



# **PARTS MANUAL**

## **Tunnel Boring Machine Series II**

**600 - 660 - 720**

**S/N: F25900F - F28700F - F28800F**

**Publication No. 050116A**

Rev. No. 190304

© Akkerman Inc. 2019  
All Rights Reserved

Akkerman Inc. 58256 266th Street Brownsdale, MN 55918  
Phone: 507-567-2261 Fax: 507-567-2605 email: [akk@akkerman.com](mailto:akk@akkerman.com)

**SERVICE • RELIABILITY • INNOVATION**



# Introduction

This parts manual contains assembly illustrations of the Akkerman Series II Tunnel Boring Machines (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 Aftermarket 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 (quad carbide head, sand head or closed face), conveyor, and target laser stand. Tunnel Boring Machines are articulated and can be steered hydraulically in any direction. The TBM has powerful hydraulic motors which rotate an bearing/inner drum. The cutter head or closed face attachment is connected to the drum. As it rotates, the teeth excavate the face and the spoils fall into the drum. Scoops and paddles in the drum dump the spoils onto a conveyor which carries the material to the dirt bucket. Once the dirt bucket is full, the dirt bucket is removed from the pipeline via a haul nit to the unloading area in the launch shaft where the dirt bucket is hoisted out of the shaft and unloaded. 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 unless otherwise indicated. 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, 55918.

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



**Akkerman 600 Series II Tunnel Boring Machine With 5200 Pump Unit**

## **NOTES**



# Contents

General Information .....	1
Decals .....	2
Structurals .....	3
Operator Controls .....	4
Electrical .....	5
Hydraulics .....	6
Valves .....	7
Motors .....	8
Pumps .....	9
Cylinders .....	10
Miscellaneous / Conveyors .....	11
Alphabetical Index .....	12
Numerical Index .....	13

## **NOTES**

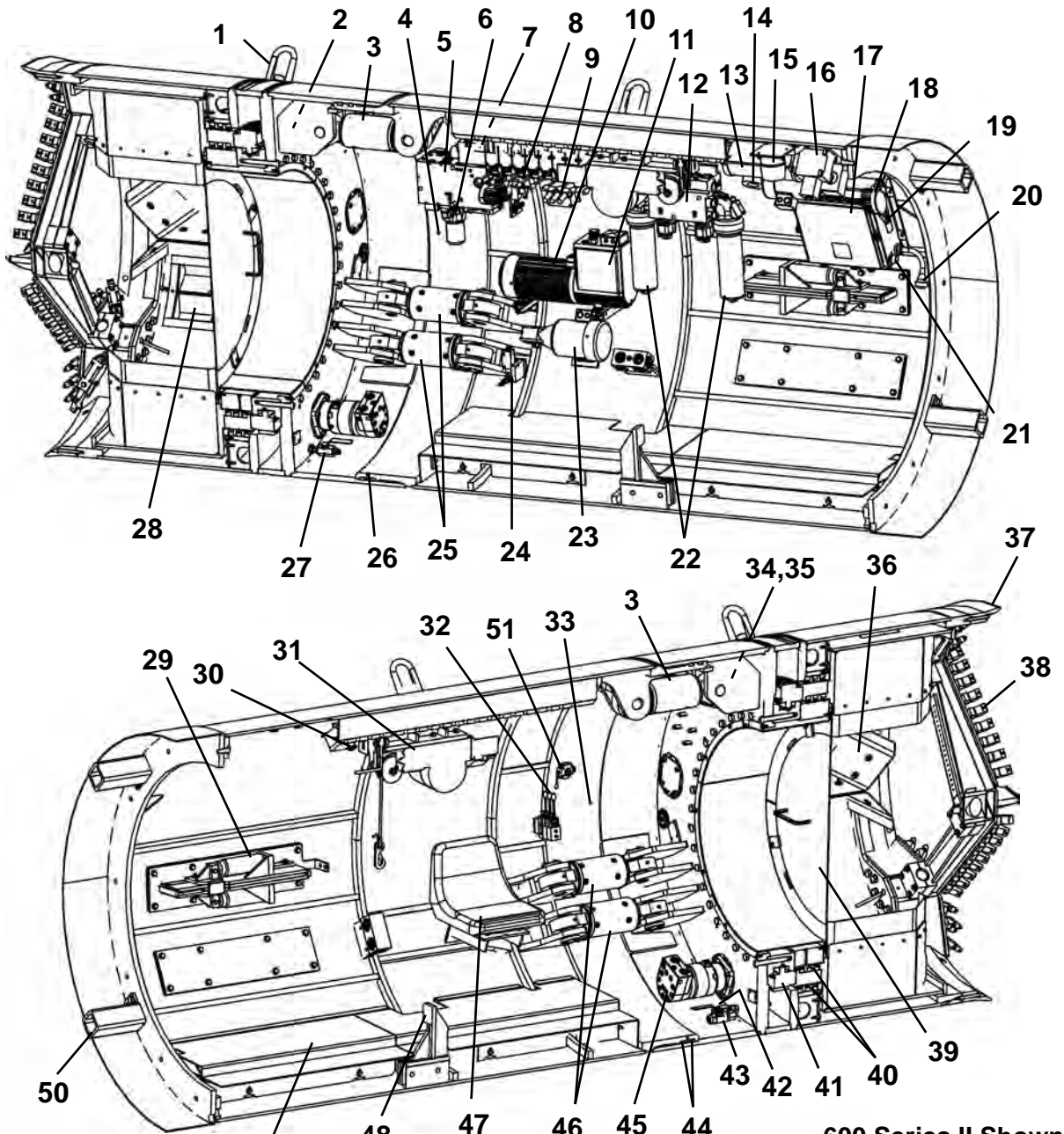


# General Information

## Terminology

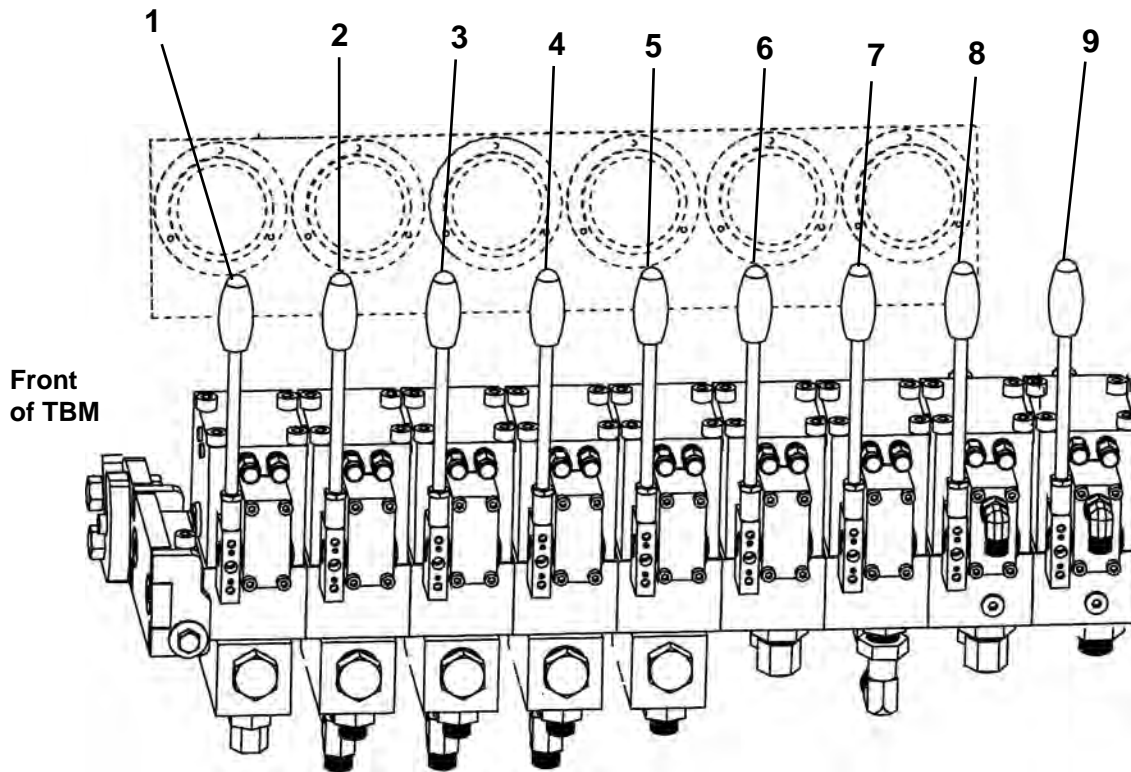
Tunnel Boring Machine	
Series II 600 - 660 - 720.....	2
TBM Control Valves .....	3
TBM Pressure Gauges .....	4
Cutter Head Attachments	
Quad Carbide Head .....	5
Sand Head .....	5
Closed Face .....	5
Conveyor	
Belt .....	6
Screw .....	7
Laser Light Stand .....	8

# TUNNEL BORING MACHINE - SERIES II: 600 - 660 - 720

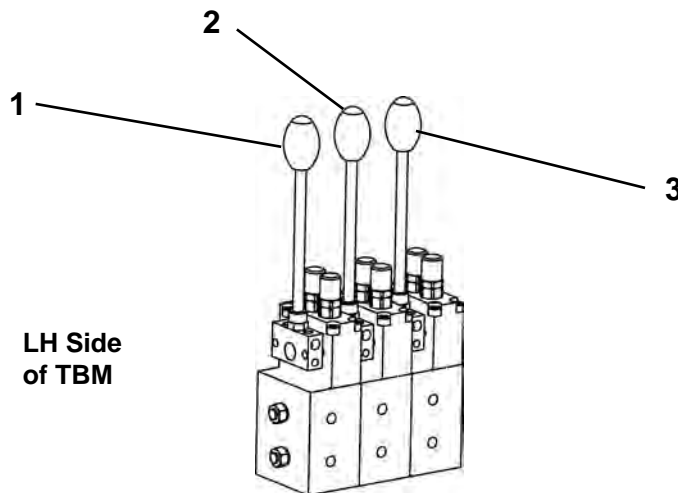


- |                                       |  |                               |
|---------------------------------------|--|-------------------------------|
| 1. Lift Eye                           | 18. Light                              | 35. Boring Head Cavity Vent   |
| 2. Bearing Cavity Oil Fill Port       | 19. Main Power Switch                  | 36. Dirt Paddles              |
| 3. Steering Cylinders (Top)           | 20. 480V Incoming Power Connection     | 37. Cutter Ring               |
| 4. Steering Joint-3 o'clock Grse Port | 21. Tunnel Power Phase OK Light        | 38. Cutter Head & Teeth       |
| 5. Boring Head Control Manifold       | 22. Pressure Filter                    | 39. Bulkhead Seal             |
| 6. Bearing Oil Lube Filter            | 23. Bearing Lube Pump                  | 40. Bearing Seals             |
| 7. Boring Head Control                | 24. Conveyor Safety Switch             | 41. Bearing                   |
| 8. TBM Control Valve & PSI Gauges     | 25. Steering Cylinders (Right)         | 42. Bearing Oil Magnetic Rod  |
| 9. Steering Pressure Relief Valve     | 26. Steering Joint-6 o'clock Grse Port | 43. Bearing Oil Drain Valve   |
| 10. Scavenging Pump                   | 27. Bearing Oil Cavity Shutoff Valve   | 44. Steering Joint Seal       |
| 11. Scavenging Pump Reservoir         | 28. Dirt Scoop                         | 45. Drive Motor               |
| 12. Unloading Compensator Block       | 29. Dirt Wing/Torque Wing              | 46. Steering Cylinders (Left) |
| 13. Seal Grease Reservoir             | 30. Emergency Stop                     | 47. Operator Seat             |
| 14. Gas Detector                      | 31. Conveyor Lift Assembly             | 48. Haul Unit Stop            |
| 15. Gas Detector Horn & Strobe        | 32. Three Bank Control                 | 49. Floor Assembly            |
| 16. Seal Grease Pump                  | 33. Steering Joint-9 o'clock Grse Port | 50. Push Block                |
| 17. Electrical Control Box            | 34. Boring Head Cavity Sight Gauge     | 51. Two Speed Motor Control   |

# TBM CONTROL VALVES



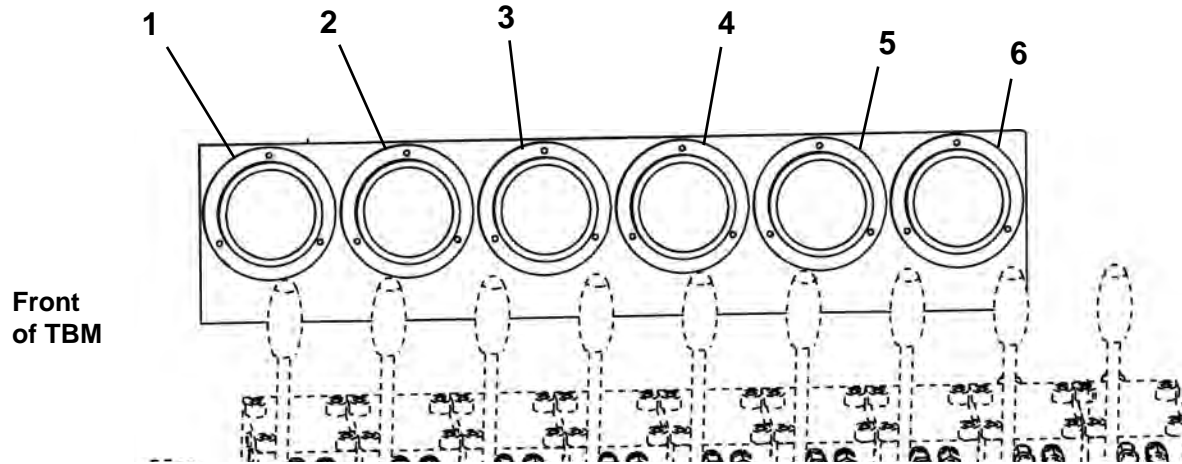
- 1. Closed Face
- 2. Steering - Left
- 3. Steering - Top
- 4. Steering - Right
- 5. Dirt Wings
- 6. Auxiliary/Dirt Wings
- 7. Conveyor Lift
- 8. Jacking Can Cylinders
- 9. Conveyor Drive



- 1. Conveyor
- 2. Jacking Can Cylinders
- 3. Boring Head Control

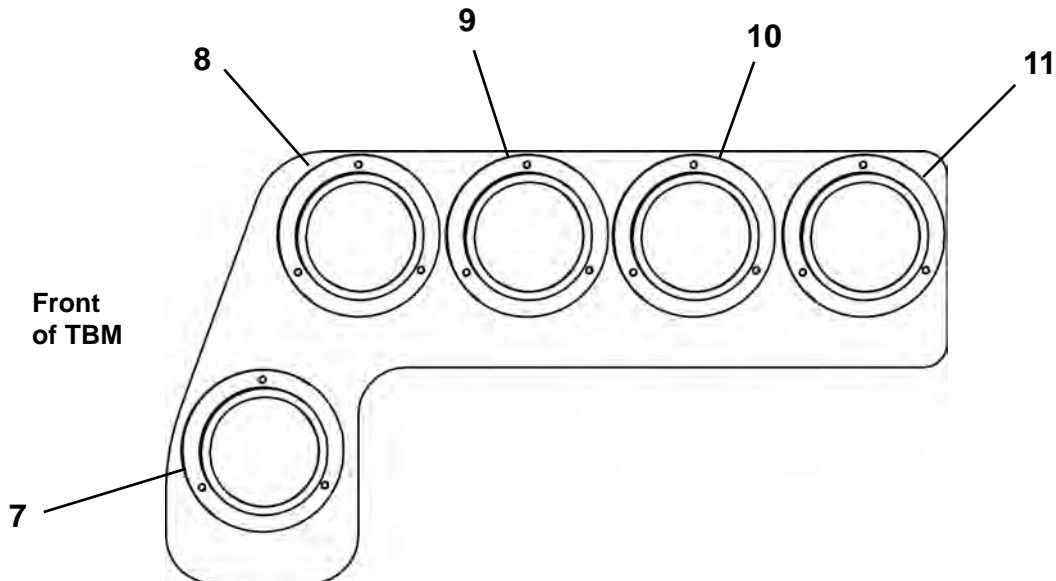
## TBM PRESSURE GAUGES

### Earlier Models



- |                                       |                               |
|---------------------------------------|-------------------------------|
| 1. Steering Cylinder Pressure - Left  | 4. Boring Head Pressure - CCW |
| 2. Steering Cylinder Pressure - Top   | 5. Boring Head Pressure - CW  |
| 3. Steering Cylinder Pressure - Right | 6. System Pressure            |

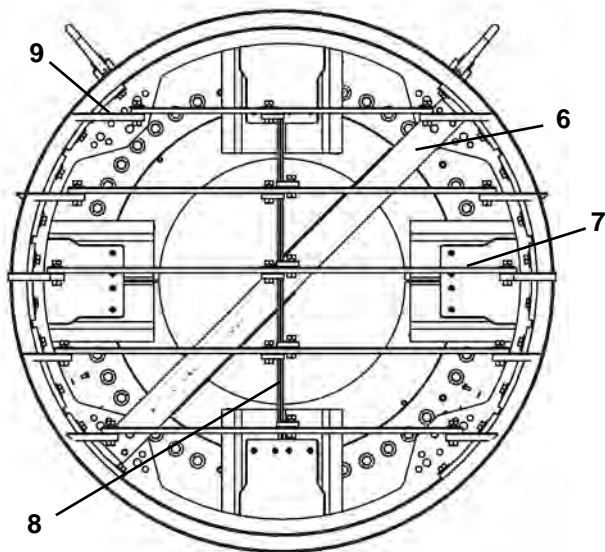
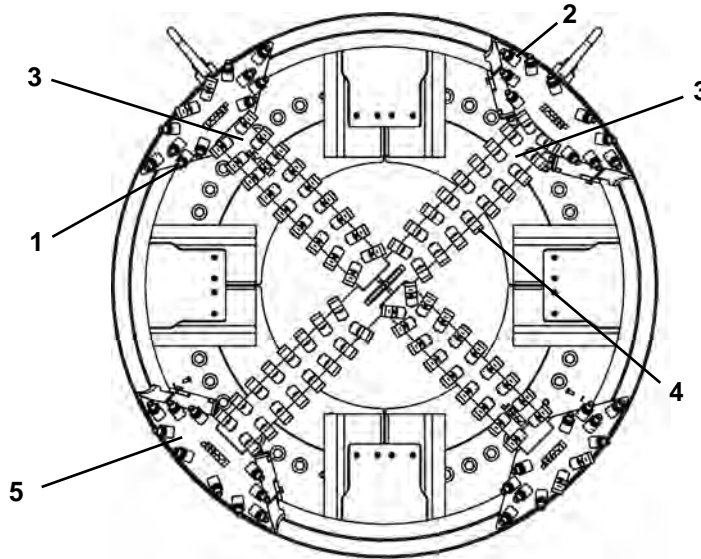
### Later Models



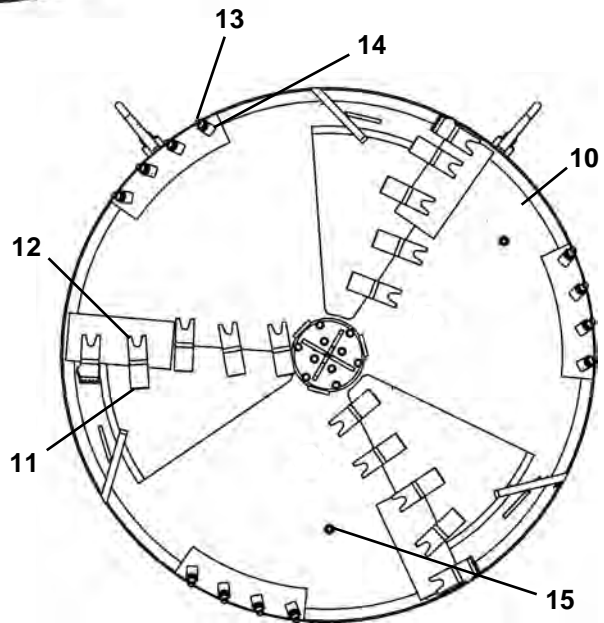
- |                         |  |
|-------------------------|--|
| 7. Boring Head Pressure | 9. Steering Cylinder Pressure - Left   |
| 8. System Pressure      | 10. Steering Cylinder Pressure - Top   |
|                         | 11. Steering Cylinder Pressure - Right |

# CUTTER HEAD ATTACHMENTS

## Quad Carbide Bar Head



**Sand Head**



**Closed Face**

### Quad Carbide Bar Head

- 1. Carbide Tooth
- 2. Tooth Holder
- 3. Quad Bar Weldment
- 4. Cutter Tooth
- 5. Cutter Bar Mount

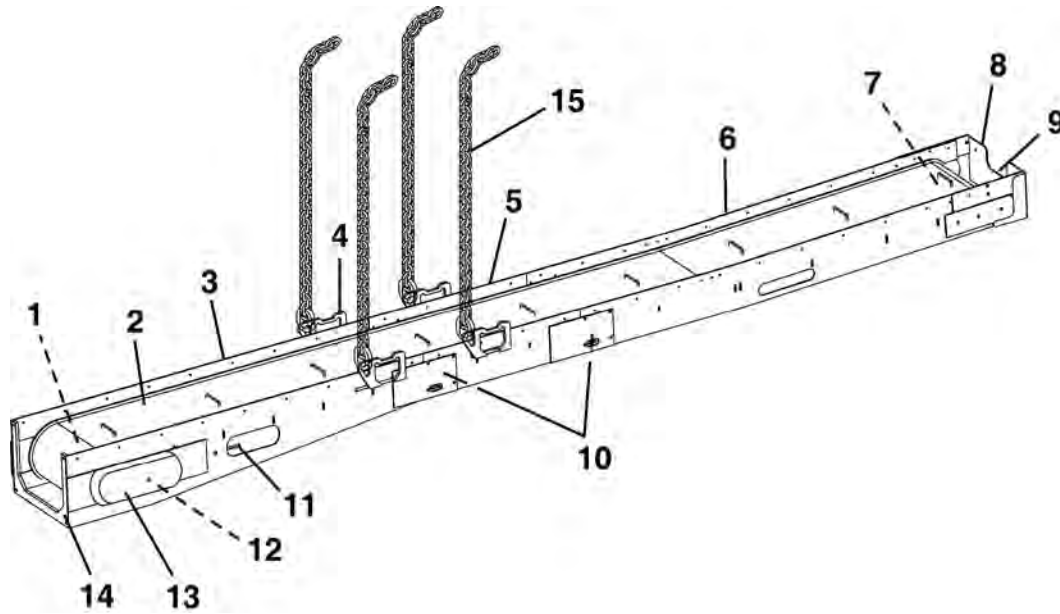
### Sand Head

- 6. Sand Bar Weldment
- 7. Sand Shelf
- 8. Sand Shelf Z Bracket
- 9. Sand Shelf End Bracket

### Closed Face

- 10. Closed Face
- 11. Cutter Tooth
- 12. Tooth Pocket
- 13. Cutter Bit
- 14. Bit Holder
- 15. Water/Lubrication Ports

## CONVEYOR - BELT

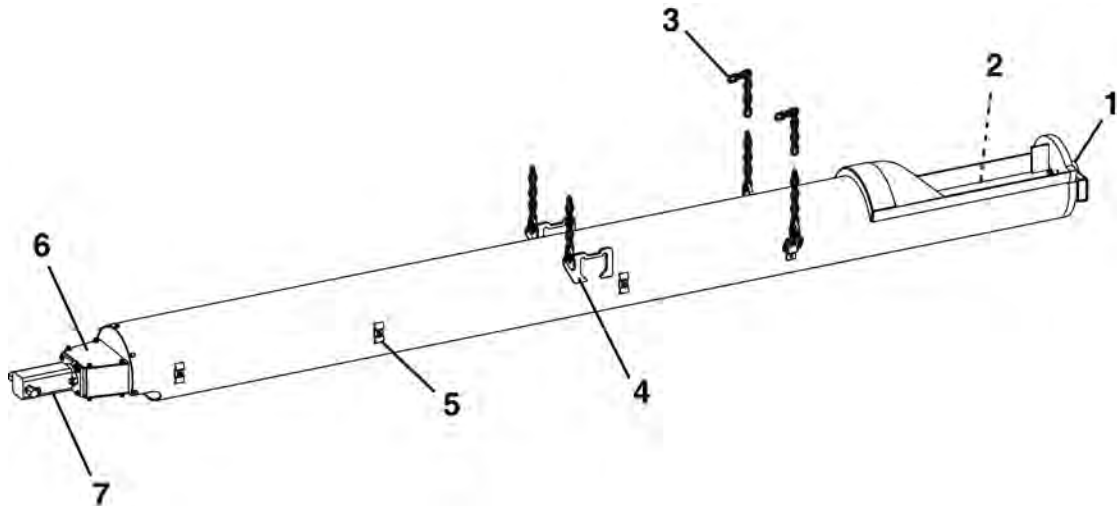


- 1. Drive Motor Frame Assembly
- 2. Belting
- 3. Drive Frame Assembly
- 4. Lift Bracket
- 5. Extension Frame Assembly

- 6. Feed Frame Assembly
- 7. Front Roller Assembly
- 8. Dirt Guard
- 9. Carrier Bearing
- 10. Idler Roller

- 11. Belt Tensioning Screw
- 12. Drive Motor & Roller Assembly
- 13. Conveyor Chain Cover
- 14. Drive Frame Free End Support
- 15. Safety Chain

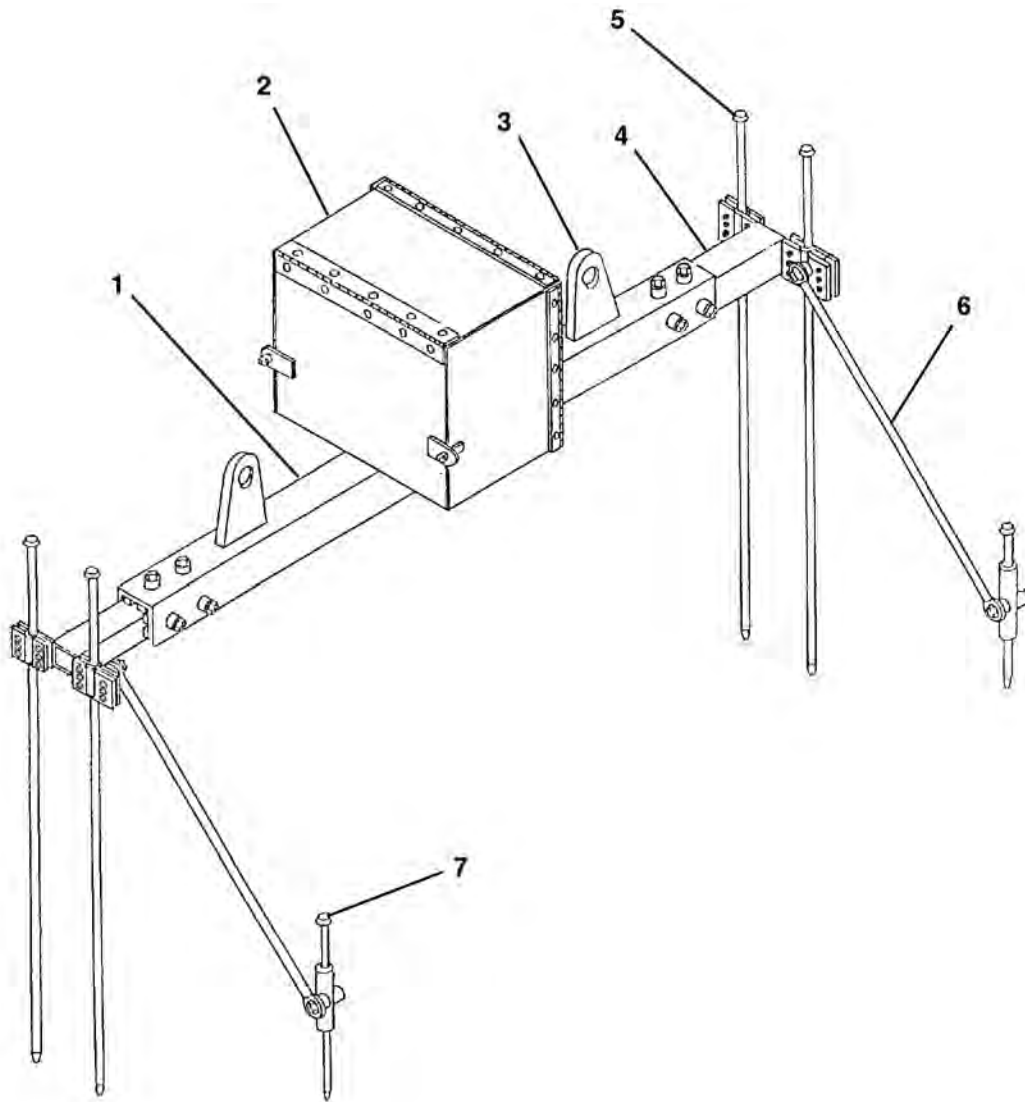
## CONVEYOR - SCREW



- 1. Carrier Bearing
- 2. Auger
- 3. Safety Chain
- 4. Lift Bracket

- 5. Hose Clamp
- 6. Motor Mount
- 7. Motor

## 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

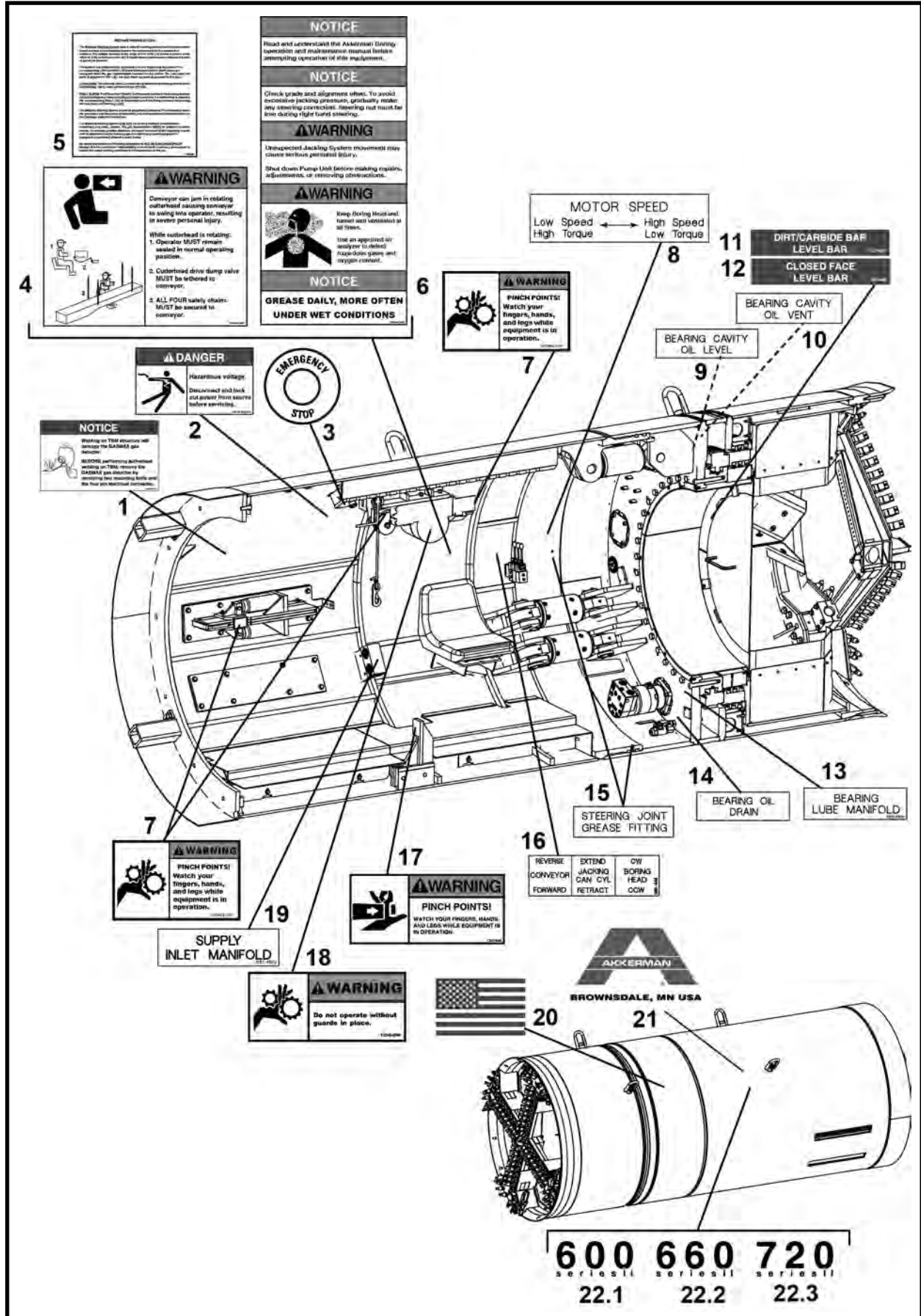


## Decals

<b>Tunnel Boring Machine</b> .....	2
600 - 660 - 720 Series II	
Left Side .....	2
Right Side .....	4
 <b>Conveyors</b>	
Belt .....	6
Screw .....	7
 <b>Laser Light Laser Stand</b> .....	8
 <b>Head Box</b> .....	9

# TUNNEL BORING MACHINE DECALS - LEFT SIDE

## 600 - 660 - 720 Series II

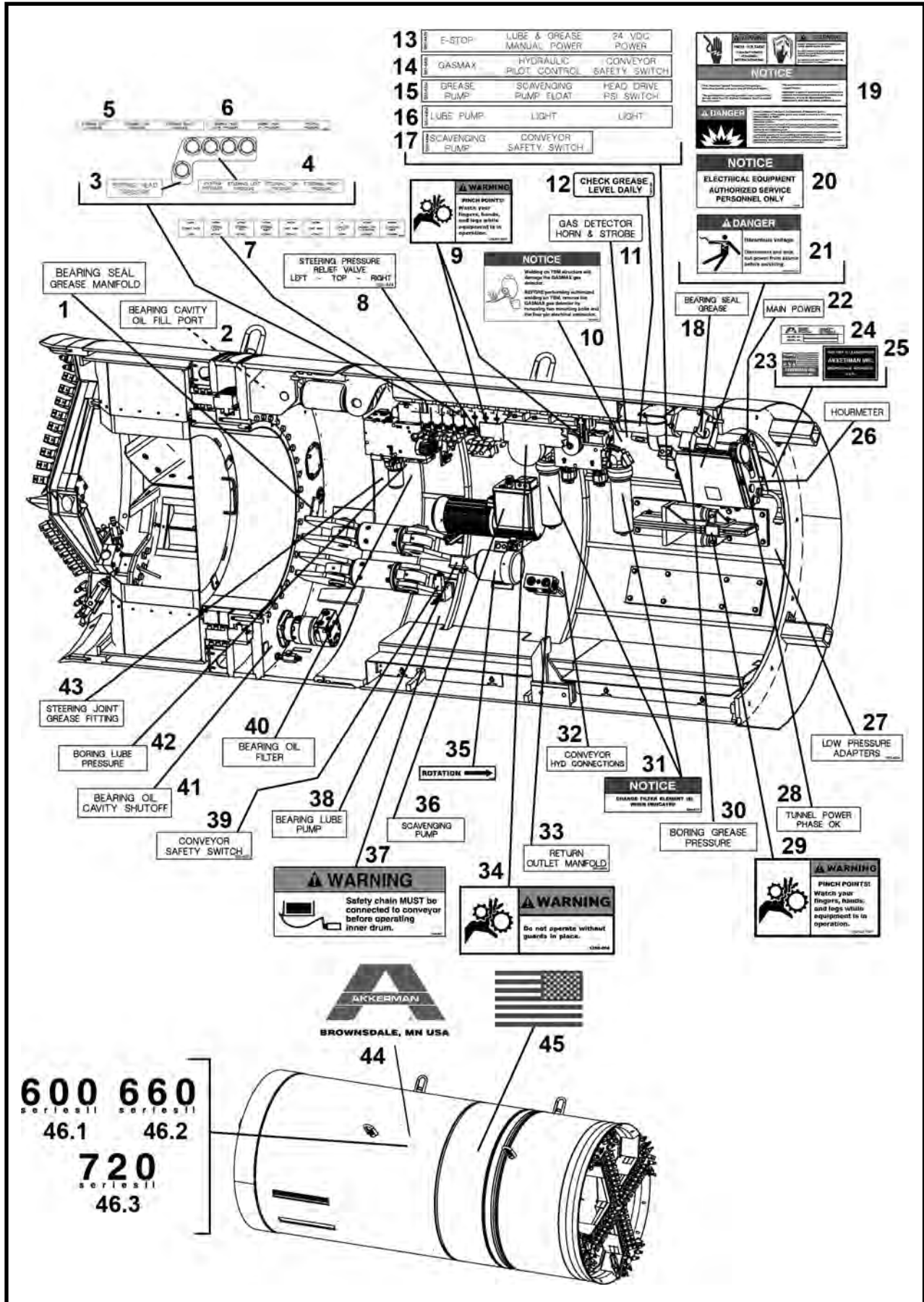


**TUNNEL BORING MACHINE DECALS - LEFT SIDE**  
**600 - 660 - 720 Series II**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	1251-320	DECAL, Notice, Welding Gas Detector Damage
2	1	1250-385	DECAL, Hazardous Voltage
3	1	F0310-474F	DECAL, Emergency Stop
4	1	1250-532a	DECAL, Warning, Conveyor Swing
5	1	1250-581	DECAL, Methane Warning System
6	1	1250-859	DECAL, TBM Warning Notice
7	3	1250-562	DECAL, Warning, Pinch Points
8	1	1251-450ab	DECAL, Motor Speed Control
9	1	1251-450n	DECAL, Bearing Cavity Oil Level
10	1	1251-450q	DECAL, Bearing Cavity Oil Vent
11	1	1251-447	DECAL, Dirt/Carbide Bar Level Bar
12	1	1251-448	DECAL, Closed Face Level Bar
13	1	1251-450d	DECAL, Bearing Lube Manifold
14	1	1251-450g	DECAL, Bearing Oil Drain
15	2	1251-450b	DECAL, Steering Joint Grease Fitting
16	1	1251-450a	DECAL, Conveyor, Jack Can Cylinder, Boring Head Control
17	1	1250-480	DECAL, Warning, Pinch Points
18	1	1250-004	DECAL, Warning, Guards Must Be In Place
19	1	1250-450y	DECAL, Supply Inlet Manifold
20	1	1250-385	DECAL, Danger, Hazardous Voltage
21	1	1250-559	DECAL, USA Flag, Medium - Left
22	1	1251-245	DECAL, Akkerman X-Large
23.1	1	1251-535e	DECAL, Model 600 Series II
23.2	1	1251-535f	DECAL, Model 660 Series II
23.3	1	1251-535g	DECAL, Model 720 Series II

# TUNNEL BORING MACHINE DECALS - RIGHT SIDE

## 600 - 660 - 720 Series II



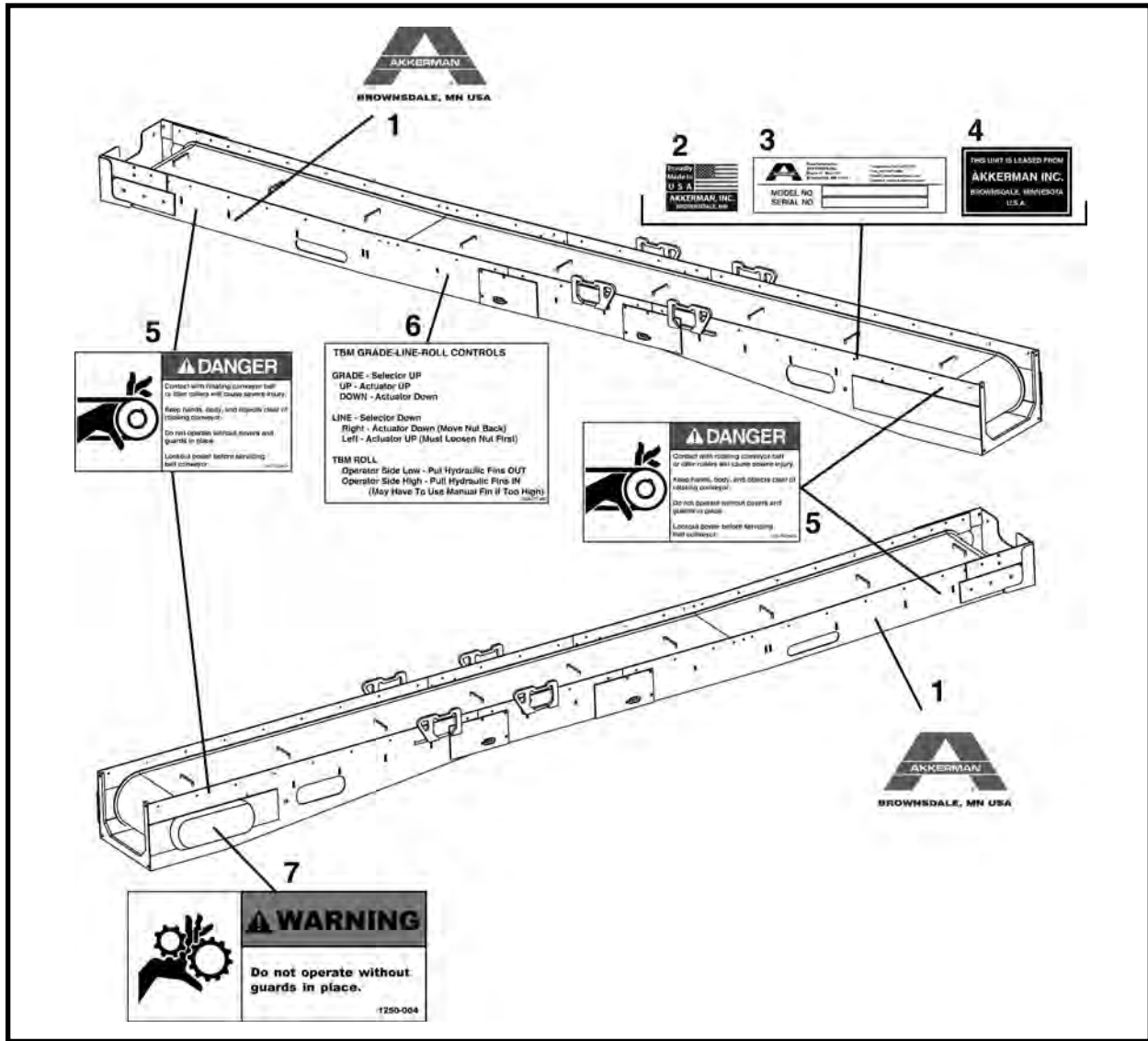
**TUNNEL BORING MACHINE DECALS - RIGHT SIDE**  
**600 - 660 - 720 Series II**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	1251-450h	DECAL, Bearing Seal Grease Manifold
2	1	1251-450o	DECAL, Bearing Cavity Oil Fill Port
3	1	1251-450ad	DECAL, Boring Head Pressure (Later Models)
4	1	1251-450ac	DECAL, System-Steering Pressure (Later Models)
5	1	1251-450ae	DECAL, Steering Pressure (Early Models)
6	1	1251-450af	DECAL, Boring Head-System Pressure (Early Models)
7	1	1251-444	LABEL, 9 Bank Valve
8	1	1251-450	DECAL, Steering Pressure Relief Valve
9	2	1250-562	DECAL, Warning, Pinch Points
10	1	1251-320	DECAL, Notice, Welding Gas Detector Damage
11	1	1251-450	DECAL, Gas Detector Horn & Strobe
12	1	1251-382	DECAL, Check Grease Level Daily
13	1	1251-443a	DECAL, E-Stop-Grease Power-24VDC Power
14	1	1251-443b	DECAL, Gasmex-Hydraulic Pilot-Conveyor Safety Switch
15	1	1251-443c	DECAL, Grease Pump-Scavenging Float-Head Drive
16	1	1251-443d	DECAL, Lube Pump-Light-Light
17	1	1251-443e	DECAL, Scavenging Pump-Conveyor Safety Switch
18	1	1251-450f	DECAL, Bearing Seal Grease
19	1	1250-649	DECAL, Danger, Warning, Notice, Gas Detector
20	1	1250-383	DECAL, Notice, Electrical Equipment
21	1	1250-385	DECAL, Danger, Hazardous Voltage
22	1	1251-450t	DECAL, Main Power
23	1	1250-544	DECAL, Made In USA
24	1	REF	PLATE, Serial Number
25*	1	1250-098	DECAL, Lease
26	1	1251-450w	DECAL, Hourmeter (Later Models)
27	1	1251-450x	DECAL, Low Pressure Adapters
28	1	1251-450k	DECAL, Tunnel Power Phase OK
29	1 per Dirt Wing	1250-562	DECAL, Warning, Pinch Points
30	1	1251-450l	DECAL, Bearing Grease Pressure
31	2	40000-16	DECAL, Notice, Change Filter
32	2	1251-450e	DECAL, Conveyor Hyd Connections
33	1	1251-450z	DECAL, Return Outlet Manifold
34	1	1250-004	DECAL, Warning, Keep Guards In Place
35	1	3-700R	DECAL, Notice, Rotation Right
36	1	1251-450s	DECAL, Scavenging Pump
37	1	1250-006	DECAL, Warning, Safety Chain To Conveyor
38	1	1251-450r	DECAL, Bearing Lube Pump
39	1	1251-450j	DECAL, Conveyor Safety Switch
40	1	1251-450c	DECAL, Bearing Oil Filter
41	1	1251-450p	DECAL, Bearing Oil Cavity Shutoff
42	1	1251-450u	DECAL, Boring Lube Pressure
43	1	1251-450b	DECAL, Steering Joint Grease Fitting
44	1	1251-245	DECAL, Akkerman X-Large
45	1	1251-325	DECAL, USA Flag, Medium - Right
46.1	1	1251-535e	DECAL, Model 600 Series II
46.2	1	1251-535f	DECAL, Model 660 Series II
46.3	1	1251-535g	DECAL, Model 720 Series II

\* Decal used only on leased equipment.

# BELT CONVEYOR DECALS

## 1615 - 2415 - 2418 BELT CONVEYORS

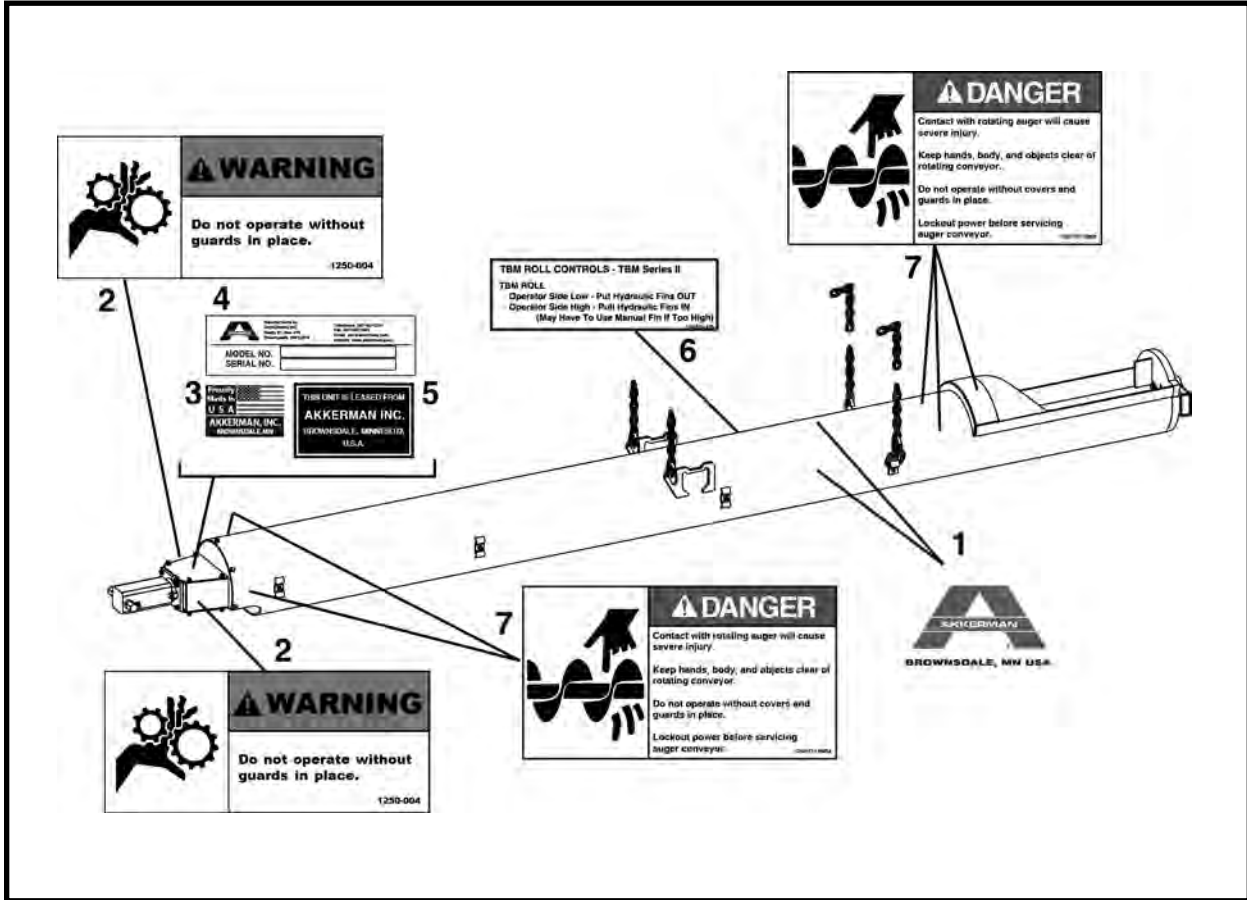


ITEM	QTY	PART NO.	DESCRIPTION
1	2	1251-246	DECAL, Akkerman, Large
2	1	1250-544	DECAL, Made In USA
3	1	REF	PLATE, Serial Number
4*	1	1250-098	DECAL, Lease
5	4	1250-750	DECAL, Danger Rotating Belt Conveyor
6	1	1250-577	DECAL, TBM Steering Controls
7	1	1250-004	DECAL, Warning, Guards Must Be In Place

\* Note: Decal used only on leased equipment.

# SCREW CONVEYOR DECALS

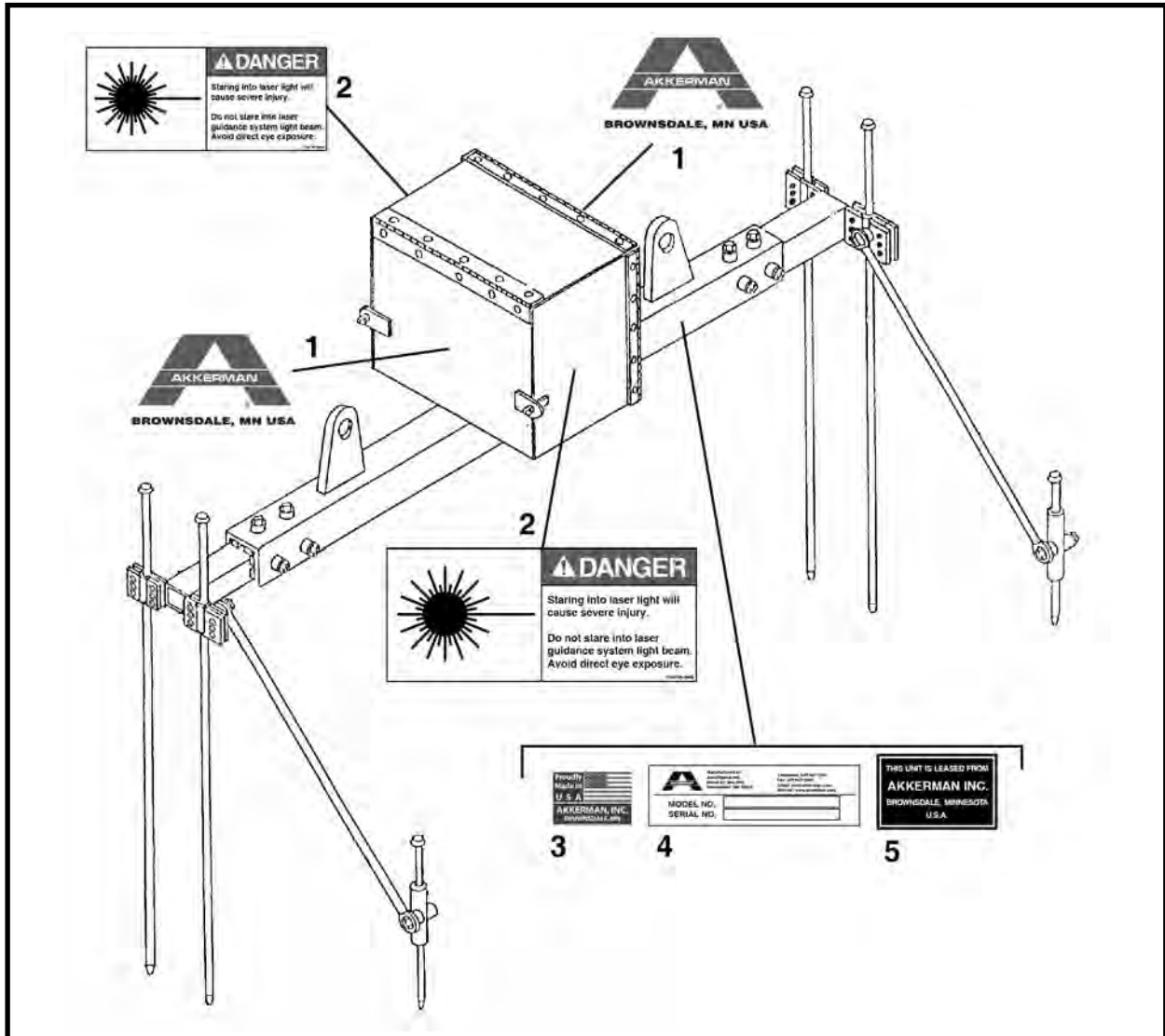
## 140 - 160 SCREW CONVEYORS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	1251-246	DECAL, Akkerman, Large
2	2	1250-004	DECAL, Warning, Guards Must Be In Place
3	1	1250-544	DECAL, Made In USA
4	1	REF	PLATE, Serial Number
5*	1	1250-098	DECAL, Lease
6	1	1250-577a	DECAL, TBM Steering Controls
7	5	1250-751	DECAL, Danger Rotating Auger Conveyor

\* Note: Decal used only on leased equipment.

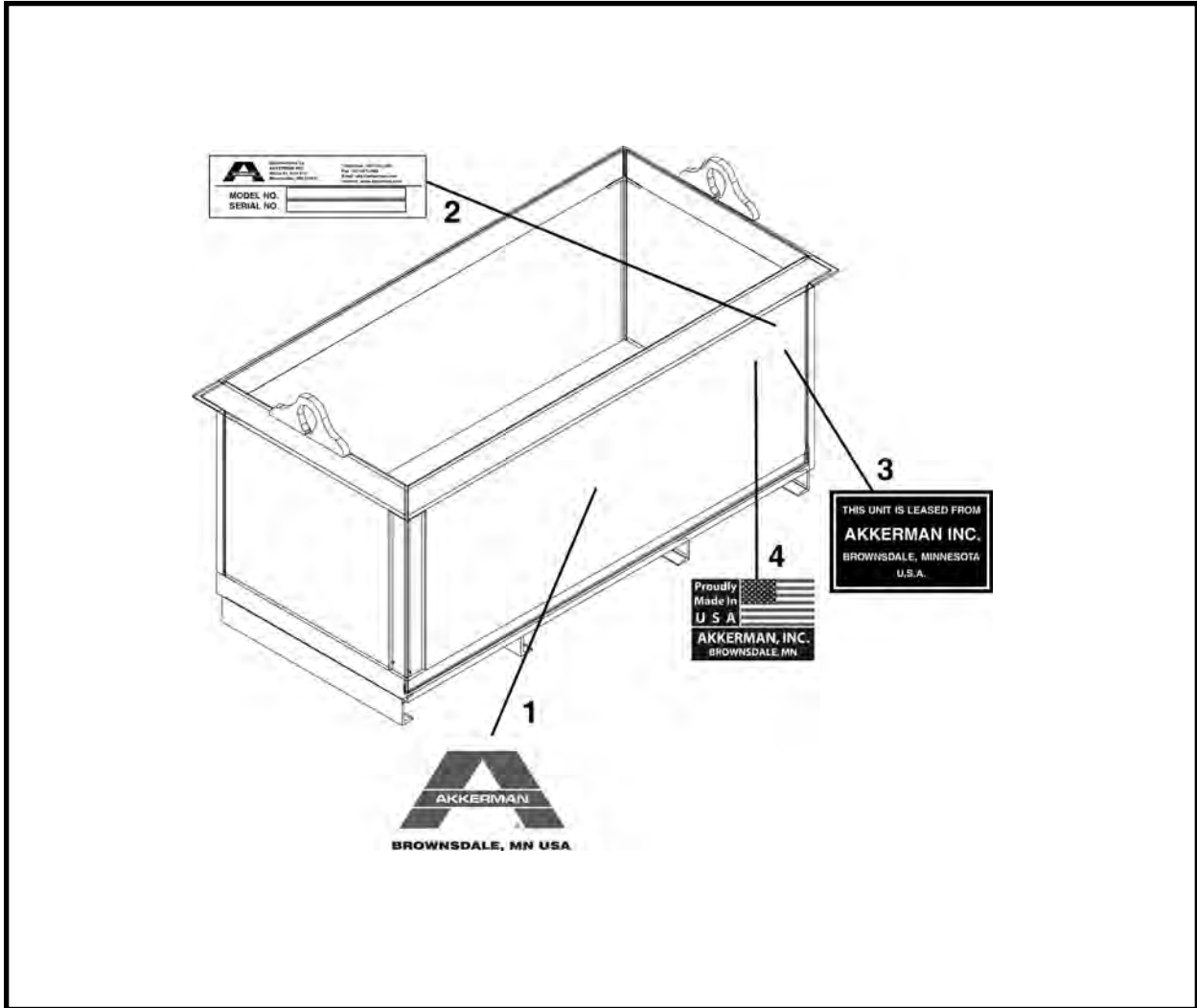
# LASER LIGHT STAND DECALS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	1251-245	DECAL, Akkerman, X Large
2	2	1250-749	DECAL, Danger, Laser Light
3	1	1250-544	DECAL, Made In USA
4	1	REF	PLATE, Serial Number
5*	1	1250-098	DECAL, Lease

\* Note: Decal used only on leased equipment.

## HEAD BOX DECALS



ITEM	QTY	PART NO.	DESCRIPTION
1	2	1251-245	DECAL, Akkerman, X Large
2	1	REF	PLATE, Serial Number
3*	1	1250-098	DECAL, Lease
4	1	1250-544	DECAL, Made In USA

\* Note: Decal used only on leased equipment.

## **NOTES**



# Structurals

## TBM Frame Assembly

Final Assembly .....	3
Steering Assembly .....	4
Front Section Assembly .....	5
Bulkhead Door Assembly .....	7
Back Section Assembly .....	8
Back Drum Assembly .....	9
Conveyor Lift Assembly, 012609A01 .....	10
Floor Assembly .....	12
Seat Assembly, 024510A .....	13
Hydraulic Dirt Wing (Bi-Directional) Assembly, 014679A .....	14
Drive Assembly	
600 Series II, 025905A .....	15
660 Series II, 028705A .....	16
720 Series II, 028805A .....	17
Cutter Bar Assembly	
600 Series II, 025975A .....	18
660 - 720 Series II .....	19
Sand Head Assembly	
600 - 660 Series II .....	20
600 Series II Sand Shelf Assembly, 004769A02 .....	21
660 Series II Sand Shelf Assembly, 004440A02 .....	22
720 Series II Sand Head / Shelf Assembly, 023417A .....	23
Closed Face Assembly	
600 - 660 Series II .....	24
720 Series II .....	25
Front Face Assembly .....	26
Rotary Hub Assembly, 028671A .....	27
Closed Face Mount Assembly To Series II TBM	
600 - 660 Series II .....	28
720 Series II, 028898A .....	29
Closed Face Mount Assembly To Series I TBM	
600 - 660 Series II .....	30
720 Series II, 028899A .....	31
Kit, Low PSI To Series II Adapter, 027698A .....	32

## Laser Light Stand

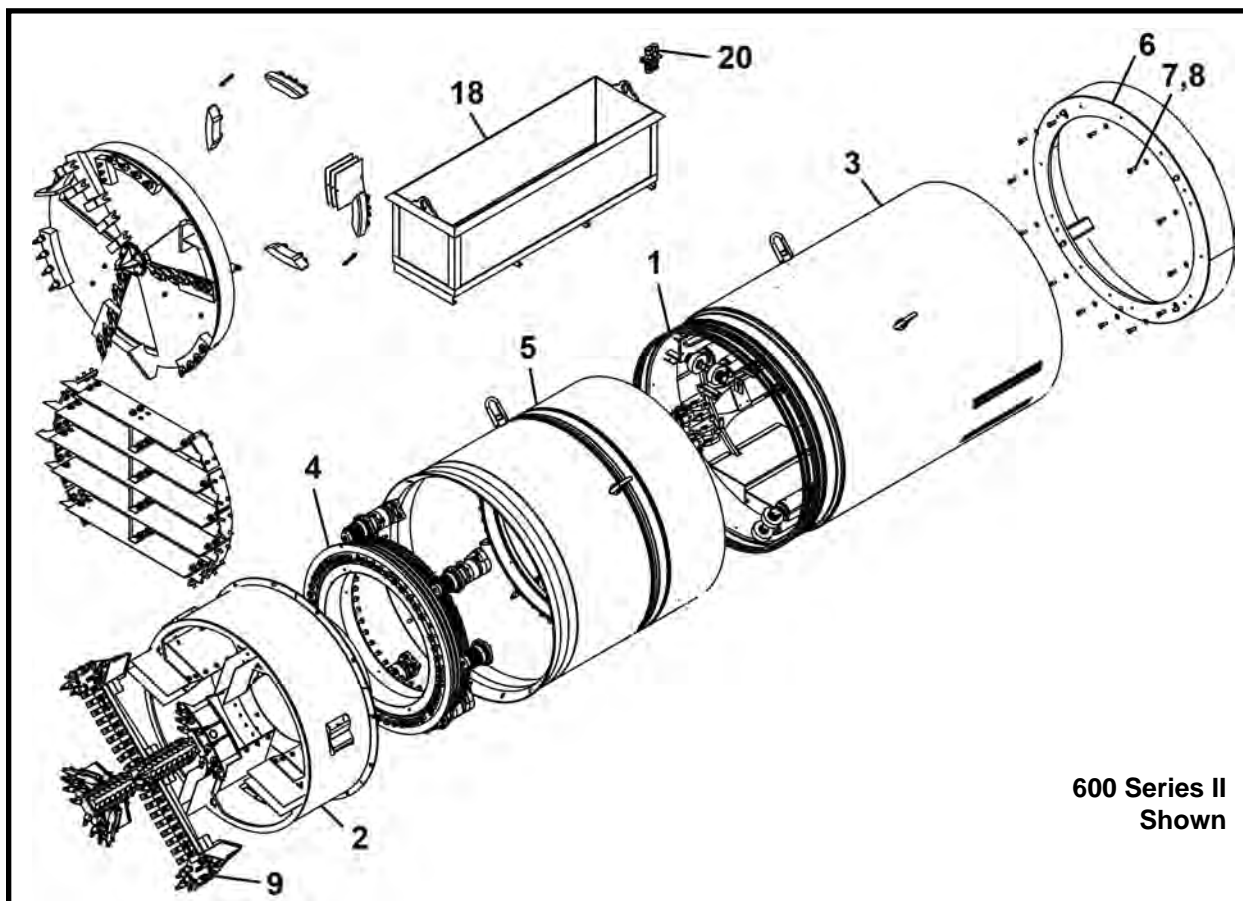
Laser Light Stand, F05866F00 (5000 Pump Unit) .....	34
Laser Light Stand, F21675F (All Pump Units).....	35

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

**Intermediate Jacking Stations** ..... See Section 6 Hydraulics

## **NOTES**

**FINAL ASSEMBLY**  
**TBM Series II: 600 - 660 - 720**



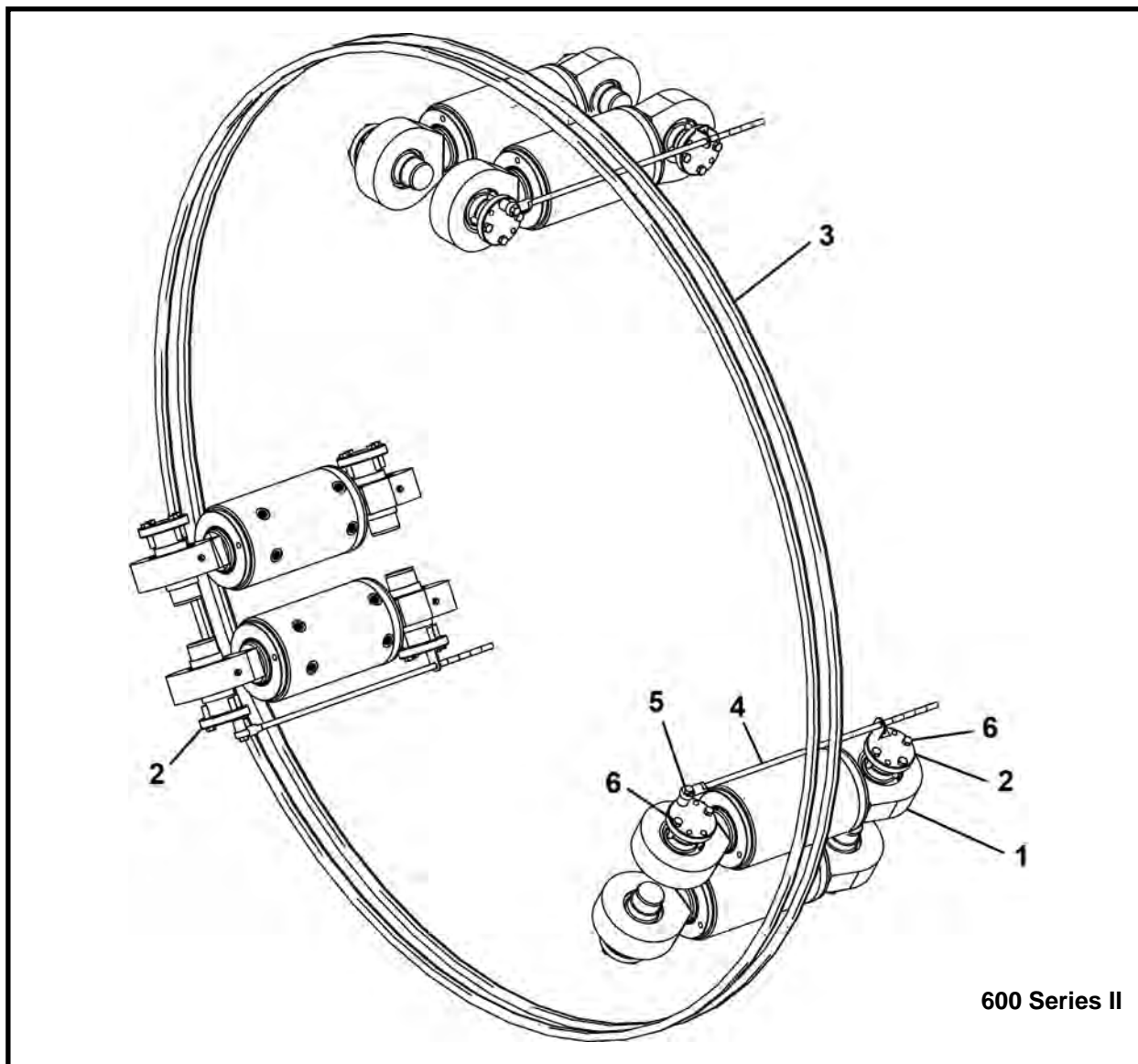
ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	F25900F	F28700F	F28800F	FINAL ASSEMBLY
1***	1	025902A	028702A	028802A	STEERING ASSEMBLY
2***	1	025903A	028703A	028803A	FRONT SECTION ASSEMBLY
3***	1	025904A	028704A	028804A	BACK SECTION ASSEMBLY
4***	1	025905A	028705A	028805A	DRIVE ASSEMBLY
5	1	025906A	028706A	028806A	WELD, Front Section
6	1	019386A00	027031A	020814A00	RING, Bell End
7	13	P0001-12-008	P0001-12-008	P0001-12-008	BOLT, Hex 3/4 UNC x 2
8	13	P0040-012	P0040-012	P0040-012	WASHER, Hardened Flat 3/4
9***	1	025975A	028749A	024768A	CUTTER BAR ASSEMBLY
10***	0	023430A	028748A	023417A	SAND HEAD ASSEMBLY
11***	0	F25965F	F28765F	F31070F	CLOSED FACE ASSEMBLY
12.1	0	025998A	028798A	028898A	MOUNT, Closed Face Ser. II
12.2	0	025999A	028799A	028899A	MOUNT, Closed Face To Ser. I
13**,^	1	025901A	028701A	028801A	HYDRAULICS ASSEMBLY
14**,^	1	024650A	024650A	024650A	ELECTRICAL ASSEMBLY
15**,^	1	025932A	025932A	025932A	LUBE ASSEMBLY
16**,^	1	025995A	025995A	025995A	GREASE ASSEMBLY
17**	1	025996A	025996A	025996A	GREASE HOSE ASSEMBLY
18	1	F10360F00	F10360F00	F10360F00	BOX, Boring Head
19** 110/100QT*		P0126-050	P0126-050	-	OIL, MOBIL GEAR 600 XP 460
19** 125 QT*		-	-	P0126-050	OIL, MOBIL GEAR 600 XP 460
20	1	027698A	027698A	027698A	KIT, Adapter, Low PSI to Ser. II

\* Quarts \*\* Not Shown

\*\*\* Refer to this section for parts information. ^ Refer to Section 6, Hydraulics for parts information.

^^ Refer to Section 5, Electrical for parts information.

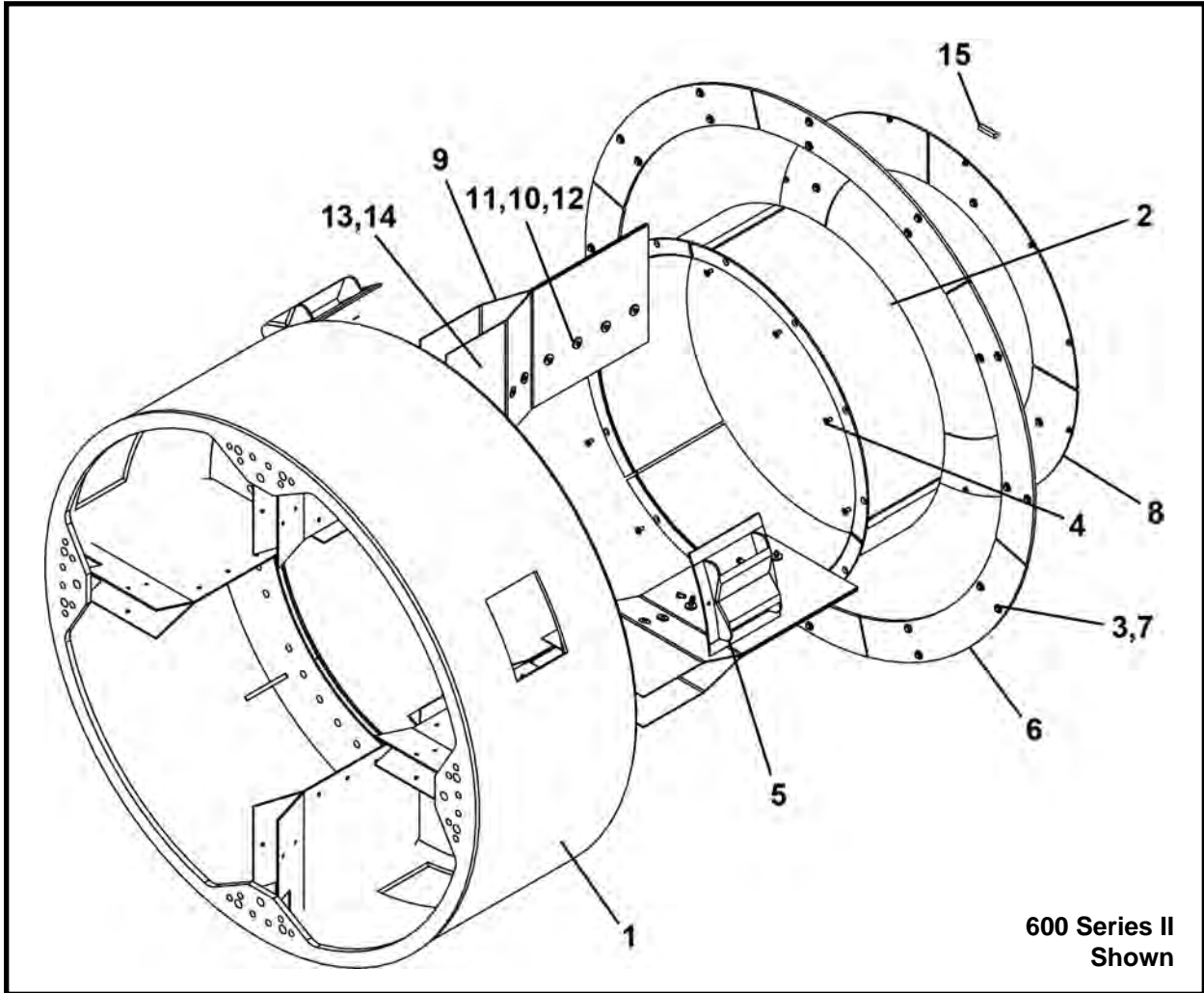
**STEERING ASSEMBLY**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	025902A	028702A	028802A	STEERING ASSEMBLY
1*	6	021175A	023175A	023175A	CYLINDER
2	12	023174P	023174P	023174P	PIN, Cylinder
3	45	P0001-06-006	P0001-06-006	P0001-06-006	BOLT, Hex 3/8 UNC x 1.5
4	2	P0088-019	P0088-019	P0088-022	ORING
5	3	028794A	028795A	028795A	ASSEMBLY, Steer Gage
6	3	P0001-06-011	P0001-06-011	P0001-06-011	BOLT, 3/8 UNC x 2.75

\* Refer to section 10, Cylinders for parts information.

**FRONT SECTION ASSEMBLY**  
**TBM Series II: 600 - 660 - 720**

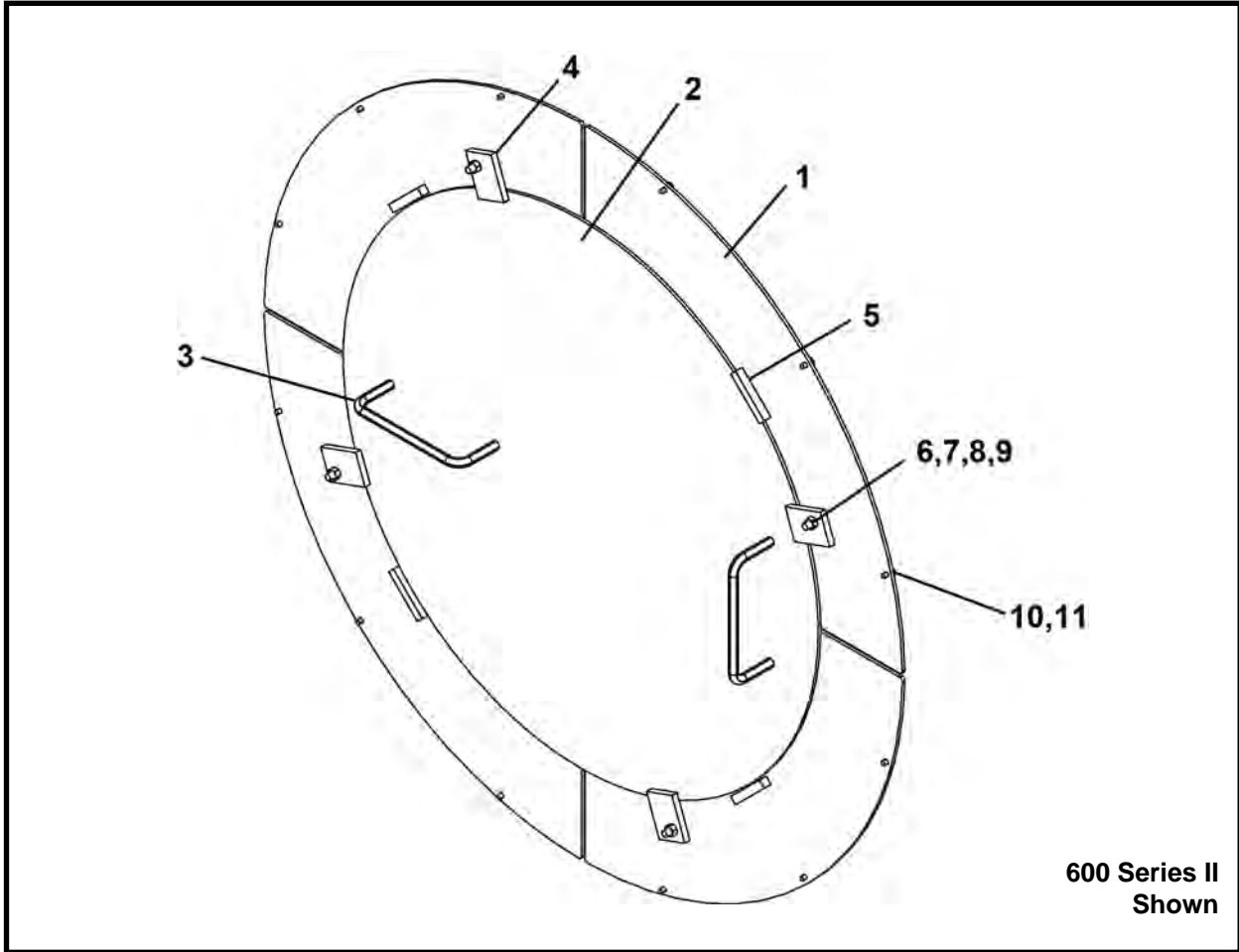


ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	025903A	028703A	028803A	FRONT SECTION ASSEMBLY
1	1	025907A	028707A	028807A	INNER DRUM
2	1	027873A	028738A	027675A	GUARD, Grease Tube
3	24	P0040-006	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
4	12	P0030-06-003	P0030-06-003	P0030-06-003	SCREW, Flat Head, Socket Head, Cap 3/8 x .75
5	3	028658A	028658A	028658A	DIRT SCOOP
6	6	025955A	028741A	028855A	PLATE, Front Closeout
7	24	P0001-06-004	P001-06-004	P001-06-004	BOLT, Hex 3/8 UNC x 1
8*	1	025962A	028743A	028862A	DOOR, Bulkhead
9	8	027611P	027611P	027611P	RUBBER, Dirt Paddle
10	16	P0001-04-006	P0001-04-006	P0001-04-006	BOLT, Hex 1/4 UNC x 1.5
11	32	P0003-04-000	P0003-04-000	P0003-04-000	NUT, 1/4 UNC
12	48	002624P00	002624P00	002624P00	WASHER, Dirt Paddle
13	16	P0001-04-004	P0001-04-004	P0001-04-004	BOLT, Hex 1/4 UNC x 1
14	16	P0040-004	P0040-004	P0040-004	WASHER, Hardened Flat
15	1	023468P	023468P	023468P	MOUNT, Magnet

\* Refer to this section for parts information.

**NOTES**

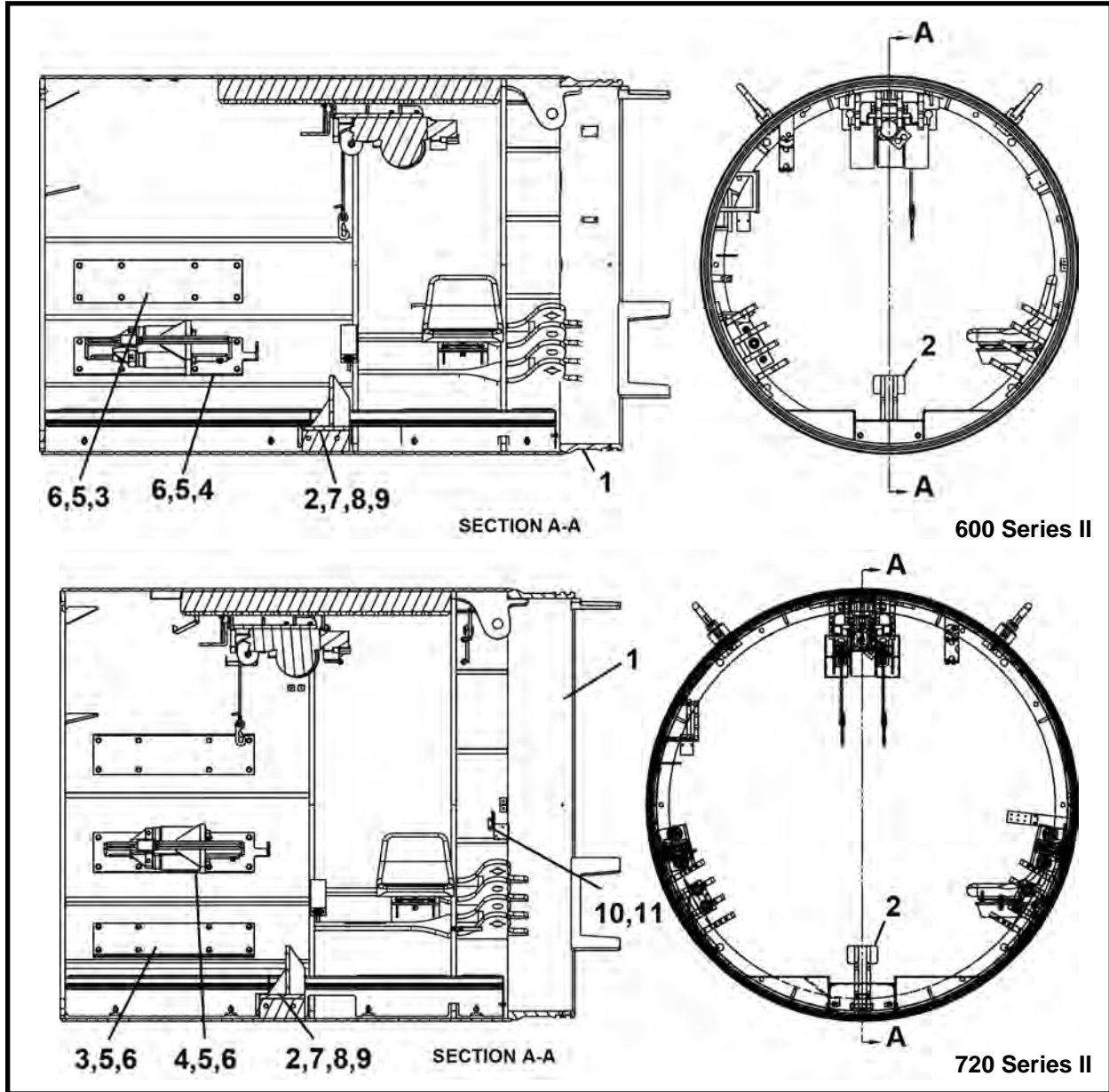
**BULKHEAD DOOR ASSEMBLY**  
**TBM Series II: 600 - 660 - 720**



**600 Series II  
Shown**

ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	025962A	028743A	028862A	BULKHEAD DOOR ASSEMBLY
1	4	025963P	028744P	028863P	MOUNT, Door
2	1	025964P	028745P	028864P	DOOR, Bulkhead
3	2	012875P00	012875P00	012875P00	HANDLE
4	4	009986P00	009986P00	009986P00	ENCLOSER
5	4	009987P00	009987P00	009987P00	BAR
6	4	P0001-06-006	P0001-06-006	P0001-06-006	BOLT, Hex 3/8 UNC x 1.5
7	4	P0040-006	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
8	4	P0003-06-000	P0003-06-000	P0003-06-000	NUT, Hex 3/8
9	4	P0007-06-000	P0007-06-000	P0007-06-000	NUT, Jam 3/8 UNC
10	12	P0001-04-002	P0001-04-002	P0001-04-002	BOLT, Hex 1/4 UNC x .5
11	12	P0040-004	P0040-004	P0040-004	WASHER, Hardened Flat 1/4

**BACK SECTION ASSEMBLY**  
TBM Series II: 600 - 660 - 720



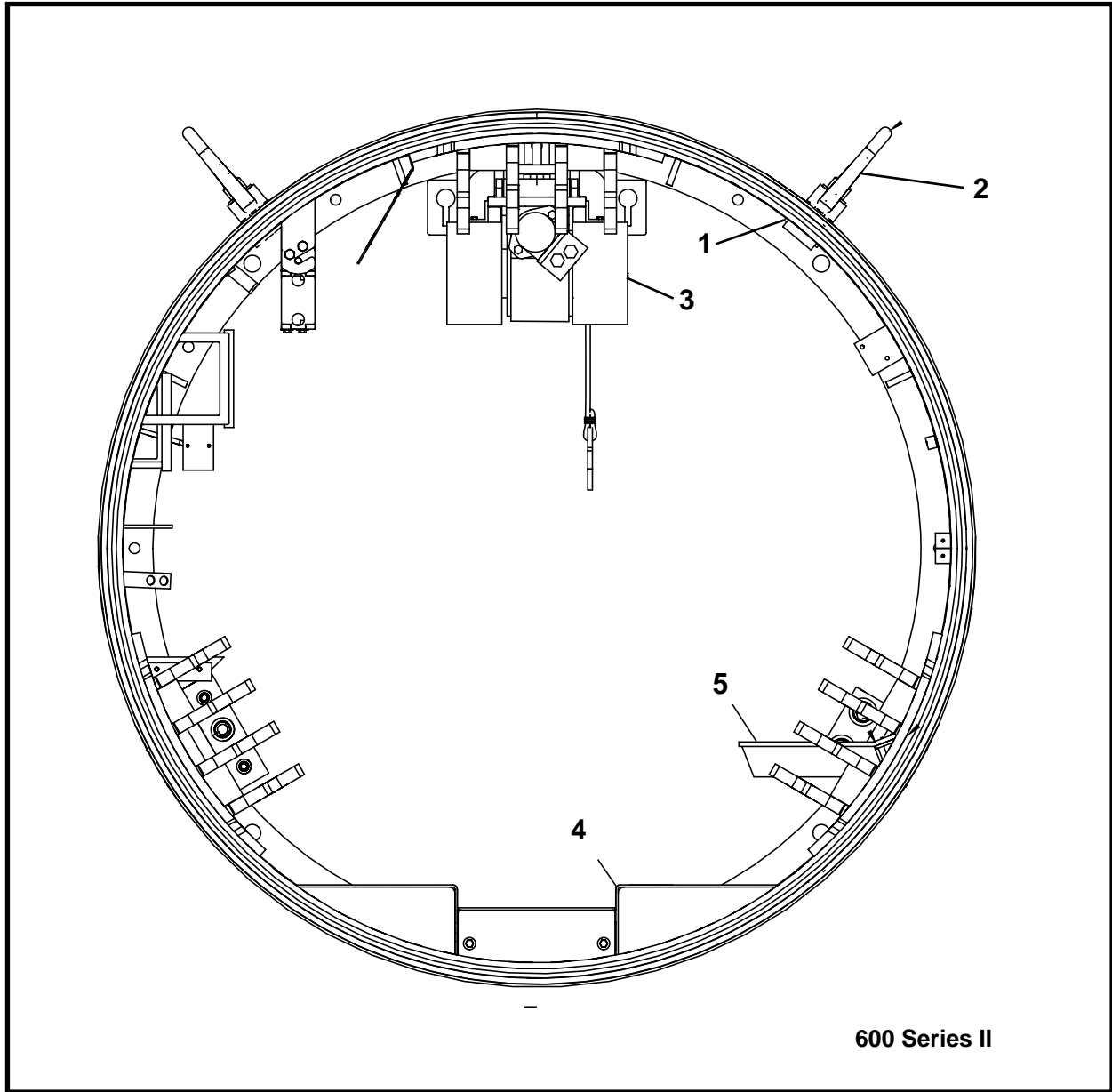
ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	025904A	028704A	028804A	BACK SECTION ASSEMBLY
1*	1	025908A	028708A	028808A	BACK DRUM ASSEMBLY
2	1	025944A	025944A	025944A	STOP, Haul Unit
3	2/2/4	**014619P00	014619P00	014619P00	COVER, Blank
4*	2	014679A	014679A	014679A	DIRT WING, Hyd. Bi-Directional
5	32/32/48	P0040-008	P0040-008	P0040-008	WASHER, Hardened Flat 1/2
6	32/32/48	P0001-08-004	P0001-08-004	P0001-08-004	BOLT, Hex 1/2 UNC x 1
7	2	P0001-12-016	P0001-12-016	P0001-12-016	SCREW, Hex Head Cap 3/4 UNC x 4
8	2	P0040-012	P0040-012	P0040-012	WASHER, Hardened Flat 3/4
9	2	P0003-12-000	P0003-12-000	P0003-12-000	NUT, Hex 3/4 UNC
10	2	-	-	026176P	MOUNT, Joystick
11	1	-	-	026175P	PLATE, Joystick Stand Off

\* Refer to this section for parts information.

\*\* Not included with complete assembly.

\*\*\* Use components from item 8 for complete hydraulic dirt wing.

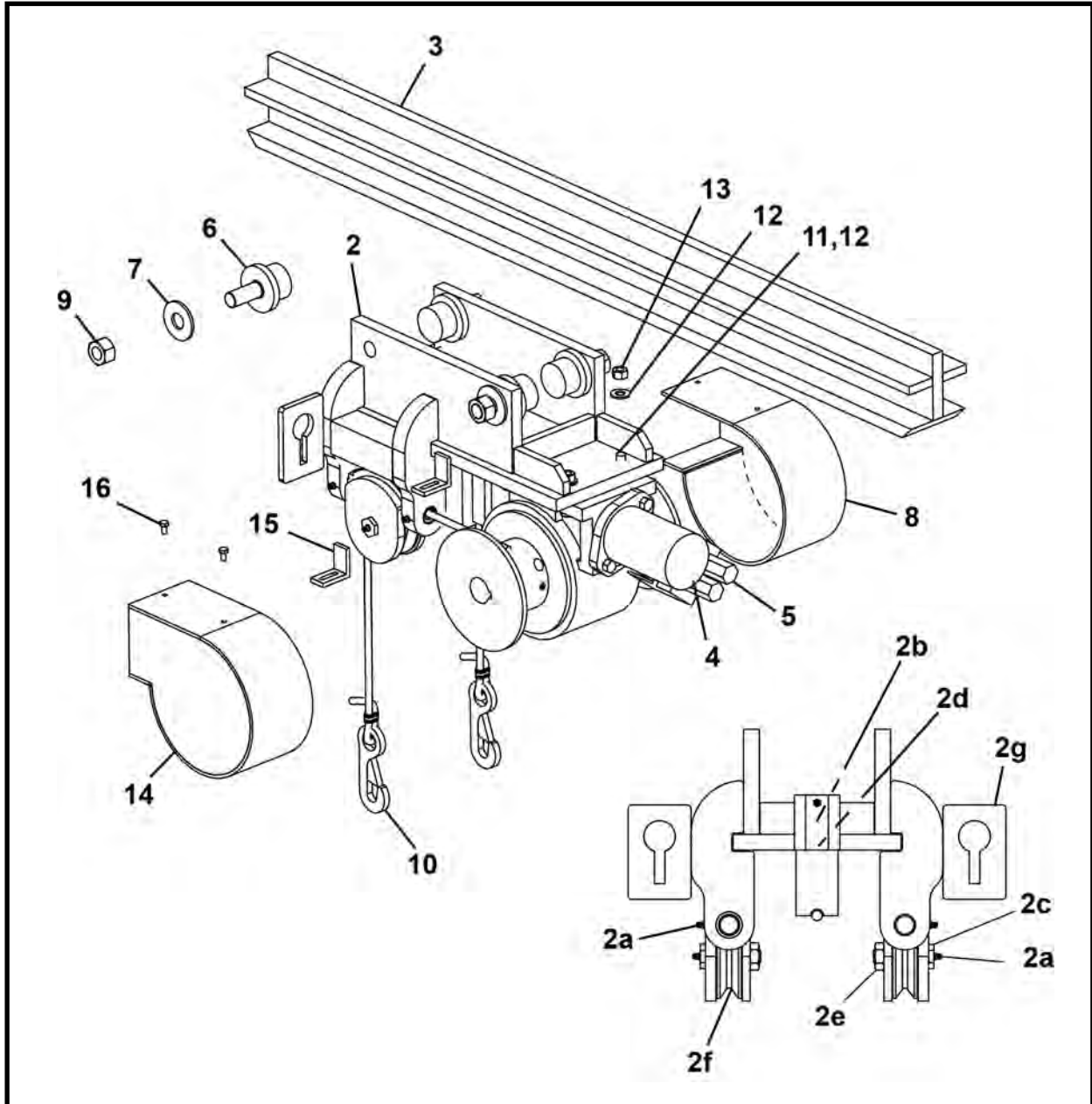
**BACK DRUM ASSEMBLY**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	025908A	028708A	028808A	BACK DRUM ASSEMBLY
1	2	021157P	021157P	021156P	MOUNT, Hoist Ring
2	2	P0098-068	P0098-068	-	RING, Hoist 10,000 lbs
2	2	-	-	P0098-069	RING, Hoist 15,000 lbs
3*	1	012609A01	012609A01	012609A01	CONVEYOR LIFT ASSEMBLY
4*	1	028592A	028770A	028809A	FLOOR ASSEMBLY
5*	1	024510A	024510A	024510A	SEAT ASSEMBLY

\* Refer to this section for parts information.

