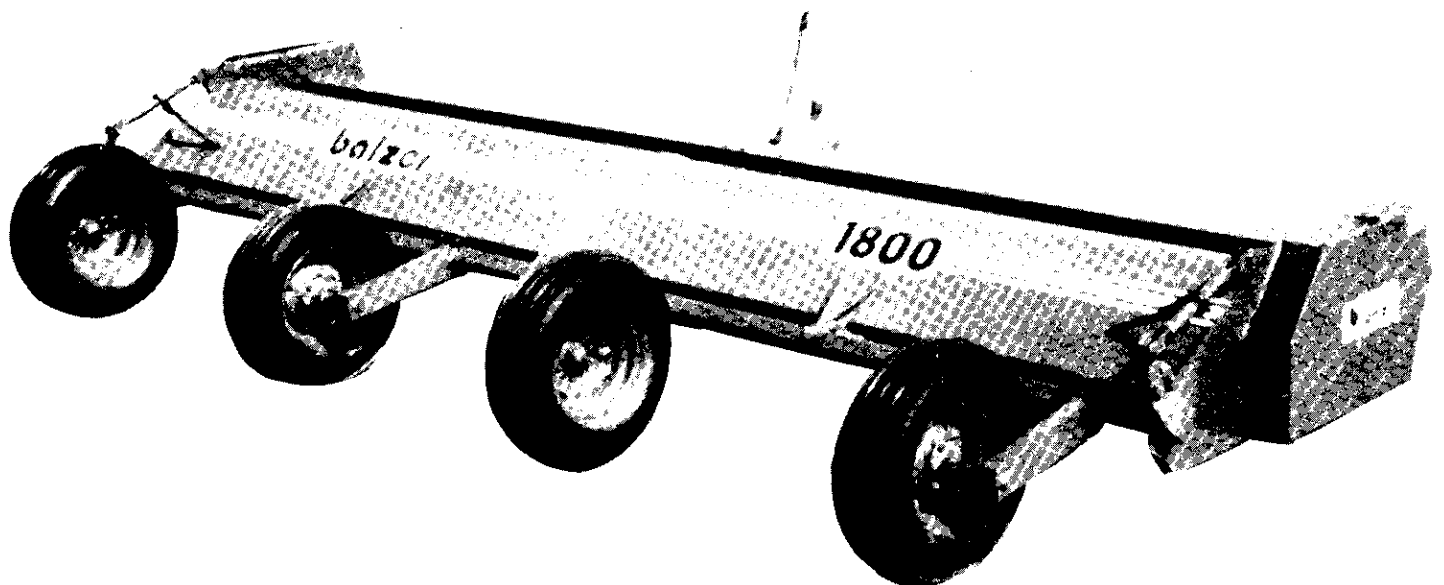


balzer mfg
corp
mountain lake, mn. 56159

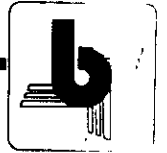


**OPERATORS & SERVICE MANUAL for
FLAIL SHREDDER MODELS 1800-2000**

PN24106

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Safety Signs

WHY safety signs are important

Safety signs or decals provide very important information and instructions designed to promote personal safety. They are designed to alert you to dangers and hazards that can be present during operation of this equipment. However, safety sign instruction does no good if it is not read, understood and followed.

WHEN safety signs must be replaced.

Safety signs or decals must be kept clean and readable. If they become unreadable for any reason they must be replaced with an identical replacement decal. Safety decals must also be replaced if parts are repaired or replaced with new parts that do not already include the necessary safety decals.

HOW to apply safety sign decals.

Surface preparation is very important for safety decals to properly adhere. Grease, oil, and dirt must be removed and the surface must be smooth and dry.

Most decals have a split backing which is meant to be removed from the split outward.

1. Position the decal in the proper location and hold firmly over the largest portion of backing.
2. With one hand holding decal in position, the free hand can carefully roll the loose end over and peel backing outward. When the backing is removed as described and shown in fig. (1), with even and gradual pull, the decal will roll onto the surface smooth and wrinkle free.
3. With the smallest portion of decal attached, the same procedure can be applied to the other half.
4. After the decal is attached in place, use a cloth or soft paper towel to burnish decal onto surface. Work gently from the middle outwards to avoid creating any wrinkles.

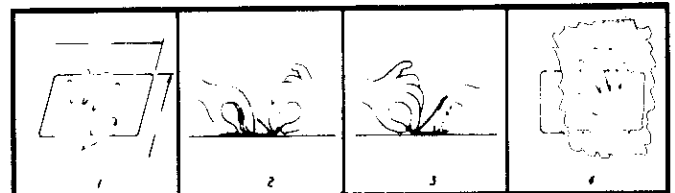
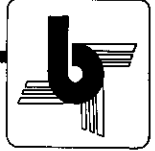


Fig. (1)

WHERE to obtain replacements.

Order replacement decals by part number through your nearest dealer. Part numbers are printed on most decals, later in this section and in the parts section of this manual.

Safety



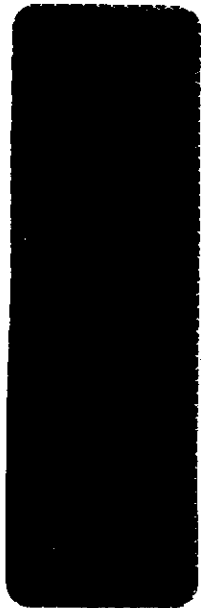
! BE CAREFUL

1. KEEP ALL SHIELDS IN PLACE.
2. STOP ENGINE BEFORE LEAVING OPERATOR'S POSITION TO ADJUST, OIL, CLEAN OR UNCLOG MACHINES, UNLESS OTHERWISE SPECIFICALLY RECOMMENDED IN THE "OPERATOR'S MANUAL".
3. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING THE MACHINE.
4. KEEP HANDS, FEET AND CLOTHING AWAY FROM POWER-DRIVEN PARTS.
5. KEEP OFF EQUIPMENT UNLESS SEAT OR PLATFORM FOR OPERATION AND OBSERVATION IS PROVIDED.
6. KEEP ALL OTHERS OFF.
7. USE FLASHING WARNING LIGHTS WHEN OPERATING ON HIGHWAY EXCEPT WHEN PROHIBITED BY LAW.
8. MAKE CERTAIN EVERYONE IS CLEAR OF MACHINE BEFORE STARTING ENGINE OR OPERATION.

10744

DECALS ARE LOCATED IDENTICALLY AT BOTH ENDS OF SHREDDER

P/N 10744 "BE CAREFUL" DECAL 1 REQ'D.

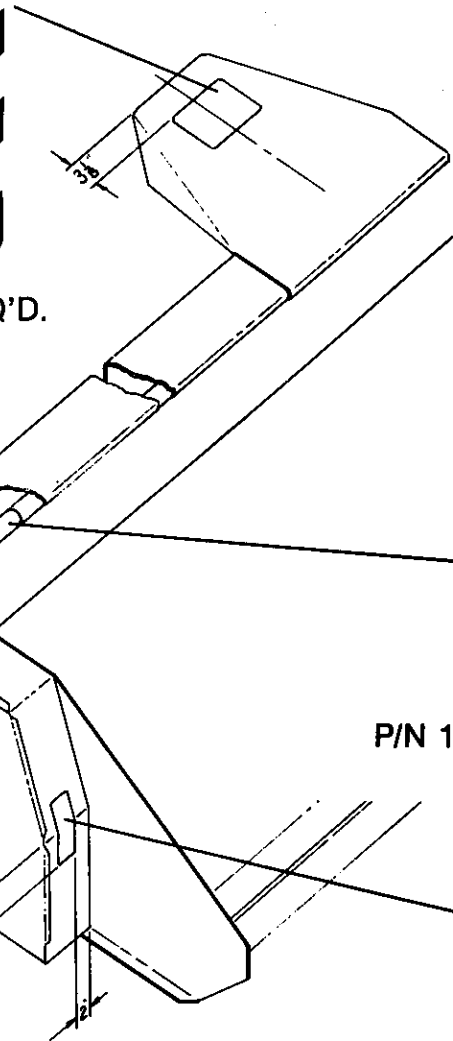


P/N 12795
AMBER REFLECTOR
2 REQ'D.

! CAUTION !
SHUT OFF MACHINE
BEFORE REMOVING SHIELDS
AND/OR ADJUSTING
MACHINE.
REPLACE SHIELDS BEFORE
OPERATING

8154

P/N 8154 "CAUTION" DECAL



! DANGER

**SHIELD MISSING
DO NOT OPERATE**

L2 WEASLER A-10886-C

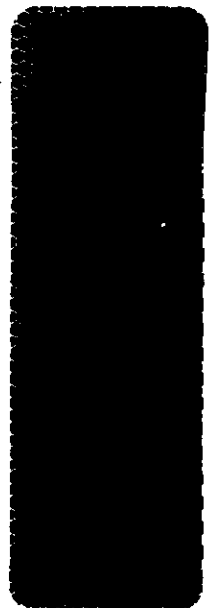
! DANGER

**SHIELD MISSING
DO NOT OPERATE**

L2 WEASLER A-10886-C

! DANGER

P/N 15295 "DANGER" DECAL
2 REQ'D.



! DANGER

STOP: WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING OR OPENING OF SHIELDS.

LOOK: THE IGNITION KEY IS REMOVED.

LISTEN: FOR ALL MOVEMENT TO STOP ROTATING PARTS CONTINUE TO ROTATE AFTER POWER IS SHUT OFF

14175

Shredder Safety



1. This machine must be operated and serviced by qualified persons who have thoroughly read and understand this operators manual and the safety signs on the machine.
2. Read and follow the instructions on all decals.
3. Never operate shredder with any guards or shields not in place. Replace any missing or damaged shields.
4. Be sure the front flipper shields are in place and swing freely prior to operation.
5. Keep hands and feet away from all moving parts.
6. Never wear any loose clothing when working around moving parts.
7. Keep children away from machinery.
8. Never leave shredder operating unattended.
9. Never allow anyone to ride on the shredder at any time.
10. Do not stand in front, behind, or along side of machine when the cylinders are turning.
11. Wait for all movement of cylinders to stop before servicing or opening of the shields on the shredder.
12. Block wheels securely when machine is parked on an incline.
13. Periodically check for loose or missing hardware and tighten or replace as needed.
14. Do not work under the shredder for servicing of cutting knives or other reasons unless the machine has been safely blocked up, and the P.T.O. disconnected.
15. Replace any parts which show signs of excess wear, cracking, or likely failure with original equipment service parts.
16. Make certain that everyone and everything is cleared before starting the engine or operation of the shredder.
17. Always start up unit slowly and gradually bring up to speed in order to check for abnormal operation.
18. If your shredder develops abnormal noises or excessive vibration, stop the unit at once and safely determine and correct the cause.
19. When parking always lower the shredder and block wheels.
20. Insure tire pressure is 20 p.s.i. maximum.
21. Hydraulic fluid pressure can be very dangerous and can cause serious personal injury. Be sure to relieve all pressure before disconnecting hydraulic lines.
22. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, not your hand to search for leaks.
23. If injured by escaping hydraulic fluid seek prompt medical attention, serious infection or reaction may develop.
24. Always use a safety chain between towing vehicle and shredder when transporting.
25. Never assume that everyone is as safety conscious as you are.



DANGER

STOP: WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING OR OPENING OF SHIELDS

LOOK: THE IGNITION KEY IS REMOVED

LISTEN: FOR ALL MOVEMENT TO STOP. ROTATING PARTS CONTINUE TO ROTATE AFTER POWER IS SHUT OFF.

To the Purchaser



This new Balzer product is designed and manufactured to give years of dependable service when used for the purpose for which it was intended and when properly maintained. NEVER OPERATE THIS EQUIPMENT UNTIL USER FULLY UNDERSTANDS THE COMPLETE CONTENTS OF THIS MANUAL. FOR OWNERS WHO DO NOT OPERATE THIS EQUIPMENT, IT IS THEIR RESPONSIBILITY THAT THE USER HAS BEEN PROPERLY INSTRUCTED AND IS FULLY AWARE OF THIS MANUAL'S CONTENTS. This is important in the safe handling of this equipment and also achieving an efficient operation. If there are questions about areas in this manual, it is important to contact your dealer for clarification.



THIS IS THE SAFETY ALERT SYMBOL. IT IS USED TO ALERT THE OPERATOR TO AN INSTRUCTION CONCERNING THE PERSONAL SAFETY AND RISK FACTOR OF THIS EQUIPMENT. ALWAYS OBSERVE AND HEED THESE VERY IMPORTANT INSTRUCTIONS TO PROMOTE A SAFE OPERATION WITH GOOD PREVENTIVE MAINTENANCE HABITS.

