CHANDLER EQUIPMENT CO.

Model 9 PT-FT

Pull-Type Fertilizer & Lime Spreader

Owner's Manual — Operation, Maintenance & Parts Catalog

SERIAL # _____

WORK ORDER # _____

DATE PUT IN SERVICE _____

How to Use This Manual

This manual covers the setup, safe operation, maintenance, and replacement parts for your Chandler Model 9 PT-FT pull-type spreader. It is organized so that everything you need to put the machine to work comes first, followed by a complete illustrated parts catalog and warranty information.

The manual is divided into the following parts:

- Safety — alert symbols, precautions, and the decals applied to your machine.
- Setup & Operation — PTO and hydraulic hook-up, daily operation, and spinner/divider settings.
- Spread Pattern Calibration — how to run a pan test and dial in an accurate, even pattern.
- Maintenance & Troubleshooting — service schedule and step-by-step problem solving.
- Parts Catalog — an exploded diagram of each assembly shown directly above its parts list.
- Warranty — Chandler and Raven Industries warranty terms.

> **IMPORTANT**
> Always have your spreader serial number available when ordering parts or requesting service.
> Use only Chandler Genuine Parts. Non-genuine parts will void your warranty (see Warranty section).

Questions? Contact your local dealer or the Chandler Equipment Service Department at **1-800-243-3319**.

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1. Safety

Your safety, and the safety of those around you, is important to everyone at Chandler Equipment Co. Important safety information appears throughout this manual and on labels applied to your spreader.

1.1 Safety Alert Symbols

A safety label alerts you to a potential hazard that can injure you or others. Each is preceded by a safety-alert symbol and one of the signal words below:

DANGER
Indicates a hazard that WILL result in death or serious injury if the instructions are not followed.

WARNING
Indicates a hazard that CAN result in death or serious injury if the instructions are not followed.

CAUTION
Indicates a hazard that CAN result in injury if the instructions are not followed.

1.2 Safety Precautions

- Be sure all guards, safety devices, and decals are in place and functioning properly.
- Stay away from all moving parts while the spreader is in operation.
- Check the lug nuts daily.
- Maintain proper tire pressure according to the tire manufacturer's specifications.
- If the spreader becomes clogged, turn **off** the PTO / hydraulics before entering the hopper or cleaning the machine.
- Never exceed 25 MPH on the highway when the spreader is loaded.

WARNING
Do NOT adjust the spinners or divider until the spinners have completely stopped.
Stay out of the hopper while the conveyor is in motion.
Do NOT ride on the spreader while the vehicle is in motion.
Stay clear of the spinners while they are turning.

1.3 Safety Decals on Your Spreader

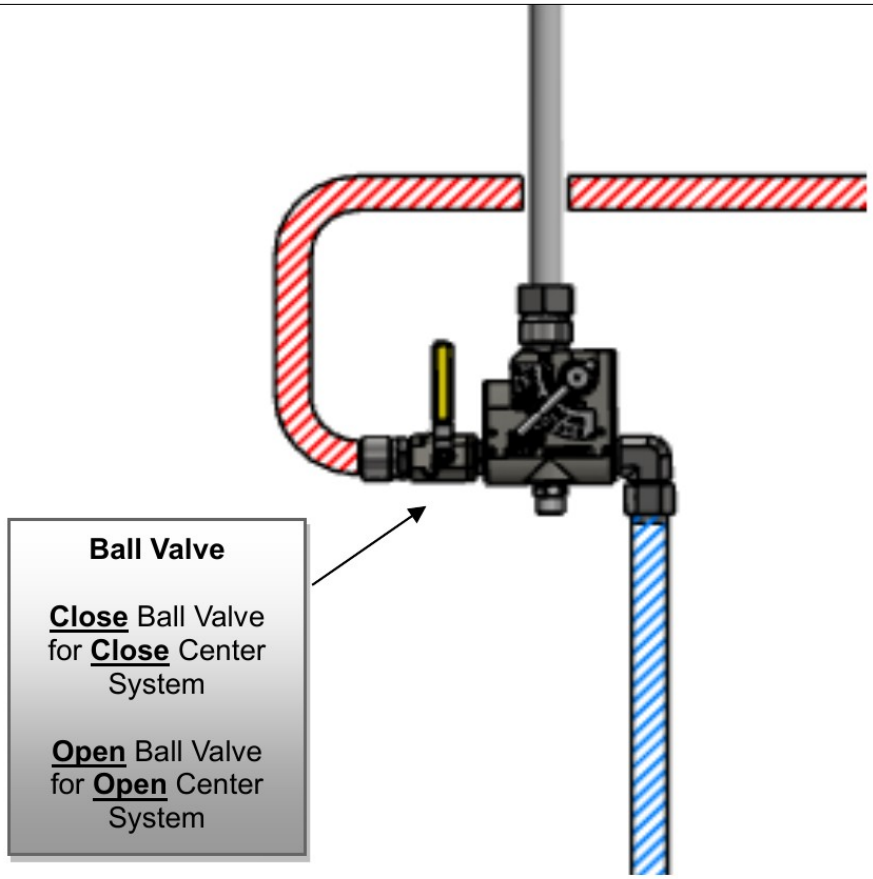
The decals below are applied to your spreader. Keep them clean/ legible, and replace any that are missing or damaged. Do not paint over a safety decal.

Safety Decals

⚠ WARNING

Failure to hook up Hydraulic Spinner Option properly may Cause serious damage to Tractor Hydraulic System or Spinner Motors

(see Chandler owner's manual for hydraulic hook up instructions)



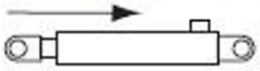
If you are unsure on Tractor Hydraulic System, see your tractors owner's manual or contact your local Tractor Dealer.

⚠ WARNING

Failure to hook up Hydraulic Spinner Option properly may Cause serious damage to Tractor Hydraulic System or Spreader

When hooking up Hydraulic Spinner Option use the following procedure.

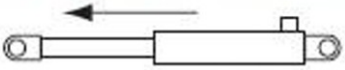
Connect Pressure Hose to tractor remote using coupler marked for the Lower Position.



(Symbol indicates Lower Position)

This will turn the spinners in proper direction when lever is in the Lower position. (PUSHED FORWARD)

If tractor is equipped with hydraulic motor return option (low pressure return circuit)
Connect Return Line here
OR
Connect Return Hose to tractor remote using coupler marked for the Raise Position.



When Disengaging Spinners, push lever forward into FLOAT Position.
NEVER GO TO NEUTRAL TO TURN SPINNERS OFF.

Before hooking to tractor, carefully read operation and parts manual. If you are not certain whether your Hydraulic System is the Open Type or Closed Type, Contact your local Dealer of Chandler Equipment.

⚠ WARNING!

This spreader is equipped with a Case Drain for the Spinner Motors.
Failure to utilize case drain or to not connect case drain line to tractor properly can result in motor seal damage.
(See Operations & Parts Manual for Instructions)

ISO 16028, 3/8" Zero Pressure Flush Face Quick Coupling

ROTATING CHAIN WARNING

ROTATING SPINNERS WARNING

2. Spreader Overview & Specifications

Chandler Model 9 PT-FT Pull-Type Spreader

2.1 Capacity & Ratings

	Fertilizer @ 65 #	Lime @ 90 #
Hopper Capacity	185 Cubic Ft.	185 Cubic Ft.
Payload	12,000 Lbs.	16,650 Lbs.
Axle / Spindle Capacity	12,000 Lbs.	12,000 Lbs.

Note: the hopper can physically hold lime beyond the axle / spindle maximum capacity of 6 tons.

> **CAUTION**
> 6 TON MAXIMUM CAPACITY — DO NOT OVERLOAD.

3. PTO Shaft Setup & Maintenance

> **IMPORTANT**
> Because Chandler spreaders are sold worldwide, a common-length PTO shaft is installed to fit many tractor types. Shortening the shaft may be required to fit your specific tractor. Follow the steps below to ensure safe operation.

3.1 Shortening the PTO Drive Shaft

- Attach the implement to the drawbar and align it with the tractor on level ground — this is the position at which the driveline is shortest. The PTO shaft needs 8-10” of travel to account for turning.
- If it bottoms out, separate the driveline into two half-shafts. Mount the tractor half on the PTO and the implement half on the power input connection (PIC).
- Hold the two halves side by side. Mark the outer shield tube where it overlaps the end of the shield cone on the implement half-shaft, plus 1/4".
- Disassemble the shields from the half-shafts.
- Cut the outer shield tube at the mark. Using the cut piece as a guide, cut an equal amount from the inner shield tube, the outer drive tube, and the inner drive tube.
- Carefully deburr the cut ends with a file. Shake and wipe all metal chips from the drive tubes.
- Coat the inner drive tube with #2 grease along its entire length.
- Reassemble the shields onto each half-shaft and slide the inner half-shaft into the outer.
- Attach the driveline to the tractor PTO and implement PIC, making sure each end is firmly attached.
- Confirm the driveline does not bottom out when the implement is turned at its’ tightest radius

PTO clearance & overlap reference

When checking the driveline, verify both the compressed and the extended positions. Turn the tractor through its tightest turn (engine off) to find the shortest position, and lower the implement fully to find the longest. General industry guidelines are:

- Collapsed (compressed) position: keep about 2 inches of clearance before the telescoping tubes bottom out, so load is not driven into the tractor PTO bearings or implement u-joint/pump.
- Extended position: maintain a safe overlap of the two halves — commonly about 6 inches (150 mm), or at least 50% of the total shaft length. Too little overlap can let the shaft separate and whip.
- U-joint angle: keep the joint angle within 17° during continuous operation to extend joint life.

IMPORTANT

These are general guidelines. Always follow the figures in your driveline manufacturer's literature, which take precedence for your specific shaft.

A shaft that is too long bottoms out and damages bearings and gearboxes; a shaft that is too short can pull apart during turns or when the implement is lowered, creating a serious whipping hazard. Never operate with marginal overlap.

3.2 PTO Lubrication

WARNING

Always wear adequate safety equipment when performing any maintenance.

Universal joint

- Rotate the shielding to open the access hole, lubricate, then rotate the shielding closed.

650 CV joint

- Rotate the shell to expose the grease fitting and inject grease.

Telescoping tubes

- If no grease fittings are provided, separate the two halves of the driveline and lubricate the telescoping tubes manually.

Schedule & general practice

- Lubricate the 650-type 70° CV joint every 8 hours.
- Lubricate all other components every 50 hours.
- Use NLGI grade 2 grease.
- Pump grease into the crosses until it purges from the bearing caps.
- Inject grease gradually; avoid pumping violently, which creates high delivery pressure.
- Check that all components are in good condition and properly lubricated before use. Clean and re-lubricate before end-of-season storage, and remove any grease that has accumulated inside the CV joint shield.

4. Hydraulic System Setup

This section applies to spreaders equipped with the hydraulic spinner option. It explains how to connect to your tractor's hydraulics, confirm spinner rotation, and set spinner speed and pressure. (For self-contained hydraulic systems, the same speed and pressure procedures apply once the system is running.)

4.1 Understanding Your Tractor's Hydraulics

WARNING
Improperly hooking up the hydraulic spinner option can cause serious damage to your tractor or spreader. Read this section completely before connecting.

Pump types

Tractors use either a Constant Displacement (Open-Center) or a Variable Displacement (Closed- Center) hydraulic pump. A constant-displacement pump puts out a constant flow regardless of pressure (until the relief valve bypasses flow); the only way to vary flow is to change engine speed. A variable-displacement pump produces only the flow the implement requires — an automatic stroke-control mechanism decreases output to maintain constant pressure and flow as demand changes.

Control (spool) valve types

There are two spool-valve types. An "Open Center" valve is open in the neutral position to allow flow back to the reservoir, and is used exclusively with constant-displacement pumps. A "Closed Center" valve stops all circuit flow in neutral, and is used exclusively with variable-displacement pumps.

Spool positions

Each spool valve has four positions — Raise, Neutral, Lower, and Float (back to front). Names vary by manufacturer, but the order does not. To run a hydraulic motor, use only Lower and Float: Lower for "ON" and Float for "OFF". Once the spinners have stopped, return to Neutral.

CAUTION
Float is recommended for (shut down) because it lets the circuit flow in a continuous loop, allowing the motor to free-wheel to a stop without trapping pressure.

Do NOT use Neutral for (shut down) — both valve types can trap oil on both sides of the circuit in Neutral, causing premature motor failure.

Do NOT use Raise for ON — the valve must pass through Neutral to reach Float.

Many tractors route return lines through filters or other restrictions, which raises return-circuit pressure. Using a standard or optional low-pressure return circuit reduces oil heating, lowers horsepower consumption, and extends seal life. Check with your tractor manufacturer to see if your tractor is, or can be, equipped this way.

4.2 Connecting the Spinner Option to Tractor Remotes

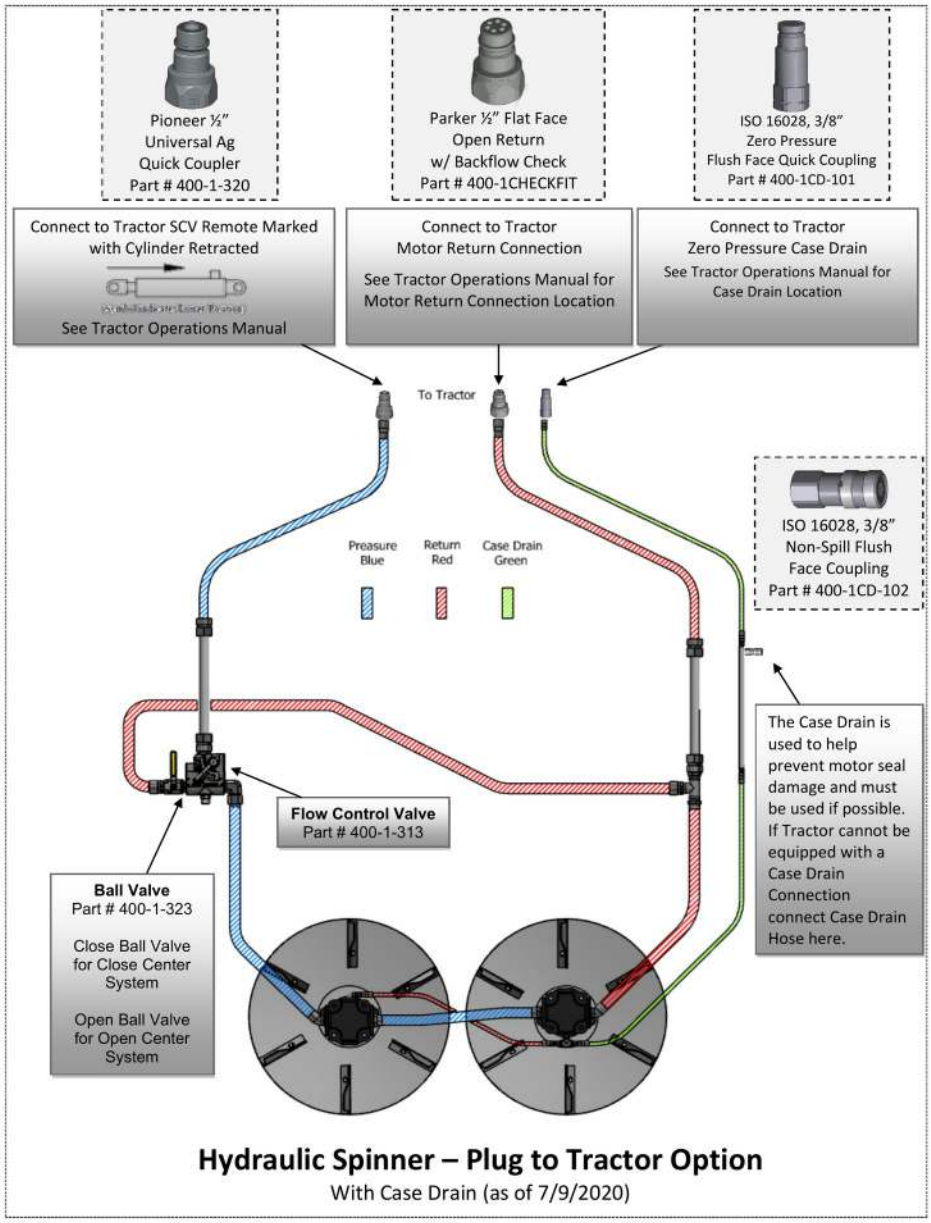
CAUTION

Before connecting any hydraulic lines, turn the engine OFF and make sure all remote levers are in the Neutral position.

- Connect the pressure hose to the tractor remote using the coupler marked for the Lower position. This turns the spinners in the proper direction when the lever is in Lower.
- Connect the return line: if your tractor has a low-pressure motor-return option, connect the return line there. Otherwise, connect the return hose to the remote using the coupler marked for the Raise position.
- On tractors that let you select “motor” or “cylinder” for a remote, be sure to select Motor (this also allows oil to flow like a low-pressure circuit).

IMPORTANT
Hydraulic hoses can fail from physical damage, kinks, age, and exposure. Check hoses daily and replace faulty hoses immediately to avoid personal injury or equipment damage.

The diagram below shows the current plug-to-tractor connection with a case drain. The case drain helps prevent motor-seal damage and should be used whenever the tractor can be equipped with a case-drain connection; if it cannot, connect the case-drain hose to the fitting indicated. Connect pressure to the SCV remote marked for cylinder retracted, and the return to the tractor’s motor-return connection.



Hydraulic Spinner — Plug to Tractor Option, with case drain. Couplers: Pioneer ½" (400-1-320), Parker ½" open-return w/ check (400-1CHECKFIT), ISO 16028 3/8" case-drain (400-1CD-101 / 400-1CD-102); ball valve 400-1-323; flow control valve 400-1-313.