**CONVEYOR LIFT ASSEMBLY, 012609A01**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	012609A01	ASSEMBLY, Conveyor Lift
1*	1	P0106-002	WINCH, Hydraulic
2	1	012785A00	WELDMENT, Trolley Bracket (Includes items 2a - 2f)
2a	7	P0063-001	FITTING, Grease 1/4
2b	1	P0070-024	SPRING
2c	2	003661P00	BOLT, Conveyor Lift
2d	1	P0044-021	RING, Snap
2e	2	P0007-12-000	NUT, Jam 3/4 UNC
2f	2	003660A01	ASSEMBLY, Pulley (Includes item 2f1)
2f1	1	P0066-003	BUSHING, Bronze
2g	2	012271P00	CHAIN GRABBER
3	1	012790A00	WELDMENT, Trolley Rail
4	1	P0304-131	MOTOR, Hydraulic
5	1	P0304-132	VALVE, Crossover Relief (1300 PSI)

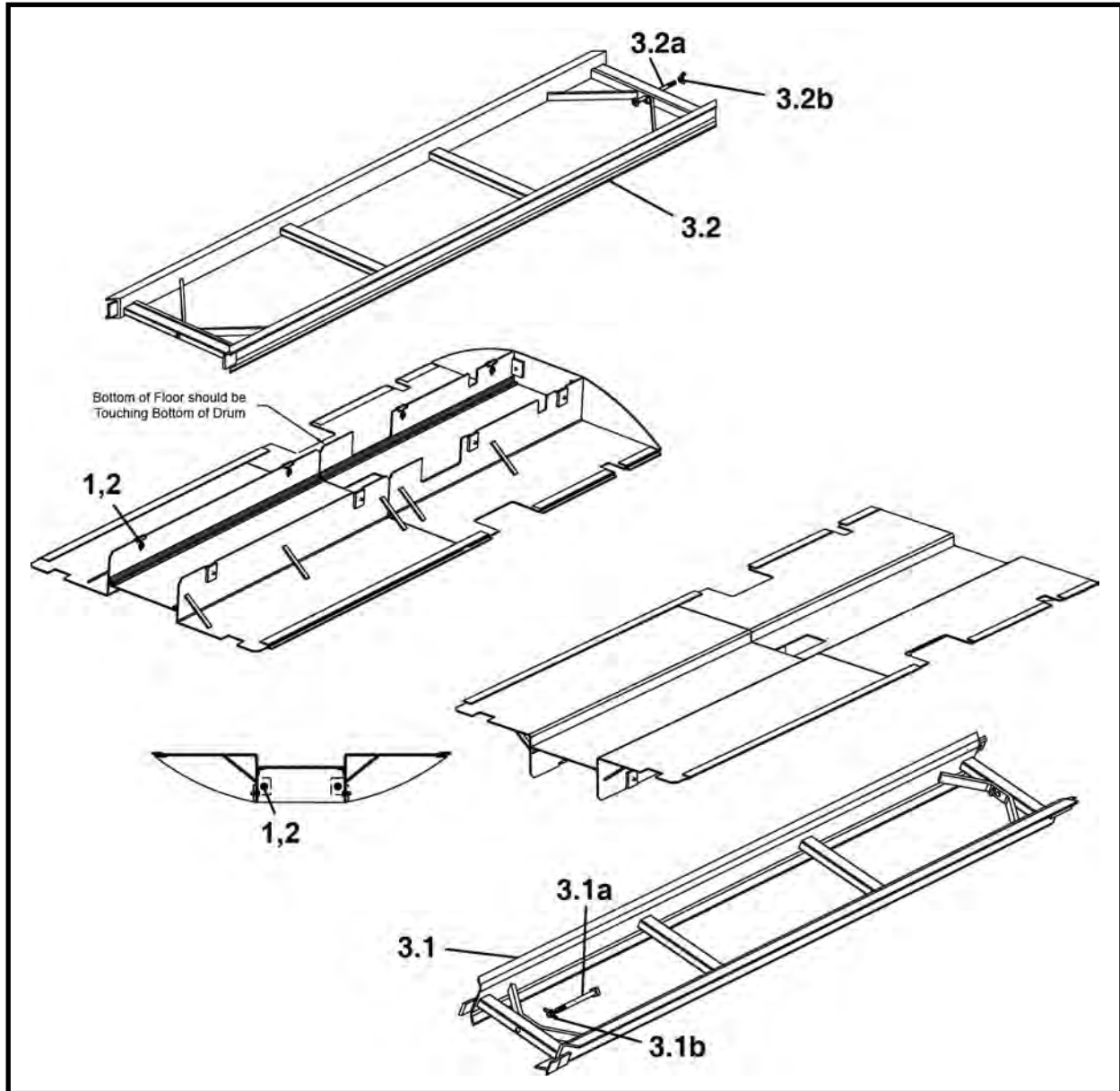
**CONVEYOR LIFT ASSEMBLY, 012609A01**  
**TBM Series II: 600 - 660 - 720**

ITEM	QTY	PART NO.	DESCRIPTION
6	4	P0065-082	BEARING
7	4	P0040-014	WASHER, Flat 7/8
8	1	012798A01	GUARD, Winch - Left
9	4	P0004-14-000	NUT, 7/8 UNF
10**	2	P0079-005	ASSEMBLY, Cable & Hook
11	4	P0001-08-008	BOLT, Hex 1/2 UNC x 2
12	4	P0040-008	WASHER,Hardened Flat 1/2
13	4	P0003-08-000	NUT, 1/2 UNC
14	1	012765A01	GUARD, Winch - Right
15	4	027113P00	BRACKET, Winch Cover Mounting
16	4	P0001-04-002	BOLT, Hex 1/4 UNC x .5

\* Refer to section 6, Hydraulics for parts information.

\*\* The cable and hook assembly, item 10, P0079-005, must be wrapped a minimum of 5 times.

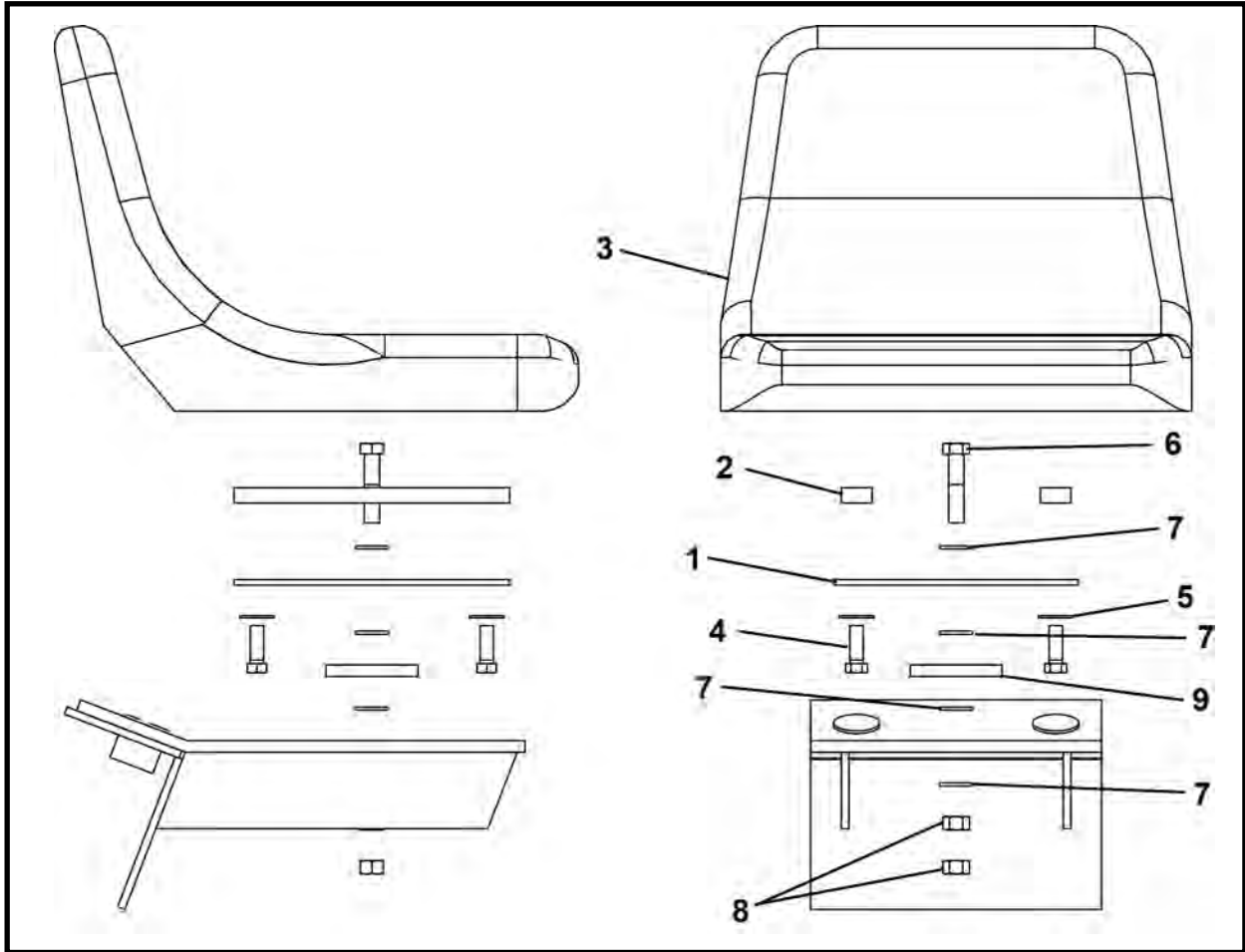
**FLOOR ASSEMBLY**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	028592A	028770A	028809A	FLOOR ASSEMBLY
1	10	P0001-06-004	P0001-06-004	P0001-06-004	BOLT, Hex 3/8 UNC x 1
2	10	P0040-006	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
3.1	1	F14750F00	F14750F00	-	TRACK, 524 Z Section 8 Ft
3.1a	1	007242A00	007242A00	-	BOLT, Track
3.1b	1	P0012-08-000	P0012-08-000	-	NUT, Wing 1/2 UNC
3.2	1	F07244F00	F07244F00	F07244F00	TRACK, 1448 8 Ft
3.2a	1	007242A00	007242A00	007242A00	BOLT, Track
3.2b	1	P0012-08-000	P0012-08-000	P0012-08-000	NUT, Wing 1/2 UNC

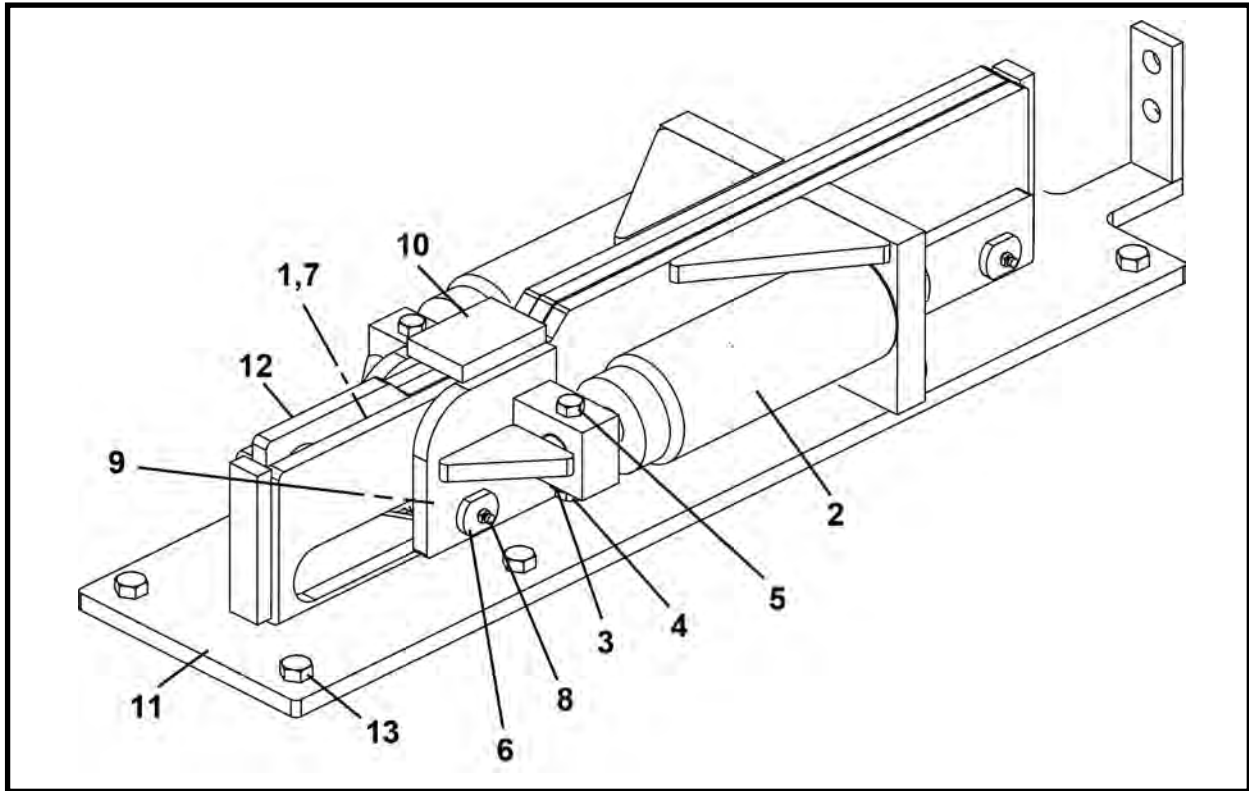
Note: Item 3 is not part of the top level Floor Assembly, item 0.

**SEAT ASSEMBLY, 024510A**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	024510A	SEAT ASSEMBLY
1	1	024512P	PLATE, Seat Mount
2	2	024513P	MOUNT, Seat
3	1	P0113-002	SEAT, High Back
4	4	P0001-05-005	BOLT, Hex 5/16 UNC x 1.25
5	4	P0040-005	WASHER, Hardened Flat 5/16
6	1	P0001-08-009	BOLT, Hex 1/2 UNC x 2.25
7	4	P0040-008	WASHER, Hardened Flat 1/2
8	2	P0003-08-000	NUT, Hex 1/2 UNC
9	1	009995P00	PAD, Mounting

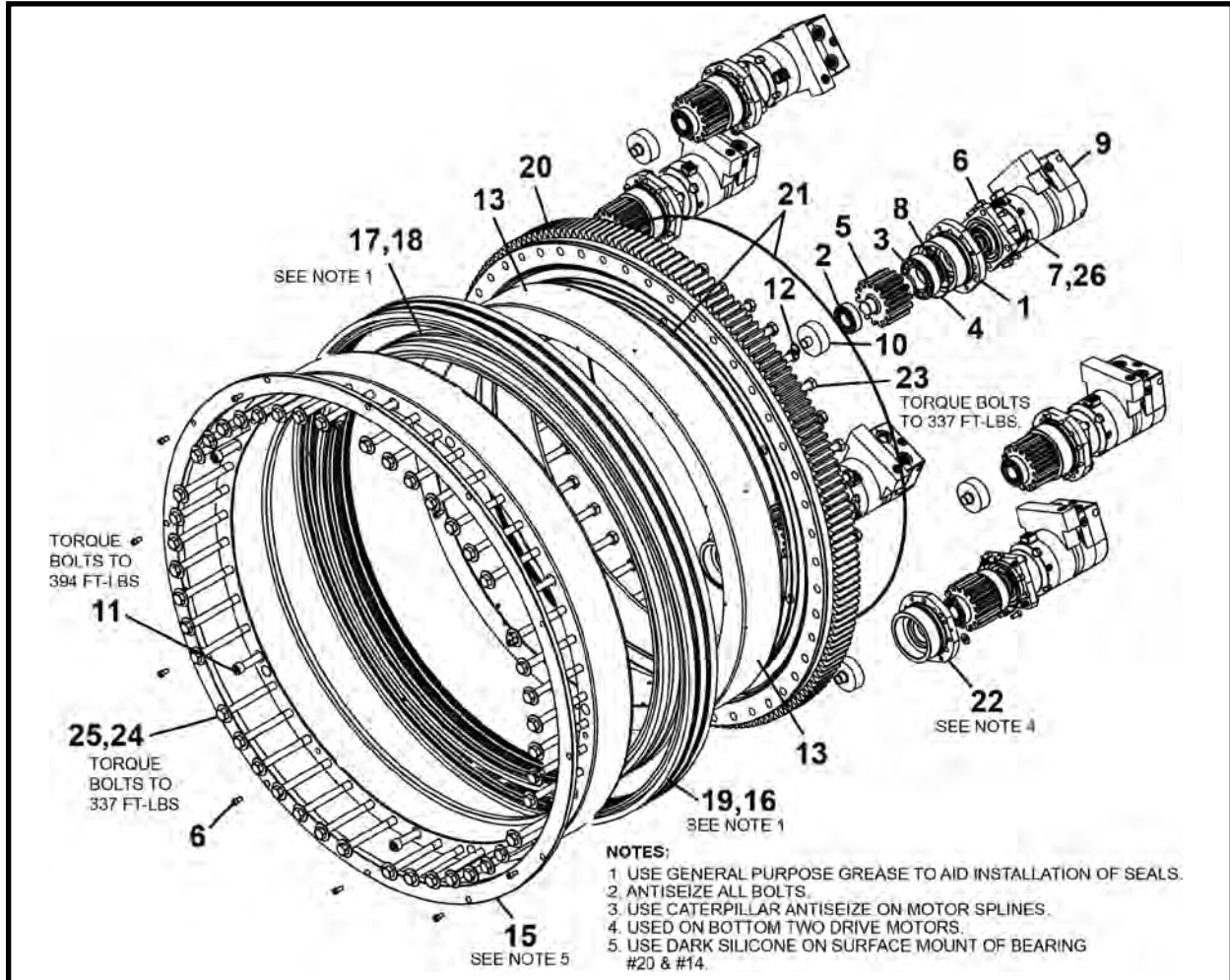
**HYDRAULIC DIRT WING (Bi-Directional) ASSEMBLY, 014679A**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	014679A	DIRT WING ASSEMBLY
1	2	P0040-008	WASHER, Hardened Flat 1/2
2*	2	014603A00	CYLINDER, Dirt Wing
3	2	P0045-007	WASHER, Lock 7/16
4	2	P0003-07-000	NUT, Hex 7/16 UNC
5	2	P0001-07-010	BOLT, Hex 7/16 UNC x 2.5
6	2	007239P00	PIN, Axle
7	2	P0003-08-000	NUT, Hex 1/2 UNC
8	2	P0063-001	FITTING, Grease Straight
9	6	007240P00	ROLLER
10	1	014606A01	BAR, Thrust
11	1	014680A	BRACKET, Bi-Directional
12	1	014610P00	BLADE
13	8	P0001-08-004	BOLT, Hex 1/2 UNC x 1

\* Refer to section 10, Cylinders for parts information.

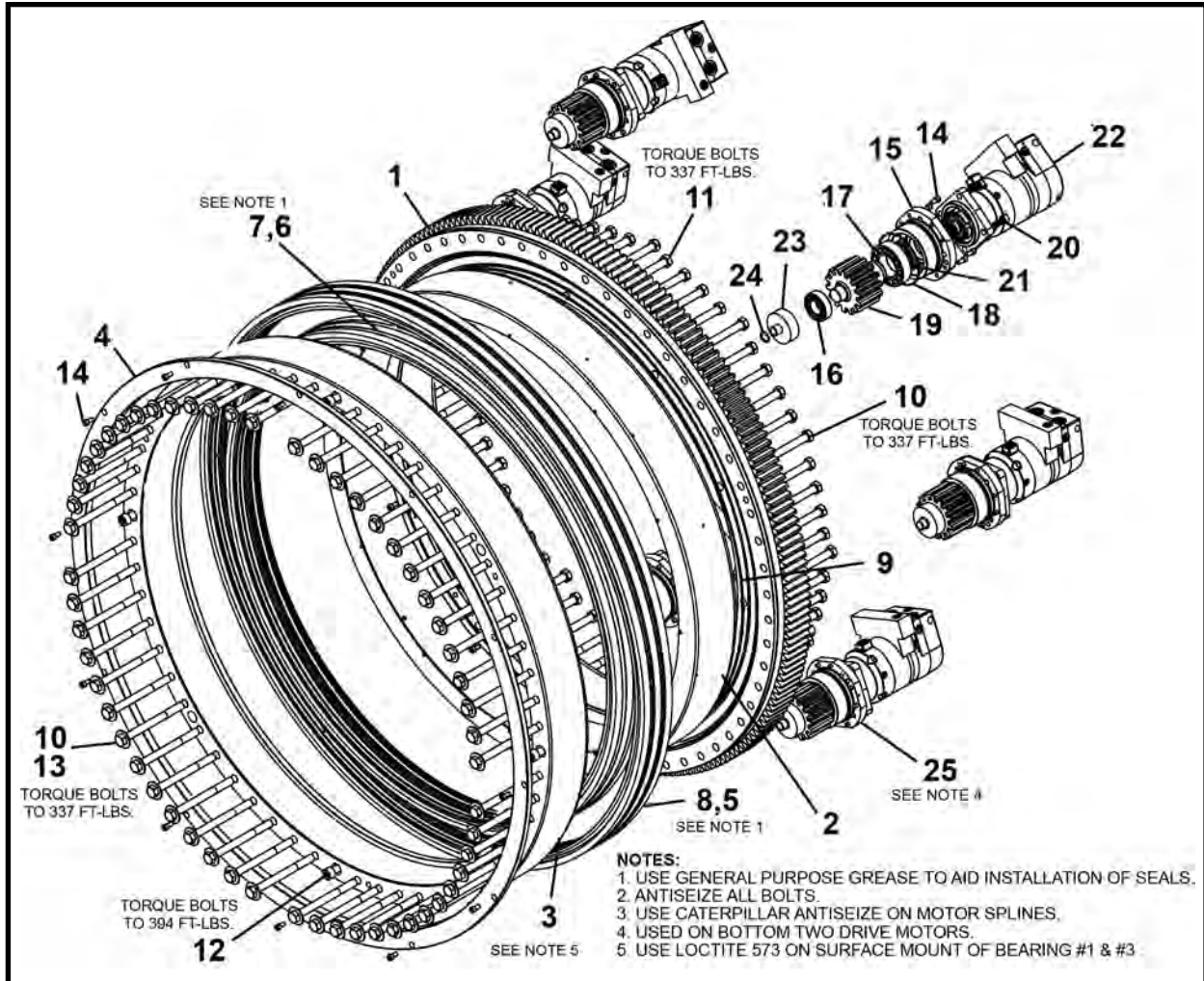
**DRIVE ASSEMBLY, 025905A**  
**TBM Series II: 600**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	025905A	DRIVE ASSEMBLY, 600 TBM
1	4	023109P	RETAINER, Pinion
2	6	P0065-266	BEARING, Roller
3	6	P0065-192	BEARING, Roller
4	6	P0085-162	ORING
5	6	023150P	PINION
6	60	P0031-06-003	SCREW, Socket Head Cap 3/8 UNC x .75
7	24	P0031-08-006	SCREW, Socket Head Cap 1/2 UNC x 1.5
8	6	P0065-268	SEAL
9*	6	P0304-344	MOTOR
10	6	027944P	PUCK, Pinion Bearing Mount
11	6	PM20B-2.5-160	SCREW, Socket Head Cap M20 x 2.5 x 160-12.9
12	6	P0085-214	ORING
13	1	025912P	SEAL RING, Inner
14	2	025913P	SEAL RING, Outer
15	1	025914P	PLATE, Seal Retainer
16	2	025915P	RING, Lantern OD
17	2	025916P	RING, Lantern ID
18	1	P0080-048	KIT, TBM Seal 1240mm
19	1	P0080-047	KIT, TBM Seal 1425mm
20	1	P0065-271-0600	BEARING, Slewing
21	2	P0088-213	ORING
22	2	026939P	RETAINER, Pinion Bottom
23	32	PM20A-2.5-160	SCREW, Socket Head Cap M20 x 2.5 x 160-10.9
24	52	PM20A-2.5-220	SCREW, Socket Head Cap M20 x 2.5 x 220-10.9
25	44	P0040-012	WASHER, Hardened Flat 3/4
26	24	P0040-008	WASHER, Hardened Flat 1/2

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

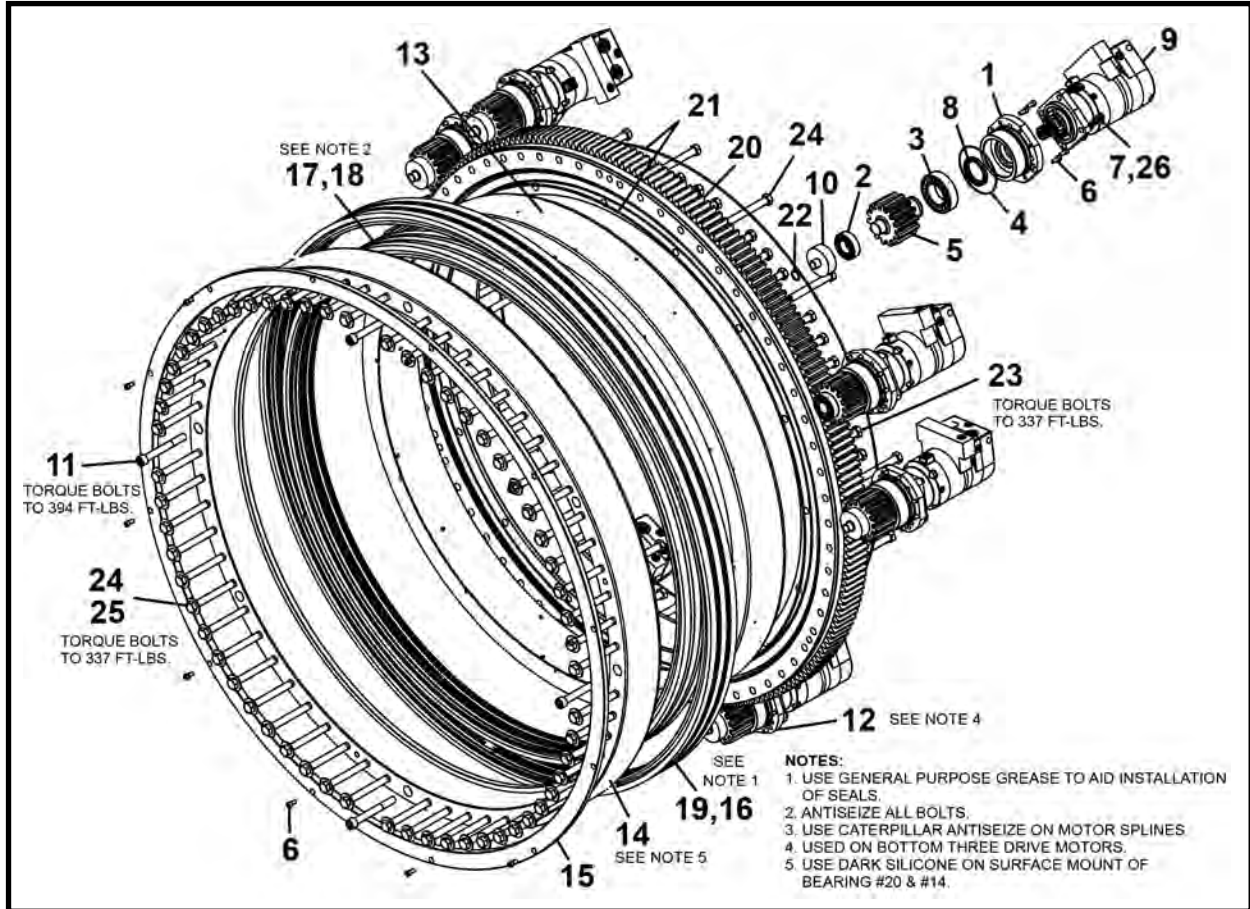
**DRIVE ASSEMBLY, 028705A**  
**TBM Series II: 660**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	028705A	DRIVE ASSEMBLY, 660 TBM
1	1	P0065-271-0660	BEARING, Slewing
2	1	028712P	SEAL RING, Inner
3	1	028713P	SEAL RING, Outer
4	1	028714P	PLATE, Seal Retainer
5	2	028715P	RING, Lantern OD
6	2	028716P	RING, Lantern ID
7	1	P0080-057	KIT, TBM Seal 1400mm
8	1	P0080-058	KIT, TBM Seal 1600mm
9	2	P0088-227	ORING
10	68	PM20A-2.5-220	SCREW, Socket Head Cap M20 x 2.5 x 220-10.9
11	48	PM20A-2.5-160	SCREW, Socket Head Cap M20 x 2.5 x 160-10.9
12	4	PM20B-2.5-160	SCREW, Socket Head Cap M20 x 2.5 x 160-12.9
13	56	P0040-012	WASHER, Hardened Flat 3/4
14	60	P0031-06-003	SCREW, Socket Head Cap 3/8 UNC x .75
15	4	023109P	RETAINER, Pinion
16	6	P0065-266	BEARING, Roller
17	6	P0065-192	BEARING, Roller
18	6	P0085-162	ORING
19	6	023150P	PINION
20	24	P0031-08-006	SCREW, Socket Head Cap 1/2 UNC x 1.5
21	6	P0065-268	SEAL
22*	6	P0304-344	MOTOR
23	6	027944P	PUCK, Pinion Bearing Mount
24	6	P0085-214	ORING
25	2	026939P	RETAINER, Pinion Bottom

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

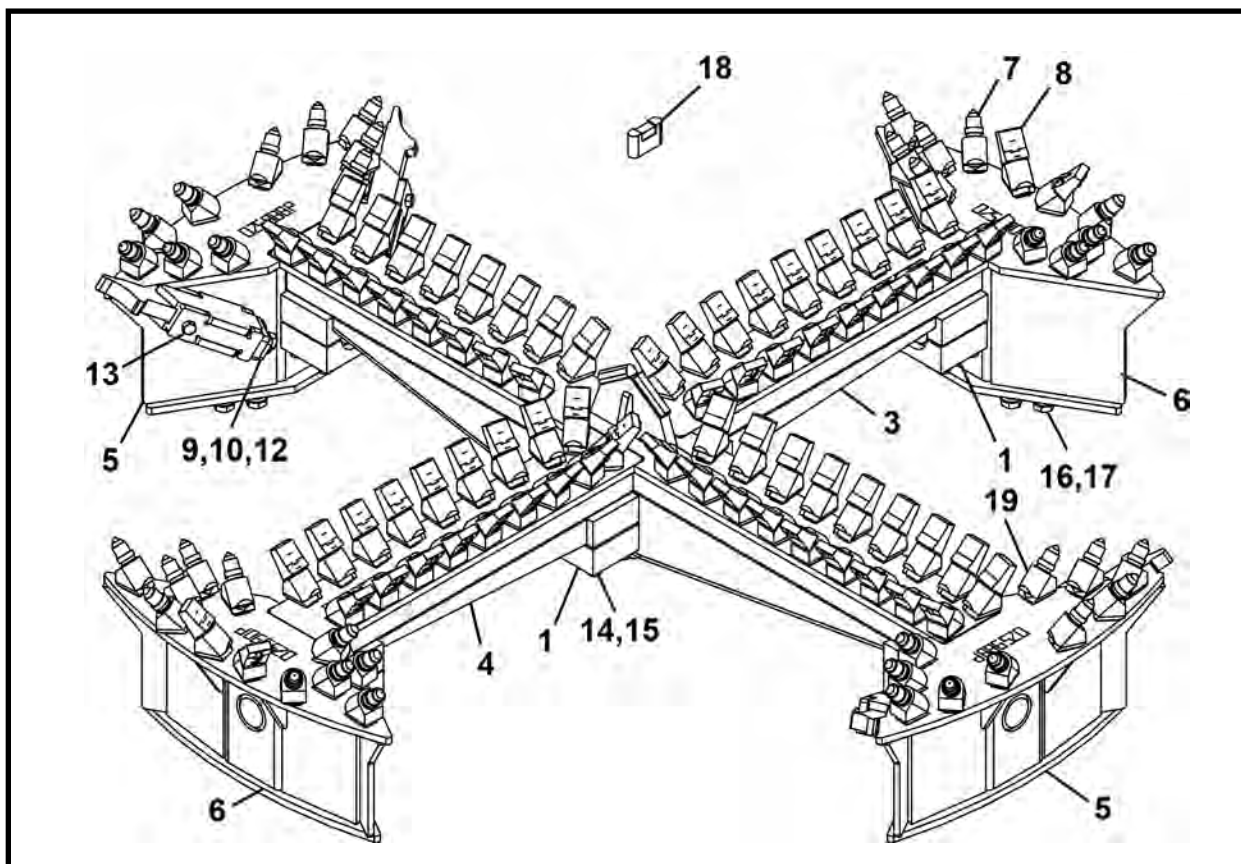
**DRIVE ASSEMBLY, 028805A**  
TBM Series II: 720



ITEM	QTY	PART NO.	DESCRIPTION
0	1	028805A	DRIVE ASSEMBLY, 720 TBM
1	6	023109P	RETAINER, Pinion
2	9	P0065-266	BEARING, Roller
3	9	P0065-192	BEARING, Roller
4	9	P0085-162	ORING
5	9	023150P	PINION
6	84	P0031-06-003	SCREW, Socket Head Cap 3/8 UNC x .75
7	36	P0031-08-006	SCREW, Socket Head Cap 1/2 UNC x 1.5
8	9	P0065-268	SEAL
9*	9	P0304-344	MOTOR
10	9	027944P	PUCK, Pinion Bearing Mount
11	4	PM20B-2.5-160	SCREW, Socket Head Cap M20 x 2.5 x 160-12.9
12	3	026939P	RETAINER, Pinion Bottom
13	1	028812P	SEAL RING, Inner
14	1	028813P	SEAL RING, Outer
15	1	028814P	PLATE, Seal Retainer
16	2	023154P	RING, Lantern OD
17	2	023155P	RING, Lantern ID
18	1	P0080-036	KIT, TBM Seal
19	1	P0080-037	KIT, TBM Seal
20	1	P0065-271-0720	BEARING, Slewing
21	2	P0088-222	ORING
22	9	P0085-214	ORING
23	48	PM20A-2.5-160	SCREW, Socket Head Cap M20 x 2.5 x 160-10.9
24	76	PM20A-2.5-220	SCREW, Socket Head Cap M20 x 2.5 x 220-10.9
25	60	P0040-012	WASHER, Hardened Flat 3/4
26	36	P0040-008	WASHER, Hardened Flat 1/2

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

**CUTTER BAR ASSEMBLY, 025975A**  
**TBM Series II: 600**

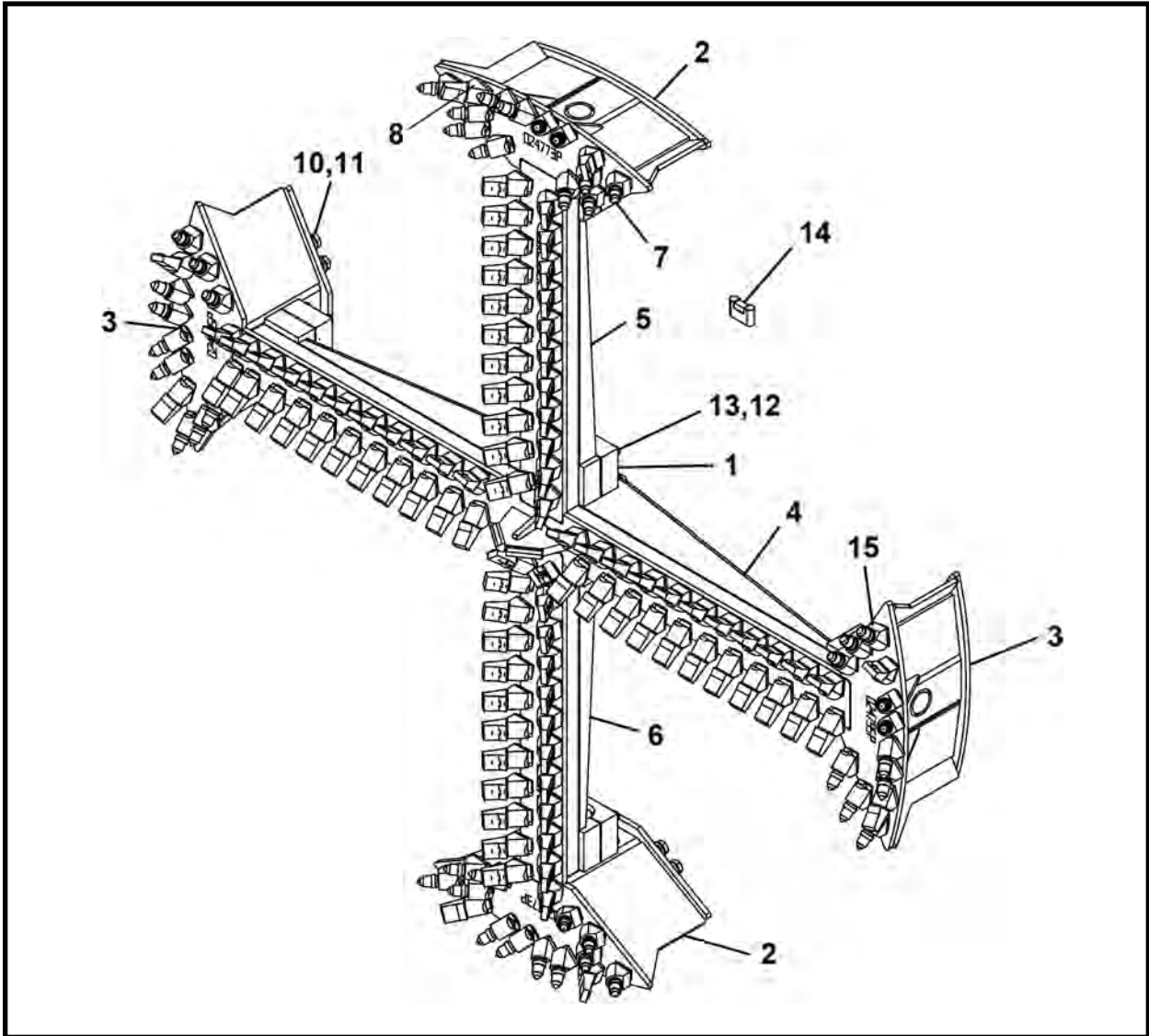


ITEM	QTY	PART NO.	DESCRIPTION
0	1	025975A	CUTTER BAR ASSEMBLY
1	6	024796P	CLAMP, Block
2	1	025976A	CUTTER BAR
3	1	025977A	CUTTER BAR, Short Bar RH
4	1	025978A	CUTTER BAR, Short Bar LH
5	2	025987A	MOUNT, Cutter Bar
6	2	025989A	MOUNT, Cutter Bar
7	114	P0050-011	CUTTER BIT, Conical
8	114	P0050-010	CUTTER BIT, Spade
9	4	024765P	PLATE, BOLT CAP
10	4	024766P	PIN, Adjustable Threaded Cutter
11	4	024799A	TOOTH, Adjustable Cutter
12	9	P0001-05-003	BOLT, Hex 5/16 UNC x .75
13	8	P0001-08-003	BOLT, Hex 1/2 UNC x .75
14	24	P0001-08-012	BOLT, Hex 1/2 UNC x 3
15	24	P0040-008	WASHER, Hardened Flat 1/2
16	24	P0040-012	WASHER, Hardened Flat 3/4
17	24	P0001-12-007	BOLT, Hex 3/4 UNC x 1.75
18	1	P0091-027	LEVEL, Magnet
19**	114	P0051-004	HOLDER, Tooth

\*\* Item 19, Tooth Holder is part of items 2, 3, 4, 5 and 6.

## CUTTER BAR ASSEMBLY

TBM Series II: 660 - 720

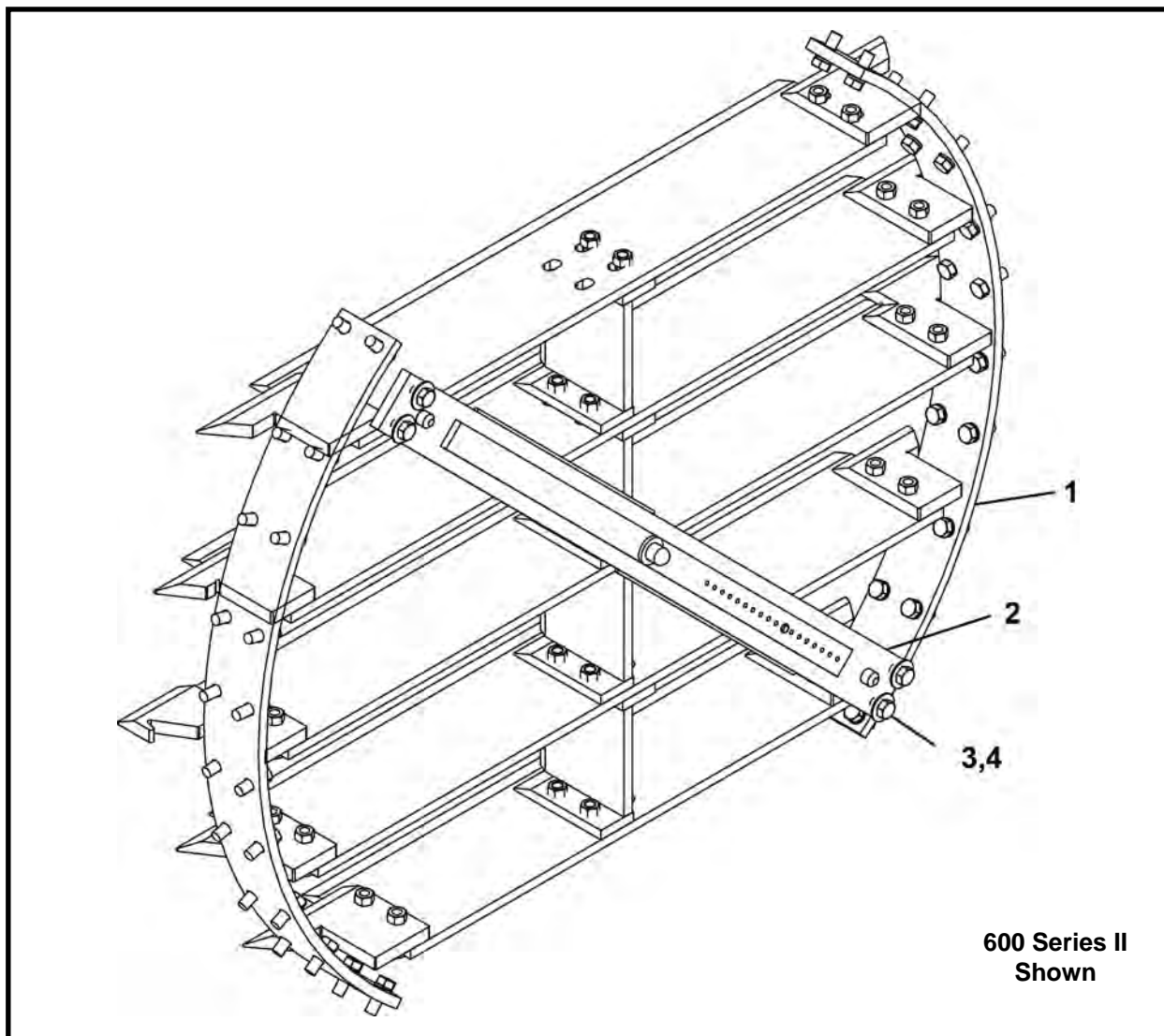


ITEM	QTY	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	028749A	024768A	CUTTER BAR ASSEMBLY
1	6	024796P	024796P	CLAMP, Block
2	2	024769A	024769A	MOUNT, Cutter Bar
3	2	024794A	024794A	MOUNT, Cutter Bar
4	1	028750A	024786A	CUTTER BAR
5	1	028756A	024778A	CUTTER BAR, Short Bar RH
6	1	028757A	024784A	CUTTER BAR, Short Bar LH
7	132/142	P0050-011	P0050-011	CUTTER BIT, Conical
8	132/142	P0050-010	P0050-010	CUTTER BIT, Spade
9	1	P0001-05-003	P0001-05-003	BOLT, Hex 5/16 UNC x .75
10	24	P0040-012	P0040-012	WASHER, Hardened Flat 3/4
11	24	P0001-12-007	P0001-12-007	BOLT, Hex 3/4 UNC x 1.75
12	24	P0040-008	P0040-008	WASHER, Hardened Flat 1/2
13	24	P0001-08-012	P0001-08-012	BOLT, Hex 1/2 UNC x 3
14	1	P0091-027	P0091-027	LEVEL, Magnet
15**	132/142	P0051-004	P0051-004	HOLDER, Tooth

\* Item 15, Tooth Holder is part of items 2, 3, 4, 5 and 6.

# SAND HEAD ASSEMBLY

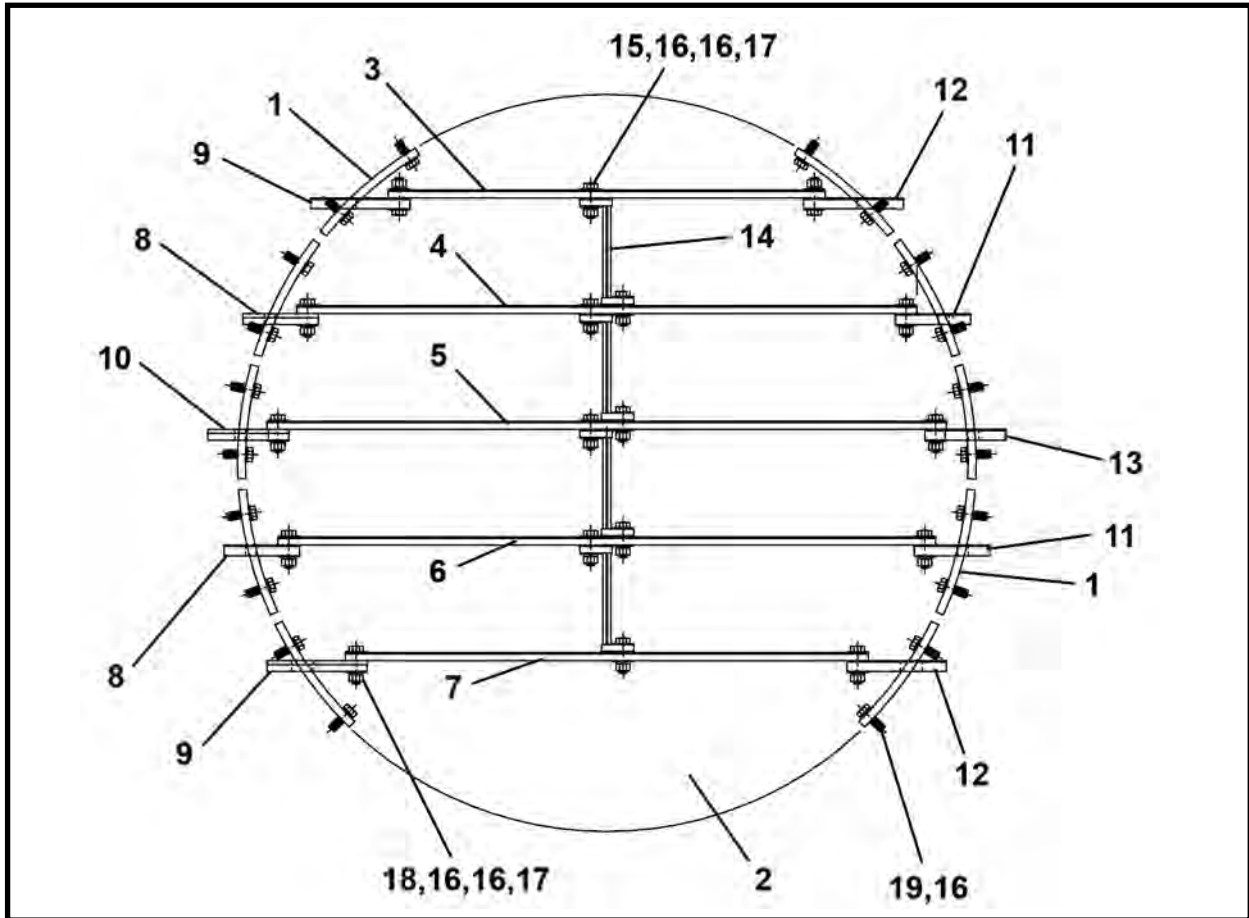
TBM Series II: 600 - 660



ITEM	QTY	600-SII PART NO.	660-SII PART NO.	DESCRIPTION
0	1	023430A	028748A	SAND HEAD ASSEMBLY
1*	1	004769A02	004440A02	ASSEMBLY, Sand Shelf
2	1	023431A	028746A	BAR, Sand
3	4	P0001-12-006	P0001-12-006	BOLT, Hex 3/4 UNC x 1.5
4	4	P0040-012	P0040-012	WASHER, Hardened Flat 3/4

\* Refer to this section for parts information.

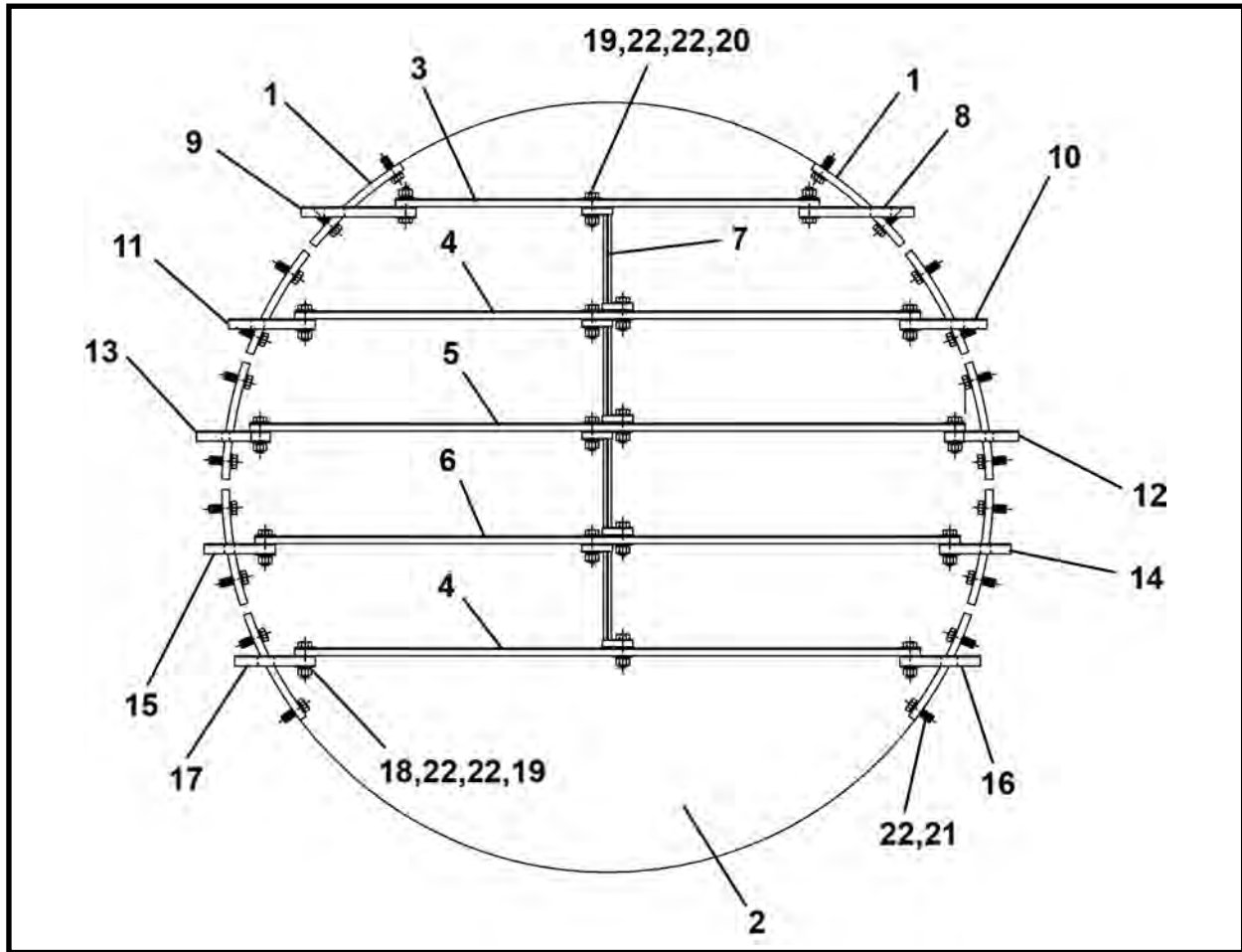
**SAND SHELF ASSEMBLY, 004769A02**  
**TBM Series II: 600**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	004769A02	SAND SHELF ASSEMBLY
1	2	005111P01	BAR, Curved Mounting
2	-	-	-
3	1	005112P00	SHELF, Sand
4	1	005113P00	SHELF, Sand
5	1	005114P00	SHELF, Sand
6	1	005115P00	SHELF, Sand
7	1	005116P00	SHELF, Sand
8	2	004947P00	SHELF, End
9	2	004943P00	SHELF, End
10	1	004945P00	SHELF, End
11	2	004948P00	SHELF, End
12	2	004944P00	SHELF, End
13	1	004946P00	SHELF, End
14	4	005117A00	BRACKET, Z
15	16	P0001-12-010	BOLT, Hex 3/4 UNC x 2.5
16	112	P0040-012	WASHER, Flat 3/4
17	36	P0003-12-000	NUT, 3/4-10
18	20	P0001-12-011	BOLT, Hex 3/4 UNC x 2.75
19	40	P0001-12-008	BOLT, Hex 3/4 UNC x 2

Note: Invert bolts on top shelf for extra clearance.

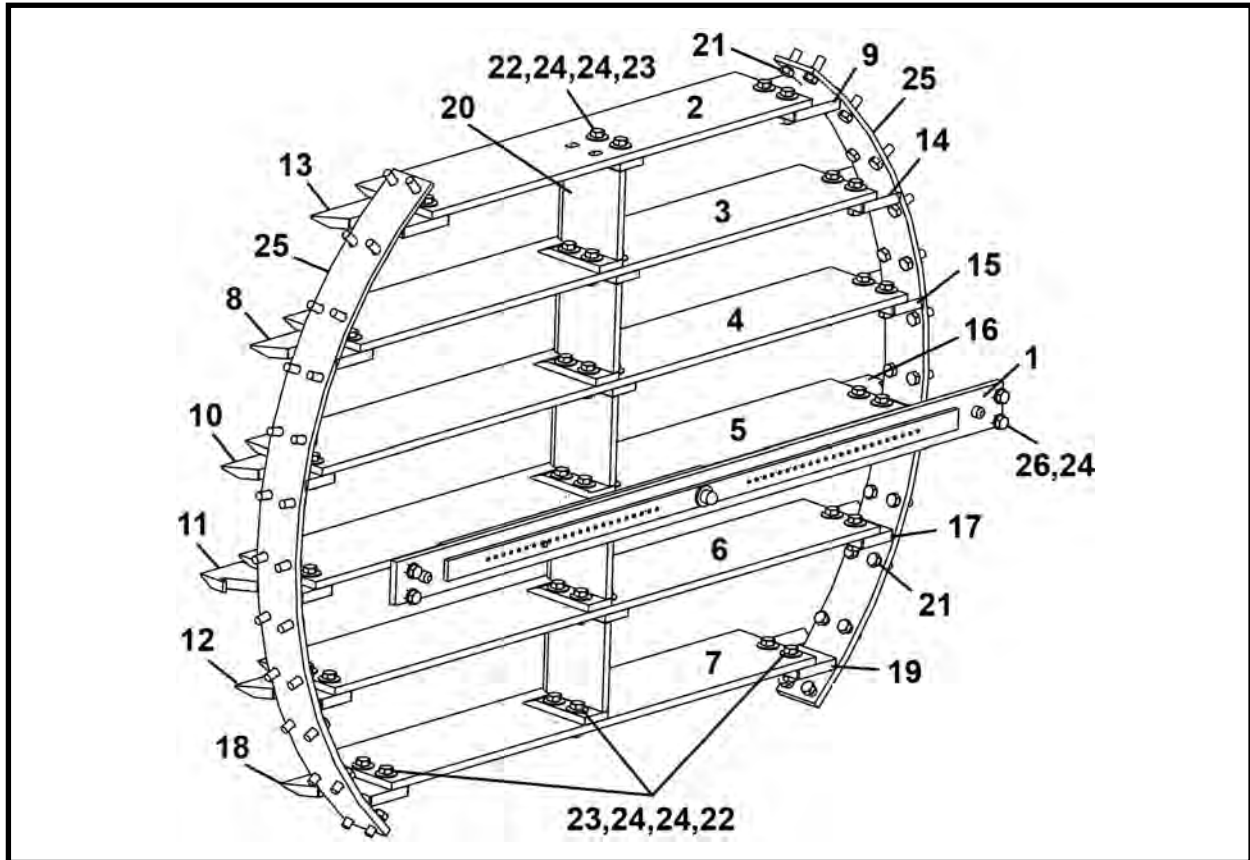
**SAND SHELF ASSEMBLY, 004440A02**  
TBM Series II: 660



ITEM	QTY	PART NO.	DESCRIPTION
0	1	004440A02	SAND SHELF ASSEMBLY
1	2	004431P01	BAR, Curved Mounting
2	-	-	-
3	1	007129P00	SHELF, Sand
4	2	007130P00	SHELF, Sand
5	1	007131P00	SHELF, Sand
6	1	007132P00	SHELF, Sand
7	4	005118A00	BRACKET, Z
8	1	007127P00	SHELF, End
9	1	007128P00	SHELF, End
10	1	005382P00	SHELF, End
11	1	005383P00	SHELF, End
12	1	005440P00	SHELF, End
13	1	005443P00	SHELF, End
14	1	004948P00	SHELF, End
15	1	004947P00	SHELF, End
16	1	005441P00	SHELF, End
17	1	005444P00	SHELF, End
18	20	P0001-12-011	BOLT, Hex 3/4 UNC x 2.75
19	36	P0003-12-000	NUT, Hex 3/4 UNC
20	16	P0001-12-010	BOLT, Hex 3/4 UNC x 2.5
21	40	P0001-12-008	BOLT, Hex 3/4 UNC x 2
22	112	P0040-012	WASHER, Hardened Flat 3/4

Note: Invert bolts on top shelf for extra clearance.

**SAND HEAD/SHELF ASSEMBLY, 023417A**  
TBM Series II: 720

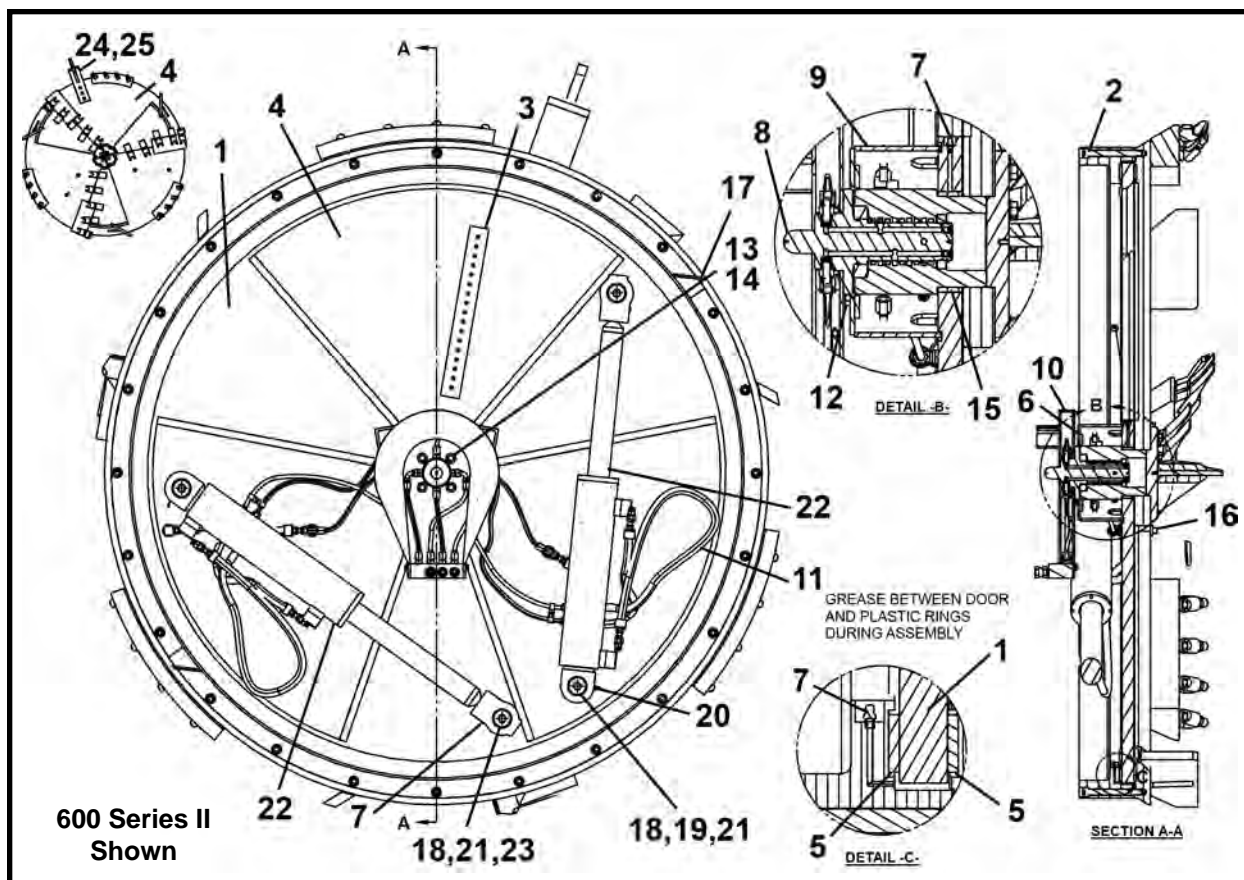


ITEM	QTY	PART NO.	DESCRIPTION
0	1	023417A	SAND HEAD/SHELF ASSEMBLY
1	1	023418A	BAR, Sand
2	1	007068P00	SHELF, Sand - Top
3	1	007069P00	SHELF, Sand - Upper
4	1	007070P00	SHELF, Sand - Mid Upper
5	1	007071P00	SHELF, Sand - Mid Lower
6	1	007072P00	SHELF, Sand - Lower
7	1	007073P01	SHELF, Sand - Lower
8	1	005373P00	SHELF, End
9	1	007066P00	SHELF, End
10	1	004948P00	SHELF, End
11	1	005440P00	SHELF, End
12	1	005377P00	SHELF, End
13	1	007065P00	SHELF, End
14	1	005374P00	SHELF, End
15	1	004947P00	SHELF, End
16	1	005443P00	SHELF, End
17	1	005378P00	SHELF, End
18	1	005439P00	SHELF, End
19	1	005442P00	SHELF, End
20	5	005118A00	BRACKET, Z
21	48	P0001-12-008	BOLT, Hex 3/4 UNC x 2
22	44	P0003-12-000	NUT, Hex 3/4 UNC
23	44	P0001-12-011	BOLT, Hex 3/4 UNC x 2.75
24	92	P0040-012	WASHER, Hardened Flat 3/4
25	2	007067P01	BAR, Curved Mounting
26	4	P0001-12-007	BOLT, Hex 3/4 UNC x 1.75

Note: Invert bolts on top shelf for extra clearance.

## CLOSED FACE ASSEMBLY

TBM Series II: 600 - 660

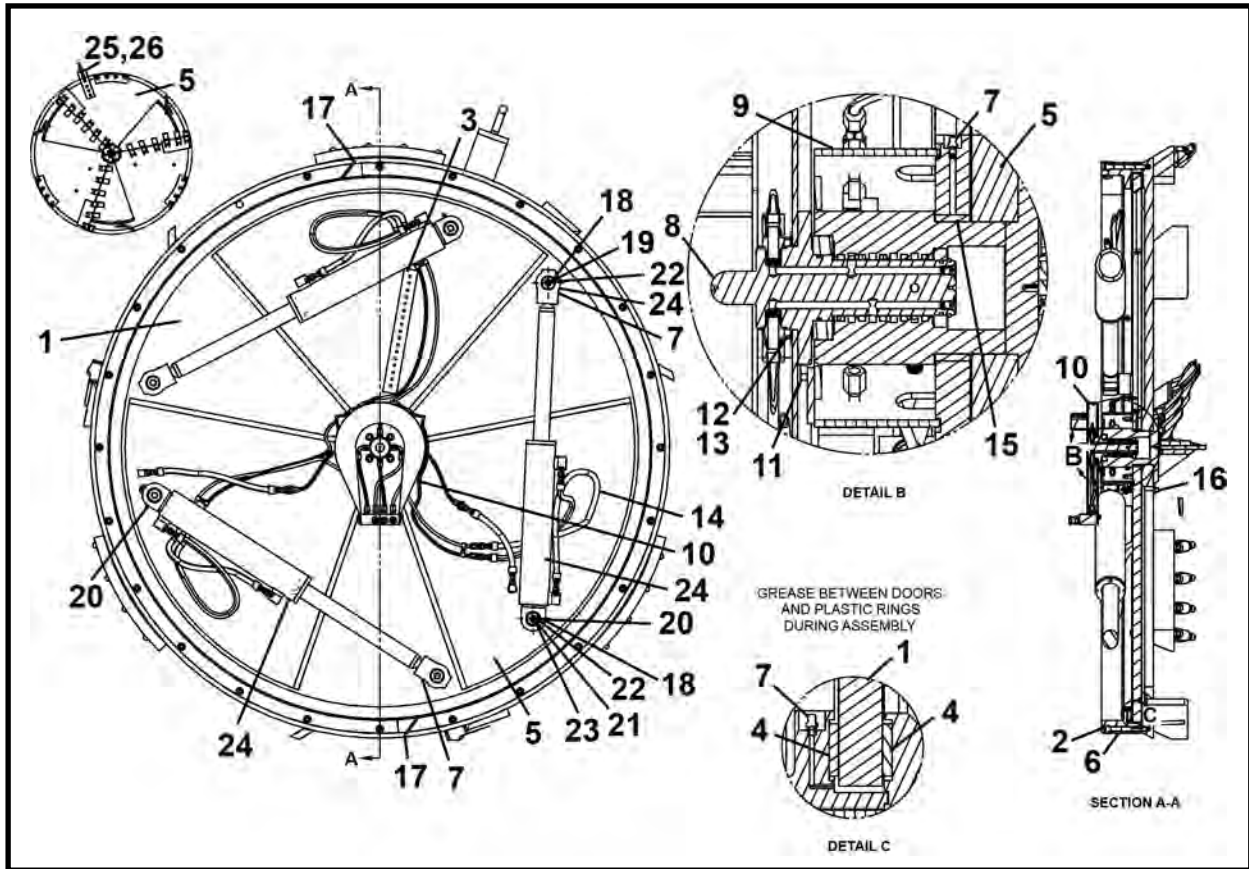


ITEM	QTY	600-SII PART NO.	660-SII PART NO.	DESCRIPTION
0	1	F25965F	F28765F	CLOSED FACE ASSEMBLY
1	1	025966P	028766P	DOOR, Rotary
2	24	P0031-10-022	P0031-10-022	SCREW, Socket Head Cap 5/8 UNC x 5.5
3	1	014215P00	014215P00	BAR, Target
4*	1	025967A	028767A	FACE, Front
5	16/10	016620P	023994P	RING, Plastic Wear
6	1	025961P	028769P	RING, Rear
7	8	P0063-001	P0063-001	FITTING, Grease - Straight
8*	1	028671A	028671A	ROTARY HUB ASSEMBLY
9	1	028676A	028676A	COVER, Swivel
10	1	018670A00	018670A00	GUARD, Conveyor & Rotary (Includes 10a-10b)
10a	4	P0001-05-004	P0001-05-004	BOLT, Hex 5/16 UNC x 1
10b	4	P0045-005	P0045-005	WASHER, Lock 5/16
11**	1	027561A	027561A	HYDRAULIC ASSEMBLY
12	4	P0001-06-002	P0001-06-002	BOLT, Hex 3/8 UNC x .5
13	4	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
14	4	P0001-06-003	P0001-06-003	BOLT, Hex 3/8 UNC x .75
15	1	P0066-125	P0066-125	BUSHING
16	4	P0416-003	P0416-003	PLUG, Square Head 1/2
17	2	027558P	027558P	SCRAPER, Outside
18	4	018718P00	018718P00	WASHER
19	2	028678P	028678P	PIN, Cylinder Mounting
20	4	P0063-003	P0063-003	FITTING, Grease - 90 Degree
21	4	P0001-08-005	P0001-08-005	BOLT, Hex 1/2 UNC x 1.25
22***	2	015050A	015050A	CYLINDER ASSEMBLY
23	2	028678P	028678P	PIN, Cylinder Mounting
24	3	P0031-12-008	P0031-12-008	SCREW, Cap 3/4 x 2
25	1	027509A	027509A	LIFT, Closed Face

\* Refer to this section for parts information. \*\* Refer to section 6, Hydraulics for parts information.

\*\*\* Refer to section 10, Cylinders for parts information. ^ Not Shown

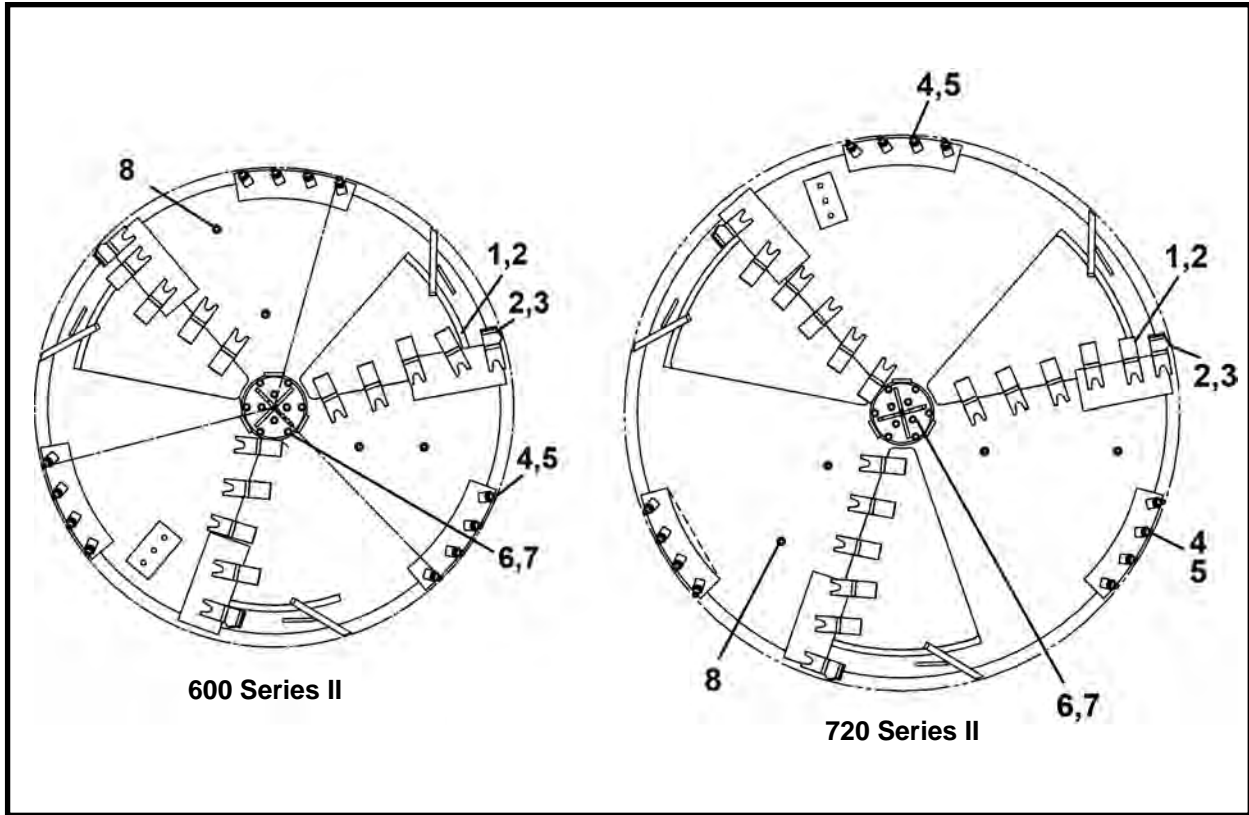
**CLOSED FACE ASSEMBLY, F31070F**  
**TBM Series II: 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F31070F	CLOSED FACE ASSEMBLY
1	1	028866P	DOOR, Rotary
2	24	P0031-10-022	SCREW, Socket Head Cap 5/8 UNC x 5.5
3	1	014215P00	BAR, Target
4	10	020980P	RING, Plastic Wear
5*	1	031067A	FACE, Front
6	1	028861P	RING, Rear
7	9	P0063-001	FITTING, Grease - Straight
8*	1	028671A	ROTARY HUB ASSEMBLY
9	1	028676A	COVER, Swivel
10	1	018670A00	GUARD, Conveyor & Rotary (Includes 10a-10b)
10a	4	P0001-05-004	BOLT, Hex 5/16 UNC x 1
10b	4	P0045-005	WASHER, Lock 5/16
11	4	P0001-06-002	BOLT, Hex 3/8 UNC x .5
12	4	P0040-006	WASHER, Hardened Flat 3/8
13	4	P0001-06-003	BOLT, Hex 3/8 UNC x .75
14**	1	020985A	HYDRAULIC ASSEMBLY
15	1	P0066-125	BUSHING
16	4	P0416-003	PLUG, Square Head 1/2
17	2	027558P	SCRAPER, Outside
18	6	018718P00	WASHER
19	3	028678P	PIN, Cylinder Mounting
20	3	P0063-003	FITTING, Grease - 90 Degree
21	6	P0001-08-006	BOLT, Hex 1/2 UNC x 1.5
22	6	P0040-008	WASHER, Hardened Flat 1/2
23	2	028681P	PIN, Cylinder Mounting
24***	2	015080A	CYLINDER ASSEMBLY
25	1	027509A	LIFT, Closed Face
26	3	P0031-12-008	SCREW, Socket Head Cap 3/4 x 2

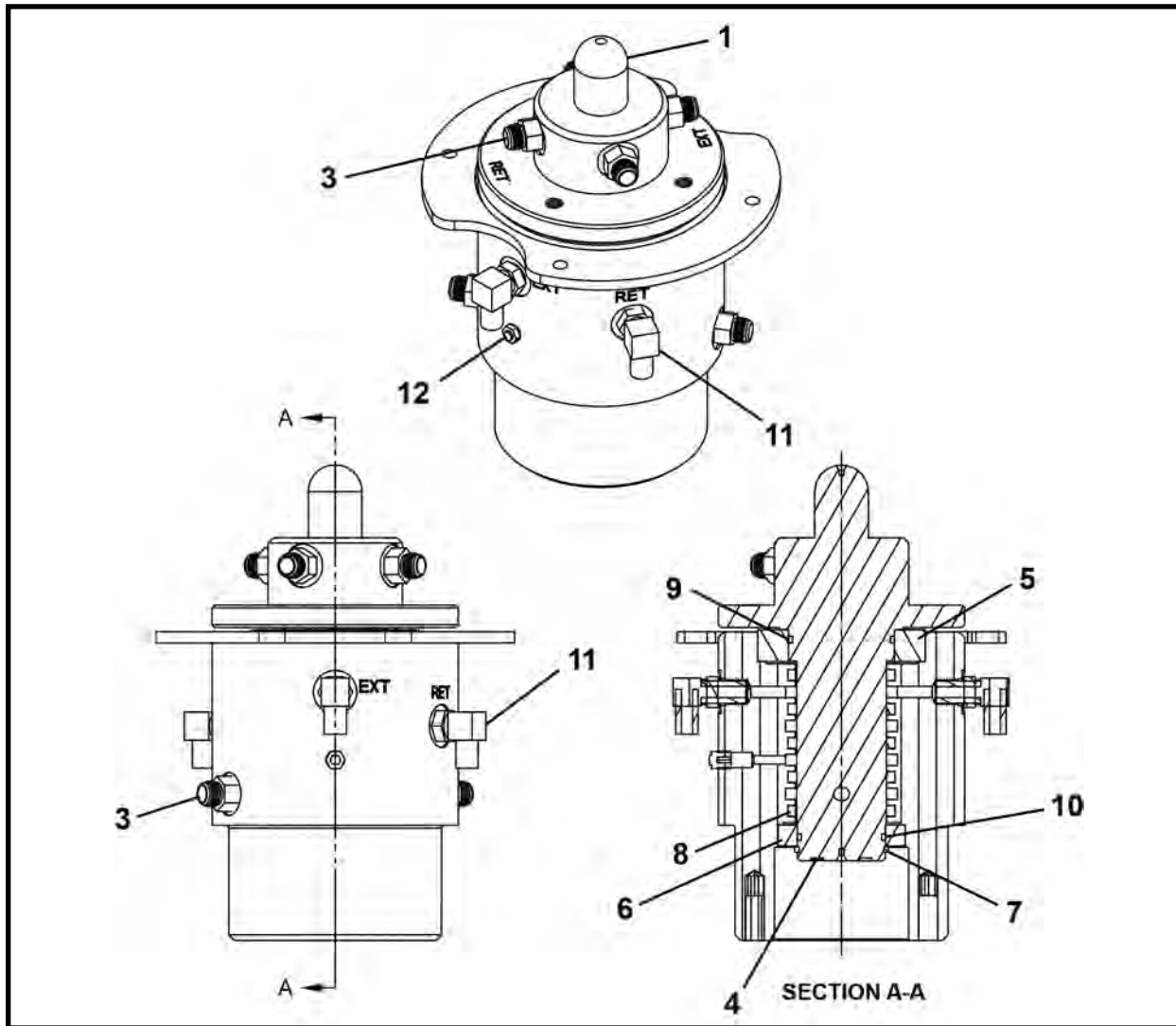
\* Refer to this section for parts information. \*\* Refer to section 6, Hydraulics for parts information.  
 \*\*\* Refer to section 10, Cylinders for parts information.

**FRONT FACE ASSEMBLY**  
TBM Series II: 600 - 660 - 720



ITEM	QTY	600-SII PART NO.	660-SII PART NO.	720-SII PART NO.	DESCRIPTION
0	1	025967A	028767A	031067A	FRONT FACE ASSEMBLY
1	12/15/15	P0050-026	P0050-026	P0050-026	TEETH, Cutter
2	15/18/18	P0051-011	P0051-011	P0051-011	POCKET, Tooth
3	3	P0050-030	P0050-030	P0050-030	TEETH, Carbide Cutter Bar
4	12	P0050-011	P0050-011	P0050-011	CUTTER BIT
5	12	P0051-004	P0051-004	P0051-004	HOLDER, Cutter Bit
6	10	P0001-08-008	P0001-08-008	P0001-08-008	BOLT, Hex 1/2 UNC x 2
7	10	P0040-008	P0040-008	P0040-008	WASHER, Hardened Flat 1/2
8	4	P0400-003	P0400-003	P0400-003	COUPLING, Pipe

**ROTARY HUB ASSEMBLY, 028671A**  
**TBM Series II: 600 - 660 - 720**

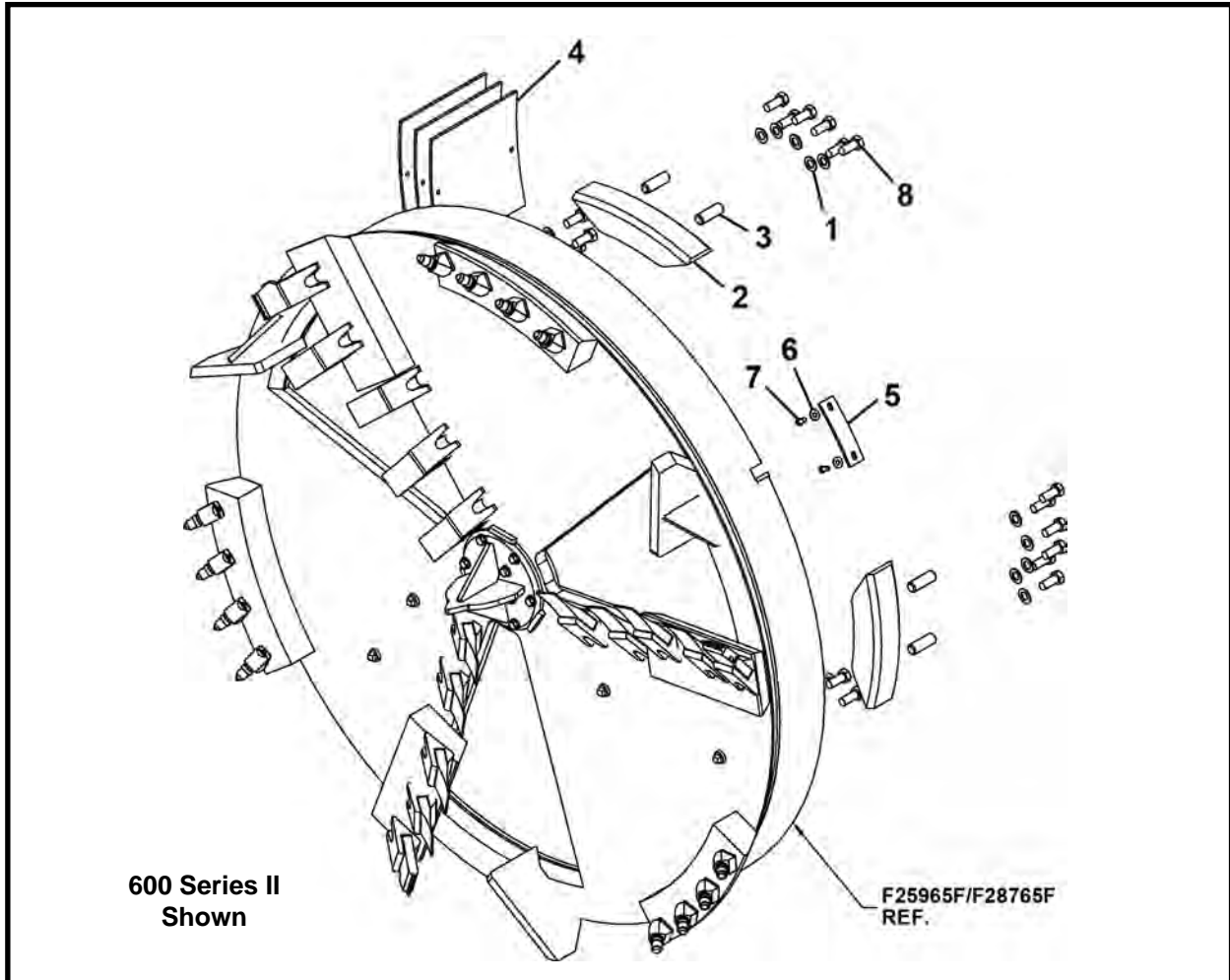


ITEM	QTY	PART NO.	DESCRIPTION
0	1	028671A	ROTARY HUB ASSEMBLY
1	1	028672P	SHAFT, Swivel
2	1	028673A	HUB, Swivel
3	6	P0300-041	FITTING, 06MJ-06MB
4	4	P0300-224	FITTING, 02MB-HHP
5	1	P0065-106	BEARING
6	1	P0065-013	BEARING
7	1	P0077-029	SNAP RING
8	5	P0080-019	SEAL, Quad
9	1	P0085-139	ORING
10	1	P0085-132	ORING
11	4	P0300-042	FITTING, 06MJ-06MB90
12	1	P0063-012	FITTING, Grease

NOTE: When replacing parts:

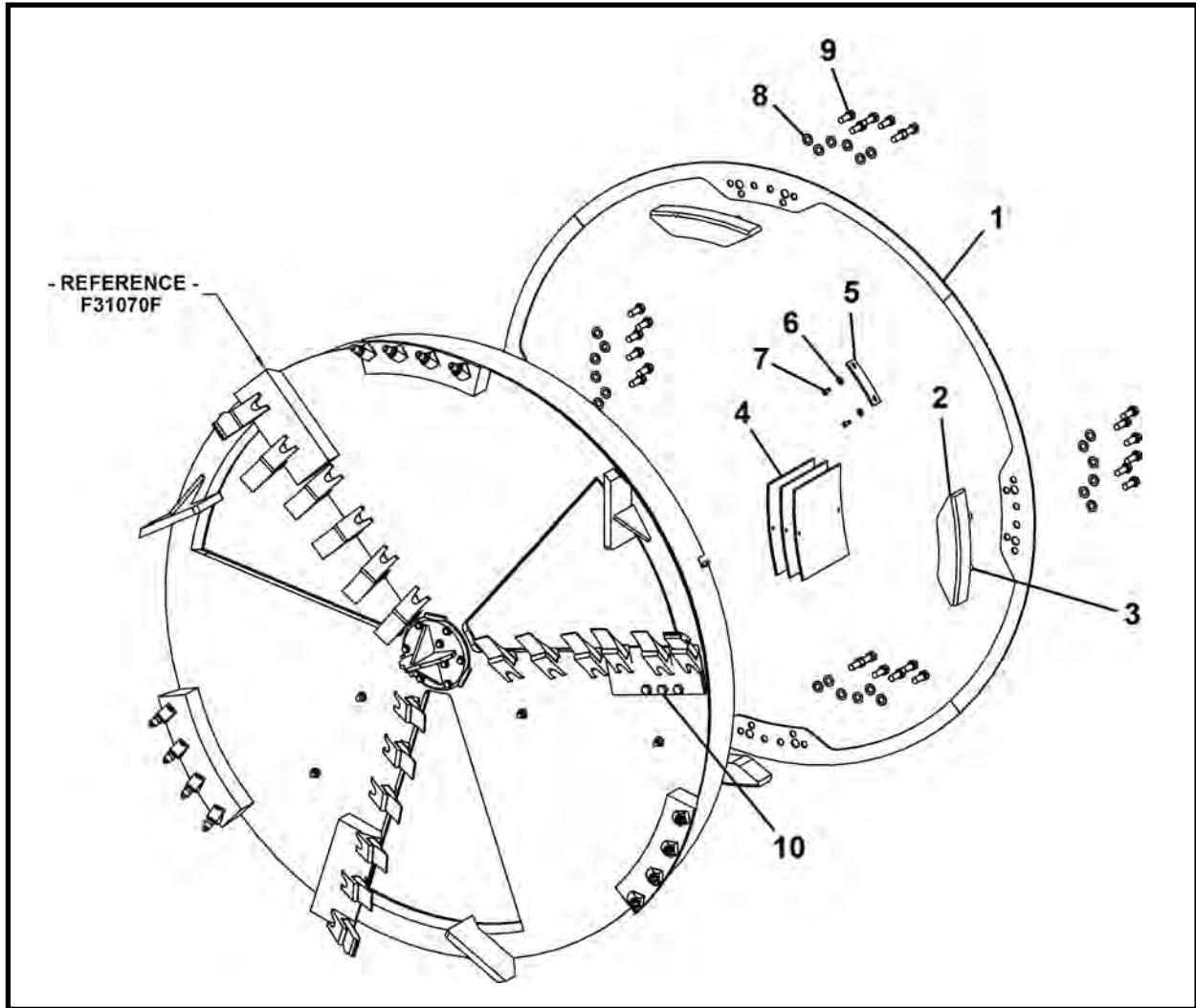
1. Pack bearings with grease before pressing into item 2.
2. Lubricate seals and shaft before assembly in item 2.
3. After shaft is in place, slide item 10 on shaft.
4. Press item 6 into housing after shaft is in place.
5. Pressure test all ports of hub to 3,000 psi.

