

BELSAW MULTI-DUTY PLANER

SETTING UP:

Support bench must be heavy and solid, approximately 22-in. high with bed bolt holes on 9 $\frac{1}{2}$ in. centers across and 20 $\frac{1}{2}$ in. lengthwise—leveled true. Bolt planer securely. Remove protective coating from cutterhead, bed and other metal parts with kerosene.

Oil threads in corner screws, bed roll bearings, and feed roll bearings with No. 10 motor oil. Fill zerk fittings with good grade gun grease.

OPERATION:

If you have ordered 932 Extension Tables, bolt to each end of bed. If these factory extensions are not available, it is advisable to support stock both at infeed and outfeed ends with flat boards or rollers to keep it same level as bed over its full length.

Cutterhead speed around 4000 rpm gives best results. With 3.8 diameter sheave supplied, a 1750 rpm electric motor requires a 9.0 drive sheave . . . (4000 x 3.8 divided by motor speed).

Planer requires 2 horsepower for light duty; 3 horsepower for heavy duty in harder woods.

Stock to be surfaced on any thickness planer must have one flat side. Warped or twisted boards cannot be straightened on a thickness planer—one surface must first be planed flat on the JOINTER.

Measure thickest part of board to be planed, then turn hand crank until scale pointer reads $\frac{1}{8}$ " less. Each full turn of hand crank moves planer bed $\frac{1}{8}$ ". Scale pointer indicates distance between planer knives and bed. Maximum depth cut is $\frac{1}{8}$ " (three full turns of the hand crank). Do not exceed. For deeper cuts make reruns, taking equal amounts off both sides.

Determine direction of grain in the board and feed so knives will cut with the grain and with flat side down. Start board under infeed roller so it will run as nearly as possible in a straight line. Support it to keep it level over entire travel. Short pieces should be followed with pusher stock of same thickness to prevent kickback and sniping on the end. **FEED SPEEDS:** Standard feed is 24 lineal feet per minute which gives 42 knife cuts per inch. This produces commercial finish used by builders and manufacturers generally. Smoother, near cabinet finish, is produced by reducing feed speed which increases knife cuts per inch. By changing pitch diameter of s-13 and s-11 sheaves you have a choice of 14 to 34 feet per minute.

Following is feed in lineal feet per minute for sheave combinations indicated:

s-13 with spacer and 8 in. s-99	14 ft. per min.
s-13 without spacer and 8 in. s-99	20 ft. per min.
s-13 with spacer and 4.4 in. s-11	24 ft. per min.
s-13 without spacer and 4.4 in. s-11	34 ft. per min.

When ordering optional s-99 8.0 sheave, you will also need s-55, 33 in. belt.

MAINTENANCE:

Lubricate gear train about twice a week with good grade open gear grease. Bed roll needle bearings should be lubricated daily with machine oil. Use motor oil No. 10 weight, or machine oil, to lubricate the four corner screws. Cutterhead runs in large self-aligning ball bearings lubricated and sealed at the factory against leakage and contamination. They require no lubrication.

Plain outfeed and fluted infeed rollers have spring tension thrust bearings for self-aligning pressure on stock. These bronze bearings in both s-16 infeed roll and s-17 outfeed roll are oil-impregnated. A few drops of oil on the top of these bearings once a month will replace any oil used. Lubricate parts s-29, s-96 and s-24 with first grade gun grease.

Outfeed roll should be hand cleaned with sandpaper and kerosene when packed or rusted. Infeed fluted roll is protected from chips by baffle design chip breaker, but may require occasional cleaning for positive material feed.

ADJUSTMENTS:

