

# TUBE•LINE™

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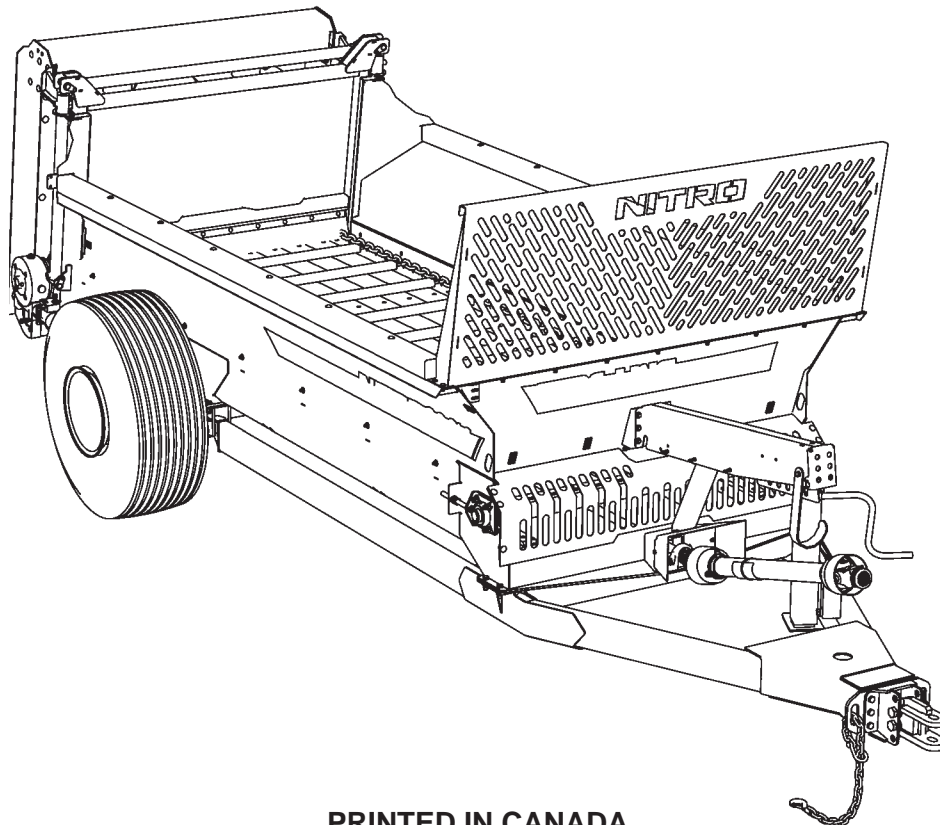
# Parts Manual

Keep this manual with the machine at all times.

# NITRO

## Manure Spreader

# Nitro 300LS



# Parts Manual

Thank you for choosing the Tubeline 300LS Manure Spreader. We know 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](http://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

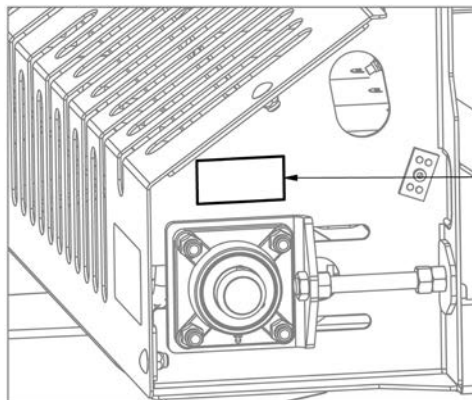
The implement serial number is located above the front left apron drive bearing. This number helps us to track changes and improvements and must be mentioned when ordering parts or requesting service. For your convenience, a space has been provided inside the front cover of this manual to record the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

Model No: \_\_\_\_\_ 300LS \_\_\_\_\_

Serial No: \_\_\_\_\_

Date Purchased: \_\_\_\_\_

Dealer Name: \_\_\_\_\_



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# Table of Contents

<b>Parts Manual</b>	<b>II</b>
Warranty and Limitation of Liability	II
Nitro Apron Chain Warranty	II
Manuals	II
Serial Number	II
Safety Decals	V
DE51369 - Model Decal Kit	V
DE42860 - Nitro Safety Decal Kit	VI
ISO Safety Decals	VII
<b>Section 1 - Parts Breakdowns &amp; Lists</b>	<b>1-1</b>
Front Shields	1-2
Front Apron Drive	1-4
Floor & Side Boards	1-5
Driveline	1-6
Rear Apron Drive	1-8
Endgate	1-10
Beaters	1-12
Single Axle	1-14
Apron Runners	1-16
Hydraulics - Endgate Cylinders	1-18
Hydraulics - Apron Drive Circuits	1-20
Tongue	1-22
<b>Section 2 - Options</b>	<b>2-1</b>
43622 - Mechanical Light Kit	2-2
Light Kit Wiring Harness	2-4
Cabled Endgate Indicator Option	2-6
Flange Paddle Kit - 51406	2-8
Electric Flow Control Wiring	2-9
Manual Flow Control - 31578	2-10
Electric Flow Control - 31797	2-12
<b>Section 3 - PTOs</b>	<b>3-1</b>
51365 - Front PTO - Up to SN 25NLS103	3-1
51366 - Rear PTO - Up to SN 25NLS103	3-1
51783 - Front PTO - SN 25NLS109 to Current	3-2
51784 - Rear PTO - SN 25NLS109 to Current	3-2
<b>Section 4 - Gearboxes</b>	<b>4-1</b>
50898 - Apron Chain Gearbox	4-1
50899 - Beater Gearbox	4-3
<b>Torque Value Chart - Imperial</b>	<b>VIII</b>
<b>Torque Value Chart - Metric</b>	<b>IX</b>

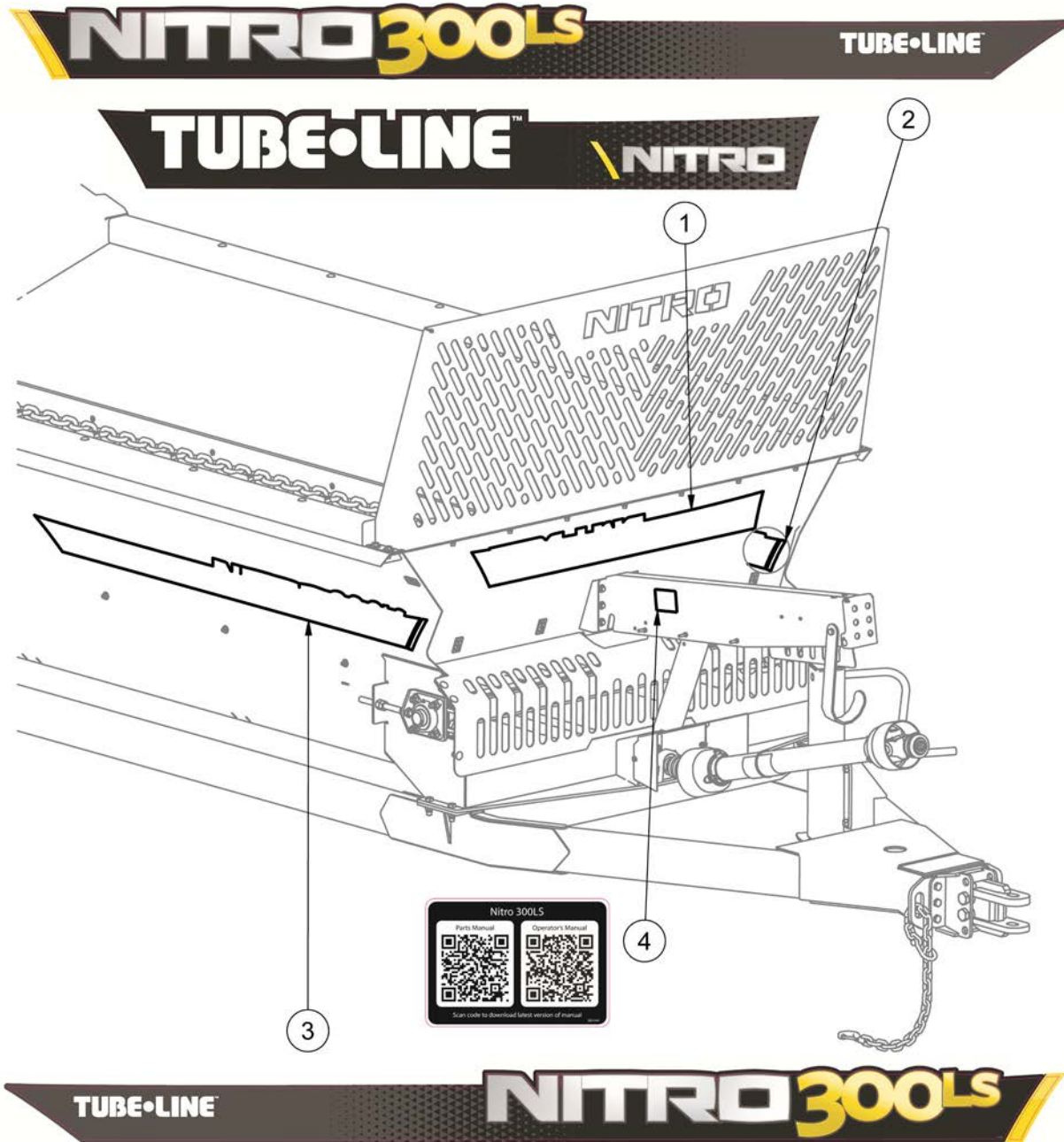
## Safety Decals

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.*

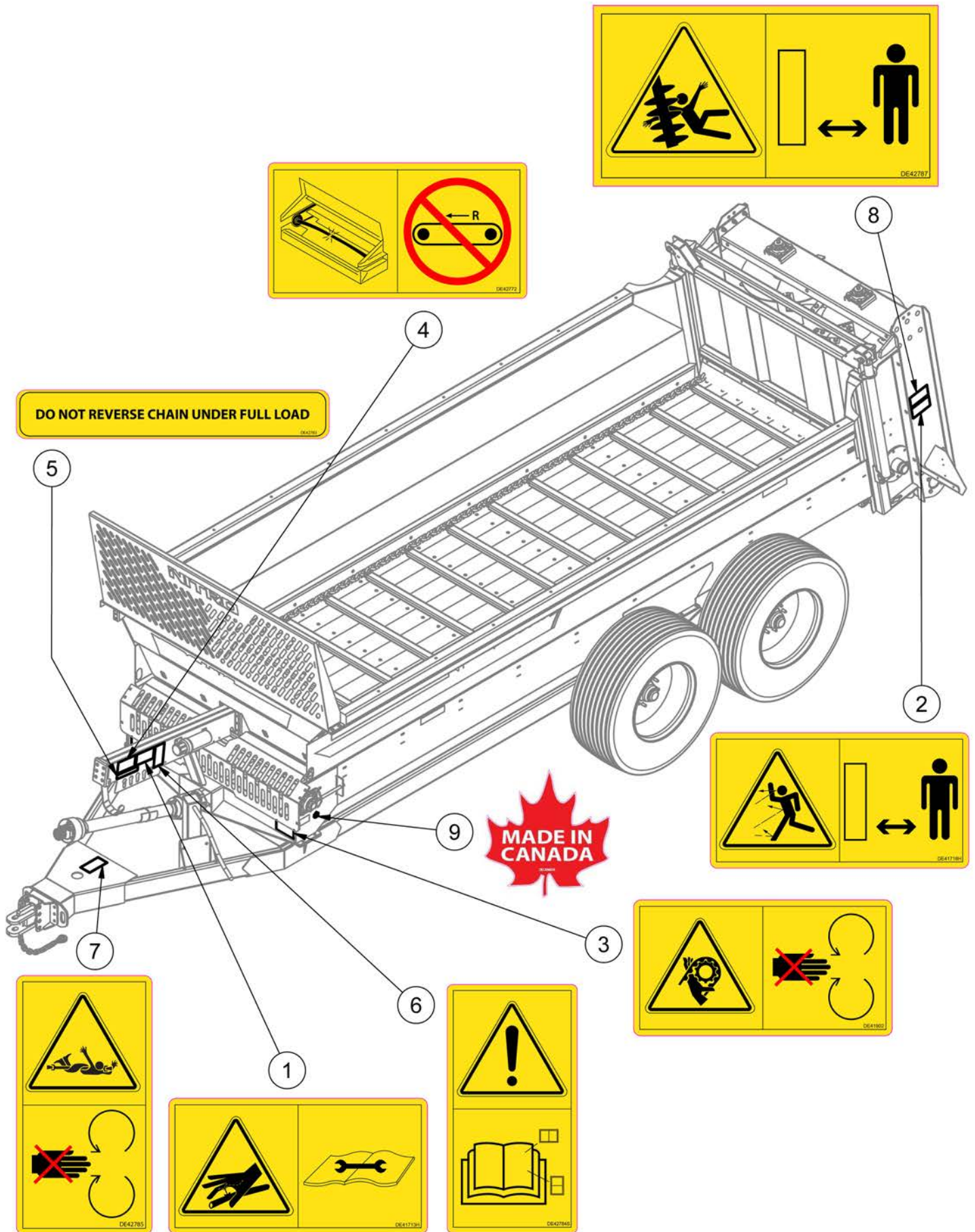
If decals have been damaged, removed, become illegible or parts replaced without safety signs, new safety signs must be applied. New safety signs are available from your authorized dealer.

