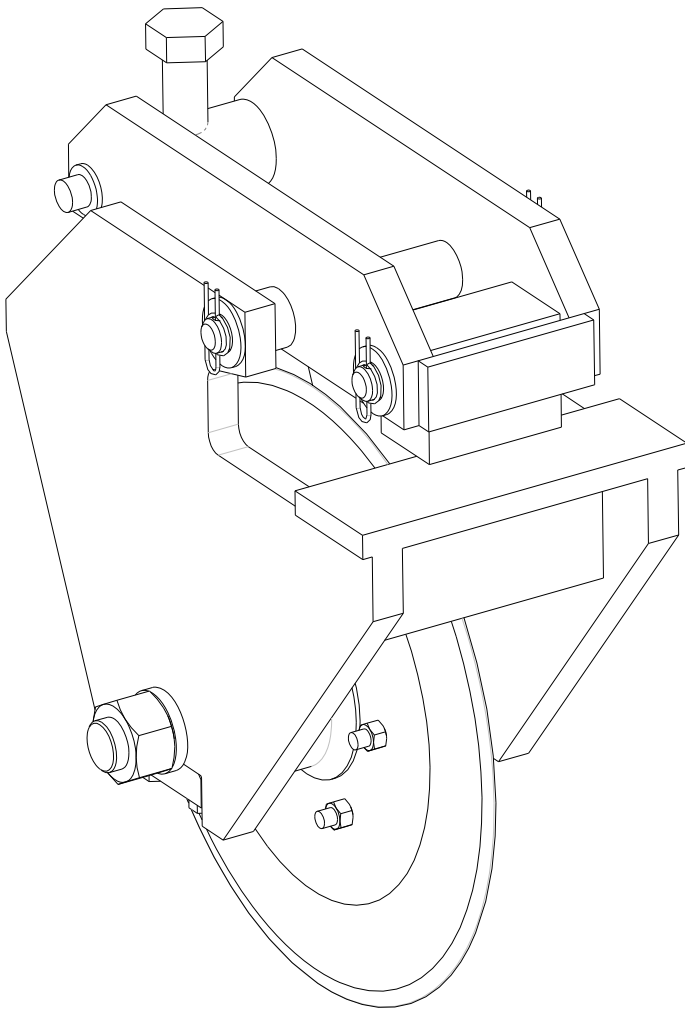




TECHNICAL MANUAL

Manual Part Number 571505



1800
Series
Roto-Cut

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DOCUMENT REVISIONS

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Sep 14, 2005		Original Issue
May 07, 2008	16	Revise parts diagram

**SECTION 1.0
INTRODUCTION**

1800 Series Roto-Cut Technical Manual:

Technical Manual is applicable to 1800 Series Roto-Cut: Models 1800C, 1800S, 1800L, 1800M

Years of Manufacture: 1994 and beyond

Serial Number: Not applicable

This manual contains important information for the safe use and maintenance of the Allied 1800 Series Roto-Cut. Read this manual thoroughly before installing, operating or servicing the 1800 Series Roto-Cut. This manual must be easily accessible to operators, or service and transport personnel. Store this manual in a convenient location.

Pay careful attention to all instructions and follow all governing regulations. Operation or service other than in accordance with these instructions may subject the 1800 Series Roto-Cut to conditions beyond its design capability. Improper operation, service or the use of non-Allied parts may result in 1800 Series Roto-Cut failure or personnel injury.

1.1 Safety Information

When using the 1800 Series Roto-Cut, safety procedures must be followed. See Section 5.0 for further safety guidelines.

Pay particular attention to WARNINGS and CAUTIONS, identified with this symbol



These instructions are important for personnel safety and full service life of the 1800 Series Roto-Cut. Follow them carefully.

1.2 Warranty Information

Warranty coverage of the Allied 1800 Series Roto-Cut depends on proper maintenance and operation as detailed in this manual. Improper maintenance or operation shall void 1800 Series Roto-Cut warranty coverage.

1.3 Allied Product Policies

Allied reserves the right to make modifications to the design or changes to the specifications without prior notice.

In this manual, Allied recommends 1800 Series Roto-Cut applications, maintenance and service consistent with industry practices. Allied takes no responsibility for the results of actions not recommended in this manual and specifically the results of:

- Operation in non-recommended applications
- Incorrect operation
- Improper maintenance

- Use of service parts not approved or supplied by Allied.

These exclusions apply to damage to the 1800 Series Roto-Cut, associated equipment, and injury to personnel.

**SECTION 2.0
OVERVIEW**

The Model 1800 Roto-Cut slashes man-hours off cutting jobs. It delivers straight, smooth cuts at a rate of 6,000 feet (1829 m) per hour. The hardened steel alloy rotary blade stays sharp to keep cutting longer, even through high density, asphaltic concrete. Allied Roto-Cut gives you an edge on the job site, whatever the

application; removal of concrete surfacing, trenching and patching jobs, edging, scoring and forming operations, utility line construction and other asphalt maintenance jobs. Roto-Cut easily attaches to your road grader, tractor/loader, dozer, road roller and other construction machinery.

**SECTION 3.0
TECHNICAL INFORMATION**

3.1 Specifications & Dimensions

Table 3.1 1800 Series Roto-Cut Operating Specifications				
	1800C	1800S	1800L	1800M
Weight Lbs (kg)	263 (120)	100 (45)	173 (79)	265 (120)
Cutting Wheel Diameter Inch (mm)	18.5 (467)			
Cutting Depth Inch (mm)	5.5 (140)			
Throat Opening Inch (mm)	2.3 (58)	N/A	N/A	N/A

