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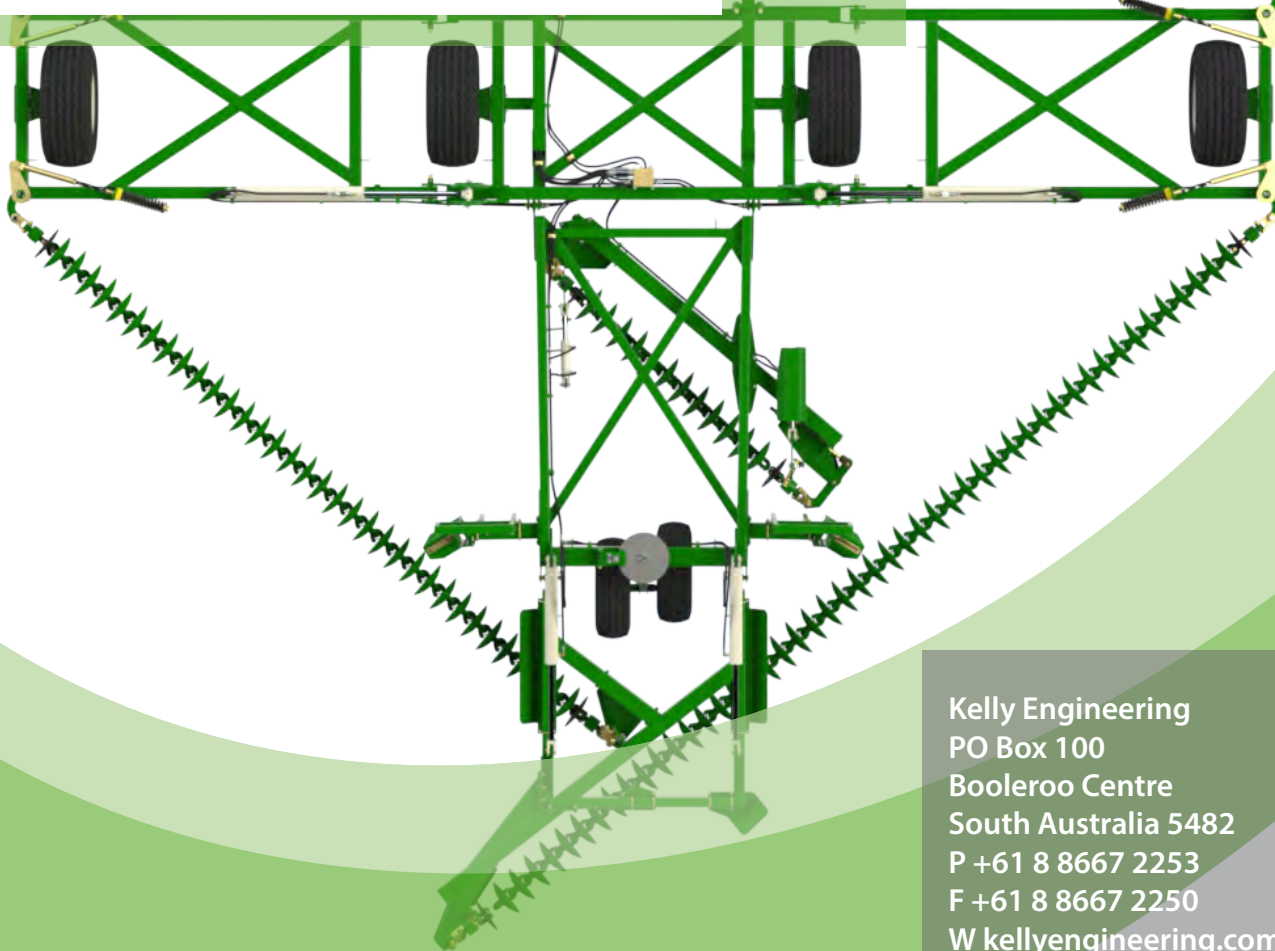
Kelly

Tillage System Model 30 Assembly and Parts Manual

Revision M - September 2019

Rev M-1-Oct 2024

Serial Number:



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Thank you for choosing a Kelly Engineering product

We trust that you find the following manual clear and easy to follow. If you should require additional customer support or assistance, please do not hesitate to contact us.

Spare parts can be purchased, as required, through your local dealer or by contacting Kelly Engineering Australia or in the United States, Hood & Company.

Kelly Engineering welcomes feedback. Should you have any difficulties that you wish to raise, suggestions for improvement or modifications that you feel would enhance our products we look forward to hearing from you.

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Spare Parts

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Contents

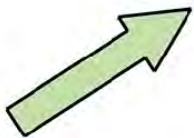
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This symbol indicates which bag the relevant fastners are in



This symbol indicates which bag the relevant hydraulics are in



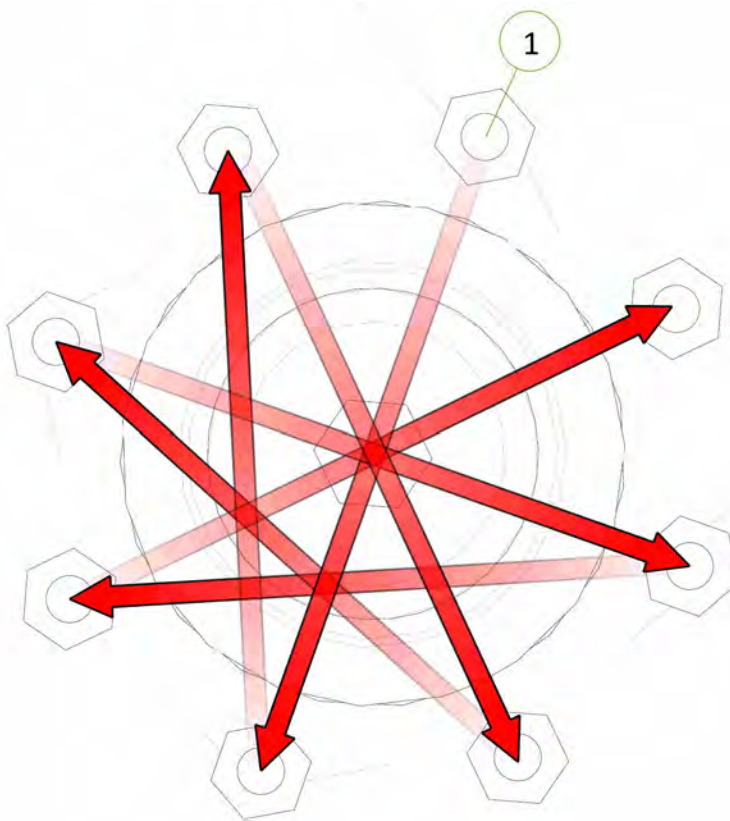
This symbol indicates which way the machine is travelling

Bolt Torque Settings

Bolt Type	Wheel nut				U Bolt			Grade 8.8 Bolt					Grade 10.9 Bolt		Grade 8 Bolt
Bolt Size	M18	M20	1/2"	9/16"	M10	M12	M16	M10	M12	M16	M20	M24	M20	M24	1" UNF
Ft lb	255	265	90	100	22	36	55	32	48	140	190	270	300	350	849
Nm	345	360	125	140	30	50	75	44	65	190	260	370	406	475	1151

[1] When fitting a wheel & tire to a hub, do the wheel nuts up in rotation to the correct tension. To achieve this choose a wheel nut & tighten, then go clockwise to the next wheel nut & tighten & so on until all wheel nuts are tight. Then repeat the procedure to check that all nuts are tight. Do not use impact tools to tighten wheel nuts. For a guide to the correct tension of the wheel nuts please use the appropriate tension for your size wheel nuts from the Bolt Torque Settings table.

Torque values are for dry threads and surfaces however it is permissible to apply a small amount of anti corrosive oil to the threads.



Section 1

Unpacking

Unpacking

We recommend the use of suitable lifting equipment for unloading and assembly



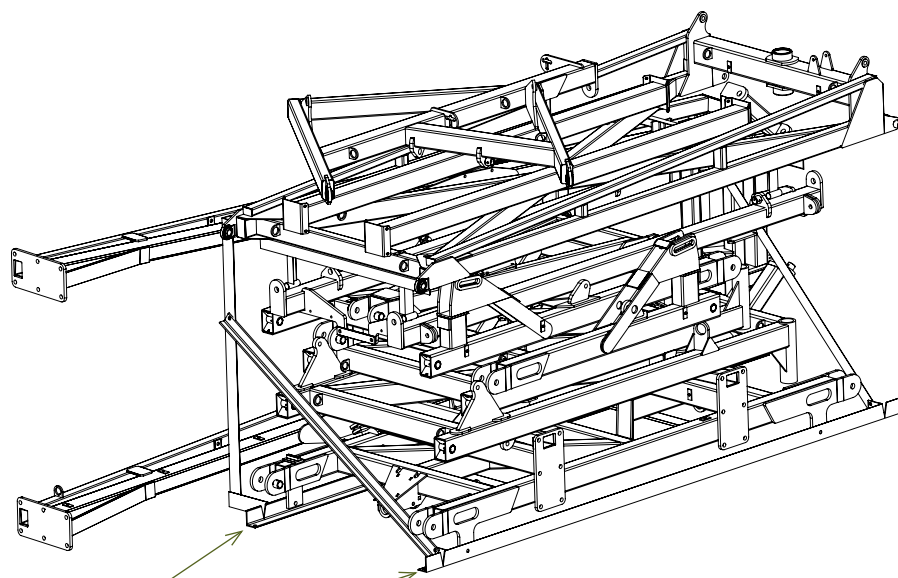
- Before unloading any loads please inspect exterior for damage



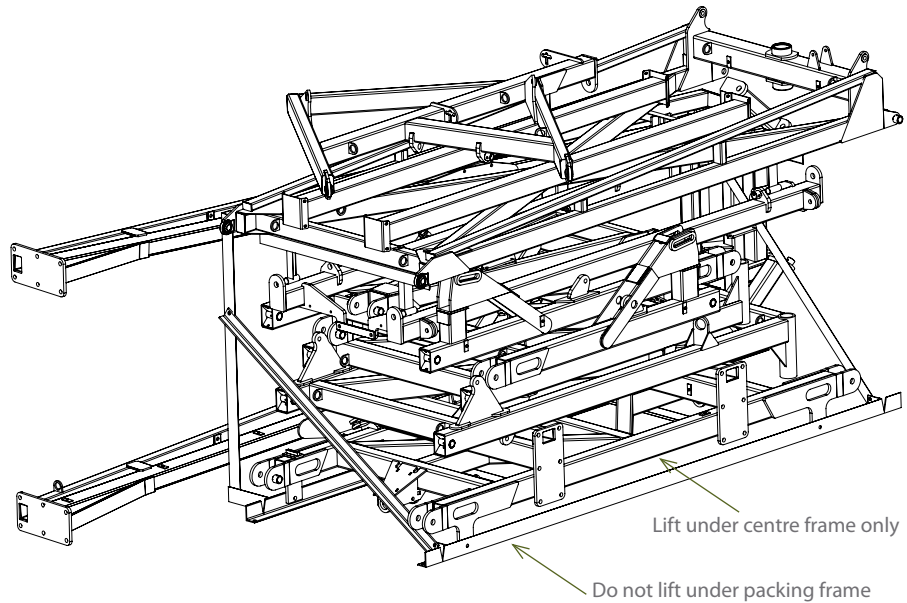
CAUTION

Take care when opening doors as load may have shifted or restraints may have broken.

- Remove boxes from doorway of container one at a time using a forklift truck. Each box weighs approximately 2600 lbs (1200kg)
- Check strapping on each bundle before attempting to remove
- Attach chains to the packing frame using shackles and using suitable equipment (eg. fork-lift or tractor) drag framework bundles out of container. To move bundles away from front of container lift from side with forklift. Do not lift under angle iron frame, lift only under centre frame. Each bundle weighs approximately 7000 lb (3200 kg).



Connect chains to these points



CAUTION

Before cutting straps attach slings or chains and take the weight of the frames to avoid them slipping or falling and causing injury.



CAUTION

Wear eye and hand protection when cutting straps. Sharp edges are exposed as straps separate and may cause injury.



CAUTION

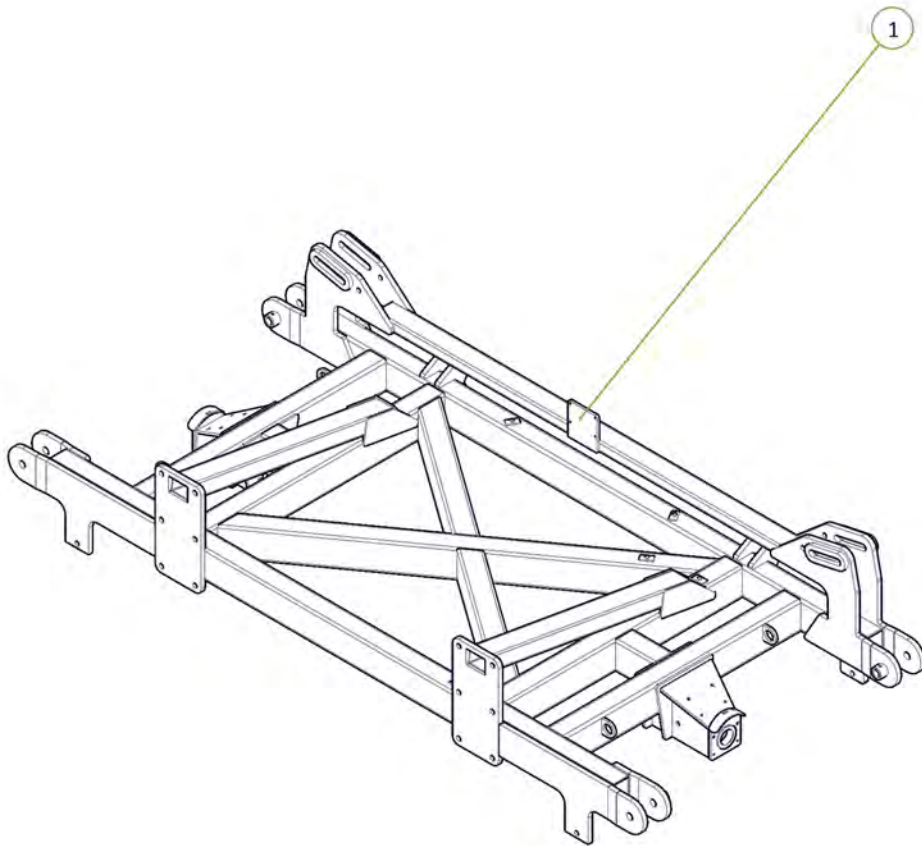
To avoid falling or moving components, before cutting straps attach slings or chains to individual pieces and only cut the straps holding the piece to be lifted.

- Remove boxes from rear of container one at a time using a forklift truck. Each box weighs approximately 2600 lbs (1200 kg)
- Cut straps holding bundles and separate parts and place in assembly area
- Once all parts have been identified machines are ready for assembly
- Identify parts for each machine by serial no. or description and separate. Open parts box and check that all parts are accounted for against checklist
- Read assembly instructions before proceeding.

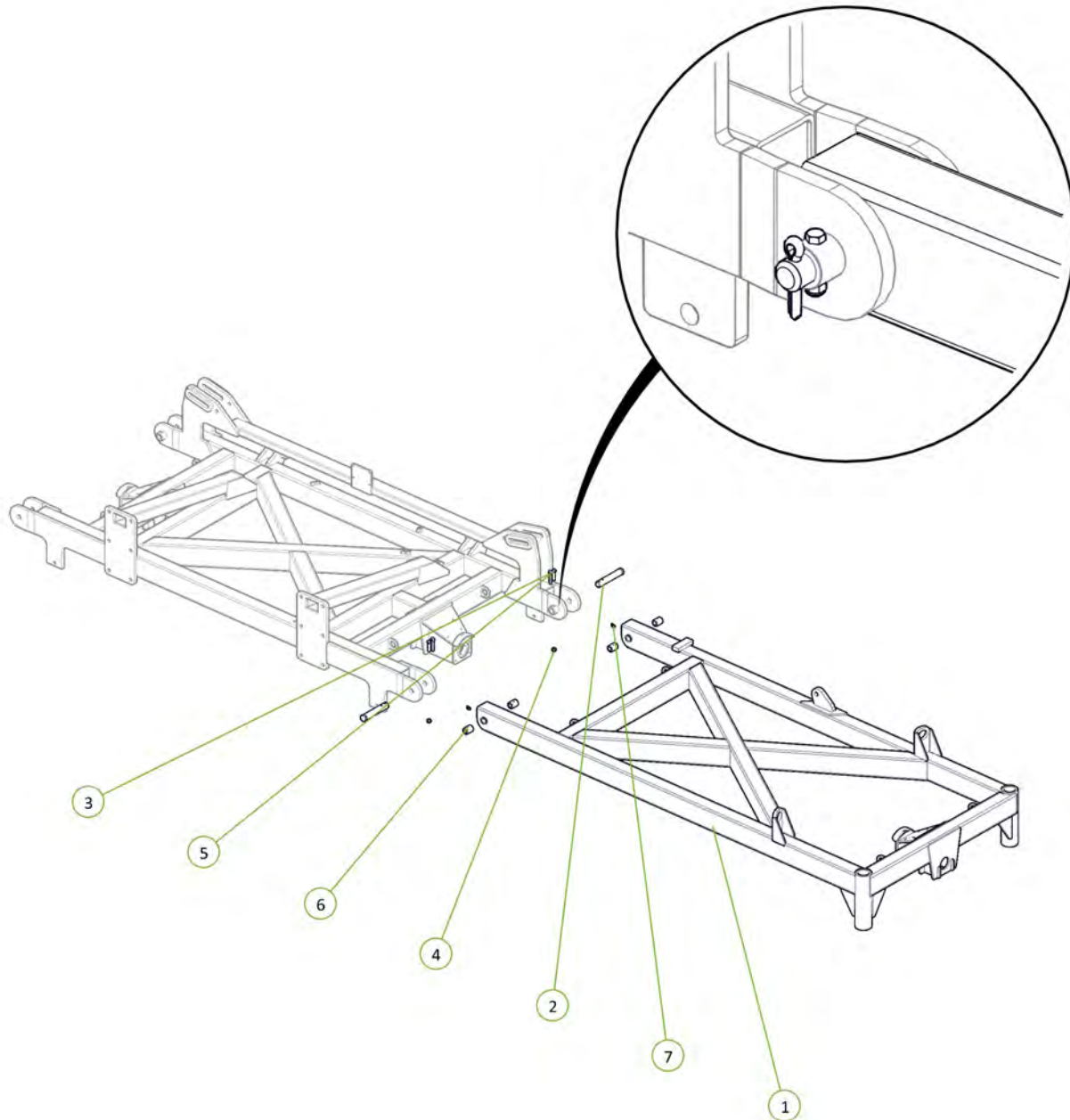
Section 2

Parts & Assembly

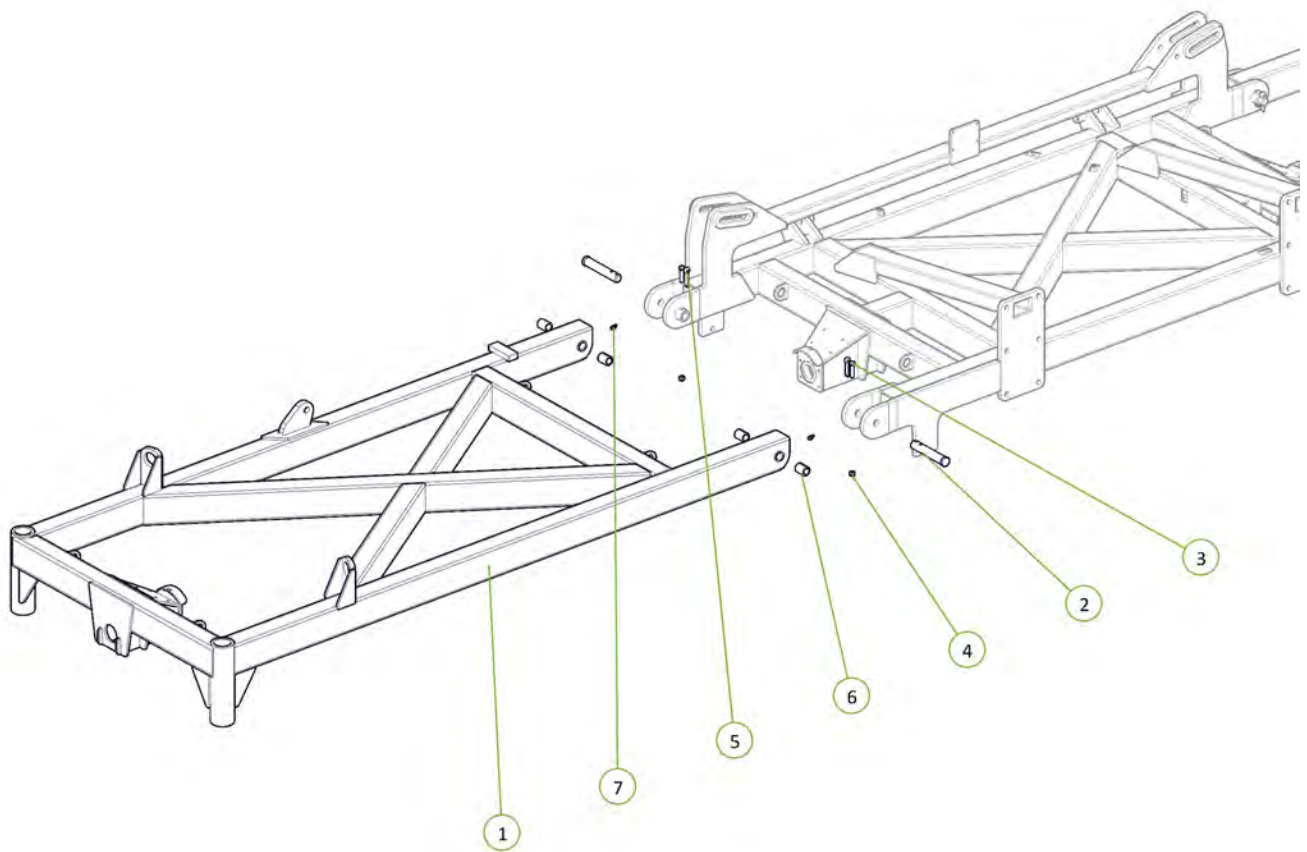
Item No.	Description	Number	Qty
1	30' Centre Frame	0830-01	1



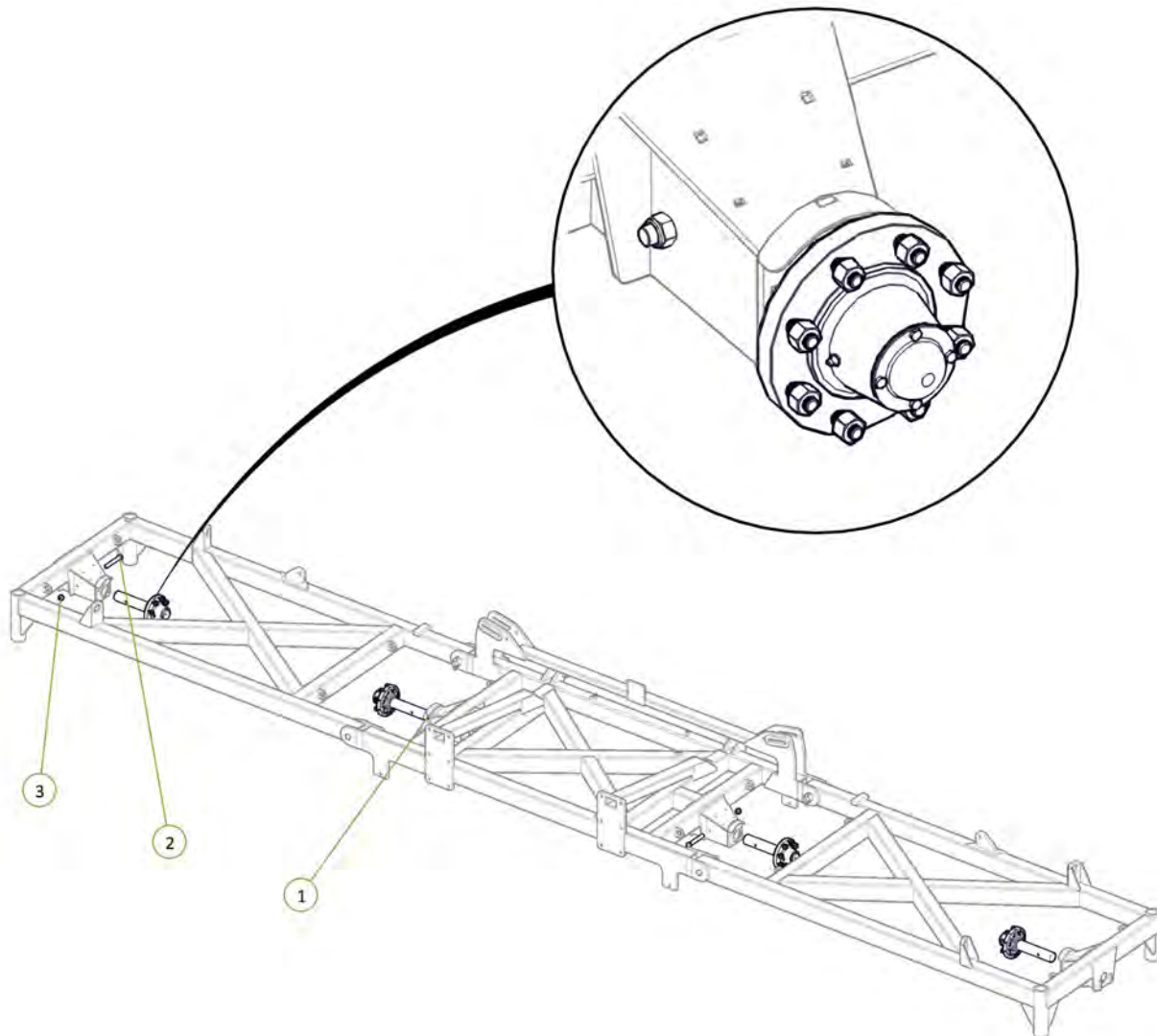
Item No.	Description	Number	Qty
1	30' Left Hand Wing	0830-07	1
2	PCH Wing Pivot Pin	0801-10-08-235	2
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	2
4	Nyloc Nut M12	0221-NYL12	2
5	Cotter Pin M13 x 63	0261-PINC1363	2
6	35 ID x 50mm DX Bush	0113-MB 3550DX	4
7	Grease Nipple 1/8" BSP 45 Deg	0181-GN1-845	2



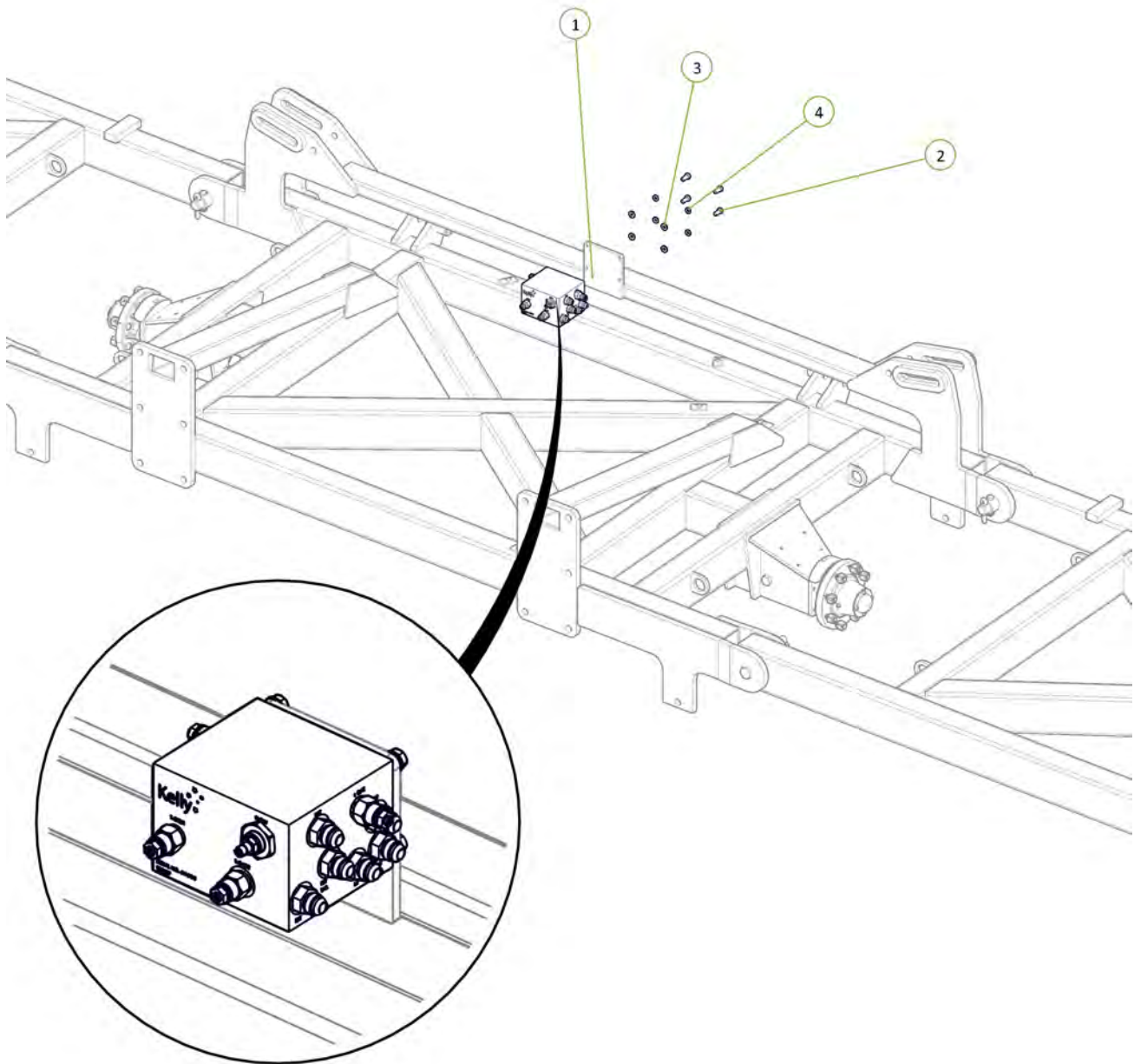
Item No.	Description	Number	Qty
1	30' Right Hand Wing	0830-06	1
2	PCH Wing Pivot Pin	0801-10-08-235	2
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	2
4	Nyloc Nut M12	0221-NYL12	2
5	Cotter Pin M13 x 63	0261-PINC1363	2
6	35 ID x 50mm DX Bush	0113-MB 3550DX	4
7	Grease Nipple 1/8" BSP 45 Deg	0181-GN1-845	2



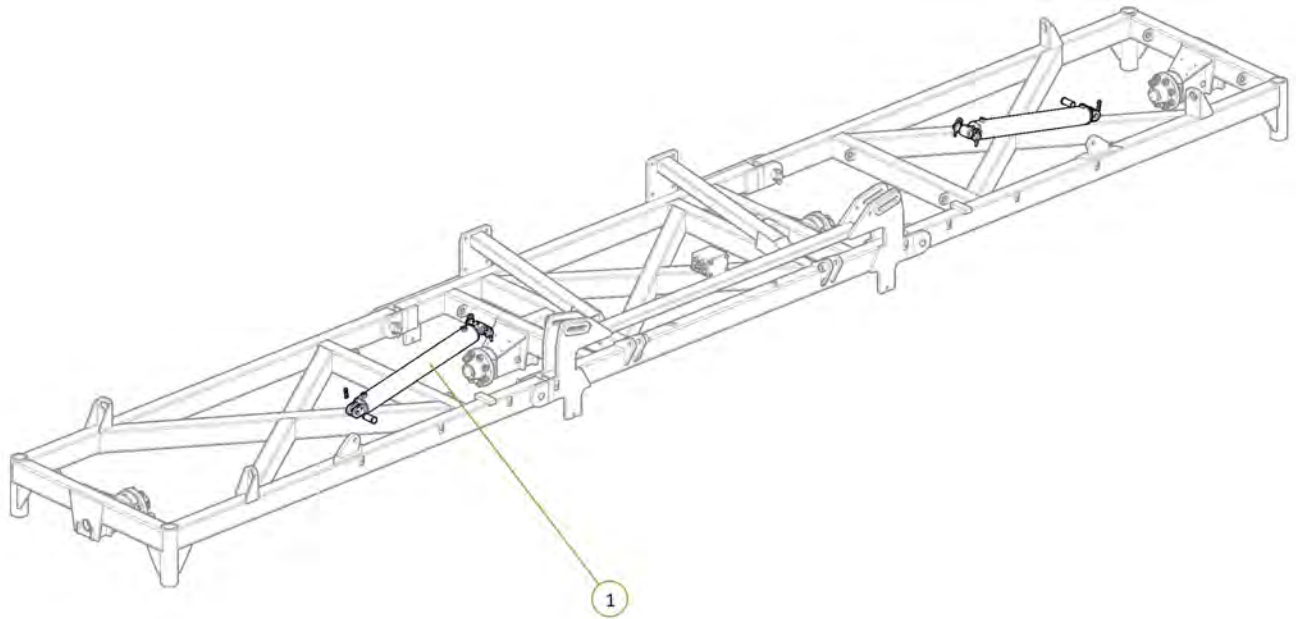
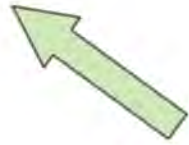
Item No.	Description	Number	Qty
1	2.75"R C/W 6 tonne 8 on 8" PCD Complete Assembly inc GS	0733-LG6080067	4
2	M20 x 170 grade 8.8 ZP Bolt	0211-20170	4
3	Nyloc Nut M20	0221-NYL20	4

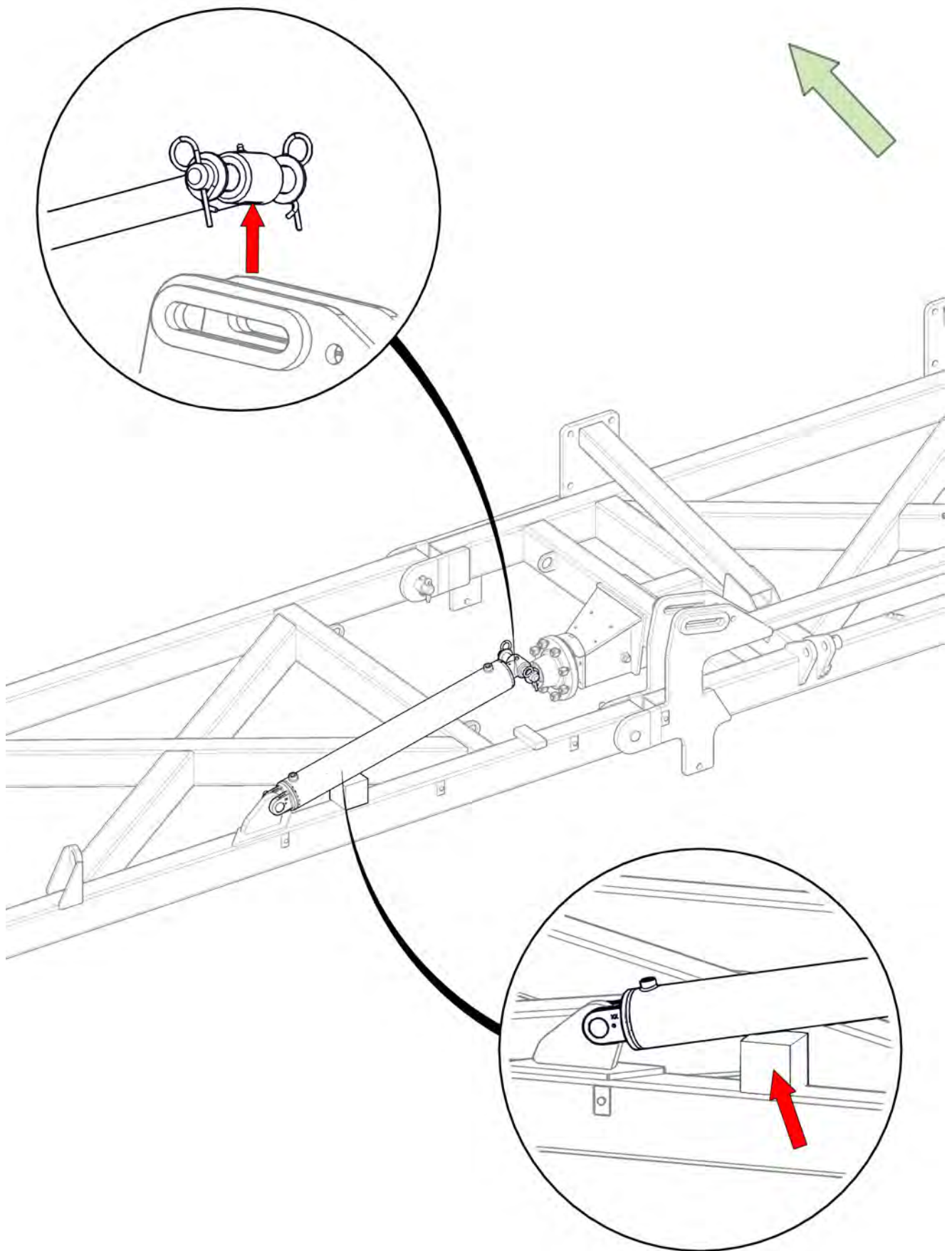


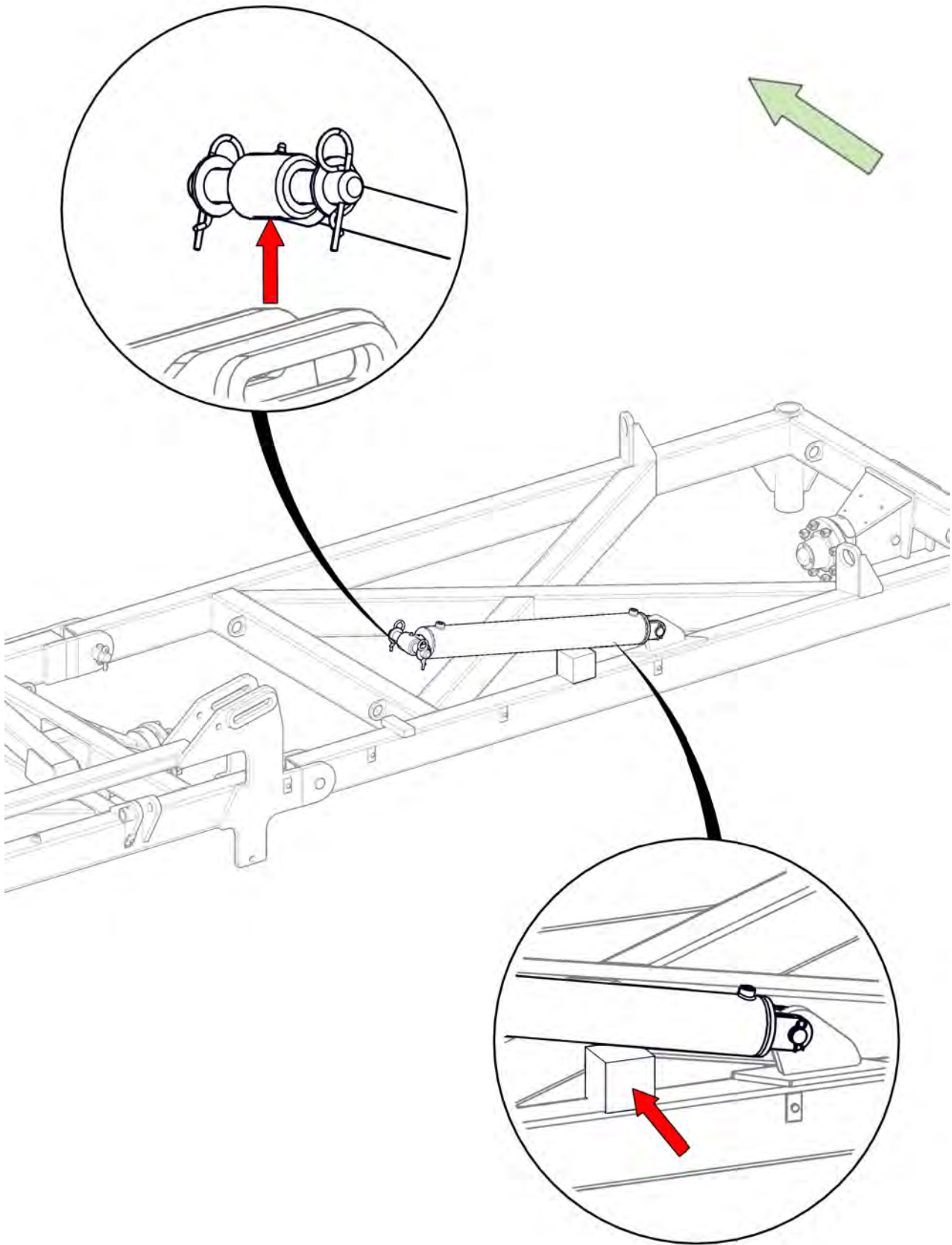
Item No.	Description	Number	Qty
1	Dual Circuit Single Sequence Block Body	0802-690507	1
2	M10 x 25 grade 8.8 ZP Bolt	0211-1025	4
3	Washer Flat M10	0231-F10	4
4	Washer Spring M10	0231-S10	4



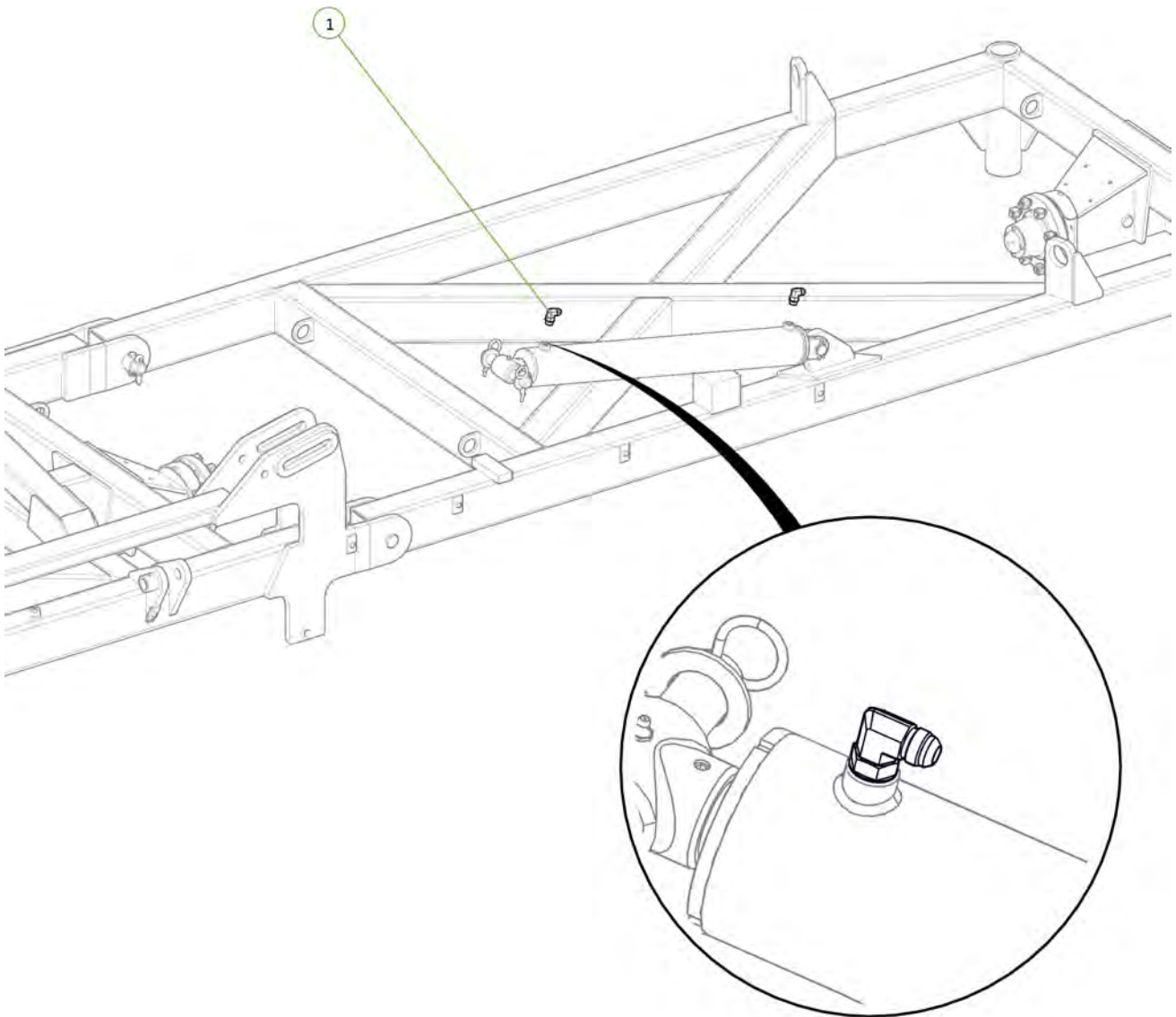
Item No.	Description	Number	Qty
1	4" Bore 30" Stroke 3" S/Tube 1.75" Rod Hydraulic Cylinder	0311-430ST	2



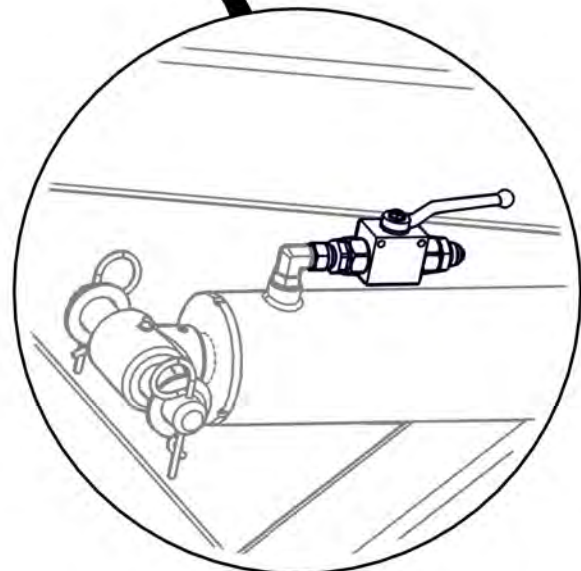
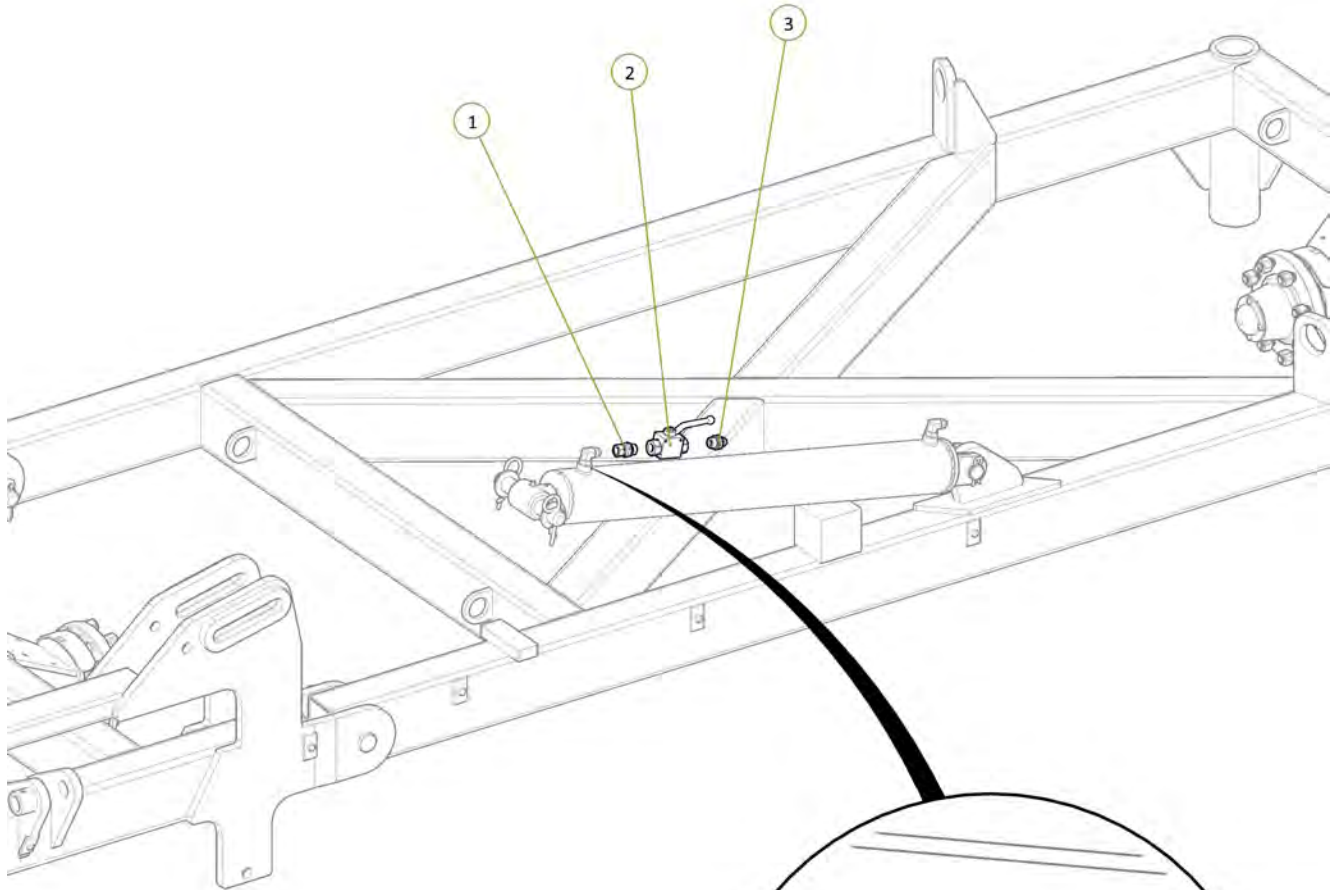




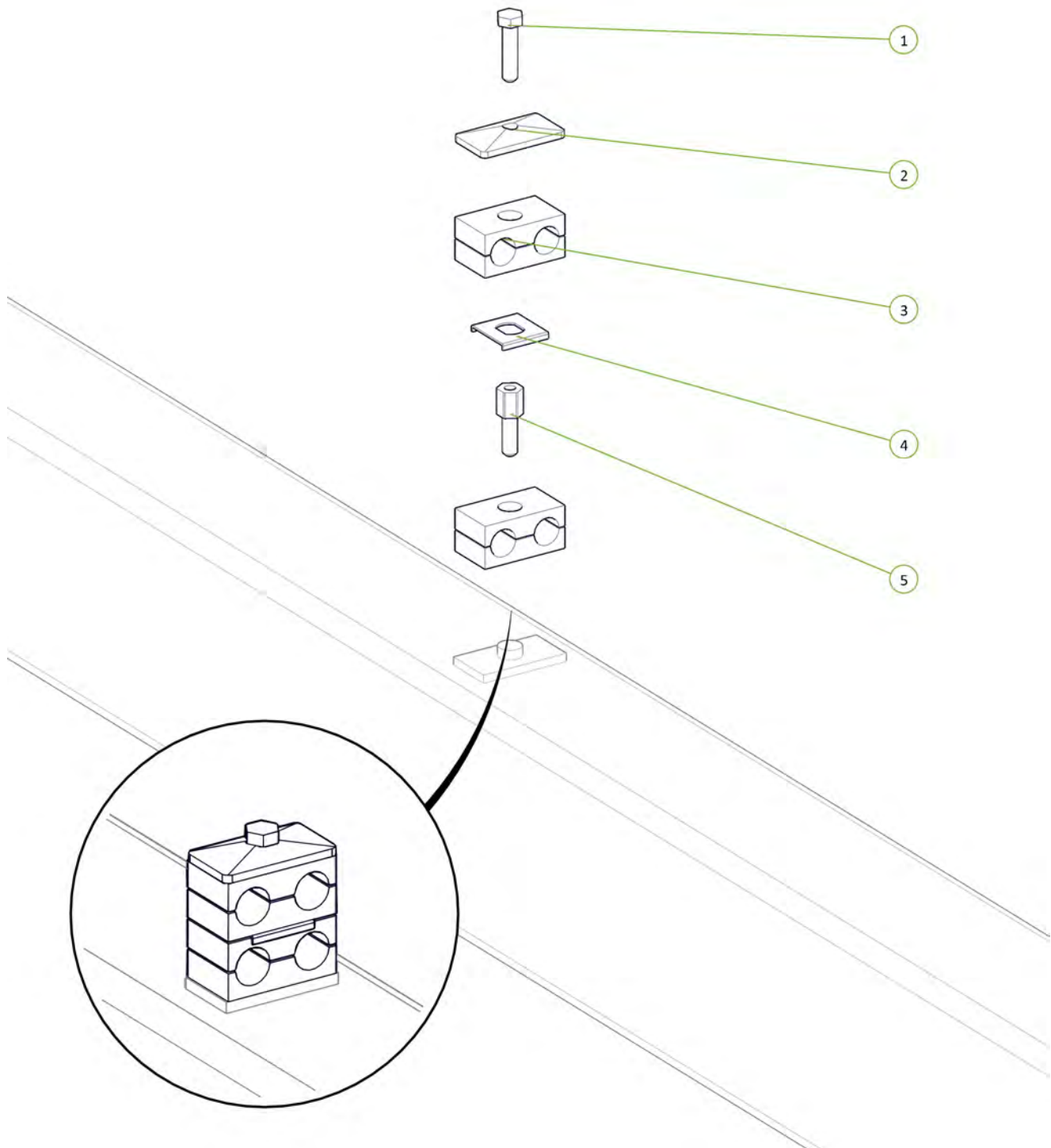
Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-S91-1212	2



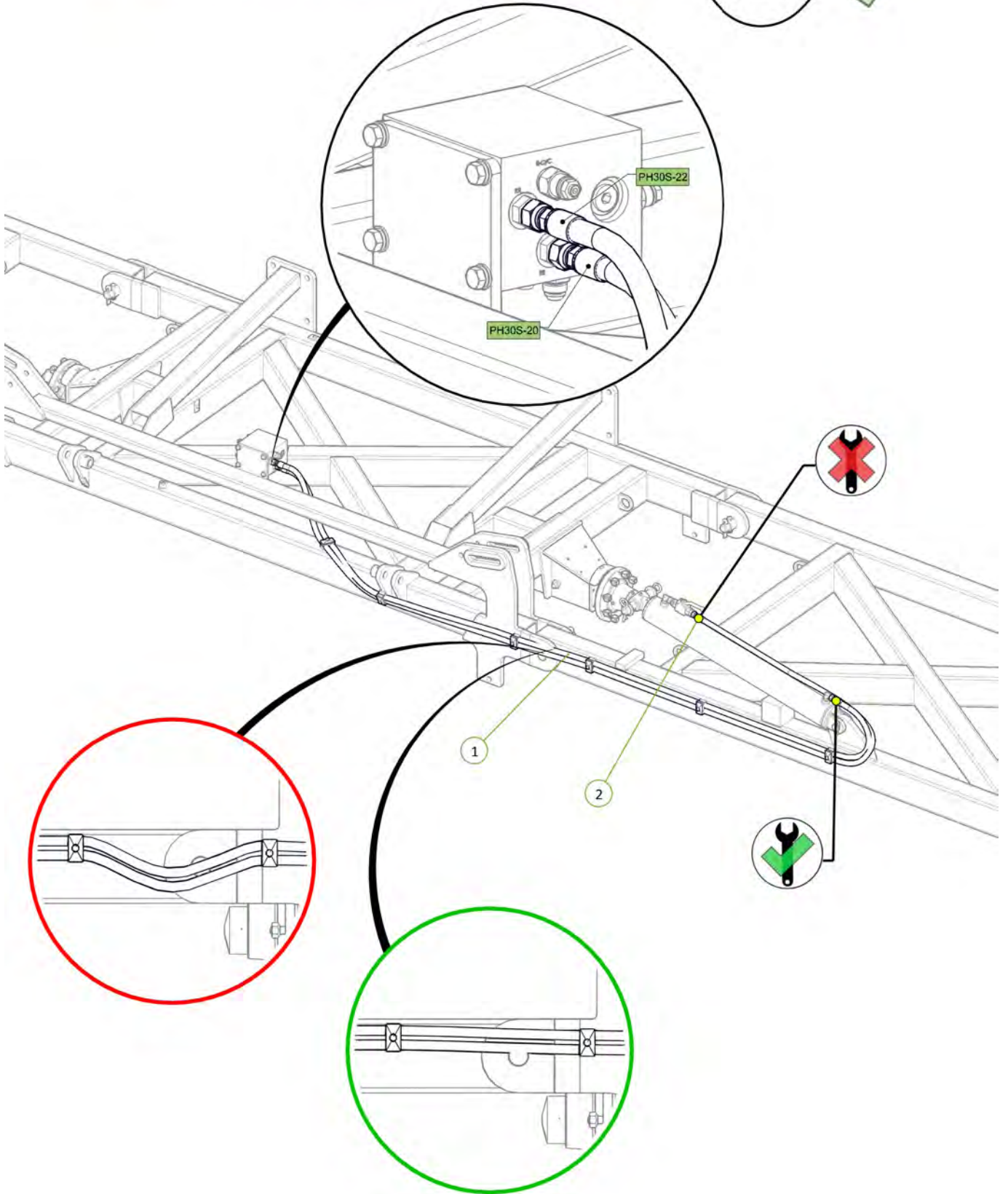
Item No.	Description	Number	Qty
1	1/2" BSPP Encapt Male 3/4" JIC Female Swive Adaptor	0323-S71-0812	1
2	Ball Valve BSPP 1/2"	0341-RL20SH-0808	1
3	1/2" BSPP Encapt Male 3/4" JIC Male Adaptor	0323-S74-0812	1



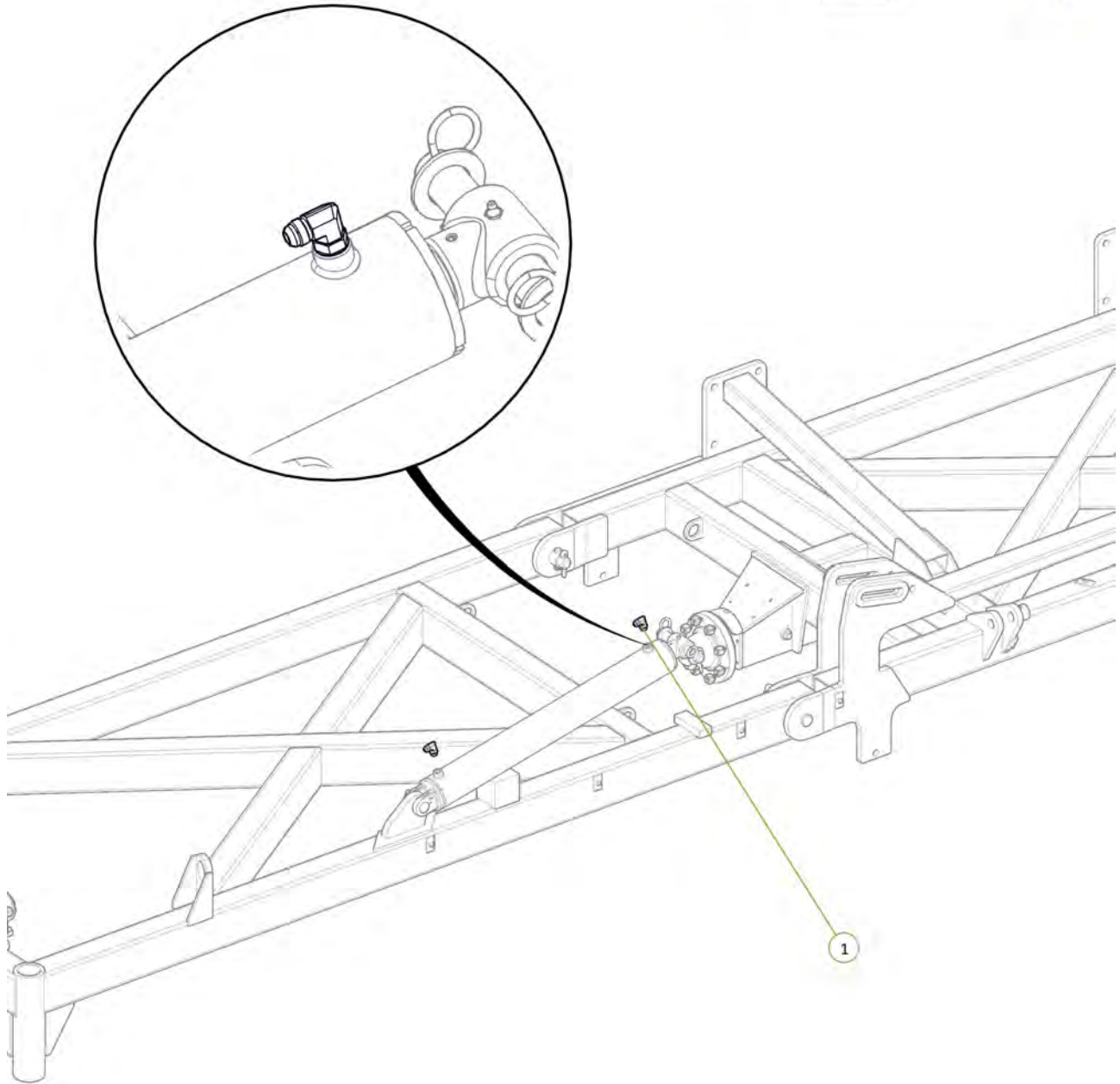
Item No.	Description	Number	Qty
1	Double Clamp Bolt Group 2	0325-RCD-2BH	1
2	Clamp top plate group 2	0325-RCD-2PT	1
3	17mm Clamp Jaws (Pair)	0325-RCD-17J	2
4	Double Clamp Stacking Plate (Non Ryco)	0325-SI-2-5D-W3	1
5	Double Clamp Stacking Bolt Group 2	0325-RCD-2BS	1



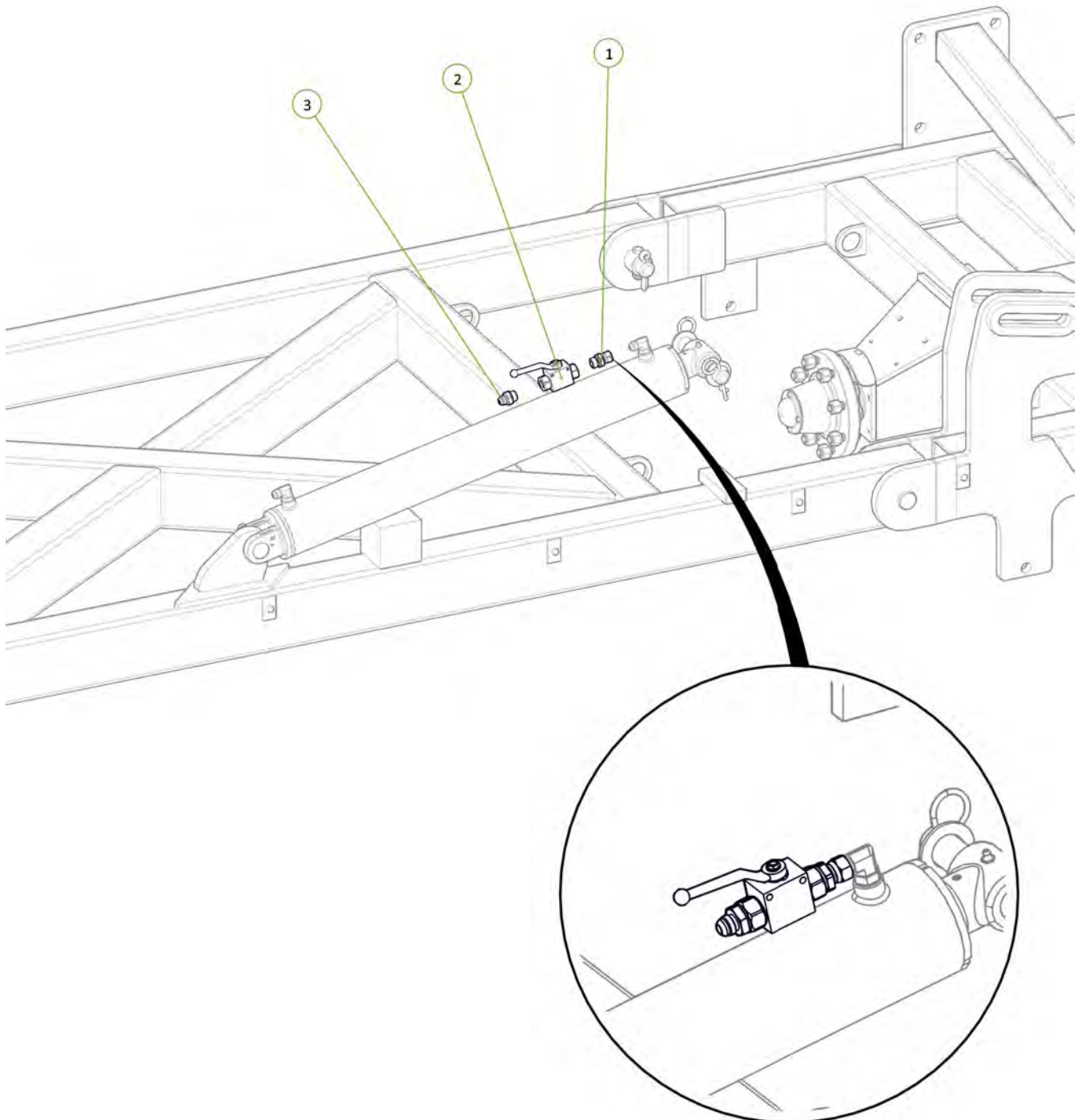
Item No.	Description	Number	Qty
1	Valve RE Port to RH Wing Cylinder Rear Port	PH30S-20	1
2	Valve RR Port to RH Wing Cylinder Rod Port	PH30S-22	1



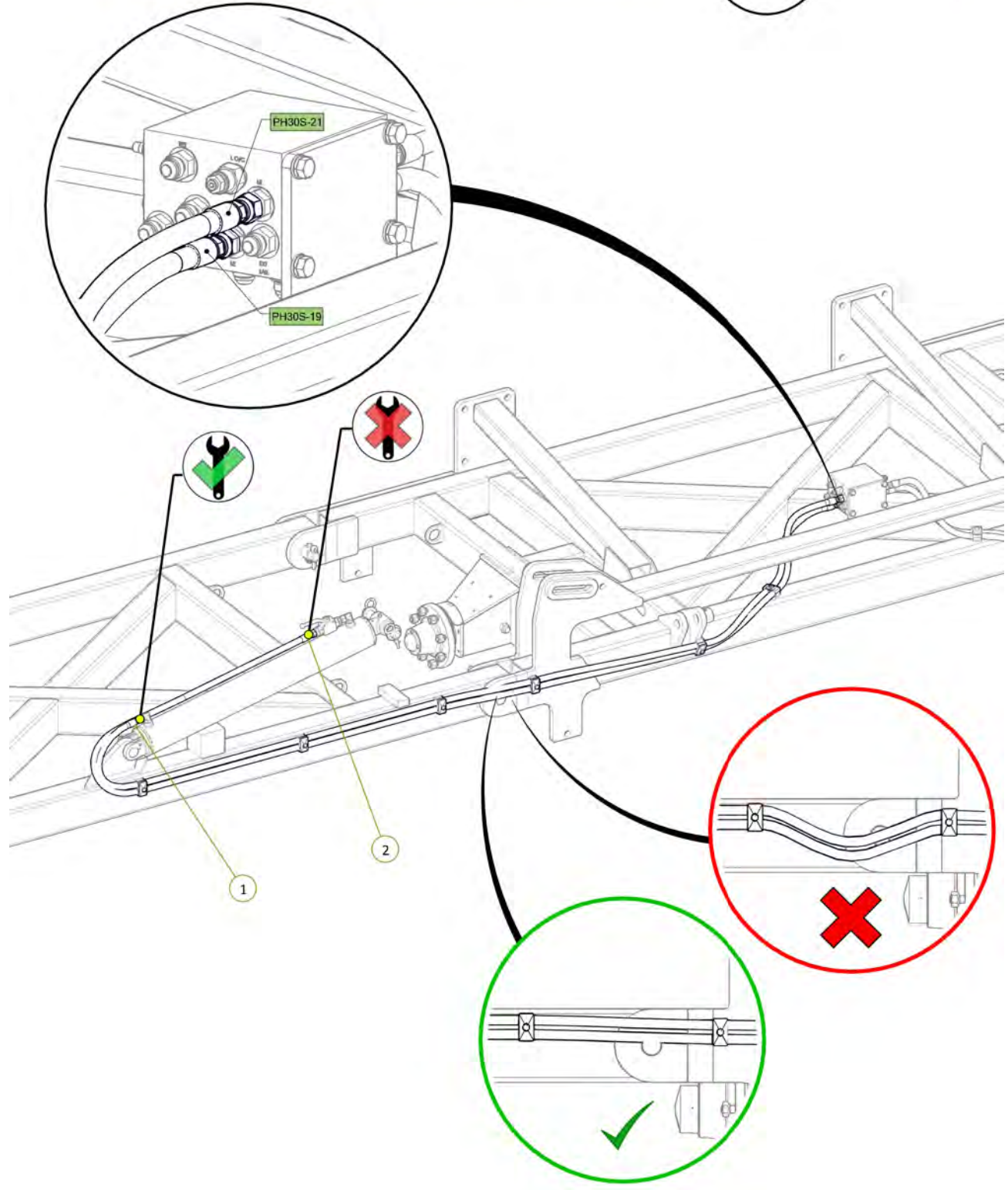
Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-S91-1212	2



