



GROWING WITH YOU

DEEP TILLAGE SEEDER TOOLBAR

2023 Mounted Range (DTST)



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Introduction

Before reading this Machine Manual & Parts Book, please read the Drills Operator Manual in Full. This manual contains information specific to the machine/range but does not include all the general safety guidelines and practices necessary to understand and correctly use the machine. It is required that both manuals be read and understood before using any Sumo machine. For more information contact your local dealership/Sumo directly.

Please note, specifications, descriptions and illustrations in this manual are accurate, as known, at the time of publication but may be subject to change. If you notice any discrepancy and need clarification, please contact us on the details given previously.

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1 Machine Range Summary

The Sumo Deep Tillage Seeder Toolbar (DTST) drill is based on a concept known as ‘strip till drilling’, a method of only loosening and preparing a band of soil where the seed is to be placed and leaving the soil in-between rows undisturbed, and therefore not working ground unnecessarily.

The DTST is a uniquely versatile toolbar drill capable of direct drilling, min-till drilling and conventional plough-based drilling. Designed and manufactured in Britain, the DTST provides all the benefits of Sumo’s patented coulter system, whilst facilitating the connection to any external front hopper or seed wagon.

The DTS patented coulter system works in three stages:

Stages One – Disc & Tine

An 18” straight serrated leading disc initiates a rip line for the following tine, ensuring a clean entry, substantially reducing surface disturbance and stopping the germination of unwanted grassweeds. The disc also cuts trash and allows previous crop residues to pass through the machine adding more organic matter to the undisturbed areas of soil. This method reduces the reliance on chemical treatments that are leached into watercourses. By removing competition, young crops can establish more vigorously.

The tine produces incredibly targeted tillage to a single strip and provides just enough soil movement to create the perfect conditions for seed placement. Depth can be adjusted down to 250mm for deep-rooting crops, leaving a seeding zone with a good tilth and a rooting zone free from compaction, with good drainage and aeration.

Stage Two – Seed Coulter & Fertiliser

Low draft, single or double row seeding boots place seed in perfect contact with newly tilled soil. They boast wear resistant tungsten for good soil penetration and a shallow wing angle for low draft pulling. DTST owners have the option to add many different fertiliser options on Grain & Fertiliser models.

Stage Three – Covering Discs & Consolidation

Covering discs channel loosened soil over the seed before independent, air-filled press wheels perform unparalleled reconsolidation for perfect seed to soil contact by firming the soil around the seed and eliminating any potential air pockets.

Note: These stages descriptions are based on our standard offering but will change depending on selected options. Consult the Drills Operators manual for more information.

2 Product Specifications

For standard machine dimensions and weight, see Drills Operators Manual. Note: Weights is described as the maximum laden mass but will increase with optional extras and attachments.

DTST Mounted Range

Code	DTS3T	DTS4TF
Working Width	3.0m	4.0m
Transport Width	3.0m	2.8m
Row Spacing	333mm	333m
Rows	9	12
Double Seed Row	As Standard	As Standard
Seed Row Width	120mm	120mm
Machine Type	Rigid	Hydraulically Folding

Available Options

Code	Option Code	Description	Specifications
DTS3T	DTS3T.DM	Wing Markers	Hydraulic
	DTS3T.TRAMLINING.KIT	Tramlining Shut Off	Tramlines spacing 1998mm (Other Spacing available upon request)
	DTS3T.WT	Weight Transfer Kit	Hydraulic
	DTS3T.OPTION.AUX.FERT. UPSTACK	Auxiliary Fertiliser Up-Stack	9 Outlet Distribution Head. 101mm or 89mm Transfer Ducting Interface
	DTS3T.OPTION.AUX.FERT . UPSTACK.TRAMLINING	Auxiliary Fertiliser Up-Stack with Tramlining	9 Outlet Distribution Head. 101mm or 89mm Transfer Ducting Interface Includes 2 Row Shut Off Units for Tramlining
	SWB1075	Variable Seed Rate	Unlock code for RDS System
DTS4TF	DTS4T.DM	Wing Markers	Hydraulic
	DTS4T.TRAMLINING.KIT	Tramlining Shut Off	Tramlines spacing 1998mm (Other Spacing available upon request)
	DTS4T.WT	Weight Transfer Kit	Hydraulic
	DTS4TF.SFK	Seeder Fitting Kit	12 Outlets
	DTS4T.OPTION.AUX.FERT. UPSTACK	Auxiliary Fertiliser Up-Stack	12 Outlet Distribution Head. 101mm or 89mm Transfer Ducting Interface
	DTS4T.OPTION.AUX.FERT . UPSTACK.TRAMLINING	Auxiliary Fertiliser Up-Stack with Tramlining	12 Outlet Distribution Head. 101mm or 89mm Transfer Ducting Interface Includes 2 Row Shut Off Units for Tramlining
	SWB1075	Variable Seed Rate	Unlock code for RDS System

Other options may be available – See Sumo website / Contact your local dealer.

3 Transport Positions & Dimensions

The following transport positions must be followed before taking the specified Sumo machine on any public road. Failure to do so may mean the machine is no longer considered road legal. It is the sole responsibility of the owner/operator to ensure the machine is correctly positioned prior to transport and complies with all local laws and regulations.

For all Sumo guidelines and safety protocols, read the related Sumo Drills Operators Manual thoroughly.

Mounted DTST

Due to mounted and adjustable nature of the DTST machines, they do not have a set transport position, but it is advised that: All coulters are retracted/lifted to ensure they do not contact the ground and the legs are pinned in the shallowest depth (Highest pinnable position). Ensure all Markers are fully retracted and securely locked into place. Ensure rear lights and reflectors are suitably angled down. Turn off all working lights so as not to dazzle others.

Transport Dimensions (Approximate)

Note: Due to the fabricated and assembled construction of Sumo machines dimensions may vary and should only be used for reference.

Shown dimensions are of maximum extremities (Excluding assembly/fabrication tolerances) but can be reduced/increased by adjusting implement positions, chassis height/angle, and reversing pins with handles. It is solely the owner/operator's responsibility to ensure they transport the machine within local legislation & laws.

Mounted Machines (Excluding Options)

Code	Length	Width	Height
DTS3T	3300	3000	1865
DTS4TF	3650	2800	2070

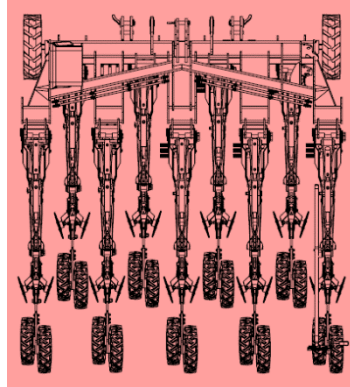
Mounted Machines (Including Options)

Code	Length	Width	Height
DTS3T.DM	-	-	-
DTS3T.TRAMLINING.KIT	-	-	-
DTS3T.WT	-	-	-
DTS3T.OPTION.AUX.FERT.UPSTACK	-	-	-
DTS3T.OPTION.AUX.FERT.UPSTACK.TRAMLINING	-	-	-
DTS4TF.DM	-	-	-
DTS4TF.TRAMLINING.KIT	-	-	-
DTS4TF.SK	-	-	-
DTS4TF.WT	-	-	-
DTS4TF.OPTION.AUX.FERT.UPSTACK	-	-	-
DTS4TF.OPTION.AUX.FERT.UPSTACK.TRAMLINING	-	-	-

4 Danger Zone

The area marked red indicates the Danger Zone of the machine. This refers to both folded & unfolded states.

Mounted DTST



The danger zone around the machine poses the following endangerments:

- Accidental operation of the hydraulic system can trigger dangerous movements of the machine.
- Defective or not correctly fastened electric lines can cause electric shocks.
- With the drive still running, machine parts may rotate or swing out.
- Hydraulically raised machine, parts can lower slowly and unnoticed.

Failing to pay attention to the danger zone can result in severe or even fatal injuries.

- Do not stand under lifted loads. Lower such loads to the ground first.
- Instruct persons to leave the danger zone around the machine and tractor.
- Before working in the danger zone of the machine or between machine and tractor: Shut down the tractor! This also applies for short-term inspection work. Many accidents happen because of carelessness and running machines!
- Follow all safety guidelines and procedures as outlined within the Drills Operators Manual.

5 Risk Assessments

Model: Mounted DTST

Notes: Ensure the most recent Drills Operators Manual, & Machine Manual are read and fully understood.

Purpose of machine: Primarily designed to direct drill into stubble, minimum tillage, or plough-based systems.

Description of machine: A three-point-linkage mounted farm implement consisting of multiple elements:

1. A row of hydraulically actuated coulter legs, consisting of a front cutting disc, a leading leg, a seeding leg, closing discs and compression wheels.
2. A hydraulically powered ground pressure system.

All the above is arranged in a heavy-duty fabricated steel framework. The machine is designed to couple to a suitably powered tractor.

Hazard Identified in Using Machine	Who Might Be Harmed	Risk Evaluation /Level (1-5)	Precautions In Place	Further Action Required
Machine collision while in transport.	Operator, Members of the Public	2 Low – Mid	Tail lights & reflectors.	Take care when using in both field and road situations. Maintain good visibility at all times.
Trapped fingers during leg depth position change.	Operator	1 Low	Warning Stickers	Observe warning stickers, maintain safe distance from moving parts, wear gloves. Clear excess soil (weight) from legs before attempting to adjust legs.
Risk of crushing: - When coupling a tractor to the Sumo implements. - When changing points. - Rotating parts	Operator	4 Mid – High	Warnings, Maintenance Stands	Take extreme care when working on legs, changing depth, replacing parts etc, make sure the machine is on a suitably firm piece of land. Ensure tractor hydraulics are in good working order. Ensure tractor is safely positioned and the parking brake is engaged when coupling up to Sumo implements.

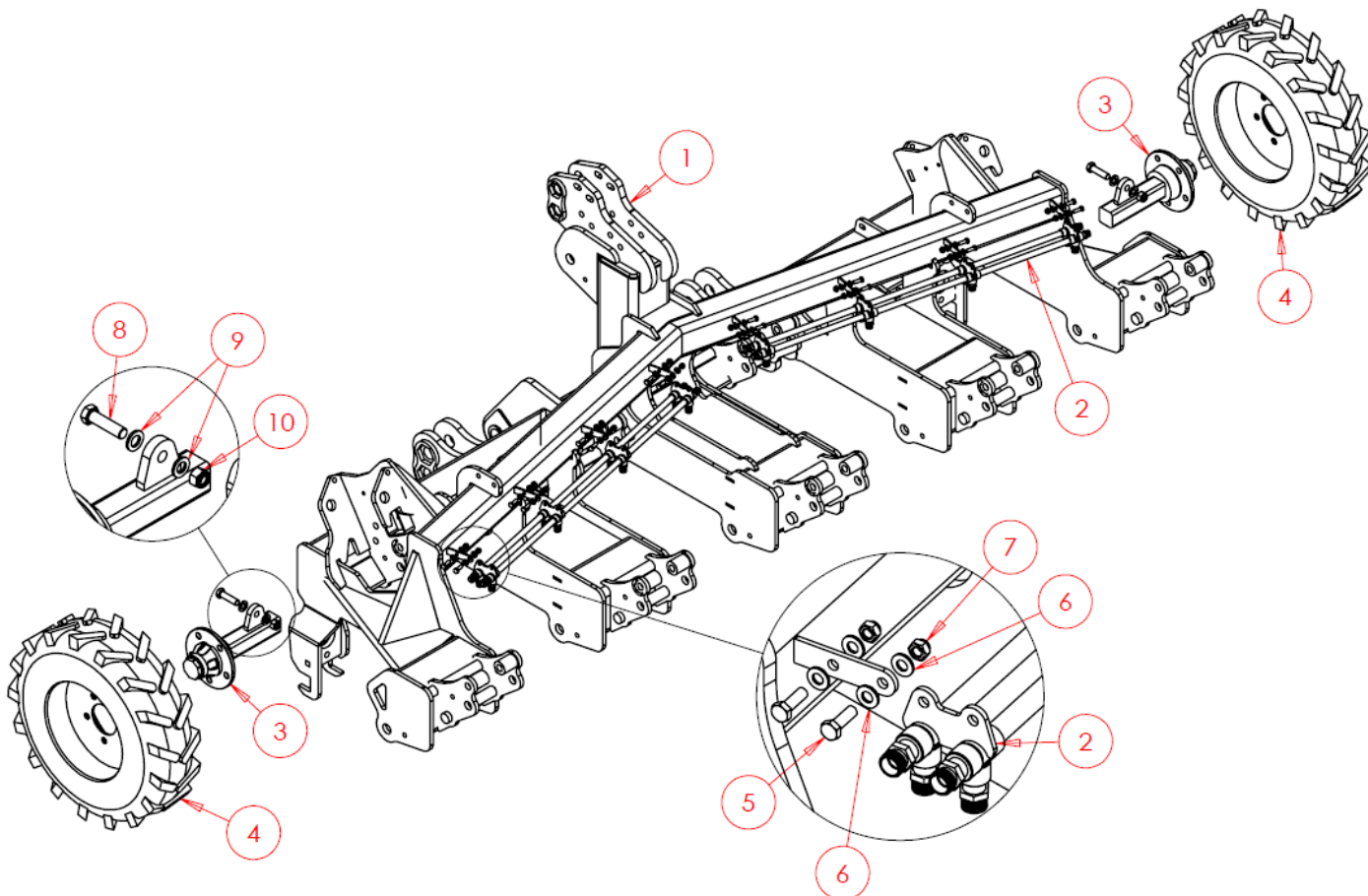
5 Risk Assessments - Continued

Hazard Identified in Using Machine	Who Might Be Harmed	Risk Evaluation /Level (1-5)	Precautions In Place	Further Action Required
Falling from machine	Operator	2 Low - Mid	Most alterations and maintenance do not require the operator to climb on the machine. For access to the grain tank, use steps and headrails provided.	Lower the machine to the floor to allow access for greasing discs, checking bearings etc...
Pressurised oil/ Burst hoses	Operator	4 Mid - High	Warning stickers	Always wear appropriate PPE. Do not remove hoses whilst pressurised. Do not feel for leaks. If contact with oil is made, wash affected area immediately. Do not inhale or consume.

6 Parts Book Index

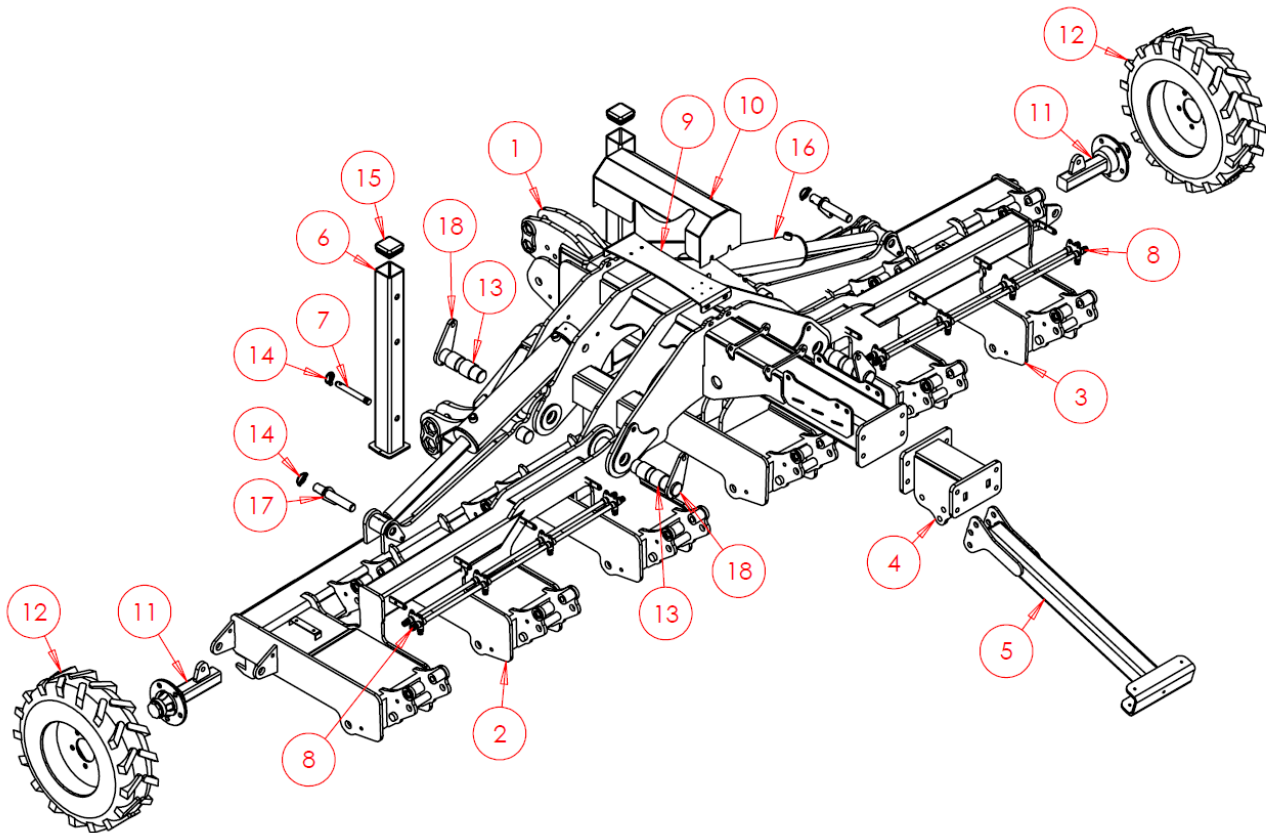
For older machines, please see Manuals & Part Books available on the Sumo website.

