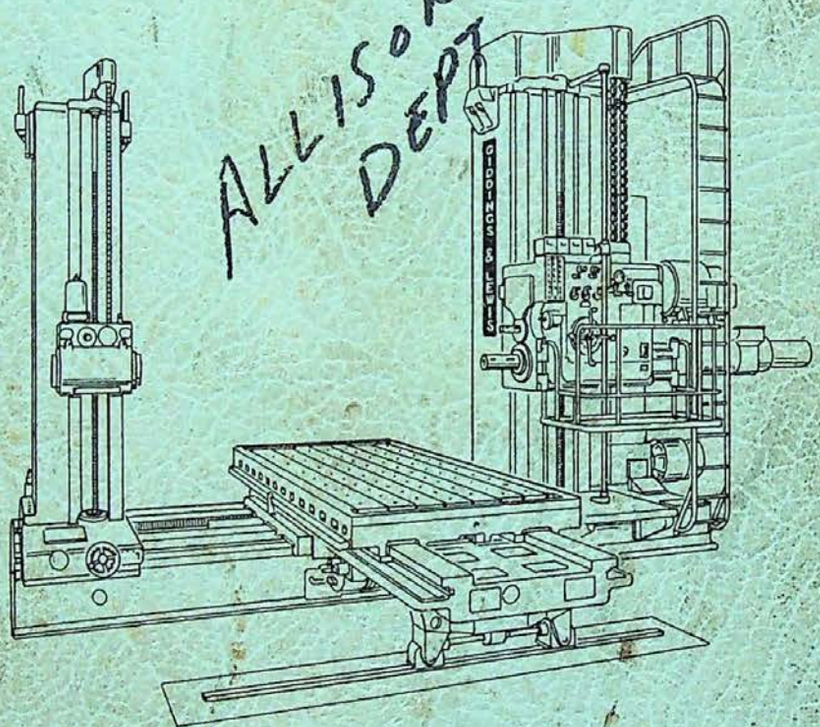
MANUAL 80

INSTRUCTION and PARTS MANUAL

ALLISON DEPT 531



50 Series

TABLE TYPE

Horizontal Boring, Drilling And Milling Machines

GIDDINGS AND LEWIS MACHINE TOOL CO.

Fond du Lac, Wisconsin, U. S. A.