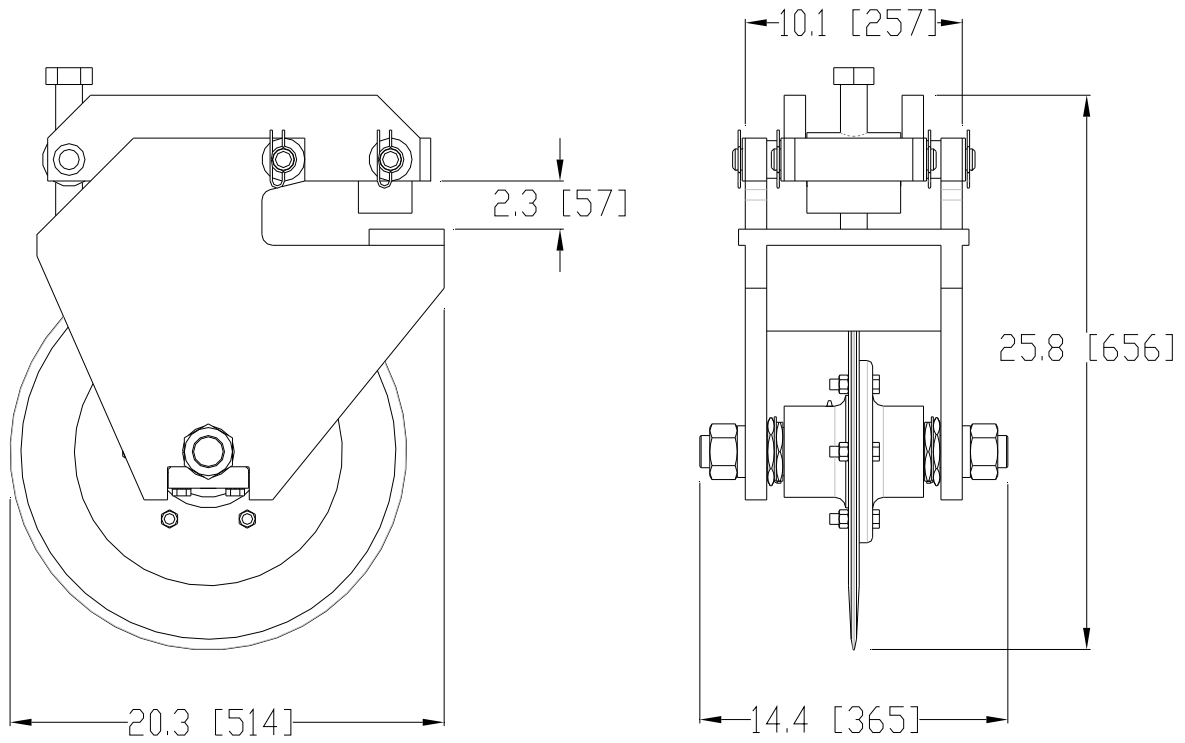


Figure 3.1: Model 1800C Dimensions

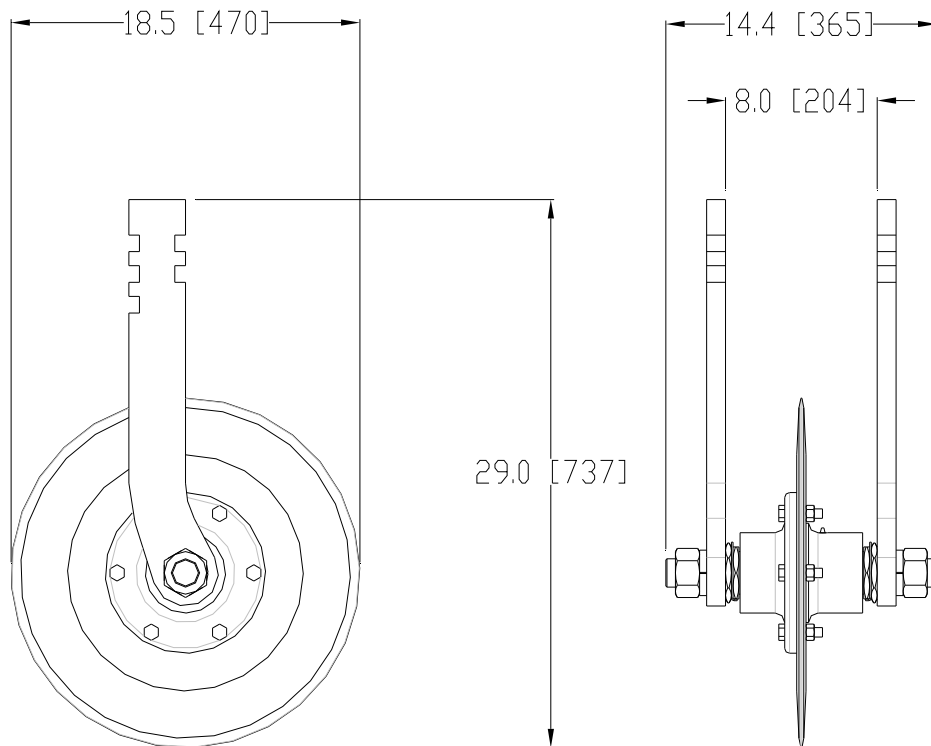


Figure 3.2: Model 1800S Dimensions

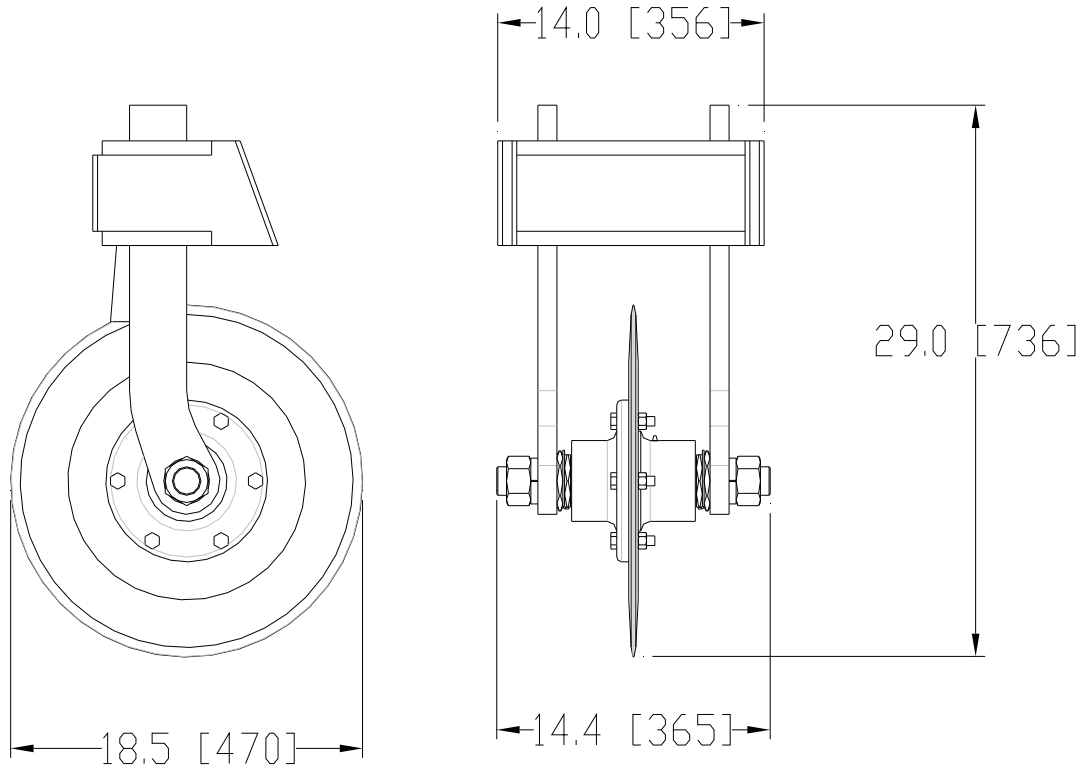


Figure 3.3 Model 1800L Dimensions

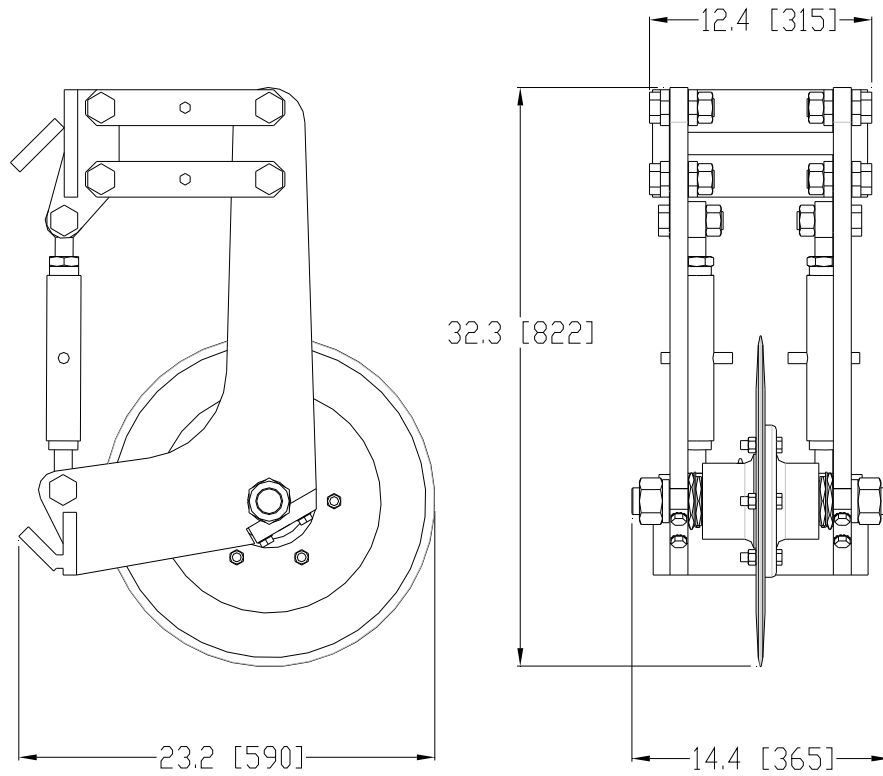


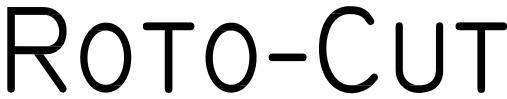



Figure 3.4 Model 1800M Dimensions

3.2 Decal Identification

	<p>The LUBRICATION decal identifies the location and frequency of required lubrication. Refer to Section 9.4 for more information.</p>
	<p>The ALLIED LOGO decal is the Allied brand identifier and is a registered trademark of Allied Construction Products, LLC.</p>
	<p>The ROTO-CUT decal is the Allied model identifier and is a registered trademark of Allied Construction Products, LLC.</p>
	<p>The MADE IN THE U.S.A. decal identifies origin of manufacture.</p>

3.3 Decal and Lubrication Diagrams

<p align="center">Table 3.2 1800 Series Roto-Cut Decal Kit, P/N 103516</p>			
ITEM	QTY	PART NO.	DESCRIPTION
1	2	676651	Decal – ALLIED Decal
2	1	102943	Decal – Roto-Cut
3	1	563753	Decal – Grease
4	2	815696	Decal – Made in USA

