



# SPTO Pendular Spreader

## SPTO-350



# Operator's Manual

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**TO THE DEALER:**

Assembly and proper installation of this product is the responsibility of the Tar River dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Owner's/Operator's Manual are completed before releasing equipment to the owner.

**TO THE OWNER:**

Read this manual before operating your Tar River equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer. The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety decals on the equipment. For service, your authorized Tar River dealer has trained mechanics, genuine Tar River service parts, and the necessary tools and equipment to handle all your needs. Use only genuine Tar River service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation.

Record your implement model and serial number in the space provide below. Your dealer will need this information to give you prompt, efficient service.

**Model Number:** \_\_\_\_\_

**Serial Number:** \_\_\_\_\_

**Date Purchased:** \_\_\_\_\_

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# Introduction

Thank you for purchasing your Tar River Fertilizer Spreader. The SPTO series spreader is designed to provide excellent precision and is versatile enough to spread materials with different weights, textures and sizes as well as high-moisture materials (up to 30% moisture content) such as powdered fertilizer.

The SPTO series features a Poly Hopper and stainless steel bottom openers and spreading fins.

## Technical Specifications

- Powder coated frame
- Durable no rust Poly Hopper
- Stainless steel bottom openers and spreading fins

	SPTO-350
Weight	203 lbs.
Capacity	795 lbs.
Spread swath - granulated	39" - 46"
Spread swath - powdered	16" - 19"
Hopper	Poly
Unit dimensions	45"x46.5" Dia.

# Important Safety Information

## Safety

It is important that you read the entire manual and to become familiar with this product before you begin using it. This product is designed for certain applications only. The manufacturer cannot be responsible for issues arising from modification. We strongly recommend this product not be modified and /or used for any application other than that for which it is designed. If you have any questions relative to a particular application, DO NOT use the product until you have first contacted us to determine if it can or should be performed on the product.

Read and understand this manual and all safety signs before operating and maintaining . Review the safety instructions and precautions annually.

## Safety Signal Words

**TAKE NOTE! This safety alert symbol found though out this manual is used to call you attention to instructions involving you personal safety and the safety of others. Failure to follow these instructions can result in injury or death.**



**This symbol means:  
Attention!  
Become alert!  
Your safety is involved!**

Note the use of the signal words, DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

	<b>DANGER:</b> Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.
	<b>WARNING:</b> Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
	<b>CAUTION:</b> Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

# Important Safety Information

## General Safety Guidelines

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them.

Replace any DANGER, WARNING, CAUTION or instruction safety decal that is not readable or is missing. Location of such decals are indicated in this manual. Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

To prevent injury of death, use a tractor equipped with a Roll Over Protection System (ROPS). Do not paint over, remove or deface any signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **Don't try it!**



## Safety Decal Care

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current safety sign
- Safety signs are available from your Distributor or Dealer Parts Department or the factory.

# Important Safety Information

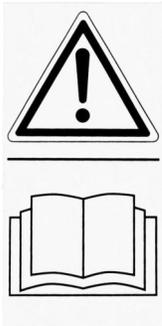
## How to install Safety Signs:

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.

# Important Safety Information

## Safety Decals

If “Safety” Decals are damaged or unreadable, replace immediately.



**VIETATO AVVICINARSI, OLIARE E PULIRE I MECCANISMI DURANTE IL MOTO.**

**KEEP AWAY AND DO NOT OIL NOR CLEAN GEARS WHILE MOVING.**

**DÉFENSE D'APPROCHER, LUBRIFIER ET NETTOYER LES MÉCANISMES EN OPÉRATION.**

**ES IST STRIKT VERBOTEN SICH NÄHERN UND DAS GETRIEBE ZU ÖLEN ODER ZU REINIGEN.**

**منع الاقتراب من الاجزء الميكانيكية او تشحيمها او تنظيفها أثناء امتعالها**

**PROHIBIDO APROXIMARSE, LUBRIFICAR O LIMPIAR LOS MECANISMOS EN MOVIMIENTO**

**WARNING**



**WARNING**

Chemicals may cause eye, skin or breathing problems. Wear face mask, gloves, and goggles. Read and follow safety instructions of the chemical supplier's label.

C550 318B

**WARNING**

1. Be familiar with controls and safety precautions before operating.
2. Keep all shields in place.
3. Stop engine before leaving operator's position.
4. Wait for all machine movement to stop before starting to adjust, lubricate, clean or unclog the machine.
5. Keep hands, feet and clothing away from power driven parts.
6. Do not permit passengers.
7. Make certain everyone is clear of machine before starting engine or operation.

# Important Safety Information



## Before Operation

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing, which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- Assure that all tires are inflated evenly.
- Give the unit a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included with this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the unit until you are sure that the area is clear, especially of children and animals.
- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Use a tractor equipped with a Roll Over Protection System (ROPS) and fasten your seat belt prior to starting engine.
- The manufacturer does not recommend usage of tractor with ROPS removed.
- Move tractor wheels to the widest recommended settings to increase stability.
- Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chain.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.

# Important Safety Information



## During Operation

- Children should not be allowed on the product.
- Clear the area of small children and bystanders before moving the spreader.
- If using a towing unit, securely attach feeder by using a hardened 3/4" pin, a metal retainer, and safety chains if required. Shift towing unit to a lower gear before going down steep downgrades, thus using the engine as a retarding force. Keep towing vehicle in gear at all times. Slow down for corners and rough terrain.
- Make sure you are in compliance with all local and state regulations regarding transporting equipment on public roads and highways. Lights and slow moving signs must be clean and visible by overtaking or oncoming traffic when feeder is transported.
- Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED!** Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and **remove the ignition key.**
- Be especially observant of the operating area and terrain. Watch for holes, rocks or hidden hazards. Always inspect the area prior to operation.
- **DO NOT** operate near the edge of drop-offs or banks.
- **DO NOT** operate on steep slopes as overturns may result.
- Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.

# Important Safety Information



## Highway and Transport Operations

- Adopt safe driving practices.
- Keep the brake pedals latched together at all times. **Never use independent braking with machine in tow as loss of control and/or upset of unit can result.**
- Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed at a minimum.
- Reduce speed prior to turns to avoid the risk of overturning.
- Avoid sudden uphill turns on steep slopes.
- Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway and marking requirements.
- When driving the tractor and equipment on the road or highway under 40 kph (20 mph) at night or during the day, use the amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated at lower than the gross weight at which you are operating.
- Watch for obstructions overhead and to the side while transporting.
- Always operate in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.
- Pick the most level route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working in inclines.

## Important Safety Information



### Highway and Transport Operations

- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks and holes, they can be dangerous for equipment operation or movement.
- Allow for unit length when making turns,
- Operate the towing vehicle from the operator's seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment and attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

# Operating Instructions

## Operation

It is important that each operator of the Tar River Fertilizer Spreader read and understand the operational procedures and all related safety precautions outlined in this section. The following checklist is provided for the operator. It is important for both the personal safety and maintaining good mechanical condition that this check list is followed.

### Prior to operating the Fertilizer Spreader:

1. Make sure that the spreader is properly lubricated.
2. Check for damaged or missing parts.
3. Check that all hardware is tightened according to specifications (See Torque Chart page 25).
4. Remove any foreign objects from hopper.
5. Never allow anyone inside the hopper. Serious injury or death could occur.
6. Do not place hands or feet inside hopper with tractor running. Moving parts inside the hopper can cause serious injury or death.
7. Make sure all guards are in place before operating spreader.
8. Clear the area of obstacles that can damage the spreader or cause uneven distribution of material.
9. Clear the area of bystanders, especially small children and animals.



