



OPERATIONS & PARTS MANUAL

FOR MODELS:

- BE-DH210FK
- BE-DH230FK

*Item may not be exactly as shown

PURCHASE DATE	MODEL NO.	SERIAL NUMBER
DEALER		

TABLE OF CONTENTS

3	General Information & Warranty
5	Usage Instructions
6	Safety
7	Maintenance
8	Troubleshooting
9	Exploded View & Parts Breakdown

Contratulations

You have invested in one of the best implements of its type in the market today.

The care you give your Disc Harrow implement will greatly determine your satisfaction with its performance and its service life. A careful study of this manual will give you a thorough understanding of your new implement before operating.

If your manual is lost or destroyed, your dealer will be glad to provide you a new copy. Visit your nearest dealership to obtain a new copy.

As an authorized dealer, we stock genuine parts which are manufactured with the same precision and skill as our original equipment. Our trained service persons are well informed on methods required to service Disc Harrows and are happy to help.

Should you require additional information or assistance, please contact us.

**CAUTION**

AS WE MAINTAIN AN ONGOING PROGRAMME OF PRODUCT IMPROVEMENT, WE RESERVE THE RIGHT TO MAKE IMPROVEMENTS IN DESIGN OR CHANGE IN SPECIFICATION WITHOUT INCURRING ANY OBLIGATION TO INSTALL THEM ON UNITS PREVIOUSLY SOLD. BECAUSE OF THE POSSIBILITY THAT SOME PHOTOGRAPHS IN THIS MANUAL WERE TAKEN OF PROTOTYPE MODELS, PRODUCTION MODELS MAY VARY IN SOME DETAIL. IN ADDITION, SOME HOTOGRAPHS MAY SHOW SHIELDS REMOVED FOR THE PURPOSE OF CLARITY. NEVER OPERATE THIS IMPLEMENT WITHOUT ALL SHIELDS IN PLACE.

This manual contains valuable information about your new tandem disc harrow.

It has been carefully prepared to give you helpful suggestions for operating, adjusting, servicing and ordering spare parts.

Keep this manual in a convenient place for quick and easy reference. Study it carefully. You have purchased a dependable and sturdy tandem disc harrow, but only by proper care and operation can you expect to receive the service and long life it has been designed for.

Sometime in the future your tandem disc harrow may need new parts to replace those which are worn out or broken. If so, please contact your local dealer.

Purchaser / Operator's responsibility

Read and understand the information contained in this manual.

2. Operate, lubricate, assemble and maintain the equipment in accordance with all instructions and safety procedures in this manual.
3. Inspect the equipment and replace or repair any parts that are damaged or worn out which under continued operation would cause further damage, wear to other parts, or a safety hazard.
4. Return the equipment or parts to the authorized dealer from where it was purchased for service or replacement of defective parts that are covered by warranty. (The dealer may inspect equipment or parts before warranty claims are honored.)
5. All costs incurred by the dealer for traveling to or transporting the equipment for warranty inspection and claims will be borne by the customer.

TECHNICAL DATA

INTRODUCTION

This handbook contains the use and maintenance instructions with a list of the spare parts of the Tandem Disc Harrow.

This Disc harrow is equipped with light duty & heavy-duty box frame specially designed for harrowing / land preparation of rough soil (secondary fine operation).

Regular and satisfactory operation together with economic and long-lasting use of the implement depends on the compliance with instructions given in this handbook.

Compliance with the instructions in this handbook is also important since the manufacturer declines any and all responsibility for damage to persons or property caused by negligence and failure to comply with these instructions.

WARRANTY

When the machine is delivered, check that it has not been subjected to damage during transport and that the accessories are in a perfect condition and complete.

Any claims following the receipt of damaged goods shall be presented in writing within 8 days from the receipt of the goods.

The purchaser may only make the claims under guarantee when he has complied with the warranty conditions in the supply contract.

WHEN THE WARRANTY BECOMES VOID

Besides the cases specified in the supply agreement, the guarantee shall in any case become void.

1. When the implement has been used beyond the specified power limit (Tractor Horse Power)
2. When repairs made by the customer without authorization from the manufacturer or owing to installation of spurious spare parts, the machine is subjected to variations and the damage can be ascribed to these variations.
3. When the user has failed to comply with the instructions in this handbook.
4. If the implement is used in very hard/stony soil no warranty of discs will be given.
5. No warranty will be given if the service and greasing is not done on time.

