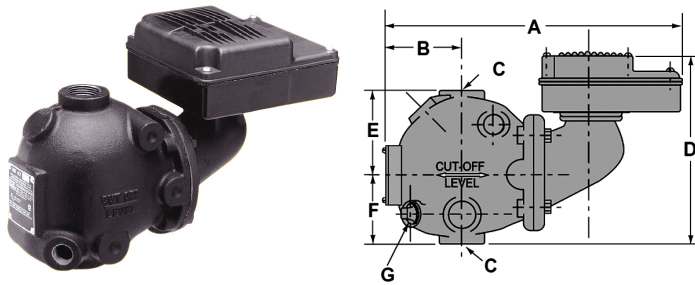


McDonnell & Miller 42 Cut-Off & Pump Controller

No. 42 and 42S



A	B	C NPT	D	E	F	G NPT
12-1/4	2-9/16	1	8-7/8	3-11/16	3-1/8	1/2

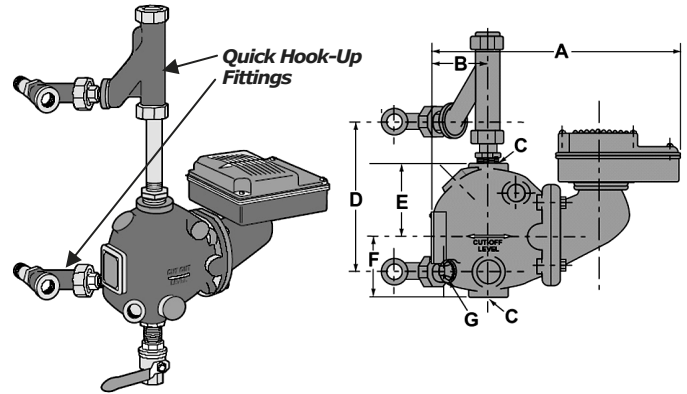
Features of the Model 42, 42A, 42S & 42A-S

■ All models are float-operated pump controllers and low-water cut-offs with either the obsolete SPST mercury switches (42 and 42-A) or non-mercury "snap switches" (42S and 42-AS) operating at different levels to control the boiler feed pump and cut-off the electrical current to the boiler in the event of a low-water condition. ■ Maximum operating pressure: 50 psi.

■ The Snap-Switch models replaced the "hazardous material" Mercury models — discontinued effective 04/07/2007.

■ The 42A and 42A-S have the same features as the 42 and 42S but are fitted with "Quick Hook-Up" fittings for installation directly into the gauge glass tapings.

No. 42-A and 42A-S



A	B	C NPT	D	E	F	G NPT
12-1/4	2-9/16	1	7-1/4	2-3/4	3-1/8	1/2

Electrical Ratings

Ampere ratings for the pump and the cut-off circuits

Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0

Pilot duty service: 345VA, 120 and 240VAC

Ampere rating for alarm service

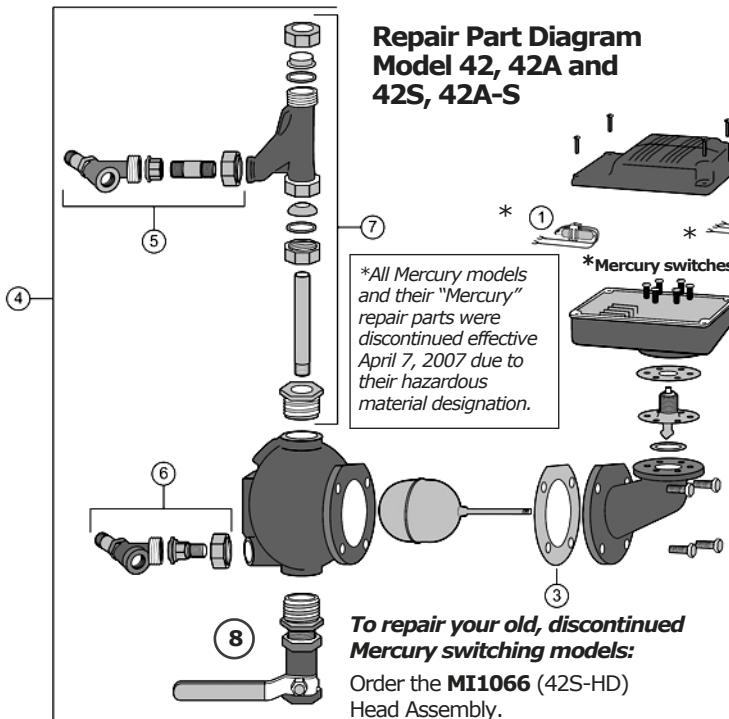
120VAC	240VAC	120VDC	240VDC
1	1/2	1/2	1/4

Replacement Guide for Old 42 Series

Model No.	Description	New Model
42	Low-water cut-off/pump control	42S
42-A	Same as above w/Quick Hook-Up	42-AS
42-N	Like 42 with gauge glass tapings	42S-N

Complete Models 42S, 42A-S

Model No.	Description	Order No.
42S	Mercury Free cut-off/pump control	MH1022
42-AS	Same as above w/Quick Hook-Up	MH1023
42S-N	Like 42S with gauge glass tapings	MH1023A



Repair Part Diagram Model 42, 42A and 42S, 42A-S

*All Mercury models and their "Mercury" repair parts were discontinued effective April 7, 2007 due to their hazardous material designation.

*Mercury switches

To repair your old, discontinued Mercury switching models:

Order the **MI1066** (42S-HD) Head Assembly.



42S Head Assembly

Repair Parts for 42 Series

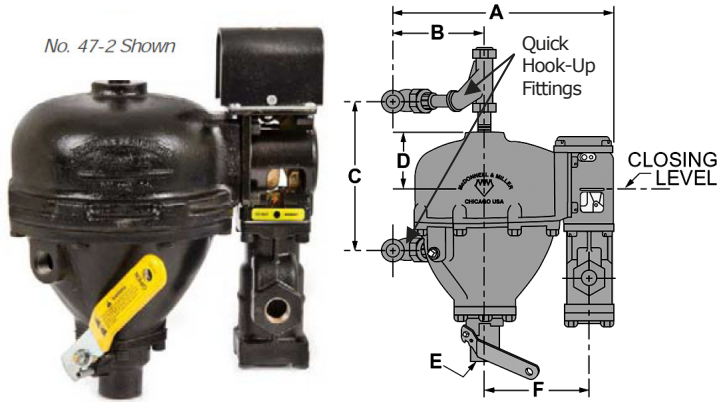
Item	Description	Order No.
1	2-wire "Mercury" pump switch	No longer available
2	2-wire "Mercury" burner switch	No longer available
	"Snap-Switch" for 42S, 42-AS	MI1375C
3	Head gasket	MI1170
4	Quick hook-up (includes 5, 6 & 7)	MI1195
5	Quick hook-up, upper	MI1373
6	Quick hook-up, lower	MI1372
7	Black "Y" assembly	MI1371
8	Blow down valve	MI1015

Replacement Head Assembly

42S Head Assembly with Snap Switch	MI1066
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McDonnell & Miller 47 Water Feeders & Cut-Offs

No. 47, 47-2 and 47-2M



No. 2 Automatic and 2M Manual Switch

Supplied as standard equipment on the 47-2 (**No. 2** automatic reset switch) and the 47-2M (**No. 2M** manual reset switch).



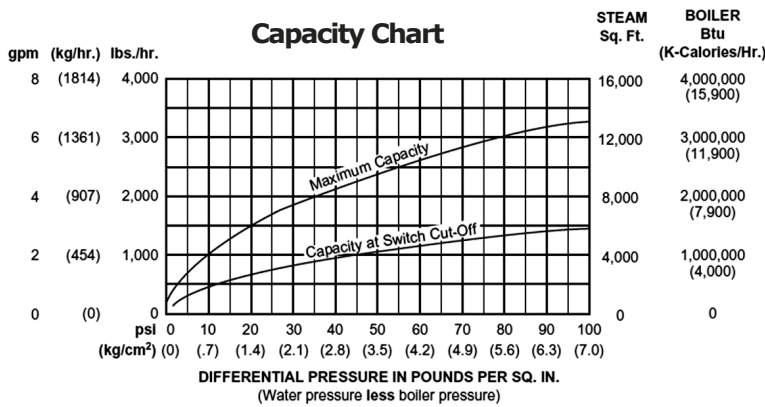
Dimensions of 47 Series (inches)

A	B	C	D	E NPT	F
11-7/8	5-1/4	7 ³ / ₈ to 14 max	2-5/8	3/4	5-1/8

Electrical Ratings, Ampere ratings

Motor Duty	120VAC	240VAC
Full Load	10.2	5.1
Locked rotor	61.2	30.6
Pilot duty service: 345VA, 120 and 240VAC		

Capacity Chart



Features of 47, 47-2 and 47-2M

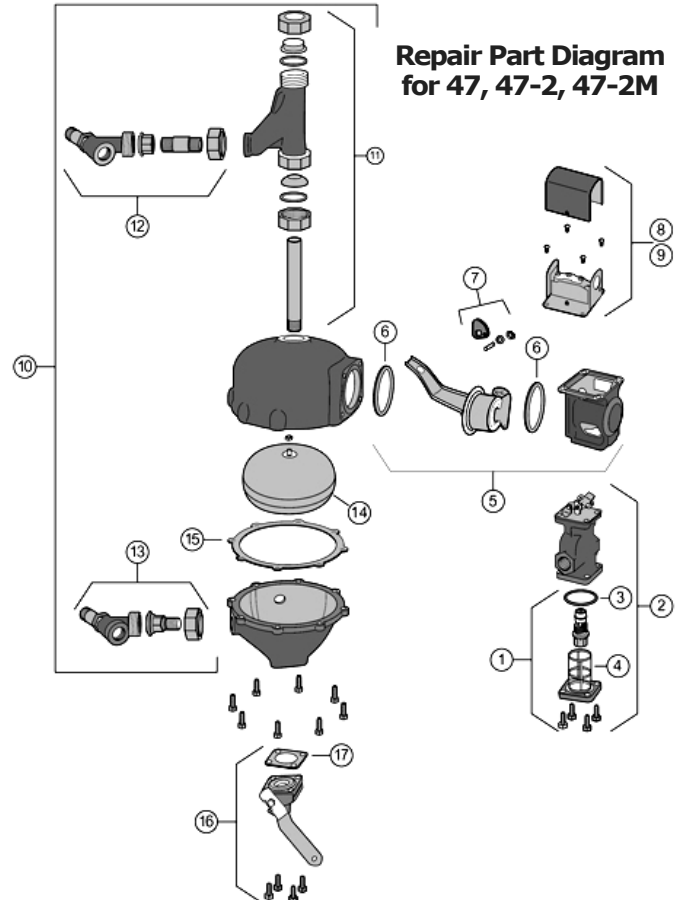
- Used for both steam and hot water boilers with a cold water feed.
- Provides continuous maintenance of safe boiler water level mechanically, independent of electrical service
- No. 2 switch provides automatic reset after a low-water condition; No. 2M switch requires manual reset.
- Maximum water supply pressure, 150 psi; maximum operating pressure, 25 psi.
- Maximum inlet water temp., 120° F.
- Quick hook-up fittings connect to gauge glass tapings.

Complete Models 47, 47-2, 47-2M

Model No.	Description	Order No.
47	Feeder only, no low water cut-off	MH1025
47-2	Feeder & cut-off, automatic reset	MH1030
47-2M	Feeder & cut-off, manual reset	MH1024

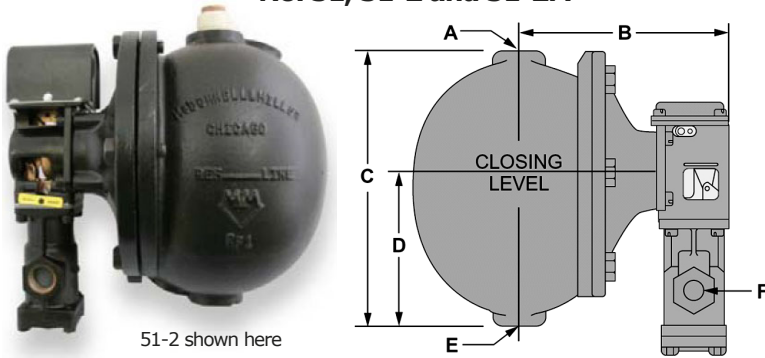
Repair Parts for Models 47, 47-2, 47-2M

Item	Description	Order No.
1	Cartridge and strainer kit	MI1262
2	Complete valve, cartridge & strainer	MI1260
3	O-Ring	MI1385
4	Strainer assembly with bolts & O-ring	MI1345
5	Complete bellows assembly	MI1250
6	Gasket	MI1050
7	Cam assembly	MI1175
8	No. 2 automatic reset switch	MI1005
9	No. 2M manual reset switch	MI1006
10	Complete Quick Hook-Up (#9, 10 & 11)	MI1200
11	Black "Y" assembly	MI1371
12	Upper Quick Hook-Up fittings	MI1373
13	Lower Quick Hook-Up fitting	MI1372
14	Float	MI1235
15	Gasket	MI1045
16	Blow-down valve and gasket	MI1015
17	Gasket only for blow-down valve	MI1060



McDonnell & Miller 51 Water Feeder & Cut-Off

No. 51, 51-2 and 51-2M

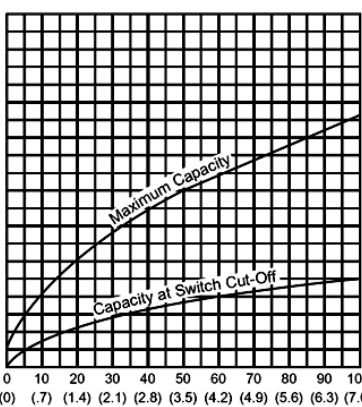


51-2 shown here

FEEDER DISCHARGE

gpm (kg/hr.) lbs./hr.

