

TUBE•LINE™

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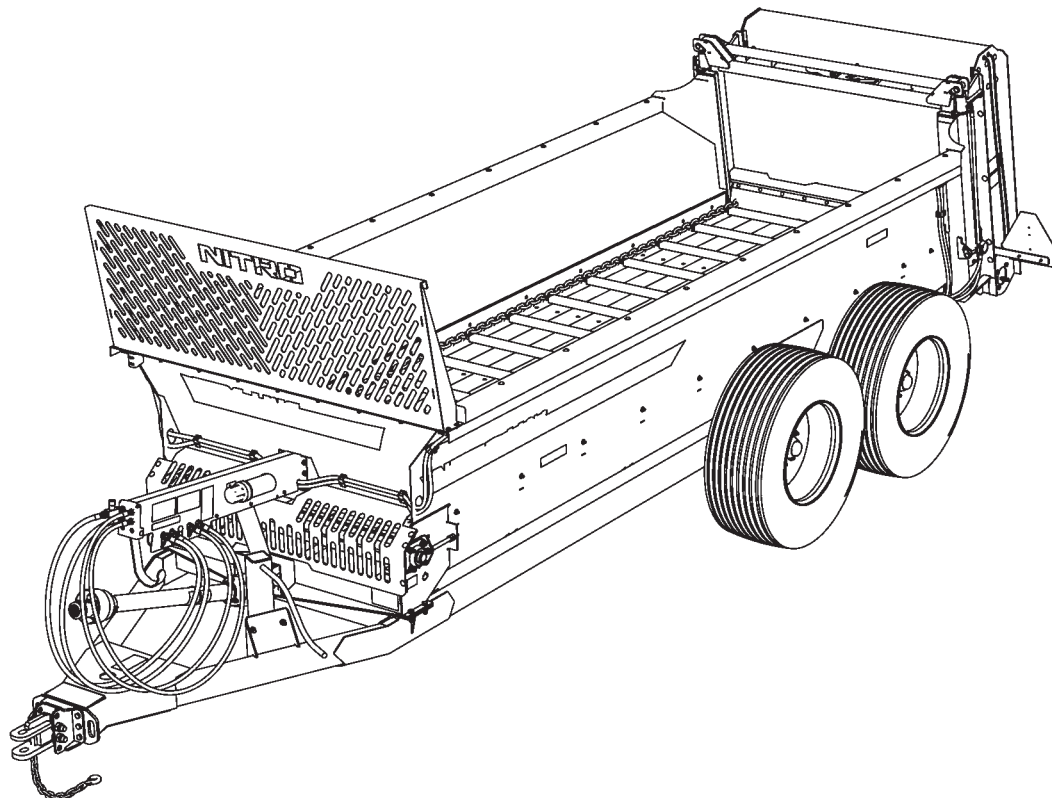
Parts Manual

Keep this manual with the machine at all times.

NITRO

Manure Spreader

Nitro 440LS



Parts Manual

Thank you for choosing the Tubeline 440LS Manure Spreader. Our hope is that it will give you many years of productive service. This machine is designed to spread various types of manure evenly over a wide area.

Warranty and Limitation of Liability

All equipment is sold subject to mutual agreement that it is warranted by the company to be free from defects of materials and workmanship. But the company shall not be liable for special, indirect or consequential, damages of any kind under this contract or otherwise. The company's liability shall be limited exclusively to replacing or repairing without charge, at its factory or elsewhere, at its discretion.

Any material, or workmanship defects which become apparent within one year from the date on which the equipment was purchased, and the company shall have no liability for damages of any kind. The buyer by the acceptance of the equipment will assume all liability for any damages, which may result from the use or misuse by his employees or others.

Nitro Apron Chain Warranty



Tubeline Manufacturing Ltd offers a limited lifetime non-transferable warranty to the original purchaser of a Nitro manure spreader. This warranty applies to chain link breakage and covers parts only. Should a connecting link fail, only it will be replaced. However, if a standard link breaks the complete chain will be provided. Freight and labor to install is the responsibility of the purchaser and is not covered under the terms of the limited warranty.

Tubeline Manufacturing Ltd reserves the right to request the return of the failed chain.

Warranty coverage is null and void unless Warranty Registration form has been completely filled in and is on file at Tubeline Manufacturing Ltd.

Manuals

Parts manuals are printed and shipped with machines as they leave the manufacturer. Your machine may include parts or features not yet included in the initially shipped manual. The latest manual version can be found at www.tubeline.ca/support.php. Tubeline reserves the right to update and change manuals as seen fit. Dealers are informed of any pressing changes/ modifications. They can help you with any questions regarding replacement parts.

Serial Number

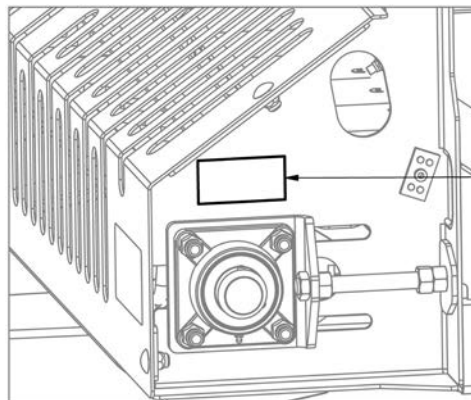
The implement serial number is located above the front left apron drive bearing. This number helps us to track changes and improvements and must be mentioned when ordering parts or requesting service. For your convenience, a space has been provided inside the front cover of this manual to record the serial number, model number, purchase date, and dealer name.

Model No: _____ 440LS _____

Serial No: _____

Date Purchased: _____

Dealer Name: _____



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Safety Decals

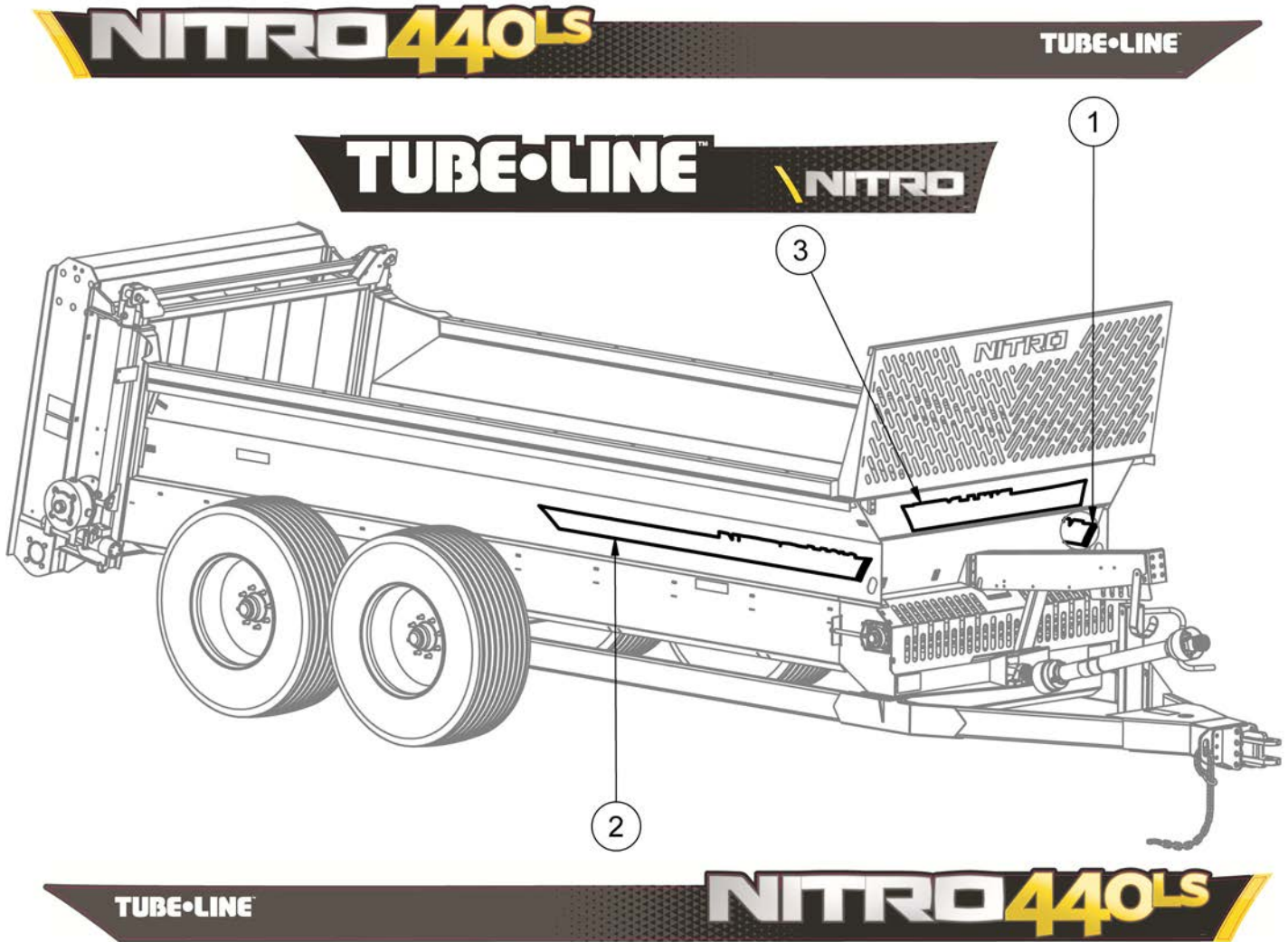
The types of safety decals and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the types of warning, and the area, or proper function related to that area, that requires your safety awareness.

Examples only - Actual decals may differ in text and graphic representation.

REMEMBER

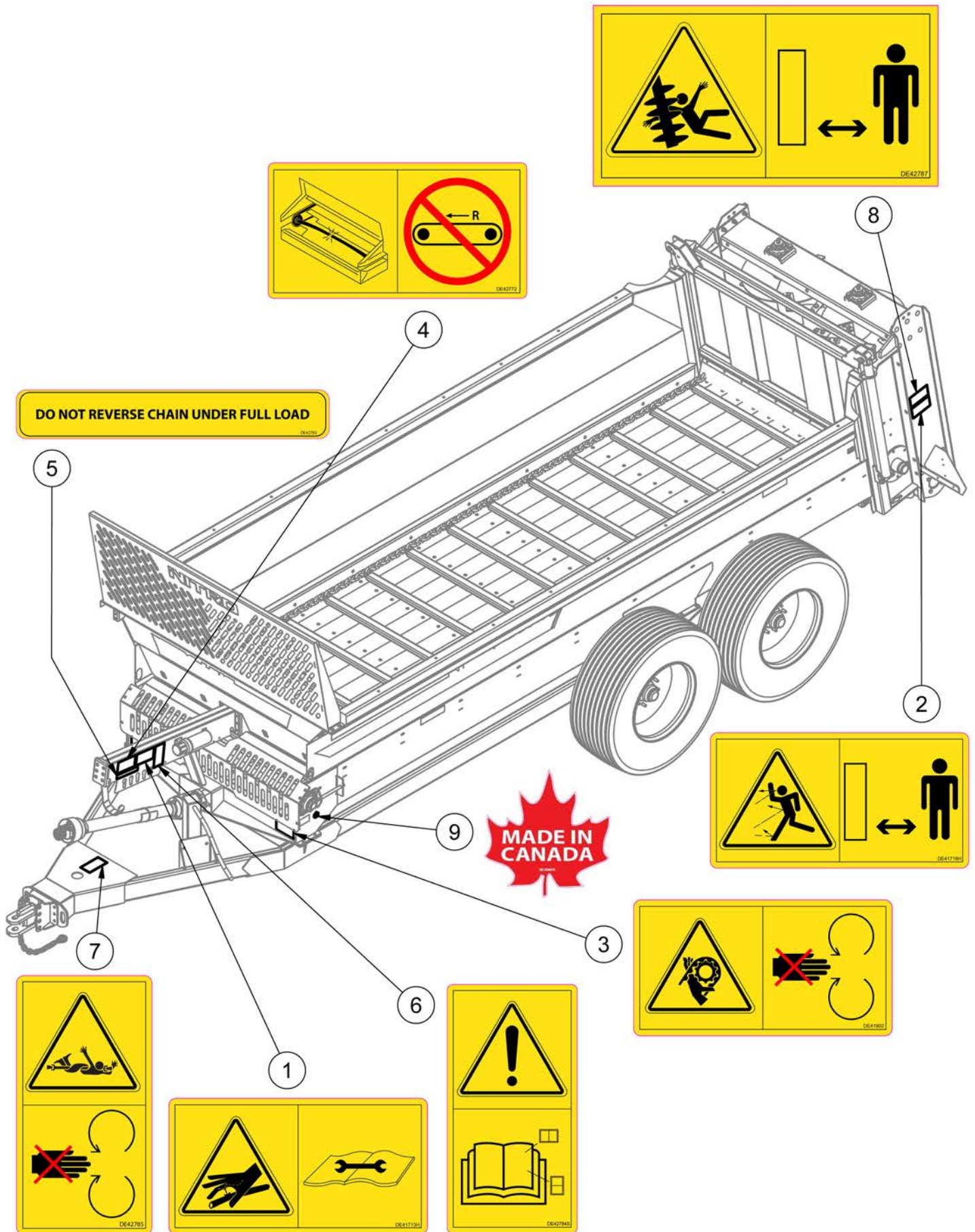
If decals have been damaged, removed, become illegible or parts replaced without safety signs, new safety signs must be applied. New safety signs are available from your authorized dealer.

Model Decal Locations



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	DE51364	440LS Left Side Decal
2	1	DE51365	440LS Right Side Decal
3	1	DE43930	Nitro 375/525 Front Decal

ISO Safety Decal Locations



ITEM	QTY	PART NUMBER	DESCRIPTION
1	6	DE41713H	ISO Decal - High Pressure Fluid Horizontal
2	2	DE41718H	ISO Decal - Thrown Object Horizontal
3	2	DE41902	ISO Decal - Chain Entanglement
4	1	DE42772	ISO Decal - Nitro Reverse Chain
5	1	DE42783	Nitro Reverse Chain Text Decal
6	1	DE42784	ISO Decal - Read OM Decals Section
7	1	DE42785	ISO Decal - PTO Entanglement
8	2	DE42787	ISO Decal - Nitro Beater Entanglement
9	2	DECANADA	Decal Made In Canada

ISO Safety Decals



Item 1: DE41713H

Do not use hand to check for hydraulic leaks, alternatively use a piece of cardboard.



Item 6: DE42784

Read Operator's manual decal section to understand safety decals.



Item 2: DE41718H

Keep clear of machine while operating. Serious injury may occur.



Item 7: DE42785

Do not use hand to check for hydraulic leaks, alternatively use a piece of cardboard.

