



# TECHNICAL MANUAL

## Safety, Operation, Parts & Service

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Models:  
744423 TRACAIRE



*WARNING: If incorrectly used this machine can cause severe injury. Those who use and maintain this machine should be trained in its proper use, warned of its dangers and should read the entire manual before attempting to set up, operate, adjust or service the machine.*



4130422 REV A

**CALIFORNIA**  
**Proposition 65 Warning**

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects and other reproductive harm.



**WARNING**

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**Californie Proposition 65**  
**Avertissement**

Les échappements des moteurs diesel et certains de leurs composés sont reconnus par l'Etat de Californie pour être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.



**AVERTISSEMENT**

L'émission du moteur de ce matériel contient des produits chimiques que l'Etat de Californie considère être cancérigènes, provoquer des défauts congénitaux et d'autres dangers en matière de reproduction.

**California Advertencia**  
**de la Proposicion 65**

El estado de California hace saber que los gases de escape de los motores diesel y algunos de sus componentes producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.



**ADVERTENCIA**

El estado de California hace saber que los gases de escape de este producto contienen productos químicos que producen cáncer, defectos de nacimiento y otros daños en el proceso de reproducción humana.

IMPORTANT MESSAGE

Thank you for purchasing this Jacobsen product. You have purchased a world class product, one of the best designed and built anywhere.

This machine comes with a Technical Manual containing safety, operation, parts, maintenance and service information. The useful life and good service you receive from this machine depends to a large extent on how well you read and understand this manual. Treat your machine properly, lubricate and adjust it as instructed, and it will give you many years of reliable service.

Your safe use of this Jacobsen product is one of our prime design objectives. Many safety features are built in, but we also rely on your good sense and care to achieve accident-free operation. For best protection, study the manual thoroughly. Learn the proper operation of all controls. Observe all safety precautions. Follow all instructions and warnings completely. Do not remove or defeat any safety features. Make sure those who operate this machine are as well informed and careful in its use as you are.

See a Jacobsen dealer for any service or parts needed. Jacobsen service ensures that you continue to receive the best results possible from Jacobsen's products. You can trust Jacobsen replacement parts because they are manufactured with the same high precision and quality as the original parts.

Jacobsen designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this machine only as directed in the manual, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Jacobsen, a Textron Company  
One Bob Cat Lane  
Johnson Creek, WI 53038-0469

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## NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Jacobsen, a Textron Company strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Jacobsen's Engineering Department. Any Jacobsen product that is altered, modified or changed in any manner not specifically authorized after original manufacture—including the addition of "after-market" accessories or component parts not specifically approved by Jacobsen—will result in the Jacobsen Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Jacobsen will be considered the responsibility of the individual(s) or company designing and/or making such changes. Jacobsen will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:  
**ATTENTION!**  
**BECOME ALERT!**

Your safety and the safety of others is involved.

## Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to Jacobsen machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

### **DANGER**

**DANGER** indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

### **WARNING**

**WARNING** indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

### **CAUTION**

**CAUTION** indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

### **CAUTION**

**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage.



**MODEL NUMBER:** This number appears on sales literature, technical manuals and price lists.

**SERIAL NUMBER:** This number appears only on your mower. It contains the model number followed consecutively by the serial number. Use this number when ordering parts or seeking warranty information.

## PRODUCT APPLICATION

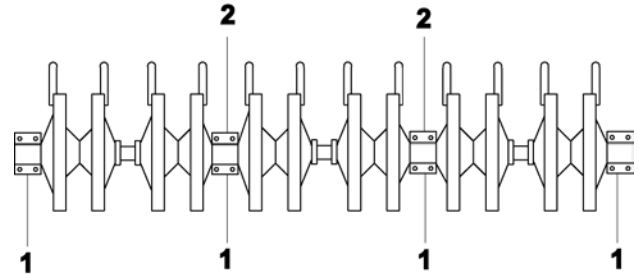
The Jacobsen Tracaire is designed to be drawn behind a tractor or similar type vehicle utilizing a SAE 3-point tractor hitch. The Tracaire is used to aerate large areas such as fairways, parks and athletic fields to relieve soil compaction.

