

RE: OTC-Kunkle Maintenance Building
Report
Drinking Water Program
Williams County
PWS ID: OH8640112



Ohio Turnpike and Infrastructure Commission

Christopher A. Matta, P.E.
Maintenance Engineer

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February 10, 2017

RECEIVED

FEB 16 2017

OHIO E.P.A.
N.W.D.O.

Ohio Environmental Protection Agency
Division of Drinking & Ground Water
Northwest District Office
347 N. Dunbridge Road.
Bowling Green, Ohio 43402

Attention: Justin Bowerman

Subject: Mapping Lead Plumbing & Fixtures
Kunkle Maintenance Building
PWS ID: OH8640112

Dear Mr. Bowerman:

- * Attached is the Commission's submittal for Mapping Lead Plumbing and Fixtures. Included in the submittal are available mapping, Contract Documents, current material specifications and two (2) of the most recent report submittals for Lead & Copper testing. As indicated in the cover page of the attached report, the Commission remodeled its PWS facility in 1992 and, as part of the project, replaced the water supply system in the building.

Please contact this office if there are any further questions concerning this matter.

Sincerely,

Christopher A. Matta, P.E.
Maintenance Engineer

* Attachment

cc: Ohio Department of Health, Lead Program 6th Floor
Ohio Department of Job and Family Services (ODJFS)

File: F:\Maintenance\BEREA\Environmental\Drinking Water\2017\Kunkle Lead Mapping\Lead-Map Cover.docx

General Site Information

Site:	Ohio Turnpike – Kunkle Maintenance Building
PWS ID:	OH8640112
Site Address:	13643 County Road 17, Pioneer, Ohio 43554
County:	Williams
Water Service Installation Year:	1992 (Capital Improvement Project #56-92-01)
Status of Piping Materials:	Non-lead piping throughout the building

Description of Attachments

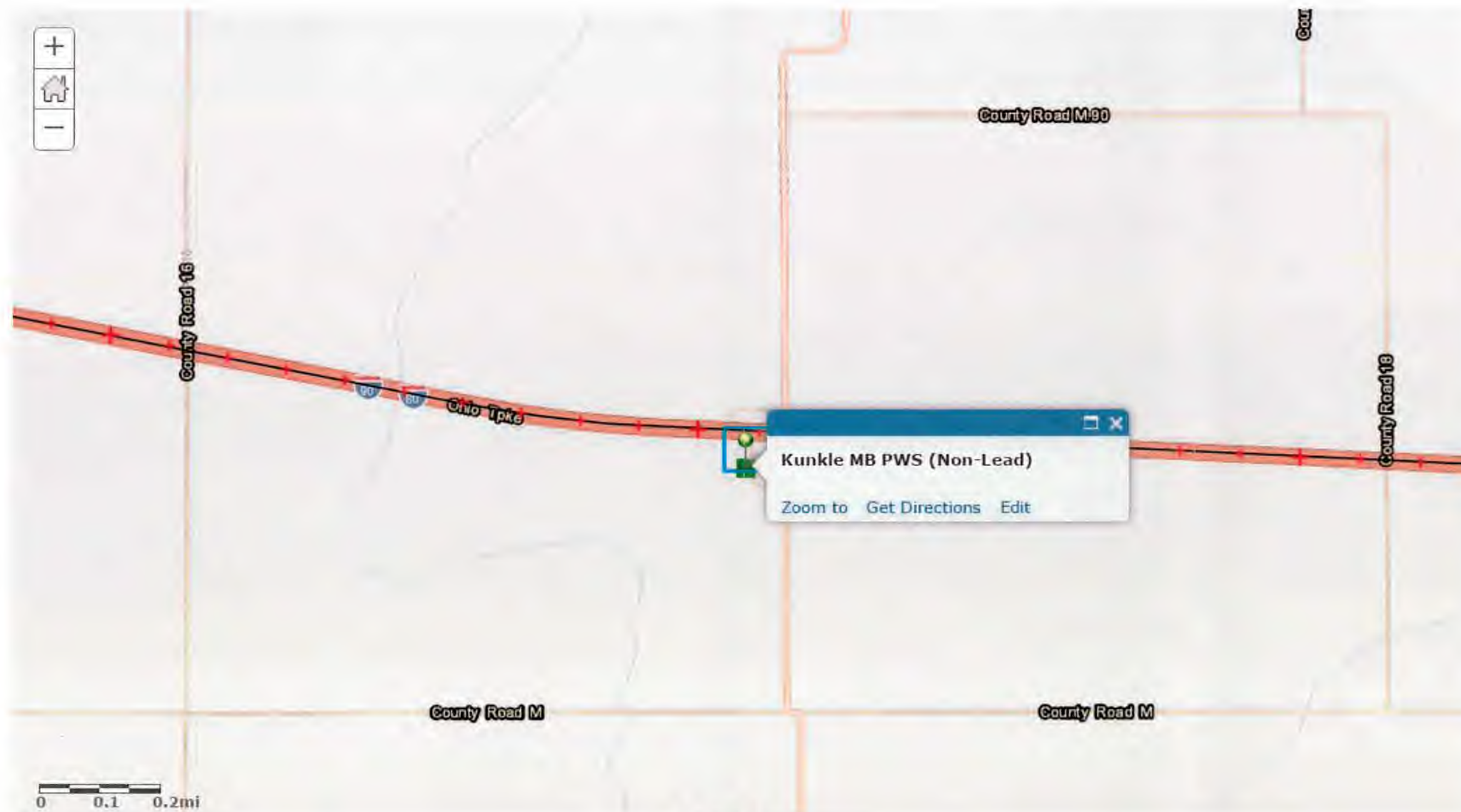
Title	Description
Site Map	Map identifying the location of the PWS site in relation to the local roads
Topographic Map	Topographic map identifying the location of the PWS in relation to the terrain, local water bodies and local roads
Aerial Photo	Aerial photo identifying the building site that contains water supply piping
Project Plans	Demolition and construction plans identifying the piping that was to be removed (entire system) and what was to be installed (entire system)
Water System Shop Drawing Submittals	Shop drawing submittals of all the equipment and supplies required for the project
Current Material Specifications	Current specifications of the materials that are purchased for completing repairs and new water service lines
Lead & Copper Test Results Submittal	Test results from the last two (2) Lead & Copper sampling events, which includes a list of sampling locations

Narrative of Site Details

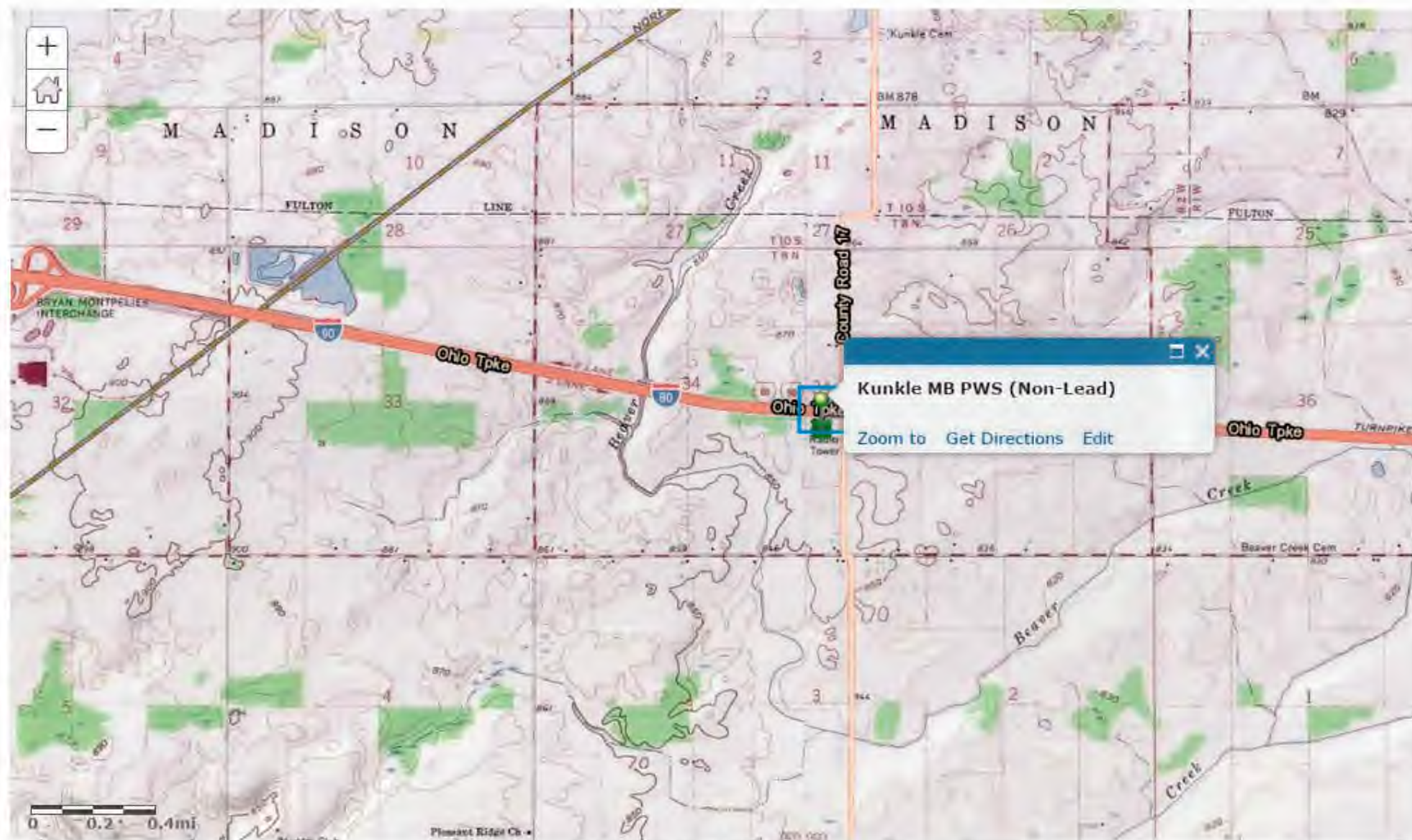
The Kunkle Maintenance Building is one of eight (8) maintenance buildings in existence on the Ohio Turnpike. These buildings were originally built in the mid-1950's to house maintenance equipment, store materials and operate as basepoint for each approximately 30-mile portion of the Ohio Turnpike. Seven (7) of the eight (8) maintenance buildings have all been connected to local water services. The Kunkle Maintenance Building is unique in that it has not been connected and utilizes a well system to provide potable water to the site. While the site does utilize a well to provide potable water, bottled water is utilized for the sole purpose of providing drinking water to the maintenance workers staffed at the site.

As previously mentioned, the maintenance buildings were originally built in the mid-1950's. Since then, each of the sites have undergone various improvement projects to improve and update various systems, as well as to expand the site to provide additional amenities to the staff working at the site. During the early 1990's, each of the maintenance buildings were updated to provide new office space, updated locker rooms and restrooms, add a breakroom, expand material storage areas and add additional work area. The attached Capital Improvements project plans (see attachment for Project Plans), provides a demolition plan identifying that all the existing piping is to be removed and the subsequent page provides a plan for the installation of new piping. Furthermore, in reference to sheet FP-1, titled "FIRE PROTECTION PLAN AND WELL PUMP DETAIL", the plan identifies that the supply line from the well pump to the building is to be constructed of copper piping. Additional documentation provided are the shop drawings for the materials and equipment, which indicate in several places that materials such as brass or copper are to be used. Specifically, the water fountain submittal made specific mention of the lead ban that was in effect at the time of the project.

Currently the Commission practices industry recognized plumbing practices and encourages staff tradesmen to maintain proper certification. All materials purchased are either required to be lead-free or are to be constructed of copper tubing (sample specifications attached). As further evidence of the Commission's commitment to a lead-free water supply system, the results from the last two sampling events (reported 8/9/12 & 8/6/15) have both identified the 90th% Lead Level in the water system to be less than the minimum detection limit of 4.0 µg/L.



Site Map



Topographic Map



Aerial Photo



OHIO TURNPIKE COMMISSION

THE JAMES W. SHOCKNESSY OHIO TURNPIKE

CONTRACT NO. CIP 56-92-01

RENOVATIONS & ADDITIONS AT

MAINTENANCE BUILDING NO. 1

KUNKLE, WILLIAMS COUNTY, OHIO

SCHEDULE OF DRAWINGS

T TITLE SHEET

SITE DEVELOPMENT

SD-1 SITE PLAN

PHASING

P-1 PHASING PLANS & NOTES

ARCHITECTURAL

A-1 DEMOLITION PLAN
A-2 FLOOR PLAN
A-3 ELEVATIONS
A-4 CROSS SECTIONS
A-5 WALL SECTIONS
A-6 WALL SECTIONS
A-7 WALL SECTIONS
A-8 ROOF PLAN, REFLECTED CEILING PLAN & DETAILS.
A-9 ROOM FINISH SCHEDULE, 1/4" PLAN, INTERIOR ELEVATIONS & DETAILS

A-10 DOOR SCHEDULE, DOOR & WINDOW ELEVATIONS & DETAILS.
A-11 DOOR & WINDOW DETAILS
A-12 DOOR, WINDOW AND WALL INTERSECTION DETAILS.

STRUCTURAL

S-1 FOUNDATION PLAN
S-2 ROOF FRAMING PLAN
S-3 TYPICAL SECTIONS & DETAILS

MECHANICAL

M-1 DEMOLITION PLAN, ABBREVIATIONS AND SYMBOLS
M-2 DOMESTIC WATER, COMPRESSED AIR, SANITARY PLANS, AND ISOMETRIC DIAGRAMS
M-3 DRAINAGE AND LUBRICATION SYSTEM PLAN, ISOMETRIC AND DETAILS
M-4 HEATING, VENTILATION AND AIR CONDITIONING PLAN AND SECTIONS
M-5 ROOF EQUIPMENT PLAN, SECTIONS AND DIAGRAMS
M-6 MISCELLANEOUS DETAILS

M-7 AUTOMATIC CONTROLS
M-8 EQUIPMENT SCHEDULES

ELECTRICAL

E-1 SCHEDULES AND SYMBOL LIST
E-2 ELECTRICAL DEMOLITION PLAN
E-3 POWER PLAN
E-4 LIGHTING PLAN
E-5 RISER DIAGRAMS, PART PLAN & SCHEDULE
E-6 PANEL SCHEDULES
E-7 MISCELLANEOUS ELECTRICAL DETAILS

FIRE PROTECTION SYSTEM

FP-1 FIRE PROTECTION PLAN
FP-2 FIRE PROTECTION PARTIAL PLAN
DIAGRAMS, DETAILS & SCHEDULE
FP-3 FIRE PROTECTION WATER SUPPLY

WASTEWATER SYSTEM

WT-1 WASTEWATER SYSTEM SITE PLAN,
PROFILE & DETAILS
WT-2 WASTEWATER SYSTEM PLAN,
PROFILE & DETAILS
WT-3 WASTEWATER SYSTEM DETAILS
WT-4 WASTEWATER SYSTEM DETAILS

FUEL SYSTEM

F-1 FUEL SYSTEM PLAN & DETAILS
F-2 FUEL SYSTEM DETAILS

STANDARD CONSTRUCTION DRAWINGS
OHIO DEPARTMENT OF TRANSPORTATION

BP-2 1-1-85
BP-4 10-1-87
F-1 11-10-83
HW-4B 4-1-80
MC-4 7-26-76
HL-1 12-28-84

AS BUILT DRAWINGS
DATE: 7/12/94

PROJECT LOCATION MILE POST 16.0



APPROVED FOR
GREINER ENGINEERING INC.-OHIO
CONSULTING ENGINEERS
BY

W. R. Fleischman
DATE: 4-27-92

APPROVED FOR
OHIO TURNPIKE COMMISSION
BY
W. R. Fleischman
DEPUTY EXECUTIVE DIRECTOR -
CHIEF ENGINEER

DATE: 4-27-92

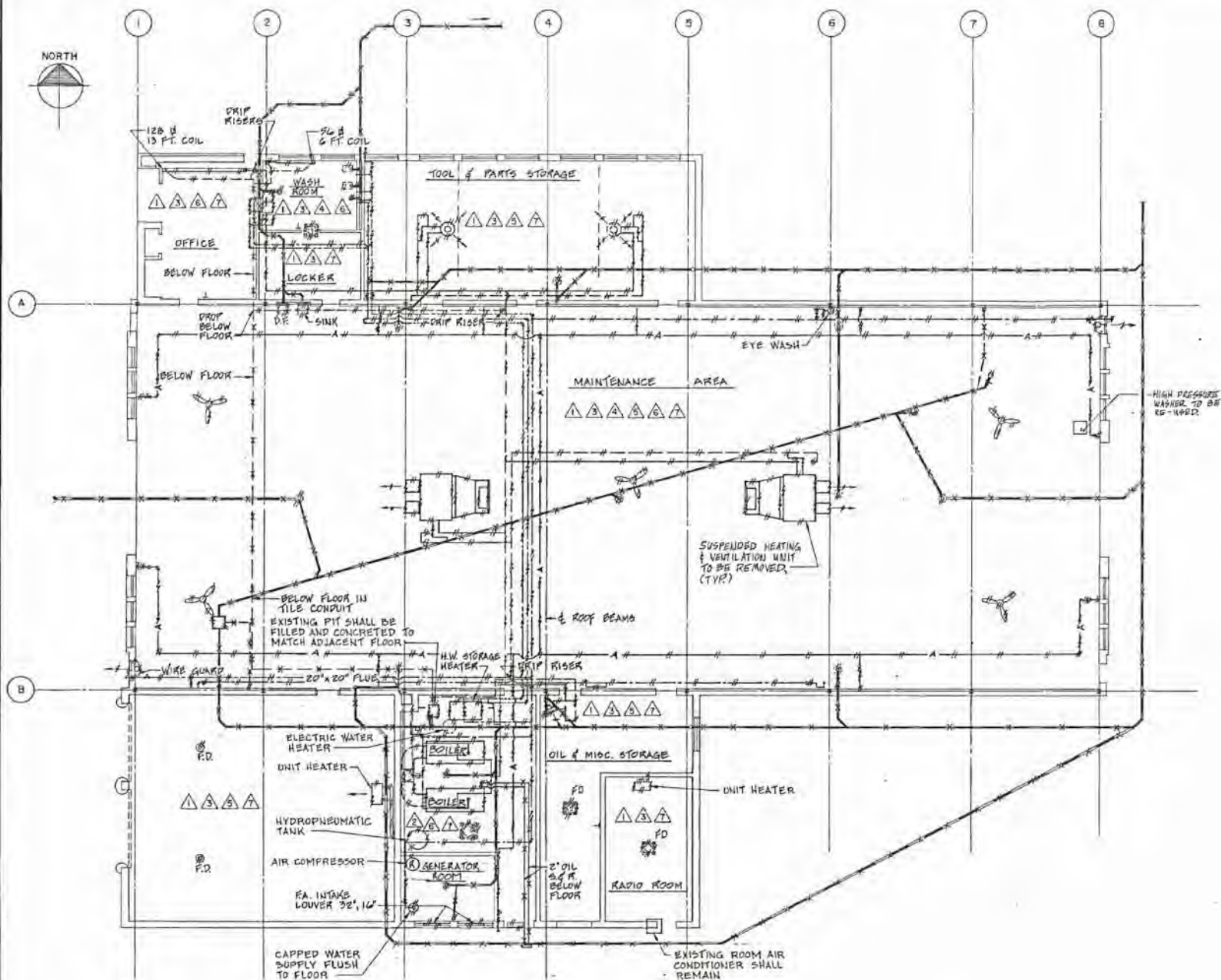
KUNKLE MB-1

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

TITLE SHEET

GREINER ENGINEERING INC. - OHIO
CONSULTING ENGINEERS

DESIGNED J.L.G.
DRAWN
CHECKED J.M.C.
IN CHARGE W.R.F.
DATE FEB., 1991
SCALE NONE
CONTRACT NO. CIP 56-92-01 SHEET T OF



DEMOLITION SYMBOLS

- EQUIPMENT TO BE REMOVED
- SANITARY FIXTURES TO BE REMOVED
- DUCTWORK TO BE REMOVED
- PIPING TO BE REMOVED
- PIPING TO BE ABANDONED IN PLACE
- EQUIPMENT TO REMAIN IN PLACE
- EQUIPMENT TO BE REMOVED AND REINSTALLED FOR REUSE

GENERAL NOTE:

THE MECHANICAL DEMOLITION PLAN WAS MADE FROM EXISTING DRAWINGS AND FIELD SURVEY FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REPRESENT THE EXACT QUANTITY AND LOCATION OF THE EXISTING EQUIPMENT AND MATERIALS TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING HVAC AND PLUMBING EQUIPMENT AND MATERIALS AS REQUIRED FOR NEW CONSTRUCTION.

MECHANICAL DEMOLITION WORK NOTES

1. EXCEPT ITEMS NOTED ON THE DEMOLITION PLAN, COMPLETELY REMOVE ALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT IN THE SPACE INCLUDING HEATING AND VENTILATING UNITS, EXHAUST FANS, ROOM AIR CONDITIONERS, RADIATORS, UNIT HEATERS, CEILING FANS, TRANSFER FANS AND CONDENSATE RETURN UNIT.
2. EXCEPT ITEMS NOTED ON THE DEMOLITION PLAN, COMPLETELY REMOVE ALL EQUIPMENT IN THE BOILER AND GENERATOR ROOMS INCLUDING STEAM BOILERS, CONDENSATE RECEIVER UNIT, HOT WATER STORAGE HEATER, ELECTRIC WATER HEATER, ASSOCIATED PIPING, DUCTWORK AND FLUE. THE EXISTING AIR COMPRESSOR SHALL BE REUSED AND SHALL BE PROVIDED WITH NEW PIPING.
3. REMOVE ALL HEATING PLUMBING PIPING IN THE SPACE INCLUDING STEAM, CONDENSATE, COLD WATER, HOT WATER, COMPRESSED AIR AND VENTS.
4. REMOVE ALL SANITARY FIXTURES AS INDICATED ON PLANS, INCLUDING WATER CLOSETS, URINALS, LAVATORY SINKS, DRINKING COOLERS, HOSE BIBBS AND EYE WASH.
5. REMOVE ALL ROOF DRAIN PIPING AND RISERS. PIPES INDICATED TO BE ABANDONED SHALL BE CAPPED, CONCEALED TO EXISTING FLOOR AND FLOOR REPAIRED TO MATCH EXISTING FLOOR FINISH.
6. ALL SANITARY, CONDENSATE, DRAINAGE AND FUEL PIPING BELOW FLOOR SLAB SHALL BE CAPPED/CONCEALED TO EXISTING FLOOR AND ABANDONED IN PLACE. ONLY THOSE WHICH ARE IN THE WAY OF NEW INSTALLATION SHALL BE REMOVED. REPAIR FLOOR AFFECTED TO MATCH EXISTING.
7. ALL ITEMS OR EQUIPMENT, MATERIALS AND FIXTURES REMOVED BY CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR, SHALL BE REMOVED FROM THE JOBSITE AND SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS.
8. ALL EQUIPMENT DESIGNATED TO BE RELOCATED AND REUSED SHALL BE STORED AND PROTECTED FROM BEING DAMAGED DURING CONSTRUCTION.
9. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO IMPLEMENTATION OF DEMOLITION WORK TO BECOME FAMILIAR WITH ACTUAL EXISTING CONDITIONS.

