POWER TOOL DIVISION
ROCKWELL MANUFACTURING COMPANY
PITTSBURGH 8, PENNSYLVANIA

PM 402-05-655-5006

DATED 1-4-60

17–860 17" DRILL PRESS SLOW SPEED ATTACHMENT

PURPOSE OF ATTACHMENT

The primary purpose of this attachment is to provide a range of lower speeds for the Slo-Speed 17" Drill Press with a No. 2 Morse taper spindle already in the field, and to make it possible to easily and quickly apply and remove the attachment from the machine when needed for short production runs. The unit can be used on the High-Speed machines but is not recommended for them, especially at the two highest speeds.

The important feature in this unit is that it permits a high input belt speed to drive through double reduction gears and provides a positive chatter-free rotation to the output spindle, thus eliminating the usual chatter always resulting from a slow speed spindle driven directly by a belt.

It is generally recommended for hand feed, and it may be used in connection with the foot feed attachment. It is not recommended for use with the power feed attachment, however, since the Power Feed does not provide low enough rates of feed for these lower spindle speeds.

The speeds available through the use of this attachment range from 80 R.P.M. to 475 R.P.M., as shown on the chart on Page 4.

APPLYING TO DRILL PRESS

This unit reaches you completely assembled except for the stop rod which has been removed for convenience in packing. A wood plug is fitted into the upper end of the case to keep out dirt and also to provide a means of keeping the drive pinion with its needle bearing in a dirt-free position when the unit is removed from the machine. Therefore the wood plug should not be thrown away.

The attachment is made to apply only to machines with a No. 2 Morse taper spindle and if the spindle nose of the machine has been abused so it runs out in excess of .006, it should be corrected before the unit is applied.

After the spindle has been found true, lower the quill about 3 inches and lock in position by means of the clamp screw. Remove the garter spring and stop rod assembly from the quill. Now remove the drive pinion from the wood plug and insert securely into the spindle nose. ***(Caution:—Do not attempt to assemble the gear case to the spindle with the No. 2 Morse taper shank drive pinion in the gear case.)***

After fastening the new stop rod loosely in place, slip the leather washer on the quill and slide the attachment over the pinion and quill so that the shoulder in the gear case strikes the end of the quill, and tighten clamp bolt. ***(Caution:—The clamp bolt for holding the attachment to the quill can be clamped securely but should not be excessively tightened, as this may injure the spindle bearings.)***

Release the quill clamp screw and after drawing up the stop rod nut, raise and lower the quill a few times to be sure the stop rod is properly aligned and is not rubbing or binding against the sides of the stop rod, stop and guide.

The quill spring should now be adjusted to counterbalance the additional weight on the quill. It is important to note that the return spring cannot be expected to rapidly return this attachment with heavy cutters in place, so that in most cases, it is necessary to "feed" and "return" by hand. Therefore, the spring should not be adjusted to its maxium tension, since this would reduce its life span.

CAPACITY AND TYPES OF WORK

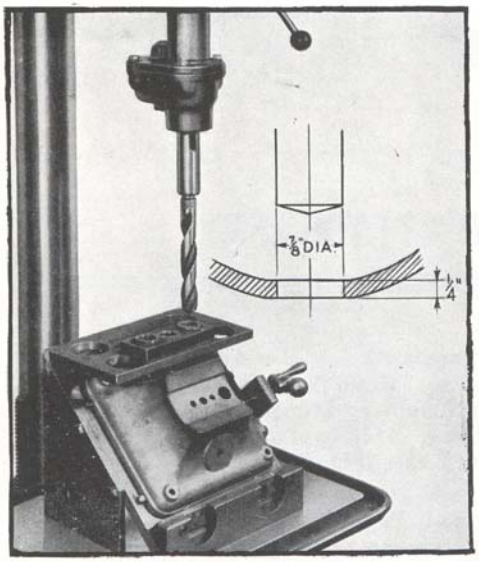
The maximum quill travel with this attachment in position is 4".

The maximum capacity of the 17" Drill Press is generally considered as capable of drilling a deep ¾" hole into solid cast iron, and in bringing out this attachment it has not been our intention to increase this capacity but rather to extend the usefulness of the press by enabling the user to spot face, ream, countersink, and core drill where slower than normal speeds are generally required. It is therefore important that consideration be given to the proper speed when setting up a job so that undue strains in the machine, and a rough finish, will be avoided. In general, the output speed should be as low as possible, depending on the material being cut and the type of cutter used. For best results all work should be securely held in a fixture or by other means. The photographs show typical types of work that can be accomplished.

