

# 3 PTO STUMP GRINDER, ROTOR SIZE: 24"



### **⚠ WARNING**



- Please read and understand the product manual completely before assembly
- Check against the parts list to make sure all parts are received
- Wear proper safety goggles or other protective gears while in assembly
- Do not return the product to dealer. They are not equipped to handle your requests.

Missing parts or have questions on assembly?

Please call: 1-877-761-2819 or email: [cs@tmgindustrial.com](mailto:cs@tmgindustrial.com)

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## IMPORTANT SAFETY INFORMATION

## **Your Safety**

YOU are responsible for the SAFE operation and maintenance of your TMG 3-PTO Stump Grinder. YOU must ensure that you and anyone else who is going to use, maintain or work around the 3-PTO Stump Grinder be familiar with the using and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using the 3-PTO Stump Grinder.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE using this equipment is familiar with the recommended using and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

When working with the winch you need to observe the safety instructions!

In order to prevent accidents carefully read and observe the following instructions:



### **General**

Prevent serious injury or death.

Read and understand this manual before operating stump grinder.

Always stop engine and remove key before leaving operator's seat.

Never allow anyone near the stump grinder during operation.

Prevent serious injury or death from moving parts.

Moving parts can crush and dismember. Do not operate without guards and shields in place.

Disconnect and lockout power source before adjusting or performing maintenance.

Use stump grinder only for the designed applications.

Any other use may result in personal injury, damage to equipment and may void the warranty.

Verify stump grinder is locked to quick attach hitch before operation or transport.

### **Avoid Rollover**

The equipment may rollover, resulting in death or serious injury. To help prevent rollover:

Travel at a slow speed.

Avoid sharp turns & sudden movement on slopes.

Carry stump grinder close to the ground.

Avoid holes, ditches and other obstructions which may cause equipment to rollover.

Use caution when operating on slopes and do not operate on excessively steep slopes.

Do not exceed load capacity of equipment.

### Cardan Shaft

1. Only use such cardan shafts which are recommended by the manufacturer.
2. The cardan shaft protection pipes, protective funnels and attachment protection must be mounted on the machine and be in perfect condition.
3. Observe the recommended pipe protection in transport and working position.
4. The cardan shaft can only be connected or disconnected, when the cardan attachment is turned off, the engine has stopped and the ignition key has been removed.
5. The cardan shaft must always be properly mounted and protected.
6. Secure the cardan shaft against rotating with a chain.
7. Before switching on the cardan shaft on the tractor make sure that the chosen speed and direction of rotation match the requirements from the chapter technical data.
8. Before switching on the cardan shaft make sure no person is standing in the danger area of the machine. This rule must also be observed during machine operation.
9. Never switch on the cardan shaft when the engine is turned off.
10. Put the disconnected cardan shaft on the intended holder.

## OPERATION



### WARNING

**Must add oil before first use.**

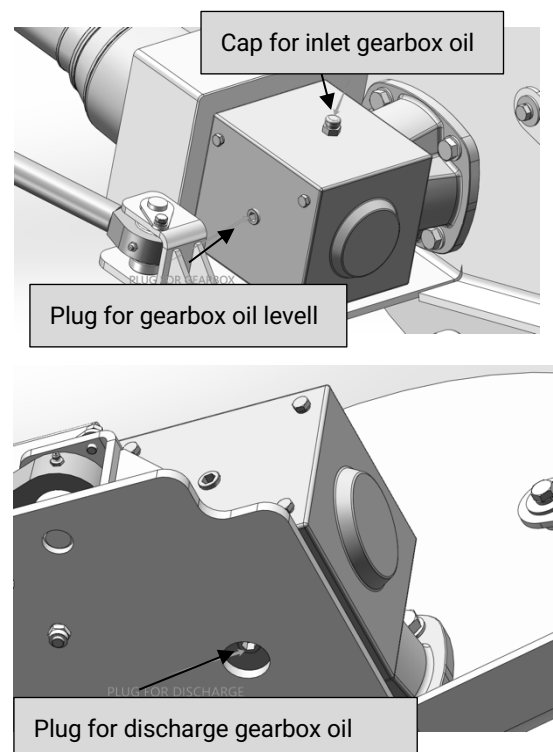
THE GEARBOX AND TRANSMISSION ARE SHIPPED WITHOUT OIL.

