No. 56 DRILLING AND CENTERING MACHINE

SPECIFICATIONS

Capacity — Two 1″ drills, simultaneously, in steel. Diameter of work, ½″ min. — 6″ max. Maximum length of work (when longest bed is used) 96″.

Spindle Speeds.....160 to 1750 R. P. M. depending upon motor application (See table of spindle speeds on page 6).

Motor — 3 H. P., 1000, 1200, 1500 or 1800 R. P. M., depending on speed range selected. (See table of spindle speeds).

Width of Bed at Top.....11″

Distance, top of bed ways to center of spindle.....6″

Spindle travel—Independent.....4″

Simultaneously { Hand Feed.....1¾″ / Power Feed.....3½″

Diameter of spindles in bearings.....1½″

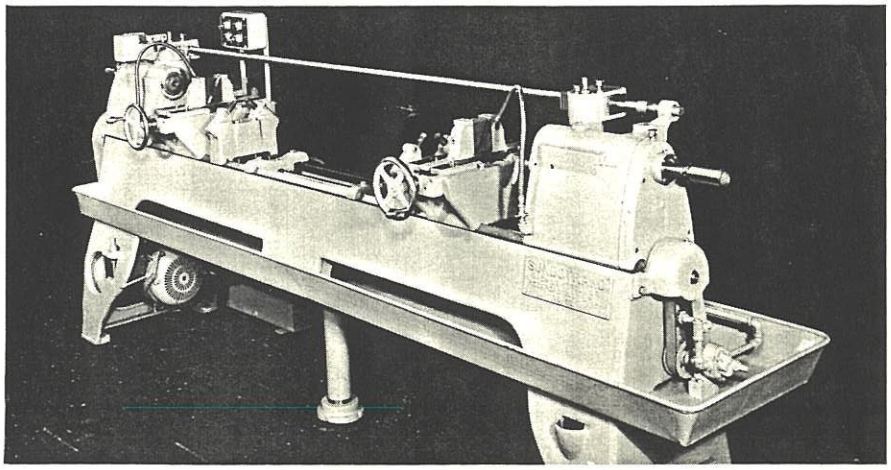
Hole through spindles.....19/32″

Taper in spindle nose.....No. 3 Morse

Plug adapters can be provided to accommodate No. 3 or No. 20 Jacobs Chucks.

Diameter of spindle quill.....4″

For shipping weights and dimensions see chart on page 7.



NO. 56 DRILLING AND CENTERING MACHINE WITH POWER FEED

The No. 56 Drilling and Centering Machine can be furnished with power feed if desired (extra). This model is hydraulically operated and is shown in the illustration above.