4.3 Checking Spinner Rotation

- Start the tractor engine.
- Start the spinners by pushing the remote lever forward into the Lower position. Confirm the spinners turn the proper direction (see the Rotating Spinners decal and the spinner assembly diagram in the Parts Catalog).
- If the spinners turn the wrong direction, switch the hoses in the remotes.
- To stop the spinners, push the lever forward into the Float position.
-

WARNING

Never stop the spinners by pushing the lever into Neutral. This stops them suddenly instead of letting them free-spin to a stop, and will damage the spinner motors or the tractor hydraulic system.

NOTE
All Chandler spreaders with the hydraulic spinner option run on an Open or Closed system. On an Open system, the ball valve underneath the flow control valve must be ON. On a Closed system, the ball valve must be OFF.

4.4 Setting Spinner Speed (Hydraulic Spinners)

A spinner speed of about 600–650 RPM is recommended (the unit is designed for a 50-60-ft pattern for fertilizer and a 30-ft pattern for lime). The flow control valve sets and maintains this speed. A typical starting setting is about “6,” but this varies from one spreader to the next due to machining tolerances.

- Before starting, confirm there is no material or obstruction in the bed or on the spinners. Rev the engine to the proper PTO RPM (540 / 1000).
- Take a hand-tach reading on the spinner shaft (the shafts are center-drilled beneath the spinners to accept a hand tach). If your unit has a control system with a spinner-speed readout, use that instead.
- Adjust the lever on the flow control valve until the desired speed is reached — a higher indicator number runs the spinners faster.
- Increase engine RPM to the proper PTO RPM and confirm the spinner speed stays reasonably constant.
- If the speed will not hold constant, clean the flow control valve as described in Troubleshooting (Problem I, investigations B and C).

CAUTION
Spinner speed is one of the most important factors in achieving a proper spread pattern — set it properly and check it regularly.

Due to normal wear, the flow control valve setting may need to be raised over time.

Too fast leaves a thin streak behind the tractor center; too slow leaves a heavy streak.

Record your valve setting here: _____

4.5 Checking & Adjusting Hydraulic Pressure

CAUTION
When checking pressure, never run the pump more than a few seconds with the gauge installed in line. Take the reading, then disengage the hydraulics immediately. There is no relief system available during this procedure — follow the steps exactly.

Checking pressure

- Run the unit empty at ordinary operating speed for about 10 minutes so the oil reaches operating temperature.
- Shut off the tractor hydraulics and install a pressure gauge into the “CF” port on the flow control valve.
- Set the flow control valve to 10, then restart the engine.
- With the hydraulics engaged, increase engine RPM to ordinary operating speed. The gauge should read 2500 PSI. If not, adjust as below.

Adjusting flow control valve pressure

- Remove the cap nut on top of the flow control valve.
- Using a 5/16" Allen wrench, turn the adjustment screw IN to increase pressure or OUT to decrease it, counting your turns.
- Turn the screw a half-turn, then re-check pressure. Repeat until the gauge reads 2500 PSI, then replace the cap nut. If turning the screw has little or no effect, return it to its original position.

> **NOTE**
> If you cannot reach 2500 PSI, contact your local dealer or the Chandler Equipment Service Department at 1-800-243-3319.

5. Operation & Setup

This section covers day-to-day operation for both standard spreaders and spreaders equipped with a rate-control system.

5.1 Basic Operating Procedure

- Make sure the flow control valve is set correctly for spinner speed (see Section 4.4).
- Raise the gate to the desired rate of application.
- Adjust the material divider accordingly (see Section 5.3).
- Engage the hydraulic remote / PTO control. Once engaged, the spinners should begin turning.
- Engage the press wheel (if equipped).
- Conduct a spread-pattern pan test and make any required adjustments (see Section 6).
- You are now ready to spread.

> **NOTE**
> If your spreader has a rate-control system: before spreading, refer to your rate controller's manual for operating and calibration instructions, and make sure the correct spreader constant is entered into the controller (see the Spreader Constants tables in Section 6.8).

5.2 Setting Spinner Speed

Spinner speed is set with the flow control valve and is one of the most important factors in a good spread pattern. See Section 4.4 for the full procedure and cautions. As a starting point, most fertilizer and lime applications run well at roughly 600–650 RPM.

5.3 Setting the Material Divider

The material divider splits product between the two spinner discs and strongly affects pattern accuracy. Improper settings cause light or heavy streaks in the field. The divider has an adjustment rod at the rear; moving it "IN" or "OUT" changes the pattern.

- Moving the divider OUT makes the pattern heavy on the outside of the swath.
- Moving the divider IN makes the pattern heavy in the middle of the swath.

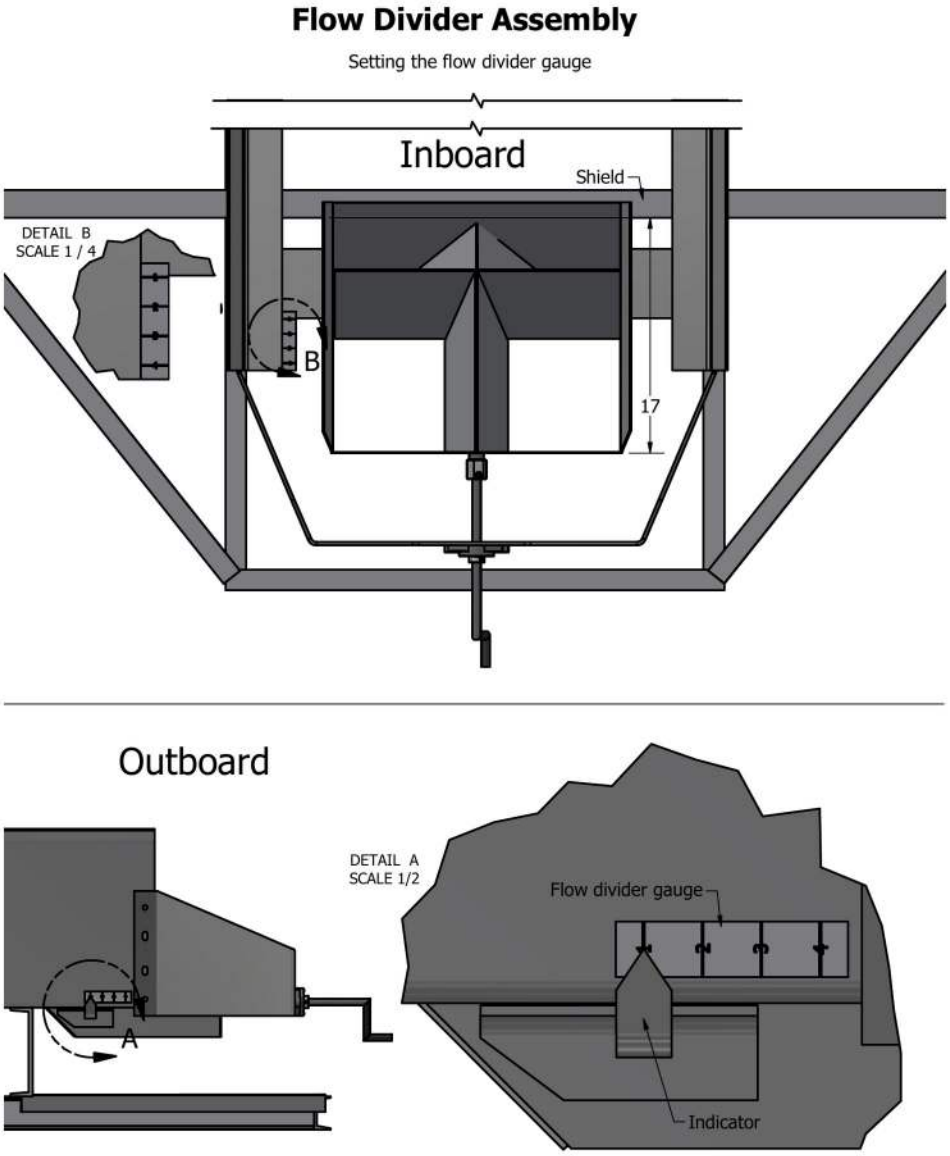
Recommended starting settings

Material	Setting	Pattern
Lime	1-1/2"	30'
Blended Fertilizer	2-1/2"	50'
Ammonia Nitrate	3-1/4"	50'
Urea	3-3/4"	50'

> **NOTE**

> These are recommended starting settings and will vary with material weight.
>
> Chandler recommends testing each spreader with a pan-test kit every season to ensure a proper spread pattern.

Read the divider setting on the flow-divider gauge using the indicator, as shown below. The shield and gauge are accessible from the outboard side of the spreader.



Flow Divider Assembly — setting the flow divider gauge (inboard and outboard views).

6. Spread Pattern Calibration

Perform a spread-pattern pan test before each season, after any maintenance or modification, and periodically during the season. Test separately for each product you apply.

> **NOTICE**
> The spinner assembly is NOT adjusted at the factory. A spread-pattern test must be performed before spreading to obtain an optimal pattern. Chandler Equipment Co. is not liable for misapplied material due to an improperly adjusted spreader.

> **WARNING**
> Use extreme caution around the spreader. Contact with the spinners or other moving parts can cause injury. Never adjust any part of the spreader while it is running or moving. Wear eye protection, avoid spinner discharge, and never ride on the spreader while in motion.

6.1 Factors That Affect the Pattern

The spread pattern is affected by many factors, including spinner speed; material properties (weight per cubic foot, granule size and distribution, flow characteristics); bed-chain speed; where material drops on the disc; division of material between discs; spinner-blade position; cleanliness and wear of the spinner assembly; spreader height; weather (wind, humidity); and spread width. Because these vary from job to job, a trial-and-error pan test is required to find the best settings for your conditions.

6.2 How Adjustments Affect the Pattern

Spinner speed

Spinner speed is a major factor and the best value depends on the material — found only by testing. Particle size and distribution greatly affect width, from about 30-40 ft for finely ground dry lime up to 50-60 ft or more for large pelletized fertilizer. Setting speed above the optimal value does NOT widen the pattern; it produces a poor pattern with a heavy deposit directly behind the tractor as material breaks down. Optimal speed is usually 600–650 RPM for ordinary materials. Retest each season and whenever components wear or are adjusted.

> **NOTE**
> Keep spinner discs and blades clean and maintained. A small build-up of material, or rusted, bent, or worn blades and discs, will produce a poor pattern.

Material divider

The divider position is as important as spinner speed and varies by product. Start most fertilizers at about 2-1/2". While spreading, if too much material lands directly behind the tractor, move the divider toward the back of the spreader; if too much lands outside the tractor, move it toward the front.

6.3 Preparing for a Pan Test

The spreader should be properly maintained and in good mechanical condition, with all worn or damaged parts replaced. Spinner discs, blades, and the divider must be free of build-up and rust. Set the gate to your application rate, confirm the gate is level and the indicator reads the actual gate height, fill the hopper with the material to be tested, and run the spreader until material reaches the end of the chain.

6.4 Running the Pan Test

- Select a test area about 120′ × 400′ with a slope of less than 2 degrees.
- Place a plastic grid in each of the 21 collection pans. Position the pans on 6′ centers with the long side parallel to the direction of travel.
- If possible, test with wind under 5 MPH. If wind exceeds 5 MPH, spread parallel to the wind direction.
- Run the spreader first to reach normal hydraulic-oil operating temperature and let the rate and spinner speed stabilize.
- Position the spreader to straddle the center pan, set the gate for the desired rate, and drive completely through the course at normal operating speed.

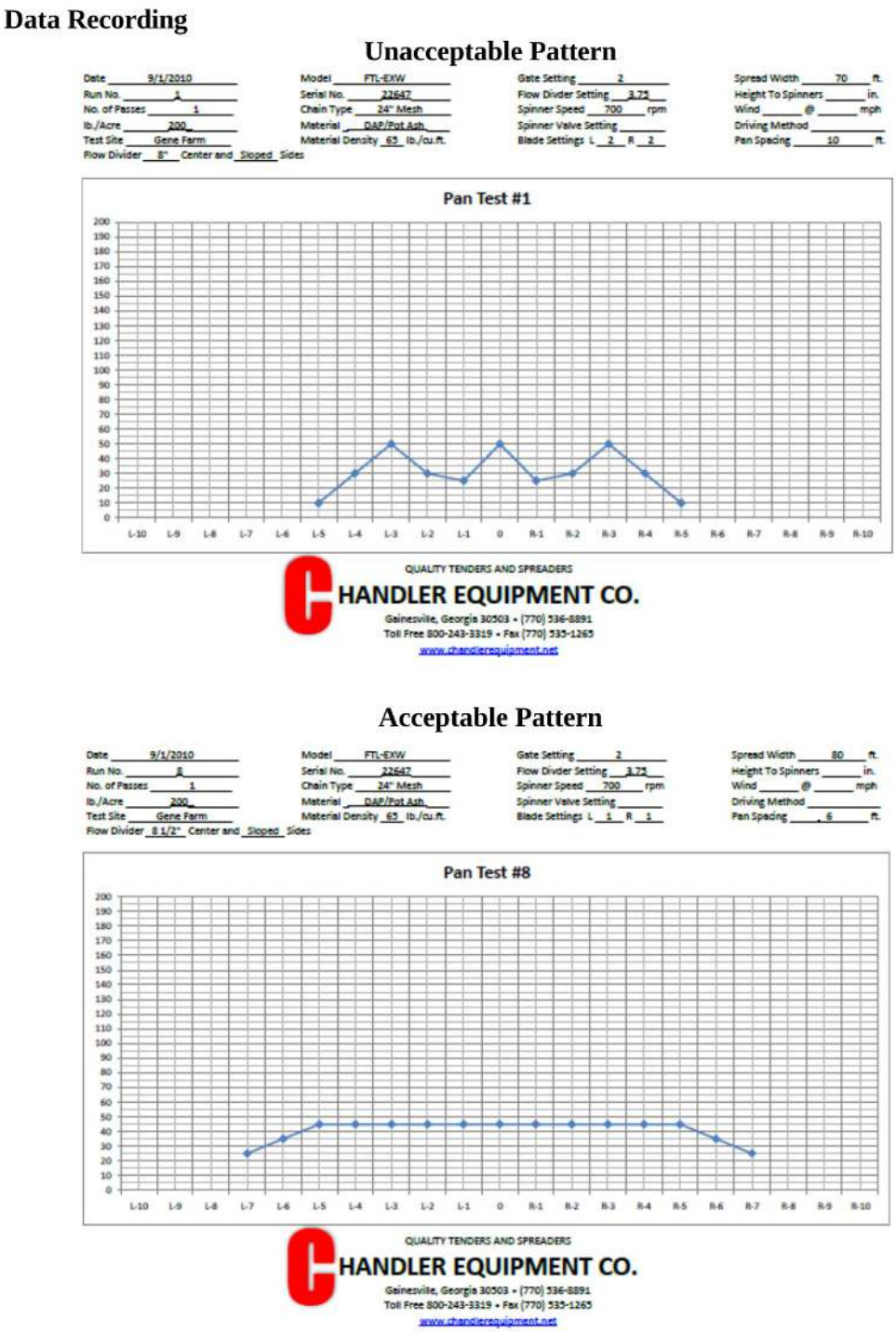
> **CAUTION**
> Drive over the pans in ONE direction only.

6.5 Recording & Interpreting Results

Using the supplied data sheets, document every adjustment made during the test. Transfer each pan’s contents into the matching test tube with the funnel, and compare tube heights to read the pattern.

> **NOTE**
> Make only ONE adjustment between tests. Changing more than one thing makes it impossible to tell which adjustment caused the change.

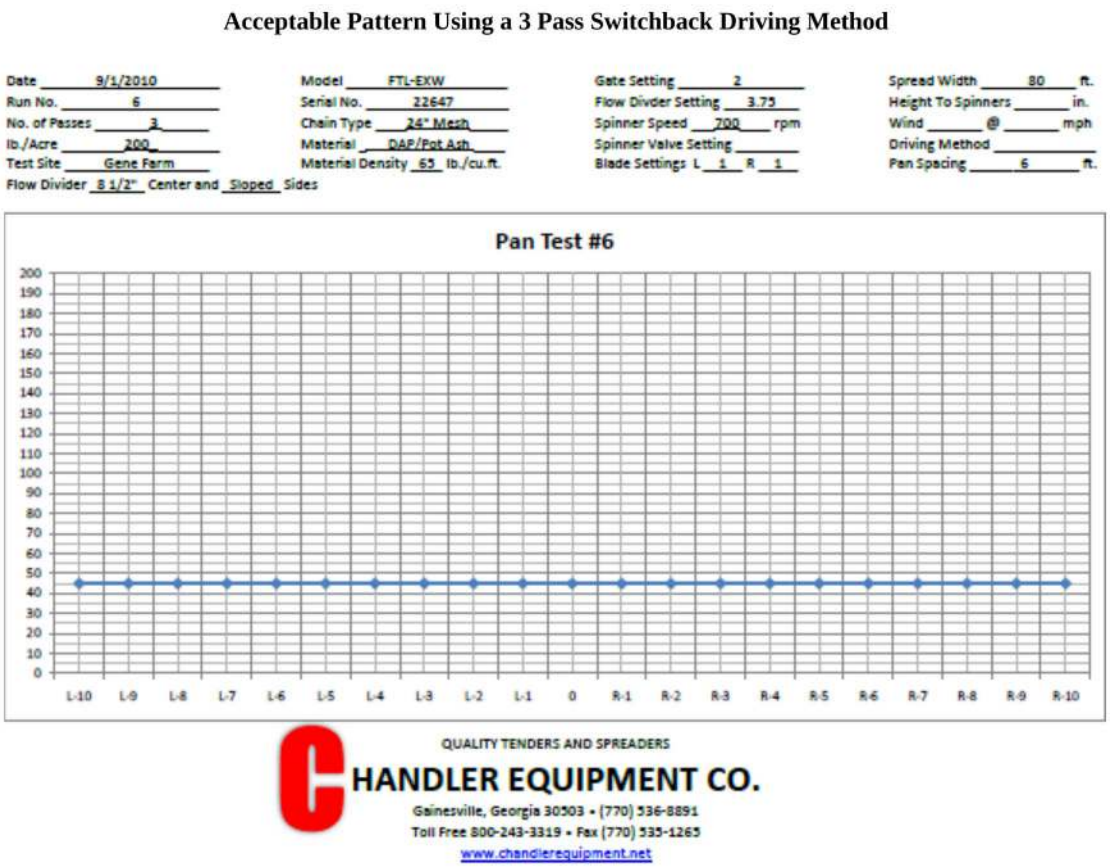
To find the maximum swath width once you have a good pattern, locate the points on the left and right where the material applied is half of the amount at the center. The distance between those points is the optimal swath width. When spreading blended fertilizer, visually check that the blend is consistent across the swath; if not, use a narrower swath and re-determine the optimal width.



