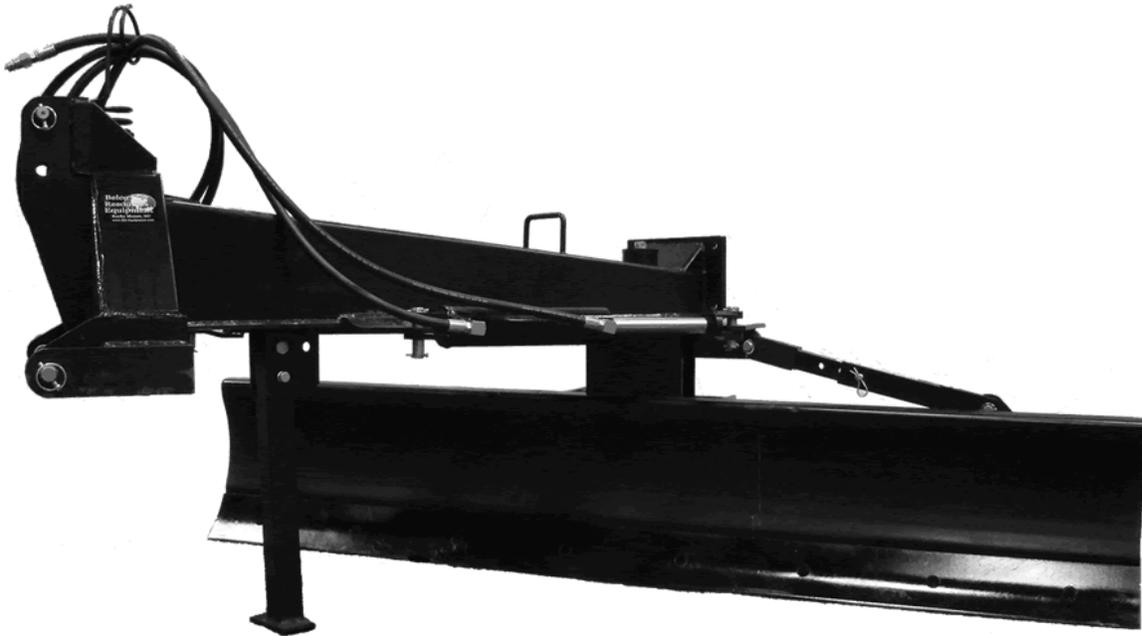


Belco Resources Equipment



Operator's Manual

BRB-908 Rear Blade



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INTRODUCTION

Belco Resources Equipment's BRB-908 3-Way Position Blade is an excellent choice for leveling, finish grading, and backfilling applications at feedlots, outdoor arenas, building sites, nurseries, and maintenance operations on farms, ranches, or home owner lanes or roadways. It is exceptional for snow removal in the pulling or the pushblade mode. Its hydraulic or manual angle, offset, and tilt capability make it an excellent choice for construction and maintenance of drainage ditches, waterways, and soil contours. It is also very effective in maintaining silage pit operations.

The BRB-908 Rear Blade is designed for Category I or II 3-point hitch mounting, attachment to two wheeled drive tractors in the 35 to 80 hp range or 4 wheeled drive tractors in the 35 to 65 horsepower range and is Quick Hitch compatible. It comes in a 96" working width. The rolled moldboard with its reversible cutting blade can be manually angled left or right up to 30 degrees or hydraulically angled left or right up to 50 degrees, the ends can be tilted up or down by as much as 20 degrees, and the whole blade can be offset to the left or right by as much as 30". The blade can also be rotated 180 degrees for blading in reverse with the same angling, tilting and offset capabilities. A retractable parking stand is included to accommodate easier blade removal, storage and reattachment.

SAFETY

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

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



THIS SYMBOL MEANS

ATTENTION!

BECOME ALERT!

YOUR SAFETY IS INVOLVED



SAFETY SIGNAL WORDS

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



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



GENERAL SAFETY GUIDELINES

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

Replace any CAUTION, WARNING, DANGER or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

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

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

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **DON'T TRY IT.**



SAFETY DECAL CARE

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

How to Install Safety Signs:

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



BEFORE OPERATION

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

Children should not be allowed on the product.
Clear the area of small children and bystanders before moving the equipment.