### DE51369 - Model Decal Kit



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	DE43930	Nitro 375/525 Front Decal
2	1	DE51366	300LS Left Model Decal
3	1	DE51367	300LS Right Model Decal
4	1	DE51491	N300LS QR Decal

# DE42860 - Nitro Safety Decal Kit



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



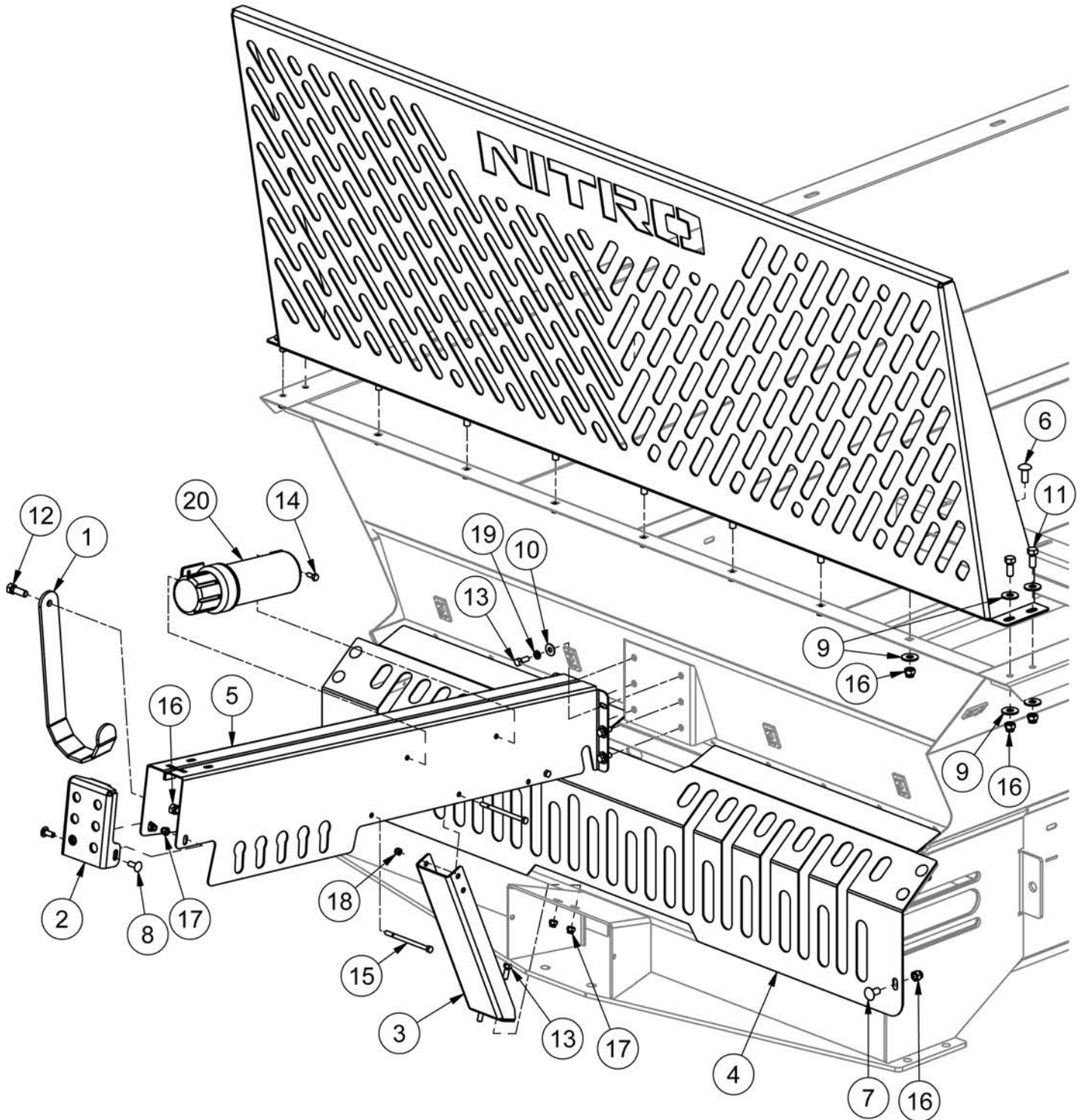
**Item 9: DECANADA**

*Manufacturer's country of origin.*

# Section 1 - Parts Breakdowns & Lists



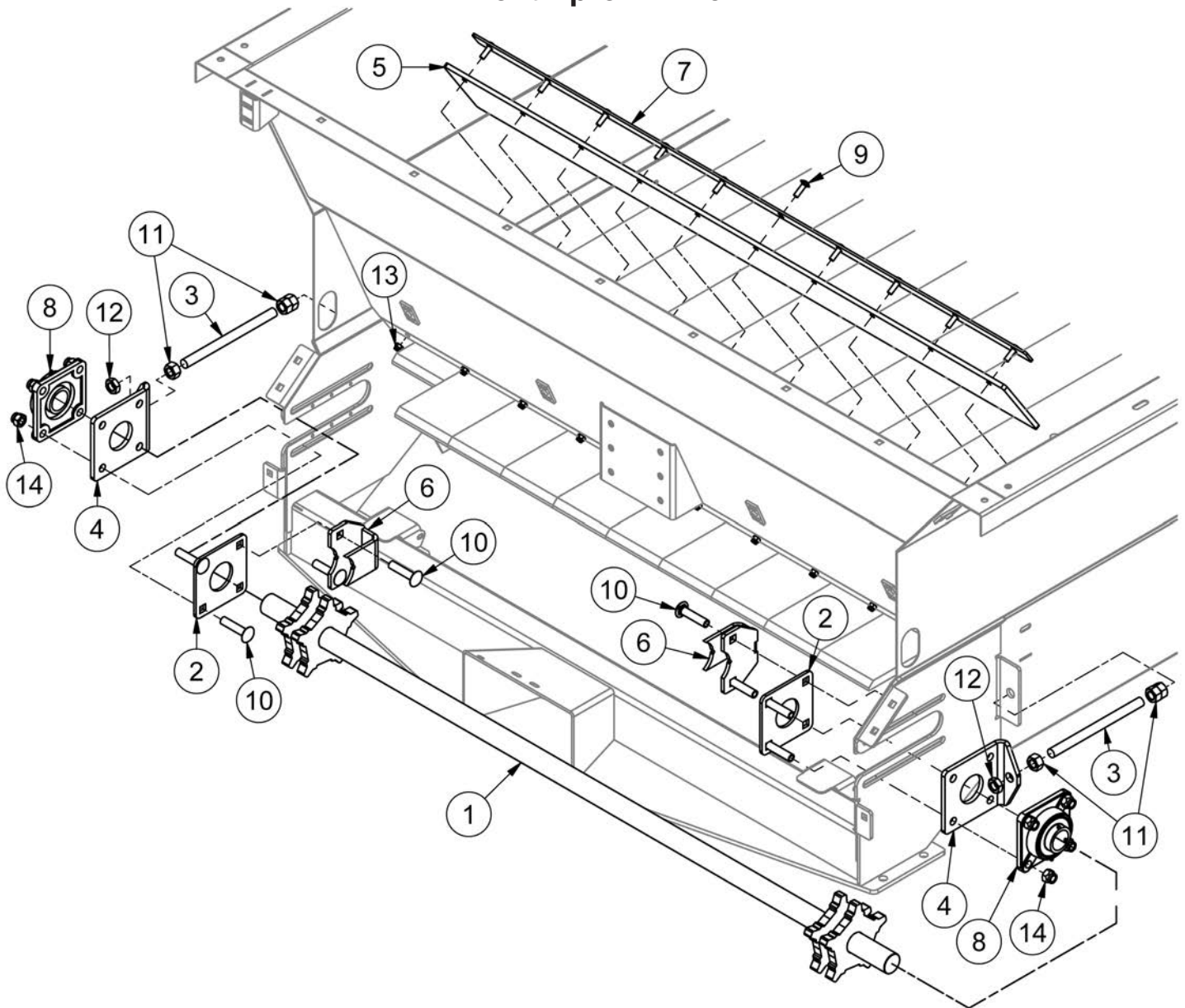
# Front Shields



## Front Shields

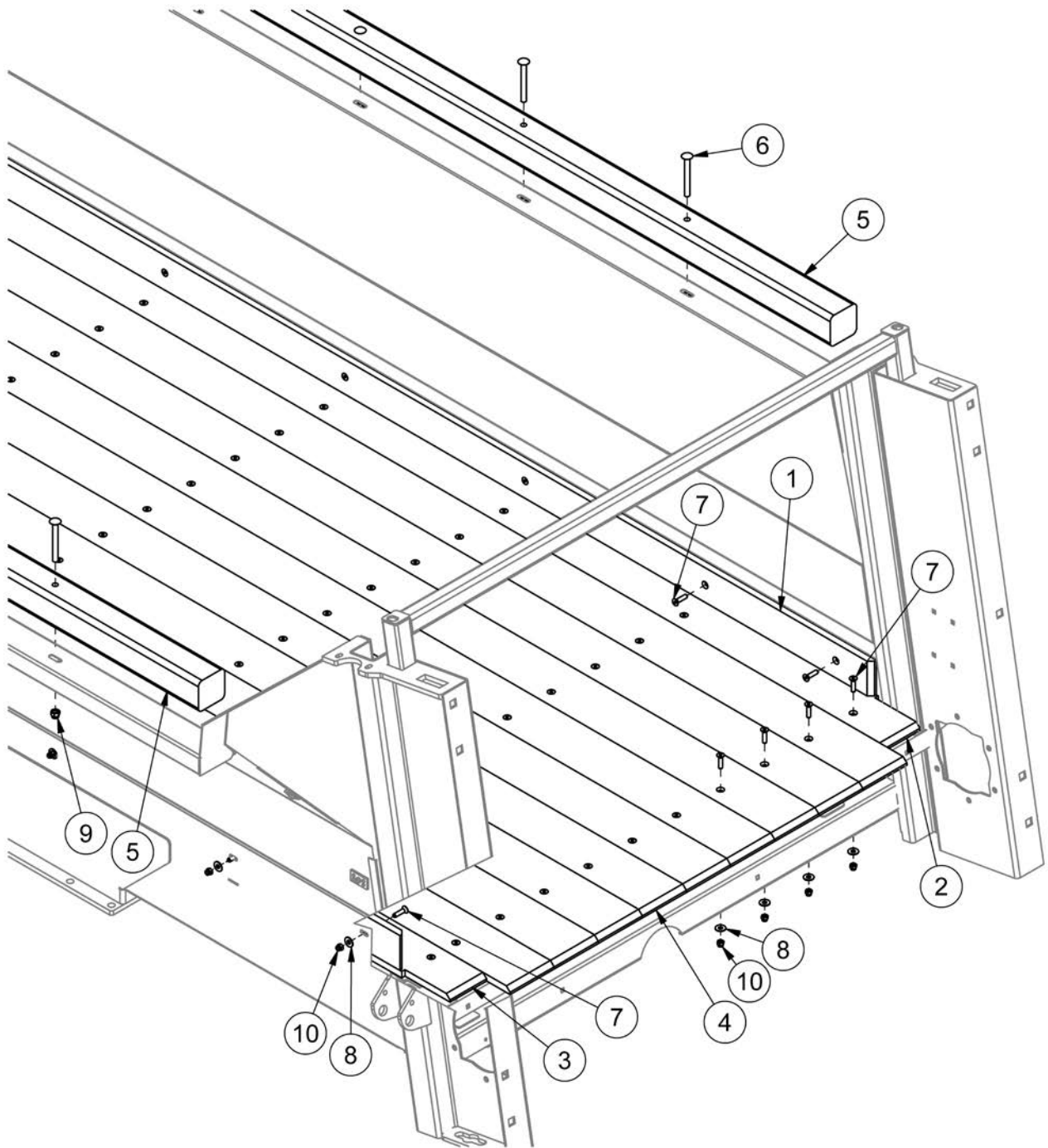
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	35754	PTO Holder
2	1	39413	Hose Mount
3	1	50993	Front Wire Mount Support
4	1	51307	300LS Spreader Base
5	1	51088	RS Hydraulic Hose Hanger
6	7	CB1/2-13X1.25CZ5	Carriage Bolt - 1/2-13 x 1 1/4" Grade 5 Zinc
7	6	CB1/2-13X1CZ5	Carriage Bolt - 1/2-13 x 1" Grade 5 Zinc
8	2	CB3/8-16X1CZ5	Carriage Bolt - 3/8-16 x 1" Grade 5 Zinc
9	15	FW 1/2	Flatwasher - 1/2" Zinc Plated USS
10	8	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
11	4	HB1/2-13X1.25Z5	Hex Bolt 1/2-13x1 1/4 Grade 5 Zinc Plated Hex Cap Screw
12	1	HB1/2-13X1.5Z5	Hex Bolt 1/2-13x1 1/2 Grade 5 Zinc Plated Hex Cap Screw
13	8	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	18	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
17	4	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



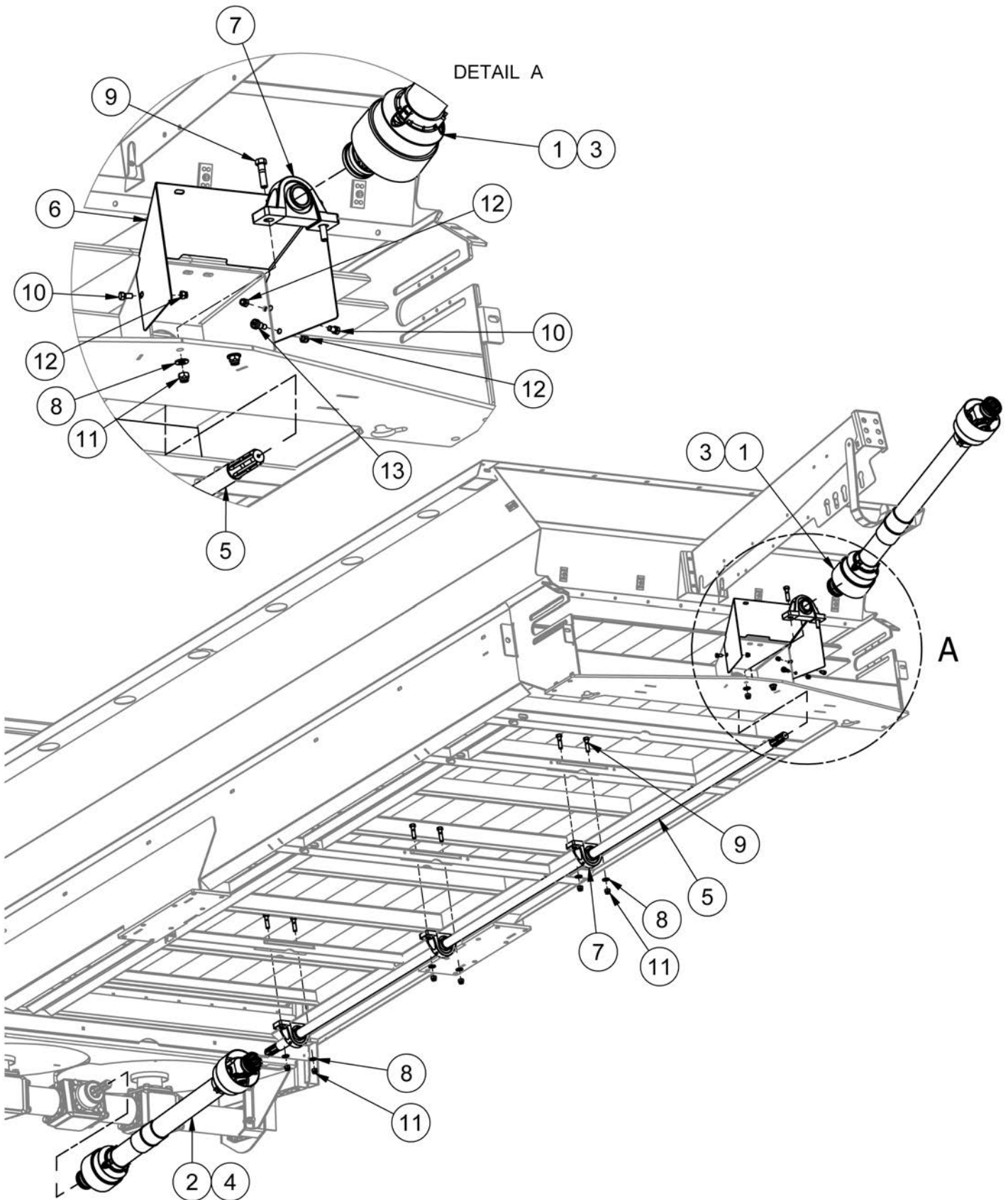
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	375-145	Front Apron Chain Shaft
2	2	37720	Inside Bearing Plate
3	2	39334	Adjustment Rod
4	2	400-169	Bearing Mount Plate
5	1	450-441	Rubber Seal
6	2	45445	RS Series Front Scraper
7	1	600-790	Rubber Hold Down
8	2	BEA UCF209-28R3	Flange Bearing, Triple Seal, Ductile 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	2	51311	Side Board
2	1	51312	Right Box Spreader Floor Board
3	1	51313	Left Box Spreader Floor Board
4	9	51314	Box Spreader Floor Board
5	2	51325	Wooden Side Top
6	12	CB1/2-13X4.5CZ5	Carriage Bolt - 1/2-13 x 4 1/2" Grade 5 Zinc
7	91	FHSCS3/8-16X1.5	Hex Bolt - 3/8"-16 x 1 1/2" Flat Socket Cap Screw
8	91	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
9	12	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
10	91	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut

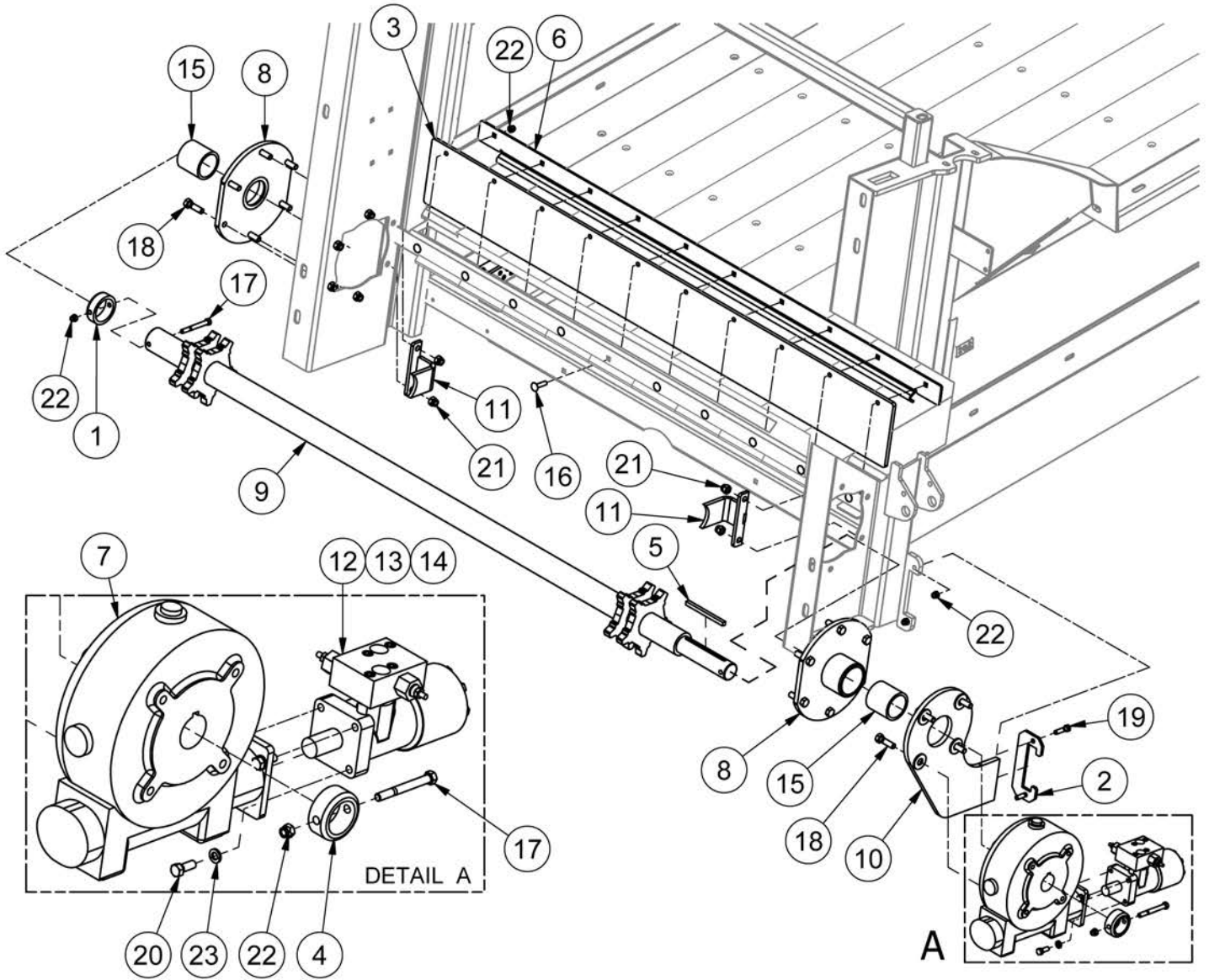
# Driveline



## Driveline

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	1	51783	PTO Slide Collar & Shear Bolt	SN 25NLS109-Current
2	1	51784	PTO Slide Collar & Overrunning Clutch	SN 25NLS109-Current
3	1	51365	PTO Slide Collar & Shear Bolt	Up to SN 25NLS104
4	1	51366	PTO Slide Collar & Overrunning Clutch	Up to SN 25NLS104
5	1	450-354	Drive Shaft - Splined 1.5 X 148.50"	
6	1	51458	LS PTO Shield	
7	4	BEA UCP208-24R3	Pillow Block Bearing, Triple Seal, Ductile Iron	
8	8	FW 1/2	Flatwasher - 1/2" Zinc Plated USS	
9	8	HB1/2-13X2Z5	Hex Bolt 1/2-13x2 Gr 5 Zinc Hex Cap Screw	
10	2	HB3/8-16X0.75Z5	Hex Bolt 3/8-16x3/4 Gr 5 Zinc Hex Cap Screw	
11	8	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut	
12	3	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut	
13	1	SHSS1/2X1/2X3/8-16Z	Socket Head Shoulder Screws - 1/2 Shldr x 1/2 x 3/8-16	

# Rear Apron Drive

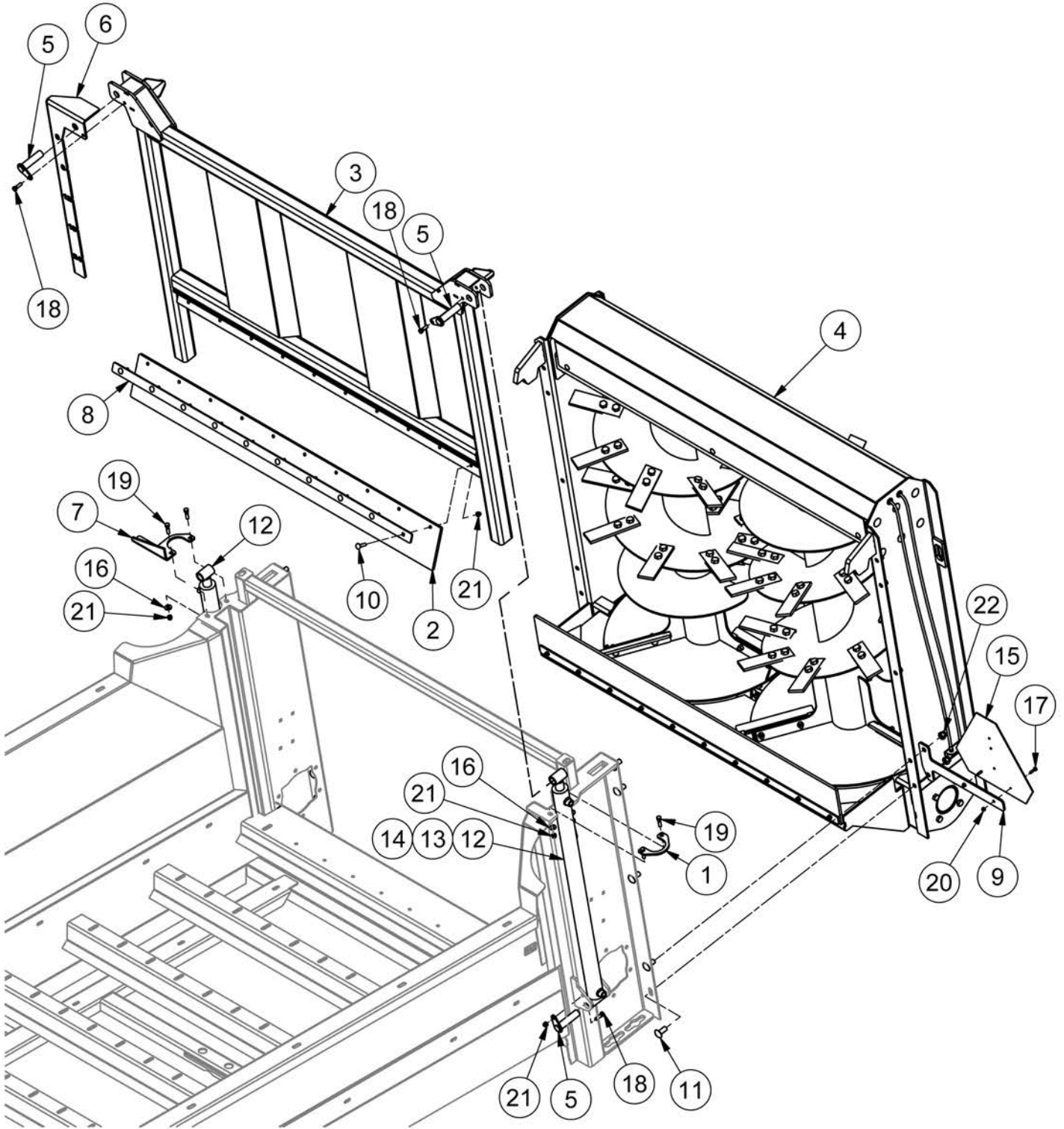


## Rear Apron Drive

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	450-371	Apron Shaft Bushing
2	1	450-433	Torque Arm Retainer
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 200cc
13	1	51358	Relief Valve Nitro LS
14	1	SK-SMRS-SK	Gearbox Motor Seal Kit
15	2	700-431	Apron Bushing
16	10	CB3/8-16X1.5CZ5	Carriage Bolt - 3/8-16 x 1 1/2" Grade 5 Zinc
17	2	HB 3/8-16X3.5 Z5	Hex Bolt 3/8-16x3 1/2 Gr.5 Zinc Hex Cap Screw
18	16	HB1/2-13X1.75Z5	Hex Bolt 1/2-13x1 3/4 Gr.5 Zinc Hex Cap Screw
19	2	HB3/8-16X1.5Z5	Hex Bolt 3/8-16x1 1/2 Gr.5 Zinc Hex Cap Screw
20	4	HB3/8-16X1Z5	Hex Bolt 3/8-16x1 Gr.5 Zinc Hex Cap Screw
21	12	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut
22	16	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
23	4	LW 3/8	LW -3/8" Zinc Plated Medium Split



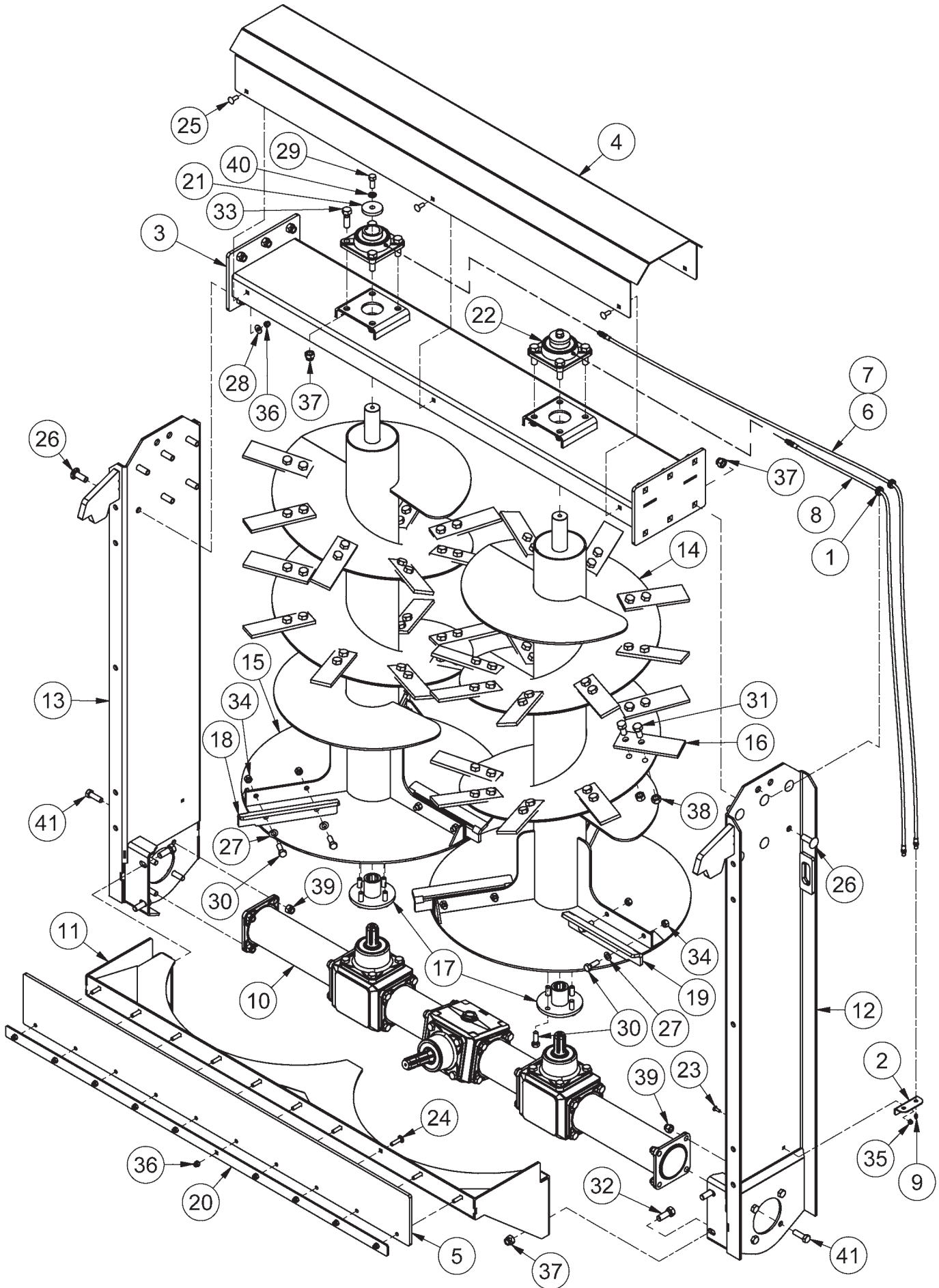
# Endgate



## Endgate

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	1	375-142	Endgate Cylinder Support	
2	2	450-441	Rubber Seal	
3	1	51065	Box Spreader Endgate	
4	1	51091	LS Series Beaters	Ref. Pg.1-12
5	4	51192	Lift Gate Pin	
6	1	53398	Rear Endgate Height Indicator	
7	1	53399	Rear Indicator Endgate Cylinder Support	
8	1	600-790	Rubber Hold Down	
9	1	700-108	SMV Sign Mount	
10	20	CB3/8-16X1.5CZ5	Carriage Bolt - 3/8-16 x 1 1/2" Grade 5 Zinc	
11	10	CB5/8-11X1.5CZ5	Carriage Bolt - 5/8-11 x 1 1/2" Grade 5 Zinc	
12	2	CYL 47972	Cylinder 2" X 44" Closed X 36" Stroke 1.25" Rod	Refer to NOTE below
13	1	SK CYL47972	Hydraulic Seal Kit	Up to SN 26NLS101
14	1	SK CYL47972-CX	Canimex Seal Kit	SN 26NLS102-Current
15	1	DESMV	Slow Moving Vehicle Sign	
16	4	FW 3/8	Flatwasher - 3/8" Zinc Plated USS	
17	2	HB1/4-20X1Z5	Hex Bolt 1/4-20x1 Gr.5 Zinc Hex Cap Screw	
18	4	HB3/8-16X1.25Z5	Hex Bolt 3/8-16x1 1/4 Gr.5 Zinc Hex Cap Screw	
19	4	HB3/8-16X1.5Z5	Hex Bolt 3/8-16x1 1/2 Gr.5 Zinc Hex Cap Screw	
20	2	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut	
21	28	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut	
22	10	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut	

