

The Bush-Whacker 6010 & 7210

2010
1000rpm

Operator's Manual and Partsbook

5 and 6 Foot Rotary Cutters

Bush-Whacker mowers from Hall Manufacturing have been popular for decades for highway right-of-way use. Lately, they have been increasingly in demand for agricultural, commercial and other applications where a heavy-duty, rugged mower is needed. The Bush-Whacker is available in a range of sizes to fit your needs — from the five-foot model all the way to the big 20-footer.

Hall Manufacturing has been in business for more than 75 years. During this time they've sold more than 10,000 units and are used in 27 states in the U.S.



- 3 point hitch or pull type
- 3/16" Deck
- Structural frame of mower is 2" by 3" tubing with 1/4" wall thickness
- 1/4" I-Beam sides instead of 1/4" flat steel
- Gearbox is mounted to a 1/2" plate that is welded to the 3/16" deck
- 6 bolt mounting on gearbox — heads are tack-welded to bottom of deck so one man can tighten the nuts or change the gearbox



Hall Manufacturing

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Welcome

Thank you for selecting the Bush-Whacker 6010 or 7210 Rotary Mower. Your machine has been carefully inspected by both the factory and the dealership prior to being received by you to ensure that it is ready for operation.

This manual explains the proper operation of your machine. It is very important that you read and understand these instructions before operating or maintaining the machine. Failure to do so could result in personal injury or even death to you or passersby. Consult your Bush-Whacker dealership if you do not understand the instructions in this manual or need additional information.

Hall Manufacturing, Inc. reserves the right to make changes at any time without notice or obligation. Additional copies of the manuals are available from your local Bush-Whacker dealer.

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General Safety Instructions and Warnings



Attention

Important Safety Information

Read and Study this safety information BEFORE operating this equipment.



The use of common sense and reasonable safety precautions are a must in the operation of this equipment. Think Safety – Accident prevention is dependant upon the personnel involved in the operation, transport, and maintenance of the equipment. To minimize the chance of accidents, serious injury, or even death; Safety Precautions Must Be Followed! **FAILURE TO FOLLOW SAFETY INSTRUCTIONS AND FAILURE TO USE COMMON SENSE COULD RESULT IN SERIOUS INJURY AND/OR DEATH TO THE OPERATOR, BYSTANDERS, PASSERSBY, OR ANIMALS IN THE AREA.**



Safety Decals Information

- Always keep the area around safety decals clean and free of debris so that they can be easily seen and read.
- When installing new components to the equipment, it is necessary to obtain new safety decals from your Bush-Whacker dealer and adhere them promptly and properly.
- Always keep safety decals clean, using soap and water. Do not use abrasive cleaners because they could cause damage to the decals.
- If the safety decals get damaged, or are missing, contact your local Bush-Whacker dealer to order replacements for them.
- In order to replace the safety decals, the equipment must be clean and dry. Then remove the adhesive backing and place it on the equipment.

Decals Part Numbers and Placement

4415



4168



4169 for 540 RPM
4170 for 1000 RPM



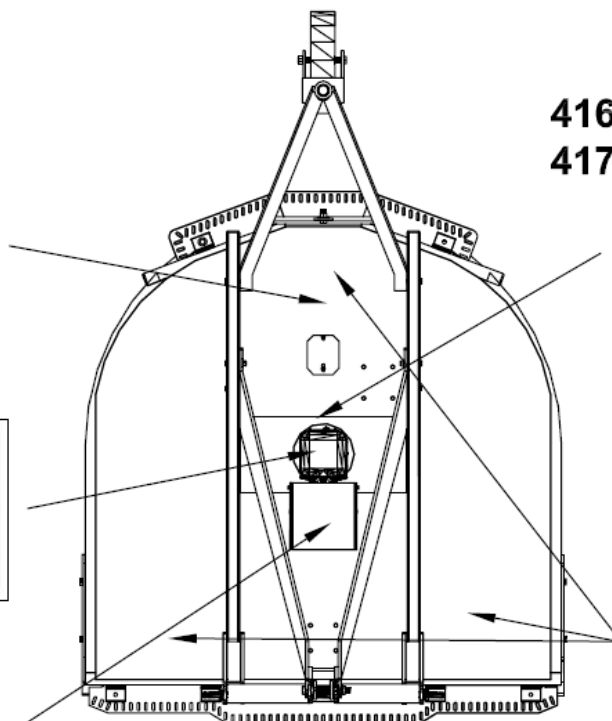
4416



2572



2569



Safety Warnings

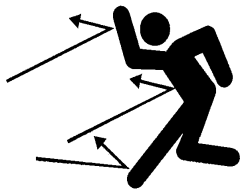
Operations

This mower can be ordered from the factory as either a 540 or 1000 RPM machine. Always make sure that the tractor and mower have the same PTO speed. Check the tractor manufacturer's instruction manual for the proper engine RPM to achieve the proper PTO speed. **DO NOT** operate the mower at any higher RPM, doing so will cause damage to the mower as well as create an extreme hazard to the operator, passersby, or animals. Also note that doing so will void the warranty of the machine.

NEVER operate a rotary mower with a person or animal in the area. The blades may throw objects for great distances and can strike a person, passersby, or animal causing serious injury or death.



Stop operation of the machine for a passerby or if someone appears to be approaching the area. Objects can be thrown for hundreds of yards at great speed.



ALWAYS inspect the deflector shields and/or chain guards daily to ensure that they are in proper working order and that no chains are missing. If the deflector shields or chain guards are not operating correctly, chain links are missing, or the complete deflector shields or chain guards assembly is missing, do not operate the mower. **NEVER OPERATE THE MOWER WITHOUT CHAIN GUARDS OR DEFLECTORS IN PROPER WORKING ORDER.**

Rocks, gravel, wire, rope, bricks, or similar objects are potential hazards for rotary mowers operation. These items can cause damage to the machine; but more importantly, they can be ejected from underneath the mower at very high speeds, resulting in property damage, injury or even death. Always inspect the mowing area prior to the operation of any rotary mower. If any of these objects or similar objects are found, remove them immediately before operation.

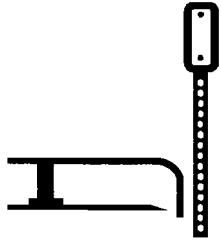


NEVER operate the mower without the driveline safety shields in place and in proper working order. Operation without safety shields can lead to injury or death.

EXTREMELY IMPORTANT—Make sure all gearbox shields are in place and tightened before operating the mower. If one works loose, stop mowing and tighten immediately. **NEVER OPERATE THE MOWER WITHOUT ALL GEARBOX SHIELDS PROPERLY INSTALLED. OPERATION WITHOUT SAFETY SHIELDS MAY CAUSE SERIOUS INJURY OR DEATH.**

Safety Warnings

Operations



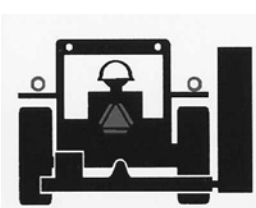
Avoid hitting hard solid objects such as large rocks, concrete culverts, guard rails, etc. This could cause serious damage to the machine. Broken machine parts or pieces of the object can be thrown at very high speeds. This could result in serious injury or death to persons at a considerable distance from the rotary mower.

NEVER ALLOW ANYONE TO RIDE ON THE MOWER OR THE TRACTOR. This equipment, if not operated properly, could be potentially dangerous; therefore, **NEVER ALLOW A CHILD TO OPERATE A ROTARY MOWER.**



Thoroughly examine the rotary mower each day before operating. Tighten loose bolts, nuts, and hydraulic fittings. Replace all damaged or broken parts, including hydraulic hoses. If rotary mowers are not kept in proper working order, they could be damaged and this could result in serious injury.

NEVER engage in repair work under the mower deck or any other part of the mower that is raised off the ground until the mower is safely and securely supported in the raised position. Inadequate support can result in the mower falling, which could result in serious injury or death.



Use **proper signage** around working area. This will help the operator have a safe place to work, and help passers by to take appropriate precautions.

Use the proper **reflective devices** on the equipment to help prevent accidents.

Make sure that all rules of the road are followed, and Slow Moving Vehicle (SMV) rules are also observed



Always inspect the area before mowing for potential mower hazards. Remove or avoid all foreign objects such as wire, cable, metal objects, and all other foreign material. **Failure to do so could result in serious injury to the operator or passerby from foreign material being thrown from the mower.**

Safety Warnings

Attaching/Detaching Cutter

If operating along roadway, keep equipment within the **lane closest to the work area**. Never operate equipment against the flow of traffic, which could possibly result in a head-on collision causing serious injury or death.



Never use equipment around railroad tracks without direct railway supervision. Inexperience in railway operations may cause loss of communications, loss of signals, rail and tie damage or derailment.



NEVER cross railway tracks anywhere other than at normal traffic crossings. Unauthorized machinery on railways are in extreme danger of being struck by locomotives and railway machinery resulting in damaged equipment, serious injury or death.

Before approaching any rotary mower or before dismounting the tractor, always make sure of the following:

The tractor transmission is in the parking gear, and the parking brake is set to keep the tractor from moving while unattended.

The tractor PTO is disengaged.

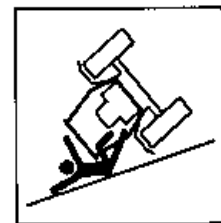
The engine has stopped, the key is out of the ignition, and all moving parts (both tractor and mower) have completely stopped. The rotating parts of the tractor and rotary may mower continue to rotate after the PTO has been disengaged. **THE OPERATOR SHOULD REMAIN SEATED UNTIL ALL MOVEMENT HAS CEASED!**



NEVER WORK ON THE ROTARY MOWER WITH THE POWER ON.

Rollover

Care must be taken when operating on uneven terrain, ditches, or embankments. The chances of the tractor and/or mower rolling over are increased. Also, the chance of objects being thrown by the blade are increased when operating under these adverse conditions.



Safety Warnings

Rollover



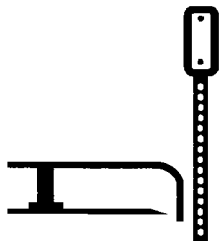
Never operate the equipment without the **Roll-Over Protective Structure (ROPS) and without a seat belt**. These items prevent injury in a roll-over accident. It is also highly recommended to wear protective equipment such as a hard hat, safety glasses, safety shoes, and ear plugs.

OPERATE CAREFULLY! It is important to slow down when turning and when going down slopes. Doing so could result in a roll over and injury, or possibly death, to the operator.



Rotating Blades

Stay away from rotating blades. **Keep hands and feet clear of rotating blades and discharge areas at all times.** Never get close to the blades until **all motion has stopped and machine is turned off.**



Never allow **rotating blades to contact solid objects** like rocks, posts, curbs or guard rails. **Only operate if all guards and deflectors are in place and in good working condition.**

Never operate equipment with loose blades. Retighten after the first 8 hours of use and after blade replacement.

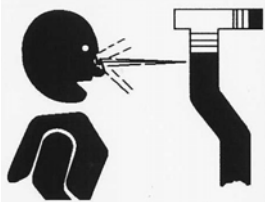


- Never operate with mower deck raised if bystanders or traffic are in the area. This helps to prevent injury or death from objects thrown by the blades.
- Stop cutting if someone comes within 300 feet. **DO NOT operate equipment with bystanders in the area!** Rotary mowers have the ability to throw debris considerable distances when blades are allowed to strike foreign objects. Operator must exercise caution or serious injury or even death could result.

Safety Warnings

Hydraulics

Relieve all pressure in the hydraulic lines by setting the mower deck on the ground, shutting the tractor off, and actuating lift valve handles before disconnecting hoses. This relief of pressure will reduce possibility of serious injury from spewing hydraulic fluid.



Frayed, torn, or crimped hoses may rupture and spray boiling oil onto Operator and cause serious bodily injury from scalding.



Failure to inspect and repair or replace hoses may cause worn hoses to **rupture suddenly** and **violently** resulting in **serious bodily injury** from **scalding or fire** with resulting burn injury or death.

Boiling oil may spray onto hot tractor parts and **catch fire** causing severe burn injury or death.



Inspect hoses daily and repair or replace when needed. Stop all leaks. Repair or replace hoses as indicated to prevent unexpected failure and possible serious injury to operator or bystander.

Use paper or cardboard to check for leaks. Never use your hand. If **oil penetrates skin**, gangrene or other serious injury could occur. **If skin is penetrated by hydraulic fluid, get immediate medical attention.**



Safety Conclusion

Now that the operator has read the information provided in this manual; he or she should now be aware of how dangerous a rotary mower can be if operated improperly. It is important that the operator of this equipment should be cautious, conscientious, and use common sense when operating this equipment in order to avoid serious injury and or death to the operator, support personnel, passersby, or animals.

**Safety
Depends on You!**

General Maintenance

Refer to tractor's service manual for proper tractor maintenance.

NEVER service the mower with the power on, except where otherwise stated.

Before working on a mower always check to see that:

- The tractor's transmission is in the parking gear and the parking brake is set to keep the tractor from moving while unattended.
- The tractor PTO has been disengaged.
- The engine is off and all moving parts (both tractor and mower) have completely stopped.

The rotating parts of the tractor and mower continue to rotate after the PTO has been disengaged. The operator should remain seated until all movement has ceased.

Never engage in repair or service work under the mower deck or any other part of the mower that is raised off of the ground until the mower is safely and securely supported in the raised position.

Use extreme caution when working on a mower. Many of the parts are heavy and sharp and can cause serious injury if they are dropped or fall on the operator or bystander.

The blades are very sharp and can pivot. Use extreme caution when performing maintenance on them. Failure to do so could result in serious injury or possibly even death.

Use marfac double ought grease or cotton picker spindle grease to lubricate all Bush-Whacker gearboxes. Replacement gearbox grease is available from you Bush-Whacker Dealership.

Always use genuine Bush-Whacker replacement parts, available through the network of authorized dealers. The use of non-OEM parts will void the warranty of this machine. Non-OEM parts, specifically blades and blade bolts, may not meet Hall Manufacturing Inc. specifications and could lead to serious injury or death.

At Least Twice Daily

Rotor Bar Assembly, Blades, Blade Bolts, and Nuts

- Check blades for any signs of cracking or damaged cutting surfaces. If a blade is cracked, replace the set at once. DO NOT operate the mower at any time with a cracked or severely damaged blade! If a blade breaks, it could cause severe injury or possibly death.
- Check if blade cutting surfaces are dull. If they are, re-sharpen or replace blades.
- Check if blade bolts and nuts are loose, cracked or damaged. DO NOT operate the mower with any of those characteristics. Any of these conditions could allow the blade to come loose and could cause injury or possibly death. Always keep the blade bolts and nuts tightened to 350 ft. lbs. of torque.
- DO NOT operate the mower with just one blade.

At Least Twice Daily

Rotor Bar Assembly, Blades, Blade Bolts, and Nuts

- Make sure rotor bar assembly is securely attached with castle nut and cotter pin to the output shaft.
- Always make sure to replace the blades in sets.

NOTE: When mowing at low cutting heights or on uneven terrain, the blades can come in contact with the ground frequently. When this happens, the blade tips can be pushed upwards causing the blade to bend. By pushing upwards on the blade tip, the rear of the blade (at the bolt hole) is forced downward away from the rotor bar assembly. This causes the bolt to be pulled through the bar and can cause it to shear. When the bolt shears, it will throw a blade. When operating in these conditions, the operator must check the blade bolts more frequently than normal, at least four times a day.