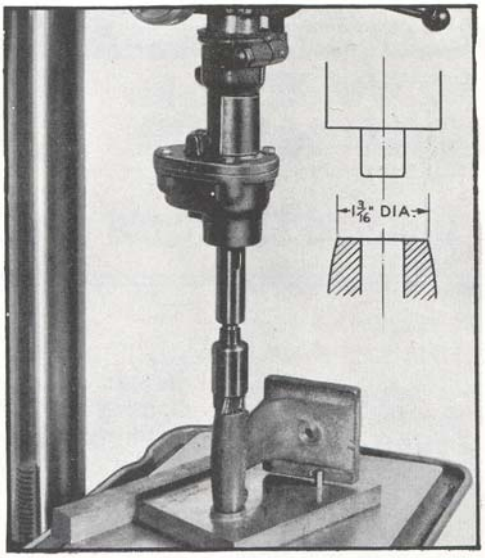
LUBRICATION

The single grease fitting supplies lubricant to the entire unit. An overflow plug is provided at the side and when filling it is advisable to remove the plug and let excess grease run out. This will avoid excessive heating.

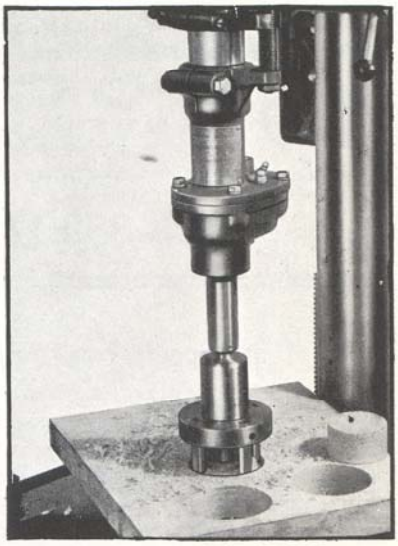
Use only a good grade of light grease, such as Gargoyle Sovarex No. 1 or its equivalent. Maintain grease level at all times, and after every 2000 work hours the unit should be opened and cleaned of old grease. At this time it is also advisable to squeeze additional grease through the shields at the sides of the double row ball bearing.



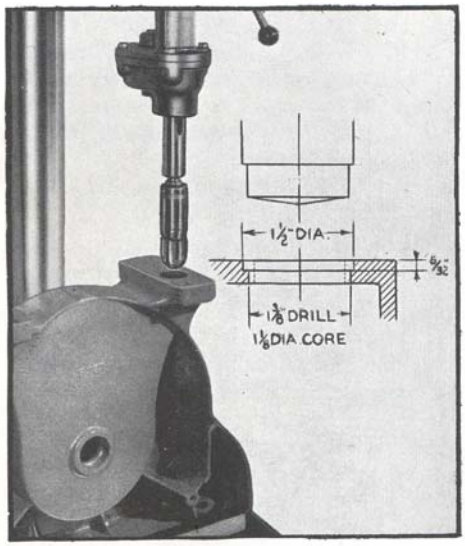
DRILLING
In cast iron with a high speed drill at 305 R.P.M.



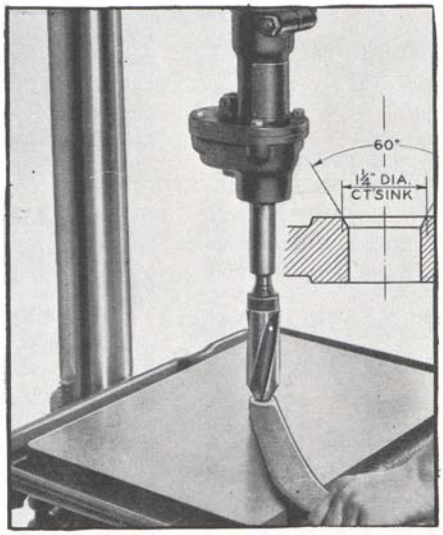
SPOT FACING
In cast iron with carbide tipped tools at 305 R.P.M.



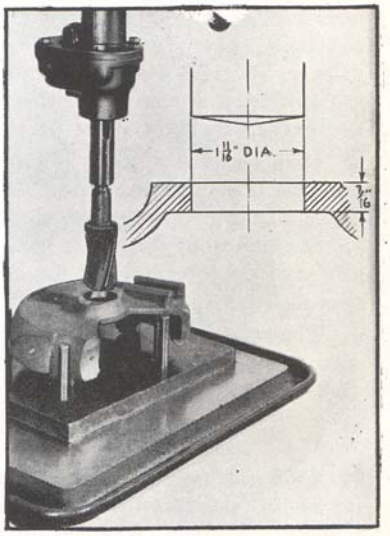
CUTTING WOOD PLUGS
3 3/16" cutter in 1½" white pine at 200 r.p.m., and in 1¼" Birch at 125 r.p.m.



