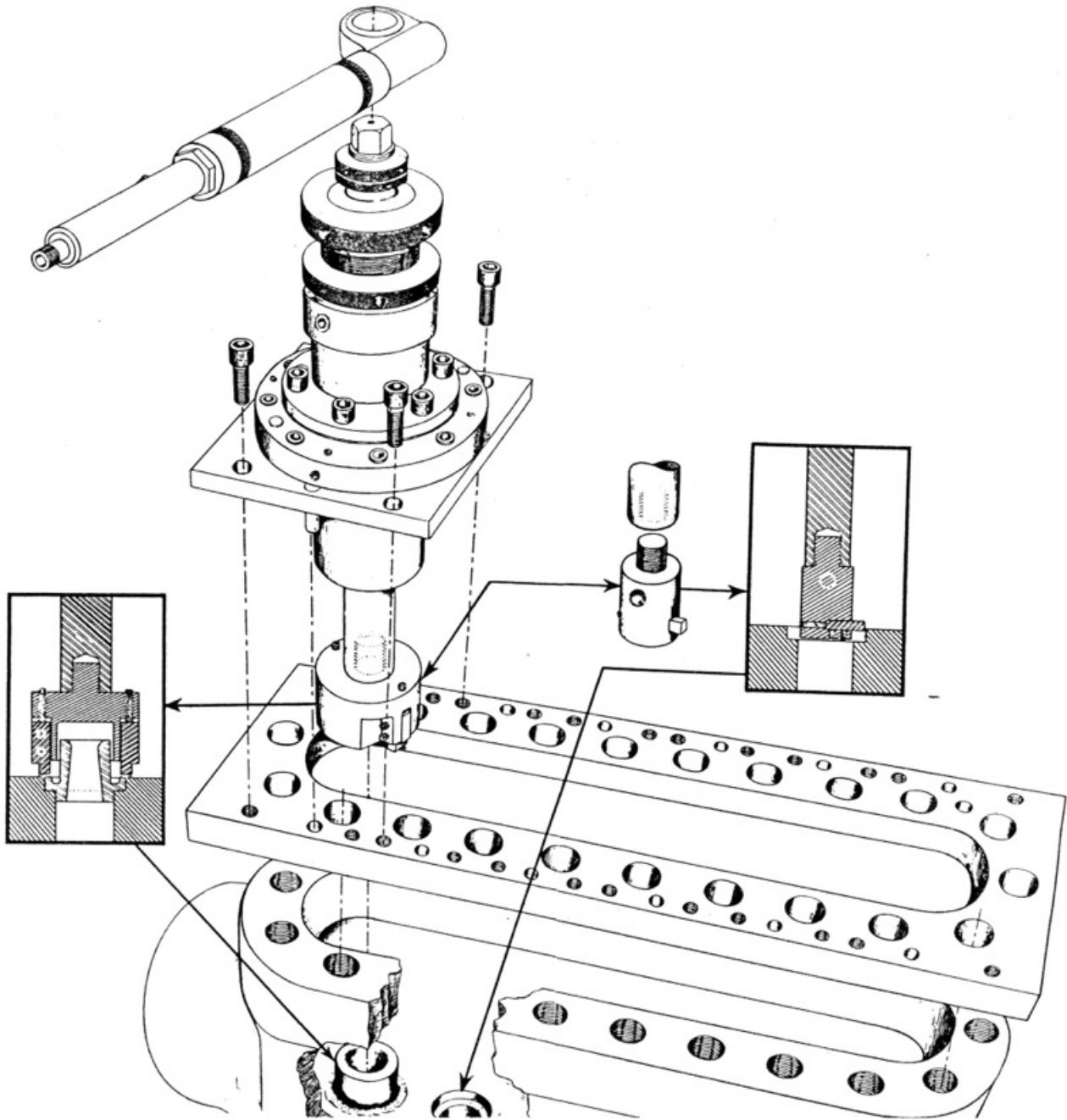


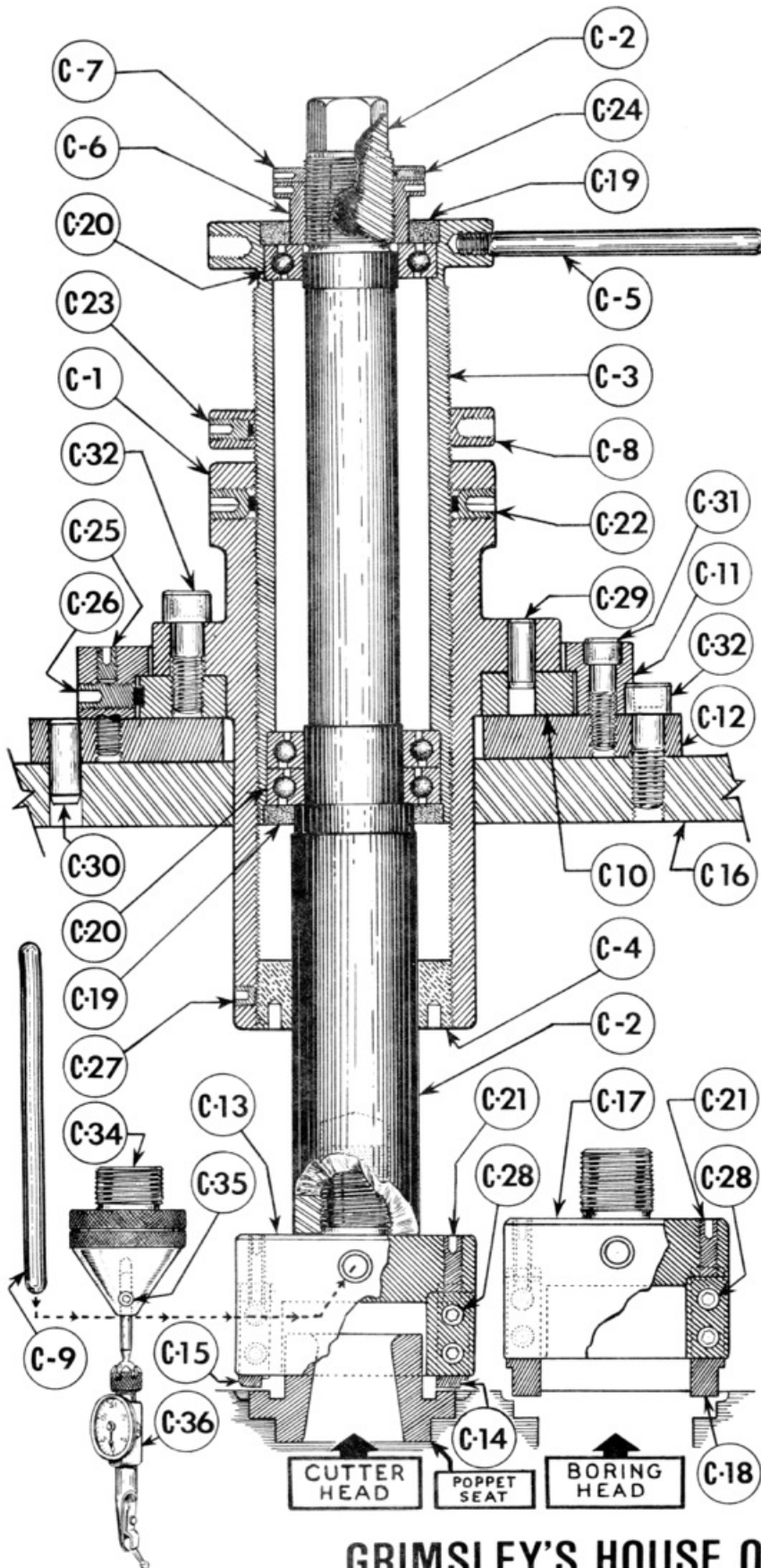
Grimsley's Portable Machine  
For Removing Nozzles And  
Refinishing Nozzle Seats In  
2500 KW Turbine Generator  
Model No. VBB-850  
Patent No. 4,090,805



**GRIMSLEY'S HOUSE OF TOOLS, INC.**

*Specializing in Portable Tools*

GRIMSLEY'S PORTABLE MACHINE  
 FOR REMOVING NOZZLES AND  
 REFINISHING NOZZLE SEATS IN  
 2500 KW TURBINE GENERATOR  
 MACHINE NO. VBB-850  
 PATENT NO. 4,090,805



**PARTS FOR NOZZLE REMOVING & NOZZLE SEAT  
 REFINISHING MACHINE NO. VBB-850**

PARTS NO.	QUAN.	DESCRIPTION
C-1	1	HOUSING
C-2	1	DRIVE SHAFT
C-3	1	ADJUSTMENT SCR.
C-4	1	NYLON BEARING
C-5	2	HANDLE PIN
C-6	1	THRUST RING
C-7	1	LOCK RING
C-8	1	DEPTH STOP RING
C-9	1	DRIVE PIN
C-10	1	ADJ. PLATE