All reference to 'LEFT' or 'RIGHT' sides is viewing equipment from rear and facing in direction it normally travels when operating.

If any part of this manual is damaged or missing, please contact your dealer to complete your manual.

ALWAYS OBTAIN ORIGINAL EQUIPMENT SERVICE PARTS FROM YOUR DEALER. NEVER ACCEPT ANY TYPE OF SUBSTITUTE ITEMS, AS THIS COULD AFFECT THE EQUIPMENT PERFORMANCE.

THIS MACHINE IS WARRANTED AS STATED ON REAR OUTSIDE COVER. HOWEVER, A REGISTRATION CARD IS TO BE FILLED IN BY YOUR DEALER WITH YOUR NAME AND ADDRESS, AND PROMPTLY RETURNED TO THE FACTORY. THE CARD PROVIDES A READY REFERENCE TO HELP YOU IN SECURING WARRANTY AND IN ANSWERING QUESTIONS THAT YOU MAY HAVE AT A LATER DATE. FURNISH THE SAME INFORMATION TO DEALER WHEN YOU ARE OBTAINING SERVICE PARTS.

We urge the return of this card so that you will receive maximum service benefits. This card does not put you on a mailing list nor is the information on the card available to anyone else.

IDENTIFICATION NO.



The location of either the serial number or identification number on this equipment is as shown above.

PLEASE FILL IN THE FOLLOWING INFORMATION FOR YOUR RECORDS

DATE OF PURCHASE _____

OWNER'S NAME _____

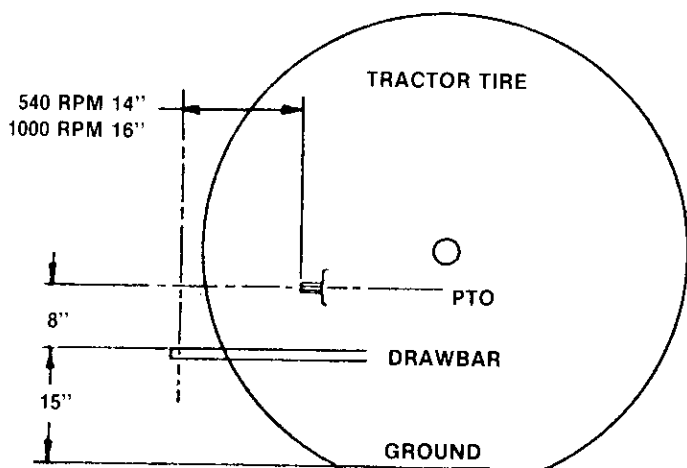
DEALER'S NAME _____

SERIAL NO. OR IDENT. NO. _____

Assembly



Raise shredder body approximately 15 inches off of ground and securely block it up. Install tongue and secure in place with the two 5/8 x 6 1/4 inch clevis pins provided in the box of parts.



SUGGESTED DRAWBAR ADJUSTMENT

Position wheel legs in position on rock shaft for the desired row spacing. Be sure to position the wheel legs so that the tire will be in the center of the rows for best operation. The customer supplied tires should be inflated to 15-20 p.s.i.

To install the hinging guards, (found in box of parts) first remove the two taped-on hinge rods from the right hand line shaft shield. Slide one hinge rod half-way through center hinge tab (one corresponding to the right hand side) so that hole in hinge rod is on left hand side of unit. Position hinging guard between the center hinge tab and the first one to the right, slide the hinge rod to the right with the rod passing through the hinging guard pipe. Repeat this until all guards are in place on the right hand side, then insert roll pin (found in box of parts) in hinge rod on the right hand side of center hinge tab. Repeat this procedure on the left hand side working from right to left, but insert roll pin on left hand side of center hinge tab.

Remove the right front 5/8 x 1 bolt on the top of the gear box shield and install the hose guard weldment, found in the box of parts.

Install 2 standard agricultural 3 x 8 hydraulic cylinders or the optional ratchet jacks between the cylinder arms on the rock shaft and the mounting tabs on top of the shredder housing running the hydraulic lines of cylinders, if used, through the hose guard weldment.

TO MOUNT TRANSPORT KIT

Remove left hand end shield from shredder. Mount tongue assembly (transport) with pin and clip provided, mount with pin hole to center of shredder.



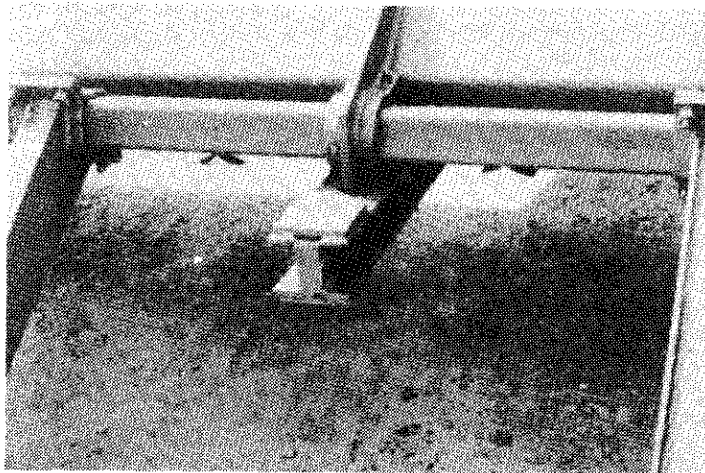
Raise front of shredder up with jack provided. Remove tongue from shredder by removing the two clips and pins located in front of gearbox. Mount transport spindle, front, (assembly) with hardware used to hold tongue in. Lower front of shredder and remove jack.



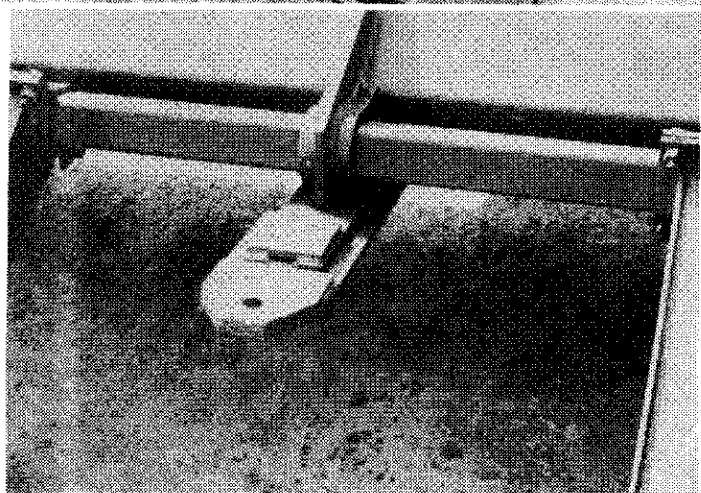
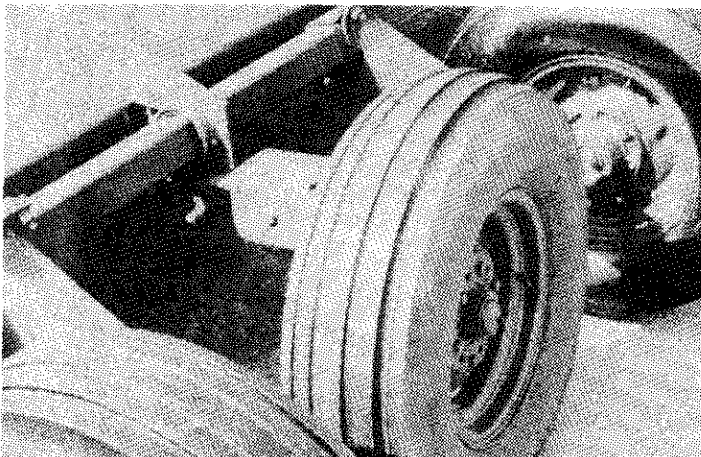
Operation



Mount transport support, (assembly) with hardware provided, mount on shredder centerplate, rear of unit.




Raise body of shredder up with optional ratchet jacks or hydraulic cylinders. Mount transport spindle, rear, (assembly) with pin and clip provided, with spindle to the bottom. Install two lynch pins (provided in transport spindle, rear (assembly) in holes provided below lower (ratchet jack, or hydraulic cylinder mounts.) Raise shredder wheels to transport position.




TO REMOVE TRANSPORT KIT

Mount jack (front of shredder) and raise shredder. Remove transport spindle, front, (assembly) by removing the two clips and pins located in front of gearbox. Mount tongue in shredder with hardware in front of gearbox. Raise body of shredder up with optional ratchet jacks or hydraulic cylinders. Remove transport spindle, rear, (assembly) by removing clip and pin. Remove tongue assembly (transport) by removing clip and pin. Replace left hand end shield on shredder. Remove the two lynch pins located below lower (ratchet jack or hydraulic cylinder mounts) and place in holes in end panels located just below and in front of lower (ratchet jack or hydraulic cylinder mounts.)

 **CAUTION: DISENGAGE TRACTOR P.T.O. DRIVE IMMEDIATELY SHOULD EXCESSIVE VIBRATION OCCUR WHILE SHREDDER IS IN OPERATION. SHUT OFF TRACTOR AND REMOVE IGNITION KEYS BEFORE DETERMINING THE CAUSE OF THE VIBRATION.**

The tractor should be operated at recommended P.T.O. speed for maximum effectiveness of the shredder.

 **CAUTION: Always start up unit slowly and gradually bring up to operating speed.**

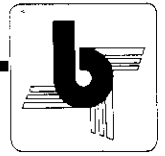
The shredder knives must be run a minimum of 2 inches above the ground to prevent excessive wear and knife damage.

With standard P.T.O. do not make sharp turns while tractor P.T.O. is engaged. This practice will damage shredder and tractor drive lines.

Never operate shredder with any broken or missing knives, this will cause structural and bearing damage to the unit.

Keep all hinging guard shields in place and free swinging. Replace any broken or bent guards.

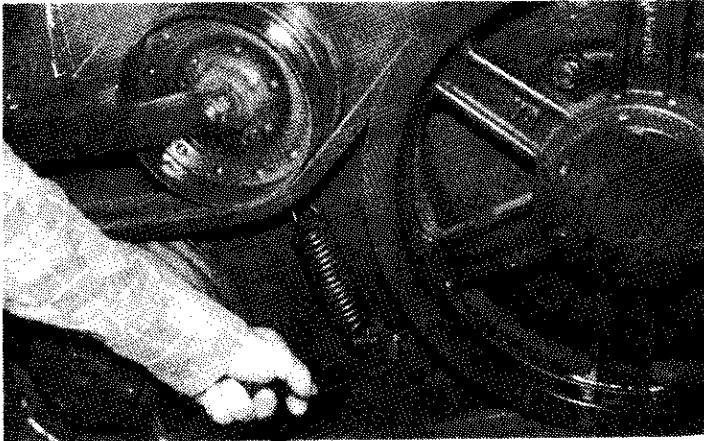
DISC HITCH
Mounts on transport support, (assembly)



BELT TENSIONING

Loose belts cause heat, glazing, and slippage, reducing belt life.

To achieve proper belt tension, use pliers or similar tool and push outside end of spring tightener tab downward to release spring tension. To retighten use screwdriver or similar tool as shown until spring just starts to stretch, then tighten three (3) more notches.



Adjust Tightener

BELT REPLACEMENT:

REPLACE BELTS IN SETS OF THREE ONLY.

DRIVE SHEAVE ALIGNMENT

Sheave alignment should be checked while unit is being lubricated. If sheaves do become misaligned, first try to determine the cause (i.e. bearing locking collar loose, sheave hub loose). Correct reason for misalignment and then re-align sheaves.

CYLINDER SIDE KNIVES

The side knives have a double edge and may be reversed to cut on the opposite edge. When knife is half worn, it should be reversed to get full use of the knife.

WHEN A KNIFE REQUIRES REPLACEMENT, IT IS NECESSARY TO REPLACE THE KNIFE 180 DEGREES OPPOSITE IT ON THE CYLINDER TUBE. THIS IS NECESSARY TO INSURE PROPER CYLINDER BALANCE AND REDUCE MACHINE WEAR.



DRIVE LINE REPLACEMENT

WHEN INSTALLING LINE SHAFTS, ALIGN KNUCKLE BY LIFTING DRIVE-LINE WHILE TIGHTENING CENTER BEARING HOLDER.

PERIODICALLY CHECK ALL HARDWARE FOR PROPER TIGHTNESS ACCORDING TO TORQUE CHART.

Torque Value Chart

RECOMMENDED TORQUE IN FOOT-POUNDS
COARSE AND FINE THREAD

BOLT MARKING	GRADE 5 	GRADE 2 
BOLT DIA	TORQUE	TORQUE
1/4	10	6
5/16	18	10
3/8	39	22
7/16	58	32
1/2	87	44
9/16	111	58
5/8	173	86
3/4	290	152
7/8	500	222
1	620	250

Lubrication

Before greasing, wipe all fittings. Any damaged ones should be replaced.

