

Tubes

All standard sizes
and extra gauges

ACCURATELY
FABRICATED

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DESIGNED
AND BUILT
TO MEET ALL
REQUIREMENTS

**Murray GATES
& GATE HOISTS!**
for any Size Power Dam

Cablest
Gorge Dam
On Clark
Park River
Idaho

MURRAY GATE HOISTS are designed and built in a wide range of capacities from less than one ton to over one hundred tons... from the smallest hand operated to the largest motor operated gate hoist.

In over 50 years of designing and building gate hoists, we have developed designs for many gate hoist problems. We may have designs and patterns to fit your special requirements. In planning gates or gate hoists, we suggest you write us before your over-all plans are complete... it may save time and money. We also build gate hoists to fit your plans and specifications.



Write for complete information and Engineering Department recommendations.

D. I. MURRAY MANUFACTURING CO. WAUSAU, WIS.

More TECHNICAL BRIEFS

Memorial Institute and I T Co.
Steel Foundry Co.

The extensive use of iron-chromium-nickel alloy castings in various applications has been dictated by desirable mechanical and physical properties at elevated temperatures. Structural members for use in furnaces, boilers, and assemblies for some chemical processes must retain their strength at the high operating temperatures involved. It is estimated, for example, that the cast alloy hangers used in furnaces may reach temperatures about 1900 F or more, and alloy fabricators have had to develop materials strong enough to withstand considerable stressing at these temperatures.

It must be recognized that high-temperature strength properties of alloys should be given first consideration in the selection of an alloy. Maintenance of these properties in corrosive environments is also important. Oxidation is an obvious common form of metal deterioration.

Corrosion of iron-chromium-nickel castings by sulfur-bearing gases at 2000 F has been investigated for Alloy Casting Institute in a comprehensive series of tests. The sulfur varied from 0 to 500 gr per 100 lb in both reducing and oxidizing atmospheres. The effects of cyclic temperature fluctuations and alternately oxidizing and reducing atmospheres were studied. Both metal loss and subsurface attack were considered in evaluating alloys.

A wide range of composition of the ternary system Fe-Cr-Ni was studied with the chromium varying from 11 to 36% and the nickel from 0 to 70%. Although the behavior of the present commercially important alloys deviated in specific instances, it was shown that in general, the HE (28% Cr-9% Ni), HK (26% Cr-20% Ni), and the HU (26% Cr-12% Ni) type had the best resistance under a variety of test conditions. The HW (12% Cr-60% Ni) alloy was generally better than the HX (15% Cr-35% Ni) alloy and both performed well until the sulfur content of the gas was raised to 100 grains per 100 cubic feet. The HX (17% Cr-66% Ni) and HU (19% Cr-39% Ni) alloys were generally better than the HW and HT types. However, they too were inferior to the HE, HK, and HX types when sulfur contents were 100 grains per cubic foot or higher. The HF (20% Cr-10% Ni) alloy originally designed for temperatures below 1600 F performed reasonably well in the

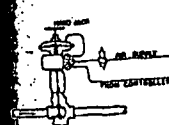
Directions for ordering papers on p 154

FISHER

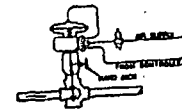
Versatile Usage

TECHNICAL EXAMPLES OF FISHER
DIAPHRAGM MOTOR VALVE
WIDE RANGE ADAPTABILITY

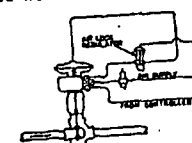
Built for your specific requirements, Fisher Diaphragm Motor Valves are manufactured to handle pressure conditions up to 10,000 pounds, for high pressure drops and are available in metals for highly corrosive service and alloys for high temperature work.



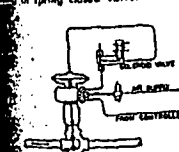
With Hand Jack Operator. Allows for operation against spring action. Example - Minimum in spring opened valve. Minimum in spring closed valve.



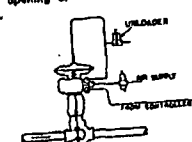
DMV with Continuously Connected Handwheel. Operator can open or close valve against controller action. Can operate valve manually if operating medium fails. Can set maximum opening or minimum closing of inner valve.



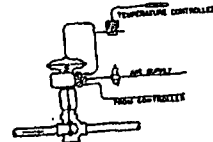
DMV with Air Lock. Should operating air supply fail, air lock regulator closes, locking pressure on diaphragm - valve remains at last position until operating air supply is re-established.



With Remotely Actuated Electric Solenoid. Valve may be fully opened or closed depending operating pressure from diaphragm by solenoid operation. Solenoid is actuated from manual switch or an electric circuit.



DMV with Air Cut-Out Feature. Valve member becomes inoperative, subject to manual handling to re-establish operation. When controller removes air from diaphragm, UN-LOADER opens. Valve remains in this position - UNLOADER orifice is too large to allow air pressure to be re-established.



DMV - with Auxiliary Controller Over-ride. An auxiliary controller, such as temperature, placed in operating air line to diaphragm - can over-ride action of main control function by unloading diaphragm and taking over functional operation of DMV.

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