DRILLING AND COUNTERBORING
In cast iron with carbide tipped tools at 200 R.P.M.

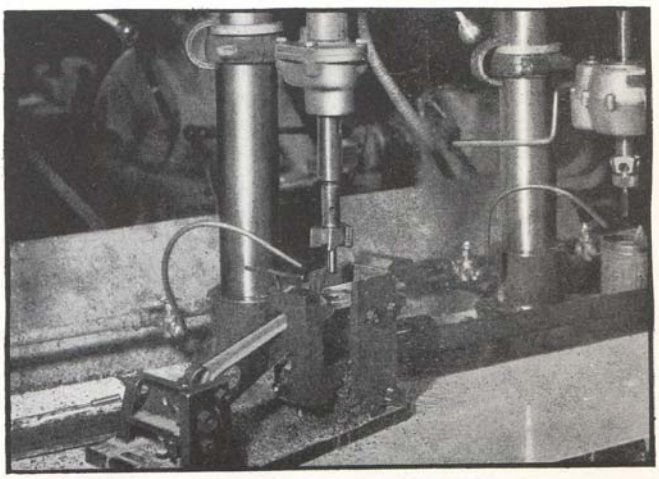


COUNTERSINKING
In steel casting at 125 R.P.M.

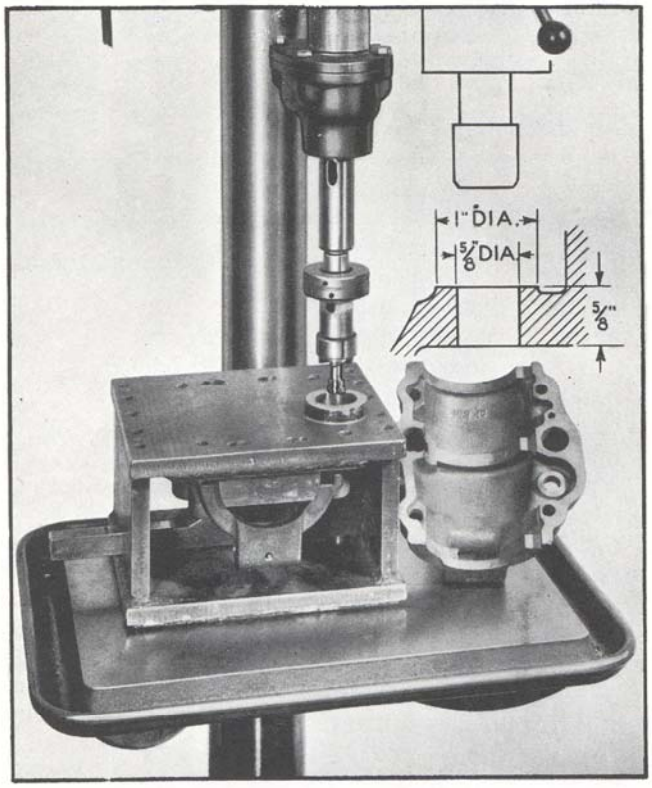


REAMING
In cast iron at 80 R.P.M.

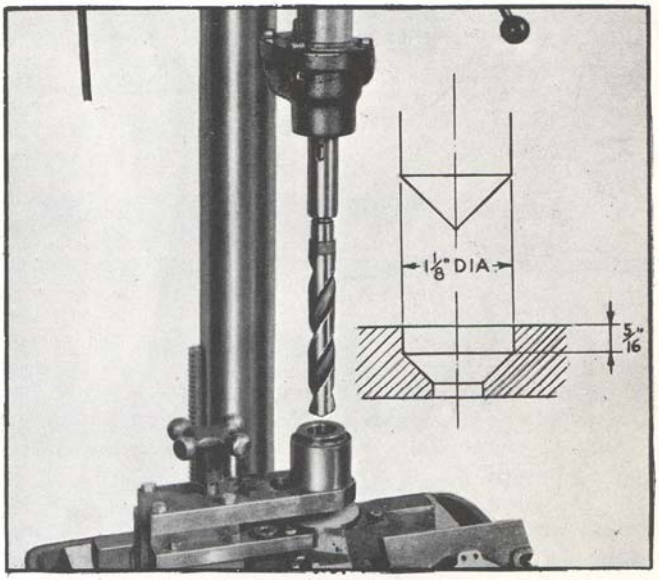
Drilling six ¼" diameter holes with high speed drill in hardened steel washer Rockwell 45-50 C scale at 200 R.P.M., also 1¼" spot facing operation.