C-11	1	PLATE RETAINER
C-12	1	MOUNTING PLATE
C-13	1	CUTTER HEAD
C-14	1	TOOL BIT # 1
C-15	1	TOOL BIT # 2
C-16	1	ADAPTER PLATE
C-17	1	BORING HEAD
C-18	2	TOOL BIT # 3
C-19	2	SEAL ~ C/R # 16270
C-20	3	ANG. CONT. BEARING
C-21	4	1/4-28 x 1" LG. SOC. SET SCREW
C-22	3	1/2-20 x 1/2" LG. SOC. SET SCREW
C-23	1	#8-32 x 1 1/2" LG. SOC. SET SCREW
C-24	1	#8-32 x 1 1/4" LG. SOC. SET SCREW
C-25	4	1/4-28 x 1/2" LG. SOC. SET SCREW
C-26	4	3/8-24 x 1" LG. SOC. SET SCREW
C-27	1	1/4-28 x 1/4" LG. SOC. SET SCREW
C-28	8	1/4-28 x 1/2" LG. SOC. SET SCREW
C-29	1	3/8" DIA. X 1" LG. DOWEL
C-30	6	1/2" DIA. X 1 1/4" LG. DOWEL
C-31	8	3/8-16 x 1 1/4" LG. SOC. HD. SCREW
C-32	10	1/2-13 x 1 1/4" LG. SOC. HD. SCREW
C-34	1	ALIGNMENT INDICATOR HOLDER
C-35	1	#8-32 x 3/4" LG. CUP PT. SOC. SET SCREW
C-36	1	INDICATOR GAUGE

