

Lewis
MACHINE TOOL COMPANY

Castings
**FOR THE TOOL
BUILDER**

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BUILD YOUR OWN MACHINE TOOLS

Lewis
CATALOG NO. 47



LEWIS MACHINE TOOL CO.

BLUE PRINTS AND CASTINGS

LEWIS MACHINE TOOLS

For Precision Metalworking and Woodworking

WHAT THEY ARE. Lewis Machine Tools are complete sets of well designed, high quality rough or semi-finished castings with engineering blueprints for twenty-three practical units. They are sold to and completed by home-craftsmen, training schools, and machine shops for manufacturing purposes. Each has been designed by technically trained and commercially experienced mechanical engineers.

WHAT YOU GET. Lewis patterns are made to precision dimensions and castings are poured from the finest grade of gray iron. Specifications for these materials are equal to those used by nationally known machine tool manufacturers. Lewis castings are close-grained, easily machined, strong, rigid and long wearing. Castings are poured under rigid foundry control and those castings which are sold in semi-finished condition and that must withstand heavy loads and stresses are thoroughly normalized to remove internal strains and improve the grain structure. For moving parts, the most suitable wearing materials are used. Ample body stock is provided in many units where enlarged bearing recesses are required to permit a choice of bronze, ball or roller bearings.

HOW YOU BENEFIT.

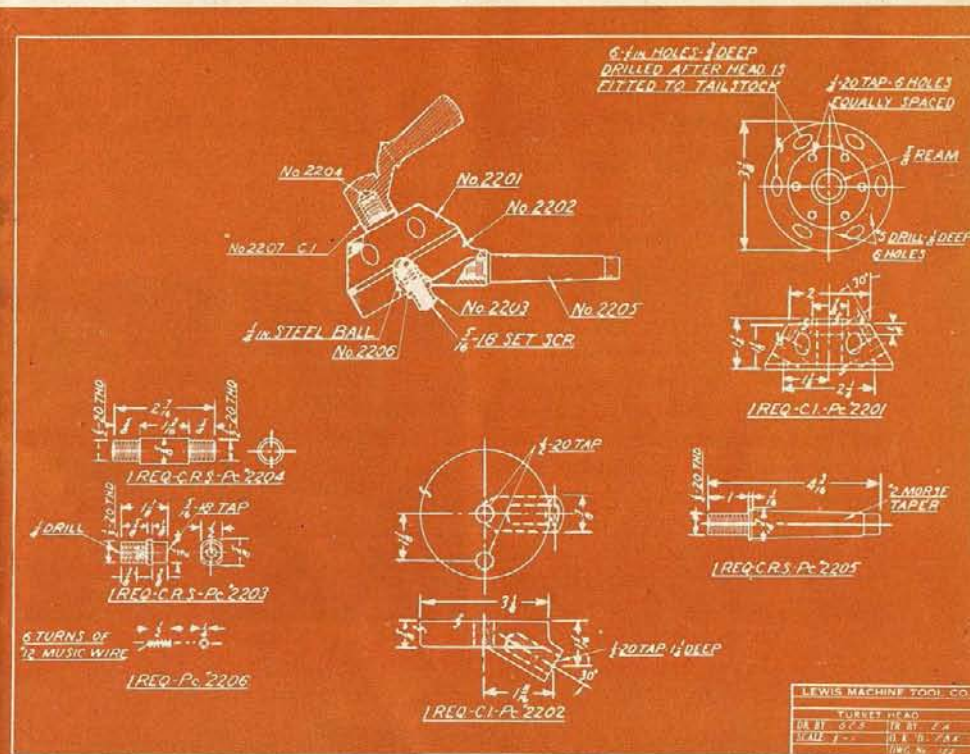
(1) You save the cost of patterns. (2) As Lewis Machine Tool Castings are made in large quantities, you save the penalty of small lot production. (3) By finishing the tools yourself, you not only get the pleasure and experience that come with good craftsmanship, but you also save the cost of expensive skilled labor that is charged into the price of finished tools. In some cases as much as 84% of the cost of comparable tools can be saved. (4) You have the choice of a wide variety of items. (5) Finally, you have the assurance of getting tools that have been correctly designed and proved by practical performance, yet have ample leeway in design to incorporate many individual ideas.

SIMPLE AND EASY TO BUILD.

Many Lewis Machine Tool projects require only simple shop operations such as filing, drilling, tapping, etc. Some of the heavier tools require more advanced operations, such as shaping and milling. If you do not have the heavy equipment for completing the Lewis Shaper or Milling Machine, we can supply the castings with all the major machining finished to a very high degree of accuracy. Often the rough castings can be machined at a reasonable cost in your local machine shops or even in neighboring school shops.

With proper care and intelligent reading of the professionally engineered Lewis blueprints, the average individual with a moderate knowledge of machine shop practice can complete equipment that will work to a .001" tolerance. Semi-finished castings are machined to commercial tolerances of approximately .003". By carefully scraping and fitting parts, such as all machine tool builders do, users can have Lewis Tools that are comparable in precision with any that can be bought. Replacement parts needed as the result of inexperienced student errors or of accident in machining can be procured at pro-rated cost without premium.

Three



WHAT LEWIS TOOLS WILL DO.

Within its capacity, every Lewis Machine Tool, when properly finished, will turn out work just as good—just as fast—just as precise, as the work produced by a tool of similar size purchased from a standard manufacturer at a much higher cost. On properly built Lewis metalworking tools, you can work to tolerances of .001" or better. The capacity of the Lewis Bench Mill and Shaper is equal to or greater than many of the models advertised by nationally known manufacturers. The same applies to all other items in the Lewis line.

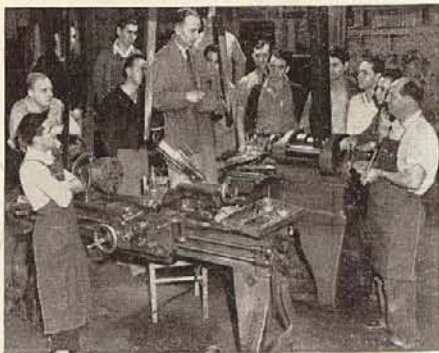
WHO USES LEWIS MACHINE TOOLS?

In 1935 Lewis Machine Tool Castings were first offered to meet a definite and growing demand from home craftsmen, inventors, model makers, and machine shops requiring small equipment. The unusually successful performance of Lewis tools in the hands of such workers—many of whom were instructors in vocational training schools—led to demands from trade schools for new projects. This was followed by a rapid expansion of orders from secondary schools, high schools and even universities. The reputation spread. Now Lewis Machine Tools are preferred by all classes of vocational training schools in every state in the Union because they provide worthwhile projects of high educational value. They continue to be used by home craftsmen, and many manufacturers now use Lewis Machine Tools for economical production to relieve or replace larger, expensive machines—with great savings in first cost and marked economies in manufacturing expense.

Lewis

MACHINE TOOLS AS PROJECTS FOR SCHOOL SHOP TRAINING THE HANDS THAT RUN MACHINES WILL MOLD THE FUTURE OF THE WORLD

With the end of World War II, the world is experiencing one of the greatest markets for consumer goods in its history. Government limitations, which restricted the manufacture of these goods, have finally been lifted. Skilled labor essential to their production is at a premium and will probably continue so for many years. It is only logical that a new and ready source of supply for skilled craftsmen will be required to fill the thousands of



vacancies that consumer demand is creating. New positions will be filled, in large part, by the universities, vocational, industrial and secondary schools throughout the nation.

Intensive training programs for adults as well as students furnished the necessary craftsmen for supplying our country's largest armed

forces. The same programs will again help to produce the tool-makers, die makers, machinists, etc., that industry is demanding today.

In this training, the knowledge of construction and proficient operation of metal and woodworking equipment are basic. The problem of shop teachers is therefore that of finding high grade projects that maintain student interest, that are instructive, and that have a useful value after completion.

Lewis projects provide schools with material for basic, practical, thorough instruction. When completed, these projects become valuable production tools for further equipping the school shops, for use in manufacturing operations or for home shops owned by the individual.

Building Lewis tools is interesting work that requires intelligent study and gives students practical experience in reasoning out how to handle jobs to the best advantage.

LEWIS MACHINE TOOLS SUITABLE FOR MANUFACTURING

In addition to being used in every state in the Union for basic training in vocational schools, completed Lewis Machine Tools are used in many plants on actual production operations. They were widely employed during the war, often saving months of delay when machine tool deliveries were difficult or impossible to obtain. On their respective assignments they proved their practicability, accuracy and adaptability.

In many cases Lewis Machine Tools are showing tremendous economies on operations within their capacity by relieving or replacing larger or more expensive machines.