WARNING

- **Thoroughly read the instruction manual before proceeding with the various operations.**
- **Maintain the harrow as per the instructions of this handbook to be entitled for warranty.**

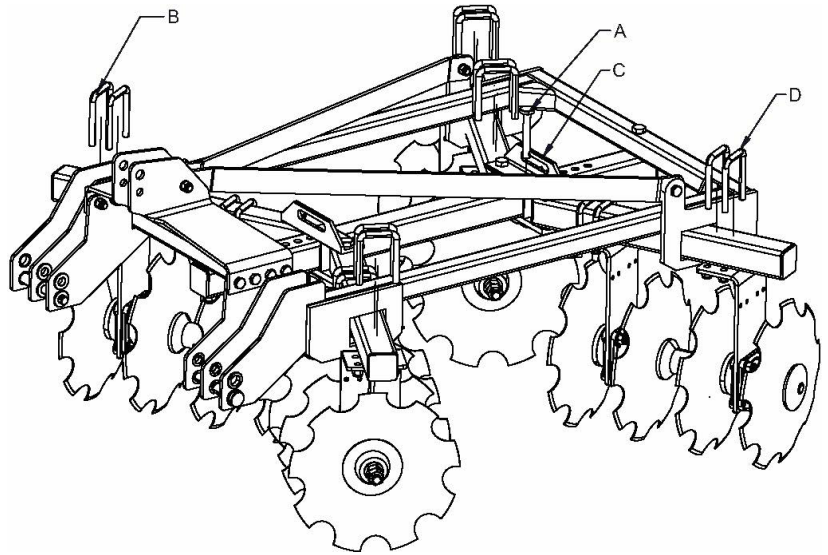
USAGE INSTRUCTIONS

BEFORE USE & ADJUSTMENTS

- Before mounting of disc harrow make sure that all nuts & bolts are properly secured.
- Also determine soil and trash conditions of the field and make the preliminary adjustments.

Disc gang angle & gang angle lateral adjustment

1. Disc Angling



NOTE: The more angle you have on the disc, the more aggressive the cut will be and the more horsepower will be required to pull your harrow and for a better ground finish, the rear gang angle should be lesser than the front gangs. The disc harrow is designed with handles (C) to make disc gang angle adjustment easy.

Adjust disc gang as follow:

- Remove pin (A) and hair lynch pin (F). Slide handle (C) to desired position and replace pin.

Disc gang lateral adjustment:

- Gang angle (Angle between two gangs) ranges between 00 to 66'. The angle can be increased for better penetration in dry soil while it should be reduced to avoid clogging in wet soil.

NOTE: The rear discs should be centered between the front discs for optimum performance.

Disc harrow leveling

The truest way to level your disc from front to rear is to observe behind the centre of the disc harrow. In most soil conditions, a slight ridge in the centre is actually a level operation. More air pockets will form where soil is thrown together, causing a small ridge to form that will disappear after a soaking rain.

If harrow is leaving a significant ridge in the centre, raise disc rear gangs by shortening the centre 3-point link.

If harrow is leaving a furrow (valley) in the centre, lower rear disc gang by lengthening the centre 3-point link.

See also the troubleshooting chart for helpful solutions to leveling the disc harrow.

Scrapper adjustment

The scrapper can be adjusted by loosening the bolts.

Disc harrow penetration

Factors affecting disc harrow penetration:

- Angle of the gang
- Weight of the harrow
- Disc diameter
- Disc sharpness
- (Blunt discs increases the draft considerably, check the disc sharpness)
- Angle of hitch

ATTACHING THE HARROW TO THE TRACTOR

1. Place the harrow duly leveled on the flat piece of land.
2. Reverse the tractor to the harrow.
3. Attach the 3-point linkage to the harrow.

WARNING FOR THE DRIVER

1. Before harrowing check all nuts & bolts of the disc harrow.
2. Be vigilant about the tree roots and stones. Don't harrow on stony soil.
3. Tractor should be in first high or fourth low gear.
4. Don't allow anyone to come across the harrow.

SAFETY

Understanding the machine safety labels



The machine safety labels shown in this section are placed in important areas on your machine to draw attention to potential safety hazards.