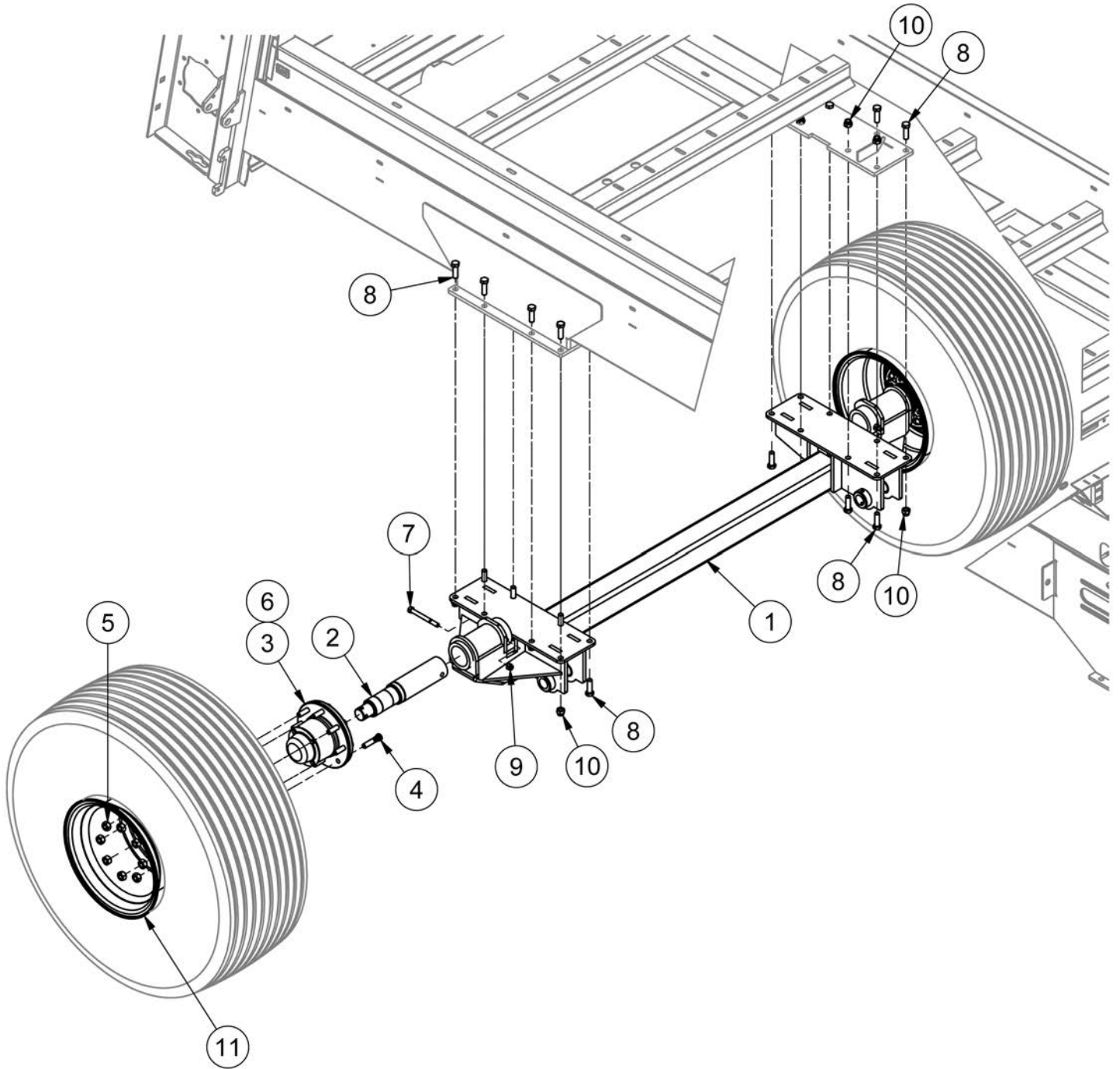
# Beaters



## 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)	
15	1	51115	Right Beater (Box Spreader)	
16	32	51122	Beater Paddle	
17	2	51125	Shaft Mount	
18	3	51408	LS Cupped Paddle - Right	
19	3	51410	LS Cupped Paddle - Left	
20	1	600-790	Rubber Hold Down	
21	2	700-157	Load Bearing Washer	
22	2	BEA UCF209-28R3	Flange Bearing, Triple Seal, Ductile Iron	
23	1	CB1/4-20X0.75CZ5	Carriage Bolt - 1/4-20 x 3/4" Grade 5 Zinc	
24	10	CB3/8-16X1.5CZ5	Carriage Bolt - 3/8-16 x 1 1/2" Grade 5 Zinc	
25	6	CB3/8-16X1CZ5	Carriage Bolt - 3/8-16 x 1" Grade 5 Zinc	
26	12	CB5/8-11X1.75CZ5	Carriage Bolt - 5/8-11 x 1 3/4" Grade 5 Zinc	
27	11	FW 1/2	Flatwasher - 1/2" Zinc Plated USS	
28	6	FW 3/8	Flatwasher - 3/8" Zinc Plated USS	
29	2	HB1/2-13X1.25Z5	Hex Bolt 1/2-13x1 1/4 Gr 5 Zinc Plated Hex Cap Screw	
30	20	HB1/2-13X1.5Z5	Hex Bolt 1/2-13x1 1/2 Gr 5 Zinc Plated Hex Cap Screw	
31	64	HB5/8-11X1.25Z5	Hex Bolt 5/8-11x1 1/4 Gr.5 Zinc Plated Hex Cap Screw	
32	4	HB5/8-11X1.75Z5	Hex Bolt 5/8-11x1 3/4 Gr 5 Zinc Plated Hex Cap Screw	
33	8	HB5/8-11X2Z5	Hex Bolt 5/8-11x2 Gr 5 Zinc Plated Hex Cap Screw	
34	12	LN1/2-13TCZ5	LN1/2-13 Gr.C Zinc Top Lock Nut	
35	1	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut	
36	16	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut	
37	24	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut	
38	64	LN5/8-11TCZ5	LN5/8-11 Gr.C Zinc Top Lock Nut	
39	8	LNM14-2CZ5	Locknut - M14-2 Zinc Plated Nylon Insert Lock Nut	
40	2	LW 1/2	LW -1/2" Zinc Plated Medium Split	
41	8	M14X45X2	Metric Bolt	

# Single Axle

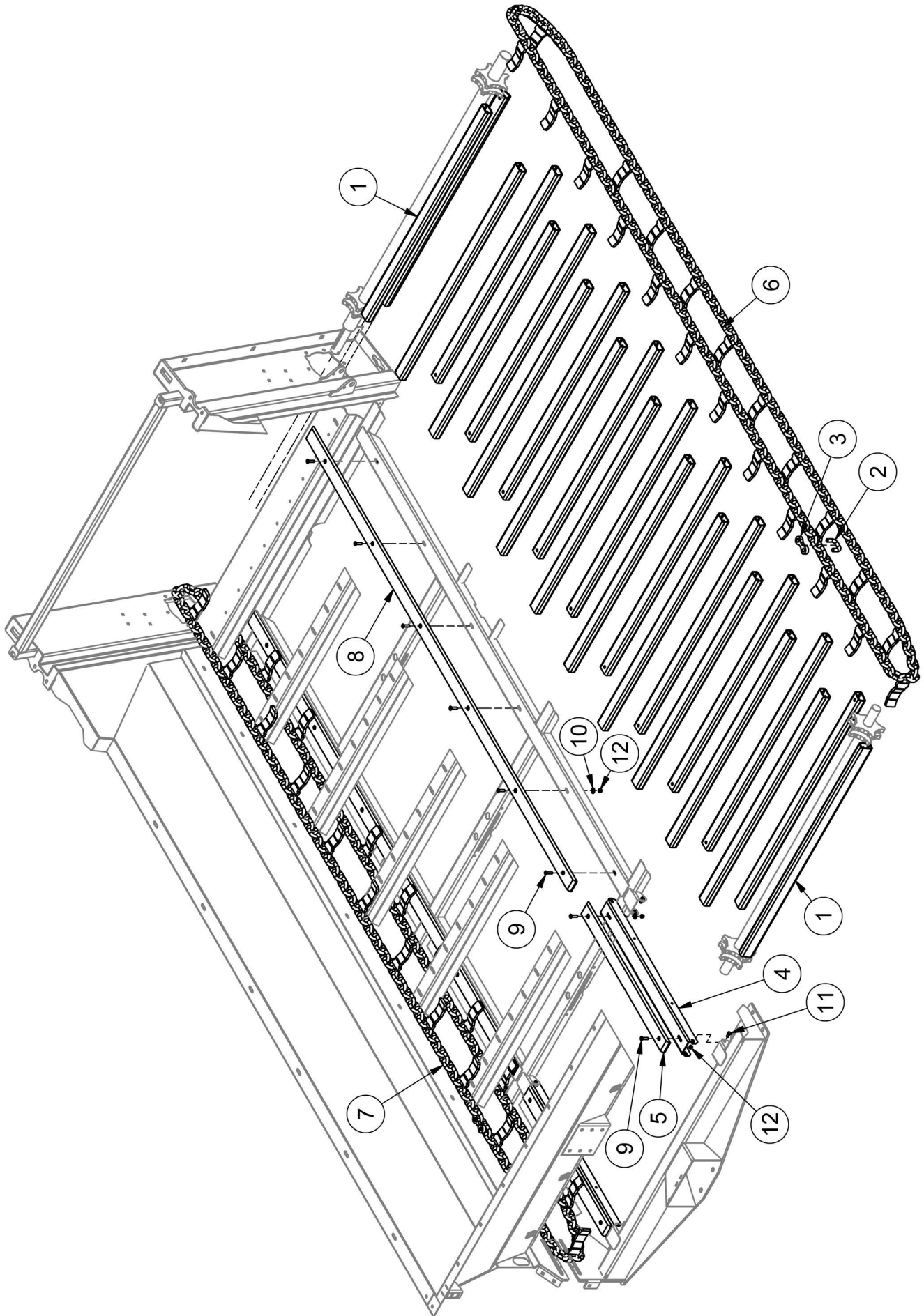


## Single Axle

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	1	51332	300LS Single Axle	
2	2	450-12001	12000 lb Spindle (3" X 15.25")	
3	2	HUB 12000	Spreader Hub Model 450-600 HUB12000	Inc. Items 4-6
4	8	31531	F58-2625 Wheel Stud (12000 Lbs Hub)	Qty/Hub
5	8	31532	F58-18 Flange Nut	Qty/Hub
6	1	HUB 12000-CCS	Complete Bearing and Seals - HUB12000	Qty/Hub
7	2	HB1/2-13X5Z5	Hex Bolt 1/2-13x5 Grade 5 Zinc Plated Hex Cap Screw	
8	16	HB5/8-18X2YZ8	Hex Bolt 5/8-18x2 Grade 8 Zinc Hex Cap Screw	
9	2	LN1/2-13NCZ5	LN 1/2-13 Zinc Plated Nylon Insert Lock Nut	
10	16	LN5/8-18NFZ5	Center Locknuts (5/8-18) 2-Way Fine Thread	
11	2	WHE 16116-8A	RIM Only 16.1 x 16 - 8 Bolt -1.81" Offset	

NITRO 300LS TIRE CHART		
AXLE TYPE	PART NUMBER	TIRE SIZE
Single	WHE 19161	Tire Only 19L X 16.1
Single	WHE 550X45X22.5	Tire Only 550x45x22.5 16 Ply

# Apron Runners

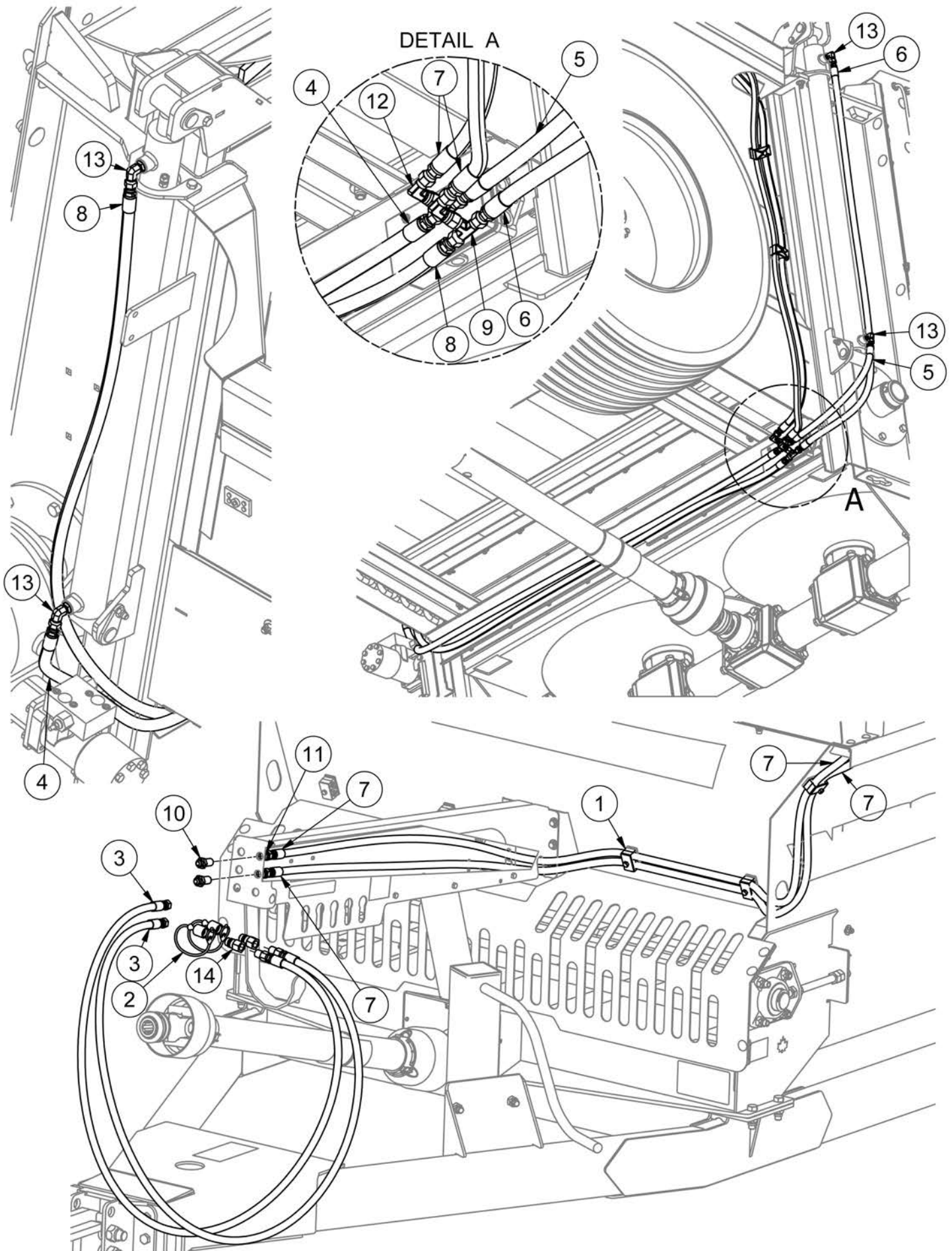


## Apron Runners

ITEM	QTY	PART NUMBER	DESCRIPTION
1	23	37820	Slat
2	2	400-889	Chain Connector Link
3	2	400-890	Chain Connector Link Tab
4	2	51017	Chain Return Slide
5	2	51043	Removable Wear Board
6	1	51309	Left Apron Chain
7	1	51310	Right Apron Chain
8	2	51329	Rear Wear Board
9	16	FHSCS3/8-16X1.5	Hex Bolt - 3/8"-16 x 1 1/2" Flat Socket Cap Screw
10	16	FW 3/8	Flatwasher - 3/8" Zinc Plated USS
11	8	HB3/8-16X0.75Z5	Hex Bolt 3/8-16x3/4 Grade 5 Zinc Plated Hex Cap Screw
12	24	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut



# Hydraulics - Endgate Cylinders



## Hydraulics - Endgate Cylinders

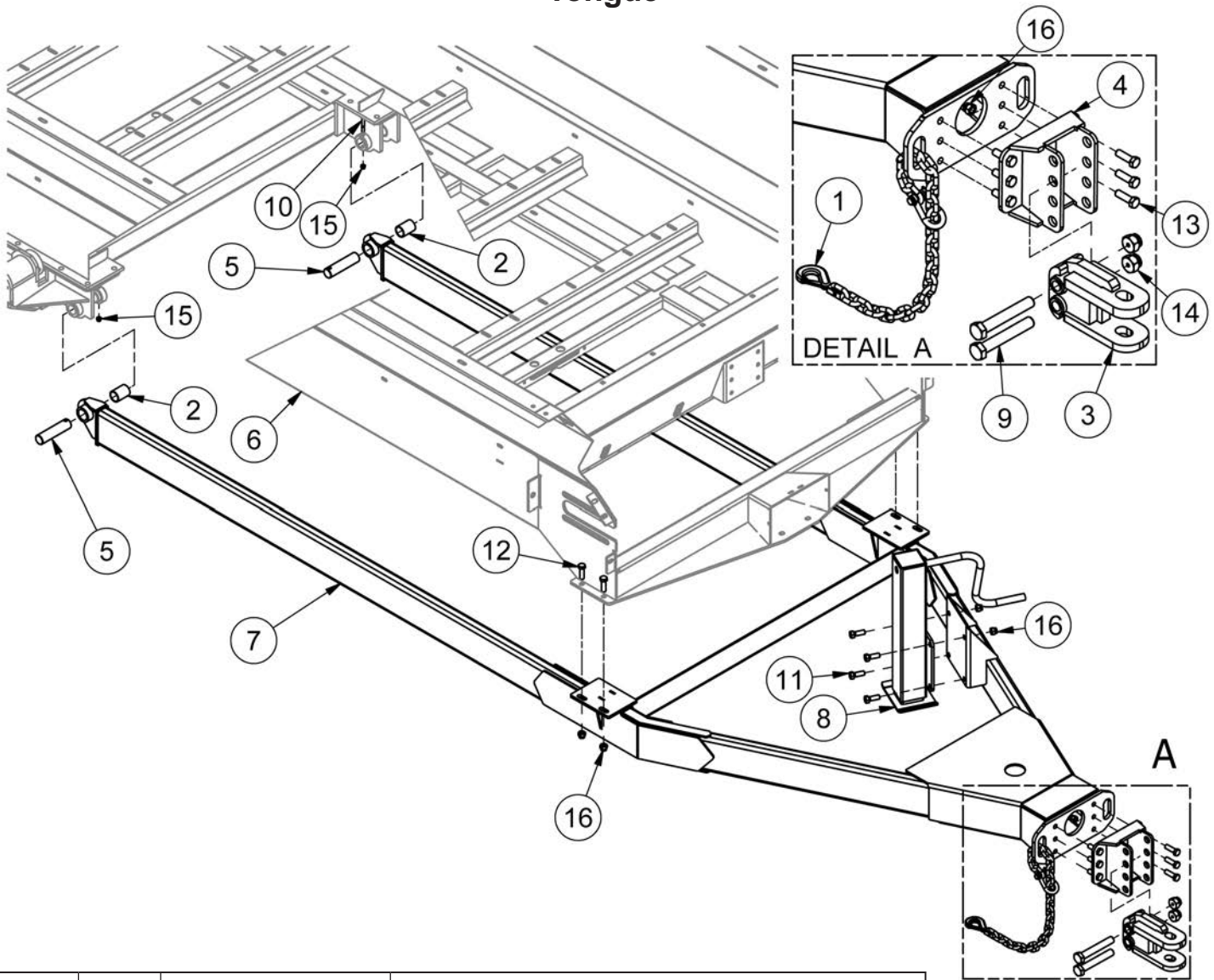
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	51357	Hydraulic Motor c/w Crossover
2	1	SK-SMRS-SK	Gearbox Motor Seal Kit
3	5	LA-HOSE CLAMP .5	Hose Clamps for 1/2 Hose
4	2	22946-2	Dust Cap, 1/2", Female, Yellow Colour
5	2	30661	HH83- 8AT1(8FJXH-8MP) HCL83"
6	1	30857	Flow Control Valve - 3/4"
7	2	39935	HH280- 8AT1(8FJX-8FJX) HCL 280"
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



## Hydraulics - Apron Drive Circuits

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"
4	1	31642	Hose - HH76 - 6AT1 (6FJX,6FJX) HCL 76"
5	1	43221	Hose - HH15 - 6AT1(6FJXH,6FJXH) HCL 15"
6	1	45127	Hose - HH52 - 6AT1 (6FJX,6FJX) HCL 52"
7	2	45128	Hose - HH282 - 6AT1(8FJX-6FJX) HCL 282"
8	1	45129	Hose - HH111- 6AT1(6FJX-6FJX) HCL 111"
9	2	HF 2603-6-6-6	Male JIC Tee
10	2	HF 2700LN-08-08	Hydraulic Fitting - MJIC to MJIC
11	2	HF 306-8	Hyd Fitting 1/2 Adjustable Locknut
12	2	HF 6500-6-6	Elbow 6MJIC to 6FJIC
13	4	HF 6801-6-6	Hydraulic Fitting - 90 Degree JIC to O-Ring
14	2	HF 8010-4	Quickcoupler 1/2" Male Tip

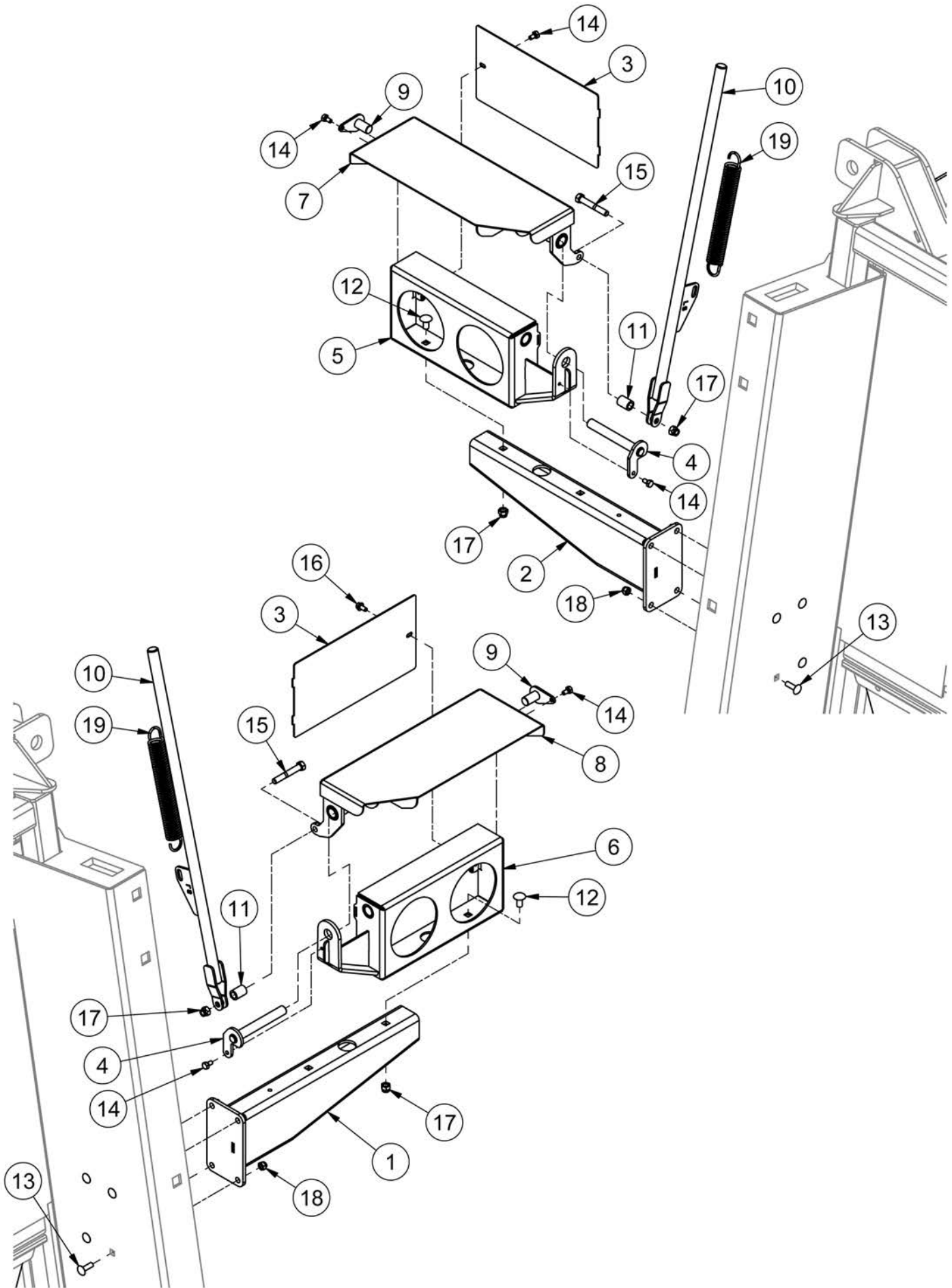
## Tongue



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	25262	Safety Chain 20000 # 60"
2	2	37845	Polygon 1.75 OD x1.52 ID x2.38 LG
3	1	40471	Clevis Hitch
4	1	42146	Hitch Pull Unit
5	2	45114	Tongue Pivot Pin
6	1	51307	Base
7	1	51308	300 Box Spreader Tongue
8	1	BW-1005	Jack
9	2	HB1-14X6.5YZ8	Hex Bolt 1-14x6 1/2 Gr 8 Zinc Hex Cap Screw
10	2	HB3/8-16X3Z5	Hex Bolt 3/8-16x3 Gr 5 Zinc Hex Cap Screw
11	4	HB5/8-11X1.75Z5	Hex Bolt 5/8-11x1 3/4 Gr 5 Zinc Hex Cap Screw
12	4	HB5/8-11X2YZ8	Hex Bolt 5/8-11x2 Gr 8 Zinc Hex Cap Screw
13	6	HB5/8-18X2YZ8	Hex Bolt 5/8-18x2 Gr 8 Zinc Hex Cap Screw
14	2	LN1-14NFZ5	Center Locknuts (1-14) 2-Way Fine Thread
15	2	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut
16	14	LN5/8-11NCZ5	LN 5/8-11 Zinc Plated Nylon Insert Lock Nut