**CLOSED FACE MOUNT ASSEMBLY TO SERIES II TBM**  
**TBM Series II: 600 - 660**



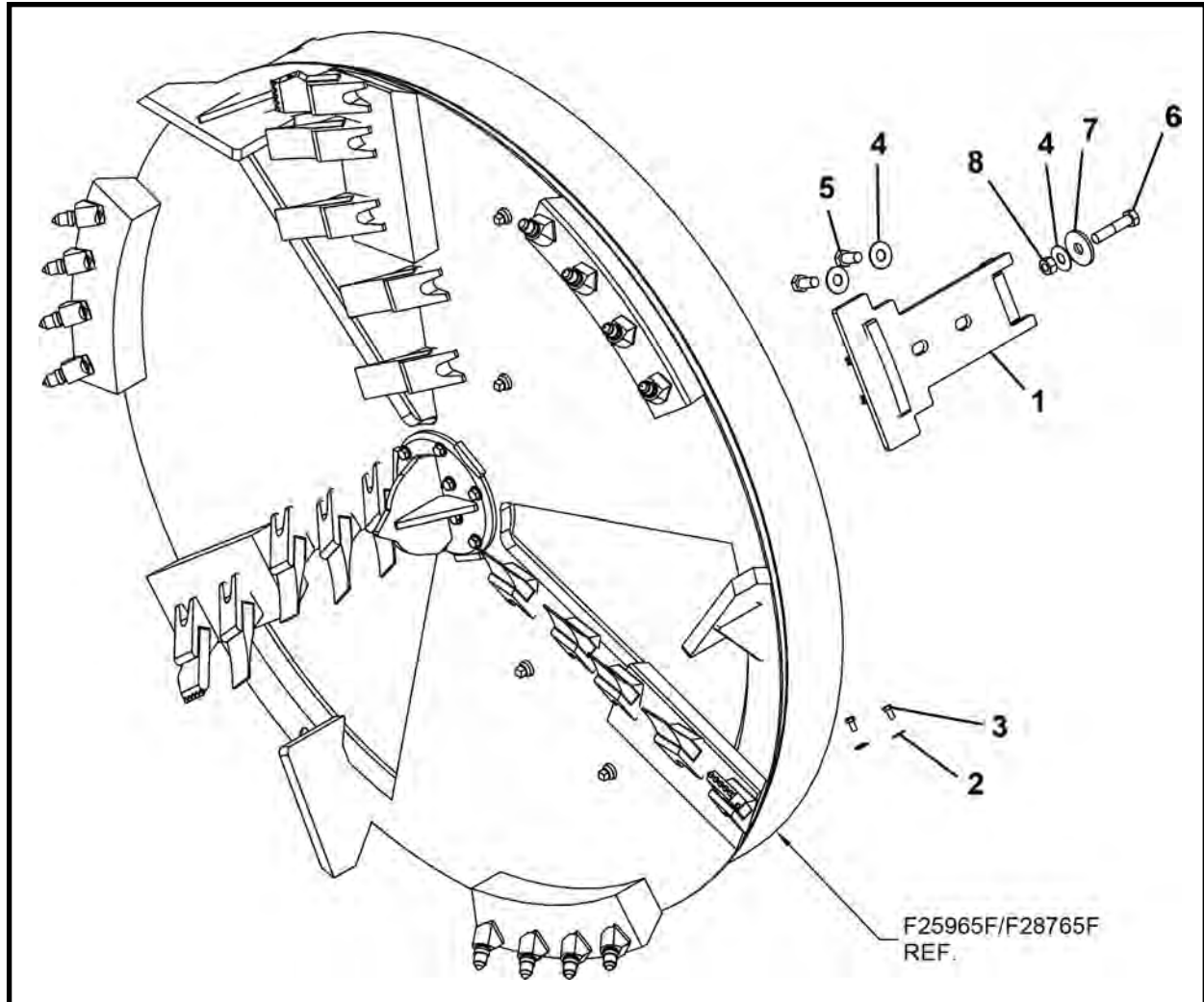
ITEM	QTY	600-SII PART NO.	660-SII PART NO.	DESCRIPTION
0	1	025998A	028798A	CLOSED FACE MOUNT ASSEMBLY
1	24	P0040-012	P0040-012	WASHER, Hardened Flat 3/4
2	4	024908P	028779P	BLOCK
3	8	024907P	024907P	PIN
4	3	024444P	024444P	COVER, Dirt Scoop
5	2	024445P	024445P	COVER, Closed Face Scraper
6	4	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
7	4	P0001-06-003	P0001-06-003	BOLT, Hex 3/8 UNC x .75
8	24	P0001-12-007	P0001-12-007	BOLT, Hex 3/4 UNC x 1.75

**CLOSED FACE MOUNT ASSEMBLY TO SERIES II TBM, 028898A**  
**TBM Series II: 720**



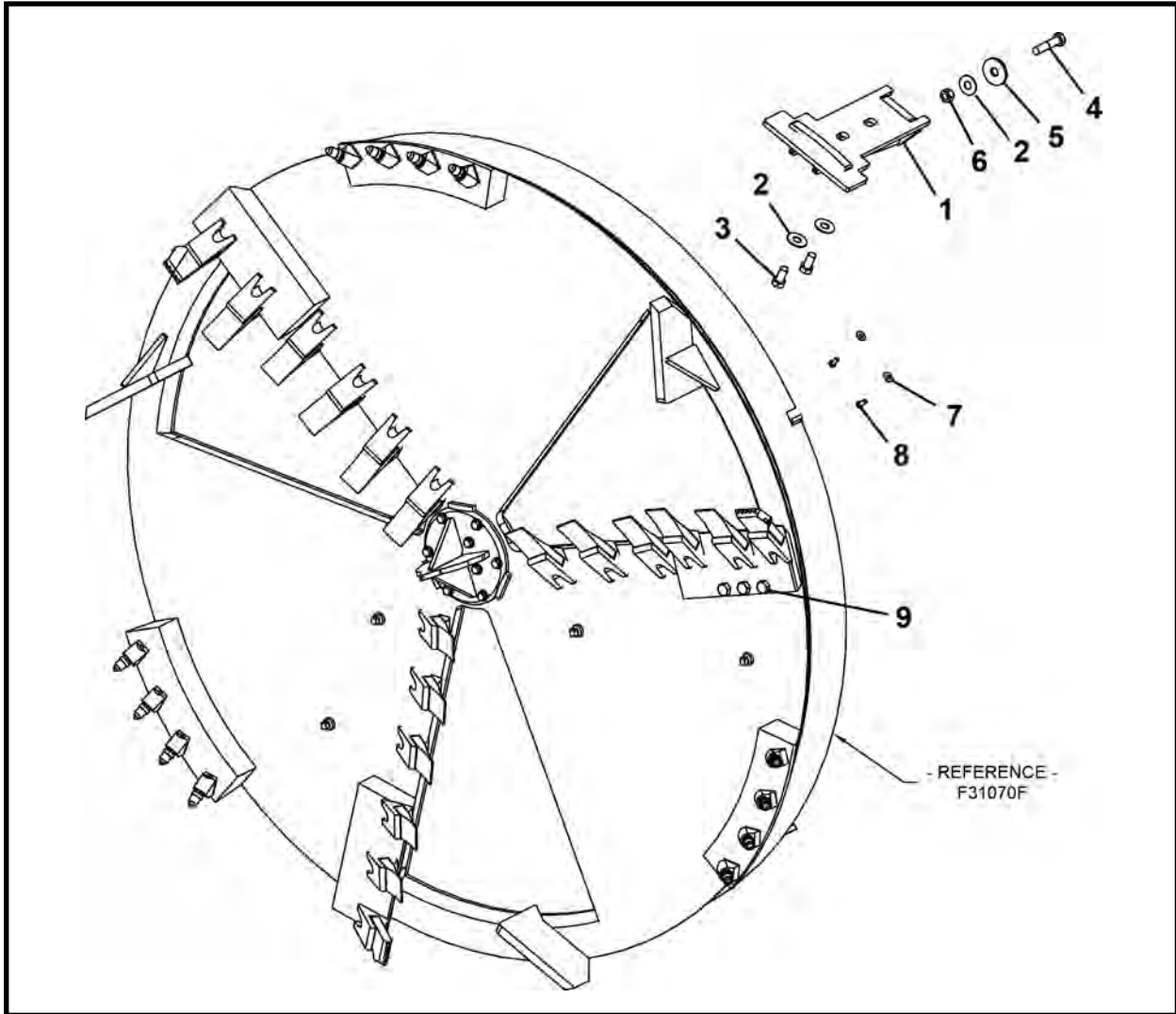
ITEM	QTY	PART NO.	DESCRIPTION
0	1	028898A	CLOSED FACE MOUNT ASSEMBLY
1	4	028897P	SPACER
2	4	028842P	BLOCK
3	8	024907P	PIN
4	3	024444P	COVER, Dirt Scoop
5	2	024445P	COVER, Closed Face Scraper
6	4	P0040-006	WASHER Hardened Flat 3/8
7	4	P0001-06-003	BOLT, Hex 3/8 UNC x .75
8	24	P0040-012	WASHER, Hardened Flat 3/4
9	24	P0001-12-008	BOLT, Hex 3/4 UNC x 2
10	3	P0001-12-005	BOLT, Hex 3/4 UNC x 1.25

**CLOSED FACE MOUNT ASSEMBLY TO SERIES I TBM**  
**TBM Series II: 600 - 660**



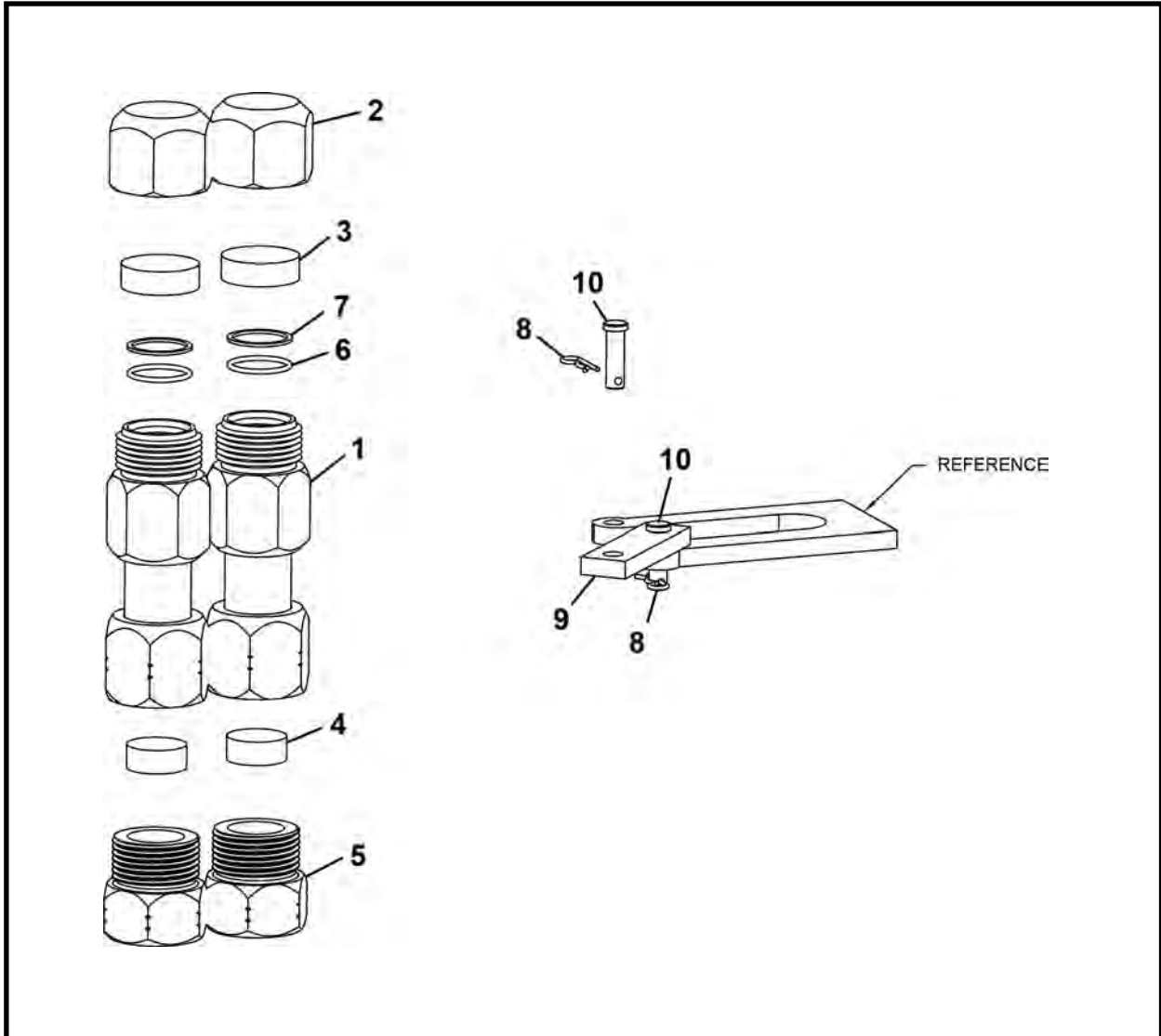
ITEM	QTY	600-SII PART NO.	660-SII PART NO.	DESCRIPTION
0	1	025999A	028799A	CLOSED FACE MOUNT ASSEMBLY To Ser. I
1	3	024904A	024904A	MOUNT, Closed Face
2	4	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
3	4	P0001-06-003	P0001-06-003	BOLT, Hex 3/8 UNC x .75
4	9	P0040-012	P0040-012	WASHER, Hardened Flat 3/4
5	6	P0001-12-006	P0001-12-006	BOLT, Hex 3/4 UNC x 1.5
6	3	P0001-12-014	P0001-12-014	BOLT, Hex 3/4 UNC x 3.5
7	3	004124P01	004124P01	WASHER
8	3	P0003-12-000	P0003-12-000	NUT, Hex 3/4 UNC

**CLOSED FACE MOUNT ASSEMBLY TO SERIES I TBM, 028899A**  
**TBM Series II: 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	028899A	CLOSED FACE MOUNT ASSEMBLY To Ser. I
1	3	024904A	MOUNT, Closed Face
2	9	P0040-012	WASHER, Hardened Flat 3/4
3	6	P0001-12-006	BOLT, Hex 3/4 UNC x 1.5
4	3	P0001-12-014	BOLT, Hex 3/4 UNC x 3.5
5	3	004124P01	WASHER
6	3	P0003-12-000	NUT, Hex 3/4 UNC
7	4	P0040-006	WASHER, Hardened Flat 3/8
8	4	P0001-06-003	BOLT, Hex 3/8 UNC x .75
9	3	P0001-12-005	BOLT, Hex 3/4 UNC x 1.25

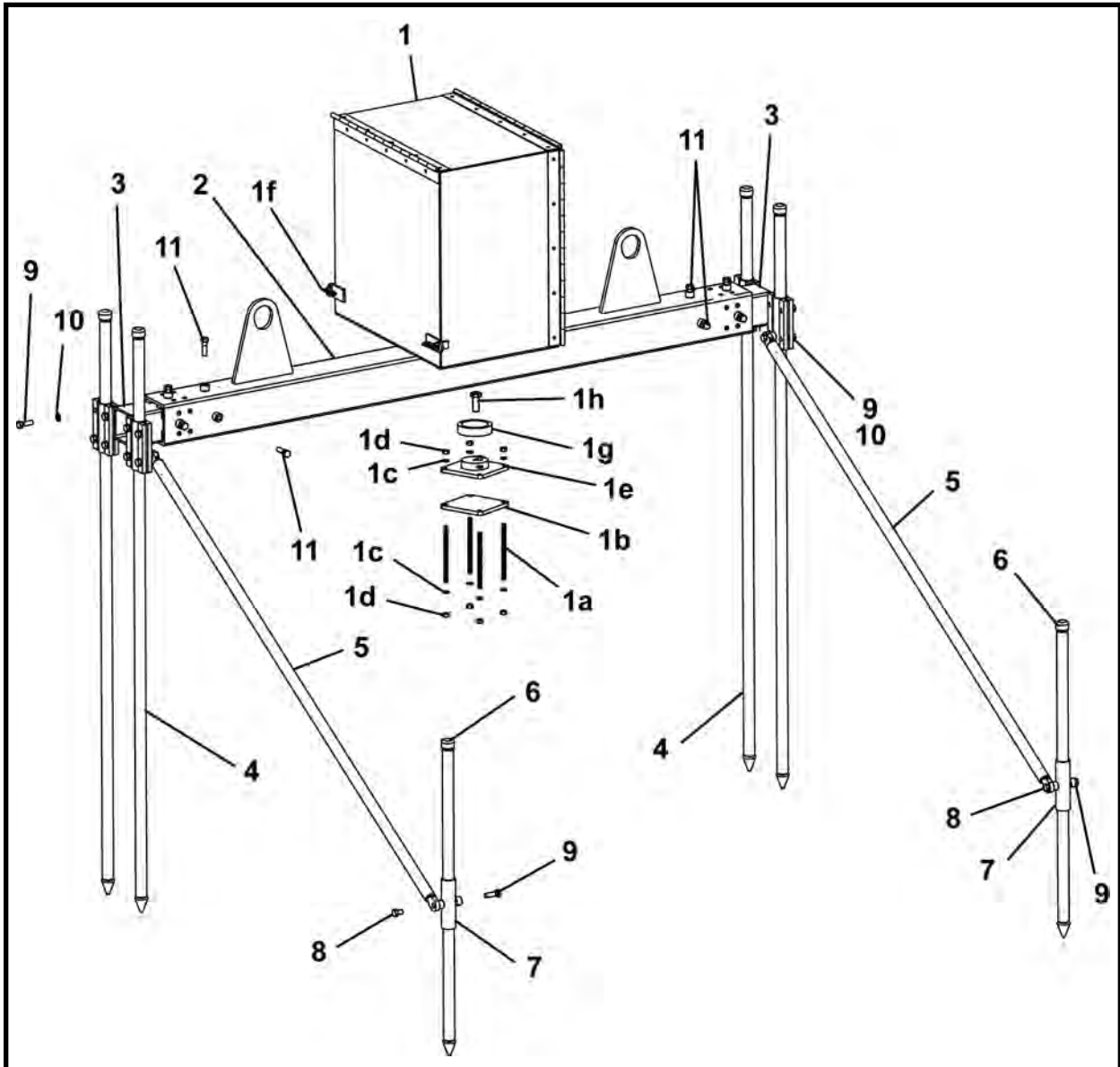
**KIT, LOW PSI TO SERIES II ADAPTER, 027698A**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027698A	KIT, Adapter, LP to Series II
1	2	027694A	FITTING, Adapter, Low Pressure To TBM Series II
2	2	007002P02	CAP, Coupler 1-1/4
3	2	007086P00	PLUG, Rubber 1/2
4	2	007087P00	PLUG, Rubber 1/2
5	2	027672P	PLUG, Storage, TBM High Pressure
6	2	P0085-123	ORING
7	2	P0084-123	RING, Back-Up
8	2	P0090-001	CLIP, Hitch Pin
9	1	027696P	RETAINER
10	2	P0024-006	PIN, Clevis 3/8 x 1.25

## **NOTES**

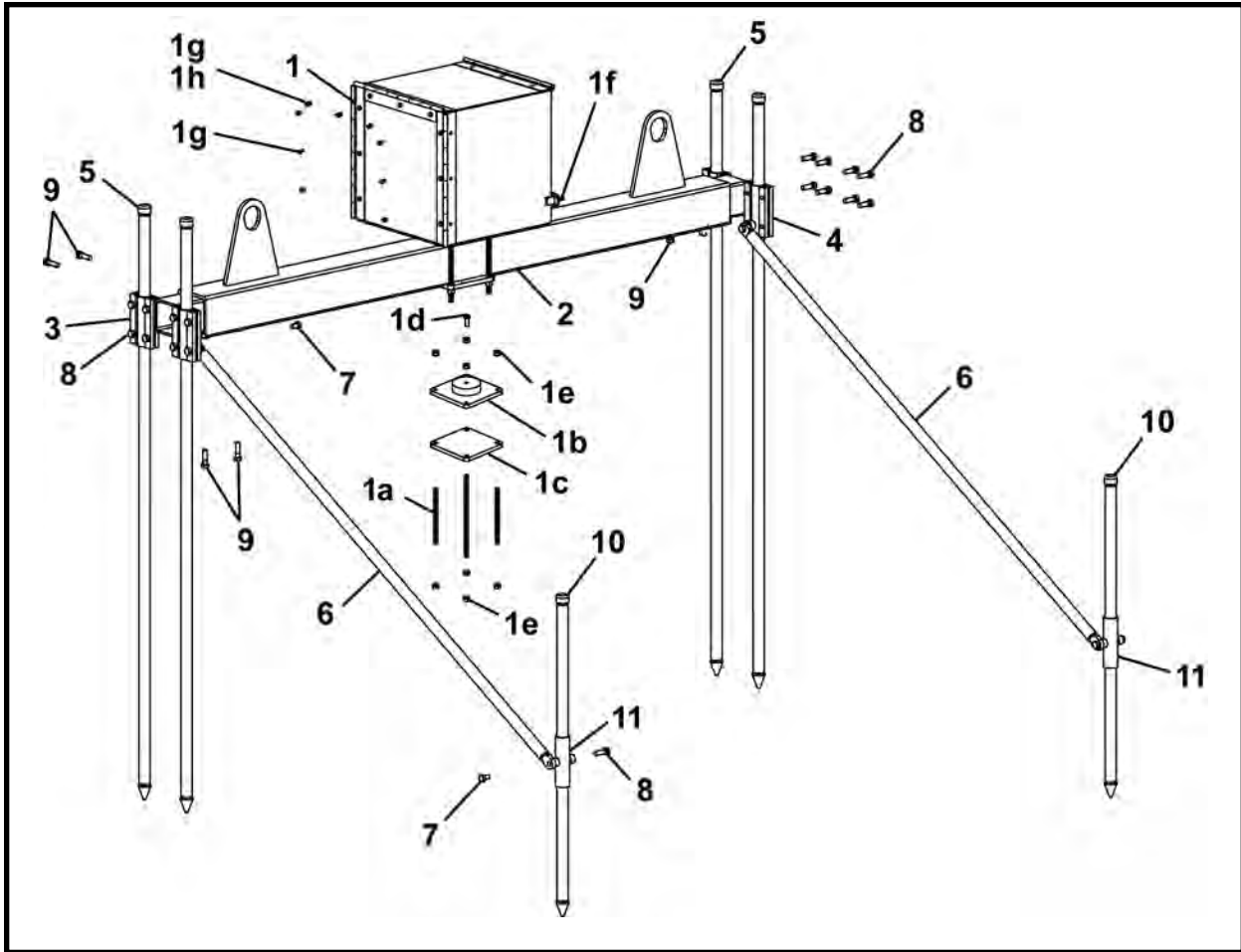
**LASER LIGHT STAND, F05866F00**  
Use With 5000 Pump Unit



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F05866F00	LASER LIGHT STAND
1	1	006068A01	LASER BOX ASSEMBLY ( Includes items 1a - 1h)
1a	4	P0023-500A-008	ROD, Threaded
1b	1	006051P00	PLATE, Laser Box
1c	8	P0045-008	WASHER, Lock 1/2
1d	8	P0003-08-000	NUT, 1/2
1e	1	006050A00	BASE, Swivel
1f	2	P0090-004	PIN, Hitch
1g	1	006055P01	BUSHING
1h*	1	006069P00	BOLT, Pivot
2	1	006047A00	TUBE
3	2	006034A00	TUBE, Sliding
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, Hex 1/2 UNC x .75
9	26	P0001-08-005	BOLT, Hex 1/2 UNC x 1.25
10	24	P0045-008	WASHER, Lock 1/2
11	8	P0001-08-007	BOLT, Hex 1/2 UNC x 1.75

\* Adjust pivot bolt and use blue thread lock to ensure bolt does not tighten or loosen while stand is adjusted.

**LASER LIGHT STAND, F21675F**  
 Use With All Pump Units (5000, 5000 Series II & 5200)



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F21675F	LASER LIGHT STAND
1	1	021681A	LASER BOX ASSEMBLY ( Includes items 1a - 1h)
1a	4	P0023-500A-008	ROD, Threaded
1b	1	006050A00	BASE. Swivel
1c	1	006051P00	PLATE, Laser Box
1d*	1	006069P00	BOLT, Pivot
1e	8	P0003-08-000	NUT, 1/2
1f	2	P0090-004	PIN, Hitch
1g	9	P0001-04-002	BOLT, Hex 1/4 UNC x .5
1h	3	P0003-04-000	NUT, 1/4
2	1	021682A	TUBE
3	1	021683A	TUBE, Slide - Right
4	1	021684A	TUBE, Slide - Left
5	4	006039A00	STAKE, Long
6	2	006044A00	TUBE, Support
7	4	P0001-08-003	BOLT, Hex 1/2 UNC x .75
8	18	P0001-08-006	BOLT, Hex 1/2 UNC x 1.5
9	8	P0001-08-007	BOLT, Hex 1/2 UNC x 1.75
10	2	006040A00	STAKE, Short
11	2	006025A00	TUBE, Swivel

\* Adjust pivot bolt and use blue thread lock to ensure bolt does not tighten or loosen while stand is adjusted.

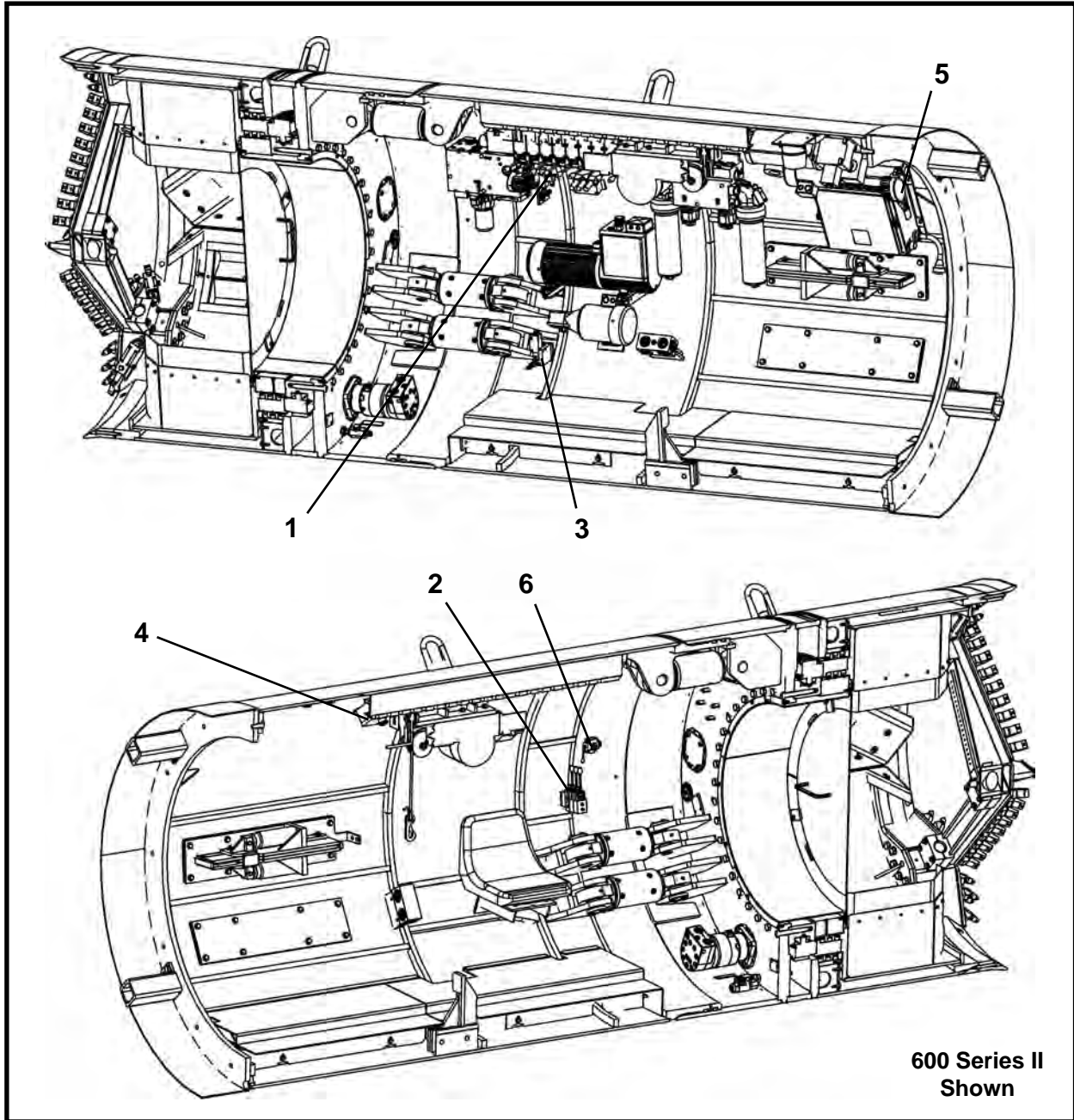
## **NOTES**



# Operator Controls

Operator Controls ..... 2

**OPERATOR CONTROLS**  
**TBM Series II: 600 - 660 - 720**



**600 Series II  
Shown**

ITEM	QTY	PART NO.	DESCRIPTION
1*	1	P0302-700	VALVE, TBM 9 Section Control
2*	1	P0302-709	VALVE, Three Section Control
3**	1	024590A	SWITCH, Conveyor Safety Stop
4**	1	019023A	E-STOP ASSEMBLY
5a	1	P0251-482	HANDLE, Main Breaker
5b	1	P0251-481	BREAKER
6	1	P0302-784	VALVE, 2 Speed Motor (Models equipped with 2 Speed Motors)

\* Refer to Section 7, Valves for parts information.

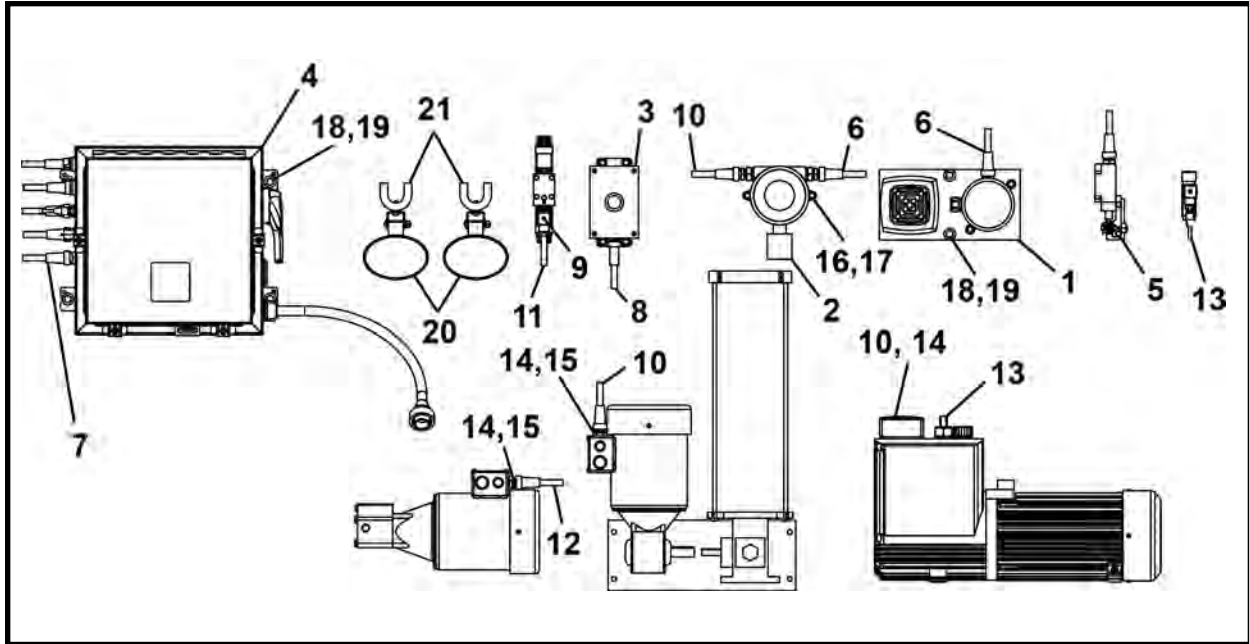
\*\* Refer to Section 5, Electrical for parts information.



## Electrical

Electrical System Assembly, 024650A .....	2
Electrical System Schematic, 024650A .....	3
Strobe - Horn Assembly, 024401A .....	4
Gas Detector Assembly GasMax II, 019049A .....	6
Gas Detector Schematic .....	7
Gas Challenge Kit, P0310-266 .....	8
Electrical Box E-Stop Assembly, 019023A .....	9
Electrical Box Assembly, 019050A .....	10
Electrical Panel Assembly, 019055A .....	11
Conveyor Safety Stop Switch Assembly, 024590A .....	12

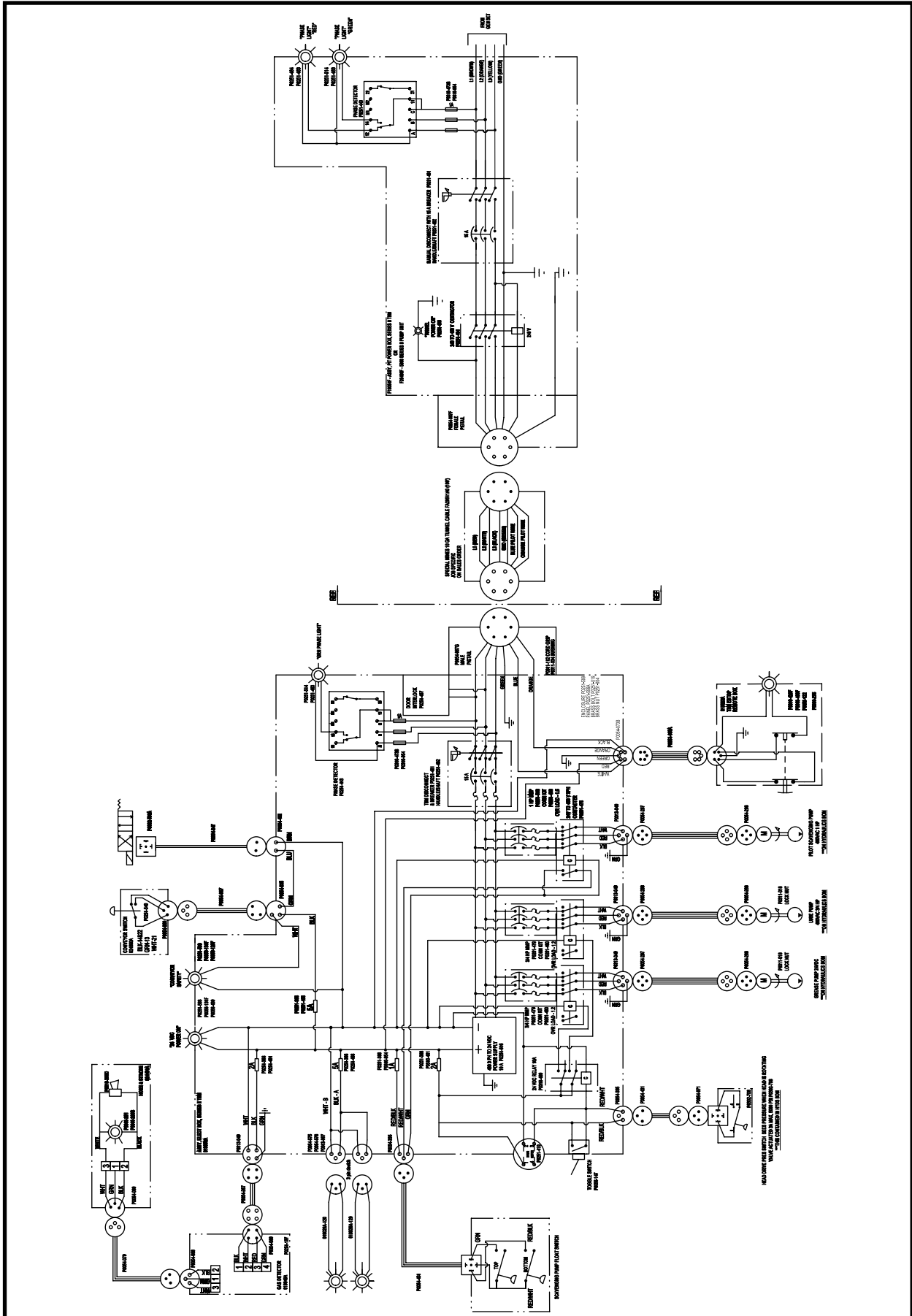
## ELECTRICAL SYSTEM ASSEMBLY, 024650A



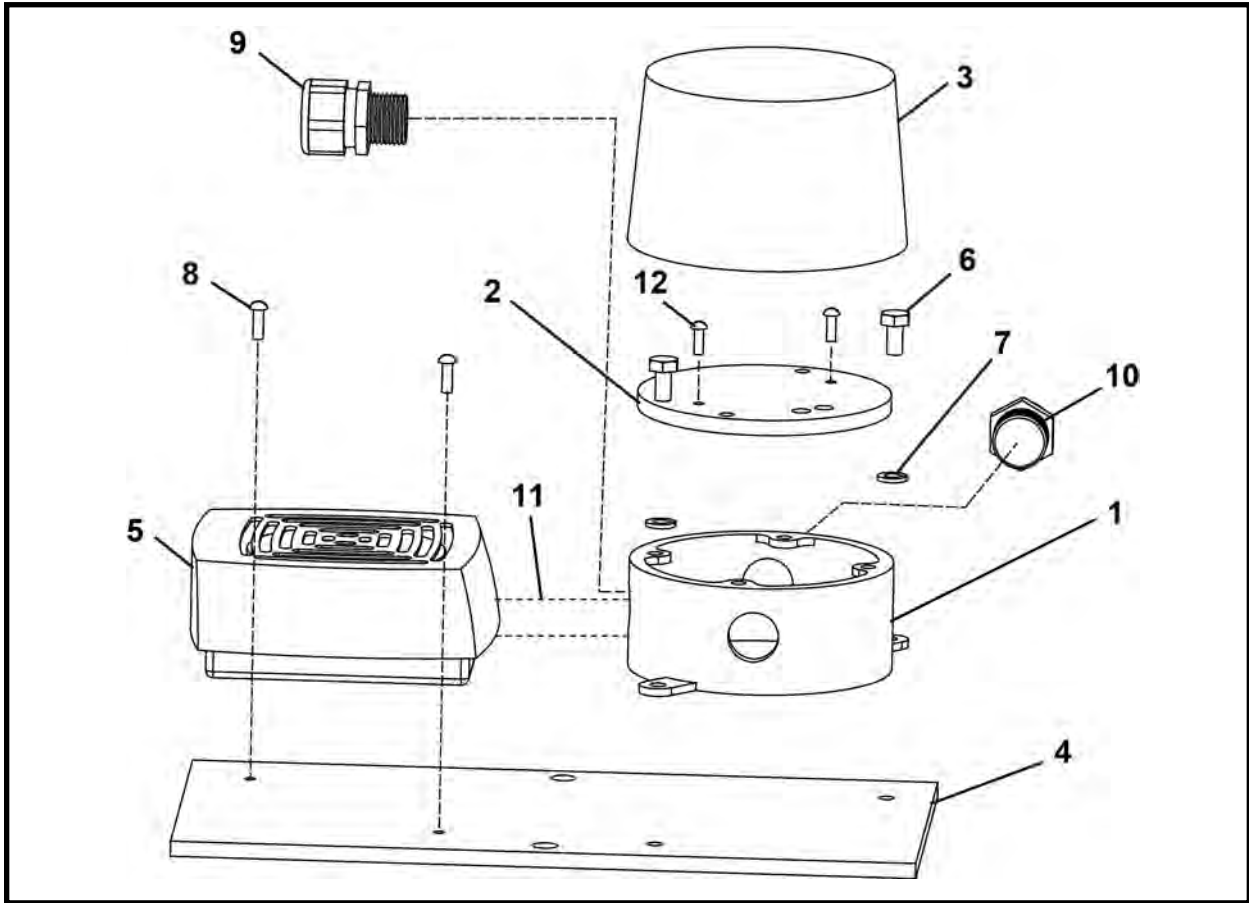
ITEM	QTY	PART NO.	DESCRIPTION
0	1	024650A	ELECTRICAL SYSTEM ASSEMBLY - Series II
1*	1	024401A	STROBE-HORN ASSEMBLY
2*	1	019049A	GAS DETECTOR ASSEMBLY - GasMax II
3*	1	019023A	ASSEMBLY, E-Stop Electrical Box
4*	1	019050A	ASSEMBLY, Electrical Box Series II
5*	1	024590A	SWITCH, Conveyor Safety Stop
6	1	P0054-106	CABLE
7	1	P0054-087	CABLE
8	1	P0054-105A	CABLE
9	1	P0302-508A	CONNECTOR, Electrical
10	3	P0054-287	CABLE
11	1	P0054-347	CABLE
12	1	P0054-288	CABLE
13	2	P0054-431	CABLE
14	3	P0054-286	RECEPTACLE
15	2	P0311-018	NUT, Lock 1/2
16	2	P0040-004	WASHER, Hardened Flat 1/4
17	2	P0001-04-003	BOLT, Hex 1/4 UNC x .75
18	6	P0040-006	WASHER, Hardened Flat 3/8
19	6	P0001-06-002	BOLT, Hex 3/8 UNC x .5
20	2	019026A-120	ASSEMBLY, CABLE-LIGHT
21	2	022156P	MAGNET, Light

\* Refer to this section for parts information.

# ELECTRICAL SYSTEM SCHEMATIC, 024650A



## STROBE - HORN ASSEMBLY, 024401A

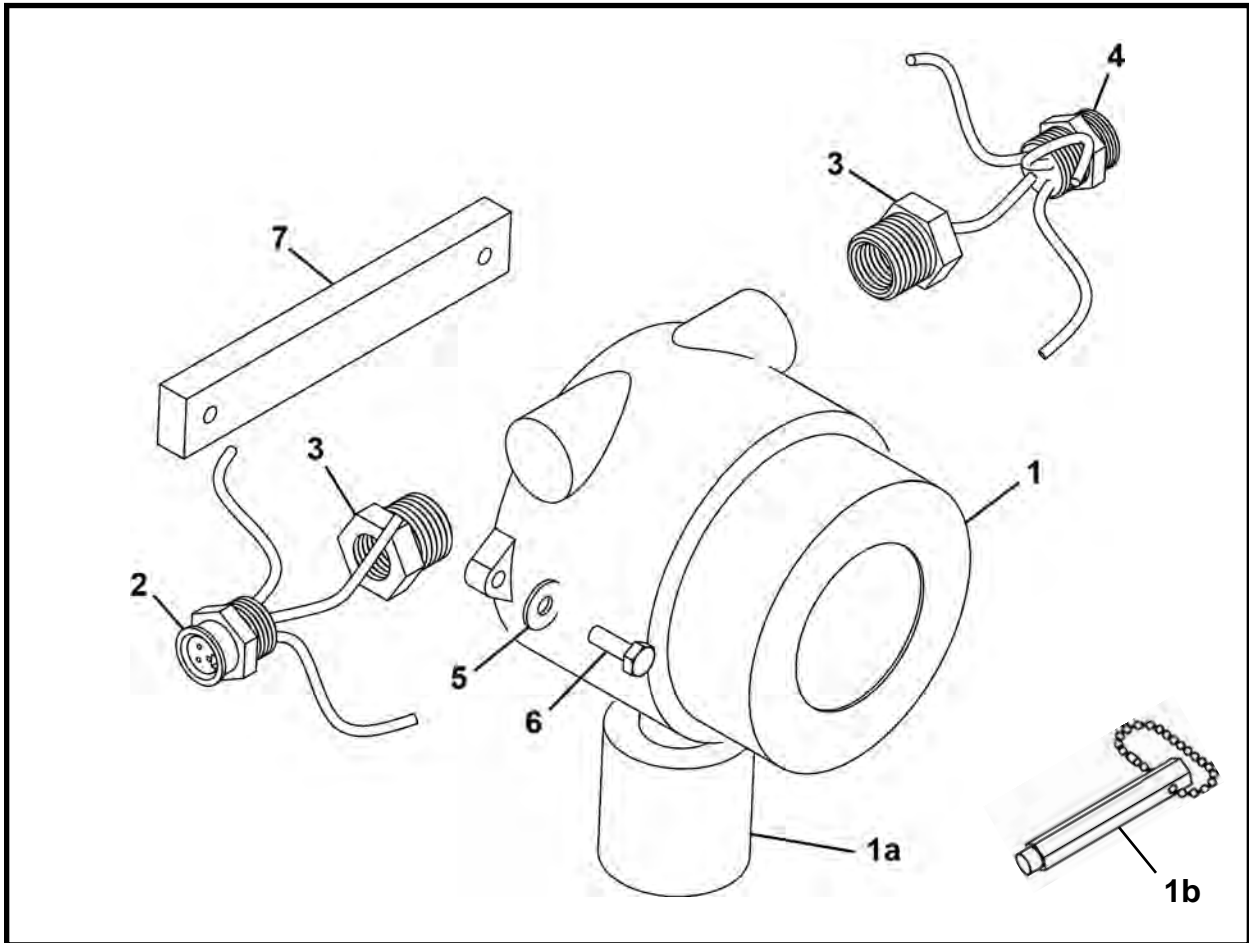


ITEM	QTY	PART NO.	DESCRIPTION
0	1	024401A	STROBE - HORN ASSEMBLY
1	1	P0310-251	HOLDER BOX
2	1	023534P00	COVER, Back
3	1	P0310-286B	STROBE LIGHT, Red 24VDC (Includes item 3a)
3a	1	P0310-286A	LENS
4	1	016405P	PLATE, Mounting
5	1	P0310-287D	HORN, Warning 24VDC
6	2	P0001-04-002	BOLT, Hex 1/4 UNC x .5
7	2	P0040-004	WASHER, Hardened Flat 1/4
8	2	P0017-08-323	SCREW, Machine 8-32 x .5
9	1	P0311-121	CONNECTOR, Strain Relief
10	1	P0054-069	RECEPTACLE, Mini
11	8 LI	P0054-018	CABLE
12	2	P0017-10-375	SCREW, Round Machine 10-24 x 3/8

LI - Linear Inch

**NOTES**

**GAS DETECTOR ASSEMBLY, 019049A**  
**GDS GasMax II**

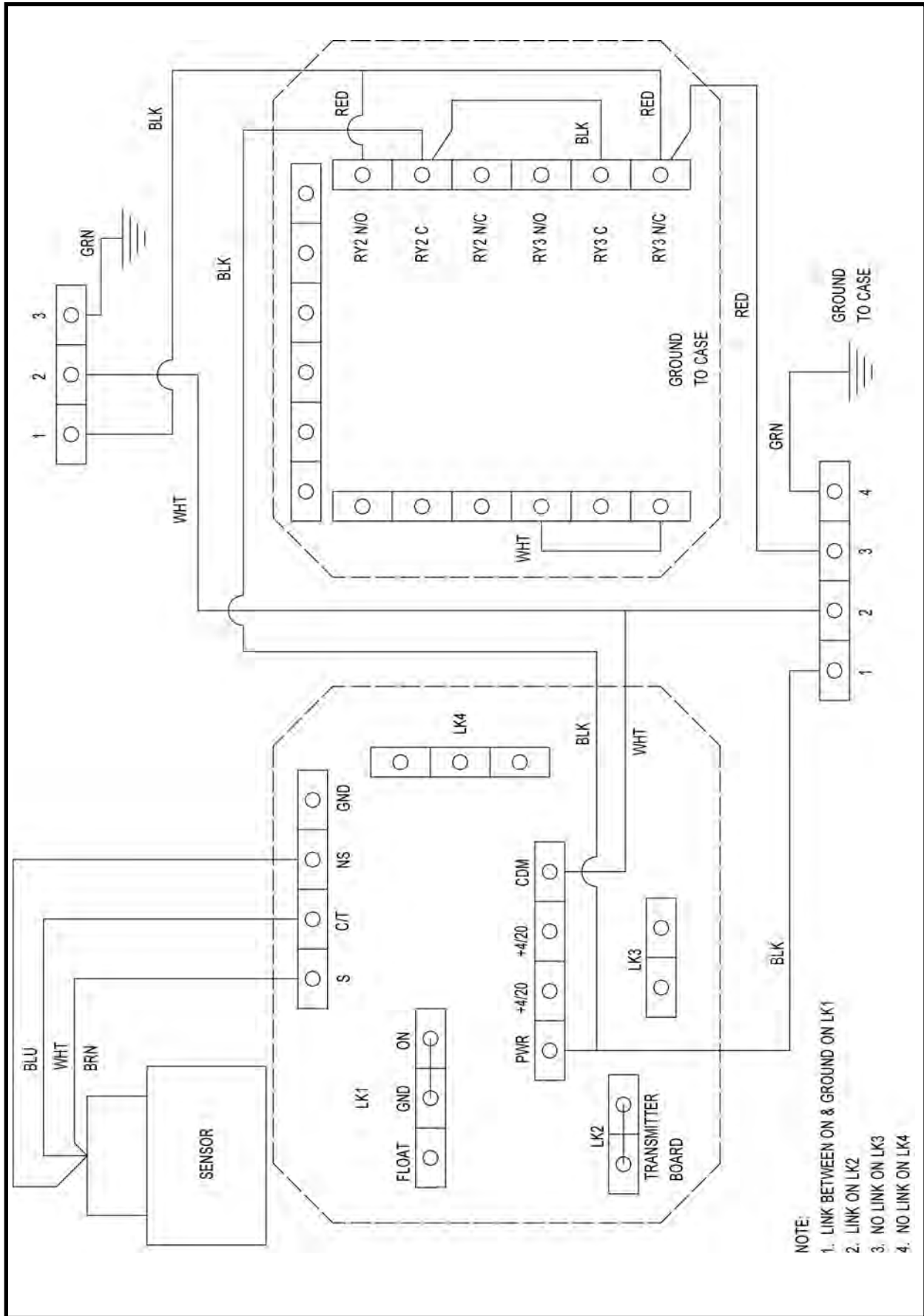


ITEM	QTY	PART NO.	DESCRIPTION
0	1	019049A	GAS DETECTOR ASSEMBLY - GasMax II
1	1	P0251-197	DETECTOR, GDS (Includes items 1a and 1b)
1a	1	P0251-197A	ELEMENT, Sensor
1b	1	P0310-283B	MAGNETIC WAND
2	1	P0054-068	RECEPTACLE, Mini Cable
3	2	P0300-012	FITTING, 12MP-08FPS
4	1	P0054-286	RECEPTACLE, 4 Pin Male
5	2	P0045-004	WASHER, Lock 1/4
6	2	P0001-04-003	BOLT, Hex 1/4 UNC x .75
7	1	016407P	BRACKET, Mounting

Note: Contact your Akkerman Aftermarket Support representative for proper set up and calibration of this gas detector assembly.

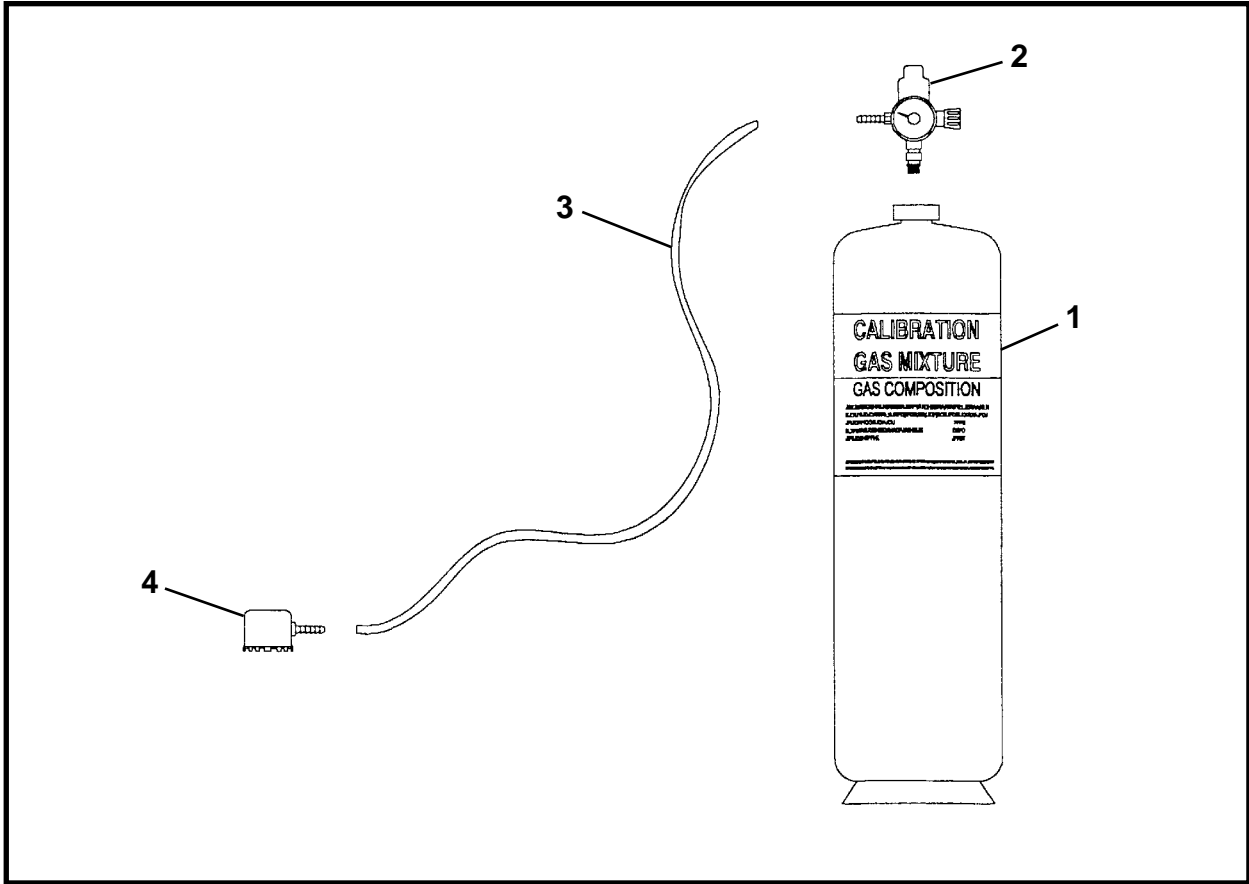
# GAS DETECTOR ASSEMBLY, 019049A

## GDS GasMax II



**NOTE:**  
 1. LINK BETWEEN ON & GROUND ON LK1  
 2. LINK ON LK2  
 3. NO LINK ON LK3  
 4. NO LINK ON LK4

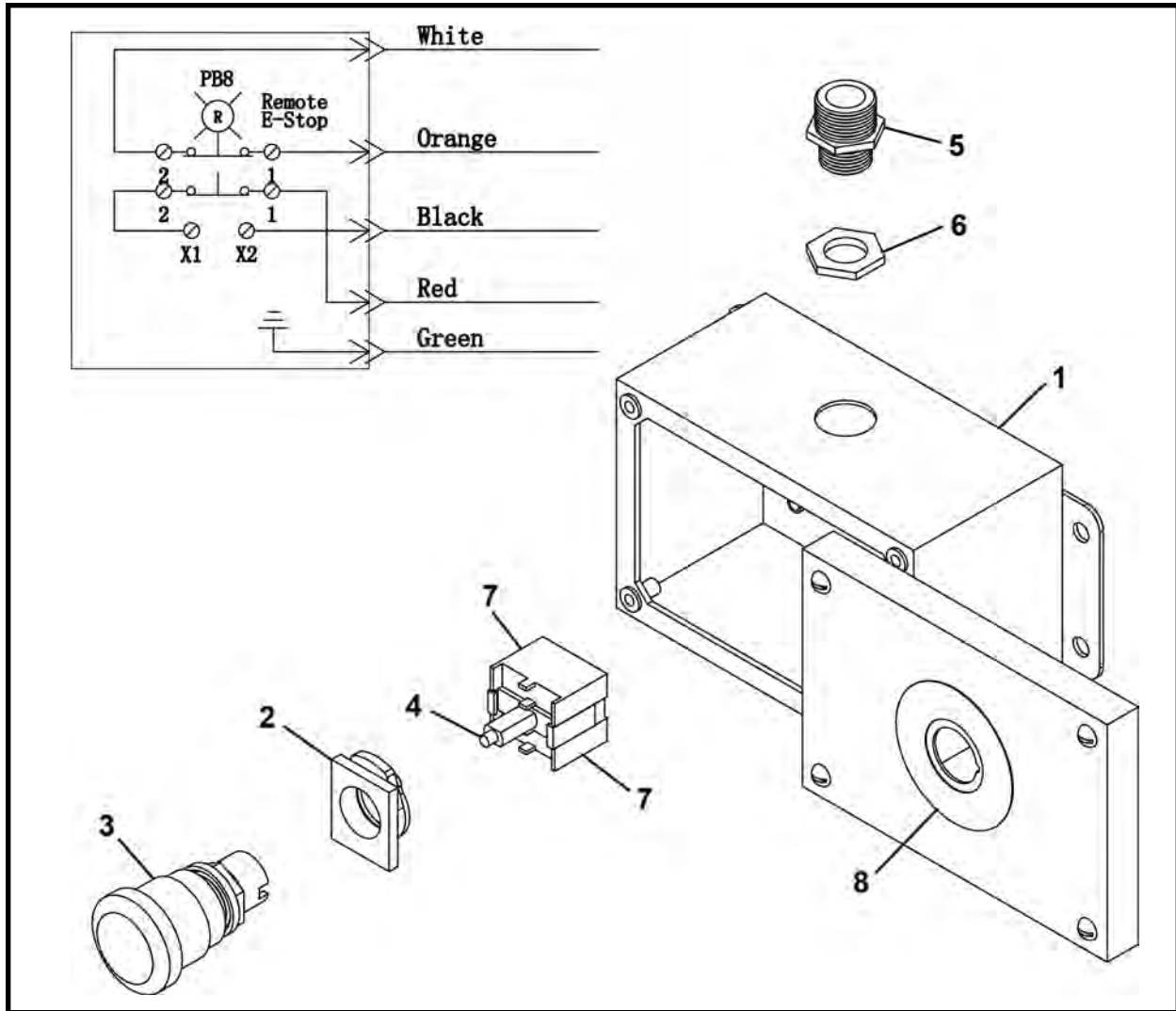
# GAS CHALLENGE KIT, P0310-266



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0310-266	GAS CHALLENGE KIT
1	2	P0310-266A	CYLINDER, 50% LEL Methane Gas Concentration
2	1	P0310-266C	REGULATOR VALVE & GAUGE
3	1	P0310-266D	TUBE, Plastic
4a	1	P0310-266B	CALIBRATION CUP, Sensor (Zellweger Gas Detector)
4b	1	016422A	CALIBRATION CUP, Sensor (GasMaxII) (Includes items 4b1-4b2)
4b1	1	016421P	CUP, Calibration (GasMaxII)
4b2	1	P0300-742	BARB, Hose 1/4
5*	1	-	PROTECTIVE CASE

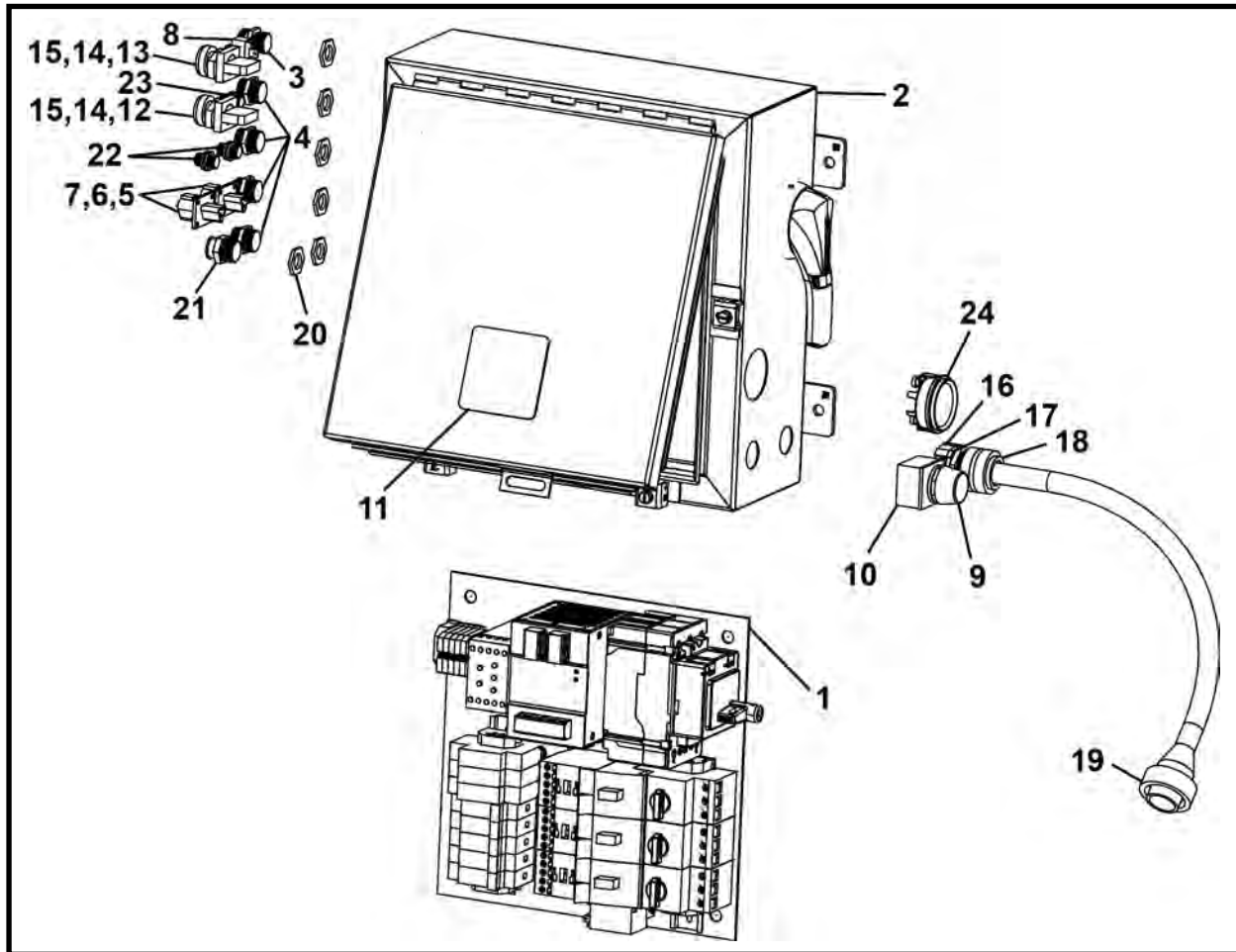
\* Not Shown

## ELECTRICAL BOX E-STOP ASSEMBLY, 019023A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	019023A	ELECTRICAL BOX E-STOP ASSEMBLY
1	1	019024P	BOX, Electrical
2	1	P0310-419F	LATCH, Mounting
3	1	P0310-420F	PUSHBUTTON, Illuminated
4	1	P0251-171	MODULE, LED
5	1	P0054-073A	RECEPTACLE
6	1	P0311-018	NUT, Lock 1/2
7	2	P0056-122F	BLOCK, Contact
8	1	P0310-474F	DECAL, Emergency Stop

## ELECTRICAL BOX ASSEMBLY, 019050A

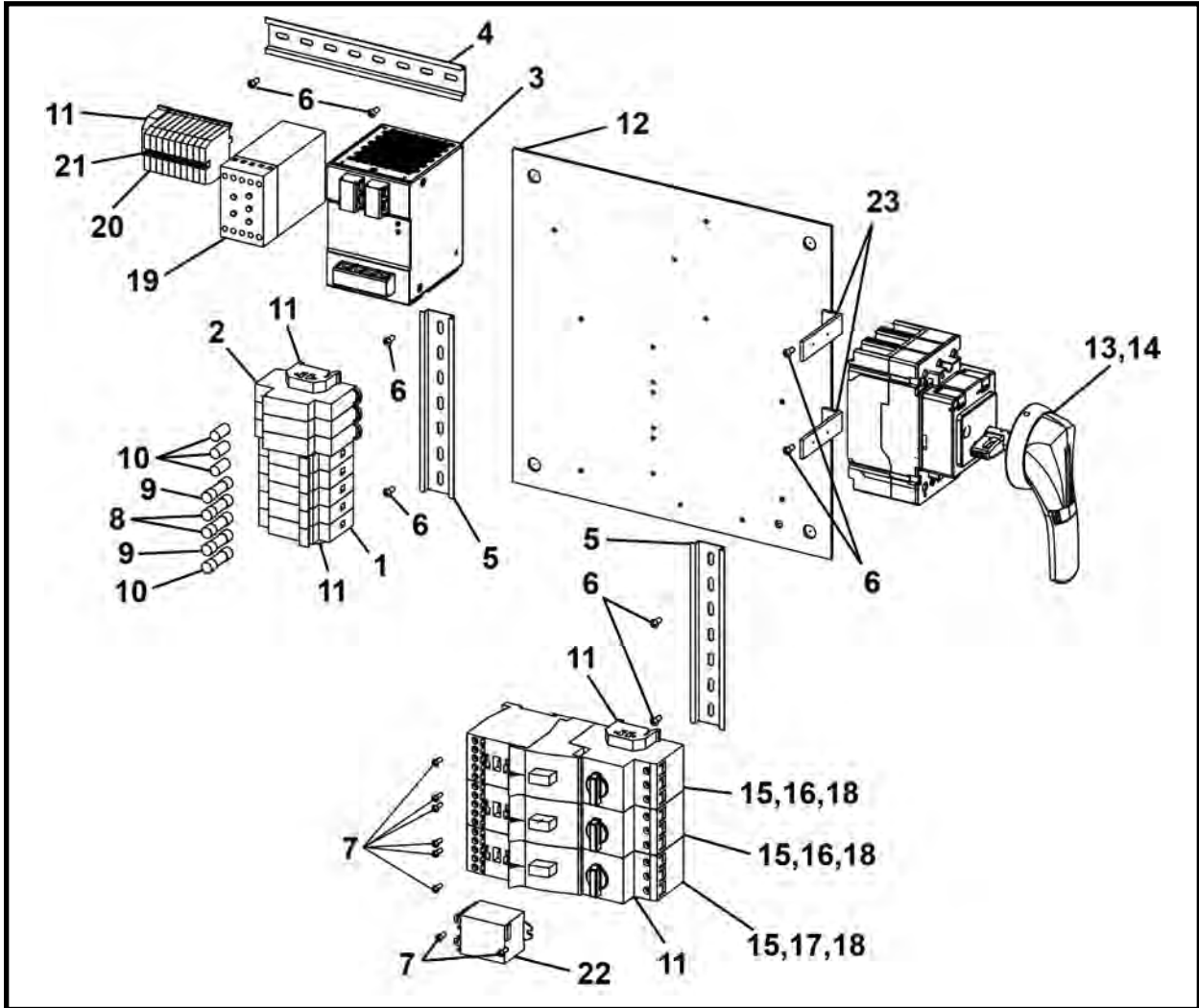


ITEM	QTY	PART NO.	DESCRIPTION
0	1	019050A	ELECTRICAL BOX ASSEMBLY, Series II
1*	1	019055A	ASSEMBLY, Electrical Panel
2	1	019056P	BOX, Electrical
3	1	P0054-073B	RECEPTACLE
4	4	P0313-049	RECEPTACLE
5	2	P0054-575	CONNECTOR
6	2	P0054-576	WEDGE
7	6	P0313-007	PINS
8	1	P0056-147	SWITCH, Toggle
9	1	P0251-514	LENS, Green Plastic
10	1	P0251-463	LIGHT, Red Pilot
11	1	P0251-457	INTERLOCK, Electrical
12	1	P0056-129F	LIGHT, Red Pilot
13	1	P0251-439	LIGHT, Green Indicator
14	2	P0056-131F	LATCH, Mounting
15	2	P0251-563	LIGHT, White Pilot LED
16	1	P0311-034	BUSHING, Insulating
17	1	P0311-020	NUT, Lock
18	1	P0311-112	CORD GRIP
19	1	P0054-067G	CABLE
20	6	P0311-018	NUT, Lock 1/2
21	1	P0054-068	RECEPTACLE
22	2	P0054-335	RECEPTACLE
23	1	P0054-402	RECEPTACLE
24**	1	P0251-410	HOURMETER

\* Refer to this section for parts information.

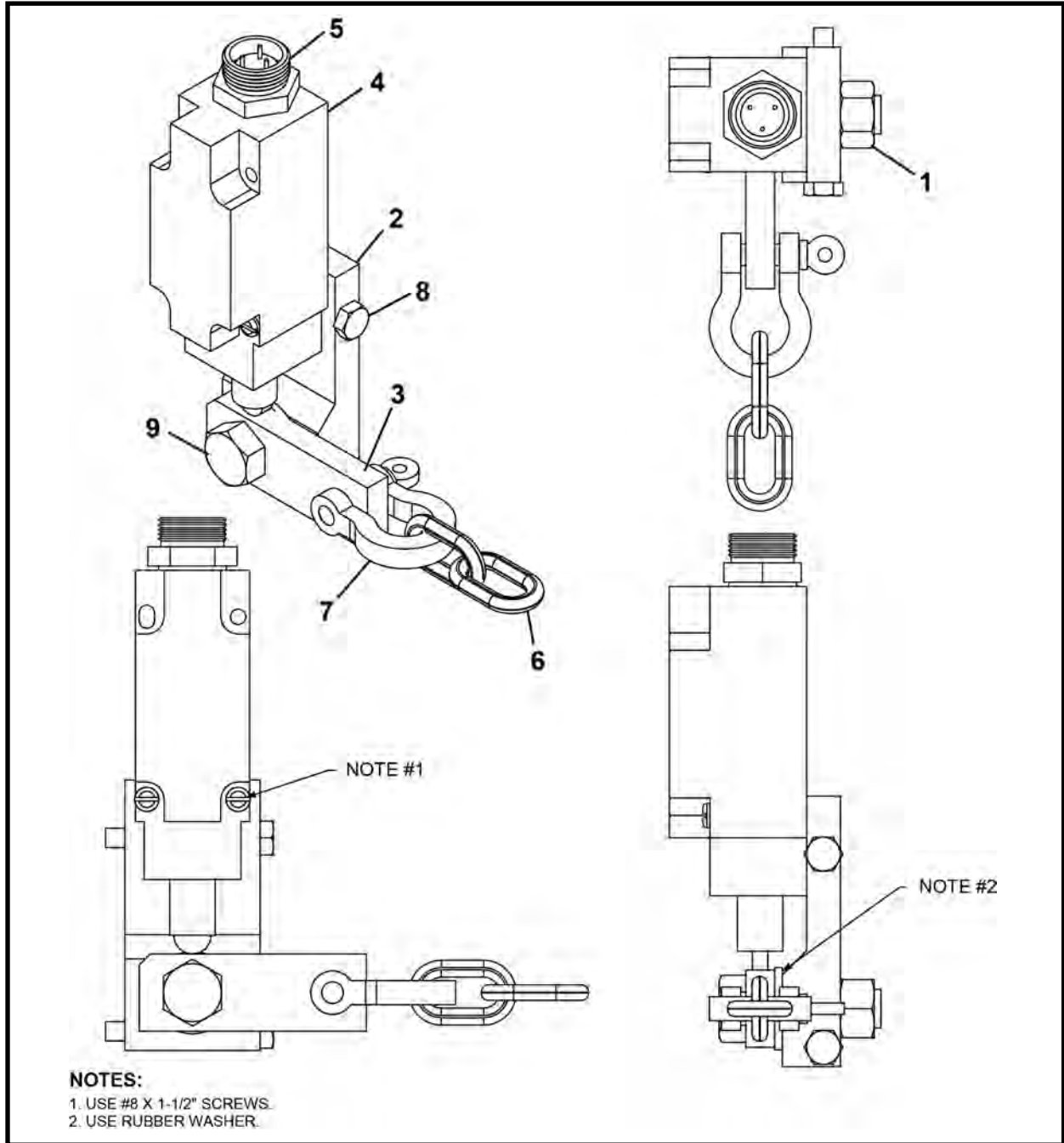
\*\* Later models are equipped with hourmeter.

## ELECTRICAL PANEL ASSEMBLY, 019055A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	019055A	ELECTRICAL PANEL ASSEMBLY
1	5	P0251-388	HOLDER, Fuse
2	3	P0310-473B	HOLDER, Fuse
3	1	P0251-616	POWER SUPPLY, 24V, 10 AMP
4	1	P0310-503-008	RAIL, Din 8
5	2	P0310-503-007	RAIL, Din 7
6	8	P0020-83-022	SCREW, Truss Head 8-32 x .375
7	8	P0020-63-022	SCREW, Truss Head 6-32 x .375
8	2	P0251-401	FUSE
9	2	P0251-468	FUSE
10	4	P0310-954	FUSE, TIME DELAY
11	5	P0310-571	END, Fuse Holder
12	1	019054P	PANEL, Electrical
13	1	P0251-481	BREAKER 480V 3PH 15/3 W/Lugs
14	1	P0251-482	HANDLE & BREAKER SHAFT
15	3	P0251-478	CONTACTOR, 3/4 HP 480V 3PH 24VDC
16	2	P0251-479	PROTECTOR, Motor 3/4 HP
17	1	P0251-560	PROTECTOR, Motor 3 HP
18	3	P0251-480	KIT, Connector
19	1	P0251-443	PHASE DETECTOR 480V
20	10	P0310-500	BLOCK, Terminal
21	1	P0310-573	JUMPER, Terminal Strip
22	1	P0310-409	RELAY, 10 Amp
23	2	026181P	MOUNT, Side Breaker

## CONVEYOR SAFETY STOP SWITCH ASSEMBLY, 024590A



ITEM	QTY	PART NO.	DESCRIPTION
0	1	024590A	SAFETY STOP SWITCH ASSEMBLY
1	1	P0003-08-000	NUT, Hex 1/2 UNC
2	1	024588P	HOUSING
3	1	024589P	INSERT
4	1	P0251-540	SWITCH
5	1	P0054-069	RECEPTACLE
6	1	P0094-004-072	CHAIN, 3/16 x 72
7	1	P0091-003	SHACKLE, Anchor
8	2	P0001-04-008	BOLT, Hex 1/4 UNC x 2
9	1	P0001-08-007	BOLT, Hex 1/2 UNC x 1.75



# Hydraulics

## Hydraulic Assembly

TBM Series II 600, 027901A .....	4
Hose Kit, 028533A .....	6
Fitting Kit, 028534A .....	8
TBM Series II 660, 028701A .....	10
Hose Kit, 028709A .....	12
Fitting Kit, 028762A .....	14
TBM Series II 720, 028801A .....	16
Hose Kit, 028891A .....	18
Fitting Kit, 028892A .....	22

## Grease Assembly

TBM Series II 600 - 660 - 720, 025995A .....	24
--	----

## Grease Hose Assembly

TBM Series II 600 - 660 - 720, 025996A .....	25
--	----

## Lube Assembly

TBM Series II 600 - 660 - 720, 025932A .....	26
--	----

## Closed Face Hydraulic Assembly

TBM Series II 600 - 660, 027561A .....	29
TBM Series II 720, 020985A .....	30

## TBM Hydraulic Tunnel Hoses & Lines

Hydraulic Starter Hose Assembly (3,000 psi), F13597F00 .....	32
Hydraulic Starter Hose Assembly (5,000 psi), F27691F .....	33
TBM Hydraulic Lines LP Assembly (3,000 psi), F13326F00 .....	34
TBM Hydraulic Lines HP Assembly (5,000 psi), F27674F .....	35
Adapter Kit - 5000 Pump Unit (3,000 psi) To TBM Series II (HP), 027698A .....	36
	37

**Intermediate Jacking Station** ..... Continued on next page

*(continued on next page)*

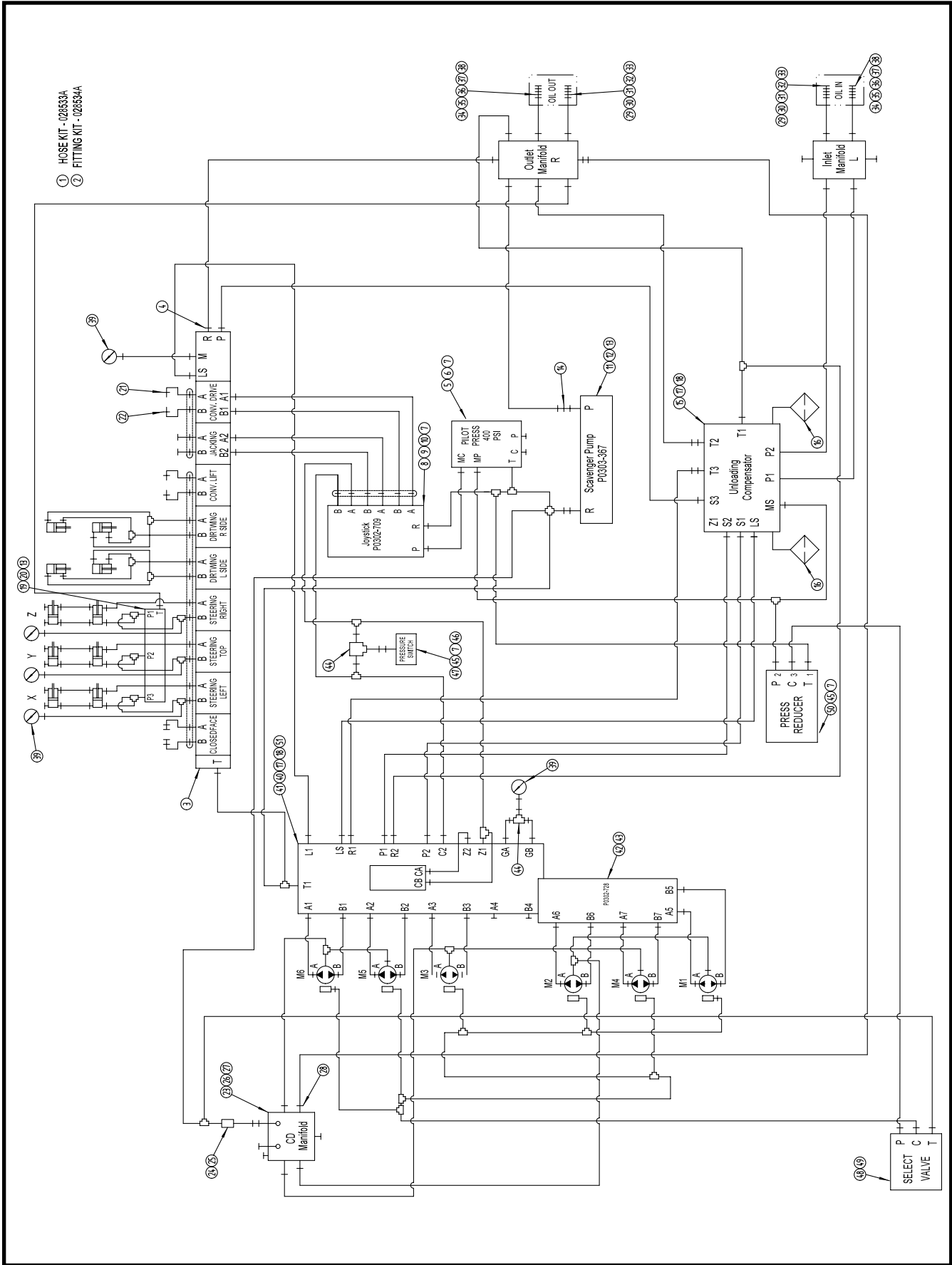
# Hydraulics (continued)

- Intermediate Jacking Station** ..... 38
  - Starter Hose, High Pressure 30 Ft, F09802F01 ..... 39
  - Starter (Return) Hose, Low Pressure 30 Ft, F09803F01 (5000 Pump Unit) ..... 40
  - Starter Hose, Low Pressure 30 Ft, F27868F (5000 SII, 5200 Pump Units) ..... 41
  - IJS Tunnel Line 10 Ft 6 In., F09800F00 ..... 42
  - Tee Connector, F09804F00 ..... 43
  - IJS Valve (With Cable), F04908F01 ..... 44
  - IJS Starter Connection, F09805F00 ..... 46
  - IJS Coupler Assembly, 005133A02 ..... 47
  - IJS Segment Assembly ..... 48
  - IJS Cylinder, F03531F02 ..... 49
  - IJS Hydraulic Schematic ..... 50

**NOTES**

# HYDRAULIC ASSEMBLY - 600, 027901A

## TBM Series II: 600



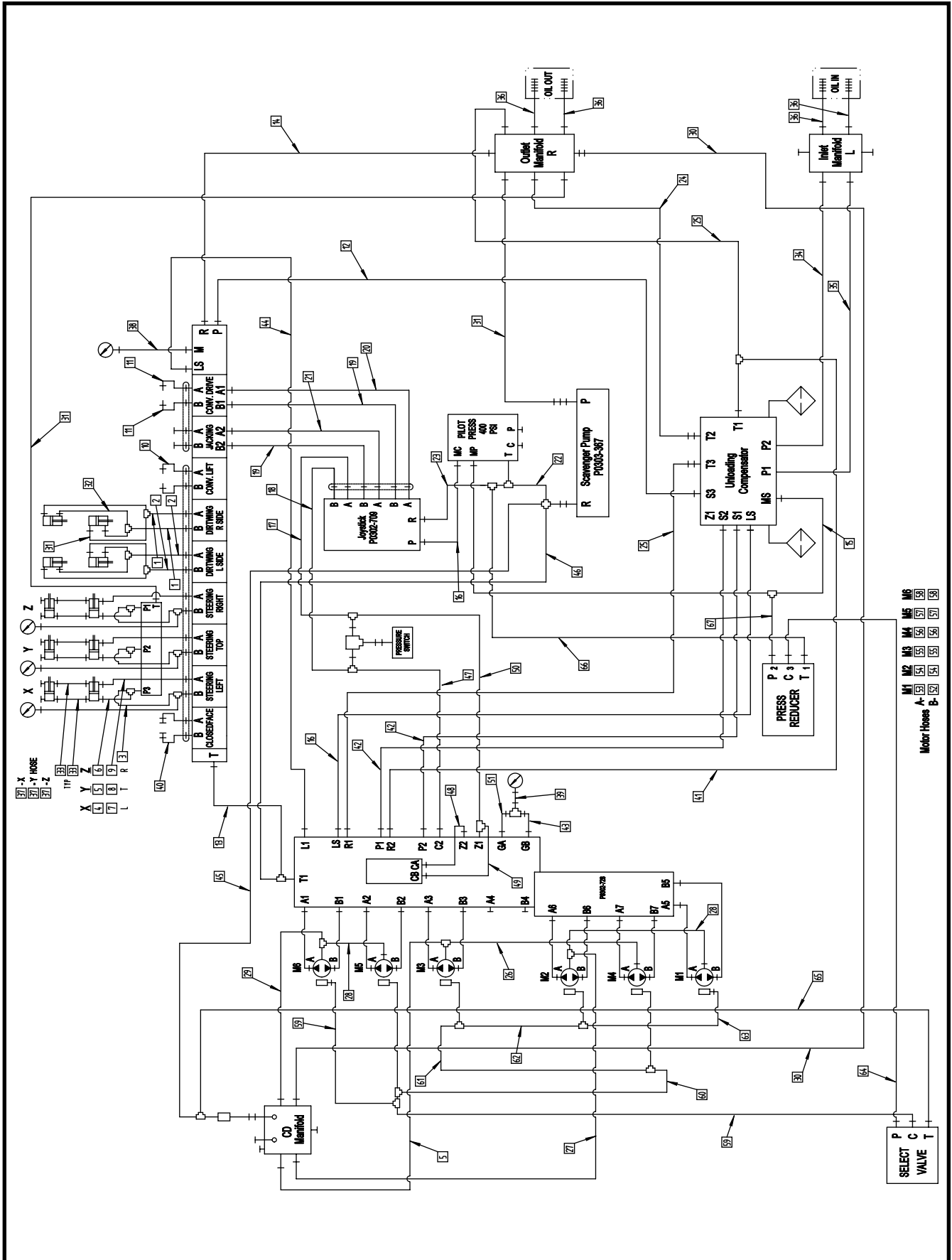
**HYDRAULIC ASSEMBLY - 600, 027901A**  
**TBM Series II: 600**

ITEM	QTY	PART NO.	DESCRIPTION
0	-	025901A	HYDRAULIC ASSEMBLY, 600 Series II
1*	1	028533A	KIT, Hose
2*	1	028534A	KIT, Fitting
3**	1	P0302-700	VALVE, 9 Section
4	1	P0302-693	VALVE, Check
5	1	P0302-705	MANIFOLD, Pilot Supply
6	2	P0001-04-004	BOLT, Hex 1/4 UNC x 1
7	14	P0040-004	WASHER, Hardened Flat 1/4
8	1	P0302-709	JOYSTICK
9	1	026168P	MOUNT, Joystick
10	8	P0001-04-003	BOLT, Hex 1/4 UNC x .75
11	1	P0303-367	PUMP, Scavenger
12	4	P0001-05-003	BOLT, Hex 5/16 UNC x .75
13	6	P0040-005	WASHER, Hardened Flat 5/16
14	1	P0302-536	VALVE, Check
15	1	P0302-796	MANIFOLD
16	2	P0309-208	ASSEMBLY, High Pressure Filter
17	7	P0001-10-026	BOLT, Hex 5/8 UNC x 6.5
18	7	P0040-010	WASHER, Hardened Flat 5/8
19	1	P0302-731	LIMITER, Steering Pressure
20	2	P0001-05-010	BOLT, Hex 5/16 UNC x 2.5
21	1	P0100-004A	COUPLER, Female
22	1	P0100-004B	COUPLER, Male
23	1	A43766P	MANIFOLD, Case Drain
24	1	P0302-513	CARTRIDGE
25	1	P0302-514	BODY, Port 3/8
26	4	P0001-06-002	BOLT, Hex 3/8 UNC x .5
27	4	P0040-006	WASHER, Hardened Flat 3/8
28	1	P0302-701	VALVE, Check
29	2	P0421-012	COUPLER, Reducer 1-1/4 x 1
30	2	027667P	COUPLER NUT
31	2	027669P	NIPPLE
32	2	007087P00	PLUG, Rubber 1/2
33	2	027672P	PLUG, Storage
34	2	027687P	FITTING, Threaded 1-1/4
35	2	P0084-124	RING, Back Up
36	2	P0085-124A	ORING
37	2	027651P	INSERT, Rubber
38	2	027671P	CAP, Storage
39	5	P0301-146	GAUGE, 6000 PSI
40	1	025693P	HANDLE, Motor Manifold
41	1	P0302-792	MANIFOLD, Motor
42	1	P0302-728	PLATE, Motor Manifold
43	3	P0031-08-010	SCREW, Socket Head Cap 1/2 UNC x 2.5
44	2	P0302-530	VALVE, Shuttle
45	4	P0001-04-006	BOLT, Hex 1/4 UNC x 1.5
46	1	024545P	PLATE, Pressure Switch
47	1	P0302-706	SWITCH, Pressure, 5000 PSI
48	1	P0302-784	VALVE, Selector
49	2	P0001-05-007	BOLT, Hex 5/16 UNC x 1.75
50	1	P0302-421A	VALVE, Pressure Reducing
51	1	PM08A-1.25-016	BOLT, Hex 8x1.25x16 10.9

\* Refer to this section for parts information. \*\* Refer to Section 7, Valves for parts information.