On your machine the words DANGER, WARNING, and CAUTION are used with this safety-alert symbol. DANGER identifies the most serious hazards. The operator's manual also explains any potential safety hazards whenever necessary.

Before harrowing with the disc harrow take care that nobody stands near it.



In order to protect yourself always wear adequate clothes and shoes during operation.



Never allow riders on the tractor or implement unless an additional seat is available.



Be careful when moving around a steep gradient to avoid sharp turns.



Never transport the implement on rough roads during the night. When operating, avoid sharp turns that may cause the tractor to collide with the implement.

MAINTENANCE INSTRUCTIONS

If you work the tandem disc harrow on stony land then more maintenance will be required.

1. If the soil has entered the grease nipple, then change the nipple.
2. After the first two hours of work, tighten all nuts & bolts.
3. After every fifty hours, grease all greasing points with a grease gun and tighten all nuts & bolts.
4. After fifty hours, open the bearing hub/bearing spool of & cleanse with diesel oil & pump in new grease.

STORAGE OF MACHINE AFTER WORK

1. Wash the tandem disc harrow after work.
2. Replace the worn-out nuts & bolts.
3. If the tandem disc harrow has to remain unused for long time, then clean it & apply a layer of used oil for rust prevention.

These steps will enhance the life of your disc harrow.

LUBRICATION

1. Please take care that high quality grease is used in the greasing points.
2. Please take care that hydraulic oil quality grease is used in the greasing points.



Be careful with the environment. Do not spill combustible oil, battery or filter residues in the soil. These will directly damage the environment. Look for information to recycle or reuse them.

INSTRUCTIONS FOR DRIVER

1. In case of the scrapper touching the discs, loosen the scrapper bolt and readjust the scrapper.
2. Never reverse the tractor when the harrow is engaged in the soil.
3. Never turn the tractor to the right or left when the harrow is engaged in the soil.
4. Properly fit the three point linkage as mentioned above & lock with lynch pin.
5. To get good results from the harrow, a disc should be replaced when its diameter is reduced by 5" from its original size.
6. When the disc harrow is ready for use, do not stand between the harrow and the tractor.

OPERATIONAL GUIDELINES FOR HARROW

1. Adding of wheel weights/water ballasting or a combination of both is recommended when excessive rear wheel slippage is experienced.
2. Always set hydraulic levers correctly for draft and position control operation.
3. Lift the harrow while turning for effective independent breaking of soil.

Precautions during transportation

1. Maintain the speed to avoid jumps.
2. Watch while overtaking on road.
3. Always use SMV (Slow Moving Vehicles) symbols.

