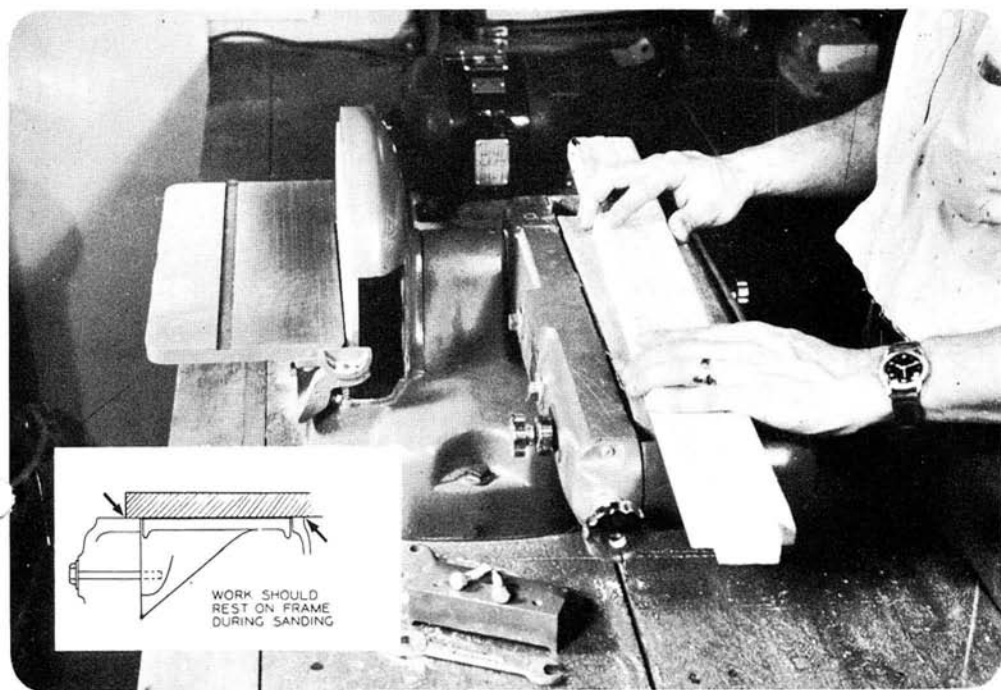


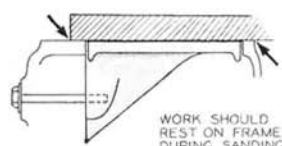
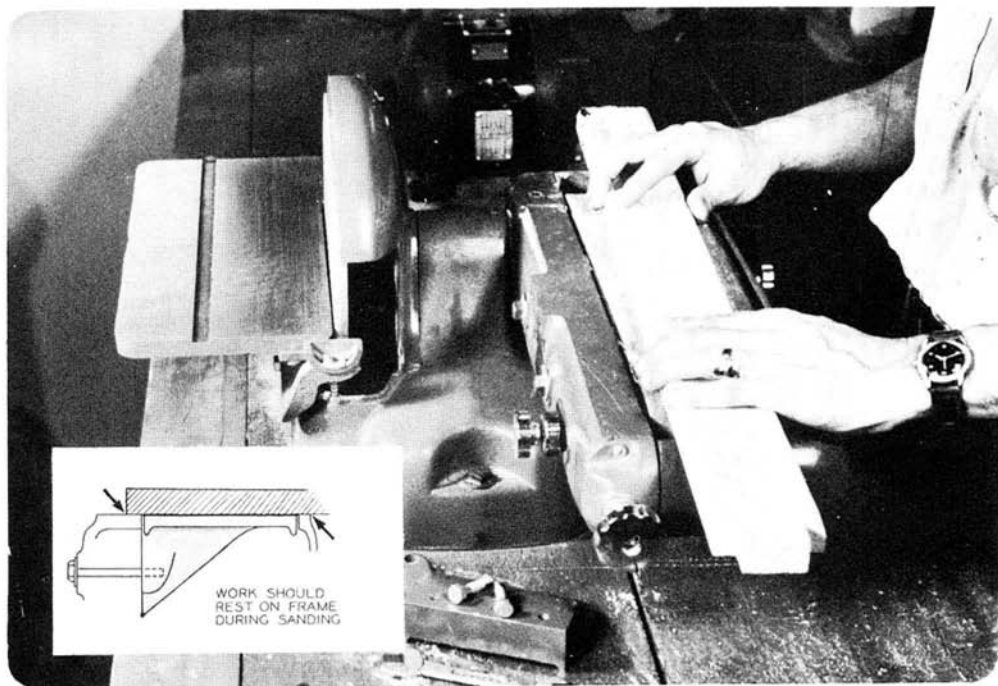


