McDONNELL & MILLER

Safety Devices for Steam and Hot Water Boilers and Liquid Level Controls

General Offices: Wrigley Building, Chicago 11, Illinois

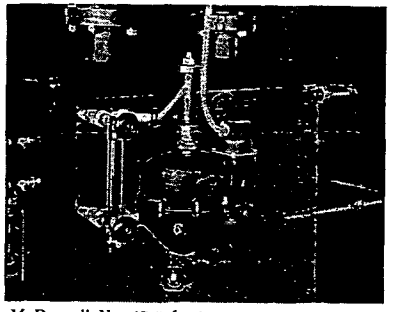
"Doing one thing well"

PRODUCTS:

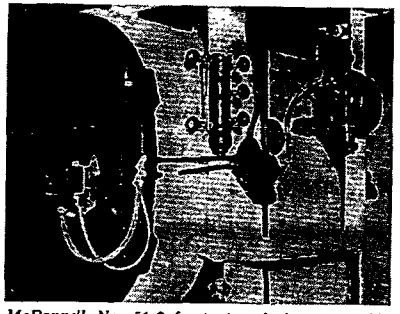
Boiler Water Feeders; Feeder Cut-off-Combinations; low Water Fuel Cut-offs; Pump Controls; Low Water Alarms; Humidifier Water Level Controls; Safety Relief Valves for hot water heating boilers and storage tanks; High and Low Oil Switches and Liquid Level Controllers for a wide range of services.

The service range and types of installations covering most common applications of McDonnell Boiler Water Level Controls are described here. For facts concerning protection of process boilers, or any special information, consult our engineering department.

McDonnell Combined Boiler Water Feeder and Low Water Cut-off



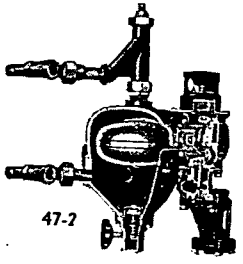
McDonnell No. 47-2 for heating boilers under 5000 sq. ft. capacity. Maximum steam pressure, 25 lbs.



McDonnell No. 51-2 for heating boilers over 5000 sq. ft. capacity. Maximum steam pressure, 35 lbs.

A typical installation of the McDonnell No. 47-2 Combined Boiler Water Feeder and Switch is illustrated above. The water feeder maintains safe level by feeding when water line drops. In case of foaming and priming or failure of water supply, causing water level to drop to ¼ in. in the water glass, low water switch comes into action. For automatically fired boilers switch may be wired to cut current to burner. For hand fired boilers switch may be wired to complete alarm bell circuit. Also furnished for hand fired boilers without switch—designated No. 47.

Installation time is cut to minimum by Quick-Hook-Up Fittings for gauge-glass installation. Valve mechanism is isolated from the heat of the float chamber. Large area straight-through blow-off valve is standard equipment.



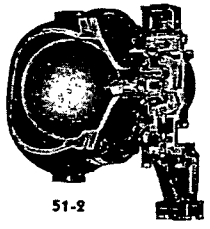
47-2

The McDonnell No. 2 Switch used in the No. 47-2 is Underwriters' approved. Electrical rating: a-c., ¾ hp 110-220 V.; d-c., 10 amp. 125 V.

The illustration above shows a typical installation of the McDonnell No. 51-2 Combined Boiler Water Feeder and Switch used for larger boilers. This combination functions the same as the No. 47-2, the feeder taking care of normal requirements and the switch safeguarding against emergencies by cutting off the burner in automatically fired boilers or completing a low water alarm circuit for hand fired installations. The feeder is also furnished for hand fired boilers (as No. 51) without low water cut-off and alarm switch.

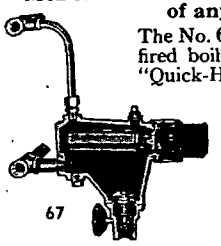
Basic features of the No. 51-2 are the same as in the No. 47-2, except that it is installed with 1 in. equalizing pipe instead of the McDonnell "Quick-Hook-Up" and has the larger feeding capacity required for larger boilers.

For boiler operating at pressures from 35 lb to 75 lb use the McDonnell No. 53-2 (with switch) or No. 53 (without switch). Electrical rating of switches used in No. 51-2 or 53-2 is the same as previously given for the No. 47-2.