Home craftsmen with Lewis Machine Tool equipment are building their own businesses by taking sub-contracts manufacturing many small and medium-sized parts. Keep in mind that Lewis Machine Tools are real producers . . . real Machine Tools. Their good design and substantial construction provide the strength and rigidity which are the essential qualities for precision production.

NOTICE

Normally we stock sufficient castings and parts to enable us to ship within a few days following receipt of your order. However, due to current material and labor conditions, orders may be unavoidably delayed. We make every effort to ship within the time specified.

LEWIS BENCH MILL

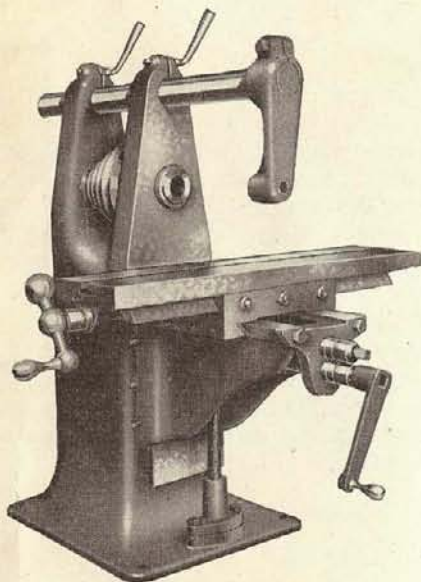
This is a skillfully designed and thoroughly practical precision milling machine having exceptionally large table movements for its compact size and amazingly low price. When completed it makes one of the most versatile and useful tools in the shop for cutting keyways, spur gears and dovetails, for fluting taps and reamers, for form cutting special shapes, and for hundreds of manufacturing and tool-making operations.

The castings are carefully poured of close-grained gray iron. A husky spindle uses either a No. 3 Morse or No. 7 Brown and Sharpe taper and has a $\frac{3}{4}$ " hole through the center, permitting use of a draw bar or collet attachment. Bearings are bronze with the front bearing tapered for take-up in case of wear. If roller or ball bearings are preferred, ample body stock permits boring for a 3" ball or roller race. Drive is optional and choice can be made between 3-step flat belt pulleys or 4-step V belt pulleys.

To facilitate smooth operation, knee and table assembly are supported by a ball thrust bearing on the vertical Acme screw. Gibs are provided on all dovetails to take up for wear.

Lewis Bench Mills are modern machines for modern shops—compact in design—ready for hard and accurate service and available at an unbelievably low price. They will perform many milling operations just as accurately, just as fast, as high priced equipment, and by using several machines, they will out-produce a single expensive mill on many jobs at a substantial saving in first cost. The high performance characteristics of this mill have influenced its purchase by hundreds of inventors, experimenters, machine shops, schools and model makers.

Lewis Bench Mills are designed to use many types of cutters but are particularly efficient for end milling operations. Where an outer bearing support is required for cutters on an arbor, an overarm and bracket are provided. Four speeds are available through Vee type pulleys or three speeds with the optional flat pulleys. Motor recommended is $\frac{1}{3}$ h.p.



LEWIS SEMI-FINISHED MILL

In purchasing castings and parts for the Lewis Mill, attention should be given to the accessory items listed for use on this tool. Most of these will prove of great value on various jobs, and by making shipment at one time, transportation costs will be saved.

SPECIFICATIONS

Overall Height	23"	Cross Feed	5"
Base Dimensions	10 $\frac{3}{4}$ "x11 $\frac{3}{4}$ "	Table Travel	12"
Size of Table	3 $\frac{7}{8}$ "x18"	Tee Slot Dimension	$\frac{3}{8}$ "
Vertical Travel	7"	Shipping weight approximately	210 lbs.

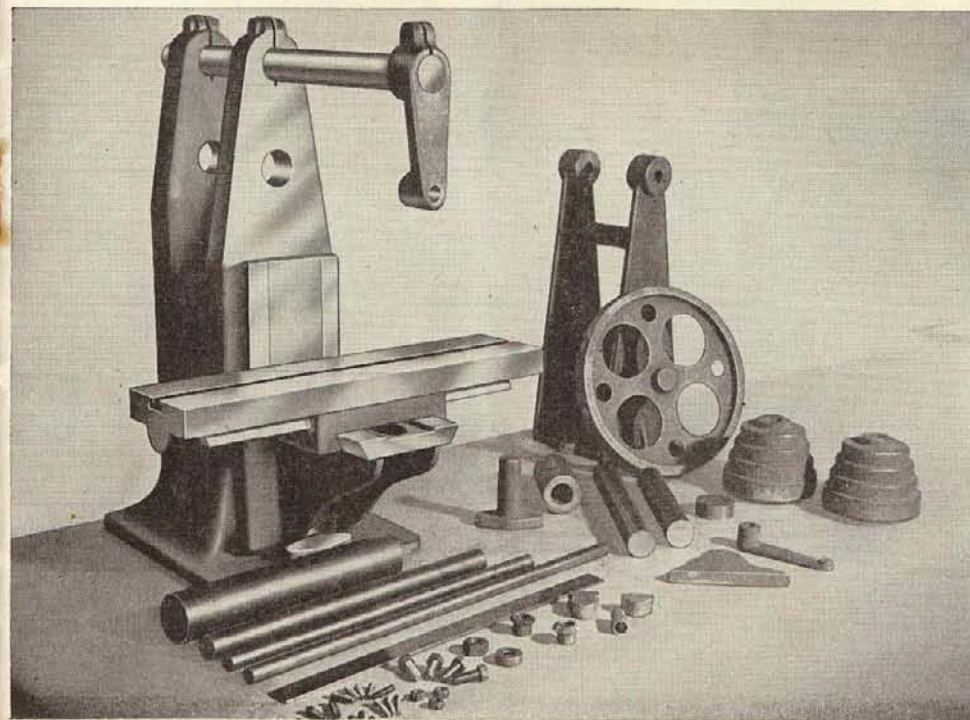
NO. 109 BENCH MILL. Available materials: Rough castings with either 3-step flat or 4-step vee pulley casting, unmachined steel stock, bearing materials, gears, cap screws and nuts and blueprints. (See next page for semi-finished castings.)

Prints only..... .50

LEWIS SEMI-FINISHED MILL

The Lewis Semi-finished Mill is offered for those whose equipment is limited to a small lathe and drill press. All castings are normalized before semi-finishing, and machining on dovetails, flat work, slotting, Tee slotting and boring are held to commercial tolerances. High precision, close fitting, and the "spotting" that gives every machine tool a highly finished appearance may be obtained by scraping the semi-finished surfaces.

Boring of the spindle and overarm holes as well as the dovetailing and surfacing of the column is performed at one work setting, thus

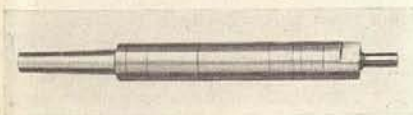


maintaining parallelism of the holes and accurate right angle alignment with the vertical column. This is an ideal project for those having limited facilities since only a lathe and drill press are required to produce a precision milling machine.

NO. 109 SEMI-FINISHED BENCH MILL. Available materials: Semi-finished castings and unmachined materials for milling machine and countershaft including 4-step vee or 3-step flat pulley casting, bronze or tapered roller bearings, cap screws and nuts, ground spindle for tapered roller bearings (No. 3 Morse Taper) and blueprints.

LEWIS MILLING MACHINE ACCESSORIES

LEWIS $\frac{7}{8}$ " ARBOR



Designed especially for the Lewis Bench Mill. Permits spacing of cutter in any convenient position in relation to table top. Strong, rigid, made of high grade steel. Optional tapers: No. 3 Morse or No. 7 Brown and Sharpe. If you want to make this arbor out of your own materials, a blueprint covering our design is available.

NO. 1109 $\frac{7}{8}$ " ARBOR. Available materials: Unmachined steel materials and blueprints.

Shipping weight approximately 9 lbs.

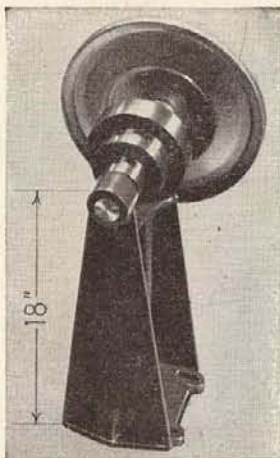
LEWIS COUNTERSHAFT

Designed especially as the driving unit for the Lewis Milling Machine, this countershaft will be found useful for the Lewis Shaper as well as many other jackshaft purposes. It is offered with 3-step flat belt pulley or 4-step Vee belt pulley, each with 10" motor pulley using a Vee belt.

NO. 117 COUNTERSHAFT. Available materials: Rough castings with matching vee or flat pulley casting, unmachined steel stock, cap screws and blueprints. (This unit included as standard equipment with Semi-finished Mill.)