DURING OPERATION

If using a towing unit, securely attach equipment by using a hardened 3/4" pin, a metal retainer, and safety chains if required. Shift towing unit to a lower gear before going down steep downgrades, thus using the engine as a retarding force. Keep towing vehicle in gear at all times. Slow down for corners and rough terrain.

Make sure you are in compliance with all local and state regulations regarding transporting equipment on public roads and highways. Lights and slow moving signs must be clean and visible by overtaking or oncoming traffic when equipment is transported.

Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.

NO PASSENGERS ALLOWED - Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.

Keep hands and clothing clear of moving parts.

Do not clean, lubricate or adjust your equipment while it is moving.

When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and **remove the ignition key**.

Be especially observant of the operating area and terrain - watch for holes, rocks or other hidden hazards. Always inspect the area prior to operation.

DO NOT operate near the edge of drop-offs or banks.

DO NOT operate on steep slopes as overturn may result.

Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.



HIGHWAY AND TRANSPORT OPERATIONS

Adopt safe driving practices:

Keep the brake pedals latched together at all times. **NEVER USE INDEPENDENT BRAKING WITH MACHINE IN TOW AS LOSS OF CONTROL AND/OR UPSET OF UNIT CAN RESULT.**

Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.

Reduce speed prior to turns to avoid the risk of overturning.

Avoid sudden uphill turns on steep slopes.

Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.

Do not drink and drive!

Comply with state and local laws governing highway safety and movement of farm machinery on public roads.

Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.

The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.

When driving the tractor and equipment on the road or highway under 40 kph (20 mph) at night or during the day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.

Plan your route to avoid heavy traffic.

Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.

Be observant of bridge loading ratings. Do not cross bridges rated lower than the gross weight as which you are operating.

Watch for obstructions overhead and to the side while transporting.

Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.

Pick the levellest possible route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.

Be extra careful when working on inclines.

Maneuver the tractor or towing vehicle at safe speeds.

Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.

Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement.

Allow for unit length when making turns.

Operate the towing vehicle from the operator's seat only.

Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.

Never leave running equipment attachments unattended.