Use a good grade of MP-2 grease on all fittings. One pump with a hand gun in good condition is recommended on all sealed bearings.

1



No. 1 — Idler — 10 Hrs. (2 req'd)

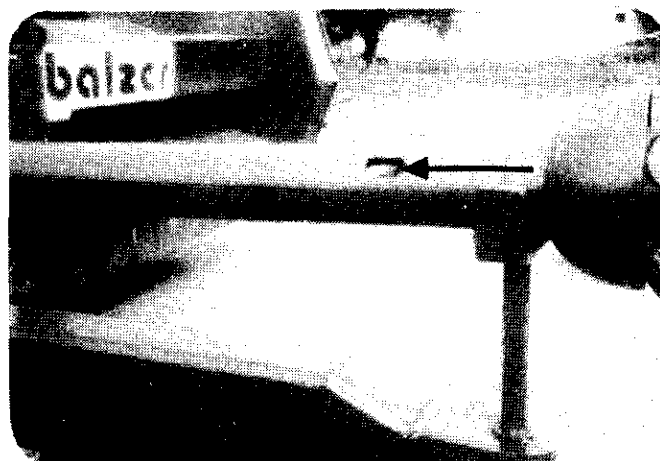
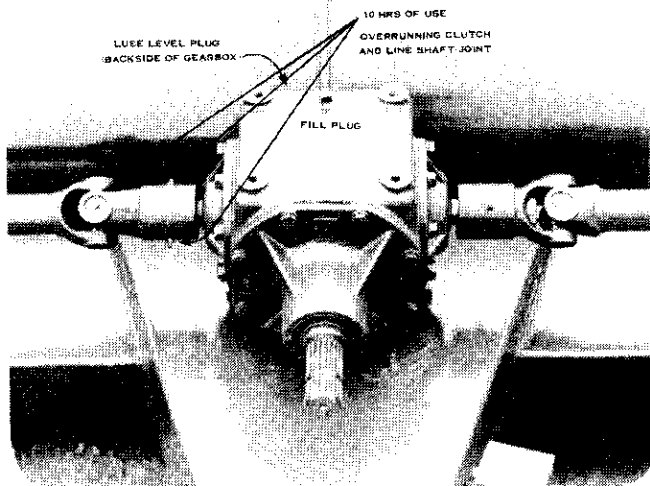
No. 2 — Lineshaft Bearings — 10 Hrs. (4 req'd)

No. 3 — Outside Cylinder Bearings — 10 Hrs., (2 req'd)

Lubrication continued

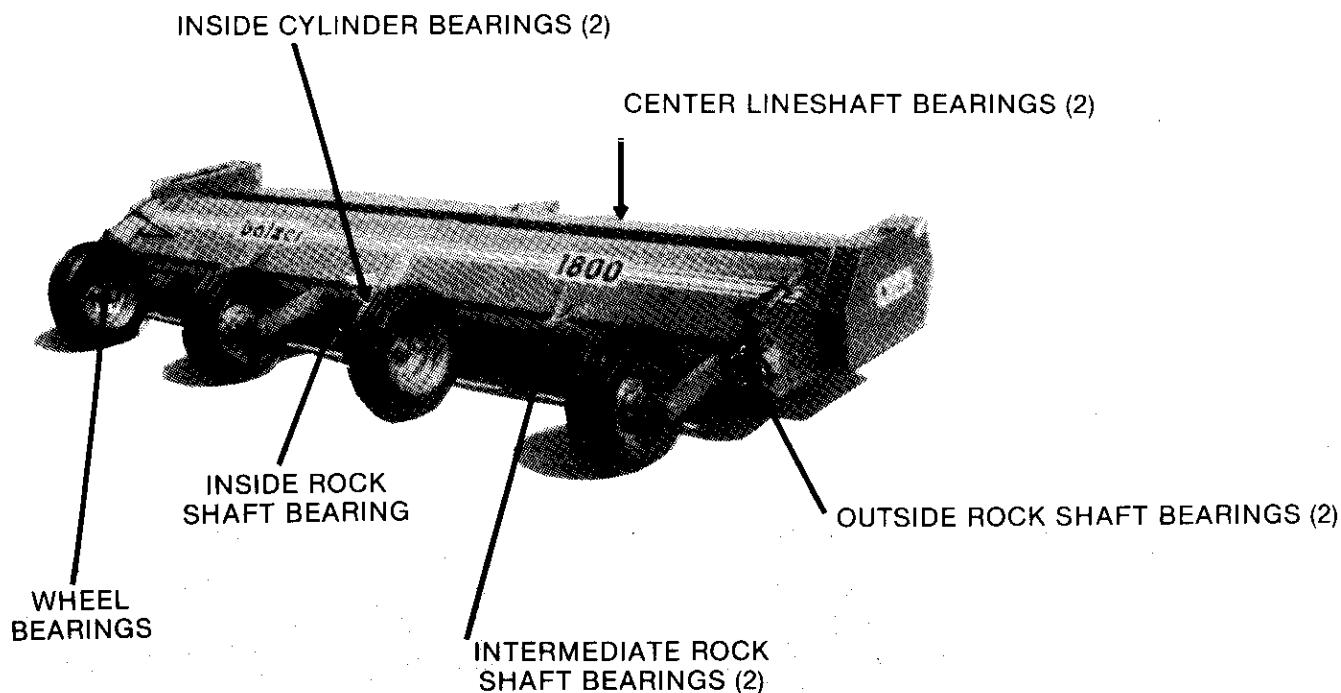


IMPORTANT: Caution must be used when greasing sealed bearings, not to damage bearing seals.



Gearcase lube level plug is located on the opposite side of the input shaft. Use a good quality SAE 90 oil with anti-foaming additives.

P.T.O. Telescoping Slide, As Shown, Both Ends Also.





It is the policy of the Balzer Mfg. Corp. to constantly improve its products whenever it is practical to do so.

The Balzer Mfg. Corp. must therefore reserve the right to redesign or change its equipment or component parts thereof without incurring the obligation to install or furnish such changes on equipment previously delivered.

INSTRUCTIONS FOR ORDERING PARTS

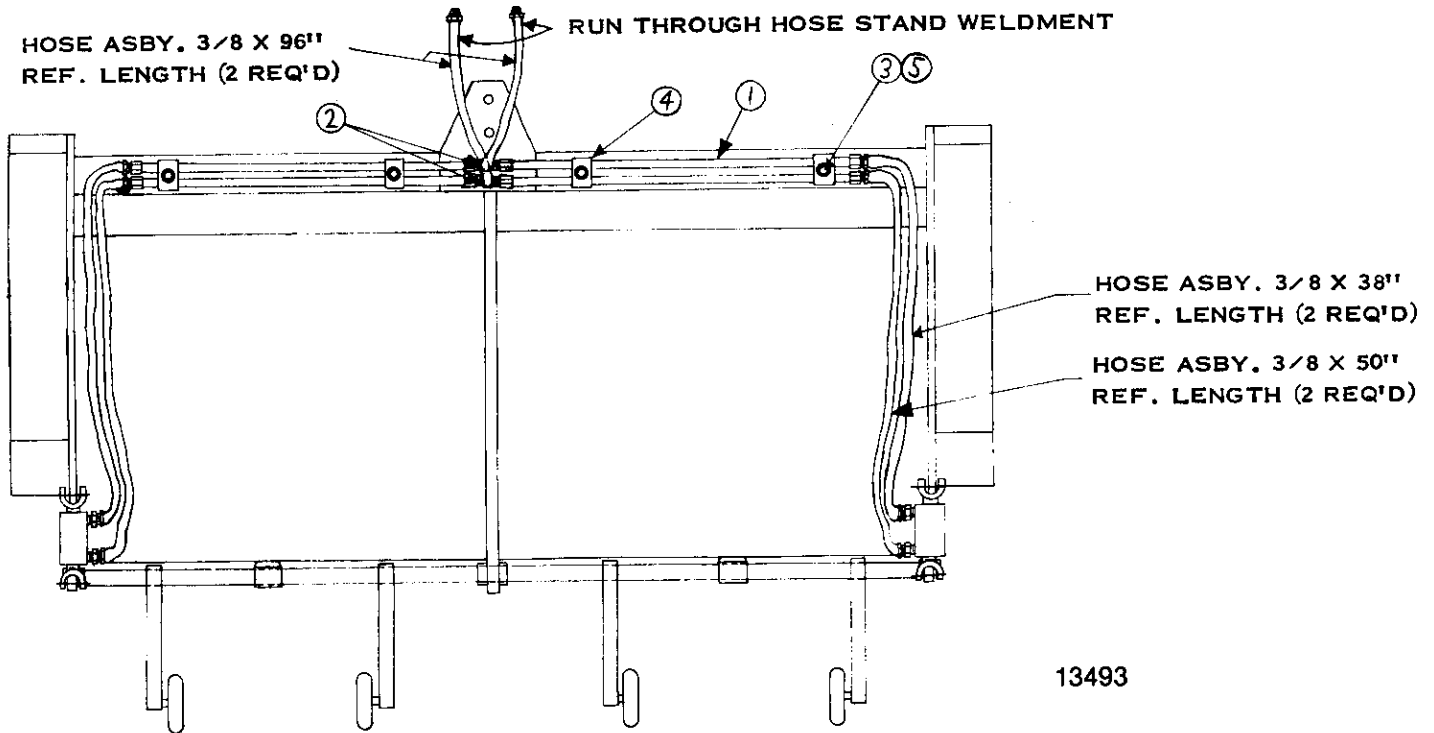
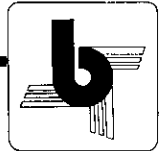
1. *Order all parts by their part number and name.
NOTE: All reference to left and right, front and rear apply to the machine as viewed from the rear and facing in direction it normally travels when operating.*
2. *Parts should never be ordered from item numbers only.*
3. *Always mention the model and serial numbers found on name plate of unit on which part is to be used. Much delay and confusion can be avoided when correct model and serial numbers are specified on parts order and correspondence.*
4. *Owners, order all parts thru your local dealer.*
5. *Dealers must indicate how to ship: whether by truck, rail freight, express or parcel post.*
6. *Collect phone calls will not be accepted.*
7. *Address all orders for parts as follows:*

balzer mfg
corp
highway 60 east
mountain lake, mn. 56159
phone (507) 427-3133

INSTRUCTIONS FOR RETURNING PARTS FOR ADJUSTMENT

1. *To assure prompt handling of claims, your dealer or distributor should follow standard claim procedure and forward claim within thirty (30) days of any part failure or malfunction believed to be a warranty claim to the Balzer Mfg. Corp. service department for processing.*
2. *No returned parts will be accepted unless they are transportation prepaid and accompanied by the packing list copy.*
3. *Parts returned should have a tag attached with senders name and address clearly printed.*

Plumbing Kits (Optional)



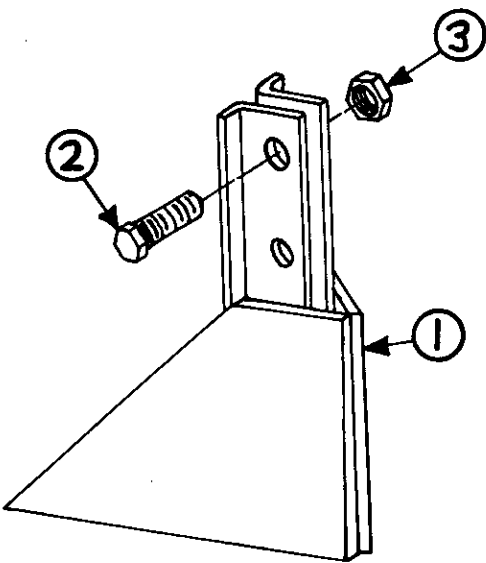
13493

ALL HOSE ASBY'S ARE CUSTOMER SUPPLIED

PARTS LIST FOR PLUMBING KITS

ITEM	QTY	P/N	DESCRIPTION
1	4	13939	Tube Asby. 1/2 (1800)
	4	13940	Tube Asby. 1/2 (2000)
2	2	13937	Tee
3	4	1166	Bolt, Hex Hd. 1/4 x 1 1/2, GR. 5
4	4	13938	Clamp, Tube-1/2
5	4	2564	Nut, Hex. 1/4 (Locking)

Center Divider, Disc Hitch & Ratchet Jack (Optional)