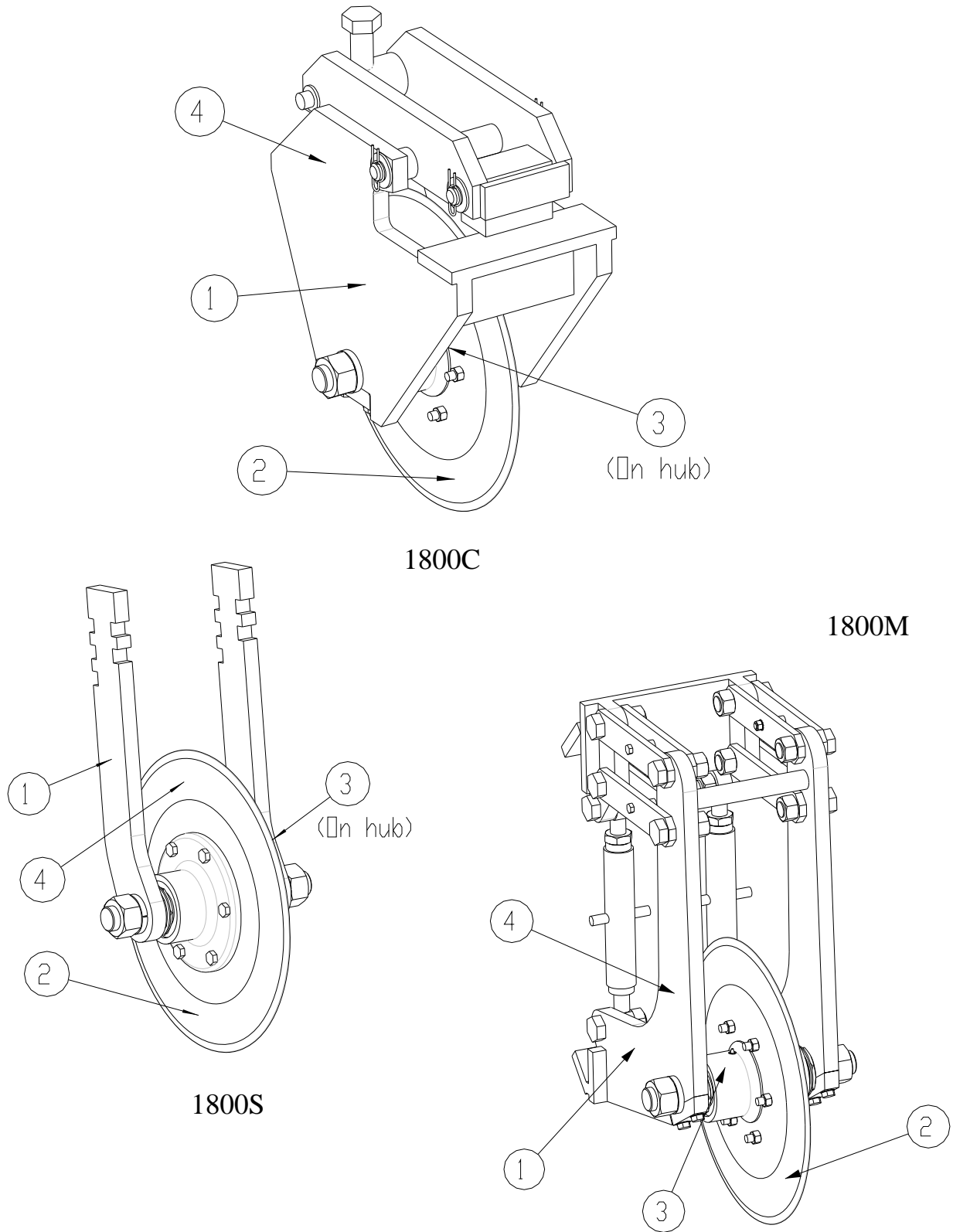
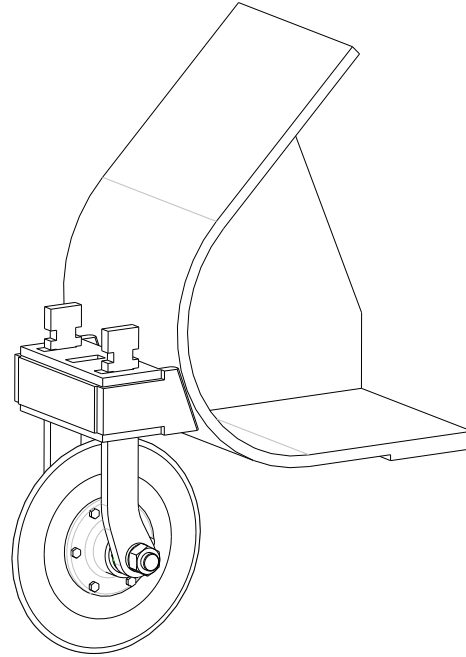
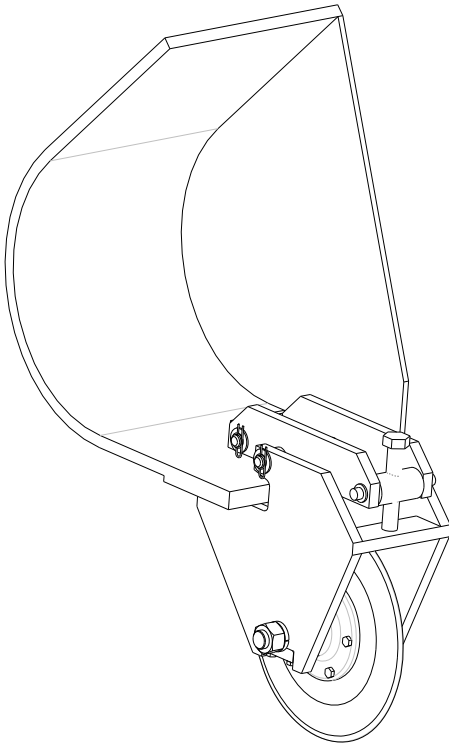


Figure 3.5: Model 1800 Decal Location Diagram

SECTION 4.0 MOUNTING INFORMATION

4.1 Model 1800C

The 1800C installs on both loader buckets and backhoe buckets. A screw clamp device attaches the cutter to the bucket blade. The throat design fits many different model backhoes and loaders.

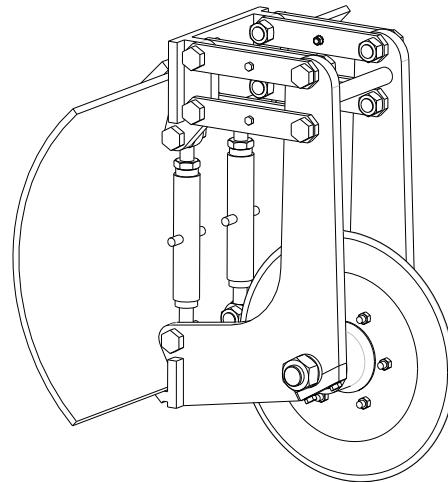


4.2 Model 1800M

The 1800M installs on the blade of all large motor graders with an adjustable frame linkage. Three turnbuckle lengths are available to fit a wide range of blade sizes.

4.2 Model 1800L & 1800S

The 1800S installs on the scarifier bar of all large motor graders with a one-piece yoke constructed frame. It also fits many front end loader buckets using an optional 1800L Mounting Block.



SECTION 5.0 ROTO-CUT OPERATION SAFETY

5.1 Owner's Responsibilities

The equipment owner shall:

Provide this technical manual to the Roto-Cut operators.

Train all operating personnel and enforce the procedures explained in this manual, especially regarding safety to personnel and equipment.

Adapt these general instructions to specific applications.

5.2 General Construction Safety

Follow standard safety precautions expected and required of those working in construction, including but not limited to locating existing underground service and utility lines, establishing pedestrian barriers and using personnel protection equipment, etc.

5.3 Federal, State, Local and OSHA Construction Guidelines and Regulations

Use the Roto-Cut in accordance with all federal, state and local regulations regarding construction practices and public safety. Identification of, and compliance to, governing regulations are the responsibility of the owner and operator.

In the United States, comply with the recommendations of the Occupational Safety and Health Administration standards of the U.S. Department of Labor. For OSHA construction guidelines contact your local federal government office or write:

U.S. Government Printing Office
Superintendent of Documents

P.O. Box 371954

Pittsburgh, Pa. 15250

Ask for Construction Industry OSHA Standards Stock #869-034-00107-6.