As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

Assembly

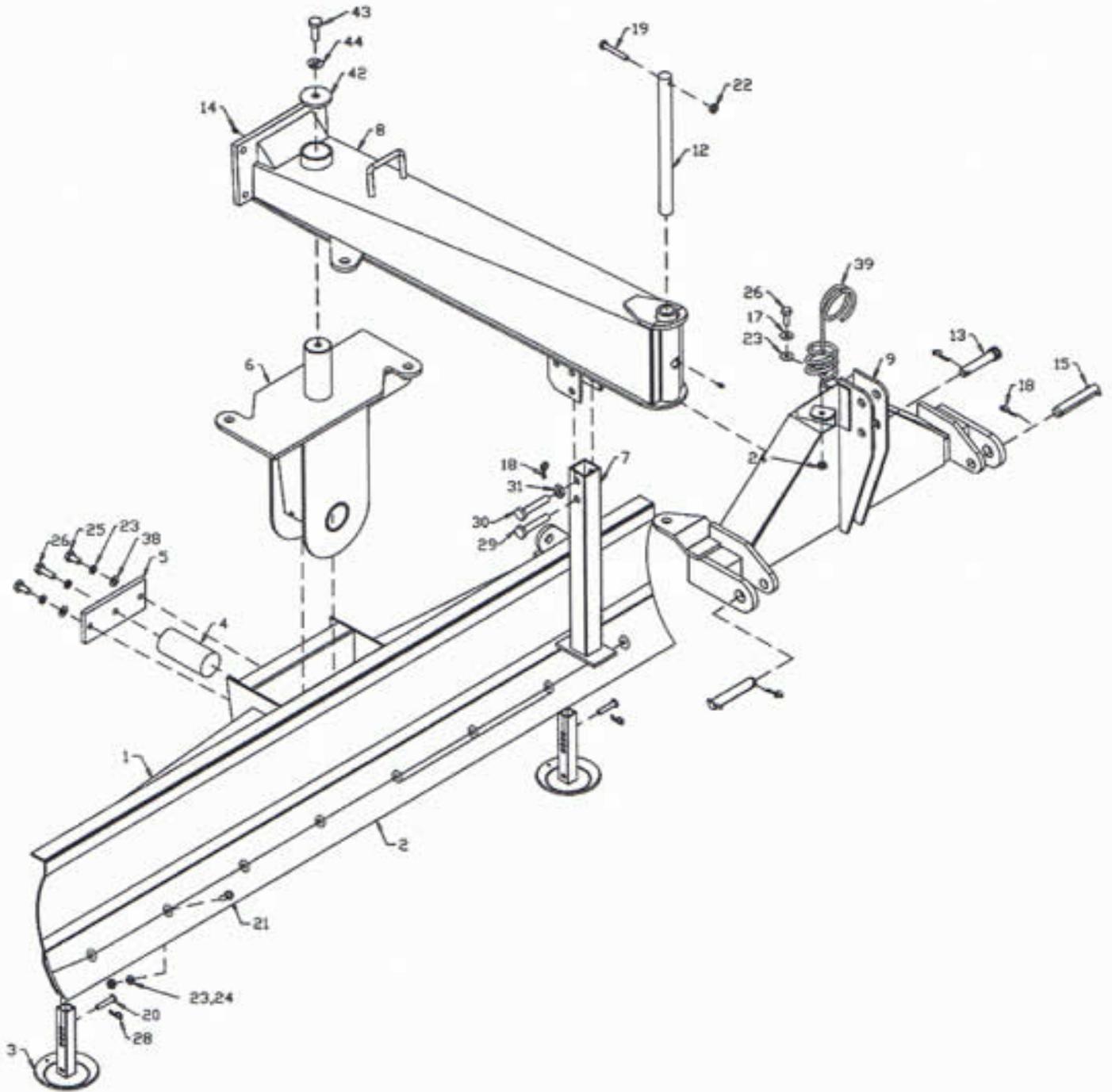
Frame:

1. Insert the Swivel Joint Assembly (# 6) into the Mould Board (# 1) and secure with the Main Shaft Pin (# 4) and Shaft Cover (# 5) using the hardware supplied with the unit (1 Bolt # 26, 2 Bolts # 25, Flat Washer # 38 and Lock Washer # 23) . **IMPORTANT:** Before assembling, be sure the Tilt tab on the Swivel Joint Assembly will be on the same side as the tab on the Mould Board.
2. Slide the Frame Weldment (# 8) onto the Swivel Joint Assembly. The Frame Weldment is held in place with a 3 1/2" Shaft Cover Disc (# 42) and 3/4" Bolt (# 43) and 3/4" Lock Washer (# 44).
3. Install the Hitch Stand (# 7) to the Frame Weldment.
4. Slide the Hitch Weldment (# 9) onto the Frame Weldment (# 8) and connect with the Hitch Shaft (# 12). Secure in place with the 3/8" x 2 3/4" Hex Bolt (# 19) and 3/8" Lock Nut (# 22).
5. Connect the Hydraulic Hose Spring (# 39) to the Hitch Weldment (#9).

