



**TRENCHLESS EQUIPMENT SPECIALISTS**

# **PARTS MANUAL**

## **Tunnel Boring Machine**

**Wheel Machines**

**960B**

**BH S/N: 29600**

**Publication No. 050028A**

Rev No. 060531

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**SERVICE • RELIABILITY • INNOVATION**



# Introduction

This parts manual contains assembly illustrations of the Akkerman Tunnel Boring Machine (TBM). The illustrations in this manual are intended to show typical construction of various parts. In some instances, the details of parts illustrated may not exactly represent their actual appearance, but will help to identify parts performing the same functions. Additional copies of this manual may be purchased from the Akkerman Product Support Department, or downloaded from the Akkerman web site at [www.akkerman.com](http://www.akkerman.com).

The TBM consists of the boring head, cutter head attachment (dirt head, sand head, quad carbide head, or closed face), conveyor, and target laser stand. Tunnel Boring Machines are articulated and can be steered hydraulically in any direction. The TBMs have powerful hydraulic motors which rotate an inner drum. The cutter head or closed face attachment is connected to the drum. As it turns, the teeth excavate the face and the spoil falls into the drum. Scoops in the drum elevate the spoil onto a conveyor that transfers it to the haul unit for removal. Manual or hydraulically operated torque wings prevent rolling of the machine. With the proper use of a laser, the strictest line and grade requirements can be maintained throughout the pipeline installation.

## LOCATING PARTS

This parts manual is organized into 13 sections to help you locate parts information quickly. The first page of each section lists the assemblies within the section.

An Alphabetical Index, Section 12, is provided to help you find the page number of a specific assembly. If a part number is known, the Numerical Index, Section 13, can also be utilized to find the page number of an assembly.

## USE GENUINE AKKERMAN PARTS

The use of parts other than genuine Akkerman parts could affect the efficient performance of the Tunnel Boring Machine. ALWAYS use genuine Akkerman parts.

## PARTS ORDERING

To order fast, accurate, and reliable parts service, call (800) 533-0386, (507) 567-2261, or fax (507) 567-2605, and provide the following information.

1. Model Number
2. Serial Number
3. Part Number, Description, and Quantity
4. Shipping Preference

## MEASUREMENTS

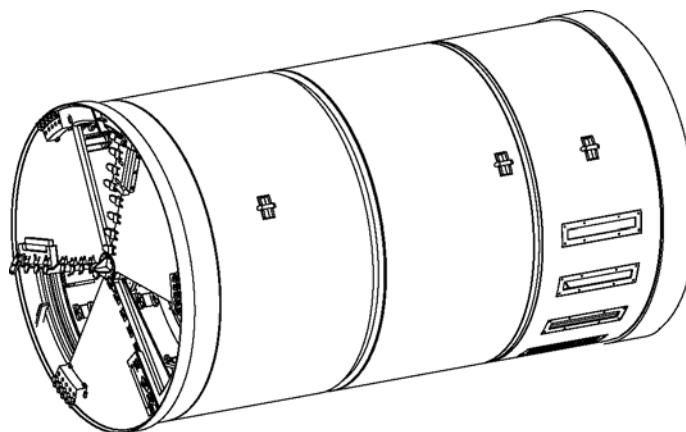
The unit of measure in this manual is in inches unless indicated otherwise.

## HARDWARE SPECIFICATION

All Akkerman products are assembled with SAE Grade 8 bolts, nuts, and washers. ALWAYS use matched fastener hardware when replacing or repairing the unit.

If you find any errors in this manual or have suggestions for improvement, please let us know. Email your comments via the Akkerman web site (Contact Us web page), or mail your suggestions to: Akkerman Inc., ATTN: Technical Publications, 58256 266th Street, Brownsdale, MN.

Akkerman Inc. reserves the right to improve its product without notice or obligation.



**960 Tunnel Boring Machine**

## **NOTES**



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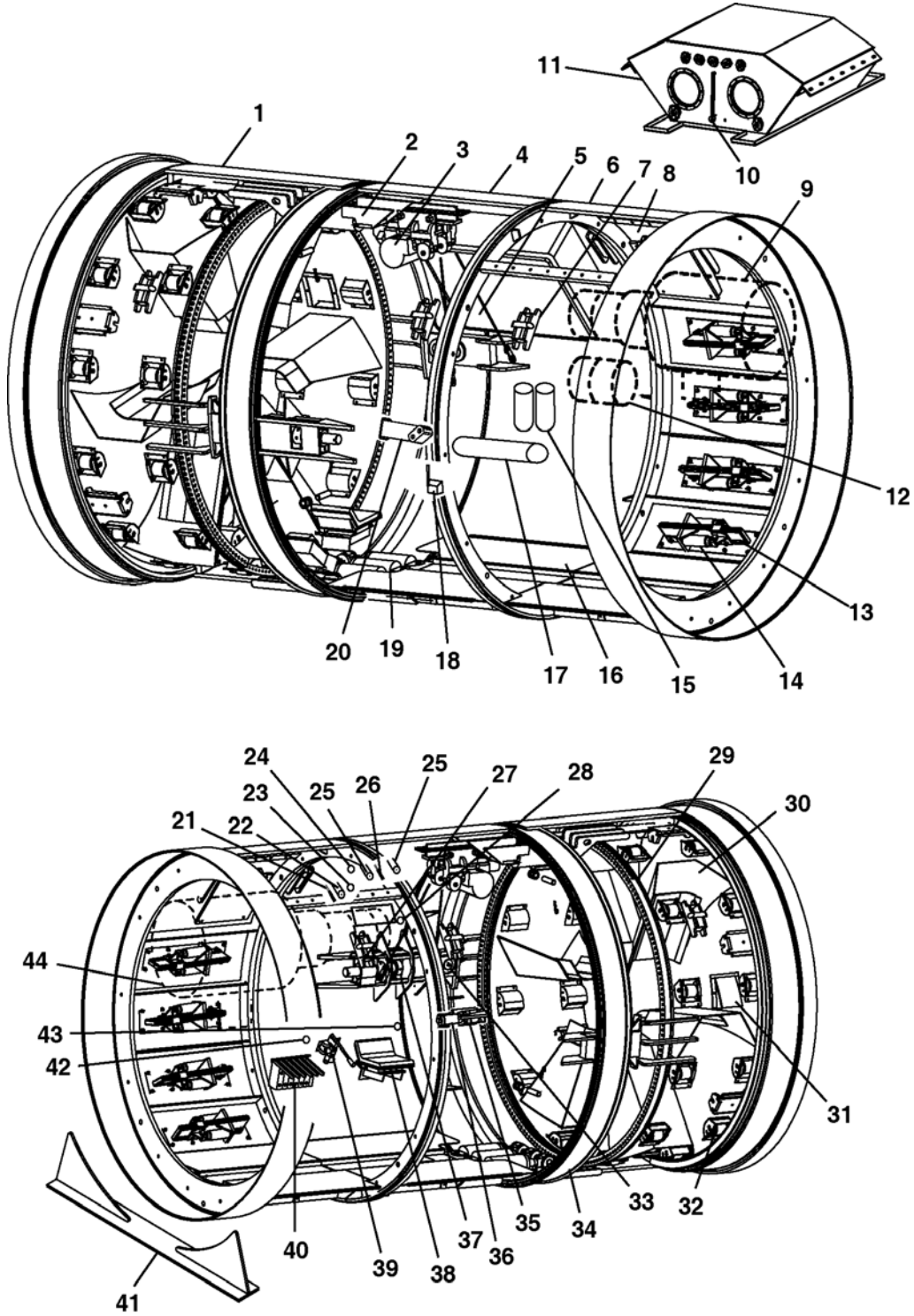
**NOTES**



# General Information

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# TUNNEL BORING MACHINE



## Tunnel Boring Machine Terminology (continued)

1. Front Drum & Drive Assembly
2. Steering Cylinder (Top)
3. Conveyor Lift
4. Mid Drum Assembly
5. Pilot Reset Switch
6. Dirt Wing Drum Assembly
7. Lift Pocket
8. Gas Detection System
9. Power Stack B \*\*
10. Oil Level & Temp. Gauge
11. Hydraulic Reservoir
12. Pump Stack C \*\*\*
13. Dirt Wing Assembly
14. Dirt Wing Cylinder
15. Pressure Filters
16. Floor Assembly
17. Heat Exchanger
18. Conveyor Safety Valve
19. Steering Cylinder (Bottom)
20. Drive Motor
21. Conveyor Drive Control
22. Conveyor Speed Control
23. Conveyor Pressure
24. Inner Drum Pressure
25. Inner Drum Speed Control (2)
26. Inner Drum Control
27. Pump Control Box
28. Steering Pressure Top
29. Gear Ring
30. Dirt Paddle
31. Dirt Scoop
32. Drum Roller
33. Steering Link
34. Steering Joint
35. Advance Assembly
36. Advance Cylinder
37. Steering Adjustment (Side to Side)
38. Operator Seat
39. Grade/Alignment Control
40. TBM Control Valve
41. Shipping Cradle
42. Auxiliary Pressure
43. Steering Pressure Bottom
44. Pump Stack A \*

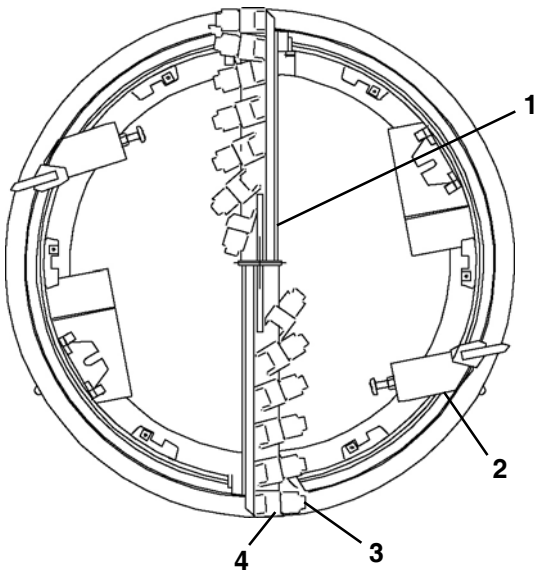
\* Pump Stack A - Main Drive and Auxiliary Functions

\*\* Pump Stack B - Main Drive and Conveyor Functions

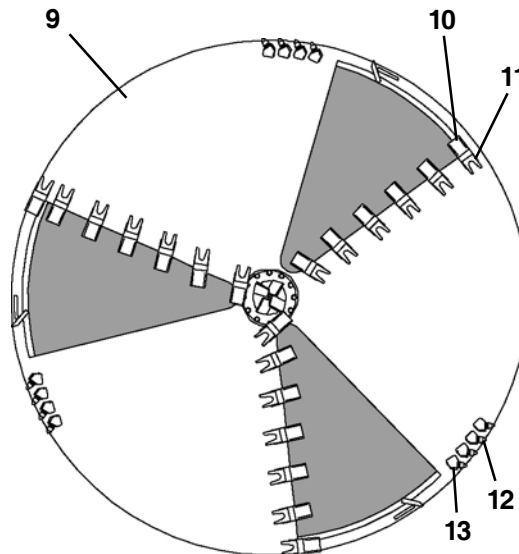
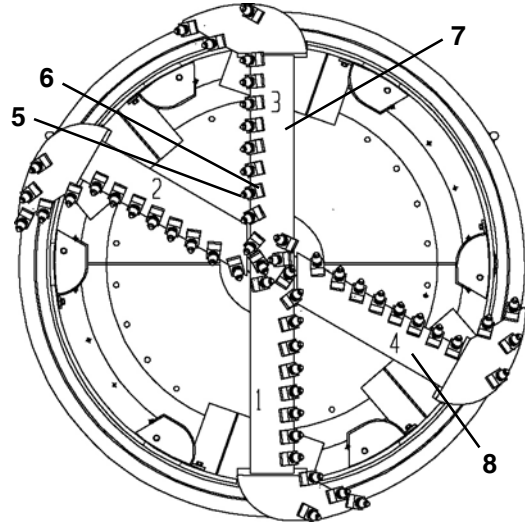
\*\*\* Pump Stack C - Cooling and Filtration

# CUTTER HEAD ATTACHMENTS

**Dirt Head**



**Quad Carbide Bar Head**



**Closed Face**

**Dirt Cutter**

- 1. Cutter Bar
- 2. Adjustable Cutter
- 3. Tooth Cutter
- 4. Tooth Pocket

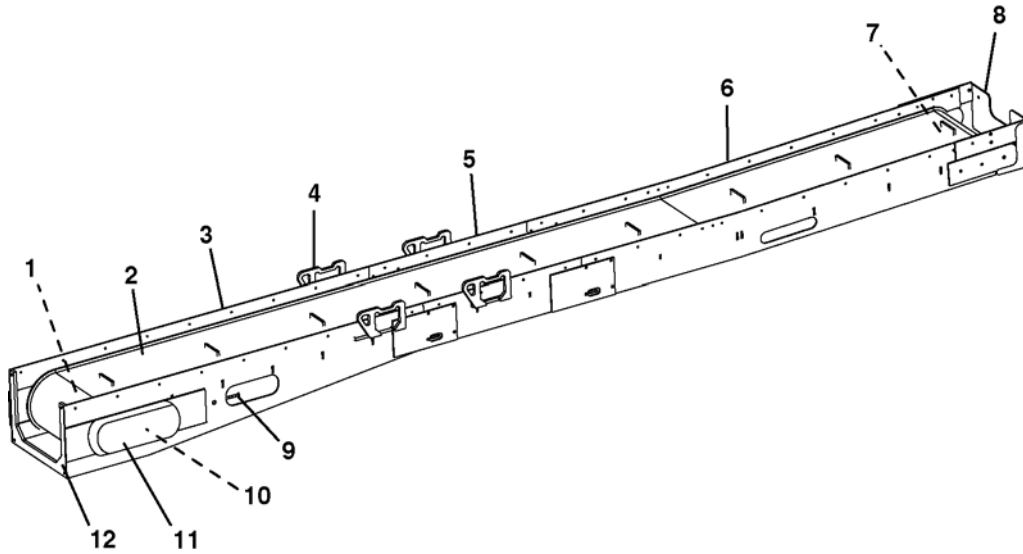
**Quad Carbide Bar Head**

- 5. Carbide Tooth
- 6. Tooth Holder
- 7. Cutter Bar Weldment
- 8. Quad Bar Weldment

**Closed Face**

- 9. Closed Face
- 10. Cutter Tooth
- 11. Tooth Pocket
- 12. Cutter Bit
- 13. Bit Holder

## CONVEYOR - BELT

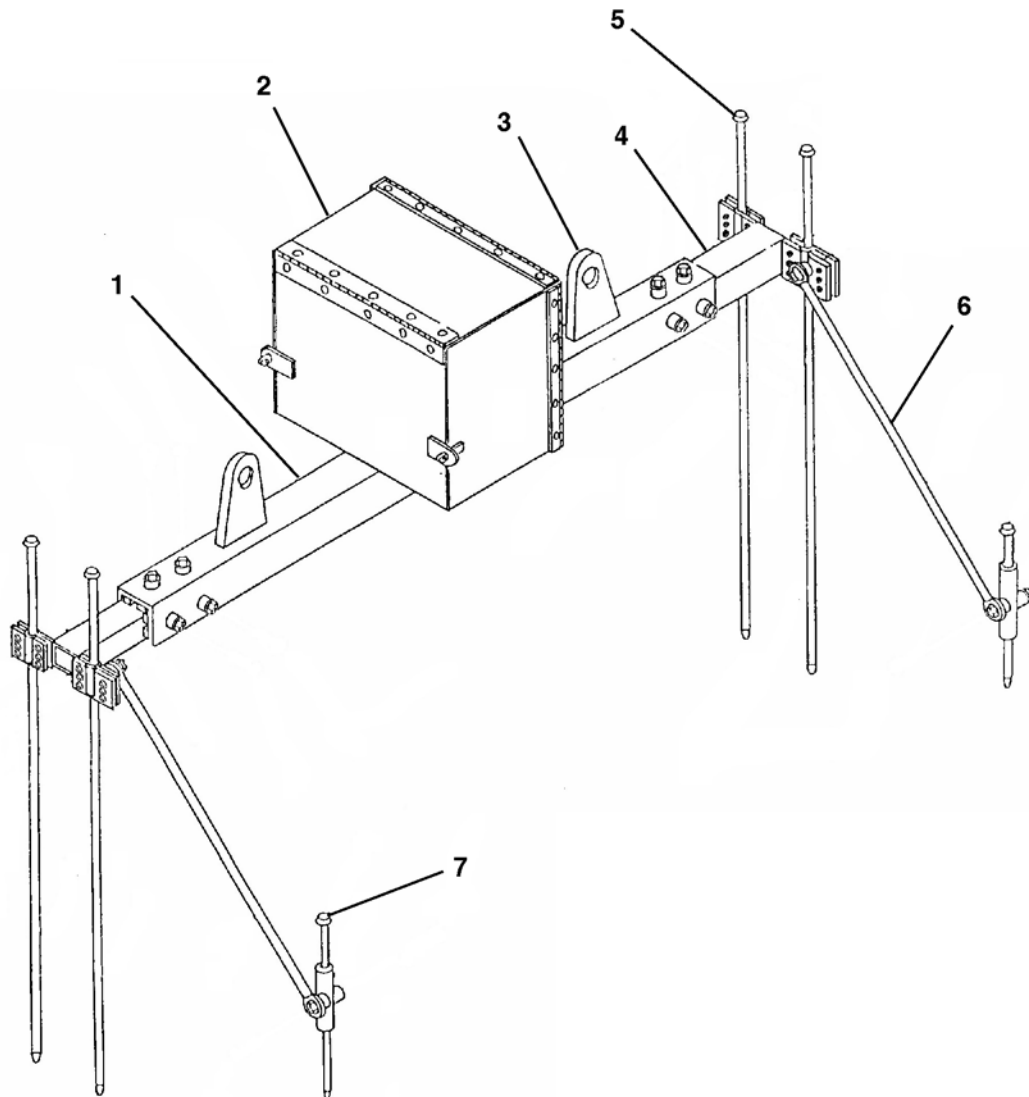


1. Drive Motor Frame Assembly  
2. Belting  
3. Drive Frame Assembly  
4. Lift Bracket

5. Extension Frame Assembly  
6. Feed Frame Assembly  
7. Front Roller Assembly  
8. Dirt Guard

9. Belt Tensioning Screw  
10. Drive Motor & Roller Assembly  
11. Conveyor Chain Cover  
12. Drive Frame Free End Support  
13. Safety Chain (not shown)

# LASER LIGHT STAND



- 1. Adjustable Frame
- 2. Laser Box Assembly
- 3. Lift Bracket
- 4. Sliding Tube

- 5. Long Stake
- 6. Support Tube
- 7. Short Stake

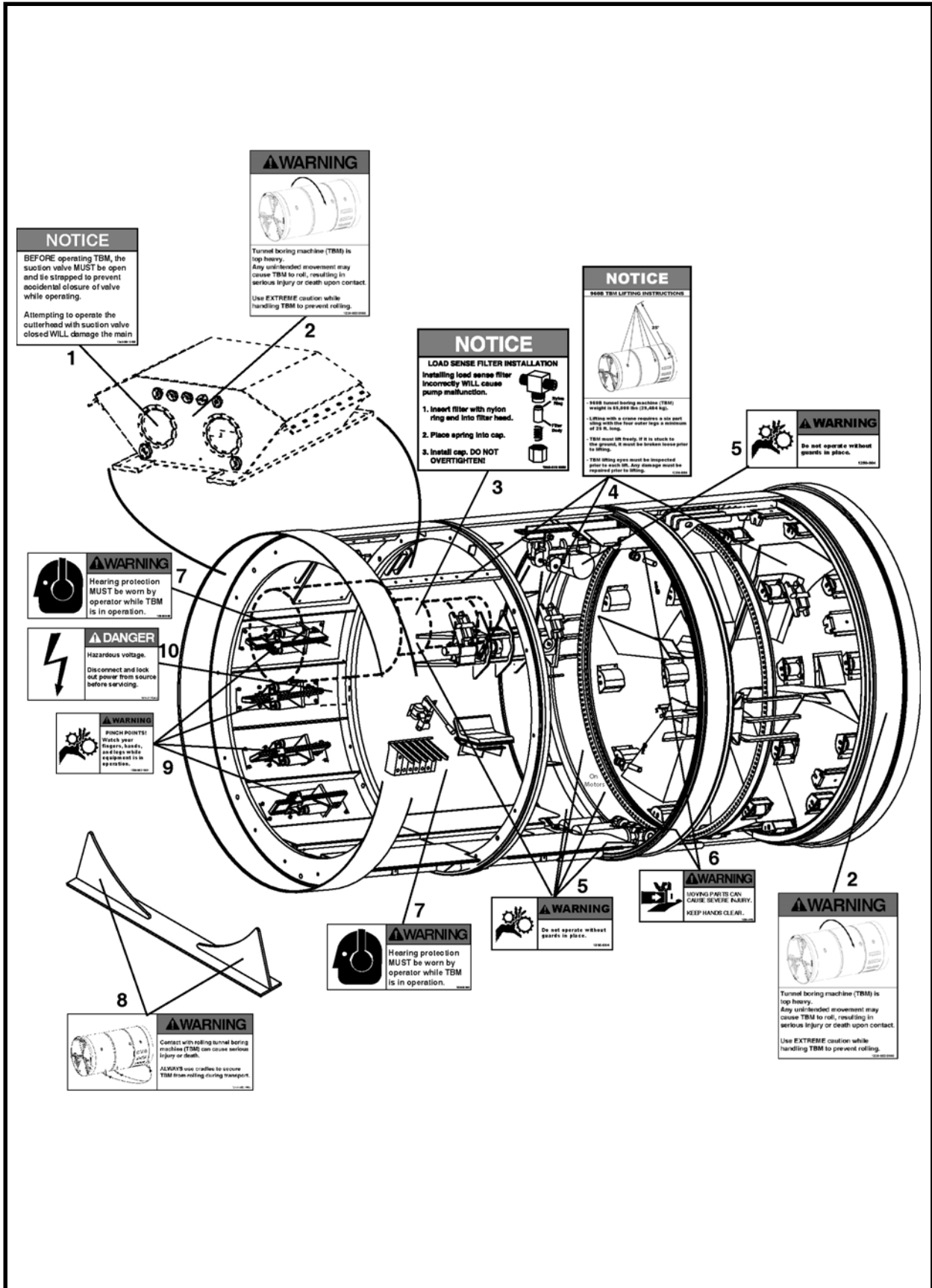


## Decals

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Conveyor	
2418 Belt .....	5
Laser Light Laser Stand .....	6
Head Box .....	7

# TUNNEL BORING MACHINE SAFETY DECALS

## LEFT SIDE

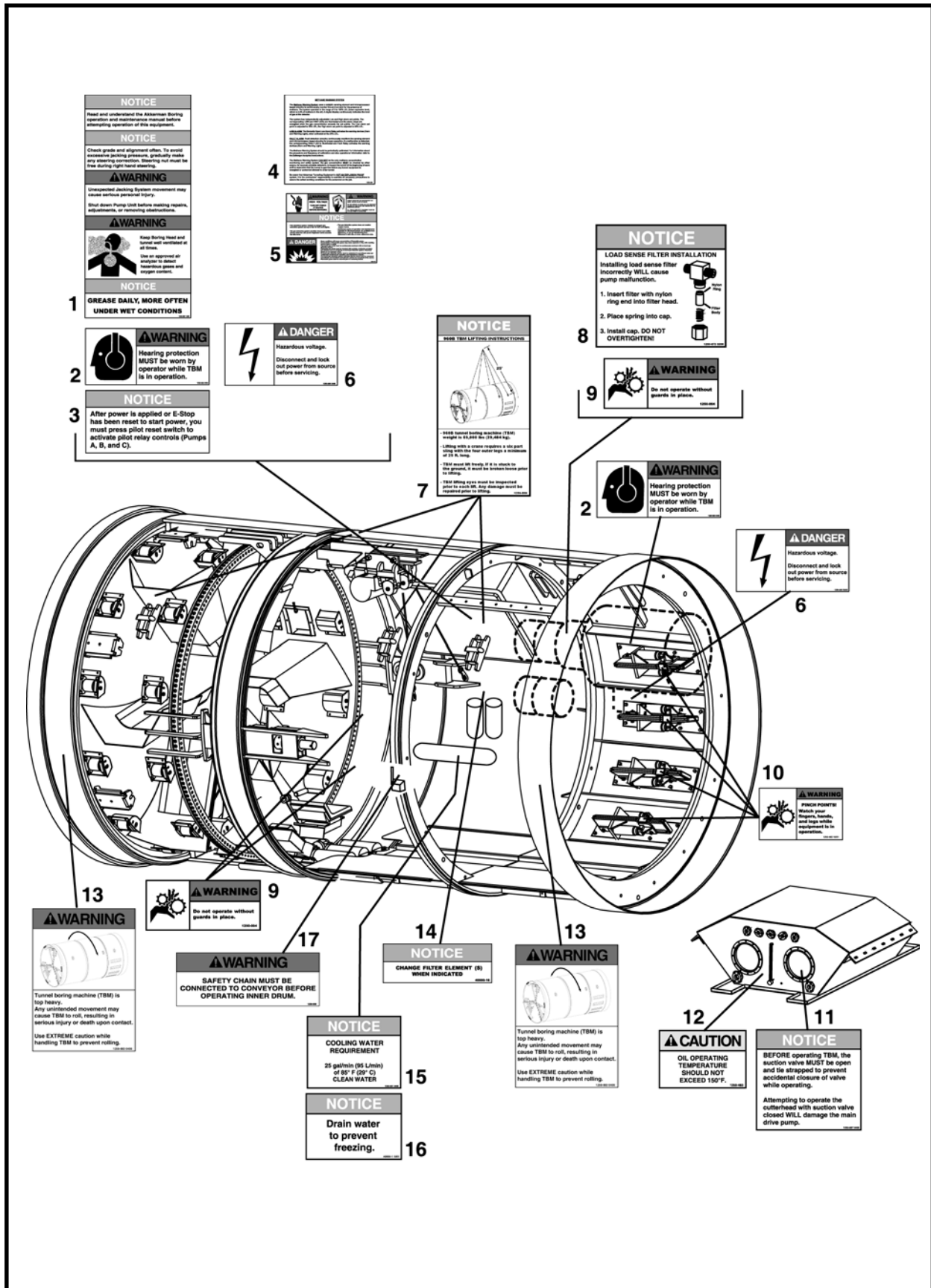


**TUNNEL BORING MACHINE SAFETY DECALS**  
**LEFT SIDE**

ITEM	QTY	PART NO.	DESCRIPTION
1	4	1250-887	DECAL, Warning, Suction Valve
2	5	1250-883	DECAL, Warning, TBM Top Heavy
3	1	1250-872	DECAL, Notice, Load Sense Filter
4	3	1250-880	DECAL, Notice, Lifting Instructions
5	7	1250-004	DECAL, Warning, Guards Must Be In Place
6	2	1250-480	DECAL, Warning, Pinch Points
7	2	1250-888	DECAL, Warning, Hearing Protection
8	6	1250-882	DECAL, TBM Cradles
9	1 per Dirt Wing	1250-562	DECAL, Warning, Pinch Points
10	1	1250-385	DECAL, Warning, Hazardous Voltage

# TUNNEL BORING MACHINE SAFETY DECALS

## RIGHT SIDE

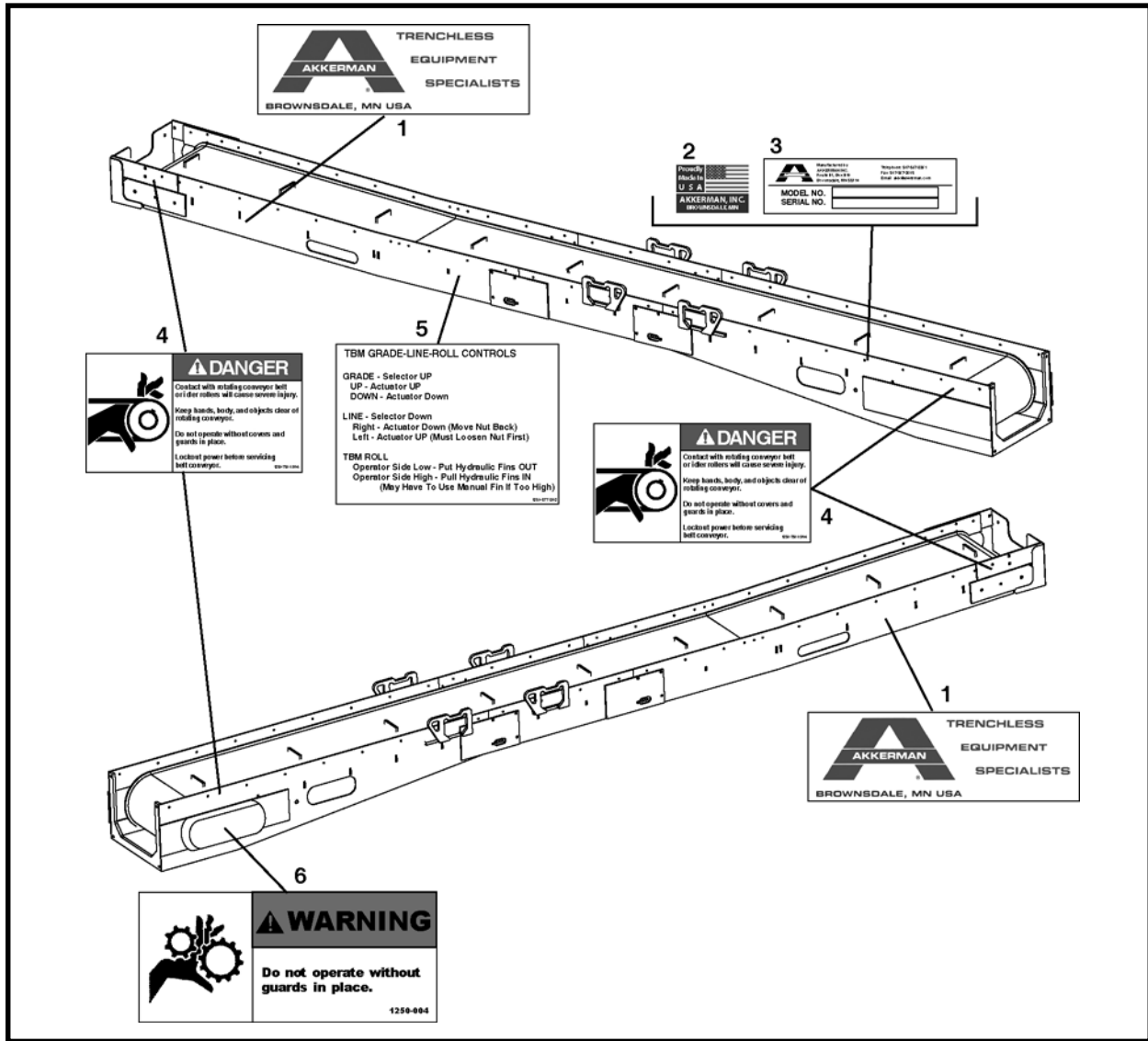


**TUNNEL BORING MACHINE SAFETY DECALS  
RIGHT SIDE**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	1250-859	DECAL, TBM Safety Decals
2	2	1250-888	DECAL, Warning, Hearing Protection
3	1	1250-886	DECAL, Notice, Pilot Reset Switch
4	1	1250-581	DECAL, Methane Warning System
5	1	1250-476	DECAL, Danger Warning Notice, Gas Detection
6	2	1250-385	DECAL, Warning, Hazardous Voltage
7	3	1250-880	DECAL, Notice, Lifting Instructions
8	1	1250-872	DECAL, Notice, Load Sense Filter
9	3	1250-004	DECAL, Warning, Guards Must Be In Place
10	1 per Dirt Wing	1250-562	DECAL, Warning, Pinch Points
11	2	1250-887	DECAL, Warning, Suction Valve
12	1	1250-483	DECAL, Caution, Oil Temperature
13	2	1250-883	DECAL, Warning, TBM Top Heavy
14	1	40000-16	DECAL, Notice, Filter Element
15	1	1250-891	DECAL, Notice Cooling Water Requirement
16	1	A3000-1	DECAL, Notice, Drain Water To Prevent Freezing
17	1	1250-006	DECAL, Warning, Safety Chain Connection

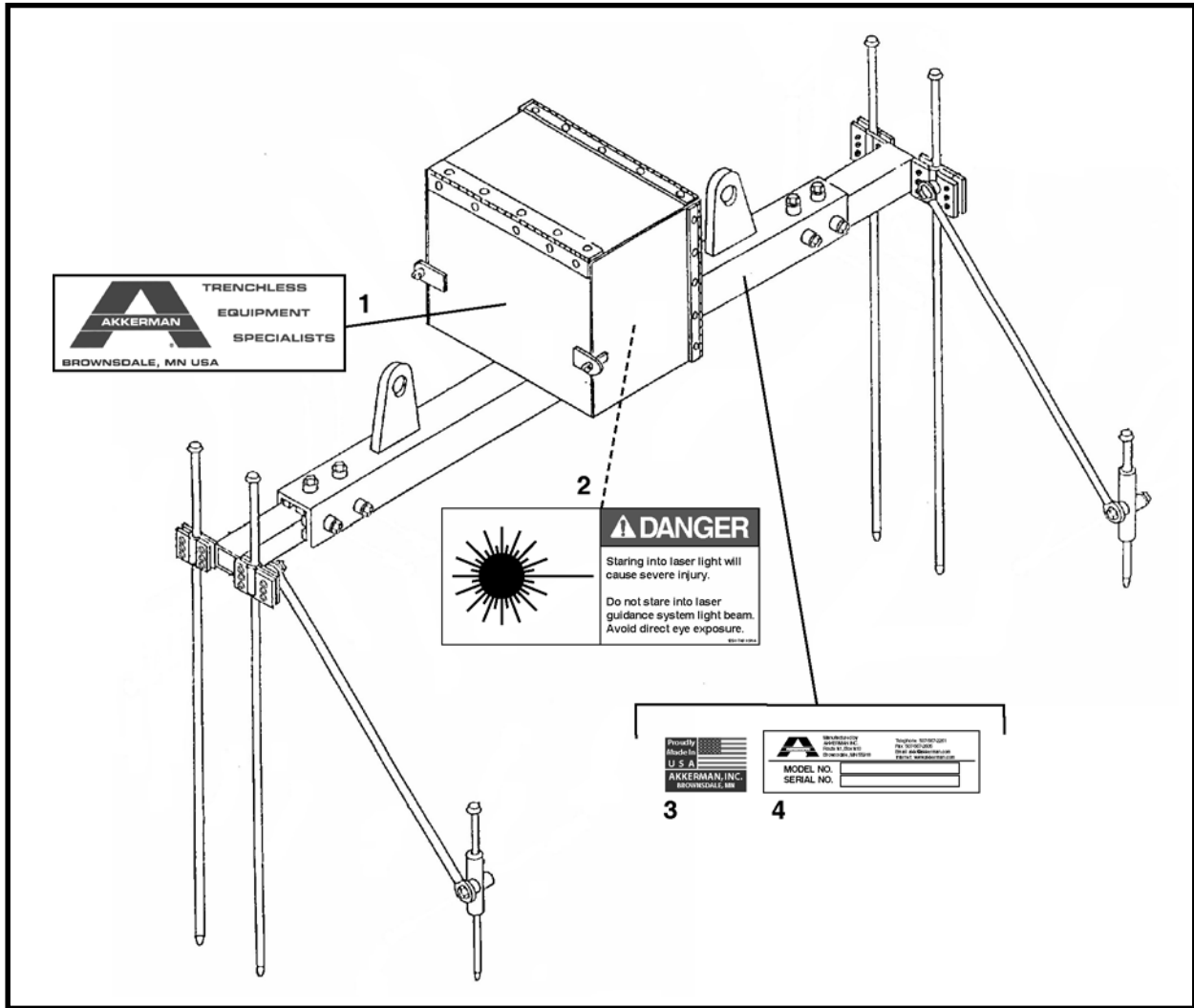
# BELT CONVEYOR DECALS

2418



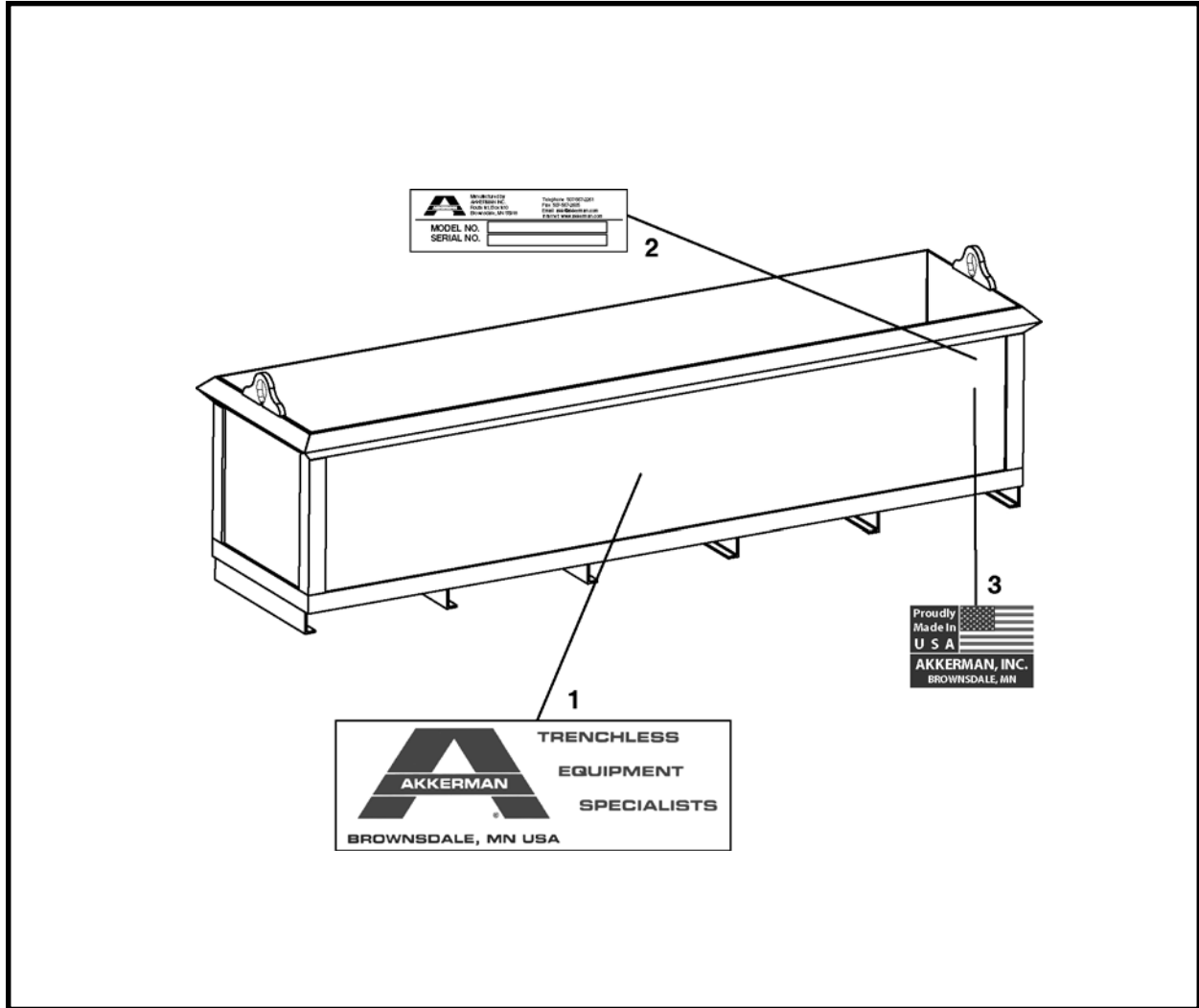
ITEM	QTY	PART NO.	DESCRIPTION
1	2	1250-547	DECAL, Akkerman, Large
2	1	1250-544	DECAL, Made In USA
3	1	REF	PLATE, Serial Number
4	4	1250-750	DECAL, Danger Rotating Belt Conveyor
5	1	1250-577	DECAL, TBM Steering Controls
6	1	1250-004	DECAL, Warning, Guards Must Be In Place

# LASER LIGHT STAND DECALS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	1250-547	DECAL, Akkerman, Large
2	2	1250-749	DECAL, Danger, Laser Light
3	1	1250-544	DECAL, Made In USA
4	1	REF	PLATE, Serial Number

## HEAD BOX DECALS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	1250-547	DECAL, Akkerman, Large
2	1	REF	PLATE, Serial Number
3	1	1250-544	DECAL, Made In USA



# Structurals

## TBM Frame

Final Assembly, F29600F .....	1
Front Drum & Drive Assembly, 029640A .....	2
Inner Drum Assembly, 029635A .....	3
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Main Hydraulics Assembly, 029644A	
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Pump Support Spring Assembly, 029770A .....	28
Shipping Guard Assembly, 029778A .....	29
Shipping Cradle, 029751A .....	30

*TBM Attachments, Laser Light Stand, and Conveyors continued on next page.*

# Structurals (continued)

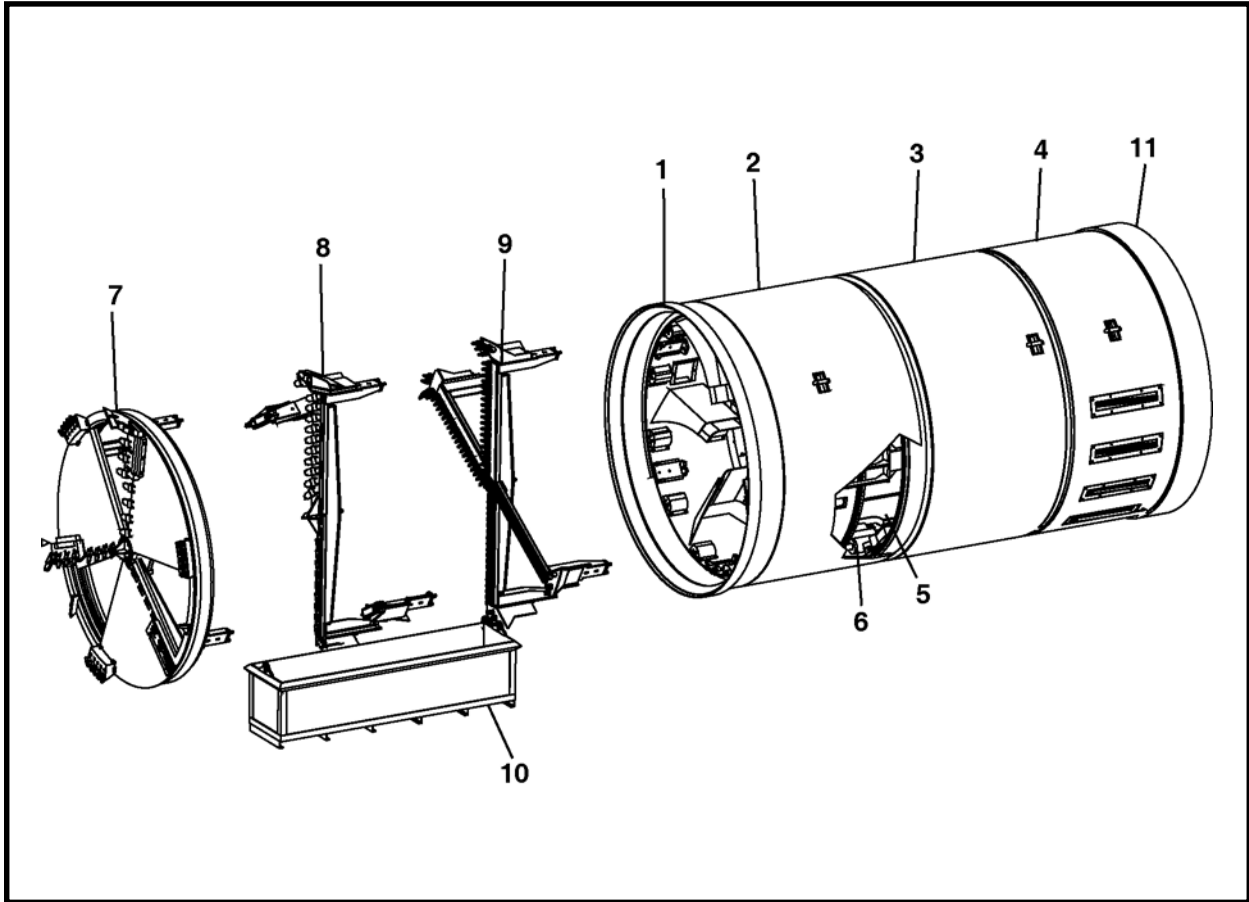
## TBM Attachments

- Dirt Head Assembly, 029700A ..... 31
  - Adjustable Cutter Assembly, 029714A ..... 32
  
- Quad Bar Assembly, 029711A ..... 33
  
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- Laser Light Stand, FLS5866F ..... 39**

- Conveyors ..... See Section 11 Miscellaneous/Conveyors**

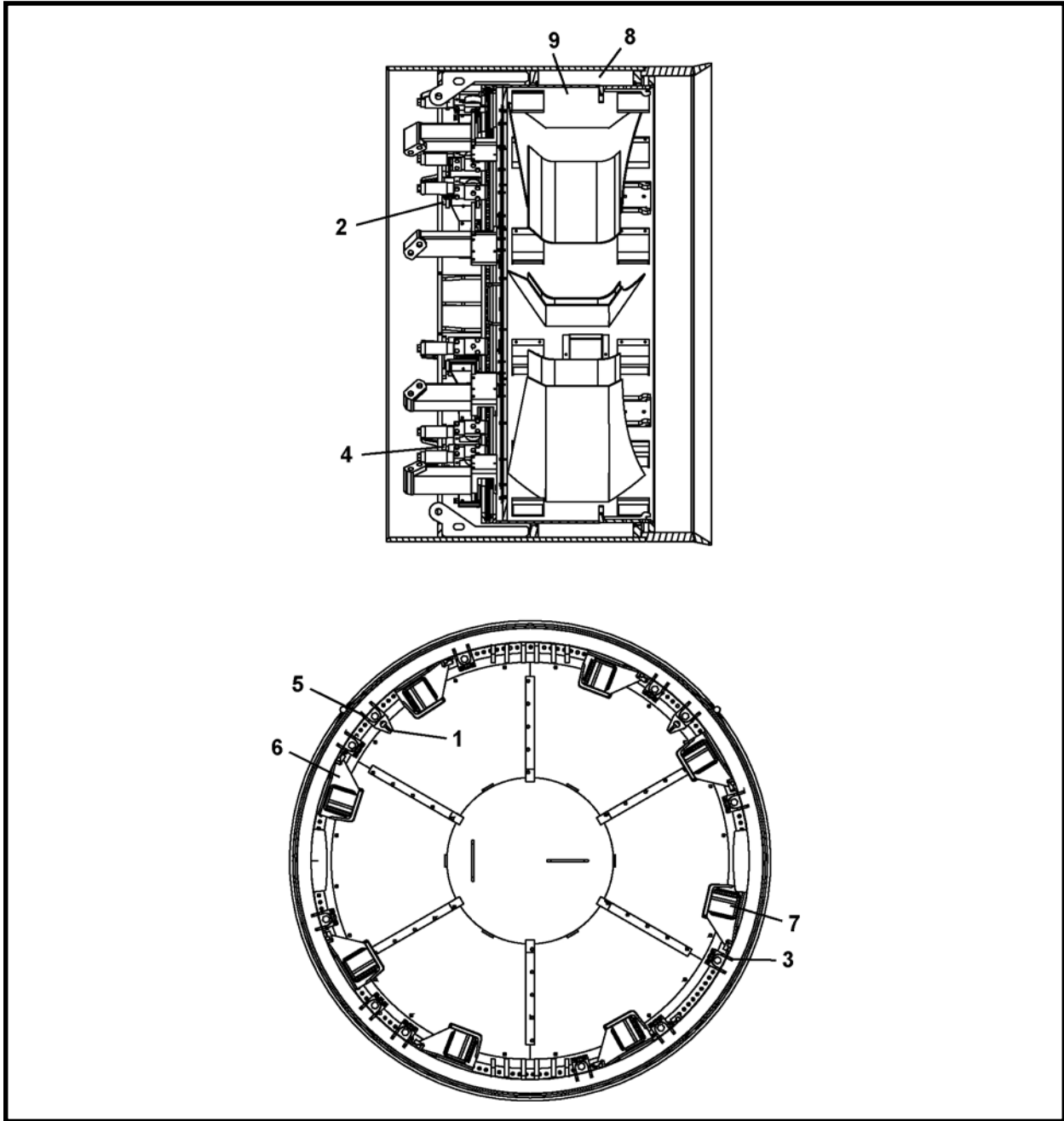
## FINAL ASSEMBLY, F29600F



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F29600F	FINAL ASSEMBLY
1	1	029637P	RING, Overcut
2	1	029640A	ASSEMBLY, Front Drum & Drive
3	1	029785A	ASSEMBLY, Mid Drum
4	1	029755A	ASSEMBLY, Dirt Wing Drum
5	1	029636A	ASSEMBLY, Floor
6	1	029650A	ASSEMBLY, Steering Cylinder & Link
7	1	F29629F	ASSEMBLY, Closed Face
8	1	029700A	ASSEMBLY, Dirt Head
9	1	029711A	ASSEMBLY, Quad Carbide Head
10	1	029765A	BOX, Boring Head
11	1	029641A	ADAPTER, Pipe
12*	1	029644A	ASSEMBLY, Main Hydraulics
13*	1	029730A	PANEL, Control - Main Electrical Box
14*	1	029633A	ASSEMBLY, Electrical System

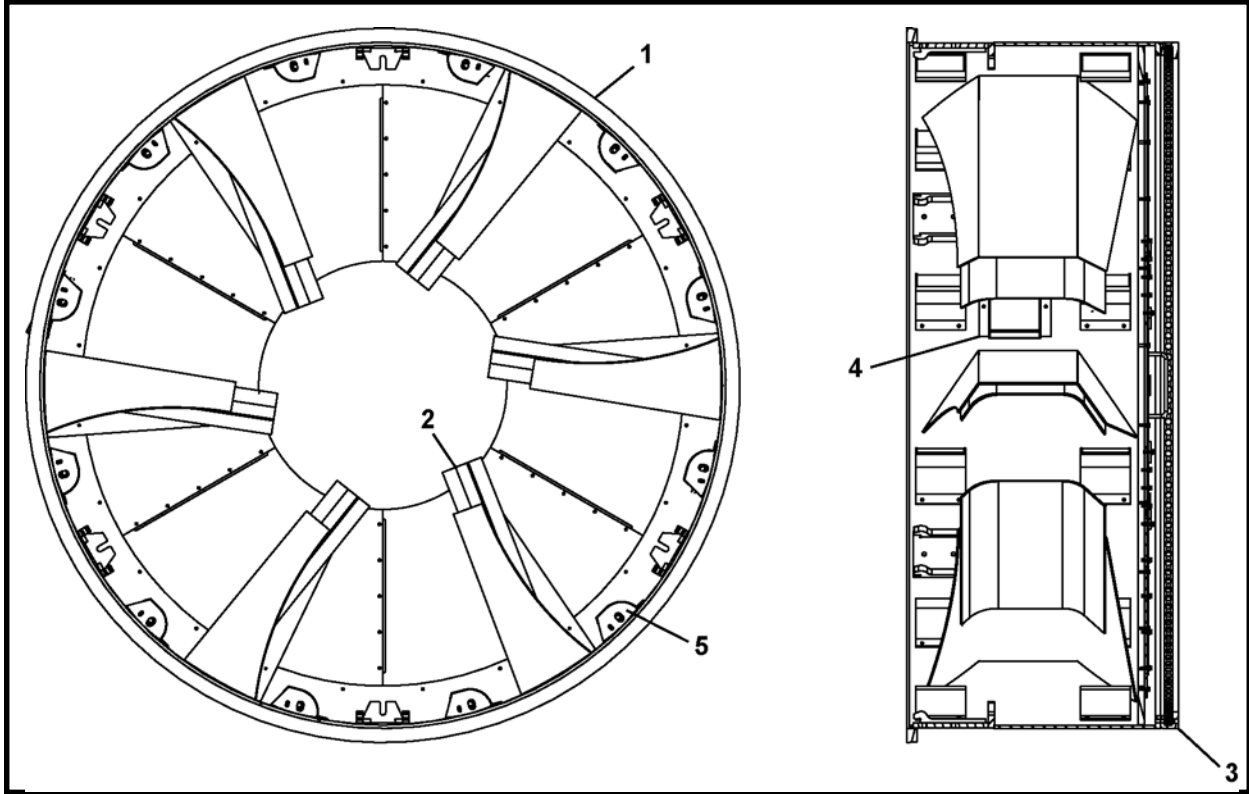
\* Not Shown

## FRONT DRUM & DRIVE ASSEMBLY, 029640A



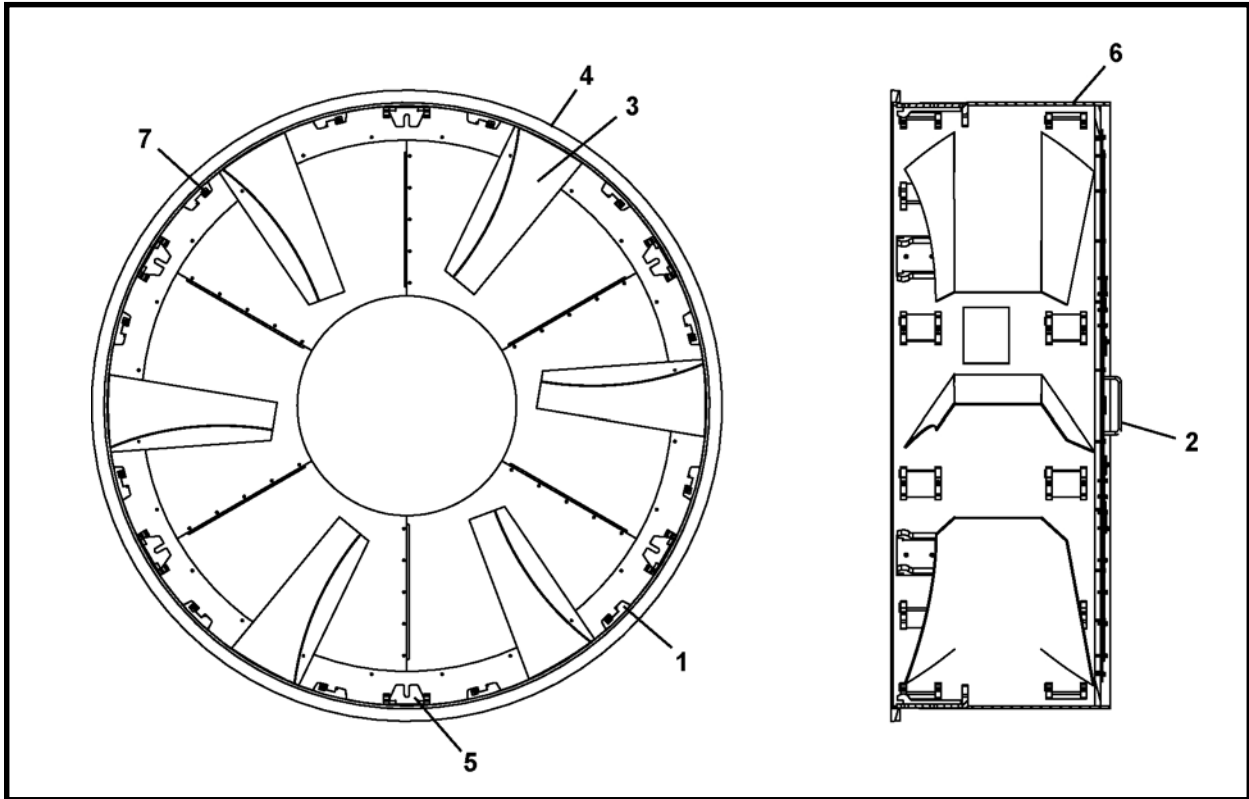
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029640A	FRONT DRUM & DRIVE ASSEMBLY
1	2	002225P	BRACKET, Conveyor Safety Retaining
2	18	025223P	MOUNT, Drum Advance w/Motor
3	9	026145A	DRUM ADVANCE, for Motor Assembly
4	6	025222P	MOUNT, Drum Advance Assembly
5	3	026140A	ASSEMBLY, Drum Advance
6	8	009588A00	BRACKET, Motor (Includes item 6a)
6a*	1	P0063-001	FITTING, Grease 1/4
7	8	013814A00	ASSEMBLY, Motor
8	1	029611A	WELDMENT, Front Drum
9	1	029635A	ASSEMBLY, Inner Drum

