058	4	Pin, Cotter 5/32" x 2"
12	76205017	2	O-Ring, B.U. - #40
13	76205018	2	O-Ring - #10
14	76205019	2	O-Ring, B.U. - #14
15	76205020	1	O-Ring - #12
16	76205021	1	Wiper - #13
17	76205022	1	O-Ring, Rod - #11
18	76205023	1	B.U., Rod - #24
-	76205016	-	Kit, Complete Seal

LION 2500 SERIES 4" X 16" CYLINDER

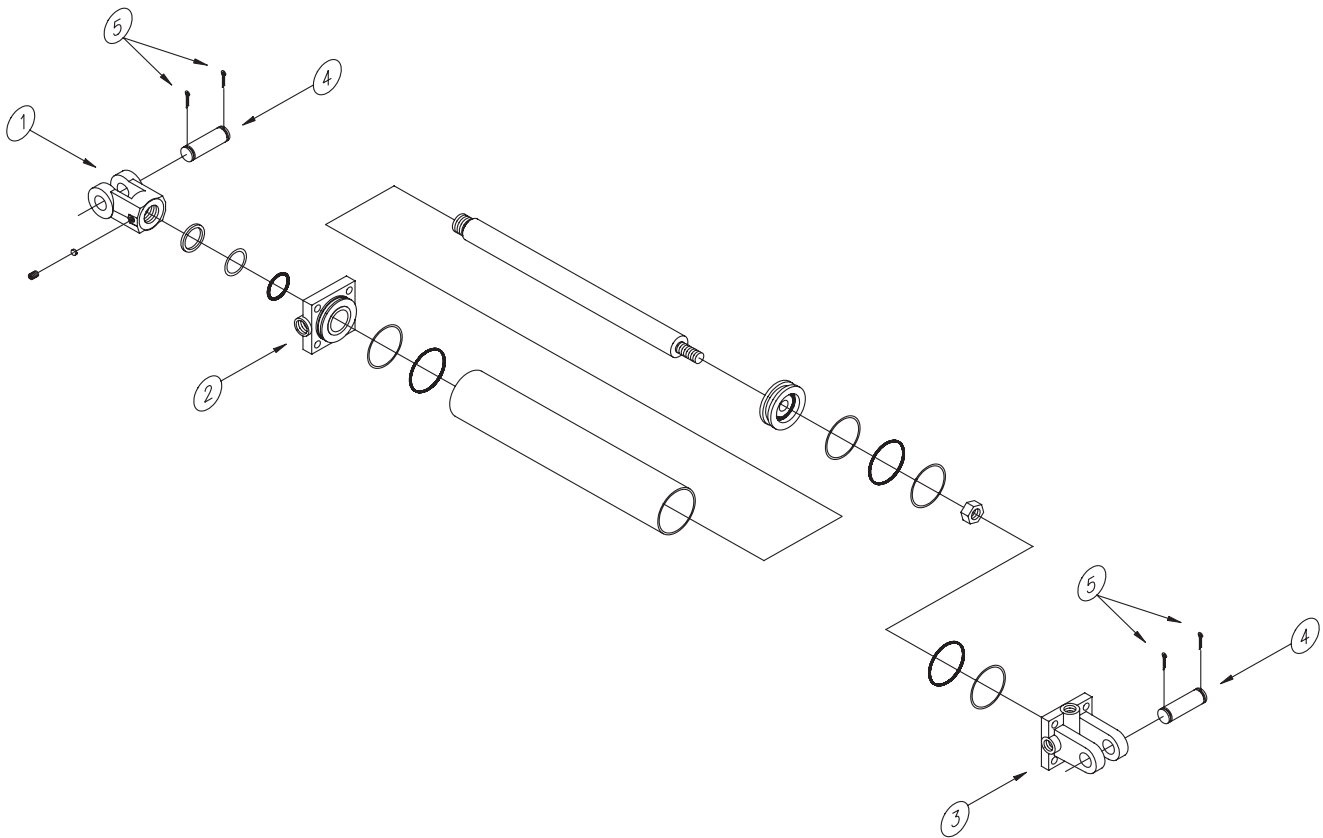
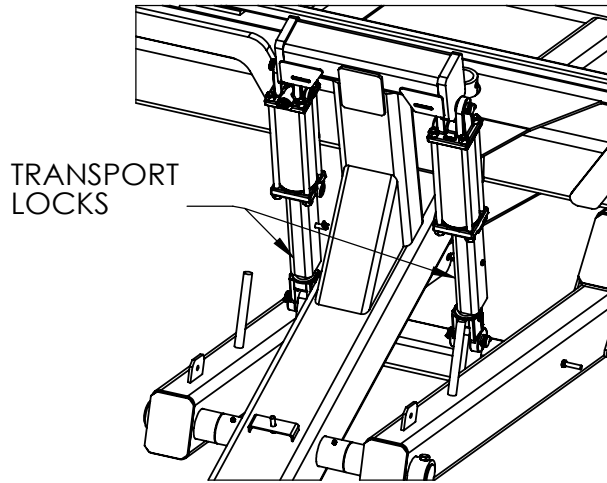