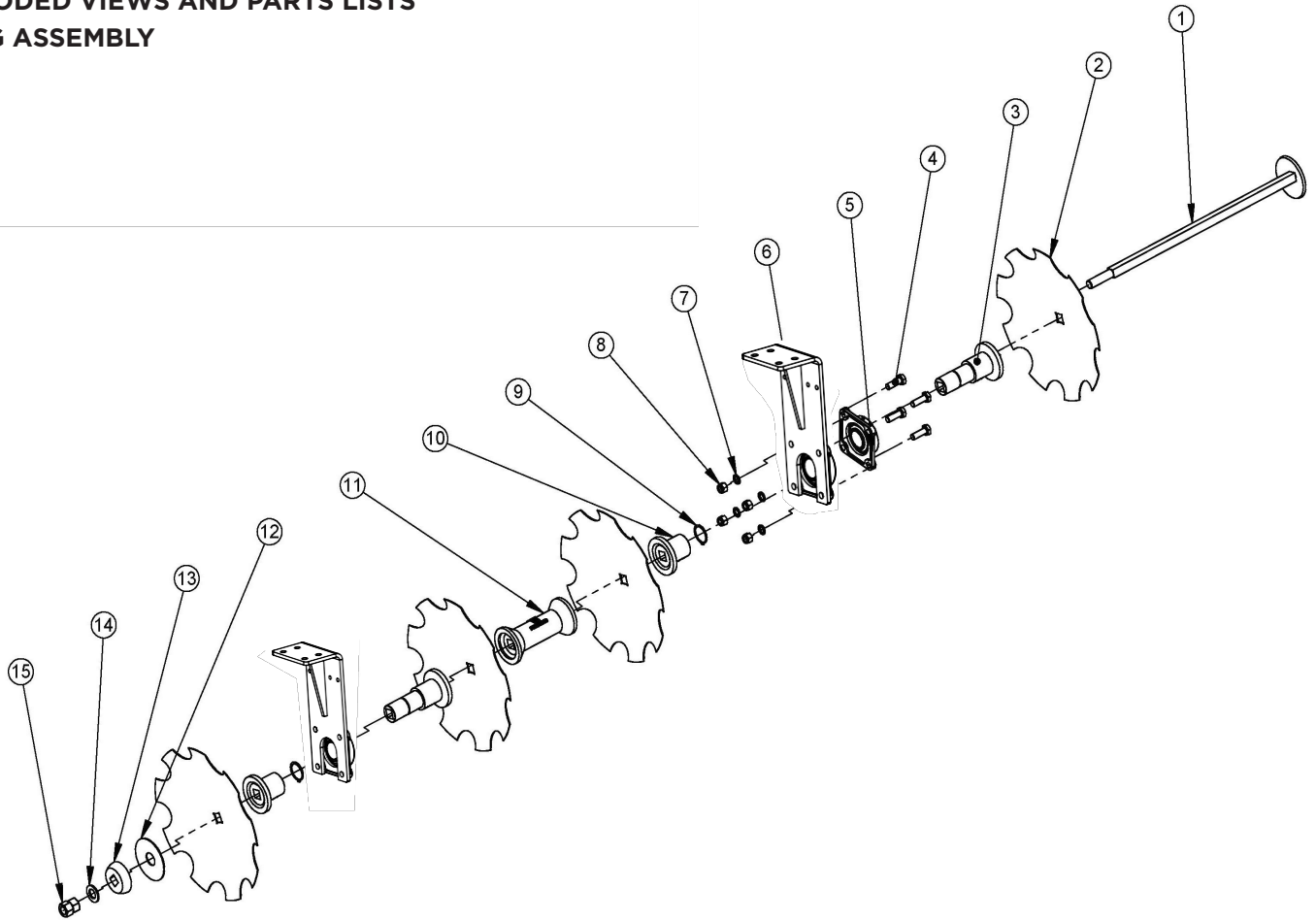


**Dear user, Respect the Earth.
Do not throw trash away.
Help protect our environment.**

TROUBLESHOOTING

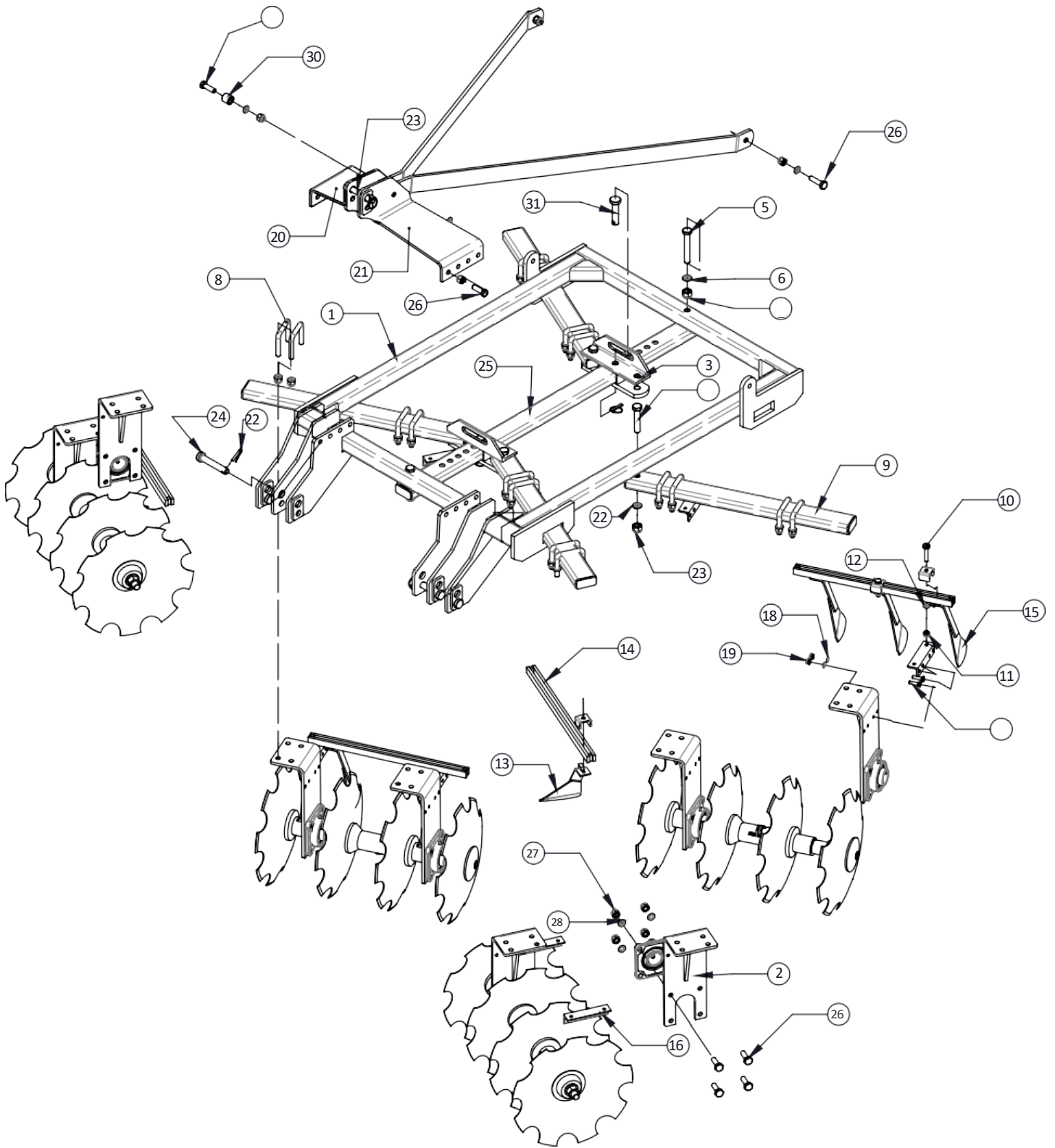
PROBLEM	POSSIBLE CAUSE	POSSIBLE REMEDY
Disc harrow makes a high centre ridge.	Disc blades are moving too much soil to the centre	Tilt disc harrow up at the rear by shortening the centre 3-point link
		Decrease tractor speed
		Increase spacing between disc gangs by moving all gang hangers on both sides away from the centre equal amounts
Disc harrow cuts a furrow (valley) in the center	Disc blades are moving enough soil to the center	Tilt disc harrow down at the rear by lengthening the center 3-point link.
		Increase tractor speed.
		Reduce spacing between rear disc gangs by moving all gang hangers on both sides toward the centre by equal amounts.
Disc harrow makes ridges on the outside cuts and furrows just inside the ridges.	Too much soil is thrown out by the front disc gangs	Check front to rear disc leveling. Raise front disc gangs by lengthening the centre 3-point link.
		Reduce front disc gang angle by one position.
Disc Harrow makes a furrow on the outside cuts and a ridge just inside the furrow	Front Disc gangs run deeper than the rear disc gangs	Tilt disc harrow down at the rear by lengthening the center 3-point link
	Disc gangs are not centered on the frame	Centre disc gangs on the disc harrow
	Front disc gangs are not at the same angle	Set front disc gang at the same angle
	Rear disc gangs are not at the same angle	Set rear disc gang at the same angle
