

OFFICE OF THE
INDIAN AGENT



CANADA
DEPARTMENT
OF
MINES AND RESOURCES
INDIAN AFFAIRS BRANCH

PLEASE QUOTE
FILE _____

Alert Bay, B. C.,
Jan. 6th, 1945.

Indian Commissioner for B. C., Department of Mines
and Resources, Vancouver, B. C.

Enclosed please find requisition covering
emergency purchase of fire hose, couplings, etc.,
for use at St. Michael's Indian Residential School,
Alert Bay, B. C.

Recently at a fire drill, it was discovered
that considerable hose had deteriorated to the extent
that when under water pressure the hose was bursting.
I, therefore, instructed Principal Wickens to obtain
tenders for same, as I consider in the interests of
protection for the school, that this should be replaced
at once.

In checking up my estimates I find that no
provision was made by the School for this replacement,
therefore, the funds may have to be supplied from some
other request which has not been used up.

It would be appreciated if you would give this
your early attention as I am somewhat worried over this
situation existing longer than necessary.

Encs.

Ms Todd
(M. S. Todd)
Indian Agent.

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

PUBLIC ARCHIVES

ARCHIVES PUBLIQUES

CANADA

POOR-COP

McLENNAN, McEELY & PRIOR, LIMITED

WHOLESALE AND RETAIL HARDWARE MERCHANTS, ETC.

NEW WESTMINSTER
911 COLUMBIA STREET
New West. 1234

HEAD OFFICE
VANCOUVER, B.C.
89 EAST CORDOVA STREET
VAN. 2111

VICTORIA
405 GOVERNMENT STREET
1111

MAR 10/45

DOM GOVT DEPT OF MINES & RESOURCES

M S TODD ESQ INDIAN AGENT

ALERT BAY B C

1945
QUOTATION 16842

REV S J WICKENS PRINCIPAL

ALERT BAY INDIAN

RESIDENTIAL SCHOOL

ALERT BAY

S T (INCL. B C)
F O B VANG

Terms: % Cash Discount
if Paid By 20th of Following Month
Except Items Marked NET

13717

D22-60M-11-44-1615

IF ANY COMPLAINT MAKE IT AT ONCE AND REFER TO INVOICE No.

| Quantity | Unit | PAYMENT OF THIS INVOICE MAY BE DEMANDED AT ANY TIME. Interest at 8% Per Annum Charged on Overdue Accounts. | Quantity Shipped | List Price | Net Price | Discount | Extension | AMOUNT |
|----------|---------|--|------------------|------------|-----------|----------|-----------|--------|
| | Per | COTTON RUBBER LINED FIRE HOSE | | | | | | |
| | | SIZE 2 1/2 IN 50' LENS | | | 69 000v | | | 276 00 |
| | Only | SETS OF COUPLINGS FITTED TO THE | | | | | | |
| | | 4 LENS OF THE ABOVE NEW HOSE | | | 7 70SET | | | 30 80 |
| | W 20196 | | | | | | | |
| | SETS | 2 1/2 HOSE COUPLINGS | | | 7 70SET | | | 30 80 |
| | | | | | | | | 337 60 |

Certified Correct
S. J. Wickens Principal

Checked by Experienced Men and Shipped Entirely at "Owner's Risk." Goods must not be returned without our consent. All claims must be made at the time of receipt of goods. If shipment arrives in "Bad Order," receipt same accordingly. This will enable you to get redress from "The Carriers."

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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Exclusive Connection
with
WESTERN UNION
TELEGRAPH CO.

Cable Service
to all the World
Money Transferred
by Telegraph

156/015
CANADIAN NATIONAL



156-0-5

TELEGRAPHS

D. E. GALLOWAY, Assistant Vice-President, Toronto, Ont.

Form 81020
CLASS OF SERVICE DESIRED

| | |
|-------------------|---|
| FULL-RATE MESSAGE | |
| DAY LETTER | |
| NIGHT MESSAGE | X |
| NIGHT LETTER | X |

PATRONS SHOULD MARK AN X OPPOSITE THE CLASS OF SERVICE DESIRED. OTHERWISE THE MESSAGE WILL BE TRANSMITTED AS A FULL-RATE TELEGRAM

RECEIVER'S NO.

TIME FILED

CHECK

Send the following message, subject to the terms on back hereof, which are hereby agreed to
Veuillez expédier la dépêche suivante aux conditions mentionnées au verso auxquelles je consens par les présentes

Ottawa April 9 1945

Mr M S Todd
Indian Agent
Alert Bay British Columbia

APPROVE REBUILDING PUMP HOUSE EXPENDITURE
NOT TO EXCEED ESTIMATE CONTAINED IN YOUR TELEGRAM

Charge Indian Affairs
Mines & Resources

Philip Phelan

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

PUBLIC ARCHIVES

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EXCLUSIVE CONNECTION WITH WESTERN UNION CABLE SERVICE

CANADIAN NATIONAL

W. M. ARMSTRONG, GENERAL MANAGER
TORONTO

TELEGRAPHS

945 APR 9 PM 3 59

Schools
YE219 34 DL=ALERTBAY BC 9 NFT

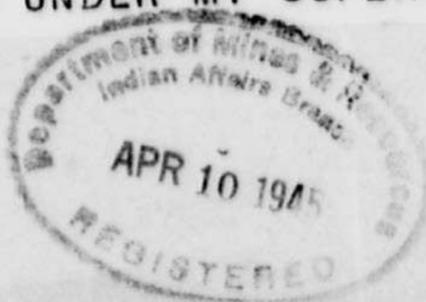
SECRETARY INDIAN AFFAIRS BRANCH DEPARTMENT MINES AND

0658 RESOURCES=OTTAWA ONT=

PUMP
RESIDENTIAL SCHOOL FARM ~~HOUSE~~ HOUSE DESTROYED BY FIRE LAST
NIGHT EQUIPMENT SAVED NECESSARY REBUILD IMMEDIATELY COST
LESS THAN TWO HUNDRED DOLLARS MATERIALS AVAILABLE REQUEST
APPROVAL PROCEED REBUILDING UNDER MY SUPERVISOR REPORT
FOLLOWING WIRE REPLY=

M S TODD.

FORM 6122



Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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McLENNAN, McEELY & PRIOR, LIMITED

WHOLESALE AND RETAIL HARDWARE MERCHANTS, ETC.

NEW WESTMINSTER
311 COLUMBIA STREET
New West. 1234

HEAD OFFICE
VANCOUVER, B.C.
29 EAST CORDOVA STREET
MARINE 3111

VICTORIA
1400 GOVERNMENT STREET
GARDEN 1111

Don. Govt. Dept. of H. & R.,
W.S. Todd Esq.,
Indian Agent,
Alert Bay, B.C.

May 12 45. Vancouver, B. C.
ON 15437 A Your Reg. No.
Rev. S.J. Wickens Principal, Shipped or
Alert Bay Ind. Res. School, Open By
Alert Bay, B.C.
Union 32265 NET CASH

D:4

IF ANY COMPLAINT MAKE IT AT ONCE AND REFER TO INVOICE No.

201962 137171

Quantity Unit PAYMENT OF THIS INVOICE MAY BE DEMANDED AT ANY TIME. Interest at 8% Per Annum Charged on Overdue Accounts. Quantity Shipped List Price Net Price Discount Extension AMOUNT

Prepaid freight on goods shipped

May 6 45.

UNION STEAMSHIPS LIMITED
PAID
MAR 15 1945
Per R. SMITH
VANCOUVER, B.C.

2 20

Our Goods are Packed by Experienced Men and Shipped Entirely at "Owner's Risk." Goods must not be returned without our consent. All claims must be made immediately on receipt of goods. If shipment arrives in "Bad Order," receipt same accordingly. This will enable you to get redress from "The Carriers."

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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McLENNAN, McFEELY & PRIOR, LIMITED

WHOLESALE AND RETAIL HARDWARE MERCHANTS, ETC.

NEW WESTMINSTER
811 COLUMBIA STREET
New West. 1234

HEAD OFFICE
VANCOUVER, B.C.
88 EAST CORDOVA STREET
MARINE 3111

VICTORIA
1400 GOVERNMENT STREET
GARDEN 1111

Dom. Govt. Dept. of W. & R.,
M.S. Todd Esq.,
Indian Agent,
Alert Bay, B.C.

Mar 12 45.

ON 15437 A

Vancouver, B. C.

Rev. S.J. Wickens Principal,
Alert Bay Ind. Res. School,
Alert Bay, B.C.

Your Reg. No.

Shipped or
Taken By

Union 32265

NET CASH

D:4

IF ANY COMPLAINT MAKE IT AT ONCE AND REFER TO INVOICE No.

20196f 13717f

| Quantity | Unit | PAYMENT OF THIS INVOICE MAY BE DEMANDED AT ANY TIME. Interest at 8% Per Annum Charged on Overdue Accounts. | Quantity Shipped | List Price | Net Price | Discount | Extension | AMOUNT |
|----------|------|--|------------------|------------|-----------|----------|-----------|--------|
| | | Prepaid freight on goods shipped | | | | | | |
| | | Mar 6 45. | | | | | | 2 20 |

UNION STEAMSHIPS LIMITED
PAID
MAR 15 1945
Per R. SMITH
VANCOUVER, B. C.

Our Goods are Packed by Experienced Men and Shipped Entirely at "Owner's Risk." Goods must not be returned without our consent. All claims must be made immediately on receipt of goods. If shipment arrives in "Bad Order," receipt same accordingly. This will enable you to get redress from "The Carriers."

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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CANADA

POOR-COPY

Ottawa, April 28, 1945.

Memorandum:DEPARTMENTAL PURCHASING AGENT.

I attach account amounting to \$132.12, covering the cost of material purchased for re-building the pump-house at the Alert Bay Indian Residential School. This building was destroyed by fire on April 8, and in order to preserve the equipment it was necessary to have it replaced immediately. The Indian Agent was therefore authorized to purchase, locally, the material required. The work was done without cost to the Department, by the senior boys, under the direction of the manual training instructor. It would be appreciated if you would issue purchase order so that the account may be paid. The coding is as follows: 76 - 10-691 (School #875).

Philip Phelan,
Chief, Training Division.

Encl.

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

PUBLIC ARCHIVES

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CANADA

POOR-COPY



TELEGRAPH COVE MILLS LTD.

ROUGH AND DRESSED LUMBER

OFFICE AND MILL
TELEGRAPH COVE, B.C.

TELEGRAPH COVE, B. C., April 16, 1941

SOLD TO Indian Dept.,

WHEN REQUIRED

SHIPPED Alert Bay, B.C.

YOUR REQ. No.

DATE

FILLED

CHARGED BY

1 1/2 Sq. #1 5X Shingles @ 5.25
Sales Tax

9 18
73
9 91

W. K. A. Wiseman

Received Payment

Received in good order

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

PUBLIC ARCHIVES

ARCHIVES PUBLIQUES

CANADA

POOR-COPY



TELEGRAPH COVE MILLS LTD.

ROUGH AND DRESSED LUMBER

OFFICE AND MILLS
TELEGRAPH COVE, B.C.

TELEGRAPH COVE, B.C., April 11, 1945

SOLD TO Indian Dept.,

WHEN REQUIRED

SHIPPED Alert Bay, B.C.

YOUR REQ. No.

