

# Northfield

## 36" BAND SAW

### OPERATION AND MAINTENANCE INSTRUCTIONS AND PARTS LIST

ALL PARTS FOR THIS MACHINE MAY BE  
PROCURED FROM:

**NORTHFIELD MACHINERY BUILDERS, INC.**  
320 WATER STREET NORTH  
PO BOX 140  
NORTHFIELD, MN 55057-0140  
PHONE: (507)645-5641  
FAX: (507)645-4005

WHEN ORDERING PARTS PLEASE INCLUDE  
THE SERIAL NUMBER AS SHOWN ON THE  
FRONT OF THIS MANUAL

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## DANGER

ANY MACHINERY USED FOR CUTTING IS CAPABLE OF CAUSING SERIOUS BODILY INJURY. USE EXTREME CAUTION AT ALL TIMES. THE SAFETY RULES, OPERATION AND LUBRICATION INSTRUCTIONS CONTAINED IN THE MANUAL ARE FOR YOUR PROTECTION AND INFORMATION. COMPLETELY FAMILIARIZE YOURSELF WITH THE CONTENTS PRIOR TO OPERATING THE MACHINE.

# GENERAL SAFETY INSTRUCTIONS

The safety rules contained herein are printed for your protection and well-being. Read them carefully and observe them strictly. If there are any portions of this manual that you do not understand completely, do not hesitate to contact your supervisor for clarification.

Your undivided attention is required when operating this machine. Concentrate fully on the task at hand and accord the band saw the respect a machine of this type is due. Usage of your good common sense is essential for safe, efficient operation. The following list of safety instructions are general in nature, and you will want to incorporate specific rules related to your application.

1. Do not wear loose clothing while operating this machine.
2. At all times give your full attention to the machine while operating.
3. Allow the machine to reach its full operating speed before starting the cut.
4. The upper guide should be raised only high enough to clear the stock.
5. Feed the work carefully and only as fast as the machine will cut it easily.
6. Be sure to select the proper blade for your depth of cut and radius being generated.
7. Keep the floor around the machine clean, also the table surface.
8. The dust collection system should be turned on before operating the machine.
9. Make all necessary adjustments before starting the machine.
10. Use a helper to assist in feeding and removing long material.
11. Make sure the saw blade has come to a complete stop before making any adjustments on the machine.
12. Clear scrap pieces by the blade with a scrap stick; never use your fingers.
13. Check stock for nails, staples, etc. before cutting.
14. Be sure to know where the stop and start control is located on the machine.
15. Make sure the saw blade has come to a complete stop before leaving the machine.
16. Check the saw blade periodically for dullness, cracks, teeth missing, pitch buildup, etc.
17. Be sure machine is properly grounded.
18. When installing the blade, check tension and tracking before starting saw.
19. Make sure all electrical power is turned off and cannot be accidentally restarted before making any adjustments, replacements, lubrication or repairs.
20. Always wear proper eye and ear protection around machinery.
21. Stock must be held firmly on the table and the ends of long boards must be supported level with the table.
22. Replace a worn throat plate because chips of wood may pass through it and fall between the lower wheel and the saw blade, causing the blade to break.

## ELECTRICAL CONNECTIONS

**WARNING:** Connections and changes in electrical connections should be made by a qualified electrician only.

Under normal usage, and if proper (full) voltage is supplied to the motor, your saw will operate efficiently on the voltage as connected at the factory. Voltage of the machine will vary as per customer order.

Connect power supply wires to terminals L-1, L-2 and L-3 in the magnetic starter. On a right-hand bandsaw the wheels should rotate in a clockwise direction. A left-hand bandsaw should have a counterclockwise wheel rotation. If the rotation is wrong, reverse any two of the power supply wires to reverse the rotation.

# UNPACKING

Your Northfield Band Saw was checked and operated before it left the factory. Remove the crating and set upright on the floor. The protective coating of rust preventative should be removed from all parts of the machine by a good grade of kerosene or a non-flammable solvent.

Check to make sure that all parts move freely without binding or sticking. Lubricate all parts as per lubrication instructions. See page 5 for detailed uncrating instructions.

## LUBRICATION INSTRUCTIONS

### BAND SAW LUBRICATION

All lube data is based on an 8 hour per day operation.

KIND OF GREASE FOR WAYS: A light white grease like 630AA Lubriplate®

KIND OF GREASE FOR BEARINGS: A No 2 consistency lithium-based grease.

KIND OF OIL: 30 wt engine oil.

UPPER QUILL BEARINGS: Sealed for life — no lubrication required.

LOWER QUILL BEARINGS: Sealed for life — no lubrication required.

ELECTRIC MOTORS: May be sealed for life. If zerks or pipe plugs are present, several shots of grease once a year should be adequate.

TABLE TILT ROCKER: Wipe old grease and brush on white grease every 6 months.

UPPER WHEEL SLIDE WAYS: Wipe old grease and brush on white grease once a year.

TABLE TILTING SCREW: Wipe old grease and brush on white grease every 6 months.

UPPER WHEEL ELEVATING SCREW: Wipe old grease and brush on white grease every 6 months.

UPPER WHEEL ELEVATING SCREW WEDGE: Block upper quill slide and lower until space appears between the wedge and screw collar. Brush on white grease every 6 months.

TABLE TILT SCREW SLEEVE: A few drops of oil every 6 months.

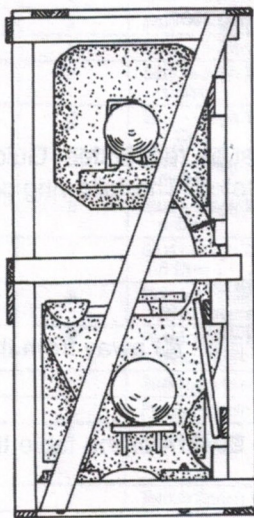
UPPER GUIDE SLIDE BAR: Wipe clean and coat with oil every 3 months.

FOOT BRAKE PIVOT SHAFT: A few drops of oil every 6 months.

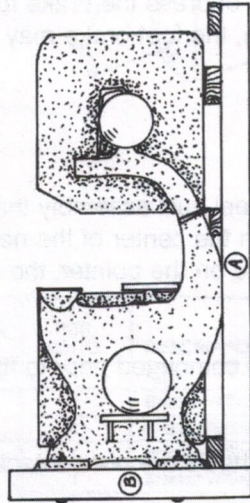
SLIDE BAR REWIND: A few drops of oil on the center shaft every 6 months.

GUARD HINGES: A few drops of oil every 6 months.

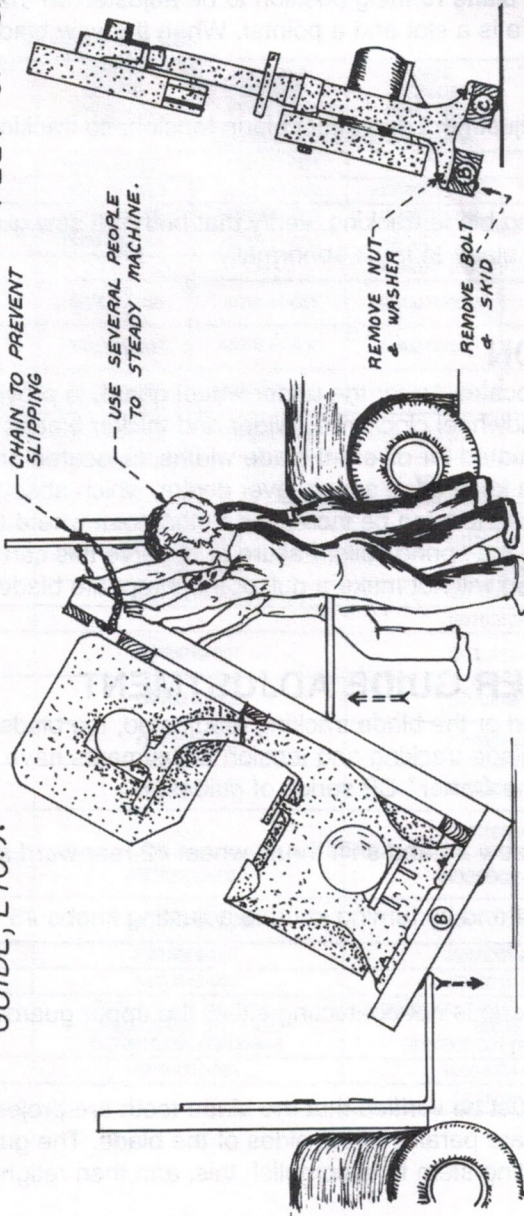
**NOTE:** The type or weight of the lubricant required is not as important as the necessity of periodic lubrication and inspection to determine that there is a light film of lubricant on the friction surfaces noted above.



1. REMOVE PARTS LYING ON FRAME OF CRATE (TABLE, GUIDE, ETC.).



2. REMOVE CRATING, EXCEPT THE BASE AND SKIDS ATTACHED TO FEET OF SAW.



3. TIP SAW UPRIGHT ONTO SKIDS. (WE RECOMMEND USING TWO FORKLIFTS; ONE TO RAISE & ONE TO LOWER).

4. REMOVE FRAME SAW WAS LYING ON (NOT THE SKIDS).
5. REMOVE NUTS & WASHERS HOLDING FEET. TIP SAW TO SIDE ONLY FAR ENOUGH TO REMOVE BOLTS & SKID.
6. CAREFULLY LOWER FOOT; & TIP SAW TO OTHER SIDE. REMOVE BOLTS & SKID.
7. ANCHOR SAW TO FLOOR.
8. ATTACH TABLE & OTHER PARTS.

THESE INSTRUCTIONS ARE GIVEN TO AVOID DAMAGE WHEN SETTING UP THE MACHINE.

4-3-80  
36-454

# OPERATIONAL CONTROLS

## UPPER BLADE GUIDE POSITIONING

The upper blade guide is vertically adjustable and should be positioned to be as close to the maximum height of the workplace or fixture as practical. In addition to safety, this provides the greatest blade support, resulting in straighter cuts.

## FOOT BRAKE

A foot-actuated brake is provided as a means of stopping the blade motion to minimize the coasting hazard. To actuate the brake, first shut off the drive motor at the pushbutton station. Then depress the brake foot pedal which projects from behind the lower wheel guard below the dust spout. As an option, the foot brake may be equipped with a switch that shuts down the drive motor when the foot brake is actuated.

## BLADE TRACKING

A screw and hand knob (20-114 & H-2) is provided at the rear of the upper wheel quill assembly that tilts the upper wheel. This allows the blade running position to be adjusted so that it tracks on the center of the neoprene tire. On the rear guard there is a slot and a pointer. When the saw blade is centered on the pointer, the blade will be centered on the wheel.

**NOTE #1:** Tracking adjustment can affect blade tension, so tracking should be completed prior to final blade tension adjustments.

**NOTE #2:** When setting blade tracking, verify that both the saw guide thrust wheels are not contacting the back of the blade, causing the blade to track abnormally.

## BLADE TENSION

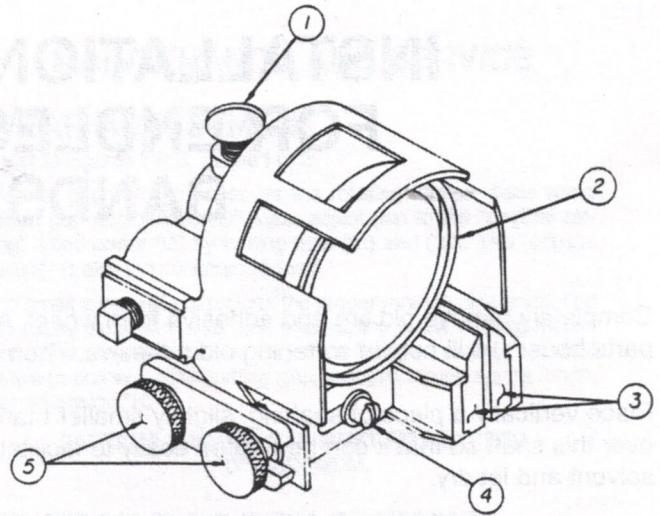
A handwheel (E-82), located under the upper wheel guard, is provided to set blade tension. To increase blade tension, rotate the handwheel clockwise. Wider and thicker blades require more tension than narrow blades. A tension indicator, graduated for different blade widths, is located on the rear of the main frame overarm. Blade strain is regulated by a knife edge spring lever design which absorbs shock and provides tension. Under no circumstances should the blade tension be increased to the point where the coil spring is in coil bind. There must always be an air gap between the spring coils. Failure to observe this can result in blade and wheel shaft breakage. Excessive blade tension will not make a dull or inappropriate blade cut any straighter.

## UPPER & LOWER GUIDE ADJUSTMENT

If blade size is changed or the blade tracking readjusted, the blade guides must be readjusted. Guide adjustment should be done after blade tracking and tension adjustments have been completed. The following procedure is for a total adjustment of the Carter™ CP series of guides.

1. Loosen thumbscrew #1 and shift thrust wheel #2 rear ward away from blade.
2. Loosen screw #4 and by turning knurled adjusting knobs #5 back, guide jaws #3 away from the side of the blade.
3. Verify that the blade is not contacting either the upper guard throat plate 20-214 or the table throat plate 20A-36.
4. At this point it must be verified that the blade teeth are projecting past the front of the guide jaws, and that the guide jaw faces are parallel to the sides of the blade. The guide housing will have to be shifted and rotated on its 3/4" mounting stem to accomplish this, and then retightened.

5. Using the #5 knurled adjusting knobs, move the guide jaws in until they just contact the sides of the blade without shifting the blade, then lock the #4 screw. Repeat this procedure on the other guide.
6. The rear thrust wheels can then be moved forward and positioned approximately 1/64" from the back of the blade. The wheels should be set so that when the saw is running but not cutting, the thrust wheels do not spin. But when cutting pressure is applied and the blade shifts rearward slightly, the wheels take up the thrust and begin to rotate. This minimizes wear on the thrust wheel bearing but maintains adjustable blade support.



## TABLE TILT

The bandsaw table is tilted by means of a hand wheel operated screw and nut tilting mechanism. The 32A-10 rocker locking handle must be released before attempting to tilt the main table. If this is not done, tilt bracket or rocker breakage can result.

NOTE: To allow the main table to be tilted in a negative direction, the adjustable table stop 36-279 must be loosened and screwed down.

## INSTALLING BLADE

To install blade on saw, shut down power to saw, observing proper lock out procedures.

Remove table pin from table slot, open top and bottom guard doors, and open rear and front guard doors. Take blade in both hands and slide through table slot and over hand wheels. With the blade placed in the center of the wheels, increase tension on upper wheel with tension screw and knob. Set upper and lower blade guides so they clear the saw blade. Turn wheels by hand to check blade tracking. Follow procedures for blade tensioning and guide adjustment. Close the guards and re-establish power to the saw.

## OPTIONAL ELECTRIC BRAKING

If the band saw was factory equipped with electric braking, this system will automatically shut down the drive motor and apply fail safe braking to the wheels in the event of blade breakage or the blade running off the wheels. This braking action also activates from the stop station or application of foot brake.

# DIRECTIONS FOR MOUNTING RESAW ATTACHMENT ON NORTHFIELD BAND SAWS

The blade must ride in the center of the wheel. Then both upper and lower guide wheels must be brought forward so that they must make contact with the blade. The fence or stock is placed on the right of the blade and the guide parallel to the slot in the table. The fence is brought forward so that the large roller makes contact with the side of the blade. (**NOTE:** The fence must be parallel to the slot.) The holes are marked out so they are at right angles to the slot. It will require two (2) or more holes for each slot. The spring tension assembly is mounted so that the rollers touch the side of the blade and the slot for the hold down screws at an approximate angle of 130° from the slot in the table. The holes are then marked out.

# INSTALLATION INSTRUCTIONS FOR ENDLESS NEOPRENE BANDSAW TIRES

Completely remove old tire and adhesive from wheel. Aerosol gasket and decal remover (available at automotive parts houses) will help in softening old adhesive. Then wipe down with a non-flammable solvent and let dry.

Place vertically a piece of shafting, slightly smaller than the bore of the wheel, in a bench vise. Place the wheel over this shaft so that it can be rotated easily to facilitate spreading the epoxy. Clean the rough side of the tire with solvent and let dry.

Apply epoxy adhesive to the wheel. We recommend 3M DP-190 Epoxy. It applies with a gun and mixes in its own mixing chamber. Use a putty knife or a CLEAN stiff-bristled brush to spread an even coat onto the rim. **DO NOT RUSH!** You have 1-1/2 hours before the epoxy sets.

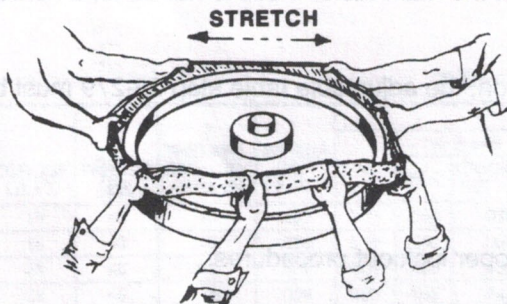


FIG. 1

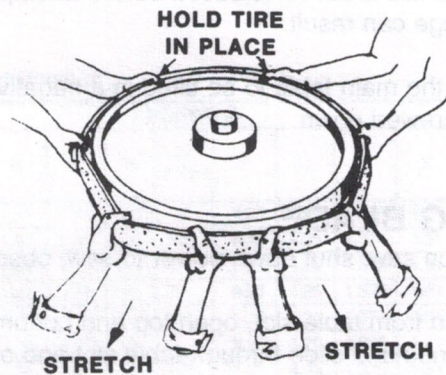


FIG. 2

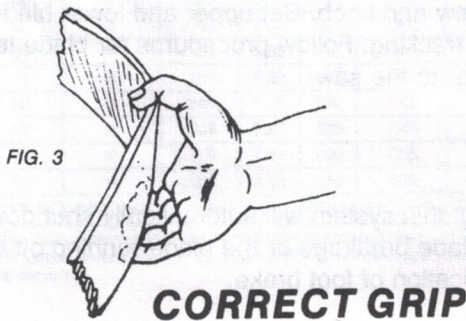


FIG. 3

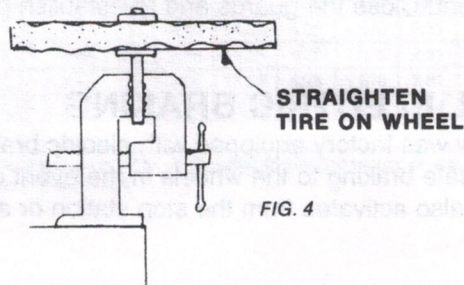


FIG. 4

With cleaned rough side of the tire on the inside, position the tire on the flat web of the wheel. We recommend at least four people with CLEAN HANDS be used to evenly stretch the tire to the diameter of the wheel prior to placing over the rim. This is necessary to ensure that there are no thick and thin spots in the tire to minimize any out of round condition. The tires are intentionally wider than the rim of the wheel, so center the tire overlap on the rim for later trimming. Pat the tire face with the palm of your hand to eliminate any air pockets trapped by the epoxy.

Remove the wheel from the vertical shaft in the vise and allow to cure for 48 hours. The wheel should be placed vertically on a horizontal shaft so that the weight of the tire does not allow it to slide on the slippery epoxy prior to curing. Do not set the wheel on the floor.

After the epoxy has cured, a sharp knife can be used to trim the excess tire from the sides of the rim. A disc sander with an 80 grit soft disc can be used to give the rim edge a finished appearance. The wheel is now ready for balancing and reinstallation onto the machine.

**NOTE:** Wheels sent to the factory for reconditioning are ground for concentricity with a slight crown to enhance blade tracking prior to balancing.

# INSTRUCTIONS FOR ASSEMBLY OF UPPER AND LOWER QUILL GROUPS FOR NORTHFIELD 36" BAND SAWS

Refer to DWG. 36-413 and 36-414 of the illustrated parts section and follow steps as outlined below.

## LOWER QUILL — 36"

- Step One: Press 36-171 on longer machined end of 36-169, then slip on washer which is locked with 36-172.
- Step Two: Press the part assembled in step one into the larger end of housing 36-13N. Lock cover 36-35 in place using three 36-227 bolts.
- Step Three: Turn quill end for end and proceed in same manner starting with 36-170. Slip on washer and lock with 36-172. Install cover 36-34, locking it with three 36-227 bolts.

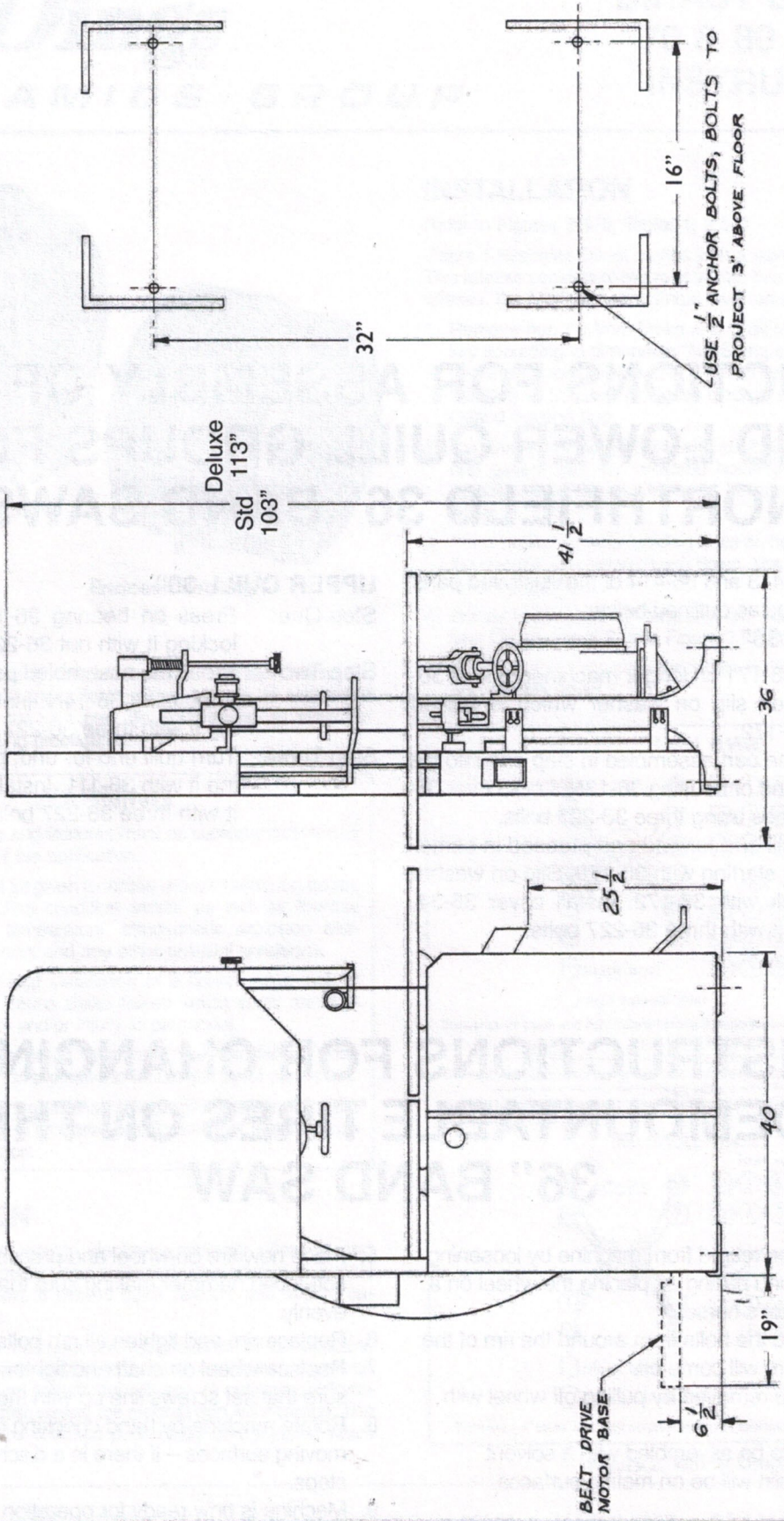
## UPPER QUILL 36"

- Step One: Press on bearing 36-108 on shaft 36-110 locking it with nut 36-225.
- Step Two: Press the assembled part into the larger end of housing 36-14N. Install cover 36-34 locking it with three 36-227 bolts.
- Step Three: Turn quill end for end, press on 36-109 locking it with 36-111. Install cover 36-36 locking it with three 36-227 bolts.