6.1 DTS3T Base Machine



Item No.	Part Number	Description	Qty
1	SW2386	Main Frame	1
2	SW3312	Manifold	2
3	SW3075	Axle	2
4	SWB530	Wheel	2
5	SWM825	M8x25 Screw	16
6	SWM8001	M8 Washer - Flat	32
7	SWM8004	M8 Nut - Nylock	16
8	SWM1660	M16x60 Bolt	2
9	SWM16001	M16 Washer - Flat	4
10	SWM16004	M16 Nut - Nylock	2

6.2 DTS4T Base Machine

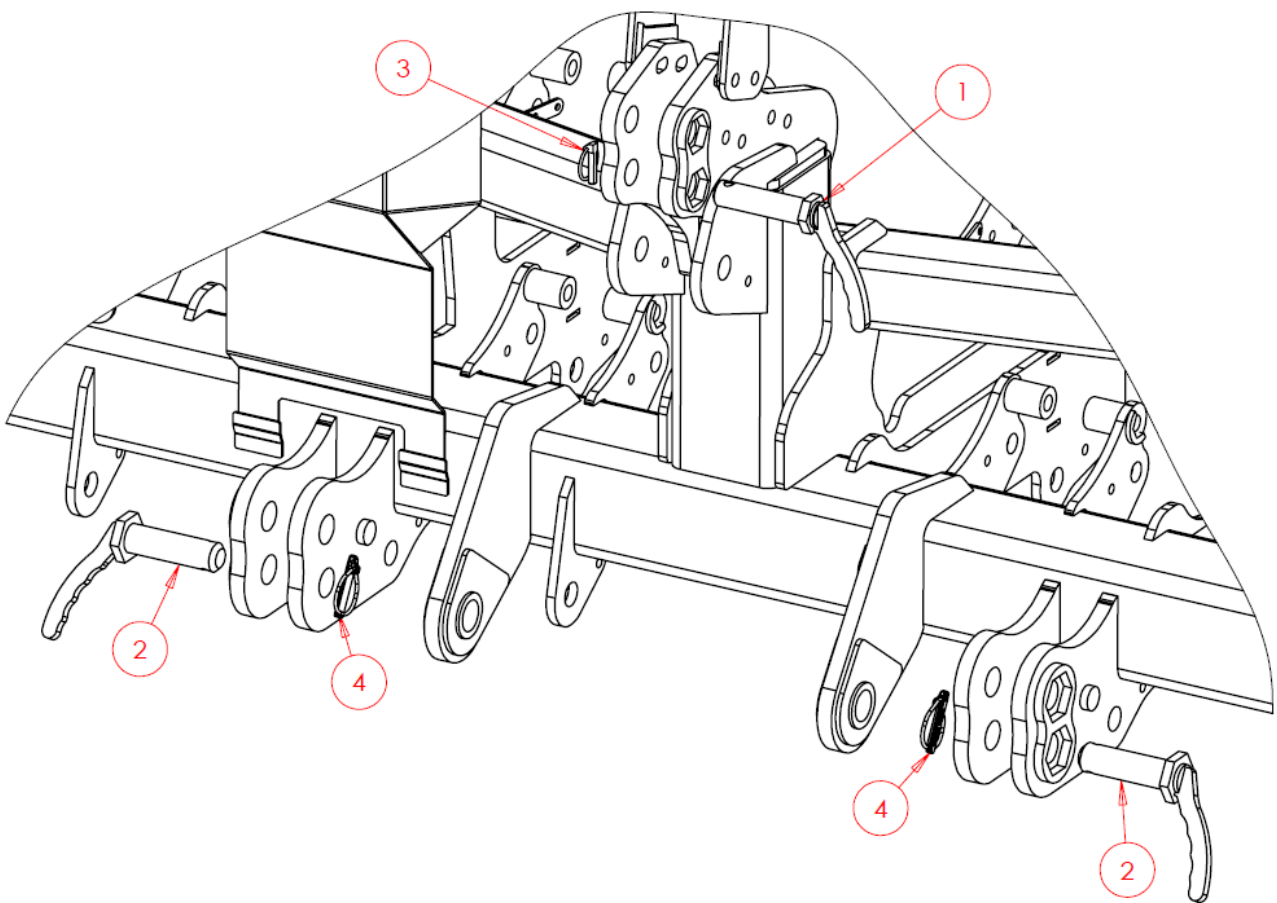


Item No.	Part Number	Description	Qty
1	SW3190	Headstock	1
2	SW3178	Wing LH	1
3	SW3179	Wing RH	1
4	SW6718	Stand Bracket	1
5	SW3187	Rear Stand	1
6	SW3183	Front Stand	2
7	SW118	Stand Pin	2
8	SW3312	Manifold	2
9	SW2293	Hydraulic Bracket	1
10	SW1863	Hydraulic Guard	1
11	SW3075	Depth Wheel Axle	2
12	SWB530	Depth Wheel	2
13	SWB142	Bush	8
14	SWB105	Lynch Pin	4
15	SWB144	Plastic Bung	2
16	SWH132	Hydraulic Cylinder	2
17	SWP30X130DB	Pin - Dog Bone	2
18	SWP50X195	Pin	4

6.3 Standard Assemblies

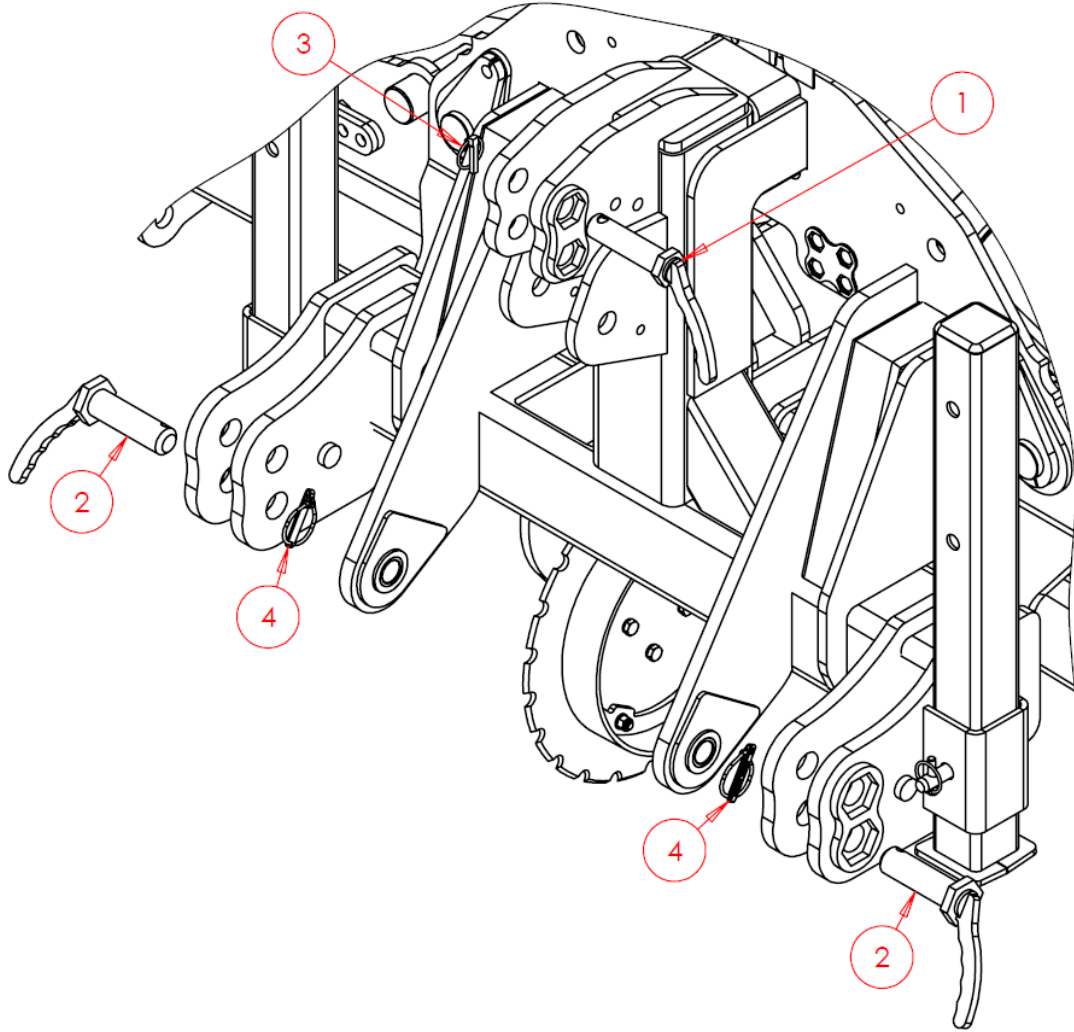
6.3.1 Three Point Linkage Pins

6.3.1.1 Three Point Linkage Pins (DTS3T Only)



Item No.	Part Number	Description	Qty
1	SW627	Top Hitch Pin	1
2	SW626	Lower Hitch Pin	2
3	SWB105	Lynch Pin	1
4	SWB107	Lynch Pin	2

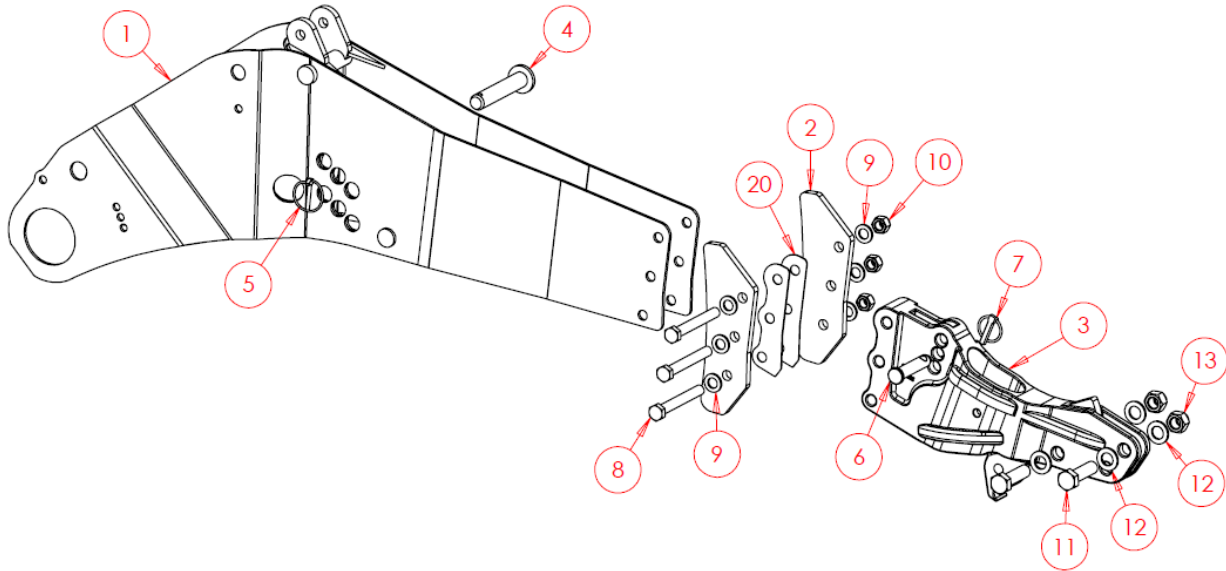
6.3.1.2 Three Point Linkage Pins (DTS4TF Only)



Item No.	Part Number	Description	Qty
1	SW627	Top Hitch Pin	1
2	SW626	Lower Hitch Pin	2
3	SWB105	Lynch Pin	1
4	SWB107	Lynch Pin	2

6.3.2 Coulter System

6.3.2.1 Main Body

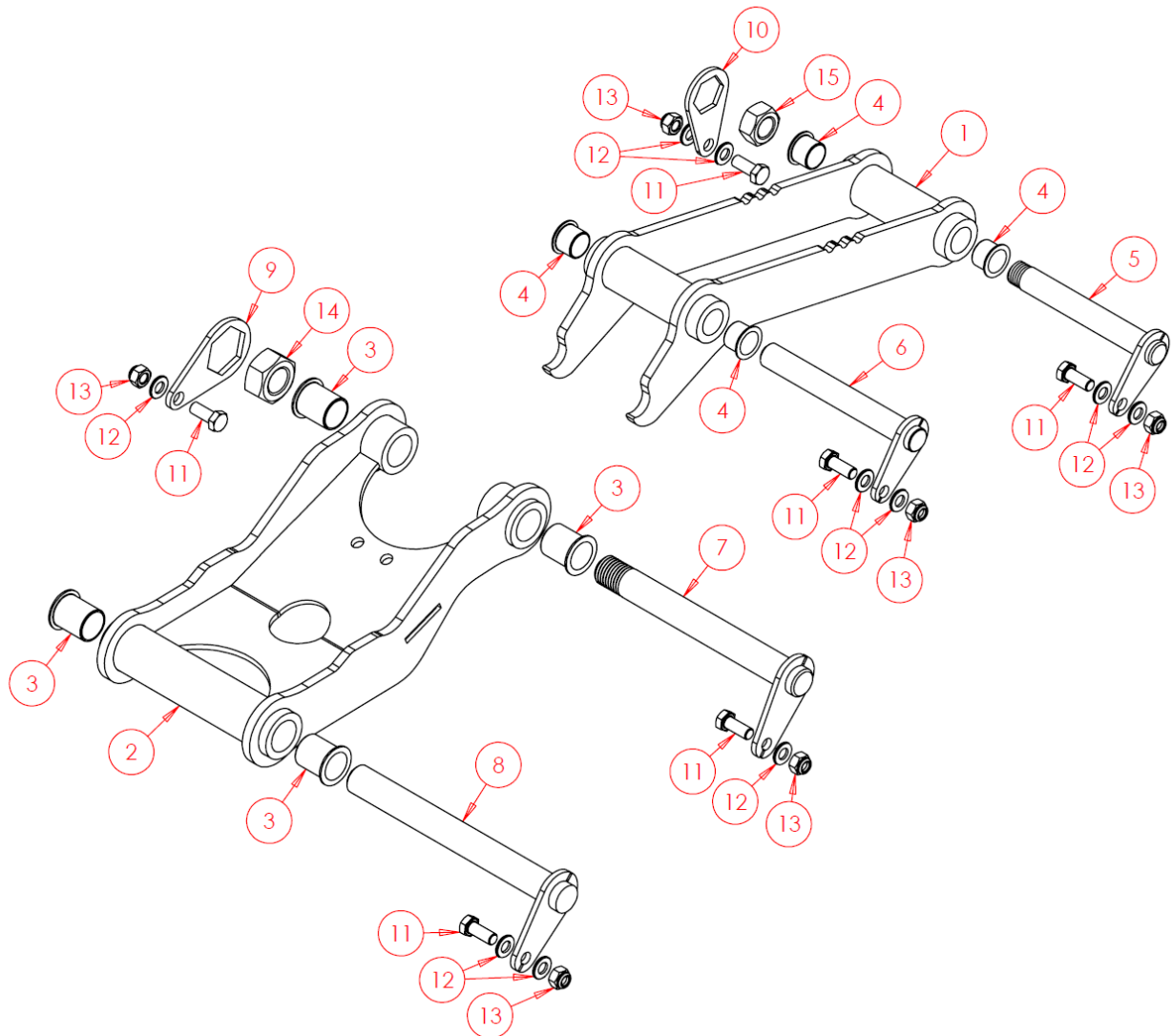


Item No.	Part Number	Description	Qty
1	SW2234	Coulter Body	1
2	SW3120	Anti-Twist Brackets	2
3	SWB532	Coulter Socket	1
4	SW1255	Leading Leg Depth Pin	1
5	SWB691	Lynch Pin	1
6	SW1256	Pin	1
7	SWB105	Lynch Pin	1
8	SWM16130	M16x130 Bolt	3
9	SWM16001	M16 Washer - Flat	6
10	SWM16004	M16 Nut - Nylock	3
11	SWM2070	M20x70 Bolt	2
12	SWM20001	M20 Washer - Flat	4
13	SWM20004	M20 Nut - Nylock	2

Item No.	Part Number	Description	Qty
20	SWS23807	Anti-Twist Shims - 1.5mm	N/A

Anti-Twist Shims are available/used to widen the gap between the anti-twist brackets, preventing binding on the leading leg during use. These are not typically fitted as standard on all products and may only appear on occasional legs.

6.3.2.2 Standard Parallel Arms



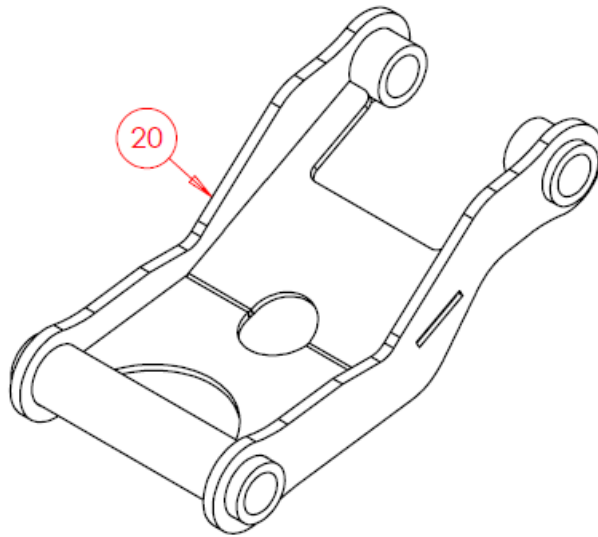
Item No.	Part Number	Description	Qty
1	SW1401	Parallel Arm - Top	1
2	SW1246	Parallel Arm - Bottom	1
3	SWB197	Top Hat Bush (30 mm)	8
4	SWB492	Top Hat Bush (25 mm)	4
5	SWP25X185T	Pin - Threaded	1
6	SWP25X195	Pin	1
7	SWP30X260T	Pin - Threaded	1
8	SWP30X275	Pin	1
9	SW2236	Nut Retainer - 46mm	1
10	SW2237	Nut Retainer - 36mm	1
11	SWM1230	M12x30 Screw	6
12	SWM12001	M12 Washer - Flat	10
13	SWM12004	M12 Nut - Nylock	6

6.3.2.2 Standard Parallel Arms -Continued

Item No.	Part Number	Description	Qty
14	SWM30004	M30 Nut - Nylock	1
15	SWM24004	M24 Nut - Nylock	1

6.3.2.3 Tramline Bottom Parallel Arm

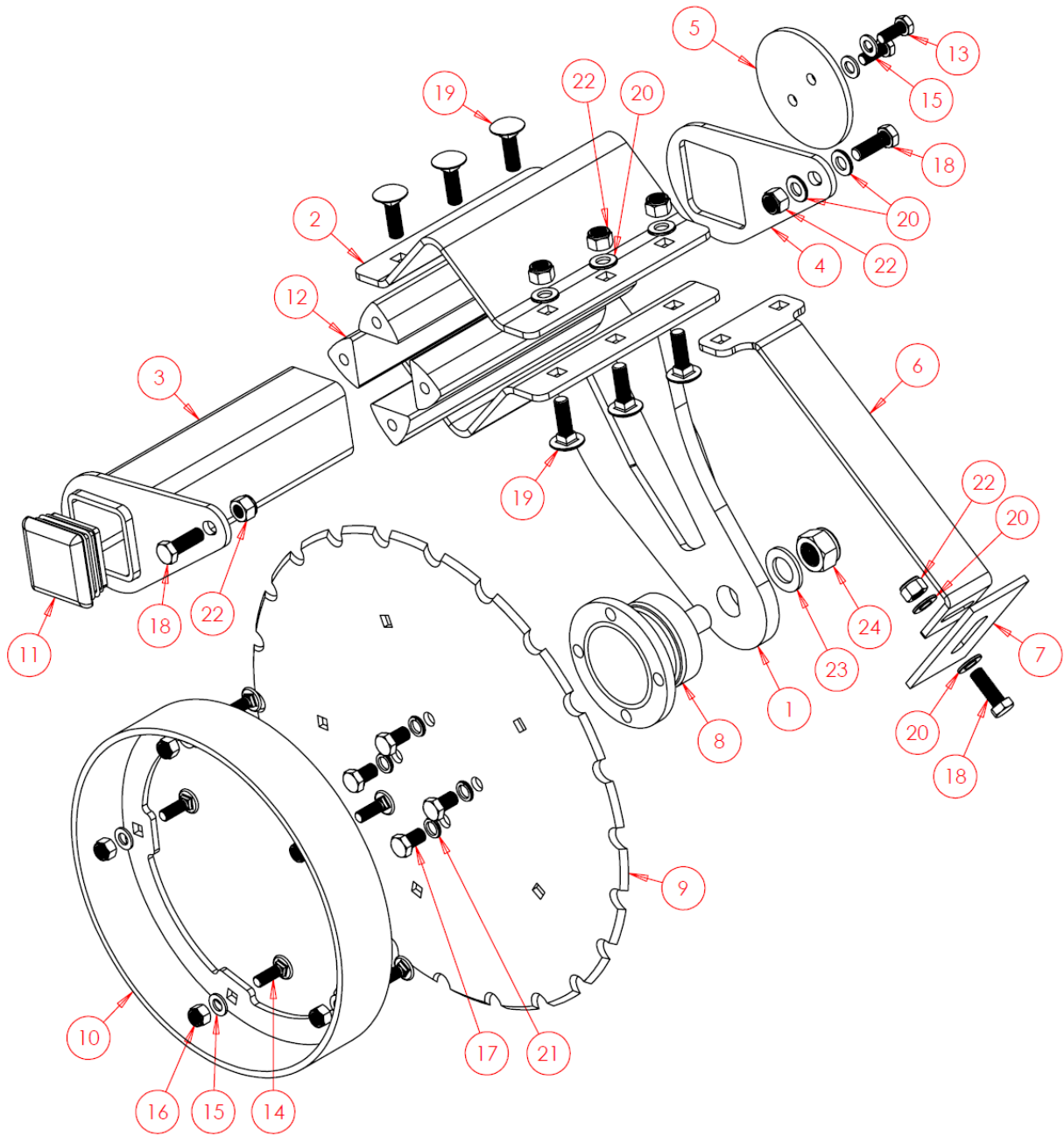
For any tramline coulters, the bottom parallel arm changes to the below, however, all other details remain the same.