20 (4536) 10,000
18 (4082) 9,000
16 (3629) 8,000
14 (3175) 7,000
12 (2722) 6,000
10 (2268) 5,000
8 (1814) 4,000
6 (1361) 3,000
4 (907) 2,000
2 (454) 1,000
0 (0) 0



DIFFERENTIAL PRESSURE IN POUNDS PER SQ. IN.
(Water pressure less boiler pressure)

STEAM Sq.Ft.
BOILER hp (Kilowatts)

40,000 290 (2843)
36,000 261 (2559)
32,000 232 (2274)
28,000 203 (1990)
24,000 174 (1706)
20,000 145 (1421)
16,000 116 (1137)
12,000 87 (853)
8,000 58 (569)
4,000 29 (284)
0 0

No. 2 Automatic and 2M Manual Switch

Standard equipment on the 51-2 (**No. 2** automatic reset switch) and the 51-2M (**No. 2M** manual reset switch). Equipped with high voltage terminals for low water cut-off and low water alarm.



Dimensions of 51-2 Series (inches)

A NPT	B	C	D	E NPT	F NPT
1	8	10-3/8	5-3/4	1	3/4

Electrical Ratings

Ampere ratings for the pump and the cut-off circuits

Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0

Pilot duty service: 345VA, 120 and 240VAC

Ampere rating for low-water alarm service

120VAC	240VAC	120VDC	240VDC
1	1/2	1/2	1/4

Complete 51, 51-2 and 51-2M

Model No.	Description	Order No.
51	Water feeder only, no switch	MH1033
51-2	Water feeder & cut-off, automatic reset	MH1035
51-2M	Water feeder & cut-off, manual reset	MH1036

Features of the Models 51, 51-2 & 51-2M

- For low pressure steam and hot water boilers larger than 5,000 sq. ft. capacity with cold water feed.
- No. 2 (automatic reset) and 2M switch (manual reset) add the low water cut-off function to the series 51.
- Max. operating pressure, 35 psi;
- Max. water supply, 150 psi;
- Max. inlet water temp. 120° F.

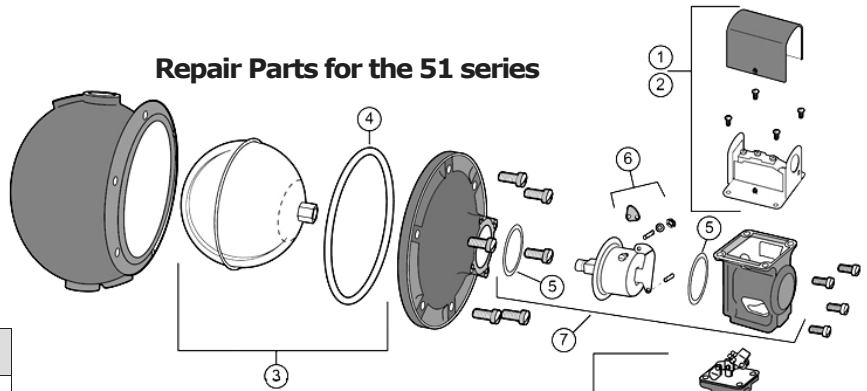
Repair Parts for 51 Series

Item	Description	Order No.
1	No. 2 switch, automatic reset	MI1005
2	No. 2M switch, manual reset	MI1006
3	*New Style Float, also order MI1265A	MI1275A
4	Gasket	MI1180
5	Gasket	MI1050
6	Cam assembly	MI1175
7	*New style Bellows bracket, also order the MI1275 float	MI1265A
8	Valve & strainer kit	MI1280
9	Cartridge strainer kit	MI1282
10	O-Ring	MI1385
11	Strainer basket w/O-Ring	MI1345

Replacement Head Assemblies

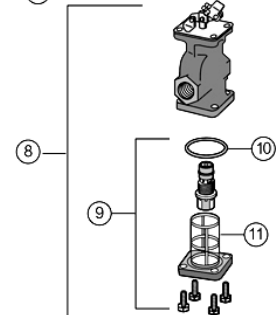
51-HD head assembly, no switch	MI1075
51-2HD head assembly, #2 switch	MI1080
51-2MHD head assembly, #2 manual	MI1082

Repair Parts for the 51 series



51 HEAD ASSEMBLY

Easily repair your boiler control with a head assembly — All the operating parts pre-assembled and easily installed. Note: The 51-HD is without #2 switch.

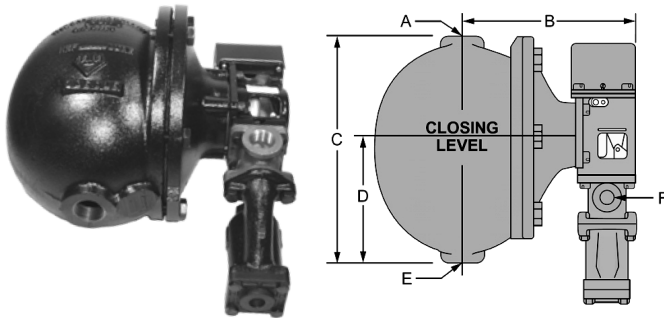


*NOTE: If ordering only a float please also order a Bellows Assembly. If your current bellows assembly looks like the one shown to the right. A design change does not allow the new components to fit on older No. 51 models.



McDonnell & Miller 51S Water Feeder & Cut-Off

No. 51S, 51S-2 and 51S-2M



No. 2 Automatic and 2M Manual Switch

Supplied as standard equipment on the 51S-2 (**No. 2** automatic reset switch) and the 51S-2M (**No. 2M** manual reset switch). See the No. 51-2 for the electrical ratings of these switches. The model 51S is a water feeder only.



Dimensions of 51S-2 Series, inches

A NPT	B	C	D	E NPT	F NPT
1	8-1/8	10-3/8	5-3/4	1	3/4

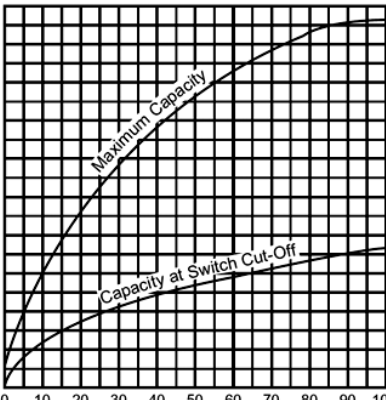
Features of the Models 51S, 51S-2 and 51S-2M

- For low pressure steam and hot water boilers up to 35,000 sq. ft. capacity with **cold water feed**.
- The largest feeding capacity of all McDonnell feeders.
- No. 2 (automatic reset) and 2M switch (manual reset) add the low water cut-off function to the series 51S-2 and 51S-2M, or add a cut-off function to the 51S
- Maximum operating pressure, 35 psi.
- Max. water supply pressure, 150 psi
- Max. inlet water temperature, 120° F.

FEEDER DISCHARGE

gpm (kg/hr.) lbs./hr.

20 (4536) 10,000
 18 (4082) 9,000
 16 (3629) 8,000
 14 (3175) 7,000
 12 (2722) 6,000
 10 (2268) 5,000
 8 (1814) 4,000
 6 (1361) 3,000
 4 (907) 2,000
 2 (454) 1,000
 0 (0) 0



DIFFERENTIAL PRESSURE IN POUNDS PER SQ. IN.
 (Water pressure less boiler pressure)

STEAM BOILER
 Sq.Ft. hp

40,000 290 (2843)
 36,000 261 (2559)
 32,000 232 (2274)
 28,000 203 (1990)
 24,000 174 (1706)
 20,000 145 (1421)
 16,000 116 (1137)
 12,000 87 (853)
 8,000 58 (569)
 4,000 29 (284)
 0 0

Complete 51S, 51S-2 and 51S-2M

Model No.	Description	Order No.
51S	Water feeder only	MH1040
51S-2	Water feeder & cut-off, automatic reset	MH1042
51S-2M	Water feeder & cut-off, manual reset	MH1043

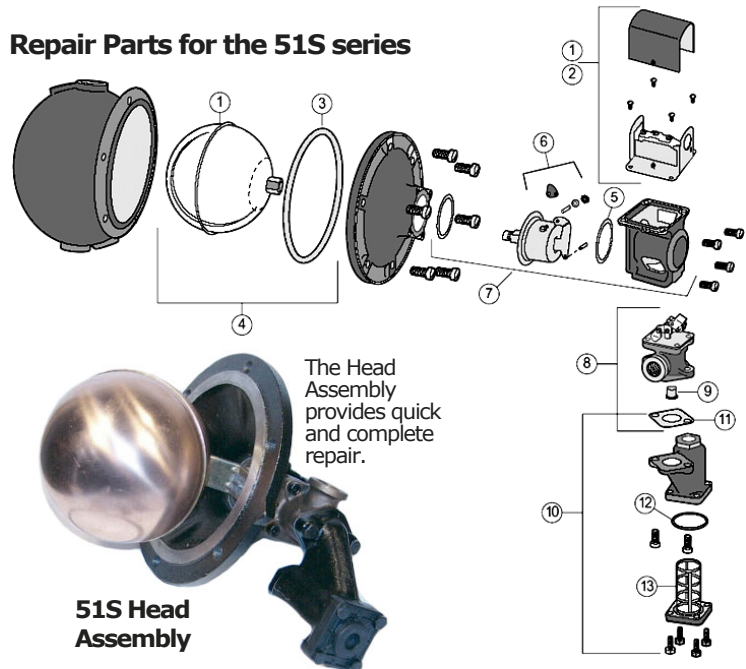
Repair Parts for 51S Series

Item	Description	Order No.
1	No. 2 switch, automatic reset	MI1005
2	No. 2M switch, manual reset	MI1006
3	*New style Float (also order MI1265A)	MI1275A
4	Gasket	MI1180
5	Gasket	MI1050
6	Cam assembly	MI1175
7	*New style Bellows bracket assembly (also order MI1275A)	MI1265A
8	Valve assembly	MI1285
9	Valve seat	MI1088
10	Strainer assembly	MI1269
11	Gasket	MI1055
12	O-Ring	MI1385
13	Strainer basket & O-Ring	MI1240

Replacement Head Assemblies

51S Head Assembly	MI1085
51S-2 Head Assembly w/#2 switch	MI1087
51S-2M Head Assembly w/#2M switch	MI1083

Repair Parts for the 51S series



51S Head Assembly

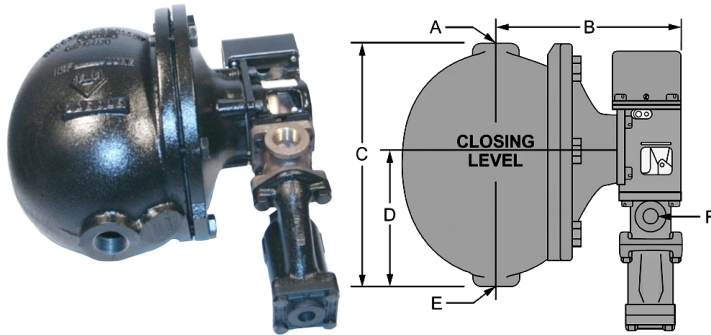
The Head Assembly provides quick and complete repair.

*NOTE: Order a Float and Bellows Assembly if your current bellows assembly looks like the one shown to the right. A design change does not allow the new components to fit on old ones.



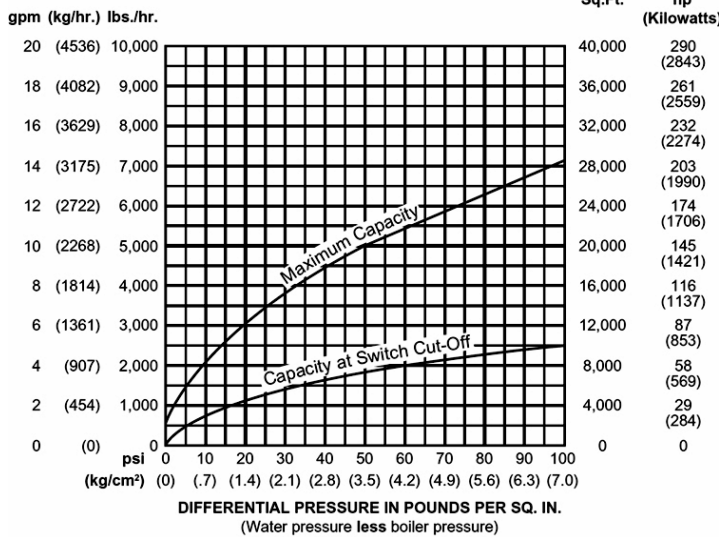
McDonnell & Miller 53 Water Feeder & Cut-Off

No. 53, 53-2 and 53-2M



Capacity Chart

FEEDER DISCHARGE



No. 2 Automatic & 2M Manual Switch

Supplied as standard equipment on the 53-2 (**No. 2** automatic reset switch) and the 53-2M (**No. 2M** manual reset switch). The model 53 is a water feeder only. See No. 51-2 page for the electrical ratings of these switches.