**Caution: Never load hopper with material without first securing the spreader to the tractor. Adding material to the hopper without first attaching it to the tractor can cause the spreader to flip over causing serious injury or death.**



**Warning: Take necessary precautions when handling any chemical. Chemicals can cause eye/skin irritation and or respiratory complications. Always wear PPE (Personal Protection Equipment) gloves, eye protection, face mask, respirator when filling the hopper. Refer to the chemical manufacturer's label for all safety recommendations.**



**Warning: If a tractor with a cab is used it must be equipped with proper filtration system or operator must wear a respirator cable of filtering toxic particles to prevent inhalation. Chemical particles can be harmful and possibly**

# Operating Instructions

## Attaching to the tractor

1. Back the tractor to the spreader carefully. Turn off the tractor and set the park brake. Be sure there is nothing between the tractor and the spreader including people or animals. There is a possibility of serious injury or death.
2. Slide the tractor lower arms over the welded pins on the spreader. Secure with lynch pins. Next, connect the top link to the spreader and secure with the top hitch pin.
3. The spreader must be horizontal to spread material uniformly. Adjust the tilt by twisting the Top Link Arm in or out.
4. Adjust the height of the spreader to approximately 28"-32" from the bottom of the pendular spout to ground level, (See Fig. 1).
5. Install the PTO on the spreader and then the tractor. Be sure to secure both ends with proper pins or bolts. Serious injury or death can occur from improperly secured PTO shaft. It may be necessary to shorten the PTO. See instructions on "Shortening a PTO Driveline".

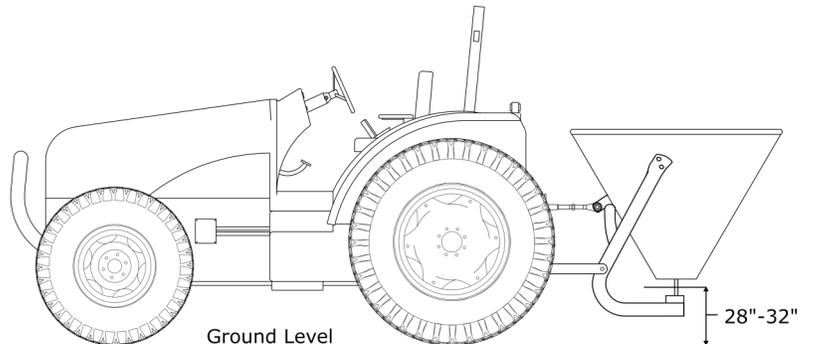


Fig. 1

# Operating Instructions

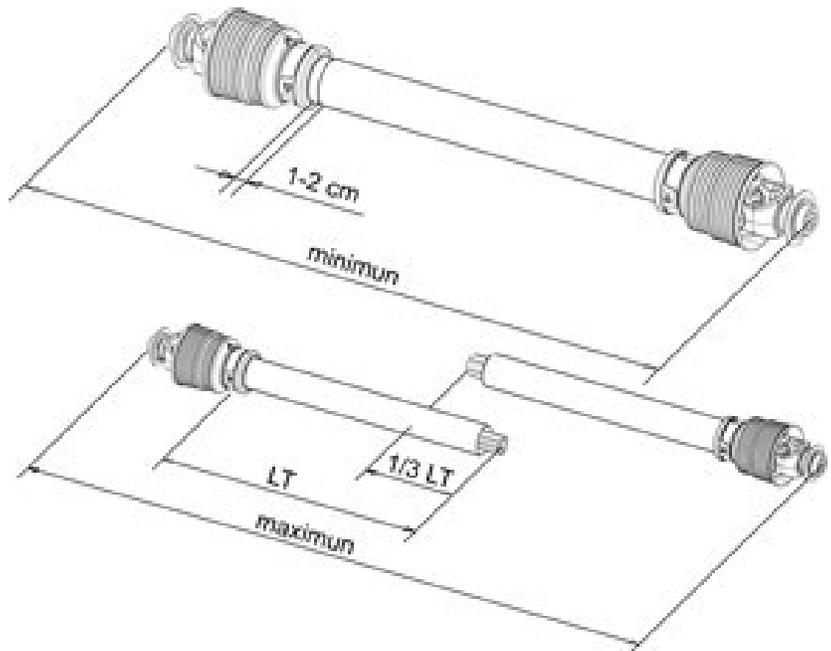
## Attaching the PTO shaft:

Before installing the PTO shaft make sure that the RPM rating and the direction of rotation match those of the tractor. Carefully read the PTO shaft and tractor instructions. Before operation, make sure that the guards are installed on the power take off of the tractor and PTO shaft. Make sure that they cover the PTO shaft throughout its length. Note: The PTO shaft may be too long and require shortening. See “**Shortening a PTO driveline**” below.

Press the locking pin on the PTO yoke and slide yoke on to the PTO of the tractor until the pin seats. Pull on PTO shaft to make certain it is locked in place. Repeat the procedure for the machine end. Attach the PTO cover’s safety chains to a stationary part of the tractor. Leave some slack in the chain to accommodate movement.

## Shortening a PTO driveline:

1. With the machine attached to the tractor’s 3-point hitch, and the PTO shaft not installed, separate the PTO shaft. Attach the machine end to the machine and the other end to the tractor PTO input shaft.
2. Raise the machine by using the tractor’s hydraulic 3-point hitch to its maximum lift height.
3. Hold the half shafts next to each other and mark them so each end is approximately 1/2” from hitting the end of the telescopic profiles.
4. Shorten the inner and outer guard tubes equally.
5. Shorten the inner and outer profiles by the same length as the guard tubes. Using a rattle file, round off all sharp edges and burrs. Grease the telescopic profile generously before reassembling.



**When fully extended, the tubes must overlap by at least 1/3 of the length of the pipes (LT). When retracted, the min. acceptable clearance is 1-2 cm (3/8”-3/4”)**

Scan the QR code below for more detailed information on PTO installation.



# Operating Instructions

## Spreading Operation

Consider the following factors when determining material quantity distributed per acre:

1. Operating speed is determined by ground conditions. Faster speeds can be obtained on dry, even, cleared land. Slower speeds are required for uneven ground. Making a practice run will help determine the correct setting for spreading as conditions vary.
2. Type or material distributed, density, moisture content, etc.
3. Width of spreading area.
4. Spreader lever position.

## Spreading Adjustment

The Graded Scale is located on the side of the spreader near the handle, (See Fig. 2). This allows for setting a predetermined opening of the Distribution Ports to adjust the amount of material spread. The adjustment settings consist of three lines of holes identified with the letters, “T, S, R”. Each line contains 9 holes allowing for 27 positions of the Distribution Ports.

Setting the Spreading Adjustment is easily accomplished by moving the Adjustment Spring Pin to the desired position on the Graded Scale. Each type of material spread requires a unique setting. Refer to the “Spreading Charts” on the following pages of this manual for the correct position. These positions are a starting point and may require further adjustment. Make a test run to determine the actual spreading width.

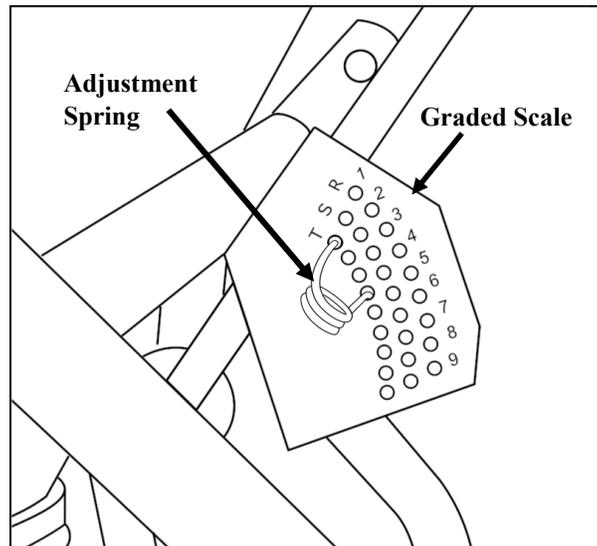


Fig. 2

# Operating Instructions

## Spread Width

The greatest amount of material spread will always be directly behind the spreader and decreases the further away from the spreader. To ensure consistent coverage of material spread, the machine operator must maintain a parallel pattern during spreading, maintaining an overlap of no less than half the “*Full Width of Spread Pattern*”, (See Fig. 3.) from the previous pass. This will ensure adequate coverage of material. Repeat each pass until the area is completely covered.