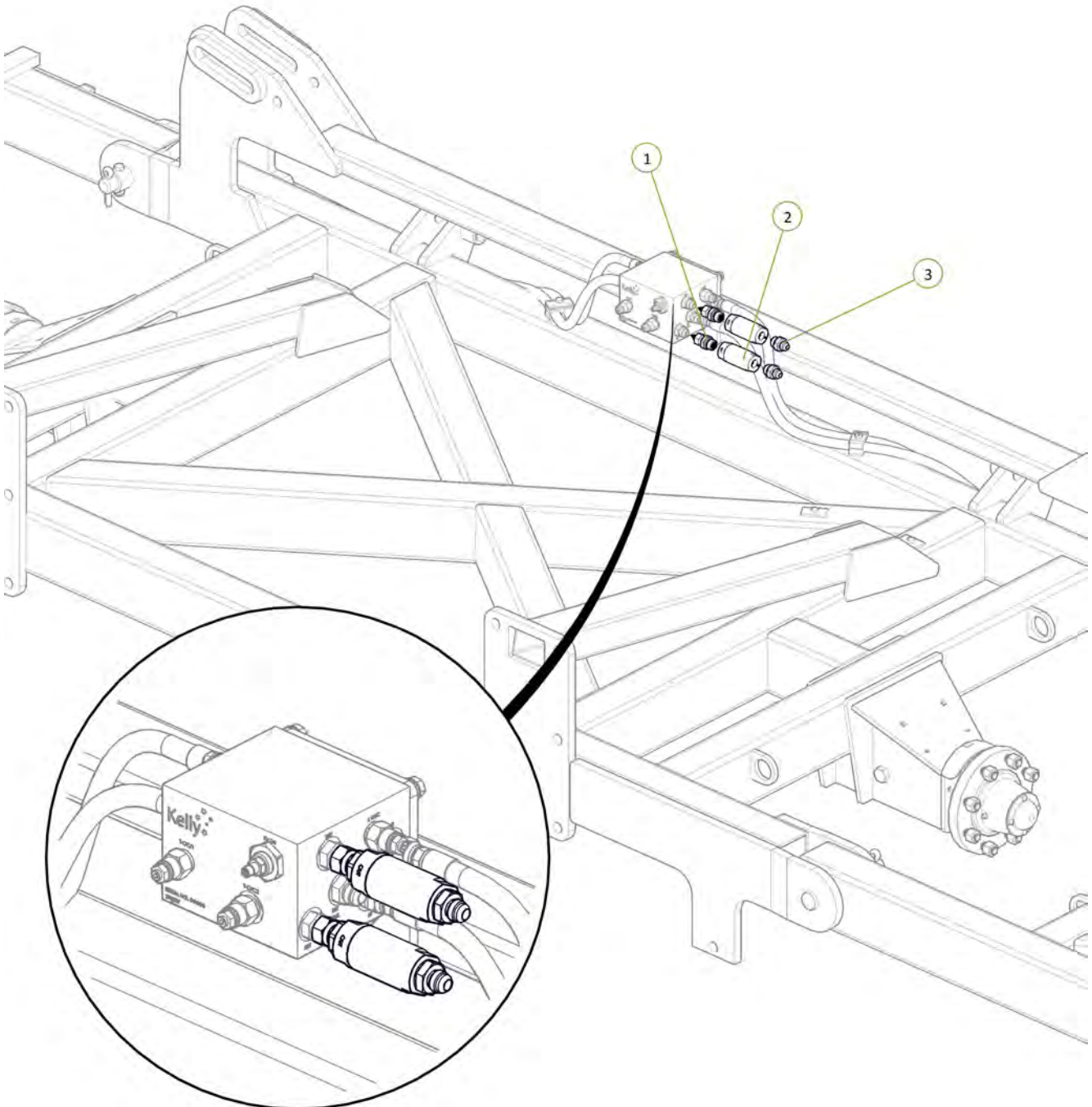
Item No.	Description	Number	Qty
1	1/2" BSPP Encapt Male 3/4" JIC Female Swive Adaptor	0323-S71-0812	1
2	Ball Valve BSPP 1/2"	0341-RL20SH-0808	1
3	1/2" BSPP Encapt Male 3/4" JIC Male Adaptor	0323-S74-0812	1



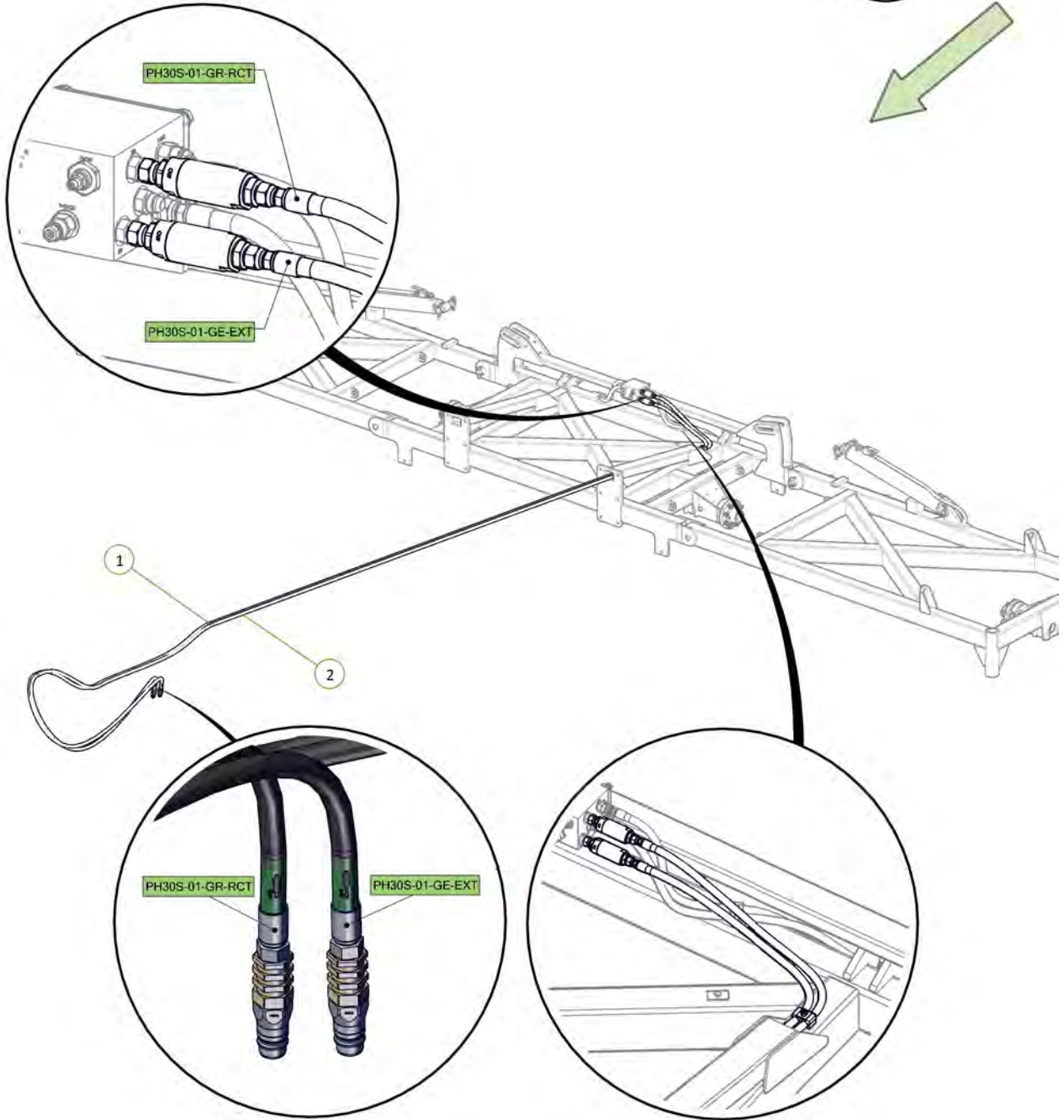
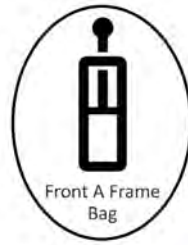
Item No.	Description	Number	Qty
1	Valve LE Port to LH Wing Cylinder Rear Port	PH30S-19	1
2	Valve LR Port to LH Wing Cylinder Rod Port	PH30S-21	1



Item No.	Description	Number	Qty
1	1/2" BSPP Encapt Male 3/4" JIC Female Swive Adaptor	0323-S71-0812	2
2	In Line Hydraulic Oil Filter	0343-924001261	2
3	1/2" BSPP Encapt Male 3/4" JIC Male Adaptor	0323-S74-0812	2



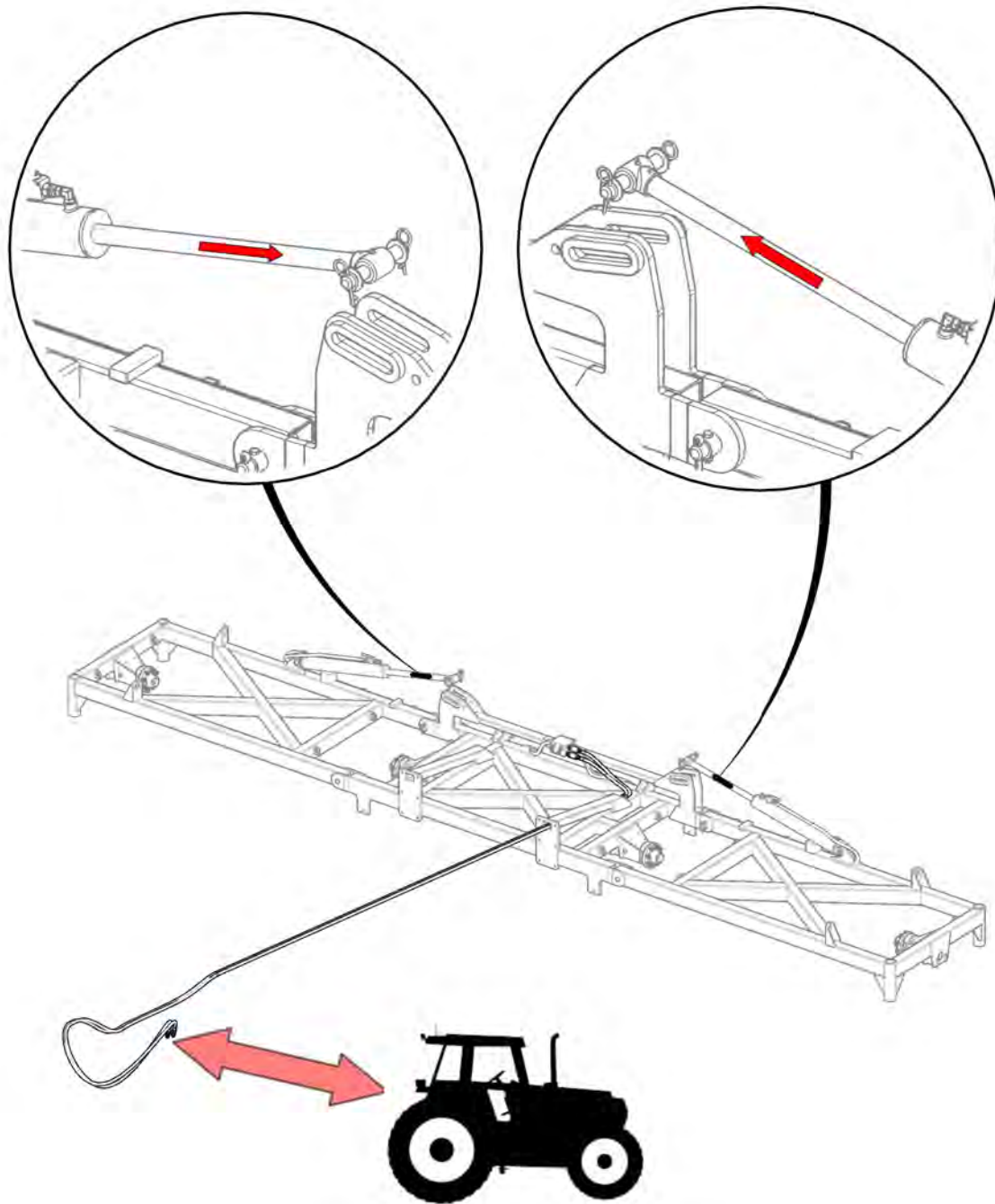
Item No.	Description	Number	Qty
1	Tractor to Sequence Valve EXT Port fitted with Green Extend Decal	PH30S-01-GE-EXT	1
2	Tractor to Sequence Valve RCT Port fitted with Green Retract Decal	PH30S-01-GR-RCT	1

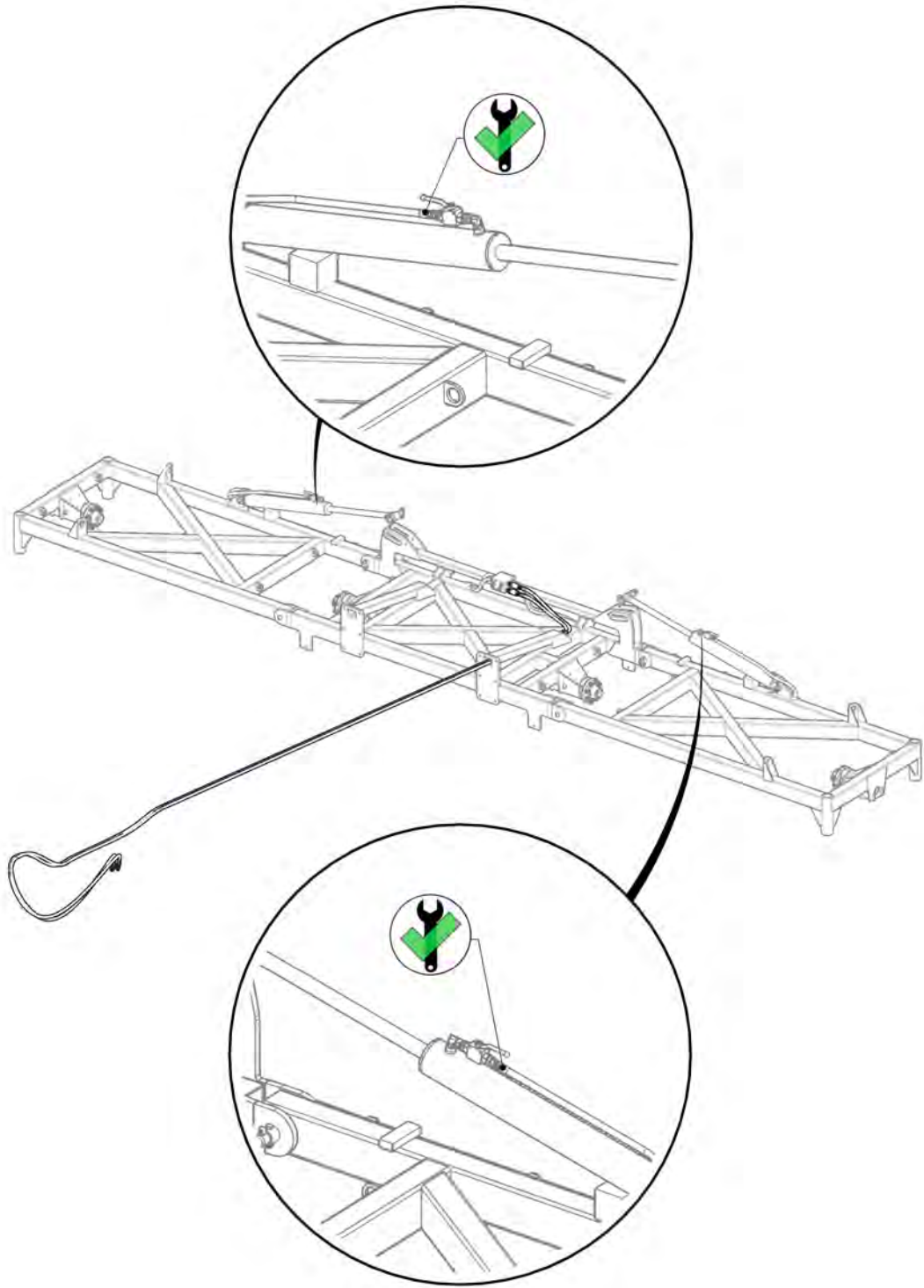


All retract hose fittings left loose to allow air to escape

All cylinders chocked up to prevent clash during extend

Signed _____ Date ____/____/____
 Unit Serial Number: _____

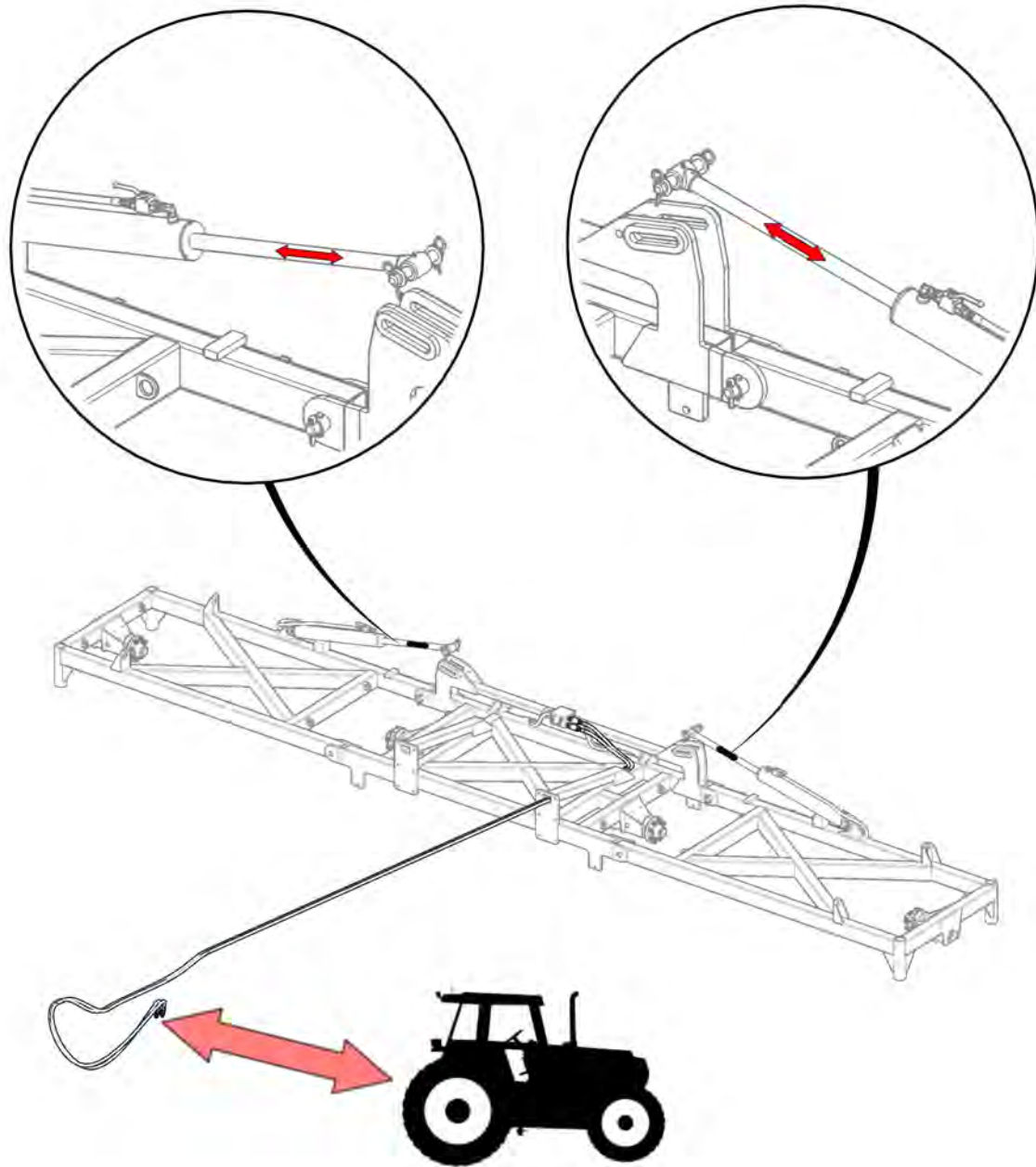




Retract fittings tightened

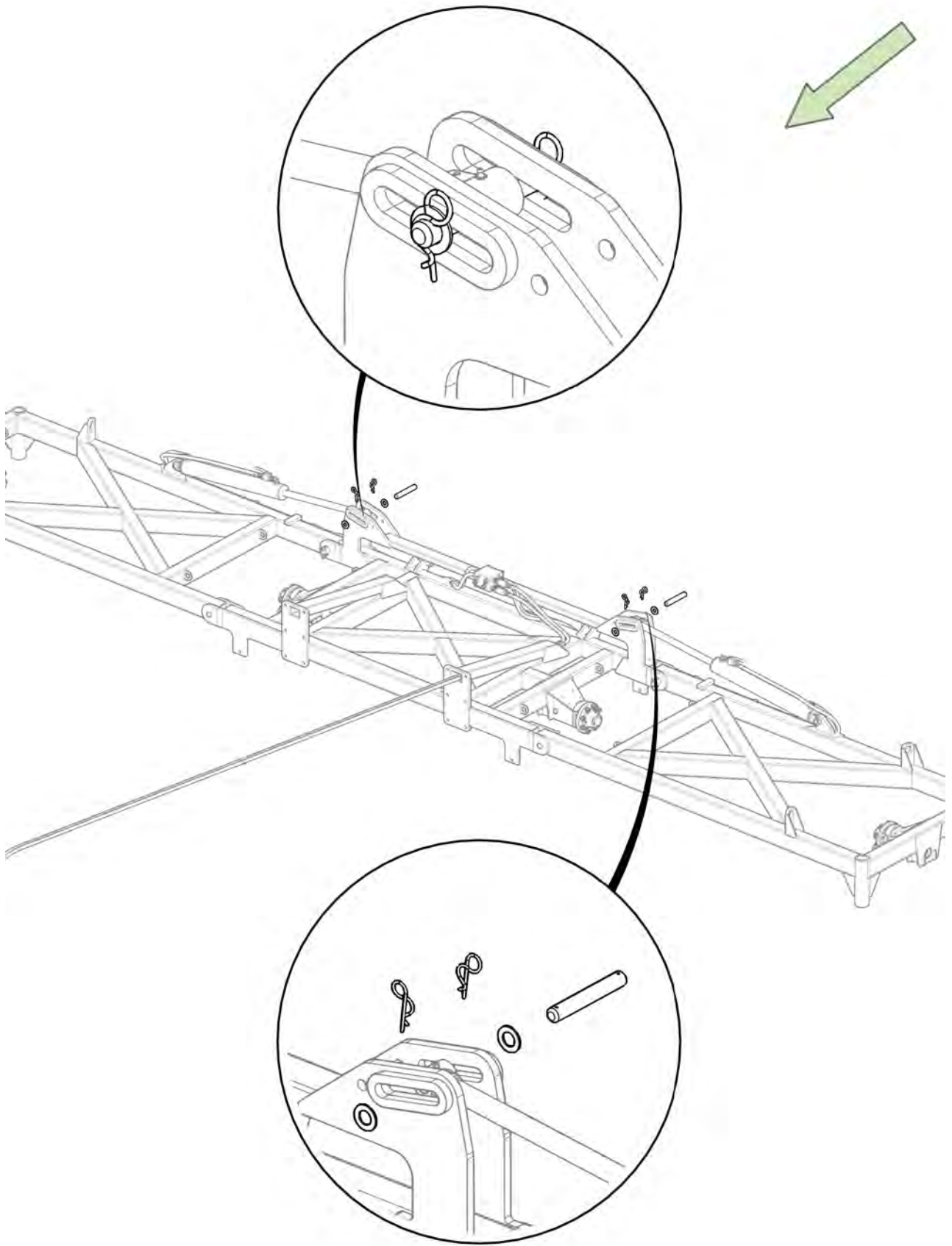


Signed _____	Date ____/____/____
Unit Serial Number: _____	

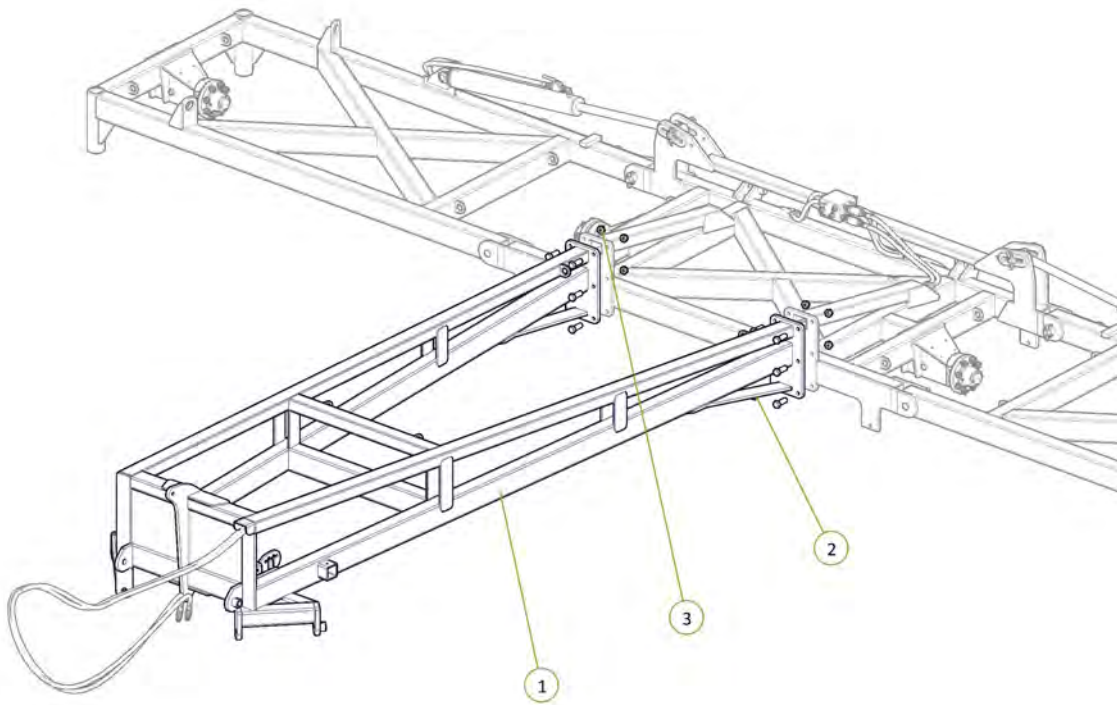
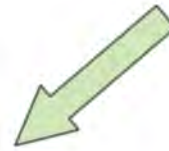


Cylinders cycled to expel air from system

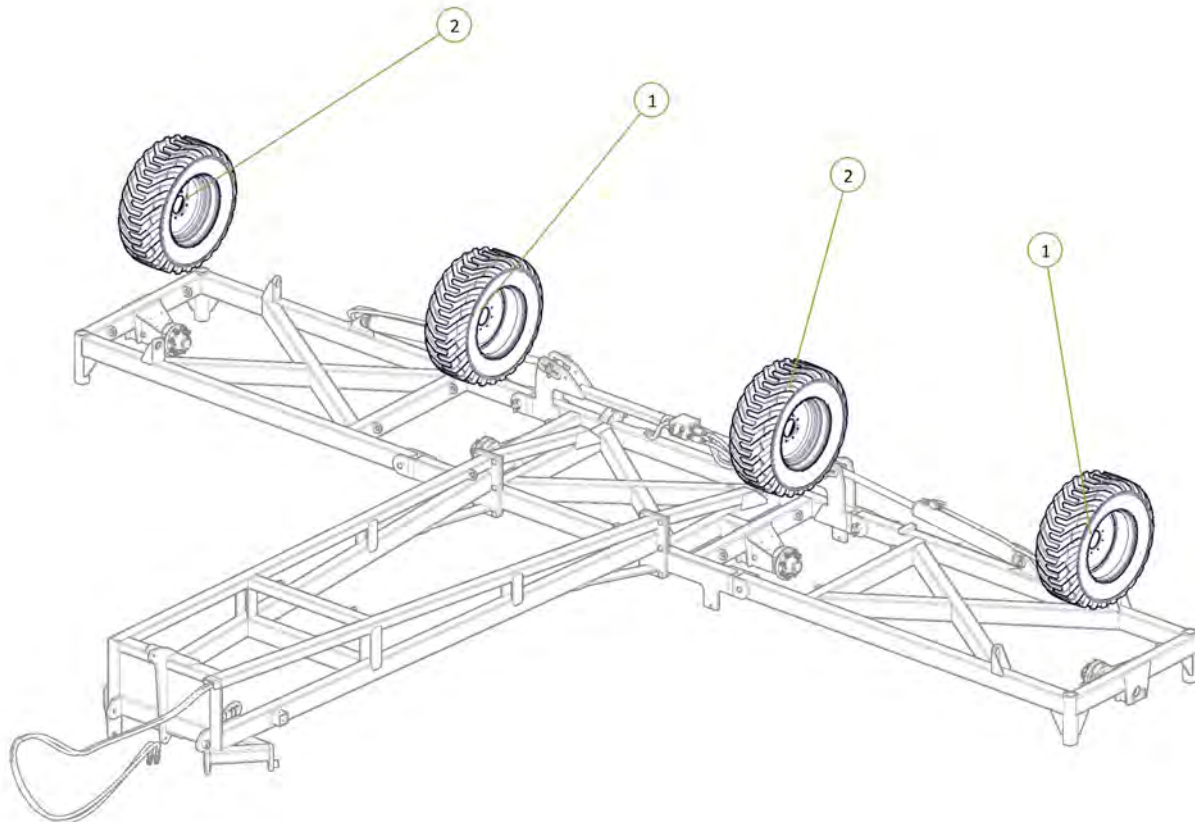
Signed _____ Date ____/____/____
Unit Serial Number: _____




Item No.	Description	Number	Qty
1	30' Main Pull	0830-02	1
2	M24 x 75 grade 8.8 zp Bolt	0211-2475	12
3	Nyloc Nut M24	0221-NYL24	12



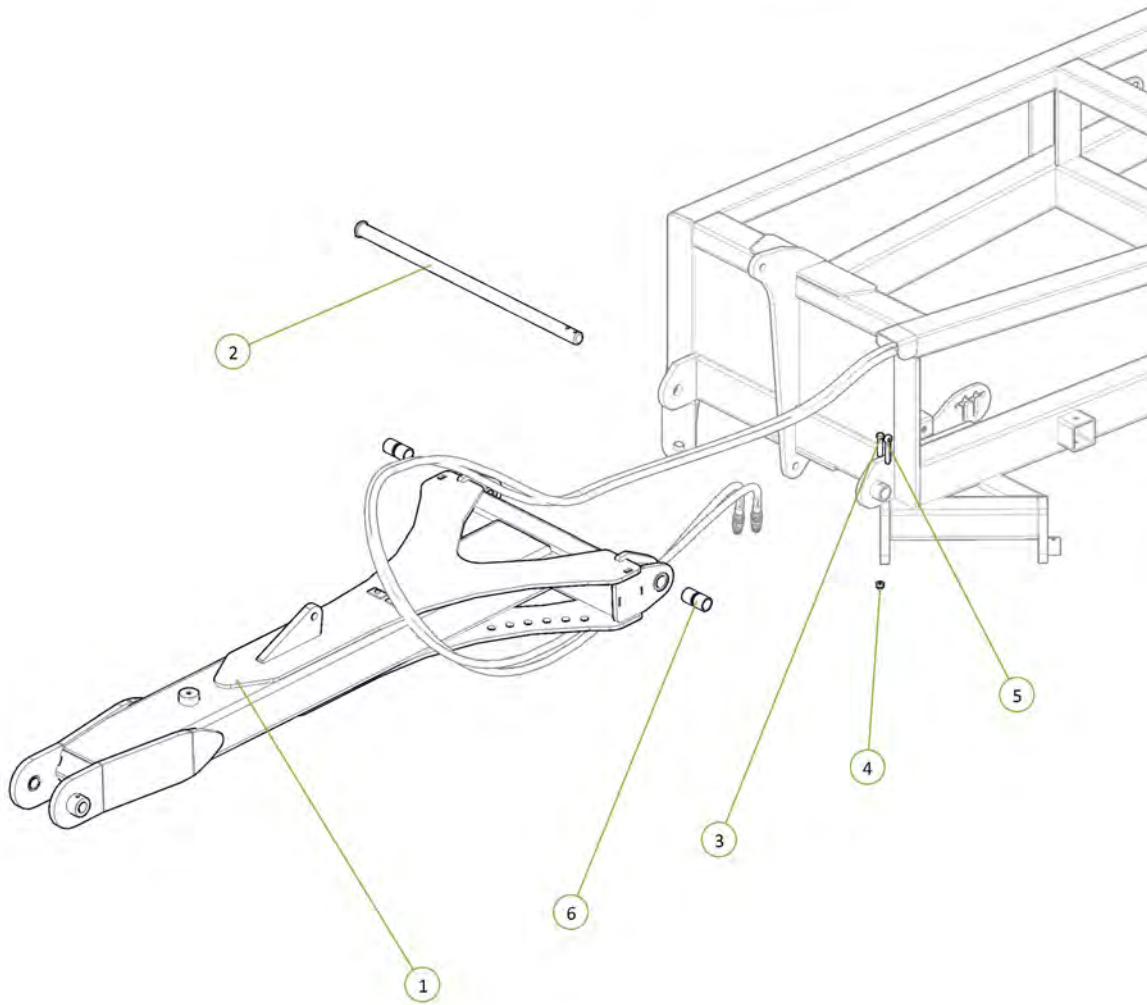
Item No.	Description	Number	Qty
1	400/55-22.5 Tyre on 8 on 8" PCD Rim (Left Hand)	0751-400-55-22.5TR-L	2
2	400/55-22.5 Tyre on 8 on 8" PCD Rim (Right Hand)	0751-400-55-22.5TR-R	2



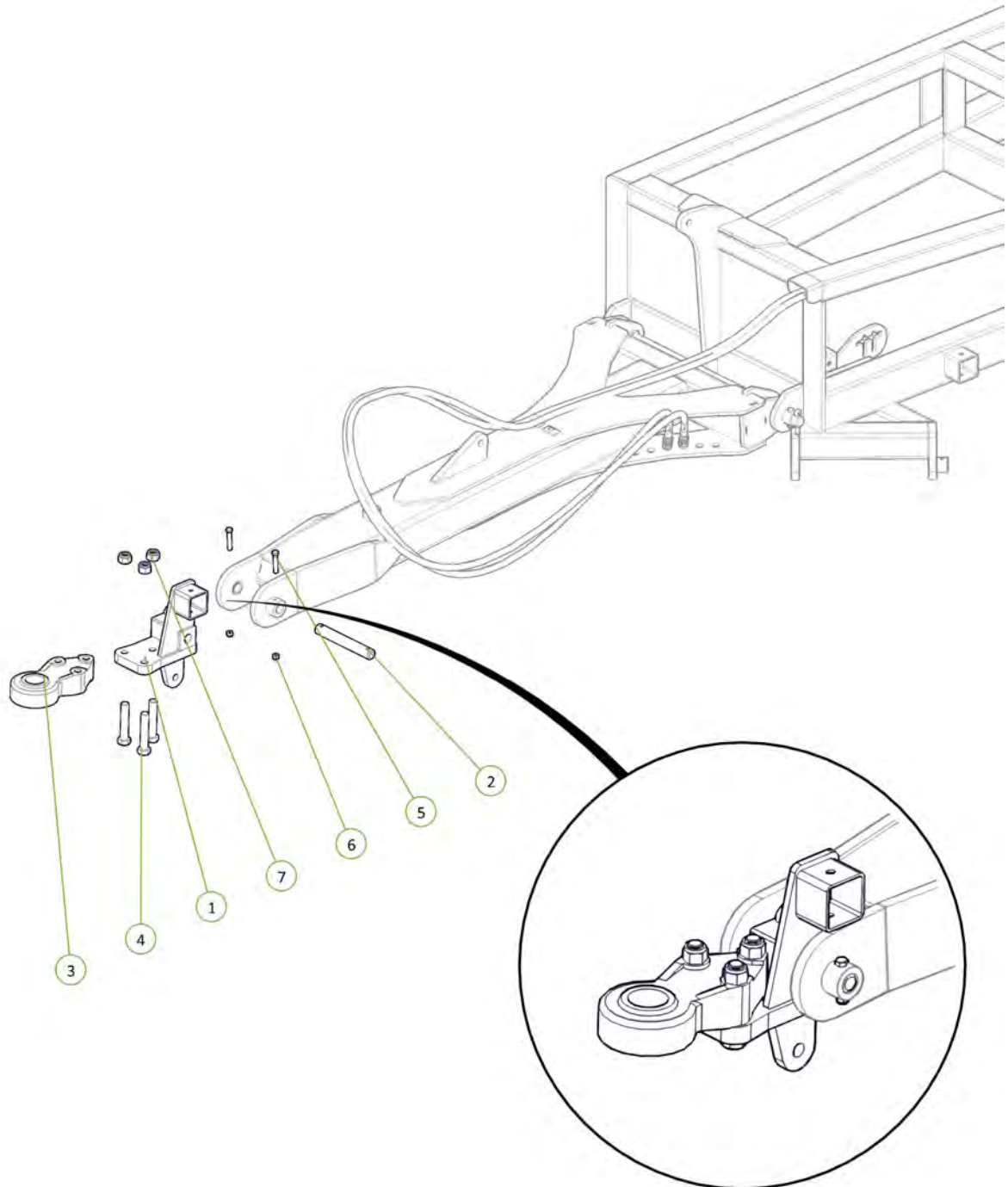
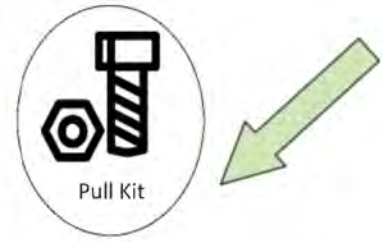
All wheel nuts tightened to 100ft-lb / 140Nm 

Signed _____ Date ___/___/___
 Unit Serial Number: _____

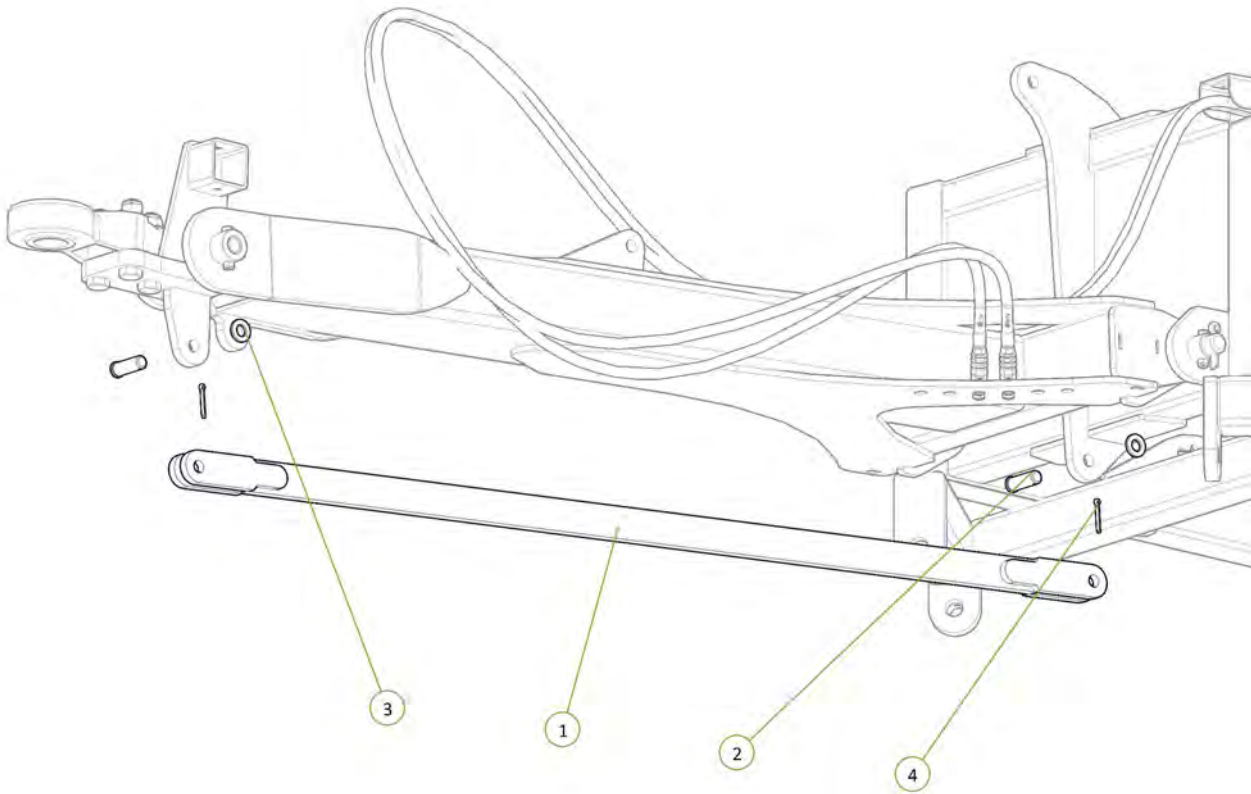
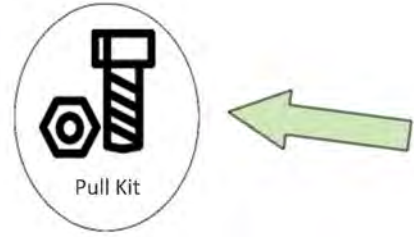
Item No.	Description	Number	Qty
1	Tapered T-Bar Drawbar	1510-08-2	1
2	Drawbar Pivot Pin	0801-10-13-970	1
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	1
4	Nyloc Nut M12	0221-NYL12	1
5	Cotter Pin M13 x 63	0261-PINC1363	1
6	Drawbar Pivot Bush	0801-B423838	4



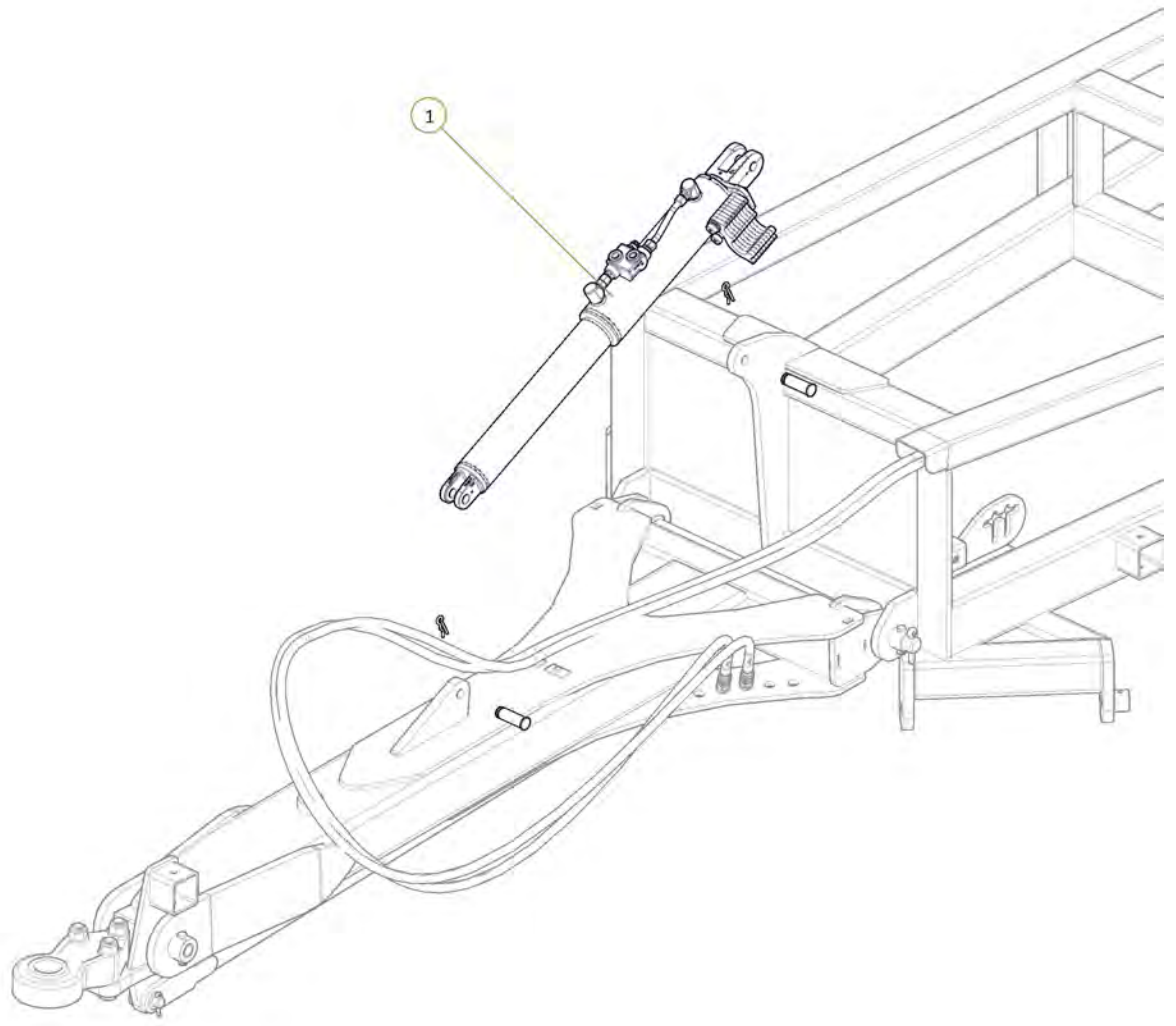
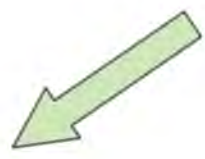
Item No.	Description	Number	Qty
1	Tow Hitch For Bull Pull Swivel Hitch	0810-09-BP	1
2	Tow Hitch Pivot Pin	0801-10-06	1
3	Bull Pull Swivel Hitch CAT 4 wt 1-1/2' Insert	0801-BPF-CAT 4JDF	1
4	1" x 5-1/2" UNF Grade 8 ZP Bolt	0213-1 51-2	3
5	M12 x 75 grade 8.8 ZP Bolt	0211-1275	2
6	Nyloc Nut M12	0221-NYL12	2
7	Nyloc Nut 1" UNF	0223-NYL1	3



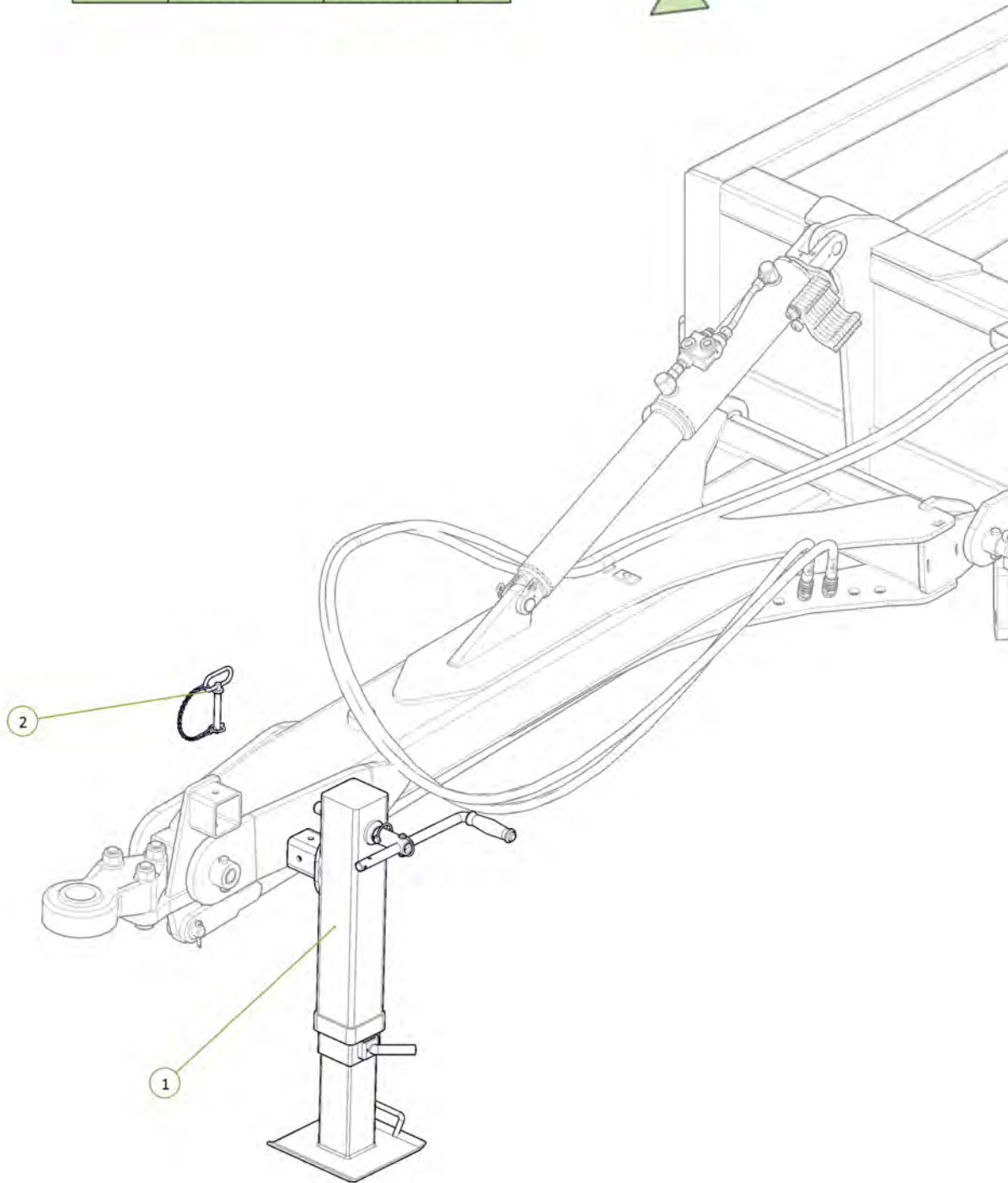
Item No.	Description	Number	Qty
1	Parallel Arm	0810-22	1
2	Clevis Pin 25mm x 75mm	0801-KE0307-1	2
3	Washer Flat M24	0231-F24	2
4	Cotter Pin M6 x 50mm	0261-PINC650	2



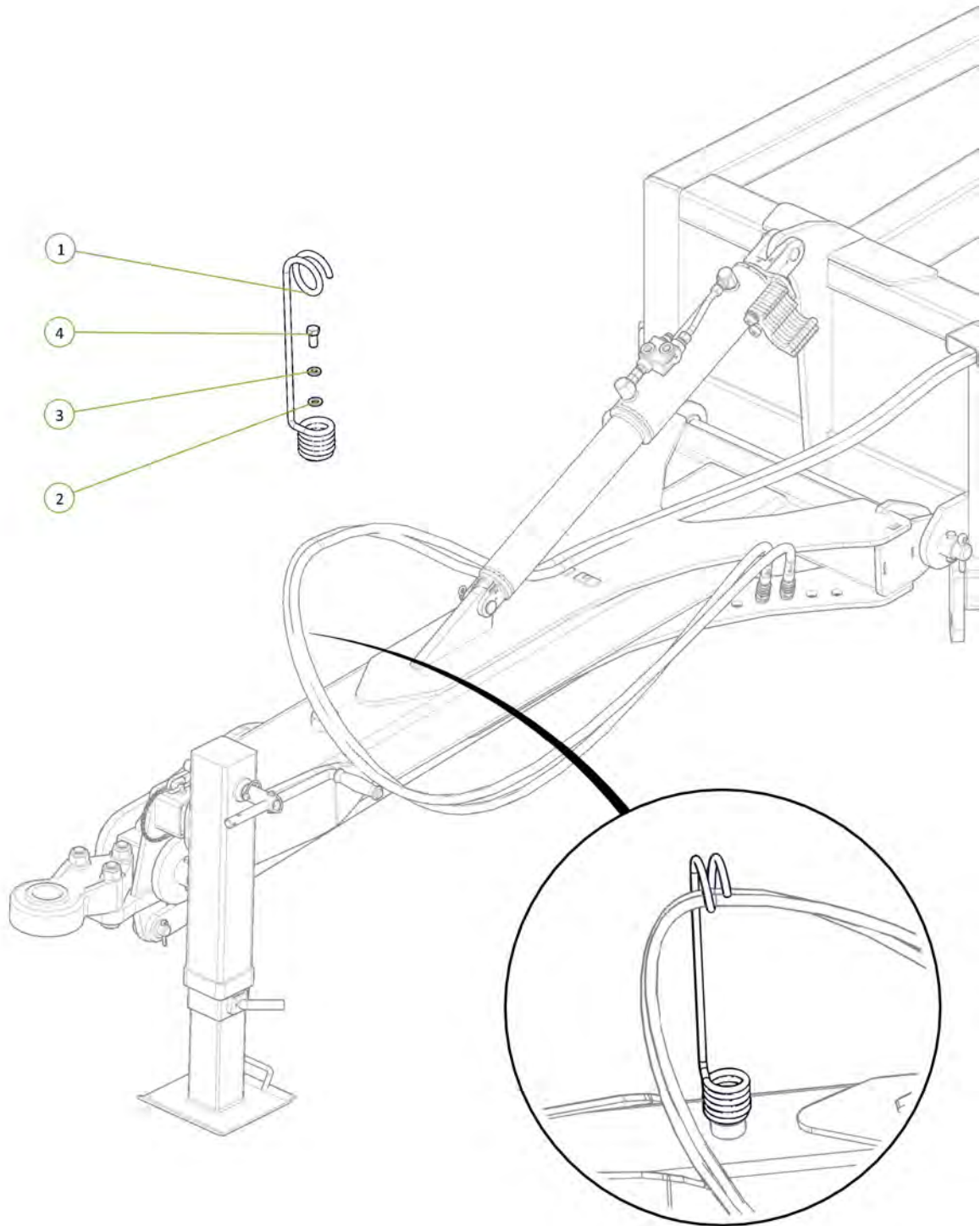
Item No.	Description	Number	Qty
1	4" Bore 12" Stroke 1.75" Rod Extended Hydraulic Cylinder	0311-412EXT	1

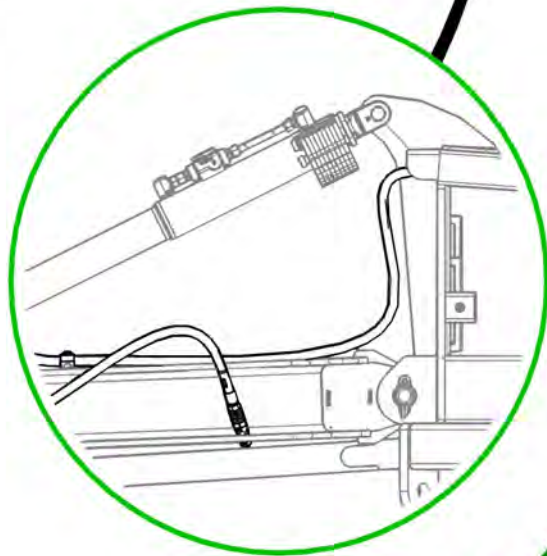
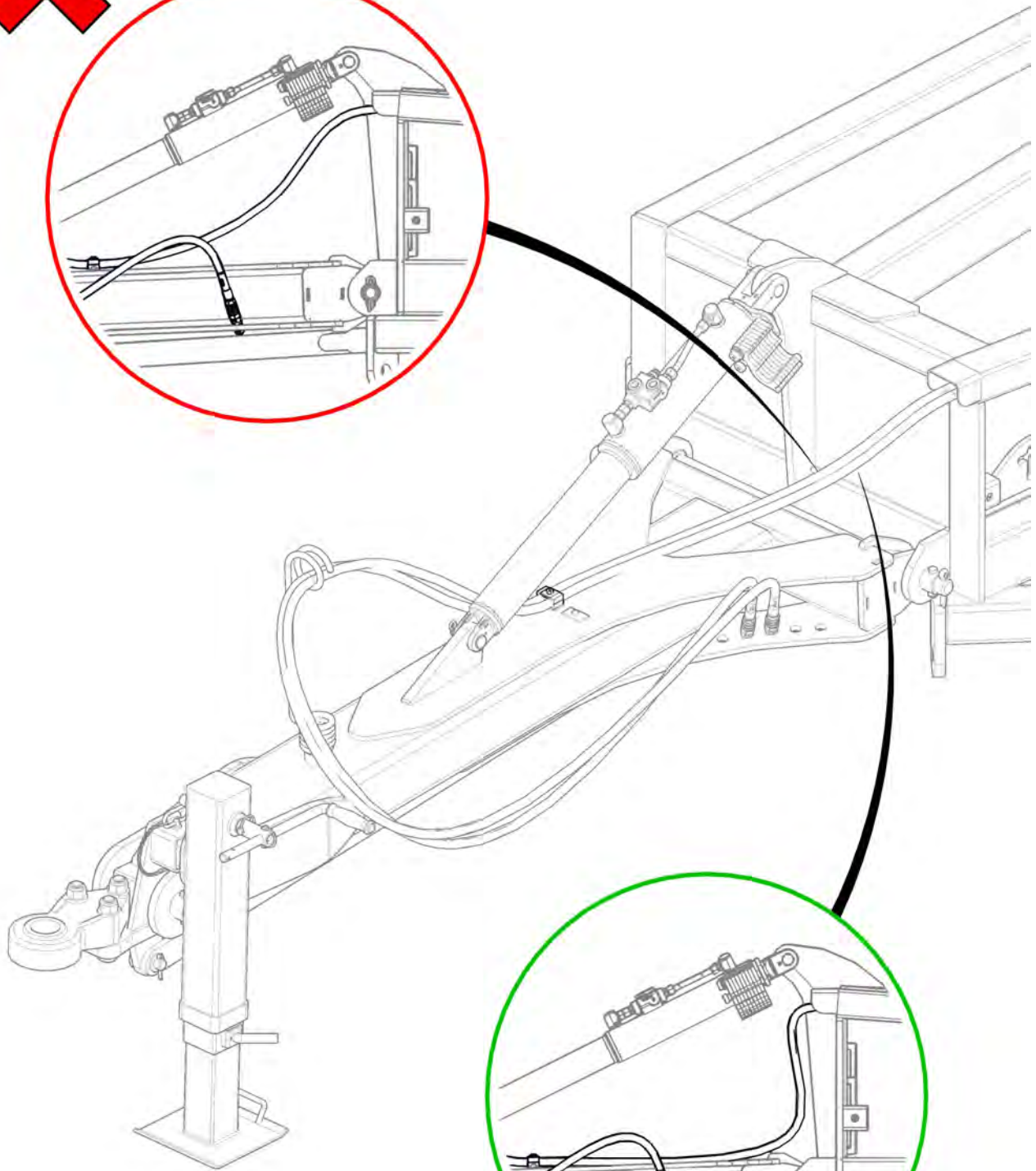
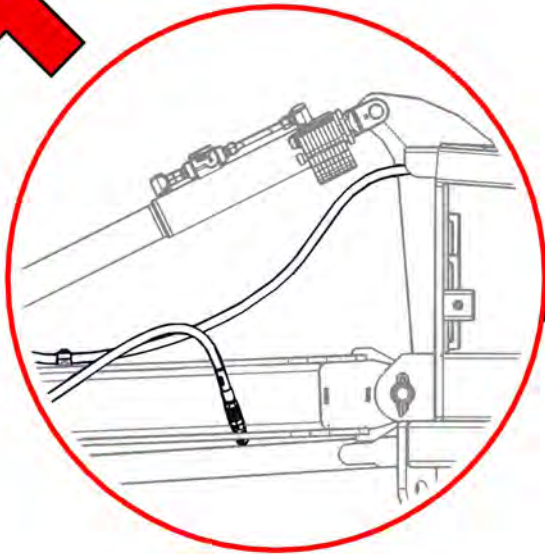


Item No.	Description	Number	Qty
1	Heavy Duty Jack	0801-SAK45B	1
2	Jack Pin	0801-B3077	1

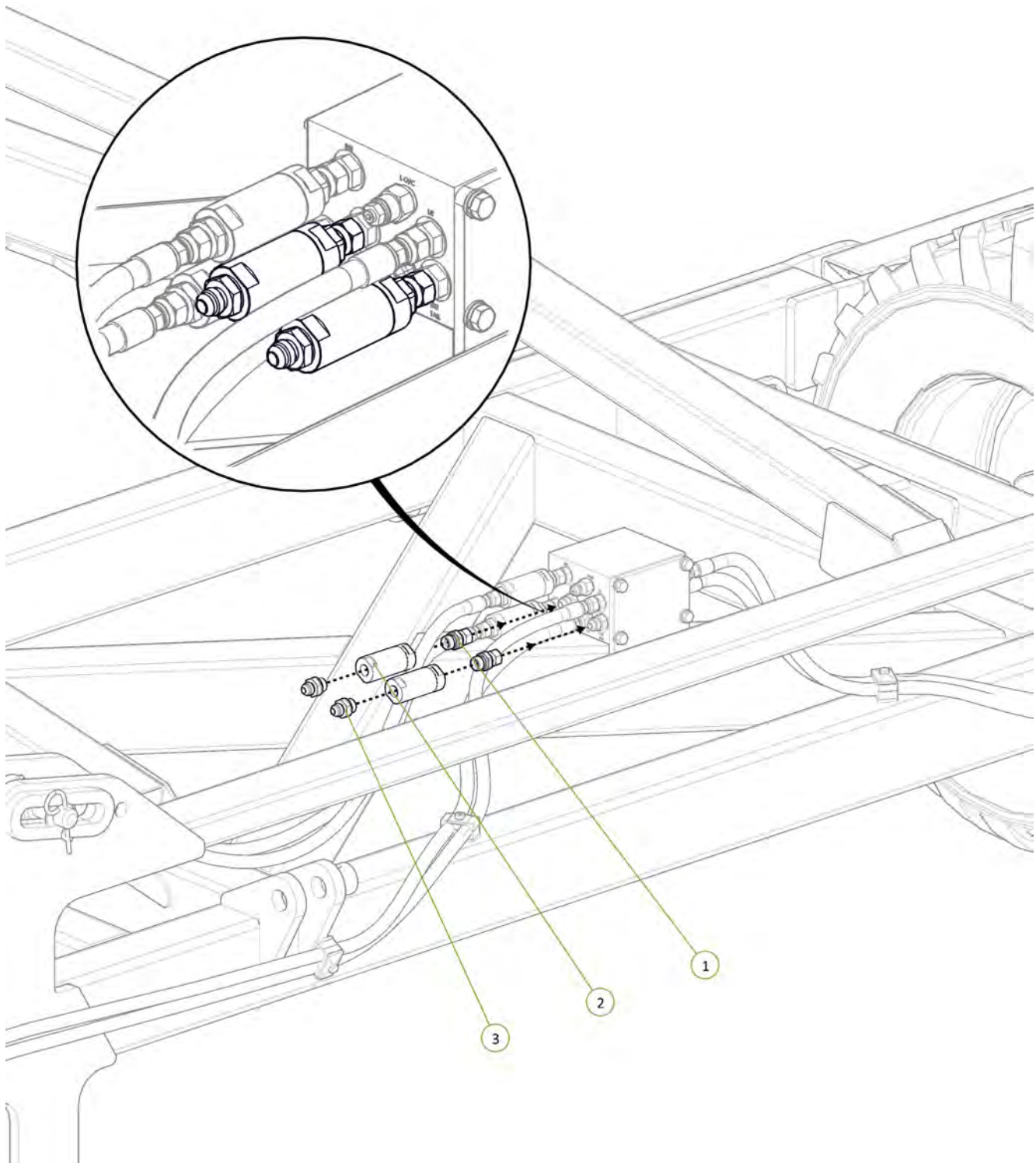


Item No.	Description	Number	Qty
1	Hose Post Spring	1601-CDB-00-0012	1
2	Washer Flat M16	0231-F16	1
3	Washer Spring M16	0231-S16	1
4	M16 x 35 grade 8.8 zp Bolt	0211-1635	1

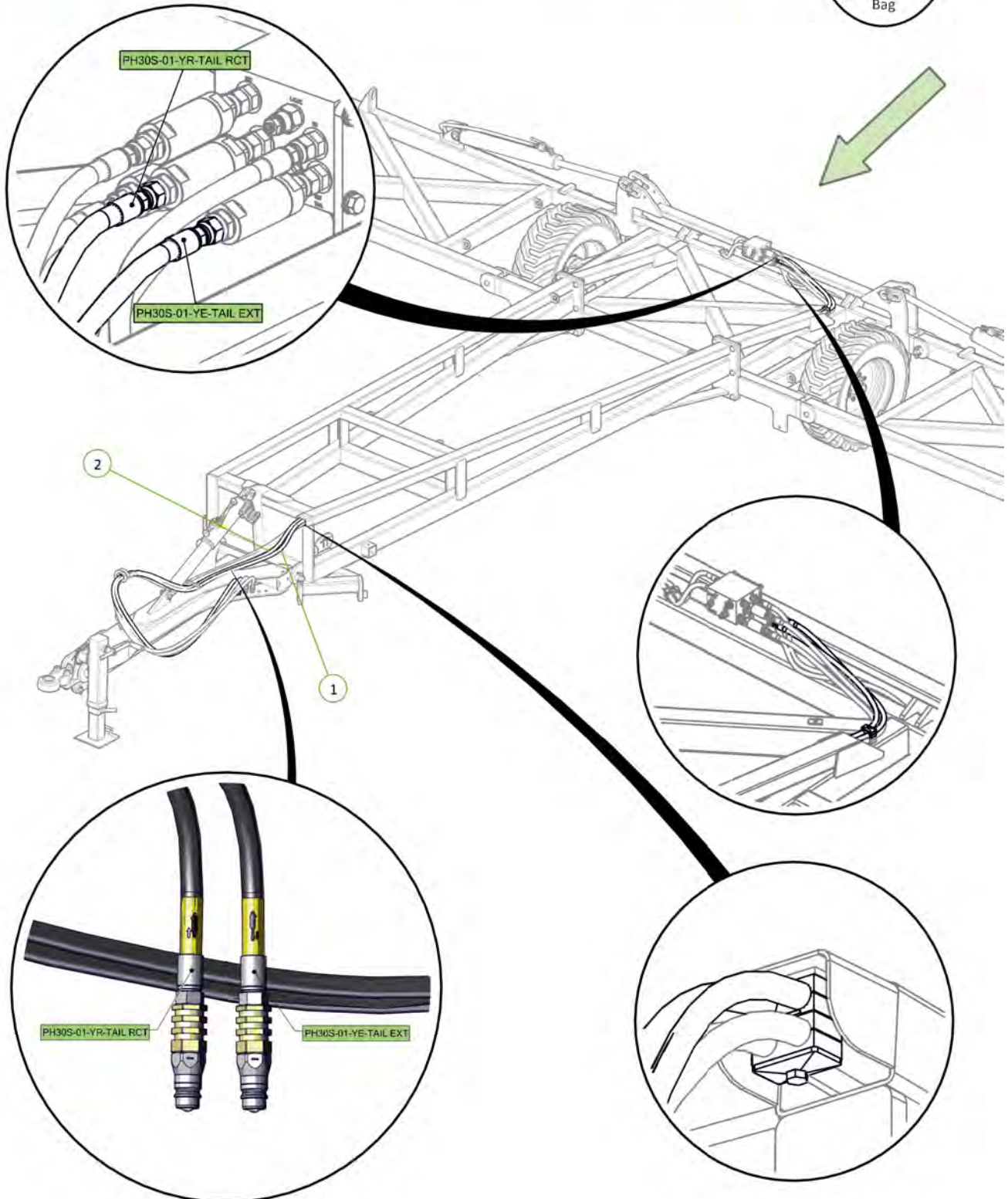


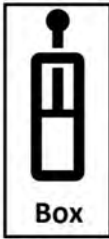
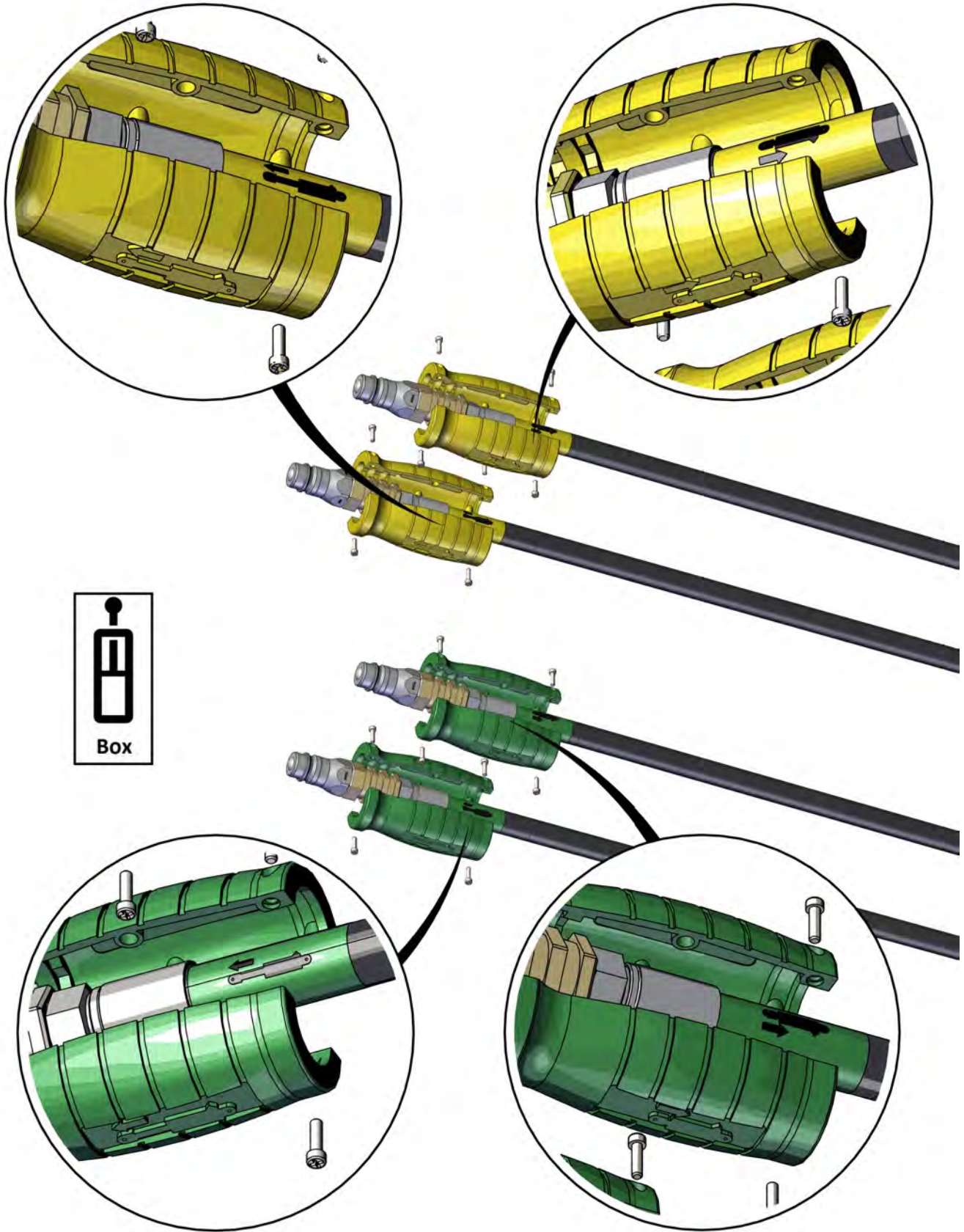