G & L 570 T Serial No. 8766 Shop Machine _____

Dept. No. _____

PRICE ~~$25.00~~

~~Price $15.00~~

INSTRUCTION
and
PARTS MANUAL

INSTALLATION
LUBRICATION
OPERATION
MAINTENANCE and ADJUSTMENTS
REPAIR PARTS

ALLISON
DEPT 531

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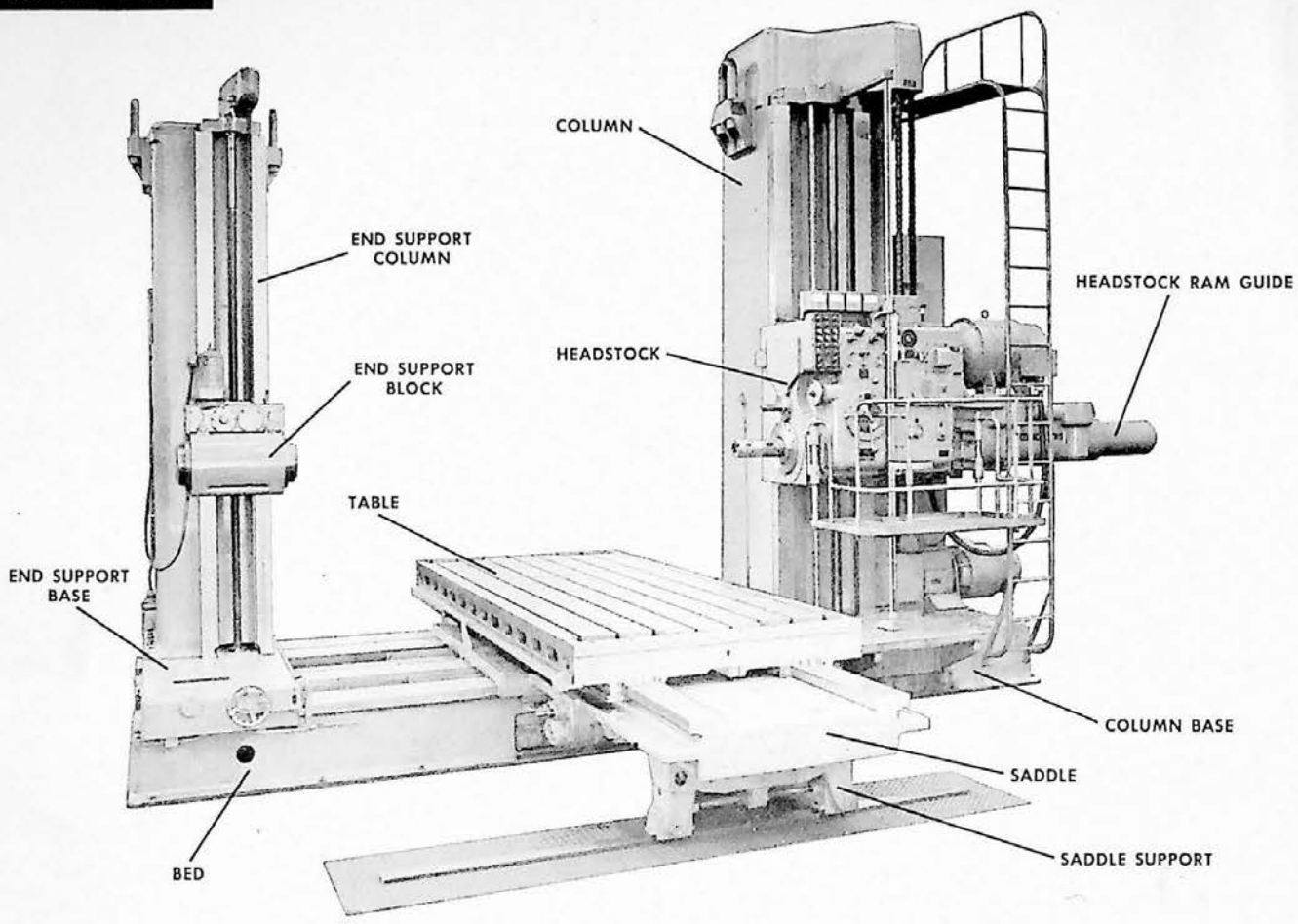

Approximate Weights for Lifting of Major Units

STANDARD HEADSTOCK		MACHINE COLUMN		END SUPPORT COLUMN	
Headstock	15,500 lbs.	Overall Length	Pounds	Overall Length	Pounds
		134"	18,000	112"	6,500
Main Counterweight	8,500 lbs.	158"	21,000	124"	7,500
		182"	24,000	136"	8,500
Auxiliary Counterweight	7,000 lbs.	206"	27,000	148"	9,500
		230"	30,000	172"	10,500
				196"	12,000

TABLE AND SADDLE UNIT			BED	
Table Size	Saddle Length	Pounds	Length Exclusive of Column Base	Pounds
60" x 140"	204"	30,000	164"	21,000
60" x 164"	240"	34,000	188"	24,000
72" x 140"	204"	32,000	212"	27,000
72" x 164"	240"	37,000	236"	30,000
			260"	33,000

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ALLISON
DEPT 5-31

INTRODUCTION

The Giddings & Lewis 50 Series Table Type Horizontal Boring, Drilling and Milling Machine is a precision tool. Correct installation and careful handling of the machine are essential for it to perform accurately and efficiently.

This manual will assist you to install and operate the machine properly. Careful maintenance will extend its productive life.

The 50 Series Machine has two spindles, each working within a different range of feeds and speeds, thus offering maximum production for modern cutting tools. This wide range of speeds and feeds makes it possible to bore, drill and mill at top efficiency. Its broader limits of headstock and column travel offer greater machining possibilities.

Our Engineering Specialists will be glad to analyze your production problems and recommend the proper size and type of tooling to fit your needs.

Section A
INSTALLATION

All Giddings & Lewis Machines are completely assembled, run-off, and inspected at the factory. Their size prohibits the shipping of them completely assembled, and they have been carefully disassembled for this reason.

For domestic shipment the machine units are placed on skids. The units are covered with waterproof paper and tarpaulins, and shipped on flat cars. You will be billed for the tarpaulins, which are to remain the property of Giddings & Lewis Machine Tool Co., but you will receive full credit when they are returned.