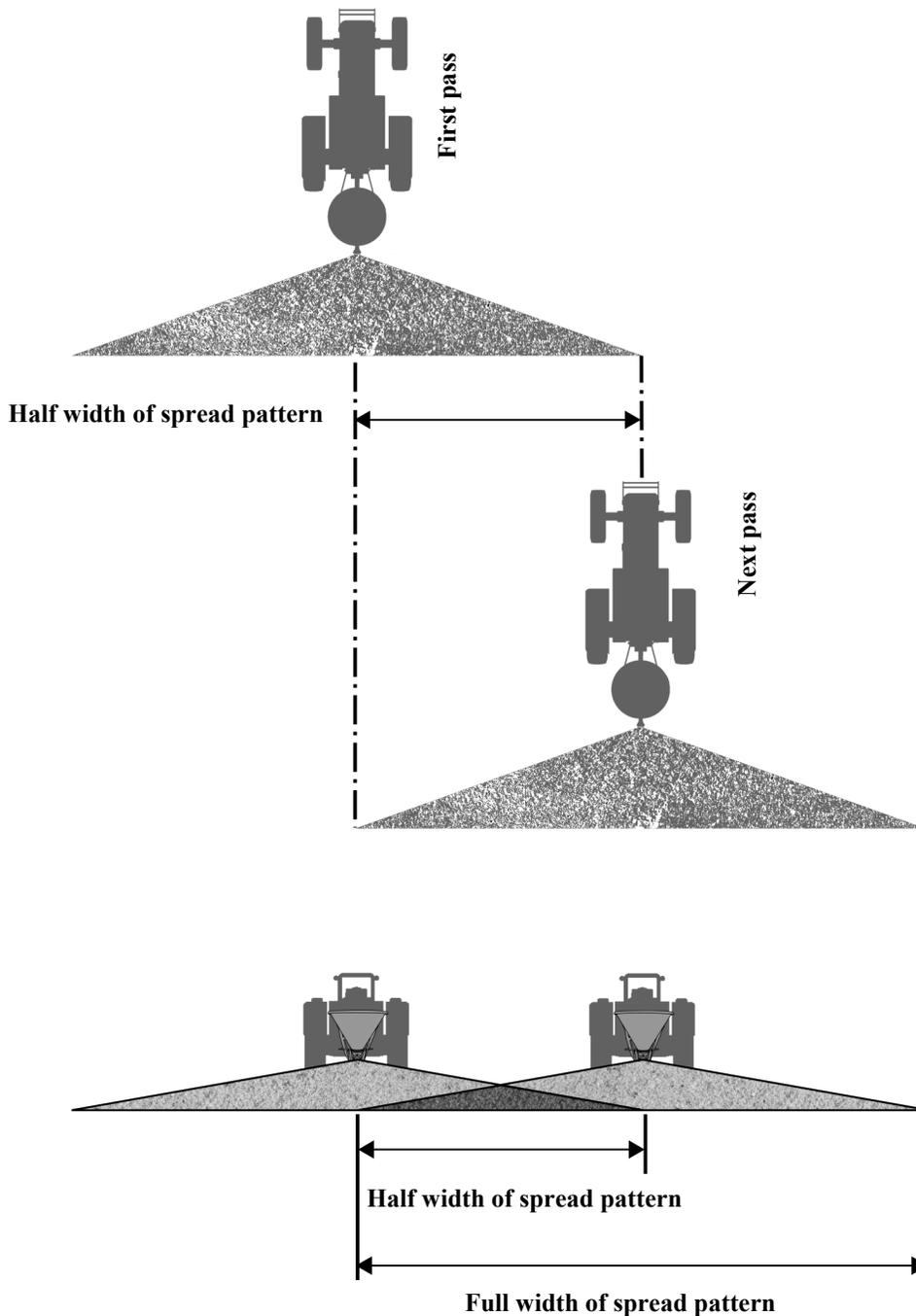


Fig. 3

# Operating Instructions

## Spread Pattern

The operator should establish a pattern of spreading by first setting the tractor at half the “Full Spread Distance” from the edge of the field. Begin by spreading around the perimeter of the field and then in parallel rows after each pass. Each pass should be equal to half the “Full Spread Distance” for proper coverage of material, (See Fig. 4).

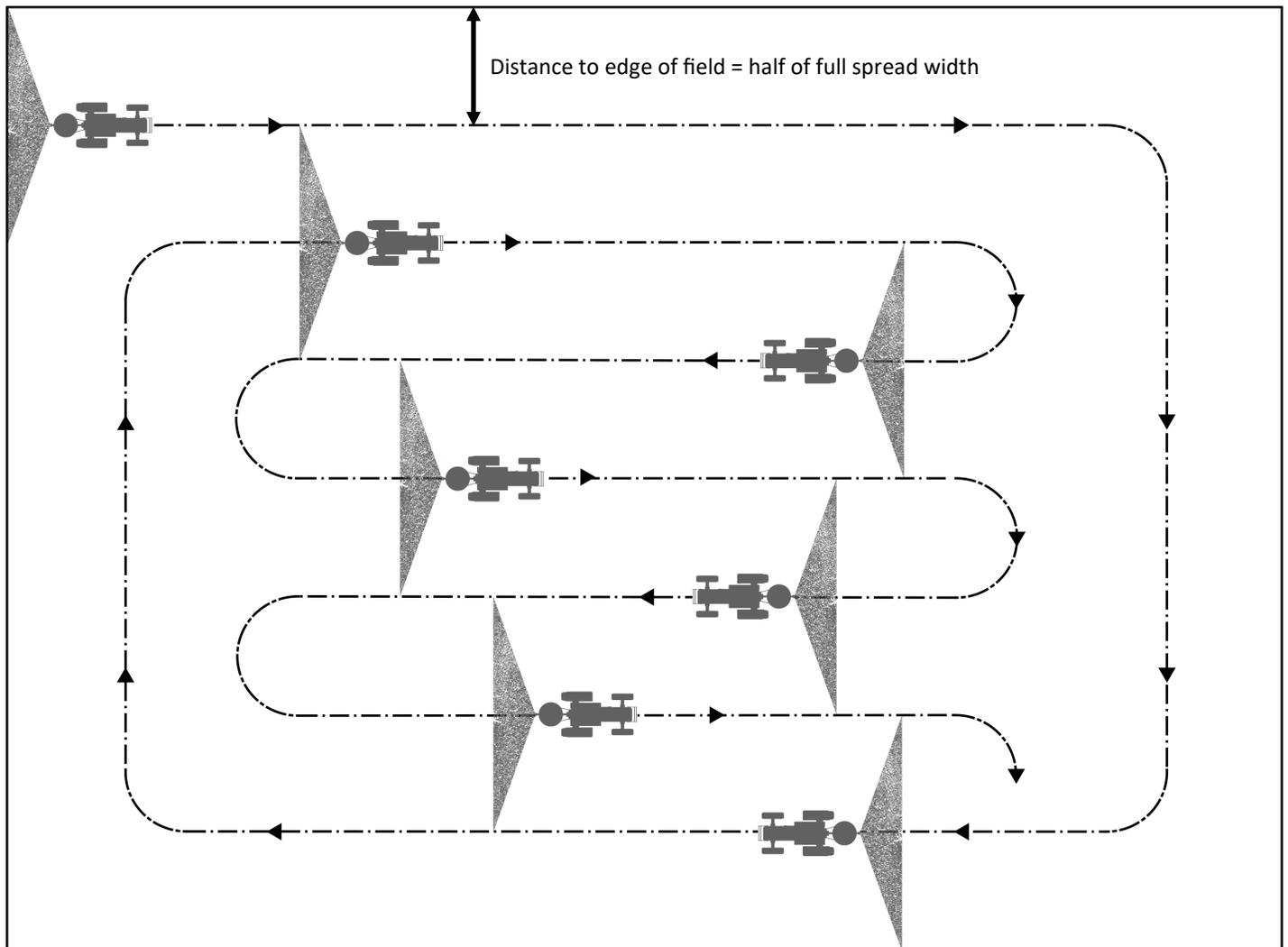
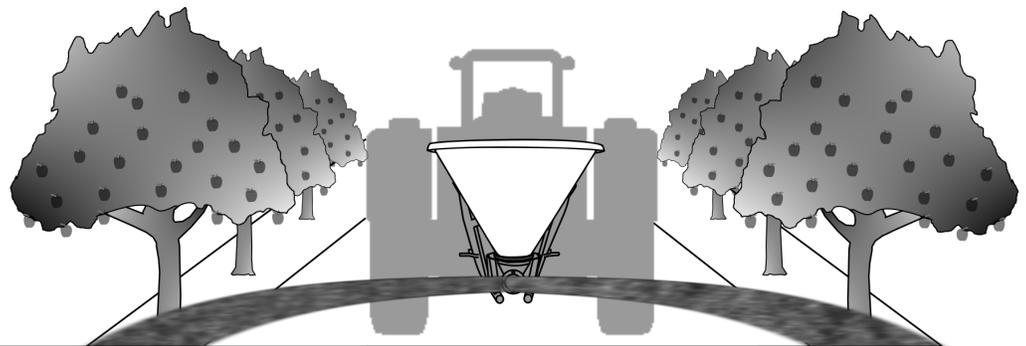