# HOSE KIT - 600, 028533A

## TBM Series II: 600

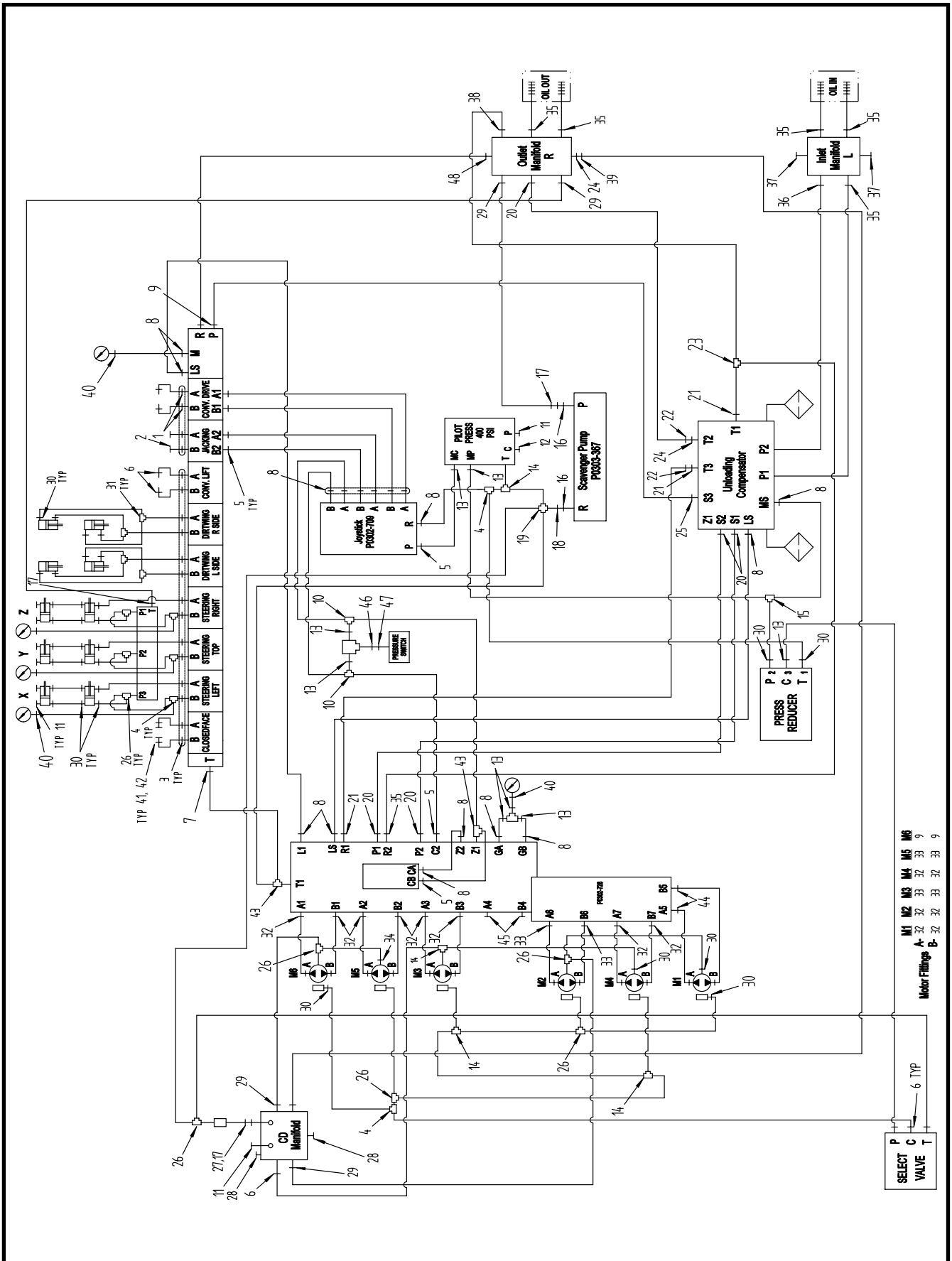


**HOSE KIT - 600, 028533A**  
**TBM Series II: 600**

ITEM	QTY	PART NO.	DESCRIPTION
0	1	028533A	HOSE KIT -600
1	2	A10313A-060	HOSE ASSEMBLY, 3/8 x 60
2	2	A10313A-152	HOSE ASSEMBLY, 3/8 x 152
3	3	A10313A-012	HOSE ASSEMBLY, 3/8 x 12
4	1	A10313A-115	HOSE ASSEMBLY, 3/8 x 115
5	2	A10313A-045	HOSE ASSEMBLY, 3/8 x 45
6	1	A10313A-070	HOSE ASSEMBLY, 3/8 x 70
7	1	A10313A-120	HOSE ASSEMBLY, 3/8 x 120
8	1	A10313A-055	HOSE ASSEMBLY, 3/8 x 55
9	1	A10313A-052	HOSE ASSEMBLY, 3/8 x 52
10	2	A09847A-110	HOSE ASSEMBLY, 3/8 x 110
11	2	A10080A-060	HOSE ASSEMBLY, 1/2 x 60
12	1	A09815A-048	HOSE ASSEMBLY, 3/4 x 48
13	1	A10326A-036	HOSE ASSEMBLY, 1/4 x 36
14	1	A10468A-056	HOSE ASSEMBLY, 3/4 x 56
15	1	A09920A-091	HOSE ASSEMBLY, 1/4 x 91
16	2	A10326A-032	HOSE ASSEMBLY, 1/4 x 32
17	1	A10325A-114	HOSE ASSEMBLY, 1/4 x 114
18	1	A10325A-108	HOSE ASSEMBLY, 1/4 x 108
19	2	A10325A-120	HOSE ASSEMBLY, 1/4 x 120
20	1	A10325A-145	HOSE ASSEMBLY, 1/4 x 145
21	1	A10325A-132	HOSE ASSEMBLY, 1/4 x 132
22	1	A10327A-088	HOSE ASSEMBLY, 1/4 x 88
23	1	A10338A-017	HOSE ASSEMBLY, 1/4 x 17
24	1	A10342A-046	HOSE ASSEMBLY, 1 x 46
25	2	A10342A-039	HOSE ASSEMBLY, 1 x 39
26	1	A10313A-019	HOSE ASSEMBLY, 3/8 x 19
27	1	A10079A-014	HOSE ASSEMBLY, 3/8 x 14
28	2	A10079A-024	HOSE ASSEMBLY, 3/8 x 24
29	1	A10079A-069	HOSE ASSEMBLY, 3/8 x 69
30	1	A09912A-079	HOSE ASSEMBLY, 1/2 x 79
31	6	A10313A-038	HOSE ASSEMBLY, 3/8 x 38
32	4	A10313A-026	HOSE ASSEMBLY, 3/8 x 26
33	6	A10313A-024	HOSE ASSEMBLY, 3/8 x 24
34	1	A10099A-090	HOSE ASSEMBLY, 1 x 90
35	1	A09849A-095	HOSE ASSEMBLY, 1 x 95
36	4	A09850A-100	HOSE ASSEMBLY, 1-1/4 x 100
37	3	A09922A-020	HOSE ASSEMBLY, 1/4 x 20
38	1	A09920A-030	HOSE ASSEMBLY, 1/4 x 30
39	1	A09920A-050	HOSE ASSEMBLY, 1/4 x 50
40	2	A10079A-033	HOSE ASSEMBLY, 3/8 x 33
41	1	A10342A-044	HOSE ASSEMBLY, 1 x 44
42	2	A09814A-029	HOSE ASSEMBLY, 1 x 29
43	1	A10325A-020	HOSE ASSEMBLY, 1/4 x 20
44	1	A10326A-035	HOSE ASSEMBLY, 1/4 x 35
45	1	A10314A-045	HOSE ASSEMBLY, 1/4 x 45
46	1	A10314A-020	HOSE ASSEMBLY, 1/4 x 20
47	1	A10326A-012	HOSE ASSEMBLY, 1/4 x 12
48	1	A10326A-013	HOSE ASSEMBLY, 1/4 x 13
49	1	A10325A-010	HOSE ASSEMBLY, 1/4 x 10
50	1	A10326A-030	HOSE ASSEMBLY, 1/4 x 30
51	1	A10325A-023	HOSE ASSEMBLY, 1/4 x 23
52	1	A10331A-032	HOSE ASSEMBLY, 3/4 x 32
53	1	A10056A-035	HOSE ASSEMBLY, 3/4 x 35
54	2	A10467A-028	HOSE ASSEMBLY, 3/4 x 28
55	2	A10467A-040	HOSE ASSEMBLY, 3/4 x 40
56	2	A10331A-062	HOSE ASSEMBLY, 3/4 x 62
57	2	A10467A-085	HOSE ASSEMBLY, 3/4 x 85
58	2	A10467A-063	HOSE ASSEMBLY, 3/4 x 63
59	2	A10327A-030	HOSE ASSEMBLY, 1/4 x 30
60	1	A10327A-045	HOSE ASSEMBLY, 1/4 x 45
61	1	A10364A-020	HOSE ASSEMBLY, 1/4 x 20
62	1	A10327A-050	HOSE ASSEMBLY, 1/4 x 50
63	1	A10364A-030	HOSE ASSEMBLY, 1/4 x 30
64	1	A10364A-018	HOSE ASSEMBLY, 1/4 x 18
65	1	A10327A-083	HOSE ASSEMBLY, 1/4 x 83
66	1	A10338A-009	HOSE ASSEMBLY, 1/4 x 9
67	1	A10364A-022	HOSE ASSEMBLY, 1/4 x 22

# FITTING KIT - 600, 028534A

## TBM Series II: 600

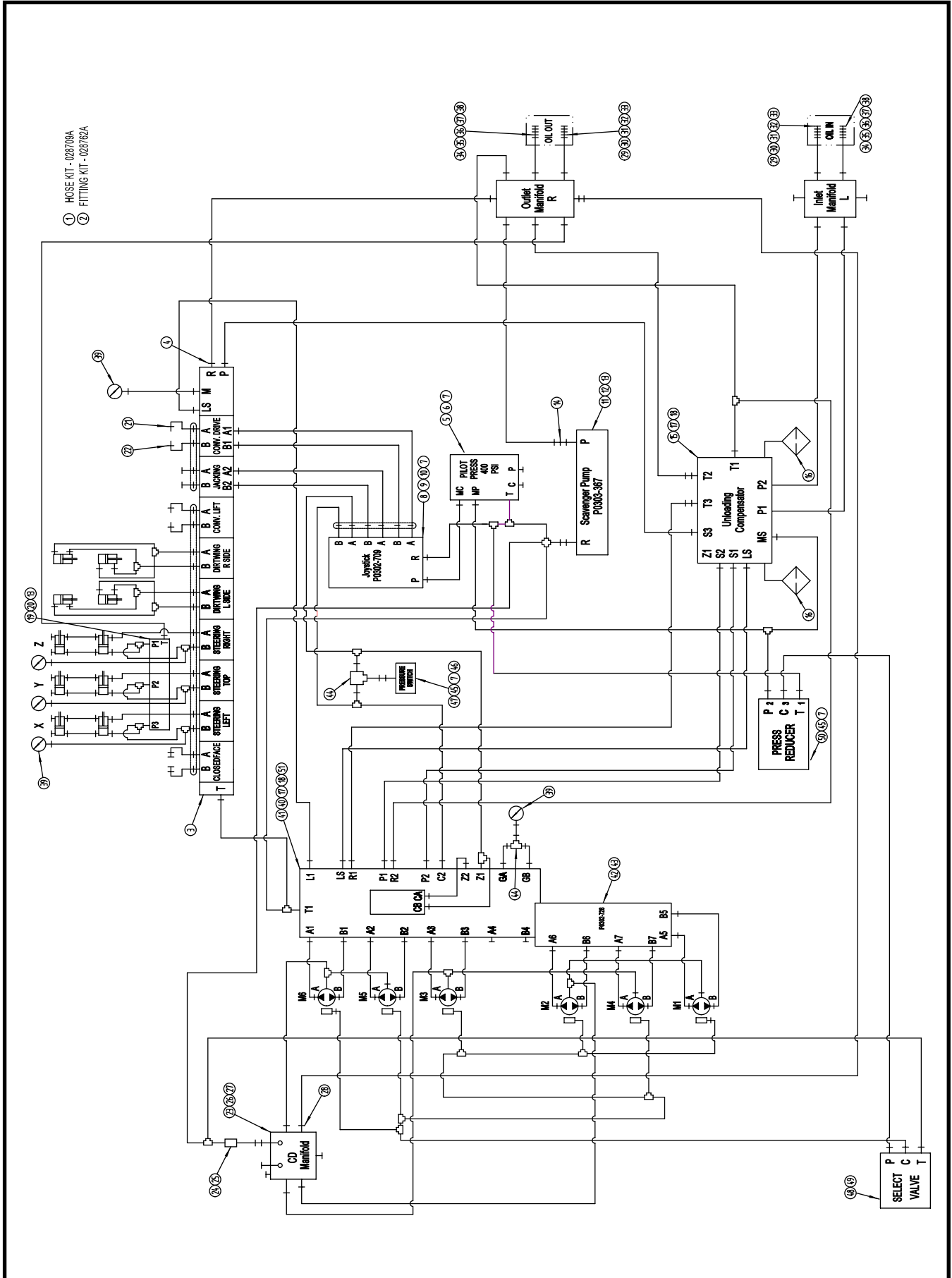


**FITTING KIT - 600, 028534A**  
**TBM Series II: 600**

ITEM	QTY	PART NO.	DESCRIPTION
0	1	028534A	FITTING KIT -600
1	4	P0300-375	FITTING, 08MFOR-12MB
2	2	P0300-408	FITTING, 08FFOR-CAP
3	14	P0300-634	FITTING, 06MFOR-10MB
4	5	P0300-613	FITTING, 06MFOR-06FFORX-06MFOR
5	7	P0300-427	FITTING, 04MFOR-04MB90
6	6	P0300-430	FITTING, 06MFOR-08MB
7	1	P0300-314	FITTING, 04MFOR-05MB
8	17	P0300-362	FITTING, 04MFOR-04MB
9	3	P0300-372	FITTING, 12MFOR-12MB90
10	1	P0300-311	FITTING, 04MFFOR-06MB90
11	8	P0300-027	FITTING, 06MB-PLUG
12	1	P0300-176	FITTING, 06MB-HHP
13	8	P0300-310	FITTING, 04MFOR-06MB
14	4	P0300-376	FITTING, 06MFOR-06MFOR-06MB
15	1	P0300-312	FITTING, 04MFFOR-04FFORX-04MFFOR
16	2	P0300-724	FITTING, 06MFFOR-06MBSPP
17	3	P0300-356	FITTING, 06MFOR-06MB
18	1	P0300-847	FITTING, 06FFORX-06FFORX
19	1	P0300-815	FITTING, 6MFFOR-6MFFOR-6MFFOR-6MFFOR
20	5	P0300-319	FITTING, 16MFFOR-16MB
21	3	P0300-374	FITTING, 16MFOR-20MB
22	2	P0300-668	FITTING, 16MFFOR-16FFORX90
23	1	P0300-328	FITTING, 16MFOR-16FFORX-16MFOR
24	2	P0300-450	FITTING, 16MFOR-20MB90
25	1	P0300-378	FITTING, 12MFFOR-16MB
26	8	P0300-386	FITTING, 06MFOR-06MB-06MFOR
27	1	P0300-618	FITTING, 06FFORX-06MB90
28	2	P0300-193	FITTING, 08MB-PLUG
29	4	P0300-717	FITTING, 6MFFOR-8MB90
30	30	P0300-355	FITTING, 06MFOR-06MB90
31	4	P0300-814	FITTING, BULKHEAD T
32	14	P0300-329	FITTING, 12MFFOR-12MB
33	6	P0300-359	FITTING, 12MFOR-12MB45
34	2	P0300-612	FITTING, 06MFOR-06MB45
35	6	P0300-366	FITTING, 20MFOR-20MB
36	1	P0300-620	FITTING, 20MFOR-20MB90
37	2	P0300-146	FITTING, 20MB-PLUG HOLLOW BACK
38	1	P0300-371	FITTING, 16MFOR-16MB90
39	1	P0300-631	FITTING, 16FFOR-08MFFOR
40	5	P0300-594	FITTING, 4FB-4MFFOR (SEE PDF FILE)
41	2	P0300-581	FITTING, 6MFFOR-6MFFOR-BKHD
42	2	P0300-390	FITTING, 06FOR-CAP
43	2	P0300-821	FITTING, 4MFFOR-4MB-4MFFOR
44	2	P0300-561	FITTING, 12MFFOR-16MB45
45	2	P0300-145	FITTING, 12MB-PLUG
46	1	P0300-575	FITTING, 06MORB-04FORB, ST
47	1	P0300-541	FITTING, ORING, #4 OR
48	2	P0300-313	FITTING, 04MFOR-04MFOR-04FFORX
49	1	P0300-765	FITTING, 12MFFOR-20MB

# HYDRAULIC ASSEMBLY - 660, 028701A

## TBM Series II: 660



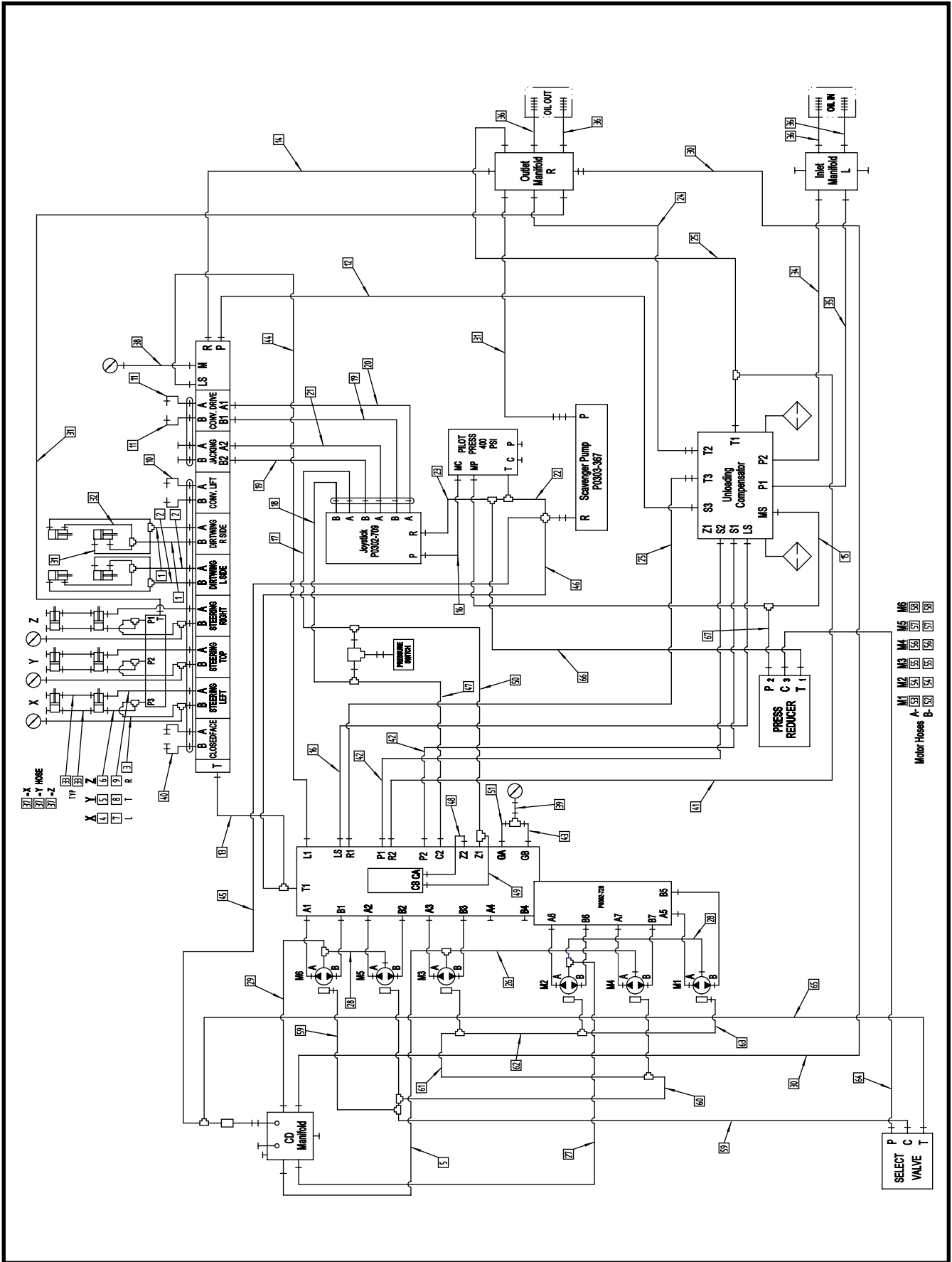
**HYDRAULIC ASSEMBLY - 660, 028701A**  
**TBM Series II: 660**

ITEM	QTY	PART NO.	DESCRIPTION
0		028701A	HYDRAULICS ASSEMBLY -660 TBM II
1*	1	028709A	KIT, Hose
2*	1	028762A	KIT, Fitting
3**	1	P0302-700	VALVE, 9 Section
4	1	P0302-693	VALVE, Check
5	1	P0302-705	MANIFOLD, Pilot Supply
6	2	P0001-04-004	BOLT, Hex 1/4 UNC x 1
7	14	P0040-004	WASHER, Hardened Flat 1/4
8	1	P0302-709	JOYSTICK
9	1	026168P	MOUNT, Joystick
10	8	P0001-04-003	BOLT, Hex 1/4 UNC x .75
11	1	P0303-367	PUMP, Scavenger
12	4	P0001-05-003	BOLT, Hex 5/16 UNC x .75
13	6	P0040-005	WASHER, Hardened Flat 5/16
14	1	P0302-536	VALVE, Check
15	1	P0302-796	MANIFOLD
16	2	P0309-208	ASSEMBLY, High Pressure Filter
17	7	P0001-10-026	BOLT, Hex 5/8 UNC x 6.5
18	7	P0040-010	WASHER, Hardened Flat 5/8
19	1	P0302-731	LIMITER, Steering Pressure
20	2	P0001-05-010	BOLT, Hex 5/16 UNC x 2.5
21	1	P0100-004A	COUPLER, Female
22	1	P0100-004B	COUPLER, Male
23	1	A43766P	MANIFOLD, Case Drain
24	1	P0302-513	CARTRIDGE
25	1	P0302-514	BODY, Port 3/8
26	4	P0001-06-002	BOLT, Hex 3/8 UNC x .5
27	4	P0040-006	WASHER, Hardened Flat 3/8
28	1	P0302-701	VALVE, Check
29	2	P0421-012	COUPLER, Reducer 1-1/4 x 1
30	2	027667P	COUPLER NUT
31	2	027669P	NIPPLE
32	2	007087P00	PLUG, Rubber 1/2
33	2	027672P	PLUG, Storage
34	2	027687P	FITTING, Threaded 1-1/4
35	2	P0084-124	RING, Back Up
36	2	P0085-124A	ORING
37	2	027651P	INSERT, Rubber
38	2	027671P	CAP, Storage
39	5	P0301-146	GAUGE, 6000 Psi
40	1	025693P	HANDLE, Motor Manifold
41	1	P0302-792	MANIFOLD, Motor
42	1	P0302-728	PLATE, Motor Manifold
43	3	P0031-08-010	SCREW, Socket Head Cap 1/2 UNC x 2.5
44	2	P0302-530	VALVE, Shuttle
45	4	P0001-04-006	BOLT, Hex 1/4 UNC x 1.5
46	1	024545P	PLATE, Pressure Switch
47	1	P0302-706	SWITCH, Pressure, 5000 Psi
48	1	P0302-784	VALVE, Selector
49	2	P0001-05-007	BOLT, Hex 5/16 UNC x 1.75
50	1	P0302-421A	VALVE, Pressure Reducing
51	1	PM08A-1.25-016	BOLT, Hex 8x1.25x16 10.9

\* Refer to this section for parts information. \*\* Refer to Section 7, Valves for parts information.

# HOSE KIT - 660, 028709A

## TBM Series II: 660

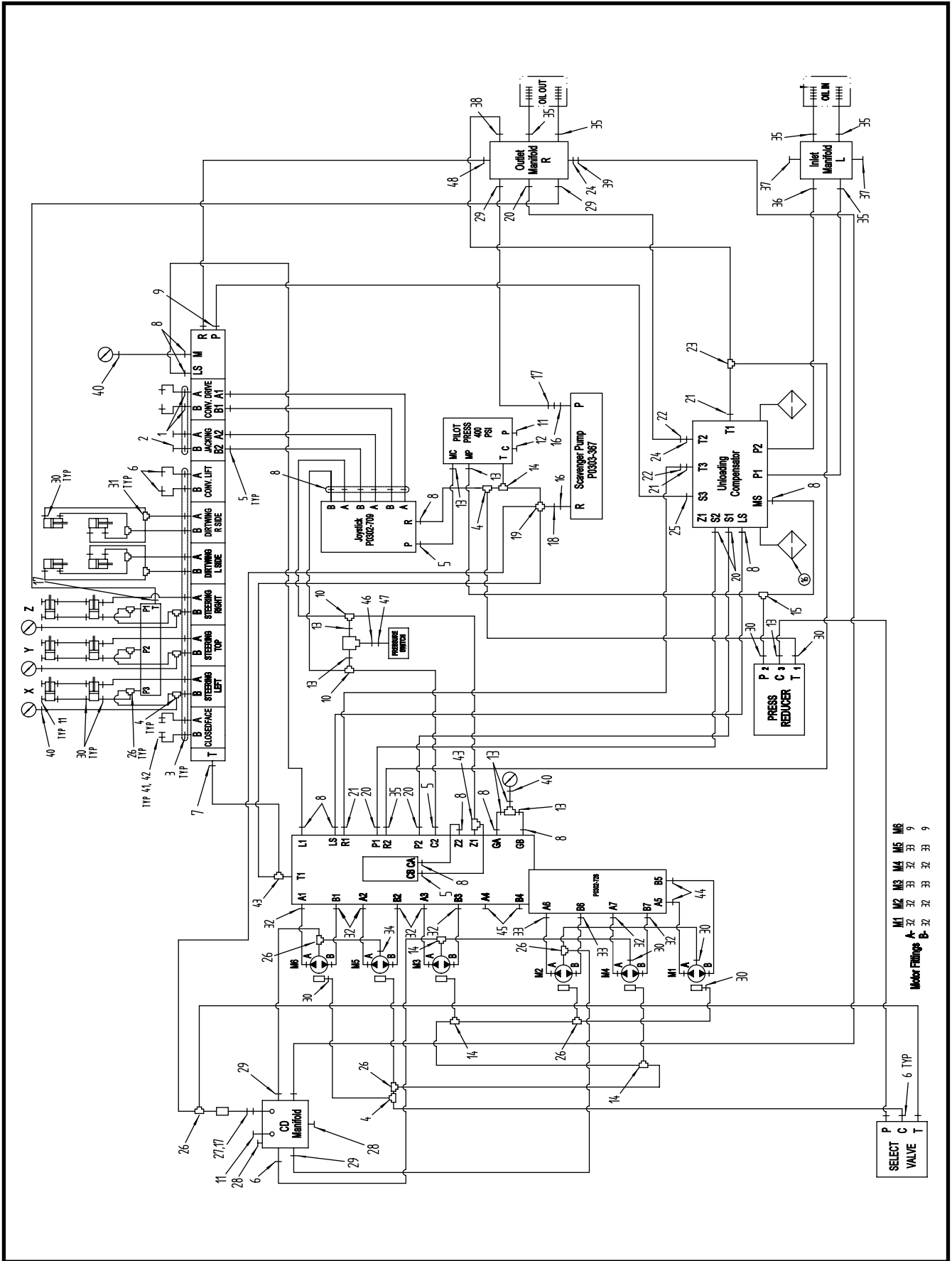


**HOSE KIT - 660, 028709A**  
**TBM Series II: 660**

ITEM	QTY	PART NO.	DESCRIPTION
0	1	028709A	KIT, Hose, 660 Series II
1	2	A10313A-060	HOSE ASSEMBLY, 3/8 x 60
2	2	A10313A-157	HOSE ASSEMBLY, 3/8 x 157
3	3	A10313A-012	HOSE ASSEMBLY, 3/8 x 12
4	1	A10313A-115	HOSE ASSEMBLY, 3/8 x 115
5	2	A10313A-050	HOSE ASSEMBLY, 3/8 x 50
6	1	A10313A-070	HOSE ASSEMBLY, 3/8 x 70
7	1	A10313A-120	HOSE ASSEMBLY, 3/8 x 120
8	1	A10313A-055	HOSE ASSEMBLY, 3/8 x 55
9	1	A10313A-052	HOSE ASSEMBLY, 3/8 x 52
10	2	A09847A-120	HOSE ASSEMBLY, 3/8 x 120
11	2	A10080A-060	HOSE ASSEMBLY, 1/2 x 60
12	1	A09815A-048	HOSE ASSEMBLY, 3/4 x 48
13	1	A10326A-036	HOSE ASSEMBLY, 1/4 x 36
14	1	A10468A-056	HOSE ASSEMBLY, 3/4 x 56
15	1	A09920A-091	HOSE ASSEMBLY, 1/4 x 91
16	2	A10326A-032	HOSE ASSEMBLY, 1/4 x 32
17	1	A10325A-120	HOSE ASSEMBLY, 1/4 x 120
18	1	A10325A-114	HOSE ASSEMBLY, 1/4 x 114
19	2	A10325A-125	HOSE ASSEMBLY, 1/4 x 125
20	1	A10325A-150	HOSE ASSEMBLY, 1/4 x 150
21	1	A10325A-137	HOSE ASSEMBLY, 1/4 x 137
22	1	A10327A-088	HOSE ASSEMBLY, 1/4 x 88
23	1	A10338A-017	HOSE ASSEMBLY, 1/4 x 17
24	1	A10342A-046	HOSE ASSEMBLY, 1 x 46
25	2	A10342A-039	HOSE ASSEMBLY, 1 x 39
26	1	A10313A-019	HOSE ASSEMBLY, 3/8 x 19
27	1	A10079A-014	HOSE ASSEMBLY, 3/8 x 14
28	2	A10079A-024	HOSE ASSEMBLY, 3/8 x 24
29	1	A10079A-075	HOSE ASSEMBLY, 3/8 x 75
30	1	A09912A-079	HOSE ASSEMBLY, 1/2 x 79
31	6	A10313A-038	HOSE ASSEMBLY, 3/8 x 38
32	4	A10313A-026	HOSE ASSEMBLY, 3/8 x 26
33	6	A10313A-024	HOSE ASSEMBLY, 3/8 x 24
34	1	A10099A-100	HOSE ASSEMBLY, 1 x 100
35	1	A09849A-100	HOSE ASSEMBLY, 1 x 100
36	4	A09850A-100	HOSE ASSEMBLY, 1-1/4 x 100
37	3	A09922A-020	HOSE ASSEMBLY, 1/4 x 20
38	1	A09920A-030	HOSE ASSEMBLY, 1/4 x 30
39	1	A09920A-050	HOSE ASSEMBLY, 1/4 x 50
40	2	A10079A-033	HOSE ASSEMBLY, 3/8 x 33
41	1	A10342A-044	HOSE ASSEMBLY, 1 x 44
42	2	A09814A-029	HOSE ASSEMBLY, 1 x 29
43	1	A10325A-020	HOSE ASSEMBLY, 1/4 x 20
44	1	A10326A-035	HOSE ASSEMBLY, 1/4 x 35
45	1	A10314A-045	HOSE ASSEMBLY, 1/4 x 45
46	1	A10314A-020	HOSE ASSEMBLY, 1/4 x 20
47	1	A10326A-012	HOSE ASSEMBLY, 1/4 x 12
48	1	A10326A-013	HOSE ASSEMBLY, 1/4 x 13
49	1	A10325A-010	HOSE ASSEMBLY, 1/4 x 10
50	1	A10326A-030	HOSE ASSEMBLY, 1/4 x 30
51	1	A10325A-023	HOSE ASSEMBLY, 1/4 x 23
52	1	A10331A-032	HOSE ASSEMBLY, 3/4 x 32
53	1	A10056A-035	HOSE ASSEMBLY, 3/4 x 35
54	2	A10467A-028	HOSE ASSEMBLY, 3/4 x 28
55	2	A10467A-040	HOSE ASSEMBLY, 3/4 x 40
56	2	A10331A-071	HOSE ASSEMBLY, 3/4 x 71
57	2	A10467A-090	HOSE ASSEMBLY, 3/4 x 90
58	2	A10467A-063	HOSE ASSEMBLY, 3/4 x 63
59	2	A10327A-030	HOSE ASSEMBLY, 1/4 x 30
60	1	A10327A-050	HOSE ASSEMBLY, 1/4 x 50
61	1	A10364A-020	HOSE ASSEMBLY, 1/4 x 20
62	1	A10327A-060	HOSE ASSEMBLY, 1/4 x 60
63	1	A10364A-030	HOSE ASSEMBLY, 1/4 x 30
64	1	A10364A-018	HOSE ASSEMBLY, 1/4 x 18
65	1	A10327A-083	HOSE ASSEMBLY, 1/4 x 83
66	1	A10364A-021	HOSE ASSEMBLY, 1/4 x 21
67	1	A10059A-015	HOSE ASSEMBLY, 1/4 x 15

# FITTING KIT - 660, 028762A

## TBM Series II: 660

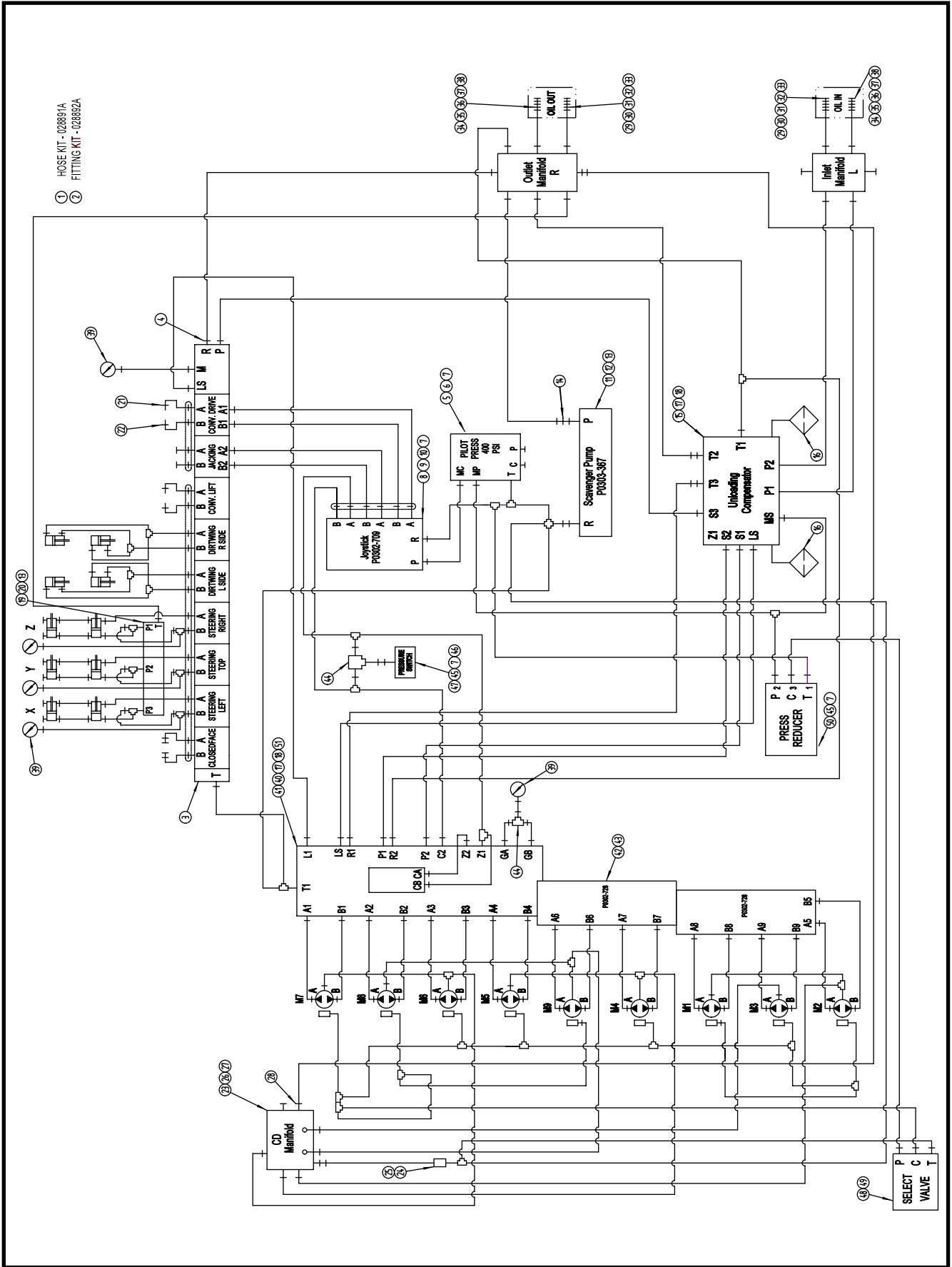


**FITTING KIT - 660, 028762A**  
**TBM Series II: 660**

ITEM	QTY	PART NO.	DESCRIPTION
0	1	028762A	KIT, Fitting, 660 Series II
1	4	P0300-375	FITTING, #8 MFS X 12 MORB
2	2	P0300-408	CAP/NUT, 8FF0R
3	14	P0300-634	FITTING, 06MFOR-10MB
4	5	P0300-613	FITTING, 06MFOR-06FFORX-06MFOR
5	7	P0300-427	FITTING, 04MFOR-04MB90
6	6	P0300-430	FITTING, 6MFFOR-8MB
7	1	P0300-314	FITTING, 4MFFOR-5MB FITTING
8	17	P0300-362	FITTING, 04MB-04MFFOR
9	3	P0300-372	FITTING, 12MFFOR-12MB90
10	2	P0300-313	FITTING, T/4MFS X 4MFS X 4FFSS
11	8	P0300-027	PLUG, 6MB
12	1	P0300-176	FITTING, 06MB-HHP
13	8	P0300-310	FITTING, 04MFFOR-06MB
14	4	P0300-376	FITTING, 06MFOR-06MFOR-06MB
15	1	P0300-312	FITTING, 4MFFOR-4FFORX-4MFFOR
16	2	P0300-724	FITTING, 06MFFOR-06MBSPP
17	3	P0300-356	FITTING, 6MFS-6MORB-STR
18	1	P0300-847	FITTING, 6FFORX-6FFORX
19	1	P0300-815	FITTING, 6MFFOR-6MFFOR-6MFFOR-6MFFOR
20	5	P0300-319	FITTING, 16MFS X 16 MORB
21	3	P0300-374	FITTING, 16MFFOR-20MB
22	2	P0300-668	FITTING, 16MFFOR-16FFORX90
23	1	P0300-328	FITTING, 16MFS-16FFSS-16MFS
24	2	P0300-450	FITTING, 16MFFOR-20MB90
25	1	P0300-378	FITTING, #12MFS-16MORB STRAIGHT
26	8	P0300-386	FITTING, 6MFS-6MAORB-6MFS
27	1	P0300-618	FITTING, 06FFORX-06MB90
28	2	P0300-193	FITTING, 08MB-PLUG
29	4	P0300-717	FITTING, 6MFFOR-8MB90
30	32	P0300-355	FITTING, 6MFS-6MAORB-90 DEGREE
31	4	P0300-814	FITTING, 6MFFOR-6MFFOR-6MFFOR-BKHD
32	14	P0300-329	FITTING, 12MFFOR-12MB
33	6	P0300-359	FITTING, 12MFFOR-12MB45
34	1	P0300-612	FITTING, 06MFOR-06MB45
35	6	P0300-366	FITTING, 20MFOR-20MB
36	1	P0300-620	FITTING, 20MFOR-20MB90
37	2	P0300-146	FITTING, 20MB-PLUG HOLLOW BACK
38	1	P0300-371	FITTING, 16MFFOR-16MB90
39	1	P0300-631	FITTING, 16FFOR-08MFFOR
40	5	P0300-594	FITTING, 4FB-4MFFOR
41	2	P0300-581	FITTING, 6MFFOR-6MFFOR-BKHD
42	2	P0300-390	FITTING, 06FOR-CAP
43	2	P0300-821	FITTING, 4MFFOR-4MB-4MFFOR
44	2	P0300-561	FITTING, 12MFFOR-16MB45
45	2	P0300-145	FITTING, 12MB-PLUG
46	1	P0300-575	FITTING, 06MORB-04FORB, ST
47	1	P0300-541	FITTING, #4 OR
48	1	P0300-765	FITTING, 12MFOR-20MB

# HYDRAULIC ASSEMBLY - 720, 028801A

## TBM Series II: 720



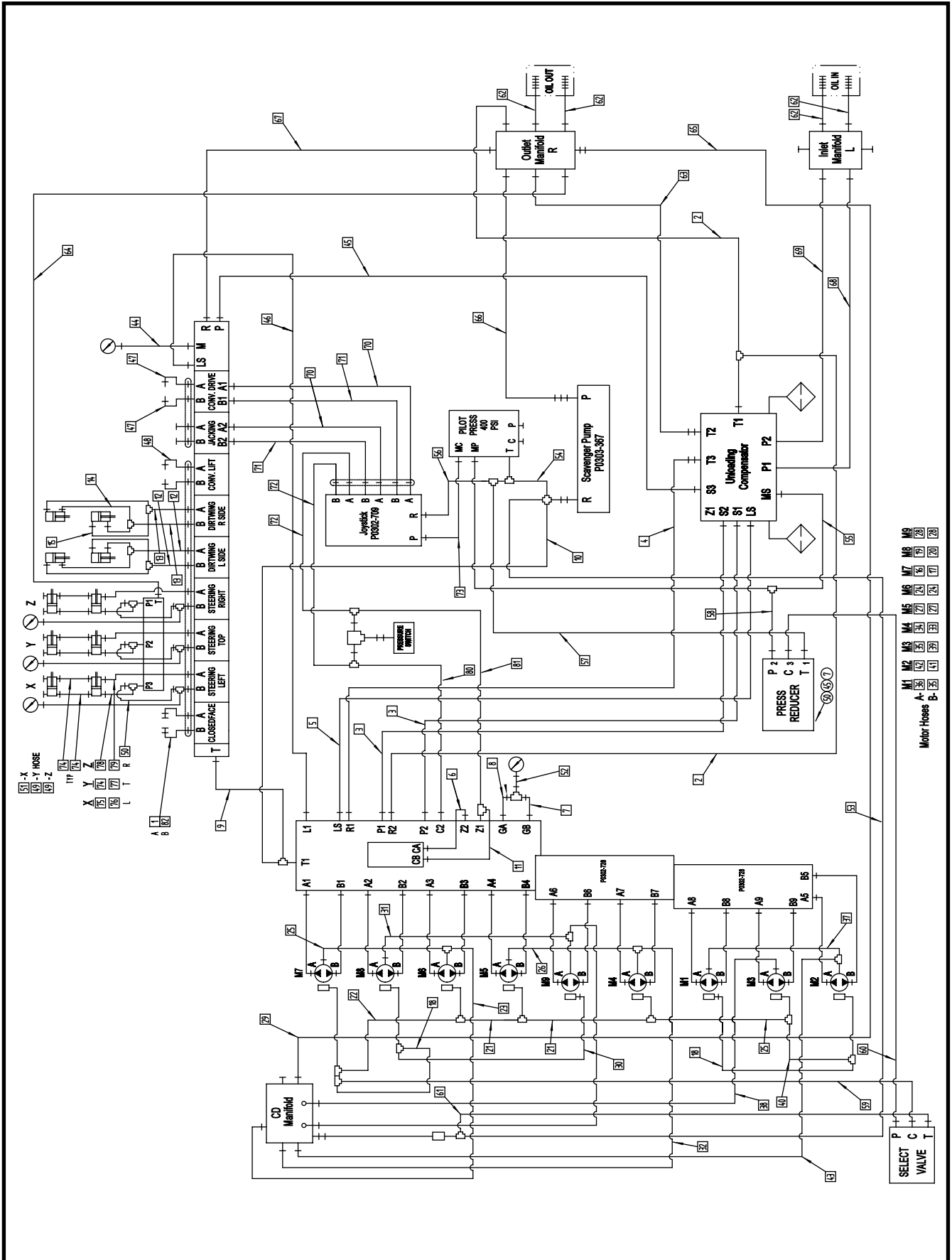
**HYDRAULIC ASSEMBLY - 720, 028801A**  
**TBM Series II: 720**

ITEM	QTY	PART NO.	DESCRIPTION
0	-	028801A	SCHEMATIC, Hydraulic, 720 Series II
1*	1	028891A	KIT, Hose -720 II
2*	1	028892A	KIT, Fitting -720 II
3**	1	P0302-700	VALVE, 9 Section
4	1	P0302-693	VALVE, Check
5	1	P0302-705	MANIFOLD, Pilot Supply
6	2	P0001-04-004	BOLT, Hex 1/4 UNC x 1
7	14	P0040-004	WASHER, Hardened Flat 1/4
8	1	P0302-709	JOYSTICK
9	1	026168P	MOUNT, Joystick
10	8	P0001-04-003	BOLT, Hex 1/4 UNC x .75
11	1	P0303-367	PUMP, Scavenger
12	4	P0001-05-003	BOLT, Hex 5/16 UNC x .75
13	6	P0040-005	WASHER, Hardened Flat 5/16
14	1	P0302-536	VALVE, Check
15	1	P0302-796	MANIFOLD
16	2	P0309-208	ASSEMBLY, High Pressure Filter
17	3	P0001-10-026	BOLT, Hex 5/8 UNC x 6.5
18	3	P0040-010	WASHER, Hardened Flat 5/8
19	1	P0302-731	LIMITER, Steering Pressure
20	2	P0001-05-010	BOLT, Hex 5/16 UNC x 2.5
21	1	P0100-004A	COUPLER, Female
22	1	P0100-004B	COUPLER, Male
23	1	A43766P	MANIFOLD, Case Drain
24	1	P0302-513	CARTRIDGE
25	1	P0302-514	BODY, Port 3/8
26	4	P0001-06-002	BOLT, HEX 3/8 UNC x .5
27	4	P0040-006	WASHER, Hardened Flat 3/8
28	1	P0302-701	VALVE, Check
29	2	P0421-012	COUPLER, Reducer 1-1/4 x 1
30	2	027667P	NUT, Coupler
31	2	027669P	NIPPLE
32	2	007087P00	PLUGS, Rubber
33	2	027672P	PLUG, Storage
34	2	027687P	FITTING, Threaded 1-1/4
35	2	P0084-124	RING, Back Up
36	2	P0085-124A	ORING
37	2	027651P	INSERT, Rubber
38	2	027671P	CAP, Storage
39	5	P0301-146	GAUGE, 6000 Psi
40	1	025693P	HANDLE, Motor Manifold
41	1	P0302-792	MANIFOLD, Motor
42	2	P0302-728	PLATE
43	3	P0031-08-018	SCREW, Socket Head 1/2 UNC x 4.5
44	2	P0302-530	VALVE, Shuttle
45	4	P0001-04-006	BOLT, Hex 1/4 UNC x 1.5
46	1	024545P	PLATE, Pressure Switch
47	1	P0302-706	SWITCH, Pressure 5000 PSI
48	1	P0302-784	VALVE, Selector
49	2	P0001-05-007	BOLT, Hex 5/16 UNC x 1.75
50	1	P0302-421A	VALVE, Pressure Reducing
51	1	PM08A-1.25-016	BOLT, Hex 8x1.25x16 10.9

\* Refer to this section for parts information. \*\* Refer to Section 7, Valves for parts information.

# HOSE KIT - 720, 028891A

## TBM Series II: 720



**HOSE KIT - 720, 028891A**  
**TBM Series II: 720**

ITEM	QTY	PART NO.	DESCRIPTION
1	1	A10079A-079	HOSE ASSEMBLY, 3/8 x 79
2	2	A10342A-044	HOSE ASSEMBLY, 1 x 44
3	2	A09814A-029	HOSE ASSEMBLY, 1 x 29
4	1	A10342A-038	HOSE ASSEMBLY, 1 x 38
5	1	A10326A-029	HOSE ASSEMBLY, 1/4 x 29
6	1	A10326A-017	HOSE ASSEMBLY, 1/4 x 17
7	1	A10325A-022	HOSE ASSEMBLY, 1/4 x 22
8	1	A10325A-024	HOSE ASSEMBLY, 1/4 x 24
9	1	A10326A-083	HOSE ASSEMBLY, 1/4 x 83
10	1	A10314A-020	HOSE ASSEMBLY, 1/4 x 20
11	1	A10325A-011	HOSE ASSEMBLY, 1/4 x 11
12	2	A10079A-078	HOSE ASSEMBLY, 3/8 x 78
13	2	A10079A-178	HOSE ASSEMBLY, 3/8 x 178
14	4	A10313A-025	HOSE ASSEMBLY, 3/8 x 25
15	4	A10313A-020	HOSE ASSEMBLY, 3/8 x 20
16	1	A10467A-095	HOSE ASSEMBLY, 3/4 x 95
17	1	A10467A-093	HOSE ASSEMBLY, 3/4 x 93
18	2	A10327A-014	HOSE ASSEMBLY, 1/4 x 14
19	1	A10467A-086	HOSE ASSEMBLY, 3/4 x 86
20	1	A10467A-085	HOSE ASSEMBLY, 3/4 x 85
21	2	A10364A-012	HOSE ASSEMBLY, 1/4 x 12
22	1	A10327A-050	HOSE ASSEMBLY, 1/4 x 50
23	1	A10313A-104	HOSE ASSEMBLY, 3/8 x 104
24	2	A10331A-074	HOSE ASSEMBLY, 3/4 x 74
25	2	A10327A-051	HOSE ASSEMBLY, 1/4 x 51
26	1	A10313A-012	HOSE ASSEMBLY, 3/8 x 12
27	2	A10331A-063	HOSE ASSEMBLY, 3/4 x 63
28	2	A10467A-077	HOSE ASSEMBLY, 3/4 x 77
29	1	A10079A-068	HOSE ASSEMBLY, 3/8 x 68
30	1	A10327A-016	HOSE ASSEMBLY, 1/4 x 16
31	1	A10079A-016	HOSE ASSEMBLY, 3/8 x 16
32	1	A10313A-079	HOSE ASSEMBLY, 3/8 x 79
33	1	A10427A-052	HOSE ASSEMBLY, 3/4 x 52
34	1	A10427A-054	HOSE ASSEMBLY, 3/4 x 54
35	2	A10331A-037	HOSE ASSEMBLY, 3/4 x 37
36	1	A10331A-031	HOSE ASSEMBLY, 3/4 x 31
37	1	A10079A-015	HOSE ASSEMBLY, 3/8 x 15
38	1	A10313A-047	HOSE ASSEMBLY, 3/8 x 47
39	1	A10331A-047	HOSE ASSEMBLY, 3/4 x 47
40	1	A10327A-015	HOSE ASSEMBLY, 1/4 x 15
41	1	A10331A-034	HOSE ASSEMBLY, 3/4 x 34
42	1	A10331A-027	HOSE ASSEMBLY, 3/4 x 27
43	1	A10079A-027	HOSE ASSEMBLY, 3/8 x 27
44	1	A09920A-087	HOSE ASSEMBLY, 1/4 x 87
45	1	A09815A-110	HOSE ASSEMBLY, 3/4 x 110
46	1	A10326A-110	HOSE ASSEMBLY, 1/4 x 110
47	2	A10080A-010	HOSE ASSEMBLY, 1/2 x 10
48	2	A09847A-010	HOSE ASSEMBLY, 3/8 x 10
49	2	A09922A-078	HOSE ASSEMBLY, 1/4 x 78
50	3	A10079A-011	HOSE ASSEMBLY, 3/8 x 11
51	1	A09922A-069	HOSE ASSEMBLY, 1/4 x 69
52	1	A09920A-031	HOSE ASSEMBLY, 1/4 x 31
53	1	A10314A-062	HOSE ASSEMBLY, 1/4 x 62
54	1	A10327A-103	HOSE ASSEMBLY, 1/4 x 103

(Continued on next page)

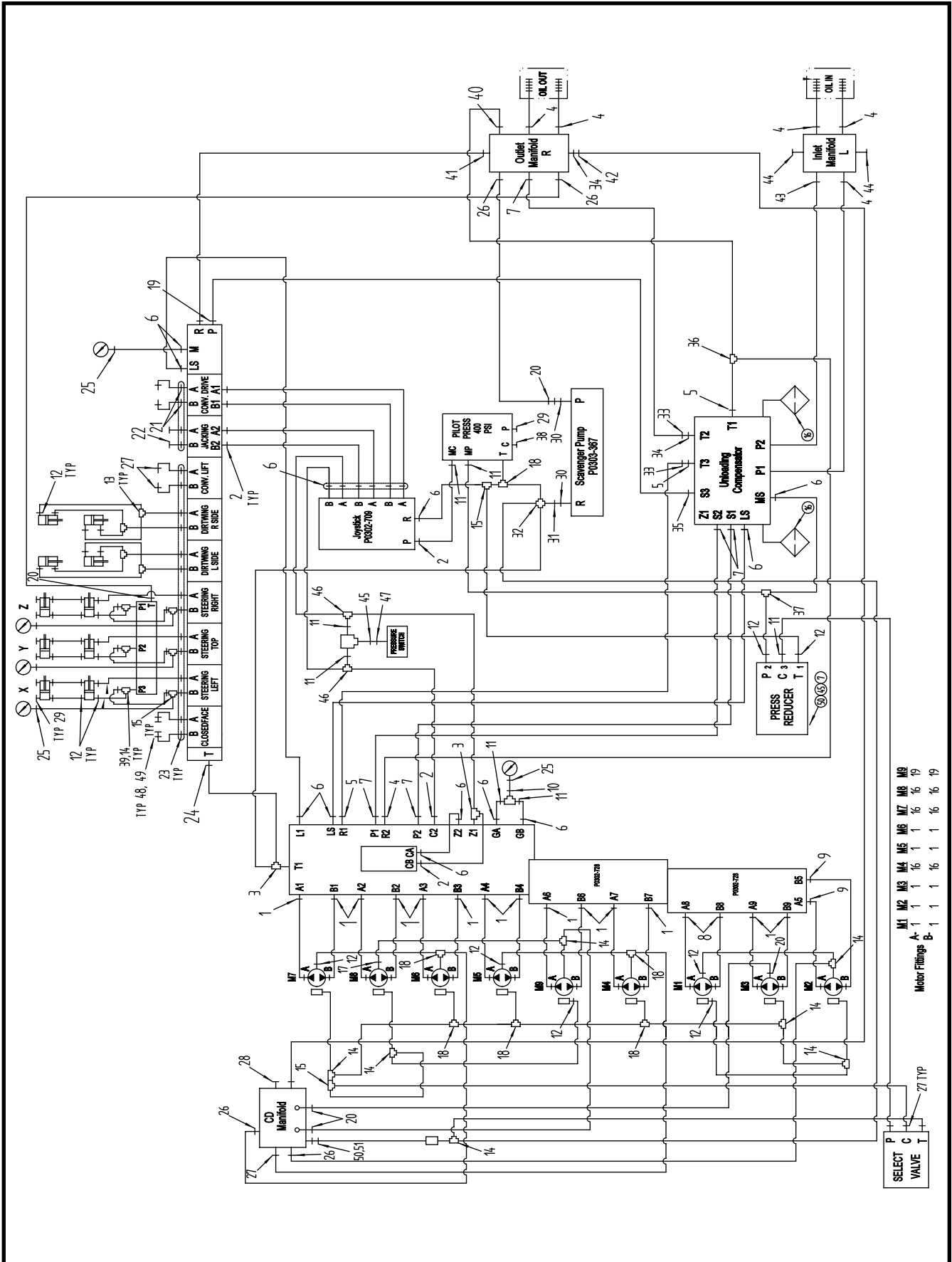
**HOSE KIT - 720, 028891A**  
**TBM Series II: 720**

ITEM	QTY	PART NO.	DESCRIPTION
55	1	A09920A-102	HOSE ASSEMBLY, 1/4 x 102
56	1	A10338A-021	HOSE ASSEMBLY, 1/4 x 21
57	1	A10364A-024	HOSE ASSEMBLY, 1/4 x 24
58	1	A10059A-018	HOSE ASSEMBLY, 1/4 x 18
59	1	A10327A-023	HOSE ASSEMBLY, 1/4 x 23
60	1	A10364A-019	HOSE ASSEMBLY, 1/4 x 19
61	1	A10327A-090	HOSE ASSEMBLY, 1/4 x 90
62	4	A09850A-100	HOSE ASSEMBLY, 1-1/4 x 100
63	1	A10342A-052	HOSE ASSEMBLY, 1 x 52
64	1	A10313A-120	HOSE ASSEMBLY, 3/8 x 120
65	1	A09912A-114	HOSE ASSEMBLY, 1/2 x 114
66	1	A10313A-045	HOSE ASSEMBLY, 3/8 x 45
67	1	A10468A-145	HOSE ASSEMBLY, 3/4 x 145
68	1	A09849A-115	HOSE ASSEMBLY, 1 x 115
69	1	A10099A-111	HOSE ASSEMBLY, 1 x 111
70	2	A10325A-100	HOSE ASSEMBLY, 1/4 x 100
71	2	A10325A-092	HOSE ASSEMBLY, 1/4 x 92
72	2	A10325A-010	HOSE ASSEMBLY, 1/4 x 10
73	1	A10326A-036	HOSE ASSEMBLY, 1/4 x 36
74	7	A10313A-022	HOSE ASSEMBLY, 3/8 x 22
75	1	A10313A-075	HOSE ASSEMBLY, 3/8 x 75
76	1	A10079A-080	HOSE ASSEMBLY, 3/8 x 80
77	1	A10079A-032	HOSE ASSEMBLY, 3/8 x 32
78	1	A10313A-107	HOSE ASSEMBLY, 3/8 x 107
79	1	A10079A-111	HOSE ASSEMBLY, 3/8 x 111
80	1	A10326A-012	HOSE ASSEMBLY, 1/4 x 12
81	1	A10326A-030	HOSE ASSEMBLY, 1/4 x 30
82	1	A10079A-073	HOSE ASSEMBLY, 3/8 x 73

## **NOTES**

# FITTING KIT - 720, 028892A

## TBM Series II: 720

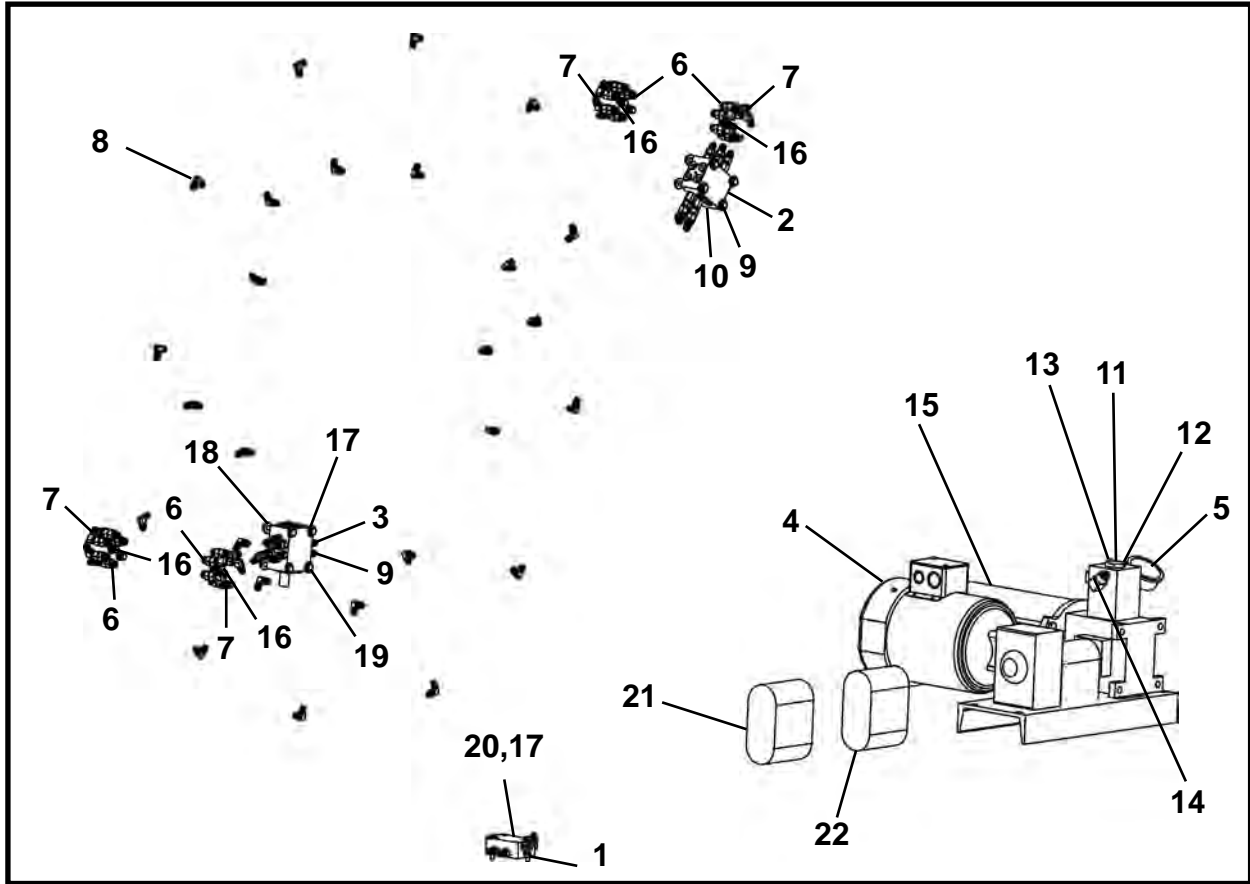


Motor Fittings	M1	M2	M3	M4	M5	M6	M7	M8	M9
A-	1	1	1	1	1	1	1	1	1
B-	1	1	1	1	1	1	1	1	1

**FITTING KIT - 720, 028892A**  
**TBM Series II: 720**

ITEM	QTY	PART NO.	DESCRIPTION
0	1	028892A	KIT, Fitting 720
1	24	P0300-329	FITTING, 12MFFOR-12MB
2	7	P0300-427	FITTING, 04MFOR-04MB90
3	2	P0300-821	FITTING, 4MFFOR-4MB-4MFFOR
4	6	P0300-366	FITTING, 20MFOR-20MB
5	3	P0300-374	FITTING, 16MFFOR-20MB
6	17	P0300-362	FITTING, 04MB-04MFFOR
7	5	P0300-319	FITTING, 16MFS X 16 MORB
8	2	P0300-632	FITTING, 12MFFOR-16MB90
9	2	P0300-561	FITTING, 12MFFOR-16MB45
10	1	P0300-311	FITTING, 04MFFOR-06MB90
11	7	P0300-310	FITTING, 04MFFOR-06MB
12	33	P0300-355	FITTING, 6MFS-6MAORB-90 DEGREE
13	4	P0300-814	FITTING, 6MFFOR-6MFFOR-6MFFOR-BKHD
14	10	P0300-386	FITTING, 6MFS-6MAORB-6MFS
15	5	P0300-613	FITTING, 06MFOR-06FFORX-06MFOR
16	6	P0300-359	FITTING, 12MFFOR-12MB45
17	1	P0300-612	FITTING, 06MFOR-06MB45
18	6	P0300-376	FITTING, 06MFOR-06MFOR-06MB
19	3	P0300-372	FITTING, 12MFFOR-12MB90
20	5	P0300-356	FITTING, 6MFS-6MORB-STR
21	4	P0300-375	FITTING, #8 MFS X 12 MORB
22	2	P0300-408	CAP/NUT 8FFOR
23	14	P0300-634	FITTING, 06MFOR-10MB
24	1	P0300-314	FITTING, 4MFFOR-5MB FITTING
25	5	P0300-594	FITTING, 4FB-4MFFOR
26	4	P0300-717	FITTING, 6MFFOR-8MB90
27	6	P0300-430	FITTING, 6MFFOR-8MB
28	1	P0300-193	PLUG, 3/4-16 HEX HEAD
29	7	P0300-027	PLUG, 6MB
30	2	P0300-724	FITTING, 06MFFOR-06MBSPP
31	1	P0300-847	FITTING, 6FFORX-6FFORX
32	1	P0300-815	FITTING, 6MFFOR-6MFFOR-6MFFOR-6MFFOR
33	2	P0300-668	FITTING, 16MFFOR-16FFORX90
34	2	P0300-450	FITTING, 16MFFOR-20MB90
35	1	P0300-378	FITTING, #12MFS-16MORB STRAIGHT
36	1	P0300-328	FITTING, 16MFS-16FFSS-16MFS
37	1	P0300-312	FITTING, 4MFFOR-4FFORX-4MFFOR
38	1	P0300-176	PLUG, 9/16-18 ORING HOLLOW HEX
39	3	P0300-603	FITTING, 06MFOR-06FFORX 90
40	1	P0300-371	FITTING, 16MFFOR-16MB90
41	1	P0300-765	FITTING, 12MFOR-20MB
42	1	P0300-631	FITTING, 16FFOR-08MFFOR
43	1	P0300-620	FITTING, 20MFOR-20MB90
44	2	P0300-146	PLUG, 20MB-PLUG HOLLOW BACK
45	1	P0300-575	FITTING, 06MORB-04FORB, ST
46	2	P0300-313	FITTING, T/4MFS X 4MFS X 4FFSS
47	1	P0300-541	ORING, #4 OR
48	2	P0300-581	FITTING, 6MFFOR-6MFFOR-BKHD
49	2	P0300-390	CAP, 06FOR
50	1	P0300-812	FITTING, 08FFORX-06MB
51	1	P0300-750	FITTING, 08MFFOR-06MB

**GREASE ASSEMBLY, 025995A**  
**TBM Series II: 600 - 660 - 720**

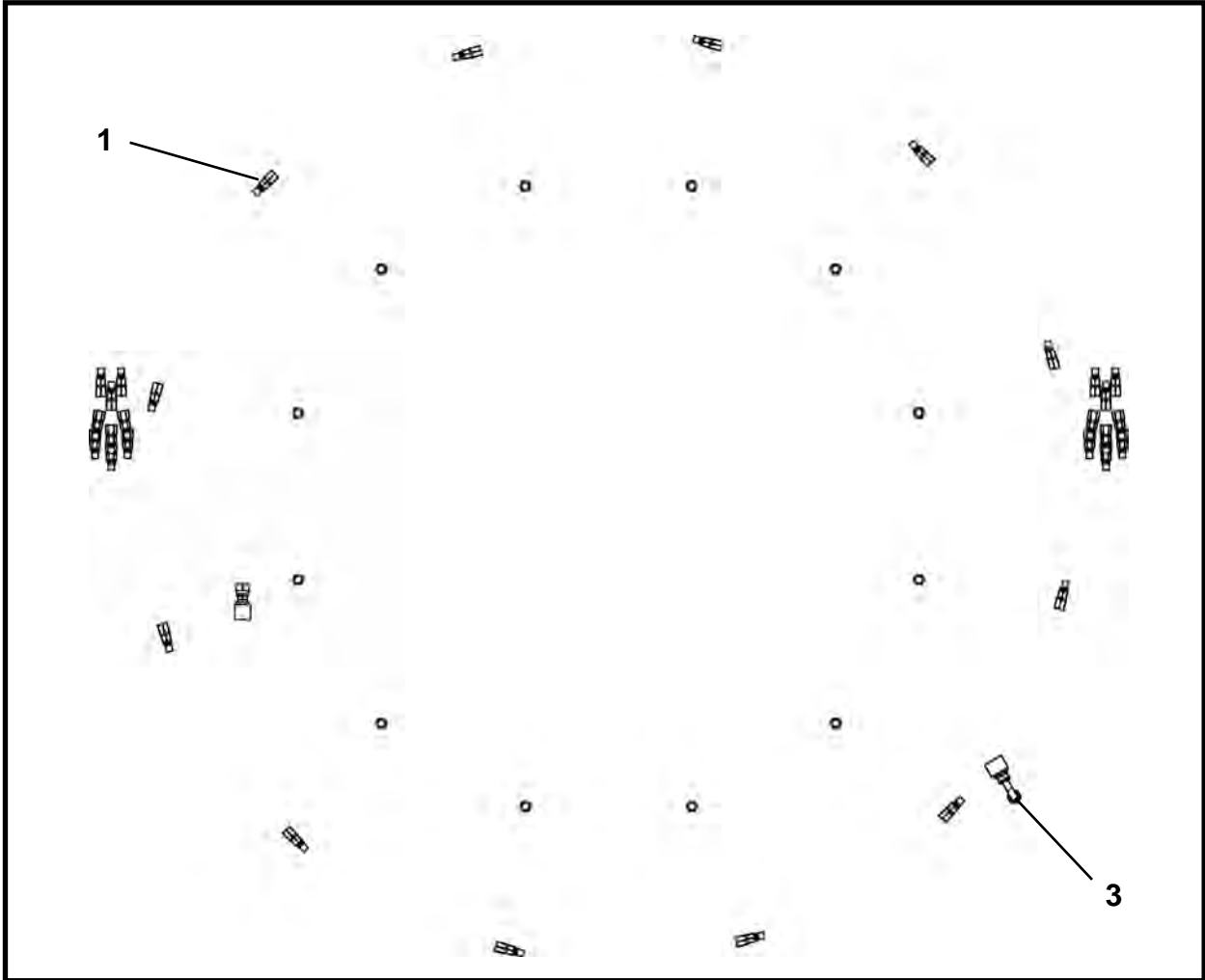


ITEM	QTY	PART NO.	DESCRIPTION
0	1	025995A	GREASE ASSEMBLY, 600 - 660 - 720 Series II
1	1	P0302-743	DIVIDER, Grease 3 Port
2	1	P0302-741	BLOCK, 6 Port Grease Distribution
3	1	P0302-742	BLOCK, 12 Port Grease Distribution
4*	1	P0303-375	GREASE PUMP W/RESERVOIR
5	1	P0309-210	FILTER, Grease
6	20	P0300-250	FITTING, 04MJ-04MB
7	26	P0300-271	FITTING, 04MJ-04FJX90
8	26	P0300-418	FITTING, 04MJ-02MP90-FGD
9	23	P0300-363	FITTING, 04MJ-02MP
10	1	P0302-744	INDICATOR, Grease Flow
11	1	P0300-113	FITTING, 04MP-04MP
12	1	P0300-268	FITTING, 04MJ-04FP
13	2	P0300-164	FITTING, 04MP-04FP90-BRZ
14	1	P0063-016	FITTING, Grease 1/4-NPT Straight
15	35 LB	P0126-049	GREASE, Mobil SHC 101EAL
16	8	P0300-682	FITTING, 4MB-HHP
17	18	P0040-004	WASHER, Hardened Flat 1/4
18	8	P0003-04-000	NUT, Hex 1/4 UNC
19	8	P0001-04-010	BOLT, Hex 1/4 UNC x 2.5
20	2	P0001-04-006	BOLT, Hex 1/4 UNC x 1.5
21	1	P0303-375A	DISK, Blowout 1/4
22	1	P0303-375B	KIT, B/O Disc - 6 Pak

LB - Pound (Grease)

\* Refer to Section 9, Pumps for parts information.

**GREASE HOSE ASSEMBLY, 025996A**  
**TBM Series II: 600 - 660 - 720**

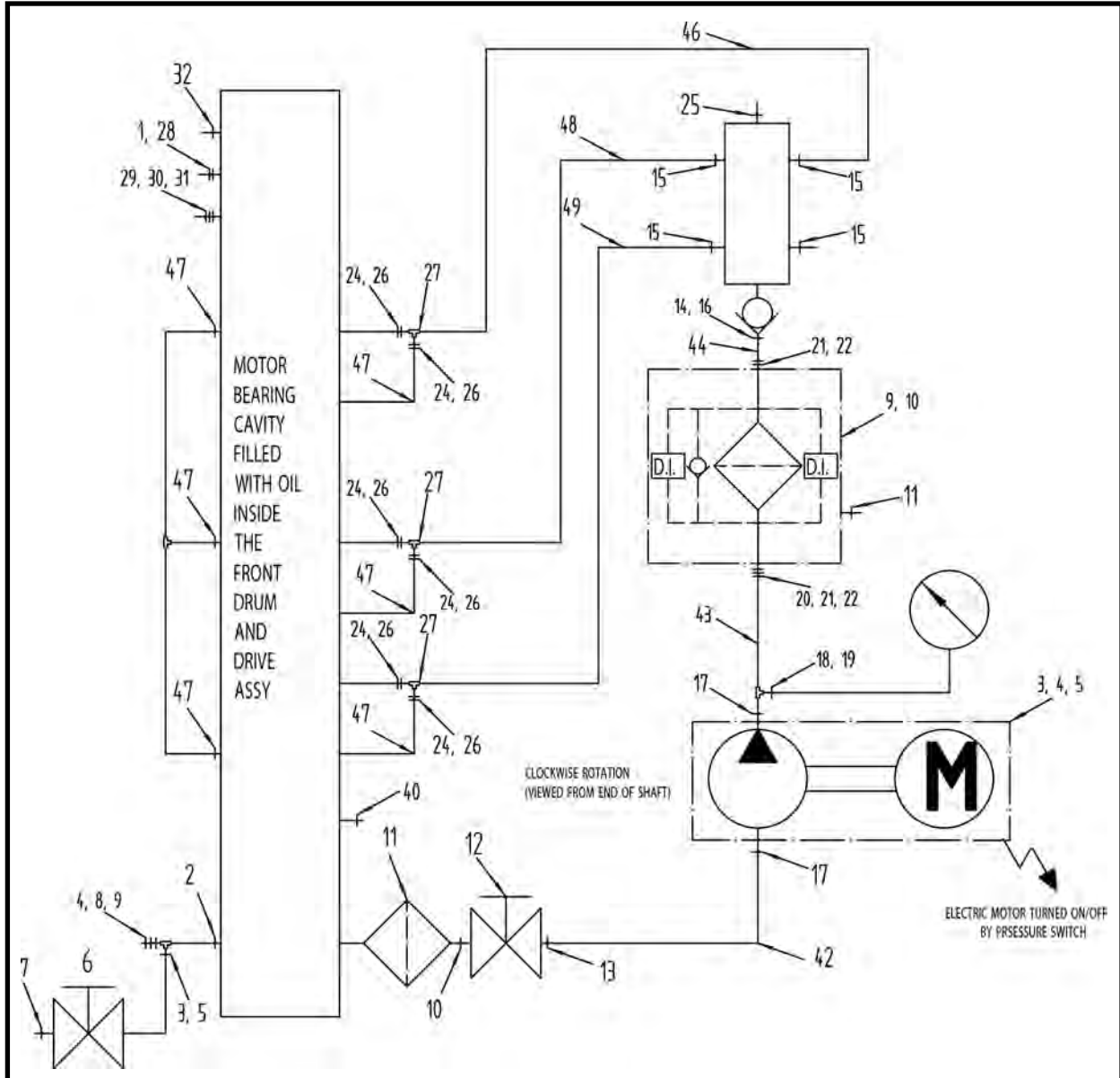


ITEM	QTY	PART NO.	DESCRIPTION
0	1	025996A	GREASE HOSE ASSEMBLY
1	75	P0220-303	FITTING, Hose
2*	2500 LI	P0201-290	HOSE, Plastic Thermo 1/8
3	1	A09977A-166	HOSE ASSEMBLY, 1/4 x 166

LI - Linear Inch

\* Not Shown

**LUBE ASSEMBLY, 025932A**  
**TBM Series II: 600 - 660 - 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	025932A	LUBE ASSEMBLY, 600 - 660 - 720 Series II
1	1	P0300-074	FITTING, 16MP-16FPX
2	1	P0300-076	FITTING, 16MP-16FP-16FP
3	1	024449P	FITTING, Tank Magnet Plug
4	1	P0300-090	FITTING, 16MP-16MP90
5	1	P0302-231	VALVE, Ball
6	1	P0300-104	FITTING, 16MP-HHP
7	3	P0300-026	FITTING, 04MP-HHP
8	1	P0091-022	MAGNET, Tank
9	1	P0300-048	FITTING, 08MP-08MP
10	1	P0309-205	STRAINER, Suction
11	1	P0302-185	VALVE, Ball 1/2
12	1	P0300-382	FITTING, 08MFOR-08MP
13	1	P0300-636	FITTING, 08MFOR-12MP
14	1	P0300-408	FITTING, 08FFOR-CAP

(Continued on next page)

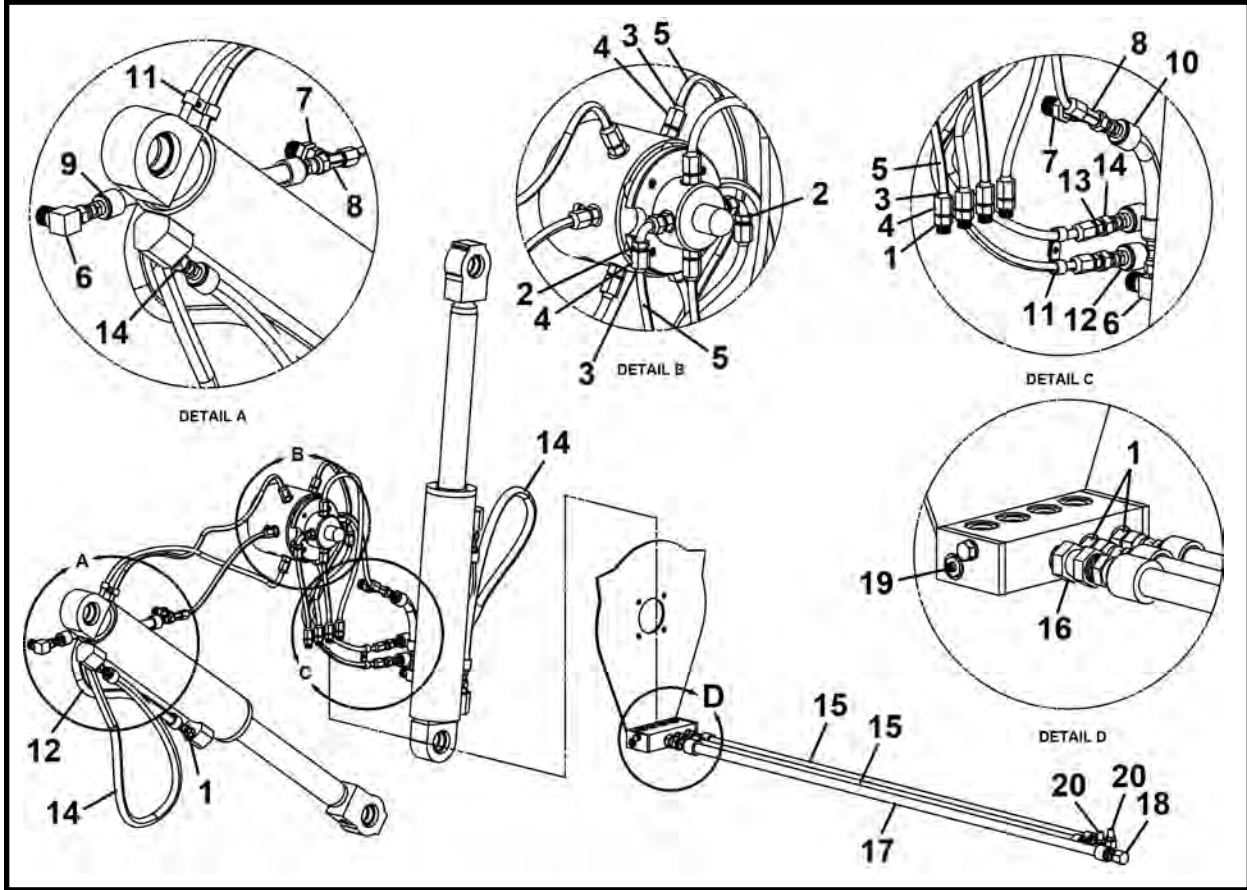
**LUBE ASSEMBLY, 025932A**  
**TBM Series II: 600 - 660 - 720**

ITEM	QTY	PART NO.	DESCRIPTION
15	1	P0308-110	BREATHER
16	2	P0300-249	FITTING, 04MJ-04MP
17	1	P0300-805	FITTING, 04MJ-04MJ-04FJX
18	2	P0300-317	FITTING, 08MFOR-08FFORX90
19	1	P0302-498	VALVE, Check
20	1	P0300-596	FITTING, 8MJ-8FPBKHD
21	1	P0300-003	FITTING, 08MP-04FPX90
22	1	P0300-334	FITTING, 08FJ-04MJ
23	1	P0301-100	GAUGE, 5000 Psi
24	1	P0304-334	MOTOR
25	1	P0305-214	BRACKET, Drive
26*	1	P0303-361	PUMP
27	8	P0040-005	WASHER, Hardened Flat 5/16
28	4	P0001-05-004	BOLT, Hex 5/16 UNC x 1
29	4	P0003-05-000	NUT, Hex 5/16 UNC
30	1	P0309-206	FILTER
31	1	P0309-206A	ELEMENT, Filter
32	1	P0301-154	INDICATOR
33	4	P0040-006	WASHER, Hardened Flat 3/8
34	2	P0001-06-003	BOLT, Hex 3/8 UNC x .75
35	2	P0300-795	FITTING, 06MP-08MFFOR
36	1	P0300-318	FITTING, 08MFOR-08FFORX-08MFOR
37	1	P0300-395	FITTING, 08FFOR-04MFOR
38	2	P0300-622	FITTING, 12FFOR-08MFOR
39	2	P0300-378	FITTING, 12MFFOR-16MB
40	1	A10319A-040	HASE ASSEMBLY, 1/4 x 40
41	1	A10372A-061	HOSE ASSEMBLY, 1/2 x 61
42	1	A10324A-016	HOSE ASSEMBLY, 1/2 x 16
43	1	A10324A-041	HOSE ASSEMBLY, 1/2 x 41
44	8	P0300-418	FITTING, 04MJ-02MP90-FGD
45	16	P0220-303	FITTING, Hose
46	2	P0300-247	FITTING, 04MJ-04MP90
47	3	P0300-264	FITTING, 04MJ-04FJX-04MJ

\* Refer to Section 9, Pumps for parts information.

**NOTES**

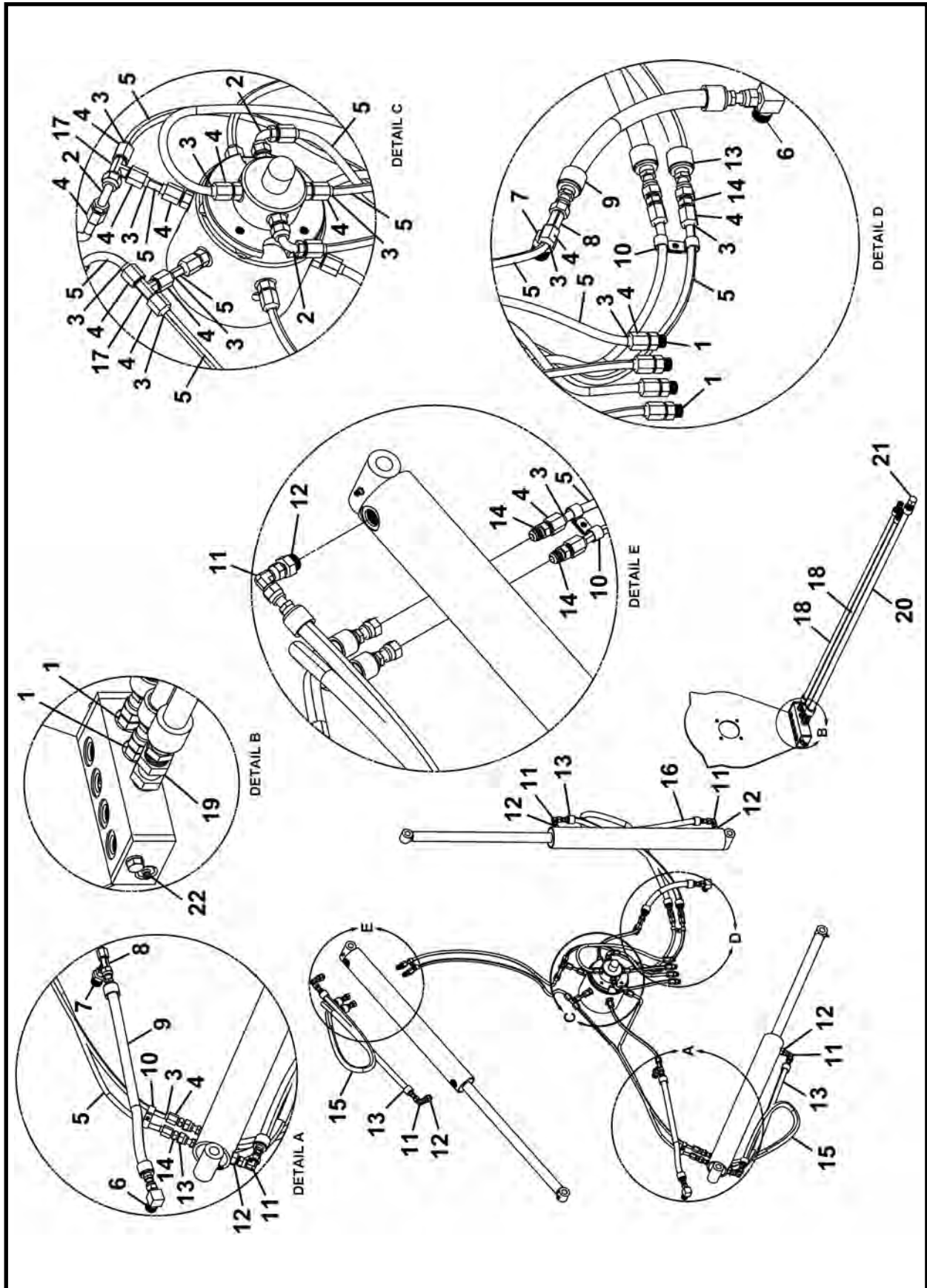
**CLOSED FACE HYDRAULIC ASSEMBLY, 027561A**  
**TBM Series II: 600 - 660**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027561A	HYDRAULIC ASSEMBLY, 540 Series II
1	10	P0300-041	FITTING, 06MJ-06MB
2	2	P0300-123	FITTING, 500454-6S
3	20	P0300-127	FITTING, 06TS
4	20	P0300-128	FITTING, 06TSN
5	190 LI	P0110-106	TUBING, Hydraulic Steel 3/8 x 190
6	2	P0300-014	FITTING, 06MJ-08MP90
7	2	P0300-120	FITTING, 06MJ-08MP
8	2	P0300-131	FITTING, 06MJ-06MJ-06FJX
9	1	A10311A-014	HOSE ASSEMBLY, 3/8 x 14
10	1	A10311A-008	HOSE ASSEMBLY, 3/8 HOSE
11	4	P0055-126	CLAMP, Insulated Tube
12	2	A10311A-025	HOSE ASSEMBLY, 3/8 x 25
13	4	P0300-129	FITTING, 06MJ-06MJ
14	2	A10311A-040	HOSE ASSEMBLY, 3/8 x 40
15	2	A10311A-090	HOSE ASSEMBLY, 3/8 x 90
16	1	P0300-010	FITTING, 08MP-08FPX
17	1	A10320A-120	HOSE ASSEMBLY, 1/2 x 120
18	1	P0417-003	CAP, Pipe 1/2
19	1	P0063-016	FITTING, Grease 1/4-NPT Straight
20	2	P0300-042	FITTING, 06MJ-06MB90

LI - Linear Inch

**CLOSED FACE HYDRAULIC ASSEMBLY 720, 020985A**  
**TBM Series II: 720**

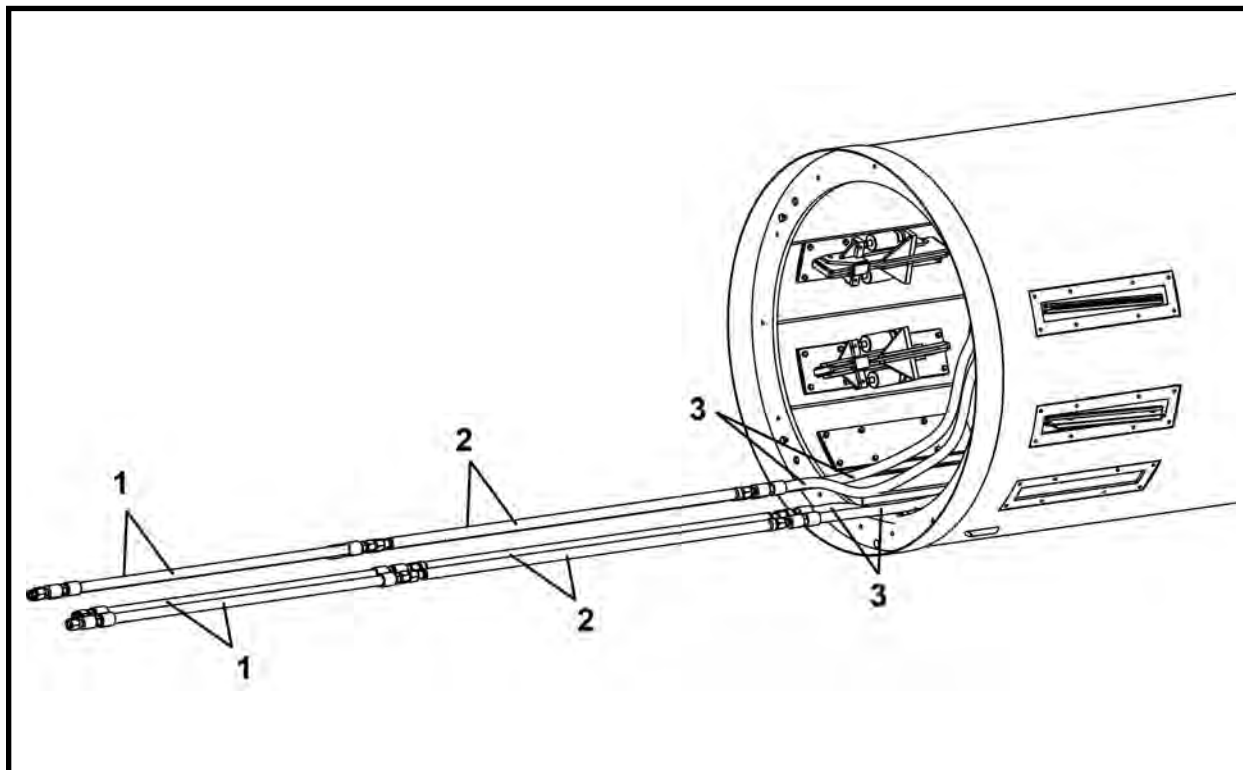


**CLOSED FACE HYDRAULIC ASSEMBLY 720, 020985A**  
**TBM Series II: 720**

ITEM	QTY	PART NO.	DESCRIPTION
0	1	020985A	ROTARY HUB HYDRAULIC ASSEMBLY 720
1	6	P0300-041	FITTING, 06MJ-06MB
2	3	P0300-123	FITTING, 500454-6S
3	28	P0300-127	FITTING, 06TS
4	28	P0300-128	FITTING, 06TSN
5	250 LI	P0110-106	TUBING, Hydraulic Steel 3/8
6	2	P0300-014	FITTING, 06MJ-08MP90
7	2	P0300-120	FITTING, 06MJ-08MP
8	2	P0300-131	FITTING, 06MJ-06MJ-06FJX
9	2	A10311A-014	HOSE ASSEMBLY, 3/8 x 14
10	6	P0055-126	CLAMP, Tubing 1/2
11	6	P0300-149	FITTING, 06MJ-06FJX90
12	6	P0300-269	FITTING, 06MJ-08MB
13	3	A10311A-028	HOSE ASSEMBLY, 3/8 x 28
14	6	P0300-129	FITTING, 06MJ-06MJ
15	2	A10311A-037	HOSE ASSEMBLY, 3/8 x 37
16	1	A10311A-040	HOSE ASSEMBLY, 3/8 x 40
17	2	P0300-138	FITTING, 06MJ-06MJ-06MJ
18	2	A10311A-090	HOSE ASSEMBLY, 3/8 x 90
19	1	P0300-010	FITTING, 08MP-08FPX
20	1	A10320A-120	HOSE ASSEMBLY, 1/2 x 120
21	1	P0417-003	CAP, Pipe 1/2
22	1	P0063-016	FITTING, Grease 1/4

LI - Linear Inch

## TBM HYDRAULIC TUNNEL HOSES & LINES



ITEM	QTY	PART NO.	DESCRIPTION
1.1 <sup>^</sup>	AR	F13597F00	HOSE ASSEMBLY, Hydraulic Starter 1-1/4 x 35' (3,000 psi)
1.2 <sup>^</sup>	AR	F27691F	HOSE ASSEMBLY, Hydraulic Starter 1-1/4 x 35' (5,000 psi)
2.1 <sup>^</sup>	AR	F13326F00	HYDRAULIC LINE, TBM 1.5 x 21' (1-1/4 Ends) (3,000 psi)
2.2 <sup>^</sup>	AR	F27674F	HYDRAULIC LINE, TBM 1.5 x 21' (1-1/4 Ends) (5,000 psi)
3.1 <sup>^</sup>	4	A09850A-100	HOSE ASSEMBLY 1-1/4 x 100 (5,000 psi)
3.2 <sup>^</sup>	4	A10094A-100	HOSE ASSEMBLY 1-1/4 x 100 (3,000 psi)

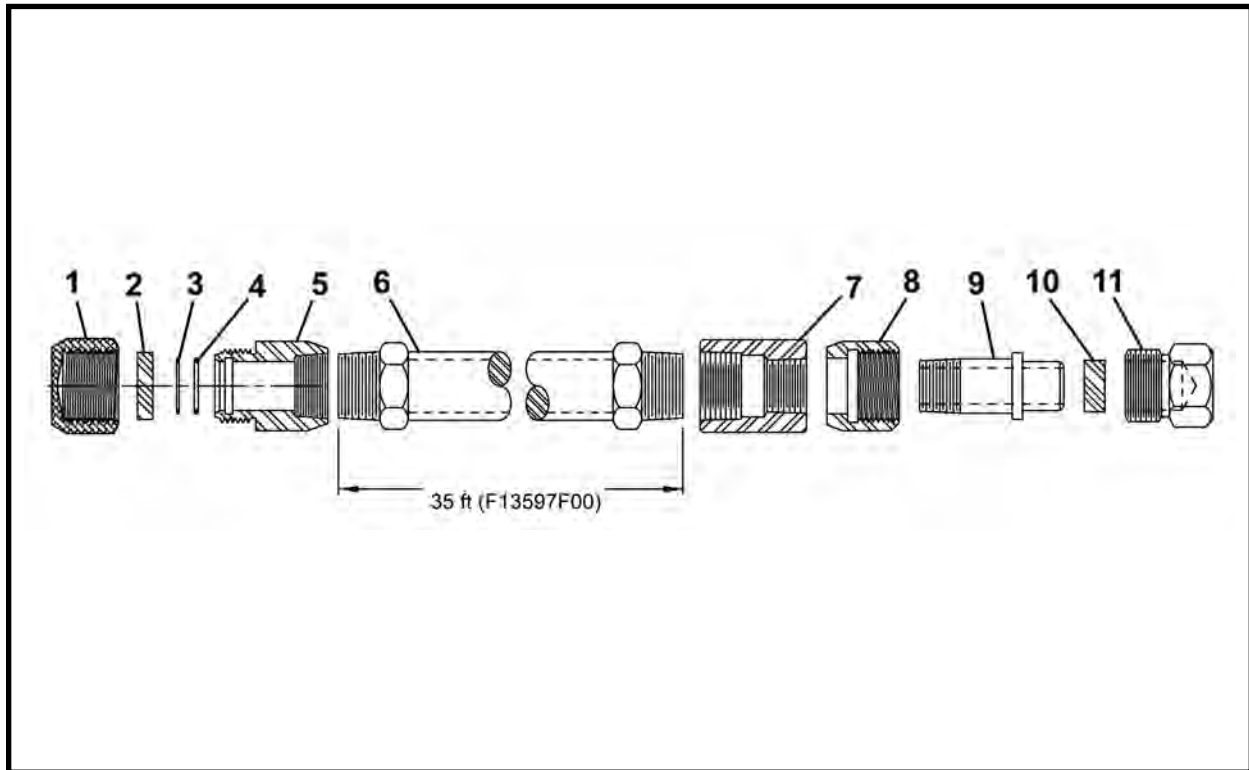
**<sup>^</sup> IMPORTANT: If using 5,000 psi supply hydraulic oil to the Series II TBM, the supply hoses/lines MUST be rated at a minimum of 5,000 psi.**

\* Refer to this section for parts information.

AR - As Required (Per Job)

NOTE: Use 027698A Adapter Kit (included in Series II TBM) to adapt the TBM to low and high pressure lines. Refer to this section for parts information.

## HYDRAULIC STARTER HOSE ASSEMBLY (3,000 PSI), F13597F00

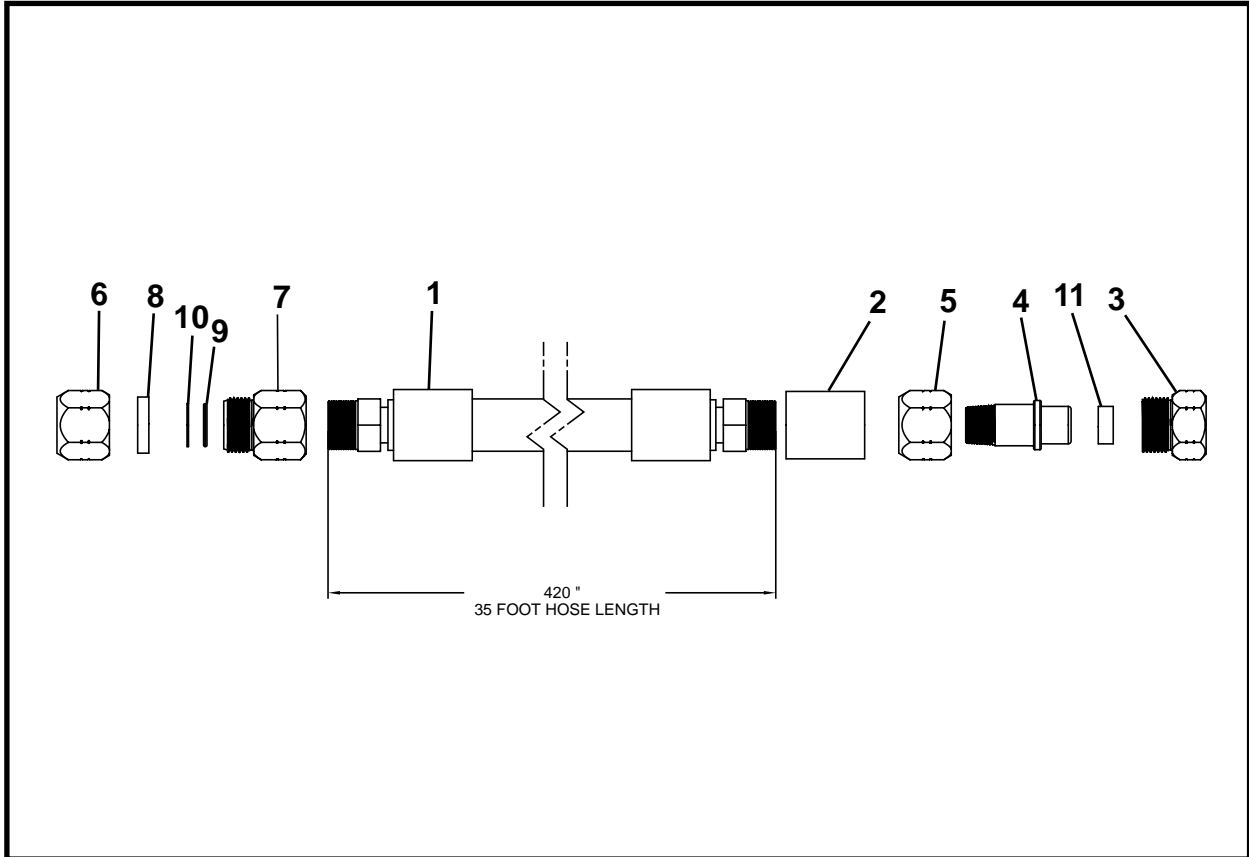


ITEM	QTY	PART NO.	DESCRIPTION
0	AR	F13597F00	HOSE ASSEMBLY 1-1/4 x 35'
1	1	007002P02	CAP, Coupler 1-1/4
2*	1	007086P00	PLUGS, Rubber 1/2 x 1.625 OD
3	1	P0084-123	RING, Back-Up
4	1	P0085-123	ORING
5	1	005348P00	COUPLER, Female 1-1/4
6	1	A10350A-420	HOSE ASSEMBLY 1-1/4 x 420
7	1	P0421-012	COUPLER, Reducer
8	1	004901P01	COUPLER
9	1	004899P00	UNION, Coupler
10**	1	007087P00	PLUGS, Rubber 1/2 x 1.25 OD
11	1	005350P03	CAP, Coupler 1-1/4

\*Included with item 1.