Fig.	Part no.	Qty	Description
-	76204007	-	Cylinder, 4" x 16"
1	76205100	1	Clevis, Rod - 492652
2	76205176	1	Cap, Rod
3	76205177	1	Cap, Clevis
4	76602112	2	Pin, Cylinder 1" x 3-3/8"
5	600383058	4	Pin, Cotter 5/32" x 2"
-	76205175	1	Kit, Complete Seal

Assembly Completion

After assembly is complete, charge the lift cylinders with a tractor or hydraulic unit, fully extending and retracting the cylinders several times. Hold the hydraulic lever open at the end of the stroke to purge the air from the system. Fully extend the lift cylinders and install the transport safety locks onto the lift cylinders.

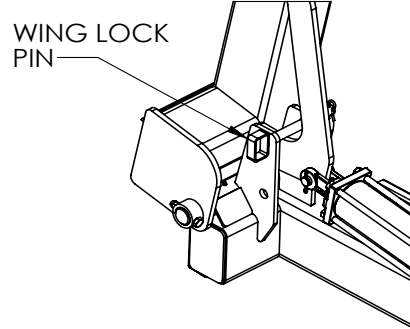
CAUTION: ALWAYS INSTALL THE TRANSPORT LOCK ONTO THE LIFT CYLINDERS WHEN THE IMPLEMENT IS PLACED IN THE RAISED POSITION FOR TRANSPORT, MAINTENANCE OR STORAGE. Secure with the pin and lock clip provided.



The wing fold cylinders must be charged with oil before attempting to fold the bar. Disconnect the cylinder rod clevis from the wings and block up the cylinder. Extend and retract the cylinders several times with a tractor or hydraulic unit, holding the lever at the end of the stroke to purge the air from the system. After fold cylinders are charged, re-connect them to the wings.

Slowly fold the wings to the transport position. Insert the wing lock safety pins.

CAUTION: ALWAYS INSTALL THE WING LOCK SAFETY PINS WHEN THE IMPLEMENT IS FOLDED FOR TRANSPORT, MAINTENANCE OR STORAGE.



CAUTION: Never transport the implement on public road ways without installing the transport safety chain and SMV sign.

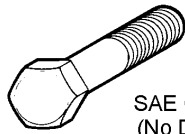
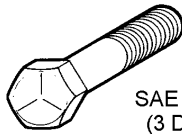
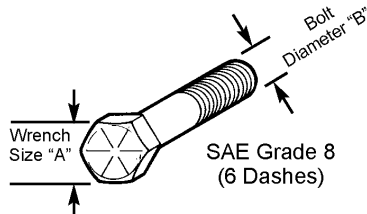
Refer to the Owners Manual for further safety information before attempting to operate or service the unit.

Final Inspection

When the machine is fully assembled, verify all nuts, bolts and other connections are secure. Be sure to read the Owners Manual before attempting to operate the unit. The Owners Manual provides important instructions and safety precautions that must be followed before attempting to hook up and move the unit after assembly.

Torque Chart

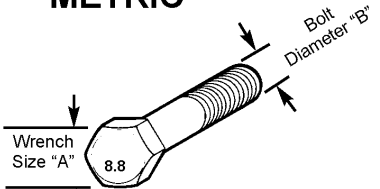
TORQUE SPECIFICATIONS

AMERICAN
Bolt Head MarkingsSAE Grade 2
(No Dashes)SAE Grade 5
(3 Dashes)SAE Grade 8
(6 Dashes)

Proper torque for American fasteners.
Recommended Torque in Foot Pounds (Newton Meters).*

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288 (1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC



Numbers appearing on bolt heads
indicate ASTM class.

Proper torque for Metric fasteners.
Recommended torque in Foot Pounds (Newton Meters).*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

Notes: _____

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general note-taking. There are no margins, text, or other markings on the page.