CHARGED BY

DATE

FILLED

| | | | | |
|-----------------|------------|-----|-------|-------------|
| 6 pc. | 2 x 4 - 24 | 96' | 35.00 | 3 36 |
| 19 ✓ | | 10 | | |
| 15 ✓ | | 12 | | |
| 18 ✓ | | 14 | 414' | 29.50 12 21 |
| 14 ✓ | | 16 | 149' | 4 61 |
| 900' ✓ | Shiplap | | 29.50 | 26 55 |
| 450' ✓ | Bm. 1 x 6 | | 29.50 | 13 27 |
| 350' ✓ | Rustic | | 56.00 | 19 60 |
| 3 1/2 Sq. #1 5X | Shingles | | 5.25 | 18 37 |

97 97
7 84
4 90
10 00
1 56

122 27

Sales Tax

70 Nails ✓

Delivery

Received later received for shingles nails

Ms2 Q. it as checked

A. Wiseman

Received Payment

Received in good order

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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DEPARTMENT OF MINES AND RESOURCES
INDIAN AFFAIRS BRANCH

FORM No. I.A. 506A

TREASURY ONLY

1945-1946

CHEQUE No.....

DATE.....

Pay to..... **Telegraph Cove Mills Ltd.,**
Address..... **Telegraph Cove, B. C.**

| DATE | SERVICE | AMOUNT |
|-----------------------------|---|----------|
| 1945 April 11 | To material supplied for the rebuilding of the pump house, Alert Bay Indian Residential School as per invoices attached:- | \$123.55 |
| | Sales Tax on \$107.15:- | 8.57 |
| | | \$132.12 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

J.S.H.

I HEREBY CERTIFY that this Voucher is correct, that the material has been supplied, the work performed and that the charges are fair and just, also that the expenditure has been incurred legitimately and that each item of the same is a fair and just charge against the Government of Canada. This expenditure was authorized by Departmental Letter, File No. ~~Wire~~ **Ottawa Apr. 9/45** dated.....

Ms Leam

VOUCHER No. **5**

DATE **April 19/45**

Agent

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

PUBLIC ARCHIVES

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POOR-COPY

DEPARTMENT OF MINES AND RESOURCES
PURCHASE ORDER

NO. **2750**
 THIS ORDER NO. TO APPEAR ON
 ALL PACKAGES AND INVOICES.

OTTAWA **May 1/45**

FILE NO. **15-3 B.C.**

TO **Telegraph Cove Mills Ltd.,
 Telegraph Cove, B.C.**

PLEASE FURNISH THE FOLLOWING MATERIALS AND CHARGE TO THE DEPARTMENT OF MINES AND RESOURCES.

SHIP TO **Already received**

F.O.B.

QUOTATION OF

RENDER A SEPARATE INVOICE FOR EACH ORDER AND SEND COPIES AFTER SHIPMENT

TO **Already received**

| QUANTITY | DESCRIPTION | UNIT | TOTAL |
|----------|--|------|-----------------|
| | Lumber etc., for rebuilding the pump-house at the Alert Bay Indian Residential School destroyed by fire 8/4/45. As per invoice dated April 11, 1945. Voucher No. 5 | | \$152.12 |

EMV/BC

| VOTE | PRIMARY | OBJECT | ENCUMB. NO. |
|-----------|-----------|------------|-------------|
| 76 | 10 | 691 | 236 |

DELIVERY REQUIRED BY

CERTIFIED IN ACCORDANCE WITH SECTION 29 OF THE CONSOLIDATED REVENUE AND AUDIT ACT 1931.

R 2007

FOR COMPTROLLER OF THE TREASURY.

TO BE RETURNED TO HEAD OF BRANCH

PURCHASING AGENT

SEE REVERSE SIDE

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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 CANADA

POOR-COPY

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Memorandum:DEPARTMENTAL PURCHASING AGENT.

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[Handwritten signature]
Philip Phelan,
Chief, Training Division.

Encl.

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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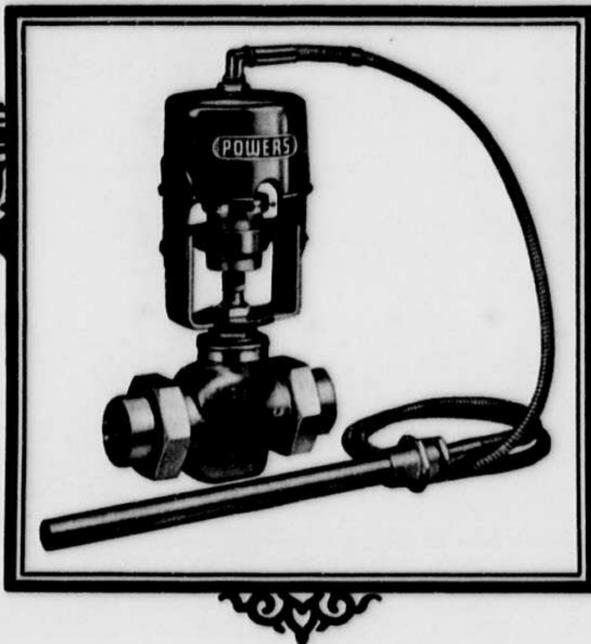
Bulletin No. 229
August 1941

POWERS

NO. 11 REGULATOR

(Self-Operating)

For the Control of Liquid Temperatures



THE CANADIAN POWERS REGULATOR CO., LTD.

50 Years of Specialization in Temperature and Humidity Control

195 Spadina Avenue, Toronto, Ontario—Phone Elgin 7673

CALGARY, ALTA.
1307 Fifth Street West
Phone M-7178

HALIFAX, N. S.
15 Cunard Street
Phone B-7539

MONTREAL, QUE.
344 University Tower
Phone Lancaster 4500

VANCOUVER, B. C.
711 Dominion Bank Building
Phone Seymour 8057

WINNIPEG, MAN.
406 Tribune Building
Phone 24-771

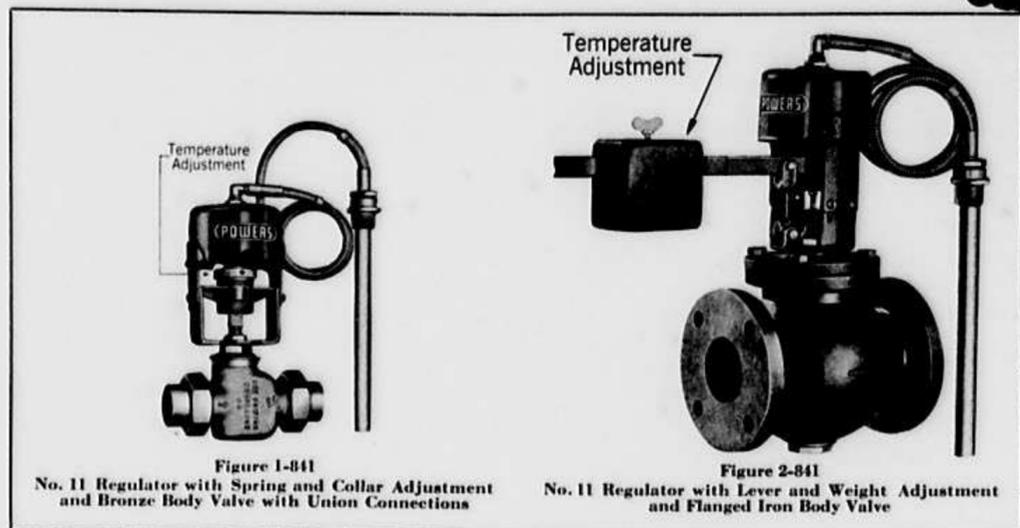
Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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CANADA

POOR-COPY



The Powers No. 11 Regulator

Type and Use

This is a self-operating regulator for the control of liquid temperatures in either heating or cooling operations. It is of rugged construction and has been designed to give years of service with a minimum of expense.

It may be used on steam heated hot water tanks, vats, kettles, dye machines, bleach tubs, pickling vats, acid baths, plating tanks, fuel oil preheaters, milk can and bottle washers, sugar juice heaters, feed water heaters, Diesel engine cooling water, sewage treatment digesters, etc. It may also be used to control liquids used as cooling mediums in drinking water systems, jet condensers, etc. See page 11 for typical applications.

Construction and Operation

The No. 11 Regulator is of all metal construction, simple in design, and easy to install. Its thermostatic bulb contains a sensitive fluid, hermetically sealed, which generates a pressure in relation to the temperature of the liquid in contact with the bulb. This pressure is communicated through the flexible connecting tubing to the all metal bellows diaphragm in the operating head, which responds by gradually closing or opening the valve to maintain the desired temperature.

Temperature Range and Adjustment

The No. 11 Regulator is furnished standard for any specified operating temperature between the limits of 60°

and 250° F. It can be furnished in sizes 1/4-inch to 2 1/2-inch, inclusive, for operation between 40° and 60° F. at extra cost. For steam heated hot water tanks the standard operating temperature is 160° F., and the regulator will be so furnished unless otherwise specified. For swimming pool heaters, the regulator should be ordered for operation at 80° F.

Within certain limitations the No. 11 Regulator may be furnished for operation at temperatures above 250° F. but not exceeding 350° F. For these higher temperatures a silver soldered monel bulb must be used (see Item 18 in price list on page 10).

All types of No. 11 regulators have a temperature adjustment feature which permits shifting the operating point either way from the temperature originally specified. On the 1/4-inch size this range extends 20° above and below the specified operating point, and decreases proportionately as the valve size increases.

Spring and collar adjustment (figure 1) is standard for regulators in sizes up to 4-inch, inclusive, and is recommended where only occasional changes of operating temperature are necessary. If the temperature setting is to be changed frequently (and the regulator is to be installed in a horizontal line), lever and weight adjustment (figure 2) should be used; sizes above 4-inch and swimming pool regulators are furnished with lever and weight

adjustment only. On sizes 1/4-inch to 3/4-inch, inclusive, where frequent and accurate resetting is necessary, a dial adjustment regulator (page 5) is recommended. Regulators for operation between 40° and 60° F. are furnished with spring and collar adjustment only. A lock for the spring and collar adjustment feature can be provided at extra cost.

Types of Valves

The No. 11 Regulator is furnished standard with a direct acting (spring opened) valve for the control of heating mediums. For the control of cooling mediums it is furnished with a reverse acting (spring closed) valve. It may also be furnished with a three-way valve for mixing hot and cold water or for diverting the flow of a heating or cooling medium (see page 6).

Valve Construction (See page 8)

The 1/4-inch and 3/8-inch valves are made of steam bronze and are of the low pressure single seat composition disc globe pattern with double unions. Sizes 1/2-inch to 1 1/2-inch, inclusive, are made of steam bronze and are of the double-seated or balanced type with double unions. Where steam pressures permit (see Table of Safe Pressures, figure 3 below), they can also be furnished in the double union single seat composition disc type.

| VALVE SIZE | STEAM PRESSURE, POUNDS | | | | | | | | | | | | | | | | | | | | |
|------------|------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|--|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 | |
| 1/4 | | | | | | | | | | | | | | | | | | | | | |
| 3/8 | | | | | | | | | | | | | | | | | | | | | |
| 1/2 | | | | | | | | | | | | | | | | | | | | | |
| 3/4 | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | | | | | | | | |
| 1 1/4 | | | | | | | | | | | | | | | | | | | | | |
| 1 1/2 | | | | | | | | | | | | | | | | | | | | | |

Figure 3-841
Table of Safe Pressures for No. 11 Regulator

All size valves above 1 1/2-inch are of the balanced type. Sizes 2-inch, 2 1/2-inch and 3-inch have iron bodies with screwed connections, but can be furnished flanged with standard drilling. Sizes above 3-inch have flanged iron bodies with standard drilling. Companion flanges and bolts will be furnished only when ordered and at market prices. All balanced valves are ground in hot for the steam pressure specified on the order.

Where single seat valves in sizes 1/4-inch and 3/8-inch are to be used for the control of oil, a valve with a

stainless steel inserted seat and a stainless steel cone type disc is recommended. This construction is also recommended for double union single seat, valves in sizes 1/4-inch to 1 1/2-inch, inclusive, when they are used with steam at pressures not more than 25 pounds higher than shown in figure 3.