## INNER DRUM ASSEMBLY, 029635A



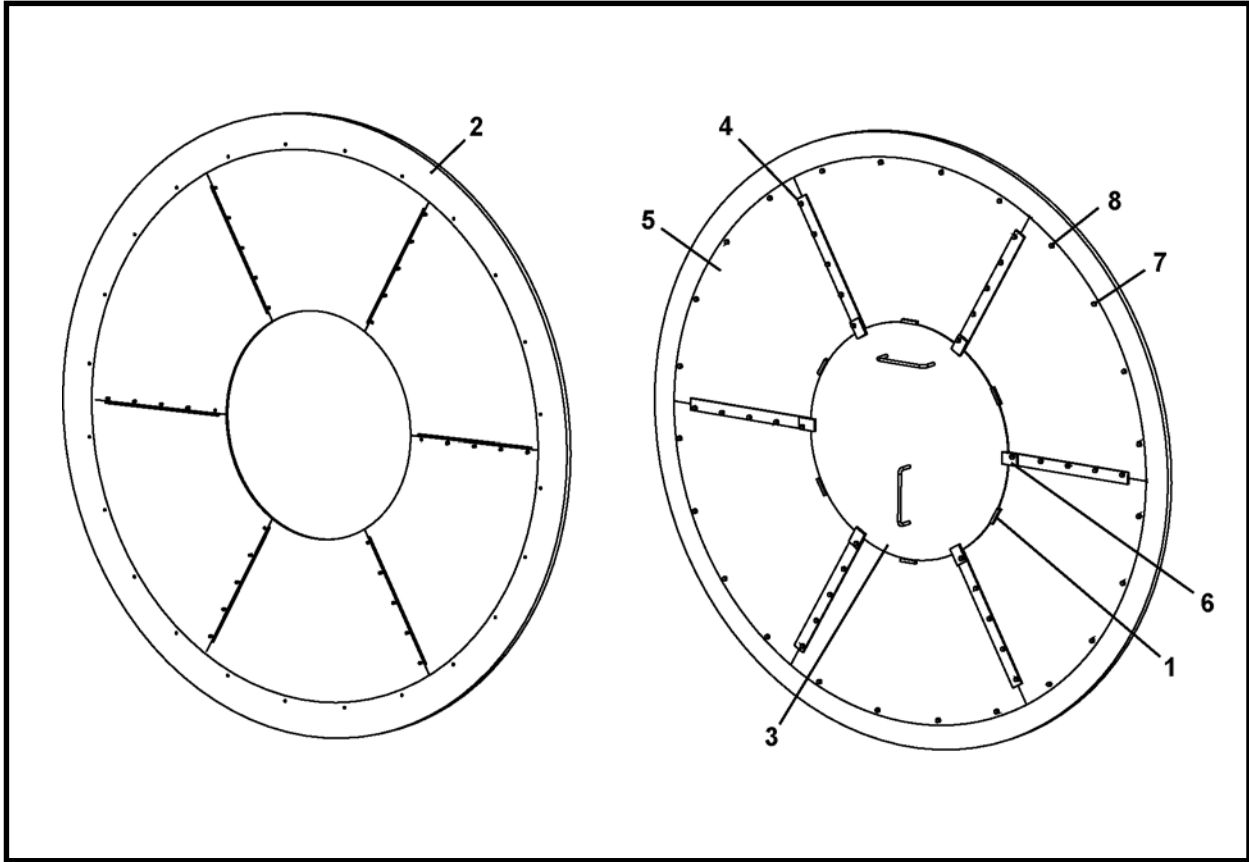
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029635A	ASSEMBLY, Inner Drum
1	1	029630A	WELDMENT, Inner Drum
2	6	029681A	ASSEMBLY, Dirt Paddle
3	1	029682A	ASSEMBLY, Gear Ring
4	1	006510A00	ASSEMBLY, Dirt Scoop
5	24	026435A	ASSEMBLY, Common Drum Roller

## INNER DRUM WELDMENT, 029630A



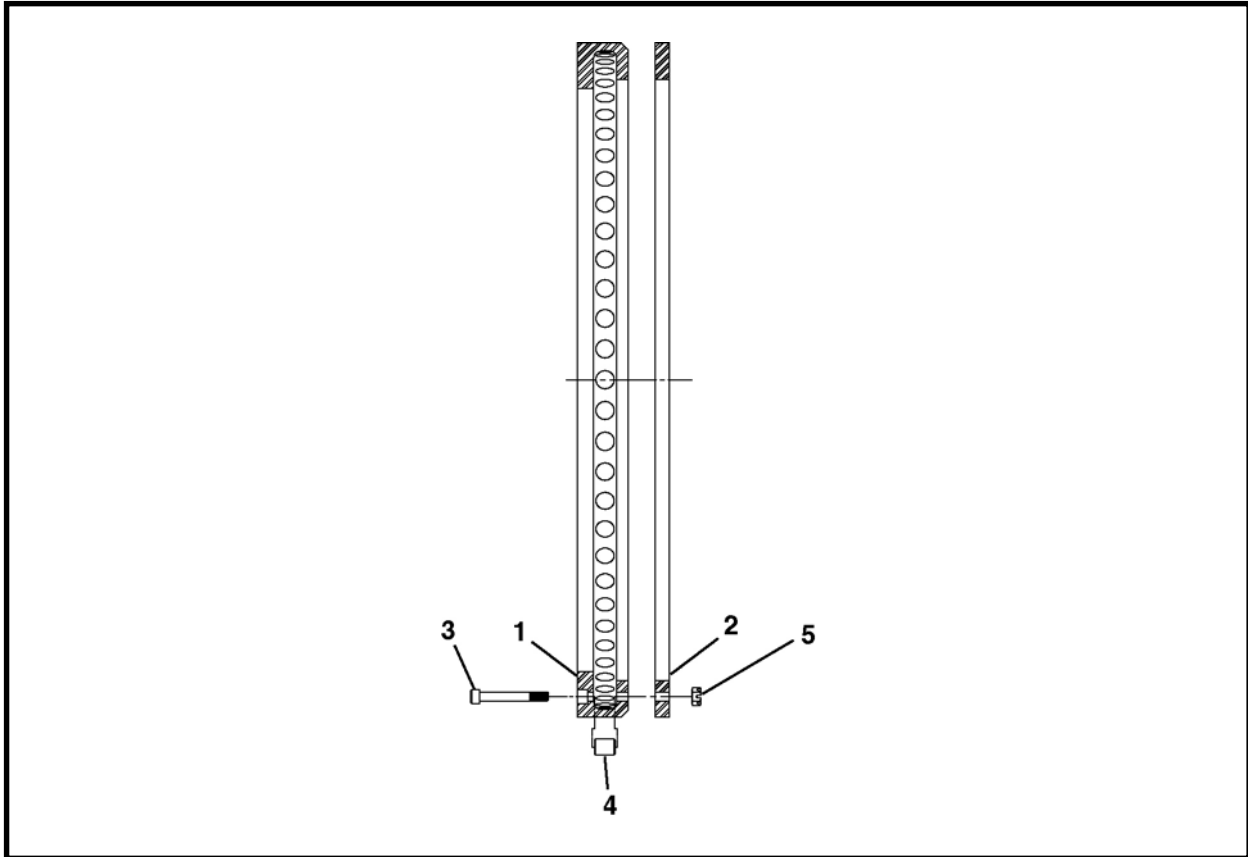
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029630A	WELDMENT, Inner Drum
1	48	011807P00	MOUNT, Drum Rollers
2	1	029673A	ASSEMBLY, Bulkhead Door
3	6	029676A	PLATE, Dirt Paddle
4	1	029607P	RING, Inner Drum
5	6	004666A00	WELDMENT, Cutter Mount
6	1	029608P	SKIN, Inner Drum
7	24	003924P00	SPACER MOUNT, Drum Roller

## BULKHEAD SEAL & DOOR ASSEMBLY, 029673A



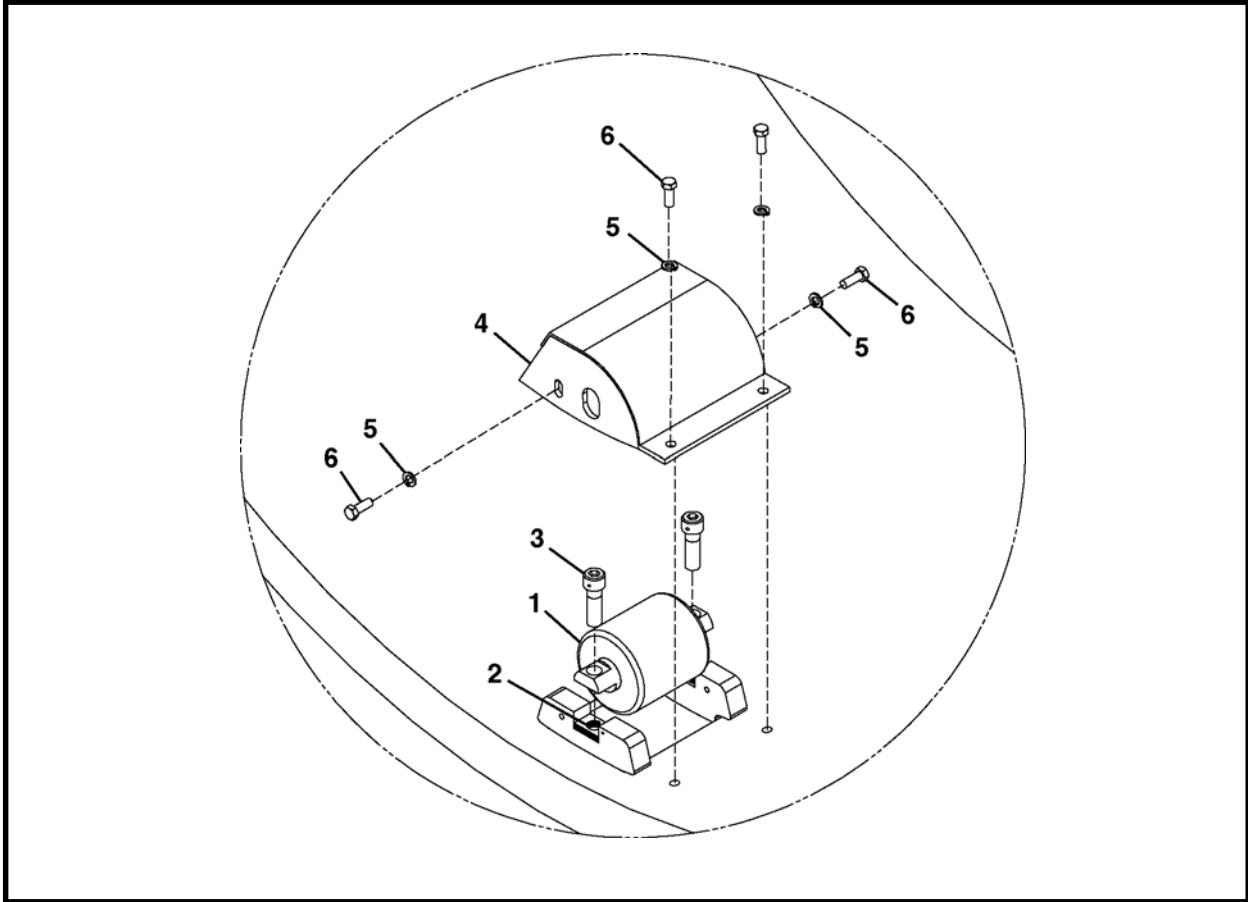
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029673A	ASSEMBLY, Bulkhead Seal Door
1	6	009987P00	BAR, Centering
2	1	029609P	RING, Rear, Inner Drum
3	1	009981A00	WELDMENT, Center Enclosure
4	6	029674P	BAR, Mounting
5	6	029675P	RING, Base
6	6	010716P00	BAR, Clamp
7	54	P0001-06-005	BOLT, 3/8-16 x 1-1/4
8	54	P0045-006	WASHER, Lock 3/8

## GEAR RING ASSEMBLY, 029682A



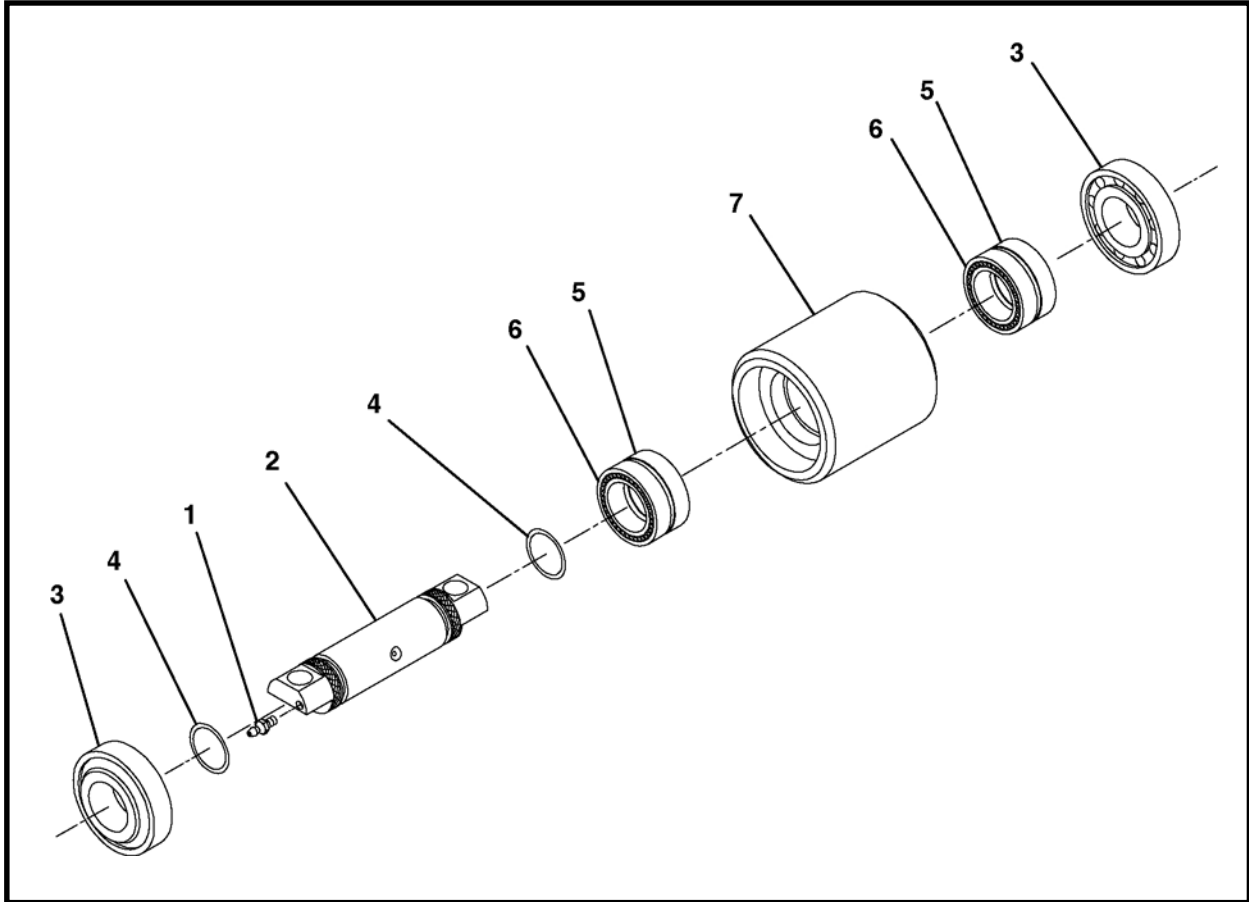
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029682A	ASSEMBLY, Gear Ring
1	1	029601P	RING, Gear
2	1	029610P	RING, Mounting
3	199	009183P01	SCREW, Socket Head Cap, 1/2-13 UNC x 4-1/2
4	199	001151P01	ROLLER
5	199	P0013-08-000	NUT, Lock 1/2

## COMMON DRUM ROLLER ASSEMBLY, 026435A



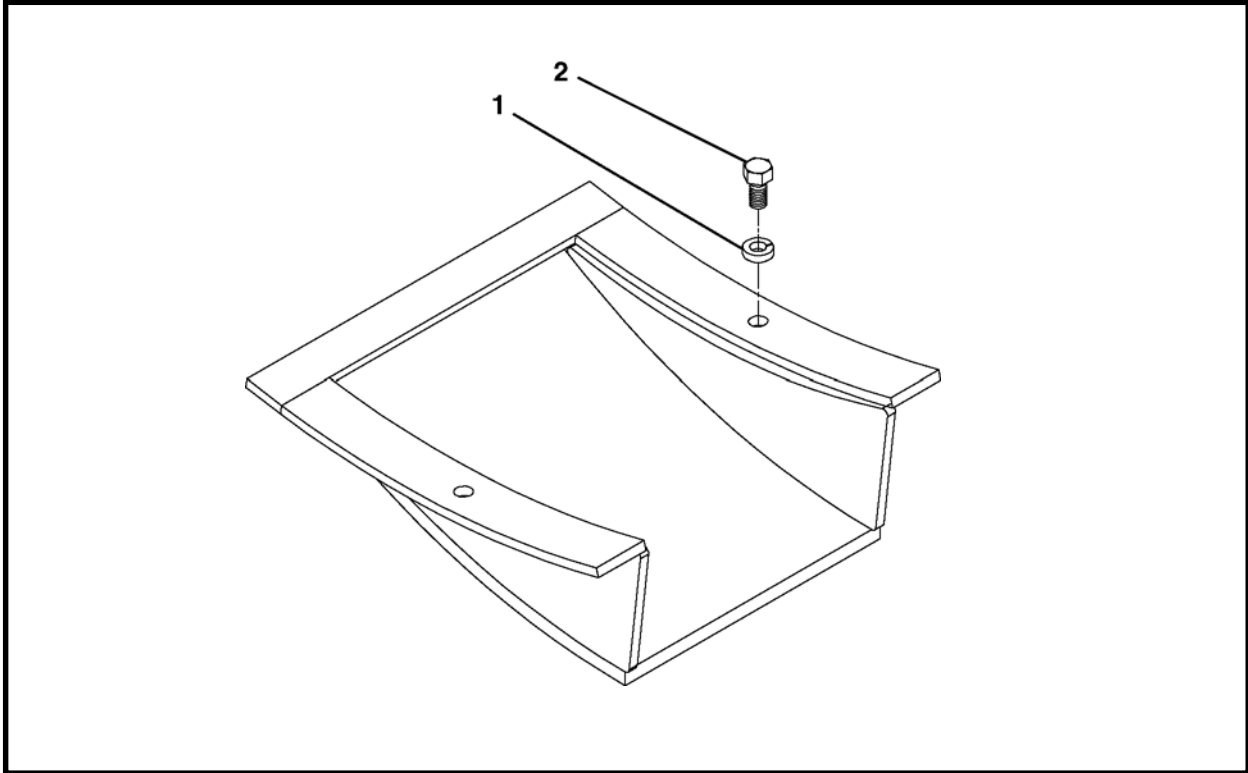
ITEM	QTY	PART NO.	DESCRIPTION
0	1	026435A	ASSEMBLY, Common Drum Roller
1	1	011845A00	ASSEMBLY, Drum Roller
2	12	011809P00	SHIM
3	2	011808P00	SCREW, Socket Head Cap, 5/8 x 2
4	1	002082A01	ASSEMBLY, Cover
5	4	P0045-006	WASHER, Lock 3/8
6	4	P0001-06-004	BOLT, 3/8-16 x 1

## DRUM ROLLER ASSEMBLY, 011845A00



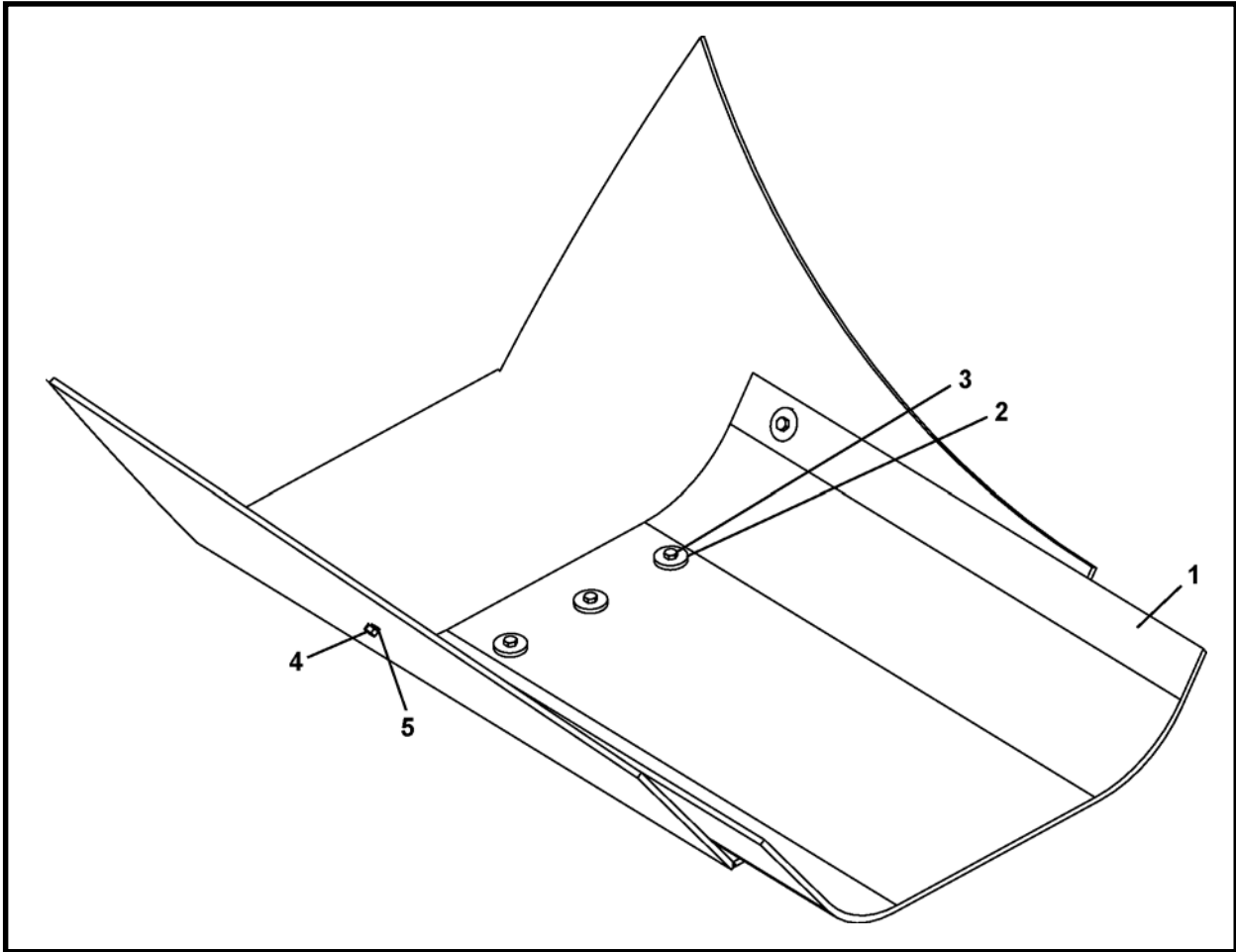
ITEM	QTY	PART NO.	DESCRIPTION
0	1	011845A00	ASSEMBLY, Drum Roller
1	1	P0063-001	FITTING, Grease 1/4-28 UNF
2	1	011805P00	ROD
3	2	P0065-004	BEARING
4	2	P0085-218	ORING
5	2	P0065-099	BEARING, Roller
6	2	P0065-100	RING, Inner
7	1	011846P00	ROD

# DIRT SCOOP ASSEMBLY, 006510A00



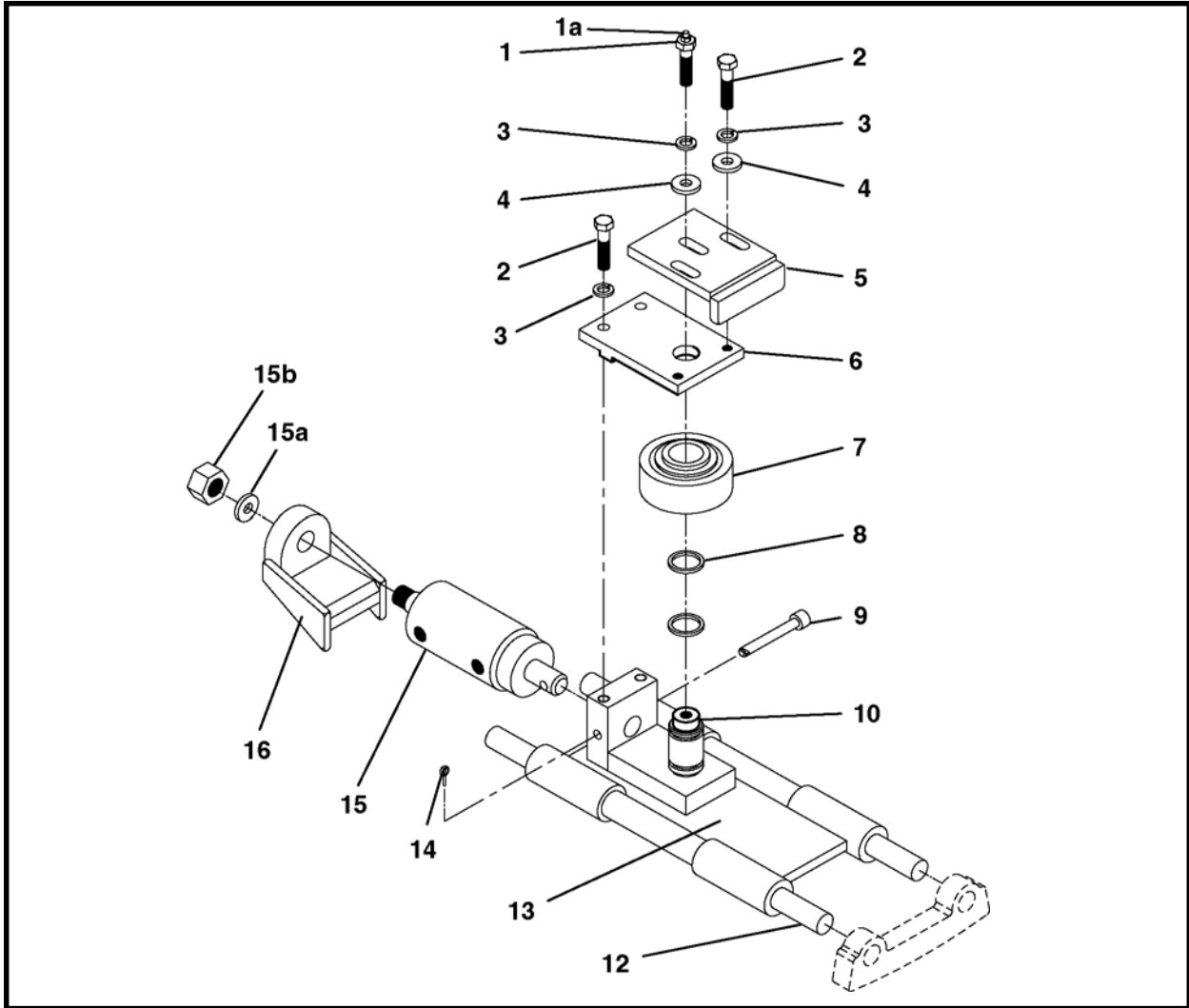
ITEM	QTY	PART NO.	DESCRIPTION
0	1	006510A00	ASSEMBLY, Dirt Scoop
1	2	P0045-006	WASHER, Lock 3/8
2	2	P0001-06-003	BOLT, 3/8-16 UNC x .75

## DIRT PADDLE ASSEMBLY, 029681A



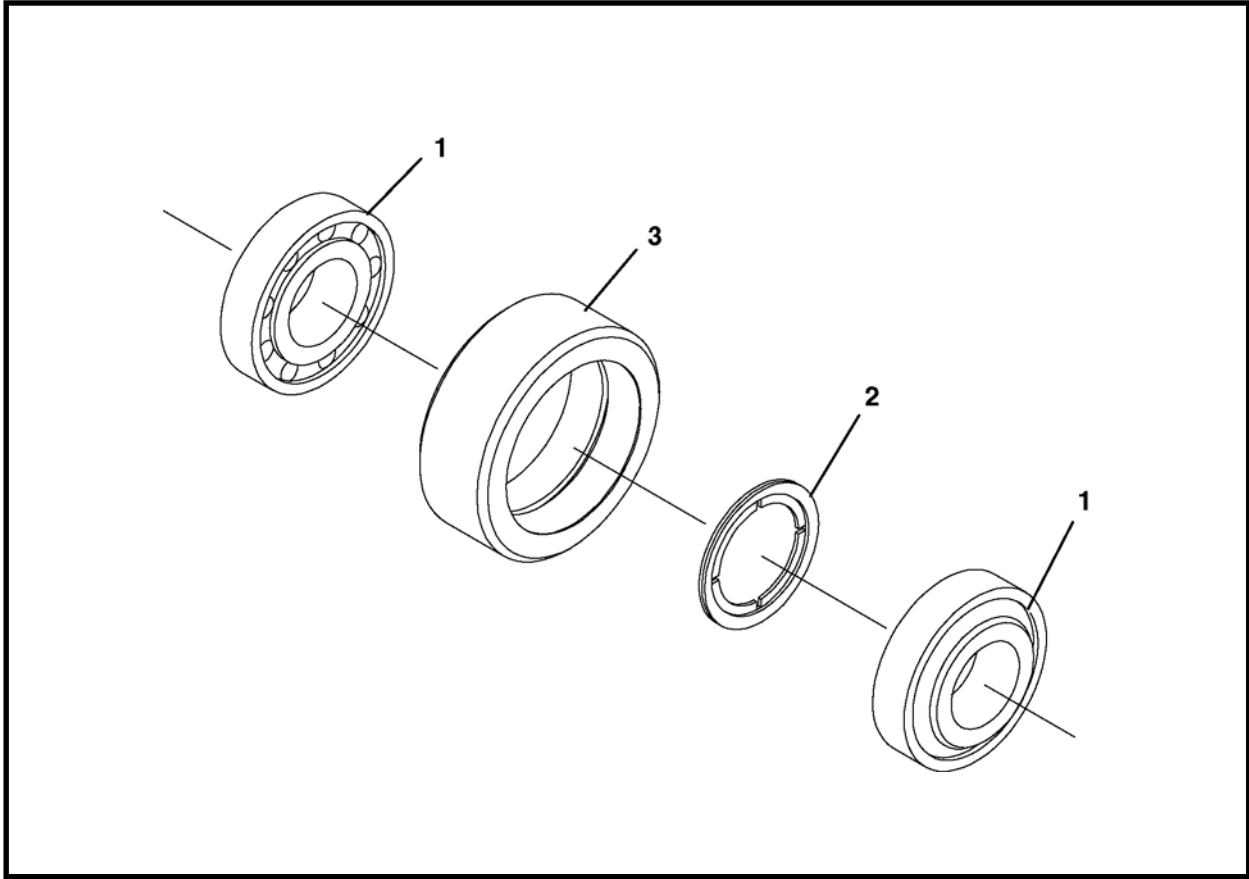
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029681A	ASSEMBLY, Dirt Paddle
1	5	029680P	RUBBER, Dirt Paddle
2	5	002624P00	WASHER
3	5	P0001-04-004	BOLT, 1/4-20 x 1
4	5	P0003-04-000	NUT, 1/4
5	5	P0045-004	WASHER, Lock 1/4

## DRUM ADVANCE STANDARD ASSEMBLY, 026140A



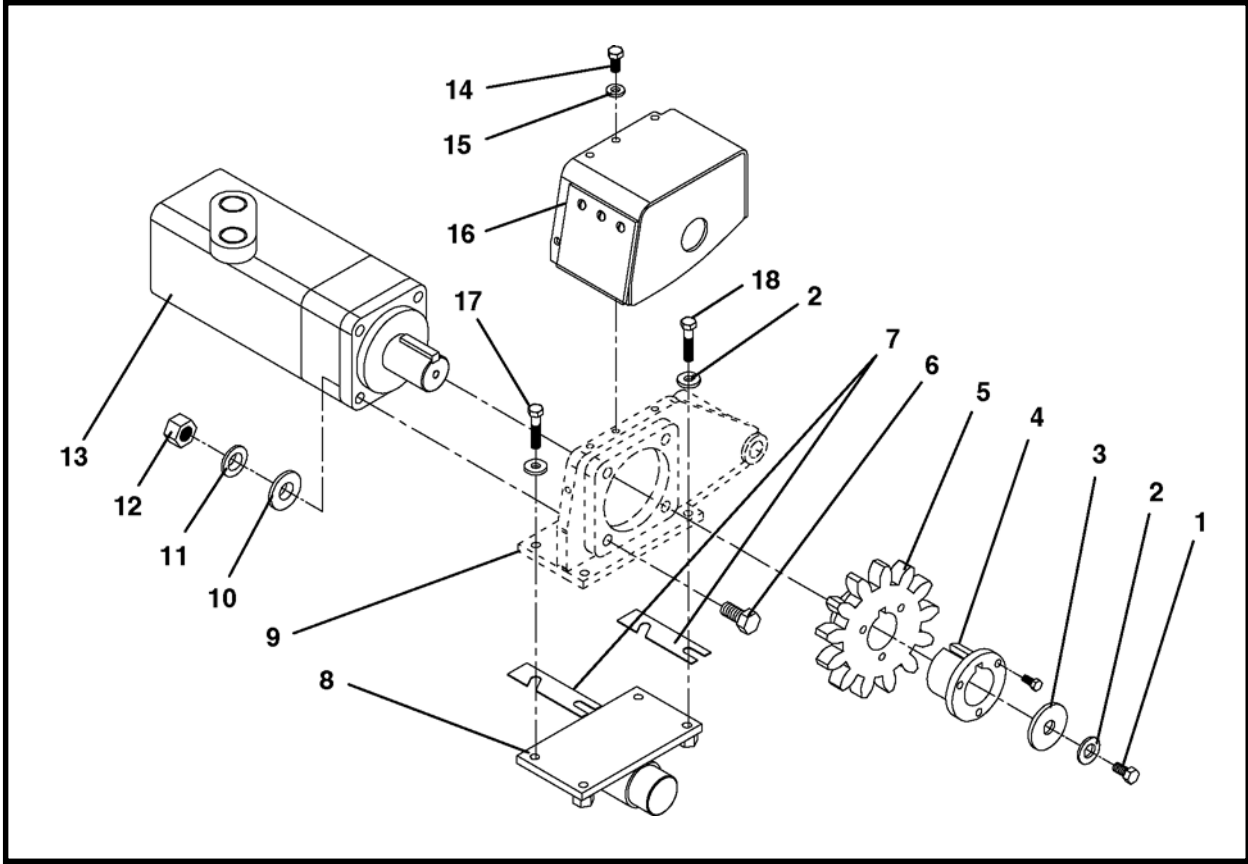
ITEM	QTY	PART NO.	DESCRIPTION
0	1	026140A	ASSEMBLY, Drum Advance Standard
1	1	001906A00	BOLT & FITTING (Includes item 1a)
1a	1	P0063-001	FITTING, Grease 1/4 UNF
2	4	P0001-08-005	BOLT, 1/2-13 UNC x 1-1/4
3	5	P0045-008	WASHER, Lock 1/2
4	2	001887P00	WASHER
5	1	001328A00	GUIDE, Thrust Roller
6	1	025356P00	PLATE
7	1	001296A02	THRUST ROLLER (Standard)
8	2	P0085-218	ORING (For Standard Duty)
9	1	002243P00	PIN, Cylinder Mount
10	1	025354P01	SHAFT, Thrust Roller
12	2	006825P01	ROD
13	1	010737A02	BRACKET, Thrust (Includes item 13a)
13a	2	P0063-003	FITTING, Grease 90 Degree (not shown)
14	1	P0048-024	PIN, Cotter
15	1	010747A00	CYLINDER, Advance (Includes items 15a and 15b)
15a	1	P0040-014	WASHER
15b	1	P0004-14-000	NUT, 7/8 UNF
16	1	002261A00	HOLDER, Advance Cylinder

## THRUST ROLLER ASSEMBLY, 001296A02



ITEM	QTY	PART NO.	DESCRIPTION
0	1	001296A02	ASSEMBLY, Thrust Roller
1	2	P0065-004	BEARING
2	1	010740P01	SPACER, Bearing
3	1	010741P00	HOUSING, Roller

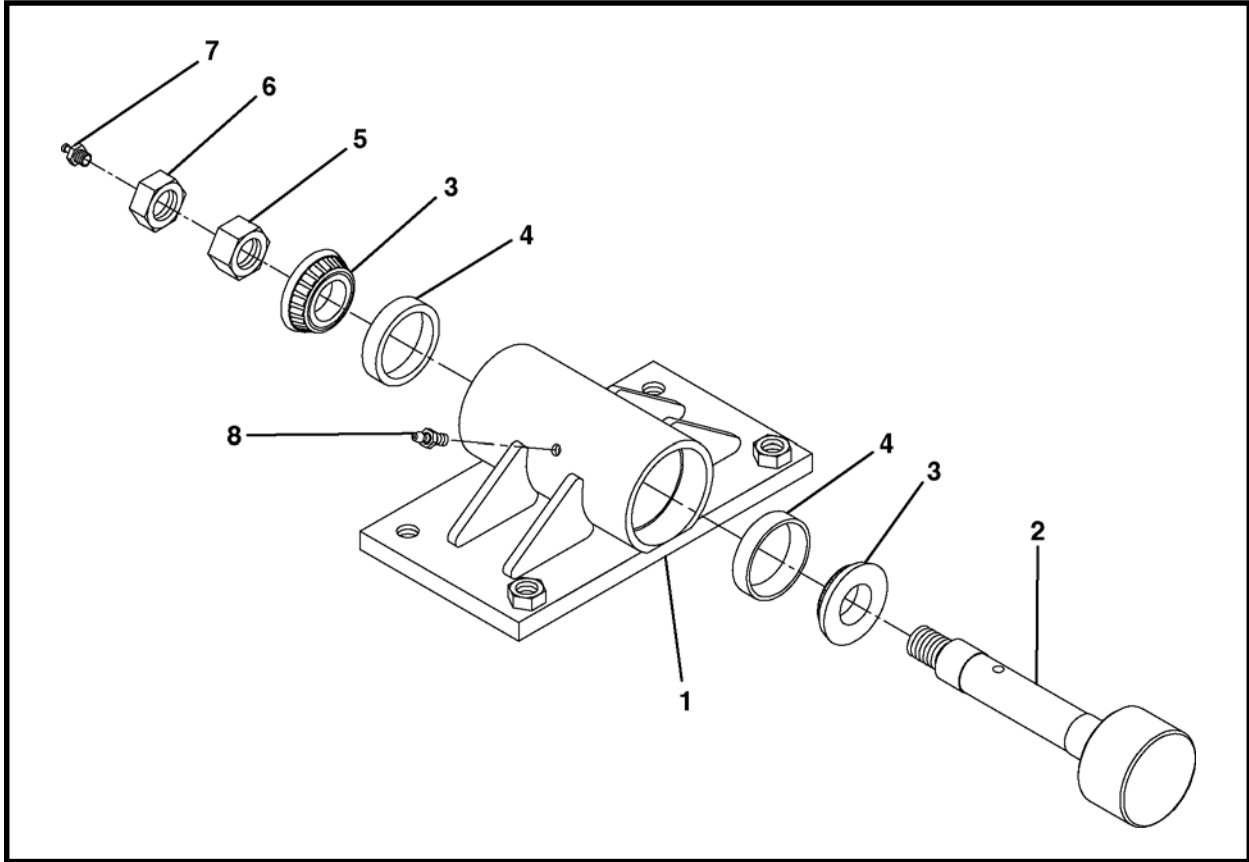
## MOTOR ASSEMBLY, 013814A00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	013814A00	ASSEMBLY, Motor
1	1	P0002-08-004	BOLT, 1/2-20 UNF x 1
2	5	P0045-008	WASHER, Lock 1/2
3	1	001320P00	WASHER
4	1	P0066-036	BUSHING
5	1	002995P04	SPROCKET
6	4	P0001-10-008	BOLT, 5/8-11 UNC x 2-1/2
7	8	007332P00	SHIM
8	1	001231A01	ASSEMBLY, Idler Roller
9	-	-	ASSEMBLY, Motor Bracket
10	4	P0040-010	WASHER, Flat 5/8
11	4	P0045-010	WASHER, Lock 5/8
12	4	P0003-10-000	NUT, 5/8
13*	1	P0304-123	MOTOR
14	4	P0001-06-003	BOLT, 3/8-16 UNC x 3/4
15	4	P0045-006	WASHER, Lock 3/8
16	1	008289A00	ASSEMBLY, Motor Guard (Includes item 16a)
16a	6	P0020-14-203	SCREW, Truss 1/4 UNC x 3/4
17	2	P0001-08-006	BOLT, 1/2-13 UNC x 1-1/2
18	2	P0001-08-008	BOLT, 1/2-13 UNC x 2

\* Refer to Section 8, Motors for parts breakdown.

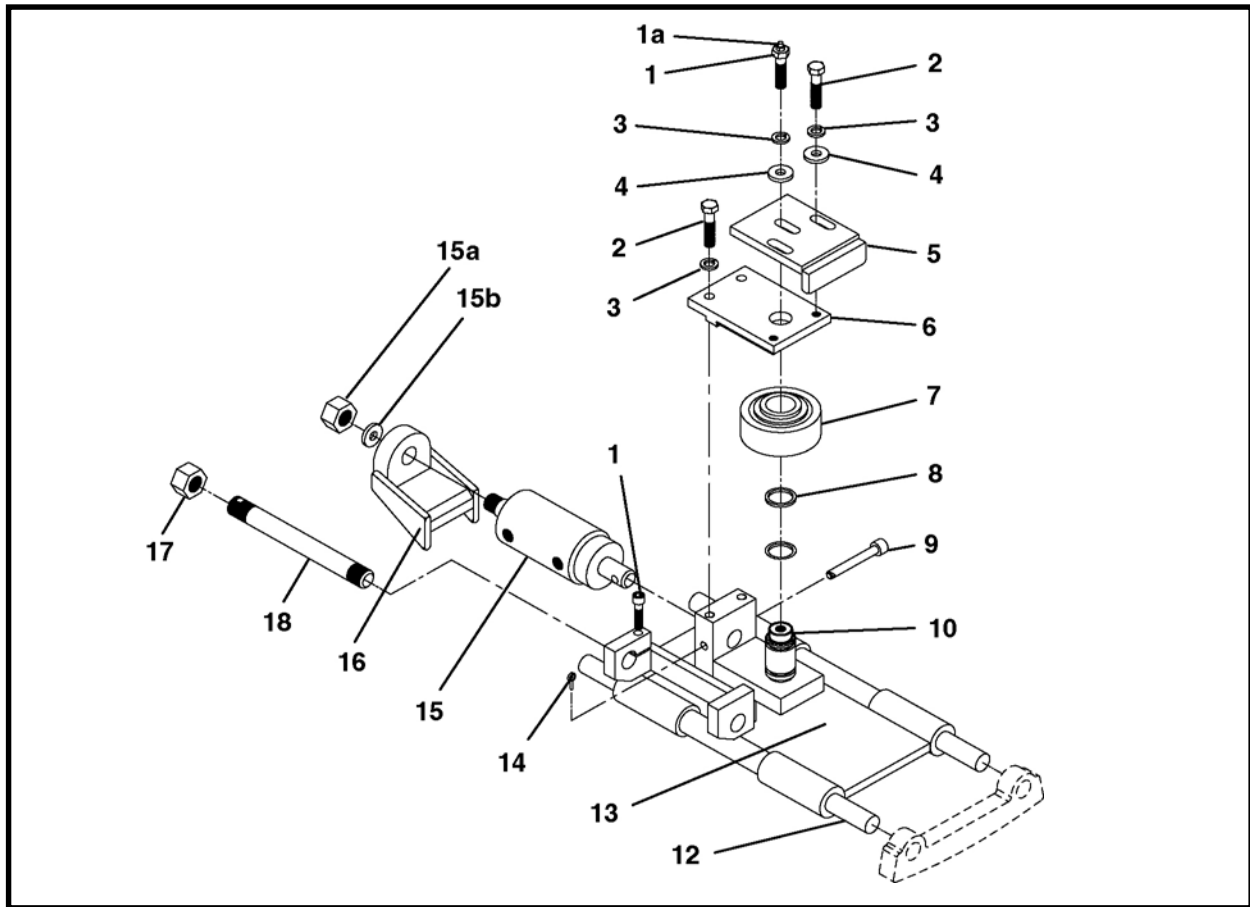
## IDLER ROLLER ASSEMBLY, 001231A01



ITEM	QTY	PART NO.	DESCRIPTION
0	1	001231A01	ASSEMBLY, Idler Roller
1	1	001229A01	ASSEMBLY, Housing
2	1	001922P01	SHAFT, Idler Roller
3	2	P0065-020	BEARING CONE
4	2	P0065-021	BEARING CUP
5	1	P0004-12-000	NUT, 3/4 UNF
6	1	P0008-12-000	NUT, Jam 3/4 UNF
7	1	P0063-001	FITTING, Grease 1/4 UNF
8	1	P0063-012	FITTING, Grease 1/4 NPT

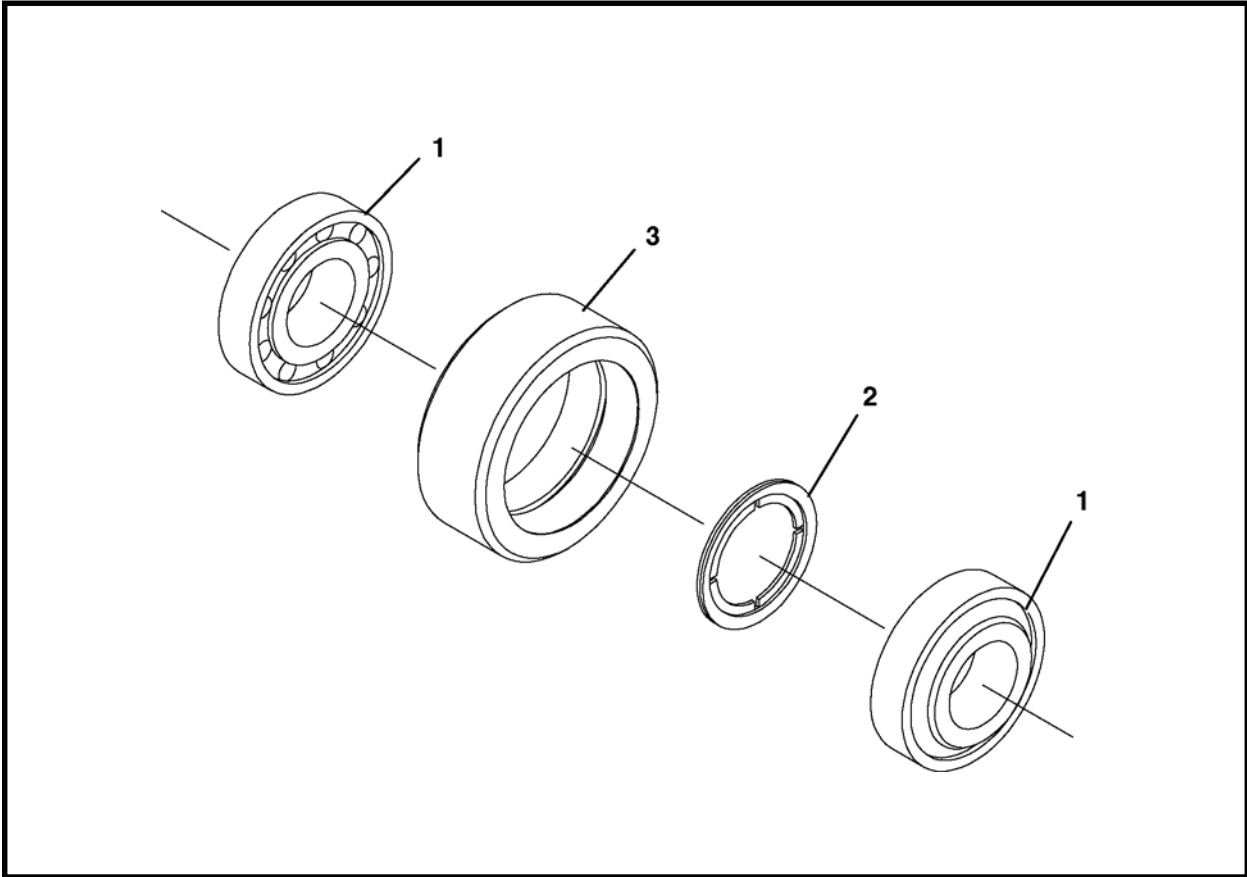
Note: Contact your Akkerman Product Support Representative for proper assembly.