**ADD OIL BEFORE FIRST USE!**

Gear Oil SAE90 700ml

Check oil level in gearbox by removing the plug located on the right-hand side. Oil should be level with bottom of plug hole. Add oil if necessary, by removing top fill plug and side plug. Add oil until it flows from side plug hole.

Do not overfill!



**IMPORTANT:** Implements should be level when checking oil in gearbox!

### **Required Equipment Of The Tractor**

PTO shaft with chosen gear ratio, max. 540 RPM.

Three-point hitch of I category.

The model TMG-TSG24 requires a tractor of at least 20 hp or up to a maximum of 60 hp.

Maximum number of revolutions and direction of tractor PTO shaft rotation is 540 rpm/min.

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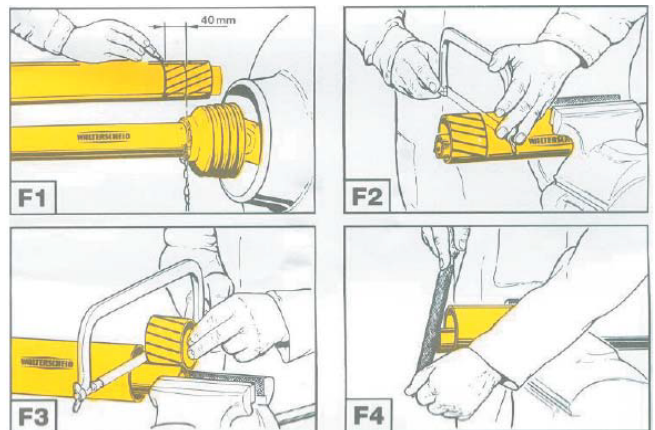
Maximum number of revolutions and direction of tractor PTO shaft rotation is 540 rpm/min.

### **PTO Shaft Adjustment**

Length of PTO shaft needs to be adjusted for different tractors (figure F1-F4).

Ascertain the accurate length in the following manner:

1. Shut down the tractor.
2. Connect the machine to the tractor.
3. Extract the PTO shaft apart and connect the individual shaft halves to the tractor and machine and compare them crosswise and mark them (figure F1).



4. Shorten external and internal plastic protection pipes (figure F2).
5. Shorten external and internal slide profiles with the same distance as plastic protection pipes (figure F3).
6. Crop the pipe end, remove fillings and grease the slide positions well (figure F4).

### **Tractor Mounting**

When connecting the winch, do not stand in the danger zone!

The forestry winch can be attached to every tractor with a three-point hitch with a category I coupling. Appropriate construction also enables easy connection to the tractor with automatic connection rods. Connect the prescribed PTO shaft and secure cardan protection with a hang chain.

Be careful that the cardan clicks into place on both connection points!

Once the winch is attached to the tractor, strengthen the stabilizers on the lower connection rods and level the winch with a hitch nut into position, so that the winch is tilted backwards for approximately 20 degrees.

### Grinder

The cutting height should be 0.5"-1.25". we think the customer cutting more than 1.25", that makes grinder working slowly.

The grinder should work from right to left or left to right. grinder parallel not vertical.

When the attachment has completed a pass, move it rearward about 0.5"-1.25" and engage the control to cut back across in the opposite direction. Never directly up to down.

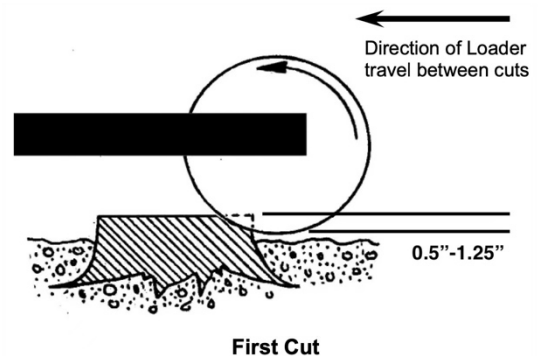
Operate the cutting wheel at 540 rpm (speed while under no load).