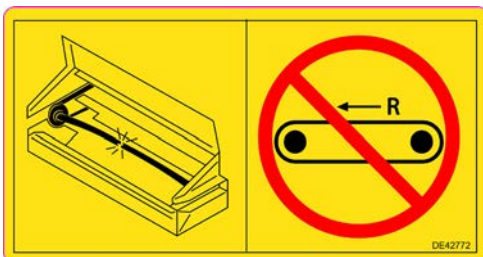


Item 3: DE41902

Keep hands clear of rotating parts while machine running. Do not operate without shielding in place. Do not wear loose clothing while operating.

Item 8: DE42787

Stand clear of rotating beaters to avoid entanglement. Serious injury or death hazard.



Item 4: DE42772

Reversing apron chain while spreader is fully loaded will cause front apron shaft breakage.



Item 5: DE42783

DO NOT REVERSE CHAIN UNDER FULL LOAD

DE42783

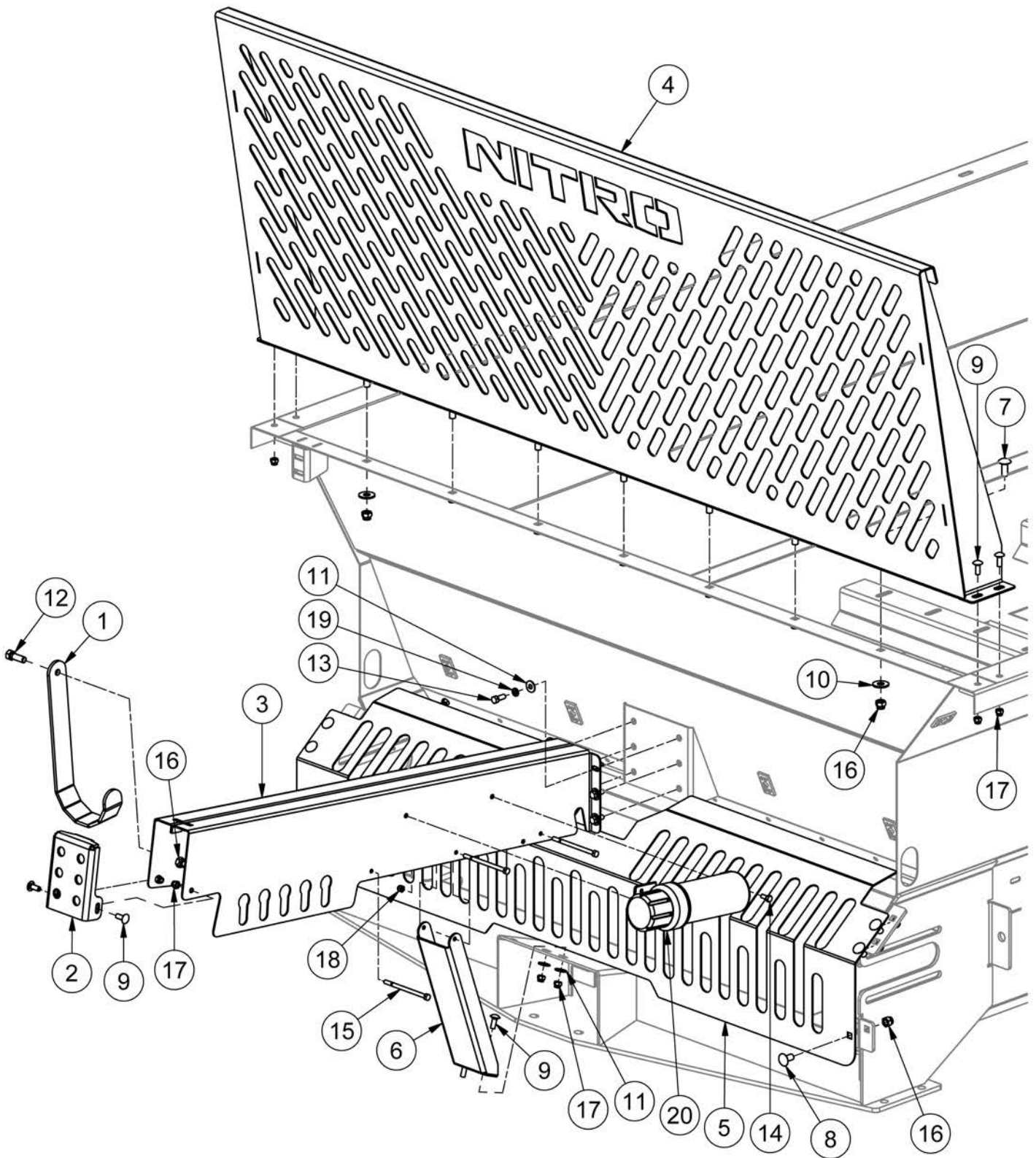


Item 9: DECANADA

Manufacturer's country of origin.

Section 1 - Parts Breakdowns & Lists

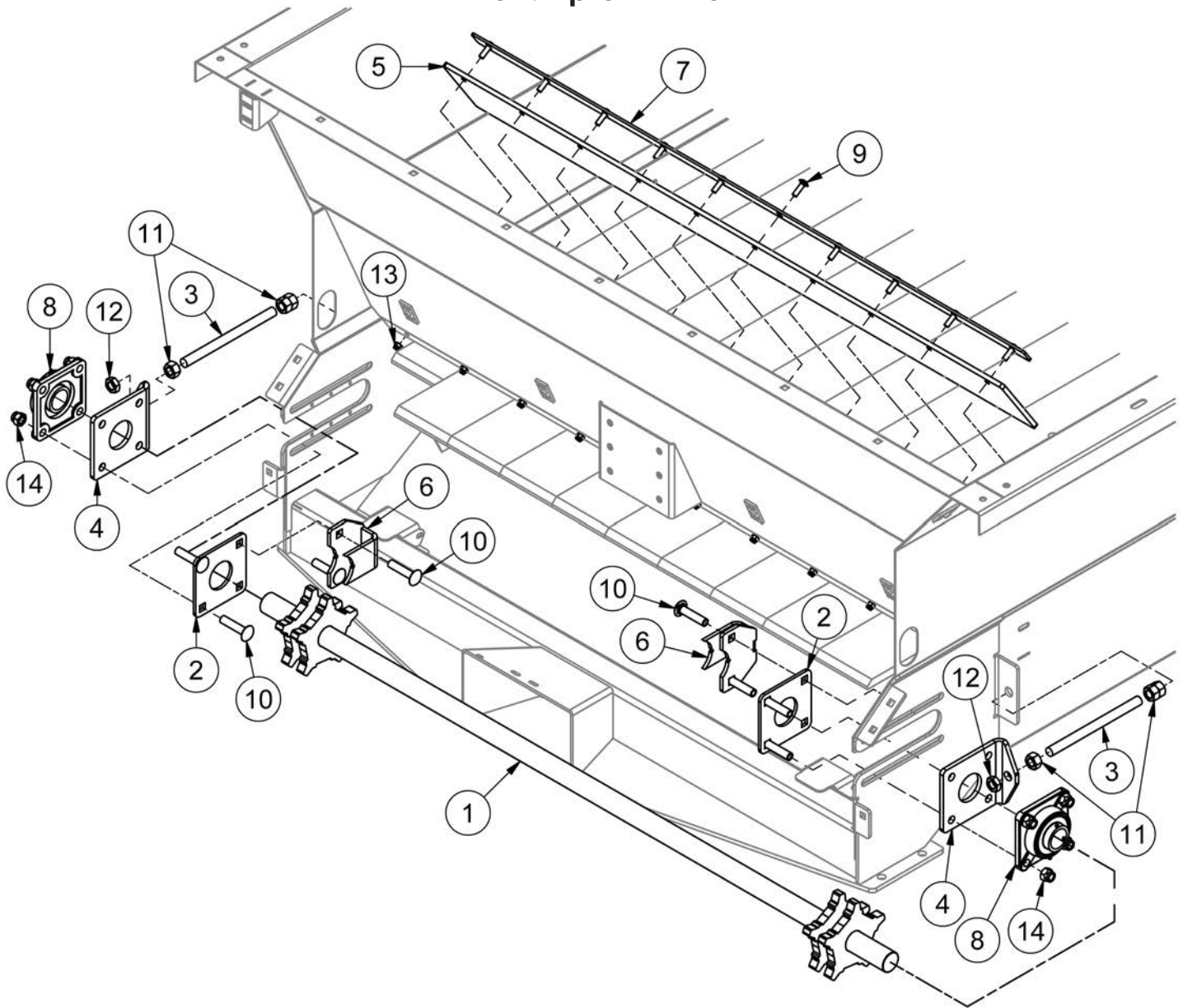
Front Shields



Front Shields

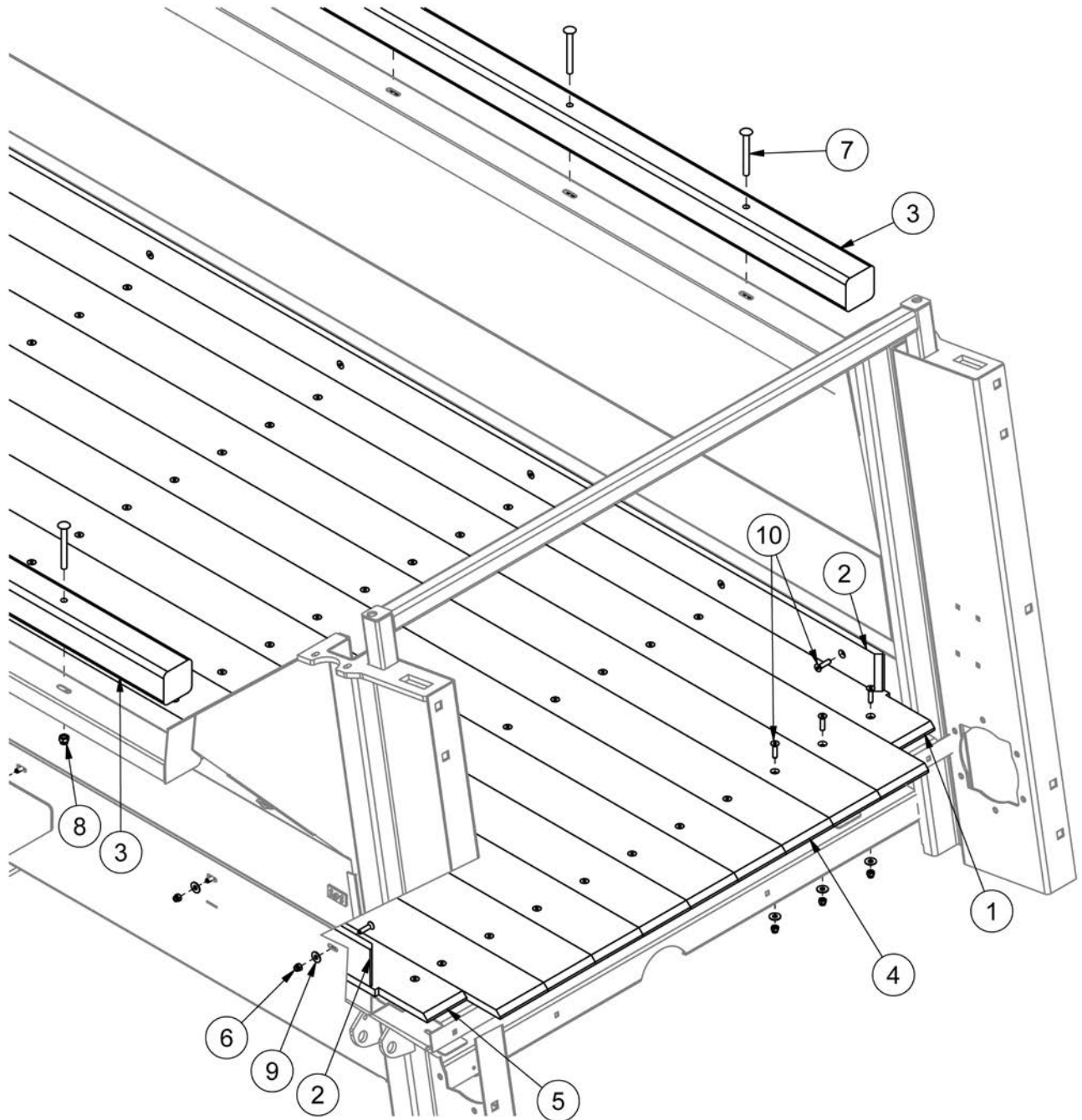
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	35754	PTO Holder
2	1	39413	Hose Mount
3	1	51088	RS Hydraulic Hose Hanger
4	1	51147	Stone Guard
5	1	51179	Front Idler Shaft Cover
6	1	51236	Front Wire Mount Support
7	7	CB1/2-13X1.25CZ5	Carriage Bolt - 1/2-13 x 1 1/4" Grade 5 Zinc
8	6	CB1/2-13X1CZ5	Carriage Bolt - 1/2-13 x 1" Grade 5 Zinc
9	8	CB3/8-16X1CZ5	Carriage Bolt - 3/8-16 x 1" Grade 5 Zinc
10	7	FW 1/2	Flatwasher - 1/2" Zinc Plated USS
11	8	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
12	1	HB1/2-13X1.5Z5	Hex Bolt 1/2-13x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
13	6	HB3/8-16X1Z5	Hex Bolt 3/8-16x1 Grade 5 Zinc Plated Hex Cap Screw
14	2	HB5/16-18X0.75Z5	Hex Bolt 5/16-18x3/4 Grade 5 Zinc Plated Hex Cap Screw
15	3	HB5/16-18X5Z5	Hex Bolt 5/16-18x5 Grade 5 Zinc Plated Hex Cap Screw
16	14	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
17	9	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
18	5	LN5/16-18NCZ5	LN 5/16-18 Zinc Plated Nylon Insert Lock Nut
19	6	LW 3/8	LW -3/8" Zinc Plated Medium Split
20	1	TL5X2-201-111	Operator's Manual Holder