Always use genuine Bush-Whacker replacement blades, bolts, and nuts. Other blades may not meet Hall Manufacturing specifications and could lead to serious injury or death.

Hydraulics

- If at any time the hoses become frayed, worn, or pinched, replace them.

Daily

Shields

- Make sure ALL shields are in place and tightened before operating the mower. If one works loose, stop mowing and tighten immediately.
- Replace shields if there's any damage or excessive wear.

Drive Shafts

- Inspect the Drive Shaft Shields, make sure that they are installed and working properly. If shields become damaged or loose during operation, stop immediately and fix or replace them.
- Make sure the drive shaft shield mounting chains are securely fastened.
- Inspect cross kits
- Grease each zerck fitting with natural or synthetic lubricants. Never mix the two types of lubricants.
- Check Drive Shaft tubes to ensure that they telescope properly. If they do not, replace them.

Daily

Gearboxes

- Check gear lube. If the grease is lower than the inspection plug on the rear side of the gearbox, then fill to the level of the plug. NOTE: Do not overfill the gearbox. If the grease level of the gearbox is low, additional grease can be purchased from your Bush-Whacker dealer.
- Inspect output shaft for vines, wire, rope, etc. that may collect around the shaft and tear up the output seal. If a seal is leaking, replace it, or risk overheating and severe damage to the equipment.
- Check the mounting bolts and nuts to be sure that they are correctly secured. If left unchecked, it could cause excessive vibrating which could damage the equipment.

Pins, Bolts, and Nuts

- Inspect all pins, bolts, and nuts, making sure that they are all in place and secure. Look for loose fasteners and tighten to the proper torque, as required.
- Make sure the three point hitch mount and stabilizer pins are secure, and Top Links are not loose or slack.

Skid Shoes

- Check for any wear or damage, replace if required.

Frame

- Look for any structural cracks, damage and wear.
- Keep the equipment clean. Inspect for debris caught in the machine, especially at all pinch points.

Wheel Hubs

- Grease wheel hubs at zerk fitting once a day before operating the mower. Check seals for leakage. Replace seals if a leak is detected. Also, check bearings for damage. If they have seized, they are damaged; replace them immediately before use.

Chain Guards

- Rear and front chain guards and front metal deflectors are standard equipment for all Bush-Whacker rotary mowers.
- Always inspect the chain guards and deflectors to be sure no chain links are missing and the guards are operating correctly. If the guards are not operating correctly, links are missing, or the complete chain guard assembly is missing, do not operate the mower. **Never operate the mower without chain guards in proper working order.**

Every 1,000 Hours or Annually

It is recommended to do annual, pre-season maintenance at the end of each operating season, rather than at the beginning.

The mower should be stored in the off-season **cleaned, inspected and repaired**. This will prevent any rust forming on the mower's surfaces and contaminants damaging the hydraulic components.

Gearbox Disassembly Procedure

1. Remove 3/8" bolts from input cap. Remove the input cap taking care not to damage the seal in the cap.
2. The input shaft assembly can now be removed. To disassemble the input shaft assembly it is not necessary to remove the retaining ring. The bearing will press off of the ends of the shaft and the gear will slide off.
3. The output gear will slide off of the output shaft.
4. Remove the 1/2" bolts from the output cap and remove the output cap; once again take care not to damage the seal.
5. The output shaft assembly will have to be pressed out from the inside or it can be pulled out. The bearings will need to be pressed off.
6. If any of the bearing races either in the housing or in the input cap need to be removed, a blind hole bearing puller should be used.

Gearbox Assembly Procedure

1. The output assembly goes into the housing first. If the upper bearing race has been pulled out it must be pressed in. After the bearings are pressed onto the output shaft, the shaft can be inserted into the housing.
2. The lower bearing race will have to be pressed into the housing until it is flush with the bottom surface of the housing. Using the same number and thickness of gaskets replace the output cap. The 1/2" bolts are torqued to 60 foot pounds.
3. The bearing preload is measured by rolling torque. The rolling torque should be between 6-15 inch pounds. If the rolling torque is too high the output cap will need to be removed and an additional gasket added. When a gasket is added the lower race will need to be pulled out slightly. If the rolling torque is too low or there is any movement of the output shaft, a gasket will need to be removed.
4. Once the preload is set, remove the output cap. Install the seal into the cap and apply sealant to the gaskets. Replace the output cap, making sure the torque is correct.
5. Slide the output gear onto the output shaft in the housing.
6. The bearing race for the rear bearing on the input shaft must be pressed in.
7. Slide the input gear onto the shaft to the retaining ring. Then place the spacer above the gear. Press the bearing on the front of the input shaft. Lastly, press the bearing onto the rear of the shaft.
8. Place the input shaft assembly in the housing and check the gear mesh and back lash. The gear mesh is correct when the back surface of the gear teeth are level. The back lash should be between 0.006" and 0.014" when measured at the pitch diameter of the gear set. If the gear mesh or back lash are incorrect use shims to correct.
9. Press the bearing race into the input cap. Using the same number and thickness of gaskets, place the input cap on the housing. Torque the 3/8" bolts to 25 foot pounds.
10. The bearing preload is measured in the same manner as for the output shaft. The rolling torque should be between 11-25 inch pounds. Refer to step 3 for correction of the preload.
11. Once the preload is set, remove the input cap. Install the seal into the input cap and apply a sealant to the gaskets. Replace the input cap taking care not to damage the seal. Check the position of the oil plugs on the input cap. The oil level check plug should be just below and to the right of the input shaft, with the fill plug directly under the input shaft. Torque the bolts back to 25 foot pounds.
12. Fill the gear box with the recommended lubricant in an upright position similar to the mounting position. Fill the gearbox to the level plug (1/8" pipe plug). Check the lubricant with a dipstick (a small piece of wood works well as a dipstick).

Using The Optional Offset Adapter

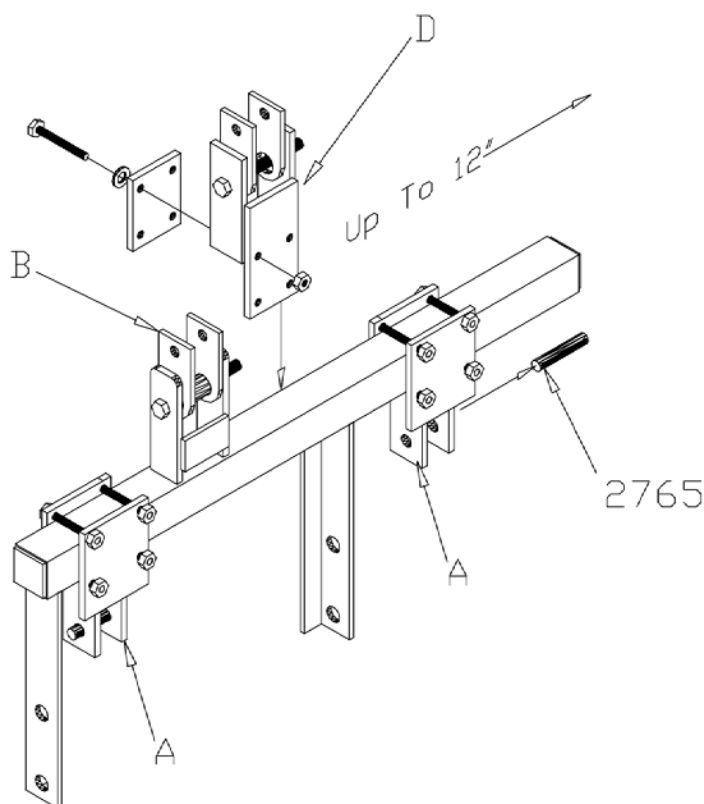
I. Mowing in the Center Position

1. Attach the tractor lift arms to the mower and adapter at points "A" using the hitch pins, Part# 2765, provided.
2. Attach the tractor top link to the clevis and adapter at point "B".
3. Hook to the offset adapter is now complete.

II. Mowing in the Offset Position

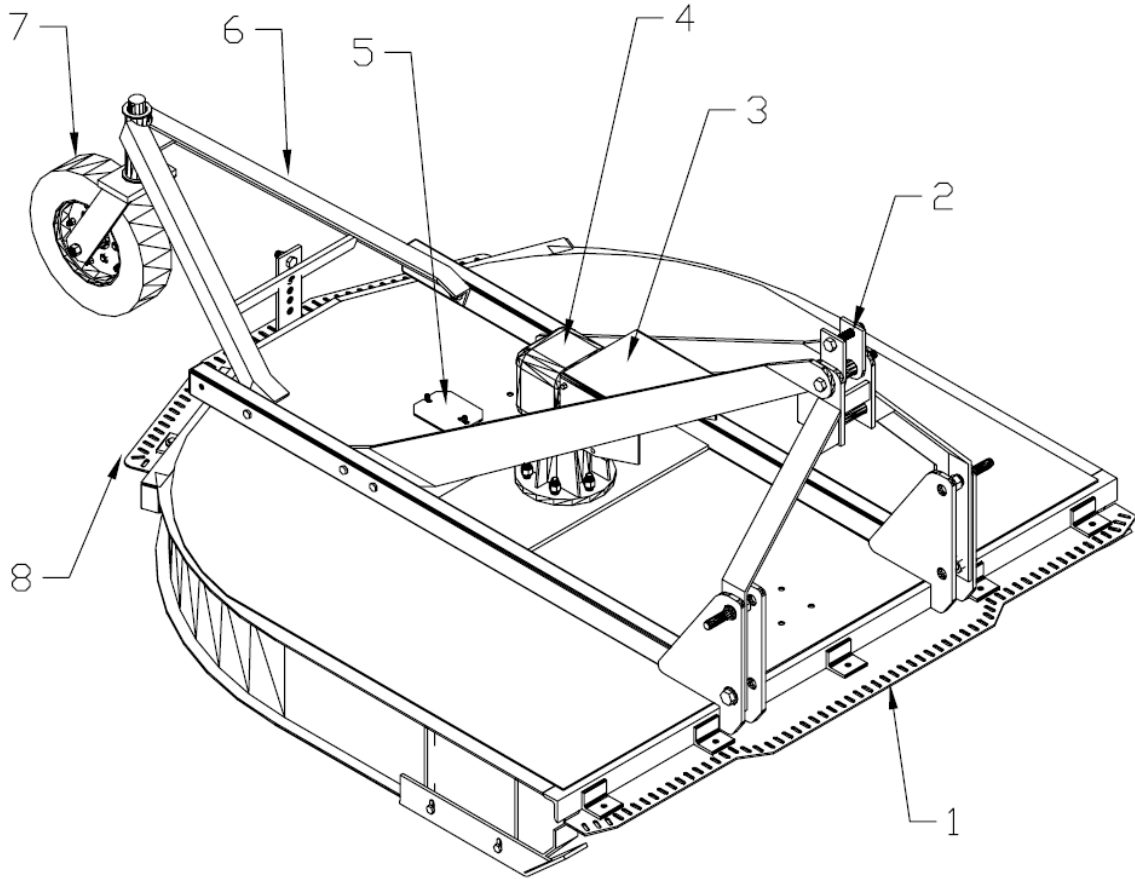
Note: Always adjust the offset adapter with the mower disengaged from the tractor and firmly on the ground. This will prevent the machine from becoming unstable and falling onto the operator. Failure to do so might cause serious injury or death to the operator.

1. Attach Part D leaving the fasteners slightly loose. (Note: Part D also includes the top link clevis)
2. Loosen Part A and slide Part A&D to the desired offset Position (up to 12") and tighten them securely into place.
3. Attach the mower to the tractor as stated in Part I except now the operator must attach the top link to Part D.