5.4 General Safety Summary

The safe and effective use of any heavy construction equipment depends upon proper installation, operation, maintenance and repair. Operational safety must encompass all of these factors. This Section includes minimum safety policies the 1800 Series Roto-Cut owner shall establish for all 1800 Series Roto-Cut installations. The 1800 Series Roto-Cut owner must tailor the safety program to each specific site and application. Such a program will result in increased equipment life and performance and reduced downtime. Most importantly, it will reduce the risk of equipment damage and personnel injuries.

5.4.1 CAUTIONS and WARNINGS

Throughout this manual detailed CAUTIONS and WARNINGS are included with instructions and procedures. Even experienced service technicians are to review these CAUTIONS and WARNINGS prior to performing a procedure. CAUTIONS and WARNINGS are highlighted by the symbol shown here and explained as follows:

!! WARNING !!

Instructions preceded by this symbol identify hazards to personnel. WARNING instructions must be followed to ensure

safe handling and operation. These instructions shall be followed at all times. Improper operation or servicing can result in personal injury. Read this manual thoroughly before operating or maintaining the 1800 Series Roto-Cut.

!! CAUTION !!

Instructions identified with this symbol are important to prevent damage to equipment and to maintain full service life of the 1800 Series Roto-Cut. Follow them carefully.

Operation or service not in accordance with these instructions may subject the 1800 Series Roto-Cut to conditions beyond its design capability. Read this manual thoroughly before operating or maintaining the 1800 Series Roto-Cut.

5.4.2 Personnel Precautions

Always wear safety glasses and protective clothing when operating or handling the Roto-Cut.

SECTION 6.0 INSTALLATION & REMOVAL

6.1 Installation

!! WARNING !!

Always wear gloves and eye protection when installing mounting pins and hardware.

!! CAUTION !!

Mount only on carriers with adequate lift capacity.

1. Prior to installation, carefully inspect threaded fasteners, boom pins, and mounting hardware for damage.

2. Repair or replace any damaged components.

!! WARNING !!

Keep hands and fingers clear of mounting pin holes, carrier linkage and other pinch points while equipment is being positioned.

!! CAUTION !!

During installation, instruct carrier operator to operate carrier controls only as instructed by 1800 Series Roto-Cut installer.

3. After installation and prior to use, briefly operate the Roto-Cut, then stop the Roto-Cut and re-check the following:

a. Mounting hardware for loose or missing parts.

b. Bolt torques. See Section 9.5.

6.2 Removal

!! WARNING !!

Always wear gloves and eye protection when removing mounting pins and hardware.

!! WARNING !!

Keep hands and fingers clear of mounting pin holes, carrier linkage and other pinch points while equipment is positioned.

!! CAUTION !!

During removal, instruct carrier operator to operate carrier controls only as instructed by 1800 Series Roto-cut installer.

1. Position Roto-Cut safely on the ground.
2. Be sure unit is stable prior to removing mounting hardware.
3. Remove mounting hardware.
4. Reinstall mounting hardware on 1800 Series Roto-Cut to avoid loss or damage.

**SECTION 7.0
OPERATION**

The 1800 Series Roto-Cut is designed to operate with the carrier over a wide range of applications. In order to maximize performance and to avoid equipment damage:

1. Daily before operating, carefully inspect threaded fasteners and mounting hardware for damage.
2. Repair or replace any damaged components prior to operation.
3. Asphalt temperature shall be at least 50° F (10° C)
4. Asphalt shall not be crystallized or contain a high percentage of large stone.
5. Insure that the carrier has adequate down force and tractive force.

**SECTION 8.0
TROUBLESHOOTING**

Listed below are several operating problems and their recommended corrective action.

Problem	Possible Cause & Recommended Action
Unit runs with excessive noise or vibration	Failed bearing. Inspect and replace bearings.
	Loose bolts or mounting hardware. Inspect and tighten bolts.
Wheel does not turn freely	Failed bearing. Inspect and replace.
Unit does not cut evenly	Check wheel for damage. Replace as required.

For conditions other than these, contact the Allied Technical Service Department.

SECTION 9.0 SERVICE AND MAINTENANCE

9.1 General Guidelines

Use standard mechanic's techniques and tools to disassemble and assemble the 1800 Series Roto-Cut.

!! WARNING !!

Follow all safety practices and wear appropriate protective equipment.

Use only genuine Allied replacement parts. Failure to use approved replacement parts may subject the operator to injury and the 1800 Series Roto-Cut to premature failure. The use of unapproved replacement parts voids the warranty.

Do not make any alterations to the 1800 Series Roto-Cut without written authorization from the Allied Engineering Department.

!! WARNING !!

Some 1800 Series Roto-Cut components are heavy. Use proper lifting and support equipment.

!! WARNING !!

Service the 1800 Series Roto-Cut in safe work areas. Never service the Roto-Cut on the carrier.

Contact the Allied Technical Service Department with questions regarding maintenance, operation or replacement parts.

!! WARNING !!

Never lubricate the 1800 Series Roto-Cut while it is operating.

9.2 Preventive Maintenance

- After every 100 hours of operation, the 1800 Series Roto-Cut should be cleaned and inspected.
- Check all components for excessive wear.
- Check all hardware for tightness. Refer to 9.5 for bolt torques.

The frequency of maintenance depends upon the operating environments and conditions of operation. Refer to 9.3 for additional maintenance considerations.

9.3 Conditional Maintenance

Clean and lubricate all 1800 Series Roto-Cut working surfaces under the following conditions:

- The 1800 Series Roto-Cut is operated in muddy or extremely wet soils.
- If reduced performance is observed.

9.4 Lubrication

The Allied 1800 Series Roto-Cut is simply lubricated through a standard lubrication fitting located at the end of the axle. Under normal operating conditions, lubricate the bearings every 2 hours of operation. During extreme operating conditions, such as high temperatures and dusty conditions, lubricate more frequently. Recommended grease:

Use a premium quality, multipurpose, extreme pressure, petroleum based grease

with lithium and anti-rust additives. Minimum oil viscosity shall be 14.5 cSt at 212° F (100° C).

Approved brands:

- Shell Oil -Alvania EP2
- Mobile Oil Co. - Mobilux EP2
- Texaco Inc. -RB2.