51-2

McDonnell No. 67 Low Water Cut-off for automatically-fired steam boilers of any size. Maximum steam pressure, 25 lb



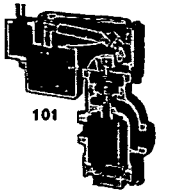
67

The No. 67 takes care of low water cut-off requirements of automatically fired boilers with steam pressure below 25 lbs. It has the McDonnell "Quick-Hook-Up" for quick, easy and trouble-proof installation in the gauge glass tappings; deep sediment chamber with large quick-opening blow-off; packless, non-binding construction; adjustable terminal box to make wiring neat and easy; dependable, snap-action, twin switches.

One switch closes on small drop without stopping burner. It can be used to complete an alarm bell circuit, warning of approaching low water, or can be used to complete circuit to the McDonnell No. 101 Electric Water described below. Second switch cuts current to burner if water level drops to ¼ inch in gauge glass.

Underwriters' ratings for both switches: a-c., ¾ hp, 110-220 V.; d-c ¼ hp, 115 V.

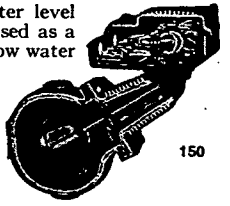
McDonnell No. 101 Electric Boiler Water Feeders for boilers up to 5000 sq. ft. capacity



101

The No. 101 is an electric water feeder for use with No. 67 Low Water Cut-off or with McDonnell "built-in" Low Water Cut-offs which are standard equipment on many modern heating boilers. It converts the cut-off into a combination boiler water feeder and low water cut-off as described on the opposite page.

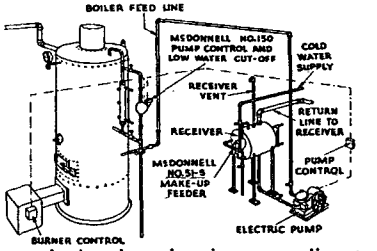
McDonnell No. 150 Pump Control, Low Water Cut-off and Alarm Switch for boilers of any size. Maximum steam pressure, 150 lb



150

This boiler water level control may be used as a pump control, a low water cut-off, a low water alarm switch, or any combination of these functions. Electrical ratings are: a-c., 1 hp, 110-220 V., d-c, ¼ hp, 110-220 V.—as pump control or cut-off; 1 amp. 110 V, a-c. or d-c—as low water alarm. No. 150 has automatic reset low water cut-off switch but may be ordered with manual reset as No. 150-M.

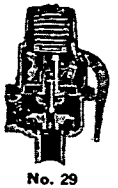
A typical hook-up of the McDonnell No. 150, controlling an electric pump and providing low water cut-off, is shown opposite. When water level drops ¾ in. below normal, No. 150 starts pump and then stops it when normal water line has been restored. If emergency occurs and water level falls to arrow mark on body of control, cut-off switch stops burner. If steam pump is used, No. 150 is wired to control electric valve in steam line to pump. Note that McDonnell No. 51-S Feeder is used to supply make-up water to the pump receiver.



Drawings available covering use of No. 150 on two or more boilers supplied by a common feed pump; ask for No. 150 Data Book.

McDonnell Safety Relief Valves

The No. 29 series of Safety Relief Valves have "snap action"—a mechanical means of opening full orifice capacity at precise instant set pressure is reached. Resulting large discharge capacity makes it feasible to rate them in heat dissipating capacity so they can be matched to Btu. output of unit on which they are installed, thus preventing over-pressures and protecting against explosions.



No. 29

Stainless steel cone replaces conventional composition disc. Long-lived, compact bellows replaces broad diaphragm of ordinary valves. Testing lever is easy to operate. All valves comply with *A.S.M.E.* code.

(1) For Hot Water Heating Boilers

Valve No.	Opening Pressure	Btu. Output
29	29 lbs	156,000
129	29 lbs	350,000

(2) For Domestic Hot Water Heaters and Tanks

Valve No.	Opening Pressure	Max. Water Supply Pres.	Btu. Output
229	75 lbs	50 lbs	316,000
329	100 lbs	75 lbs	380,000
429	150 lbs	100 lbs	432,000