# MECHANIX ILLUSTRATED



**HOW TO USE  
THE No. 5010  
COMBINATION  
SANDER...**





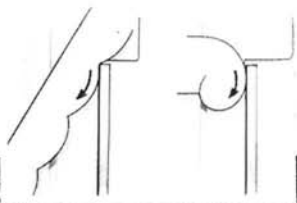
WORK SHOULD REST ON FRAME DURING SANDING

## HOW TO USE THE COMBINATION SANDER

The first of a series of articles for both beginners and experts on the proper use of machine tools.

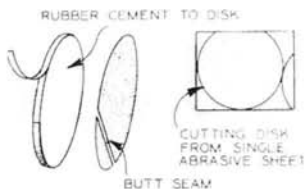
By Roland Cueva

Outside contours are easily shaped on the abrasive disk of the versatile, power-run combination sander.

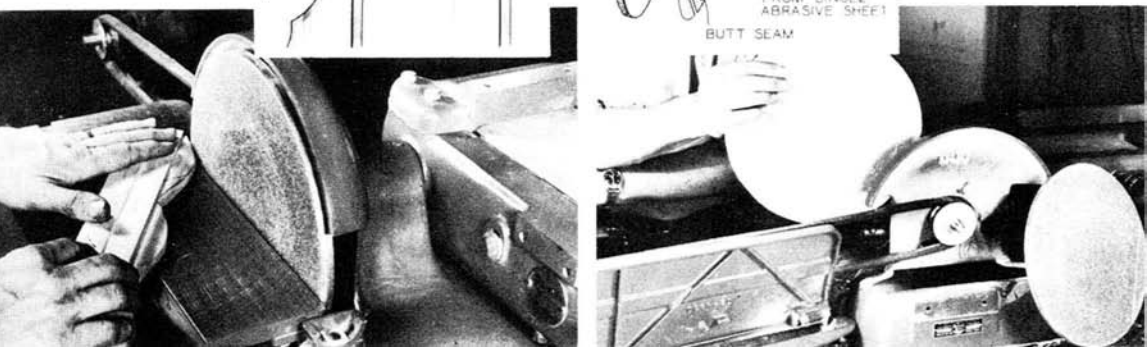


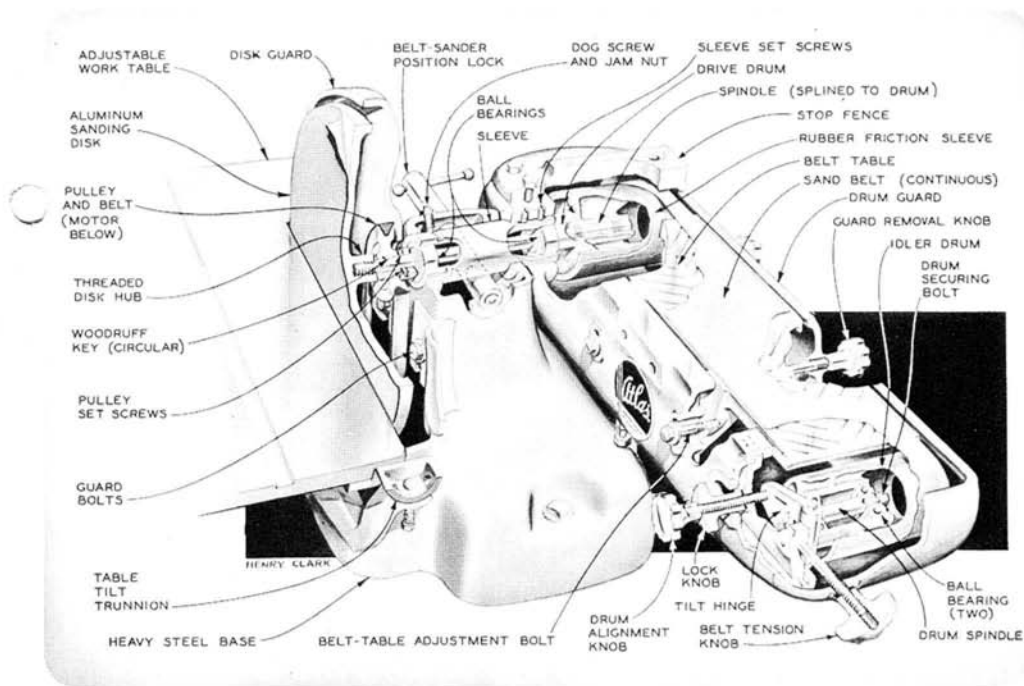
BECAUSE half the secret of producing satisfactory woodworking projects in your workshop lies in good finishing, a combination sander should be included in your basic equipment. A professional-looking finish on any piece of work—whether, natural, paint, or lacquer—depends on the base under it—which means sanding and more sanding.