Item No.	Description	Number	Qty
1	1/2" BSPP Encapt Male 3/4" JIC Female Swive Adaptor	0323-S71-0812	2
2	In Line Hydraulic Oil Filter	0343-924001261	2
3	1/2" BSPP Encapt Male 3/4" JIC Male Adaptor	0323-S74-0812	2



Item No.	Description	Number	Qty
1	Tractor to Sequence Valve TAIL EXT Port fitted with Yellow Extend Decal	PH30S-01-YE-TAIL EXT	1
2	Tractor to Sequence Valve TAIL RET Port fitted with Yellow Retract Decal	PH30S-01-YR-TAIL RCT	1

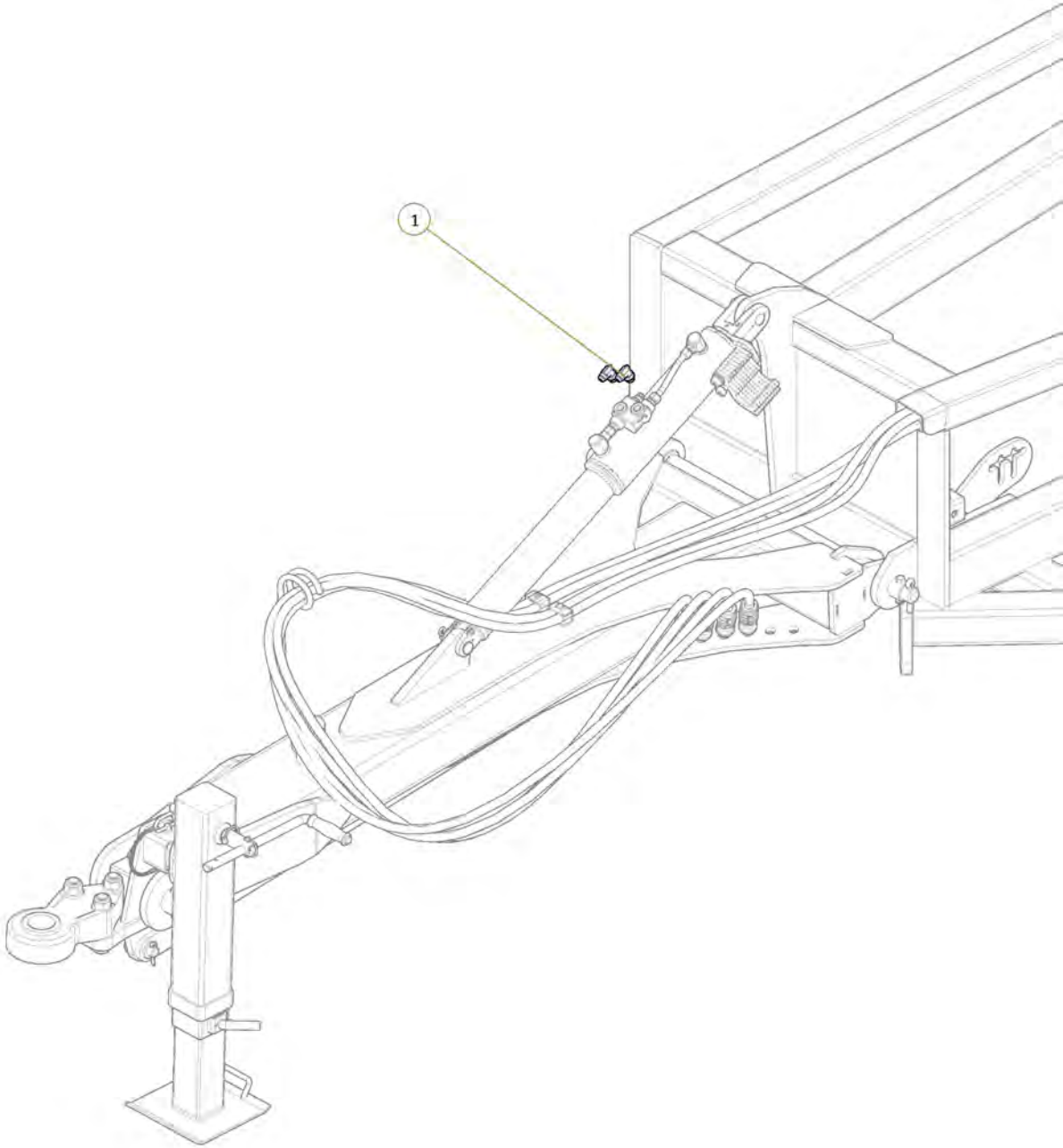
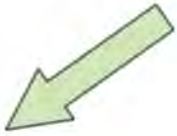




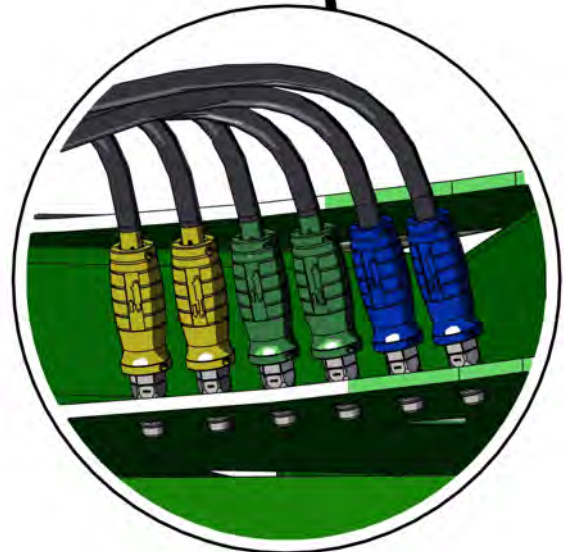
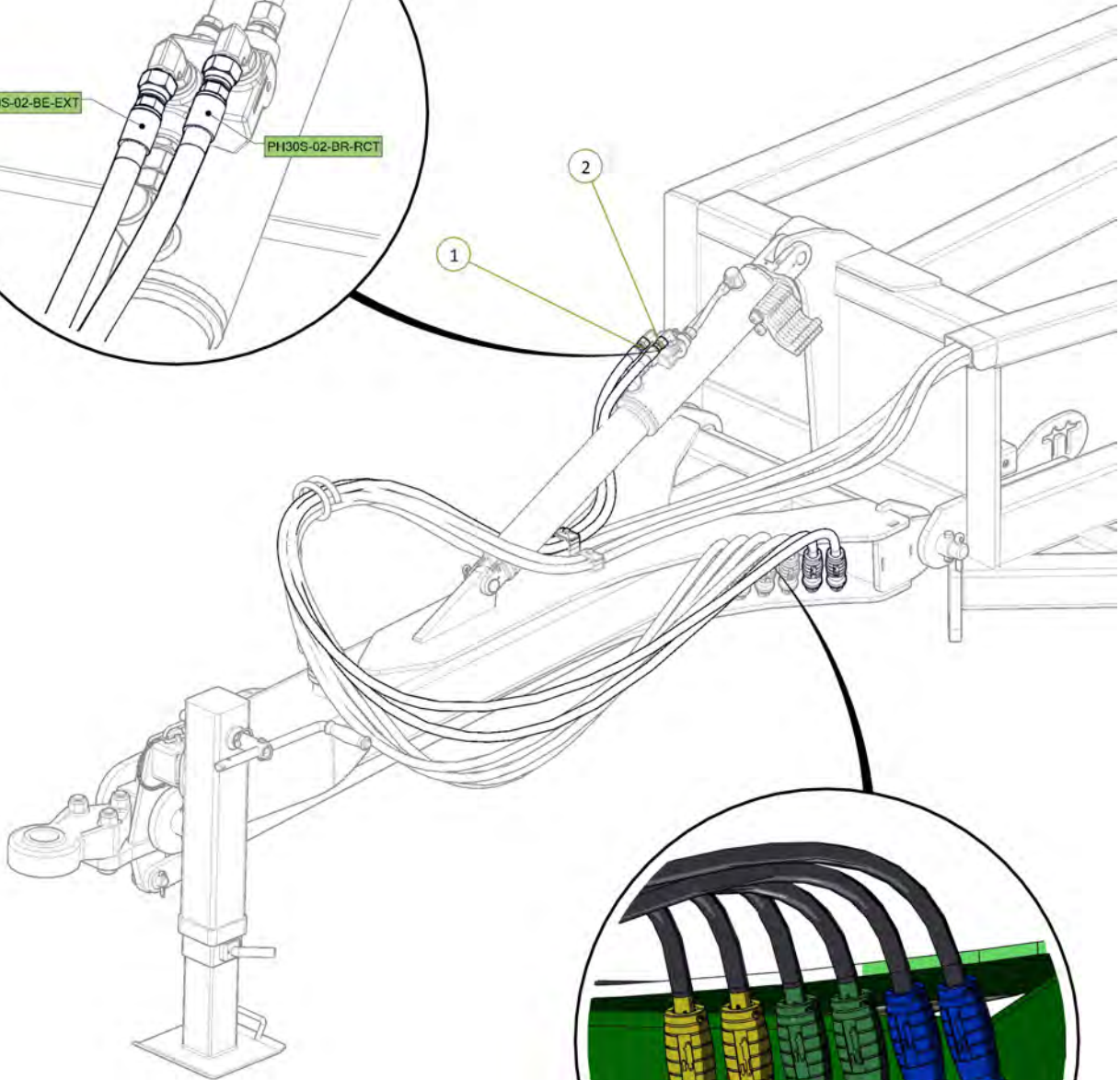
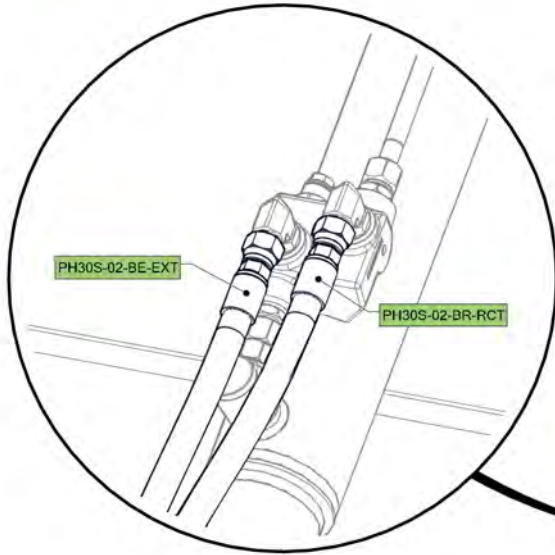
Hose grip handles fitted as per stickers on hoses ○

Signed _____ Date ____/____/____
 Unit Serial Number _____

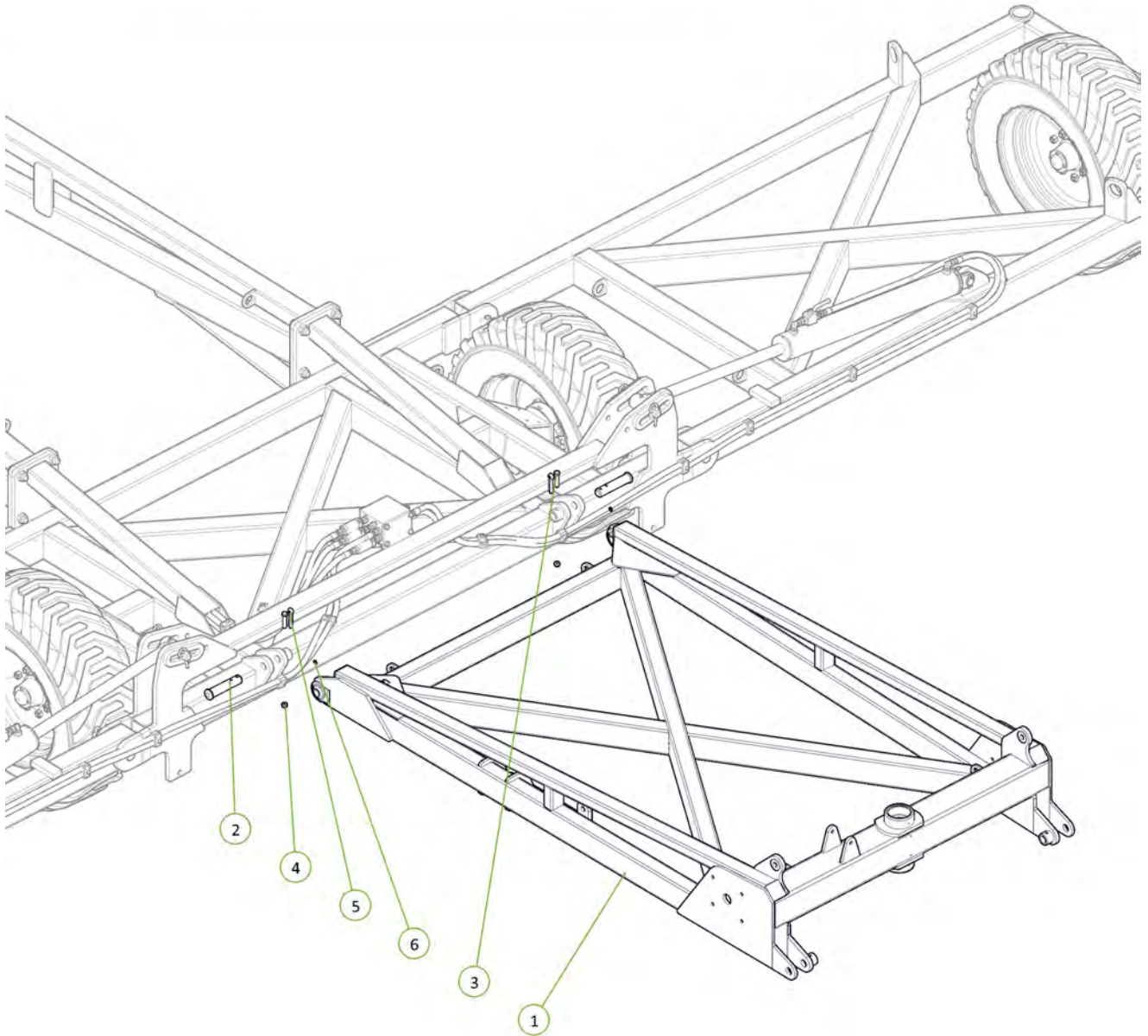
Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-S91-1212	2



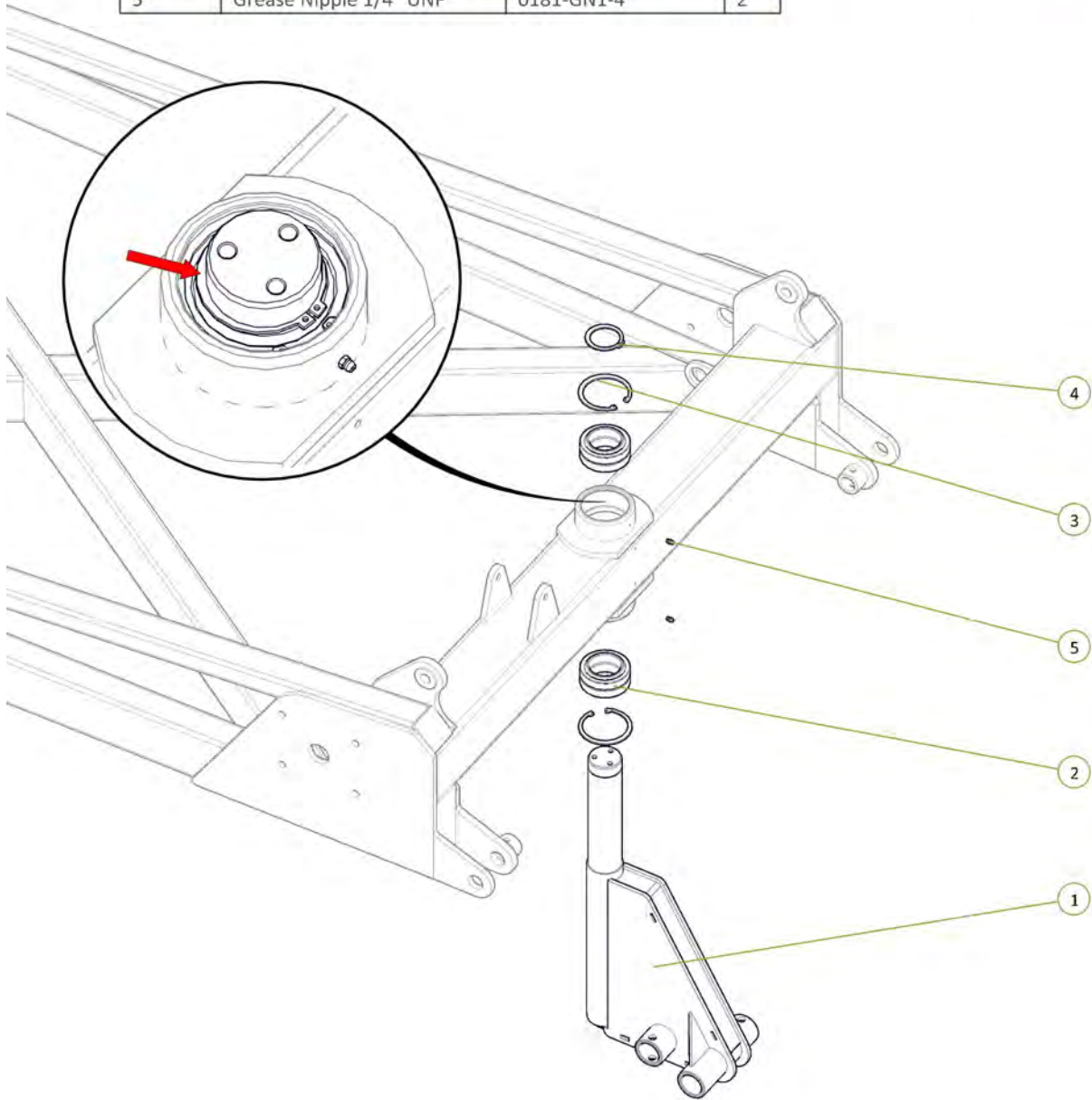
Item No.	Description	Number	Qty
1	Tractor to Front Lift Cylinder Extend Port fitted with Blue Extend Grip	PH30S-02-BE-EXT	1
2	Tractor to Front Lift Cylinder Retract Port fitted with Blue Retract Grip	PH30S-02-BR-RCT	1



Item No.	Description	Number	Qty
1	30' Rear A-Frame	0830-03	1
2	Tail Frame Pivot pin	0801-10-08-175	2
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	2
4	Nyloc Nut M12	0221-NYL12	2
5	Cotter Pin M13 x 63	0261-PINC1363	2
6	Grease Nipple 1/4" UNF	0181-GN1-4	2



Item No.	Description	Number	Qty
1	70mm Jockey Wheel	0810-11-70	1
2	Plain Spherical Bearing 70mm	0113-GE70DO-2RS	2
3	Circlip Internal 105mm	0171-J105	2
4	Circlip External 70mm	0172-D1400-0700AAP	1
5	Grease Nipple 1/4" UNF	0181-GN1-4	2

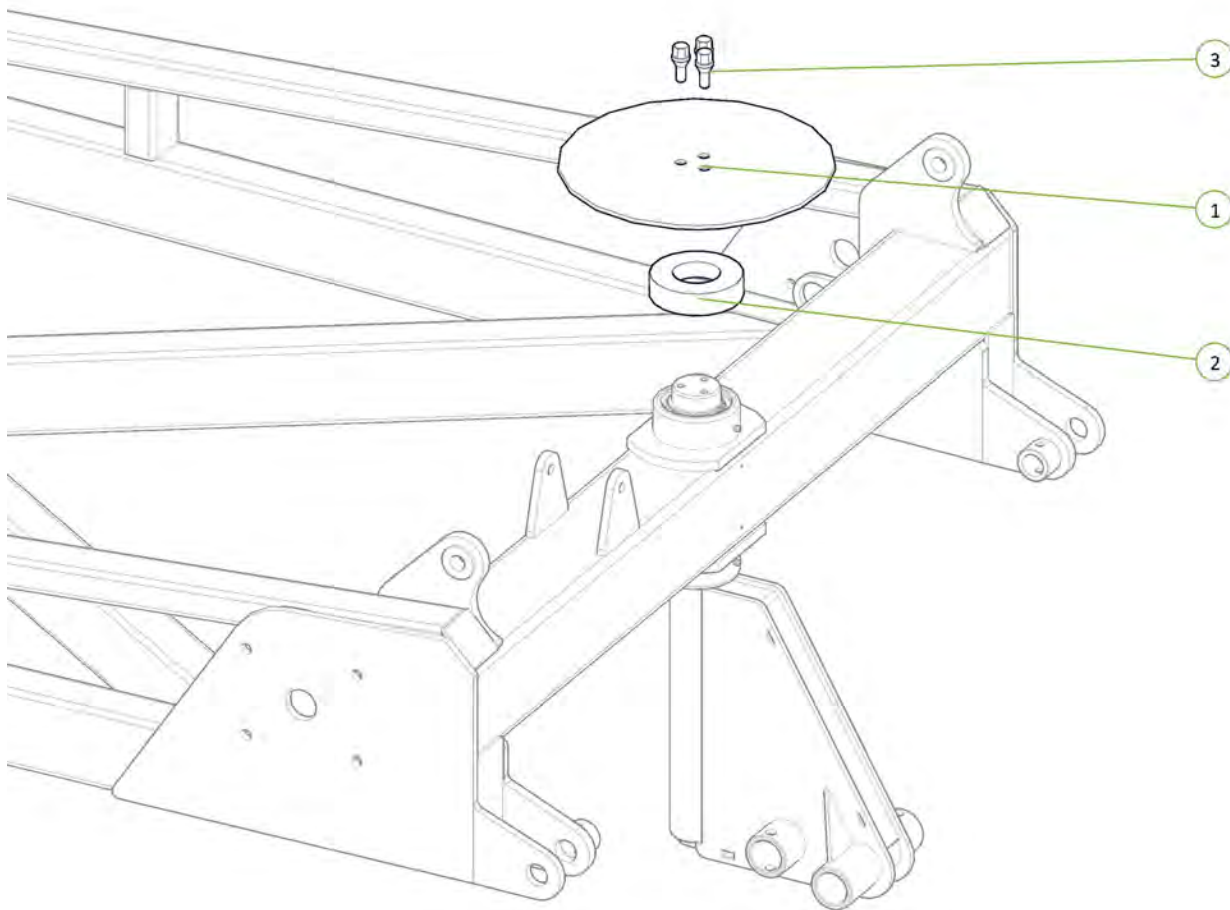


Circlip fitted to Jockey Wheel shaft



Signed _____ Date ____/____/____
 Unit Serial Number: _____

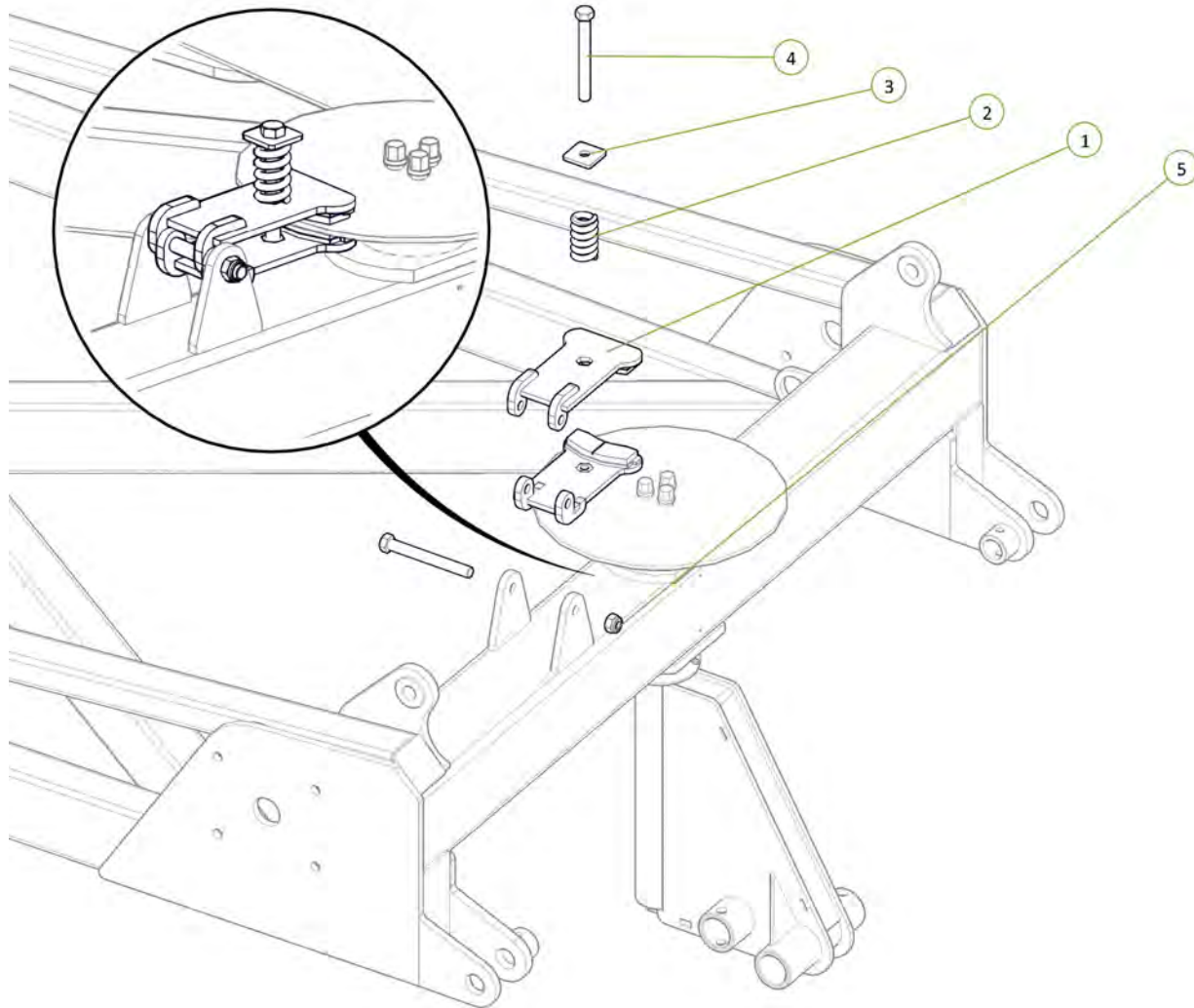
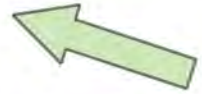
Item No.	Description	Number	Qty
1	Brake Disc	1600-405	1
2	Bolt on Brake Disc Dust Cap 70 ID x 135 OD x 35	1601-DC7013535	1
3	M12 x 24 Wheel Bolt	0216-WB1224	3



Wheel bolts torqued to 65fl-lb / 88Nm

Signed _____ Date ____ / ____ / ____
 Unit Serial Number: _____

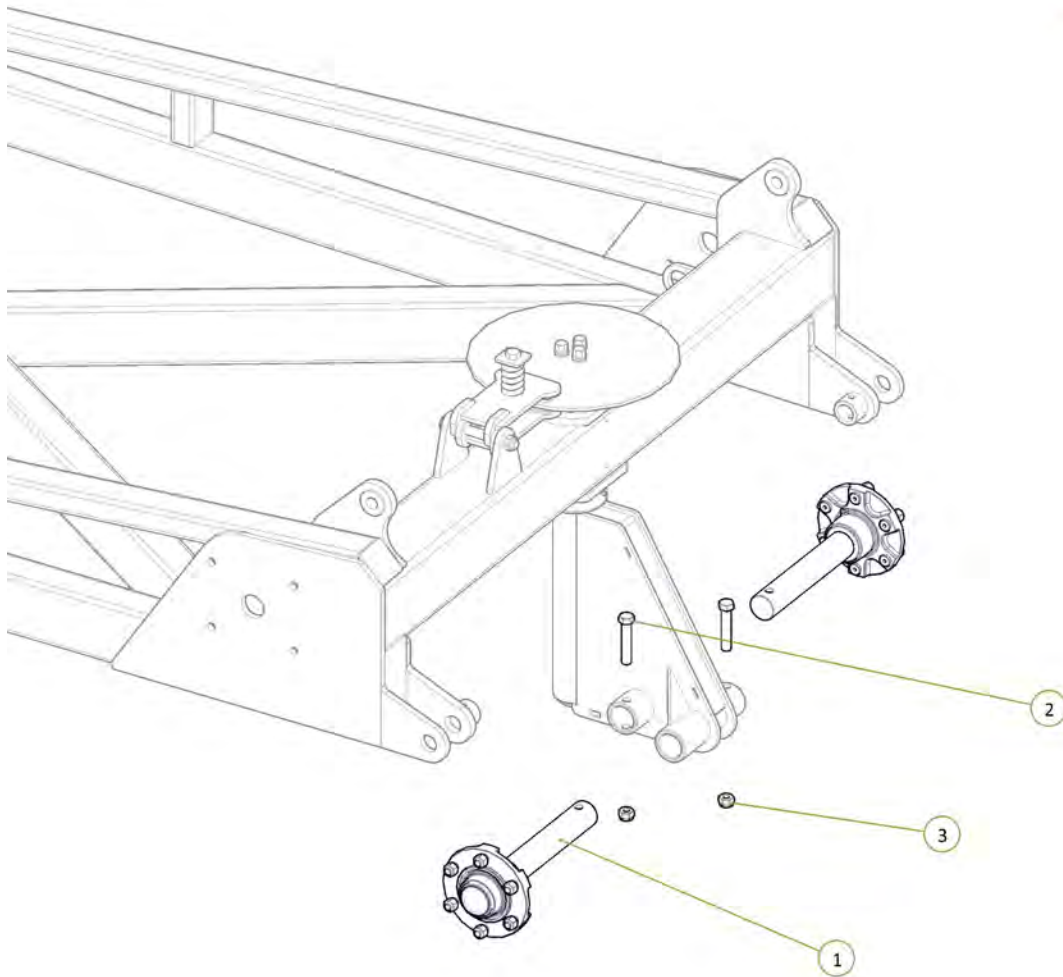
Item No.	Description	Number	Qty
1	Jockey Wheel Brake Caliper	0810-12CAL	1
2	Brake Compression Spring	0801-KE009	1
3	Washer Square M16 x 50 x 5	0231-SQ16505	1
4	M16 x 150 grade 8.8 zp Bolt	0211-16150	2
5	Nyloc Nut M16	0221-NYL16	1

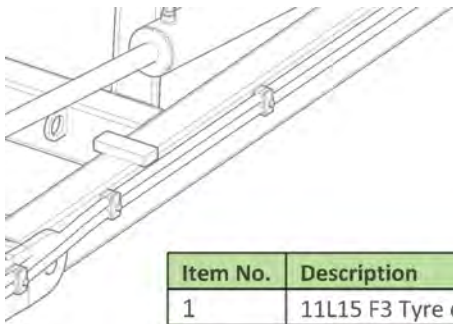


Check tension of brake caliper spring (50-63mm road transport)

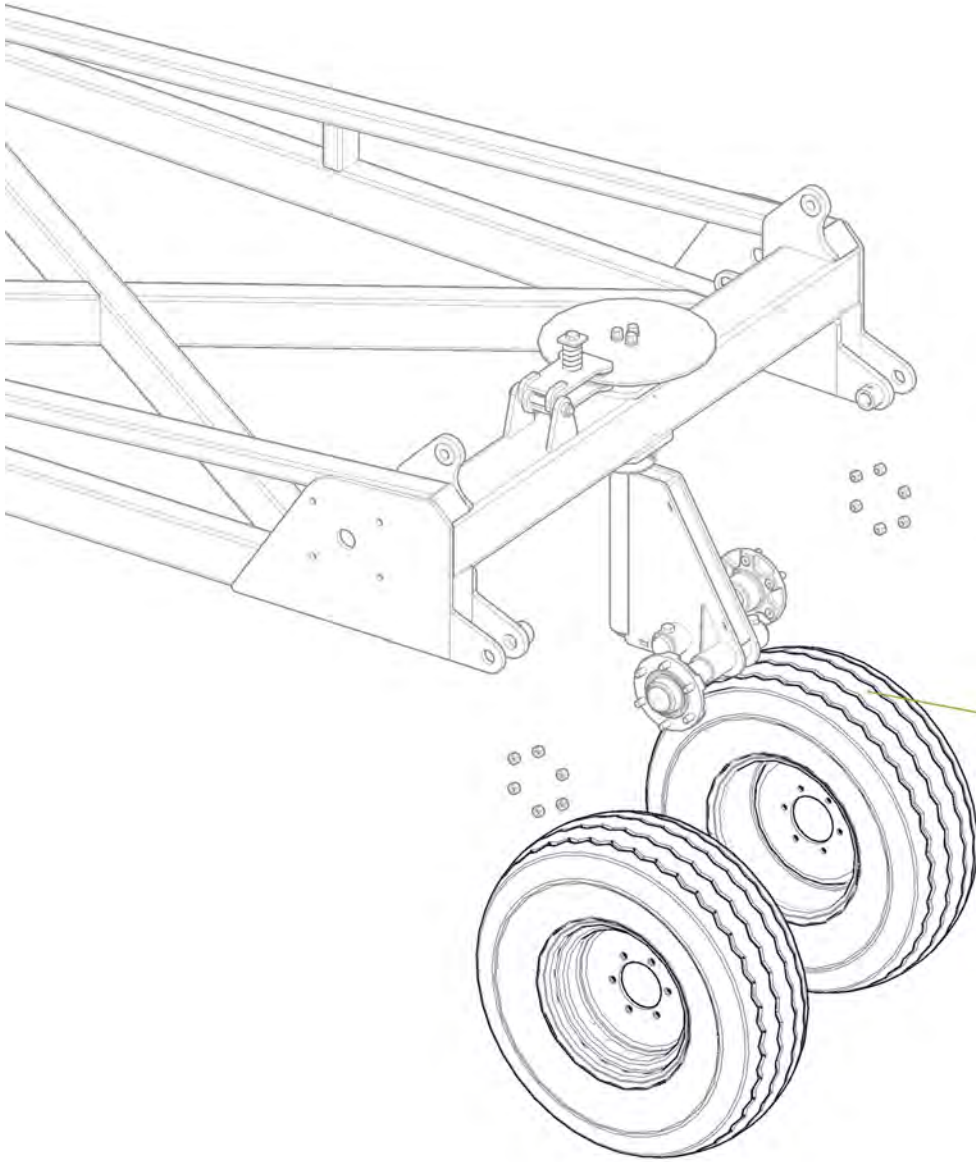
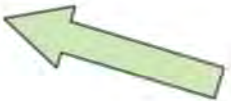
Signed _____	Date ____/____/____
Unit Serial Number: _____	

Item No.	Description	Number	Qty
1	Axle 2"R 3T 6 on 6"PCD 330 OHF Complete Assembly Inc GS	0733-LG8880093	2
2	M16 x 90 grade 8.8 zp Bolt	0211-1690	2
3	Nyloc Nut M16	0221-NYL16	2





Item No.	Description	Number	Qty
1	11L15 F3 Tyre on 6 on 6" Stud Rim	0751-11L15	2

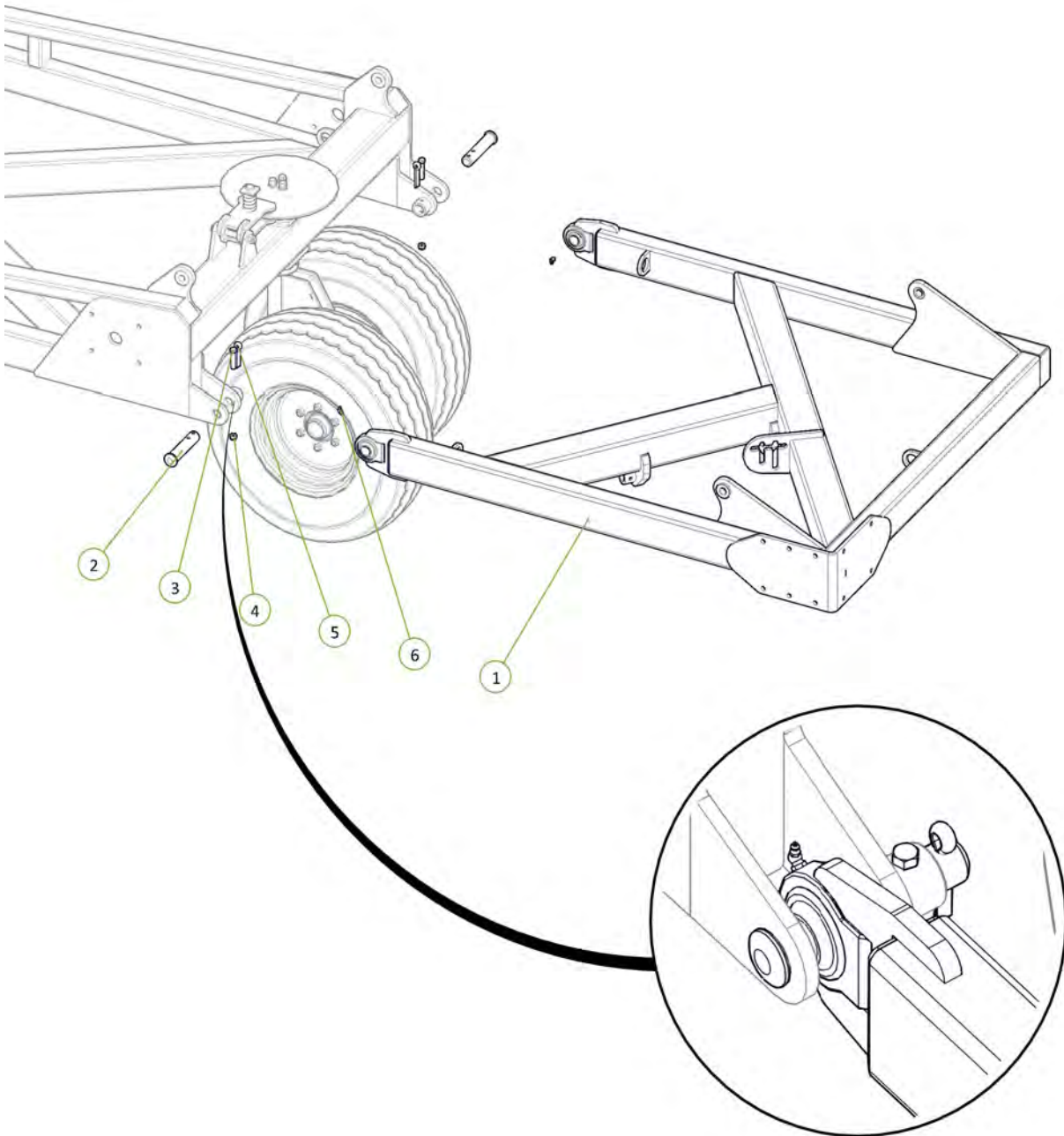


All wheel nuts tightened to 90ft-lb / 125Nm

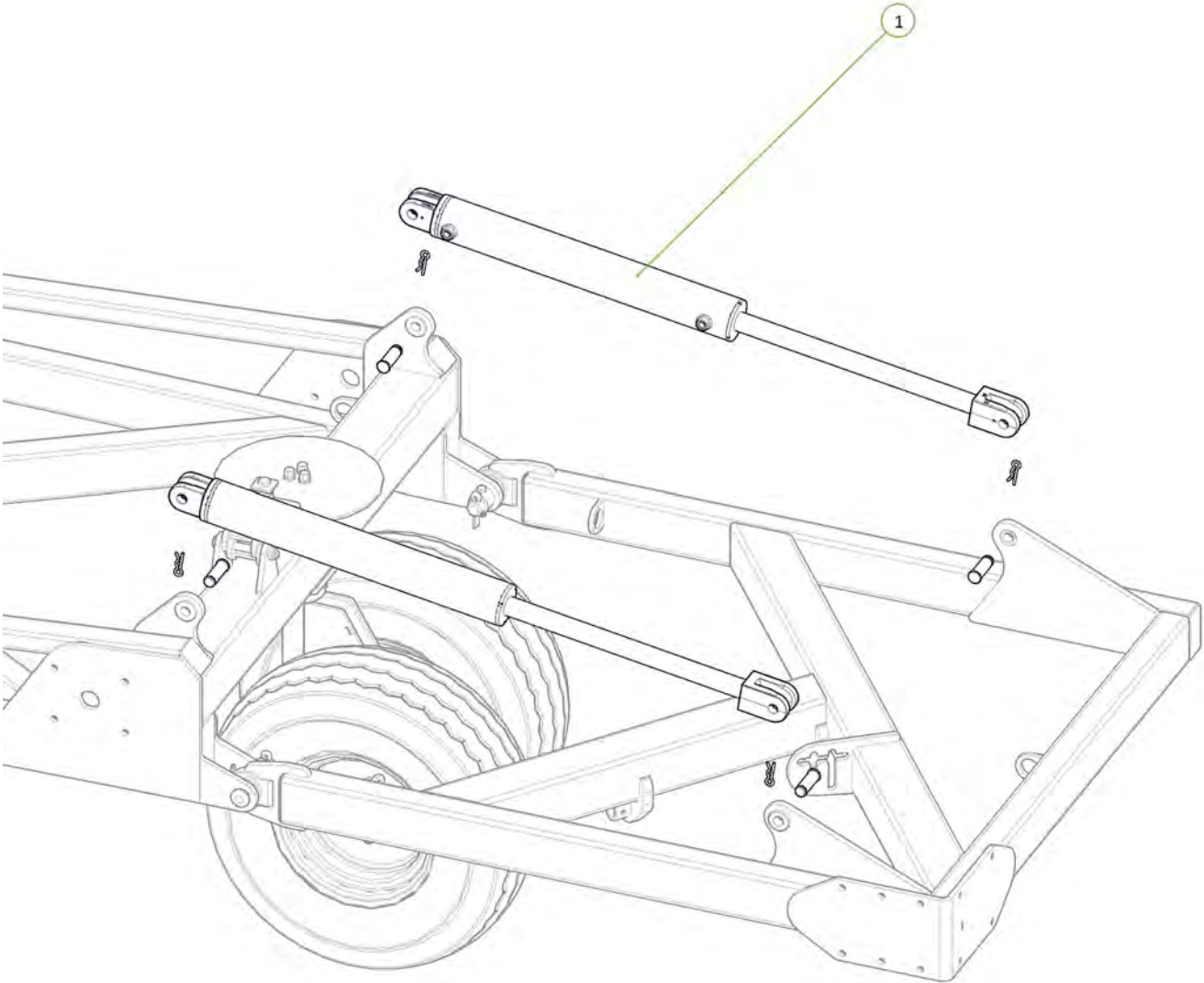


Signed _____ Date ____/____/____
Unit Serial Number: _____

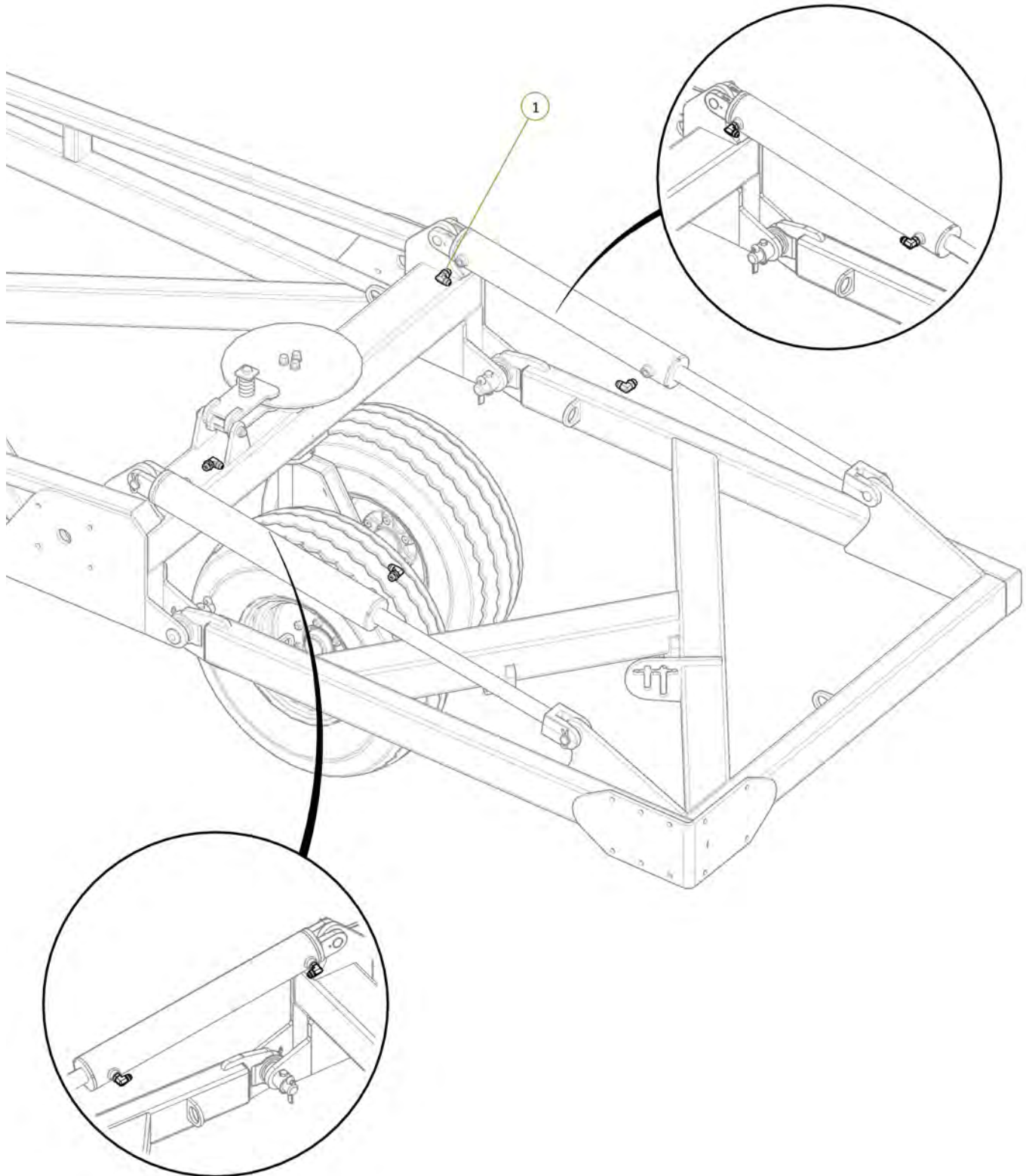
Item No.	Description	Number	Qty
1	Extended Tip Rear Tail	0810-10E	1
2	Tail Frame Pivot pin	0801-10-08-175	2
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	2
4	Nyloc Nut M12	0221-NYL12	2
5	Cotter Pin M13 x 63	0261-PINC1363	2
6	Grease Nipple 1/4" UNF 45°	0181-GN1/445	2



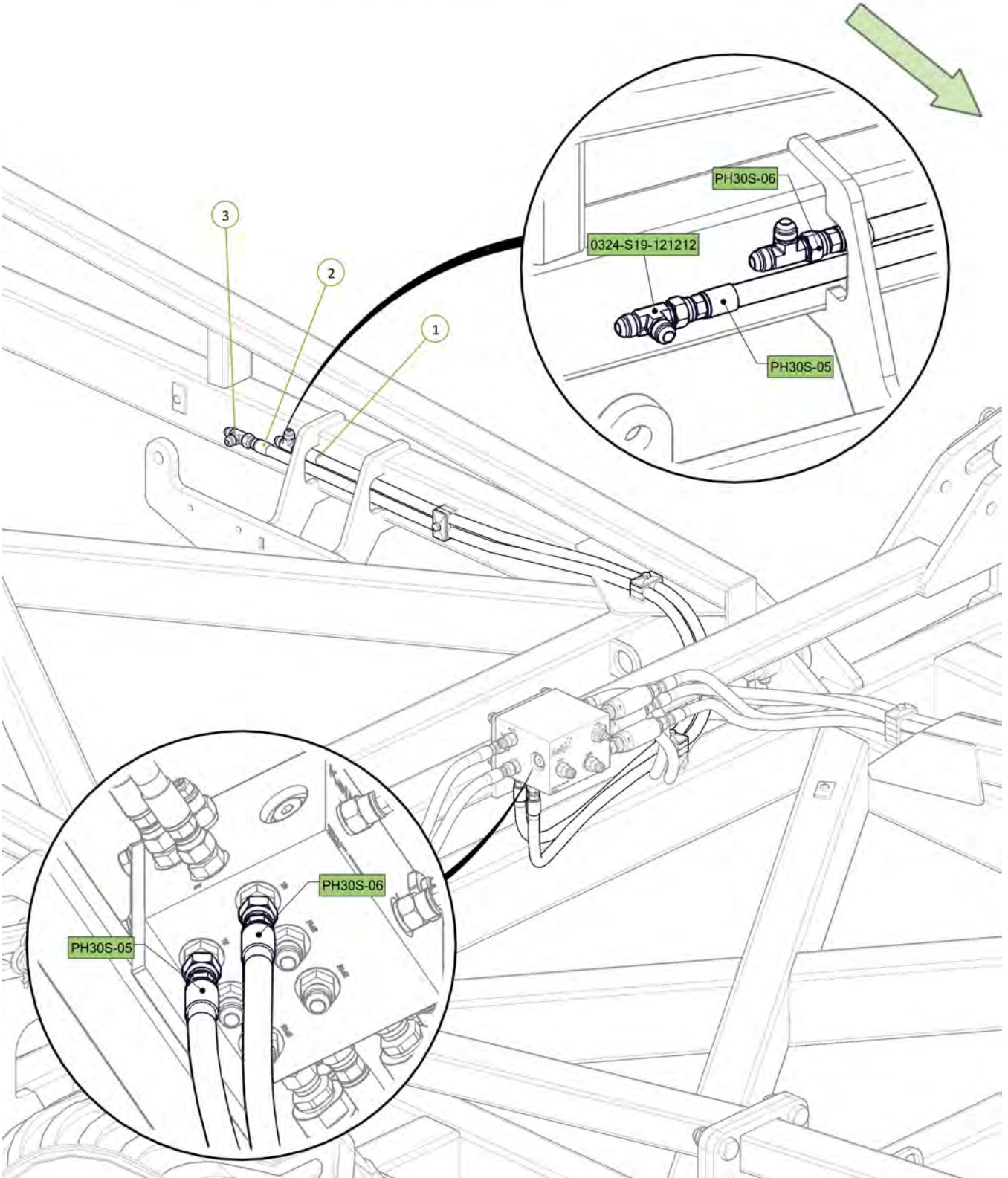
Item No.	Description	Number	Qty
1	3.5" Bore 24" Stroke 1.75" Rod Hydraulic Cylinder	0311-3524SP	2



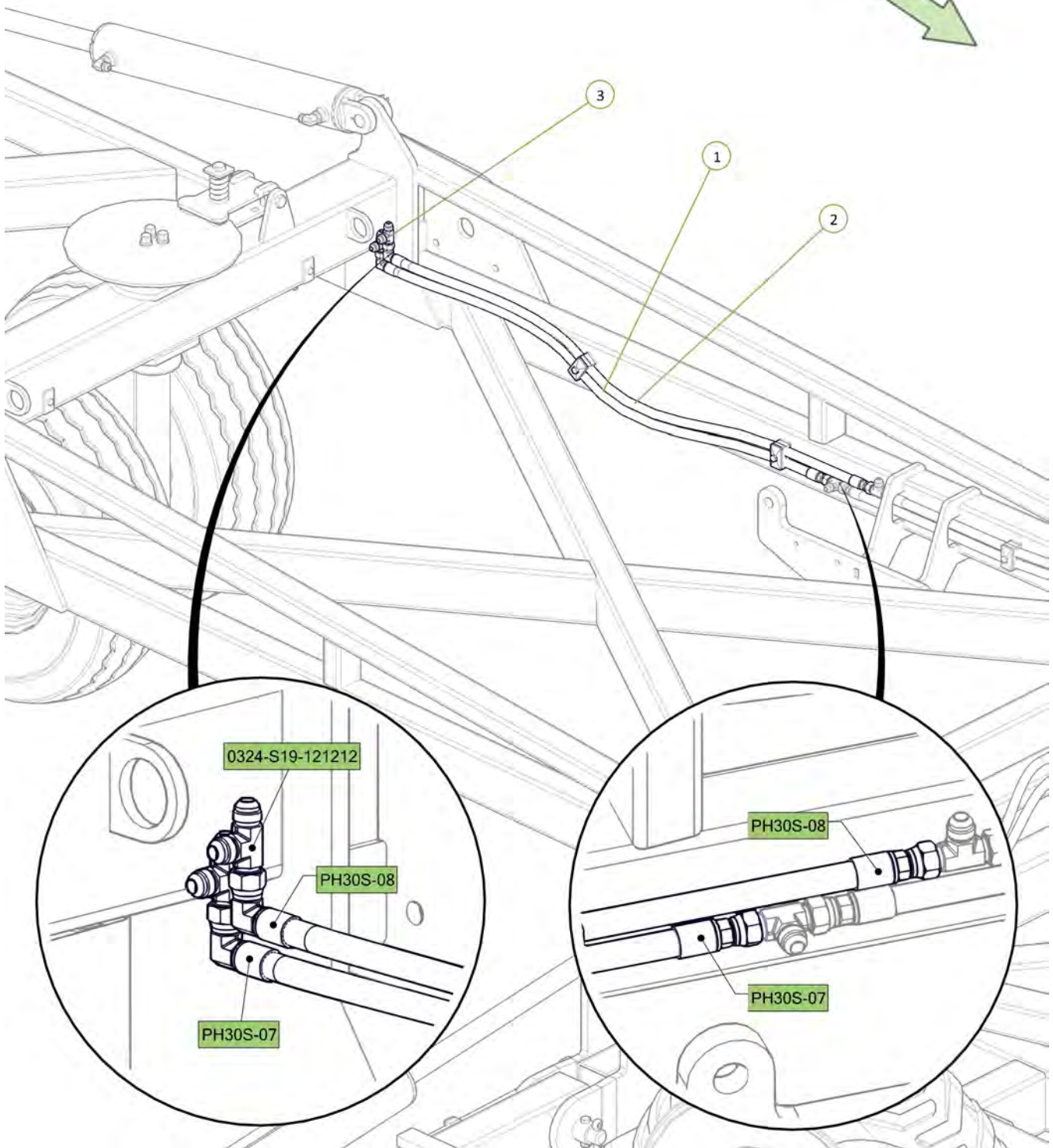
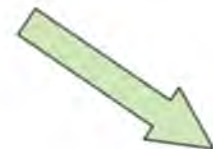
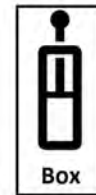
Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-S91-1212	4



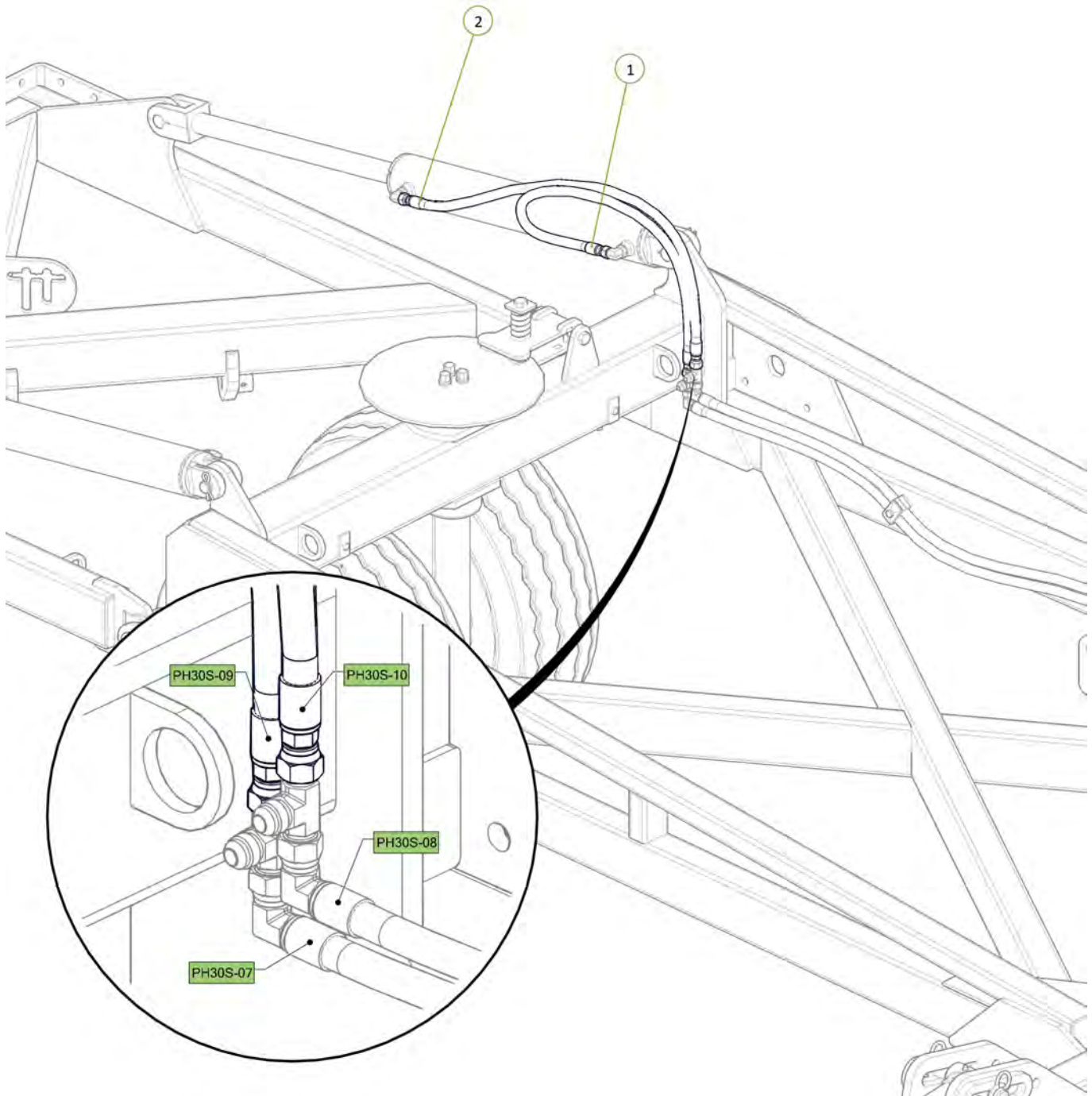
Item No.	Description	Number	Qty
1	Valve TE Port to Tail Extend Tee	PH30S-05	1
2	Valve TR Port to Tail Retract Tee	PH30S-06	1
3	3/4" JIC Male Tee 3/4" JIC Male Tee 3/4" JIC Male Tee	0324-S19-121212	2



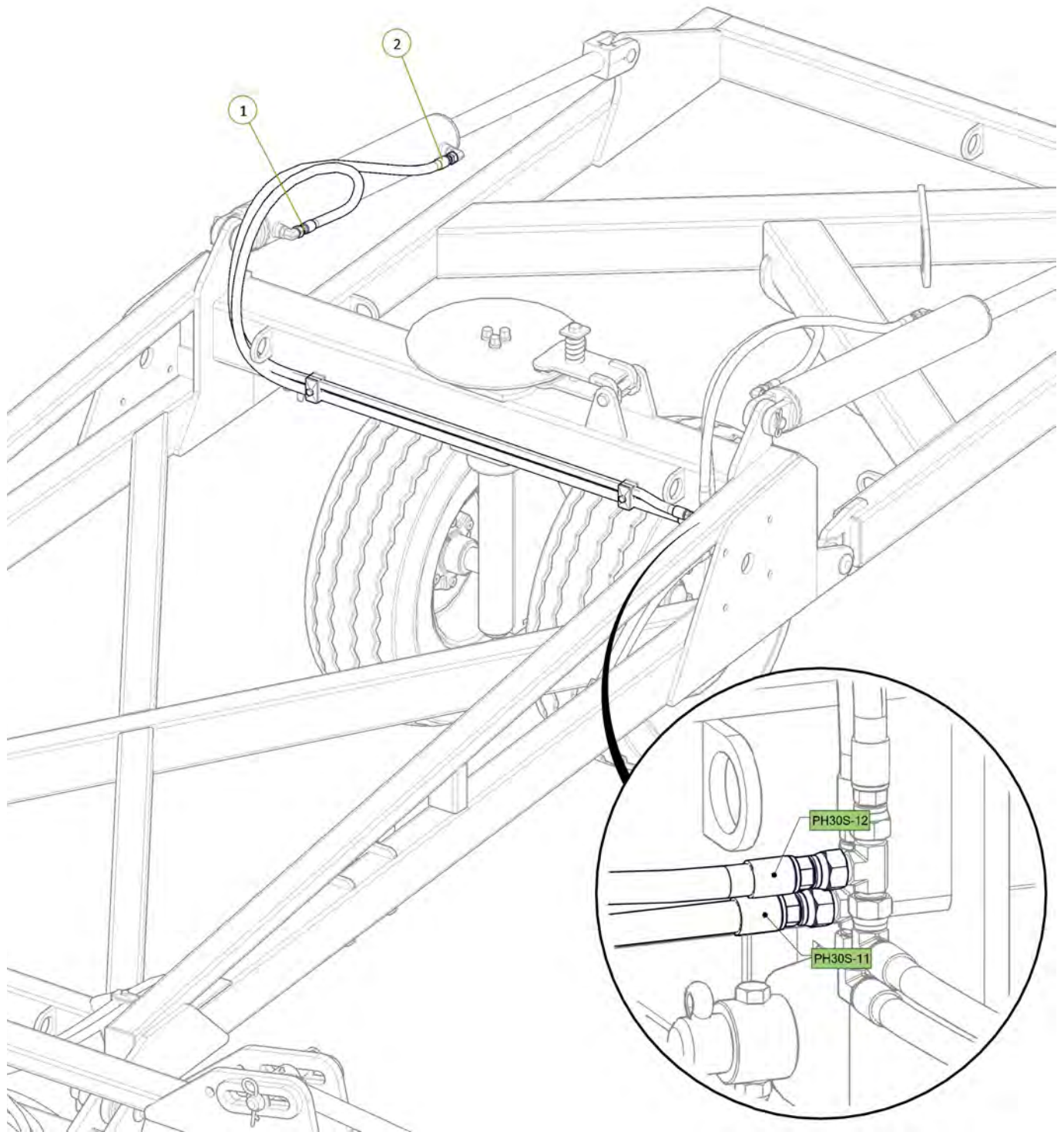
Item No.	Description	Number	Qty
1	Tail Extend Tee to Rear Extend Tee	PH30S-07	1
2	Tail Retract Tee to Rear Retract Tee	PH30S-08	1
3	3/4" JIC Male Tee 3/4" JIC Male Tee 3/4" JIC Male Tee	0324-S19-121212	2

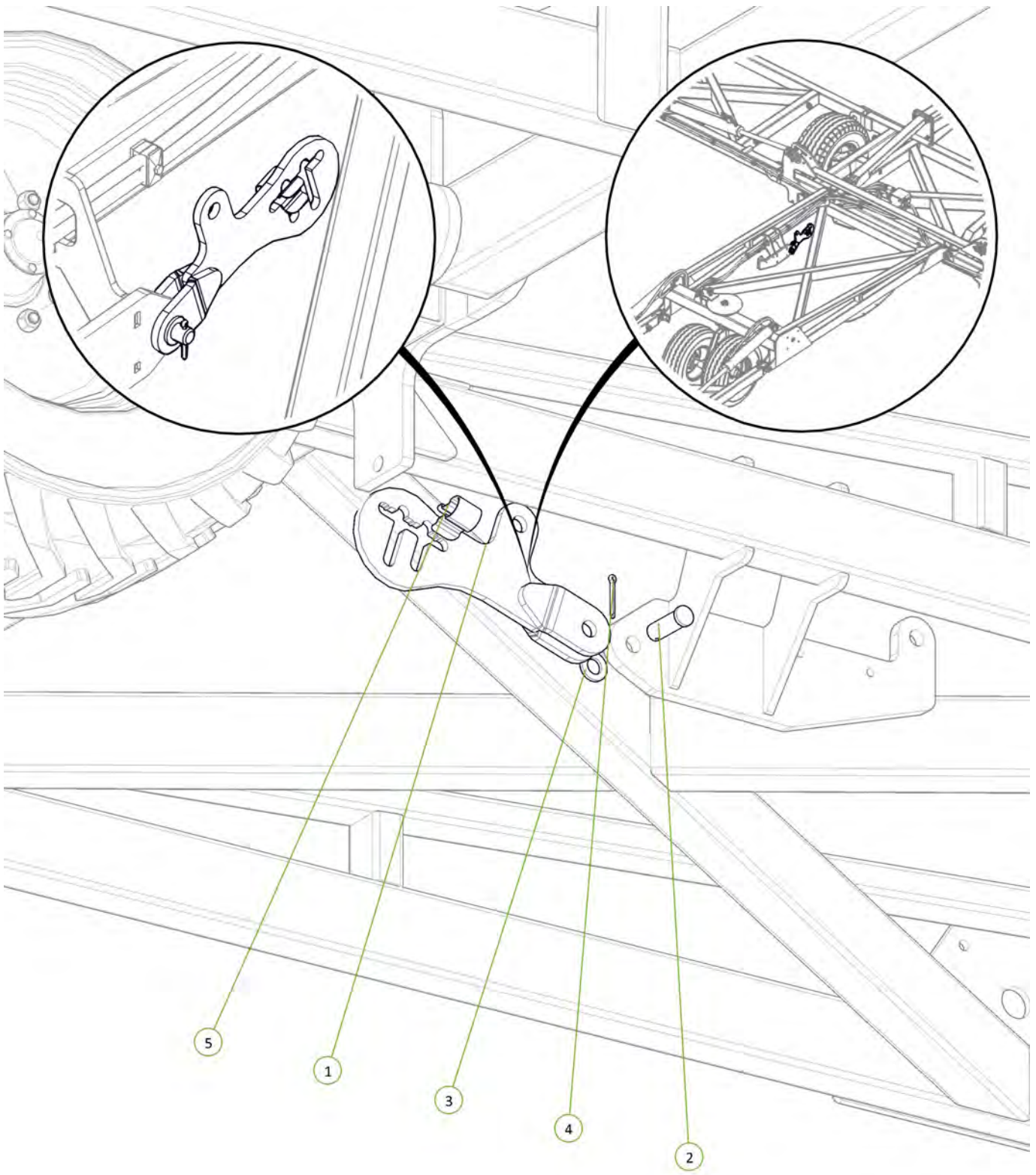


Item No.	Description	Number	Qty
1	Rear Extend Tee to Rear Port LH Tail Cylinder	PH30S-09	1
2	Rear Retract Tee to Rod Port Tail LH Cylinder	PH30S-10	1



Item No.	Description	Number	Qty
1	Rear Extend Tee to Rear Port RH Tail Cylinder	PH30S-11	1
2	Rear Retract Tee to Rod Port RH Tail Cylinder	PH30S-12	1