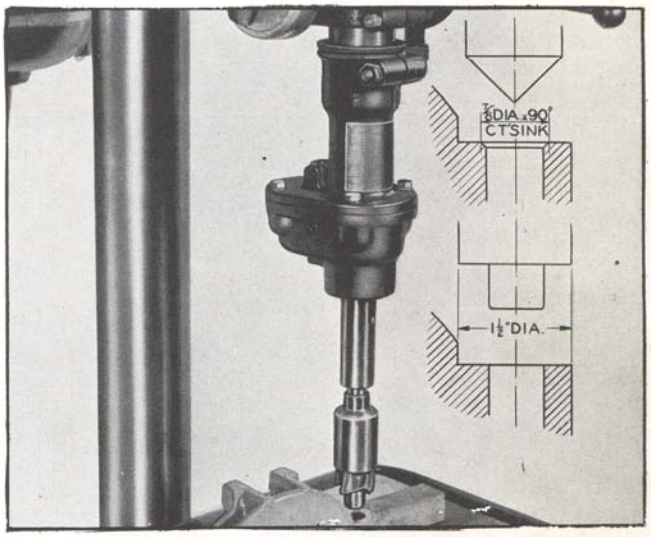
2" diameter spot facer High Speed Gairing Cutter in malleable cast iron at 125 R.P.M. Increased cutter life and eliminated chatter marks.



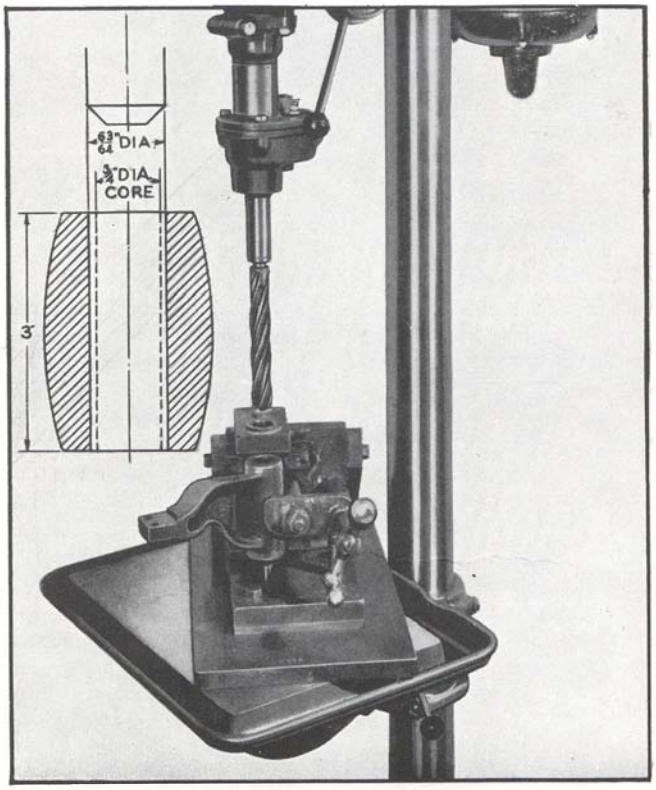
REAMING AND SPOT FACING
With a combination tool in cast iron at 200 R.P.M.



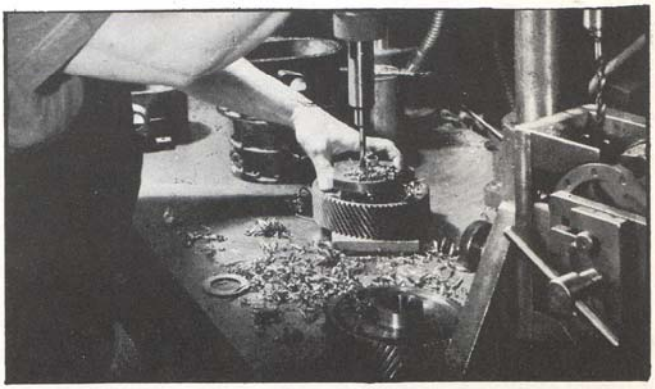
COUNTERBORING
In cast iron with a high speed drill at 200 R.P.M.



