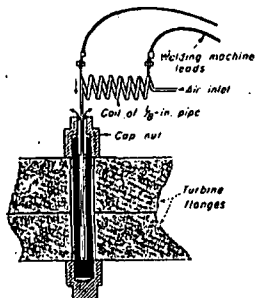


PRACTICAL IDEAS...here's the trading post for you

Operating and maintenance short cuts

STEVE ELONKA, Associate Editor



Heater for Turbine Flange Bolts

ELECTRIC BOLT HEATERS for our turbine flange bolts were not available when we began to dismantle one of our units for inspection. We don't heat high-tensile-strength bolts with an open flame torch.

We heated bolts with a coil of $\frac{1}{2}$ -in. iron pipe as an electric heating element. Low-pressure compressed air passes through hot coil and down into bolt, sketch.

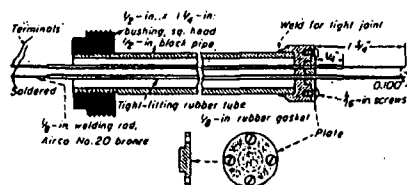
Heating coil is 10 turns of $\frac{1}{2}$ -in. standard black-iron pipe with inside coil diameter of 3 in. Coil, wound in lathe over a $2\frac{1}{2}$ -in. pipe, has spacing of about $\frac{1}{2}$ in. between turns. One end of coil

is left straight, and long enough to reach bottom of 14-in.-deep hole in bolt.

To lugs welded to both ends of coil are leads from a dc electric welding machine. About 250 amp heats coil to a dull red, with air at 5 psi passing through coil and into bolt.

Superheated air heats bolt as it escapes from bottom of heater pipe and passes back up through bolt. It took 20 minutes of heating to elongate bolts enough to permit nuts to be easily removed. Bolts were heated in same way when reassembling machine.

C TRETINYAK Austin, Minn.



Making a Conductivity Cell

OUR CONDUCTIVITY CELLS gave trouble, so I made a cell from welding rod and half-inch pipe, sketch. This works better and needs little maintenance. Only upkeep is cleaning electrode tips in weak acid solution. Also resetting the 0.100-in. clearance, which may vary with application.

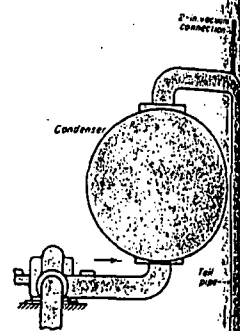
Cell is easy to make. First make

shell. Lightly screw in plate with rubber gasket. Slip rubber hose over welding rod, leaving an inch hanging over end. Place another rod with hole in end, run wire through hole, slip assembly into overhanging hose. Secure rod to hose with wire. Push leading rod through holes in plate and gasket. First swap rubber hose so it slips through

easier. Then pull leading rod through with hose and electrode. Cut hose, move electrode out $1\frac{1}{4}$ in. Tighten plate and trim hose to $\frac{1}{4}$ in. If electrodes are long, file down. After sealing terminals, cell is ready for use. You place a rubber stopper with holes. Make holes larger than hose over electrodes in cell's top to seal electrodes in place.

Another way to seal cell's bottom is coat inside of plate with GE Glyptal. If this is used, cell must be left to dry at least 24 hr before using.

C J THOSKR Galesburg, Mich.



Tail-Pipe Clean-Up System

WE NEEDED a vacuum clean-up system. Condenser tail pipe on our 10,000-hp machine had a 15-ft drop, so we made a 2-inch pipe connection to upper sketch. This gave an excellent vacuum at expense of an extra pound of pressure on our circulating pumps, to a partial loss of siphoning action.

As turbine operation is continuous we extended piping to various locations throughout plant. One length of hose is enough for all plant cleaning.

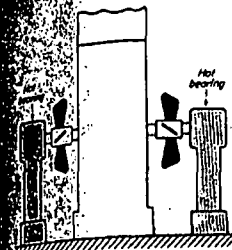
System has been operating for years and is highly satisfactory. Dust and dirt collected is automatically discharged with circulating water.