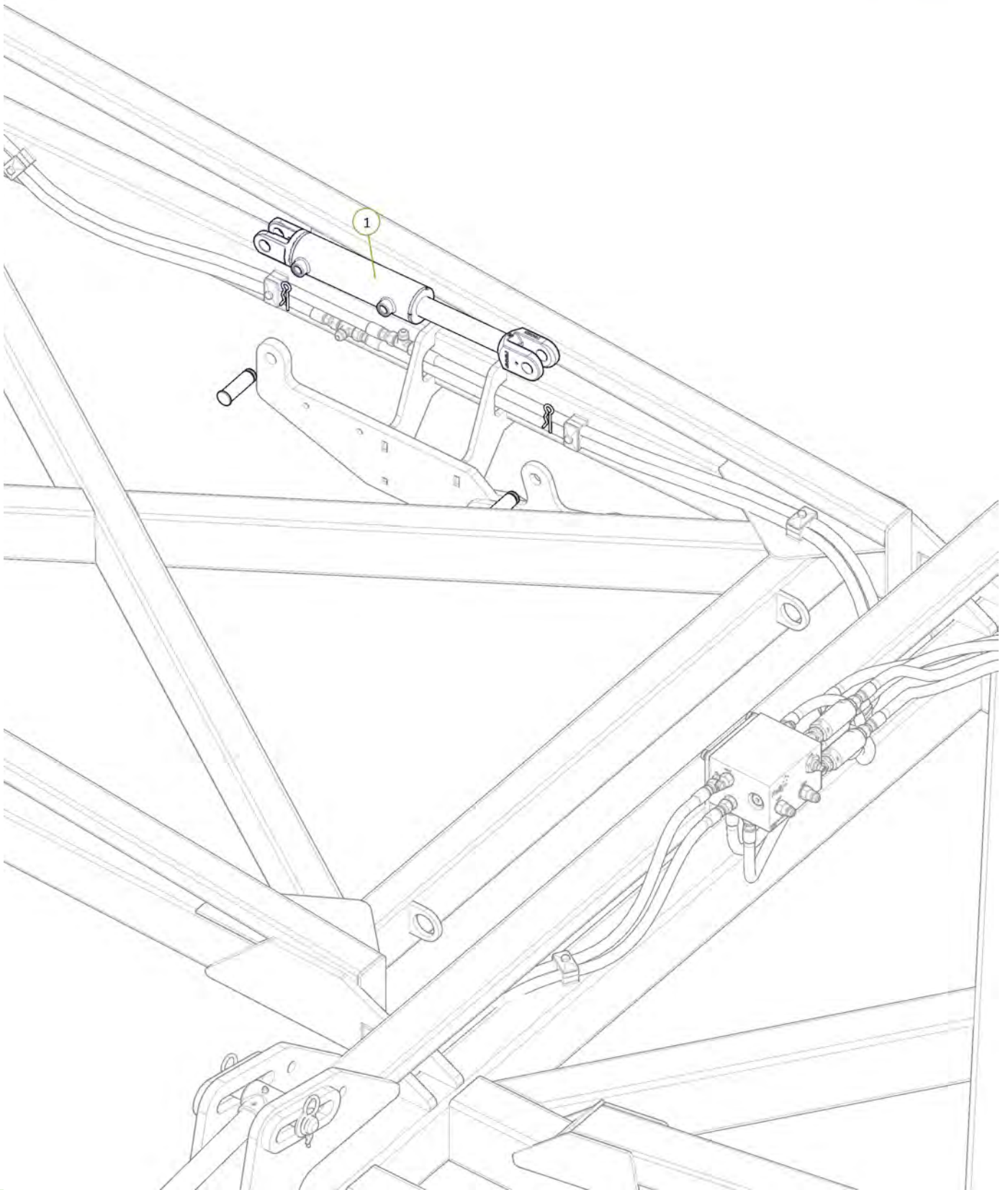




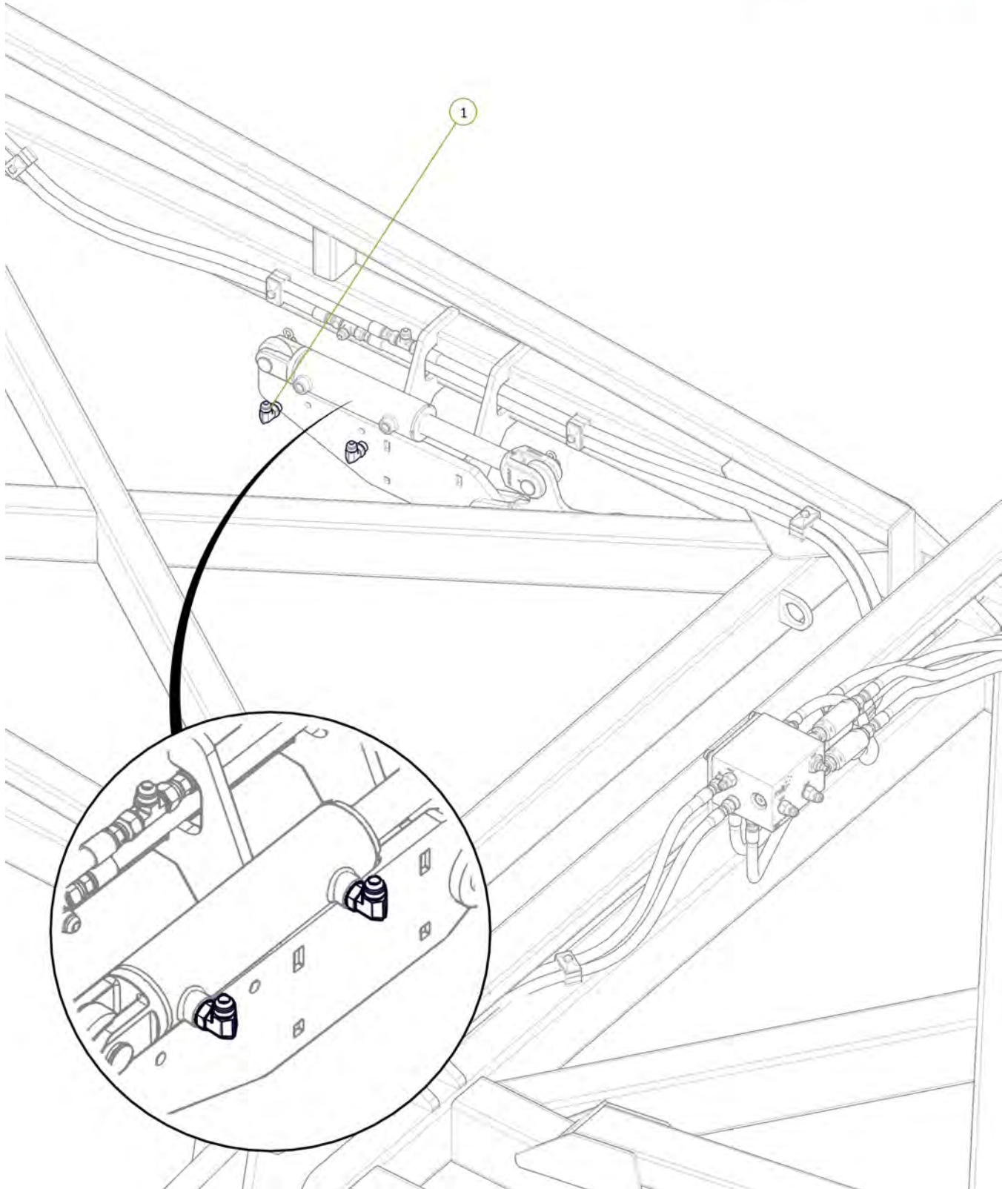
Item No.	Description	Number	Qty
1	30' Short Module Lift Arm	0810-107	1
2	Clevis Pin 25mm x 75mm	0801-KE0307-1	1
3	Washer Flat M24	0231-F24	1
4	Cotter Pin M5 x 50	0261-PINC550	1
5	Height Adjustor Retaining Clip	0801-KE014	1



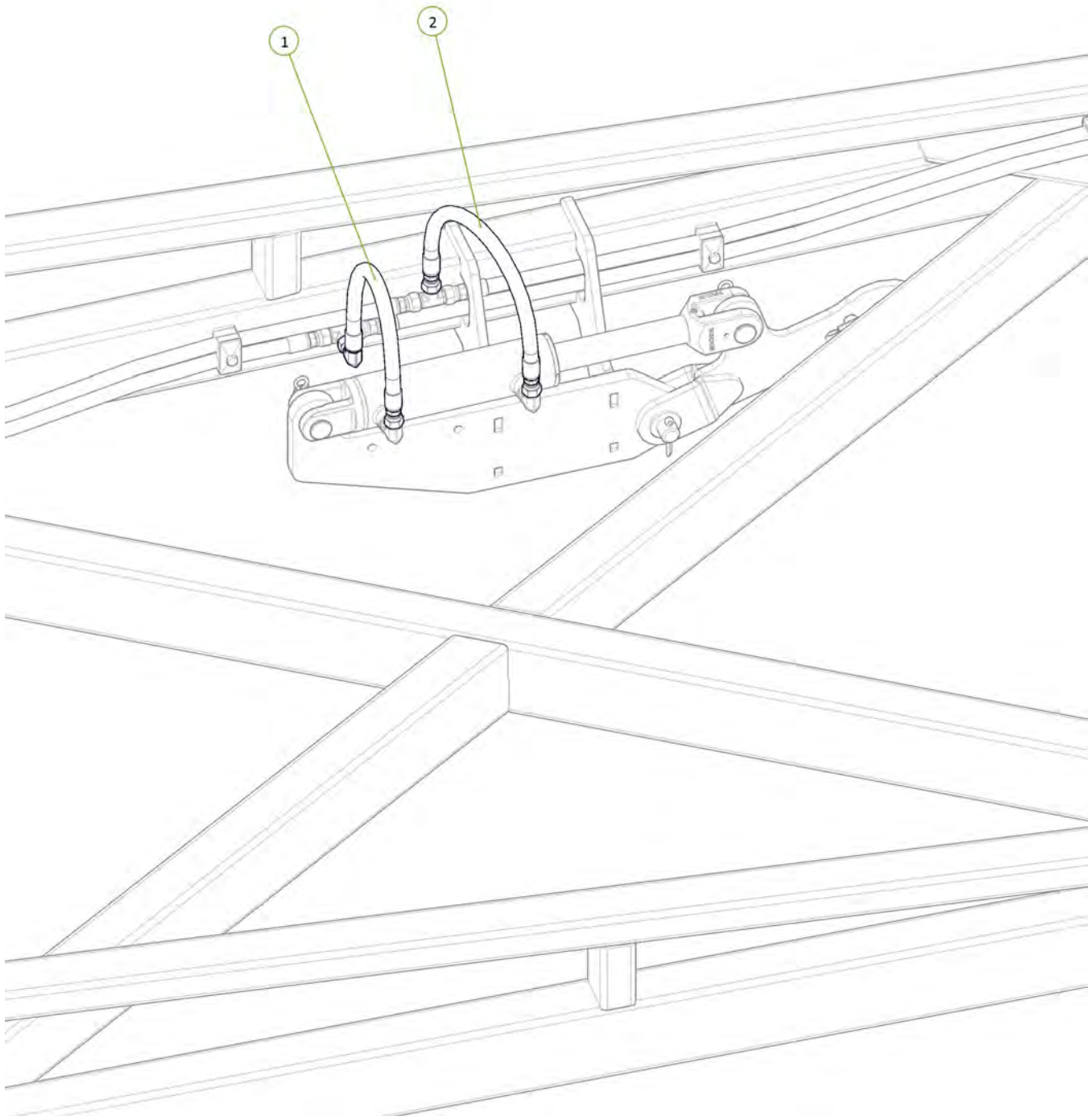
Item No.	Description	Number	Qty
1	2.5" Bore x 6" Stroke 1.5" Rod Side Port Cylinder	0311-256SP	1



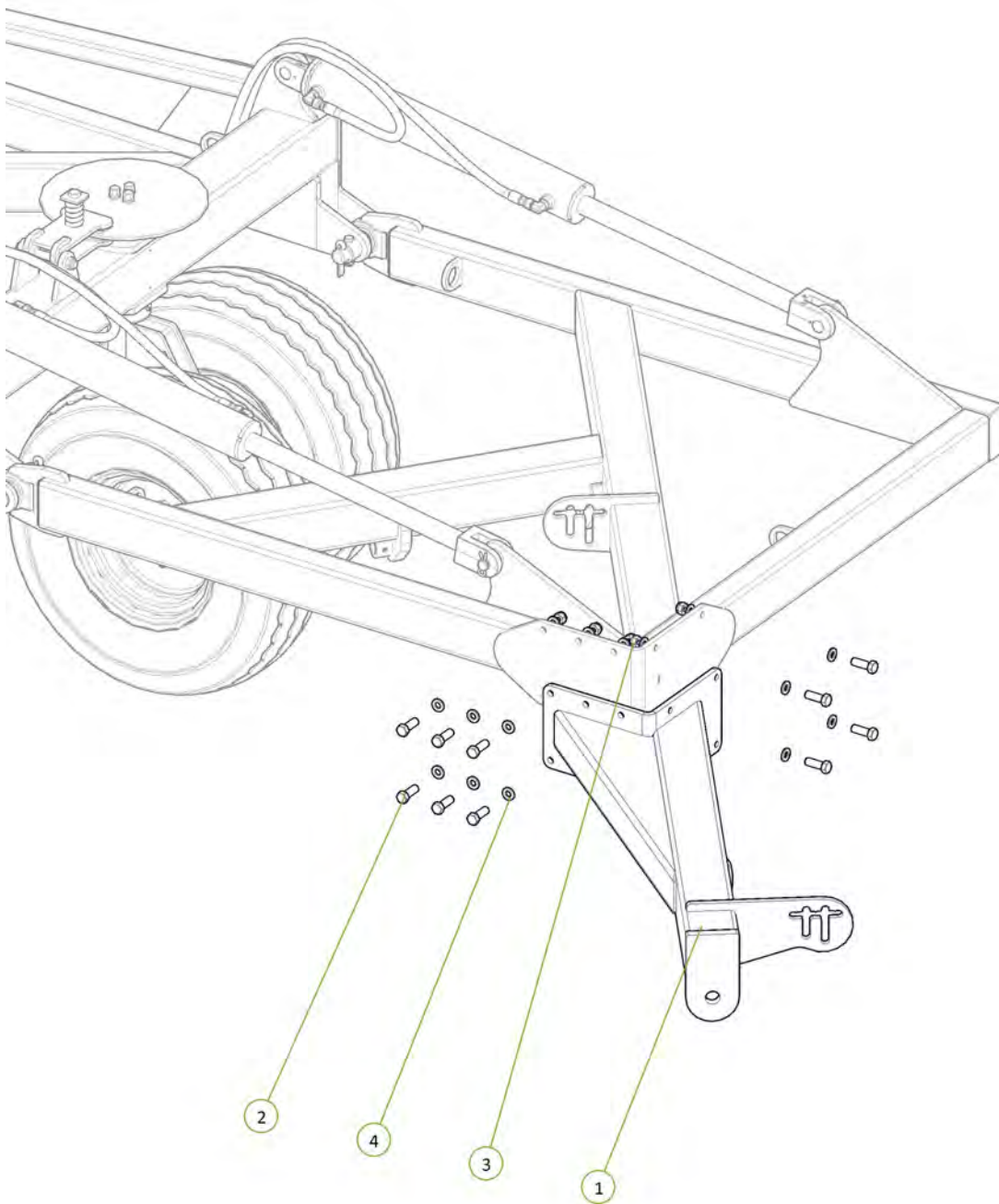
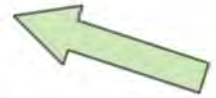
Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-591-1212	2



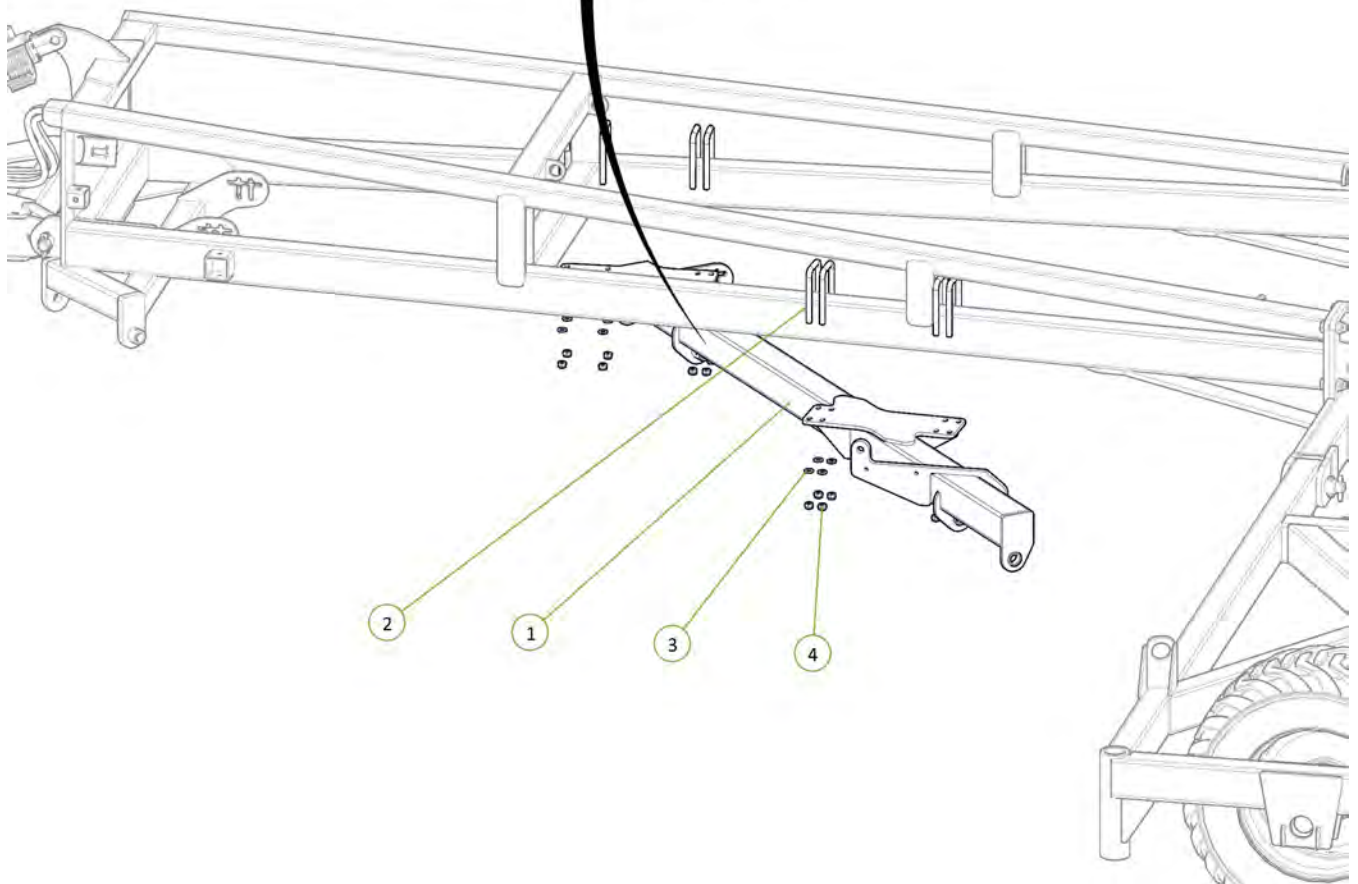
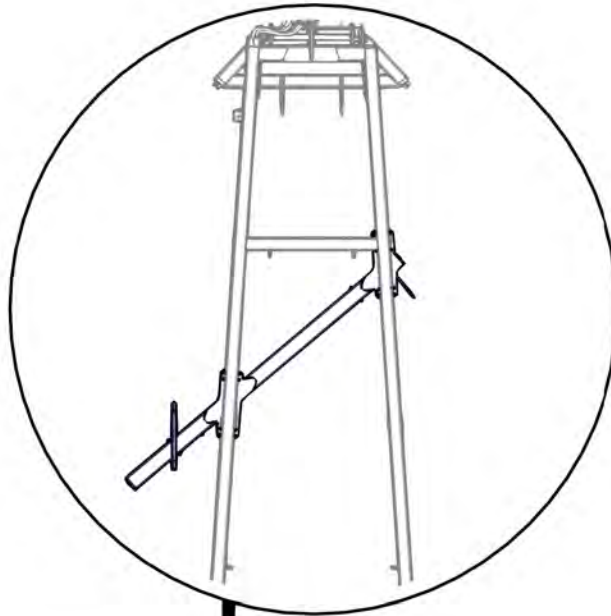
Item No.	Description	Number	Qty
1	Tail Extend Tee to Rear Port Left Rear Module Cylinder	PH30S-13	1
2	Tail Retract Tee to Rod Port Left Rear Module Cylinder	PH30S-14	1



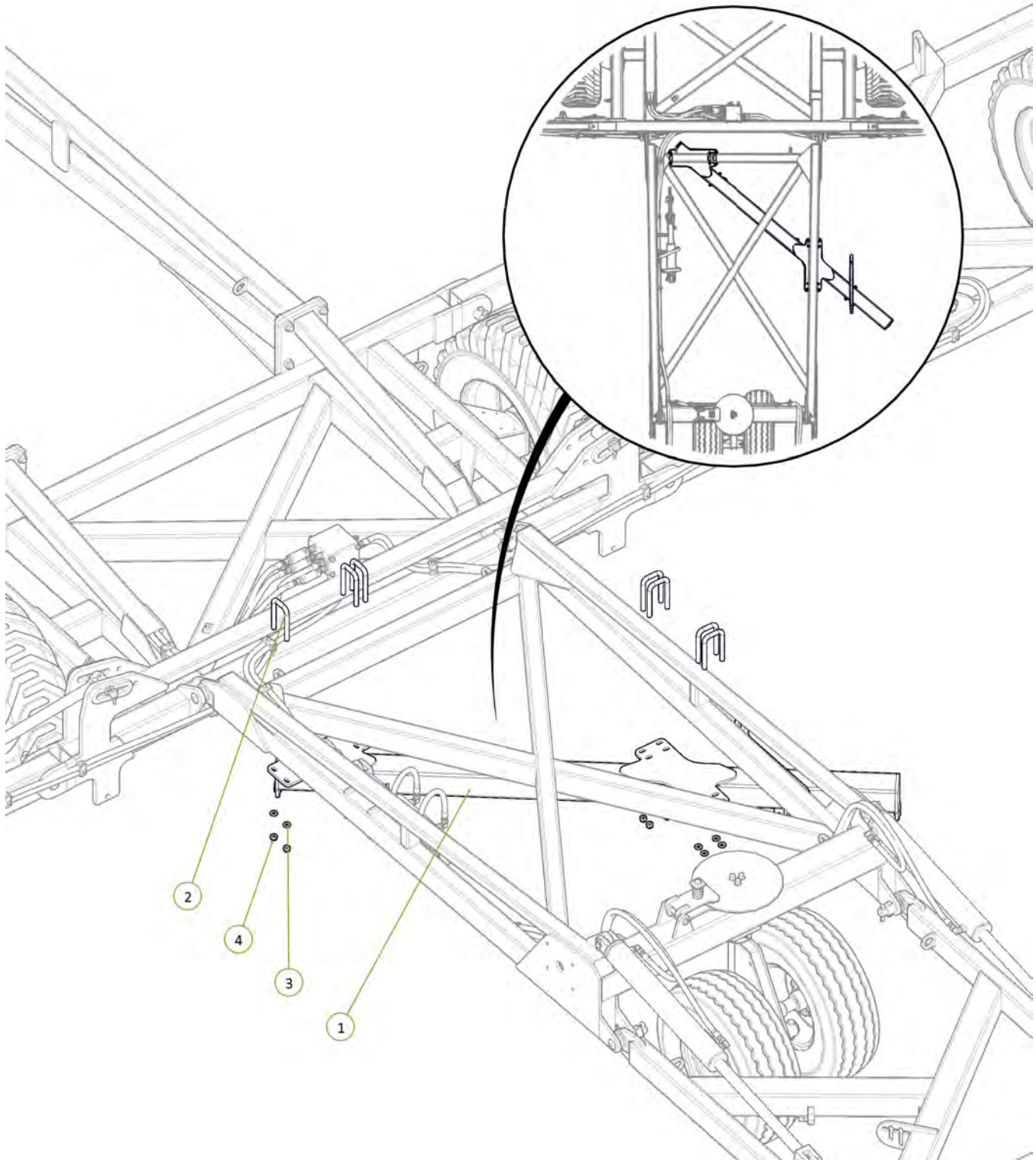
Item No.	Description	Number	Qty
1	Extended Tip Tail Bolt On Tip	0810-10ET	1
2	M16 x 50 grade 8.8 zp Bolt	0211-1650	10
3	Nyloc Nut M16	0221-NYL16	10
4	Washer Flat M16	0231-F16	20



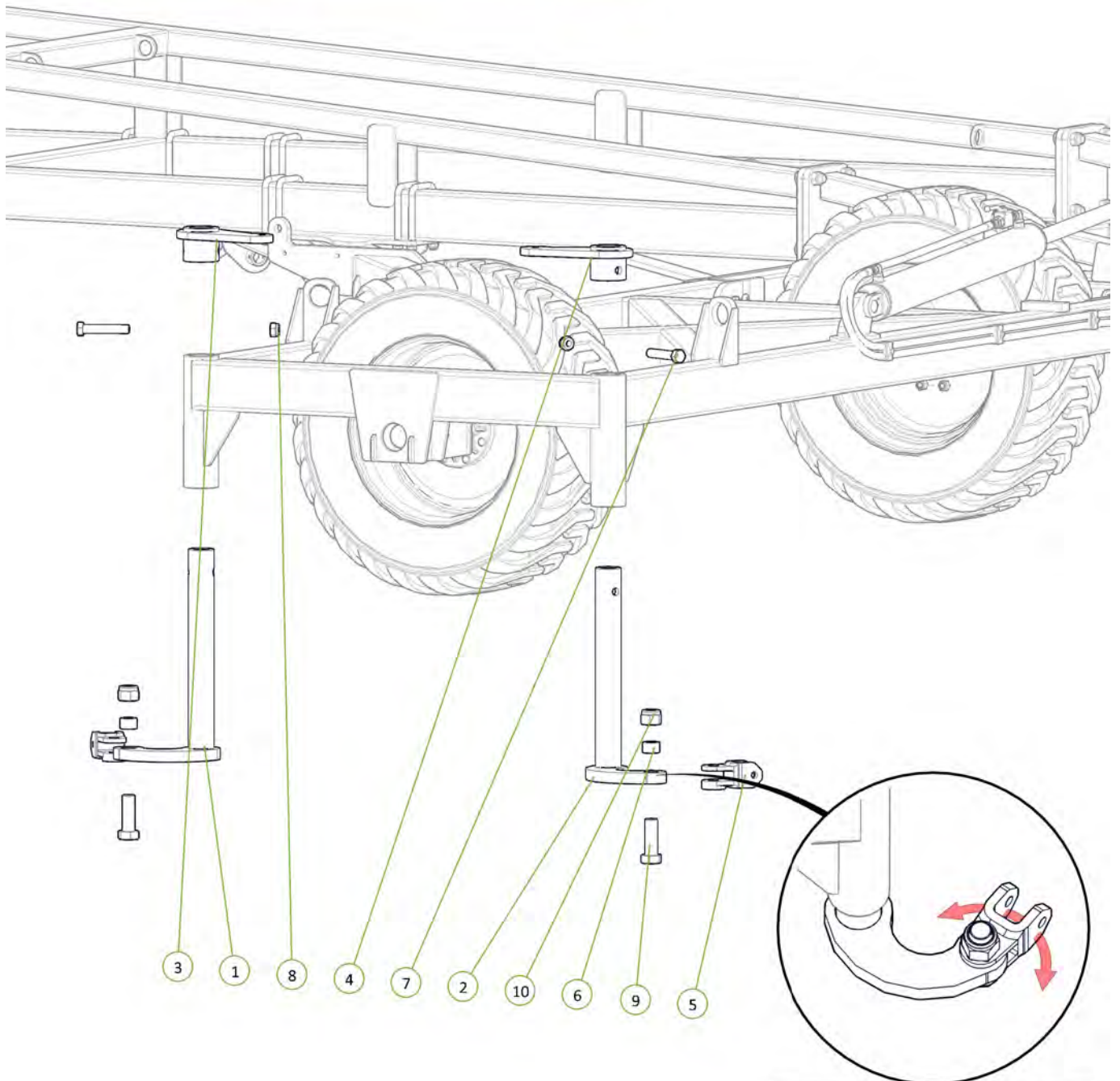
Item No.	Description	Number	Qty
1	30' Front Module	0810-28-30	1
2	U-Bolt M16 x 190 Deep x 106 Wide	0271-16190106U	8
3	Washer Flat M16	0231-F16	16
4	Nyloc Nut M16	0221-NYL16	16



Item No.	Description	Number	Qty
1	30' Rear Module	0810-29-30	1
2	U-Bolt M16 x 167 Deep x 79 Wide	0271-1616779U	7
3	Washer Flat M16	0231-F16	14
4	Nyloc Nut M16	0221-NYL16	14

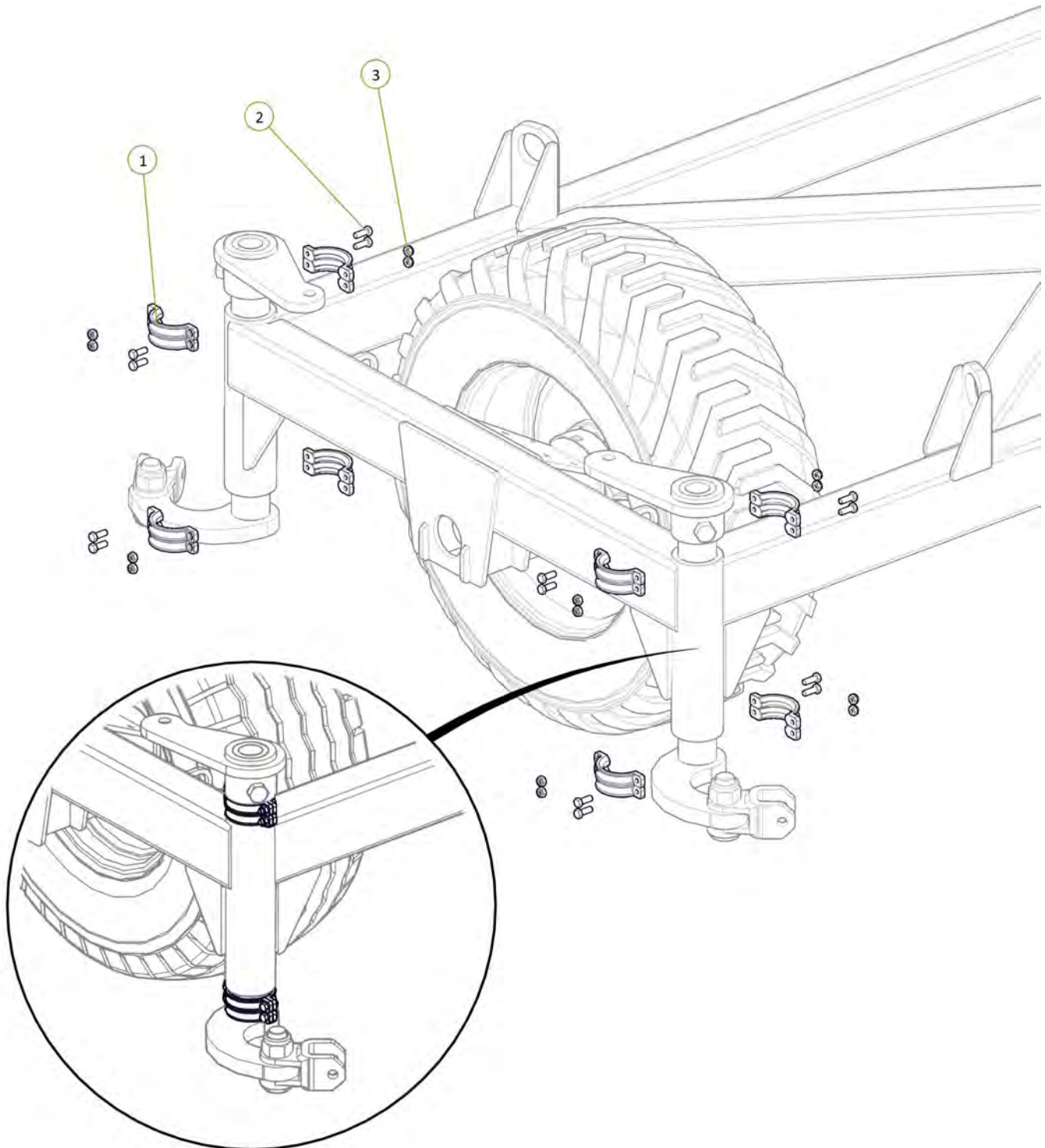


Item No.	Description	Number	Qty
1	LH Dropleg No Clevis	0810-24F	1
2	RH Dropleg No Clevis	0810-25F	1
3	LH Chain Adjusting Lug	0810-26	1
4	RH Chain Adjusting Lug	0810-27	1
5	Forged Clevis 21mm Bolt Hole	0801-FC21	2
6	Stainless Steel Wear Bush	1501-365033-SS	2
7	M24 x 140 grade 8.8 zp Bolt	0211-24140	2
8	Nyloc Nut M24	0221-NYL24	2
9	M36 x 105 grade 8.8 zp Bolt	0211-36105	2
10	Nyloc Nut M36	0221-NYL36	2

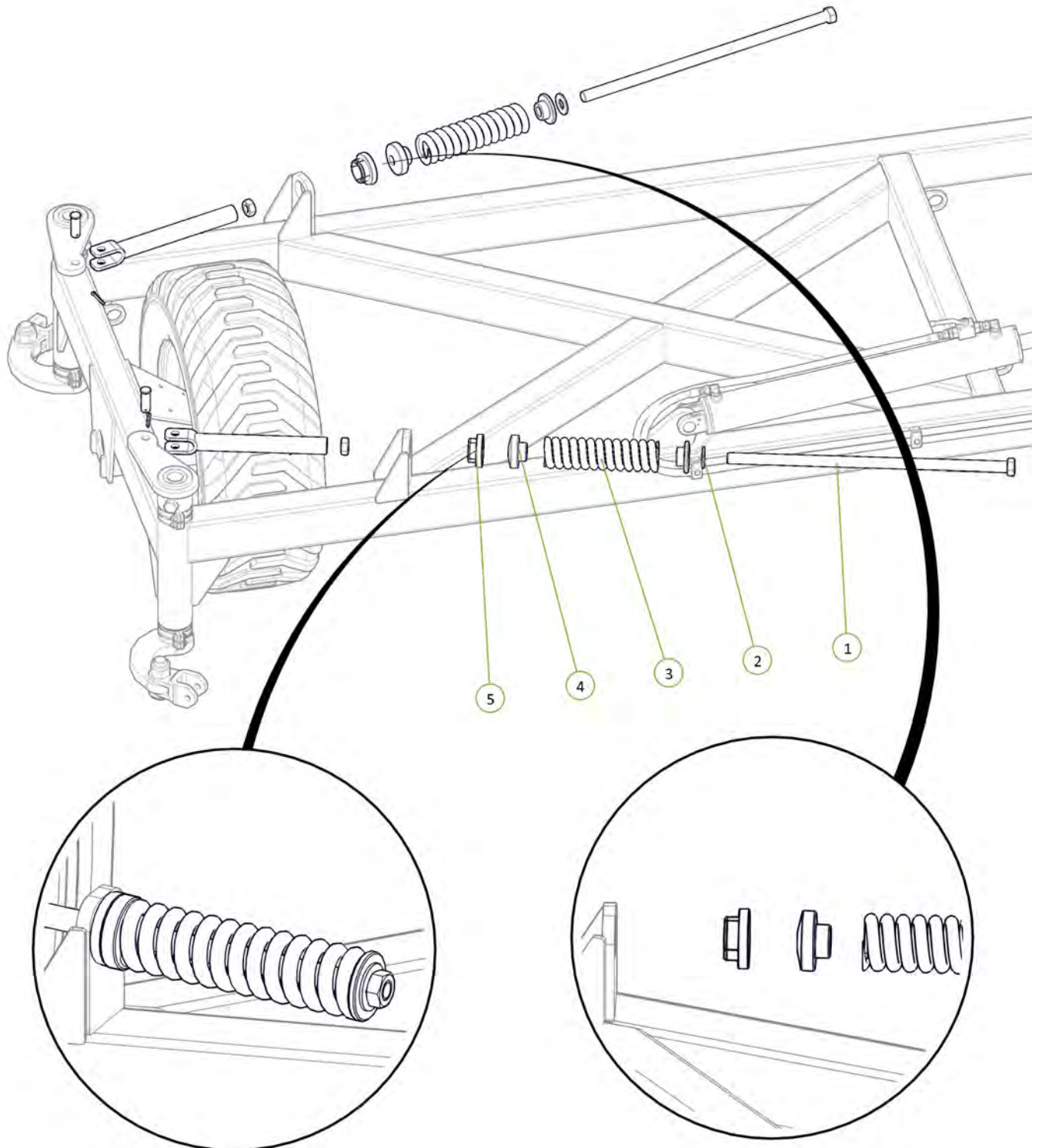


Ensure ALL clevis's can pivot after installation

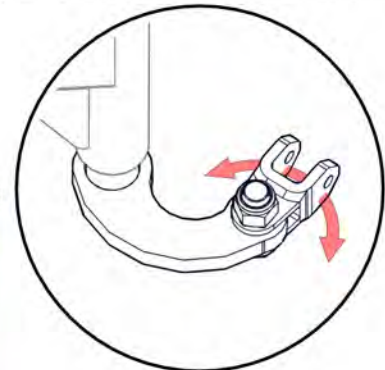
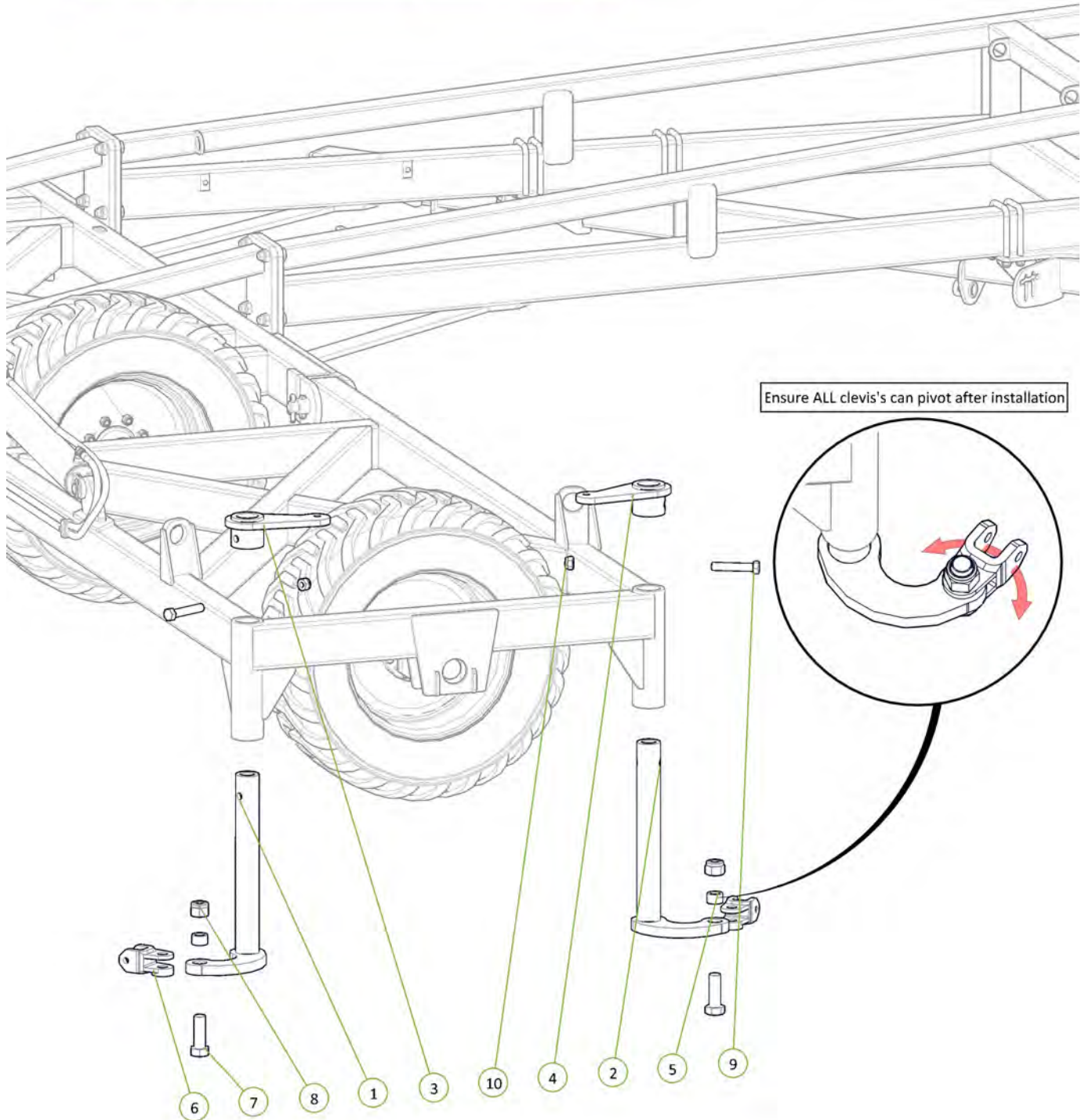
Item No.	Description	Number	Qty
1	Cast 25mm Spacing	0801-CS25	16
2	M10 x 30 grade 8.8 ZP Bolt	0211-1030	16
3	Nyloc Nut M10	0221-NYL10	16



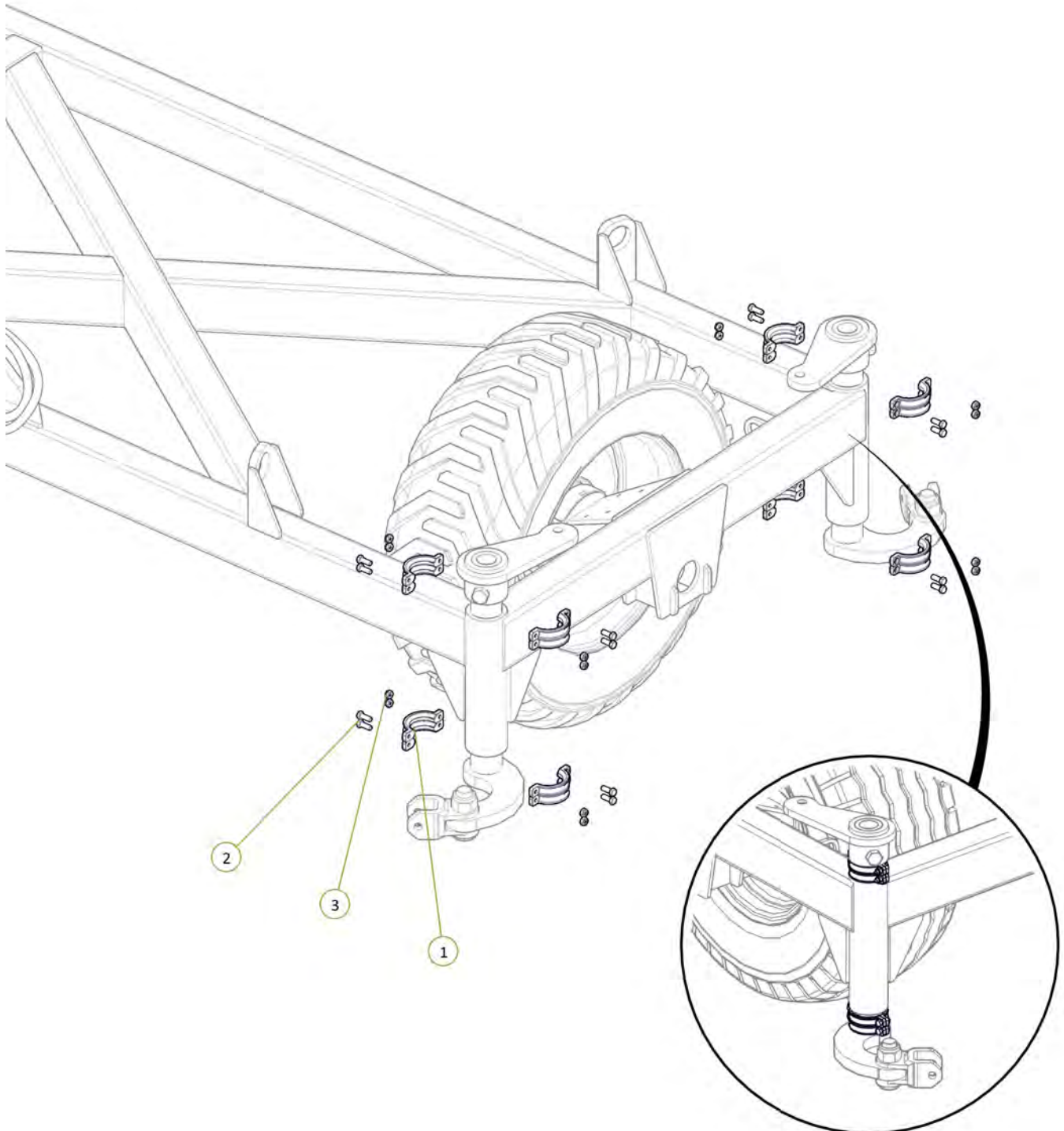
Item No.	Description	Number	Qty
1	Chain Tension Adjustor	0802-PCHTA	2
2	Washer High Tensile 1 1/4"	0232-HT11-4	2
3	20mm Compression Spring	0801-XK9261S	2
4	Tensioner Cup - Male	0801-KE0805-3	2
5	Female Spring Locator	0801-KE0805-4	2



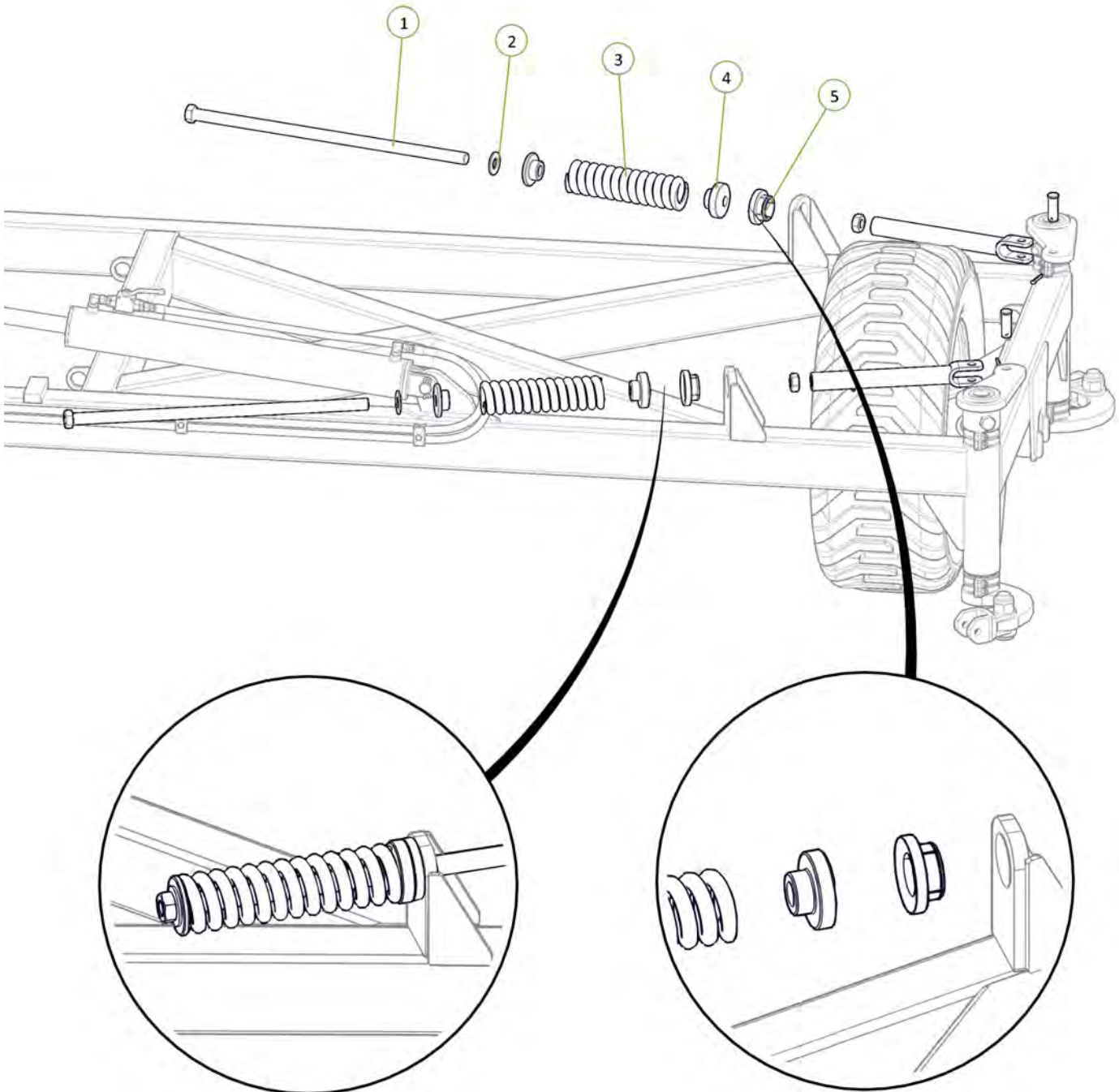
Item No.	Description	Number	Qty
1	LH Dropleg No Clevis	0810-24F	1
2	RH Dropleg No Clevis	0810-25F	1
3	LH Chain Adjusting Lug	0810-26	1
4	RH Chain Adjusting Lug	0810-27	1
5	Stainless Steel Wear Bush	1501-365033-SS	2
6	Forged Clevis 21mm Bolt Hole	0801-FC21	2
7	M36 x 105 grade 8.8 zp Bolt	0211-36105	2
8	Nyloc Nut M36	0221-NYL36	2
9	M24 x 140 grade 8.8 zp Bolt	0211-24140	2
10	Nyloc Nut M24	0221-NYL24	2

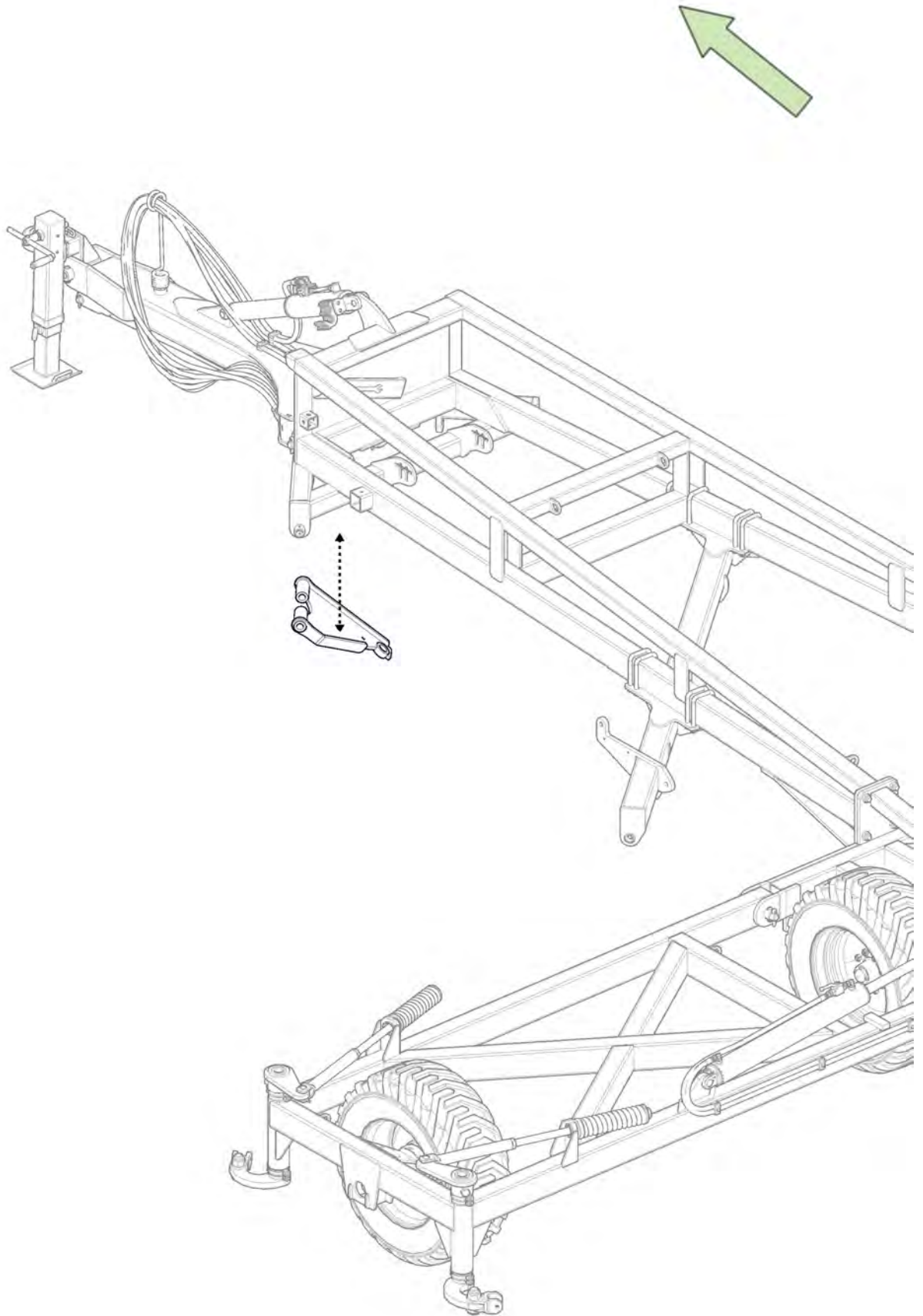


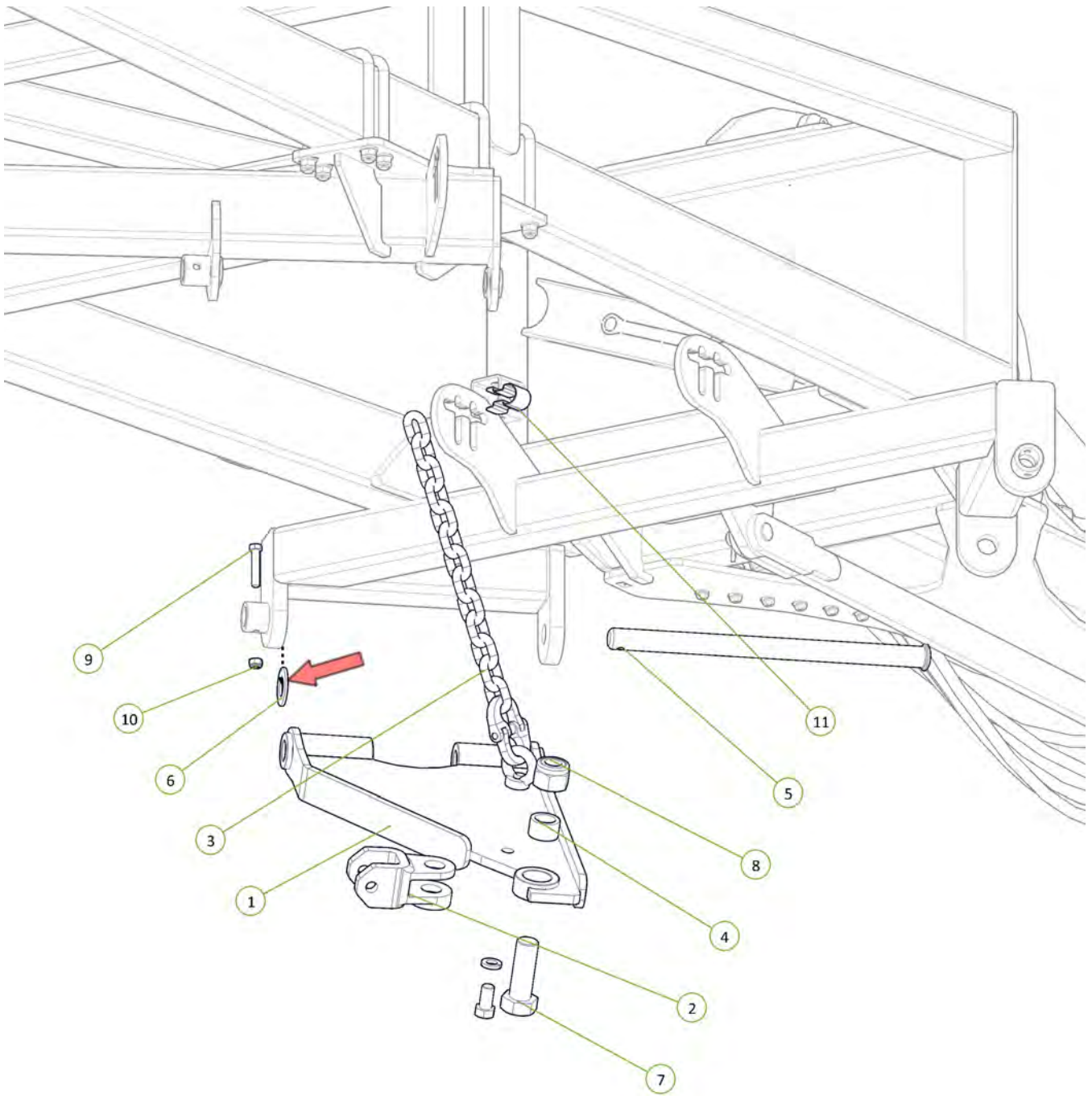
Item No.	Description	Number	Qty
1	Cast 25mm Spacing	0801-CS25	16
2	M10 x 30 grade 8.8 ZP Bolt	0211-1030	16
3	Nyloc Nut M10	0221-NYL10	16



Item No.	Description	Number	Qty
1	Chain Tension Adjustor	0802-PCHTA	2
2	Washer High Tensile 1 1/4"	0232-HT11-4	2
3	20mm Compression Spring	0801-XK9261S	2
4	Tensioner Cup - Male	0801-KE0805-3	2
5	Female Spring Locator	0801-KE0805-4	2

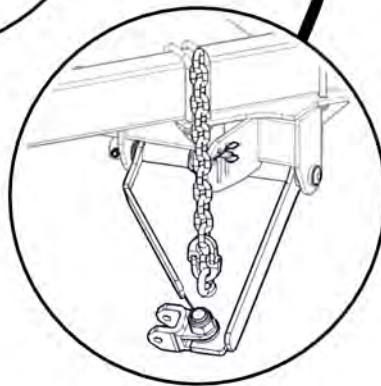
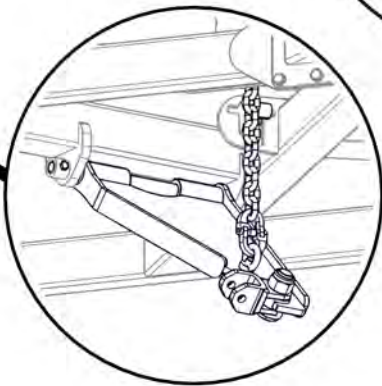
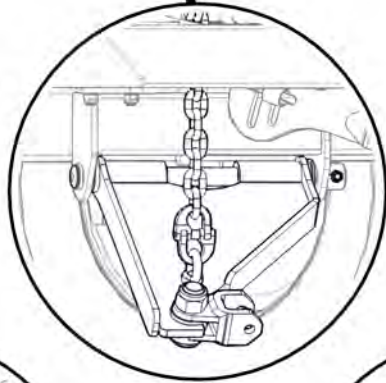
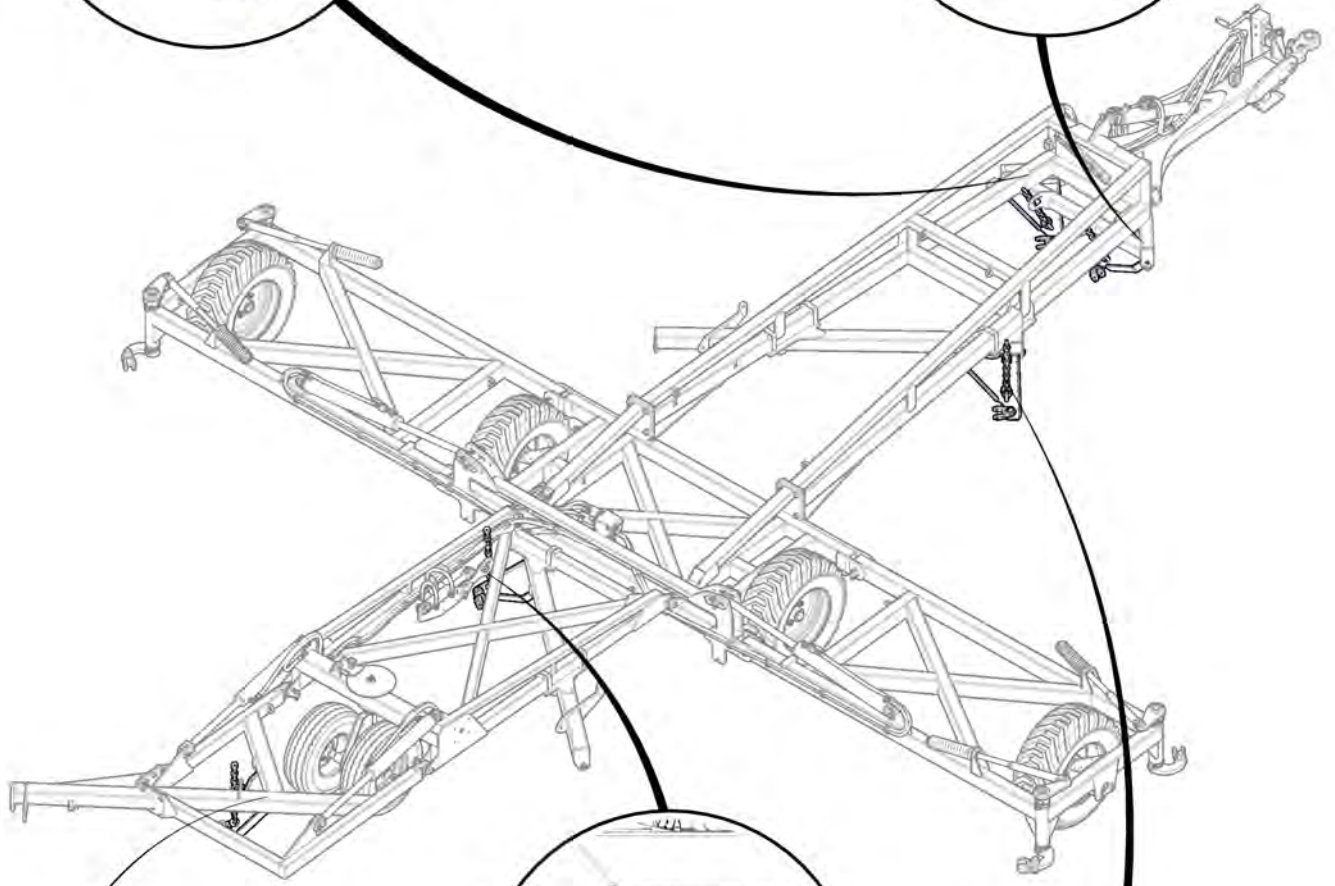
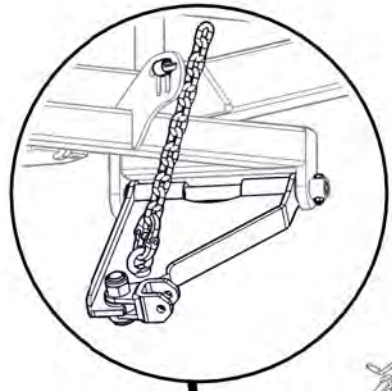
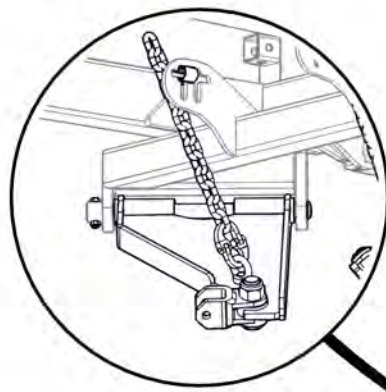




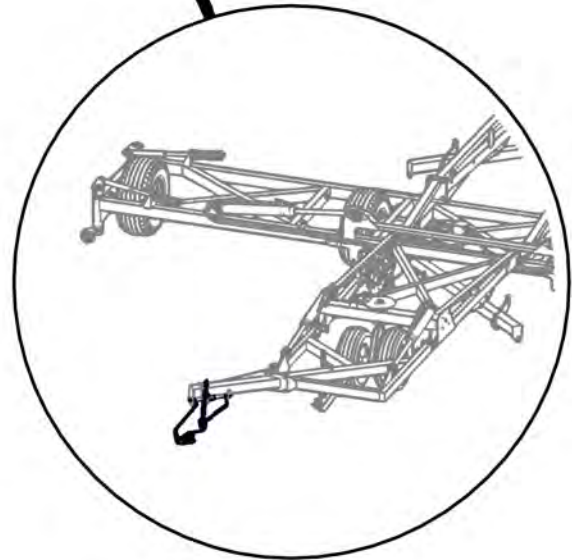
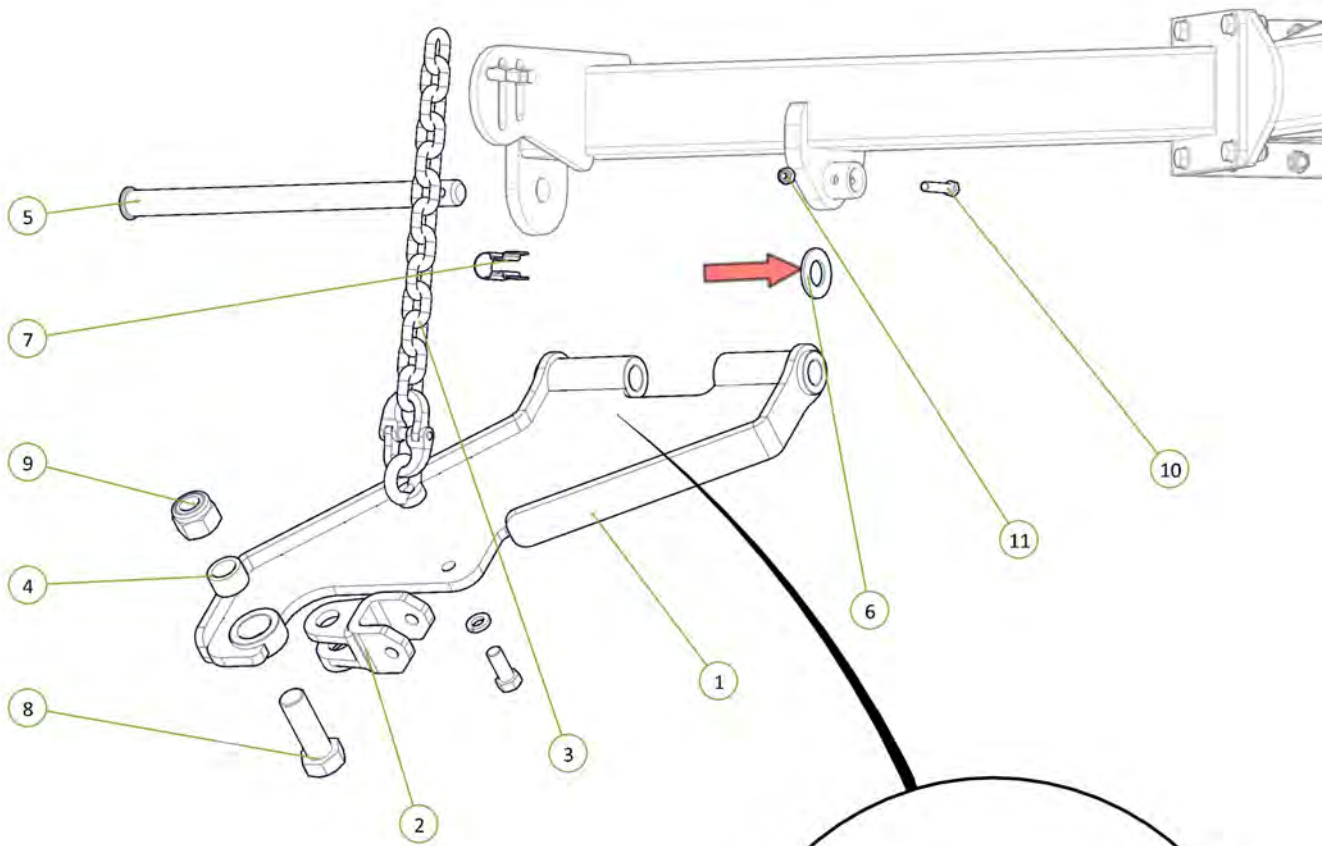


Item No.	Description	Number	Qty
1	Standard Chain Mount Plate	0810-20	1
2	Forged Clevis 21mm Bolt Hole	0801-FC21	1
3	Height Adjusting Chain Assembly 13 Link	0801-20MCA	1
4	Stainless Steel Wear Bush	1501-365033-SS	1
5	Chain Mount Pivot Pin	0801-10-51	1
6	Washer High Tensile 1 1/4"	0232-HT11-4	1
7	M36 x 105 grade 8.8 zp Bolt	0211-36105	1
8	Nyloc Nut M36	0221-NYL36	1
9	M12 x 65 grade 8.8 ZP Bolt	0211-1265	1
10	Nyloc Nut M12	0221-NYL12	1
11	Height Adjustor Retaining Clip	0801-KE014	1