1. Position 1800 Series Roto-Cut for easy access to lubrication fitting.
2. Carefully clean lubrication fitting prior to use.
3. Inject 2 or 3 “shots” with a standard manual grease gun.

After rebuilding a 1800 Series Roto-Cut or for completely dry bearings, inject 5 “shots” with a standard manual grease gun.

9.5 Bolts

It is extremely important that threaded fasteners are properly tightened. Always follow the torque specifications in this section.

!! CAUTION !!
 Replace any damaged fasteners prior to Roto-Cut operation. Use only Allied replacement parts.

1. Clean threaded fasteners and surfaces to be bolted.
2. Apply a light coat of grease to threads and washer faces.
3. Initially tighten the bolts to 10 ft-lbs (14 N-m).

4. Tighten the fasteners according to the table below.

Diameter	Final Torque (Lubricated)
1 inch	650 ft-lbs (880 N-m)
1-1/4 inch	1,360 ft-lbs (1,840 N-m)
1-1/2 inch	2,370 ft-lbs (3,200 N-m)

5. After bolt installation, briefly operate the 1800 Series Roto-Cut, then re-check bolt torques.

9.6 Warranty Protection

Maintain written records of 1800 Series Roto-Cut maintenance, service and repair. These records will be helpful if warranty coverage is ever in question. Each record shall include:

- The date of service, maintenance or repair.
- A description of the service, maintenance or repair performed. Include part numbers if applicable.
- Copies of purchase order(s) and invoice(s) for repair parts and service.
- The name and signature of the person performing the service, maintenance or repair.

**SECTION 10.0
LIFTING & TRANSPORT**

If the 1800 Series Roto-Cut is to be transported independent of the carrier:

1. Remove all loose debris from 1800 Series Roto-Cut.
2. Follow removal instructions in Section 6.2.
3. Lift 1800 Series Roto-Cut only with appropriate lifting equipment.
4. Adequately stabilize and secure Roto-Cut for transport.

If the 1800 Series Roto-Cut is transported while installed on the carrier:

1. Remove all loose debris from 1800 Series Roto-Cut.
2. Inspect the mounting pins and hardware for damage and integrity.
3. Transport carrier in accordance with carrier manufacturer's recommendations.

**SECTION 11.0
STORAGE**

Several simple precautions are necessary for storage of the 1800 Series Roto-Cut.

1. Lubricate bearings to protect internal components.
2. Avoid wet or damp conditions to minimize rust.

**SECTION 12.0
PARTS INFORMATION**

NOTE: The following illustrations and parts lists are typical models of the 1800 Series Roto-Cut. Specific assemblies and mounting configurations may vary.