J A SWANSON Princeton, N.J.

Timer for Chemical Feed

INSTALLATION of 15-minute timer for chemical feed pump results in savings for power and maintenance. It does not alter concentration.

L F ZIPPATRICK Jefferson City, Mo.

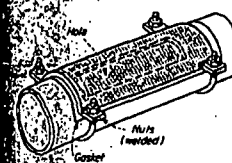


No More Fan Bearing Troubles

BEARINGS of large induced-draft and centrifugal fans are usually water-cooled and aligning bearings to cut down wear on sleeves. In smaller fans, bearings are oil-lubricated and water-cooled, but fan bearings. Even then, bearings may overheat.

At one plant we had trouble from fan bearing overheating. This was overcome by fitting a disk, with a number of blades attached, to fan shaft between fan bearing and fan sketch. Fan dissipated heat before entering the bearing. That solved our problem.

T H GINN Skipton, England

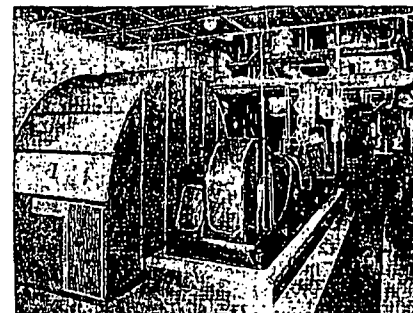


Removable Clamps Serve as Clean-Outs

WHEN LARGE DRAIN or iron sewer line is blocked, here's a quick way to clean out obstruction, especially if there are many fittings. Where line is hard to get at, we cut a hole in pipe's top section, 6 in. x 8 in. long, sketch. We then use a clamp by either sawing or cutting lengthwise a pipe of same diameter, a few inches longer than cut in pipe.

Clamps are welded or brazed at each end of clamps. Rods are made up and bent to curvature of pipe, gasket placed, clamp pulled up and bolted.

W ROCKLIN Chicago, Ill.



Lighten Up Dark Engine Rooms

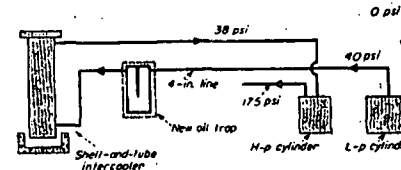
HAVING OPERATED or managed 100 ice plants in my time, I have learned that painting engine rooms white is a good investment. It not only lightens up everything, but also cuts down accidents.

Photo shows overhead, walls, some machinery and also the floor painted white. At one time this was a dark en-

gine room. Now only the path along floor is dark.

Employees stay longer in a clean, light plant. Then again they naturally take better care of it. That cuts down maintenance bills and outages. There is no reason why a plant cannot be kept as clean as your own home or office.

H C WELCH Baldwin, N. Y.



Oil Trap Stops Metallic Noise

OWN OF OUR 2-stage, direct-acting, horizontal, high-speed ammonia compressors is rated at 150 tons at 0-psi suction, and 0 F superheat at 175-psi condensing pressure. Machine needed an intercooler to reduce valve maintenance, oil consumption and power cost.

Intercooler was installed a great distance from machine because of water-supply system. After installation there was a severe metallic hammer at frequency corresponding to compressor valve opening. Noise caused complaints from operators, we all worried about piping. We first contacted makers.

Compressor and intercooler maker's field engineers could offer no economical solution. We installed an oil trap, sketch, to protect intercooler surface from oil, which would cause poor heat transfer. We oversized trap and insulated it with hair felt in hope that shock waves causing hammer would quiet down. Hammering decreased and pipeline vibration stopped. Also, a much steadier pressure was noted back in suction to high-pressure cylinder. This helped increase h-p cylinder efficiency.

M EVANS Chicago, Ill.

(Continued on page 128)