TO MOVE THE HEAVIEST PARTS SAFELY A 15 TON CRANE IS RECOMMENDED. In removing the parts from flat cars and in moving them to location, place heavy pads at all points where lifting ropes or chains contact the machine. Be sure no chain or rope exerts strain on projecting parts.

Carefully check all parts of the machine against the packing lists. Report immediately any shortages or parts damaged, in shipment, to the representative of our agent from whom the machine was purchased.

For foreign shipment the machine is disassembled into its various units and shipped completely boxed.

PREPARING MACHINE FOR INSTALLATION

Use gasoline, kerosene or other non-inflamable cleaners, to remove the slushing compound from each unit as it is needed during assembly. The Giddings & Lewis service representative is available, on request, to supervise the assembly of domestic machines. If you require the service representative, clean all units thoroughly, and move them to a location near the machines foundation before his arrival.

FOUNDATION

The G & L High Power Precision Horizontal Boring, Drilling and Milling Machines are extremely rigid. The runway is a semi-steel casting of heavy box-type construction, internally ribbed. Nevertheless, any machine will perform more satisfactorily when placed on a solid foundation free from vibration.

Suggestion for foundation: The foundation should be a one-piece, solid construction, reinforced concrete slab insulated from the floor and five (5) or more feet deep depending upon the underlying soil structure. All foundation bolts should be securely set in the concrete at a depth of not less than nine inches (9"). It is advisable to use the type of hold-down bolt described on our prepared foundation prints. This will allow the foundation to be completely finished before machine arrives. Our design permits the bolt to have a sufficient amount of lateral movement to easily assemble together, or disassemble, two or more sections or runway. A smooth finish on the concrete adjacent to the hold-down bolts is desirable so that the leveling jack will lie flat and level.

When setting machine on foundation it is recommended that you do not grout it in!

Assembly of Machine

BED

Start assembling the machine with the bed unit. (See Fig. 1.) Place the leveling jacks in their respective positions on the foundation in accordance with dimensions given on the foundation print. The bed can then be lowered over hold-down bolts; placed in position; and leveled.

WARNING

In order to obtain precision alignments, machine must be accurately leveled using a precision level having a vial of 10 seconds accuracy — one division equalling one-half thousandth (0.0005") of an inch per foot.

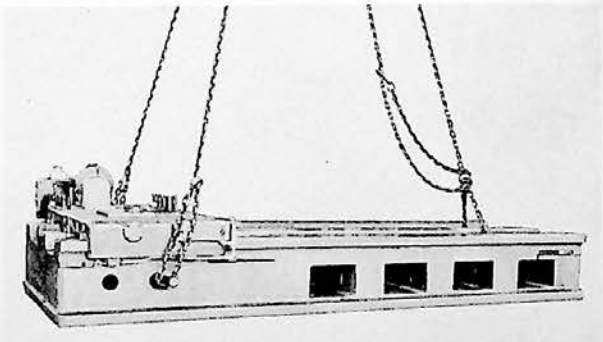

Figure 1, Lifting Bed and End Support Base

INSTALLATION

COLUMN BASE

Clean attaching surfaces of column base and bed, making sure that all dowel pin holes and surfaces that join together are free from paint and burrs or nicks. After the leveling jacks are placed in their right locations, lower the column base in position. (See Fig. 2.) Level it to a

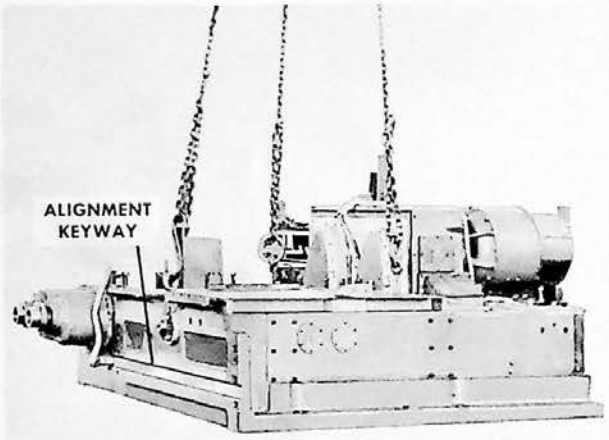

Figure 2, Lifting Column Base

position that allows the keyway on the end to line up with the keys on the bed section. Units may now be drawn together by means of the 1-1/4" cap screws which secure column base to the bed section. If dowel pin holes do not line up perfectly, tap column base slightly forward or backward by means of a large bumping bar until the holes do line up. Drive dowel pins home and tighten all screws.