Front Apron Drive



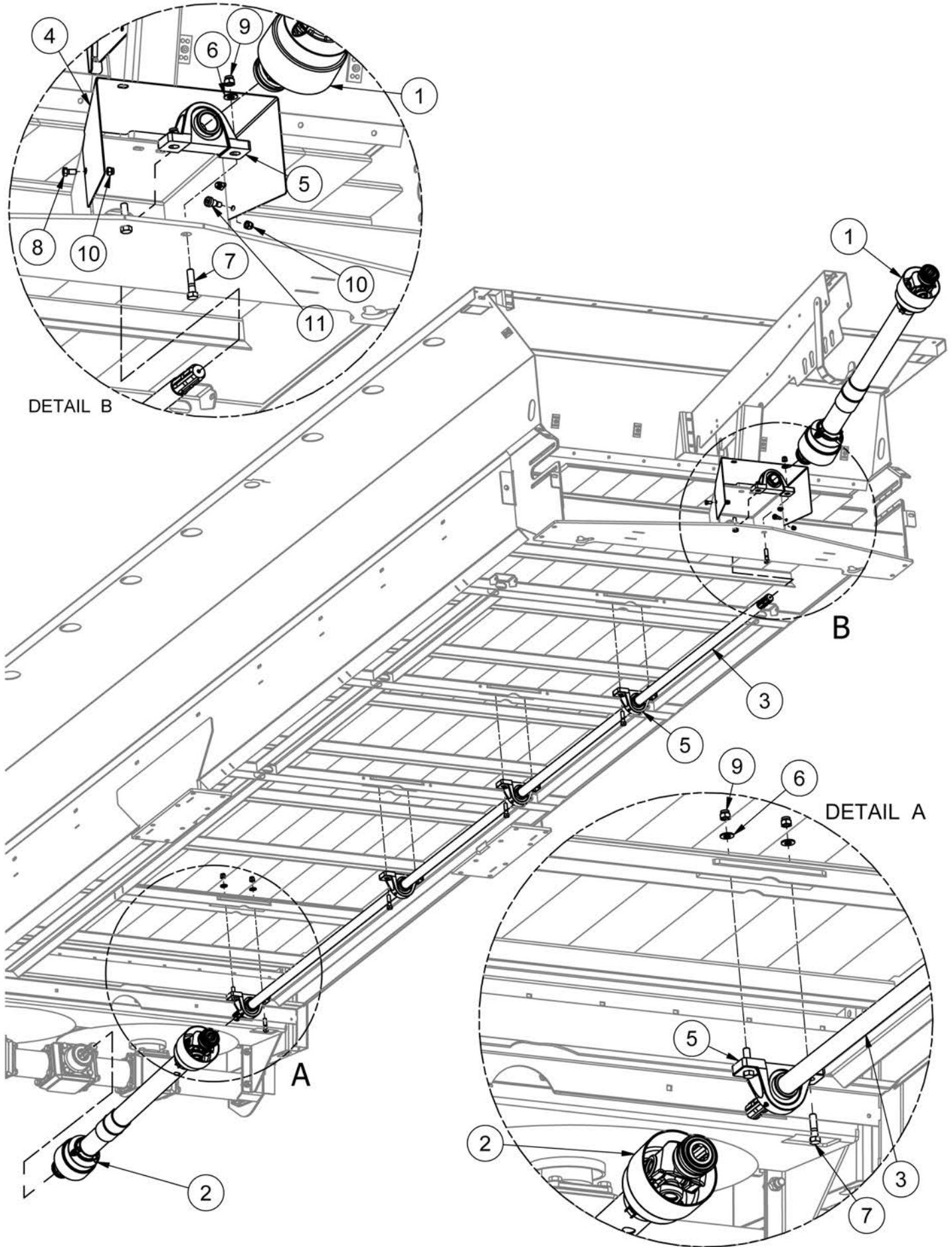
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	375-145	Front Apron Chain Shaft
2	2	37720	Inside Bearing Plate
3	2	39334	Adjustment Rod
4	2	400-169	Bearing Mount Plate
5	1	450-441	Rubber Seal
6	2	45445	RS Series Front Scraper
7	1	600-790	Rubber Hold Down
8	2	BEA UCF209-28R3	Flange Bearing, Triple Seal, Ductile Iron
9	10	CB3/8-16X1.25CZ5	Carriage Bolt - 3/8-16 x 1 1/4" Grade 5 Zinc
10	8	CB5/8-11X2.75CZ5	Carriage Bolt - 5/8-11 x 2 3/4" Grade 5 Zinc
11	6	HN3/4-10CZ5	Hex Nut 3/4"-10 Grade 5 Zinc Plated Finished
12	2	HNJ3/4-10	Hex Nut - 3/4-10 Zinc Plated Hex Jam Nut
13	10	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
14	8	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut

Floor & Side Boards



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	51041	Right Box Spreader Floor Board
2	2	51042	Side Board
3	2	51077	Wooden Side Top
4	9	51078	Box Spreader Floor Board
5	1	51079	Left Box Spreader Floor Board
6	104	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
7	14	CB1/2-13X4.5CZ5	Carriage Bolt - 1/2-13 x 4 1/2" Grade 5 Zinc
8	14	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
9	104	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
10	104	FHSCS3/8-16X1.5	Hex Bolt - 3/8"-16 x 1 1/2" Flat Socket Cap Screw

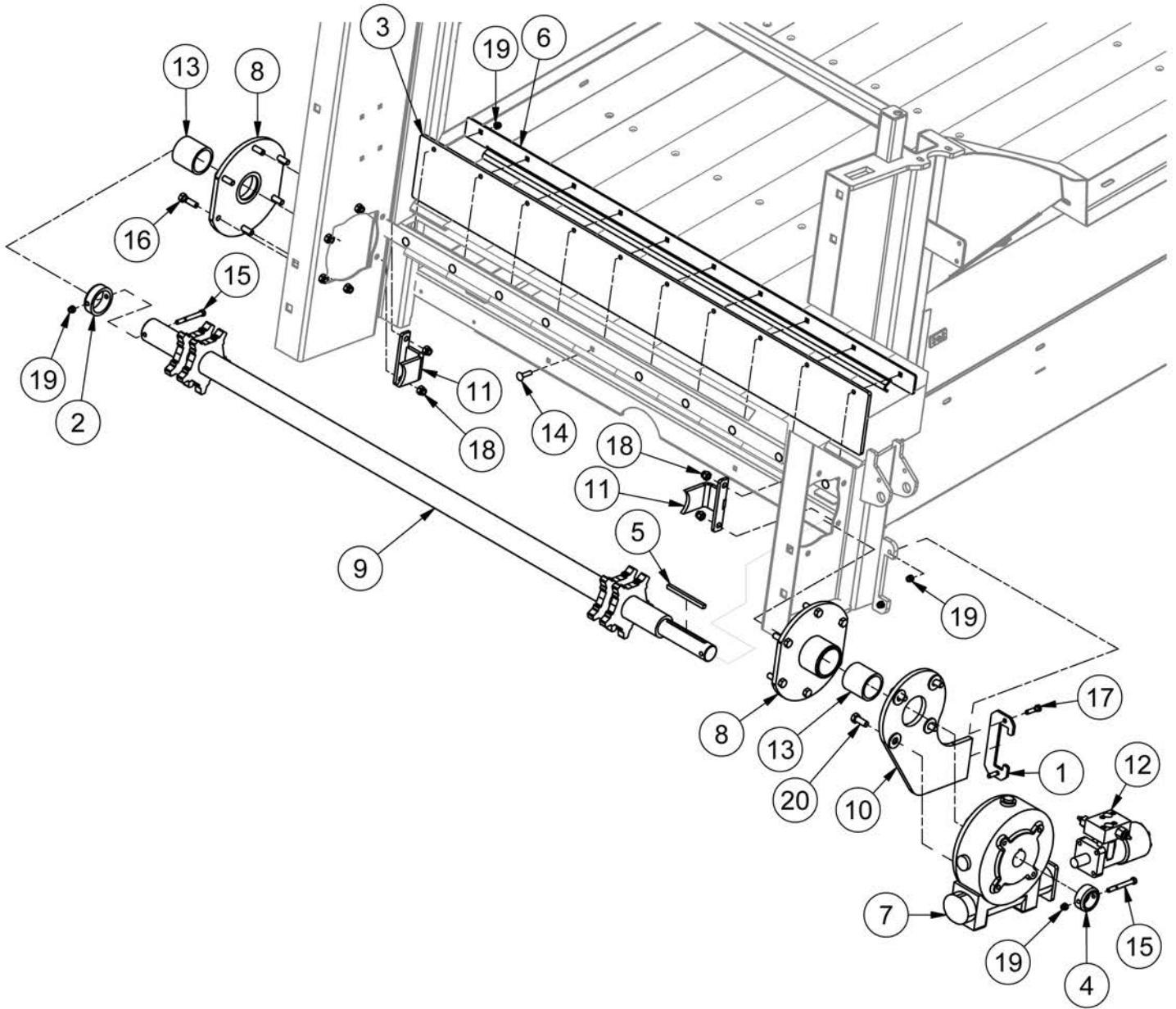
Driveline



Driveline

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	51365	PTO Slide Collar & Shear Bolt
2	1	51366	PTO Slide Collar & Overrunning Clutch
3	1	49810	CV Splined Shaft 192.12"
4	1	51458	LS PTO Shield
5	5	BEA UCP208-24R3	Pillow Block Bearing, Triple Seal, Ductile Iron
6	10	FW 1/2	Flatwasher - 1/2" Zinc Plated USS
7	10	HB1/2-13X2Z5	Hex Bolt 1/2-13x2 Grade 5 Zinc Plated Hex Cap Screw
8	2	HB3/8-16X0.75Z5	Hex Bolt 3/8-16x3/4 Grade 5 Zinc Plated Hex Cap Screw
9	10	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
10	3	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
11	1	SHSS1/2X1/2X3/8-16Z	Socket Head Shoulder Screws - 1/2 Shldr x 1/2 x 3/8-16

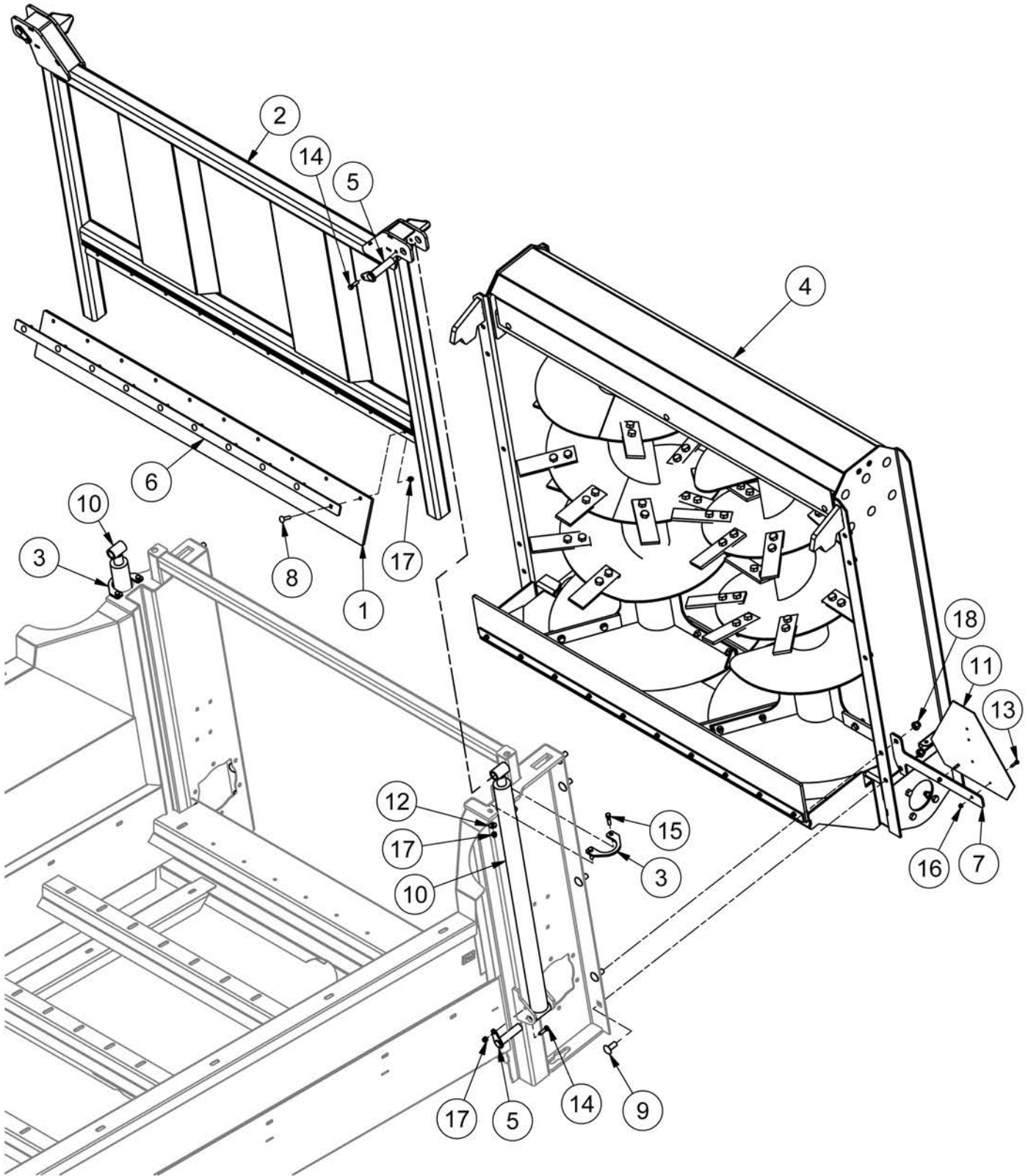
Rear Apron Drive



Rear Apron Drive

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	375-433	Torque Arm Retainer
2	1	450-371	Apron Shaft Bushing
3	1	450-441	Rubber Seal
4	1	45113	Apron Shaft Bushing
5	1	45130	LS Series Key
6	1	47567	Wiper Guide 62.5
7	1	50898	CC131.3-25H1:3/4-4BF-RIGHT-M320-UD-RH2-SD-1 Gearbox
8	2	51038	Rear Shaft Bushing
9	1	51107	Rear Apron shaft
10	1	51109	CNM350 Torque Arm Asm.
11	2	51194	Box Spreader Rear Scraper
12	1	51357	Hydraulic Motor c/w Crossover
13	2	700-431	Apron Bushing
14	10	CB3/8-16X1.5CZ5	Carriage Bolt - 3/8-16 x 1 1/2" Grade 5 Zinc
15	2	HB 3/8-16X3.5 Z5	Hex Bolt 3/8-16x3 1/2 Grade 5 Zinc Plated Hex Cap Screw
16	12	HB1/2-13X1.75Z5	Hex Bolt 1/2-13x1 3/4 Grade 5 Zinc Plated Hex Cap Screw
17	2	HB3/8-16X1.5Z5	Hex Bolt 3/8-16x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
18	12	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
19	14	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
20	4	M14X35X2	Metric Bolt