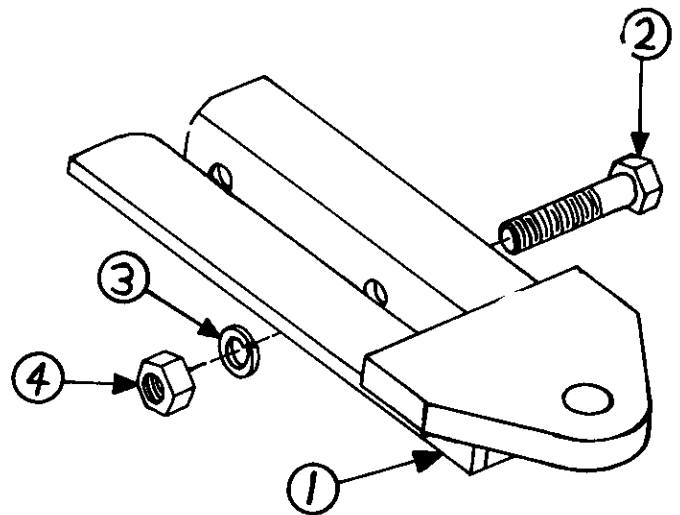


CENTER DIVIDER-24027

ITEM	QTY	P/N	DESCRIPTION
1	1	24021	Center Divider (Weldment)
2	2	1250	Bolt, Hex. HD. 1/2" x 1 1/2", GR. 5
3	2	2539	Nut, Hex. 1/2" (Locking)
4	4	1618	Washer, Flat-1/2" (not used)

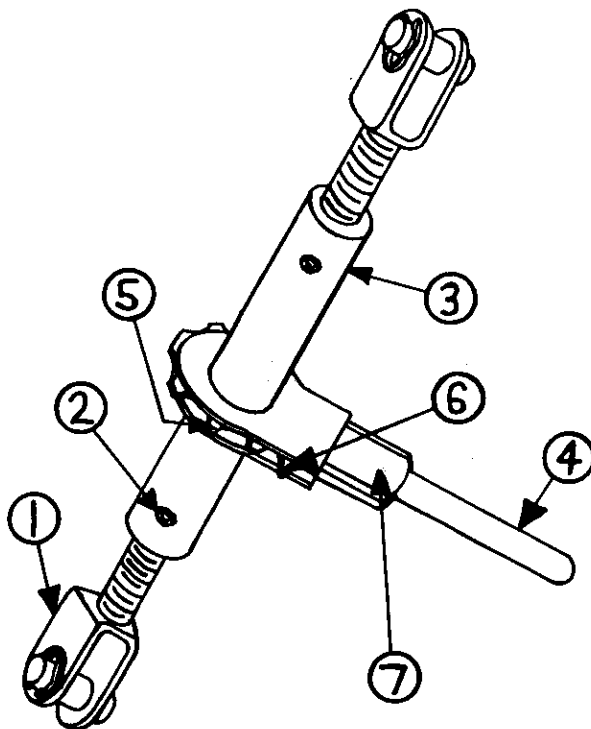
5678

FOR OPTIONAL YOKE
SEE PAGE 15, KEY NO. 3



DISC HITCH-24030

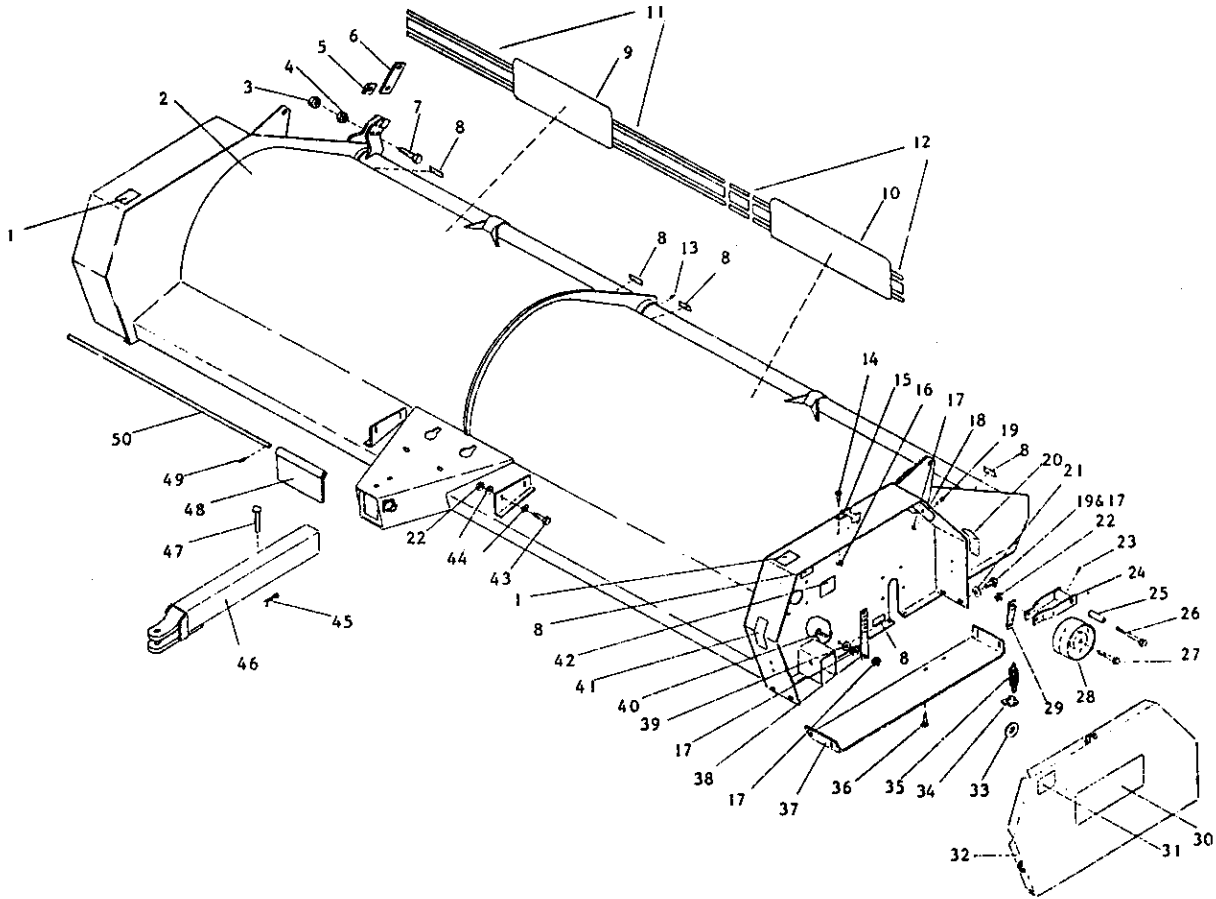
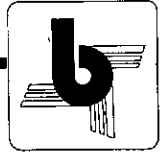
ITEM	QTY	P/N	DESCRIPTION
1	1	24139	Disc Hitch (Weldment)
2	1	1316	Bolt, Hex. HD. 3/4" x 3 1/2", GR. 5
3	1	1641	Lockwasher, 3/4"
4	1	1697	Nut, Hex. 3/4"



RATCHET JACK-12267

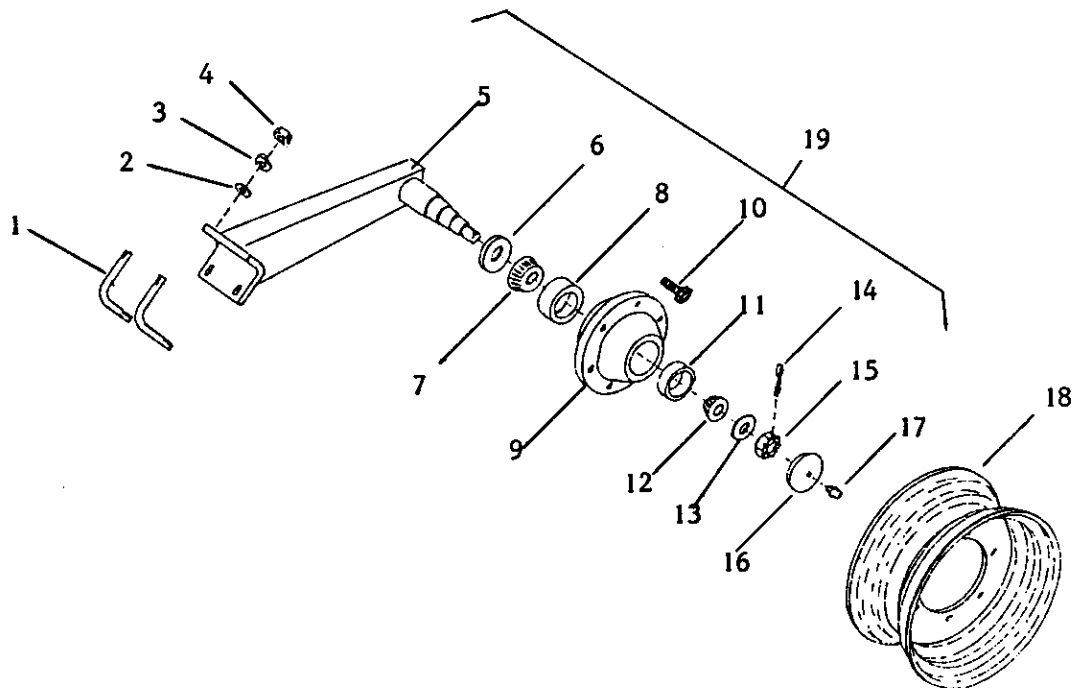
ITEM	QTY	P/N	DESCRIPTION
1	2	12951	Screw Yoke Asby
2	2	2289	Grease Fittings
3	1	12952	Main Housing
4	1	12956	Handle
5	1	12953	Ratchet, Spring Loaded
6	1	12954	Ratchet Finger
7	1	12955	Ratchet Housing

Main Body And Related Parts



ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	2	14175	DECAL "DANGER"	29	2	12399	TIGHTENING PLATE
2	1	24051	MAIN WELDMENT 1800	30	2	12431	DECAL "BALZER W/LOGO"
	1	24001	MAIN WELDMENT 2000	31	2	8154	DECAL "CAUTION"
3	4	1699	NUT, HEX HD. 1"	32	1	14400	END SHIELD R.H.
4	4	1643	LOCKWASHER 1"		1	14401	END SHIELD L.H.
5	2	12428	ROCKSHAFT STOP	33	2	2003	MACHINE BUSHING 1-1/2
6	2	12427	CYLINDER ARM	34	2	14476	SPRING TIGHTENER
7	4	1343	BOLT, HEX HD. 1 X 3 GR. 5	35	2	12401	SPRING
8	10	15384	DECAL "GREASE"	36	4	1207	BOLT, HEX HD. 3/8 X 1-1/4 GR. 5
9	1	24136	DECAL "1800"	37	1	24113	END PANEL BOTTOM L.H.
	1	24135	DECAL "2000"		1	24114	END PANEL BOTTOM R.H.
10	1	12287	DECAL "BALZER"	38	2	14477	TIGHTENING BAR
11	2	24092	DECAL "STRIPPING" 1800	39	AR	1598	WASHER, FLAT 3/8
	2	24088	DECAL "STRIPPING" 2000	40	2	1209	BOLT, HEX HD. 3/8 X 1-3/4 GR. 5
12	2	24091	DECAL "STRIPPING" 1800	41	2	12795	REFLECTOR, AMBER
	2	24087	DECAL "STRIPPING" 2000	42	2	14878	DECAL "BELT TENSION"
13	5	2286	ZERK 1/4-28	43	4	1249	BOLT, HEX HD. 1/2 X 1-1/4 GR. 5
14	8	1161	BOLT HEX HD. 1/4 X 5/8 GR. 5	44	8	1600	WASHER, FLAT 1/2
15	4	14403	HOOD LATCH	45	2	11059	HAIRPIN CLIP
16	8	2564	NUT HEX HD. 1/4 (TOPLOCK)	46	1	15347	TONGUE
17	24	2496	NUT HEX HD. 3/8 (TOPLOCK)		1	12374	TONGUE (OLD STYLE) SER. #117 & UP MOD. 1800
18	1	24101	IDLER BRACKET				SERV. #152 & UP MOD. 2000
19	16	1206	BOLT HEX HD. 3/8 X 1 GR. 5	47	2	13909	CLEVIS PIN
20	2	12794	REFLECTOR, RED	48	18	12362	HINGING GUARD 1800
21	32	1598	WASHER FLAT 3/8		20	12362	HINGING GUARD 2000
22	8	2539	NUT HEX HD. 1/2 (TOPLOCK)	49	2	1850	ROLL PIN 1/8 X 1
23	2	2282	ZERK 1/4-28 45	50	2	24103	HINGE ROD 1800
24	2	12395	BELT TIGHTENER		2	24104	HINGE ROD 2000
25	2	12400	PIPE BUSHING	51	REF	15342	HOOD REPLACEMENT KIT 1800
26	2	1263	BOLT, HEX HD 1/2 X 5-1/2 GR. 5		REF	15344	HOOD REPLACEMENT KIT 2000
27	2	1260	BOLT, HEX HD 1/2 X 4 GR. 5	52	REF	12341	BELT TIGHTENER ASSY L.H. (ITEMS 22,23,
28	2	12398	IDLER PULLEY		REF	12394	BELT TIGHTENER ASSY R.H. 24,27,28,29)