ABBREVIATIONS

- BTUH BRITISH THERMAL UNITS PER HOUR
- CFM CUBIC FEET PER MINUTE
- DELIV. DELIVERY
- DIA. DIAMETER
- DWG. DRAWING
- ELEV. ELEVATION
- ENT. ENTERING
- ESP. EXTERNAL STATIC PRESSURE
- EVAP. EVAPORATOR
- EXH. EXHAUST
- °F DEGREE FAHRENHEIT
- GPM GALLONS PER MINUTE
- HP HORSEPOWER
- HR. HOUR
- Hz HERTZ
- Kw KILOWATT
- LBS. POUNDS
- MIN. MINIMUM
- NO. NUMBER
- Ø PHASE
- PRESS. PRESSURE
- PSI POUNDS PER SQUARE INCH
- QTY. QUANTITY
- RPM REVOLUTIONS PER MINUTE
- SAN. SANITARY
- SUSPD. SUSPENDED
- TEMP. TEMPERATURE
- TSP TOTAL STATIC PRESSURE
- TYP. TYPICAL
- JAN. JANITOR
- CW COLD WATER
- HWS(H) HOT WATER SUPPLY (RETURN)
- FT. FOOT, FEET
- HB HOSE BIBB
- FD FLOOR DRAIN
- RD ROOF DRAIN
- SAN. SANITARY

SYMBOLS

- COMPRESSED AIR LINE
- FUEL OIL SUPPLY
- FUEL OIL RETURN
- STORM DRAIN PIPING
- FLOOR DRAIN PIPING
- SANITARY DRAIN PIPING
- VENT PIPING
- VENT THRU ROOF
- VENT SIZE
- SPACE THERMOSTAT
- NIGHT THERMOSTAT
- DAY THERMOSTAT

NEW WORK

- 24" x 12"
- 10"
- 10"
- 10"
- 10"
- 10"
- 10" x 10" 250 CFM
- 10" x 10" 250 CFM
- 10" x 10" 250 CFM
- 10" x 10" 250 CFM
- 10" 250 CFM
- 10" x 10" 250 CFM
- 10" x 10" 250 CFM
- 10" x 10" 250 CFM
- 10" x 10" 250 CFM
- CW
- HWS
- HWR
- G
- G
- C
- R
- S
- RD
- HB
- WH
- FCO
- U
- PRV

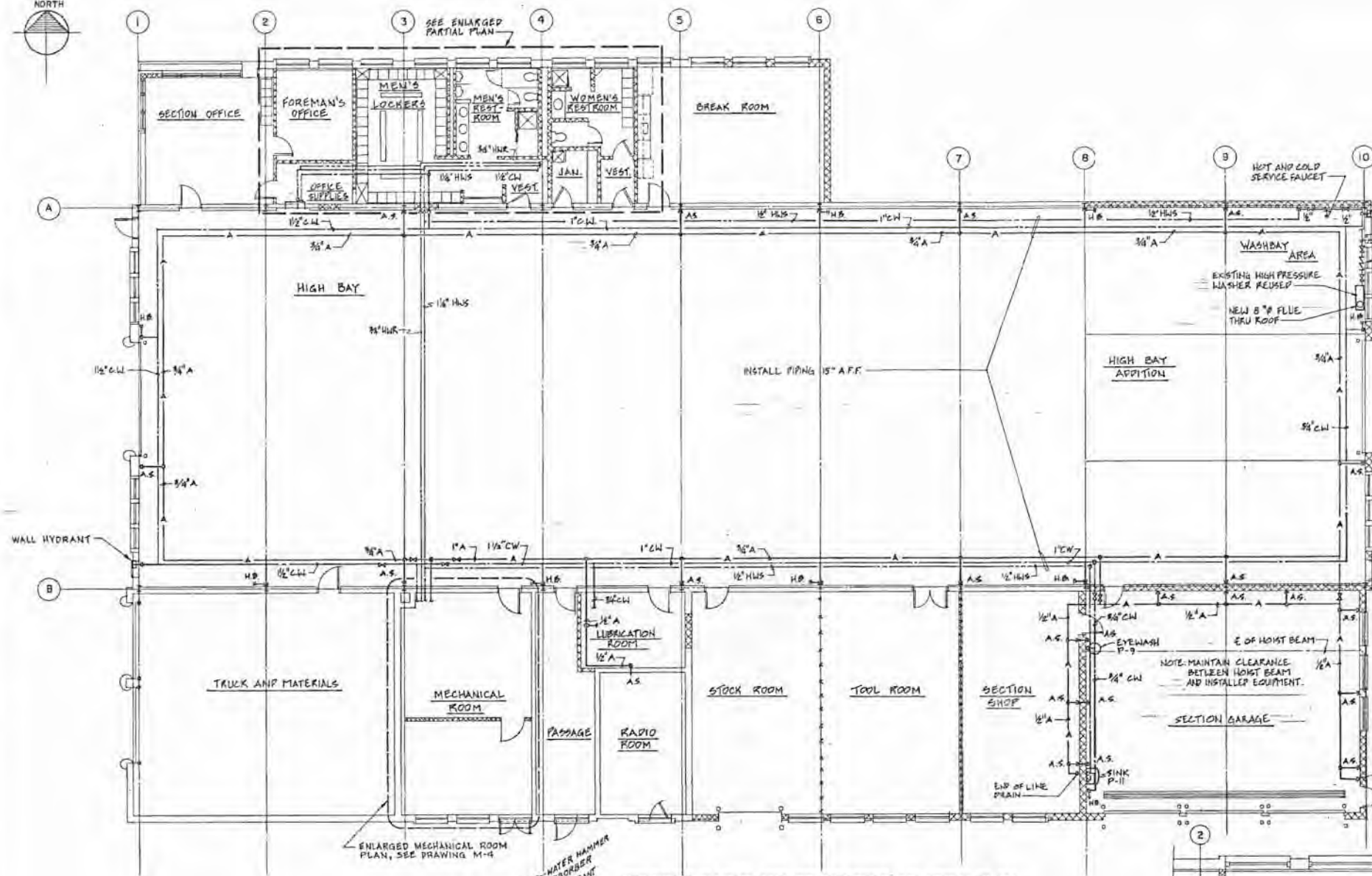
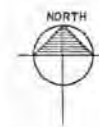
KUNKLE MB-1

OHIO TURNPIKE COMMISSION
OHIO TURNPIKE

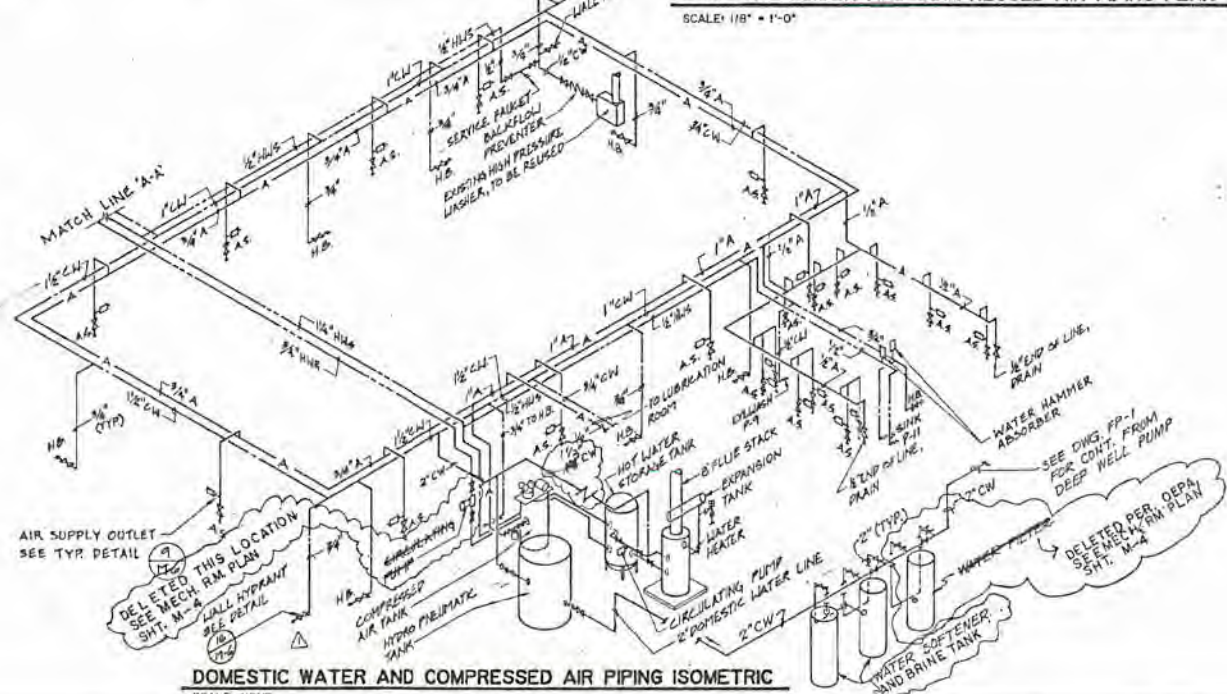
DEMOLITION PLAN
ABBREVIATIONS AND SYMBOLS

J.E. GREINER COMPANY-OHIO
CONSULTING ENGINEERS

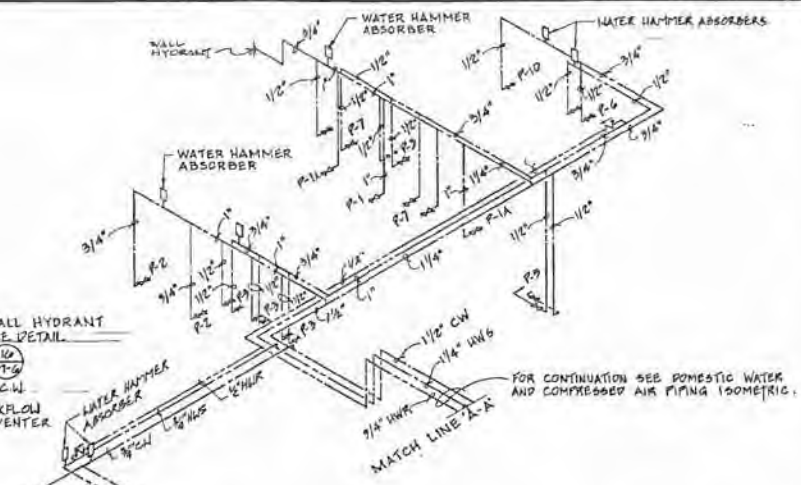
DESIGNED	E.P.J.	CHECKED	W.W.M.	DATE	FEB., 1991
DRAWN	M.B.W.	IN CHARGE	W.R.F.	SCALE	AS NOTED
NO.	REVISIONS	BY	DATE	CONTRACT NO.	CIP 58-92-01
				SHEET	M-1 OF



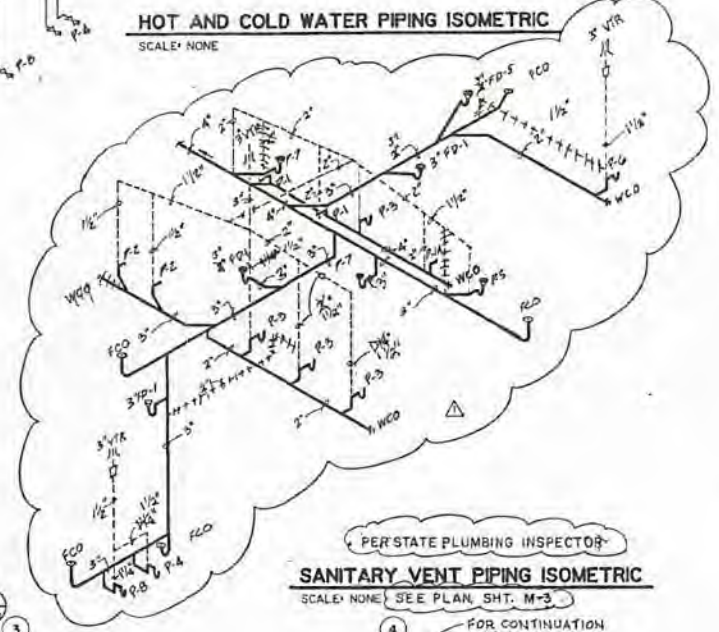
DOMESTIC WATER AND COMPRESSED AIR PIPING PLAN
SCALE: 1/8" = 1'-0"



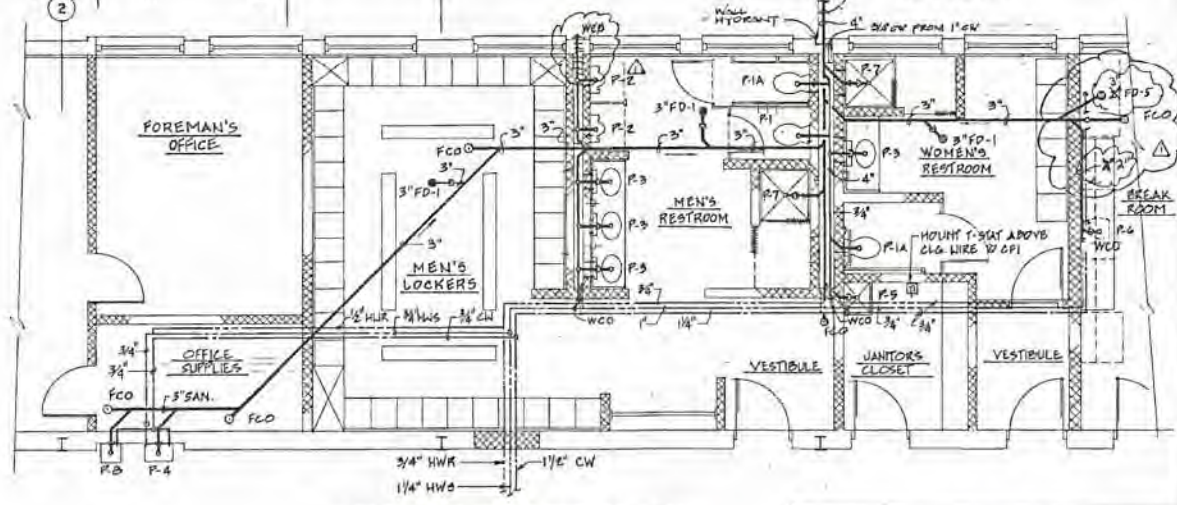
DOMESTIC WATER AND COMPRESSED AIR PIPING ISOMETRIC
SCALE: NONE



HOT AND COLD WATER PIPING ISOMETRIC
SCALE: NONE

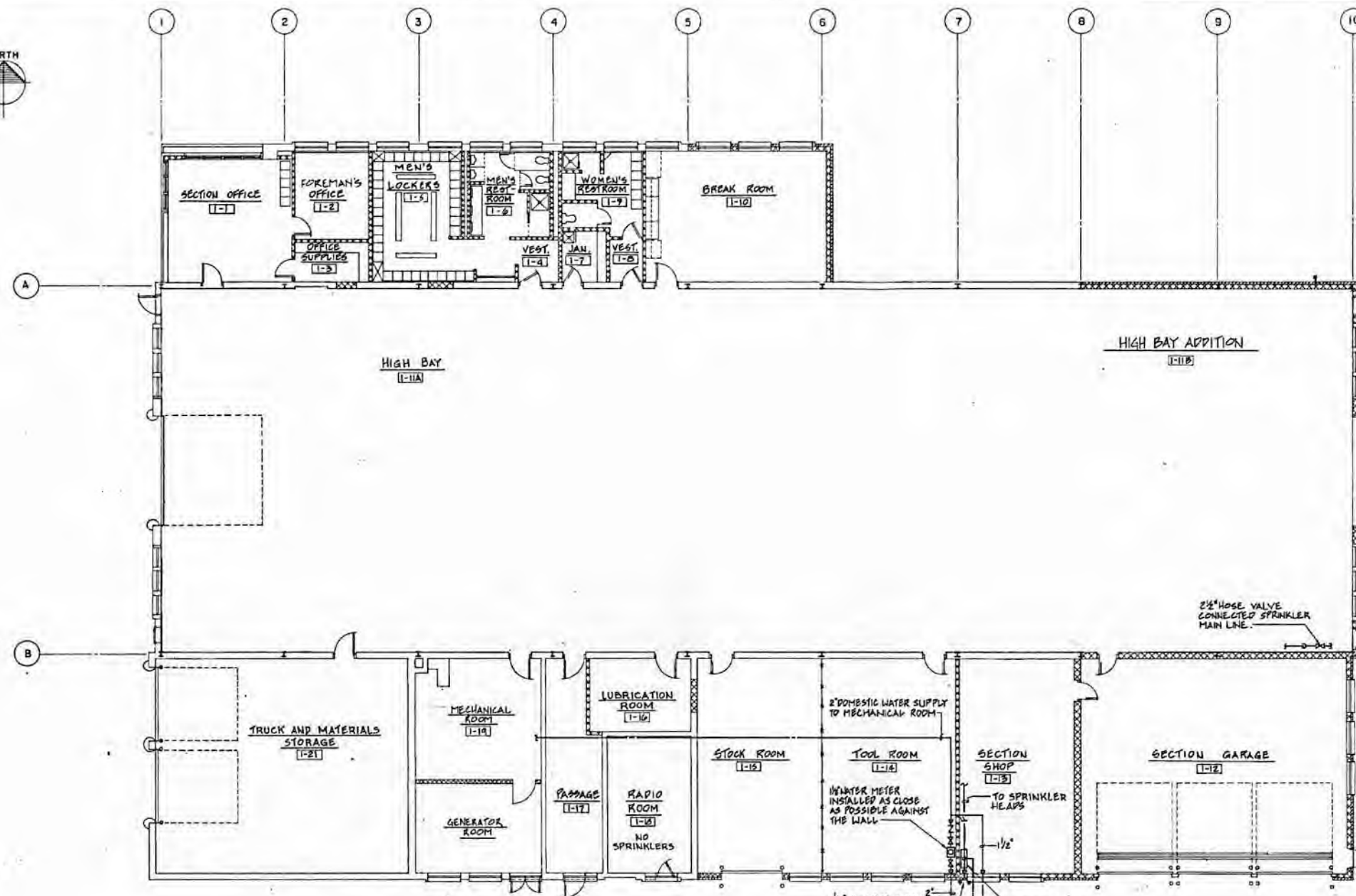


PER STATE PLUMBING INSPECTOR
SANITARY VENT PIPING ISOMETRIC
SCALE: NONE SEE PLAN, SHT. M-3



TOILETS ENLARGED PARTIAL PLAN
SCALE: 1/4" = 1'-0"

KUNKLE MB-1			
OHIO TURNPIKE COMMISSION			
OHIO TURNPIKE			
DOMESTIC WATER, COMPRESSED AIR, SANITARY PLANS AND ISOMETRIC DIAGRAMS			
J.E. GREINER COMPANY-OHIO CONSULTING ENGINEERS			
DESIGNED E.P.J.	CHECKED W.W.M.	DATE FEB., 1991	
DRAWN J.M.F./E.P.R.	IN CHARGE W.R.F.	SCALE AS NOTED	
CONTRACT NO. CIP 58-92-01		SHEET M-2 OF	



FIRE PROTECTION CRITERIA

1. THE BUILDING SHALL BE FULLY SPRINKLED WITH A CLOSED HEAD WET PIPE SPRINKLER SYSTEM HAVING COVERAGE DENSITY OVER ANY AND THE MOST HYDRAULICALLY REMOTE 1,500 SQUARE FEET OF AREA.
2. REFER TO THE REFLECTED CEILING PLAN ON SHEET A-8 AND THE ROOM FINISH SCHEDULE ON SHEET A-9 AND COORDINATE THE LOCATION AND TYPE OF SPRINKLER HEADS WITH OTHER CEILING MOUNTED DEVICES.
3. THE FOLLOWING ROOMS SHALL BE SPRINKLED WITH A DISCHARGE DENSITY OF 0.10 GPM / SQ. FT. (1 LIGHT HAZARD OCCUPANCY):

ROOM NAME	ROOM NO.
SECTION OFFICE	1-1
OFFICE	1-2
OFFICE SUPPLIES	1-3
VESTIBULE	1-4
MEN'S LOCKER	1-5
MEN'S RESTROOM	1-6
JANITOR'S CLOSET	1-7
VESTIBULE	1-8
WOMEN'S RESTROOM	1-9
BREAK ROOM	1-10
PASSAGE	1-11

4. ALL OTHER ROOMS SHALL BE FULLY SPRINKLED WITH A DISCHARGE DENSITY OF 0.20 GPM / SQ. FT. (ORDINARY HAZARD GROUP 3 OCCUPANCY); THESE ROOMS SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

ROOM NAME	ROOM NO.
HIGH BAY	1-11A
HIGH BAY ADDITION	1-11B
SECTION GARAGE	1-12
SECTION SHOP	1-13
TOOL ROOM	1-14
STOCK ROOM	1-15
LUBRICATION ROOM	1-16
MECHANICAL/GENERATOR RM.	1-17
TRUCK AND MATERIALS STORAGE	1-21

5. FIRE PROTECTION WATER SUPPLY

- A. SOURCE: 6" MAIN FROM FIRE PUMP
- B. PRESSURE AT BASE OF ALARM VALVE RISER: 80 PSI
- C. FLOW: 500 GPM PUMP.

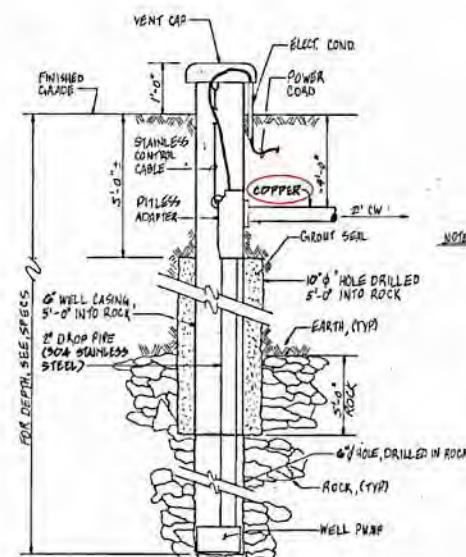
6. SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED TO EMULATE ACTUAL FLOW CONDITION AT ANY PORTION OF THE BUILDING TO BE EQUAL TO OR GREATER THAN THE REQUIRED FLOW AT THE HYDRAULICALLY MOST DEMANDING FIRE AREA.

GENERAL NOTES

1. PROVIDE PENDENT TYPE SPRINKLER HEADS IN ALL AREAS WITH DROP CEILING.
2. PROVIDE UPRIGHT TYPE SPRINKLER HEADS IN ALL AREAS WITH EXPOSED CEILING.
3. PROVIDE SPRINKLER PROTECTION BELOW OVER HEAD DOORS PER NFPA 13 APPENDIX B-4-2.1.
4. PROVIDE DEFLECTORS ON SPRINKLER HEADS TO SHIELD ELECTRICAL EQUIPMENT AND DEVICES IN ROOM.

ABBREVIATIONS AND SYMBOLS

FM	FACTORY MUTUAL	— F —	FIRE WATER SUPPLY LINE
GPM	GALLONS PER MINUTE	— X —	GATE VALVE
HP	HORSEPOWER	— G —	GLOBE VALVE/BALL VALVE
Hz	HERTZ	— C —	CHECK VALVE
PH	PHASE	— A —	AIR RELIEF VALVE
PSI	POUNDS PER SQUARE INCH	— U —	UPRIGHT SPRINKLER HEAD
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	— P —	PENDENT SPRINKLER HEAD
QTY	QUANTITY	— U —	UNION CONNECTION
TDM	TOTAL DYNAMIC HEAD	— P —	PRESSURE GAGE
UL	UNDERWRITER'S LABORATORIES	— S —	STRAINER
N.C.	NORMALLY CLOSED		
N.O.	NORMALLY OPENED		
S.V.	SOLENOID VALVE		
O.S. & Y.	OPEN STEM AND YOST VALVE		



- NOTES:
1. LOCATE REAR PUMP CONTROL PANEL IN MECH. ROOM
 2. INTERCONNECT PUMP CONTROL TO START PUMP @ 40 P.S.I. AND STOP @ 80 P.S.I. AS INDICATED BY A PRESSURE SWITCH ON THE HYDRO-PNEUMATIC TANK

FIRE PROTECTION PLAN

SCALE: 1/8" = 1'-0"

WELL PUMP DETAIL

NOT TO SCALE

SCALE: 1/8" = 1'-0"

DESIGNED	E.P.J.	CHECKED	W.W.M.	DATE	FEB., 1991
DRAWN	R.V.D.	IN CHARGE	W.R.F.	SCALE	AS NOTED
CONTRACT NO.	CIP 58-92-01	SHEET	FP-10F		

KOHLER

OHIO TURNPIKE

KUNKLE MAINTENANCE BUILDING

WILLIAMS COUNTY OHIO

L. R. BABCOCK MECHANICAL CONTRACTORS

Submitted by MAUMEE PLUMBING & HEATING SUPPLY INC.

Kohler Co. Branch Date 6-15-92

Address 12860 ECKEL JUNCTION RD., PERRYSBURG, OHIO 43552

PLUMBING SPECIFICATIONS



KINGSTON WATER-GUARD K-4430-ET

Wall-hanging vitreous china elongated toilet - designed to flush with 3 gallons of water - siphon jet flushing action

Off-the floor design makes cleaning easier • Designed for quiet action with rim baffle to reduce noise • Efficient rim flush thoroughly cleans bowl.



K-4430-ET Kingston Water-Guard vitreous china wall hanging elongated siphon jet bowl with 1 1/2" top spud.

DIMENSIONS

Height (floor to rim)	15"
Width overall	16 1/2"
Length overall	25 1/4"
Water area	11 1/2" x 12 1/2"
Passageway (2 1/2" ball passage)	2 1/2"
Water seal	3"
Roughing-in (floor to center of outlet)	5"

COLOR

ILLUSTRATED WITH

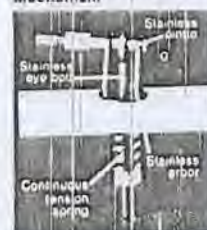
K-1670-C — Lustra solid plastic elongated open front seat with check hinge

Refer to manufacturer's instructions and local codes for proper flush valve installations and requirements.

VARIATIONS



Internal Self-Sustaining Mechanism



External Check

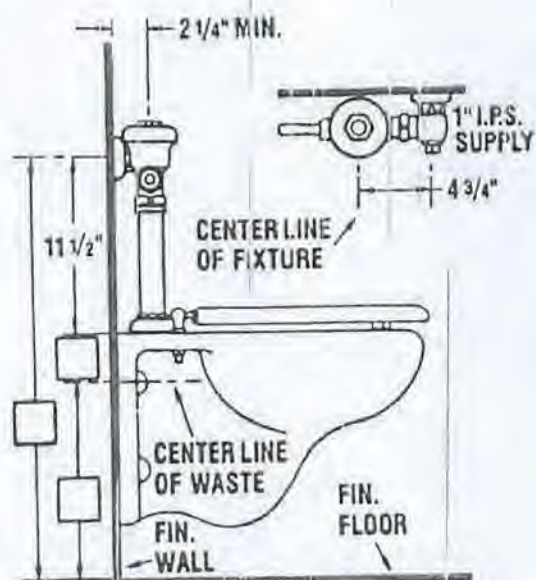
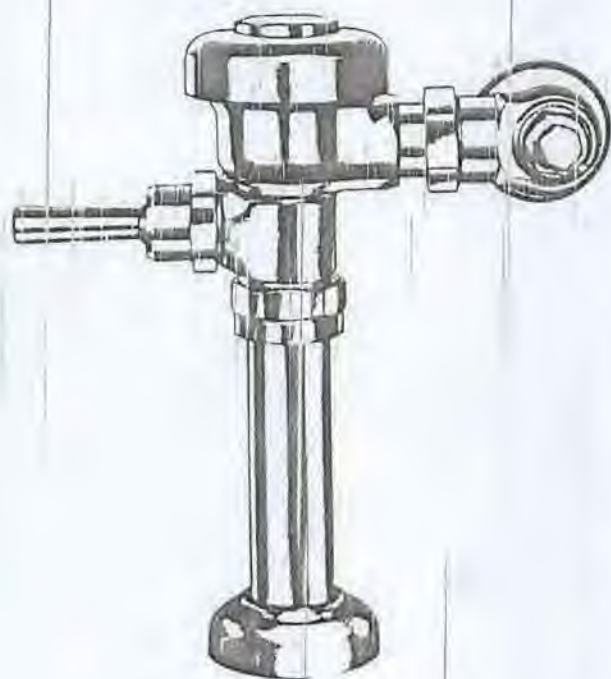


MODEL 295C (5334.024)

Open front seat less cover for elongated bowl, with external check hinges, stainless steel posts.

SLOAN®

P-1 & P-1A



SPECIFICATION SHEET

Regal^{T.M.} Flushometer

- ☐ **Model 110** (Standard, 4.5 gal. flush cycle)
- ☒ **Model 110-3** (Water-Saver, 3.5 gal. flush cycle max.)
- ☐ **Model 111** (Low Consumption, 1.6 gal. flush cycle max.)

Quiet, Exposed Diaphragm Type, Closet Flushometer, Chrome Plated, metal oscillating Non-Hold-Open Handle, 1" I.P.S. Screwdriver Bak-Chek® Angle Stop with Protective Cap, Adjustable Tailpiece, Vacuum Breaker Flush Connection and Spud Coupling for 1 1/2" top spud, Wall and Spud Flanges.

Check Variations to the standard specifications in the appropriate box below.