## DRUM ADVANCE FOR MOTOR ASSEMBLY, 026145A



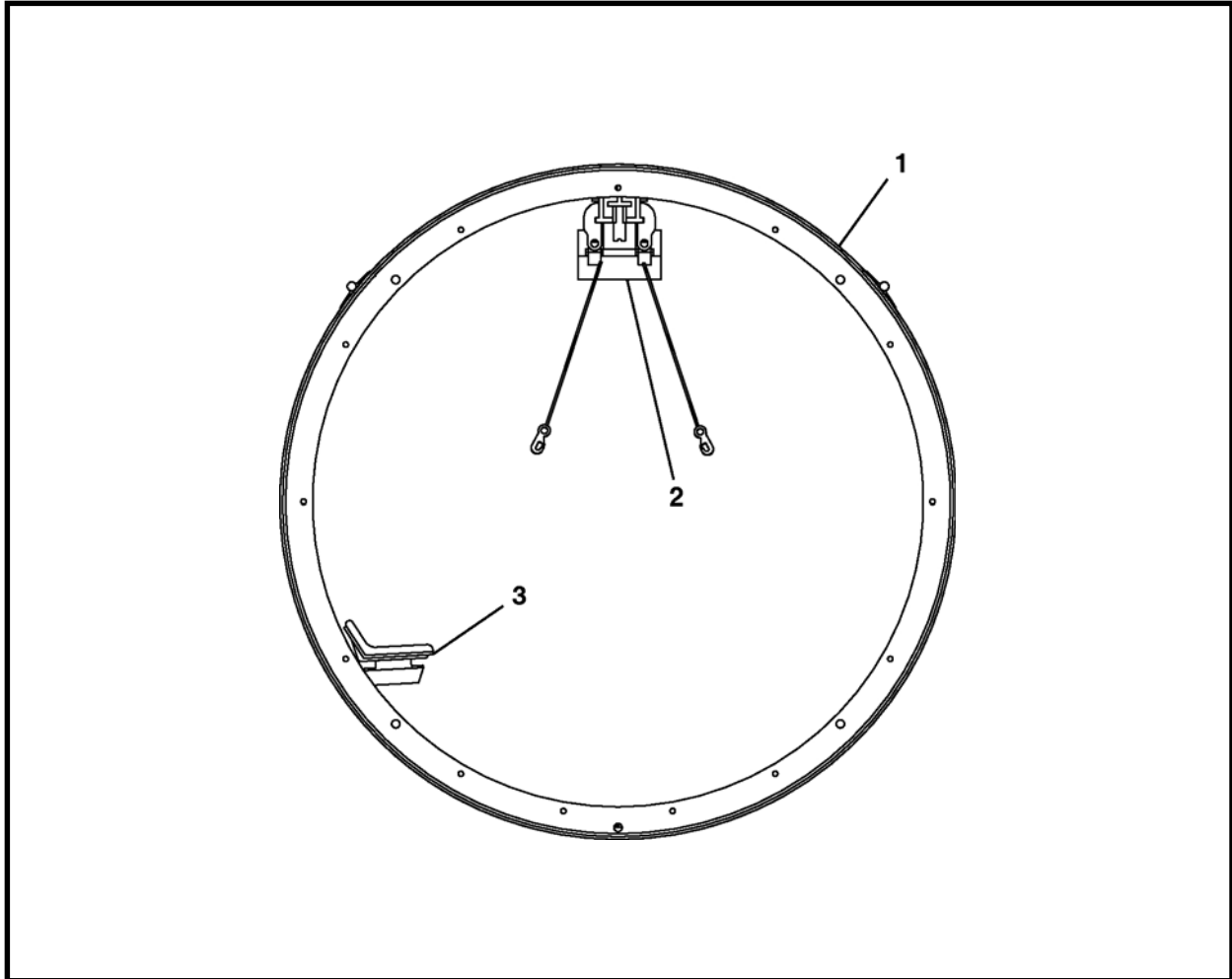
ITEM	QTY	PART NO.	DESCRIPTION
0	1	026145A	ASSEMBLY, Drum Advance For Motor
1	1	001906A00	BOLT & FITTING (Includes item 1a)
1a	1	P0063-001	FITTING, Grease 1/4 UNF
2	4	P0001-08-005	BOLT, 1/2-13 UNC x 1-1/4
3	5	P0045-008	WASHER, Lock 1/2
4	2	001887P00	ADVANCE, Washer
5	1	001328A00	GUIDE, Thrust Roller
6	1	025356P00	PLATE, Thrust Roller
7	1	001296A02	ASSEMBLY, Thrust Roller
8	2	P0085-218	ORING (For Standard Duty)
9	1	002243P00	PIN, Cylinder
10	1	025354P01	SHAFT, Thrust Roller
12	2	006825P01	ROD
13	1	010744A02	BRACKET, Motor & Thrust Roller (Includes item 13a)
13a	2	P0063-001	FITTING, Grease 1/4 UNF (not shown)
14	1	P0048-024	PIN, Cotter 1/8 x 3/4
15	1	010747A00	ASSEMBLY, Advance Cylinder (Includes items 15a & 15b)
15a	1	P0040-014	WASHER, 7/8
15b	1	P0004-14-000	NUT, 7/8
16	1	002261A00	CYLINDER, Advance Holder
17	1	P0007-16-000	NUT, Jam 1-8 UNC
18	1	010742P00	SHAFT, Motor Mount
19	1	P0001-07-007	SCREW, Socket Head Cap 7/16-14 UNC x 1.75

# THRUST ROLLER ASSEMBLY, 001296A02



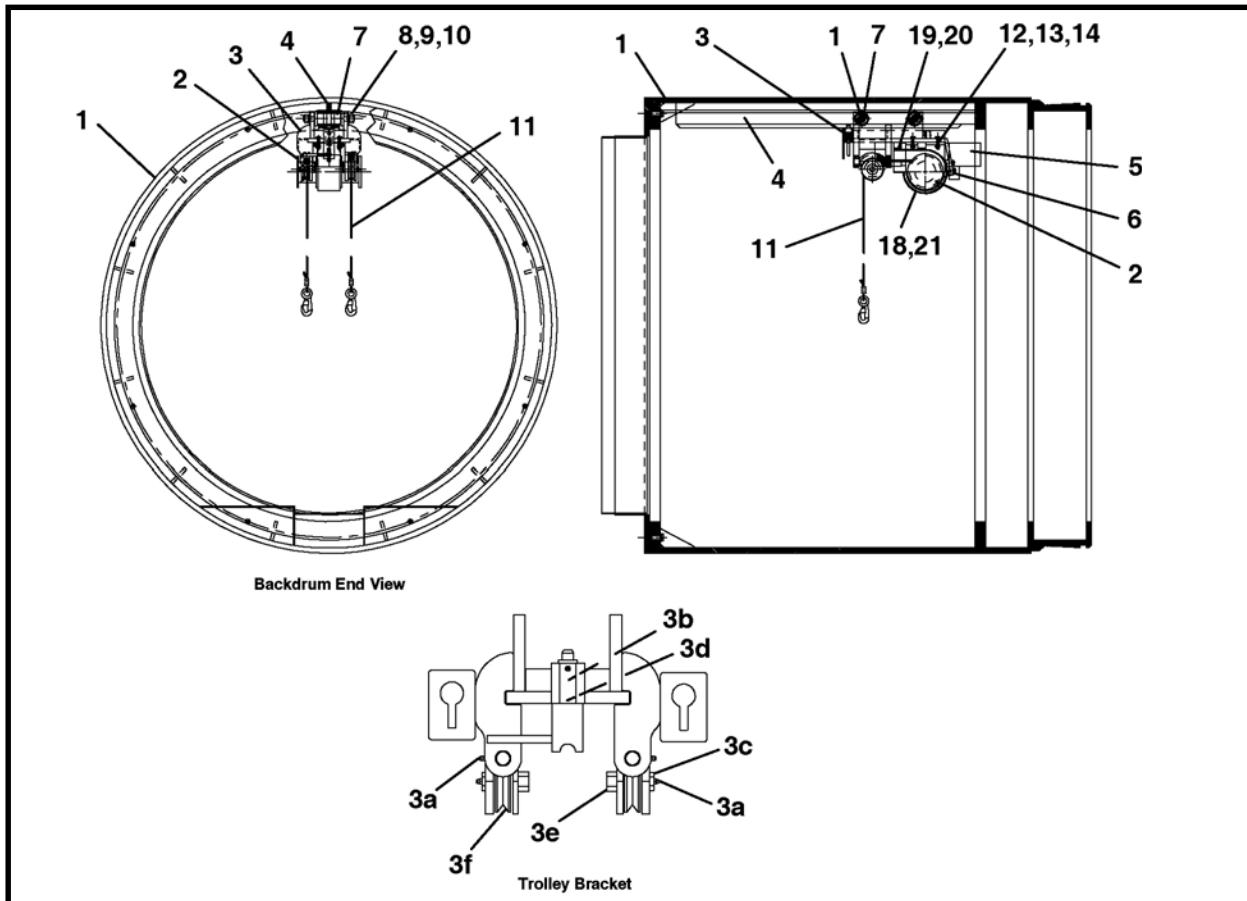
ITEM	QTY	PART NO.	DESCRIPTION
0	1	001296A02	ASSEMBLY, Thrust Roller
1	2	P0065-004	BEARING
2	1	010740P01	SPACER, Bearing
3	1	010741P00	HOUSING, Roller

# MID DRUM ASSEMBLY, 029785A



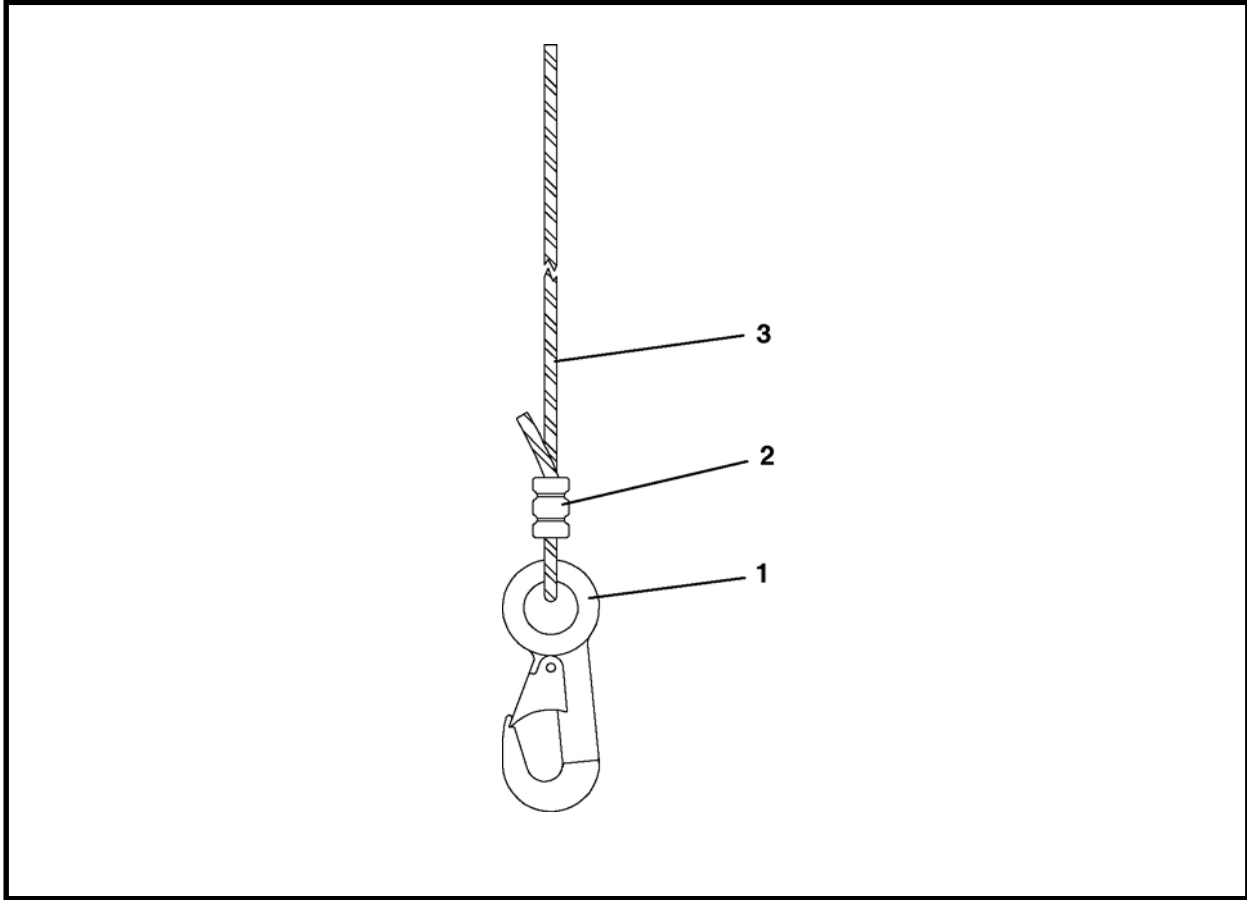
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029785A	ASSEMBLY, Mid Drum
1	1	029620A	WELDMENT, Mid Drum
2	1	012609A01	ASSEMBLY, Conveyor Lift
3	1	009992A01	ASSEMBLY, Seat

## CONVEYOR LIFT ASSEMBLY, 012609A01



ITEM	QTY	PART NO.	DESCRIPTION
0	1	012609A01	ASSEMBLY, Conveyor Lift
1	-	-	DRUM, Back
2	1	P0106-002	WINCH, Hydraulic
3	1	012785A00	WELDMENT, Trolley Bracket (Includes items 3a - 3f)
3a	7	P0063-001	FITTING, Grease 1/4
3b	1	P0070-024	SPRING
3c	2	003661P00	BOLT, Conveyor Lift
3d	1	P0044-021	RING, Snap
3e	2	P0007-12-000	NUT, Jam 3/4-10 UNC
3f	2	003660A01	ASSEMBLY, Pulley (Includes item 3f1)
3f1	1	P0066-003	BUSHING, Bronze
4	1	012790A00	WELDMENT, Trolley Rail
5	1	P0304-131	MOTOR, Hydraulic
6	1	P0304-132	VALVE, Crossover Relief (1300 PSI)
7	4	P0065-082	BEARING
8	4	P0040-014	WASHER, Flat 7/8
9	4	P0045-014	WASHER, Lock 7/8
10	4	P0004-14-000	NUT, 7/8-14 UNF
11	2	012795A00	ASSEMBLY, Cable 1/4 Dia. x 15 Feet
12	4	P0001-08-008	BOLT, 1/2-13 UNC x 2
13	4	P0045-008	WASHER, Lock 1/2
14	4	P0003-08-000	NUT, 1/2-13 UNC
15	-	-	-
16	-	-	-
17	-	-	-
18	1	012765A01	WELDMENT, Winch Guard - Right
19	4	027113P00	BRACKET, Winch Cover Mounting
20	4	P0001-04-002	BOLT, 1/4-20 UNC x 1/2
21	1	012798A00	WELDMENT, Winch Guard - Left

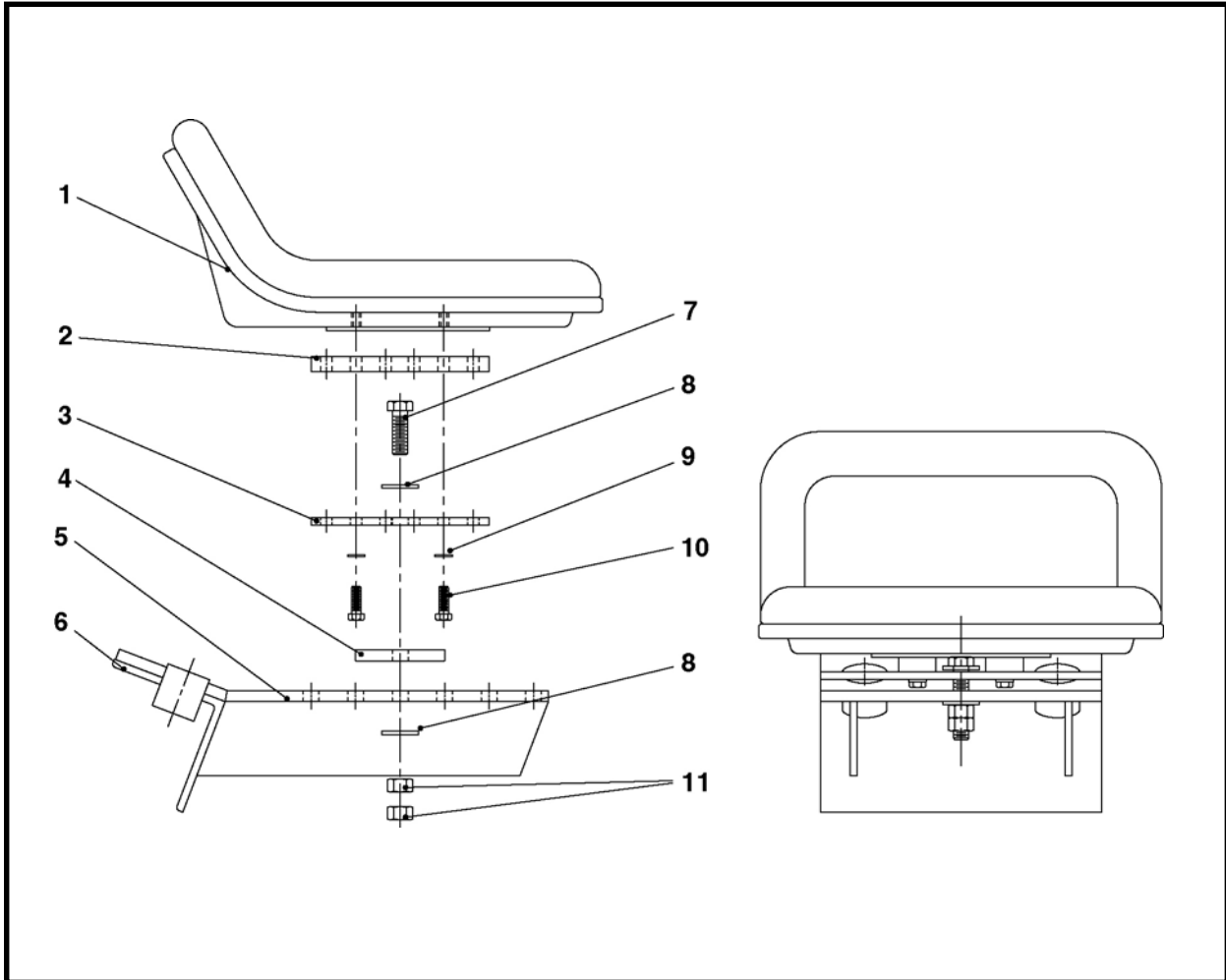
# CABLE ASSEMBLY, 012795A00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	012795A00	ASSEMBLY, Cable
1.2	15 LF	P0075-002	CABLE, 1/4 x 180
2	1	P0073-001	SLEEVE
3	1	P0079-001	HOOK

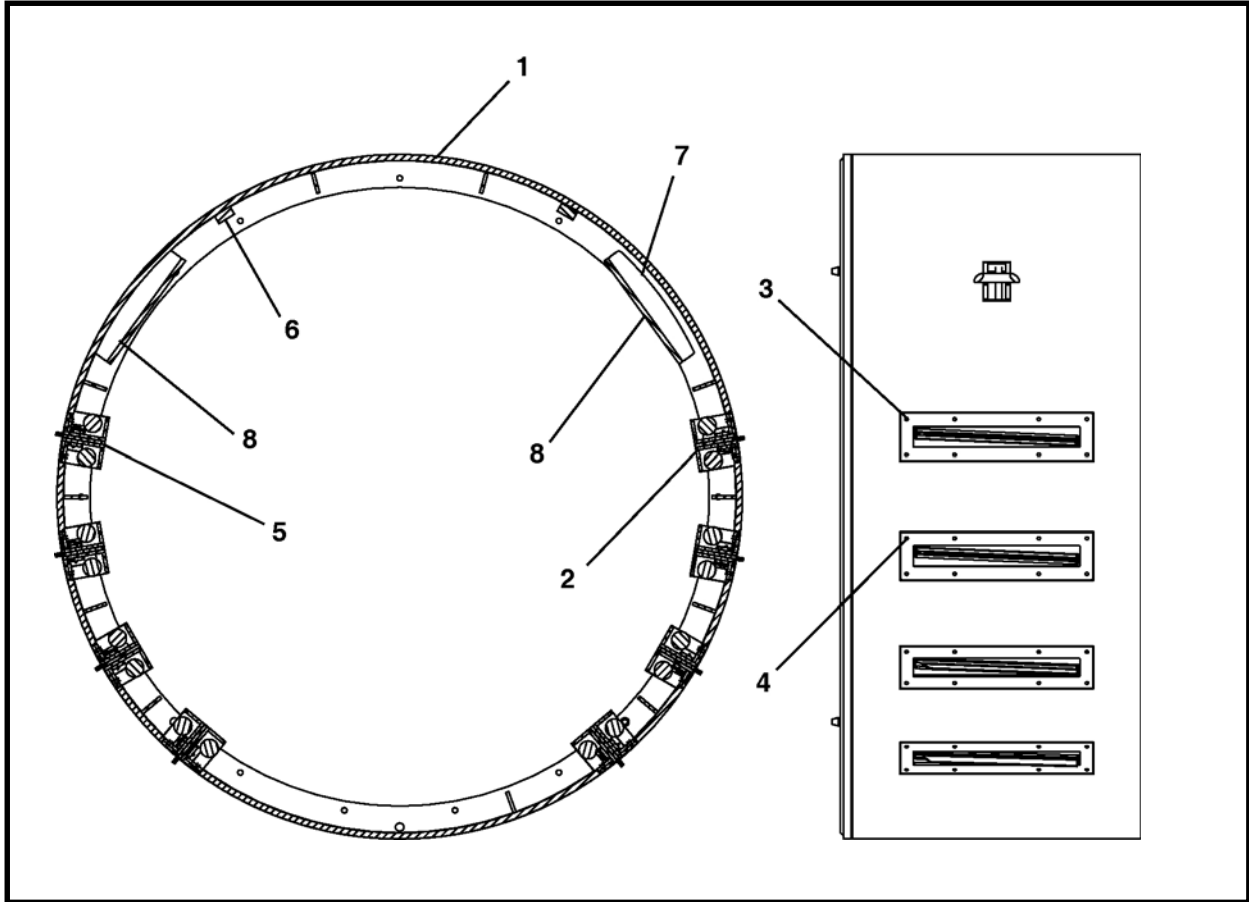
LF - Linear Feet

## SEAT ASSEMBLY, 009992A01



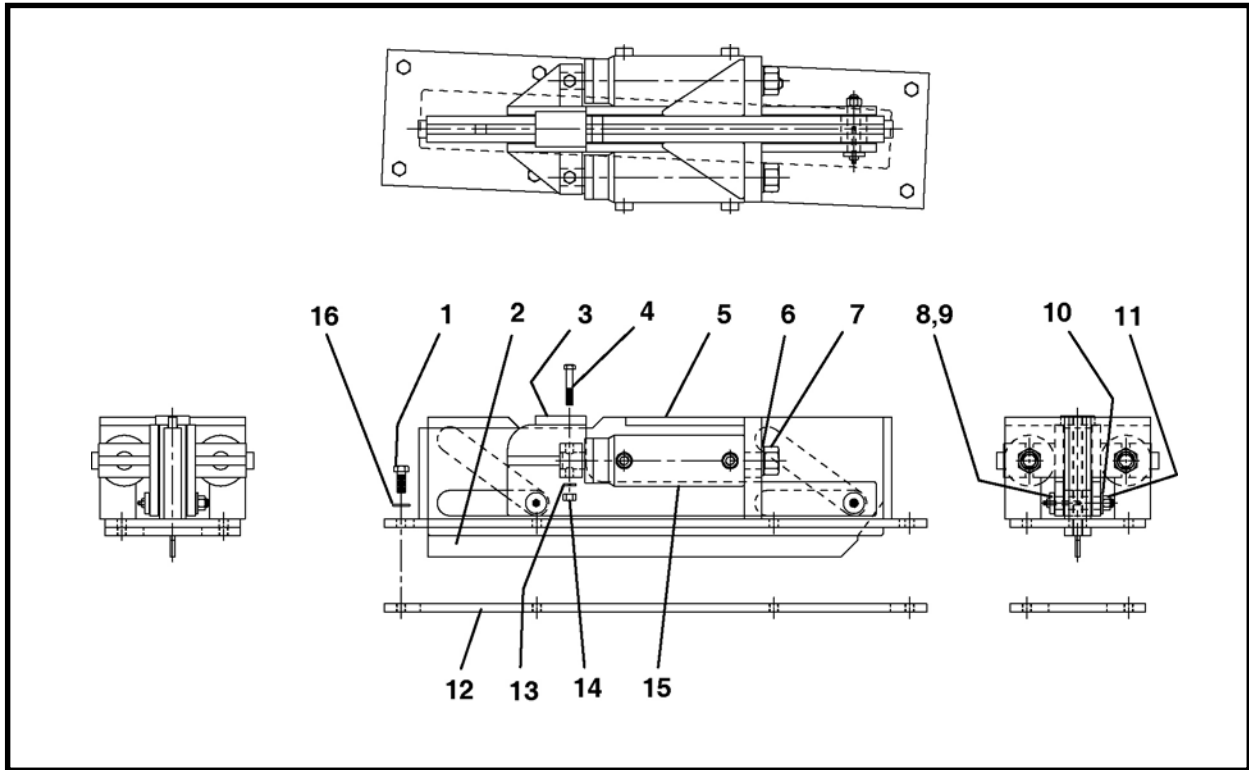
ITEM	QTY	PART NO.	DESCRIPTION
0	1	009992A01	ASSEMBLY, Seat
1a	1	P0113-001	SEAT, Lower Back - Standard
1b	1	P0113-001A	SEAT, Lower Back - Flame Resistant
2	2	009993P00	BAR
3	1	009994P00	BAR
4	1	009995P00	BAR
5	1	019378A00	BRACKET, Seat
6	1	019382P00	ANGLE
7	1	P0001-08-009	BOLT, 1/2-13 UNC x 2-1/4
8	2	P0040-008	WASHER, Flat 1/2
9	4	P0045-005	WASHER, Lock 5/16
10	4	P0001-05-004	BOLT, 5/16-18 UNC x 1
11	2	P0003-08-000	NUT, Hex 1/2

## DIRT WING DRUM ASSEMBLY, 029755A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029755A	ASSEMBLY, Dirt Wing Drum
1	1	029625A	WELDMENT, Dirt Wing Drum
2	4	014600A00	ASSEMBLY, Hyd. Dirt Wing -CW
3	64	P0001-08-005	BOLT, Hex 1/2-13 x 1-1/4
4	64	P0045-008	WASHER, Lock 1/2
5	4	014617A00	ASSEMBLY, Hydraulic Dirt Wing -CCW
6	2	029695P	MOUNTING BAR, Reservoir Tank
7	4	029744P	PLATE, Motor Mount
8	2	029743P	PLATE, Motor Mount

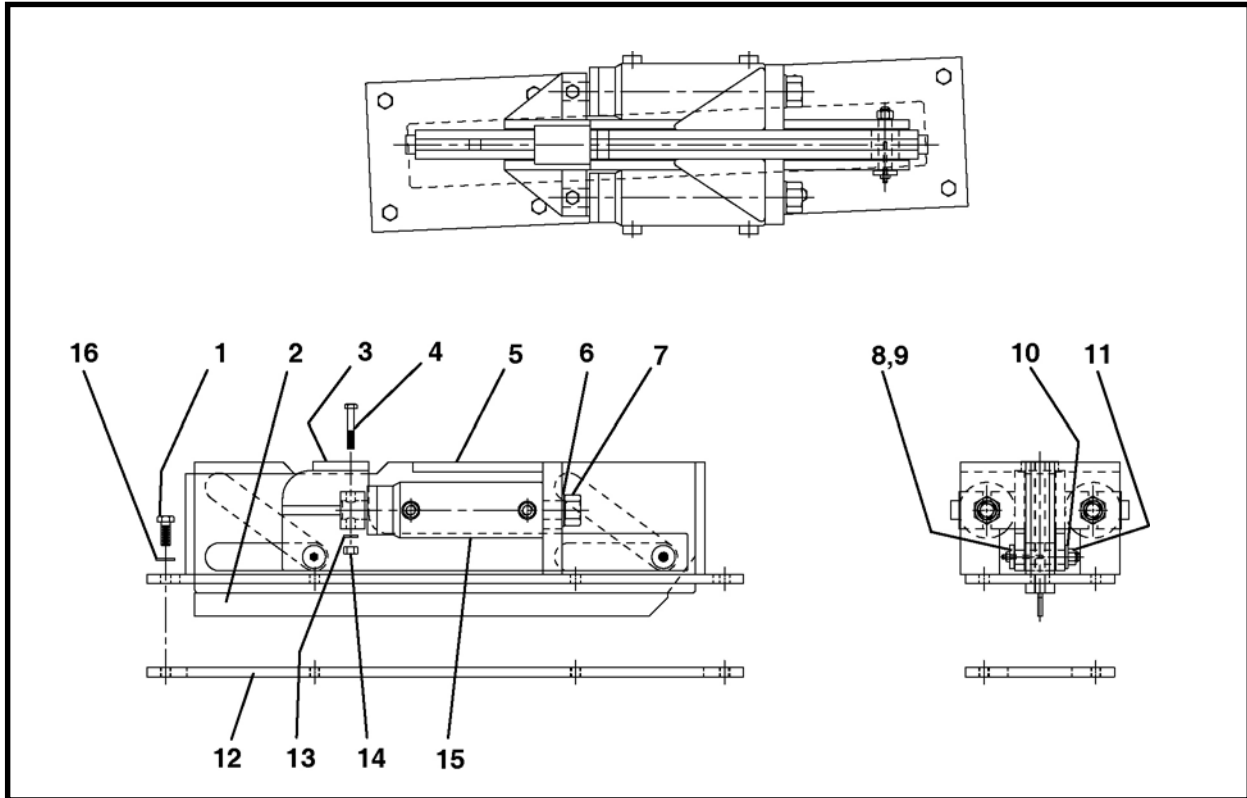
## HYDRAULIC DIRT WING (CW) ASSEMBLY, 014600A00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	014600A00	ASSEMBLY, Hydraulic Dirt Wing (CW Rotation)
1	8	P0001-08-005	BOLT, Hex 1/2-13 UNC x 1-1/4
2	1	014601A00	WING
3	1	014606A01	WELDMENT, Thruster Bar
4	2	P0001-07-010	BOLT, Hex 7/16-14 UNC x 2-1/2
5	1	014602A00	WELDMENT, Bracket (CW)
6	2	P0040-014	WASHER, Flat 7/8
7	2	P0004-14-000	NUT, 7/8
8	2	007239P00	PIN, Axle
9	6	007240P00	ROLLER
10	2	P0040-008	WASHER, Flat 1/2
11	2	P0003-08-000	NUT, 1/2
12	*	011583P00	PLATE
13	2	P0045-007	WASHER, Lock 7/16
14	2	P0003-07-000	NUT, 7/16
15	2	014603A00	ASSEMBLY, Cylinder
16	8	P0045-008	WASHER, Lock 1/2

\* Part of Dirt Wing Drum Weldment.

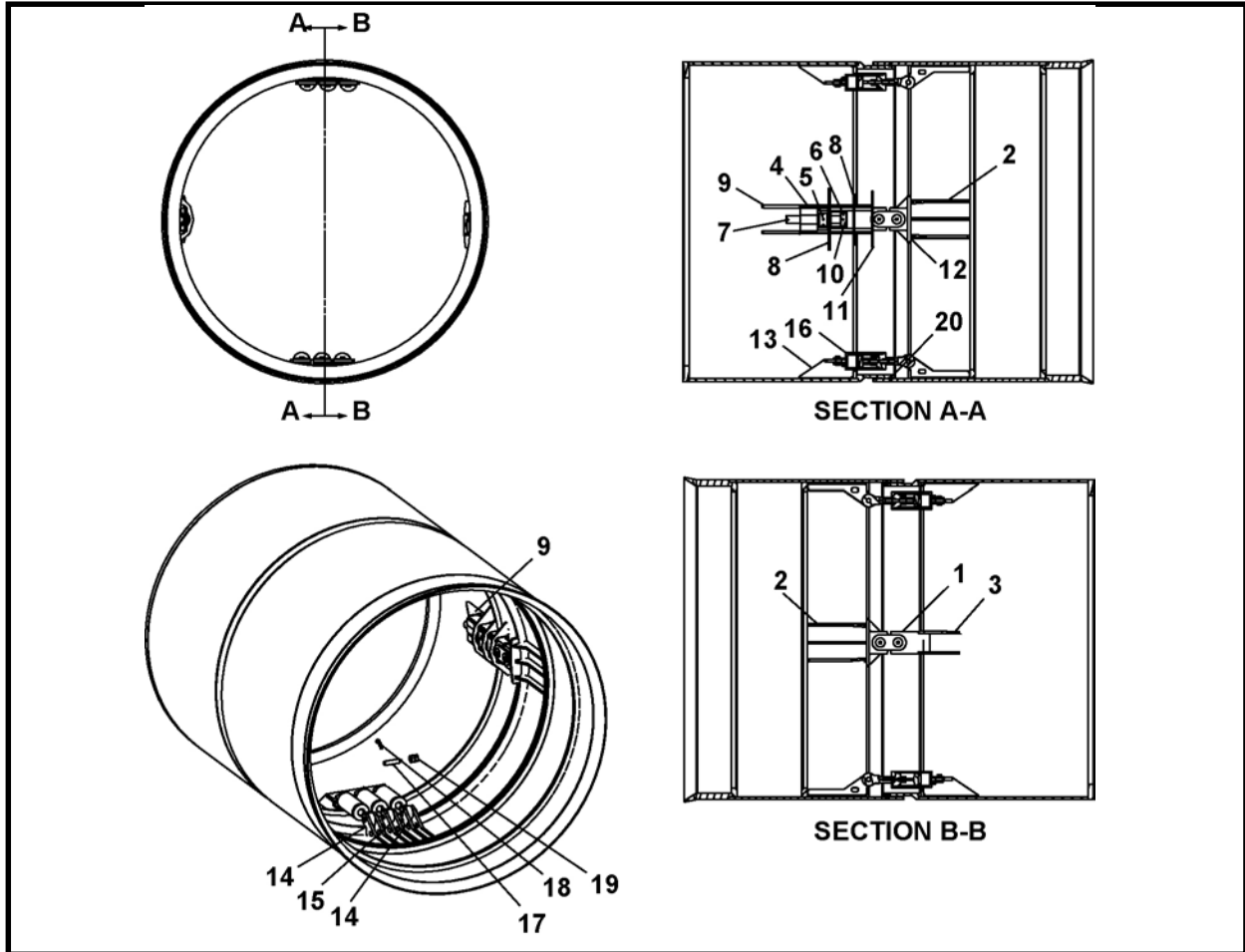
## HYDRAULIC DIRT WING (CCW) ASSEMBLY, 014617A00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	014617A00	ASSEMBLY, Hydraulic Dirt Wing (CCW Rotation)
1	8	P0001-08-005	BOLT, Hex 1/2-13 UNC x 1-1/4
2	1	014601A00	WING
3	1	014606A01	WELDMENT, Thruster Bar
4	2	P0001-07-010	BOLT, Hex 7/16-14 UNC x 2-1/2
5	1	014618A00	WELDMENT, Bracket (CW)
6	2	P0040-014	WASHER, Flat 7/8
7	2	P0004-14-000	NUT, 7/8
8	2	007239P00	PIN, Axle
9	6	007240P00	ROLLER
10	2	P0040-008	WASHER, Flat 1/2
11	2	P0003-08-000	NUT, 1/2
12	*	011583P00	PLATE
13	2	P0045-007	WASHER, Lock 7/16
14	2	P0003-07-000	NUT, 7/16
15	2	014603A00	ASSEMBLY, Cylinder
16	8	P0045-008	WASHER, Lock 1/2

\* Part of Dirt Wing Drum Weldment.

## STEERING & LINK ASSEMBLY, 029650A



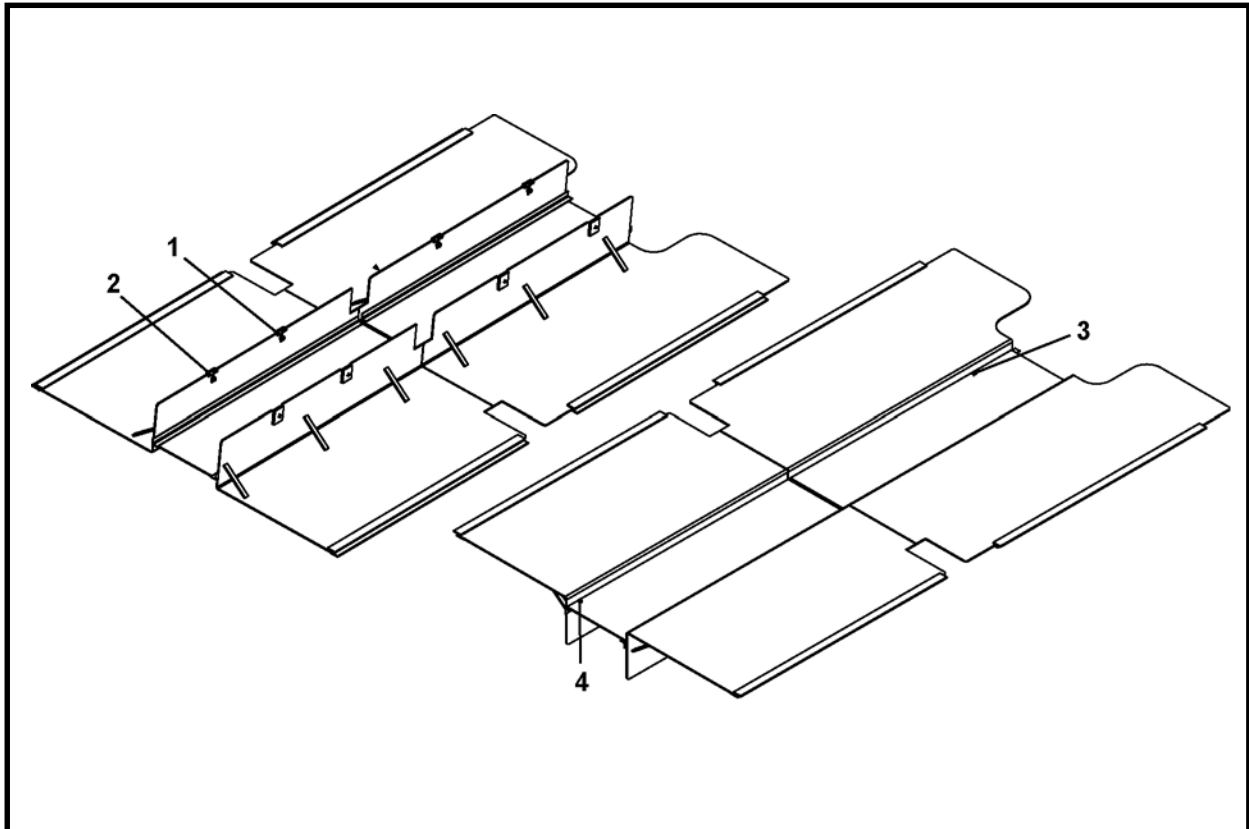
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029650A	ASSEMBLY, Steering Cylinder & Link
1	2	008035A00	ASSEMBLY, Link (Includes items 1a - 1d)
1a	1	008036P00	LINK, Steering
1b	2	003640P00	WASHER
1c	2	P0001-08-005	BOLT, Hex 1/2-13 x 1-1/4
1d	2	P0045-008	WASHER, Lock 1/2
2	6	029656P	GUSSET, Steering
3	2	029657P	GUSSET, Steering
4	1	007910A00	ASSEMBLY, Link Box
5	1	007908P00	NUT, Steering
6	1	005851P01	NUT, Steering Link
7	1	005852P01	SCREW, Steering Link
8	2	029659P	GUSSET, Steering
9	2	029658P	GUSSET, Steering
10	1	P0033-06-016	SCREW, Socket Head Set 3/8-16 x 1
11	1	029660P	GUSSET, Steering
12	2	029661P	PLATE, Support Gusset
13	2	029651A	WELD, Cylinder Mount - Rear
14	8	029653P	PLATE, Steering Cylinder - Outside
15	4	029652P	PLATE, Steering Cylinder - Inside
16	6	029645A	ASSEMBLY, Steering Cylinder
17	2	007158P00	ROD

## STEERING & LINK ASSEMBLY, 029650A

ITEM	QTY	PART NO.	DESCRIPTION
18	2	P0090-005	PIN, Hitch 1/4
19	2	007413P00	BUSHING, Steering Cylinder
20	1	P0088-153	SEAL, O-ring
21*	1	005912P00	ROD, Adjustment
22*	1	P0088-012	LUBE, Drum Seal

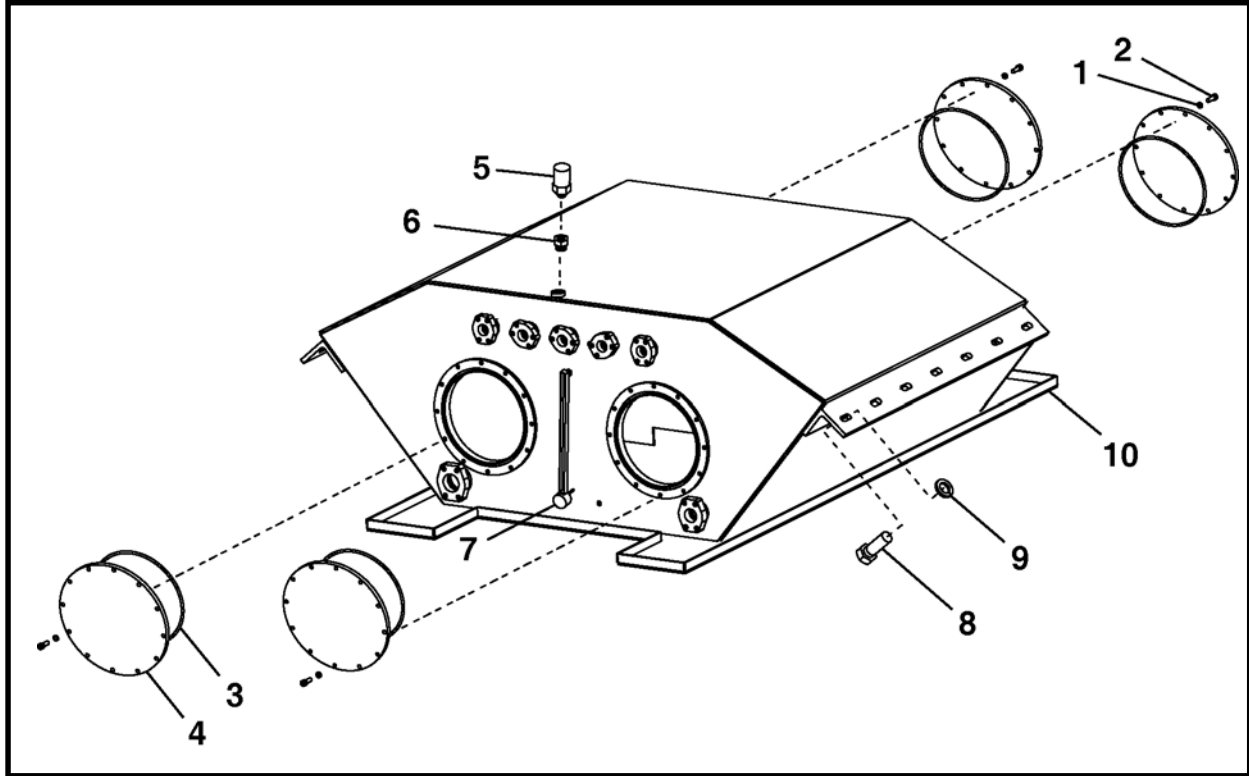
\* Not Shown

## FLOOR ASSEMBLY, 029636A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029636A	ASSEMBLY, Floor
1	8	P0001-06-004	BOLT, 3/8-16 UNC x 1
2	8	P0045-006	WASHER, Lock 3/8
3	2	P0001-04-004	BOLT, 1/4-20 UNC x 1
4	2	P0045-004	WASHER, Lock 1/4

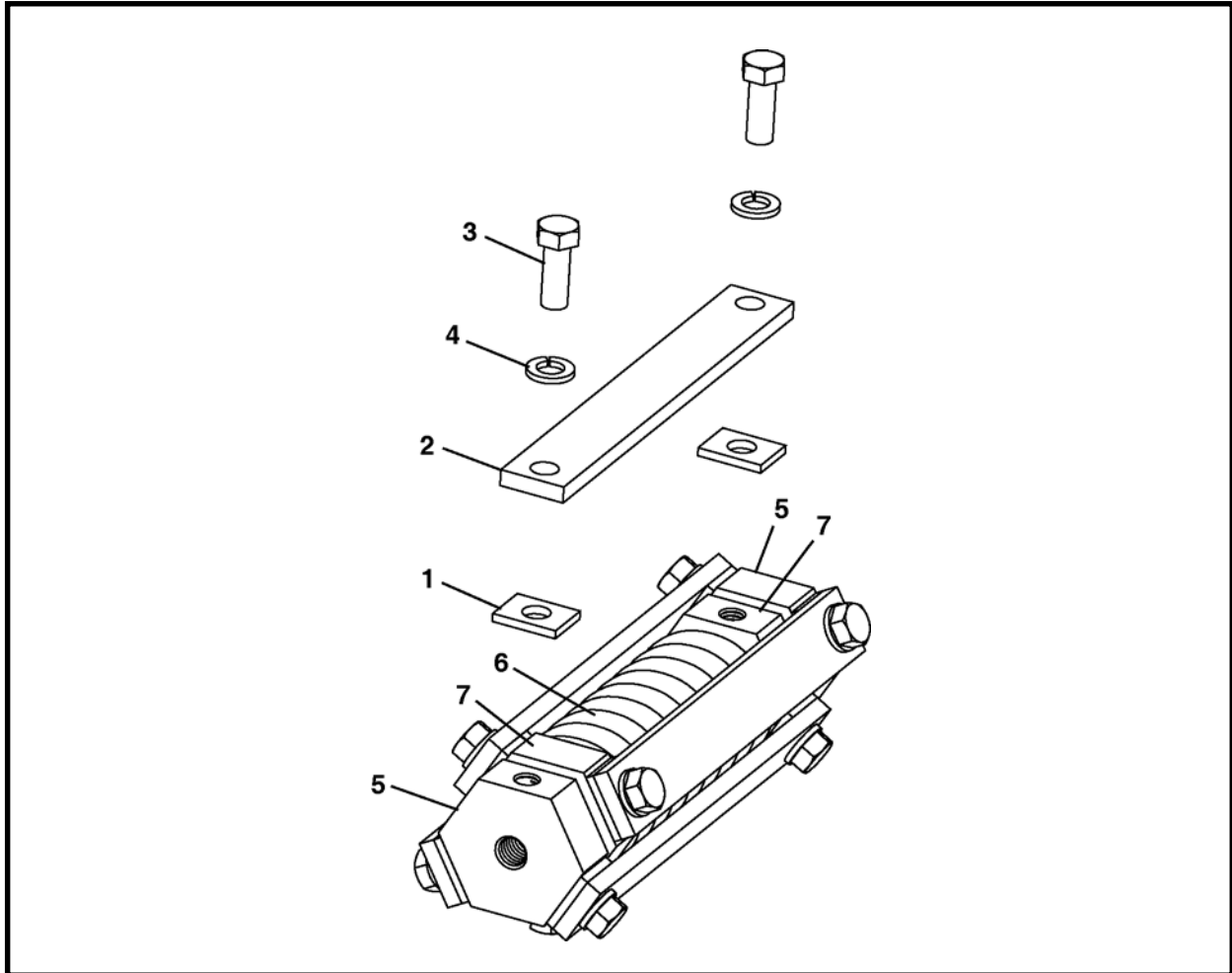
## HYDRAULIC RESERVOIR ASSEMBLY, 029760A



ITEM	QTY	PART NO,	DESCRIPTION
0	1	029760A	ASSEMBLY, Hydraulic Reservoir
1	48	P0046-006	WASHER, Hi-Collar Lock 3/8
2	48	P0031-06-004	SCREW, Socket Head Cap 3/9-16 UNC x 1
3	4	P0085-450	ORING
4	4	029747P	PLATE
5	1	P0309-185	BREATHER/VENT
6	1	P0300-545	FITTING
7	1	P0301-138	GAUGE, Sight
8	14	P0001-10-007	BOLT, 5/8-11 UNC x 1-3/4
9	14	P0045-010	WASHER, Lock
10	1	029725A	WELDMENT, Hydraulic Reservoir
11*	5	A40718P	PIPE, Return
12*	1	A42607P	BREATHER, Tank
13*	2	P0302-104	VALVE, Check
14*	1	P0302-154	VALVE, Pilot Check

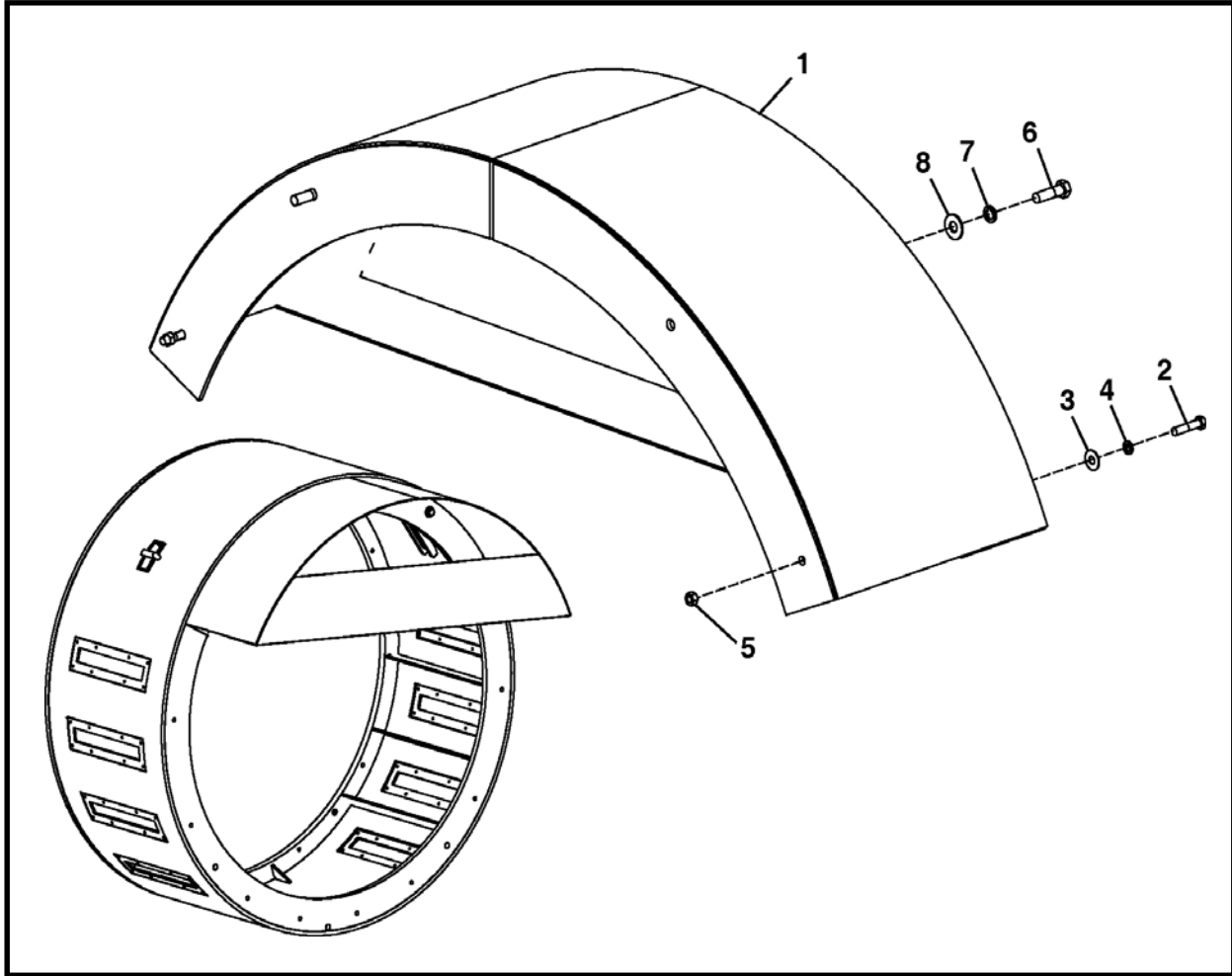
\* Not Shown

## PUMP SUPPORT SPRING ASSEMBLY, 029770A



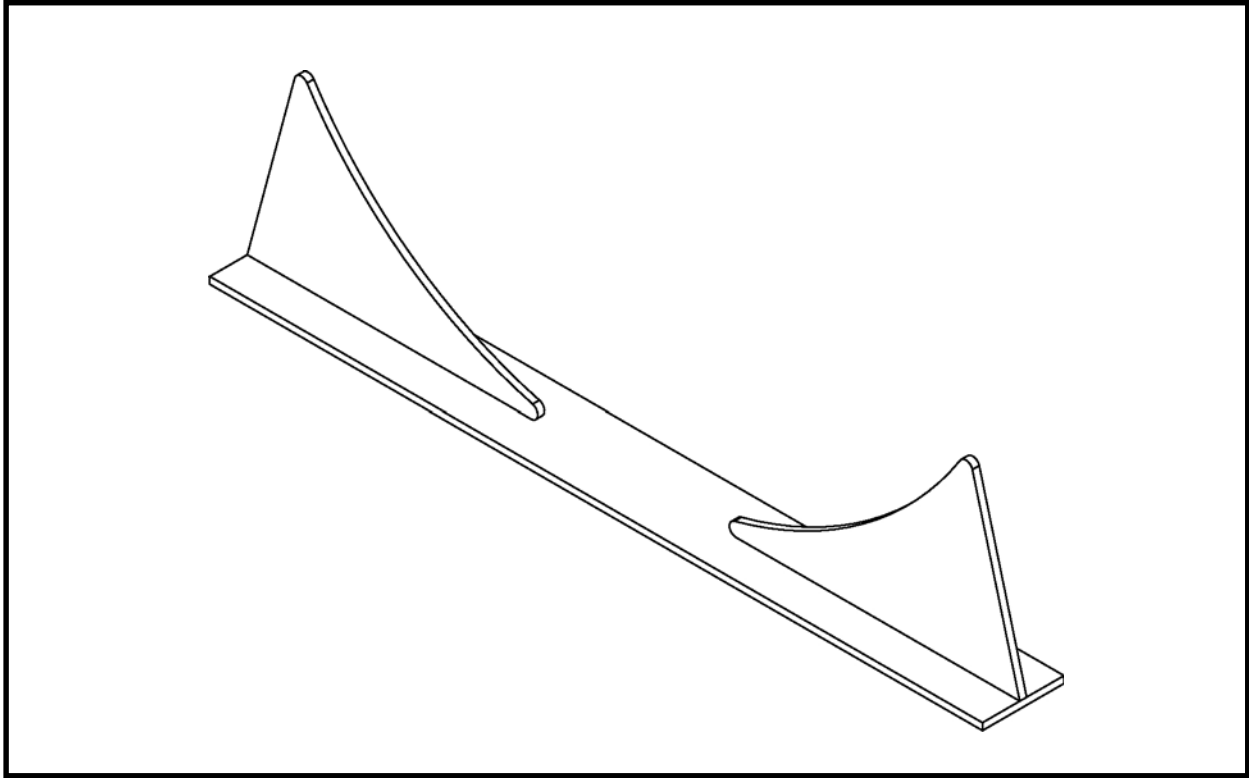
ITEM	QTY	PART NO,	DESCRIPTION
0	1	029770A	ASSEMBLY, Pump Support Spring
1	1	029771P	SPACER, Pump Support
2	6	029772P	STRAP, Pump Support
3	12	P0001-06-003	BOLT, Hex 3/8-16 UNC x 3/4
4	12	P0045-006	WASHER, Lock 3/8
5	2	029773P	PLATE, Hex
6	1	P0070-045	SPRING
7	2	029775P	HEX, Inside