# INSTRUCTIONS FOR CHANGING DEMOUNTABLE TIRES ON THE 36" BAND SAW

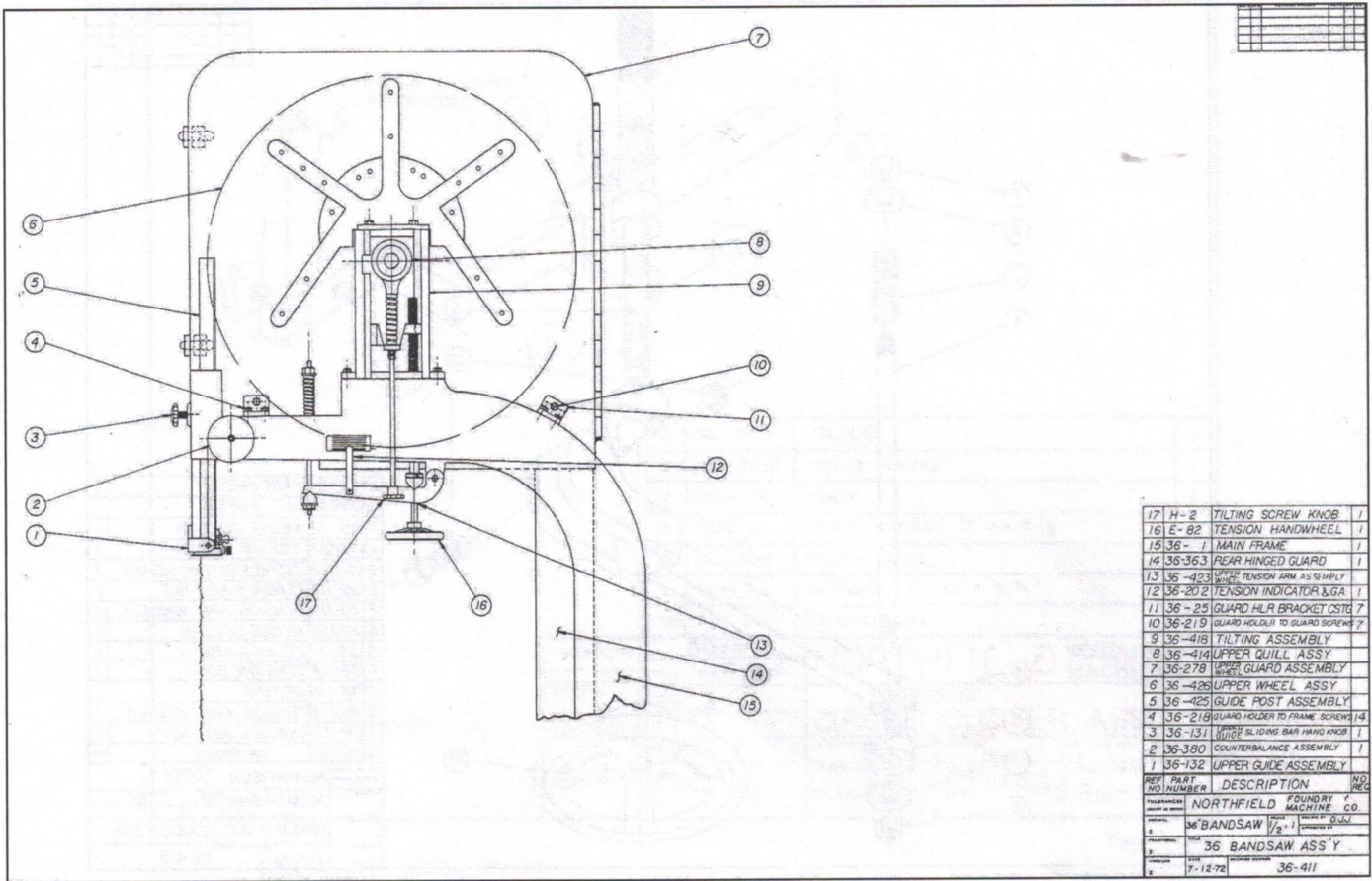
1. Remove wheel to be retired from machine by loosening set screws in hub and pulling off placing the wheel on a box, or two carpenter's horses.
2. Loosen and remove the bolts from around the rim of the wheel so that the rim will come off.
3. The tire can now be removed by pulling off wheel with pliers, etc.
4. Clean all surfaces to be assembled with a solvent cleaner so that no dirt will be on mating surfaces.
5. Place new tire on wheel and proceed to tap on with a soft-faced hammer making sure that the tire goes on evenly.
6. Replace rim and tighten all rim bolts securely.
7. Replace wheel on shaft and tighten set screws making sure that set screws line up with the previous setting.
8. Rotate machine by hand checking for straightness of all moving surfaces – if there is a discrepancy, recheck all steps.
9. Machine is now ready for operation.

NO.	DATE	REVISIONS RECORD	AUTH.	CHK.



TOLERANCES EXCEPT AS NOTED		SCALE	DRAWN BY
DECIMAL	±	36" B. S.	None
FRACTIONAL	±	FLOOR PLAN	
ANGULAR	±	DATE	DRAWING NUMBER
		4-10-75	36-4-41

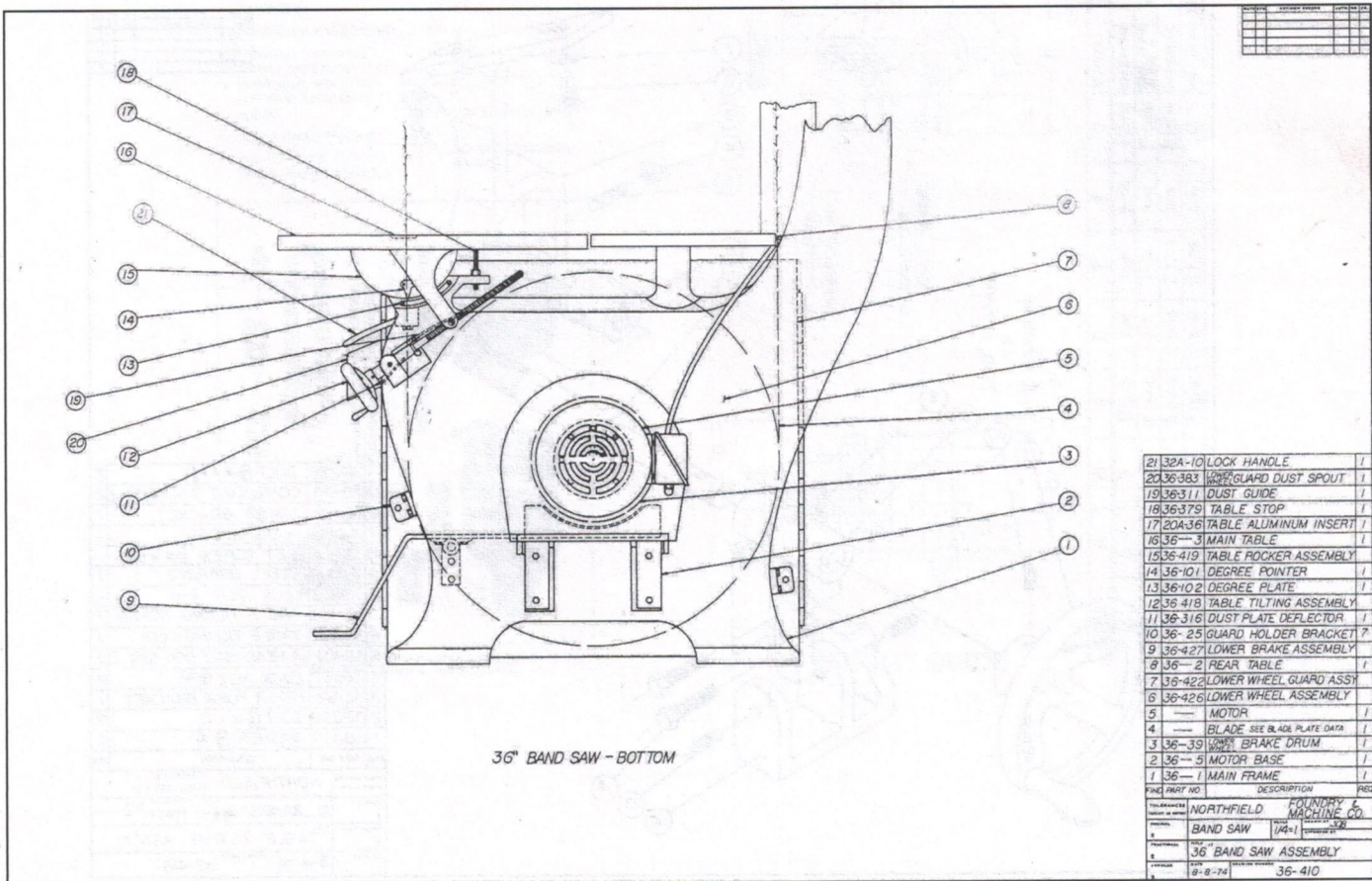
USE 1" Z ANCHOR BOLTS, BOLTS TO PROJECT 3" ABOVE FLOOR



REF NO	PART NUMBER	DESCRIPTION	QTY	REG
17	H-2	TILTING SCREW KNOB	1	
16	E-82	TENSION HANDWHEEL	1	
15	36-	MAIN FRAME	1	
14	36-363	REAR HINGED GUARD	1	
13	36-423	TENSION ARM ASSEMBLY	1	
12	36-202	TENSION INDICATOR & GA.	1	
11	36-25	GUARD HLR BRACKET CSTE	7	
10	36-219	GUARD HOLDER TO GUARD SCREW	7	
9	36-418	TILTING ASSEMBLY	1	
8	36-414	UPPER QUILL ASSY	1	
7	36-278	UPPER GUARD ASSEMBLY	1	
6	36-426	UPPER WHEEL ASSY	1	
5	36-425	GUIDE POST ASSEMBLY	1	
4	36-218	GUARD HOLDER TO FRAME SCREW	14	
3	36-131	UPPER SLIDING BAR HAND KNOB	1	
2	36-380	COUNTERBALANCE ASSEMBLY	1	
1	36-132	UPPER GUIDE ASSEMBLY	1	

REF NO	PART NUMBER	DESCRIPTION	QTY	REG
1	36	BANDSAW 1/2"	1	
2	36	BANDSAW ASS'Y	1	
3	7-12-72			36-411

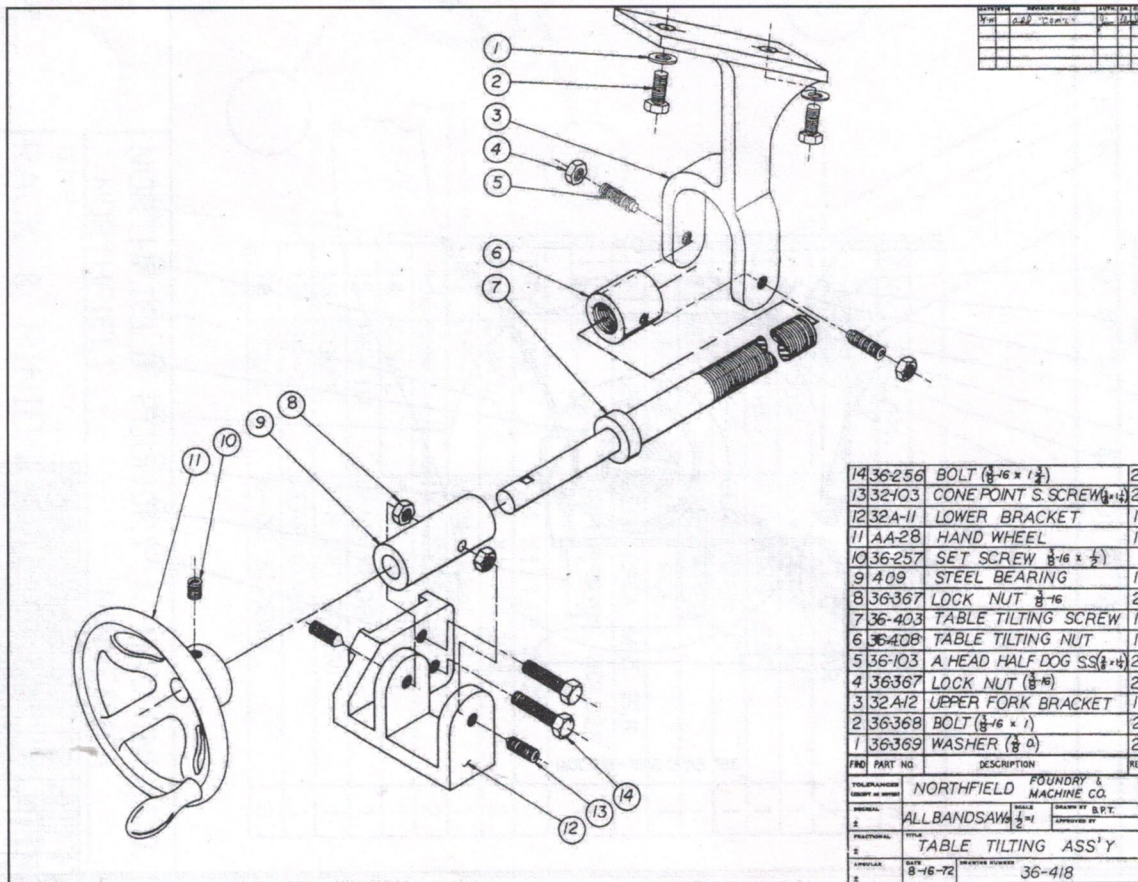
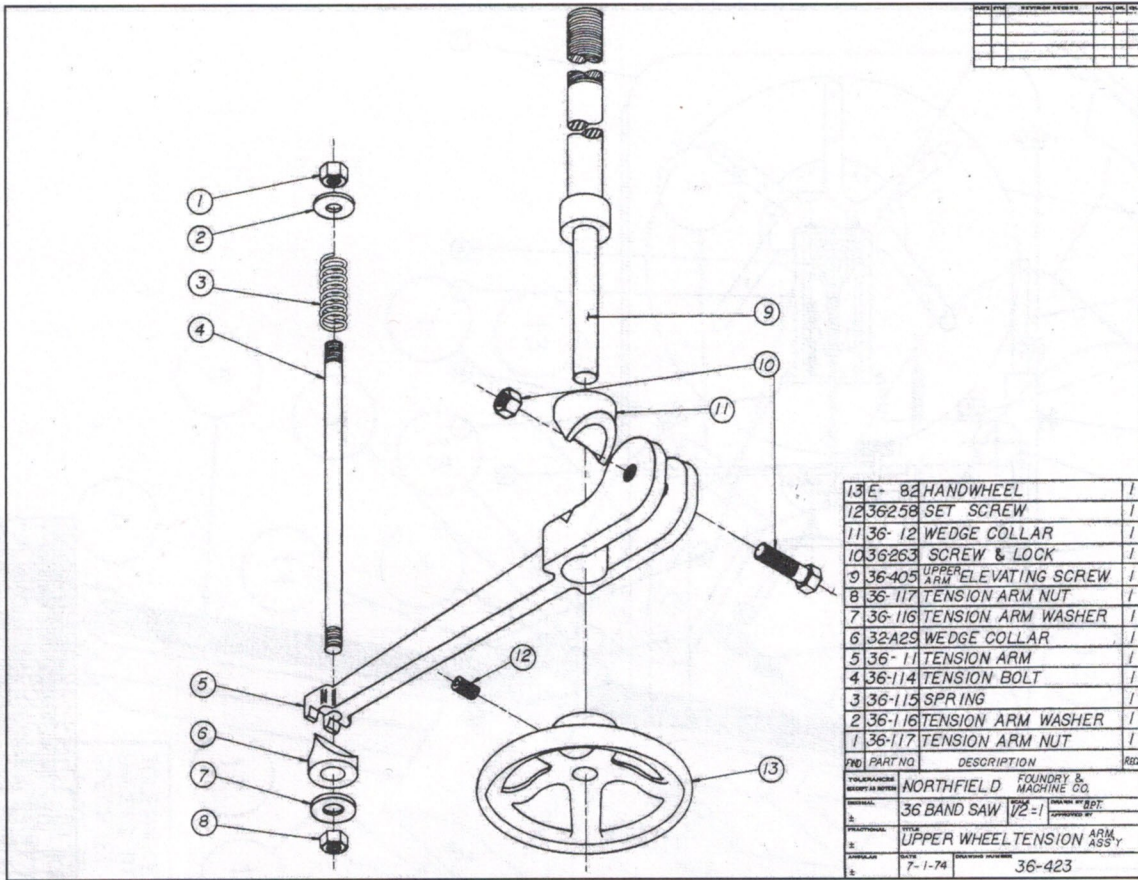


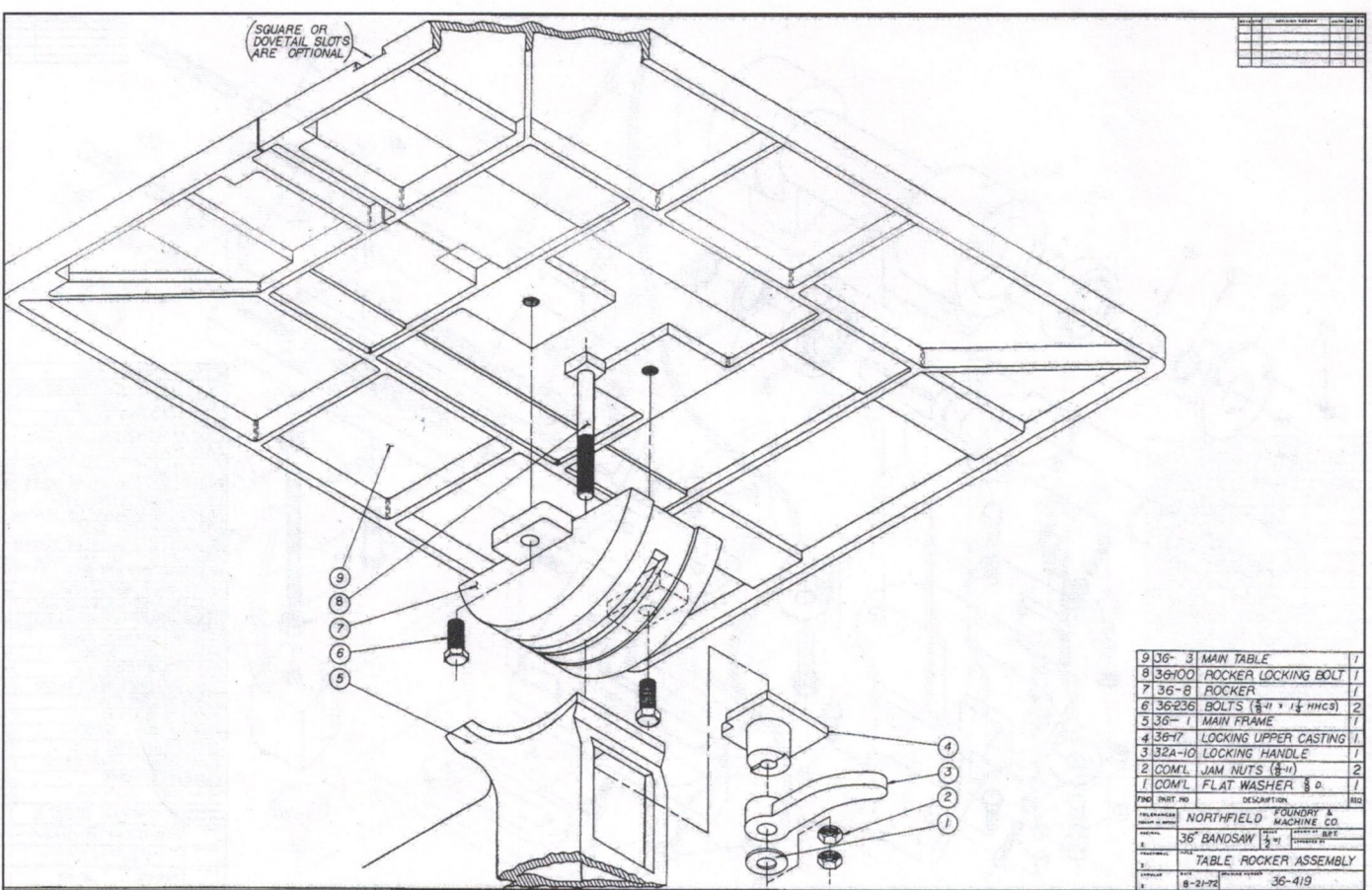
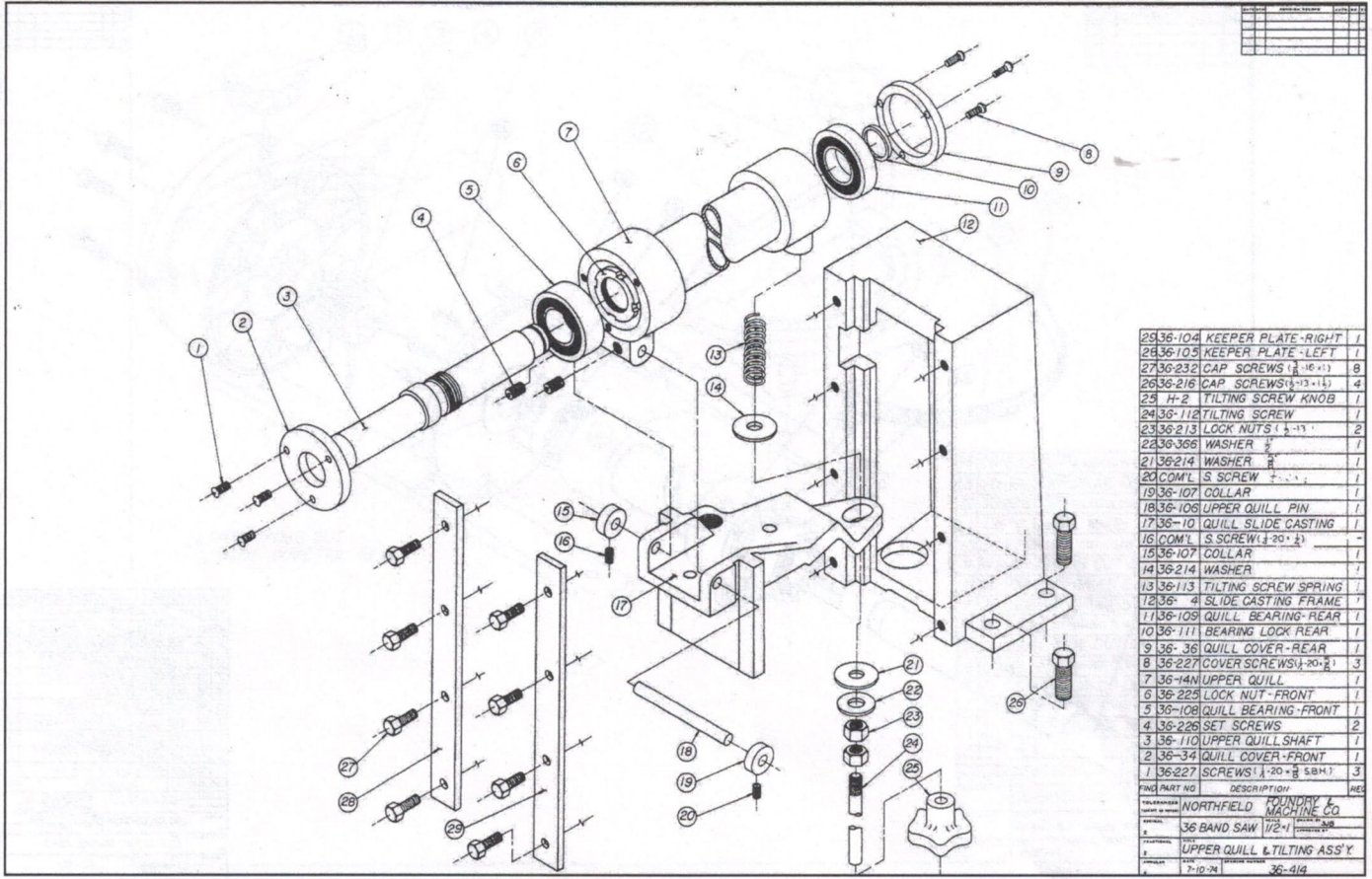
36" BAND SAW - BOTTOM