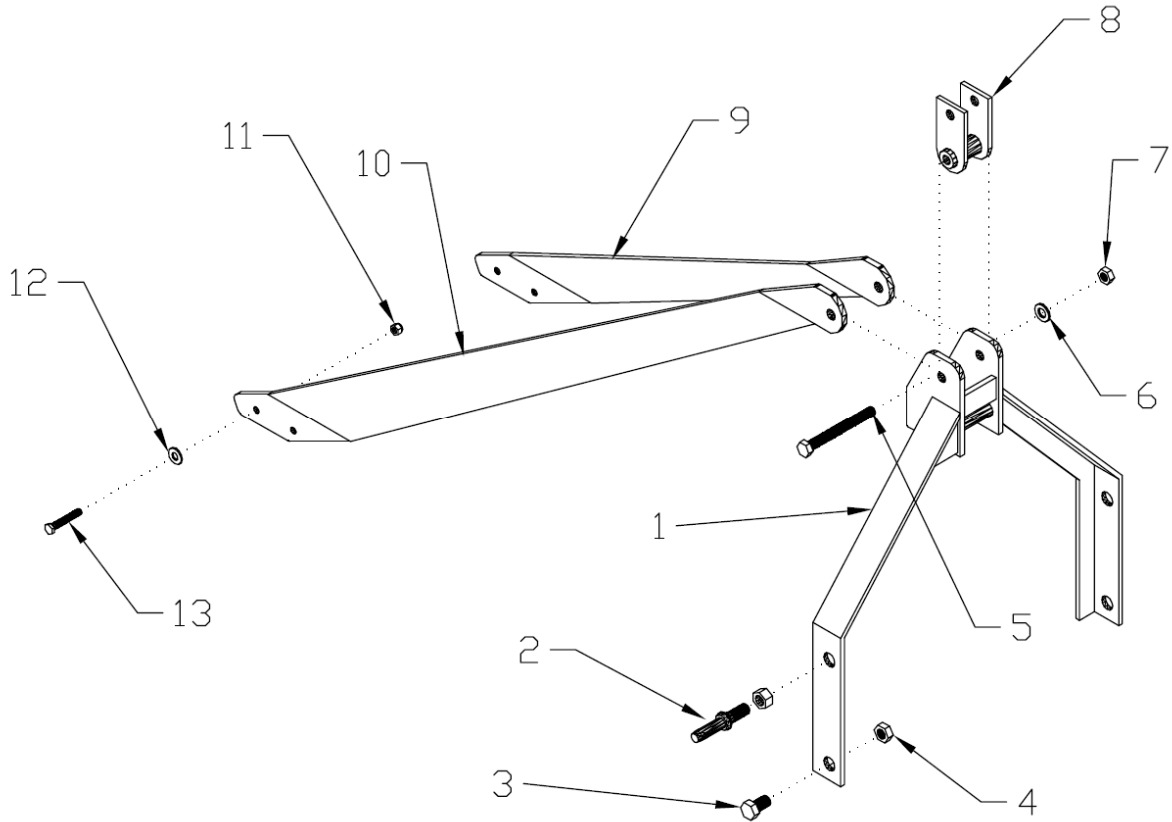
Partsbook

6010 & 7210 Lift Type Assembly Breakdown



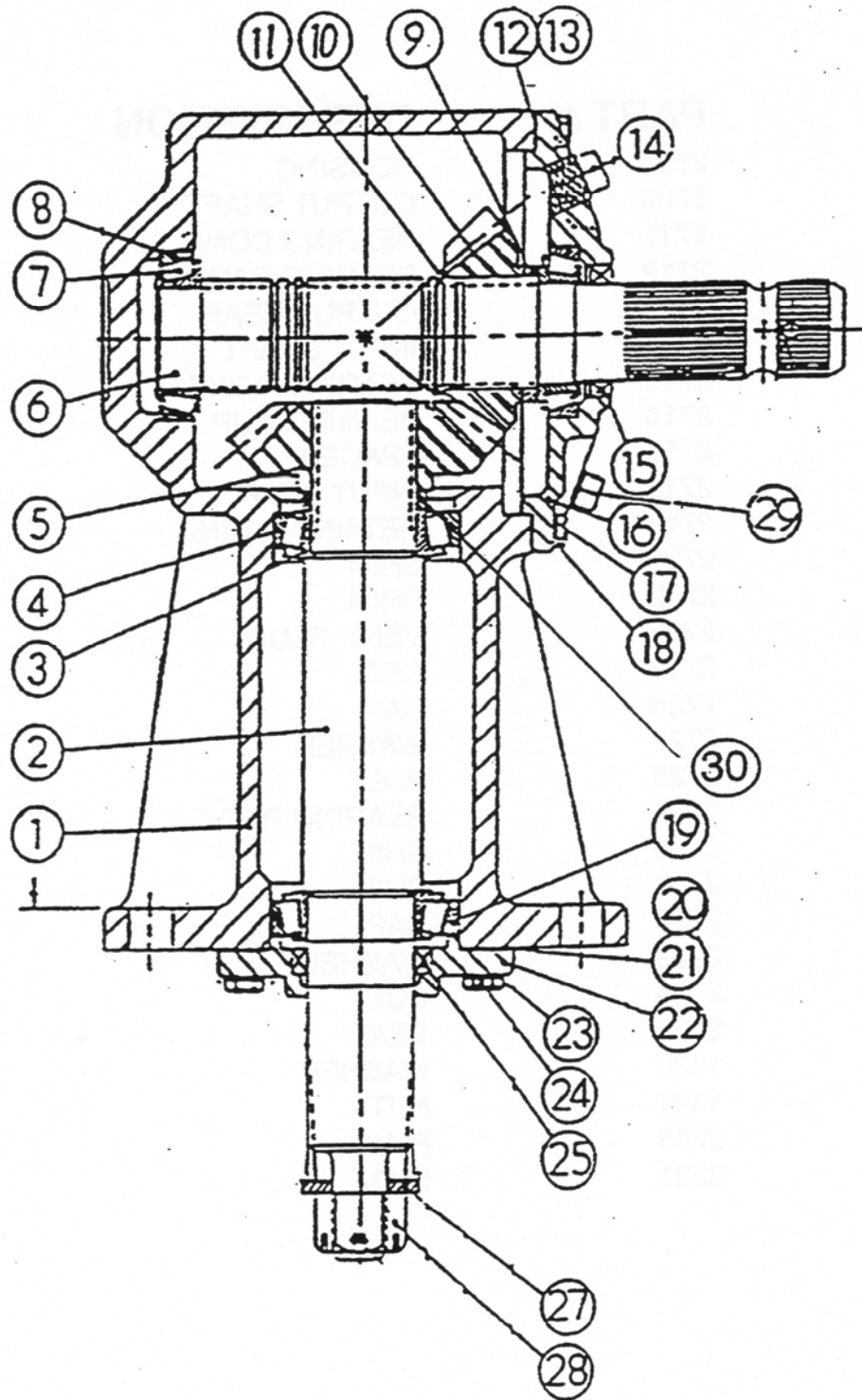
Ref. No.	Description	Page Number
1	Front Chain Guard	30
2	Hitch Frame Assembly	19
3	Tail "A" Frame	25
4	Tail Wheel Fork & Wheel Assembly	26
5	Gear Box Shields	27
6	Gearbox	20
7	Access Cover	50
8	Rear Chain Guard	29

Hitch Frame Assembly



Ref. No.	Part No.	Description	Qty
1	4379	Hitch Frame	1
2	C222	Hitch Pin	2
3	3373	Bolt	2
4	3374	Nut	2
5	3284	Bolt	1
6	3285	Washer	1
7	3286	Nut	1
8	3287	Category I Clevis	1
	4860	Category II Clevis	1
9	4380	6010 Left Brace	1
10	4381	7210 Left Brace	1
10	4382	6010 Right Brace	1
11	4383	7210 Right Brace	1
11	3148	Nut	4
12	3718	Washer	4
13	3297	Bolt	4

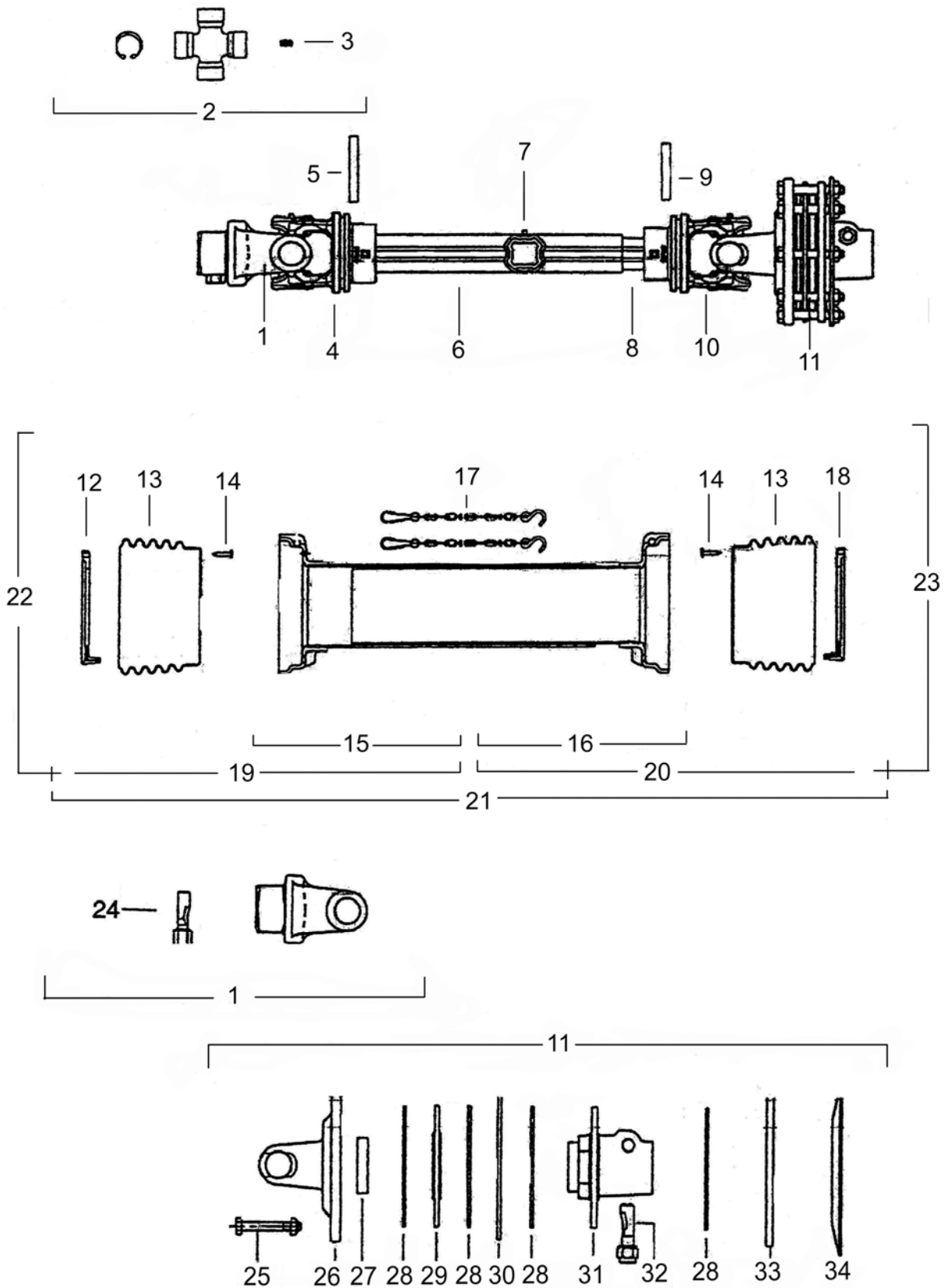
3308 Gear Box
(See Maintenance Section for Required Lubricant)



3308 Gear Box
(See Maintenance Section for Required Lubricant)
Parts List

Ref. No.	Part No.	Description	Qty
1	2708	Housing	1
2	2709	Output Shaft	1
3	2711	Bearing Cone	2
4	2712	Bearing Race	1
6	2714	Input Shaft	1
7	2715	Bearing Cone	2
8	2716	Bearing Cup	2
9	3311	Spacer	1
10	3309	Gear	2
11	2719	Retaining Ring	1
12	2721	Shim	AR
13	2722	Shim	AR
14	2723	Vent Plug	1
15	2713	Seal	1
16	2726	Cap	1
17	2727	Washer	8
18	2728	Bolt	8
19	2729	Bearing Race	1
20	2730	Shim	AR
21	2731	Shim	AR
22	2732	Cap	1
23	2733	Washer	4
24	2734	Bolt	4
25	2735	Seal	1
27	1420	Washer	1
28	1421	Nut	1
29	2748	Plug	1
30	3231	Shim	AR
31	3312	Spacer	1

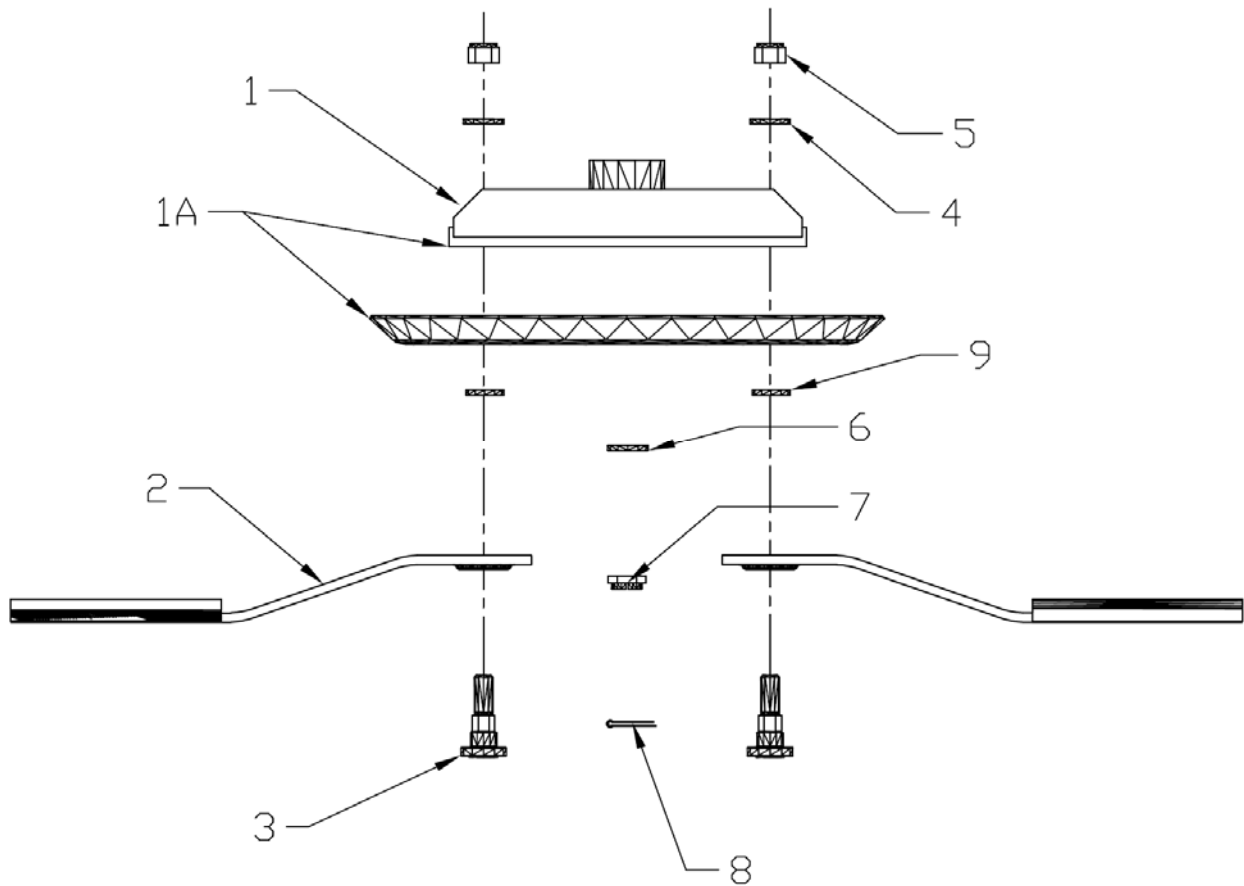
4082 Complete Drive Shaft for 7210 Lift Type



4082 Complete Drive Shaft for 7210 Lift Type Parts List

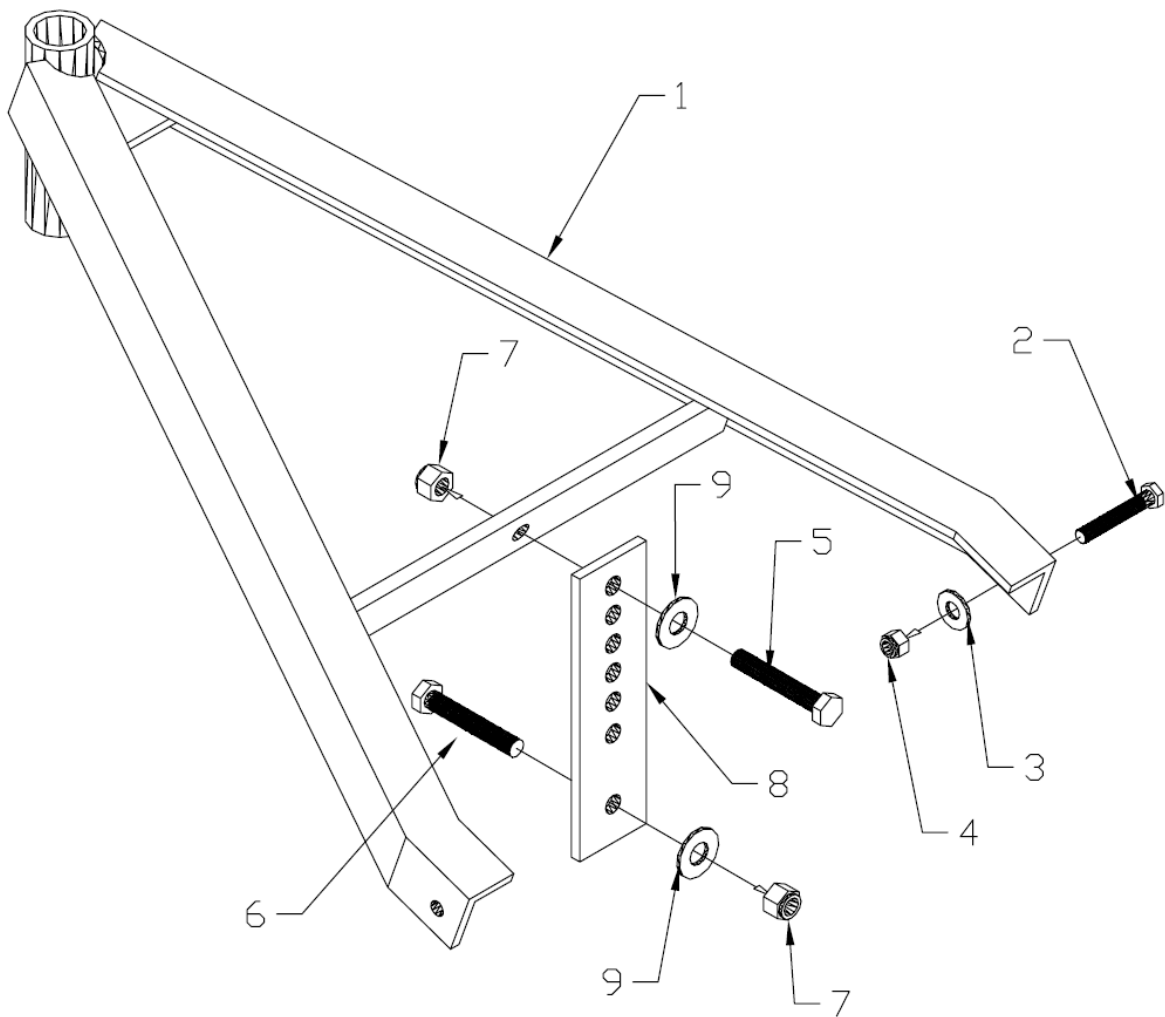
Ref. No.	Part No.	Description	Qty
1	4081	Quick Disconnect Yoke	1
2	3941	Cross Kit	2
3	3917	Grease Fitting	1
4	3942	Outer Tube Yoke	1
5	3919	Outer Roll Pin	1
6	4029	Outer Tube (Steel)	1
7	4008	Grease Fitting	1
8	4030	Inner Tube (Steel)	1
9	3922	Inner Roll Pin	1
10	3945	Inner Tube Yoke	1
11	4010	Complete Clutch Assembly	1
12	3927	Outer Shield Ring	1
13	3947	Shield Bell	2
14	3928	Shield Screw	6
15	4031	Outer Shield Tube	1
16	4032	Inner Shield Tube	1
17	4012	Shield Safety Chain	2
18	3932	Inner Shield Ring	1
19	4033	Outer Shield Complete	1
20	4034	Inner Shield Complete	1
21	4035	Complete Shield Assembly	1
22	4466	Outer Half Shaft Complete	1
23	4037	Inner Half Shaft Complete	1
24	3925	QD Pin Kit	1
25	4098	Bolt with Nut	8
26	4018	Flange Yoke	1
27	3962	Bushing	1
28	3963	Clutch Disk	4
29	3964	Clutch Plate	1
30	3965	Inner Plate	1
31	3966	Splined Hub	1
32	3967	Bolt with Nut	1
33	3968	Outer Plate	1
34	3969	Spring	1