## Section 2 - Options

# 43622 - Mechanical Light Kit

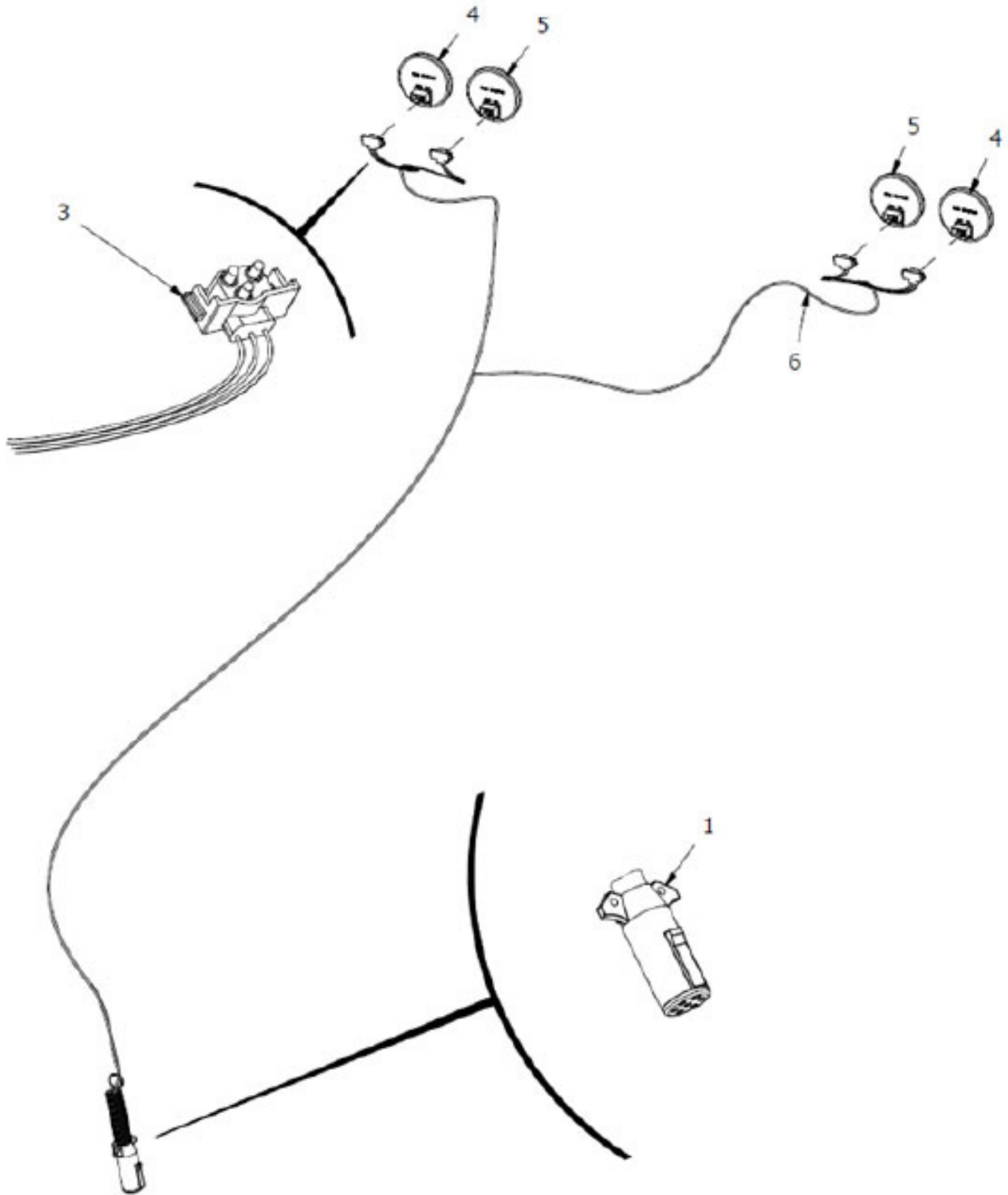


## 43622 - Mechanical Light Kit

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

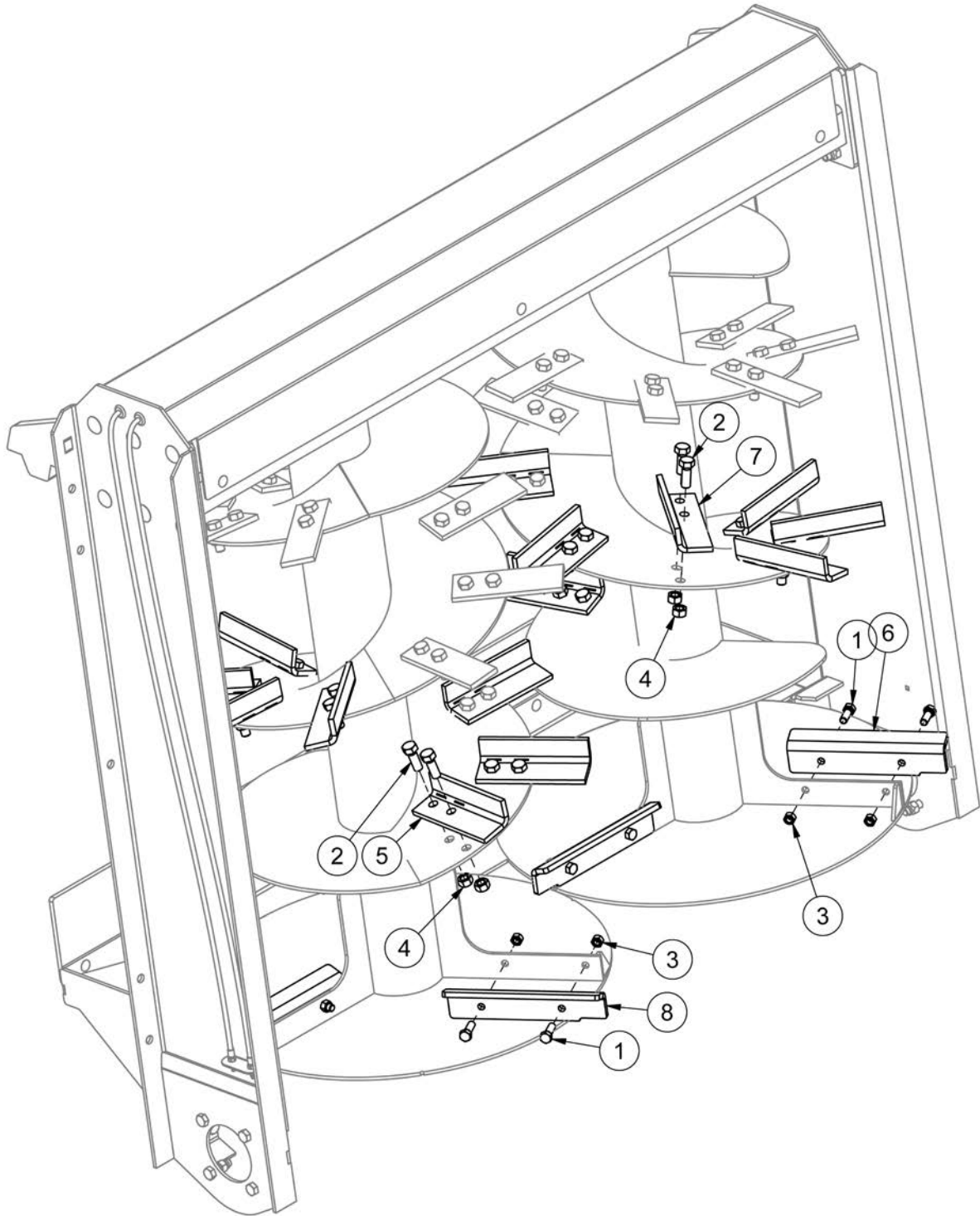
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TL550-200-117	Female 7 Pin Plug
	4	31798	Grommet
3	4	31790	Individual Light Wiring
4	2	31788	Red Tail Light
5	2	31789	Amber Tail Light
6	1	36924	Light Wiring Harness
	1	31573	Complete Wiring



## Cabled Endgate Indicator Option

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	1	51900	Option - LS Series Indicator Kit	All Items
2	1	45136	LS Series Indicator	
3	1	45137	Indicator Back Panel	
4	1	45144	Indicator Mount Plate	
5	1	45146	Endgate Cable Pin	
6	1	45153	Indicator Slider	
7	1	45154	Indicator Arrow	
8	1	45313	Pulley Mount	
9	1	45407	Indicator Slider Mount	
10	1	45410	Spring Tensioner Pulley	
11	2	46086	Spring 12.0 X 1.0 X .105	
12	1	51815	Indicator Mount Plate	
13	4	FW 1/4	Flatwasher - 1/4" Zinc Plated USS	
14	3	FW 3/8	Flatwasher - 3/8" Zinc Plated USS	
15	4	HB1/4-20X0.5Z5	Hex Bolt 1/4-20x1/2 Grade 5 Zinc Plated Hex Cap Screw	
16	3	HB1/4-20X1.5Z5	Hex Bolt 1/4-20x1 1/2 Grade 5 Zinc Plated Hex Cap Screw	
17	2	HB1/4-20X1Z5	Hex Bolt 1/4-20x1 Grade 5 Zinc Plated Hex Cap Screw	
18	5	HB3/8-16X1Z5	Hex Bolt 3/8-16x1 Grade 5 Zinc Plated Hex Cap Screw	
19	1	HB5/16-18X1.5Z5	Hex Bolt 5/16-18x1 1/2 Grade 5 Zinc Plated Hex Cap Screw	
20	4	HN3/8-16CZ5	Hex Nut 3/8"-16 Grade 5 Zinc Plated Finished	
21	2	HN5/16-18CZ5	Hex Nut 5/16"-18 Grade 5 Zinc Plated Finished	
22	9	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut	
23	5	LN3/8-16NCZ5	LN 3/8-16 Zinc Plated Nylon Insert Lock Nut	
24	1	LN5/16-18NCZ5	LN 5/16-18 Zinc Plated Nylon Insert Lock Nut	
25	4	PP00423	Pulley	
26	3	PP00682	Eye Bolt - 5/16-18 x 4" Shank Zinc Plated Turned	

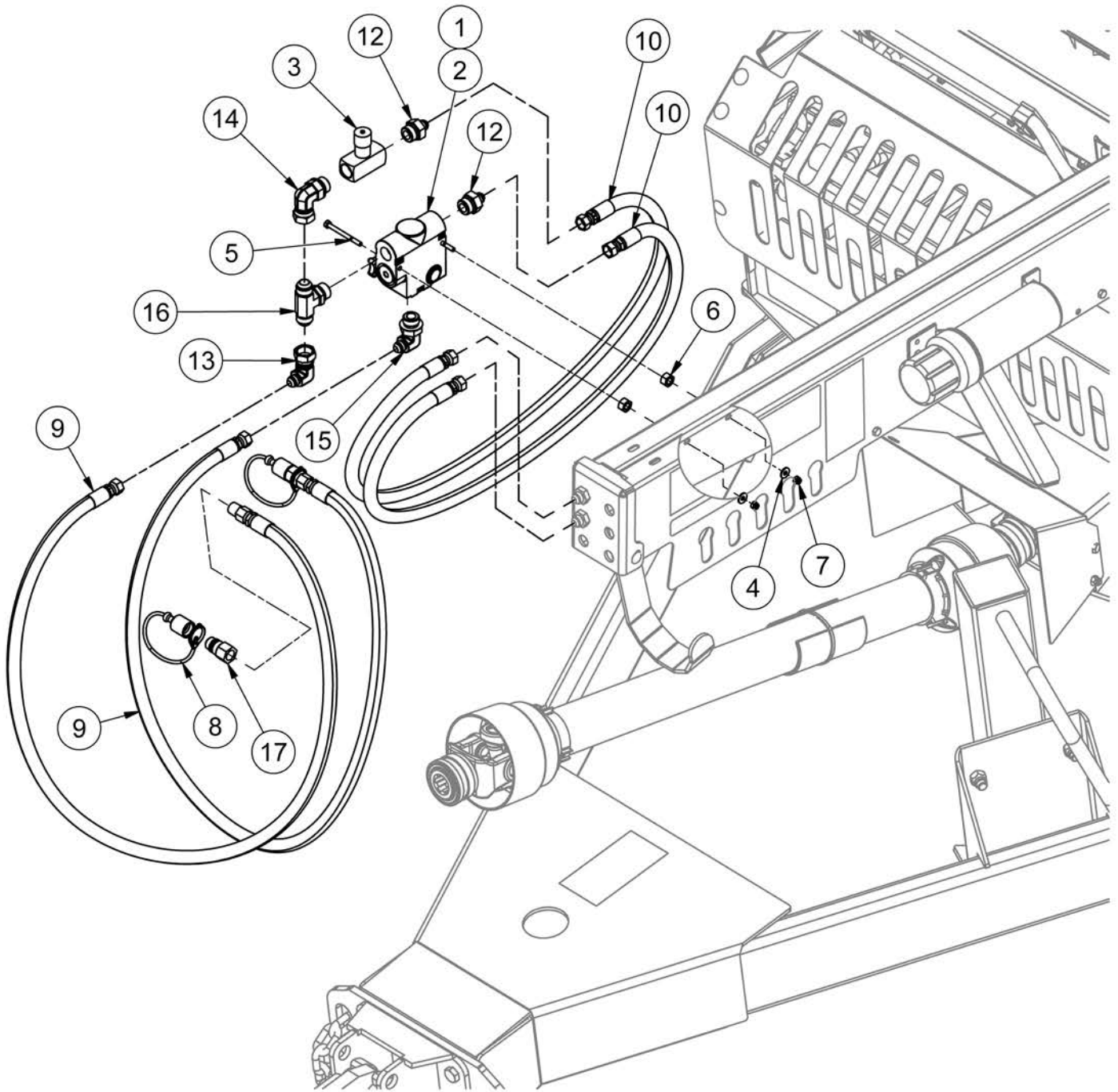
## Flange Paddle Kit - 51406



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



# Manual Flow Control - 31578

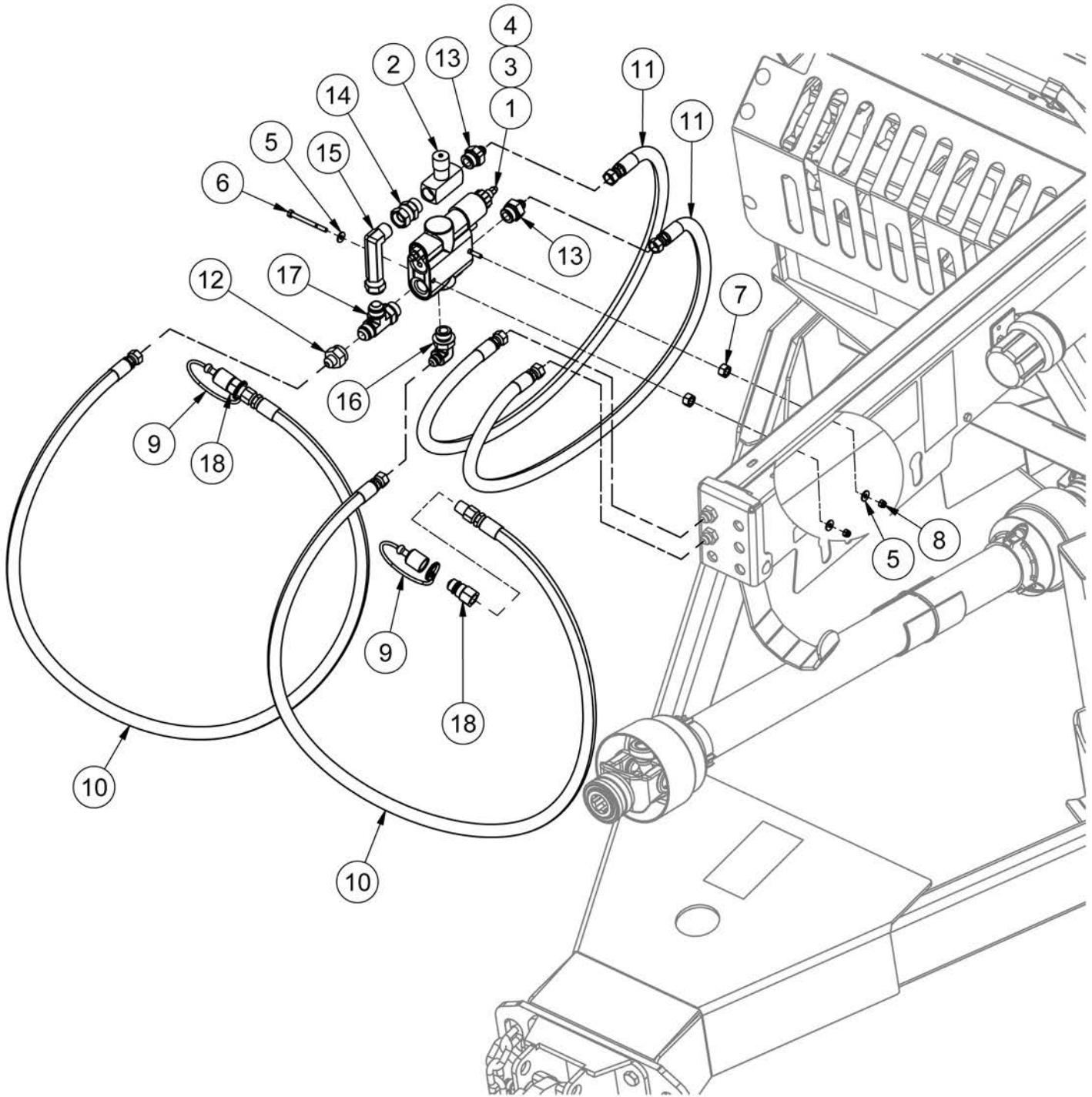


## Manual Flow Control - 31578

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	1	31578	Manual Flow Control Option	All Items
2	1	30855	Flow Control - Pressure Compensated 3/4	
3	1	30857	Flow Control Valve - 3/4"	
4	2	FW 1/4	Flatwasher - 1/4" Zinc Plated USS	
5	2	HB1/4-20X3Z5	Hex Bolt 1/4-20x3 Gr.5 Zinc Hex Cap Screw	
6	2	HN1/2-13CZ5	Hex Nut 1/2"-13 Grade 5 Zinc Finish	
7	2	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut	
8	2	22946-2	Dust Cap, 1/2", Female, Yellow Colour	
9	2	30661	Hose - HH83- 8AT1(8FJXH-8MP) HCL83"	
10	2	37987	Hose - HH52 - 8AT1(8FJX,8FJX) HCL 52"	
12	2	HF 6400-8-12	Hyd. Fitting	
13	1	HF 6500-8-12	Hyd. Fitting 1/2 Male JIC - 3/4 Female JIC 90 Degree	
14	1	HF 6809-12-12	Hydraulic Fitting 90 Degree O-Ring to JIC	
15	1	HF 6801-8-12	Hyd. Fitting - 1/2" JIC - 3/4" 90 Degree Elbow	
16	1	HF 6803-12-12-12	Hyd. Fitting Male JIC Male JIC Male ORB Tee	
17	2	HF 8010-4	Quickcoupler 1/2" Male Tip	