Dimensions of 53 Series (inches)

A NPT	B	C	D	E NPT	F NPT
1	8-1/8	10-3/8	5-3/4	1	3/4

Features of the Models 53, 53-2 and 53-2M

- For higher pressure steam and hot water boilers up to 5,000 sq. ft. capacity and 75 psi with cold water feed.
- Proportional feed action.
- No. 2 (automatic reset) and 2M switch (manual reset) add the low water cut-off function to the series 53-2 and -2M, or add a cut-off function to the 53.
- Maximum operating pressure, 75 psi; Max. water supply pressure, 150 psi; Max. inlet water temperature, 120° F.

Complete 53, 53-2 and 53-2M

Model No.	Description	Order No.
53	Water feeder only	MH1045
53-2	Water feeder & cut-off, automatic reset	MH1047
53-2M	Water feeder & cut-off, manual reset	MH1048

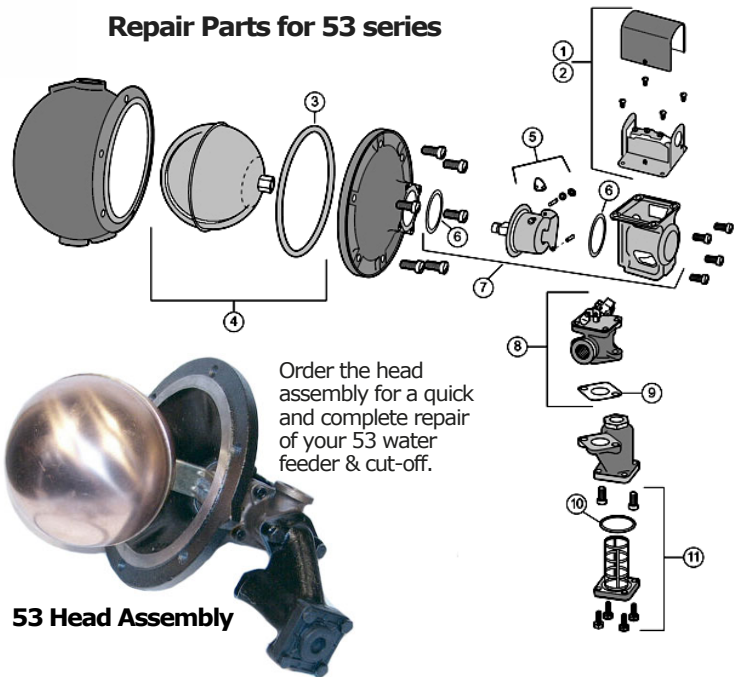
Repair Parts for 53 Series

Item	Description	Order No.
1	No. 2 switch, automatic reset	MI1005
2	No. 2M switch, manual reset	MI1006
3	Gasket	MI1180
4	Float	MI1277
5	Cam assembly	MI1175
6	Gasket	MI1050
7	*New Style Bellows assembly	MI1293A
8	Valve assembly	MI1294
9	Gasket	MI1055
10	O-Ring	MI1385
11	Strainer Basket	MI1240

Replacement Head Assemblies

53 Head Assembly	MI1090
53-2 Head Assembly with no. 2 switch	MI1093
53-2M Head Assembly with no. 2M switch	MI1093A

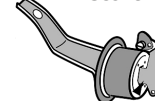
Repair Parts for 53 series



53 Head Assembly

Order the head assembly for a quick and complete repair of your 53 water feeder & cut-off.

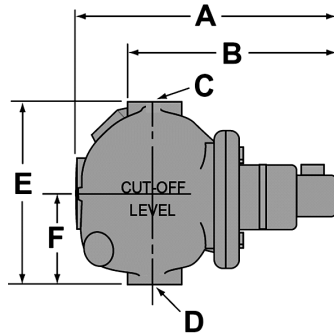
Old style bellows: Discontinued



*NOTE: Order a Float and Bellows Assembly if your current bellows assembly looks like the one shown to the right. A design change does not allow the new components to fit on old ones.

McDonnell & Miller 61 Low Water Cut-Off

No. 61 Low Water Cut-Off



Dimension of 61, inches

A	B	C NPT	D NPT	E	F
9-15/16	7-7/16	1	1	6-1/2	3-1/8

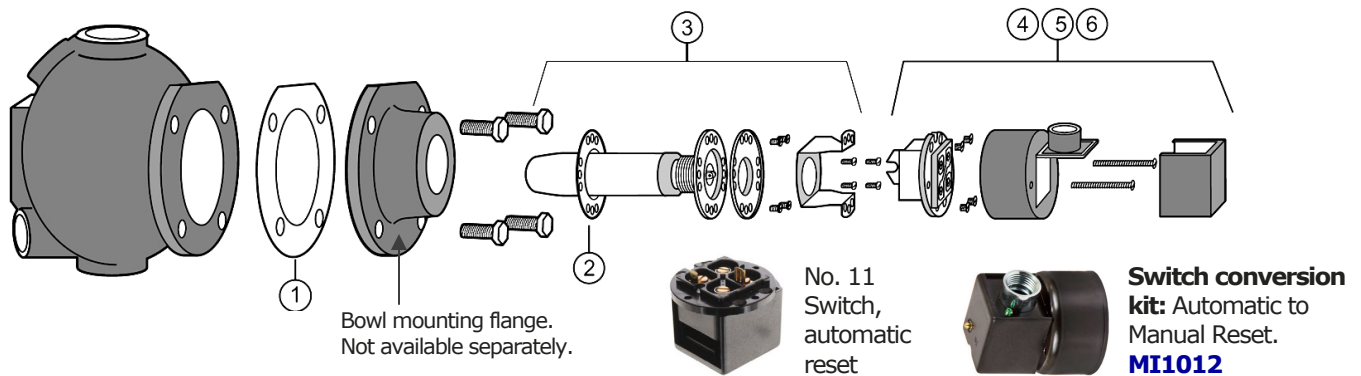
Features of the No. 61

- Primarily for installation on low pressure steam boilers.
- Installed with 1" pipe size steam or water equalizing lines.
- Blow-down valve required.
- Order TC-4 Test N Check valves for hot water boilers.
- Dual precision switches for dependable operation of the low water cut-off and alarm or electric water feeder.
- Adjustable BX outlet for easy installation.
- Maximum steam pressure: 20 psi.

Complete No. 61

Model No.	Description	Order No.
61	Low water cut-off for steam boilers with automatic No. 11 reset switch	MH1050

Repair Part Diagram for the No. 61



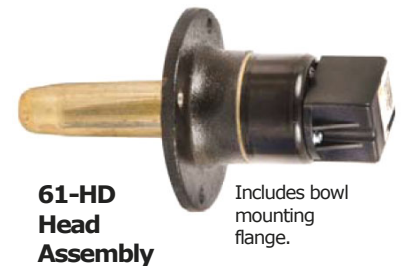
Repair Parts for No. 61

Item	Description	Order No.
1	Head gasket	MI1170
2	Gasket	MI1110
3	Float & bellows assembly	MI1315
4	No. 11 switch, automatic reset	MI1010
5	No. 11M switch conversion kit from automatic to manual reset	MI1012
6	No. 11-MV switch, millivolt service	MI1013
Replacement Head Assemblies		
61-HD	Head assembly	MI1095
6667	Head mechanism, No. 11 switch	MI1160
6667-MV	Head mechanism, No. 11-MV switch	MI1161
TC-4 Test and Check Valves (set of two)		
TC-4 for easy testing of Hot Water Boilers		MH1175

HEAD ASSEMBLY

For a quick and complete repair, order the complete **61-HD head assembly**. This component includes the 6667 Head Mechanism (with automatic reset No. 11 switch) and the front-of-bowl flange connection.

Or simply order the **6667 head mechanism** with either the No. 11 switch or the No. 11-MV millivolt switch.



TC-4 Test and Check Valves for Hot Water Boilers
Installs in the equalizing lines for easy testing of the low water cut-off.

McDonnell & Miller 63 Low Water Cut-Off



No. 63 and 63-M

Features of the Models 63 and 63-M

- For steam and hot water boilers.
- Use with the TC-4 valve set on hot water boilers.
- No. 2 (automatic reset) and 2M switch (manual rest)
- Easy access opening for testing switch operation.
- Maximum operating pressure, 50 psi.
- Max. water supply pressure, 150 psi

No. 2 Switch

Supplied as standard equipment on the 63 (**No. 2** automatic reset switch) and the 63M (**No. 2M** manual reset switch).

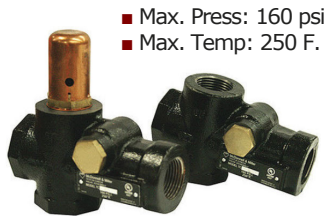


Complete 63 and 63-M		
Model No.	Description	Order No.
63	Low water cut-off, automatic reset	MH1055
63-M	Low water cut-off, manual reset	MH1056

Electrical Ratings for the No. 2 switch				
Ampere ratings for the pump and the cut-off circuits				
Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0
Pilot duty service: 345VA, 120 and 240VAC				

Ampere rating for low-water alarm service			
120VAC	240VAC	120VDC	240VDC
1	1/2	1/2	1/4

TC-4 Test and Check Valves for Hot Water Boilers



- Max. Press: 160 psi
- Max. Temp: 250 F.

Used on hot water boilers to simplify the mandated code for testing low water cut-off. Eliminates need to drain the system. 1" NPT connection. Includes both valves. Mounts at crosses in the equalizing lines for isolation during LWCO testing.

Repair Parts for 63 Series

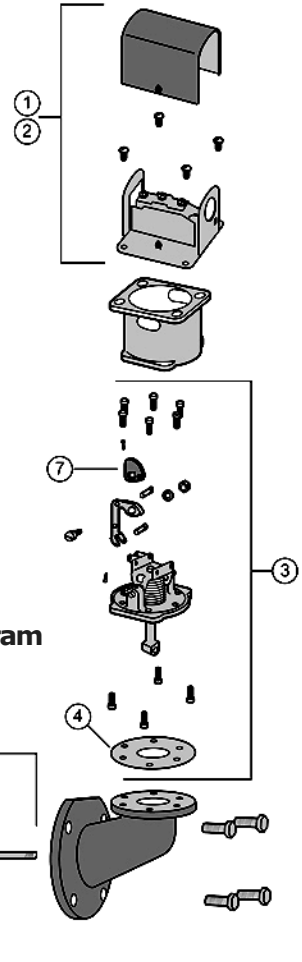
Item	Description	Order No.
1	No. 2 switch, automatic reset	MI1005
2	No. 2M switch, manual reset	MI1006
3	Bellows assembly & gasket	MI1290
4	Gasket	MI1165
5	Float and gasket	MI1300
6	Head Gasket	MI1170

Replacement Head Assemblies

63-HD Head Assembly, automatic reset	MI1100
63-M-HD Head Assembly, manual reset	MI1103

TC-4 Test and Check Valves (set of two)

TC-4 for easy testing of Hot Water Boilers	MH1175
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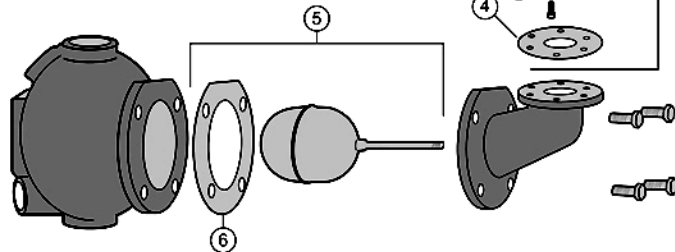


63-HD

For a quick, easy and complete repair, order the **head assembly**.

To order: See the Repair Parts Ordering table.

Repair Part Diagram for the 63 series

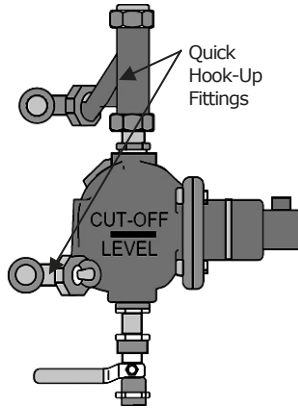


McDonnell & Miller 64 Low Water Cut-Off

No. 64 and 64-M



No. 64A



Features of the Models 64, 64-A and 64-M

- For steam and hot water boilers. Use with the TC-4 on hot water boiler systems. 64A has Quick hook-up fittings.
- No. 11(automatic reset) and 11M switch (manual rest). Dual switches for cut-off and alarm or electric water feeder.
- Uses 1" equalizing pipes.
- Maximum operating pressure, 50 psi.; Max. water supply pressure, 150 psi;

No. 11 Switch

Supplied as standard equipment on the 64 (**No. 11** automatic reset switch) and the 64M (**No. 11M** manual reset switch).



Complete 64, 64-M and 64-A

Model No.	Description	Order No.
64	Low water cut-off, automatic reset	MH1060
64-M	Low water cut-off, manual reset	MH1061
64-A	Low water cut-off, w/Quick Hook-Up	MH1062

Electrical Ratings for the No. 11 switch

Ampere ratings for the pump and the cut-off circuits

Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0

Pilot duty service: 345VA, 120 and 240VAC

Ampere rating for low-water alarm service

120VAC	240VAC	120VDC	240VDC
1	1/2	1/2	1/4

64-HD Head Assembly

The easiest way to ensure a successful repair of your 64 boiler control.