Prints only..... .25

Shipping weight, approximately 45 lbs.



LEWIS $3\frac{1}{2}$ " SWIVEL-BASE VISE

ENGINEERED in size and features for use on the Lewis Bench Mill but generally applicable elsewhere. Two hold-down lugs bolt to the Tee slot in the table, and vise swivels 360° in horizontal plane. The base can be turned on a small lathe. The body castings and the jaw should be machined on a small shaper or milling machine although many have been completed by using a

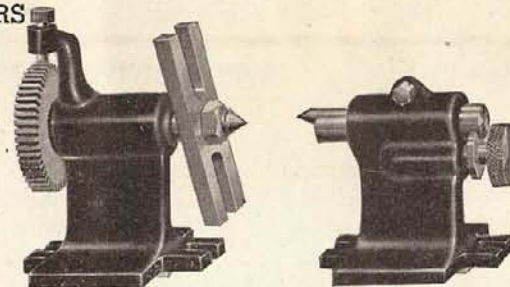
LEWIS MILLING MACHINE ACCESSORIES

milling attachment on a lathe. The screw can be cut easily on a lathe or even with a die. This vise is recommended for use with the Lewis Bench Mill as it is ideal for holding small work where swivelling is necessary. Jaws are $3\frac{1}{2}$ " wide, $1\frac{1}{8}$ " deep, and open to 3". Overall height 3". Identical in appearance to 7" vise illustrated on page 10.

NO. 120 $3\frac{1}{2}$ " SWIVEL-BASE VISE. Materials available: Rough castings, unmachined steel stock, cap screws and nuts and blueprints.
Shipping weight approximately 10 lbs.

LEWIS DIVIDING CENTERS

DESIGNED especially for use on the Lewis Milling Machine, these centers are also applicable to almost any small mill. They are invaluable for cutting gears, squares, hexagons, locating holes in circular jobs, fluting operations, and similar work. Since the purchaser usually has no method of cutting his first gear, one index plate cut in 48 divisions can be included, if desired, with each set of castings and material for Lewis Dividing Centers. Thereafter, any number of additional plates can be made in the user's own shop. With a very small investment Lewis Dividing Centers can be shipped at the same time as the Lewis Milling Machine. Usefulness of these centers will be repaid many times over in a very short period of time.



NO. 125 DIVIDING CENTERS. Materials available: Rough castings, machined 48 division index plate, unmachined steel stock, screws, nuts and blueprints.

Prints only..... .25

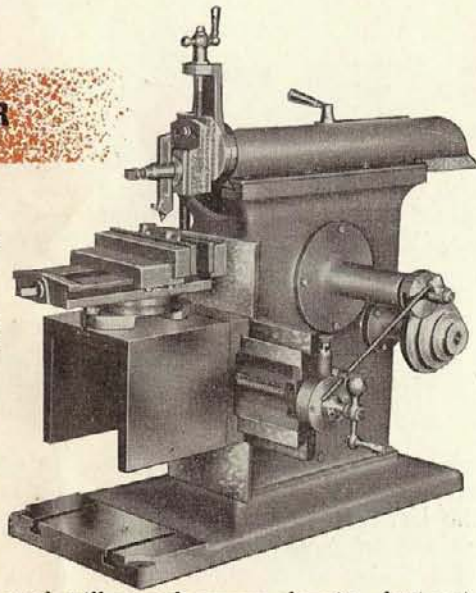
Shipping weight approximately 11 lbs.

LEWIS 10" METAL SHAPER

ONE of the most important units in the Lewis line is this 10" precision shaper. In connection with a lathe and drill press, it will enable a shop to handle a majority of all metal working jobs.

As an indication of its size and sturdy design, the rough castings weigh in excess of 300 pounds, and are composed of the finest gray iron. It embodies many modern features found in larger and far more expensive machines and will stand severe day-in, day-out service.

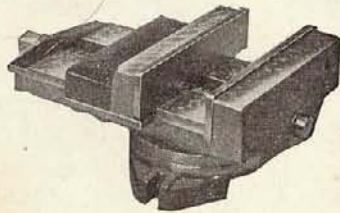
It is highly recommended and widely used for project work in vocational training schools and is accurate and efficient in the tool room or on the production line.



LEWIS 7" SWIVEL-BASE VISE

A sturdy tool that requires 32 pounds of good gray iron to pour the castings! When finished it will be worth about five times the cost of the raw materials.

With its swivel base it is an unusually useful tool on a shaper or milling machine, as well as for general shop service.



The body casting and the movable jaw require finishing on either a mill, shaper, or planer. The base and screw can be easily turned on a small bench lathe. The replaceable steel-faced jaws are 7" wide, 1 1/2" deep, and open to 5 1/4". Overall height 4 1/2".

NO. 112 7" SWIVEL-BASE VISE. Materials available: Rough castings, unmachined steel stock, cap screws and nuts and blueprints. (This unit included as standard equipment with Semi-finished Shaper.)

Prints only..... .25
Shipping weight, approximately 40 lbs.

The Lewis Shaper is not hard to build, although some of the castings require a planer, mill, or shaper with a 22" stroke for proper finishing. This wide range of machining and assembling operations makes it an exceptionally good project for schools.

FEATURES

Tool head swivels 60° each side of vertical. Clapper head swivels for tool clearance. Table swivels 90° each side of zero setting and is keyed for normal position. Ram is rigidly supported in large 60° dovetails even at extreme stroke, insuring precision work and long life. Stroke is quickly and easily adjusted to desired length and position. Gibs are provided on all sliding surfaces. Five reversible, automatic cross feeds are easily selected in steps of .002". Large husky bull wheel and pinion assure efficient transfer of power. You'll find this Lewis Shaper has a larger capacity than some shapers built by leading manufacturers of finished tools and at a fraction of the cost!

SPECIFICATIONS

Stroke	10"	Overall Height	24"
Longitudinal Feed	10"	Motor	1/2 h.p.
Vertical Feed	7"	Base Dimensions	12x27

NO. 106 METAL SHAPER. Materials available: Rough castings, unmachined steel stock, bearing material, cap screws and nuts and blueprints.

Complete blueprints only..... .50
Shipping weight approximately 340 lbs.

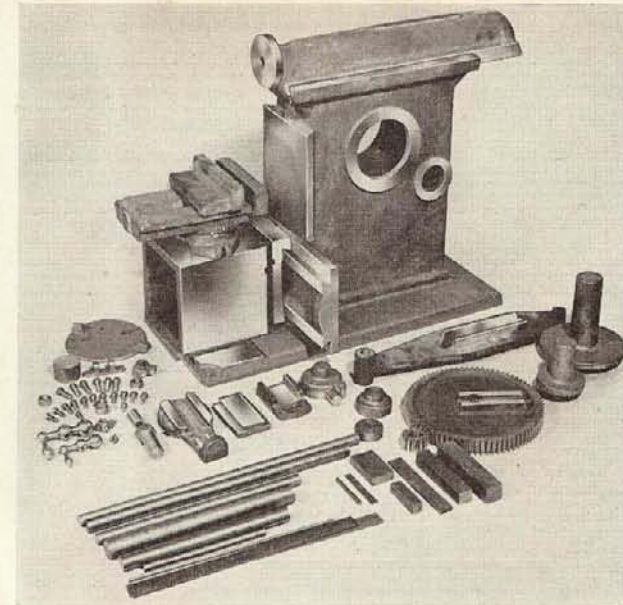
LEWIS METAL SHAPER, SEMI-FINISHED

In this semi-finished shaper, all planing, milling, boring and other machine work that cannot be done on a small lathe and drill has been accurately completed. All castings and necessary parts are provided, including rough castings and materials for No. 112 7" swivel-base vise shown on page 10. Large castings subject to stress are normalized before machining. The completed shaper can be used to finish the vise.

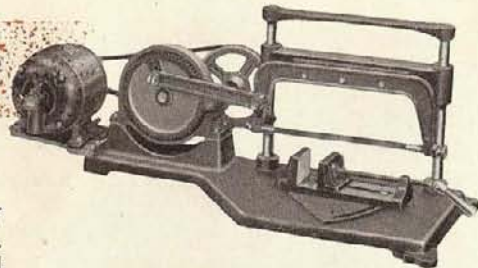
NO. 106 SEMI-FINISHED METAL SHAPER AND NO. 112 7" SWIVEL-BASE VISE. Materials available: Semi-finished castings, unmachined steel stock, cap screws, and nuts, bearing material and blueprints.

Note: Castings illustrated which are not semi-finished can be completely machined on a small lathe, drill press and on the completed shaper itself.

Shipping weight approximately 380 lbs.



