

More PLANT PROBLEMS

BALANCE THE LOAD when more than one welder is hooked into a circuit. With two dc sets on the same line, one set up for straight polarity work and the other for reverse (holder positive), you run into a 160-v circuit if maximum allowable open-circuit voltage for each machine is 80 v. You complete this circuit when you contact uninsulated parts of the electrode terminals, cables or holders.

MT should check his welding circuit, especially rods and holders to see if there are shorts that may be causing his overheating. That's where he may find trouble source.

T LEE MACK Chicago, Ill.

WRONG ELECTRODES for current values being used may cause MT's trouble. Check current recommendation of rod manufacturer to see if it is within the range used. Too high a current setting may overheat the rods.

JOHN BENNING New York, N. Y.

CHECK POLARITY of welding current to make sure it is right for rods used. Electrode negative is best for bare or lightly coated electrodes because a little more heat is generated on positive side of circuit with this type.

Adding a coating to the electrode forms gas in the arc, which alters heat conditions so greater heat is produced on the negative side. But remember, heat conditions are effected differently by various coatings.

One heavy coating may give desirable heat conditions with electrode negative, while another coating on same electrode may have a more desirable heat balance with electrode positive.

Designer decides polarity to use with any electrode. If MT is in doubt about polarity to use with any electrode he can check the melt-off rate. Melt off 6 or 8 in. of an electrode with each polarity, keeping a record of the time needed. Longer melt-off time usually gives greater heat in plate or joint. Such a test is accurate enough for most jobs.

L C KANE Denver, Colo.

EXCESSIVE CURRENT overheats any electrical device, including welding rods. It can also cause major damage to welder, especially if there is no overload protection. Don't use welder while defect exists.

Check current settings on dial pointer with an ammeter temporarily hooked to the welding line.

L E POLIKOFF Brooklyn, N. Y.

AWS Recommendations for Welding Plain-Carbon Steel

AWS classification	Deep penetration	Four fill-up	Finish pass on deep-groove work	Weld cracks	For steels with tendency toward porosity
E6010	"	"	"	"	"
E6011	"	"	"	"	"
E6012	"	"	"	"	"
E6013	"	"	"	"	"
E6015	"	"	"	"	"
E6020	"	"	"	"	"

CONTROL VOLTAGE with setting on machine. Use high voltage but low current on thin metals so arc won't burn through metal.

High current will be needed on an overhead job to get enough penetration with sufficient arc force to help push the

metal up. Use a high current on a casting; voltage may be low.

Choose electrode correctly. Gives American Welding Society recommendations for electrodes used in plain-carbon steel.

BEN MASEDALE Dallas

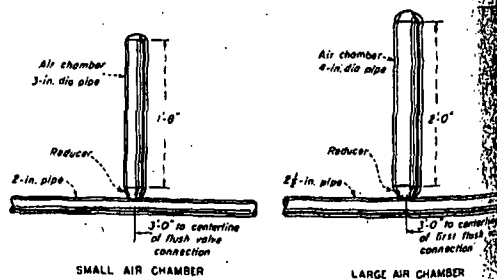
What Causes This Water Hammer?

HERE ARE THE FACTS: Every time flush valves in our sanitary lines are opened we get a sharp knock in the pipes, sketch p 152, Dec Power. We've tried suppressors at points shown but shock wasn't reduced. Hammer isn't common type from sudden halting of liquid flow. Instead, it is a reverse shock opposite to flow direction. It makes pipe move about 1/4 in.

Shock seems to be independent of flow, and there are no shock waves following the initial one. Reducing flow at flush valves cut shock somewhat, but not completely. All pipes are clean, without internal obstructions.

What's best way of stopping these shocks? Do we need more or larger suppressors? Should we change piping?—CH, Dec Power

Here Are the Answers

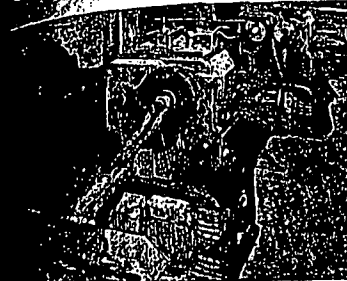


WATER HAMMER in CH's sanitary lines comes from intermittent stoppage of flow through the flush valves. Decreased flow reduces shock in the piping.

Water hammer is a series of pressure pulsations above and below normal

pressure in line. Pulsations start when the moving fluid is suddenly stopped. Noise we hear comes from pulsations. Several ways of relieving high pressure accompanying water hammer are: (1) spring-loaded relief valves that

DEFENSE PLANT DE-MOTHBALLED FAST WITH THE HELP OF TWO SUN PRODUCTS



BEFORE: The machinery in this Navy-owned shell-making plant stood idle—coated with a rust preventive—for 5 years after World War II. When asked to reactivate the plant in 1947, the U. S. Hoffman Machinery Corporation undertook a complete machinery teardown for cleaning. Rust preventive had seeped into the working parts.



AFTER: No teardown was needed. Sun Spirits did the internal cleaning job and the detergency of Sunvis H.D. 700 Oils did the internal job—cleaning out parts and freeing hydraulic systems. Thanks to the effectiveness of these products, the plant was completed and the plant put in operating condition within the three months specified by the Navy.

Recently the U. S. Hoffman Machinery Corporation was asked to reopen a World War II Navy-owned shell-making plant and start production in three months. The machinery, idle for 5 years, had been protected by an external layer of rust preventive. Headstocks, gear units and hydraulic lines were among the parts coated, and unfortunately some of the protective material had seeped into them. It looked as if the machinery might have to be torn down to be cleaned.

Hoffman invited Sun and several other oil companies to survey the machinery and suggest cleaning methods. The company chose Sun's recommendations on the basis of their soundness, as well as on Sun's record for reliable service in other Hoffman plants. The Sun products used eliminated the need for any dismantling. Sun Spirits did the external cleaning job. Sunvis H.D. 700 Oils freed up the hydraulic systems, many of which were extremely sluggish; the detergency of these oils flushed away every last trace of sludge and rust preventive.

Throughout the entire cleaning and recharging process, Sun representatives stayed on the job. As part of Sun's regular service, they trained the oilers, helped work out an inventory control system, and set up lubrication schedules. The terms of the Navy contract were met, and vital defense production was started on schedule. In the year and a half that has since elapsed, there have been no machine failures traceable to poor lubrication.

SUN OIL COMPANY, Dept. P-3
Philadelphia 3, Pa.

- ☐ I would like to consult with a Sun representative.
☐ Please send me a copy of "Sunvis H.D. 700 Oils."

Name _____
Title _____
Company _____
Address _____
City _____ Zone _____ State _____

TECHNICAL ASSISTANCE AVAILABLE. Sun's engineers are at your service for consultation on any matters concerning hydraulics, lubrication or metalworking. It will pay you to utilize the broad experience they have gained in solving a wide variety of lubricating and processing problems in many different industries.

SUN INDUSTRIAL PRODUCTS

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