Wheel Arms

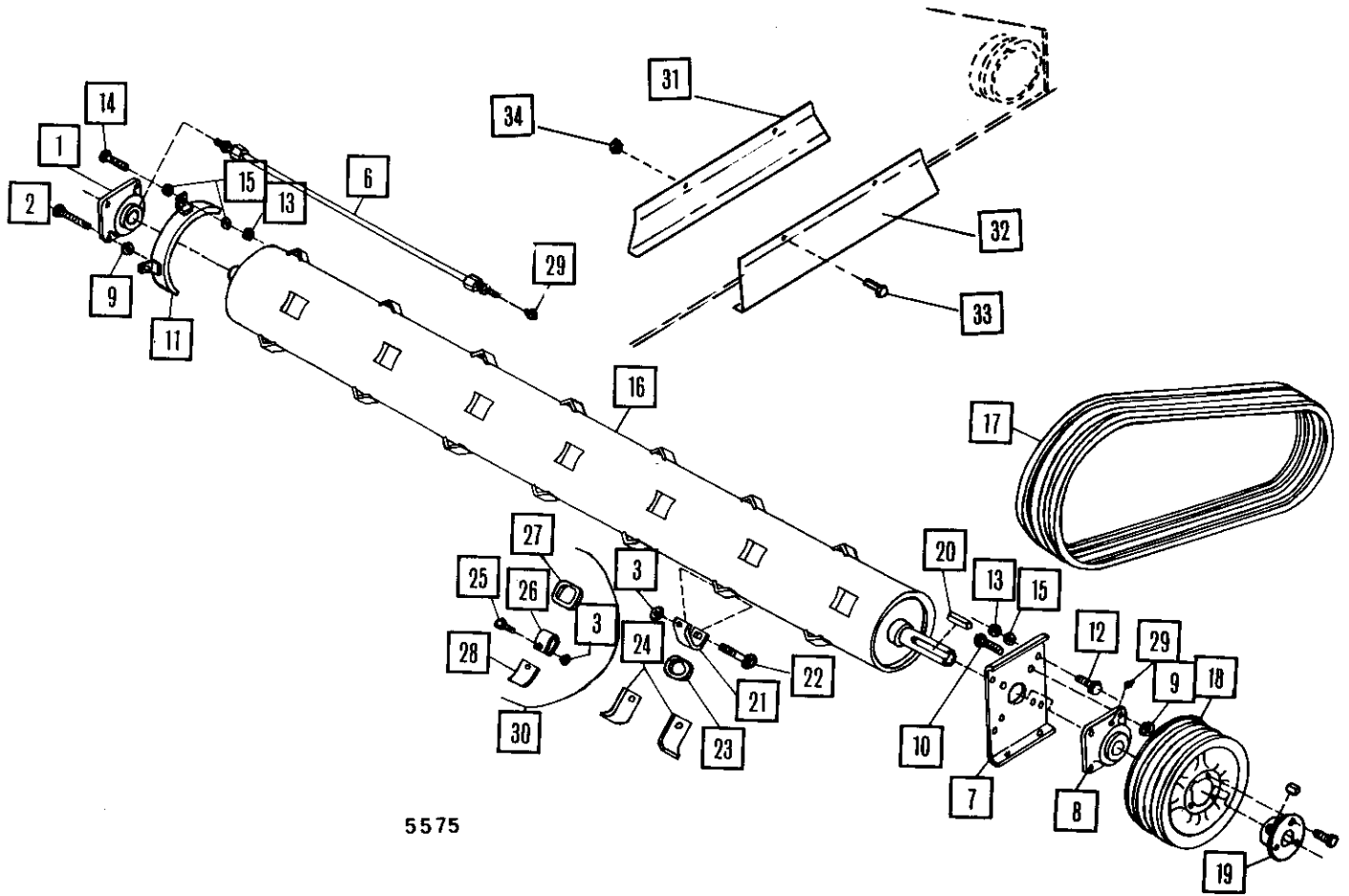
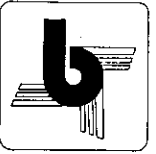


ITEM	QTY	P/N	DESCRIPTION
1	2	15354	BOLT, MOUNTING BRKT
2	4	1602	WASHER, FLAT 5/8
3	4	1640	LOCKWASHER 5/8
4	4	1696	NUT, HEX HD 5/8
5	1	15351	WHELL ARM
6	1	6572	SEAL
7	1	6573	CONE, INNER
8	1	6574	CUP, INNER
9	1	12441	HUB, 6-BOLT
10	6	9089	BOLT, WHEEL

ITEM	QTY	P/N	DESCRIPTION
11	1	6665	CUP, OUTER
12	1	6663	CONE, OUTER
13	1	1605	WASHER, FLAT 1"
14	1	2045	COTTER PIN 5/32 x 1½
15	1	1754	NUT, HEX CASTLE 1"
16	1	12442	HUB CAP w/ZERK
17	1	2286	ZERK ¼-28
18	1	8125	WHEEL 15 x 6 6-BOLT
19	1	15350	WHEEL ARM ASSY

* QUANTITY LISTED IS PER WHEEL ARM

Cylinder Assembly And Related Parts



5575

Cylinder Assembly And Related Parts

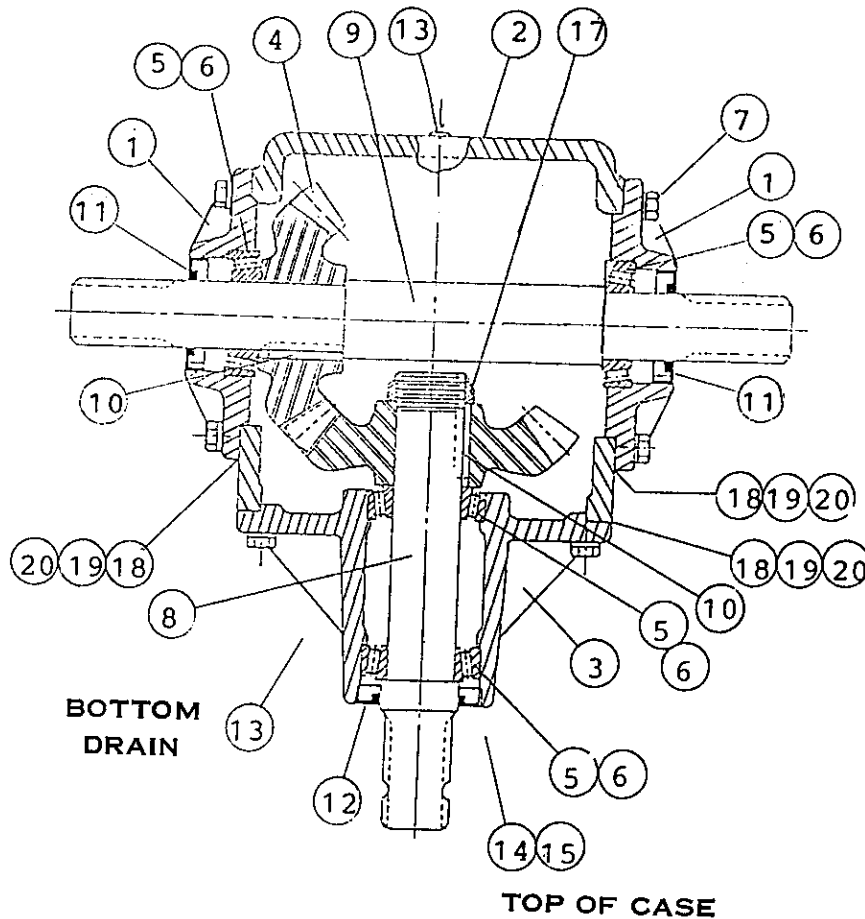


ITEM	QTY.	P/N	DESCRIPTION
1	2	24145	Bearing, 1 1/4 (Rework)
2	4	1293	Bolt, Hex. H.D. 5/8 x 2 1/2, GR. 5
3	72	2539	Nut, Hex, 1/2 (Locking) (1800) w/Side Knives
	80	2539	Nut, Hex, 1/2 (Locking) (2000) w/Side Knives
	144	2539	Nut, Hex, 1/2 (Locking) (1800) w/Cup Knives
	160	2539	Nut, Hex, 1/2 (Locking) (2000) w/Cup Knives
6	2	15308	Grease Tube, Kit
7	2	24100	Bearing Stiffener
8	2	24060	Bearing, 2"-4 Bolt Flange
9	12	2546	Nut, Hex, 5/8 (Locking)
10	8	1291	Bolt, Hex. Hd. 5/8 x 2, GR. 5
11	8	12366	Grass Ring, (Weld)
12	8	1186	Bolt, Hex. Hd. 5/16 x 1 1/4
13	12	2475	Nut, Hex. 5/16 (Locking)
14	4	1186	Bolt, Hex. Hd. 5/16 x 1 1/4, GR. 5
15	24	1597	Washer, 5/16 Flat
16	2	24048	Cylinder Weldment (1800)
	2	24039	Cylinder Weldment (2000)
17	2	24076	Belt, (Matched Set of 3)
18	2	24073	Sheave, 3 Groove — 10.6
19	2	24075	Bushing Assembly
20	2	2439	Key — 1/2 Sq. x 2 1/2
21	72	12355	Knife Bracket (1800)
	80	12355	Knife Bracket (2000)
22	72	2530	Bolt, Carriage, GR. 5, 1/2 x 3 1/4 (1800)
	80	2530	Bolt, Carriage, GR. 5, 1/2 x 3 1/4 (2000)
23	72	12356	'D' Ring (1800) w/Side Knives
	80	12356	'D' Ring (2000) w/Side Knives
24	144	12357	Knife (1800) w/Side Knives
	160	12357	Knife (2000) w/Side Knives
25	72	1094	Bolt, Carriage, GR. 5, 1/2 x 1 1/4 (1800) w/Cup Knives
	80	1094	Bolt, Carriage, GR. 5, 1/2 x 1 1/4 (2000) w/Cup Knives
26	72	12296	Hanger, Knife (1800) w/Cup Knives
	80	12296	Hanger, Knife (2000) w/Cup Knives
27	72	12295	Ring, Attaching (1800) w/Cup Knives
	80	12295	Ring, Attaching (2000) w/Cup Knives
28	72	12297	Knife, Cup (1800) w/Cup Knives
	80	12297	Knife, Cup (2000) w/Cup Knives
29	4	2291	Zerk, 1/8-Pipe Straight
30	72	12294	Cup Knife Assembly (1800)
	80	12294	Cup Knife Assembly (2000)
31	1	24138	Knife Deflector, Right
32	1	24031	Knife Deflector, Left
33	2	1207	Bolt, Hex Hd. 3/4 x 1 1/4
34	2	2496	Nut, Hex. Hd. 3/4 (Unitorque)