Fig. 4

# Operating Instructions

## Band Spreading

Band spreading is the technique of spreading material to the sides and not to the center of the spreader. This is accomplished by removing the deflector from the end of the spout and cutting off a portion of the spout. Determine the “Banding Width” desired and remove a portion of the spout according to the chart below. Note: The chart below gives approximate distances and may vary according to conditions, moisture content of material, speed of tractor, etc. Only a practice run can determine the exact amount of material/distance spread, (See Fig. 5).



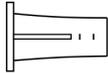
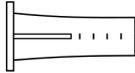
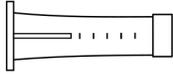
1/4 Length - 4.00" 	3'	6'	3'
1/2 Length - 7-3/4" 	3'	10'	3'
3/4 Length - 11-1/2" 	3'	16'	3'
Full Length - 15-1/2" 	3'	23'	3'
<b>Cut Dimensions</b>	<b>Row width in feet</b>	<b>Banding width in feet</b>	<b>Row width in feet</b>

Fig. 5

# Spreading Charts

PTO 540 RPM		Fertilizer Spread Table in Lbs./per Acre																												
Type of fertilizer	Spread width ft.	Work speed mph	Lever Position																											
			1R	1S	1T	2R	2S	2T	3R	3S	3T	4R	4S	4T	5R	5S	5T	6R	6S	6T	7R	7S	7T	8R	8S	8T	9R	9S	9T	
Complex 12.12.12	39	3.7				38	58	82	104	146	186	228	290	354	416	488	580	632	698	764	830	944	1056	1170	1207	1244	1282	1296	1320	
		5				27	43	61	82	109	139	171	217	265	311	366	420	473	523	573	623	708	792	878	905	933	962	972	990	
		6.2				22	35	49	67	91	119	151	187	237	289	343	399	456	513	570	627	726	816	904	931	959	987	1015	1043	
		7.5				18	28	39	54	74	100	131	166	207	253	302	353	405	457	510	563	664	758	848	936	963	991	1019	1047	
		8.7				15	23	32	44	60	82	108	139	177	219	265	313	362	412	463	515	618	715	806	894	921	949	977	1005	
Superphosphate	39	3.7				20	42	64	86	122	160	196	252	306	362	426	492	556	636	718	798	888	980	1070	1136	1204	1270	1290	1310	
		5				15	31	48	64	91	120	147	189	229	271	319	369	417	477	538	596	666	735	803	852	903	963	967	982	
		6.2				12	25	38	51	73	96	118	151	184	217	256	295	334	382	431	478	538	588	642	682	722	762	744	786	
		7.5				10	21	32	43	61	80	98	126	153	181	213	246	278	318	359	399	444	490	535	588	602	635	645	655	
		8.7				9	18	27	36	52	69	84	108	131	155	183	211	238	273	308	342	380	420	459	487	516	544	553	561	
Ammonium Nitrate	39	3.7				56	92	128	164	218	270	324	404	484	564	652	742	830	956	1082	1208	1274	1340	1407	1448	1480	1532	1544	1556	
		5				42	69	96	122	163	202	243	303	363	423	489	556	623	717	811	906	955	1005	1055	1086	1117	1148	1158	1167	
		6.2				34	55	77	98	131	162	194	242	290	338	391	445	498	574	649	725	762	804	844	869	894	919	926	934	
		7.5				28	46	64	82	109	135	162	202	242	282	326	371	415	478	541	604	637	670	704	724	745	766	772	778	
		8.7				24	39	55	70	93	116	139	173	207	242	279	318	356	410	464	518	546	574	603	621	638	656	662	667	
Calcium Nitrate	39	3.7																												
		5																												
		6.2																												
		7.5																												
		8.7																												
Ammonium Sulfate	39	3.7				66	124	182	240	322	404	486	620	752	886	1028	1172	1314	1490	1666	1842	2050	2256	2464	2490	2514	2540	2570	2585	
		5				49	93	136	180	241	303	364	465	564	664	771	879	986	1117	1249	1381	1537	1692	1847	1867	1885	1905	1927	1939	
		6.2				40	74	109	144	193	242	291	372	451	531	617	703	788	894	999	1105	1230	1354	1478	1494	1508	1525	1542	1551	
		7.5				33	62	91	120	161	202	243	310	376	443	514	586	657	745	833	921	1025	1128	1232	1245	1257	1270	1285	1292	
		8.7				38	53	78	103	138	173	208	266	322	376	440	502	563	639	714	789	878	967	1056	1067	1077	1089	1101	1108	
Magnesium Potassium Sulfate	39	3.7				28	56	86	114	162	212	260	326	390	456	520	582	616	736	828	918	1034	1152	1268	1327	1077	1089	1101	1500	
		5				21	42	64	86	121	159	194	244	292	341	390	436	484	552	621	689	775	864	951	995	1386	1445	1486	1125	
		6.2				17	34	52	68	97	127	155	196	234	273	312	349	387	442	497	551	620	691	761	796	1039	1084	1115	900	
		7.5				14	28	43	57	81	106	130	163	195	228	260	291	323	368	414	459	517	576	634	663	832	867	892	750	
		8.7				12	24	37	49	69	91	111	140	167	195	223	249	276	315	355	393	443	493	543	569	393	723	743	643	