The cutting wheel feed is controlled by the hydraulic cylinder and the pressure control valve.

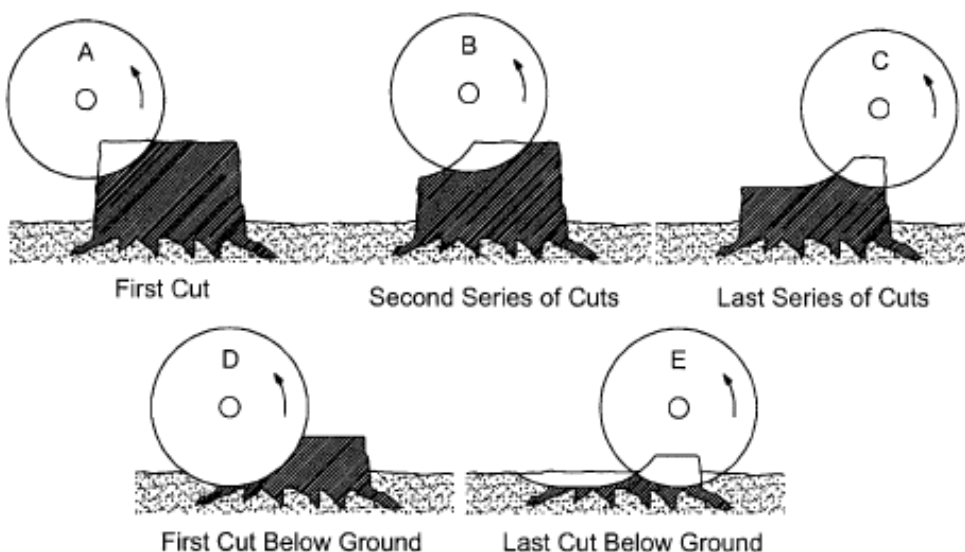
The rate of cut will depend on the type of tree, condition of the wood, and the condition of the carbide cutting teeth.

Excessive feed rates will either stall the engine or slip the clutch.

Too light a feed will produce sawdust.



### Above Ground (Large Stump)



### Below Ground

# MAINTENANCE

## Before Every Use

Check hydraulic hoses and fittings daily for leaks. Replace hose if worn or damaged. Investigate the location of any oil leaks and repair. Lubricate all joints with lithium grease.

Inspect the unit for any buildup of contamination (dirt, stones, etc.).

Check cutting teeth every 2 hours of use. Keep cutting teeth in good condition. Unit will cut faster and remaining teeth will last longer if broken teeth are replaced.

Check that all fasteners (nuts, bolts, pins, keepers) are in their right place and are tight. Inspect and replace any worn, torn, or missing safety decals.

## Every Week

Check the condition of the teeth base and/or teeth. Order parts if the cutting edge or points are becoming worn and replace as soon as possible.

## After Every Season

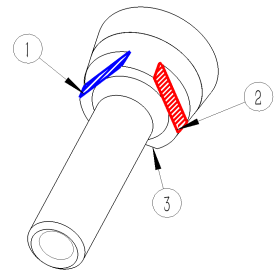
Inspect the implement for any loose or worn parts that may need to be replaced prior to the next season.

Visually inspect the teeth. Replace, if necessary.

Clean, sand & repaint any area that looks worn or scratched to prevent further rusting. Use an equipment-paint found at your local hardware store or building center.

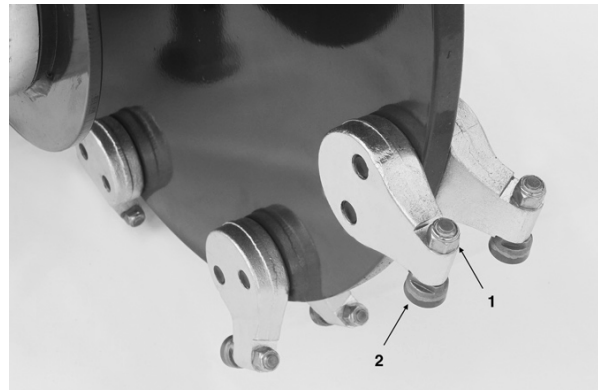
Replace any warning decals that have been lost or damaged.