Examples of an unacceptable pattern (top) and an acceptable pattern (bottom).

6.6 Multiple-Pass Driving Methods

Initial testing uses a single pass over the pans. Once you know the optimal swath width, run a multiple-pass test to check the overlap areas. Chandler recommends a 3-pass switchback method, which amplifies non-symmetrical patterns by blending right-side on right and left-side on left.



Acceptable pattern using a 3-pass switchback driving method.

6.7 Spread Pattern Troubleshooting

Problem	Recommended Adjustments
Heavy directly behind the tractor	1) Move the divider toward the back. 2) Decrease spinner speed. 3) Check spinner blade condition.
Light directly behind the tractor	1) Move the divider toward the front. 2) Increase spinner speed. 3) Check spinner blade condition.
Light outside the tractor's tracks	1) Check spinner blade condition. 2) Decrease spinner speed.
Pattern off center	1) Check the gate is level and free of caked material. 2) Check the divider is square and centered. 3) Check the spinners are centered and shafts are straight. 4) Test parallel to the wind.

> **NOTE**
> If problems persist, contact your local dealer or the Chandler Equipment Service Department at 1-800-243-3319.

6.8 Spreader Constants

Enter the correct spreader constant for your bed-chain width and rate sensor into your rate controller. The tables below are reproduced from the factory settings.

Spreader Constants - 16” Mesh Chain

Raven 180 CPR Rate Sensor 16" Chain

Gate Opening	Spreader Constant
1	1484
2	742
3	495
4	371
5	297
6	247
7	212
8	185
9	165
10	148

Rawson 67 CPR Gear Tooth Sensor 16" Chain

Gate Opening	Spreader Constant
1	552
2	276
3	184
4	138
5	110
6	92
7	79
8	69
9	61
10	55

Raven or DJ 360 CPR Rate Sensor 16" Chain

Gate Opening	Spreader Constant
1	2968
2	1484
3	989
4	742
5	594
6	195
7	424
8	371
9	330
10	397

Spreader Constants - 20" Mesh Chain

Raven 180 CPR Rate Sensor 20" Chain

Gate Opening	Spreader Constant
1	1187
2	594
3	396
4	297
5	237
6	198
7	170
8	148
9	132
10	119

Rawson 67 CPR Gear Tooth Sensor 20" Chain

Gate Opening	Spreader Constant
1	442
2	221
3	147
4	110
5	88
6	74
7	63
8	55
9	49
10	44

Raven or DJ 360 CPR Rate Sensor 20" Chain

Gate Opening	Spreader Constant
1	2374
2	1187
3	791
4	594
5	475
6	396
7	339
8	297
9	264
10	237

Spreader Constants - 24" Mesh Chain

Raven 180 CPR Rate Sensor 24" Chain

Gate Opening	Spreader Constant
1	989
2	495
3	330
4	247
5	198
6	165
7	141
8	124
9	110
10	99

Rawson 67 CPR Gear Tooth Sensor 24" Chain

Gate Opening	Spreader Constant
1	368
2	184
3	123
4	92
5	74
6	61
7	53
8	46
9	41
10	37

DJ 360 CPR Rate Sensor 24" Chain

Gate Opening	Spreader Constant
1	1979
2	989
3	660
4	495
5	396
6	330
7	283
8	247
9	220
10	198

CAUTION

These are starting constants and are normally within 3–5%. Always perform a catch test to verify calibration (see your control-system manual).

When spreading fertilizer, never go below a 2" gate opening. The 1" gate opening is for seed and other light materials.

This spreader is capable of very accurate application when properly calibrated. Final calibration and application of different materials is the RESPONSIBILITY OF THE OPERATOR.

7. Maintenance & Troubleshooting

7.1 Maintenance Schedule

Proper maintenance protects a major investment and keeps your spreader applying material accurately. Pay constant attention to the following areas.

Bed chain

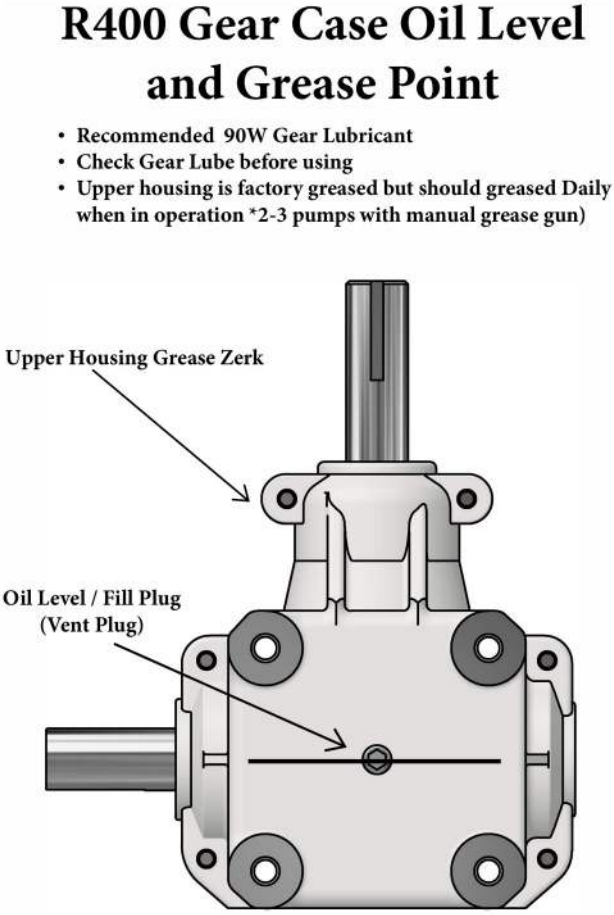
The standard stainless-steel mesh chain stretches roughly 16 inches during the first few weeks of service. Take up the first inches with the front-roller adjustment; once that adjustment is used up, back off the adjustment rods and remove as much chain as possible (expect to do this a couple of times). After the initial stretch is out, only occasional adjustment is needed. Adjust the tension rods equally on both sides — when correct, the chain should just clear the frame cross-members. Keep build-up cleaned out from under the chain.

Hydraulic oil

Check the oil level daily using the temperature/level gauge on the front of the tank. Keep the level within 1 inch of the black line at the top; never fill past the black line or let it fall below the red line, or you may damage the hydraulic system.

Lubrication & gear case

- Grease bearings and U-joints daily when the unit is in use.
- Maintain proper lubricant level in the gear case; replace an oil seal at the first sign of a leak.
- R400 gear case: use 90W gear lubricant and check the gear-lube level before each use. The upper housing is factory greased but should be greased daily during operation — 2–3 pumps with a manual grease gun at the upper-housing grease zerk.



R400 Gear Case — oil level / fill plug and upper-housing grease zerk.

Cleaning

Wash the spreader body occasionally, and especially before extended storage, using 4 parts fuel oil to 1 part 10W motor oil. Run the material divider through its full adjustment range daily and keep the adjustment rod greased so it stays free.

Spinner assembly

- Blades: a wear item — check regularly and replace worn, bent, or holed blades immediately for a proper pattern.
- Discs: check daily; replace if worn or not spinning true.
- Bearings: check daily for wear and movement; replace immediately if there is any movement, which can damage discs and motors. Do NOT over-grease.
- Motors: check seals daily; replace immediately if leaking to avoid damaging the hydraulic system and motor.

Material divider

- Keep the divider and spinners clean at all times; in wet conditions, clean them in the field as needed for the best pattern.
- Proper, repeatable adjustment is critical — run the divider through its full range daily and keep the rod greased.

7.2 Troubleshooting Procedures

These recommendations cover simple repairs. Two instruments not usually found in a mechanic's toolbox are helpful: a 0–1500 RPM hand tach (Part 300-FT-033) and a 0–3000 PSI hydraulic pressure gauge (Part 400-1-351). If a problem remains after completing the relevant investigation, contact Chandler Equipment Co.

Problem I — Spinner speed very slow, or spinners do not turn

A. Basic checks:

1. Confirm the flow control valve indicator is in its proper location (see Section 4.4).
2. Confirm there is sufficient oil in the tank and no restriction in the line from the bottom of the tank to the pump.
3. Check the spinner-shaft bearings for proper lubrication and wear.
4. Check that the keyways are properly in place on the motor shafts.

If everything is in order, proceed to B.

B. Clean the flow control spool:

1. Remove both spool caps. From either side, push out the spool and spring. Clean all removed items thoroughly and blow dry with an air hose; blow out the housing.
2. Reassemble: insert the spool from the upper side (hollow end first — it should slide freely); insert the spring from the lower side (spring end up into the hollow spool); replace the lower cap (spring seated in its recess); replace the upper cap.

If not resolved, proceed to C.

C. Clean the lever spool:

1. Remove the retaining ring. Mark the top of the spool, then knock the lever spool from the valve body with a punch and hammer.
2. Clean the housing bore and the lever-spool outer surface thoroughly; blow out all holes with high-pressure air. Reassemble as removed, with the marked area in the same position.

If not resolved, proceed to D.

> **NOTE**
> Procedure D must be carried out carefully and exactly — there is no relief system available, so excessive pressure builds immediately and can cause damage if instructions are not followed precisely.

D. Set spinner pressure:

1. Run the unit empty at ordinary operating RPM for about 10 minutes to reach operating temperature.
2. Disengage the PTO and install a pressure gauge into the "CF" port on the flow control valve.
3. Set the flow control valve lever to 10.
4. Engage the PTO and rev the engine to about 2000 RPM.
5. Slowly release the clutch while watching the gauge — it should read 2000 PSI.

If not, adjust pressure using the procedure in Section 4.5 (Adjusting Flow Control Valve Pressure).

Problem II — Spinners will not throw material far enough

1. Verify proper spinner speed.
2. Check hydraulic pressure relief (see Problem I, investigation D).
3. Check that the spinner-blade bolts are tight and properly in place.
4. Check that the spinner discs are securely fastened.

Problem III — Improper spread pattern

1. Check the material divider setting.
2. Check the spinner discs and blades for wear; replace as needed.
3. Check the spinner speed.

> **NOTE**
> If problems persist, contact your local dealer or the Chandler Equipment Service Department at 1-800-243-3319.

8. Parts Catalog

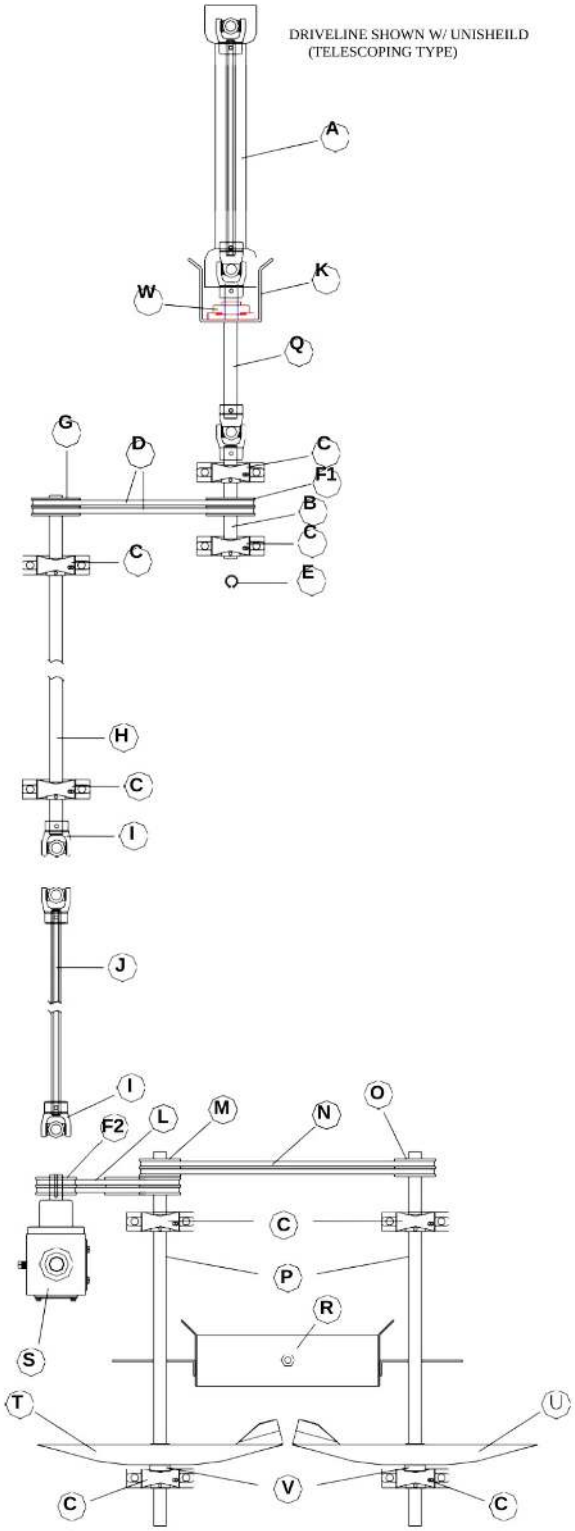
Each assembly below shows an exploded-view diagram followed by its parts list. Match the reference letter or number on the diagram to the same reference in the list to find the Chandler part number. When ordering, quote the part number and your machine's serial number.

> **IMPORTANT**
> Use only Chandler Genuine Parts. Items marked "Optional" or "Not Shown" are listed for reference. The Hydraulic Cylinder Engagement Assembly and Hydraulic Filter are shown once under Section 8.11 (Shared Components) and are used across several configurations.