# Electric Flow Control - 31797

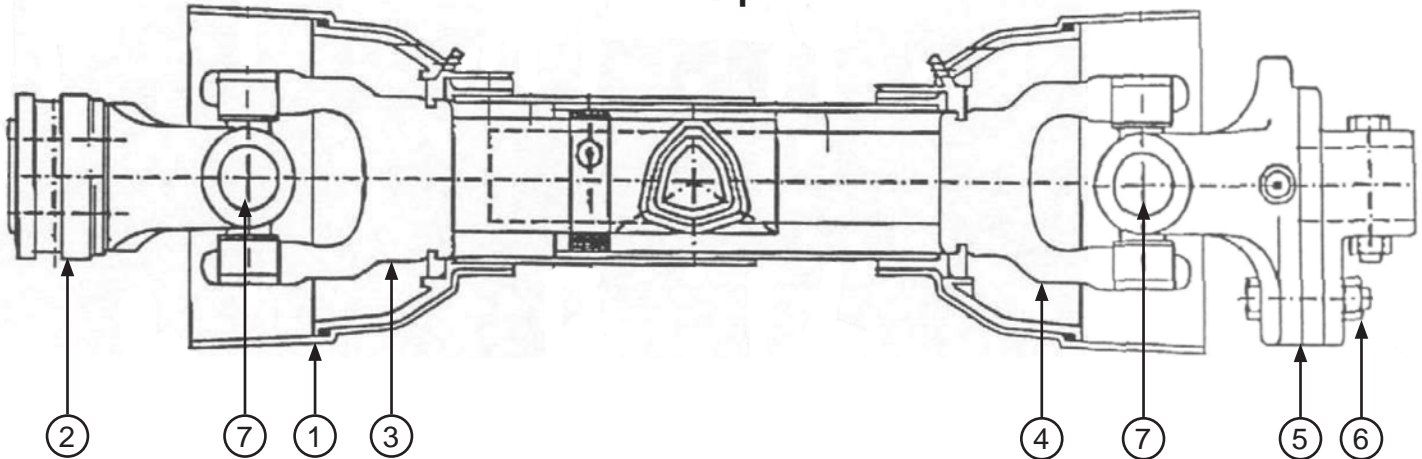


## Electric Flow Control - 31797

ITEM	QTY	PART NUMBER	DESCRIPTION	NOTE
1	1	31797	Electric Flow Control Kit	All Items
2	1	30857	Flow Control Valve - 3/4"	
3	1	52032	Electric Flow Control Valve 30gpm	Incl. Item 4
4	1	37968	Electric Flow Control Solenoid Coil	
5	4	FW 1/4	Flatwasher - 1/4" Zinc Plated USS	
6	2	HB1/4-20X3Z5	Hex Bolt 1/4-20x3 Gr.5 Zinc Hex Cap Screw	
7	2	HN1/2-13CZ5	Hex Nut 1/2"-13 Grade 5 Zinc Plated Finished	
8	2	LN1/4-20NCZ5	LN 1/4-20 Zinc Plated Nylon Insert Lock Nut	
9	2	22946-2	Dust Cap, 1/2", Female, Yellow Colour	
10	2	30661	Hose - HH83- 8AT1(8FJXH-8MP) HCL83"	
11	2	37987	Hose - HH52 - 8AT1(8FJX,8FJX) HCL 52"	
12	1	HF 2406-12-8	Hydraulic Adapter Fitting JIC	
13	2	HF 6400-8-12	Hyd. Fitting	
14	1	HF 6402-12-12	Hyd. Fitting #12 Male O-Ring to #12 F JIC	
15	1	HF 6500-L-12-12-FG	MJ-FJS 90° Elbow Long	
16	1	HF 6801-8-12	Hyd. Fitting - 1/2" JIC - 3/4" 90 Degree Elbow	
17	1	HF 6804-12-12-12	Hydraulic Tee Fitting - SAE-ORB - MJICs	
18	2	HF 8010-4	Quickcoupler 1/2" Male Tip	

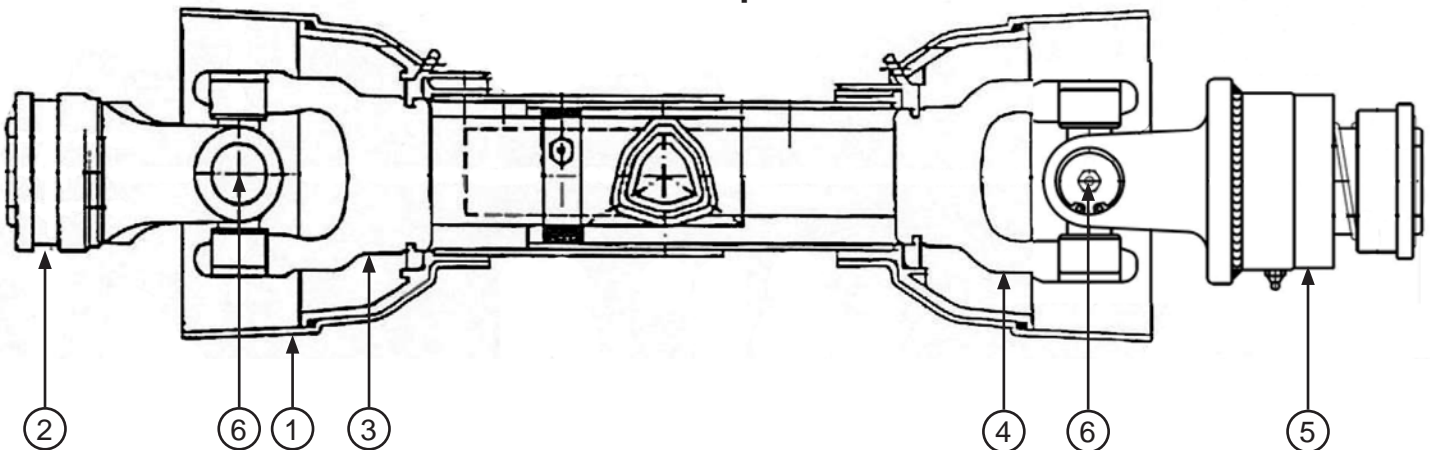
## Section 3 - PTOs

### 51365 - Front PTO - Up to SN 25NLS103



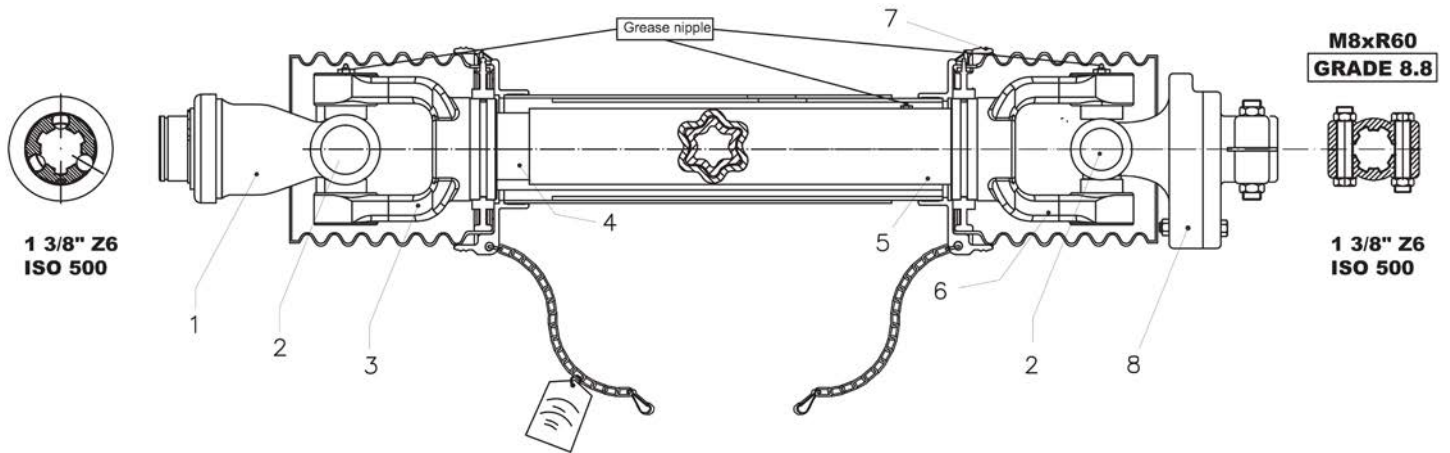
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	PTO142.260.097	Guard 60,CC141 (51365)
2	1	PTO141.026.544	Complete Collar Yoke
3	1	PTO151.016.028	Outer Yoke
4	1	PTO151.016.029	Inner Yoke
5	1	PTO143.260.006	Shear Bolt Yoke 1:3/8-6, S.B. DB.INT.BOLT
6	1	PTOM10-60	M10-60, 6.6/6.8 Shearbolt Kit For LS Spreader
7	2	PTO180.016.130	Cross Set for PTO - 30.2 X 92

### 51366 - Rear PTO - Up to SN 25NLS103



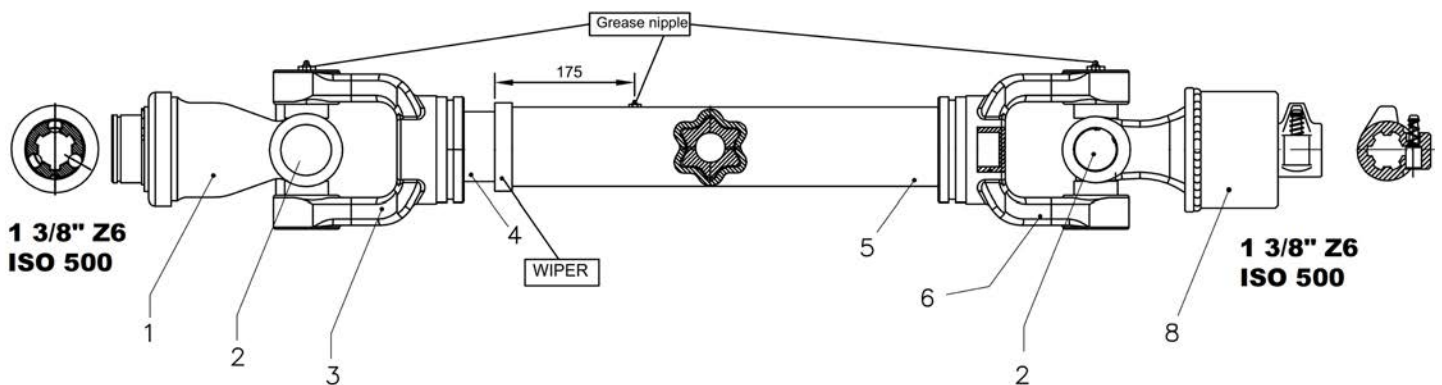
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	PTO142.260.006	Guard 60,CC091 (51366)
2	1	PTO141.026.544	Complete Collar Yoke
3	1	PTO151.016.028	Outer Yoke
4	1	PTO151.016.029	Inner Yoke
5	1	PTO145.265.011.1	Complete Overrunning Clutch R12
6	2	PTO180.016.130	Cross Set for PTO - 30.2 X 92

## 51783 - Front PTO - SN 25NLS109 to Current



ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	51783-01	Yoke PTO-60 1:3/8Z6SC
2	1	51783-02	Cross PTOS-60-Cross 30.16x92
3	2	51783-03	Internal Yoke PTOS-60 Male Star
4	1	51783-04	Tube PTOS 60 Male Star
5	1	51783-05	Tube PTOS 60 Female Star
6	1	51783-06	Internal Yoke PTOS-60 Female Star
7	1	51783-07	PTO 60 Guard 51783 PTO
8	1	51783-08	Shear Bolt Yoke PTOS-60 1:3/8Z6
	4	51783-SB	Shear Bolt Kit M8x60 Grade 8.8