High Steam Pressures

When the pressure of the steam to be controlled is above 75 pounds, stainless steel trimmed valves are recommended. For steam pressures above 200 pounds or for total steam temperatures above 500° F., steel valves with stainless steel seats and poppets must be used.

When so ordered the Powers No. 11 regulator can be safeguarded for a specified over-run in temperature.

Extension Bonnet

When the regulator is to control at a temperature below 20° F. or if the valve is to be installed where moisture may accumulate and freeze on the packing gland and valve stem, an extension bonnet is recommended. The use of this extension bonnet also permits a neater job of pipe covering.

Thermostatic Bulb

The standard bulb is made of copper and is for use in water and other non-corrosive liquids. For use in corrosive solutions or gases, a bulb of proper metal can be supplied (at extra cost) when full information is given regarding the corrosive agent, its concentration, and the temperature at which the solution is to be maintained.

The standard bulb has a pipe thread tank bushing and retaining nut and a straight flexible tubing connection (see figures 1 and 2); an angle connection will be substituted when specified. Bulbs of special design can be furnished if required; a sketch and complete details should accompany requests for prices. Figures 4 and 5 on page 4 show two special bulbs.

Separable Well

To permit removal of the bulb without draining the tank, vat or pipe line, a separable well or socket can be supplied at extra cost but its use retards the action of the regulator to some extent. Where temperature changes are quite slow the interference offered by a well is negligible, but where accurate indication is required and temperature changes are fairly rapid a well should not be used.

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

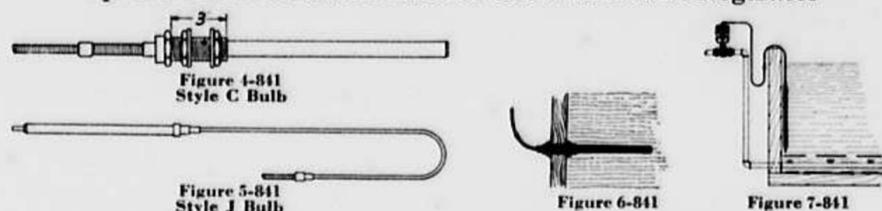
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CANADA

POOR COPY

Special Thermostatic Bulbs for Use with No. 11 Regulator



Upper left, Figure 4—Style C bulb with tank bushing for wooden vat with 2-inch to 3-inch walls. Bulb is inserted through a hole drilled in side of vat (see figure 6), and retaining nuts and washers are then drawn up securely, making a liquid-tight installation.
Lower left, Figure 5—Style J bulb with 36-inch bendable stem which permits it to be suspended in an open vat as shown in figure 7.

Wet Bulb Control

By covering the bulb of a No. 11 Regulator with a wick kept saturated in an overflow or automatic water pan (see Bulletin No. 202), the regulator may be used as a wet bulb instrument. A chromium plated style W bulb will be furnished for this service. If the dry bulb is to be mounted on the water pan it should be of the same type W construction. This has an insulating bushing which decreases heat transfer.

Flexible Tubing

Standard flexible tubing is made of copper with bronze protective sheathing. Standard lengths are shown in the price list on page 10 and in the tables of dimensions on page 9; additional lengths may be had at extra cost.

Special tubing to resist the corrosive action of various chemicals can also be supplied. Ambrac tubing with a nickel finish will resist mild acid fumes. Smooth bendable monel or stainless steel tubing can also be furnished, but the best protection for tubing is lead sheathing (see Items 29 and 30 in the price list).

The No. 11 Regulator can be furnished without flexible tubing. It is then identified as the Powers No. 17 Regulator and is described in Bulletin No. 241.

Cautions

For best results the steam pressure should be kept constant and as low as possible.

To prolong the life of the regulator and prevent temperature variations due to dirt or sediment lodging between the valve disc and seat, a self-cleaning strainer should be installed in the supply line to the valve. If the steam carries an excessive amount of moisture or condensate, a steam trap should be installed just ahead of the regulator. See page 7 for strainers and Bulletin No. 253 for traps.

How to Order (Prices shown on page 10)

Describe clearly the process or operation to be controlled and specify:

- (A) Valve size.
- (B) Type of valve: Direct acting (spring opened), reverse acting (spring closed), or three-way (for mixing or diverting?).
- (C) Valve: Single seat, balanced, stainless steel trimmed, or cast steel. If three-way type specify connections (see table V, page 8).
- (D) Is valve to handle steam, water, gas, oil or brine?
- (E) Pressure (and temperature) of heating or cooling medium to be handled by valve.
- (F) Operating temperature.
- (G) Range of temperature adjustment.
- (H) Type of adjustment: Spring and collar, lever and weight, or dial.
- (I) Is regulator to have dial thermometer mounted on operating head? If so, state difference in elevation between bulb and thermometer head.
- (J) Liquid in which bulb will be immersed, and its concentration.
- (K) Bulb: Copper, monel, nickel, steel, nickel plated, chromium plated, lead sheathed (copper, monel, nickel or steel?), silver soldered (copper or monel?).
- (L) Is bulb to have straight or angle flexible tubing connection?
- (M) Tank bushing: Brass or same metal as bulb.
- (N) Is bulb to be installed horizontally, vertically pointing upward, or vertically pointing downward?
- (O) Length of flexible tubing.
- (P) Any special features.

The Powers Dial Adjustment No. 11 Regulator

Type and Use

This regulator is of the same design and construction as the Powers standard No. 11 Regulator (pages 2 to 4), except that it is provided with dial adjustment to facilitate changing the temperature setting within close limits. The use of different style thermostatic bulbs (see figures 9 to 12 below) also makes the regulator suitable for the control of atmospheric, liquid, wet bulb and dew-point temperatures.

This regulator may also be furnished with an indicating thermometer mounted on the operating head.



Figure 8-841

250° F. and has a range of adjustment of approximately 20°. To obtain this range and to permit ease of adjustment and accurate resetting, a fine pitch screw is used. As six complete turns of the adjustment handle are required to cover the entire temperature band, two scales are provided: a vertical scale (calibrated alphabetically, A to G, inclusive); and a circular dial (marked off in five divisions). After the regulator is installed, it may be calibrated and dial readings recorded with their equivalent temperatures. This makes it possible to easily reset the regulator for any predetermined temperature.

Valve Construction (See page 8)

The regulator is made in valve sizes 1/4-inch, 3/8-inch, 1/2-inch and 3/4-inch only. It is furnished standard with a valve of the double union single seat pattern, and can be had in the direct acting (spring opened), reverse acting (spring closed), or three-way type. In the three-way pattern the bottom port is screwed.

Temperature Range and Adjustment

The regulator is furnished standard for a specified operating temperature between the limits of 60° and

the regulator for any predetermined temperature.

How to Order

In addition to the information called for on page 4, please specify style of bulb (B, D, F or G), and straight or angle flexible tubing connection.

List Price

See Items 15 and 16 in the price list on page 10.

Dimensions

See tables on page 9 and notes below tables.

Thermostatic Bulbs for Use with Dial Adjustment No. 11 Regulator



Figure 9-841 Style B Bulb
For air exposure in rooms, compartments or ducts

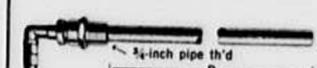


Figure 10-841 Style D Bulb
For use in pipe lines, metal tanks or containers, air washers, etc.

Valve Size, Inches..... 1/4 3/8 1/2 3/4

Style B and D Bulbs:

| | | | | |
|------------------------|-----|-----|-----|-----|
| A (60°-250°), inches | 3/4 | 3/4 | 3/4 | 3/4 |
| B (125°-250°), inches* | 8 | 8 | 13 | 13 |
| B (60°-125°), inches* | 15 | 15 | 22 | 22 |

Style F and G Bulbs:

| | | | | |
|-----------------------|-------|-------|-------|-------|
| A (60°-250°), inches | 1 1/2 | 1 1/2 | 1 1/2 | 1 1/2 |
| B (125°-250°), inches | 8 | 8 | 13 | 13 |
| B (60°-125°), inches | 15 | 15 | 22 | 22 |

*Bulb length (B) will be reduced one-third when bulb diameter (A) is increased to 1-inch. Pipe thread connection on style D bulb will then be 1-inch.



Figure 11-841 Style F Bulb
Similar to style B but with fin construction which increases efficiency



Figure 12-841 Style G Bulb
Similar to style F but with a flange for mounting on duct wall

Any of these bulbs may be had either with straight or angle flexible tubing connection, but the type illustrated will be furnished unless otherwise specified.

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The Powers No. 11 Regulator with Three-Way Valve

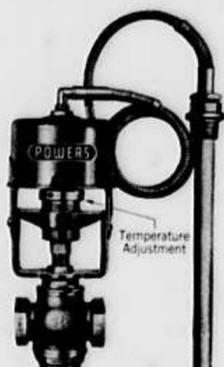


Figure 13-841

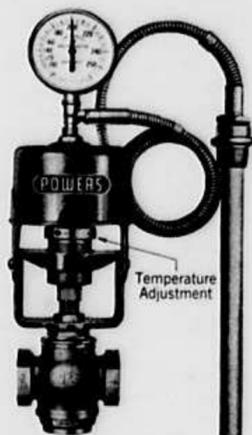


Figure 16-841



Figure 14-841
Three-Way Valve
for Mixing

Figure 15-841
Three-Way Valve
for Diverting

Type and Use

This regulator is designed to mix hot and cold water and to deliver the mixture at a constant temperature. It is used for supplying tempered water to wash sinks and fountains, air washer units, humidifiers, industrial processes, etc. It is also used for mixing or diverting the flow of brine in cooling operations. It is not intended for shower bath use.

Valve Construction (See page 8)

Sizes 1/4-inch to 2-inch, inclusive, have bronze bodies with screwed connections. Sizes 1/4-inch to 1 1/2-inch, inclusive, can also be furnished with union connection side ports and screwed bottom port. Sizes 2 1/2-inch to 4-inch have iron bodies with screwed connection on all three ports, but can be furnished with flanged side and screwed bottom connections, at no extra cost. Valves flanged on all three ports are furnished at extra cost in sizes 2 1/2-inch to 4-inch. Sizes 3/4-inch and up have valve discs of special skirted design to prevent "hunting."

Extention Bonnet

When the regulator is to control at a temperature below 20° F. or if the valve is to be installed where moisture may accumulate and freeze on the packing gland and valve stem, an extension bonnet is recom-

mended. The use of this extension bonnet also permits a neater job of pipe covering.

Temperature Range and Adjustment

The standard regulator is furnished for an operating temperature of 140° F. and has an adjustment range of approximately 20° above and below this point. Any other 40° range between 60° and 250° F. may be had, when specified, at no additional cost. It can be furnished in sizes 1/4-inch to 2 1/2-inch, inclusive, for operation between 40° and 60° F. at extra cost.

Water Pressure

For best results the hot and cold water pressures must be approximately equal. If one pressure is considerably higher than the other, a suitable reducing valve must be used (see Bulletin No. 256).

Cautions

Check valves should always be installed in both supply lines.

To prolong the life of the regulator and prevent temperature variations due to dirt or sediment lodging between the valve disc and seat, self-cleaning strainers should be installed in both supply lines to the regulator (see Page 7).

Whenever possible regulator should be installed in a mixing position in preference to diverting.

List Prices

See Item 6 in the price list on page 10.

Dimensions

See Table VII on page 9 and notes below table.

The Powers No. 11 Indicating Regulator

To properly check the performance of a regulator and to determine the temperature being maintained by it, the bulb of the thermometer must be installed directly adjacent to the thermostatic bulb of the regulator. This requires an additional tapping in the tank, pipe line or vat, and if it is in a location where a standard thermometer cannot easily be read, a more expensive remote bulb thermometer must be used.

To eliminate the expense of the extra tapped opening and special remote bulb thermometer, the Powers No. 11 Indicating Regulator offers as one instrument with a single bulb and tube system a reliable regulator and an easily read dial thermometer.