Represented by

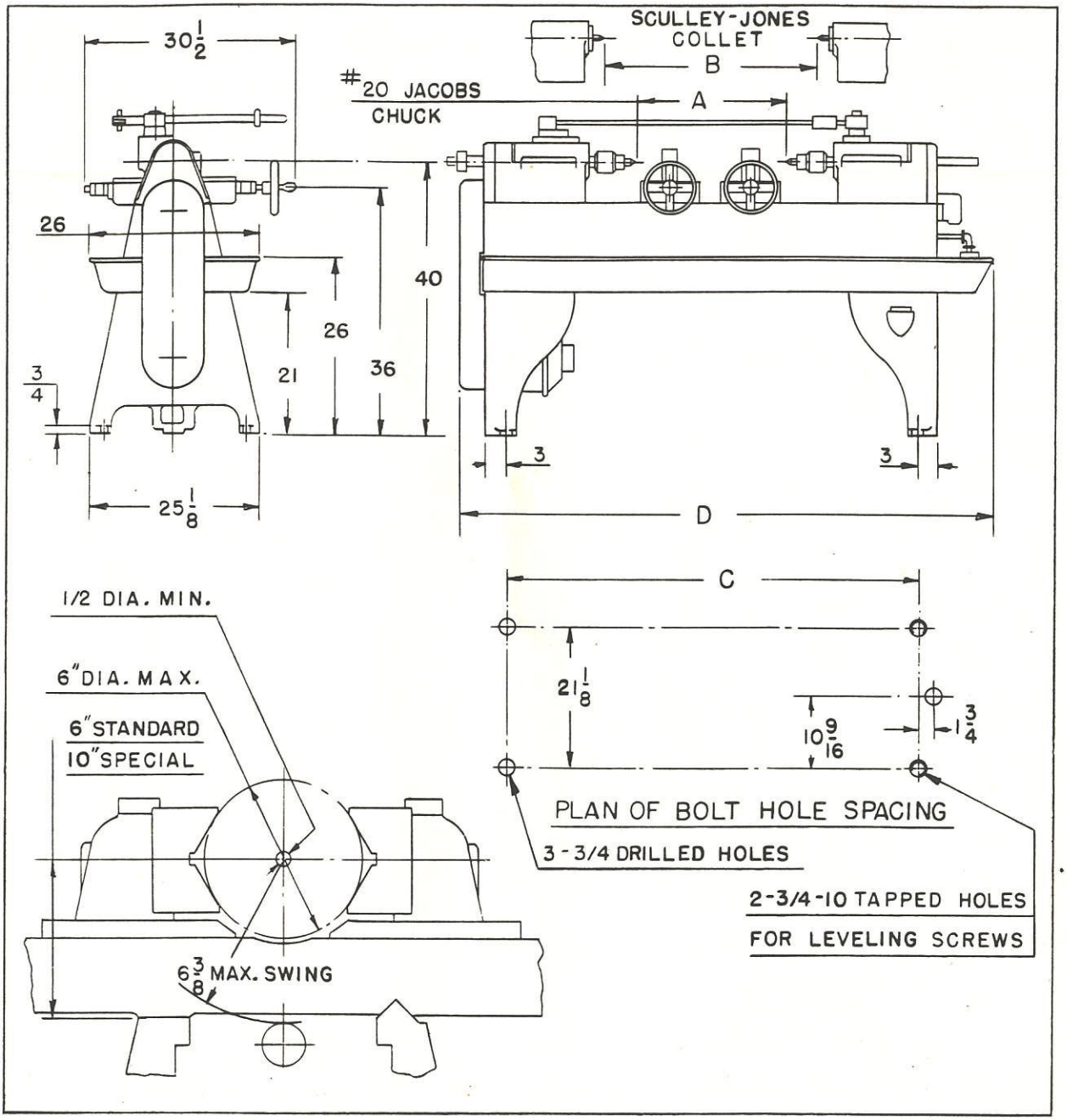
SUNDSTRAND

SUNDSTRAND MACHINE TOOL

DIVISION OF SUNDSTRAND CORPORATION

BELVIDERE, ILLINOIS, U.S.A.

SUNDSTRAND No. 56 DRILLING AND CENTERING MACHINE



MACHINE	A	B	C	D	SHIPPING WEIGHT LESS MOTOR	SIZE OF EXPORT CASE
6 x 24	24	34	62	84	1900	36 x 57 x 91
6 x 48	48	58	86	108	2200	36 x 57 x 115
6 x 72	72	82	110	132	2500	36 x 57 x 139
6 x 96	96	106	134	156	2800	36 x 57 x 163

No. 56 DRILLING AND CENTERING MACHINE

No. 56 Drilling and Centering Machine is a powerful, strong, rigid, accurate and extremely versatile machine tool with which to meet the ever increasing demand for lower production costs and increased output. Its design is based upon long experience with centering problems and other types of Sundstrand Drilling and Centering Machines built in the past and continued as a part of our manufacturing program. No. 56 Drills and centers one or both ends of work pieces accurately and rapidly, prior to turning or other machining operations. In addition to such relatively light work, this machine is designed for efficient and economical handling of many other operations, some of which will be described later.

STUDY THESE FEATURES

BED and SUPPORTS—A solid foundation is provided for the chip pan, and the heavy bed which continues the taper of the supports. The bed has double channel section, with very heavy cross-ribbing, a design which eliminates warping and deflection. Reinforcing strips are provided on machines for work 48" long and over.