Rotor Bar Assembly



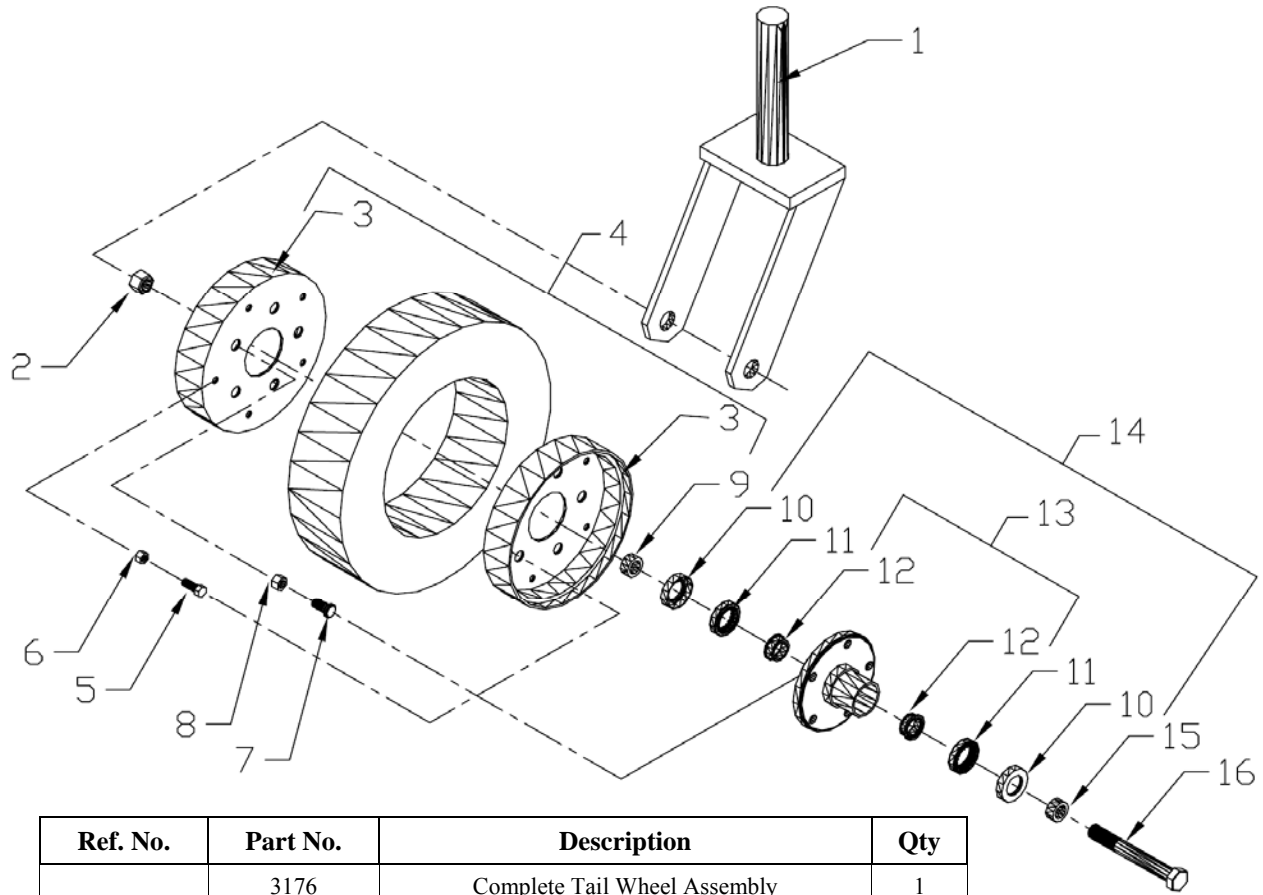
Ref. No.	Part No.	Description	Qty	Remarks
1	3162	Blade Bar Only for 6010	1	
1	3173	Blade Bar Only for 7210	1	
1A	3163	Blade Bar with Stump Jumper for 6010	1	
1A	3174	Blade Bar with Stump Jumper for 7210	1	
2	3172	Blade for 6010 & 7210	2	
3	3095	Bolt	2	
4	2106	Washer	2	
5	2105	Nut	2	
6	1420	Output Shaft Washer	1	
7	1421	Output Shaft Nut	1	
8	1426	Cotter Pin	1	
9	3096	Washer	2	Only needed when using Stump Jumper

Tail Wheel "A" Frame Assembly



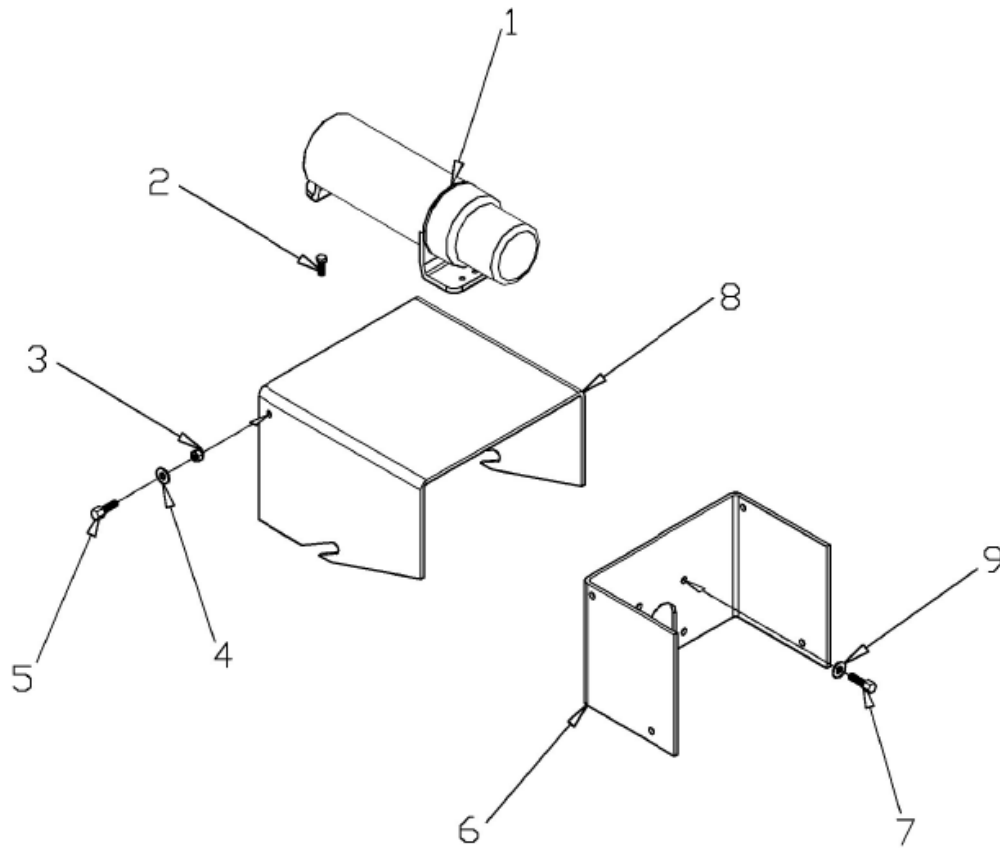
Ref. No.	Part No.	Description	Qty
1	4384	Tail "A" Frame	1
2	3297	Bolt	2
3	2342	Washer	2
4	3299	Nut	2
5	4458	Bolt	1
6	4378	Bolt	1
7	3148	Nut	2
8	3677	Adjusting Strap	1
9	3386	Washer	2

3176 Complete Tail Wheel Assembly



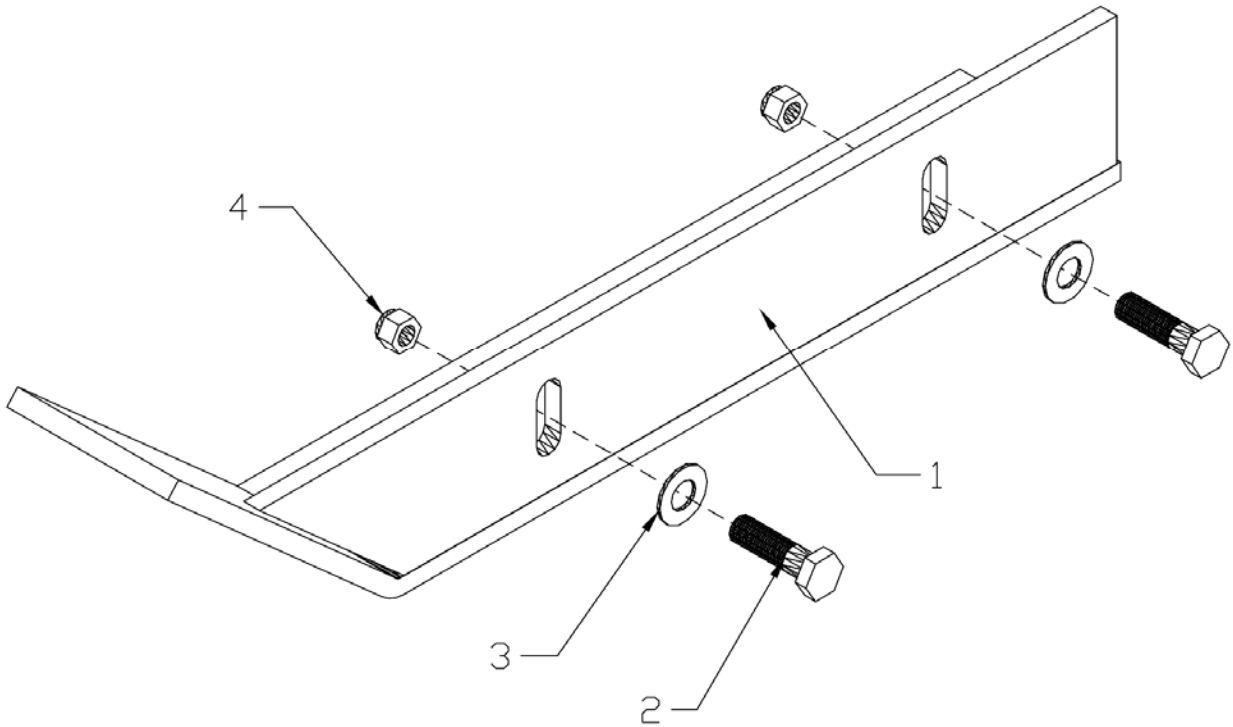
Ref. No.	Part No.	Description	Qty
	3176	Complete Tail Wheel Assembly	1
1	3177	Tail Wheel Fork	1
2	3178	Nut	1
3	3179	Wheel Only, 2 piece	1
4	3180	Tire and Wheel—less Hub	1
5	3181	Bolt	5
6	3182	Nut	5
7	3183	Bolt	5
8	3184	Nut	5
9	3185	Spacer	1
10	3186	Seal	2
11	3187	Bearing Cone	2
12	3188	Bearing Cup	2
13	3189	Hub with Races and Studs	1
14	3190	Hub Complete with Bearings and Seals	REF
15	3191	Spacer	1
16	3192	Axle Bolt	1
10, 11, 12	4884	Bearing kit	1

Gearbox Shield Assembly



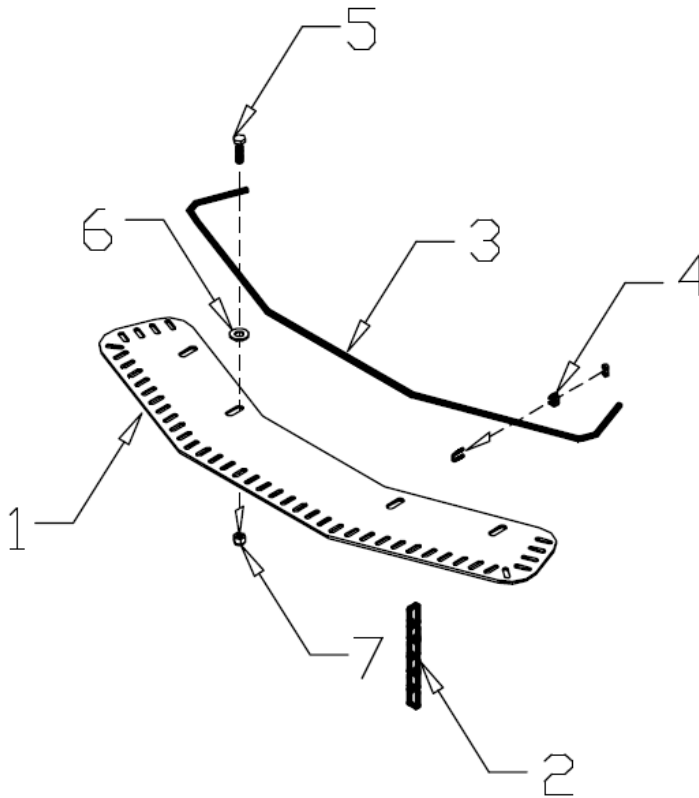
Ref. No.	Part No.	Description	Qty
1	4463	Manual Holder	1
2	4432	Self Tapping Screw	2
3	2513	Nut	2
4	3393	Washer	2
5	2512	Bolt	2
6	2510	Shield Face Plate	1
7	3006	Bolt	4
8	2517	Flip Top Shield	1
9	4477	Lock Washer	4