With a combination sander, you can ob-



To speed work, keep two disks on hand—one covered with a fine paper and the other with coarse.



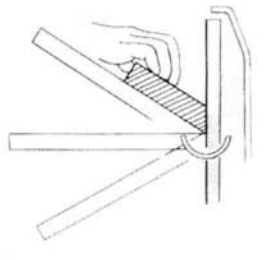


tain perfectly sanded surfaces in a fraction of the time required for tedious hand methods. In addition to conventional sanding of pieces of almost any shape and size, this versatile tool can handle other types of work, such as reduction or shaping of small and medium-sized parts. With it, you can round off edges and corners with great accuracy, accomplish contour sanding, and practically eliminate the necessity of planing. By employing various grades of abrasive on the disk or belt, it is possible to eradicate in an instant the most stubborn saw marks or other defects and progress

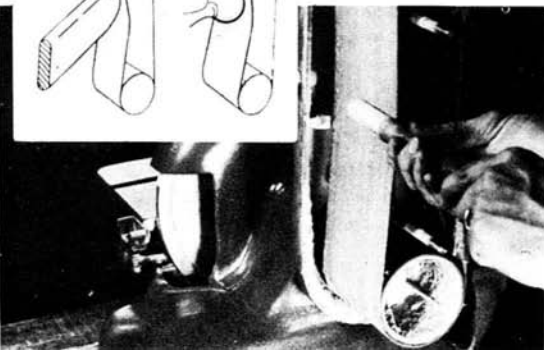
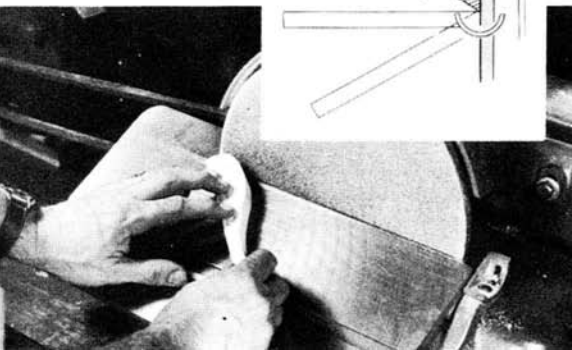
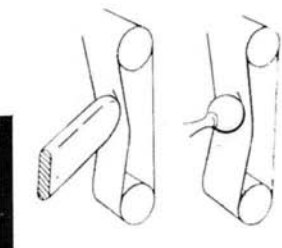
to the fine, satiny surface that spells a clean, even, perfect finish.

To get the most out of it, the sander should be properly mounted. The best arrangement is to bolt it to an individual stand about 30 in. high, with the motor on a shelf or bracket below. If desired, the stand can be on casters for portability. These sanders, however, are built so the motor can also be placed to one side; thus the complete outfit may be set up on a workbench, as shown in the photos. The important thing is to have plenty of space all around the tool and to have it accessible

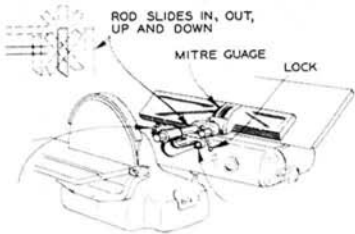
For sanding work at an angle, the table can be tilted either up or downward; then locked tight.