HEADS—Two heavy heads support spindles rigidly so that vibration does not develop even at high speed. They are scraped accurately to the vees of the bed, assuring absolute alignment. Head at left is stationary, the one at the right is adjustable along the bed. A powerful lever and screw, conveniently located, provide means for clamping the adjustable head securely.

QUILLS—Semi-steel quills 4" diameter by 9¾" long, accurately ground and fitted to ground bearings in the heads, carry the spindles. A rack-and-pinion movement provides each quill with 4" of independent movement, or 1¾" of simultaneous movement for the hand feed model and 3½" for the power feed model.

SPINDLES—Spindles are high carbon steel, heat treated and ground. They are mounted in Timken precision bearings, front and rear, with suitable provision for adjustment. Oil pockets between bearings insure a liberal supply of lubricant. No. 3 Morse taper is standard. Adapters are available to accommodate No. 3 or No. 20 Jacobs Chucks. A $^{19}/_{32}$" hole through each spindle accommodates a $^{9}/_{16}$" draw-rod. Stop nuts accurately limit the depth to which tools may be fed. Spindles are driven by wide faced spur gears, with Micarta idlers for quiet operation. Gearing of spindle-drive can readily be altered to meet special requirements.

VISES—Two very strong heavy vises, accurately scraped to the vees and adjustable lengthwise on the bed, are standard equipment. The vise screws are generously proportioned, have bronze nuts 2½" long and ball thrust-bearings. Jaw inserts are hardened steel. By special arrangement both vises may be operated in unison by one handwheel. Electric motor operated vises also can be furnished.

COOLANT—The right hand leg of the machine contains a ten gallon tank for coolant. A pump, directly over the oil pan and belt-driven from the main drive shaft, supplies five gallons of coolant a minute to piping system which discharges directly on the cutting tools.

DRIVE—Each machine is of the "vee" belt motor driven type with suitable provision for mounting the motor in the left hand leg. Means for belt take-up and belt guards are furnished as standard equipment. A 3 H.P. motor of 1000, 1200, 1500, or 1800 R.P.M. is required and will be furnished as extra equipment.

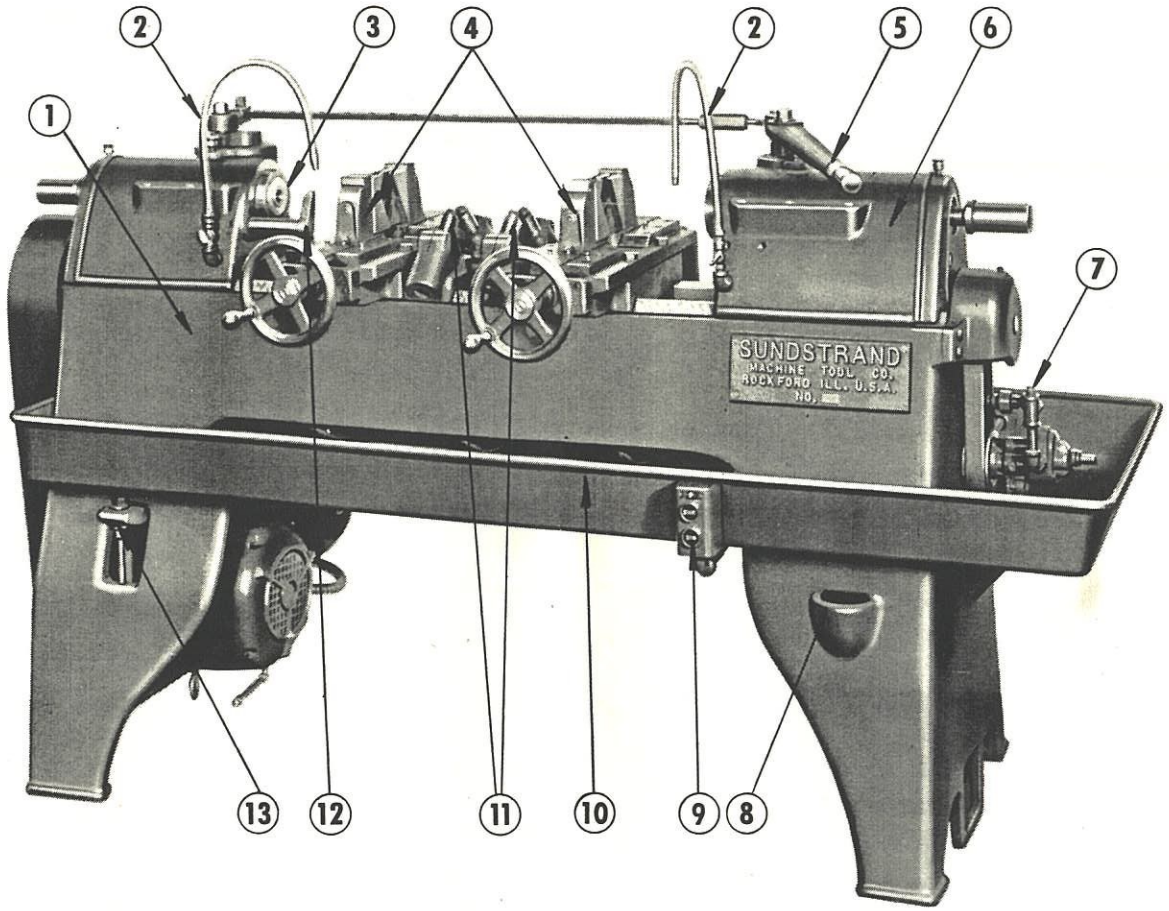
SPINDLE SPEEDS—The range of possible speeds for each machine is determined by the ratio of the head and the R.P.M. of the motor. The spindle speed within range selected depends upon the size of motor sheave furnished. Each standard machine will be equipped with one set of sheaves and will run at but one spindle speed. Any other speed within the range selected can be had by changing the motor sheaves.