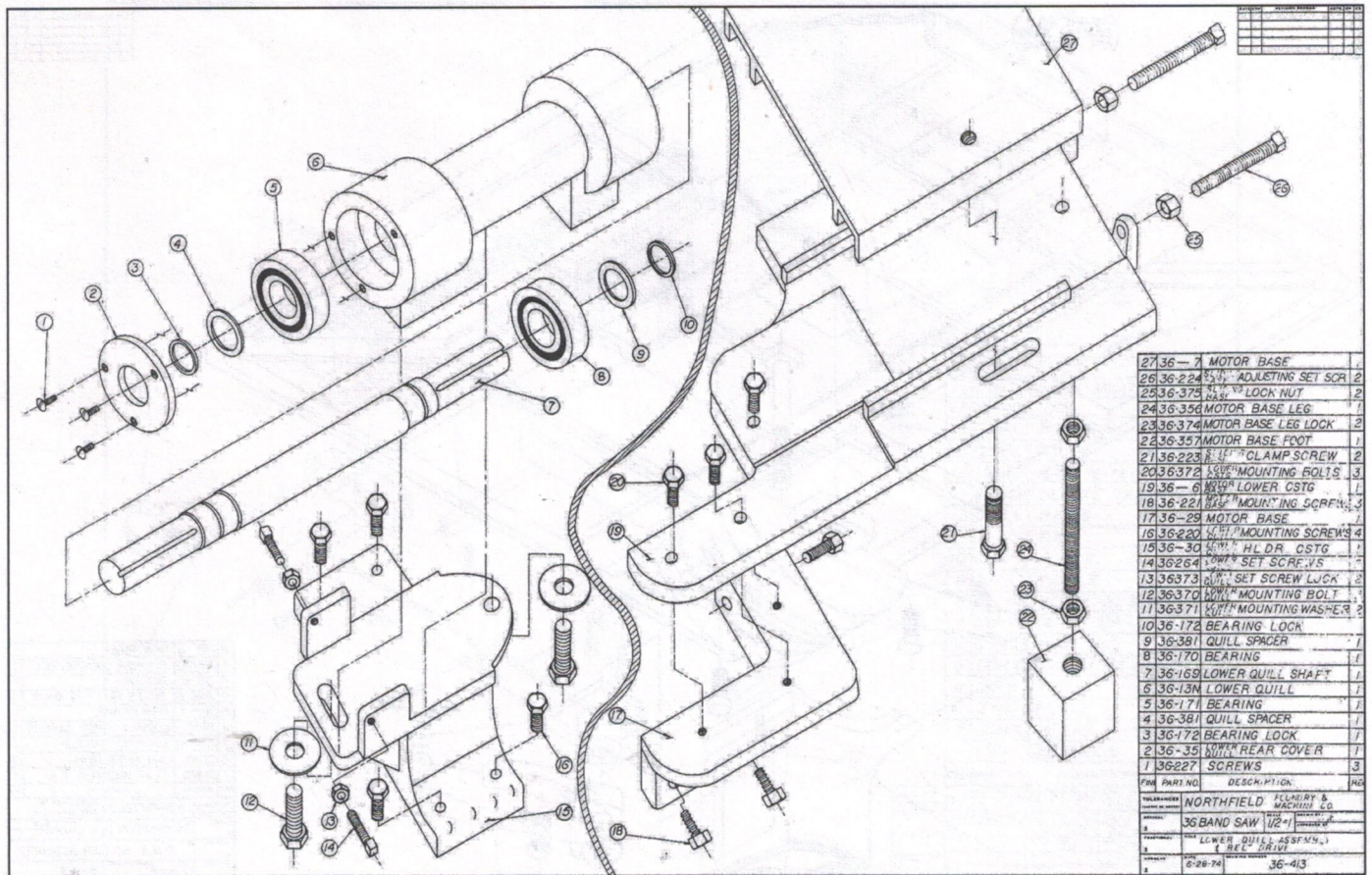
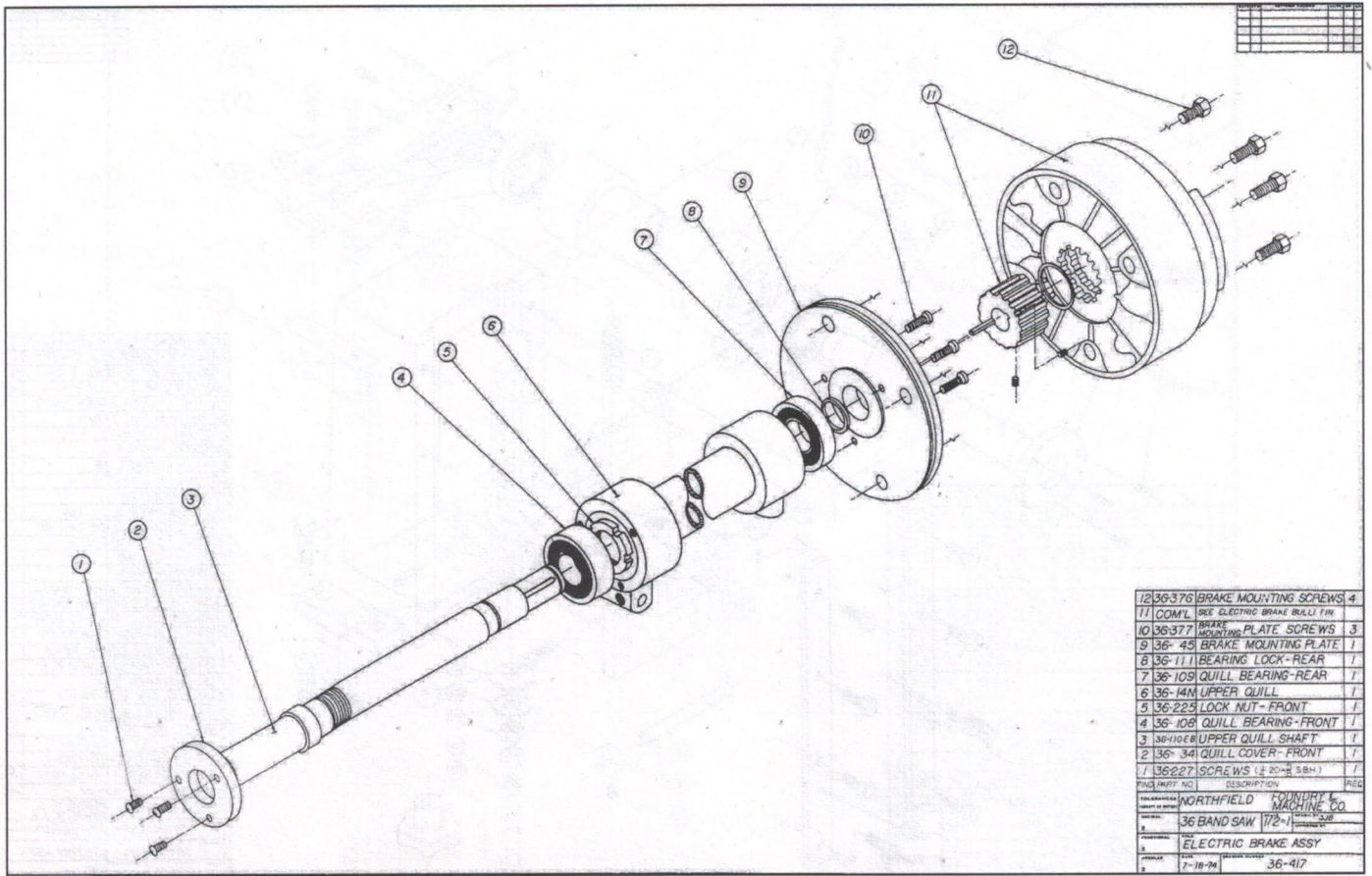
REF NO	PART NUMBER	DESCRIPTION	QTY	REG
21	32A-10	LOCK HANDLE	1	
20	36-383	GUARD DUST SPOUT	1	
19	36-311	DUST GUIDE	1	
18	36-379	TABLE STOP	1	
17	20A-36	TABLE ALUMINUM INSERT	1	
16	36-3	MAIN TABLE	1	
15	36-419	TABLE POCKER ASSEMBLY	1	
14	36-101	DEGREE POINTER	1	
13	36-102	DEGREE PLATE	1	
12	36-418	TABLE TILTING ASSEMBLY	1	
11	36-316	DUST PLATE DEFLECTOR	1	
10	36-25	GUARD HOLDER BRACKET	7	
9	36-427	LOWER BRAKE ASSEMBLY	1	
8	36-2	REAR TABLE	1	
7	36-422	LOWER WHEEL GUARD ASSY	1	
6	36-426	LOWER WHEEL ASSEMBLY	1	
5		MOTOR	1	
4		BLADE SEE BLADE PLATE DATA	1	
3	36-39	WHEEL BRAKE DRUM	1	
2	36-5	MOTOR BASE	1	
1	36-	MAIN FRAME	1	

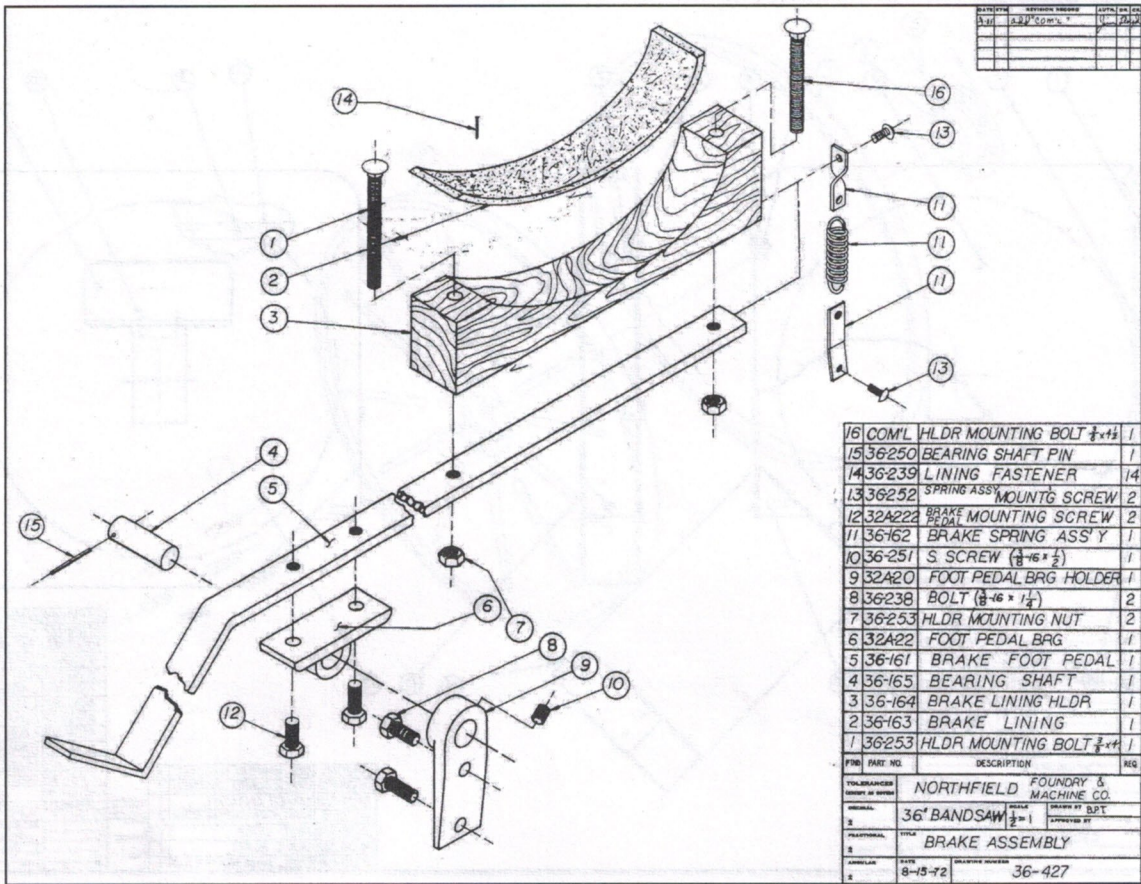
REF NO	PART NUMBER	DESCRIPTION	QTY	REG
1	36	BAND SAW 1/2"	1	
2	36	BAND SAW ASSEMBLY	1	
3	8-8-74			36-410





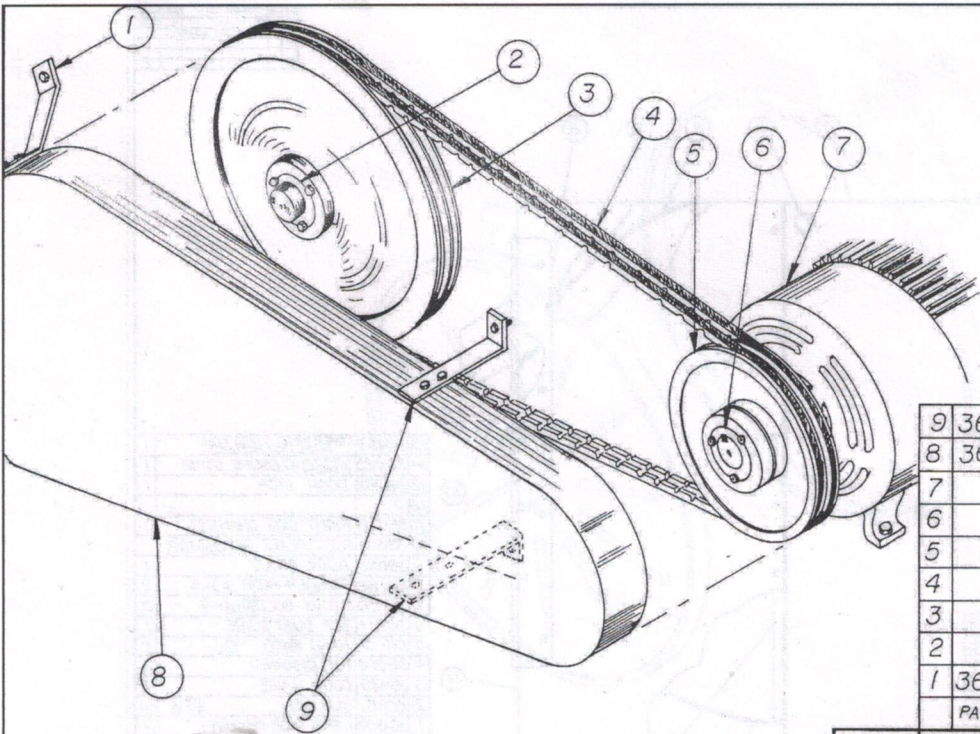






QTY	DESCRIPTION	REQ
1	1/6 COM'L HLDR MOUNTING BOLT 3/8 x 1 1/2	1
1	15 36250 BEARING SHAFT PIN	1
14	14 36239 LINING FASTENER	14
2	13 36252 SPRING ASS'Y MOUNTG SCREW	2
2	12 32A222 BRAKE MOUNTING SCREW	2
1	11 36162 BRAKE SPRING ASS'Y	1
1	10 36251 S SCREW (3/8 x 1 1/2)	1
1	9 32A20 FOOT PEDAL BRG HOLDER	1
2	8 36238 BOLT (3/8 x 1 1/2)	2
2	7 36253 HLDR MOUNTING NUT	2
1	6 32A22 FOOT PEDAL BRG	1
1	5 36161 BRAKE FOOT PEDAL	1
1	4 36165 BEARING SHAFT	1
1	3 36164 BRAKE LINING HLDR	1
1	2 36163 BRAKE LINING	1
1	1 36253 HLDR MOUNTING BOLT 3/8 x 1 1/2	1

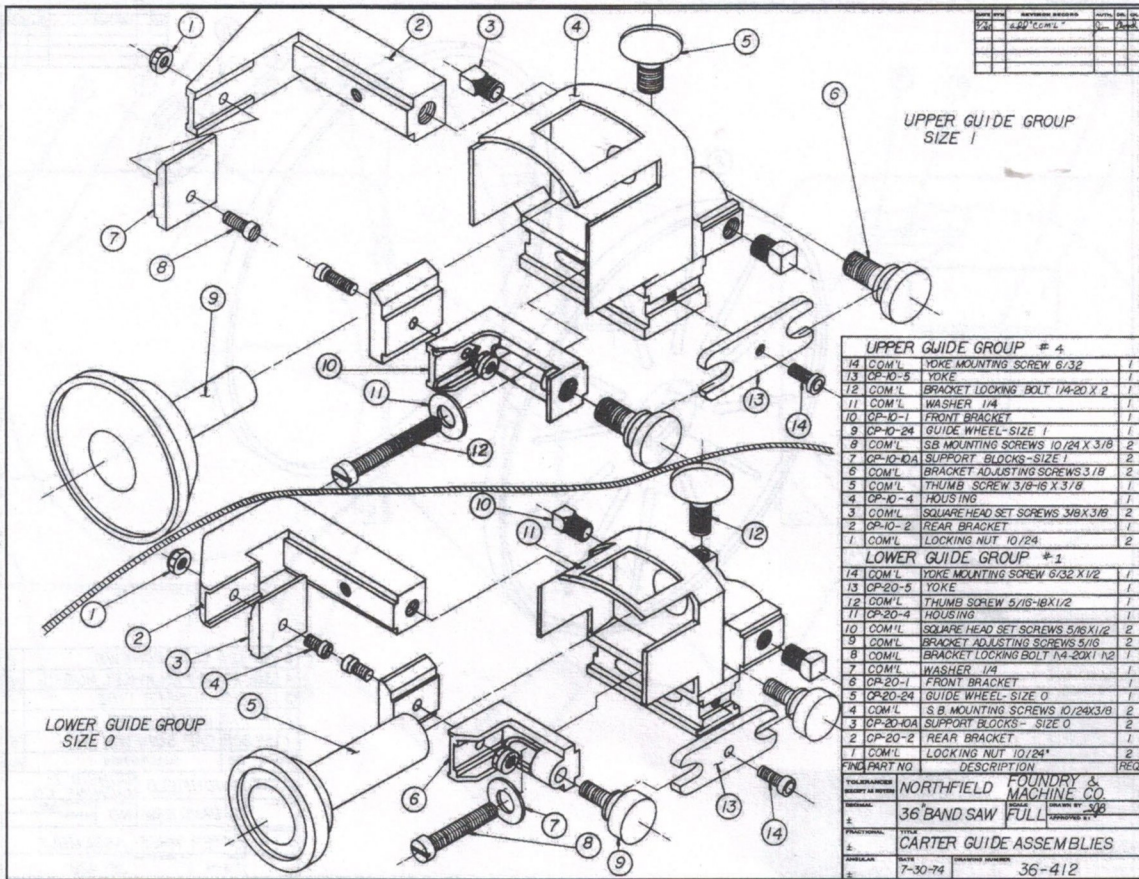
TOLERANCES UNLESS OTHERWISE SPECIFIED		NORTHFIELD FOUNDRY & MACHINE CO.	
DECIMAL	± .005	FRACTIONAL	± 1/32"
FRACTIONAL	± 1/32"	ANGULAR	± .005"
ANGULAR	± .005"	DATE	8-15-72
PART NO.		DESCRIPTION	
36 BANDSAW		BRAKE ASSEMBLY	
DRAWN BY		36-427	



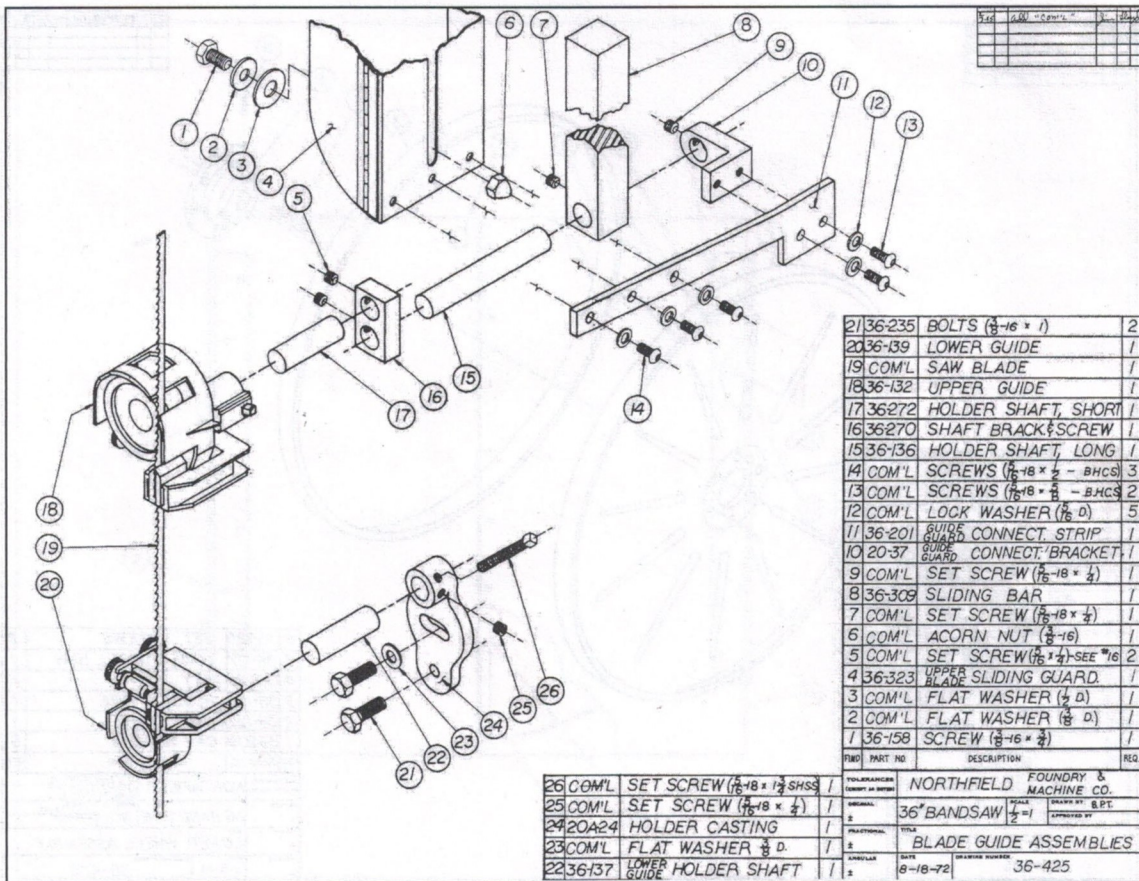
QTY	DESCRIPTION	REQ
2	9 36-473 SIDE GUARD BRACKET	2
1	8 36-474 BELT GUARD	1
1	7 MOTOR	1
1	6 BUSHING	1
1	5 PULLEY	1
1	4 BELT	1
1	3 PULLEY	1
1	2 BUSHING	1
1	1 36-472 END GUARD BRACKET	1
PART NO.		DESCRIPTION
		REQ