LEWIS POWER HACK SAW



The Lewis Power Hack Saw is supplied as rough castings. No large tools are required if finished gears are supplied . . . the slide requires no milling . . . the vise swivel is cast in and the vise castings require only filing. Your part of the work is to drill and tap a few holes, turn a few parts in a lathe, perform some simple filing, and pour a few ounces of babbit. The average beginner in a high school machine shop can do this job easily! Detailed blueprints clearly show each simple operation.

SPECIFICATIONS AND FEATURES

Capacity	3 1/2"	Length overall	29"
Blade	10"	Swivel Vise: Width of jaw	2 1/2"
Height overall	12"	Height of jaw	2"
Strokes per minute	97	Maximum capacity (open)	5"
Length of stroke	4"		

NO. 124 POWER HACK SAW. Materials available: Rough castings, finished gears, 6" vee drive pulley, unmachined steel stock, cap screws and nuts and blueprints.

Prints only..... .25
Shipping weight approximately 65 lbs.

LEWIS TURRET ATTACHMENT

This attachment makes a high production machine out of an ordinary engine lathe. By machining and boring it on your own lathe, you can be sure that absolute alignment with the headstock bore will be obtained. The Lewis Turret Attachment makes an interesting project that becomes a very useful and time-saving accessory. It can be finished in a short time without milling or shaping operations.

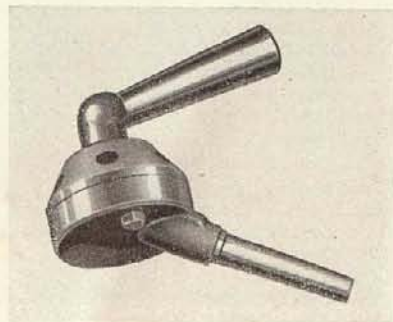
FEATURES

Turret holds six tools.
Easily adaptable to any lathe simply by matching the tailstock taper.
Has positive locking handle, accurate fast spring and ball indexing device.
Makes duplicate work easy, rapid and uniform.

NO. 122 TURRET ATTACHMENT. Materials available: Rough castings, unmachined steel stock, spring set screws and blueprints.

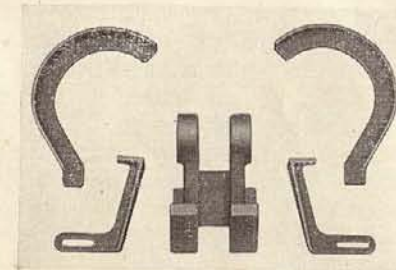
Prints only..... .25

Shipping weight approximately 8 lbs.



LEWIS 6" BENCH GRINDER

HERE'S a useful tool that can be built in a very short time and with a minimum of machine work. Compare the cost of Lewis parts with the supply house price for equal size and quality. The frame of this unit is heavy cast iron with large bosses for retaining the bearings. The set includes cast guards, rests and frame. It is designed to take two 6" grinding wheels or buffers and to operate at high spindle speeds.

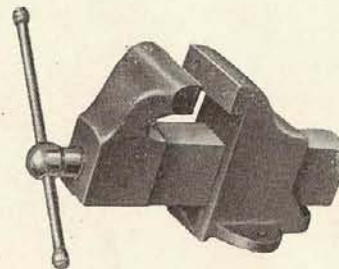


NO. 116 6" BENCH GRINDER. Materials available: Rough castings, ball bearings, 2" vee drive pulley, unmachined steel stock, cap screws and blueprints.

Prints only..... .25
Shipping weight, approximately 12 lbs.

LEWIS 4" BENCH VISE

This sturdy, heavy duty vise is easy to build. The moving jaw and the sliding surfaces can be finished with a mill, shaper or planer. The screw can be threaded on a lathe or cut with a die. The nut can be threaded on a lathe or tapped. From the appearance of these castings it is plain that this is a real tool ready for countless uses in the shop. Jaw faces measure 4" x 1 1/4". Jaws open to 5".



NO. 113 4" BENCH VISE. Materials available: Rough castings, unmachined steel for screw and handle, cap screws and blueprints.

Prints only..... .25
Shipping weight approximately 45 lbs.

LEWIS BENCH DRILL PRESS

THE LEWIS BENCH DRILL has features found in all modern machines. For instance, the pulley rotates on an extension of the head and drives the spindle by means of a key. Thus the belt strain is absorbed by the pulley itself, leaving the spindle free to float. Greater accuracy and longer bearing life are immediate advantages. Thrust is taken by a ball-bearing; sturdy spindle is $\frac{5}{8}$ " diameter. Adjustable motor bracket permits belt tightening. Vee belt drive transmits power without slippage. Table tilts up to 60° angle.

Those having access to a milling machine can cut the rack directly on the quill or a standard gear rack can be countersunk into the quill of this press. The pinion gear is standard and can be purchased with a mating rack at any hardware store.

SPECIFICATIONS

Quill travel.....	3"	Size of table.....	7"x7"
Chuck to table.....	15"	Size of base.....	8"x12"
Chuck to base.....	18"	Drills to center of 12" circle.	
		Maximum chuck capacity.....	$\frac{1}{2}$ "

NO. 108 BENCH DRILL PRESS. Materials available: Rough castings, unmachined steel stock for spindle, handle, etc., thrust bearing, 2"x24" Shelby seamless steel tubing for column, pinion gear and rack, cap screws and blueprints.

Prints only..... .25

Shipping weight approximately 75 lbs.

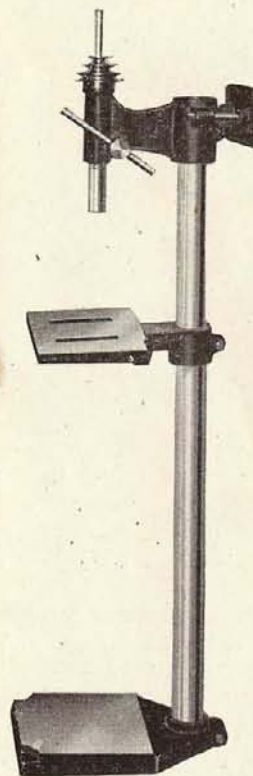


LEWIS FLOOR DRILL PRESS

THE SAME construction and design features are incorporated in the Lewis Floor Drill as in the bench drill described on the opposite page. The 110 lb. castings are sufficiently heavier to balance this increased size and are rigidly supported by a $2\frac{3}{4}$ " diameter Shelby seamless steel tubing. Table tilts up to a 60° angle and is slotted for mounting workpieces. Spindle is designed to use a No. 2 Morse Taper. This unit is easily adaptable to a heavy duty bench drill merely by shortening the column.

Quill travel 4". Size of base $18\frac{7}{8}$ x13". Size of table 9x9".

Drills to center of 14" circle. Takes up to $\frac{5}{8}$ " drill. Mounts on a $2\frac{3}{4}$ "x5' seamless steel column.



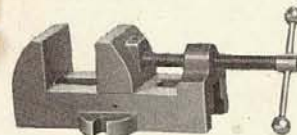
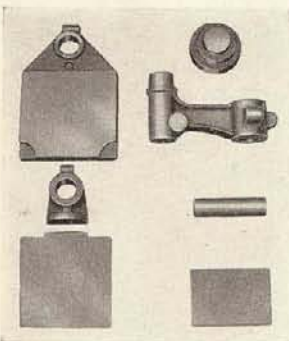
NO. 108A FLOOR DRILL PRESS. Materials available: Rough castings, unmachined steel stock for spindle, handles, etc., thrust bearing, $2\frac{3}{4}$ " Shelby seamless tubing for column, pinion gear, rack, cap screws and blueprints.

Prints only..... .25

Shipping weight approximately 160 lbs.

LEWIS $2\frac{3}{4}$ " DRILL VISE

Low first cost, easy construction and widely varied uses make this Lewis Drill Vise a most welcome addition to any shop. Surfacing work can be easily and quickly done by milling or shaping or even with a file. A little drilling and tapping is required. The screw may be turned on a lathe or cut with an ordinary die. Hold down lugs on the sides adapt it to the mill as well as the drill press.

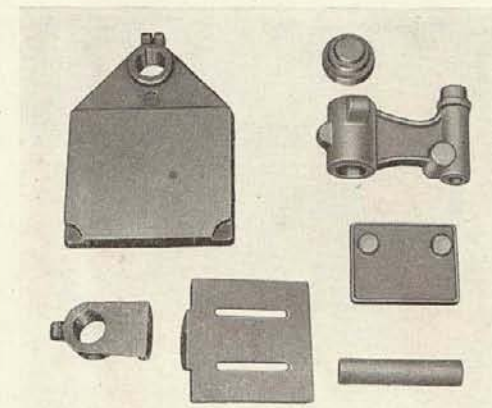


Jaws measure $2\frac{3}{4}$ " wide, $1\frac{3}{4}$ " deep, open to $3\frac{3}{4}$ ".