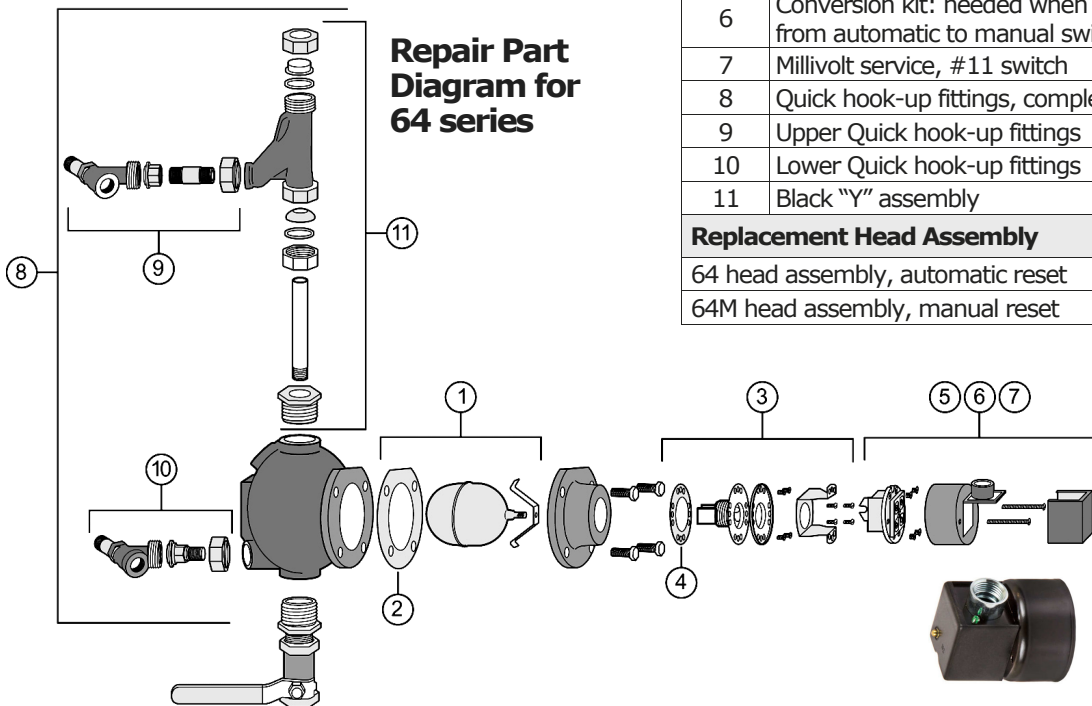
Repair Parts for 64 Series

Item	Description	Order No.
1	Float assembly	MI1310
2	Head gasket	MI1170
3	Bellows assembly	MI1305
4	Gasket	MI1110
5	Automatic #11 switch	MI1010
6	Conversion kit: needed when changing from automatic to manual switch	MI1012
7	Millivolt service, #11 switch	MI1013
8	Quick hook-up fittings, complete	MI1200
9	Upper Quick hook-up fittings	MI1373
10	Lower Quick hook-up fittings	MI1372
11	Black "Y" assembly	MI1371

Replacement Head Assembly

64 head assembly, automatic reset	MI1105
64M head assembly, manual reset	MI1105A

Repair Part Diagram for 64 series



Switch conversion kit: Automatic to Manual Reset.
MI1012

McDonnell & Miller 67 Low Water Cut-Off



No. 67, 67G and 67-M
Shown with Quick Hook-up Fittings

Features of the Models 67, 67G and 67-M

- For steam boilers any size.
- Most widely used control of its kind.
- Quick hook-up fittings connect to gauge glass tapplings.
- No. 11 (automatic reset) and 11M switch (manual reset). Dual switches for cut-off and alarm or electric water feeder.
- Max. steam operating pressure, 20 psi.

No. 11 Switches

Supplied as standard equipment on the 67 and 67LQHU (**No. 11** automatic reset switch), 67G (**No. 11MV** millivolt) and the 67M (**No. 11M** manual reset switch).



Electrical Ratings for the No. 11 switch

Ampere ratings for the pump and the cut-off circuits

Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0

Pilot duty service: 345VA, 120 and 240VAC

Ampere rating for low-water alarm service

	120VAC	240VAC	120VDC	240VDC
	1	1/2	1/2	1/4

Complete 67, 67-G and 67-M

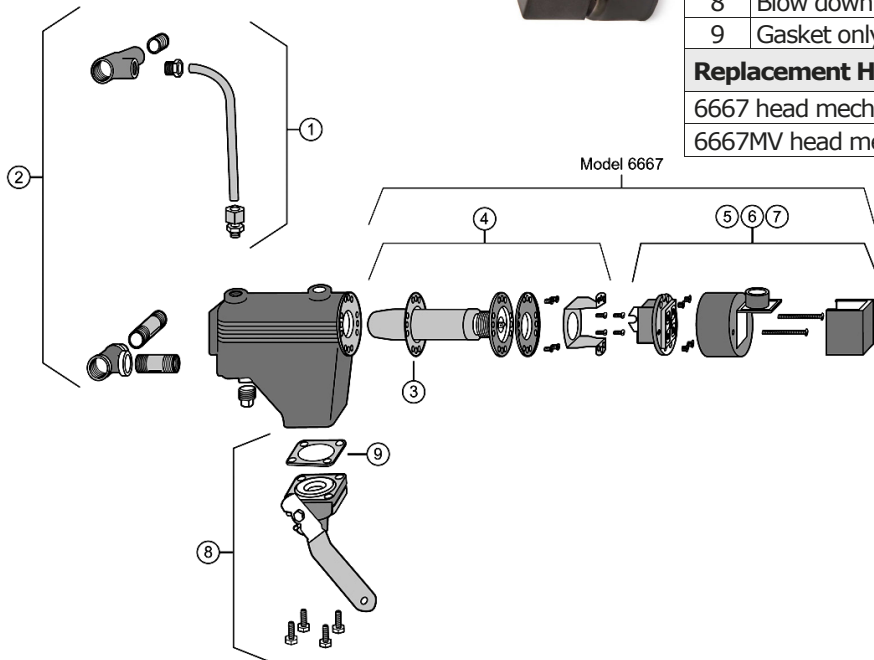
Model No.	Description	Order No.
67	Low water cut-off, automatic reset	MH1065
67-G	Low water cut-off, millivolt service	MH1066
67LQHU	Cut-off <u>without</u> Quick Hook-Up fittings	MH1067
67-M	Low water cut-off, w/Quick Hook-Up	MH1068

Repair Parts for 67 Series

Item	Description	Order No.
1	Upper Quick hook-up assembly	MI1312
2	Complete Quick hook-up assembly	MI1205
3	Head gasket	MI1110
4	Float and bellows assembly with gasket	MI1315
5	Standard switch, No. 11	MI1010
6	Switch, manual reset, No. 11M. Includes Conversion kit needed when changing from an automatic to manual switch	MI1012
7	Switch for millivolt service, No. 11MV	MI1013
8	Blow down valve with gasket	MI1015
9	Gasket only, for blow down valve	MI1060

Repair Part Diagram for 67 series

MI1012



Replacement Head Mechanism

6667 head mechanism, standard voltage	MI1160
6667MV head mechanism, millivolt service	MI1161

Head Mechanism:

the easiest way to repair your series 67 boiler controls. Re-use your current, piped-in "bowl," remove the old head, bolt -in the new one — Done!



6667

McDonnell & Miller 69 Built-In Low Water Cut-Off

Installs into a boiler's 2 1/2" side tapping



Series 69 Built-In Cut-Off

Features of the Series 69

- For steam boilers of any steaming capacity.
- Adjustable BX outlet for easy electrical wiring.
- Installs into a boiler's 2-1/2" NPT side tapping.
- No. 11 (automatic reset), No. 11M (manual reset) and 11MV (millivoltage service).
- Dual switches for cut-off and alarm or electric water feeder.
- Max. steam operating pressure, 20 psi.
- Order the appropriate head mechanism to easily repair the corresponding 69 series .

Complete 69 Series Built-In Cut-Offs

Model No.	Description	Insertion Length	Order No.
69	Water cut-off, No. 11 switch	4-1/8"	MH1070
69MVP	Water cut-off, No. 11MV switch	4-1/8"	Not Available
169	Water cut-off, No. 11 switch	3-1/8"	MH1105J
269	Water cut-off, No. 11 switch	2-1/4"	MH1112
369	Water cut-off, No. 11 switch	1-3/4"	MH1112A
369MV	Water cut-off, No. 11MV switch	1-3/4"	Not Available
469	Water cut-off, No. 11 switch	1-3/16"	MH1112B
569	No. 469 with 1/4" NPT tapping	1-3/16"	MH1114

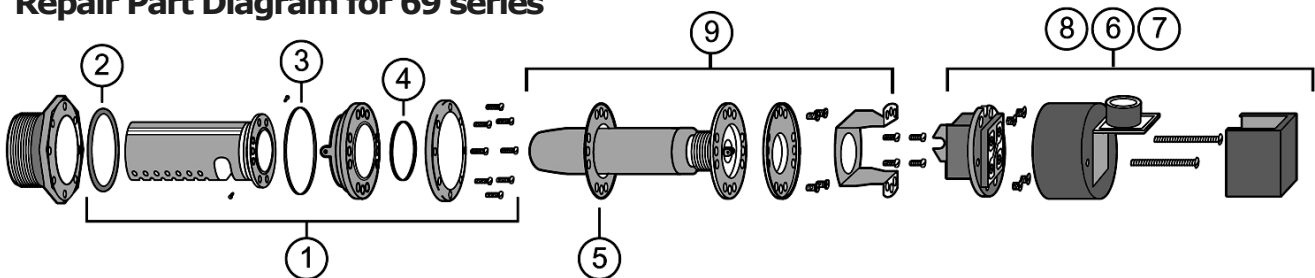
Repair Parts for 69 Series

Item	Description	Order No.
1	Shield assembly, not available separately	MI1316
2	Gasket	MI1115
3	O-Ring	MI1116
4	O-Ring	MI1117
5	Gasket	MI1110
6	No. 11 automatic reset switch	MI1010
7	No. 11-M manual reset switch	MI1012
8	No. 11-MV switch for millivolt service	MI1013
9	Float and bellows assembly	MI1315

Replacement Head Mechanism

No. 6667 Head Mechanism for all 69 series except the 69MVP and 369MV	MI1160
No. 6667-MV Head Mechanism: 69MVP & 369MV	MI1161

Repair Part Diagram for 69 series



No. 11 Automatic and 11MV Millivolt Switch

Supplied as standard equipment on the 69, 169, 269, 369, 469 and 569 (No. 11 automatic reset switch). The No. 11MV millivolt switch is supplied with the 69MVP and the 369MV.



Electrical Ratings for the No. 11 switch

Ampere ratings for the pump and the cut-off circuits

Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0

Pilot duty service: 345VA, 120 and 240VAC

Ampere rating for low-water alarm service

120VAC	240VAC	120VDC	240VDC
1	1/2	1/2	1/4



Switch conversion kit: Automatic to Manual Reset.
MI1012

Replacement Head Mechanism

The easiest way to repair your McDonnell-Miller boiler controls: Simply unscrew the old one, insert the new one — you're done!



6667

McDonnell & Miller 70 Low Water Cut-Off - Obsolete

Series 70 Built-In Cut-Off

Discontinued

Model 70



Model 70-B



Model 569
is the functional replacement.

Features of the Discontinued Series 70/70B For Historical Reference Only

- For steam boilers any steaming capacity.
- Adjustable BX outlet for easy electrical wiring.
- Installs into a boilers 2-1/2" NPT side tapping.
- Dual switches for cut-off and alarm or electric water feeder, and 1/4" npt pressure control tapping.
- Max. steam operating pressure, 20 psi.
- Model 569 replaces the 70/70B low water cut-off.

70 Series Built-In Cut-Offs Discontinued		
Model No.	Description	Order No.
70	Low water cut-off	Obsolete
70B	Low water cut-off with blow-down valve	



Complete 569

Description	Order No.
Built-in low water cut-off for a boiler's 2 1/2" side tapping & 1-3/16" insertion length.	MH1114

Repair Parts available for 70 Series		
Item	Description	Order No.
1	Lever-handle Blow down valve	MI1015
2	Gasket	MI1060
4	Gasket	MI1110
5	No. 11 automatic reset switch	MI1010
6	No. 11-M manual reset switch	MI1012
7	No. 11-MV switch for millivolt service	MI1013
8	Float and bellows assembly	MI1315
Replacement Head Mechanism		
9	No. 6667 Head Mechanism	MI1160
10	No. 6667MV Head Mechanism (millivolt)	MI1161

No. 11 Switch

Supplied as standard equipment on both the model 70 and 70B. Choose from automatic or manual reset, or select millivolt service.



Electrical Ratings for the No. 11 switch				
Ampere ratings for the pump and the cut-off circuits				
Motor Duty	120VAC	240VAC	120VDC	240VDC
Full Load	7.4	3.7	2.4	1.2
Locked rotor	44.4	22.2	24.0	12.0
Pilot duty service: 345VA, 120 and 240VAC				
Ampere rating for low-water alarm service				
120VAC	240VAC	120VDC	240VDC	
1	1/2	1/2	1/4	

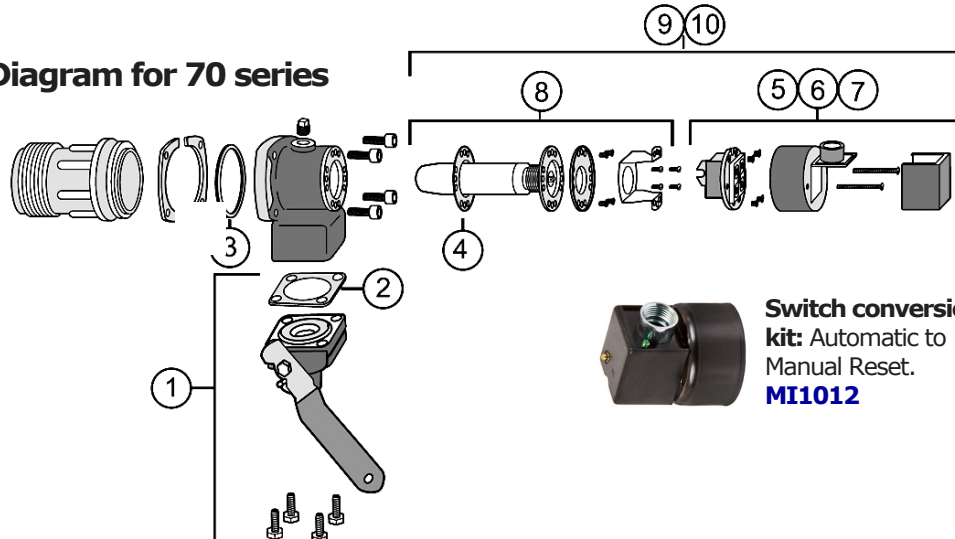
Replacement Head Mechanism

The easiest way to repair your McDonnell-Miller boiler controls: Simply unscrew the old one, insert the new one — you're done!