WARNING

GREAT CARE must be exercised to see that the taper pin holes, adjacent to the screw holes, are thoroughly clean and that the pins can be inserted to their full length before attempting to drive them home. Drive pins "home" solidly and secure all screws.

After the bed and column base are fastened together they should be checked again for level and the nuts on the hold-down bolts tightened.

COLUMN

Prepare column base for assembly of column by removing all bolts and pins from column base and by scraping paint back approximately 1/2" from scribed outline of column. COLUMN BASE MUST BE PERFECTLY CLEAN BEFORE PLACING COLUMN ON IT.

Column may now be lifted. (See Fig. 3.)

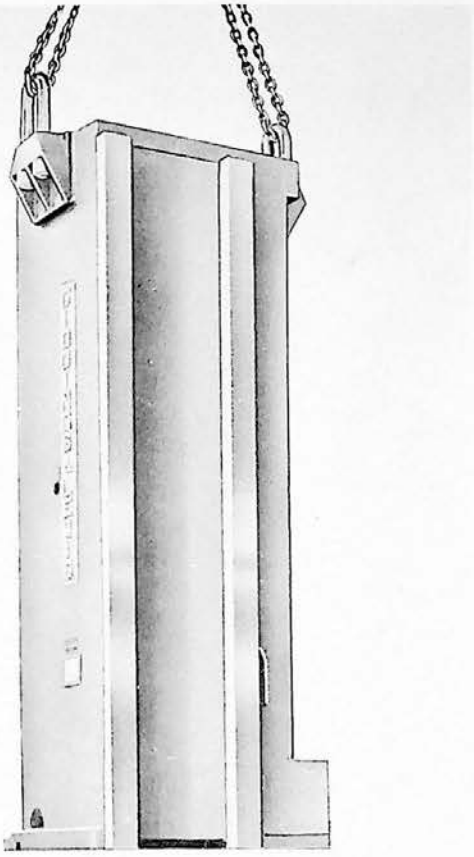

Figure 3, Lifting Column

Clean bottom, bolt holes and pin holes thoroughly. Lower column into position over column base so that tongues and grooves are properly engaged with liners in their respective positions on front sides of tongues. (NOTE: liners and tongues are marked with identifying numbers for correct assembly.)

Column should be brought snugly against liners by means of lock screws at rear of column, but should not be locked. Column may then be moved either right or left to perfectly align taper pin holes. Drive taper pins "home" and tighten lock screws at rear of column securely. Place all the column bolts in position and secure.

COUNTERWEIGHTS

Remove cover about half way up on front of column and place 2" diameter steel bar through opening. Bar should rest firmly on rib section and against far side of column. Pick up main counterweight sections and lower into their respective positions in column until they rest firmly on the bar support. (See Fig. 4.)

INSTALLATION

NOTE

Vertical steel counterweight guides should be lightly greased before weights are assembled.