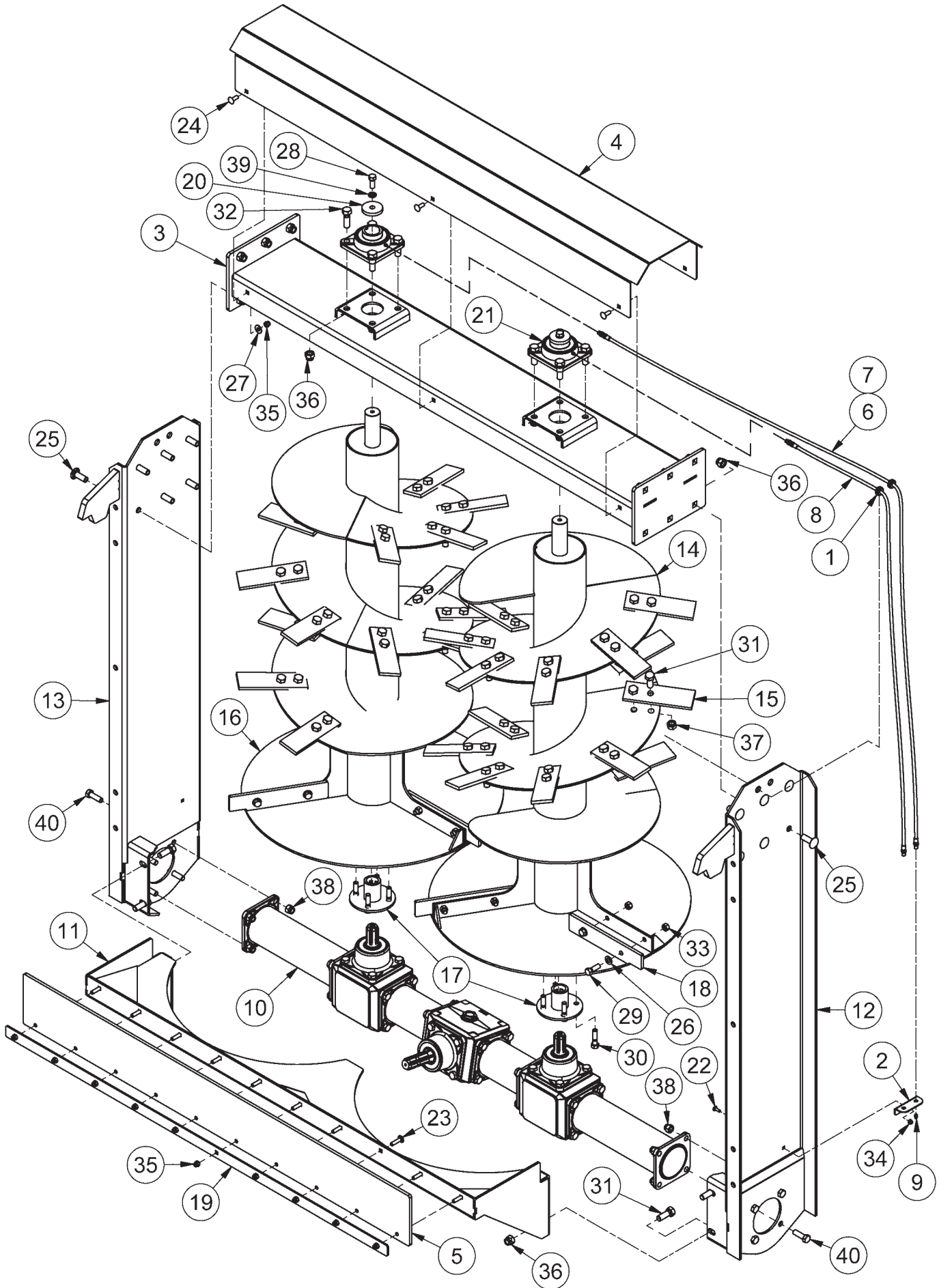
Endgate



Endgate

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	450-441	Rubber Seal
2	1	51065	Box Spreader Endgate
3	2	51082	Endgate Cylinder Support
4	1	51091	LS Series Beaters
5	4	51192	Lift Gate Pin
6	1	600-790	Rubber Hold Down
7	1	700-108	SMV Sign Mount
8	20	CB3/8-16X1.5CZ5	Carriage Bolt - 3/8-16 x 1 1/2" Grade 5 Zinc
9	10	CB5/8-11X1.5CZ5	Carriage Bolt - 5/8-11 x 1 1/2" Grade 5 Zinc
10	2	CYL 47972	Cylinder 2" X 44" Closed X 36" Stroke 1.25" Rod
11	1	DESMV	Slow Moving Vehicle Sign
12	4	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
13	2	HB1/4-20X1Z5	Hex Bolt 1/4-20x1 Grade 5 Zinc Plated Hex Cap Screw
14	4	HB3/8-16X1.25Z5	Hex Bolt 3/8-16x1 1/4 Grade 5 Zinc Plated Hex Cap Screw
15	4	HB3/8-16X1.5Z5	Hex Bolt 3/8-16x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
16	2	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
17	28	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
18	10	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut

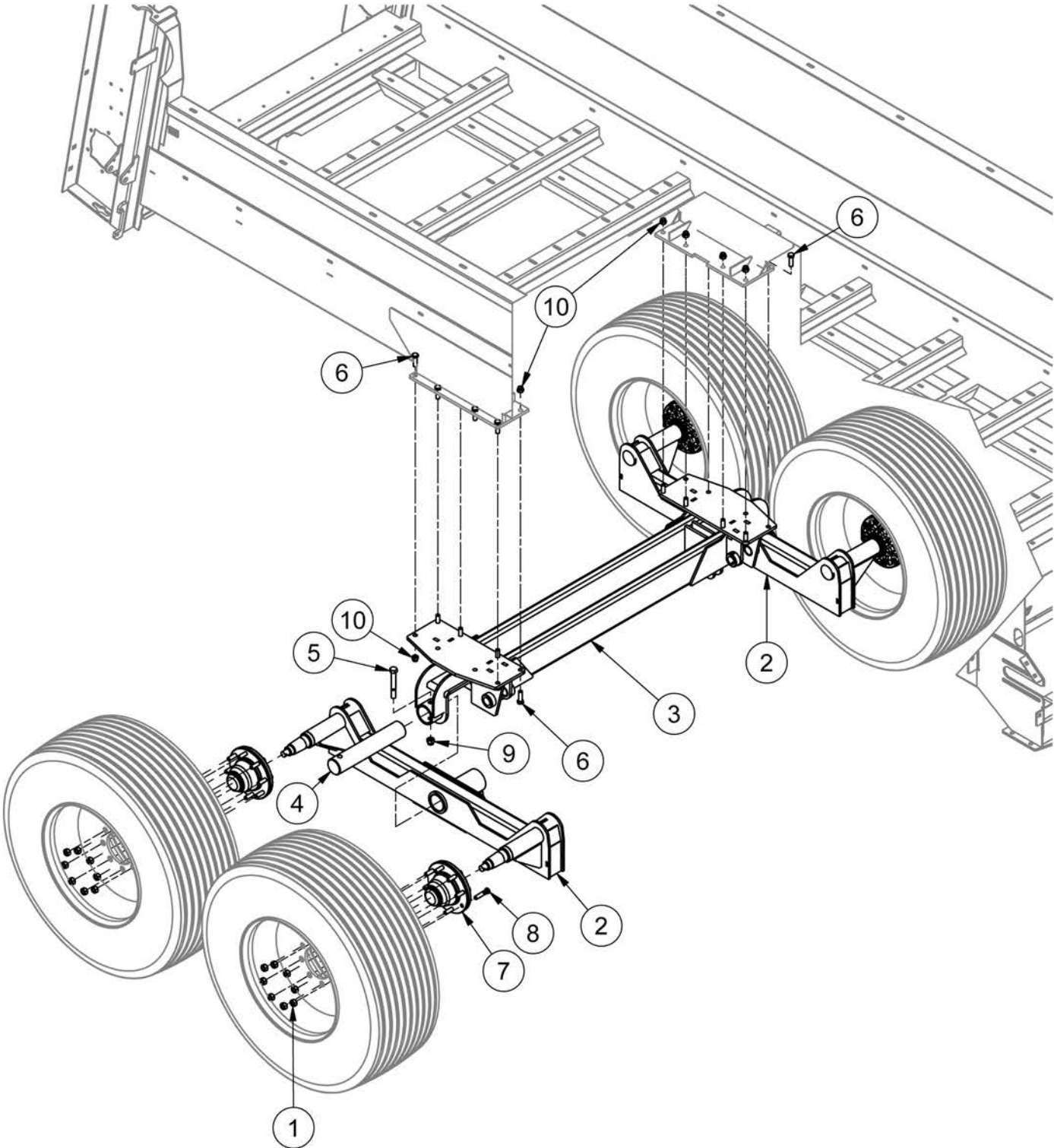
Beaters



Beaters

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	2	30862	Grommet	
2	1	37849	Beater Greaseline Mount	
3	1	42226	Top Beater Crosser	
4	1	450-405	Top Beater Cover	
5	1	450-441	Rubber Seal	
6	1	45159	LS Grease Line Kit	Inc. Item 7-9
7	1	45160	LS Long Grease Line	
8	1	45161	LS Short Grease Line	
9	2	GR 1/4 X 28	Grease Fitting 1/4-28 Straight Standard Zerk	
10	1	50899	ST8 Gearbox	
11	1	51092	Spinner Pan	
12	1	51098	Left Side Beater Frame	
13	1	51101	Right Side Beater Frame	
14	1	51114	Left Beater (Box Spreader)	Inc. Item 14
15	16	51122	Beater Paddle	Qty/Beater
16	1	51115	Right Beater (Box Spreader)	Inc. Item 14
17	2	51125	Shaft Mount	
18	6	51195	Box Spreader Spinner Paddle	
19	1	600-790	Rubber Hold Down	
20	2	700-157	Load Bearing Washer	
21	2	BEA UCF209-28R3	Flange Bearing, Triple Seal, Ductile Iron	
22	1	CB1/4-20X0.75CZ5	Carriage Bolt - 1/4-20 x 3/4" Grade 5 Zinc	
23	10	CB3/8-16X1.5CZ5	Carriage Bolt - 3/8-16 x 1 1/2" Grade 5 Zinc	
24	6	CB3/8-16X1CZ5	Carriage Bolt - 3/8-16 x 1" Grade 5 Zinc	
25	12	CB5/8-11X1.75CZ5	Carriage Bolt - 5/8-11 x 1 3/4" Grade 5 Zinc	
26	11	FW 1/2	Flatwasher - 1/2" Zinc Plated USS	
27	6	FW 3/8	Flatwasher - 3/8" Zinc Plated USS	
28	2	HB1/2-13X1.25Z5	Hex Bolt 1/2-13x1 1/4 Gr 5 Zinc Plated Hex Cap Screw	
29	12	HB1/2-13X1.5Z5	Hex Bolt 1/2-13x1 1/2 Gr 5 Zinc Plated Hex Cap Screw	
30	8	HB1/2-13X2Z5	Hex Bolt 1/2-13x2 Gr 5 Zinc Plated Hex Cap Screw	
31	68	HB5/8-11X1.75Z5	Hex Bolt 5/8-11x1 3/4 Gr 5 Zinc Plated Hex Cap Screw	
32	8	HB5/8-11X2Z5	Hex Bolt 5/8-11x2 Gr 5 Zinc Plated Hex Cap Screw	
33	12	LN1/2-13TCZ5	LN1/2-13 Gr.C Zinc Top Lock Nut	
34	1	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut	
35	16	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut	
36	24	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut	
37	64	LN5/8-11TCZ5	LN5/8-11 Gr.C Zinc Top Lock Nut	
38	8	LNM14-2CZ5	Locknut - M14-2 Zinc Plated Nylon Insert Lock Nut	
39	2	LW 1/2	LW -1/2" Zinc Plated Medium Split	
40	8	M14X45X2	Metric Bolt	

Tandem Axle

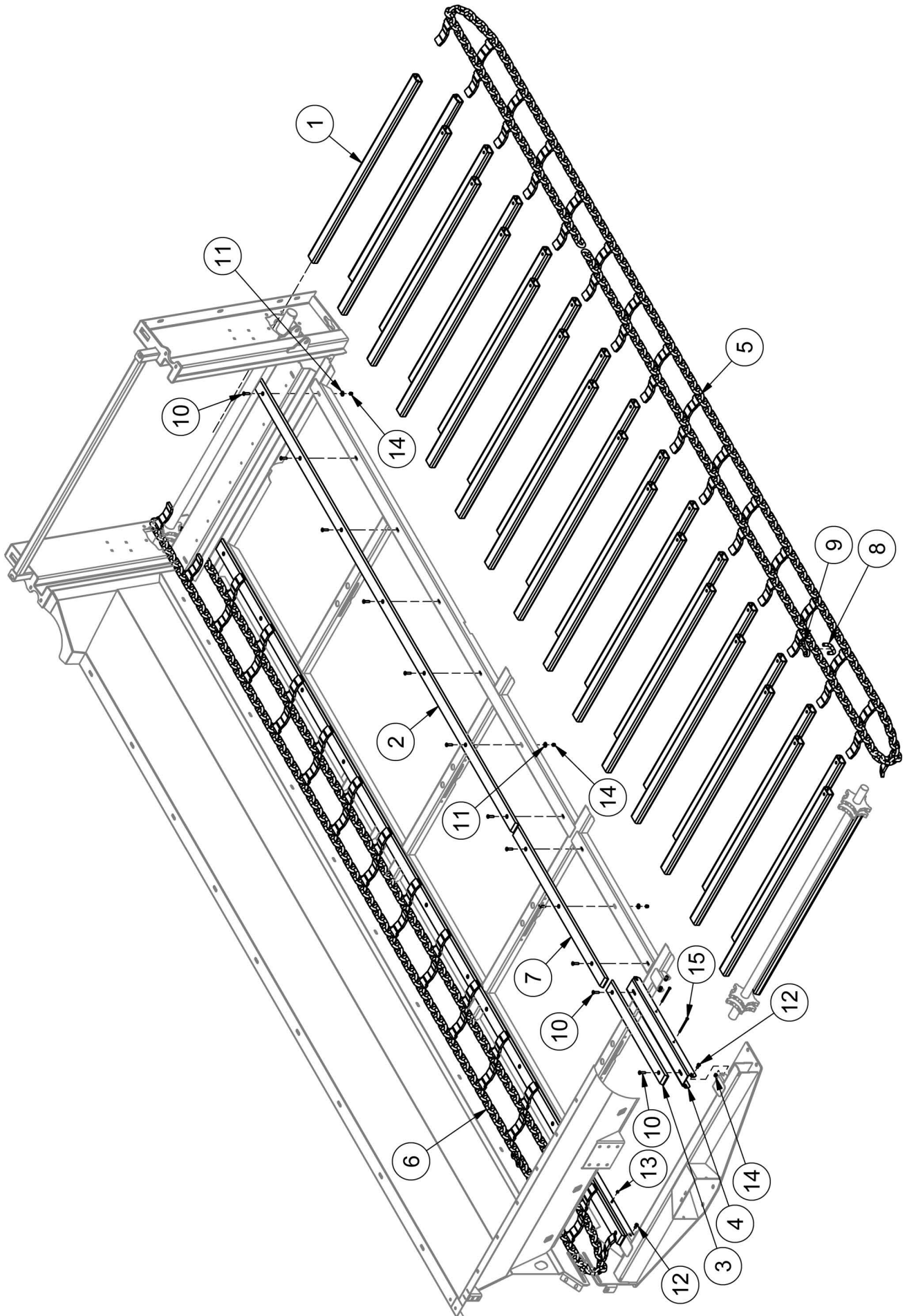


Tandem Axle

ITEM	QTY	PART NUMBER	DESCRIPTION
1	32	F58-CONE NUT	5/8" Wheel Nut
2	2	51030	Box Spreader Walking Beam
3	1	51087	Box Spreader Tandem Axle
4	2	51303	Walking Beam Pin
5	2	HB3/4-10X5.5Z5	Hex Bolt 3/4-10x5 1/2 Grade 5 Zinc Plated Hex Cap Screw
6	16	HB5/8-18X2YZ8	Hex Bolt 5/8-18x2 Grade 8 Zinc Hex Cap Screw
7	4	HUB 8000	Complete Assembly HUB8000
8	8	F58-225	Wheel Stud for 12000 # Hub
9	2	LN3/4-10NCZ5	LN 3/4-10 Zinc Plated Nylon Insert Lock Nut
10	16	LN5/8-18NFZ5	Center Locknuts (5/8-18) 2-Way Fine Thread