Item No.	Part Number	Description	Qty
20	SW3998	Parallel Arm - Bottom (Tramline Only)	2*

*Quantity per Machine

6.3.2.4 Straight Leading Disc



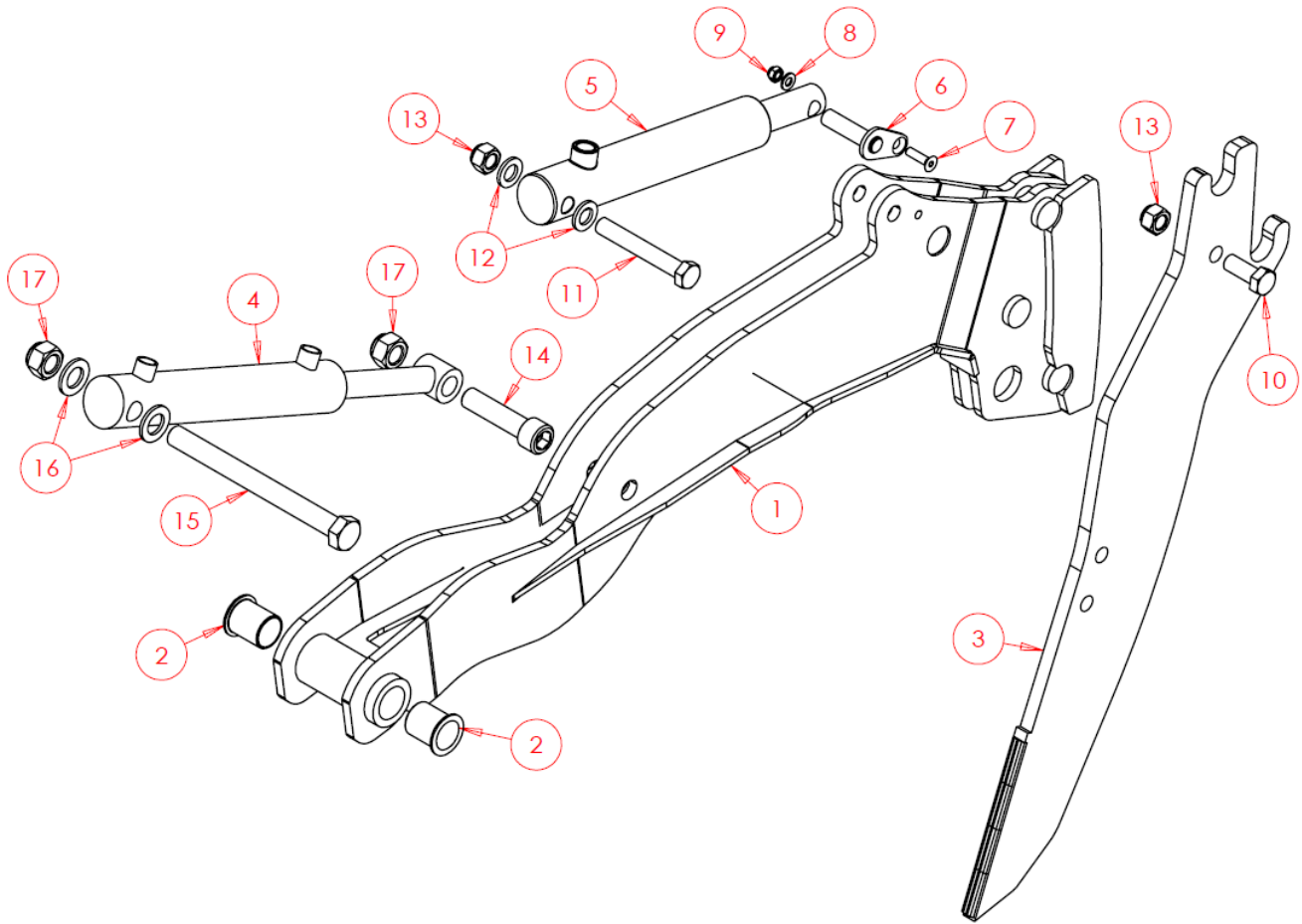
Left and right-hand versions of Disc Hangers are required but all other details remain the same. Left-hand version shown. Ensure to specify required hand when ordering.

6.3.2.4 Straight Leading Disc – Continued

Quantities are per sub assembly and not per machine.

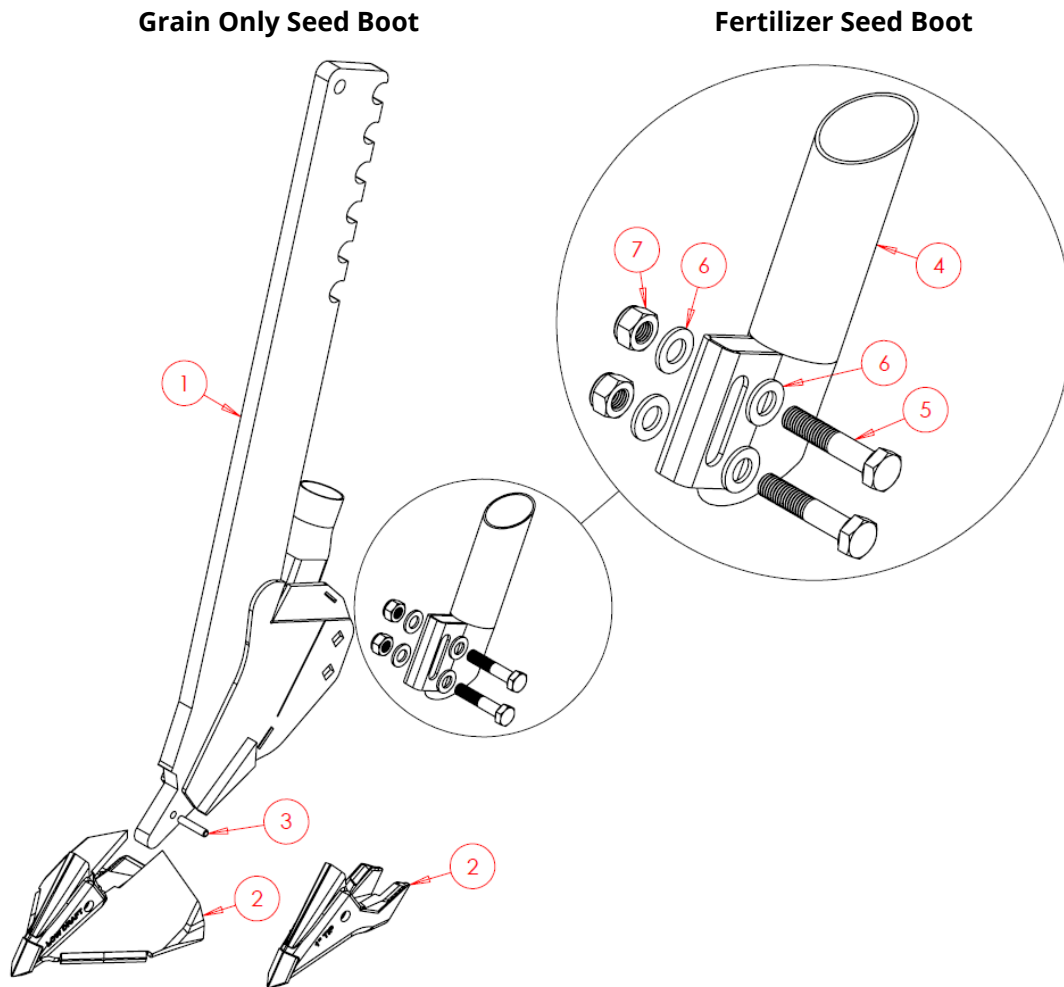
Item No.	Part Number	Description	Qty
1	SW1227L	Disc Hanger – Left Hand	1
1	SW1227R	Disc Hanger – Right Hand (Not Shown)	N/A
2	SW1800	Clamping Plate	1
3	SW1269	Disc Adjustment Beam	1
4	SWS8726	Disc Adjuster	1
5	SW1270	End Plate	1
6	SW1229	Scraper Hanger	1
7	SW1228	Scraper	1
8	SWB399	SKF Bearing	1
9	SWB442	450mm Disc	1
10	SW1226	Depth Ring	1
11	SWB1216	Plastic Bung	1
12	SWB866	Rubber Triangles	4
13	SWM1025	M10x25 Screw	2
14	SWM1030CHSQ	M10x30 Screw – Cup Head Square	5
15	SWM10001	M10 Washer – Flat	7
16	SWM10004	M10 Nut – Nylock	5
17	SWM1220FP	M12x20 Screw – Fine Thread	4
18	SWM1235	M12x35 Screw	3
19	SWM1240CHSQ	M12x40 Screw – Cup Head Square	6
20	SWM12001	M12 Washer – Flat	10
21	SWM12002	M12 Washer – Spring	4
22	SWM12004	M12 Nut – Nylock	9
23	SWM22001	M22 Washer – Flat	1
24	SWM22004FP	M22 Nut – Fine Tread Nylock	1

6.3.2.5 Hydraulic Leading Leg



Item No.	Part Number	Description	Qty
1	SW2233	Leading Leg Frame	1
2	SWB197	Top Hat Bush	2
3	SW2734	Leading Leg	1
4	SWH102	Hydraulic Ram	1
5	SWH393	Hydraulic Ram	1
6	SWP16X60	Pin	1
7	SWM830CSK	M8x30 Countersink Screw	1
8	SWM8001	M8 Washer - Flat	1
9	SWM8004	M8 Nut - Nylock	1
10	SWM1640	M16x40 Screw	1
11	SWM16110	M16x110 Bolt	1
12	SWM16001	M16 Washer - Flat	2
13	SWM16004	M16 Nut - Nylock	2
14	SWM2080AKH	M20x80 Socket Head Bolt	1
15	SWM20220	M20x220 Bolt	1
16	SWM20001	M20 Washer - Flat	2
17	SWM20004	M20 Nut - Nylock	2

6.3.2.6 Seed Boot Leg

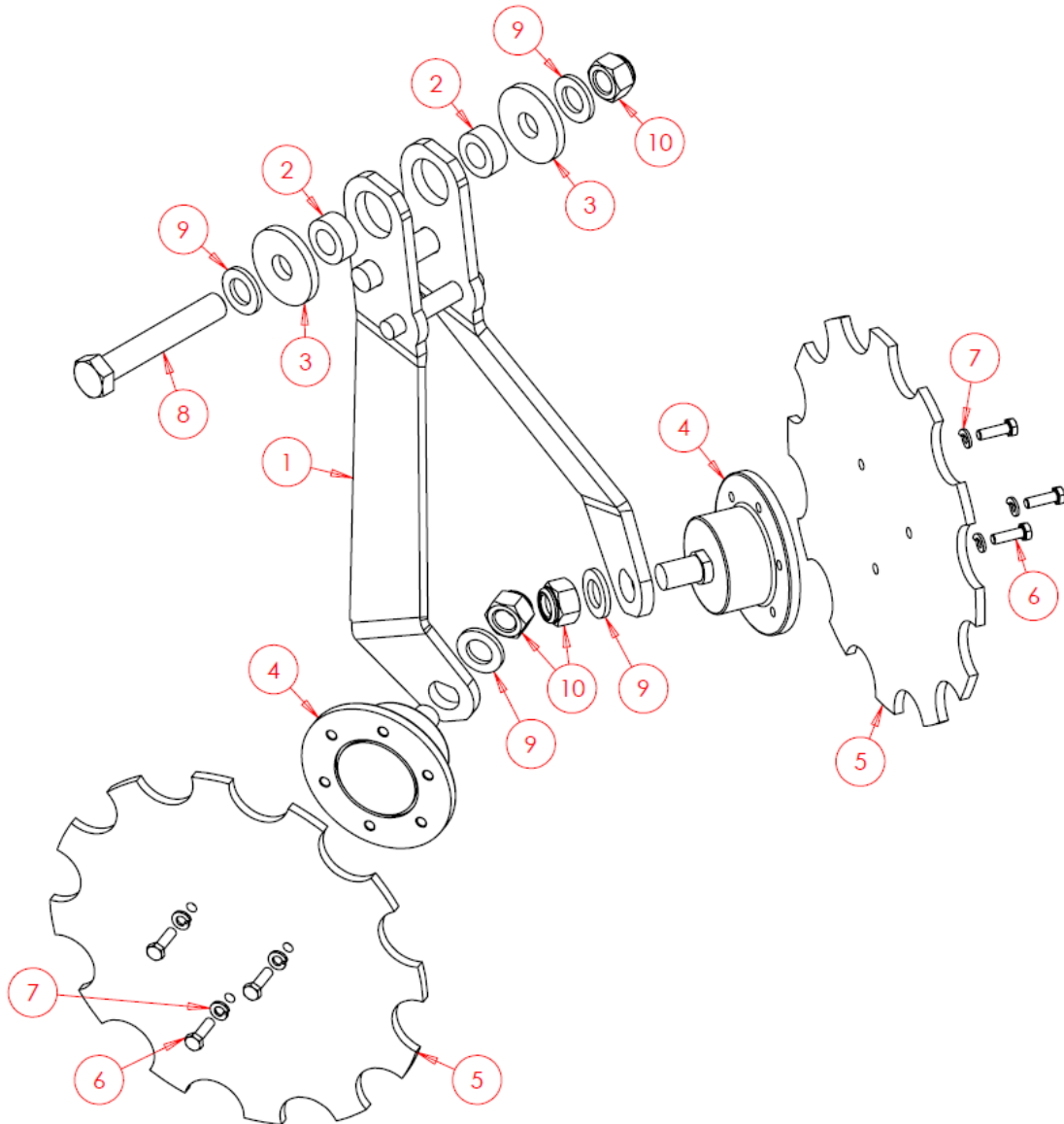


Grain Only Seed Boot			
Item No.	Part Number	Description	Qty
1	SW1225	Seed Boot Leg	1
2	SWB443	5" Twin Band Opener Point *	1
2	SWB657	5" Open Bottom Opener Point *	1
2	SWB444	1" Single Row Opener Point *	1
3	SWB243	Split Roll Pin	1

Fertilizer Seed Boot			
Item No.	Part Number	Description	Qty
4	SW2307	Fertilizer Boot	1
5	SWM1050	M10x50 Bolt	2
6	SWM10001	M10 Washer - Flat	4
7	SWM10004	M10 Nut - Nylock	2

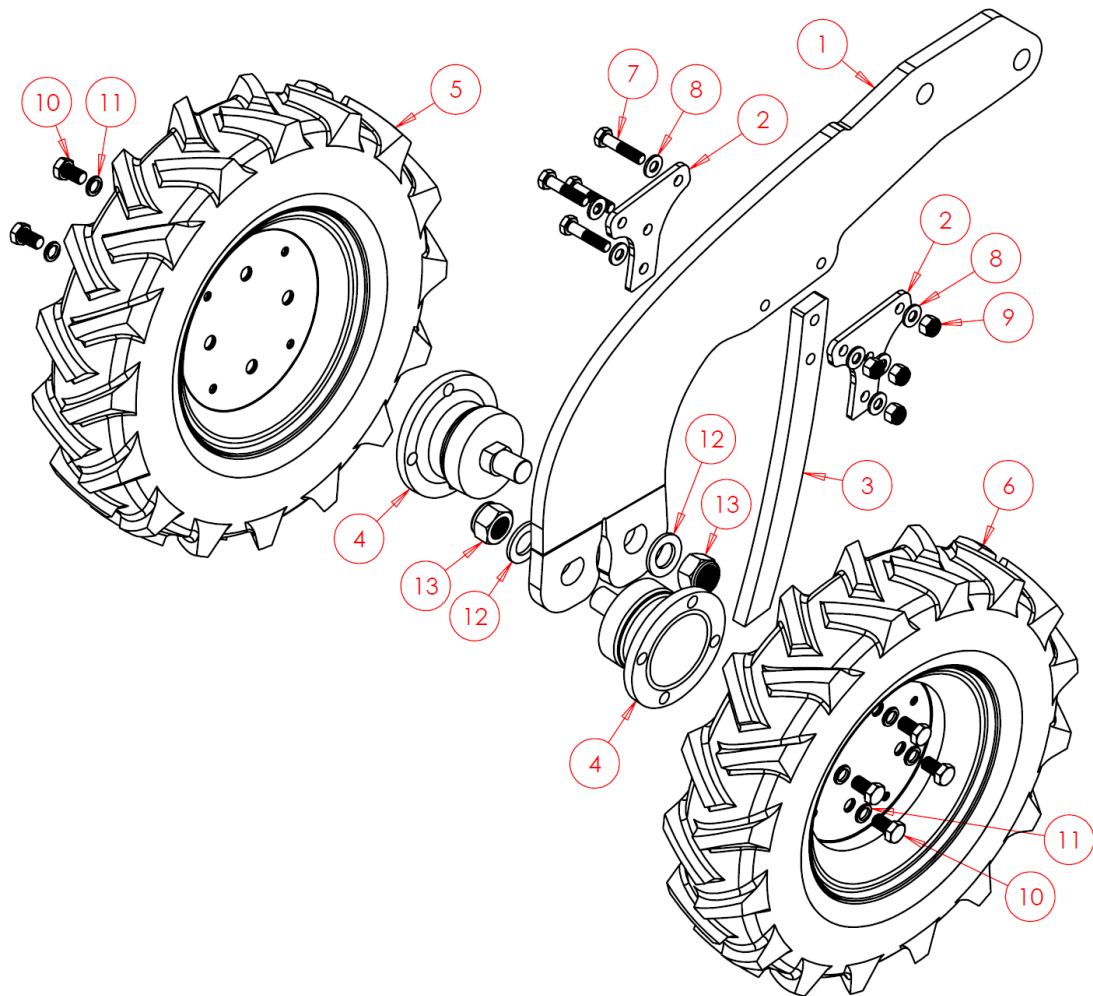
* Other options are available, contact your local dealer.