List Price—See Item 7 in the price list on page 10.

Dimensions—See Table VI on page 9 and notes below tables.

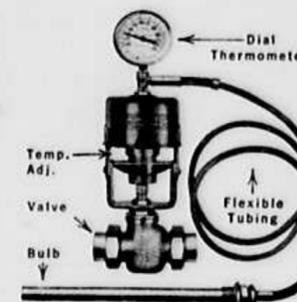


Figure 17-841

The Powers No. 11 Sprinkler Tank Regulator

Heaters used to prevent freezing of the water in sprinkler tanks are of sufficient capacity to maintain a temperature of at least 40° F. in the coldest weather. Consequently during mild weather the water may become badly overheated, causing a great waste of steam. The Powers Sprinkler Tank No. 11 Regulator will keep the temperature of the water at 40° at all times. See figure 29, page 11, for typical application.

This regulator has a bulb incased in a well which permits the removal of the bulb from the tank without shutting off the water and draining the tank. A small hole drilled through the seat web of the valve permits a slight flow of steam at all times, even when the valve is in a closed position.

In ordering, specify valve size, steam pressure, operating temperature, length of flexible tubing and type of heater (single, multiple or radiator type).

List Price—See Item 8 in the price list on page 10.

Dimensions—See Table VI on page 9 and notes below tables.

This regulator is approved by the Factory Mutual Laboratories.

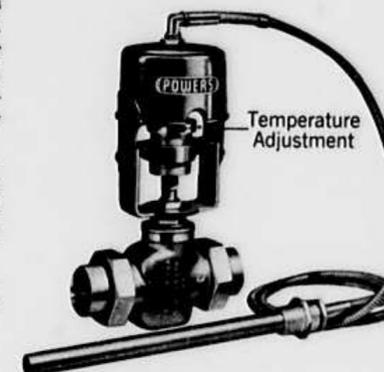


Figure 18-841

The Powers Self-Cleaning Strainer

For use on pipe lines carrying water, air, gas, oil or steam. Efficiently removes entrained dirt, scale and other foreign matter. Can be cleaned by opening blow-off valve without removal of screen. Furnished with either semi-steel or cast bronze body, screwed, suitable for pressures up to 250 lbs. and temperatures up to 500° F. Specify size, type, and fluid to be handled.

LIST PRICES and Shipping Weights

| Item | Pipe size, inches | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 |
|------|-------------------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| 1 | Semi-Steel | \$2.50 | \$2.50 | \$3.00 | \$3.75 | \$4.50 | \$5.25 | \$ 6.00 | \$ 9.00 | \$13.00 | \$17.00 |
| 2 | Cast Bronze | \$3.50 | \$3.50 | \$5.00 | \$6.00 | \$7.00 | \$8.00 | \$12.00 | \$18.00 | | |
| 3 | Shipp'g Wt., lbs. | 1 | 1 | 2 | 3 | 5 | 7 | 10 | 17 | 37 | 45 |

Blow-off valve is not included in above prices.

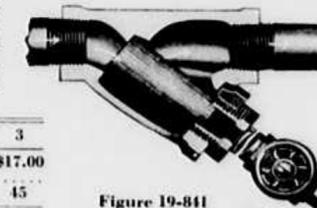


Figure 19-841

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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Table I—Double Seat Balanced Valve Pressure Specifications

| Item | Body | Maximum Pressure | Maximum Temperature |
|------|-------------------------------------|------------------|---------------------|
| 1 | Bronze Body | 250 pounds | 450° F. |
| 2 | Iron Body, Screwed Ends | 250 pounds | 450° F. |
| 3 | Iron Body, Standard Flanged Ends | 125 pounds | 450° F. |
| 4 | Iron Body, Extra Heavy Flanged Ends | 250 pounds | 450° F. |
| 5 | Cast Steel, Screwed Ends | 600 pounds | 750° F. |
| 6 | Cast Steel Flanged, Series 30 | 300 pounds | 750° F. |

Table II—Single Seat and Three-Way Valve Pressure Specifications

| Item | Body | Maximum Pressure | Maximum Temperature |
|------|--------------|------------------|---------------------|
| 1 | Double Union | 250 pounds | 450° F. |
| 2 | Three-Way | 125 pounds | 450° F. |

Table III—Double Seat Valve Bodies Available

| Item | Material | Type of Body and Trim | | Valve Sizes | | | | | | | | | | | | | | |
|------|----------------------|-----------------------|-----------|-------------|-----|-----|---|-------|-------|---|-------|---|-------|---|---|---|---|---|
| | | Ends | Poppet | Seats | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 | 8 | |
| 1 | Bronze | Double Union | Bronze | Bronze | S | S | S | S | S | | | | | | | | | |
| 2 | Bronze | Double Union | St. Steel | St. Steel | X | X | X | X | X | | | | | | | | | |
| 3 | Iron | Screwed | Bronze | Bronze | | | | | S | S | S | | | | | | | |
| 4 | Iron | Screwed | St. Steel | St. Steel | | | | | X | X | X | | | | | | | |
| #5 | Iron | Std. Flanged | Bronze | Bronze | | | | | X | X | X | S | S | S | S | S | S | S |
| #6 | Iron | Std. Flanged | St. Steel | St. Steel | | | | | X | X | X | X | X | X | X | X | X | X |
| #7 | Iron | Ex. Hvy. Flanged | St. Steel | St. Steel | | | | | X | X | X | X | X | X | X | X | X | X |
| 8 | Cast Steel | Screwed | St. Steel | St. Steel | | | | | X | X | X | X | X | X | X | X | X | X |
| #9 | Cast Steel Series 30 | Flanged | St. Steel | St. Steel | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

S—Denotes standard. X—Denotes furnished when specified.
 #Companion flanges, bolts and gaskets furnished when specified at market prices.

Table IV—Single Seat Valve Bodies Available

| Item | Material | Ends | | Disc | Seat | Size of Valve | | | | | | | | | | | | |
|------|----------|-----------|-------------|-----------|------|---------------|-----|-----|-----|---|-------|-------|---|-------|---|-------|---|--|
| | | #D. Union | Composition | | | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | |
| 1 | Bronze | #D. Union | St. Steel | Bronze | S | S | S | S | S | S | S | | | | | | | |
| *2 | Bronze | #D. Union | St. Steel | St. Steel | X | X | X | X | X | X | X | | | | | | | |

#Double Union S—Denotes Standard. X—Denotes furnished when specified.
 *Stainless steel disc will be of the cone pattern.

Table V—Three-Way Valve Bodies Available

| Item | Material | Type of Body and Trim | | | Size of Valve | | | | | | | | | | | | |
|------|----------|-----------------------|-------------|--------|---------------|-----|-----|-----|---|-------|-------|---|-------|---|---|---|--|
| | | Side Ports | Bottom Port | Disc | Seats | 1/4 | 3/8 | 1/2 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 4 | | |
| 1 | Bronze | Union | Screwed | Bronze | Bronze | X | X | X | X | X | X | | | | | | |
| 2 | Bronze | Screwed | Screwed | Bronze | Bronze | S | S | S | S | S | S | | | | | | |
| 3 | Iron | Screwed | Screwed | Bronze | Bronze | | | | | | | | | | | | |
| 4 | Iron | *Flanged | Screwed | Bronze | Bronze | | | | | | | | | S | S | S | |
| 5 | Iron | *Flanged | Flanged | Bronze | Bronze | | | | | | | | | X | X | X | |

S—Denotes standard. X—Denotes furnished when specified.
 *A.S.M.E. Standard drilling for 125 lb. steam pressure.

Principal Dimensions, Shipping Weights and Capacities

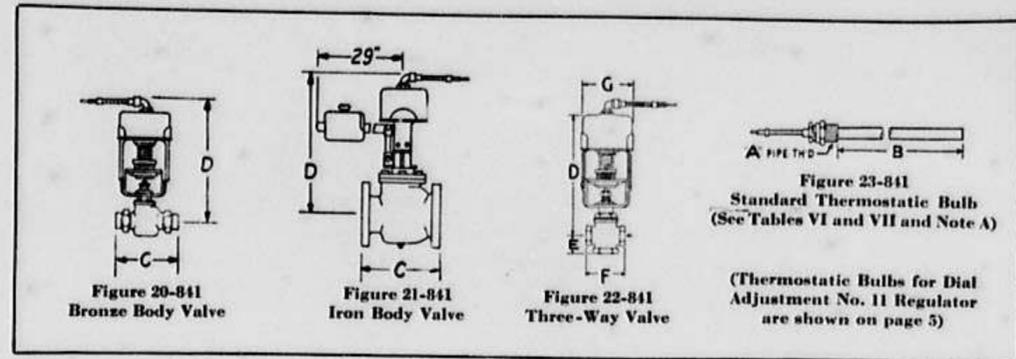


Table VI—Standard No. 11 Regulator (Figures 20, 21 and 23)

| Valve Size, inches | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 3 1/2 | 4 | 5 | 6 | 8 |
|--------------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| A (125°-250°), inches | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| A (60°-125°), inches | 1 | 1 | 1 | 1 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 |
| *B (125°-250°), inches | 8 | 8 | 10 | 10 | 12 | 14 | 14 | 16 | 16 | 18 | 20 | 20 | 24 | 24 | 24 |
| *B (60°-125°), inches | 16 | 16 | 18 | 18 | 12 | 14 | 14 | 16 | 16 | 18 | 20 | 20 | 30 | 30 | 30 |
| C (Double Union), inches | 4 1/8 | 4 1/8 | 5 3/8 | 6 | 6 1/16 | 6 7/8 | 7 3/8 | | | | | | | | |
| C (Screwed), inches | | | | | | | 8 | 9 1/4 | 9 1/4 | | | | | | |
| C (Flanged), inches | | | | | | | 8 | 9 1/8 | 9 1/8 | 10 3/4 | 10 3/4 | 12 | 13 | 16 3/4 | |
| D, inches | 10 7/16 | 10 3/16 | 11 3/8 | 11 3/8 | 11 3/8 | 12 3/8 | 15 1/4 | 15 3/8 | 15 3/8 | 15 3/8 | 15 3/8 | 21 1/2 | 23 | 24 | |
| Standard Tubing, feet | 6 | 6 | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 8 | 10 | 10 | 10 | |
| Shipping Weight, pounds | 20 | 20 | 31 | 33 | 34 | 35 | 36 | 55 | 77 | 82 | 115 | 120 | 182 | 236 | 355 |

Table VII—No. 11 Regulator with Three-Way Valve (Figures 22 and 23)

| Valve Size, inches | 1/4 | 3/8 | 1/2 | 3/4 | 1 | 1 1/4 | 1 1/2 | 2 | 2 1/2 | 3 | 4 |
|-------------------------------------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| Capacity, G. P. M. water at 5 lbs. | 3 | 4 | 13 | 16 | 22 | 36 | 45 | 110 | 160 | 240 | 450 |
| Capacity, G. P. M. water at 20 lbs. | 5 | 7 | 18 | 23 | 39 | 75 | 90 | 220 | 360 | 480 | 880 |
| Capacity, G. P. M. water at 40 lbs. | 7 | 10 | 25 | 45 | 60 | 112 | 150 | 300 | 480 | 610 | 1200 |
| A (125°-250°), inches | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 1/4 | 1 1/4 |
| A (60°-125°), inches | 1 | 1 | 1 | 1 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 |
| B (125°-250°), inches | 8 | 8 | 12 | 12 | 14 | 16 | 16 | 20 | 20 | 24 | 24 |
| B (60°-125°), inches | 16 | 16 | 18 | 12 | 14 | 16 | 16 | 20 | 24 | 30 | 30 |
| D, inches | 9 1/8 | 9 1/8 | 9 5/8 | 9 1/2 | 9 3/8 | 10 | 10 3/8 | 15 3/8 | 15 3/8 | 15 3/8 | 16 1/2 |
| E (Screwed), inches | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 1 1/2 | 2 3/16 | 2 3/16 | | | | |
| E (Flanged), inches | | | | | | | | 6 3/4 | 7 3/8 | 7 3/8 | 8 1/2 |
| F (Double Union), inches | 4 1/8 | 4 1/8 | 5 3/8 | 6 | 6 1/16 | 6 7/8 | 7 3/8 | | | | |
| F (Screwed), inches | 2 7/8 | 2 7/8 | 2 7/8 | 3 3/8 | 3 3/4 | 4 1/4 | 4 1/4 | 5 1/16 | 8 | 8 1/2 | 10 1/2 |
| F (Flanged), inches | | | | | | | | | 9 1/2 | 10 | 12 |
| G, inches | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 1/4 | 6 1/4 | 6 1/4 | 6 1/4 |
| Standard Tubing, feet | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 |
| Shipping Weight, pounds | 21 | 22 | 24 | 25 | 25 | 30 | 30 | 35 | 75 | 85 | 125 |

Notes

- (A) If part of the temperature range extends down into a lower zone, a larger bulb may be necessary.
- (B) Style J bulb has length as shown in tables. Smooth bendable section is 36 inches long.
- (C) Extension bonnet. Add 5 inches to dimension D of standard and three-way regulators.
- (D) Combination regulator and dial thermometer. Add 5 inches to dimension D of standard regulator.
- (E) Sprinkler tank regulator. Bulb is 24 inches long with 1 1/4-inch tank bushing.
- (*) This dimension is as shown in figure 23 and allowance should be made for the make-up of the tank fitting.