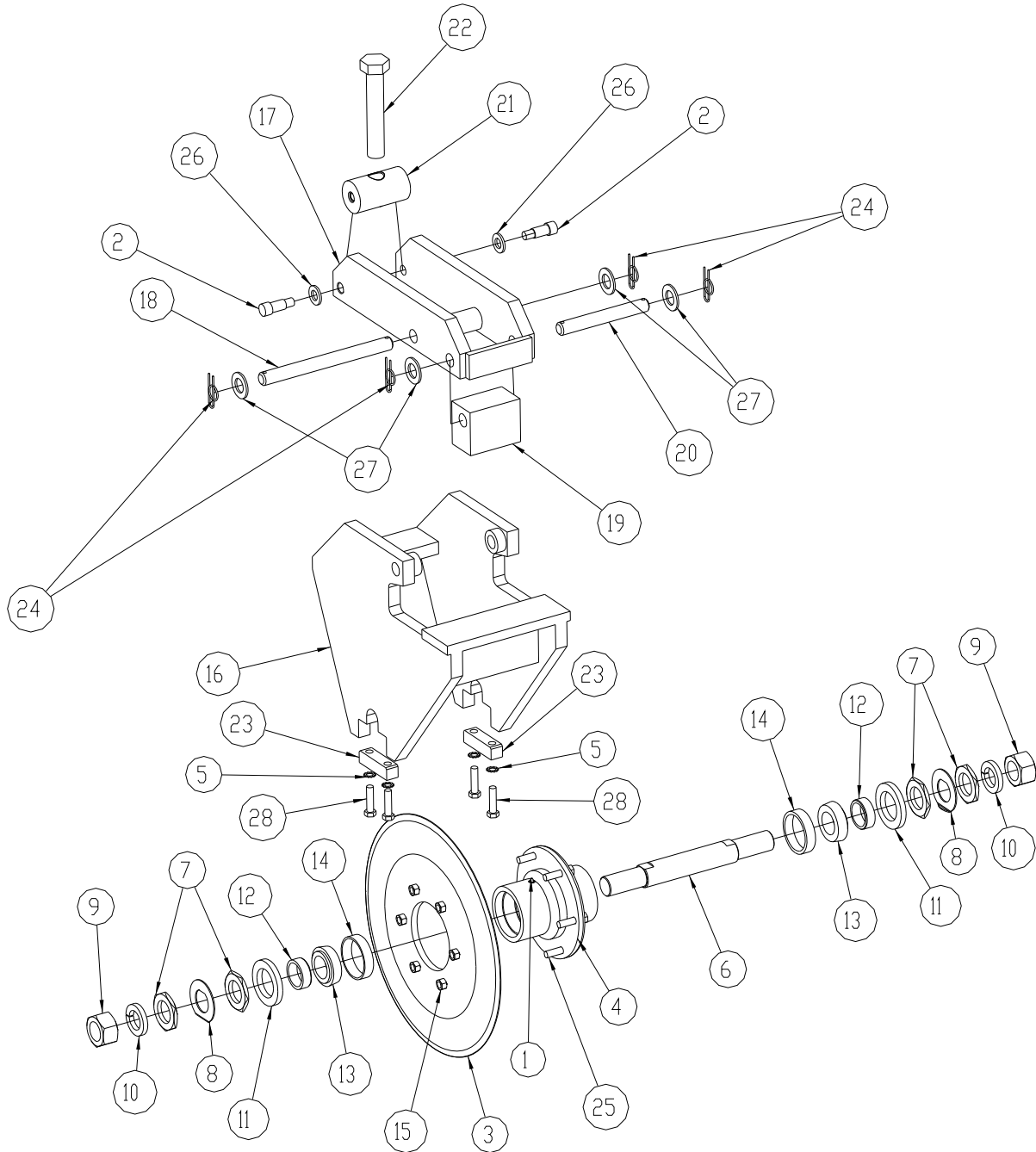


Figure 12.1: Model 1800C Parts Diagram

Table 12.1 Model 1800C Parts List Part No. 558200			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	551270	Grease Fitting (not shown)
2	2	551288	Shoulder Screw
3	1	551810	Cutting Wheel
4	1	551815	Hub
5	4	551823	Lock Washer
6	1	551825	Axle
7	4	551830	Jam Nut
8	2	551835	Anti-rotation Washer
9	2	551840	Hex Nut
10	2	551845	Lock Washer
11	2	551850	Grease Seal
12	2	551860	Hub Spacer
13	2	551880	Bearing Cone
14	2	551885	Bearing Cup
15	6	551886	Hex Nut
16	1	558206	Mounting Bracket
17	1	558207	Clamp Arm
18	1	558208	Pin, Clamp Arm
19	1	558209	Clamp
20	1	558210	Pin, Clamp
21	1	558211	Clamp Nut
22	1	558212	Hex Head Cap Screw
23	2	558213	Support Cap
24	4	558215	Pin Retainer
25	6	654430	Hex Head Cap Screw
26	2	719021	Flat Washer
27	4	719521	Flat Washer
28	4	883654	Hex Head cap Screw

Table 12.2 Model 1800S Parts List Part No. 558100			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	551270	Grease Fitting (not shown)
2	1	551810	Cutting Wheel
3	2	551811	Scarifier Shank
4	1	551815	Hub
5	1	551825	Axle
6	4	551830	Jam Nut
7	2	551835	Anti-rotation Washer
8	2	551840	Hex Nut
9	2	551845	Lock Washer
10	2	551850	Grease Seal
11	2	551860	Hub Spacer
12	2	551880	Bearing Cone
13	2	551885	Bearing Cup
14	6	551886	Hex Nut
15	6	654430	Hex Head Cap Screw

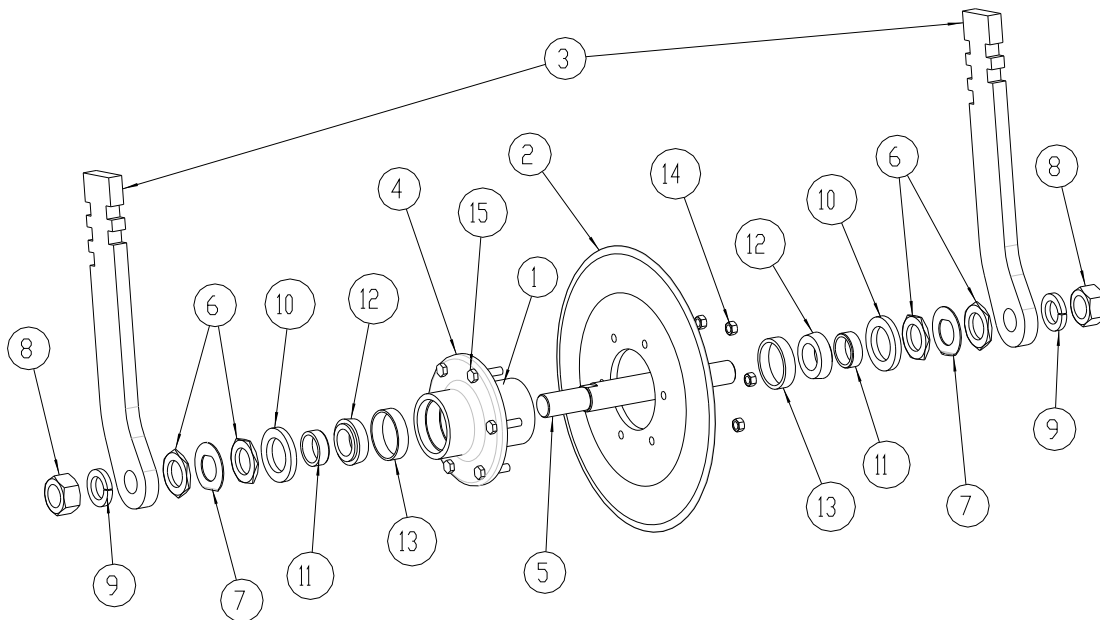


Figure 12.2: Model 1800S Parts Diagram

Table 12.3 Model 1800L Parts List Part No. 558600			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	558100	Roto-Cut 1800S (see separate parts diagram)
2	1	558400	Loader Block Assembly (Includes Items 3 and 4)
3	1	558401	Loader Block
4	2	551855	Wedge