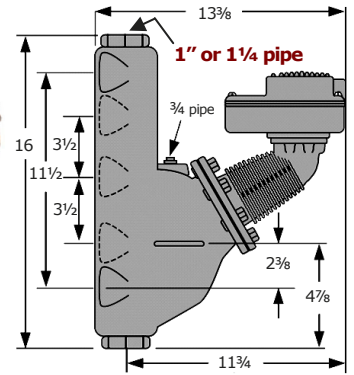
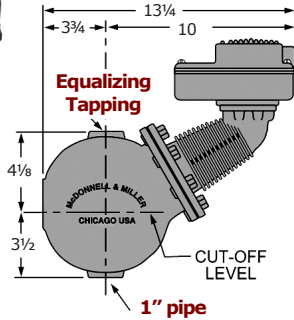
6667

Repair Part Diagram for 70 series



Switch conversion kit: Automatic to Manual Reset.
MI1012

McDonnell & Miller 150 & 157 Cut-Off/Pump Control

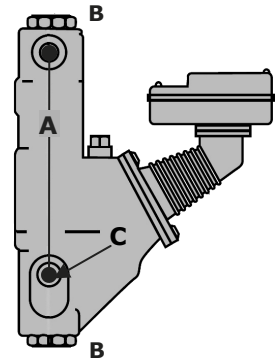


150 and 157 Boiler Controls & Replacement Head Assemblies

Model No.	Description <i>Automatic Reset unless otherwise shown</i>	Gage or Tri-Cock Tapping	Equal. Line Tapping	Complete Order No.	Head Assembly
150S & 157S Pump & Low Water Cut-Offs					
150S	Cut-Off/Pump Controller, standard	1/2"	1"	MH1095	MI1145
150S-M	150S with Manual reset	1/2"	1"	MH1097	MI1147
150S-MD	*150S with Maximum Differential	1/2"	1"	MH1096	MI1147A
150S-M-MD	*150S-MD with Manual reset	1/2"	1"	MH1094A	MI1147B
157S	150S with built-in water column	1/2"	1"	MH1100	MI1145
157S-M	157S with Manual reset	1/2"	1"	MH1102	MI1147
157S-MD	*157S with Maximum Differential	1/2"	1"	MH1103	MI1147A
157S-M-MD	*157S-MD with Manual reset	1/2"	1"	MH1099B	MI1147B
157S-RBP-MD	*157S-MD w/integral sensing probes	1/2"	1"	MH1104	MI1147A
157S-A	157S with alternate tapings	3/4"	1 1/4"	MH1105	MI1145
157S-A-M	157S-M with alternate tapings	3/4"	1 1/4"	MH1100B	MI1147
157S-R	157S with front-side gauge glass taps.	1/2"	1"	MH1101	MI1145
157S-R-M	157S-R with Manual reset	1/2"	1"	MH1101A	MI1147
157S-RL	157S-R with 1 1/4" equalizing line	1/2"	1 1/4"	MH1101C	MI1145
157S-RL-M	157S-RL with Manual reset	1/2"	1 1/4"	MH1101D	MI1147
158 & 159 Pump & Low Water Cut-Offs with Double Snap Switches					
158S	150S with 2 SPDT switches	1/2"	1"	MH1105D	MI1148B
158S-M	158S with Manual reset	1/2"	1"	MH1105B	MI1148C
159-S	158S with 2 SPST switches	1/2"	1"	MH1105F	MI1149B

157R front-side gage glass tapings

Unlike the 157S & 157S-A, the gauge glass tapings are located on the front of the water column.



157 Alternate Pipe Tapings:

Models 157S-A and 157S-RL have 1 1/4" equalizing line pipe tapings, in place of the standard 1" equalizing line pipe tapings found on the standard 157S. Also, as shown in the chart below, 157S-A has 3/4" gauge glass and tri-cock pipe tapings, unlike the 1/2" tapings found on the 157S and 157S-R.

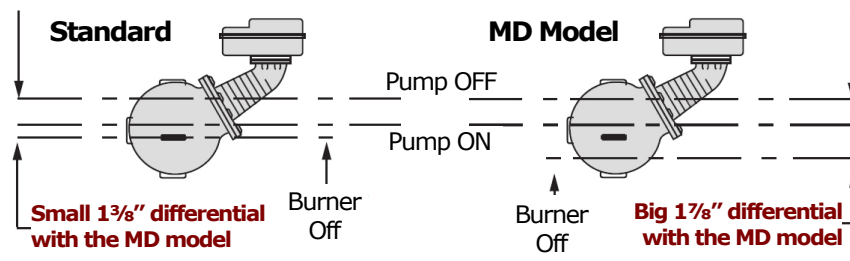
Tapings on 157S, 157S-A & 157S-RL

Product No. ▶	157, R	157A	157RL
A Dimension	11 1/2	11 1/2	12 3/4
B Equalizing taps.	1	1 1/4	1 1/4
C Gauge glass & tri-cock taps.	1/2	3/4	1/2

*Models indicating "MD" Prevent Nuisance Burner Shutdowns

Specifically manufactured for applications operating at less than 50 psi.

When the pressure within the application gets below 50 psi the ON/OFF points will narrow, potentially leading to nuisance burner shutdowns. The series of "MD" 150 & 157 are manufactured to address this issue. The MD models increase the distance between pump-off and burner-off. Nuisance burner shutdown? **Order the MD style!**

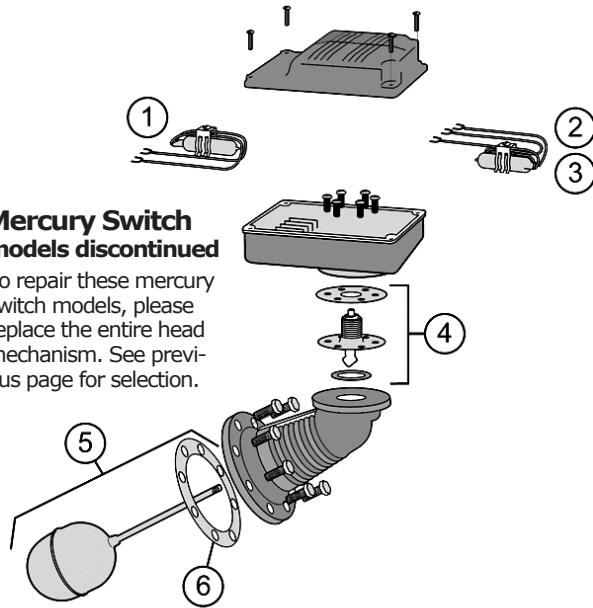


Head Assembly

The easiest way to ensure all will work well once repaired.

McDonnell & Miller 150 & 157 Repair Parts

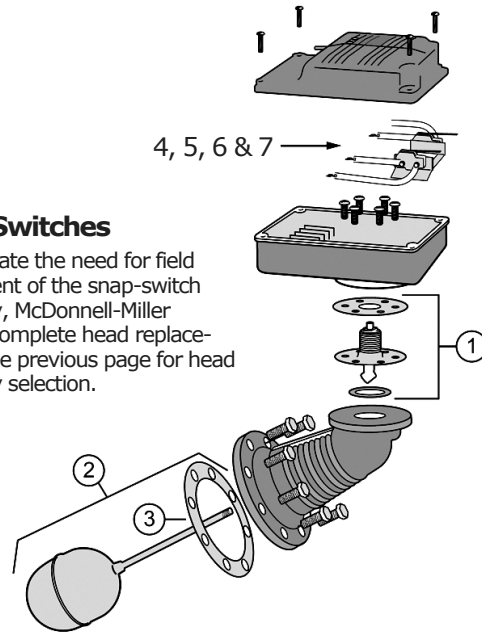
No. 150 & 157 Repair Parts — Mercury Switches



Mercury Switch models discontinued

To repair these mercury switch models, please replace the entire head mechanism. See previous page for selection.

No. 150S & 157S Repair Parts — Snap Switches



Snap-Switches

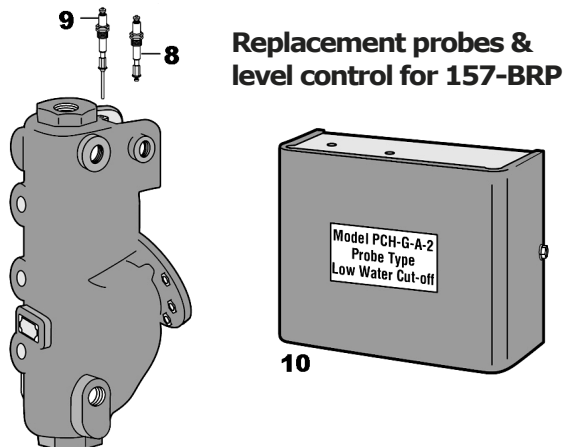
To eliminate the need for field adjustment of the snap-switch assembly, McDonnell-Miller advises complete head replacement. See previous page for head assembly selection.

Repair Parts for 150 & 157 Mercury Switch

Part No.	*Mercury Discontinued 04/07/07	Order No.
1	Mercury switch, 2-wire	No longer available.
2	Mercury switch, 3-wire	
3	Mercury switch, 3-wire, manual reset	
4	Bellows assembly	MI1360
5	Float & rod assembly (includes gasket)	MI1355
6	Head Gasket (8-hole bolt gasket)	MI1140
Repair Electrodes for the 157-RBP		
8	Short electrode for 157-RBP only	MI1176A
9	Long electrode for 157-RBP only	MI1176
10	Level control module for 157-RBP only	MI1530

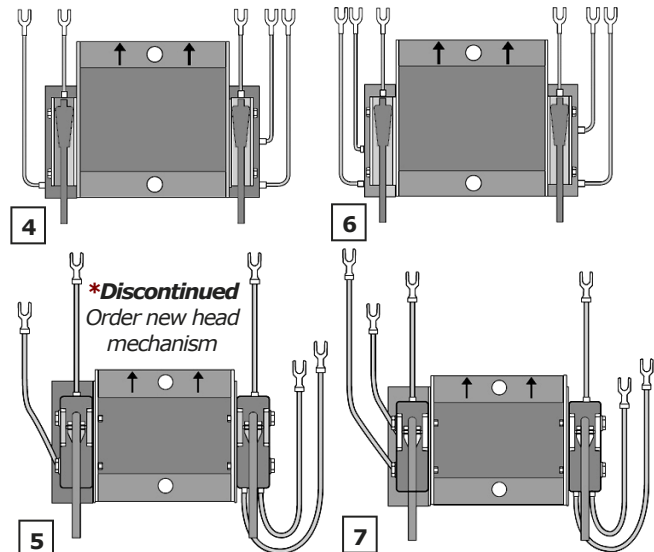
Repair Parts for 150S & 157S Snap Switch

Part No.	Description	Order No.
1	Bellows assembly	MI1360
2	Float & rod assembly (includes gasket)	MI1355
3	Head Gasket (8-hole bolt gasket)	MI1140
4	Snap switch for 150S	MI1376
—	Snap switch for 150S-MD <i>Not shown</i>	MI1377A
5	Snap switch for 150S-M styles	*N/A
6	Snap switch for 158S styles	MI1378
7	Snap switch for 158S-M styles	310469
—	Snap switch for 159S <i>Not shown</i>	MI1378B



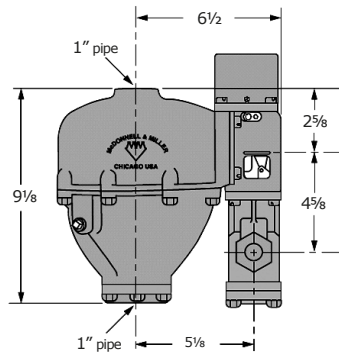
Replacement probes & level control for 157-RBP

Replacement Snap Switches



McDonnell & Miller 247 Feeder & Feeder Cut-Off

No. 247-2 Boiler Water Feeder & Feeder Cut-Off



No. 2 Automatic and 2M Manual Switch

Supplied as standard equipment on the 247-2 (No. 2 automatic reset switch) and the 247-2M (No. 2M manual reset switch). Can also be purchased separately to add a burner cut-off function to a 247 water feeder. Has high voltage terminals for low water cut-off and low water alarm.