# Spreading Charts

**Fertilizer Spread Table in Lbs./per Acre**

PTO 540 RPM	Type of fertilizer	Spread width ft.	Work speed mph	Lever Position																										
				1R	1S	1T	2R	2S	2T	3R	3S	3T	4R	4S	4T	5R	5S	5T	6R	6S	6T	7R	7S	7T	8R	8S	8T	9R	9S	9T
				33	3.7	26	62	100	136	192	250	306	380	456	530	628	724	820	932	1144	1156	1238	1318	1400	1466	1534	1600	1660	1680	
Potassium Chloride Granular	5	19	46	75	101	144	187	229	285	342	397	469	543	615	699	783	866	928	988	1050	1099	1150	1200	1245	1260					
	6.2	16	37	60	81	115	150	183	228	274	318	378	434	492	559	624	693	743	791	840	880	920	960	996	1008					
	7.5	13	31	50	68	96	125	153	190	228	265	313	362	410	466	522	578	619	659	700	733	767	800	830	840					
Urea	8.7	11	27	43	58	82	107	130	163	195	227	268	310	351	389	447	495	531	585	600	628	657	688	711	720					
	3.7	38	64	90	116	170	222	278	336	396	456	530	606	680	768	858	946	1030	1116	1200	1234	1266	1300	1320	1335					
	5	28	48	67	87	127	166	206	252	297	341	397	454	510	576	643	709	772	837	900	925	949	975	990	1001					
Calcium Cyanamide	6.2	23	38	54	69	102	133	165	142	238	273	318	364	408	461	515	567	618	670	720	740	759	780	792	801					
	7.5	19	32	45	58	85	111	138	168	196	228	265	303	340	384	429	473	515	558	600	617	633	650	660	667					
	8.7	16	27	39	50	73	95	118	144	170	195	227	260	291	329	368	405	441	478	514	529	543	557	566	572					
Granulated Thomas	3.7	68	124	178	234	316	396	478	596	714	832	966	1098	1232	1346	1462	1576	1650	1728	1800	1834	1866	1900	1925	1940					
	5	51	93	133	175	237	297	358	447	535	624	724	832	924	1009	1096	1182	1237	1294	1350	1375	1399	1425	1444	1455					
	6.2	41	74	107	140	190	238	266	358	428	499	580	659	739	808	877	946	990	1035	1080	1100	1120	1140	1155	1164					
Powdered Thomas	7.5	34	62	89	117	158	198	239	298	357	416	483	549	616	673	731	788	825	863	900	917	933	950	962	970					
	8.7	29	53	76	100	135	170	204	205	229	357	414	471	528	577	626	675	707	740	771	788	800	814	825	831					
	3.7	32	64	94	126	182	238	294	362	432	500	598	696	794	882	970	1058	1182	1304	1428	1502	1576	1650	1692	1714					
Granulated Thomas	5	24	48	70	94	136	178	220	271	324	375	488	522	595	661	727	793	886	978	1071	1128	1182	1237	1269	1285					
	6.2	19	38	56	76	109	143	176	217	259	300	359	418	476	529	582	634	709	782	857	901	946	989	1015	1028					
	7.5	16	32	47	63	91	119	147	181	216	250	299	348	397	441	485	529	591	652	717	761	788	825	846	857					
Powdered Thomas	8.7	14	37	40	54	78	102	126	155	185	214	256	298	340	378	416	453	507	559	612	644	675	707	725	735					
	3.7	50	122	194	266	538	808	1080	1528	1976	2424	2696	2966	3238	3586	3934	4282	4680	5080	5478	5578	5630								
	5	38	162	145	200	403	606	809	1146	1482	1817	2022	2224	2428	2689	2950	3211	3510	3810	4108	4183	4222								
Powdered Thomas	6.2	30	73	116	160	323	485	647	917	1186	1454	1618	1780	1942	2152	2360	2569	2808	3048	3287	3347									
	7.5	25	61	97	133	269	404	540	764	988	1212	1348	1483	1619	1793	1967	2141	2340	2540	2739	2789									
	8.7	21	52	83	114	231	346	462	655	847	1038	1155	1271	1387	1537	1686	1835	2006	2177	2348	2391									



# Maintenance



**Danger: Never attempt to perform maintenance on the machine without first stopping the towing vehicle's engine, setting the parking brake and removing the key from the ignition. Always wear the proper protection (PPE) when performing service. Refer to the chemical manufacturer for proper safety recommendations.**

- Proper maintenance is the responsibility of the owner/operator. Poor maintenance is an invitation to trouble.
- Operate the spreader in an area with adequate ventilation. Never operate the engine of the towing vehicle in a closed building. Exhaust fumes may cause asphyxiation (suffocation) leading to serious injury or death.
- Be certain all moving parts on attachments have come to a complete stop before attempting to perform maintenance.
- Always use the proper tools or equipment for the job at hand. Maintenance area should be clean and dry. Electrical outlets and tools are to be properly grounded.
- Use extreme caution when making adjustments. Securely block equipment before servicing.
- After servicing, be sure all tools, parts and service equipment are removed.
- Use personal protection equipment (PPE) such as eye, hand, hearing and proper mask to filter any chemicals used.
- Check tightness of all hardware periodically, including; bolts, nuts, screws, pins. See page "Torque Specification" Chart on page 23 for proper torque specifications.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, the manufacturer does not accept any liability for injury or warranty.

## Service

### Before operating spreader:

- Grease all exposed moving parts.
- Inspect the spreader for any damaged or worn parts. Replace damaged or worn parts with OEM parts only to avoid voiding the warranty.
- Check all hardware for tightness.
- Check the Gearbox Oil Level every 8 hours. Remove the Oil Dipstick and inspect. If oil is at or below the "Add Oil" mark, add SAE 90W oil to bring the oil level to the normal operating range.

# Maintenance

## **After operating spreader:**

- Wash the spreader thoroughly. This is extremely important especially after spreading corrosive materials such as fertilizer or salt. These materials are highly corrosive and will eat away at metal parts.
- Dry the machine after washing to remove any remaining water. Moisture will cause rust to form and corrode metal parts.
- Exposed parts should be coated with a thick layer of grease for lubrication and protection.

## **End of season or prolonged storage:**

- Spreader should be washed and dried thoroughly.
- Examine the spreader for any damaged or worn parts. Replace with OEM parts to prevent voiding warranty.
- Check for corrosion on painted parts. It is advisable to remove any loose rust, prime and paint these parts to avoid further corrosion.
- All exposed moving parts should be coated with grease.
- Store the spreader in a clean and dry location. If shelter is not possible, the spreader should be covered from the elements.