## SET-UP

### **⚠ WARNING**

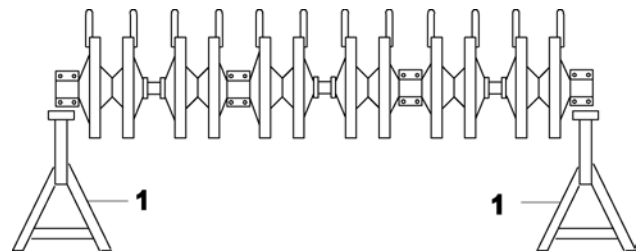
**DO NOT** rely on tractor hydraulics to support the Tracaire during set-up or maintenance. A sudden hydraulic line failure can cause the unit to drop unexpectedly causing severe injuries to you or bystanders. **ALWAYS** use good quality jackstands for support.

1. Back tractor up to Tracaire. Attach Tracaire to 3-point hitch on tractor and secure. See Figure 1.



**FIGURE 1**  
1. Pillow Blocks  
2. Hitch Locations

2. Activate tractor hydraulic system and raise Tracaire. Raise the unit approximately 6" (15.2 cm) above working surface and support with jackstands placed beneath the pillow blocks. Lower Tracaire onto jackstands and shut off tractor engine. See Figure 2.

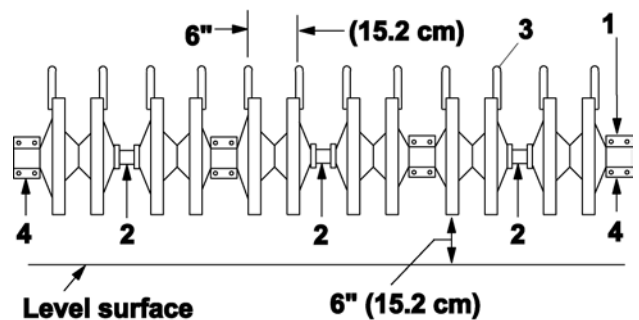


**FIGURE 2**  
1. Jackstands

3. Attach slicing knives or tines to wheels. To obtain even spacing between tools, always clamp tools to the side of aerating wheel as shown in Figure 3.

### **⚠ WARNING**

Tines and knives are sharp and could cut hands. **ALWAYS** wear leather gloves or similar hand protection when working on or around tine wheels. Remove tines or knives from aerating wheels before attempting axle replacement.



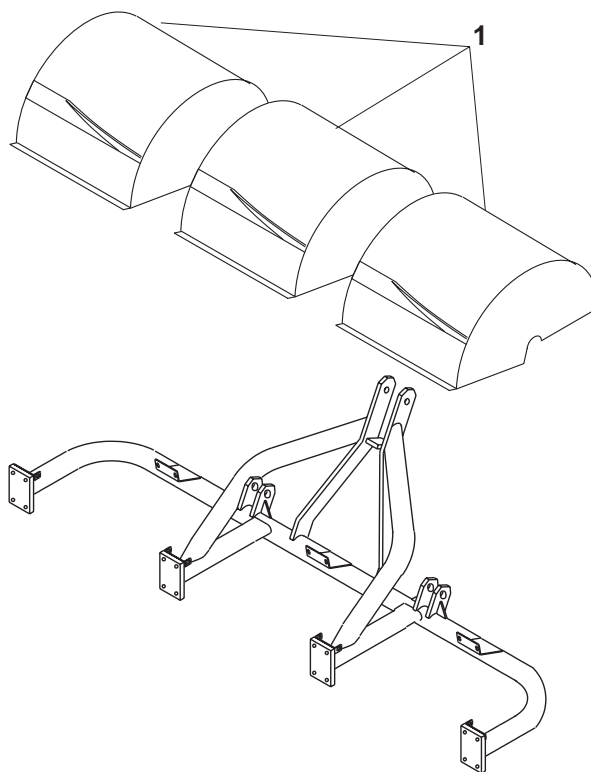
**FIGURE 3**  
1. Pillow Block  
2. Spacer Part No. 516294  
3. Aerating tool  
4. Jackstand position

4. Attach three (3) guard assemblies to frame using hardware from loose parts bag.

5. Lubricate aerating wheels with a good lithium based lubricant until the lubricant can be seen between aerating wheel and spacer.