## SHIPPING GUARD ASSEMBLY, 029778A



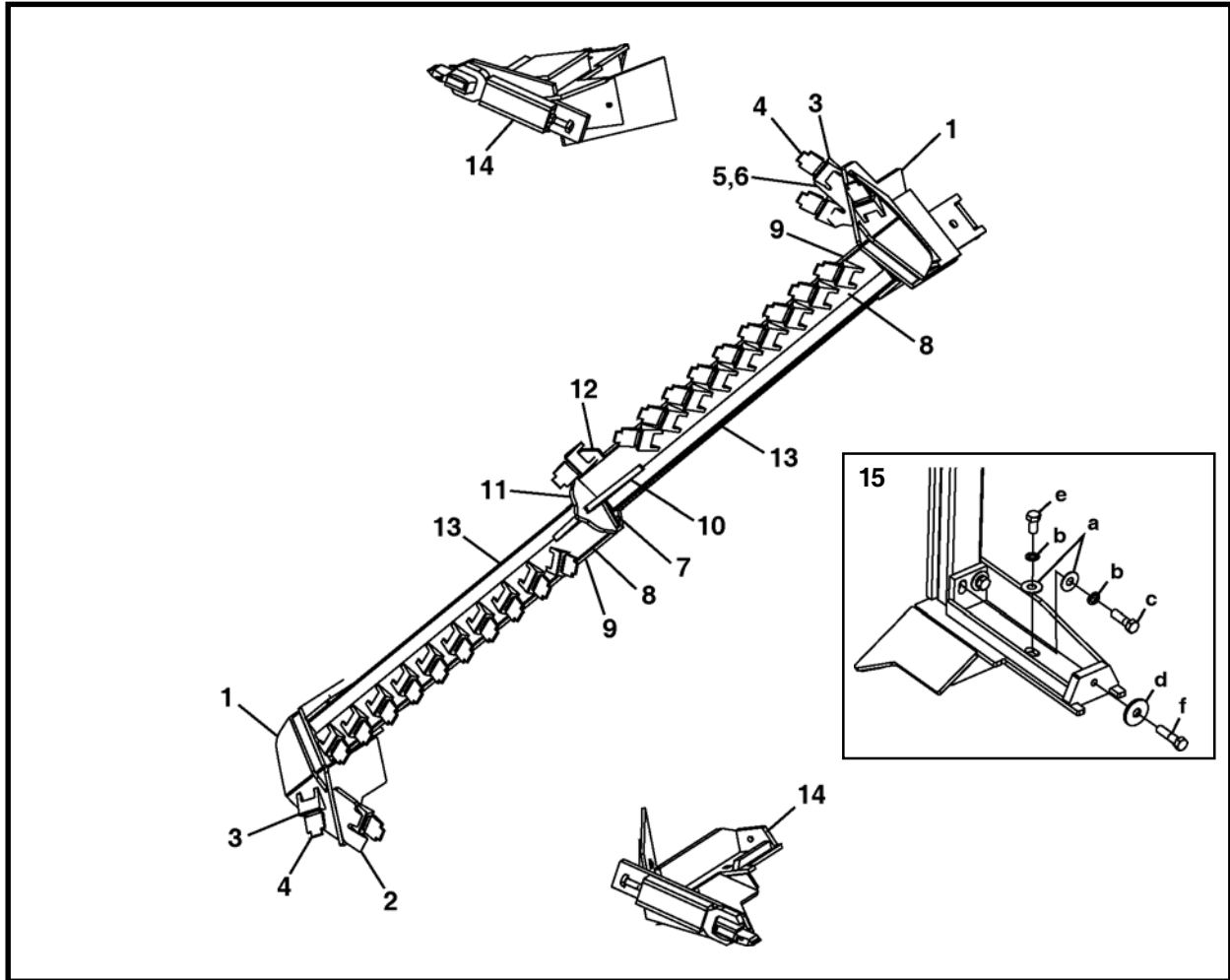
ITEM	QTY	PART NO,	DESCRIPTION
0	1	029778A	ASSEMBLY, Shipping Guard
1	1	029774A	WELDMENT, Shipping Guard
2	2	P0001-12-014	BOLT, Hex 3/4 UNC x 3-1/2
3	2	P0040-012	WASHER, Flat
4	2	P0045-012	WASHER, Lock
5	2	P0003-12-000	NUT, 3/4
6	2	P0001-16-014	BOLT, Hex 1 UNC x 3-1/2
7	2	P0045-016	WASHER, Lock 1
8	2	P0040-016	WASHER, Flat 1

# SHIPPING CRADLE, 029751A



ITEM	QTY	PART NO,	DESCRIPTION
0	1	029751A	SHIPPING CRADLE

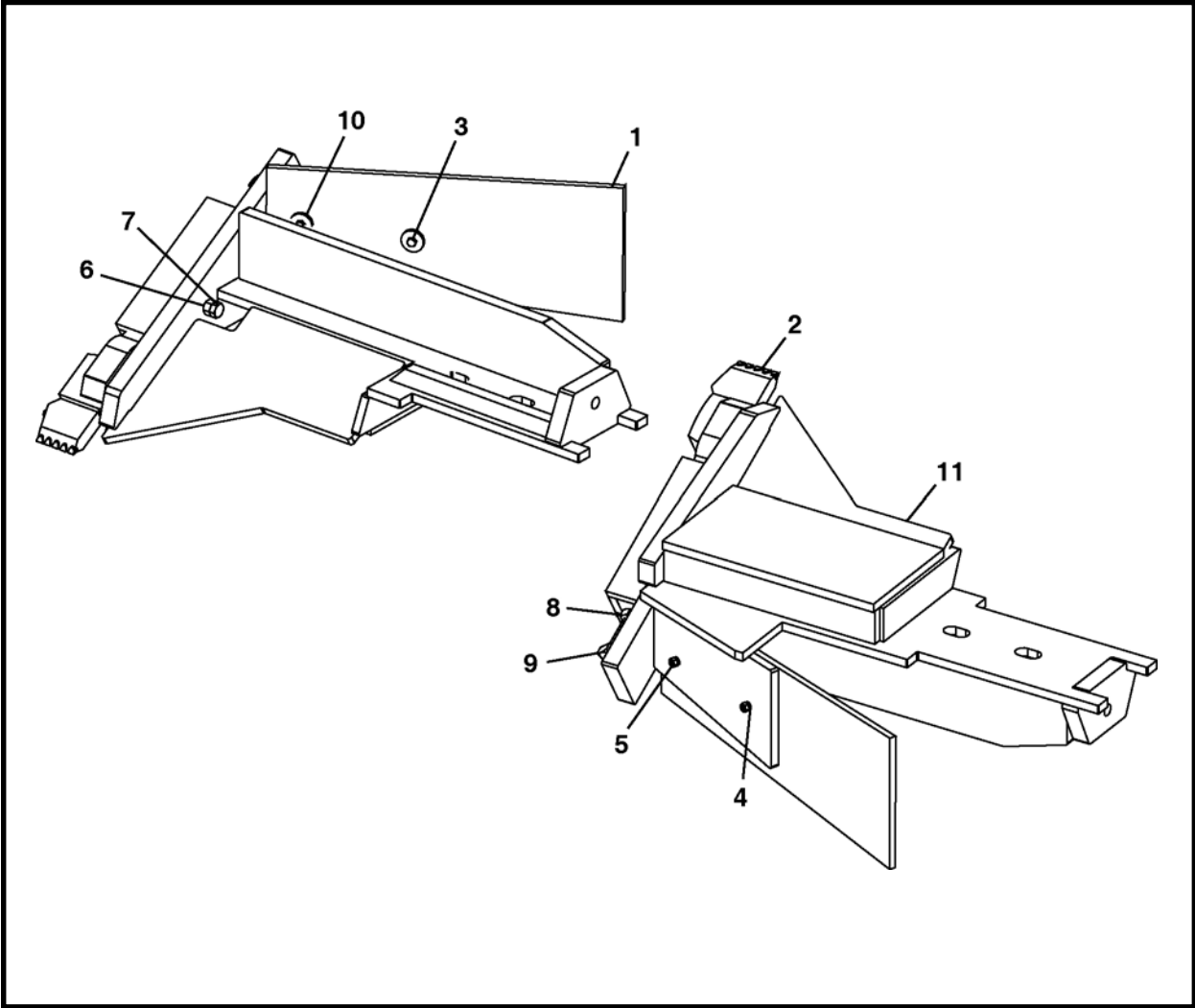
## DIRT BAR ASSEMBLY, 029700A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029700A	ASSEMBLY, Dirt Bar
1	2	029701A	WELDMENT, Dirt Cutter
2	1	004782P00	PLATE, Tooth Mounting
3	25	P0051-001	POCKET, Tooth
4	25	P0050-001	TOOTH, Cutter
5	1	004783P01	PLATE, Tooth Mounting
6	1	025249P	GUSSET
7	4	001688P00	GUSSET, Boring Head
8	2	029709P	PLATE, Dirt Bar Tooth
9	2	029710P	PLATE, Support
10	2	001679P00	GUSSET, Cutter Bar
11	1	001348P00	PILOT, Center
12	1	002209P00	BAR, Cutter Head
13	1	029702A	WELDMENT, Dirt Bar Tube
14*	2	029714A	ASSEMBLY, Adjustable Cutter
15	1	026154A	KIT, Dirt Bar Hardware (Includes items 15a - 15f)
15a	12	P0040-012	WASHER, 3/4
15b	12	P0045-012	WASHER, Lock 3/4
15c	8	P0001-12-010	BOLT, 3/4-10 UNC x 2-1/2
15d	4	004124P01	WASHER
15e	4	P0001-12-006	BOLT, 3/4-10 UNC x 1-1/2
15f	4	P0001-12-012	BOLT, 3/4-10 UNC x 3
16	1	P0035-002	BOLT, Target 5/16 UNC x 3/4 (not shown)
17	1	P0003-05-000	NUT, 5/16 (not shown)

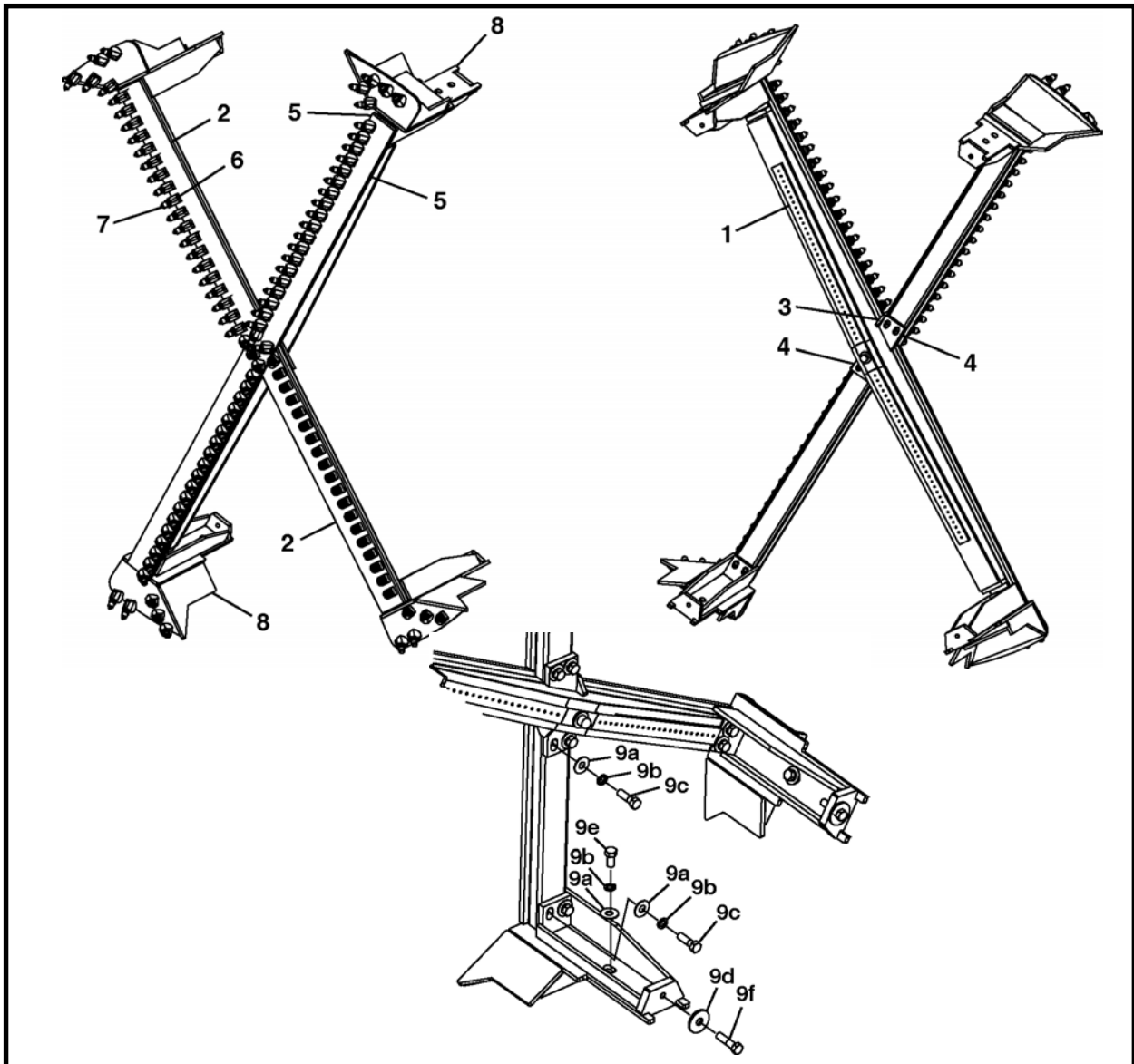
\* Refer to this section for parts breakdown

**ADJUSTABLE CUTTER ASSEMBLY, 029714A**



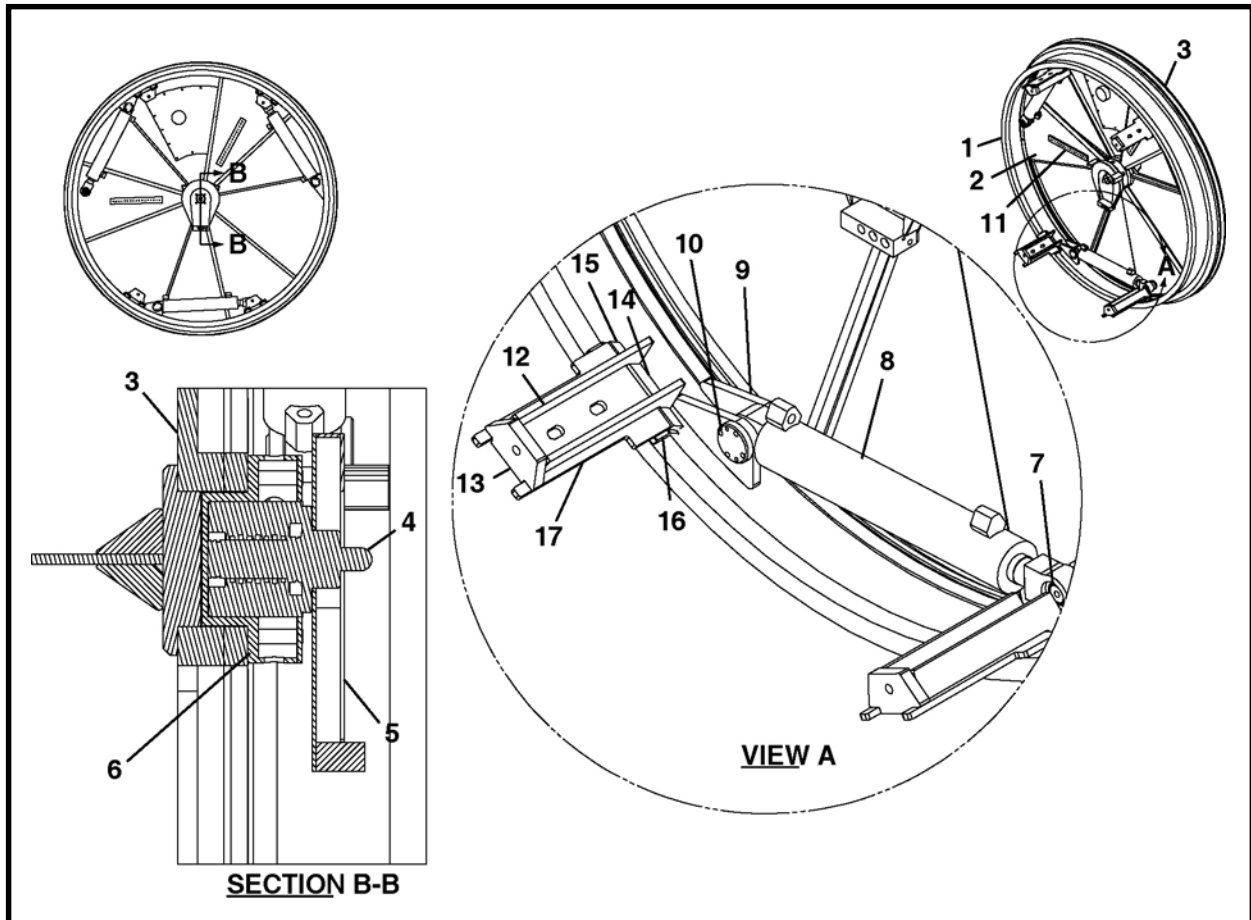
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029714A	ASSEMBLY, Adjustable Cutter
1	1	014194P01	PADDLE, Cutter Plate
2	1	014195A00	WELDMENT, Outside Cutter Tooth
3	2	P0001-04-005	BOLT, 1/4-20 UNC x 1-1/4
4	2	P0045-004	WASHER, Lock 1/4
5	2	P0003-04-000	NUT, 1/4
6	1	P0003-08-000	NUT, 1/2
7	1	P0001-08-006	BOLT, 1/2-13 UNC 1-1/2
8	1	P0007-12-000	NUT, Jam 3/4
9	1	P0034-12-014	BOLT, Square 3/4-10 UNC 3-1/2
10	2	002624P00	WASHER
11	1	029713A	WELDMENT, Adjustable Cutter

## QUAD BAR ASSEMBLY, 029711A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029711A	ASSEMBLY, Quad Bar
1	1	029702A	WELDMENT, Dirt Bar Tube
2	2	029712A	WELDMENT, Short Bar
3	2	025083P	GUSSET
4	2	024122P00	MOUNT, Quad Bar
5	1	029698P	BAR, Cutter Face
6	101	P0051-004	HOLDER, Tooth
7	101	P0050-011	TOOTH, Carbide
8	4	029715A	WELDMENT, Cutter
9	1	026150A	KIT, Hardware (Includes items 9a-9f)
9a	16	P0040-012	WASHER, Flat 3/4
9b	16	P0045-012	WASHER, Lock 3/4
9c	12	P0001-12-010	BOLT, 3/4-10 UNC x 2-1/2
9d	4	004124P01	WASHER
9e	4	P0001-12-006	BOLT, 3/4-10 UNC x 1-1/2
9f	4	P0001-12-012	BOLT, 3/4-10 UNC x 3
10	1	P0035-002	BOLT, Target 5/16 UNC x 3/4 (not shown)
11	1	P0003-05-000	NUT, 5/16 (not shown)

## CLOSED FACE FINAL ASSEMBLY, F29629F



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F29629F	ASSEMBLY, Closed Face Final
1	1	029622P	RING, Rear
2	16	029623P	PLASTIC, Wear
3	1	029626P	WASHER, Wear
4	1	018700A00	HUB, Rotary
5	1	018671A00	GUARD, Conveyor Hub (Includes items 5a-5b)
5a	4	P0001-05-004	BOLT, Hex 5/16 UNC x 1
5b	4	P0045-005	WASHER, Lock 5/16
6	1	018703P01	GUARD, Rotary Hub
7	3	014215P00	BAR, Target
8*	3	P0307-170	ASSEMBLY, Cylinder
9	6	P0001-12-004	BOLT, 3/4-10 UNC x 1-1/4
10	6	P0040-012	WASHER, Flat 3/4
11	3	029697P	SPUD, Long
12	3	029696P	SPUD, Short
13	1	029631A	WELDMENT, Front Face
14	1	029638P	DOOR
15	6	029627A	MOUNT
16	36	P0001-10-020	BOLT, 5/8-11 UNC x 5
17	36	P0046-010	WASHER, Hi-Collar Lock 5/8
18**	1	026912A	ASSEMBLY, Closed Face Control

## CLOSED FACE FINAL ASSEMBLY, F29629F

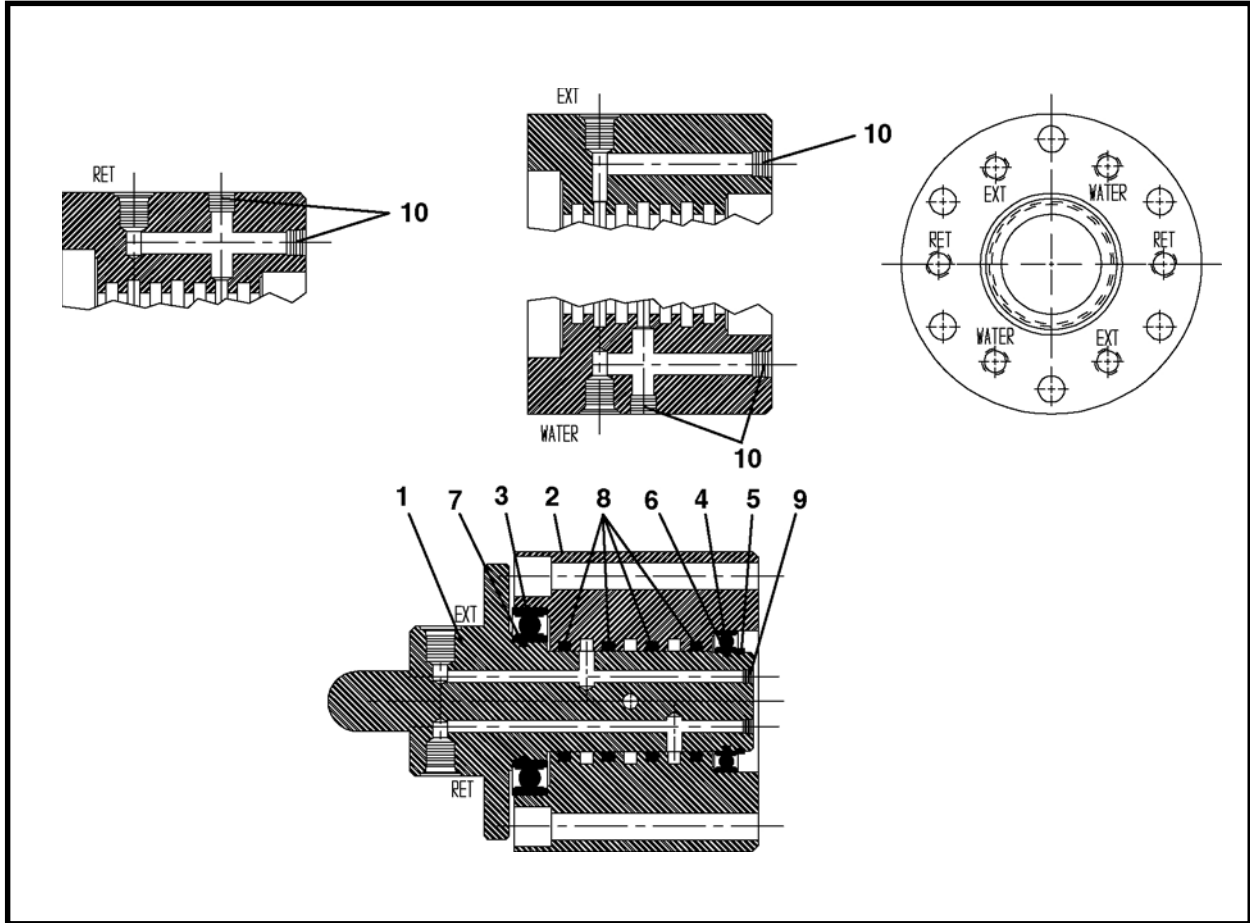
ITEM	QTY	PART NO.	DESCRIPTION
19***	1	026911A	KIT, Hardware (19a-19q)
19a	12	P0001-06-005	BOLT, 3/8-16 UNC x 1.25
19b	33	P0045-006	WASHER, Lock 3/8
19c	3	P0001-12-014	BOLT, 3/4-10 UNC x 3.5
19d	12	P0045-012	WASHER, Lock 3/4
19e	3	P0003-12-000	NUT, 3/4
19f	6	P0001-12-006	BOLT, 3/4-10 UNC x 1.5
19g	6	P0040-012	FLATWASHER, 3/4
19h	6	P0030-06-004	SCREW, Flat Head Cap 3/8 x 1
19i	12	P0001-08-008	BOLT, 1/2-13 UNC x 2
19j	15	P0045-008	WASHER, Lock 1/2
19k	17	P0001-06-006	BOLT, 3/8-16 UNC x 1.5
19l	4	P0001-06-003	BOLT, 3/8-16 UNC x .75
19m	6	P0031-08-024	SCREW, Socket Head Cap 1/2-13 UNC x 6
19n	6	P0046-008	WASHER, Lock, Hi Collar 1/2
19o	2	P0001-08-006	BOLT, 1/2-13 UNC x 1.5
19p	2	P0001-05-003	BOLT, 5/16-18 UNC x .75
19q	17	P0040-006	WASHER, Flat 3/8

\* Refer to Section 10, Cylinders, Cylinder Assembly, P0307-170 for parts breakdown.

\*\* Refer to Section 6, Hydraulics, Closed Face Control Assembly, 026912A for parts breakdown.

\*\*\* Not Shown

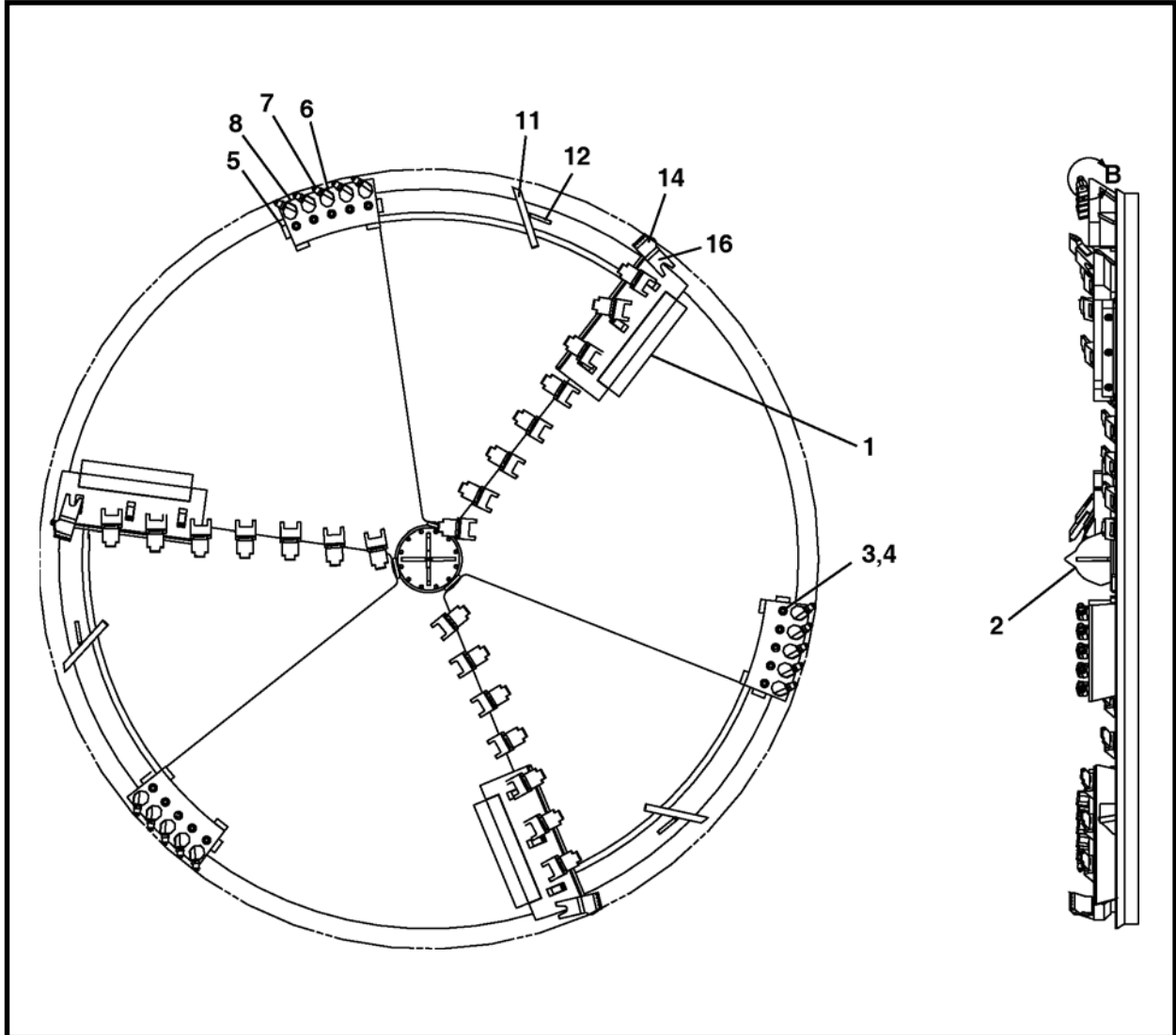
# ROTARY HUB ASSEMBLY, 018700A00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	018700A00	ASSEMBLY, Rotary Hub
1	-	-	-
2	-	-	-
3	1	P0065-106	BEARING
4	1	P0065-013	BEARING
5	1	P0077-029	RING, Snap
6	1	P0085-132	ORING
7	1	P0085-139	ORING
8	4	P0080-019	SEAL, Quad
9	1	P0300-144	PLUG, 1/8
10	10	P0300-026	PLUG, 1/4



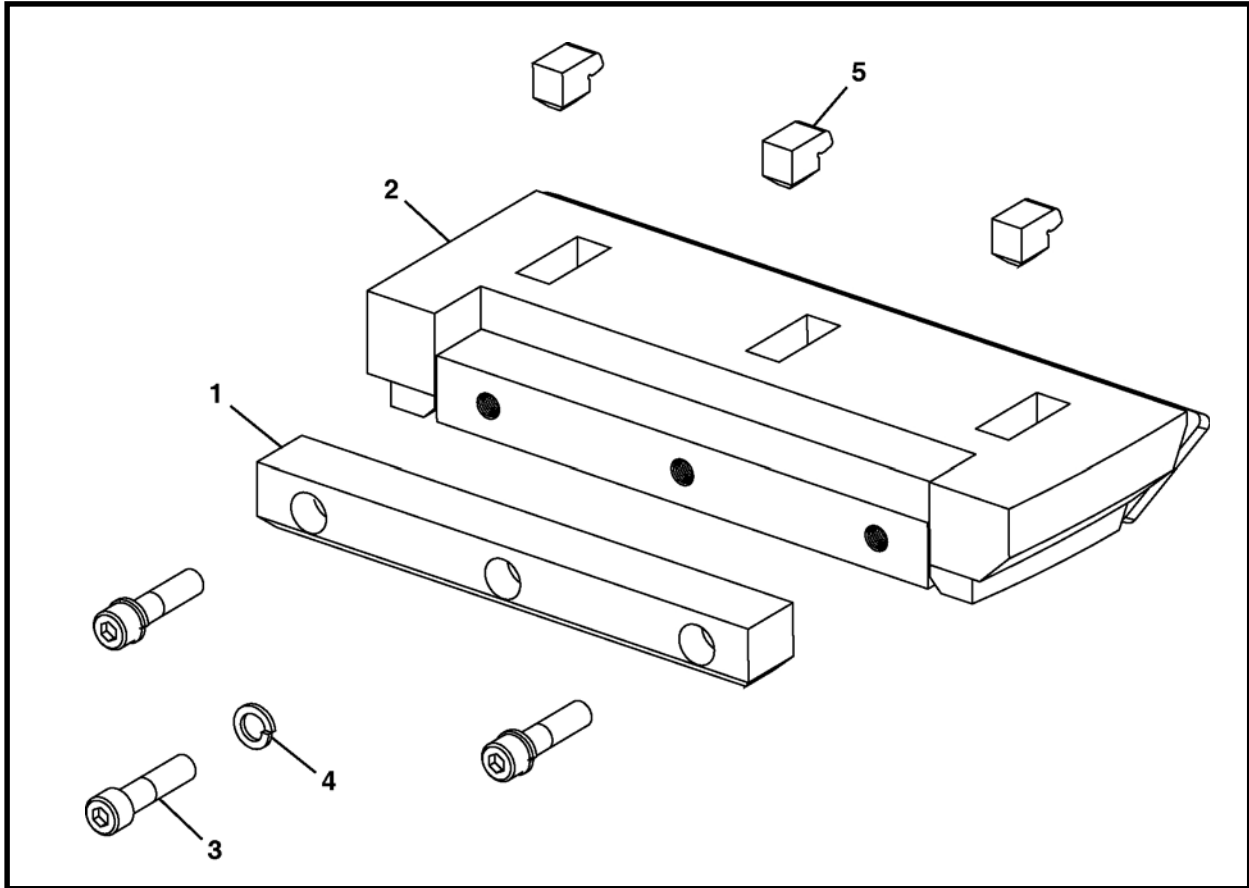
## FRONT FACE WELDMENT, 029631A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029631A	WELDMENT, Front Face
1*	3	029624A	ASSEMBLY, Tooth Bar
2	1	029634A	WELDMENT, Closed Face Pilot
3	16	P0046-012	WASHER, Hi-Collar Lock 3/4
4	15	P0031-12-012	SCREW, Socket Head Cap 3/4-10 UNC x 3
5	12	025658P	SUPPORT, Tooth Bar
6	15	P0051-004	HOLDER, Carbide Tooth
7	15	P0050-011	TOOTH, Carbide Bullet
8	3	-	PLATE
9	22	P0050-001	POCKET
10	22	P0051-001	HOLDER
11	3	-	SCRAPER
12	3	-	GUSSET
13	3	-	BAR, Pilot Retainer
14	3	P0050-030	TOOTH, Carbide Cutter Bar
15	6	029628P	BAR, Front Face
16	3	P0050-011	HOLDER, Carbide Tooth

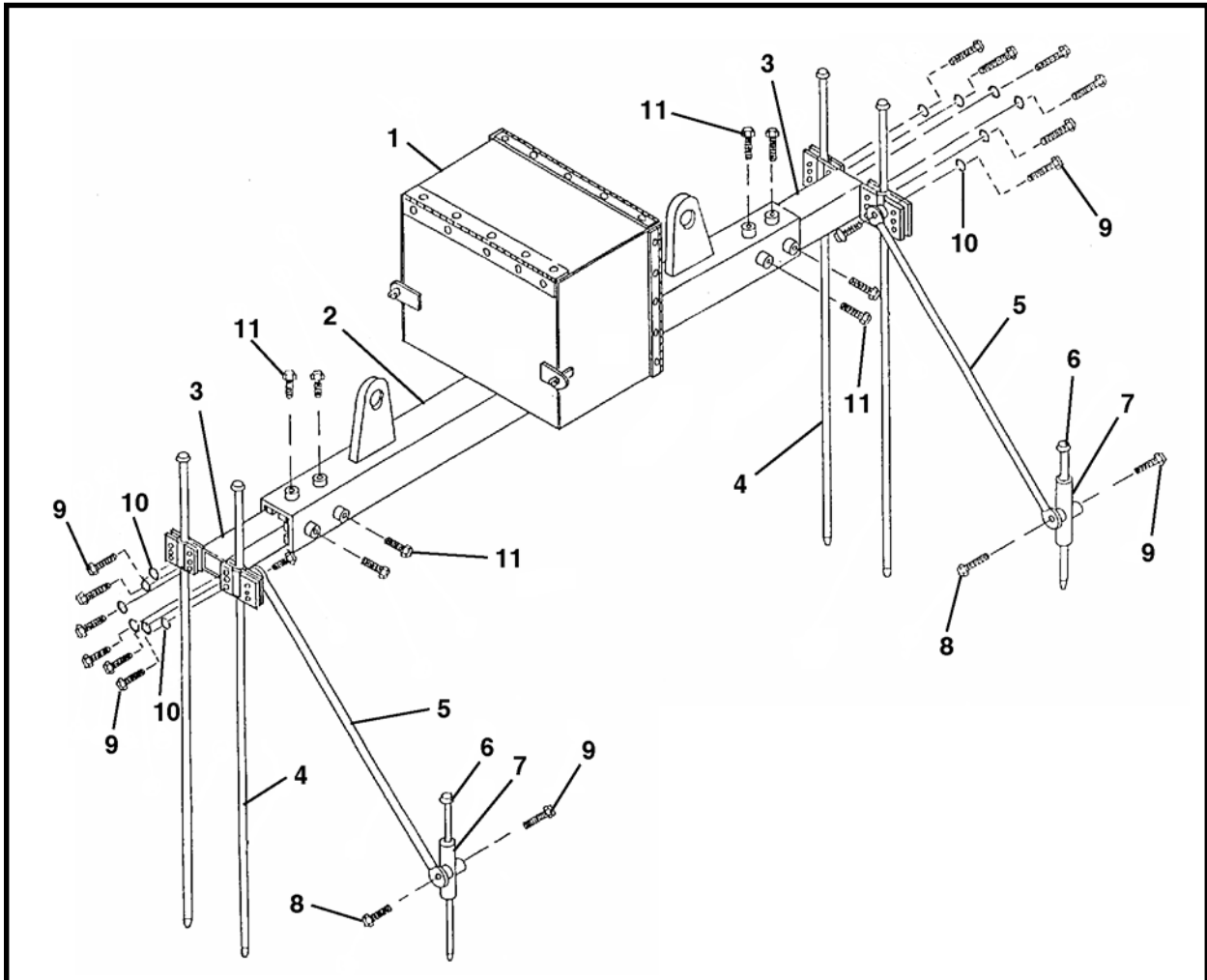
\* Refer to this section for parts breakdown.

## TOOTH BAR ASSEMBLY, 029624A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029624A	ASSEMBLY, Tooth Bar
1	1	029684P	PLATE, Bar-Face
2	1	029683A	WELDMENT, Tooth Bar
3	3	P0031-12-012	SCREW, Socket Head Cap 3/4-10 UNC x 3
4	3	P0046-012	WASHER, Hi-Collar Lock 3/4
5	3	025632P	TAB, Locking

# LASER LIGHT STAND, FLS5866F



ITEM	QTY	PART NO.	DESCRIPTION
0	1	FLS5866F	LASER LIGHT STAND
1	1	006068A00	ASSEMBLY, Laser Box
2	1	006047A00	WELDMENT, Tube
3	2	006034A00	WELDMENT, Sliding Tube
4	4	006039A00	STAKE, Long
5	2	006044A00	TUBE, Support
6	2	006040A00	STAKE, Short
7	2	006025A00	TUBE, Swivel
8	4	P0001-08-003	BOLT, 1/2 UNC x 3/4
9	26	P0001-08-005	BOLT, 1/2 UNC x 1-1/2
10	24	P0045-008	WASHER, Lock 1/2
11	8	P0001-08-007	BOLT, 1/2 UNC x 1-3/4

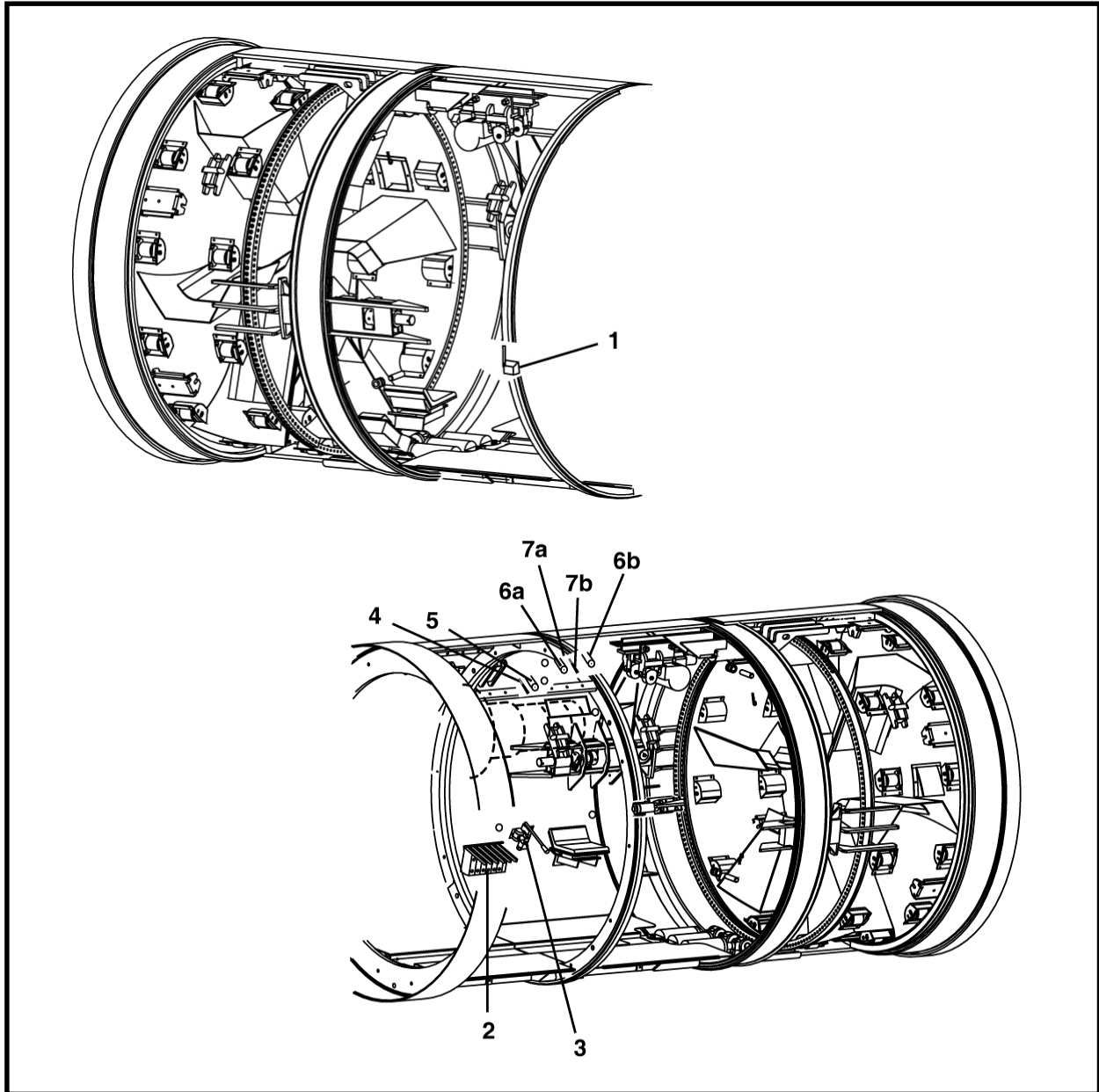
## **NOTES**



# Operator Controls

Operator Controls ..... 1

## OPERATOR CONTROLS



ITEM	QTY	PART NO.	DESCRIPTION
1	1	P0302-252	VALVE, Conveyor Control
2	1	P0302-497	VALVE, TBM Control
3	1	P0302-118	VALVE, Steering (Grade/Alignment)
4	1	P0302-169	VALVE, Conveyor Drive Control
5	1	P0302-167	VALVE, Conveyor Speed Flow Control
6a	1	P0302-167	VALVE, Inner Drum Speed Flow Control
6b	1	P0302-491	VALVE, Inner Drum Speed Flow Control
7a	1	P0302-466	VALVE, Inner Drum
7b	1	P0302-467	VALVE, Inner Drum Pilot Control



# Electrical

## Main Electrical Circuit

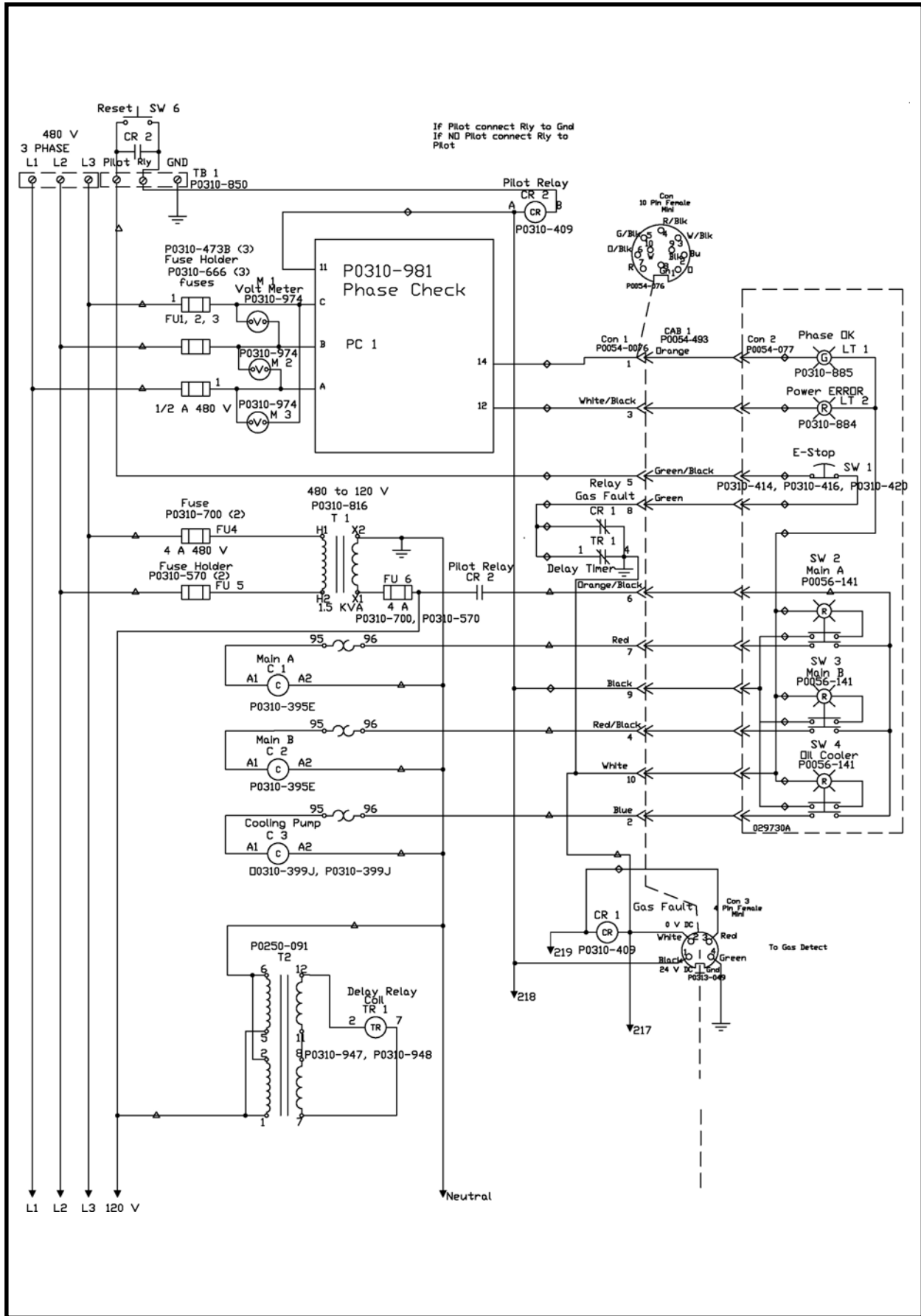
960B Electrical Power Circuit, 029633A	
Part 1 of 3 .....	1
Part 2 of 3 .....	3
Part 3 of 3 .....	5

## Gas Detection System

Electrical System Assembly, 016400A .....	7
Strobe - Horn Assembly, 016404A .....	8
Gas Detector Assembly, 016401A .....	9
Gas Challenge Kit, P0310-266 .....	10
Gas Detector Schematic .....	11
Electrical Box Assembly, 016402A .....	12
Electrical Box Schematic .....	13
Extension Light Assembly, 016415A .....	14

# ELECTRICAL SYSTEM ASSEMBLY, 029633A

## Part 1 of 3



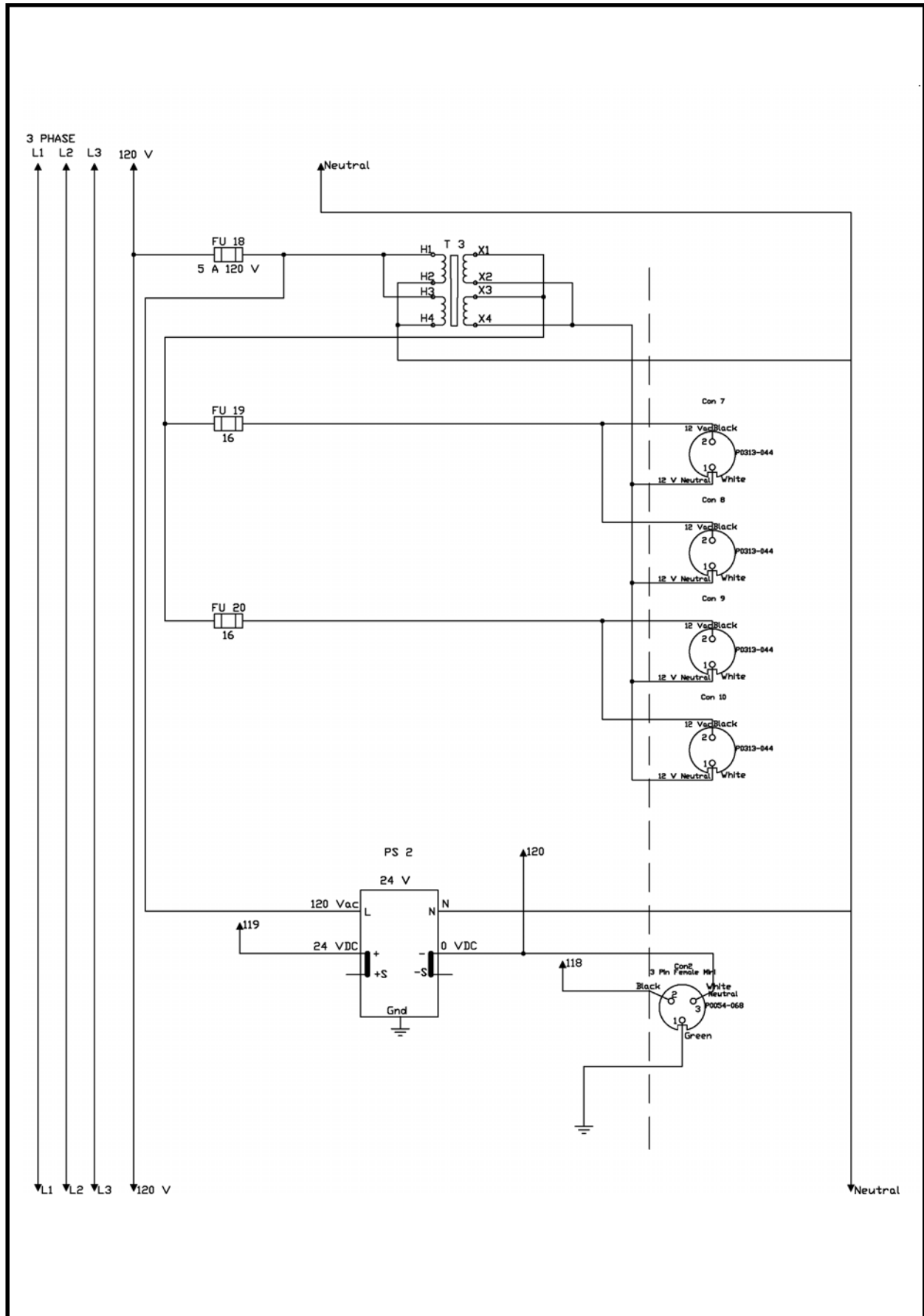
# ELECTRICAL SYSTEM ASSEMBLY, 029633A

## Part 1 of 3

ITEM	QTY	PART NO.	DESCRIPTION
BX2	1	P0310-987	Box Electrical
BX2	1	P0310-987A	Box back panel
C 1	1	P0310-395E	150 HP contactor with overloads 120 V coil
C 2	1	P0310-395E	150 HP contactor with overloads 120 V coil
C 3	1	P0310-399J	2 HP contactor 120 V coil
C 3	1	P0310-399I	Overload relay
CAB2	1	P0054-167	Extension 2 pin mini
Con 1	1	P0054-076	10 pin mini Female
Con 3	1	P0313-049	4 pin mini Female connector
Con 4	1	P0054-286	4 pin Mini Male connector
Con 5	1	P0313-044	2 pin mini Female
Con 6	1	P0310-042	2 pin mini male
CR 1	1	P0310-409	24 V control relay
CR 2	1	P0310-409	24 V Control Relay
FU 1, 2, 3	3	P0310-666	1/2 A 480 V fuse
FU 1, 2, 3	3	P0310-473B	Fuse holder for FU 1, 2, 3
FU 4, 5	2	P0310-667	2 A 480 V Fuse
FU 4, 5	2	P0310-473B	Fuse holder for FU 4, 5
FU 6	1	P0310-667	2 S 480 V Fuse
FU 6	1	P0310-473B	Fuse holder for P0310-667
FU 7, 8	2	P0310-471	Fuse 15 A SB
FU 7, 8	2	P0310-473B	Fuse holder for P0310-471
FU 9 - 14	6	P0310-772	175 A 480 Fuse
FU 9 - 14	6	P0310-772A	Fuse holder for P0310-772
FU 15 - 17	3	P0310-668	6 A 480 V fuse
FU 15 - 17	3	P0310-473B	Fuse holder for P0310-668
M1, M2, M3	3	P0310-974	0 - 600 V. Meters
PC 1	1	P0310-981	Phase checker 480 V
PS 1	1	P0310-984	Power Supply 12V 15 A
SW 5	1	P0056-009	Switch Toggle SPDT
	1	P0056-010	Boot for P0056-009
T 1	1	P0310-816	480 - 120 V Transformer 1.5 KVA
T 2	1	P0250-091	120 - 12 V Transformer
TB 1	1	P0310-850	Terminal Block 600 V 30 A
TB 2	1	P0310-850	Terminal Block 600 V 30 A
TB 3	1	P0310-985	760 A Ternubak Block
TB 3	1	P0310-986	Terminal Block cover
TR 1	1	P0310-947	12 V timer relay
TR 1	1	P0310-948	Relay Base