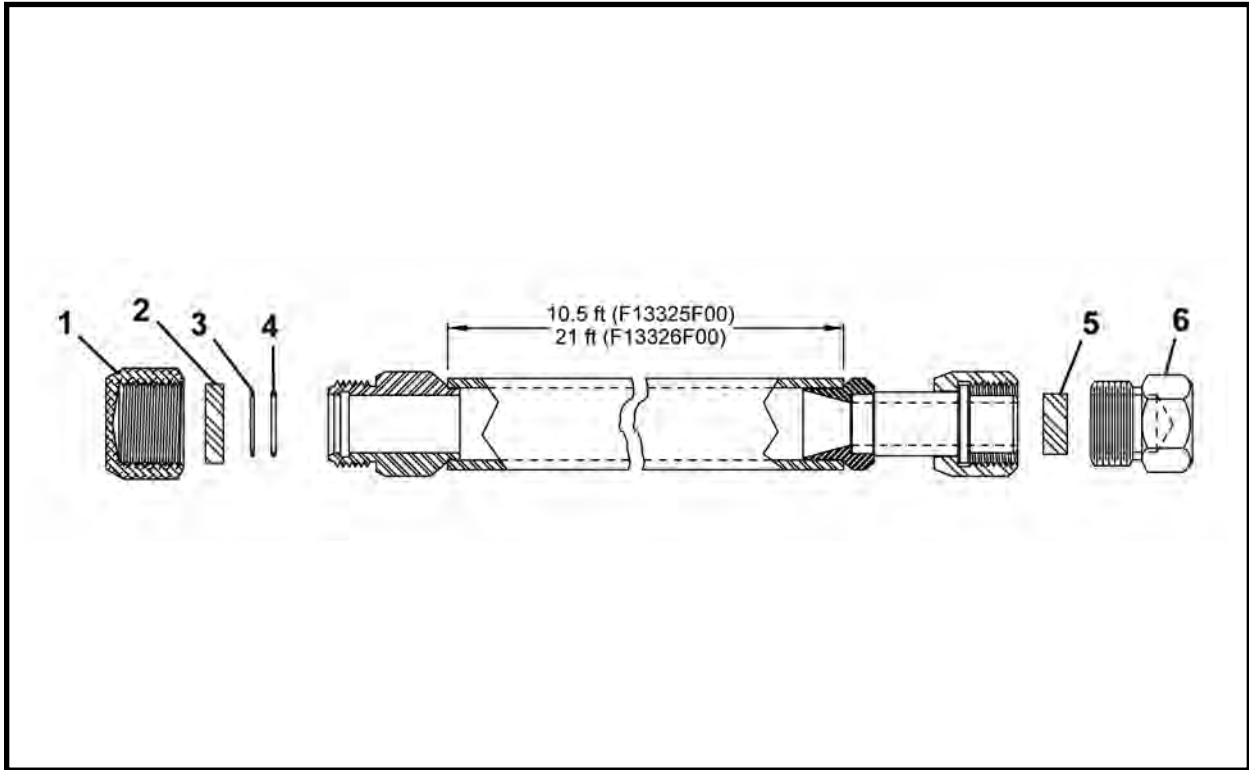
\*\* Included with item 11.

## HYDRAULIC STARTER HOSE ASSEMBLY (5,000 PSI), F27691F



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F27691F	STARTER HOSE ASSEMBLY, 35'
1	1	A09851A-420	HOSE ASSEMBLY, 1-1/4 x 420 (35 ft)
2	1	P0421-022	REDUCER
3	1	027672P	PLUG, Storage, TBM High Pressure
4	1	027669P	NIPPLE, Threaded, TBM High Pressure
5	1	027667P	NUT, Couple, TBM High Pressure
6	1	027671P	CAP, Storage, TBM High Pressure
7	1	027687P	FITTING, Threaded, TBM High Pressure
8	1	027651P	INSERT, Rubber
9	1	P0085-124A	ORING
10	1	P0084-124	RING, Back-Up
11	1	007087P00	PLUG, Rubber

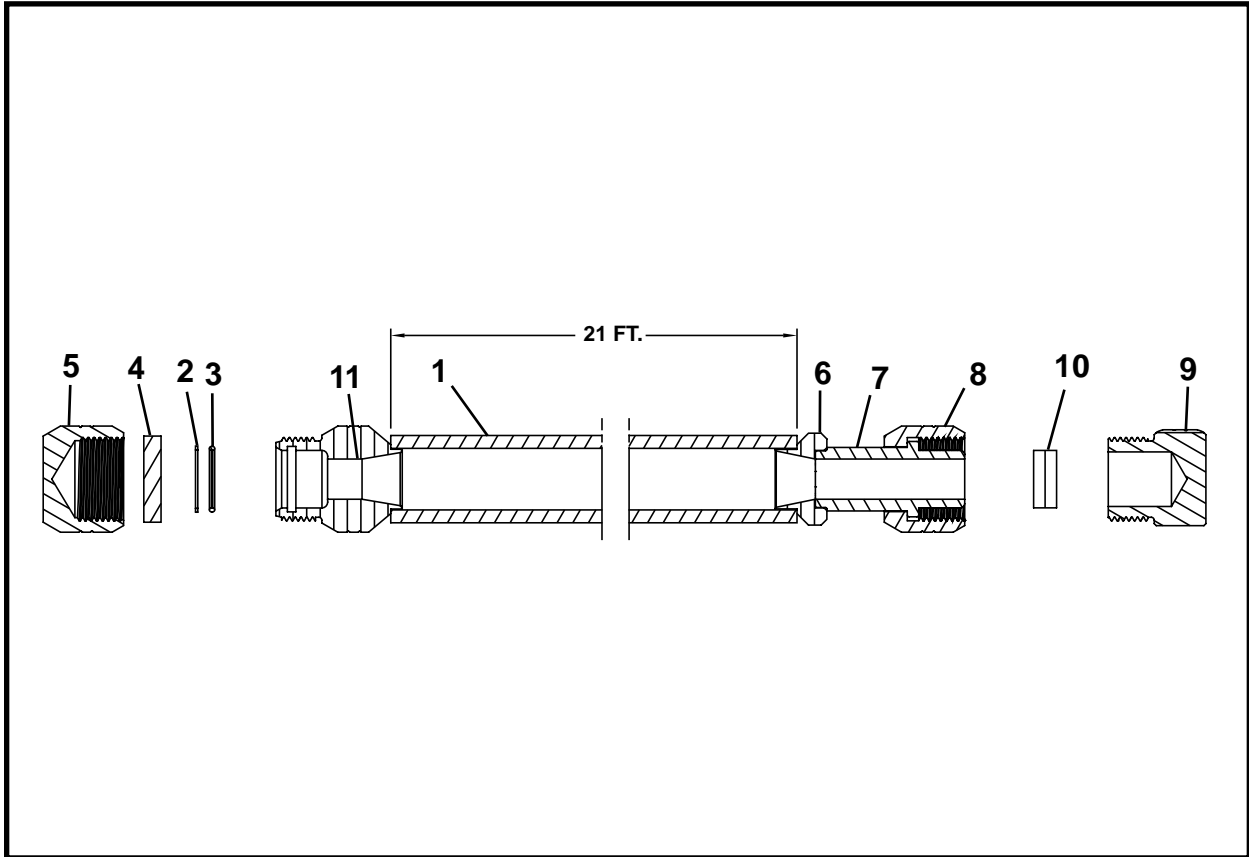
## TBM HYDRAULIC LINES LP (3,000 PSI) ASSEMBLY, F13326F00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F13326F00	HYDRAULIC LINE 1.5 x 21' (1-1/4 Ends)
1	1	007002P02	CAP, Coupler 1-1/4
2*	1	007086P00	PLUGS, Rubber 1/2 x 1.625 OD
3	1	P0084-123	RING, Back-Up
4	1	P0085-123	ORING
5	1	007087P00	PLUGS, Rubber 1/2 x 1.25 OD
6	1	005350P03	CAP, Coupler 1-1/4

\* Included in item 1.

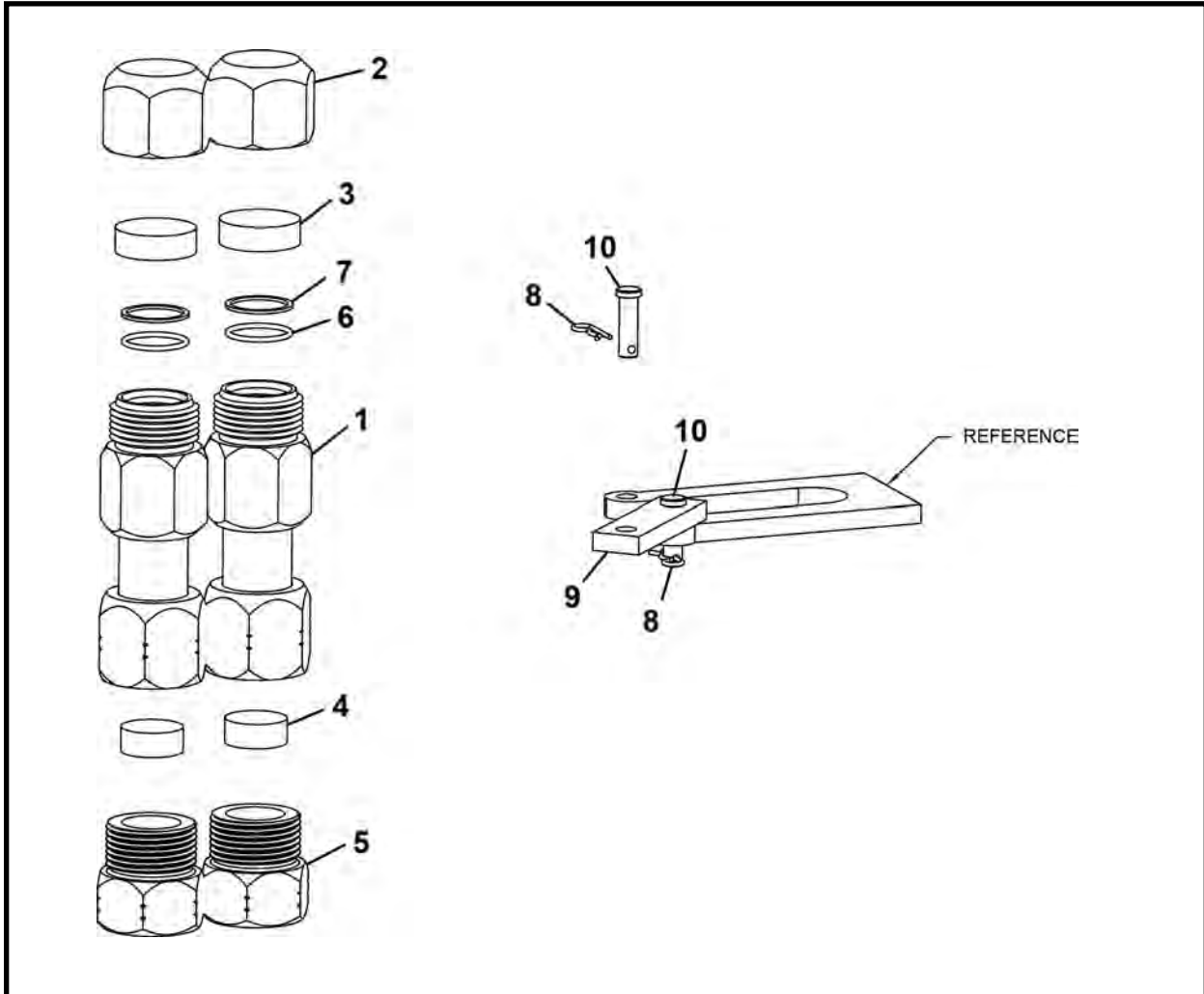
## TBM HYDRAULIC LINES HP (5,000 PSI) ASSEMBLY, F27674F



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F27674F	ASSEMBLY, Hydraulic Line HP (5,000 psi)
1	1	NSS	PIPE
2	1	P0084-124	RING, Back-Up
3	1	P0085-124A	ORING
4	1	027612P	INSERT, Rubber
5	1	027671P	CAP, Storage, TBM High Pressure
6	1	NSS	RING, Adapter TBM High Pressure
7	1	NSS	NIPPLE, TBM High Pressure
8	1	NSS	NUT, Coupler, TBM-High Pressure
9	1	027672P	PLUG, Storage TBM High Pressure
10	1	007087P00	PLUG, Rubber
11	1	NSS	FITTING, TBM High Pressure

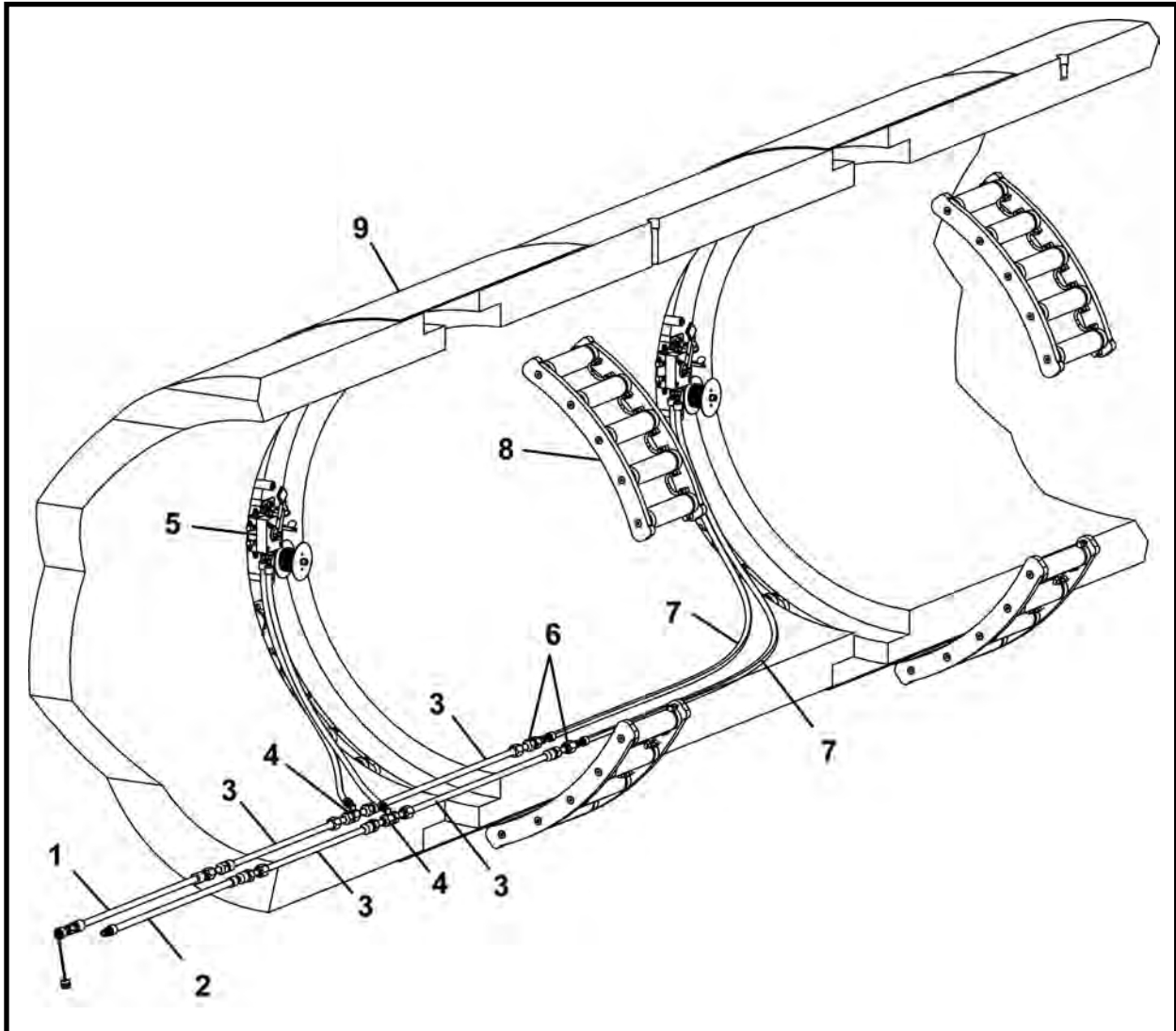
NSS - Not Sold Separately

**ADAPTER KIT - 5000 PUMP UNIT (3,000 PSI) TO TBM Series II (HP), 027698A**  
**1-1/4 LP to HP Connections**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027698A	KIT, Adapter, 5000 Pump Unit To TBM Series II (HP)
1	2	027694A	FITTING, Adapter, Low Pressure To TBM Series II
2	2	007002P02	CAP, Coupler 1-1/4
3	2	007086P00	PLUG, Rubber 1/2
4	2	007087P00	PLUG, Rubber 1/2
5	2	027672P	PLUG, Storage, TBM High Pressure
6	2	P0085-123	ORING
7	2	P0084-123	RING, Back-Up
8	2	P0090-001	CLIP, Hitch Pin
9	1	027696P	RETAINER
10	2	P0024-006	PIN, Clevis 3/8 x 1.25

## INTERMEDIATE JACKING STATION



ITEM	QTY	PART NO.	DESCRIPTION
1*	1	F09802F01	STARTER HOSE, High Pressure 30'
2*	1	F27868F	STARTER HOSE, Low Pressure 30'
3*	AR	F09800F00	TUNNEL LINE
4*	AR	F09804F00	TEE CONNECT
5*	AR	F04908F01	VALVE, IJS (With Cable)
6*	1	F09805F00	STARTER CONNECTION
7	2	A10311A-xxx	HOSE ASSEMBLY, 3/8 JIC x length
8.1*	6	007302A00	IJS SEGMENT ASSEMBLY - 600
8.2*	7	007303A00	IJS SEGMENT ASSEMBLY - 660
8.3*	5	007304A00	IJS SEGMENT ASSEMBLY - 720
9**	AR	-	IJS HOUSING

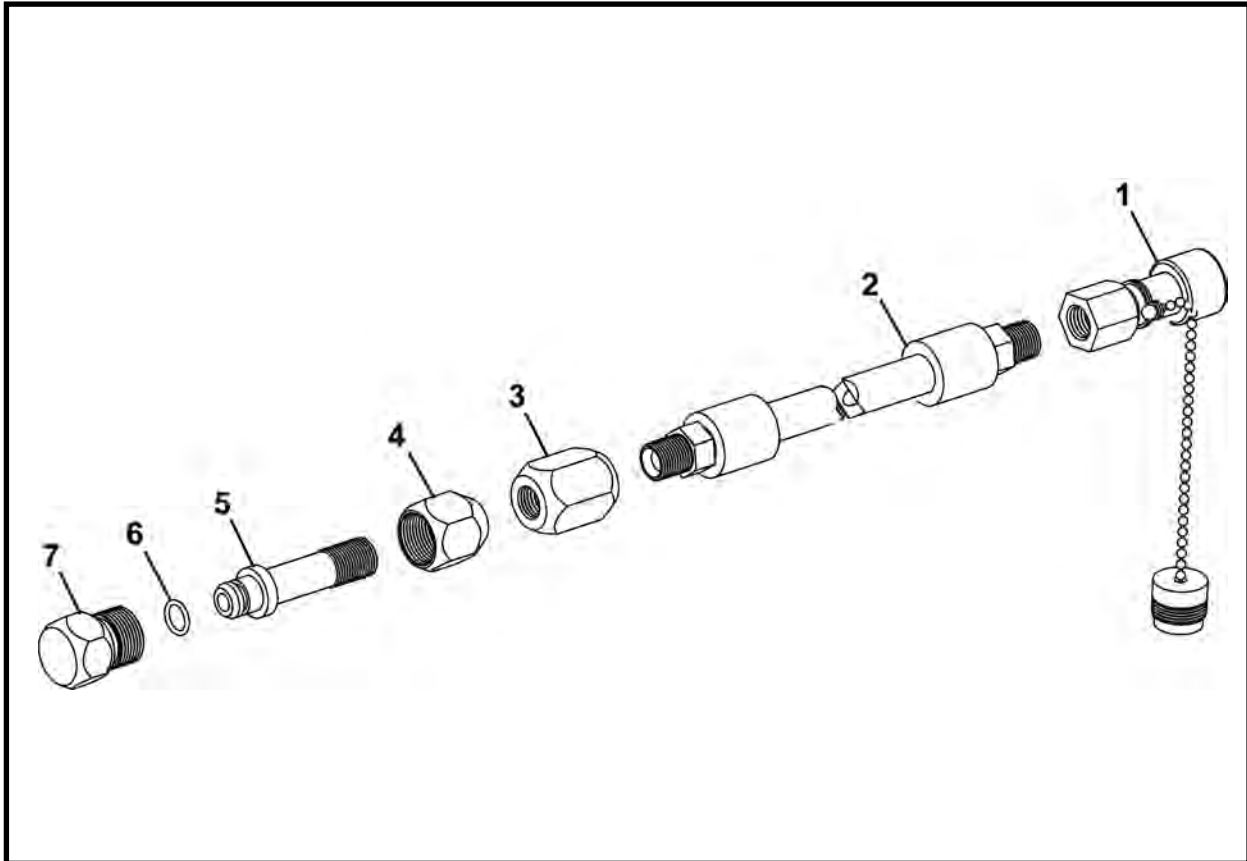
AR - As Required (Per Job)

\* Refer to this section for parts information.

\*\* Contact your Akkerman Aftermarket Support representative for information regarding IJS housings.

xxx - Hose length per job requirement.

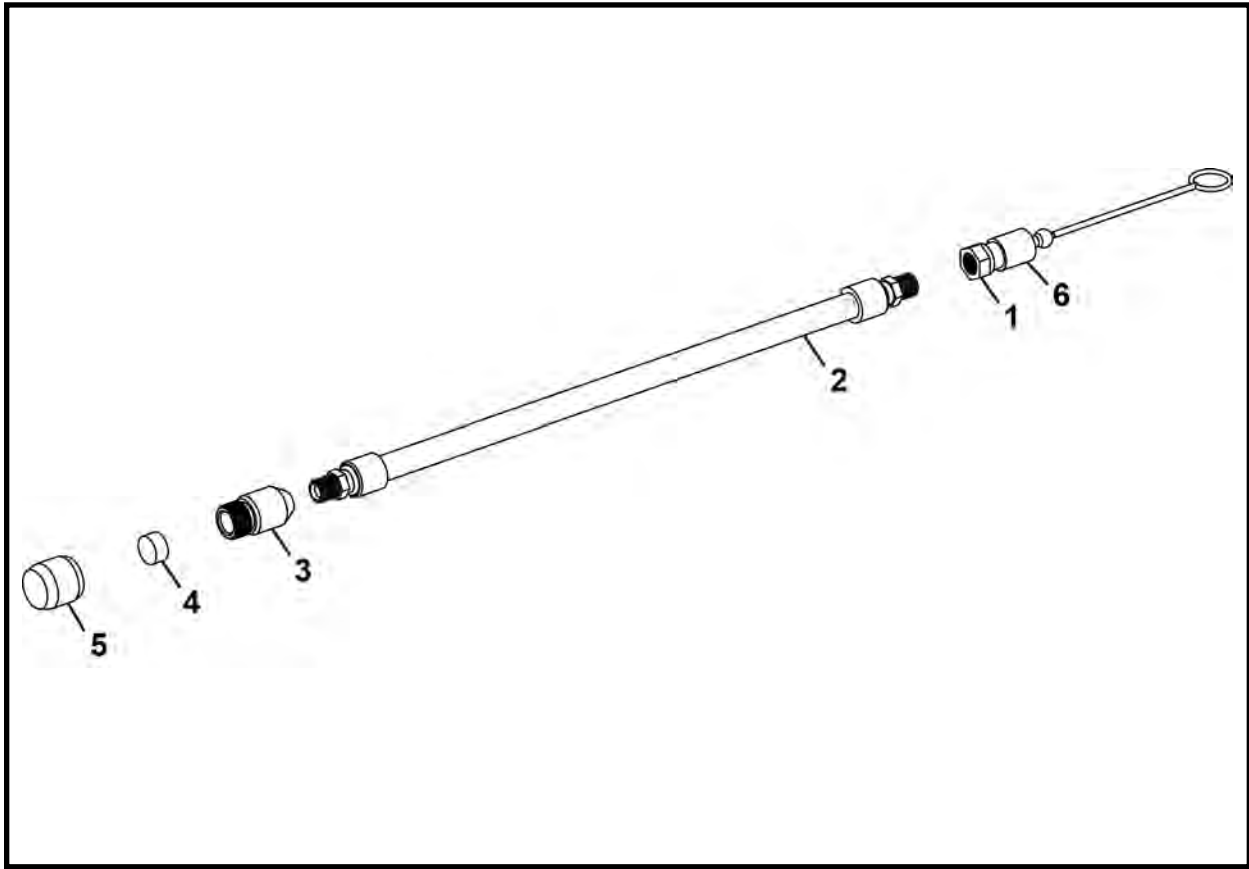
**STARTER HOSE 30 FT (HIGH PRESSURE) ASSEMBLY, F09802F01**  
**USE WITH 5000 - 5000 Series II - 5200 PUMP UNITS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09802F01	HOSE, High Pressure Starter 30'
1	1	P0100-001B	COUPLER, Male
2	1	A10420A-360	HOSE ASSEMBLY, 1/2 x 360
3*	1	009812P01	COUPLER, Hi-Pressure 1/2 NPT
4*	1	005135P00	COUPLER, 1/2
5*	1	005134P00	COUPLER, Male 1/2
6*	1	P0085-113	ORING
7*	1	009808P00	CAP, Female

\* Included in IJS Coupler Assembly, 005133A02. Refer to this section for parts information.

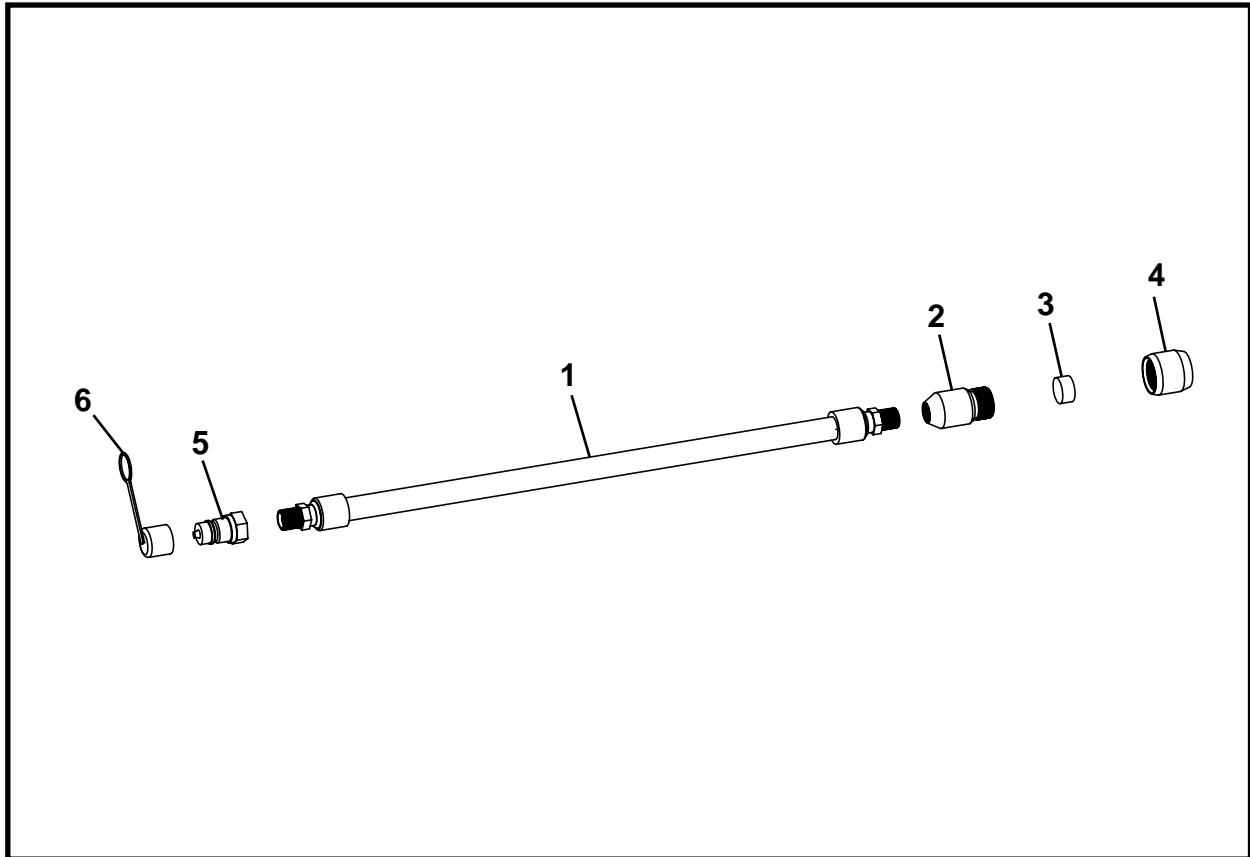
**STARTER (RETURN) HOSE, LOW PRESSURE 30', F09803F01  
USE WITH 5000 PUMP UNIT**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09803F01	HOSE, Low Pressure Starter (Return) 30'
1.1	1	P0417-003	CAP, Hex Pipe 1/2 (Earlier Units) (Not Shown)
1.2	1	P0100-013B	Nipple, Female Thread 1/2 (Later Units)
2	1	A10320A-360	HOSE ASSEMBLY, 1/2 x 360
3*	1	009809P00	COUPLER, Female 1/2
4*	1	007085P00	PLUG, Coupler 1 OD
5*	1	009811P01	CAP, Male

\* Included in IJS Coupler Assembly, 005133A02. Refer to this section for parts information.

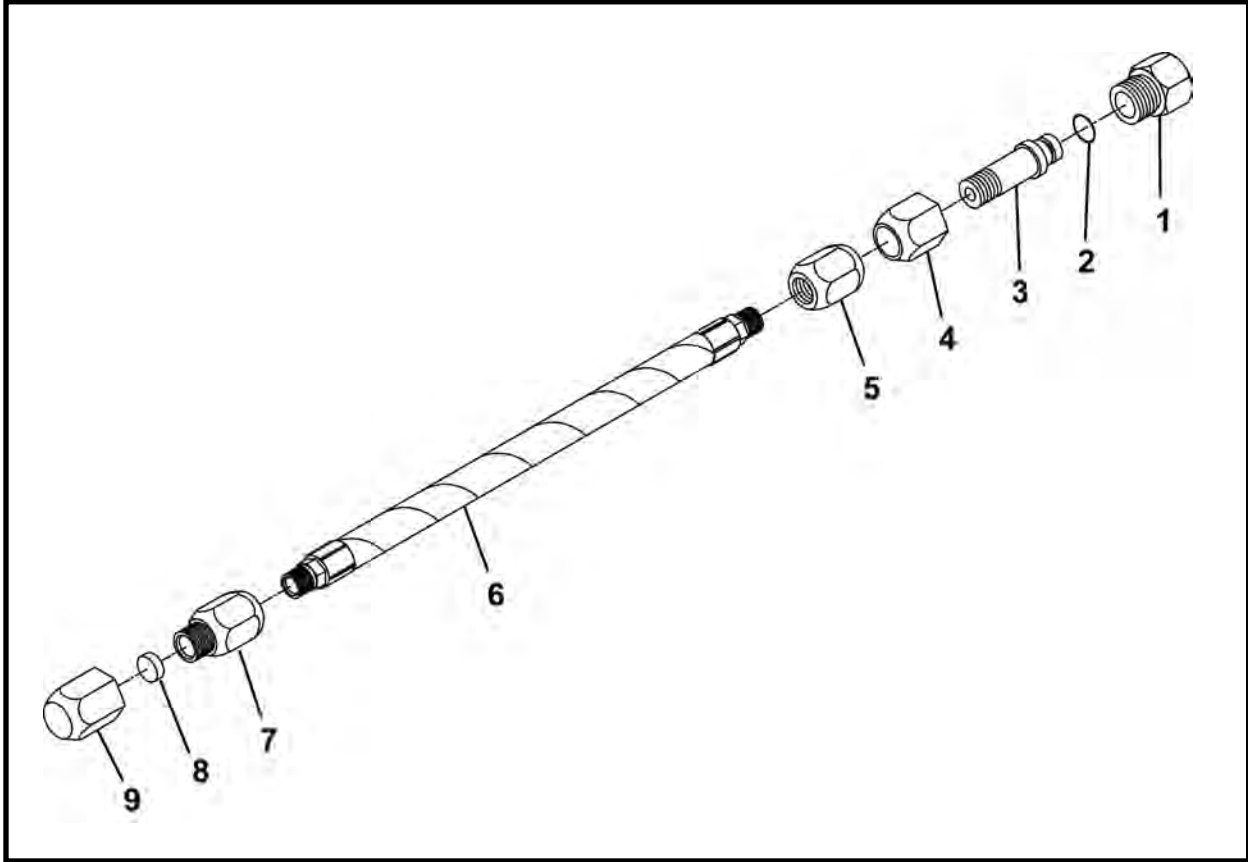
**IJS STARTER HOSE 30 FT (LOW PRESSURE) ASSEMBLY, F27868F**  
**USE WITH 5000 Series II - 5200 PUMP UNITS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F27868F	IJS STARTER HOSE ASSEMBLY
1	1	A10320A-360	HOSE ASSEMBLY 1/2 x 360
2	1	009809P00	COUPLER, Female 1/2
3	1	007085P00	PLUG, Coupler Cap
4	1	009811P01	CAP, Male
5*	1	P0100-013B	NIPPLE, Female 1/2 NPT
6*	1	P0100-013D	PLUG, Dust

\* Items 5 and 6 are not used with the 5000 Pump Unit.

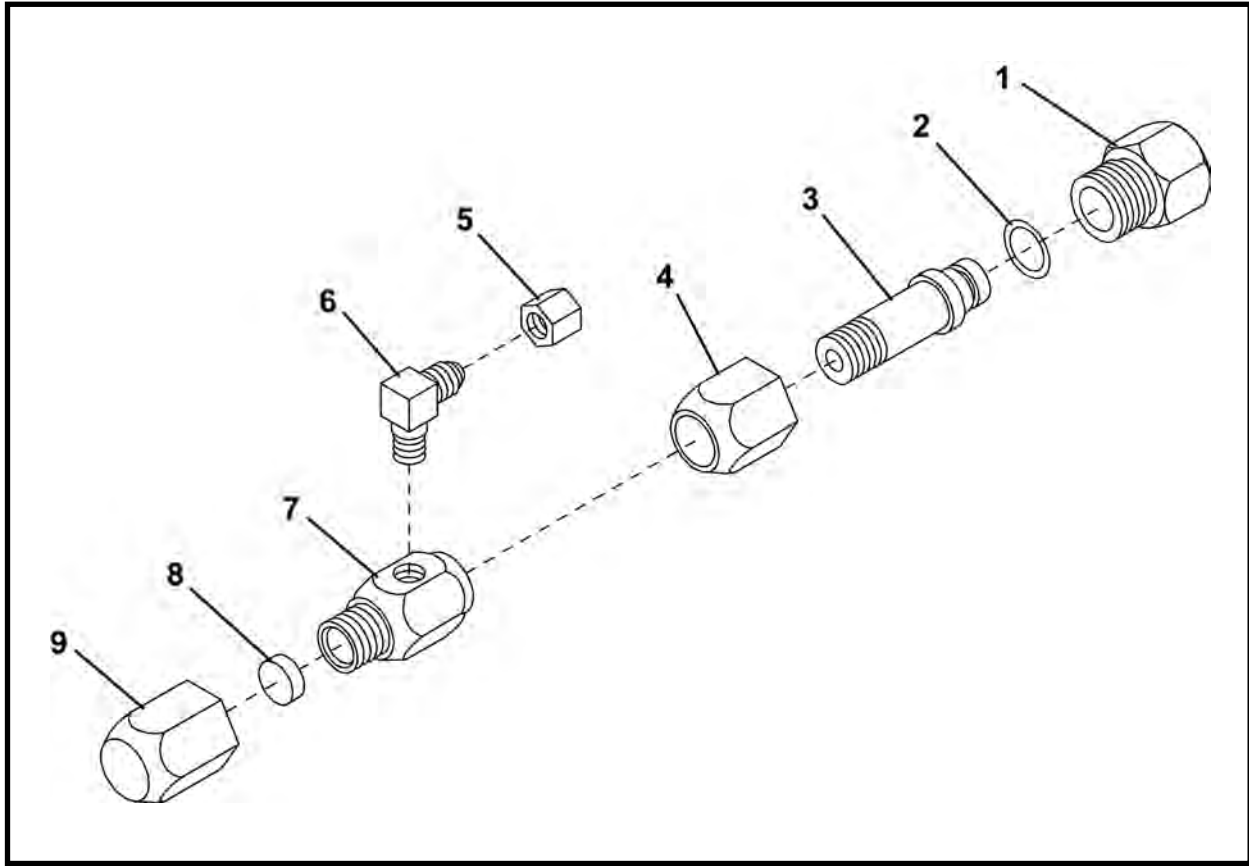
## IJS TUNNEL LINE 10' 6", F09800F00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09800F00	IJS TUNNEL LINE 10' 6"
1*	1	009808P00	CAP, Female
2*	1	P0085-113	ORING
3*	1	005134P00	COUPLER, Male
4*	1	005135P00	COUPLER
5*	1	009812P01	COUPLER, High Pressure
6	1	009806P00	PIPE
7*	1	009809P00	COUPLER, Female
8*	1	007085P00	PLUG, Coupler
9*	1	009811P01	CAP, Male

\* Included in IJS Coupler Assembly, 005133A02. Refer to this section for parts information.

## TEE CONNECTOR, F09804F00

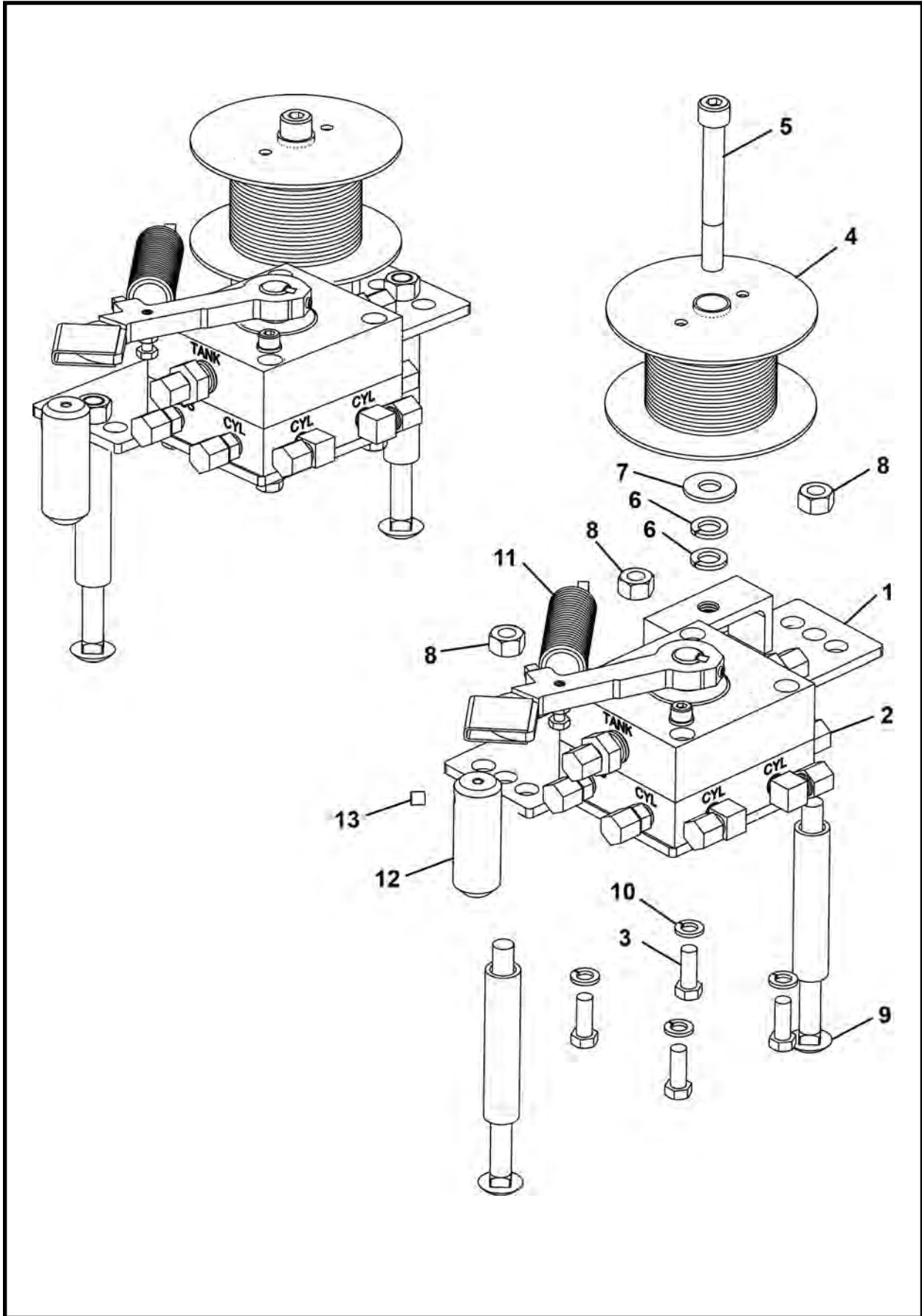


ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09804F00	TEE CONNECTOR
1*	1	009808P00	CAP, Female
2*	1	P0085-113	ORING
3*	1	005134P00	COUPLER, Male
4*	1	005135P00	COUPLER, 1/2
5	1	P0300-126	CAP, 06FJ
6	1	P0300-125	FITTING, 06MJ-04MP90
7	1	009810P00	COUPLER, Female
8*	1	007085P00	PLUG, Coupler Cap
9*	1	009811P01	CAP, Male

NOTE: Two connectors required per jack station.

\* Included in IJS Coupler Assembly, 005133A02. Refer to this section for parts information.

# IJS VALVE (With Cable), F04908F01



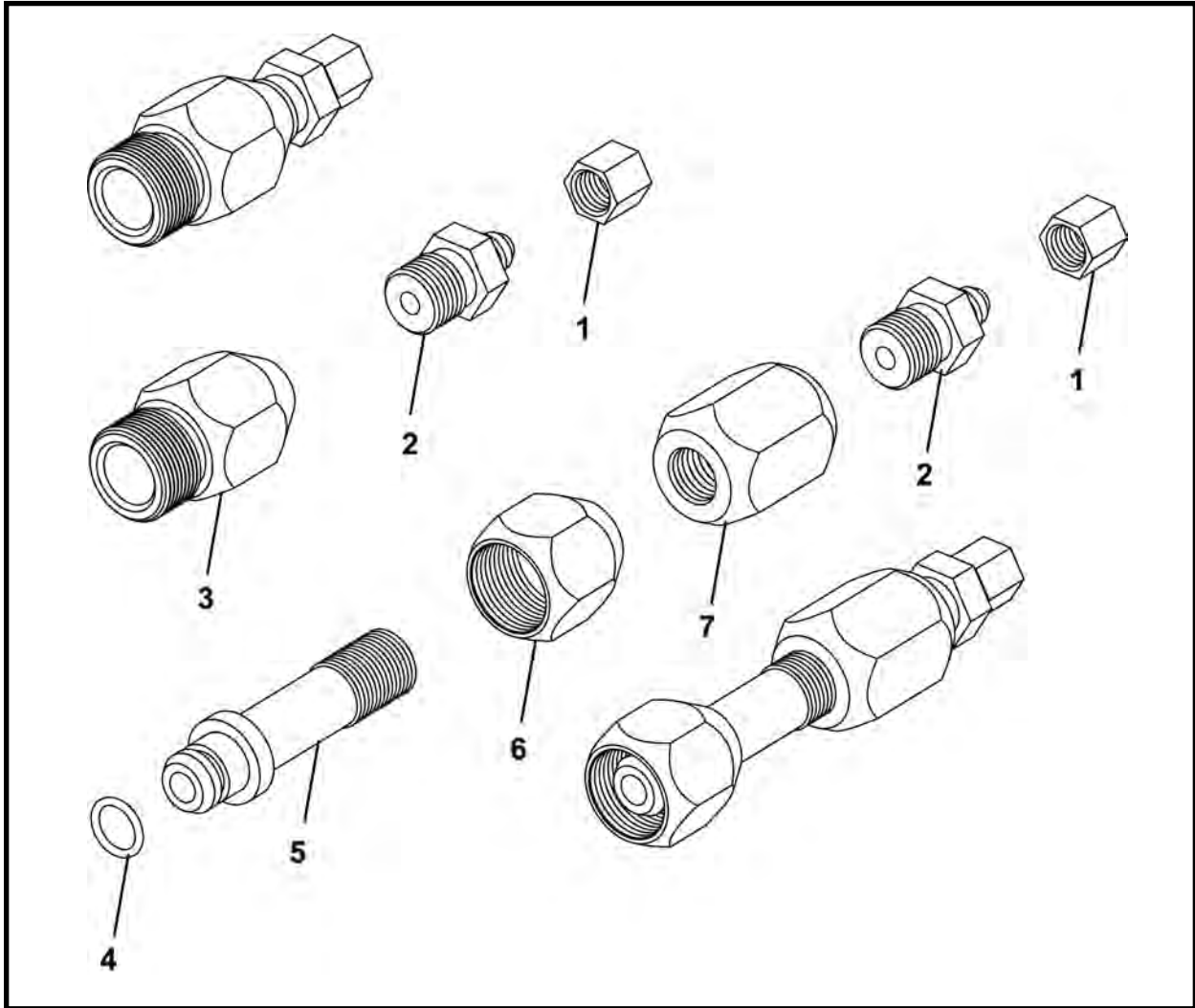
## IJS VALVE (With Cable), F04908F01

ITEM	QTY	PART NO.	DESCRIPTION
0	1	F04908F01	IJS VALVE (With Cable)
1	1	005764A00	PLATE ASSEMBLY
2*	1	004725A00	VALVE
3	4	P0001-06-004	BOLT, Hex 3/8 UNC x 1
4	1	002323A	ASSEMBLY, Cable & Spool (Includes items 4a - 4b)
4a	1	002373A00	SPOOL ASSEMBLY
4b	7200 LI	P0075-001	CABLE
5	1	P0031-08-016	SCREW, Socket Head Cap 1/2 UNC x 4
6	2	P0043-008	WASHER, Spring 1/2
7	1	P0040-008	WASHER, Hardened Flat 1/2
8	3	P0003-08-000	NUT, 1/2 UNC
9	2	P0026-011	BOLT, Carriage 1/2 x 6.5
10	4	P0040-006	WASHER, Hardened Flat 3/8
11	1	P0070-031	SPRING
12	1	001335P00	WEIGHT, Valve
13	1	P0033-05-004	SCREW, Socket Set 5/16 x .25

\* Refer to Section 7, Valves for parts information.

LI - Linear Inch

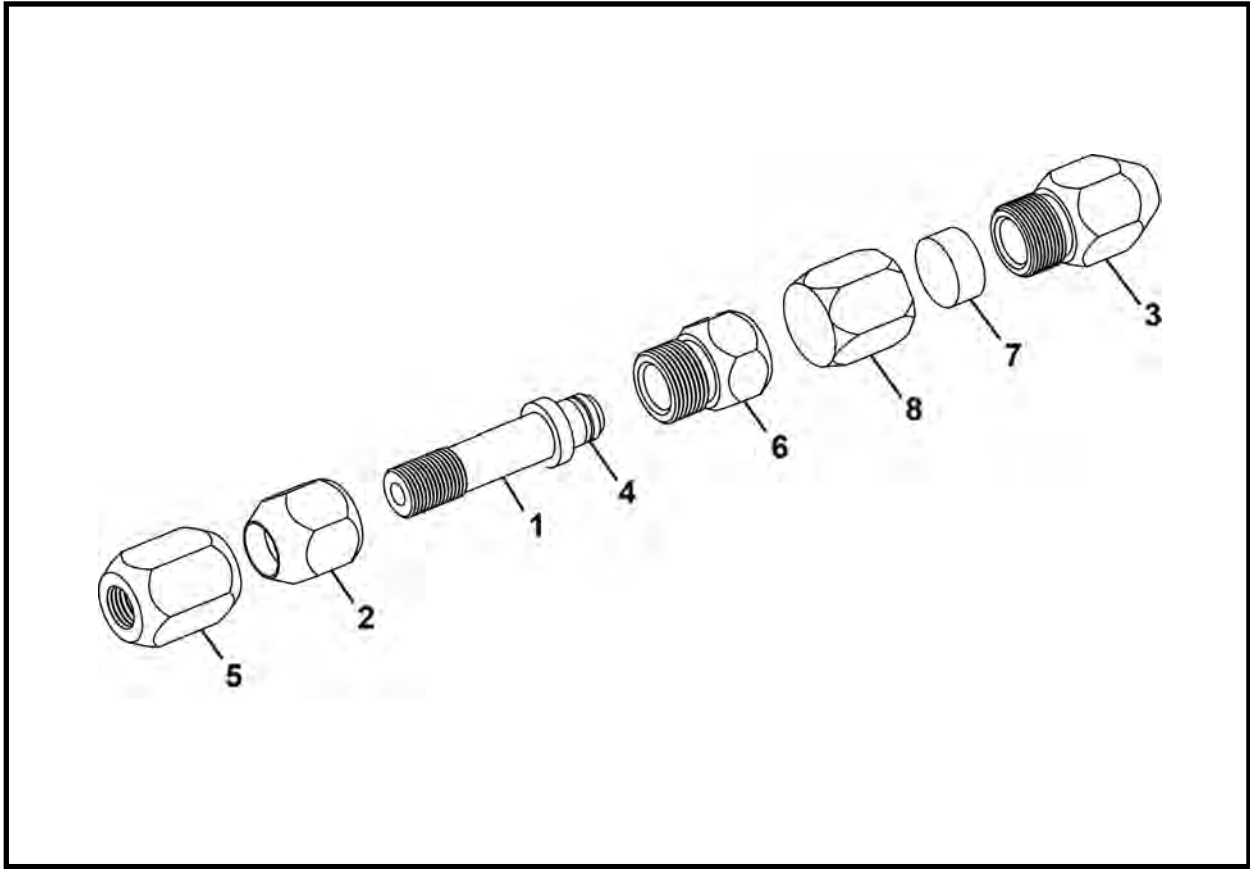
## IJS STARTER CONNECTION, F09805F00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09805F00	STARTER CONNECTION
1	2	P0300-126	CAP, 06FJ
2	2	P0300-120	FITTING, 06MJ-08MP
3*	1	009809P00	COUPLER, Female
4*	1	P0085-113	ORING
5*	1	005134P00	COUPLER, Male
6*	1	005135P00	COUPLER
7*	1	009812P01	COUPLER, High Pressure

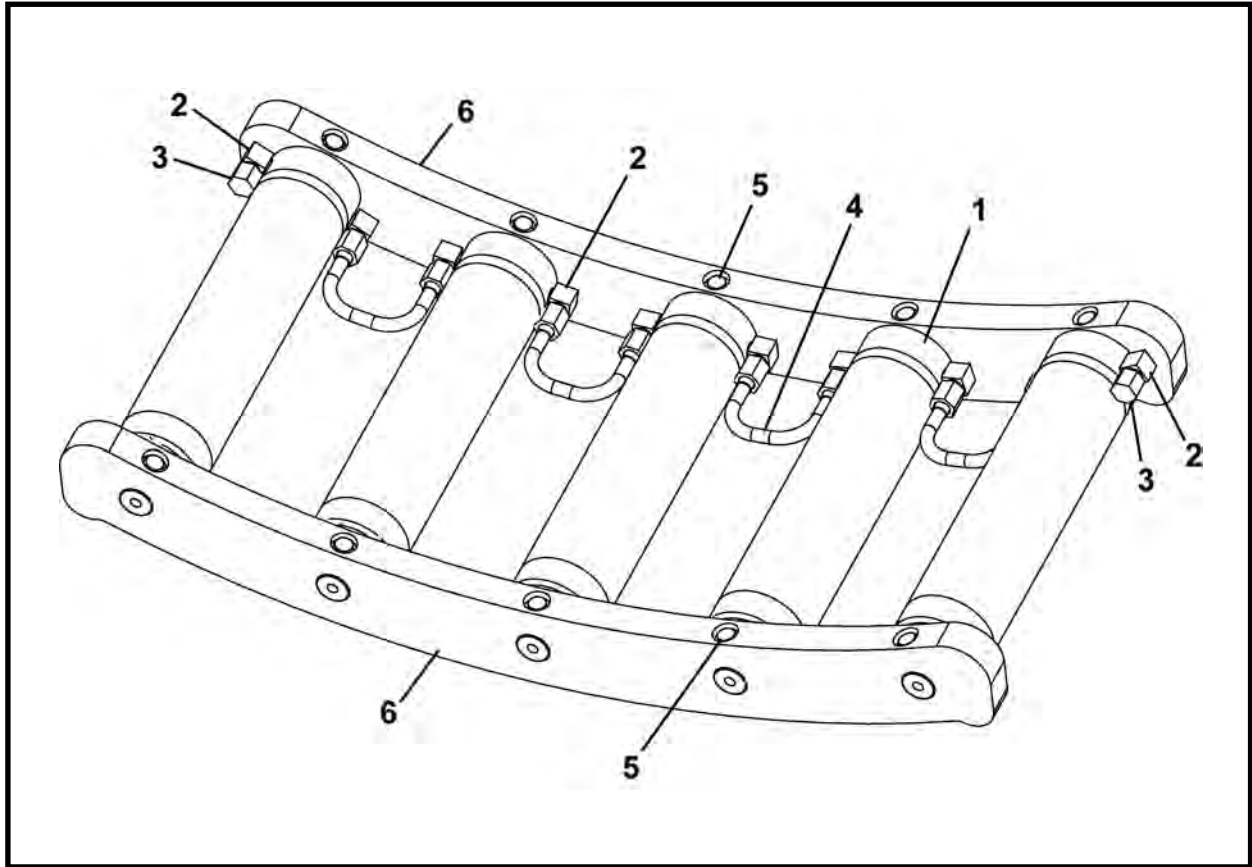
\* Included in IJS Coupler Assembly, 005133A02. Refer to this section for parts information.

## IJS COUPLER ASSEMBLY, 005133A02



ITEM	QTY	PART NO.	DESCRIPTION
0	1	005133A02	IJS COUPLER ASSEMBLY
1	1	005134P00	COUPLER, Male
2	1	005135P00	COUPLER
3	1	009809P00	COUPLER, Female
4	1	P0085-113	ORING
5	1	009812P01	COUPLER, High Pressure
6	1	009808P00	CAP, Female
7	1	007085P00	PLUG, Coupler
8	1	009811P01	CAP, Male

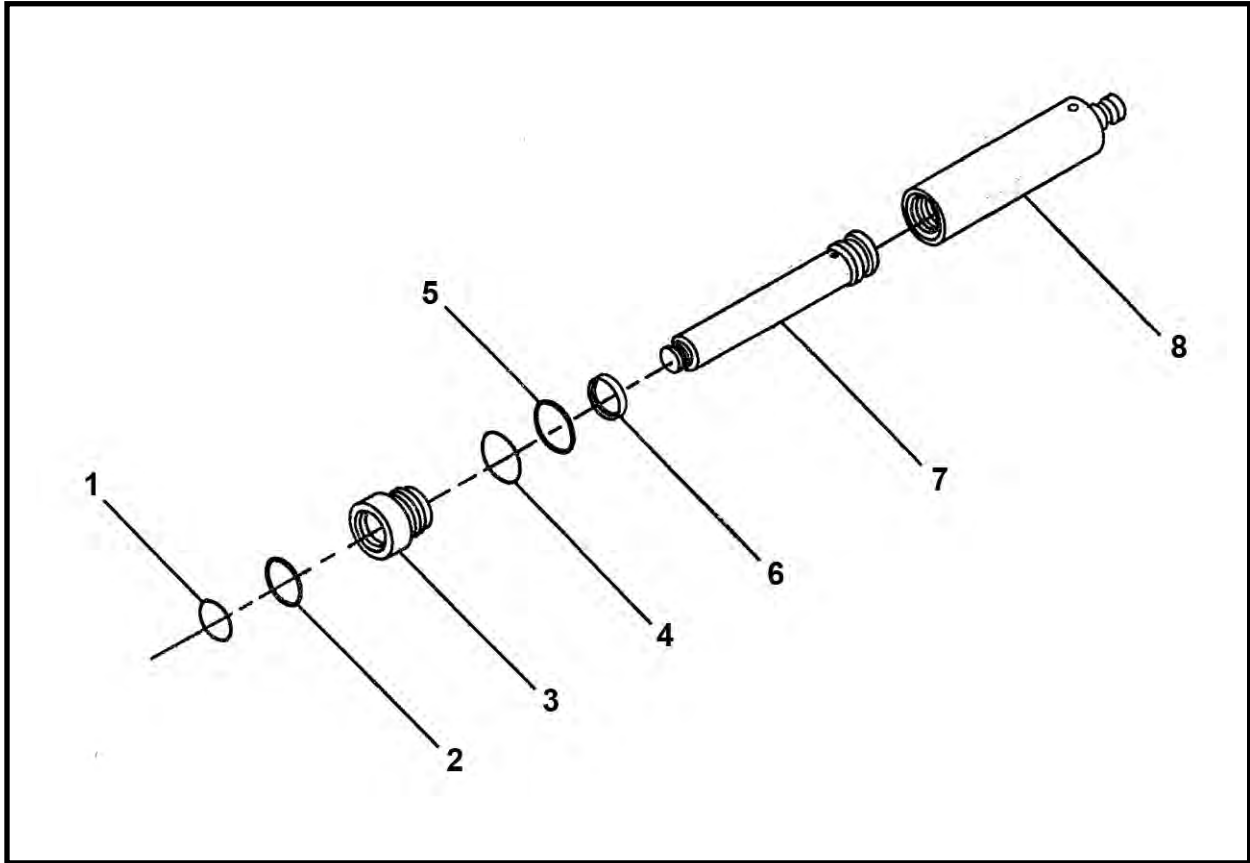
## IJS SEGMENT ASSEMBLY



ITEM	QTY	PART NO.	DESCRIPTION
0.1	1	007302A00	IJS SEGMENT ASSEMBLY - 600
0.2	1	007303A00	IJS SEGMENT ASSEMBLY - 660
0.3	1	007304A00	IJS SEGMENT ASSEMBLY - 720
1*	5	F03531F02	CYLINDER, IJS
2	10	P0300-125	FITTING, 04MP-06MJ
3	2	P0300-126	CAP
4	4	001907A00	TUBE
5	10	P0001-05-003	BOLT, Hex 5/16 UNC x .75
6.1	2	F03834F00	END IRONS, Plate - 600
6.2	2	F05487F00	END IRONS, Plate - 660
6.3	2	F07296F00	END IRONS, Plate - 720

\* Refer to this section for parts information.

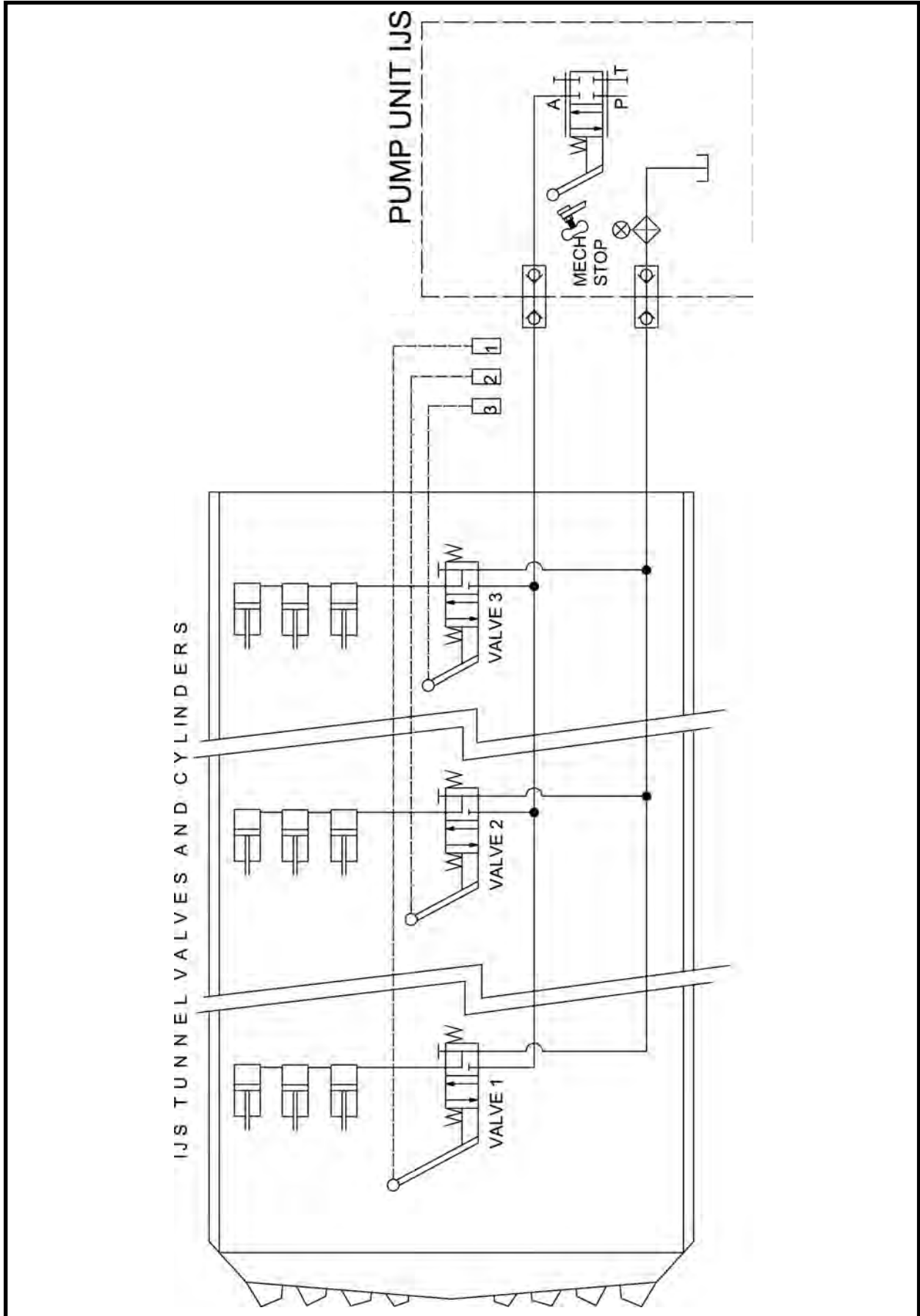
## IJS CYLINDER, F03531F02



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F03531F02	CYLINDER, IJS
1*	1	P0087-001	WIPER
2*	1	P0086-003	POLYSEAL
3	1	003095P02	CAP, End
4*	1	P0084-139	RING, Back-Up
5*	1	P0085-139	ORING
6*	1	P0088-002	RING, Wear
7	1	003348P02	SHAFT
8	1	003364A01	BARREL
9	REF	007344A00	KIT, Seal

\* Included in item 9, 007344A00 Seal Kit.

# INTERMEDIATE JACKING STATION SCHEMATIC





# Valves

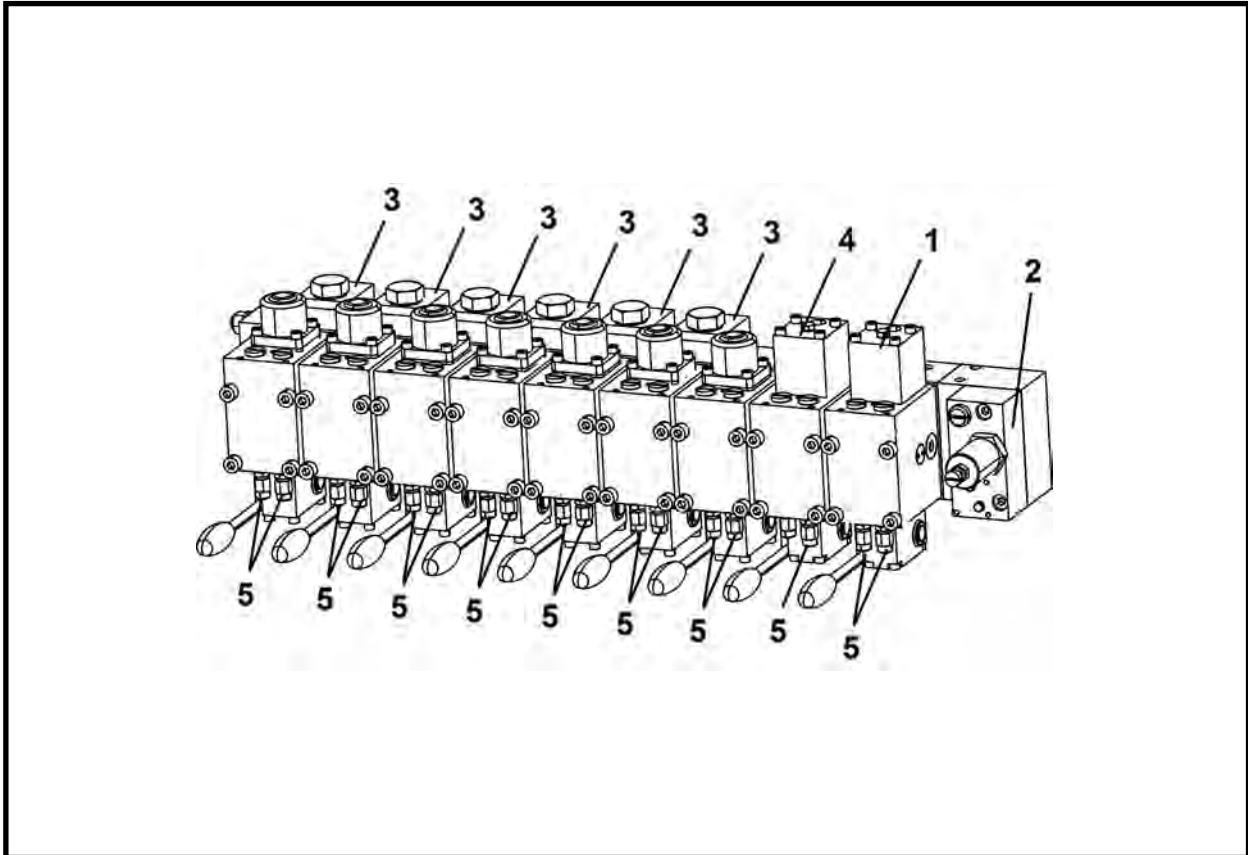
## **Tunnel Boring Machine**

TBM Nine Section Valve, P0302-700 .....	2
TBM Three Section Valve, P0302-709 .....	3
Two Speed Motor Valve, P0302-784 .....	4
Conveyor Lift Valve, P0302-680 .....	5

## **Intermediate Jacking Station**

IJS Valve (With Cable), F04908F01 .....	6
IJS Valve, 004725A00 .....	8

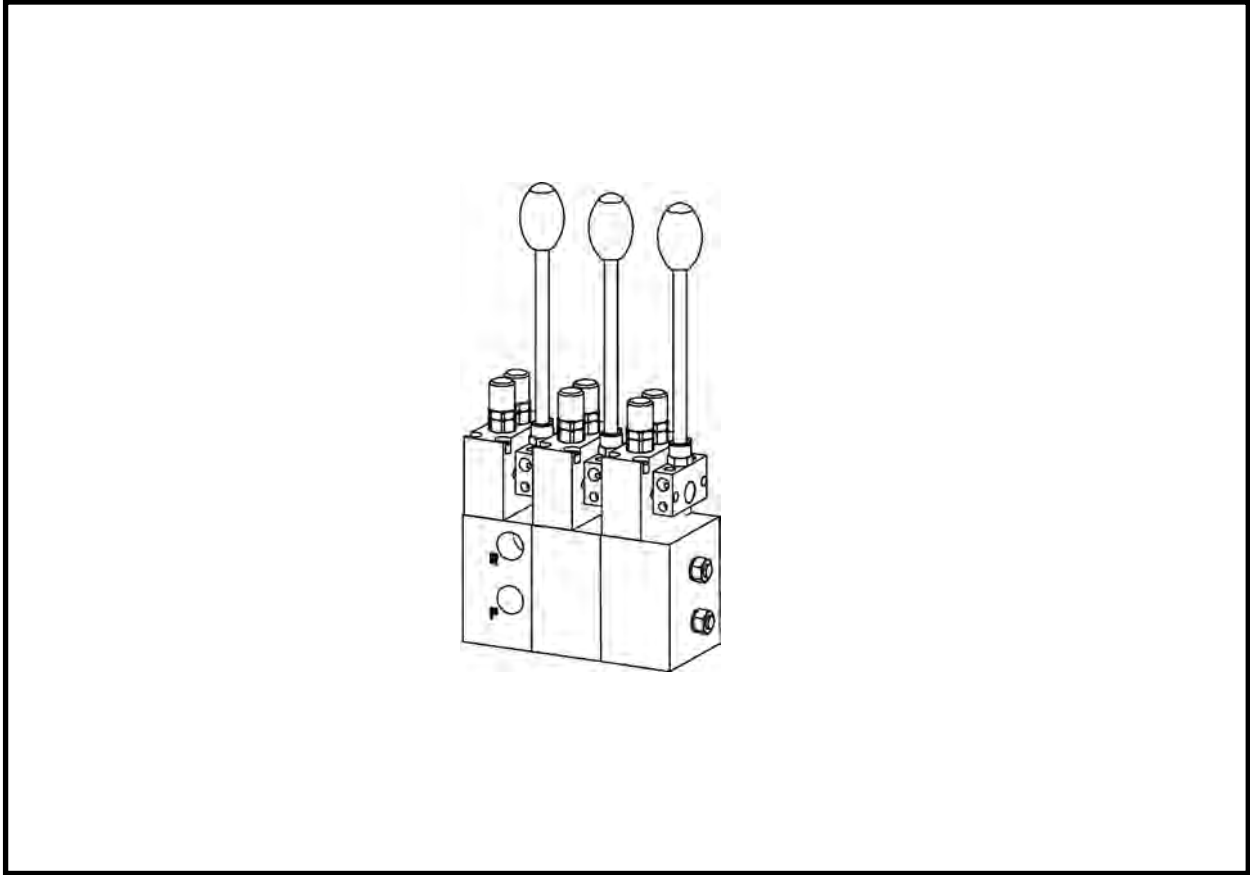
## TBM NINE SECTION VALVE, P0302-700



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-700	VALVE, Nine Section
1	1	P0302-700A	SPOOL 80/80
2	1	P0302-700B	SPRING
3	6	P0302-700C	BLOCK, Ancillary PO Check
4	1	P0302-700D	SPOOL 63/63
5	17	P0302-700E	INSERTS, PSI Limiter Valve

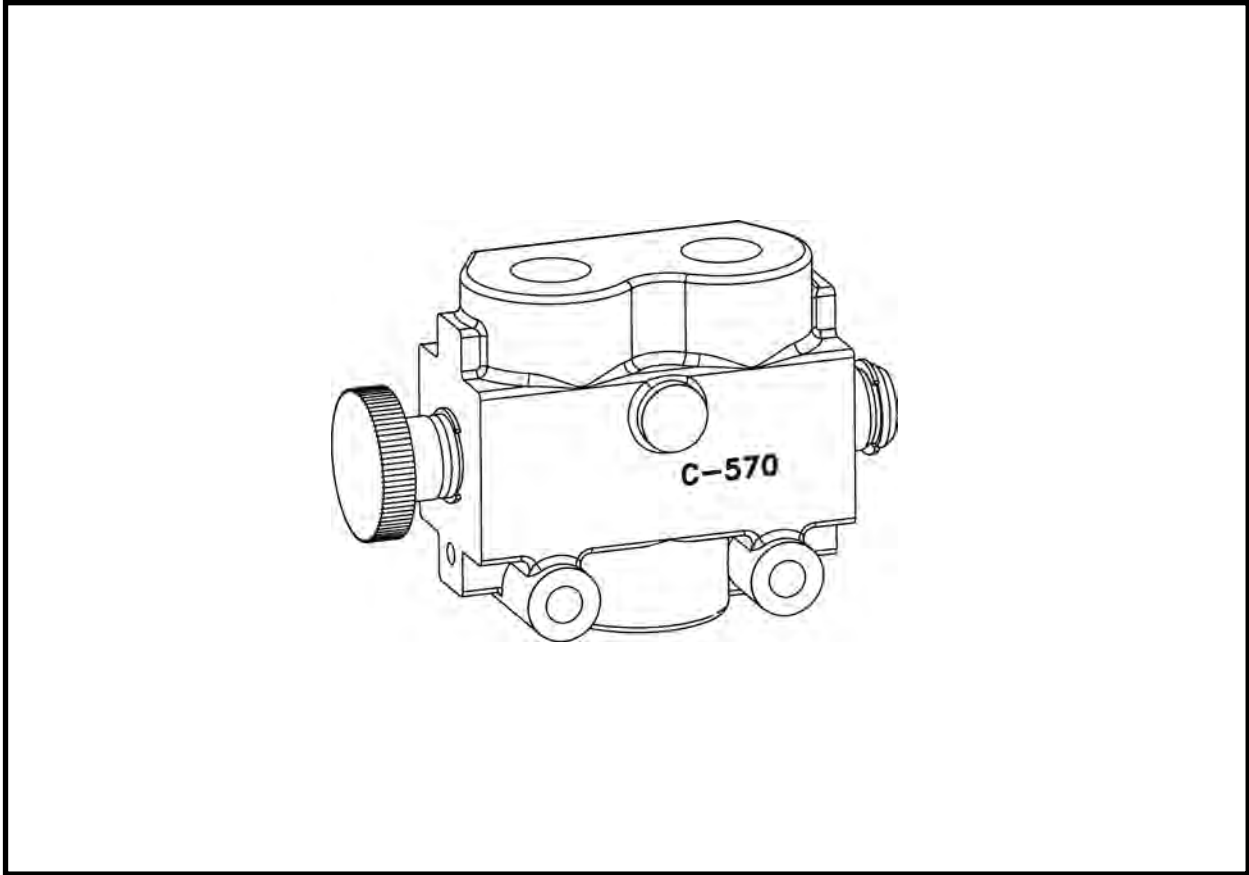
NOTE: Valve and handle positions vary depending on TBM model.

# TBM THREE SECTION CONTROL VALVE, P0302-709



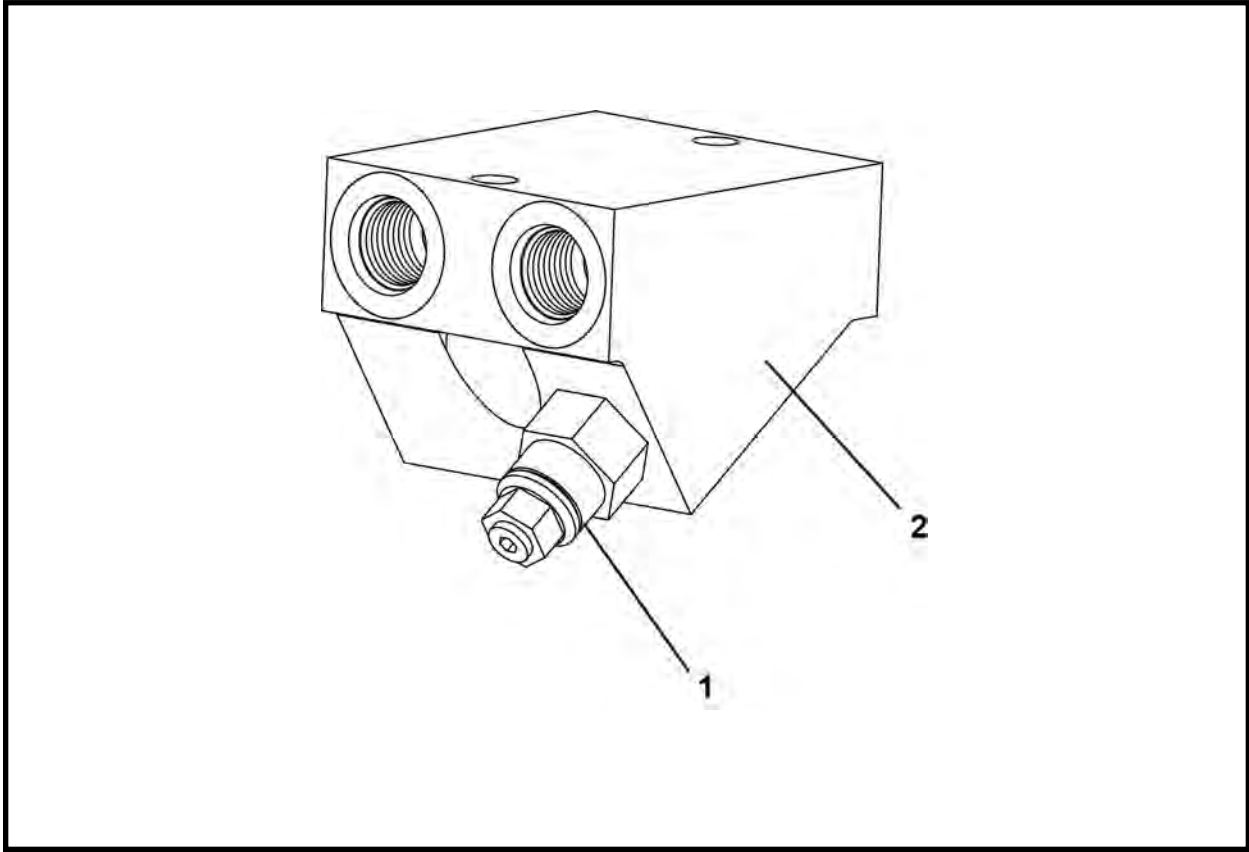
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-709	VALVE, TBM Three Section Control

## TWO SPEED MOTOR VALVE, P0302-784



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-784	VALVE, Two Speed Motor

# CONVEYOR LIFT VALVE, P0302-680



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0302-680	VALVE, Conveyor Lift
1	1	P0302-680A	CARTRIDGE
2	1	P0302-680B	BODY, Valve



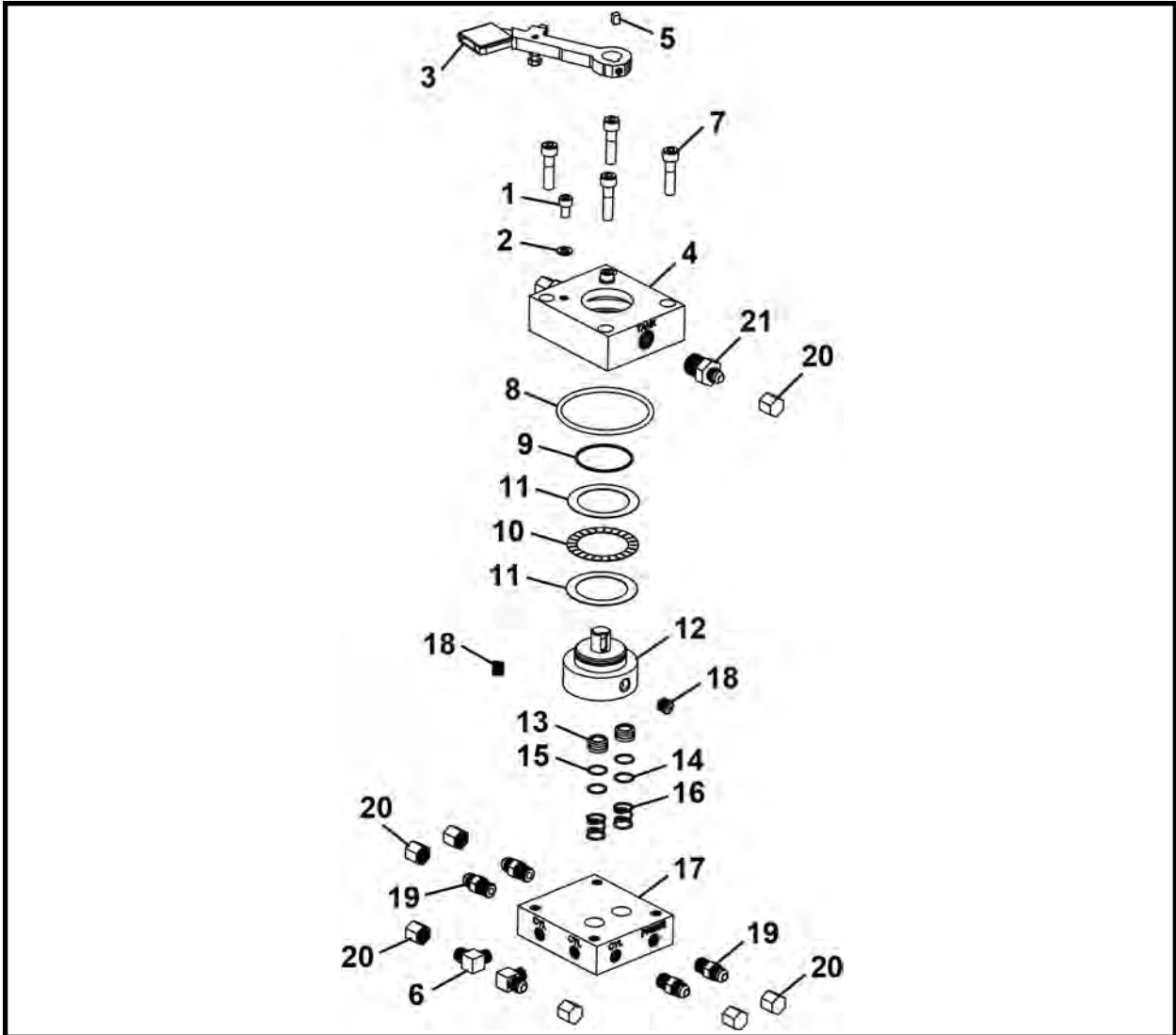
## IJS VALVE (With Cable), F04908F01

ITEM	QTY	PART NO.	DESCRIPTION
0	1	F04908F01	IJS VALVE (With Cable)
1	1	005764A00	PLATE ASSEMBLY
2*	1	004725A00	VALVE
3	4	P0001-06-004	BOLT, 3/8 UNC x 1
4	1	002323A	CABLE & SPOOL ASSEMBLY (Includes item 4a & 4b))
4a	1	002373A00	SPOOL
4b	7200 LI	P0075-001	CABLE
5	1	P0031-08-016	SCREW, Socket Head Cap 1/2 UNC x 4
6	2	P0043-008	WASHER, Spring 1/2
7	1	P0040-008	WASHER, Hardened Flat 1/2
8	3	P0003-08-000	NUT, 1/2 UNC
9	2	P0026-011	BOLT, Carriage 1/2 x 6.5
10	4	P0045-006	WASHER, Lock 3/8
11	1	P0070-031	SPRING
12	1	001335P00	WEIGHT, Valve
13	1	P0033-05-004	SCREW, Socket Set 5/16 x .25

LI - Linear Inch

\* Refer to this section for parts information.