**NOTE:** Wipe off lubrication fittings before and after lubrication of aerating wheels.

6. Activate tractor hydraulic system and raise aerator. Remove jackstands supporting Tracaire.



**FIGURE 4**  
**1. Guard Assemblies**

### OPERATION

#### **WARNING**

- **DO NOT** allow any unauthorized or untrained personnel to operate this equipment. Read and understand all operating instructions before attempting operation.
- Before operating Tracaire, inspect area to be aerated. Remove any objects that may present a safety hazard or may damage the equipment.
- **NEVER** operate this equipment without all safety guards secured in place. **DO NOT** attempt to make any adjustments or perform any service/maintenance while tractor engine is running.
- **DO NOT** leave tractor unattended at any time without lowering aerator and stopping tractor engine.

#### **NOTE:**

- For maximum performance, a double set of tines may be mounted on the aerating wheels. A 3/8-16 X 3" screw (Part No. 311213) is required to mount the double tine set.
- Lubricate aerating wheels after each four (4) hours of aerating, using a good lithium based lubricant.
- Failure to lubricate aerating wheels properly will result in damage to axle, bushings and wheels.
- **NEVER** cross hard objects or surfaces (sidewalks, drives, stepping stones, etc.) with tines down.
- When making turns, the tines or blades must be raised out of the ground to prevent turf from being damaged.
  1. Position the tractor and Tracaire to begin aerating.
  2. Lower the Tracaire while the tractor is still stopped.
  3. Move tractor slowly forward until tines are penetrating at the desired depth.

## CLEARING BLOCKAGES

### **WARNING**

- **DO NOT** attempt to clear any blockage while the tractor engine is running. Sudden movement of the tractor can cause serious injuries.
- **DO NOT** rely on tractor hydraulics to support the Tracaire during maintenance or repairs. A sudden hydraulic line failure can cause the unit to drop unexpectedly causing severe injuries to you or bystanders. **ALWAYS** use good quality jackstands for support.
- Tines and knives are sharp and could cut hands. **ALWAYS** wear leather gloves or similar hand protection when working on or around tines or slicing knives.

1. Using the tractor hydraulics, raise the Tracaire high enough to allow jackstands to be placed under pillow blocks. Lower the unit down onto jackstands.
2. Shut off tractor engine.
3. Wearing good hand protection, carefully remove all built up thatch, etc. from tines or knives.

**NOTE:** If an object becomes wedged in the unit, it may be necessary to remove the tine guard(s) to remove the blockage.

4. Start tractor engine, raise Tracaire and remove jackstands.

## DAILY OR EXTENDED STORAGE

1. Thoroughly clean all tines inside and out when aerating is completed. A light coat of oil or rust inhibitor inside and out, will help prevent rust and corrosion. This procedure will keep tines or knives in good condition to insure proper coring the next time the unit is put into service.
2. Wipe off lubrication fittings before and after lubrication. Lubricate all lubrication fittings. Lubricating before long storage periods, will help prevent moisture build-up in lubrication cavities.
3. Place unit on rubber mats, boards or a similar type material to prevent damage to tines or knives.

## LUBRICATION

**NOTE:** Lubricate aerating wheels after every four (4) hours of aeration.

1. Wipe off all lubrication fittings.
2. Lubricate aerating wheels with a good lithium based lubricant.
3. Wipe off lubrication fittings when finished.

**NOTE:** After lubricating, check to make sure tine wheel bushings are rotating on the axle and not inside the tine wheels. If the bushings are turning inside the tine wheel, the bushing may be worn through and the wheel may have been damaged. If the wheel is damaged it may not accept a new bushing. If the wheel is damaged to that point, it will need to be replaced.



## AXLE REPLACEMENT

1. Activate tractor hydraulic system and raise Tracaire. Raise the unit approximately 6" (15.2 cm) above working surface and support with jackstands placed beneath the pillow blocks. Lower Tracaire onto jackstands and shut off tractor engine.
2. Loosen and remove the three (3) tine guards. Retain original hardware for re-installation.

### **WARNING**

**Tines and knives are sharp and may cut hands. ALWAYS wear leather gloves or similar hand protection when working on or around tine wheels. Remove tines or knives from aerating wheels before attempting axle replacement.**

3. Remove tines or knives from aerating wheels.
4. Loosen set screws in pillow blocks. Remove set screw from right pillow block to allow axle to be removed.