GEAR CASE ASSEMBLY



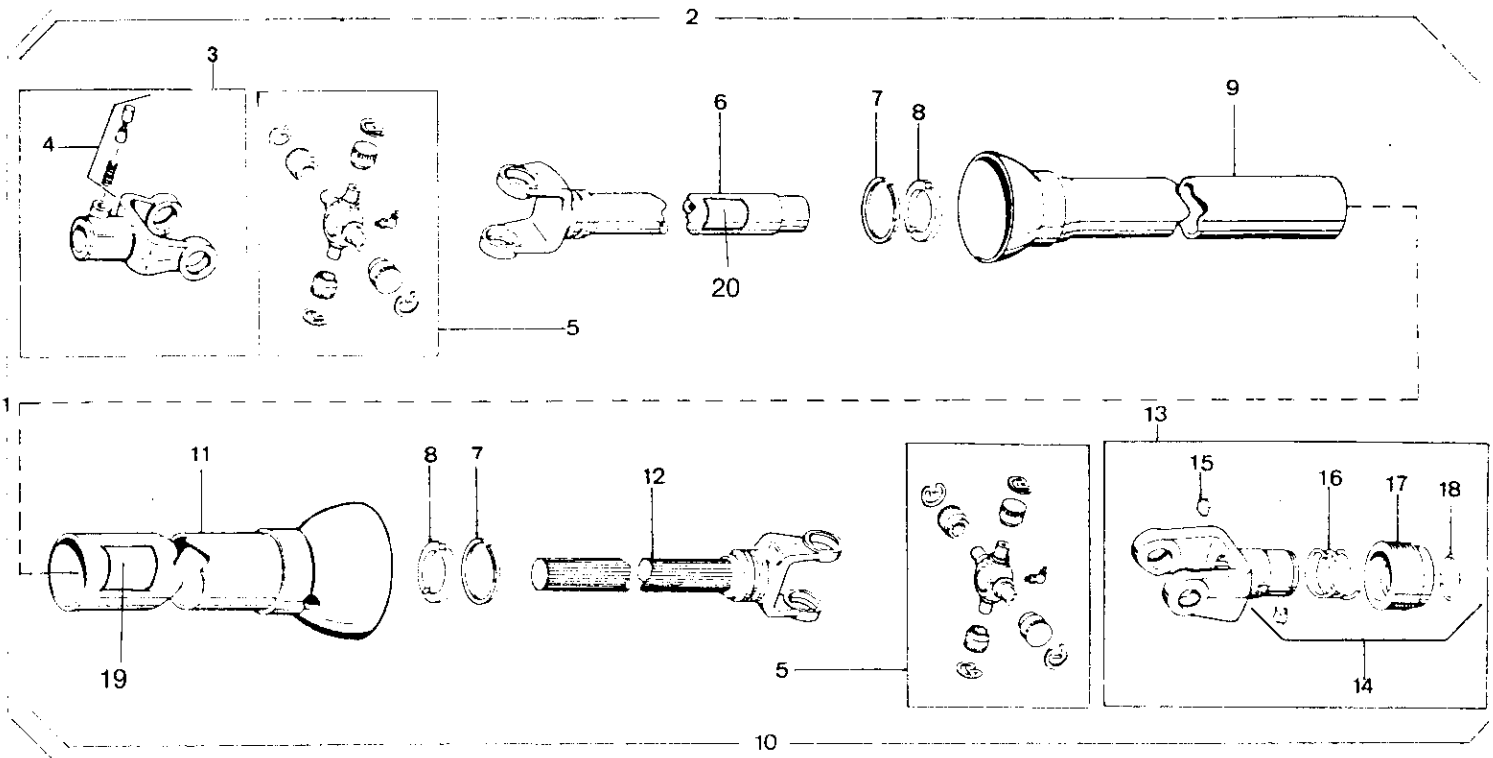
von ruden 1000 rpm



FOR SERIAL #
 1200-3544C-UP
 1400-3542C-UP
 1800-3548C-UP
 2000-3599C-UP

ITEM	QTY	P/N	DESCRIPTION
1.	2	15700	COVER
2.	1	15701	HOUSING
3.	1	15702	PIN HOUSING
4.	2	15703	GEAR
5.	4	11498	BEARING CUP
6.	4	11499	BEARING CONE
7.	24	15716	CAP SCREW 3/8 x 1 (SERATED HD.)
8.	1	15704	PINION SHAFT
9.	1	15705	CROSS SHAFT
10.	2	15706	KEY
11.	2	15707	SEAL OUTPUT
12.	1	15708	SEAL INPUT
13.	2	13181	PIPE PLUG, DRAIN 1/2
14.	1	13038	REDUCER BUSHING 1/2 x 1/8
15.	1	13097	PLUG VENT 1/8-27 NPT(BREATHER)
16.	1		
17.	1	15717	LOCK NUT
18.	A.R.	15709	SHIM
19.	A.R.	15710	SHIM
20.	A.R.	15711	SHIM

Universal Joint Telescoping Assembly with Guard

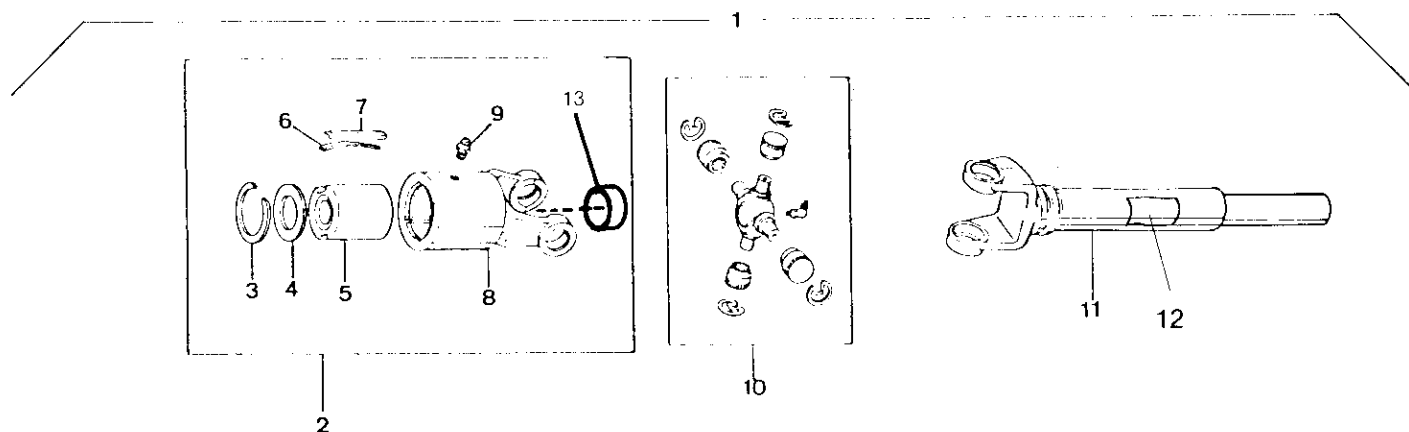


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ITEM	P/N	DESCRIPTION
1	13917 * 15360	55NW Universal Joint Telescoping Assembly
2	13918 * 15361	Joint & Tube Half w/Guard
3	12909	Lock Yoke Assembly
4	12910	Saf-T-Pin & Spring Kit
5	12911	Repair Kit
6	13919 * 15356	Yoke and Tube
7	13920	Bearing Retainer
8	13921	Nylon Bearing
9	13922 * 15357	Inner Guard
10	13923	Joint & Shaft Half w/Guard
11	13924	Outer Guard
12	13925	Yoke and Shaft
13	12928	Lock Yoke Assembly
14	12921	Safety Slide Lock Repair Kit
15	12922	Pawl
16	12923	Spring
17	12924	Collar
18	12925	Retaining Ring
19	11040	Decal, PTO
20	15295	Decal "Danger"

* Use this P/N for units with Serial Number, Model 1800 #117, Model 2000 #152, and above.

Universal Joint and Tubular Drive with Over-running Clutch



5681

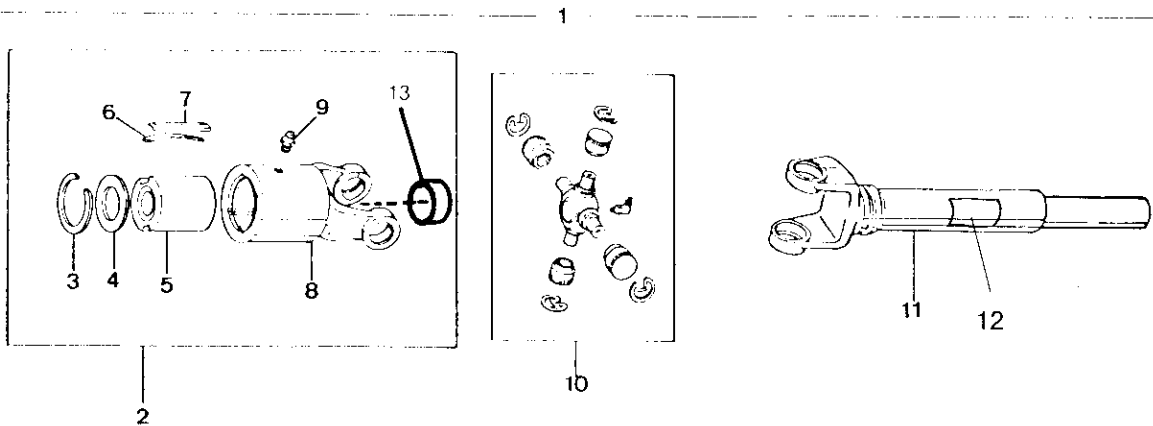
R.H. 1800

ITEM	P/N	DESCRIPTION
1	24066	Drive Line, Right
2	24146	Complete Overrunning Clutch Asm. R.H.
3	12382	Retaining Ring
4	12381	Washer
5	12380	Inner Sleeve
6	12384	Leaf Spring
7	12383	Drive Key
8	24072	Yoke and Housing, R.H.
9	12385	Zerk Fitting
10	24116	55 PW Kit
11	24068	Drive Line
12	15295	Decal "Danger"
13	15355	Frost Plug 1½"

L.H. 1800

ITEM	P/N	DESCRIPTION
1	24067	Drive Line, Left
2	24147	Complete Overrunning Clutch Asm. L.H.
3	12382	Retaining Ring
4	12381	Washer
5	12380	Inner Sleeve
6	12384	Leaf Spring
6	12383	Drive Key
8	24144	Yoke and Housing, L.H.
9	12385	Zerk Fitting
10	24116	55 PW Kit
11	24068	Drive Line
12	15295	Decal "Danger"
13	15355	Frost Plug 1½"

Universal Joint And Tubular Drive With Over-Running Clutch



R.H. 2000

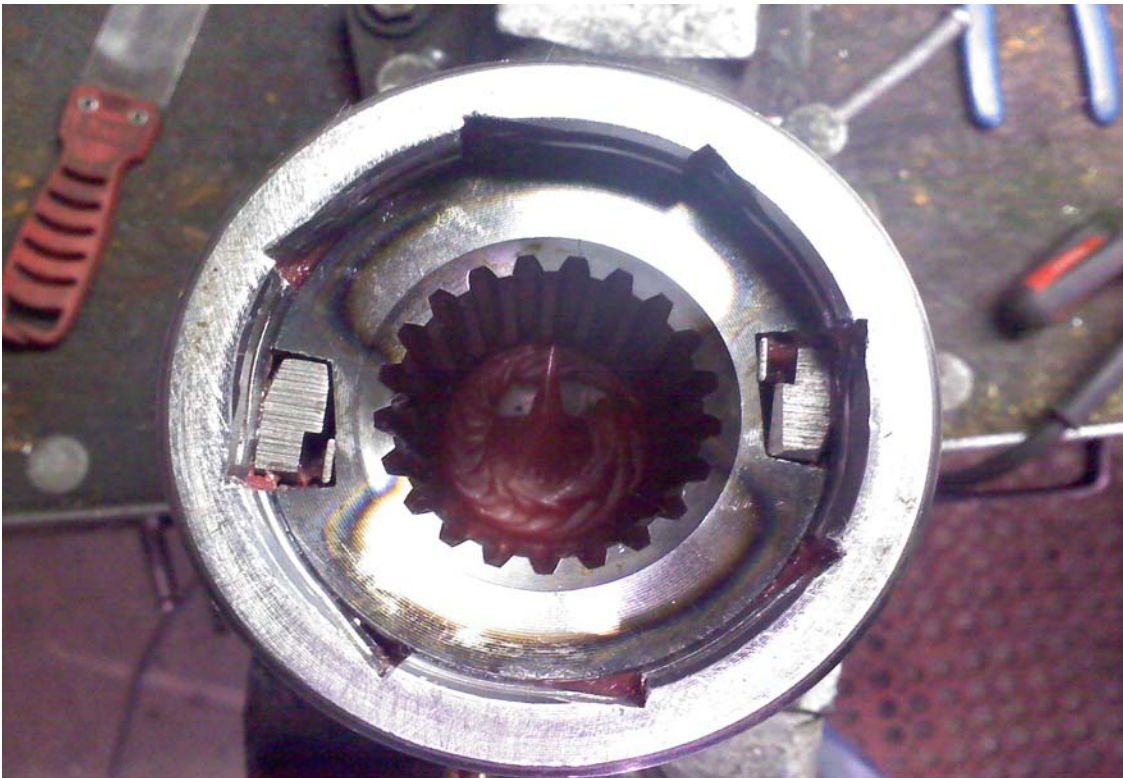
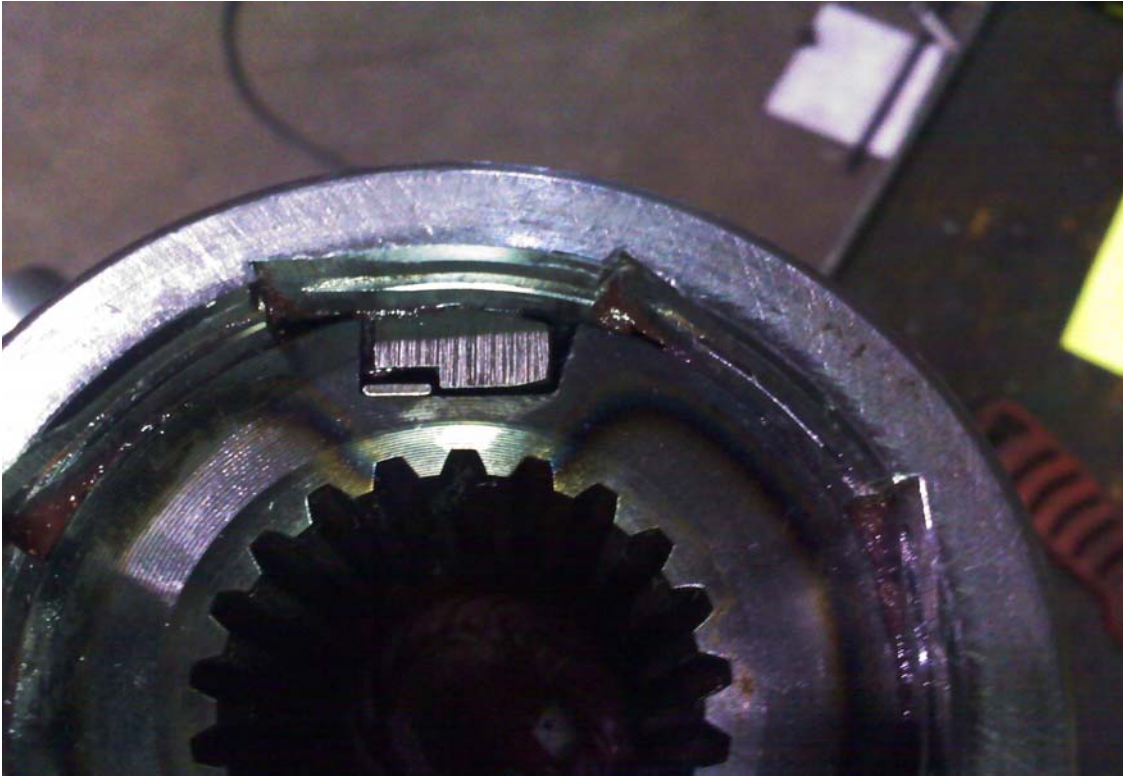
ITEM	P/N	DESCRIPTION
1	24070	Drive Line, Right
2	24146	Completing Overrunning Clutch Asm. R.H.
3	12382	Retaining Ring
4	12381	Washer
5	12380	Inner Sleeve
6	12384	Leaf Spring
7	12383	Drive Key
8	24072	Yoke and Housing, R.H.
9	12385	Zerk Fitting
10	24116	55 PW Kit
11	24069	Drive Line
12	15295	Decal "Danger"
13	15355	Frost Plug 1/2