8.1 PTO Drive Spinners

PTO Drive Spinner & Drive Assembly

PTO DRIVEN SPINNERS BASIC PARTS ILLUSTRATION

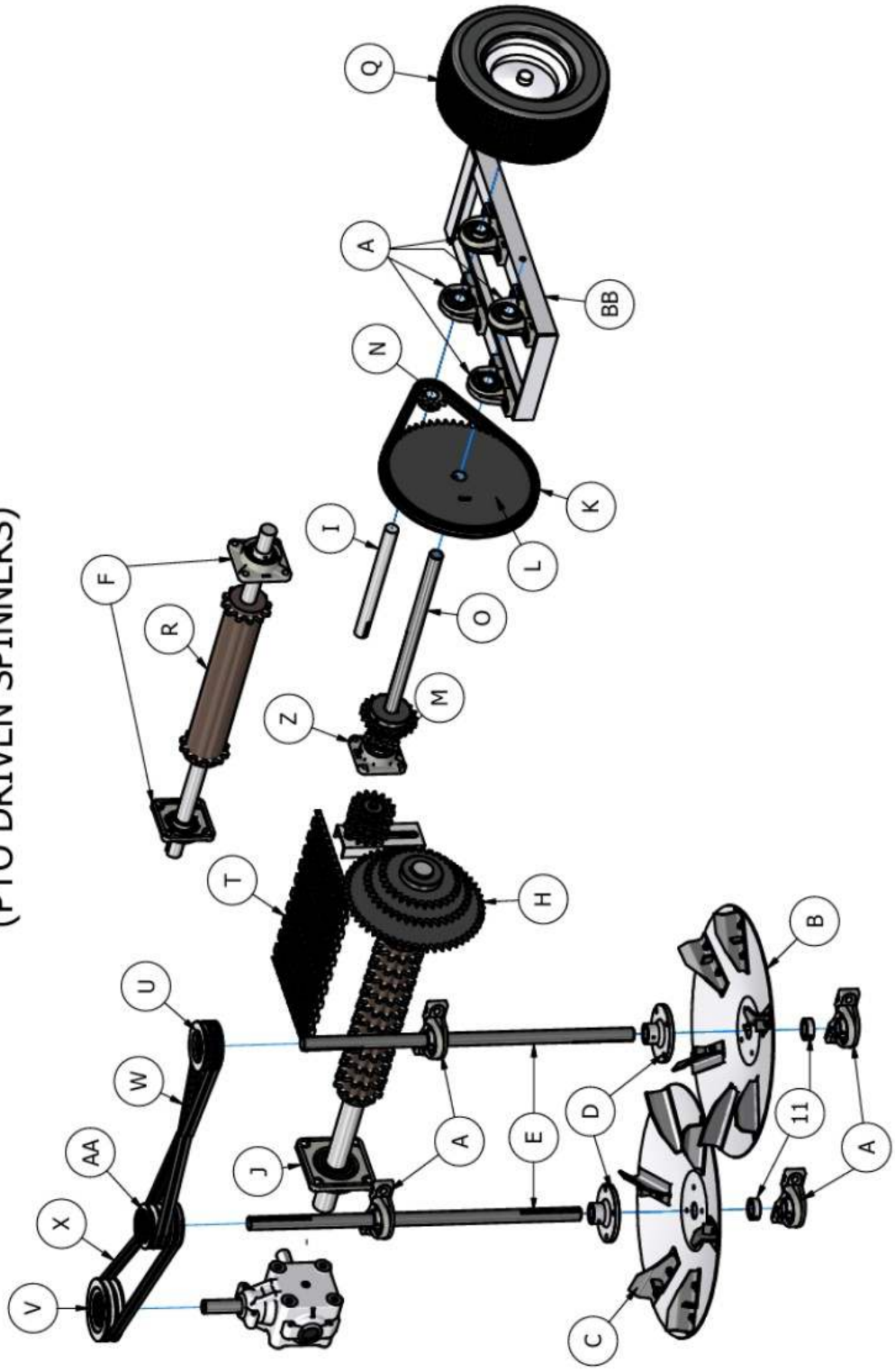


Ref.	Part Number	Description
A)	200-2-018D 200-2-018B 200-2-018E	540RPM CV PTO Shaft 1000RPM 1 3/8” CV PTO Shaft 1000RPM 1 ¾” CV PTO Shaft
B)	300-FL-126	11" Shaft for Pulley
C)	UCP-207-20	1-1/4" Pillow Block Bearing
D)	1100-1-107	B-67 V-Belts (540 PTO)
*	1100-1-111	B-69 V-Belts (1000 PTO)
E)	PTF-13	Retaining Ring
F1)	1100-2-202	2 B - 5.6 SDS Pulley (540 PTO)
*	1100-2-215	1-1/4" SDS Bushing
*	1100-2-201	2 B - 4.4 SH Pulley (1000 PTO)
*	1100-2-214	1-1/4" SH Bushing
F2)	1100-2-202	2 B - 5.6 SDS Pulley (540 PTO)
*	1100-2-215	1-1/4" SDS Bushing
*	1100-2-197	2 B - 4.8 SDS Pulley (1000 PTO Top of Gear Box)
*	1100-2-215	1-1/4" SDS Bushing
G)	1100-2-204	2 B - 8.6 SK Pulley (540 PTO)
*	1100-2-216	1-1/4" SK Bushing
*	1100-2-199	2 B - 11.0 SK Pulley (1000 PTO)
*	1100-2-216	1-1/4" SK Bushing
H)	200-2-023	PTO Drive Line 1-1/4" Shaft (Specify Length)
I)	200-2-002	Universal Joint (7/8" Hex x 1-1/4" Round)
J)	200-2-246	Shielded Gearbox Connecting Shaft
K)	300-C-026	Cradle Bonnet
*	300-C-027	Cradle Pin
L)	1100-1-102	B-39 V-Belts (540 PTO)
M)	1100-2-203	4 B - 4.4 Pulley
*	1100-2-213	1-1/4" SD Bushing
N)	1100-1-105	B-62 V-Belts (Standard Set-up)
O)	1100-2-201	2 B - 4.4 SH Pulley (Standard Set-up)
*	1100-2-214	1-1/4" SH Bushing
P)	300-1-207	PTO Drive Fan Shaft – 33” Long
Q)	300-FL-125	Cradle Shaft – 23-1/2" x 1-1/4”
R)	300-FT-010	Flow Divider S.S. (Specify Floor Width)
S)	R400-GB	R400 Spinner Gear Case

T)	300-FL-101-L	24" Spinner Disc (Only) 7 Ga. Mild Steel (L.H.)
**	300-FL-102-L	24" Spinner Disc (Only) S.S. (L.H.)
U)	300-FL-101-R	24" Spinner Disc (Only) 7 Ga. Mild Steel (R.H.)
**	300-FL-102-R	24" Spinner Disc (Only) S.S. (R.H.)
V)	300-1-208	Spacer - Lock Collar for 1-1/4" Shaft
W)	UCF-207-20	1-1/4" 4 Bolt Flange Bearing
*	300-1-126	Front Belt Guard (540 PTO)
*	300-1-126	Front Belt Guard (1000 PTO)
*	300-1-127	Rear Belt Guard

Press Wheel Drive-PTO Drive Spinners

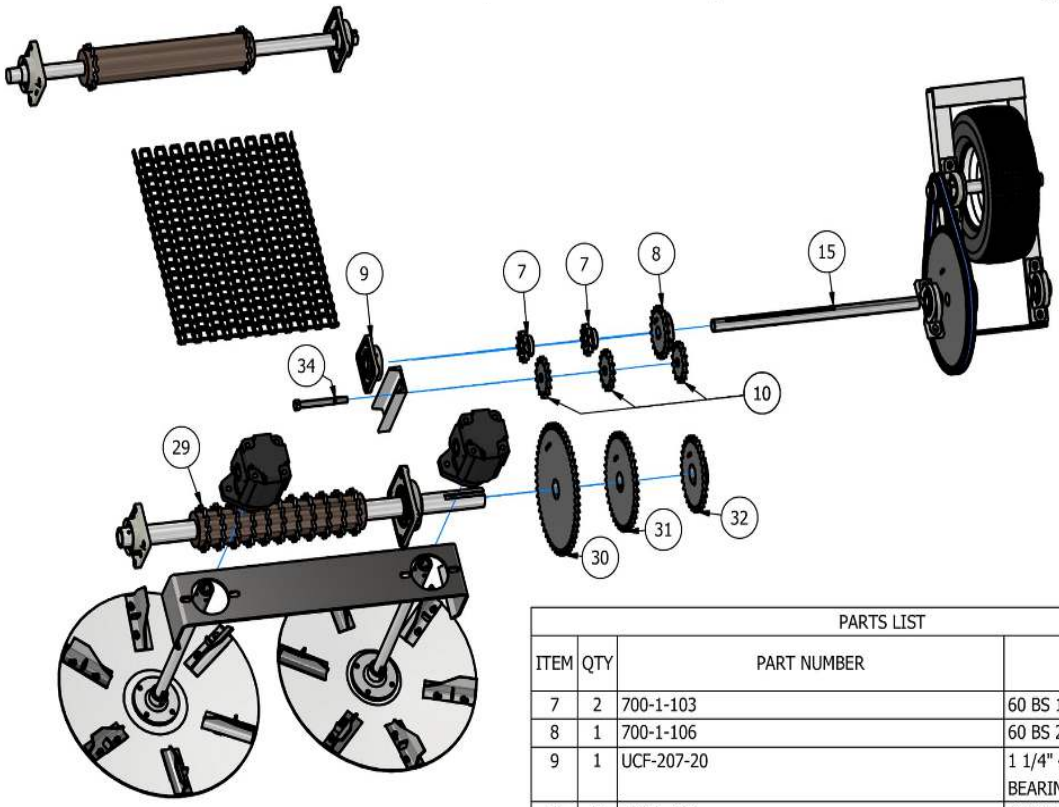
9 PT PRESS WHEEL PARTS ILLUSTRATION
(PTO DRIVEN SPINNERS)



Ref.	Part Number	Description
A	UCP-207-20	1-1/4" Pillow Block Bearing
B	300-FL-101-L	24" Spinner Disc (Only) 7 Ga. Mild Steel (L.H.)
**	300-FL-102-L	24" Spinner Disc (Only) S.S. (L.H.)
**	300-FL-101-R	24" Spinner Disc (Only) 7 Ga. Mild Steel (R.H.)
**	300-FL-102-R	24" Spinner Disc (Only) S.S. (R.H.)
C	300-FL-107-L	F/L Spinner Blade Mild Steel (L.H.)
**	300-FL-108-L	F/L Spinner Blade Heat Treated (L.H.)
**	300-FL-109-L	F/L Spinner Blade S.S. (L.H.)
**	300-FL-107-R	F/L Spinner Blade Mild Steel (R.H.)
**	300-FL-108-R	F/L Spinner Blade Heat Treated (R.H)
**	300-FL-109-R	F/L Spinner Blade S.S. (R.H.)
D	300-FL-112	4 Bolt Fan Hub
11	300-1-208	Lock Collar
E	300-1-207	Fan Shaft – 33“
F	UCF-208-24	1-1/2" 4 Bolt Flange Bearing
G	700-1-109	60 BS 30 X 1-1/2" Sprocket
H	See	Page 38
I	200-2-042	Key 3/8" X 1-1/2"
K	500-1-101	#60 Chain
L	700-1-115	60 BS 60 X 1-1/4" Sprocket
M	See	Page 38
N	700-1-103	60 BS 11 X 1-1/4" Sprocket
O	300-FT-038	L-1 1/4" GW Shaft – 25.5”
P	300-FT-038A	S-1 1/4" GW Shaft – 14”
Q	800-1-108	16 x 6.5 x 8 Tire
**	300-1-117	Metal Press Wheel -16” 20.5” and Double Wide Press Wheel (optional)
R	GWC-F-1634	Front Roller Assembly (16" Chain)
**	GWC-F-2034	Front Roller Assembly (20" Chain)
**	GWC-F-2434	Front Roller Assembly (24" Chain)
S	PTWC-16-45	Rear Roller Assembly (16" Chain)
**	PTWC-20-45	Rear Roller Assembly (20" Chain)
**	PTWC-24-45	Rear Roller Assembly (24" Chain)
T	500-3-301	16" S.S. Mesh Chain
**	500-3-303	20" S.S. Mesh Chain
**	500-3-304	24" S.S. Mesh Chain
*	500-3-306	16" S.S. Connecting Pin
*	500-3-308	20" S.S. Connecting Pin
*	500-3-309	24" S.S. Connecting Pin
U	1100-2-201	2 B - 4.4 SH Pulley

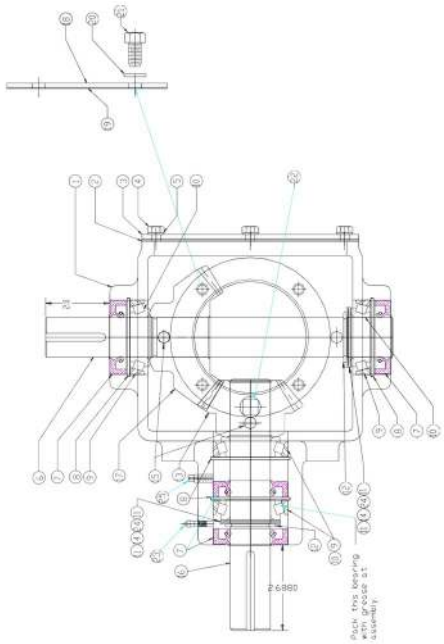
V	**1100-2-202**	**2 B - 5.6 SDS Pulley(540 PTO)**
**	**1100-2-197**	**2 B – 4.8 SDS Pulley(1000 PTO**
W	**1100-1-105**	**B-62 V-Belt**
X	**1100-1-102**	**B-39 V-Belt**
Y	**R400-GB**	**PTF Spinner Gear Case**
Z	**UCF-207-20**	**1-1/4" 4 Bolt Flange Bearing**
AA	**1100-2-203**	**4 B - 4.4 SD Pulley**
BB	**300-FT-005**	**25.5 Ground Wheel Frame**

Press Wheel 3 Sprocket Assembly



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
7	2	700-1-103	60 BS 11 X 1 1/4" SPROCKET
8	1	700-1-106	60 BS 20 X 1 1/4" SPROCKET
9	1	UCF-207-20	1 1/4" 4 BOLT FLANGE BEARING
10	3	700-1-121	#60 IDLER SPROCKET
15	1	300-FT-038	GW SHAFT - 9 PT
29	1	PTWC2045	20" Rear roller shown (specify chain width)
30	1	60BS54 2.0 Bore	60 BS 60 X 1 1/4" SPROCKET
31	1	60BS40 2.0 bore	60 BS 40 X 1 1/2" SPROCKET
32	1	60BS30 2.0 bore	60 BS 30 X 1 1/2" SPROCKET
34	1	ANSI/ASME B18.2.1 - 5/8-11 UNC - 6	Hex Bolt - UNC 6 Inch)

PTF-RZ Spinner Gear Case



PTF-RZ – Spinner Gear Case – Parts List

PTF-RZ – Spinner Gear Case

Ref.	Part Number	Description	Qty.
1	PTF-1AZ	Housing	1
2	PTF-3	Gasket	1
3	PTF-2A	Cover	1
4	PTF-4	Cap screw	6
5	PTF-5	Lock Washer	6
6	PTF-6	Shaft	1
7	PTF-11	Oil Seal	4
8	PTF-12	Retaining Ring	4
9	PTF-10R	Race Bearing	4
10	PTF-10C	Cone Bearing	4
11	PTF-16	Thrust Washer	4
12	PTF-13	Retaining Ring	2
13	PTF-8P	Pinion	1
14	PTF-18A	Shim (0.005)	2
15	PTF-9	Pin	2
16	PTF-7A	Shaft	1
17	PTF-8B	Gear	1
18	PTF-2B	Cover	1
19	PTF-19B	Gasket	1
20	PTF-17	Lock Washer	4
21	PTF-15A	Cap screw	4
22	PTF-14	Pipe Plug	1
23	PTF-22	Zerk	1
24	PTF-18B	Shim (0.010)	2
25	TC-15	Vent Plug	1

R400 PTO Drive Spinner Gear Case

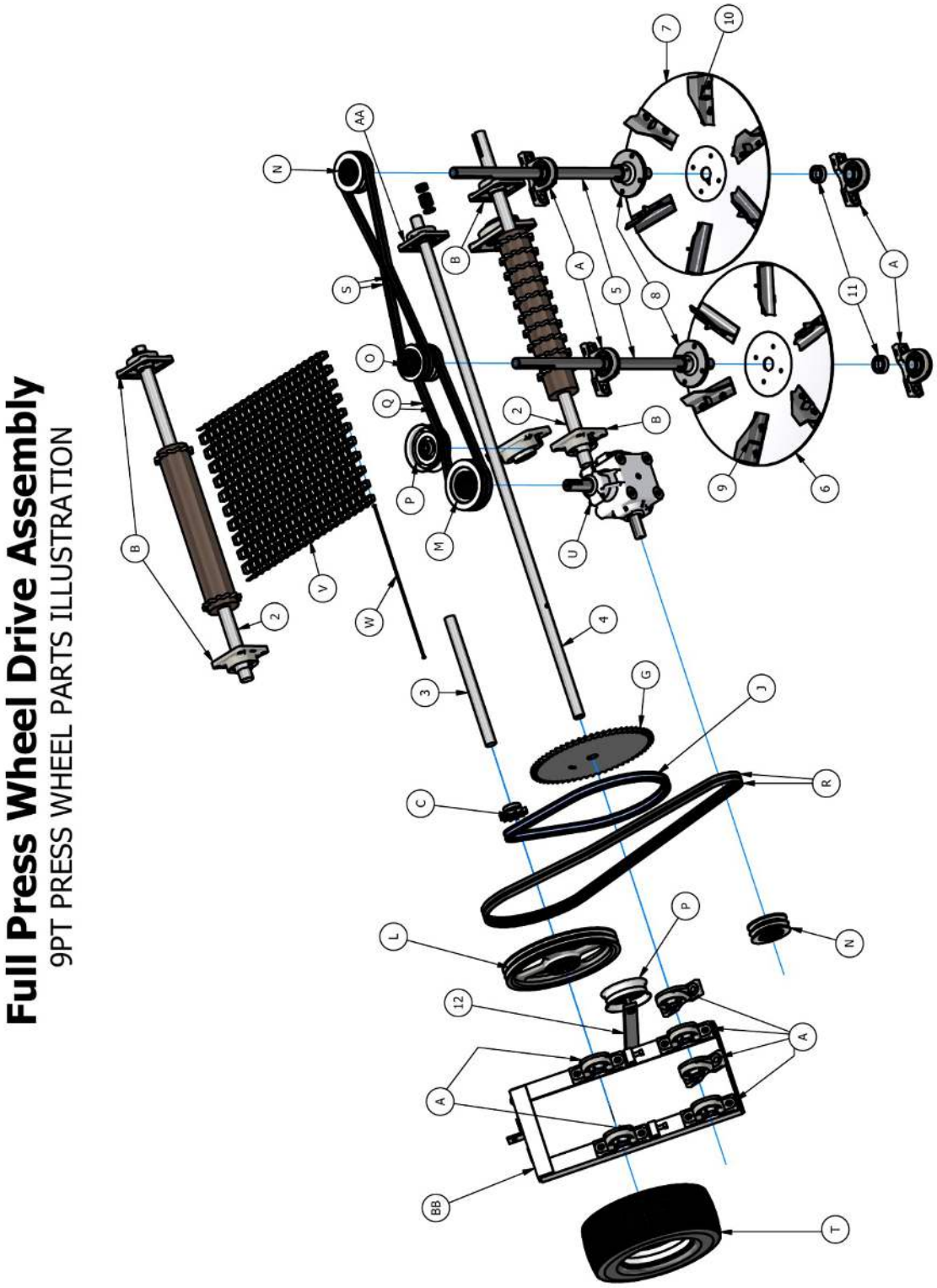
> **NOTE**
> Current-production gear case (see Section 7.1 for the R400 lubrication points). Earlier units use the PTF-RZ gear case shown above. Order R400 parts using the R400-series numbers below.