### **WARNING**

**When the axle is removed, the tine wheels should be removed carefully. The aerating wheels weigh approximately 56 lbs. (25 kg) each and may cause serious injuries if accidentally dropped.**

5. Remove existing axle and aerating wheels.
6. Insert new axle, minus aerating wheels, through pillow blocks.
7. Re-install right pillow block and secure.
8. Insert center punch through set screw hole and mark set screw location on axle.
9. Loosen and remove right pillow block and new axle. Drill a 3/8" (10 mm) diameter by 3/8" (10 mm) deep hole at center punch mark.
10. Replace new axle, aerating wheels, spacers and right pillow block on Tracaire.
11. Replace and tighten set screws to hold axle in position.
12. Re-install tines or knives.
13. Using original retained hardware, re-install tine guards.
14. Restart tractor engine and raise Tracaire from jackstands. Remove jackstands.

<b>SPECIFICATIONS</b>		<b>Lubrication:</b>	Lubrication Fittings
<b>Axle:</b>	1-1/4" (3.2cm) diameter steel rod clamped to frame	<b>Operating Speed:</b>	Up to 10 mph (16.1km)
<b>Aerating Depth:</b>	Up to 5" (12.7cm)	<b>Tines:</b>	See Aerating Tools (Page 9)
<b>Aerating Pattern:</b>	6" X 6" (15.2cm x 15.2cm)	<b>Weight:</b>	Approx. 800 lbs. (363kg)
<b>Aerating Width:</b>	6' (183cm)	<b>Wheels:</b>	Cast iron with sintered bronze bushings, grooved each side for mounting aerating tines on both sides
<b>Chassis:</b>	2" (5.1cm) diameter high strength steel pipe		
<b>Hitch:</b>	Standard SAE 3-point tractor hitch (category 1)		

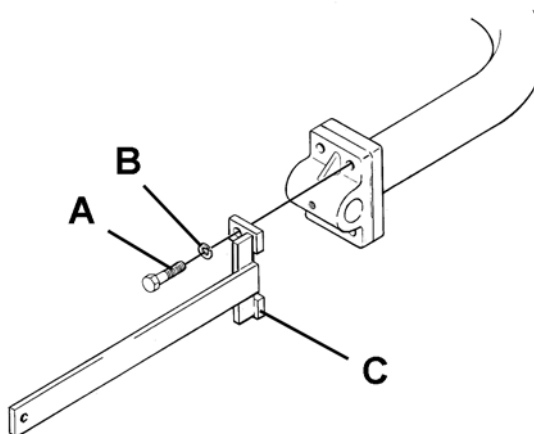
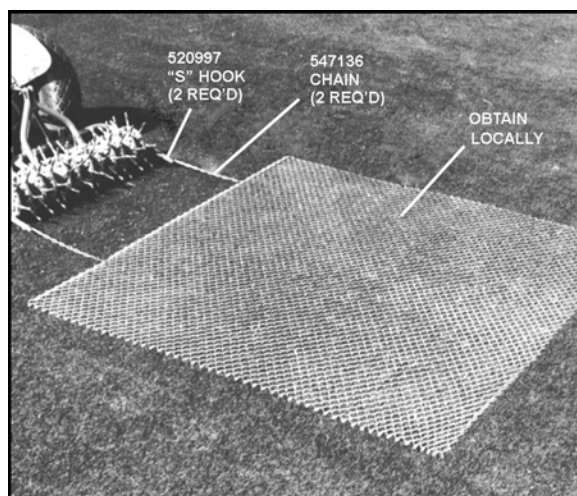
## ACCESSORIES

**DRAGMAT (Service Parts Only)** - When aerating a fairway, a dragmat can be attached directly behind the Tracaire to break up the cores while aerating all in one quick easy operation.

Mat size: 12' (3 658mm) wide X 10' (3 048mm) long.

## INSTALLATION

1. Remove the two (2) outside screws on outside pillow blocks of frame.
2. Attach bracket assembly **C** (547139) using (2) 1/2-13 X 1-3/4" screws **A** (312176) and (2) lockwashers **B** (120166) as shown. Repeat for opposite side.
3. Insert "S" hooks in hole in bracket assembly attaching dragmat assembly to aerator.

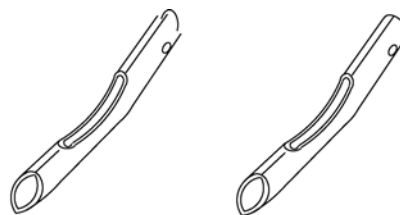


**(Single Tine Part Numbers)**

**515196 - 1/2" Coring Tine**

**515197 - 3/4" Coring Tine**

These tines are used for thorough aeration programs in the Spring and Fall. Soil cores up to 4" (102mm) in length can be removed with minimal surface disturbance.