Store your implement in a shed or cover with a water-proof tarp to protect it from the weather. Store in an area not frequented by children.



## Cutting teeth Removal & Replacement

1. Support stump grinder to prevent falling.
2. Stop skid steer engine and remove key.
3. Inspect cutting teeth for damage. Rotated the tooth 3 times before replace it.
4. Replace individual teeth as needed.
5. Remove lock nut (1) and cutting tooth (2)
6. Rotated the tooth or install replacement tooth and lock nut. Tighten locknut (1) to 95 lb./ft. (129 Nm) of torque. Do not allow untrained or unqualified people to operate this equipment.



## Lubrication

### Gearbox

Type of Lubrication: SAE 90W Gear Lube

Check oil level in gearbox by removing the plug located on the right-hand side. Oil should be level with bottom of plug hole.

Add oil if necessary, by removing top fill plug and side plug. Add oil until it flows from side plug hole.

Do not overfill!

IMPORTANT: Implements should be level when checking oil in gearbox!

WARNING!



To avoid an accident that could result in Death or Serious Injury, never find yourself in a position where any body part is located under an unsupported blade or frame when servicing this attachment.

**WARNING!**

Hazardous dust can be generated if painted surfaces are heated or welded and could result in death or Serious Injury. Remove paint before welding and always make repairs in a well-ventilated area and wear an approved respirator.

**CAUTION!**

Cutting edges can be very heavy and could cause Minor or Serious Injury if mishandled. Always wear protective gloves and footwear.

1. Weld-on cutting edge replacement is not a task for most machinery operators and should be referred to a welding shop that possesses the proper equipment, knowledge, and experience.
2. Replacement cutting edges are available from your dealer.

**Hydraulic System**

**WARNING!**

A small stream of oil from a pinhole leak could penetrate your skin if contacted. To avoid an accident that could result in Death or Serious Injury, never use your hand or other body parts in an attempt to locate a hydraulic leak.

**NOTICE!**

Always release the hydraulic system pressure from the hydraulic circuits prior to removing the attachment or any hydraulic system service work.

**Bolt Torque**

**CHECKING BOLT TORQUE**

The tables shown below give correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified.

Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

\* Torque value for bolts and cap screws are identified by their head markings

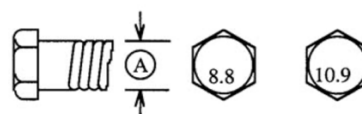
**ENGLISH TORQUE SPECIFICATIONS**

Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



**METRIC TORQUE SPECIFICATIONS**

Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710





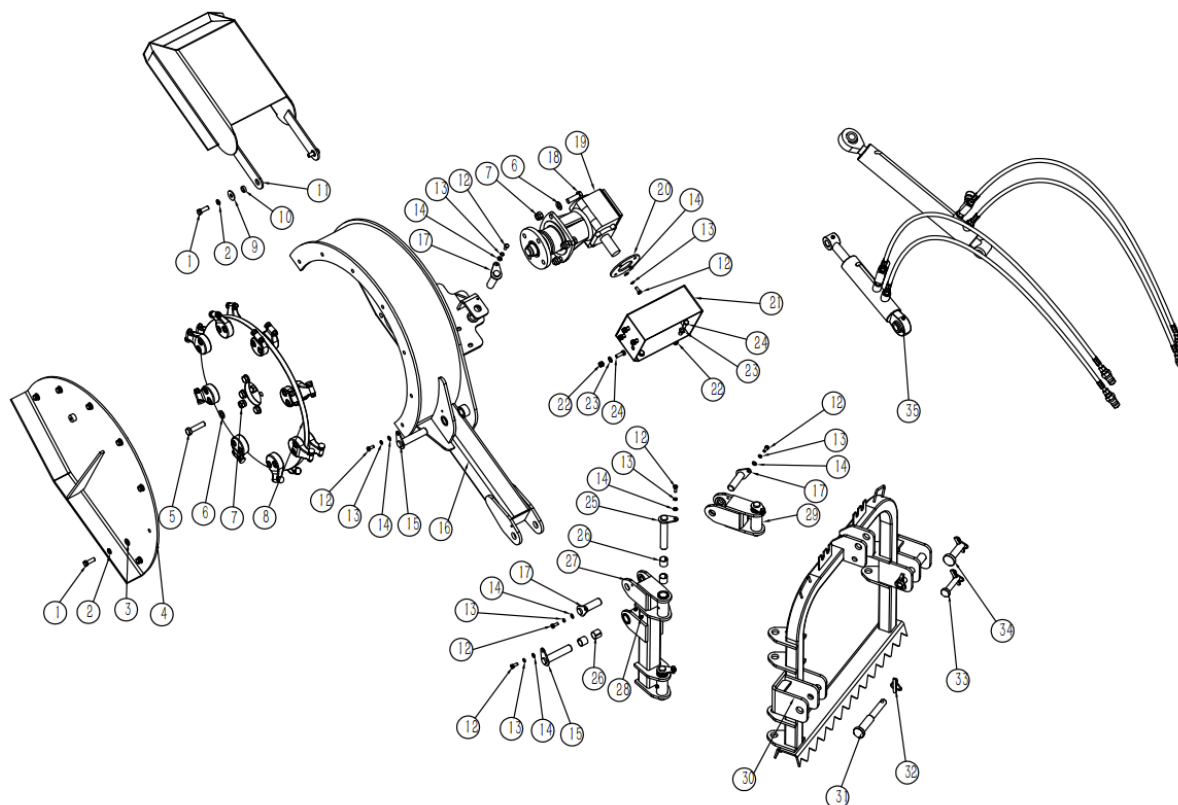
# SPECIFICATION

## Specifications & Capacities

MODEL	TMG-TSG24
Maximum cutting depth – below ground	12"
Maximum cutting height – above ground	18"
Cutting arc (degrees)	40°
Type of PTO included	20-60HP
Required hydraulic flow	5-13GPM
Cutting wheel speed	950 U/min
Weight	620lbs
Number of cutting teeth	16
Category	CAT 1 and 2