✓	Variations	Description
	K	Wheel Handle Stop
	YA	Nickel-silver Handle
✓	YB	Sweat-solder Adaptor Kit
	YC	Cast Wall Flange with Set Screw
	YG	Extended Bumper on Angle Stop (for seat with cover)
	YO	Bumper on Angle Stop (for open front seat without cover)
	XYV	Less Vacuum Breaker

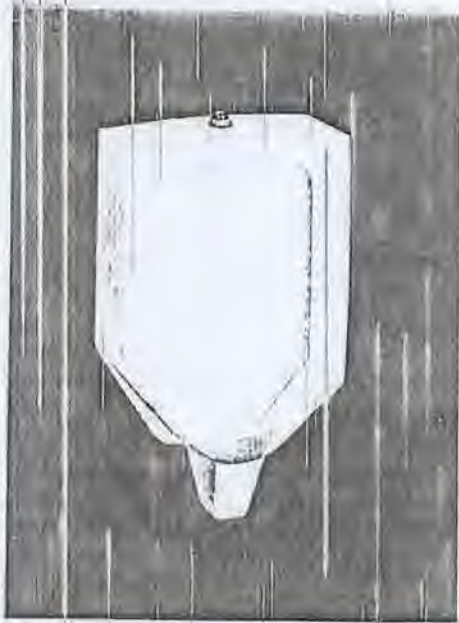
OTHER (Describe below)

This space for Architect/Engineer approval

SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131

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MADE IN THE U.S.A. Printed in U.S.A.



BARDON™ K-4960-T WATER-GUARD® URINAL

Vitreous china wall-hanging
washout urinal
Water-conserving with extended
shield, Anti-splash design

Designed to flush efficiently with less than one
gallon of water when installed with a water-
saving flush valve • Anti-splash
design • Extended shields



VARIATIONS

K-4960-T Bardon Water-Guard vitreous china wall
hanging washout action urinal. Anti-
splash design, extended shields,
removable metal strainer, integral trap
cleanout, 3/4" top spud, wall hangers, 2"
I.P.S. outlet connection.

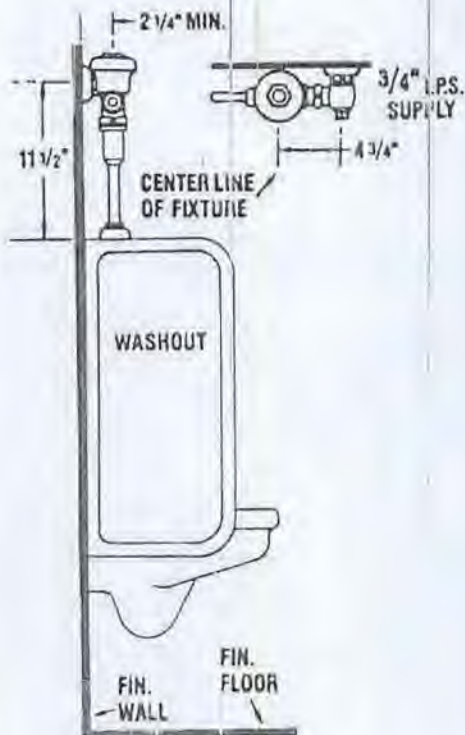
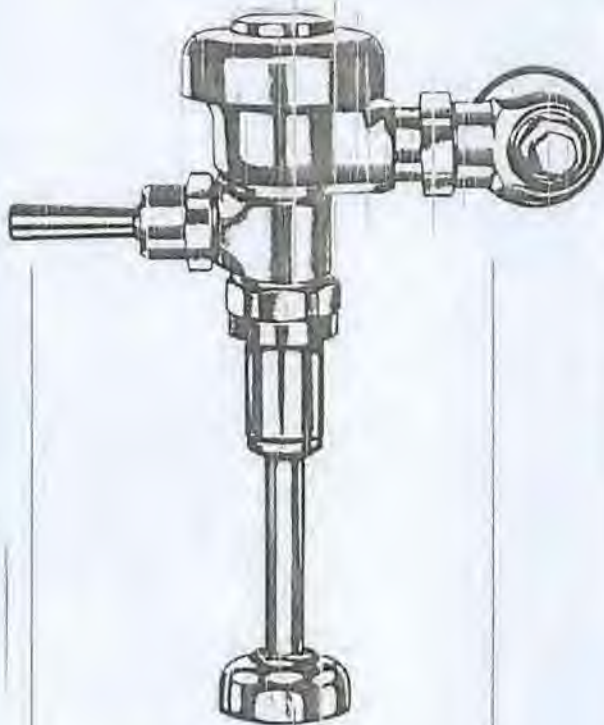
DIMENSIONS

Height overall (Urinal only) 28"
Width 18"
Wall to front of flare 11 1/4"

Refer to manufacturers instructions and local codes for proper
flush valve installation and requirements.

SLOAN®

17-2



SPECIFICATION SHEET

^{T.M.} *Regal* Flushometer

- ☐ **Model 186** (Standard, 1.5 gal. flush cycle)
☐ **Model 186-1** (Low Consumption, 7 gal. flush cycle max.)

Quiet, Exposed Diaphragm Type, Urinal Flushometer, Chrome Plated, metal oscillating Non-Hold-Open Handle, 3/4" I.P.S. Screwdriver Bak-Chek® Angle Stop with Protective Cap, Adjustable Tailpiece, Vacuum Breaker Flush Connection and Spud Coupling for 3/4" top spud, Wall and Spud Flanges.

Check Variations to the standard specifications in the appropriate box below.

✓	Variations	Description
	K	Wheel Handle Stop
	YA	Nickel-silver Handle
✓	YB	Sweat-solder Adaptor Kit
	YC	Cast Wall Flange with Set Screw
	XYV	Less Vacuum Breaker

OTHER (Describe below)

This space for Architect/Engineer approval



CAXTON K-2210

Vitreous china oval basin
countertop lavatory

For building into marble or tile
countertops • Glass-hard
surfaces • Concealed overflow



VARIATIONS

K-2210 Caxton vitreous china oval basin lavatory,
with K-1916 set of four clamps with bolts,
anchors and wood screws.

- 1) KOHLER K-7715 GRID DRAIN
- 2) DEARBORN 1½ 17 GA. P-TRAP WITH CLEANOUT
- 3) BRASSCRAFT CR-1912-A LAVATORY SUPPLY KIT
WITH LOOSE KEY STOPS

DIMENSIONS

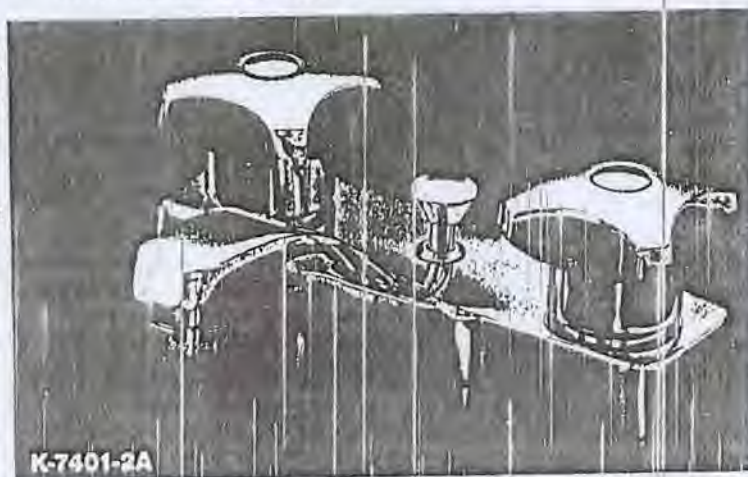
Overall Size 19½ x 16½" 21¼ x 17¼"
Size 17 x 14" 19 x 15"

COLOR

Available in a variety of Kohler colors. Refer to the
Kohler Color Guide.

ILLUSTRATED WITH

K-108 "Antique" Water-Guard lavatory faucet with Valvet®
valve units, coupling nuts, pop-up drain with 1½" tailpiece, 8"
to 12" centers. 1½" maximum countertop thickness.—K-7606
¾" angle supplies with stops.—K-9000 1½" cast brass "P" trap



K-7401 Triton Lavatory Faucet with
hand-tighten shank nuts and pop-up
drain with 1½" (32 mm) tailpiece.
Available with handle styles 2, 3, 4, 5;
and spout outlets A, E, D, E, G, H.

K-7404 Triton Lavatory Faucet, same as
K-7401 less drain and lift-rod hole.

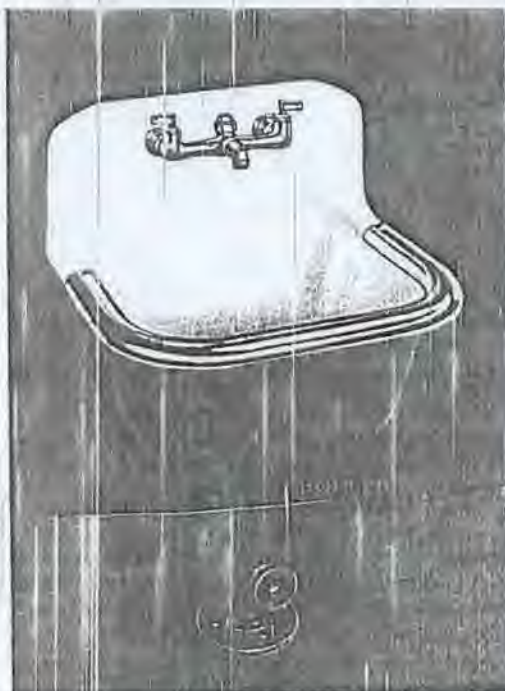
11-2
KOHLER OF KOHLER

BANNON-Kohler Acid-Resisting Enameled Cast Iron Service Sink

Non-Flexing Iron, Cast for Rugged Strength and Permanent Ridity — Durable — Trap Standard Has Cleanout Plug and Strainer



K-6673



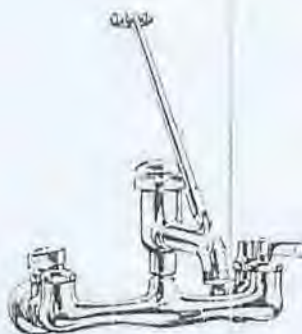
K-6714 Bannan Service Sink, enameled cast iron, 22 $\frac{1}{4}$ " x 18 $\frac{1}{4}$ " (565 x 464 mm) with K-8936 stainless steel rim guard and wall hanger supports.



HOSE and HOSE BRACKET, part #85,700 — heavy duty, $\frac{1}{2}$ " diameter, reinforced, 40' rubber hose with brass couplings on one end. Spring loaded, molded rubber hose holder mounts on stainless steel wall bracket.



MOP HANGER, part #85,800 — 3" wide x 24" long, 16 gauge #302 stainless steel with 3 spring loaded, molded rubber handle holders. Wall anchors and mounting screws included.



K-8904

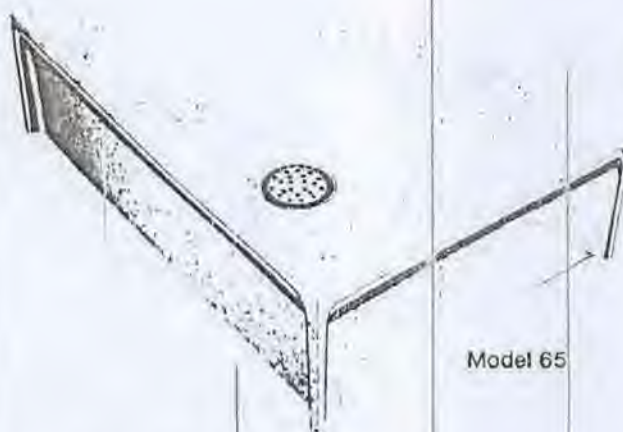
Service sink faucet with vacuum breaker and loose key stops.

LOOK FOR THE KOHLER TRADE MARK ON EACH FIXTURE AND FITTING

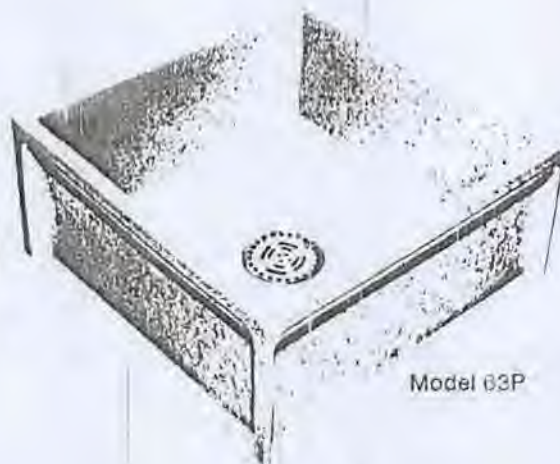
Kohler Co. Manufacturers since 1873

Printed in U. S. A.

MUSTEE Mop Service Basins and Accessories



Model 65



Model 63P

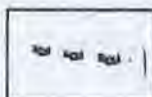
Accessories



SERVICE FAUCET, part #63.600A — chrome plated brass faucet, 1/2" pipe eccentric inlets on 8" centers. Vacuum breaker integral stops, chrome plated (18C) handles, 1/2" hose and sprout with pull hook, top reinforcing bar and mounting bracket. Shall meet ANSI Specifications: A112.1.1, Section 2.8 and A112.18.1M.



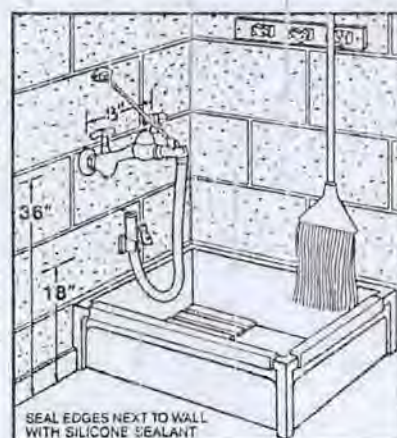
HOSE and HOSE BRACKET, part #65.700 — heavy duty, 1/2" diameter, reinforced 48" rubber hose with brass couplings on one end. Spring loaded, molded rubber hose holder mounts on stainless steel wall bracket.



MOP HANGER, part #65.600 — 3" wide x 24" long, 18 gauge #302 stainless steel with 3 spring loaded, molded rubber handle holders. Wall anchors and mounting screws included.



BUMPER GUARDS, part #63.401 — 20 1/2" length, part #66.403 — 32 1/4" length. Extruded, hi-impact, rigid vinyl bumpers protect exposed rims and snap into place.



Commercial and Industrial Installations

When it comes to being tough and providing years of trouble-free performance, you'll never buy or use a better built mop basin than Mustee's. Select from four models with choice of drain assembly and elevated drain shelf. Made with Duraslone® (crushed natural stone) and special polyester resins, Mustee Mop Service Basins are the favorite of architects, builders and sanitary personnel throughout the nation.

Specify and install Mustee Mop Basins and optional accessories for new or remodeled complexes, apartments, hotels, motels, restaurants, public institutions, office buildings, schools, etc., etc.

Residential Uses

Install one in the garage, basement, breezeway or patio. Ideal for bathing pets, cleaning up messy garden utensils, grimy toys, tools, etc.



Quality Plumbing Products...



Shower Stalls • Enclosures • Bathtub and Shower Walls • Shower Floors
Shower Ensembles • Laundry Trays • Mop Basins • Accessories

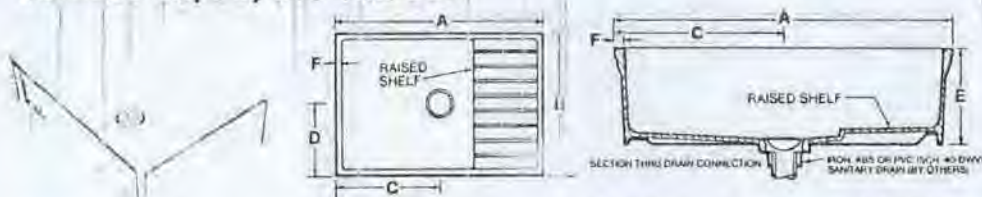
MUSTEE Mop Service Basins and Accessories

Copy this side for submittals. Space provided left of model numbers to indicate items needed. Retain this catalog for future use/reference.



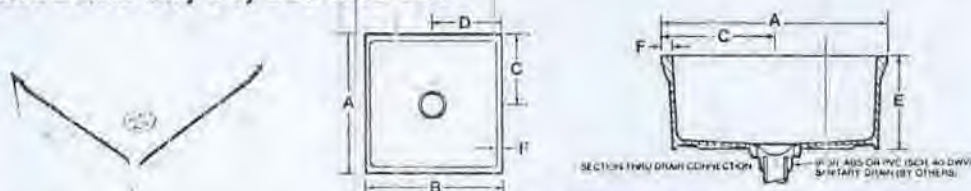
SPECIFICATIONS & ORDERING INFORMATION

MODELS 65, 66, 65P and 66P



Model No. — Drain Assembly	I.P.S.	A	B	Dimensions C	D	E	F	Weight	Shipping Cubic Ft.
___ 65—Cast Brass ___ 65P—PVC	3"	36"	24"	18"	12"	10"	1"	70 lbs.	8.0
___ 66—Cast Brass ___ 66P—PVC	2"	36"	24"	18"	12"	10"	1"	70 lbs.	8.0

MODELS 63, 64, 63P and 64P



Model No. — Drain Assembly	I.P.S.	A	B	Dimensions C	D	E	F	Weight	Shipping Cubic Ft.
___ 63—Cast Brass ___ 63P—PVC	3"	24"	24"	12"	12"	10"	1"	54 lbs.	5.6
___ 64—Cast Brass ___ 64P—PVC	2"	24"	24"	12"	12"	10"	1"	54 lbs.	5.6

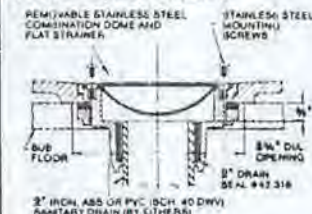
GENERAL

Furnish and install as shown on plans, Mop Service Basin model _____, as manufactured by E.L. Mustee & Sons, Inc. Unit to be one-piece molded construction by match metal dies under heat and pressure using fused natural crushed stone with polyester resin. Sides shall be 10" high with not less than 1" wide shoulder. Size _____ x _____. Models 65, 66, 65P and 66P have integrally molded self-draining shelf. Drain for 2" or 3" I.P.S. as determined by model number shall include a combination removable dome and flat strainer with cadmium plated cast brass body (models 63, 64, 65 and 66), or PVC drain body (models 63P, 64P, 65P, and 66P), including drain seal for iron, ABS and PVC pipe. Performance tested to meet or exceed ANSI Specification Z 124.2 and FHA/HUD UM-73 requirements.

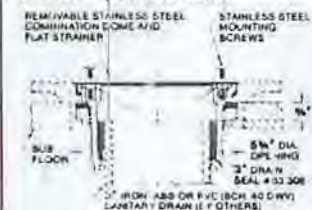
Drain Assemblies

Models 63P, 64P, 65P and 66P — drain body is PVC (meets SCH. 80 requirements) with "flat" and "dome" strainer, 16 gauge #302 stainless steel, drain seal included. Optional drain seals for copper pipe available — 2" requires part #42.320 and 3" part #43.307.

2" PVC — part #64.300A

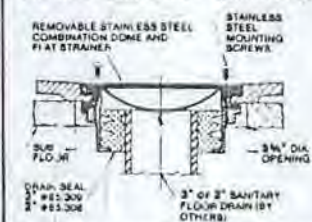


3" PVC — part #63.300A



Models 63, 64, 65 and 66 — drain body is chrome plated cast brass with "flat" and "dome" strainer, 16 gauge #302 stainless steel, part #65.300, drain seal included.

2" or 3" Cast Brass — part #65.300



Note: For 2" cast brass, order drain assembly #65.300, plus drain seal #65.308.

ACCESSORIES

- ___ 63.600A — Service Faucet
- ___ 65.700 — Hose & Hose Bracket
- ___ 65.600 — Mop Hanger
- ___ 65.401 — 20 3/4" Bumper Guard
- ___ 65.403 — 32 3/4" Bumper Guard



SERVICE FAUCET, part #63.600A — chrome plated brass faucet, 1/2" pipe eccentric inlets on 6" centers. Vacuum breaker integral stops, chrome plated (H&C) handles, 3/4" hose and spout with pull hook, top reinforcing bar and mounting bracket. Shall meet ANSI Specifications A112.1.1, Section 2.9 and A112.18.1M.

HOSE and HOSE BRACKET, part #65.700 — heavy duty, 1/2" diameter, reinforced 48" rubber hose with brass couplings on one end. Spring loaded, molded rubber hose holder mounts on stainless steel wall bracket.

MOP HANGER, part #65.600 — 3" wide x 24" long, 18 gauge #302 stainless steel with 3 spring loaded, molded rubber handle holders. Wall anchors and mounting screws included.

BUMPER GUARDS, part #65.401 — 20 3/4" length, part #65.403 — 32 3/4" length. Extruded, hi-impact, rigid vinyl bumpers protect exposed rim and snap into place.



SUBMITTED TO:

SUBMITTED BY:



E.L. MUSTEE & SONS, INC.

5431 West 164th Street • Cleveland, Ohio 44142

Phone: (216) 267-3100 • Fax: (216) 267-9997, Available 24 Hours

To reorder
this literature
specify ADV-291.

Patented and patents pending
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SPEAKMAN COMMANDER®

Cast Brass Service Sink Fittings

□ SC-5811

Speakman Polished Chrome Plated Cast Brass COMMANDER Service Sink Fitting with PERFECT® Valves. ¼ turn ceramic cartridges covered by 25 year Silver warranty. Integral stops. Vandal-resistant four arm handles with color-coded indexes. Cast brass nozzle with ¾" hose coupling discharge, pail hook and top brace. Brass vacuum breaker. Brass top brace assembly with wall flange and mounting screws. Distance from finished wall to nozzle outlet is 9". 8" centers with ±½" adjustment. Adjustable threaded brass wall flanges. Vandal-resistant standard. ½" NPTF inlets.

□ SC-5811-RCP

Speakman Rough Chrome Plated Cast Brass COMMANDER Service Sink Fitting with PERFECT® Valves. ¼ turn ceramic cartridges covered by 25 year Silver warranty. Integral stops. Vandal-resistant four arm handles with color-coded indexes. Cast brass nozzle with ¾" hose coupling discharge, pail hook and top brace. Brass vacuum breaker. Brass top brace assembly with wall flange and mounting screws. Distance from finished wall to

nozzle outlet is 9". 8" centers with ±½" adjustment. Adjustable threaded brass wall flanges. Vandal-resistant standard. ½" NPTF inlets.

OPTIONS

SUFFIX DESCRIPTION

- | | |
|-------|-----------------------|
| □ BH | Brass Handles |
| □ 4WH | 4" Wrist Handles |
| □ 6WH | 6" Wrist Handles |
| □ 5'H | 5' Hose with Coupling |



BH



4WH



6WH



5'H

NOTE: Inlets are ½ NPTM. All dimensions are in inches unless otherwise specified and are subject to change without notice.



SPEAKMAN

The Quality Leader Since 1869
P.O. Box 191, Wilmington, DE 19899-0191
1-302/764-9100, FAX: 1-302/764-1956

This space for Architect/Engineer approval.

COMMANDER® - Registered T.M. Speakman Company
PERFECT® - Registered T.M. Speakman Company
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CELEBRITY, ONE COMPARTMENT SINK

CELEBRITY, SINK

CR-SERIES
SINGLE COMPARTMENT
20 GAUGE-TYPE 302-SELF RIM

Good quality, spacious sink bowl
seamlessly drawn of #20 gauge, type 302
nickel bearing stainless steel. Bowl depth:
7-inches with 3-inch radius vertical coved
corners. Self rim. Exposed surfaces are
machine polished to a highlighted
LK-4K-H bright finish. Underside is
undercoated.

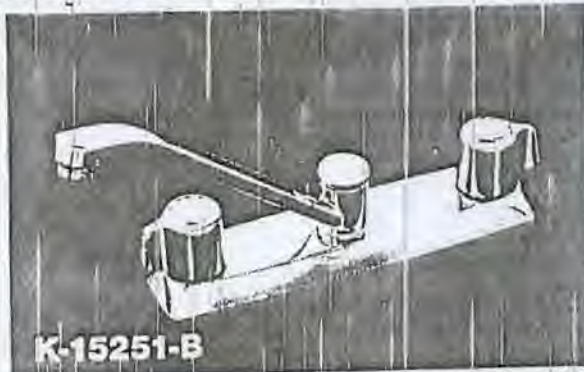
Compartment and faucet deck are
recessed $\frac{3}{8}$ -inch below outside edge of
sink.

Drain opening size is $3\frac{1}{2}$ -inches.

NOTE: Where choice of three of four
faucet holes is indicated, four faucet holes
furnished unless otherwise specified.

SPECIFIED FITTINGS:

- 1) MCGUIRE #151-A BASKET STRAINER
- 2) DEARBORN $1\frac{1}{2}$ 17 GA. P-TRAP WITH CLEANOUT
- 3) BRASSCRAFT #SCR-1912-A SUPPLY KIT

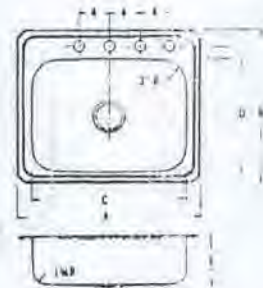


***K-15253 Coralais Kitchen Sink Faucet**
with acrylic handles, $7\frac{3}{4}$ " (197 mm)
swing spout with aerator, lever control
sprayer, flexible connectors and
coupling nuts.