The range of speed of the machine and the specific speed required should be selected from the chart shown on page 6.

A Multi-Speed Drive is available as extra equipment. With this drive a combination of three quick speed changes can be obtained with a single speed motor or six quick changes with a two-speed motor.

VERSATILITY—Speed, power, length and work-holding devices can be varied to meet special requirements. Power feed for quills, with automatic or semi-automatic control, can be supplied. Automatic work-handling devices can be designed for especially high production. The possibilities of this machine, in a wide field of work, are almost unlimited. It has the accuracy and stamina to perform efficiently many other operations, in addition to drilling and centering. A few of these are shown and described on pages 4 and 5.

SUNDSTRAND No. 56 DRILLING AND CENTERING MACHINE



1 Bed has wide base and double-channel design with very heavy cross-ribbing to prevent warping and deflection as well as to provide great strength and rigidity.

2 Coolant piping system discharges directly on cutting tools.

3 Spindles are high-carbon steel, heat-treated, ground and mounted in Timken precision bearings, front and rear, with convenient adjustment. They are carried in semi-steel quills 4″ diameter by 9¾″ long, accurately ground and fitted to a ground bearing in the spindle heads.

4 Two vises, as described, are standard equipment. Machines can be purchased "less vises" and with special holding devices designed to order. (See pp. 4 and 5.)

5 Spindle-quills have 4″ of independent movement or 1¾″ simultaneous movement controlled by a single lever as indicated.

6 Right-hand head is adjustable on bed, being clamped in position by a powerful lever and screw. Left-hand head is stationary. Both heads are accurately aligned and have powerful, quiet drive. Spindle speeds can differ from each other if required by special work.

7 Coolant pump has capacity of 5 gallons a minute. (Extra Equipment).

8 Tank for 10 gallons of coolant is contained in right-hand leg.

9 "Start" and "Stop" push buttons. (Extra equipment).

10 Heavy steel chip pan.

11 Adjustable preliminary work rests. (Extra equipment).

12 Adjustable locator for positioning work endwise.

13 Pivoted bracket, or base, is provided in left-hand leg for mounting motor and tightening belts. Guards, pulleys, and belts for multiple vee belt drive furnished as standard equipment. Motor and controls are extra. (See page 8 for specifications and illustration of multi-speed drive application).