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Calculator Chart for Determining Proper Valve Sizes of Powers Hot Water Tank Regulators

| SCALE A | |
|---------------------|------------------|
| Steam Pressure Lbs. | Steam Factor (3) |
| 0 | 4.0 |
| 1 | 3.5 |
| 2 | 3.0 |
| 5 | 2.1 |
| 10 | 1.3 |
| 15 | 1.1 |
| 20 | .90 |
| 25 | .80 |
| 30 | .70 |
| 40 | .55 |
| 50 | .50 |
| 60 | .42 |
| 70 | .38 |
| 80 | .33 |
| 90 | .31 |
| 100 | .28 |
| 125 | .23 |
| 150 | .20 |
| 175 | .17 |
| 200 | .15 |

GIVEN: Gallons of water, temperature and steam pressure.

REQUIRED: Valve size.

FORMULA: (1) × (2) × (3) = (4) (When factor 4 falls between two values in scale B use larger size).

CODE: (1)—Gallons of water to be heated per hour.

(2)—Rise in temperature of water in degrees.

(3)—Steam factor (refer to scale A).

(4)—Valve factor (see scale B for equivalent valve size).

EXAMPLE:

What size valve should be furnished for the following specification?

To heat 700 gallons of water per hour from an initial temperature of 60° F. to a final temperature of 180° F. (actual rise in temperature 120° F.), steam pressure 5 pounds.

(1) (2) (3) (4)
 $700 \times 120 \times 2.10 = 176,000 = 1\frac{1}{2}"$ Bal. Valve.

Note: The above formula is based on ordinary hot water storage tank service. When closer or more accurate control is required, formula valve factor (4) may be increased by not more than 100%. This will ensure faster response and more positive control.

Doubling Factor 4 in above example we have:

$F4 = 176,000 \text{ times } 2 \text{ equals } 352,000$ or a 2" balanced valve
 (nearest scale B valve factor)

| SCALE B | | |
|---------------------------|----------------|-----------------------------|
| Balanced Valve Factor (4) | Valve Size In. | Single Seat Valve Factor(4) |
| | $\frac{3}{8}$ | 12,000 |
| 24,000 | $\frac{1}{2}$ | 24,000 |
| 37,000 | $\frac{3}{4}$ | 44,000 |
| 67,000 | 1 | 80,000 |
| 111,000 | $1\frac{1}{4}$ | 101,000 |
| 179,000 | $1\frac{1}{2}$ | 140,000 |
| 312,000 | 2 | |
| 485,000 | $2\frac{1}{2}$ | |
| 680,000 | 3 | |
| 880,000 | $3\frac{1}{2}$ | |
| 1,110,000 | 4 | |
| 1,700,000 | 5 | |
| 2,300,000 | 6 | |
| 4,100,000 | 8 | |

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A.I.A. File No. 29h3

Bulletin No. 258
April 1940

POWERS MIXING VALVES

for

Mixing Hot and Cold Water and Steam and Water or Other Liquids

Mixing Valves for—

| | |
|---|----------------------------------|
| INDIVIDUAL SHOWER BATHS | Pages 2 to 18 |
| GROUP AND ZONE SHOWERS | Pages 19 to 27 |
| WASH SINKS AND FOUNTAINS | Pages 2, 8, 10, 16 and 19 |
| HOT WATER LINE CONTROL | Pages 19, 30, 31 and 32 |
| INDUSTRIAL PROCESS CONTROL | Pages 2, 8, 10, 16, 19, 29 to 33 |
| HOSPITAL HYDROTHERAPY | Pages 10 to 28 |
| SURGEONS' WASH-UP SINKS | Pages 7, 13 and 18 |
| AUTOMOBILE AND TRUCK WASHING | Pages 2, 8 and 19 |
| CAPACITY FLOW CHARTS | Page 36 |
| <hr/> | |
| INDICATING AND RECORDING THERMOMETERS | Page 34 |
| SELF-CLEANING STRAINER | Page 35 |
| HOT WATER TANK REGULATORS | Page 35 |

THE CANADIAN POWERS REGULATOR CO., LTD.

Over 50 Years of Temperature and Humidity Control
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325 University Tower
Phone Lancaster 4500

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711 Dominion Bank Building
Phone Seymour 8057

WINNIPEG, MAN.
206 Tribune Building
Phone 24-771

A.I.A. File No. 29h3

Indian Affairs. (RG 10, Volume 6428, file 875-5, part 9)

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Powers Safety Shower Mixers

(Pressure Equalizing Valve Type)

With the simple turn of only one handle, this Powers mixer automatically delivers a shower unsurpassed in comfort.

Because of its simplicity, rugged construction, safety and economy, it is used widely in residences, hotels, hospitals, and especially on showers subjected to more than average use, as in clubs, colleges and universities, schools, public baths, institutions and industrial plants. It is unequalled for heavy duty.

Comfort and Safety Features

Pressure Equalizing Valve (Figure 3-440). Without this important feature a Powers mixer would be simply another shower mixer. This valve is a floating piston which controls and equalizes the pressures of hot and cold water before they enter the mixing chamber.

It safeguards the bather from scalding and annoying temperature changes caused by pressure variations in supply lines due to use of nearby showers, faucets and flush valves. It substantially shuts off hot water if cold water supply fails.

Safety Stop Screw (Figure 2-440). This screw can be set to limit the delivery temperature of the shower, thereby preventing the possibility of scalding caused by a

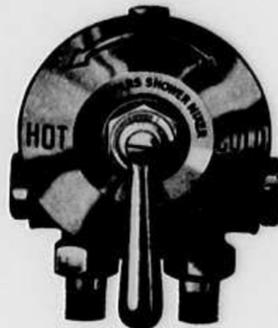


Figure 1-440
Style A Mixer

"dead end" in the hot water supply.

Check Valves (Figure 3-440) are built into both inlets to prevent by-passing or interchanging of hot and cold water.

Economies—While the first cost of Powers Mixers is higher than that of hand valves and most mechanical mixers, their many advantages make them a much more profitable investment.

By providing safe showers, they prevent damaging publicity and expensive lawsuits caused by accidents to bathers injured in ordinary showers.

No time or water is wasted while bathers wait for showers to become hot or cool off to the right temperature.

Extra large supply pipes, often used to minimize dangerous pressure changes, are unnecessary when Powers Mixers are used.

Construction—Powers Mixers are ruggedly built of bronze with all interior working parts chromium plated to resist corrosion and wear. They have no thermostatic coils, no diaphragms, and no composition valve seat washers on hot water inlet to wear out and need frequent replacement.

Their sturdy all metal construction insures a durability not equaled by any other mixer.

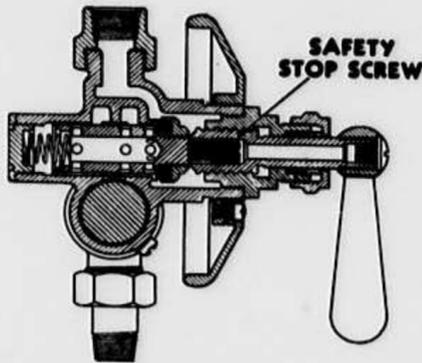


Figure 2-440

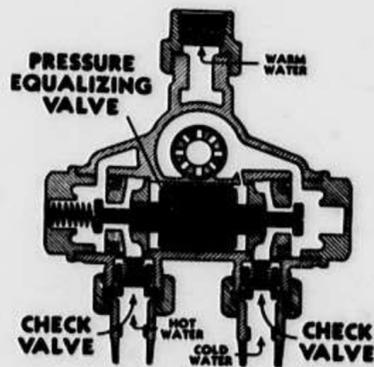
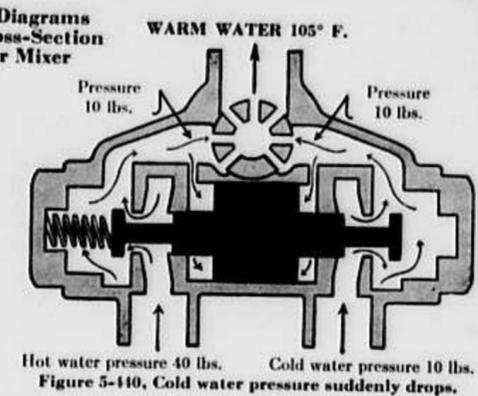
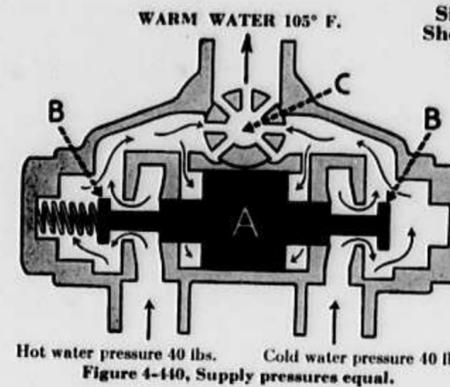


Figure 3-440

How the Pressure Equalizing Valve Works



Pressure Equalizing Valve A is a floating piston carrying on each end valves, BB, which control the admission of the hot and cold water to mixing chamber C.

To illustrate the operation of this valve let us assume that the pressure of hot and cold water supply is 40 lbs., and that the handle of the mixer has been turned to the position where the temperature of mixed water delivered to shower is 105° F.

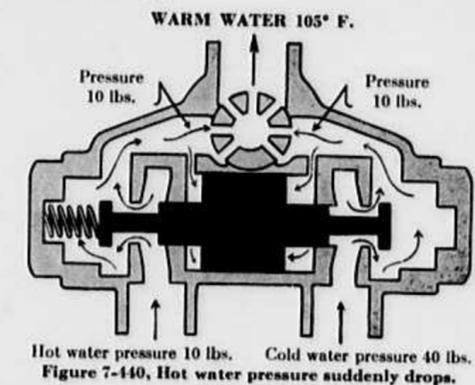
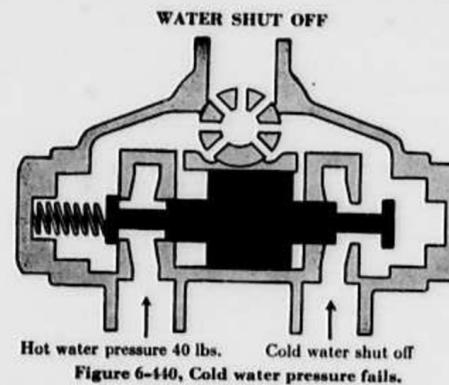
As long as the pressures of both hot and cold water supply are equal, the piston will occupy the neutral position illustrated above.