***K-15251 Coralais Kitchen Sink
Faucet**, same as K-15253 less handspray.

***K-15251-B Coralais Kitchen Sink
Faucet**, same as K-15251 except with
blade handles.

CR-2521 illustrated



Model Number	DIMENSIONS IN INCHES					Cutout in Counter Top ($\frac{1}{2}$ " Radius Corners)	No. of $1\frac{1}{2}$ " Dia. Faucet Holes 4" Centers	Ship. Wt. Lbs.
	Length is left to right. Width is front to back.							
	Overall		Inside Each Compartment					
	L	W	L	W	D			
	A	B	C	D	E	Cutout Size	Faucet Holes	
CR-1721	17	21 $\frac{1}{4}$	14	15 $\frac{1}{4}$	7	16 $\frac{1}{4}$ 20 $\frac{1}{4}$	3	9
CR-2521	25	21 $\frac{1}{4}$	21	15 $\frac{1}{4}$	7	24 $\frac{1}{4}$ 20 $\frac{1}{4}$	3 or 4	12
CR-3122	31	22	28	15 $\frac{1}{4}$	7	30 $\frac{1}{4}$ 21 $\frac{1}{4}$	3 or 4	16
CRS-3322	33	22	28	15 $\frac{1}{4}$	7	32 $\frac{1}{4}$ 21 $\frac{1}{4}$	3 or 4	17

INDICATE FAUCET DRILLINGS REQUIRED



4 Holes



3 Holes

JOB NAME _____

DATE _____

CUSTOMER _____

ARCHITECT/ENGINEER _____

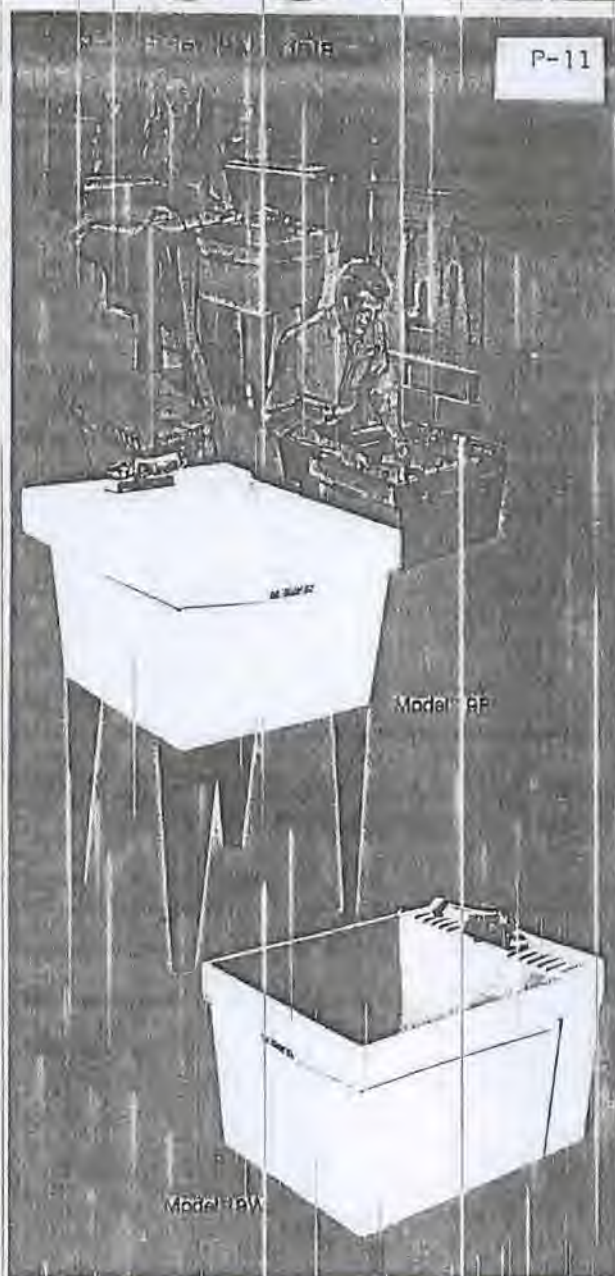
ELKAY MANUFACTURING COMPANY • 2222 CAMDEN COURT • OAK BROOK, IL 60521

ELKAY
stainless steel sinks

*This specification describes an Elkay product with design, quality functional benefits to the user.
When making a comparison of other producers' offerings, be certain these features are not overlooked.*

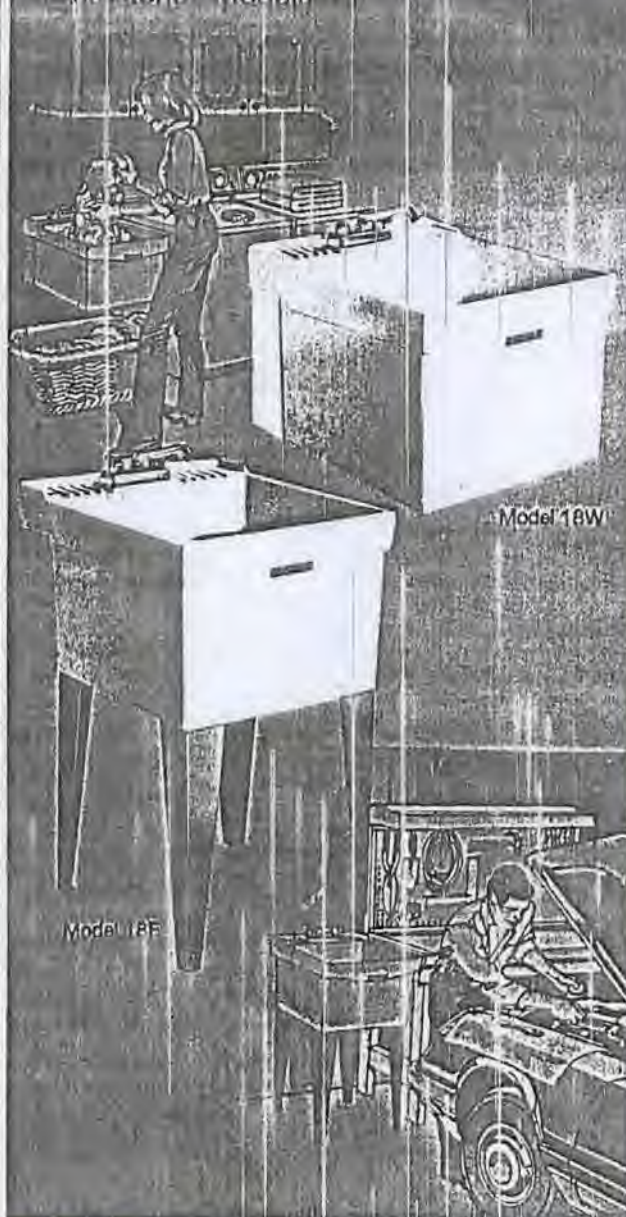
MUSTEE

Thermoplastic and
Durastone[®]
Laundry/Utility Trays



P-11

Durastone Models



UTILATUB[®] 19/18

Mustee's UTILATUBS[®] are designed with many built-in features. Sturdy floor and wall mounted models are extra tough, stain-resistant, attractive . . . and provide years of dependable performance.

When it's time to tackle those "tough" cleanup jobs . . . messy painting utensils and garden tools, family pets, grimy dirt from working on your car, doing the laundry, etc., etc., nothing works better than the convenience of a UTILATUB[®]. So don't wait, install one next to your workbench, in your basement, garage, utility room, breezeway, on your patio . . . or anywhere.

Quality Plumbing Products . . .

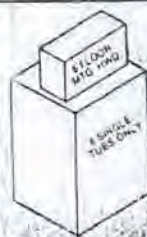


Shower Stalls • Enclosures • Bathtub and Shower Walls • Shower Floors
Shower Ensembles • Laundry Trays • Mop Basins • Accessories

MUSTEE UTILATUB® Laundry/Utility Trays

- **Sturdy, One-piece Construction** — molded under extreme heat and pressure with matched metal dies.
- **Choice of Floor or Wall Mounting.**
- **19 Gallon Capacity** — extra deep 13 inch bowl.
- **Smooth Interior Surfaces** — prevent fine fabric snags.
- **Only 20 Inches Wide** — fit where others can't.
- **Rust and Leak-resistant** — easy to clean.
- **Quick'n Easy to Assemble and Install.**

Space-saving "8-Paks" — single carton contains 6 trays with corresponding floor or wall mounting hardware in separate carton.



BUILT-IN FEATURES



Sturdy legs slide into snug fitting leg supports. Leveling devices included.



Leakproof 1 1/2" drain molded as integral part of tray, no putty or seals required.

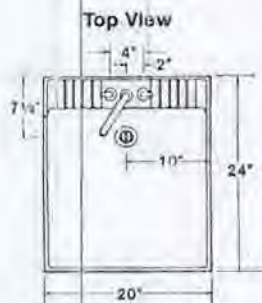


Built-in twin soap/storage shelves with retainer surface permit rapid drainage of soapy water and lather.

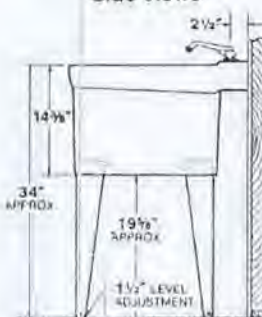
MATERIALS

Thermoplastic — structural polymer materials with cellular construction, white color.
Durastone® — mixture of fiberglass and crushed stone, blended with special formulated resins, marbelized white color.

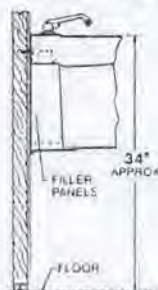
SPECIFICATIONS & ORDERING INFORMATION



Side Views



Floor Mount



Wall Mount

Model No.	Material	Mounting	Size (LxWxH)*	Capacity	Weight	Shipping Cu. Ft.
19F	Thermoplastic	Floor	24"x20"x35"	19 Gal.	23 lbs.	4.8
19W	Thermoplastic	Wall	24"x20"xAdj.	19 Gal.	20 lbs.	4.8
18F	Durastone®	Floor	24"x20"x35"	18 Gal.	32 lbs.	4.8
18W	Durastone®	Wall	24"x20"xAdj.	18 Gal.	28 lbs.	4.8

*L=length; W=width; H=height. Patent No. 3,427,044 and patents pending.

Note: When ordering "8-Paks" (dual cartons) use following suffix codes:

19FK for floor mounted trays and hardware, 110 lbs., 13.5 cubic ft.

19WK for wall mounted trays and hardware, 102 lbs., 13.5 cubic ft.

18FK for floor mounted trays and hardware, 159 lbs., 13.5 cubic ft.

18WK for wall mounted trays and hardware, 146 lbs., 13.5 cubic ft.

General: Furnish and install as shown on plans. UTILATUB® laundry tray(s) as manufactured by E.L. Mustee & Sons, Inc., Model

Models 19F/W. One-piece molded construction using structural thermoplastic, complete with drain assembly and floor or wall mounting hardware.

Models 18F/W. One-piece molded construction using natural crushed stone with polyester resin, complete with drain assembly and floor or wall mounting hardware.

Wall Mounting Bracket

2 MOUNTING BOLTS PROVIDED



Mounting Bracket — easily mounted to studs, concrete or block walls. Wall mount models include side fillers.

Optional Accessories...

FAUCET — chrome plated 4" center set, brass body and swing spout with hose end. Part No. 93.600.

FAUCET — chrome plated 4" center set, brass body and swing spout with hose end. Part No. 91.804.

FAUCET — clamp-on heavy brass body with swing spout and hose end. Part No. 90.700.

FAUCET BLOCK — for use with overhead water supply, deluxe molded. Part No. 20.600.

OVERFLOW TUBE — prevents water overflow. Part No. 27.600C.

DRAIN HOSE — tough, flexible 32" connector hose. Part No. 12.301A.

To reorder this literature specify catalog number ADV-281.

Notice: Our continuous commitment of product improvement may result in changes to product specifications without notice.

1 A/BS/AT 50/MAde in U.S.A.



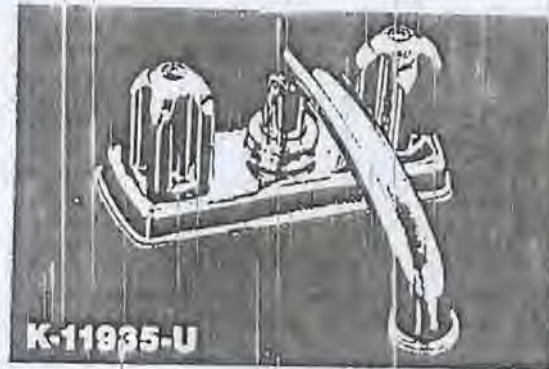
Quality Plumbing Products

E.L. MUSTEE & SONS, INC.

5431 West 164th Street • Cleveland, Ohio 44142

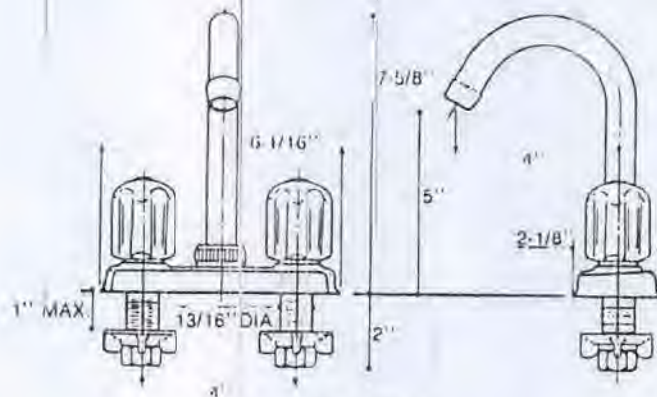
Phone: (216) 267-3100 • Fax: (216) 267-9957, Available 24 Hours

P-11



K-11935-U Trend Laundry Tray Sink Faucet with metal handles, outside threaded swing spout, renewable seats and hand-tighten shank nuts.

For additional Trend faucets, see Bath & Powder Room Faucets section.



K-11933

- 1) DEARBORN 1½ 17 GA. P-TRAP WITH CLEANOUT
- 2) BRASSCRAFT #SCR-1912-A SUPPLY KIT

CREATIVE INDUSTRIES TERRAZZO PRODUCTS, INC.

MANUFACTURERS
AND
DISTRIBUTORS

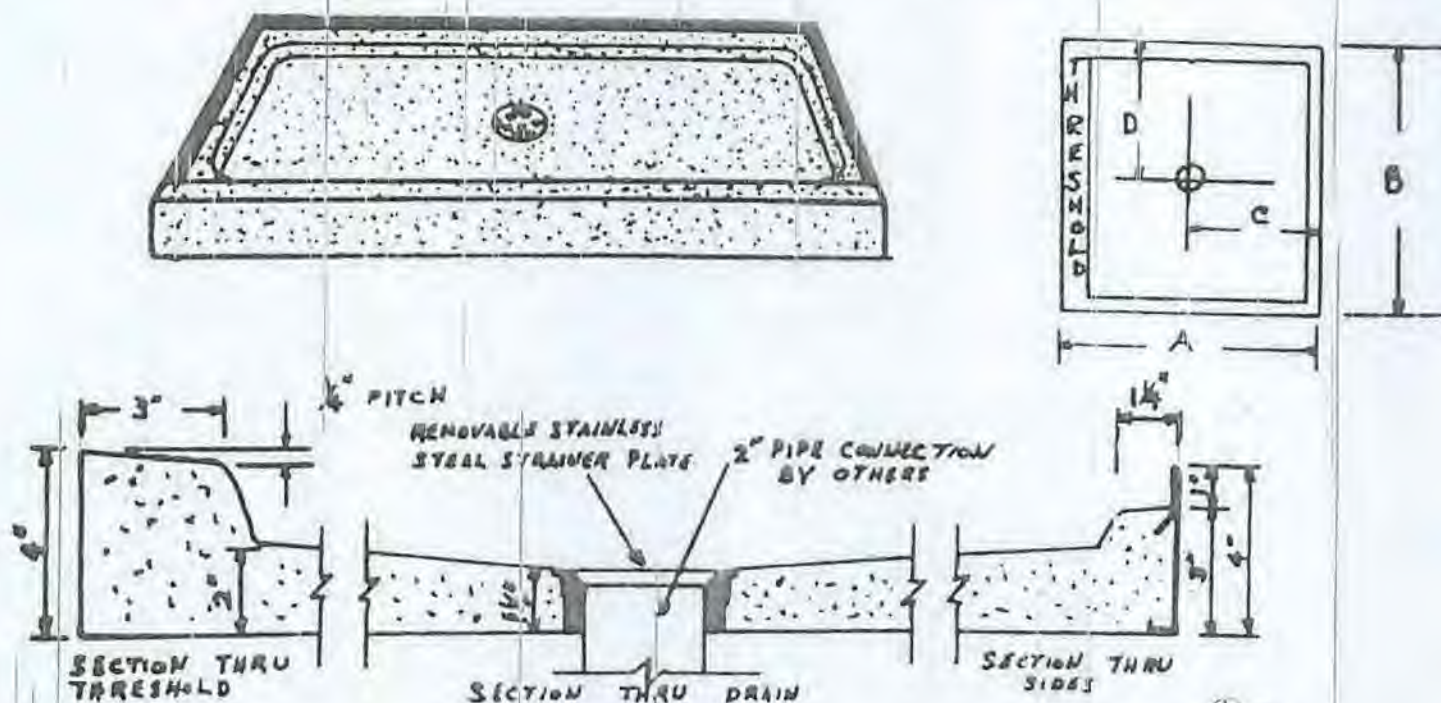
1753 N. SPAULDING AVENUE

CHICAGO, ILLINOIS 60647

(312) 235-9084
(312) 235-9089

SPECIFICATIONS:

Shower floor shall be precast terrazzo as manufactured by Creative Industries Terrazzo Products Inc. Receptors shall be cast as a one piece unit with wire mesh reinforcing if specified. Shoulder shall not be less than 1" high and not less than 1/2" wide. Drain shall be cast integral and shall provide for a caulk lead connection not less than 1" inch deep to a 2" pipe. Removable type strainer plate shall be made of stainless steel. Terrazzo shall be genuine black and white marble chips cast in white portland cement to provide a compressive strength of not less than 3,000 psi seven days after casting. Terrazzo surfaces shall be ground and polished with all air holes and/or pits grouted and sealed. Any other color combination or size desired can be supplied at additional cost.



MODEL	A	B	C	D
T3030	30"	30"	15"	15"
T3232	32"	32"	16"	16"
T3434	34"	34"	17"	17"
T3636	36"	36"	18"	18"
T4040	40"	40"	20"	20"
T4848	48"	48"	24"	24"

This is an approved drawing, all dimensions to be verified and approved copy of this print is to be returned to Creative Industries Terrazzo Products Inc. before production can proceed.

K-6902

Blue Print Pressure Balance Shutoff
Fitting

Alterra Set

Wheelchair Water Coolers

OASIS

1) 1½" CHROME PLATED CAST BRASS P-TRAP

2) ½" PAIR CIP-1912-A SUPPLY KIT

☐ OPLF8WMQA
☐ OPLF8WMQ
☐ OPLF4WMQ

☐ OPLF8WMD
☐ OPLF8WM
☐ OPLFWM

The functional style of a slender, angled cabinet allows plenty of room for the comfort of wheelchair users, and a variety of electrically activated bubbler valves add flexibility to model selection. For example:

Model OPLF8WMQA is activated by light pressure from any part of the body on any one of four touch pads. Water runs automatically for 7 seconds, then shuts off.

Model OPLF8WMQ also features four touch pads, but water flow continues as long as pressure on the pads is maintained.

Model OPLF8WMD continues water flow as long as pressure is maintained on either of two touch pads on the cabinet front.

Model OPLF8WM operates with a simple twist of the Dial-A-Drink® valve. Also available in a non-refrigerated fountain (OPLFWM).

OASIS water coolers use today's technology for lead-free safety.

The waterway systems in all our water coolers are constructed with copper components and *lead-free* materials. A *lead-free* brazing alloy is used on all joints. They meet UL and CSA requirements as well as all sanitary codes.

SUGGESTED SPECIFICATIONS

Cooler(s) shall deliver at least 7.5 gph of 50°F. water at 80°F. inlet water and 90°F. room temperature.

Bubbler valve shall have built-in pressure regulator for supply pressures from 20 to 125 psi.

Bubbler shall be electrically controlled and be activated by touch pads for a timed period of water flow (OPLF8WMQA), or by any one of four touch pads (OPLF8WMQ) and (OPLF4WMQ), or by either of two touch pads (OPLF8WMD), or by a Dial-A-Drink® bubbler that is mechanically operated (OPLFWM).

Tank-type cold water storage system shall have copper refrigerant coils. Refrigerant flow controlled by capillary tube. Temperature controlled by adjustable thermostat with "Off" position.

All water carrying lines shall be copper.

Potable water system components shall be *lead free* as defined by the Safe Drinking Water Act Amendments of 1986, and the Lead Contamination Control Act of 1988.

Water cooler(s) shall have limited five-year warranty on the sealed refrigeration system and most component parts.

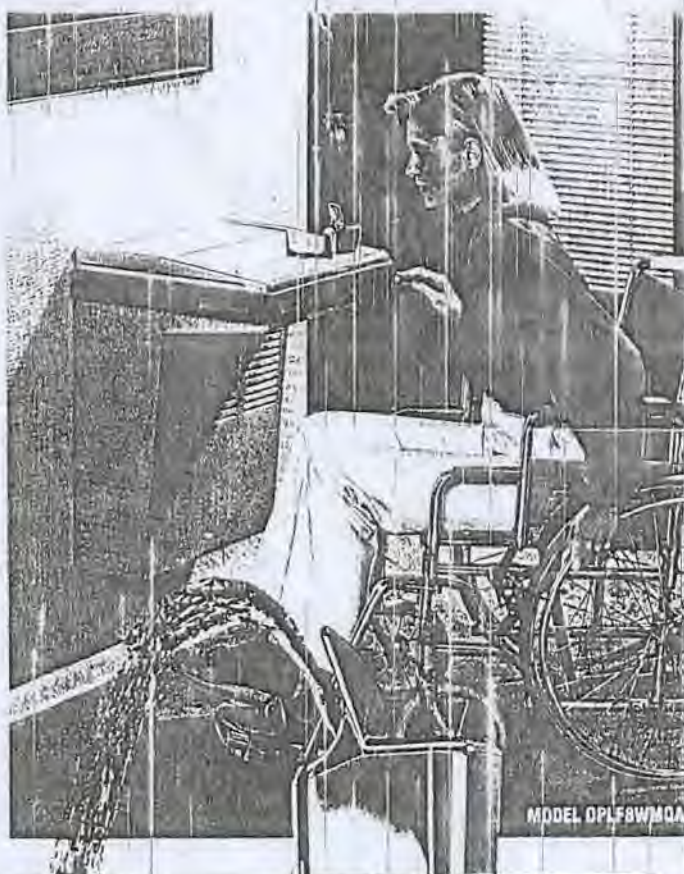
Cooler(s) shall meet specifications of U.S. Department of Commerce Bureau of Standards; Public Health, Sanitary and Plumbing Codes; and be Certified to ARI, Listed by Underwriters' Laboratories, and Certified by CSA. Water cooler(s) shall be Oasis Wheelchair Model(s).



MODEL OPLF8WMD



MODEL OPLF8WM



MODEL OPLF8WMQA

OASIS Wheelchair Water Cooler Specifications

Model	Capacity in GPH of 50°F.* Drinking Water				Base Rate GPH	Pre- Cooler	115 Volts, 60 Hz.		Net Weight, Approx.	Number of People Served (Bubbler) Per One Gallon of Capacity at ARI Standard Rating Condition
	Ambient Air Temperature						Compr. HP	Full Load Amps		
	70°F.	80°F.	90°F.*	100°F.						
OF LF8WMQA	9.0	8.4	7.8	7.1	7.8	No	1/5	5.5	59 Lbs.	Offices, Hospitals, Schools,
OF LF8WMQ	9.0	8.4	7.8	7.1	7.8	No	1/5	5.5	59 Lbs.	Stores, and Lobbies
OF LF4WMQ	4.6	4.3	4.0	3.6	4.0	No	1/6	3.0	50 Lbs.	Light Manufacturing
OF LF8WMD	9.0	8.4	7.8	7.1	7.8	No	1/5	5.5	59 Lbs.	Heavy Manufacturing
OF LF8WM	9.0	8.4	7.8	7.1	7.8	No	1/5	5.5	59 Lbs.	Hot, Heavy Manufacturing
OF LFWM	FOUNTAIN ONLY								27 Lbs.	Not: The table above is in accordance with ARI Drinking Water Cooler Application Standard 102)

*Air Conditioning and Refrigeration Institute Standard Rating Condition 80°F. inlet water temperature.

Bubbler Valve: Built-in pressure regulator assures a smooth, steady flow at line pressures from 20 to 125 psi.

Bubbler Valve Control: Model OPLF8WMOA solid state operated solenoid; Models OPLF8WMQ, OPLF4WMQ and OPLF8WMD electro-mechanical operated solenoid; Model OPLF8WM mechanical Dial-A-Drink®.

One-Piece Top and Receptor: Satin finish Type 304 stainless steel. Effective anti-splash ridge with easy-to-clean integral strainer.

Cabinet: The separate unitized (welded) framework of heavy-gauge steel that provides rigidity is enamel coated for corrosion protection. Panels have standard finish of Sandstone vinyl laminated to steel. Optional colors available in vinyl and baked enamel on steel. Also available in stainless steel and Regency Bronze at extra cost.

Units feature removable front and side panels, and are shipped with mounting bracket.

Tank and Cooling Coil: High-efficiency, tank-type cold water storage system reduces starts and operating time of compressor. Two metal walls

between drinking water and refrigerant. All water carrying lines are constructed of copper tubing.

Cooling Tank Insulation: Removable, molded, expanded bead polystyrene.

Cold Water Thermostat: Adjustable thermostat with "Off" position; controls cold water temperature.

Refrigeration Unit: Fan-cooled condenser. Internally spring mounted, hermetically sealed compressor with automatic overload protector. No lubrication needed. Refrigerant is controlled by accurately calibrated capillary tube.

Electrical: Furnished with 3-wire service cord and polarized plug.

Accessory Glass Filler: Factory installed. Push handle (029603-003), push back (029603-002), or push down (029603-001).

Limited 5-Year Warranty (Continental limits of the United States and Canada): Five years on the sealed refrigeration system and most component parts. Detailed warranty certificate enclosed with each water cooler; sample copy available upon request.

Components in these water coolers/fountains are lead free as defined by the Safe Drinking Water Act Amendments of 1986, and the Lead Contamination Control Act of 1988.