NO. 114 DRILL VISE. Materials available: Rough castings, unmachined steel stock, cap screws and blueprints.

Prints only..... .25

Shipping wt. approx. 11 lbs.



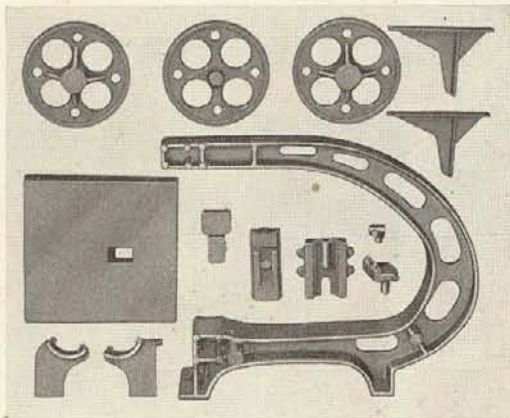
LEWIS 24" BAND SAW

THREE wheels are used to provide a deep throat, yet keep this tool down to a compact size. The large cast iron frame is designed for rigidity and freedom from vibration. Two No. 203 ball bearings are used in each of the two idling wheels, and the power wheel spindle is equipped with two bronze bushings. Wheels are cast iron, 10" in diameter and mounted to insure correct alignment and long life of the cutting blade. While this 24" Lewis Band Saw is a bench tool, it will handle all the work of a heavy, cumbersome and expensive floor model 2-wheel band saw costing many times its original price. The great value of this unit can be appreciated when you consider its extremely low cost and its remarkably large capacity. Fine gray iron castings with a total weight of 155 pounds are used. Tilting table is heavily ribbed. Saw tension adjustment and wheel alignment screw are mounted on upper bracket. Blade is always under spring tension. Both idling wheels ride silently and smoothly on two large ball bearings. This saw is ideal for metal cutting when the proper blade and speed are used. Auxiliary table brackets are provided.

SPECIFICATIONS

Dimensions of table.....15"x15"
 Diameter of wheels..... 10"
 Capacity—48" dia. Max. depth 6"

Overall height 31"
 R.P.M. 875
 Blade speed (wood).....2300 ft. per min.

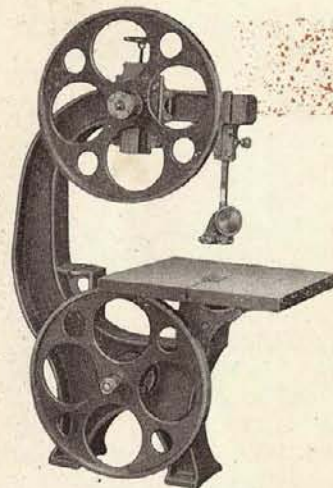


NO. 103 24" BANDSAW.

Materials available: Rough or semi-finished castings, unmachined steel stock, ball bearings, bronze bearings, 6" vee drive pulley, rubber tires, blades in assorted widths, cap screws and nuts and blueprints.

Shipping weight approx.
175 lbs.

LEWIS 16" BAND SAW



THIS ruggedly designed and thoroughly practical Lewis Band Saw will give efficient service to pattern makers, carpenters, cabinet makers, and other craftsmen. If the proper blade is used and the speed reduced, it makes an ideal metal cutting tool. The frame is of the "I" beam type for resisting vibration and warpage and weighs approximately 60 pounds alone. Altogether the total weight of the castings is almost 150 pounds.

This means sound, substantial construction, resulting in a machine that will give complete satisfaction.

The upper wheel runs evenly and quietly in two large No. 203 ball bearings, and the wheel assembly is under spring tension at all times to keep the blade at the proper tension. Power wheel rides in bronze bushings. An auxiliary table bracket is cast in the frame. Table is heavily ribbed and arranged for tilting. No machine work is required on the frame other than drilling and tapping, and facing a few bosses with a hand file.

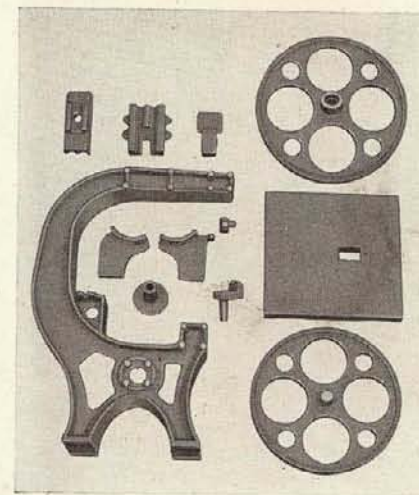
SPECIFICATIONS

Dimensions of table..... 15"x15"
 Diameter of cast iron wheels.... 16"
 Overall Height 40 1/2"
 R.P.M. 580
 Blade Speed (ft. per min.) 2400
 Capacity 32" dia., max. depth 6".

NO. 102 16" BANDSAW. Materials available: Rough or semi-finished castings, unmachined steel stock, 6" vee drive pulley, rubber tires, ball bearings, bronze bearings, blades in assorted widths, cap screws and nuts and blueprints.

Prints only..... .25

Shipping weight approx.
160 lbs.



LEWIS 8" CIRCULAR SAW



THIS saw was designed to meet the most exacting demands of home, school and commercial woodworking shops and at the same time keep the cost down to a low level. The table tilts at any angle up to 45° and the saw, which is easily raised or lowered by a handwheel, cuts up to a 2 $\frac{3}{4}$ " depth at one pass. The only castings that offer any machining problems are the table and guide, and they can be finished on a planer, miller, or shaper with a capacity covering dimensions of table. If you do not have this equipment, your local machine shop can do the work by following blueprints furnished with the set. The base requires only drilling. The slide bearings for raising and lowering the table are poured with babbit and require no machining. The spindle housing can be turned on a small lathe for fitting the two No. 203 ball bearings. All guard castings require drilling only.

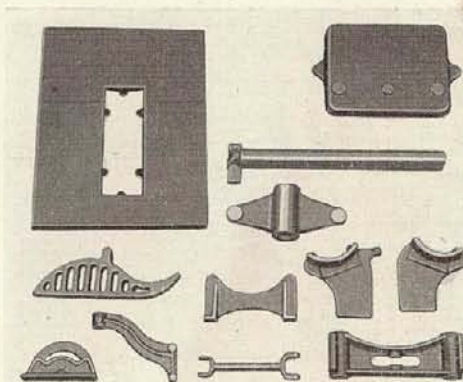
NO. 101 8" CIRCULAR SAW. Materials available: Rough or semi-finished castings with either 14"x18" or 18"x22" table casting, unmachined steel stock, cap screws and nuts, ball bearings, 2 $\frac{1}{2}$ " vee drive pulley and blueprints.

Prints only25

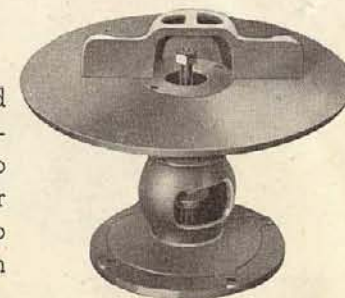
Shipping weight approximately 85 to 95 lbs.

SPECIFICATIONS

Table tops.....14"x18" or 18"x22"
 Spindle speed approx.....3000 r.p.m.
 Maximum depth of cut.....2 $\frac{3}{4}$ "
 Base to table top.....9"
 Base dimensions.....9"x11"



LEWIS WOOD SHAPER

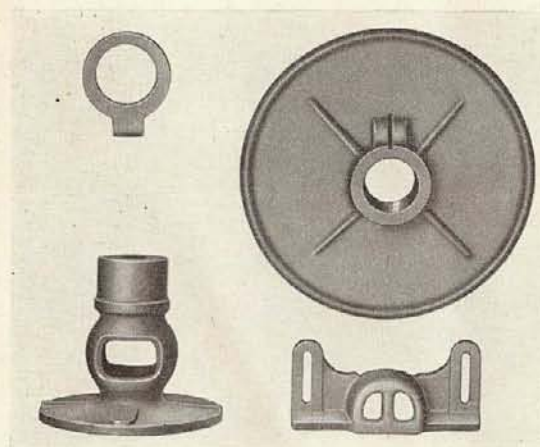


THREE advantages of the Lewis Wood Shaper make it one of the most valuable tools for your shop: (1) it will do work that cannot be done on any other type of tool; (2) it can be built equal to commercial shapers of similar sizes at an extremely low cost; (3) it is easy to make.

The spindle is oversize for increased rigidity and is carried silently in two large No. 203 ball bearings operating at approximately 8000 r.p.m. The combination guard and guide guarantee accurate cuts with maximum protection. The clamp collar fit of the table to column maintains table accuracy regardless of the depth of cut being taken.