If pressure of cold water suddenly drops to 10 lbs., as shown in Figure 5-440, due to use of nearby showers or flush valves, the preponderance of hot water pressure instantly moves the piston sufficiently so that valves BB, by

proportionately restricting the higher and favoring the lower pressure, maintain in the mixing chamber C the perfect balance of pressures necessary to maintain the temperature at 105° F.

Complete failure of either supply substantially cuts off the other. See Figure 6-440 which illustrates position of piston with complete failure of cold water supply. Spring shown is non-corrosive and is used only as an additional safeguard to insure instant closing of hot water valve when cold water supply fails.

Figure 7-440 shows position of piston with hot water supply suddenly reduced to 10 lbs. Because pressures of hot and cold water flowing to the mixing chambers are perfectly balanced, temperature of shower remains constant at 105° F.



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POOR-COPY

Style C for Concealed Piping Accessible only from the Front



Figure 17-440
Style C, 1/2-inch size



Figure 18-440—Style C,
Octagonal, 1/2-inch size



Figure 19-440
Style C, 3/4-inch size



Figure 20-440—Style C,
Octagonal, 3/4-inch size

This style has a metal box to be inserted in wall flush with surface, to receive pipe connections and mixer. The dial covers opening in wall, and when removed makes mixer accessible. Has chromium plated finish, with exposed parts highly polished. For thin partitions, the 1/2-inch mixer only can be furnished with a shell 3 inches deep.

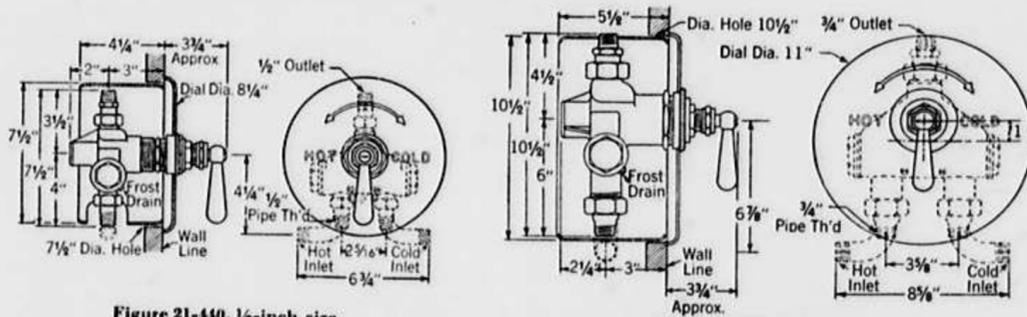
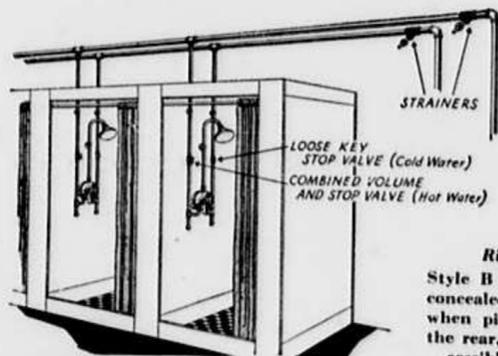


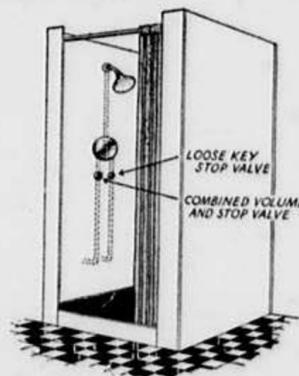
Figure 21-440, 1/2-inch size

Figure 22-440, 3/4-inch size

Typical Installations of Safety Shower Mixers



Left, Figure 23-440
Style A Mixers with
wall flanges and ex-
posed piping.



Right, Figure 24-440
Style B or Style C Mixer with
concealed piping. Style B is used
when piping is accessible from
the rear, Style C when it is ac-
cessible only from the front.

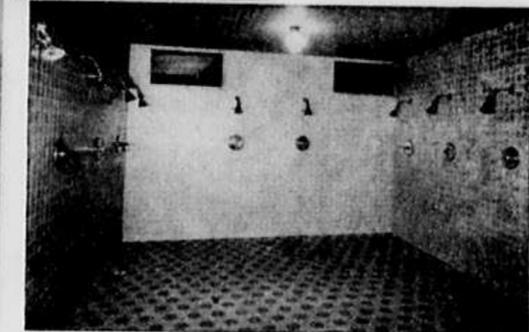
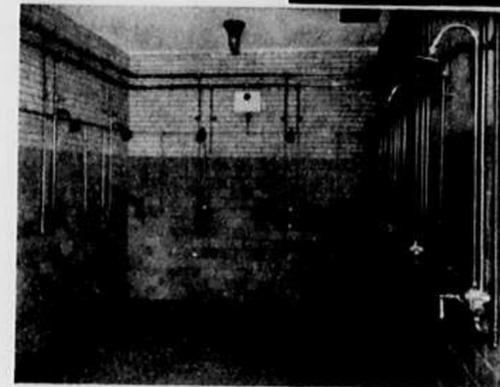
Typical Installations of Powers Safety Mixers

Below, Figure 26-440
Powers Style A safety mix-
ers in gymnasium shower
room.



Left, Figure 25-440
Powers Style A safety mixer
supplying water to shampoo
fixture.

Below, Figure 27-440
Powers Style C safety mixers
in dormitory shower room.



Powers Knee-Operated Safety Mixer for Surgeons' Wash-Up Sinks

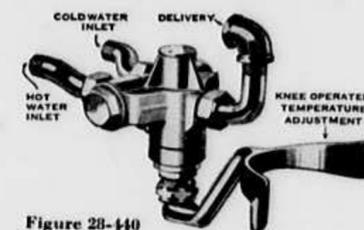


Figure 28-440

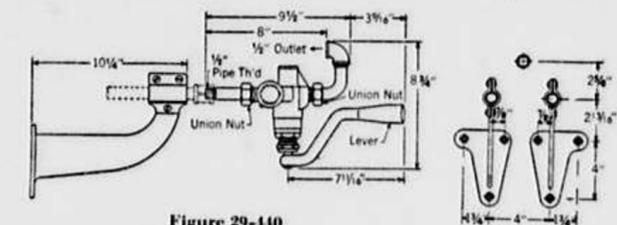


Figure 29-440

The Powers Knee-Operated Safety Mixer is designed to mix hot and cold water and deliver a safe supply of warm water for surgeons' and dentists' wash-up purposes. The two safety features, a pressure equalizing valve and a safety stop, described on pages 2 and 3, are included in its construction. The mixer will maintain desired temperature regardless of pressure changes in supply lines.

Mixer should be installed with a loose key stop valve in its cold water supply line and a combined vol-

ume and stop valve in its hot water supply line. The force of the delivery flow may be regulated by this combined volume and stop valve.

Mixer is furnished in chromium plated finish with machined surfaces polished. The bronze wall mounting brackets are optional and may be had in white plated or chromium plated finish.

List Prices—See Items 6 to 8 in price list on page 4.

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POOR-COPY

Powers Style D Steam and Water Mixer

The Powers Style D Steam and Water Mixer is recommended for use where it is not practical to install a steam heated hot water storage tank and regulator. It will deliver, economically and without noise, water at a reasonably constant temperature for showers; wash sinks and wash fountains; dishwashing machines; barrell, can and car washing; and industrial processes.

The 1/2-inch mixer is intended to furnish tempered water for only one shower or fixture. No shut-off valve or volume adjustment should be placed between the mixer and the shower head or outlet. When used in this manner, the steam and water pressures may be anything between 10 and 100 pounds.

The 3/4-inch mixer may also be used for furnishing tempered water to wash-up sinks, provided there is a cold water connection at each fixture to permit mixing cold water with the tempered water from the mixer. When used in this manner, the handle of the mixer is set at the desired temperature and left permanently in this position. For this type of installation the steam pressure should not exceed the cold water pressure; if it does, a Powers pressure reducing valve (see bulletin No. 256) should be installed in the steam supply line to reduce the steam pressure and maintain it at the normal water pressure.

The 3/4-inch and 1-inch mixers are intended for industrial process work, and should generally be operated at not less than 50% of their rated capacity.

The Style D mixer will not operate satisfactorily if either the steam or water pressure is less than 10 pounds or more than 100 pounds.

Safety Features—The two safety features described on pages 2 and 3—a pressure equalizing valve and a safety stop—are included in the construction of this mixer. The mixer will maintain whatever temperature is desired regardless of pressure changes in the supply lines. Failure of cold water substantially shuts off the delivery.

Construction—The mixer is ruggedly built of bronze with all interior working parts chromium plated to resist wear and corrosion. Dial and handle are heavily chromium plated. Handle is provided with cooling fins. Wall flange can be supplied for mounting mixer to wall.

Connections—Inlets have standard male elbow connections with unions. Outlet has female connection without union; male connection with union at outlet can be furnished when specified.



Figure 30-440
Style D Mixer

Temperature Range—Mixer can be adjusted to maintain any desired temperature between that of the incoming water and 200° F. Delivery volume decreases proportionately as temperature rises.

Check Valves—The mixer has built-in check valves to prevent steam and cold water from interchanging. However, as an extra precaution, it is recommended that check valves be installed in both steam and water supply lines.

Shut-Off Valve—The mixer has a built-in shut-off valve.

Strainers—To protect shower mixers and heads from dirt, grit, scale, etc., Powers self-cleaning strainers (page 35) should be installed in steam and cold water supply lines or mains. We can also furnish chromium plated brass strainer tees (see roughing-in dimensions and price list).

CAPACITIES

(Based on delivery temperature of 100° F.)

| | | | | |
|---|-------|--------|----|--------|
| Minimum steam or water pressure, pounds . . . | 10 | 25 | 45 | 60 |
| 1/2-inch mixer, gallons per minute | 2 1/2 | 5 | 7 | 8 |
| 3/4-inch mixer, gallons per minute | 5 | 9 1/2 | 14 | 16 1/2 |
| 1-inch mixer, gallons per minute | 7 | 13 1/2 | 19 | 22 |

(Based on steam and water at 45 pounds pressure and water at 60° F.)

| | | | | | | |
|--|-------|--------|--------|------|-------|------|
| Delivery temperature | 100° | 120° | 140° | 160° | 180° | 200° |
| 1/2-inch mixer, gals. per min. | 6 1/2 | 5 | 3 1/2 | 3 | 2 1/2 | 2 |
| 3/4-inch mixer, gals. per min. | 14 | 11 1/2 | 9 1/2 | 8 | 6 1/2 | 5 |
| 1-inch mixer, gals. per min. | 19 | 16 | 13 1/2 | 11 | 9 1/2 | 8 |

NOTE: Mixing steam with hot water at 140° F. increases delivery volume approximately 75%.

For complete capacity data see page 36.

How to Order—State proposed use and specify:

- (A) Size of mixer.
- (B) Maximum temperature required.
- (C) Pressures of steam and water.