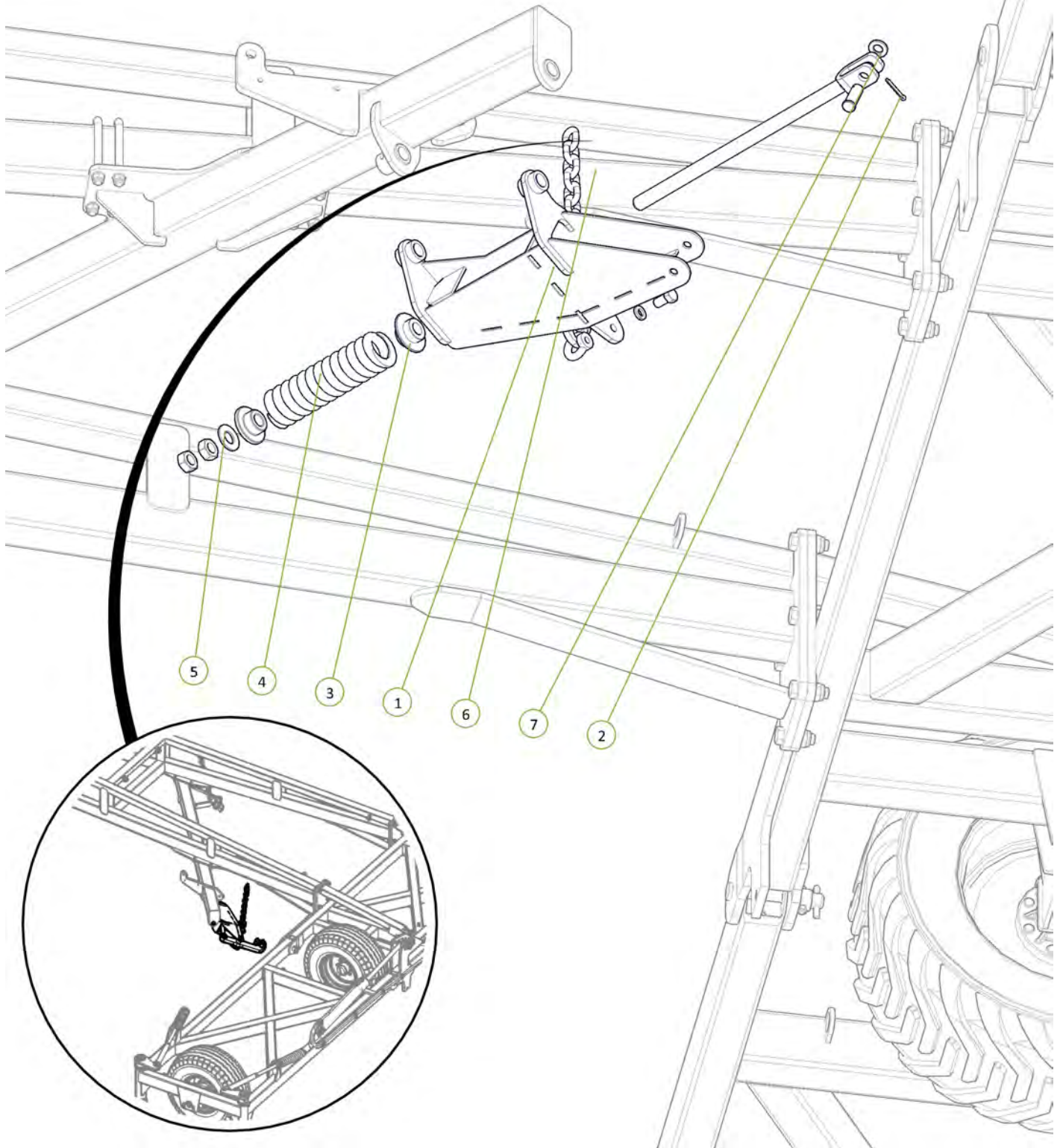


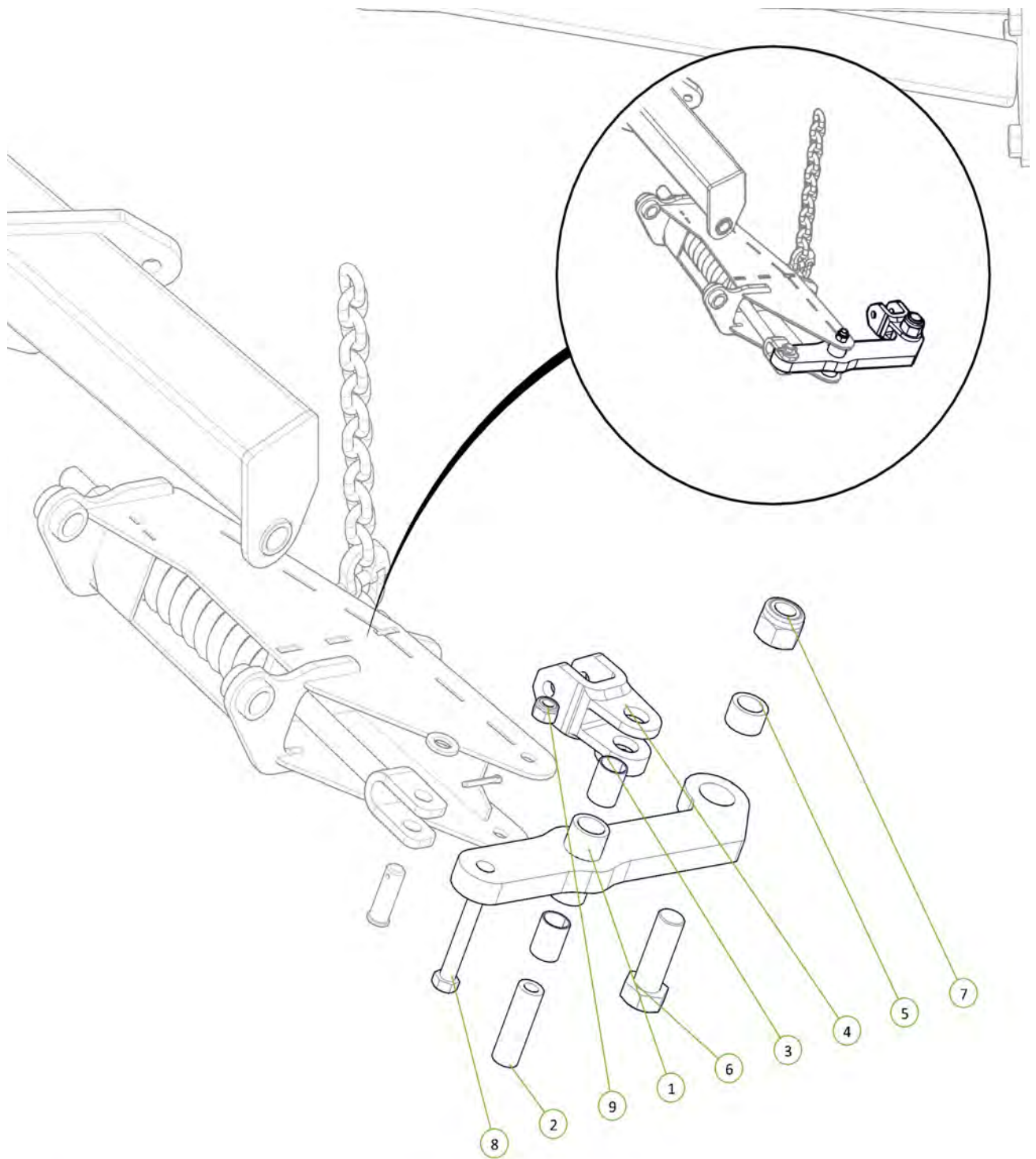


Item No.	Description	Number	Qty
1	Extended Chain Mount Plate	0810-21	1
2	Forged Clevis 21mm Bolt Hole	0801-FC21	1
3	Height Adjusting Chain Assembly 13 Link	0801-20MCA	1
4	Stainless Steel Wear Bush	1501-365033-SS	1
5	Chain Mount Pivot Pin	0801-10-51	1
6	Washer High Tensile 1 3/8"	0232-HT13-8	1
7	Height Adjustor Retaining Clip	0801-KE014	1
8	M36 x 105 grade 8.8 zp Bolt	0211-36105	1
9	Nyloc Nut M36	0221-NYL36	1
10	M12 x 65 grade 8.8 ZP Bolt	0211-1265	1
11	Nyloc Nut M12	0221-NYL12	1



Item No.	Description	Number	Qty
1	Front Module Tension Body	0810-103F	1
2	Module Tension Rod Assembly	0810-105A	1
3	Rigid Spring Locator	0801-10-S2L	1
4	20mm Compression Spring	0801-XK9261S	1
5	Washer High Tensile 1 1/4"	0232-HT11-4	1
6	Height Adjusting Chain Assembly 13 Link	0801-20MCA	1
7	Washer Flat M24	0231-F24	1



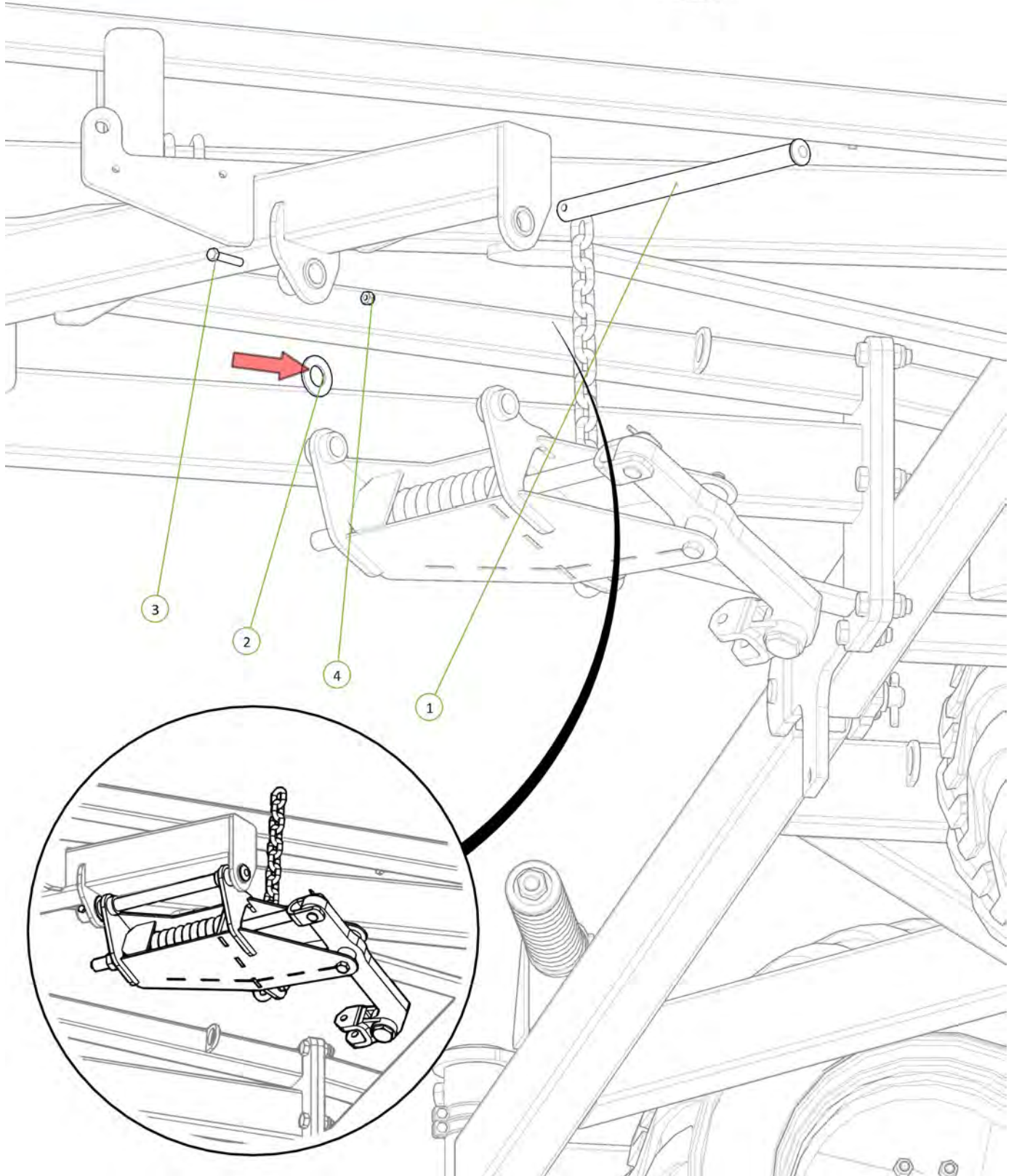


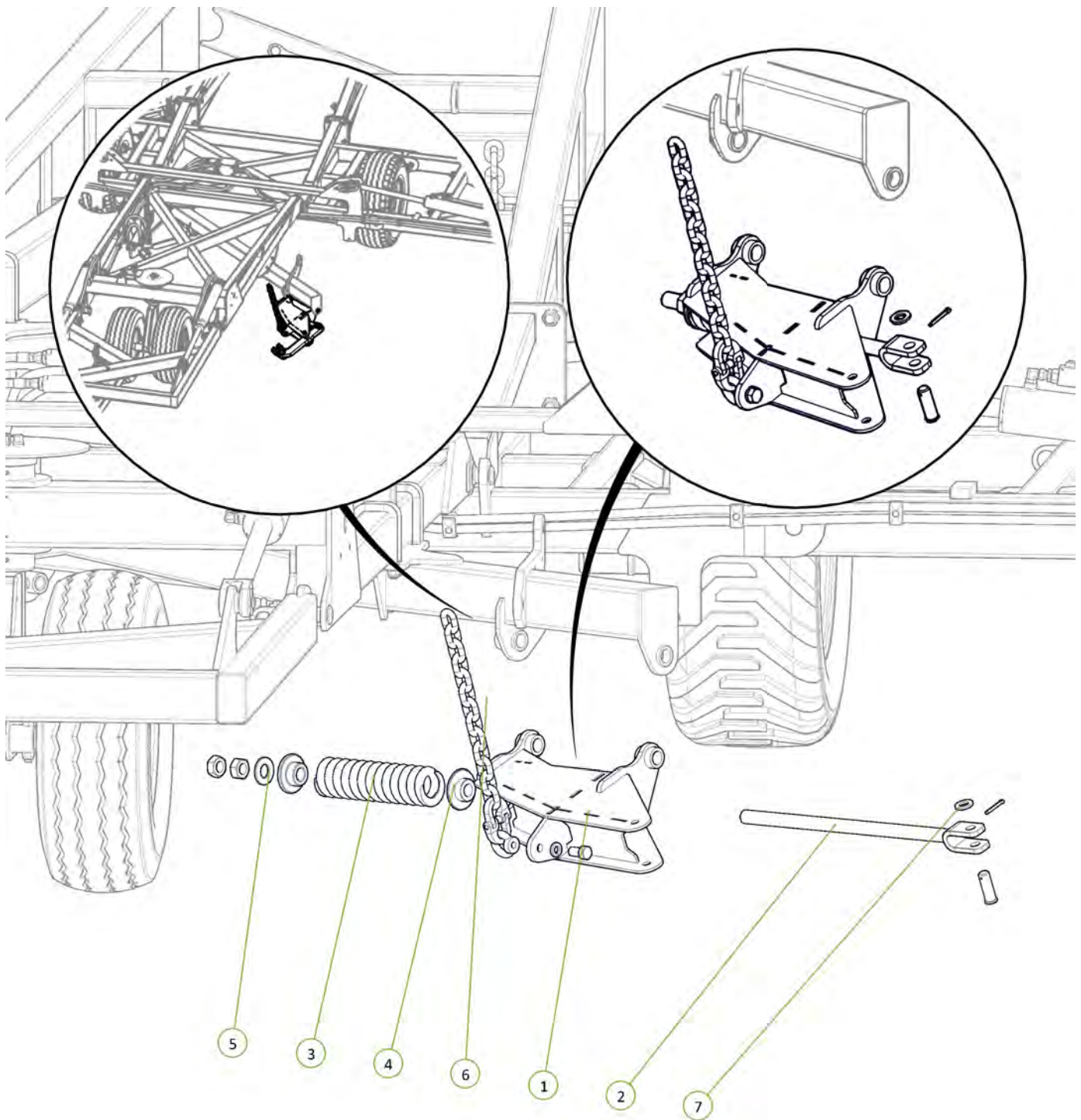
Item No.	Description	Number	Qty
1	Module Tension Arm	0810-104	1
2	Module Pivot Arm Bush	0801-10-110	1
3	35 ID x 50mm DU Bush	0113-MB 3550DU	2
4	Forged Clevis 21mm Bolt Hole	0801-FC21	1
5	Stainless Steel Wear Bush	1501-365033-SS	1
6	M36 Grade 8.8 ZP Bolt	0211-36105	1
7	Nyloc Nut M36	0221-NYL36	1
8	M20 x 150 grade 8.8 ZP Bolt	0211-20150	1
9	Nyloc Nut M20	0221-NYL20	1



Loose Items
Modules Kit

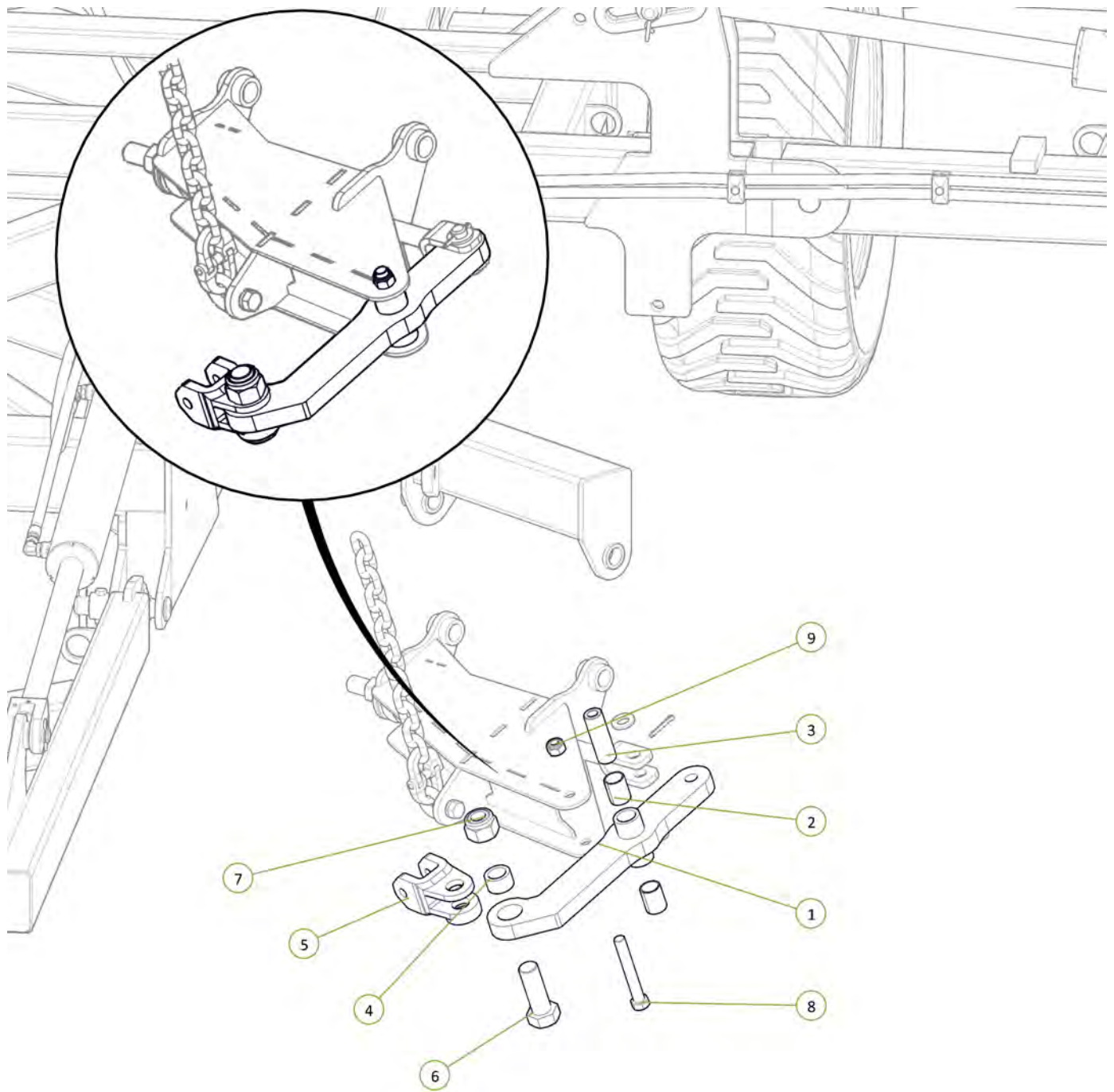
Item No.	Description	Number	Qty
1	Chain Mount Pivot Pin	0801-10-51	1
2	Washer High Tensile 1 3/8"	0232-HT13-8	1
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	1
4	Nyloc Nut M12	0221-NYL12	1





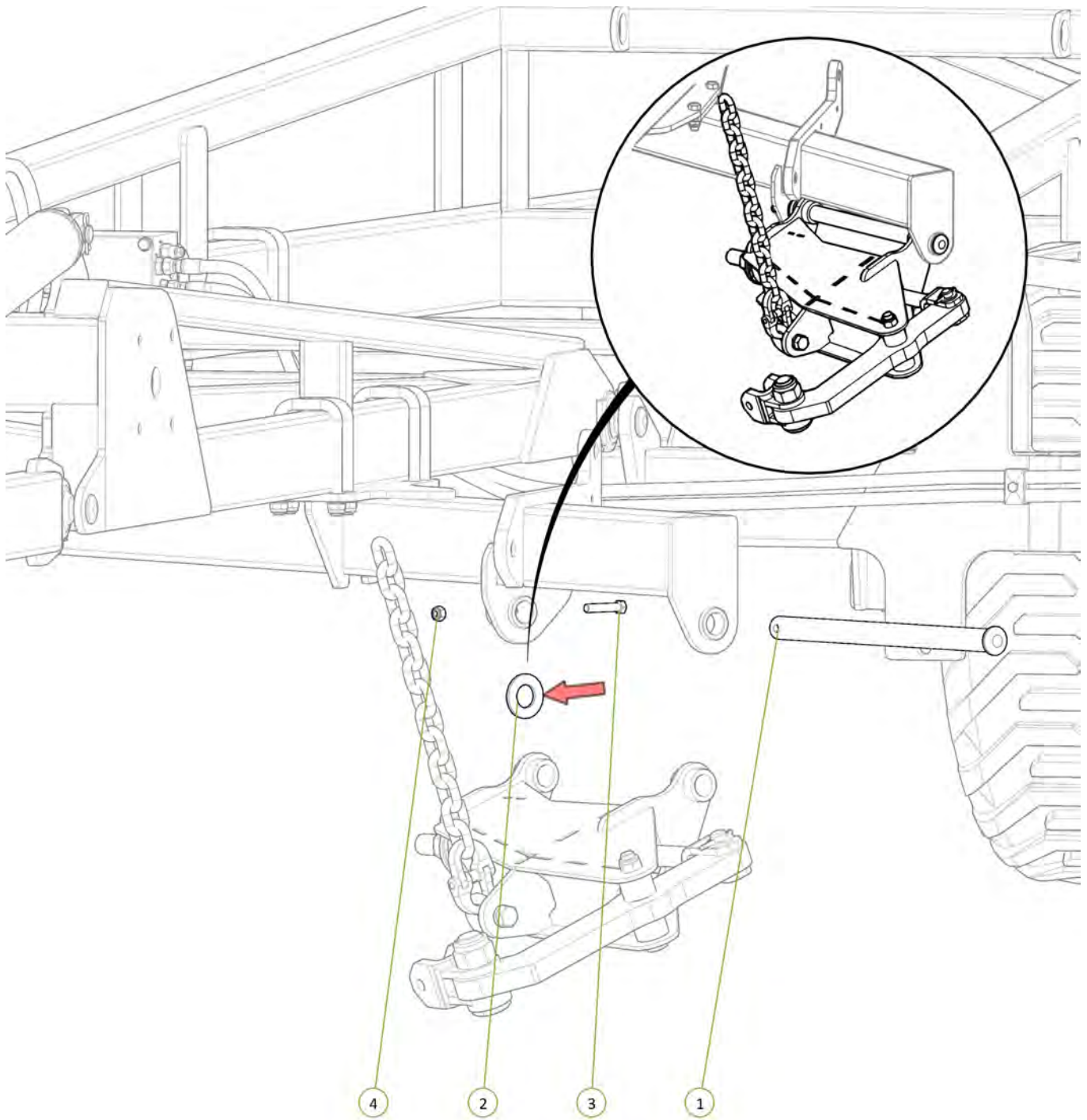
Item No.	Description	Number	Qty
1	Rear Module Tension Body	0810-103R	1
2	Module Tension Rod Assembly	0810-105A	1
3	20mm Compression Spring	0801-XK9261S	1
4	Rigid Spring Locator	0801-10-S2L	1
5	Washer High Tensile 1 1/4"	0232-HT11-4	1
6	Height Adjusting Chain Assembly 13 Link	0801-20MCA	1
7	Washer Flat M24	0231-F24	1





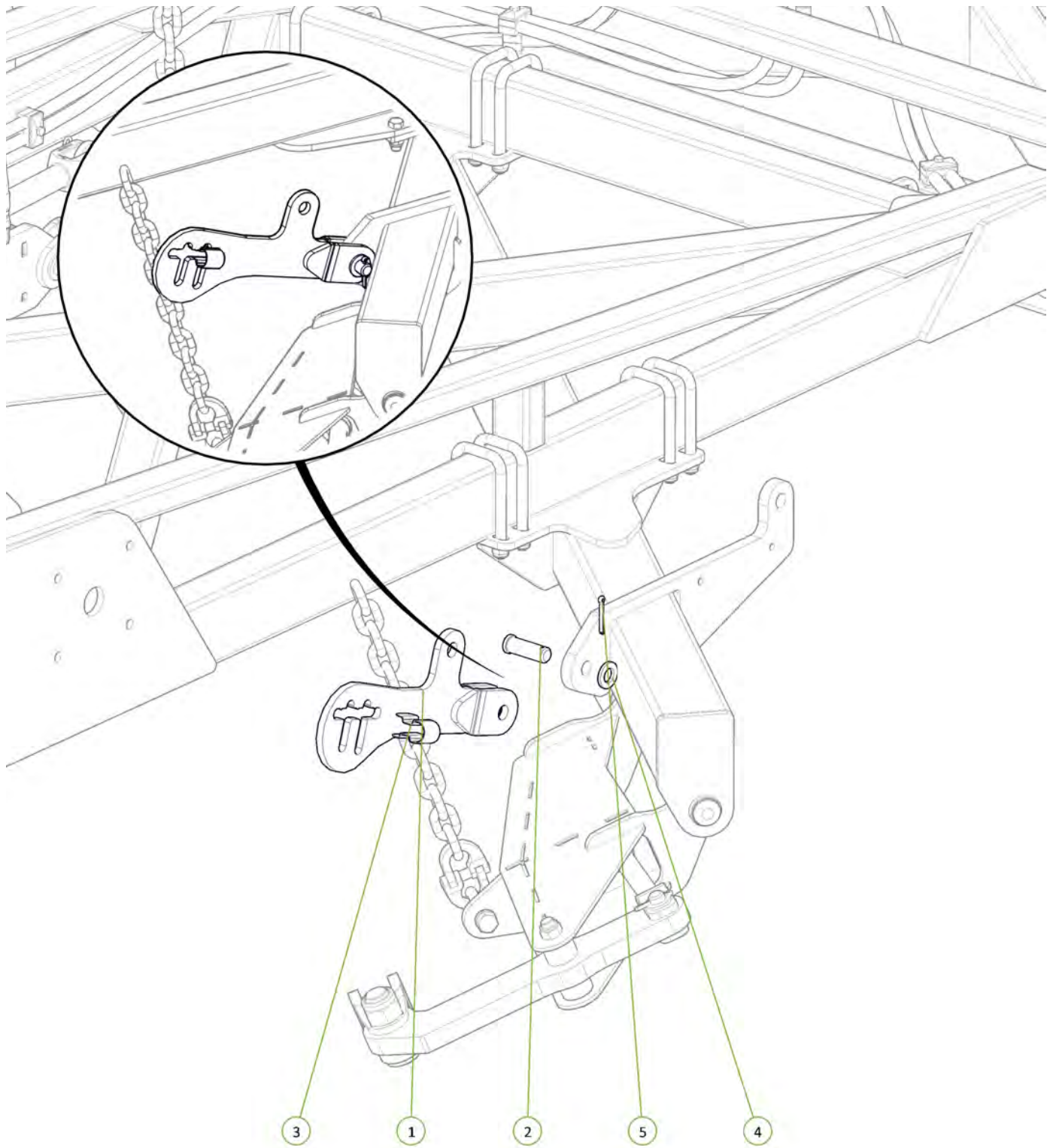
Item No.	Description	Number	Qty
1	Module Tension Arm	0810-104	1
2	35 ID x 50mm DU Bush	0113-MB 3550DU	2
3	Module Pivot Arm Bush	0801-10-110	1
4	Stainless Steel Wear Bush	1501-365033-SS	1
5	Forged Clevis 21mm Bolt Hole	0801-FC21	1
6	M36 x 105 grade 8.8 zp Bolt	0211-36105	1
7	Nyloc Nut M36	0221-NYL36	1
8	M20 x 150 grade 8.8 ZP Bolt	0211-20150	1
9	Nyloc Nut M20	0221-NYL20	1





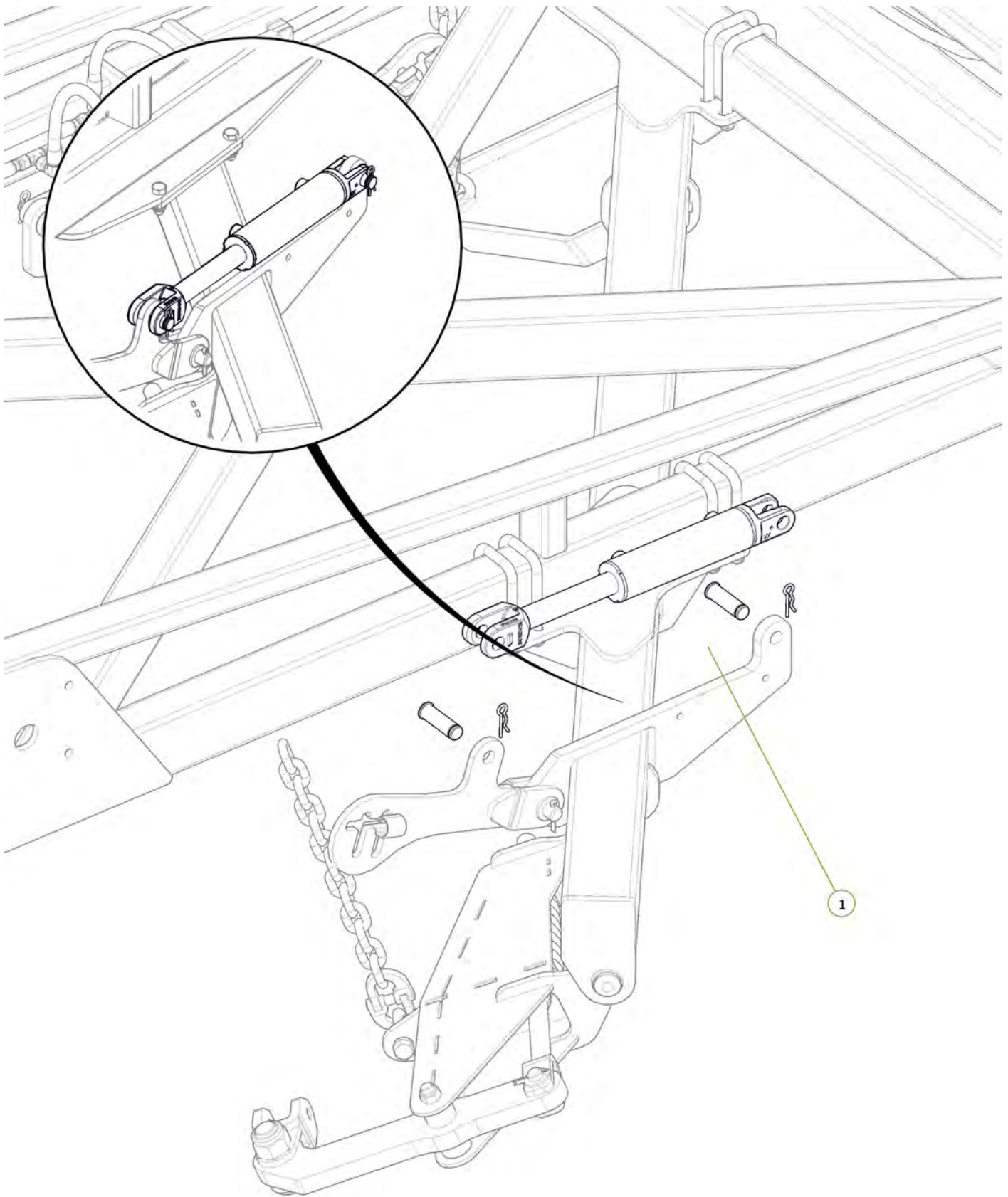
Item No.	Description	Number	Qty
1	Chain Mount Pivot Pin	0801-10-51	1
2	Washer High Tensile 1 3/8"	0232-HT13-8	1
3	M12 x 65 grade 8.8 ZP Bolt	0211-1265	1
4	Nyloc Nut M12	0221-NYL12	1





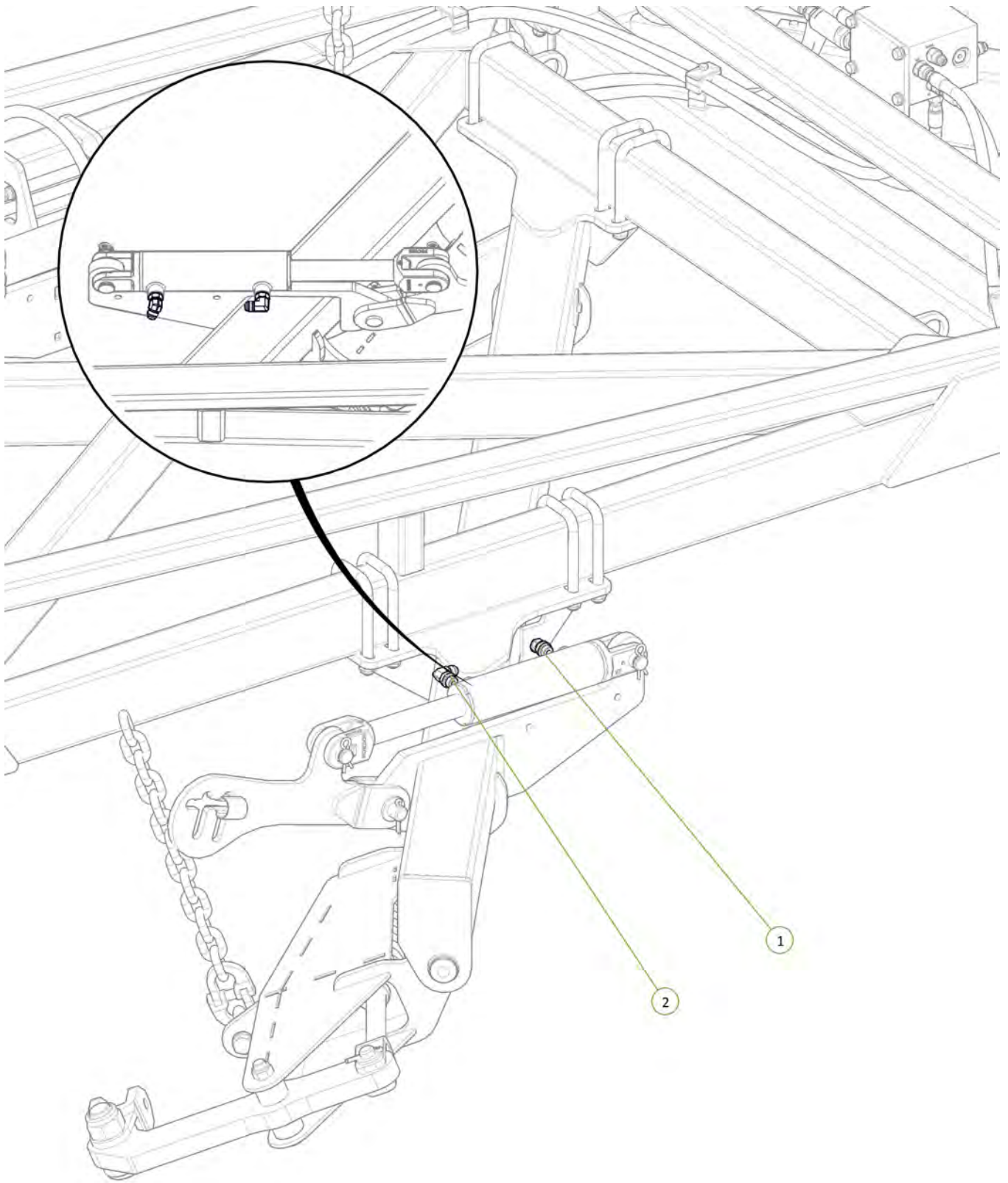
Item No.	Description	Number	Qty
1	30' Module Lift Plate	0810-106	1
2	Clevis Pin 25mm x 75mm	0801-KE0307-1	1
3	Height Adjuster Retaining Clip	0801-KE014	1
4	Washer Flat M24	0231-F24	1
5	Cotter Pin M5 x 50	0261-PINC550	1





Item No.	Description	Number	Qty
1	2.5" Bore x 6" Stroke 1.5" Rod Side Port Cylinder	0311-256SP	1

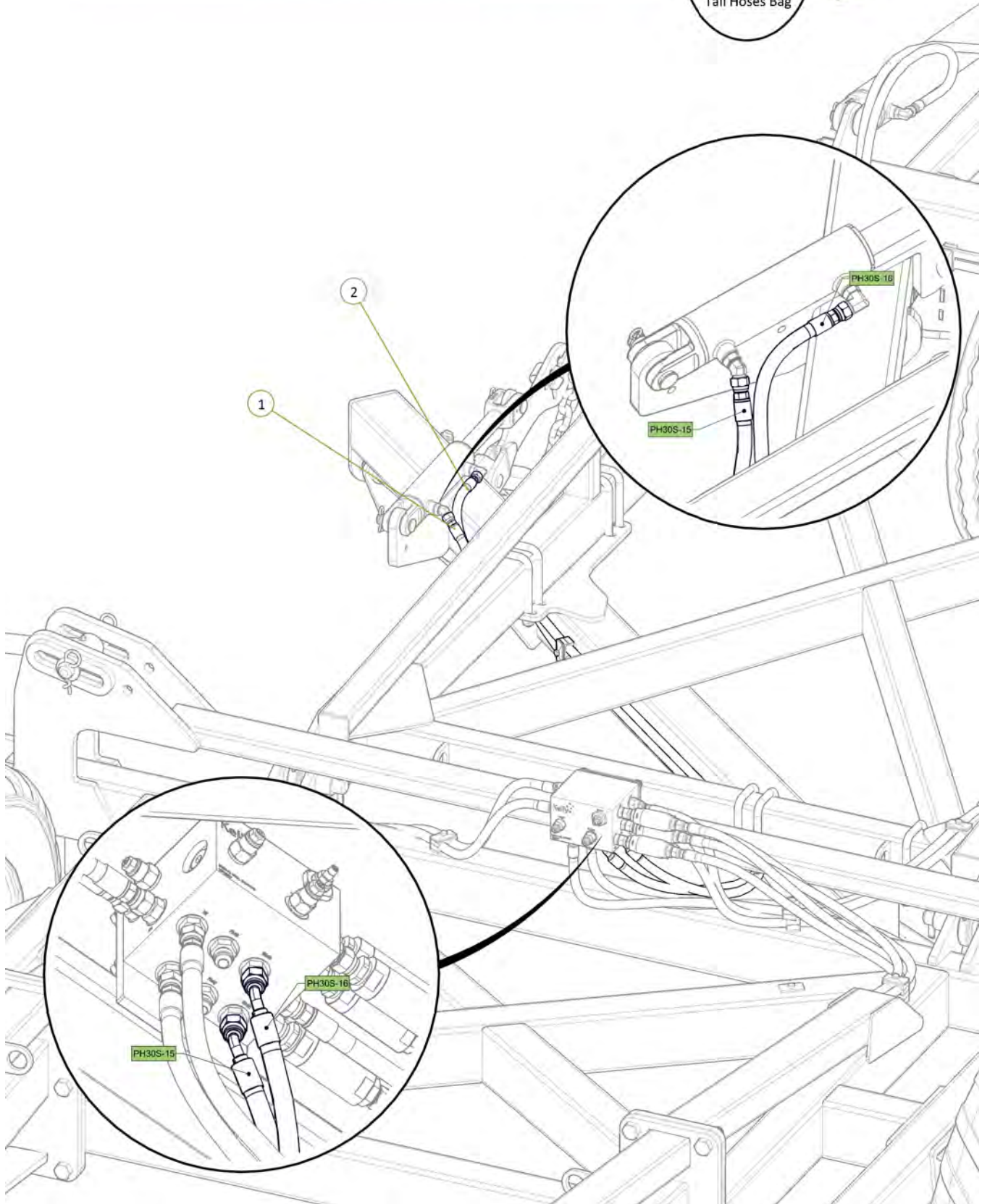


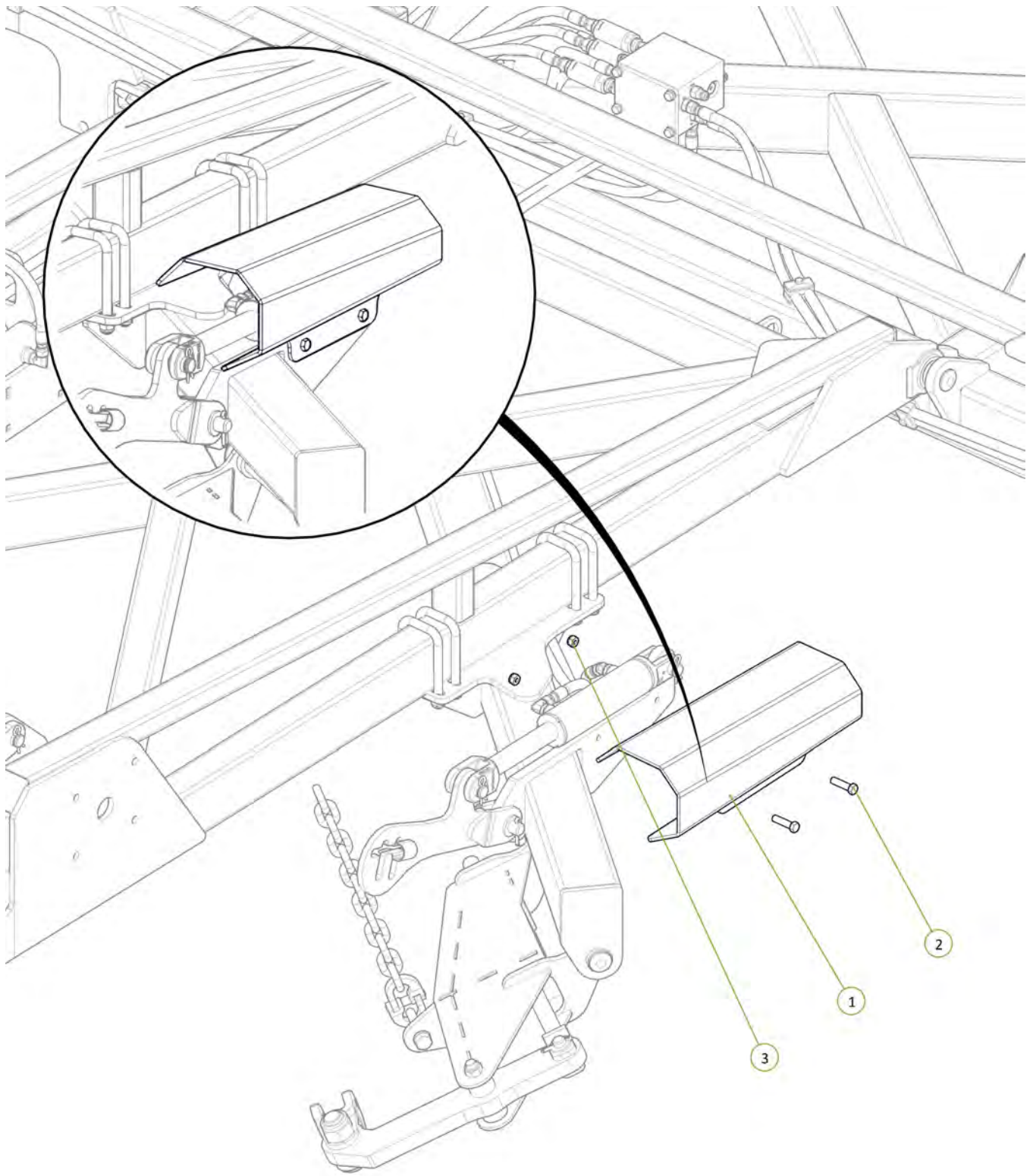


Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 45° Elbow	0323-S88-1212	1
2	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-S91-1212	1



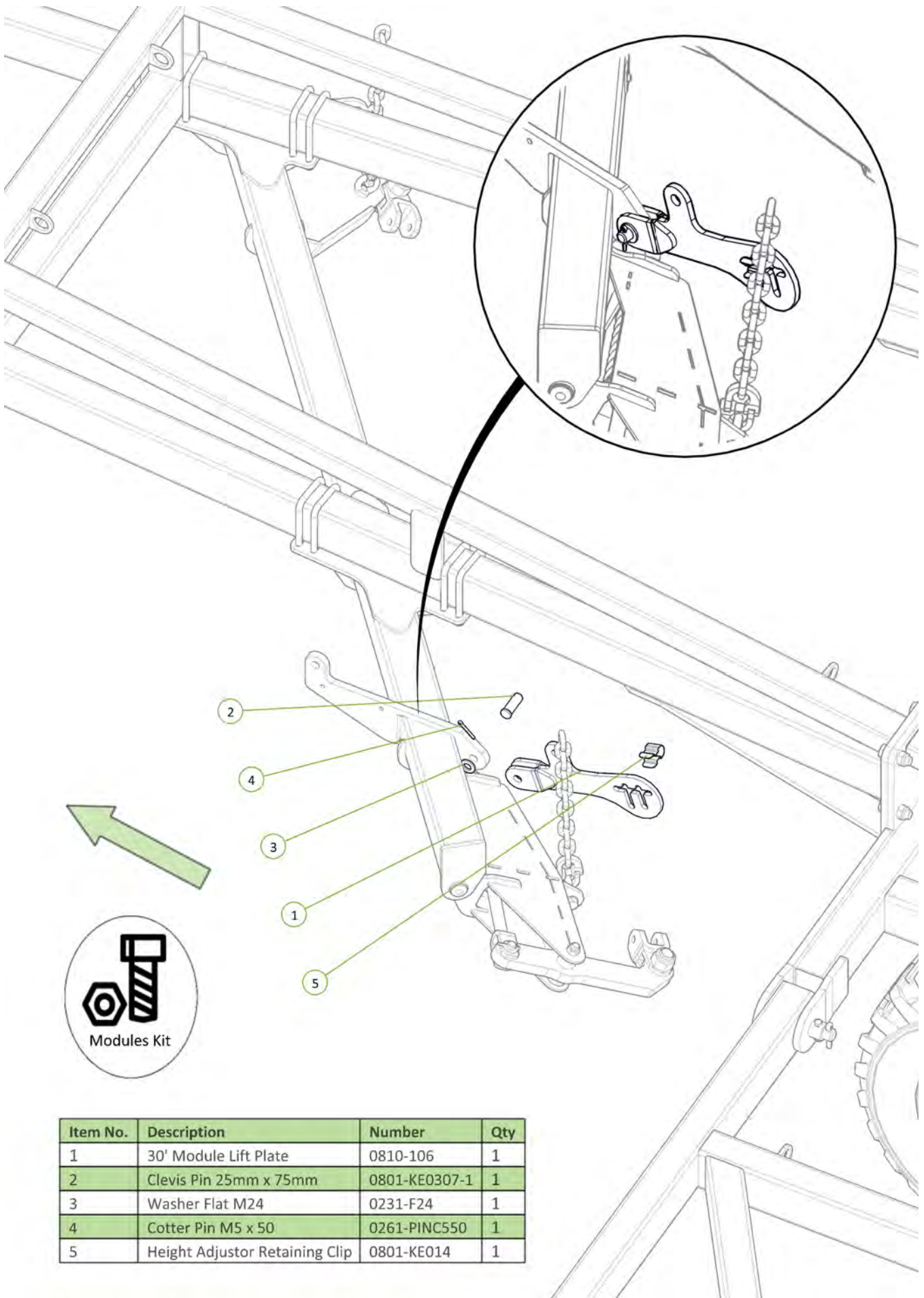
Item No.	Description	Number	Qty
1	Valve RME Port to Right Rear Module Rear Port	PH30S-15	1
2	Valve RMR Port to Right Rear Module Rod Port	PH30S-16	1



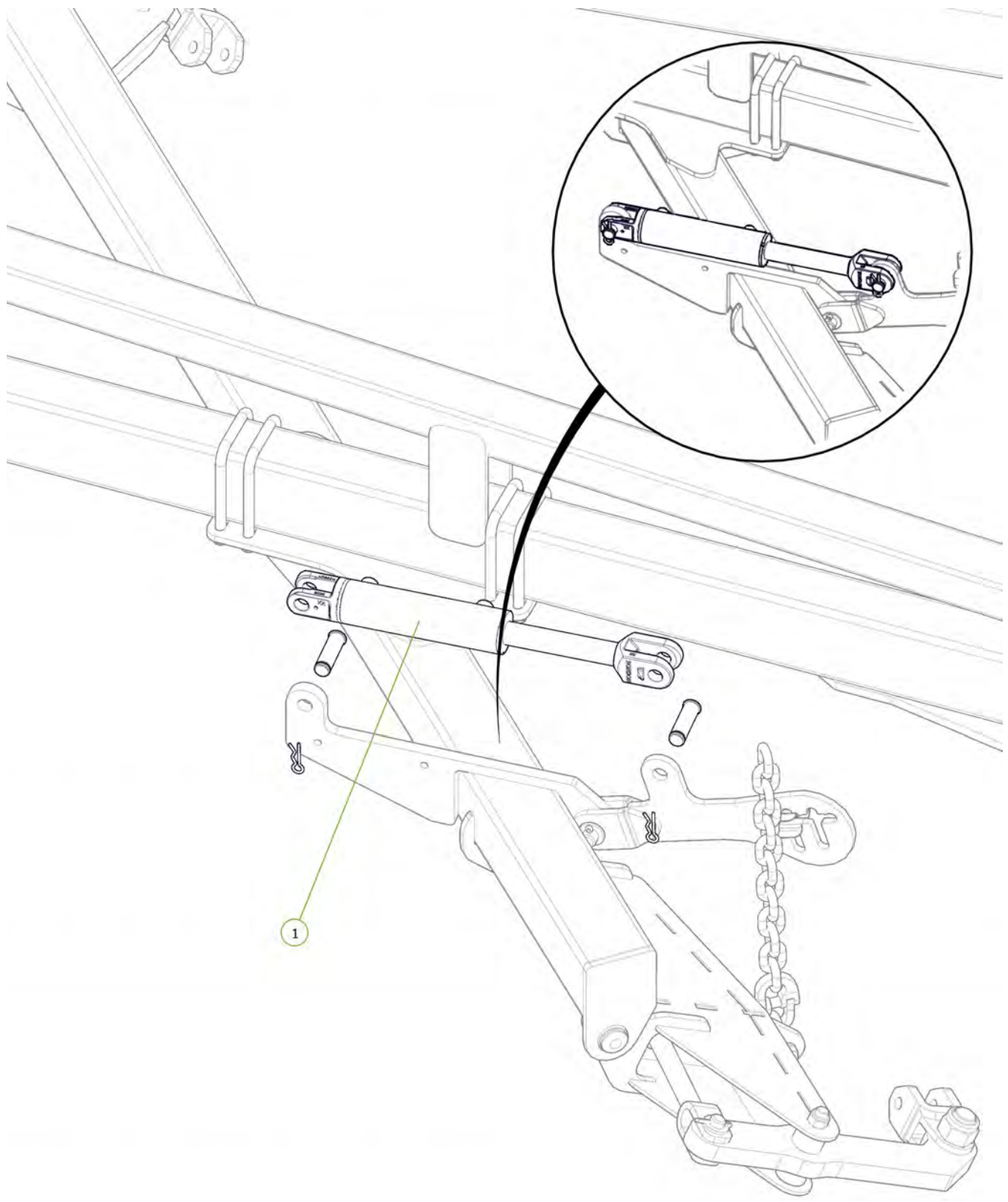


Item No.	Description	Number	Qty
1	Module Cylinder Guard	0800-167.3	1
2	M12 x 50 grade 8.8 ZP Bolt	0211-1250	2
3	Nyloc Nut M12	0221-NYL12	2



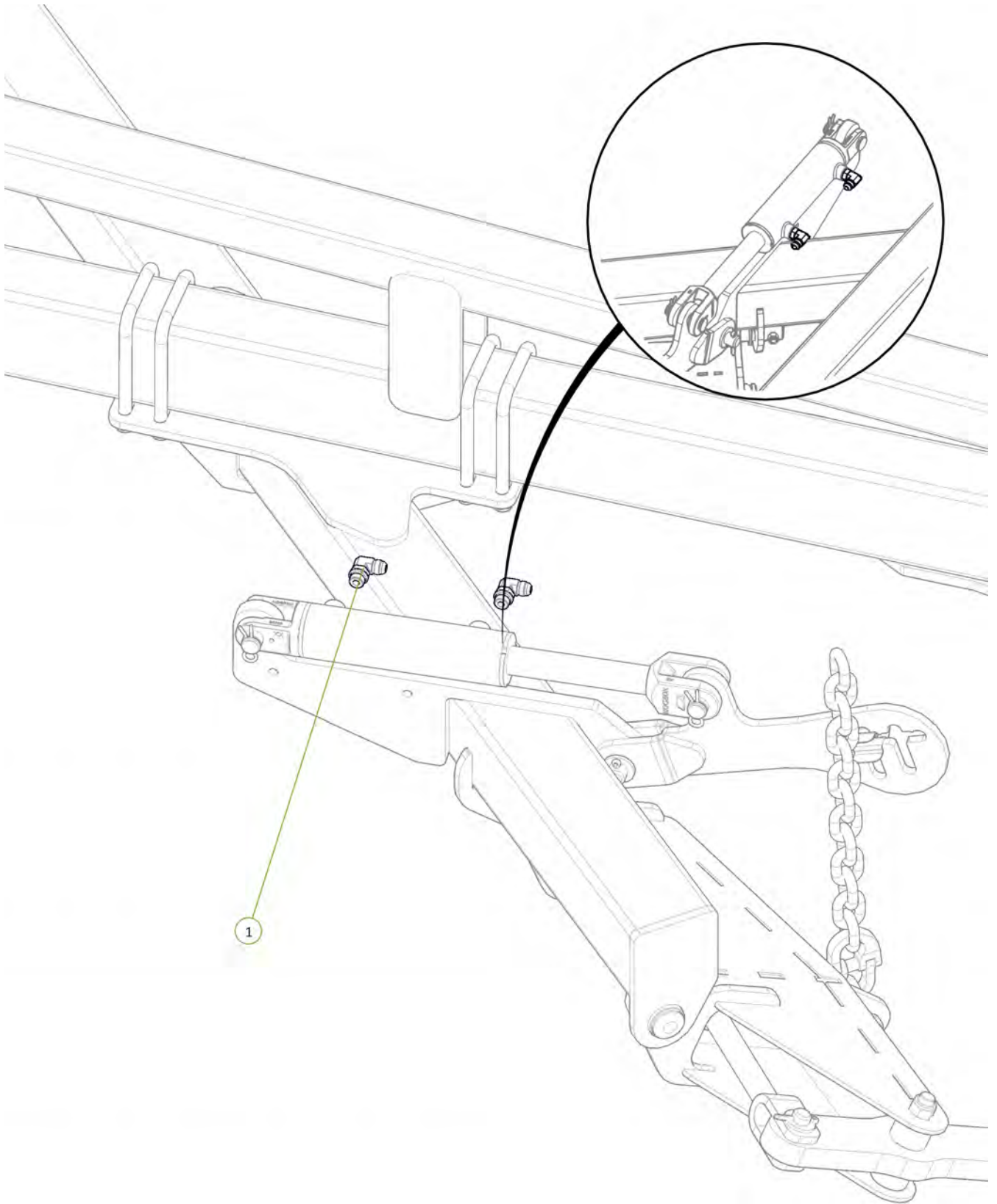


Item No.	Description	Number	Qty
1	30' Module Lift Plate	0810-106	1
2	Clevis Pin 25mm x 75mm	0801-KE0307-1	1
3	Washer Flat M24	0231-F24	1
4	Cotter Pin M5 x 50	0261-PINC550	1
5	Height Adjustor Retaining Clip	0801-KE014	1



Item No.	Description	Number	Qty
1	2.5" Bore x 6" Stroke 1.5" Rod Side Port Cylinder	0311-256SP	1

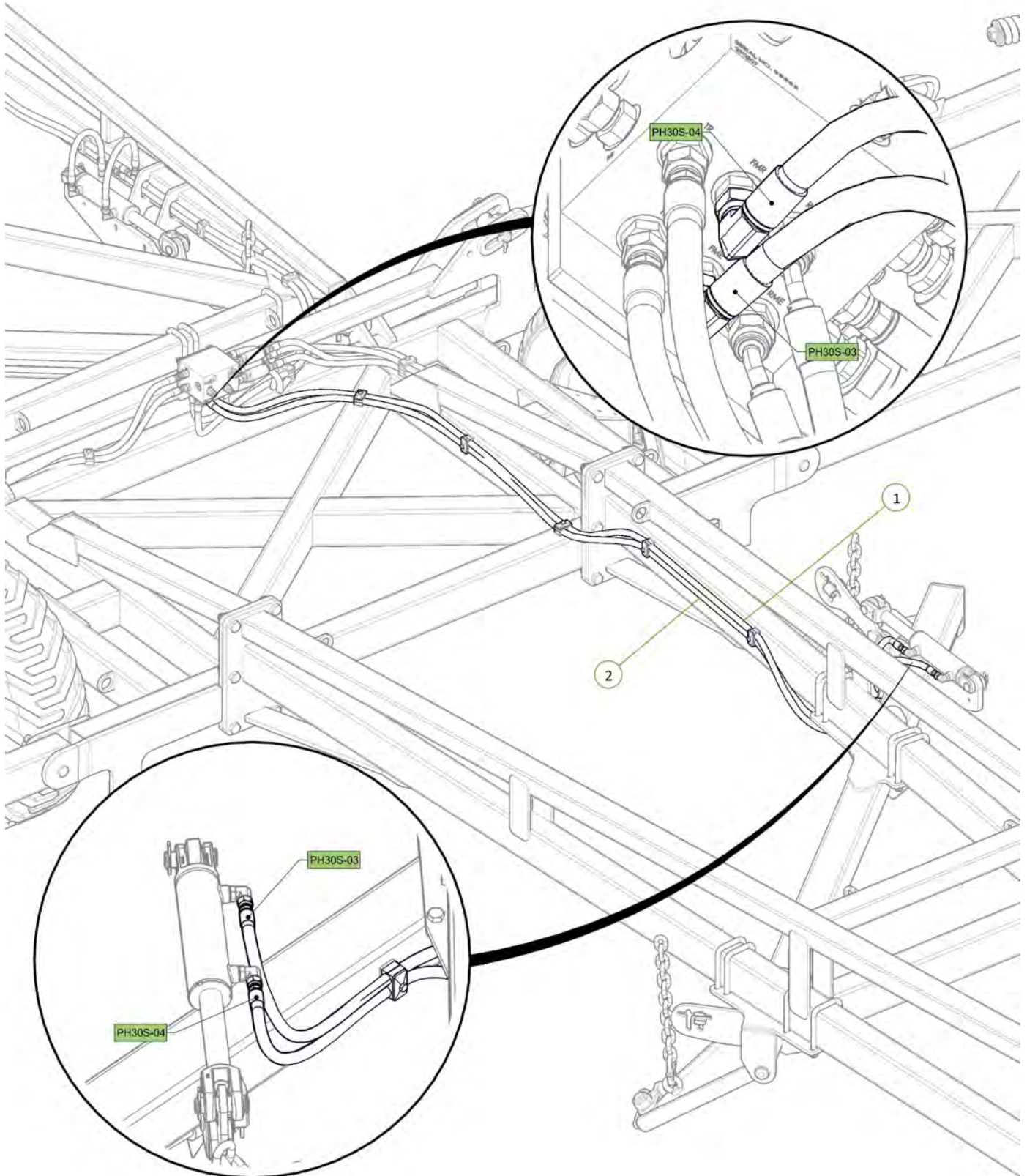




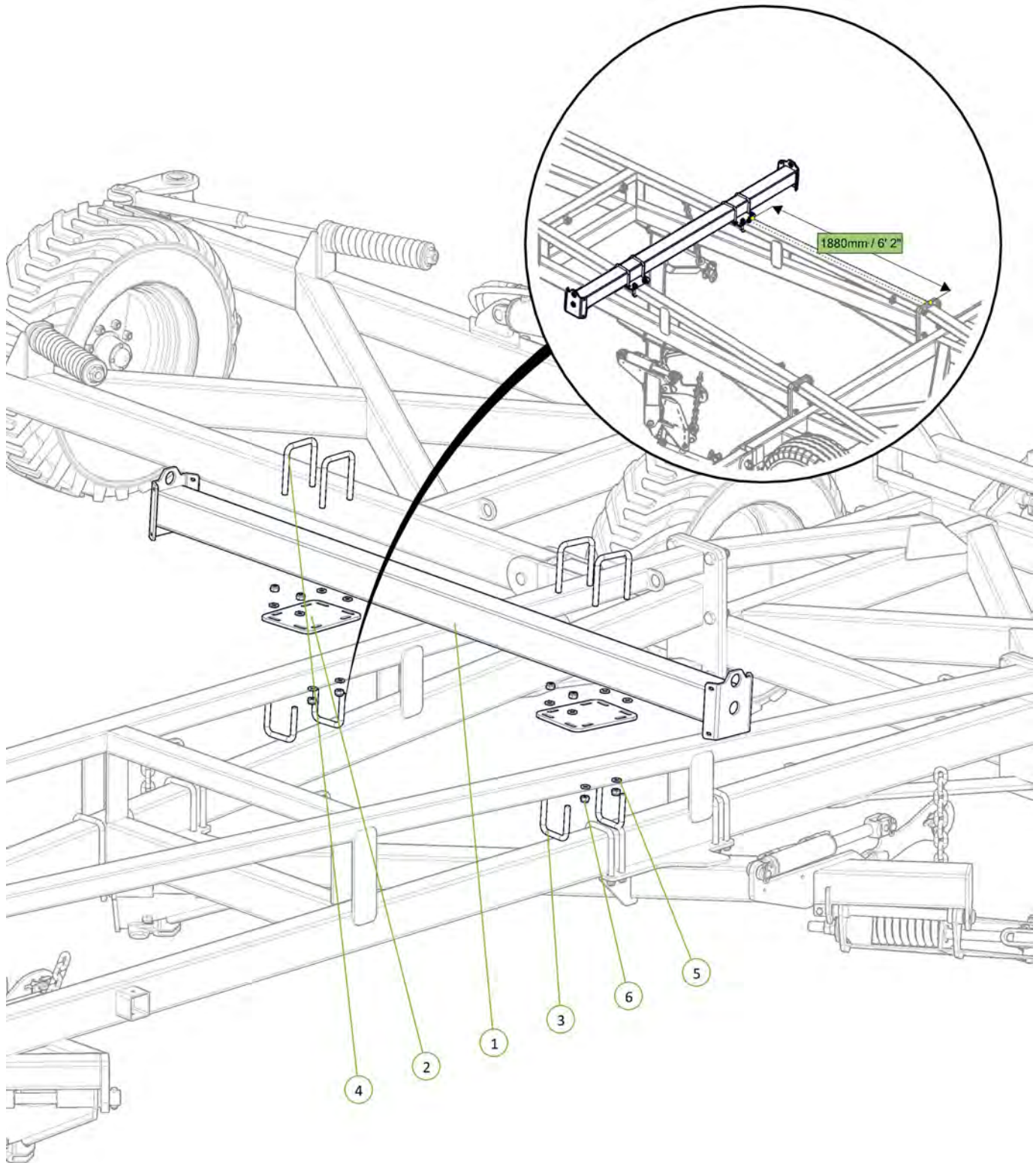
Item No.	Description	Number	Qty
1	3/4" JIC Male 3/4" UN O Ring Male 90° Elbow	0323-S91-1212	2



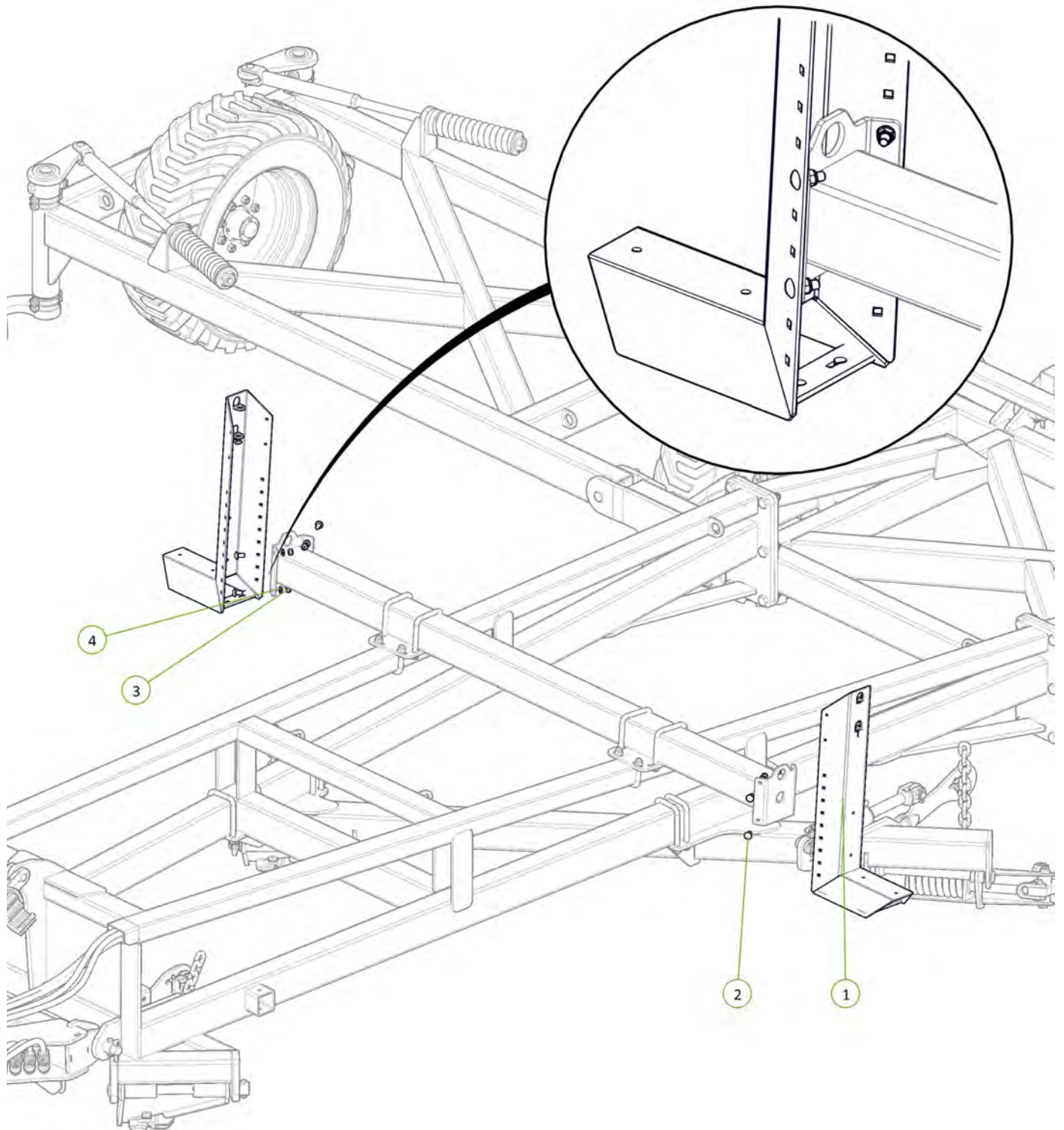
Item No.	Description	Number	Qty
1	Front Module EXT Port to Valve FME Port	PH30S-03	1
2	Front Module Rod Port to Valve FMR Port	PH30S-04	1



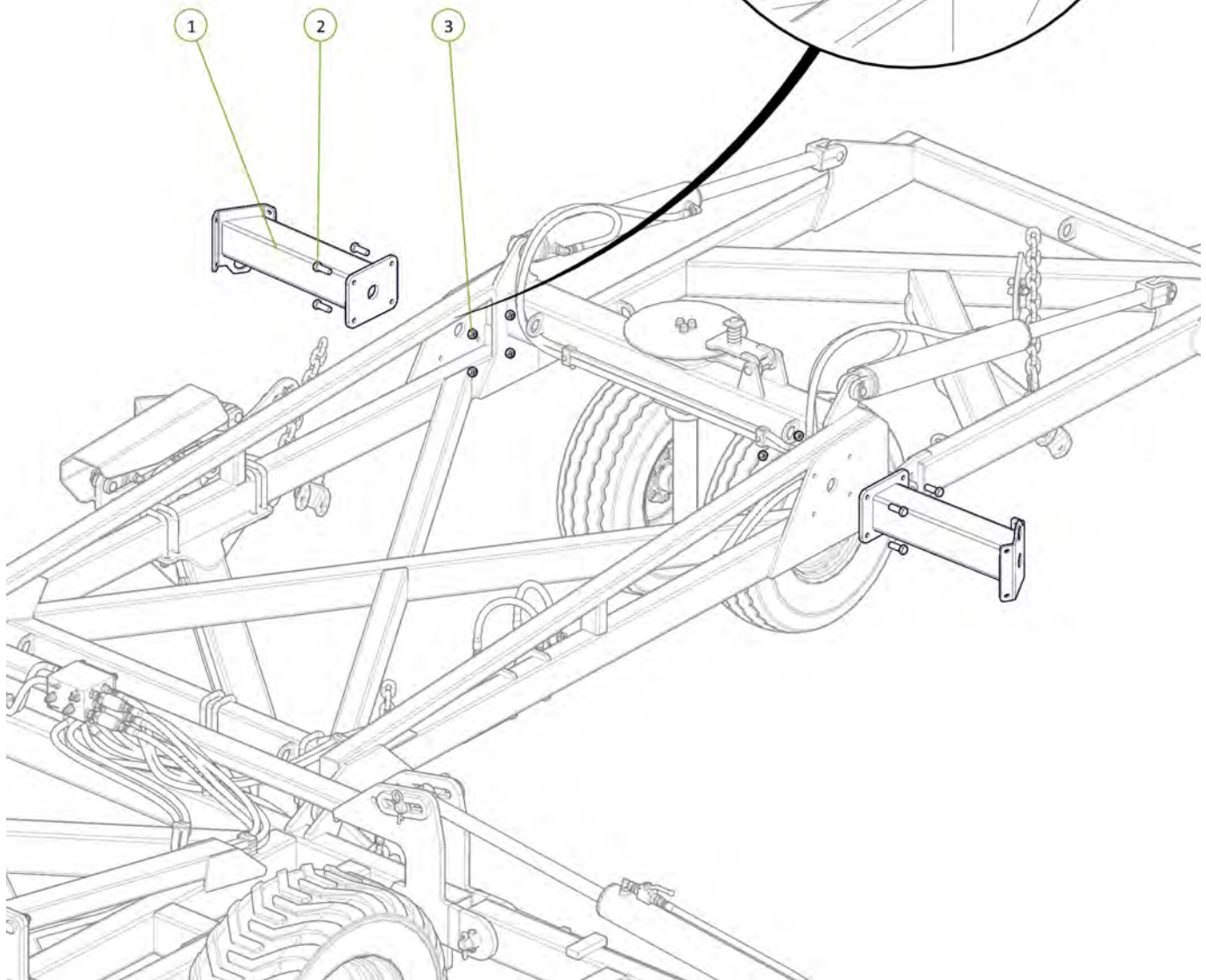
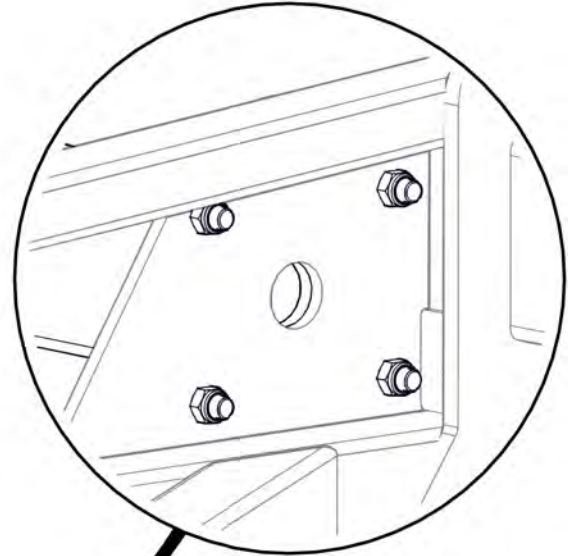
Item No.	Description	Number	Qty
1	30' Chain Carrier Beam	0810-17-30	1
2	Chain Carrier Mount Plate	0800-139.1	2
3	U-Bolt M16 x 114 Deep x 106 Wide	0271-16114106U	4
4	U-Bolt M16 x 162 Deep x 129 Wide	0271-16162129U	4
5	Washer Flat M16	0231-F16	16
6	Nyloc Nut M16	0221-NYL16	16