FEATURES

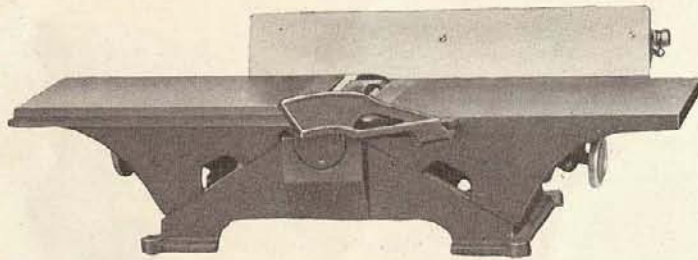
Large 1 $\frac{1}{4}$ " diameter cast table has positive locking device to prevent shifting or change of adjustment during operation. Threaded depth adjustment collar gives accurate adjustment and is positively locked in position at all times. Spindle takes standard $\frac{1}{2}$ " cutters, available at wood-working supply stores.



NO. 104 WOOD SHAPER. Materials available: Rough or semi-finished castings, unmachined steel stock, cap screws and nuts, ball bearings, 2" vee drive pulley and blueprints.

Shipping weight approx. 50 lbs.

LEWIS 6" JOINTER



HERE'S a sturdy jointer with good capacity, capable of delivering satisfactory performance for many years to come. The ball bearings permit high-speed cutter rotation of 5000 r.p.m., which makes smooth cuts on all work. The frame is heavily ribbed to prevent warping or twisting under load. The fence tilts at an included angle of 135° and is extra long to permit accurately feeding work to the cutter. Like all efficient jointers, this Lewis tool is designed to permit rabbeting as well as planing. Cutter head is 2½" diameter and holds three 6" knives. Overall length of jointer 34", overall width 7".

NO. 107 6" JOINTER. Materials available: Rough or semi-finished castings, unmachined steel stock, 2½" vee drive pulley, cap screws and nuts, ball bearings, 3 ground High Speed Steel knives and blueprints.

Prints only25
Shipping weight approximately 100 lbs.

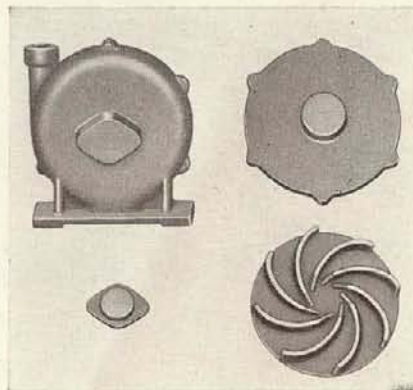
LEWIS CENTRIFUGAL PUMP

From the wide variety of projects in the Lewis line, this practical centrifugal pump is one of the most interesting and will prove highly useful on the farm, in the home, or on a boat. A drill and a small lathe are all the tools required for building and only a few hours should be consumed in its construction.

With a ½ h.p. motor driving the pump at 3000 r.p.m., 20 gallons per minute is the approximate delivery. Formerly made in both cast iron or cast bronze, but available in cast iron only.

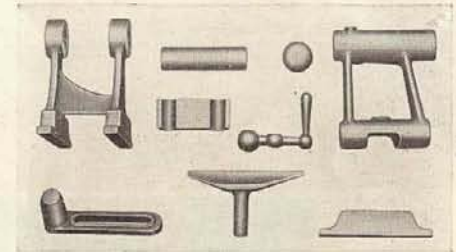
NO. 123 CENTRIFUGAL PUMP. Materials available: Rough castings (iron or bronze), unmachined steel stock, cap screws and nuts and blueprints.

Prints only25
Shipping weight approximately 12 lbs.



LEWIS 11" WOOD LATHE

THIS is a high speed tool with an 11" swing—adequate for all normal shop requirements. The use of 1" cold rolled steel shafting for the bed permits extension to any desirable length. Headstock spindle is mounted in two No. 203 ball bearings which permit high spindle speeds with efficient cutting. Ample speeds for all diameters are obtained by a 4-step "V" pulley. Positive-locking, rigid bed clamp keeps Tee-rest firmly fixed in any desired position. Only simple machine work is required to finish this lathe.



SPECIFICATIONS

Distance between centers.....	25"
Bed length	40"
Swing	11"
Four speeds.....	700, 1300, 2300, 4700
Overall height	9"

Shipping weight approx. 65 lbs.

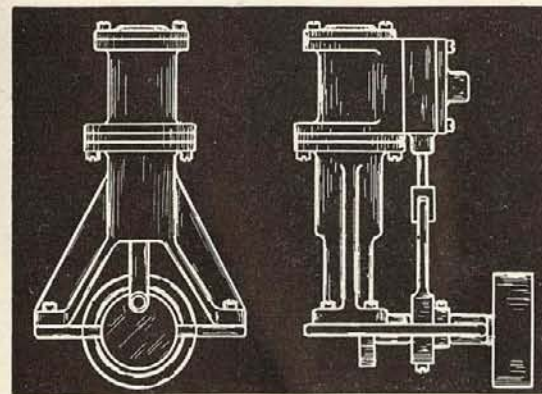
NO. 105 11" WOOD LATHE. Materials available: Rough castings, unmachined steel stock, cap screws, ball bearings, 4-step vee pulley for motor and blueprints.

Prints only25

LEWIS STEAM ENGINE

Work based on the elementary principles of steam engineering is still a most interesting and fundamentally instructive branch of the mechanical arts. The Lewis Steam Engine is the vertical type with 5/8" bore and 3/4" stroke. Its most popular use is as a power plant for model boats.

Castings are bronze; piston, piston rod

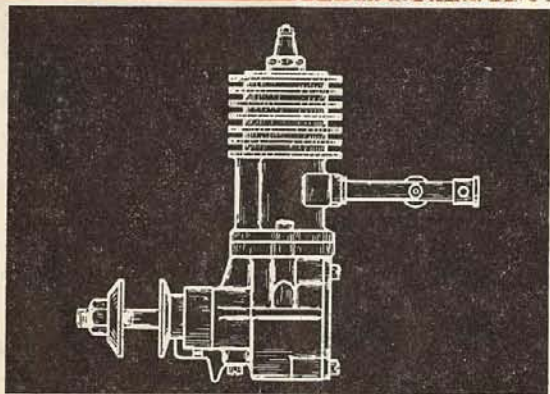


and valve assembly are high quality, long wearing brass. The valve head guide is cylindrical to simplify the machine work. Drawings are clearly detailed and easy to read.

NO. 118 STEAM ENGINE. Materials available: Rough bronze castings, unmachined steel stock and materials, cap screws and blueprints. (Boiler not included.)

Prints only25
Shipping weight 3 lbs.

LEWIS GASOLINE ENGINE

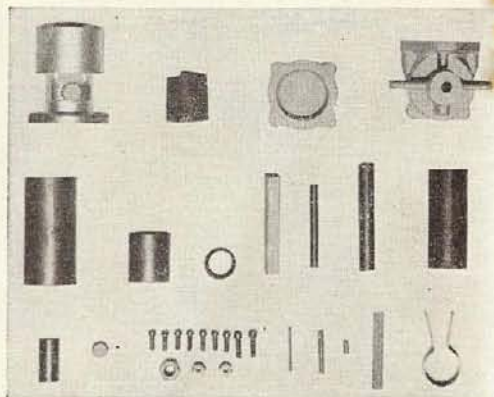


THIS is a neat and efficient power plant for model planes and other fractional horsepower units. It offers fine mechanical experience as a project. Easy to finish, it will develop approximately 1/5 h.p. Cylinder block, crank-case and crank-case cover are sand-cast aluminum. Piston is cast iron; cylinder liner and crank-shaft are steel. Bore 7/8", stroke 1".

NO. 119 GASOLINE ENGINE. Materials available: Rough aluminum castings, unmachined steel stock and materials, cap screws and nuts and blueprints. (Spark plug, coil, battery and gas tank not included.)

Prints only..... .25

Shipping weight 3 lbs.



THE LEWIS BLUEPRINT PORTFOLIO offers practical material for instruction in blueprint reading. All prints have been standardized to a size of 9"x12". Three advantages are obtained by adopting this size: (1) it is amply large to be clearly read; (2) it is more convenient to handle and file, and (3) it reduces your cost to

LEWIS DETAILED BLUEPRINTS

an unusually small figure. With three exceptions, all Lewis Blueprint sets are priced at 25c each. On account of the large number of drawings and prints required for the Shaper and Bench Milling Machine, it has been necessary to price these sets at 50c each.

As some of the Lewis projects involve considerable and varied machining, it is suggested that a set of blueprints for the larger units be ordered for preliminary study so as to determine whether or not the necessary operating equipment is available. If an order is received later for castings and parts, the price of the preliminary set of blueprints may be deducted from the cost of materials.