# IJS VALVE, 004725A00



ITEM	QTY	PART NO.	DESCRIPTION
0	1	004725A00	VALVE, IJS
1	2	P0031-05-002	SCREW, Socket Head Cap 5/16 UNC x .5
2	2	P0046-005	WASHER, Lock Hi-Collar 5/16
3	1	002188A00	HANDLE
4	1	004722P00	VALVE, Top
5	0.38	P0047-003	KEY
6	2	P0300-125	FITTING, 06MJ-04MP90
7	4	P0031-06-006	SCREW, Socket Head Cap 3/8 UNC x 1.5
8*	1	P0085-340	ORING
9*	1	P0085-032	ORING
10	1	P0065-030	BEARING
11	2	P0065-031	BEARING
12	1	004724P00	SPOOL
13	2	003842P01	SPOOL
14*	2	P0085-016	ORING
15*	2	P0084-016	RING, Back-Up
16*	2	P0070-020	SPRING
17	1	004723P01	VALVE, Base
18	2	P0300-026	FITTING, 04MP-HHP
19	4	P0300-121	FITTING, 06MJ-04MP
20	8	P0300-126	CAP, 06FJ-CAP
21	2	P0300-120	FITTING, 06MJ-08MP
22**	0	005763A00	Kit, Seal

\* Item included in item 22, Seal Kit

\*\* Not Shown



# Motors

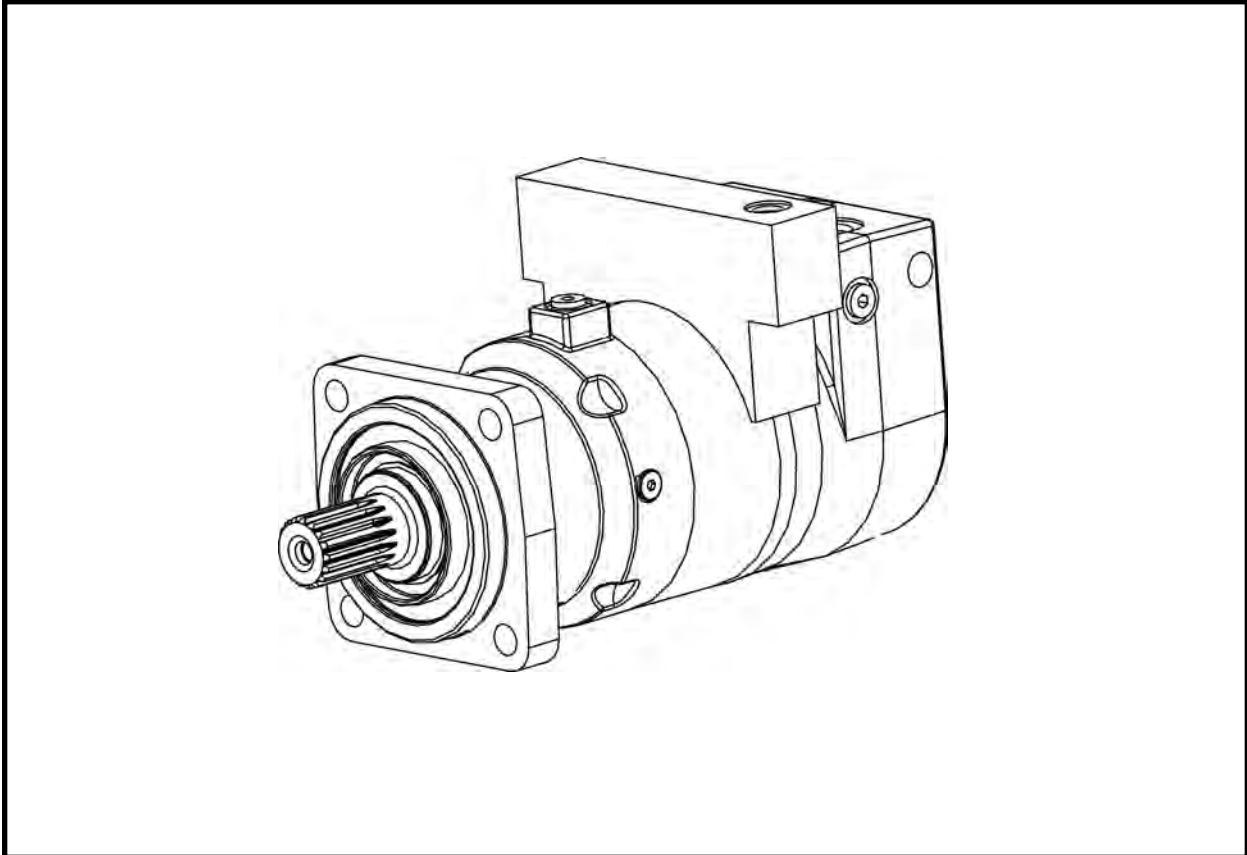
## Tunnel Boring Machine

TBM Drive Motor, P0304-344 .....	2
Lube Motor, P0304-334 .....	3

## Conveyors

Conveyor Drive Motor	
1615/2415/2418 Belt Conveyor, P0304-157 .....	4
140EX Screw Conveyor/160 Screw Conveyor (SN F09885F04 & Before), P0304-145 ...	6
160 Screw Conveyor (SN F09885F05 & After), P0304-338 .....	7

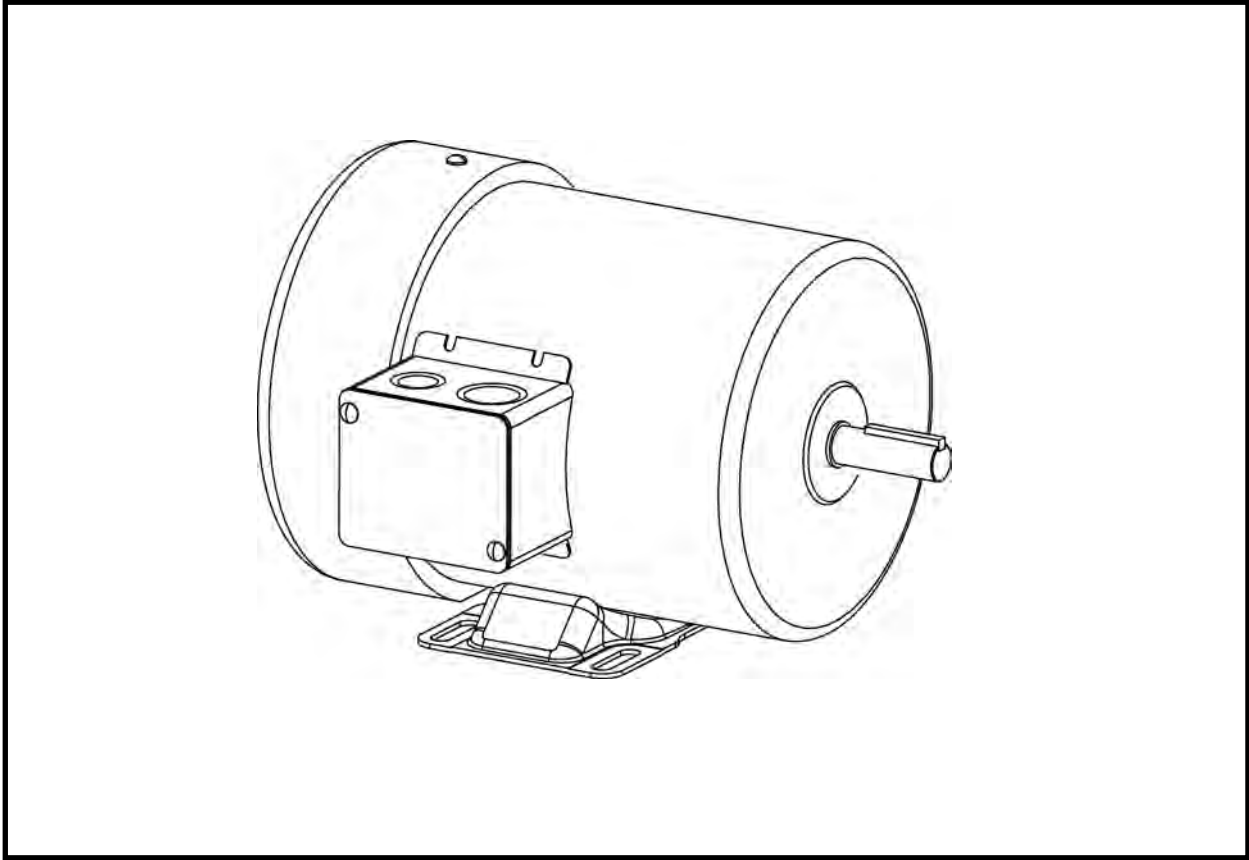
**TBM TWO SPEED DRIVE MOTOR, P0304-344**  
**TBM MOTOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-344	MOTOR, TBM Two Speed Drive
1*	1	P0304-344A	KIT, Motor Seal

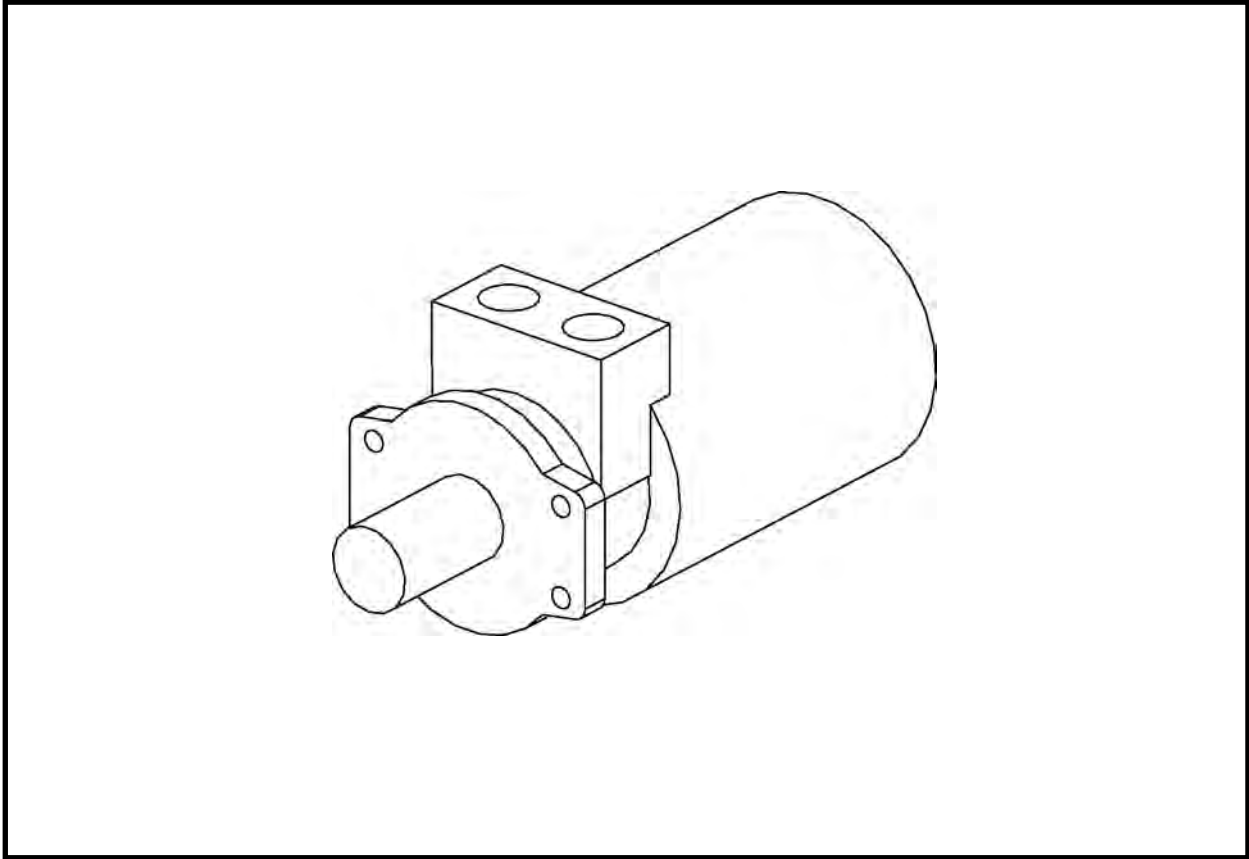
\* Not Shown

**LUBE MOTOR, P0304-334**  
**TBM LUBE MOTOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-334	MOTOR, Lube

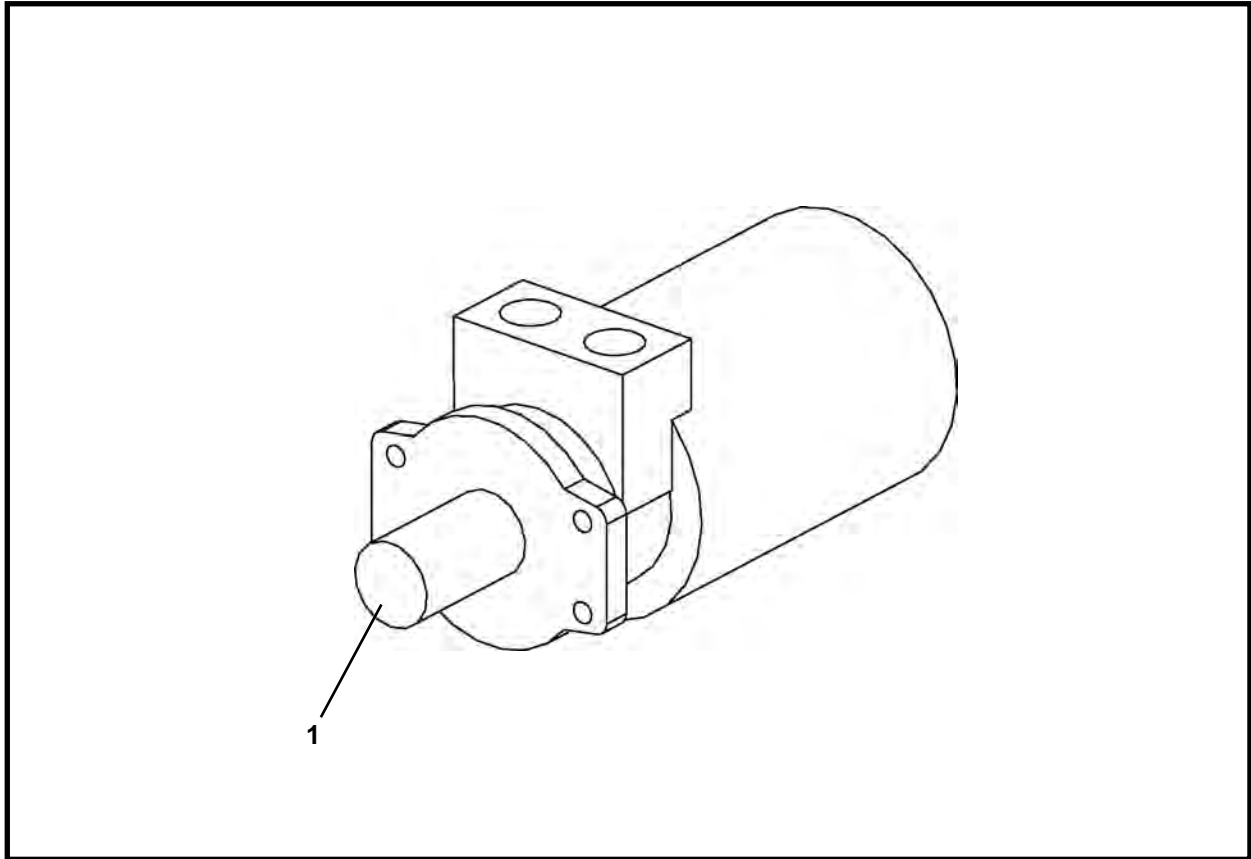
**CONVEYOR DRIVE MOTOR, P0304-157**  
**1615/2415/2418 BELT CONVEYOR**



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

## **NOTES**

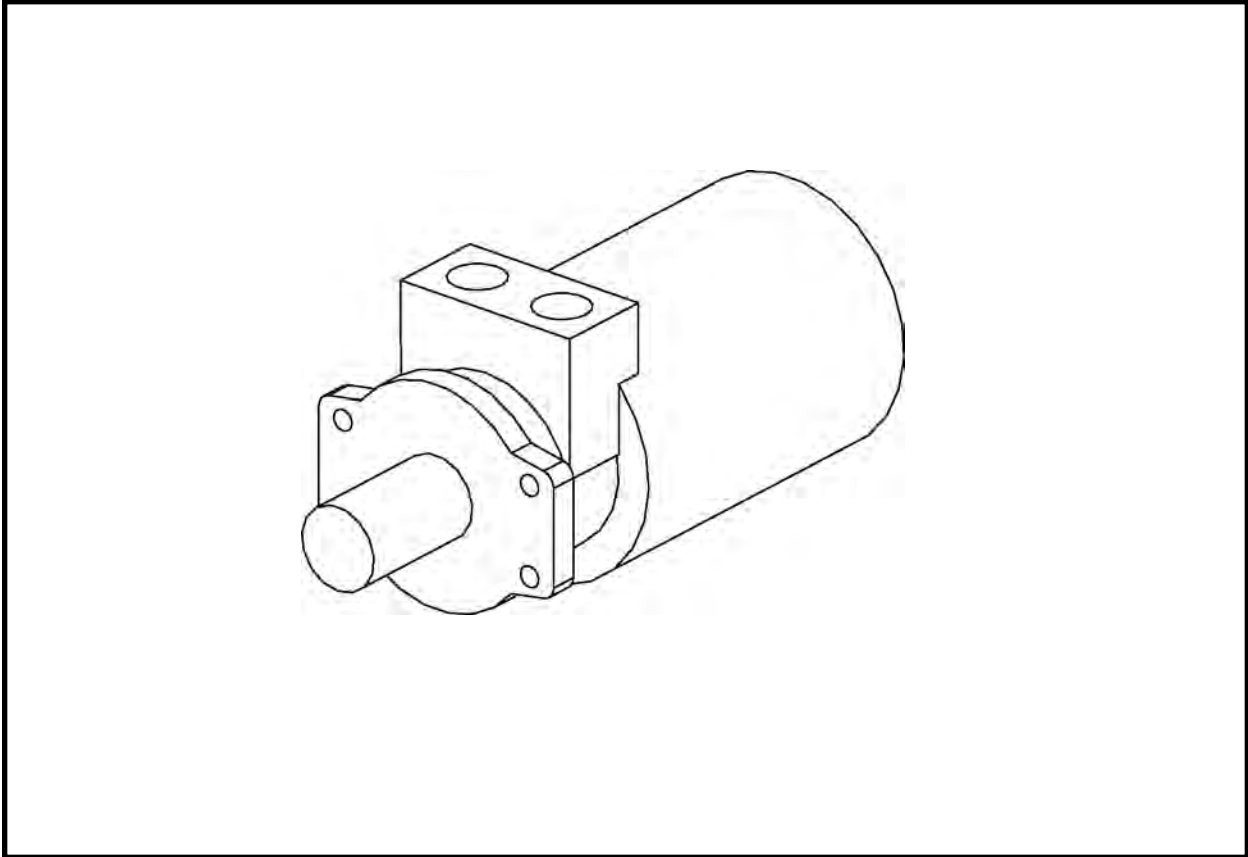
**140/160 SCREW CONVEYOR DRIVE MOTOR, P0304-145**  
**140EX/160 (SN F09885F04 & Before) SCREW CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-145	MOTOR, Screw Conveyor Drive
1	1	P0304-147	SHAFT
2*	1	P0304-148	KIT, Seal

\* Not Shown

**160 SCREW CONVEYOR DRIVE MOTOR, P0304-338**  
**160 (SN F09885F05 & After) SCREW CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0304-338	MOTOR, Screw Conveyor Drive

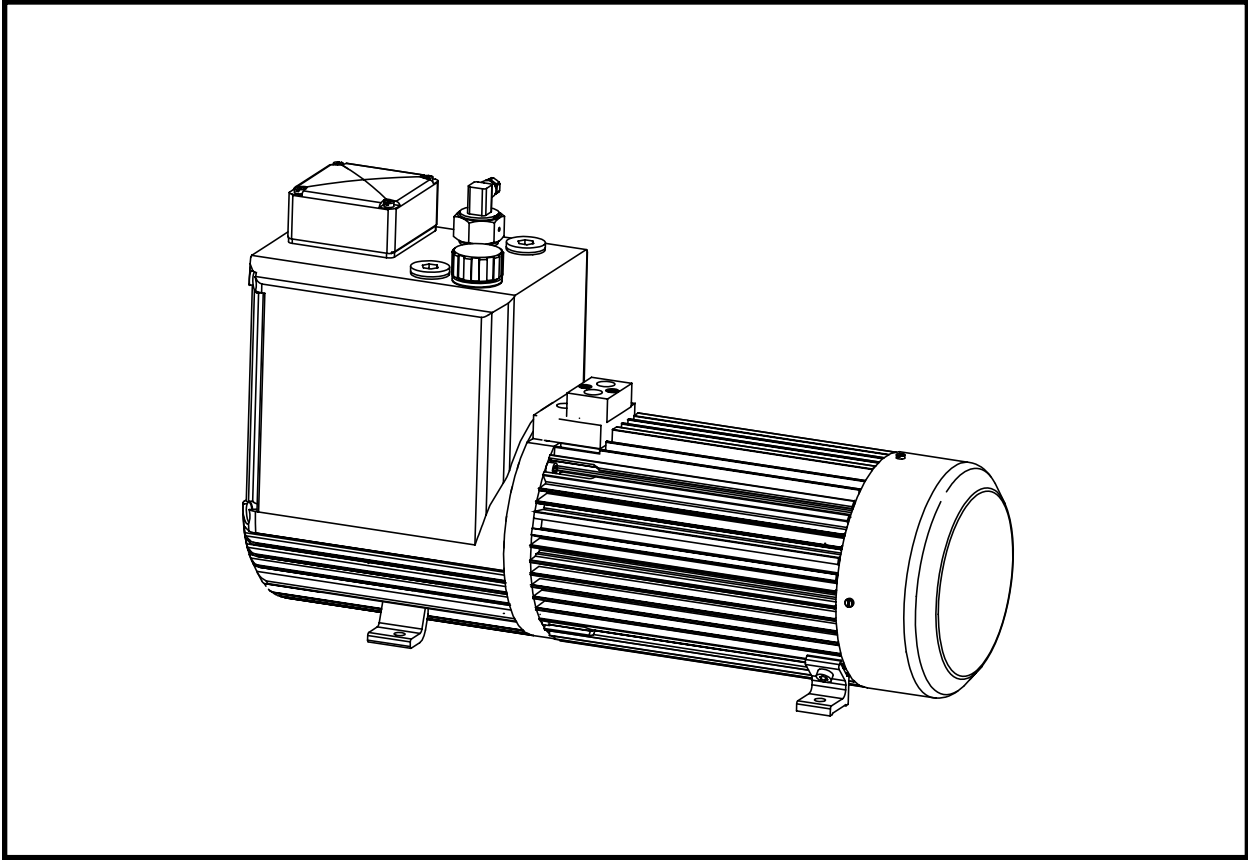
## **NOTES**



# Pumps

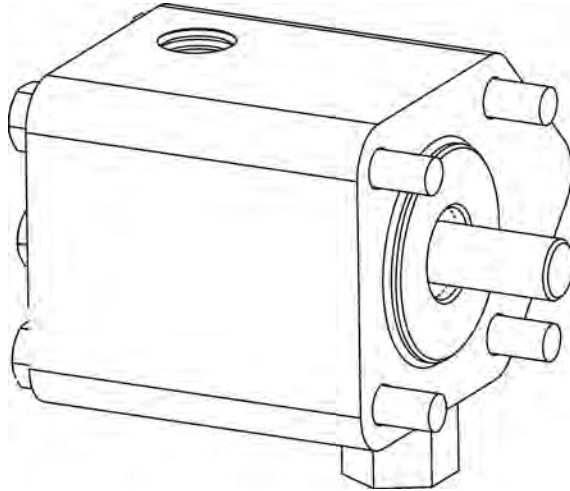
Scavenging Pump, P0303-367 .....	2
Lube Pump, P0303-361 .....	3
Grease Pump, P0303-375 .....	4

## SCAVENGING PUMP, P0303-367



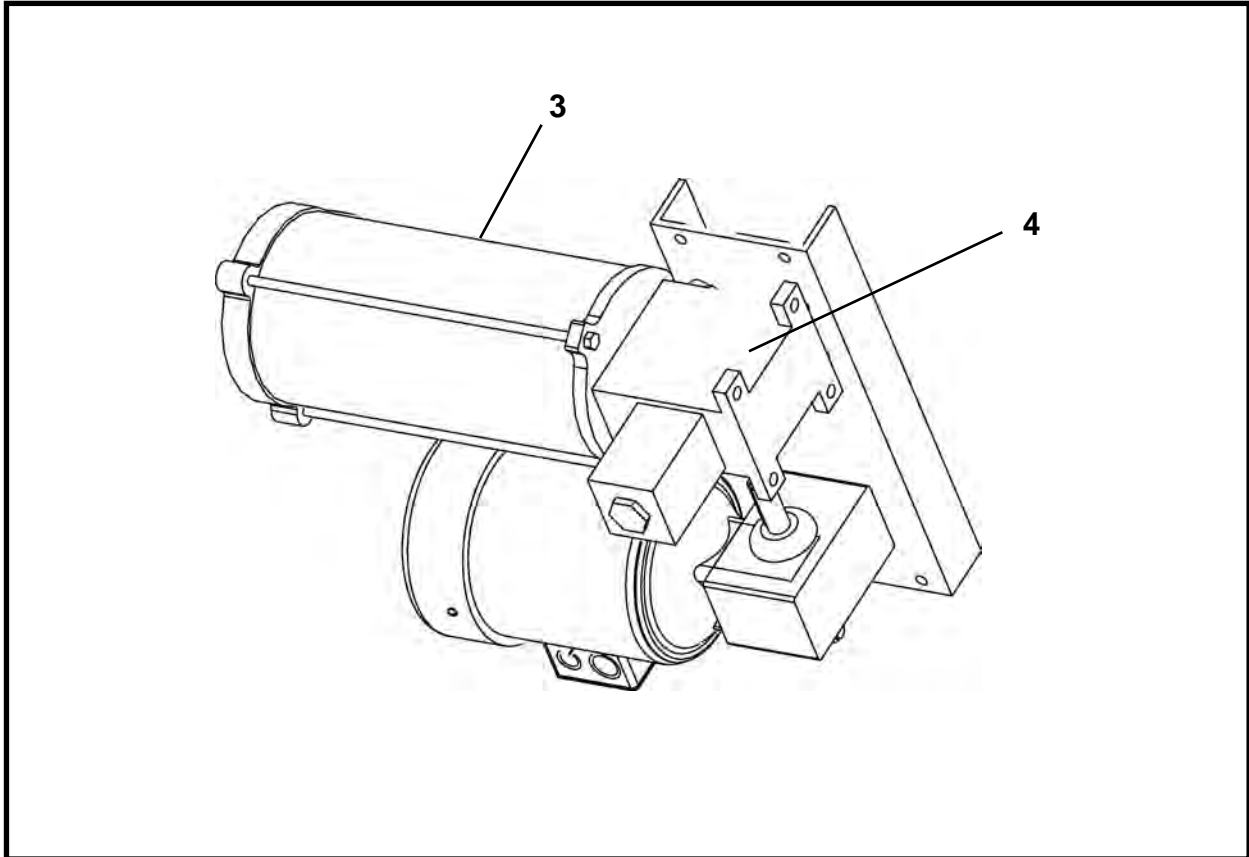
ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0303-367	PUMP, Scavenging

# LUBE PUMP, P0303-361



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0303-361	PUMP, Lube

## GREASE PUMP WITH RESERVOIR, P0303-375



ITEM	QTY	PART NO.	DESCRIPTION
0	1	P0303-375	PUMP, Grease With Reservoir
1*	1	P0303-375A	DISK, Blowout
2*	1	P0303-375B	KIT, B/O Disk
3	1	P0303-375D	RESERVOIR
4	1	P0303-375E	PUMP ASSEMBLY

\* Not Shown



# Cylinders

## **TBM**

Steering Cylinder

Steering Cylinder Assembly (600 Series II), 021175A ..... 2

Steering Cylinder Assembly (660 - 720 Series II), 023175A ..... 3

Hydraulic Dirt Wing Cylinder

Hydraulic Dirt Wing Cylinder Assembly, 014603A00 ..... 4

## **Attachments**

Closed Face

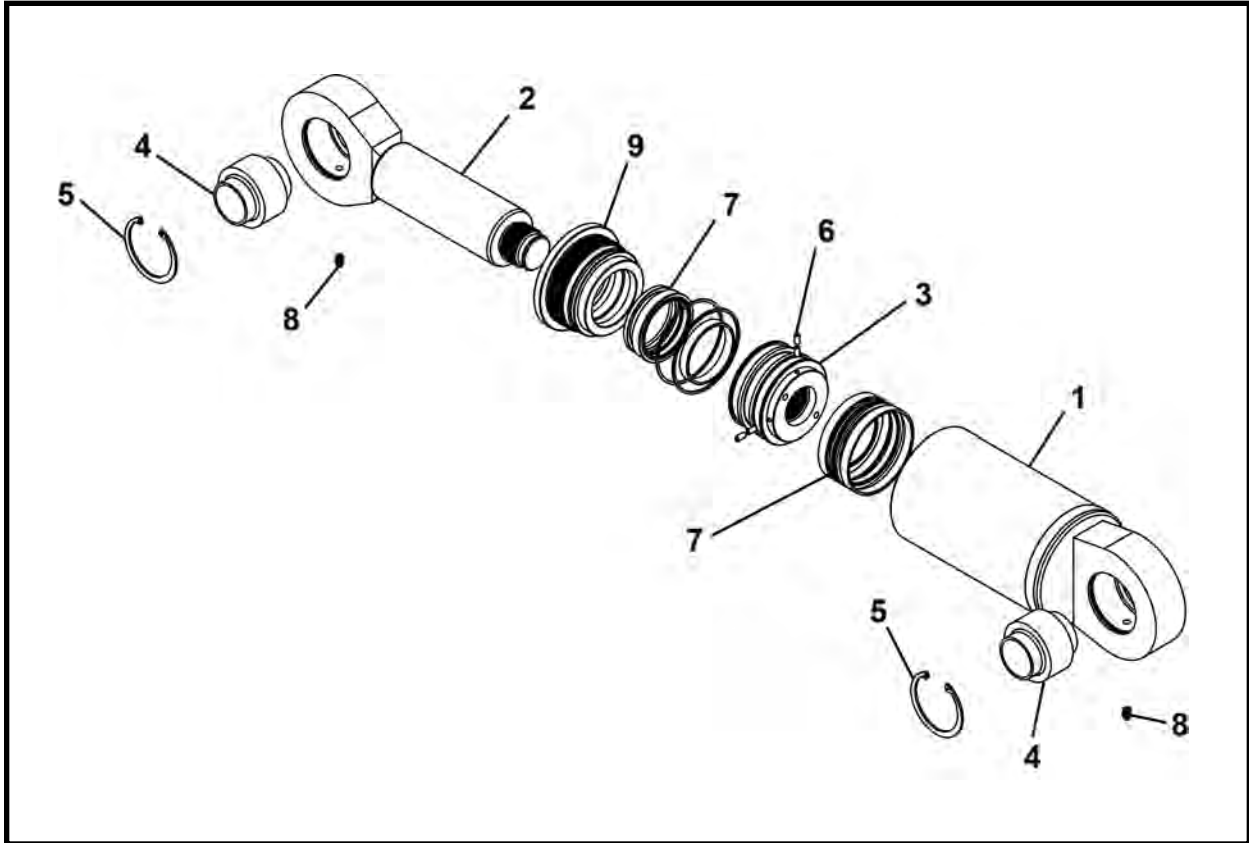
Closed Face Cylinder Assembly (600 - 660 Series II), 015050A ..... 6

Closed Face Cylinder Assembly (720 Series II), 015080A ..... 7

## **Intermediate Jacking Station**

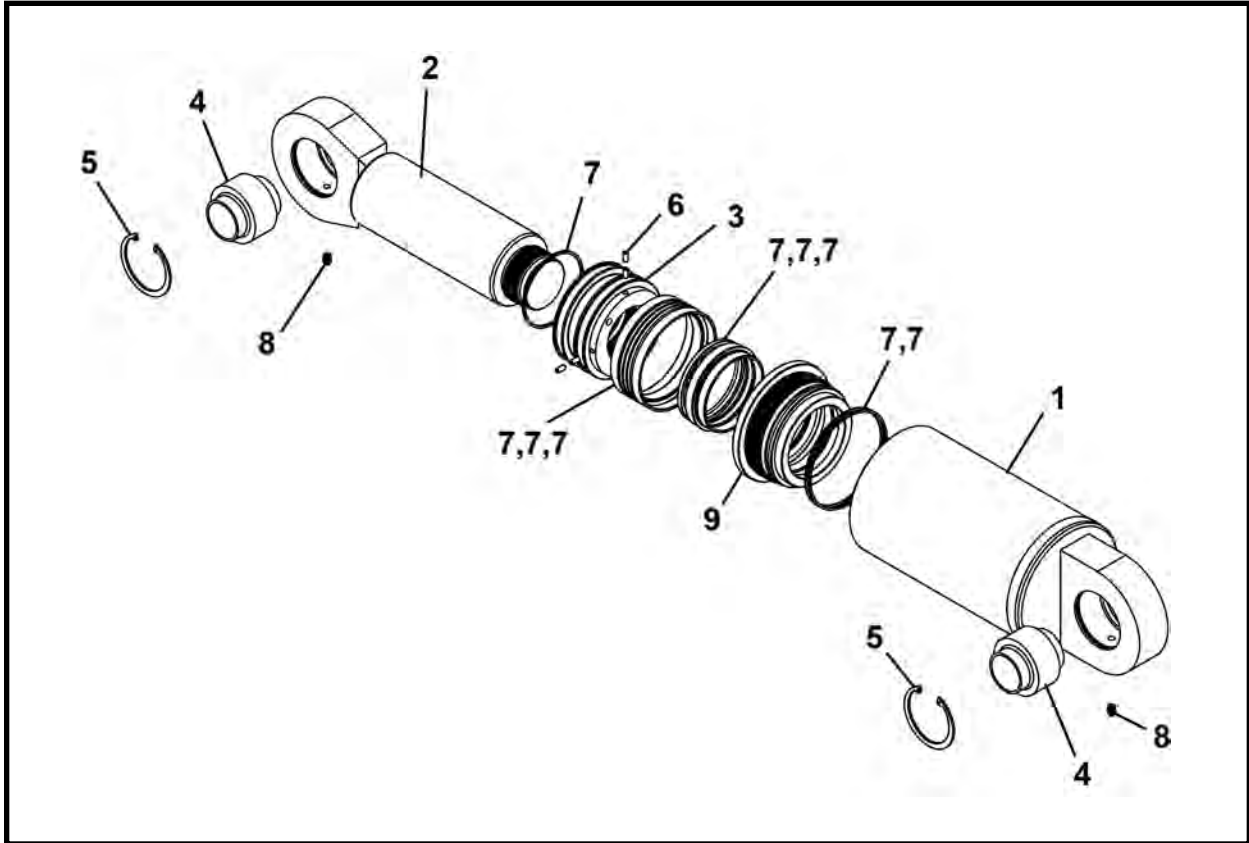
Intermediate Jacking Station Cylinder, F03531F02 ..... 8

**STEERING CYLINDER ASSEMBLY, 021175A**  
**TBM Series II: 600**



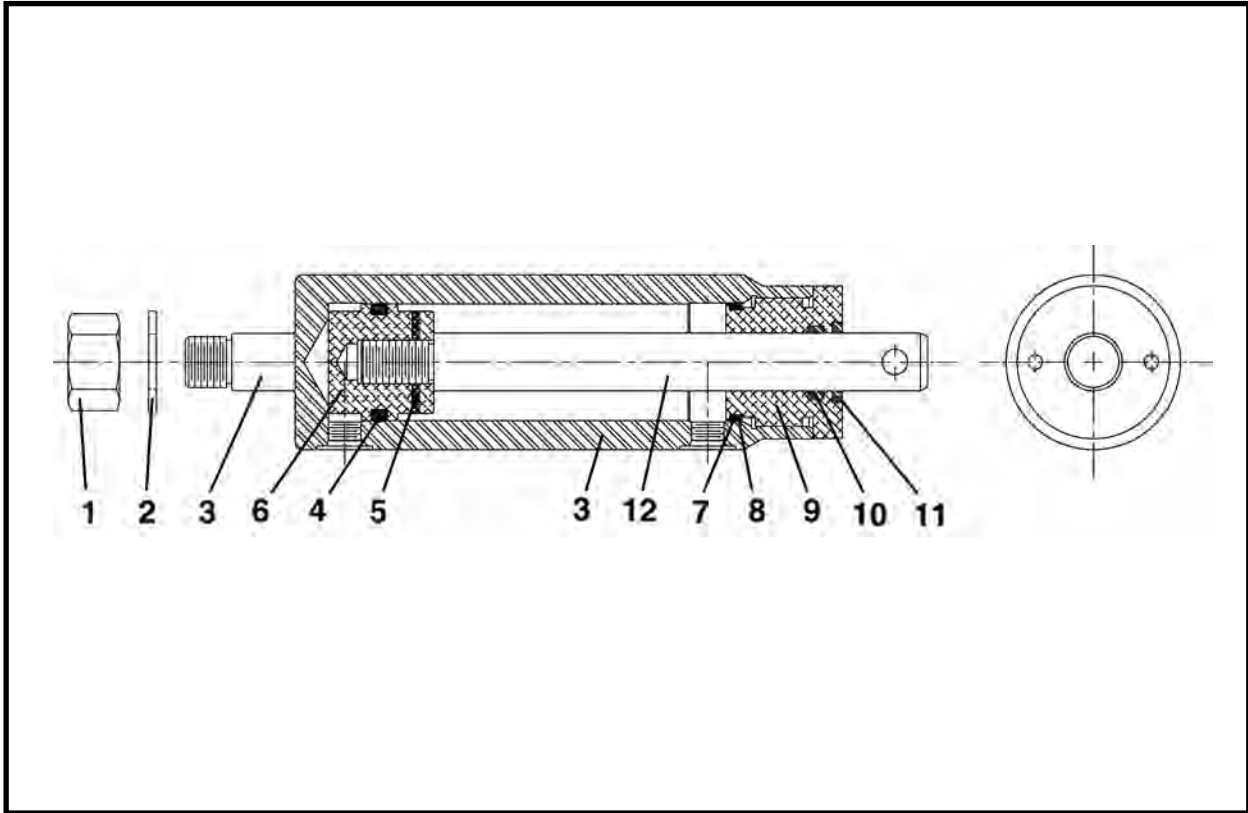
ITEM	QTY	PART NO.	DESCRIPTION
0	1	021175A	ASSEMBLY, Steering Cylinder
1	1	021176A	BARREL
2	1	021177A	ROD
3	1	021179P	PISTON
4	2	P0065-269	BEARING, Spherical
5	2	P0077-059	RING, Retaining
6	4	P0033-04-008	SCREW, Socket Set Hex 1/4 UNC x .5
7	1	P0307-225	KIT, Seal
8	2	P0063-004	FITTING, Grease 1/8-NPT Straight
9	1	021178P	GLAND

**STEERING CYLINDER ASSEMBLY, 023175A**  
**TBM Series II: 660 - 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	023175A	ASSEMBLY, Steering Cylinder
1	1	023176A	BARREL
2	1	023177A	ROD
3	1	023179P	PISTON
4	2	P0065-269	BEARING, Spherical
5	2	P0077-059	RING, Retaining
6	4	P0033-04-008	SCREW, Socket Set Hex 1/4 UNC x .5
7	1	P0307-217	KIT, Seal
8	2	P0063-004	FITTING, Grease 1/8-NPT Straight
9	1	023178P	GLAND

**CYLINDER ASSEMBLY, 014603A00**  
**HYDRAULIC DIRT WING CYLINDERS**  
**TBM Series II: 600 - 660 - 720**



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-2	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

\* Included in item 13, 010748A00 Seal Kit.

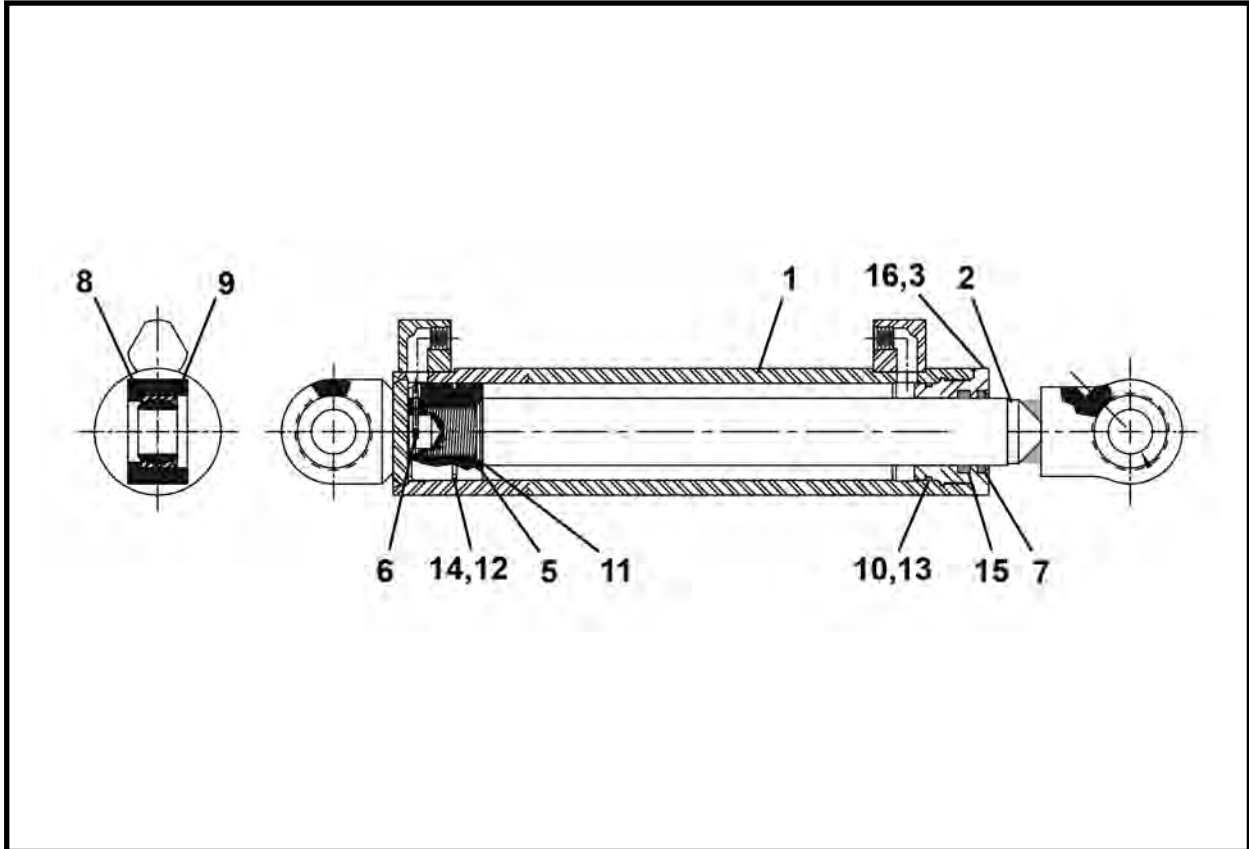
*Cylinders*

## **NOTES**

# CYLINDER ASSEMBLY, 015050A

CLOSED FACE

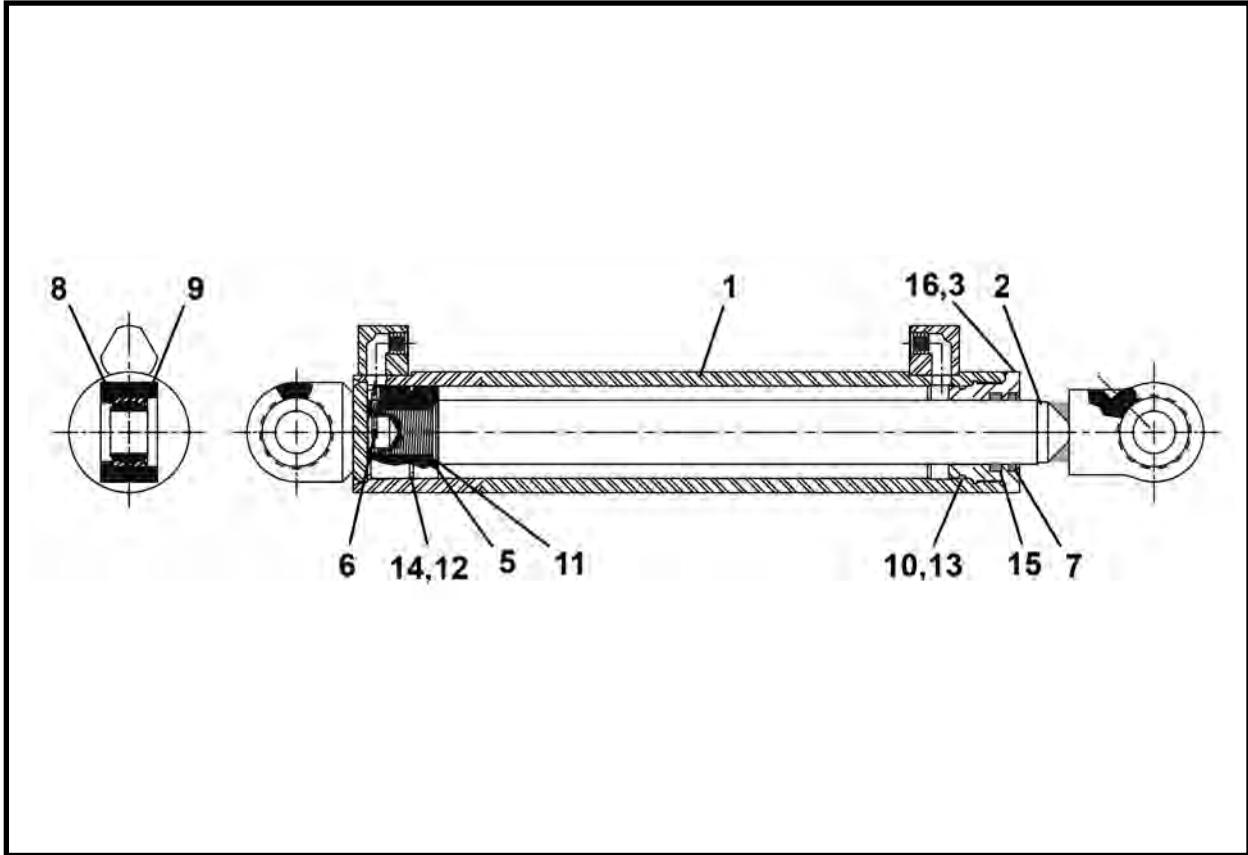
TBM Series II: 600 - 660



ITEM	QTY	PART NO.	DESCRIPTION
0	1	015050A	CYLINDER ASSEMBLY
1	1	015051A	BARREL
2	1	015053A	SHAFT
3	1	008945P01	GLAND
4*	REF	009918A00	KIT, Seal
5	1	014481P00	PISTON
6	1	P0048-033	PIN, Cotter
7*	1	P0087-004	WIPER
8	2	P0065-086	BEARING
9	2	P0076-050	RING, Internal Snap
10*	1	P0084-234	RING, Back-Up
11*	1	P0085-134	ORING
12*	1	P0085-149	ORING
13*	1	P0085-234	ORING
14*	1	P0085-C3	SEAL, Piston
15*	1	P0086-005	POLYSEAL
16	2	P0033-04-008	SCREW, Socket Head Set 1/4 UNC x .5

\* Included in item 4, 009918A00 Seal Kit

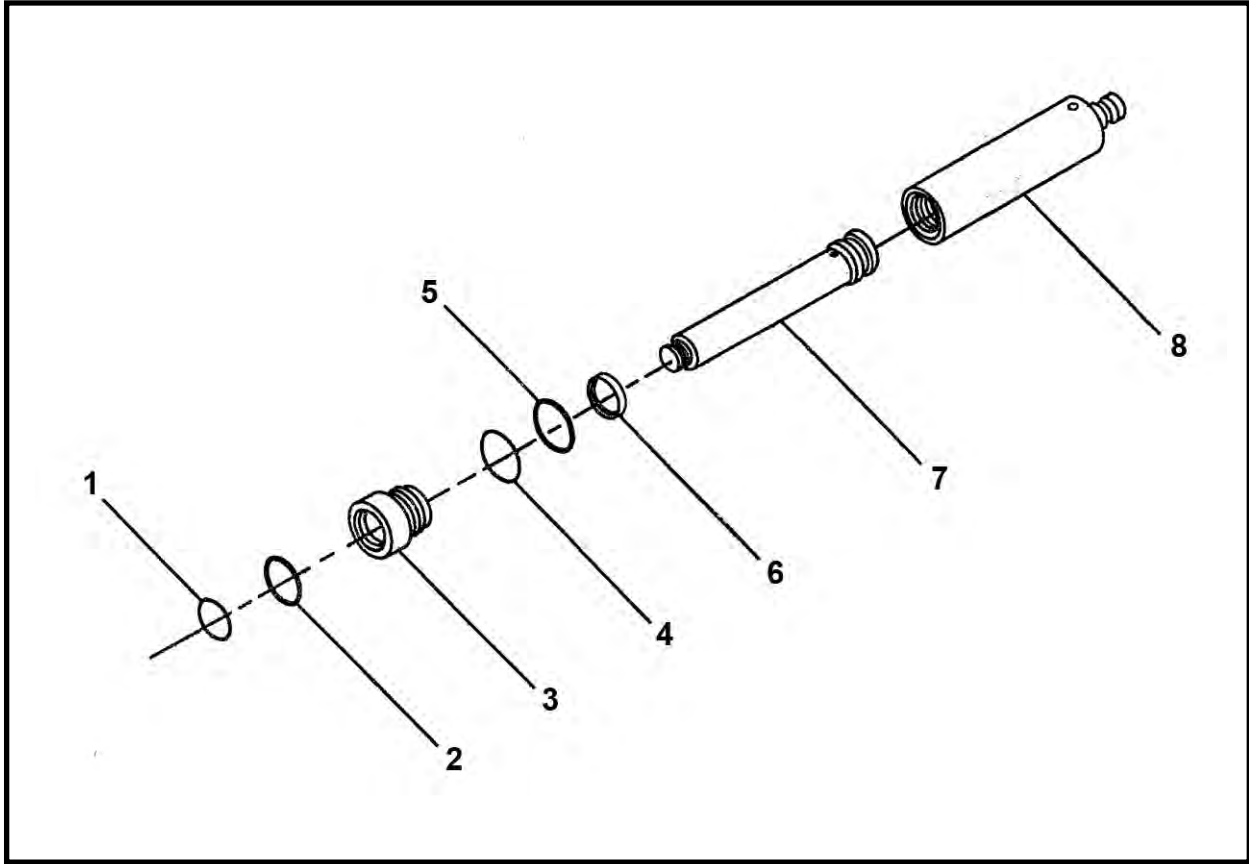
**CYLINDER ASSEMBLY, 015080A**  
**CLOSED FACE**  
**TBM Series II: 720**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	015080A	CYLINDER ASSEMBLY
1	1	015081A	BARREL
2	1	015083A	SHAFT
3	1	008945P01	GLAND
4	0	009918A00	KIT, Seal
5	1	014481P00	PISTON
6	1	P0048-033	PIN, Cotter
7*	1	P0087-004	WIPER
8	2	P0065-086	BEARING
9	2	P0076-050	RING, Internal Snap
10*	1	P0084-234	RING, Back-Up
11*	1	P0085-134	ORING
12*	1	P0085-149	ORING
13*	1	P0085-234	ORING
14*	1	P0085-C3	SEAL, Piston
15*	1	P0086-005	POLYSEAL
16	2	P0033-04-008	SCREW, Socket Head Set 1/4 UNC x .5

\* Included in item 4, 009918A00 Seal Kit

## IJS CYLINDER, F03531F02



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F03531F02	CYLINDER, IJS
1*	1	P0087-001	WIPER
2*	1	P0086-003	POLYSEAL
3	1	003095P02	CAP, End
4*	1	P0084-139	RING, Back-Up
5*	1	P0085-139	ORING
6*	1	P0088-002	RING, Wear
7	1	003348P02	SHAFT
8	1	003364A01	BARREL
9	REF	007344A00	KIT, Seal

\* Included in item 9, 007344A00 Seal Kit.



# Miscellaneous / Conveyors

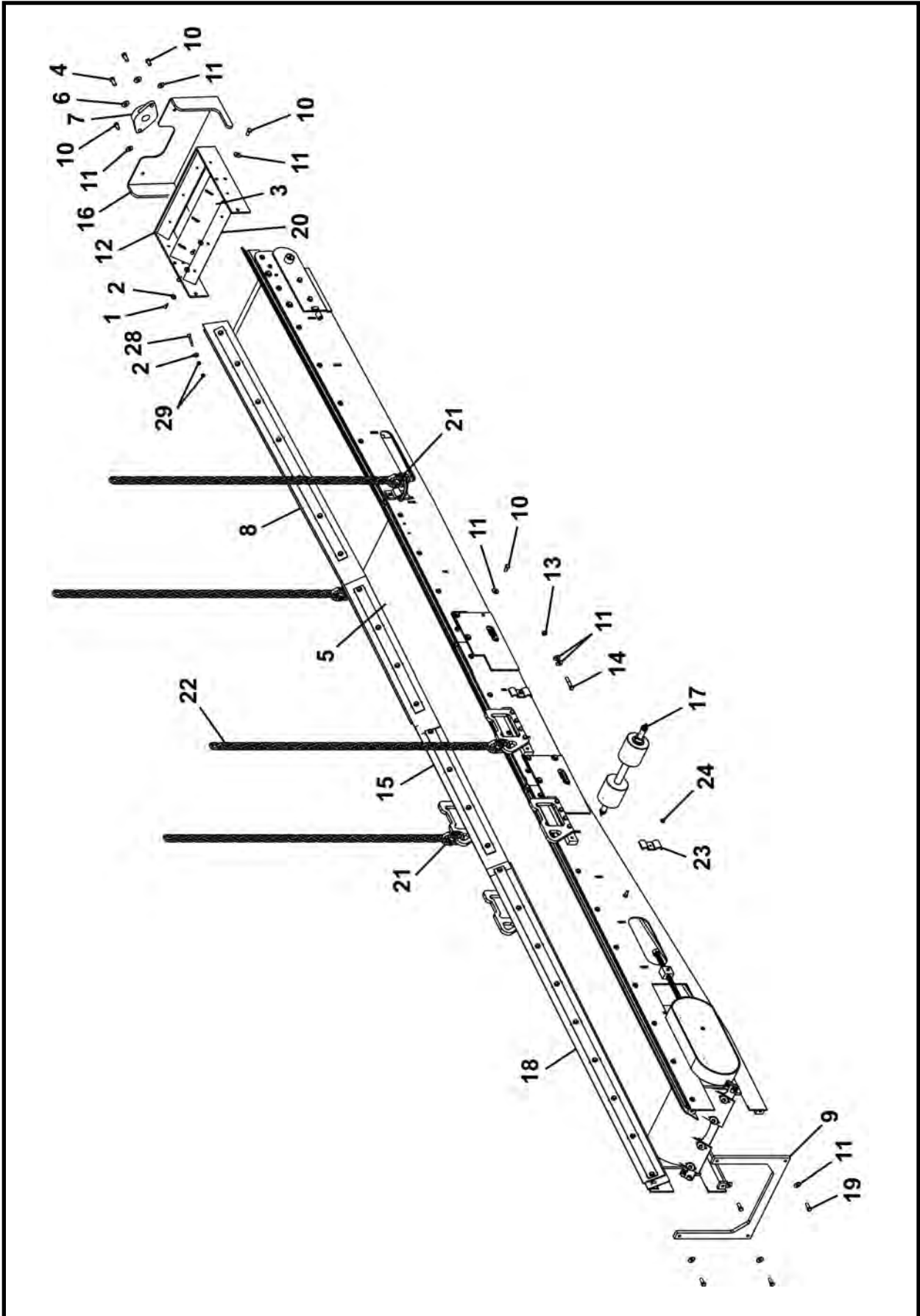
## Belt Conveyors

Belt Conveyor, 1615 .....	2
Feed Frame Assembly .....	5
Feed Frame Spoils Guide Assembly - Left Front, 027137A00 .....	6
Feed Frame Spoils Guide Assembly - Right Front, 027221A00 .....	7
Front Roller Assembly.....	8
Feed Frame Spoils Guide Assembly - Left Rear, 027265A00 .....	9
Feed Frame Spoils Guide Assembly - Right Rear, 027266A00 .....	10
Extension Frame Assembly (2415), 027314A00 .....	11
Short Spoils Guide Assembly - Front (2415), 027134A00 .....	12
Short Spoils Guide Assembly - Rear (2415), 027267A00 .....	13
Idler Roller Assembly, 027261A00 .....	14
Drive Frame Assembly, 027262A00 .....	15
Drive Frame Spoils Guide Assembly - Left, 027131A00 .....	16
Drive Frame Spoils Guide Assembly - Right, 027219A00 .....	17
Drive Motor & Roller Assembly, 027254A00 .....	18
Belt Conveyor, 2415 / 2418 .....	20
Feed Frame Assembly, 027313A00 .....	22
Feed Frame Spoils Guide Assembly - Left Front, 027137A00 .....	23
Feed Frame Spoils Guide Assembly - Right Front, 027221A00 .....	24
Front Roller Assembly, 027307A00 .....	25
Feed Frame Spoils Guide Assembly - Left Rear, 027265A00 .....	26
Feed Frame Spoils Guide Assembly - Right Rear, 027266A00 .....	27
Extension Frame Assembly (2415), 027314A00 .....	28
Short Spoils Guide Assembly - Front (2415), 027134A00 .....	29
Short Spoils Guide Assembly - Rear (2415), 027267A00 .....	30
Extension Frame Assembly (2418), 027456A .....	31
Spoils Guide Assembly - Left (2418), 027461A .....	32
Spoils Guide Assembly - Right (2418), 027462A .....	33
Idler Roller Assembly, 027311A00 .....	34
Drive Frame Assembly, 027425A00 .....	35
Drive Frame Spoils Guide Assembly - Left, 027131A00 .....	36
Drive Frame Spoils Guide Assembly - Right, 027219A00 .....	37
Drive Motor & Roller Assembly, 027420A00 .....	38

## Screw Conveyors

Screw Conveyor 140EX, F20645F00 .....	40
Screw Conveyor 160, F09885F04 & Before.....	42
Screw Conveyor 160, F09885F05 & After.....	44

BELT CONVEYOR, F27250F00  
1615 CONVEYOR



**BELT CONVEYOR, F27250F00  
1615 CONVEYOR**

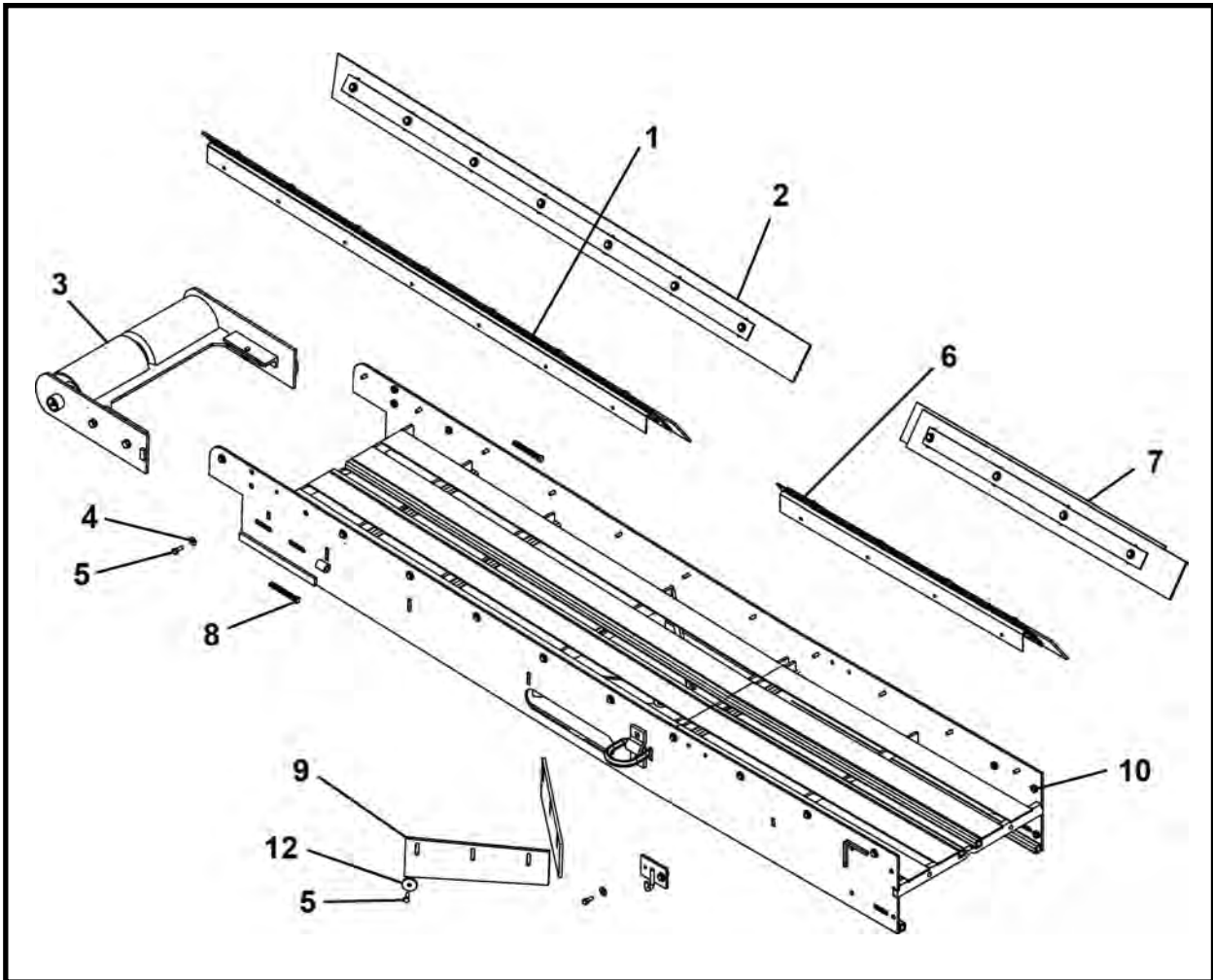
ITEM	QTY	PART NO.	DESCRIPTION
0	1	F27250F00	CONVEYOR, Belt
1	3	P0001-04-003	BOLT, Hex 1/4 UNC x .75
2	5	P0040-004	WASHER, Hardened Flat 1/4
3	1	027289P00	SCRAPER, External Belt
4	2	P0001-07-004	BOLT, Hex 7/16 UNC x 1
5	1	P0067-041	BELTING, 16" X 29' 8"
6	2	P0040-007	WASHER, Hardened Flat 7/16
7	1	P0065-017	BEARING
8*	1	027263A00	FEED FRAME ASSEMBLY
9	1	027286P00	SUPPORT, Drive Frame Free End
10	24	P0001-06-003	BOLT, Hex 3/8-16 UNC x .75
11	36	P0040-006	WASHER, Lock 3/8
12	1	027259A00	MOUNT, Nose Bearing
13	4	P0003-06-000	NUT, Hex 3/8 UNC
14	4	P0001-06-008	BOLT, Hex 3/8 UNC x 2
15*	1	027264A00	EXTENSION FRAME ASSEMBLY
16	1	027258A00	GUARD, Dirt
17*	2	027261A00	ASSEMBLY, Idler Roller
18*	1	027262A00	ASSEMBLY, Drive Frame
19	4	P0001-06-004	BOLT, Hex 3/8 UNC x 1
20	1	027144P	PLATE, Feed Belt Retainer
21	4	P0098-010	LINK, 3/8 Hammerloc
22	4	P0094-003-030	CHAIN, 3/8 x 30
23	2	002269P01	CLAMP, Line
24	2	P0003-05-000	NUT, Hex 5/16
25**	2	A10320A-132	HOSE ASSEMBLY 1/2 x 132
26**	1	P0100-004A	COUPLER, Female
27**	1	P0100-004B	COUPLER, Male
28	2	P0001-04-010	BOLT, Hex 1/4 UNC x 2.5
29	4	P0003-04-000	NUT, 1/4

\* Refer to this section for parts information.

\*\* Not Shown

## **NOTES**

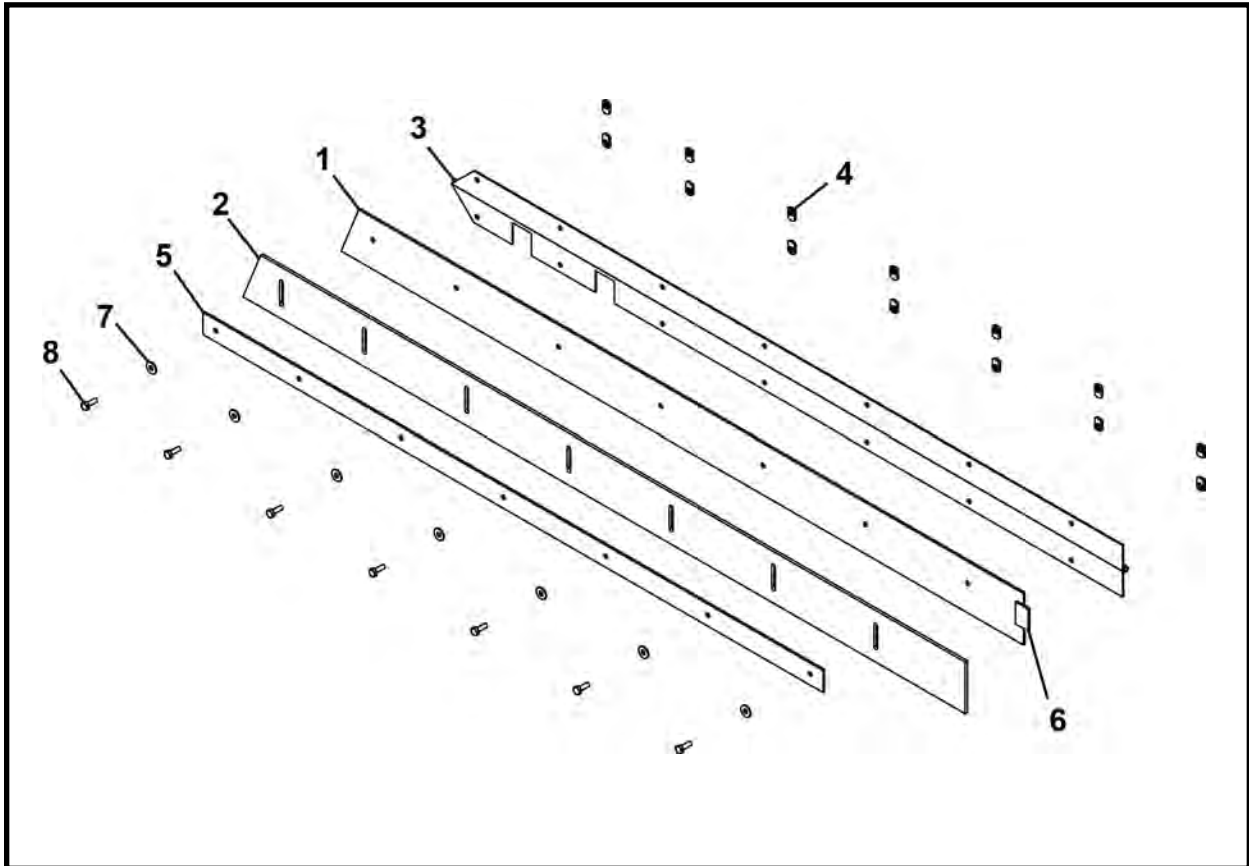
**FEED FRAME ASSEMBLY  
1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027263A00	ASSEMBLY, Feed Frame
1*	1	027137A00	GUIDE, Feed Frame Spoils - Left Front
2*	1	027221A00	GUIDE, Feed Frame Spoils - Right Front
3*	1	027257A00	FRONT ROLLER ASSEMBLY
4	24	P0040-004	WASHER, Hardened Flat 1/4
5	30	P0001-04-003	BOLT, Hex 1/4 UNC x .75
6*	1	027265A00	GUIDE, Feed Frame Spoils - Left Rear
7*	1	027266A00	GUIDE, Feed Frame Spoils - Right Rear
8	2	P0034-06-012	SCREW, Square Head Set 3/8 UNC x 3
9	2	027296P00	BELTING, Inner Belt Scraper
10	1	027252A00	FRAME, Feed (Includes items 10a-10c)
10a	2	001496P00	ROD, Adjustment
10b	14	P0011-006C	NUT, Jam/Weld 3/8 UNC
10c	2	P0079-003	D-RING, 1/2
11	1	005436A00	PLATE, Hook
12	6	002624P00	WASHER, Dirt Paddle

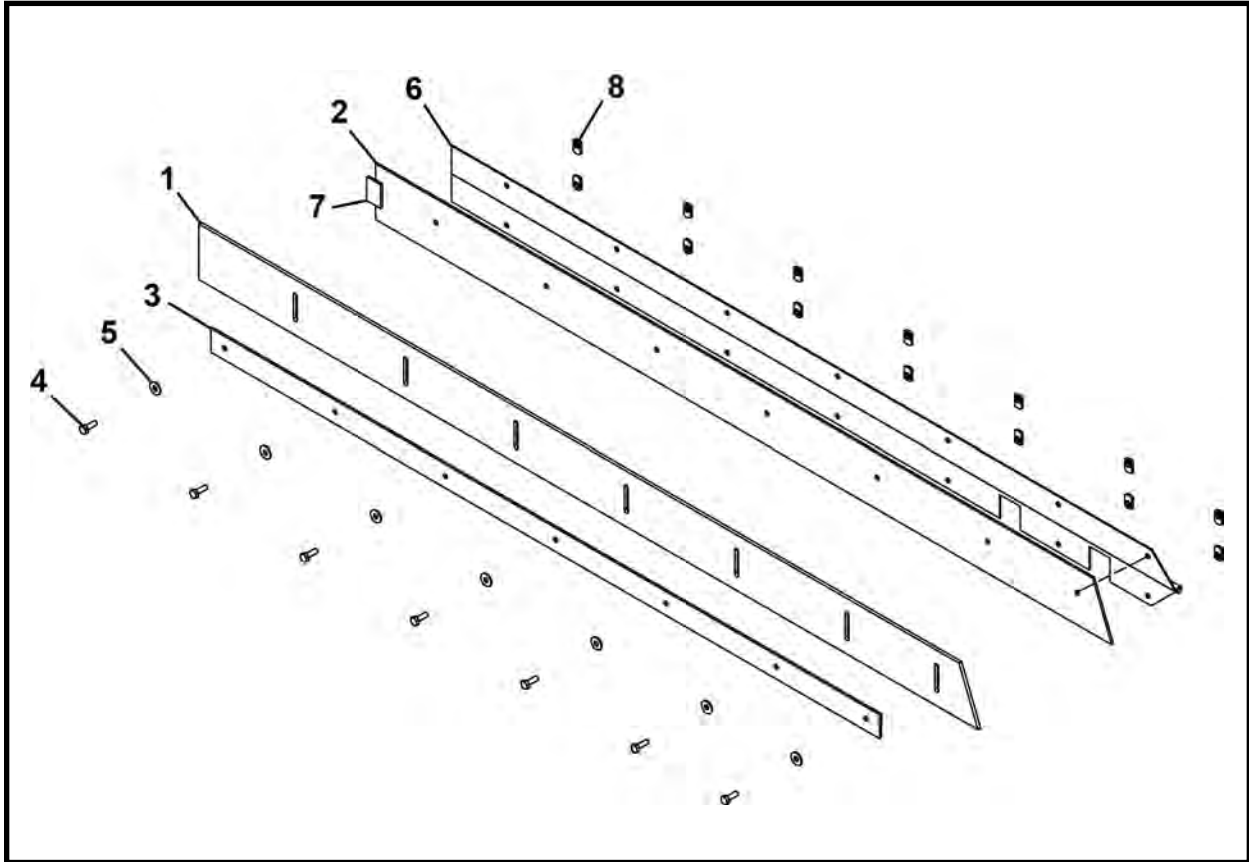
\* Refer to this section for parts information.

**FEED FRAME SPOILS GUIDE ASSEMBLY - LEFT FRONT, 027137A00**  
**1615 BELT CONVEYOR**



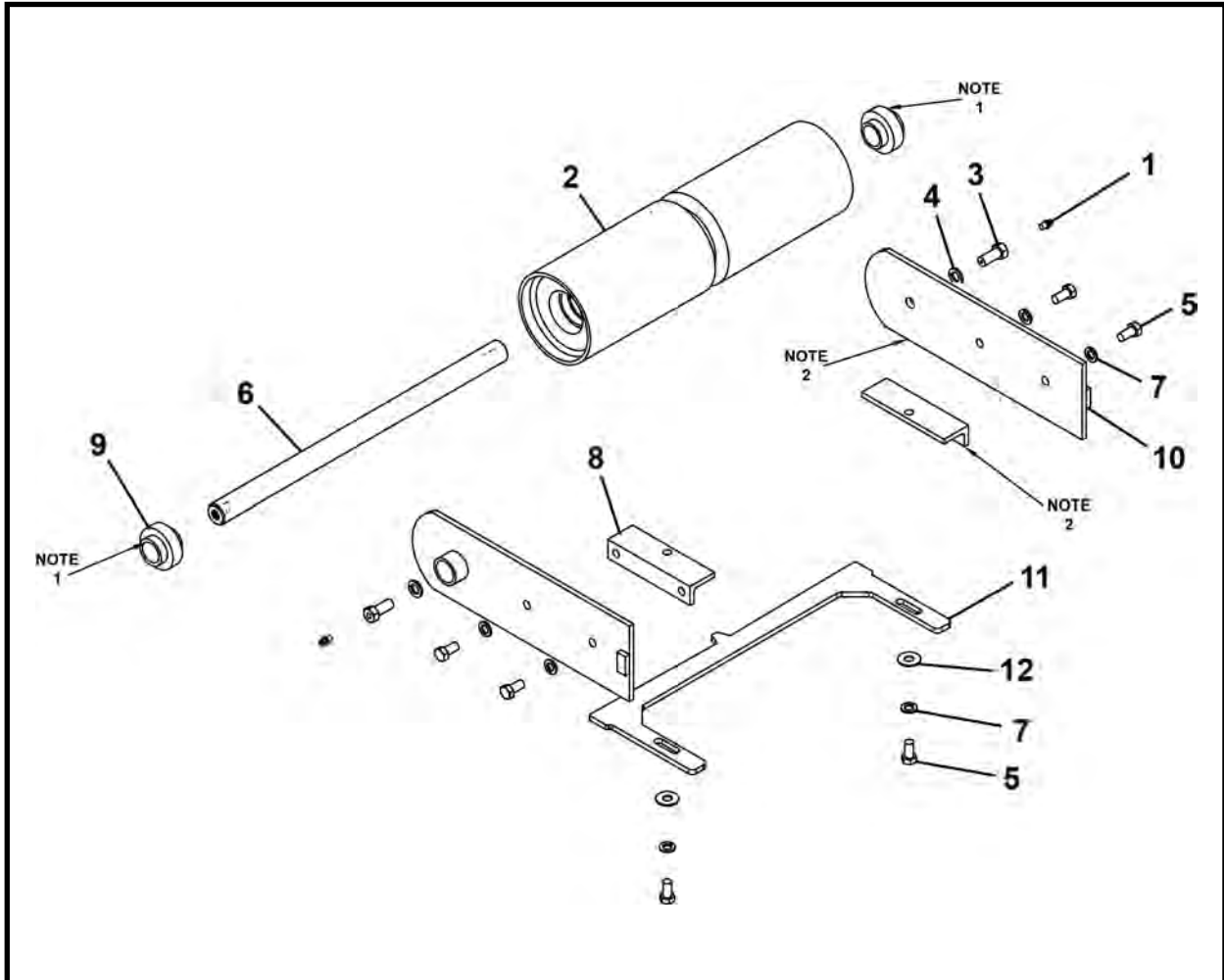
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027137A00	ASSEMBLY, Feed Frame Spoils Guide - Left Front
1	1	027139P00	SUPPORT BAR, Feed Frame Spoils
2	1	027140P00	STRIP, Wear, Feed Frame Spoils
3	1	027138P00	HINGE, Feed Frame Spoils
4	14	P0011-004B	NUT, Weld 1/4 UNC
5	1	027248P00	BRACKET, Feed Frame Wear Strip
6	1	027216P00	TAB, Feed Frame Support Bar
7	7	P0040-004	WASHER, Hardened Flat 1/4
8	7	P0001-04-003	BOLT, Hex 1/4 UNC x .75

**FEED FRAME SPOILS GUIDE ASSEMBLY - RIGHT FRONT, 027221A00**  
**1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027221A00	ASSEMBLY, Feed Frame Spoils Guide - Right Front
1	1	027140P00	STRIP, Wear, Feed Frame Spoils
2	1	027139P00	SUPPORT BAR, Feed Frame Spoils - Right
3	1	027248P00	BRACKET, Feed Frame Wear Strip
4	7	P0001-04-003	BOLT, Hex 1/4 UNC x .75
5	7	P0040-004	WASHER, Lock 1/4
6	1	027156P	HINGE, Feed Frame Spoils
7	1	027216P00	TAB, Feed Frame Support Bar
8	14	P0011-004B	NUT, Weld 1/4 UNC

**FRONT ROLLER ASSEMBLY  
1615 BELT CONVEYOR**

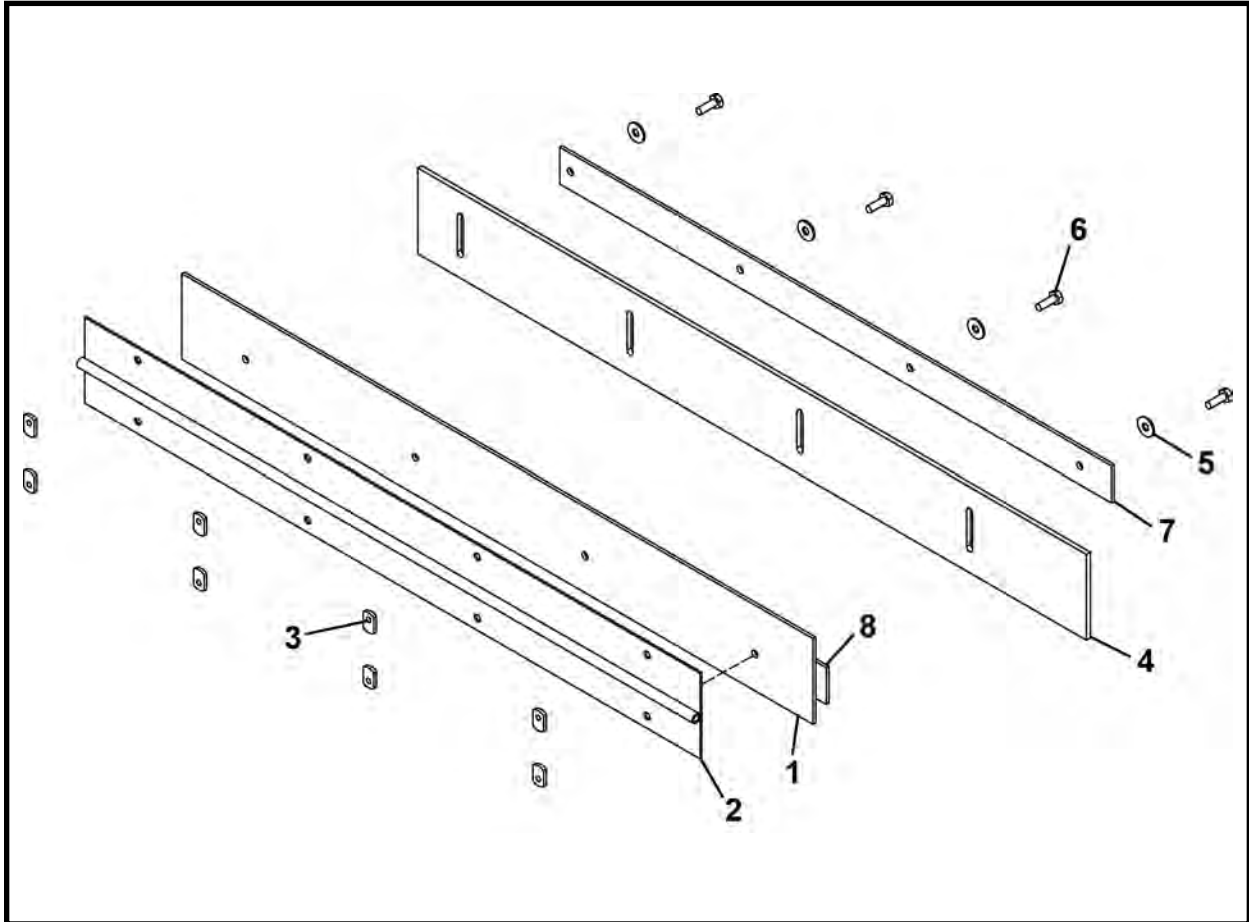


ITEM	QTY	PART NO.	DESCRIPTION
0	1	027257A00	FRONT ROLLER ASSEMBLY
1	2	P0063-001	FITTING, Grease Straight
2	1	002256A00	ROLLER, Front
3	2	002386P01	BOLT, Grease
4	2	P0045-007	WASHER, Lock 7/16
5	6	P0001-06-003	BOLT, Hex 3/8 UNC x .75
6	1	027293P00	SHAFT, Front Roller
7	6	P0045-006	WASHER, Lock 3/8
8	2	027130P00	MOUNT, Front Roller Scraper
9	2	P0065-006	BEARING
10	2	027109A00	BRACKET, Front Roller Mounting
11	1	027290P00	SCRAPER, Front Roller
12	2	P0040-006	WASHER, Hardened Flat 3/8

**NOTE:**

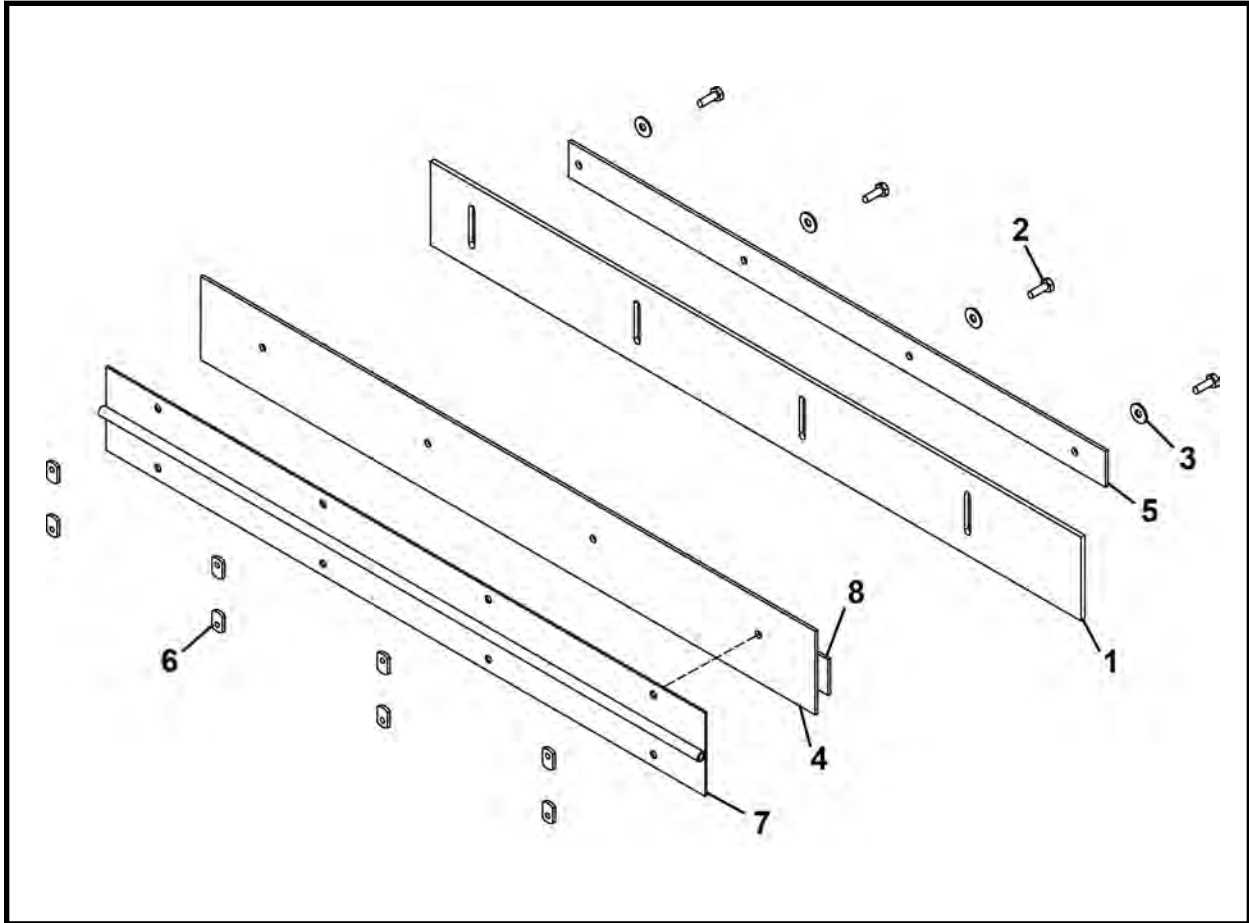
1. Remove seal on inside half of bearings (item 9).
2. 3/16" Feed Frame mounts between items 8 and 10.

**FEED FRAME SPOILS GUIDE ASSEMBLY - LEFT REAR, 027265A00**  
**1615 BELT CONVEYOR**



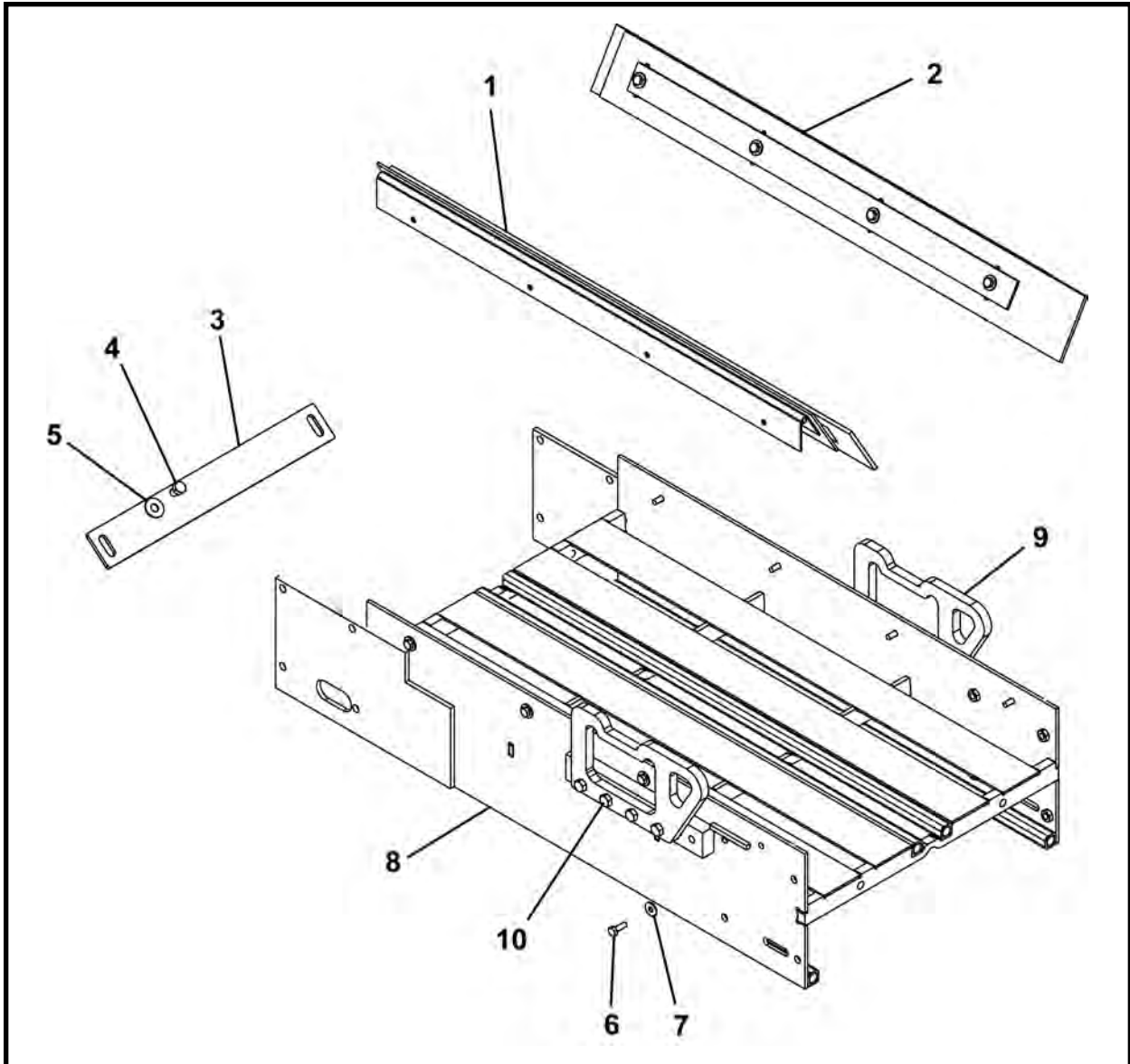
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027265A00	ASSEMBLY, Feed Frame Spoils Guide - Left Rear
1	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Left
2	1	027135P00	HINGE, Short Spoils Guide
3	8	P0011-004B	NUT, Weld 1/4 UNC
4	1	027136P00	STRIP, Short Spoils Guide Wear
5	4	P0040-004	WASHER, Hardened Flat 1/4
6	4	P0001-04-003	BOLT, Hex 1/4 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**  
**1615 BELT 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 UNC x .75
3	4	P0040-004	WASHER, Hardened Flat 1/4
4	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Right
5	1	027249P00	BRACKET, Short Spoils Wear Strip
6	8	P0011-004B	NUT, Weld 1/4 UNC
7	1	027135P00	HINGE, Short Spoils Guide
8	1	027216P00	TAB, Feed Frame Support Bar

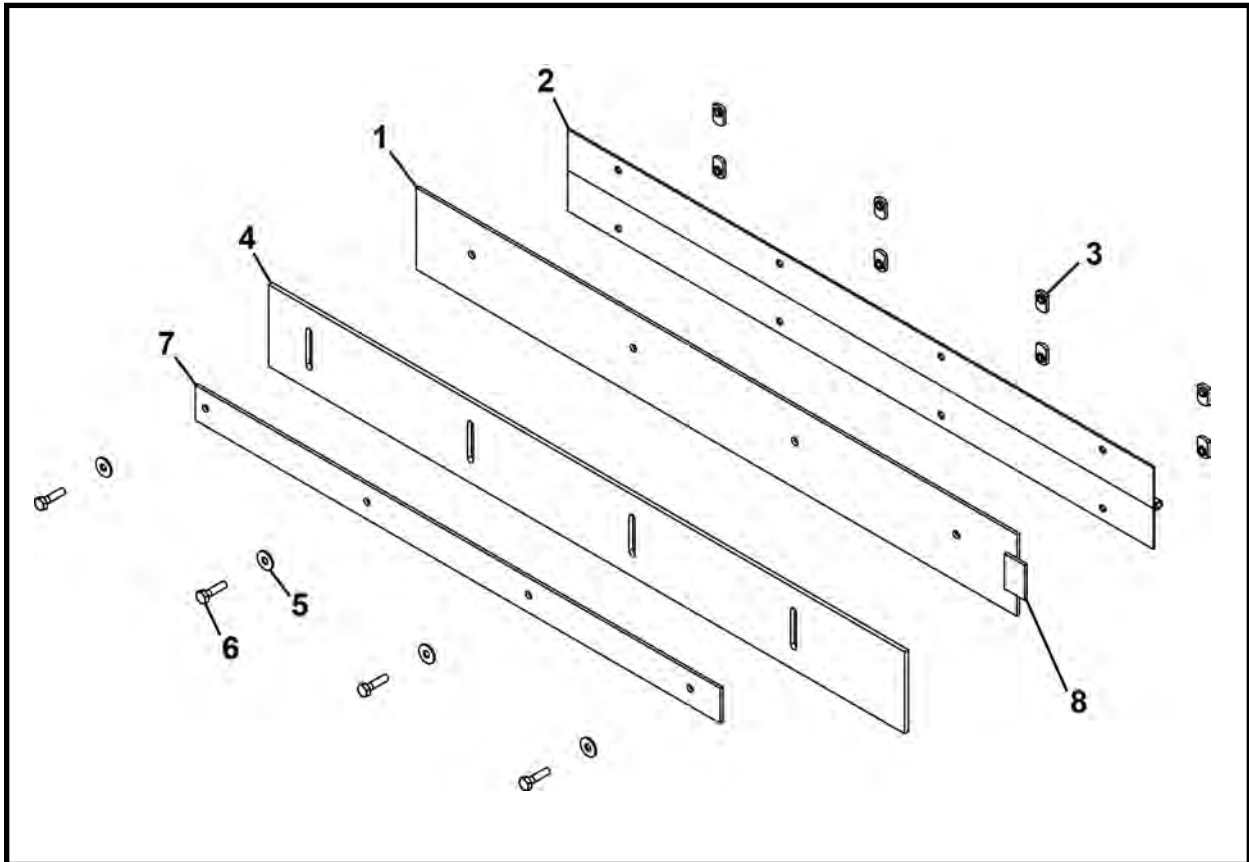
**EXTENSION FRAME ASSEMBLY  
1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027264A00	EXTENSION FRAME ASSEMBLY
1*	1	027134A00	GUIDE, Short Spoils - Left
2*	1	027267A00	GUIDE, Short Spoils - Right
3	1	027295P00	SCRAPER, Idler Roller
4	2	P0001-06-002	BOLT, Hex 3/8 UNC x .5
5	2	P0040-006	WASHER, Hardened Flat 3/8
6	8	P0001-04-003	BOLT, Hex 1/4 UNC x .75
7	8	P0045-004	WASHER, Lock 1/4
8	1	027253A00	FRAME, Extension (Includes items 8a-8b)
8a	2	P0011-006A	NUT, Strut Square 3/8
8b	8	P0011-006C	NUT, Weld 3/8 UNC
9	2	025344P	LIFT EYE
10	8	P0001-06-005	BOLT, Hex 3/8 UNC x 1.25

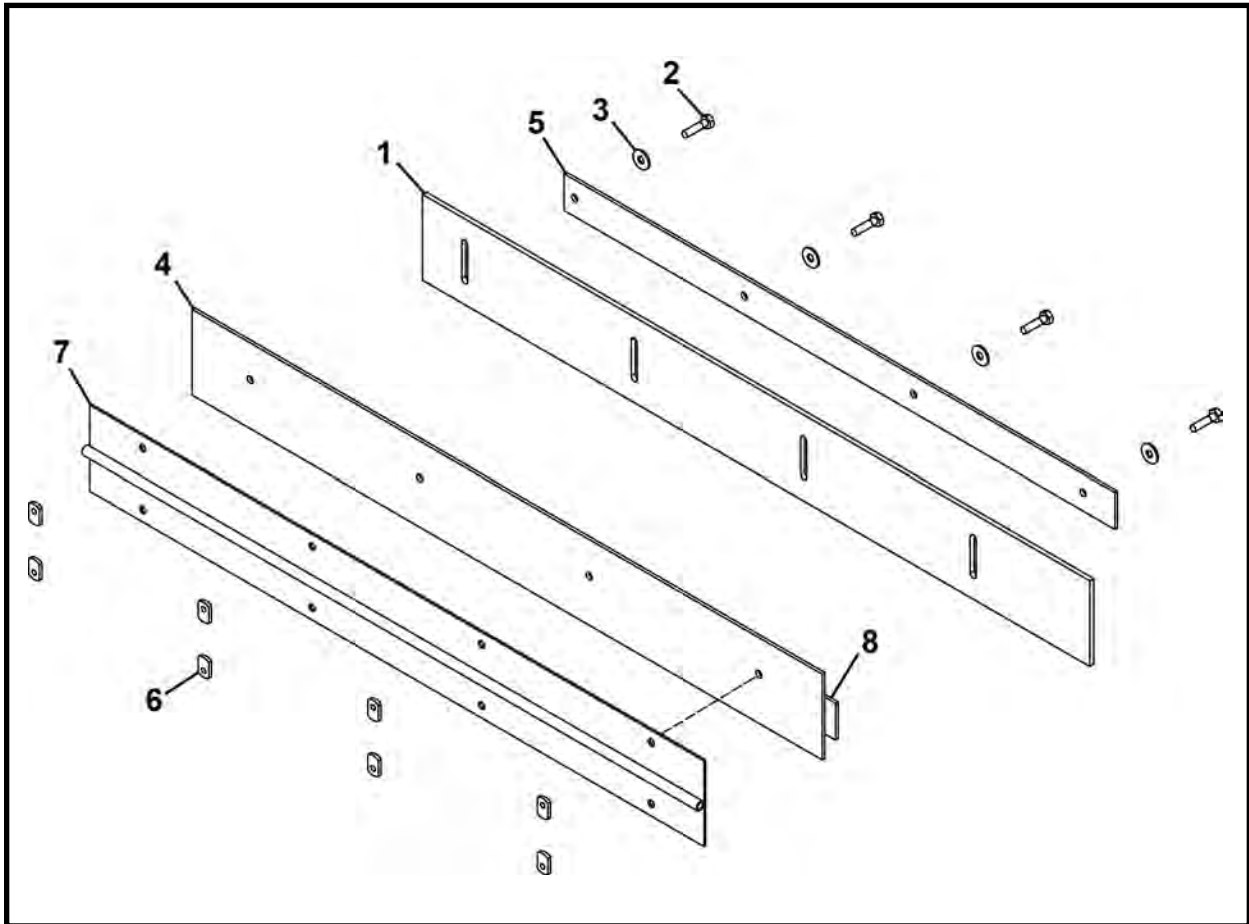
\* Refer to this section for parts information.