# ELECTRICAL SYSTEM ASSEMBLY, 029633A

Part 2 of 3



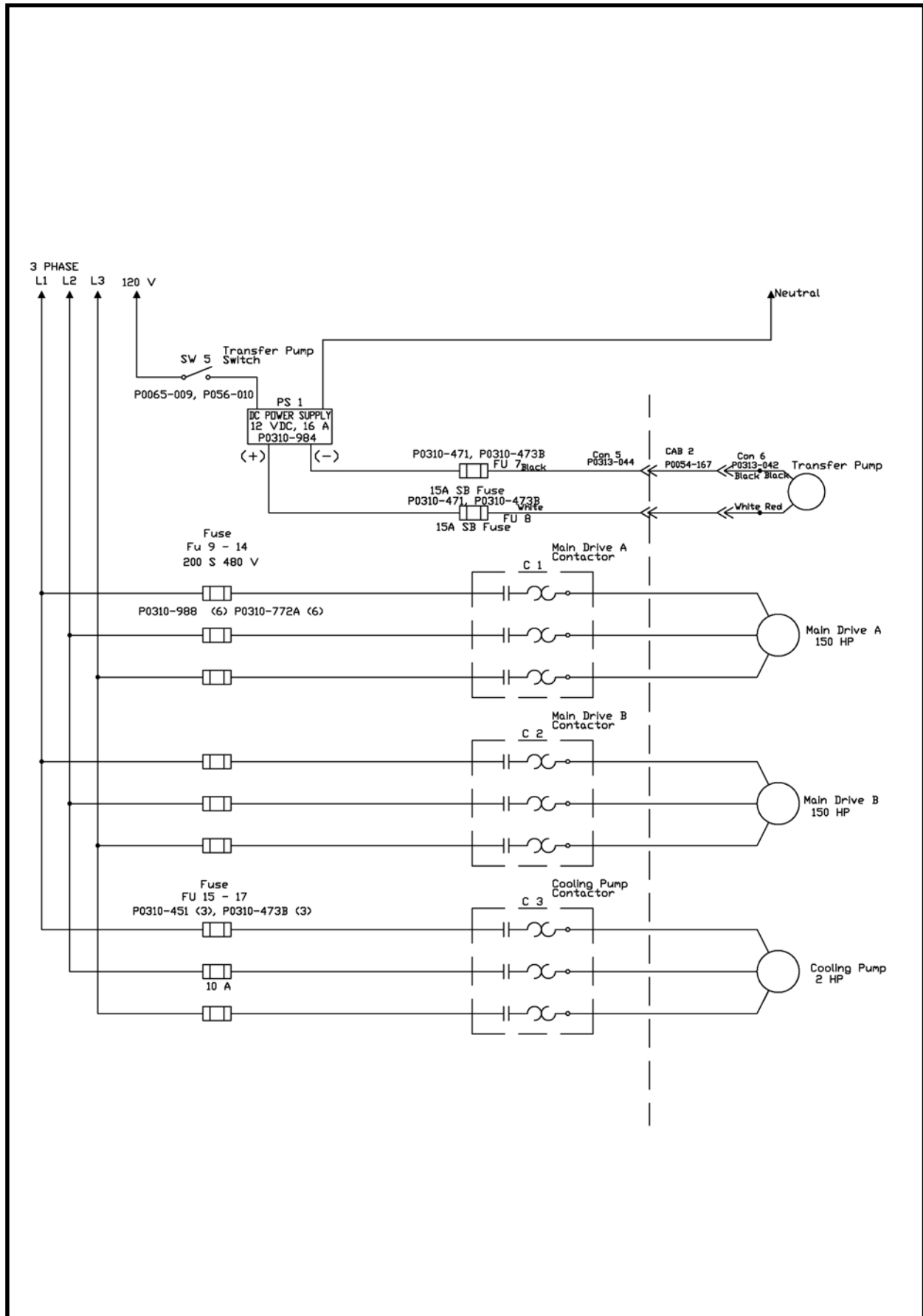
# ELECTRICAL SYSTEM ASSEMBLY, 029633A

## Part 2 of 3

ITEM	QTY	PART NO.	DESCRIPTION
BX2	1	P0310-987	Box Electrical
BX2	1	P0310-987A	Box back panel
C 1	1	P0310-395E	150 HP contactor with overloads 120 V coil
C 2	1	P0310-395E	150 HP contactor with overloads 120 V coil
C 3	1	P0310-399J	2 HP contactor 120 V coil
C 3	1	P0310-399I	Overload relay
CAB2	1	P0054-167	Extension 2 pin mini
Con 1	1	P0054-076	10 pin mini Female
Con 3	1	P0313-049	4 pin mini Female connector
Con 4	1	P0054-286	4 pin Mini Male connector
Con 5	1	P0313-044	2 pin mini Female
Con 6	1	P0310-042	2 pin mini male
CR 1	1	P0310-409	24 V control relay
CR 2	1	P0310-409	24 V Control Relay
FU 1, 2, 3	3	P0310-666	1/2 A 480 V fuse
FU 1, 2, 3	3	P0310-473B	Fuse holder for FU 1, 2, 3
FU 4, 5	2	P0310-667	2 A 480 V Fuse
FU 4, 5	2	P0310-473B	Fuse holder for FU 4, 5
FU 6	1	P0310-667	2 S 480 V Fuse
FU 6	1	P0310-473B	Fuse holder for P0310-667
FU 7, 8	2	P0310-471	Fuse 15 A SB
FU 7, 8	2	P0310-473B	Fuse holder for P0310-471
FU 9 - 14	6	P0310-772	175 A 480 Fuse
FU 9 - 14	6	P0310-772A	Fuse holder for P0310-772
FU 15 - 17	3	P0310-668	6 A 480 V fuse
FU 15 - 17	3	P0310-473B	Fuse holder for P0310-668
M1, M2, M3	3	P0310-974	0 - 600 V. Meters
PC 1	1	P0310-981	Phase checker 480 V
PS 1	1	P0310-984	Power Supply 12V 15 A
SW 5	1	P0056-009	Switch Toggle SPDT
	1	P0056-010	Boot for P0056-009
T 1	1	P0310-816	480 - 120 V Transformer 1.5 KVA
T 2	1	P0250-091	120 - 12 V Transformer
TB 1	1	P0310-850	Terminal Block 600 V 30 A
TB 2	1	P0310-850	Terminal Block 600 V 30 A
TB 3	1	P0310-985	760 A Ternubak Block
TB 3	1	P0310-986	Terminal Block cover
TR 1	1	P0310-947	12 V timer relay
TR 1	1	P0310-948	Relay Base

# ELECTRICAL SYSTEM ASSEMBLY, 029633A

Part 3 of 3

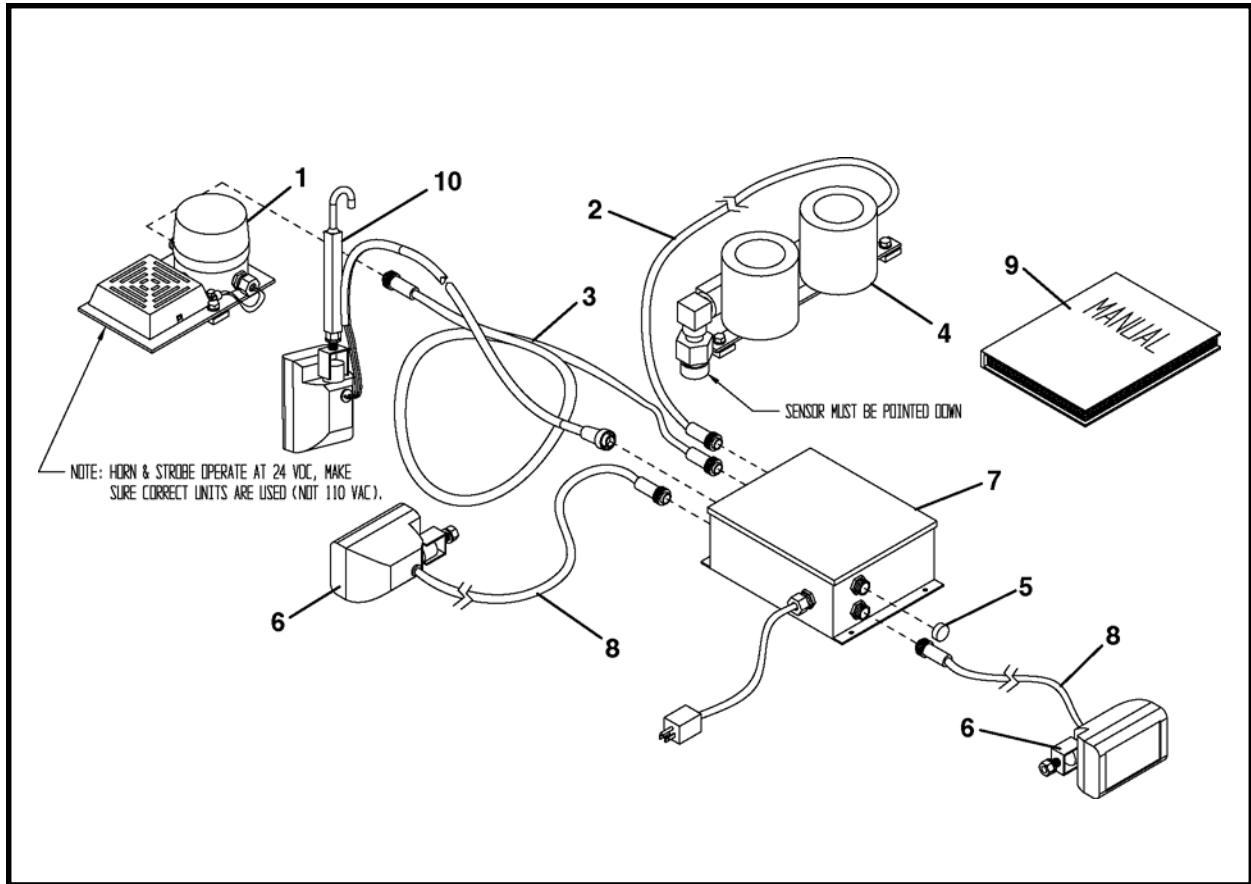


# ELECTRICAL SYSTEM ASSEMBLY, 029633A

## Part 3 of 3

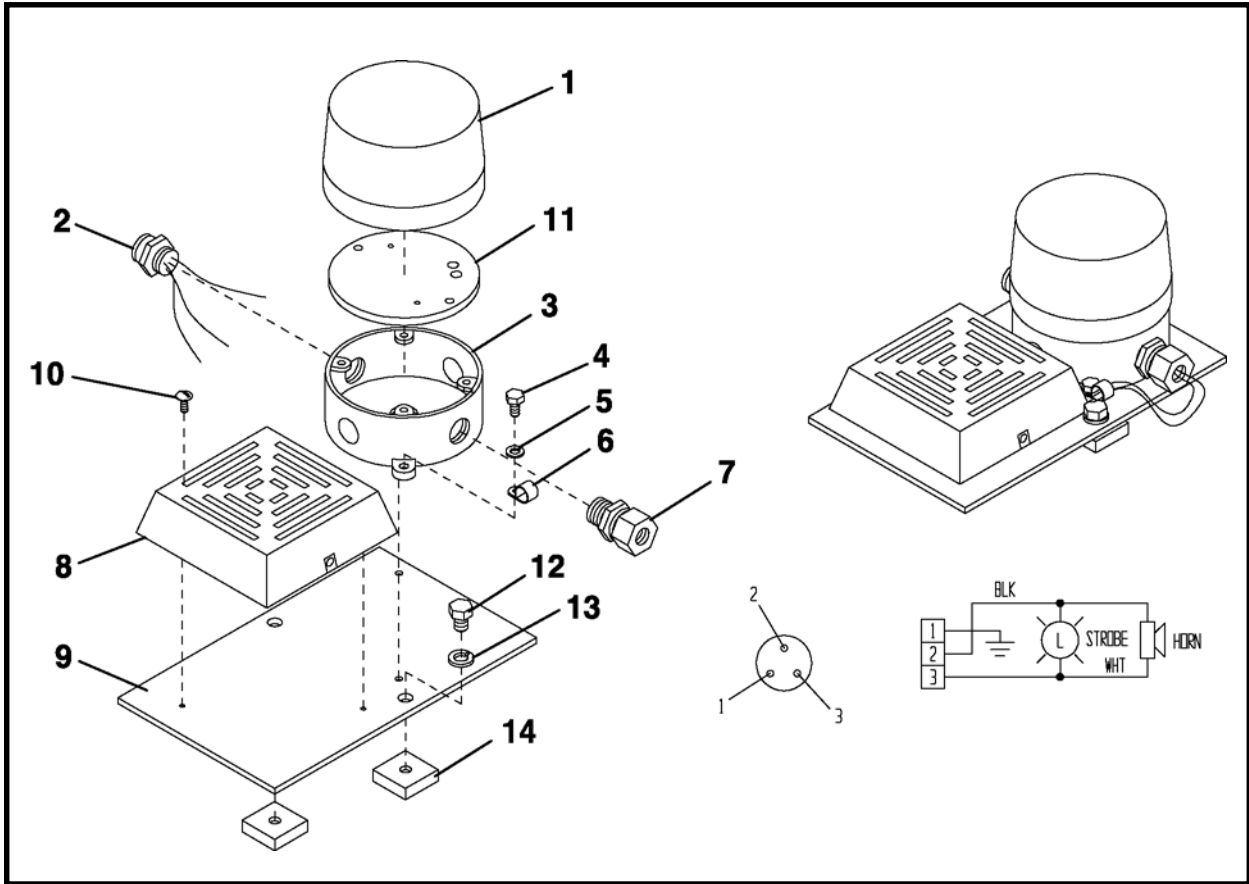
ITEM	QTY	PART NO.	DESCRIPTION
BX2	1	P0310-987	Box Electrical
BX2	1	P0310-987A	Box back panel
C 1	1	P0310-395E	150 HP contactor with overloads 120 V coil
C 2	1	P0310-395E	150 HP contactor with overloads 120 V coil
C 3	1	P0310-399J	2 HP contactor 120 V coil
C 3	1	P0310-399I	Overload relay
CAB2	1	P0054-167	Extension 2 pin mini
Con 1	1	P0054-076	10 pin mini Female
Con 3	1	P0313-049	4 pin mini Female connector
Con 4	1	P0054-286	4 pin Mini Male connector
Con 5	1	P0313-044	2 pin mini Female
Con 6	1	P0310-042	2 pin mini male
CR 1	1	P0310-409	24 V control relay
CR 2	1	P0310-409	24 V Control Relay
FU 1, 2, 3	3	P0310-666	1/2 A 480 V fuse
FU 1, 2, 3	3	P0310-473B	Fuse holder for FU 1, 2, 3
FU 4, 5	2	P0310-667	2 A 480 V Fuse
FU 4, 5	2	P0310-473B	Fuse holder for FU 4, 5
FU 6	1	P0310-667	2 S 480 V Fuse
FU 6	1	P0310-473B	Fuse holder for P0310-667
FU 7, 8	2	P0310-471	Fuse 15 A SB
FU 7, 8	2	P0310-473B	Fuse holder for P0310-471
FU 9 - 14	6	P0310-772	175 A 480 Fuse
FU 9 - 14	6	P0310-772A	Fuse holder for P0310-772
FU 15 - 17	3	P0310-668	6 A 480 V fuse
FU 15 - 17	3	P0310-473B	Fuse holder for P0310-668
M1, M2, M3	3	P0310-974	0 - 600 V. Meters
PC 1	1	P0310-981	Phase checker 480 V
PS 1	1	P0310-984	Power Supply 12V 15 A
SW 5	1	P0056-009	Switch Toggle SPDT
	1	P0056-010	Boot for P0056-009
T 1	1	P0310-816	480 - 120 V Transformer 1.5 KVA
T 2	1	P0250-091	120 - 12 V Transformer
TB 1	1	P0310-850	Terminal Block 600 V 30 A
TB 2	1	P0310-850	Terminal Block 600 V 30 A
TB 3	1	P0310-985	760 A Ternubak Block
TB 3	1	P0310-986	Terminal Block cover
TR 1	1	P0310-947	12 V timer relay
TR 1	1	P0310-948	Relay Base

## ELECTRICAL SYSTEM ASSEMBLY, 016400A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	016400A	ELECTRICAL SYSTEM ASSEMBLY
1	1	016404A	STROBE-HORN ASSEMBLY
2	1	P0054-287	CABLE
3	1	P0054-087	CABLE
4	1	016401A	GAS DETECTOR ASSEMBLY
5	2	P0054-090	CAP
6	2	016409A	LIGHT ASSEMBLY (Includes items 6a & 6b)
6a	1	P0053-026	LIGHT
6b	1	P0053-026A	BULB, Light
7	1	016402A	ELECTRICAL BOX ASSEMBLY
8	2	016410A	CABLE ASSEMBLY
9	1	050006A	MANUAL, Gas Detection System
10	1	016415A	ASSEMBLY, Extension Light

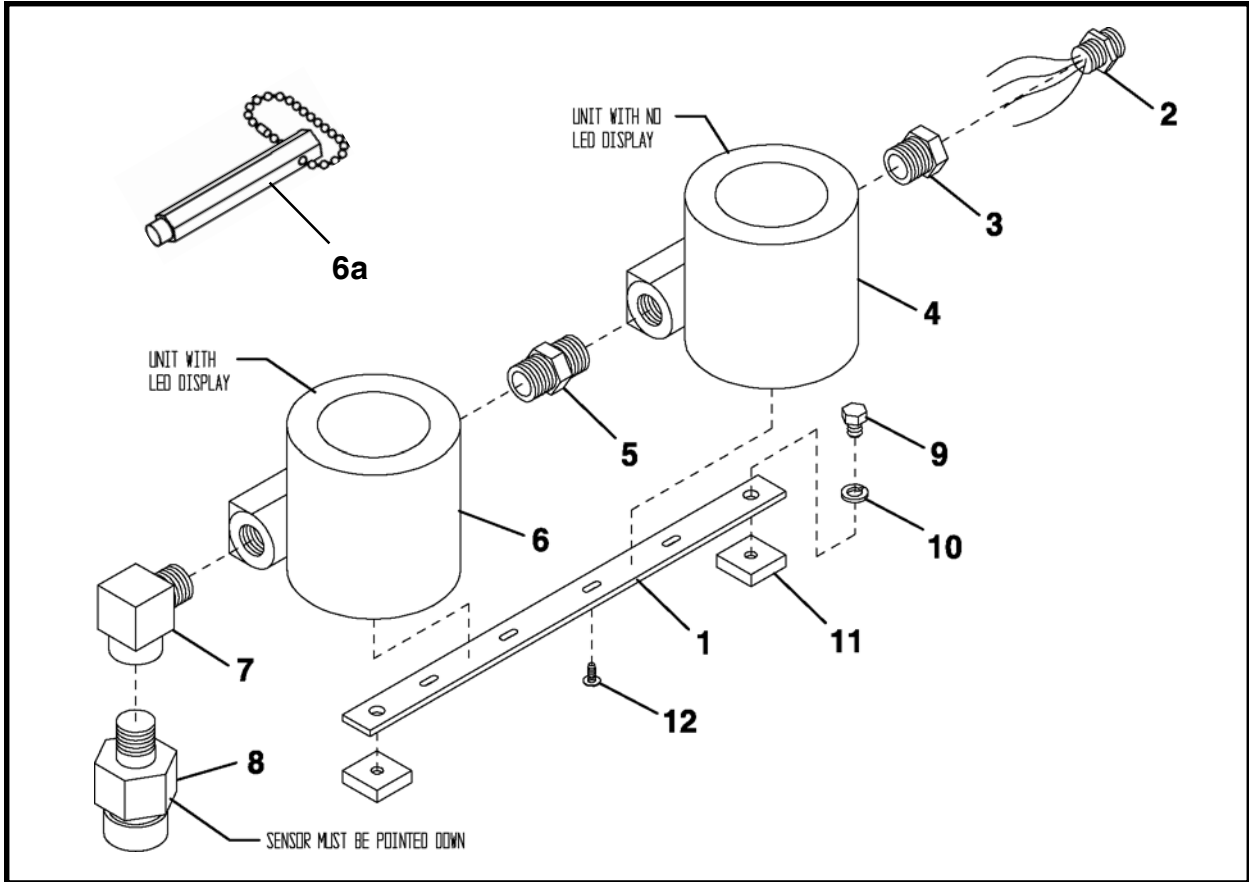
## STROBE - HORN ASSEMBLY, 016404A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	016404A	STROBE - HORN ASSEMBLY
1	1	P0310-286B	STROBE LIGHT, Red 24VDC (includes 1a and 1b)
1a*	1	P0310-286A	LENS
1b*	1	P0310-286B	STROBE LIGHT 24VDC
2	1	P0054-069	RECEPTACLE, Mini
3	1	P0310-251	HOLDER BOX
4	2	P0001-04-002	BOLT, 1/4-20 UNC x 1/2
5	2	P0045-004	WASHER, Lock 1/4
6	1	P0055-123	CLAMP, Nylon
7	1	P0311-121	CONNECTOR, Strain Relief
8	1	P0310-287D	HORN, Warning 24VDC
9	1	016405P	PLATE, Mounting
10	2	P0017-08-323	SCREW, Round Head Machine 8-32 x 1/2
11	1	023534P00	COVER, Back
12	2	P0001-06-002	BOLT, 3/8-16 UNC x 1/2
13	2	P0045-006	WASHER, Lock 3/8
14	2	P0011-006A	NUT, Strut Square

\* Not Shown

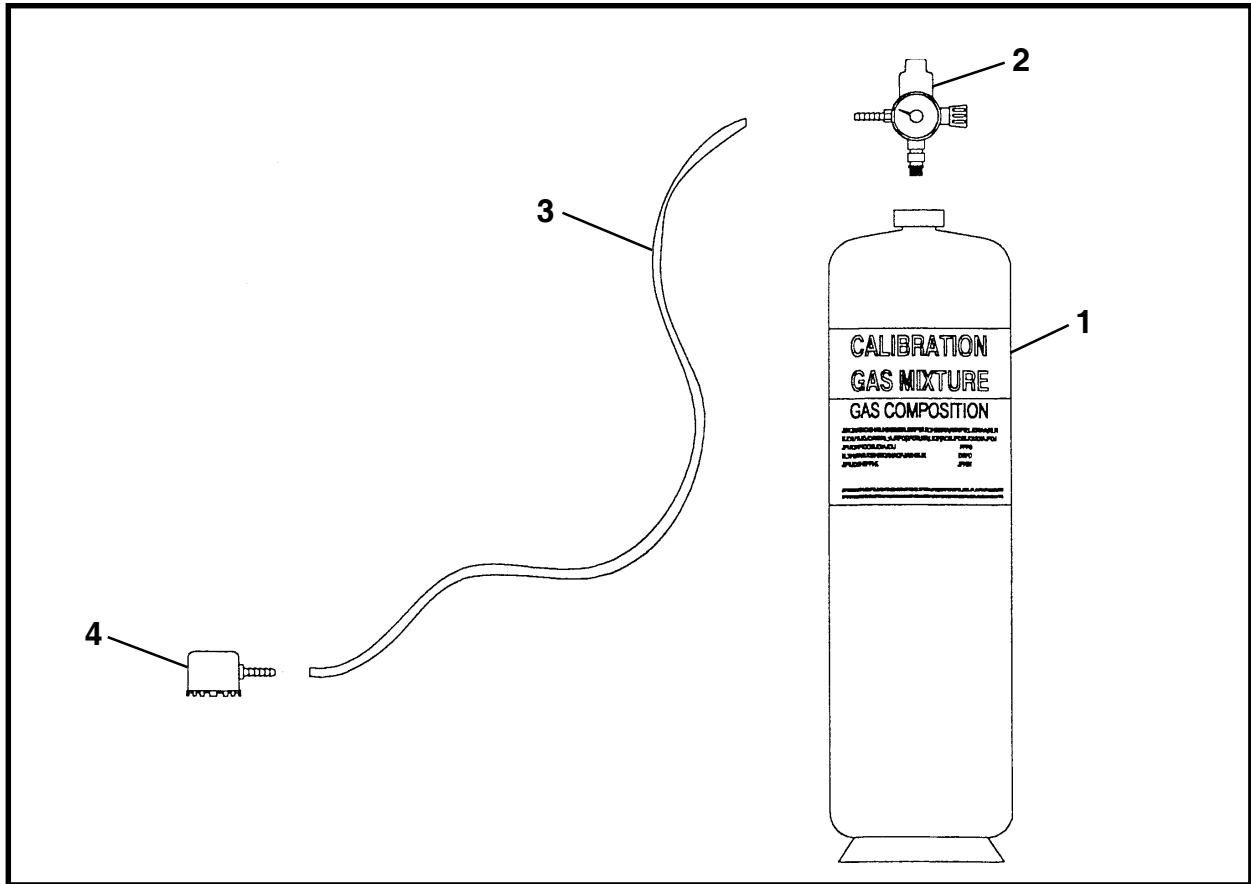
## GAS DETECTOR ASSEMBLY, 016401A



ITEM	QTY	PART NO.	DESCRIPTION
0*	1	016401A	GAS DETECTOR ASSEMBLY
1	1	016403A	BRACKET, Mounting
2	1	P0054-286	RECEPTACLE
3	1	P0300-012	BUSHING, Reducer
4	1	P0310-284E	RELAY MODULE, Gas Detector
5	1	P0300-107	NIPPLE
6	1	P0310-283A	TRANSMITTER, Gas Detector (includes item 6a)
6a	1	P0310-283B	MAGNETIC WAND
7	1	P0300-009	ELBOW, Street 3/4 - 90 Degree
8	1	P0310-284D	SENSOR, Gas Detector
9	2	P0001-06-002	BOLT, 3/8-16 UNC x 1/2
10	2	P0045-006	WASHER, Lock 3/8
11	2	P0011-006A	NUT, Strut Square
12	4	P0017-10-324	SCREW, Round Head Machine 10-32

\* Do not use pipe dope or tape on threads, must have good ground.  
All fittings must be plated noncorrosive configuration.

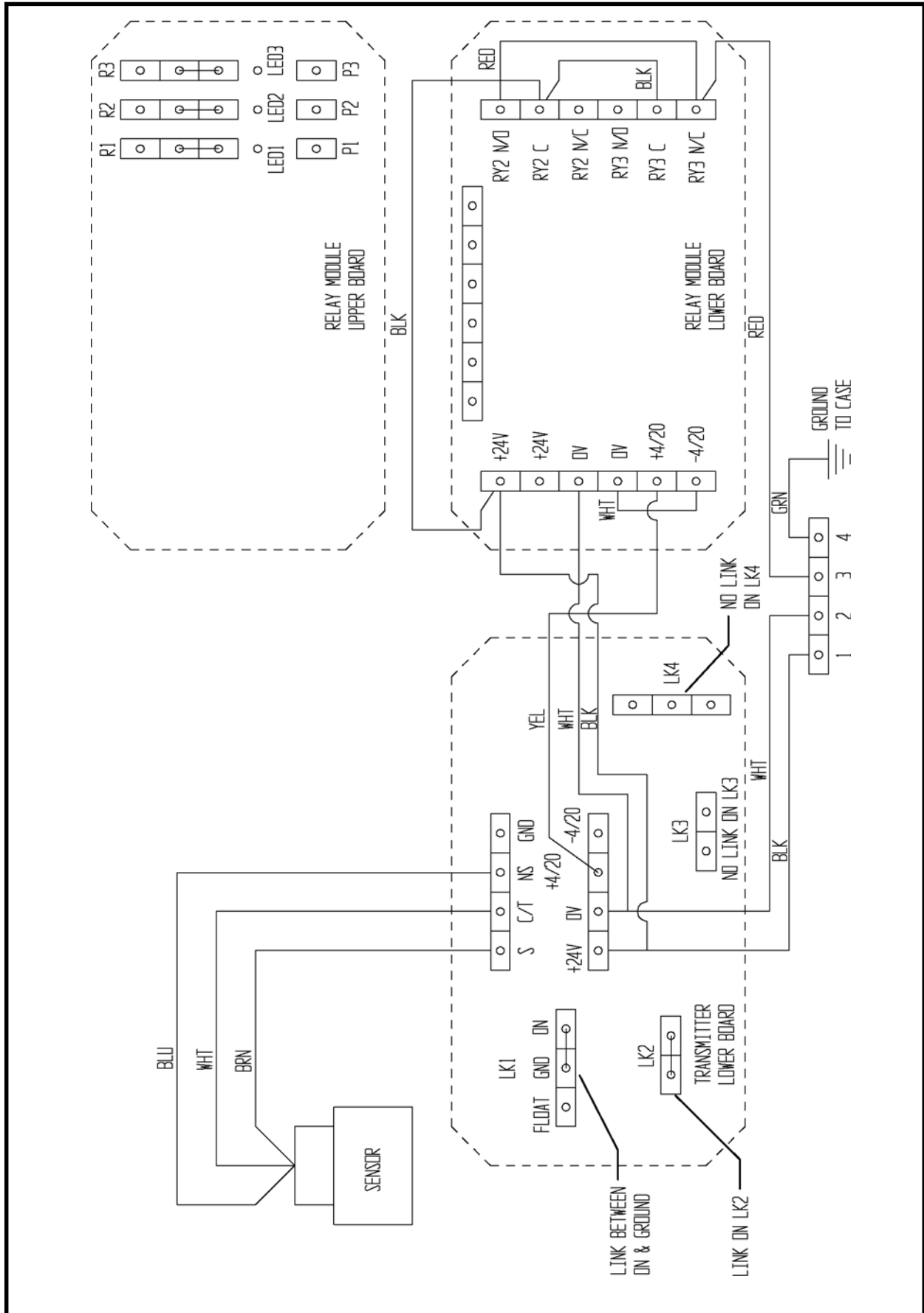
## GAS CHALLENGE KIT, P0310-266



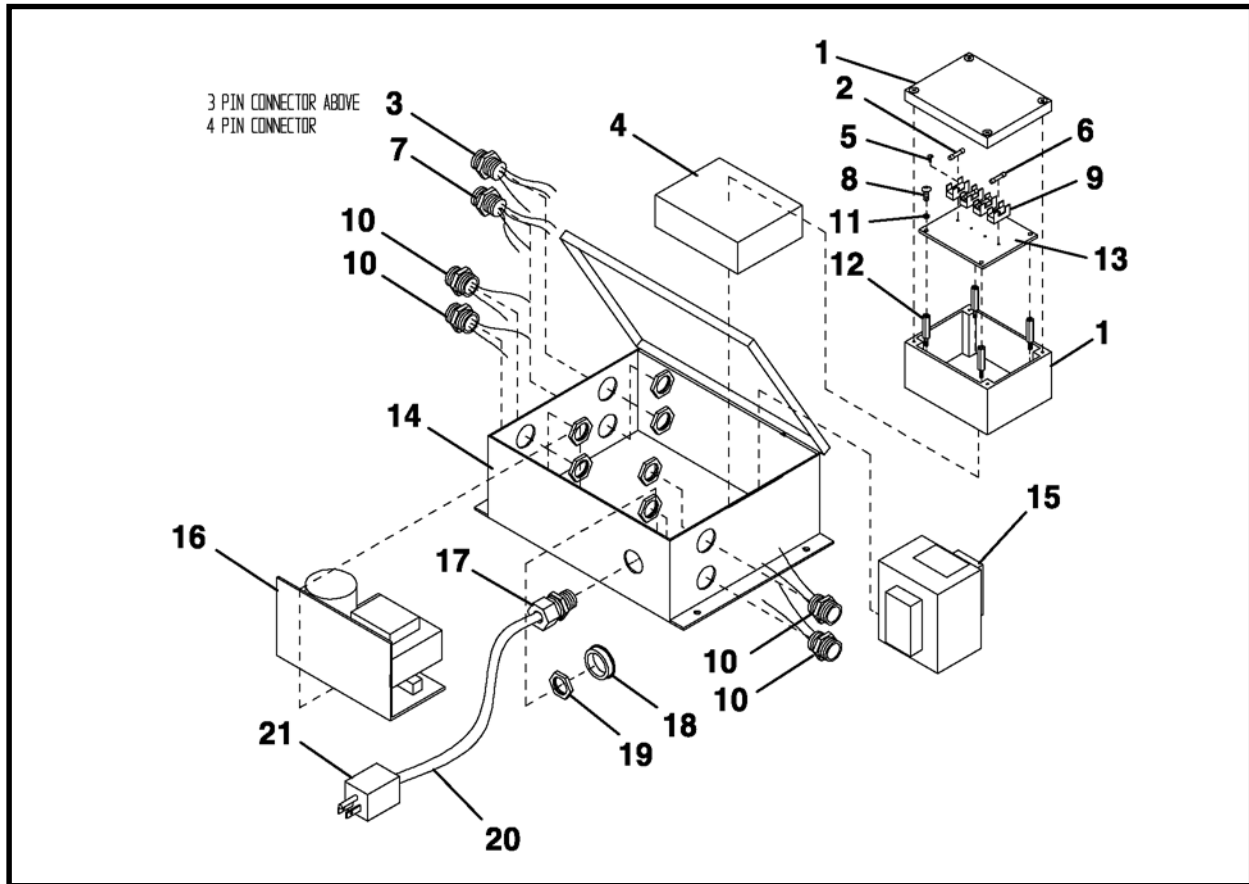
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0310-266	GAS CHALLENGE KIT
1	2	-	CYLINDER, 50% LEL Methane Gas Concentration
2	1	-	REGULATOR VALVE & GAUGE
3	1	-	TUBE, Plastic
4	1	-	CALIBRATION NOZZLE
5*	1	-	PROTECTIVE CASE

\* Not Shown

# GAS DETECTOR ASSEMBLY SCHEMATIC



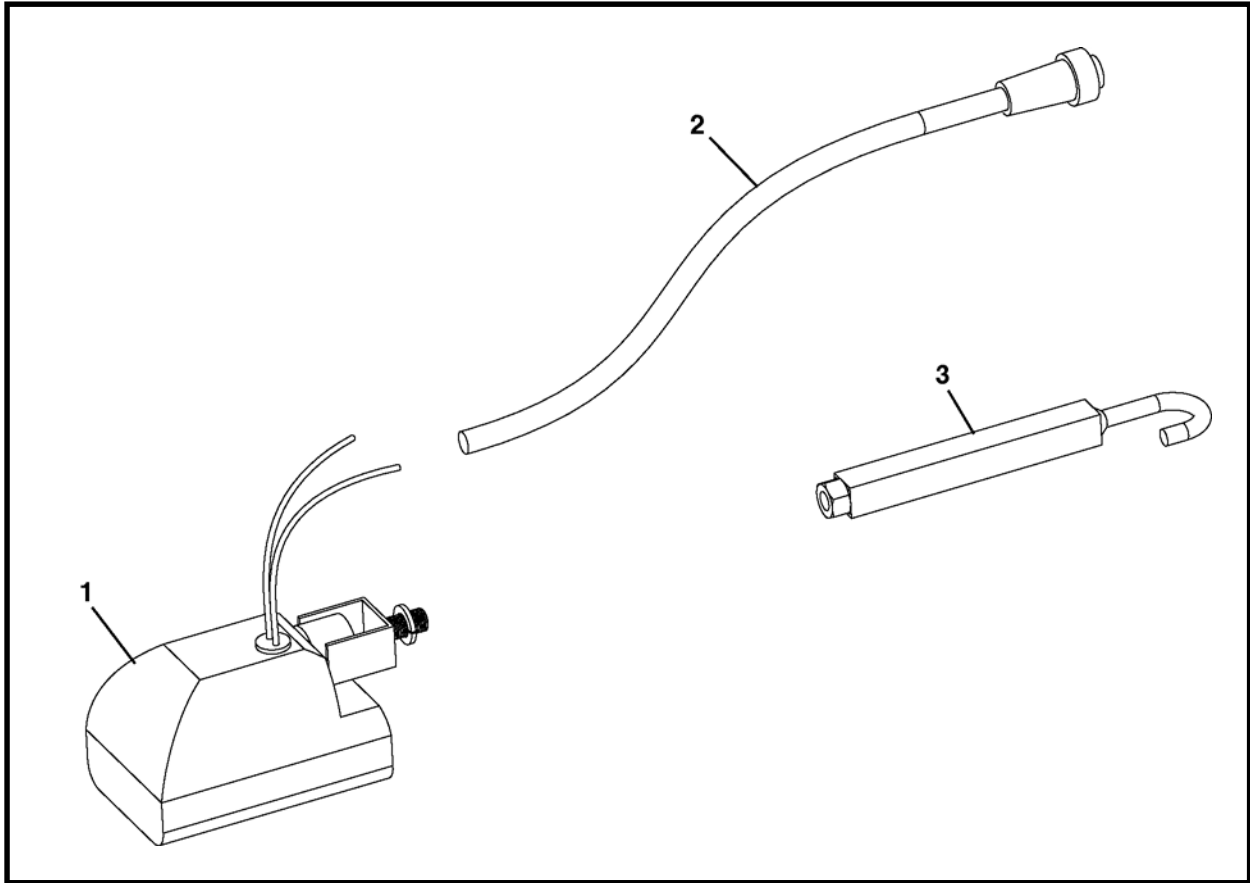
## ELECTRICAL BOX ASSEMBLY, 016402A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	016402A	ELECTRICAL BOX ASSEMBLY
1	1	P0310-712	FUSE BOX
2	2	P0310-582	FUSE
3	1	P0054-068	RECEPTACLE, Mini
4	1	REF	REF
5	4	P0031-03-375	SCREW, Slotted Head Cap 3-48 UNC x 3/8
6	2	P0310-579	FUSE
7	1	P0313-049	RECEPTACLE, 4 Pin Connector
8	4	P0031-M3-010	SCREW, Slotted Head Cap, M3-.5 x 10mm
9	4	P0310-713	FUSE BLOCK
10	4	P0313-044	RECEPTACLE
11	4	P0043-010	WASHER, #6 Star
12	4	P0027B-12MM	KEYSTONE
13	1	016412P	PLATE, Fuse Block
14	1	016406P	ELECTRICAL BOX
15	1	P0310-701	TRANSFORMER
16	1	P0310-285A	POWER SUPPLY
17	1	P0311-121	CONNECTOR, Strain Relief
18	1	P0311-032	BUSHING, Insulating 1/2
19	7	P0311-018	NUT, Lock 1/2
20	1	P0054-021	CONDUIT
21	1	P0311-041	PLUG, Grounding 3 Wire
22	0.5	P0310-390A	SYLGARD SILICONE ELASTOMER
23	0.5	P0310-390B	SYLGARD SILICONE ELASTOMER
24	1	1250-471	DECAL, Fuse Locator
25	1	1250-478	DECAL, Notice, Danger, Warning
26	1	1250-470	DECAL, Schematic
27	1	1250-475	DECAL, Connector Designator
28	1	1250-474	DECAL, Work Light Max. Amp



## EXTENSION LIGHT ASSEMBLY, 016415A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	016415A	ASSEMBLY, Extension Light
1	1	P0053-026	LIGHT (Includes item 1a)
1a	1	P0053-026A	BULB, Light
2	1	P0054-167A	CABLE, 25'
3	1	016416A	HANDLE, Extension Light

**NOTES**



# Hydraulics

## **TBM**

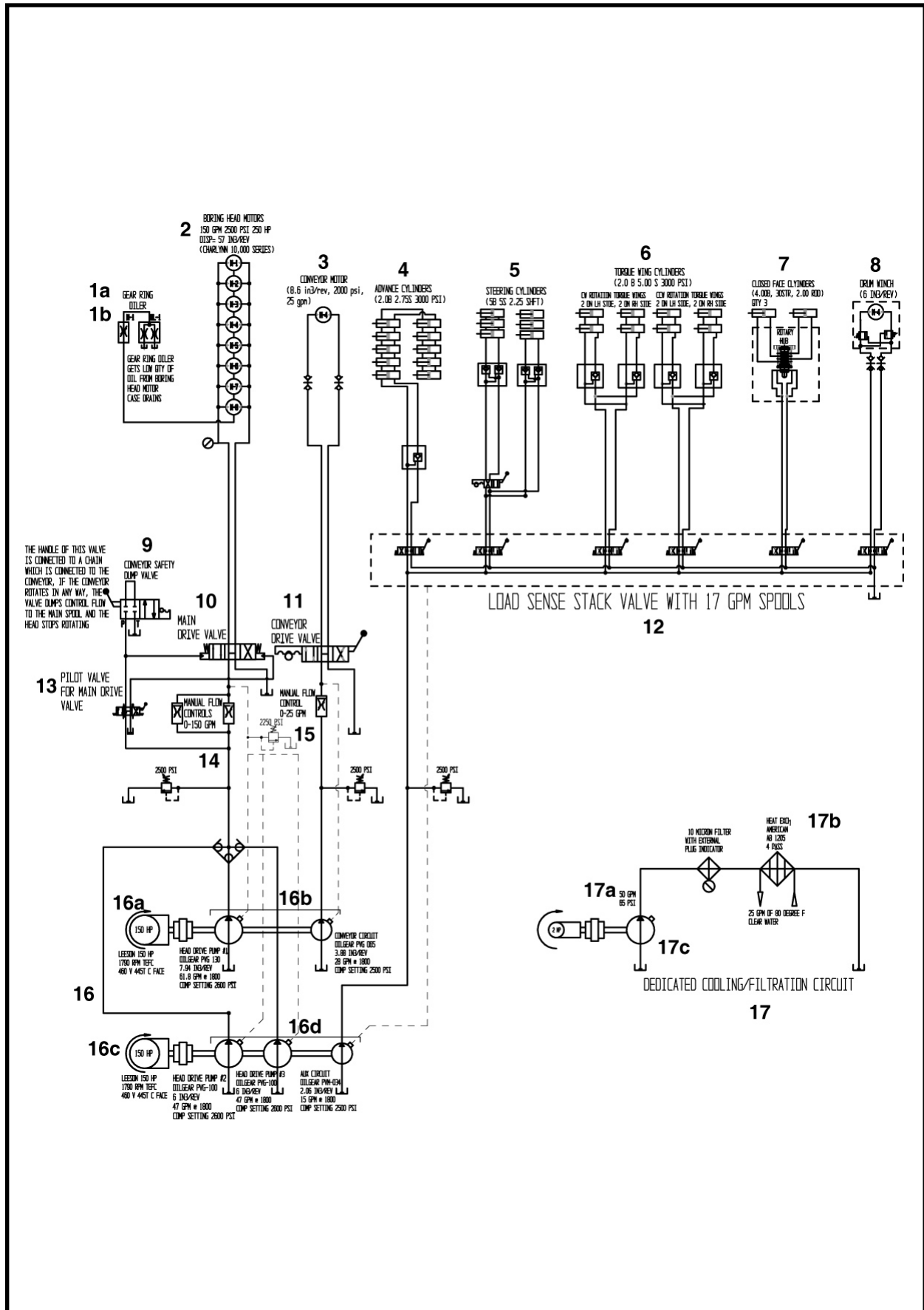
Hydraulic Schematic, 029790A .....	1
Hydraulics Final Assembly, 029644A .....	3
Cooling Circuit Assembly, 029745A.....	4
150 HP Pump Stacks Assembly, 029735A .....	5
Suction Assembly, 029750A .....	6
Control Valves Assembly, 029740A .....	7

## **Attachments**

Closed Face Control Assembly, 026912A .....	9
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# HYDRAULIC SCHEMATIC, 029790A

960B

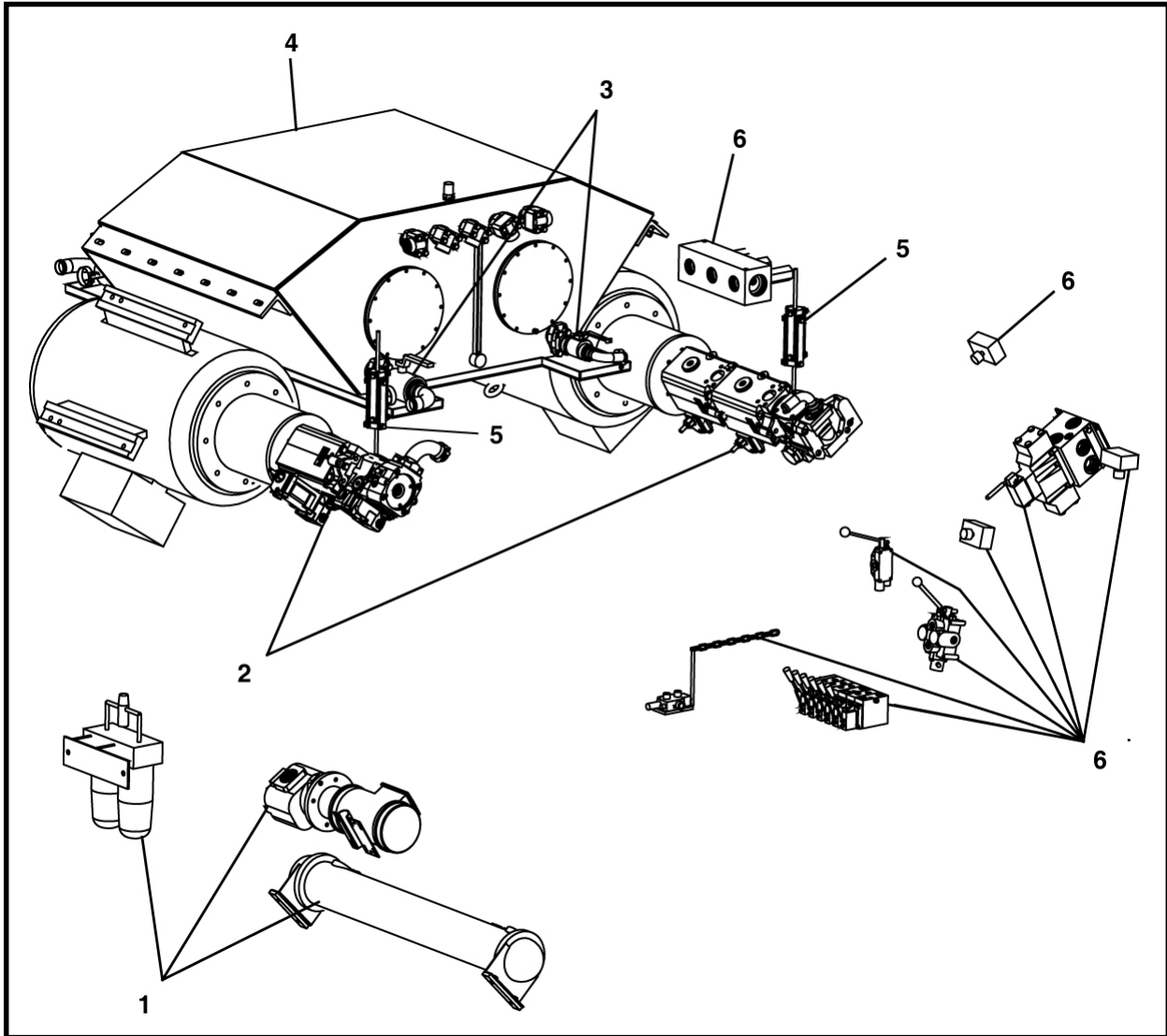


**HYDRAULIC SCHEMATIC, 029790A  
960B**

ITEM	QTY	PART NO.	DESCRIPTION
0	-	029790A	SCHEMATIC, Hydraulic
1a	1	P0302-167	VALVE, Needle
1b	1	007968A00	OILER, Gear Ring (Includes item 1ba)
1ba	1	P0300-144	PLUG, 1/8 Hex
2	8	P0304-123	MOTOR, Boring Head
3	1	P0304-157	MOTOR, Conveyor
4	8	010747A00	CYLINDER, Advance
5	6	029645A	CYLINDER, Steering
6	8	014603A00	CYLINDER, Torque (Dirt) Wing
7	3	P0307-170	CYLINDER, Closed Face
8	1	P0106-002	MOTOR, Drum Winch
9	1	P0302-252	VALVE, Conveyor Control
10	1	P0302-466	VALVE, Main Drive
11	1	P0302-169	VALVE, Conveyor Drive
12	1	P0302-497	VALVE, Stack (TBM Control)
13	1	P0302-467	VALVE, Pilot (for main drive valve)
14	-	-	CONTROL, Manual Flow (0 to 150 gpm) (Includes items 14a - 14b)
14a	1	P0302-167	VALVE, Throttle
14b	1	P0302-491	VALVE, Throttle
15	1	P0302-167	VALVE, Throttle (for manual flow control 0 to 25 gpm)
16	1	029735A	ASSEMBLY, 150 HP Pump Stacks (Includes items 16a - 16d)
16a	1	P0304-170	MOTOR, 150 HP
16b	1	P0303-295	PUMP STACK, Main Drive & Conveyor
16c	1	P0304-171	MOTOR, 150 HP
16d	1	P0303-294	PUMP STACK, Main Drive & Auxiliary
17	1	029745A	ASSEMBLY, Cooling Circuit (Includes items 17a - 17c)
17a	1	P0310-388A	MOTOR, 2 HP
17b	1	P0093-018	HEAT EXCHANGER
17c	1	P0303-296	PUMP

\* Refer to this section for parts breakdown.

## HYDRAULICS FINAL ASSEMBLY, 029644A

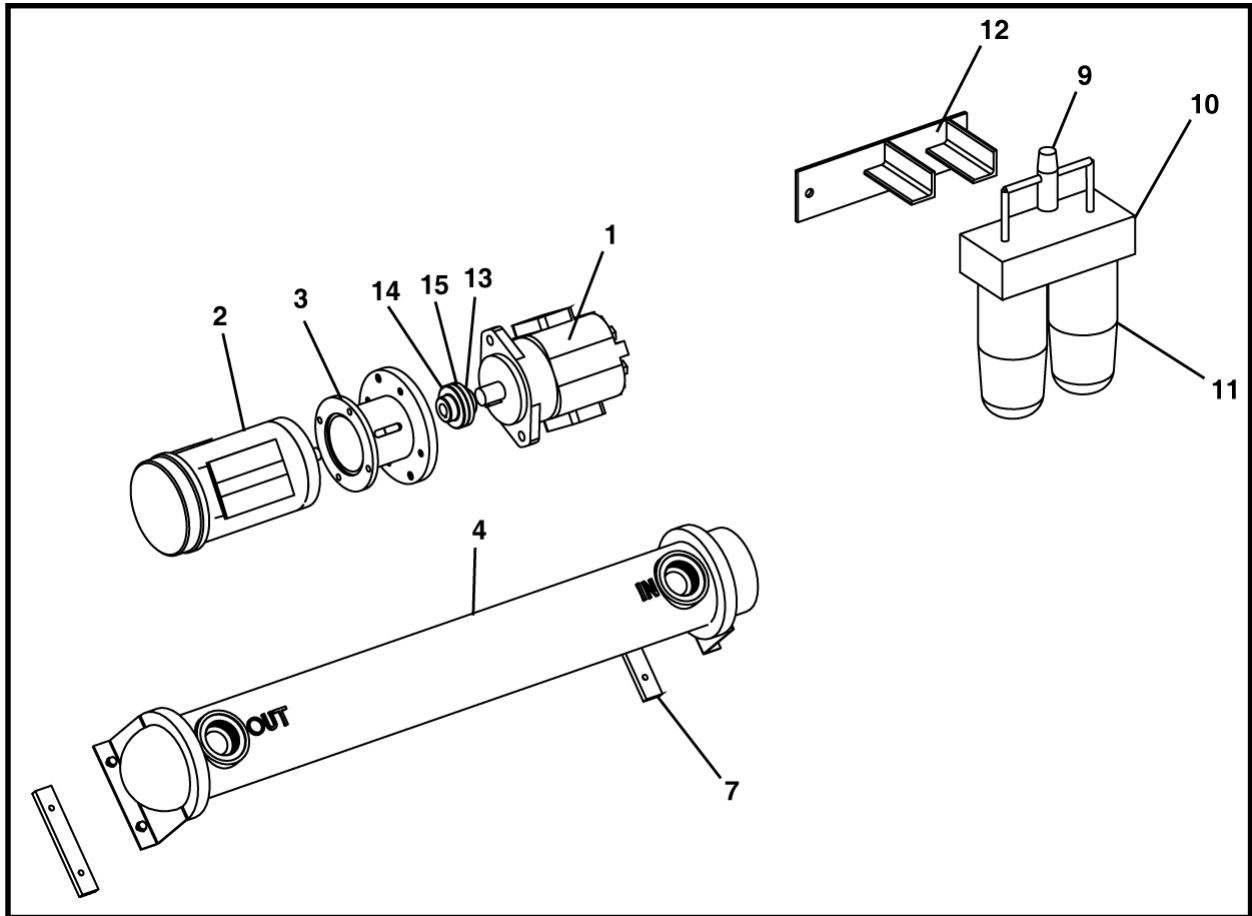


ITEM	QTY	PART NO.	DESCRIPTION
0	1	029644A	ASSEMBLY, Hydraulics Final
1*	1	029745A	ASSEMBLY, Cooling Circuit
2*	1	029735A	ASSEMBLY, 150 HP Pump Stacks
3*	1	029750A	ASSEMBLY, Suction Fitting
4**	1	029760A	ASSEMBLY, Reservoir Final
5**	2	029770A	ASSEMBLY, Pump Support Spring
6*	1	029740A	ASSEMBLY, Control Valves

\* Refer to this section for parts breakdown.

\*\* Refer to section 3, Structurals for parts breakdown.