Note the large savings that can be enjoyed by sending for the Special Portfolios listed below—for example, the complete lot of 22 sets for \$2.75, or less than half of the total cost of \$6.00 if the sets are ordered individually. The other Special Portfolios listed are correspondingly reduced.

SPECIAL BLUE PRINT PORTFOLIO OFFERS

22 Lewis Machine Tool Projects: Illustrated and described in this catalog. (59 blue prints.) Only.....	\$2.75
13 Lewis Metal Working Projects listed below.....	1.65
6 Lewis Wood Working Projects listed below.....	1.10
6 Lewis Projects Assorted According to Your Interest including either the Shaper or Bench Mill but not both.....	1.10

COMPLETE SETS OF INDIVIDUAL PROJECT BLUEPRINTS

METAL-WORKING	7. 3 1/2" Swivel Vise.....	.25	15. 16" Band Saw.....	.25
1. Bench Mill.....	8. 4" Bench Vise.....	.25	16. 24" Band Saw.....	.25
2. Countershaft.....	9. Drill Vise.....	.25	17. 14" Wood Shaper.....	.25
3. 10" Metal Shaper.....	10. Hack Saw.....	.25	18. 11" Wood Lathe.....	.25
.....	11. Dividing Centers.....	.25	19. 6" Jointer.....	.25
4. Floor size Drill Press.....	12. Turret Attachment.....	.25	MISCELLANEOUS	
5. Bench size Drill Press.....	13. 6" Bench Grinder.....	.25	20. Steam Engine.....	.25
6. 7" Swivel Vise.....	14. 8" Circular Saw.....	.25	21. Gas Engine.....	.25
	WOOD-WORKING		22. Centrifugal Pump.....	.25
	23. 7/8" Arbor.....	.50		

Remember—these scaled detailed specification prints will give you comprehensive information on the projects you wish to build.

PARTIAL LIST OF VOCATIONAL SCHOOLS THAT HAVE BUILT LEWIS MACHINE TOOLS

MONROE HIGH SCHOOL Lynchburg, Va.	NATCHITOCHE TRADE SCHOOL Natchitoches, La.
BOARD OF EDUCATION City of Fond du Lac, Wisconsin	ALTOONA SCHOOL DISTRICT Altoona, Penna.
HEMPHILL DIESEL ENGINE SCHOOLS Los Angeles, Calif.	BOARD OF VOC. & ADULT EDUCATION Beaver Dam, Wisconsin
SAN DIEGO VOCATIONAL HIGH SCH. San Diego, Calif.	BRECKENRIDGE PUBLIC SCHOOLS Breckenridge, Texas
SAN JOSE JUNIOR COLLEGE San Jose, Calif.	BOARD OF EDUCATION Buffalo, New York
WESTERN TECHNICAL SCHOOL Toronto, Ontario, Canada	CALIFORNIA POLYTECHNIC SCHOOL San Luis Obispo, Calif.
POTTSVILLE HIGH SCHOOL Pottsville, Penna.	DURHAM CITY SCHOOLS Durham, N. C.
WAYNESBORO SCHOOL DISTRICT Waynesboro, Penna.	CITY OF HAVERHILL Massachusetts
WORCESTER VOCATIONAL SCHOOL Worcester, Mass.	SCHOOL CITY OF MUNCIE Indiana
THE ORLANDO VOCATIONAL SCHOOL Orlando, Fla.	NEW MEXICO NORMAL UNIVERSITY Las Vegas, New Mexico
INGLEWOOD UNION HIGH SCHOOL Inglewood, Calif.	OKLAHOMA AGRI. & MECH. COLLEGE Stillwater, Okla.
GEORGE HALL VOCATIONAL SCHOOL Ogdensburg, N. Y.	UNIVERSITY OF OKLAHOMA Norman, Okla.
EL DORADO COUNTY HIGH SCHOOL Placerville, Calif.	PORTSMOUTH CITY SCHOOL DISTRICT Portsmouth, Ohio
WAUKESHA VOCATIONAL SCHOOL Waukesha, Wisconsin	RICHMOND PUBLIC SCHOOLS Richmond, Virginia
JUNIOR-SENIOR HIGH SCHOOL Newton, Iowa	UTAH STATE AGRICULTURAL COLLEGE Logan, Utah
SAN PEDRO HIGH SCHOOL San Pedro, Calif.	VALLEJO BOARD OF EDUCATION Vallejo, Calif.
SANTA ANA HIGH SCHOOL Santa Ana, Calif.	THE UNIVERSITY OF ALABAMA University, Ala.
GEORGIA SCHOOL FOR THE DEAF Cave Spring, Georgia	BOARD OF EDUCATION Baltimore, Md.
RIVERSIDE HIGH SCHOOL Riverside, Calif.	CORPUS CHRISTI INDEPENDENT SCH. Corpus Christi, Texas
MIDDLESEX CO. VOCATIONAL SCH. New Brunswick, N. J.	HARRISBURG SCHOOL DISTRICT Harrisburg, Penna.
SCHOOL CITY OF RICHMOND Richmond, Indiana	BOARD OF EDUCATION Memphis, Tenn.
EVELETH MANUAL TRAINING SCHOOL Eveleth, Minn.	STATE DEPARTMENT OF EDUCATION Jefferson City, Mo.
SACRAMENTO SENIOR HIGH SCHOOL Sacramento, Calif.	N. Y. A. New York, New York
	VOC. ED. FOR NATIONAL DEFENSE Oklahoma City, Okla.

WHAT USERS SAY ABOUT LEWIS TOOLS

What actual builders and users of Lewis tools say about them is far more important than our own opinion. You will be interested in these user comments!

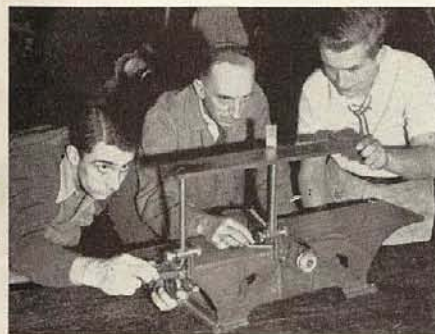
Fine Quality, Perfect Scale Castings: "Lewis Machine Tool Blueprints are undoubtedly the clearest and most easily understood that I have ever seen. They are definitely an asset to the progressing student. Lewis Rough Casting Service provides castings of very fine quality, and in perfect scale." John Micali, John Micali Company (manufacturers of shoe shank tools and machinery), Lawrence, Mass.

Six Weeks' Pay-Off: "Finished mill paid for self in six weeks." S. B. Moyer, Home Elevator Co., San Francisco, California.

Blueprints Please: "I have received the blueprints in perfect

condition and they surely are made by skilled hands. I find them very satisfactory and I thank you very much." L. Genereux, Plumber, Lachine, Quebec, Canada.

SAVED \$300: "I am delighted with my Lewis metal shaper which I recently built up from the castings. I now have a shaper worth every bit of \$500 and figure that I saved fully \$300 on it . . . after making a



(Above) Instructor C. J. McGregor of Lincoln Evening High School, Los Angeles, makes final checkup on 6" Lewis Jointer finished by students in National Defense Training class.

(Right) Students of Lincoln Evening H. S. receive practical training in the operation of all types of equipment when Lewis Machine Tool work projects are used.



fair allowance for my time. As soon as machine tool users learn what you are offering, I predict your shaper and other tools will be in tremendous demand." H. R. McMillan, Instrument Maker, San Francisco, Calif.

WHAT USERS SAY ABOUT LEWIS TOOLS

- **CASTINGS EXCELLENT:** "A compliment is due you and your company. Your castings are excellent. With them, failure is hardly possible. A word to the future—I shall buy the castings for your steam engine as soon as I finish the model gasoline engine." Kenneth L. Abell, Coalinga, Calif.
- **MUCH BETTER THAN EXPECTED:** "Have just finished the power hack saw. As equipment is quite limited and I am a slow worker anyway, it took 60 hours to compete. It functions perfectly and much more quietly than I expected. I took my time and tried to make all the parts fit precisely. It is a much superior job all through to what would be expected from your description and illustration." P. A. Spencer, Toronto, Canada.
- **SHAPER RUNS PERFECTLY:** "Have just finished building a Lewis 10" Metal Shaper from the set recently purchased from you. I now have this shaper running perfectly and want to congratulate you on your design and material. As you know I also have in my shop your power hack saw, milling machine, and turret attachment." E. Callahan, Los Altos, Calif.
- **PAID FOR ITSELF MANY TIMES:** "Your Lewis Mill, which we recently purchased, has proven to be the handiest tool we have ever owned. It is used daily for many different purposes and has paid for itself many times. The mill has been in constant use day and night for over five months and is still in as fine condition as the day it was received." Fred Hallett, Acme Electric Co., Oakland, Calif.
- **PLANS TO BUILD MORE:** "Am well on my way to completion of my Lewis bench mill castings and have found the iron and materials of the highest quality. Am looking forward to building more projects such as the metal shaper when time permits." T. Deirup, Palo Alto, Calif.