6.3.2.7 Covering Discs



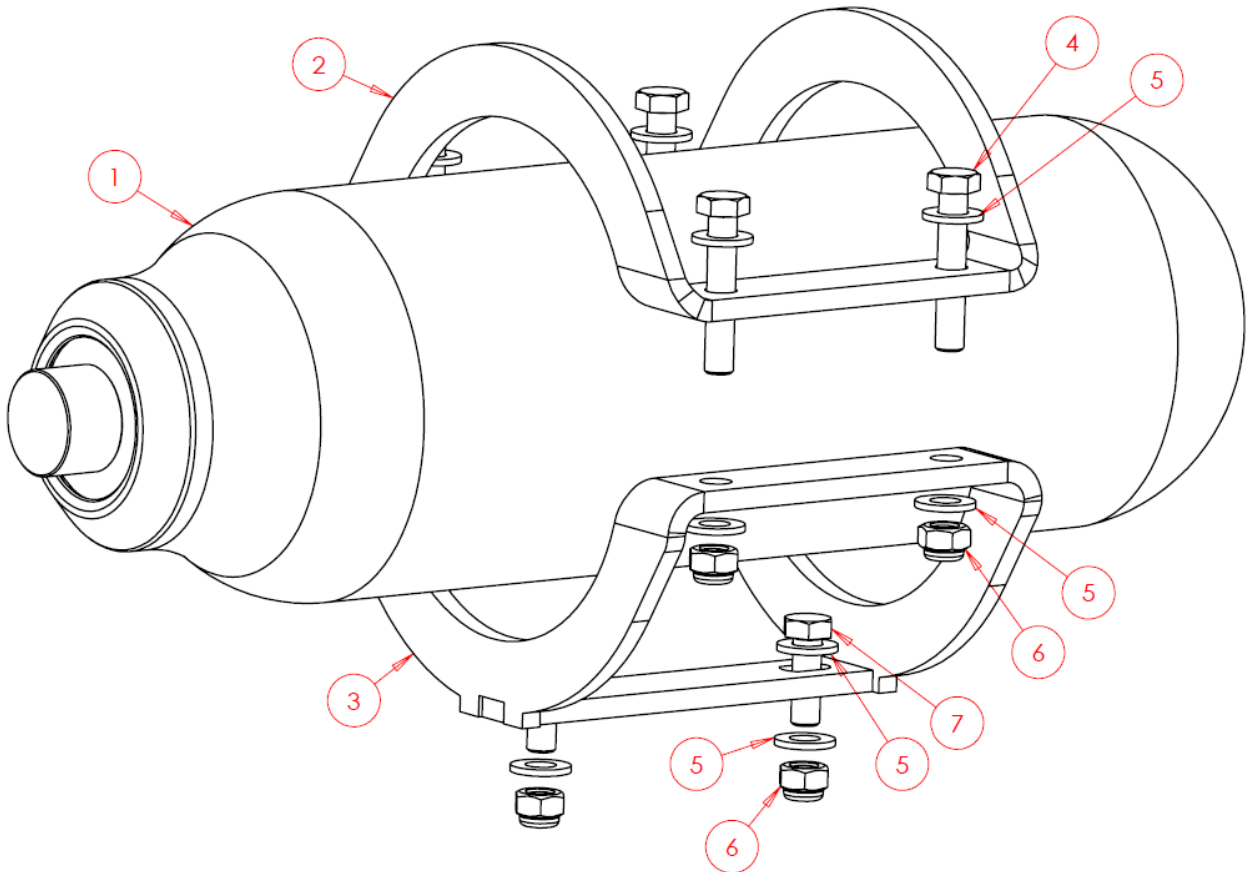
Item No.	Part Number	Description	Qty
1	SW3772	Covering Disc Frame	1
2	SW3199	Spacer	2
3	SW1259	Spacer	2
4	SWB952	Bearing	2
5	SW1268S	Disc	2
6	SWM620FP	M6x20 Fine Thread Screw	6
7	SWM6002	M6 Spring Washer	6
8	SWM16100	M16x100 Bolt	1
9	SWM16001	M16 Washer - Flat	4
10	SWM16004	M16 Nut - Nylock	3

6.3.2.8 Press Wheels & Stone Deflector



Item No.	Part Number	Description	Qty
1	SWS19636	Press Arm	1
2	SW1402	Stone Deflector Mounting Bracket	2
3	SW1230	Stone Deflector	1
4	SWB399	SKF Bering	2
5	SWB452PU-L	Press Tyre - Resin Filled - Left	1
6	SWB452PU-R	Press Tyre - Resin Filled - Right	1
7	SWM1045	M10x45 Bolt	4
8	SWM10001	M10 Washer - Flat	8
9	SWM10004	M10 Nut - Nylock	4
10	SWM1220FP	M12x20 Fine Thread Screw	8
11	SWM12002	M12 Washer - Spring	8
12	SWM22001	M22 Washer - Flat	2
13	SWM22004FP	M22 Nut - Fine Thread Nylock	2

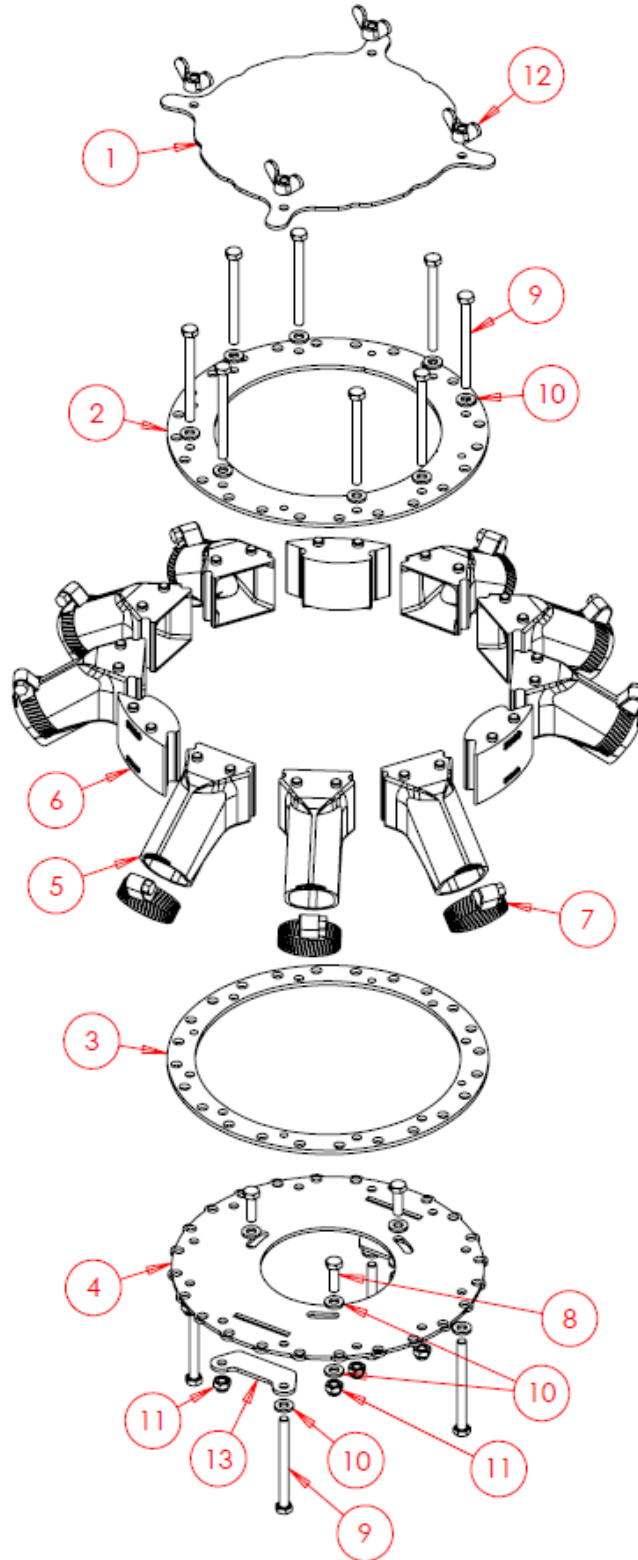
6.3.3 2.8 Litre Membrane Accumulator



Item No.	Part Number	Description	Qty
1	SWH686	2.8 Litre Membrane Accumulator	1
2	SW1510	Top Bracket	1
3	SW1511	Base Bracket	1
4	SWM845	M8x45 Bolt	4
5	SWM8001	M8 Washer - Flat	12
6	SWM8004	M8 Nut - Nylock	6
7	SWM825	M8x25 Screw	2

6.3.4 Distribution Head & Transfer Pipes

6.3.4.1 Nine Outlet Modular Distribution Head Assembly (DTS3T Only)



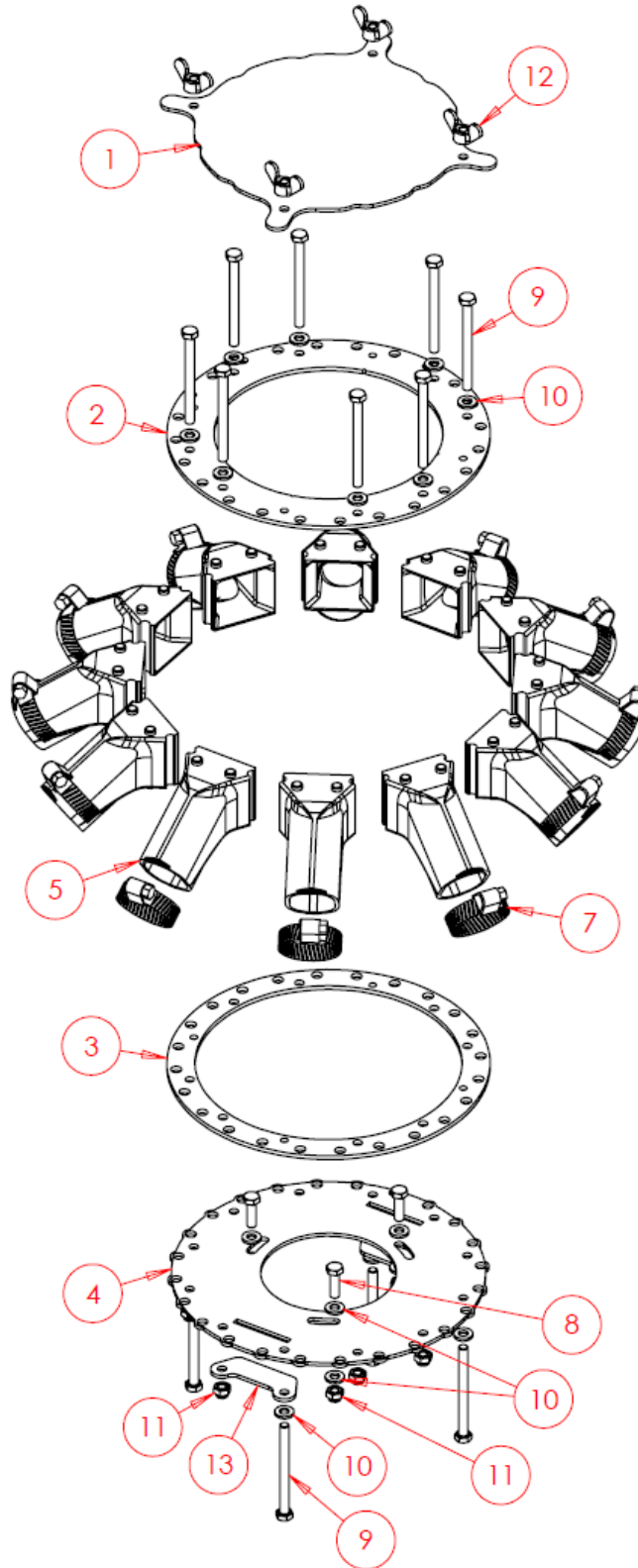
6.3.4.1 Nine Outlet Modular Distribution Head Assembly – Continued

Complete Assembly – SWA451			
Item No.	Part Number	Description	Qty
1	SW1842	Lid	1
2	SW1841	Top Ring	1
3	SWS21755	Bottom Ring	1
4	SW1840	Mounting Plate	1
5	SWB667	38mm Moulded Outlet	9
6	SWB658	38mm Head Blocker	3
7	SWB496	Jubilee Clip – 50mm	9
8	SWM620ST	M6x20 Stainless Screw	3
9	SWM670ST	M6x70 Stainless Bolt	12
10	SWM6001ST	M6 Stainless Washer – Flat	18
11	SWM6004ST	M6 Stainless Nut – Nylock	11
12	SWM6003WNS	M6 Stainless Nut – Wing	4
13	SWS24777	Tramline Blanking Plate *	2
13	SW3195	Tramline Open Plate *	2
**	SWB470	38mm Seed Hose	N/A

* Tramline blanking plates are only provided when tramlines are not fitted. If tramlines are fitted, tramline Open plates are provided.

** Hose is typically sold in metres, provide desired cut length when requesting.

6.3.4.2 Twelve Outlet Modular Distribution Head Assembly (DTS4TF Only)



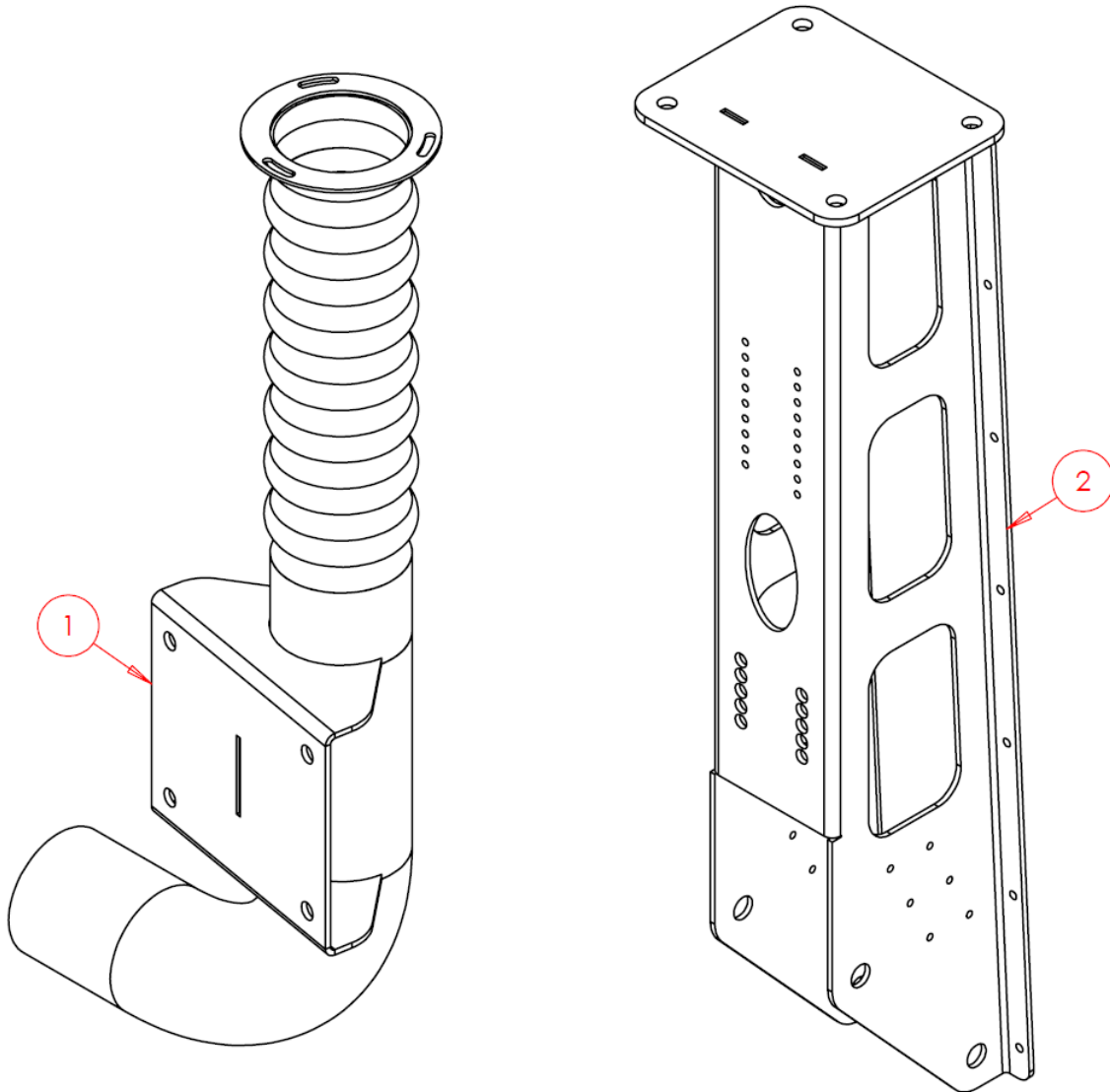
6.3.4.1 Nine Outlet Modular Distribution Head Assembly – Continued

Item No.	Part Number	Description	Qty
1	SW1842	Lid	1
2	SW1841	Top Ring	1
3	SWS21755	Bottom Ring	1
4	SW1840	Mounting Plate	1
5	SWB667	38mm Moulded Outlet	12
7	SWB496	Jubilee Clip – 50mm	9
8	SWM620ST	M6x20 Stainless Screw	3
9	SWM670ST	M6x70 Stainless Bolt	12
10	SWM6001ST	M6 Stainless Washer – Flat	18
11	SWM6004ST	M6 Stainless Nut – Nylock	11
12	SWM6003WNS	M6 Stainless Nut – Wing	4
13	SWS24777	Tramline Blanking Plate *	2
13	SW3195	Tramline Open Plate *	2
**	SWB470	38mm Seed Hose	N/A

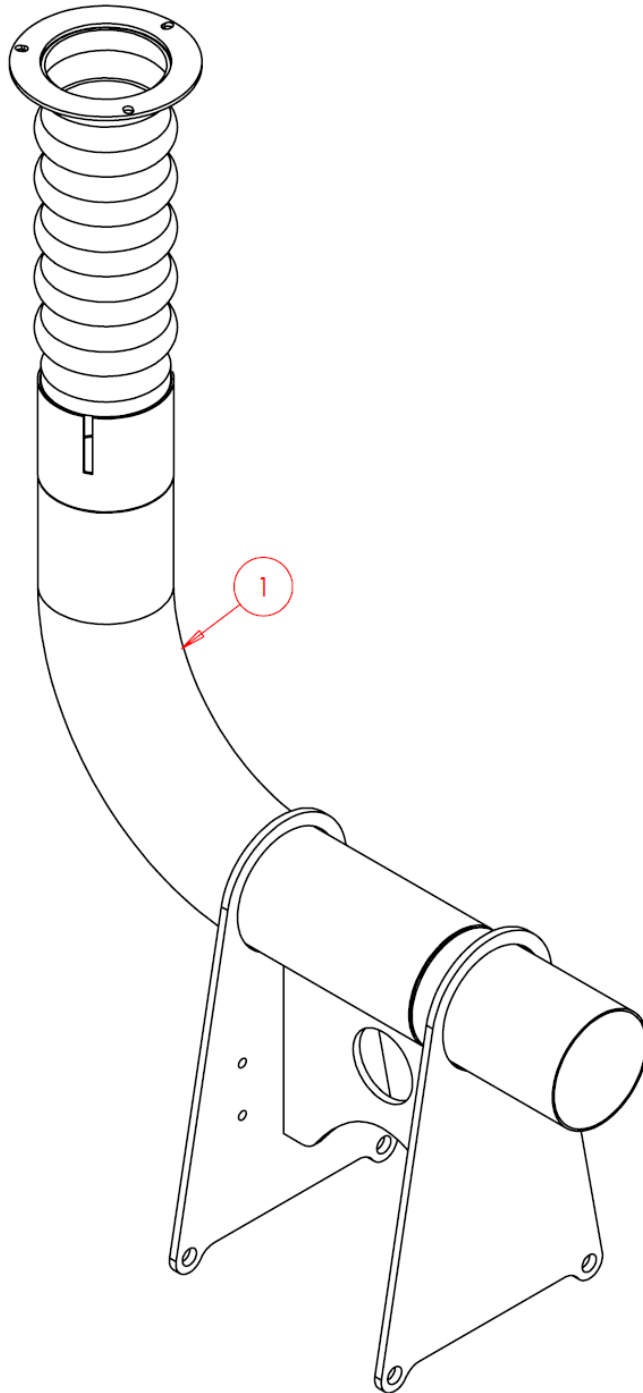
* Tramline blanking plates are only provided when tramlines are not fitted. If tramlines are fitted, tramline Open plates are provided.