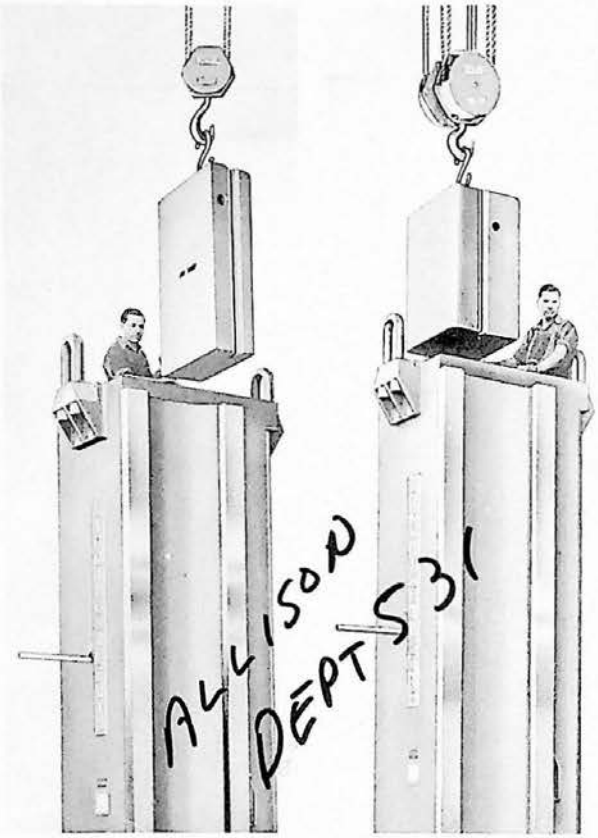

Figure 4, Lowering Counterweights

Counterweight chains may now be secured to counterweights, allowing the loose ends of chains to hang down over rear edge of column. Assemble auxiliary counterweight sections in position on top of main counterweight. To do this, it will be necessary to temporarily move large counterweight chain to the front of the column. After the auxiliary weights are placed in position, the chain can be returned to the rear edge of the column. All the machines do not necessarily have auxiliary counterweights. However, the number required for each machine is indicated on the packing list.

Assemble the three rubber oil seals and steel retainer strips in their respective positions between transmission unit and main column.

It is imperative that this is done before the electrical control panel is placed into position. The oil seals are small rubber hoses about 3/8" diameter and are of different lengths, from approximately 24" to approximately 60". The steel strips are fastened to the top and sides of the transmission unit with several 3/8"socket screws.

ELECTRICAL CONTROL PANEL

Pick up main control panel and assemble to right side of column immediately over the transmission unit. (See Fig. 5.) Secure all cables in cable supports and connect all wires.

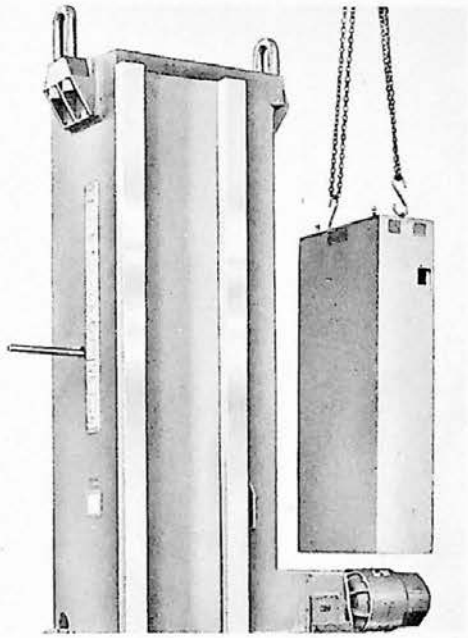

Figure 5, Attaching Electrical Control Panel

HEADSTOCK

Pick up headstock in perfect balance with ways vertical. (See Fig. 6.)

NOTE

If overhead clearance will not permit the headstock to be lowered on the column ways from above, the electric control panel should be assembled after the headstock is positioned in order to attach clamps.

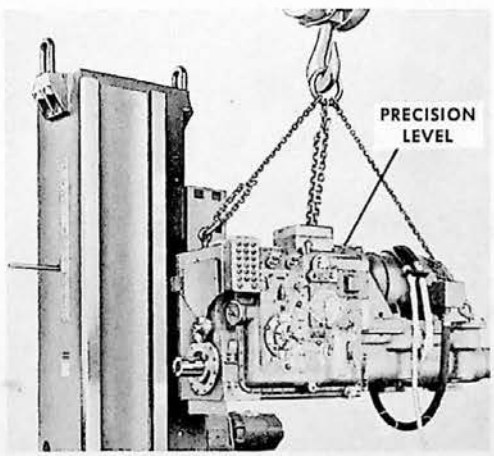

Figure 6, Proper Way To Lift Headstock

INSTALLATION

Clean ways, wiper pockets of headstock and ways of column thoroughly.

It is important that the headstock is perfectly balanced in both directions. Use a precision level on top of the headstock on a milled surface for assistance in balancing. The movement of the spindle in or out will help in balancing horizontally.

If possible, lower headstock over the column ways from the top after the clamps are loosely attached. If not, carefully place headstock in position on column; attach head clamps and insert the head gibs in their proper positions. Headstock locks may be adjusted after machine is in running condition.

After all clamp bolts have been tightened and gibs are temporarily adjusted, place two 4" x 6" x 4" props under headstock close to column ways and lower headstock to rest on props. Crane may now be released and slings removed. At this time, assemble top way wipers to headstock.

Clean operator's platform and milled surfaces of platform bracket. Clean the two pads on headstock and assemble operator's platform to headstock. (See Fig. 7.)