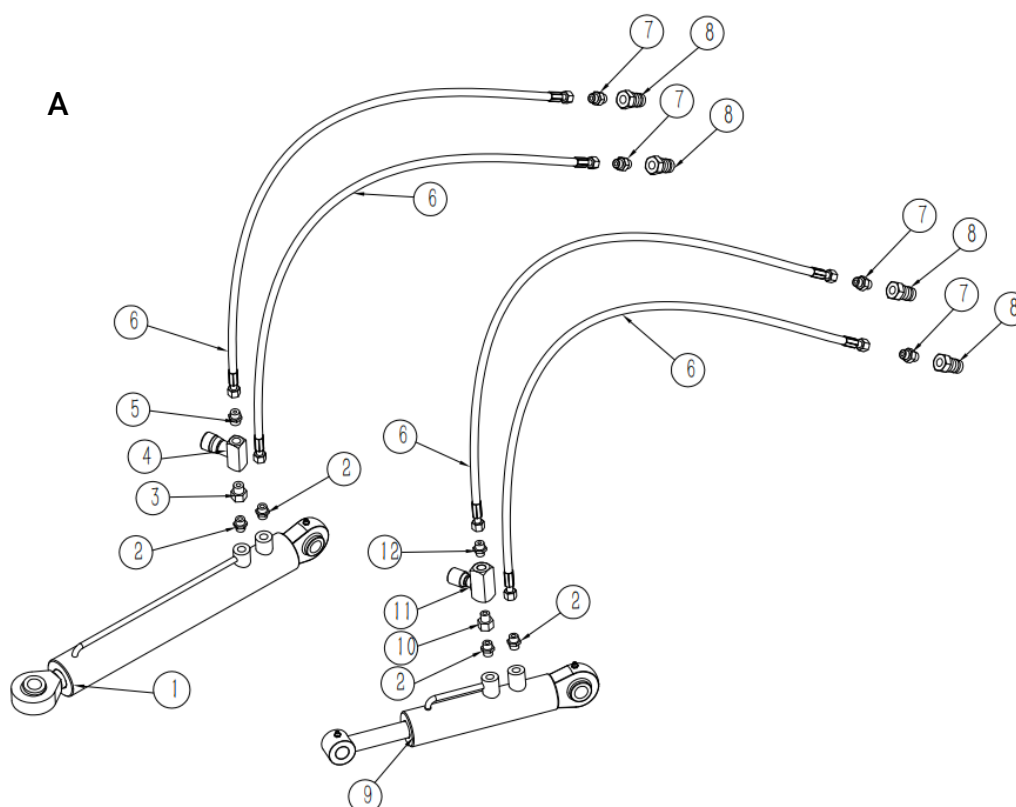
# PARTS LIST

## 3-PTO Stump Grinder Assembly



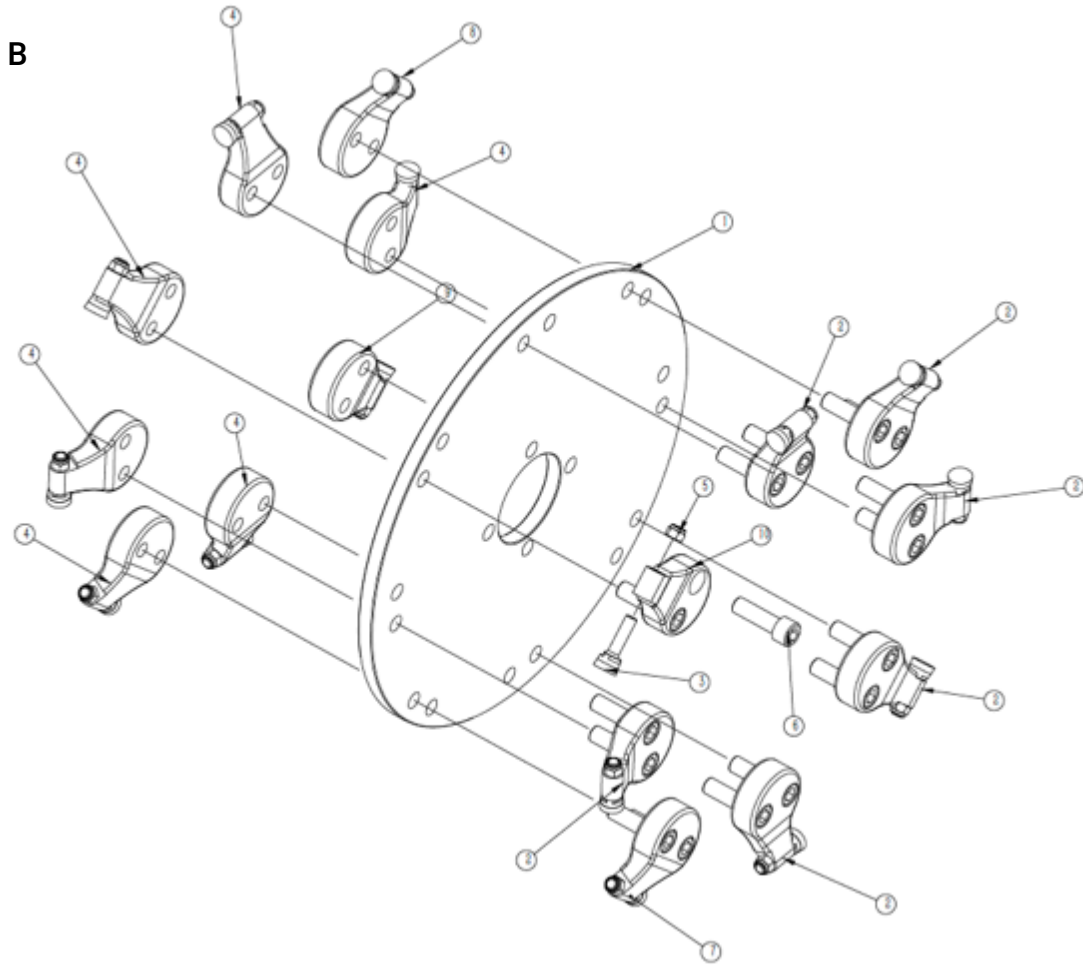
Part No.	Ref.	Part Description	QTY
1	GB/T 5783	Bolt M12X35	9
2	GB/T93.1	Spring Washer 12	9
3	GB/T 97.1	Washer 12	7
4	TSG61.7	Outer Plate Weldment	1
5	GB/T 5783	Bolt M16*65	4
6	GB/T 97.1	Washer 16	8
7	GB/T 889.1	Lock Nut M16	8
8	SSG61.4	Cutting Wheel Assembly	1
9	GB/T 96-1985	Big Washer 12	2
10	TSG61.15	Guard Spacer	2
11	TSG61.6	Guard Weldment	1
12	GB/T 5783	Bolt M8X20	12
13	GB/T93.1	Spring Washer 8	12
14	GB/T 97.1	Washer 8	12
15	TSG61.9	Cylinder Pin 1	2
16	TSG61.1	Frame Weldment	1
17	TSG61.10	Cylinder Pin 2	3
18	GB/T 5783	Bolt M16X50	4
19	TSG61.8	Gearbox Assembly	1
20	TSG61.13	Gearbox Protection Plate	1
21	TSG61.5	Gearbox Protection Cover	1
22	GB/T 889.1	Lock Nut M10	8
23	GB/T 97.1	Washer 10	8
24	GB/T 5783	Bolt M10X30	8
25	TSG61.11	Rotary Linkage Weldment	3
26	TSG61.30	Bearing 28X25X25	8
27	TSG61.2	Rotary Weldment	1
28	JB / T 7940.1-1995	Grease Nipple M8	4
29	TSG61.3	Rotary Weldment 2	1
30	TSG61.4A	Supporting Weldment	1
31	TLL5.2	Lower Pin	2
32	TSG61.31	Lock Pin 10*45	4
33	TLL5.5	Upper Pin 01	1
34	TLL5.6	Upper Pin 02	1
35	TSG61.12	Hydraulic Components	1