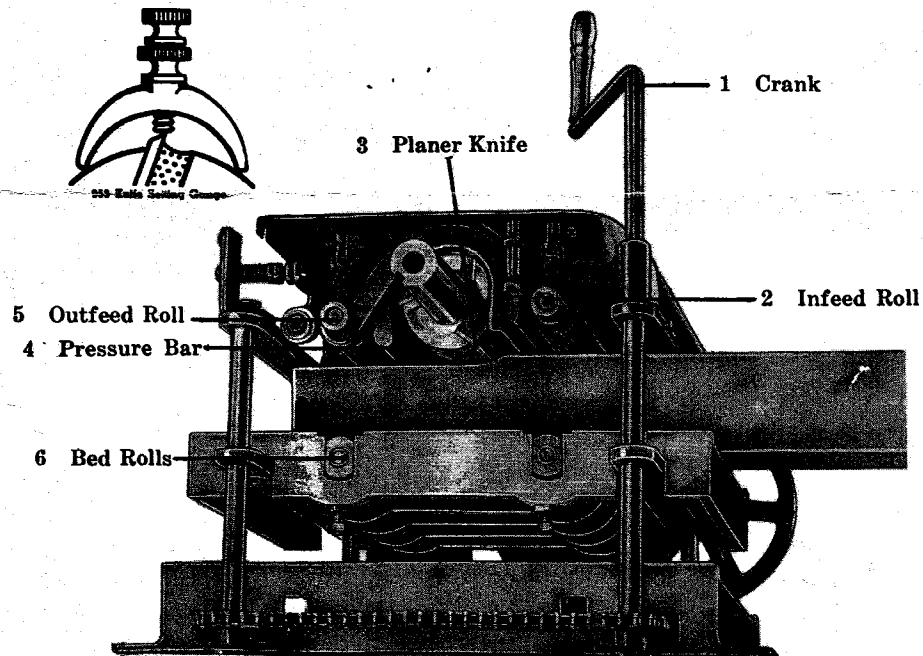
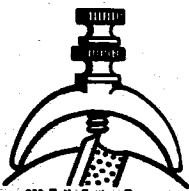
1. CRANK turns clockwise to raise planer bed, each full turn moves bed $\frac{1}{8}$ ". Bed can be raised for $\frac{1}{8}$ " minimum board thickness, lowered to 6" maximum.
2. INFEEED ROLL power feeds stock through the planer. If it requires forcing up to start board . . . does not climb smoothly on the board . . . reduce spring-tension by raising lock nuts. If board lacks positive feed, hesitates at cutterhead, increase spring-tension by lowering lock nuts. Should

3. PLANER KNIVES project 5/32" to 7/32" for proper cutting action. To remove them or adjust for greater projection turn $\frac{1}{2}$ " socket head screws back at least $\frac{1}{4}$ ". If knives and gibs do not lift out easily, use a screwdriver between chip-breaker arm and gib. Move gib knife back and forth until they are loose enough to lift out. Screw up gibs so that knives are replaced under very slight resistance. Push them into final position with Knife Setting Gauge preset for desired projection. This is an easy way to keep projection uniform along full cutting edge and equal for all knives. Make certain all bolts holding knives are TIGHT before operating.

4. PRESSURE BAR directly behind cutterhead rides on newly planed surfaces and holds stock firmly on bed. If board does not feed clear through planer lift pressure bar by moving its adjustment nuts toward back of planer. Do this on both sides to keep pressure bar straight. If board chatters, lower pressure bar. If snipe on end of board, lower pressure bar slightly, and provide outboard support, level with planer bed.

5. OUTFEED ROLL should have enough pressure to pull the board past cutterhead and pressure bar after it leaves the infeed roll. Too low, the outfeed roll will bump the board and cause it to hesitate. In this case move lock nuts up to reduce spring tension. If the board does not feed at uniform speed (slows down or skips) move lock nuts down to increase spring tension. Keep tension even on both sides of planer.

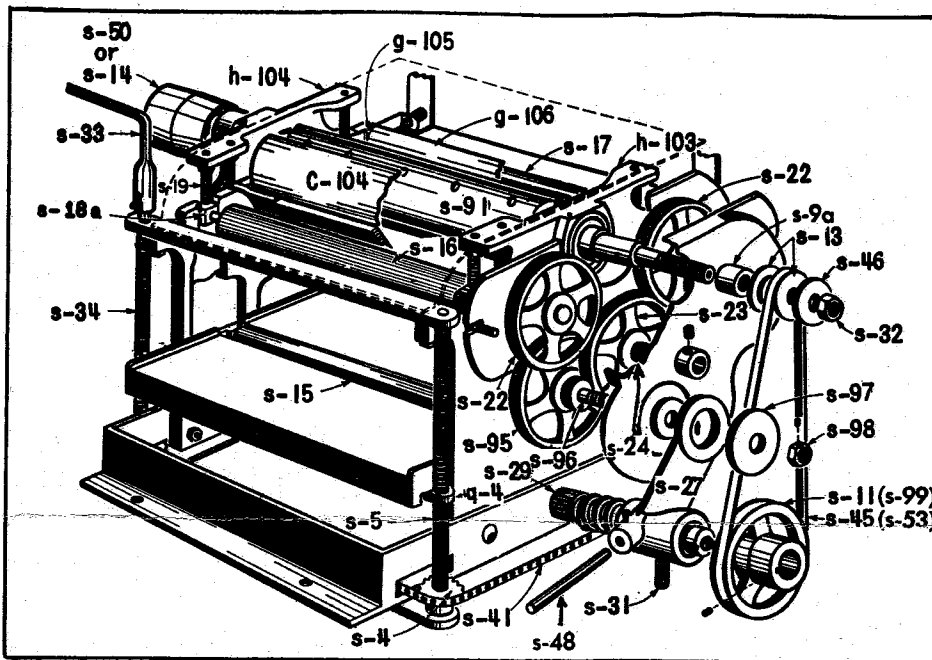
6. BED ROLLS reduce the drag of the board on the planer bed. Bed rolls are factory set .008" above bed which is best for general use. For rough lumber and heavy timbers they can be raised as high as 1/32" above planer bed. Loosen lock nut under planer bed and turn screw counter-clockwise to raise . . . clockwise to lower, then lock nuts. Each end of the bed roll must be exactly the same height above the bed for uniform thickness planing.