NITRO 440LS TIRE CHART		
AXLE TYPE	PART NUMBER	TIRE SIZE
Tandem	WHE 11R225-U	Used Tire 11Rx22.5
Tandem	WHE 165161	16.5L X 16.1
Tandem	WHE 550X45X22.5	550x45x22.5 16 Ply

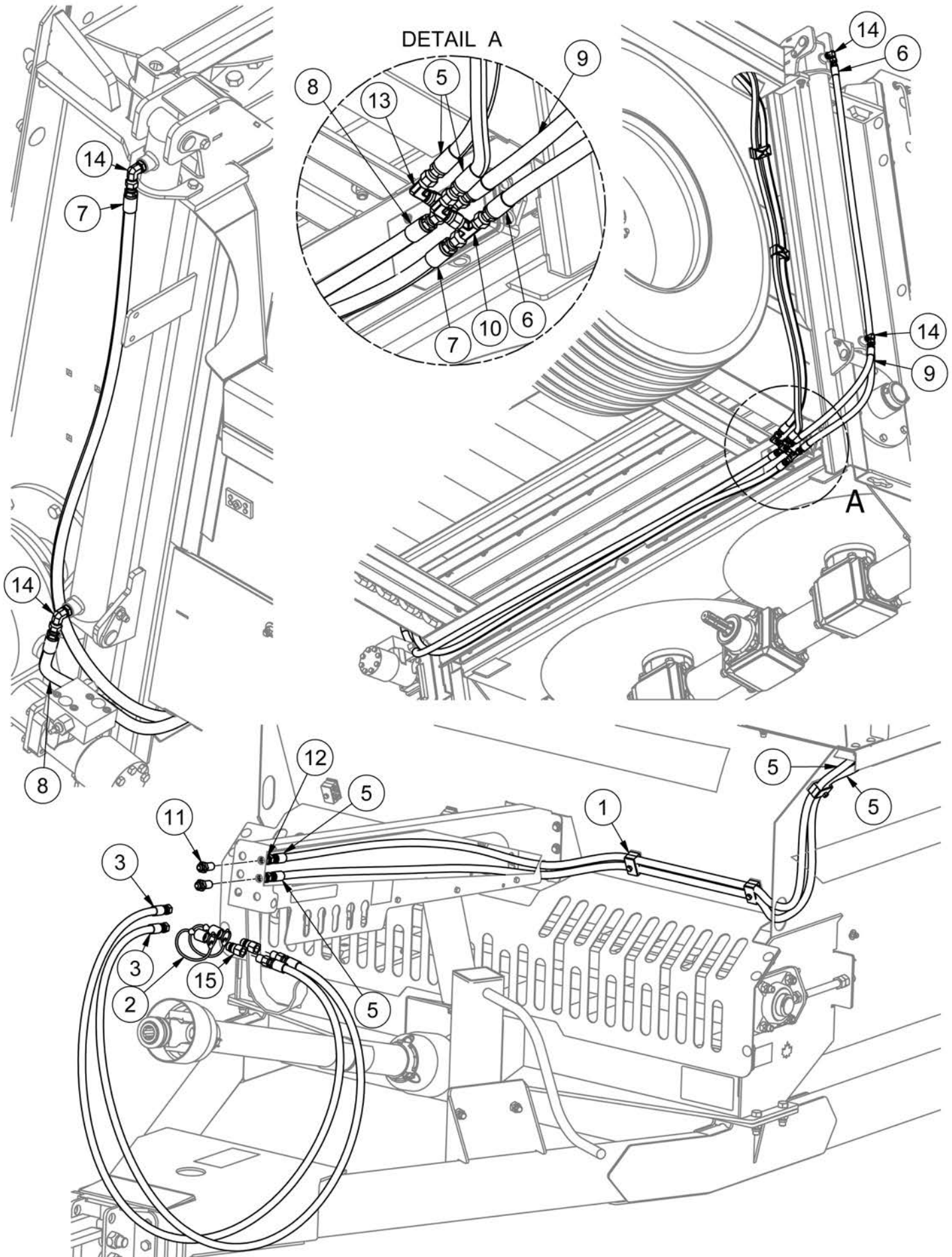
Apron Runners



Apron Runners

ITEM	QTY	PART NUMBER	DESCRIPTION
1	30	37820	Slat
2	2	50990	Rear Wear Board
3	2	50992	Removable Wear Board
4	2	51158	Chain Return Slide
5	1	51160	Left Apron Chain
6	1	51161	Right Apron Chain
7	2	51181	Front Wear Board
8	2	400-889	Chain Connector Link
9	2	400-890	Chain Connector Link Tab
10	24	FHSCS3/8-16X1.5	Hex Bolt - 3/8"-16 x 1 1/2" Flat Socket Cap Screw
11	24	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
12	8	HB3/8-16X0.75Z5	Hex Bolt 3/8-16x3/4 Grade 5 Zinc Plated Hex Cap Screw
13	4	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
14	32	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
15	4	HB1/4-20X4Z5	Hex Bolt 1/4-20x4 Grade 5 Zinc Plated Hex Cap Screw

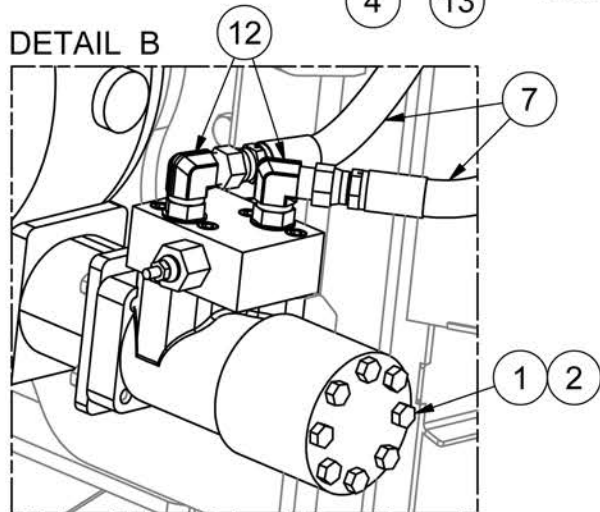
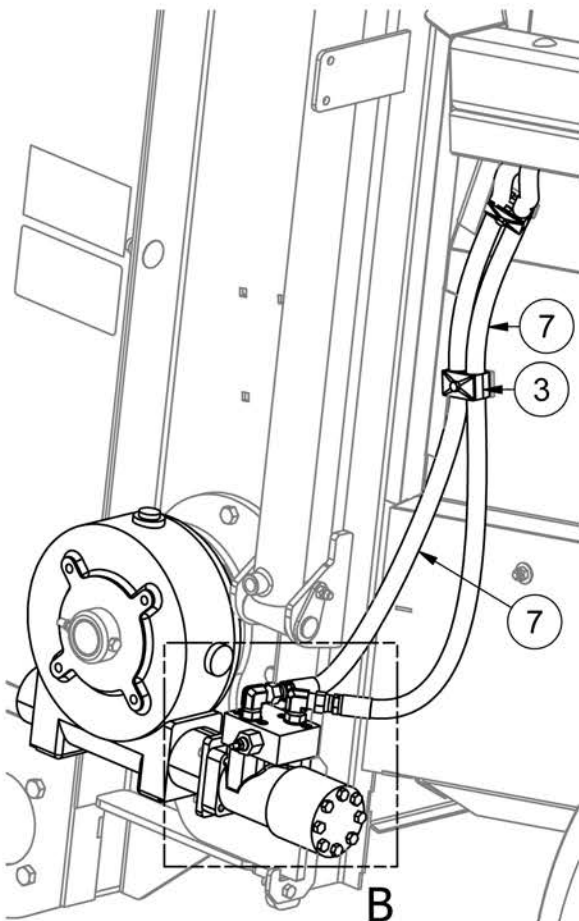
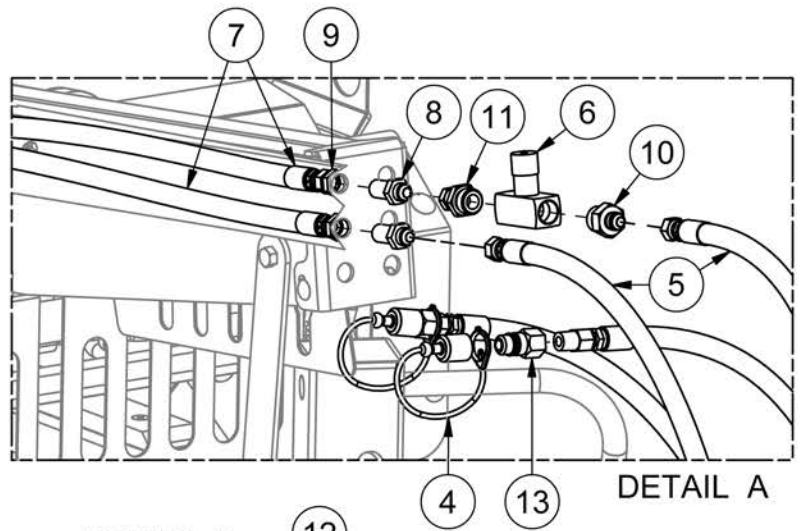
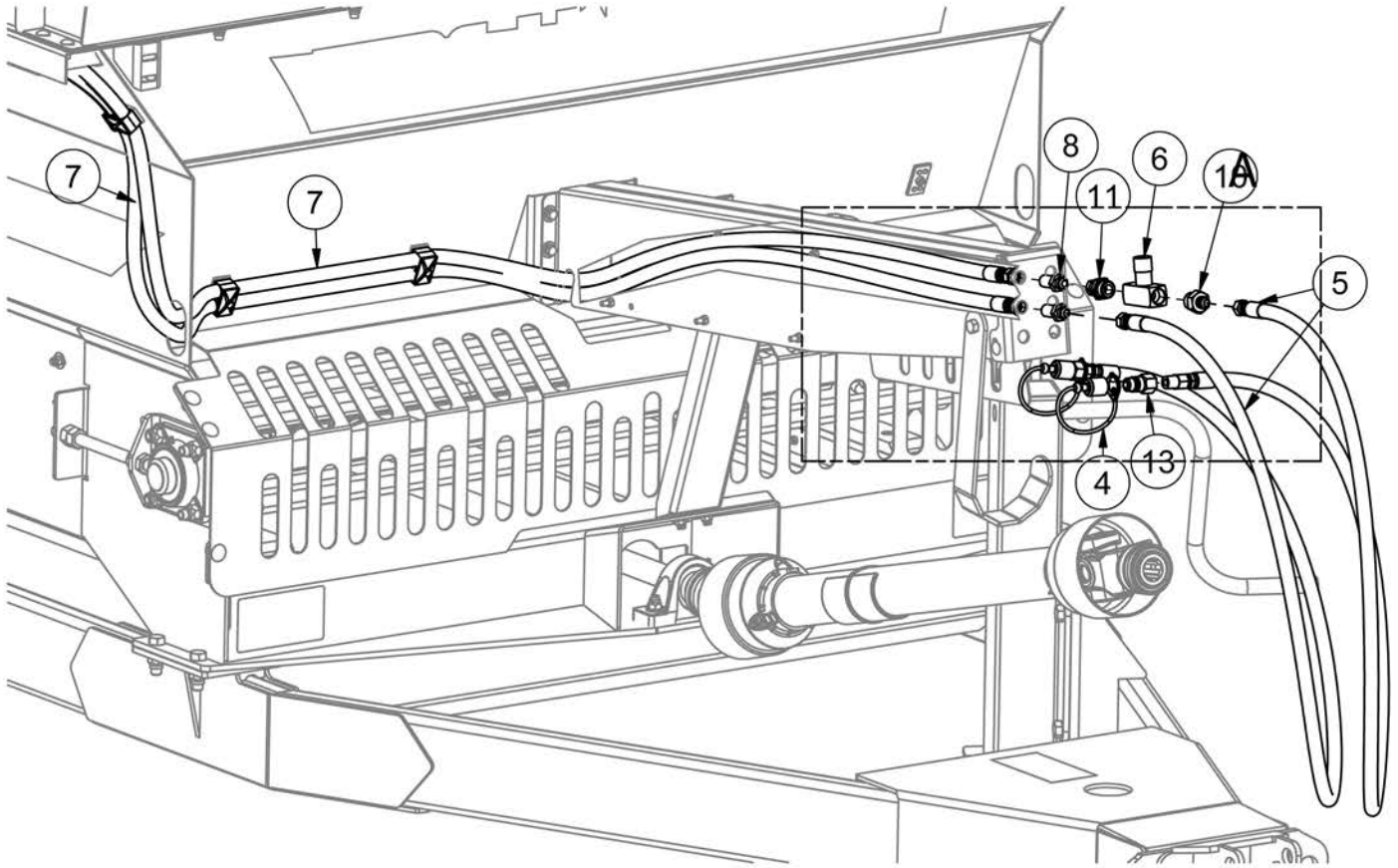
Hydraulics - Endgate Cylinders



Hydraulics - Endgate Cylinders

ITEM	QTY	PART NUMBER	DESCRIPTION
1	5	LA-HOSE CLAMP	Hose Clamp - 3/8"
2	2	22946-1	Dust Cap, 1/2", Female, Black Colour
3	2	30654	HH87- 6AT1(8FJXH-8MP) HCL 87"
5	2	43872	HH343 - 6AT1(8FJX-6FJX) HCL 343"
6	1	45100	Hose - HH59- 6AT1(6FJX-6FJX) HCL 59"
7	1	45102	Hose - HH107- 6AT1(6FJX-6FJX) HCL 107"
8	1	48157	Hose - HH71 - 6AT1 (6FJX,6FJX) HCL 71"
9	1	48756	Hose - HH21 - 6AT1(6FJXH,6FJXH) HCL 21"
10	2	HF 2603-6-6-6	Male JIC Tee
11	2	HF 2700LN-08-08	Hydraulic Fitting - MJIC to MJIC
12	2	HF 306-8	Hyd Fitting 1/2 Adjustable Locknut
13	2	HF 6500-6-6	Elbow 6MJIC to 6FJIC
14	4	HF 6801-6-6	Hydraulic Fitting - 90 Degree JIC to O-Ring
15	2	HF 8010-4	Quickcoupler 1/2" Male Tip