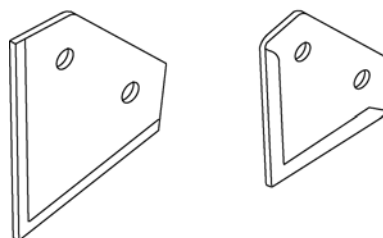
**(Single Knife Part Numbers)**

**521155 - Deep Slicing Knife**

**515193 - Shallow Slicing Knife**

Slicing knives are used for aeration and renovation programs during all seasons. Slicing knives control thatch by cutting through grass runners and also have the advantage of no surface clean up after aerating. Knives are especially helpful in that they do not place buried seeds of noxious weeds on the surface where they can germinate.

Slicing knives are especially recommended for athletic fields. Slicing allows moisture, air and fertilizer to be absorbed while not creating hazardous playing conditions for athletes.



**(Single Tine Part Number)**

**520404 - Aerating Tine**

These tines are for turf building and Fall renovation programs. These tines will thoroughly open up the soil by penetrating deep into the ground bringing up large amounts of soil, which then becomes top dressing.

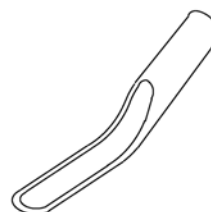


FIGURE 1

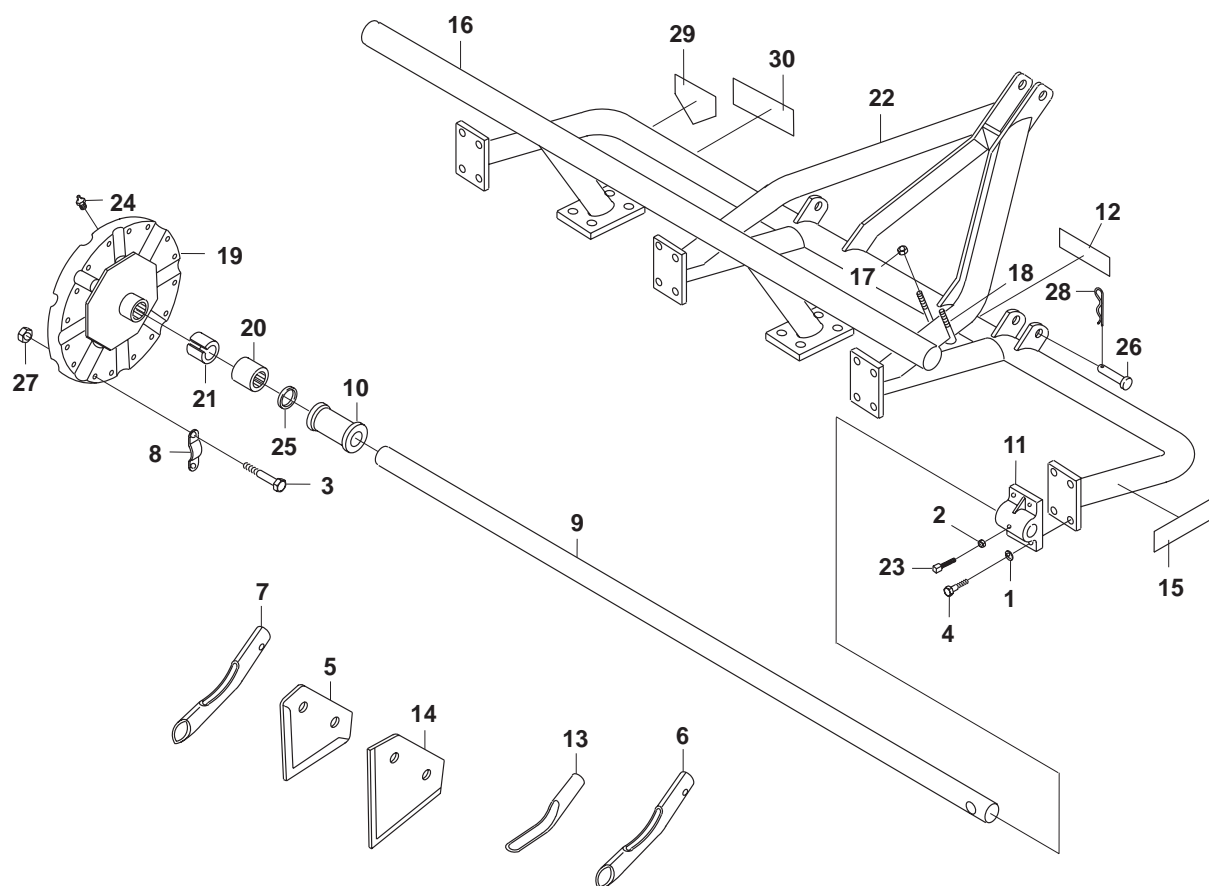


FIGURE 1

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1-1	120166	LOCKWASHER, 1/2	16				