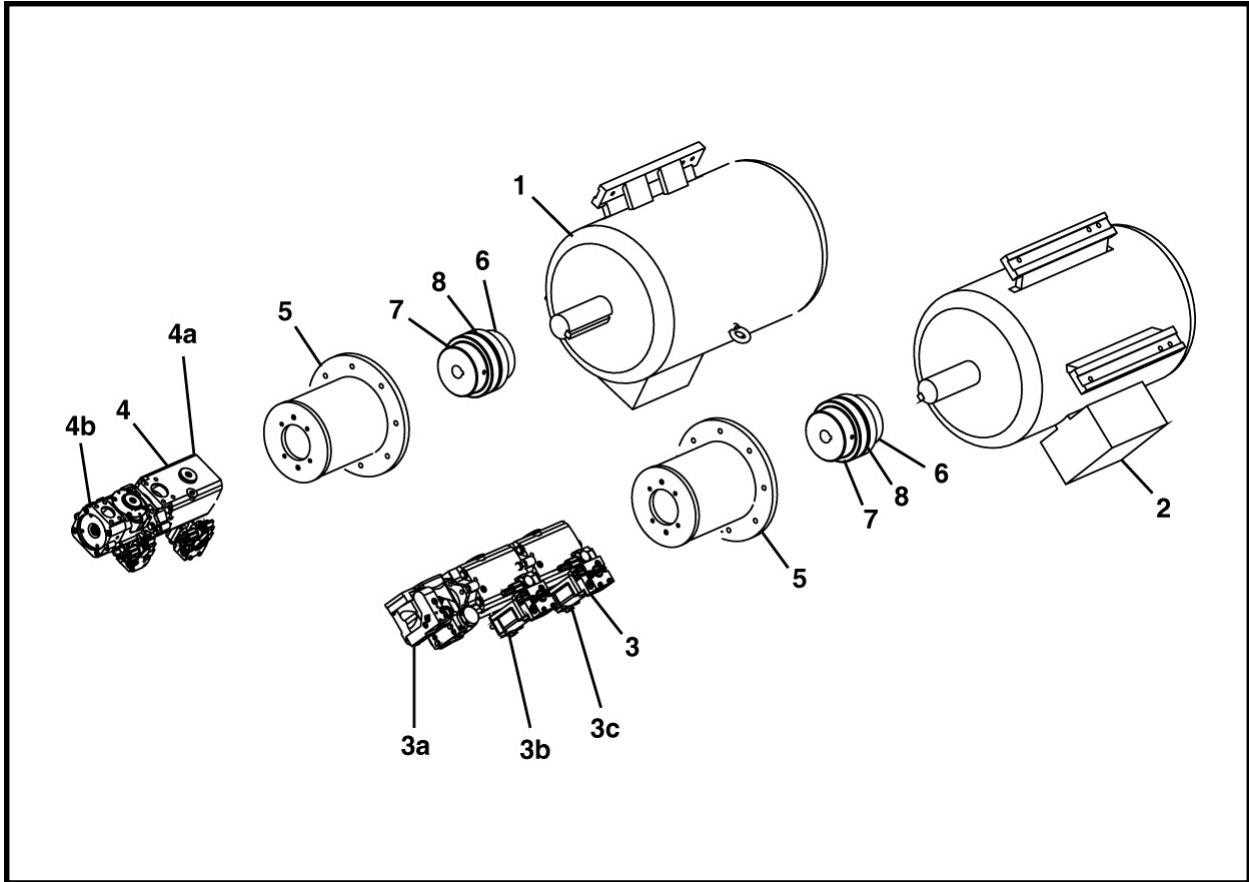
## COOLING CIRCUIT ASSEMBLY, 029745A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029745A	ASSEMBLY, Cooling Circuit
1	1	P0303-296	PUMP
2	1	P0310-388A	MOTOR, 2 HP
3	1	P0305-157	MOUNT, Pump
4	1	P0093-018	HEAT EXCHANGER
5*	4	P0045-006	WASHER, Lock 3/8
6*	2	P0001-06-002	BOLT, 3/8-16 x 1/2
7	2	A10582P	BAR
8*	2	P0001-06-003	BOLT, 3/8-16 x 3/4
9	1	P0301-108	INDICATOR, Plug
10	1	P0309-175	ASSEMBLY, Dual Head Filter (Includes item 11)
11	2	P0309-172	ELEMENT, Filter
12	1	016222A	MOUNT, Filter
13	1	P0305-158	COUPLER
14	1	P0306-159	COUPLER
15	1	P0305-160	INSERT

\* Not Shown

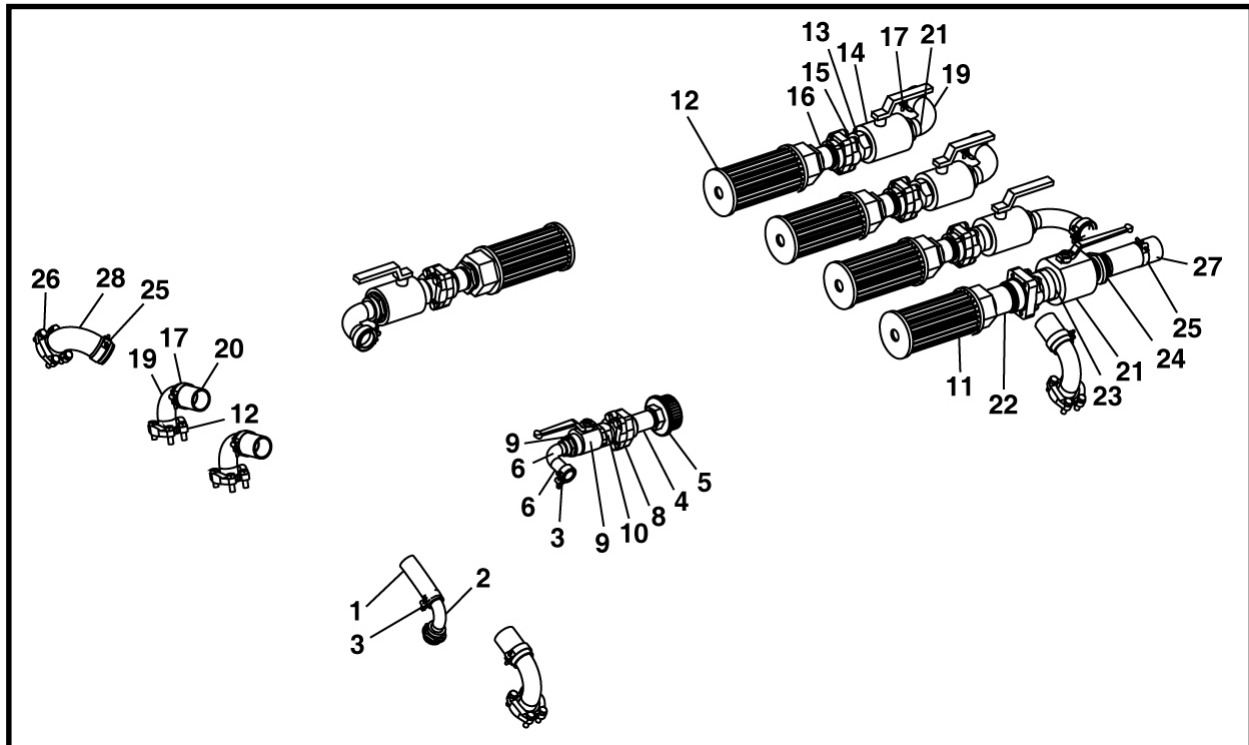
## 150 HP PUMP STACKS ASSEMBLY, 029735A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029735A	ASSEMBLY, 150 HP Pump Stacks
1	1	P0304-170	MOTOR, 150 HP
2	1	P0304-171	MOTOR, 150 HP
3	1	P0303-294	PUMP STACK, Main Drive & Auxiliary
3a	-	-	PUMP 034, 15 GPM @ 3,000 psi for auxiliary functions
3b	-	-	PUMP 100, 48 GPM @ 3,000 psi for main head drive
3c	-	-	PUMP 100, 48 GPM @ 3,000 psi for main head drive
4	1	P0303-295	PUMP STACK, Main Drive & Conveyor
4a	-	-	PUMP 130, 62 GPM @ 3,000 psi for main head drive
4b	-	-	PUMP 065, 25 GPM @ 3,000 psi for conveyor
5	2	P0305-153	MOUNT, Pump
6	2	P0305-154	COUPLING
7	2	P0305-155	COUPLING
8	2	P0305-156	INSERT
9*	6	P0310-988	FUSE, Time Delay 200A 480V

\* Not Shown

## SUCTION ASSEMBLY, 029750A



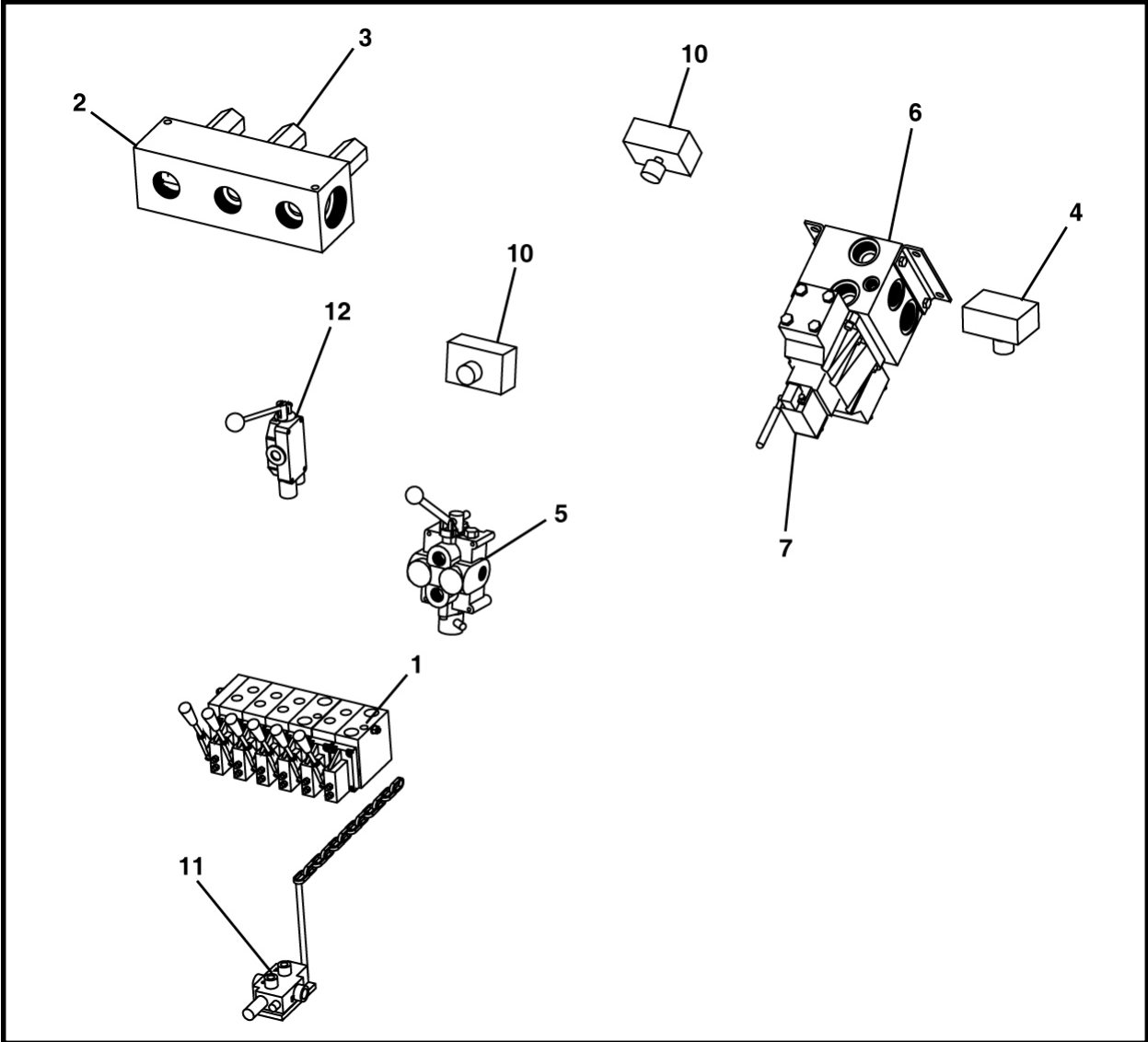
ITEM	QTY	PART NO.	DESCRIPTION
0	1	029750A	ASSEMBLY, Suction
1	60 LI	P0201-214	ASSEMBLY, Hose 1-1/4
2	1	P0220-230	FITTING, 20-24 MB
3	2	P0201-205	CLAMP, T
4	1	P0409-005	NIPPLE, 1-1/2 x 4
5	1	P0309-117	SCREEN, Suction
6	1	P0220-223	FITTING, 20 Insert 90-20MB
7*	1	P0300-447	ORING
8	1	P0300-446	FITTING, 24SFO
9	1	P0302-418	VALVE, Ball 1-1/4
10	1	P0300-445	FITTING, 24 Flange Code 61 x 20MJ
11	5	P0309-153	STRAINER
12	8	P0300-443	FITTING, 32CFHS
13	4	P0300-442	FITTING, 32 Flange Code 61 x 32MJ
14	4	P0302-434	VALVE, Ball ORB
15	4	P0300-444	ORING
16	4	P0409-011A	NIPPLE, 2 x 3-1/2
17	8	P0201-180	CLAMP
18*	4	P0413-015	BUSHING, 2-1/2 x 2
19	8	P0220-222	HOSE END, 32-32
20	4 @ 105 LI	P0201-226	ASSEMBLY, Suction Hose
21	1	P0302-486	VALVE, Ball
22	1	P0409-012	NIPPLE, 2-1/2 x 5
23	1	P0100-057	FITTING, 40 Flange Code 61 x 40MJ
24	1	P0100-058	FLANGE
25	2	P0201-167	CLAMP
26	2	P0100-059	FITTING, Code 61 Flange CFHS
27	144 LI	P0201-225	ASSEMBLY, 2-1/2 Fuel
28	1	P0220-237	HOSE END, 40-40

\* Not Shown

LI - Linear Inches

tbmpm050028A-029750a

# CONTROL VALVES ASSEMBLY, 029740A

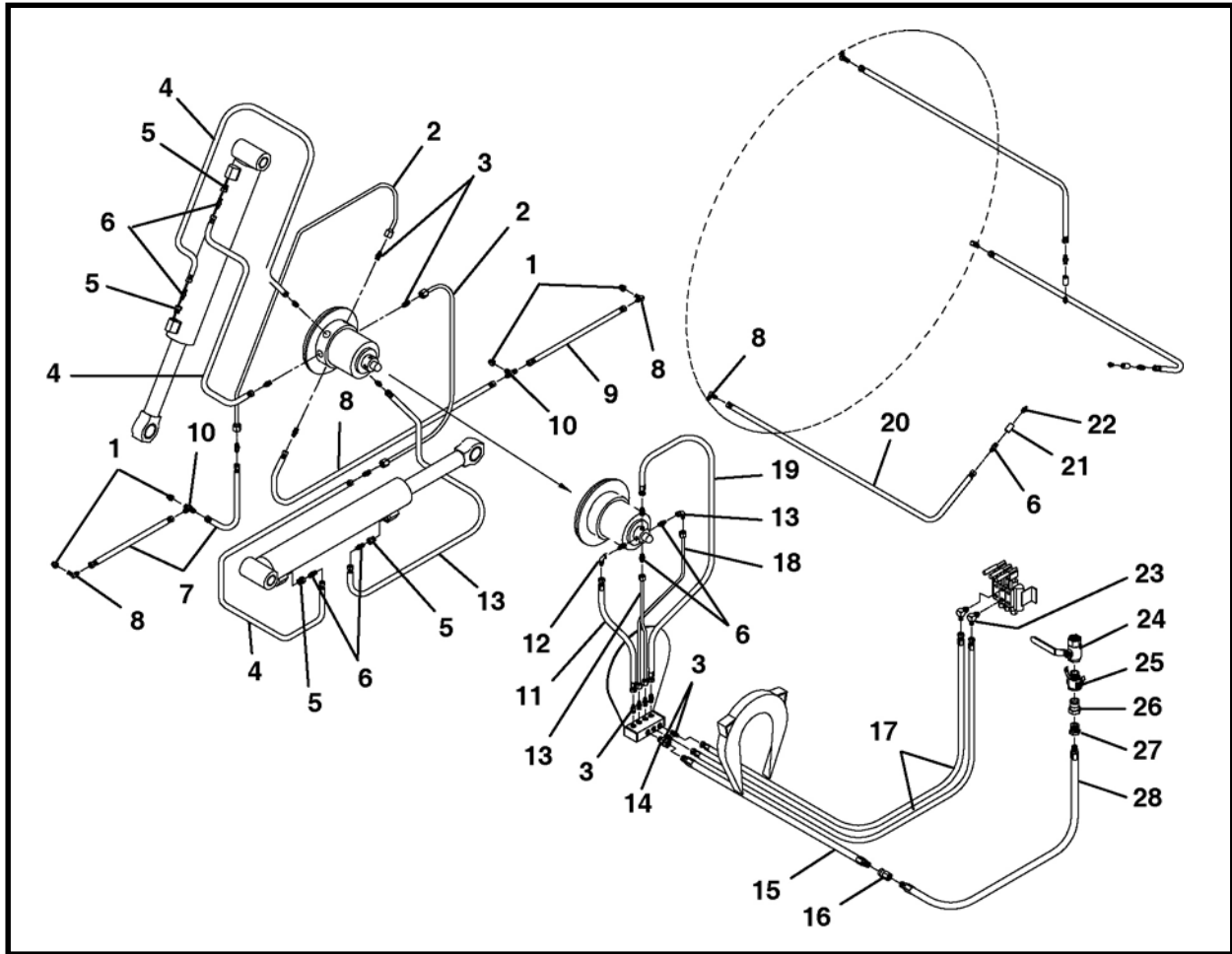


ITEM	QTY	PART NO.	DESCRIPTION
0	1	029740A	ASSEMBLY, Control Valves
1	1	P0302-497	VALVE, 6 Section
2	1	P0302-489	MANIFOLD, Header
3	3	P0302-488	VALVE, Check
4	1	P0302-491	VALVE, Throttle
5	1	P0302-169	VALVE, Conveyor
6	1	P0302-466	MANIFOLD, 150 GPM
7	1	P0302-467	ASSEMBLY, Manifold, Boring Head Pilot Valve
8*	5	P0301-110	GAUGE, Pressure 600 psi
9*	2	P0301-142	GAUGE, Pressure 5000 psi MORB
10	2	P0302-167	VALVE, Throttle
11	1	P0302-252	VALVE, Detent
12	1	P0302-118	VALVE, Steering (Grade/Alignment)

\* Not Shown

**NOTES**

## CLOSED FACE CONTROL ASSEMBLY, 026912A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	026912A	ASSEMBLY, Closed Face Control
1	4	P0300-067	BUSHING, Reducer
2	3	P0110-106	TUBING, Steel Hydraulic
3	12	P0300-041	CONNECTOR
4	3	P0506-036	ASSEMBLY, Hose 3/8 x 36
5	6	018736P00	PLUG
6	8	P0300-121	ADAPTER, 3/8 x 1/4 NPTF
7	2	P0506-012	HOSE, 3/8 x 12
8	5	P0300-125	ELBOW, 90 Degree
9	1	P0506-018	HOSE, 3/8 x 18
10	2	P0300-132	TEE
11	1	P0506-038	HOSE, 3/8 x 38
12	2	P0300-123	ADAPTER, 90 Degree
13	1	P0110-106	TUBING, Hydraulic Steel 3/8 x 8
14	1	P0300-010	SWIVEL
15	1	P0508-084	HOSE, 1/2 x 84
16	1	P0300-059	SWIVEL
17	2	P0506-090	HOSE, 3/8 x 90
18	1	P0110-106	TUBING, 3/8 x 10
19	1	P0506-020	HOSE, 3/8 x 20
20	3	P0506-048	HOSE, 3/8 x 48

## CLOSED FACE CONTROL ASSEMBLY, 026912A

ITEM	QTY	PART NO.	DESCRIPTION
21	3	P0400-001	COUPLING
22	3	P0063-016	FITTING, Grease
23	2	P0300-042	ELBOW, 90 Degree
24	1	P0302-231	VALVE, Ball
25	1	P0100-023	SOCKET, NPT
26	1	P0100-024	PLUG
27	1	P0300-078	BUSHING, Reducer 1 x 1/2
28	1	P0508-036	HOSE, 1/2 x 36

Note: Cylinders shown for reference only.

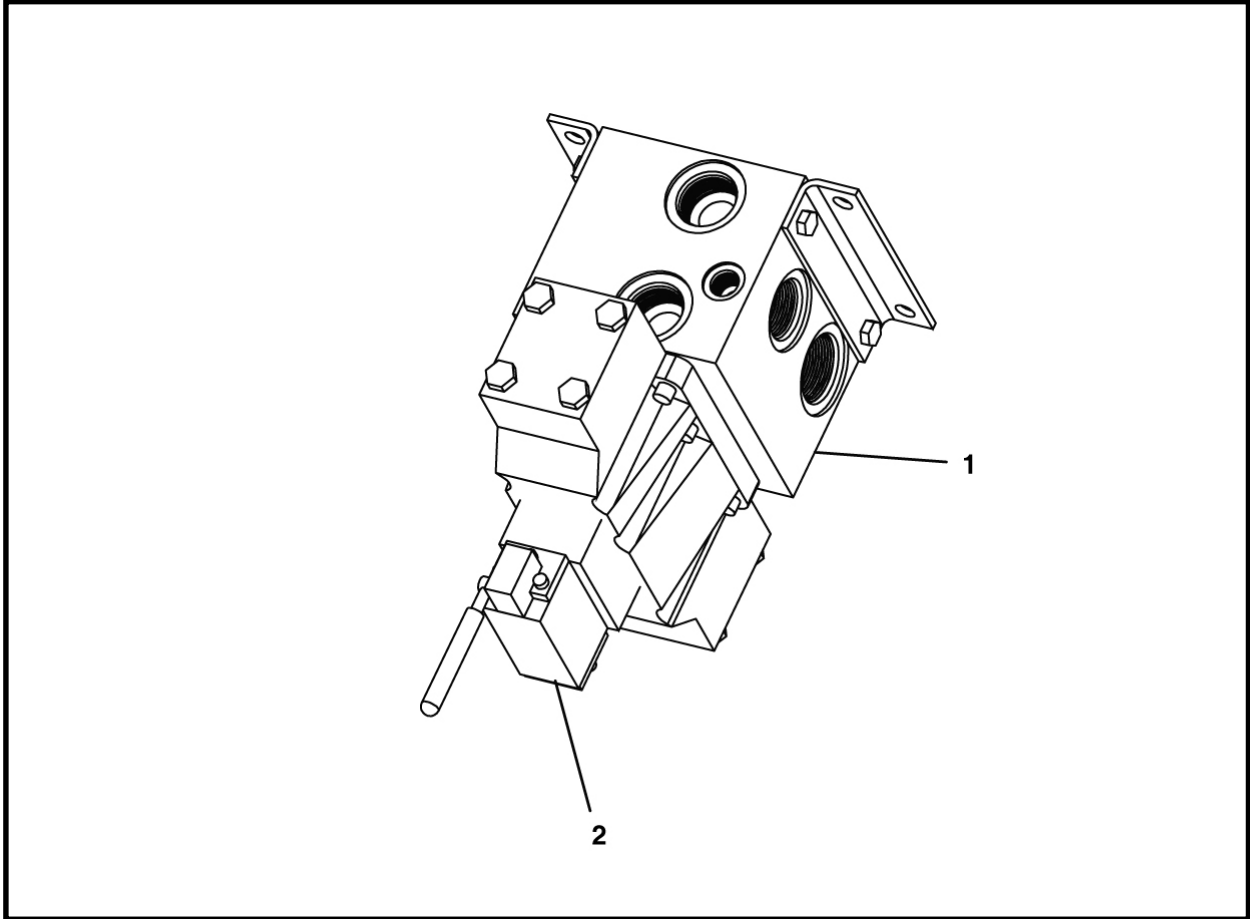
**NOTES**



# Valves

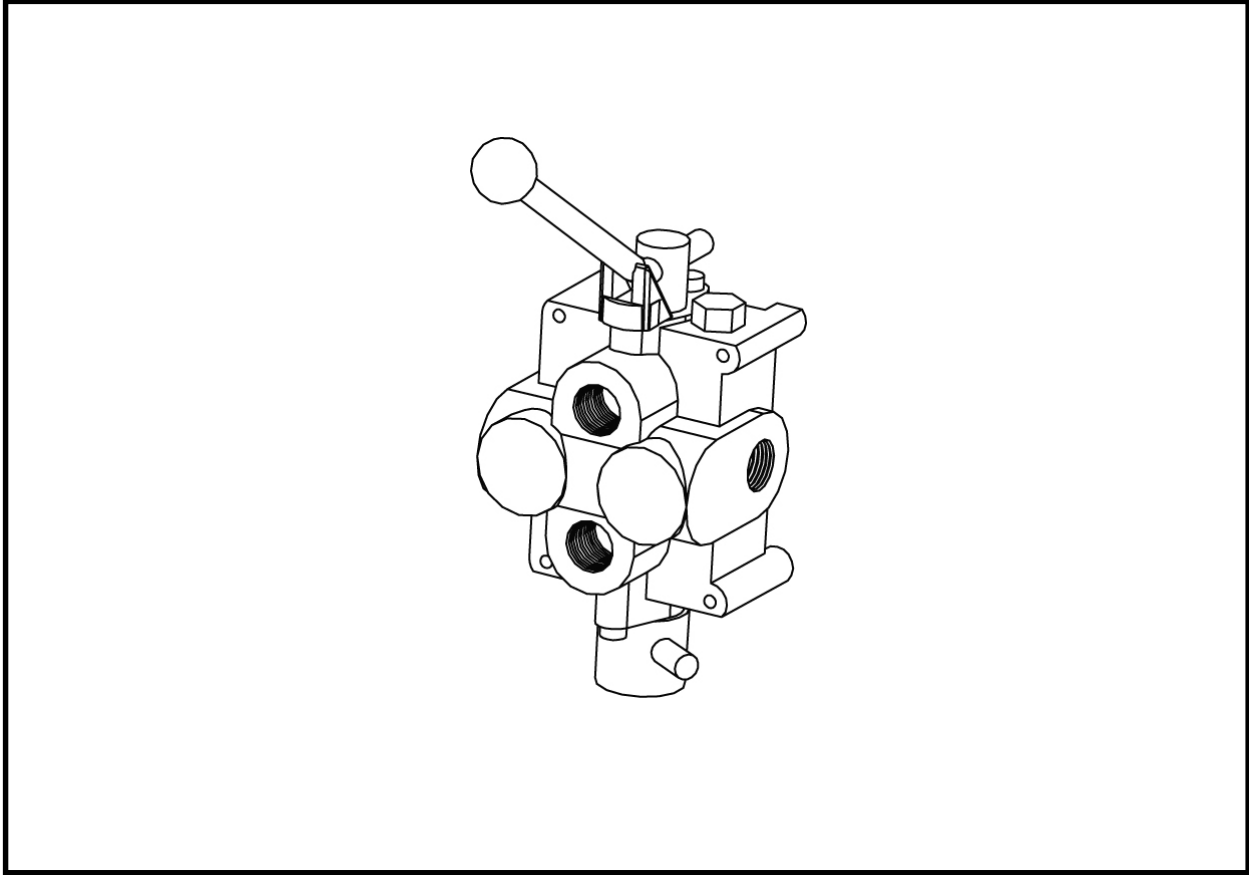
Inner Drum Control Valves, P0302-466 & P0302-467 .....	1
Conveyor Drive Control Valve, P0302-169 .....	2
Speed Flow Control Valves, P0302-167 & P0302-491 .....	3
Conveyor Control Valve, P0302-252 .....	4
Steering Valve, P0302-118 .....	5
TBM Control Valve, P0302-497 .....	6

# INNER DRUM CONTROL VALVES



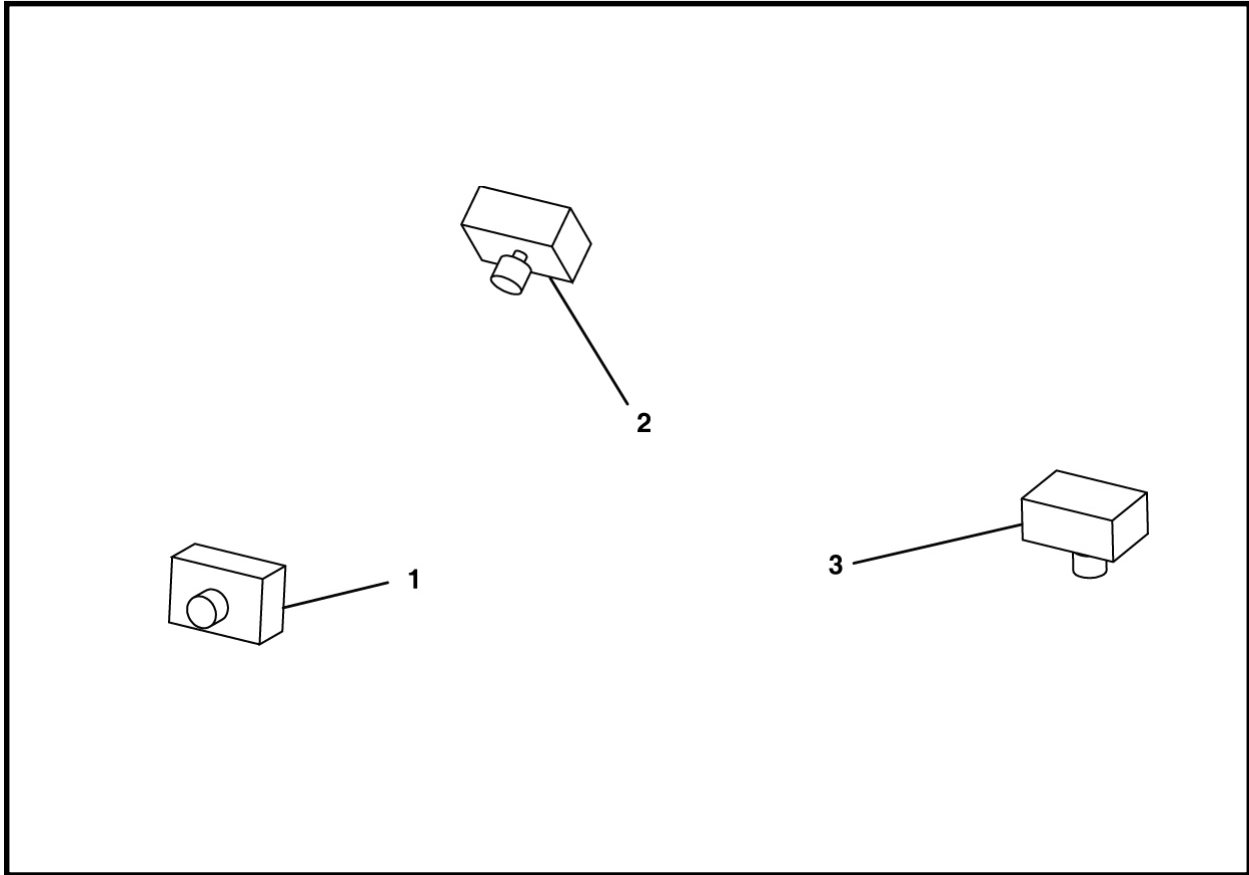
ITEM	QTY	PART NO.	DESCRIPTION
1	1	P0302-466	VALVE, Inner Drum
2	1	P0302-467	VALVE, Inner Drum Pilot Control

# CONVEYOR DRIVE CONTROL VALVE, P0302-169



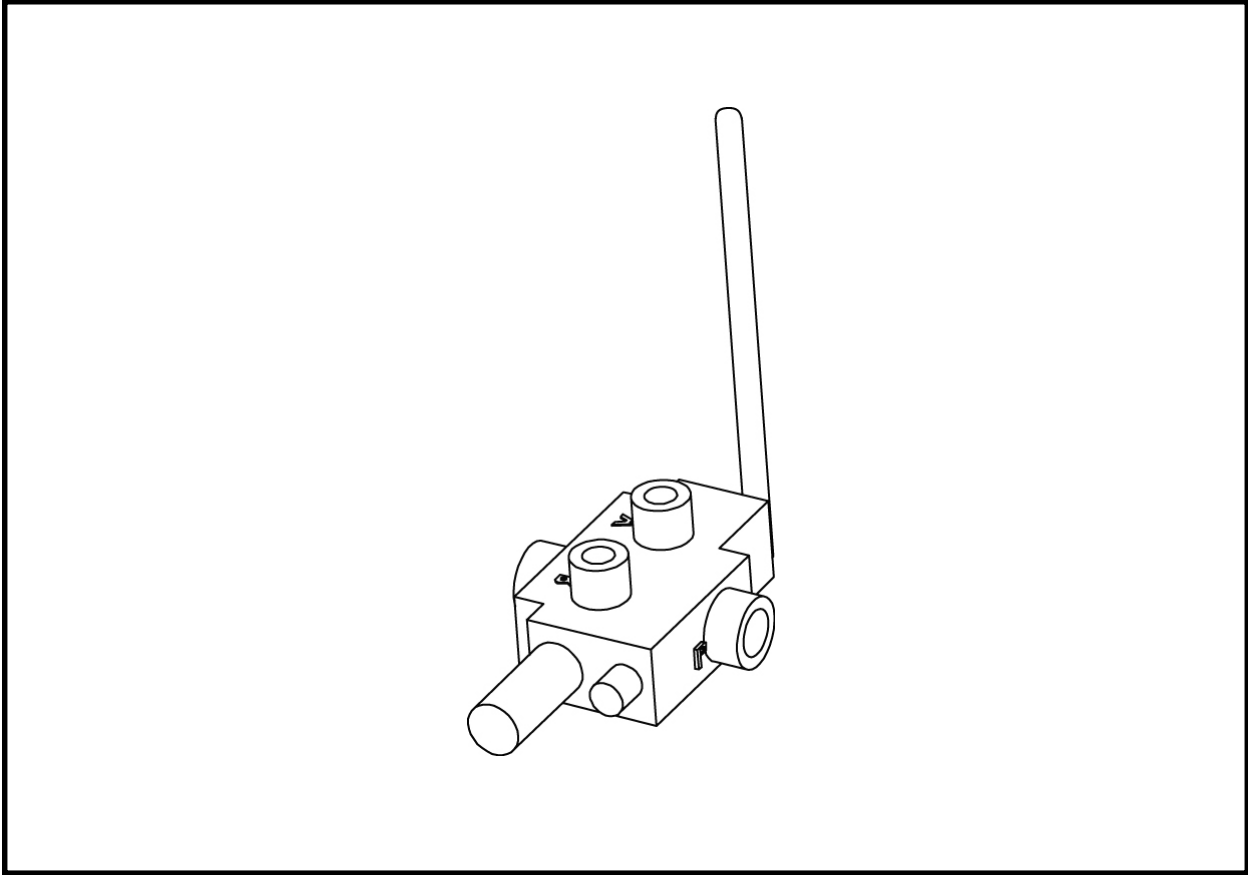
ITEM	QTY	PART NO.	DESCRIPTION
1	1	P0302-169	VALVE, Conveyor Drive Control

## SPEED FLOW CONTROL VALVES



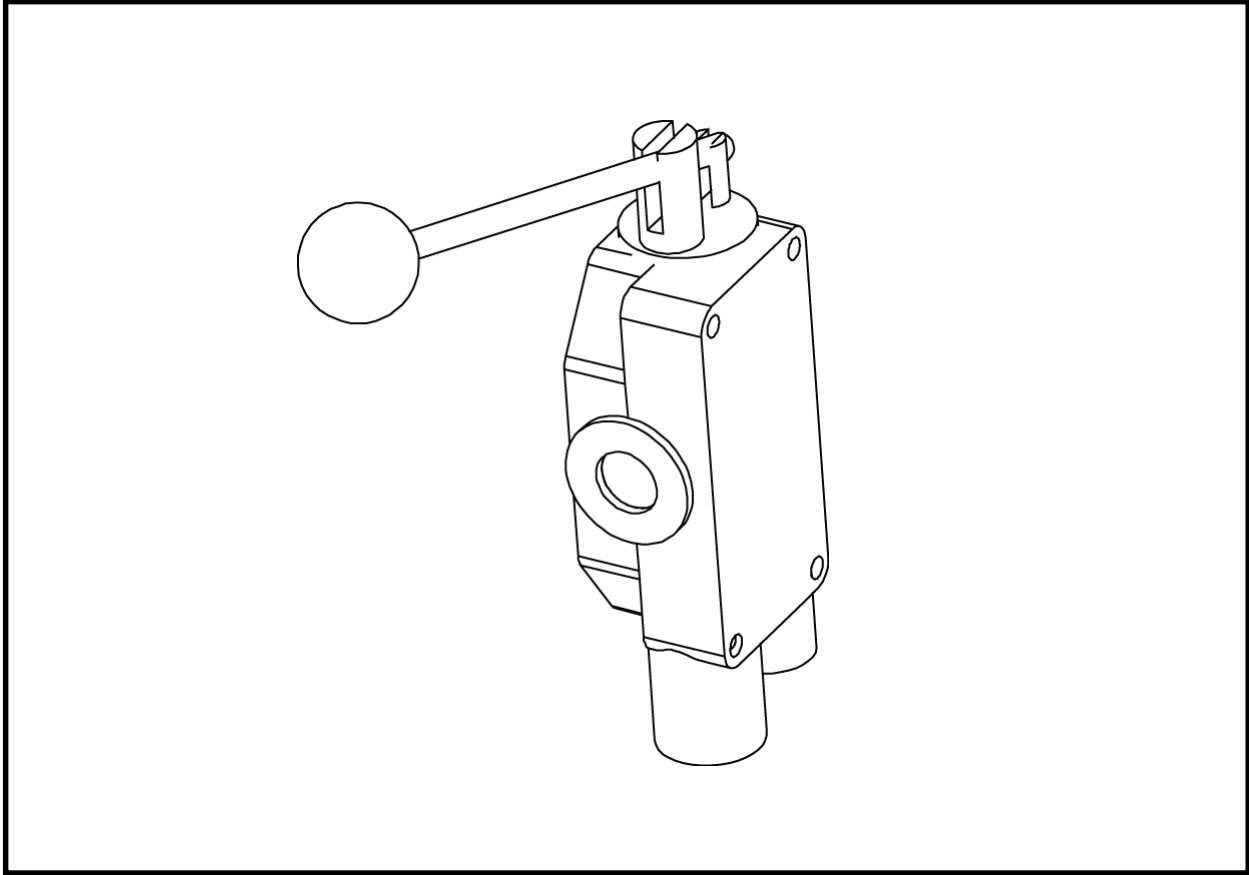
ITEM	QTY	PART NO.	DESCRIPTION
1	1	P0302-167	VALVE, Throttle (Conveyor Speed Control)
2	1	P0302-167	VALVE, Throttle (Inner Drum Speed Control)
3	1	P0302-491	VALVE, Throttle (Inner Drum Speed Control)

# CONVEYOR CONTROL VALVE, P0302-252



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-252	VALVE, Conveyor Control

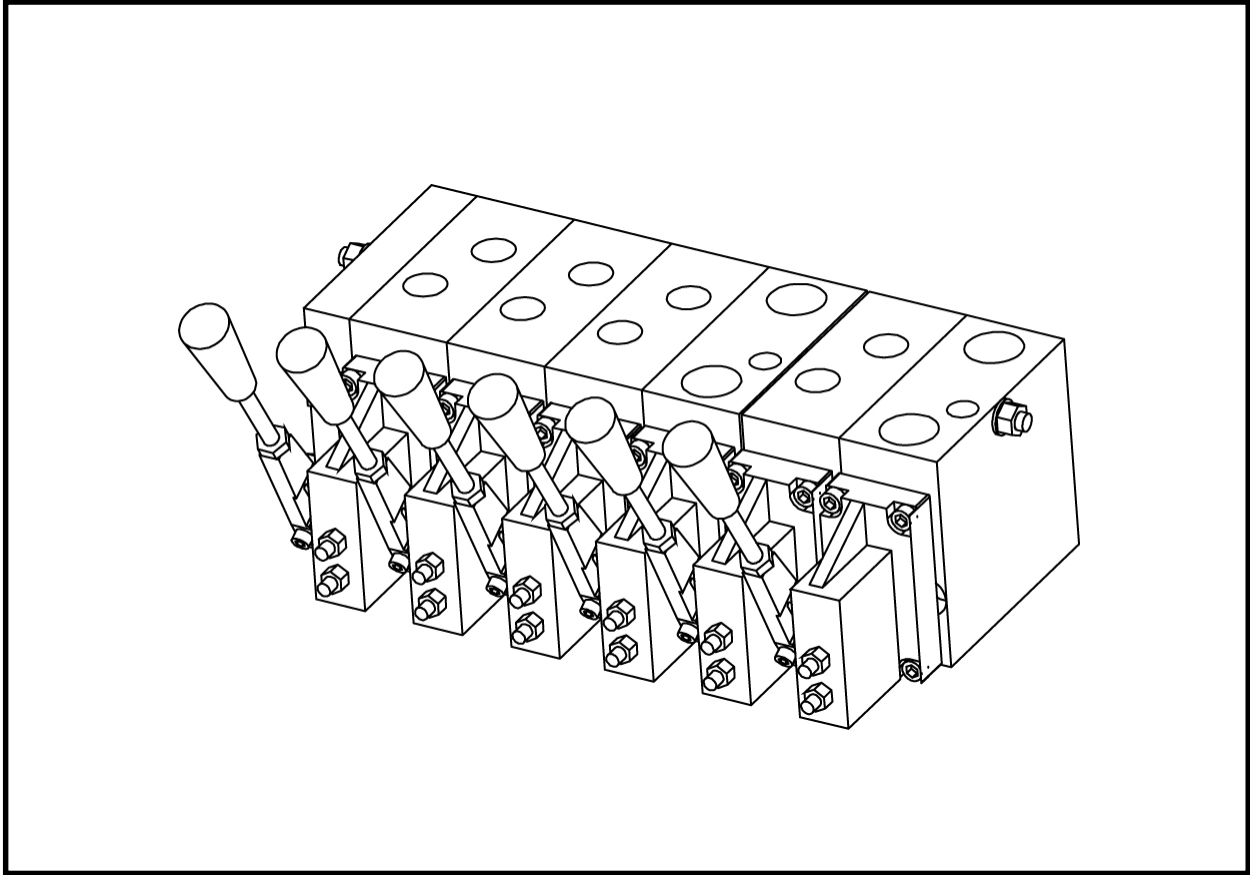
## STEERING VALVE (Grade/Alignment), P0302-118



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-118	VALVE, Steering
1*	1	P0302-118A	SPOOL
2*	1	P0302-118B	KIT, Valve
3*	1	P0302-118C	KIT, Handle
4*	1	P0302-118E	ORING
5*	1	P0302-118F	WASHER

\* Not Shown

# TBM CONTROL VALVE, P0302-497



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-497	VALVE, TBM Control

**NOTES**



# Motors

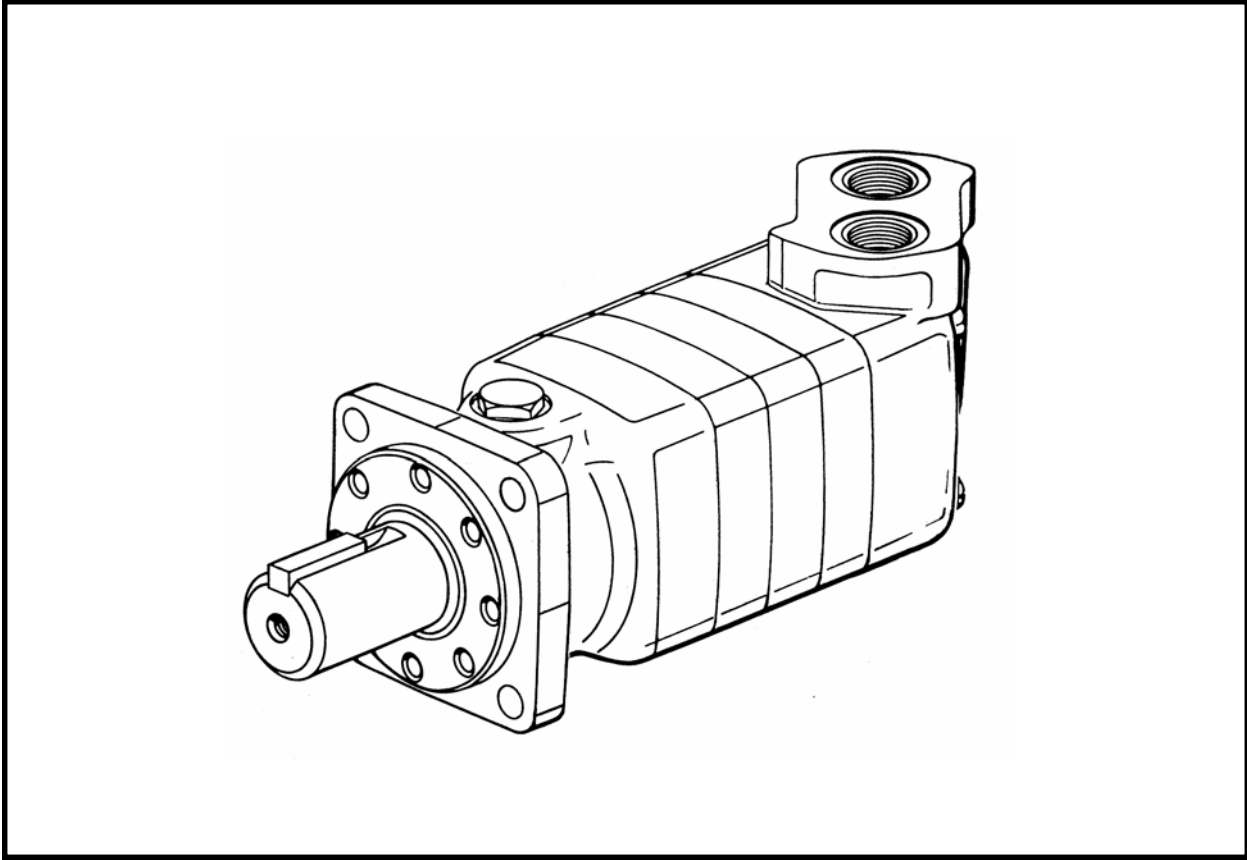
## Hydraulic Motors

TBM Drive Motor, P0304-123 .....	1
2418 Conveyor Drive Motor, P0304-157 .....	2
Main Drive & Conveyor 150 HP Motor, P0304-170 .....	3
Main Drive & Auxiliary 150 HP Motor, P0304-171 .....	4
Conveyor Lift Motor, P0304-131 .....	5

## Electric Motors

Cooling Circuit 2 HP Motor, P0310-388A .....	6
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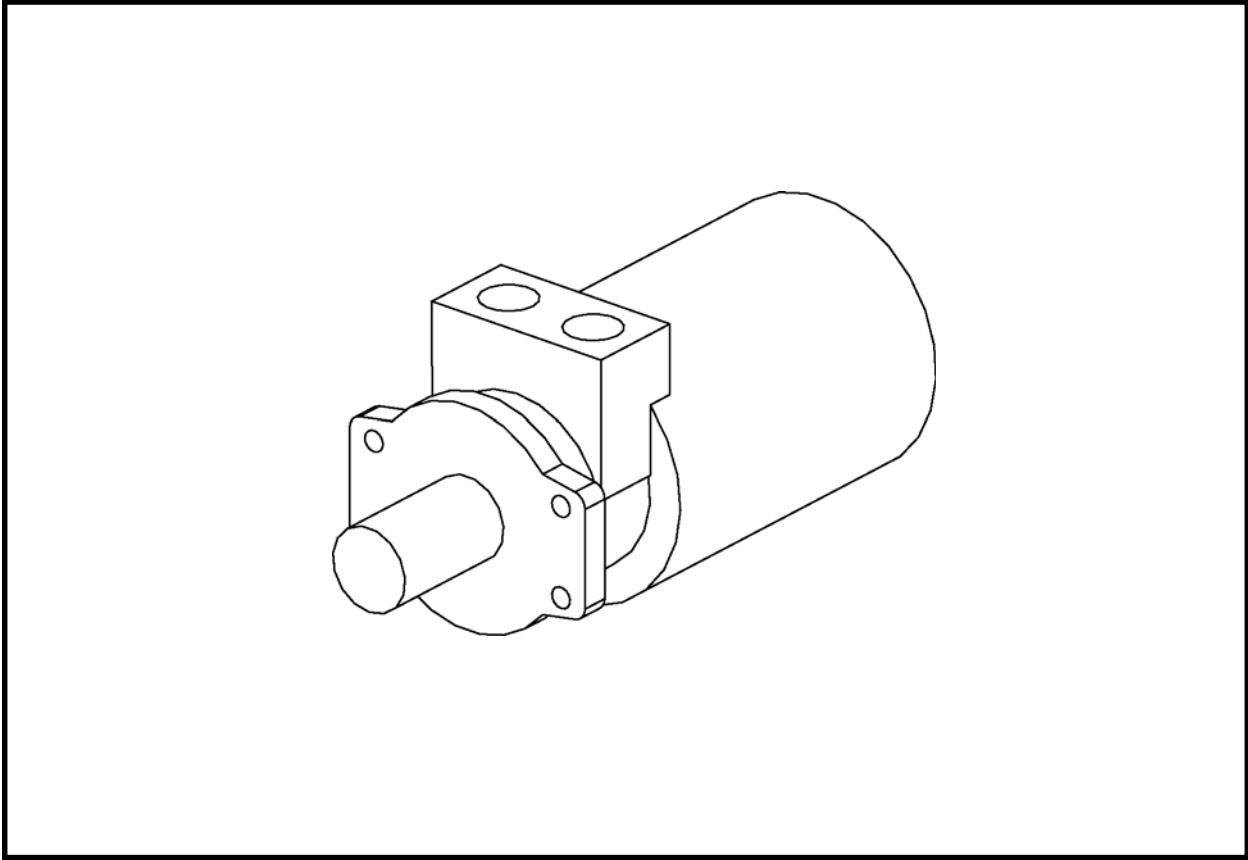
# TBM DRIVE MOTOR, P0304-123



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-123	MOTOR, TBM Drive
1*	1	P0304-107	KIT, Shaft End Seal
2*	4	P0304-107A	SCREW, Shaft End Cap

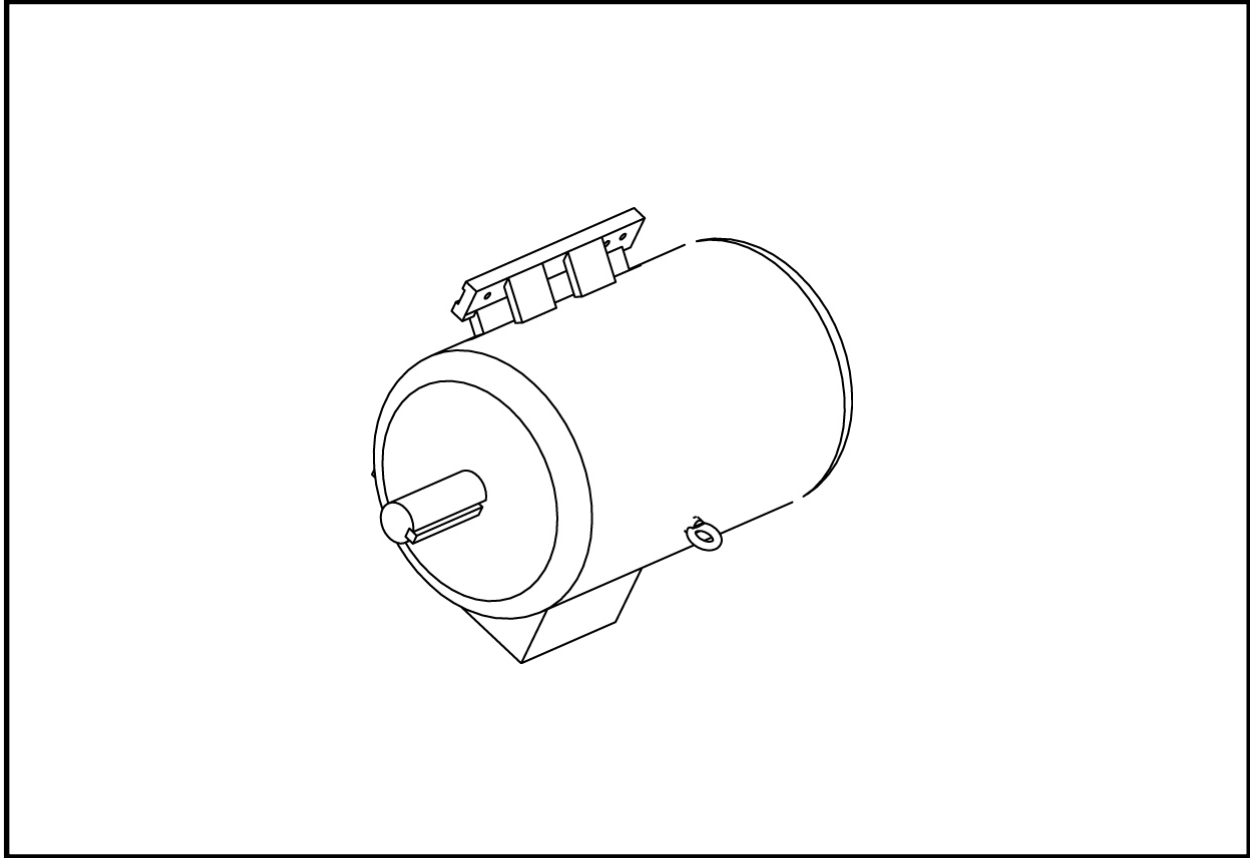
\* Not Shown

## 2418 CONVEYOR DRIVE MOTOR, P0304-157



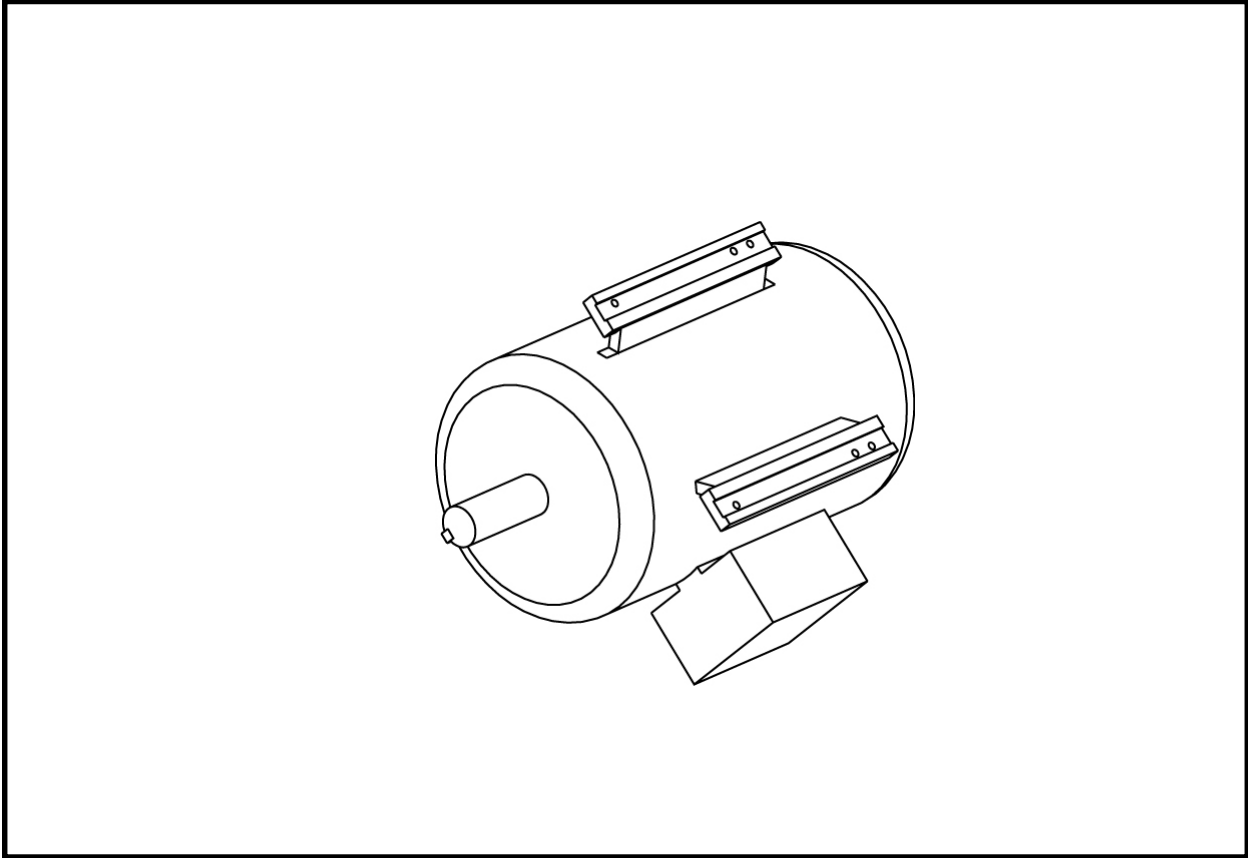
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-157	MOTOR, 2418 Conveyor Drive