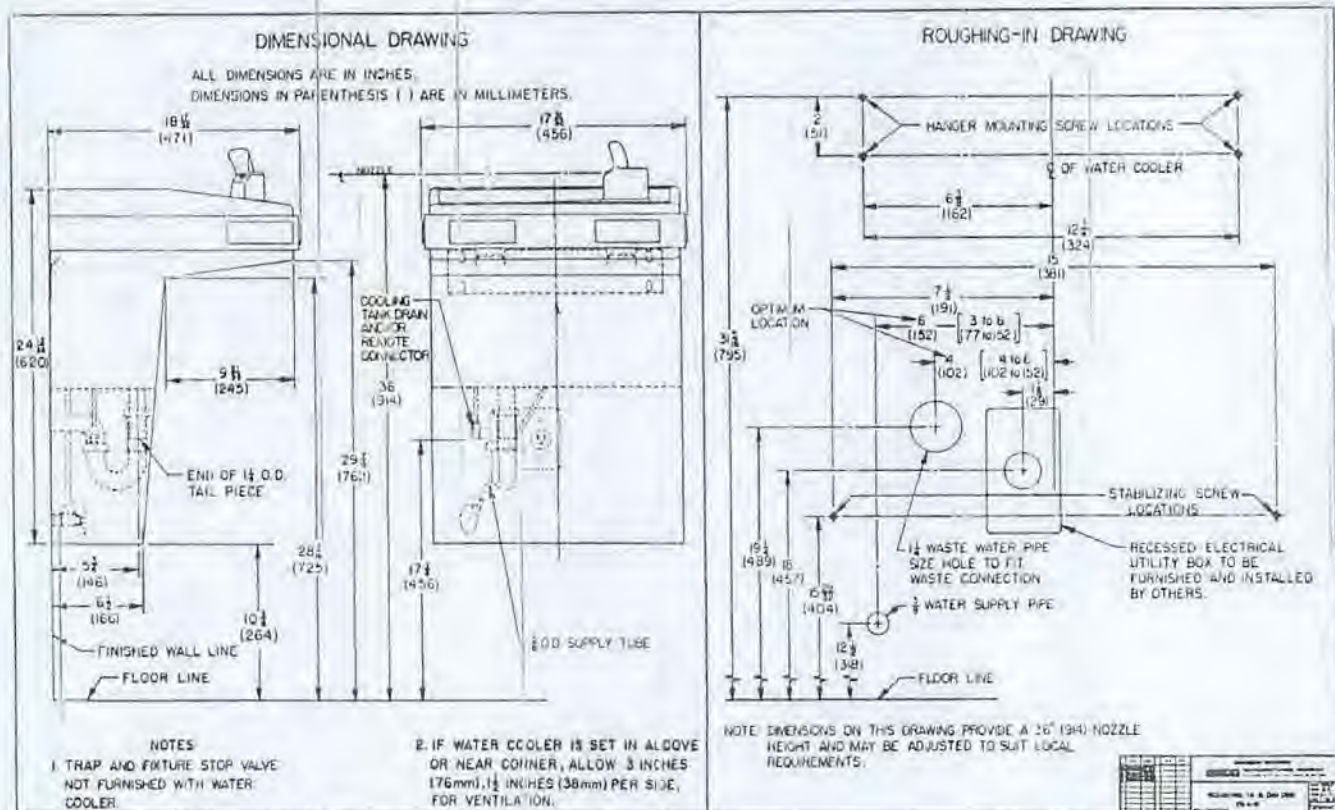


Models covered by these specifications comply with all known Plumbing Codes, Listed by Underwriters' Laboratories, Certified by Canadian Standards Association, and Certified to Air Conditioning and Refrigeration Institute.

EXPORT

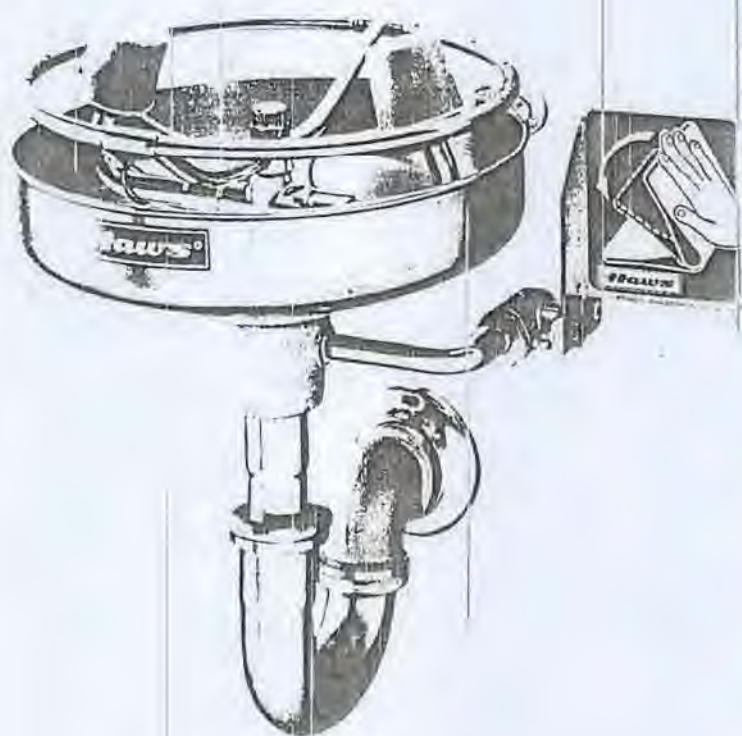
Special Export Models: Models OPLF8WMOA/X and OPLF8WMX are operable on 220-240 volts, 50 Hertz without transformers. UL, CSA and ARI not applicable.

Warranty: One year on the sealed refrigeration system and most component parts. Four-year replacement contract on sealed refrigeration system. Detailed warranty certificate enclosed with each water cooler; sample copy available upon request.



Eyewash with Face Spray Ring

7760
7760B
7760BT



Model 7760BT

For less trap specify Model 7760B
For less trap and bracket specify Model 7760

Receptor: Stainless steel.

Heads: Twin Soft-Flo[®] patented soft PVC covered ABS plastic anti-surge heads in safety green (Model SP11).

Stream Control: Steady water flow under varying pressures assured with dual automatic pressure compensation devices.

Dust Covers: Protect heads and automatically release with water pressure.

Spray Ring: Circular, chrome plated with 16 spray openings which project soft streams of water to entire face.

Valve: Instant action, stay open chrome plated brass ball valve easily activated by stainless steel push flag.

Sign: Universal emergency sign included.

Wall Mounting: 7760B and 7760BT include wall-mount bracket.

Trap: 7760BT includes 1 1/2" IPS satin chrome plated trap.

Supply: 1/2" IPS.

Waste: 1 1/4" IPS with 1 1/4" O.D. tail piece.

Shipping Weight: 7760 (8 lbs.), 7760B (8 lbs.), 7760BT (12 lbs.)

Options: (Additional Cost)

- **Model 9100[®]:** Dust cover assembly protects unit from dust and other environmental contamination.

Continued →

Notice: All models shown meet ANSI Standard and OSHA rules and regulations relating to this type of product. Units should be tested regularly. Continued product improvements make specifications subject to change without notice.
*Patent No. 3,809,115 **Patent No. 3,599,261

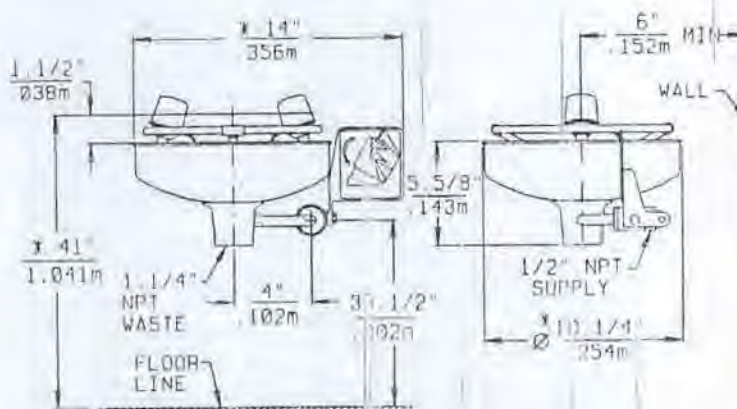
Haws[®]

1435 Eighth Street • P.O. Box 1999
Berkeley, CA 94701
Phone: (510) 525-5801 • FAX: 510-528-2812

Eyewash with Face Spray Ring

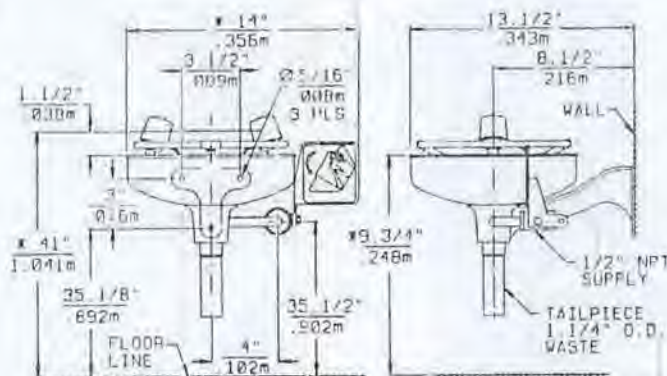
- ☐ **CRP Green Coating:** Protection against corrosive atmospheres.
- ☐ **Model 9050 Foot Control Assembly:** Allows user to operate unit without using hands. The Model 9050 Foot Control Assembly was specially designed for use with 7000 series wall mounted eyewash models. Pressure on treadle activates water flow.

Note: ANSI Standard specifies eyewash nozzle heights to be 33" (.83m) to 45" (1.143m) above the floor.



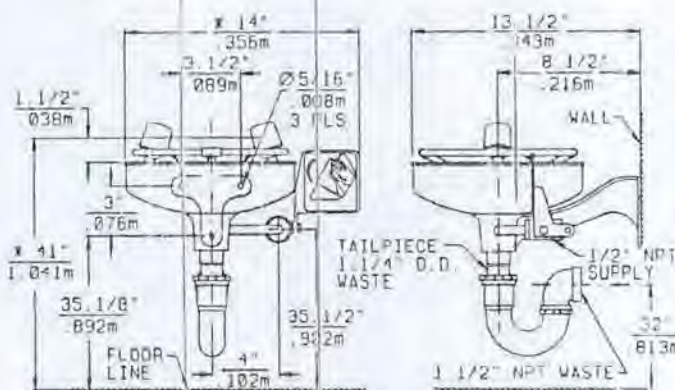
* THESE DIMENSIONS MAY VARY PLUS OR MINUS 1/2" (.013m)
NOTE: ANSI STANDARD SPECIFIES EYEWASH NOZZLES TO BE 33" (.83m) TO 45" (1.143m) ABOVE THE FLOOR.

Model 7760



* THESE DIMENSIONS MAY VARY PLUS OR MINUS 1/2" (.013m)
NOTE: ANSI STANDARD SPECIFIES EYEWASH NOZZLES TO BE 33" (.83m) TO 45" (1.143m) ABOVE THE FLOOR.

Model 7760B



* THESE DIMENSIONS MAY VARY PLUS OR MINUS 1/2" (.013m)
NOTE: ANSI STANDARD SPECIFIES EYEWASH NOZZLES TO BE 33" (.83m) TO 45" (1.143m) ABOVE THE FLOOR.

Model 7760B

Haws

1435 Fourth Street • P.O. Box 1999 • Berkeley, CA 94701
Phone: (510) 525-5801 • FAX: 510-528-2812

IMPORTANT CONSUMER INFORMATION

LIMITED ONE-YEAR WARRANTY

Kohler plumbing fixtures and fittings are warranted free of manufacturing defects.

Kohler Co. will promptly repair, replace, or make appropriate adjustment where Kohler Co. inspection discloses any such defect occurring in normal usage within one year after installation. Kohler is not responsible for installation costs.

To obtain warranty service, contact Kohler Co. either through your Dealer or Plumbing contractor or by writing Kohler Co., Attn: Consumer Affairs Department, Kohler, Wisconsin 53044, U.S.A.

Implied warranties including that of merchantability are expressly limited in duration to the duration of this warranty. Kohler Co. disclaims any responsibility for consequential damages.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so this limitation and exclusion may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

This is our exclusive written warranty.

KOHLER CO., KOHLER, WISCONSIN 53044

CARE AND CLEANING FOR YOUR NEW KOHLER FAUCET

CAUTION: CLEAN ACRYLIC HANDLES ONLY WITH SOAP AND WARM WATER. DO NOT USE DISINFECTANTS CONTAINING ALCOHOL OR OTHER ORGANIC SOLVENTS.

CHROME PLATED FAUCETS: Your attractive chrome finished faucets will remain sparkling if you clean them with a damp sponge and buff dry to restore their gleam. In hard water areas you may use the following cleaners, but remember, they must be rinsed off immediately.

- Lysol Direct Multi-Purpose
- Lysol Disinfectant
- Lysol Bleach Alternative
- Fantablic All-Purpose
- Scrub Free-Kitchen
- Limeaway Bath & Kitchen
- Dow Bathroom
- Fantablic Bathroom
- Fantablic All-Purpose
- Glass Plus
- Pine Magic
- "New" Spit & Span
- Mr. Clean w/Soft Abrasive
- Mr. Clean All-Purpose
- Top Job

EPOXY FINISHED BRASS OR COLORED FAUCETS: should be treated by cleaning with a mild soap and warm water and by wiping dry with a clean, soft cloth. Many cleaners may contain chemicals, such as ammonia, which could adversely affect the finish. If used, they must be wiped off immediately.

- Scrub Free-Bathroom
- Scrub Free-Kitchen

GOLD FAUCETS REQUIRE SPECIAL CLEANING: Your handsome gold finished faucets deserve the same special care you give your jewelry. Clean ONLY with the following cleaners and dab dry with a soft cloth.

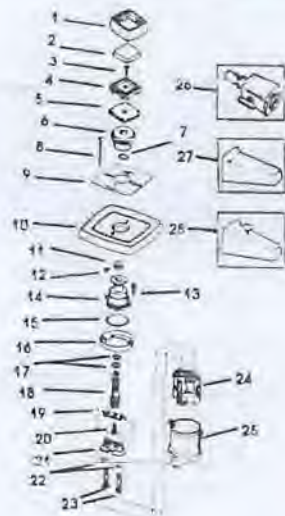
- Lysol Direct Multi-Purpose
- Lysol Disinfectant
- Lysol Bleach Alternative
- Scrub Free-Kitchen
- Fantablic All-Purpose
- Glass Plus
- Pine Power
- Mr. Clean All-Purpose
- Top Job

DO NOT USE ABRASIVE CLEANERS OR SOLVENTS ON KOHLER FAUCETS.

Showerheads may require occasional special cleaning to discourage lime deposits. Remove the showerhead and soak it in a glass of vinegar until the lime deposit can be wiped off. Please remember to thoroughly rinse the showerhead before replacing it on its fitting.

CAUTION: Do not leave the showerhead in the vinegar solution too long or the brass working parts may be affected.

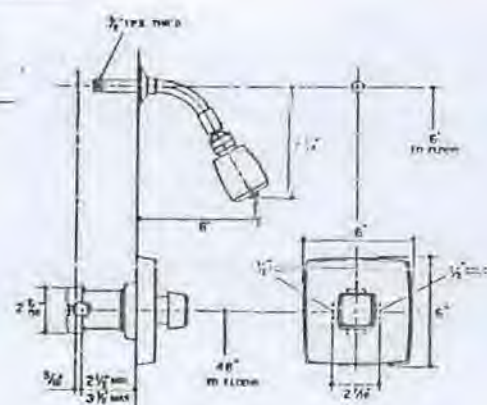
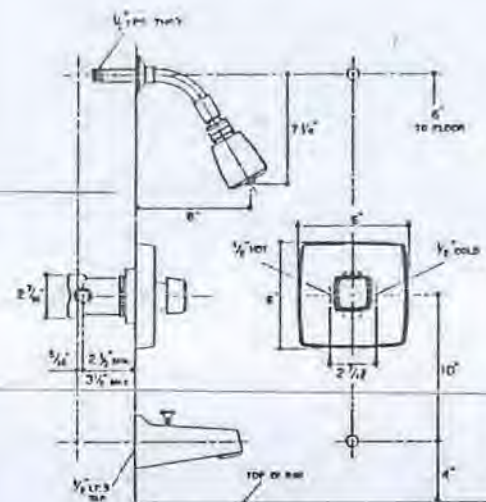
ITEM NO.	PART NO.	DESCRIPTION
1	500229	Large Handle Body
2	600231	Large Altern. Inset
3	500234	Rite-Temp. Screw
4	600235	Large Inset Handle
5	500437	Large Handle Base
6	600241	Rite-Temp. Handle Skirt
7	600242	Snap-Ring
8	30201	Screw
9	42055	Metal Faceplate
10	42056	Plastic Faceplate
11, 12, 13	30045	Valve Regulating Screw and Nut S.A.
14	42059	Cap
15		Not available as a service part
16, 17, 20	42053	Spindle S.A.
21	42033	Bunger Guide
22	30046	Pressure Regulator
23		Not available as a service part
24	4-7334	Alterna Showerhead
25	29727	Bath Spout
26	29726	Diverter Spout



Specify finish on exposed parts

KOHLER INSTALLATION INSTRUCTIONS

ALTERNA™ RITE TEMP
BATH/SHOWER FAUCET
K-6900, K-6902,
K-6904



SPECIFICATIONS

Lead stops	K-6900
Roughing-in sheets	K-6900/K-6904
	105169
	K-6902
	105170

NOTES

Valve shuts off by water pressure. DO NOT FORCE HANDLE IN ANY DIRECTION. To turn off valve, gently turn to off position.

THESE INSTRUCTIONS CONTAIN WARRANTY AND MAINTENANCE INFORMATION. PLEASE SAVE FOR FUTURE REFERENCE.

BEFORE YOU BEGIN ...

- Observe all local plumbing and building codes.
- Inspect waste and supply tubing ... replace if necessary.
- Assemble all tools and materials needed.

TOOLS AND MATERIAL REQUIRED:

- Adjustable or open end wrench
- Plumber's putty
- Thread sealant (Teflon tape)
- Hack saw
- Teflon tape
- Strap wrench
- Propane torch
- Tube cutter
- 9/16" hex head wrench

OPTIONAL TOOLS & MATERIALS:

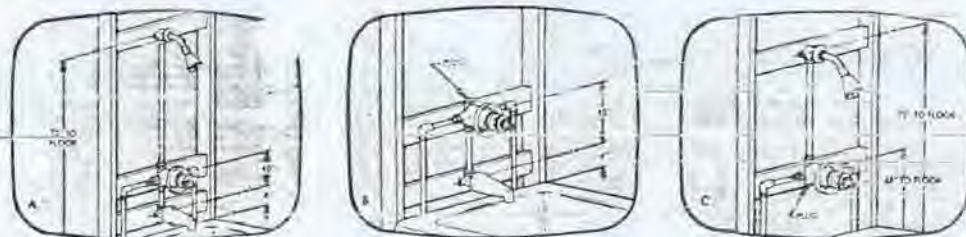
- Pipe wrench
- Pliers
- Basin wrench
- Supply tubes
- Bending rod

TROUBLESHOOTING

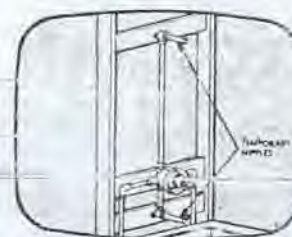
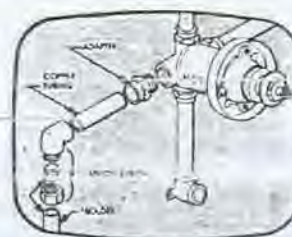
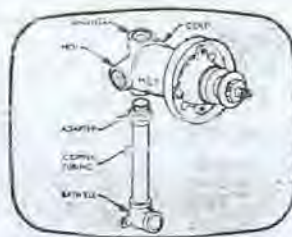
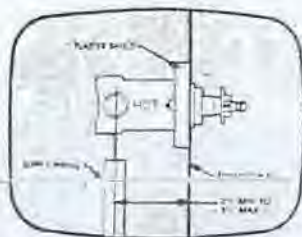
Flush and troubleshoot new faucet before finished wall is completed.

Check for leaks at:
Tubing
Supply to Valve Body
Spout

Make sure handle operates smoothly and that the finish is undamaged. **DO NOT FORCE HANDLE IN ANY DIRECTION.** Turn handle clockwise to turn on valve.

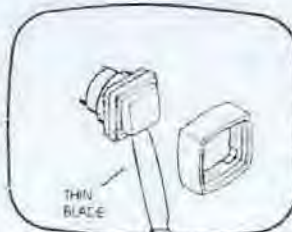
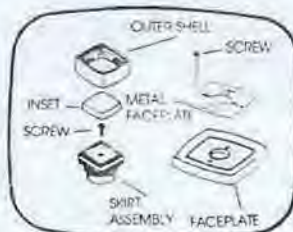
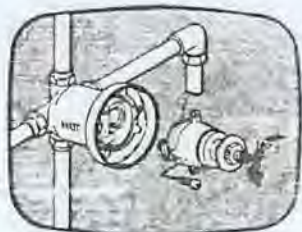


Refer to the illustrations above before installing RITE TEMP. (A) Bath and Shower, (B) Bath only, (C) Shower only. **DO NOT REMOVE PLASTER SHIELD FROM VALVE.** Protect the bath or shower during installation. Make sure you have a large enough access to make connections.



1 Use plaster shield to position mixer from centerline of inlets to face of finished wall. Make sure **HOT** marking is on the left. Install 1/2" copper or equivalent to bath and shower end of the valve as needed. **Refer to illustration for suggested fittings. SOLDER ANY ADAPTERS OR BATH AND SHOWER ELLS BEFORE CONNECTING TO VALVE BODY OR DAMAGE MAY RESULT.** For shower only or bath only installations, seal unused opening in valve with plug.

2 Install adapters, tubing, and unions for hot and cold supplies as illustrated. If water stops are to be used, install at this time. **SOLDER ROUNDED END OF UNION CONNECTION TO COPPER TUBING BEFORE ASSEMBLING TO VALVE BODY. DO NOT APPLY DIRECT HEAT TO VALVE BODY.** Install temporary nipples in bath and shower ells.



3 BACK-TO-BACK INSTALLATION. Never install mixer upside down. On mixer where supplies are reversed remove cap screws from mixer and turn cap assembly 180 degrees. Reassemble mixer. Complete finished wall. Set maximum temperature by loosening screw on stem. Loosen locknut and rotate stem to desired temperature setting. Position nut against cap and tighten screw. Install metal faceplate, faceplate, and sleeve. **ASSEMBLE THE HANDLE.** Unscrew handle outer shell from handle skirt assembly. Fasten handle skirt assembly to valve with screws. Snap handle insert into rubber inset holder. Thread handle outer shell onto handle skirt as shown.

4 Remove temporary nipples. Apply putty around inlet of spout. Install spout to bath ell using a 1/2" nipple extending 7/16" beyond finished wall. Tighten spout with a clean strap wrench. Place putty around shower arm escutcheon. Slip over shower arm. Install shower arm to shower ell using thread sealant. Flush and faucet. Install showerhead. Tighten setscrew on escutcheon.

TO CHANGE INSET. Unscrew handle outer shell from handle skirt. Pry inset out of rubber inset holder. Use your thumb to pry one side of rubber inset holder away from inset. Assemble one side of new inset into rubber inset holder and snap inset into place. Thread handle outer shell to handle skirt.

IMPORTANT CONSUMER INFORMATION

LIMITED TWO-YEAR WARRANTY

Kohler plumbing fixtures and fittings are warranted free of manufacturing defects.

Kohler Co. will, at its election, repair, replace, or make appropriate adjustment where Kohler Co. inspection disclosed any such defects occurring in normal usage within two years after installation. Kohler Co. is not responsible for installation costs.

To obtain warranty service, contact Kohler Co. either through your Dealer or Plumbing Contractor or by writing Kohler Co., Attn: Consumer Affairs Department, Kohler, WI 53044 U.S.A.

IMPLIED WARRANTIES, INCLUDING THAT OF MERCHANTABILITY, ARE EXPRESSLY LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. KOHLER CO. DISCLAIMS ANY RESPONSIBILITY FOR CONSEQUENTIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages. So this limitation and exclusion may not apply to you. This warranty gives you specific legal rights. You may also have rights which vary from state to state.

This is our exclusive written warranty.

KOHLER CO., KOHLER, WISCONSIN 53044

CARE AND CLEANING FOR YOUR NEW KOHLER FAUCET

ACRYLIC HANDLES. Clean acrylic handles using one of the following cleaners. DO NOT USE DISINFECTANTS CONTAINING ALCOHOL OR OTHER ORGANIC SOLVENTS.

- | | | | |
|---------------------|------------------------|----------------------------|---------------------|
| *Tough Act | *FANTASTIK All-Purpose | *Glass Plus | *FANTASTIK Bathroom |
| *Lysol Bathroom | *Lysol Deodorizing | *LIME-A-WAY Bath & Kitchen | *New Spic and Span |
| *Spic and Span Pine | *Mr. Clean All-Purpose | *Mr. Clean w/Soft Abrasive | |

CHROME PLATED FAUCETS. Your attractive chrome finished faucets will remain sparkling if you clean them with a damp sponge and buff dry to restore their gleam. In hard water areas you may use the following cleaners, but remember, they must be rinsed off immediately.

- | | | | |
|----------------------------|--------------------|----------------------------|-----------------------------|
| *NEW SPIC AND SPAN | *Dow Bathroom | *Lysol Deodorizing | *LYSOL Direct Multi-Purpose |
| *FANTASTIK Bathroom | *LYSOL Fine Action | *MR. CLEAN w/Soft Abrasive | *MR. CLEAN All-Purpose |
| *FANTASTIK All-Purpose | *GLASS PLUS | *LYSOL Basin, Tub & Tile | *TOP JOB |
| *LIME-A-WAY Bath & Kitchen | | *FINE MAGIC Multi-Purpose | *FINE POWER |

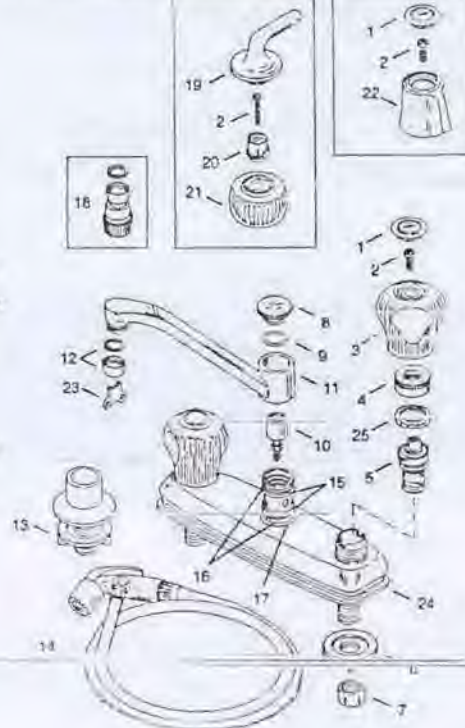
POLISHED BRASS, AND COLORED FAUCETS. Clean these faucets with a mild soap and warm water. Wipe entire faucet completely dry with a clean, soft cloth. Many cleaners may contain chemicals, such as ammonia, which could adversely affect the finish and are not recommended for cleaning.