** Hose is typically sold in metres, provide desired cut length when requesting.

6.3.4.3 Upstack (DTS3T Only)

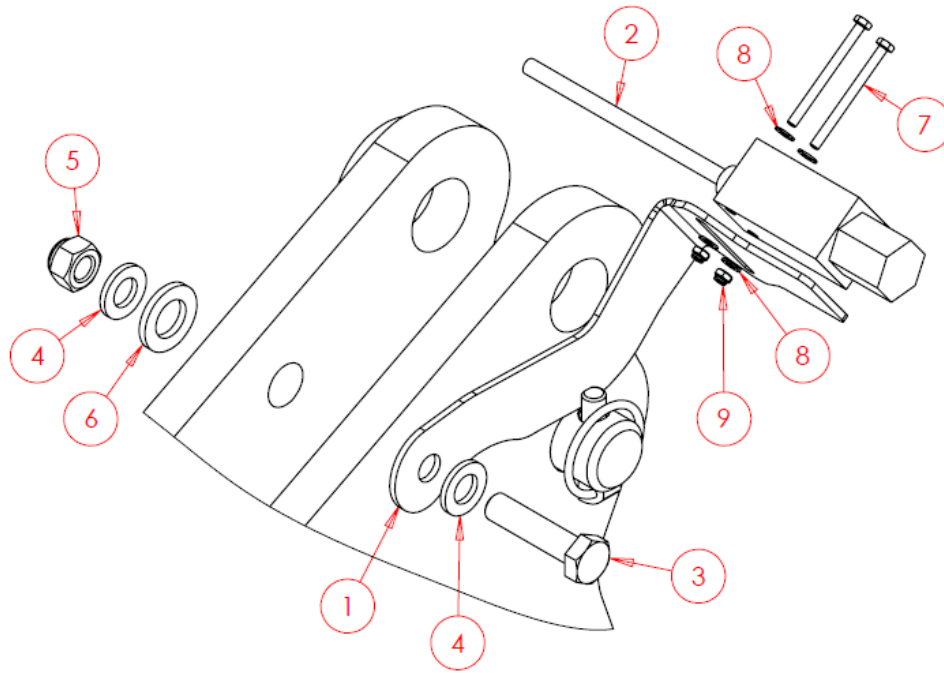


Item No.	Part Number	Description	Qty
1	SW2395	Upstack	1
2	SW2394	Mounting Bracket	1

6.3.4.4 Upstack (DTS4TF Only)

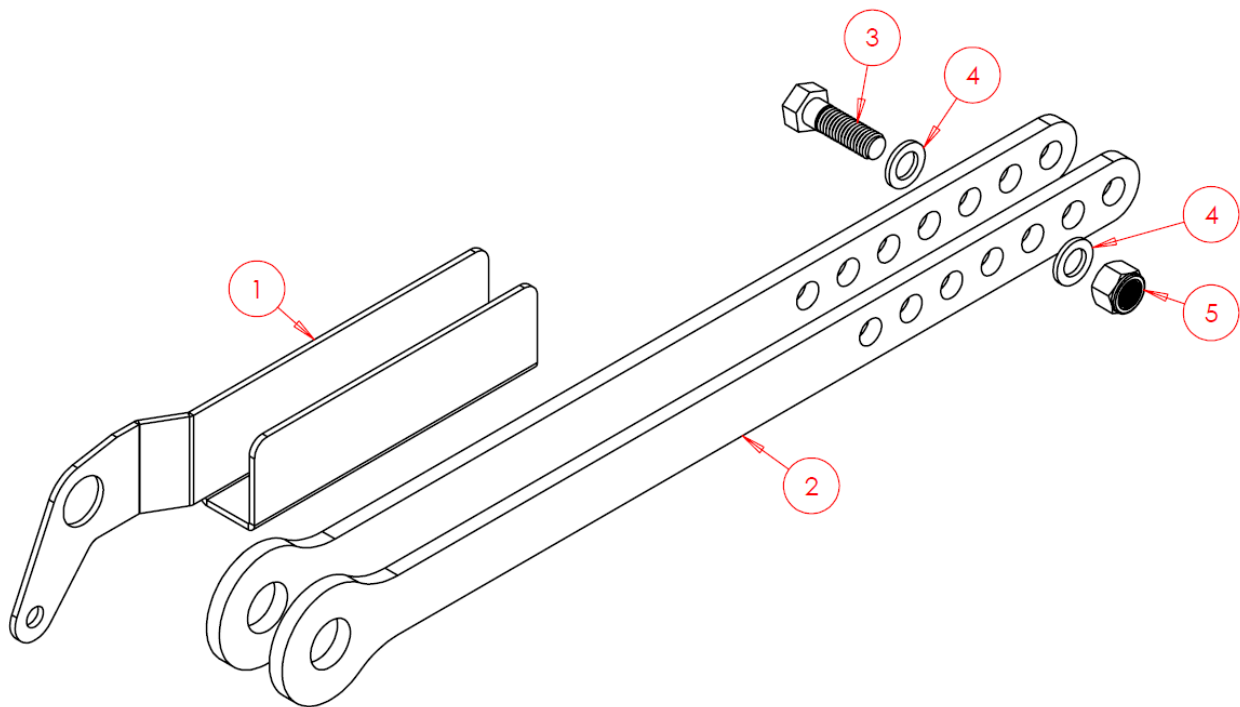
Item No.	Part Number	Description	Qty
1	SW3188	Upstack	1

6.3.5 Finger Switch Assembly



Item No.	Part Number	Description	Qty
1	SW1176	Bracket	1
2	SWB850	Finger Switch	1
3	SWM1250	M12x50 Bolt	1
4	SWM12001	M12 Washer - Flat	2
5	SWM12004	M12 Nut - Nylock	1
6	SWM16001	M16 Washer - Flat	1
7	SWM450	M4x50 Screw	2
8	SWM4001	M4 Washer - Flat	4
9	SWM4004	M4 Nut - Nylock	2

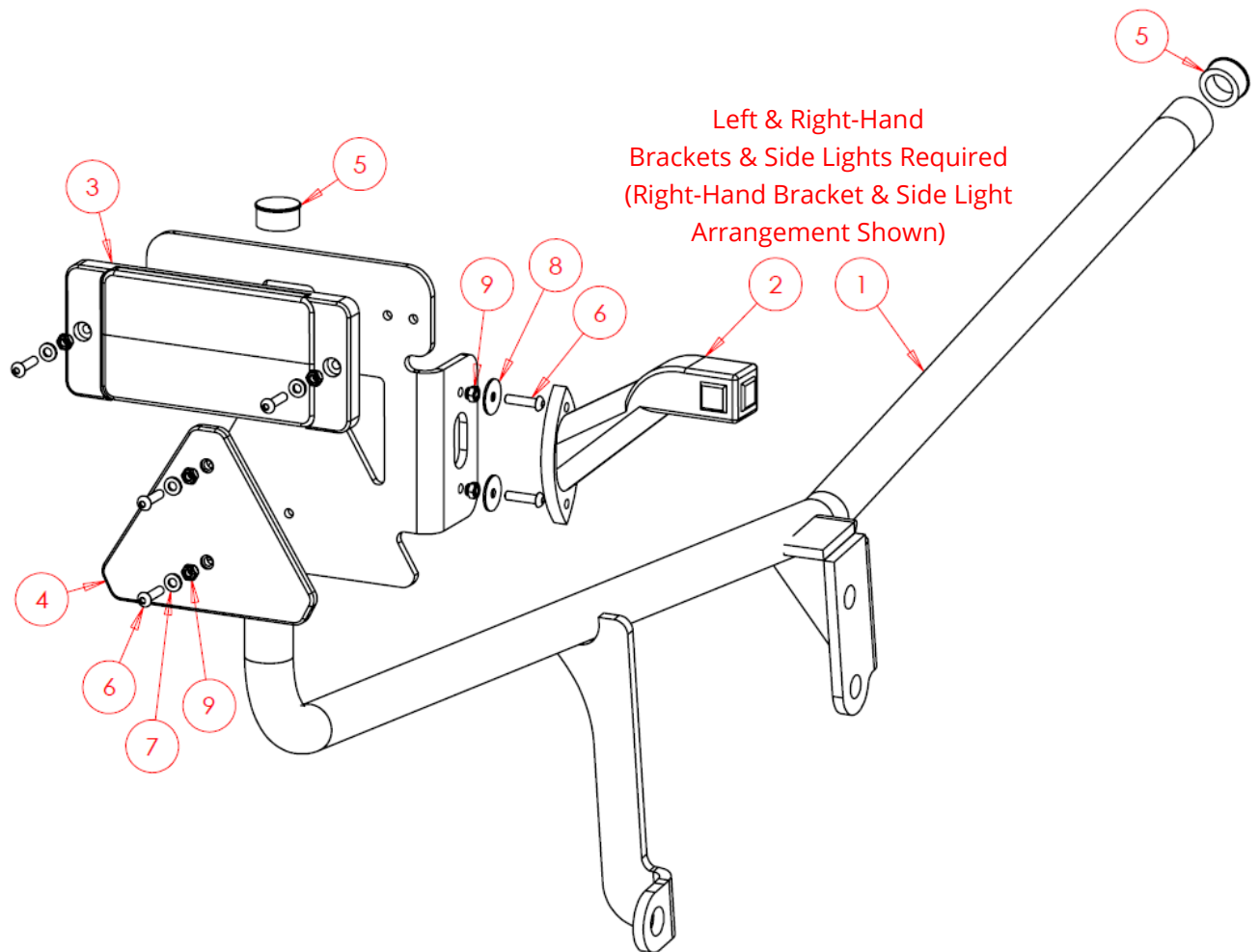
6.3.6 Dog Bone Assembly



Item No.	Part Number	Description	Qty
1	SWS21812	Holder	1
2	SWS21813	Dog Bone	2
3	SWM1650	M16x50 Screw	1
4	SWM16001	M16 Washer - Flat	2
5	SWM16004	M16 Nut - Nylock	1

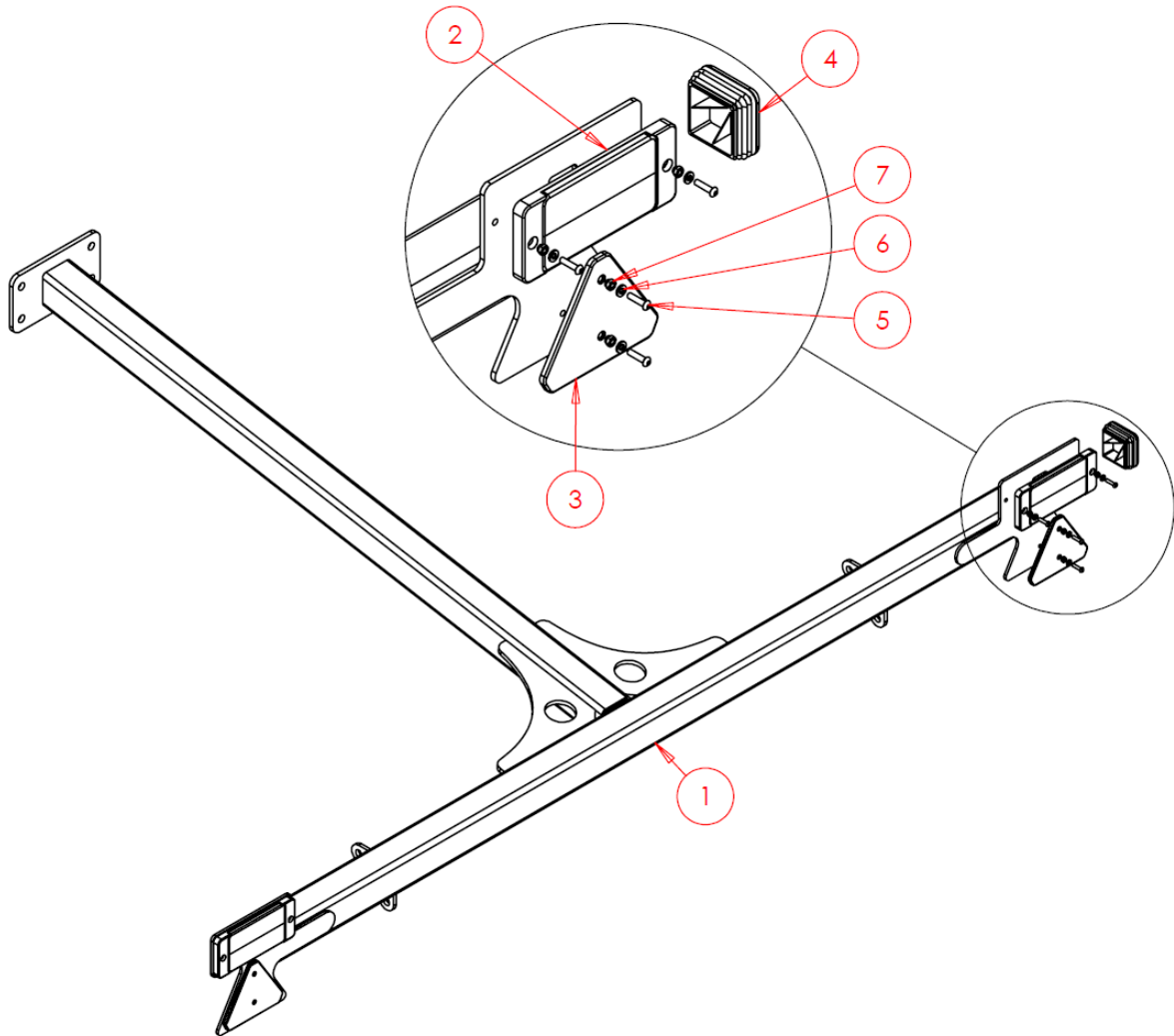
6.3.7 Lights Bracket Assembly

6.3.7.1 Lights Bracket Assembly (DTS3T Only)



Item No.	Part Number	Description	Qty
1	SWA2189	Light Bracket RH	1
1	SWA2190	Light Bracket LH (Not Shown)	1
2	SWB172	Side Light RH	1
2	SWB173	Side Light LH (Not Shown)	1
3	SWB715	Rear Stop Light/Indicator	1
4	SWB162	Reflector - Red Triangle	1
5	SWB541	Plastic Bung	2
6	SWM625BTH	M6x25 Button Head Screw	6
7	SWM6001	M6 Washer - Flat	4
8	SWM6001XL	M6 Washer - Flat Extra Large	2
9	SWM6004	M6 Nut - Nylock	6

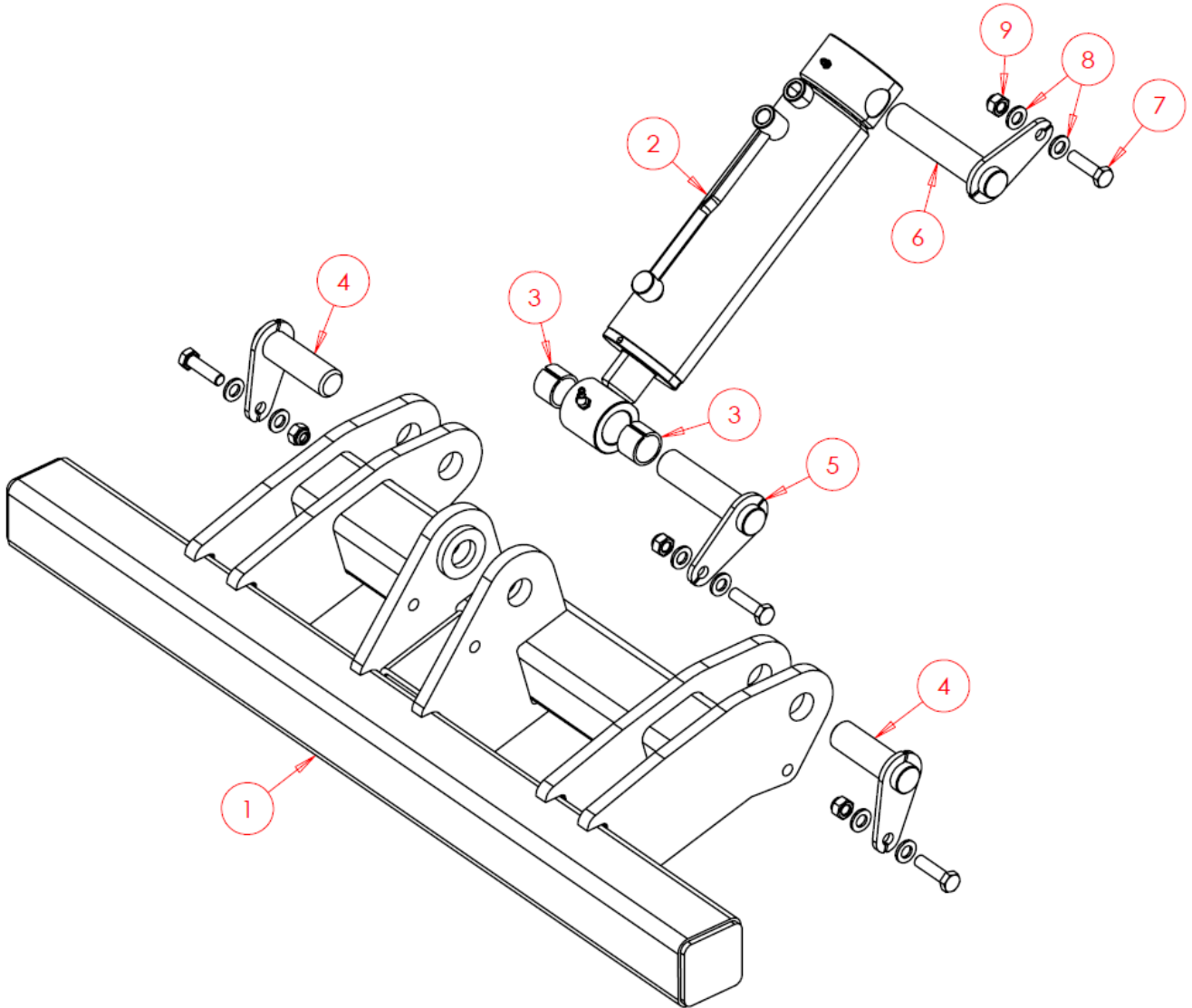
6.3.7.2 Lights Bracket Assembly (DTS4TF Only)