# MAIN DRIVE & CONVEYOR 150 HP MOTOR, P0304-170



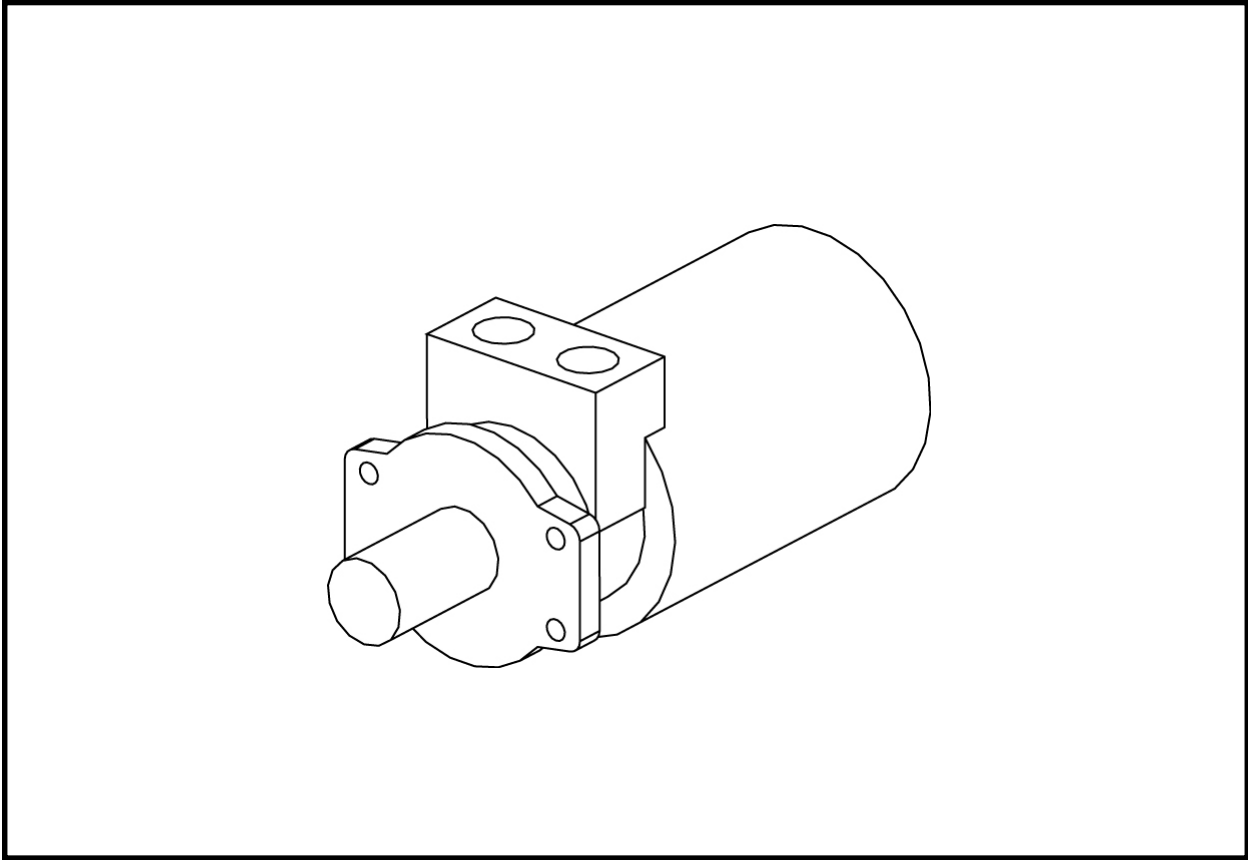
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-170	MOTOR, 150 HP (Main Drive & Conveyor)

# MAIN DRIVE & AUXILIARY 150 HP MOTOR, P0304-171



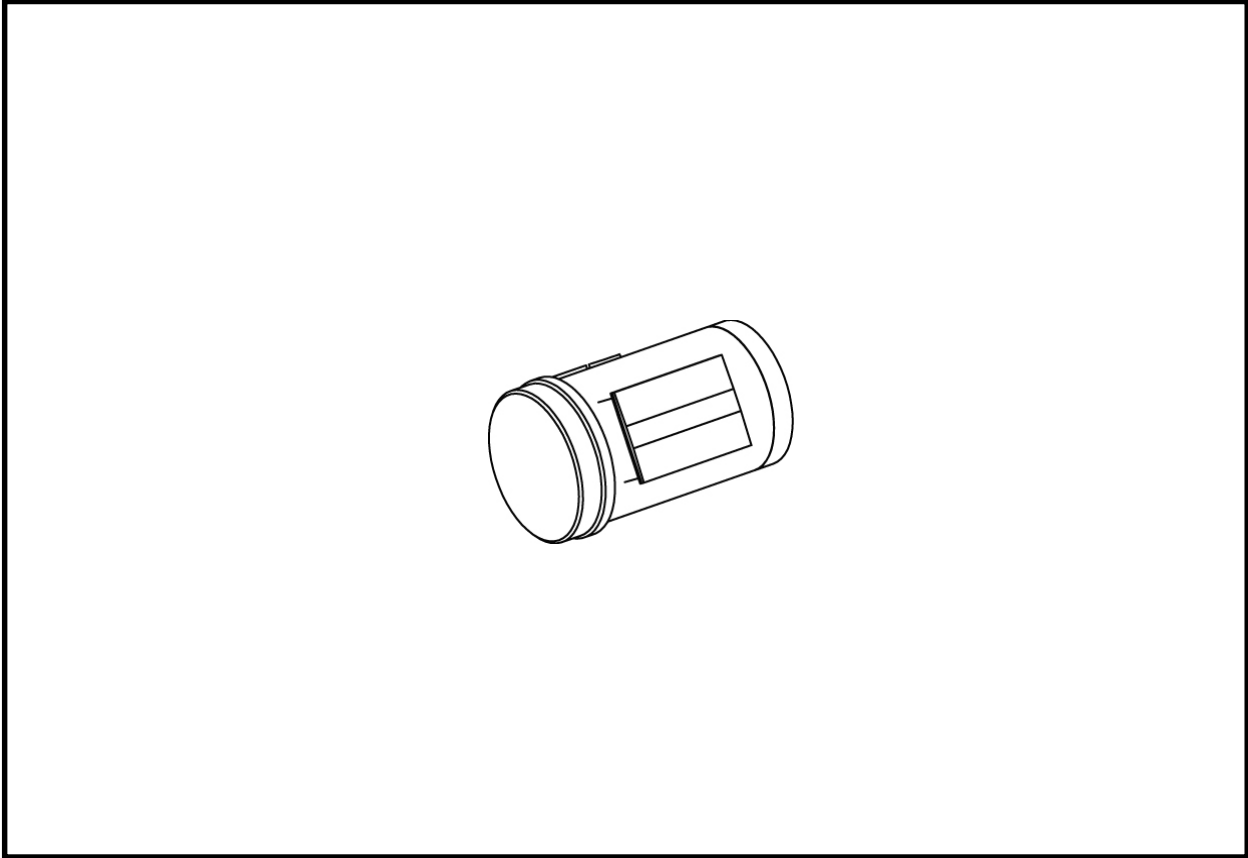
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-171	MOTOR, 150 HP (Main Drive & Auxiliary)

# CONVEYOR LIFT MOTOR, P0304-131



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-131	MOTOR, Conveyor Lift

# COOLING CIRCUIT 2 HP MOTOR, P0310-388A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0310-388A	MOTOR, 2 HP Cooling Circuit

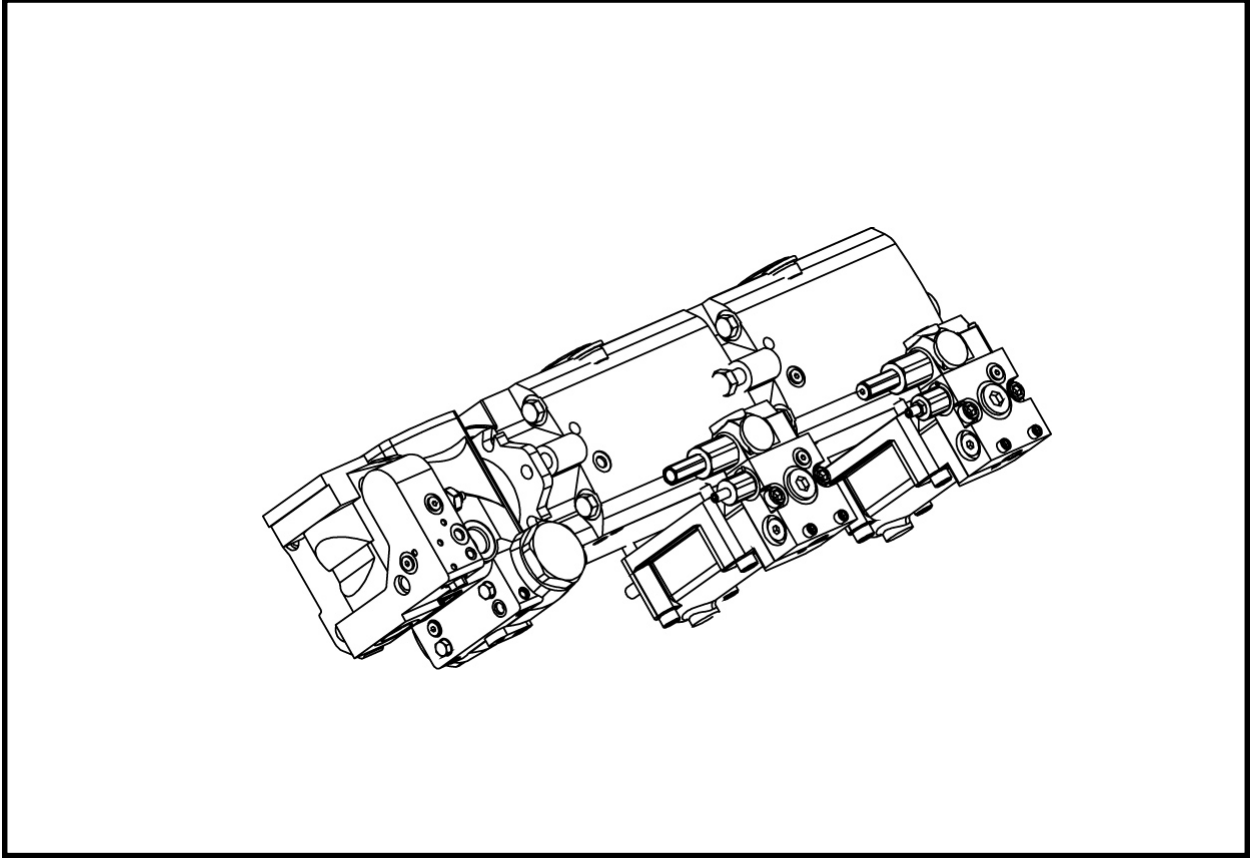
## **NOTES**



# Pumps

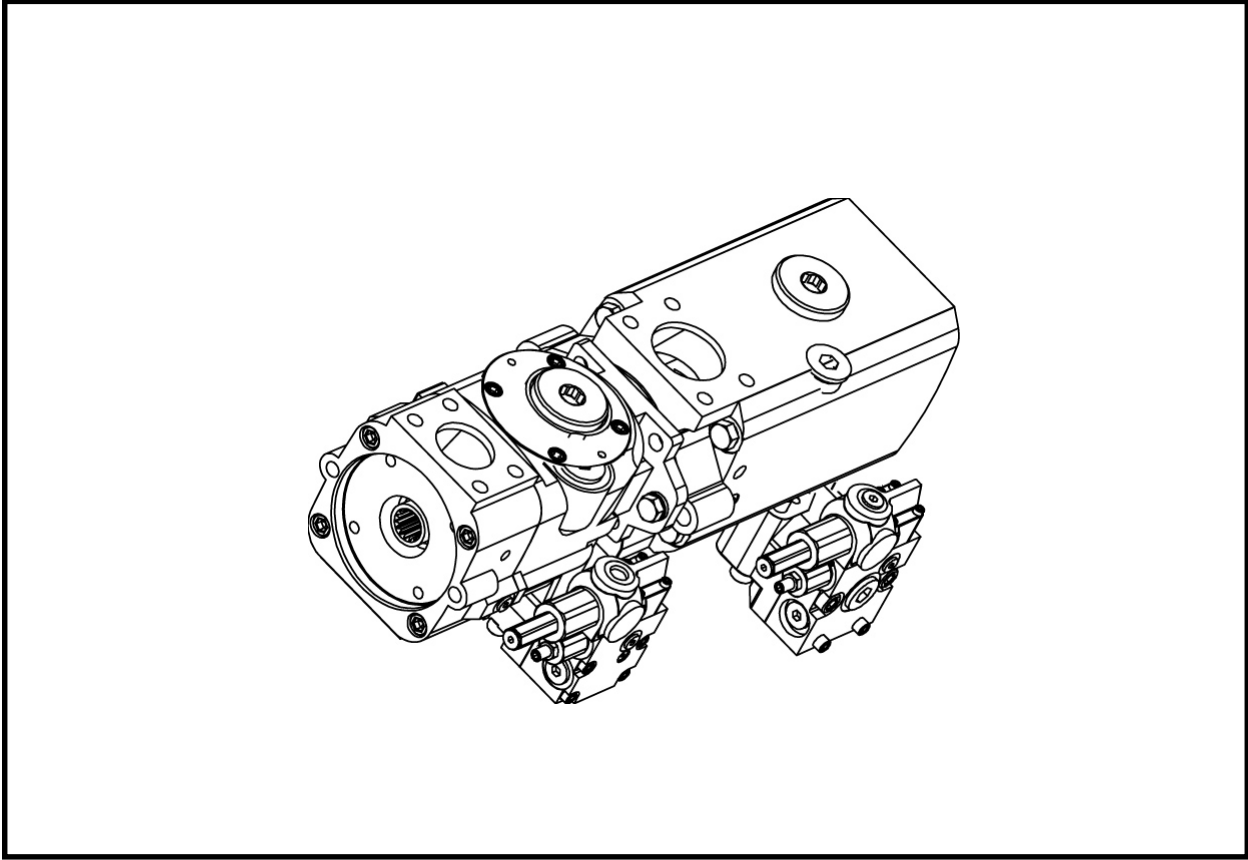
Pump Stack, Main Drive & Auxiliary, P0303-294 .....	1
Pump Stack, Main Drive & Conveyor, P0303-295 .....	2
Cooling Circuit Pump, P0303-296 .....	3

# PUMP STACK, MAIN DRIVE & AUXILIARY, P0303-294



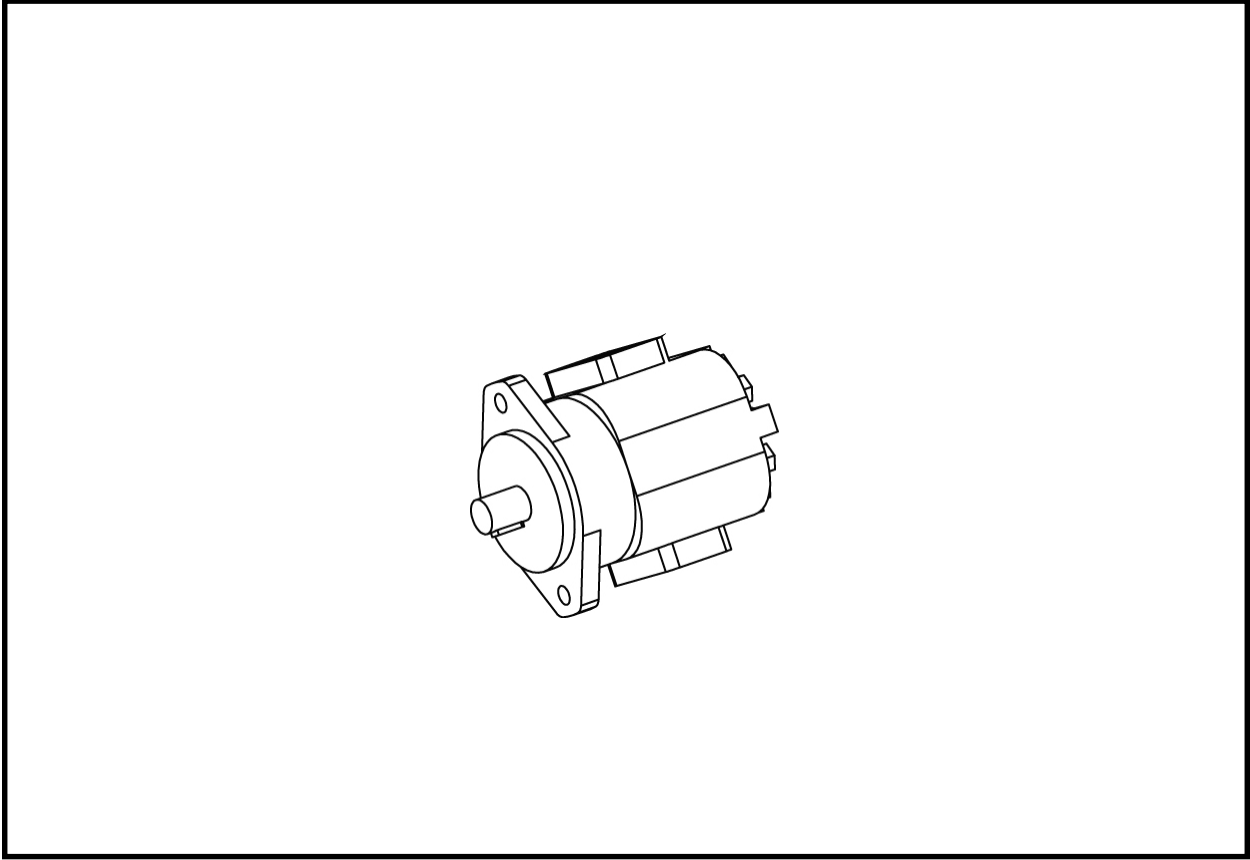
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0303-294	PUMP STACK, Main Drive & Auxiliary

# PUMP STACK, MAIN DRIVE & CONVEYOR, P0303-295



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0303-295	PUMP STACK, Main Drive & Conveyor

# COOLING CIRCUIT PUMP, P0303-296



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0303-296	PUMP, Cooling Circuit



# Cylinders

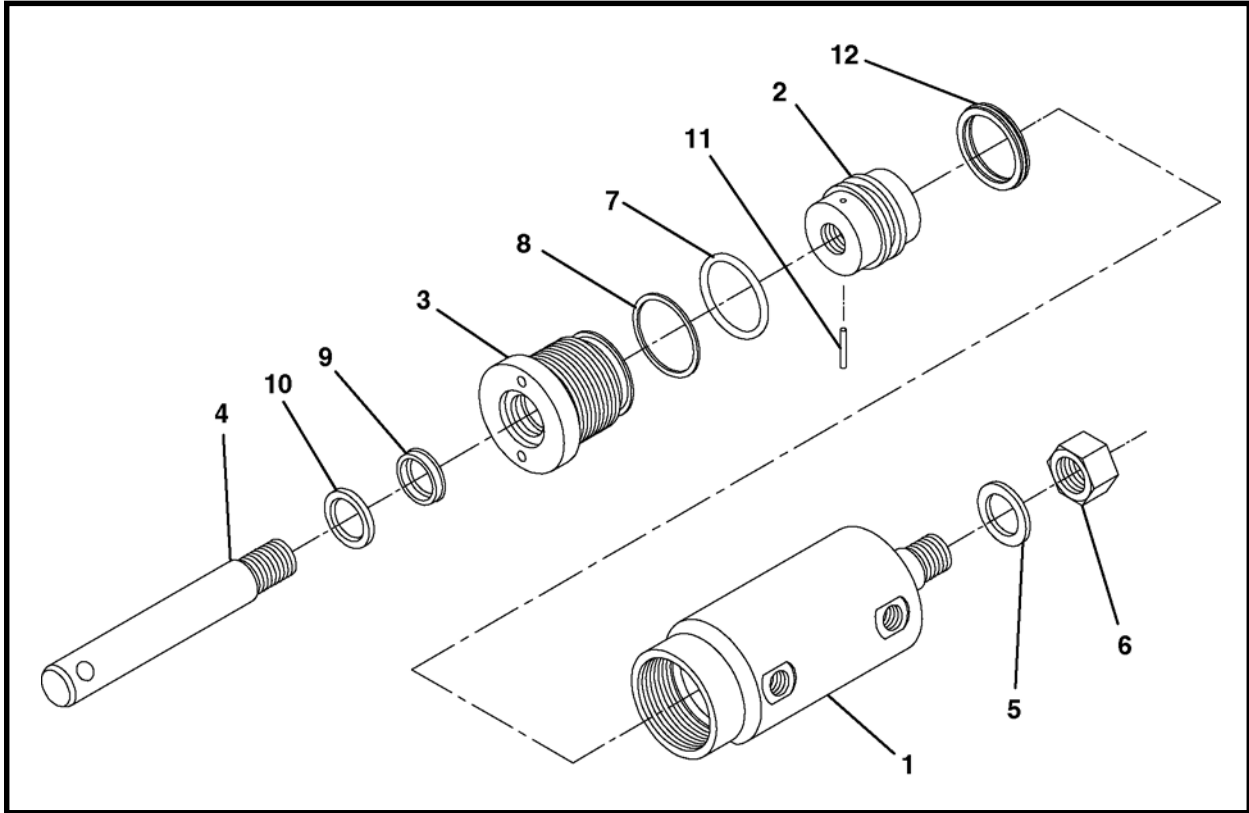
## **TBM**

Advance & Dirt (Torque) Wing Cylinder Assembly, 010747A00 .....	1
Hydraulic Dirt Wing Cylinder Assembly, 014603A00 .....	2
Steering Cylinder Assembly, 029645A.....	3

## **Attachments**

Closed Face	
Closed Face Cylinder Assembly, P0307-170 .....	4

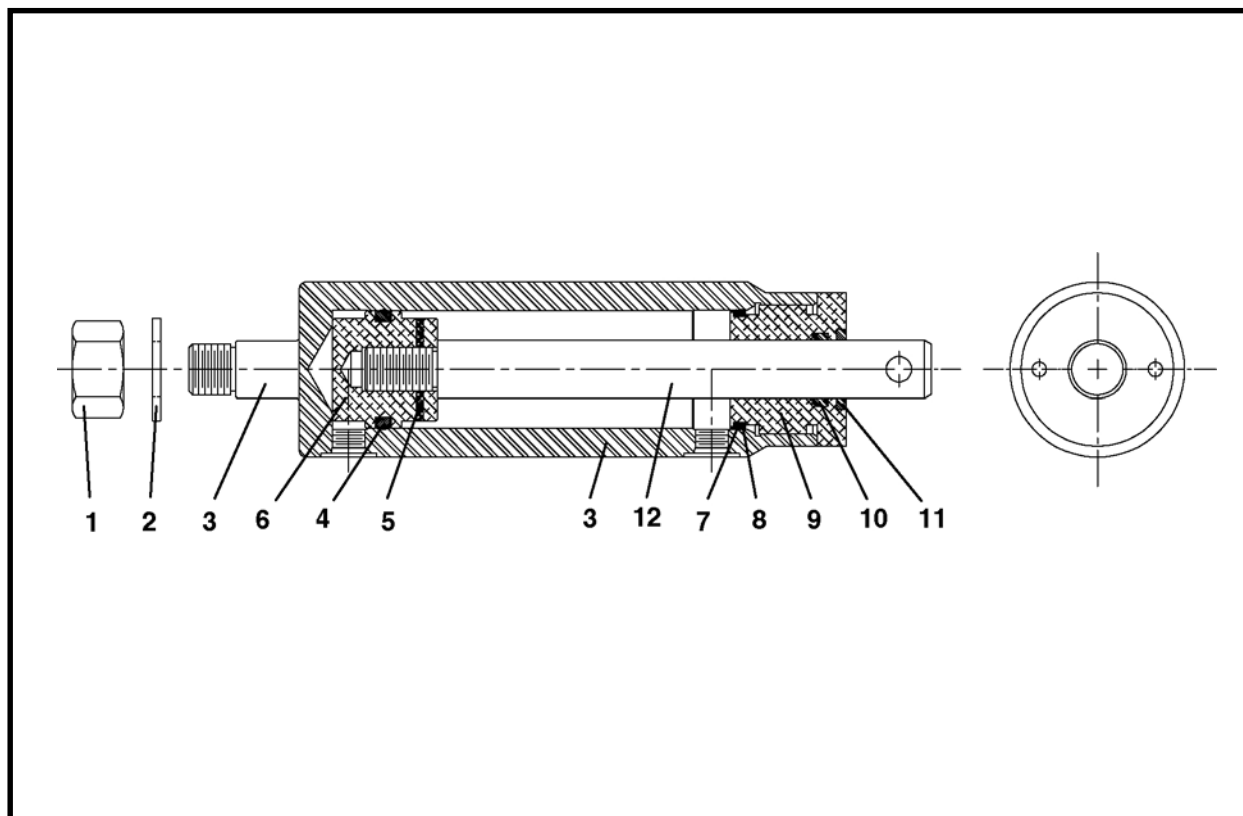
**CYLINDER ASSEMBLY, 010747A00  
ADVANCE CYLINDERS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	010747A00	ASSEMBLY, Advance Cylinder
1	1	010865P00	BARREL, Cylinder
2	1	010864P00	PISTON
3	1	001245P00	GLAND
4	1	001243P01	SHAFT
5	1	P0040-014	WASHER, 7/8
6	1	P0004-14-000	NUT, 7/8 UNF
7*	1	P0085-224	ORING
8*	1	P0084-224	RING, Back Up
9*	1	P0086-001	POLYSEAL
10*	1	P0080-001	WIPER
11	1	P0049-042	PIN, Spring
12*	1	P0085C-002	SEAL
13	1	010748A00	KIT, Seal

\* Items included in item 13, 010748A00 Seal Kit.

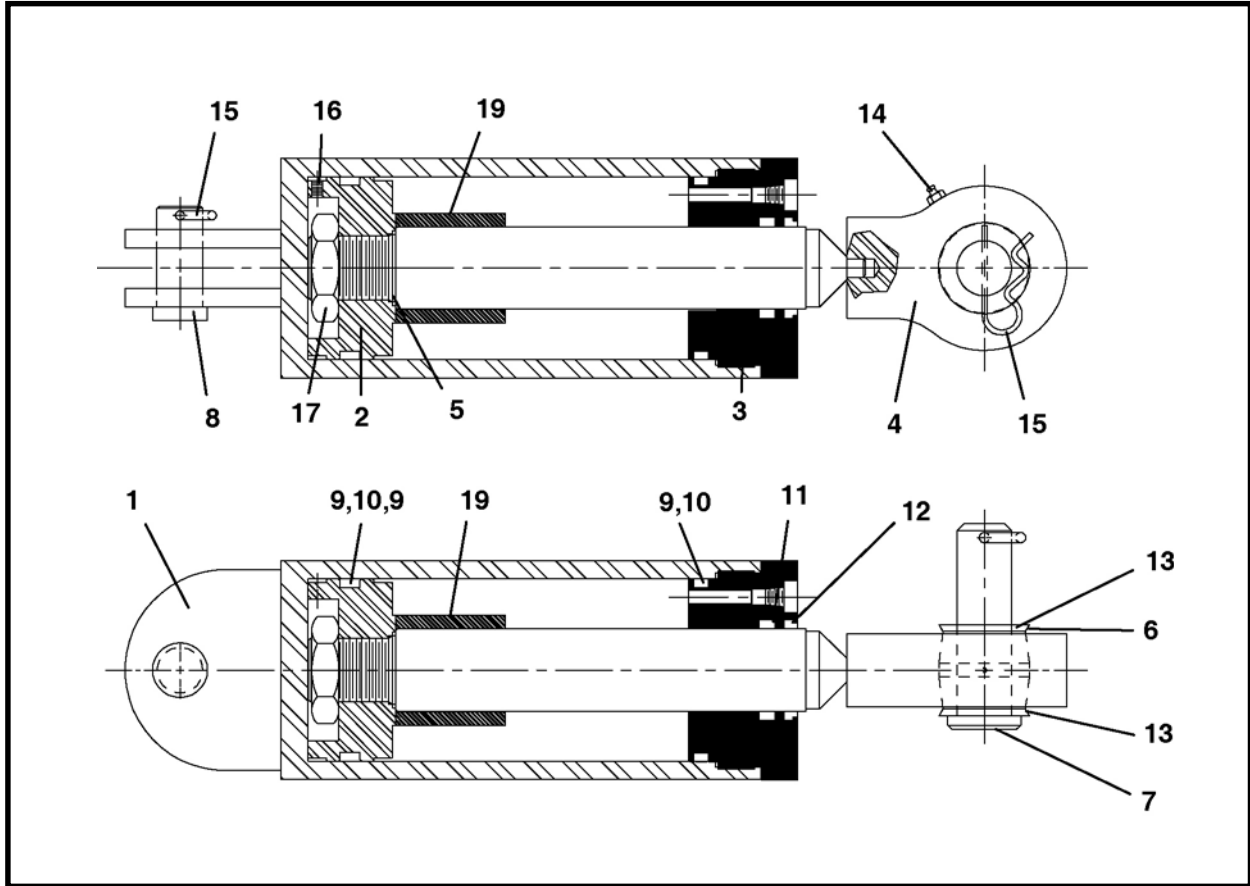
**CYLINDER ASSEMBLY, 014603A00  
HYDRAULIC DIRT WING CYLINDERS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	014603A00	ASSEMBLY, Hydraulic Dirt Wing Cylinder
1	1	P0004-14-000	NUT, 7/8 UNF
2	1	P0040-014	WASHER, 7/8
3	1	014605P00	BARREL, Cylinder
4*	1	P0085C-002	SEAL
5	1	P0049-042	PIN, Roll
6	1	010864P00	PISTON
7*	1	P0085-224	ORING
8*	1	P0084-224	RING, Back Up
9	1	001245P00	GLAND
10*	1	P0086-001	POLYSEAL
11*	1	P0080-001	WIPER
12	1	014604P00	SHAFT
13	1	010748A00	KIT, Seal

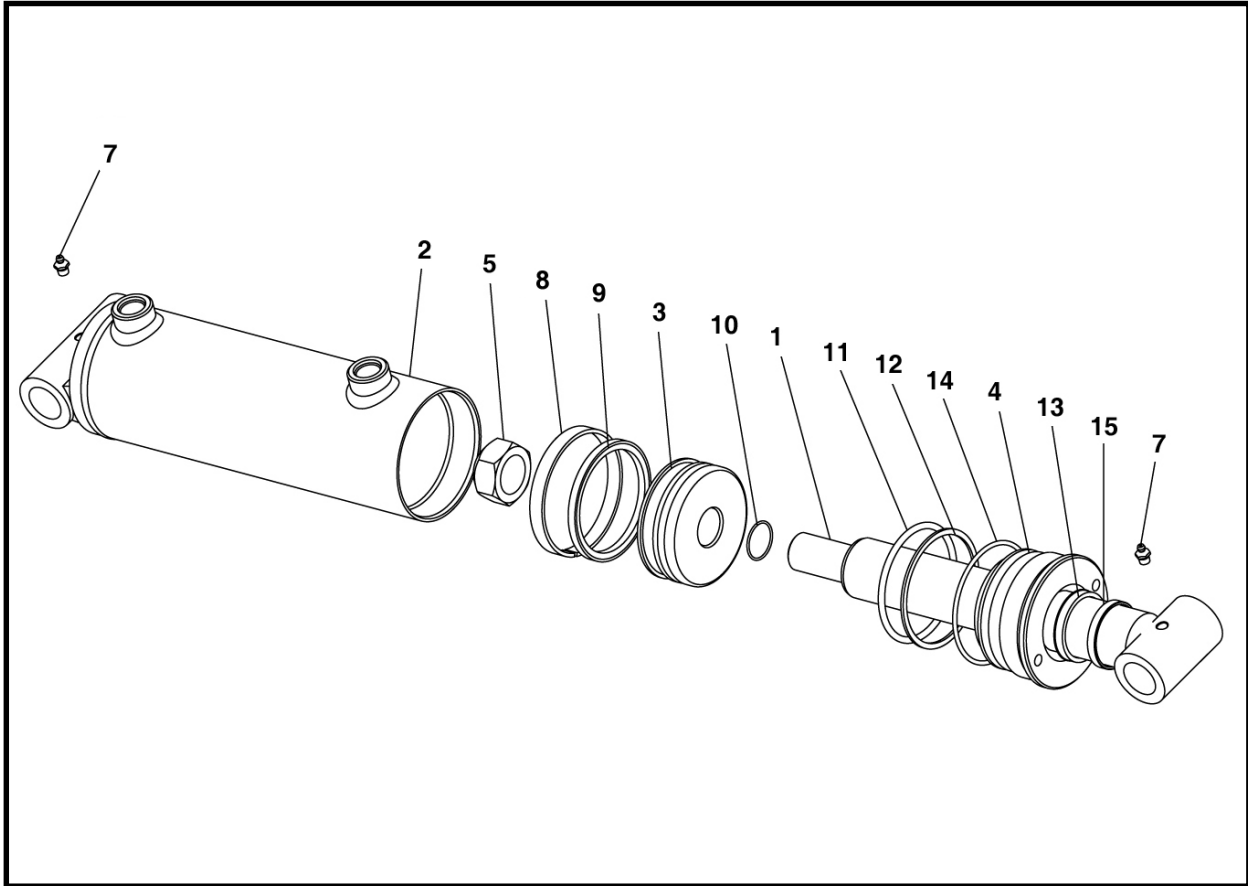
\* Items included in item 13, 010748A00 Seal Kit.

## STEERING CYLINDER, 029645A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	029645A	STEERING CYLINDER
1	1	011701A00	WELDMENT, Steering Cylinder
2	1	011704P00	ROD
3	1	007407P00	GLAND
4	1	011703A00	WELDMENT, Shaft & Clevis
5	1	P0085-134	ORING
6	1	007412P00	BUSHING
7	1	005868P00	PIN, Steering Cylinder
8	1	002856P00	PIN, Cylinder
9	3	P0084-426	ORING
10	2	P0085-426	RING, Back Up
11	1	P0086-005	POLYSEAL
12	1	P0087-004	WIPER
13	2	P0085-326	ORING
14	1	P0063-001	FITTING, Grease 1/4-28 UNF
15	2	P0090-005	PIN, Hitch
16	1	P0033-06-016	SCREW, Socket Head Set 3/8-16 UNC x 1
17	1	011713P00	NUT
18	REF.	011709A00	KIT, Seal
19	1	029621A	RESTRICTOR, Stroke

**CYLINDER ASSEMBLY, P0307-170  
CLOSED FACE**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0307-170	ASSEMBLY, Cylinder
1	1	-	ASSEMBLY, Piston Rod
2	1	-	ASSEMBLY, Barrel
3	1	-	PISTON
4	1	-	GLAND
5	1	-	LOCKNUT
6	-	-	-
7	2	-	ZERK, Grease
8*	1	-	BEARING RING
9*	1	-	ASSEMBLY, Teflon Seal
10*	1	-	ORING
11*	1	-	ORING
12*	1	-	BACKUP WASHER
13*	1	-	U-CUP
14*	1	-	ORING
15*	1	-	WIPER
16	1	P0307-170A	KIT, Seal

\* Included in item 16, P0307-170A, Seal Kit

**NOTES**

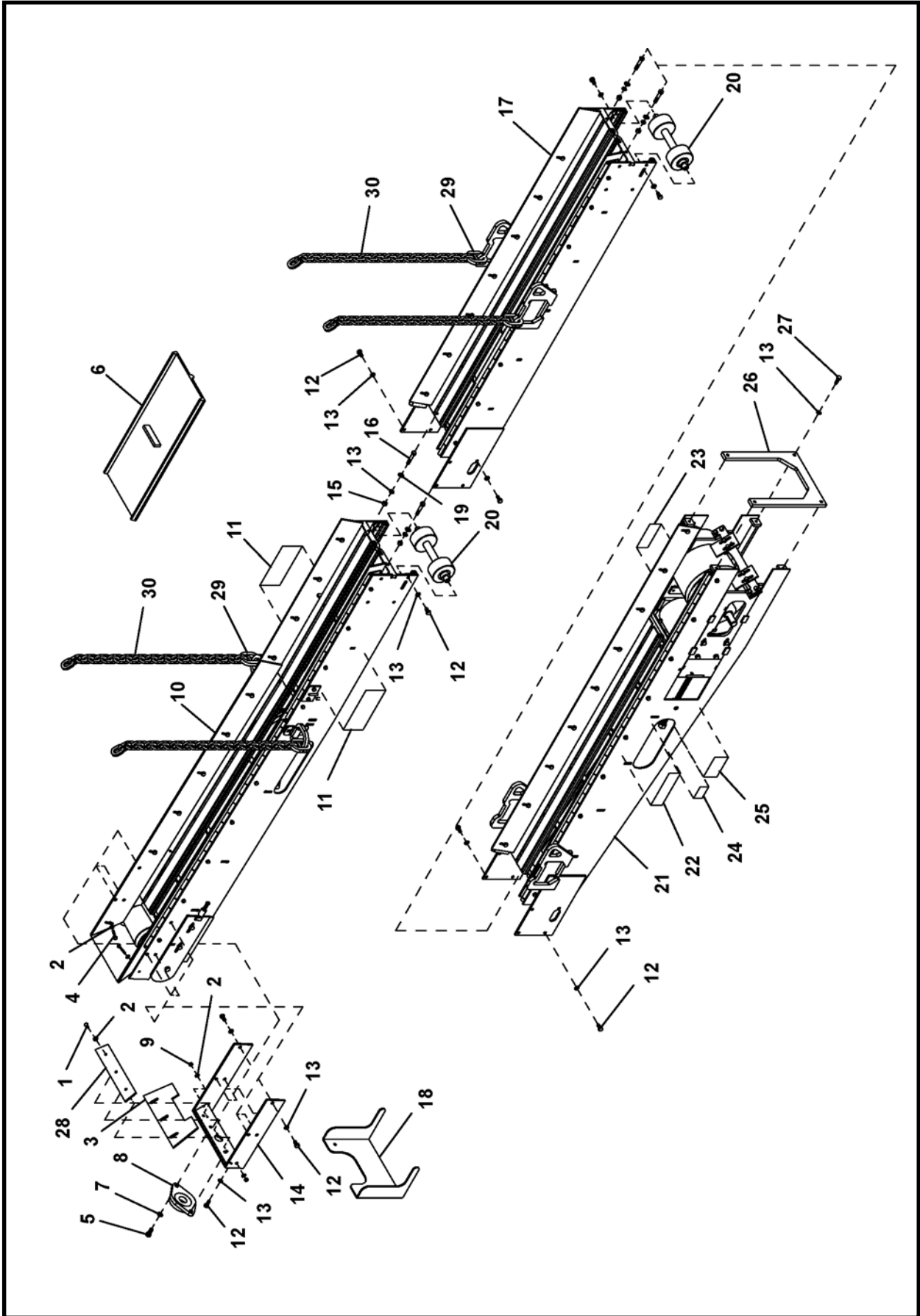


## Miscellaneous / Conveyors

### Belt Conveyors

2418 Belt Conveyor, F27455F .....	1
Feed Frame Assembly, 027313A00 .....	3
Feed Frame Spoils Guide Assembly - Left Front, 027137A00 .....	4
Feed Frame Spoils Guide Assembly - Left Rear, 027221A00 .....	5
Front Roller Assembly, 027307A00 .....	6
Feed Frame Spoils Guide Assembly - Right Front, 027265A00 .....	7
Feed Frame Spoils Guide Assembly - Right Rear, 027266A00 .....	8
Extension Frame Assembly, 027456A .....	9
Spoils Guide - Front Assembly, 027461A .....	10
Spoils Guide - Front Assembly, 027462A .....	11
Idler Roller Assembly, 027311A00 .....	12
Drive Frame Assembly, 027425A00 .....	13
Drive Frame Spoils Guide Assembly - Front, 027131A00 .....	14
Drive Frame Spoils Guide Assembly - Rear, 027219A00 .....	15
Drive Motor & Roller Assembly, 027420A00 .....	17

BELT CONVEYOR, F27455F  
2418 CONVEYOR



**BELT CONVEYOR, F27455F  
2418 CONVEYOR**

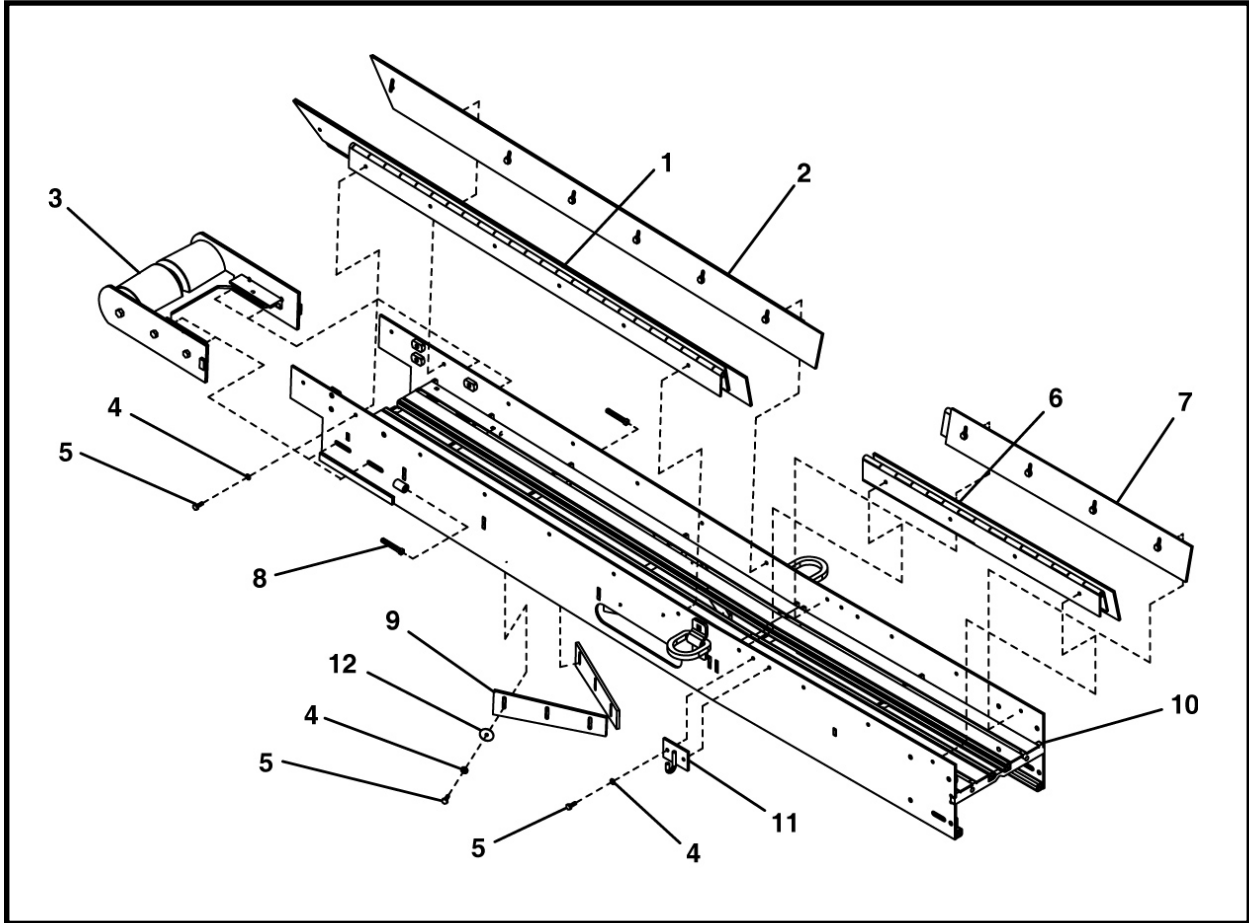
ITEM	QTY	PART NO.	DESCRIPTION
0	1	F27455F	CONVEYOR, Belt
1	3	P0020-14-204	SCREW, Slotted Truss Head 1/4-20 UNC x 3/4
2	7	P0040-004	WASHER, Flat 1/4
3	1	027339P00	SCRAPER, External Belt, Front End
4	2	P0020-14-207	SCREW, Slotted Truss Head 1/4-20 UNC x 1-1/2
5	2	P0001-07-004	BOLT, Hex 7/16-14 UNC x 1
6	1	P0067-011	BELTING, 24" X 34'
7	2	P0045-007	WASHER, Lock 7/16
8	1	P0065-017	BEARING
9	2	P0003-04-000	NUT, Hex 1/4-20 UNC
10	1	027313A00	ASSEMBLY, Feed Frame
11	2	1250-447	DECAL, Akkerman, Small
12	28	P0001-06-003	BOLT, Hex 3/8-16 UNC x 3/4
13	36	P0040-006	WASHER, Lock 3/8
14	1	027309A00	WELDMENT, Nose Bearing Mount
15	4	P0003-06-000	NUT, Hex 3/8-16 UNC
16	4	P0001-06-008	BOLT, Hex 3/8-16 x 2
17	2	027456A	ASSEMBLY, Extension Frame
18	1	027308A00	GUARD, Dirt
19	4	P0040-006	WASHER, Flat 3/8
20	2	027311A00	ASSEMBLY, Idler Roller
21	1	027425A00	ASSEMBLY, Drive Frame
22	1	REF	PLATE, Serial Number
23	1	1250-004	DECALS, Warning, Guards Must Be In Place
24	1	1250-452	DECAL, Made In USA
25*	1	1250-098	DECAL, Lease
26	1	027336P00	SUPPORT, Drive Frame Free End
27	4	P0001-06-004	BOLT, Hex 3/8-16 UNC x 1
28	1	027144P00	PLATE, Feed Belt Retainer
29	2	P0098-010	LINK, 3/8 Hammerlock Link
30	4 @ 30 LI	P0094-003	CHAIN, 3/8 Alloy Steel
31**	2	002269P01	CLAMP, Line
32**	2	P0004-05-000	NUT, Hex 5/16-18
33**	2	P0045-005	WASHER, Lock 5/16
34**	2	P0001-05-003	BOLT, Hex 5/16-18 x 3/4
35**	2	002036P00	ASSEMBLY, Hose 1/2 x 132
36**	1	P0100-004A	COUPLER, Quick 1/2 Male
37**	1	P0100-004B	COUPLER, Quick 1/2 Female

\* Decal used only on leased equipment.