DO NOT USE ABRASIVE CLEANERS OR SOLVENTS ON KOHLER FAUCETS.

NOTE: Part numbers listed refer to service parts and may not correspond to production part numbers packed with fitting. Order by service part number only.

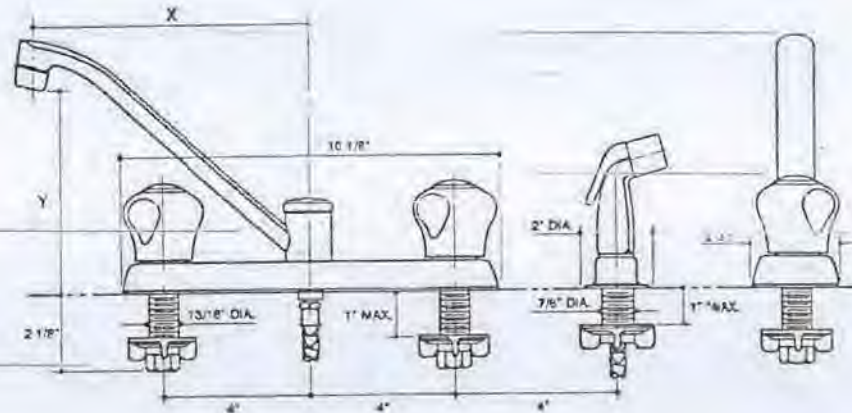
ITEM NO.	PART NO.	DESCRIPTION
1	70207	Cold Plug Button, 1 ea.
	70208	Hot Plug Button, 1 ea.
2	70047	Handle Screw, 1 ea.
3	70206	Handle, Acrylic, 1 ea.
4	70308	Bonnet, 1 ea.
5	70127	Valve Unit (Closes Clockwise), 1 ea.
	70415	Valve Unit (Closes Counterclockwise), 1 ea.
6	40080	Shank Nut, 1 ea.
7	32751	Coupling Nut, 1 ea.
8	70046	Cap, 1 ea.
9	34300	O-ring, 1 ea.
10	20854	Diverter, 1 ea.
11	70416	8" Spout w/Aerator, 1 ea. Items 11 and 12
	10" Spout w/Aerator, 1 ea.	
12	K-15280	12" Spout w/Aerator, 1 ea. Items 11 and 12
	41056	Aerator (Male), 1 ea.
	40109	Aerator (Female), 1 ea.
	41060	Vandal Resistant Aerator (Female), 1 ea.
13	20847	Spray Guide, 1 ea.
14	20816	Hose and Spray Head, 1 ea.
15	26464	O-ring, 1 ea.
16	70300	Snap Ring, 1 ea.
17	70039	Washer, 1 ea.
18	32456	Black Swinger Spray (Specify Finish), 1 ea.
19	70302	Handle, Lever, 1 ea.
20	70307	Adapter, 1 ea.
21	70306	Skin (Clear)
22	70508	Handle, Blade, 1 ea.
23	21999	Vandal Resistant Aerator Wrench, 1 ea.
24	70221	Sink Undercover
25	70007	Retaining Ring

Specify finish on all exposed parts.



KOHLER® INSTALLATION INSTRUCTIONS

LAVALAIS™ LAVATORY FAUCETS



SPECIFICATIONS

Less spray, round handles	K-15251
Less spray, lever handles	K-15252
With spray, round handles	K-15253
With spray, lever handles	K-15254
With Swinger, round handles	K-15257
With Blade Handles	
Less spray	K-15251-B
With spray	K-15253-B
With 10" spout	
Less spray, round handles	K-15251-TT
Less spray, lever handles	K-15252-TT
With spray, round handles	K-15253-TT
With spray, lever handles	K-15254-TT
With Blade Handles & V.R. Aerator	
Less spray	K-15653-B
With spray	K-15653-B

NOTES

Valve inlets accommodate 1/2" O.D. tubing for slip joint connections.

Suffix B = blade handles
Suffix TT = 10" spout

Spout: X = 7-3/4" Y = 6"
10" Spout: X = 10" Y = 6-7/16"

PLEASE LEAVE THESE INSTRUCTIONS WITH THE CONSUMER. THEY CONTAIN IMPORTANT CARE, CLEANING, AND WARRANTY INFORMATION.

KOHLER CO. KOHLER, WISCONSIN 53044

105648-BA (0590)
E019400

BEFORE YOU BEGIN:

- Observe all local plumbing codes.
- Shut off main water supply.
- Inspect waste and supply tubing; replace if necessary.

FOR NEW INSTALLATIONS: Assemble faucet to lavatory before installing lavatory.

NOTE: Valves installed close with a quarter-turn in the direction indicated below:

Knob handles: Cold and hot valves close clockwise.
Lever/blade handles: Cold valve closes counter-clockwise. Hot valve closes clockwise.

REQUIRED TOOLS & MATERIALS:

- Assortment of screwdrivers
- Adjustable or open end wrenches
- Tubing cutter
- Plumber's putty
- Thread sealant

OPTIONAL TOOLS & MATERIALS:

- Pipe wrench
- Pliers
- Basin wrench
- Supply tubes
- Bending rod
- Shut-off valves
- Trap
- Strainer

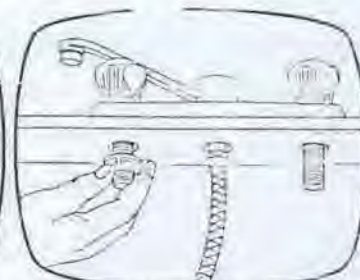
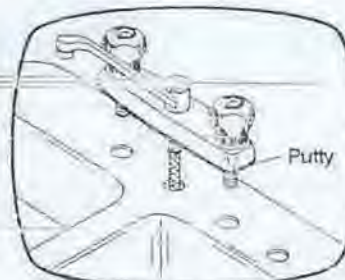
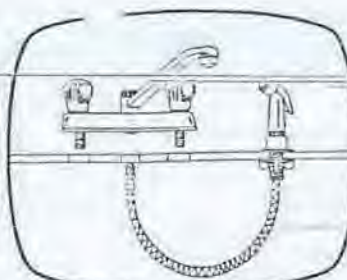
TROUBLESHOOTING:

Flush and troubleshoot new faucet with aerator removed.

Check for leaks at joints including the following:

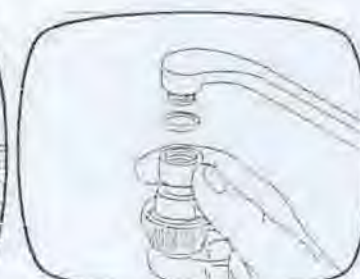
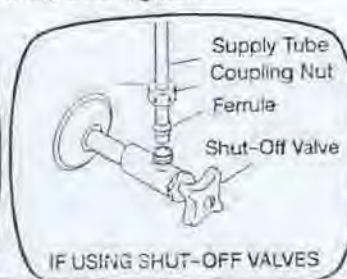
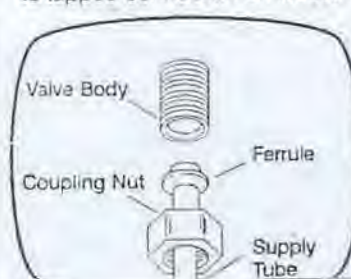
- Supply to valve body
- Spout

Check handles for smooth operation. Check finish for damage.



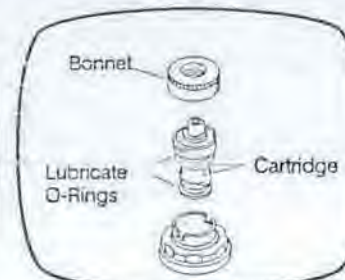
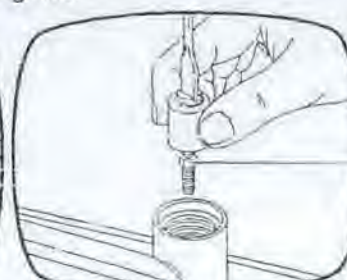
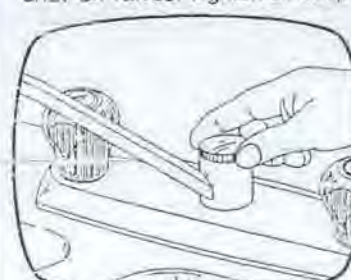
1 If installing a faucet without a spray unit, go to Step 2. Put a bead of plumber's putty around underside of hose guide. Place spray guide into far right hole, as illustrated. From under sink, place washer and nut over hose guide. Wrench-tighten nut. Remove excess putty. Insert hose down through hose guide. Feed hose up through second sink hole from left. Using a small amount of thread sealant, thread hose end to tapped connection on faucet. **Do not over-tighten.**

2 Put a bead of plumber's putty around underside of faucet. Place faucet inlets through sink holes. Center and align faucet. From under sink, securely hand-tighten locknuts. **Do not wrench-tighten.**



3 Cut supply tubes if necessary to allow for required penetration into shut-off valve. Slip coupling nuts onto supply tubes. Carefully position round ends of supply tubes squarely to inlet connections of shanks. Carefully bend supply tubes to align with supply stops. Slip coupling nuts then ferrules onto supply tubes. Insert supply tubes into outlets of shut-off valves. Tighten all coupling nuts.

4 Remove aerator. Turn hot and cold water on. Run water through faucet about a minute to remove any debris. Inspect aerator and remove any debris. Replace aerator. Check for leaks.



To replace spray diverter unit: Shut off water supply. Remove the knurled cap from top of spout post. Cover cap with tape or cloth to avoid scratching the plating. Place screwdriver into slot on top of diverter unit. Turn counter-clockwise to loosen. Turn out diverter unit and discard. Replace with new diverter unit. Reassemble faucet. Turn hot and cold water on. Run water through faucet about a minute to remove any debris. Inspect aerator and remove any debris. Replace aerator. Check for leaks.

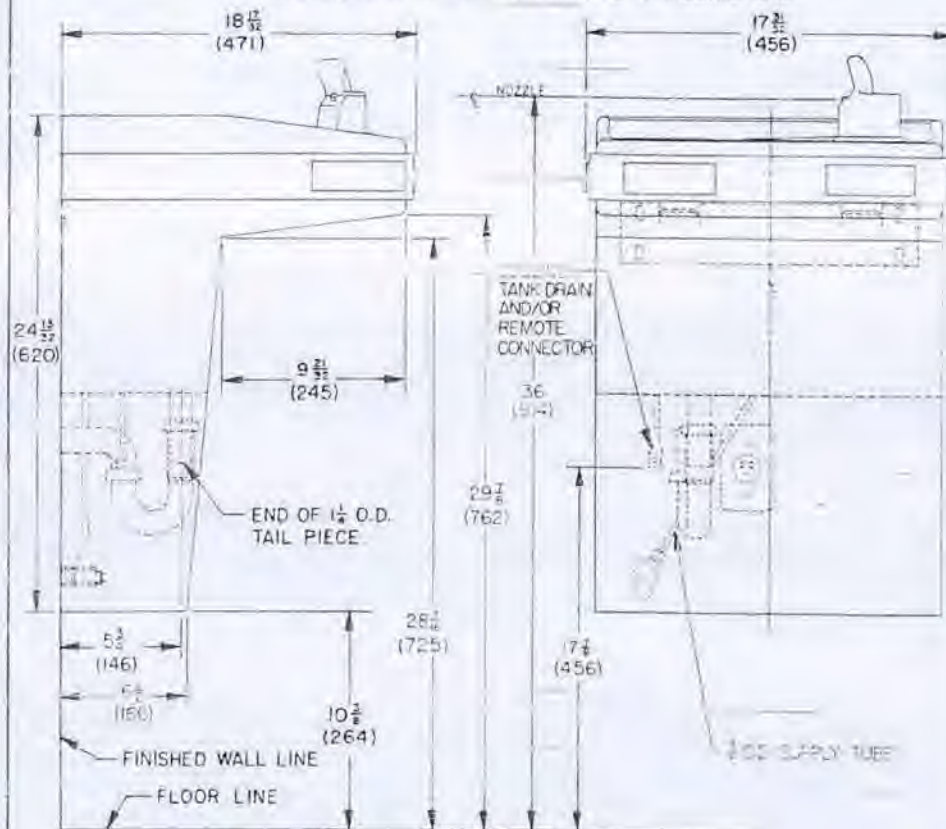
To replace cartridge: Turn off water supply. Open valves to relieve water pressure. Remove handle and cover edges of bonnet with tape. **Do not scratch plated surfaces.** Turn bonnet counter-clockwise with pliers or wrench to remove. Replace handle on cartridge and thread screw through handle. Turn handle to open position and pull cartridge out of faucet. Lubricate O-ring with lube provided. Rotate stem on new cartridge to open position. Insert new cartridge into body so lugs on cartridge fits into slot on faucet body. Reassemble bonnet to faucet. **Do not use excessive force.** Reassemble handle to valve.

Water Cooler Models

PLFWM, PLF8WM, PLF8WMD, PLF4WMQ, PLF8WMQ, PLF8WMQA

DIMENSIONAL DRAWING

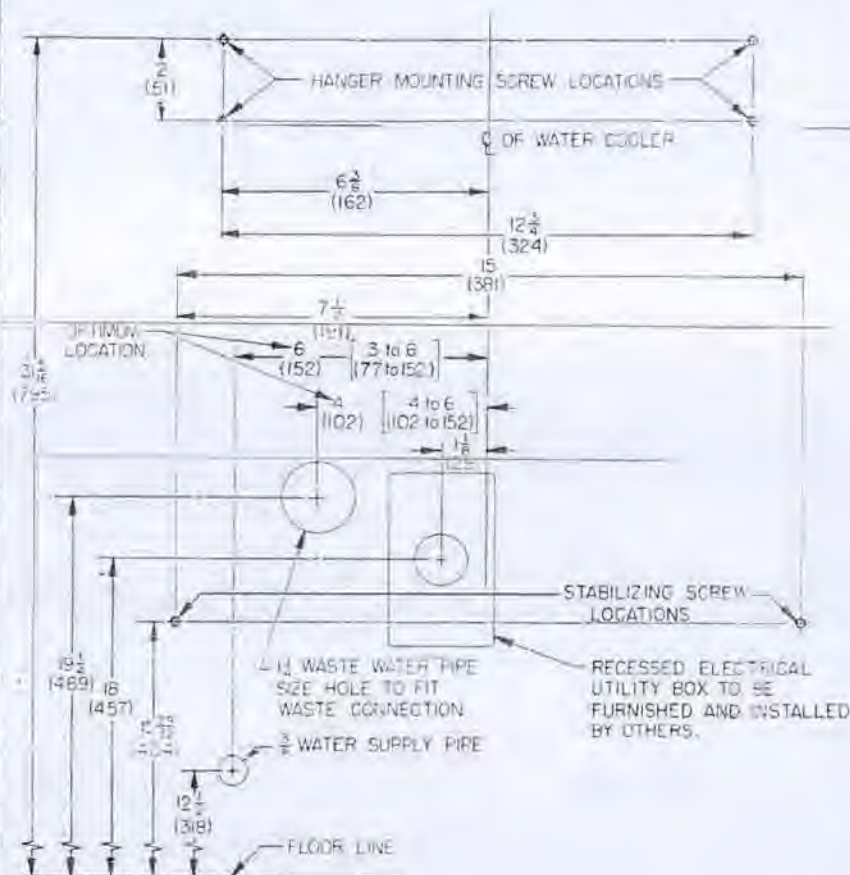
ALL DIMENSIONS ARE IN INCHES.
DIMENSIONS IN PARENTHESIS () ARE IN MILLIMETERS.



NOTES:

1. TRAP AND FIXTURE STOP VALVE NOT FURNISHED WITH WATER COOLER.
2. IF WATER COOLER IS SET IN ALCOVE OR NEAR CORNER, ALLOW 3 INCHES (76mm), 1 1/2 INCHES (38mm) PLR SIDE, FOR VENTILATION.

ROUGHING-IN DRAWING



NOTE: DIMENSIONS ON THIS DRAWING PROVIDE A 36" (914) NOZZLE HEIGHT AND MAY BE ADJUSTED TO FIT LOCAL REQUIREMENTS.

OWNER'S COPY

Ebec Water Cooler Limited Warranty

FIRST YEAR

The Manufacturer promises that in respect to repair or at the Manufacturer's option, to replace any part of this water cooler to be imperative due to a defect in material or workmanship under normal use of one year from the date of origin or in any event of eighteen (18) months from the factory, whichever is first. During the one-year warranty factory will, through its approved or factory repair department, provide parts necessary to correct such a defect at no charge if the water cooler has been installed and is applied to use within the warranty period furnished with the water cooler.

If it becomes necessary to ship the imperative water cooler to the approved or factory repair department, the Manufacturer will pay the transportation charges by air mail carrier. Local delivery charges are not covered.

The cost of labor to adjust, examine and electrical connections will be the responsibility of the owner.

SECOND THROUGH FIFTH YEAR

In addition, after expiration of the first year, the Manufacturer promises to, at its option, to replace a 5% of the sealed refrigeration system, including compressor, condenser, evaporator, expansion valve and refrigerant, a separate line of the internal cold water system, cooling coil, pressure and soldered connections, and cold water lines which prove to be imperative due to a defect in material or workmanship. The Manufacturer will provide through its approved service centers or the factory, replacement parts and labor at no charge, to install and parts of the sealed refrigeration or cold water system.

If it becomes necessary to ship the imperative water cooler to the approved or factory repair department, the Manufacturer will pay the transportation charges by air mail carrier. Local delivery charges are not covered.

The cost of labor for adjusting sealed refrigeration system or cold water system, the cost of labor required to adjust, examine and electrical connections will be the responsibility of the owner. The labor to install the imperative water cooler will be the responsibility of the owner. The labor to install the imperative water cooler will be the responsibility of the owner. The labor to install the imperative water cooler will be the responsibility of the owner.

These parts are not available for a limited period of time.

and fan relay, compressor starting relay and over-head, condenser water regulating valve, electronic membrane switch and P.C. board, electronic solenoid valve, bubbler valve regulating mechanism, stem assembly.

The labor to change the parts in the above paragraph will be the responsibility of the user (owner).

GENERAL PROVISIONS AND EXCLUSIONS

This warranty applies only within the Continental Limits of the United States of America and Canada.

This warranty does not apply and no agreement, either expressed or implied, shall be applicable if the affixed serial number is removed, defaced or obliterated.

This warranty does not apply to service of the sealed refrigeration system or cold water system or parts (furnished as original equipment) if the Manufacturer is not obtained from an approved service center of the factory.

This warranty does not apply to any water components that become imperative due to limiting conditions.

This warranty does not apply to any water cooler or components that become imperative because of a failure to meet standards or regulations adopted by any government or agency. The effect subsequent to the date of shipment from the factory.

This warranty does not cover, withstanding, failure or damages of any sort resulting from external causes such as alterations, abuse, misuse, misapplication, corrosion or acts of God.

This warranty does not apply to non-refrigerated water fountain, dispensers and accessories, and the following models: DPM, LW, HW, KR, KR2-RR, RHW, TPK, ER2. These products and models have individual warranties.

WARNING

The warranty and the Underwritten Laboratory listing for this machine are automatically voided if this machine is altered, modified, or combined with any other machine or device, or alteration or modification of it is made by means of any service, flooding or other hazard, or electrical shock or fire.

Except as set forth herein, the Manufacturer makes no other warranty, guarantee or agreement expressed, implied or statutory, including any implied warranty of merchantability or fitness for a particular purpose.

The foregoing is in full of all the obligations, expressed, implied or statutory, and all other obligations or liabilities of the Manufacturer. The Manufacturer does not assume any obligation or liability in connection with this product. In no event will the Manufacturer be liable for special or consequential damages or for any delay in the performance of this agreement due to causes beyond their control.

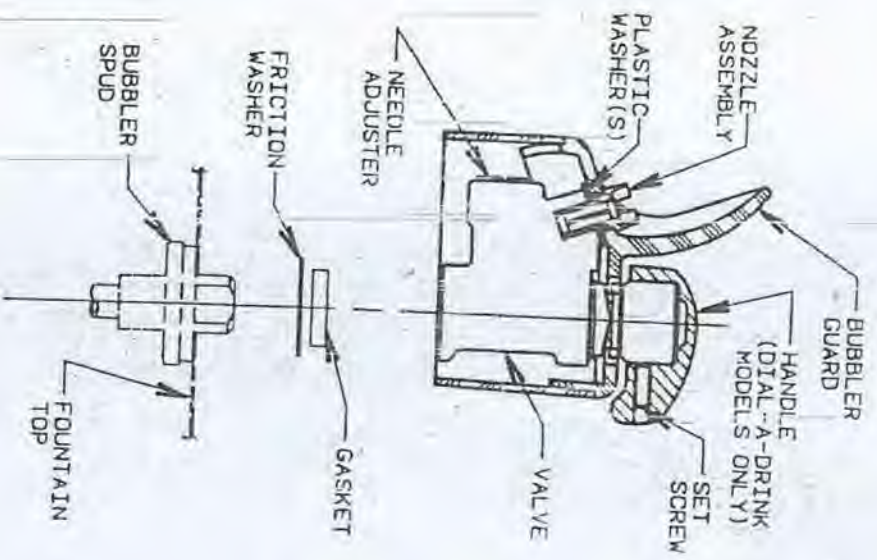
EBCO

MANUFACTURING COMPANY

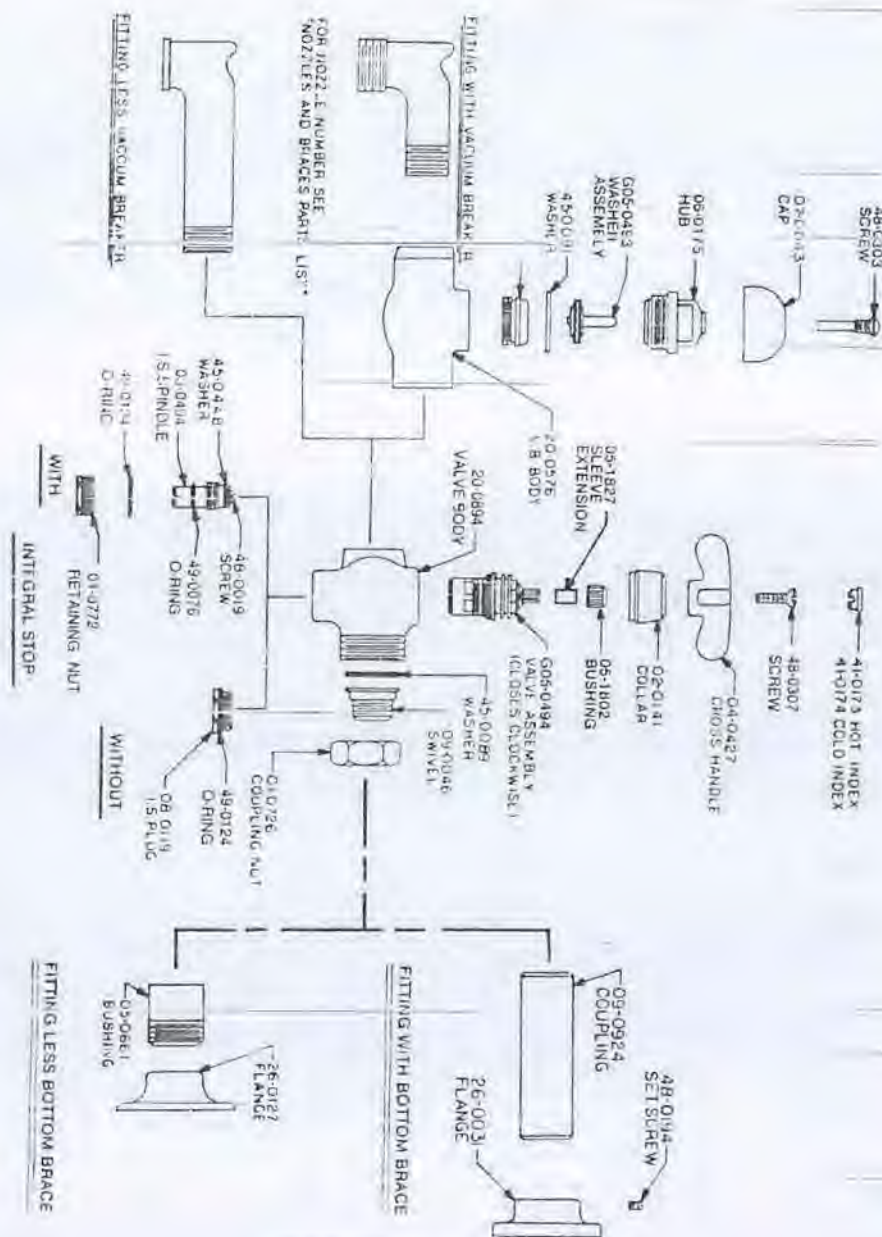
255 N. Lombard St. • Tel. 4150 • Columbus, OH 43217 • OHIO • 614/651-1350 • Fax 614/651-6783

VALVE INSTALLATION/ADJUSTMENT INSTRUCTIONS

- 1) REMOVE HANDLE (DIAL-A-DRINK MODELS ONLY), UNSCREW AND REMOVE NOZZLE, LIFT OFF BUBBLER GUARD (SEE DIAGRAM ON BACK).
- 2) PLACE FRICTION WASHER ON BUBBLER SPUD FIRST, THEN GASKET. SCREW VALVE ONTO SPUD, TIGHTEN SECURELY TO PREVENT LEAKS.
- 3) STREAM HEIGHT SHOULD BE 5-1/2". TO REGULATE, TURN NEEDLE ADJUSTER CLOCKWISE TO LOWER STREAM OR COUNTER-CLOCKWISE TO RAISE STREAM.
- 4) PLACE PLASTIC WASHER(S) ON VALVE NOZZLE HOLE AND ASSEMBLE BUBBLER GUARD OVER VALVE.
- 5) SCREW NOZZLE FIRMLY INTO PLACE.
- 6) POSITION HANDLE WITH A 1/32" VERTICAL CLEARANCE BETWEEN HANDLE AND BUBBLER GUARD ON THE SIDE NEAREST NOZZLE. TIGHTEN SET SCREW ONLY ENOUGH TO PREVENT REMOVAL.