SPOT FACING AND COUNTERSINKING
In malleable cast iron at 125 R.P.M., with carbide tipped tool. Countersink also at 125 R.P.M.



CORE DRILLING
In cast iron with a high speed drill at 305 R.P.M.



Drilling two 5/16" diameter holes with high speed drill for 3/8 tap in timing Gear. Heat treated alloy steel Rockwell 40-42 C scale hardness. Slow speed attachment at 200 R.P.M.

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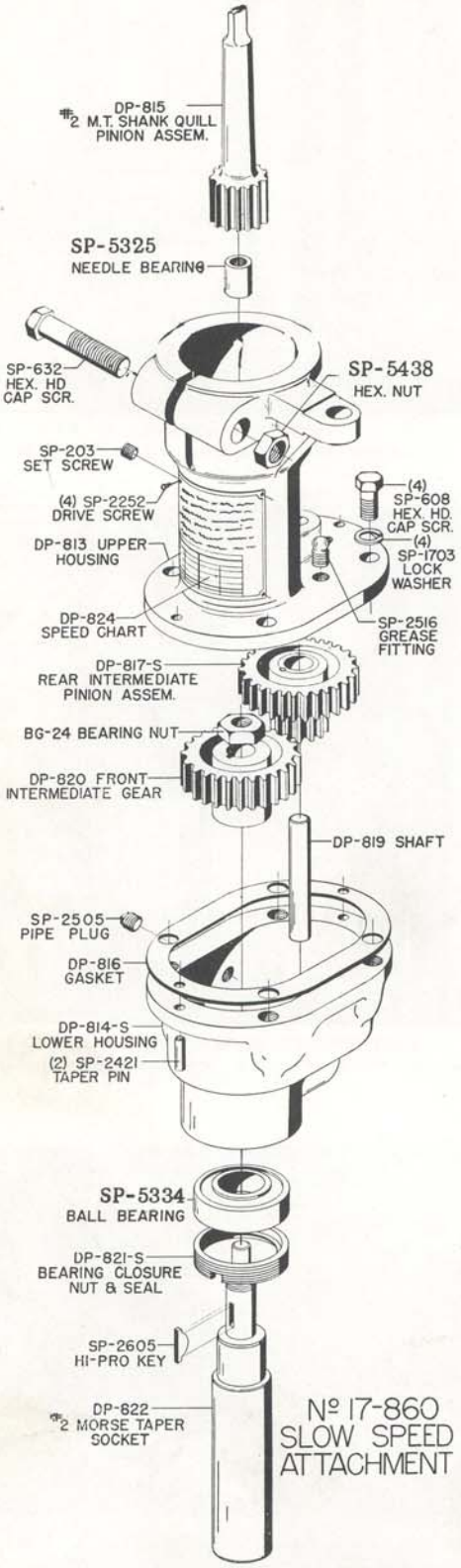

Part No.	Description
BG-24	Bearing Nut
DP-790	Cushioning Ring
DP-813	Upper Housing
DP-814-S	Lower Housing, Including: SP-5254 National Oil Seal
DP-815	Quill Pinion
DP-816	Gasket
DP-817-S	Compound Gear, Including: SP-5326 Needle Bearing #B-812
DP-819	Shaft
DP-820	Front Intermediate Gear
DP-821-S	Bearing Closure Nut & Seal, Including: SP-5254 National Oil Seal
DP-822	# 2 Morse Taper Socket
DP-823	Expansion Plug
DP-824	Instruction Plate
SP-203	1/4-20 X 3/8 Set Screw
SP-608	5/16-18 X7/8 Hex Cap Screw
SP-632	7/16-14 X 2 3/4 Hex Cap Screw
SP-1703	5/16 Lock Washer
SP-2252	Drive Screw
SP-2421	#0 X 3/4 Taper Pin
SP-2505	1/8 Pipe Plug
SP-2516	1/8 x 45 Grease Fitting
SP-2605	#505 Hi Pro Key
SP-5325	Needle Bearing
SP-5334	Ball Bearing
SP-5438	7/16 X 14 Hex Nut

R.P.M. CHART FOR 60 CYCLE MOTOR			
Slo-Speed Drill Press		Hi-Speed Drill Press	
Spindle	Output	Spindle	Output
385	80	700	150
600	125	1150	240
935	200	1750	370
1450	305	2700	570
2240	475	4550	950

NOTE: This unit is not recommended for use with the two highest speeds on high speed machines as outlined with the heavy lines.

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