1-2	304632	NUT, JAM 3/8-16	4				
1-3	306836	SCREW, 3/8-16 X 2-1/4	192				
1-4	316911	SCREW, 1/2-13 X 1-3/8	16				
1-5 *	515193	KNIFE, SHALLOW SLICING	96				
1-6 *	515196	TINE, CORING, 1/2" (13mm)	96				
1-7 *	515197	TINE, CORING, 3/4" (19mm)	96				
1-8	515198	CLAMP, TINE	96				
1-9	516290	AXLE	1				
1-10	516294	SPACER	3				
1-11	516298	BLOCK, PILLOW	4				
1-12	519842	DECAL, LUBRICATION	1				
1-13 *	520404	TINE, SPOON	96				
1-14 *	521155	KNIFE, DEEP SLICING	96				
1-15	4130429	LABEL-TRACAIRE	2				
1-16	545438	GUARD, COMPLETE	3				
		(INCLUDES ITEMS 17 & 18)					
1-17	548804	NUT, FLANGELOCK, 3/8-16	8				
1-18	814494	CLAMP, TUBING	4				
1-19	546048	WHEEL, TINE	12				
		(INCLUDES ITEMS 20 & 21)					
1-20	515184	BUSHING	24				
1-21	521814	SPACER	12				
1-22	546238	FRAME	1				
1-23	548216	SCREW, SET, 3/8-16 X 1	4				
1-24	548230	FITTING, LUBRICATION	12				
1-25	548256	SEAL, OIL	24				
1-26	548471	PIN, CLEVIS, 7/8 X 3 (76mm)	2				
1-27	548804	NUT, FLANGELOCK, 3/8-16	192				
1-28	809265	PIN, HAIR, 5/32	2				
1-29	835892	DECAL-DANGER HANDS/FT	2				
1-30	4124074	LABEL-JACOBSEN	2				