Dis harrow leaves a depression in the worked soil behind tractor wheels	Tire slippage, heavy tractor, soft soil conditions	Add duals, increase tractor speed, increase gang angle and/or increase cutting depth
Disc harrow won't settle down and operate smoothly	Disc gang angles are set too high	Set disc gang angle at the smallest angle required to do the job. Make sure front disc gangs are set 3 degrees higher than the rear disc gang angle.
Dis harrow dose not penetrate soil properly	Disc gang angles are not set at large enough angles	Increase disc gang angles. Make sure the front disc gangs are set 3 degrees more than the disc gangs.
Outside front disc blades and/or gang axle is bending or breaking	Making sharp turns and crossing ditches with disc harrow in the ground	Raise disc harrow out of the ground when making sharp turns and crossing ditches. Do not cross deep ditches
	Gang axles become loose	Keep disc gang axle nut tight
Bearing Problem	Bent gang axle causing bearing to wobble	Replace gang axle and damaged bearing
	Foreign objects and/or dirt caught in between spacer and disc blades causing bearing to wobble	Completely disassemble disc gang components and clean thoroughly before reassembling. Replace damaged bearing.
	Abrasive material such as wire ribbing against the bearing and destroying its seals	Remove abrasive material right away. Replace damaged bearings.
	Contaminated bearing caused by not cleaning the grease zerks before adding grease to bearings	Always clean grease zerks before pumping grease into the bearings. Replace damaged bearing.
	Pumping grease into the bearing too fast in cold weather will pop off bearing seals	Pump grease into the bearings slower, especially in cold weather. Replace all damaged bearings.