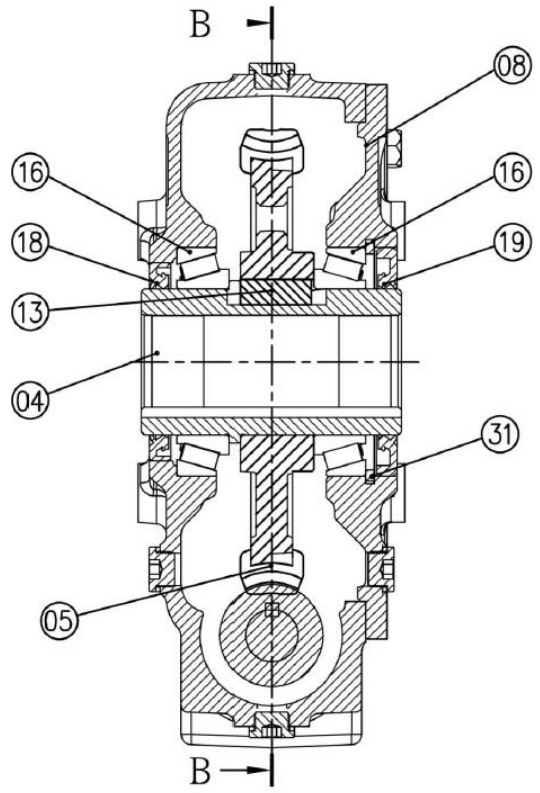
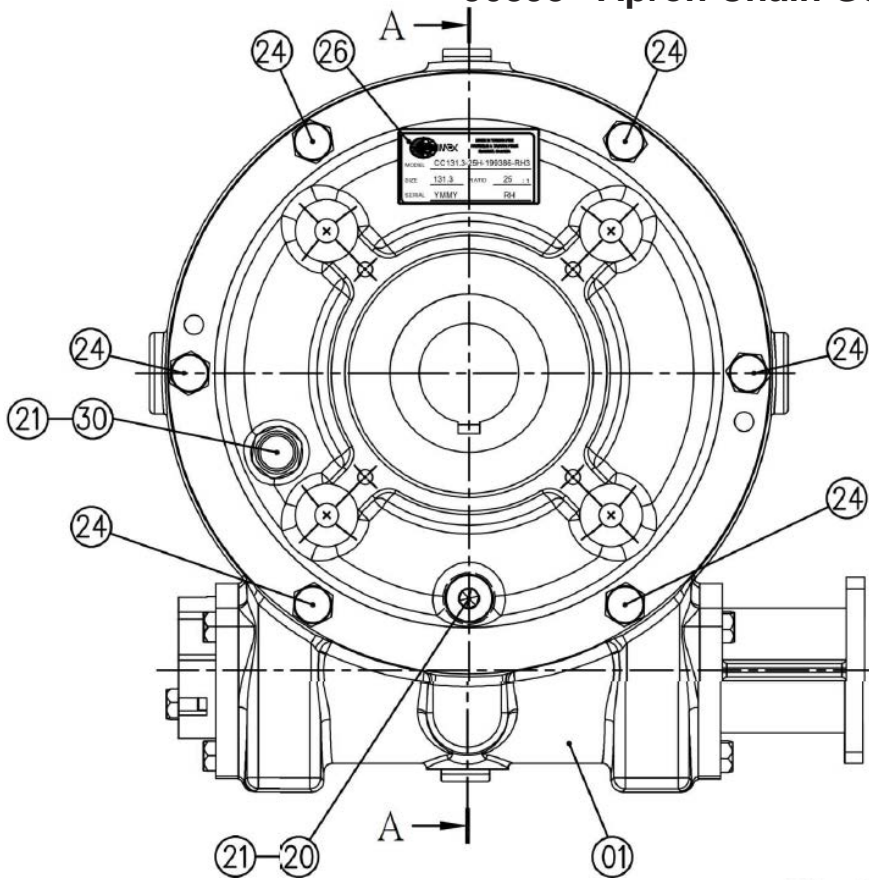
## 51784 - Rear PTO - SN 25NLS109 to Current



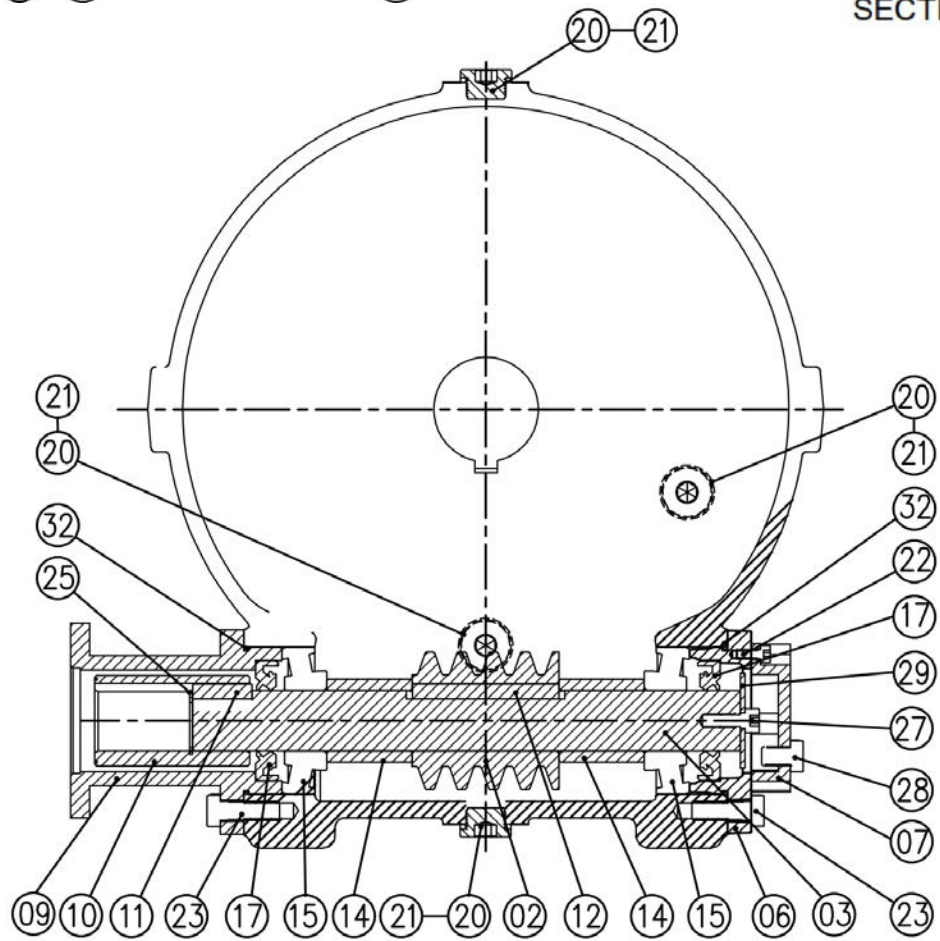
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	51784-01	Yoke PTO-60 1:3/8Z6SC
2	1	51784-02	Cross PTOS-60-Cross 30.16x92
3	2	51784-03	Internal Yoke PTOS-60 Male Star
4	1	51784-04	Tube PTOS 60 Male Star 51784
5	1	51784-05	Tube PTOS 60 Female Star 51784
6	1	51784-06	Internal Yoke PTOS-60 Female Star
8	1	51784-08	Yoke PTOS 60 1:3/8Z6 (R38)P

# Section 4 - Gearboxes

## 50898 - Apron Chain Gearbox



SECTION A-A

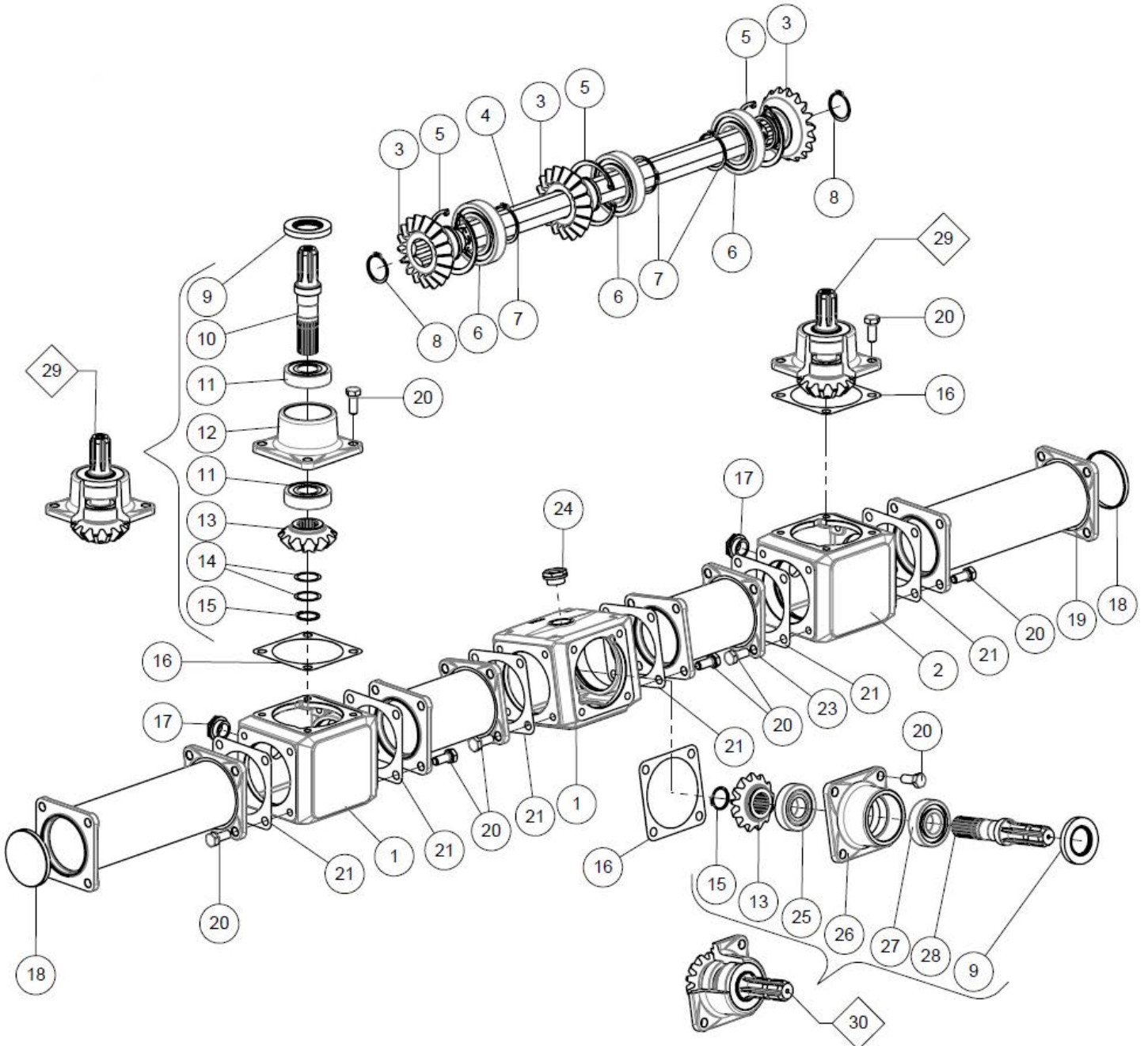


SECTION B-B

## 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	Aluminum Output Cover
5	1	50898-05	Hollow Worm Wheel
6	1	50898-06	Aluminum Input Cover
7	1	50898-07	Cast Input Cover
8	1	50898-08	Cast Output Cover
9	1	50898-09	4 Bolt Flange
10	1	50898-10	Sleeve Coupling
11	1	50898-11	1/4 x 1/4 x 25mm Key
12	1	50898-12	1/4 x 1/4 x 61.9mm Key
13	1	50898-13	20 x 12 x 34mm Key
14	2	50898-14	Spacer
15	2	50898-15	Input Bearing
16	2	50898-16	Output Bearing
17	2	50898-17	1" x 2" x 3/8" Oil Seal
18	1	50898-18	70mm x 95mm x 10mm Oil Seal
19	1	50898-19	70mm x 110mm x 10mm Oil Seal
20	5	50898-20	3/8-19 BSPP Plug
21	6	50898-21	14.96x23.8x2t Washer
22	3	50898-22	M4x10L Screw Bolt
23	6	50898-23	M8x25L Screw Bolt
24	6	50898-24	M10x25L Screw Bolt
25	1	50898-25	R25 Snap Ring
26	1	50898-26	Name Plate
27	1	50898-27	M6x14L Screw Bolt
28	1	50898-28	M8xP1x16" Screw Bolt
29	1	50898-29	Sensor
30	1	50898-30	3/8-19 BSPP Sight Glass
31	1	50898-31	Snap Ring R110
32	2	50898-32	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 <sup>b</sup>	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 <sup>b</sup>				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	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

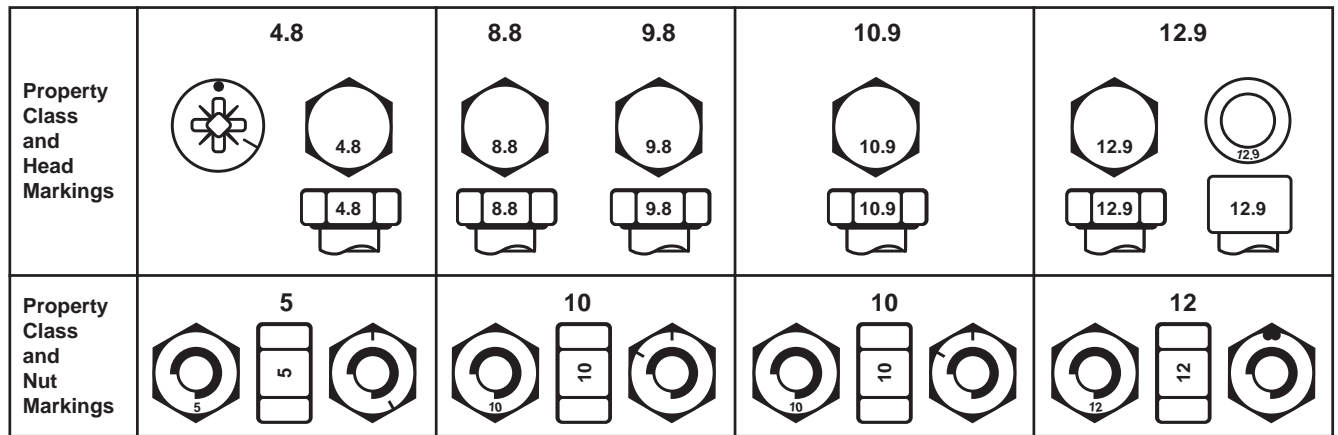
them from failing when tightening.

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.

<sup>a</sup> "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.

<sup>b</sup> 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 <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>		Lubricated <sup>a</sup>		Dry <sup>a</sup>	
	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.

# Index

43622 - Mechanical Light Kit . . . . .	.2-2
50898 - Apron Chain Gearbox . . . . .	.4-1
50899 - Beater Gearbox . . . . .	.4-3
51365 - Front PTO - Up to SN 25NLS103 . . . . .	.3-1
51366 - Rear PTO - Up to SN 25NLS103 . . . . .	.3-1
51783 - Front PTO - SN 25NLS109 to Current . . . . .	.3-2
51784 - Rear PTO - SN 25NLS109 to Current . . . . .	.3-2
Apron Runners . . . . .	1-16
Beaters . . . . .	1-12
Cabled Endgate Indicator Option . . . . .	.2-6
DE42860 - Nitro Safety Decal Kit . . . . .	. VI
DE51369 - Model Decal Kit. . . . .	. V
Driveline . . . . .	.1-6
Electric Flow Control - 31797 . . . . .	2-12
Electric Flow Control Wiring . . . . .	.2-9
Endgate. . . . .	1-10
Flange Paddle Kit - 51406 . . . . .	.2-8
Floor & Side Boards . . . . .	.1-5
Front Apron Drive. . . . .	.1-4
Front Shields . . . . .	.1-2
Hydraulics - Apron Drive Circuits . . . . .	1-20
Hydraulics - Endgate Cylinders . . . . .	1-18
ISO Safety Decals . . . . .	. VII
Light Kit Wiring Harness . . . . .	.2-4
Manual Flow Control - 31578 . . . . .	2-10
Manuals . . . . .	. II
Nitro Apron Chain Warranty . . . . .	. II
Parts Manual . . . . .	. II
Rear Apron Drive . . . . .	.1-8
Safety Decals . . . . .	. V
Section 1 - Parts Breakdowns & Lists . . . . .	.1-1
Section 2 - Options . . . . .	.2-1
Section 3 - PTOs . . . . .	.3-1
Section 4 - Gearboxes . . . . .	.4-1
Serial Number. . . . .	. II
Single Axle . . . . .	1-14
Tongue . . . . .	1-22
Torque Value Chart - Imperial . . . . .	.VIII
Torque Value Chart - Metric . . . . .	. IX
Warranty and Limitation of Liability . . . . .	. II



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