L.H. 2000

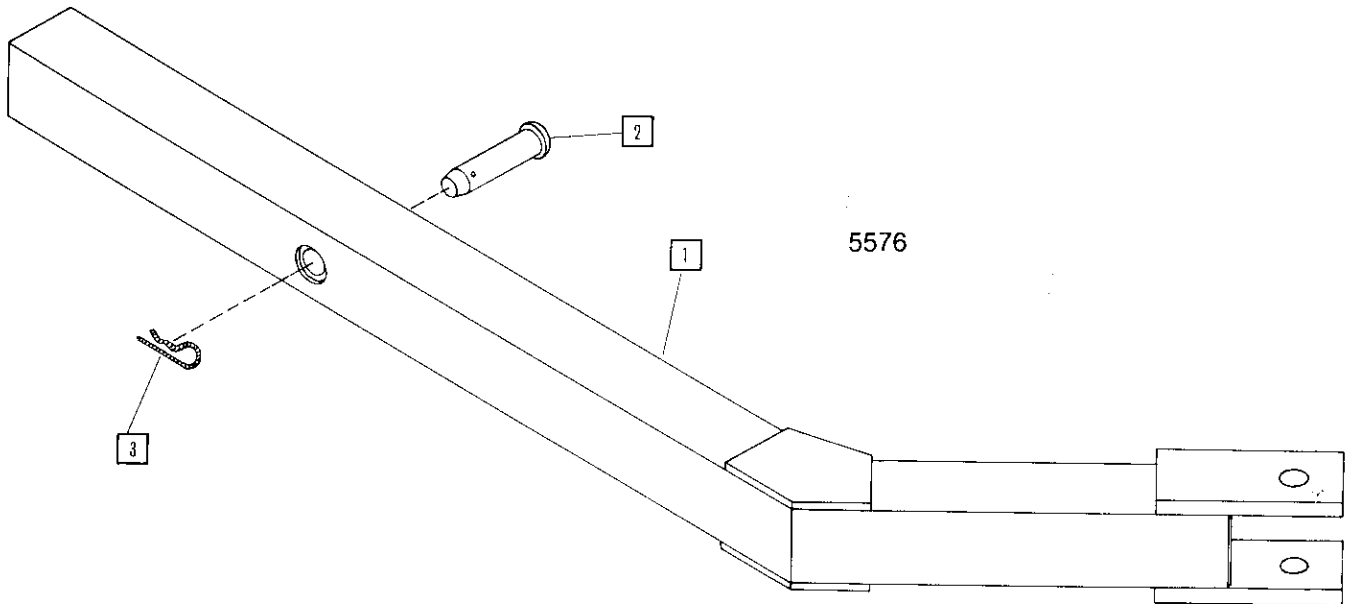
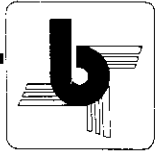
ITEM	P/N	DESCRIPTION
1	24071	Drive Line, Left
2	24147	Complete Overrunning Clutch Asm. L.H.
3	12382	Retaining Ring
4	12381	Washer
5	12380	Inner Sleeve
6	12384	Leaf Spring
7	12383	Drive Key
8	24144	Yoke and Housing, L.H.
9	12385	Zerk Fitting
10	24116	55 PW Kit
11	24069	Drive Line
12	15295	Decal "Danger"
13	15355	Frost Plug 1/2

Weasler Overrunning Clutches - Part #'s 13039, 13040, 24146, 24147

**Left Hand Pictured*

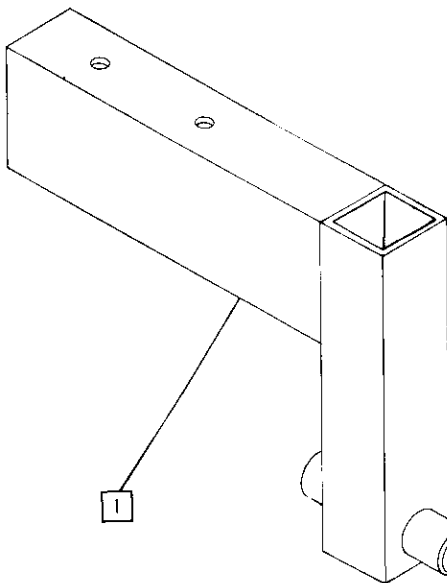


End Transport Kit-(24093)



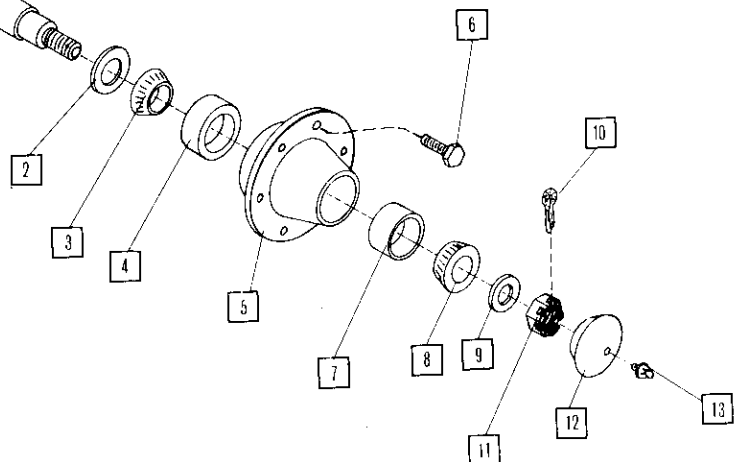
TONGUE ASSEMBLY (TRANSPORT)-24095

ITEM	QTY.	P/N	DESCRIPTION
1	1	24115	Tongue Weldment (Transport)
2	1	24094	Clevis Pin
3	1	11059	Hair Pin, Cotter

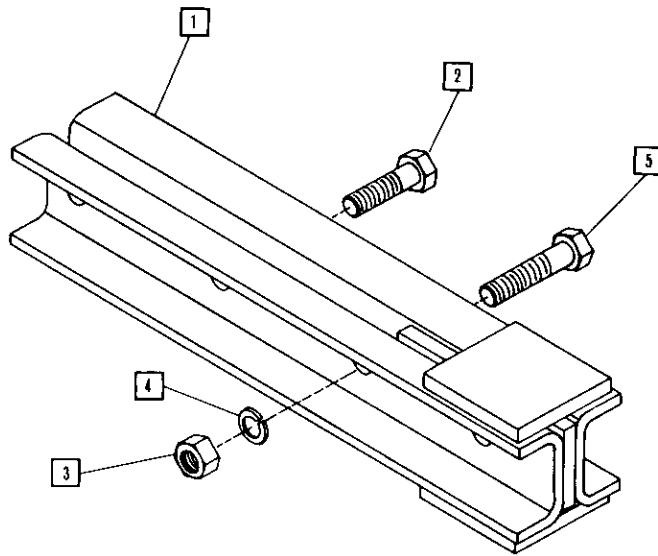
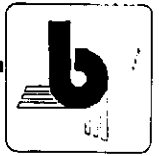


TRANSPORT SPINDLE, FRONT, (ASBY)-24096

ITEM	QTY.	P/N	DESCRIPTION
1	1	24122	End Transport Spindle, Front
2	1	6572	Seal
3	1	6573	Bearing Cone, Inner
4	1	6574	Bearing Cup, Inner
5	1	12441	Hub
6	6	9089	Wheel Bolt
7	1	6663	Bearing Cup, Outer
8	1	6665	Bearing Cone, Outer
9	1	1605	Washer, Flat-1"
10	1	2045	Cotter Pin, 5/32 x 1 1/2
11	1	1754	Nut, Hex. Castle
12	1	12442	Hub Cap W/Zerk
13	1	2286	Zerk, 1/4-28 Short



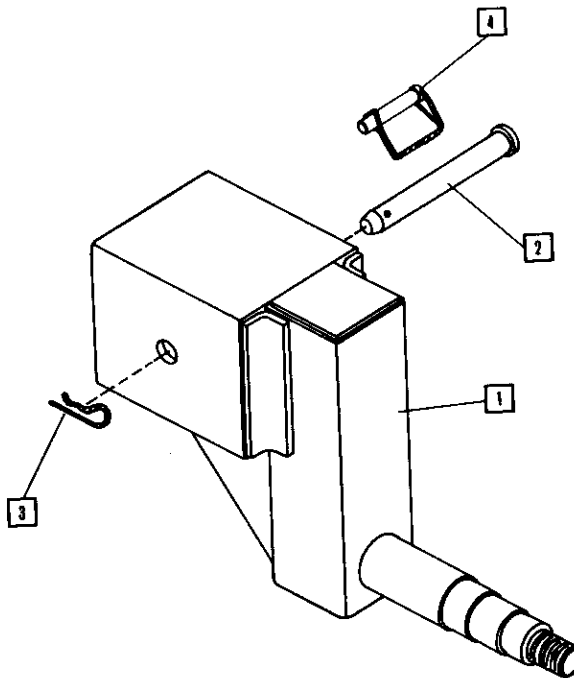
End Transport Kit-(24093)