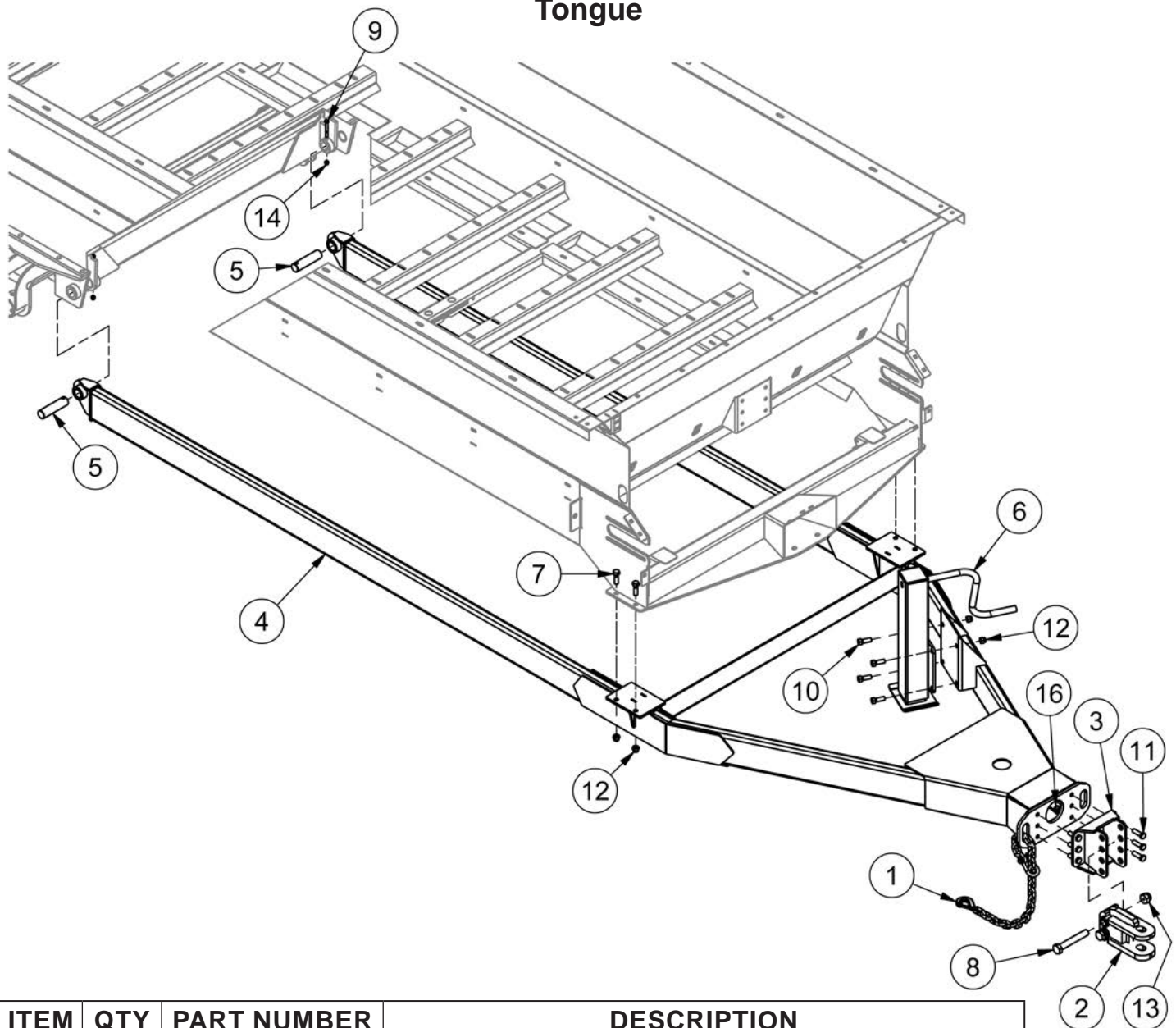
Hydraulics - Apron Drive Circuits



Hydraulics - Apron Drive Circuits

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	51357	Hydraulic Motor c/w Crossover
2	1	SK-SMRS-SK	Gearbox Motor Seal Kit
3	5	LA-HOSE CLAMP .5	Hose Clamps for 1/2 Hose
4	2	22946-2	Dust Cap, 1/2", Female, Yellow Colour
5	2	30661	HH83- 8AT1(8FJXH-8MP) HCL83"
6	1	30857	Flow Control Valve - 3/4"
7	2	45101	HH335- 8AT1(8FJX-8FJX) HCL 335"
8	2	HF 2700LN-08-08	Hydraulic Fitting - MJIC to MJIC
9	2	HF 306-8	Hyd Fitting 1/2 Adjustable Locknut
10	1	HF 6400-8-12	Hyd. Fitting
11	1	HF 6402-12-8	Hyd. Fitting #12 Male O-Ring to #8 F JIC
12	2	HF 6801-8-10	Hyd. Fitting - 1/2" JIC - 5/8" 90° Elbow
13	2	HF 8010-4	Quickcoupler 1/2" Male Tip

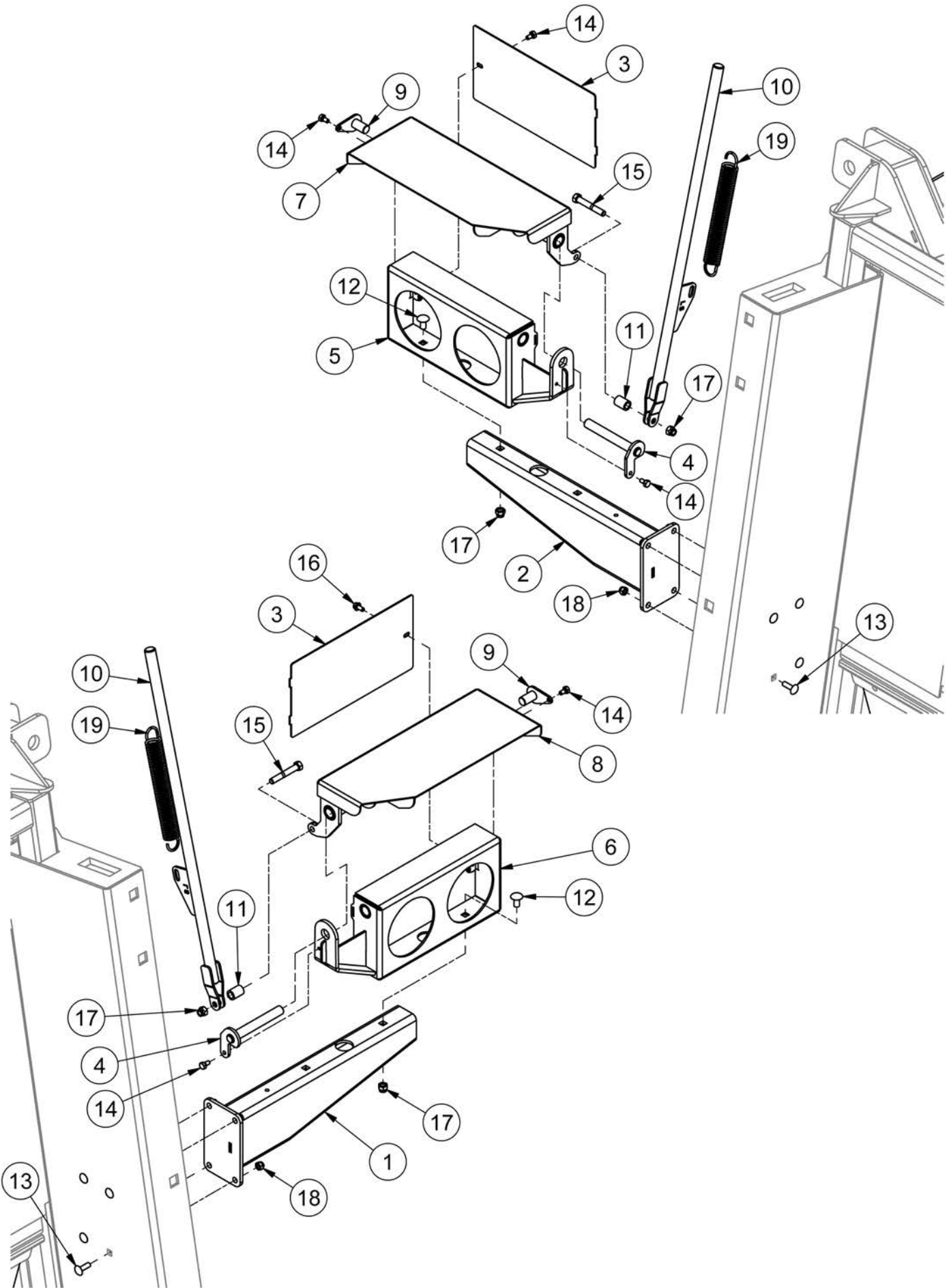
Tongue



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	25262	Safety Chain 20000 # 60"
2	1	40471	Clevis Hitch
3	1	42146	Hitch Pull Unit
4	1	51156	Box Spreader Tongue
5	2	51193	Tongue Pivot Pin
6	1	BW-1005	Jack
7	4	HB 5/8-11X2 Z5	Hex Bolt 5/8-11x2 Grade 5 Zinc Plated Hex Cap Screw
8	2	HB1-14X6.5YZ8	Hex Bolt 1-14x6 1/2 Grade 8 Zinc Hex Cap Screw
9	2	HB3/8-16X3Z5	Hex Bolt 3/8-16x3 Grade 5 Zinc Plated Hex Cap Screw
10	4	HB5/8-11X1.75Z5	Hex Bolt 5/8-11x1 3/4 Grade 5 Zinc Plated Hex Cap Screw
11	6	HB5/8-18X2YZ8	Hex Bolt 5/8-18x2 Grade 8 Zinc Hex Cap Screw
12	8	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut
13	2	LN1-14NFZ5	Center Locknuts (1-14) 2-Way Fine Thread
14	2	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
15	6	LN5/8-18NFZ8	5/8-18 Gr.8 Zinc Nylon Lock Nut

Section 2 - Options

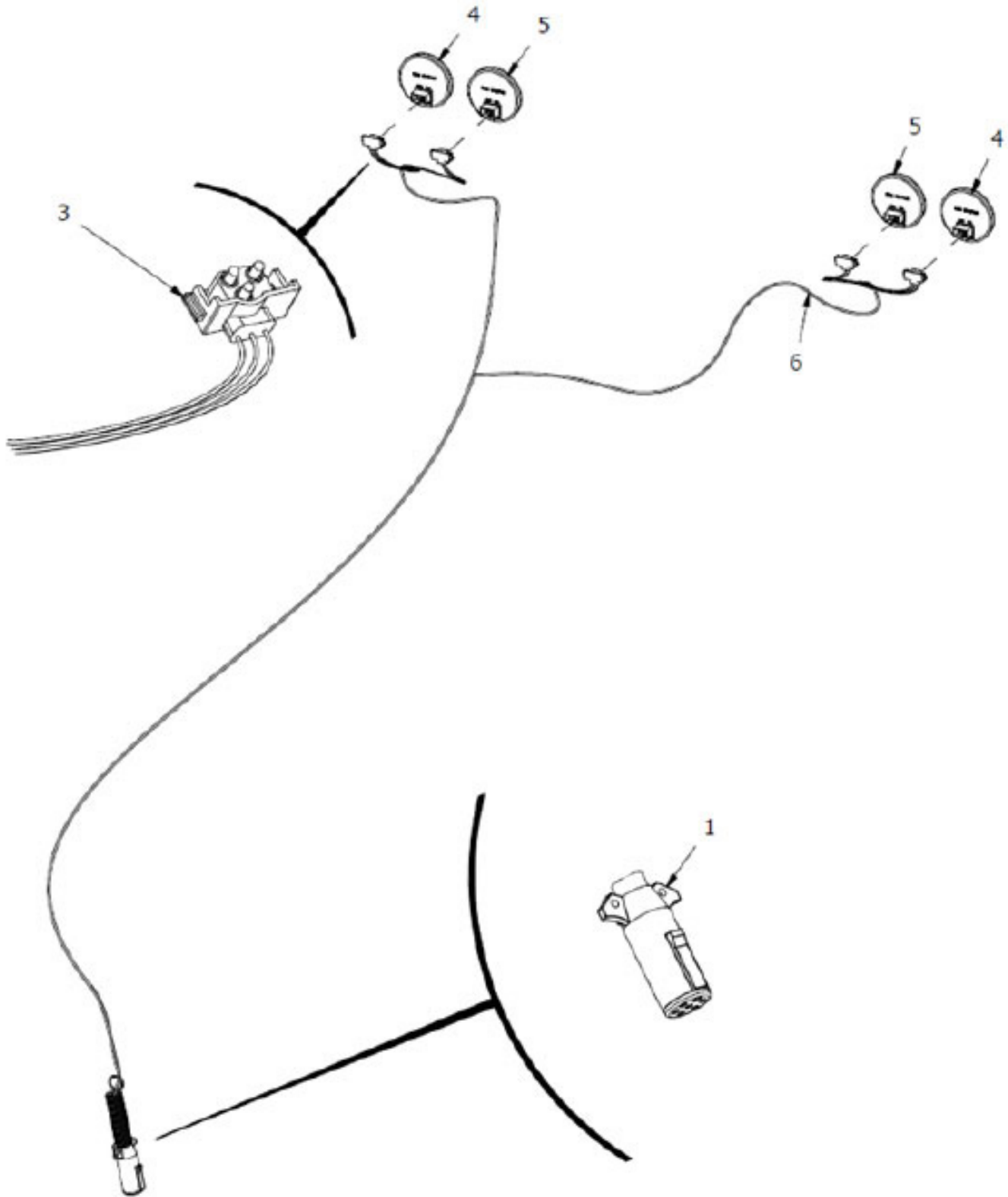
43622 - Mechanical Light Kit



43622 - Mechanical Light Kit

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	42139	Right Light Bracket
2	1	42140	Left Light Bracket
3	2	43178	Light Box Cover
4	2	43204	Inner Pin
5	1	43206	Left Light Box
6	1	43207	Right Light Box
7	1	43208	Left Light Cover
8	1	43209	Right Light Cover
9	2	43213	Outer Pin
10	2	51185	Light Push Arm
11	2	51375	LS Series Light Bushing
12	4	CB3/8-16X0.75CZ5	Carriage Bolt - 3/8-16 x 3/4" Grade 5 Zinc
13	8	CB5/16-18X1CZ5	Carriage Bolt - 5/16-18 x 1" Grade 5 Zinc
14	5	HB1/4-20X0.5Z5	Hex Bolt 1/4-20x1/2 Grade 5 Zinc Plated Hex Cap Screw
15	2	HB3/8-16X2.5Z5	Hex Bolt 3/8-16x2 1/2 Grade 5 Zinc Plated Hex Cap Screw
16	1	HBC1/4X0.5	Hex Bolt Cerrated 1/4-20 x 1/2 Zinc Flange Bolt
17	6	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
18	8	LN5/16-18NCZ5	LN 5/16-18 Zinc Plated Nylon Insert Lock Nut
19	2	PP00679	Spring, .135 x .1 x 7.5"