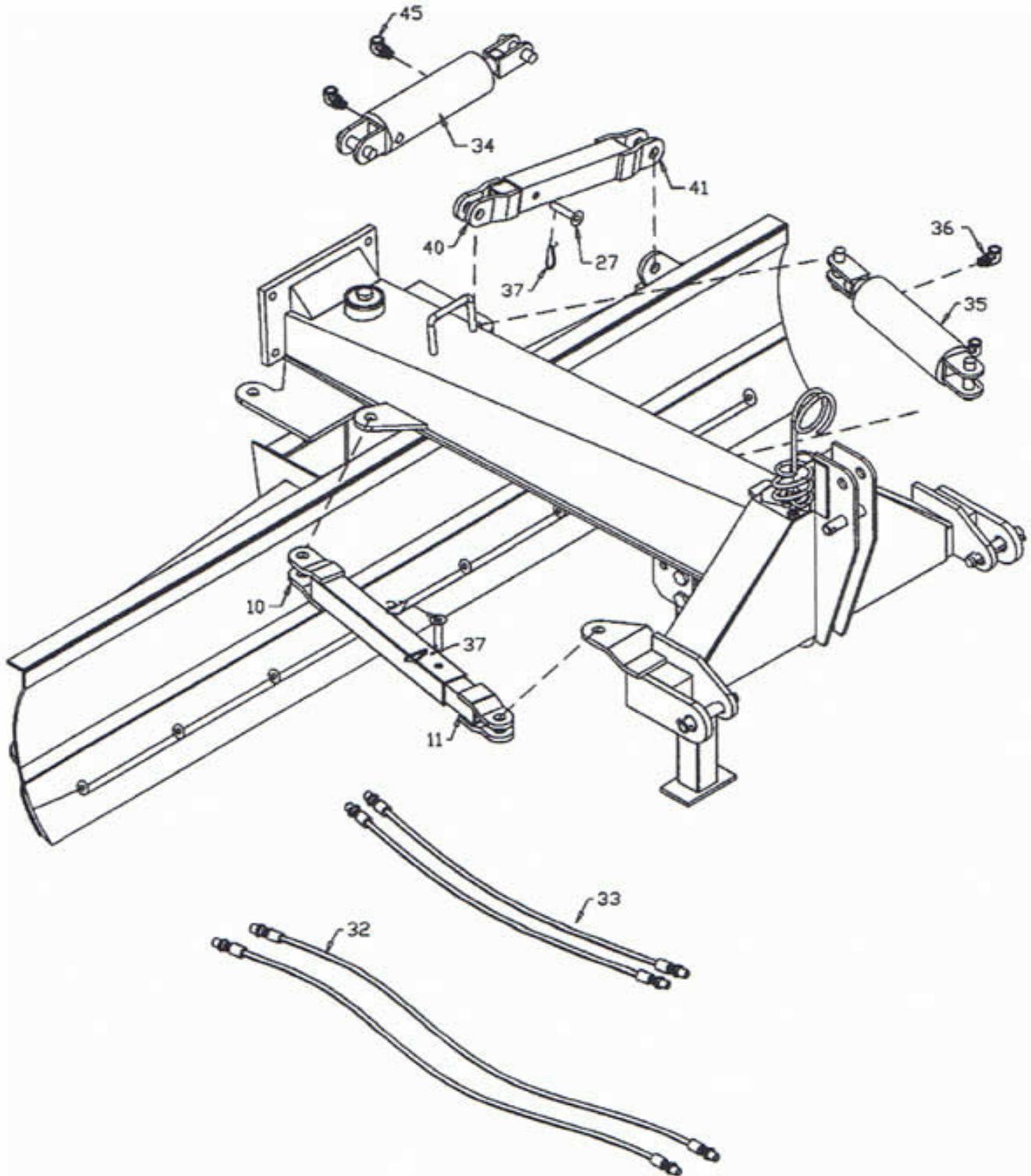
Hydraulics and Swivels:

6. Connect the two mechanical links and the Hydraulic Cylinder to the unit. The Hydraulic Cylinder (# 35) controls the angle, Mechanical Link (# 10 & 11) controls the offset and Mechanical Link (# 40 & 41) control the Tilt. An optional hydraulic tilt cylinder is also available (# 34).
7. Connect the hydraulic hoses (# 33; # 32 for tilt option) to the cylinder.