BELSAW MACHINERY CO

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TOP JOINTER TABLE

INSTALLATION:

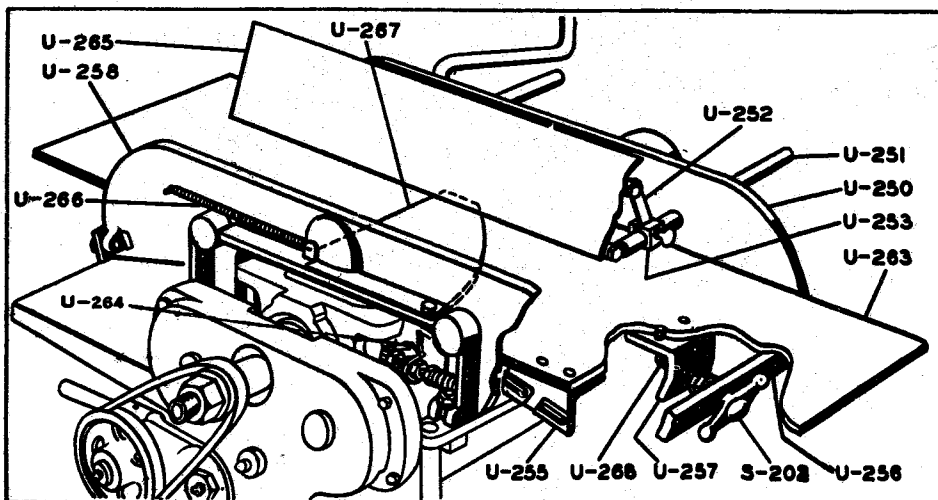
1. Remove cover.
2. Remove extension plate on chip-breaker shield. This part held in place by 4 screws.
3. Remove 4 3/4" carriage bolts from front and rear cross bars at corner screws and replace with longer ones furnished.
4. Remove two cover support angles, pressure bar bolts, and springs at out-feed side of planer.
5. Place jointer on planer with fence on left near planer adjusting crank. Insert carriage bolts through jointer feet with nuts and washers up.
6. Bring both tables to top of cutter radius testing with steel straight edge. Level tables in relation to cutterhead and to each other by loosening 2 3/4" screws under tables on sliding bracket and tapping in or out as needed. Adjust these 4 brackets individually. Slight longitudinal leveling may be accomplished by adjusting the set screws in top of infeed table.
7. Replace pressure bar bolts with 3/4" X 2" long set screws, attach to pressure bar with two jam nuts. Spring presses between nut and casting leg. Stop pressure bar down travel approximately .010" above cutting radius by sliding slotted clip angle u-264 on both sides of jointer. Adjust spring tension by nut just ahead of spring.

OPERATION:

Feed stock with the grain. Take off high surfaces first, when board is flat make a complete pass.
 Thickness of cut depends upon lowering infeed table, maximum is 1/8". Outfeed table is kept even with top of cutterhead stroke.
 Push block having friction surface of rubber or wood projecting heel holds stock securely against knives and prevents kick-back of short lengths. Use this safety device, do not feed stock by hand.
BEVEL . . . tilt fence and rerun stock till full angle is secured.
CHAMFER . . . same as bevel, but rerun only till desired chamfer face width is secured. Side casting and angle guide make useful jig to hold stock. Use a sliding T-Bevel to determine angle of fence.