R400 – PTO Drive Spinners Gear Case – Parts List

Ref.	Part Number	Description	Qty.
1	R400-1	Inboard Housing, R400	1
2	R400-2	Outboard Housing, R400	1
3	R400-3	Output Shaft, R400	1
4	R400-4	Input Shaft, R400	1
5	R400-5	20T Bevel Gear, R400	1
6	R400-6	30T Drive Gear, R400	1
7	R400-7	Bearing Cup (Race), R400	4
8	R400-8	Bearing Cone (Bearing), R400	4
9	R400-9	Seal, R400	2
10	R400-10	Retaining Ring, R400	4
11	R400-11	Key, 1/4" x 1/4" x 1.2", R400	2
12	R400-12	Bolt, 3/8-16 x 1.5", R400	9
13	R400-13	Fill Plug, R400, 1/2-14	2
14	R400-14	Breather Plug, 1/8", R400	1
15	R400-15	End Cap, R400	1
16	R400-16	Grease Washer, R400	1
17	R400-17	Grease Zerk, R400	1
	R400-GB	Complete R400 Gear Box	

8.2 Full Press Wheel Drive

Full Press Wheel Drive Assembly



Full Press Wheel Drive Parts List

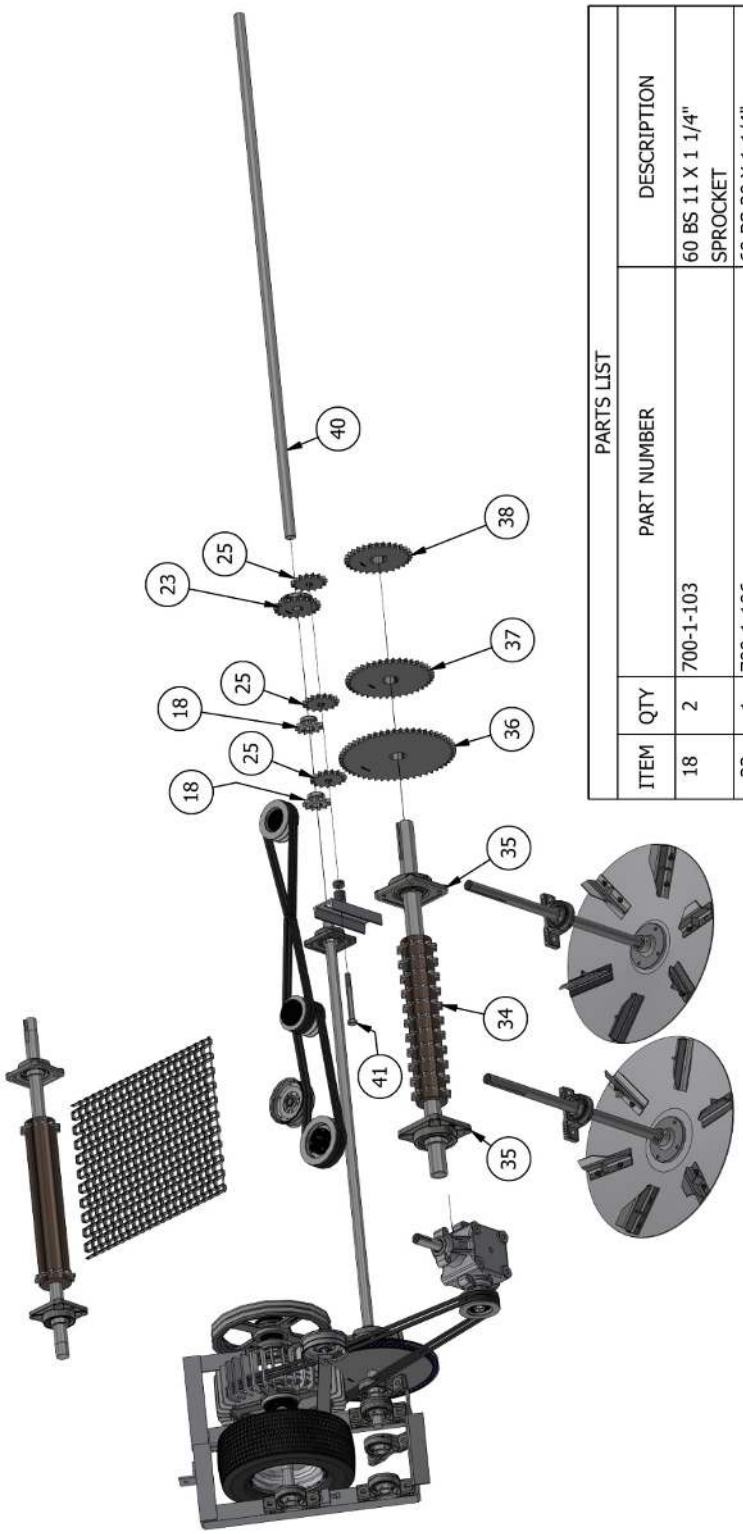
Ref.	Part Number	Description
A)	UCP-207-20	1-1/4" Pillow Block Bearing
AA)	UCF-207-20	1-1/4" 4 Bolt Flange Bearing
B)	UCF-208-24	1-1/2" 4 Bolt Flange Bearing
C)	700-1-103	60 BS 11 X 1-1/4" Sprocket
D)	700-1-106	60 BS 20 X 1-1/4" Sprocket
E)	700-1-109	60 BS 30 X 1-1/2" Sprocket
F)	700-1-111	60 BS 40 X 1-1/2" Sprocket
G)	700-1-115	60 BS 60 X 1-1/4" Sprocket
H)	700-1-121	Idler 6015E
J-K)	500-1-101	#60 Chain Black
*	500-1-102	#60 Chain S.S.
L)	1100-2-205	2 B - 13.6 SK Pulley
*	1100-2-216	1-1/4" SK Bushing
M)	1100-2-202	2 B - 5.6 SDS Pulley
*	1100-2-215	1-1/4" SDS Bushing
N)	1100-2-201	2 B - 4.4 SH Pulley
*	1100-2-214	1-1/4" SH Bushing
O)	1100-2-203	4 B - 4.4 SD Pulley
*	1100-2-213	1-1/4" SD Bushing
P)	1100-2-212	V-Belt Idler
Q)	1100-1-103	B-40 V-Belt
R)	1100-1-109	B-80 V-Belt
*	1100-1-108	B-72 V-Belt (11.25 x 28 Tires)
S)	1100-1-105	B-62 V-Belt
T)	800-1-108	16 x 6.5 x 8 Tire
U)	PTF-71-2RZFP	Gear Case
V)	500-3-301	16" S.S. Mesh Chain
**	500-3-303	20" S.S. Mesh Chain
**	500-3-304	24" S.S. Mesh Chain
W)	500-3-306	16" S.S. Connecting Pin
**	500-3-308	20" S.S. Connecting Pin
**	500-3-309	24" S.S. Connecting Pin
1	PTWC-16-415	Rear Roller Assemble (16" Chain)
**	PTWC-20-415	Rear Roller Assemble (20" Chain)
**	PTWC-24-415	Rear Roller Assemble (24" Chain)
2	GWC-F-1634	Front Roller Assembly (16" Chain)
**	GWC-F-2034	Front Roller Assembly (20" Chain)
**	GWC-F-2434	Front Roller Assembly (24" Chain)
3	300-FT-002	Press Wheel Shaft 1-1/4" x 16-1/2"
4	300-FT-032A	Press Wheel Crossover Shaft 65"
5	300-1-207	Fan Drive Shaft
6	300-FL-101-L	24" Spinner Disc (Only) 7 Ga. Mild Steel (L.H.)
**	300-FL-102-L	24" Spinner Disc (Only) S.S. (L.H.)
7	300-FL-101-R	24" Spinner Disc (Only) 7 Ga. Mild Steel (R.H.)
**	300-FL-102-R	24" Spinner Disc (Only) S.S. (R.H.)
8	300-FL-112	4 Bolt Fan Hub
9	300-FL-107-L	F/L Spinner Blade Mild Steel (L.H.)
**	300-FL-108-L	F/L Spinner Blade Heat Treated (L.H.)
**	300-FL-109-L	F/L Spinner Blade S.S. (L.H.)
10	300-FL-107-R	F/L Spinner Blade Mild Steel (R.H.)
**	300-FL-108-R	F/L Spinner Blade Heat Treated (R.H)
**	300-FL-109-R	F/L Spinner Blade S.S. (R.H.)
11	300-1-208	1-1/4" Lock Collar
12	300-FT-208	Tensioner Pully, mount For 11.25 Tires
BB	300-FT-005	Standard Ground Wheel Frame

* Not Shown

*****For Gearbox Breakdowns see pgs 39-40**

Full Press Wheel — 3 Sprocket Assembly

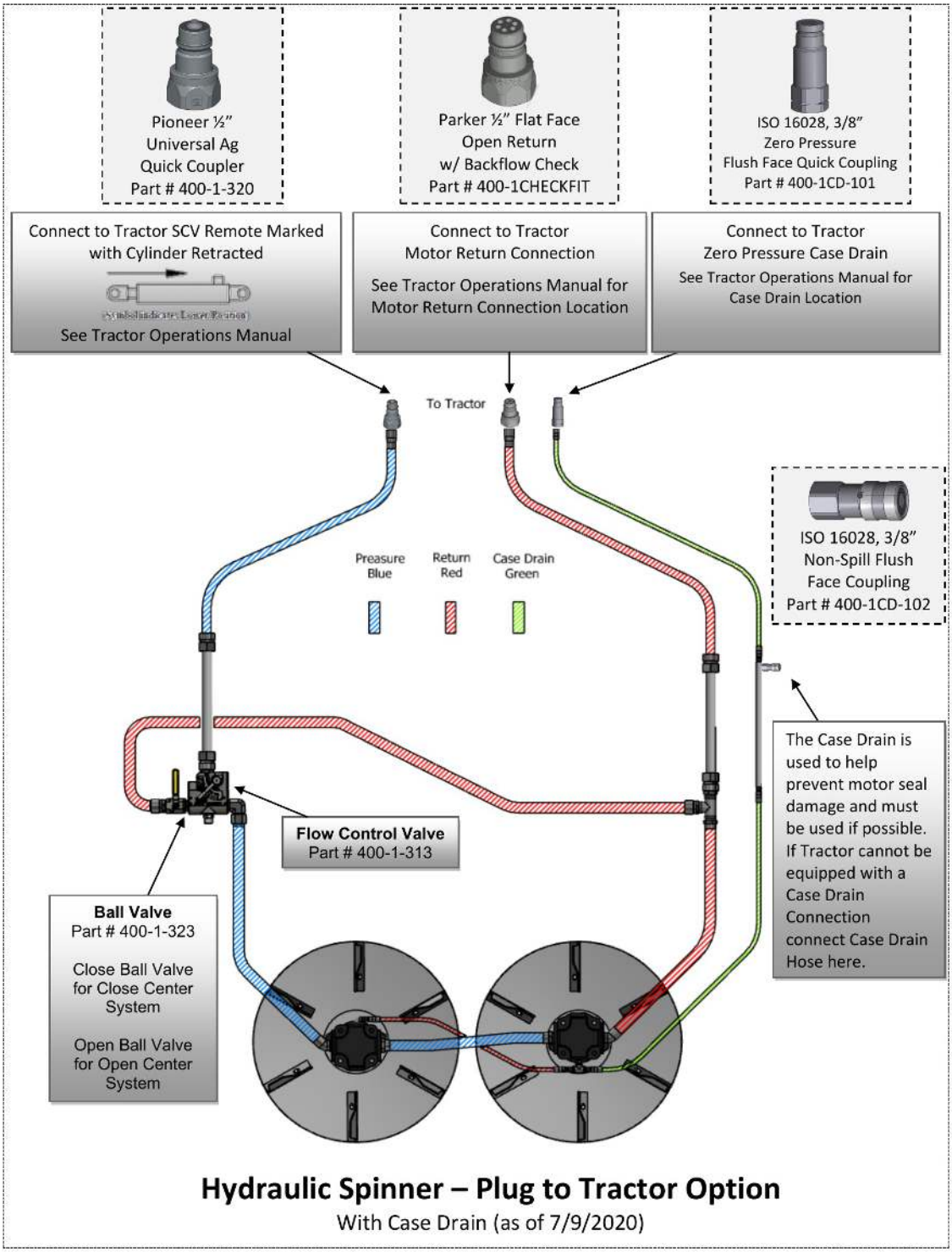
Full Press Wheel 3 Sprocket Assembly



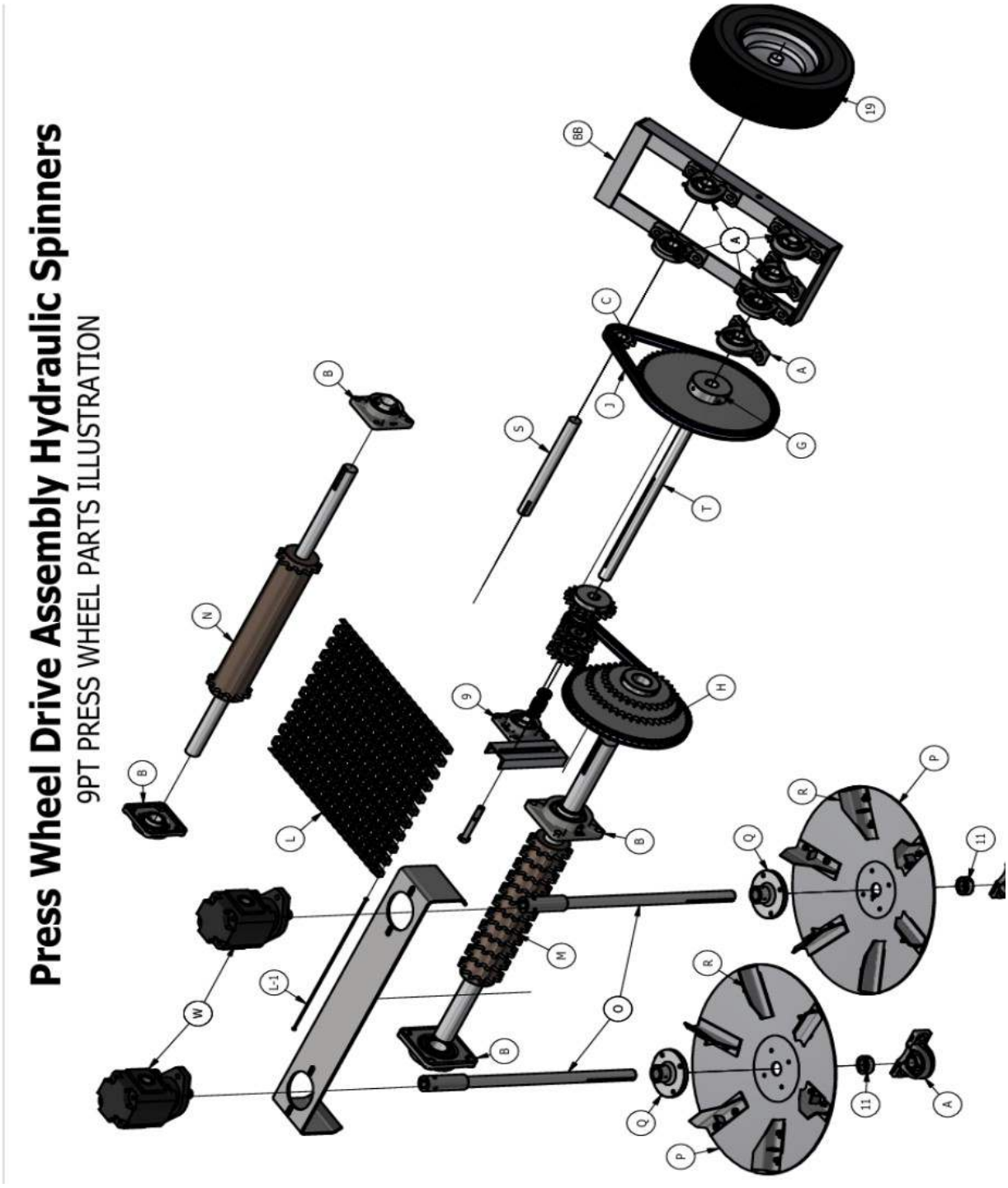
PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
18	2	700-1-103	60 BS 11 X 1 1/4" SPROCKET
23	1	700-1-106	60 BS 20 X 1 1/4" SPROCKET
25	3	700-1-121	#60 IDLER SPROCKET
34	1	PTWC2045 ....20"chain shown (specify chain width)	2"Rear Roller
35	2	UCF-211-32	F-211 Bearing
36	1	700-1-132B	60 BS 54 X 2" SPROCKET
37	1	700-1-111A	60 BS 40 X 2" SPROCKET
38	1	700-1-109A	60 BS 30 X 2" SPROCKET
40	1	67in shaft 1.25 ground wheel	
41	1	ANSI/ASME B18.2.1 - 5/8-11 UNC - 6	Hex Bolt - 6"