LIST PRICES and Shipping Weights

| Item | Size, Inches | 1/2 | 3/4 | 1 |
|------|--|---------|----------|----------|
| 1 | Style D Steam and Water Mixer | \$52.50 | \$105.00 | \$132.25 |
| 2 | Wall Flange for Style D Mixer | \$ 3.15 | \$ 6.30 | \$ 6.30 |
| 3 | Strainer Tees, per pair | \$ 5.25 | \$ 6.30 | \$ 8.40 |
| 4 | Shipping weight of Mixer, lbs. | 13 | 25 | 27 |
| 5 | Shipping weight of Wall Flange, lbs. | 2 | 4 | 4 |
| 6 | Shipping weight of Strainer Tees, lbs. | 1 | 2 | 3 |

Roughing-In Dimensions

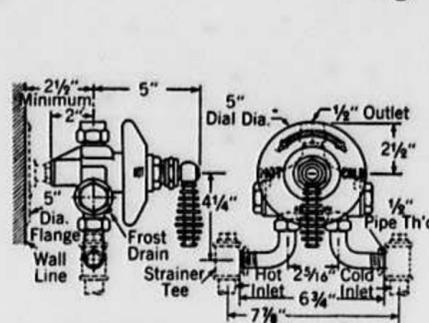


Figure 31-440, 1/2-Inch Style D Mixer

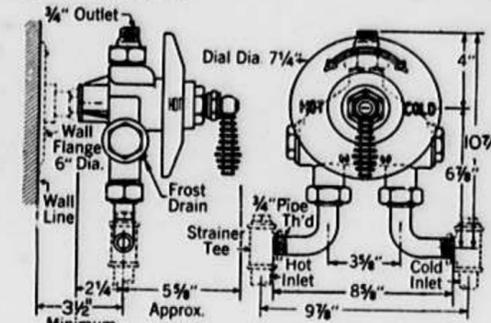


Figure 32-440-A, 3/4-Inch Style D Mixer

Has chromium plated finish, with all machined surfaces highly polished. If wall flange is required (see Item 2 in price list), specify distance from center of inlets to wall, otherwise the 1/2-inch mixer will be furnished with the 2 1/2-inch minimum dimension and the 3/4-inch and

1-inch mixers with the 3 1/2-inch minimum dimension. All dimensions of 1-inch mixer are same as 3/4-inch except that inlets and outlets are 1-inch; and when furnished with strainer tees, pipe centers will be 10 1/2-inches.

Typical Installations

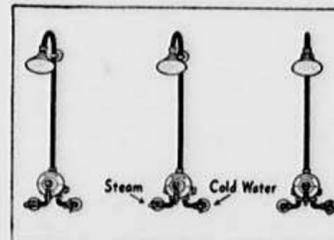


Figure 33-440
Standard shower installation

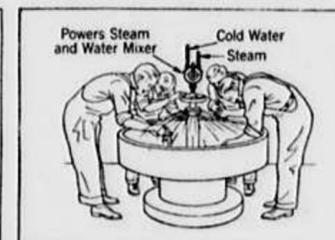


Figure 34-440
Tempered water for washfountains

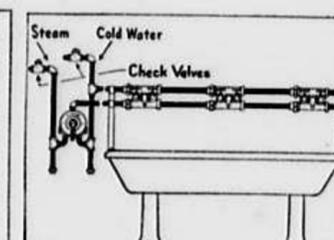


Figure 35-440*
Tempered water for hand washing



Figure 36-440
Car washing



Figure 37-440
Washing cans



Figure 38-440—Mixing steam and hot water for dishwashing

*If the steam pressure is higher than the water pressure, a reducing valve must be used (see our Bulletin No. 256).

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Powers Type M Thermostatic Water Mixers

This Powers Thermostatic Water Mixer is made in two sizes: one with a delivery capacity of 6 gallons per minute, and the other 10 gallons. Both sizes are made in two styles: M-E for exposed piping, and M-C for concealed piping.

The mixer controls thermostatically the mixing of hot and cold water and may be used to deliver tempered water for shower baths, baby baths, hydrotherapeutic baths, wash-up sinks, photographic developing and printing tanks, industrial processes, etc.

Safety Features—The temperature of the mixed water remains constant regardless of temperature or pressure changes in the supply lines, and failure of either supply shuts off the delivery flow.

Restricting the delivery of an M-E-6 or M-C-6 mixer to a minimum flow of one gallon per minute is possible without a noticeable change in the delivery temperature.

Temperature Range—The standard mixer will deliver tempered water at any desired point between cold water and 115° F. It can be furnished for a higher operating temperature (maximum 140°) when ordered.

Construction—The thermostat is of the bimetallic type, constructed of rust-proof materials, and has a reserve of power many times that required for normal operation. It is very rugged, yet extremely sensitive; and because of its unusual form and heavy construction, it responds instantly to temperature changes in the supply lines. Upon removal of the cover plate the three units comprising the mixer working parts are easily accessible for inspection or cleaning.

The mixer is made of bronze, with stainless steel mixing valves. The valve housing and its seats are heavily chromium plated to resist wear and corrosion. The mixer can be furnished in rough bronze or polished chromium plated finish.

The standard mixer is designed for upward delivery with the outlet at the top. Bottom outlet for downward delivery, or both top and bottom outlets, can be supplied if specified. Both inlets and outlets are tapped with 1/2-inch pipe thread, but mixers with 3/4-inch outlets or 3/4-inch inlets and outlets can be furnished if specified.

Check Valves—The M-E-6 and M-C-6 mixers have built-in check valves which are easily accessible for inspection, cleaning or replacement. The M-E-10 and M-C-10 mixers do not have built-in check valves.



Figure 39-440
Style M-E-6 Mixer

Volume Control Shut-Off Valve—These mixers do not have a built-in shut-off valve. To shut off, restrict or vary the delivery from the mixer, a separate volume control shut-off valve is required (see page 12, and price list on page 11).

Strainers—These mixers have coarse mesh built-in strainers. For additional protection for the mixer and shower head separate strainers of finer mesh and larger screen area are recommended. For exposed installation and to match the mixers, Powers union strainer tees or union check valve strainer tees can be furnished (see page 14 and price list on page 11). As an alternate, Powers self-cleaning strainers (page 35) may be installed in hot and cold water lines or mains.

(page 35)

Union Street Ells can be furnished for the style M-E-6 and M-E-10 mixers (see page 14 and price list on page 11).

Special Features which can be furnished without extra charge are octagonal dial and handle for the M-C mixer (page 12); prison type handle (page 14); removable temperature adjustment key (page 14). Prices for special finishes on request.

CAPACITIES

(Based on delivery temperature of 100° F.)

| | | | | |
|--|-------|-------|-------|--------|
| Minimum hot or cold water pressure, lbs. | 10 | 25 | 45 | 60 |
| M-E-6 and M-C-6, gallons per minute | 3 | 4 1/2 | 6 1/2 | 7 1/2 |
| M-E-10 and M-C-10, gallons per minute | 4 1/2 | 7 | 10 | 11 1/2 |

Note: For complete capacity data see page 36.

How to Order—State proposed use and specify:

- (A) Style of mixer: M-E-6 or M-E-10 for exposed piping, M-C-6 or M-C-10 for concealed piping, knee-operated, or elbow operated.
- (B) Rough bronze or chromium plated.
- (C) 1/2-Inch (standard) or 3/4-inch inlets.
- (D) 1/2-Inch (standard) or 3/4-inch outlet.
- (E) Top (standard) or bottom outlet, or both.
- (F) Is a volume control shut-off valve to be included?
- (G) Any special features required.
- (H) Normal and maximum temperatures required.
- (I) Temperature and pressure of hot water supply.
- (J) Temperature and pressure of cold water supply.

Unless otherwise specified, a chromium plated mixer with a maximum delivery temperature of 115° F. and with 1/2-inch inlets and 1/2-inch top outlet but less volume control shut-off valve will be furnished.

LIST PRICES and Shipping Weights

| Item | Description | Rough Bronze | Chromium Plated | Shipping Weight, Lbs. |
|------|--|--------------|-----------------|-----------------------|
| 1 | Style M-E-6 thermostatic water mixer for exposed piping (less shut-off valve), 1/2-inch inlets and outlet | \$42.50 | \$45.00 | 11 |
| 2 | Same as Item 1 but with 3/4-inch outlet or 3/4-inch inlets and outlet | 45.00 | 47.50 | 11 |
| 3 | Style M-E-10 thermostatic water mixer for exposed piping (less shut-off valve), 1/2-inch inlets and outlet | 53.75 | 56.25 | 12 |
| 4 | Same as Item 3 but with 3/4-inch outlet or 3/4-inch inlets and outlet | 56.25 | 58.75 | 12 |
| 5 | For 1/2-inch volume control shut-off valve for style M-E mixer Add | \$ 4.50 | \$ 5.00 | 2 |
| 6 | For 3/4-inch volume control shut-off valve for style M-E mixer Add | 6.25 | 7.50 | 3 |
| 7 | For wall mounting flange Add | 5.60 | 6.25 | 5 |
| 8 | For 1/2-inch union street ells, per pair Add | 5.60 | 6.25 | 2 |
| 9 | For 3/4-inch union street ells, per pair Add | 6.90 | 7.50 | 3 |
| 10 | For 1/2-inch union strainer tees, per pair Add | 10.60 | 11.25 | 2 |
| 11 | For 3/4-inch union strainer tees, per pair Add | 11.90 | 12.50 | 3 |
| 12 | For 1/2-inch union check valve strainer tees, per pair Add | 11.90 | 12.50 | 2 |
| 13 | For 3/4-inch union check valve strainer tees, per pair Add | 13.25 | 13.75 | 3 |
| 14 | Style M-C-6 thermostatic water mixer for concealed piping (less shut-off valve), 1/2-inch inlets and outlet | \$47.50 | \$50.00 | 13 |
| 15 | Same as Item 14 but with 3/4-inch outlet or 3/4-inch inlets and outlet | 50.00 | 52.50 | 13 |
| 16 | Style M-C-10 thermostatic water mixer for concealed piping (less shut-off valve), 1/2-inch inlets and outlet | 60.00 | 62.50 | 14 |
| 17 | Same as Item 16 but with 3/4-inch outlet or 3/4-inch inlets and outlet | 62.50 | 65.00 | 14 |
| 18 | For 1/2-inch volume control shut-off valve for style M-C mixer Add | 5.60 | 6.25 | 3 |
| 19 | For 3/4-inch volume control shut-off valve for style M-C mixer Add | 7.50 | 8.75 | 4 |

Simple Construction

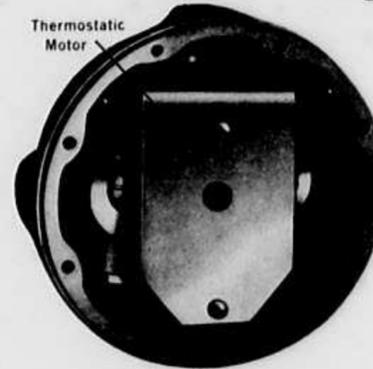


Figure 40-440
Mixer with thermostat in position.

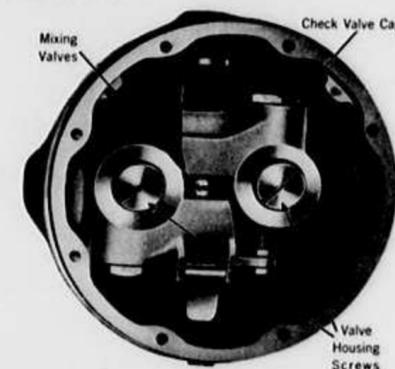


Figure 41-440
Mixer with cover and thermostat removed.

Note the simple, rugged construction and the small number of parts. The large bimetallic thermostatic motor insures a reserve of power many times that required for normal operation. The valve assembly housing contains the stainless steel mixing valves, strainers and check

valves, and may be lifted out as a unit by removal of the two valve housing screws. Due to the construction used, the mixer may be permanently installed, either exposed or concealed, as all parts may be easily removed for inspection, cleaning or repair.