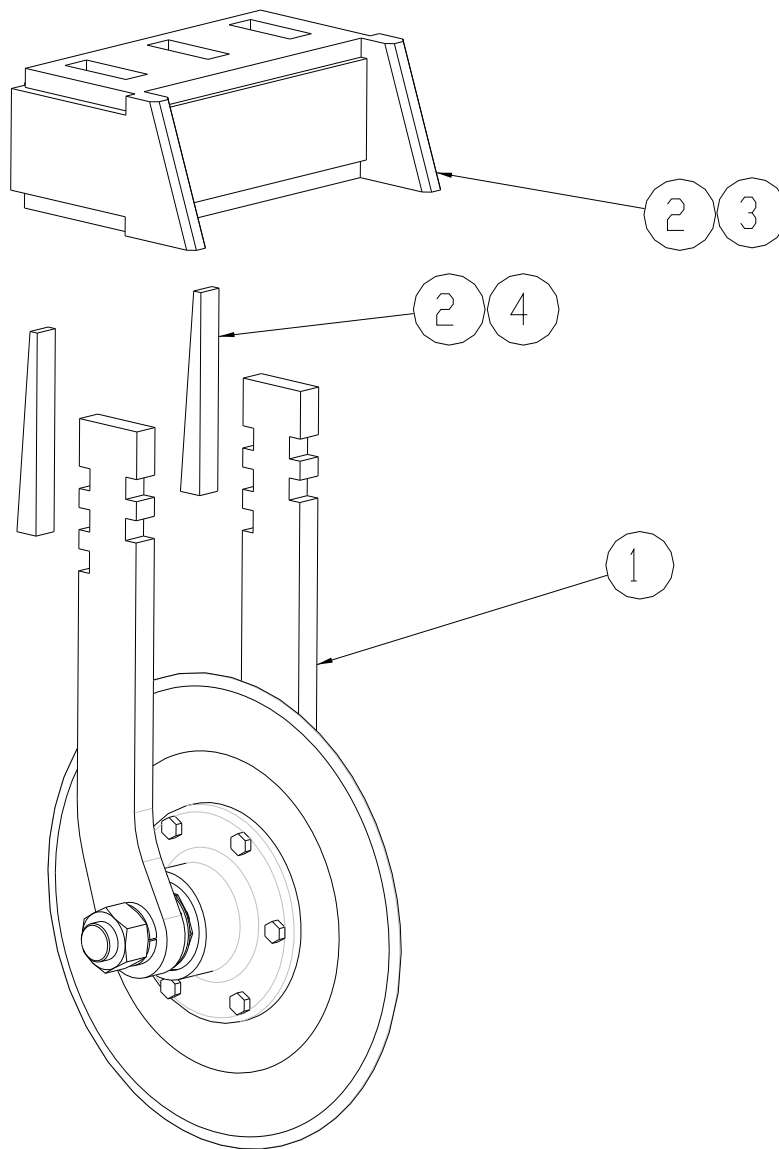


Figure 12.3: Model 1800L Parts Diagram

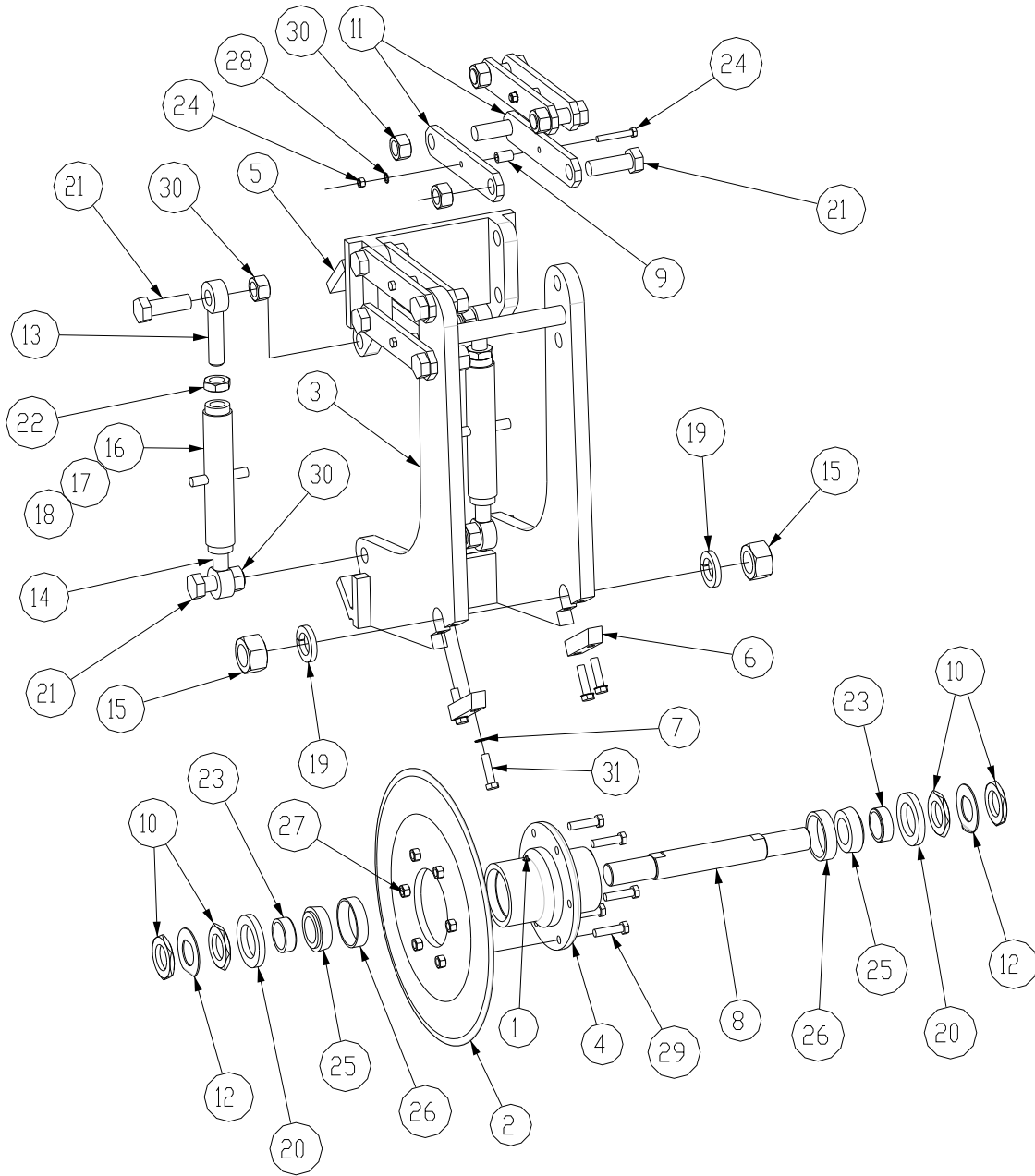


Figure 12.4: Model 1800M Parts Diagram

Table 12.4
Model 1800M Parts List
Part No. 558000

ITEM	QTY	PART NO.	DESCRIPTION
1	1	551270	Grease Fitting
2	1	551810	Cutting Wheel
3	1	551812	Main Frame
4	1	551815	Hub
5	1	551817	Upper Support Bracket
6	2	551822	Shaft Support Cap
7	4	551823	Lock Washer
8	1	551825	Axle
9	4	551827	Spacer, Frame
10	4	551830	Jam Nut
11	8	551832	Hinge Link
12	2	551835	Anti-rotation Washer
13	2	551837	Eyebolt RH
14	2	551838	Eyebolt LH
15	2	551840	Hex Nut
16	2	551841	Turnbuckle 4"
17	2	551842	Turnbuckle 7"
18	2	551843	Turnbuckle 10"
19	2	551845	Lock Washer
20	2	551850	Grease Seal
21	12	551852	Hex Head Cap Screw
22	2	551857	Jam Nut
23	2	551860	Hub Spacer
24	4	551862	Hex Head Cap Screw w/ Hex Nut
25	2	551880	Bearing Cone
26	2	551885	Bearing Cup
27	6	551886	Hex Nut
28	4	566038	Lock Washer
29	6	654430	Hex Head Cap Screw
30	12	658837	Torque Nut
31	4	883654	Hex Head cap Screw



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