Skid Shoe Assembly



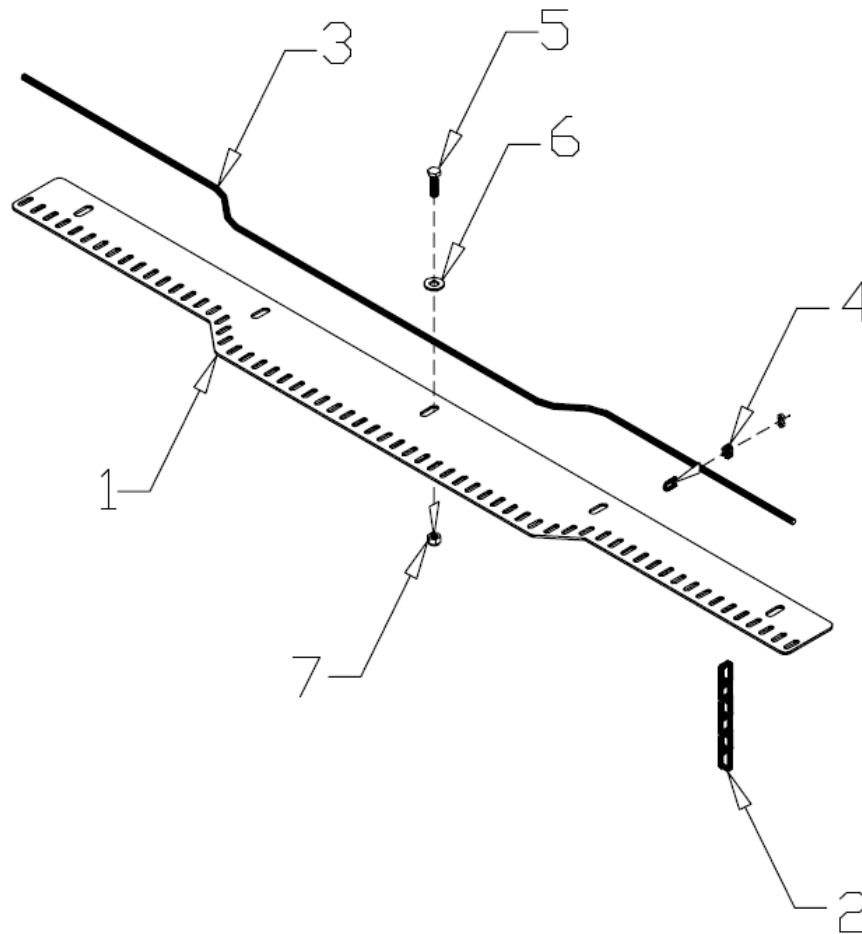
Ref. No.	Part No.	Description	Qty
Not Shown	2201	Right Hand Skid Shoe	1
1	2202	Left Hand Skid Shoe	1
2	2340	Bolt	2
3	2342	Washer	2
4	2341	Nut	2

Rear Chain Guard Assembly



Ref. No.	Part No.	Description	Qty
REF	3646	Single Curtain Assembly for 6010	
REF	3843	Double Curtain Assembly for 6010	
REF	3652	Single Curtain Assembly for 7210	
REF	3845	Double Curtain Assembly for 7210	
1	3647	Chain Guard Plate for 6010	1
1	3653	Chain Guard Plate for 7210	1
2	3583	Chain Link for Single Curtain for 6010	39
REF	3588	Chain Link for Double Curtain for 6010	39
2	3583	Chain Link for Single Curtain for 7210	47
REF	3588	Chain Link for Double Curtain 7210	47
3	3648	Cable	1
4	3585	Clamp	2
5	2335	Bolt	4
6	2337	Washer	4
7	2336	Nut	4

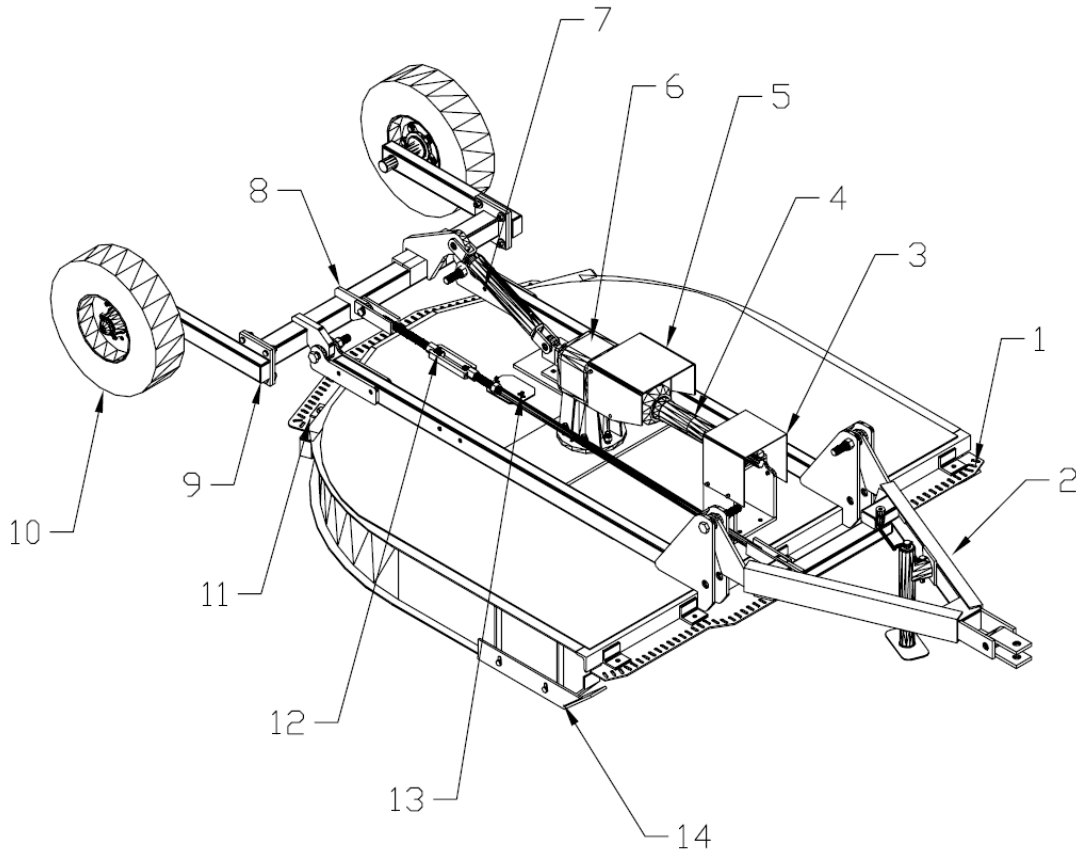
Front Chain Guard Assembly



Ref. No.	Part No.	Description	Qty
REF	3643	Single Curtain Assembly for 6010	
REF	3842	Double Curtain Assembly for 6010	
REF	4385	Single Curtain Assembly for 7210	
REF	4386	Double Curtain Assembly for 7210	
1	3644	Chain Guard Plate for 6010	1
1	4387	Chain Guard Plate for 7210	1
2	3583	Chain Link for Single Curtain for 6010	51
REF	3588	Chain link for Double Curtain for 6010	51
2	3583	Chain Link for Single Curtain for 7210	63
REF	3588	Chain Link for Double Curtain for 7210	63
3	3651	Cable	1
4	3585	Clamp	2
5	2335	Bolt	5
6	2337	Washer	5
7	2336	Nut	5

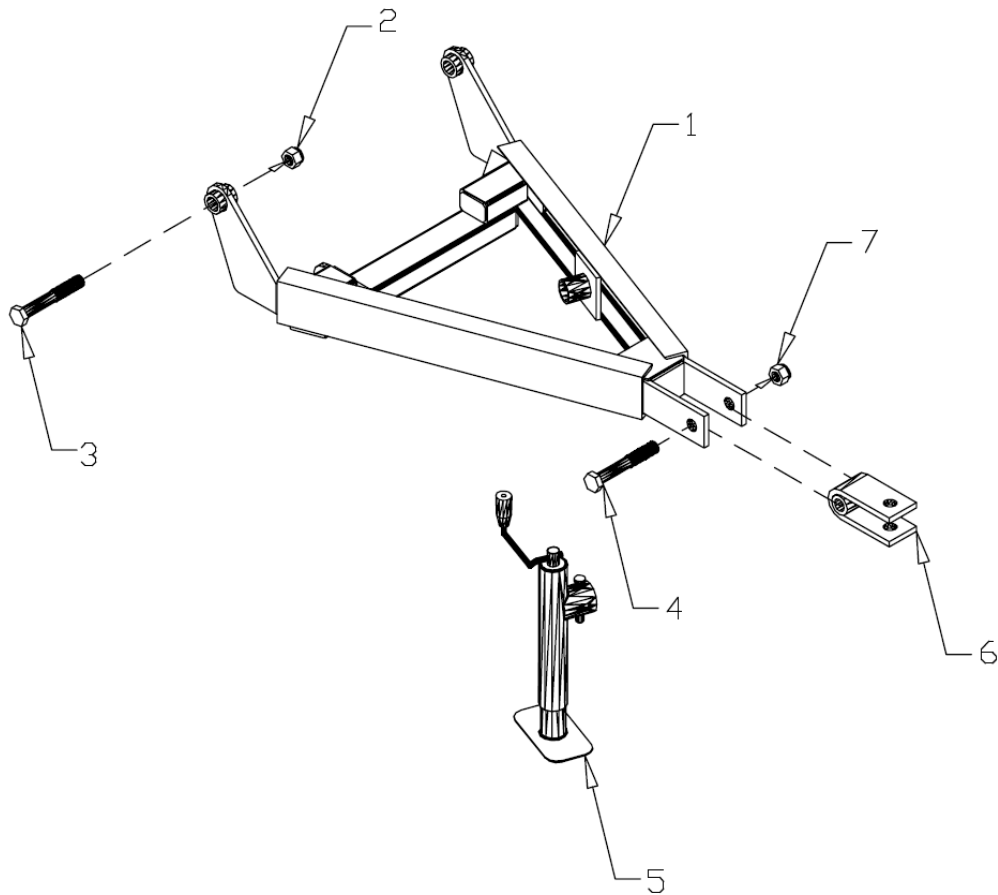
Optional
Equipment
and
Other Items
not Illustrated

6010 & 7210 Pull Type Assembly Breakdown



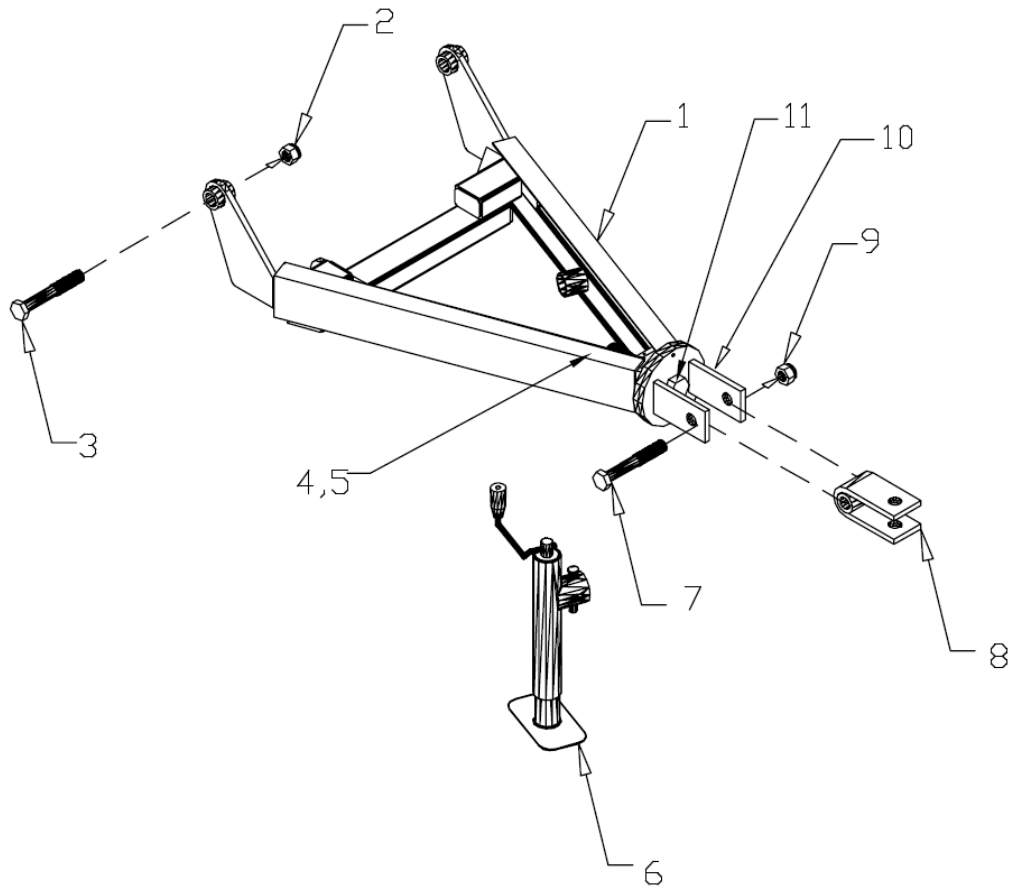
Ref. No.	Description	Page Number
1	Front Chain Guard	30
2	Tongue Assembly	33-35
3	Pillow Block Bearing Assembly	48
4	Jack Shaft (7210 Only)	38
5	Gearbox Shield Assembly	27
6	Gear Box	20
7	Cylinder	44
8	Center Pivot Assembly	46
9	Axle Arm Assembly	42
10	Tire & Wheels	50
11	Rear Chain Guard	29
12	Level Rod	45
13	Access Cover	50
14	Skid Shoe	28