8.3 Hydraulic Spinners — Plug to Tractor

Hydraulic Spinners — Plug to Tractor Assembly

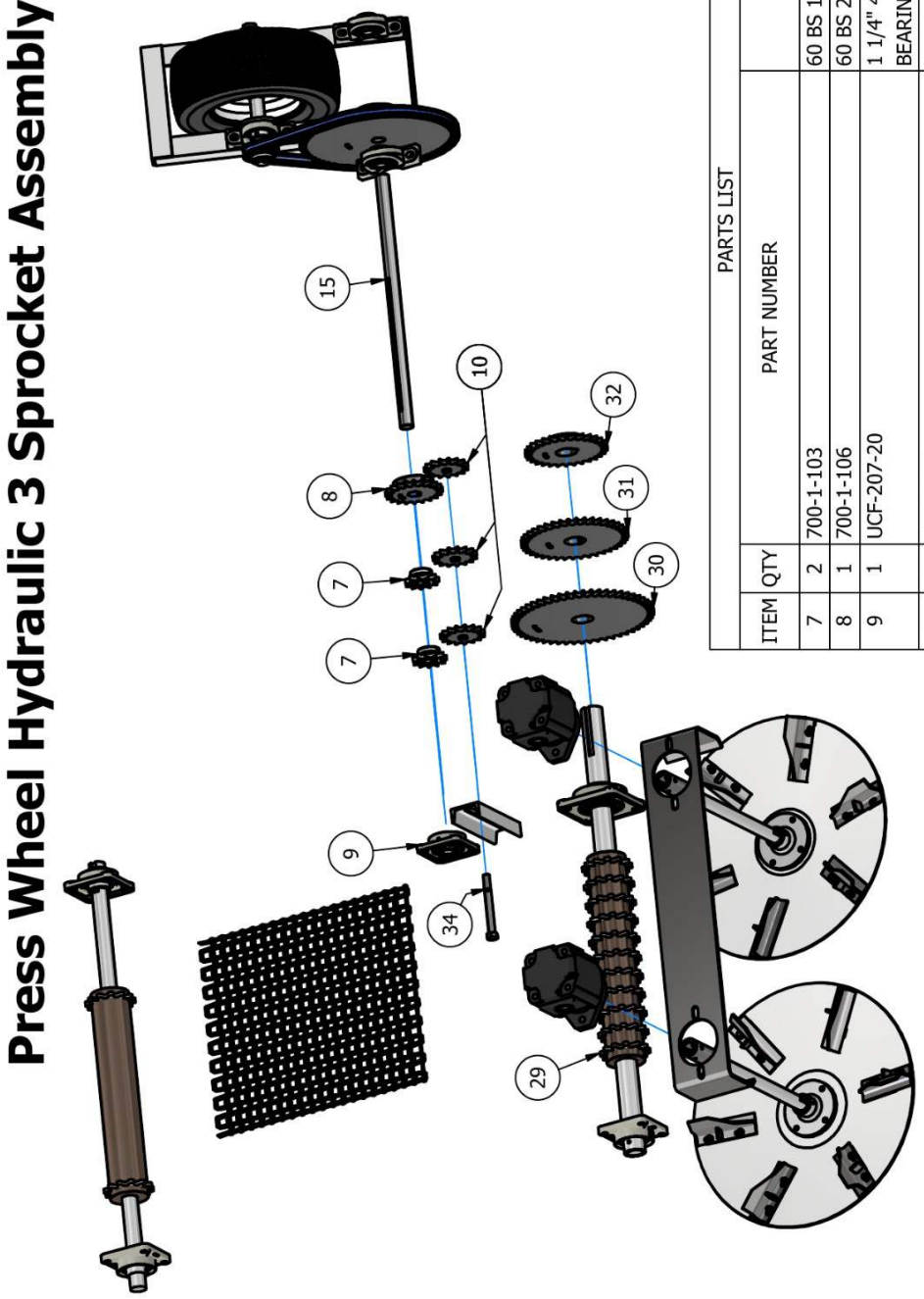


Press Wheel Drive — Hydraulic Spinners



Ref.	Part Number	Description
A	UCP-207-20	1-1/4" Pillow Block Bearing
B	UCF-211-32	2" 4 Bolt Flange Bearing
C	700-1-103	60BS11 Sprocket
G	700-1-115	60BS60 Sprocket
H	See	Below
I	200-2-042	Key 3/8”
J	500-1-101	#60 Chain
19	800-1-108	16 x 6.5 x 8 Tire; 20.5 tire or double wide optional
L	500-3-301	16" S.S. Mesh Chain
**	500-3-303	20" S.S. Mesh Chain
**	500-3-304	24" S.S. Mesh Chain
L-1	500-3-306	16" S.S. Connecting Pin
*	500-3-308	20" S.S. Connecting Pin
*	500-3-309	24" S.S. Connecting Pin
M	PTWC-16-45	Rear Roller Assembly (16" Chain)
**	PTWC-20-45	Rear Roller Assembly (20" Chain)
**	PTWC-24-45	Rear Roller Assembly (24" Chain)
N	GWC-F-1634	Front Roller Assembly (16" Chain)
**	GWC-F-2034	Front Roller Assembly (20" Chain)
**	GWC-F-2434	Front Roller Assembly (24" Chain)
O	300-1-210	Fan Shaft
P	300-FL-101-L	24" Spinner Disc (Only) 7 Ga. Mild Steel (L.H.)
**	300-FL-102-L	24" Spinner Disc (Only) S.S. (L.H.)
**	300-FL-101-R	24" Spinner Disc (Only) 7 Ga. Mild Steel (R.H.)
**	300-FL-102-R	24" Spinner Disc (Only) S.S. (R.H.)
Q	300-FL-112	4 Bolt Fan Hub
R	300-FL-107-L	F/L Spinner Blade Mild Steel (L.H.)
**	300-FL-108-L	F/L Spinner Blade Heat Treated (L.H.)
**	300-FL-109-L	F/L Spinner Blade S.S. (L.H.)
**	300-FL-107-R	F/L Spinner Blade Mild Steel (R.H.)
**	300-FL-108-R	F/L Spinner Blade Heat Treated (R.H)
**	300-FL-109-R	F/L Spinner Blade S.S. (R.H.)
S	300-FT-038A	S-1 1/4" GW Shaft 14"
T	300-FT-038	L-1 1/4" GW Shaft
U	UCF-207-20	1-1/4" 4 Bolt Flange Bearing
V	300-1-214	AFC Motor Mount – Mild Steel
**	300-1-214A	AFC Motor Mount – Stainless Steel
W	400-C-201	M-30 - 2" Gear Spinner Motor
11	300-1-208	1/4” lock Collar
BB	300-FT-005	Ground wheel Frame Standard

Press Wheel Hydraulic — 3 Sprocket Assembly



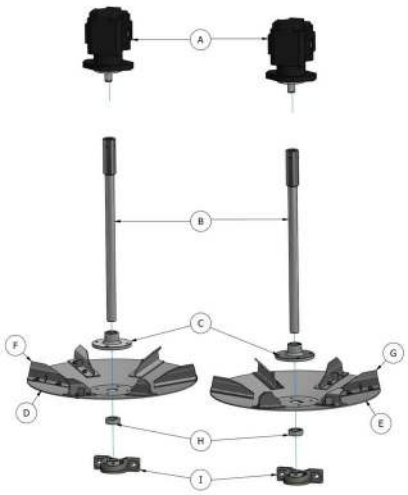
PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
7	2	700-1-103	60 BS 11 X 1 1/4" SPROCKET
8	1	700-1-106	60 BS 20 X 1 1/4" SPROCKET
9	1	UCF-207-20	1 1/4" 4 BOLT FLANGE BEARING
10	3	700-1-121	#60 IDLER SPROCKET
15	1	300-FT-038	GW SHAFT - 9 PT
29	1	PTWC2045	20" Rear roller shown (specify chain width)
30	1	60BS54 2.0 Bore	60 BS 60 X 1 1/4" SPROCKET
31	1	60BS40 2.0 bore	60 BS 40 X 1 1/2" SPROCKET
32	1	60BS30 2.0 bore	60 BS 30 X 1 1/2" SPROCKET
34	1	ANSI/ASME B18.2.1 - 5/8-11 UNC - 6	Hex Bolt - UNC 6 Inch)

8.4 Hydraulic Spinner Assembly

Hydraulic Spinner Assembly

Hydraulic Spinners Exploded View



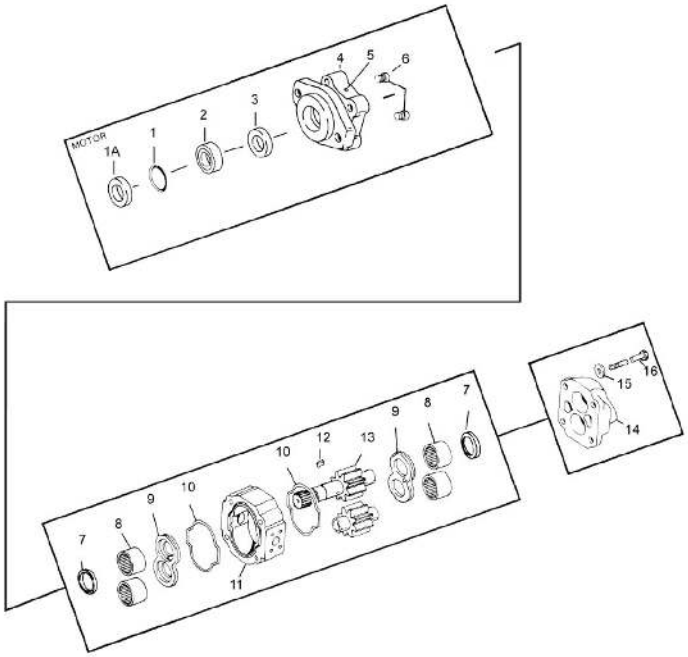
Hydraulic Spinners – Parts List

Ref.	Part Number	Description
A)	400-C-201	M-30 - 2" Gear Spinner Motor
B)	300-1-210-28.25	Spinner Shaft - Carbon M30 For 17" Floor & 25" Floor
**	300-1-210-26.25	Spinner Shaft - Carbon M30 For 21" Floor
**		
**	300-1-211-28.25	Spinner Shaft - Stainless M30 M30 For 17" Floor & 25" Floor
**	300-1-211-26.25	Spinner Shaft – Stainless M30 For 21" Floor
C)	300-FL-112	4 Bolt Spinner Hub - Carbon
**	300-FL-112A	4 Bolt Spinner Hub - Stainless
D)	300-FL-101-L	24" Spinner Disc (Only) 7 Ga. Mild Steel (L.H.)
**	300-FL-102-L	24" Spinner Disc (Only) S.S. (L.H.)
E)	300-FL-101-R	24" Spinner Disc (Only) 7 Ga. Mild Steel (R.H.)
**	300-FL-102-R	24" Spinner Disc (Only) S.S. (R.H.)
F)	300-FL-107-L	F/L Spinner Blade Mild Steel (L.H.)
**	300-FL-108-L	F/L Spinner Blade Heat Treated (L.H.)
**	300-FL-109-L	F/L Spinner Blade S.S. (L.H.)
G)	300-FL-107-R	F/L Spinner Blade Mild Steel (R.H.)
**	300-FL-108-R	F/L Spinner Blade Heat Treated (R.H)
**	300-FL-109-R	F/L Spinner Blade S.S. (R.H.)
H)	300-1-208	Spacer - Lock Collar for 1-1/4" Shaft
I)	UCP-207-20	1-1/4" Pillow Block Bearing

** Optional

Spinner Motor (M-30-2)

Spinner Motor M-30 – 2



Assembly Parts

Assembly Parts Description
1A) GREASE SEAL
1) SNAP RING
2) BEARING SPACER
3) MOTOR SHAFT SEAL
4) 2-BOLT-B SHAFT END COVER (SEC)
5) PIPE PLUG 1/4" NPT FOR (SEC)
6) CHECK VALVE ASSEMBLY
7) RING SEAL
8) ROLLER BEARING
9) THRUST PLATE
10) GEAR HOUSING GASKET SEAL
11) GEAR HOUSING 1"
12) SHAFT KEY
13) GEAR SET 1-1/2"L X 1" KEYED
14) PORT END COVER (PEC)
15) WASHER 5/8"
16) HEX HEAD BOLT 5/8-11 X 4-1/2"

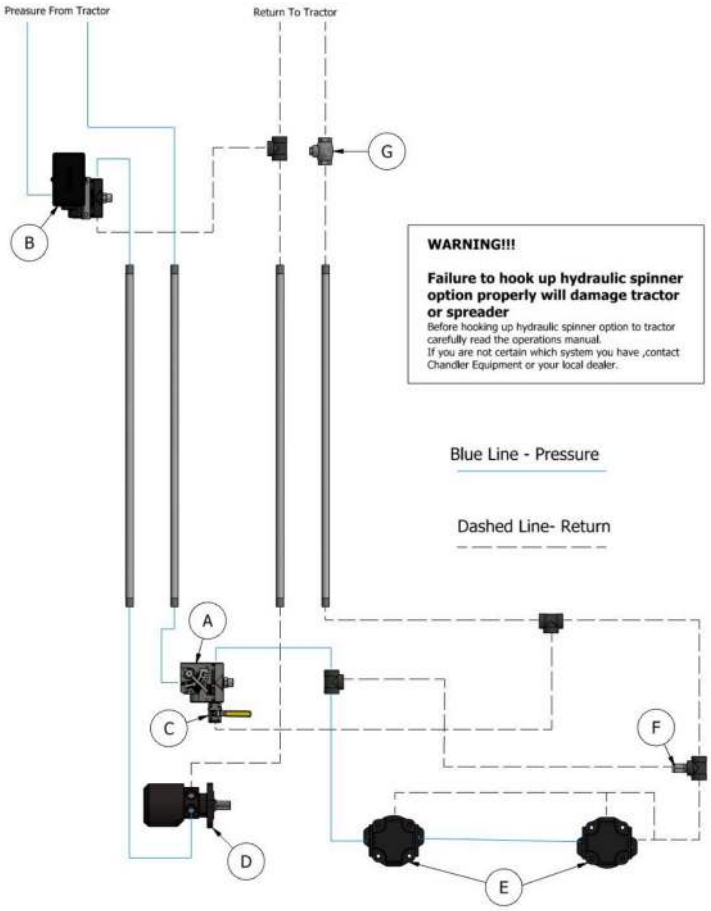
M-30 Motor Parts List

	Description	Part #
	M-30 - 2 Motor	400-C-201
	M-30 Seal Kit (includes1A, 3, 10)	400-C-206
1A)	GREASE SEAL	400-C-215
3)	MOTOR SHAFT SEAL	400-C-205
8)	ROLLER BEARING	400-C-204
9)	THRUST PLATE	400-C-229
10)	GEAR HOUSING GASKET SEAL	400-C-205A
12)	SHAFT KEY	400-C-207
13)	GEAR SET 2"L X 1" KEYED	400-C-211
	SEAL INSTALLATION SLEEVE	400-C-226

8.5 Plug-to-Tractor Hydraulics (Rate Control System)

Plug-to-Tractor Hydraulics — Diagram & Parts

9PT-FT Hydraulic System - Plug To Tractor

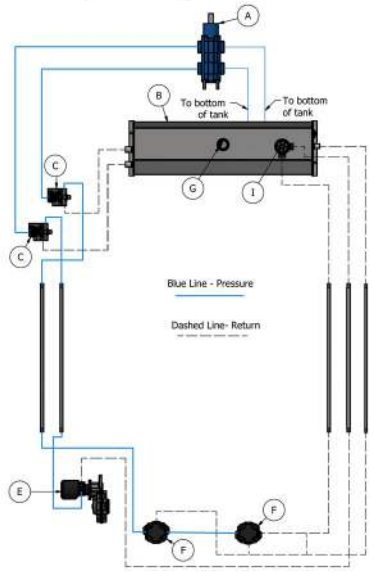


	Part #	Description
A)	400-1-313	Flow Control Valve with Built-in Relief
B)	Options:	Control Valve
	063-0171-846	Raven: 30 GPM PWM
	063-0172-194	Raven: 30 GPM Fast Valve
	35-02128	TeeJet: 30 GPM EXR - 4
C)	400-1-323	Ball Valve – ½" 3000psi
D)	400-R-106	Parker - MB - 18 - Single Rawson Drive
	400-R-104	Parker - MB - 12 - Twin Rawson Drive
E)	400-C-201	M - 30 2" Gear Spinner Motor

8.6 Self-Contained Hydraulics (Optional Rate Control System)

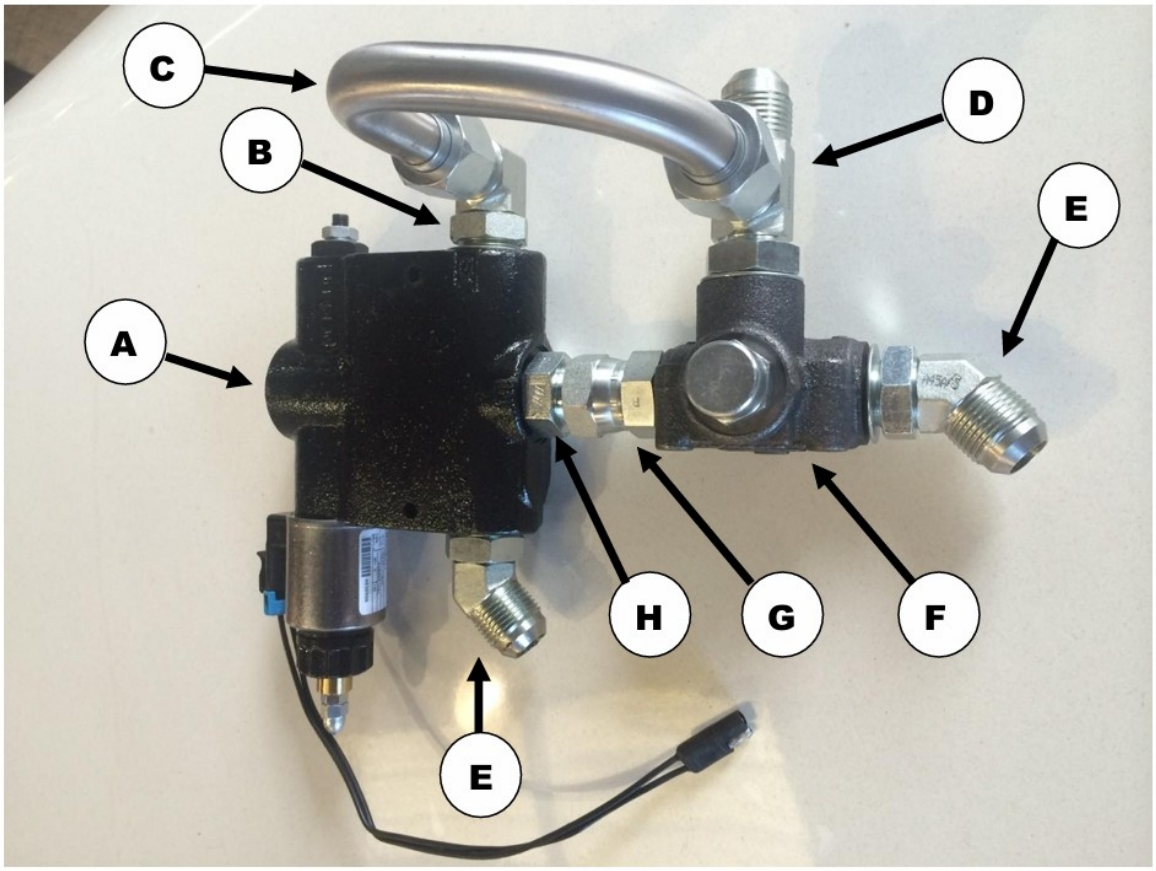
Self-Contained Hydraulics — Diagram & Parts