Item No.	Part Number	Description	Qty
1	SW3184	Light Bracket	1
2	SWB715	Rear Stop Light/Indicator	2
3	SWB162	Reflector - Red Triangle	2
4	SWB144	Plastic Bung	2
5	SWM625BTH	M6x25 Button Head Screw	8
6	SWM6001	M6 Washer - Flat	8
7	SWM6004	M6 Nut - Nylock	8

6.4 Optional Extras/Attachments

6.4.1 Weight Transfer Unit

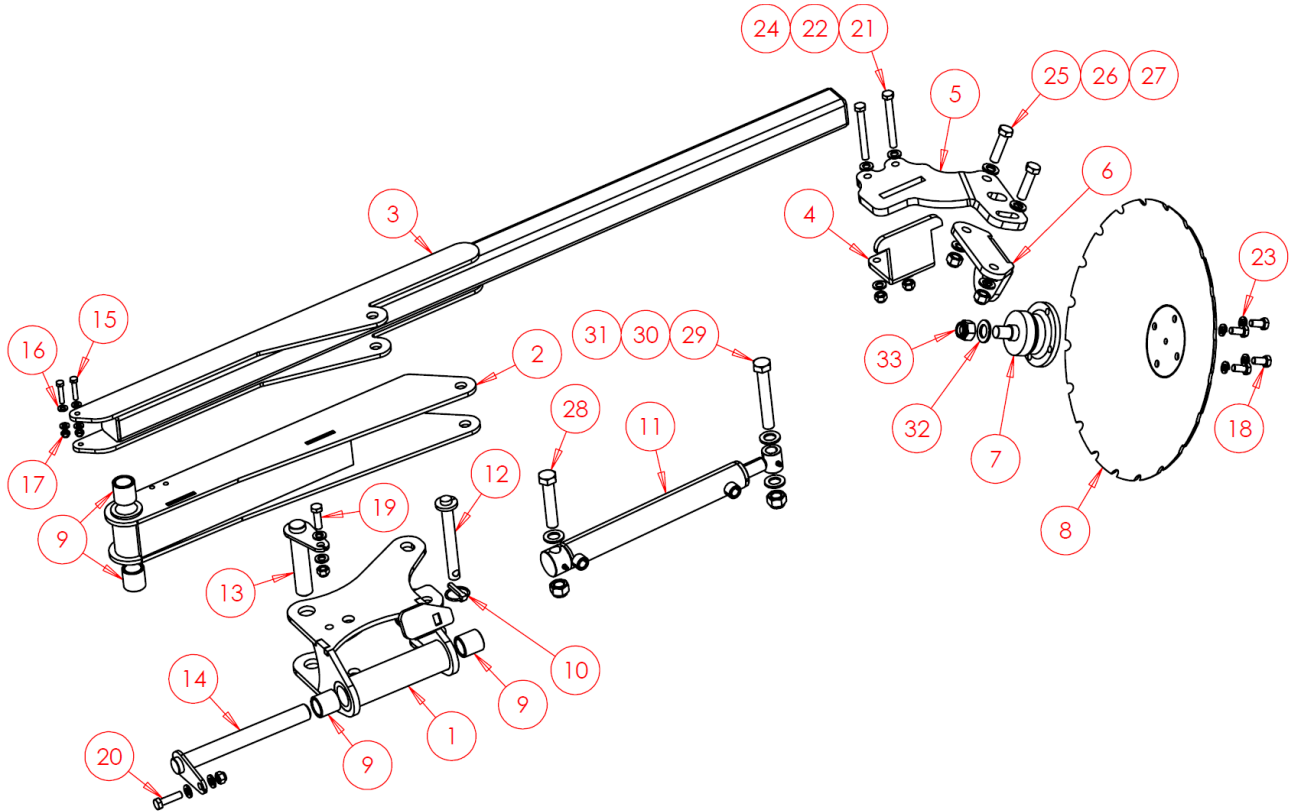


Item No.	Part Number	Description	Qty
1	SW2379	Weight Transfer Frame	1
2	SWH125	Hydraulic Cylinder	1
3	SWB374	Split Tension Bush	2
4	SWP30X90	Pin	2
5	SWP30X120	Pin	1
6	SWP30X140	Pin	1
7	SWM1245	M12x45 Bolt	4
8	SWM12001	M12 Washer - Flat	8
9	SWM12004	M12 Nut - Nylock	4

6.4.2 Markers

6.4.2.1 Markers (DTS3T Only)

Left & Right-Hand marker arms required – Right-Hand version shown.



Quantities below are for both Left & Right-Hand marker arms combined.

Item No.	Part Number	Description	Qty
1	SW2808	Knuckle RH	1
1	SW2809	Knuckle LH (Not Shown)	1
2	SW2810	Arm Pivot	2
3	SW2812	Marker Arm	2
4	SW2524	Clamp	2
5	SW2523-R	Mount RH	1
5	SW2523-L	Mount LH (Not Shown)	1
6	SW2552	Bearing Mount	2
7	SWB399	Bearing	2
8	SWB863	Disc	2
9	SWB411	Oilite Bush	8
10	SWB105	Lynch Pin	2
11	SWH103	Hydraulic Cylinder	2
12	SWP20X140W	Pin	2

6.4.1 Weight Transfer Unit

Item No.	Part Number	Description	Qty
1	SW2379	Weight Transfer Frame	1
2	SWH125	Hydraulic Cylinder	1
3	SWB374	Split Tension Bush	2
4	SWP30X90	Pin	2
5	SWP30X120	Pin	1
6	SWP30X140	Pin	1
7	SWM1245	M12x45 Bolt	4
8	SWM12001	M12 Washer - Flat	8
9	SWM12004	M12 Nut - Nylock	4



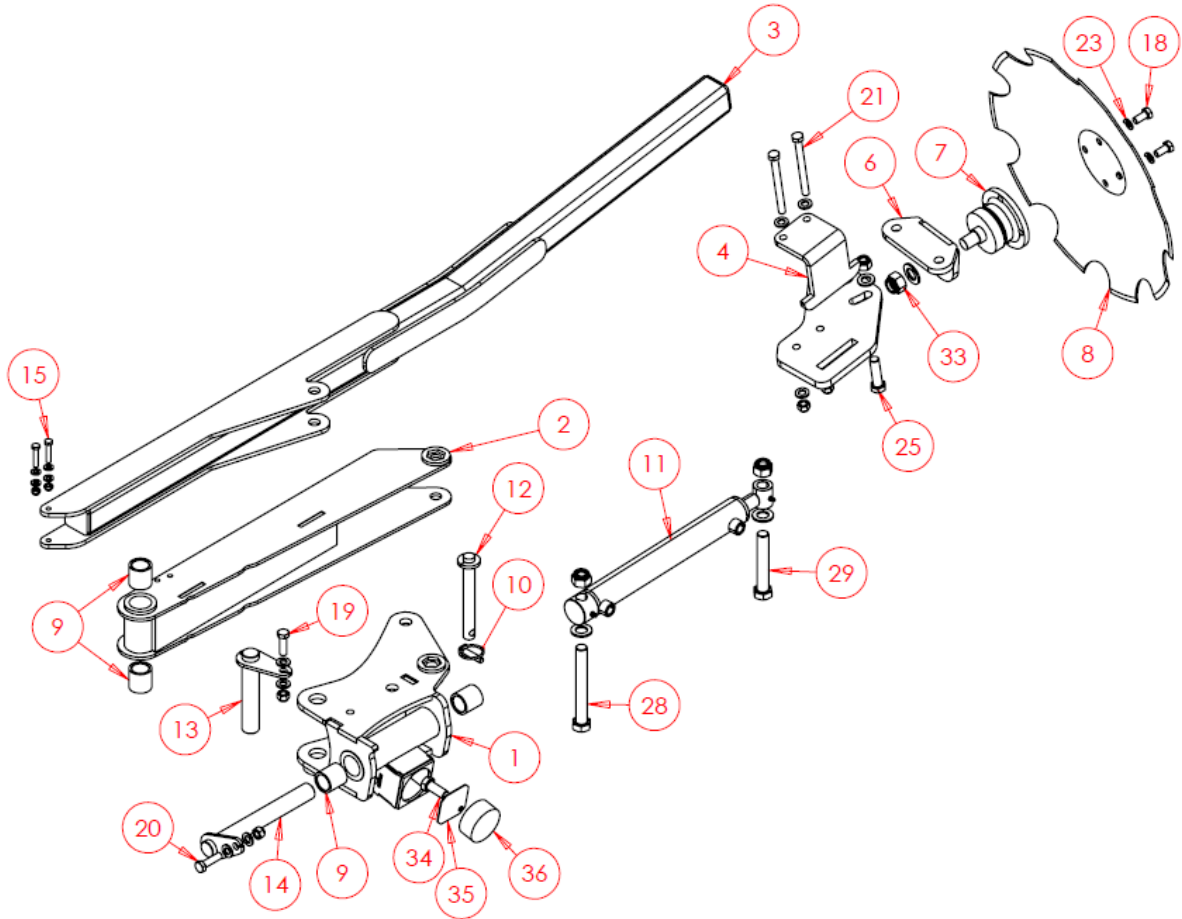
GROWING WITH YOU

Markers - Continued

Item No.	Part Number	Description	Qty
13	SWP30X135	Pin	2
14	SWP30X265	Pin	2
15	SWM840	M8x40 Screw	4
16	SWM8001	M8 Washer - Flat	8
17	SWM8004	M8 Nut - Nylock	4
18	SWM1225FT	M12x25 Fine Thread Screw	8
19	SWM1240	M12x40 Screw	2
20	SWM1245	M12x45 Screw	2
21	SWM12110	M12x110 Screw	4
22	SWM12001	M12 Washer - Flat	16
23	SWM12002	M12 Washer - Spring	8
24	SWM12004	M12 Nut - Nylock	8
25	SWM1660	M16x60 Bolt	4
26	SWM16001	M16 Washer - Flat	8
27	SWM16004	M16 Nut - Nylock	4
28	SWM20100	M20x100 Bolt	2
29	SWM20130	M20x130 Bolt	2
30	SWM20001	M20 Washer - Flat	6
31	SWM20004	M20 Nut - Nylock	4
32	SWM22001	M22 Washer - Flat	2
33	SWM22004FT	M22 Fine Thread Nut - Nylock	2

6.4.2.2 Markers (DTS4TF Only)

Left & Right-Hand Versions Required – Right Hand Shown.

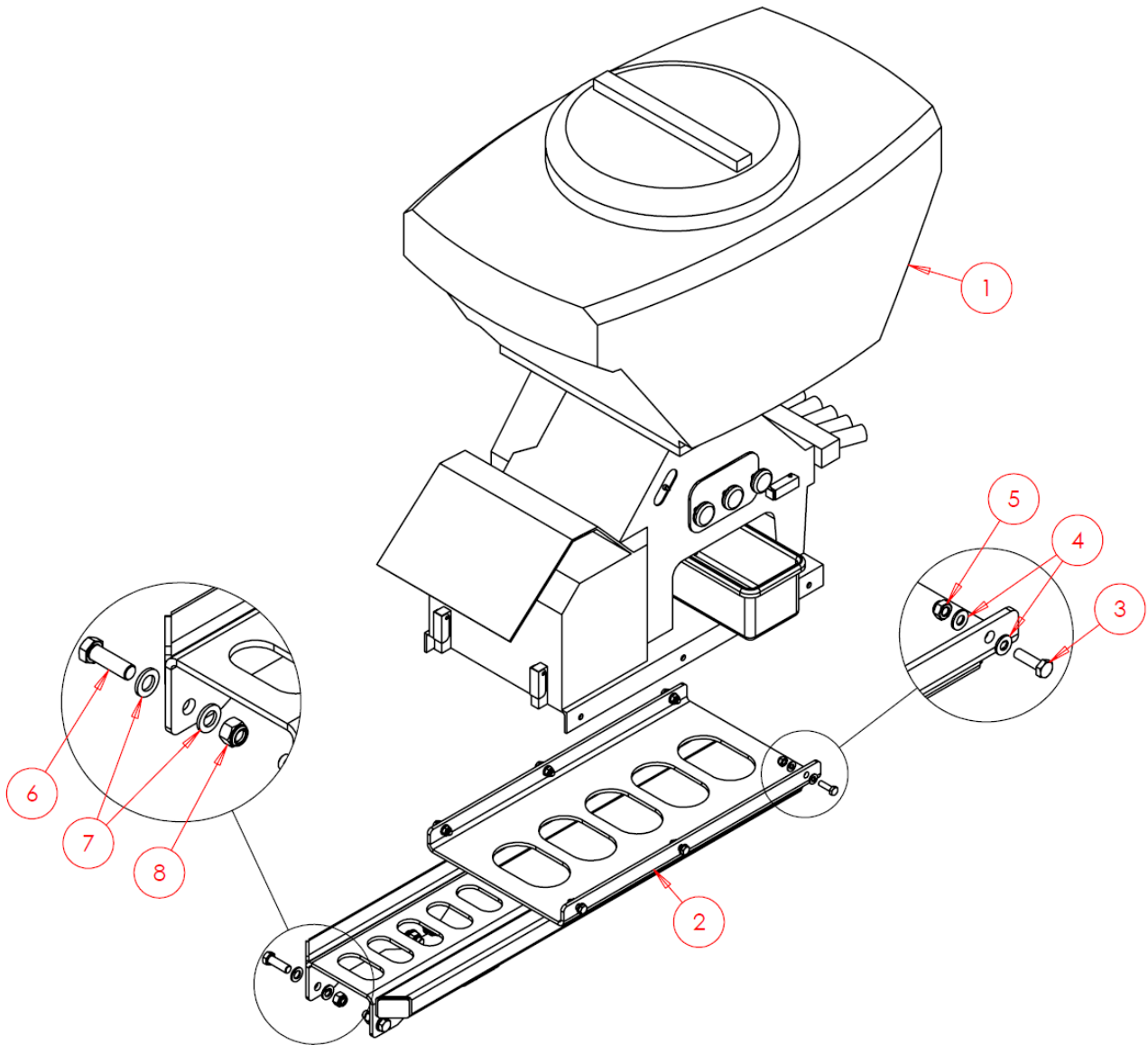


Quantities below are for both Left & Right-Hand marker arms combined.

Item No.	Part Number	Description	Qty
1	SW2294	Knuckle RH	1
1	SW2295	Knuckle LH (Not Shown)	1
2	SW2298	Arm Pivot RH	1
2	SW2299	Arm Pivot LH (Not Shown)	1
3	SW2296	Marker Arm RH	1
3	SW2297	Marker Arm LH (Not Shown)	1
4	SW2301	Clamp	2
5	SW3324	Mount	2
6	SW2552	Bearing Mount	2
7	SWB399	Bearing	2
8	SWB863	Disc	2
9	SWB411	Oilite Bush	8
10	SWB105	Lynch Pin	2
11	SWH103	Hydraulic Cylinder	2

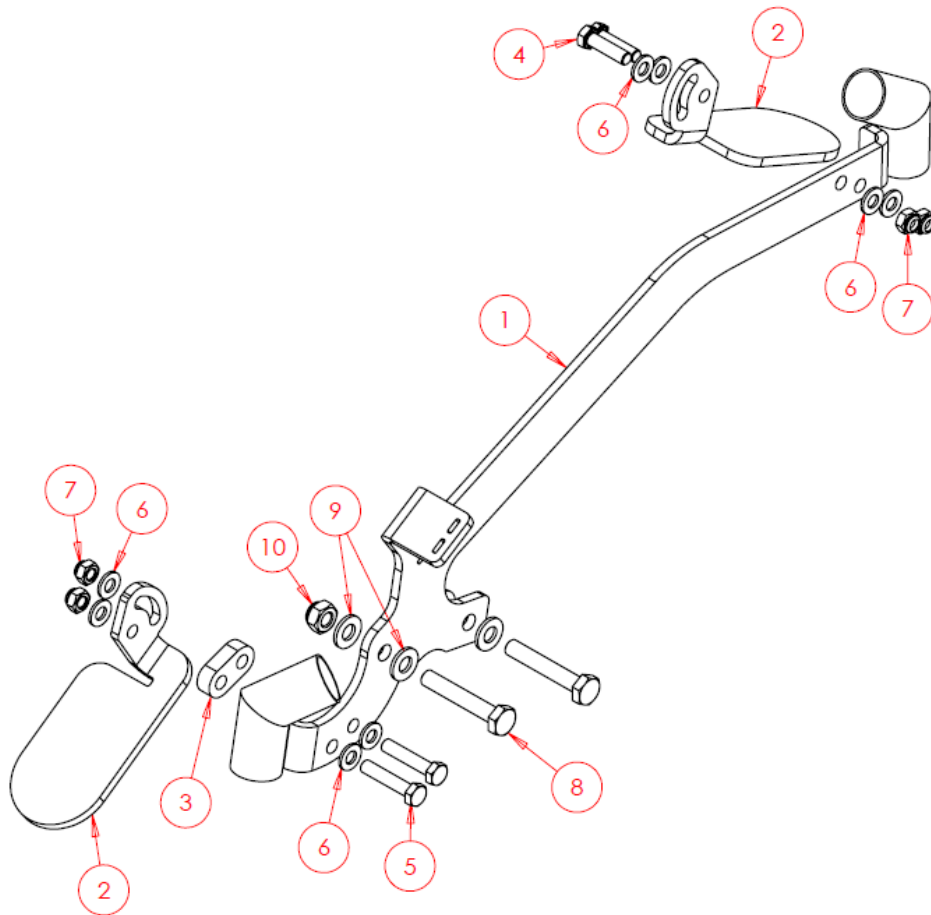
12	SWP20X140W	Pin	2
13	SWP30X150	Pin	2
14	SWP30X240	Pin	2
15	SWM840	M8x40 Screw	4
16	SWM8001	M8 Washer – Flat	8
17	SWM8004	M8 Nut – Nylock	4
18	SWM1225FT	M12x25 Fine Thread Screw	8
19	SWM1240	M12x40 Screw	2
20	SWM1245	M12x45 Screw	2
21	SWM12130	M12x130 Screw	8
22	SWM12001	M12 Washer – Flat	32
23	SWM12002	M12 Washer – Spring	8
24	SWM12004	M12 Nut – Nylock	20
25	SWM1660	M16x60 Bolt	4
26	SWM16001	M16 Washer – Flat	8
27	SWM16004	M16 Nut – Nylock	4
28	SWM20160	M20x160 Bolt	2
29	SWM20120	M20x120 Bolt	2
30	SWM20001	M20 Washer – Flat	8
31	SWM20004	M20 Nut – Nylock	5
32	SWM22001	M22 Washer – Flat	2
33	SWM22004FT	M22 Fine Thread Nut – Nylock	2
34	SWM1640	M16x40 Bolt	1
35	SW3269	Bump Stop Backing Plate	1
36	SWB1400	Rubber Bump Stop	1