Tongue with Fixed Clevis



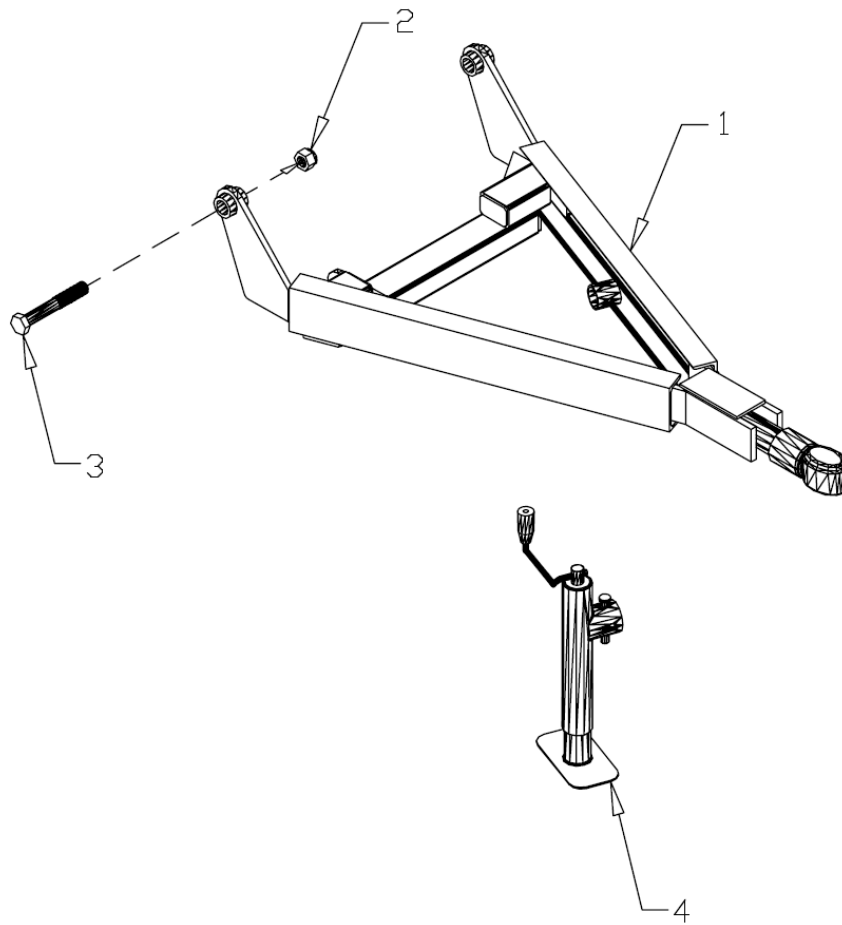
Ref. No.	Part No.	Description	Qty
1	4388	Tongue Only	1
2	3374	Nut	2
3	3373	Bolt	2
4	2968	Bolt	1
5	3061	Jack	1
6	3381	Clevis	1
7	2638	Nut	1

Tongue Assembly with Swivel Clevis



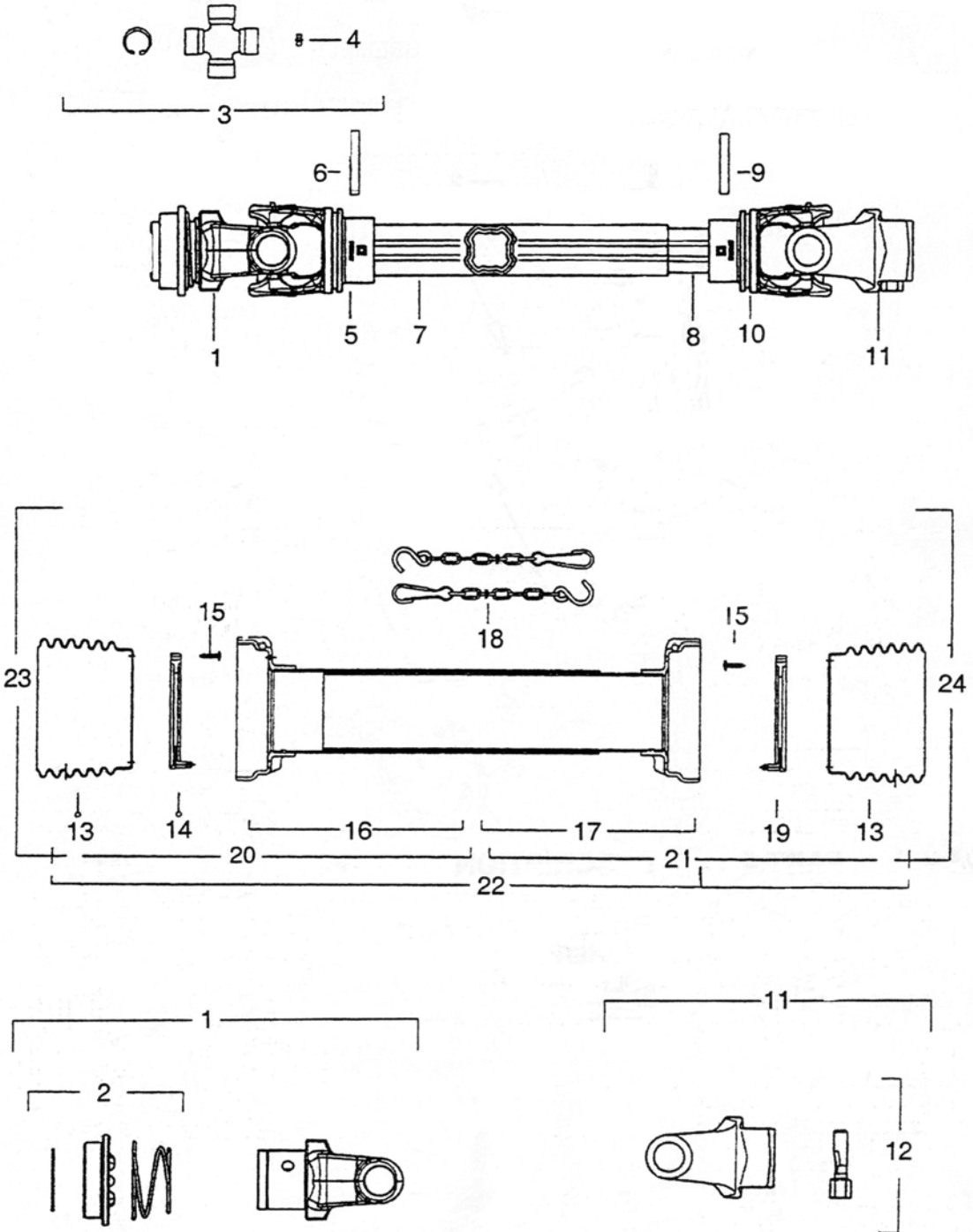
Ref. No.	Part No.	Description	Qty
1	4408	Swivel Tongue Only	1
2	3374	Nut	2
3	3373	Bolt	2
4	4107	Nut	1
5	4108	Washer	1
6	3061	Jack	1
7	2968	Bolt	1
8	3381	Clevis	1
9	2638	Nut	1
10	4104	Swivel Only	1
11	4106	Bolt	1

Tongue Assembly with Bulldog Hitch



Ref. No.	Part No.	Description	Qty
1	4407	Bulldog Tongue Assembly	1
2	3374	Nut	2
3	3373	Bolt	2
4	3061	Jack	1

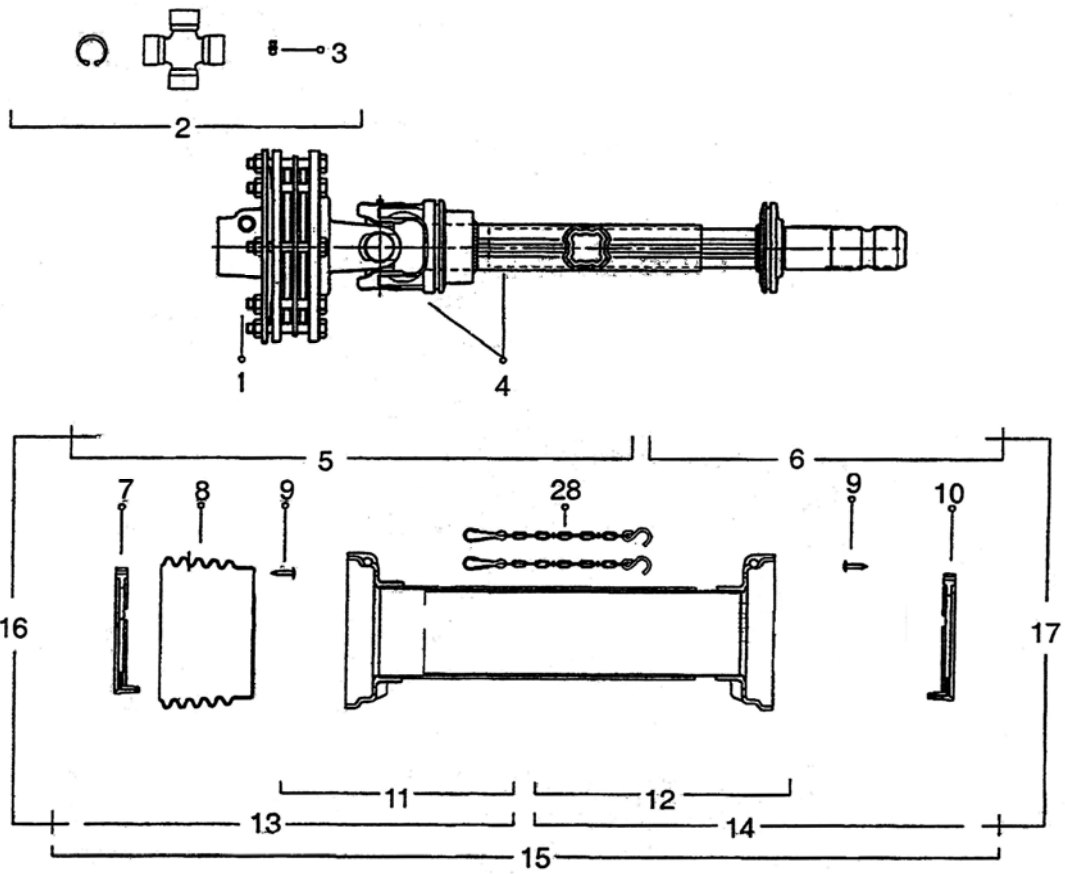
4085 Main Drive Shaft For 7210 Pull Type Only



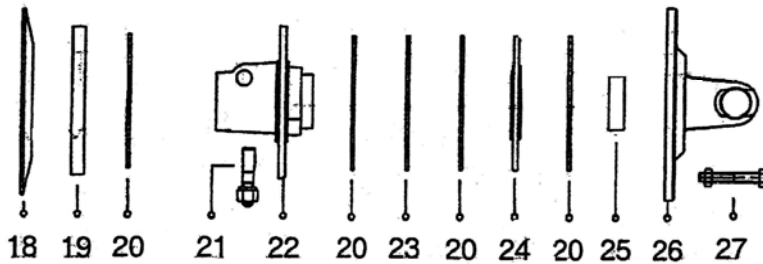
**4085 Main Drive Shaft
For 7210 Pull Type Only
Parts List**

Ref. No.	Part No.	Description	Qty
1	4083	Slide Collar Yoke	1
2	4084	Slide Collar Kit	1
3	3941	Cross Kit	2
4	3917	Grease Fitting	1
5	3942	Outer Tube Yoke	1
6	3919	Outer Roll Pin	1
7	3943	Outer Tube (Steel)	1
8	3944	Inner Tube (Steel)	1
9	3922	Inner Roll Pin	1
10	3945	Inner Tube Yoke	1
11	3946	Quick Disconnect Yoke	1
12	3925	QD Pin	1
13	3947	Shield Bell	2
14	3927	Outer Shield Ring	1
15	3928	Shield Screw	6
16	3948	Outer Shield Tube	1
17	3949	Inner Shield Tube	1
18	3950	Shield Safety Chain	2
19	3932	Inner Shield Ring	1
20	3951	Outer Half Shield Complete	1
21	3952	Inner Half Shield Complete	1
22	3953	Complete Shield Assembly	1
23	4464	Outer Half Shaft Complete	1
24	3955	Inner Half Shaft Complete	1

4099 Jackshaft For 7210 Pull Type (Only)



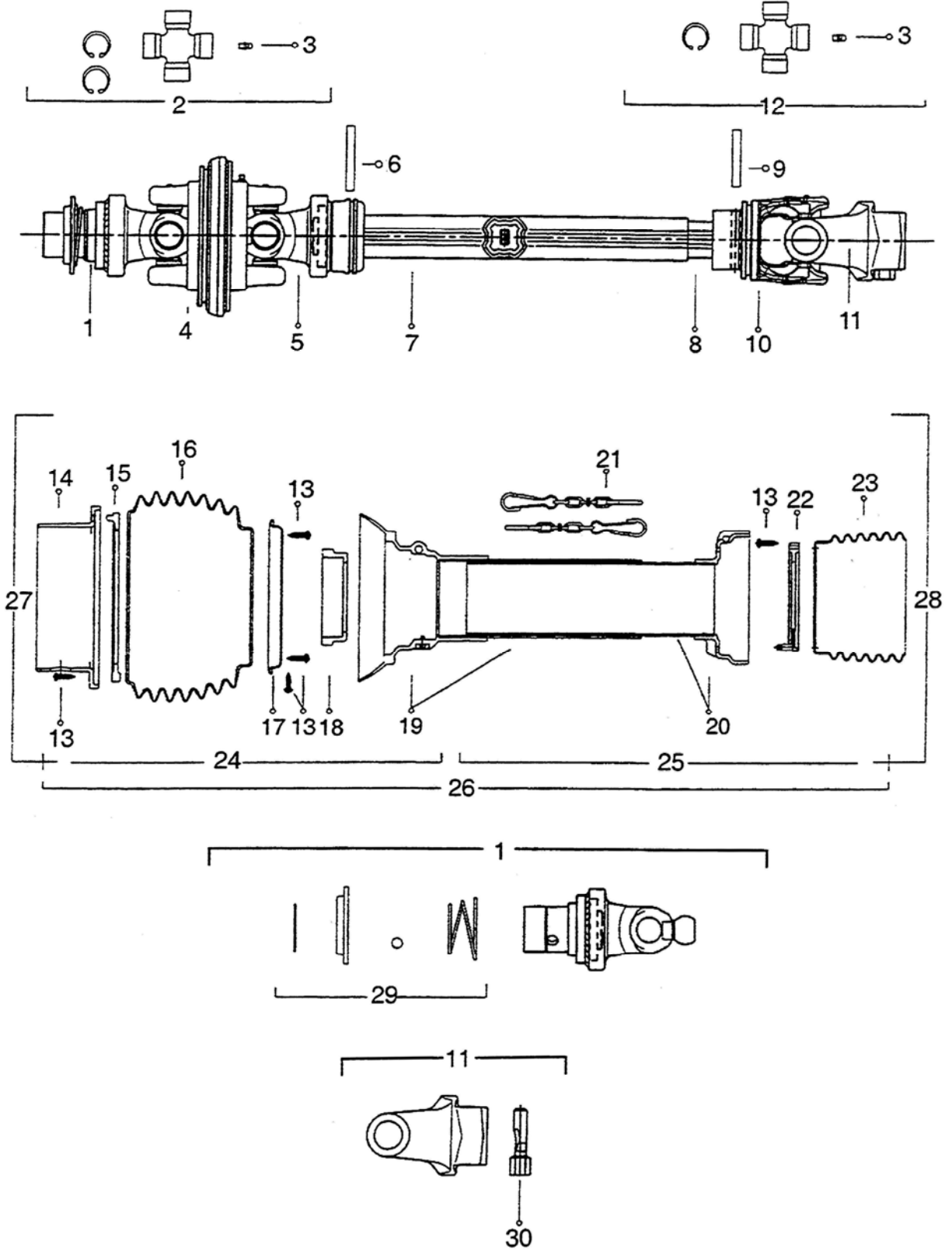
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**4099 Jackshaft
For 7210 Pull Type (Only)
Parts List**

Ref. No.	Part No.	Description	Qty
1	4010	Complete Slip Clutch	1
2	3941	Cross Kit	1
3	3917	Grease Fitting	1
4	4100	Yoke & Tube	1
5	4101	Clutch Half Less Shield	1
6	4102	Stub Half Less Shield	1
7	3927	Outer Shield Ring	1
8	3947	Shield Bell	1
9	3928	Shield Screw	6
10	3932	Inner Shield Ring	1
11	4103	Outer Shield Tube	1
12	4109	Inner Shield Tube	1
13	4110	Outer Half Shield	1
14	4111	Inner Half Shield	1
15	4112	Complete Shield Assembly	1
16	4113	Clutch Half Shaft with Shield	1
17	4114	Stub Half Shaft with Shield	1
18	3969	Spring	1
19	3968	Outer Plate	1
20	3963	Clutch Disk	4
21	3967	Bolt w/Nut	1
22	3966	Splined Hub	1
23	3965	Inner Plate	1
24	3964	Clutch Plate	1
25	3962	Bushing	1
26	4018	Flange Yoke	1
27	4098	Bolt w/Nut	8
28	4138	Shield Chain	2