**SHORT SPOILS GUIDE ASSEMBLY - LEFT, 027134A00**  
**1615 BELT CONVEYOR - EXTENSION**



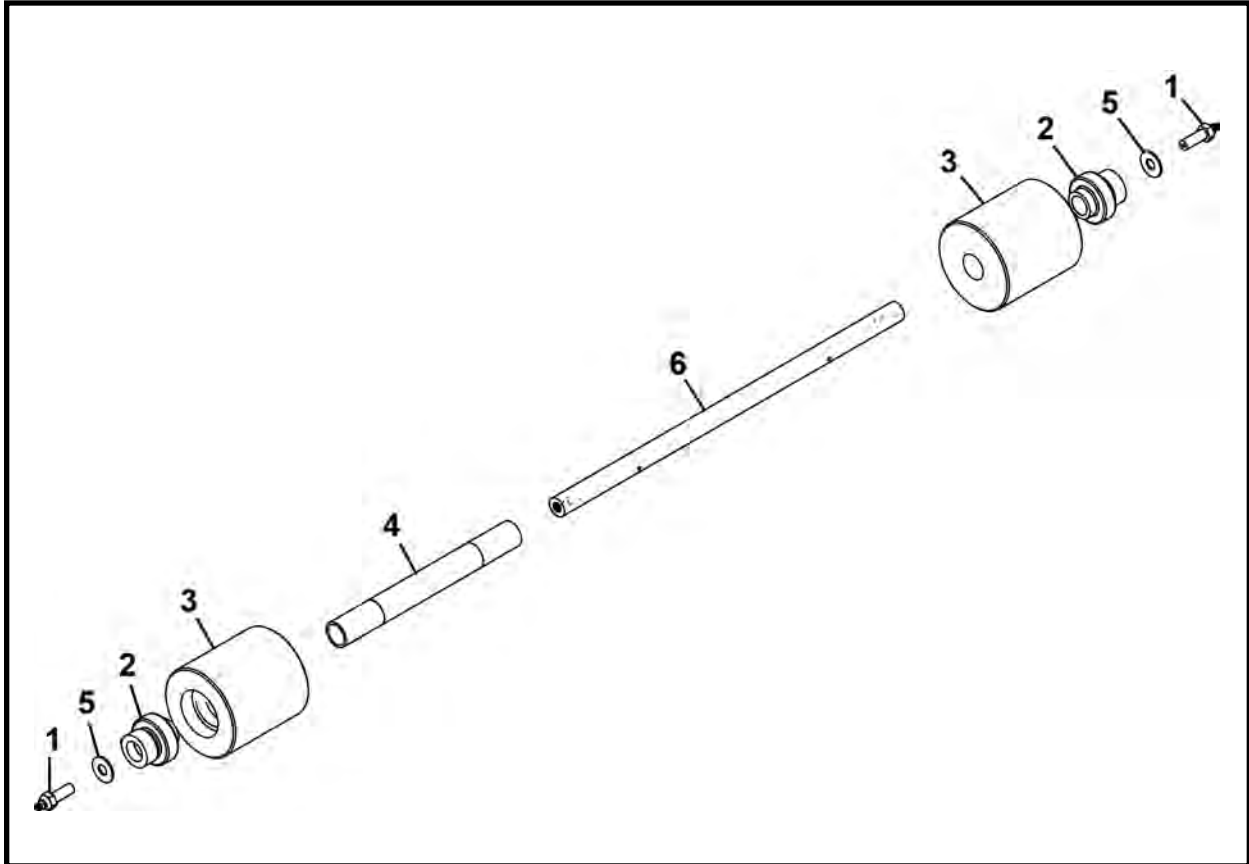
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027134A00	ASSEMBLY, Short Spoils Guide - Left
1	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Left
2	1	027135P00	HINGE, Short Spoils Guide
3	8	P0011-004B	NUT, Weld 1/4 UNC
4	1	027136P00	STRIP, Short Spoils Guide Wear
5	4	P0045-004	WASHER, Lock 1/4
6	4	P0001-04-003	BOLT, Hex 1/4 UNC x .75
7	1	027249P00	BRACKET, Short Spoils Wear Strip
8	1	027216P00	TAB, Feed Frame Support Bar

**SHORT SPOILS GUIDE ASSEMBLY - RIGHT, 027267A00**  
**1615 BELT CONVEYOR - EXTENSION**



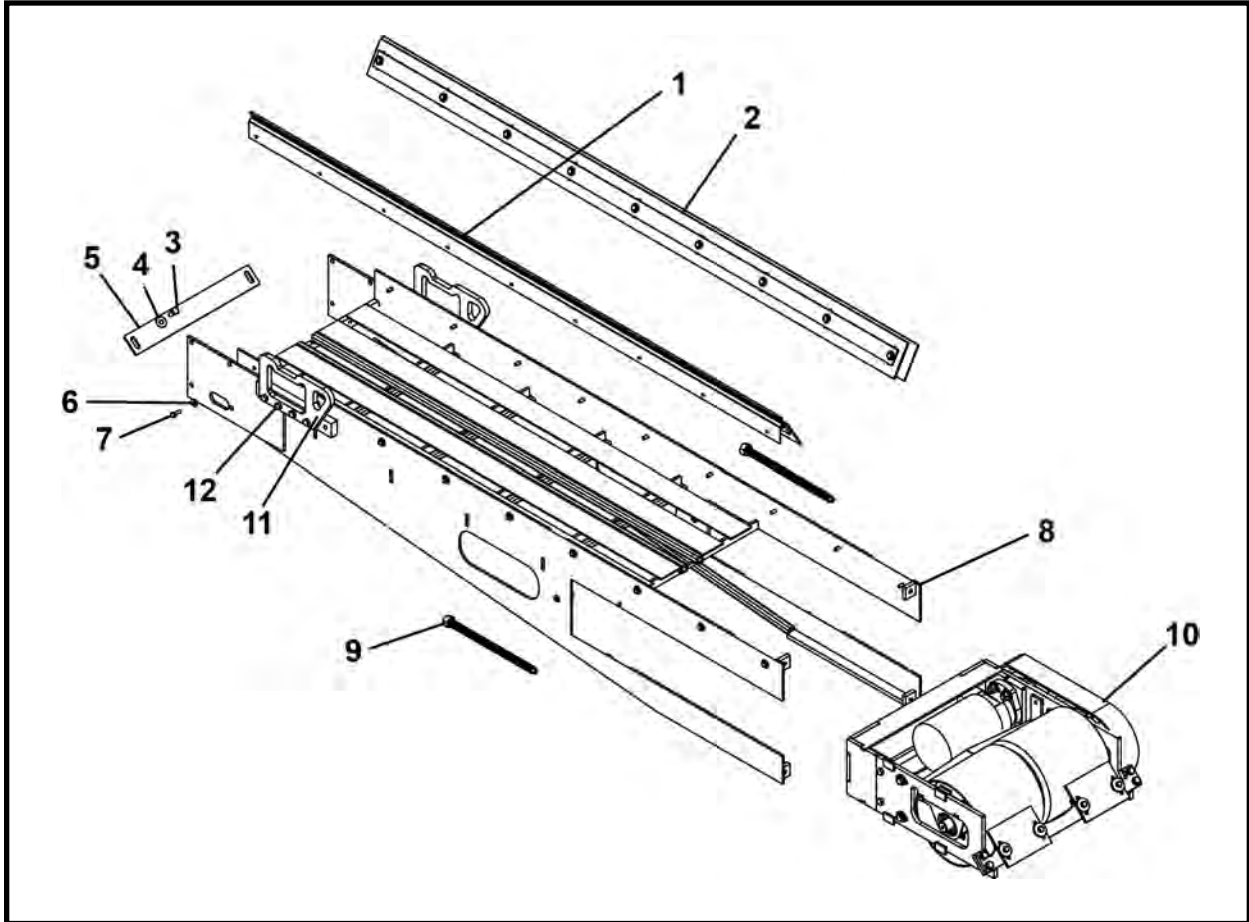
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027267A00	ASSEMBLY, Short Spoils Guide - Right
1	1	027136P00	STRIP, Short Spoils Guide Wear
2	4	P0001-04-003	BOLT, Hex 1/4 UNC x 3/4
3	4	P0045-004	WASHER, Lock 1/4
4	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Right
5	1	027249P00	BRACKET, Short Spoils Wear Strip
6	8	P0011-004B	NUT, Weld 1/4 UNC
7	1	027135P00	HINGE, Short Spoils Guide
8	1	027216P00	TAB, Feed Frame Support Bar

**IDLER ROLLER ASSEMBLY, 027261A00**  
**1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027261A00	IDLER ROLLER ASSEMBLY
1	2	001341A00	BOLT, 3/8 UNC x 1.25 W/Fitting (Includes item 1a)
1a	2	P0063-001	FITTING, Grease
2	2	027397P	BEARING
3	2	002306P00	ROLLER, Idler
4	1	001085P00	TUBE, Idler
5	2	P0040-006	WASHER, Hardened Flat 3/8
6	1	002416P00	SHAFT, Idler

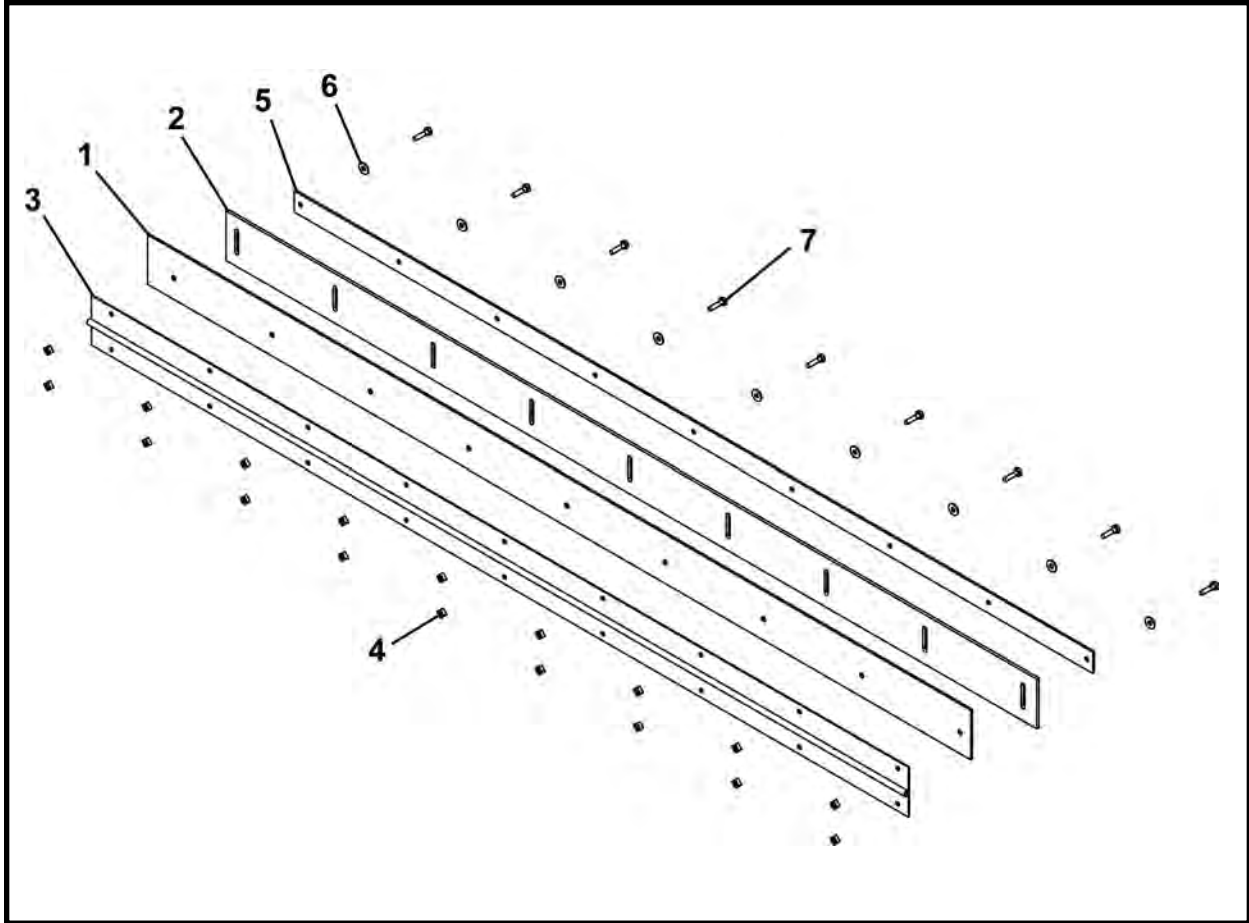
**DRIVE FRAME ASSEMBLY, 027262A00**  
**1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027262A00	DRIVE FRAME ASSEMBLY
1*	1	027131A00	GUIDE, Drive Frame Spoils - Left
2*	1	027219A00	GUIDE, Drive Frame Spoils - Right
3	2	P0001-06-003	BOLT, Hex 3/8 UNC x .75
4	2	P0040-006	WASHER, Hardened Flat 3/8
5	1	027295P00	SCRAPER, Idler Roller
6	18	P0040-004	WASHER, Hardened Flat 1/4
7	18	P0001-04-003	BOLT, Hex 1/4 UNC x .75
8	1	027251A00	FRAME, Drive (Includes items 8a-8b)
8a	6	P0011-006A	NUT, Strut Square 3/8
8b	2	P0063-001	FITTING, Grease 1/4
9	2	002824A01	SCREW, Adjusting
10*	1	027254A00	ASSEMBLY, Drive Motor & Roller
11	2	025344P	LIFT EYE
12	8	P0001-06-005	BOLT, Hex 3/8 UNC x 1.25

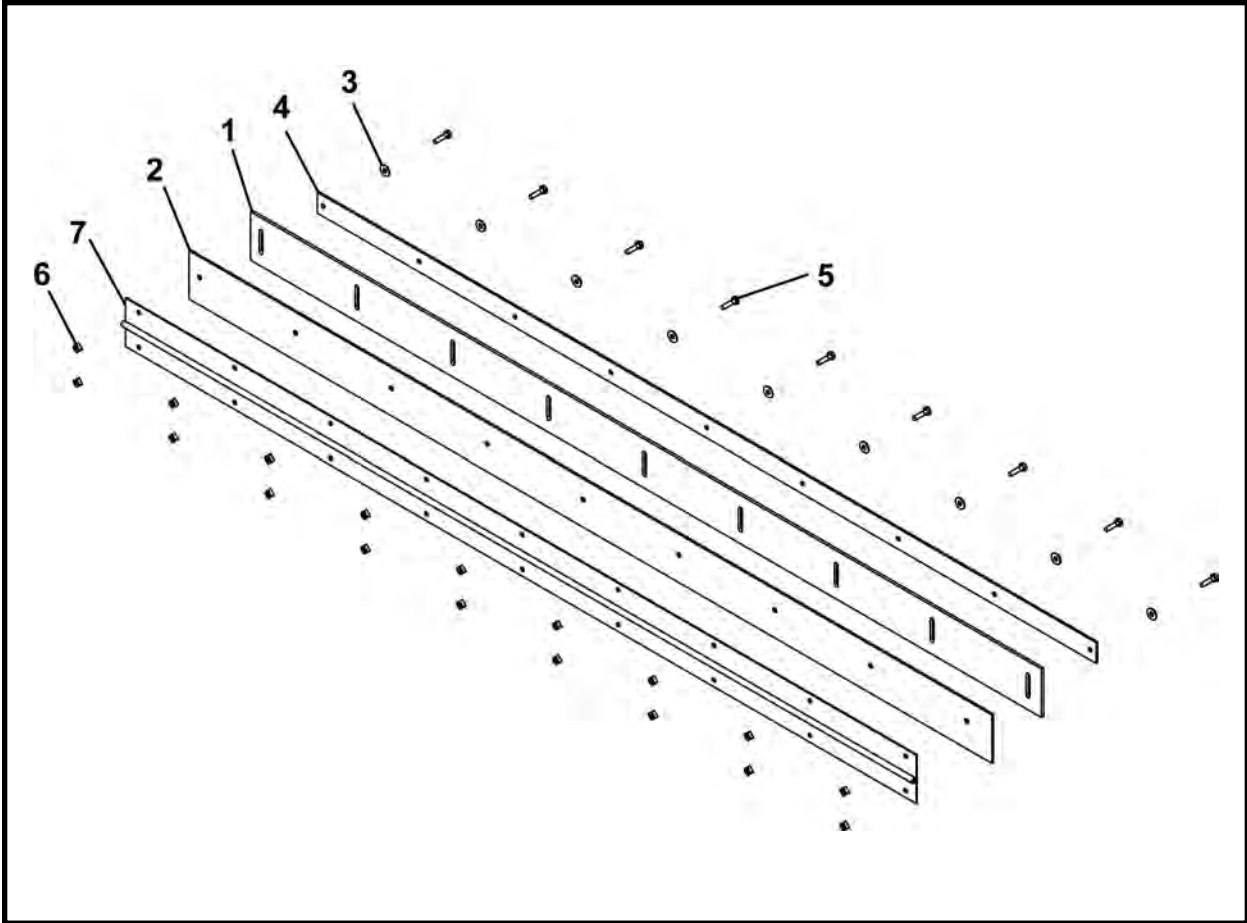
\* Refer to this section for parts information.

**DRIVE FRAME SPOILS GUIDE ASSEMBLY - LEFT, 027131A00**  
**1615 BELT CONVEYOR**



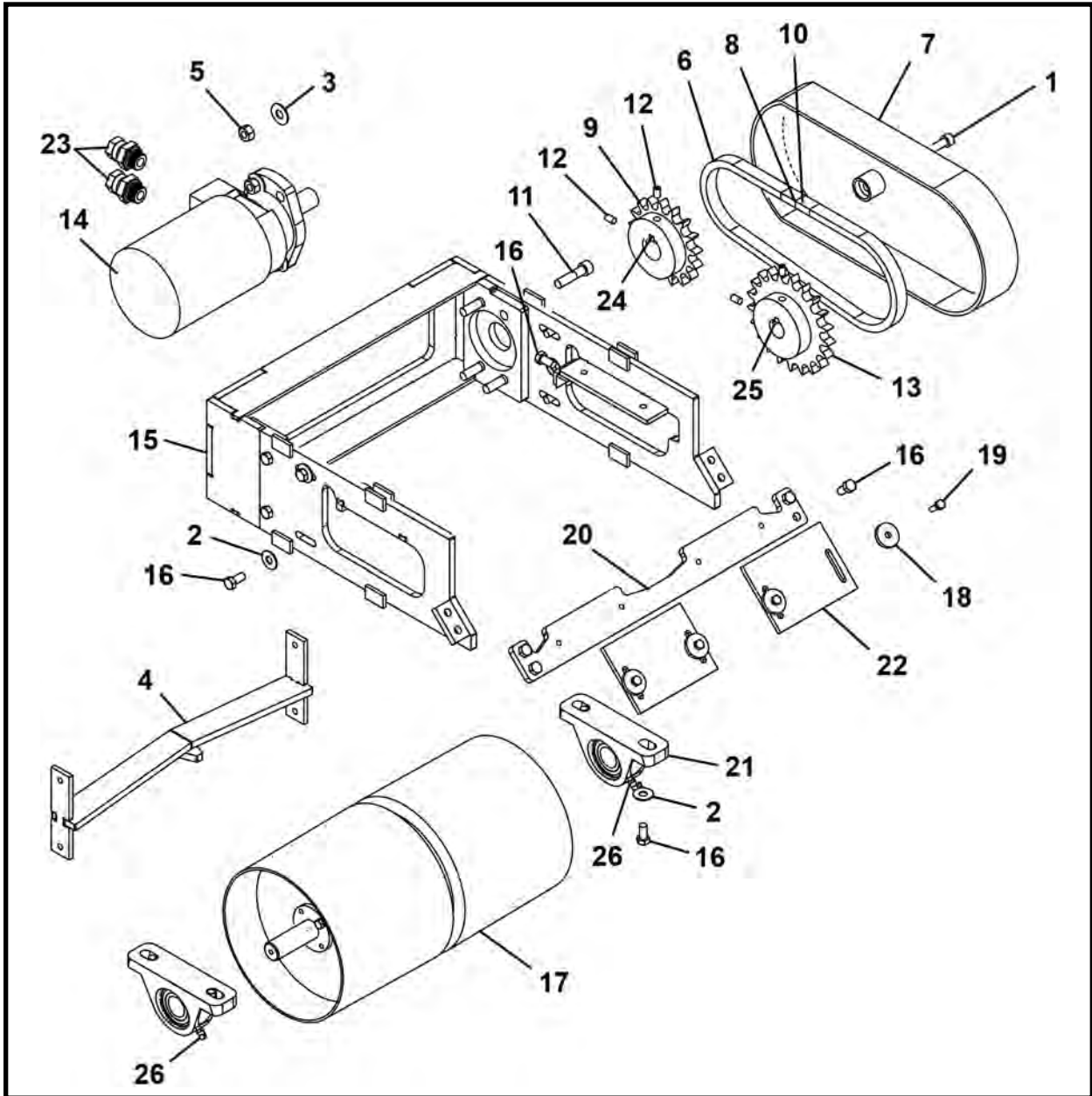
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027131A00	GUIDE, Drive Frame Spoils - Left
1	1	027218P00	SUPPORT BAR, Drive Frame Spoils
2	1	027133P00	STRIP, Feed Frame Spoils Wear
3	1	027132P00	HINGE, Drive Frame Spoils Guide
4	18	P0011-004B	NUT, Weld 1/4 UNC
5	1	027247P00	BRACKET, Drive Frame Wear Strip
6	9	P0040-004	WASHER, Hardened Flat 1/4
7	9	P0001-04-003	BOLT, Hex 1/4 UNC x .75

**DRIVE FRAME SPOILS GUIDE ASSEMBLY - RIGHT, 027219A00**  
**1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027219A00	GUIDE, Drive Frame Spoils - Right
1	1	027133P00	STRIP, Drive Frame Spoils Wear
2	1	027218P00	SUPPORT BAR, Drive Frame Spoils
3	9	P0040-004	WASHER, Hardened Flat 1/4
4	1	027247P00	BRACKET, Drive Frame Wear Strip
5	9	P0001-04-003	BOLT, Hex 1/4 UNC x .75
6	18	P0011-004B	NUT, Weld 1/4 UNC
7	1	027132P00	HINGE, Drive Frame Spoils Guide

**DRIVE MOTOR & ROLLER ASSEMBLY, 027254A00**  
**1615 BELT CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027254A00	ASSEMBLY, Drive Motor & Roller
1	1	P0031-06-003	SCREW, Socket Head Cap 3/8 UNC x .75
2	8	P0040-006	WASHER, Hardened Flat 3/8
3	4	P0040-007	WASHER, Hardened Flat 7/16
4	1	027256A00	SCRAPER, Internal Drive Roller
5	4	P0003-07-000	NUT, 7/16 UNC
6	36	P0078-002	CHAIN, Roller #60 x 35
7	1	001429A00	COVER, Conveyor Chain
8	1	P0078-008	LINK, Connect #60
9	1	001399P00	SPROCKET, Drive 17 Teeth
10	1	P0078-005	LINK, Half #60
11	4	P0031-07-007	SCREW, Socket Head Cap 7/16 UNC x 1.75
12	4	P0033-05-008	SCREW, Socket Head Set 5/16 UNC x .5

(Continued on next page)

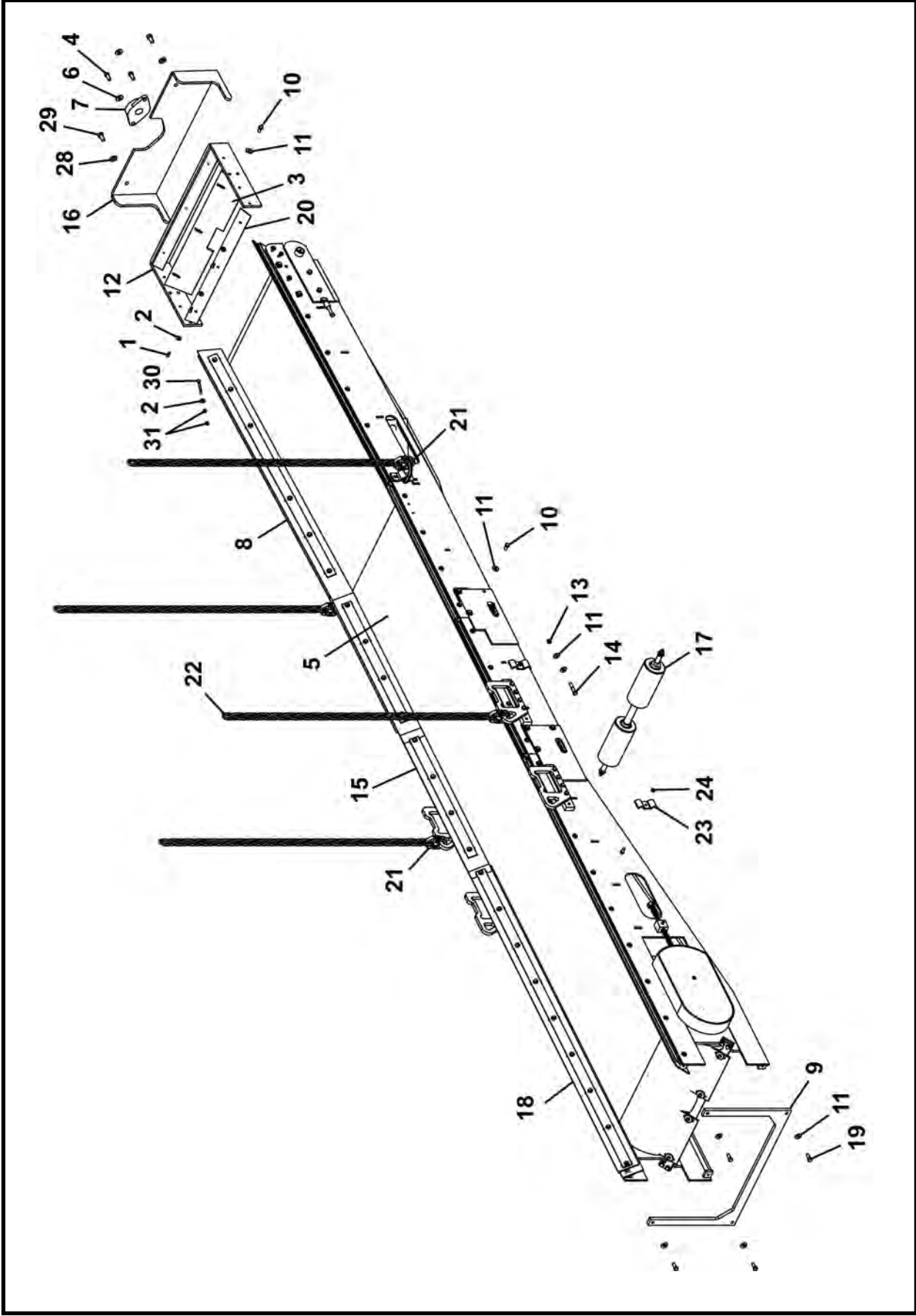
**DRIVE MOTOR & ROLLER ASSEMBLY  
1615 BELT CONVEYOR**

ITEM	QTY	PART NO.	DESCRIPTION
13	1	001398P00	SPROCKET
14*	1	P0304-157	MOTOR
15	1	027255A00	FRAME, Drive Motor
16	14	P0001-06-003	BOLT, Hex 3/8 UNC x .75
17	1	001969A00	ROLLER, Drive
18	4	002624P00	WASHER
19	4	P0001-04-003	BOLT, Hex 1/4 UNC x .75
20	1	027283P00	SCRAPER, External
21	2	P0065-014	BEARING
22	2	027285P00	SCRAPER, External Belt
23	2	P0300-094	FITTING, 10MB-08FPX
24	1.25 LI	P0047-004	KEY, 5/16
25	1.25 LI	P0047-003	KEY, 1/4
26	2	P0063-003	FITTING, Grease 1/4 90 Deg.

LI - Linear Inch

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

**BELT CONVEYORS**  
**2415 & 2418 BELT CONVEYORS**



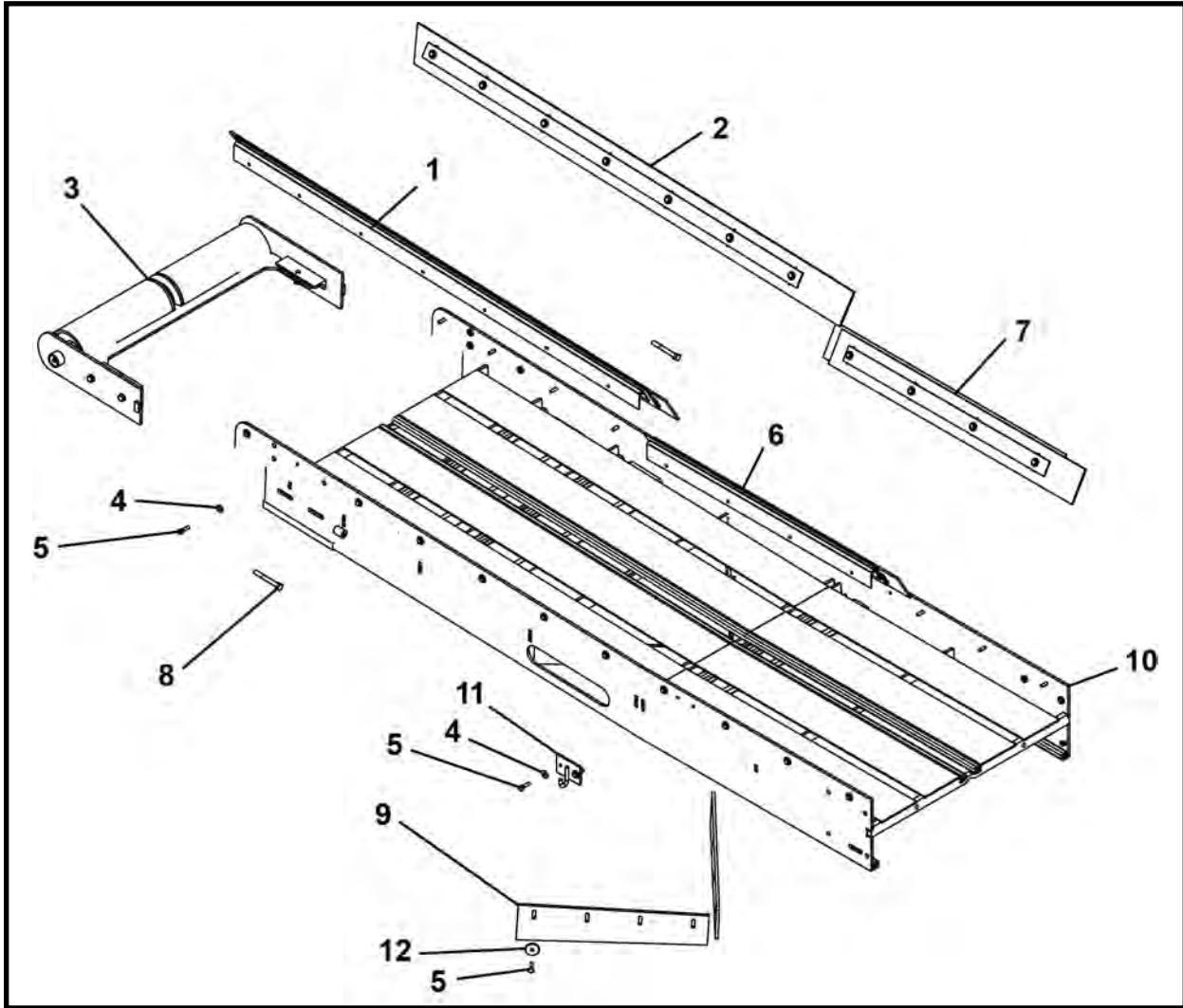
**BELT CONVEYORS**  
**2415 & 2418 BELT CONVEYORS**

ITEM	QTY	PART NO.	PART NO.	DESCRIPTION
0	1	F27450F00	F27455F	BELT CONVEYOR
1	3	P0001-04-003	-	BOLT, Hex 1/2 UNC x .75
1	3	-	P0001-04-002	BOLT, Hex 1/2 UNC x .5
2	5	P0040-004	P0040-004	WASHER, Hardened Flat 1/4
3	1	027339P00	027339P00	SCRAPER, External Belt
4	2	P0001-07-004	P0001-07-004	BOLT, Hex 7/16 UNC x 1
5a	1	P0067-042	-	BELTING, 24" x 29' 8" (belt with extension frame)
5b	1	P0067-010	-	BELTING, 24" x 24' 8" (belt without extension frame)
5c	1	-	P0067-011	BELTING, 24" x 34' 8"
6	2	P0040-007	P0040-007	WASHER, Hardened Flat 7/16
7	1	P0065-017	P0065-017	BEARING, Conveyor End Pivot
8*	1	027313A00	027313A00	FEED FRAME ASSEMBLY
9	1	027336P00	027336P00	SUPPORT, Drive Frame Free End
10	22	P0001-06-003	P0001-06-003	BOLT, Hex 3/8 UNC x .75
11	34	P0040-006	P0040-006	WASHER, Hardened Flat 3/8
12	1	027150A	027150A	MOUNT, Nose Bearing
13	4	P0003-06-000	P0003-06-000	NUT, 3/8 UNC
14	4	P0001-06-008	P0001-06-008	BOLT, 3/8 UNC x 2
15	1	027314A00	027456A	EXTENSION FRAME ASSEMBLY
16	1	027155A	027155A	GUARD, Dirt
17	2	027311A00	027311A00	IDLER ROLLER ASSEMBLY
18	1	027425A	027425A	DRIVE FRAME ASSEMBLY
19	4	P0001-06-004	P0001-06-004	BOLT, 3/8 UNC x 1
20	1	027411P	027411P	PLATE, Feed Belt Retainer
21	4	P0098-010	P0098-010	LINK, 3/8 Hammerlock Link
22	4	P0094-003-060	P0094-003-060	CHAIN, 3/8 x 60
23	2	002269P01	002269P01	CLAMP, Line
24	2	P0003-05-000	P0003-04-000	NUT, Hex 5/16 UNC
25**	2	A10320A-132	A10320A-132	HOSE ASSEMBLY 1/2 x 132
26**	1	P0100-004A	P0100-004A	COUPLER, Quick 1/2 Female
27**	1	P0100-004B	P0100-004B	COUPLER, Quick 1/2 Male
28	2	P0040-008	P0040-008	WASHER, Hardened Flat 1/2
29	2	P0001-08-004	P0001-08-004	BOLT, Hex 1/2 UNC x 1
30	2	P0001-04-012	-	BOLT, Hex 1/4 UNC x 3
30	2	-	P0001-04-010	BOLT, Hex 1/4 UNC x 2.5
31	4	P0003-04-000	P0003-04-000	NUT, Hex 1/4 UNC

\* Refer to this section for part information.

\*\* Not Shown

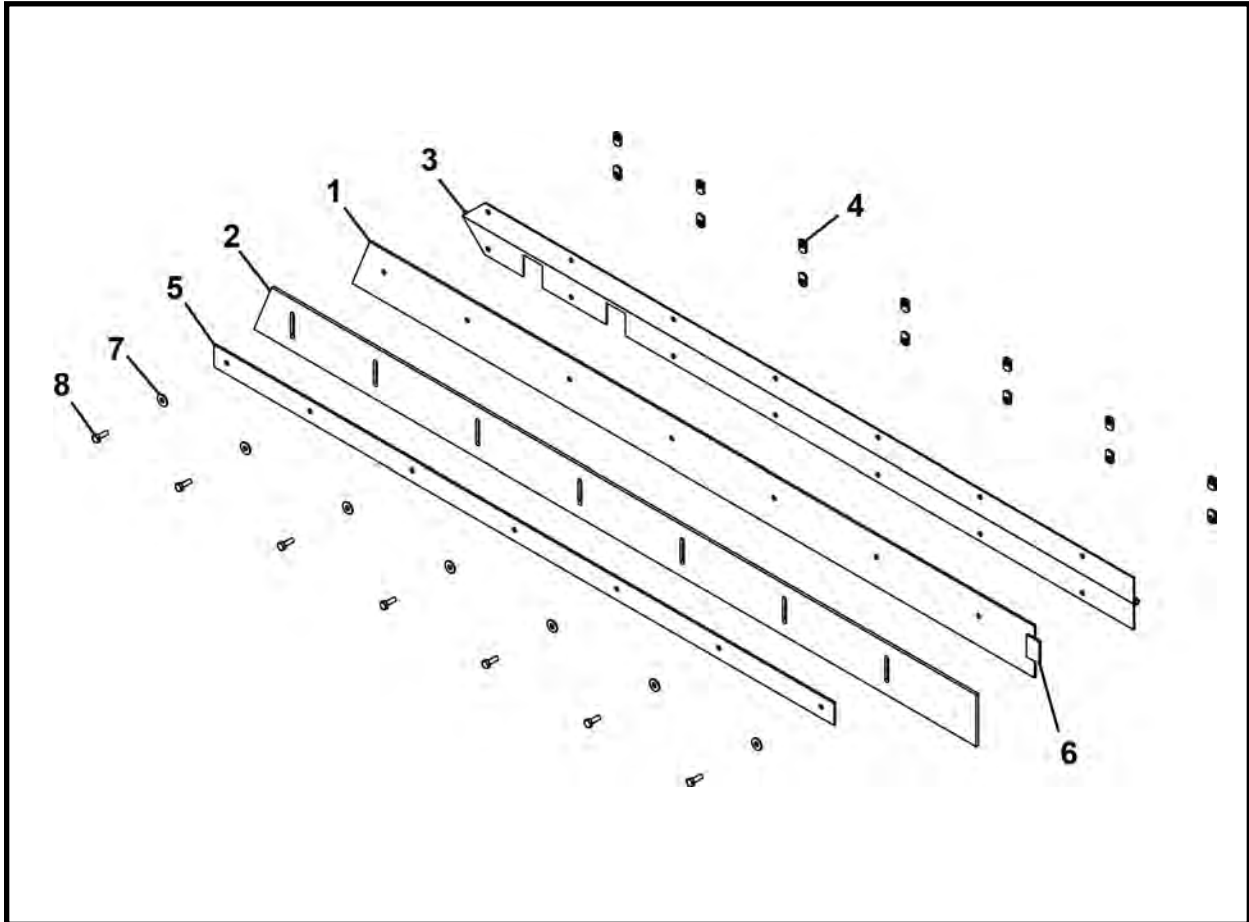
**FEED FRAME ASSEMBLY, 027313A00**  
**2415 & 2418 CONVEYORS**



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 - Right Front
3*	1	027307A00	ASSEMBLY, Front Roller
4	24	P0045-004	WASHER, Lock 1/4
5	30	P0001-04-003	BOLT, Hex 1/4 UNC x 3/4
6*	1	027265A00	ASSEMBLY, Feed Frame Spoils Guide - Left Rear
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	P0011-006C	NUT, Tab 3/8 UNC
10c	2	P0079-003	D-RING, 1/2
11	1	005436A00	PLATE, Hook
12	8	002624P00	WASHER, Dirt Paddle

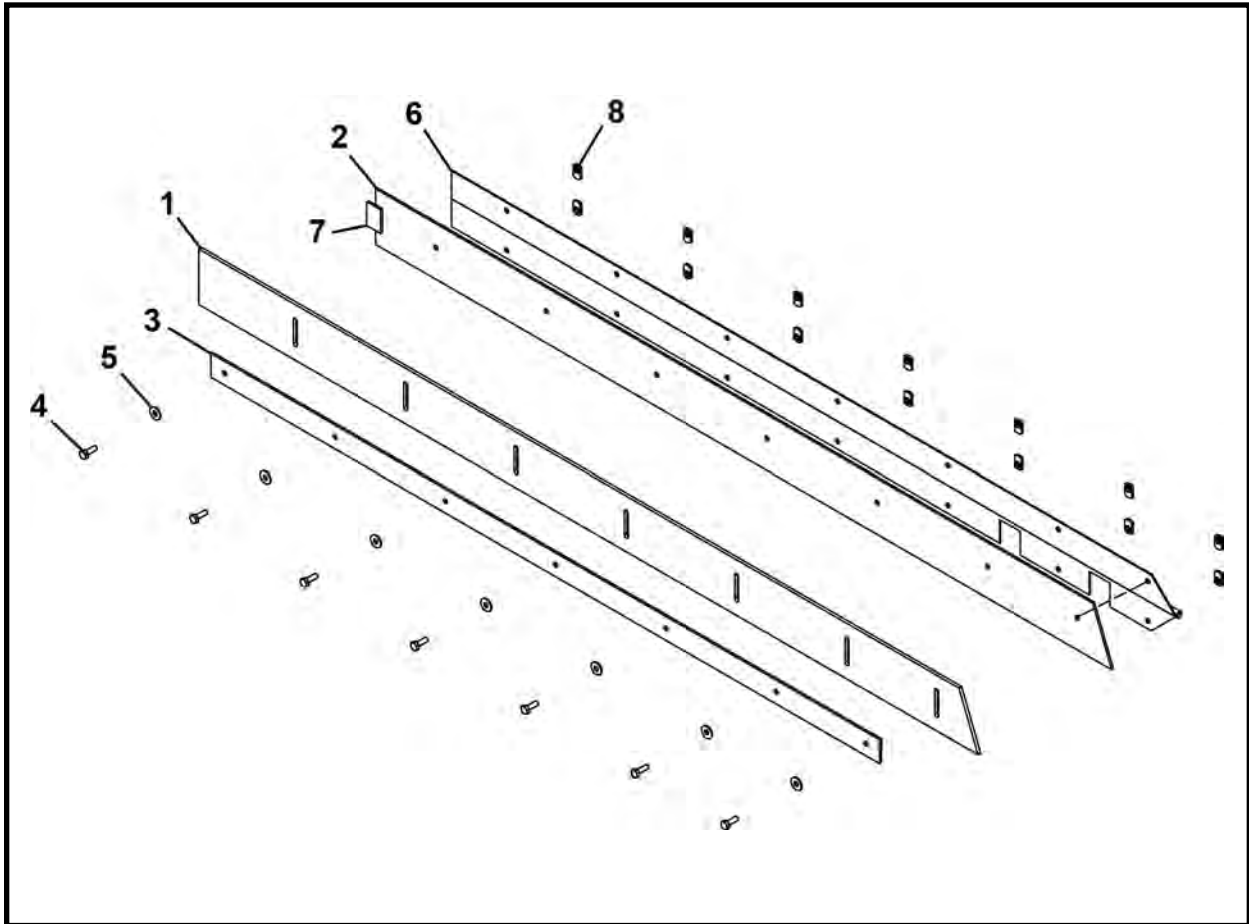
\* Refer to this section for parts information.

**FEED FRAME SPOILS GUIDE ASSEMBLY - LEFT FRONT, 027137A00**  
**2415 & 2418 CONVEYORS**



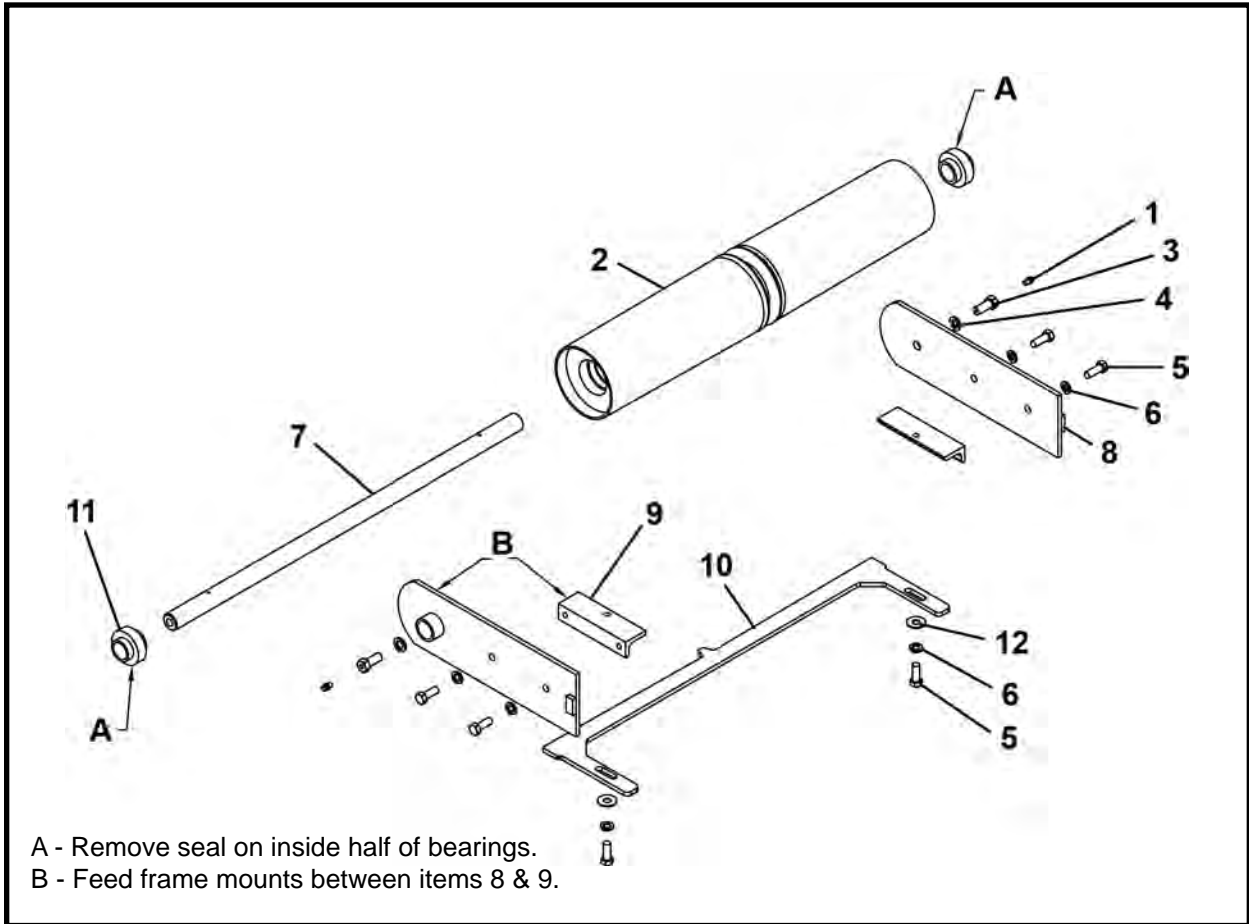
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027137A00	ASSEMBLY, Feed Frame Spoils Guide - Left Front
1	1	027139P00	SUPPORT BAR, Feed Frame Spoils
2	1	027140P00	STRIP, Wear, Feed Frame Spoils
3	1	027138P00	HINGE, Feed Frame Spoils
4	14	P0011-004B	NUT, Weld 1/4 UNC
5	1	027248P00	BRACKET, Feed Frame Wear Strip
6	1	027216P00	TAB, Feed Frame Support Bar
7	7	P0040-004	WASHER, Hardened Flat 1/4
8	7	P0001-04-003	BOLT, Hex 1/4 UNC x .75

**FEED FRAME SPOILS GUIDE ASSEMBLY - RIGHT FRONT, 027221A00**  
**2415 & 2418 CONVEYORS**



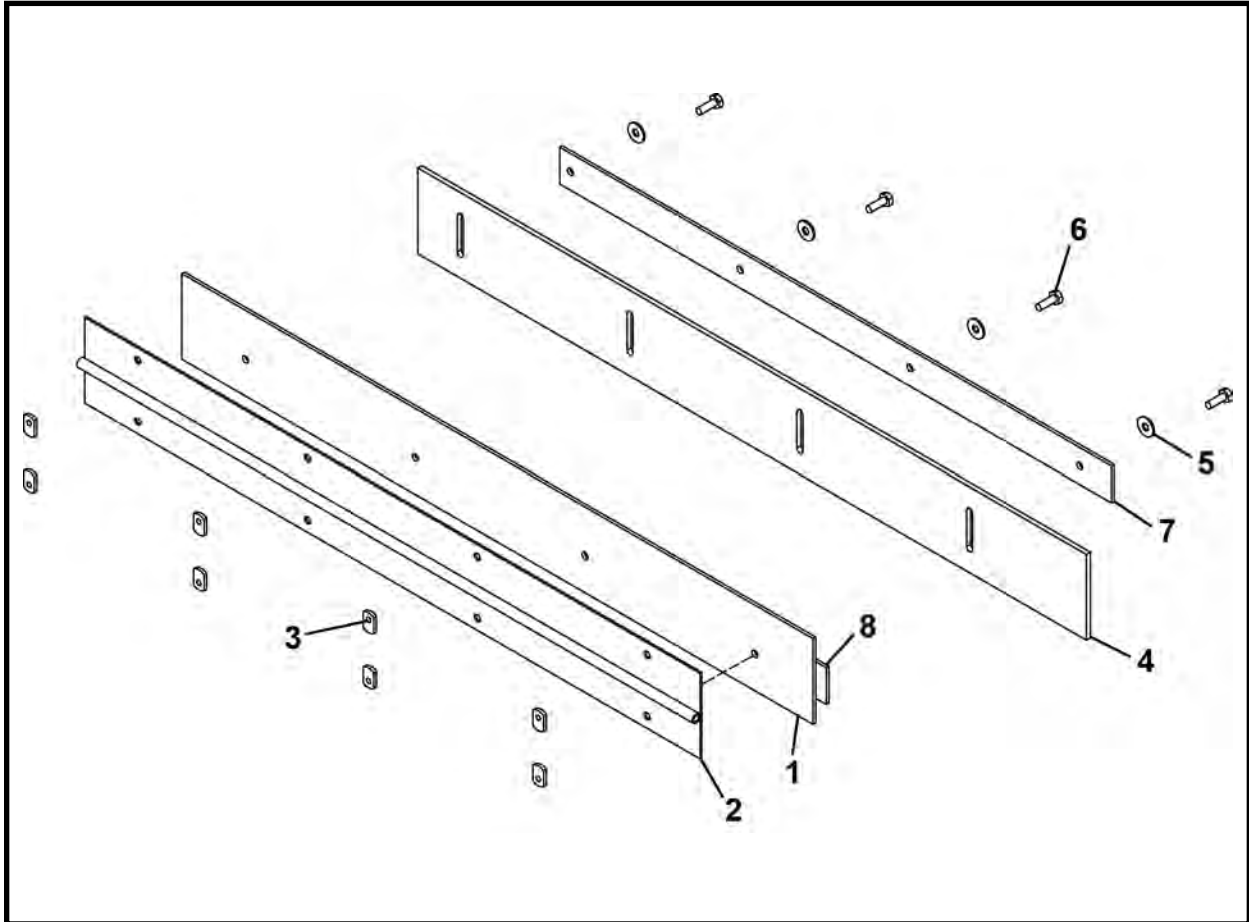
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027221A00	ASSEMBLY, Feed Frame Spoils Guide - Right Front
1	1	027140P00	STRIP, Wear, Feed Frame Spoils
2	1	027139P00	SUPPORT BAR, Feed Frame Spoils - Right
3	1	027248P00	BRACKET, Feed Frame Wear Strip
4	7	P0001-04-003	BOLT, 1/4 UNC x .75
5	7	P0040-004	WASHER, Lock 1/4
6	1	027138P00	HINGE, Feed Frame Spoils
7	1	027216P00	TAB, Feed Frame Support Bar
8	14	P0011-004B	NUT, Weld 1/4 UNC

**FRONT ROLLER ASSEMBLY, 027307A00**  
**2415 & 2418 CONVEYORS**



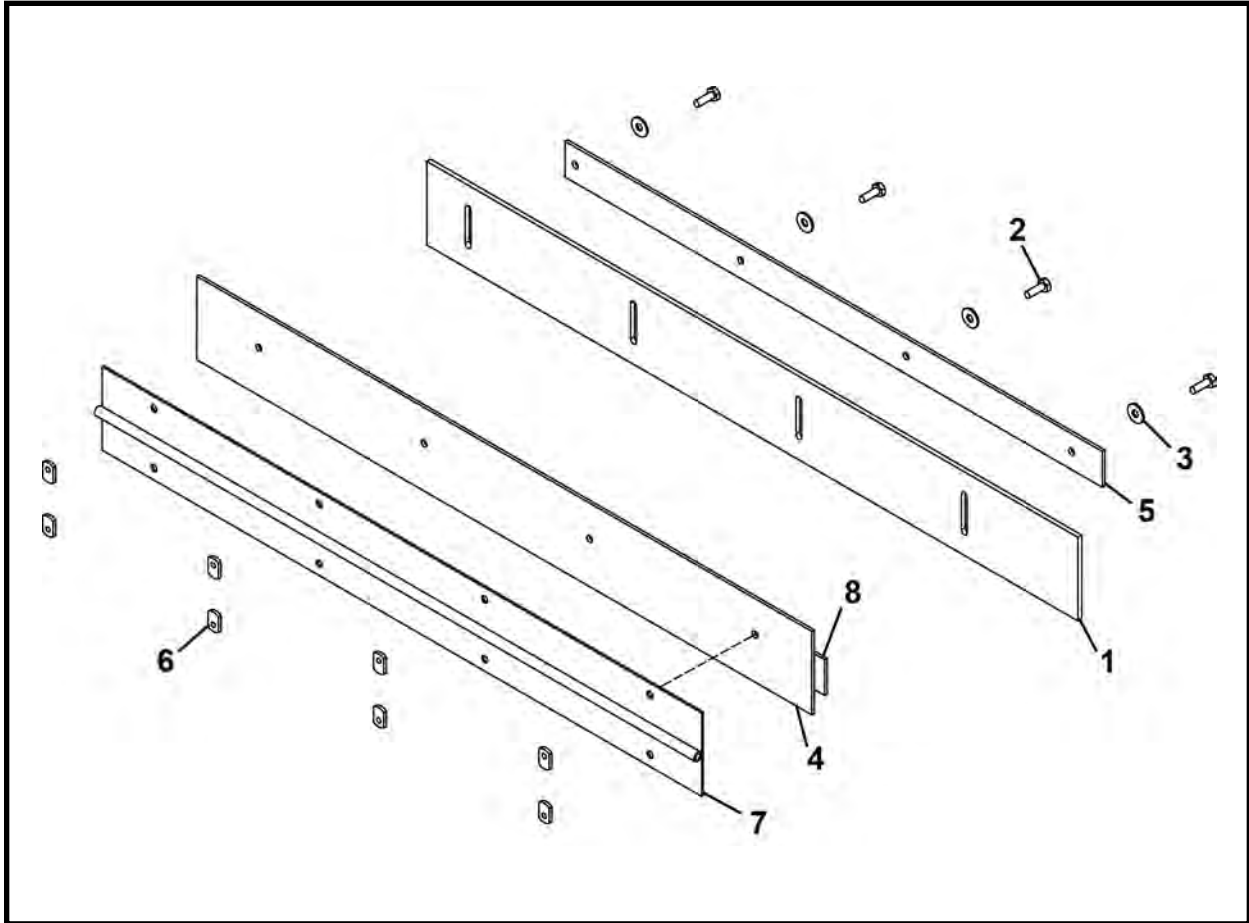
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027307A00	ASSEMBLY, Front Roller
1	2	P0063-001	FITTING, Grease Str.
2	1	027347A00	WELDMENT, Front Roller
3	2	002386P01	BOLT, Grease
4	2	P0045-007	WASHER, Lock 7/16
5	6	P0001-06-003	BOLT, Hex 3/8 UNC x .75
6	6	P0045-006	WASHER, Lock 3/8
7	1	027343P00	SHAFT, Front Roller
8	2	027109A00	WELDMENT, Front Roller Mounting Bracket
9	2	027130P00	MOUNT, Front Roller Scraper
10	1	027340P00	SCRAPER, Front Roller
11	2	P0065-006	BEARING
12	2	P0040-006	WASHER, Hardened Flat 3/8

**FEED FRAME SPOILS GUIDE ASSEMBLY - LEFT REAR, 027265A00**  
**2415 & 2418 CONVEYORS**



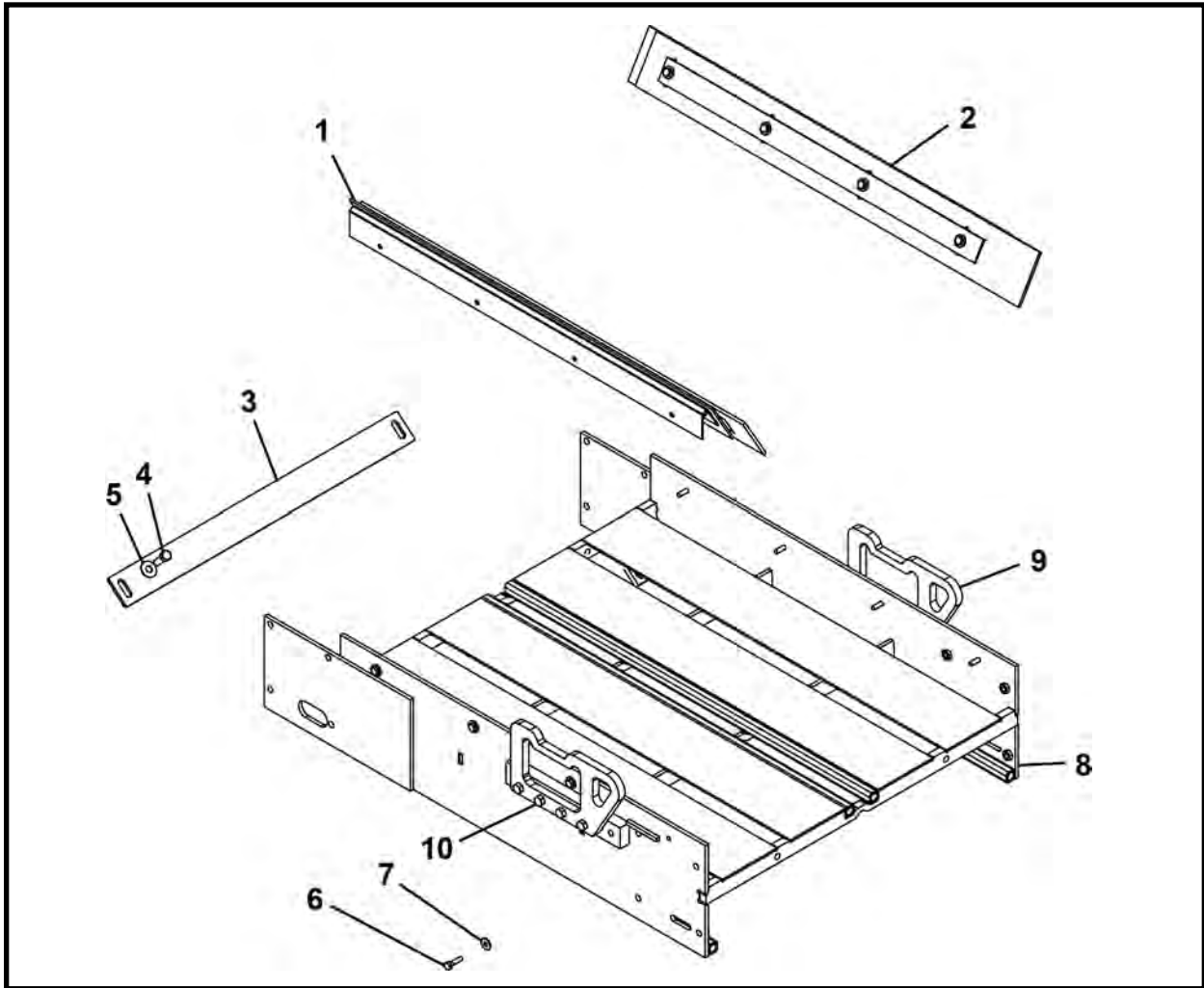
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027265A00	ASSEMBLY, Feed Frame Spoils Guide - Left Rear
1	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Left
2	1	027135P00	HINGE, Short Spoils Guide
3	8	P0011-004B	NUT, Weld 1/4 UNC
4	1	027136P00	STRIP, Short Spoils Guide Wear
5	4	P0040-004	WASHER, Hardened Flat 1/4
6	4	P0001-04-003	BOLT, 1/4 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**  
**2415 & 2418 CONVEYORS**



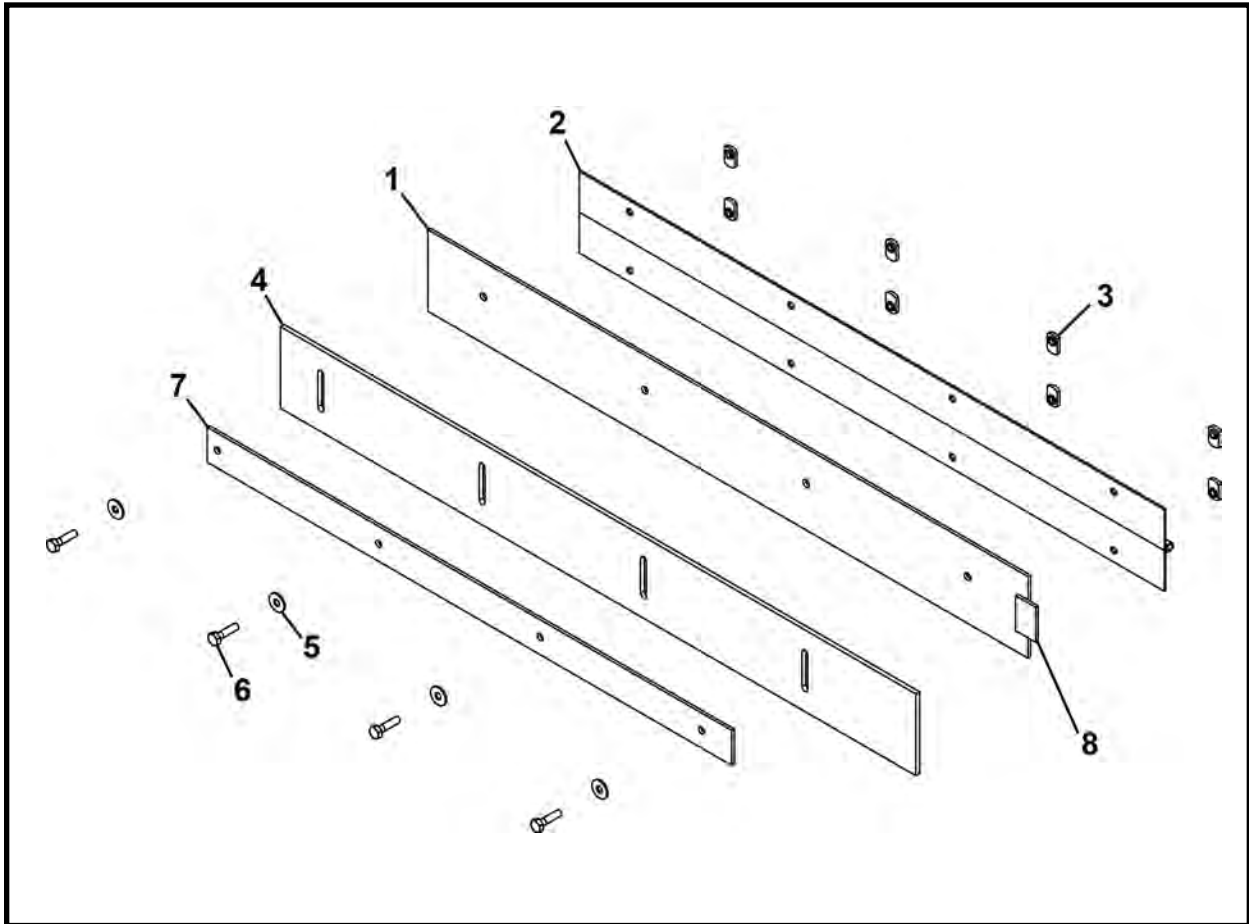
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027266A00	ASSEMBLY, Feed Frame Spoils Guide - Right Rear
1	1	027136P00	STRIP, Short Spoils Guide Wear
2	4	P0001-04-003	BOLT, 1/4 UNC x .75
3	4	P0040-004	WASHER, Hardened Flat 1/4
4	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Right
5	1	027249P00	BRACKET, Short Spoils Wear Strip
6	8	P0011-004B	NUT, Weld 1/4 UNC
7	1	027135P00	HINGE, Short Spoils Guide
8	1	027216P00	TAB, Feed Frame Support Bar

**EXTENSION FRAME ASSEMBLY, 027314A00**  
**2415 CONVEYOR**



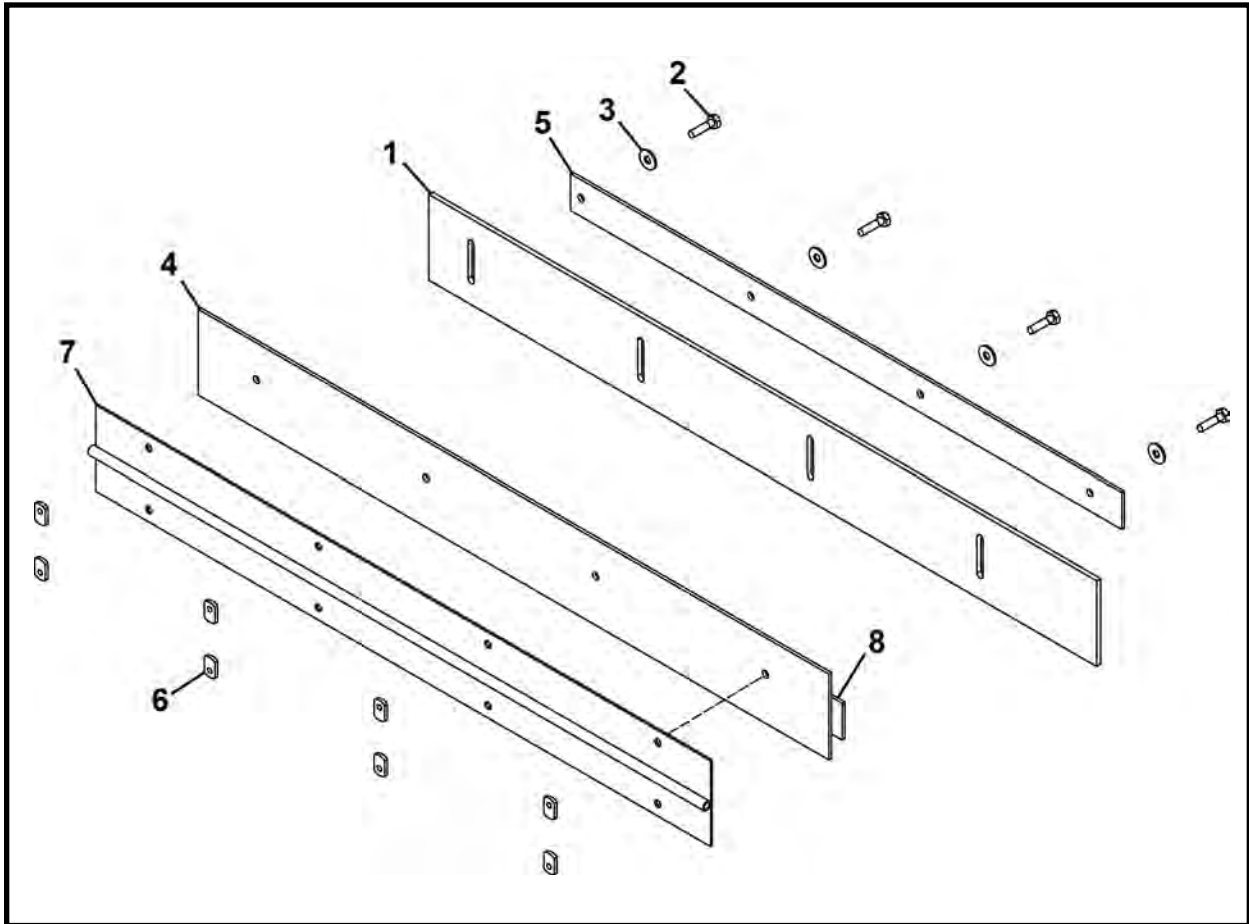
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027314A00	ASSEMBLY, Extension Frame
1	1	027134A00	ASSEMBLY, Short Spoils Guide - Front
2	1	027267A00	ASSEMBLY, Short Spoils Guide - Rear
3	1	027345P00	PLATE, Idler Roller Scraper
4	2	P0001-06-002	BOLT, 3/8 UNC x .5
5	2	P0040-006	WASHER, Lock 3/8
6	8	P0001-04-003	BOLT, 1/4 UNC x .75
7	8	P0045-004	WASHER, Lock 1/4
8	1	027303A00	WELDMENT, Extension Frame (Includes items 8a-8c)
8a	2	P0011-006A	NUT, Strut Square 3/8
8b	8	P0011-006C	NUT, Tab 3/8 UNC
8c	1	P0001-05-003	BOLT, Hex 5/16 UNC x .75
9	2	025344P	LIFT EYE
10	8	P0001-06-005	BOLT, 3/8 UNC x 1.25

**SHORT SPOILS GUIDE ASSEMBLY - FRONT, 027134A00**  
**2415 CONVEYOR - EXTENSION**



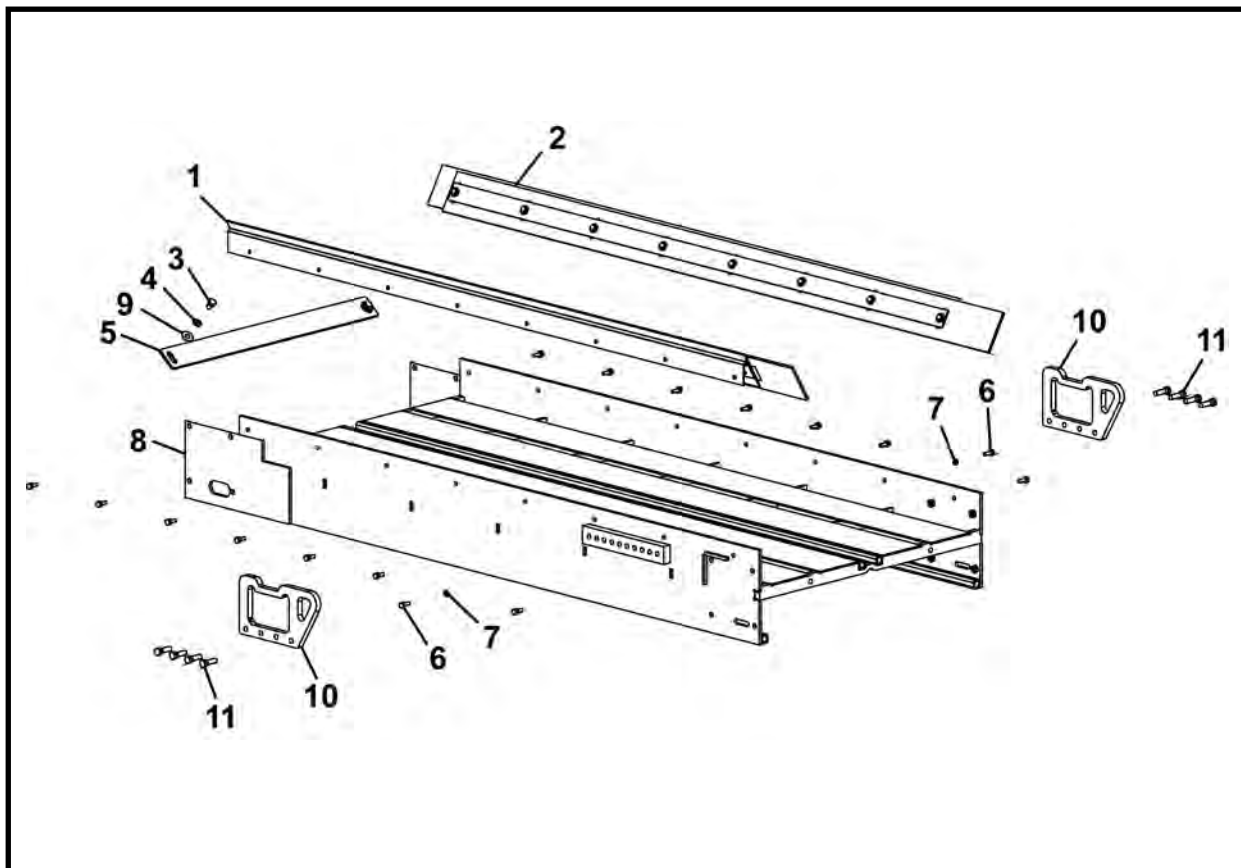
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027134A00	ASSEMBLY, Short Spoils Guide - Front
1	1	027217P00	SUPPORT BAR, Feed Frame Spoils - Left
2	1	027135P00	HINGE, Short Spoils Guide
3	8	P0011-004B	NUT, Weld 1/4 UNC
4	1	027136P00	STRIP, Short Spoils Guide Wear
5	4	P0045-004	WASHER, Lock 1/4
6	4	P0001-04-003	BOLT, Hex 1/4 UNC x .75
7	1	027249P00	BRACKET, Short Spoils Wear Strip
8	1	027216P00	TAB, Feed Frame Support Bar

**SHORT SPOILS GUIDE ASSEMBLY - REAR, 027267A00**  
**2415 CONVEYOR - EXTENSION**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027267A00	ASSEMBLY, Short Spoils Guide - 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	P0011-004B	NUT, Weld 1/4-20 UNC
7	1	027135P00	HINGE, Short Spoils Guide
8	1	027216P00	TAB, Feed Frame Support Bar

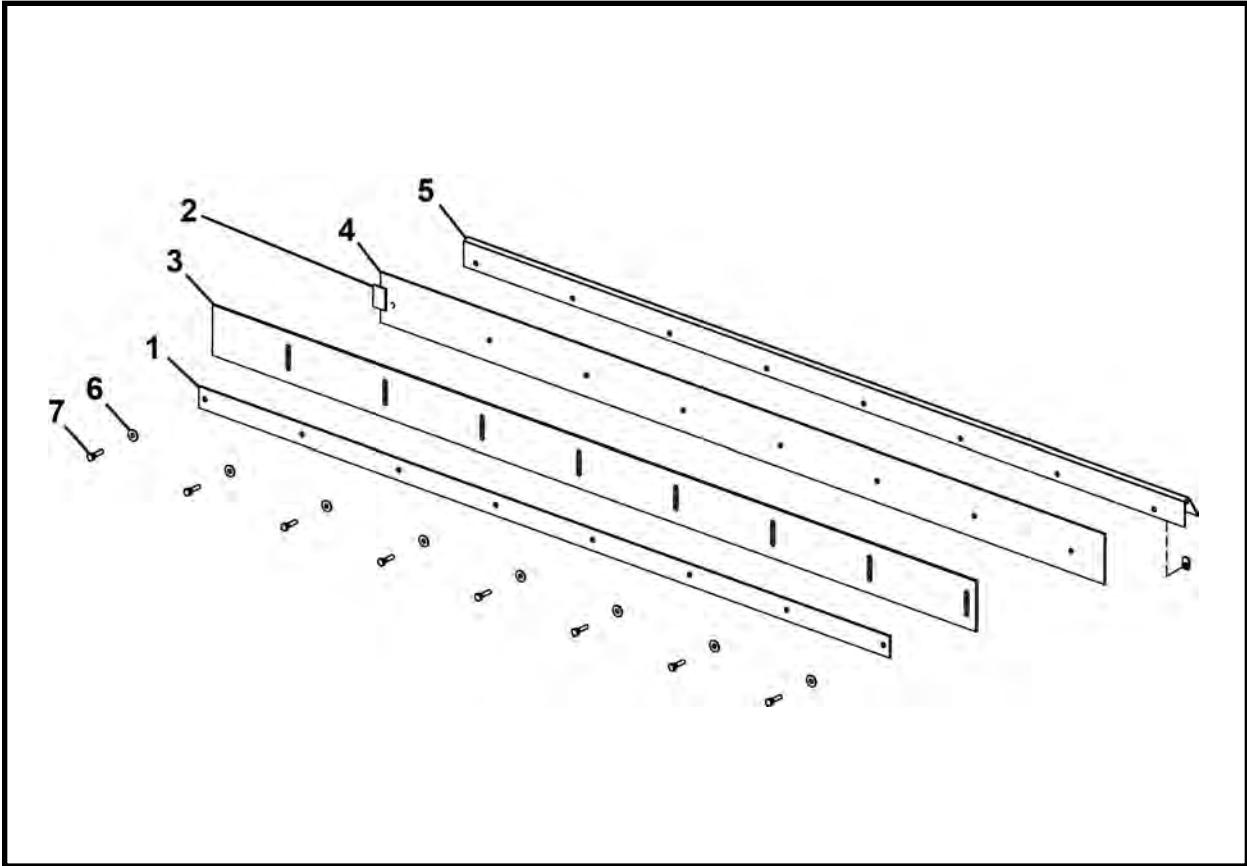
**EXTENSION FRAME ASSEMBLY, 027456A**  
**2418 CONVEYOR - EXTENSION**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027456A	ASSEMBLY, Extension Frame
1*	1	027461A	ASSEMBLY, Spoils Guide - Front
2*	1	027462A	ASSEMBLY, Spoils Guide - Rear
3	2	P0001-06-002	BOLT, Hex 3/8 UNC x .5
4	2	P0045-006	WASHER, Lock 3/8
5	1	027345P00	PLATE, Idler Roller Scraper
6	16	P0001-04-003	BOLT, Hex 1/4 UNC x .75
7	16	P0045-004	WASHER, Lock 1/4
8	1	027457A	WELDMENT, Extension Frame (Includes items 8a-8c)
8a	2	P0011-006A	NUT, Strut Square 3/8
8b	8	P0011-006C	NUT, Tab 3/8 UNC
8c	1	P0001-05-003	BOLT, Hex 5/16 UNC x .75
9	2	P0040-006	WASHER, Hardened Flat 3/8
10	2	025344P	LIFT EYE
11	8	P0001-06-005	BOLT, Hex 3/8 UNC x 1.25

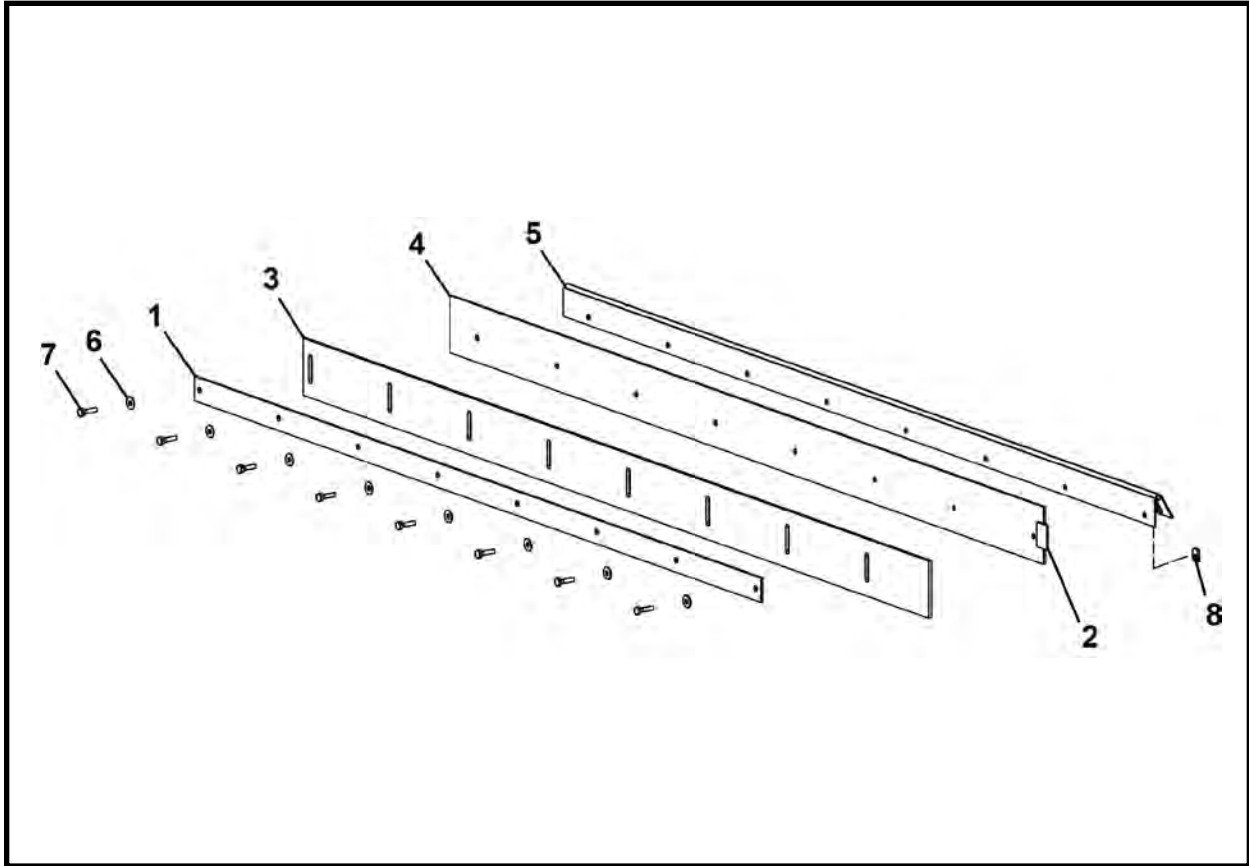
\* Refer to this section for parts information.

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



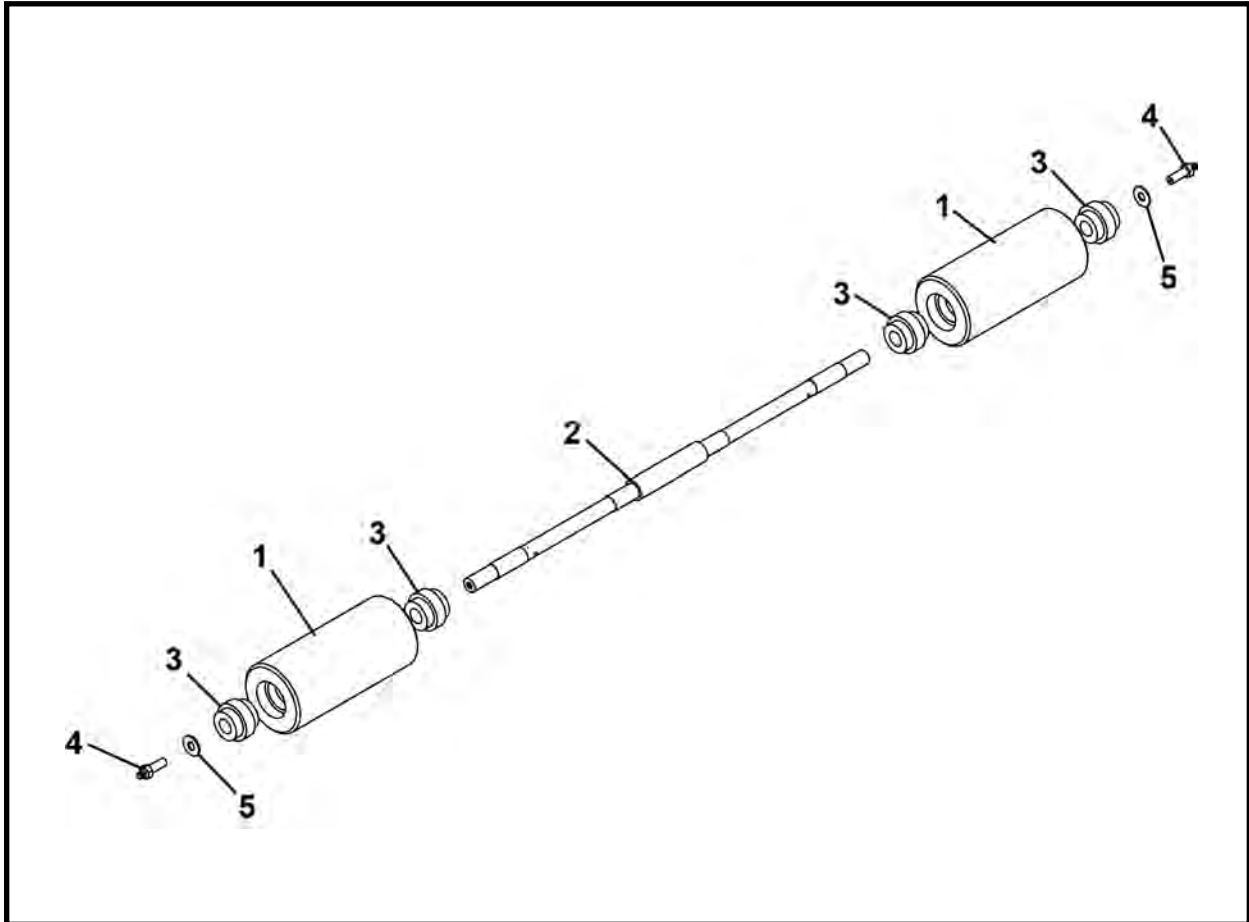
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027461A	ASSEMBLY, Spoils Guide - Front
1	1	027468P	BRACKET, Wear Strip
2	1	027216P00	TAB, Feed Frame Support Bar
3	1	027467P	GUIDE, Wear Strip
4	1	027463P	SUPPORT BAR
5	1	027464P	HINGE, Spoils Guide
6	8	P0040-004	WASHER, Hardened Flat 1/4
7	8	P0001-04-003	BOLT, Hex 1/4 UNC x .75
8	16	P0011-004B	NUT, Tab 1/4 UNC

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



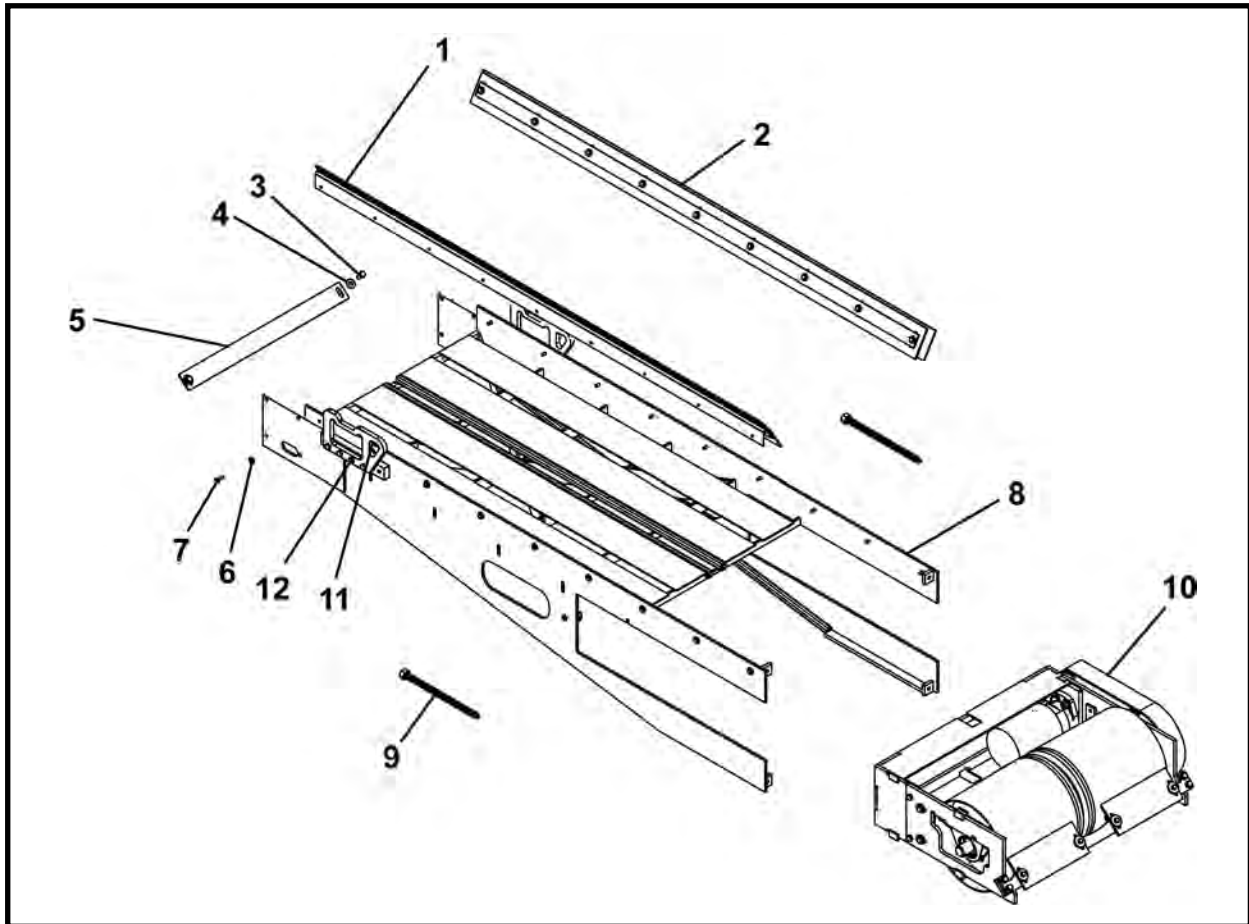
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027462A	ASSEMBLY, Spoils Guide - Rear
1	1	027468P	BRACKET, Wear Strip
2	1	027216P00	TAB, Feed Frame Support Bar
3	1	027467P	GUIDE, Wear Strip
4	1	027463P	SUPPORT BAR
5	1	027464P	HINGE, Spoils Guide
6	8	P0040-004	WASHER, Hardened Flat 1/4
7	8	P0001-04-003	BOLT, Hex 1/4 UNC x .75
8	16	P0011-004B	NUT, Tab 1/4

**IDLER ROLLER ASSEMBLY, 027311A00**  
**2415 - 2418 CONVEYORS**



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	027397P	BEARING
4	2	001341A00	BOLT, 3/8 UNC x 1-1/4 With Grease Fitting (Includes item 4a)
4a	2	P0063-001	FITTING, Grease
5	2	P0040-006	WASHER, Flat 3/8

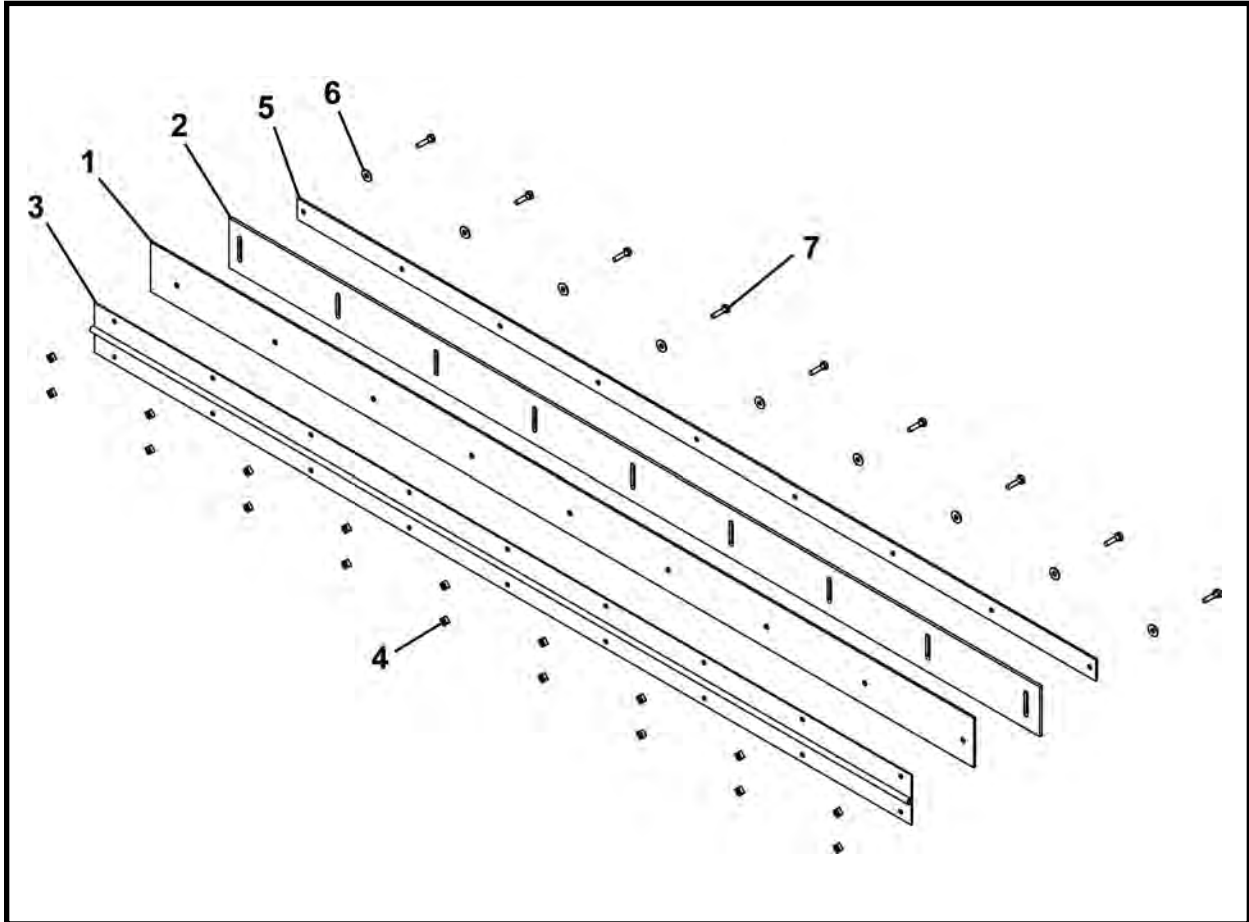
**DRIVE FRAME ASSEMBLY, 027425A**  
**2415 & 2418 CONVEYORS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027425A	DRIVE FRAME ASSEMBLY
1*	1	027131A00	ASSEMBLY, Drive Frame Spoils Guide - Front
2*	1	027219A00	ASSEMBLY, Drive Frame Spoils Guide - Rear
3	2	P0001-06-003	BOLT, 3/8 UNC x .75
4	2	P0045-006	WASHER, Lock 3/8
5	1	027345P00	PLATE, Idler Roller Scraper
6	18	P0045-004	WASHER, Lock 1/4
7	18	P0001-04-003	BOLT, 1/4 UNC x .75
8	1	027451A	WELDMENT, Drive Frame (Includes items 8a-8c)
8a	6	P0011-006A	NUT, Strut Square 3/8
8b	2	P0063-001	FITTING, Grease 1/4
8c	1	P0001-05-003	BOLT, Hex 5/16 UNC x .75
9	2	002824A01	WELDMENT, Adjusting Screw
10*	1	027420A	ASSEMBLY, Drive Motor Frame
11	2	P0040-006	WASHER, Hardened Flat 3/8
12	2	025344P	LIFT EYE
13	8	P0001-06-005	BOLT, 3/8 UNC x 1.25

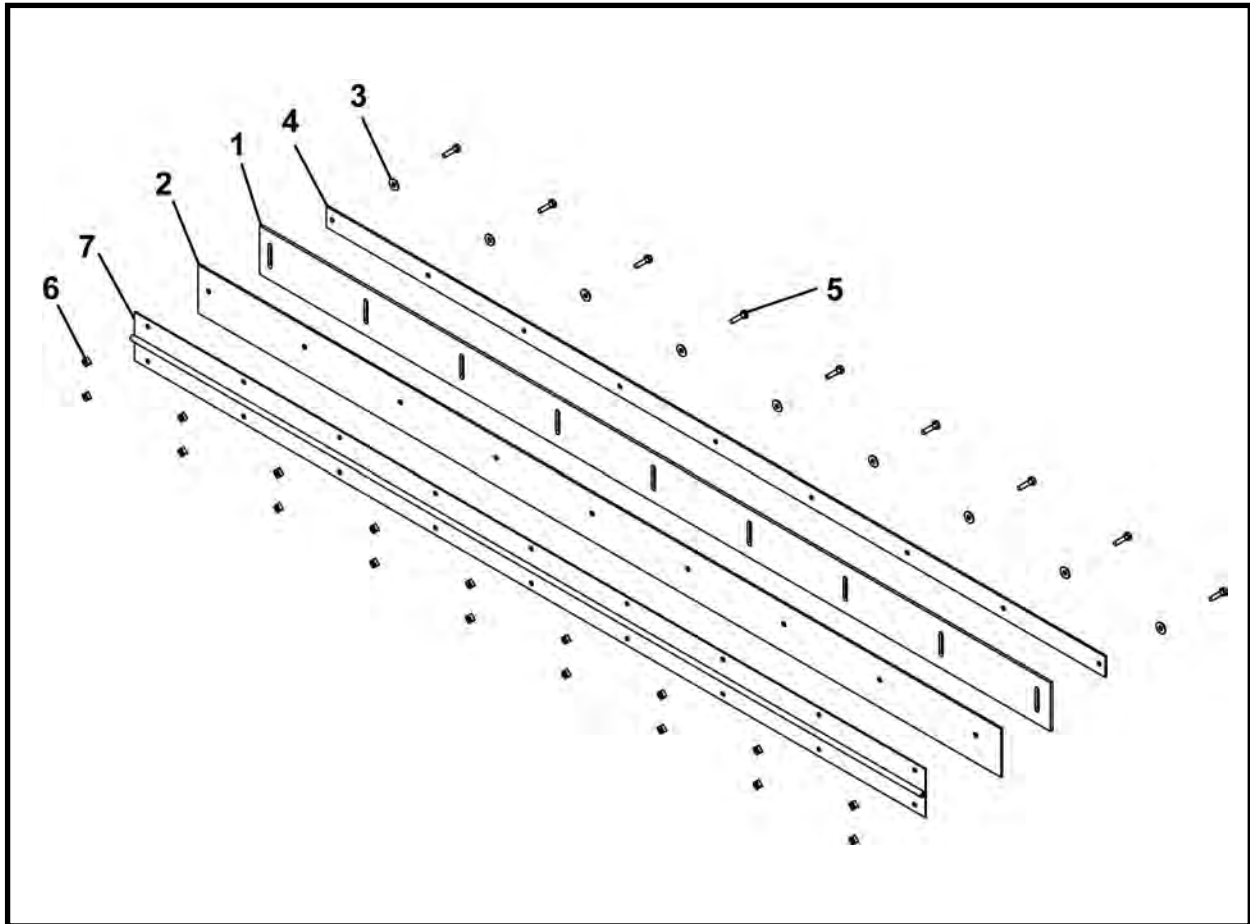
\* Refer to this section for parts information.