6.4.3 Seeder Fitting Kit (DTS4TF Only)



Item No.	Part Number	Description	Qty
1	Turbojet8	Turbojet i-CON 8	1
2	SWA2972	Mounting Bracket	1
3	SWM1035	M10x35 Bolt	6
4	SWM10001	M10 Washer - Flat	12
5	SWM10004	M10 Nut - Nylock	6
6	SWM1650	M16x50 Bolt	6
7	SWM16001	M16 Washer - Flat	12
8	SWM16004	M16 Nut - Nylock	6

6.4.3.1 Seed Outlet – Dual Seed Location

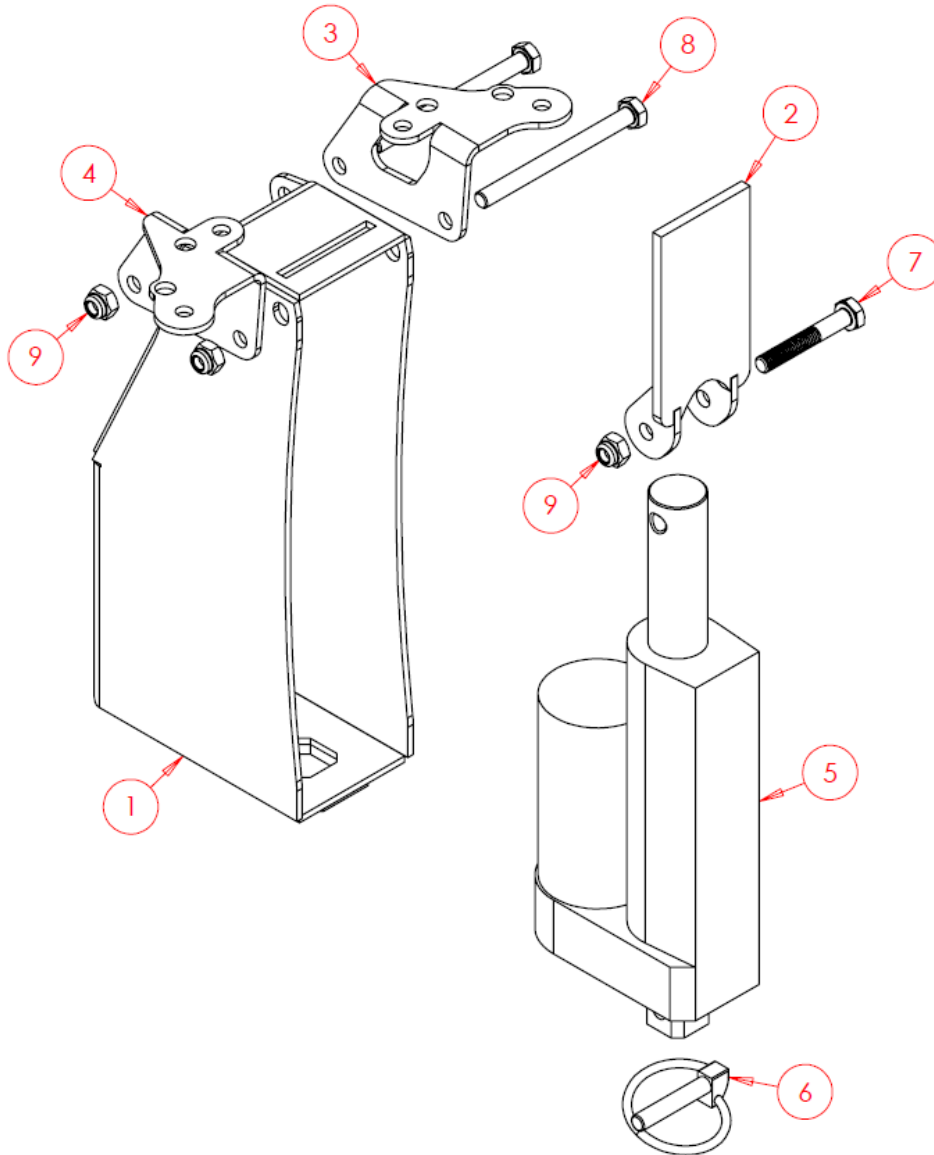


Item No.	Part Number	Description	Qty*
1	SWA3049	Main Bracket	1
2	SWS24477	Splash Plate	2
3	SWS24675	Spacer	1
4	SWM830	8x40 Screw	2
5	SWM840	M8x40 Screw	2
6	SWM8001	M8 Washer – Flat	8
7	SWM8004	M8 Nut – Nylock	4
8	SWM1060	M10x60 Bolt	2
9	SWM10001	M10 Washer – Flat	4
10	SWM10004	M10 Nut – Nylock	2
11	SWB495	Jubilee Clip (Not Shown)	2
**	SWB344	Seed Hose	-

* Quantities above are per outlet, NOT per machine.

** Hose is typically sold in metres, provide desired cut length when requesting.

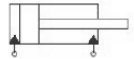

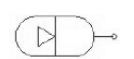
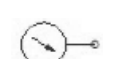
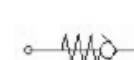
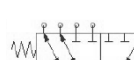

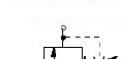
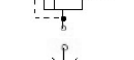
6.4.4 Tramline Shut Off



Item No.	Part Number	Description	Qty
1	SW1836	Actuator Guard	1
2	SW1837	Tramline Shut Off Slide	1
3	SW1838	Bracket LH	1
4	SW1839	Bracket RH	1
5	SWB508	Actuator	1
6	SWB1391	Lynch Pin	1
7	SWM640ST	M6x40 Stainless Bolt	1
8	SWM670ST	M6x70 Stainless Bolt	2
9	SWM6004ST	M6 Stainless Nut - Nylock	3

7 Hydraulic Function Diagrams

Standard Symbols Key:

	=	Double Acting Cylinder
	=	Single Acting Cylinder
	=	Accumulator
	=	Pressure Gauge
	=	Quick Release/Check Valve
	=	Six Way Changeover Valve
	=	Ball Valve
	=	Pilot Operated Relief Valve
	=	Flow Restrictor