\*\* Not Shown

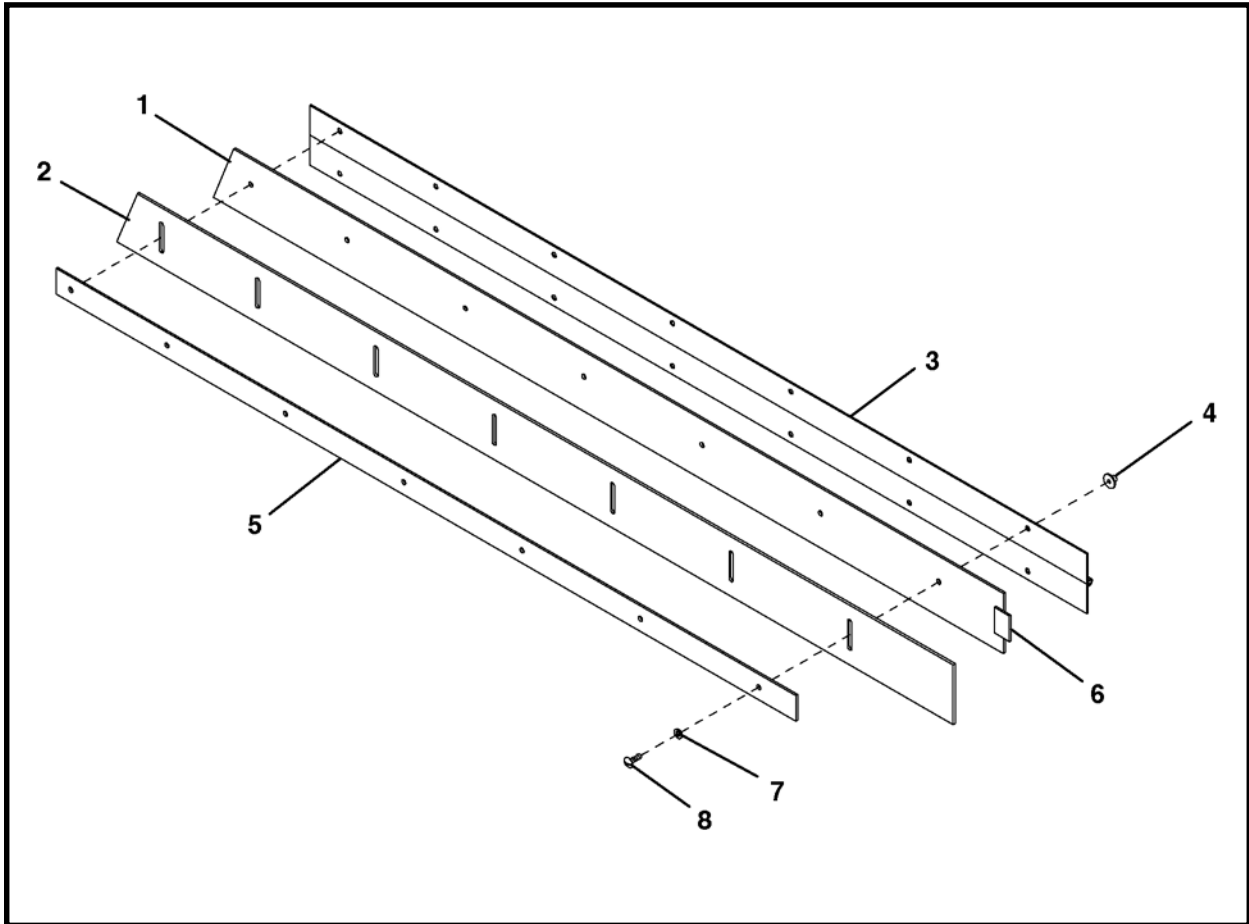
LI - Linear Inches

**FEED FRAME ASSEMBLY, 027313A00**  
**2418 CONVEYOR**



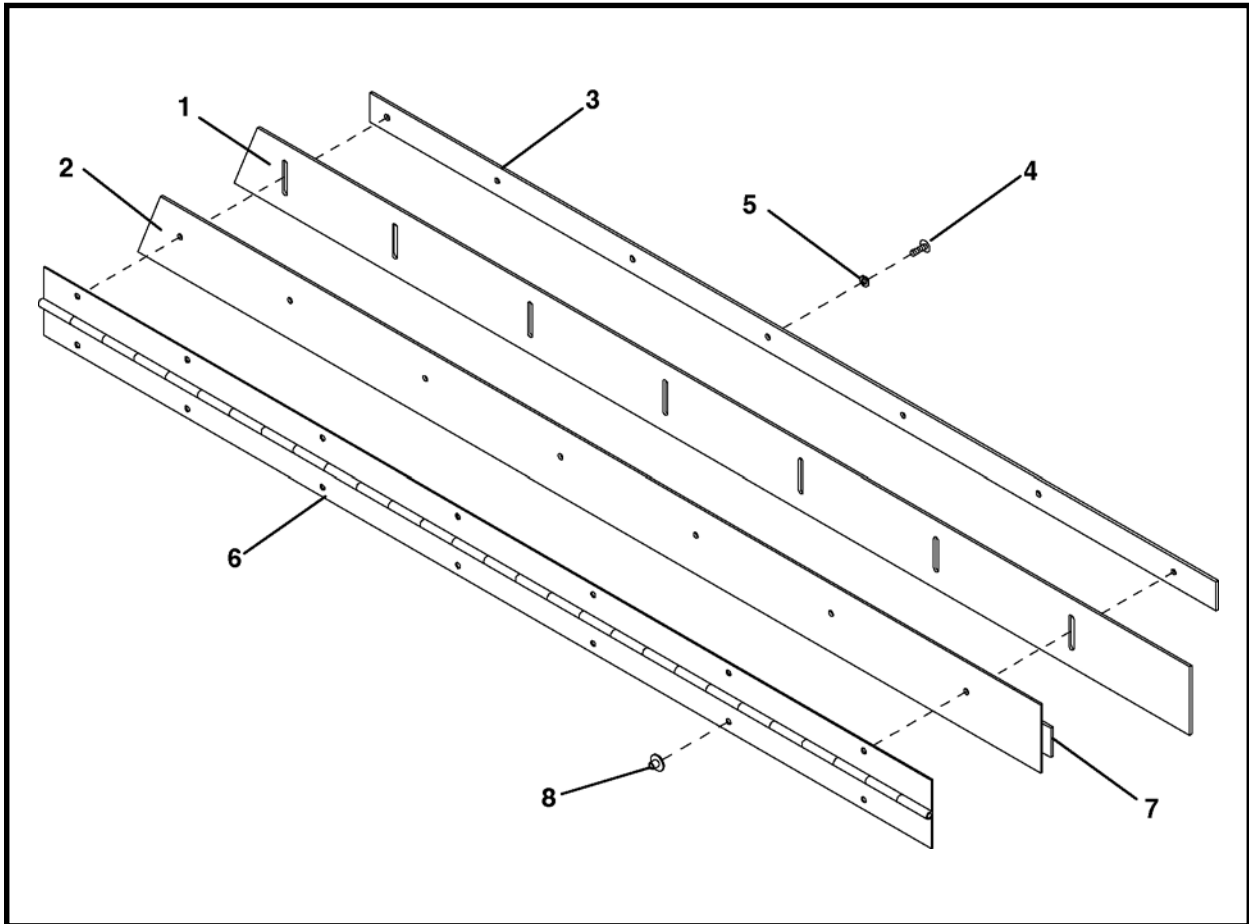
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027313A00	ASSEMBLY, Feed Frame
1	1	027137A00	ASSEMBLY, Feed Frame Spoils Guide - Left Front
2	1	027221A00	ASSEMBLY, Feed Frame Spoils Guide - Left Rear
3	1	027307A00	ASSEMBLY, Front Roller
4	28	P0045-004	WASHER, Lock 1/4
5	28	P0001-04-003	BOLT, Hex 1/4 UNC x 3/4
6	1	027265A00	ASSEMBLY, Feed Frame Spoils Guide - Right Front
7	1	027266A00	ASSEMBLY, Feed Frame Spoils Guide - Right Rear
8	2	P0034-06-012	SCREW, Square Head Set 3/8-16 UNC x 3
9	2	027346P00	BELTING, Inner Belt Scraper
10	1	027302A00	WELDMENT, Feed Frame (Includes items 10a-10c)
10a	2	001496P00	NUT, Adjustment
10b	14	P0007-06-000	NUT, Jam 3/8-16 UNC
10c	2	P0079-003	D-RING, 1/2
11	1	005436A00	PLATE, Hook
12	6	P0042-009	WASHER, Fender

**FEED FRAME SPOILS GUIDE ASSEMBLY - LEFT FRONT, 027137A00**  
**2418 CONVEYOR**



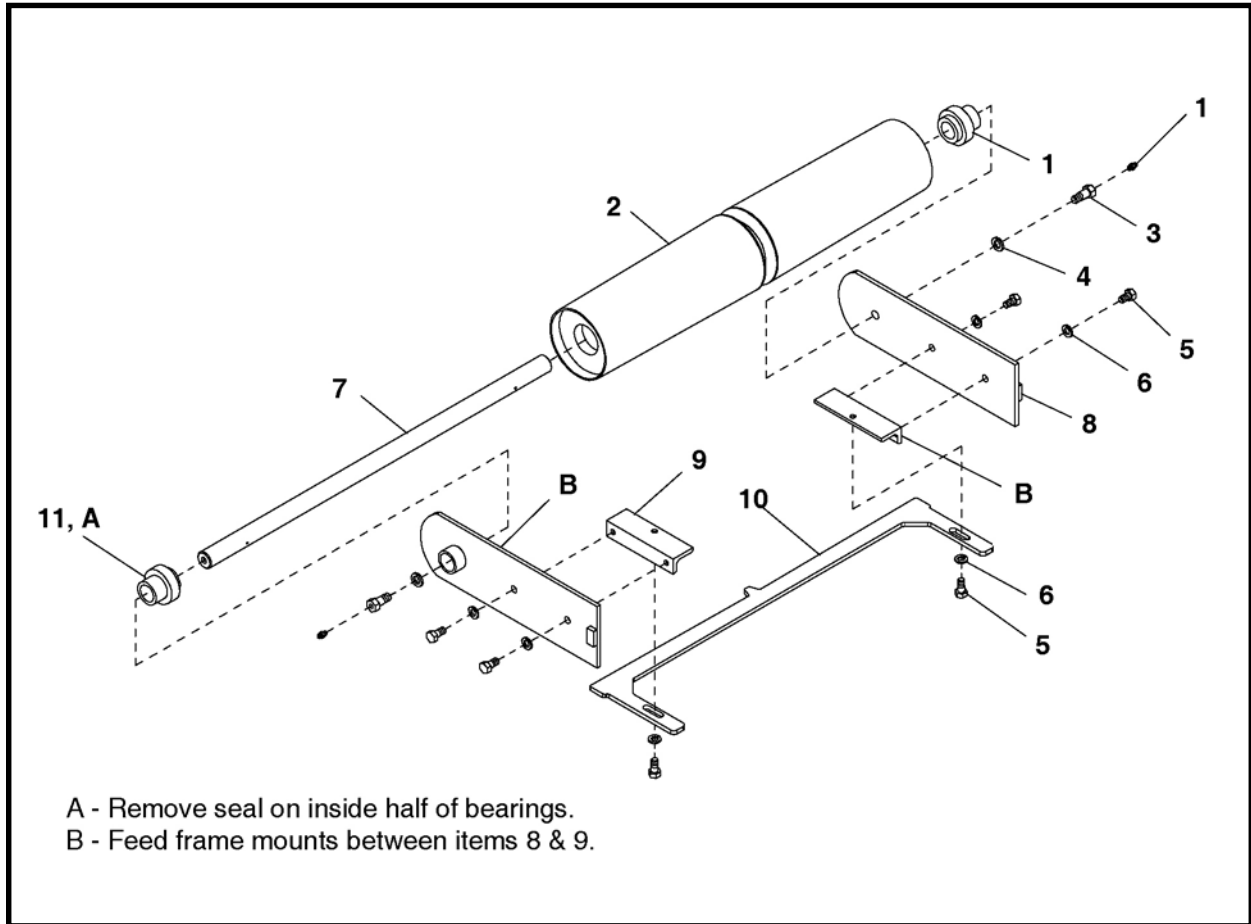
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027137A00	ASSEMBLY, Feed Frame Spoils Guide - Left Front
1	1	027139P00	SUPPORT BAR, Feed Frame Spoils - Left
2	1	027140P00	STRIP, Wear, Feed Frame Spoils
3	1	027138P00	HINGE, Feed Frame Spoils
4	12	P0011-004C	NUT, Weld 1/4-20 UNC
5	1	027248P00	BRACKET, Feed Frame Wear Strip
6	1	027216P00	TAB, Feed Frame Support Bar
7	6	P0045-004	WASHER, Lock 1/4
8	6	P0020-14-204	SCREW, Truss Slotted Head 1/4-20 UNC x 3/4

**FEED FRAME SPOILS GUIDE ASSEMBLY - LEFT REAR, 027221A00**  
**2418 CONVEYOR**



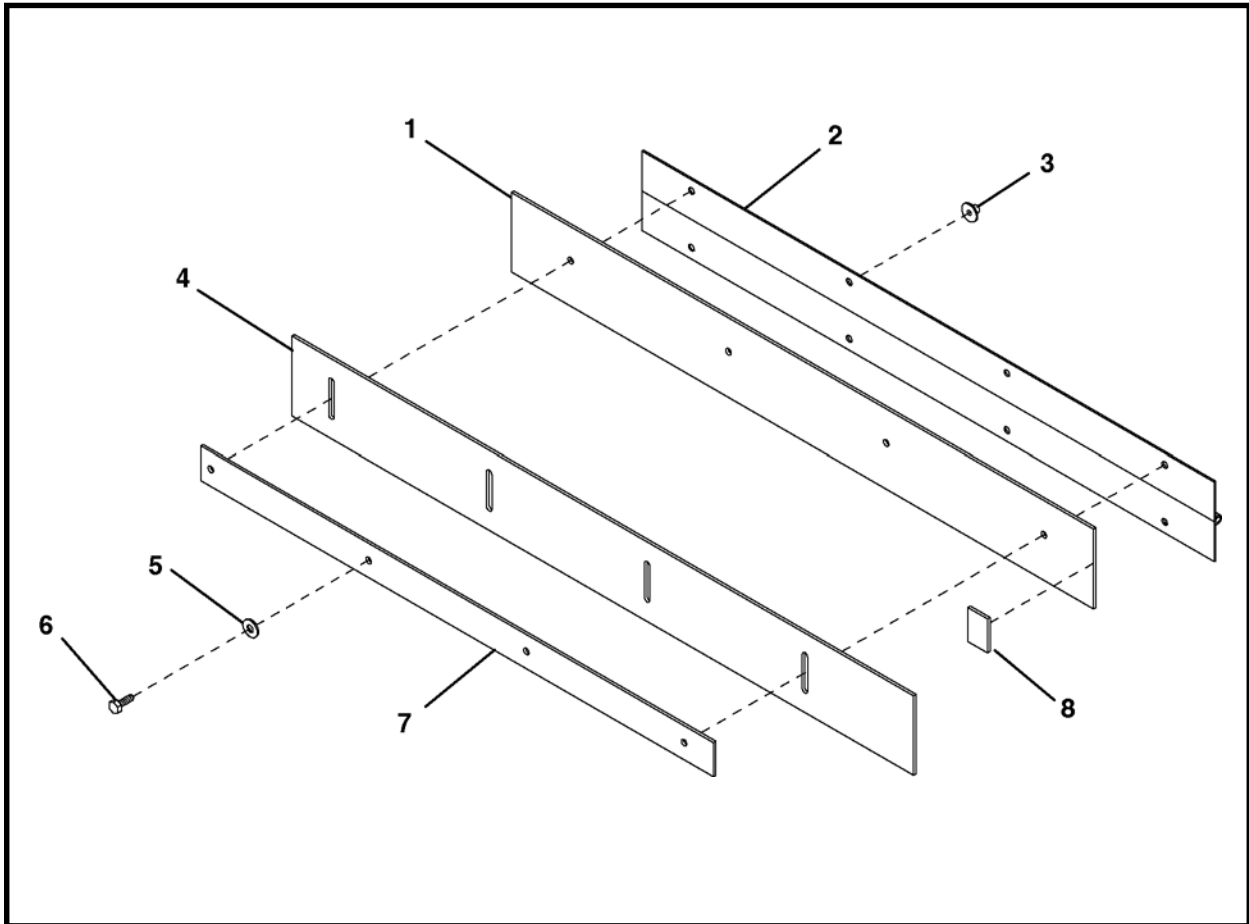
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027221A00	ASSEMBLY, Feed Frame Spoils Guide - Left Rear
1	1	027140P00	STRIP, Wear, Feed Frame Spoils
2	1	027139P00	SUPPORT BAR, Feed Frame Spoils - Left
3	1	027248P00	BRACKET, Feed Frame Wear Strip
4	6	P0020-14-204	SCREW, Slotted Truss Head 1/4-20 UNC x 3/4
5	6	P0045-004	WASHER, Lock 1/4
6	1	027138P00	HINGE, Feed Frame Spoils
7	1	027216P00	TAB, Feed Frame Support Bar
8	12	P0011-004C	NUT, Weld 1/4-20 UNC

**FRONT ROLLER ASSEMBLY, 027307A00**  
**2418 CONVEYOR**



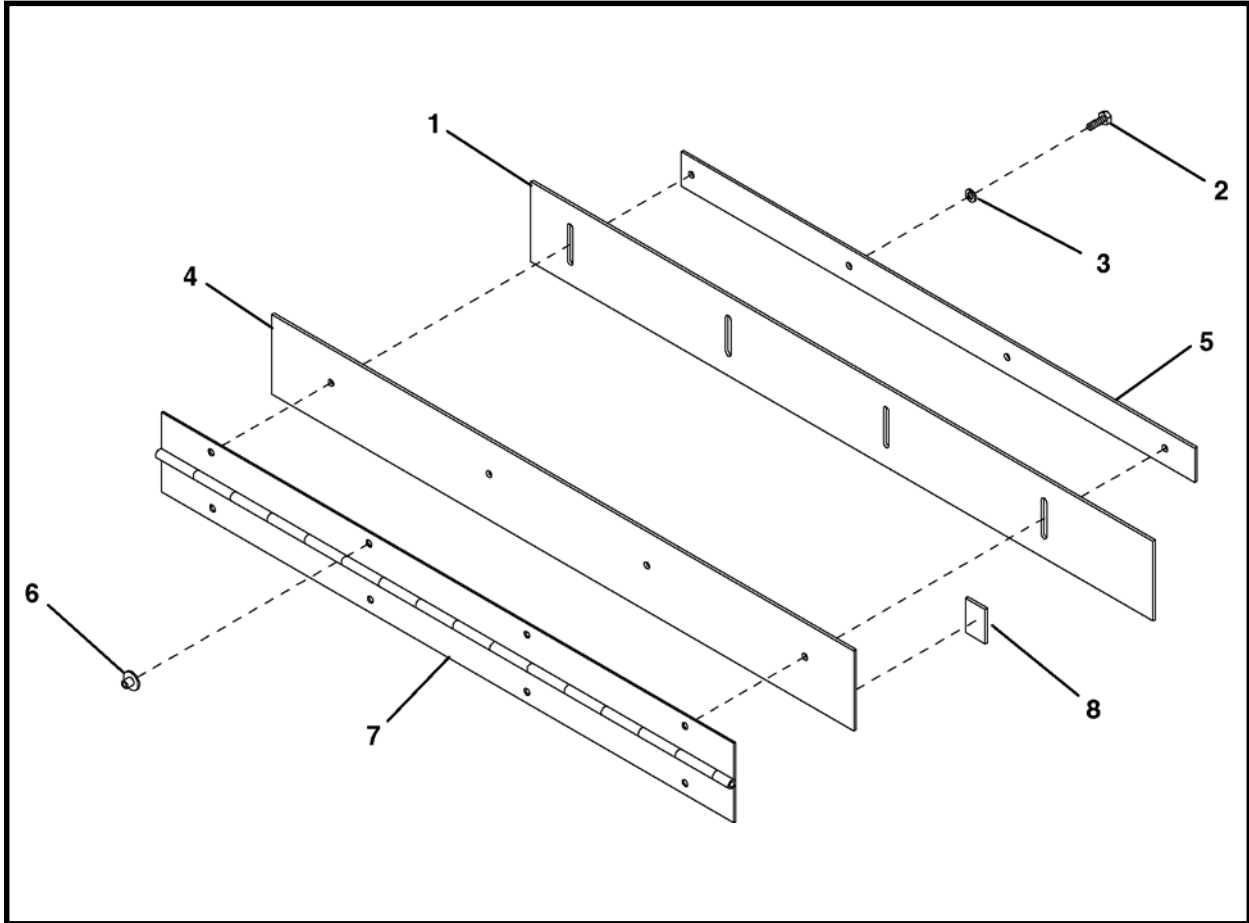
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027307A00	ASSEMBLY, Front Roller
1	2	P0063-001	FITTING, Grease Straight
2	1	027347A00	WELDMENT, Front Roller
3	2	002386P04	BOLT, Grease
4	2	P0045-007	WASHER, Lock 7/16
5	6	P0001-06-003	BOLT, Hex 3/8 UNC x 3/4
6	6	P0045-006	WASHER, Lock 3/8
7	1	027343P00	SHAFT, Front Roller
8	2	027109A00	WELDMENT, Front Roller Mounting Bracket
9	2	027130P00	MOUNT, Front Roller Scraper
10	1	027340A00	SCRAPER, Front Roller
11	2	P0065-006	BEARING

**FEED FRAME SPOILS GUIDE ASSEMBLY - RIGHT FRONT, 027265A00**  
**2418 CONVEYOR**



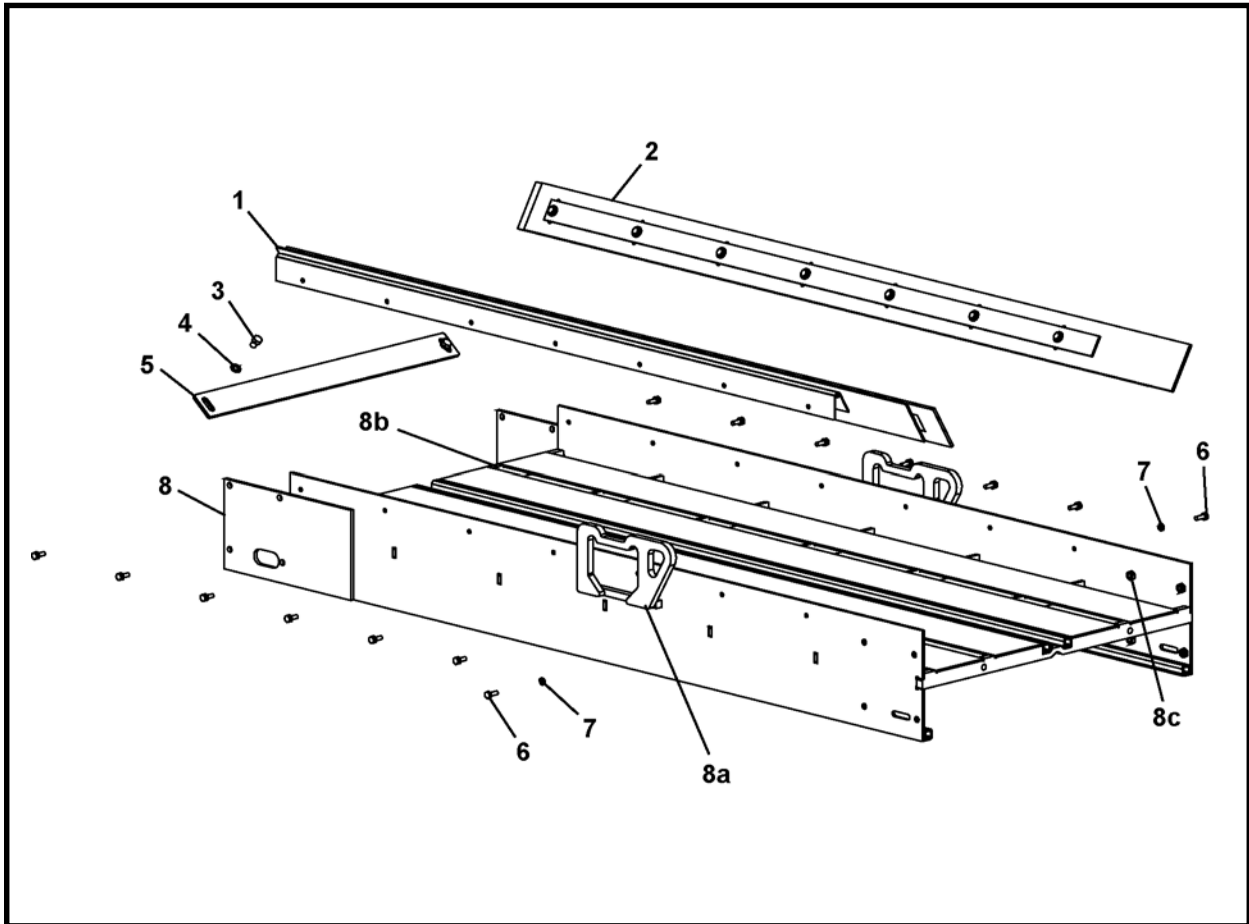
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027265A00	ASSEMBLY, Feed Frame Spoils Guide - Right Front
1	1	027217P00	SUPPORT BAR, Feed Frame Spoils - RIGHT
2	1	027135P00	HINGE, Short Spoils Guide
3	8	P0011-004C	NUT, Weld 1/4-20 UNC
4	1	027136P00	STRIP, Short Spoils Guide Wear
5	4	P0045-004	WASHER, Lock 1/4
6	4	P0001-04-003	BOLT, Hex 1/4-20 UNC x 3/4
7	1	027249P00	BRACKET, Short Spoils Wear Strip
8	1	027216P00	TAB, Feed Frame Support Bar

**FEED FRAME SPOILS GUIDE ASSEMBLY - RIGHT REAR, 027266A00**  
**2418 CONVEYOR**



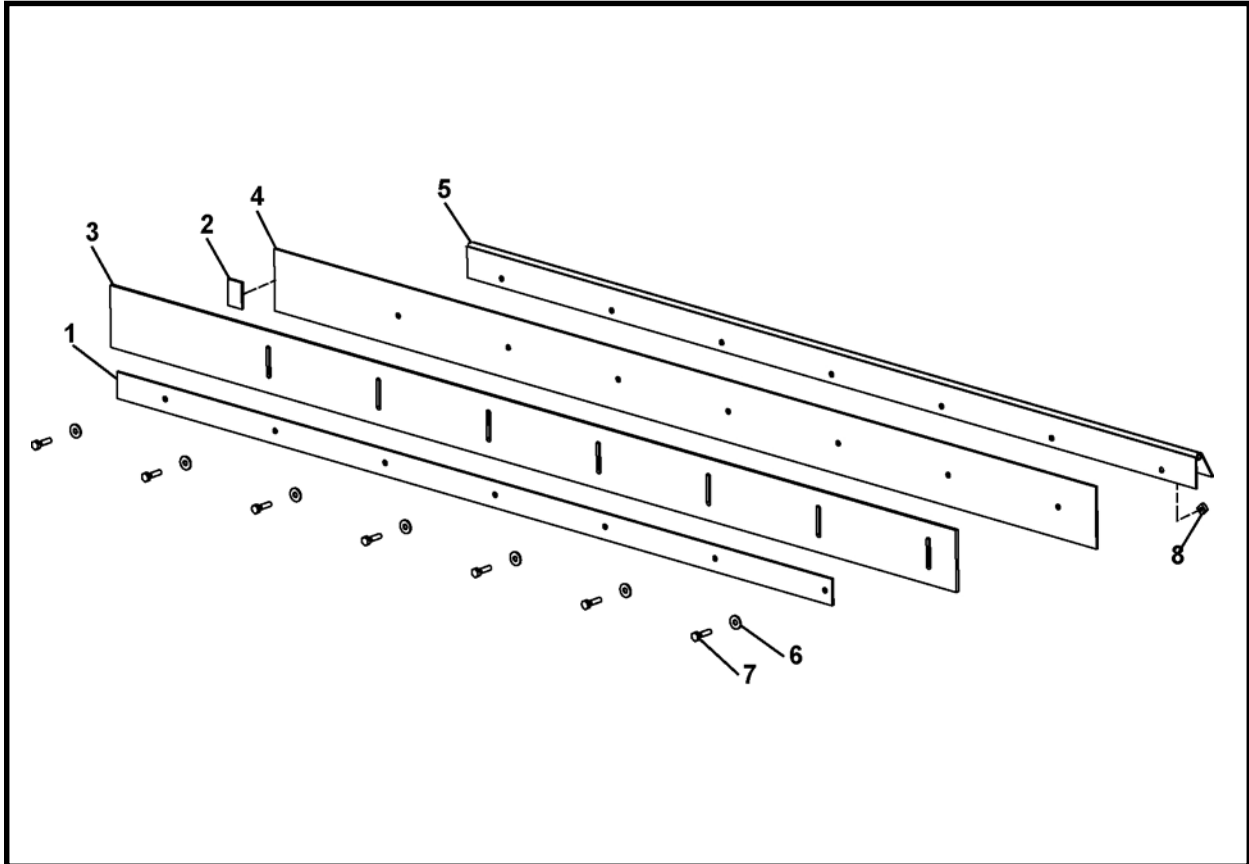
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027266A00	ASSEMBLY, Feed Frame Spoils Guide - Right Rear
1	1	027136P00	STRIP, Short Spoils Guide Wear
2	4	P0001-04-003	BOLT, Hex 1/4-20 UNC x 3/4
3	4	P0045-004	WASHER, Lock 1/4
4	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Right
5	1	027249P00	BRACKET, Short Spoils Wear Strip
6	8	P0011-004C	1/4-20 UNC WELD NUT
7	1	027135P00	HINGE, Short Spoils Guide
8	1	027216P00	TAB, Feed Frame Support Bar

**EXTENSION FRAME ASSEMBLY, 027456A**  
**2418 CONVEYOR**



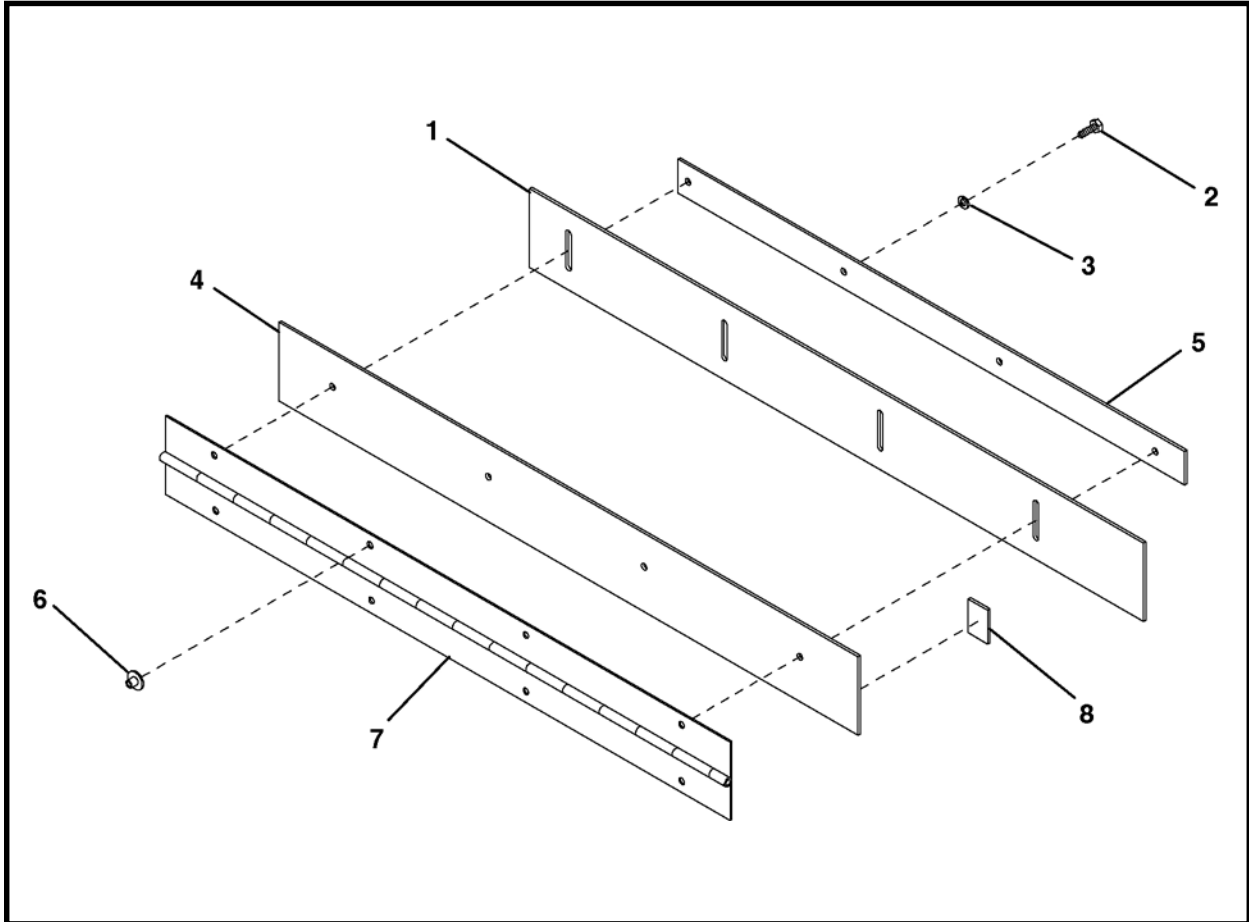
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027456A	ASSEMBLY, Extension Frame
1	1	027461A	ASSEMBLY, Short Spoils Guide - Front
2	1	027462A	ASSEMBLY, Short Spoils Guide - Rear
3	2	P0001-06-002	BOLT, Hex 3/8-16 UNC x 1/2
4	2	P0045-006	WASHER, Lock 3/8
5	1	027345P00	PLATE, Idler Roller Scraper
6	14	P0001-04-003	BOLT, Hex 1/4 UNC x 3/4
7	14	P0045-004	WASHER, Lock 1/4
8	1	027457A	WELDMENT, Extension Frame (Includes items 8a-8c)
8a	2	023524P00	BRACKET, Conveyor
8b	2	P0011-006A	NUT, Strut Square 3/8
8c	8	P0007-06-000	NUT, Jam 3/8-16 UNC

**SPOILS GUIDE - FRONT ASSEMBLY, 027461A**  
**2418 CONVEYOR**



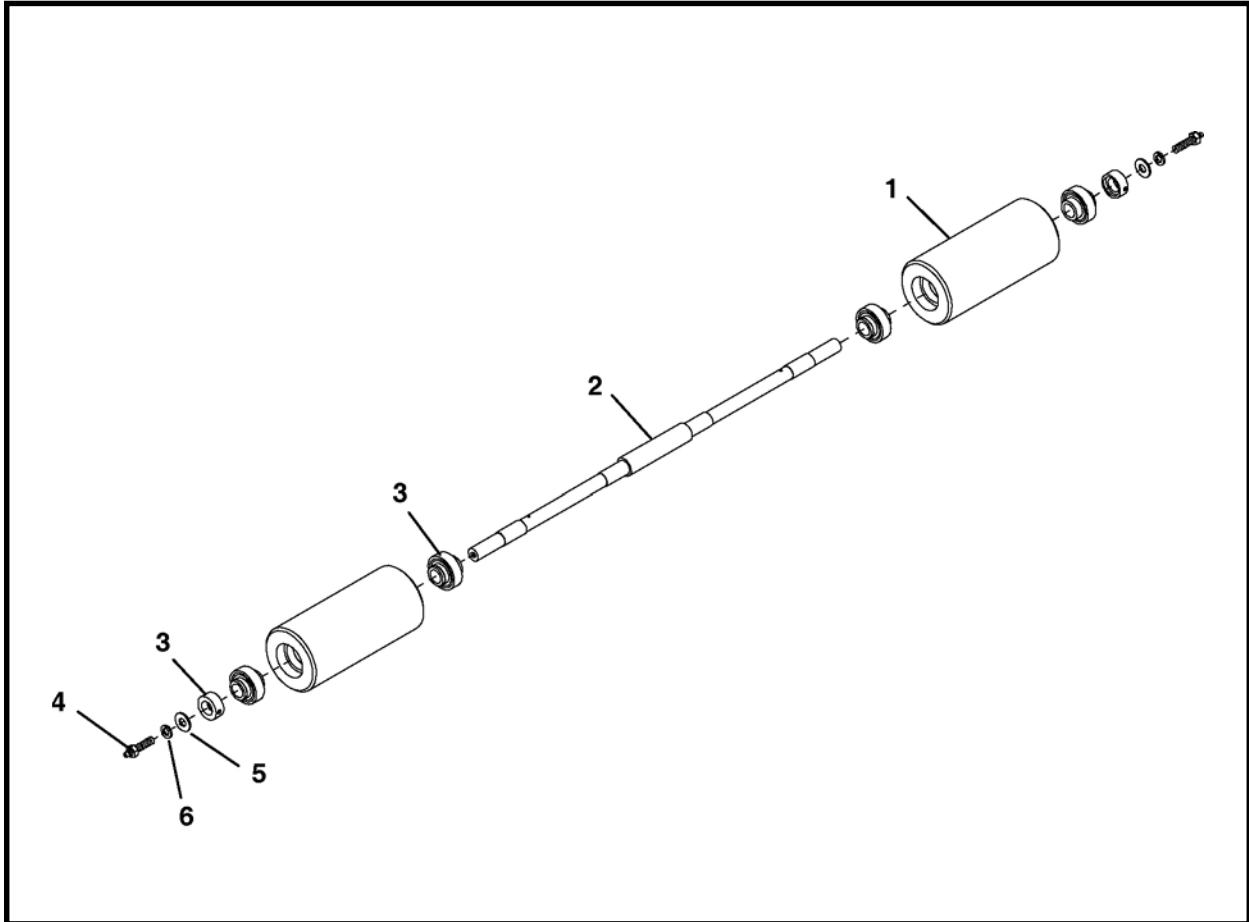
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027461A	ASSEMBLY, Spoils Guide - Front
1	1	027468P	BRACKET, Wear Strip
2	1	027216P00	TAB, Feed Frame Support Bar
3	1	027467P	GUIDE, Wear Strip
4	1	027463P	BAR, Spoils Support
5	1	027464P	HINGE, Spoils Guide
6	7	P0045-004	WASHER, Lock 1/4
7	7	P0001-04-003	BOLT, Hex 1/4-20 UNC x 3/4
8	14	P0011-004C	NUT, Weld 1/4-20 UNC

**SPOILS GUIDE - REAR ASSEMBLY, 027462A**  
**2418 CONVEYOR**



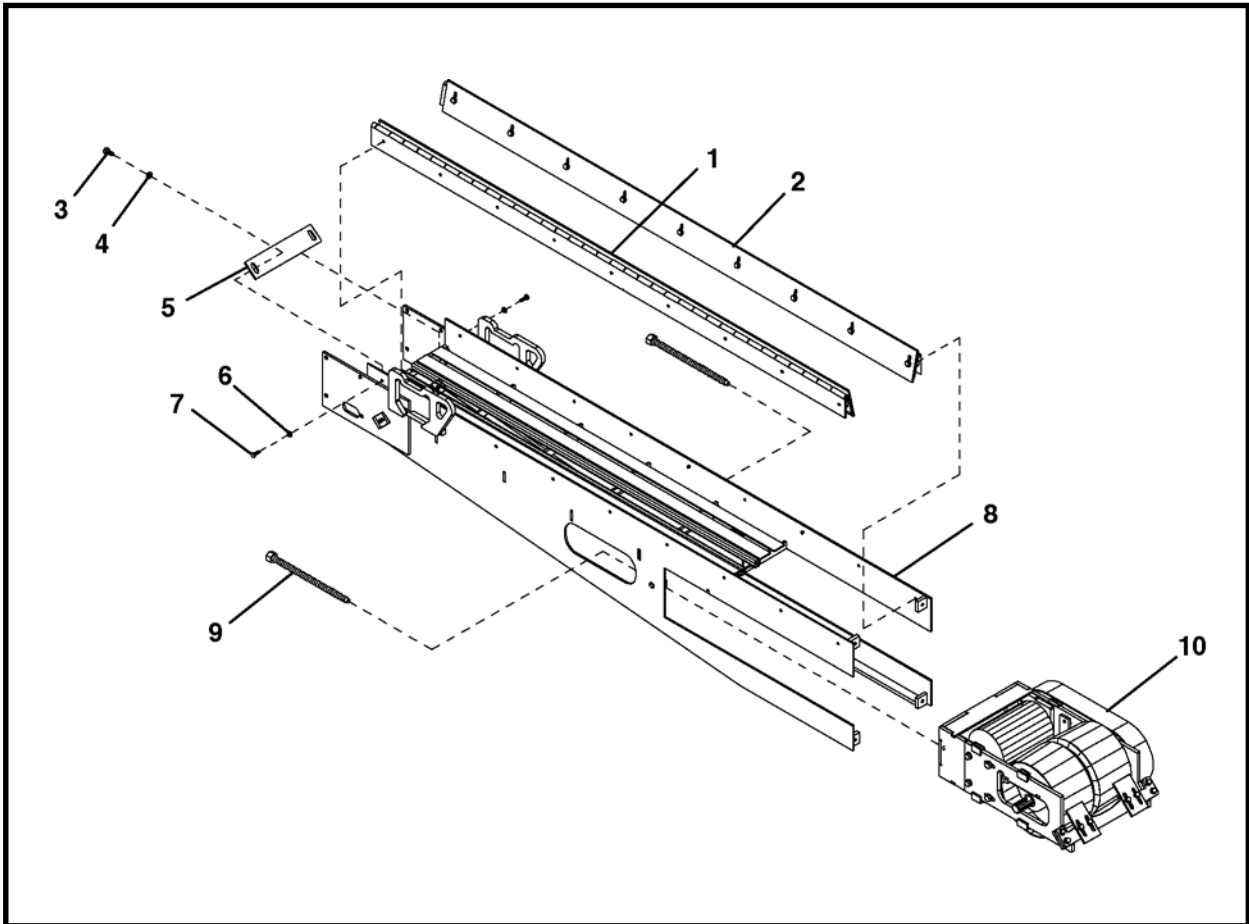
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027462A	ASSEMBLY, Spoils Guide - Rear
1	1	027468P	BRACKET, Wear Strip
2	1	027216P00	TAB, Feed Frame Support Bar
3	1	027467P	GUIDE, Wear Strip
4	1	027463P	BAR, Spoils Support
5	1	027464P	HINGE, Spoils Guide
6	7	P0045-004	WASHER, Lock 1/4
7	7	P0001-04-003	BOLT, Hex 1/4-20 UNC x 3/4
8	14	P0011-004C	NUT, Weld 1/4-20 UNC

**IDLER ROLLER ASSEMBLY, 027311A00**  
**2418 CONVEYOR**



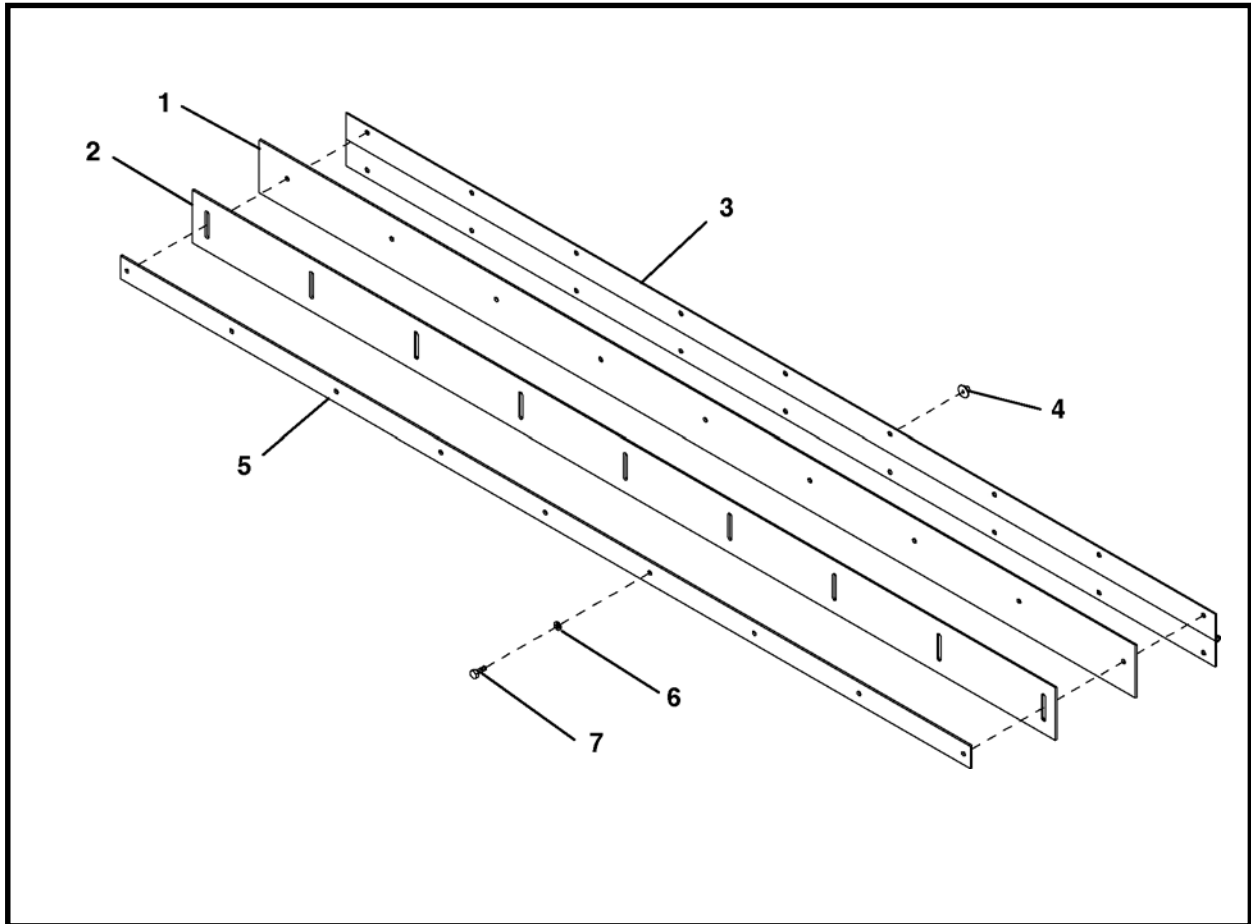
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027311A00	ASSEMBLY, Idler Roller
1	2	007645P00	ROLLER, Conveyor Idler
2	1	007646P00	SHAFT, Conveyor Idler
3	4	P0065-007	BEARING
4	2	001341A00	BOLT, 3/8 UNC x 1-1/4 With Grease Fitting (Includes item 1a)
4a	2	P0063-001	FITTING, Grease
5	2	P0040-006	WASHER, Flat 3/8
6	2	P0045-006	WASHER, Lock 3/8

**DRIVE FRAME ASSEMBLY, 027425A**  
**2418 CONVEYOR**



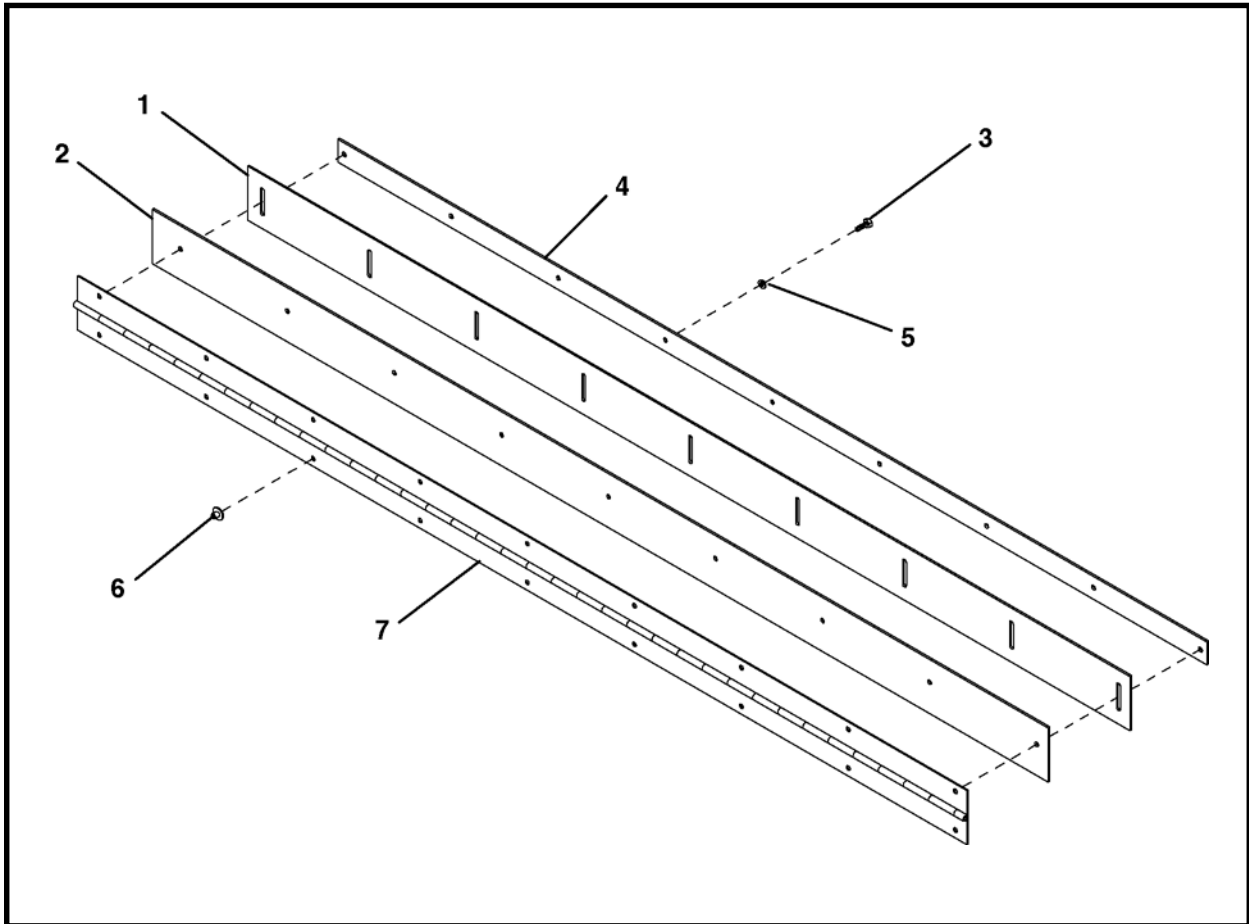
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027425A00	ASSEMBLY, Drive Frame
1	1	027131A00	ASSEMBLY, Drive Frame Spoils Guide - Front
2	1	027219A00	ASSEMBLY, Drive Frame Spoils Guide - Rear
3	2	P0001-06-003	BOLT, Hex 3/8 UNC x 3/4
4	2	P0045-006	WASHER, Lock 3/8
5	1	027345P00	PLATE, Idler Roller Scraper
6	18	P0042-009	WASHER, Fender 1/4
7	18	P0001-04-003	BOLT, Hex 1/4 UNC x 3/4
8	1	027451A00	WELDMENT, Drive Frame (Includes items 8a-8c)
8a	6	P0011-006A	NUT, Strut Square 3/8
8b	2	023524P00	LIFT EYE
8c	2	P0063-001	FITTING, Grease 1/4
9	2	002824A01	WELDMENT, Adjusting Screw
10	1	027420A00	ASSEMBLY, Drive Motor Frame

**DRIVE FRAME SPOILS GUIDE ASSEMBLY - FRONT, 027131A00**  
**2418 CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027131A00	ASSEMBLY, Drive Frame Spoils Guide - Front
1	1	027218P00	SUPPORT BAR, Drive Frame Spoils
2	1	027133P00	STRIP, Feed Frame Spoils Wear
3	1	027132P00	HINGE, Drive Frame Spoils Guide
4	18	P0011-004C	NUT, Weld 1/4-20 UNC
5	1	027247P00	BRACKET, Drive Frame Wear Strip
6	9	P0045-004	WASHER, Lock 1/4
7	9	P0001-04-003	BOLT, Hex 1/4-20 UNC x 3/4

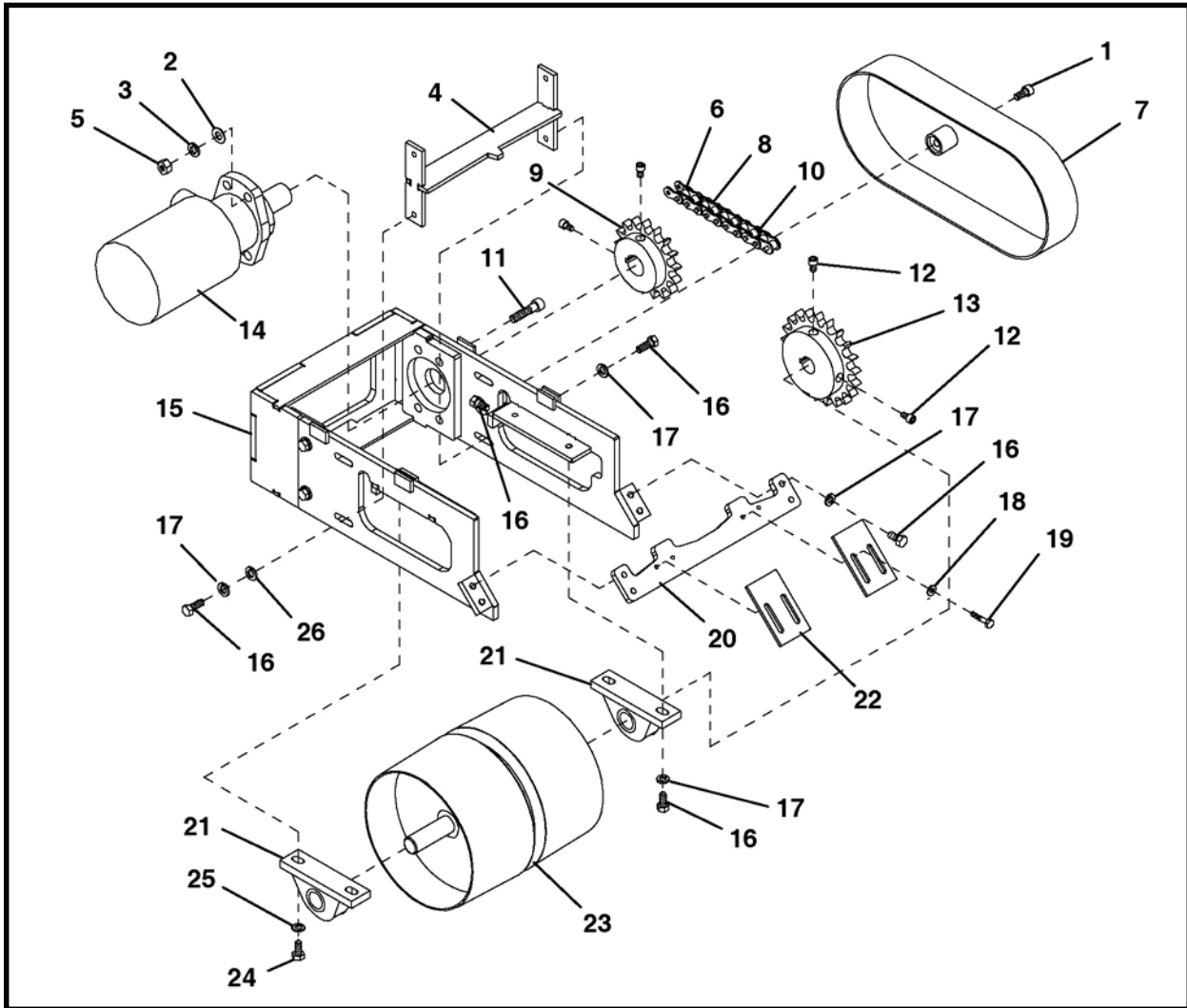
**DRIVE FRAME SPOILS GUIDE ASSEMBLY - REAR, 027219A00**  
**2418 CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027219A00	ASSEMBLY, Drive Frame Spoils Guide - Rear
1	1	027133P00	STRIP, Drive Frame Spoils Wear
2	1	027218P00	SUPPORT BAR, Drive Frame Spoils
3	9	P0045-004	BOLT, Hex 1/4-20 UNC x 3/4
4	1	027247P00	BRACKET, Drive Frame Wear Strip
5	9	P0001-04-003	WASHER, Lock 1/4
6	18	P0011-004C	NUT, Weld 1/4-20 UNC
7	1	027132P00	HINGE, Drive Frame Spoils Guide

## **NOTES**

**DRIVE MOTOR & ROLLER ASSEMBLY, 027420A00**  
2418 CONVEYOR



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027420A00	ASSEMBLY, Drive Motor & Roller
1	1	P0031-06-003	SCREW, Socket Head Cap 3/8-16 UNC x 3/4
2	4	P0040-007	WASHER, Flat 7/16
3	4	P0045-007	WASHER, Lock 7/16
4	1	027306A00	SCRAPER, Internal Drive Roller
5	4	P0003-07-000	NUT, 7/16-14 UNC
6	35 LI	P0078-002	CHAIN, Roller #60 x 35
7	1	027470A	COVER, Conveyor Chain
8	1	P0078-008	LINK, Connect #60
9	1	027374P	SPROCKET, Drive 14 Teeth
10	1	P0078-005	LINK, Repair #60
11	4	P0001-07-007	SCREW, Socket Head Cap 7/16-14 UNC x 1-3/4
12	4	P0033-06-012	SCREW, Socket Head Set 3/8-16 UNC x 1/2
13	1	027369P	SPROCKET, Drive 21 Teeth
14	1	P0304-157	MOTOR
15	1	027415A00	WELDMENT, Drive Motor Frame (Includes item 15a)
15a	2	P0001-06-003	BOLT, Hex 3/8-16 UNC x 3/4
16	10	P0001-06-003	BOLT, Hex 3/8-16 UNC x 3/4
17	8	P0045-006	WASHER, Lock 3/8
18	4	P0042-013	WASHER, Fender 1/4

**DRIVE MOTOR & ROLLER ASSEMBLY, 027420A00**  
**2418 CONVEYOR**

ITEM	QTY	PART NO.	DESCRIPTION
19	4	P0001-04-005	BOLT, 1/4-20 UNC x 1-1/4
20	1	027333P00	MOUNT, External Scraper
21	2	P0065-016	BEARING
22	2	027335A00	SCRAPER, External Belt
23	1	027465A	ROLLER, Drive
24	4	P0001-08-005	BOLT, 1/2-13 UNC x 1-1/4
25	4	P0045-008	WASHER, Lock 1/2
26	4	P0040-006	WASHER, Flat 3/8

LI - Linear Inch

## **NOTES**



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