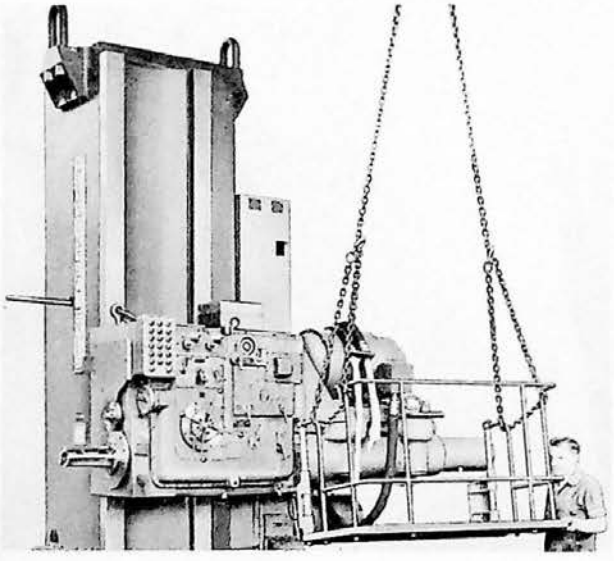

Figure 7, Hanging Operator's Platform

Pick up operator's ladder and assemble to the machine just to the right of operator's platform. (See Fig. 8.)

Clean column screw bracket thoroughly and assemble it in place on top of column. (See Fig. 9.)

Remove bearing retainer covers from column bracket and clean the bearing recesses thoroughly.

Assemble vertical shaft and elevating screw through column screw bracket and head, and to the column base. If there is not enough head room to lower the long screw and shaft through the top bracket, it will be necessary to install these parts before the column screw bracket is assembled to the column. The bearings will have to be removed from the shaft and screw, and the bracket put in place. Then replace bearings and fasten all bearing retainer covers in place.

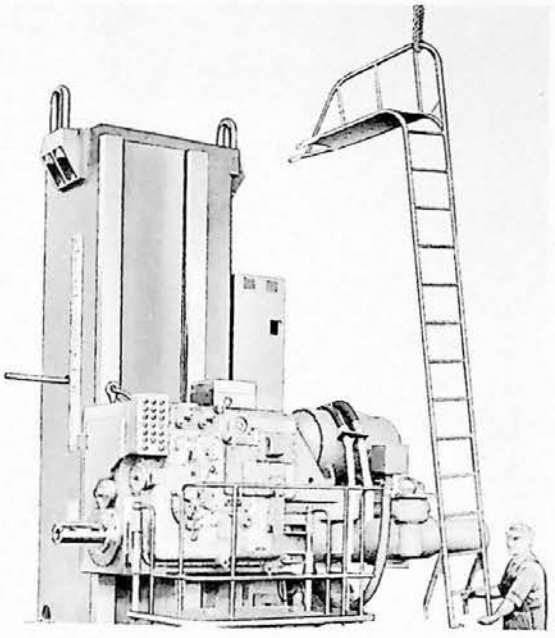

Figure 8, Attaching Operator's Ladder

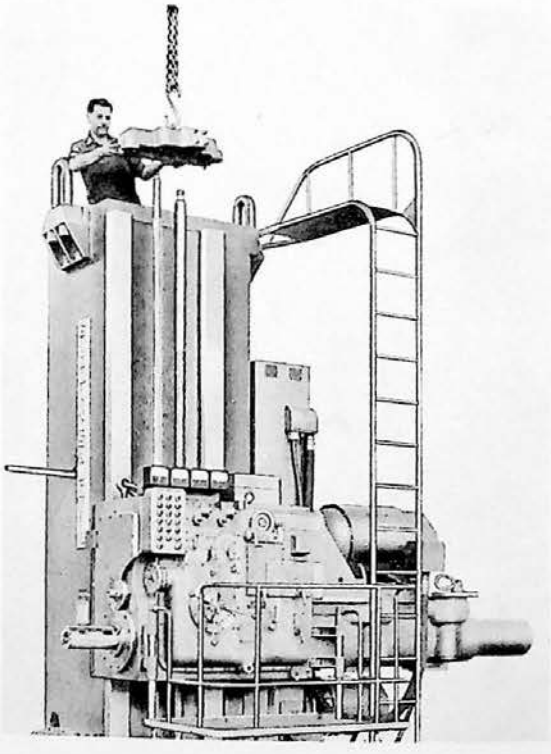

Figure 9, Assembly of Column Screw Bracket