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Union Street Ells for Powers Style M-E and T-E Mixers

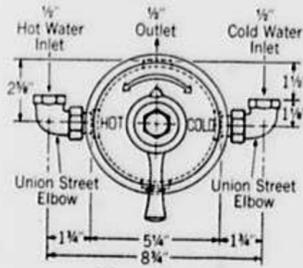


Figure 57-440
1/2-Inch Union Street Ells

Union street ells can be furnished in the 1/2-inch size for the style M-E and T-E mixers, and in the 3/4-inch size for the M-E mixer. The T-E mixer is not built with 3/4-inch inlets.

List prices are shown on pages 11 and 16.

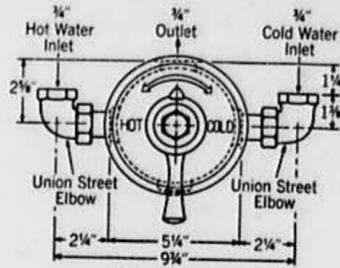


Figure 58-440
3/4-Inch Union Street Ells

Union Strainer Tees for Powers Style M-E and T-E Mixers

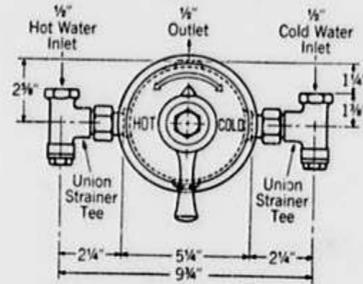


Figure 59-440
1/2-Inch Union Strainer Tees

Union strainer tees can be furnished in the 1/2-inch size for the style M-E and T-E mixers, and in the 3/4-inch size for the M-E mixer. The T-E mixer is not built with

3/4-inch inlets. Union strainer tees can be supplied with or without built-in check valves. List prices are shown on pages 11 and 16.

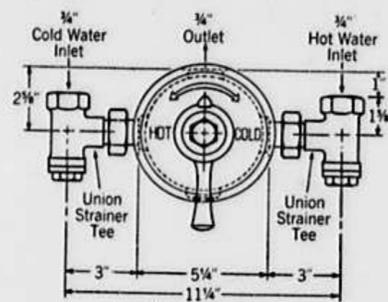


Figure 60-440
3/4-Inch Union Strainer Tees

Union strainer tees can be furnished in the 1/2-inch size for the style M-E and T-E mixers, and in the 3/4-inch size for the M-E mixer. The T-E mixer is not built with

Prison Type Handle

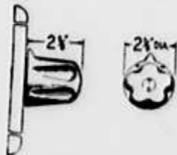


Figure 61-440

The prison type handle can be supplied without extra charge for the type M and T mixers. The handle is secured to the mixer with a flush head retaining screw which requires a special wrench to remove it.

Temperature Adjustment Key

A removable temperature adjustment key can be supplied without extra charge for the type M and T mixers. This prevents unauthorized changing of the temperature setting of the mixer.

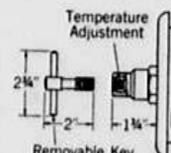


Figure 62-440

All dimensions shown on this page are approximate.

Typical Installations of Type M and T Mixers



Left, Figure 63-440
Powers Thermostatic Water Mixer supplying warm water for infant bath.



Right, Figure 64-440
Powers Thermostatic Water Mixer supplying tempered water to X-ray plate developer.



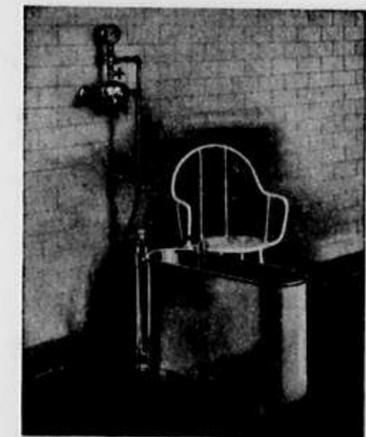
Above left, Figure 65-440
Powers Thermostatic Water Mixer supplying warm water for delivery bath.



Above right, Figure 66-440
Powers Thermostatic Water Mixer supplying warm water to shampoo fixture.



Left, Figure 67-440
Powers Knee-Operated Thermostatic Mixer on surgeons' washup sink.



Right, Figure 68-440
Powers Thermostatic Water Mixer supplying warm water for leg bath.

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Powers Type T Thermostatic Water Mixers

This Powers heavy-duty Thermostatic Water Mixer is furnished in two styles: T-E for exposed piping, and T-C for concealed piping. It controls thermostatically the mixing of hot and cold water, and may be used to deliver tempered water for shower and tub baths, baby baths, hydrotherapeutic baths, wash-up sinks and fountains, photographic developing and printing tanks, industrial processes, etc.

Safety Features—The temperature of the mixed water remains constant regardless of temperature or pressure changes in the supply lines, and failure of either supply shuts off the delivery flow.

Restriction of the delivery to a minimum flow of two gallons per minute is possible without a noticeable change in the delivery temperature.

Temperature Range—The standard mixer will deliver tempered water at any desired point between cold water and 115° F. It can be furnished for a higher operating temperature (maximum 140° F.) when ordered.

Construction—The thermostatic element in this mixer is of the same rugged type as that used successfully for over twenty years in the Powers Thermostatic Water Controller.

The mixer body and internal parts are bronze, with mixing valve seats chromium plated to resist wear and corrosion. The mixer can be furnished in rough bronze and in polished chromium plated finish.

The standard mixer has top and bottom outlets with all openings tapped for 1/2-inch female pipe thread. It can be furnished with outlet connections tapped for 3/4-inch pipe when specified.

All parts of the mixer are accessible upon removal of the cover plate.

Check Valves—Mixers have built-in check valves which are easily accessible for inspection, cleaning or replacement.

Volume Control Shut-Off Valve—These mixers do not have a built-in shut-off valve. To shut off, restrict or vary the delivery from mixer, a separate volume control shut-off valve is required (see page 17, and price list below).

Strainers—These mixers have coarse mesh built-in strainers. For additional protection for the mixer and shower head separate strainers of finer mesh and larger screen area are recommended. For exposed installation and to match the mixers, Powers union strainer tees or union check valve strainer tees can be furnished (see page 14, and price list below). Powers self-cleaning strainers (page 35) may be installed in hot and cold water lines or mains.

Union Street Ells can be furnished for the style T-E mixer (see page 14 and price list below).

Special Features which can be furnished without extra charge are octagonal dial and handle for the T-C mixer (page 17); prison handle (page 14); removable temperature adjustment key (page 14). Prices for special finishes on request.

CAPACITIES

(Based on delivery temperature of 100° F.)

| | | | | |
|---|----|----|-------|----|
| Minimum hot or cold water pressure, lbs. | 10 | 25 | 45 | 60 |
| Maximum delivery, gallons per minute. | 4 | 7 | 9 1/2 | 11 |

NOTE: For complete capacity data see page 36.

How to Order—State proposed use and specify:

- (A) Style of mixer: T-E for exposed piping, T-C for concealed piping, knee operated, or elbow operated.
- (B) Rough bronze or chromium plated finish.
- (C) 1/2-Inch (standard) or 3/4-inch outlet.
- (D) Top (standard) or bottom outlet, or both.
- (E) Is a volume control shut-off valve to be included?
- (F) Any special features required.
- (G) Normal and maximum temperatures required.
- (H) Temperature and pressure of hot water supply.
- (I) Temperature and pressure of cold water supply.

Unless otherwise specified, a chromium plated mixer with a maximum delivery temperature of 115° F. and with 1/2-inch outlets but less volume control shut-off valve will be furnished.

LIST PRICES and Shipping Weights

| Item | Description | Rough Bronze | Chromium Plated | Shipping Weight, Lbs. |
|------|--|--------------|-----------------|-----------------------|
| 1 | 1/2-Inch style T-E thermostatic water mixer for exposed piping (less shut-off valve) | \$68.75 | \$75.00 | 16 |
| 2 | Same as Item 1 but with 3/4-inch outlet | 71.25 | 77.50 | 16 |
| 3 | For 1/2-inch volume control shut-off valve for style T-E mixer | 4.50 | 5.00 | 2 |
| 4 | For 3/4-inch volume control shut-off valve for style T-E mixer | 6.25 | 7.50 | 3 |
| 5 | For 1/2-inch union street ell for style T-E mixer | 5.60 | 6.25 | 5 |
| 6 | For 1/2-inch union strainer tees for style T-E mixer, per pair | 5.60 | 6.25 | 2 |
| 7 | For 1/2-inch union check valve strainer tees for style T-E mixer, per pair | 10.60 | 11.25 | 2 |
| 8 | For 1/2-inch union check valve strainer tees for style T-E mixer, per pair | 11.90 | 12.50 | 2 |
| 9 | 1/2-Inch style T-C thermostatic water mixer for concealed piping (less shut-off valve) | \$75.00 | \$81.25 | 16 |
| 10 | Same as Item 9 but with 3/4-inch outlet | 77.50 | 83.75 | 16 |
| 11 | For 1/2-inch volume control shut-off valve for style T-C mixer | 5.60 | 6.25 | 3 |
| 12 | For 3/4-inch volume control shut-off valve for style T-C mixer | 7.50 | 8.75 | 4 |
| 13 | Style T-E thermostatic water mixer with knee or elbow operated volume control shut-off lever and blade temperature adjustment lever, and complete with union strainer tees (see page 18) | \$93.75 | \$100.00 | 35 |
| 14 | Wall mounting brackets for knee or elbow operated mixer, per pair | 17.50 | 22.50 | 10 |

Roughing-In Dimensions

Style T-E for Exposed Piping

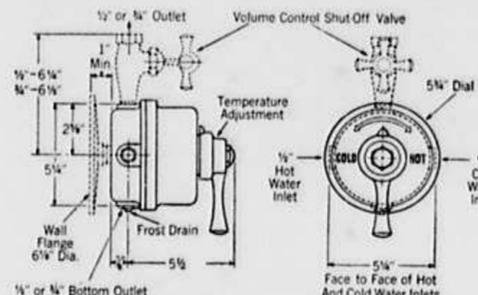


Figure 69-440

Furnished standard with 1/2-inch inlets and 1/2-inch top and bottom outlets. Can also be had with 3/4-inch outlets. Supplied with or without volume control shut-off valve. Made entirely of non-ferrous metal, in rough bronze or polished chromium plated finish.



Figure 70-440

Style T-C for Concealed Piping

Furnished standard with 1/2-inch inlets and 1/2-inch top and bottom outlets. Can also be had with 3/4-inch outlets. Supplied with or without volume control shut-off valve. Made entirely of non-ferrous metal, in rough bronze or polished chromium plated finish. Round dial is standard but octagonal dial and handle are available at the same prices.



Left, Figure 71-440 Standard Style T-C



Right, Figure 72-440 Octagonal Style T-C

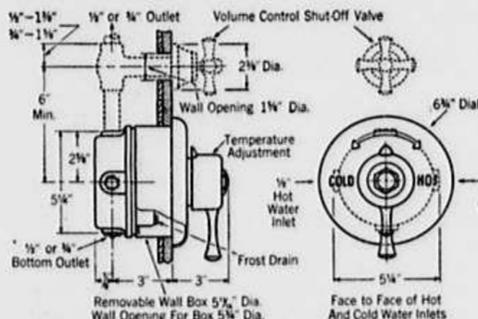


Figure 73-440

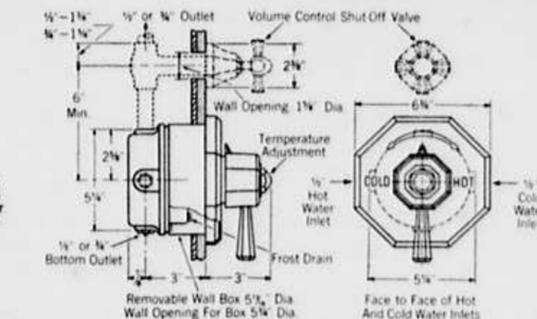


Figure 74-440

All dimensions shown on this page are approximate.

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