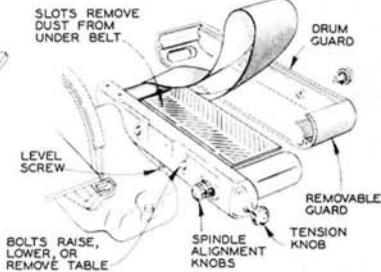
The underside of the belt has no backing; so it is flexible. Round work is easily handled, as shown.



**FOR BELT-SANDING LARGE PANELS**



**FENCE GAUGE FOR USE WITH BELT WILL ACCOMMODATE LARGE PLANKS**



**DON'T WORK WITH LOOS CUFFS, TIES, OR OTHER FLAPPY APPAREL**



**DON'T POWER-SAND THIN STRIPS...MAY BE SWEEPED FROM FINGERS, JAM UNDER GUARD**



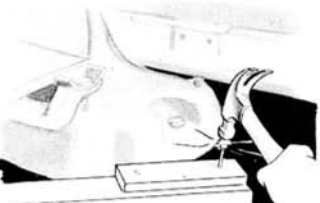
**DON'T SAND CROSS GRAIN ON THE BELT... WILL SCORE WOOD... BETTER RESULTS WITH DISK**



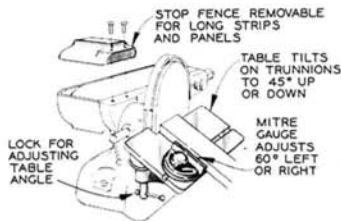
**DON'T USE R. H. FACE OF DISK... THIS FLINGS WORK UPWARD... ALONG WITH MUCH SAWDUST.**