Electrical Ratings, Ampere ratings

	120VAC	240VAC
Motor Duty	120VAC	240VAC
Full Load	10.2	5.1
Locked rotor	61.2	30.6
Pilot duty service: 345VA, 120 and 240VAC		

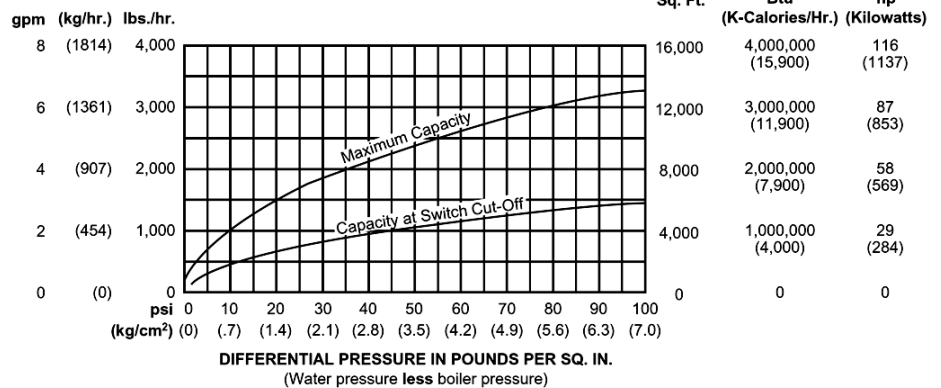
Complete 247 Series

Model	Description	Order No.
247	Water feeder less switch	MH1110
247-2	Water feeder with automatic No. 2 switch	MH1111
247-2M	Water feeder with manual reset 2M switch	MH1111A

Features of the Series 247

- For steam and hot water boilers with a cold water feed.
- Continual maintenance of minimum safe water level.
- No. 2 (automatic reset) and 2M switch (manual reset) add the low water cut-off function to the 247.
- Maximum operating pressure, 30 psi;
- Max. water supply pressure, 150 psi

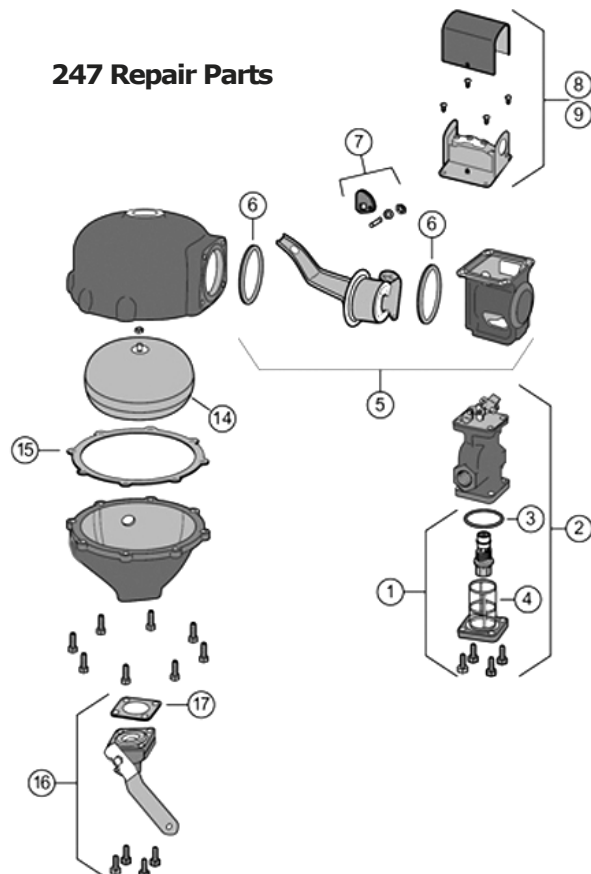
Capacities for 247



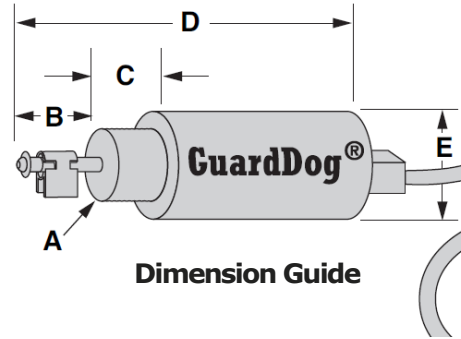
Repair Parts for 247 Series

Part No.	Description	Order No.
1	Cartridge and strainer kit	MI1262
2	Valve, cartridge and strainer kit	MI1260
3	O-Ring	MI1385
4	Strainer Assembly	MI1345
5	Bellows bracket assembly	MI1255
6	Gaskets (2) for bracket assembly	MI1050
7	Cam assembly	MI1175
8	No. 2 Automatic Reset Switch	MI1005
9	No. 2M Manual Reset Switch	MI1006
14	Float (includes gasket #15)	MI1235
15	Gasket for Bowl	MI1045
16	Complete blow-down valve	MI1015
17	Blow-down valve gasket	MI1060

247 Repair Parts

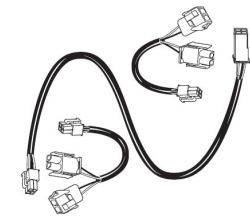
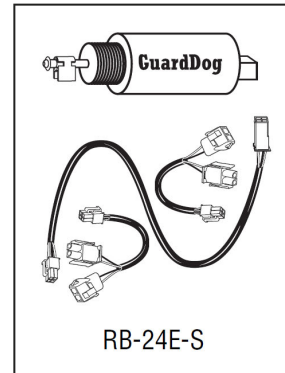


RB-24E Residential Electronic Low Water Cut-Offs

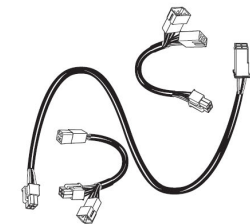
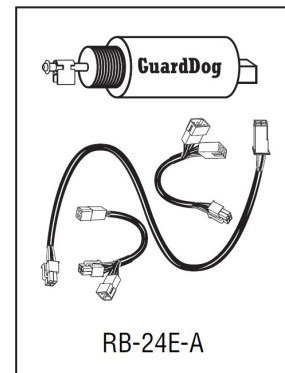


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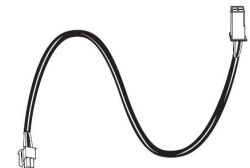
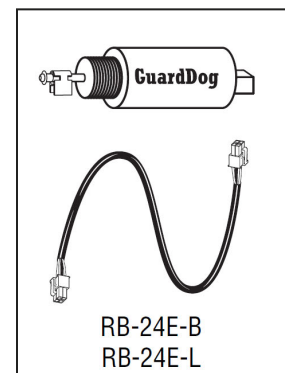
- 3/4" Brass threads for secure, compact installation.
- Test button confirms proper operation.
- Universal wiring harness for all of today's gas boilers.
- -S, -A and -B models are "plug-N-play" installation with most residential boilers.
- Automatic reset feature resumes operations after a power outage when the water probe is on.
- Green-colored LED indicates power on.
- Red-colored LED indicates low water condition.
- Solid state operation.
- 15,000 ohms sensitivity.
- Maximum ambient temperature: 120° F.
- Maximum ambient temperature: 250° F.
- Maximum water pressure: 160 psi.



Replacement Cable Set
UWH-RB-24S



Replacement Cable Set
UWH-RB-24A



Replacement Cables
UWH-RB-24B
UWH-RB-24L

Electrical Ratings

Voltage	Power Consumption	Load Switching
24 VAC	2.5 VA	2 A at 24 VAC

Note: A 15 mA minimum current draw is required.

Dimensions, in. (mm)

A	B	C	D	E
NPT				
3/4	1 3/16 (30.2)	1 3/16 (30.2)	5 3/4 (180)	1 7/8 (47.6)

Ordering Guide

Model No.	Code No.	Description	Order No.
RB-24E	144692	Standard LWCO	MH1174A
RB-24E-A	144694	LWCO w/vent damper harness	MH1174C
RB-24E-B	144696	LWCO w/burner control harness	MH1174D
RB-24E-S	144693	LWCO w/control board harness	MH1174B
RB-24E-L	144690	LWCO w/burner control harness	MH1174E
UWH-RB-24A	144681	Replacement cables for RB-24E-A	MH1174F
UWH-RB-24B	144695	Replacement cable for RB-24E-B	MH1174H
UWH-RB-24S	144682	Replacement cables for RB-24E-S	MH1174K
UWH-RB-24L	144691	Replacement cable for RB-24EL	MH1174M



**RB-122-E
for Hot Water
Boilers**
Order No.
[MH1127A](#)

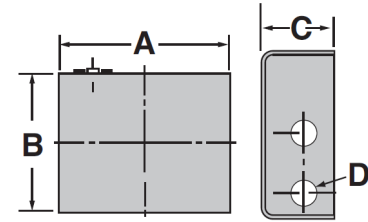
Not for use with steam boilers. For residential and commercial hot water applications. ■ Automatic reset when water once again touches the probe after a low water condition. ■ 20,000 ohms probe sensitivity. 3/4" pipe connection. ■ No lock-out with loss of power if probe is in water ■ Max. water temp: 250° F; Max. water press. 160 psi ■ LED lights: RED = Low Water; GREEN = Power

750 Low Water Cut-Off Control Box for Remote Sensors



Model 750 for Primary on Hot Water, Secondary on Steam Boilers

- Primary or secondary control on hot water boilers with either manual or automatic reset model installed.
- May be used as a secondary control on steam boilers only when a manual reset model is installed.
- Used with remote sensor and probe(s).
- **Order sensor/probes separately.**
- Manual reset models meet the requirements of ASME Standard CSD-1.
- Green-colored LED = power on; Red-colored LED = low water condition. Includes Test button.
- No lock-out with power loss if probe is in water.
- 20,000 ohms sensitivity. NEMA 1 rating.

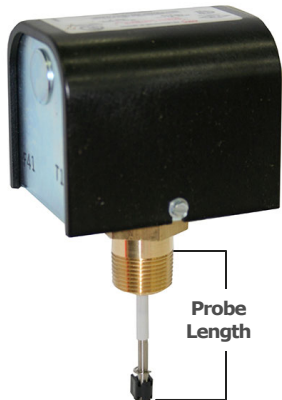


750 dimensions, inches

A	B	C	D
6 ³ / ₈	5 ¹ / ₈	2 ¹ / ₂	1 ¹ / ₂

Model No.	Code No.	Control Description <i>Order sensors/probes separately</i>	Order No.
750-T-24	176294	Low water cut-off, 24V, Auto. reset	MH1114A
750-MT-24	176293	LWCO, 24V, Manual reset	MH1114M
750-T-120	176206	LWCO, 120V, Automatic reset	MH1114C
750-MT-120	176207	LWCO, 120V, Manual reset	MH1114D
750-HW-MT-120	176236	*High Water cut-off for steam boilers, 120V, Manual reset	MH1114N

Model 750-HW-MT-120 is the one model in the 750 series specially made to provide continuous protection against ***high water conditions in steam boilers**. It includes a manual reset button that will need to be pressed when the water level is restored. Otherwise, the 750-HW-MT-120 share similar attributes & features as the standard 750-T and 750-MT models.



RS-1-LP & HP Low & High Pressure Remote Sensor *Includes standard or short probe*

- Models RS-1-LP & -LPS rated for steam pressure to 15 psi & water pressure to 160 psi; temp. to 250° F.
- The model RS-1-HP is for high pressures up to 250 psi, and temperatures up to 406° F. **No probe included with RS-1-HP. Order separately.**
- All models can be installed either vertically or horizontally.

Model No.	NPT Pipe Conn.	Code No.	Steam/Water PSI Rating	Probe Length	Order No.
RS-1-LP	3/4"	176203	15/160 psi	2.75"	MI1551
RS-1-LP-S		176218		2.5625	MI1551A
RS-1-HP		176199	250/250 psi	None	MI1552

Probe Rods, Stainless Steel

- For use with all RS sensors.
- Stainless steel - Series 316 material.
- Select from **Grounding Probes** or **Sensing Probe** rods with Teflon-coated (PTFE) ends to provide protection from false signals.
- Probes may be cut to desired set points.

Model No.	Code No.	Length inches	Order No.
Ground Probes			
G-2-SS	179156	24	MI1499H
G-3-SS	179157	36	MI1499K
G-4-SS	179158	48	MI1499M
G-5-SS	179159	60	MI1499N
G-6-SS	179160	72	MI1499P
Sensing Probes Teflon Coated, Stainless Steel			
P-1/3-SS	176208	4 ¹ / ₂	MI1504
P-1-SS	179530	12	MI1500
P-2-SS	179535	24	MI1505
P-3-SS	179540	36	MI1510
P-4-SS	179545	48	MI1515
P-5-SS	179550	60	MI1520
P-6-SS	179555	72	MI1521
Spacer for multi-probes longer than 36"			
S-4	179529	—	MI1495

PTFE Teflon® coated



RS-1-BR-1 Remote Sensor, NEMA 4X Enclosure

- Maximum temperature: 406° F.
- Maximum pressure: 250 psi.
- Remote sensor for the attachment of one probe. **Order probe and desired length separately.**

Model No.	NPT Pipe	Code No.	Order No.
RS-1-BR-1	1"	179524	MI1550

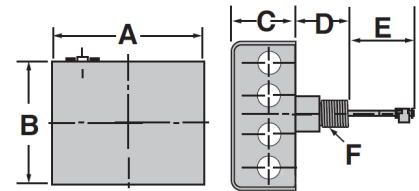
1 probe connection

751P & 752P Low Water Cut-Off Control with Probes



Low Water Cut-Offs for Hot Water & Secondary Control on Steam Boilers

- Select from 24 volt (752) or 120 volt (751) models.
- Use as primary or secondary LWCO on hot water boilers.
- Manual reset models meet ASME CSD-1 standards: To allow the burner to fire following a low water condition, manual reset button needs to be pushed when the water level is restored.
- NEMA 1 enclosures. ■ Manual reset models can be used as a **secondary control on steam boilers.**
- Green and Red LED lights to indicate "power on" and "low water."
- Test button ■ Self-cleaning probe.
- 20,000 ohms sensitivity.
- No lock-out loss of power probe in water.