# Torque Specifications

Torque Specifications for Common Bolt Sizes															
Inches		Bolt Head Identification						Metric		Bolt Head Identification					
Bolt size (inches)	Thread pitch	Grade 2		Grade 5		Grade 8		Bolt size (metric)	Thread pitch	Class 5.8		Class 8.8		Class 10.9	
		N.m	ft-lb	N.m	ft-lb	N.m	ft-lb			N.m	ft-lb	N.m	ft-lb	N.m	ft-lb
1/4"	20	7	5	11	8	16	12	M5	0.08	4	3	6	4	9	7
1/4"	28	8	6	13	10	19	14	M6	1	6	4	10	7	15	11
5/16"	18	15	11	24	17	33	25	M8	1.25	16	12	25	18	36	27
5/16"	24	17	13	26	19	37	27	M8	1	17	13	26	19	38	28
3/8"	16	27	20	42	31	59	44	M10	1.5	31	23	48	35	71	52
3/8"	24	31	23	47	35	67	49	M10	1.25	33	24	51	38	75	55
7/16"	14	43	32	67	49	95	70	M10	1	35	26	53	39	78	58
7/16"	20	48	36	75	55	106	78	M12	1.75	54	40	84	62	123	91
1/2"	13	66	48	102	75	144	106	M12	1.5	56	41	87	64	128	94
1/2"	20	75	55	115	85	163	120	M12	1.25	59	44	90	66	133	98
9/16"	12	95	70	147	109	208	154	M14	2	84	62	133	98	195	144
9/16"	18	106	79	164	121	232	171	M14	1.5	94	69	142	105	209	154
5/8"	11	132	97	203	150	287	212	M16	2	131	97	206	152	302	223
5/8"	18	149	110	230	170	325	240	M16	1.5	141	104	218	161	320	236
3/4"	10	233	172	361	266	509	376	M18	2.5	181	133	295	218	421	310
3/4"	16	261	192	403	297	569	420	M18	2	196	145	311	229	443	327
7/8"	9	226	167	582	430	822	606	M18	1.5	203	150	327	241	465	343
7/8"	14	249	184	642	473	906	668	M20	2.5	256	189	415	306	592	437
1"	8	339	250	873	644	1232	909	M20	1.5	288	212	454	335	646	476
1"	12	371	273	955	704	1348	995	M22	2.5	344	254	567	418	807	595
1-1/8"	7	480	354	1077	794	1746	1288	M22	1.5	381	281	613	452	873	644
1-1/8"	12	539	397	1208	891	1958	1445	M24	3	444	327	714	526	1017	750
1-1/4"	7	677	500	1519	1120	2463	1817	M24	2	488	360	769	567	1095	808
1-1/4"	12	750	553	1682	1241	2728	2012	M27	3	656	484	1050	774	1496	1103
1-3/8"	6	888	655	1992	1469	3230	2382	M27	2	719	530	1119	825	1594	1176
1-3/8"	12	1011	746	2268	1673	3677	2712	M30	3.5	906	668	1420	1047	2033	1499
1-1/2"	6	1179	869	2643	1949	4286	3161	M30	2	1000	738	1600	1180	2250	1659
1-1/2"	12	1326	978	2974	2194	4823	3557	M36	4	1534	1131	2482	1830	3535	2607

**Notes:**

This chart is an approximate estimate of torque values.

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for Metric hardware.

Make sure that fastener threads are clean and that you properly start thread engagement.