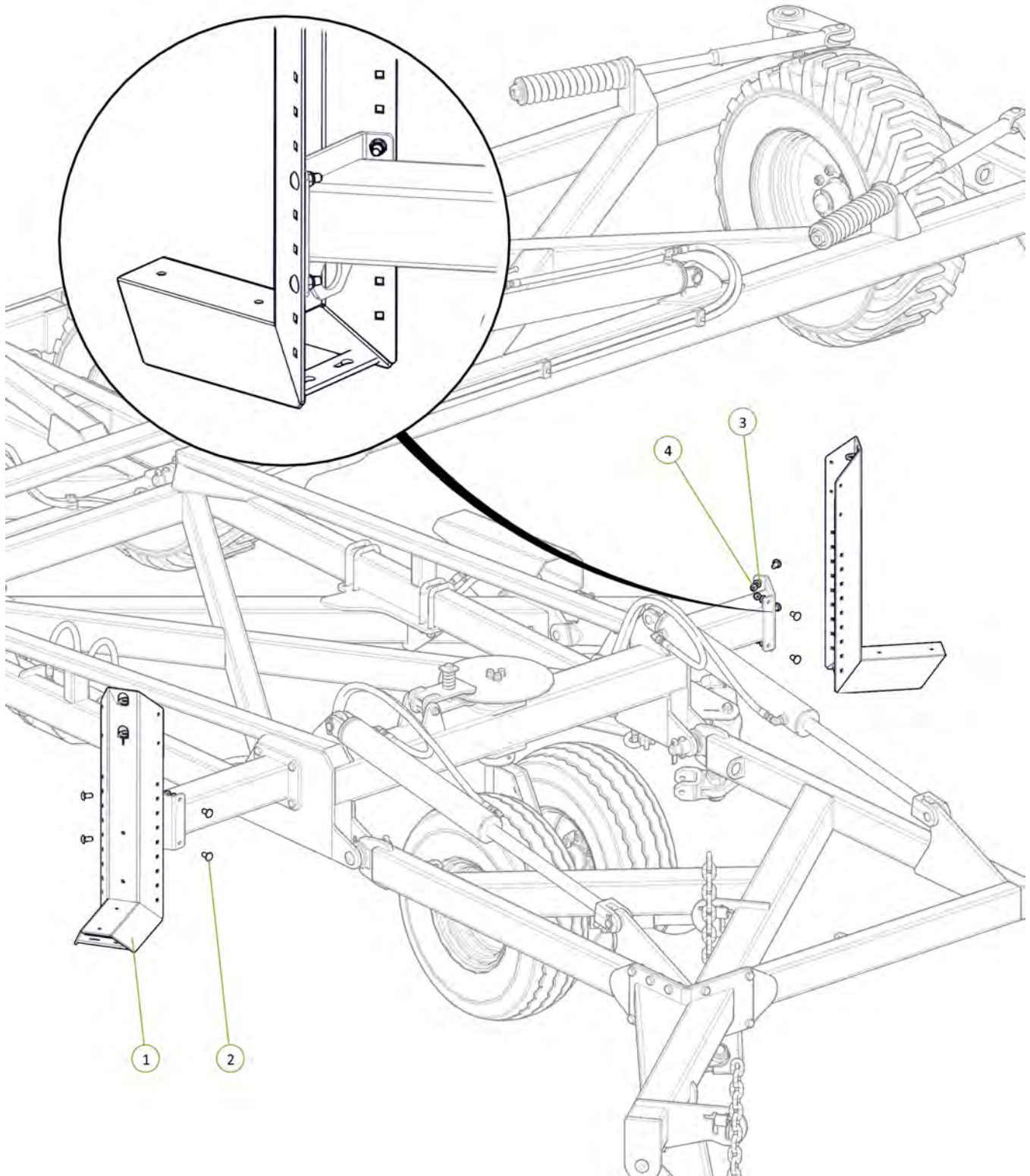
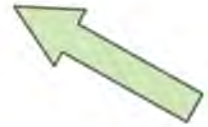
Item No.	Description	Number	Qty
1	Chain Carrier Bolt on End	0810-17L	2
2	M12 x 30 Coach Head Bolt	0215-CH1230	8
3	Nyloc Nut M12	0221-NYL12	8
4	Washer Flat M12	0231-F12	8



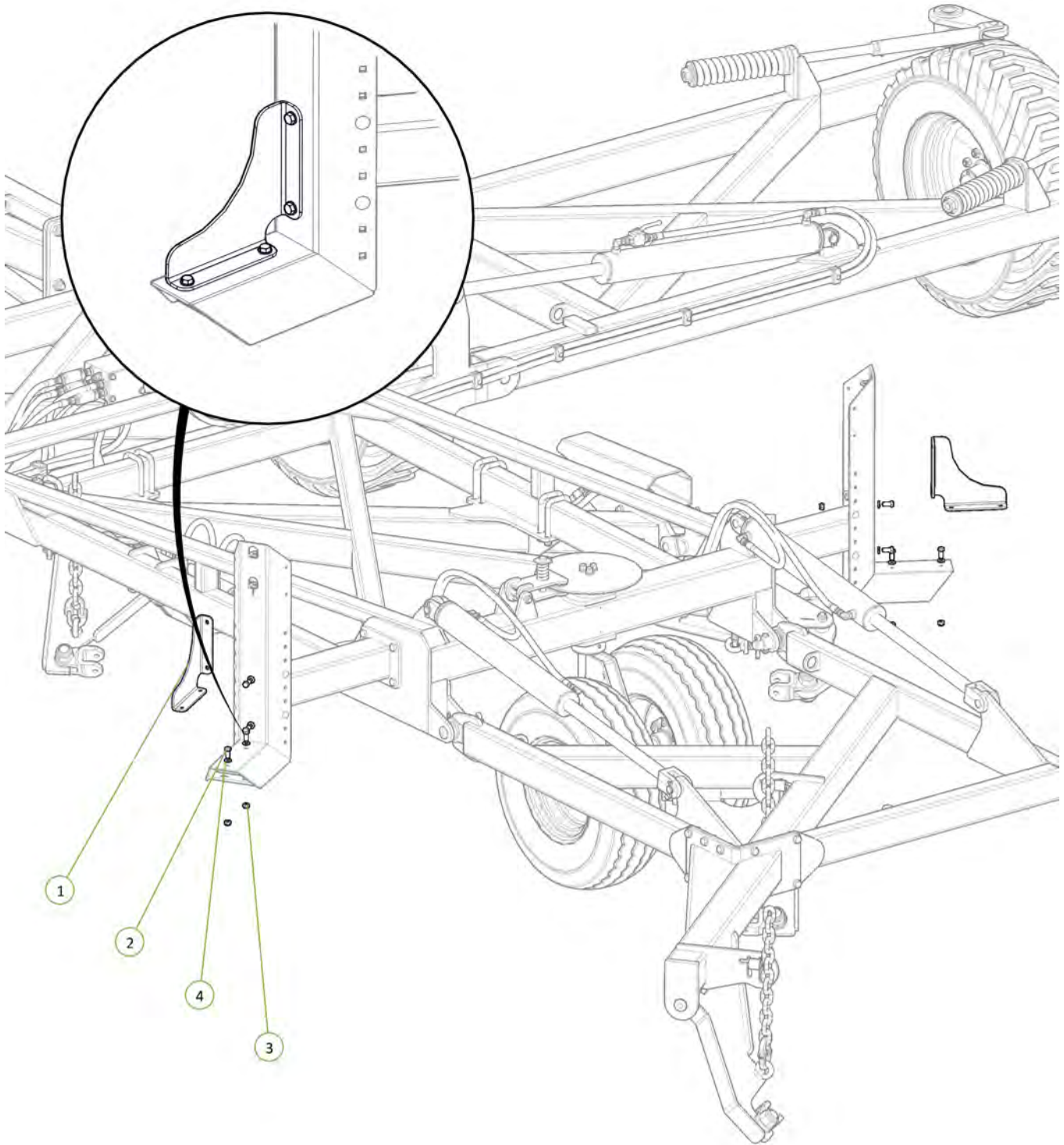
Item No.	Description	Number	Qty
1	Outrigger	0810-109	2
2	M16 x 50 grade 8.8 zp Bolt	0211-1650	8
3	Nyloc Nut M16	0221-NYL16	8



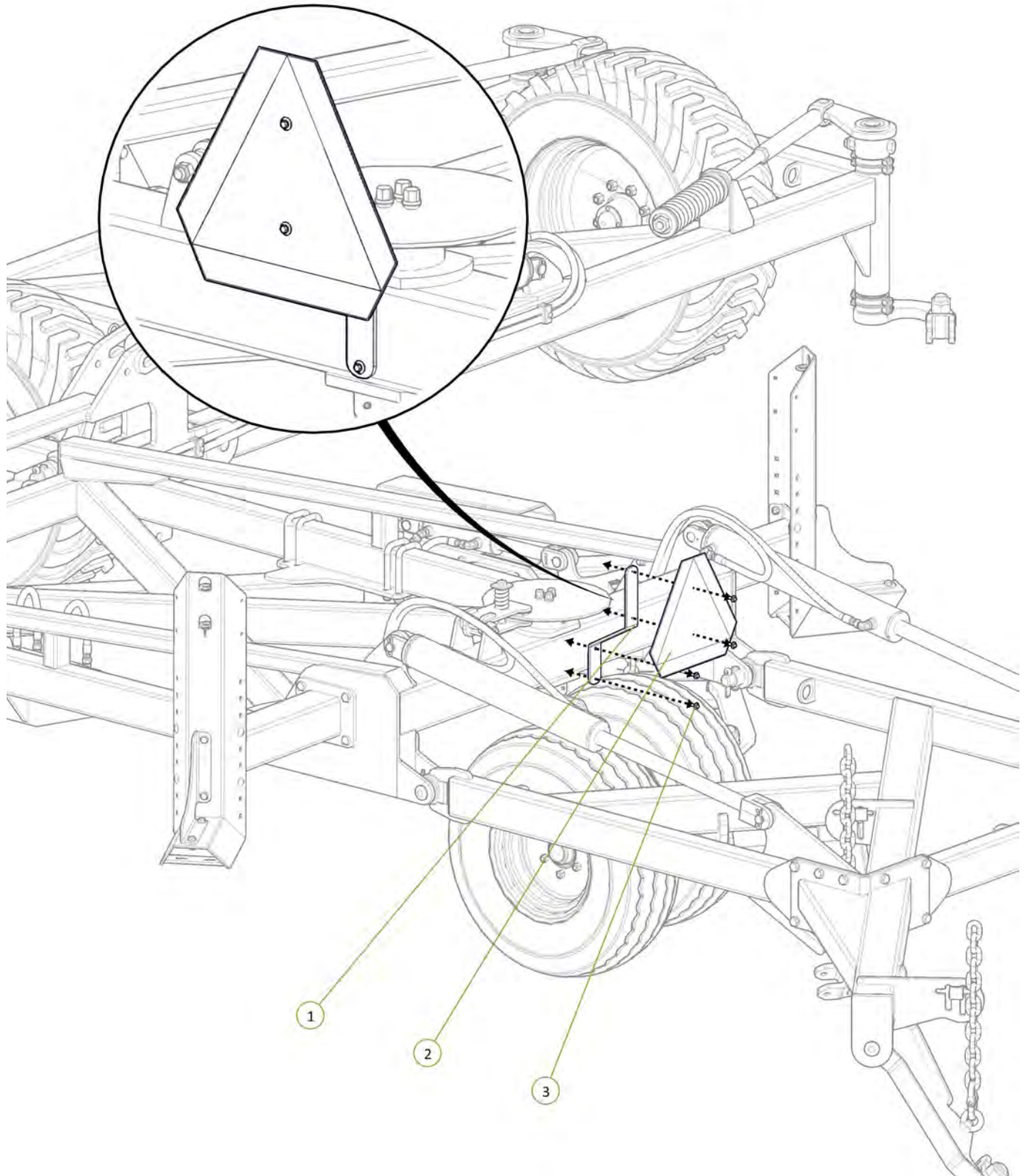
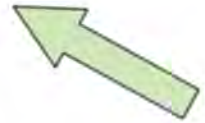
Item No.	Description	Number	Qty
1	Chain Carrier Bolt on End	0810-17L	2
2	M12 x 30 Coach Head Bolt	0215-CH1230	8
3	Washer Flat M12	0231-F12	8
4	Nyloc Nut M12	0221-NYL12	8

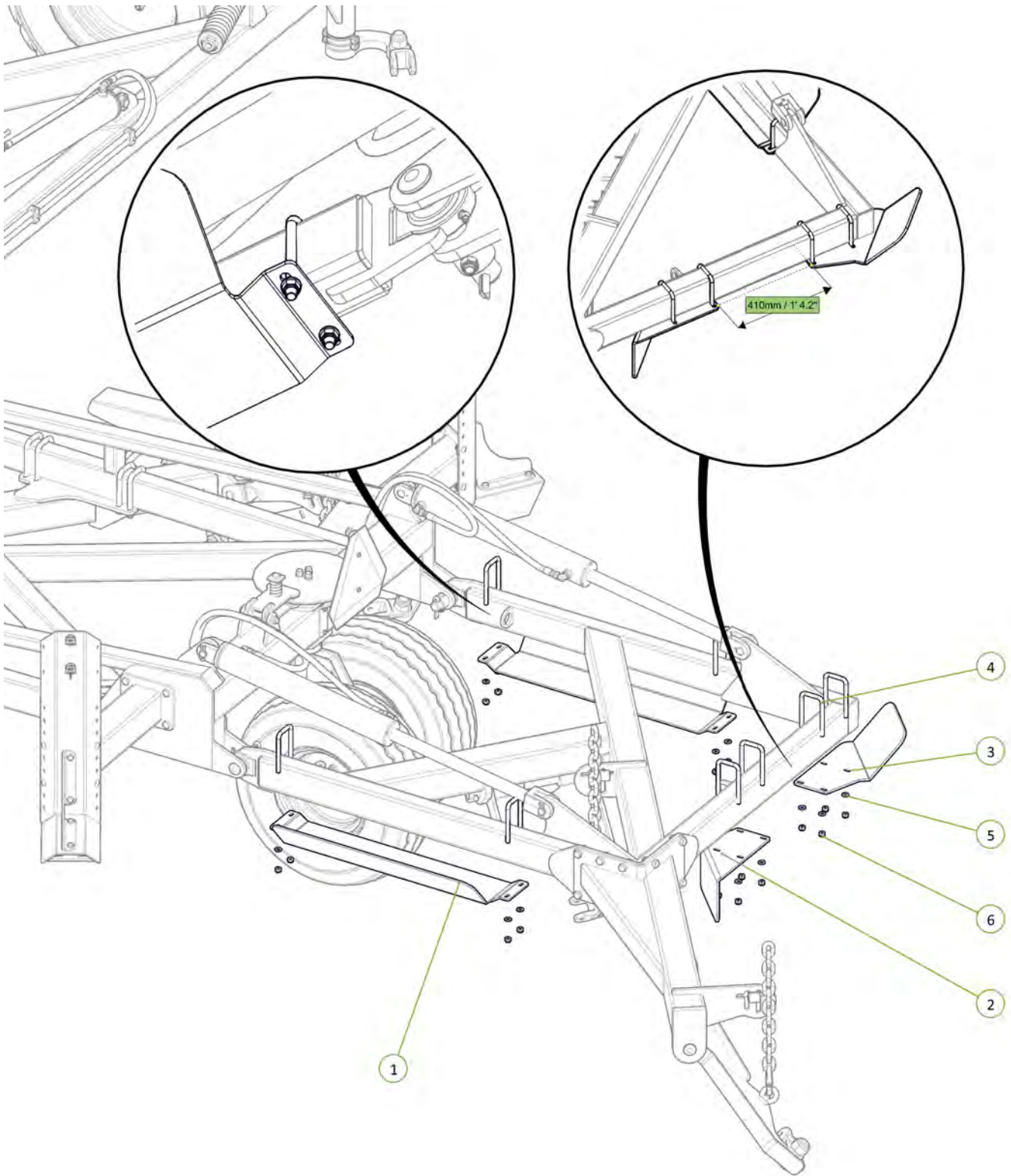


Item No.	Description	Number	Qty
1	30' Chain Retainer Plate	0800-360	2
2	M12 x 30 grade 8.8 ZP Bolt	0211-1230	8
3	Nyloc Nut M12	0221-NYL12	8
4	Washer Flat M12	0231-F12	8



Item No.	Description	Number	Qty
1	SMV Sign Bracket	0800-195.1	1
2	Slow Moving Vehical Sign	0801-FB5MVTUF	1
3	M6 x 20 Trilobe self tapping Scew	0211-M620MZPHTF	4

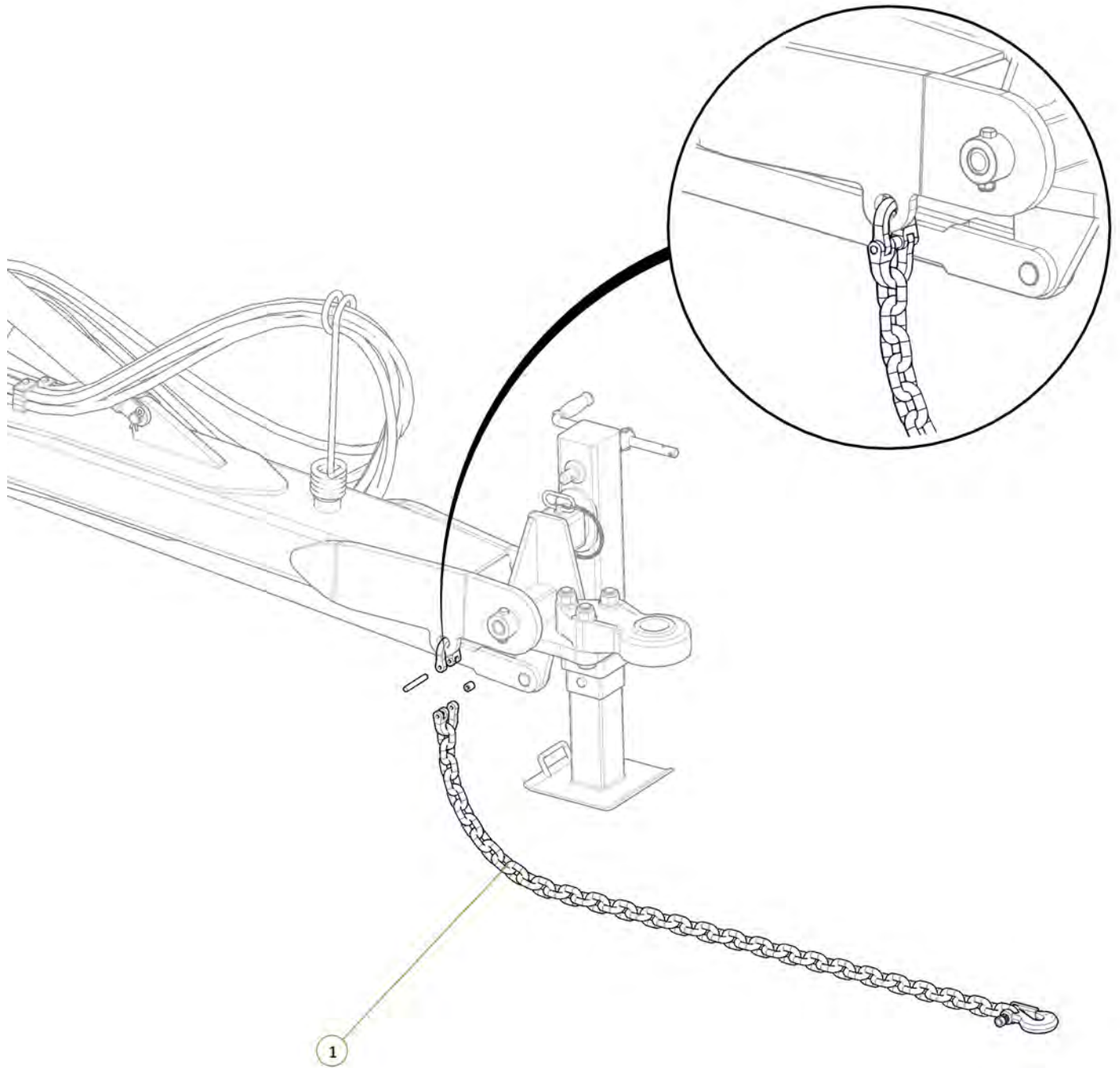




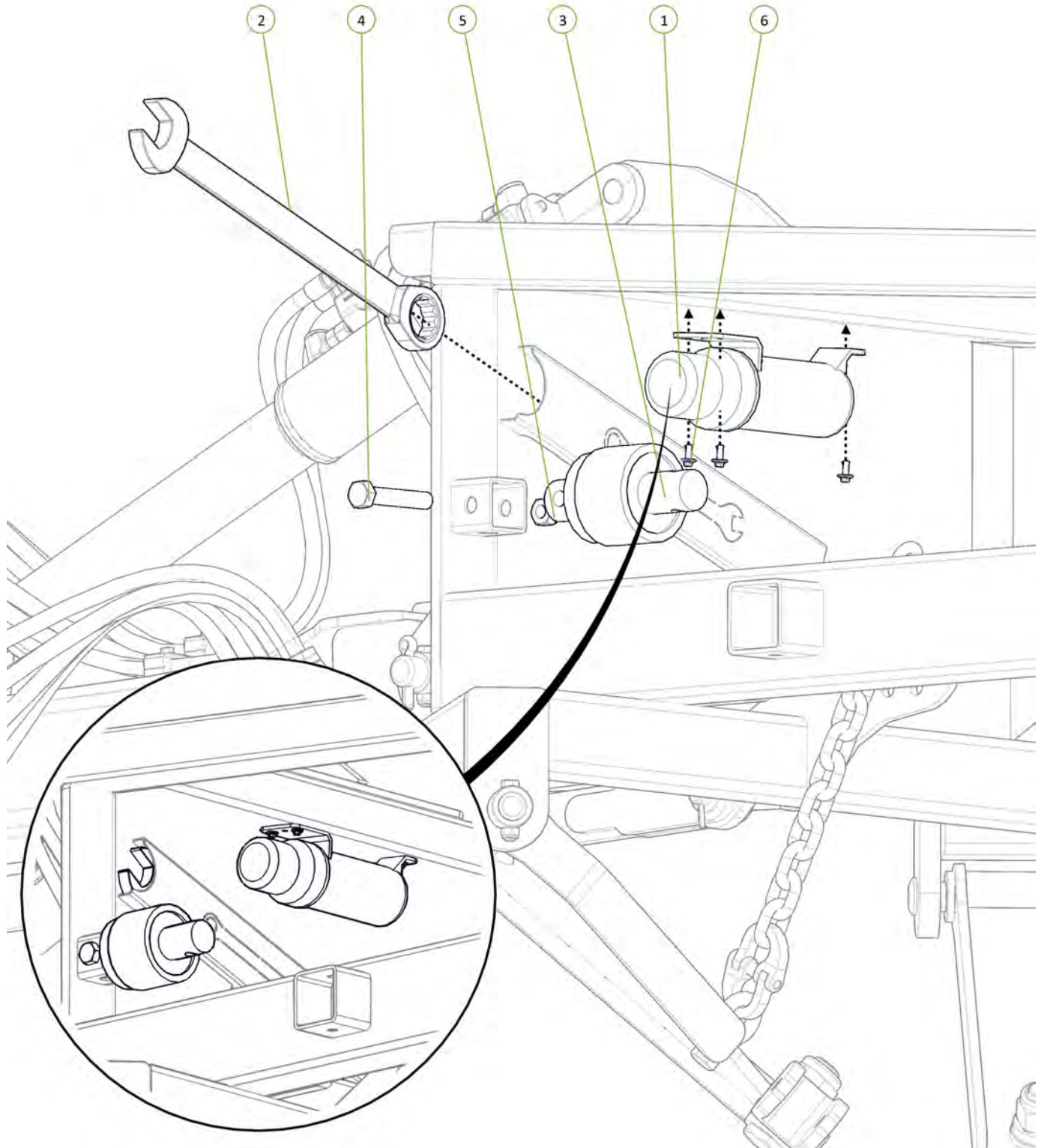
Item No.	Description	Number	Qty
1	Rear Tail Guard	0800-235	2
2	Tail Chain Stop Guard	0800-220.1	1
3	Angled Chain Gaurd	0800-498	1
4	U-Bolt M12 157 Deep x 79 Wide	0271-1215779U	8
5	Washer Flat M12	0231-F12	16
6	Nyloc Nut M12	0221-NYL12	16



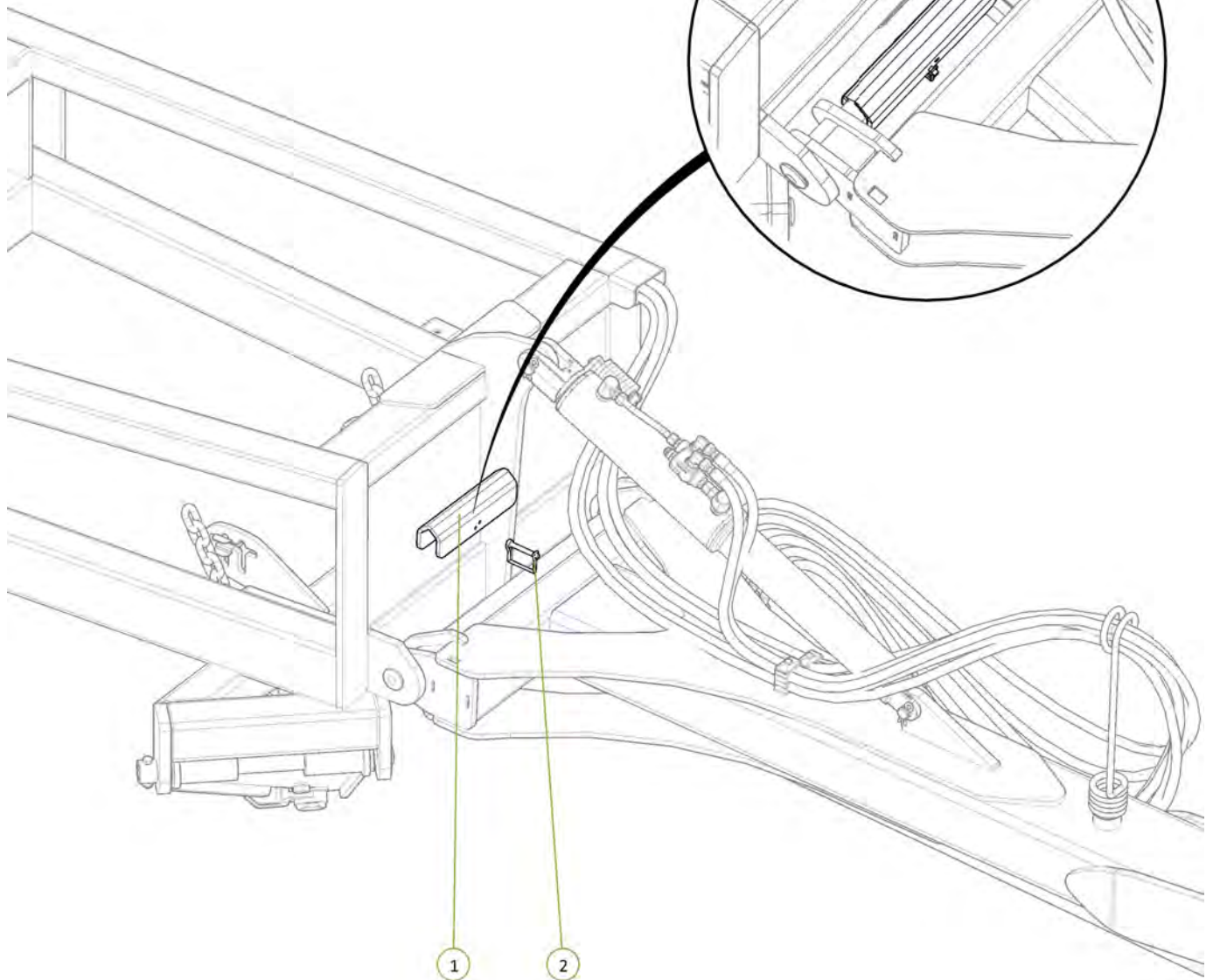
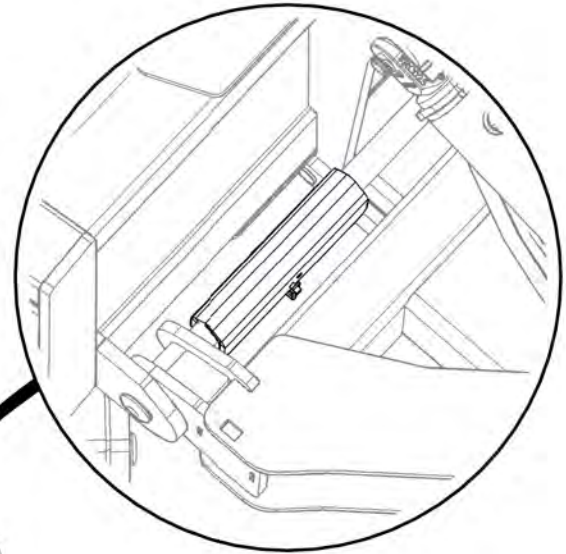
Item No.	Description	Number	Qty
1	Safety Chain Assembly	0810-16	1

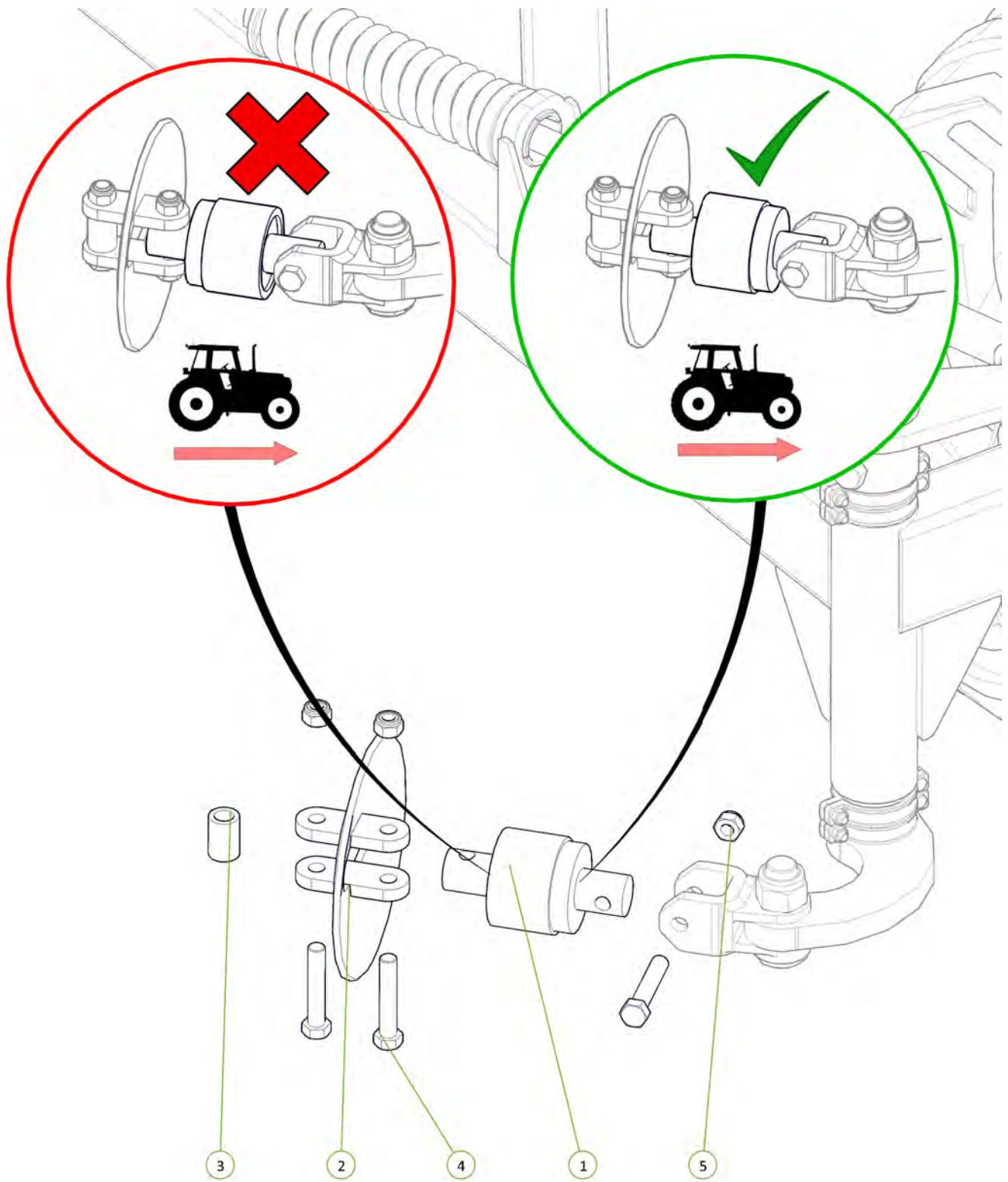


Item No.	Description	Number	Qty
1	Operator Manual Cannister	0801-OMC-1	1
2	Ratcheting Gear Wrench 1 3/4"	0802-GW1 3-4	1
3	20mm Bolt Swivel Unit	0802-PCHB55	1
4	M20 x 110 grade 10.9 ZP Short Thread Bolt	0211-20110ST	1
5	Nyloc Nut M20	0221-NYL20	1
6	M6 x 20 Trilobe self tapping ScREW	0211-M620MZPHTF	3

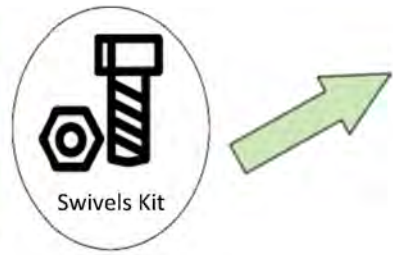


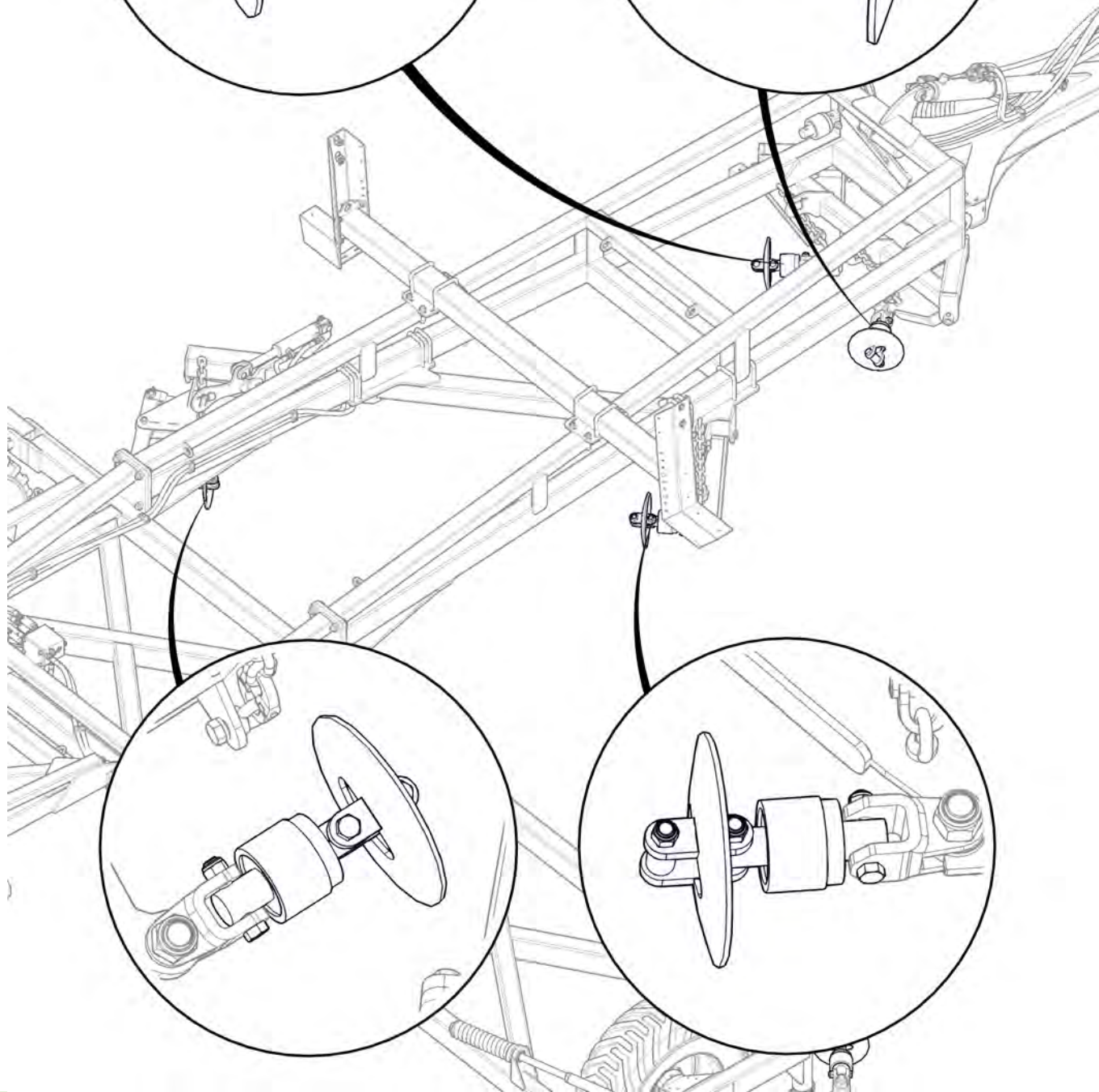
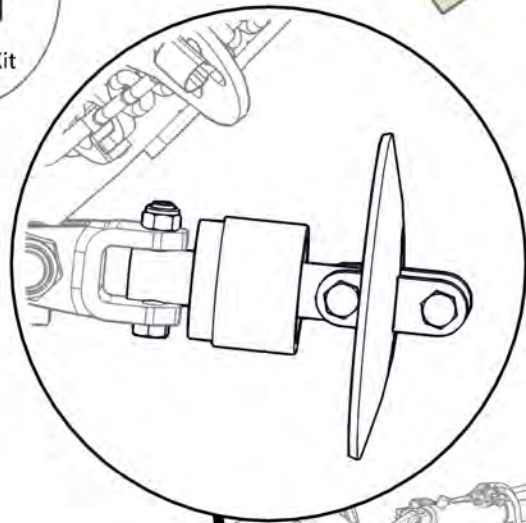
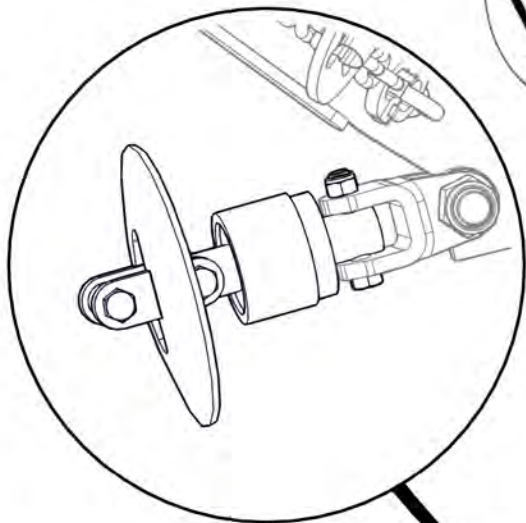
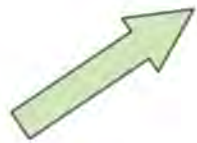
Item No.	Description	Number	Qty
1	Cylinder Safety Stop	0800-212.1	1
2	Square Loop Pin M8 x 63	0511-PINLOOPSQ863	1

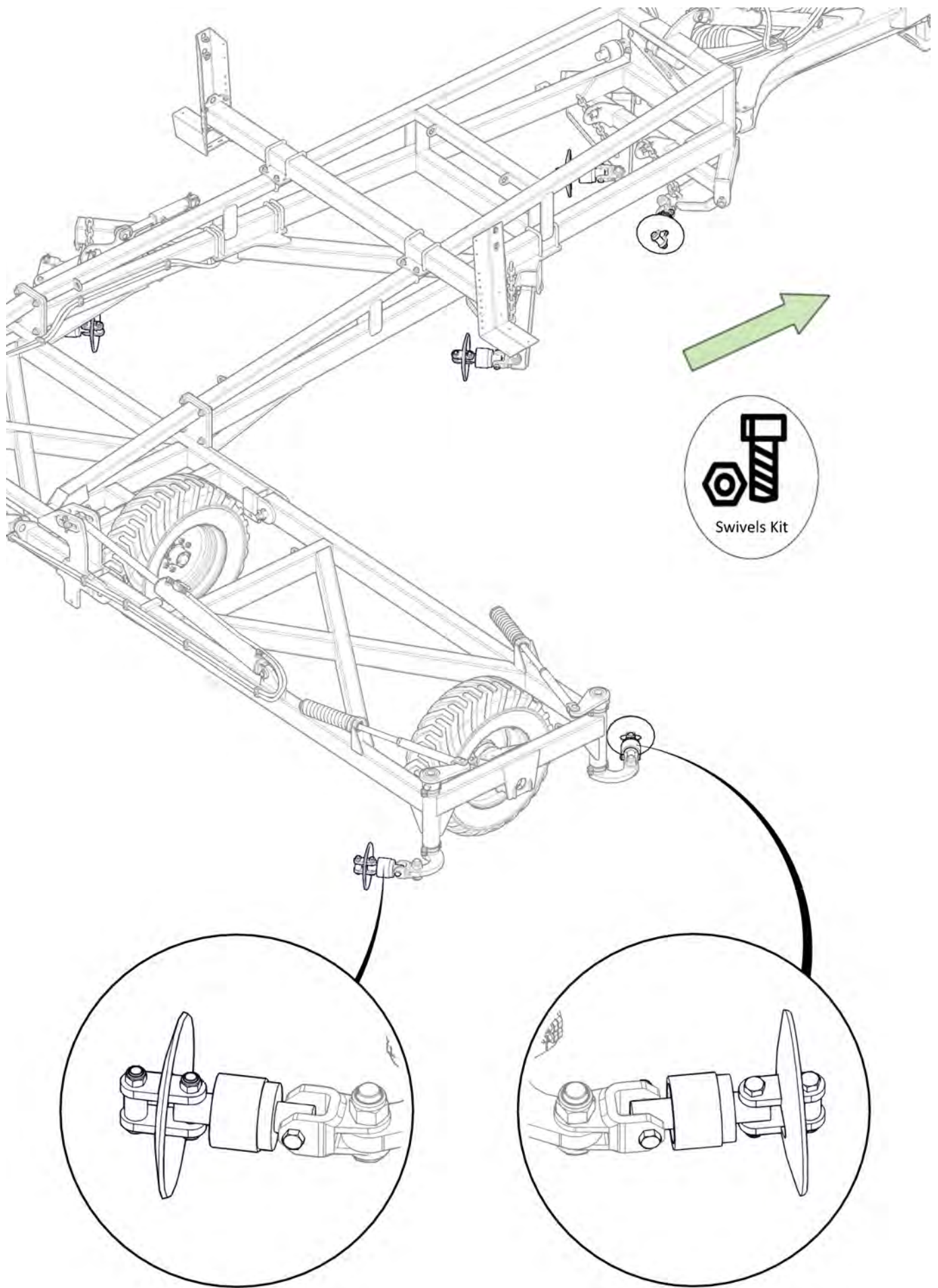


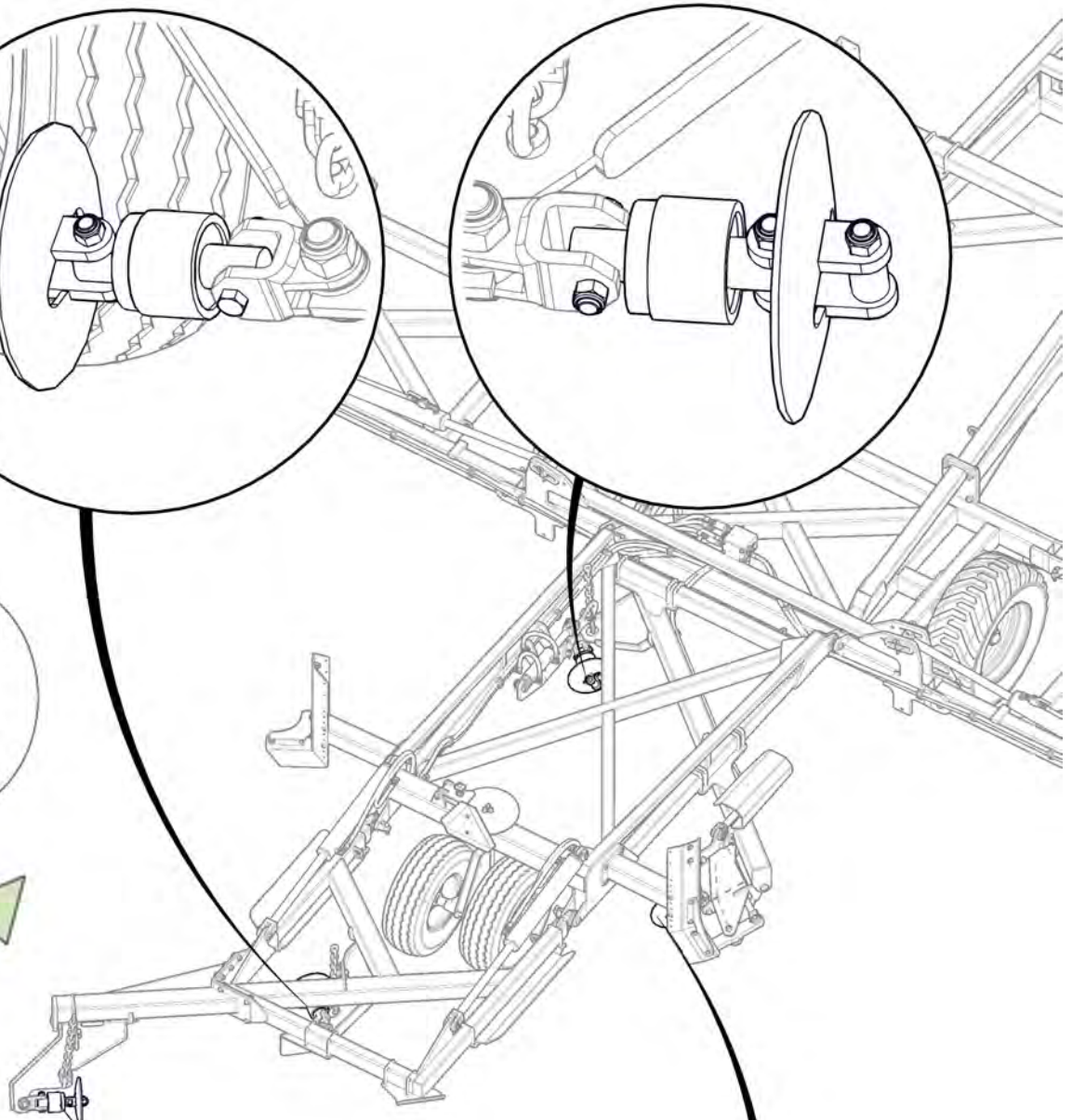
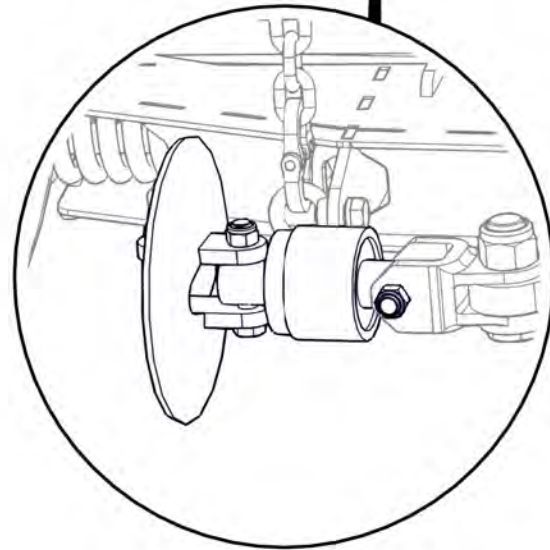
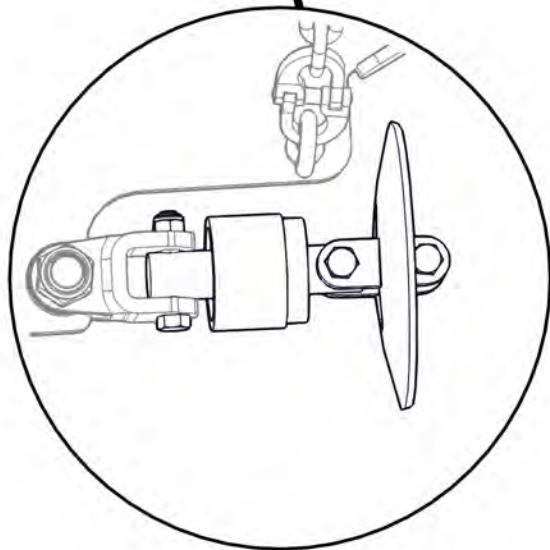
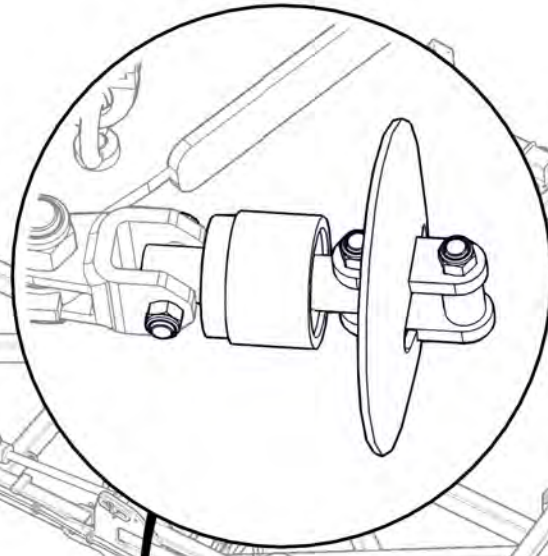
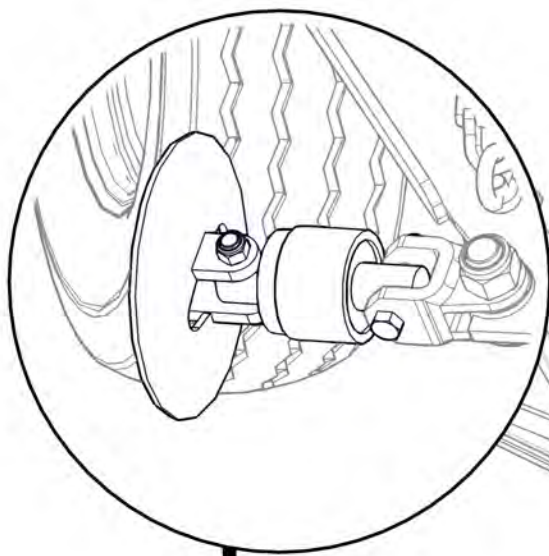


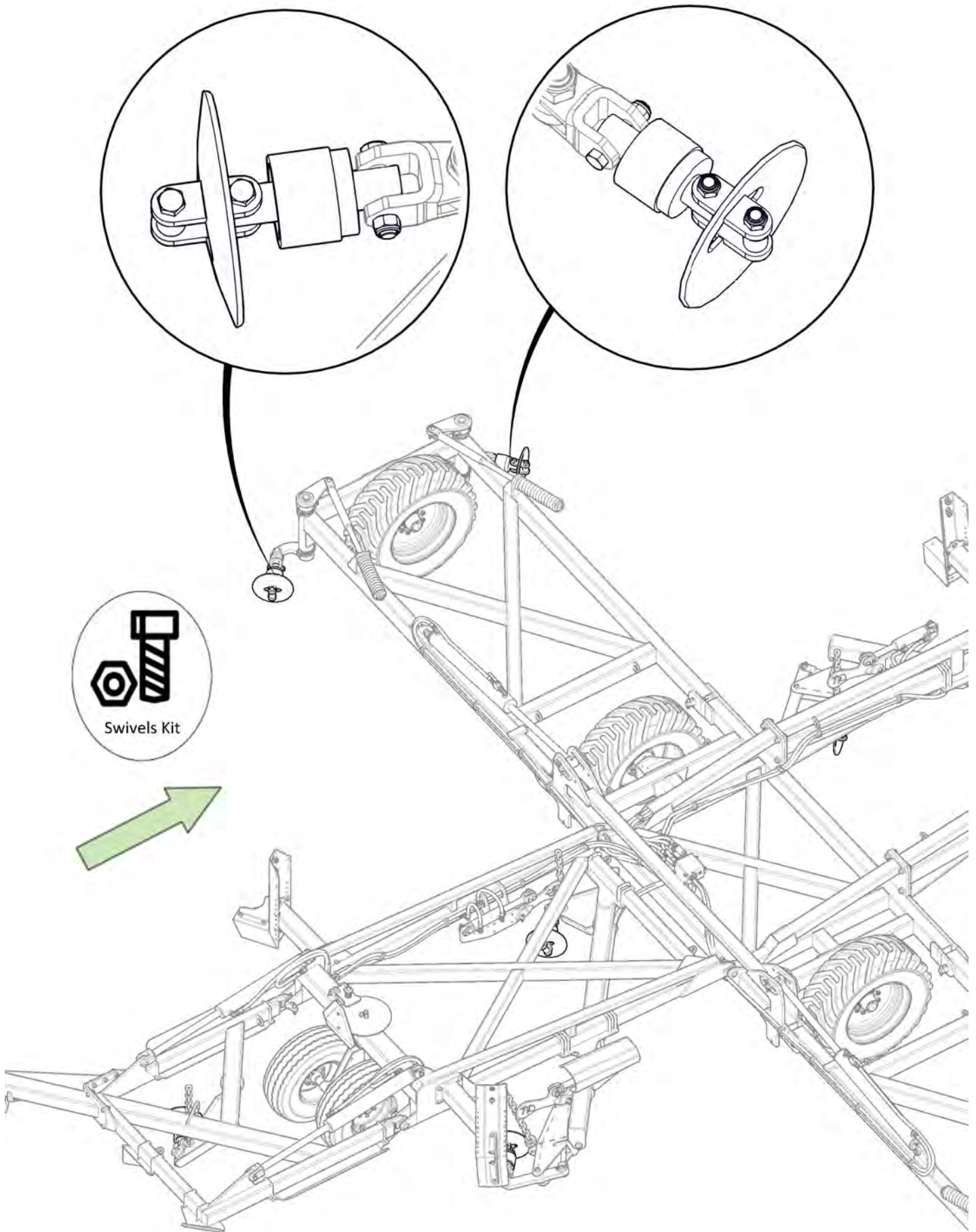
Item No.	Description	Number	Qty
1	20mm Bolt Swivel Unit	0802-PCHB55	1
2	Disc Chain Tie Plate Link 20mm	0802-DCTP-20	1
3	Tie Plate Bush	0801-PCDCS55	1
4	M20 x 110 grade 10.9 ZP Short Thread Bolt	0211-20110ST	3
5	Nyloc Nut M20	0221-NYL20	3



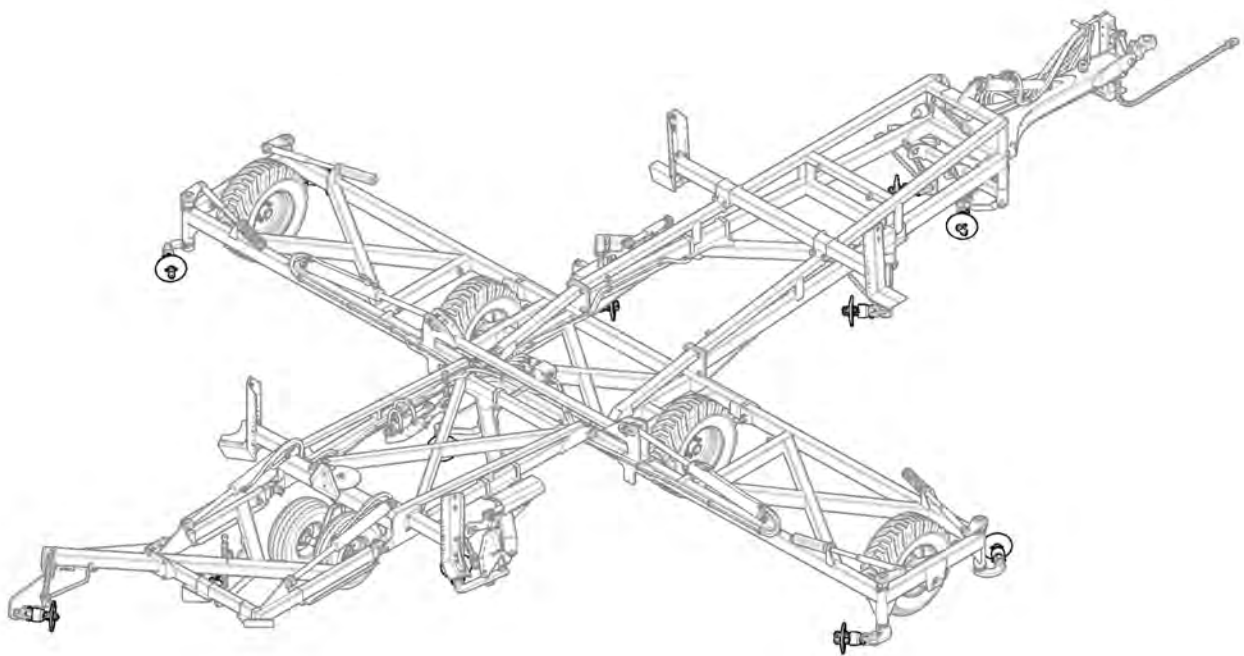








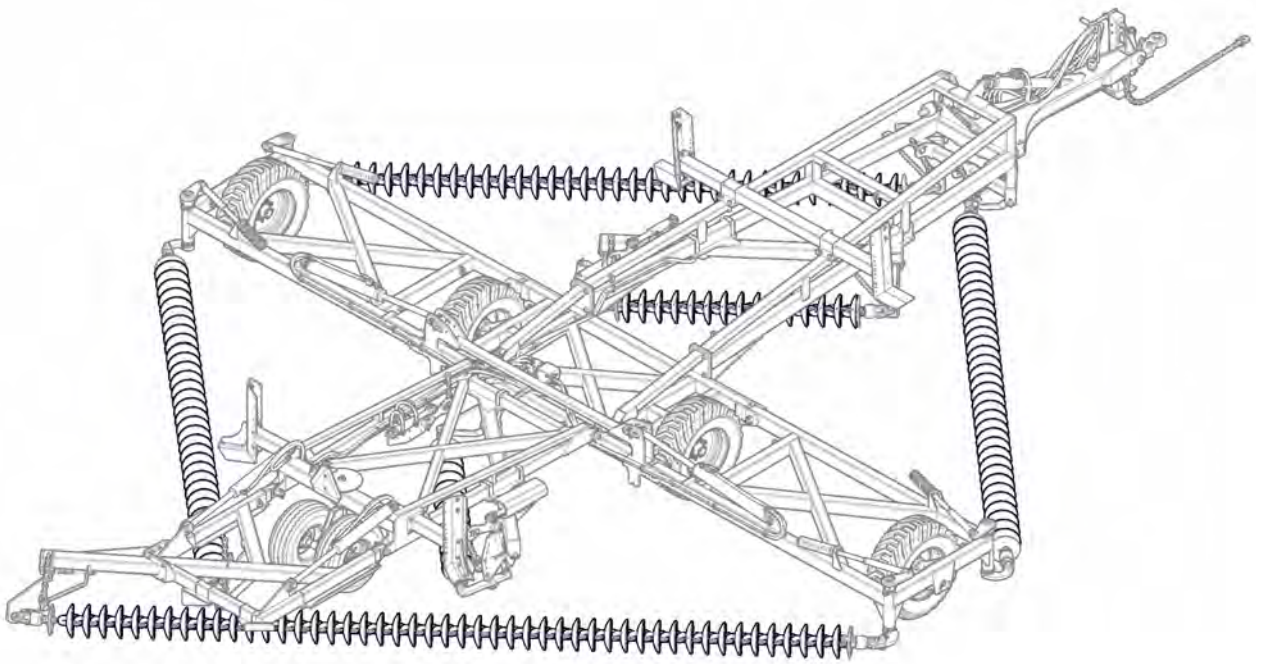
Swivels Kit



All bearings correctly orientated with seal facing rear of the machine

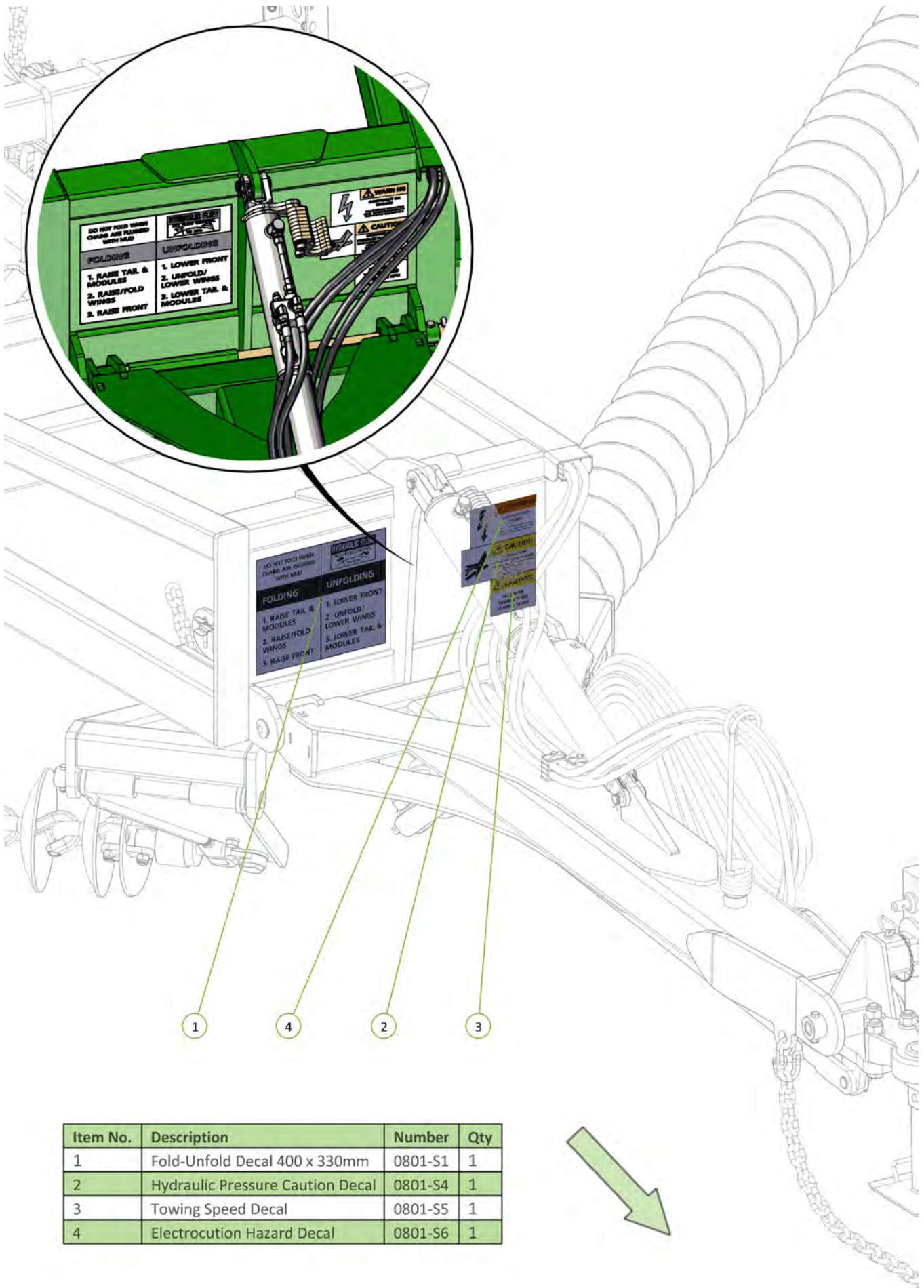


Signed _____ Date ____ / ____ / ____
Unit Serial Number: _____



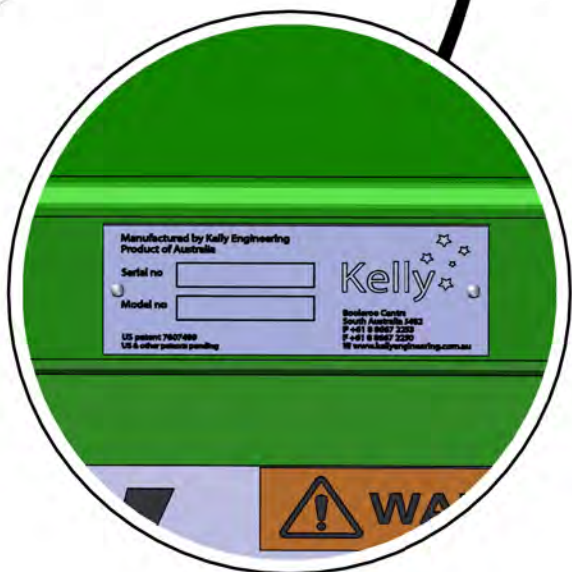
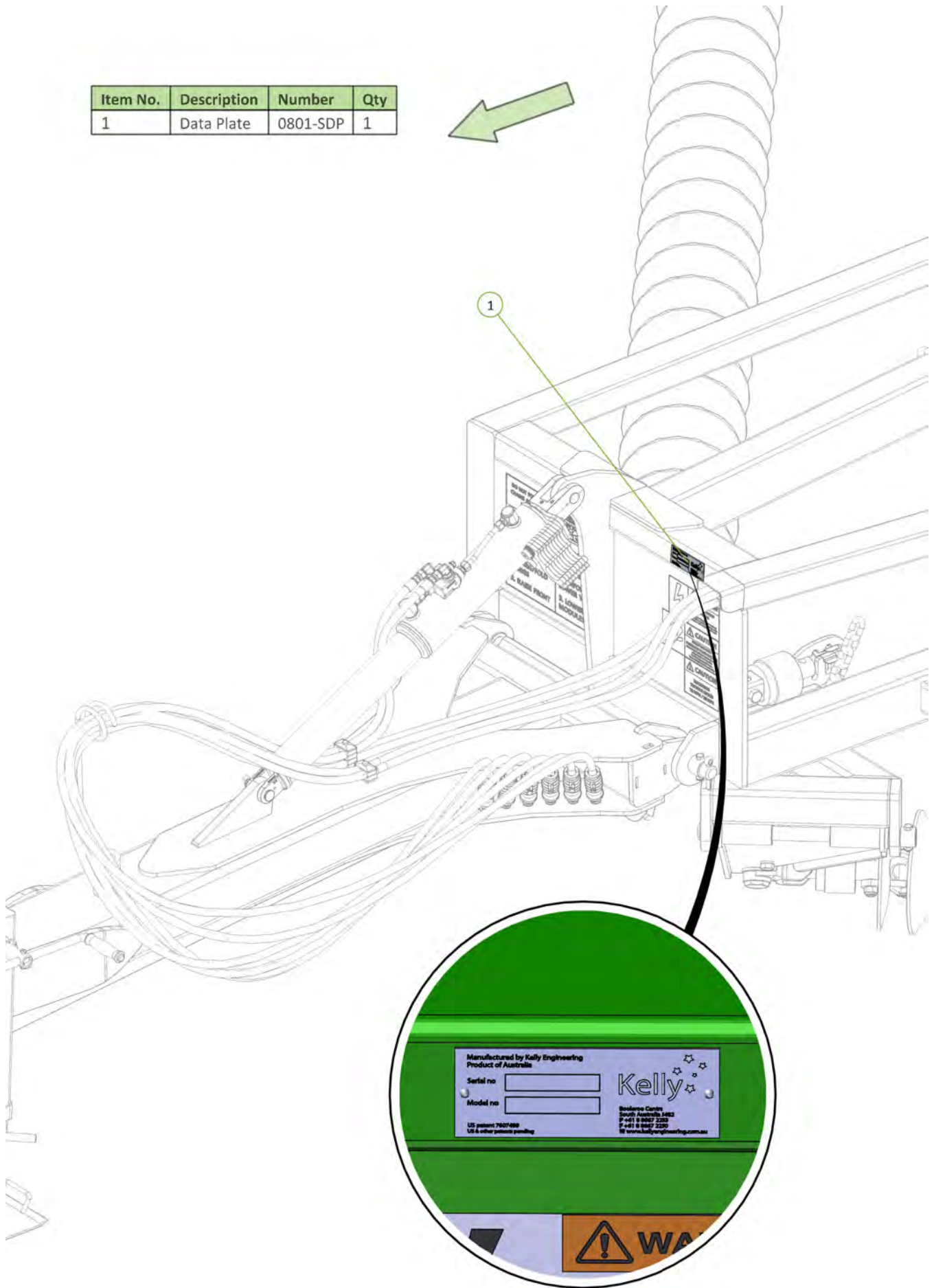
Section 3