TOLERANCES (EXCEPT AS NOTED)	NO.	DATE	BY
DECIMAL	1		
FRACTIONAL	2		
ANGULAR	3		

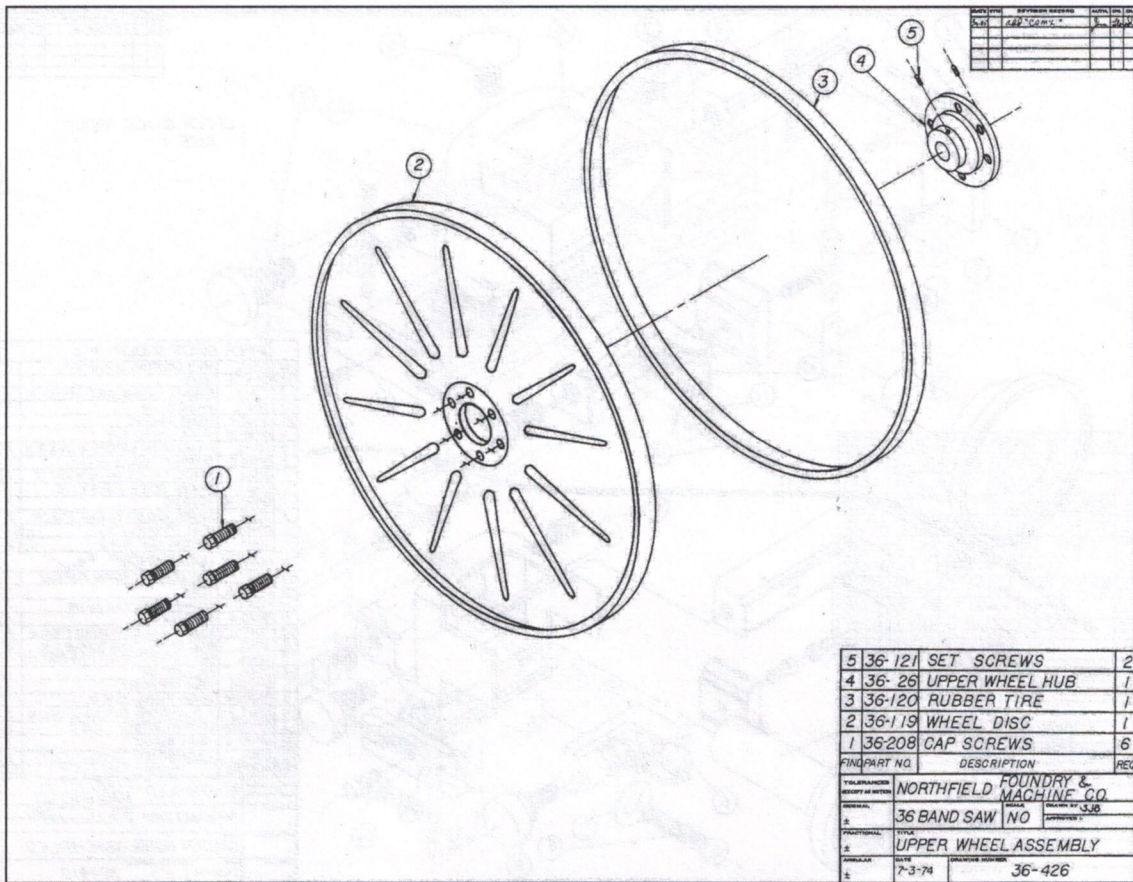
NORTHFIELD MACHINES			
BANDSAW BELT GUARD ASS'Y			
DRAWN BY	SCALE	NONE	MATERIAL
CHK'D	DATE	6-23-84	DRAWING NO.
TRACED	APPROV		36-475



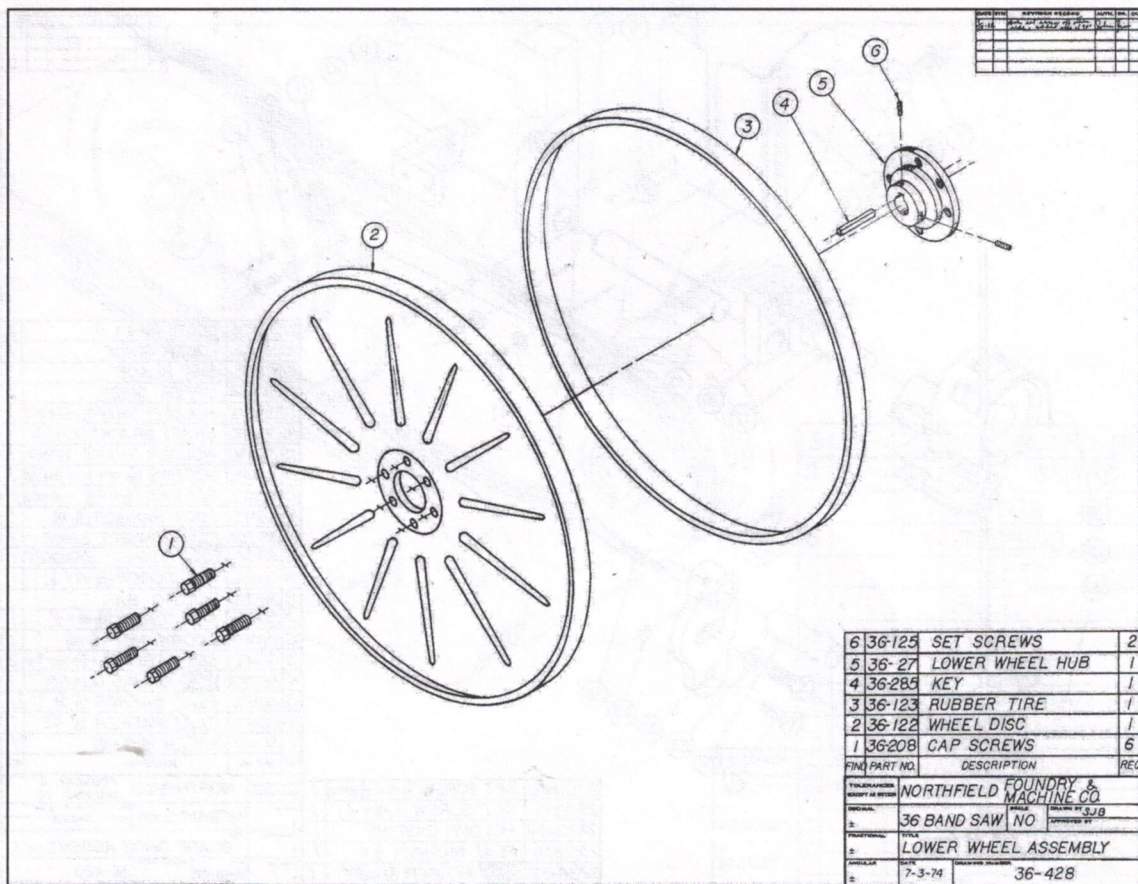
UPPER GUIDE GROUP # 4			
14	COM'L	YOKE MOUNTING SCREW 6/32	1
13	CP-20-5	YOKE	1
12	COM'L	BRACKET LOCKING BOLT 1/4-20 X 2	1
11	COM'L	WASHER 1/4	1
10	CP-10-1	FRONT BRACKET	1
9	CP-10-24	GUIDE WHEEL-SIZE 1	1
8	COM'L	SB MOUNTING SCREWS 10/24 X 3/8	2
7	CP-10-10A	SUPPORT BLOCKS-SIZE 1	2
6	COM'L	BRACKET ADJUSTING SCREWS 3/8	2
5	COM'L	THUMB SCREW 3/8-16 X 3/8	1
4	CP-10-4	HOUSING	1
3	COM'L	SQUARE HEAD SET SCREWS 3/8 X 3/8	2
2	CP-10-2	REAR BRACKET	1
1	COM'L	LOCKING NUT 10/24	2
LOWER GUIDE GROUP # 1			
14	COM'L	YOKE MOUNTING SCREW 6/32 X 1/2	1
13	CP-20-5	YOKE	1
12	COM'L	THUMB SCREW 5/16-18 X 1/2	1
11	CP-20-4	HOUSING	1
10	COM'L	SQUARE HEAD SET SCREWS 5/16 X 1/2	2
9	COM'L	BRACKET ADJUSTING SCREWS 5/16	2
8	COM'L	BRACKET LOCKING BOLT 1/4-20 X 1 1/2	1
7	COM'L	WASHER 1/4	1
6	CP-20-1	FRONT BRACKET	1
5	CP-20-24	GUIDE WHEEL-SIZE 0	1
4	COM'L	S B MOUNTING SCREWS 10/24 X 3/8	2
3	CP-20-10A	SUPPORT BLOCKS-SIZE 0	2
2	CP-20-2	REAR BRACKET	1
1	COM'L	LOCKING NUT 10/24	2
FINI PART NO DESCRIPTION REQ			
TOLERANCES UNLESS OTHERWISE SPECIFIED			
NORTHFIELD FOUNDRY & MACHINE CO.			
36" BANDSAW FULL			
CARTER GUIDE ASSEMBLIES			
DATE	REVISED NUMBER		
7-30-74	36-412		



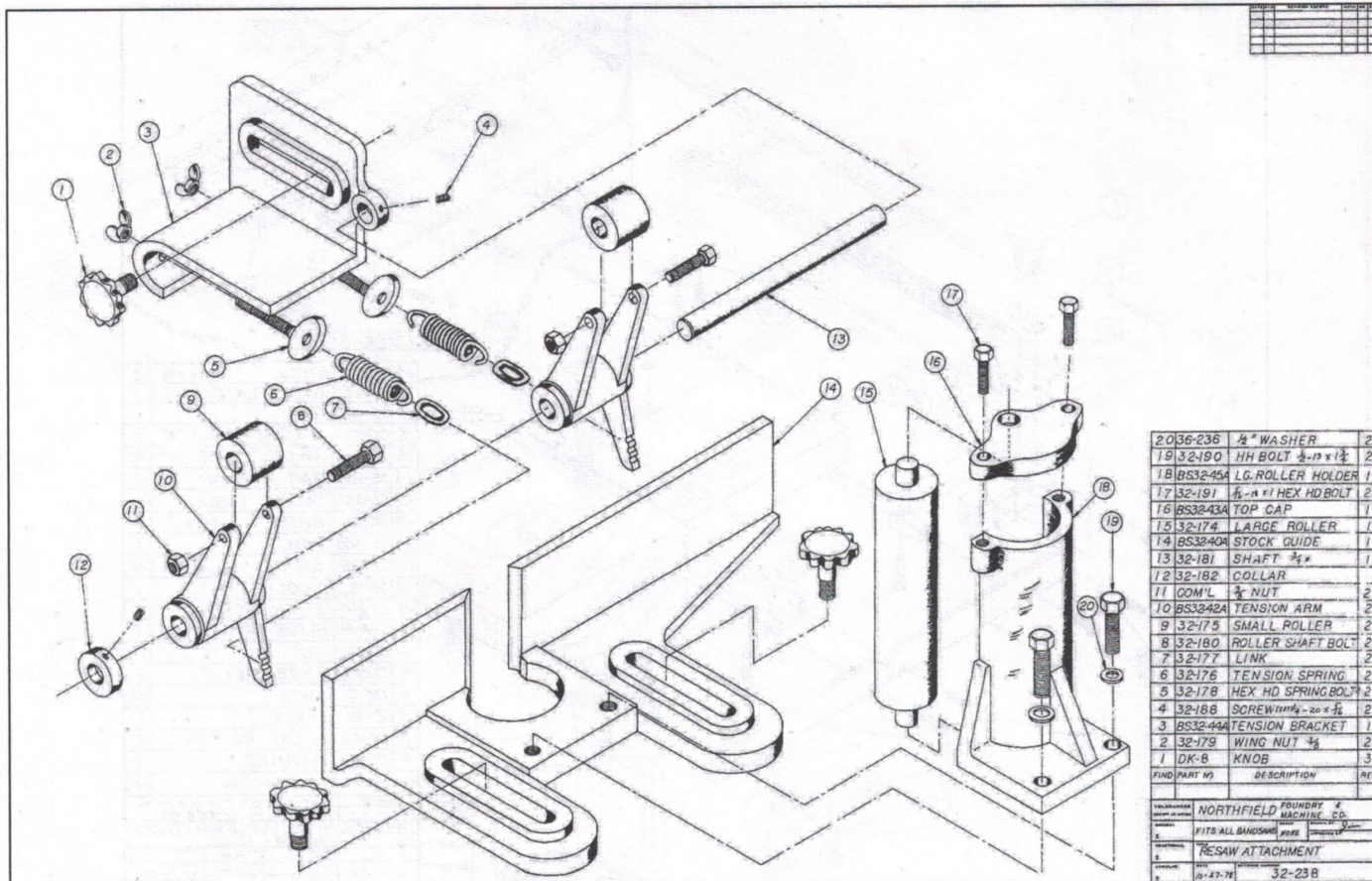
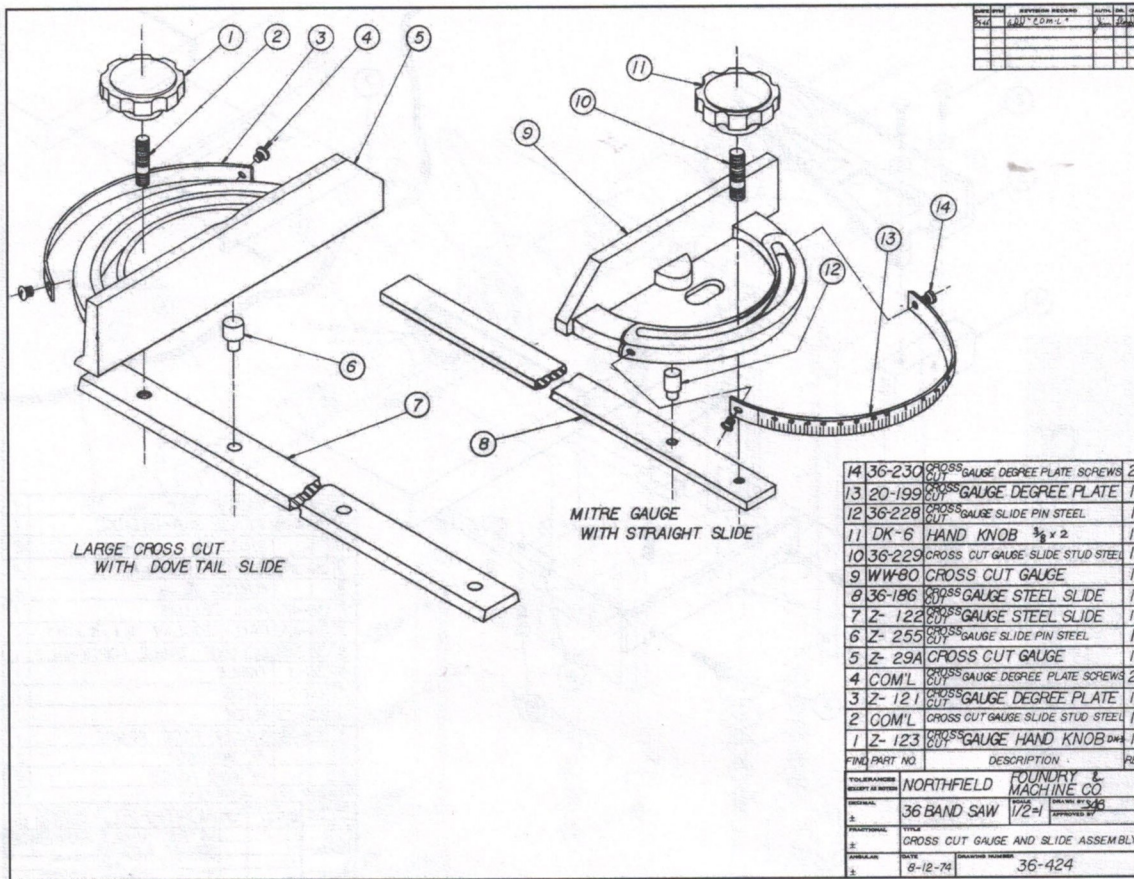
21	36-235	BOLTS (3/8-16 x 1)	2
20	36-139	LOWER GUIDE	1
19	COM'L	SAW BLADE	1
18	36-132	UPPER GUIDE	1
17	36-272	HOLDER SHAFT, SHORT	1
16	36-270	SHAFT BRACKET SCREW	1
15	36-136	HOLDER SHAFT, LONG	1
14	COM'L	SCREWS (7/8-18 x 2 - BHCS)	3
13	COM'L	SCREWS (7/8-18 x 2 - BHCS)	2
12	COM'L	LOCK WASHER (7/8 D)	5
11	36-201	GUIDE GUARD CONNECT STRIP	1
10	20-37	GUIDE GUARD CONNECT BRACKET	1
9	COM'L	SET SCREW (7/8-18 x 1/4)	1
8	36-309	SLIDING BAR	1
7	COM'L	SET SCREW (7/8-18 x 1/4)	1
6	COM'L	ACORN NUT (3/8-16)	1
5	COM'L	SET SCREW (7/8-18 x 1/4) SEE #16	2
4	36-323	UPPER BLADE SLIDING GUARD	1
3	COM'L	FLAT WASHER (1/2 D)	1
2	COM'L	FLAT WASHER (1/2 D)	1
1	36-158	SCREW (3/8-16 x 1/2)	1
FINI PART NO DESCRIPTION REQ			
TOLERANCES UNLESS OTHERWISE SPECIFIED			
NORTHFIELD FOUNDRY & MACHINE CO.			
36" BANDSAW			
DRAWN BY BPT			
CHECKED BY			
TITLE			
BLADE GUIDE ASSEMBLIES			
DATE	REVISED NUMBER		
8-18-72	36-425		

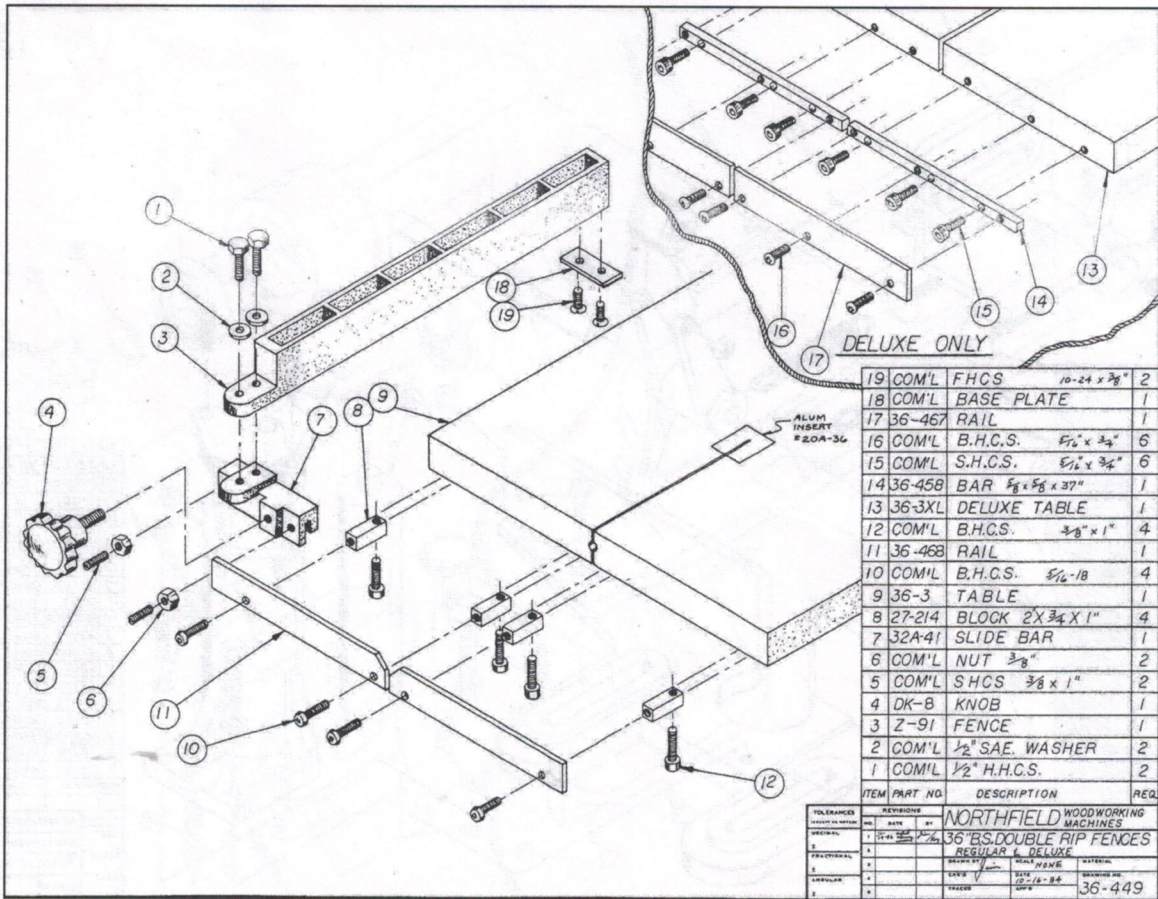
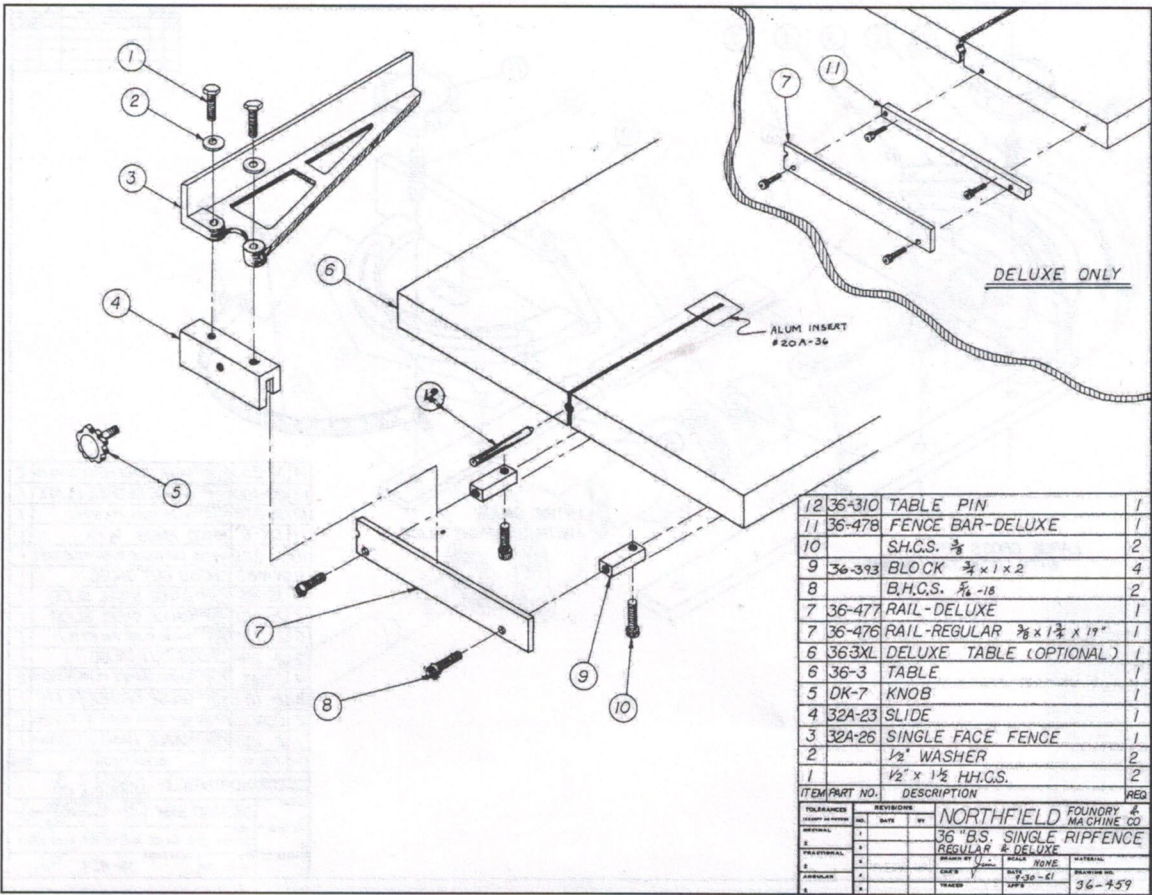