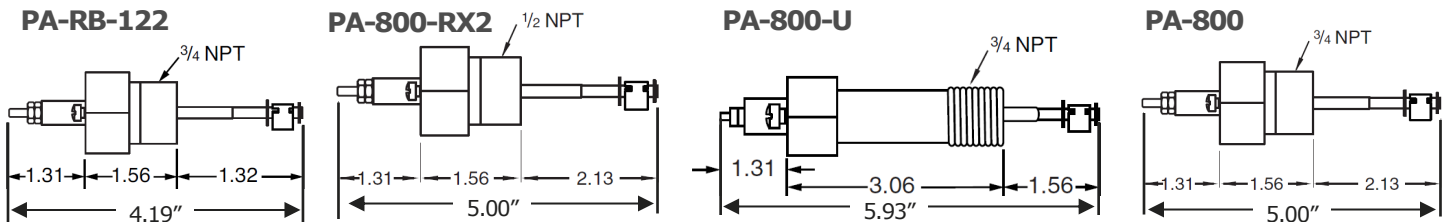


Dimensions, inches

A	B	C	D			E			F NPT
			Std	SP	U	Std	SP	U	
6 ⁵ / ₈	5 ¹ / ₄	2 ³ / ₄	1 ¹ / ₂	3	1 ¹ / ₂	2 ¹ / ₈	1 ¹ / ₄	1 ¹ / ₂	3 ⁴ / ₈

New Model No.	Code No.	Probe Specs.	Volts	Probe Provided	New model shown replaces these previous models . . .	Wgt. lbs.	Order No.
752P-MT-24	176296	Max. Steam Press: 15 psi	24	Standard probe PA-800	PS-852-M-24	2.5	MH1114H
752P-MT-U-24	176298			Extended probe PA-800-U	—		MH1114K
752P-MT-SP-24	176297			Short probe PA-RB-122	PS-852-M-SP-24		MH1114J
751P-MT-120 Formerly 750P-MT-120	176234	Max. Water Press: 160 psi	120	Standard probe PA-800	900M, 901M, 902M, PS-851-M-120		MH1114E
751P-MT-U-120 Formerly 720P-U-MT-120	176214			Extended probe PA-800-U	PS-851-M-U-120		MH1114F
751P-MT-SP-120	176295			Short probe PA-RB-122	PS-851-M-SP-120		MH1114G

Replacement Sensing Probes for a Variety of McDonnell & Miller Controls



Probe for Control Model No.	Probe Model No.	Probe Code No.	Order No.
PS-801-120	PA-800	354081	MI1496
PSE-851-120			
PS-802-24			
PS-852-24			
RS-1-LP			
PS-851-M-120			
PS-852-M-24			
PS-801-M-120			
PS-802-M-24			
750P-MT-120			
751P-MT-24			
PSE-801-120			
PSE-802-24			
PSE-801-M-120			
PSE-802-M-24			
PS-801-U-120	PA-800-U	354141	MI1497
PS-802-U-24			
PS-851-M-U-120			
PS-851-U-120			
PS-802-M-U-24			

Probe for Control Model No.	Probe Model No.	Probe Code No.	Order No.
PS-801-M-U-120	PA-800-U	354141	MI1497
750-MT-U-120			
PSE-801-M-U-120			
PSE-802-M-U-24			
PSE-801-U-120			
PSE-802-U-24			
751P-MT-U-120			
752P-MT-U-24			
PS-802-RX2-24	PA-800-RX2	354140	MI1498
PS-851-RX2-120			
PSE-802-RX2-24			
RB-122	PA-RB-122	354083	MI1499
RS-1-LP-S			
PS-851-SP-120			
PS-852-SP-24			
RB-120			
PS-851-M-SP-120			
PS-852-M-SP-24			
751P-MT-SP-120			
752P-MT-SP-24			

Model 1575 LWCO & Pump Controller for Steam Boilers



Model 1575 Probe Chamber
With 3 probes standard



1575 Control Unit
For remote mounting
Purchase separately



Replacement Electrode

Typical Applications

- Primary low water fuel cut-off protection and pump control for commercial and industrial steam boilers
- Motorized valve controller, low water cut-off and alarm actuator for boilers, vessels and tanks

Features

- Set points and differential remain constant throughout pressure range
- Diagnostic features incorporated in the control include:
 - High ambient temperature protection
 - Internal LEDs that indicate water position and condition
 - External LEDs that indicate control activity
- Adjustable pump differentials by cutting probes to desired set points
- Control unit mounted remotely from probe chamber for maximum flexibility
- Adjustable 60-second burner-off time delay
- 1 HP burner and pump relays
- Solid state operation
- Redundant low-water and pump-off circuitry
- 60,000 ohms probe sensitivity
- Test button to quickly confirm proper operation
- Probe chamber with 3 probes and gauge glass tapplings
- 4th probe can be added for high water control
- NEMA1 electrical control unit enclosure
- NEMA4X probe chamber enclosure
- Maximum ambient temperature 135° F
- Maximum water temperature 406° F at probes
- Maximum water pressure of 250 psi

The **Series 1575** controller provides reliable control of burner circuits, pumps, motor starters and electric valves for low water protection and pump control in commercial and industrial steam boilers. The control uses conductance probes and solves many of the inherent limitations of float operated probes such as sensitivity to boiler operating pressure.

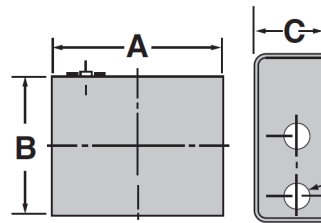
Model No.	Code No.	Control Description	Wgt. lbs.	Order No.
1575	171907	Probe chamber with 3 probes	30.0	MI1543B
150E-CU	310490	Control unit for 1575	2.1	MI1140E

Replacement Components

PA-750-HP	176319	Electrode assembly less probe	0.5	MI1544A
PS-1-SS	179530	Sensing probe, 12" long	0.5	MI1500

Electrical Rating and Switch Ratings

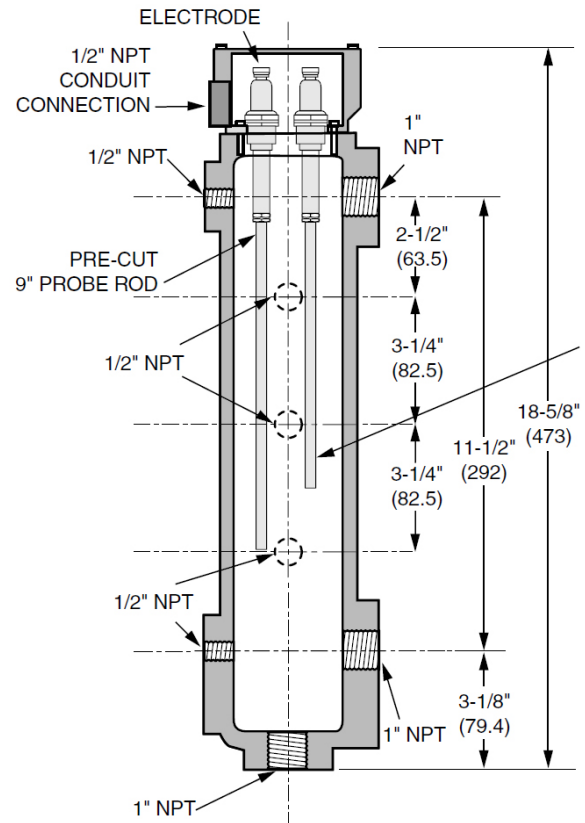
Supply Voltage	Probe Voltage	Full load (Amps) NO (NC), (VAC)	Locked Rotor (Amps) NO (NC), (VAC)	Pilot Duty (VA) NO (NC), (VAC)	Motor (HP) NO (NC), (VAC)
120 VAC 50/60Hz	5 VAC Maximum	16 (5.8), 120 8 (4.9), 240	96 (34.8), 120 48 (17.4), 240	470 (290), 120 470 (290), 240	1 (1/4), 120 2 (1/2), 240



Control Box, inches

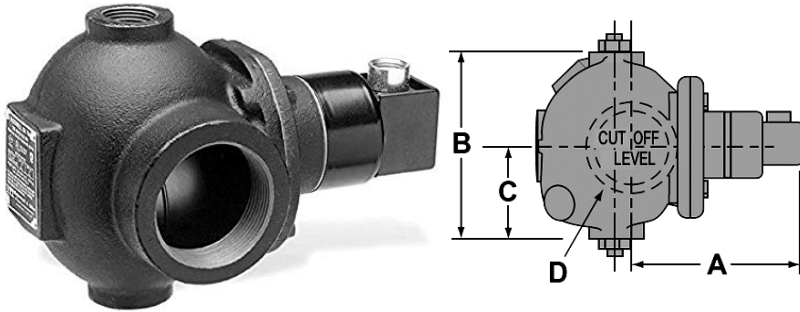
A	B	C	D
6½	5⅛	2¾	1½

Internal View 1575 and Dimensions, inches



McDonnell & Miller 764 Low Water Cut-Off

No. 764 Low Water Cut-Off



The No. 764 is designed with 2½" pipe side tappings (top and bottom) for installation with close nipples into the 2½" tapping available on some hot water boilers. The No. 764 can also be used on steam service. Similar to the No. 64 in construction and operation. Uses a No. 11 switch.

FEATURES:

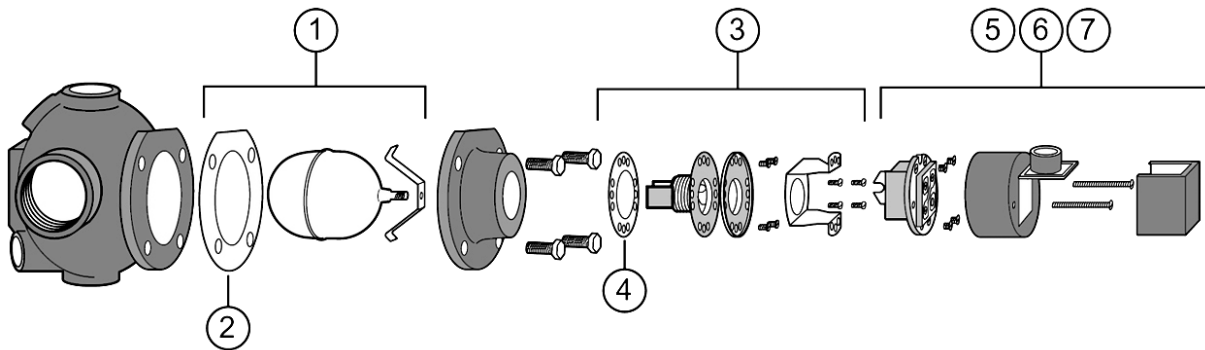
- For steam and hot water boilers of any steaming capacity.
- Adjustable BX outlet for easy installation.
- Dual precision switches for dependable operation of cut-off, alarm or electric water feeder
- Maximum boiler pressure, 50 psi
- Automatic reset after low water condition

764 Low Water Cut-Off		
Model No.	Description	Order No.
764	Low water cut-off, 2½" tapping	MI1115

Dimensions for Model 764			
A	B	C	D
6⅞	6½	3⅛	2½

Electrical Ratings		
Ampere ratings for the cut-off circuits		
Motor Duty	120VAC	240VAC
Full Load	7.4	3.7
Locked rotor	44.4	22.2
Pilot duty service: 120 and 240VAC, 125 VA		

Model 764 Repair Parts



Repair Parts for 764		
Part No.	Description	Order No.
1	Float assembly	MI1310
2	Gasket	MI1170
3	Bellows assembly	MI1305
4	Gasket	MI1110
5	No. 11 switch	MI1010
6	No. 11-M conversion switch from automatic to manual reset	MI1012
7	No. 11-MV switch	MI1013
Replacement Head Assembly		
64-HD	Head Assembly	MI1105



No. 11 Switch
Automatic reset
MI1010



11-M Switch conversion kit:
Automatic to Manual Reset.
MI1012

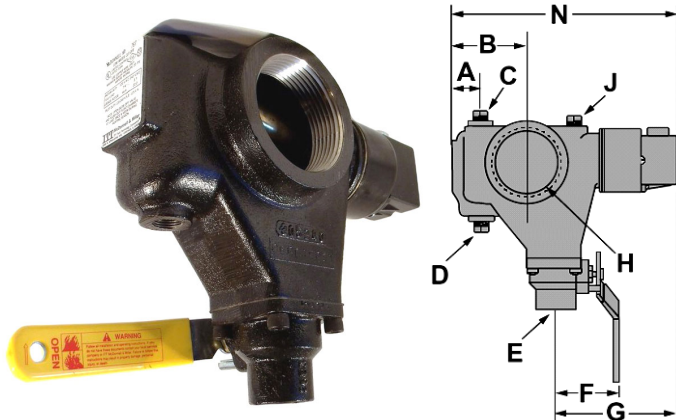
No. 764 Head Assembly

The easy way to repair your McDonnell-Miller boiler control. You re-use your old bowl: Remove your old head assembly, bolt-on the new one.