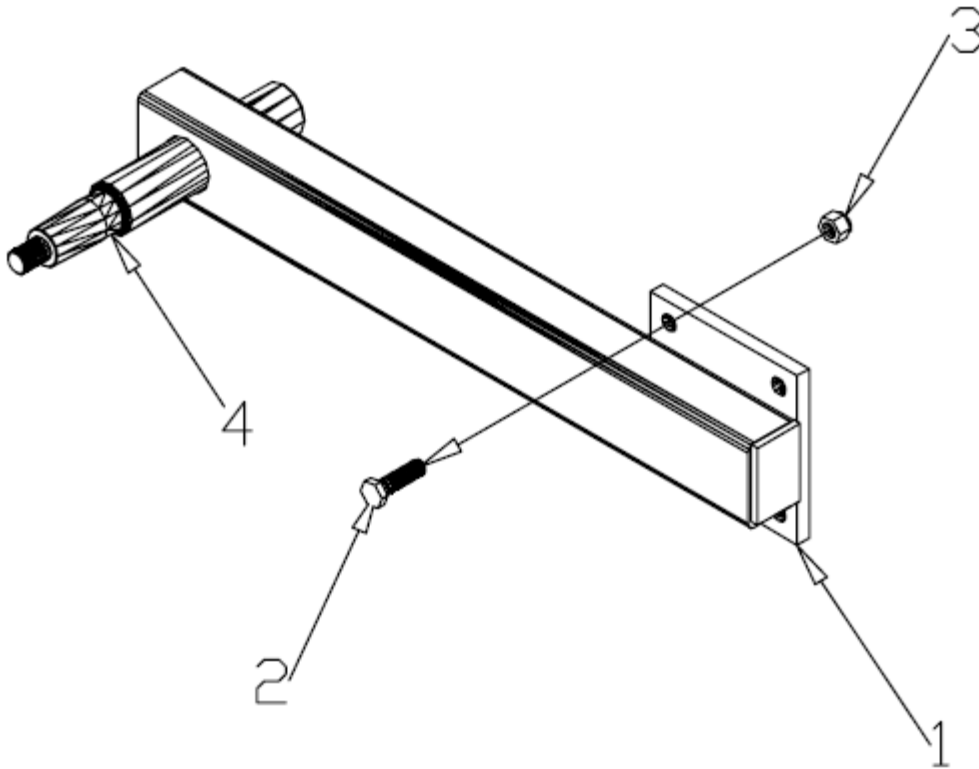
4512 Constant Velocity Drive Shaft



4512 Constant Velocity Drive Shaft Parts List

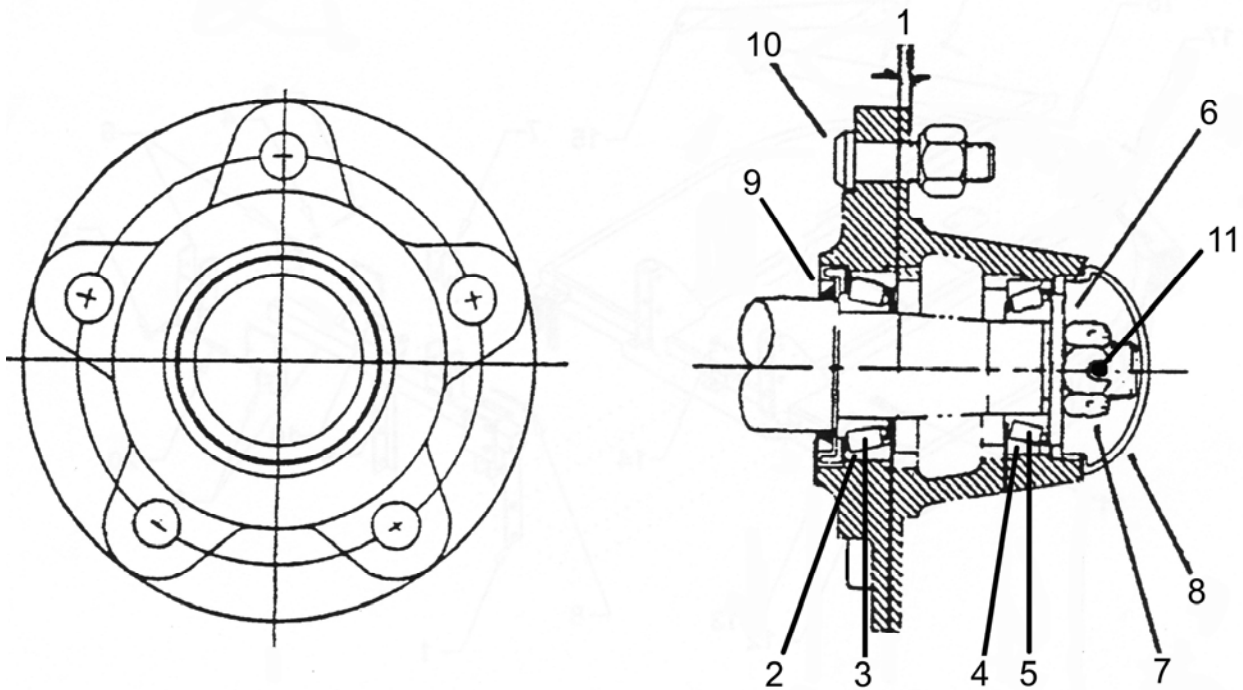
Ref. No.	Part No.	Description	Qty
1	4075	Slide Collar CV Yoke	1
2	3971	CV Cross Kit	2
3	3917	Grease Fitting	1
4	3972	CV Body	1
5	3973	Outer Tube Yoke	1
6	3974	Outer Roll Pin	1
7	4502	Outer Tube (Steel)	1
8	4503	Inner Tube (Steel)	1
9	4145	Inner Roll Pin	1
10	3923	Inner Yoke	1
11	3924	Quick Disconnect Yoke	1
12	3941	Cross Kit	1
13	3928	Shield Screw	17
14	3977	Shield Cone	1
15	3978	Shield Ring	1
16	3979	Outer Shield Bell	1
17	3980	Shield Flange	1
18	3981	Outer Tube Ring	1
19	4504	Outer Shield Tube	1
20	4505	Inner Shield Tube	1
21	3931	Shield Safety Chain	2
22	3932	Inner Shield Ring	1
23	3926	Inner Shield Bell	1
24	4506	Outer Shield Complete	1
25	4507	Inner Shield Complete	1
26	4508	Complete Shield Assembly	1
27	4513	CV Half Shaft Complete	1
28	4510	Inner Half Shaft Complete	1
29	3989	Slide Collar Kit	1
30	3925	QD Pin Kit	1

Axle Arm Assembly



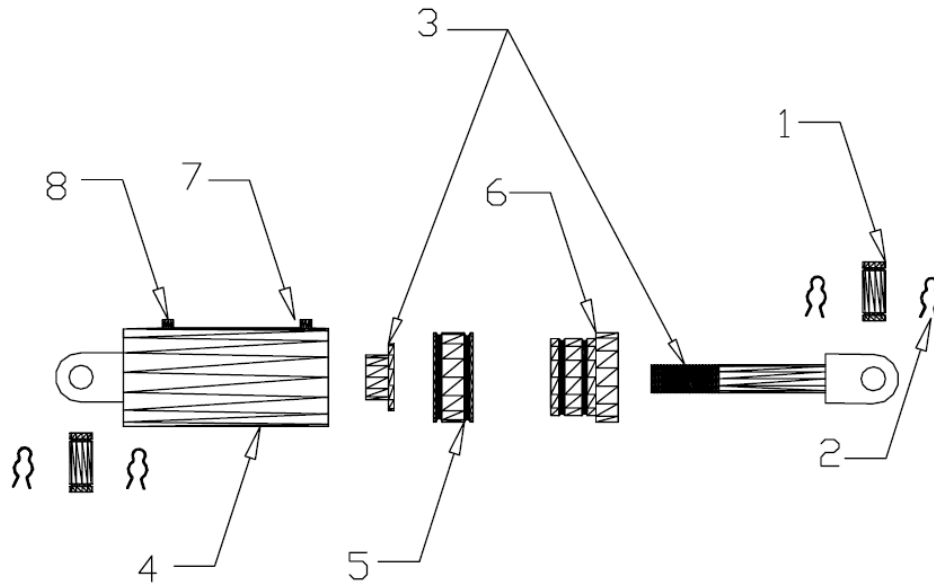
Ref. No.	Part No.	Description	Qty
1	3563	Axle Arm (Left Same As Right)	1
2	3054	Bolt	4
3	2336	Nut	4
4	3564	Spindle	1

2448 Hub Assembly



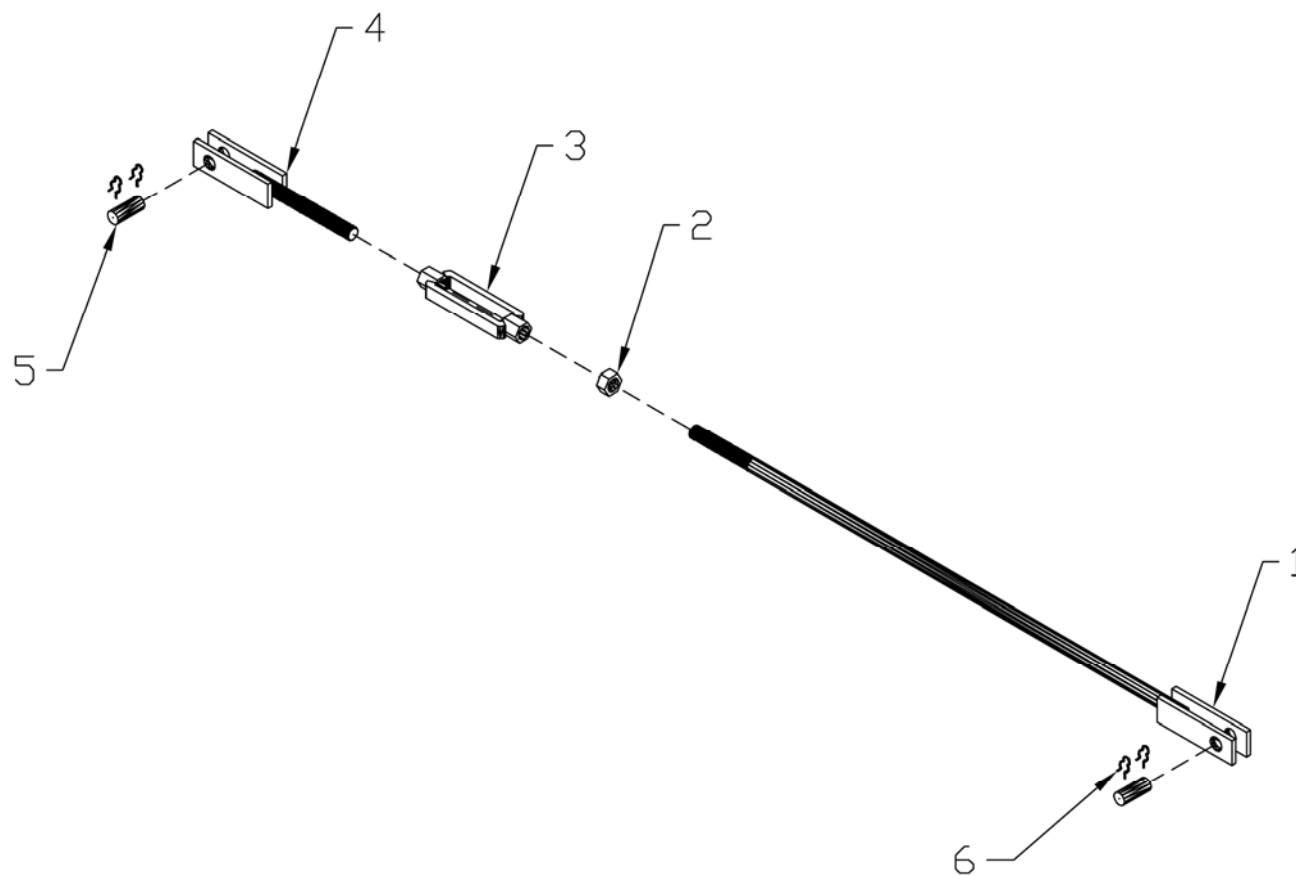
Ref. No.	Part No.	Description	Qty	Remarks
	2448	Complete Hub Assembly	REF	Includes items 2-5,9,10
1	2449	Hub with Cups and Studs only	1	
2	2450	Inner Race	1	
3	2451	Inner Bearing	1	
4	2452	Outer Race	1	
5	2453	Outer Bearing	1	
6	3359	Spindle Washer	1	
7	3372	Spindle Nut	1	
8	2456	Dust Cap	1	
9	2457	Seal	1	
10	2458	Stud Bolt with Nut	5	
	3360	Cotter Pin	1	

3387 Lift Cylinder



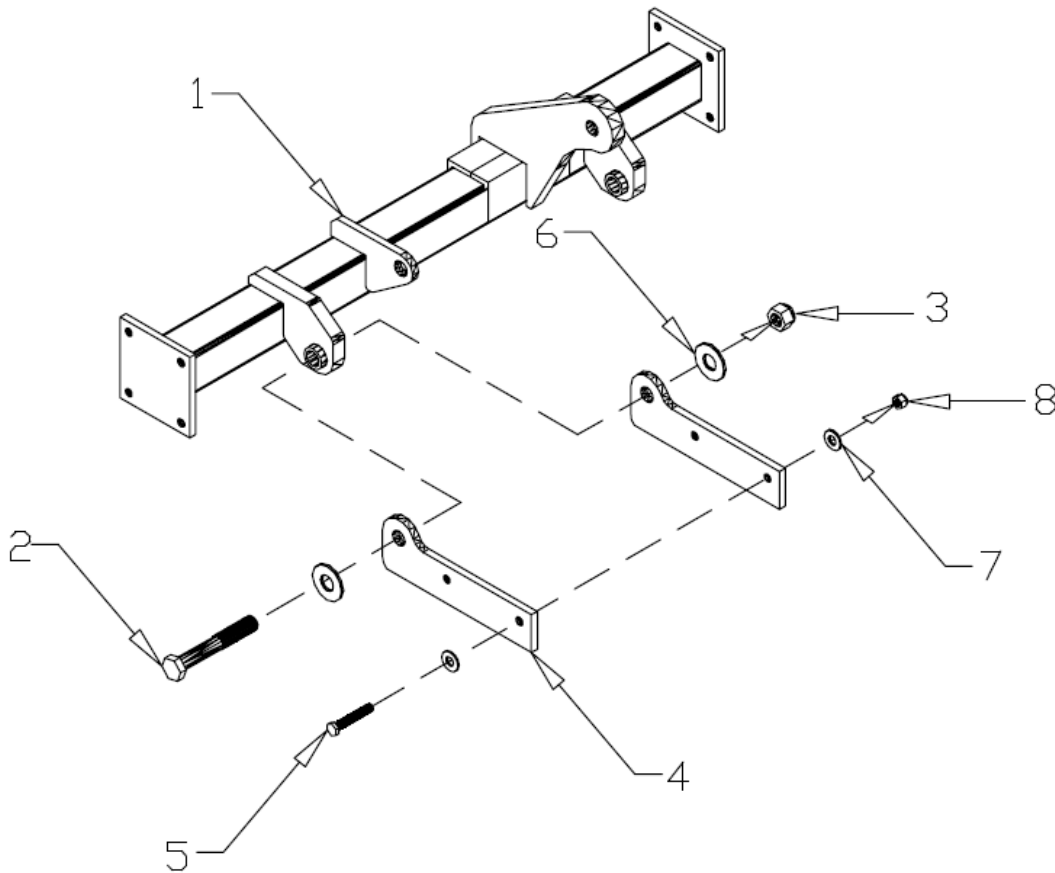
Ref. No.	Part No.	Description	Qty
1	2330	Pin	2
2	3270	Clip Pin	4
3	3152	Rod w/Lock Nut	1
4	3157	Barrel Assembly	1
5	3158	Piston	1
6	3159	Gland	1
7	3165	Breather Plug	1
8	3330	Restrictor	1
REF	3166	Seal Kit	1
REF	3167	Stroke Control Segment Kit	AR