EXPLODED VIEWS AND PARTS LISTS
GANG ASSEMBLY



REF.	DESCRIPTION	PART NO		QTY	
		4 - DISC	5 - DISC	4 - DISC	5 - DISC
1	AXLE ROD ASSY.	77780003	77780005	1	
2	NOTCHED DISC 18"	10240032		4	5
3	BEARING SPOOL	10340014		2	
4	HEX HEAD BOLT M16x50L	10260358		8	
5	UC BEARING F210	10050031		2	
6	LEG ASSY.	77800004		2	
7	SPRING WASHER 16MM	10270005		8	
8	NYLOCK NUT M16x2P	10280005		8	
9	EXTERNAL CIRCLIP 50A	10390010		2	
10	BEARING SPOOL CAP	10180017		2	
11	PLAIN SPOOL	10340015		1	2
12	DISC WASHER	10270029		1	
13	SMALL CHAPPEN	10360005		1	
14	PLAIN WASHER 25MM	10270024		1	
15	HEX NUT M24X3P	10280044		2	

TANDEM DISC HARROW BE-DH210FK AND BE-DH230FK



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REF.	DESCRIPTION	PART NUMBER		QTY	
		16 DISCS	20 DISCS	16 DISCS	20 DISCS
1	MAIN FRAME ASSY.	72900001		1	1
2	LEG ASSY.	77800004		8	8
3	GANG JOINT ANGLE ASSY.	77810001		1	1
4	HEX HEAD BOLT M20X110X2.5P	10260431		4	4
5	HEX HEAD BOLT M20X130X2.5P	10260132		2	2
6	SPRING WASHER 20MM	10270016		6	6
7	NYLOCK NUTM20X2.5P	10280021		6	6
8	U CLAMP SET	10220038		16	16
9	GANG PIPE ASSY.	77790003	77790005	4	4
10	HEX HEAD BOLT M12x60x1.5P	10260356		20	24
11	NYLOCK NUT M12x1.5P	10280003		20	24
12	SPRING WASHER 12MM	10270003		10	12
13	SCRAPER ASSY. LEFT	77820002		12	16
14	SCRAPER HOLDING FLAT ASSY.	77820009	77820010	4	4
15	SCRAPER ASSY. (RIGHT)	77820001		12	16
16	SCRAPER HOLDING ANGLE	78370002		8	8
17	HEX HEAD BOLT M10X35	10260353		16	16
18	SPRING WASHER 10MM	10270002		16	16
19	NYLOCK NUT M10X1.5P	10280002		16	16
20	LEVER SHEET (LHS)	77750015		1	1
21	LEVER SHEET (RHS)	77750014		1	1
22	LINCH PIN 10MM	10020022		5	5
23	PIN 19x125L	10020009		1	1
24	PIN 22x200	78370005		2	2
25	CENTER SUPPORT ASSY.	77760005		1	1
26	HEX HEAD BOLT M16x50X2P	10260358		42	42
27	NYLOCK NUTM16x2P	10280005		43	43
28	SPRING WASHER 16MM	10270005		43	43
29	HEX HEAD BOLT M16X105	10260134		1	1
30	BUSH (17x32x30)	10070008		1	1
31	PIN 19x95	10200031		2	2



BRABEREQ.COM
WGSALES@BRABEREQ.COM

PHONE: 604-850-7770
FAX: 604-850-7774
TOLL FREE PHONE: 1-877-588-3311
TOLL FREE FAX: 1-800-665-7334