7.1 Hydraulic Function Schematic

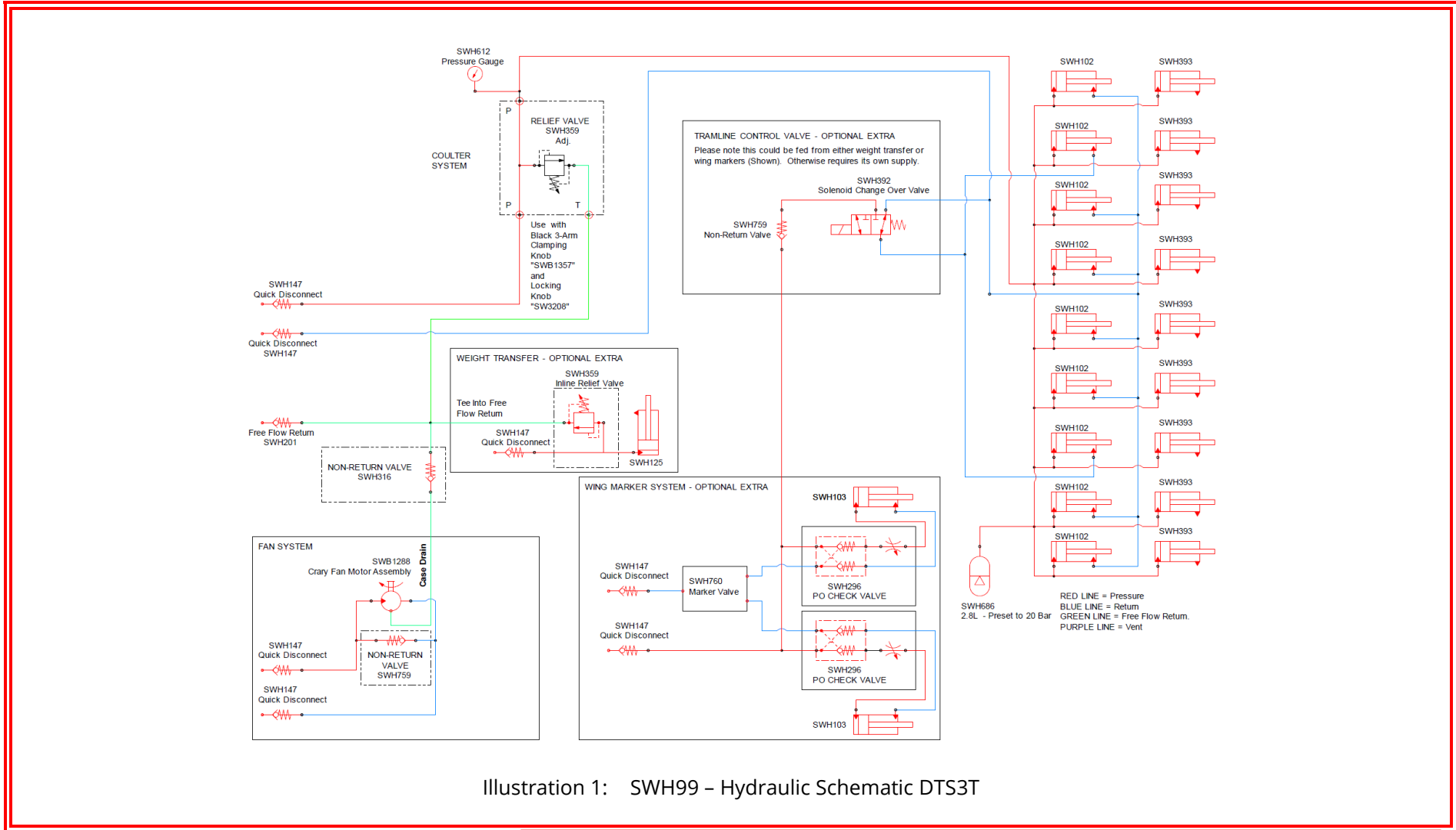


Illustration 1: SWH99 - Hydraulic Schematic DTS3T

7.2 DTS4TF - Hydraulic Function Schematic

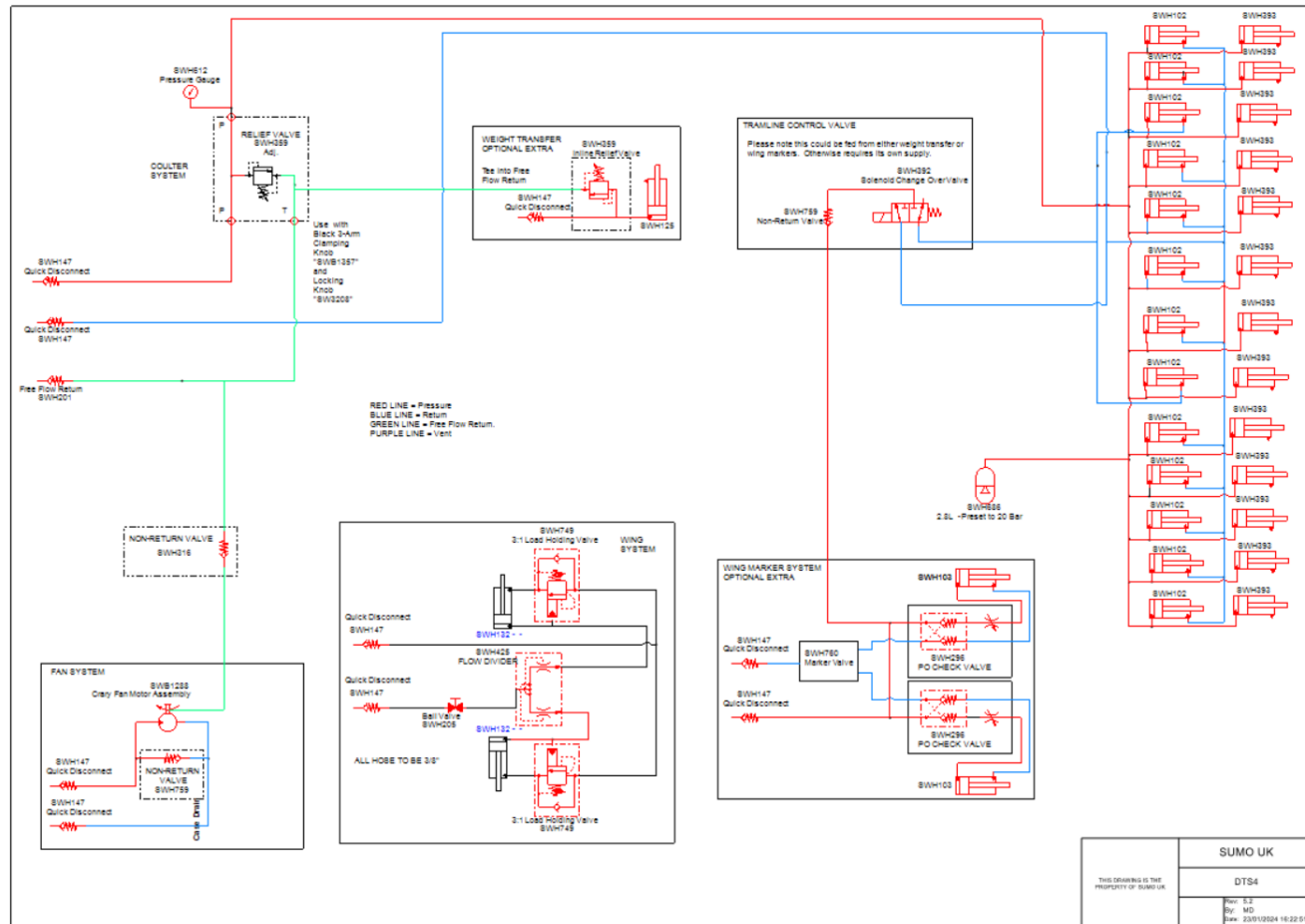


Illustration 2: SWH - Hydraulic Schematic DTS4T

7.3 Coulter System Pressure Control

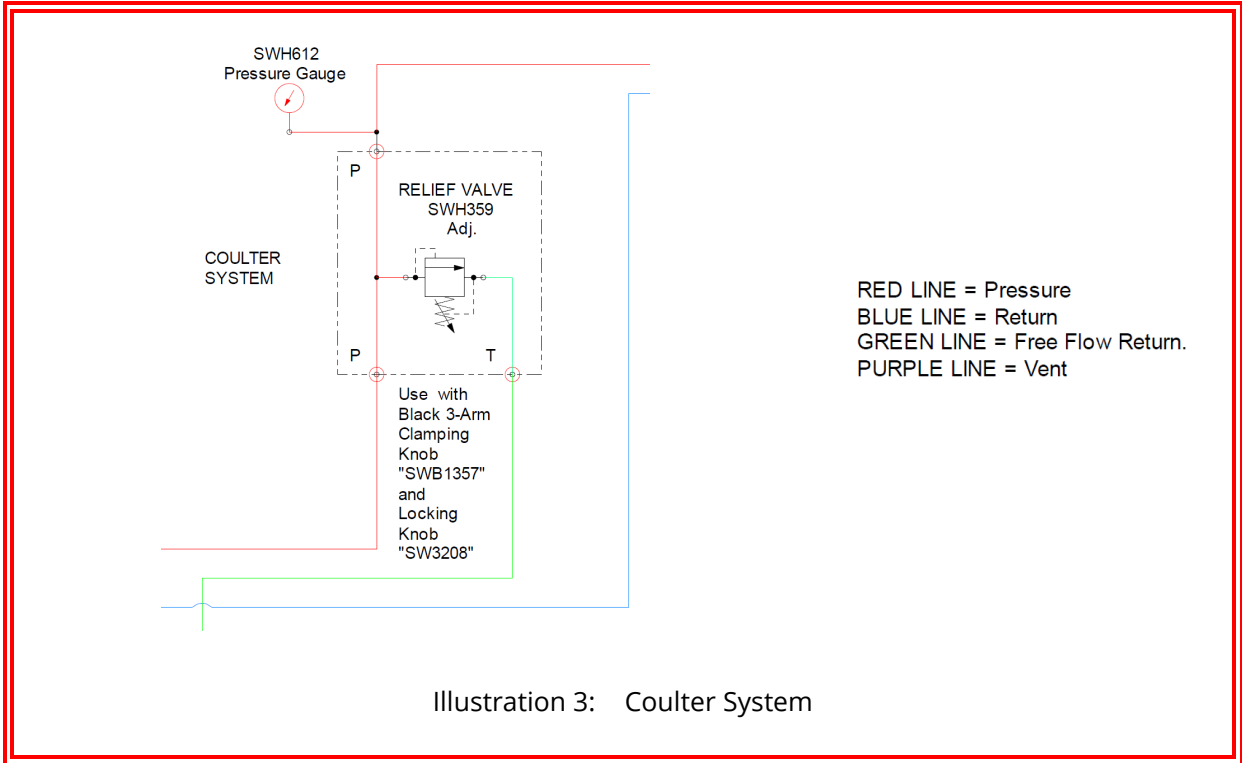
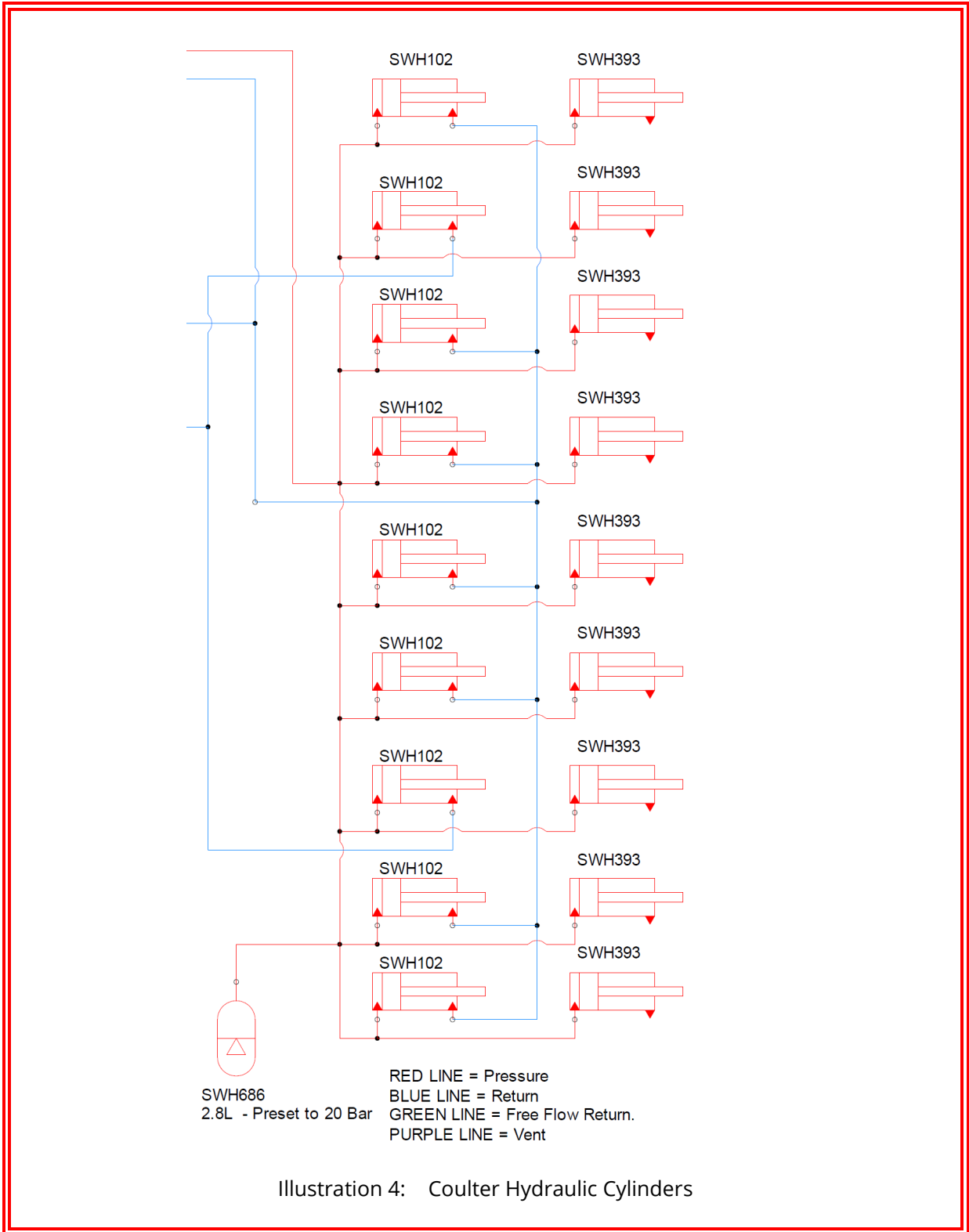
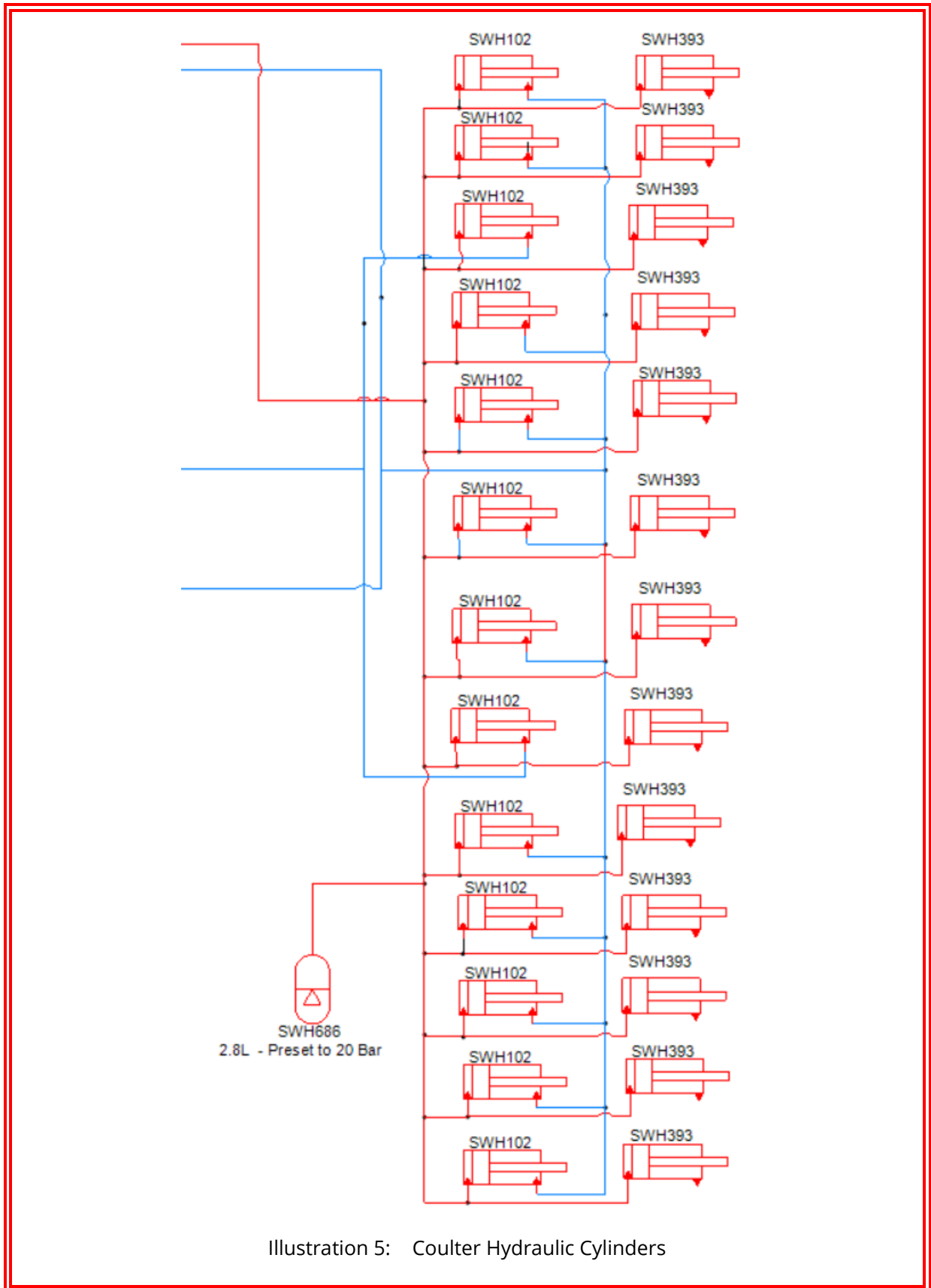


Illustration 3: Coulter System

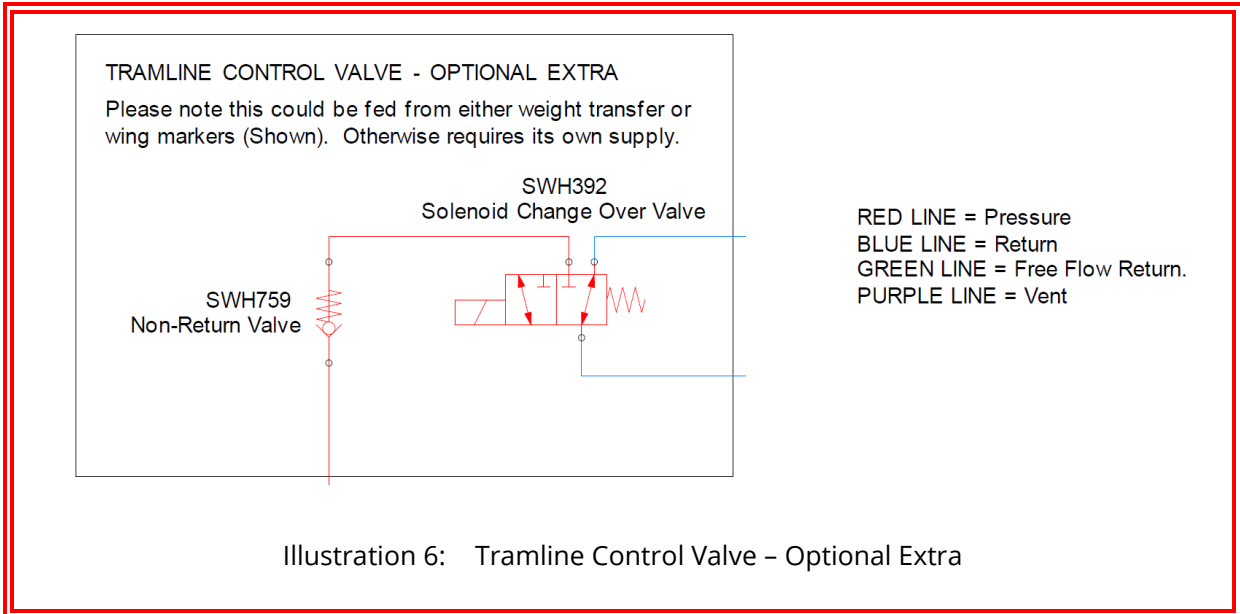
7.4 DTS3T - Coulter Hydraulic Cylinders Circuit



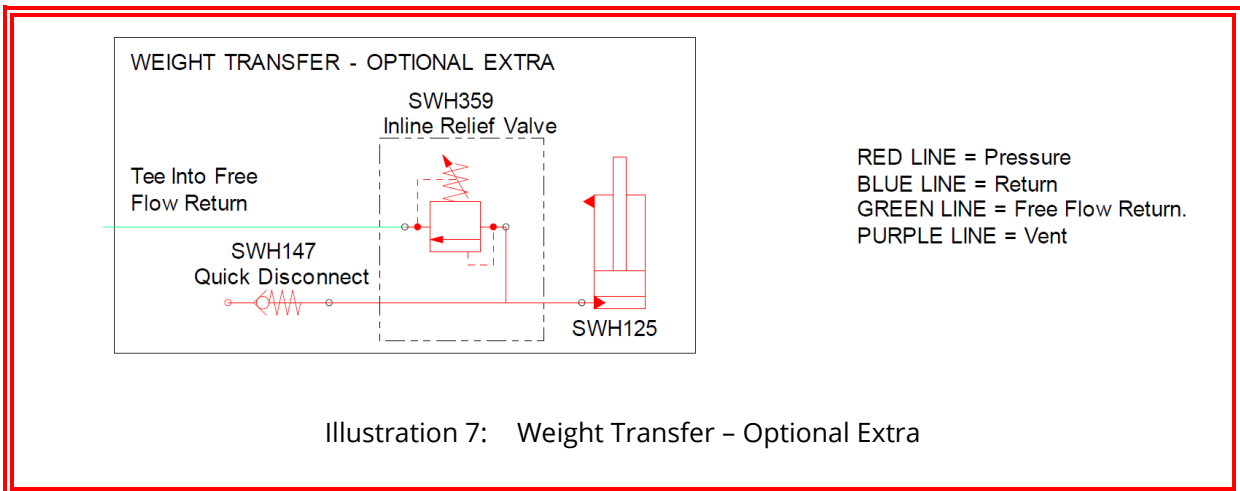
7.5 DTS4TF - Coulter Hydraulic Cylinders Circuit



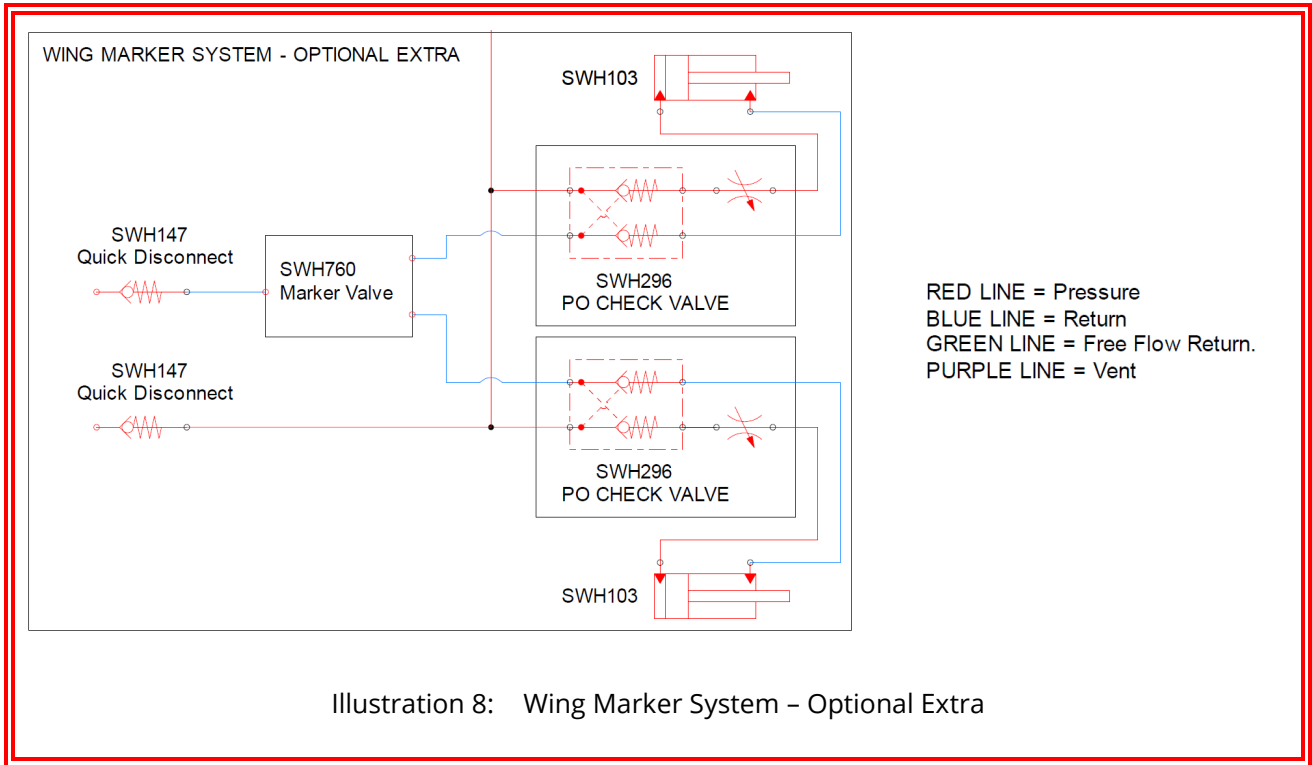
7.6 Tramline Control Valve (Optional Extra) Circuit



7.7 Weight Transfer (Optional Extra) Circuit

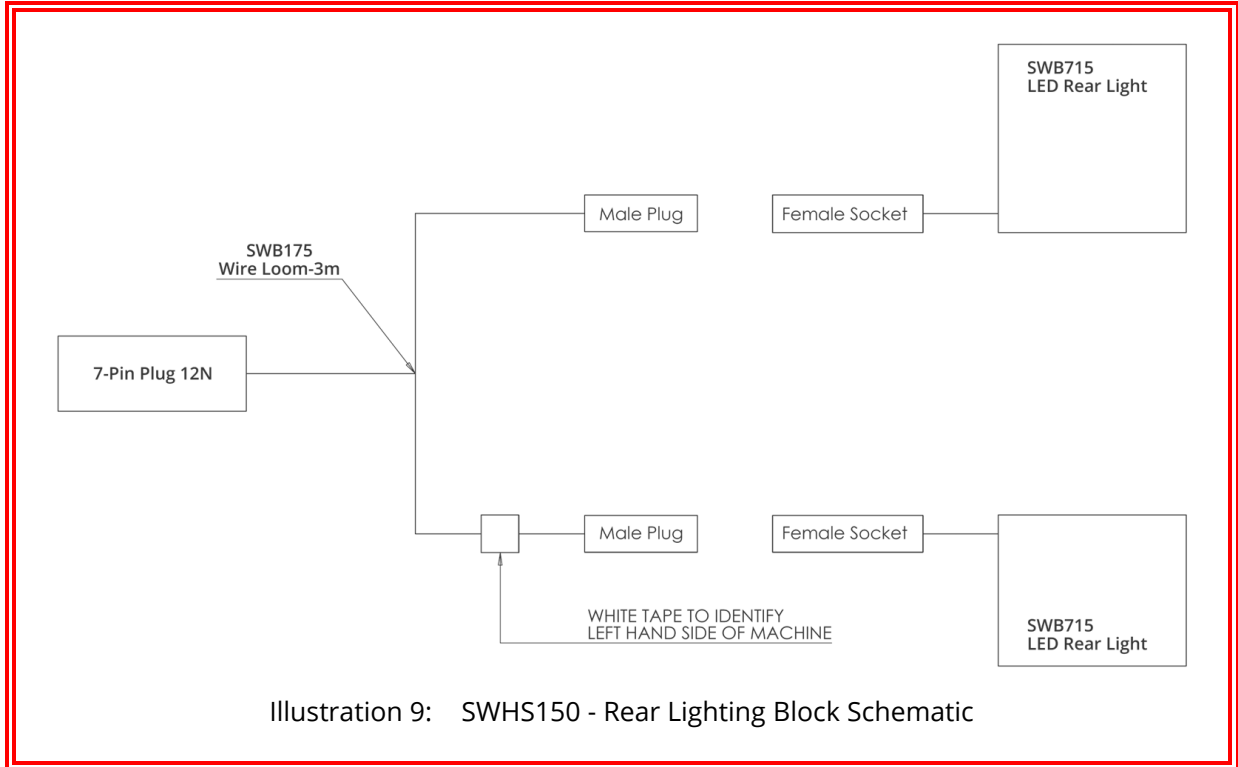


7.8 Wing Marker System (Optional Extra) Circuit



8 Electrical Schematics

8.1 Rear Road Lighting



9 Standard Torque Values

Non-Standard torque values will appear in the parts book section of this document.

Standard Toque Values (Nm) (Unless Otherwise Stated)			
Thread	Grade 8.8	Grade 10.9	Stainless Steel
M6	10	14	7
M8	25	36	17
M10	50	70	33
M12	86	121	57
M16	215	314	140
M20	410	580	273
M24	710	1000	472
M30	1400	1450	930

For any arrangement using Nord-Lock washers, see Nord-Lock website:

[Torque Guide for Nord-Lock Washers - Nord-Lock Group](#)