Decal Application

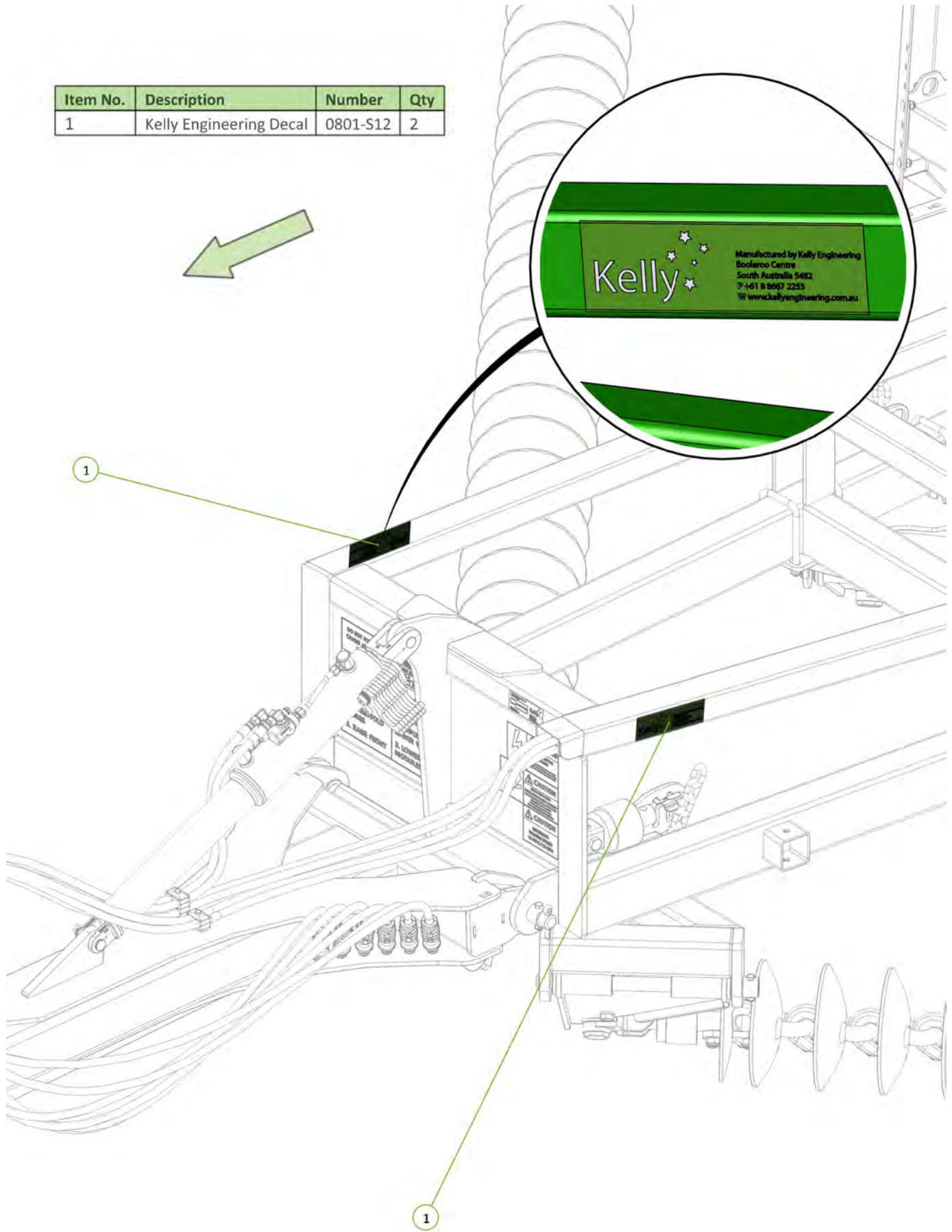


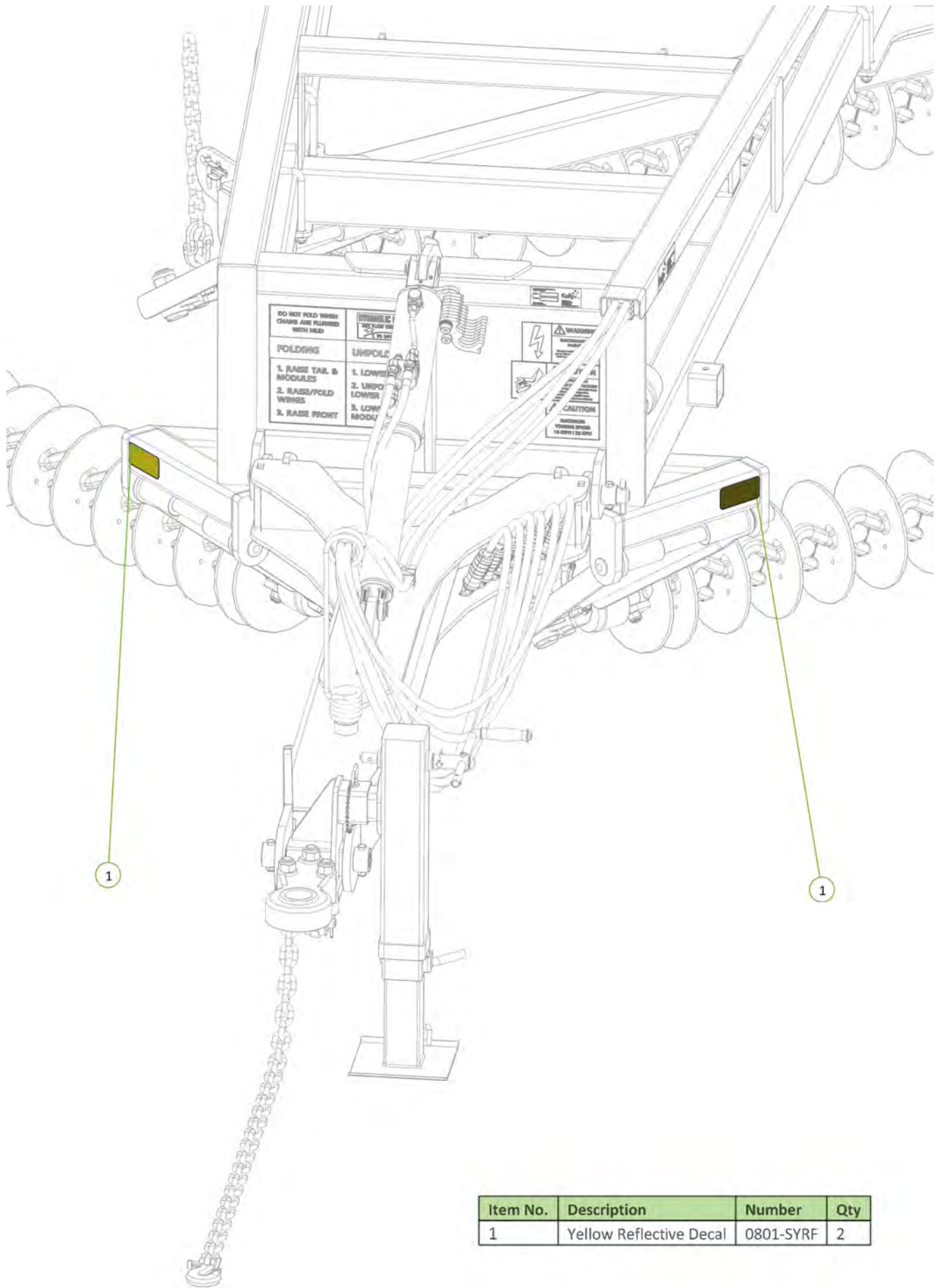
Item No.	Description	Number	Qty
1	Fold-Unfold Decal 400 x 330mm	0801-S1	1
2	Hydraulic Pressure Caution Decal	0801-S4	1
3	Towing Speed Decal	0801-S5	1
4	Electrocution Hazard Decal	0801-S6	1

Item No.	Description	Number	Qty
1	Data Plate	0801-SDP	1

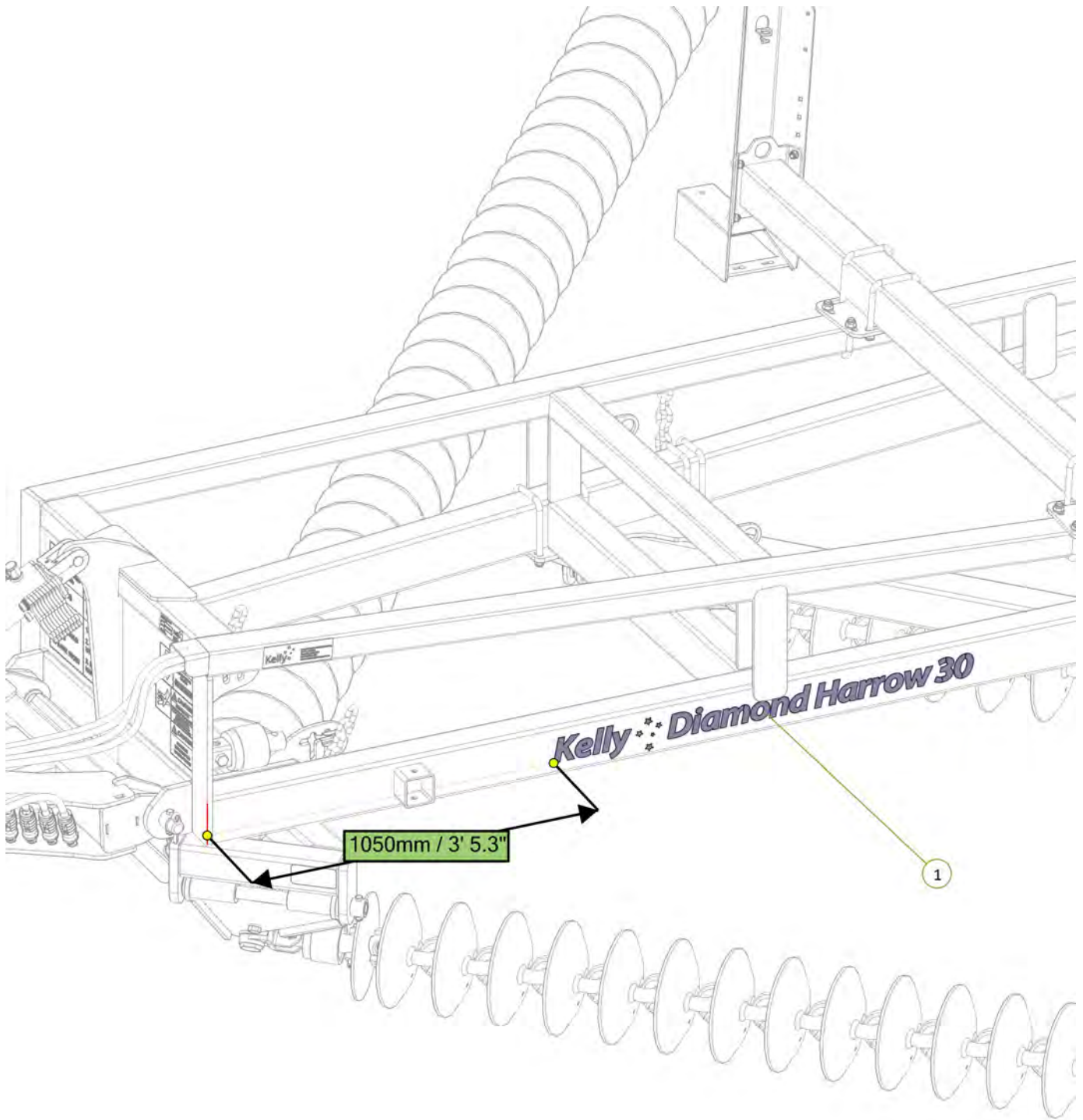


Item No.	Description	Number	Qty
1	Kelly Engineering Decal	0801-S12	2



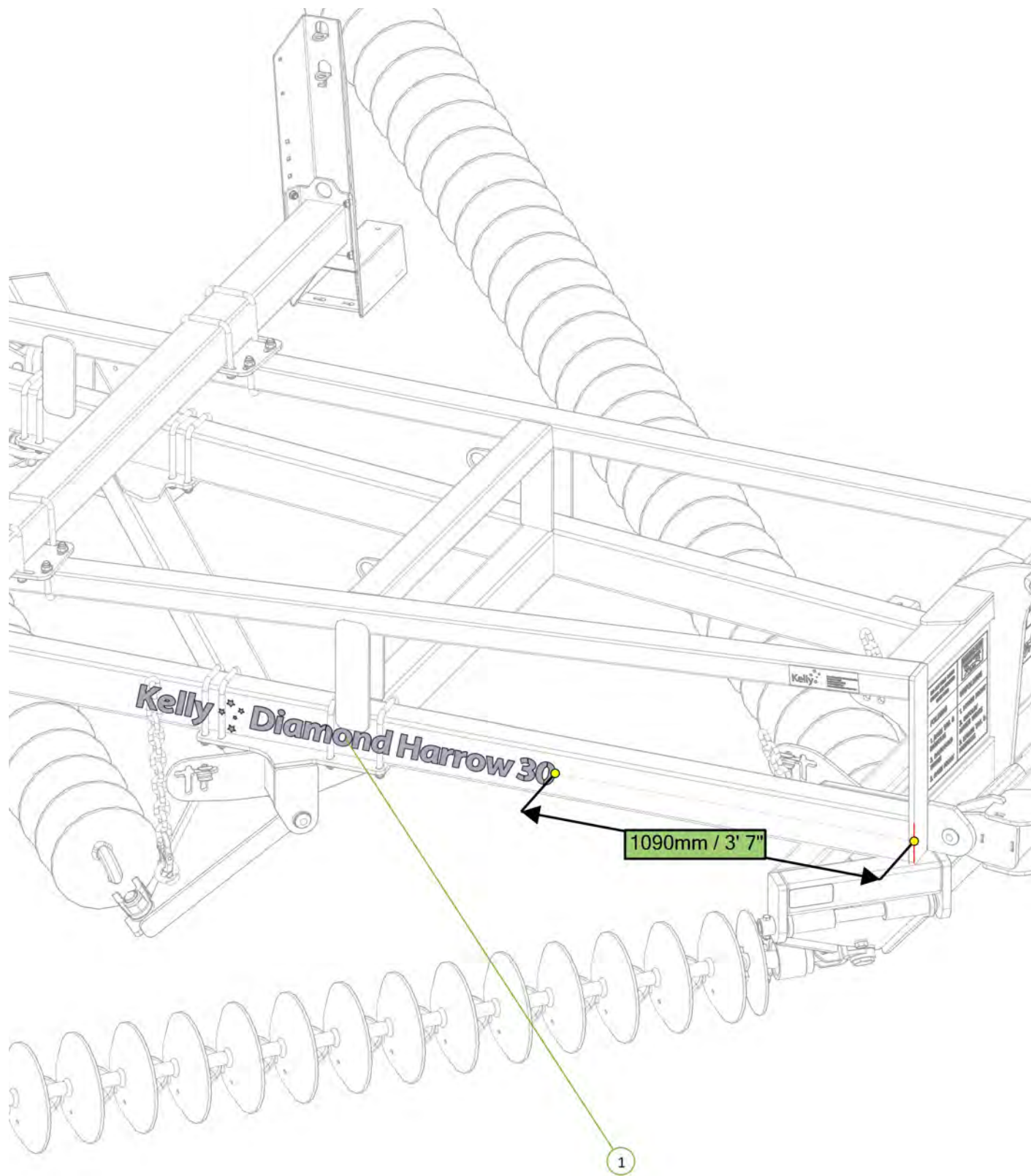


Item No.	Description	Number	Qty
1	Yellow Reflective Decal	0801-SYRF	2



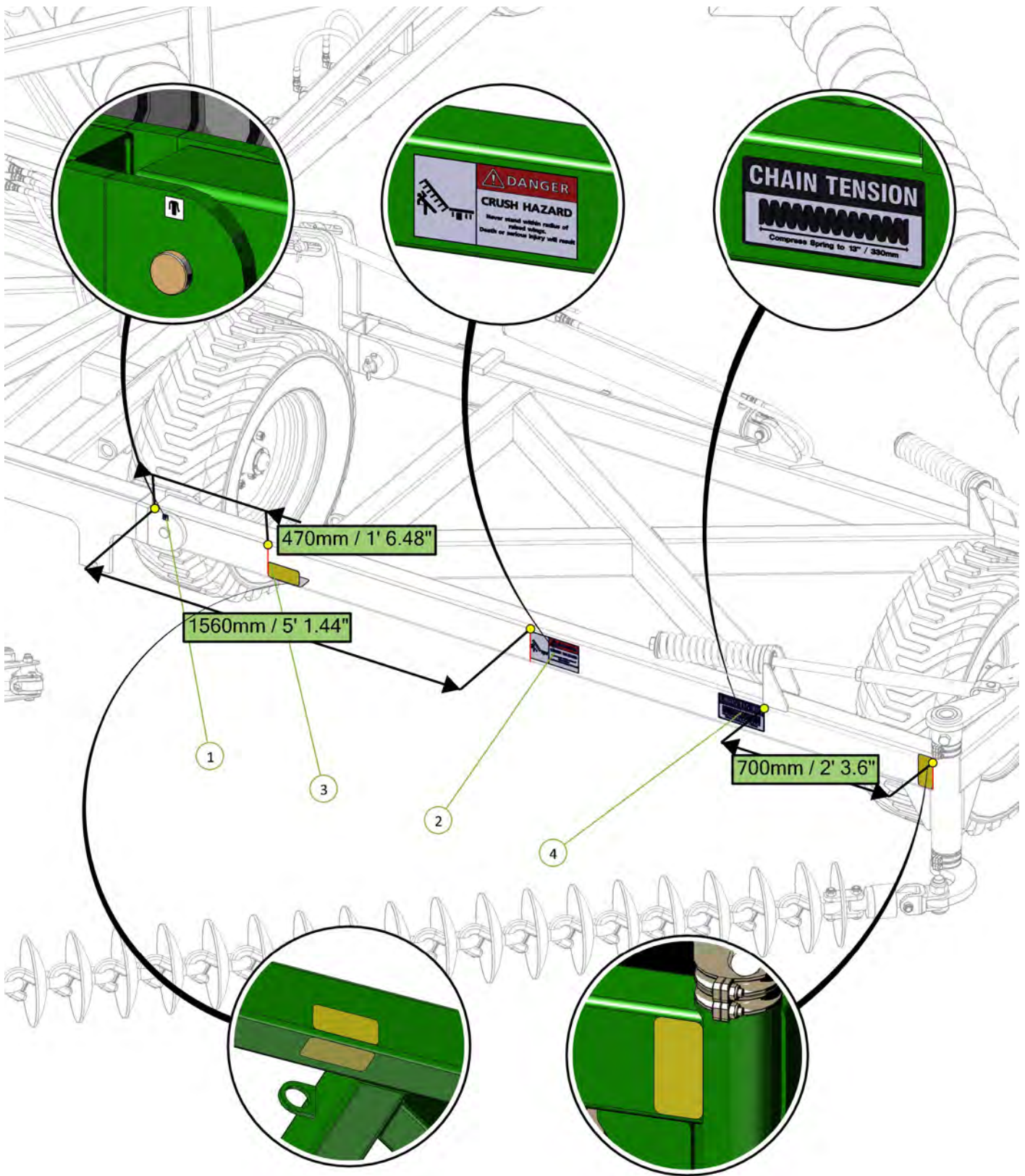
Item No.	Description	Number	Qty
1	Diamond Harrow 30 Decal	0801-SKDH30	1





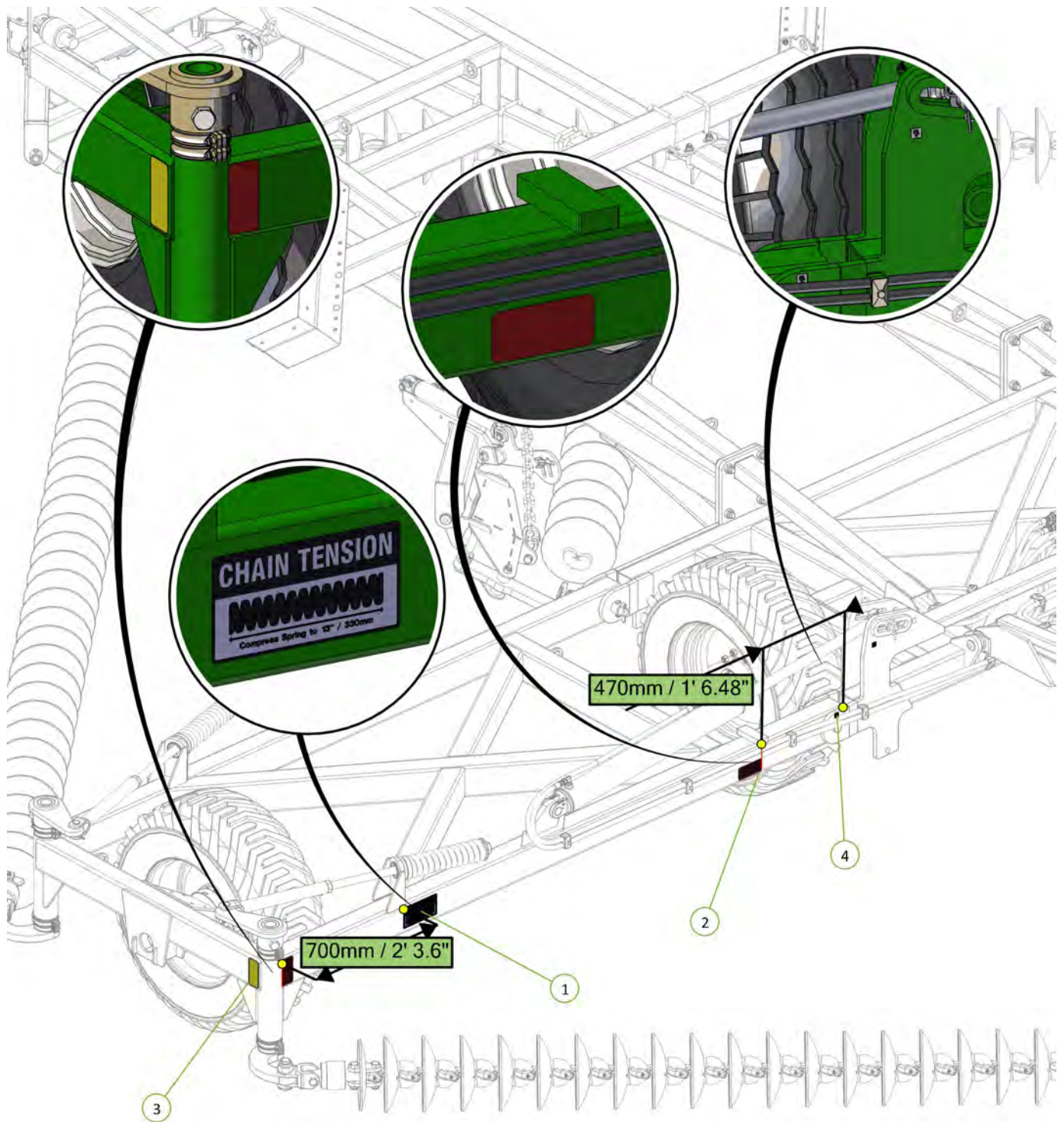
Item No.	Description	Number	Qty
1	Diamond Harrow 30 Decal	0801-SKDH30	1





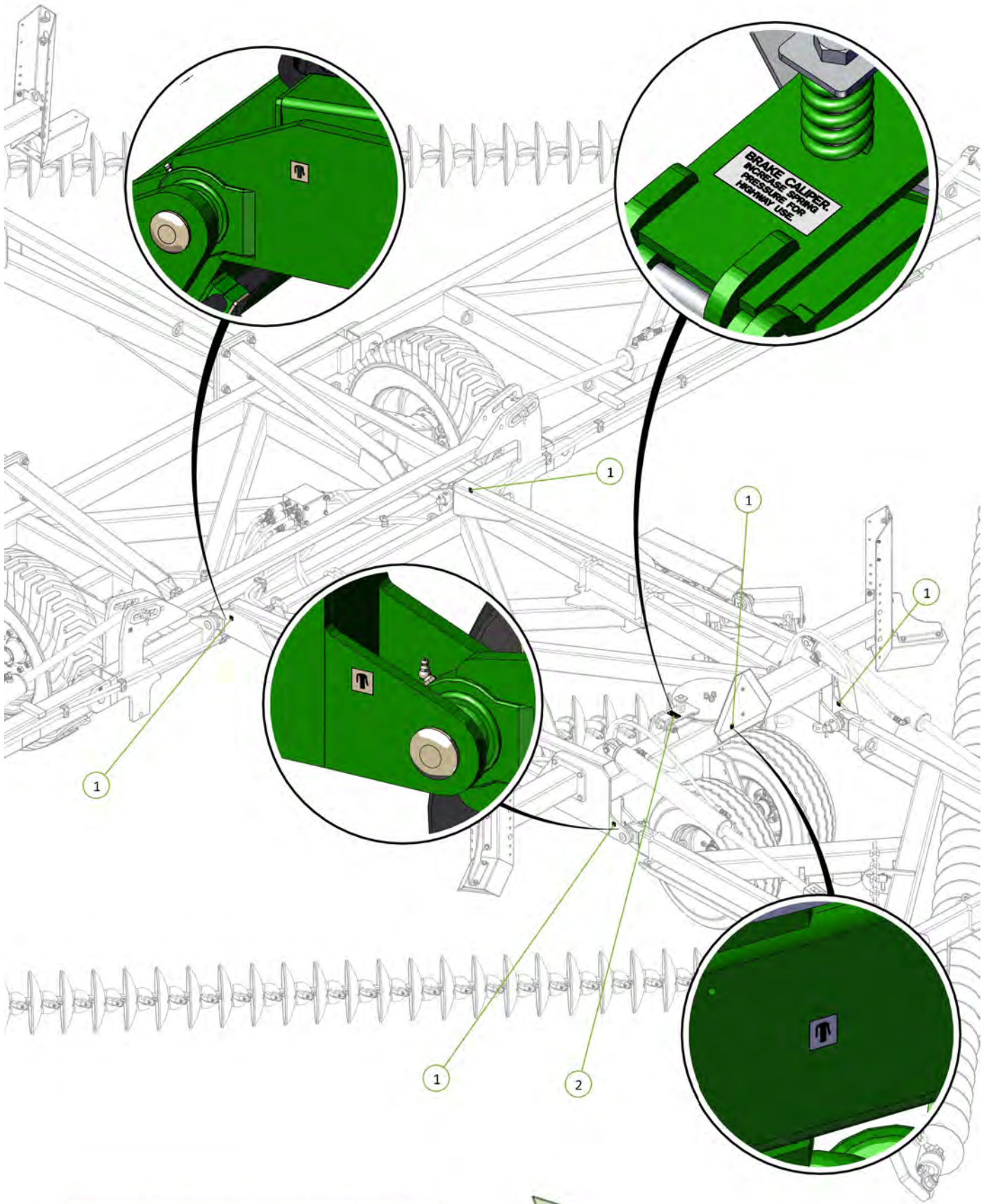
Item No.	Description	Number	Qty
1	Grease Decal	0801-S10	1
2	Danger Crush Hazard Decal	0801-S3	1
3	Yellow Reflective Decal	0801-SYRF	3
4	Chain Tension 330mm Decal	0801-S15	1





Item No.	Description	Number	Qty
1	Chain Tension 330mm Decal	0801-S15	1
2	Red Reflective Decal	0801-SRRF	2
3	Yellow Reflective Decal	0801-SYRF	1
4	Grease Decal	0801-S10	2

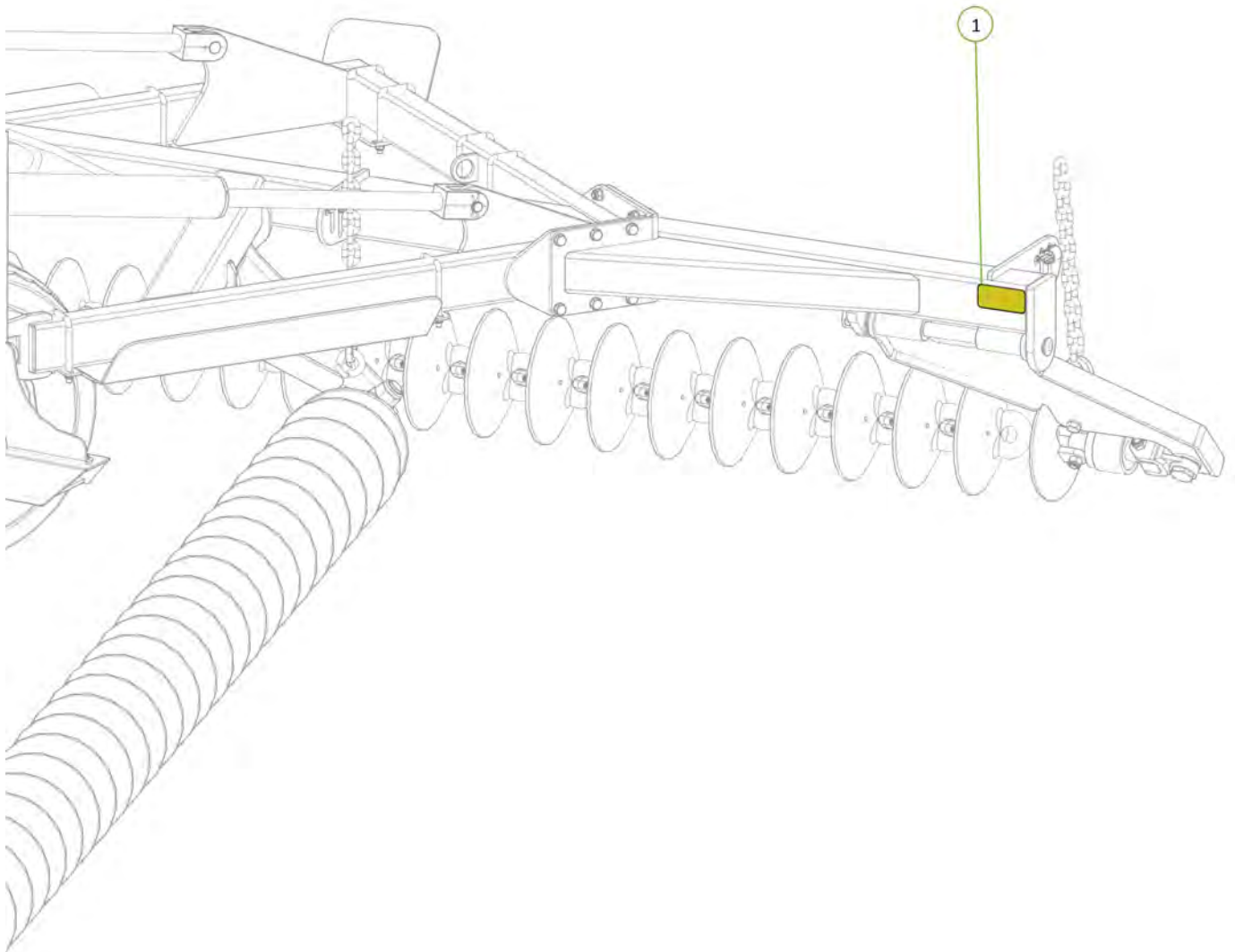




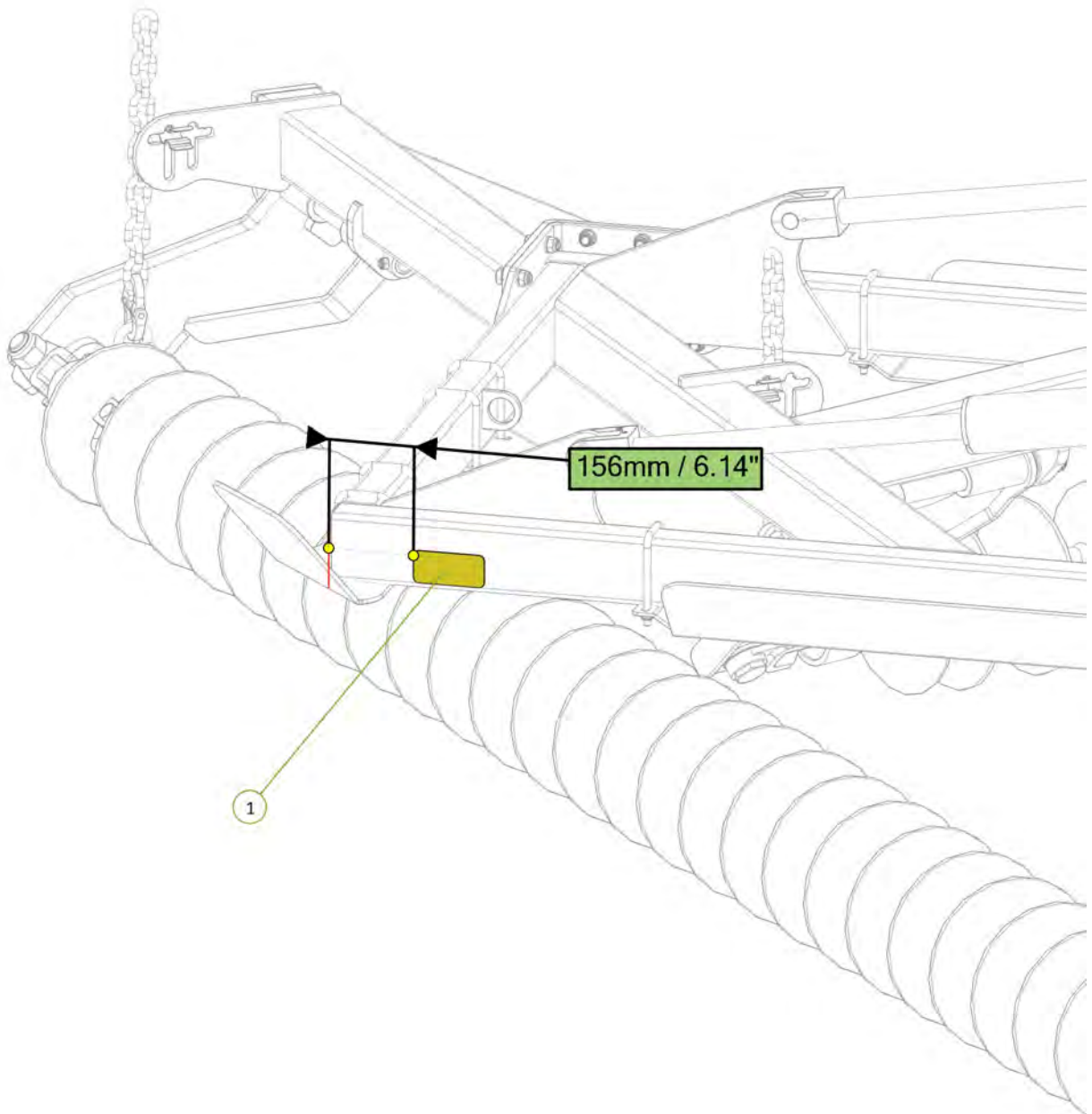
Item No.	Description	Number	Qty
1	Grease Decal	0801-S10	5
2	Brake Caliper Decal	0801-S11	1

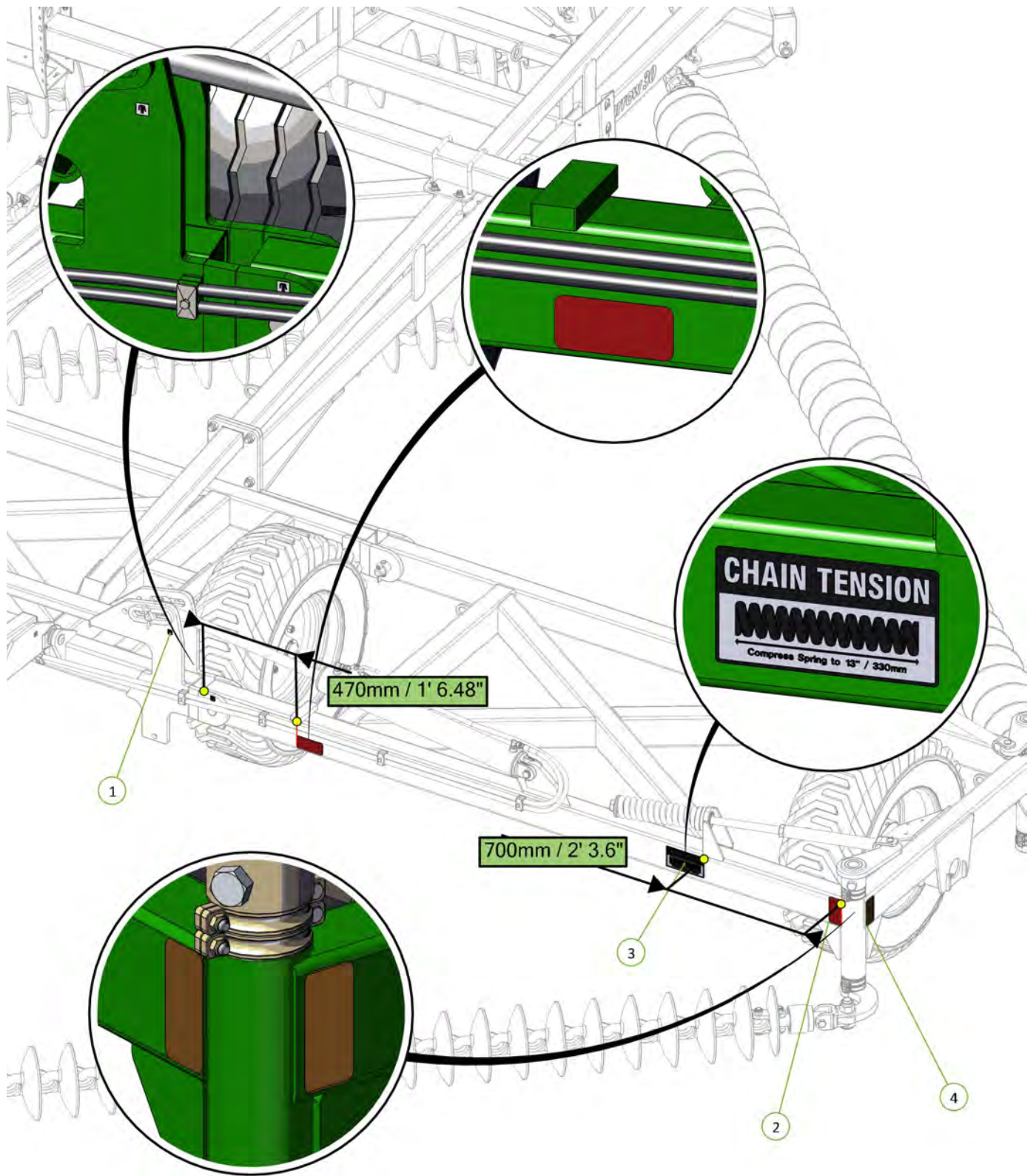


Item No.	Description	Number	Qty
1	Yellow Reflective Decal	0801-SYRF	1



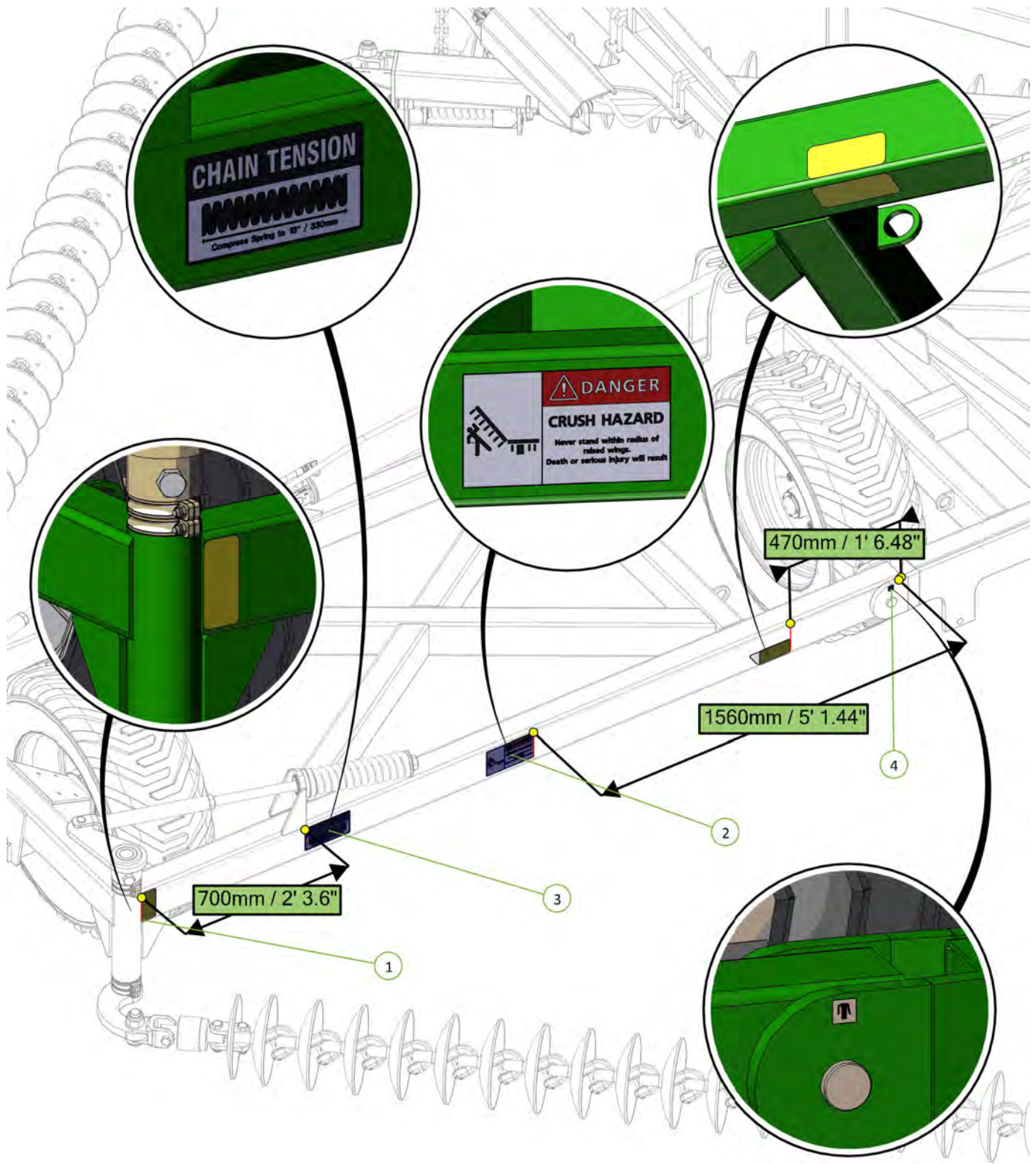
Item No.	Description	Number	Qty
1	Yellow Reflective Decal	0801-SYRF	1





Item No.	Description	Number	Qty
1	Grease Decal	0801-S10	2
2	Red Reflective Decal	0801-SRRF	2
3	Chain Tension 330mm Decal	0801-S15	1
4	Yellow Reflective Decal	0801-SYRF	1

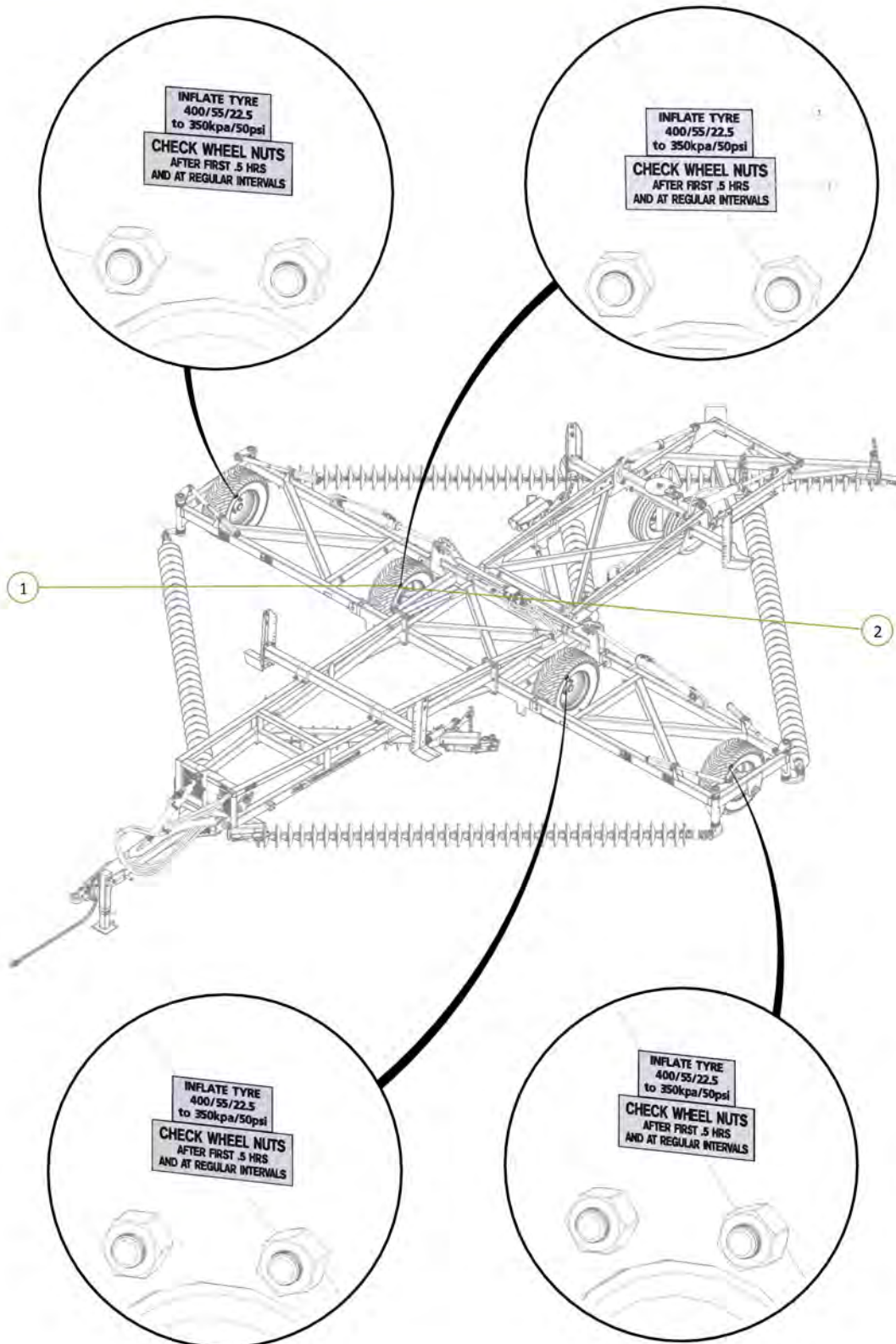




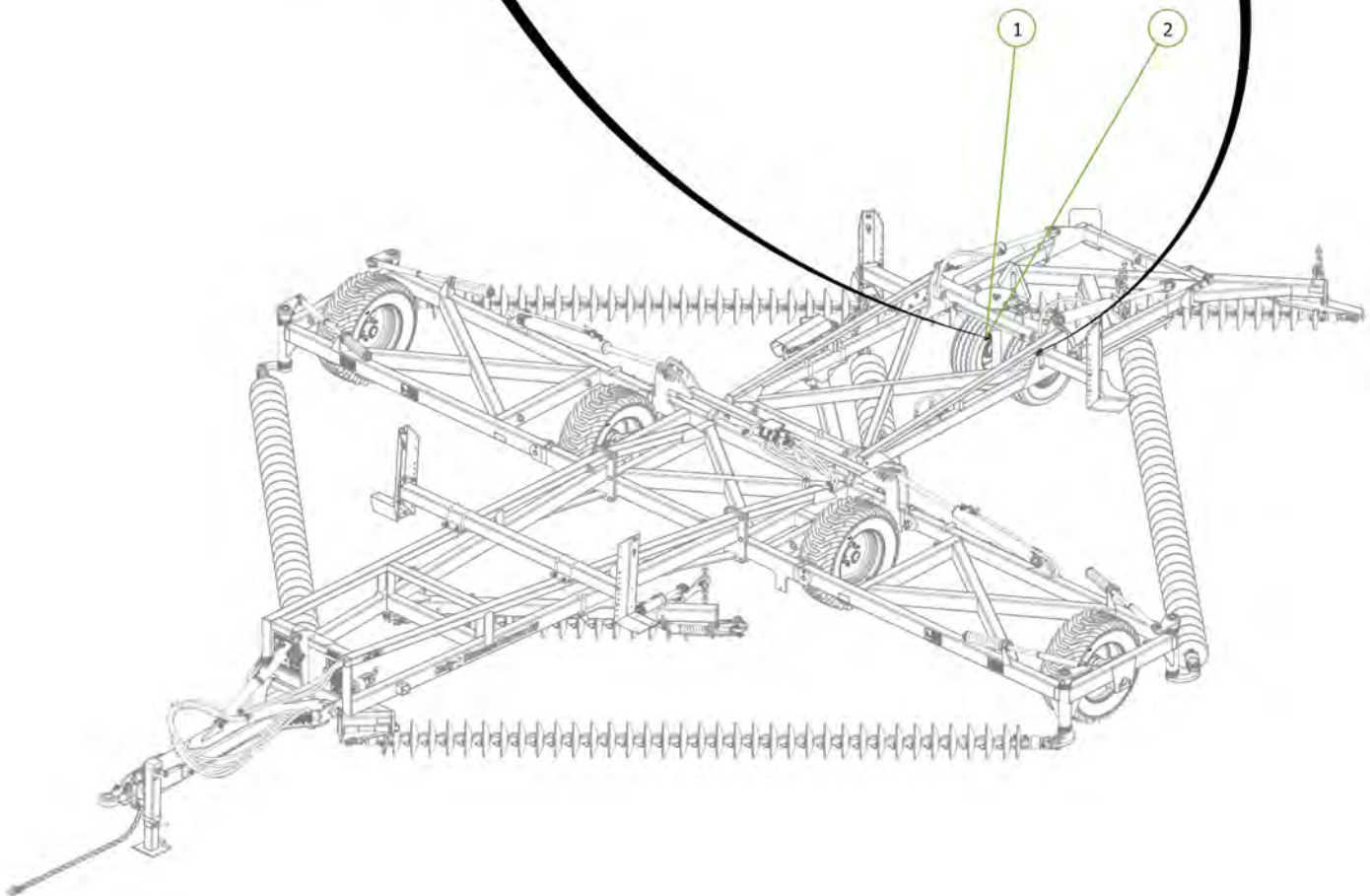
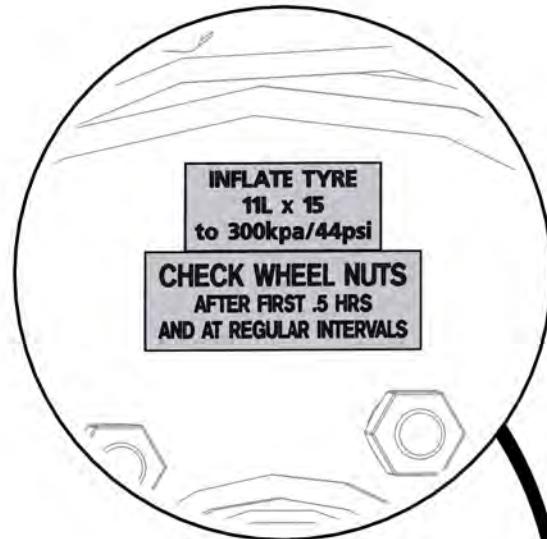
Item No.	Description	Number	Qty
1	Yellow Reflective Decal	0801-SYRF	3
2	Danger Crush Hazard Decal	0801-S3	1
3	Chain Tension 330mm Decal	0801-S15	1
4	Grease Decal	0801-S10	1

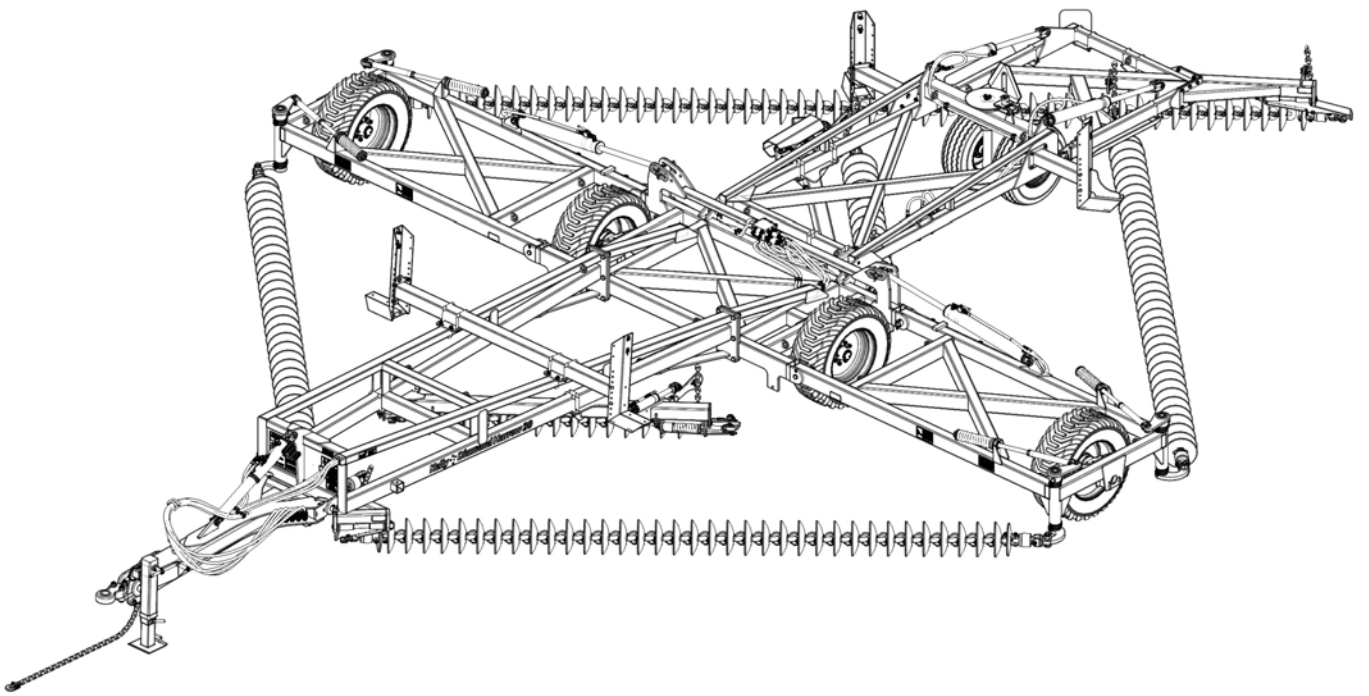


Item No.	Description	Number	Qty
1	Decal, 400/55/22.5 Tyre Inflation	0801-S8-400-55-22.5	4
2	Wheel Nut Decal	0801-S9	4



Item No.	Description	Number	Qty
1	Decal, 11L-15 Tyre Inflation	0801-S8-11L-15.JPG	2
2	Wheel Nut Decal	0801-S9	2

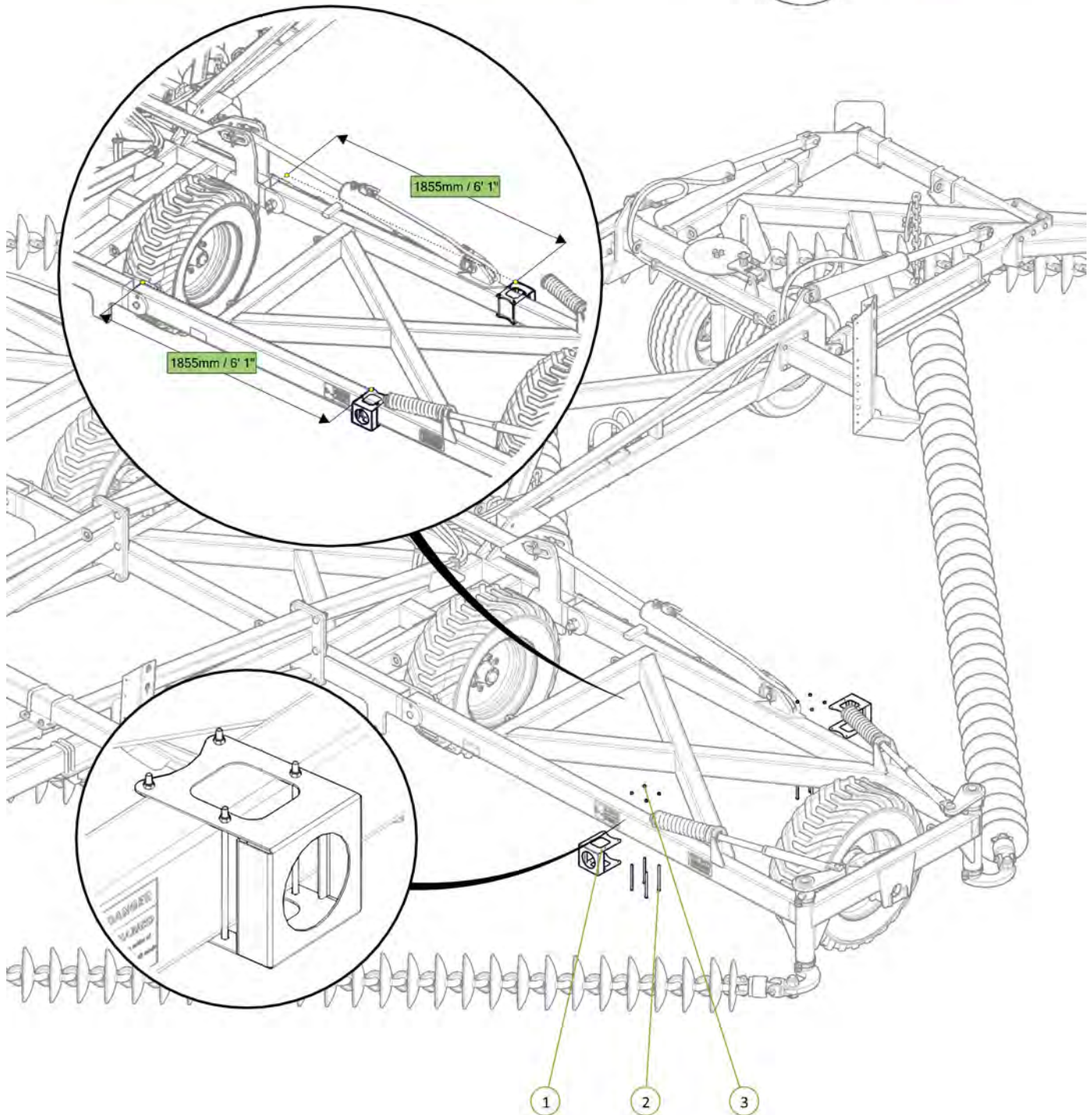




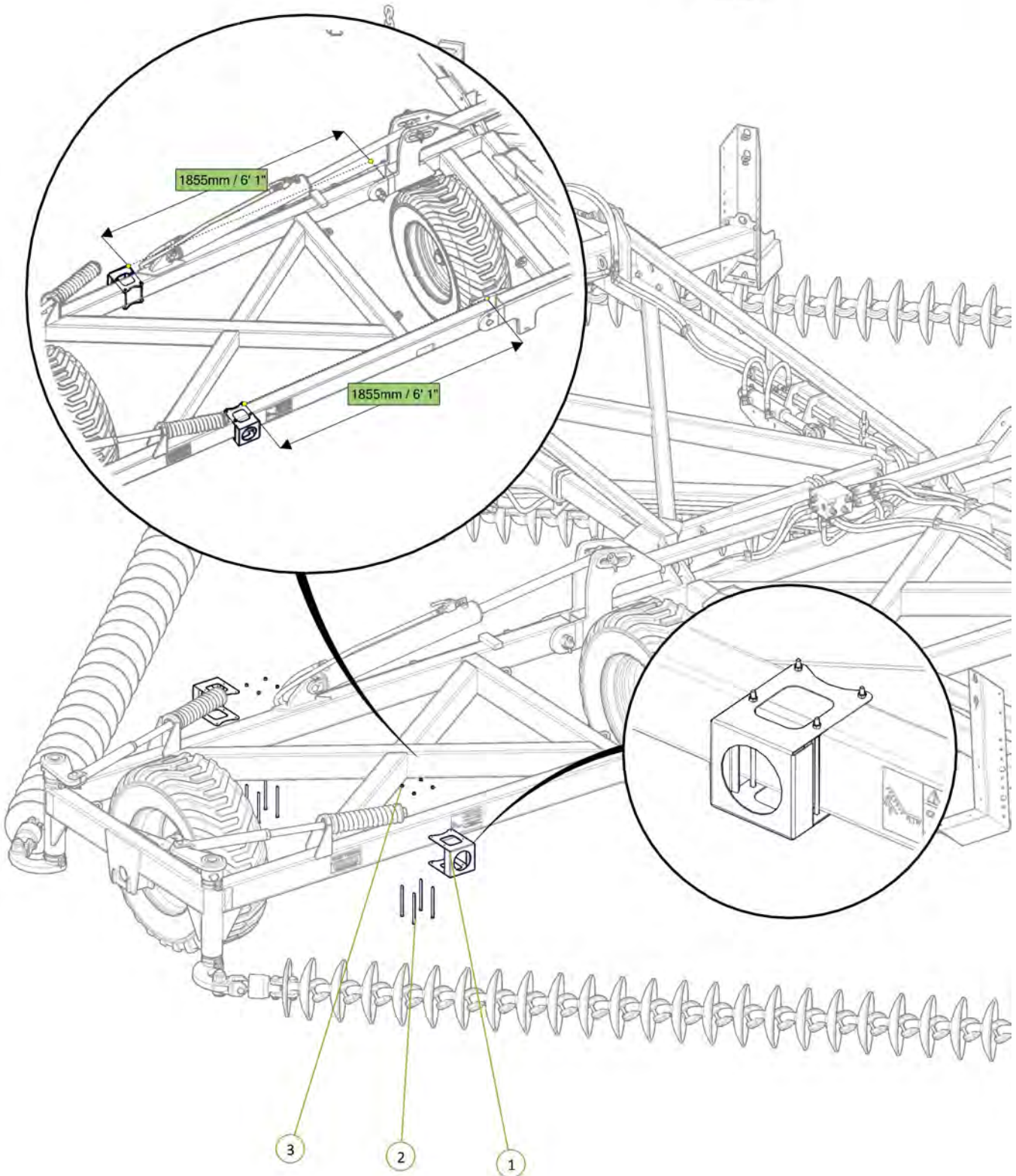
Section 4

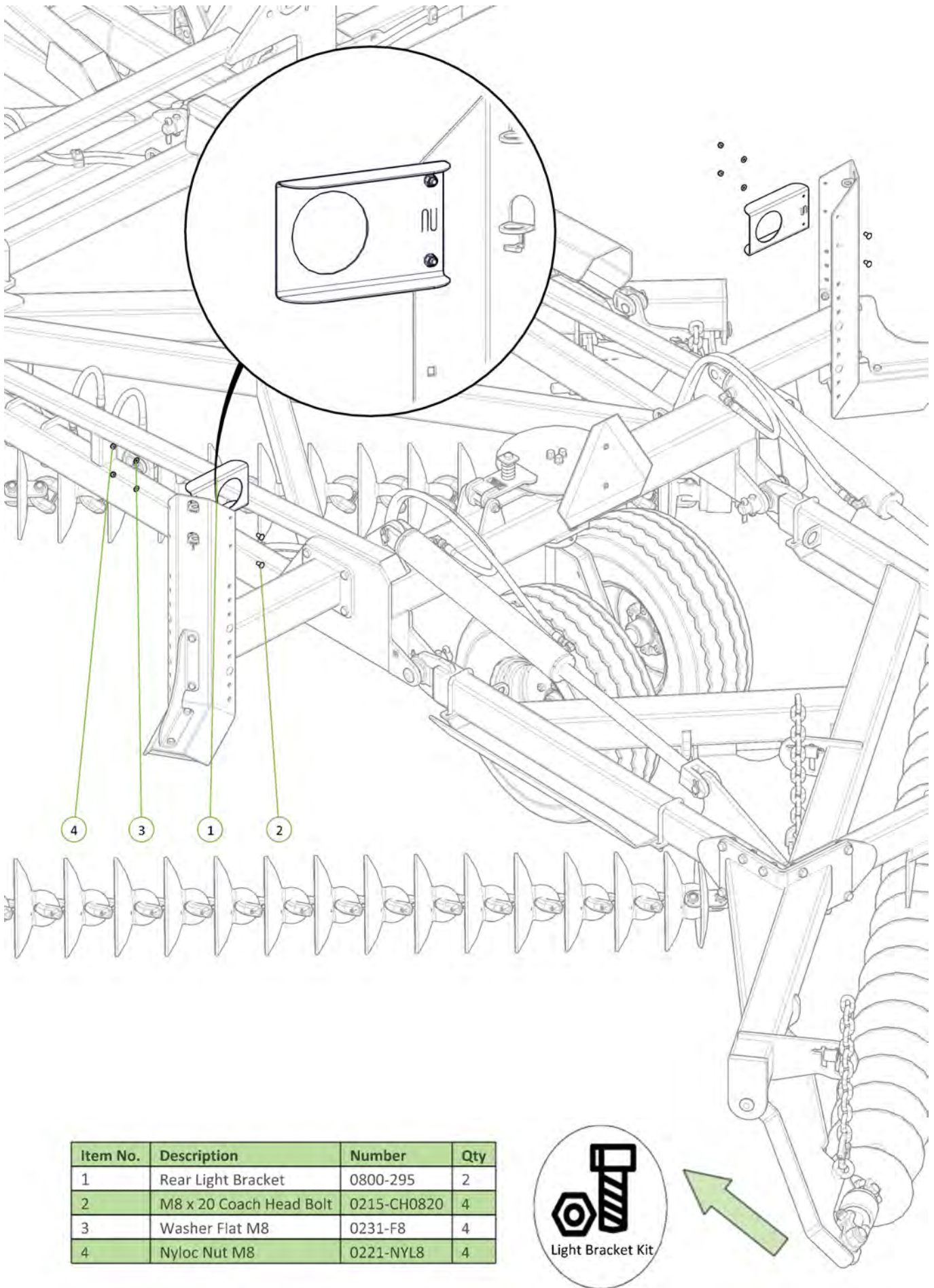
Light Kit

Item No.	Description	Number	Qty
1	Wing light bracket	0800-296	2
2	Socket Head Bolt M6 x 170 zp	0211-SH6170	8
3	Nyloc Nut M6	0221-NYL6	8



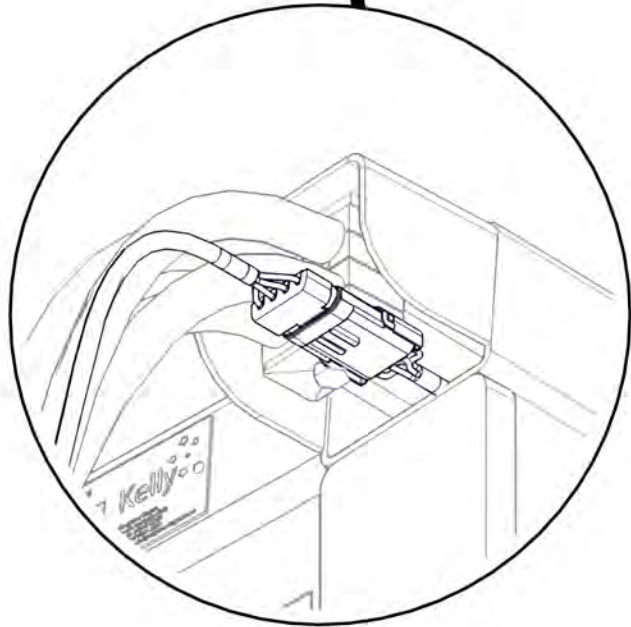
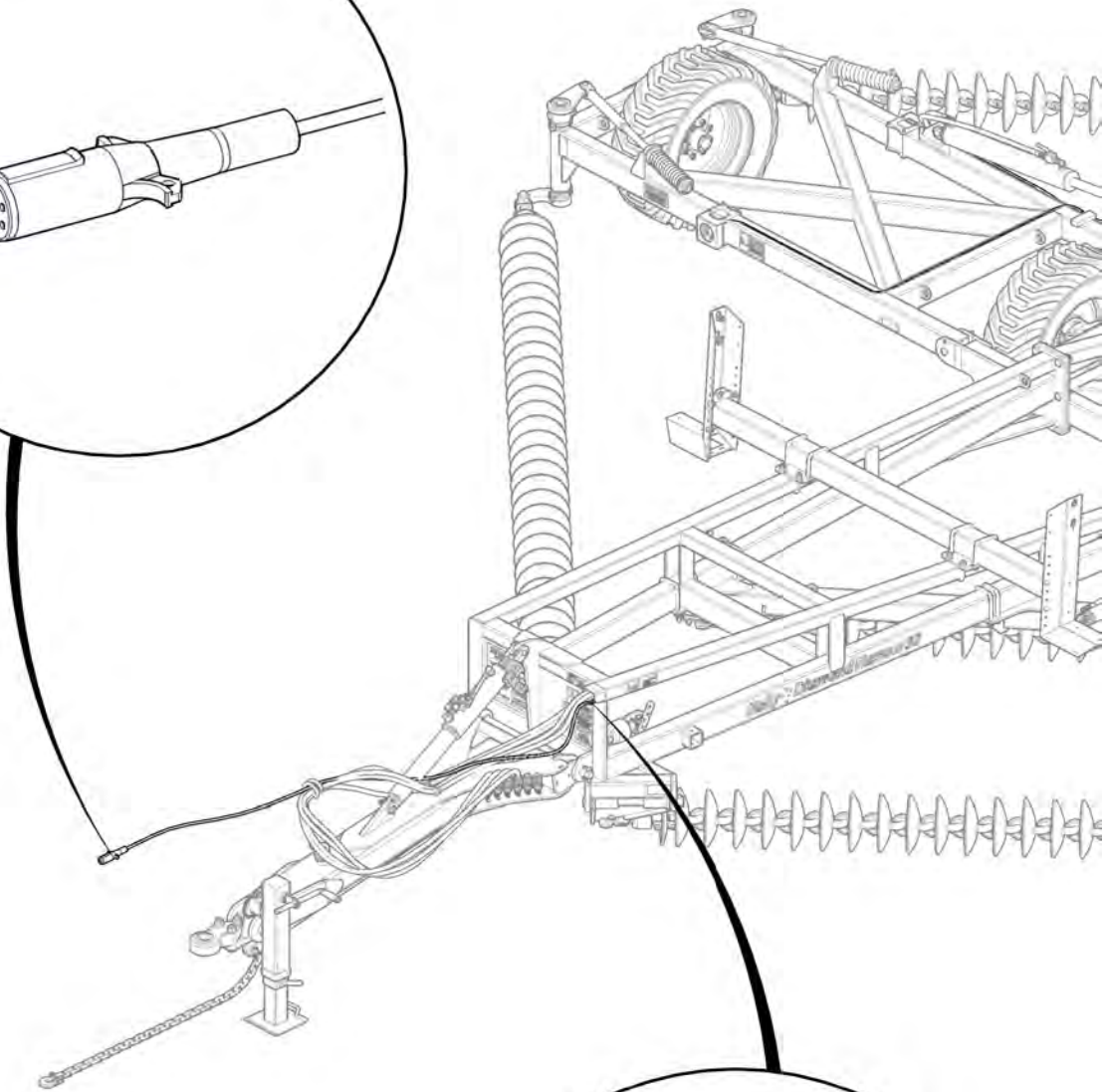
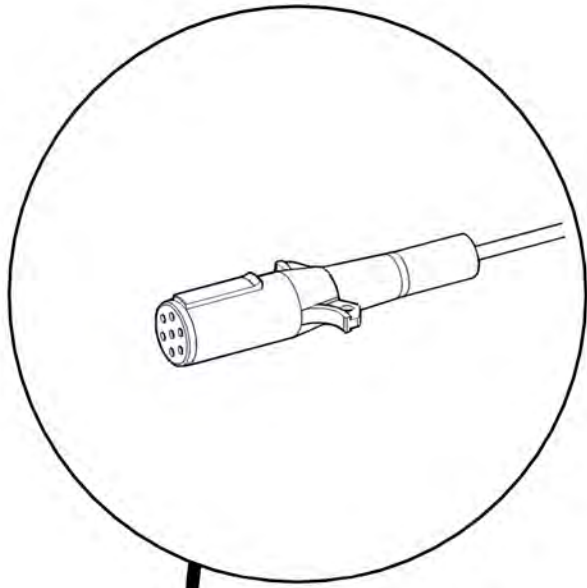
Item No.	Description	Number	Qty
1	Wing light bracket	0800-296	2
2	Socket Head Bolt M6 x 170 zp	0211-SH6170	8
3	Nyloc Nut M6	0221-NYL6	8