## Hydraulic components Assembly



Part No.	Ref.	Part Description	QTY
A1	TSG61.12-2	Swing Cylinder	1
A2	GE10LM16x1.5EDOMD	End Straight Joint M16x1.5-M16x1.5	4
A3	EGE10LR38ED	End Straight Joint M16x1.5-G3/8	1
A4	STB 3/8	Control Valve	1
A5	GE10LR38EDOMD	End Straight Jointm16x1.5-G3/8	1
A6	TSG61.12-3	Oil Hose	4
A7	GE10LR1/2ED	End Straight Joint M16*1.5-G1/2"	4
A8	GB/T 5862	Quick Change Connector G1/2	4
A9	TSG61.12-1	Lifting Cylinder	1
A10	EGE10LRED	End Straight Joint M16x1.5-G1/4	1
A11	STU 1/4	One-Way Flow Control Valve	1
A12	GE10LR14ED	End Straight Joint M16x1.5-G1/4	1

## Cutting Wheel Assembly Assembly



Part No.	Ref.	Part Description	QTY
B1	SSG61.4-7	Cutting wheel	1
B2	ESG47.4-2	Teeth base900-2	6
B3	ESG47.4-8	Teeth 900	16
B4	ESG47.4-3	Teeth base900-3	6
B5	ASME B18.16.6	Nylon Insert Lock Nuts	16
B6	ASME B18.3	HEX SOCKET HEAD BOLT	16
B7	ESG47.4-4	Teeth base900-4	1
B8	ESG47.4-5	Teeth base900-5	1
B9	ESG47.4-6	Teeth base900-6	1
B10	ESG47.4-1	Teeth base900-1	1