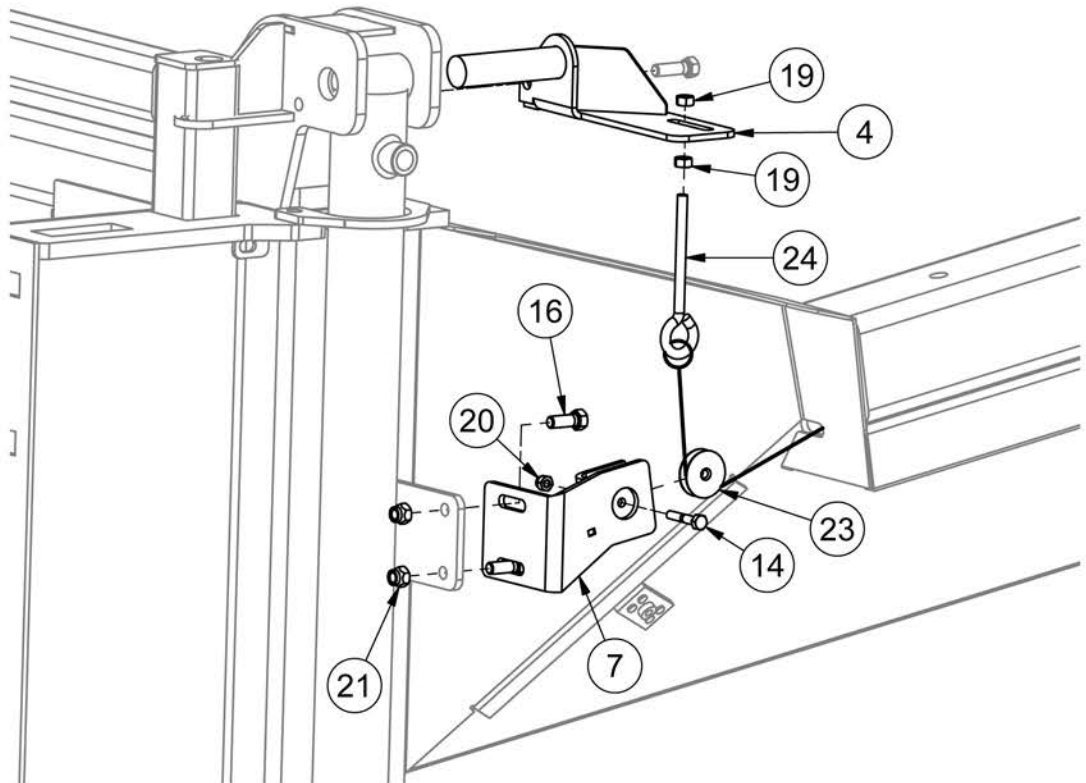
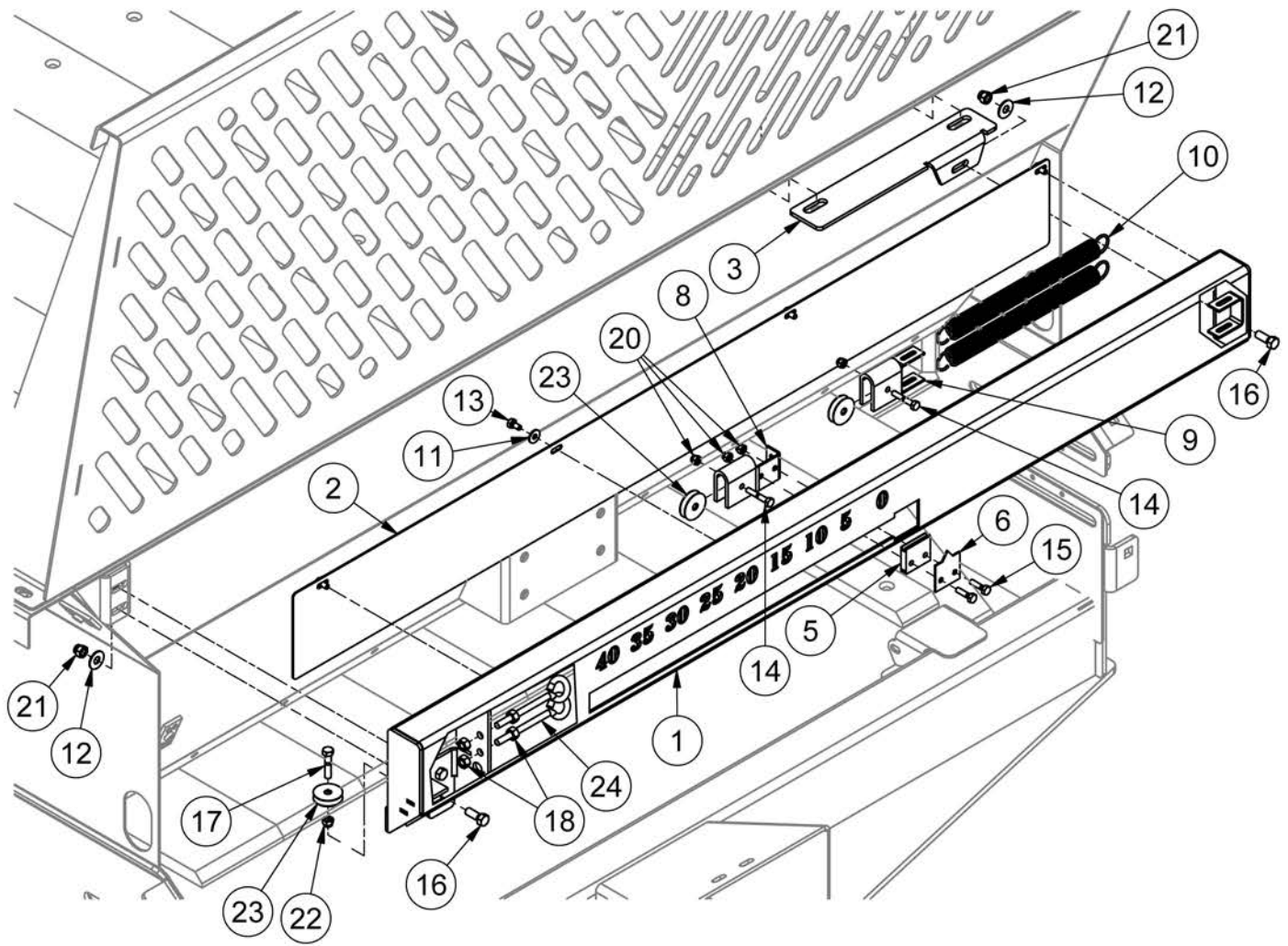
Light Kit Wiring Harness



Light Kit Wiring Harness

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TL550-200-117	Female 7 Pin Plug
	4	31798	Grommet
3	4	31790	Individual Light Wiring
4	2	31788	Red Tail Light
5	2	31789	Amber Tail Light
6	1	36924	Light Wiring Harness
	1	31573	Complete Wiring

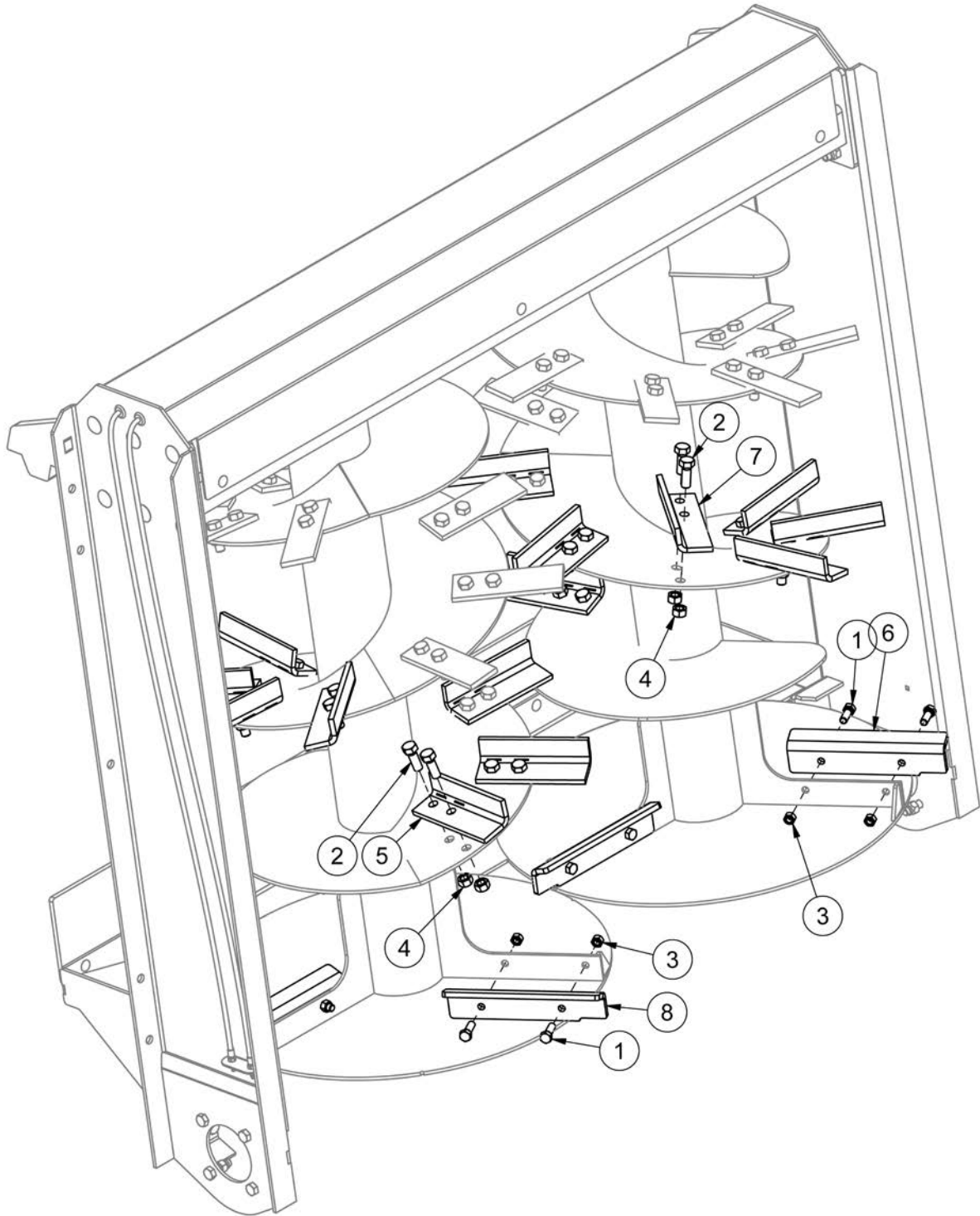
Endgate Indicator



Endgate Indicator

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	45136	LS Series Indicator
2	1	45137	Indicator Back Panel
3	1	45144	Indicator Mount Plate
4	1	45146	Endgate Cable Pin
5	1	45153	Indicator Slide
6	1	45154	Indicator Arrow
7	1	45313	Pulley Mount
8	1	45407	Indicator Slider Mount
9	1	45410	Spring Tensioner Pulley
10	2	46086	Spring 12.0 X 1.0 X .105
11	4	FW 1/4	Flatwasher - 1/4" Zinc Plated USS
12	3	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
13	4	HB1/4-20X0.5Z5	Hex Bolt 1/4-20x1/2 Grade 5 Zinc Plated Hex Cap Screw
14	3	HB1/4-20X1.5Z5	Hex Bolt 1/4-20x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
15	2	HB1/4-20X1Z5	Hex Bolt 1/4-20x1 Grade 5 Zinc Plated Hex Cap Screw
16	5	HB3/8-16X1Z5	Hex Bolt 3/8-16x1 Grade 5 Zinc Plated Hex Cap Screw
17	1	HB5/16-18X1.5Z5	Hex Bolt 5/16-18x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
18	4	HN3/8-16CZ5	Hex Nut 3/8"-16 Grade 5 Zinc Plated Finished
19	2	HN5/16-18CZ5	Hex Nut 5/16"-18 Grade 5 Zinc Plated Finished
20	9	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut
21	5	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
22	1	LN5/16-18NCZ5	LN 5/16-18 Zinc Plated Nylon Insert Lock Nut
23	4	PP00423	Pulley
24	3	PP00682	Eye Bolt - 5/16-18 x 4" Shank Zinc Plated Turned

Flange Paddle Kit - 51406



ITEM	QTY	PART NUMBER	DESCRIPTION
1	12	HB1/2-13X1.5Z5	Hex Bolt 1/2-13x1 1/2 Gr 5 Zinc Plated Hex Cap Screw
2	32	HB5/8-11X1.75Z5	Hex Bolt 5/8-11x1 3/4 Gr 5 Zinc Plated Hex Cap Screw
3	12	LN1/2-13TCZ5	LN1/2-13 Gr.C Zinc Top Lock Nut
4	32	LN5/8-11TCZ5	LN5/8-11 Gr.C Zinc Top Lock Nut
5	8	51407	Left Flange Paddle
6	3	51408	Right Spinner Flange Paddle
7	8	51409	Right Flange Paddle
8	3	51410	Left Spinner Flange Paddle