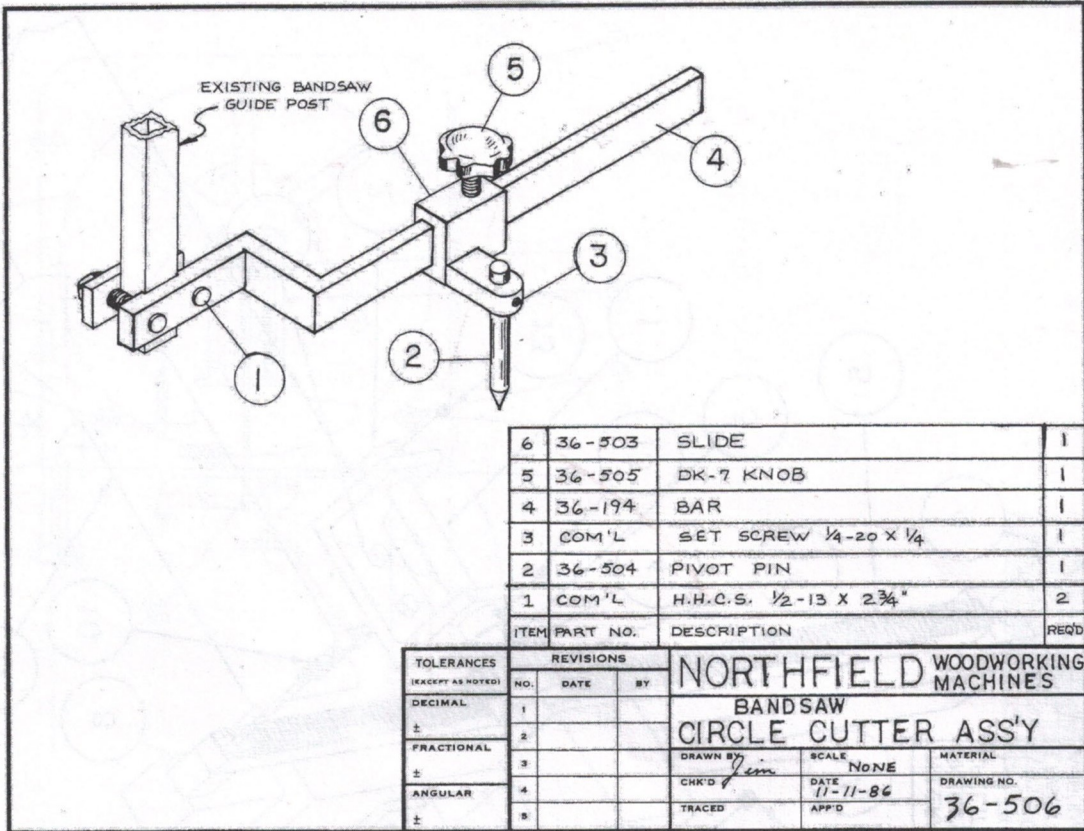
5	36-121	SET SCREWS	2
4	36-26	UPPER WHEEL HUB	1
3	36-120	RUBBER TIRE	1
2	36-119	WHEEL DISC	1
1	36-208	CAP SCREWS	6
FINI PART NO.		DESCRIPTION	REQ
TOLERANCES UNLESS OTHERWISE SPECIFIED			
NORTHFIELD FOUNDRY & MACHINE CO.			
36 BAND SAW	NO	DESIGNED BY	JJB
PROFITABLE TYPE			
UPPER WHEEL ASSEMBLY			
DATE	7-3-74	DRAWING NUMBER	36-426



6	36-125	SET SCREWS	2
5	36-27	LOWER WHEEL HUB	1
4	36-285	KEY	1
3	36-123	RUBBER TIRE	1
2	36-122	WHEEL DISC	1
1	36-208	CAP SCREWS	6
FINI PART NO.		DESCRIPTION	REQ
TOLERANCES UNLESS OTHERWISE SPECIFIED			
NORTHFIELD FOUNDRY & MACHINE CO.			
36 BAND SAW	NO	DESIGNED BY	JJB
PROFITABLE TYPE			
LOWER WHEEL ASSEMBLY			
DATE	7-3-74	DRAWING NUMBER	36-428

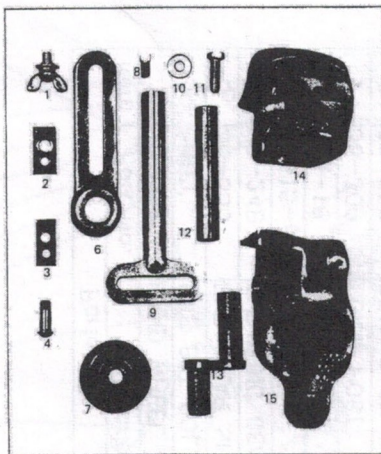




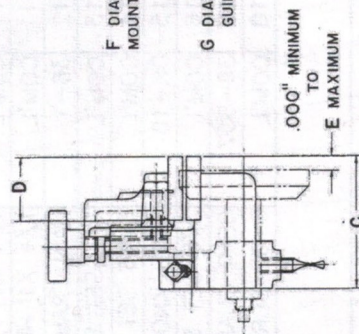
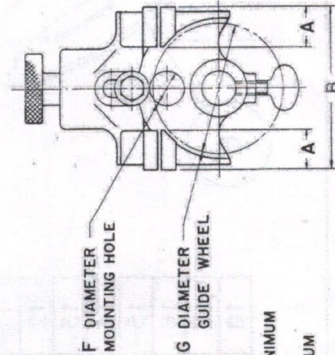


PARTS LIST—MODEL NO. 20

- 1. Wing Screw
- 2. Large Slide
- 3. Small Slide
- 4. Slide Connecting Screw
- 5. Assembly (two wing screws and one each of large slide, small slide and slide connecting screw)
- 6. Lower Guide Bracket
- 7. No. 617-R Ball Bearing Wheel, double sealed
- 8. 3/16" Set Screw
- 9. 3/4" Top Guide Shaft
- 10. Washer
- 11. 1/4 x 1" Cap Screw
- 12. 3/4" Lower Guide Shaft
- 13. Offset Lower Guide Shaft
- 14. Upper Guide Body Casting
- 15. Lower Guide Body Casting



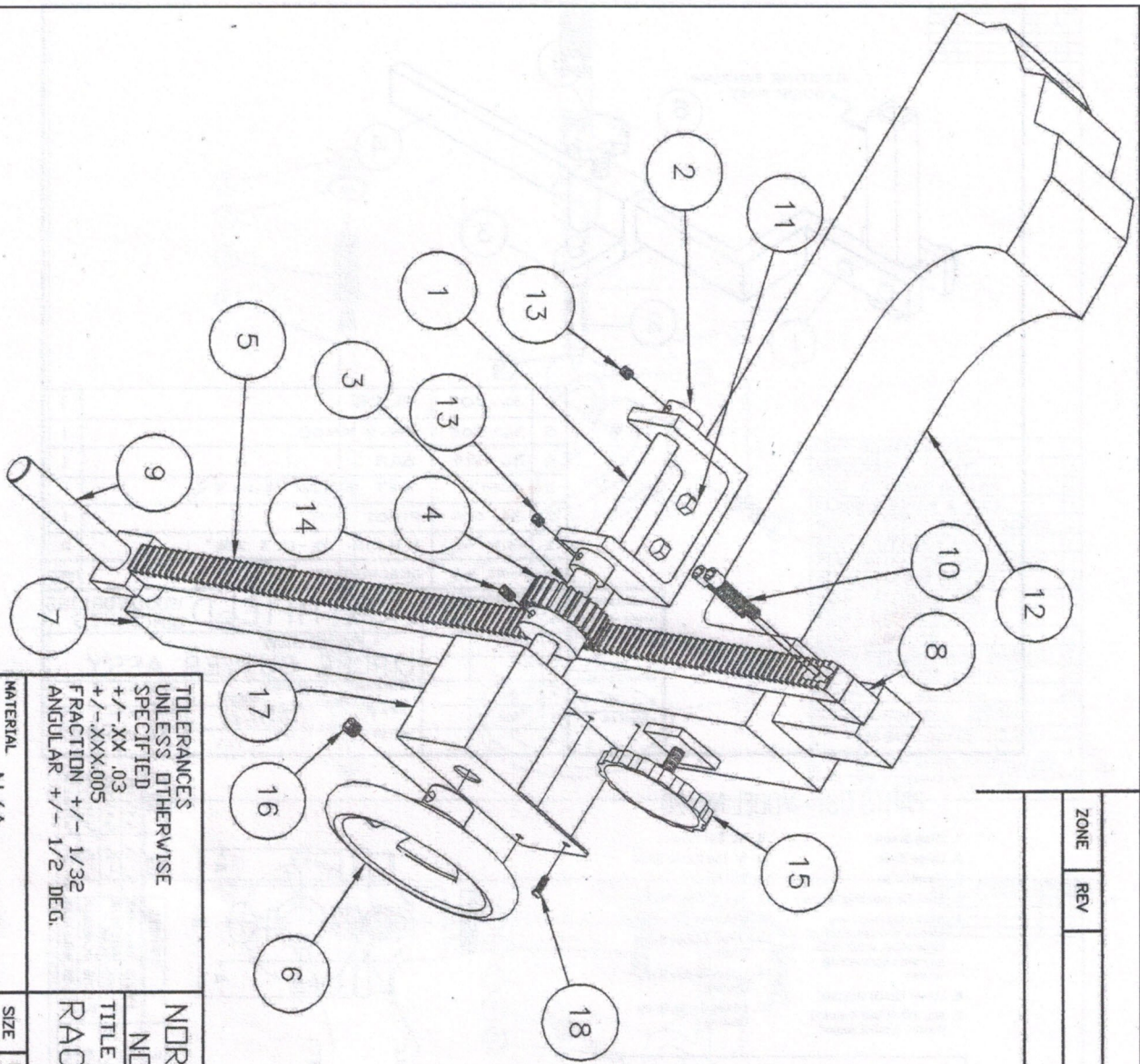
PADDOCK GUIDE



WRIGHT GUIDE

SIZE	A	B	C	D	E	F	G	WHEEL	WIDTH SAW	SIZE JAW
0	3/4	3	2 3/8	1 1/4	1 1/8	9/16	1 15/16	BALL BEAR	1 1/4	1 1/2 x 1 1/4
1	7/8	3 1/2	2 13/16	1 3/8	1 1/4	3/4	2 13/16	PLAIN BEAR	1 1/2	1 1/2 x 1 1/4
2	1 1/8	4 1/8	3 13/16	2 3/16	2 3/16	3/4	2 13/16	PLAIN BEAR	1 1/2	1 1/2 x 2 1/4
2	1 1/8	4 1/8	3 13/16	2 3/16	2 3/16	3/4	2 13/16	BALL BEAR	1 1/2	1 1/2 x 2 1/4

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



Parts list			
Item	Part No.	Description	Cn.
1	36-554	HAND WHEEL BRACKET	1
2	COM'L	5/8 SET COLLAR	2
3	36-555	ELEV GEAR SHAFT	1
4	ND-24B	ELEVATING GEAR	1
5	L-515-6	GEAR RACK	1
6	27A-18	HAND WHEEL	1
7	36-309	GUIDE POST	1
8	36-556	GEAR RACK MNT BLK	1
9	36-136	UPPER GUIDE HOLDER SHAFT	1
10	COM'L	1/4 X1 1/2 SHCS	2
11	COM'L	1/4 X1 HH BOLT	2
12	36-1	MAIN FRAME	1
13	COM'L	1/4 SET SCREW	2
14	COM'L	5/16 SET SCREW	1
15	DK-10	HAND KNOB	1
16	COM'L	3/8 SET SCREW	1
17	36-557	GEAR GUARD	1
18	COM'L	6-32 SCREWS	2

TOLERANCES UNLESS OTHERWISE SPECIFIED  
 +/- .XX .03  
 +/- .XXX .005  
 FRACTION +/- 1/32  
 ANGULAR +/- 1/2 DEG.

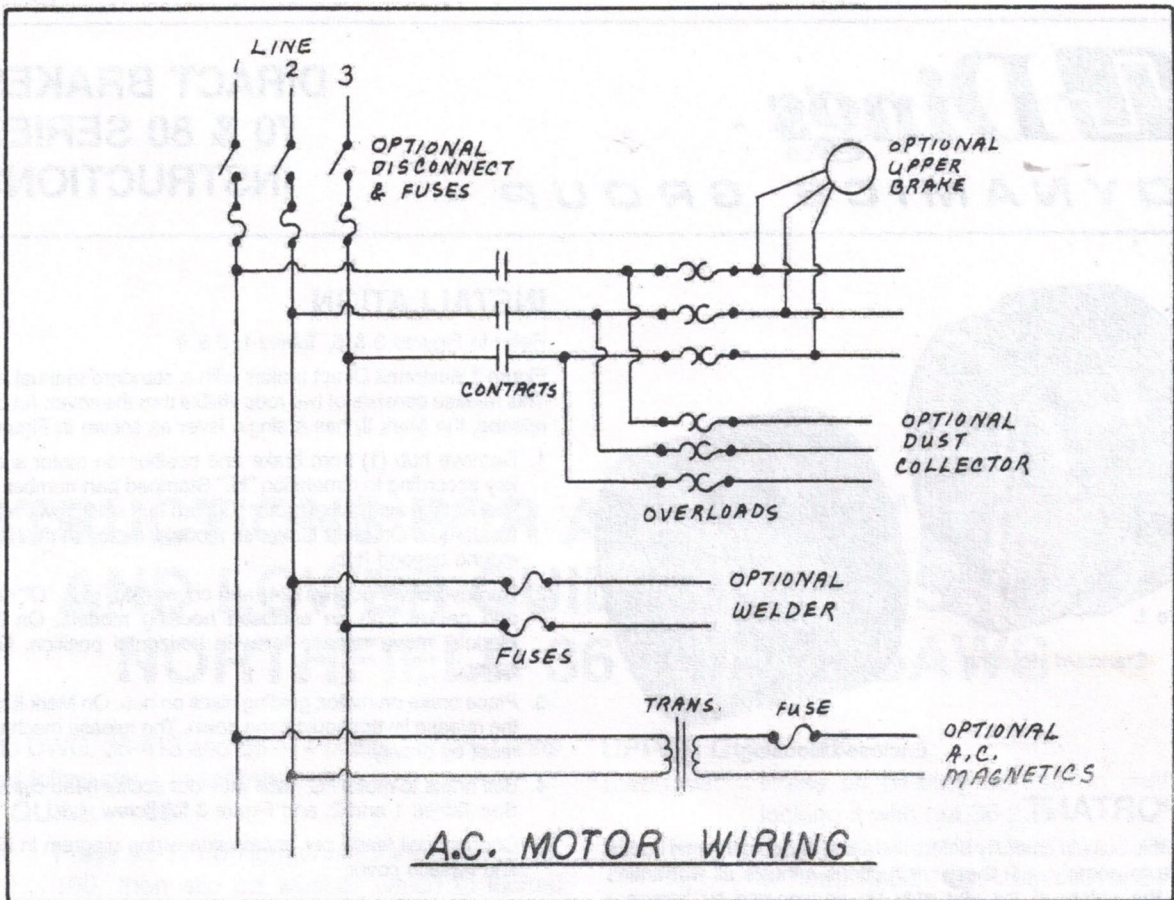
NORTHFIELD FOUNDRY & MACHINE CO.  
 NORTHFIELD MINNESOTA

TITLE  
 RACK & PINION ADJ. GUIDE POST

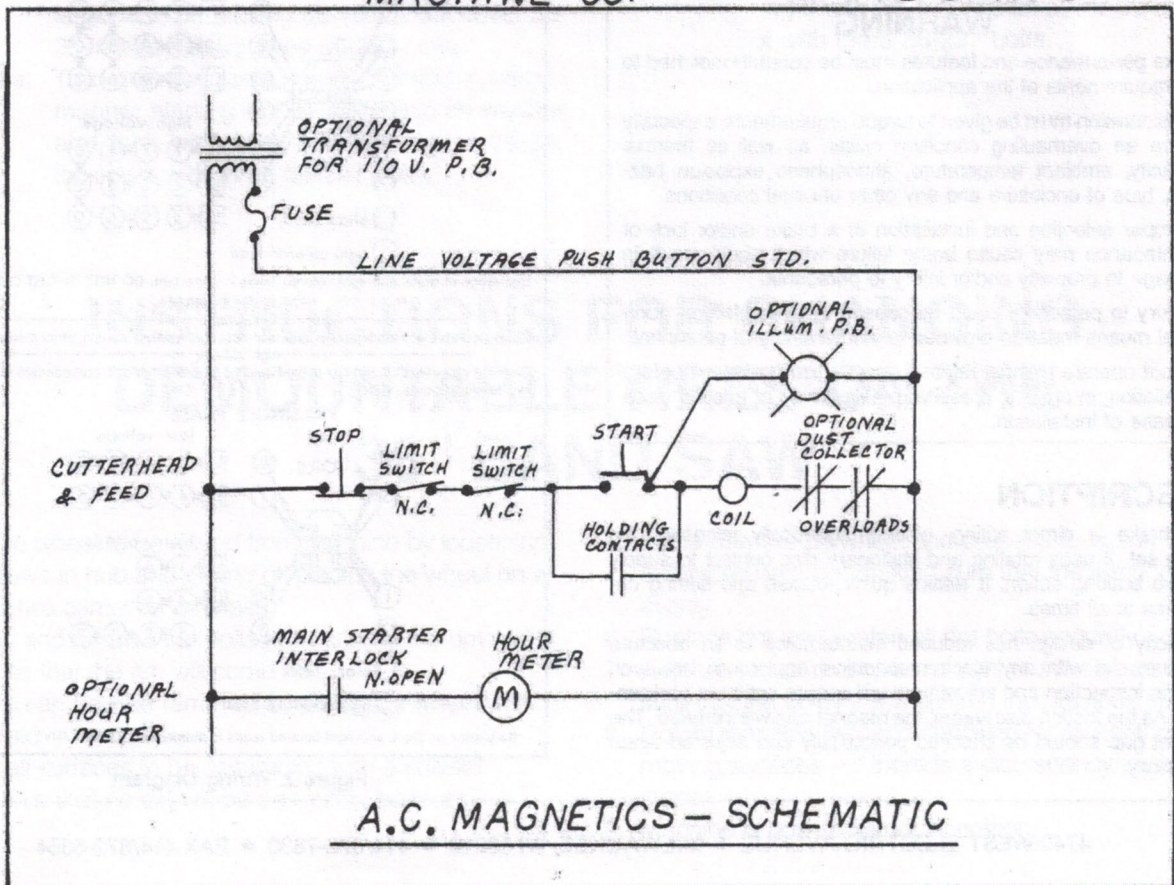
MATERIAL N/A  
 FINISH AS SPEC.

SIZE A  
 DRAWN BY N.L.  
 DWG NO. 36-553  
 REV A

Scale 1:4  
 DATE 11-02-99  
 Sheet 1 OF 1



NORTHFIELD FOUNDRY & MACHINE CO. — BANDSAWS



# Dings<sup>CO</sup>

## DYNAMICS GROUP

### DIRACT BRAKES 70 & 80 SERIES INSTRUCTIONS

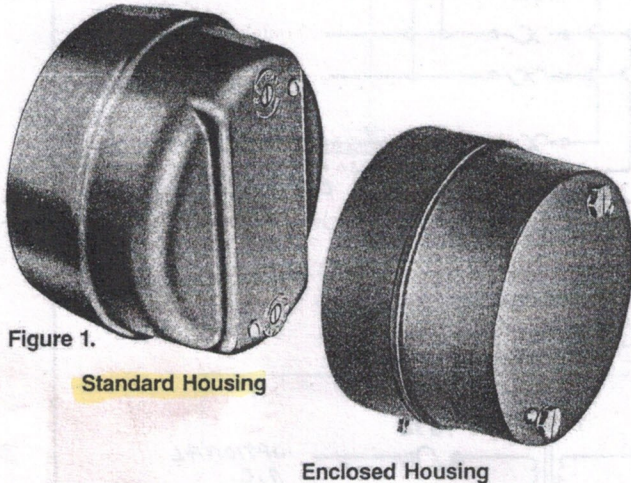


Figure 1.

Standard Housing

Enclosed Housing

### IMPORTANT

Read this bulletin carefully before installing or operating this brake. Failure to comply with these instructions cancels all warranties since the safety of the unit may be endangered by improper installation or operating procedures.

### WARNING

Brake performance and features must be carefully matched to the requirements of the application.

Consideration must be given to torque requirements, especially where an overhauling condition exists, as well as thermal capacity, ambient temperature, atmospheric explosion hazards, type of enclosure and any other unusual conditions.

Improper selection and installation of a brake and/or lack of maintenance may cause brake failure which could result in damage to property and/or injury to personnel.

If injury to personnel could be caused by brake failure, additional means must be provided to insure safety of personnel.

Do not operate manual release or energize brake coil before installation, in order to preserve prealignment of rotating discs for ease of installation.

### DESCRIPTION

This brake is direct acting, electromagnetically released and spring set. It uses rotating and stationary disc contact to supply positive braking action. It retains quick release and setting capabilities at all times.

Simplicity of design has reduced maintenance to an absolute minimum. As with any electromechanical equipment, however, periodic inspection and adjustment will assure optimum performance. As the friction disc wears, the magnet gap will increase. The magnet gap should be checked periodically and adjusted when necessary.

### INSTALLATION

Refer to Figures 3 & 5, Tables 1, 2 & 4

Figure 1 illustrates Direct brakes with a standard manual release. This release consists of two rods visible thru the cover. An optional release, the Mark II, has a single lever as shown in Figure 4.

1. Remove hub (1) from brake and position on motor shaft with key according to dimension "N." Stamped part number on hub should face away from motor. Tighten hub set screws with 12 ft. lbs. torque. On Mark II release models, motor shaft should not extend beyond hub.
2. Remove cover screws (24) and cover (23), plus "O" ring (28) and gasket (32) on enclosed housing models. On Mark II models, move release lever to horizontal position. Remove cover.
3. Place brake on motor, guiding discs on hub. On Mark II models, the release lever should hang down. The release mechanism is reset by gravity.
4. Bolt brake to motor "C" face with four socket head cap screws. See Tables 1 and 2, and Figure 3 for screw size.
5. Connect coil leads per appropriate wiring diagram in Figure 2 and replace cover.

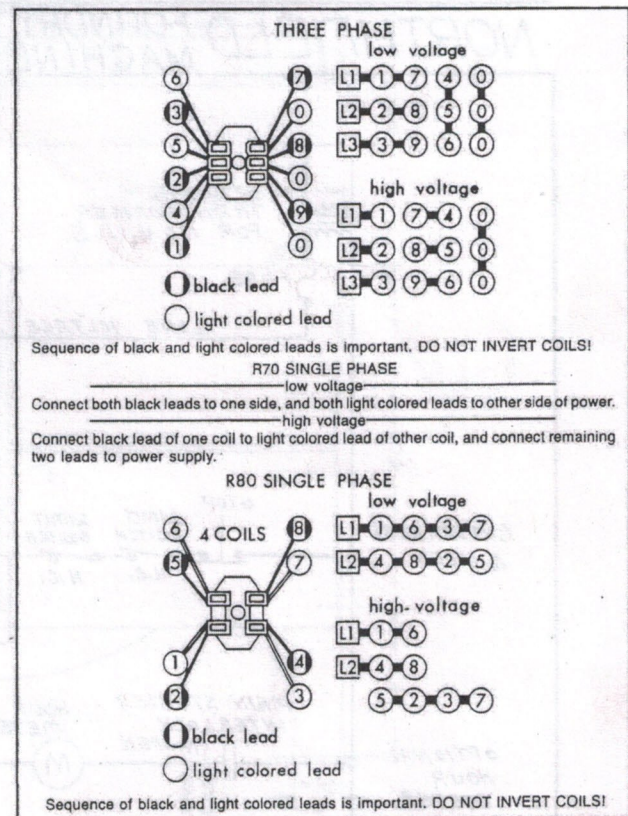


Figure 2. Wiring Diagram

## MANUAL RELEASE OPERATION

Refer to Figures 4 & 5

To operate standard release (Figure 5), rotate two rods (10) clockwise until stop screw (14) hits pin. To operate Mark II release (Figure 4), push lever (12) to upward position. Brake will remain in released position until rods or lever are manually returned to original position, or until electrical power is restored which automatically resets the brake.