BRB-908 Assembly



BRB-908 Hydraulics & Swivels



Parts

Item Location	Part Number	Description
1	RB10000	Mouldboard (8')
2	RB10028	Blade (8')
3	RB10029	Skid Plate (optional)
4	RB10006	Main Shaft Pin
5	RB10005	Shaft Cover
6	RB10010	Swivel Joint Assembly
7	RB10023	Hitch Stand
8	RB10012	Frame Weldment
9	RB10022	Hitch Weldment
10	RB10014	Mechanical Link - Offset (outer)
11	RB10017	Mechanical Link - Offset (inner)
12	RB10015	Hitch Shaft
13	RB10018	Top Hitch Pin (Cat. 2)
14	RB10025	Grease Nipple
15	RB10021	Side Hitch Pin (Cat. 2-3)
16	RB10001	Pin
17	FW12000	Flat Washer
18	RB10019	5/16" Lynch Pin
19	BM10700	3/8" x 2 3/4" Hex Bolt
20	SB105122	Clevis Pin (optional)
21	CBM1640	Carriage Bolt
22	NM10000	Hex Nut
23	LW12000	1/2" Lockwasher
24	NM16000	Hex Nut M16
25	BM12200	1/2" x 1" Hex Bolt
26	BM12400	1/2" x 1 1/2" Hex Bolt
27	RB10007	Pin
28	SB105123	Hair Pin Clip (optional)
29	RB10024	Blade Stand Pin
30	BM18115	Hex Bolt for Blade Stand
31	RB10018	Hex Nut
32	RB10031	Hydraulic Hoses for Tilt (optional)
33	RB10026 (coupler RB10027)	Hydraulic Hose (with coupler)

Parts

Item Location	Part Number	Description
34	RB10030	Hydraulic Tilt Cylinder (optional)
35	RB10011	Hydraulic Angle Cylinder
36	RB10032	Cylinder-Hose Elbow
37	RB10008	Hair Pin Clip
38	FW12000	1/2" Flat Washer
39	RB10016	Hydraulic Hose Holder
40	RB10017	Mechanical Link - Tilt (inner)
41	RB10014	Mechanical Link - Tilt (outer)
42	RB10013	3 1/2" Shaft Cover Disc
43	BM18600	3/4" x 2" Hex Bolt
44	LW18000	3/4" Lock Washer

Operation

Blade Pitch Adjustment

Blade pitch can be adjusted by lengthening or shortening the tractor's top center 3-point link. Increasing the blade pitch will increase the blades digging ability.

Lengthen the link to increase blade pitch when grading while traveling forward. Shorten the link to decrease blade pitch.

The opposite is true if backfilling. Shorten the link to increase blade pitch and lengthen the link to decrease blade pitch. To help protect the Rear Blade from damage while backfilling, lengthen the tractor's center top link until the blade will move across the top of the ground without forcing itself into the soil.

Blade Offset

The blade may come in contact with the tractor rear tire when offsetting blade to maximum position and angling blade in the same direction to most severe angle.

Offset Adjustment

The blade offset has 4 adjustments up to 30" left or right.

1. Manually adjust blade offset by removing hitch pin (#16) and moving inner link (#33) to a different hole position.
2. Replace hitch pin and secure with hair pin cotter (#17).



CAUTION

Avoid injury from falling blade by always check to make sure all hardware is secured properly before rotating blade.



CAUTION

The blade may come in contact with the tractor's rear tire when offsetting it to its maximum position and angling it in the same direction to its most severe angle.

Hydraulic Angle Adjustment

Adjust blade angle with angling cylinder by as much as 30 degrees clockwise and counterclockwise. Operate tractor control lever to change blade angle.

1. If the angling cylinder is attached to the selector valve, make certain the valve lever is set to operate that cylinder.
2. Operate tractor control lever to change blade angle by as much as 30 degrees forward or backward.
3. The blade may also be rotated 180 degrees.
 - a. Disconnect angle cylinder from blade turntable lug.
 - b. Rotate Rear Blade clockwise 180 degrees.
 - c. Reconnect angle cylinder to turntable lug.

Manual Tilt Adjustment

The blade end can be tilted manually by as much 13 degrees with the Tilt Adjustment Linkage.

1. Manually adjust blade offset by removing hitch pin (#16) and moving inner link (#33) to a different hole position.
2. Replace hitch pin and secure with hair pin cotter (#17).

LIMITED WARRANTY

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

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

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

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

Proper service is not preformed on the machine

The machine is modified or altered in any way

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

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Belco Resources Equipment Division, LLC obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, including implied warranties of merchantability and fitness for a particular purpose and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Belco Resources Equipment Division, LLC; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery.

Increasing agricultural productivity since 1974

Belco Resources Equipment

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