FACTS YOU WANT TO KNOW ABOUT LEWIS TOOLS

WHAT WE MEAN BY ROUGH AND SEMI-FINISHED CASTINGS

ROUGH CASTINGS are those parts cast from iron, bronze or aluminum which we supply just as received from the foundry. These castings have been cleaned by tumbling or sandblasting but have not been machined. Rough castings must be milled, shaped, turned, drilled, tapped or bored according to the blueprint specifications before the tool may be assembled.

SEMI-FINISHED CASTINGS are those castings which we have milled, shaped, bored or turned in our plant according to blueprint specifications. These parts have had major machining operations performed and usually require only light lathe, drill press and hand operations before they are ready for assembly.

Unless our catalog or price list specifically states that **SEMI-FINISHED CASTINGS** are supplied, **ROUGH CASTINGS** will be shipped. Users will find these castings amply proportioned with a generous supply of metal, allowing for a complete clean-up on all machining operations.

WHY WE SUPPLY ONLY ROUGH CASTINGS OR PARTIALLY FINISHED MATERIALS

It has been our experience that many school shops and individuals are interested in building their own tools. By completing the tools from rough or semi-finished parts, not only can substantial savings be made in labor required for fitting and assembly, but lower freight rates prevail for unfinished materials. These savings, plus the satisfaction of building your own tools, make Lewis castings a real value.

At present, we are tooled up to supply on a production basis those items listed under **SEMI-FINISHED**. Since this tooling enables us



(Left) Mr. B. B. Smith working in his home shop on a Lewis 10" Shaper which was built under his supervision by machine shop students of the Warren School of Aeronautics, Los Angeles. Mr. Smith, instructor at Warren's, writes: "Our Students have received valuable experience in machine tool building through the use of Lewis Castings and Blueprints."

to perform these operations with maximum speed and convenience, you profit by a much lower labor cost. Ordinarily, those castings not listed as semi-finished are supplied in the rough only. Special tooling is not available for finishing these items and a higher charge must be made if semi-finishing is requested by the customer. In this event, quotations will be furnished and delivery date estimated, based upon the volume of work already scheduled.

WHY CASTINGS AND PARTS ARE PRICED SEPARATELY ON OUR PRICE LIST

Customers occasionally wish to purchase only basic castings for a tool, obtaining other materials from local supply houses. Often, the necessary steel stock can be salvaged from scrap or short ends without extra expenditure. Other requisites such as screws, bearings, etc., may be possessed by the builder or are always available as stock items in all local supply houses. If however, local supply facilities are inadequate, all materials as well as castings will be supplied by us if orders specifically state items required.

TRADE PRACTICES

1. Shipments should be checked immediately upon arrival, and errors, if there be such, reported at once. Do not fail to make the proper notes upon carrier's receipt if goods are received in bad condition, for our responsibility ends when the carrier has accepted the shipment from us. Any claims for loss or handling due to the carrier must be filed with the delivering carrier at once.
2. Goods may not be returned without our consent. We reserve the right to make a reasonable charge to cover the extra cost involved when goods are returned after orders have been correctly filled by us.
3. Our quotations are for immediate acceptance and are subject to change without notice to conform to changing market conditions. Clerical errors are, of course, subject to correction.



A PRECISION TOOL

"The quality of the castings, the sturdiness of design, and the accuracy of the semi-finishing make possible a finished tool of the highest quality. My shaper produces precision work throughout its range." Glenn Cooper, South Pasadena, Calif.

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ORDERS AND SHIPMENTS

FREIGHT RATES. Compared with the prices of Lewis Tools, the cost of transportation to any point in the United States is negligible. Freight rates are based on 100 pounds minimum. For this reason it is advisable to include a number of the smaller units when ordering larger tools so that freight charges are proportionately reduced. Shipping weights are given for every item in the Lewis line.

SMALL ORDERS. Small units will be shipped by parcel post or express, whichever is cheaper.

TERMS OF SALE. Terms are 30% with order, balance C.O.D. or sight draft against shipping documents. We cannot, at Lewis prices, carry time payment or installment contracts. School and college requisitions, however, are accepted without advance payment, and shipments are made on straight bill of lading with payment to follow in due course.

TAXES. Lewis prices are subject to any sales or transportation taxes that may be levied in purchaser's territory.

FREIGHT RATES TO PRINCIPAL CITIES IN UNITED STATES

City	Rate per Cwt.	City	Rate per Cwt.
Boston	4.41	New Orleans	3.30
Chicago	3.37	New York	4.40
Cleveland	3.97	Omaha	3.30
Dallas	3.30	Philadelphia	4.35
Denver	2.04	Pittsburgh	4.07
Detroit	3.92	Portland	1.74
Kansas City, Mo.	3.30	St. Louis	3.37
Memphis	3.30	San Francisco84
Miami	4.46	Seattle	2.15

Above rates apply to rough iron castings and unmachined steel in less than carload lots. Slightly higher rates prevail for semi-finished castings. All rates are subject to Federal transportation taxes.

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LEWIS MACHINE TOOL GUARANTEE

THE LEWIS MACHINE TOOL COMPANY guarantees all Lewis Machine Tool Castings to be of high quality, close-grained gray iron. All possible precaution is taken in casting the molds for all parts of Lewis Machine Tools and each is minutely inspected before shipping. Materials which are found to be defective within 30 days following delivery will be replaced without charge F.O.B. our plant. We will not assume liability due to lost time or for machine work on material which, for reasons beyond our control, proves defective.

Lewis

MACHINE TOOL COMPANY

CHOOSE YOUR PROJECTS FROM THIS LIST OF LEWIS TOOLS

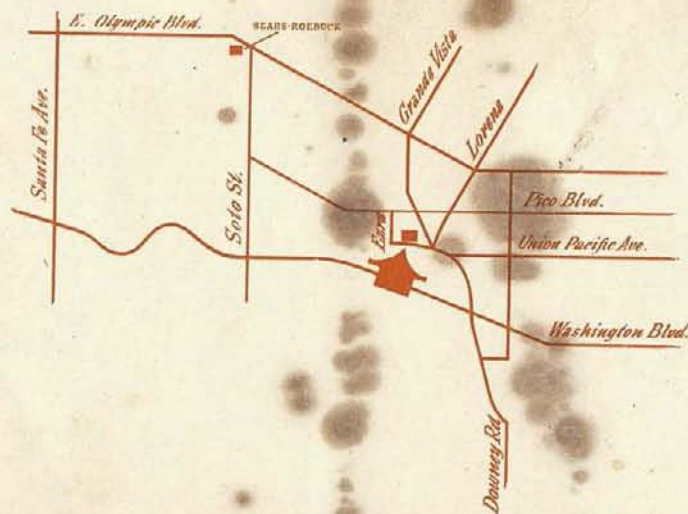
- | | |
|-----------------------------------------------|--------------------------------------------|
| <input type="checkbox"/> Bench Mill | <input type="checkbox"/> Wood Shaper |
| <input type="checkbox"/> 3½" Swivel-Base Vise | <input type="checkbox"/> 4" Bench Vise |
| <input type="checkbox"/> Dividing Centers, | <input type="checkbox"/> Gas Engine |
| Countershaft | <input type="checkbox"/> Bench Drill Press |
| <input type="checkbox"/> Turret Attachment | <input type="checkbox"/> Wood Lathé |
| <input type="checkbox"/> 16" Band Saw | <input type="checkbox"/> 6" Circular Saw |
| <input type="checkbox"/> 24" Band Saw | <input type="checkbox"/> Floor Drill Press |
| <input type="checkbox"/> Metal Shaper | <input type="checkbox"/> Drill Vise |
| <input type="checkbox"/> 7" Swivel-Base Vise | <input type="checkbox"/> 6" Jointer |
| <input type="checkbox"/> Power Hack Saw | <input type="checkbox"/> Centrifugal Pump |
| <input type="checkbox"/> 6" Bench Grinder | <input type="checkbox"/> Steam Engine |

WE WANT TO HELP YOU

THE success of the Lewis Machine Tool Company has been due to discovering a real need for new projects and then satisfactorily supplying that need. It is for this particular reason we enjoy and rely upon our customers to tell us what they want to build . . . the sizes preferred . . . the features wanted.

When a new tool is added to the Lewis line, every attempt is made to give you a practical tool—yet to keep its cost comparable to other Lewis products and effect as big a saving to you as is humanly possible.

We earnestly solicit correspondence from school executives, home craftsmen and machine users in industry on their needs for new equipment.



LEWIS MACHINE TOOL COMPANY

3217 Union Pacific Ave.
Los Angeles 23, California
ANgelus 3-1992