PARTS LIST



SPEAKMAN

COMMANDER® SERVICE

SINK FITTINGS

INSTALLATION INSTRUCTIONS

LESS BOTTOM BRACE

NOTE: Shut off water supplies. Supply lines must have 1/2 NPT male threaded ends.

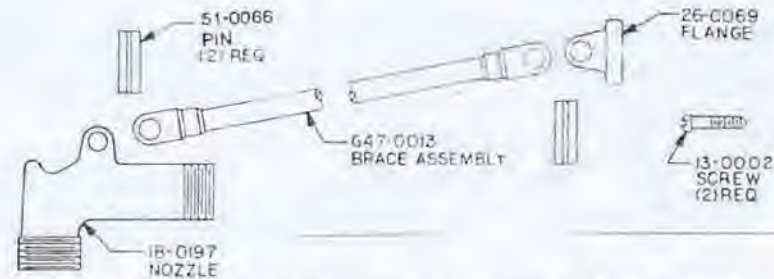
1. Screw down trim flanges onto swivel assemblies.
2. Apply pipe sealant to threads of supply lines.
NOTE: Supply lines must stick out of sink or finished wall 3/8" (plus or minus 3/16"), with both sides being the same distance.
3. Screw swivel assemblies onto supply lines. Using a 3/8" square wrench, tighten and position assemblies so they are the same distance apart as the valve body inlets.
NOTE: Swivel assemblies are machined off center for adjustment.
4. Screw flanges up against sink or wall.
5. If installing fitting with top brace, connect brace assembly to nozzle with roll pin provided.
6. Placing fiber washers inside coupling nuts, position fitting up to swivel assemblies and tighten nuts with wrench.
7. Turn water supplies on and check supply line connections for leaks.

WITH BOTTOM BRACE

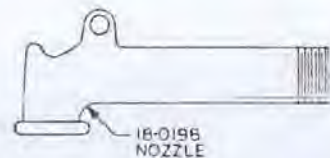
NOTE: Shut off water supplies. Supply lines must have 1/2 NPT male threaded ends.

1. Slip trim flanges onto coupling assemblies.
2. Apply pipe sealant to threads of supply lines or couplings.
NOTE: Supply lines must set back in finished wall 3/4" (plus or minus 1-1/2"), with both sides being the same distance.
3. Screw coupling assemblies onto supply lines and tighten using a 3/8" square wrench.
NOTE: Supply lines must have enough side adjustment to match up with the valve body inlets.
4. Slide trim flanges up against wall and tighten set screws in flanges.
5. Placing fiber washers inside coupling nuts, position fitting up to coupling assemblies and tighten nuts with wrench.
6. Turn water supplies on and check supply line connections for leaks.

PARTS LIST

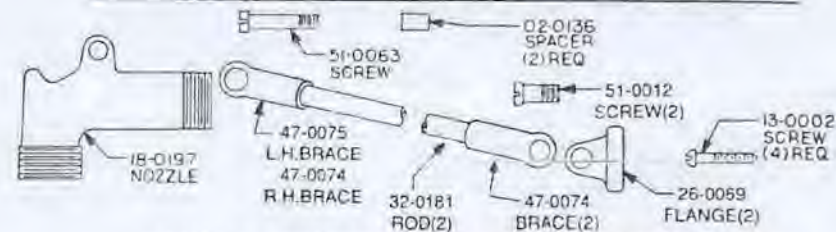


FITTING WITH VACUUM BREAKER AND TOP BRACE

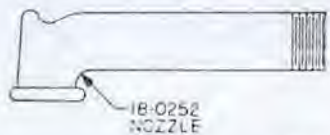


BRACE PARTS SAME AS ABOVE

FITTING LESS VACUUM BREAKER WITH TOP BRACE



FITTING WITH VACUUM BREAKER AND (2) BOTTOM BRACES



FITTING LESS VACUUM BREAKER



FITTING WITH VACUUM BREAKER

NOZZLES AND BRACES

BRACE MOUNTING INSTRUCTIONS

TOP BRACE

1. Lift brace assembly up against finished wall. Center with nozzle and mark location of holes in brace flange.
 2. Drill starter holes for mounting screws.
 3. Screw flange to wall using (2) wood screws provided.
- NOTE: Finished wall must be supported where brace flange mounts.

BOTTOM BRACE

1. Assemble and connect left and right brace assemblies to nozzle using the (2) spacers and screw provided.
 2. Tighten each brace assembly rod and position brace flange so that it sits flat against finished wall with holes being horizontal.
 3. Lift braces up against wall so that both are equally spaced with nozzle. Mark location of holes in flanges.
 4. Drill starter holes for mounting screws.
 5. Screw flanges to wall using (4) wood screws provided.
 6. Check to make sure all brace screws are tight.
- NOTE: Finished wall must be supported where brace flanges mount.

MAINTENANCE INSTRUCTIONS

NOTE: Valves are washerless, needing no routine maintenance.

INTEGRAL STOP FITTINGS

Integral stops use O-ring seals, so there is no need to tighten packing nuts. If fitting does not shut off when stops are screwed in, replace seat washer(s) on stop spindle(s).

VANDAL RESISTANT HANDLES

TO REMOVE INDEX BUTTON:

Locate knockout hole in handle (See illustration). Insert rigid pin (1/8" diameter or smaller) into hole and knockout index button.



BEFORE YOU BEGIN:

- Observe all local plumbing and building codes.
- Shut off hot and cold water supplies.
- Inspect waste and supply tubing; replace if necessary.
- Remove existing faucet being careful not to damage lavatory.
- If you are installing a new lavatory, install faucet before lavatory is installed.

REQUIRED TOOLS & MATERIALS:

- Screwdrivers
- Adjustable wrenches
- Adjustable arc pliers

OPTIONAL TOOLS & MATERIALS:

- Basin wrench
- Open end wrenches
- Hacksaw
- Tube cutter

IT MAY ALSO BE NECESSARY TO PURCHASE:

- Shut-off valves
- Trap

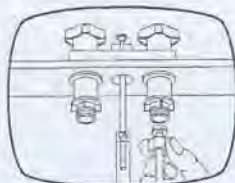


- 1** Apply a bead of plumber's putty around the underside of faucet. Insert faucet through top of lavatory. Align faucet on lavatory. Hold in position. From underside of lavatory fasten faucet to lavatory by securely hand tightening the calcon locknuts. **NO TOOLS ARE REQUIRED.**

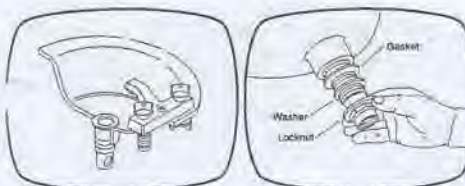


- 4** Assemble screw and nut to connecting link. Assemble connecting link to ball lever. **Squeeze "V" clip while attaching.**

To install strainer shown: Apply plumber's putty on underside of drain flange. Insert drain body through lavatory. Place rubber washer (tapered side up), friction washer, and locknut (flat side up) onto drain body. Tighten locknut. **Do not reposition drain after tightening.** Thread tailpiece into drain body.



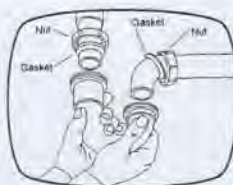
- 7** If supply tube must be cut, make sure you allow for required penetration of tube into shut-off valve. Cut supply tube to allow for required penetration into shut-off valves. Loosen coupling nut from shank. Slide compression nut and ferrule from shut-off valve onto supply tube. Insert supply tubes into inlets. Reconnect coupling nuts to shanks. Tighten coupling nuts on faucet shanks. Tighten compression nuts on shut-off valve.



- 2** Apply a bead of plumber's putty around the underside of the drain body flange. Insert drain into lavatory with hole for ball lever facing back of lavatory. Assemble drain gasket (tapered side up), drain washer, and locknut to drain body. **Hand tighten locknut.**



- 5** Push ball lever down into open position. Insert stopper into drain body. Slide lift rod through hole in faucet and connecting link. Tighten screw on connecting link so knob is 1/2" above faucet body. If lavatory is not installed, install at this time. **Refer to lavatory manufacturer's installation instructions.**

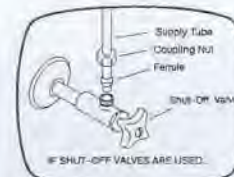


- 8** If trap is to be replaced, align trap inlet with tailpiece. Turn tailpiece into drain body. Tailpiece must extend 1" to 2" into the trap. Tailpiece may need to be cut.

Insert trap nut and gasket onto tailpiece and insert into trap. Be careful not to deform tailpiece or damage threads.



- 3** Insert gasket onto ball lever assembly. Tighten ball lever assembly onto hole in drain body. Position drain so ball lever assembly points to the back of lavatory. Snugly tighten locknut to achieve a watertight connection. Remove excess putty from around the flange.



- 6** Slide coupling nuts onto supply tube. Carefully connect supply tube to faucet by positioning round end of supply tube squarely to the inlet connection of shank. Hand tighten coupling nuts. Carefully bend supply tubes to align with supply stop.

Carefully bend tubing to avoid kinking.



- 9** Remove aerator. Turn hot and cold water on. Run water through faucet approximately one minute to remove any debris. Inspect aerator and remove any debris. Replace aerator and check for leaks.

IMPORTANT CONSUMER INFORMATION

Please take a moment to familiarize yourself with the Kohler Warranty, its benefits, and limitations. Kohler Co. and its distributors support you with one of the largest Service Networks of its type. Here's what you need to do if you require service:

FIRST: Contact the dealer or contractor who sold and installed the product. They should be able to solve any problems you may have.

SECOND: If your dealer or contractor cannot solve the problem, they will contact or supply you with the name of the local Kohler Distributor and file.

THIRD: If you are unable to obtain warranty service through either your contractor or Kohler Co. distributor, please write us directly at the address below.

FOURTH: Include all pertinent information regarding your claim, including a complete description of the product, model numbers, colors, finishes, and the date the product was installed. Include a description of the problem, and a photocopy of your invoice for the products involved. Also give us the name of the contractor and distributor.

Kohler Co. Consumer Affairs Kohler, Wisconsin 53044

LIMITED ONE-YEAR WARRANTY

Kohler plumbing fixtures and fittings are warranted free of manufacturing defects.

Kohler Co. will, at its election, repair, replace, or make appropriate adjustment where Kohler Co. inspection discloses any such defects occurring in normal usage within one year after installation. Kohler Co. is not responsible for installation costs.

To obtain warranty service, contact Kohler Co. either through your Dealer or Plumbing Contractor or by writing Kohler Co., Attn: Consumer Affairs Department, Kohler, WI 53044 U.S.A.

IMPLIED WARRANTIES, INCLUDING THAT OF MERCHANTABILITY, ARE EXPRESSLY LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. KOHLER CO. DISCLAIMS ANY RESPONSIBILITY FOR CONSEQUENTIAL DAMAGES.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so this limitation and exclusion may not apply to you. This warranty gives you specific legal rights. You may also have rights which vary from state to state.

This is our exclusive written warranty.

KOHLER CO., KOHLER, WISCONSIN 53044

CARE AND CLEANING FOR YOUR NEW KOHLER FAUCET

CHROME PLATED FAUCETS: Your attractive chrome finished faucets will remain sparkling if you clean them with a damp sponge and buff dry to restore their gleam. In hard water areas you may use the following cleaners, but remember, they must be rinsed off immediately.

*NEW SPIC AND SPAN *Lysol Deodorizing *LYSOL Direct Multi-Purpose *FANTASTIK Bathroom
*MR. CLEAN w/Soft Abrasive *LYSOL Pine Action *MR. CLEAN All-Purpose *LYSOL Basin, Tub & Tile
*GLASS PLUS *TOP JOB *LIME-A-WAY Bath & Kitchen *FANTASTIK All-Purpose *PINE POWER

POLISHED BRASS, BRUSHED NICKEL, AND COLORED FAUCETS: Clean these faucets with a mild soap and warm water. Wipe entire faucet completely dry with a clean, soft cloth. Many cleaners may contain chemicals, such as ammonia, which could adversely affect the finish and are not recommended for cleaning.

ACRYLIC HANDLES: Clean acrylic handles using one of the following cleaners. DO NOT USE DISINFECTANTS CONTAINING ALCOHOL OR OTHER ORGANIC SOLVENTS.

*Tough Act *FANTASTIK All-Purpose *Glass Plus *FANTASTIK Bathroom *Lysol Bathroom
*Lysol Deodorizing *New Spic and Span *LIME-A-WAY Bath & Kitchen *Spic and Span Pine *MR. Clean w/Soft Abrasive
*MR. Clean All-Purpose

DO NOT USE ABRASIVE CLEANERS OR SOLVENTS ON KOHLER FAUCETS.

NOTE: Part numbers listed refer to service parts and may not correspond to production part numbers packed with fitting. Order by service part number only.

ITEM NO.	PART NO.	DESCRIPTION
1	52622	Standard Plug Button, Chrome
2	52623-H	V-R Plug Button, Red
3	52623-C	V-R Plug Button, Blue
4	52623-A	V-R Plug Button, Black
5	54666-S	Screw, Wrist Blade
6	52625-S	Screw, Lever and Four Prong
7	50074	Screw, Standard Handle
8	50079	Screw, Wrist Blade
9	31460	Screw, Lever and Four Prong
10	53187	Wrist Blade Handle
11	52639	Four-Prong Handle
12	52642	Standard Handle
13	50225S	Stap-Tite K2 (2 ea.)
14	50027	Spline Adapter
15	40420	Ceramic Valve, Clockwise Close
16	40401	Ceramic Valve, Counterclockwise Close
17	21099	V-R Aerator Key
18	41056	Aerator, 2.75 GPM
19	41781	Aerator, 1.5 GPM
20	54027	Steambreaker, 2.75 GPM
21	54990	Aerator, V-R, 2.75 GPM
22	55403	Aerator, V-R, 1.5 GPM
23	20344	Spray V-R, 1 GPM
24	20452	Screw
25	20461	Nut
26	51102	Connecting Rod
27	20438	Clip
28	38743	Packing Nut
29	38745	Washer
30	38744	Packing
31	20537	Ball Lever Assembly Std.
32	38741	Ball Lever Assembly, Vandal Proof
33	38744	Packing
34	38742	Housing
35	20427	Gasket
36	38730	Stopper w/O-Ring, Standard
37	38755	Stopper w/ O-Ring, Vandal Proof
38	33576	O-Ring
39	33507	Gasket
40	34043	Washer
41	20531	Locknut
42	41840	Ballpiece
43	38738	Drain Body, Pop-Up
44	35648	Drain Body, Strainer
45	34214	Spacer
46	40080	Locknut
47	32781	Coupling Nut
48	51198	U-Lift Rod
49	25830	Chain and Stopper Assembly
50	32561	Slay Ring
51	11815	Black Chain
52	31814	Rubber Plug
53	32644	Strainer Body
54	35848	Strainer Body
55	33981	Nut
56	34917	Washer, 17/32" I.D. x 3/4" O.D.
57	50071	Collar

ITEM NO. PART NO. DESCRIPTION

47 50152 Flo-Et (used)

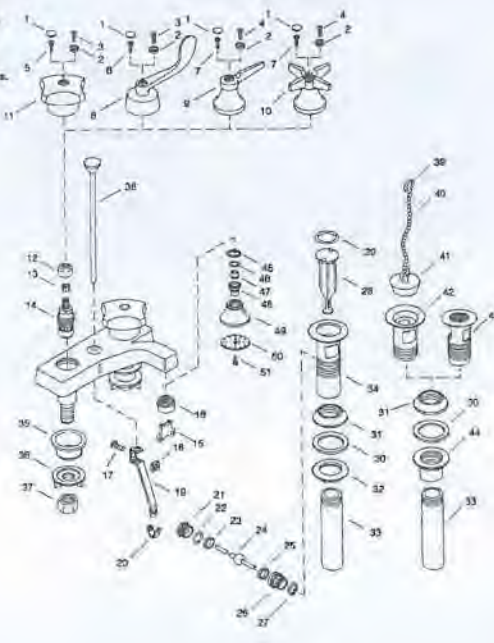
48 50141 Flo-Et Resin

49 50140 Spray Head

50 34230 Spray Pin

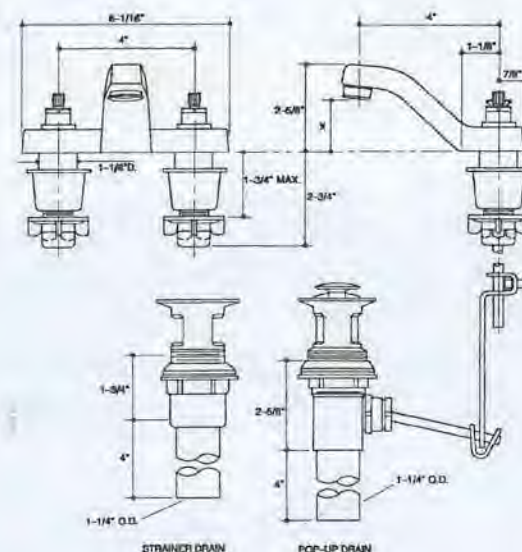
51 50143 Screw

Specify finish on all exposed parts.



KOHLER® INSTALLATION INSTRUCTIONS

CENTERSET FAUCETS



SPECIFICATIONS

4" Centerset w/pop-up	K-7401-AA
4" Centerset w/drain plug	K-7403-AA
4" Centerset less drain	K-7404-AA
4" Centerset perf. strainer	K-7408-2C-AB
4" Centerset w/vandal-proof pop-up	K-7415-AA

NOTES

PLEASE LEAVE THESE INSTRUCTIONS WITH CONSUMER AS THEY CONTAIN IMPORTANT CARE, CLEANING, AND WARRANTY INFORMATION.

printed on recycled paper

63537X PARTS LIST

SEE OPPOSITE PAGE FOR VIEW

REF.	DESCRIPTION	(QTY)PART NO.	REF.	DESCRIPTION	(QTY)PART NO.
✓	INDICATES PARTS INCLUDED IN SERVICE KIT 61129		13	Gasket	(1) F21-37
1	Cap Screw	(4) Y6-44-C	14	Washer	(2) 75747
2	Lockwasher	(4) Y14-416	15	Adapter	(1) 77926
✓	3 Washer	(1) 76848	16	O-Ring	(1) Y325-113
✓	4 O-Ring	(1) Y325-227	17	Ring	(1) 72469
5	Body	(1) 73754	18	Insert	(1) 77927
6	Trigger	(1) 4349	19	Swivel Asm.	(1) 60543
7	Pin	(1) 2600	20	Filler	(1) 71268
8	Label	(1) 92351	21	Spring	(1) 71269
✓	9 Nut	(1) 76847	✓	22 Gasket	(1) 73750
✓	10 Gasket	(1) F21-42	✓	23 Packing	(1) Y186-43
✓	11 Spring	(1) 76850	24	Gland	(1) 73752
✓	12 Seal Asm.	(1) 61142			

MODEL

REF. DESCRIPTION	635377-B	635378	635381	635382	635383	635384	635386
A Shroud (Nylon)	75654	75655	75654	75655	75654	75654	75654
B Bushing	6788	6788	6788	6788			
Adapter					70749		70749
C Meter Asm.	635153	635148	635141	635142	635154	635154	635141
D Latch	73584	73584			73584	73584	

OPERATION

CAUTION: Disconnect pump power source and relieve all pressure from system when not in use.

Do not drop or leave control handle on floor.

Be sure non-drip nozzle is fully open before actuating handle. If non-drip tip is not fully open control handle will not shut off. Close completely after dispensing to prevent leakage. Hold the control handle so that the non-drip nozzle is pointed downward. Turn counter-clockwise to close and clockwise to open.

MAINTENANCE

Should no lubricant be dispensed even though (5) handle is operated, be sure non-drip nozzle is open and that lubricant is being supplied to control handle. Also be sure that (12) valve stem is being moved by the handle.

Should lubricant leak past the control handle under the trigger, remove the trigger and tighten (24) gland. If this does not stop leak, remove the gland and replace the (23) packing or (22) gasket.

NOTE: If may be necessary to remove the (9) cap nut and then push the (12) seal arm up in order to remove the packing and gasket.

If lubricant leaks around the (9) cap nut, remove the cap nut and check the (10) gasket.

Should lubricant flow from control handle even though trigger is not depressed, remove the (9) nut and (12) seal arm. Check for dirt or foreign matter which may be preventing valve from properly sealing, also check the rubber seat of the valve assembly for seal. Replace (4) seal assembly if rubber is pitted or torn.

NOTE: A small amount of lubricant will leak from control handle after it has been used and trigger is released. This is because this lubricant is already past the non-drip valve seat. The non-drip nozzle should be closed after each use to prevent this.

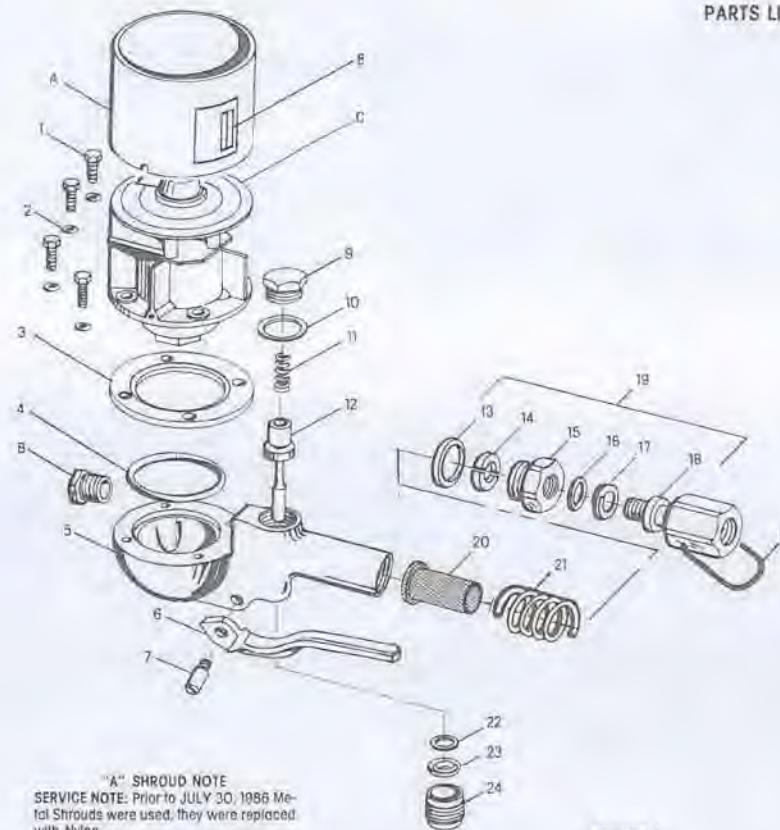


FIGURE 1

"A" SHROUD NOTE
SERVICE NOTE: Prior to JULY 30, 1986 Metal Shrouds were used, they were replaced with Nylon.
 Metal shrouds and Nylon shrouds ARE NOT interchangeable.

METAL (OLD)	NYLON (NEW)
4940	75654
4939	75655

6786 NOZZLE ASM.

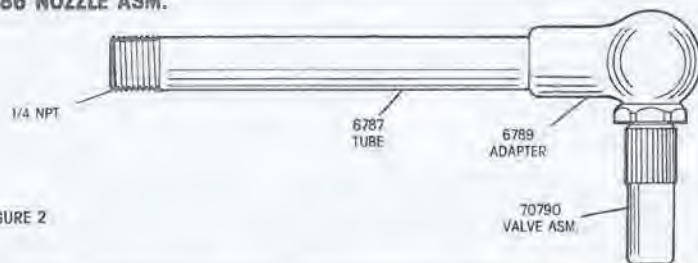


FIGURE 2

629226 NOZZLE ASM.



FIGURE 3

629516 NOZZLE ASM.

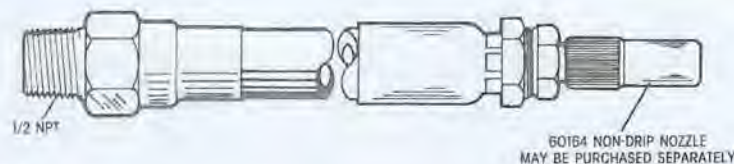


FIGURE 4

629521 NOZZLE ASM.

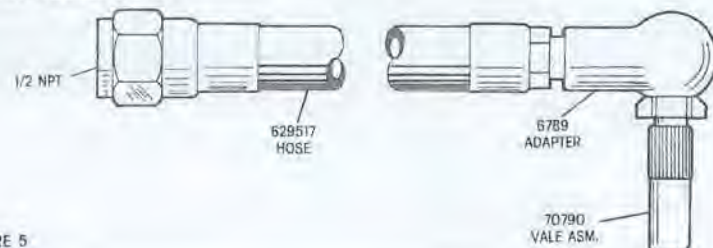


FIGURE 5

OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE
ALSO INCLUDE MANUAL: 63514X METER

63537X

63538X

RELEASED:1-8-82
REVISED:5-28-91
(REV G) IPP/PSE

63537X CONTROL HANDLE

**IMPORTANT: READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.**

TOTALIZING
635377-B
635381
635383
635384
635386

NON-TOTALIZING
635378
635382



MODEL	METER	TOTALIZING OR NON-TOTALIZING	NOZZLE	OVERALL LENGTH
635377-B	635153	Tot.Litres	6786	15-1/2" approx.
635378	635148	Non-Tot.Litres	6786	15-1/2" approx.
635381	635141	Tot.Pts.	6786	15-1/2" approx.
635382	635142	Non-Tot.Pts.	6786	15-1/2" approx.
635383	635154	Tot.Gal.	629516	22-1/8" approx.
635384	635154	Tot.Gal.	629226	20" approx.
635386	635141	Tot.Pts.	629521	24" approx.

ALSO COVERS 61129 SERVICE KIT

WARNING: HIGH PRESSURE DEVICE

- IMPROPER USAGE OF EQUIPMENT COULD RESULT IN SERIOUS INJURY. THE POSSIBILITY OF INJECTION INTO THE FLESH IS A POTENTIAL HAZARD. NEVER ALLOW ANY PART OF THE HUMAN BODY TO COME IN FRONT OF OR IN DIRECT CONTACT WITH THE MATERIAL OUTLET.
- AN INJECTION INJURY CAN BE SERIOUS! IF INJECTION SHOULD OCCUR, CONTACT A QUALIFIED PHYSICIAN FOR IMMEDIATE TREATMENT OF SUCH INJURIES.
- DO NOT EXCEED MAXIMUM WORKING PRESSURE OF 1000 P.S.I. (69 BAR).