## TORQUE ADJUSTMENT

Refer to Figures 3 & 5, Tables 1 or 2

Brake is factory set for rated torque per spring length "H." To increase stopping time and lower torque, turn two locknuts (9) counter-clockwise, increasing dimension "H." Both spring lengths should be equal. Do not decrease spring length "H" as this may cause coil to burn out.

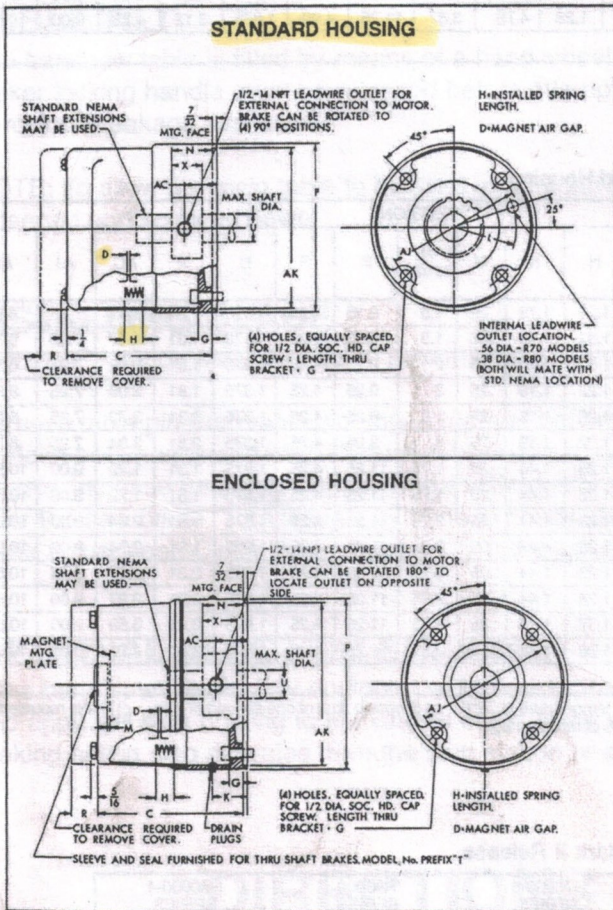


Figure 3.

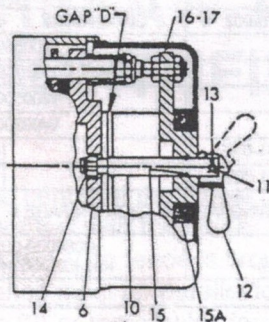


Figure 4.  
Mark II Release

## MAINTENANCE AND SERVICE

### WEAR ADJUSTMENT

Refer to Figures 3 & 5, Tables 1 or 2

Magnet gap "D" increases as the rotating friction discs wear. When gap approaches "D" max., adjust gap to the "original setting," listed under "D," by turning nuts (21) and (22). The "original setting" is also the minimum allowed.

Too small a gap will not provide the proper running clearance, and will cause excessive wear and overheating of the rotating friction disc. The magnet gap can vary from "original setting"  $\pm .005$  between corners. After setting gap, readjust torque spring length per dimension "H."

**CAUTION: MAGNET GAP MUST NOT EXCEED "D" MAXIMUM.**

### FRICTION DISC REPLACEMENT

Refer to Figures 3, 4 & 5, Tables 1 or 2

When rotating friction disc (4) wears down to a thickness of 7/32", replace disc.

1. Remove cover screws (24) and cover (23), plus "O" ring (28) and gasket (32) on enclosed models.
2. Standard release model: Unhook loop of torsion springs (11) from pins at rear of magnet plate (16). Remove release stop screws (14) washers (12) and shims (13). See Figure 5. Mark II release model: Remove cotter pin (13) and release lever (12). See Figure 4.
3. Remove adjusting lock nuts (22) magnet assembly (16), adjusting nuts (21), torque nuts (9), washers (8), torque spring (7) and pressure plate (6).
4. Remove friction disc (4) and stationary disc (5). Replace worn friction discs.
5. Reassemble all parts in reverse order. Set spring length "H" and magnet gap "D." Assemble manual release. See following paragraph.

### MANUAL RELEASE ASSEMBLY

Refer to Figures 3, 4 & 5

When assembling a standard manual release mechanism (Figure 5), add only enough shim washers (13) to obtain proper release action. Too many shim washers will prevent automatic reset when electrical power is applied. Too few washers will prevent the motor shaft from turning freely. Replace stop screws (14). Wind each torsion spring (11) approximately 1/4 turn and hook spring loop over pin.

When assembling a Mark II manual release mechanism (Figure 4), attach lever (12) to release rod (10) with pin (11) and cotter pins (13). With lever (12) in raised position, rotate lever until pressure plate (6) makes contact with magnet assembly (16) closing gap "D." Lower the lever and turn counterclockwise 1/4 turn. The lever should now hang down, and if not, remove lever and relocate it close as possible to down position as holes in rod (10) allow. The lever must hang down because reset is by gravity (vertical mounted brakes have return springs).

To check release action, raise lever. Motor shaft should turn freely. Apply power. Lever should return to down position automatically. If shaft does not turn freely, turn lever clockwise 1/4 turn. Relocate lever to down position. If lever does not return automatically, turn lever counterclockwise 1/4 turn. Relocate lever to down position.

**Table 1. Standard Housing**

MODEL	TORQUE LB. FT.	WEIGHT LBS.	† THERMAL CAPACITY HPS/MIN	INERTIA WK <sup>2</sup> LB. FT. <sup>2</sup>	DIMENSIONS													
					C	D ±.005		G	H	L	N ± 1/32	P	R	U	X	AC	AJ	AK
						MAX.	ORIGINAL SETTING											
R71010	10	35	11	.028	5.75	.060	.035	.75	1.31	3.812	1.15	9.25	4.00	1.375	1	1.47	7.25	8.500
R71015	15	35	11	.028	5.75	.060	.035	.75	1.31	3.812	1.5	9.25	4.00	1.375	1	1.47	7.25	8.500
R72025	25	40	12	.051	6.37	.060	.035	.75	1.31	3.812	2	9.25	4.00	1.375	1.5	2.09	7.25	8.500
R72035	35	40	12	.051	6.37	.065	.040	.75	1.22	3.812	2	9.25	4.00	1.375	1.5	2.09	7.25	8.500
R73050	50	45	13	.075	7.00	.065	.040	.75	1.25	3.812	2.5	9.25	4.00	1.375	2	2.72	7.25	8.500
R74070	70	50	14	.099	7.62	.065	.040	.75	1.22	3.812	3	9.25	4.00	1.375	2.5	3.34	7.25	8.500
R81025	25	50	*	.084	6.00	.065	.040	1	1.28	4.75	1.75	11.25	4.00	1.875	1	1.72	9.00	10.500
R81035	35	50	*	.084	6.00	.065	.040	1	1.28	4.75	1.75	11.25	4.00	1.875	1	1.72	9.00	10.500
R82050	50	55	*	.158	6.62	.065	.040	1	1.28	4.75	2.25	11.25	4.00	1.875	1.5	2.34	9.00	10.500
R82070	70	55	*	.158	6.62	.065	.040	1	1.28	4.75	2.25	11.25	4.00	1.875	1.5	2.34	9.00	10.500
R83075	75	60	*	.233	7.25	.070	.045	1	1.28	4.75	2.75	11.25	4.00	1.875	2	2.97	9.00	10.500
R83105	105	60	*	.233	7.25	.070	.045	1	1.28	4.75	2.75	11.25	4.00	1.875	2	2.97	9.00	10.500
R84125	125	66	*	.307	7.87	.080	.055	1	1.37	4.75	3.25	11.25	4.00	1.875	2.5	3.59	9.00	10.500
R85175	175	72	*	.384	8.50	.080	.055	1	1.28	4.75	3.87	11.25	4.00	1.875	3.12	4.22	9.00	10.500

SHAFT MUST BE CUT OFF AT N DIMENSION FOR BRAKES WITH MARK II RELEASE

**Table 2. Enclosed Housing**

MODEL	TORQUE LB. FT.	WEIGHT LBS.	† THERMAL CAPACITY HPS/MIN	INERTIA WK <sup>2</sup> LB. FT. <sup>2</sup>	DIMENSIONS														
					C	D ±.005		G	H	K	M	N ± 1/32	P	R	U	X	AC	AJ	AK
						MAX.	ORIGINAL SETTING												
R71010-4	10	40	10	.036	5.75	.060	.035	.75	1.31	1.19	.25	1.5	9.25	4.25	1.375	1.31	1.47	7.25	8.500
R71015-4	15	40	10	.036	5.75	.060	.035	.75	1.31	1.19	.25	1.5	9.25	4.25	1.375	1.31	1.47	7.25	8.500
R72025-4	25	45	11	.059	6.37	.060	.035	.75	1.31	1.19	.25	2	9.25	4.25	1.375	1.81	2.09	7.25	8.500
R72035-4	35	45	11	.059	6.37	.065	.040	.75	1.22	1.19	.25	2	9.25	4.25	1.375	1.81	2.09	7.25	8.500
R73050-4	50	50	12	.083	7.00	.065	.040	.75	1.25	1.19	.25	2.5	9.25	4.25	1.375	2.31	2.72	7.25	8.500
R74070-4	70	55	13	.107	7.62	.065	.040	.75	1.22	1.19	.25	3	9.25	4.25	1.375	2.81	3.34	7.25	8.500
R81025-4	25	56	*	.095	6.00	.065	.040	1	1.28	1.44	.25	1.75	11.25	4.25	1.875	1.31	1.72	9.00	10.500
R81035-4	35	56	*	.095	6.00	.065	.040	1	1.28	1.44	.25	1.75	11.25	4.25	1.875	1.31	1.72	9.00	10.500
R82050-4	50	61	*	.169	6.62	.065	.040	1	1.28	1.44	.25	2.25	11.25	4.25	1.875	1.81	2.34	9.00	10.500
R82070-4	70	61	*	.169	6.62	.065	.040	1	1.28	1.44	.25	2.25	11.25	4.25	1.875	1.81	2.34	9.00	10.500
R83075-4	75	66	*	.244	7.25	.070	.045	1	1.28	1.44	.25	2.75	11.25	4.25	1.875	2.31	2.97	9.00	10.500
R83105-4	105	66	*	.244	7.25	.070	.045	1	1.28	1.44	.25	2.75	11.25	4.25	1.875	2.31	2.97	9.00	10.500
R84125-4	125	73	*	.318	7.87	.080	.055	1	1.37	1.44	.25	3.25	11.25	4.25	1.875	2.81	3.59	9.00	10.500
R85175-4	175	80	*	.395	8.50	.080	.055	1	1.28	1.44	.25	3.87	11.25	4.25	1.875	3.44	4.22	9.00	10.500

SHAFT MUST BE CUT OFF AT N DIMENSION FOR BRAKES WITH MARK II RELEASE

† Thermal capacity (HPS/MIN.) was determined under the following test conditions: a) Room temperature at 72°F. b) Stopping time of one second or less. c) Brake mounted in a horizontal position. d) Equal on and off times. e) 1800 RPM. f) Coil energized with 110% of rated voltage.  
\*Consult factory for thermal capacity.

**Table 3. Parts List Mark II Release**

ITEM NO.	PCS. REQ'D.	DESCRIPTION	R70000 SERIES PART NO.	R70000-4 SERIES PART NO.	R80000 SERIES PART NO.	R80000-4 SERIES PART NO.
6	1	Pressure Plate	K070076-001		K080029-001	
10	1	Manual Release Rod	G070076-001	G070076-002	G070076-001	G070076-002
11	1	Pin	W005002-004		W005002-004	
12	-1	Lever	H020005-001		H020005-001	
13	2	Cotter Pin	W005001-003		W005001-003	
14	1	Locknut (ESNA)	W003001-020		W003001-020	
15	1	O-Ring	---	W006001-014	---	W006001-014
15A	1	Bushing Seal	---	G070301-002	---	G070301-002
16	1	Magnet Assembly Complete with coils	SEE ORDERING INFORMATION ON PAGE 6			
17	1	Magnet Plate W/O Coils	K070073-001 (3-Phase) K070074-001 (Single Phase)		K080033-001 (3 Phase) K080031-001 (Single Phase)	

Items 29, 30 & 31 are not used.

MAXIMUM SPEED FOR ALL MODELS IS 3600 RPM

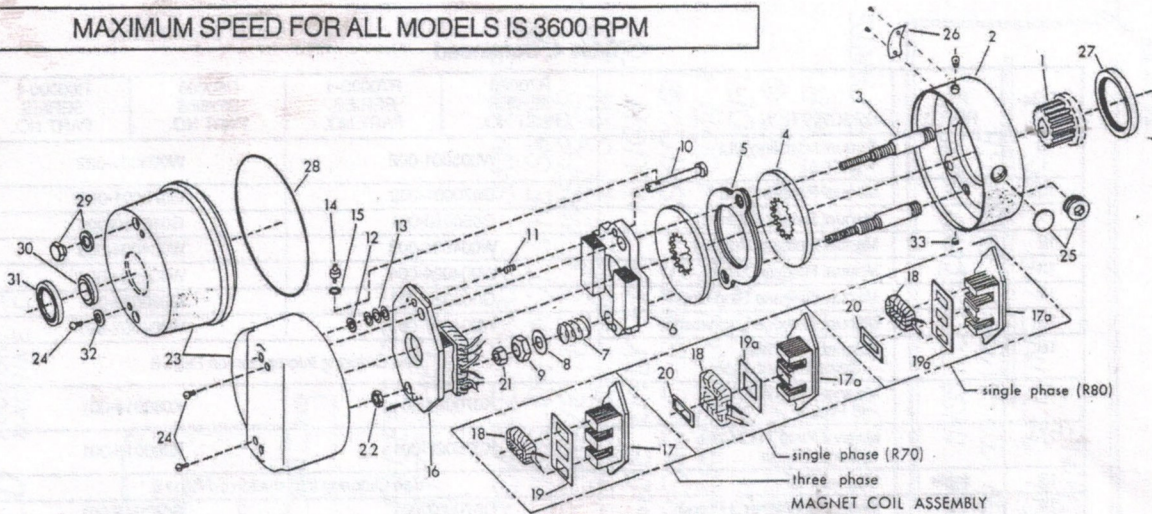


Figure 5. Exploded View of Brake

Table 4. Parts List

ITEM NO.	PCS. REQ'D.	DESCRIPTION	R70000 SERIES PART NO.	R70000-4 SERIES PART NO.	R80000 SERIES PART NO.	R80000-4 SERIES PART NO.
1	1	Hub	Specify shaft diameter and keyway.			
2	1	Bracket W/Studs — 1 Disc	H070135-001	H070141-001	H080077-001	H080079-001
2	1	Bracket W/Studs — 2 Disc	H070135-002	H070141-002	H080077-002	H080079-002
2	1	Bracket W/Studs — 3 Disc	H070135-003	H070141-003	H080077-003	H080079-003
2	1	Bracket W/Studs — 4 Disc	H070135-004	H070141-004	H080077-004	H080079-004
2	1	Bracket W/Studs — 5 Disc	---	---	H080077-005	H080079-005
2A	1	Bracket W/High Tensile Studs — 1 Disc	H070135-005	H070141-005	H080077-006	H080079-006
2A	1	Bracket W/High Tensile Studs — 2 Disc	H070135-006	H070141-006	H080077-007	H080079-007
2A	1	Bracket W/High Tensile Studs — 3 Disc	H070135-007	H070141-007	H080077-008	H080079-008
2A	1	Bracket W/High Tensile Studs — 4 Disc	H070135-008	H070141-008	H080077-009	H080079-009
2A	1	Bracket W/High Tensile Studs — 5 Disc	---	---	H080077-010	H080079-010
3	2	Stud — 1 Disc	G070213-001		G070213-001	
3	2	Stud — 2 Disc	G070213-002		G070213-002	
3	2	Stud — 3 Disc	G070213-003		G070213-003	
3	2	Stud — 4 Disc	G070213-004		G070213-004	
3	2	Stud — 5 Disc	---		G070213-005	
3A	2	Stud — High Tensile 1 Disc	G070219-001		G070219-001	
3A	2	Stud — High Tensile 2 Disc	G070219-002		G070219-002	
3A	2	Stud — High Tensile 3 Disc	G070219-003		G070219-003	
3A	2	Stud — High Tensile 4 Disc	G070219-004		G070219-004	
3A	2	Stud — High Tensile 5 Disc	---		G070219-005	
4	*	Rotating Friction Disc (Non-asbestos)	H070103-001		H080002-002	
4A	*	Rotating Disc Heavy Duty (Alternate)	H070047-003		H080026-003	
5	**	Stationary Disc	H070089-001		K080001-003	
6	1	Pressure Plate	K070045-001		K080012-001	
7	2	Torque Spring	G070011-001 (10 Ft. Lb.) G070019-001 (25 Ft. Lb.) G070012-001 (All Others)		G080001-001 Models 81025, 82050, 83075 G080002-001 (All Others)	
8	2	Torque Spring Washer	W004004-001		W004004-001	

Continued on Next Page

Table 4. Continued

ITEM NO.	PCS. REQ'D.	DESCRIPTION	R70000 SERIES PART NO.	R70000-4 SERIES PART NO.	R80000 SERIES PART NO.	R80000-4 SERIES PART NO.
9	2	Torque Adjusting Nut (ESNA)	W003001-002		W003001-022	
10	2	Manual Release Rod	G070001-002		G070001-002	
11	2	Manual Release Spring	G060010-001		G060010-001	
12	2	Manual Release Washer	W004004-003		W004004-003	
13	A.R.	Manual Release Shim	W004004-004		W004004-004	
14	2	Manual Release Stop Screw	G060029-001		G060029-001	
15	2	Manual Release Lockwasher	W004007-007		W004007-007	
16	1	Magnet Assembly, Complete with Coils	See Ordering Information on Page 6			
17	1	Magnet Plate W/O Coils 3 Phase	K070024-001		K080014-001	
17A	1	Magnet Plate W/O Coils Single Phase	K070027-001		K080015-001	
18	***	Magnet Coil	See Ordering Information on Page 6			
19	2	Insulating Washer 3 Phase	G070037-001		G080016-001	
19A	2	Insulating Washer Single Phase	G070029-001		G080148-001	
20	2	Shading Coil (Single Phase Only)	G070032-001		G080022-001	
21	2	Gap Adjusting Nut	W003003-023		W003003-023	
22	2	Gap Adjusting Locknut (ESNA)	W003001-020		W003001-020	
23	1	Cover	K070080-001	K070104-001	K080023-001	K080048-002
24	2	Cover Screw	W001004-012	W001002-103	W001004-012	W001002-103
25	1	Conduit Hole Plug	W008003-001	W010002-004	W008003-001	W010002-004
26	1	Nameplate with Screws	SPECIFY DATA			
27	1	Hub Seal	---	W011001-007	---	W011001-008
28	1	"O" Ring Seal	---	W006001-010	---	W006001-011
29	2	Release Cap	---	G060170-002	---	G060170-002
		Gasket	---	G070381-001	---	G070381-001
30	1 ****	Thru-Shaft Sleeve (Specify Bore & Keyway)	---	H070080	---	H080036
31	1 ****	Thru-Shaft Seal	---	W011001-006	---	W011001-007
32	2	Cover Screw Gasket Stat-O-Seal	---	W011002-005	---	W011002-005
33	2	Drain Hole Pipe Plug	---	W010002-001	---	W010002-001

\* Number of Rotating Discs is shown as second digit of Model No.; Example - R72025  
 \*\* Number of Stationary Discs is one less than number of Rotating Discs.  
 \*\*\* 3 phase brake requires six coils. Single phase R70 require two coils. Single phase R80 require four coils.  
 \*\*\*\* For models with prefix "T" (thru shaft) only.

## MAGNET COIL REPLACEMENT

Refer to figures 5 & 6.

Remove magnet assembly as outlined under FRICTION DISC REPLACEMENT.

Coils (18) are held in place with epoxy cement. Force coil off magnet mounting plate and remove excess epoxy from all surfaces.

Replacement coils should be held in place with new epoxy cement. The epoxy cement should be heat resistant and shock resistant. Place an insulating washer (19 or 19A) below the coils. Order insulating washers when ordering coils. An insulating washer can be cut to suit when replacing only one coil on a multiple coil assembly.

When installing coils, it is very important to follow EXACTLY the sequence of black and light colored leads as shown in wiring diagram (Figure 2). The brake will not operate properly unless coils are all in the correct position.

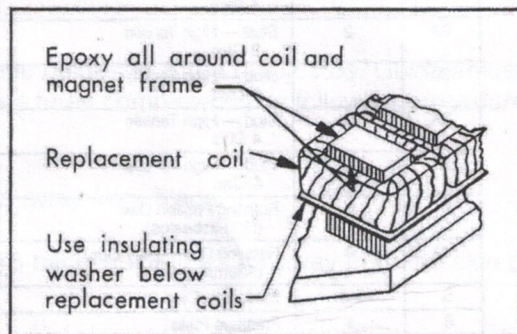


Figure 6. Fastening of Replacement Magnet Coils

# TROUBLE SHOOTING

## A. IF BRAKE DOES NOT RELEASE:

1. Check brake visually for broken or damaged parts.
2. Check for broken leadwire or bad electrical connection.
3. Check for correct voltage. Line voltage must correspond to the voltage for which the brake coils are connected. If the line voltage is more than 10% below the voltage for which the brake coils are connected, the magnet will not pull in, causing the coils to burn out within minutes. If the line voltage is more than 10% above the voltage for which the brake coils are connected, the coils will overheat and burn out.
4. Check for burned-out coils (coils may be charred or burned).
5. Check for excessive magnet gap. ( See WEAR ADJUSTMENT.)
6. Check for failure of power supply to brake.

## B. IF BRAKE DOES NOT STOP:

1. Check brake visually for broken or damaged parts.
2. Make certain hub has not shifted position on the motor shaft and that all rotating discs are fully engaged on the hub.
3. Check that the manual release is in the normal position.
4. Check disc wear. ( See WEAR ADJUSTMENT.)

## C. IF BRAKE CHATTERS OR HUMS:

1. See that magnet faces are clean. To remove dirt, insert a clean sheet of paper between magnet faces and energize brake. Move paper around between faces to dislodge dirt, then remove paper.
2. Check for low voltage. Magnet will not put in, and coils will burn out if line voltage is beyond 10% below the voltage the brake coils are connected for.
3. See that magnet faces are parallel within tolerance. Readjust magnet gap to "D" min. ( See WEAR ADJUSTMENT.)
4. Check if shading coil (20) is cracked, broken or out of position (single phase only).

## D. IF MANUAL RELEASE DOES NOT WORK:

1. Check for broken or damaged parts.
2. Check return spring (11). Brake will not reset automatically if this spring is broken.
3. Check magnet gap with brake in released position. (See MANUAL RELEASE ASSEMBLY.)
4. Check quantity of shim washers (13) under release stop screws. (See MANUAL RELEASE ASSEMBLY.)

