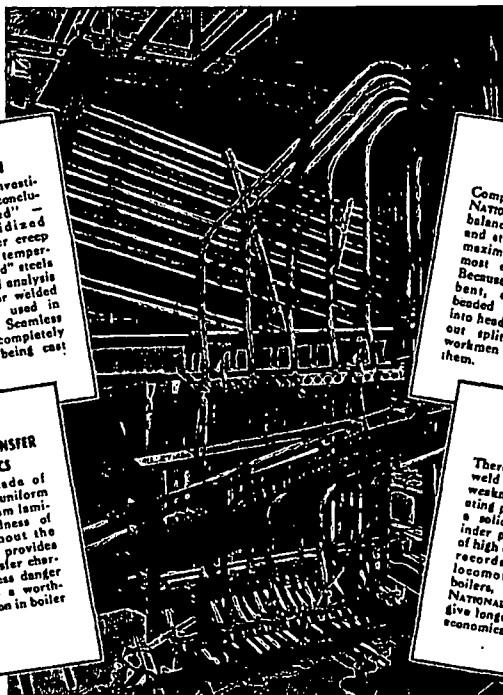




HIGHER CREEP STRENGTH

Tests, by impartial investigators have shown conclusively that "killed" — thoroughly deoxidized steels — have better creep strength at elevated temperatures than "rimmed" steels of similar chemical analysis commonly used for welded U-S-S NATIONAL Seamless Boiler Tubes are completely "killed" before being cast into ingots.

SUPERIOR HEAT TRANSFER CHARACTERISTICS

Seamless tubes made of "killed" steels have uniform density, freedom from laminations and soundness of structure throughout the metal walls. This provides superior heat transfer characteristics with less danger of "hot spots" — a worthwhile consideration in boiler tube service.

BETTER WORKING PROPERTIES

Complete annealing gives NATIONAL Tubes the right balance between ductility and strength which assures maximum service and utmost ease of installation. Because they can be readily beaded and rolled tightly into headers or sheets without splitting or fracture, workmen prefer to install them.

"WALLS WITHOUT WELDS"

There is no longitudinal weld or line of potential weakness to limit safe operating pressure. Each tube is a solid, homogeneous cylinder pierced from a billet of high quality steel. Service records from stationary, locomotive, and marine boilers, prove that U-S-S NATIONAL Seamless Tubes give longer, safer, and more economical service.

These 4 basic advantages PAY OFF

when you're handling extreme pressures, high temperatures or complicated assemblies

THAT's why so many public utilities and other high pressure steam plants have standardized on U-S-S NATIONAL Seamless Boiler Tubes. To the Seamless Process of tube making — pioneered by NATIONAL — can be credited much of the advance made in more efficient steam production.

Piercing a tube from a solid billet of steel is the only process that absolutely removes all uncertainty regarding uniform wall strength — that provides the structural homogeneity and

the assured safety, security, and dependability of a solid forging.

What is equally important, these superior "Walls Without Welds" have been continually improved, both in their metallurgy and in their fabrication, to insure lasting safety and economy under increasingly heavier loads.

NATIONAL TUBE COMPANY, PITTSBURGH, PA.

(FORGING SPECIALTIES DIVISION)

COLUMBIA STEEL COMPANY, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS

UNITED STATES STEEL EXPORT COMPANY, NEW YORK



NATIONAL



Seamless

BOILER TUBES

UNITED STATES STEEL

WHY SHOP FOR A BOILER??

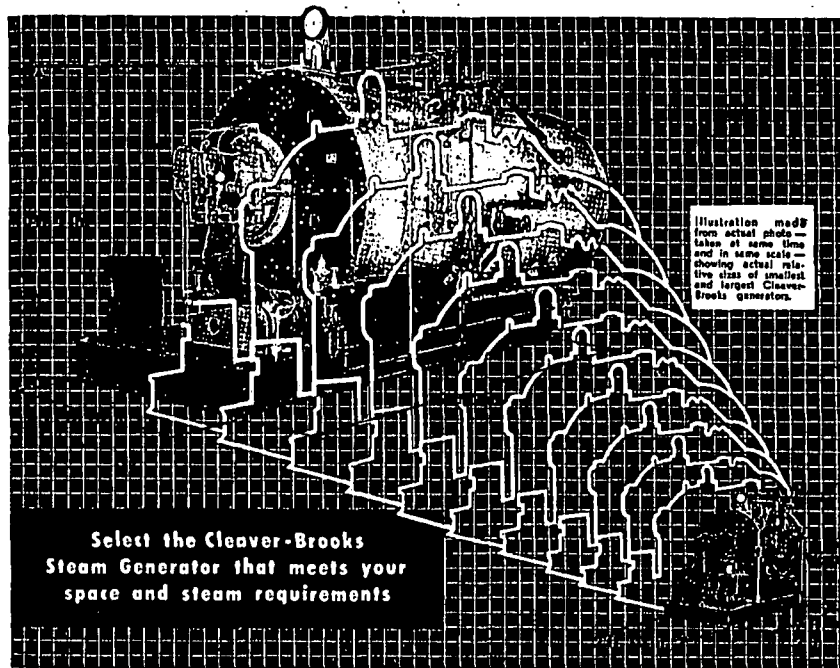


Illustration made from actual photos — taken at same time and in same scale — showing actual relative sizes of smallest and largest Cleaver-Brooks generators.

Select the Cleaver-Brooks Steam Generator that meets your space and steam requirements

WHY search and shop for a boiler — install a Cleaver-Brooks engineered and packaged steam generator that fully meets your steam requirements and needs only a minimum of space and headroom.

You can select from a range of sizes 15 to 500 hp. — and you can have your Cleaver-Brooks steam generator equipped for oil, gas, or with a combination burner which permits alternate use of gas or oil and provides for a quick change-over from one fuel to the other.

Equally important — you get Cleaver-Brooks guarantee of at least 80% efficiency from full load down to 30% of rating — with either gas or oil as fuel — and IN ALL SIZES.

Cleaver-Brooks steam generators enable you to burn the available fuel in your area — give you clean,

CLEAVER-BROOKS COMPANY, 332 E. Keefe Ave., Milwaukee 12, Wis.

Oil or Gas Fired . . . Guaranteed 80% Efficiency from Full Load Down to 30% of Rating . . . IN ALL SIZES

smokeless operation — eliminate fuel and ash handling — need no high or costly stacks — no special foundations — fit under low headroom and into limited space — provide flexible operation to meet fluctuating loads — fully meet all codes.

Available in a size to fit your needs — 15 to 200 p.s.i., 15 to 500 hp. — write for Cleaver-Brooks Steam Generator bulletin.



WRITE on your business letterhead for Free Steam Cost Calculator — a ready reference slide rule showing the comparative steam costs when using oil, gas or coal as fuel.

Cleaver-Brooks

"Packaged"

STEAM GENERATORS

HAVE SERVED INDUSTRY FOR MORE THAN FIFTEEN YEARS