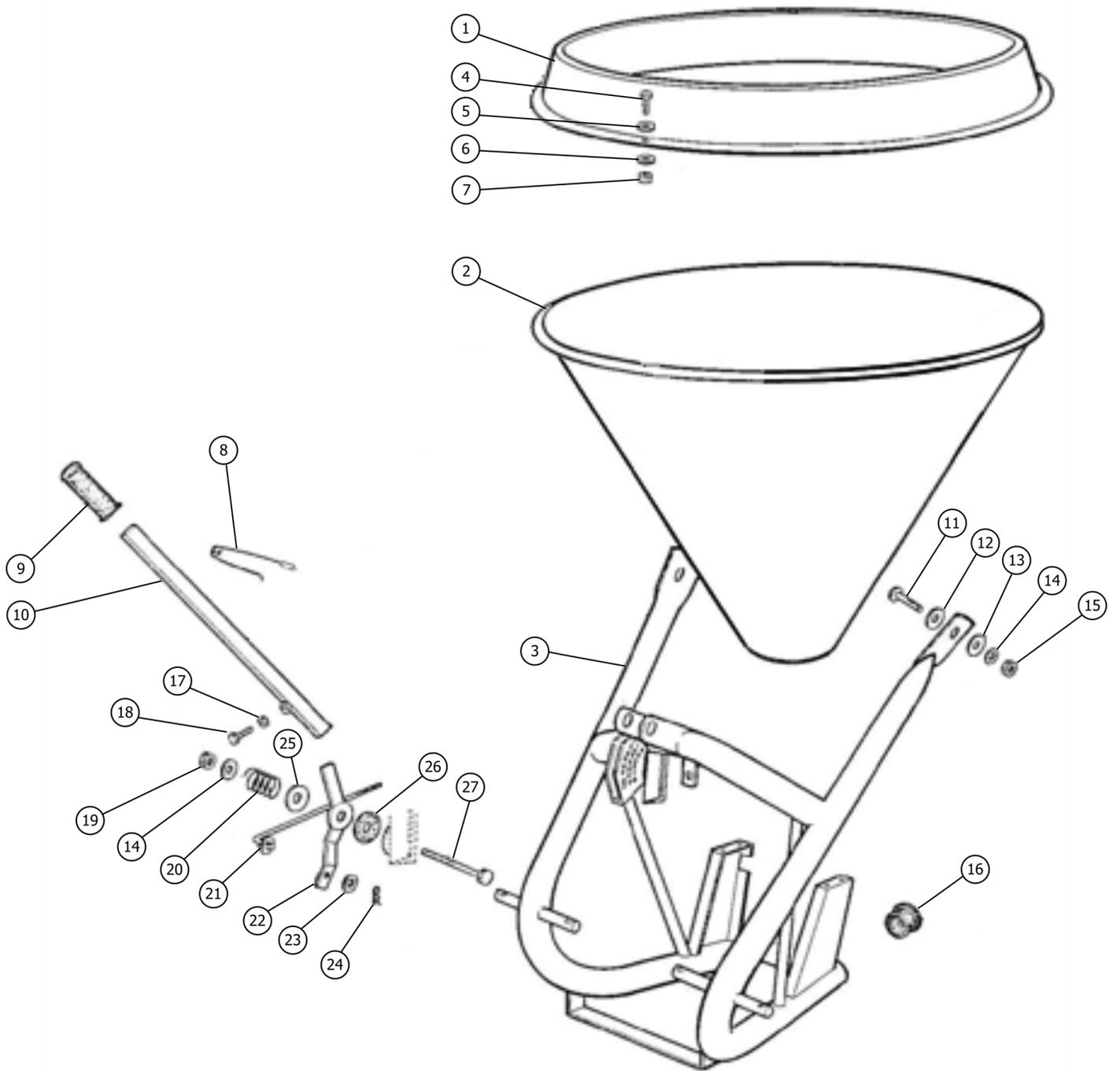
# SPTO Pendular Spreader

## SPTO-350



## Parts Manual

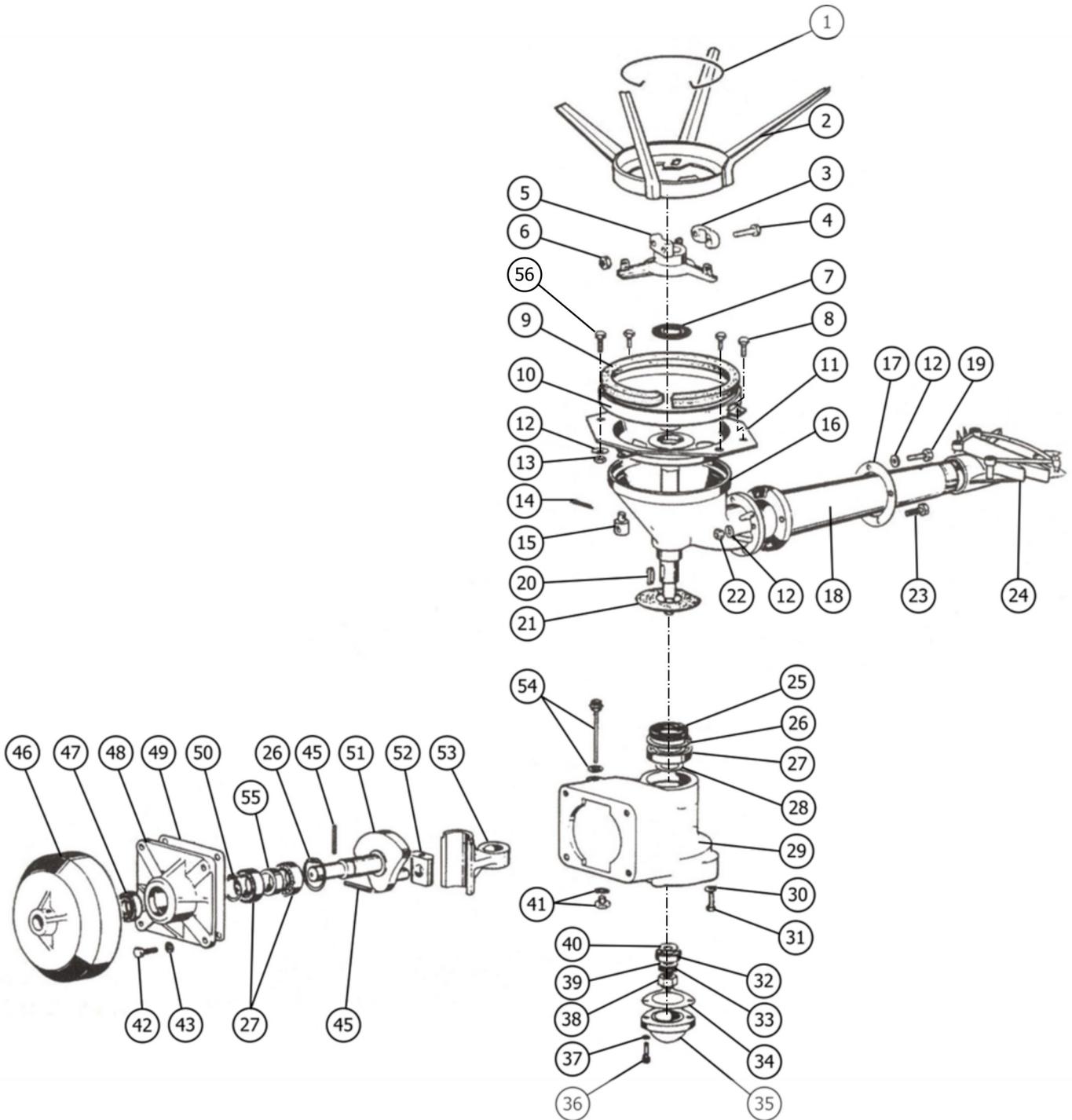
# Hopper Assembly SPTO-350



## Hopper Assembly SPTO-350

Item	Part #	Description	Qty.
1	RP58-10-15	Extension 150	1
2	RP58-00-19	Hopper 350F	1
3	RP37-02-09	Frame	1
4	RP28-50-77	Bolt	5
5	RP20-11-06	Washer	5
6	RP20-23-06	Washer	5
7	RP21-46-06	Nut	5
8	RP61-17-05	Spring	1
9	RP58-60-77	Handle	1
10	RP37-30-10	Lever	1
11	RP22-92-64	Bolt	3
12	RP20-11-16	Washer	3
13	RP20-10-13	Washer	3
14	RP20-24-12	Washer	3
15	RP21-10-12	Nut	3
16	RP58-30-37	Plug	2
17	RP21-11-08	Nut	1
18	RP22-51-25	Bolt	1
19	RP21-30-12	Nut	1
20	RP61-01-43	Spring	1
21	RP37-34-61	Tie Rod	1
22	RP37-32-05	Support	1
23	RP20-10-10	Washer	1
24	RP25-00-60	Cotter pin	1
25	RP20-19-16	Washer	1
26	RP58-38-22	Washer	1
27	RP22-11-79	Bolt	1