9PT-FT Hydraulic System - Self Contained



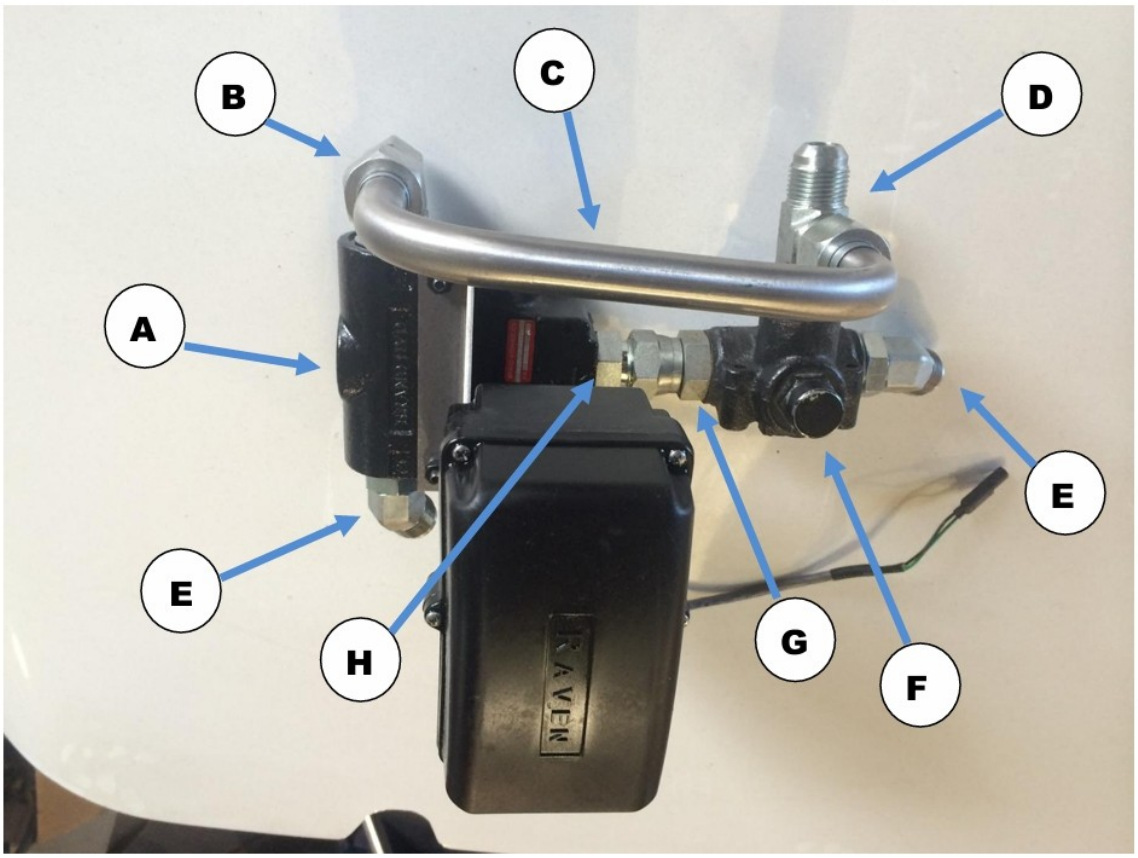
	Part #	Description
A)	400-C-209B	P - 2500 Tandem Pump 2 1/2" x 2 1/2" (540 PTO)
	400-C-209	P - 2500 Tandem Pump 1 1/2" x 1 1/2" (1000 PTO)
B)	400-C-213	28 gal. Hydraulic Oil Tank
C)	400-1-313	Flow Control Valve with Built-in Relief
D)	Options:	Control Valve
	063-0171-846	Raven: 30 GPM PWM
	063-0172-194	Raven: 30 GPM Fast Valve
	35-02128	TeeJet: 30 GPM EXR – 4
	400-1-308	Relief Valve - Nonadjustable - 2500 PSI (RD-25E)
E)	400-R-106	Parker - MB - 18 - Single Rawson Drive
	400-R-104	Parker - MB - 12 - Twin Rawson Drive
F)	400-C-201	M - 30 2" Gear Spinner Motor
G)	400-1-317	Breather Cap
H)	400-1-319A	Filter Head
	400-1-319	Filter Element - *Not Shown*
I)	400-1-332	1” Gate Valves - *Not Shown*

Raven 30 GPM - PWM Valve Assembly



	Part #	Description
A)	R1-063-0171-846	30 GPM PWM Valve
B)	400-3-121	#12OR - 37 Degree JIC male- 90
C)	400-3-198	PWM - 304 Stainless Tube Assembly
D)	400-3-130	#12OR - 37 Degree JIC male- SR TEE
E)	400-3-156	#12OR - 37 Degree JIC male- 45
F)	400-1-308	2500 PSI Relief
G)	400-3-125	#12OR -37 Degree JIC female Swivel
H)	400-3-124	#12OR - 37 Degree JIC male

Raven 30 GPM - Fast Valve Assembly

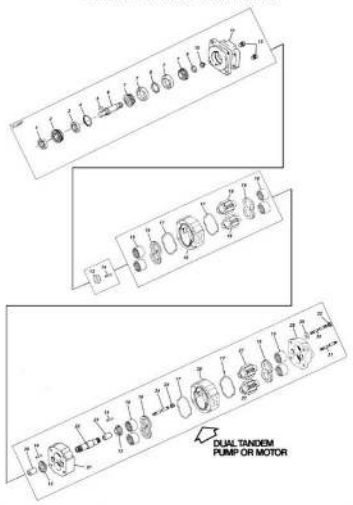


	Part #	Description
A)	R1-063-0173-146	30 GPM Fast Valve
B)	400-3-121	#12OR - 37 Degree JIC male- 90
C)	400-3-199	Fast Valve - 304 Stainless Tube Assembly
D)	400-3-130	#12OR - 37 Degree JIC male- RUN TEE
E)	400-3-156	#12OR - 37 Degree JIC male- 45
F)	400-1-308	2500 PSI Relief
G)	400-3-125	#12OR -37 Degree JIC female Swivel
H)	400-3-124	#12OR - 37 Degree JIC male

Hydraulic Pump

2500 SERIES

P2500B(599SPL)AXHK25-62AHK25-1(CHA)



Note: Drawing shown with Flange Mount (Part 11) actual Pump has 4-Bolt Pad Mount (see parts list next page)

MODEL NUMBER	**P2500B(599SPL)AXHK25-62AHK25-1(CHA)**
DESCRIPTION	**PUMP TYPE I SHAFT**

Item Number On Exploded View	Description	Order This Part Number	Quantity Per Unit
1	SPECIAL SEAL	280-1774-935	1
2	RETAINER RING	GZ-0961-1	1
3	PUMP SHAFT SEAL	W62-26-10	1
4	O'RING	K-2995-47	1
5	SHAFT KEY	W09-44	1
6	PUMP SHAFT	TB-0024-1	1
7	TAPER BEARING	W015-7	2
8	BEARING SPACER	FA-0558	1
9	SHAFT SPACER	XZ-0558-2	1
10	SNAP RING	W86-100	1
11	TYPE III PAD MOUNT (SEC)	LA-0575-3	1
12	CHECK VALVE	L-0280-K	2
13	SHAFT BUSHING	ZQ-1909	3
14	ROLL PIN	W004-19	3
15	ROLLER BEARING	R-0921	8
16	THRUST PLATE	X-0947-TC	4
17	GEAR HOUSING GASKET SEAL	TA-2995-244	4
18	GEAR HOUSING 2-1/2"	LZ-0577-25-5	1
19	GEAR SET 2-1/2"	JZ-0996L-25	1
20	GEAR SPACER 1-1/8"	SZ-0408-9	1
21	BEARING CARRIER (BC)	JA-0576	1
22	CONNECTING SHAFT	SZ-0022	1
23	GEAR SPACER 1-1/8"	SZ-0408-9	1
24	THREADED ROD	3/8"-16	1
25	LOCK NUT	W78-05	1
26	GEAR HOUSING 2-1/2"	LZ-0577-25-5	1
27	GEAR SET 2-1/2"	JZ-0996L-25	1
28	PORT END COVER (PEC)	QZ-0592	1
29	WASHER 5/8"	W033-2	4
30	TIE BOLT 12-1/2"	ZD-0391-125	2
31	TIE BOLT 16"	ZD-0391-16	2
32	HEX NUT 5/8"-11	W3-65	4

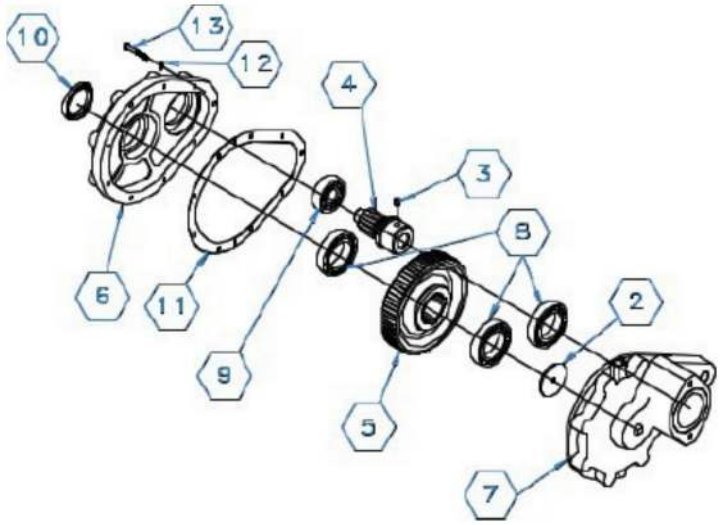
8.7 Hydraulic Conveyor Drive

Conveyor Assembly

Conveyor Assembly

	Part #	Description
A)	HWC-R-1634A	16” Rear Roller Assembly
	HWC-R-2034A	20” Rear Roller Assembly
	HWC-R-2434A	24” Rear Roller Assembly
B)	UCF-211-32	Flange Bearing
C)	GWC-F-1634A	16” Front Roller Assembly
	GWC-F-2034A	20” Front Roller Assembly
	GWC-F-2434A	24” Front Roller Assembly
D)	UCF-208-24	Flange Bearing
E)	300-FT-008	Roller Adjustment Rod
F)	500-3-306	Connecting Pin - 16"
	500-3-308	Connecting Pin - 20"
	500-3-309	Connecting Pin - 24"
G)	500-3-301	Mesh Type Chain - 16"
	500-3-303	Mesh Type Chain - 20"
	500-3-304	Mesh Type Chain - 24"
H)	100-R-1-01	Gear Case - Single
	100-R-2-01	Gear Case - Twin
	100-R-1-01A	Gear Case - Single with Rate Sensor Port
	100-R-2-01A	Gear Case - Twin with Rate Sensor Port
I)	400-R-106	Hydraulic Motor - MB18 (Single Gear Case)
	400-R-104	Hydraulic Motor - MB12 (Twin Gear Case)
J)	300-FT-044	Encoder Mounting Bracket

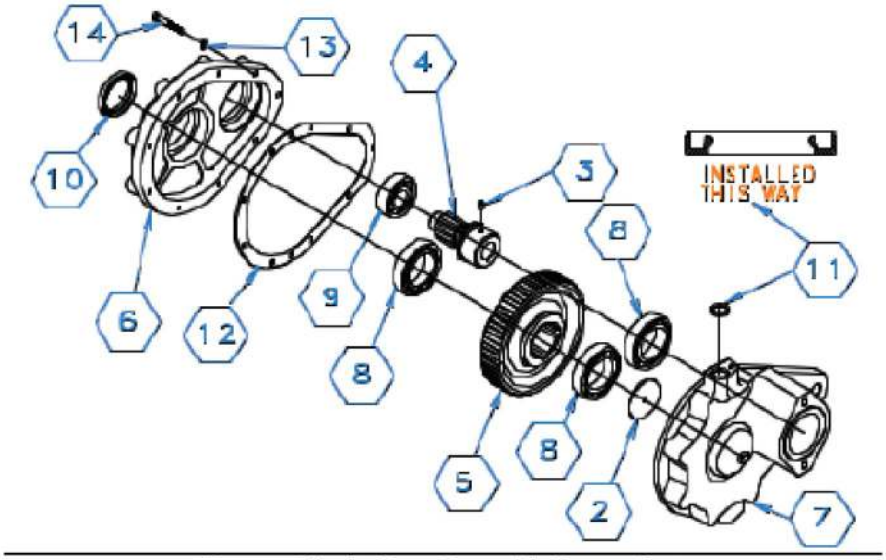
Single Motor Gear Case



Single Gear Case

	Part #	Description
1)	100-R-1-12A	Plug Kit
2)	N/A	Washer
3)	N/A	Plug - Delrin (comes installed in pinion gear)
4)	100-R-1-08	Pinion Gear - 11 Tooth
5)	100-R-1-07	Drive Gear 67 - Tooth
6)	100-R-1-09	Inboard Housing - Single
7)	100-R-1-10	Outboard Housing - Single
8)	100-R-1-03	Bearing - 50mm
9)	100-R-1-04	Bearing -25mm
10)	100-R-1-05	Oil Seal
11)	100-R-1-06	Gasket – Single
12)	100-R-1-13	Washer - 5/16" Lock
13)	100-R-1-14	Cap Screw - 5/16" x 1 1/2"
14)	100-R-1-11	Key - 1/2" (not shown)

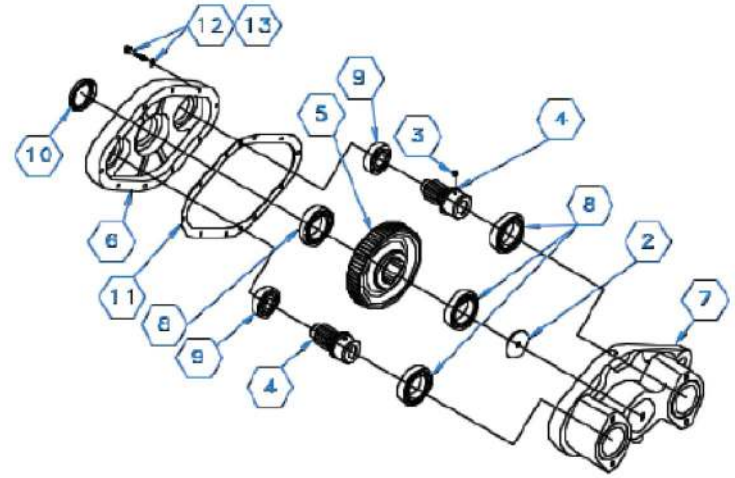
Single Motor Gear Case (with Sensor Port)



Single Gear Case with Sensor Port

	Part #	Description
1)	100-R-1-12A	Plug Kit
2)	N/A	Washer
3)	N/A	Plug - Delrin (comes installed in pinion gear)
4)	100-R-1-08	Pinion Gear - 11 Tooth
5)	100-R-1-07	Drive Gear 67 - Tooth
6)	100-R-1-09	Inboard Housing - Single
7)	100-R-1-10A - LH	Outboard Housing - Single w/ Sensor Port LH
8)	100-R-1-03	Bearing - 50mm
9)	100-R-1-04	Bearing -25mm
10)	100-R-1-05	Oil Seal
11)	100-R-1-15	Oil Seal - Sensor Port
12)	100-R-1-06	Gasket
13)	100-R-1-13	Washer - 5/16" Lock
14)	100-R-1-14	Cap Screw - 5/16" x 1 1/2"
15)	100-R-1-11	Key - 1/2" (not shown)

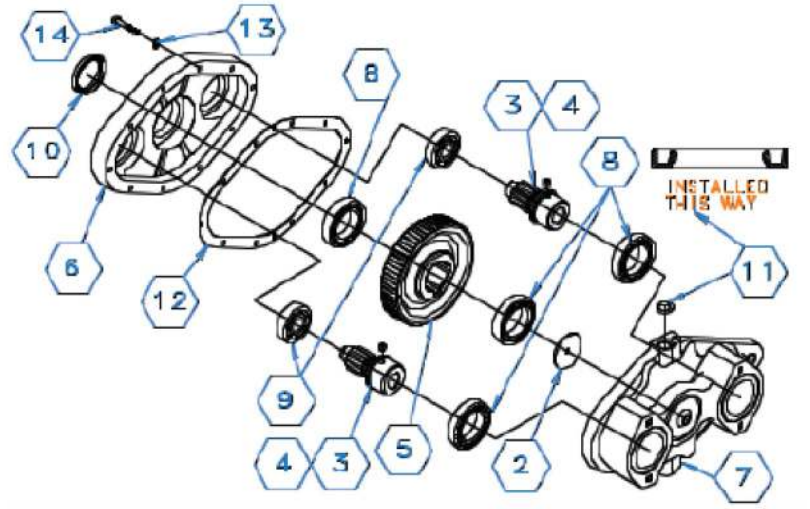
Tandem Motor Gear Case



Twin Gear Case

	Part #	Description
1)	100-R-1-12A	Plug Kit
2)	N/A	Washer
3)	N/A	Plug - Delrin (comes installed in pinion gear)
4)	100-R-1-08	Pinion Gear - 11 Tooth
5)	100-R-1-07	Drive Gear 67 - Tooth
6)	100-R-2-02	Inboard Housing - Twin
7)	100-R-2-03	Outboard Housing - Twin
8)	100-R-1-03	Bearing - 50mm
9)	100-R-1-04	Bearing -25mm
10)	100-R-1-05	Oil Seal
11)	100-R-2-06	Gasket - Twin
12)	100-R-1-13	Washer - 5/16" Lock
13)	100-R-1-14	Cap Screw - 5/16" x 1 1/2"
14)	100-R-1-11	Key - 1/2" (not shown)