Level Rod Assembly
3064 Complete Assembly for 7210
4461 Complete Assembly for 6010



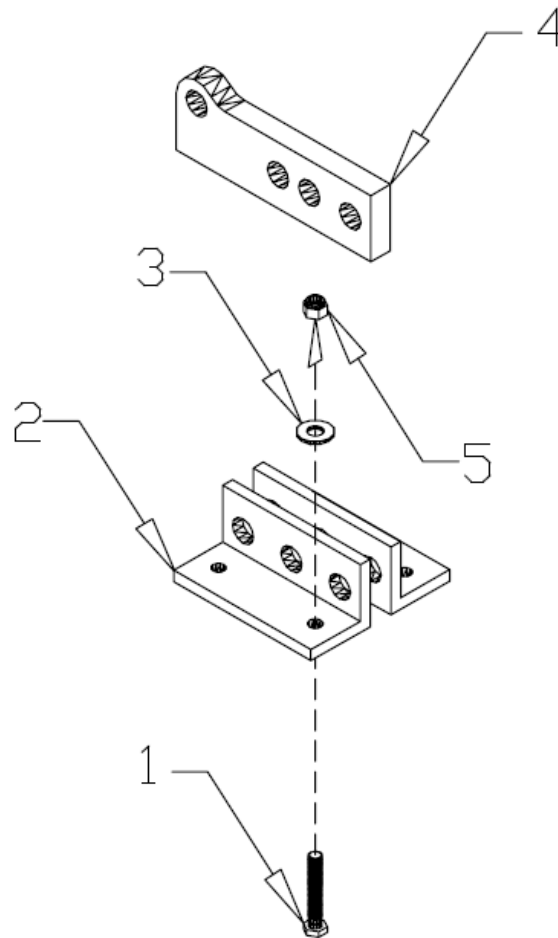
Ref. No.	Part No.	Description	Qty
1	3876	Front Level Rod for 6010	1
1	3065	Front Level Rod for 7210	1
2	2322	Nut	1
3	2321	Turnbuckle	1
4	3066	Rear Level Rod	1
5	2354	Pin	2
6	3270	Clip Pin	4

Pivot Assembly



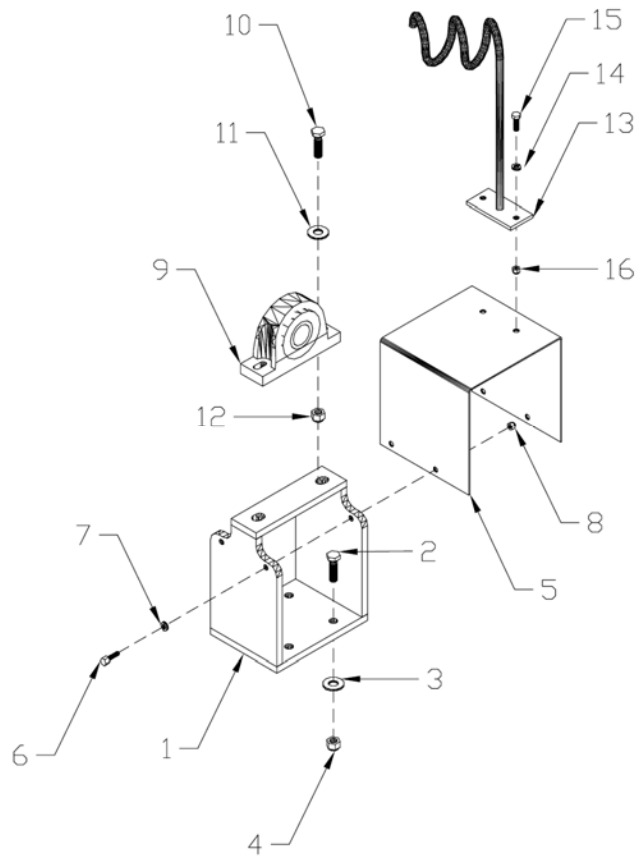
Ref. No.	Part No.	Description	Qty
1	4389	Pivot Assembly	1
2	3389	Bolt	2
3	2638	Nut	2
4	3399	Pivot Mounting Bracket	4
5	3297	Bolt	4
6	3259	Washer	2
7	3298	Washer	4
8	3299	Nut	4

Cylinder Adjusting Block



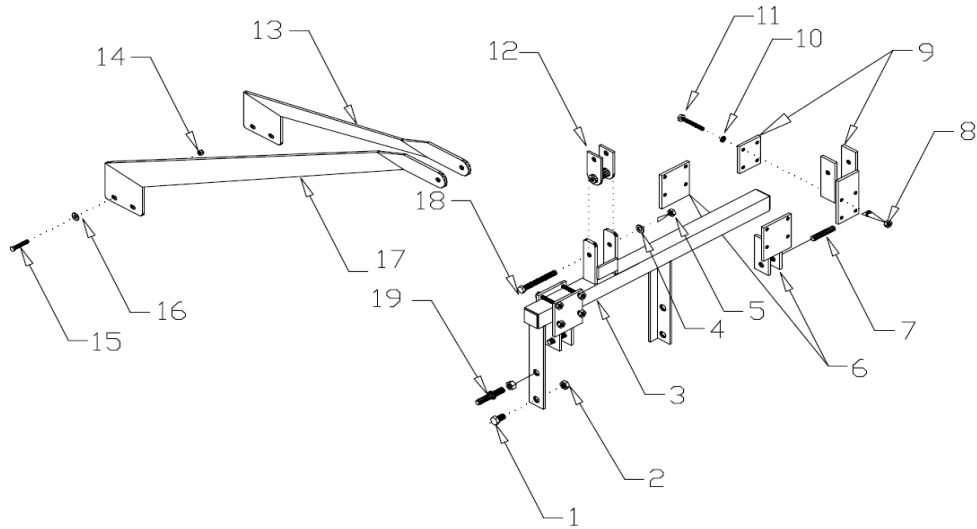
Ref. No.	Part No.	Description	Qty
1	2340	Bolt	4
2	3396	Cylinder Block Adjusting Bracket	2
3	2342	Washer	4
4	3397	Cylinder Mounting Block	1
5	2341	Nut	4

Pillow Block Bearing Mounting Assembly



Ref. No.	Part No.	Description	Qty
1	3391	Pillow Block Bearing Stand	1
2	2340	Bolt	4
3	2342	Washer	4
4	2341	Nut	4
5	3392	Shield Assembly	1
6	3071	Bolt	4
7	3393	Washer	4
8	3072	Nut	4
9	3565	Pillow Block Bearing	1
10	2335	Bolt	2
11	2337	Washer	2
12	2336	Nut	2
13	3394	Hose Holder	1
14	3393	Washer	2
15	2512	Bolt	2
16	2513	Nut	2

Offset Adapter Assembly



Ref. No.	Part No.	Description	Qty
1	3373	Bolt	2
2	3374	Nut	2
3	4390	Offset Adapter	1
4	3285	Washer	1
5	3286	Nut	1
6	2768	Adjustable Lift Guide	2
7	2765	Hitch Pin	2
8	2336	Nut	12
9	3688	Adjustable Three Point Mount	1
10	2337	Washer	12
11	2772	Bolt	12
12	3287	Category I Clevis	1
12A	4860	Category II Clevis	1
13	4391	Left Brace	1
14	3148	Nut	4
15	3297	Bolt	4
16	3718	Washer	4
17	4392	Right Brace	1
18	3284	Bolt	1
19	C222	Hitch Pin	2
20	5045	Offset Adapter Subassembly made of items: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 (12A), 18, 19 At request as separate assembly	1

**Items not Illustrated
For Pull Type Only**

Part No.	Description	Qty
2484	Standard Solid Rubber Tire	REF
2489	Rim for 2490 Tire	REF
2490	26" Aircraft Type Tire Assembly	REF
2622	Foam Filled Tire, Implement	REF
3275	26" Aircraft Tire Only	REF.
3276	Tube for 26" Aircraft Tire	REF.
3516	Foam Filled Aircraft Tire Assembly	REF.
3083	Access Cover	1

HALL MANUFACTURING WARRANTY POLICY FOR BUSH-WHACKER ROTARY MOWERS

NEW EQUIPMENT WARRANTY

Subject to limitations and exclusions set forth herein, Hall Manufacturing Inc. warrants that if any component or part of a machine manufactured by Hall Manufacturing, excluding any mechanical gearbox or mechanical gearbox component used by Hall Manufacturing, proves to be defective in material or workmanship within one (1) year from the delivery date of the original sale to the end user, Hall Manufacturing will, at its option, either repair or replace the defective part without charge. In addition, Hall Manufacturing warrants that if any mechanical gearbox or mechanical gearbox component used by Hall Manufacturing on any Bush-Whacker rotary mower proves to be defective in material or workmanship within three (3) years from the delivery date of the original sale, Hall Manufacturing will, at its option, either repair or replace the defective mechanical gearbox or gearbox part without charge, except for rotary mowers sold directly to a state or related governmental agencies for which the mechanical gearbox or mechanical gearbox component warranty period is limited to one (1) year from the delivery date of the original sale. No payment will be made in lieu of repair of the machine.

LIMITATIONS AND EXCLUSIONS

If the equipment is used for rental the warranty period is ninety (90) days from the date of sale to the renter. This includes all mechanical gearboxes and their components.

This limited warranty covers defects in materials and workmanship in the parts manufactured or used by Hall Manufacturing excluding:

Damage resulting from accident, abuse, misuse, neglect or other than normal and ordinary use of the equipment.

Damage resulting from failure to use the product in accordance with the manufacturer's instructions.

Refer to the appropriate owner's manual for the Bush-Whacker mower model you purchased.

Hall Manufacturing shall be released from all obligations and liabilities under this warranty if:

The equipment had been operated with any accessory, equipment, component or part not manufactured by Hall Manufacturing or approved for use by Hall Manufacturing.

The equipment has been repaired, altered or modified without Hall Manufacturing's approval or if the equipment shall have been operated subsequent to its involvement in an accident or breakdown unless the Owner furnishes reasonable evidence that such repair, alteration, modification or operation subsequent to its involvement in an accident or breakdown was not a cause of the defect.

The Owner does not return, at Owner expense, the defective accessory, equipment component or machine to, or notify, an authorized Bush-Whacker dealer. The Owner shall be responsible for submission of reasonable evidence of proof of Date Discovery of said defect.

REPLACEMENT PARTS WARRANTY AND PARTS REPLACED BY WARRANTY

Hall Manufacturing further warrants that if any genuine Bush-Whacker part or component utilized by an authorized Bush-Whacker dealer proves to be defective in material or workmanship, within thirty (30) days of such utilization, Hall Manufacturing will, at its option, repair or replace the defective part without charge. Owner shall be responsible for all freight charges including labor to and from the place where the warranty work is performed.

WHAT YOU MUST DO TO ENFORCE THIS WARRANTY

Warranty services must be performed or approved by an authorized Bush-Whacker Dealer. The Owner must, at the Owner's expense, deliver, mail or ship the defective product together with the original Bill of Sale to any Authorized Dealer in the Owner's area.

Owner must pay any postage, shipping charges, insurance costs, freight and other expenses to and from the place where the warranty work is performed. If required to return equipment or any component or part to an authorized Bush-Whacker Dealer, Owner shall be obligated to pay any premium payable for overtime labor if overtime is incurred as a result or a request by the Owner.

UNAPPROVED SERVICE OR MODIFICATION

All obligations of Hall Manufacturing under this warranty shall be terminated if:

Service is performed by someone other than a Dealer authorized by Hall Manufacturing

Equipment is modified or altered in ways not approved by Hall Manufacturing.

ACCIDENTS AND NORMAL MAINTENANCE

This warranty covers only defective materials and workmanship. It does not cover depreciation or damage caused by normal wear, accident, improper maintenance, improper protection in storage or improper use. The cost of normal maintenance and replacement of service items such as: cutting parts, drive line cross kits and clutch pads, skid shoes, gearbox and drive line shields, tires, bearings, seals, chains, etc. shall be paid for by the Owner.

HALL MANUFACTURING WARRANTY POLICY FOR BUSH-WHACKER ROTARY MOWERS

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Hall Manufacturing's obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, **INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE** and any liability for incidental and consequential damages with respect to the sale or use of the equipment warranted. Such incidental and consequential damages shall include but not limited to: transportation charges loss of income; rental of substitute equipment, and expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Hall Manufacturing.

IMPROVEMENTS OR CHANGES

Hall Manufacturing reserves the right to make improvements or changes in design and specification at any time without incurring any obligation to owners of units previously sold.

WARRANTY CLAIMS PROCEDURE

Warranty claims must be delivered to Hall Manufacturing within thirty (30) days after the warranty service work was performed.

Hall Manufacturing will approved or deny claim within thirty (30) days of receiving a claim.

Hall Manufacturing will issue credit for all genuine Bush-Whacker parts or components as well as all approved

Dealership employee labor time at a rate of \$30.00 per hour within thirty (30) days of the claim approval.

Defective parts must be held for inspection for ninety (90) days after the work is performed. Hall Manufacturing may request that parts be returned to the Hall Manufacturing factory for inspection.

ACKNOWLEDGEMENT REQUIRED

Hall Manufacturing shall have no obligation under this warranty unless the Owner Registration Card, included with your Operators Manual, is signed by Owner and Dealer or Dealer's Agent and is delivered along with a copy of the original Bill of Sale from the Dealer to Hall Manufacturing within sixty (60) days from the date of sale.

COMPLETE THE WARRANTY REGISTRATION CARD

(ON THE FOLLOWING PAGE)

PLACE IN AN ENVELOPE ALONG WITH THE ORIGINAL BILL OF SALE

MAIL TO:

HALL MANUFACTURING, INC.
P. O. BOX 5638
NORTH LITTLE ROCK, AR 72119

WARRANTY REGISTRATION

** Return to Hall Manufacturing within sixty (60) days of purchase

Date of Purchase _____ Purchaser _____

Address _____ City _____ State _____

Product _____ Model# _____ Serial# _____

Dealer _____

Address _____

City _____ State _____

Signature of Original Buyer

Signature of Dealer or Dealer's Agent

* Please include a copy of the original bill of sale

Notes