# NUMERICAL PARTS LIST

## WHEN ORDERING PARTS INCLUDE:

1. Serial number of machine
2. Part number
3. Nomenclature or description

PART NO.	IDENTIFICATION	PART NO.	IDENTIFICATION
32-1	Main Frame	36-119C	Upper Carter Wheel
32-2	Rear Table	36-122C	Lower Carter Wheel
32-3	Table Standard	36-131	Upper Guide Sliding Bar Hand Knob
36-3XL	Table Deluxe	36-132	Upper Guide (Size 1)
36-4	Upper quill	36-136	Upper Guide Holder Shaft (Long)
36-5	Motor Base DD Old Style	36-137	Lower Guide Holder Shaft
36-6	Motor Base Lower Casting B.D.	36-139	Lower Guide (Size 0)
36-7	Motor Base Upper Casting B.D.	36-140	Lower Guard Door Hinge Right
36-8	Table Rocker	36-144	Upper Guard Rear Panel
36-10	Upper Quill Slide Casting	36-145	Upper Guard Door Panel
36-11	Upper Wheel Tension Arm	36-151	Lower Wheel Guard Door Latch Knob
36-12	Upper Wheel Elev. Wedge Collar	36-154	Lower Guard Door Panel Left
36-13N	Lower Quill	36-155	Lower Guard Door Panel Right
36-14N	Upper Quill	36-161	Brake Foot Pedal
36-17	Table Rocker Locking Upper Casting	36-162	Brake Spring Assembly
36-25	Guard Holder Bracket Casting	36-163	Brake Lining
36-26	Upper Hub. Carter Wheel Specify Bore	36-164	Brake Lining Holder
36-27	Lower Hub. Carter Wheel Specify Bore	36-165	Brake Bearing Shaft
36-28	Upper Guard Spider	36-169	Lower Quill shaft B.D.
36-29	Motor Base B.D.	36-170	Lower Quill Bearing
36-30	Lower Quill Holder B.D.	36-171	Lower Quill Bearing
36-34	Upper Quill Cover Front	36-172	Bearing Lock
36-35	Lower Quill Rear Cover	36-185	Upper Guard Hinge
36-36	Upper Quill Cover Rear	36-189	Lower Guard Door Hinge Left
36A-37	Counterbalance Spring Housing	36A-189	Counterbalance Spring
36A-38	Counterbalance Spring Cover	36-190	Counterbalance Bolt
36-39	Lower Wheel Brake Drum	36-191	Upper Guard Latch
36-62	Motor Base DD New Style	36-192	Upper Guard Latch Lock
36-65	Quill Base Mount Belt Drive	36-201	Guide Guard Connector Strip
36-66	Motor Base Bracket	36-202	Tension Indicator and Gauge
36-100	Table Rocker Locking Bolt	36-204	Brake Pedal Bearing Washer
36-101	Table Rocker Degree Pointer	36-205	Wheel Guard Hinge Rivets
36-102	Table Rocker Degree Plate	36-209	Dust Deflector
36-103	Table Tilting UP Bracket Screw 3/8 Full Dog	36-225	Upper Quill Bearing Locknut
36-104	Upper Quill Slide Casting Right Keeper	36-246	Counterbalance Cable
36-105	Upper Quill Slide Casting Left Keeper	36-247	Counterbalance Cable Clamp
36-106	Upper Quill Pin	36-250	Brake Bearing Shaft
36-107	Upper Quill Pin Collar	36-262	Lower Guard Door Stop
36-108	Upper Quill Bearing Front	36-270	Guide Shaft Bracket
36-109	Upper Quill Bearing Rear	36-272	Upper Guide Holder Shaft (Short)
36-110	Upper Quill Shaft	36-273	Upper Wheel Guard Channel
36-111	Upper Quill Bearing Lock Rear	36-278	Upper Guard Assembly
36-112	Upper Wheel Tilting Screw	36-279	Lower Guard Assembly
36-113	Upper Wheel Tilting Screw Spring NF-29	36-280	Table Alignment Pin-Govt't Only
36-114	Upper Wheel Tension Arm Bolt	36-306	Top Channel Lower Guard
36-115	Upper Wheel Tension Arm Spring NF-28	36-307	Left Side Channel Lower Guard
36-116	Upper Wheel Tension Arm Washer	36-308	Right Side Channel Lower Guard
36-117	Upper Wheel Tension Arm Nut	36-309	Upper Guide Sliding Bar

<b>PART NO.</b>	<b>IDENTIFICATION</b>	<b>PART NO.</b>	<b>IDENTIFICATION</b>
36-310	Table Pin	36-408	Table Tilting Screw Nut
36-311	Dust Guide	36-409	Table Tilting Screw Bearing
36-312	Upper Guard Door Brace	32A-10	Table Rocker Locking Handle
36-316	Dust Plate Deflector	32A-11	Table Tilting Lower Fork
36-319	Lower Channel Upper Guard	32A-12	Upper Fork Bracket
36-322	Blade Plate	27A-18	Table Tilt Hand Wheel
32-323	Front Guard Sliding	32A-20	Brake Bearing Holder Casting
36-325	Lower Guard Enclosure Strip	32A-22	Brake Foot Pedal Bearing
36-327	Lower Guide Guard Back Cover	32A-29	Tension Arm Wedge Collar, Small
36-351	B.D. Steel Motor Plate	32-103	Table Tilting Lower Fork Bracket Screw 3/8 Conepoint
36-356	Motor Base Leg for Foot	20A-24	Lower Guide Holder Casting
36-357	Motor Base Foot B.D.	20A-36	Table Aluminum Insert
36-363	Rear Guard	20-37	Guide Guard Connecting Bracket
36-379	Table Stop Bolt	AA-28	Table Tilting Handwheel
36-380	Counterbalance Assembly	DK-5	Guard Door Hand Knob
36-381	Bearing Spacer Belt Drive	20-40	Tilting Screw Hand Knob
36-403	Table Tilting Screw	E-82	Tension Handwheel
36-404	Table Tilting Screw Collar	20-180	Blade Tracking Pointer
36-405	Elevating Screw	20-190	Dust Pad
36-406	Elevating Screw Collar	Z-152	Spinner Knob
36-407	Guard for Guide		

## OPTIONAL PARTS

### CROSSCUT GAUGE

#### Straight

20-199	Degree Plate
20-201	Slide Pin
DK-3	Hand Knob
36-229	Slide Stud
36-186	Slide Straight
36-230	Degree Plate Screw
WW-80	Cross Cut Gauge

#### DOVETAIL

Z-122	Slide Dovetail
Z-255	Slide Pin
Z-29A	Gauge
Z-121	Degree Plate
Z-123	Hand Knob DK-3

### SINGLE FACE RIP FENCE

27-214	Block
32A-216	Rail
DK-7	Knob
32A-23	Slide
32A-25	Single Face Fence
36-362	Block

### DOUBLE FACE RIP FENCE

27-214	Block
DK-6	Knob
36-288	Rail
32A-41	Slide
32A-40	Double Face Fence

### ELECTRIC BRAKE

36-45	Brake Mounting Plate
6-72050	50 Ft lb Dings Brake
LRL-50M	Unilet
36-173	Brake Pedal Paddle
36-174	Tension Arm Paddle
36-110EB	Upper Quill Shaft For Elec Brake

### RESAW ATTACHMENT

BS32-45A	Large Roller Holder
BS32-43A	Top Cap
BS32-40A	Stock Guide
BS32-42A	Tension Arm
BS32-44A	Tension Bracket
32-174	Large Roller
32-181	Shaft, Center
32-182	Collar
32-175	Small Roller
32-177	Link
32-176	Tension Spring
32-178	Hex hd. Spring Bolt
32-179	Wing Nut
DK-8	Knob

IDENTIFICATION CONTENT

Part No.	Description
38-310	Top Pin
38-311	Dist Guide
38-312	High Guard Dist Pin
38-313	Dist Pin Dist Guide
38-314	Lower Channel Upper Guard
38-315	Blade Pin
38-316	Front Guard Spring
38-317	Lower Guard Guide & Pin
38-318	Lower Guard Back Cover
38-319	U.C. Guard Motor Plate
38-320	Mech. Pin Top Pin Foot
38-321	Mech. Pin Foot U.C.
38-322	Flow Guard
38-323	Top Slip Bolt
38-324	Counterbalance Assembly
38-325	Coating Spring Bolt Dist Pin
38-326	Top Thing Spring
38-327	Top Thing Spring Pin
38-328	Flowing Spring
38-329	Flowing Spring Guide
38-330	Guide for Guide
38-331	Flowing Spring
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38-397	Flowing Spring
38-398	Flowing Spring
38-399	Flowing Spring
38-400	Flowing Spring

**NORTHFIELD WARRANTY**

All machines or parts of our manufacture are under warranty against defective material or workmanship for a period of one year from the date of sale. We will replace or repair any part or parts that, upon examination by us, appear to be defective, provided the parts claimed defective are sent to us at Northfield, MN, transportation prepaid. This warranty does not obligate us to bear the cost of labor in replacing such parts. Defects in electrical equipment, ball or roller bearings, or other trade accessories will be in accordance with the standard warranty of the manufacturer thereof. The company makes no warranty as to fitness of its products for specific applications by the buyer.

Northfield Machinery Builders, Inc

# Northfield

## Heavy Duty 36" Band Saws

### ADVANCED DESIGN

NORTHFIELD Band saws undergo a constant process of testing and refinement, to maintain the highest standards of precision, speed, dependability, appearance and value.

### QUALITY MANUFACTURE

NORTHFIELD band saws are built to exacting quality standards in every detail. They are solid, smooth-running machines. Each band saw is electronically balanced for vibration-free performance.

### HEAVY DUTY FRAME

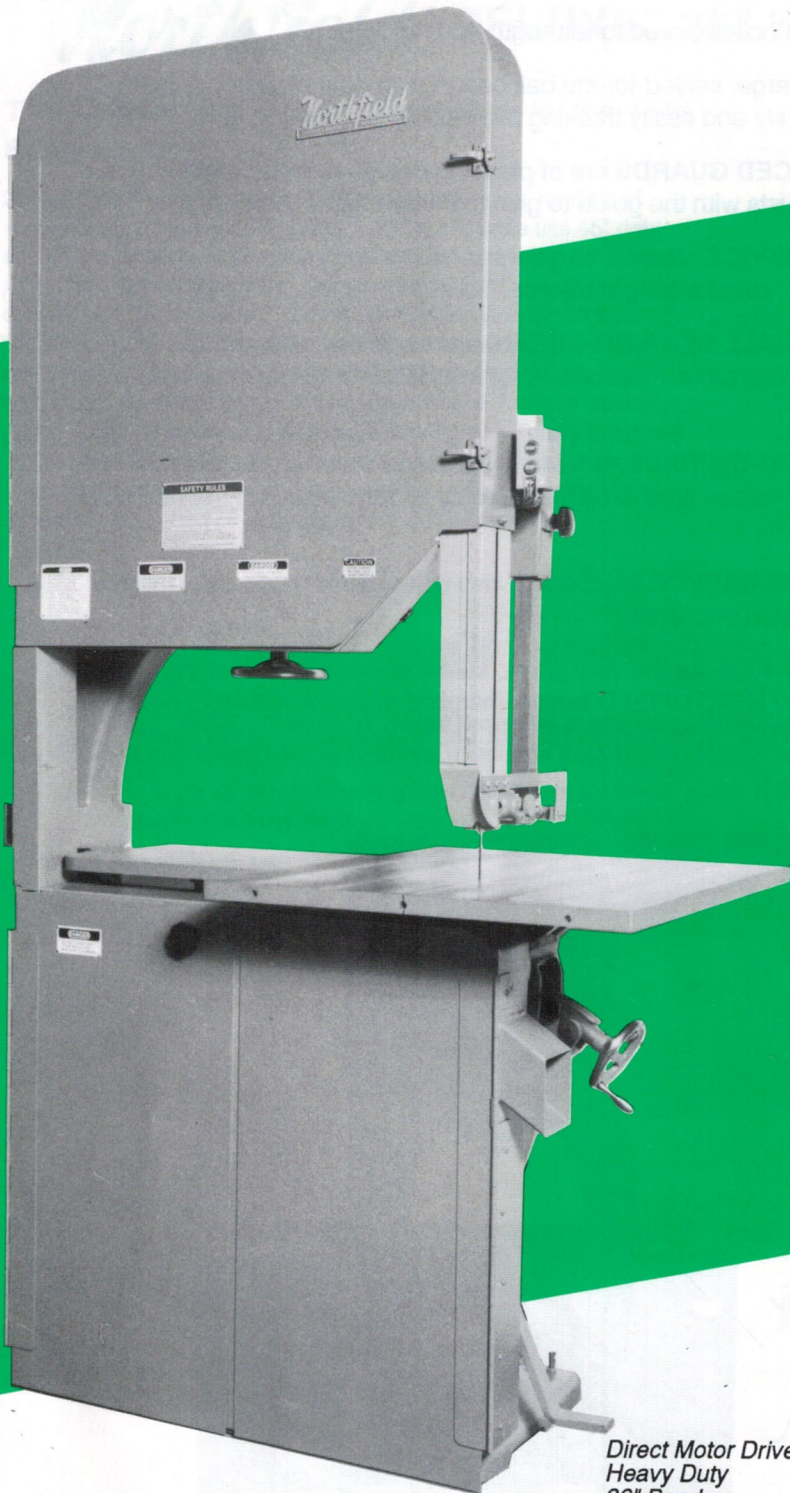
High strength cast iron frames with wide, ribbed feet give a solid stance, and absorb vibration.

### MACHINED AND GROUND TABLES

Tables are thick and heavily ribbed — machined and ground — equipped with removable, replaceable table inserts.

### TRUE ANTI-FRICTION ROCKER

Machined rocker and babbitt bearing type — a true anti-friction combination — for ease of adjustment, plus natural resistance to rust and corrosion. Rocker can be angled and locked solidly at any degree by use of screw and nut-tilting device and positive lock.



*Direct Motor Drive  
Heavy Duty  
36" Bandsaw*



# FEATURE-FULL *Northfield* BAND SAWS

**HEAVY ONE PIECE CAST IRON FRAME** is hollow cored for strength and rigidity.

**LONG, RIGID, HEAVY-DUTY QUILLS** use large, sealed-for-life ball bearings and high quality spindle steel. Top quill is adjustable for accurately and easily tracking the blade.

**STREAMLINED, HEAVY STEEL REINFORCED GUARDS** are of pleasing design and noiseless construction. The guide post guard adjusts with the guide to give maximum protection.

**SENSITIVE, POSITIVE SAW STRAINING DEVICE** consists of a very sensitive knife edge spring lever arrangement which absorbs shock and provides proper tension. Tension indicator is easily read.

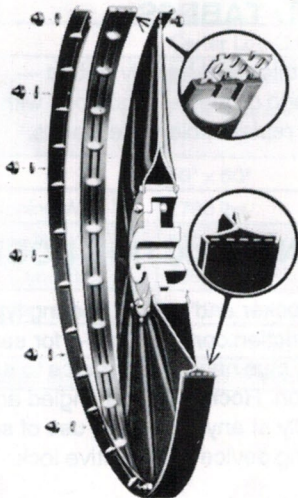
**CARTER CP SERIES MICRO PRECISION BALL BEARING GUIDES** are furnished as standard equipment. Size 1 on top, Size 0 below the table. Paddock, Wright and Carter Guideall Guides available upon request.

**CARTER SUPER RIGID WHEELS WITH LOC-ON TIRES.** Northfield 36" Band Saws are furnished with Carter demountable steel wheels which allows tires to be changed by simply removing the retaining ring and replacing the tire.

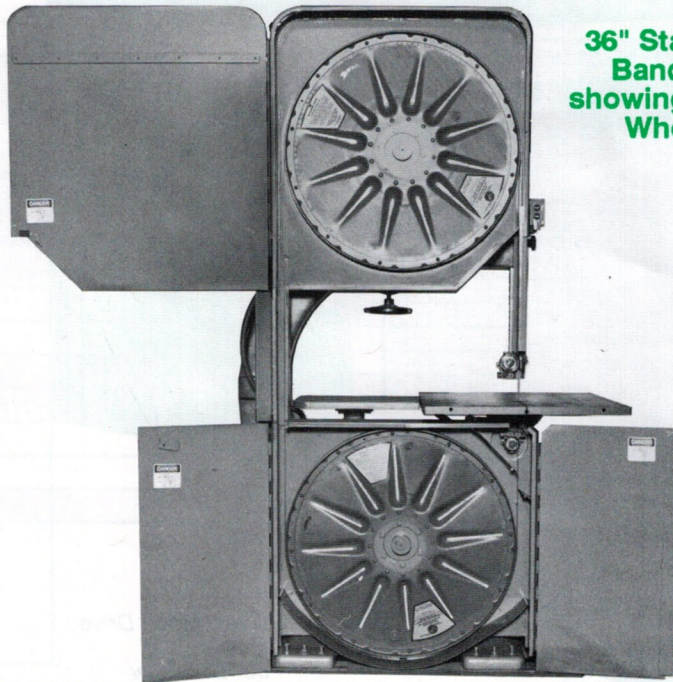
**FOOT OPERATED BRAKES FOR OPTIMUM SAFETY.** Mechanical two wheel brakes can be arranged with switch that stops power on application of brakes.

**AUTOMATIC ELECTRIC TWO WHEEL BRAKES** are the very finest, safest and simplest braking system used on any band saw. Available on any NORTHFIELD factory installed motor. Automatic, electric two wheel brakes are activated by (1) STOP push button, (2) foot pedal control, (3) when blade breaks, (4) when blade runs off wheel.

**36" Carter Wheels with Loc-on Tires**



**36" Standard Bandsaw showing Carter Wheels**



# 36" Deluxe & Standard Models

Up to 48" Underguide

## *Northfield* "DELUXE" 36" HEAVY DUTY BAND SAWS

**The Largest and Finest Band Saw in the Line**

Equipped with:

36" x 2" steel disc wheels with demountable, steel reinforced rubber tires / Heavy Duty quills / 37" x 37" table tilts 45° right and 5° left / Stationary table 16" x 19" / Removable table insert / Two ball bearing guides / Heavy steel hinged guards / Dust chute / 30" under guide / Tension indicator / Automatic safety tension control / Automatic safety brake on upper wheel which operates automatically if blade breaks or runs off wheel; also operates by push button or lower wheel brake / Blade tracking guide / Spring counter balance / Work light / Totally enclosed fan cooled motor / Sealed-for-life ball bearings throughout / Magnetic starter with push button control / Direct Motor Drive, constant speed belt or variable speed drives available

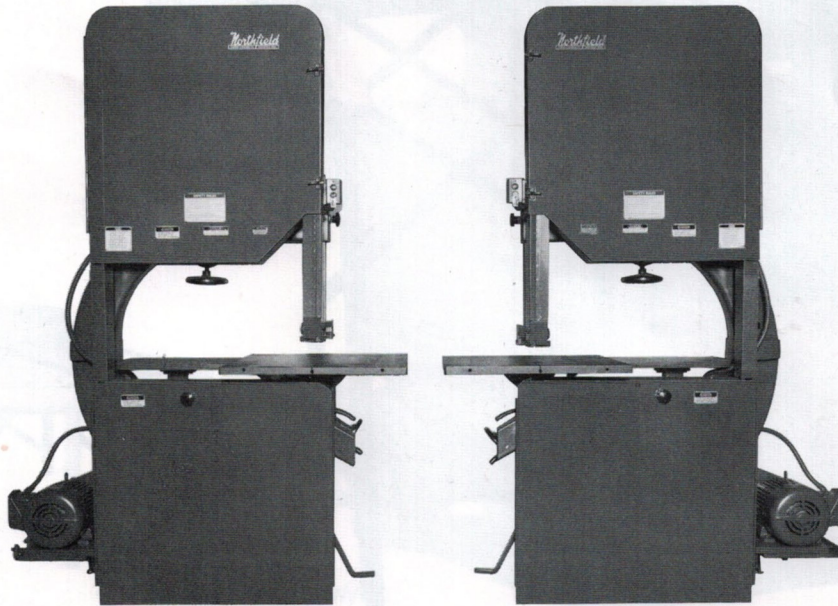
## *Northfield* "STANDARD" 36" HEAVY DUTY BAND SAWS

36" x 2" steel disc wheels with demountable steel reinforced rubber tires / Heavy duty quills / 30" x 36" table tilts 45° right and 5° left / Stationary table 16" x 19" / Removable table insert / Two ball bearing guides / Heavy steel hinged guards / Dust chute / Spring counter balance / Foot Brake / Tracking guide / Tension indicator / 1/4" x 2" wide blade capacity / one 3/8" blade / 22" capacity under guide / Sealed-for-life ball bearings throughout / If ordered without electrics a motor base at the side is furnished / Direct Motor Drive, constant speed belt or variable speed drives available

## *Right and Left Hand Band Saws*

NORTHFIELD 36" Band Saws are available in RIGHT and LEFT HAND configurations. This allows you to solve any flow of material problems your facility layout or product design may pose.

In addition, under guide heights of up to 48" make NORTHFIELD the most adaptable band sawing machine on the market.

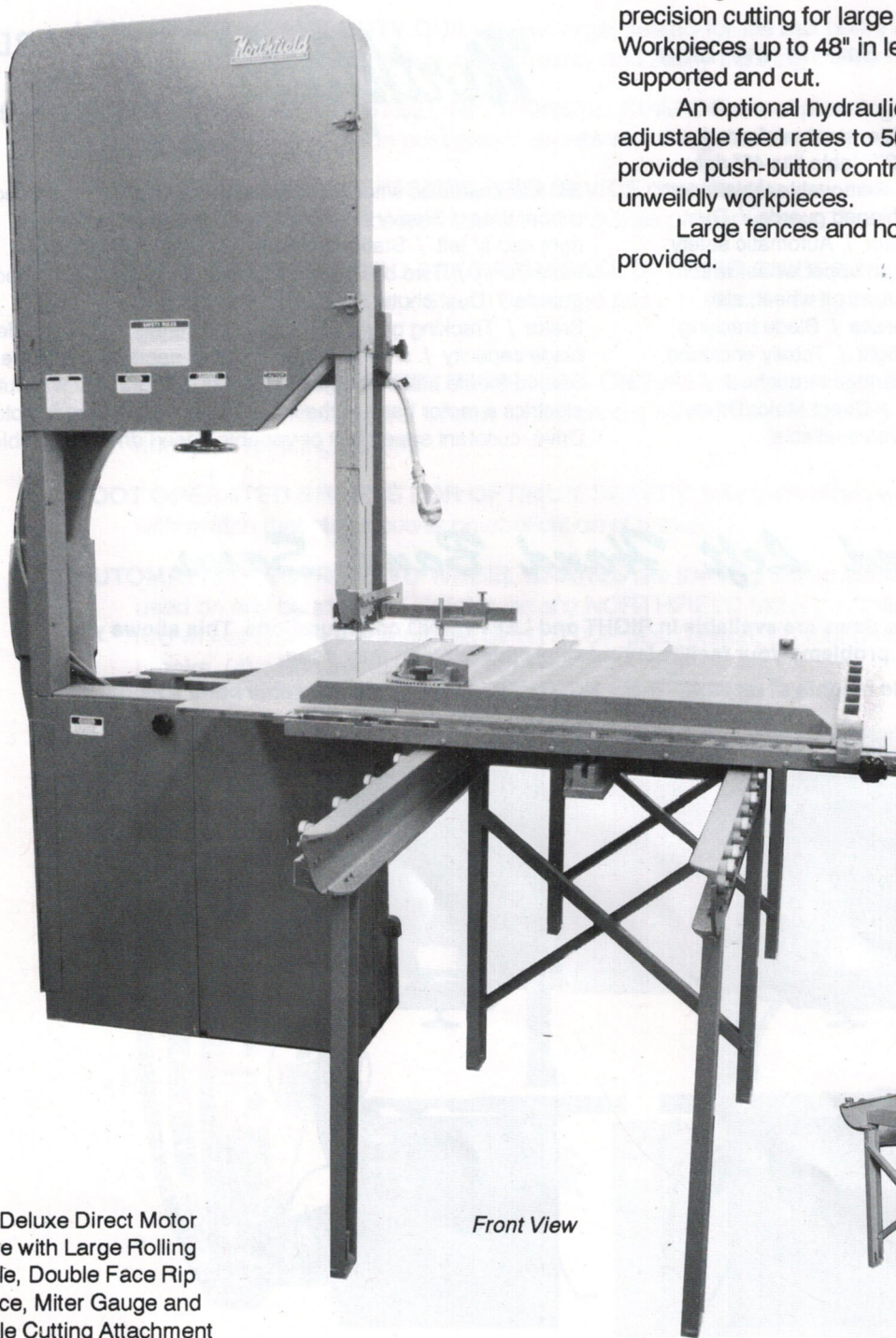


# 50" x 50" Tilting and Rolling Tables

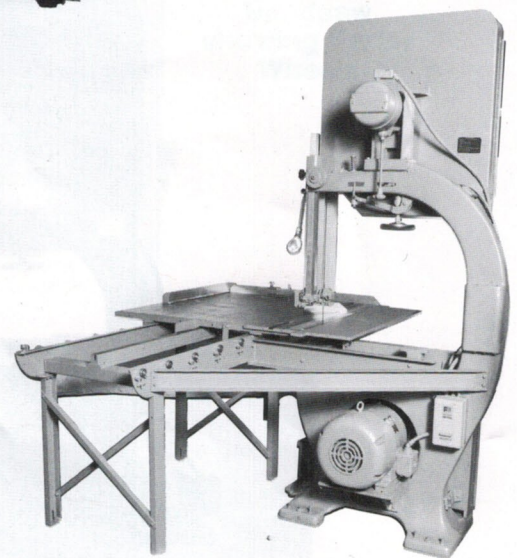
Large 50" x 50" cast iron rolling table affords precision cutting for large or heavy workpieces. Workpieces up to 48" in length can be accurately supported and cut.