Section 3 - PTOs

51365 - Front PTO

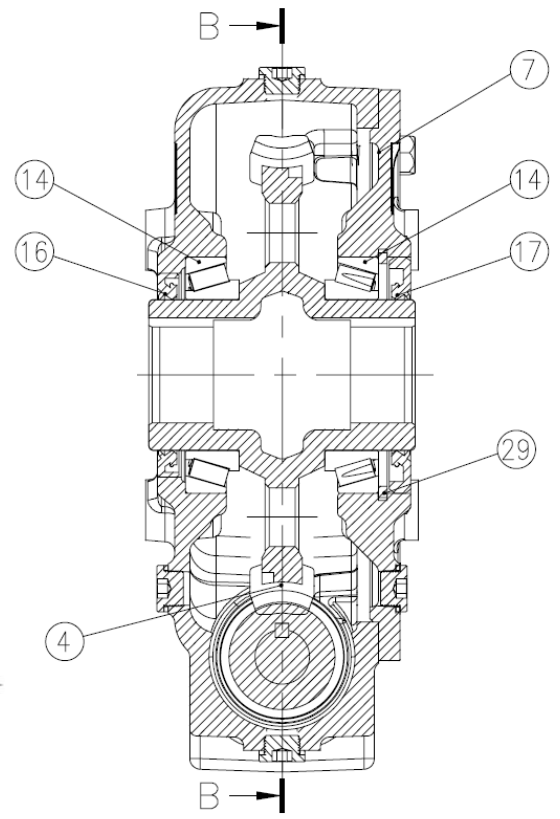
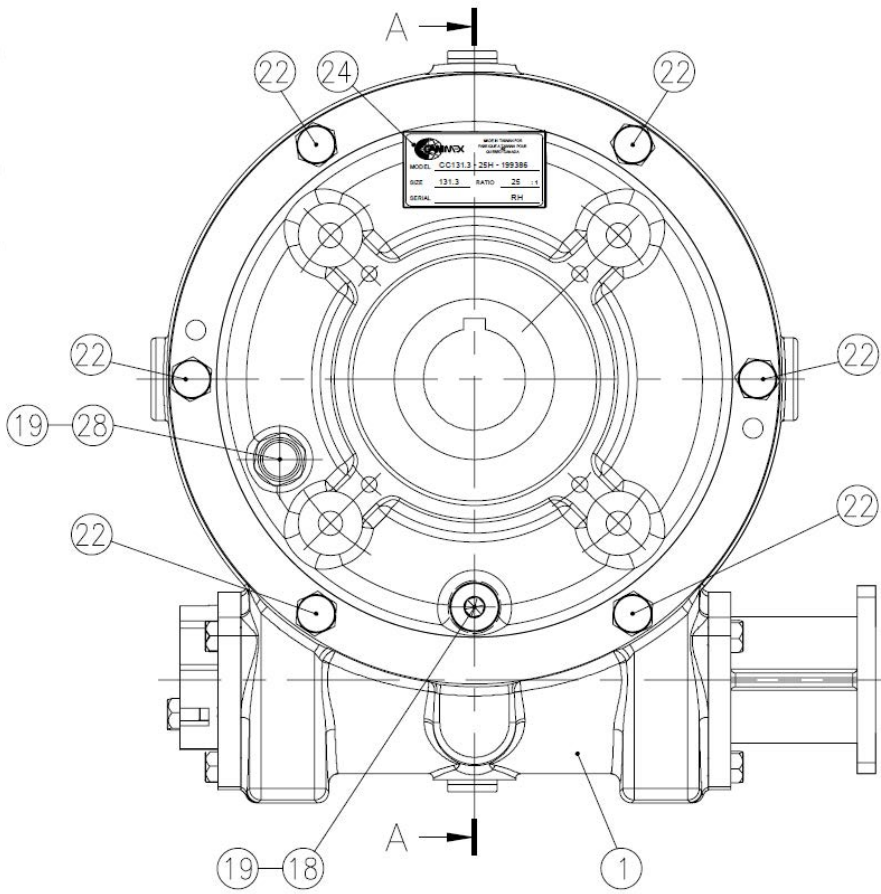
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51366 - Rear PTO

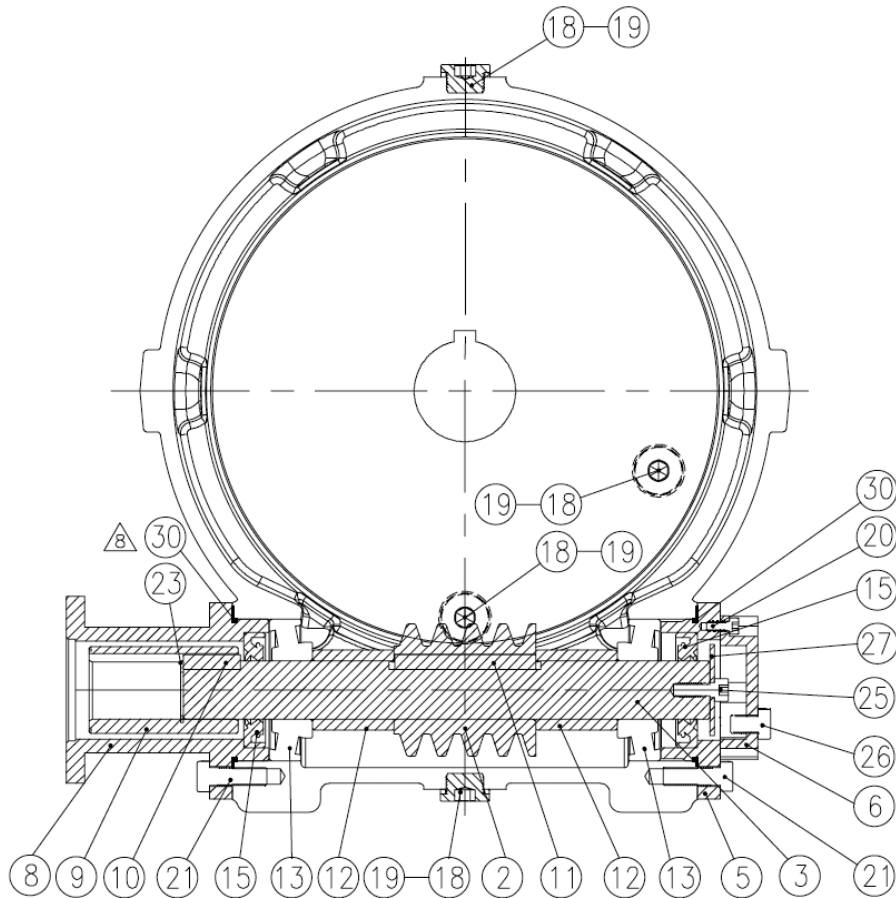
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Section 4 - Gearboxes

50898 - Apron Chain Gearbox



SECTION A-A

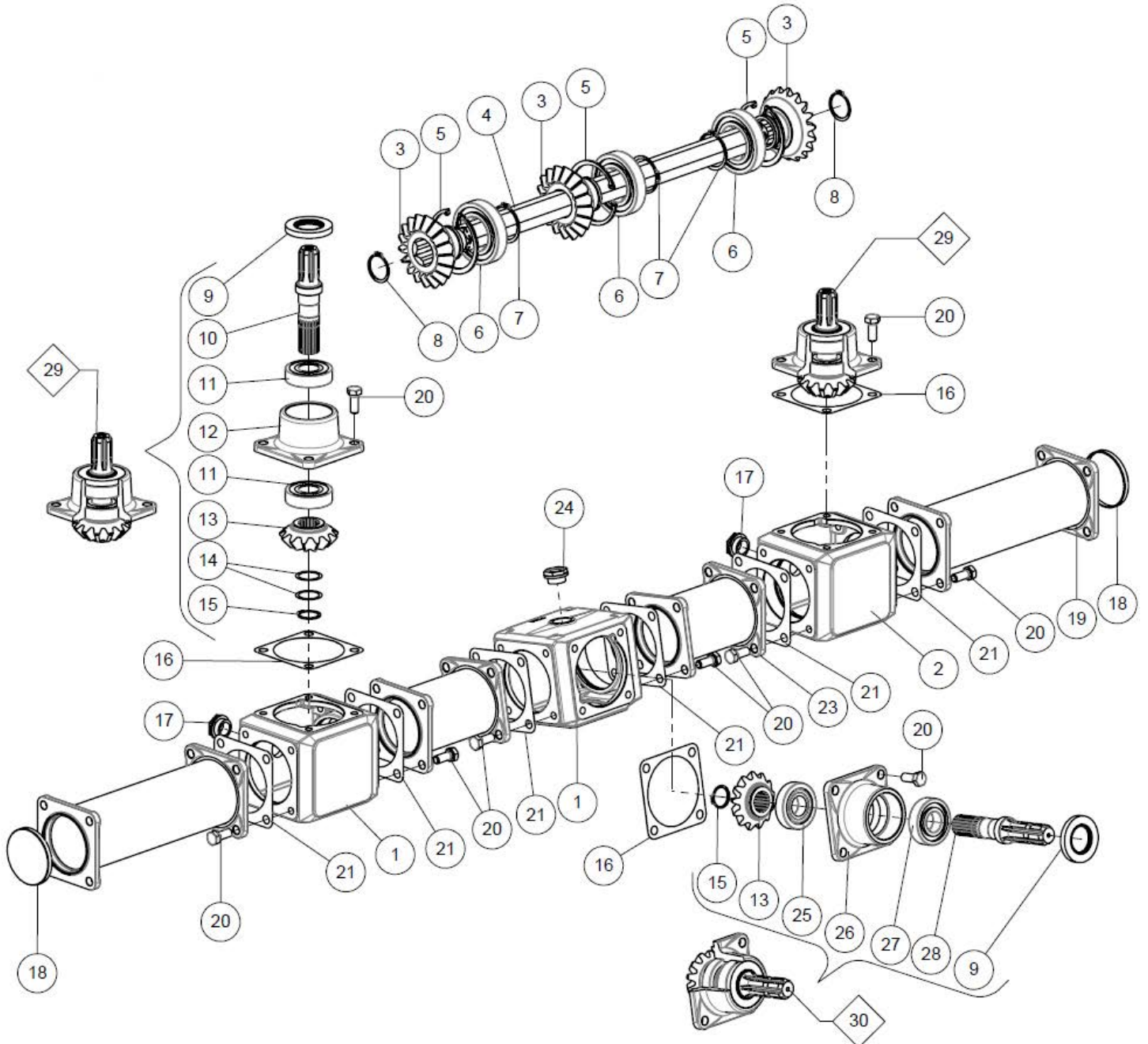


SECTION B-B

50898 - Apron Chain Gearbox

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	50898-01	Housing
2	1	50898-02	Hollow Worm
3	1	50898-03	Input Shaft
4	1	50898-04	Hollow Worm Wheel
5	1	50898-05	Aluminum Input Cover
6	1	50898-06	Cast Input Cover
7	1	50898-07	Output Cover
8	1	50898-08	4 Bolt Flange
9	1	50898-09	Sleeve Coupling
10	1	50898-10	1/4 x 1/4 x 25mm Key
11	1	50898-11	1/4 x 1/4 x 61.9mm Key
12	2	50898-12	Spacer
13	2	50898-13	Input Bearing
14	2	50898-14	Output Bearing
15	2	50898-15	1" x 2" x 3/8" Oil Seal
16	1	50898-16	70mm x 95mm x 10mm Oil Seal
17	1	50898-17	70mm x 110mm x 10mm Oil Seal
18	5	50898-18	3/8-19 BSPP Plug
19	6	50898-19	14.96x23.8x2t Washer
20	3	50898-20	M4x10L Screw Bolt
21	6	50898-21	M8x25L Screw Bolt
22	6	50898-22	M10x25L Screw Bolt
23	1	50898-23	R25 Snap Ring
24	1	50898-24	Name Plate
25	1	50898-25	M6x14L Screw Bolt
26	1	50898-26	M8xP1x16" Screw Bolt
27	1	50898-27	Stainless Sensor Disc
28	1	50898-28	3/8-19 BSPP Sight Glass
29	1	50898-29	R110 Snap Ring
30	1	50898-30	56.87x1.78 O-Ring











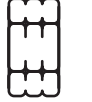
50899 - Beater Gearbox



50899 - Beater Gearbox

ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	50899-7711	Housing
2	1	50899-7712	Housing
3	3	50899-7717	Gear Z=18
4	1	50899-10731	Shaft L=729
5	3	50899-7482	Circlip I 110
6	3	50899-7748	Bearing 6212
7	3	50899-3531	Circlip E 60
8	2	50899-3427	Circlip E 45
9	3	50899-3442	Oil Seal 45/80/10-DL
10	2	50899-7725	Shaft L=729
11	4	50899-4876	Bearing 6307-2RS
12	2	50899-7714	Calotte
13	3	50899-7718	Bevel Pinion Z=13
14	4	50899-9354	Spacer 45x35.1x0.2
15	3	50899-3425	Circlip E 35
16	3	50899-7735	Gasket
17	2	50899-1831	Oil Level Indicator 1" Dia. Gas
18	2	50899-8930	Plug 100 Dia.
19	2	50899-10729	Spacer L=367
20	36	50899-3549	Screw, Hex-HD M14x35
21	6	50899-7736	Gasket
22	1	50899-10726	Spacer L=189
23	1	50899-10728	Spacer L=189
24	1	50899-9175	Oil Breather Plug 1" Dia. Gas
25	1	50899-8556	Bearing 30307
26	1	50899-8989	Hub
27	1	50899-3339	Bearing 6307
28	1	50899-9484	Input Shaft
29	2	50899-7846	Complete Calotte
30	1	50899-9705	Complete Hub

Torque Value Chart - Imperial

SAE Grade and Head Markings	1 or 2 ^b	5	5.1	5.2	8	8.2
	NO MARK 					
SAE Grade and Nut Markings	2	5		8		
	NO MARK 					

Size	Grade 1				Grade 2 ^b				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	240	175	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	400	300	510	375	400	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

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

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

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

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent

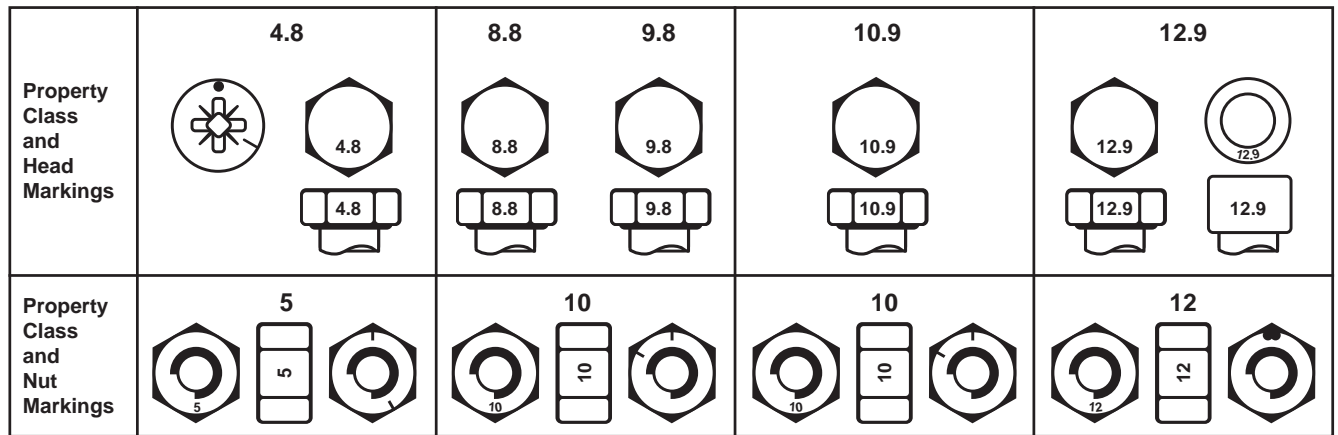
them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

^a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

^b Grade 2 applies for hex cap screws (not hex bolts) up to 152 mm (6-in.) long. Grade 1 applies for hex cap screws over 152 mm (6-in.) long, and for all other types of bolts and screws of any length.

Torque Value Chart - Metric



Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a		Lubricated ^a		Dry ^a	
	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

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

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

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

Make sure fasteners threads are clean and that you

properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

a "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

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