TRANSPORT SUPPORT (ASBY)-24041

5674

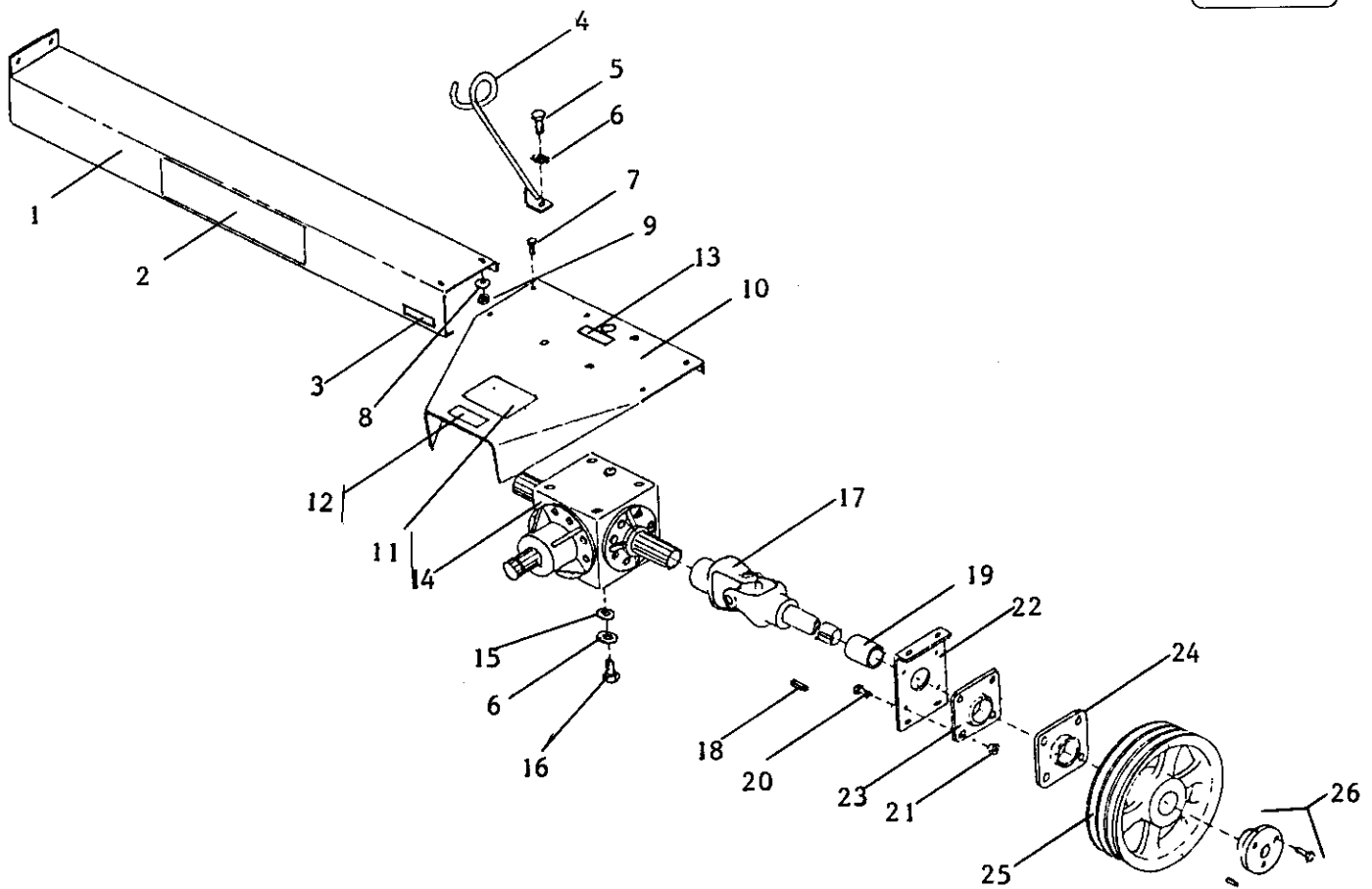
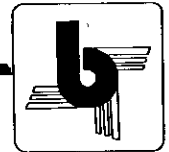
ITEM	QTY.	P/N	DESCRIPTION
1	1	24126	Transport Support, (Weldment)
2	2	1313	Bolt, Hex. Hd. $\frac{3}{4}$ x $2\frac{1}{2}$, GR. 5
3	3	1697	Nut, Hex. $\frac{3}{4}$
4	3	1641	Lockwasher, $\frac{3}{4}$
5	1	1316	Bolt, Hex. Hd. $\frac{3}{4}$ x $3\frac{3}{4}$, GR. 5



TRANSPORT SPINDLE, REAR (ASBY)-24097

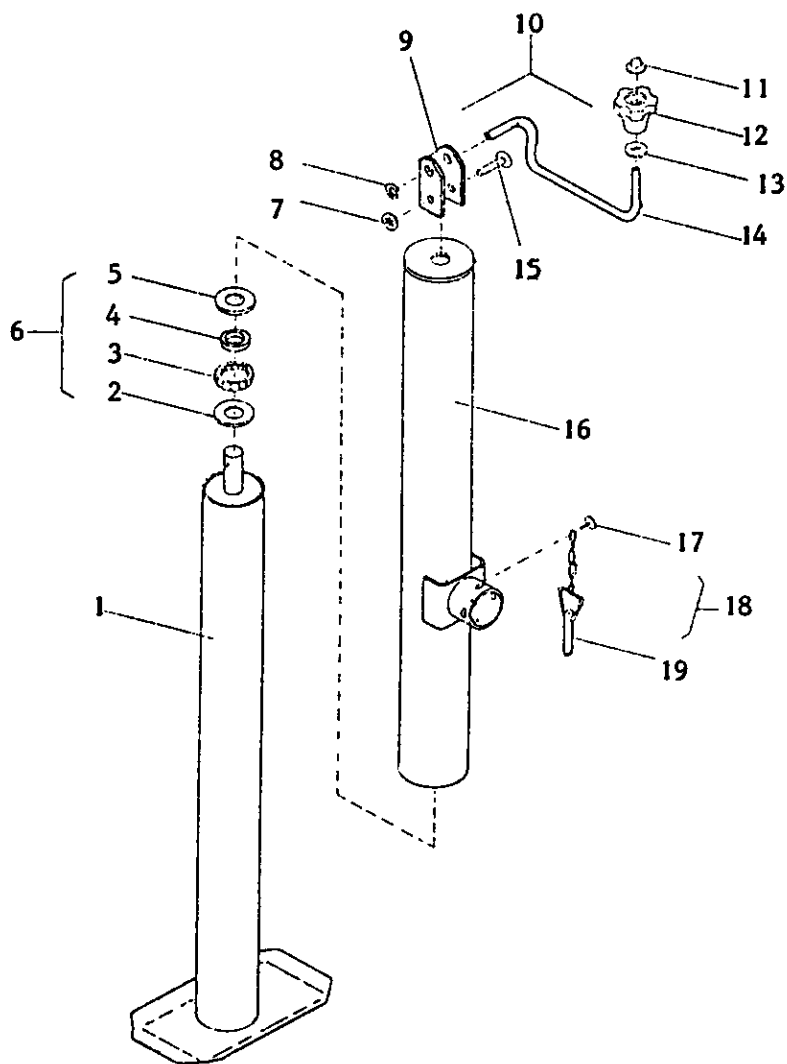
ITEM	QTY.	P/N	DESCRIPTION
1	1	24130	Transport Spindle, Rear
2	1	24098	Clevis Pin
3	1	11059	Hair Pin, cotter
4	2	13935	Lynch Pin

Drive Line Assemblies



ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	1	24064	LINESHAFT SHIELD R.H. 1800	14	1	15699	GEARCASE (1000 RPM)
	1	24065	LINESHAFT SHIELD L.H. 1800	15	4	1620	WASHER, FLAT 5/8
	1	24109	LINESHAFT SHIELD R.H. 2000	16	4	1288	BOLT, HEX HD 5/8 x 1 1/2 GR.5
	1	24108	LINESHAFT SHIELD L.H. 2000	17	1	24066	DRIVELINE R.H. 1800
2	2	12286	DECAL "BALZER"		1	24067	DRIVELINE L.H. 1800
3	2	15384	DECAL "GREASE"		1	24070	DRIVELINE R.H. 2000
4	1	12415	HOSE STAND		1	24071	DRIVELINE L.H. 2000
5	4	1287	BOLT, HEX HD 5/8 x 1	18	2	2439	KEY 1/2 SQ x2 1/2
6	8	1640	LOCKWASHER 5/8	19	2	24102	BEARING SLEEVES
7	12	1185	BOLT, HEX HD 5/16 x 1	20	16	1290	BOLT, HEX HD. 5/8 x 1 3/4
8	12	1597	WASHER, FLAT 5/16	21	16	2546	NUT, HEX HD 5/8 (TOPLOCK)
9	12	2475	NUT, HEX HD 5/16(TOPLOCK)	22	2	24057	BEARING MOUNTING PLATE
10	1	12418	GEARCASE SHIELD	23	2	24079	BEARING 2 1/4 4-BOLT FLANGE
11	1	10744	DECAL "BE CAREFUL"	24	2	24060	BEARING 2" 4-BOLT FLANGE
12	1	14256	DECAL "1000 RPM"	25	2	24074	SHEAVE 3 GROOVE 16" C
13	1	7249	DECAL "CHECK OIL"	26	2	24075	BUSHING ASSY

Jack Assembly



ITEM	QTY	P/N	DESCRIPTION	ITEM	QTY	P/N	DESCRIPTION
1	1	13058	INNER TUBE ASSY	11	1	10529	PALNUT
2	1	13051	SUPPORT WASHER	12	1	10527	KNOB
3	1	10531	BALL&CAGE BEARING	13	1	10525	WASHER
4	1	13052	FELT SPACER	14	1	10644	CRANK
5	1	13054	THRUST WASHER	15	1	13061	CRANK PIN
6	REF	10537	FINAL ASSY	16	1	13059	OUTER TUBE ASSY
7	1	13060	PUSHNUT	17	1	13172	DRIVE SCREW
8	1	12452	C WASHER	18	REF	13049	PULL PIN&CHAIN w/DRIVE SCREW
9	1	10523	SCREW CAP	19	1	12446	PULL PIN & CHAIN
10	1	13057	CRANK ASSY				

WARRANTY

WARRANTY BY MANUFACTURER

Dealer or Distributor understands and agrees that Manufacturer extends only the following Warranty to customers. In the event dealer or Distributor extends any additional warranty (such as by enlarging the scope or period of warranty or undertaking a warranty of merchantability or fitness for any particular purpose) or any other obligation whatsoever, Dealer or Distributor shall: (1) be solely responsible therefor; (2) have no recourse against Manufacturer thereof; and (3) defend, indemnify and hold Manufacturer harmless against any claim or cause of action whatsoever arising out of, or occasioned by, Dealer or Distributor's extension of said additional warranty or obligation.

CERTIFICATE OF GENERAL EQUIPMENT WARRANTY

"Balzer Mfg. Corp. warrants new Products sold by it to be free from defects in material or workmanship for a period of one (1) year after date of delivery to the first user and subject to the following conditions: Balzer Mfg. Corp's obligation and liability under this Warranty is expressly limited to repairing or replacing at Balzer Mfg. Corp's option, any parts which appear to Balzer Mfg. Corp. upon inspection to have been defective in material or workmanship. Such parts shall be provided at no cost to user, at the business establishment of the authorized Balzer Mfg. Corp. dealer or distributor of the Product during regular working hours. This Warranty shall not apply to component parts or accessories of Products not manufactured by Balzer Mfg. Corp. and which carry the warranty of the manufacturer thereof, or to normal maintenance (such as tune-up) or normal maintenance parts (such as oil filters). Replacement or repair parts installed in the Product covered by this Warranty are warranted only for the remainder of this Warranty as if such parts were original components of said Product. **BALZER MFG. CORP. MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.**

"Balzer Mfg. Corp's obligation under this Warranty shall not include any transportation charges, cost of installation, duty taxes or any other charges whatsoever, or any liability for direct, indirect, incidental or consequential damage or delay. If requested by Balzer Mfg. Corp. Products or parts for which a warranty claim is made are to be returned transportation prepaid to Balzer Mfg. Corp. Any improper use, including operation after discovery of defective or worn parts, operation beyond rated capacity, substitution or parts not approved by Balzer Mfg. Corp. or any alteration or repair by others in such manner as in Balzer Mfg. Corp's judgment affects the Product materially and adversely, shall void this Warranty.

"NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY AN OFFICER OF BALZER MFG. CORP. AT ITS HOME OFFICE."

LIABILITY FOR DELAYS

No liability shall attach to Manufacturer or direct, indirect, incidental, or consequential damages or expenses due to loss, damage, detention of delay in delivery of Products resulting from acts or delays beyond its control.

balzer mfg
corp

highway 60 east
mountain lake, mn. 56159
phone (507)427-3133

WARRANTY CLAIMS AND RETURN OF GOODS

1. The dealer shall submit each warranty claim to the company within 30 days after the defective part has been replaced.
2. The dealer shall furnish the Company definite proof of delivery date of the machine to the purchaser prior to the Company's honoring any warranty claim.
3. All parts alleged to be defective under the Company's warranty policy shall be made available for examination by the Company, either at the dealer's place of business or factory of the Company, at the Company's option. If examination is to be made at factory, the part shall be returned to the Company with transportation charge prepaid, only after receipt of the dealer of written shipping instructions from the Company.
4. Goods authorized for return to the factory are to be returned by dealer within 30 days from authorization date. Failure to return with the 30 day period will invalidate the warranty claim.

In order to be protected under the terms of the BALZER MANUFACTURING CORPORATION warranty, and to avoid delay in processing warranty claims, the original owner's name and address and the identification numbers of the machine should be registered at the BALZER MANUFACTURING CORPORATION factory within thirty (30) days from the date of purchase. A registration card is furnished with each machine.