**DRIVE FRAME SPOILS GUIDE ASSEMBLY - FRONT, 027131A00**  
**2415 & 2418 CONVEYORS**



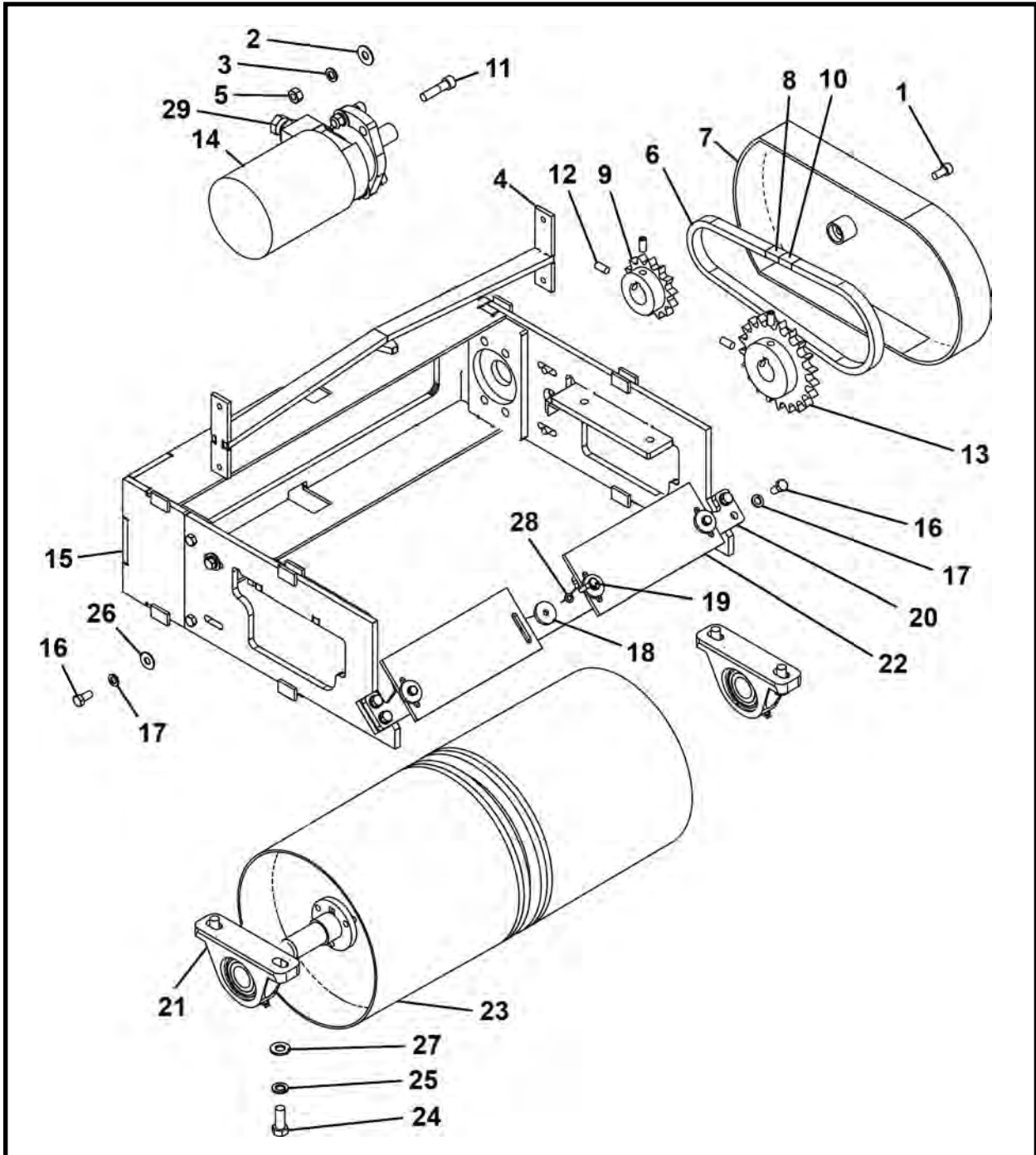
ITEM	QTY	PART NO.	DESCRIPTION
0	1	027131A00	DRIVE FRAME SPOILS GUIDE - Front
1	1	027218P00	SUPPORT BAR, Drive Frame Spoils
2	1	027133P00	STRIP, Feed Frame Spoils Wear
3	1	027132P00	HINGE, Drive Frame Spoils Guide
4	18	P0011-004B	NUT, Weld 1/4 UNC
5	1	027247P00	BRACKET, Drive Frame Wear Strip
6	9	P0040-004	WASHER, Hardened Flat 1/4
7	9	P0001-04-003	BOLT, 1/4 UNC x .75

**DRIVE FRAME SPOILS GUIDE ASSEMBLY - REAR, 027219A00**  
**2415 & 2418 CONVEYORS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027219A00	DRIVE FRAME SPOILS GUIDE ASSEMBLY - Rear
1	1	027133P00	STRIP, Drive Frame Spoils Wear
2	1	027218P00	SUPPORT BAR, Drive Frame Spoils
3	9	P0040-004	BOLT, 1/4 UNC x .75
4	1	027247P00	BRACKET, Drive Frame Wear Strip
5	9	P0001-04-003	WASHER, Lock 1/4
6	18	P0011-004B	NUT, Weld 1/4 UNC
7	1	027132P00	HINGE, Drive Frame Spoils Guide

**DRIVE MOTOR & ROLLER ASSEMBLY, 027420A**  
**2415 & 2418 CONVEYORS**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	027420A	DRIVE MOTOR & ROLLER ASSEMBLY
1	1	P0031-06-003	SCREW, Socket Head Cap 3/8 UNC x .75
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 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

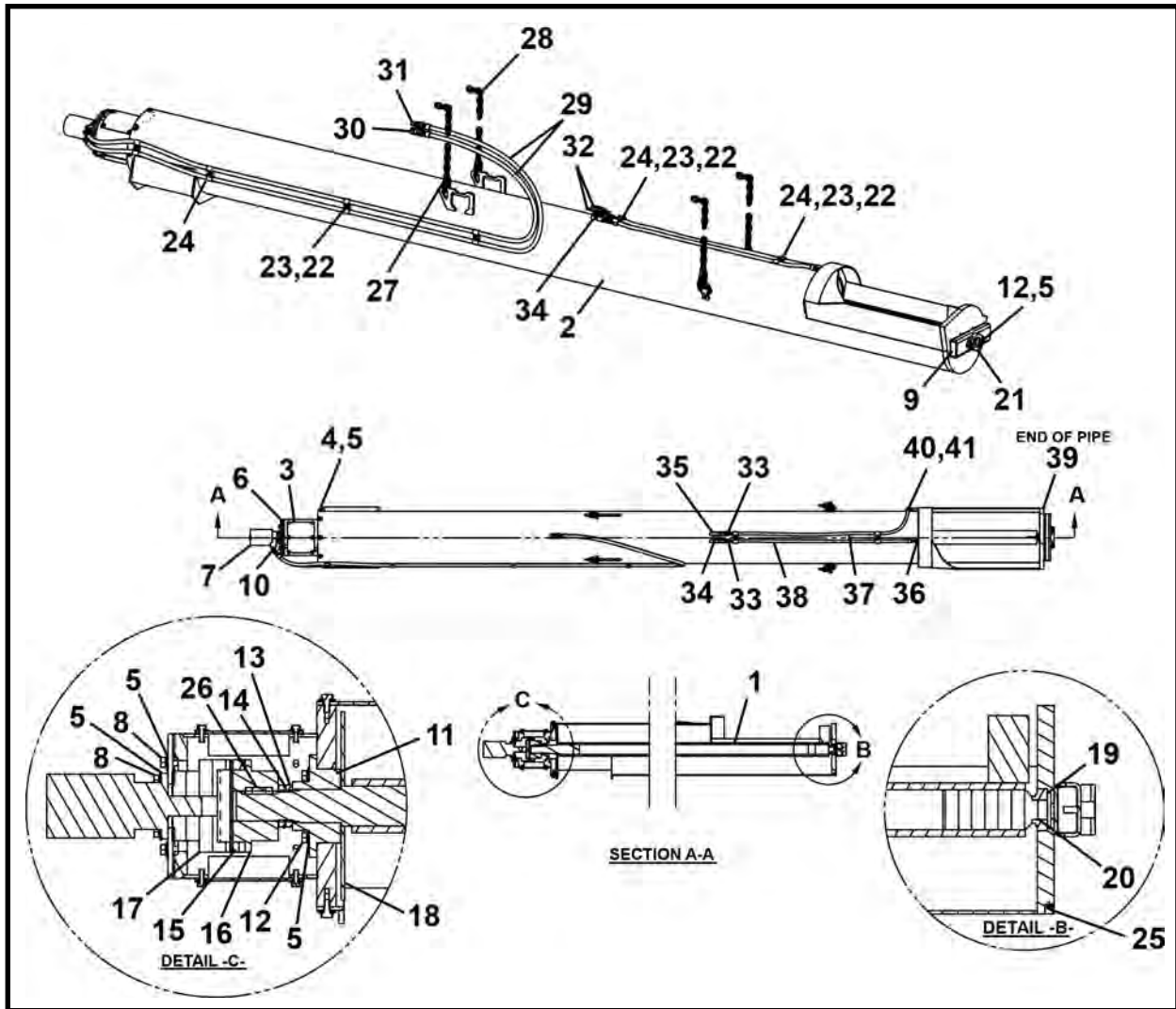
**DRIVE MOTOR & ROLLER ASSEMBLY, 027420A**  
**2415 & 2418 CONVEYORS**

ITEM	QTY	PART NO.	DESCRIPTION
10	1	P0078-005	LINK, Repair #60
11	4	P0001-07-007	SCREW, Socket Head Cap 7/16 UNC x 1.75
12	4	P0033-06-012	SCREW, Socket Head Set 3/8 UNC x .5
13	1	027369P	SPROCKET, Drive 21 Teeth
14	1	P0304-157	MOTOR
15	1	027415A	WELDMENT, Drive Motor Frame (Includes item 15a)
15a	2	P0001-06-003	BOLT, 3/8 UNC x .75
16	10	P0001-06-003	BOLT, 3/8 UNC x .75
17	8	P0045-006	WASHER, Lock 3/8
18	4	002624P00	WASHER, Dirt Paddle
19	4	P0001-04-005	BOLT, 1/4 UNC x 1.25
20	1	027333P00	MOUNT, External Scraper
21	2	P0065-016	BEARING
22	2	027335P00	SCRAPER, External Belt
23	1	027465A	ROLLER, Drive
24	4	P0001-08-005	BOLT, 1/2 UNC x 1.25
25	4	P0045-008	WASHER, Lock 1/2
26	4	P0040-006	WASHER, Flat 3/8
27	4	P0040-008	WASHER, Hardened Flat 1/2
28	4	P0045-004	WASHER, Lock 1/4
29	2	P0300-094	FITTING, 10MB-08FPX

\* May need to remove one link for proper fit.

LI - Linear Inch

**140EX SCREW CONVEYOR, F20645F00**  
**140EX SCREW CONVEYOR**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F20645F00	CONVEYOR, Screw, 140EX
1	1	020644A	SCREW, Extended
2	1	020646A	PIPE, Extended
3	1	024502A00	ADAPTER, Motor
4	8	P0001-08-004	BOLT, Hex 1/2 UNC x 1
5	22	P0040-008	WASHER, Hardened Flat 1/2
6	1	009893P00	PLATE, Mounting
7*	1	P0304-145	MOTOR
8	8	P0001-08-006	BOLT, Hex 1/2 UNC x 1.5
9	2	023544A	SPACER, Tube
10	2	P0300-165	FITTING, 10MB-08FPX45
11	1	P0065-107	BEARING
12	6	P0001-08-008	BOLT, Hex 1/2 UNC x 2
13	2	P0065-108	NUT, Lock N-12
14	1	P0065-109	WASHER, Lock W-12
15	1	P0305-134C	INSERT
16	1	P0305-134A	COUPLER
17	1	P0305-134B	SPLINE, Coupler

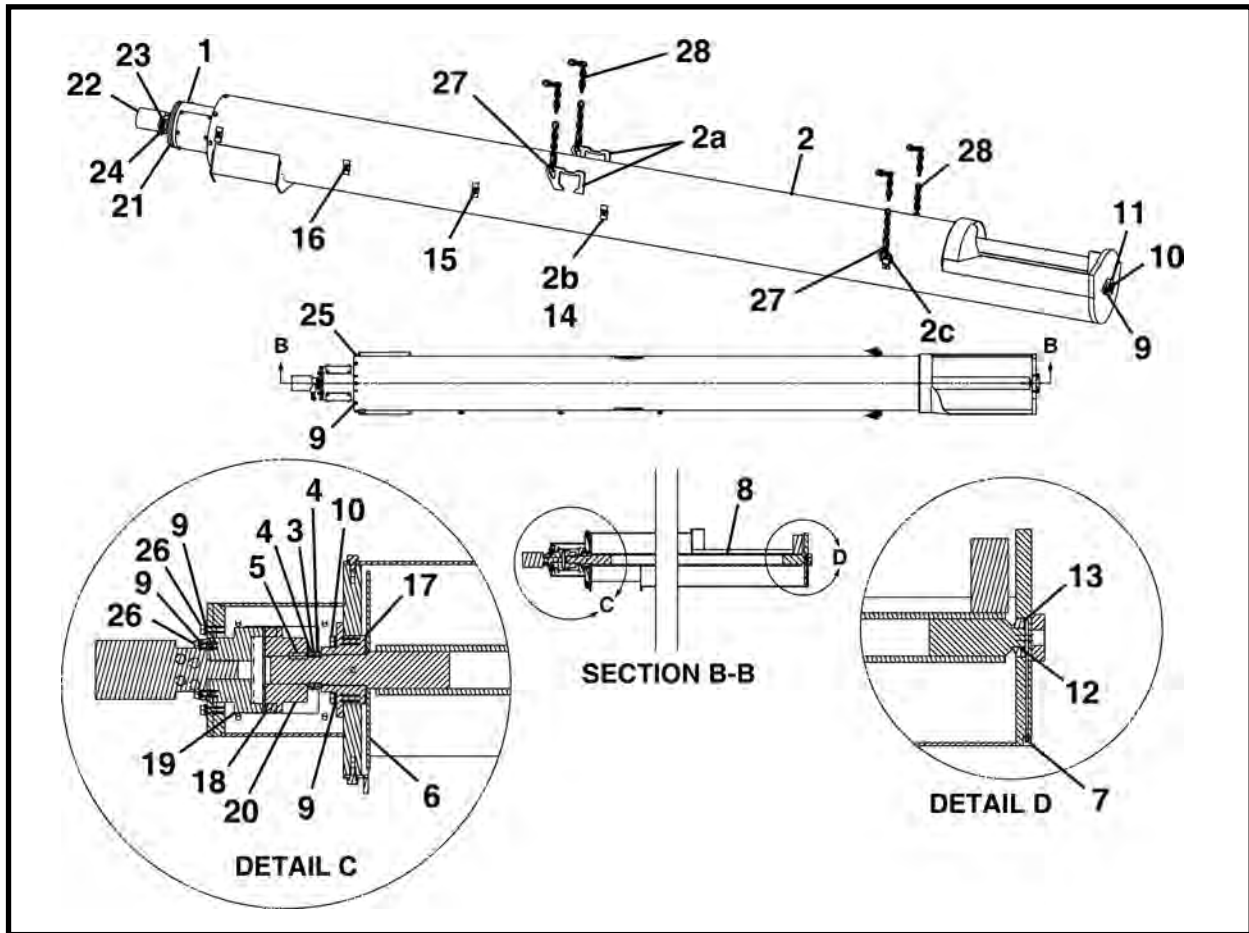
(Continued on next page)

**140EX SCREW CONVEYOR, F20645F00**  
**140EX SCREW CONVEYOR**

ITEM	QTY	PART NO.	DESCRIPTION
18	1	024559P	WASHER, Conveyor Flighting
19	1	P0065-004	BEARING
20	1	P0085-028	ORING
21	1	P0065-017	BEARING, Conveyor End Pivot
22	6	P0003-05-000	NUT, Hex 5/16 UNC
23	6	P0040-005	WASHER, Hardened Flat 5/16
24	6	002269P01	CLAMP, Line
25	1	P0063-001	FITTING, Grease Straight
26	1	P0047-007	KEY
27	4	P0098-010	LINK, Hammerlock 3/8
28	4	P0094-003-030	CHAIN, 3/8
29	2	A10320A-200	HOSE ASSEMBLY, 1/2 x 200
30	1	P0100-004A	COUPLER, Female
31	1	P0100-004B	COUPLER, Male
32	2	P0302-185	VALVE, Ball 1/2
33	2	P0300-120	FITTING, 06MJ-08MP
34	1	P0300-025	FITTING, 08MP-08MP90
35	1	P0300-049	FITTING, 08MP-08FP-08FP
36	1	P0300-331	FITTING, 06MJ-06MJBKHD
37	1	A10311A-060	HOSE ASSEMBLY, 3/8 x 60
38	1	A10311A-056	HOSE ASSEMBLY, 3/8 x 56
39	1	P0417-002	CAP, Pipe 3/8
40	1	P0300-130	FITTING, 06MJ-06MP
41	1	P0400-002	COUPLING, Pipe 3/8

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

**160 SCREW CONVEYOR, F09885F00**  
**160 SCREW CONVEYOR (SN F09885F04 & Before)**



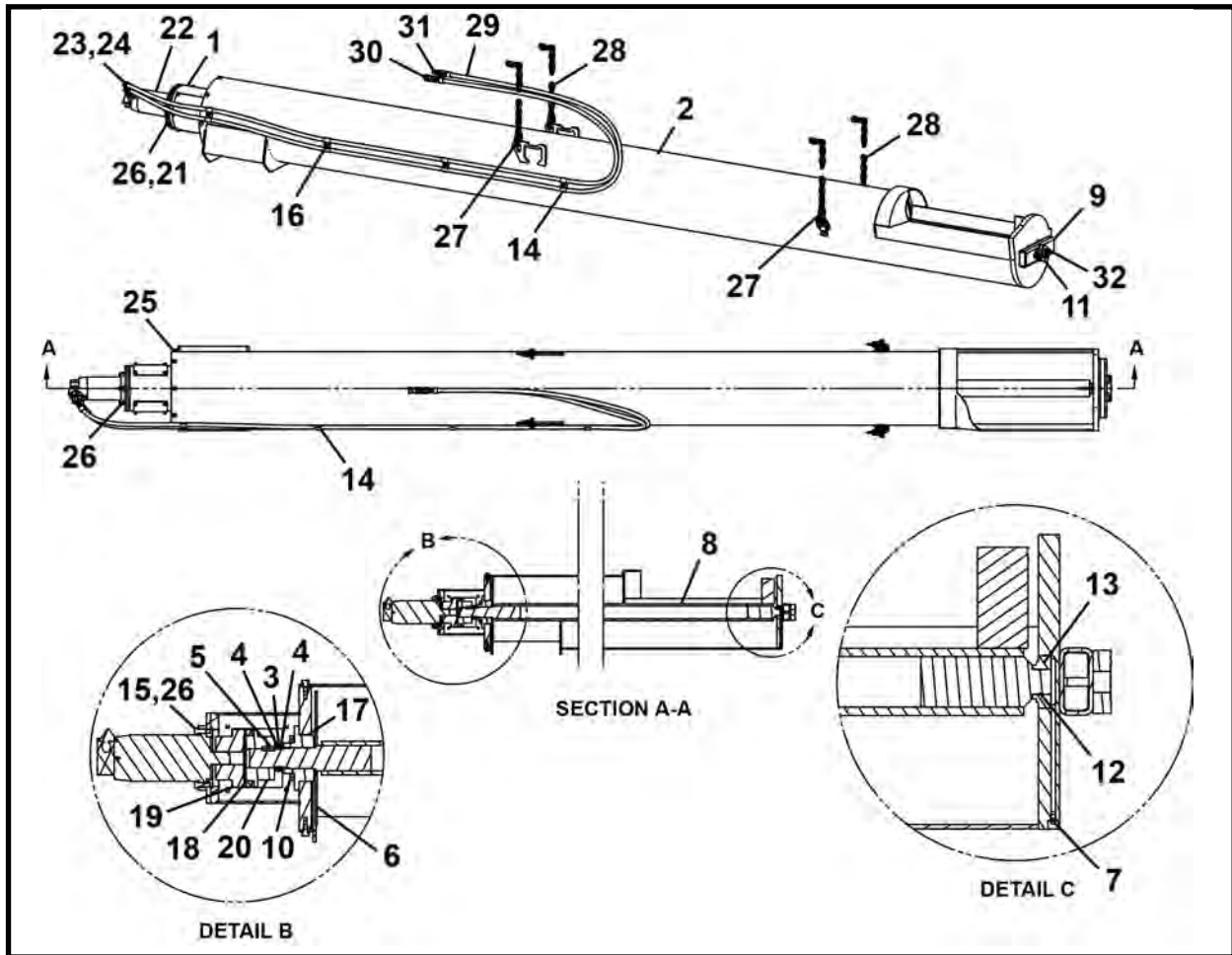
ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09885F00	CONVEYOR, Screw, 160
1	1	009883A00	WELDMENT, Motor Adaptor
2	1	009881A00	WELDMENT, 16" Pipe (Includes items 2a-2c)
2a	2	023524P00	BRACKET, Conveyor
2b	4	P0001-05-003	BOLT, Hex 5/16 UNC x .75
2c	2	P0079-003	D-RING 1/2
3	1	P0065-109	WASHER, Lock
4	2	P0065-108	NUT, Lock
5	1	P0047-007	KEY
6	1	009874P	WASHER, Conveyor Flighting
7	1	P0063-001	FITTING, Grease 1/4
8	1	009882A00	WELDMENT, 16" Screw
9	22	P0045-008	WASHER, Lock 1/2
10	6	P0001-08-008	BOLT, Hex 1/2-13 x 2
11	1	P0065-017	BEARING, Pivot End
12	1	P0085-028	O-RING
13	1	P0065-004	BEARING
14	4	002269P01	CLAMP, Line
15	4	P0045-005	WASHER, Lock 5/16
16	4	P0004-05-000	NUT, 5/16
17	1	P0065-107	BEARING
18	1	P0305-134C	INSERT, Coupler

(Continued on next page)

**160 SCREW CONVEYOR, F09885F00**  
**160 SCREW CONVEYOR (SN F09885F04 & Before)**

ITEM	QTY	PART NO.	DESCRIPTION
19	1	P0305-134B	COUPLER, Spline
20	1	P0305-134A	COUPLER, Keyway
21	1	009893P00	PLATE, Mounting
22	1	P0304-145	MOTOR, Hydraulic
23	2	P0300-167	FITTING, 10MB-08FP
24	2	P0300-173	SWIVEL, 1/2 Male, 45 Degree
25	8	P0001-08-004	BOLT, 1/2 UNC x 1
26	8	P0001-08-006	BOLT, 1/2 UNC x 1.5
27	4	P0098-010	LINK, 3/8
28	4	P0094-003-030	CHAIN, 3/8 x 30
29	2	A10320A0-200	HOSE ASSEMBLY, 1/2 x 200
30	1	P0100-004A	COUPLER, Quick 1/2 Female
31	1	P0100-004B	COUPLER, Quick 1/2 Male

**160 SCREW CONVEYOR, F09885F00**  
**160 SCREW CONVEYOR (SN F09885F05 & After)**



ITEM	QTY	PART NO.	DESCRIPTION
0	1	F09885F00	CONVEYOR, Screw, 160
1	1	009883A00	WELDMENT, Motor Adaptor
2	1	009881A00	WELDMENT, 16" Pipe (Includes items 2a-2c)
2a	2	023524P00	BRACKET, Conveyor
2b	4	P0001-05-003	BOLT, Hex 5/16 UNC x .75
2c	2	P0079-003	D-RING 1/2
3	1	P0065-109	WASHER, Lock
4	2	P0065-108	NUT, Lock
5	1	P0047-007	KEY
6	1	009874P	WASHER, Conveyor Flighting
7	1	P0063-001	FITTING, Grease 1/4
8	1	009882A00	WELDMENT, 16" Screw
9	1	023544A	SPACER, Tube
10	4	P0001-08-008	BOLT, Hex 1/2-13 x 2
11	1	P0065-017	BEARING, Pivot End
12	1	P0085-028	O-RING
13	1	P0065-004	BEARING
14	4	002269P01	CLAMP, Line
15	4	P0040-008	WASHER, Hardened Flat 1/2
16	4	P0004-05-000	NUT, 5/16
17	1	P0065-107	BEARING

(Continued on next page)

**160 SCREW CONVEYOR, F09885F00**  
**160 SCREW CONVEYOR (SN F09885F05 & After)**

ITEM	QTY	PART NO.	DESCRIPTION
18	1	P0305-165	INSERT
19	1	P0305-230	COUPLER
20	1	P0305-134A	COUPLER, Keyway
21	1	009876P	ADAPTER, Motor
22*	1	P0304-338	MOTOR, Hydraulic
23	2	P0300-068	FITTING, 16MB-12FP
24	2	P0300-024	FITTING, 12MP-08FPX45
25	8	P0001-08-004	BOLT, Hex 1/2 UNC x 1
26	8	P0001-08-006	BOLT, Hex 1/2 UNC x 1.5
27	4	P0098-010	LINK, 3/8
28	4	P0094-003-030	CHAIN, 3/8 x 30
29	2	A10320A0-200	HOSE ASSEMBLY, 1/2 x 200
30	1	P0100-004A	COUPLER, Quick 1/2 Female
31	1	P0100-004B	COUPLER, Quick 1/2 Male
32	2	P0001-08-014	BOLT, Hex 1/2 UNC x 3.5

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

## **NOTES**



# Alphabetical Index

## A

Adapter kit - 5000 pump unit (lp) to  
tbn series ii (hp) ..... 6-37

## B

Back drum assembly ..... 3-9  
Back section assembly ..... 3-8  
Belt conveyor - 1615 ..... 11-2  
Belt conveyor decals ..... 2-6  
Belt conveyors - 2415 & 2418 ..... 11-20  
Bulkhead door assembly ..... 3-7

## C

Challenge kit, gas ..... 5-8  
Closed face assembly ..... 3-24, 3-25  
Closed face, cylinder assembly ..... 10-6, 10-7  
Closed face hydraulic assembly 600 - 660 .... 6-29  
Closed face hydraulic assembly 720 ..... 6-30  
Closed face mount assembly to  
series ii tbn ..... 3-28, 3-29  
Closed face mount assembly to  
series i tbn ..... 3-30, 3-31  
Contents ..... iii  
Conveyor, belt - 1615 ..... 11-2  
Conveyor drive motor ..... 8-4  
Conveyor lift assembly ..... 3-10  
Conveyor lift valve ..... 7-5  
Conveyor safety stop switch assembly ..... 5-12  
Conveyors / miscellaneous ..... 11-1  
Cutter bar assembly ..... 3-18, 3-19  
Cylinder assembly closed face ..... 10-6  
Cylinder assembly, closed face ..... 10-7  
Cylinder assembly, dirt wing ..... 10-4  
Cylinder assembly, steering ..... 10-2, 10-3  
Cylinder, IJS ..... 6-49, 10-8  
Cylinders ..... 10-1

## D

Decals ..... 2-1  
Decals, belt conveyor ..... 2-6  
Decals, head box ..... 2-9  
Decals, laser light stand ..... 2-8  
Decals, screw conveyor ..... 2-7  
Decals, tbn - left side ..... 2-2  
Decals, tbn - right side ..... 2-4

## D (continued)

Dirt wing assembly, hydraulic ..... 3-14  
Dirt wing cylinder assembly ..... 10-4  
Door assembly, bulkhead ..... 3-7  
Drive assembly ..... 3-15, 3-16, 3-17  
Drive frame assembly - 1615 ..... 11-15  
Drive frame assembly - 2415/2418 ..... 11-35  
Drive frame spoils guide assembly -  
front - 2415/2418 ..... 11-36  
Drive frame spoils guide assembly -  
left - 1615 ..... 11-16  
Drive frame spoils guide assembly -  
rear - 2415/2418 ..... 11-37  
Drive frame spoils guide assembly -  
right - 1615 ..... 11-17  
Drive motor & roller assembly - 1615 ..... 11-18  
Drive motor & roller assembly - 2415/2418 . 11-38

## E

Electrical ..... 5-1  
Electrical box assembly ..... 5-10  
Electrical box e-stop assembly ..... 5-9  
Electrical panel assembly ..... 5-11  
Electrical system assembly ..... 5-2  
Electrical system schematic ..... 5-3  
Errors ..... i  
E-stop assembly, electrical box ..... 5-9  
Extension frame assembly - 1615 ..... 11-11  
Extension frame assembly - 2415 ..... 11-28  
Extension frame assembly - 2418 ..... 11-31

## F

Feed frame assembly ..... 11-5  
Feed frame assembly - 1615 ..... 11-5  
Feed frame assembly - 2415/2418 ..... 11-22  
Feed frame spoils guide assembly -  
left front - 1615 ..... 11-6  
Feed frame spoils guide assembly -  
left front - 2415/2418 ..... 11-23  
Feed frame spoils guide assembly -  
left rear - 1615 ..... 11-9  
Feed frame spoils guide assembly -  
left rear - 2415/2418 ..... 11-26  
Feed frame spoils guide assembly -  
right front - 1615 ..... 11-7

**F (continued)**

Feed frame spoils guide assembly -  
 right front - 2415/2418 ..... 11-24  
 Feed frame spoils guide assembly -  
 right rear - 1615 ..... 11-10  
 Feed frame spoils guide assembly -  
 right rear - 2415/2418 ..... 11-27  
 Final assembly ..... 3-3  
 Fitting kit - 600 ..... 6-8  
 Fitting kit - 660 ..... 6-14  
 Fitting kit - 720 ..... 6-22  
 Floor assembly ..... 3-12  
 Front face assembly ..... 3-26  
 Front roller assembly - 1615 ..... 11-8  
 Front roller assembly - 2415/2418 ..... 11-25  
 Front section assembly ..... 3-5

**G**

Gas challenge kit ..... 5-8  
 Gas detector assembly ..... 5-6, 5-7  
 General information ..... 1-1  
 General information - conveyor - belt ..... 1-6  
 General information - conveyor - screw ..... 1-7  
 General information - cutter head attachments .. 1-5  
 General information - laser light stand ..... 1-8  
 General information - tbm ..... 1-2  
 General information - tbm control valves ..... 1-3  
 General information - tbm pressure gauges .... 1-4  
 Genuine parts ..... i  
 Grease assembly ..... 6-24  
 Grease hose assembly ..... 6-25  
 Grease pump ..... 9-4

**H**

Hardware specification ..... i  
 Head box decals ..... 2-9  
 Horn - strobe assembly ..... 5-4  
 Hose kit - 600 ..... 6-6  
 Hose kit - 660 ..... 6-12  
 Hose kit - 720 ..... 6-18  
 Hydraulic assembly ..... 6-4  
 Hydraulic assembly - 600 ..... 6-4  
 Hydraulic assembly - 660 ..... 6-10  
 Hydraulic assembly - 720 ..... 6-16  
 Hydraulic assembly, closed face ..... 6-29  
 Hydraulic assembly, closed face 720 ..... 6-30  
 Hydraulic dirt wing assembly ..... 3-14  
 Hydraulics ..... 6-1  
 Hydraulic starter hose assembly ..... 6-33, 6-34  
 Hydraulic tunnel hoses & lines, tbm ..... 6-32

**I**

Idler roller assembly - 1615 ..... 11-14  
 Idler roller assembly - 2415/2418 ..... 11-34  
 IJS ..... 6-38  
 IJS coupler assembly ..... 6-47  
 IJS cylinder ..... 6-49, 10-8

**I (continued)**

IJS segment assembly ..... 6-48  
 IJS starter connection ..... 6-46  
 IJS starter hose 30 ft (lp) assembly ..... 6-41  
 IJS tunnel line 10' 6" ..... 6-42  
 IJS valve ..... 7-8  
 IJS valve (with cable) ..... 6-44, 7-6  
 Index, alphabetical ..... i  
 Index, numerical ..... i  
 Information, general ..... 1-1  
 Intermediate jacking station ..... 6-38  
 Intermediate jacking station schematic ..... 6-50  
 Introduction ..... i

**K**

Kit, gas challenge ..... 5-8  
 Kit, low psi to series ii adapter ..... 3-32

**L**

Laser light stand ..... 3-34, 3-35  
 Laser light stand decals ..... 2-8  
 Locating parts ..... i  
 Lube assembly ..... 6-26  
 Lube motor ..... 8-3  
 Lube pump ..... 9-3

**M**

Measurements ..... i  
 Miscellaneous / conveyors ..... 11-1  
 Motor, conveyor drive ..... 8-4  
 Motor, lube ..... 8-3  
 Motors ..... 8-1  
 Motor, screw conveyor drive ..... 8-6, 8-7  
 Motor, tbm two speed drive ..... 8-2

**N**

Numerical index ..... i

**O**

Operator controls ..... 4-1  
 Operator controls ..... 4-2  
 Ordering, parts ..... i

**P**

Parts, locating ..... i  
 Parts ordering ..... i  
 Pump, grease ..... 9-4  
 Pump, lube ..... 9-3  
 Pumps ..... 9-1  
 Pump, scavenging ..... 9-2

**R**

Rotary hub assembly ..... 3-27

**S**

Safety stop switch assembly, conveyor ..... 5-12  
 Sand head assembly ..... 3-20

**S (continued)**

Sand head/shelf assembly ..... 3-23  
 Sand shelf assembly ..... 3-21, 3-22  
 Scavenging pump ..... 9-2  
 Schematic, electrical system ..... 5-3  
 Schematic, hydraulic - 660 ..... 6-10  
 Schematic, intermediate jacking station ..... 6-50  
 Screw conveyor - 140ex ..... 11-40  
 Screw conveyor - 160 ..... 11-42, 11-44  
 Screw conveyor decals ..... 2-7  
 Screw conveyor drive motor ..... 8-6, 8-7  
 Seat assembly ..... 3-13  
 Segment assembly, IJS ..... 6-48  
 Short spoils guide assembly - front - 2415 ... 11-29  
 Short spoils guide assembly - left - 1615 ..... 11-12  
 Short spoils guide assembly - rear - 2415 ... 11-30  
 Short spoils guide assembly - right - 1615 .... 11-13  
 Specification, hardware ..... i  
 Spoils guide assembly - front - 2418 ..... 11-32  
 Spoils guide assembly - rear - 2418 ..... 11-33  
 Starter hose 30 ft (hp) assembly ..... 6-39  
 Starter (return) hose, low pressure 30' ..... 6-40  
 Steering assembly ..... 3-4  
 Steering cylinder assembly ..... 10-2, 10-3  
 Strobe - horn assembly ..... 5-4  
 Structural ..... 3-1

**T**

Tbm decals - left side ..... 2-2  
 Tbm decals - right side ..... 2-4  
 Tbm hydraulic lines hp assembly ..... 6-36  
 Tbm hydraulic lines lp assembly ..... 6-35  
 Tbm hydraulic tunnel hoses & lines ..... 6-32  
 Tbm nine section valve ..... 7-2  
 Tbm three section control valve ..... 7-3  
 Tbm two speed drive motor ..... 8-2  
 Tee connector - IJS ..... 6-43  
 Tunnel hoses & lines, tbm hydraulic ..... 6-32  
 Two speed motor valve ..... 7-4

**V**

Valve, conveyor lift ..... 7-5  
 Valve, IJS ..... 7-8  
 Valve, IJS (with cable) ..... 7-6  
 Valves ..... 7-1  
 Valve, tbm nine section ..... 7-2  
 Valve, tbm three section control ..... 7-3  
 Valve, two speed motor ..... 7-4

## **NOTES**



# Numerical Index

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
001085P00 .....	11-14	002624P00 .....	11-22	004946P00 .....	3-21
001245P00 .....	10-4	002624P00 .....	11-39	004947P00 .....	3-21
001335P00 .....	6-45	002824A01 .....	11-15	004947P00 .....	3-22
001335P00 .....	7-7	002824A01 .....	11-35	004947P00 .....	3-23
001341A00 .....	11-14	003095P02 .....	6-49	004948P00 .....	3-21
001341A00 .....	11-34	003095P02 .....	10-8	004948P00 .....	3-22
001398P00 .....	11-19	003348P02 .....	6-49	004948P00 .....	3-23
001399P00 .....	11-18	003348P02 .....	10-8	005111P01 .....	3-21
001429A00 .....	11-18	003364A01 .....	6-49	005112P00 .....	3-21
001496P00 .....	11-5	003364A01 .....	10-8	005113P00 .....	3-21
001496P00 .....	11-22	003660A01 .....	3-10	005114P00 .....	3-21
001907A00 .....	6-48	003661P00 .....	3-10	005115P00 .....	3-21
001969A00 .....	11-19	003842P01 .....	7-8	005116P00 .....	3-21
002188A00 .....	7-8	004124P01 .....	3-30	005117A00 .....	3-21
002256A00 .....	11-8	004124P01 .....	3-30	005118A00 .....	3-22
002269P01 .....	11-3	004124P01 .....	3-31	005118A00 .....	3-23
002269P01 .....	11-21	004431P01 .....	3-22	005133A02 .....	6-39
002269P01 .....	11-21	004440A02 .....	3-20	005133A02 .....	6-40
002269P01 .....	11-41	004440A02 .....	3-22	005133A02 .....	6-42
002269P01 .....	11-42	004722P00 .....	7-8	005133A02 .....	6-43
002269P01 .....	11-44	004723P01 .....	7-8	005133A02 .....	6-46
002306P00 .....	11-14	004724P00 .....	7-8	005133A02 .....	6-47
002323A .....	6-45	004725A00 .....	6-45	005134P00 .....	6-39
002323A .....	7-7	004725A00 .....	7-7	005134P00 .....	6-42
002373A00 .....	6-45	004725A00 .....	7-8	005134P00 .....	6-43
002373A00 .....	7-7	004769A02 .....	3-20	005134P00 .....	6-46
002386P01 .....	11-8	004769A02 .....	3-21	005134P00 .....	6-47
002386P01 .....	11-25	004899P00 .....	6-33	005135P00 .....	6-39
002416P00 .....	11-14	004901P01 .....	6-33	005135P00 .....	6-42
002624P00 .....	3-5	004943P00 .....	3-21	005135P00 .....	6-43
002624P00 .....	11-5	004944P00 .....	3-21	005135P00 .....	6-46
002624P00 .....	11-19	004945P00 .....	3-21	005135P00 .....	6-47

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
005348P00	6-33	007002P02	6-37	007344A00	6-49
005350P03	6-33	007065P00	3-23	007344A00	10-8
005350P03	6-35	007066P00	3-23	007645P00	11-34
005373P00	3-23	007067P01	3-23	007646P00	11-34
005374P00	3-23	007068P00	3-23	008945P01	10-6
005377P00	3-23	007069P00	3-23	008945P01	10-7
005378P00	3-23	007070P00	3-23	009806P00	6-42
005382P00	3-22	007071P00	3-23	009808P00	6-39
005383P00	3-22	007072P00	3-23	009808P00	6-42
005436A00	11-5	007073P01	3-23	009808P00	6-43
005436A00	11-22	007085P00	6-40	009808P00	6-47
005439P00	3-23	007085P00	6-41	009809P00	6-40
005440P00	3-22	007085P00	6-42	009809P00	6-41
005440P00	3-23	007085P00	6-43	009809P00	6-42
005441P00	3-22	007085P00	6-47	009809P00	6-46
005442P00	3-23	007086P00	3-32	009809P00	6-47
005443P00	3-22	007086P00	6-33	009810P00	6-43
005443P00	3-23	007086P00	6-35	009811P01	6-40
005444P00	3-22	007086P00	6-37	009811P01	6-41
005763A00	7-8	007087P00	3-32	009811P01	6-42
005764A00	6-45	007087P00	6-5	009811P01	6-43
005764A00	7-7	007087P00	6-11	009811P01	6-47
006025A00	3-34	007087P00	6-17	009812P01	6-39
006025A00	3-35	007087P00	6-33	009812P01	6-42
006034A00	3-34	007087P00	6-34	009812P01	6-46
006039A00	3-34	007087P00	6-35	009812P01	6-47
006039A00	3-35	007087P00	6-36	009874P	11-42
006040A00	3-34	007087P00	6-37	009874P	11-44
006040A00	3-35	007127P00	3-22	009876P	11-45
006044A00	3-34	007128P00	3-22	009881A00	11-42
006044A00	3-35	007129P00	3-22	009881A00	11-44
006047A00	3-34	007130P00	3-22	009882A00	11-42
006050A00	3-34	007131P00	3-22	009882A00	11-44
006050A00	3-35	007132P00	3-22	009883A00	11-42
006051P00	3-34	007239P00	3-14	009883A00	11-44
006051P00	3-35	007240P00	3-14	009893P00	11-40
006055P01	3-34	007242A00	3-12	009893P00	11-43
006068A01	3-34	007302A00	6-38	009918A00	10-6
006069P00	3-34	007302A00	6-48	009918A00	10-7
006069P00	3-35	007303A00	6-38	009986P00	3-7
007002P02	3-32	007303A00	6-48	009987P00	3-7
007002P02	6-33	007304A00	6-38	009995P00	3-13
007002P02	6-35	007304A00	6-48	010748A00	10-4

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
010864P00	10-4	019023A	5-9	023175A	3-4
012271P00	3-10	019024P	5-9	023175A	3-4
012609A01	3-9	019026A-120	5-2	023175A	10-3
012609A01	3-10	019049A	5-2	023176A	10-3
012765A01	3-11	019049A	5-6	023177A	10-3
012785A00	3-10	019050A	5-2	023178P	10-3
012790A00	3-10	019050A	5-10	023179P	10-3
012798A01	3-11	019054P	5-11	023417A	3-3
012875P00	3-7	019055A	5-10	023417A	3-23
014215P00	3-24	019055A	5-11	023418A	3-23
014215P00	3-24	019056P	5-10	023430A	3-3
014215P00	3-25	019386A00	3-3	023430A	3-20
014481P00	10-6	020644A	11-40	023431A	3-20
014481P00	10-7	020646A	11-40	023468P	3-5
014603A00	3-14	020814A00	3-3	023468P	3-5
014603A00	10-4	020980P	3-25	023468P	3-5
014604P00	10-4	020985A	3-25	023524P00	11-42
014605P00	10-4	020985A	6-31	023524P00	11-44
014606A01	3-14	021156P	3-9	023534P00	5-4
014610P00	3-14	021157P	3-9	023544A	11-40
014619P00	3-8	021157P	3-9	023544A	11-44
014679A	3-8	021175A	3-4	023994P	3-24
014679A	3-14	021175A	10-2	024401A	5-2
014680A	3-14	021176A	10-2	024401A	5-4
015050A	3-24	021177A	10-2	024444P	3-28
015050A	10-6	021178P	10-2	024444P	3-29
015051A	10-6	021179P	10-2	024445P	3-28
015053A	10-6	021681A	3-35	024445P	3-29
015080A	3-25	021682A	3-35	024449P	6-26
015080A	10-7	021683A	3-35	024502A00	11-40
015081A	10-7	021684A	3-35	024510A	3-9
015083A	10-7	022156P	5-2	024510A	3-13
016405P	5-4	023109P	3-15	024512P	3-13
016407P	5-6	023109P	3-16	024513P	3-13
016421P	5-8	023109P	3-17	024545P	6-5
016422A	5-8	023150P	3-15	024545P	6-11
016620P	3-24	023150P	3-16	024545P	6-17
018670A00	3-24	023150P	3-17	024559P	11-41
018670A00	3-25	023154P	3-17	024588P	5-12
018718P00	3-24	023155P	3-17	024589P	5-12
018718P00	3-25	023174P	3-4	024590A	4-2
019023A	4-2	023174P	3-4	024590A	5-2
019023A	5-2	023174P	3-4	024590A	5-12

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
024650A	3-3	025912P	3-15	026175P	3-8
024650A	3-3	025913P	3-15	026176P	3-8
024650A	5-2	025914P	3-15	026181P	5-11
024765P	3-18	025915P	3-15	026939P	3-15
024766P	3-18	025916P	3-15	026939P	3-16
024768A	3-3	025932A	3-3	026939P	3-17
024768A	3-19	025932A	3-3	027031A	3-3
024769A	3-19	025932A	3-3	027109A00	11-8
024769A	3-19	025932A	6-26	027109A00	11-25
024778A	3-19	025944A	3-8	027113P00	3-11
024784A	3-19	025944A	3-8	027130P00	11-8
024786A	3-19	025944A	3-8	027130P00	11-25
024794A	3-19	025955A	3-5	027131A00	11-15
024796P	3-18	025961P	3-24	027131A00	11-16
024796P	3-19	025962A	3-5	027131A00	11-35
024799A	3-18	025962A	3-7	027131A00	11-36
024904A	3-30	025963P	3-7	027132P00	11-16
024904A	3-31	025964P	3-7	027132P00	11-17
024907P	3-28	025966P	3-24	027132P00	11-36
024907P	3-29	025967A	3-24	027132P00	11-37
024908P	3-28	025967A	3-26	027133P00	11-16
025344P	11-11	025975A	3-3	027133P00	11-17
025344P	11-15	025975A	3-18	027133P00	11-36
025344P	11-28	025976A	3-18	027133P00	11-37
025344P	11-31	025977A	3-18	027134A00	11-11
025344P	11-35	025978A	3-18	027134A00	11-12
025693P	6-5	025987A	3-18	027134A00	11-28
025693P	6-11	025989A	3-18	027134A00	11-29
025693P	6-17	025995A	3-3	027135P00	11-9
025901A	3-3	025995A	3-3	027135P00	11-10
025901A	6-5	025995A	3-3	027135P00	11-12
025902A	3-3	025995A	6-24	027135P00	11-13
025902A	3-4	025996A	3-3	027135P00	11-26
025903A	3-3	025996A	3-3	027135P00	11-27
025903A	3-5	025996A	3-3	027135P00	11-29
025904A	3-3	025996A	6-25	027135P00	11-30
025904A	3-8	025998A	3-3	027136P00	11-9
025905A	3-3	025998A	3-28	027136P00	11-10
025905A	3-15	025999A	3-3	027136P00	11-12
025906A	3-3	025999A	3-30	027136P00	11-13
025907A	3-5	026168P	6-5	027136P00	11-26
025908A	3-8	026168P	6-11	027136P00	11-27
025908A	3-9	026168P	6-17	027136P00	11-29

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
027136P00	11-30	027218P00	11-17	027263A00	11-5
027137A00	11-5	027218P00	11-36	027264A00	11-3
027137A00	11-6	027218P00	11-37	027264A00	11-11
027137A00	11-22	027219A00	11-15	027265A00	11-5
027137A00	11-23	027219A00	11-17	027265A00	11-9
027138P00	11-6	027219A00	11-35	027265A00	11-22
027138P00	11-23	027219A00	11-37	027265A00	11-26
027138P00	11-24	027221A00	11-5	027266A00	11-5
027139P00	11-6	027221A00	11-7	027266A00	11-10
027139P00	11-7	027221A00	11-22	027266A00	11-22
027139P00	11-23	027221A00	11-24	027266A00	11-27
027139P00	11-24	027247P00	11-16	027267A00	11-11
027140P00	11-6	027247P00	11-17	027267A00	11-13
027140P00	11-7	027247P00	11-36	027267A00	11-28
027140P00	11-23	027247P00	11-37	027267A00	11-30
027140P00	11-24	027248P00	11-6	027283P00	11-19
027144P	11-3	027248P00	11-7	027285P00	11-19
027150A	11-21	027248P00	11-23	027286P00	11-3
027155A	11-21	027248P00	11-24	027289P00	11-3
027156P	11-7	027249P00	11-9	027290P00	11-8
027216P00	11-6	027249P00	11-10	027293P00	11-8
027216P00	11-7	027249P00	11-12	027295P00	11-11
027216P00	11-9	027249P00	11-13	027295P00	11-15
027216P00	11-10	027249P00	11-26	027296P00	11-5
027216P00	11-12	027249P00	11-27	027302A00	11-22
027216P00	11-13	027249P00	11-29	027303A00	11-28
027216P00	11-23	027249P00	11-30	027306A00	11-38
027216P00	11-24	027251A00	11-15	027307A00	11-22
027216P00	11-26	027252A00	11-5	027307A00	11-25
027216P00	11-27	027253A00	11-11	027311A00	11-21
027216P00	11-29	027254A00	11-15	027311A00	11-34
027216P00	11-30	027254A00	11-18	027313A00	11-21
027216P00	11-32	027255A00	11-19	027313A00	11-22
027216P00	11-33	027256A00	11-18	027314A00	11-21
027217P00	11-9	027257A00	11-5	027314A00	11-28
027217P00	11-10	027257A00	11-8	027333P00	11-39
027217P00	11-12	027258A00	11-3	027335P00	11-39
027217P00	11-13	027259A00	11-3	027336P00	11-21
027217P00	11-26	027261A00	11-3	027339P00	11-21
027217P00	11-27	027261A00	11-14	027340P00	11-25
027217P00	11-29	027262A00	11-3	027343P00	11-25
027217P00	11-30	027262A00	11-15	027345P00	11-28
027218P00	11-16	027263A00	11-3	027345P00	11-31

Numerical Index

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
027345P00	11-35	027611P	3-5	027944P	3-17
027346P00	11-22	027611P	3-5	028533A	6-5
027347A00	11-25	027612P	6-36	028533A	6-7
027369P	11-39	027651P	6-5	028534A	6-5
027374P	11-38	027651P	6-11	028534A	6-9
027397P	11-14	027651P	6-17	028592A	3-9
027397P	11-34	027651P	6-34	028592A	3-12
027411P	11-21	027667P	6-5	028658A	3-5
027411P	11-21	027667P	6-11	028671A	3-24
027415A	11-39	027667P	6-17	028671A	3-24
027420A	11-35	027667P	6-34	028671A	3-25
027420A	11-38	027669P	6-5	028671A	3-27
027425A	11-21	027669P	6-11	028672P	3-27
027425A	11-21	027669P	6-17	028673A	3-27
027425A	11-35	027669P	6-34	028676A	3-24
027451A	11-35	027671P	6-5	028676A	3-25
027456A	11-21	027671P	6-11	028678P	3-24
027456A	11-31	027671P	6-17	028678P	3-25
027457A	11-31	027671P	6-34	028681P	3-25
027461A	11-31	027671P	6-36	028701A	3-3
027461A	11-32	027672P	3-32	028701A	6-11
027462A	11-31	027672P	6-5	028702A	3-3
027462A	11-33	027672P	6-11	028702A	3-4
027463P	11-32	027672P	6-17	028703A	3-3
027463P	11-33	027672P	6-34	028703A	3-5
027464P	11-32	027672P	6-36	028704A	3-3
027464P	11-33	027672P	6-37	028704A	3-8
027465A	11-39	027675A	3-5	028705A	3-3
027467P	11-32	027687P	6-5	028705A	3-16
027467P	11-33	027687P	6-11	028706A	3-3
027468P	11-32	027687P	6-17	028707A	3-5
027468P	11-33	027687P	6-34	028708A	3-8
027470A	11-38	027694A	3-32	028708A	3-9
027509A	3-24	027694A	6-37	028709A	6-11
027509A	3-24	027696P	3-32	028709A	6-13
027509A	3-25	027696P	6-37	028712P	3-16
027558P	3-24	027698A	3-3	028713P	3-16
027558P	3-24	027698A	3-32	028714P	3-16
027558P	3-25	027698A	6-32	028715P	3-16
027561A	3-24	027698A	6-37	028716P	3-16
027561A	3-24	027873A	3-5	028738A	3-5
027561A	6-29	027944P	3-15	028741A	3-5
027611P	3-5	027944P	3-16	028743A	3-5

Numerical Index

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
028743A	3-7	028812P	3-17	1250-559	2-3
028744P	3-7	028813P	3-17	1250-562	2-3
028745P	3-7	028814P	3-17	1250-562	2-5
028746A	3-20	028842P	3-29	1250-562	2-5
028748A	3-3	028855A	3-5	1250-577	2-6
028748A	3-20	028861P	3-25	1250-577a	2-7
028749A	3-3	028862A	3-5	1250-581	2-3
028749A	3-19	028862A	3-7	1250-649	2-5
028750A	3-19	028863P	3-7	1250-749	2-8
028756A	3-19	028864P	3-7	1250-750	2-6
028757A	3-19	028866P	3-25	1250-751	2-7
028762A	6-11	028891A	6-17	1250-859	2-3
028762A	6-15	028892A	6-17	1251-245	2-3
028766P	3-24	028892A	6-23	1251-245	2-5
028767A	3-24	028897P	3-29	1251-245	2-8
028767A	3-26	028898A	3-3	1251-245	2-9
028769P	3-24	028898A	3-29	1251-246	2-6
028770A	3-9	028899A	3-3	1251-246	2-7
028770A	3-12	028899A	3-31	1251-320	2-3
028779P	3-28	031067A	3-25	1251-320	2-5
028794A	3-4	031067A	3-26	1251-325	2-5
028795A	3-4	1250-004	2-3	1251-382	2-5
028795A	3-4	1250-004	2-5	1251-443a	2-5
028798A	3-3	1250-004	2-6	1251-443b	2-5
028798A	3-28	1250-004	2-7	1251-443c	2-5
028799A	3-3	1250-006	2-5	1251-443d	2-5
028799A	3-30	1250-098	2-5	1251-443e	2-5
028801A	3-3	1250-098	2-6	1251-444	2-5
028801A	6-17	1250-098	2-7	1251-447	2-3
028802A	3-3	1250-098	2-8	1251-448	2-3
028802A	3-4	1250-098	2-9	1251-450	2-5
028803A	3-3	1250-383	2-5	1251-450	2-5
028803A	3-5	1250-385	2-3	1251-450a	2-3
028804A	3-3	1250-385	2-3	1251-450ab	2-3
028804A	3-8	1250-385	2-5	1251-450ac	2-5
028805A	3-3	1250-450y	2-3	1251-450ad	2-5
028805A	3-17	1250-480	2-3	1251-450ae	2-5
028806A	3-3	1250-532a	2-3	1251-450af	2-5
028807A	3-5	1250-544	2-5	1251-450b	2-3
028808A	3-8	1250-544	2-6	1251-450b	2-5
028808A	3-9	1250-544	2-7	1251-450c	2-5
028809A	3-9	1250-544	2-8	1251-450d	2-3
028809A	3-12	1250-544	2-9	1251-450e	2-5

Numerical Index

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
1251-450f	2-5	A09912A-079	6-13	A10094A-100	6-32
1251-450g	2-3	A09912A-114	6-20	A10099A-090	6-7
1251-450h	2-5	A09920A-030	6-7	A10099A-100	6-13
1251-450j	2-5	A09920A-030	6-13	A10099A-111	6-20
1251-450k	2-5	A09920A-031	6-19	A10311A-008	6-29
1251-450l	2-5	A09920A-050	6-7	A10311A-014	6-29
1251-450n	2-3	A09920A-050	6-13	A10311A-014	6-31
1251-450o	2-5	A09920A-087	6-19	A10311A-025	6-29
1251-450p	2-5	A09920A-091	6-7	A10311A-028	6-31
1251-450q	2-3	A09920A-091	6-13	A10311A-037	6-31
1251-450r	2-5	A09920A-102	6-20	A10311A-040	6-29
1251-450s	2-5	A09922A-020	6-7	A10311A-040	6-31
1251-450t	2-5	A09922A-020	6-13	A10311A-056	11-41
1251-450u	2-5	A09922A-069	6-19	A10311A-060	11-41
1251-450w	2-5	A09922A-078	6-19	A10311A-090	6-29
1251-450x	2-5	A09977A-166	6-25	A10311A-090	6-31
1251-450z	2-5	A10056A-035	6-7	A10311A-xxx	6-38
1251-535e	2-3	A10056A-035	6-13	A10313A-012	6-7
1251-535e	2-5	A10059A-015	6-13	A10313A-012	6-13
1251-535f	2-3	A10059A-018	6-20	A10313A-012	6-19
1251-535f	2-5	A10079A-011	6-19	A10313A-019	6-7
1251-535g	2-3	A10079A-014	6-7	A10313A-019	6-13
1251-535g	2-5	A10079A-014	6-13	A10313A-020	6-19
3-700R	2-5	A10079A-015	6-19	A10313A-022	6-20
40000-16	2-5	A10079A-016	6-19	A10313A-024	6-7
A09814A-029	6-7	A10079A-024	6-7	A10313A-024	6-13
A09814A-029	6-13	A10079A-024	6-13	A10313A-025	6-19
A09814A-029	6-19	A10079A-027	6-19	A10313A-026	6-7
A09815A-048	6-7	A10079A-032	6-20	A10313A-026	6-13
A09815A-048	6-13	A10079A-033	6-7	A10313A-038	6-7
A09815A-110	6-19	A10079A-033	6-13	A10313A-038	6-13
A09847A-010	6-19	A10079A-068	6-19	A10313A-045	6-7
A09847A-110	6-7	A10079A-069	6-7	A10313A-045	6-20
A09847A-120	6-13	A10079A-073	6-20	A10313A-047	6-19
A09849A-095	6-7	A10079A-075	6-13	A10313A-050	6-13
A09849A-100	6-13	A10079A-078	6-19	A10313A-052	6-7
A09849A-115	6-20	A10079A-079	6-19	A10313A-052	6-13
A09850A-100	6-7	A10079A-080	6-20	A10313A-055	6-7
A09850A-100	6-32	A10079A-111	6-20	A10313A-055	6-13
A09850A-100	6-13	A10079A-178	6-19	A10313A-060	6-7
A09850A-100	6-20	A10080A-010	6-19	A10313A-060	6-13
A09851A-420	6-34	A10080A-060	6-7	A10313A-070	6-7
A09912A-079	6-7	A10080A-060	6-13	A10313A-070	6-13

Numerical Index

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
A10313A-075	6-20	A10325A-114	6-13	A10327A-090	6-20
A10313A-079	6-19	A10325A-120	6-7	A10327A-103	6-19
A10313A-104	6-19	A10325A-120	6-13	A10331A-027	6-19
A10313A-107	6-20	A10325A-125	6-13	A10331A-031	6-19
A10313A-115	6-7	A10325A-132	6-7	A10331A-032	6-7
A10313A-115	6-13	A10325A-137	6-13	A10331A-032	6-13
A10313A-120	6-7	A10325A-145	6-7	A10331A-034	6-19
A10313A-120	6-13	A10325A-150	6-13	A10331A-037	6-19
A10313A-120	6-20	A10326A-012	6-7	A10331A-047	6-19
A10313A-152	6-7	A10326A-012	6-13	A10331A-062	6-7
A10313A-157	6-13	A10326A-012	6-20	A10331A-063	6-19
A10314A-020	6-7	A10326A-013	6-7	A10331A-071	6-13
A10314A-020	6-13	A10326A-013	6-13	A10331A-074	6-19
A10314A-020	6-19	A10326A-017	6-19	A10338A-009	6-7
A10314A-045	6-7	A10326A-029	6-19	A10338A-017	6-7
A10314A-045	6-13	A10326A-030	6-7	A10338A-017	6-13
A10314A-062	6-19	A10326A-030	6-13	A10338A-021	6-20
A10319A-040	6-27	A10326A-030	6-20	A10342A-038	6-19
A10320A0-200	11-43	A10326A-032	6-7	A10342A-039	6-7
A10320A0-200	11-45	A10326A-032	6-13	A10342A-039	6-13
A10320A-120	6-29	A10326A-035	6-7	A10342A-044	6-7
A10320A-120	6-31	A10326A-035	6-13	A10342A-044	6-13
A10320A-132	11-3	A10326A-036	6-7	A10342A-044	6-19
A10320A-132	11-21	A10326A-036	6-13	A10342A-046	6-7
A10320A-200	11-41	A10326A-036	6-20	A10342A-046	6-13
A10320A-360	6-40	A10326A-083	6-19	A10342A-052	6-20
A10320A-360	6-41	A10326A-110	6-19	A10350A-420	6-33
A10324A-016	6-27	A10327A-014	6-19	A10364A-012	6-19
A10324A-041	6-27	A10327A-015	6-19	A10364A-018	6-7
A10325A-010	6-7	A10327A-016	6-19	A10364A-018	6-13
A10325A-010	6-13	A10327A-023	6-20	A10364A-019	6-20
A10325A-010	6-20	A10327A-030	6-7	A10364A-020	6-7
A10325A-011	6-19	A10327A-030	6-13	A10364A-020	6-13
A10325A-020	6-7	A10327A-045	6-7	A10364A-021	6-13
A10325A-020	6-13	A10327A-050	6-7	A10364A-022	6-7
A10325A-022	6-19	A10327A-050	6-13	A10364A-024	6-20
A10325A-023	6-7	A10327A-050	6-19	A10364A-030	6-7
A10325A-023	6-13	A10327A-051	6-19	A10364A-030	6-13
A10325A-024	6-19	A10327A-060	6-13	A10372A-061	6-27
A10325A-092	6-20	A10327A-083	6-7	A10420A-360	6-39
A10325A-100	6-20	A10327A-083	6-13	A10427A-052	6-19
A10325A-108	6-7	A10327A-088	6-7	A10427A-054	6-19
A10325A-114	6-7	A10327A-088	6-13	A10467A-028	6-7

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
A10467A-028	6-13	F10360F00	3-3	P0001-04-003	11-11
A10467A-040	6-7	F13326F00	6-32	P0001-04-003	11-12
A10467A-040	6-13	F13326F00	6-35	P0001-04-003	11-13
A10467A-063	6-7	F13597F00	6-32	P0001-04-003	11-15
A10467A-063	6-13	F13597F00	6-33	P0001-04-003	11-16
A10467A-077	6-19	F14750F00	3-12	P0001-04-003	11-17
A10467A-085	6-7	F14750F00	3-12	P0001-04-003	11-19
A10467A-085	6-19	F20645F00	11-40	P0001-04-003	11-21
A10467A-086	6-19	F21675F	3-35	P0001-04-003	11-22
A10467A-090	6-13	F25900F	3-3	P0001-04-003	11-23
A10467A-093	6-19	F25965F	3-3	P0001-04-003	11-24
A10467A-095	6-19	F25965F	3-24	P0001-04-003	11-26
A10468A-056	6-7	F27250F00	11-3	P0001-04-003	11-27
A10468A-056	6-13	F27450F00	11-21	P0001-04-003	11-28
A10468A-145	6-20	F27455F	11-21	P0001-04-003	11-29
A43766P	6-5	F27674F	6-32	P0001-04-003	11-30
A43766P	6-11	F27674F	6-36	P0001-04-003	11-31
A43766P	6-17	F27691F	6-32	P0001-04-003	11-32
F0310-474F	2-3	F27691F	6-34	P0001-04-003	11-33
F03531F02	6-48	F27868F	6-38	P0001-04-003	11-35
F03531F02	6-49	F27868F	6-41	P0001-04-003	11-36
F03531F02	10-8	F28700F	3-3	P0001-04-003	11-37
F03834F00	6-48	F28765F	3-3	P0001-04-004	3-5
F04908F01	6-38	F28765F	3-24	P0001-04-004	6-5
F04908F01	6-45	F28800F	3-3	P0001-04-004	6-11
F04908F01	7-7	F31070F	3-3	P0001-04-004	6-17
F05487F00	6-48	F31070F	3-25	P0001-04-005	11-39
F05866F00	3-34	P0001-04-002	3-7	P0001-04-006	3-5
F07244F00	3-12	P0001-04-002	3-35	P0001-04-006	6-5
F07244F00	3-12	P0001-04-002	5-4	P0001-04-006	6-11
F07244F00	3-12	P0001-04-002	11-21	P0001-04-006	6-17
F07296F00	6-48	P0001-04-002	3-11	P0001-04-006	6-24
F09800F00	6-38	P0001-04-003	5-2	P0001-04-008	5-12
F09800F00	6-42	P0001-04-003	5-6	P0001-04-010	6-24
F09802F01	6-38	P0001-04-003	6-5	P0001-04-010	11-3
F09802F01	6-39	P0001-04-003	6-11	P0001-04-010	11-21
F09803F01	6-40	P0001-04-003	6-17	P0001-04-012	11-21
F09804F00	6-38	P0001-04-003	11-3	P0001-05-003	3-18
F09804F00	6-43	P0001-04-003	11-5	P0001-05-003	3-19
F09805F00	6-38	P0001-04-003	11-6	P0001-05-003	6-5
F09805F00	6-46	P0001-04-003	11-7	P0001-05-003	6-11
F09885F00	11-42	P0001-04-003	11-9	P0001-05-003	6-17
F09885F00	11-44	P0001-04-003	11-10	P0001-05-003	6-48

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0001-05-003.....	11-28	P0001-06-004.....	6-45	P0001-08-008 .....	3-11
P0001-05-003.....	11-31	P0001-06-004.....	7-7	P0001-08-009.....	3-13
P0001-05-003.....	11-35	P0001-06-004.....	11-3	P0001-08-012.....	3-18
P0001-05-003.....	11-42	P0001-06-004.....	11-21	P0001-08-012.....	3-19
P0001-05-003.....	11-44	P0001-06-005.....	11-11	P0001-08-014.....	11-45
P0001-05-004.....	3-24	P0001-06-005.....	11-15	P0001-10-026.....	6-5
P0001-05-004.....	3-25	P0001-06-005.....	11-28	P0001-10-026.....	6-11
P0001-05-004.....	6-27	P0001-06-005.....	11-31	P0001-10-026.....	6-17
P0001-05-005.....	3-13	P0001-06-005.....	11-35	P0001-12-005.....	3-29
P0001-05-007.....	6-5	P0001-06-006.....	3-4	P0001-12-005.....	3-31
P0001-05-007.....	6-11	P0001-06-006.....	3-7	P0001-12-006.....	3-20
P0001-05-007.....	6-17	P0001-06-008.....	11-3	P0001-12-006.....	3-30
P0001-05-010.....	6-5	P0001-06-008.....	11-21	P0001-12-006.....	3-31
P0001-05-010.....	6-11	P0001-06-008.....	11-21	P0001-12-007.....	3-18
P0001-05-010.....	6-17	P0001-06-011 .....	3-4	P0001-12-007.....	3-19
P0001-06-002.....	3-24	P0001-07-004.....	11-3	P0001-12-007.....	3-23
P0001-06-002.....	3-25	P0001-07-004.....	11-21	P0001-12-007.....	3-28
P0001-06-002.....	5-2	P0001-07-004.....	11-21	P0001-12-008.....	3-3
P0001-06-002.....	6-5	P0001-07-007.....	11-39	P0001-12-008.....	3-21
P0001-06-002.....	6-11	P0001-07-010.....	3-14	P0001-12-008.....	3-22
P0001-06-002.....	6-17	P0001-08-003.....	3-18	P0001-12-008.....	3-23
P0001-06-002.....	11-11	P0001-08-003.....	3-34	P0001-12-008.....	3-29
P0001-06-002.....	11-28	P0001-08-003.....	3-35	P0001-12-010.....	3-21
P0001-06-002.....	11-31	P0001-08-004.....	3-8	P0001-12-010.....	3-22
P0001-06-003.....	3-24	P0001-08-004.....	3-14	P0001-12-011 .....	3-21
P0001-06-003.....	3-24	P0001-08-004.....	11-21	P0001-12-011 .....	3-22
P0001-06-003.....	3-25	P0001-08-004.....	11-40	P0001-12-011 .....	3-23
P0001-06-003.....	3-28	P0001-08-004.....	11-43	P0001-12-014.....	3-30
P0001-06-003.....	3-28	P0001-08-004.....	11-45	P0001-12-014.....	3-31
P0001-06-003.....	3-29	P0001-08-005.....	3-24	P0001-12-016.....	3-8
P0001-06-003.....	3-30	P0001-08-005.....	11-39	P0003-04-000.....	3-5
P0001-06-003.....	3-31	P0001-08-006.....	3-25	P0003-04-000.....	3-35
P0001-06-003.....	6-27	P0001-08-006.....	3-35	P0003-04-000.....	6-24
P0001-06-003.....	11-3	P0001-08-006.....	11-40	P0003-04-000.....	11-3
P0001-06-003.....	11-8	P0001-08-006.....	11-43	P0003-04-000.....	11-21
P0001-06-003.....	11-15	P0001-08-006.....	11-45	P0003-05-000.....	6-27
P0001-06-003.....	11-19	P0001-08-007.....	3-34	P0003-05-000.....	11-3
P0001-06-003.....	11-21	P0001-08-007.....	3-35	P0003-05-000.....	11-21
P0001-06-003.....	11-25	P0001-08-007.....	5-12	P0003-05-000.....	11-41
P0001-06-003.....	11-35	P0001-08-008.....	3-26	P0003-06-000.....	3-7
P0001-06-003.....	11-39	P0001-08-008.....	11-40	P0003-06-000.....	11-3
P0001-06-004.....	3-5	P0001-08-008.....	11-42	P0003-06-000.....	11-21
P0001-06-004.....	3-12	P0001-08-008.....	11-44	P0003-07-000.....	3-14

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0003-07-000.....	11-18	P0011-006A.....	11-15	P0031-12-008.....	3-25
P0003-07-000.....	11-38	P0011-006A.....	11-28	P0033-04-008.....	10-2
P0003-08-000.....	3-13	P0011-006A.....	11-31	P0033-04-008.....	10-3
P0003-08-000.....	3-14	P0011-006A.....	11-35	P0033-04-008.....	10-6
P0003-08-000.....	3-34	P0011-006C.....	11-5	P0033-04-008.....	10-7
P0003-08-000.....	3-35	P0011-006C.....	11-11	P0033-05-004.....	6-45
P0003-08-000.....	5-12	P0011-006C.....	11-22	P0033-05-004.....	7-7
P0003-08-000.....	6-45	P0011-006C.....	11-28	P0033-05-008.....	11-18
P0003-08-000.....	7-7	P0011-006C.....	11-31	P0033-06-012.....	11-39
P0003-08-000.....	3-11	P0012-08-000.....	3-12	P0034-06-012.....	11-5
P0003-12-000.....	3-8	P0012-08-000.....	3-12	P0034-06-012.....	11-22
P0003-12-000.....	3-21	P0017-08-323.....	5-4	P0040-004.....	3-5
P0003-12-000.....	3-22	P0017-10-375.....	5-4	P0040-004.....	3-7
P0003-12-000.....	3-23	P0020-63-022.....	5-11	P0040-004.....	5-2
P0003-12-000.....	3-30	P0020-83-022.....	5-11	P0040-004.....	5-4
P0003-12-000.....	3-31	P0023-500A-008.....	3-34	P0040-004.....	6-5
P0004-05-000.....	11-42	P0023-500A-008.....	3-35	P0040-004.....	6-11
P0004-05-000.....	11-44	P0024-006.....	3-32	P0040-004.....	6-17
P0004-14-000.....	10-4	P0024-006.....	6-37	P0040-004.....	6-24
P0004-14-000.....	3-11	P0026-011.....	6-45	P0040-004.....	11-3
P0007-06-000.....	3-7	P0026-011.....	7-7	P0040-004.....	11-5
P0007-12-000.....	3-10	P0030-06-003.....	3-5	P0040-004.....	11-6
P001-06-004.....	3-5	P0030-06-003.....	3-5	P0040-004.....	11-7
P001-06-004.....	3-5	P0030-06-003.....	3-5	P0040-004.....	11-9
P0011-004B.....	11-6	P0031-05-002.....	7-8	P0040-004.....	11-10
P0011-004B.....	11-7	P0031-06-003.....	3-15	P0040-004.....	11-15
P0011-004B.....	11-9	P0031-06-003.....	3-16	P0040-004.....	11-16
P0011-004B.....	11-10	P0031-06-003.....	3-17	P0040-004.....	11-17
P0011-004B.....	11-12	P0031-06-003.....	11-18	P0040-004.....	11-21
P0011-004B.....	11-13	P0031-06-003.....	11-38	P0040-004.....	11-23
P0011-004B.....	11-16	P0031-06-006.....	7-8	P0040-004.....	11-24
P0011-004B.....	11-17	P0031-07-007.....	11-18	P0040-004.....	11-26
P0011-004B.....	11-23	P0031-08-006.....	3-15	P0040-004.....	11-27
P0011-004B.....	11-24	P0031-08-006.....	3-16	P0040-004.....	11-32
P0011-004B.....	11-26	P0031-08-006.....	3-17	P0040-004.....	11-33
P0011-004B.....	11-27	P0031-08-010.....	6-5	P0040-004.....	11-36
P0011-004B.....	11-29	P0031-08-010.....	6-11	P0040-004.....	11-37
P0011-004B.....	11-30	P0031-08-016.....	6-45	P0040-005.....	3-13
P0011-004B.....	11-32	P0031-08-016.....	7-7	P0040-005.....	6-5
P0011-004B.....	11-33	P0031-08-018.....	6-17	P0040-005.....	6-11
P0011-004B.....	11-36	P0031-10-022.....	3-24	P0040-005.....	6-17
P0011-004B.....	11-37	P0031-10-022.....	3-25	P0040-005.....	6-27
P0011-006A.....	11-11	P0031-12-008.....	3-24	P0040-005.....	11-41

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0040-006	3-5	P0040-008	3-26	P0045-004	11-35
P0040-006	3-7	P0040-008	6-45	P0045-004	11-39
P0040-006	3-12	P0040-008	7-7	P0045-005	3-24
P0040-006	3-12	P0040-008	11-21	P0045-005	3-25
P0040-006	3-12	P0040-008	11-39	P0045-005	11-42
P0040-006	3-24	P0040-008	11-40	P0045-006	7-7
P0040-006	3-25	P0040-008	11-44	P0045-006	11-8
P0040-006	3-28	P0040-008	3-11	P0045-006	11-25
P0040-006	3-29	P0040-010	6-5	P0045-006	11-31
P0040-006	3-30	P0040-010	6-11	P0045-006	11-35
P0040-006	3-31	P0040-010	6-17	P0045-006	11-39
P0040-006	5-2	P0040-012	3-3	P0045-007	3-14
P0040-006	6-5	P0040-012	3-8	P0045-007	11-8
P0040-006	6-11	P0040-012	3-8	P0045-007	11-25
P0040-006	6-17	P0040-012	3-8	P0045-007	11-38
P0040-006	6-27	P0040-012	3-15	P0045-008	3-34
P0040-006	6-45	P0040-012	3-16	P0045-008	11-39
P0040-006	11-3	P0040-012	3-17	P0045-008	11-42
P0040-006	11-8	P0040-012	3-18	P0046-005	7-8
P0040-006	11-11	P0040-012	3-19	P0047-003	7-8
P0040-006	11-14	P0040-012	3-20	P0047-003	11-19
P0040-006	11-15	P0040-012	3-20	P0047-004	11-19
P0040-006	11-18	P0040-012	3-21	P0047-007	11-41
P0040-006	11-21	P0040-012	3-22	P0047-007	11-42
P0040-006	11-25	P0040-012	3-23	P0047-007	11-44
P0040-006	11-28	P0040-012	3-28	P0048-033	10-6
P0040-006	11-31	P0040-012	3-29	P0048-033	10-7
P0040-006	11-34	P0040-012	3-30	P0049-042	10-4
P0040-006	11-35	P0040-012	3-31	P0050-010	3-18
P0040-006	11-39	P0040-014	10-4	P0050-010	3-19
P0040-007	11-3	P0040-014	3-11	P0050-011	3-18
P0040-007	11-18	P0043-008	6-45	P0050-011	3-19
P0040-007	11-21	P0043-008	7-7	P0050-011	3-26
P0040-007	11-38	P0044-021	3-10	P0050-026	3-26
P0040-008	3-8	P0045-004	5-6	P0050-030	3-26
P0040-008	3-13	P0045-004	11-11	P0051-004	3-18
P0040-008	3-14	P0045-004	11-12	P0051-004	3-19
P0040-008	3-15	P0045-004	11-13	P0051-004	3-19
P0040-008	3-17	P0045-004	11-22	P0051-004	3-26
P0040-008	3-18	P0045-004	11-28	P0051-011	3-26
P0040-008	3-19	P0045-004	11-29	P0054-018	5-4
P0040-008	3-25	P0045-004	11-30	P0054-067G	5-10
P0040-008	3-26	P0045-004	11-31	P0054-068	5-6

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0054-068	5-10	P0063-016	6-24	P0065-271-0660	3-16
P0054-069	5-4	P0063-016	6-29	P0065-271-0720	3-17
P0054-069	5-12	P0063-016	6-31	P0066-003	3-10
P0054-073A	5-9	P0065-004	11-41	P0066-125	3-24
P0054-073B	5-10	P0065-004	11-42	P0066-125	3-25
P0054-087	5-2	P0065-004	11-44	P0067-010	11-21
P0054-105A	5-2	P0065-006	11-8	P0067-011	11-21
P0054-106	5-2	P0065-006	11-25	P0067-041	11-3
P0054-286	5-2	P0065-013	3-27	P0067-042	11-21
P0054-286	5-6	P0065-014	11-19	P0070-020	7-8
P0054-287	5-2	P0065-016	11-39	P0070-024	3-10
P0054-288	5-2	P0065-017	11-3	P0070-031	6-45
P0054-335	5-10	P0065-017	11-21	P0070-031	7-7
P0054-347	5-2	P0065-017	11-41	P0075-001	6-45
P0054-402	5-10	P0065-017	11-42	P0075-001	7-7
P0054-431	5-2	P0065-017	11-44	P0076-050	10-6
P0054-575	5-10	P0065-030	7-8	P0076-050	10-7
P0054-576	5-10	P0065-031	7-8	P0077-029	3-27
P0055-126	6-29	P0065-082	3-11	P0077-059	10-2
P0055-126	6-31	P0065-086	10-6	P0077-059	10-3
P0056-122F	5-9	P0065-086	10-7	P0078-002	11-18
P0056-129F	5-10	P0065-106	3-27	P0078-002	11-38
P0056-131F	5-10	P0065-107	11-40	P0078-005	11-18
P0056-147	5-10	P0065-107	11-42	P0078-005	11-39
P0063-001	3-10	P0065-107	11-44	P0078-008	11-18
P0063-001	3-14	P0065-108	11-40	P0078-008	11-38
P0063-001	3-24	P0065-108	11-42	P0079-003	11-5
P0063-001	3-25	P0065-108	11-44	P0079-003	11-22
P0063-001	11-8	P0065-109	11-40	P0079-003	11-42
P0063-001	11-15	P0065-109	11-42	P0079-003	11-44
P0063-001	11-25	P0065-109	11-44	P0079-005	3-11
P0063-001	11-34	P0065-192	3-15	P0080-001	10-4
P0063-001	11-35	P0065-192	3-16	P0080-019	3-27
P0063-001	11-41	P0065-192	3-17	P0080-036	3-17
P0063-001	11-42	P0065-266	3-15	P0080-037	3-17
P0063-001	11-44	P0065-266	3-16	P0080-047	3-15
P0063-001	11-14	P0065-266	3-17	P0080-048	3-15
P0063-003	3-24	P0065-268	3-15	P0080-057	3-16
P0063-003	3-25	P0065-268	3-16	P0080-058	3-16
P0063-003	11-19	P0065-268	3-17	P0084-016	7-8
P0063-004	10-2	P0065-269	10-2	P0084-123	3-32
P0063-004	10-3	P0065-269	10-3	P0084-123	6-33
P0063-012	3-27	P0065-271-0600	3-15	P0084-123	6-35

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0084-123	6-37	P0085-214	3-17	P0098-010	11-43
P0084-124	6-5	P0085-224	10-4	P0098-010	11-45
P0084-124	6-11	P0085-234	10-6	P0098-068	3-9
P0084-124	6-17	P0085-234	10-7	P0098-069	3-9
P0084-124	6-34	P0085-340	7-8	P0100-001B	6-39
P0084-124	6-36	P0085C-2	10-4	P0100-004A	6-5
P0084-139	6-49	P0085-C3	10-6	P0100-004A	6-11
P0084-139	10-8	P0085-C3	10-7	P0100-004A	6-17
P0084-224	10-4	P0086-001	10-4	P0100-004A	11-3
P0084-234	10-6	P0086-003	6-49	P0100-004A	11-21
P0084-234	10-7	P0086-003	10-8	P0100-004A	11-21
P0085-016	7-8	P0086-005	10-6	P0100-004A	11-41
P0085-028	11-41	P0086-005	10-7	P0100-004A	11-43
P0085-028	11-42	P0087-001	6-49	P0100-004A	11-45
P0085-028	11-44	P0087-001	10-8	P0100-004B	6-5
P0085-032	7-8	P0087-004	10-6	P0100-004B	6-11
P0085-113	6-39	P0087-004	10-7	P0100-004B	6-17
P0085-113	6-42	P0088-002	6-49	P0100-004B	11-3
P0085-113	6-43	P0088-002	10-8	P0100-004B	11-21
P0085-113	6-46	P0088-019	3-4	P0100-004B	11-21
P0085-113	6-47	P0088-019	3-4	P0100-004B	11-41
P0085-123	3-32	P0088-022	3-4	P0100-004B	11-43
P0085-123	6-33	P0088-213	3-15	P0100-004B	11-45
P0085-123	6-35	P0088-222	3-17	P0100-013B	6-40
P0085-123	6-37	P0088-227	3-16	P0100-013B	6-41
P0085-124A	6-5	P0090-001	3-32	P0100-013D	6-41
P0085-124A	6-11	P0090-001	6-37	P0106-002	3-10
P0085-124A	6-17	P0090-004	3-34	P0110-106	6-29
P0085-124A	6-34	P0090-004	3-35	P0110-106	6-31
P0085-124A	6-36	P0091-003	5-12	P0113-002	3-13
P0085-132	3-27	P0091-022	6-26	P0126-049	6-24
P0085-134	10-6	P0091-027	3-18	P0126-050	3-3
P0085-134	10-7	P0091-027	3-19	P0126-050	3-3
P0085-139	3-27	P0091-027	3-19	P0201-290	6-25
P0085-139	6-49	P0094-003-030	11-3	P0220-303	6-25
P0085-139	10-8	P0094-003-030	11-41	P0220-303	6-27
P0085-149	10-6	P0094-003-030	11-43	P0251-171	5-9
P0085-149	10-7	P0094-003-030	11-45	P0251-197	5-6
P0085-162	3-15	P0094-003-060	11-21	P0251-197A	5-6
P0085-162	3-16	P0094-004-072	5-12	P0251-388	5-11
P0085-162	3-17	P0098-010	11-3	P0251-401	5-11
P0085-214	3-15	P0098-010	11-21	P0251-410	5-10
P0085-214	3-16	P0098-010	11-41	P0251-439	5-10

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0251-443	5-11	P0300-113	6-24	P0300-247	6-27
P0251-457	5-10	P0300-120	6-29	P0300-249	6-27
P0251-463	5-10	P0300-120	6-31	P0300-250	6-24
P0251-468	5-11	P0300-120	6-46	P0300-264	6-27
P0251-478	5-11	P0300-120	7-8	P0300-268	6-24
P0251-479	5-11	P0300-120	11-41	P0300-269	6-31
P0251-480	5-11	P0300-121	7-8	P0300-271	6-24
P0251-481	4-2	P0300-123	6-29	P0300-310	6-9
P0251-481	5-11	P0300-123	6-31	P0300-310	6-23
P0251-482	4-2	P0300-125	6-43	P0300-310	6-15
P0251-482	5-11	P0300-125	6-48	P0300-311	6-9
P0251-514	5-10	P0300-125	7-8	P0300-311	6-23
P0251-540	5-12	P0300-126	6-43	P0300-312	6-9
P0251-560	5-11	P0300-126	6-46	P0300-312	6-15
P0251-563	5-10	P0300-126	6-48	P0300-312	6-23
P0251-616	5-11	P0300-126	7-8	P0300-313	6-9
P0300-003	6-27	P0300-127	6-29	P0300-313	6-15
P0300-010	6-29	P0300-127	6-31	P0300-313	6-23
P0300-010	6-31	P0300-128	6-29	P0300-314	6-9
P0300-012	5-6	P0300-128	6-31	P0300-314	6-15
P0300-014	6-29	P0300-129	6-29	P0300-314	6-23
P0300-014	6-31	P0300-129	6-31	P0300-317	6-27
P0300-024	11-45	P0300-130	11-41	P0300-318	6-27
P0300-025	11-41	P0300-131	6-29	P0300-319	6-9
P0300-026	6-26	P0300-131	6-31	P0300-319	6-15
P0300-026	7-8	P0300-138	6-31	P0300-319	6-23
P0300-027	6-9	P0300-145	6-9	P0300-328	6-9
P0300-027	6-15	P0300-145	6-15	P0300-328	6-15
P0300-027	6-23	P0300-146	6-9	P0300-328	6-23
P0300-041	3-27	P0300-146	6-15	P0300-329	6-9
P0300-041	6-29	P0300-146	6-23	P0300-329	6-15
P0300-041	6-31	P0300-149	6-31	P0300-329	6-23
P0300-042	3-27	P0300-164	6-24	P0300-331	11-41
P0300-042	6-29	P0300-165	11-40	P0300-334	6-27
P0300-048	6-26	P0300-167	11-43	P0300-355	6-9
P0300-049	11-41	P0300-173	11-43	P0300-355	6-15
P0300-068	11-45	P0300-176	6-9	P0300-355	6-23
P0300-074	6-26	P0300-176	6-15	P0300-356	6-9
P0300-076	6-26	P0300-176	6-23	P0300-356	6-15
P0300-090	6-26	P0300-193	6-9	P0300-356	6-23
P0300-094	11-19	P0300-193	6-15	P0300-359	6-9
P0300-094	11-39	P0300-193	6-23	P0300-359	6-15
P0300-104	6-26	P0300-224	3-27	P0300-359	6-23

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0300-362	6-9	P0300-430	6-9	P0300-668	6-9
P0300-362	6-15	P0300-430	6-15	P0300-668	6-15
P0300-362	6-23	P0300-430	6-23	P0300-668	6-23
P0300-363	6-24	P0300-450	6-9	P0300-682	6-24
P0300-366	6-9	P0300-450	6-15	P0300-717	6-9
P0300-366	6-15	P0300-450	6-23	P0300-717	6-15
P0300-366	6-23	P0300-541	6-9	P0300-717	6-23
P0300-371	6-9	P0300-541	6-15	P0300-724	6-9
P0300-371	6-15	P0300-541	6-23	P0300-724	6-15
P0300-371	6-23	P0300-561	6-9	P0300-724	6-23
P0300-372	6-9	P0300-561	6-15	P0300-742	5-8
P0300-372	6-15	P0300-561	6-23	P0300-750	6-23
P0300-372	6-23	P0300-575	6-9	P0300-765	6-9
P0300-374	6-9	P0300-575	6-15	P0300-765	6-15
P0300-374	6-15	P0300-575	6-23	P0300-765	6-23
P0300-374	6-23	P0300-581	6-9	P0300-795	6-27
P0300-375	6-9	P0300-581	6-15	P0300-805	6-27
P0300-375	6-15	P0300-581	6-23	P0300-812	6-23
P0300-375	6-23	P0300-594	6-9	P0300-814	6-9
P0300-376	6-9	P0300-594	6-15	P0300-814	6-15
P0300-376	6-15	P0300-594	6-23	P0300-814	6-23
P0300-376	6-23	P0300-596	6-27	P0300-815	6-9
P0300-378	6-9	P0300-603	6-23	P0300-815	6-15
P0300-378	6-27	P0300-612	6-9	P0300-815	6-23
P0300-378	6-15	P0300-612	6-15	P0300-821	6-9
P0300-378	6-23	P0300-612	6-23	P0300-821	6-15
P0300-382	6-26	P0300-613	6-9	P0300-821	6-23
P0300-386	6-9	P0300-613	6-15	P0300-847	6-9
P0300-386	6-15	P0300-613	6-23	P0300-847	6-15
P0300-386	6-23	P0300-618	6-9	P0300-847	6-23
P0300-390	6-9	P0300-618	6-15	P0301-100	6-27
P0300-390	6-15	P0300-620	6-9	P0301-146	6-5
P0300-390	6-23	P0300-620	6-15	P0301-146	6-11
P0300-395	6-27	P0300-620	6-23	P0301-146	6-17
P0300-408	6-9	P0300-622	6-27	P0301-154	6-27
P0300-408	6-26	P0300-631	6-9	P0302-185	6-26
P0300-408	6-15	P0300-631	6-15	P0302-185	11-41
P0300-408	6-23	P0300-631	6-23	P0302-231	6-26
P0300-418	6-24	P0300-632	6-23	P0302-421A	6-5
P0300-418	6-27	P0300-634	6-9	P0302-421A	6-11
P0300-427	6-9	P0300-634	6-15	P0302-421A	6-17
P0300-427	6-15	P0300-634	6-23	P0302-498	6-27
P0300-427	6-23	P0300-636	6-26	P0302-508A	5-2

*Numerical Index*

PART NO.	PAGE NO.	PART NO.	PAGE NO.	PART NO.	PAGE NO.
P0302-513	6-5	P0302-728	6-11	P0304-157	11-39
P0302-513	6-11	P0302-728	6-17	P0304-334	6-27
P0302-513	6-17	P0302-731	6-5	P0304-334	8-3
P0302-514	6-5	P0302-731	6-11	P0304-338	8-7
P0302-514	6-11	P0302-731	6-17	P0304-338	11-45
P0302-514	6-17	P0302-741	6-24	P0304-344	3-15
P0302-530	6-5	P0302-742	6-24	P0304-344	3-16
P0302-530	6-11	P0302-743	6-24	P0304-344	3-17
P0302-530	6-17	P0302-744	6-24	P0304-344	8-2
P0302-536	6-5	P0302-784	4-2	P0304-344A	8-2
P0302-536	6-11	P0302-784	6-5	P0305-134A	11-40
P0302-536	6-17	P0302-784	6-11	P0305-134A	11-43
P0302-680	7-5	P0302-784	6-17	P0305-134A	11-45
P0302-680A	7-5	P0302-784	7-4	P0305-134B	11-40
P0302-680B	7-5	P0302-792	6-5	P0305-134B	11-43
P0302-693	6-5	P0302-792	6-11	P0305-134C	11-40
P0302-693	6-11	P0302-792	6-17	P0305-134C	11-42
P0302-693	6-17	P0302-796	6-5	P0305-165	11-45
P0302-700	4-2	P0302-796	6-11	P0305-214	6-27
P0302-700	6-5	P0302-796	6-17	P0305-230	11-45
P0302-700	6-11	P0303-361	6-27	P0307-217	10-3
P0302-700	6-17	P0303-361	9-3	P0307-225	10-2
P0302-700	7-2	P0303-367	6-5	P0308-110	6-27
P0302-700A	7-2	P0303-367	6-11	P0309-205	6-26
P0302-700B	7-2	P0303-367	6-17	P0309-206	6-27
P0302-700C	7-2	P0303-367	9-2	P0309-206A	6-27
P0302-700D	7-2	P0303-375	6-24	P0309-208	6-5
P0302-700E	7-2	P0303-375	9-4	P0309-208	6-11
P0302-701	6-5	P0303-375A	6-24	P0309-208	6-17
P0302-701	6-11	P0303-375A	9-4	P0309-210	6-24
P0302-701	6-17	P0303-375B	6-24	P0310-251	5-4
P0302-705	6-5	P0303-375B	9-4	P0310-266	5-8
P0302-705	6-11	P0303-375D	9-4	P0310-266A	5-8
P0302-705	6-17	P0303-375E	9-4	P0310-266B	5-8
P0302-706	6-5	P0304-131	3-10	P0310-266C	5-8
P0302-706	6-11	P0304-132	3-10	P0310-266D	5-8
P0302-706	6-17	P0304-145	8-6	P0310-283B	5-6
P0302-709	4-2	P0304-145	11-40	P0310-286A	5-4
P0302-709	6-5	P0304-145	11-43	P0310-286B	5-4
P0302-709	6-11	P0304-147	8-6	P0310-287D	5-4
P0302-709	6-17	P0304-148	8-6	P0310-409	5-11
P0302-709	7-3	P0304-157	8-4	P0310-419F	5-9
P0302-728	6-5	P0304-157	11-19	P0310-420F	5-9

PART NO.	PAGE NO.
P0310-473B.....	5-11
P0310-474F.....	5-9
P0310-500.....	5-11
P0310-503-007.....	5-11
P0310-503-008.....	5-11
P0310-571.....	5-11
P0310-573.....	5-11
P0310-954.....	5-11
P0311-018.....	5-2
P0311-018.....	5-9
P0311-018.....	5-10
P0311-020.....	5-10
P0311-034.....	5-10
P0311-112.....	5-10
P0311-121.....	5-4
P0313-007.....	5-10
P0313-049.....	5-10
P0400-002.....	11-41
P0400-003.....	3-26
P0416-003.....	3-24
P0416-003.....	3-25
P0417-002.....	11-41
P0417-003.....	6-29
P0417-003.....	6-31
P0417-003.....	6-40
P0421-012.....	6-5
P0421-012.....	6-11
P0421-012.....	6-17
P0421-012.....	6-33
P0421-022.....	6-34
PM08A-1.25-016.....	6-5
PM08A-1.25-016.....	6-11
PM08A-1.25-016.....	6-17
PM20A-2.5-160.....	3-15
PM20A-2.5-160.....	3-16
PM20A-2.5-160.....	3-17
PM20A-2.5-220.....	3-15
PM20A-2.5-220.....	3-16
PM20A-2.5-220.....	3-17
PM20B-2.5-160.....	3-15
PM20B-2.5-160.....	3-16
PM20B-2.5-160.....	3-17

## **NOTES**