An optional hydraulic feed with infinitely adjustable feed rates to 50 fpm is available to provide push-button controlled cutting of the most unweildly workpieces.

Large fences and hold down clamps can be provided.



Front View

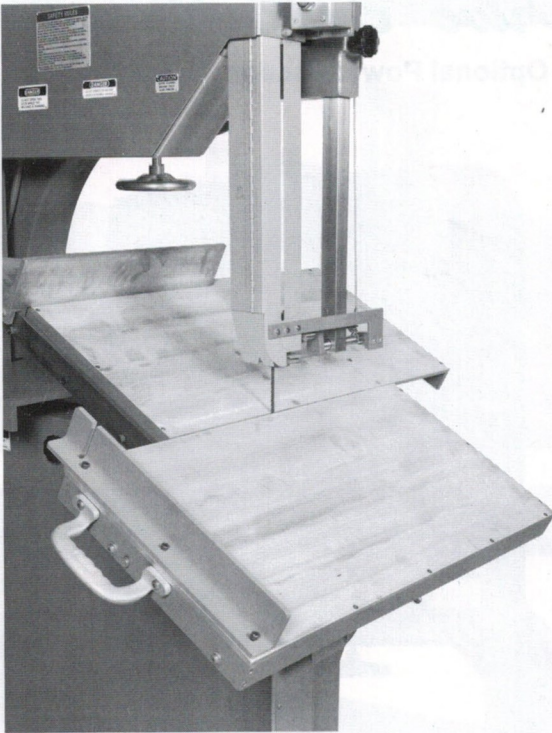


Rear View

36" Deluxe Direct Motor Drive with Large Rolling Table, Double Face Rip Fence, Miter Gauge and Circle Cutting Attachment

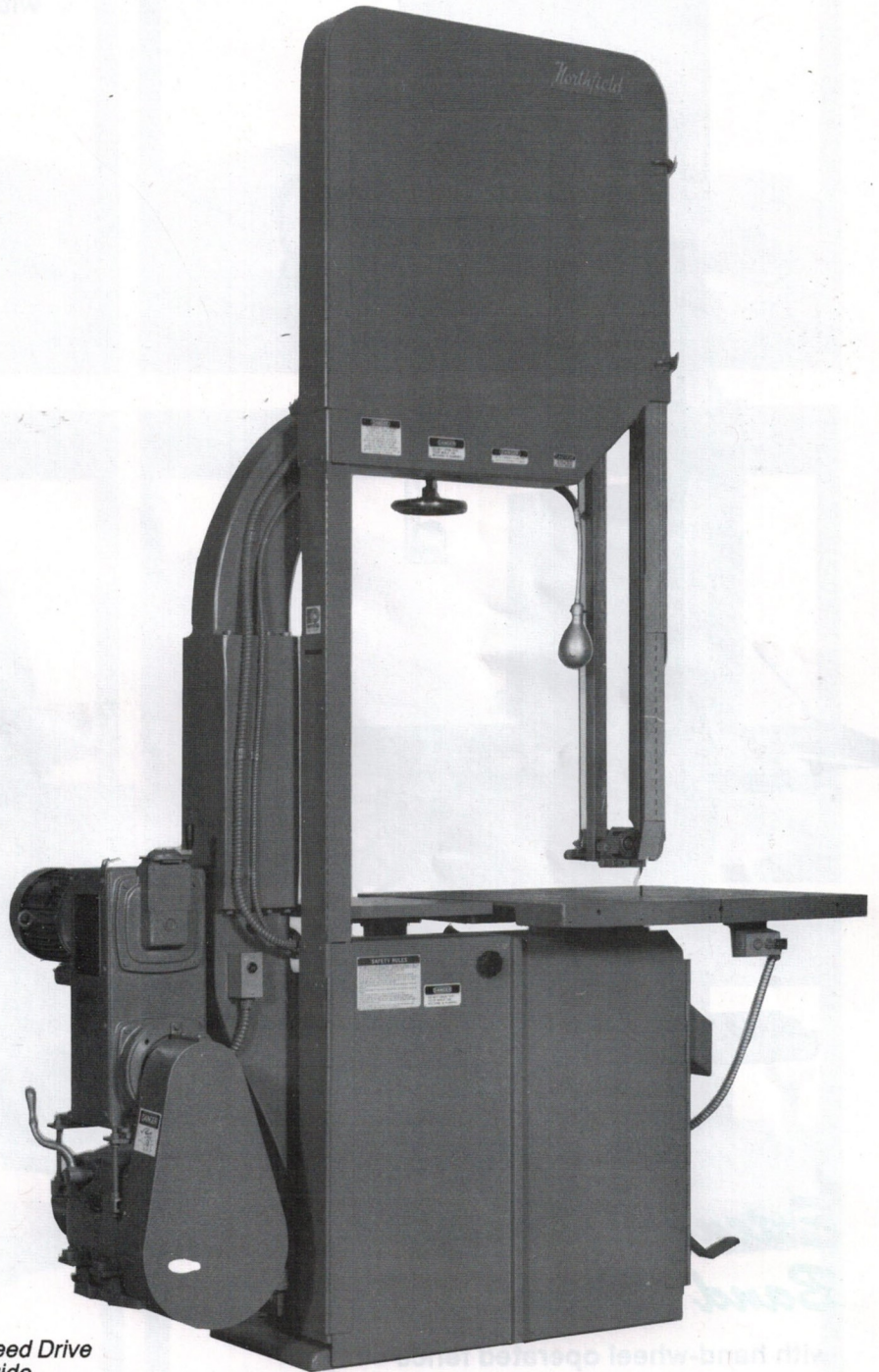


# 3:1 & 40:1 36" Variable Speed Band Saw



## Tilting & Rolling Table

Aluminum construction with Thompson anti-friction bearings. Right side sliding section offers 22" travel.



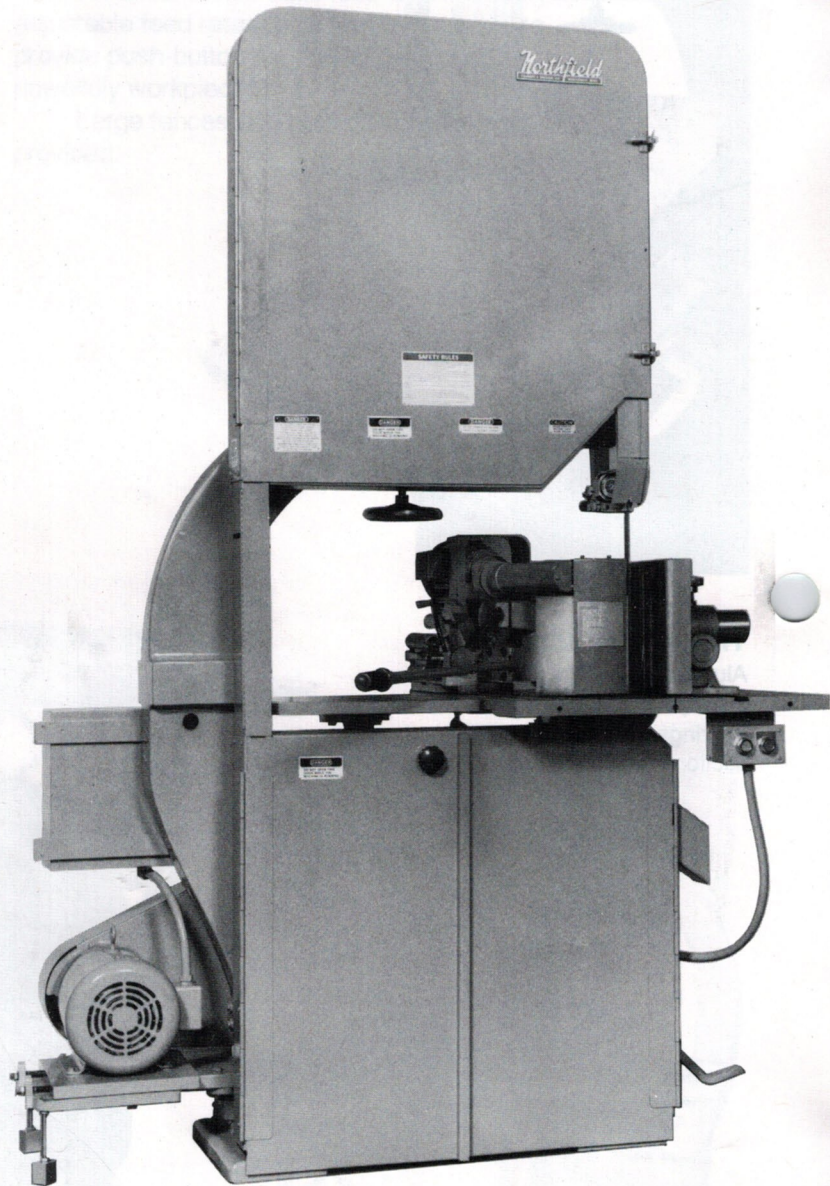
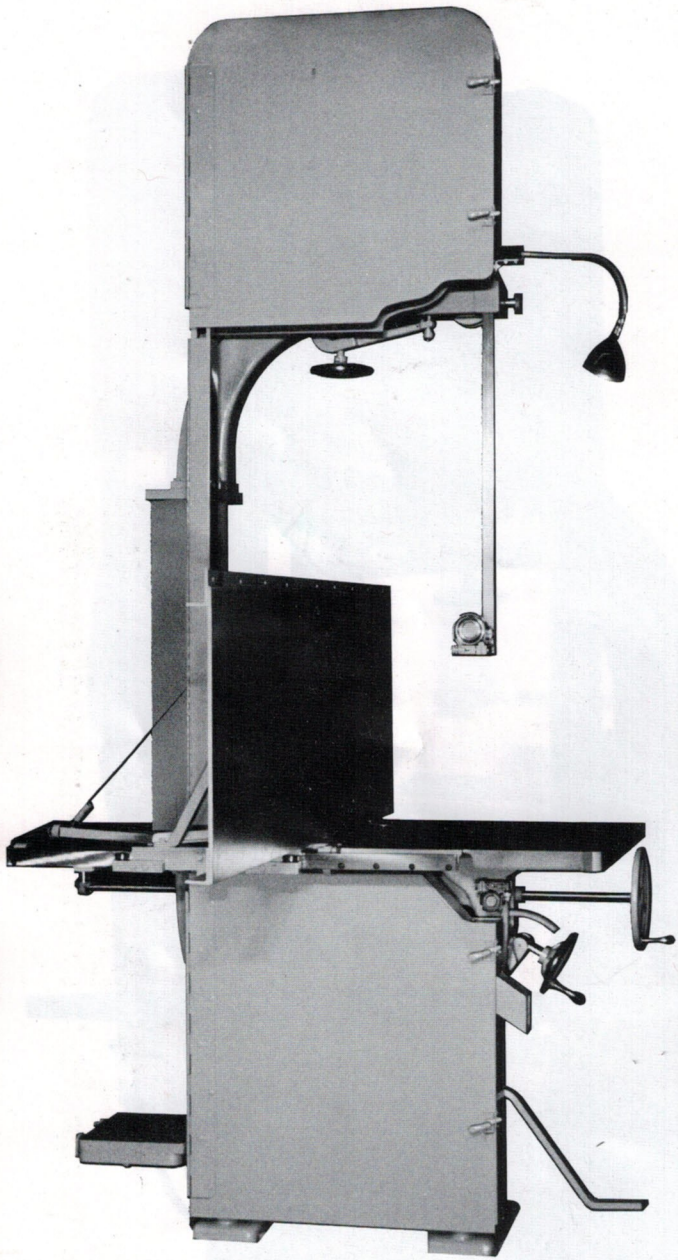
40:1 Variable Speed Drive  
with 42" under guide

DRIVE ASSEMBLIES FOR  
CUTTING WOOD, METAL,  
PLASTICS, ETC.

# Options

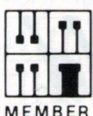
## Belt Drive Band Saw

with Optional Power Feeder



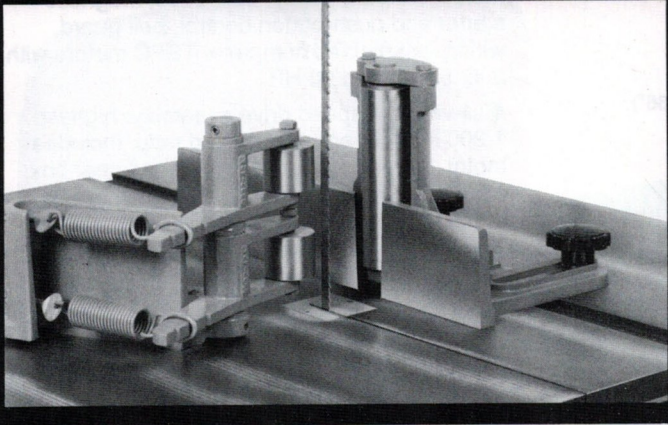
## Extended Height Band Saws

with hand-wheel operated fence

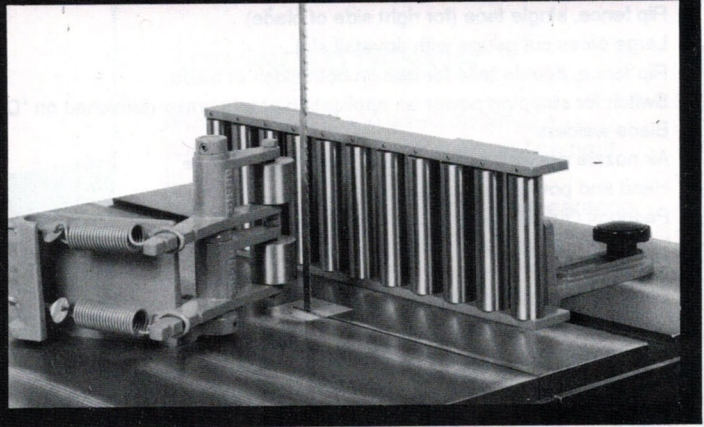


# Options

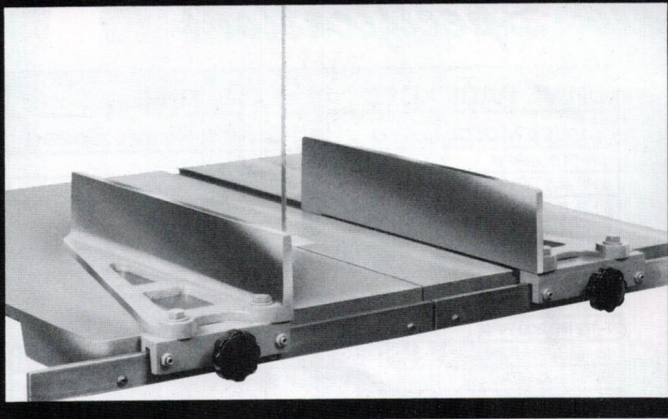
**Single Roller Resaw Fence**



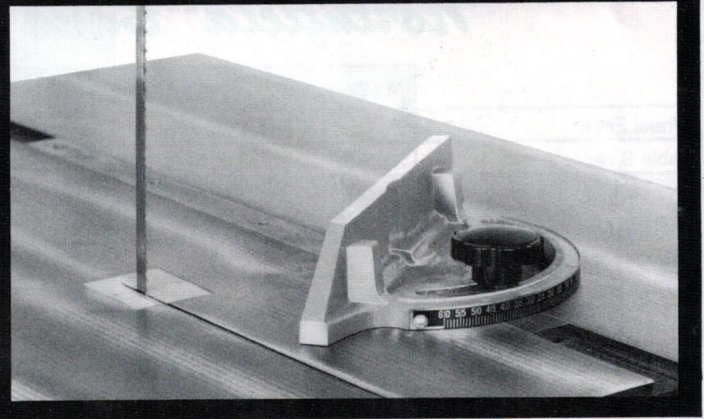
**11 Roller Resaw Fence**



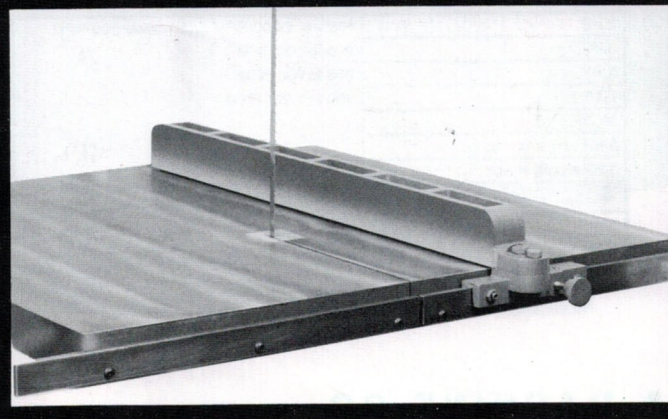
**Single Face Rip Fences (left & right)**



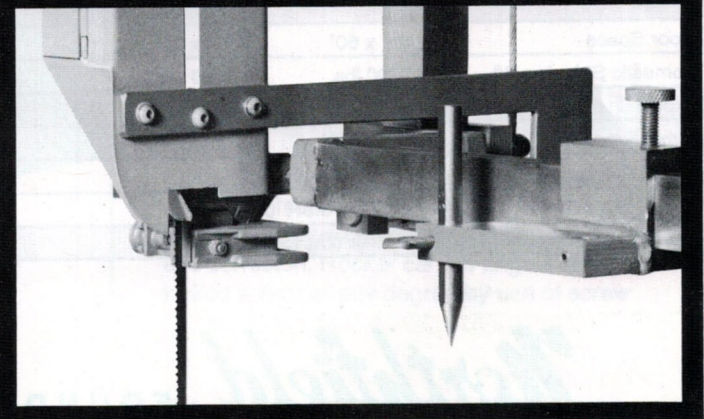
**Miter Gauge with Dovetail Slot**



**Double Face Rip Fence**



**Circle Cutting Attachment**



## EXTRAS FOR ALL 36" BAND SAWS

- Work light, 110V, plugs into customers' 110V receptacle, or work light 110V-100W using transformer in starting box, also gives 110 volt at push-button.
- Crosscut (miter) gauge and slot
- Rip fence, single face (for right side of blade)
- Large cross cut gauge with dovetail slot
- Rip fence, double face for use on both sides of blade
- Switch for stopping power on application of foot brake (furnished on "Deluxe" 36")
- Blade welders
- Air nozzle assembly, connects to customer's air line
- Hand and power resaw attachment
- Paddock Guides, Wright Guides, Guideall 400
- Large rolling table, 48" cut-off x 50" wide, solid cast iron, non-tilting table with 12" x 50" auxiliary table
- Power feed attachments for rolling tables
- Left-hand machines
- 48", 36", 30" and 24" (standard) Under guides
- Two wheel foot operated synchronized brakes (standard model)
- Upper wheel automatic synchronized safety brake (standard motorized models) includes automatic tension control
- Lower wheel automatic synchronized safety brake

## VARIABLE SPEED ASSEMBLIES

- 3:1 variable speed drive assembly; 1,200 – 400 RPM, 900 – 300 RPM, 600 – 200 RPM. Includes motor, pulley, belt, base, magnetic starter and push-button control, belt guard, wiring, assembled complete. TEFC motors with 2, 3, 5, 7½ and 10 HP
- 40:1 variable speed drive assembly: highest 1,200 RPM or any 40:1 speed ratio. Includes motor, pulleys, belts, base, 4-speed gear box, final drive, magnetic switch and push button control, guards, wiring, assembled complete. TEFC motors with 3 and 5 HP

### TO CALCULATE BLADE SPEED IN FPM:

Multiply RPM x 9.424'  
 examples:  
 900 RPM x 9.424 = 8481 FPM  
 300 RPM x 9.424 = 2827 FPM

## Northfield Band Saw Specifications

	STD	DELUXE
Wheel Face	2"	
Table Size	30" x 36"	37" x 37"
Front Edge of Table to Teeth of 3/8" Blade	12"	13"
Cap Under Guide	22"	30"
Table Tilt to Right	45 degrees	
Table Tilt to Left	5 degrees	
Horizontal Cap	35 - 1/2"	
Table Height	42"	
Wheels	Carter Loc-On Steel Disc Demountable Tire	
Brakes	Lower Wheel Foot Operated	Lower Wheel Foot Operated & Upper Wheel Automatic
Floor Space	50" x 60"	50" x 63"
Domestic Shipping Wt.	2700 lbs.	3000 lbs.
Export Shipping Wt.	3300 lbs.	3600 lbs.
Cubic Export Crate Size	165 cu. ft.	180 cu. ft.
Wheel Circumference	36" Dia. = 9.424 ft.	
Dust Outlet	4.5W x 5.5H use 5" pipe	
Machine requires approx 600 CFM air flow for dust collection		

DRIVE PACKAGES All Motors TEFC	
Direct Motor Drive	Belt Driven Single Speed
5 HP 1,200 RPM	2 HP
5 HP 900 RPM	3 HP
5 HP 700 RPM	5 HP
5 HP 600 RPM	7-1/2 HP
7-1/2 HP 1,200 RPM	10 HP
7-1/2 HP 900 RPM	15 HP
7-1/2 HP 700 RPM	3 HP single phase
7-1/2 HP 600 RPM	5 HP single phase
10 HP 1,200 RPM	
10 HP 900 RPM	Minimum 300 RPM
10 HP 700 RPM	Maximum 1,275 RPM
15 HP 1,200 RPM	Speeds lower than 300 RPM
15 HP 900 RPM	Contact Factory

### VARIABLE SPEED ASSEMBLIES:

#### 3:1 Variable Speed Drive Assembly

2 HP	Highest 1,200 RPM and slowest 200 RPM
3 HP	200 to 600 RPM
5 HP	300 to 900 RPM
7-1/2 HP	400 to 1,200 RPM
10 HP	
2 HP single phase	
3 HP single phase	

#### 40:1 Variable Speed Drive Assembly

3 HP	Highest RPM is 1,200
5 HP	Any 40:1 speed range in below 1,200 RPM

# Northfield

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