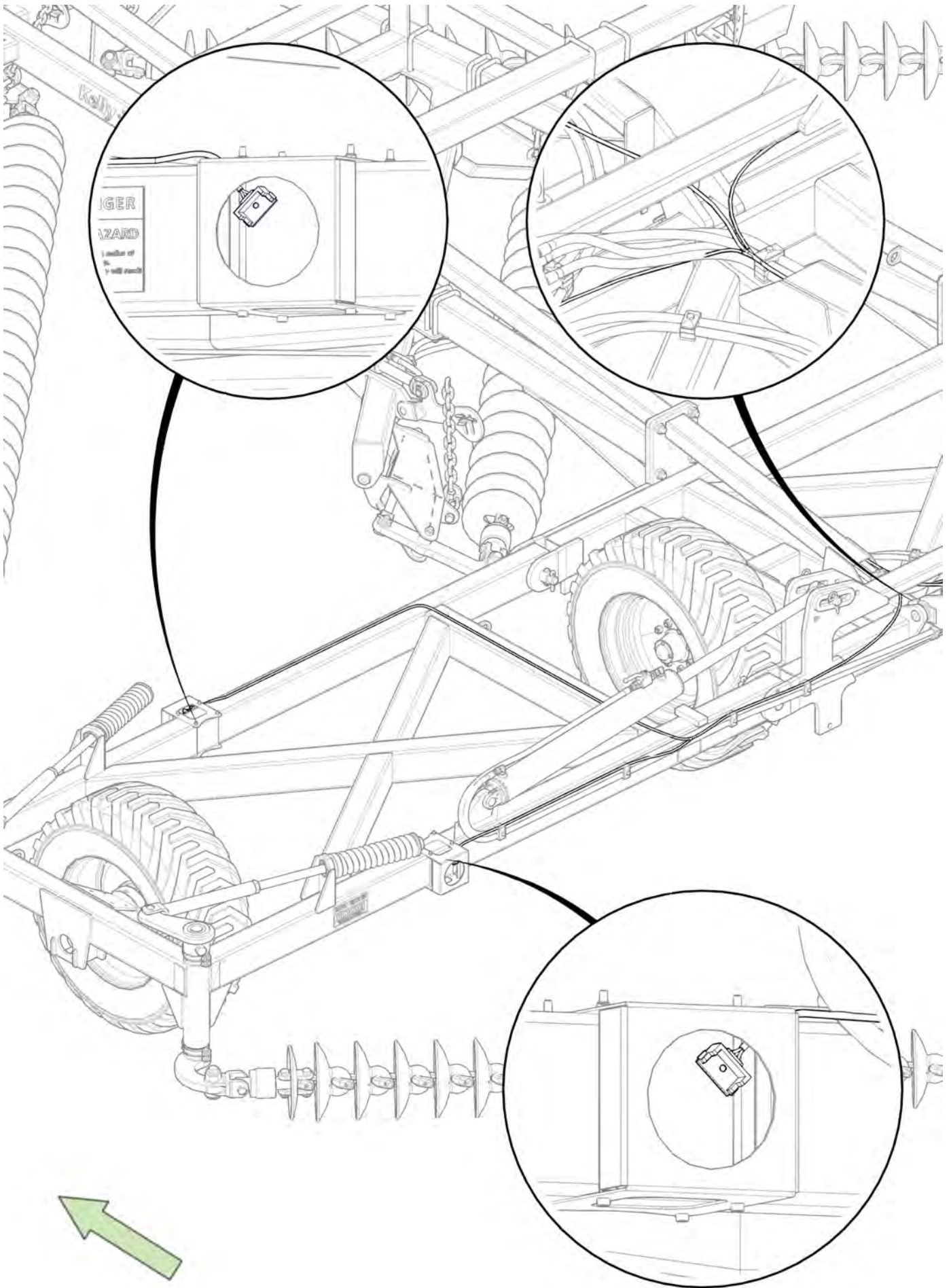


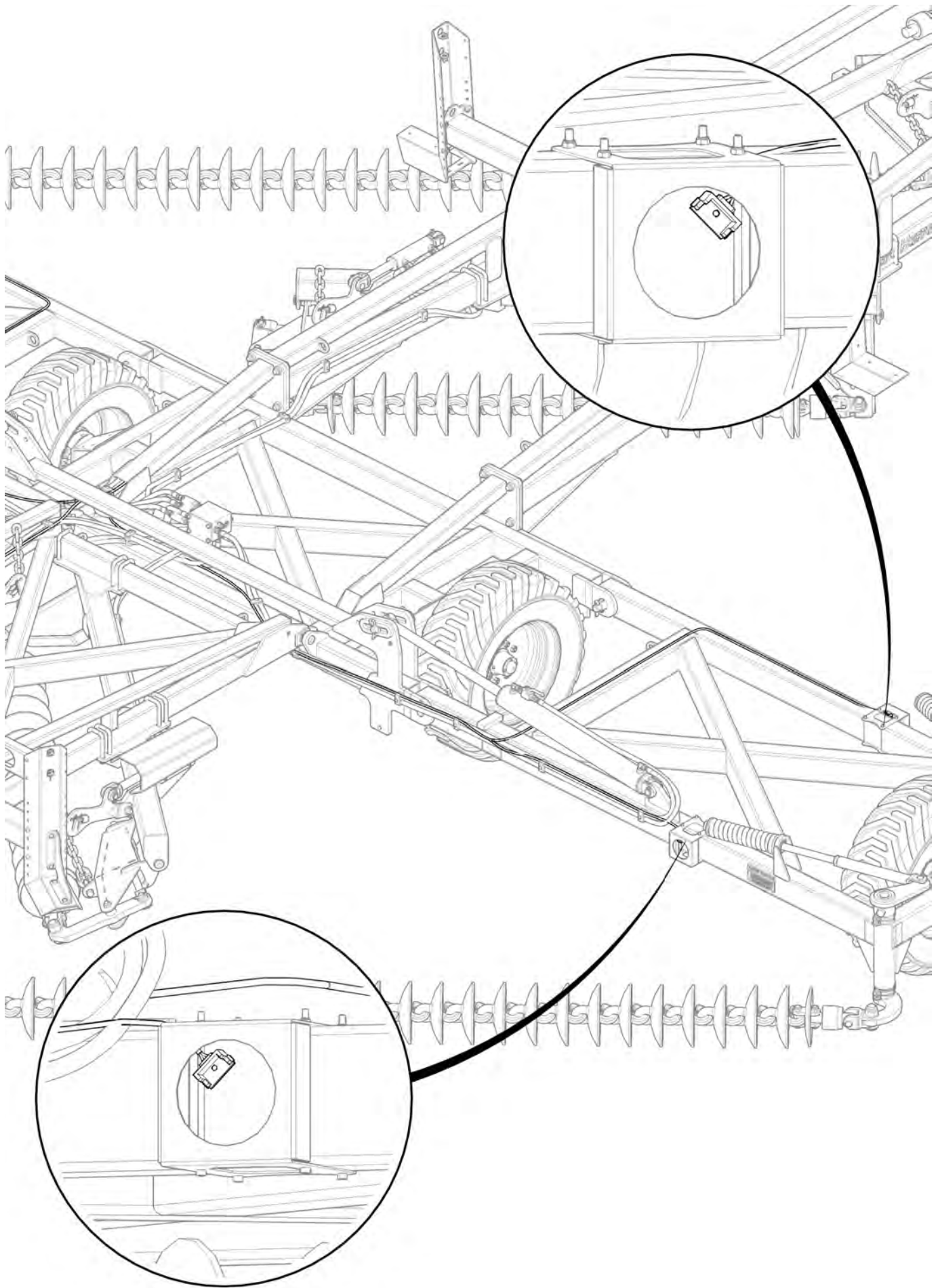


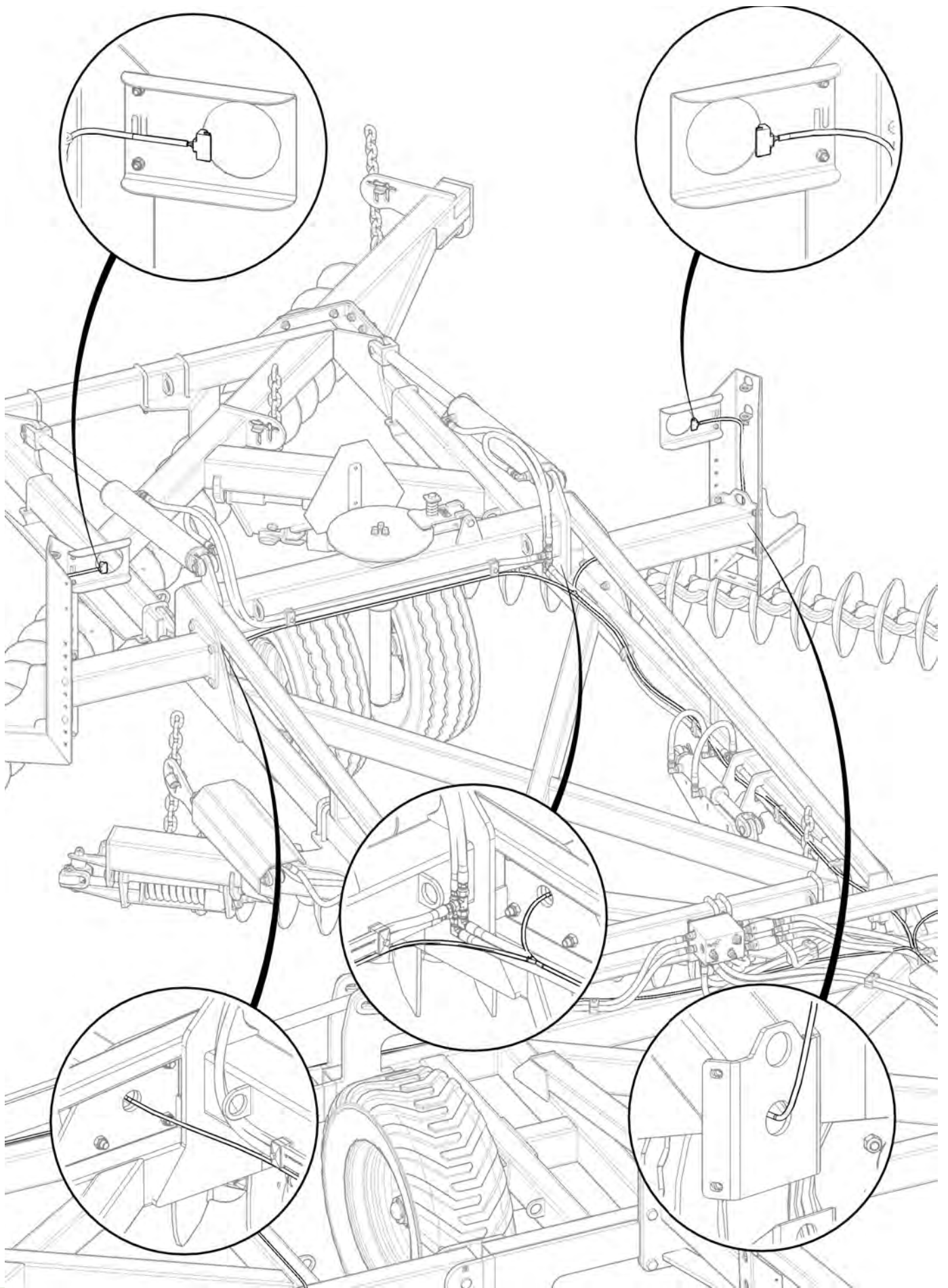
Item No.	Description	Number	Qty
1	Rear Light Bracket	0800-295	2
2	M8 x 20 Coach Head Bolt	0215-CH0820	4
3	Washer Flat M8	0231-F8	4
4	Nyloc Nut M8	0221-NYL8	4



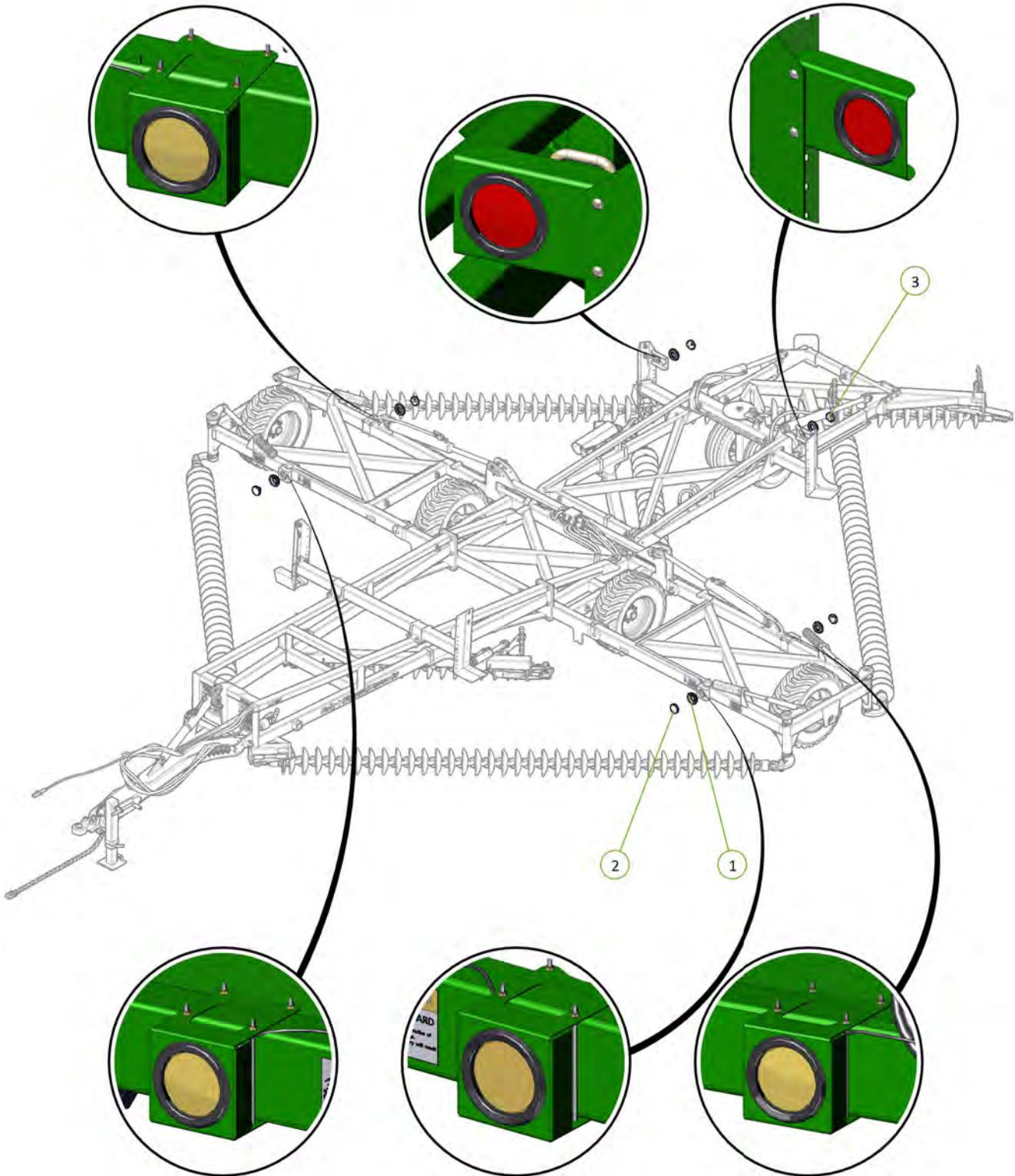


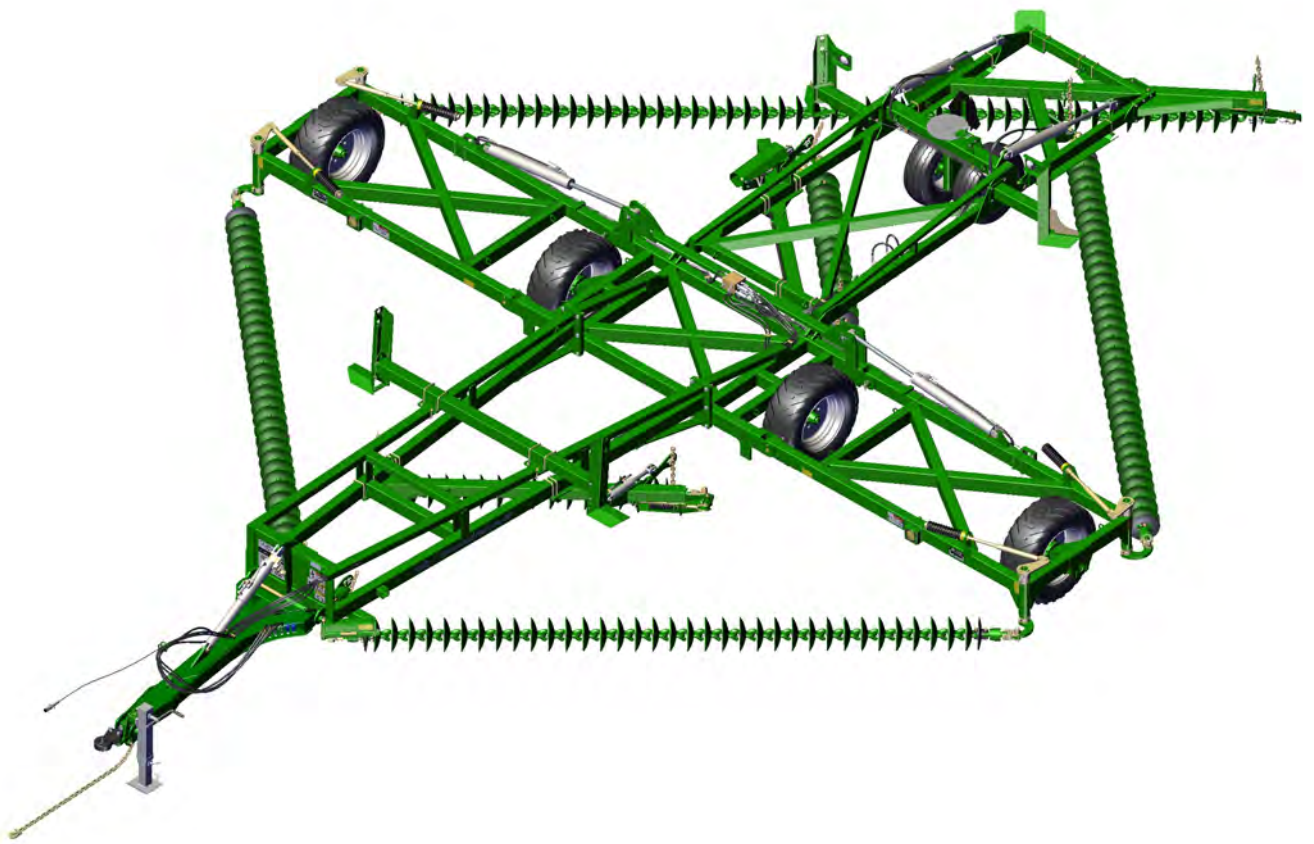






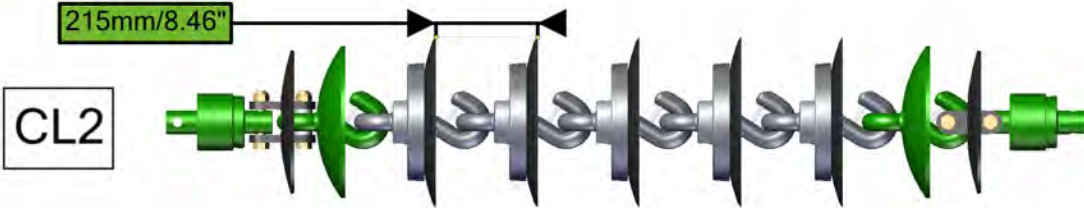
Item No.	Description	Number	Qty
1	110RM Rubber Grommet	0412-53101RG	6
2	LED Rear Indicator Lamp	0412-LED110AM	4
3	LED Stop Tail Lamp	0412-LED110RM	2





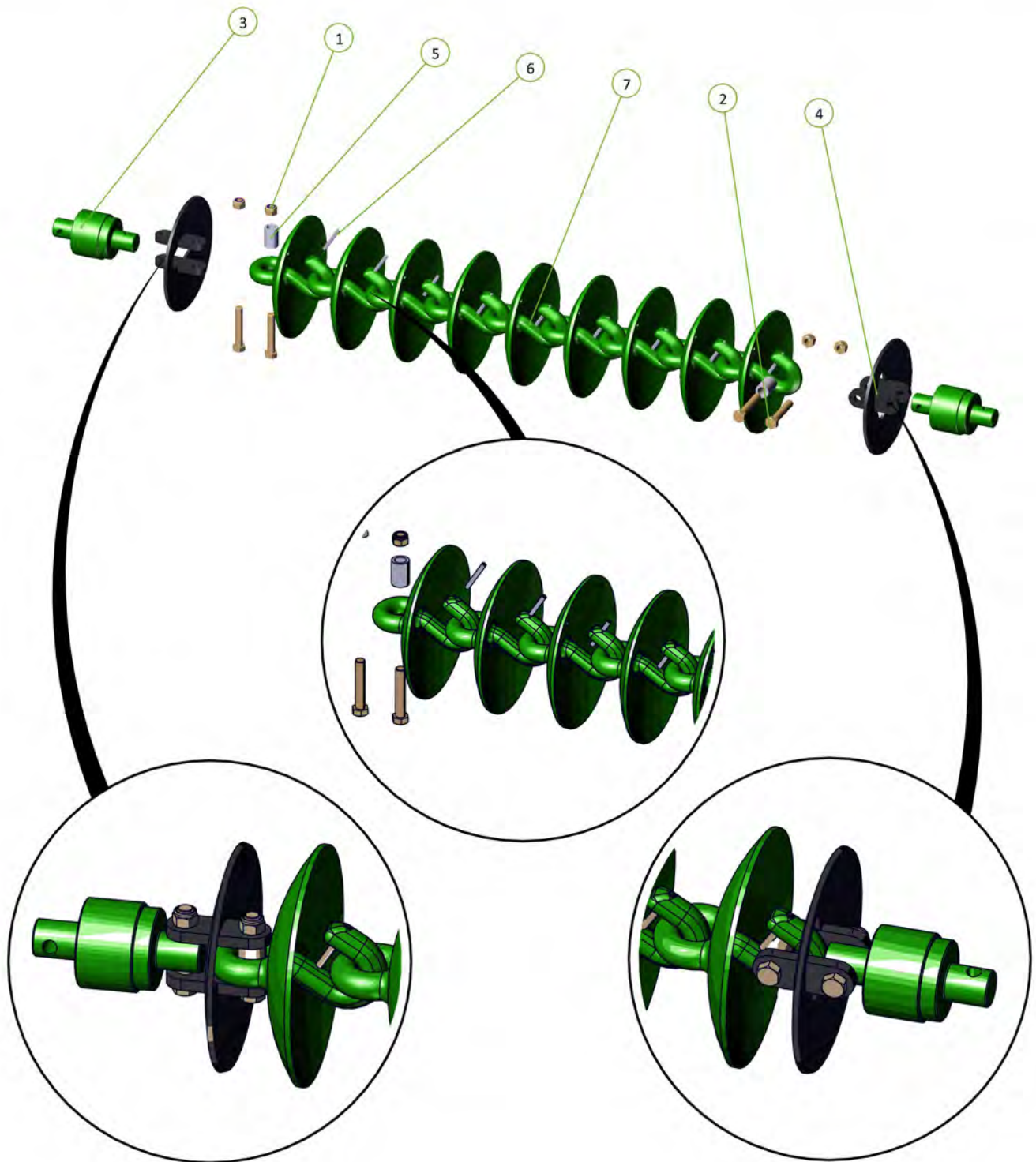
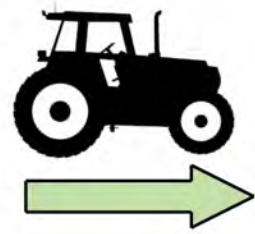
Section 5

Chain Assembly



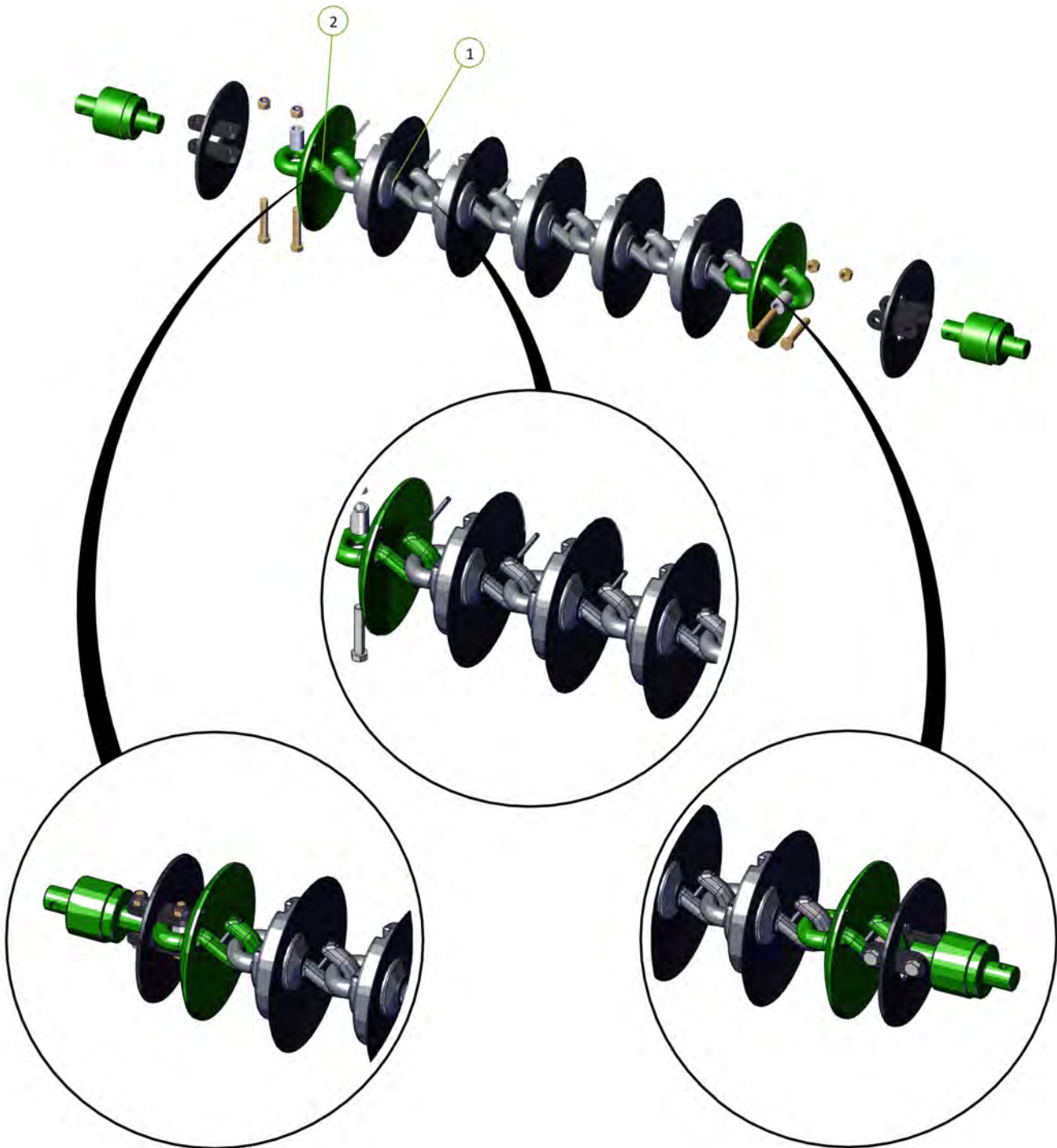
CL1 Disc Chain - CL47/35/7

Item No.	Description	Number	Qty
1	Nyloc Nut M20/24	0221-NYL20/24	4
2	M20 x 110 / M24 x 120 grade 10.9 ZP Short Thread Bolt	0211-20110ST/0211-24120ST	4
3	20/24mm Bolt Swivel Unit	0802-PCHB55 / 0802-PCHB553	2
4	Disc Chain Tie Plate Link 20mm / 24mm	0802-DCTP-20 / 0802-DCTP-24	2
5	Tie Plate Bush	0801-PCDCS55	2
6	Roll Pin Zinc Plated 3/8" x 3"	0262-3-8X3	1
7	CL1-B Chain Disc Link	0803-CL1	1



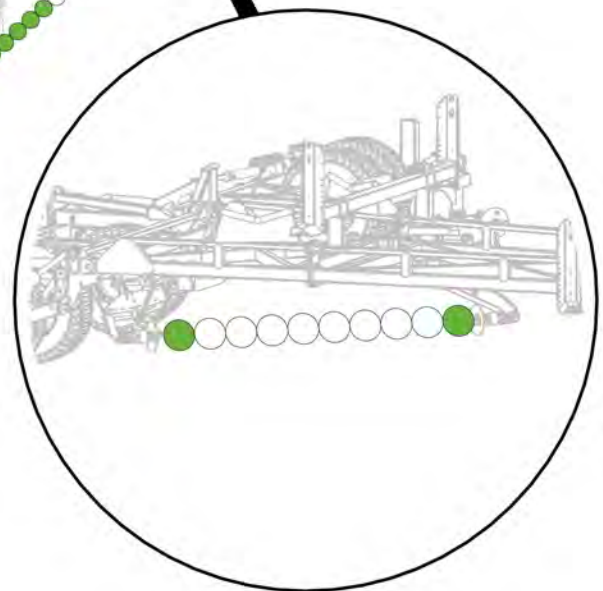
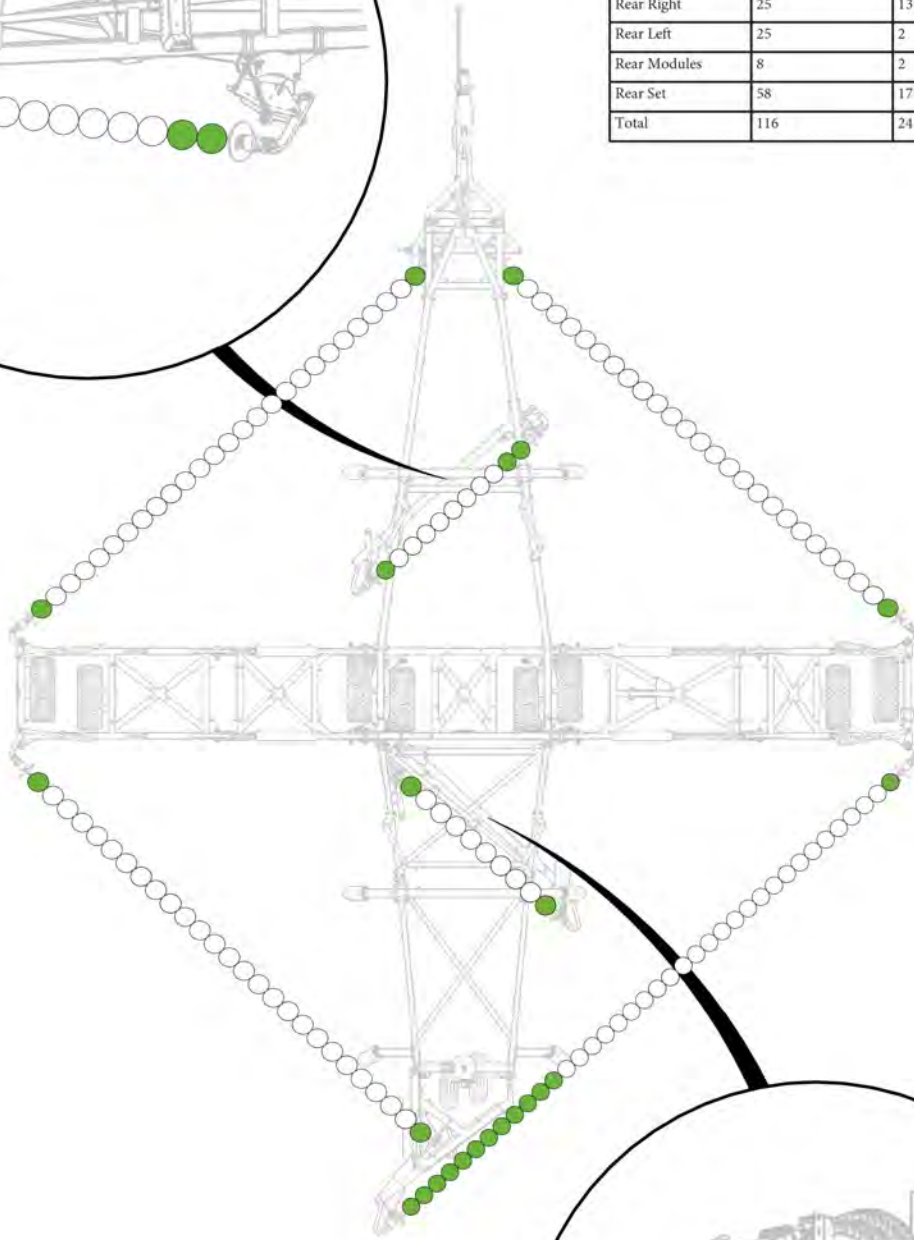
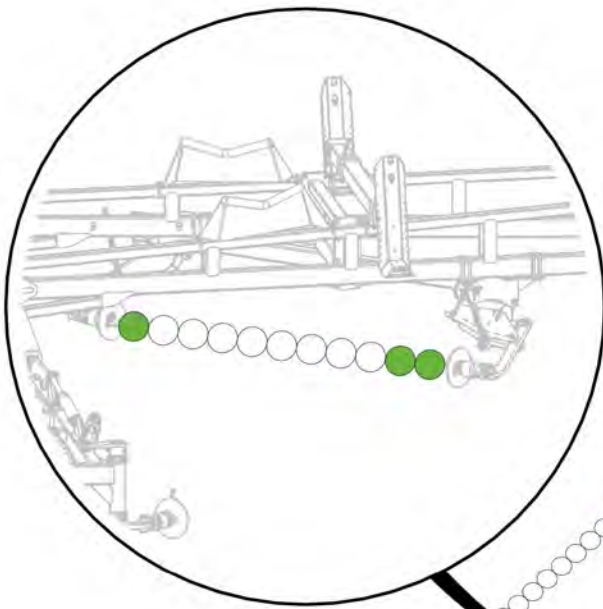
CL2 Disc Chain - CL75/25/8

Item No.	Description	Number	Qty
1	0803-CL2-Link Assembly	0803-CL2	1
2	CL1-B Chain Disc Link	0803-CL1	1



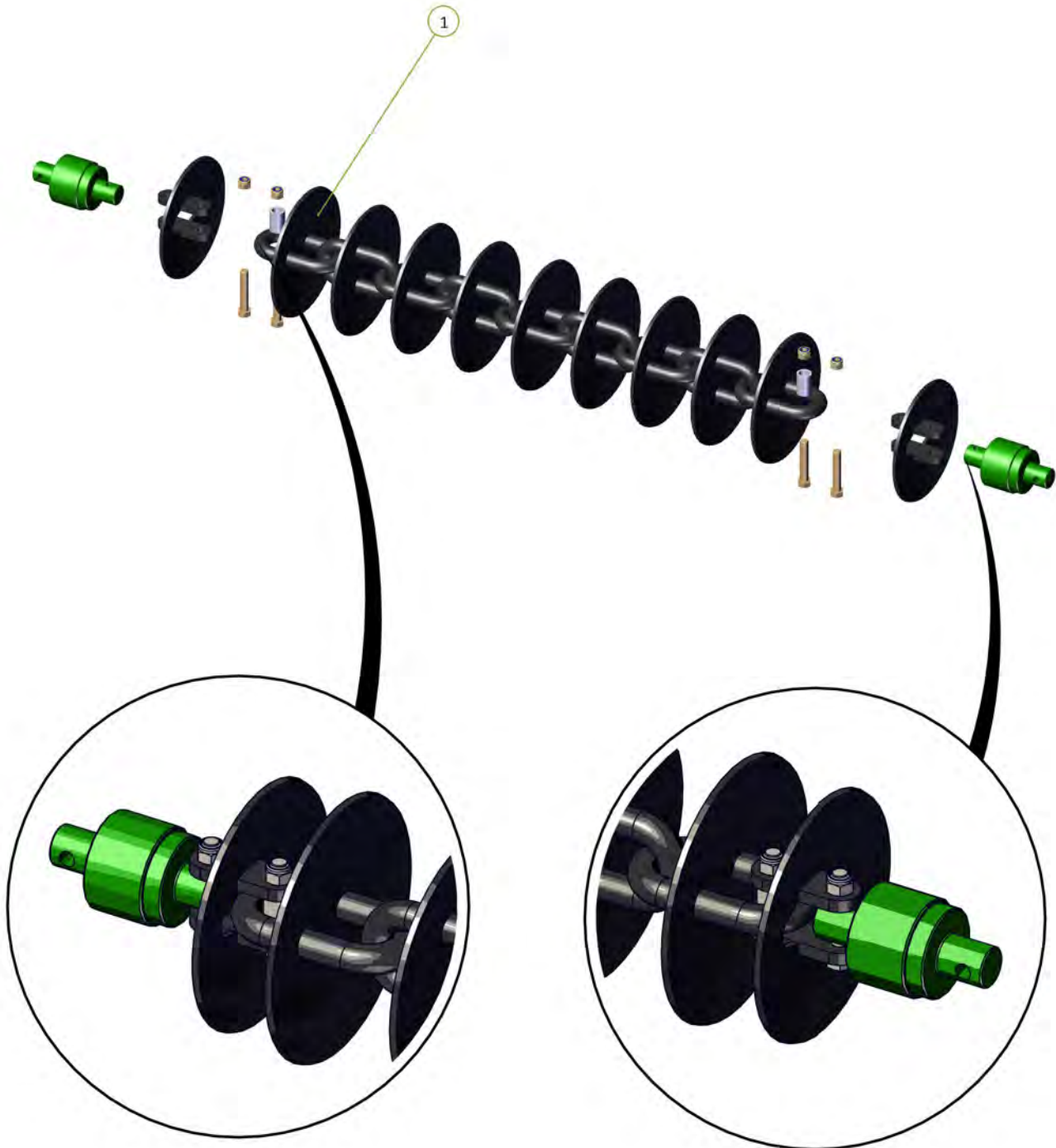
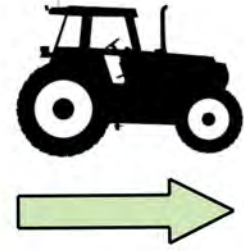
CL2 Chain Layout

Set	CL2	CL1
Front Left	25	2
Front Right	25	2
Front Modules	8	3
Front Set	58	7
Rear Right	25	13
Rear Left	25	2
Rear Modules	8	2
Rear Set	58	17
Total	116	24



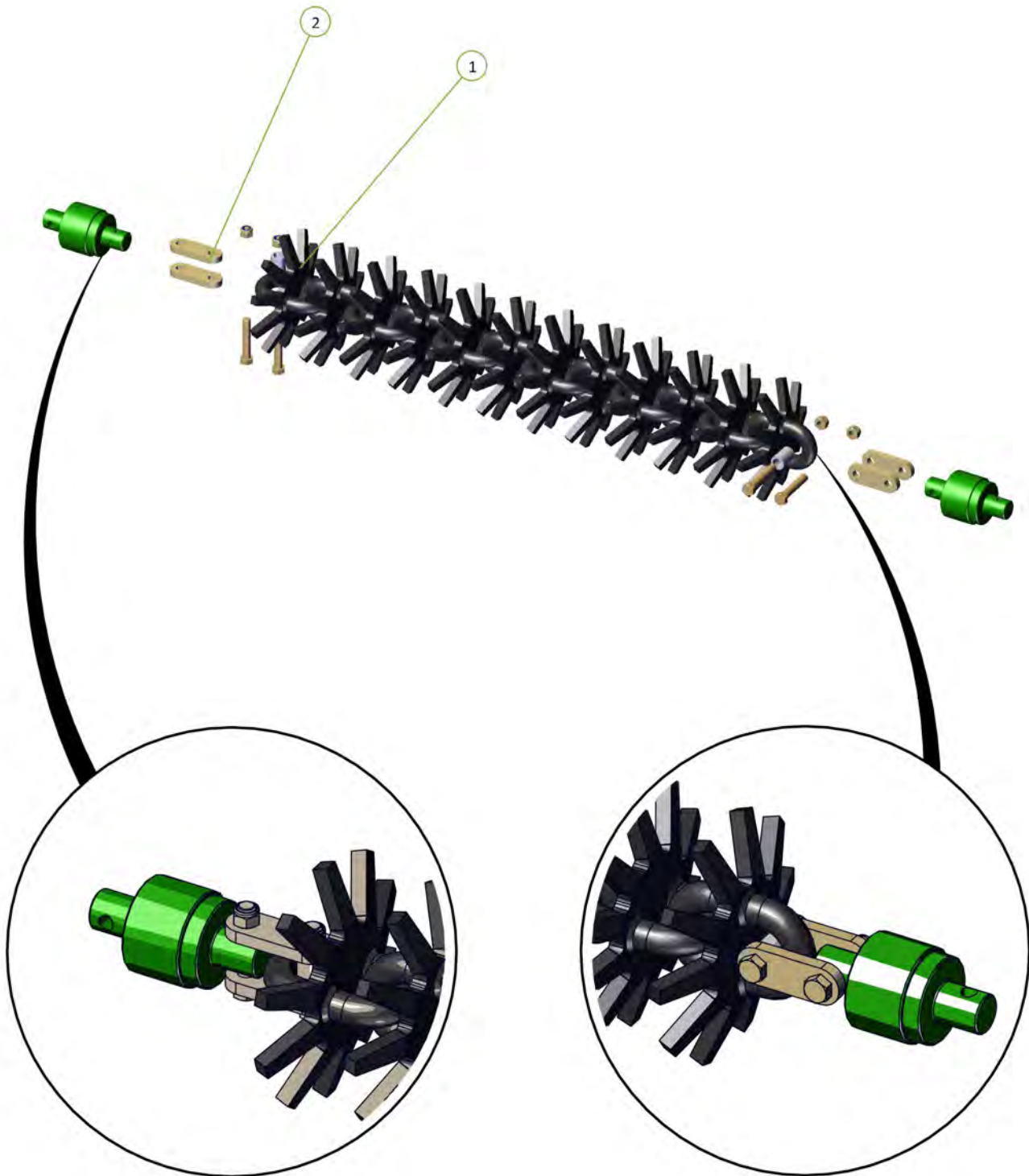
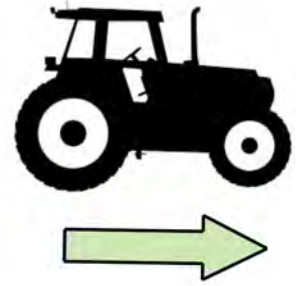
W36 Disc Chain - W36/25/7

Item No.	Description	Number	Qty
1	W36/25 Chain Link	0803-W36	1

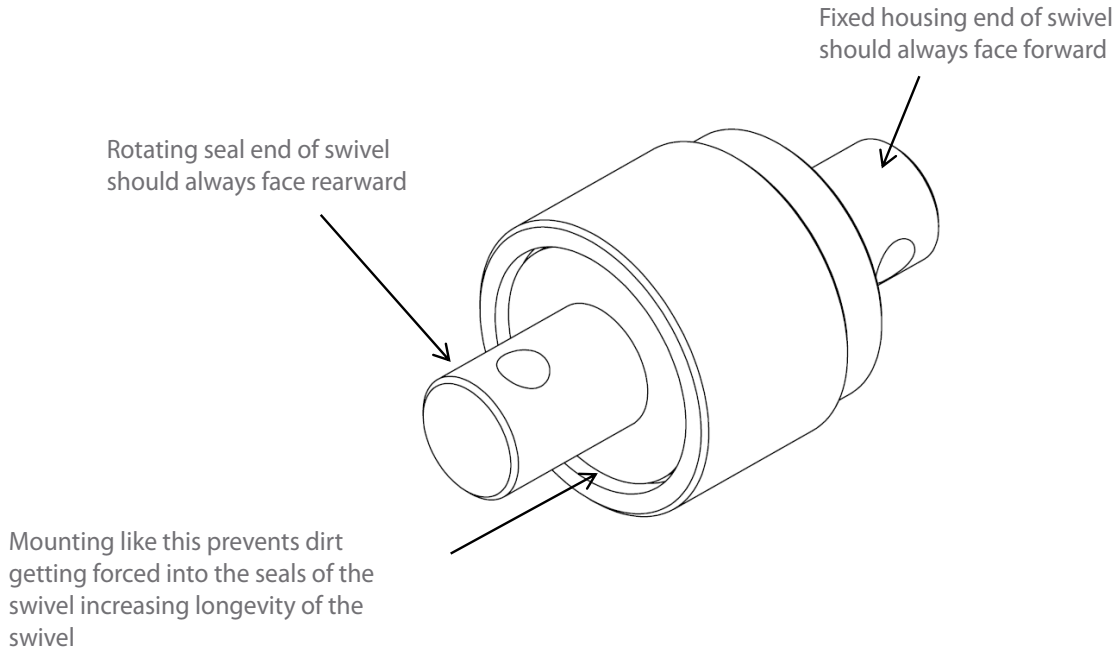


Spike Disc Chain - SD49/27/5

Item No.	Description	Number	Qty
1	10 Spike Disc Chain 49/27/5	0803-SD49	1
2	Tie Plate For 20mm Bolt/ Tie Plate For 24mm Bolt	0800-83.2 / 0800-83.3	4

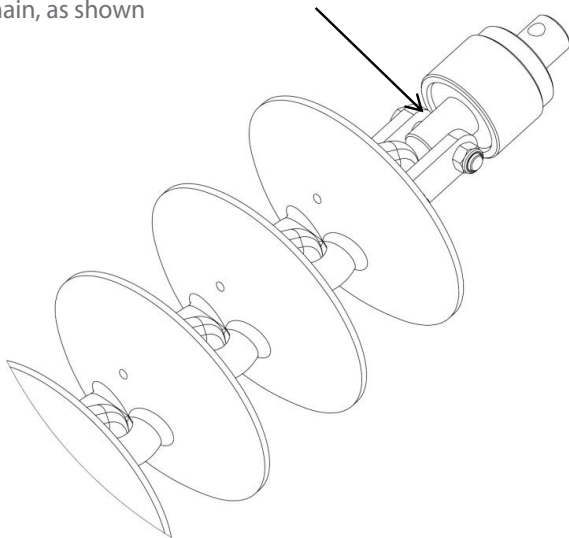


Mounting swivels

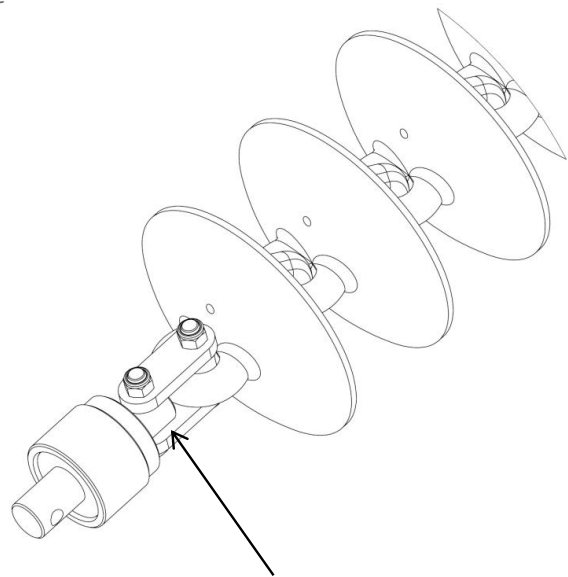


For example

Swivels attached to the leading ends of the chains should have the rotating seal end attached to the chain, as shown

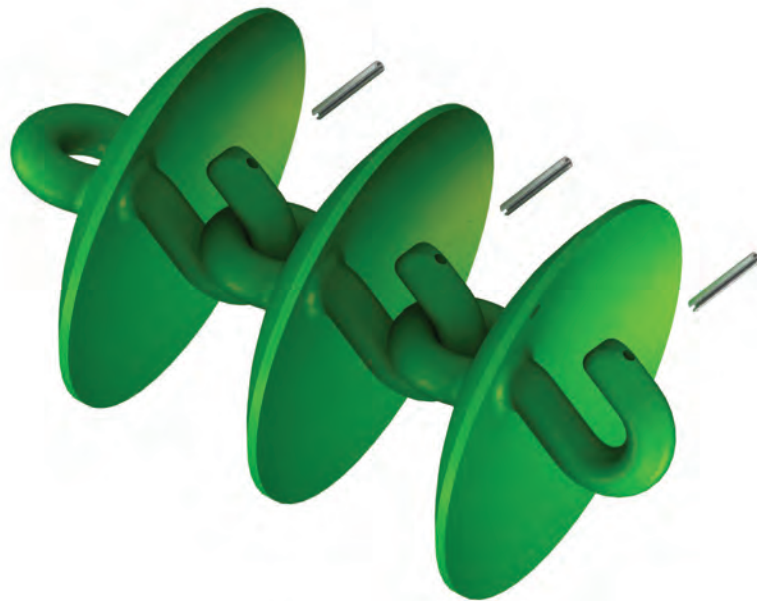
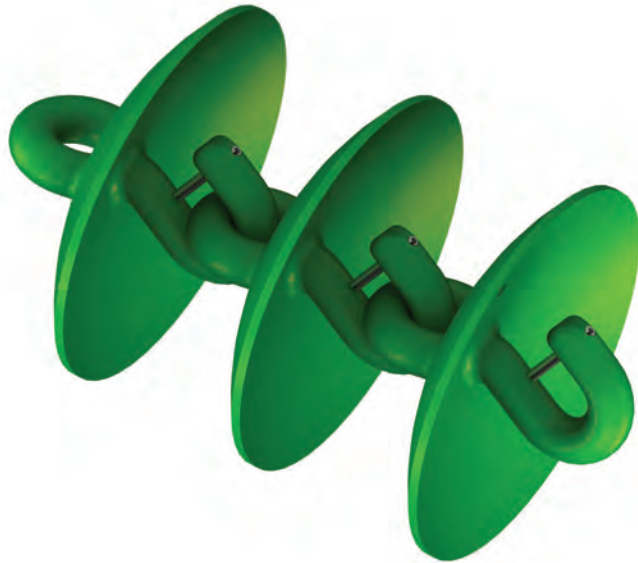


Swivels attached to the trailing ends of the chains should have the fixed housing end attached to the chain, as shown



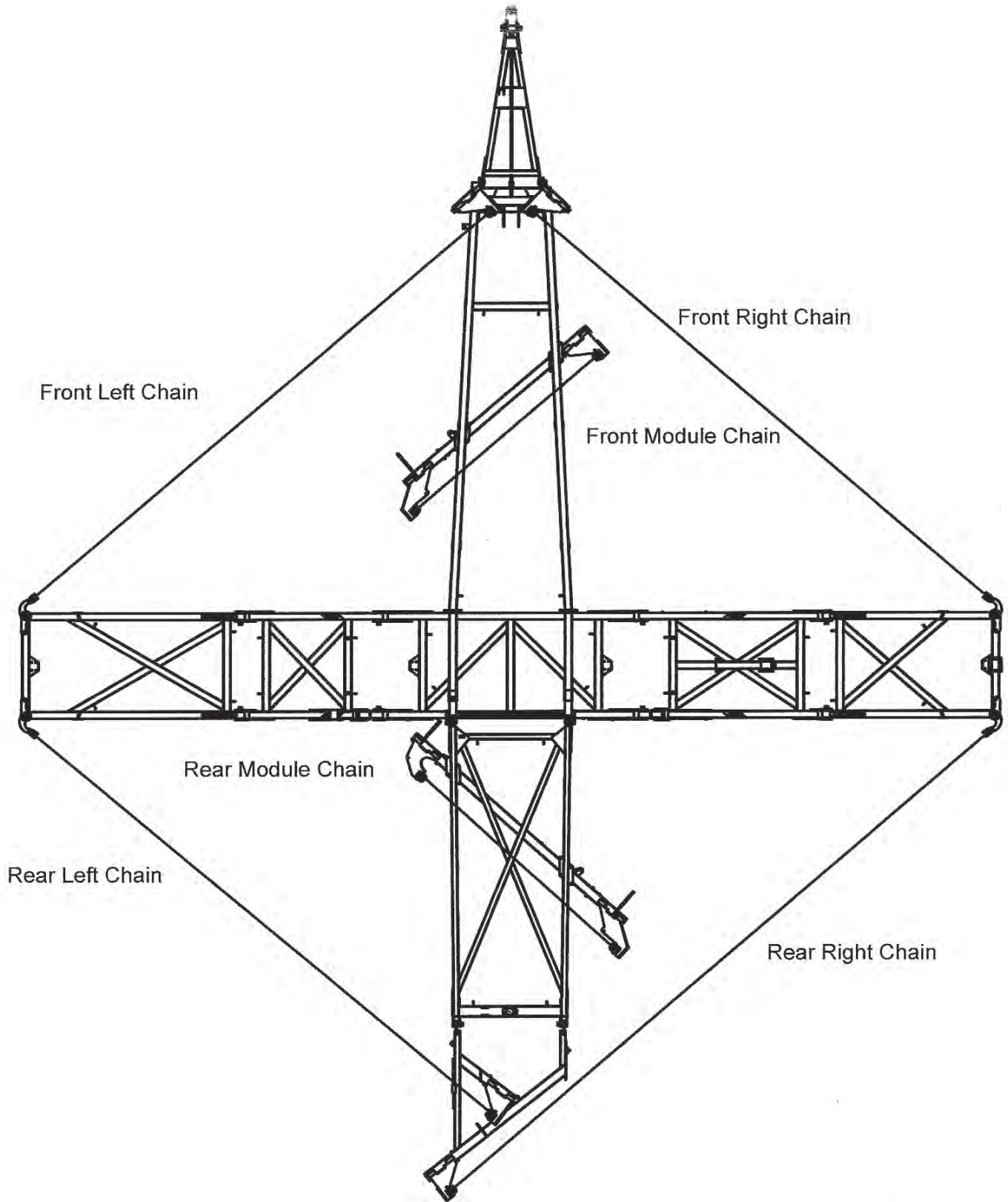
Fitting cast link retaining pins

Please install cast link retaining Pins (3/8" x 3" Roll Pin, part number 0262-3-8X3) on all cast disc links. Failure to do this could lead to the discs becoming dislodged during transport causing severe damage or injury.



Section 5

Diagrams and Charts



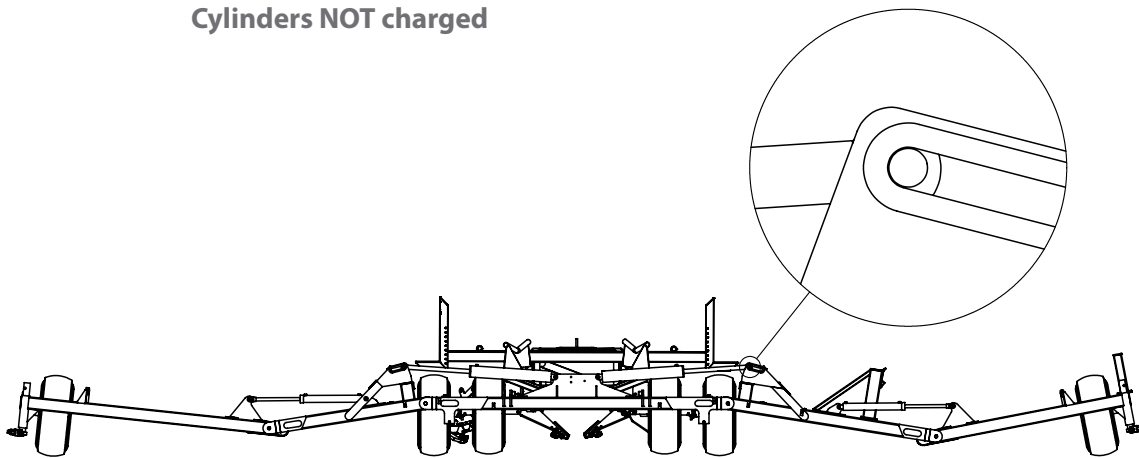


Before folding the machine for the first time, ensure all hydraulic cylinders are charged with oil.

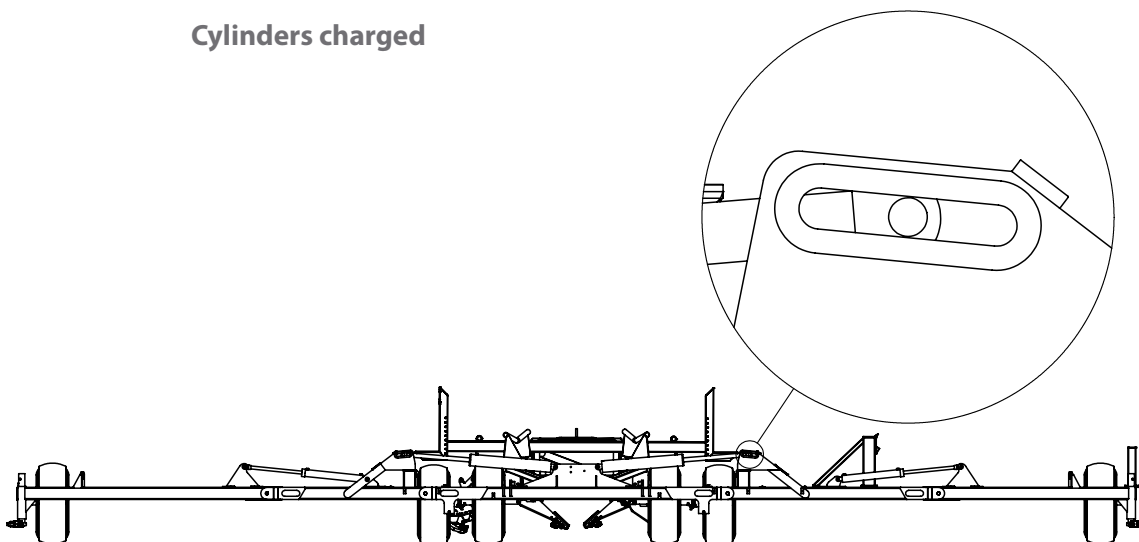
To do this, run the hydraulics through the unfold sequence until the outer wings are straight and the centre cylinders are centred in the slots. (It may take a few minutes for the cylinders to charge completely).

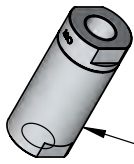
Failure to do this could result in severe personal injury and/or damage to the machine.

Cylinders NOT charged

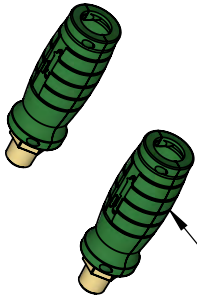


Cylinders charged

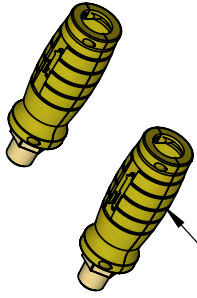




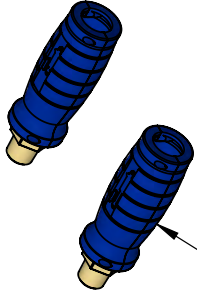
0343-924001261
1/2" BSPP 60 micron inline filter
max flow 60L/M & 5000psi max pressure



0325-HG-PT24E25R
Green 1/2" NPT Hydra
Grip Pair (Extend /Ret)



0325-HG-PT25E25R
Yellow 1/2" NPT Hydra
Grip Pair (Extend /Ret)



0325-HG-PT20E20R
Blue 1/2" NPT Hydra
Grip Pair (Extend /Ret)



0323-S71-0812
1/2"BSPP O Ring Male - 3/4"JIC Female
Adaptor



0323-S74-0812
1/2"BSPP O Ring Male - 3/4"JIC Male
Adaptor



0323-S15-1212
3/4"JIC Male - 3/4"JIC Female
90° Elbow



0323-S91-1212
3/4"JIC Male - 3/4"UNO Male
90° Elbow



0323-S90-1212
3/4"JIC Male - 3/4"UNO Male
Adaptor



0324-S19-121212
3/4"JIC Male
Tee



0324-S67-121212
3/4"JIC Male - 3/4"JIC Female - 3/4"JIC Male
Tee



0323-S88-1212
3/4"JIC Male - 3/4"UNO Male
45° Elbow



0324-S92-121212
3/4"JIC Male - 3/4"JIC Female - 3/4"UNO
Male Tee



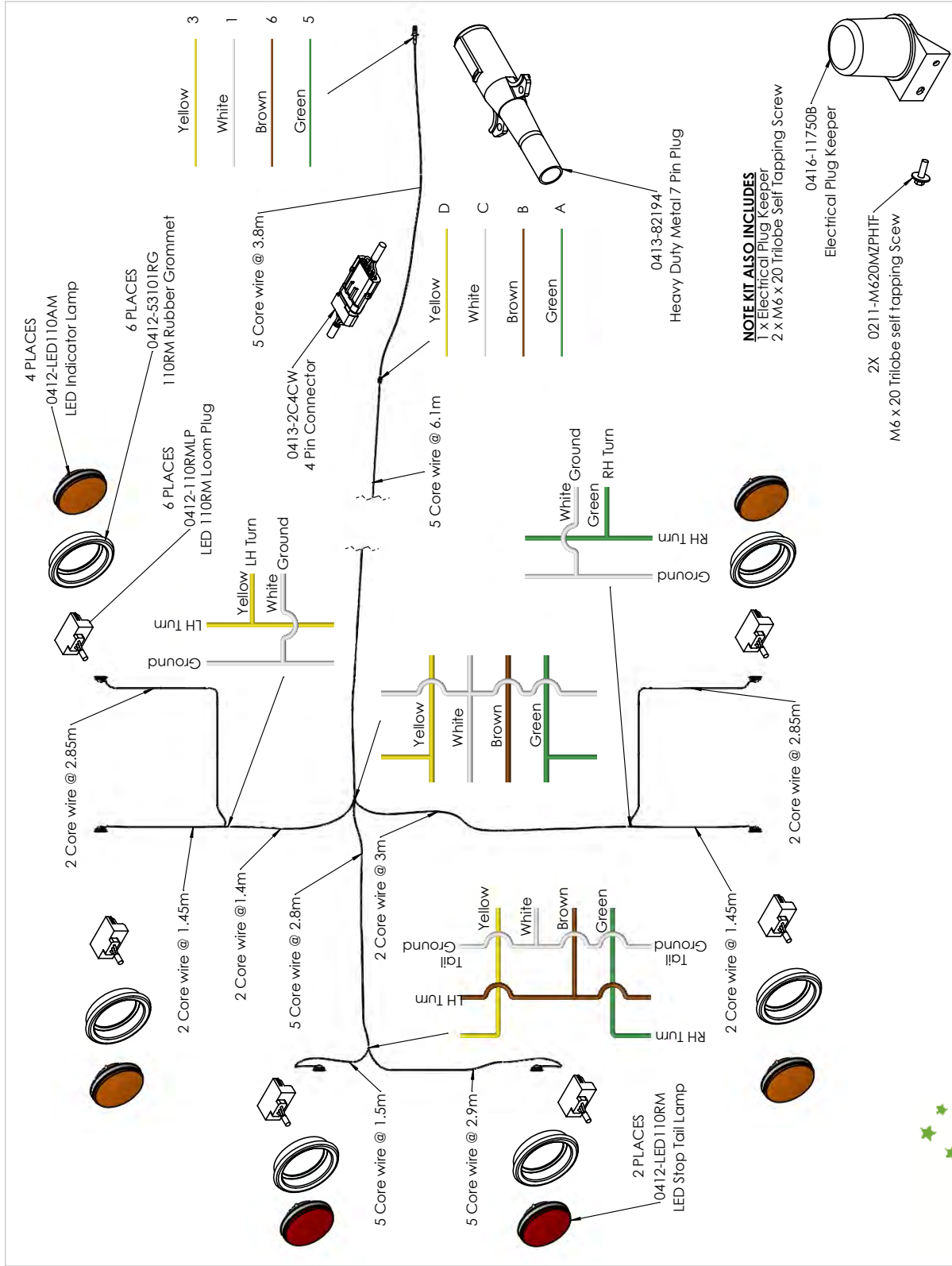
0324-S68-121212
3/4"JIC Male - 3/4"JIC Female - 3/4"JIC
Female Tee



0325-R91-08M
1/2" BSPP
Quick Release Ball Coupling



0323-S12-1212
3/4"JIC Male - 3/4"UNO Male
Extended 90° Elbow



<p>Part Number 0802-USLK30</p>	<p>Description US 30' Light Kit</p>	<p>Revision B</p>
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Operating speeds

Operating speeds for normal conditions	
Chain type	Speed
Prickle Chain	6-10 Mph / 10-16 kmph
Disc Mulch Chain	6-8 Mph / 10-12 kmph
Transport / towing on roads	15 Mph / 25 kmph

Tire pressure

Tire size	Ply	PSI	KPA
16.5L x 16.1	14	36	250
H40 x 14.5-19	26	60	410
11L - 15	10	44	300
15.5/80/24	16	58	400
16.5/85/24	16	55	380
550/60/22.5	16	40	280
400/60/22.5	16	50	350
12.5/80/18	14	85	590
15.0/70/18	14	71	490

Chain Harrow specifications

Model	30'/9m
Working width	29.7'/9.0m
Transport width	11.5'/3.5m
Transport height	13.1'/4.0m
Transport length	40.7'/12.4m

Disc Chain lengths

Model 30		Length	CL2	CL1	W36	R300	SD49	Prickle chain
			CL2 disc chain also requires CL1 disc chain					
30'	Front right	19'/5.8m	CL2 - 25 CL1 - 2	35	35	46	46	64
	Front left	19'/5.8m	CL2 - 25 CL1 - 2	35	35	46	46	64
	Rear right	24.4'/7.45m	CL2 - 25 CL1 - 15	48	47	63	63	87
	Rear left	19'/5.8m	CL2 - 25 CL1 - 2	36	35	46	46	64
	Modules front	7.4'/2.25m	CL2 - 8 CL1 - 3	14	14	19	19	26
	Modules rear	5.9'/1.8m	CL2 - 8 CL1 - 2	12	12	16	16	22

Section 6

Operation

Basic Operation

Unfolding:

1. Walk around and inspect the machine.
 - a. Check that chains are not hooked on framework
 - b. Check swivel bolts are in place and not broken
 - c. Check th at height adjusting chains have not fallen out of their slotted plates during transport.
 - d. Ensure front lift cylinder depth stops are fully engaged on cylinder shaft.
2. Lower front A frame to working height.
3. Unfold wings holding the hydraulic lever until both the main center cylinder pins have centered in their slots. (If chain pulls tight during unfold, stop and inspect if chain is hooked)
4. Lower rear tail by holding hydraulic lever until tail and modules are completely lowered to working position.
5. Walk around and check that all chain links are straight and that working height of all swivels is correct for field conditions. Adjust if necessary.
6. Move off with all chains in working position. If necessary it is acceptable to raise front A pull to transport height. This will lift the front chains off the ground and reduce the load on the tractor. Lower the front A pull once moving satisfactorily.

Folding:

1. Lower the front A frame to working height. (This is important to ensure that all chains locate correctly in their transport rests).
2. Raise the Rear Tail and modules by holding the hydraulic lever until they come to a complete stop.
3. Fold the wings. They should move as follows; main center cylinders will retract, one or both, until the wings stand vertically. The left outer wing then the right outer wing will fold down.
4. Raise front A frame to transport height.
5. Walk around and check that chains have located correctly in transport rests.
(30' only, close wing transport lock valves).

Setting for correct chain tension

Wings

Use the spanner supplied. Loosen the lock nut adjacent to the tensioner assembly body. Turn the tension bolt clockwise to compress the coil spring. Correct tension is achieved when spring retains its set length when operator rolls the chain fore and aft on the ground. Retighten the lock nut.

See table below

Spring Compression Length

Model	inches	mm
30	12.9	330

When less than 4" (100mm) of thread remains visible on the adjustor bolt then a link must be removed from the chain



Modules

Loosen the lock nut on the draw bolt.

Tighten the adjusting nut clockwise until the outer face of the spring retaining washer is flush with the body of the module tensioning unit.

Retighten the lock nut.

If more than 8" (200mm) of thread is exposed then a link should be removed to maintain correct adjustment.



Importance of chain tension

Operational

It is imperative that the correct adjustment be maintained. Only through correct adjustment can a smooth and level finish be achieved in field working.

Loose chains lead to :

- Uneven performance across the width of the machine
- Uneven weed control
- Unsatisfactory incorporation
- Ineffective levelling
- Accelerated or premature chain wear
- Chains failing to engage with transport locators when folded
- Machine damage when folding or unfolding
- Uneven field surface with ridges and furrows being created. The leading 1/3rd of a loose chain is much more aggressive than the trailing 1/3rd and the center. This will mean that middle of the machine's front pair of chains will aggressively move soil outwards. The machine's rear pair of chains, if loose, have their aggressive 1/3rd near the wing extremity. It follows then that as the front discs push soil outwards, the least aggressive portion of the rear chain follows them and does not balance the soil movement. This is exacerbated at the wings, effectively creating a broad ridge about halfway out each wing. It won't be evident in one pass, but is possible if care is not taken over time.

A correctly adjusted machine will not cause this phenomenon.

Settings for correct working height

To adjust the swivel height at the wings, relocate one of the polyurethane spacers either above or below the fixed mounting tube.

Adjustment

1	Loosen chain tension completely
2	Undo self tapping screw from corresponding spacer then prise open the spacer and spring it off of the drop leg tube
3	Replace it in the selected position after raising or lowering the drop leg
4	Reinstall the self tapping screw and re-tension the chain

It is possible to install all spacers either above or below the mounting tube giving a maximum of 4" (100mm) of adjustment.