**GRIMSLEY'S HOUSE OF TOOLS, INC.**

*Specializing in Portable Tools*

GRIMSLEY'S PORTABLE CUTTING TOOL  
MODEL VBB-850  
FOR REMOVING NOZZLES AND REFINISHING NOZZLE SEATS  
IN STEAM GENERATORS  
WITHOUT REMOVING GENERATOR HOUSING TO MACHINE SHOP

Description

This machine permits removal of one or all nozzles (Poppett Valves) from steam chest in place. A portable cutting tool is mounted on the top of a governor chest after the chest cover and valving mechanisms have been removed from chest. The cutting tool rotates and axially advances a cutting head to cut away the weld material which welds a nozzle to a wall of the governor chest. This permits removal and replacement of the nozzle. The cutting tool is mounted on a mounting plate so as to permit selection of one of several locations as the cutting site, thus permitting use of a single cutting tool to effect the removal of all the nozzles within a governor chest. The cutting head carries two tool bits which cut in angular overlapping paths and the cutting head is recessed so it may pass over a nozzle as a weld is cut. A second cutter head is provided for refinishing the nozzle seats after the nozzles have been removed. Different interchangeable mounting plates permit the cutting tool to be utilized on chests of different sizes or having different spacings between nozzles.

Operation

1. Remove the bonnet and operating mechanism from the governor chest.
2. Cover the poppetts valves or any other openings to prohibit foreign matter from entering the steam chamber.
3. Clean the flange face of the governor chest, removing all scale and/or burs.
4. Install proper adapter plate piece number 16. Make sure plate is clean of trash or burs so that it will have absolute contact (all the way around on the governor chest).
5. Install cutter head to boring bar, install proper tool bits and adjust for cut to be made, and tighten tool bit holding screw.
6. Measure depth from bottom surface of steam chest to top surface of the adapter plate piece number 16.

7. Adjust the machine to the depth desired for the first cut (by running the feed screw piece number 3 up or down to suit). After the depth of cut has been determined, adjust the locking ring piece number 8 to allow the feed screw to feed down until the locking ring contacts the housing piece number 1.
8. Install the assembled machine to the adapter plate piece number 16 by alignment of the dowel pins with corresponding dowel holes in the adapter plates. This will align the boring bar with the poppet to be removed. NOTE: Adapter plate piece number 16 for 2500 KW General Electric Generators only.
9. After the assembled machine has been installed check the alignment to insure that the cutter head is concentric with the poppet valve to be removed using the indicator adapter on the boring bar.
10. Be sure to tighten the holding cap screws (4) to the adapter plate.
11. Install drive motor and turn bar a few revolutions to be sure bar turns freely.
12. After the initial cut has been taken, inspect, and if a further cut is desired, adjust the locking ring on the feed screw. To make this adjustment, back off the locking ring piece number 8 until a feeler gage of the proper thickness can be inserted. Slightly tighten the nylon tipped allen head screw so that the ring piece number 8 will not move and then screw the feed down as the bar rotates to remove the additional metal. When the locking ring again comes into contact, the desired cut will be finished.
13. Remove the assembled machine from the governor chest by removing the (4) holding cap screw.
14. Remove the poppet and examine the bore to determine if any further machining is necessary. If not, move machine over to next Poppett and follow the same procedure.
15. If it is determined that the bore needs machining, install the boring head piece number 17 with proper tool bit piece number 18 and follow the same procedure as outlined above for facing off the weld prior to removing the poppet.

Maintenance

Equipment should be thoroughly cleaned after each use, sprayed with a rust inhibitor chemical before placing in storage case. If machine is to be used in a contaminated area, clean in accordance with Government specifications.

GRIMSLEY'S HOUSE OF TOOLS, INCORPORATED WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY IMPROPER USE OR STORAGE OF THEIR EQUIPMENT.

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CALL FOR DEMONSTRATION OR SERVICE

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