SAFETY RULES:

Keep knives sharp, fasten securely. Use a light cut, too heavy cut may cause a kickback.
 Wear no loose fitting clothing and no gloves, tuck in necktie and roll up sleeves.
 Do not place hands near knives . . . use a pusher board at all times.
 Be sure tables and fence are secure and clear of knives before starting motor.
 Keep floor clean around machine.

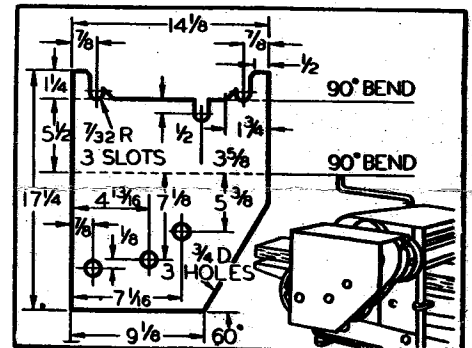


PARTS LIST
Model 905

THREE KNIFE HEAD—CAST TABLE

Order Part No.	Description	Shipping Wt. in Lbs.
c-104a	Chipbreaker and Shield	7
e-103	Table Roll Bearing Boss (4)	1
g-105	Pivot Bushing (2)	1
g-106	Pressure Bar	1
h-103	Right Bearing Housing	1
h-104	Left Bearing Housing	7
m-2	Ball Bearing, Cutterhead (2)	2
q-4	End Bar (2)	2
q-5	Bed Roll Bearing (4)	1
s-4	Sprocket (4)	1
s-5	Corner Screw (3)	2
s-8a	Sleeve	1
s-11	V Sheave 4.4	3
s-13	V Pulley, 3 pieces	1
s-14	Drive Pulley 4" x 4"	6
s-15	Table Roller (2)	7
s-16	Infeed Roll, 1 1/2" fluted	8
s-17	Outfeed Roll, 1 1/2" plain	8
s-18a	Infeed Roll Bearing (2)	1
s-19	Feed Roll Tension Spring (4)	1
s-22	Feed Gear, 80T	2
s-23	Idler Gear, 80T	2
s-24	Axle for s-23	1
s-27	Feed Sheave Arm	4
s-29	Feed Pinion, with axle 21T	2
s-30	Roller Bearing for s-29	1
s-31	Feed Belt Tension Spring	1
s-32	Arbor Nut	1
s-33	Crank	3
s-34	Corner Crank Screw (1)	2
s-41	Roller Chain—Diamond #65	2
s-45	V Belt 28" (for 4.4 sheave)	1/2
s-46	Washer	1/2
s-48	Feed Pulley Handle	1/2
s-50	Drive Sheave 3.8 2 groove	5
s-53	Belt 33" (for 8.0 sheave)	1
s-57	Outfeed Roll Bearings (2)	1
s-81	Planer Cutterhead, 3 blade	37
s-82	Planer Head Gib (3)	2
s-85	Compound Gear 124T-21T	5
s-86	Axle for s-85	1
s-97	Feed Sheave Arm Plate	1
s-98	Nut 1/2"	1/2
s-99	V-Sheave 8.0	1
957	Planer Knife 12 1/2 x 1 1/2 x 1/8" (set of 3)	2
958	Planer Knife — Super high speed steel for continuous planing of hard woods and for fine cabinet finish on thin cuts extra-quality—12 1/2 x 1 1/2 x 1/8" (set of 3)	2
953	Knife Setting Gauge	1/4

When ordering parts always give both MODEL No. and SERIAL No. shown on your machine's nameplate. Include allowance for postage; we will prepay and refund unused portion.



Above is suggested guard for feed belt.

PARTS LIST
920 Jointer Table

Part No.	Description	Shp. Wt. in Lb.
s-202	Handle, Operating Screw	3
u-250	Support Casting, Fence Side	29
u-251	Slide Rod	3
u-252	Fence Link	1/4
u-253	Tilt Locking Clamp	1/4
u-254	R. H. Table Bracket (not shown) (2)	3
u-255	L. H. Table Bracket (2)	3
u-256	Yoke	3
u-257	Height Control Bracket	1/4
u-258	Support Casting, Guard Side	29
u-263	Jointer Table (2)	28
u-264	Pressure Bar Stop (2)	1/4
u-265	Fence	9
u-266	Spring	1/4
u-267	Knife Guard	3
u-268	Screw—1/4 x 4 (2)	1/4