Delegate to each man the work he knows best so machine is put back in operation in the least possible time



NUMBER all stationary diaphragms so they go back in right places. Clean blades thoroughly, then inspect for erosion. Inspect garter spring carbon-ring grooves



RETAP all threaded holes so screws enter easily when parts are assembled



SCRAPE bearings if they need it. Here carbonized oil is removed in dust form

CARBON RINGS *are used here for both* interstage and casing-end sealing. Rings are made in segments, held together with garter springs, and kept from turning by metal stop on spring. These rings work like piston rings—sealing against shaft and side of groove they are housed in.

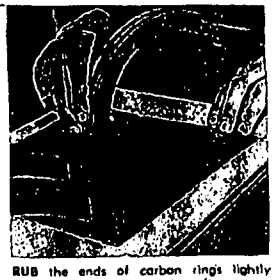
Clearance between shaft and ring must be right. Keep to turbine maker's *recommendations. Before checking* clearance, polish shaft section that rings seal, so surface is right. If too much clearance, polish ends of segments with fine abrasive cloth. But this job must be done right or ring ends will leak steam.

If there is much refitting, best practice is to turn piece of short stock same diameter as shaft and use it on work *bench to fit rings onto. Carbon dust or* solids from boiler carryover often cock rings in groove, causing them to break. Or impurities work into segment ends, causing leakage.

Usually, you have only to clean carbon dust from sides and ends of ring, clean sides of grooves and reassemble rings around shaft. Rings are precision made, so give job to good mechanics.

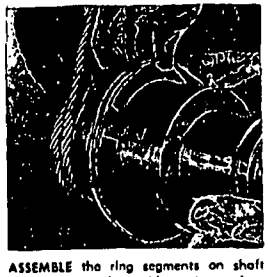


POLISH shaft sections with a fine abrasive strip where the carbon rings seal



RUB the ends of carbon rings lightly against fine abrasive cloth to clean them

Carbon seals prevent leakage between the various stages

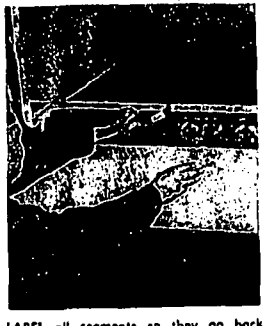


ASSEMBLE the ring segments on shaft and hold together with garter springs



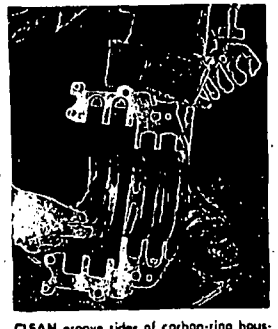
CHECK clearance against *manufacturer's* recommendation. Sand ring ends if needed

Right clearances do better sealing job, save shaft



LABEL all segments so they go back into the right places, to avoid trouble

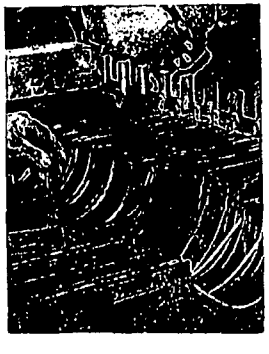
REPLACE ring segments in stationary diaphragms after cleaning with vacuum



CLEAN groove sides of carbon-ring housing as sides are also the sealing surfaces

SMEAR sealing compound in turbine housing to seal the lower half of gland box

Carbon rings seal against groove side and shaft, like piston ring





High-pressure steam leaks under carbon-ring housing if it's not sealed

Turn page