\* SEE PAGE 9 FOR AERATING TOOLS AND  
SUGGESTED USES

FIGURE 2

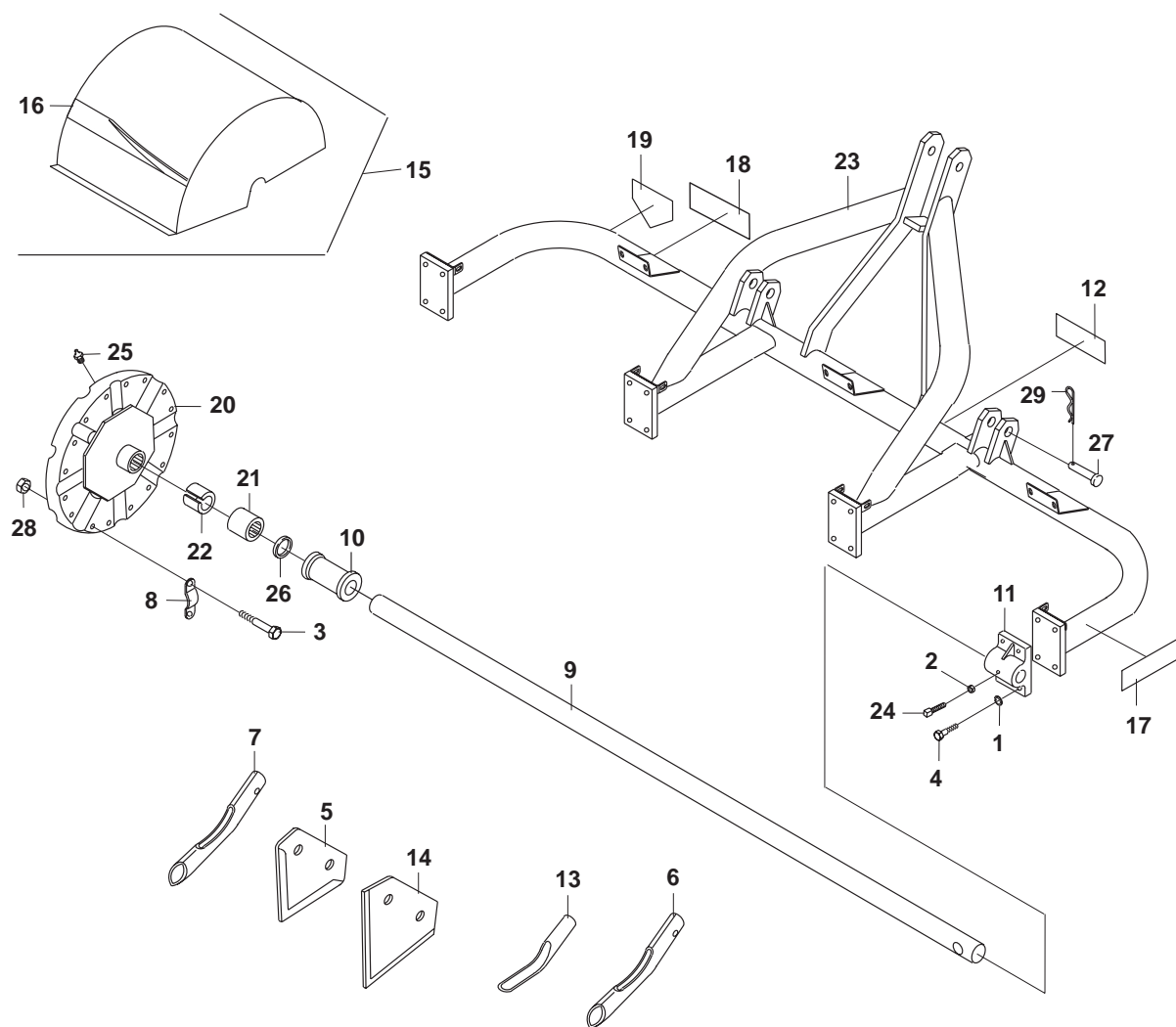


FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
2-1	120166	LOCKWASHER, 1/2	16				
2-2	304632	NUT, JAM, 3/8-16	4				
2-3	306836	SCREW, 3/8-16 X 2-1/4	192				
2-4	316911	SCREW, 1/2-13 X 1-3/8	16				
2-5 *	515193	KNIFE, SHALLOW SLICING	96				
2-6 *	515196	TINE, CORING, 1/2" (13mm)	96				
2-7 *	515197	TINE, CORING, 3/4" (19mm)	96				
2-8	515198	CLAMP, TINE	96				
2-9	516290	AXLE	1				
2-10	516294	SPACER	3				
2-11	516298	BLOCK, PILLOW	4				
2-12	519842	DECAL, LUBRICATION	1				
2-13 *	520404	TINE, SPOON	96				
2-14 *	521155	KNIFE, DEEP SLICING	96				
2-15	540388	GUARD, COMPLETE	3				
		(INCLUDES ITEM 16)					
2-16	4124281	LABEL-JACOBSEN	3				
2-17	4130429	LABEL-TRACAIRE	3				
2-18	4124074	LABEL-JACOBSEN	3				
2-19	835892	DECAL, DANGER HANDS	2				
2-20	546048	WHEEL, TINE	12				
		(INCLUDES ITEMS 21 & 22)					
2-21	515184	BUSHING	24				
2-22	521814	SPACER	12				
2-23	546238	FRAME	1				
2-24	548216	SCREW, SET, 3/8-16 X 1	4				
2-25	548230	FITTING, LUBRICATION	12				
2-26	548256	SEAL, OIL	24				
2-27	548471	PIN, CLEVIS, 7/8 X 3 (76mm)	2				
2-28	548804	NUT, FLANGELOCK, 3/8-16	192				
2-29	809265	PIN, HAIR, 5/32	2				

\* SEE PAGE 9 FOR AERATING TOOLS AND  
SUGGESTED USES

## **World Class Quality, Performance And Support**



Equipment from Jacobsen, a Textron company, is built to exacting standards ensured by ISO 9001 and ISO 14001 registration at all our manufacturing locations.

A worldwide dealer network and factory-trained technicians backed by Textron Parts Xpress provide reliable, high-quality product support.



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**BOB-CAT BROWER BUNTON CUSHMAN RYAN STEINER**