McDonnell & Miller 767 Low Water Cut-Off

No. 767 Low Water Cut-Off for Steam Boilers



The No. 767 is used on steam boilers of any size up to 20 psi operating pressure. Self contained cut-off for side connection via close nipple into 2½" boiler tapping.

FEATURES:

- For steam and hot water boilers of any steaming capacity.
- Adjustable BX outlet for easy installation.
- Dual precision switches for dependable operation of cut-off, alarm or electric water feeder.
- Integral full-port blow down valve.
- Large float chamber for enhanced float movement.
- Maximum boiler pressure, 20 psi.
- Automatic reset after low water condition.

767 Low Water Cut-Off

Model No.	Description	Order No.
767	Low water cut-off, 2½" tapping	MI1120

Electrical Ratings

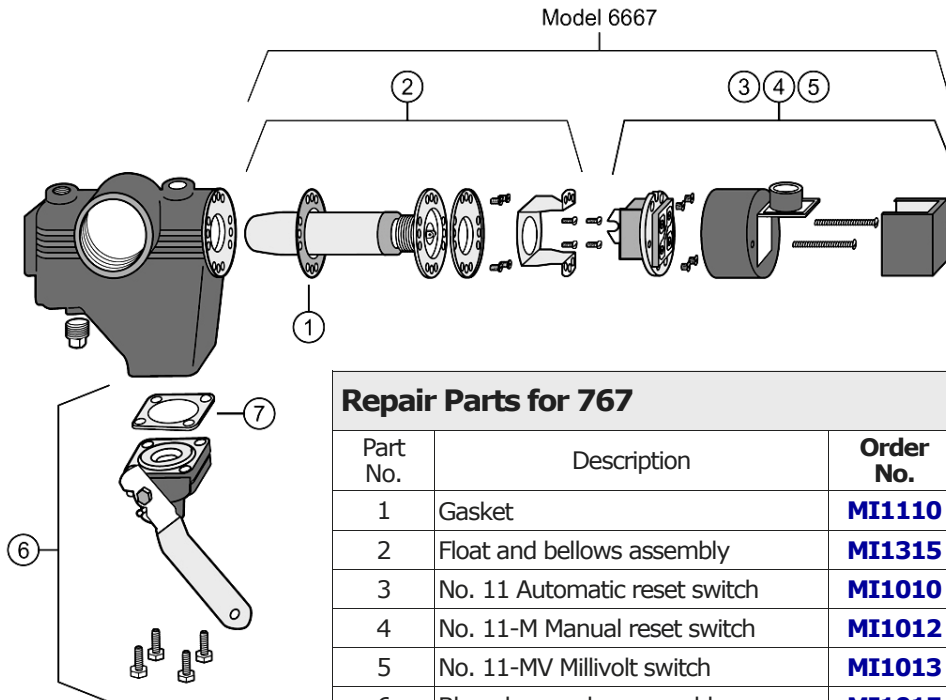
Ampere ratings for the cut-off circuits

	120VAC	240VAC
Motor Duty		
Full Load	7.4	3.7
Locked rotor	44.4	22.2
Pilot duty service: 120 and 240VAC, 125 VA		

Dimensions, inches

A	B	C	D	E	F	G	H	J	N
1-5/32	3-1/4	3/8	3/8	3/4	2-3/4	5-3/8	2-1/2	1/4	9-3/4

Model 767 Repair Parts



Repair Parts for 767

Part No.	Description	Order No.
1	Gasket	MI1110
2	Float and bellows assembly	MI1315
3	No. 11 Automatic reset switch	MI1010
4	No. 11-M Manual reset switch	MI1012
5	No. 11-MV Millivolt switch	MI1013
6	Blow down valve assembly	MI1015
7	Gasket for blow down valve	MI1060

Replacement Head Mechanism

6667	Head Assembly (includes 2 to 5)	MI1160
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No. 11 Automatic Reset Switch:
MI1010



Switch conversion kit: Automatic to Manual Reset.
MI1012

Order the 6667 head mechanism for an easy and complete repair of your No. 767 McDonnell-Miller boiler control.



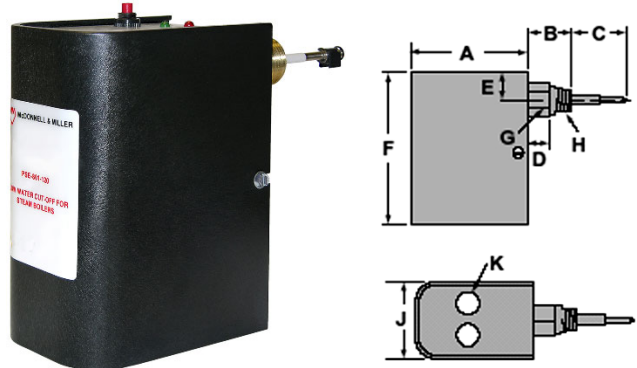
6667 Head Mechanism

PSE-801 & PSE-802 Low Water Cut-Offs

PSE-800 Features:

- Electronic operation: For residential & commercial low-pressure steam boilers (up to 15 psig).
- Selections available include:
 - **Manual reset** (Do not use with automatic water feeder)
 - **Automatic reset** once low water condition abated
- Self-cleaning probes prevent lime build-up for 5 years!
- 24 volt (Model PS-802) or 120 volt (Model PS-801)AC.
- User friendly diagnostic:
 - Red LED — Low water and shorted probe
 - Green LED — Power and testing function
- Probe sensitivity to 7,000 ohms
- No lock-out with loss of power if probe is in water
- 15-second Delay on Make feature
- 10-second Delay on Break feature
- No blow-down of control needed when directly mounted into the boiler tappings
- Test button is standard on all models
- Power consumption at 1.7 VA
- Provisions to add alarm or automatic water feeder. Do not use Manual Reset models with an automatic water feeder.
- Maximum steam pressure, 15 psi
- Maximum water temperature, 250° F.
- Maximum ambient temperature, 120° F.

PSE-800 designed for low pressure Steam Boilers



Dimensions of PSE-800 Series, inches

A	B		C		D	E	F	G	H	J	K
	All	U	Std	U							
4¼	1½	3	2⅛	1½	1¾	¾	5¾	1⅜	¾	2⅞	⅞

Electrical Ampere Ratings for PS-800 series

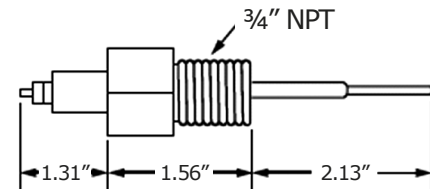
Voltage	Full Load	Locked Rotor	Pilot Duty
24VAC	—	—	50VA @ 24VAC
120VAC or 240VAC	7.5	43.2	125VA @ 120 or 240V

PS-801 and PS-802 Low Water Cut-Offs

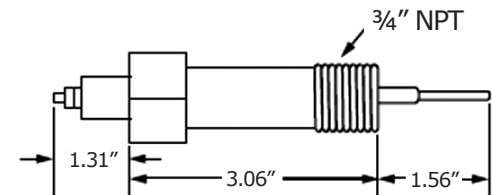
Model No.	Product Code	Description	Order No.
120 Volt Models, Manual & Automatic Reset			
PSE-801-120	153827	Automatic reset, standard electrode	MH1172
PSE-801-M-120	153601	Manual reset, standard electrode	MH1172A
PSE-801-U-120	153828	Automatic reset, extended electrode	MH1172B
PSE-801-M-U-120	153603	Manual reset, extended electrode	MH1172C
24 Volt Models, Manual & Automatic Reset			
PSE-802-24	153927	Automatic reset, standard electrode	MH1173
PSE-802-M-24	153602	Manual reset, standard electrode	MH1173A
PSE-802-U-24	153928	Automatic reset, extended electrode	MH1173B
PSE-802-M-U-24	153604	Manual reset, extended electrode	MH1173D
PSE-802-RX2-24	153929	Manual reset, remote electrode	MH1173C
Replacement Electrodes			
PA-800	354081	Standard barrel electrode	MI1496
PA-800-U	354141	Extended barrel electrode	MI1497
PA-800-RX2	354140	Remote electrode for model PS-802-RX2-24	MI1498

Replacement Electrodes, Dimensions

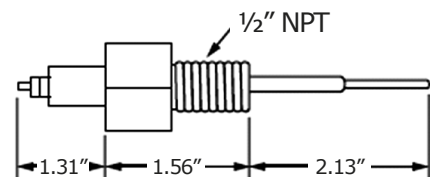
■ Standard PA-800 Electrode



■ Extended PA-800-U Electrode



■ Remote PA-800-RX2 Electrode



Automatic Reset Models — Whenever water is below the level of the probe, the control will go into a low water condition. When the water level has been restored, the control will automatically return to a run condition.

Manual Reset Models — If a low water condition occurs (water off probe), the manual reset button must be manually pressed once the water level is restored to a level above the probe.

Do not use **Manual Reset** models with an automatic water feeder.

PS-851 & PS-852 Low Water Cut-Offs - Obsolete

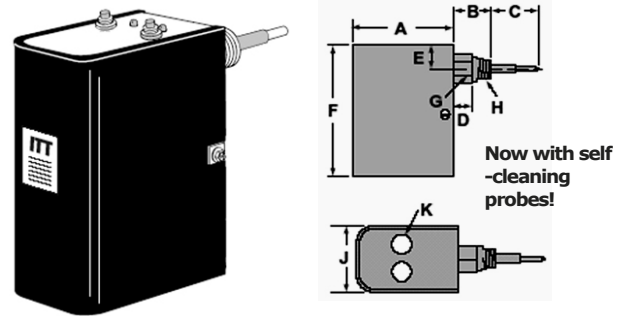
The PS-851 and -852 series of low water cut-offs for hot water boilers are no longer made.

They have been replaced by the models shown in the Cross Reference Table below. Questions or concerns? Please call our product application specialists at 800.772.2099 or locally at 651.774.5985.

PS-851 and PS-852 Features, HISTORICAL

- Electronic operation: For residential & commercial Hot Water boilers.
- Self-cleaning probes prevent lime build-up for 5 years!
- 24 volt (Model PS-852) or 120 volt (Model PS-851)AC.
- User friendly diagnostic:
 - Red LED — Low water and shorted probe
 - Green LED — Power and testing function
- Probe sensitivity to 7,000 ohms
- No lock-out with loss of power if probe is in water
- No blow-down of control needed when directly mounted into the boiler tappings. Provisions to add alarm
- Test button is standard on all models
- Options available include:
 - Manual reset (Do not use with automatic water feeders).
 - Extended barrel, remote and short probe models
- Standard PS model, 3/4" pipe connection. The PS models with "RX" in the model number have a 1/2" pipe connection.
- Provisions to add alarm
- Maximum water pressure, 160 psi; Maximum water temperature, 250° F.; Max ambient temperature, 120° F.

PS-850 series electronic low water cut-offs were designed specifically for Hot Water Boilers.



Dimensions of PS-850 Series (inches)

A	B	C	D	E	F	G	H	J	K
4 1/4	See probes		3/4	13/16	5-13/16	1 3/8	See probes	2 7/8	7/8

Electrical Ratings for PS-850 series, Ampere ratings

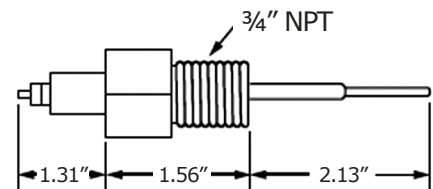
Model	Voltage	Full Load	Locked Rotor	Pilot Duty
24 VAC	24VAC	—	—	50VA @ 24VAC
120 VAC	120 or 240	7.5 or 3.75	43.2 or 21.6	125V @120/240

PS-851 and PS-852 Cross Reference Table

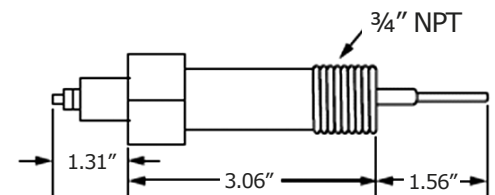
OLD Model No.	Replacement Model	Replace Product Code	Replace Order No.
120 Volt Models			
PS-851-120	Replaced by RB-122E	144676	MH1127A
PS-851-U-120	Replaced by 750-T plus PA-800-U electrode	176206 354141	MH1114C MI1497
PS-851-M-120	Replaced by 751P-MT-120	176234	MH1114E
PS-851-M-U-120	Replaced by 751P-MT-U-120	176214	MH1114F
PS-851-RX2-120	Replaced by 750-T-120 plus PA-800-RX2	176206 354140	MH1114C MI1498
PS-851-M-RX2-120	Replaced by 750-MT-120 plus PA-800-RX2	176207 354140	MH1114D MI1498
PS-851-SP-120	Replaced by RB-122E	144676	MH1127A
PS-851-SP-M-120	Replaced by 751P-MT-SP-120	176295	MH1114G
24 Volt Models			
PS-852-24	Replaced by RB-24E	144692	MH1174A
PS-852-M-24	Replaced by 752P-MT-24	176296	MH1114H
PS-852-SP-24	Replaced by RB-24E	144692	MH1174A
PS-852-SP-M-24	Replaced by 752P-MT-24	176297	MH1114J
Replacement Electrodes			
PA-800	Standard barrel electrode	354081	MI1496
PA-800-U	Extended barrel electrode	354141	MI1497
PA-800-RX2	Remote barrel electrode	354140	MI1498
PA-RB-120	Electrode for "SP" in the model number	354083	MI1499

Replacement Electrodes, Dimensions

■ Standard PA-800 Electrode



■ Extended PA-800-U Electrode



■ Remote PA-800-RX2 Electrode