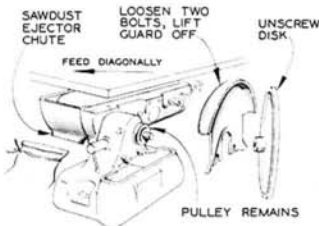
**DON'T FORCE WORK...DISK CUTS RAPIDLY, WILL OVERCUT OR BURN-MARK WOOD**



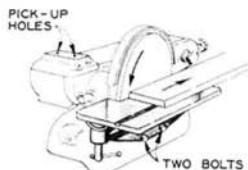
**DON'T HAMMER NEAR SANDER FRAME...YOU MAY SLIP AND CRACK SOMETHING!**



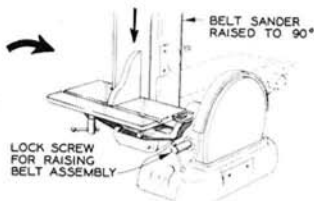
**OTHER FEATURES, INCLUDING GAUGE**



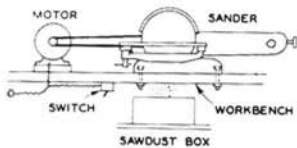
**DISK AND GUARD ARE REMOVABLE**



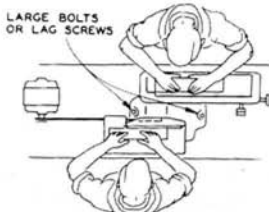
**WORK TABLE IN POSITION FOR DISK SANDING, IS QUICKLY REMOVED ~**



**OVER TO BELT-SANDING WORK BY SWITCHING TWO BOLTS**

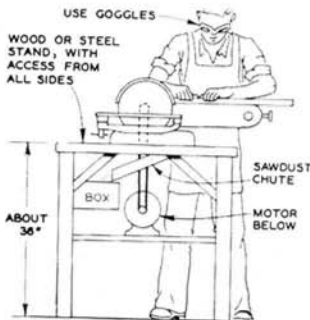


**SAWDUST BOX**



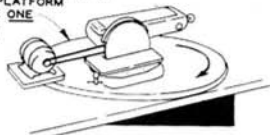
**SANDER SHOULD BE ACCESSIBLE FROM BOTH SIDES OF BENCH**

**BENCH MOUNTING**

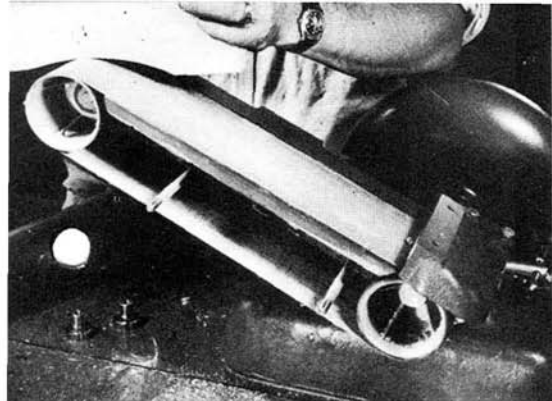


**STAND MOUNTING**

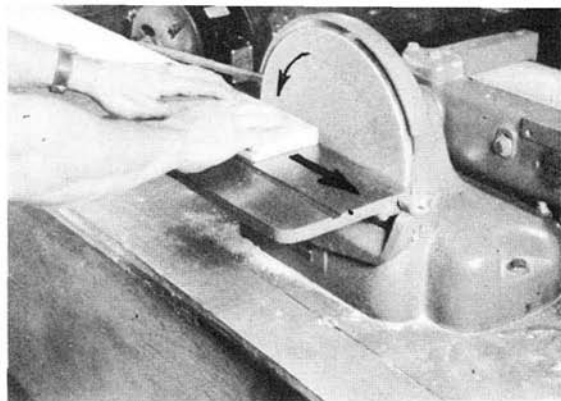
**~OR PERHAPS MOUNTED ON ROTARY PLATFORM TO SERVE ONE WORKING POSITION**



**BENCH MOUNTING**



You'll want to sand out many an inside contour. Removing the guard and tilting the carriage, as illustrated, permits this to be done efficiently.



When sanding the edge of a board, always move the work across the counterclockwise-rotating disk from left to right, never from right to left.

from both sides. There will be many times when you will want to work on the belt from the far side; so don't mount it on a bench or table against the wall.

Sawdust is controlled by cutting a hole in the bench top under the base of the sander and putting a box there to catch the dust. The belt drum guard has a sawdust ejection nozzle over which a cloth bag can be tied. It's a good idea, incidentally, to collect and save some of your sander dust—it has a fine flour consistency and when mixed with Cascamite or other plastic adhesive makes an excellent wood dough for filling cracks, countersunk nail heads, etc. By keeping dust from various woods in separate jars, you can have the ingredients of a matching filler handy for any job.

How do sanders of this type operate? Generally, disk and belt are run on a single shaft, rotating counterclockwise simultaneously at the same speed. A  $\frac{1}{3}$ -hp. capacitor motor is adequate for average work, but if you expect to run pretty heavy loads, a  $\frac{1}{2}$ -hp. motor would be better. The sanding belt is continuous, passing over two drums, one at either end. It has a removable guard on the side and a stop fence on top against which the work can be firmly held. The belt assembly is pivoted so it may be set in any position from horizontal to vertical. The belt sander is used mainly for flat work, though with-the-grain edges can be sanded square, beveled, softened, or rounded off. Round pieces can also be sanded on the belt, after a bit of practice, by holding the work against the fence and rotating it slowly in the hands. With the stop fence removed, long planks are accommodated.

In flat sanding, move the piece being sanded slowly back and forth with the grain as the belt runs under it, keeping a light but even pressure on it. One mistake the be-

giner may make is to "over press" the work, which shortens the life of the abrasive and can cause burn marks on the wood. Let the machine do the work—heavy pressure is unnecessary. The sanding belts are supplied by the manufacturer in various grades from fine (3/0) to fairly coarse (1½). A good arrangement is to use the finer grades on the belt and coarser on the disk, where edge sanding across the grain is done. For wood alone, a garnet abrasive is satisfactory, but the aluminum-oxide types are preferable, not only because they wear longer but also because metal as well as wood can be sanded on them. With the belt carrier raised and guard removed, the ends can be employed as drum sanders for concave work. In vertical position, irregular and odd-shaped pieces can be sanded on the *under* side of the belt, which, because it has no backing plate, is more flexible than the top. For guiding straight work, adjustable fences, similar to the ripping fences on circular saws, are available as accessories.