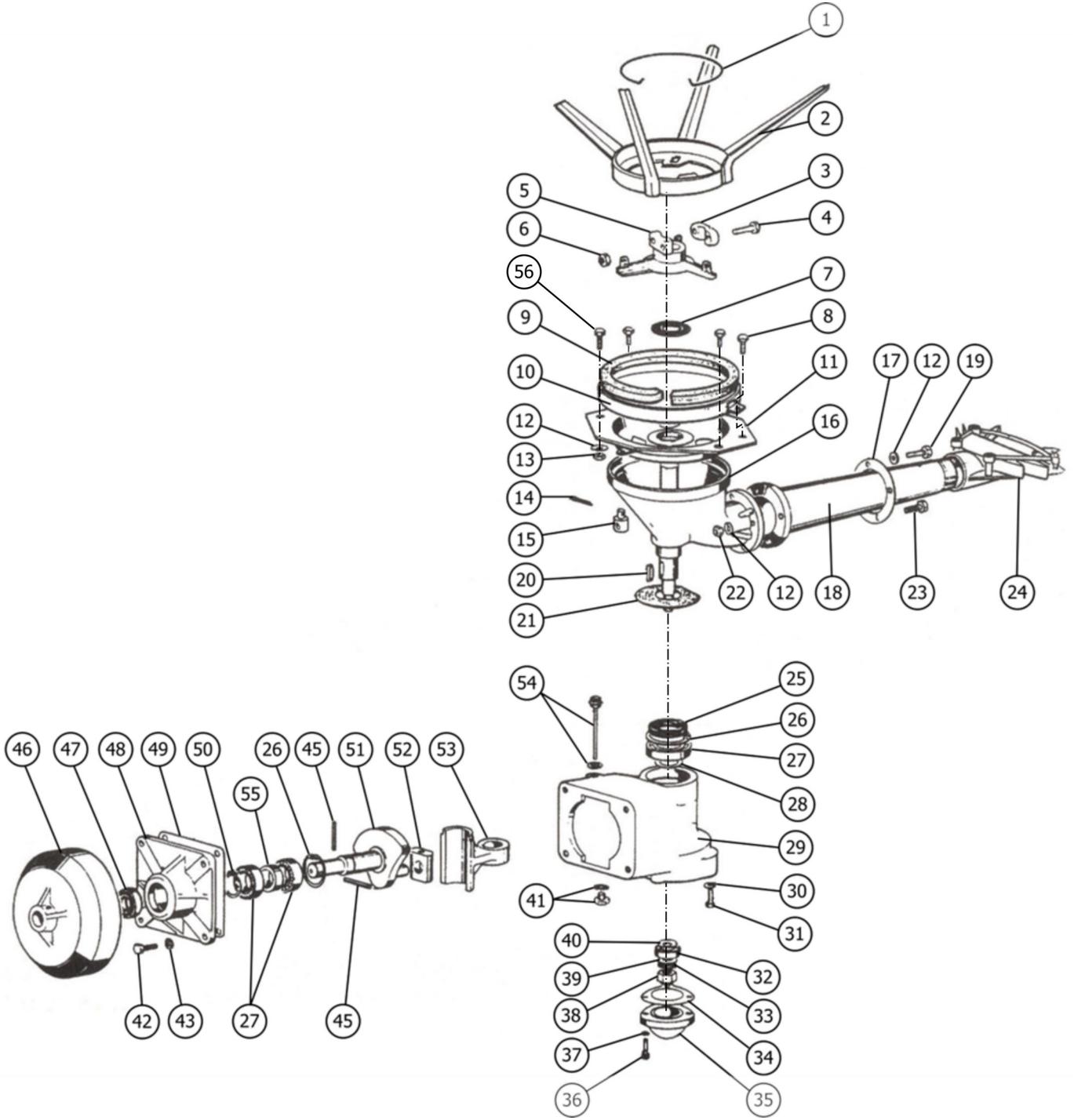
# Gearbox Assembly SPTO-350



## Gearbox Assembly SPTO-350

Item	Part #	Description	Qty.
1	RP61-17-15	Spring	1
2	RP39-38-15	Agitator for powder	1
3	RP41-52-05	Bracket	2
4	RP22-16-78	Screw	2
5	RP41-50-05	Agitator	1
6	RP21-30-12	Nut	2
7	RP58-38-71	Washer	1
8	RP22-51-52	Screw	4
9	RP19-07-58	Gasket	1
10	RP39-40-05	Ring	1
11	RP62-70-25	Distribution unit	1
12	RP20-23-10	Washer	7
13	RP21-11-10	Nut	4
14	RP25-00-60	Cotter pin	1
15	RP35-40-27	Pawl	1
16	RP51-05-05	Tank	1
17	RP-36-84-15	Ring	1
18	RP58-20-05	Tube	1
19	RP21-51-56	Screw	1
20	RP25-81-03	Key	1
21	RP58-38-90	Washer	1
22	RP21-11-10	Nut	4
23	RP22-51-59	Screw	3
24	RP58-22-06	Deflector	1
25	RP27-55-59	Ring	1
26	RP25-61-56	Ring	2
27	RP60-00-43	Bearing	3
28	RP35-10-07	Spacer	1
29	RP41-10-05	Box	1
30	RP20-21-12	Washer	4
31	RP22-46-83	Screw	4
32	RP60-00-31	Bearing	1
33	RP20-00-21	Washer	1
34	RP57-05-05	Gasket	1
35	RP41-13-30	Small lid	1

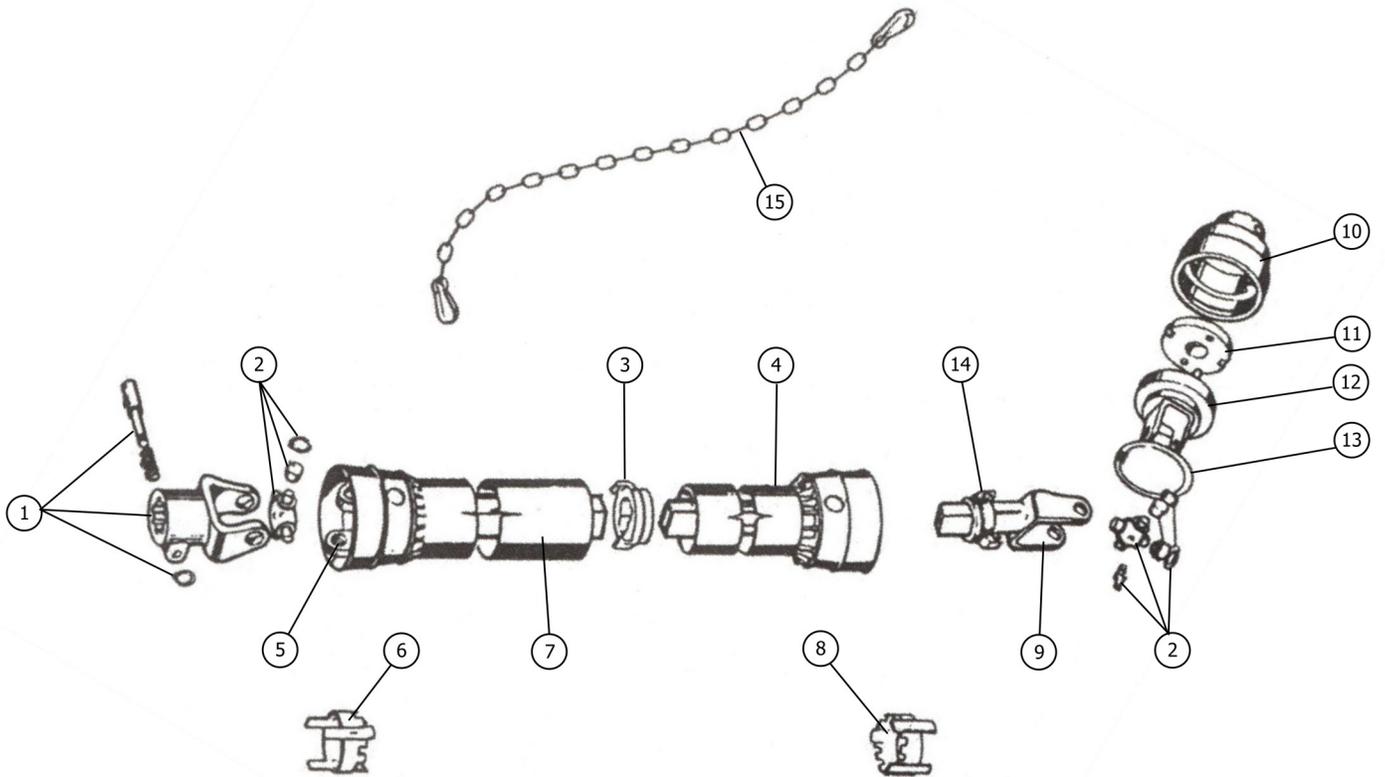
# Gearbox Assembly SPTO-350



## Gearbox Assembly SPTO-350

<b>Item</b>	<b>Part #</b>	<b>Description</b>	<b>Qty.</b>
36	RP22-80-62	Screw	3
37	RP20-23-06	Washer	3
38	RP21-31-21	Nut	1
39	RP20-30-21	Washer	1
40	RP35-10-05	Spacer	1
41	RP26-16-77	Plug with washer	1
42	RP22-46-54	Screw	4
43	RP20-23-10	Washer	4
44			
45	RP25-12-65	Plug M10x60	2
46	RP41-30-05	Flywheel	1
47	RP27-52-40	Ring	1
48	RP41-13-05	Lid	1
49	RP57-05-10	Gasket	1
50	RP25-60-35	Ring	1
51	RP31-05-92	Shaft	1
52	RP51-45-05	Slide	1
53	RP41-20-05	Fork	1
54	RP58-33-64	Plug	1
55	RP35-10-06	Spacer	1
56	BM101525	Bolt HH M10-1.5x25	2

# PTO Shaft SPTO-350



## PTO Shaft SPTO-350

Item	Part #	Description	Qty.
1	RP63-80-01	Fork	1
2	RP63-80-02	Cross	2
3	RP63-80-19	Ring nut	1
4	RP63-80-69	Protection	-
5	RP63-80-08	Fork	-
6	RP63-80-80	Ring nut	1
7	RP63-80-56	Protection	-
8	RP63-80-81	Ring nut	1
9	RP63-80-24	Fork	-
10	RP41-60-05	Joint	1
11	RP58-80-05	Spring drive	1
12	RP35-20-05	Fork	1
13	RP25-61-59	Ring	1
14	RP63-80-20	Ring nut	1
15	RP63-80-84	Chain	1
-	RP99-70-71	PTO Shaft 404 Complete	1

# Warranty

## LIMITED WARRANTY

Belco Resources Equipment warrants to the original purchaser of any new piece of machinery from Belco Resources Equipment, purchased from an authorized Belco Resources Equipment dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state, and municipalities' use, ninety (90) days for commercial use from date of retail sale. Warranty for rental purposes is thirty (30) days. The obligation of Belco Resources Equipment to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Belco Resources Equipment dealer during regular working hours. Belco Resources Equipment reserves the right to inspect any equipment or parts, which are claimed to have been defective in material or workmanship.

This limited warranty does not apply to and excludes wear items such as shear pins, tires, tubes knives, blades or other wear items. Oil or grease is not covered by this warranty.

All obligations of Belco Resources Equipment under this limited warranty shall be terminated if:

Proper service is not performed on the machine.

The machine is modified or altered in any way.

The machine is being used or has been used for purposes other than those for which the machine was intended.

## DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Belco Resources Equipment 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 items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Belco Resources Equipment; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery.

## REGISTRATION

The online Warranty Registration must be completed in order to qualify for coverage on this Limited Warranty. Visit [br-equipment.com](http://br-equipment.com), click on "Warranty Registration" and completely fill out the form to register the new piece of equipment.

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