Tandem Motor Gear Case (with Sensor Port)

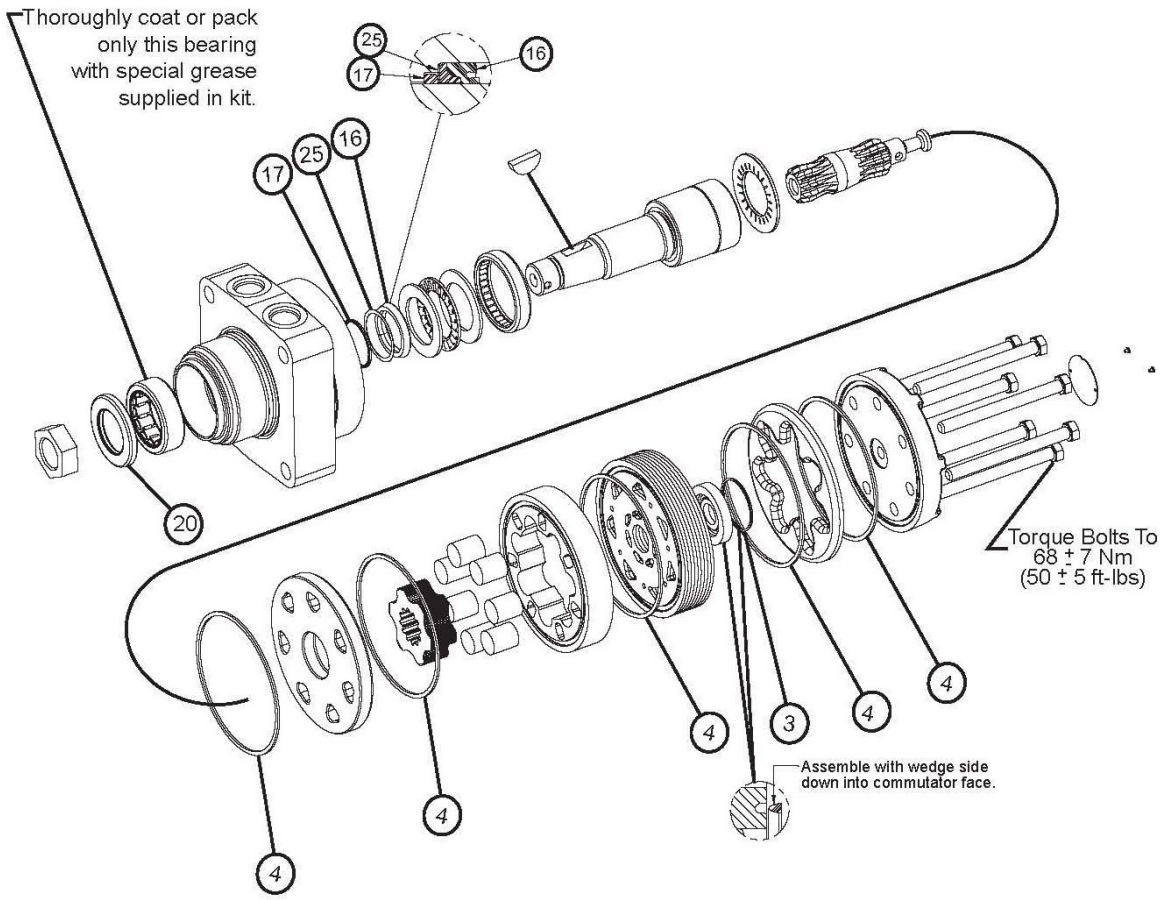


Twin Gear Case with Sensor Port

	Part #	Description
1)	100-R-1-12A	Plug Kit
2)	N/A	Washer
3)	N/A	Plug - Delrin (comes installed in pinion gear)
4)	100-R-1-08	Pinion Gear - 11 Tooth
5)	100-R-1-07	Drive Gear 67 - Tooth
6)	100-R-2-02	Inboard Housing - Twin
7)	100-R-2-03A - LH	Outboard Housing - Twin w/ Sensor Port LH
8)	100-R-1-03	Bearing - 50mm
9)	100-R-1-04	Bearing -25mm
10)	100-R-1-05	Oil Seal
11)	100-R-1-16	Oil Seal - Sensor Port
12)	100-R-2-06	Gasket - Twin
13)	100-R-1-13	Washer - 5/16" Lock
14)	100-R-1-14	Cap Screw - 5/16" x 1 1/2"
15)	100-R-1-11	Key - 1/2" (not shown)

Conveyor Motor

Conveyor Motor



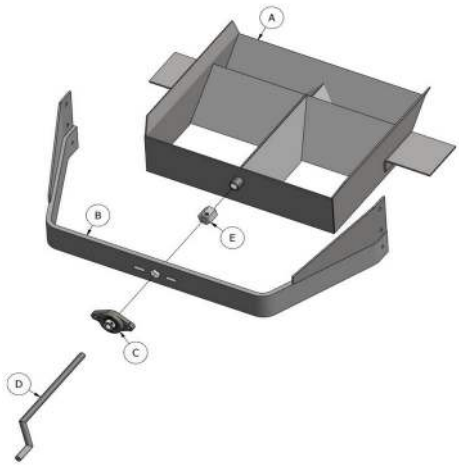
	Description	Part #
1)	MB180102AAAA Motor - Single Gear Case	400-R-106
4)	MB120102AAAA Motor - Tandem Gear Case	400-R-104
5)	MB Seal Kit (includes- 3, 4, 16, 17, 20, 25)	400-R-109
6)	Motor Shaft - MB019002	400-R-111

*** **When Ordering these parts have serial number available to insure proper parts**

8.8 Material Flow Divider

Material Flow Divider Assembly

Flow Divider Exploded View



Flow Divider – Parts List

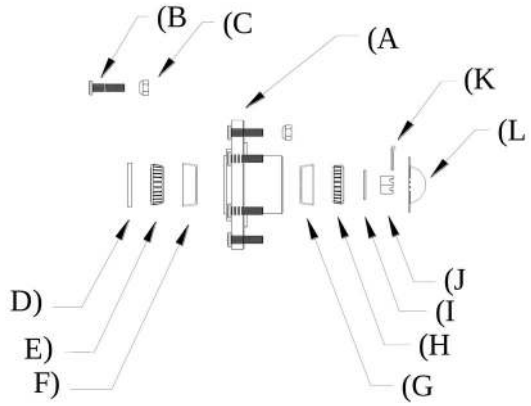
	Part #	Description
A	300-FT-010	Flow Divider Assembly S.S. (Specify Floor Width When Ordering)
B)	300-FT-011	Flow Divider Bar S.S.
C)	UCFL-204-10	5/8" Flange Bearing
D)	300-FT-012	Flow Divider Adjustment Rod
E)	300-FT-013	Flow Divider Hex Nut w/ Grease Zerk
*	300-FT-019	Flow Divider Gauge

***Not Shown**

8.9 Axles, Hubs & Tires

8-Bolt Hub Assembly (12,000# per Pair)

8 Bolt (12,000# per Pair) Hub Assembly

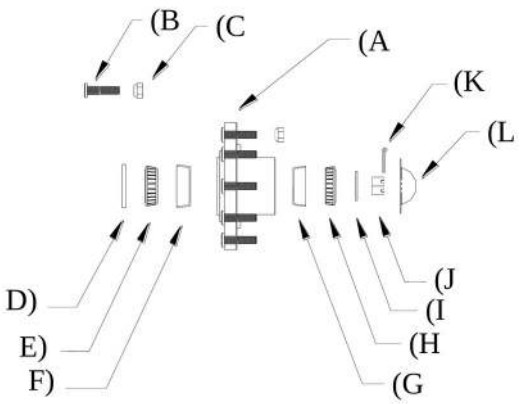


8 Bolt Hub Assembly Parts List

	Part #	Description
A)	800-3-101	60-8 - 8 Bolt Hubs Only
B)	800-3-114	60-8 - 8 Bolt Wheel Stud
C)	800-3-113	60-8 - 8 Bolt Wheel Nut
D)	800-3-108	60-8 Hub Seal
E)	800-3-104	60-8 Inner Bearing
F)	800-3-105	60-8 Inner Race
G)	800-3-107	60-8 Outer Race
H)	800-3-106	60-8 Outer Bearing
I)	800-3-112	60-8 Spacer Washer
J)	800-3-109	60-8 Spindle Nut
K)	800-3-115	60-8 Cotter Pin
L)	800-3-103	60-8 Hub Cap
M)	800-3-102	60-8 Hub Assembly Complete

10-Bolt Hub Assembly (14,000# per Pair)

10 Bolt (14,000# per Pair) Hub Assembly



	Part #	Description
A)	800-6-110	873 - 10 Bolt Hubs Complete
B)	800-4-107	873 - 10 Bolt Wheel Stud
C)	800-4-108	873 - 10 Bolt Wheel Nut
D)	800-6-117	873 Hub Seal
E)	800-6-111	873 Inner Bearing
F)	800-6-112	873 Inner Race
G)	800-6-114	873 Outer Race
H)	800-6-113	873 Outer Bearing
I)	800-4-114	873 Spacer Washer
J)	800-4-113	873 Spindle Nut
K)	800-4-112	873 Cotter Pin
L)	800-4-110	873 Hub Cap

Tire & Wheel Combinations / Torque Specifications

Tire and Wheel Combinations

Bolt Pattern	Tire Size	Ply	Wheel Size	Air Pressure (psi)	Tire Part #	Wheel Part #	Tire and Wheel Part #
8	19L x 16.1	12	16.1 x 16 C	36	800-1-104	800-1-112	800-1-122
8	11.25 x 28	12	10 x 28	48	800-1-106	800-1-115	800-1-124-8
10	11.25 x 28	12	10 x 28	48	800-1-106	800-1-116	800-1-124-10
8	550/45-22.5	16	16x22.5	28			800-1-147
10	18.4 x 26 AWT	10	16 x 26	26			800-1-143LARGE

Lug Nut Torque Specifications (ft-lbs)

Hub	Bolt Pattern	Stud Size	Part Number	Torque (ft-lbs)
60-8	8	5/8"	800-3-114	125-140
873	10	11/16"	800-4-107	250-300

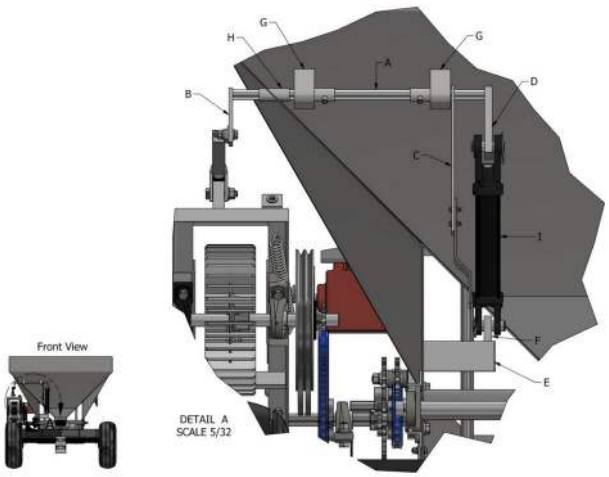
8.10 Shared Components

The following assemblies are common to several configurations and are shown once here to avoid duplication.

Hydraulic Cylinder Engagement Assembly

> **NOTE**
> Used on the press-wheel-drive configurations in Sections 8.1, 8.2, and 8.3.

Hydraulic Cylinder Engagement Assembly



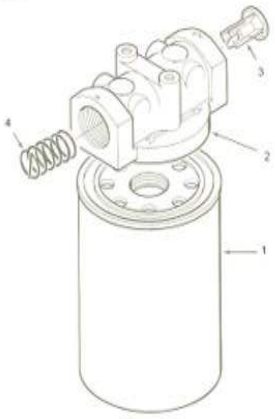
Hydraulic Cylinder Engagement – Parts List

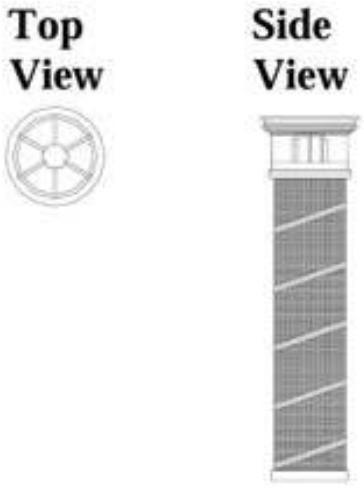
Ref.	Part Number	Description
A)	300-1-135	1" S.S. Rod – 25" Long
B)	300-1-136	Connecting Rod
C)	300-1-137	Manual Engagement Arm
D)	300-1-138	Top Cylinder Mount
E)	300-1-139	Lower Cylinder Brace
F)	300-1-140	Lower Cylinder Mount
G)	300-1-141	Engagement Rod Hanger
H)	300-1-142	Engagement Rod Pipe
I)	400-1-300	Hydraulic Cylinder – 8"

Hydraulic Filters

> **NOTE**
> Used on all self-contained hydraulic systems (Sections 8.5, 8.7, and 8.8).

Hydraulic Filters





Part # 300-FL-113A

1) Filter Element 400-1-319
2) Filter Head 400-1-319A (when ordering this part # items 3,4 are included

9. Warranty

9.1 Chandler Standard Warranty

Chandler Equipment Company warrants that equipment it manufactures, under normal conditions of use and service, will be free from material defects due to faulty manufacturing for the period below:

- Poultry Litter Spreaders and Conveyors — six (6) months.
- Fertilizer and Lime Pull-Type Spreaders — six (6) months.
- Fertilizer Tenders (trailer or truck mounted) — six (6) months.
- Fertilizer and Lime Chassis-Mounted Spreaders — one (1) year.

Warranty approval

All warranty claims must be approved in writing by Chandler Equipment Company before any work is done.

> **IMPORTANT**
> Any work done without prior written approval will NOT be covered under warranty, and the customer / dealer will be responsible for all costs.

Warranty claim forms (dealers only)

- Every claim must include the serial number, date of purchase, customer name, and date of sale to the original owner.
- Improperly filed or misleading information will result in denial of the claim.
- All warranty claims must be e-mailed to your sales representative.

Labor & repair cost (dealers only)

- Labor for any repair must be approved before work begins.
- Chandler Equipment Company retains the right to adjust any and all warranty claims.

Dealer responsibility

- Maintain good, open communication between the customer and Chandler to resolve warranty issues.
- Inform the customer of operating procedures, safety precautions, and normal maintenance to help avoid warranty issues.
- **Promptly inform Chandler of any possible warranty issue** and make every effort to resolve issues in a timely manner.
- Notify Chandler of possible non-warranty issues, such as any modification made to equipment.

Genuine parts & replacement shipping

- Chandler will only warranty equipment that uses Chandler Genuine Parts. Use of any other parts voids all warranties.
- Chandler ships Chandler Genuine Parts for warranty replacement and will not warranty any non-genuine part installed by the customer / dealer; the cost of such parts is the customer's / dealer's responsibility.
- Warranty replacement parts ship via regular UPS. Next-Day Air costs are the customer's / dealer's responsibility.

Parts returns

- All parts replaced under warranty must be returned within 20 days for evaluation, in their original, unmodified state. Any modification denies the claim and the parts are returned.
- Returned hydraulic components must be assembled (original state) with ports plugged to prevent contamination; a disassembled hydraulic component voids the claim.
- Tag every returned part with: customer or dealer name, address, phone, and contact person; equipment serial number; and a complete description of the problem.

Not covered under this warranty

- Equipment modified from its original state, or used for any purpose other than its original design.
- Damage from improper installation or misuse. Chandler accepts no liability for improper installation, including damage to property, crops, or other equipment.
- Incomplete equipment and dealer add-ons — Chandler does not warrant equipment sold incomplete (axles, tires, hydraulic components, paint), nor equipment damaged by a control system not sold and installed by Chandler. Non-genuine aftermarket add-ons installed without written approval void all warranties.
- Travel time, cleaning, unloading of material, or towing; and cost of materials applied improperly due to not following operating instructions.

9.2 Raven Industries Warranty

Raven applied products carry a 1-year standard warranty covering defects in workmanship or materials under normal use. All Raven parts must be returned clean and free of fluids; it is recommended they be returned in the packaging the replacement parts arrived in.

Warranty claims on a Raven component must be submitted to Chandler Equipment Company no later than 10 days after the repair date, and must include the spreader serial number, the part number and serial number of the defective part, a description of the failure, and the diagnostic procedure used.

> **IMPORTANT**
> Returned Raven parts are submitted to Raven Industries for diagnostic testing. If found to be “No Failure,” the part is returned and the customer is charged a $108.00 diagnostic fee plus associated freight.
>
> All defective parts must be returned to Chandler within 15 days of failure. The customer is invoiced for replacement parts until warranty credit is issued by Raven, then credited. Parts found defective due to misuse or improper installation are the customer’s responsibility, including freight.