Edge sanding of all kinds is done on the disk, which is equipped with an adjustable table on which to rest the work. This table is milled like a saw table to take a miter gauge, so very accurate work is possible. The table tilts and locks in position at any angle to 45°, up or down. Picture-frame and other mitered corners can be sanded to a precision that will make the joints virtually invisible. Rounding corners and edges is a simple task on the disk. Always hold the work against the half of the wheel turning *down toward* the table—work held against the up-spinning side is liable to be knocked rudely from your hands. When sanding long work on the disk, feed it slowly and steadily into the direction of rotation, never the other way. If for any reason, you *have*

to feed from the other side, get a firm grip on the work with both hands and hold it very lightly against the wheel. The disk will cut faster than the belt, so caution must be exercised to avoid overcutting. Remember that the outer edge of the disk is traveling much faster than the inside and can cut ridges in work carelessly held. A little practice with scrap wood will give you the correct "feel."

The abrasive disks can be purchased like the belts, or you can cut your own from standard sheets of garnet or aluminum-oxide paper. One sheet will make a disk if cut and applied in two pieces, as shown. The abrasive is secured to the metal disk with heavy rubber cement. When an abrasive disk is worn out, it must be removed before applying a new one—don't try pasting them one over the other. A stunt that will increase the capacity of the disk is to cement a narrow strip of abrasive paper around the edge. With this, notches, tenons, open mortises, lap joints, etc., can be sanded smooth and to a close fit.

The power sander is a rugged tool that will give years of efficient service if properly operated. There is a common safety rule applicable to all rotating power tools—don't wear a necktie or long sleeves when working or you may literally be wrapped up in your work. Don't use the table or bench in the

vicinity of your sander for assembling parts, hammering, etc. A slip with a hammer may crack the housing or other cast-iron parts of the sander. Don't try to sand very thin pieces on the belt. They may slip between fence and belt, seriously jamming the sander. Don't work an abrasive belt or disk until it is worn smooth. It wastes time, puts an added burden on the moving parts of the sander, and is likely to burn the work. Scrubbing the abrasive with a stiff wire brush occasionally will prolong its active life by removing gum and wood particles that stick to it.

Oil all parts frequently and keep a film of oil on the ground surface of the disk table when the sander is not in use. Keep at least two extra belts on hand at all times. They don't break or tear easily, but it's nice to have extras just in case. Always use the disk-table adjustment and angle gauge when precision angle sanding is required. Your eye may be fairly good, but the gauge is perfect. Sand all parts separately and completely before assembly, even when the project is small. Use the sander only for its intended purposes. It may sound foolish to say that anyone would mount a carborundum wheel or circular-saw blade on the disk arbor, but there have actually been such cases. •

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## SANDER ACCESSORIES

### BELT FENCE



No. 6101 SANDING BELT FENCE. Essential for accurate edging operations on belt. Bracket bolts to ready-machined belt housing, no drilling or tapping

necessary. Fence face is precision ground. Fence positions up, down, in, out—tilts 45° both ways from vertical. Angle of tilt is shown on graduated segment. Wt. 6 lbs.

### ABRASIVE SHEETS FOR DISC

No. 5101 Fine Garnet #3/0-120 .....Set of 6  
 No. 5102 Medium Garnet #1/0-80.....Set of 6  
 No. 5103 Coarse Garnet #1 1/2-40.....Set of 6  
 No. 5104 Aloxite (for Metal Sanding) #1 1/2-40. Set of 6

### ABRASIVE BELTS

No. 5105 Fine Garnet #3/0-120.....each  
 No. 5106 Medium Garnet #1/0-80.....each  
 No. 5107 Coarse Garnet #1 1/2-40.....each  
 No. 5108 Aloxite (for Metal Sanding) #1 1/2-40.....each

### MITRE GAUGE



No. 3227 MITRE GAUGE. For accuracy in edging operations on disc and in belt operations where work is supported on table

—essential for duplicate work. Graduated 60° left and right—locks rigidly in desired position. Slides smoothly in table slot. Wt. 1 lb.

### EXTRA SANDING DISC



No. 5110 SANDING DISC. Having a disc for each abrasive used saves time, money. Balanced aluminum casting, face accurately machined. Easily interchangeable. Wt. 2 lbs.

### FLOOR STAND

No. 9013 FLOOR STAND. A sturdy support for belt and disc sander. Top, shelf and legs are heavy-gauge steel—scientifically designed for maximum rigidity. Motor mounts on bottom shelf—shelf positions 2½" for proper belt tension. Easily assembled with bolts and nuts furnished. 13¼" x 27" x 27" high. Wt. 36 lbs.

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