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PARTS LIST

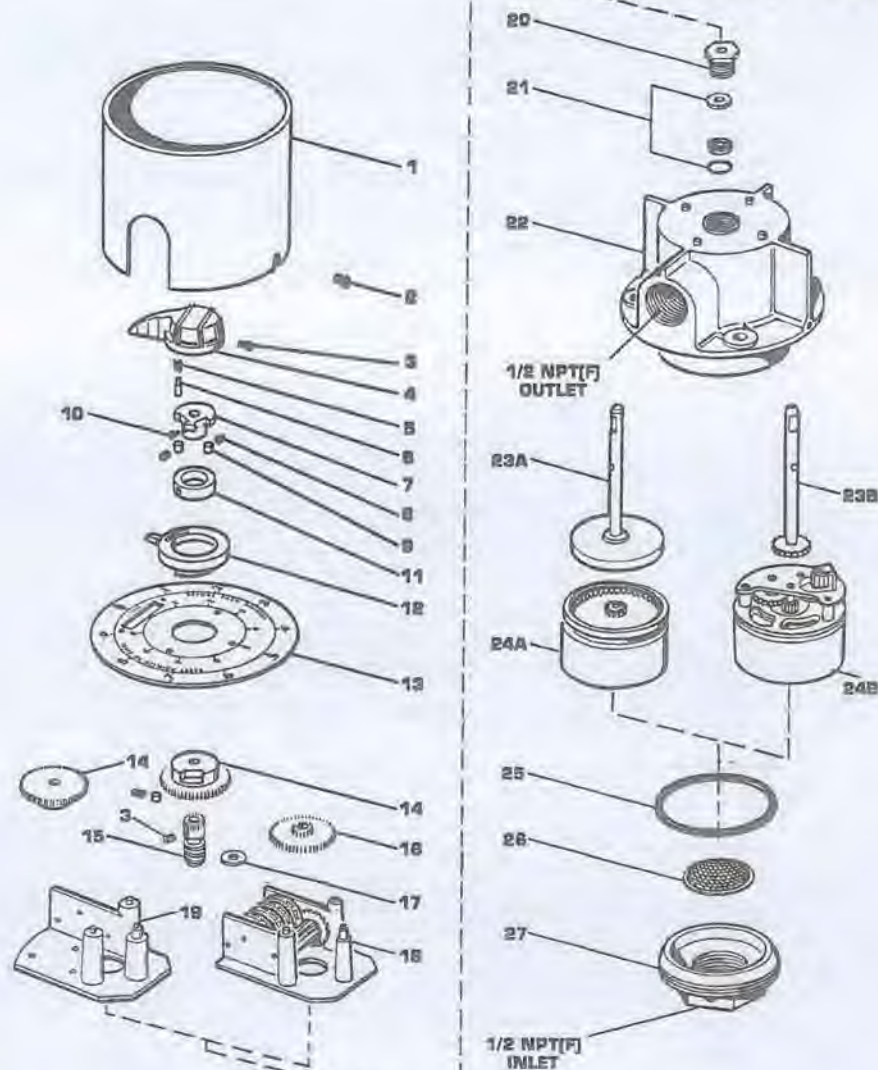
REF. NO.	PART NO.	PART NAME	MODEL NO.					
			635141	635142	635143	635148	635151	635153
1	75654	SHROUD (NYLON)						
	75655	SHROUD (NYLON)						
2	Y76-145-C	SCREWS (2)						
	Y76-145	SCREW (2)						
3	5517	SET SCREW						
	76862	SET SCREW						
4	5563	KNOB ASSY						
	77673	KNOB ASSY						
5	5532	PLUNGER SPRING						
6	5533	PLUNGER						
7	76809	LOCK CAM						
8	5519	RETAINING SPRING (3)						
	5519	RETAINING SPRING (2)						
9	5594	CLUTCH ROLLER (3)						
	5594	CLUTCH ROLLER (2)						
10	77336	SET SCREW						
11	76808	RETAINING SLEEVE						
12	5568	POINTER & SPRING ASSY						
13		DIAL & WINDOW ASSY						
14	5562	POINT CAM						
	71262	POINT CAM						
	70297	POINT CAM						
15	71071	WORM GEAR ASSY						
	71083	WORM GEAR ASSY						
	5561	WORM GEAR ASSY						
	70299	WORM GEAR ASSY						
	72245	WORM GEAR ASSY						
16	5564	POINTER GEAR						
	70299	POINT GEAR						
17	71264	SPACER						
18	5521	REGISTER ASSY						
	71265	REGISTER ASSY						
	66719	REGISTER ASSY						
	60098	REGISTER ASSY						
19	5551	BOTTOM PLATE						
20	71069	PACKING BOX NUT						
21	71064	PACKING BOX ASSY						
22	5535	(PLANITARY TYPE) HOUSING						
	70296	(SPUR TYPE) HOUSING						
23A	61037	SPINDLE & GEAR ASSY						
	61043	SPINDLE & GEAR ASSY						
	61036	SPINDLE & GEAR ASSY						
	61041	SPINDLE & GEAR ASSY						
23B	66721	SPINDLE & GEAR ASSY						
24A	5580	CHAMBER & PISTON ASSY						
	61361	CHAMBER & PISTON ASSY						
	5580	CHAMBER & PISTON ASSY						
24B	66720	CHAMBER & PISTON ASSY						
25	Y151-1	("O" RING TYPE) GASKET						
	Y325-223	("O" RING TYPE) GASKET						
26	73835	SCREEN						
27	5536	HOUSING CAP						

*NOTE: Prior To July 30, 1966
Metal Shrouds were used
Metal (Old) Nylon (New)
4940 75654
4939 75655

Metal Shrouds and Nylon Shrouds
are NOT Interchangeable

DARK SHADED AREA SHOWN INDICATES PARTS USAGE

63514X, 15X



MODEL/DIAL DESCRIPTION



MODEL NO.	TOTALIZING	NON TOTALIZING	13 DIAL PART NO.
635141	U.S. PINTS		71084
635142		U.S. PINTS	5560
635143	U.S. QTS.		71068
635148		LITRES	5588
635151		U.S. QTS.	5569
635153	LITRES		79302
635154	GALLONS		71094

MODEL NO.	22 HOUSING SETTING
63514X, 15X	OUTLET IN LINE WITH ZERO SETTING
63514X-A, 15X-A	OUTLET 90° FROM ZERO SETTING
63514X-B, 15X-B	OUTLET 180° FROM ZERO SETTING
63514X-C, 15X-C	OUTLET 270° FROM ZERO SETTING

OPERATOR'S MANUAL

INCLUDING:
OPERATION, INSTALLATION, & MAINTENANCE

63514X
63515X

RELEASED: 7-8-81
REVISED: 8-13-86
(REV. E) IPP/PSE



METER ASSY



THIS MANUAL COVERS THE FOLLOWING MODELS:

ALSO INCLUDES-X (A,B,C,) MODELS
SEE PAGE 4 FOR DETAILS

TOTALIZING
635141
635143
635153
635154

NON-TOTALIZING
635142
635148
635151

OPERATION

1. Do not attempt to advance meter pointer manually.
2. To reset, turn pointer counter clockwise back to zero.

SERVICE

If meter fails to operate, we suggest it be returned to Aro for service.

MAXIMUM WORKING PRESSURE 1000 P.S.I. (69 BAR)

NOTICE: READ THIS MANUAL CAREFULLY BEFORE OPERATING, INSTALLING OR SERVICING THIS EQUIPMENT.

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63514X, 15X
PAGE 1 OF 4

CHALLENGER AIRLINE REGULATOR

1/4", 3/8", & 1/2" PIPE SIZES

PRIMARY PRESSURE
250 PSI MAX. (17 BAR MAX.)

ADJUSTED PRESSURE
250 PSI MAX. (17 BAR MAX.)

TEMPERATURE RANGE
0°F to 180°F (-18°C to 82°C)

OPERATING AND SAFETY PRECAUTIONS

WARNING:

- Do not exceed the pressure or temperature ratings of this unit as specified.
- Shut-off and relieve air supply before disassembling unit.
- Secondary pressure adjustment range is not minimum or maximum secondary pressure limits. Regulators can be adjusted to zero psig secondary pressure and, initially, to pressures in excess of those specified. The use of these regulators to control pressure outside of the specified range is not recommended.

INSTALLATION

Install regulator upstream from lubricator and as close as possible to tool, cylinder, or pneumatic device. The regulator must be installed with the air flow through the unit in the direction as indicated by the arrow on the base. If the airline contains water, sludge, or foreign materials, an Air-Airline Filter should be installed on the upstream side to protect regulator. After the regulator has been installed in airline, the adjustment knob should be turned counter-clockwise until it stops, to prevent over-pressurizing tool, cylinder or pneumatic device when air supply is turned on.

TROUBLE SHOOTING

Shut-off and relieve air pressure before disassembling unit. If the output pressure creeps or rises slowly, check the valve (104057) for foreign material, and replace if worn. If the regulator continuously bleeds air through the housing, check for dirt on the seat in the diaphragm assembly (104058 or 104059) and replace if worn.

- ✓ RELIEVING TYPE ORDER REPAIR KIT NO. 104062.
- ✓ NON-RELIEVING TYPE ORDER REPAIR KIT NO. 104063.
- 104110 TAMPER RESISTANT KIT.
- NOT INCLUDED WITH MODEL — MUST BE ORDERED SEPARATELY.
- TIGHTEN HOUSING 35-40 FT. LBS.

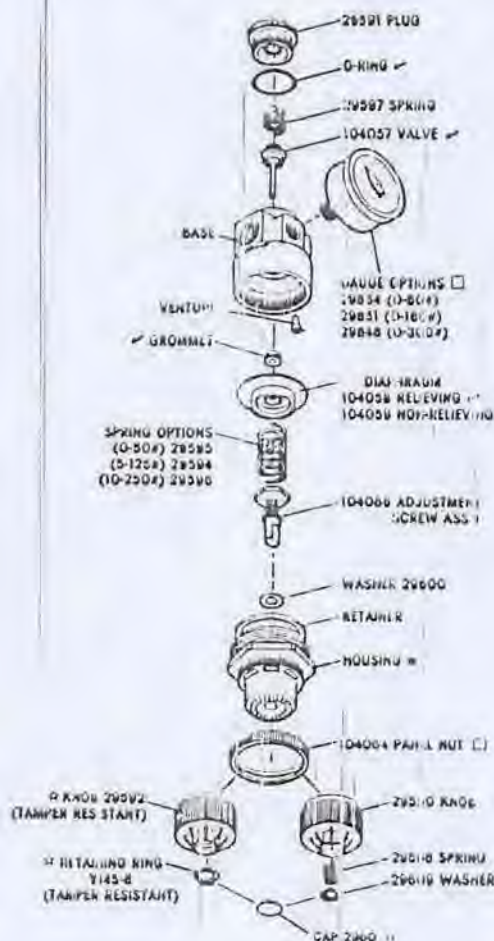
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MODEL NO.



REV 7/88

CHALLENGER AIRLINE LUBRICATOR

1/4", 3/8", & 1/2" PIPE SIZES

PRIMARY PRESSURE
200 PSI MAX. (14 BAR MAX.) PLASTIC BOWL
250 PSI MAX. (17 BAR MAX.) METAL BOWL

TEMPERATURE RANGE
0°F to 125°F (-18°C to 52°C)

THE ARO CORPORATION

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PH 419-636-2242 • TWX 810-443-2994 • TELEX 288450 • FAX 419-636-2115

ARO

MODEL NO.

TROUBLE SHOOTING

Shut-off and relieve air pressure before disassembling unit. If lubricator will not feed oil into the airline, remove bowl and blow compressed air through the oil suction tube to clear oil circuit. Also check compensating valve to insure it will operate freely.

MAINTENANCE

Shut-off and relieve air pressure before disassembling unit. Periodically, the bowl should be removed and cleaned.

WASH BOWL WITH WARM WATER OR KEROSENE ONLY.

OPERATING AND SAFETY PRECAUTIONS

WARNING

- Do not exceed the pressure or temperature ratings of this unit as specified.
- The polycarbonate plastic used for the bowl can be weakened (and possibly fail) if exposed internally or externally to certain solvents and other chemicals or their vapors and fumes. Therefore DO NOT EXPOSE to acetone, trichloroethane, gasoline, alcohols, ketones, esters, chlorinated hydrocarbons, toluene, etc.
- Lubricating oils used in plastic bowls must be compatible with polycarbonate plastic. (Some "fire resistant" oil additives are not compatible.) Fumes of these substances in contact with polycarbonate bowls internally or externally can also damage bowl. Consult Aro catalog or The Aro Corporation, Bryan, Ohio 43506 for comprehensive listings of harmful chemicals and compatible lubricating oils. If questions arise, request Form No. 4424.
- Shut-off and relieve air supply before disassembling unit.

INSTALLATION

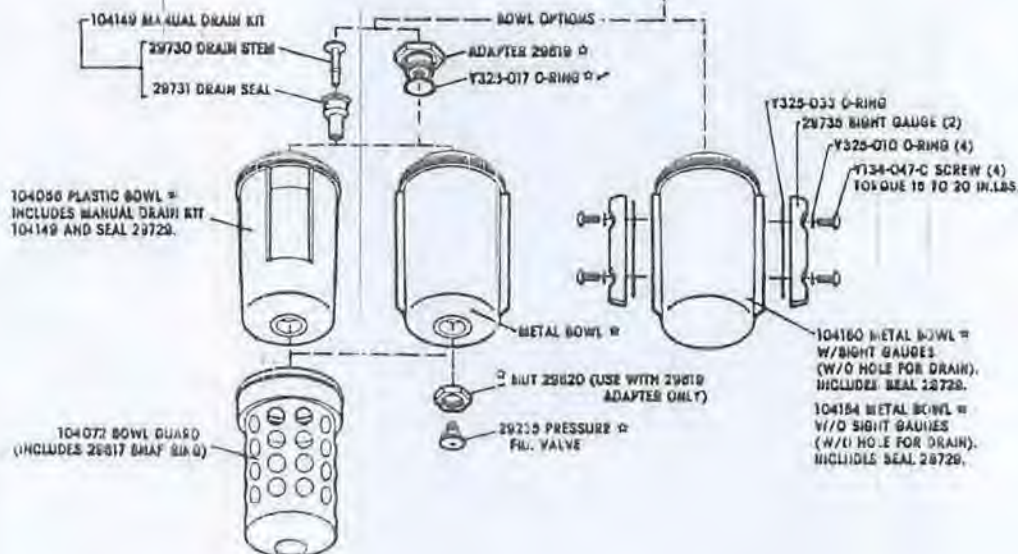
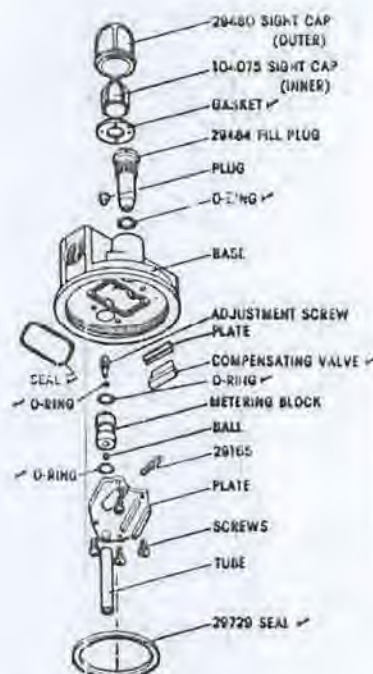
Install lubricator downstream from regulator and filter and as close as possible to tool, cylinder, or pneumatic device. The lubricator must be installed with the air flow through the unit in the direction as indicated by the arrow on the base. All oil feed rate adjustments should be made with the unit in operation. To decrease oil feed rate, turn adjustment screw clockwise, and to increase oil feed rate, turn the adjustment screw counter-clockwise.

✓ INCLUDED IN REPAIR KIT NO. 104061.

✗ USED WITH PRESSURE FILL UNIT.

✗ TIGHTEN BOWL 35-50 IN. LBS.

104140 SERVICE KIT INCLUDES (1) SIGHT GAUGE
29735, (1) O-RING Y325-033 AND (2) O-RINGS
Y325-010



CHALLENGER AIRLINE FILTER

1/4", 3/8", & 1/2" PIPE SIZES

PRIMARY PRESSURE

200 PSI MAX. (14 BAR MAX.) PLASTIC BOWL
250 PSI MAX. (17 BAR MAX.) METAL BOWL

TEMPERATURE RANGE

0°F to 125°F (-18°C to 52°C)

THE ARO CORPORATION

ONE ARO CENTER, BRYAN, OHIO 43506-0151
PH 419-631-4242 • TWX 810-443-2994 • TELEX 286456 • FAX 419-635-2115



MODEL NO.

INSTALLATION

Install filter upstream from regulator and lubricator and as close as possible to tool, cylinder, or pneumatic device. The filter must be installed with the air flow through the unit in the direction as indicated by the arrow on the base.

MAINTENANCE

Shut-off and relieve air pressure before disassembling unit. Periodically, the bowl should be removed and cleaned. Replace filter element if necessary.

OPERATING AND SAFETY PRECAUTIONS

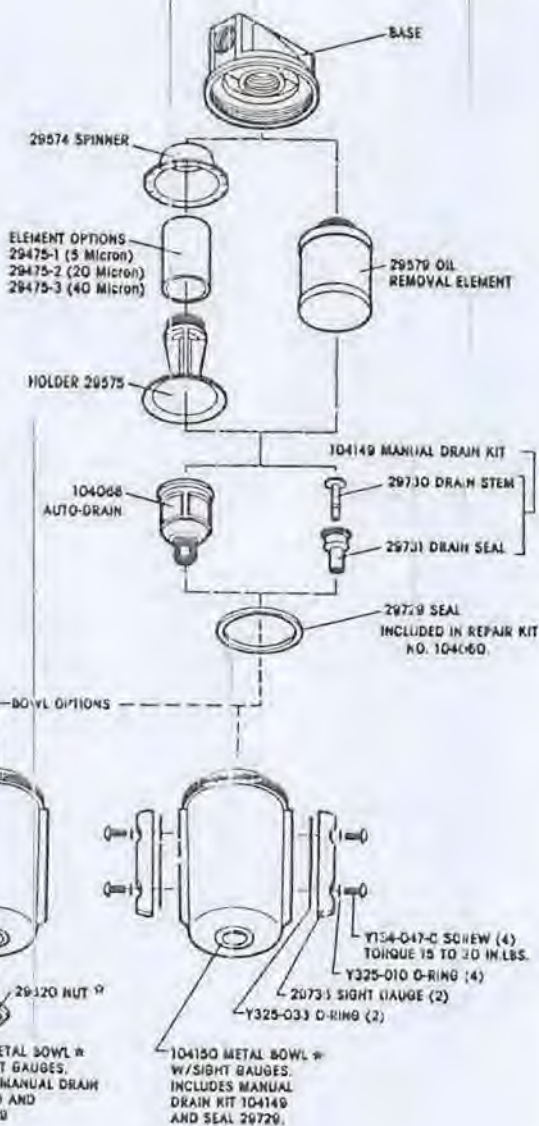
WARNING

- Do not exceed the pressure or temperature ratings of this unit as specified.
- The polycarbonate plastic used for the bowl can be weakened (and possibly fail) if exposed internally or externally to certain solvents and other chemicals or their vapors and fumes. Therefore **DO NOT EXPOSE** to acetone, trichloroethane, gasoline, alcohols, ketones, esters, chlorinated hydrocarbons, toluene, etc.
- Lubricating oils used in plastic bowls must be compatible with polycarbonate plastic. (Some "fire resistant" oil additives are not compatible.) Fumes of these substances in contact with polycarbonate bowls internally or externally can also damage bowl. Consult Aro catalog or The Aro Corporation, Bryan, Ohio 43506 for comprehensive listings of harmful chemicals and compatible lubricating oils. If questions arise, request Form No. 4424.
- Shut-off and relieve air supply before disassembling unit.

★ USED WITH AUTOMATIC DRAIN 104068.

★ TIGHTEN BOWL 35-50 IN. LBS.

104140 SERVICE KIT, INCLUDES (1) SIGHT GAUGE 29735, (1) O-RING Y325-033 AND (2) O-RINGS Y325-010



AMTROL

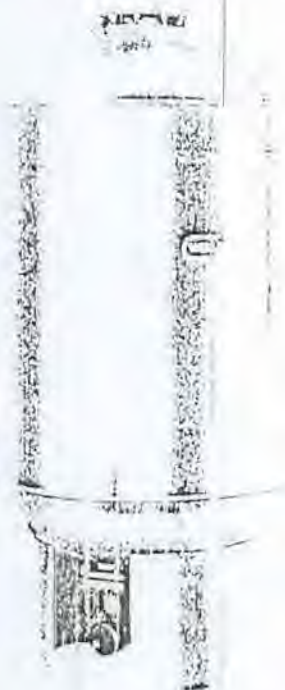
WELL-X-TROL™

74

SERIES 400 and 450

Pre-pressurized Hydro-
pneumatic Tanks (CODE AND NON-CODE)

Applications, selection and sizing procedures



WELL-X-TROLTM

Applications, selection and sizing procedures

Series 400 and 450 pre-pressurized hydro-pneumatic tanks

Available in ASME Code (125 PSI) or Non-Code (150 PSI)

WELL-X-TROL Series 400 and 450 tanks are designed for applications with working pressure up to 150 pounds. Typically, these applications include:

- a) conventional WELL-X-TROL jobs that require high pressure
- b) centralized storage for community wells
- c) high-rise buildings
- d) irrigation systems
- e) municipal well systems or pressure boosting stations

WELL-X-TROL tanks allow the water system designer to apply the concept of Effective System Protection to an increased range of applications. The ESP concept is designed to protect pump and operating controls by insuring that the actual pump operation conforms to the manufacturer's specified minimum running time. In addition, it helps provide economical system operation by reducing pump starts, extending pump motor life and saving energy.



OPERATING CHARACTERISTICS

The WELL-X-TROL is essentially an energy storage device that couples the pump to the system. It is designed to improve system performance and extend component life by minimizing radical changes in system pressure and flow.

The WELL-X-TROL principle is based on the permanent separation of air from system water. This is achieved by using a sealed-in heavy-duty diaphragm that separates system water from a permanent air cushion.

As water enters the WELL-X-TROL, the diaphragm flexes. This compresses the air inside and reduces its volume by the same amount as volume of the water that enters.

As the volume of air decreases, the pressure in the WELL-X-TROL increases. So it always equals the pressure exerted by the water.

When properly sized, the air cushion in the WELL-X-TROL will be of sufficient volume at minimum pressure (pump cut-in) to allow a desired volume of water to enter the WELL-X-TROL while keeping the subsequent pressure increase within the specified operating pressure range.

Since both the air pressure and the water pressure are always equal, the diaphragm is never under any kind of strain or tension. Instead, it simply flexes or floats between the water and air. (This is what makes WELL-X-TROL so reliable.)

Water in the WELL-X-TROL is contained in a completely non-leakage reservoir.

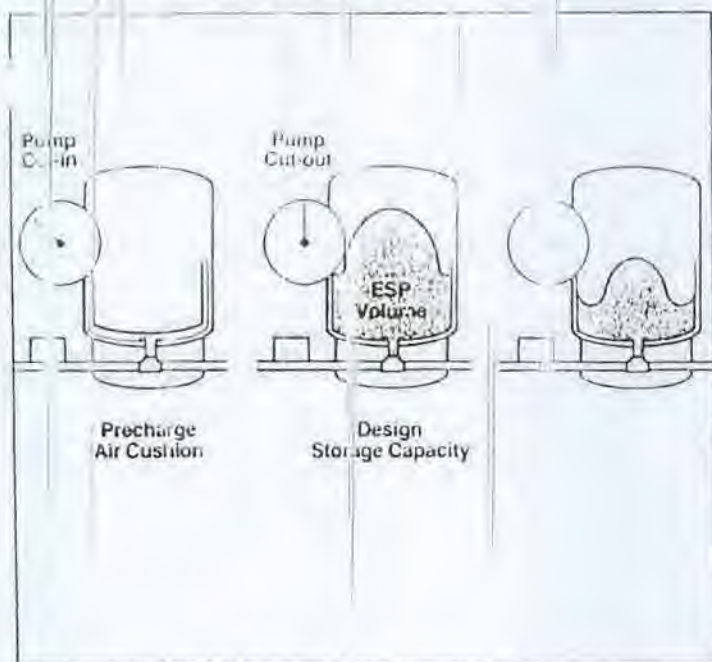
This separation of air and water permits the permanent air cushion to be precharged to the minimum required operating pressure for the system. This reduces the required tank size without affecting system performance.

All these things can affect pump performance. And while a pump will still respond to the system, it may begin having problems due to excessive cycling and erroneous signals caused by pressure surges. These problems will eventually result in shorter life and a higher cost of system operation. The WELL-X-TROL is designed to prevent these problems by protecting both the pump and the system from sudden shifts in water pressure and flow.

WELL-X-TROL SIZING

In most applications, you only need to store the amount of water necessary to provide the pump manufacturer's minimum run time. On occasion, this volume is dictated by other parameters. Even in these instances, you should still consider minimum pump run time.

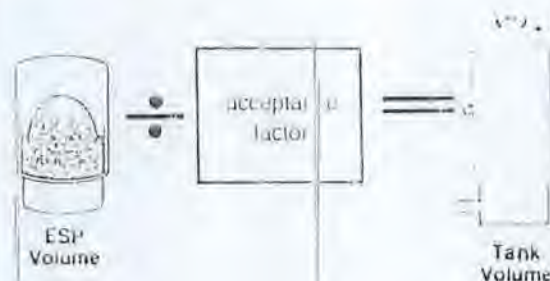
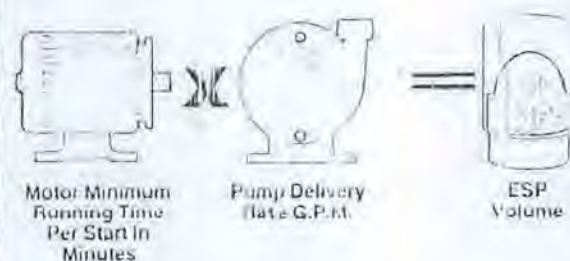
If you need a volume of water greater than the amount needed for minimum run time, enter that amount on line three of WELL-X-TROL Quick Sizing Form.



APPLYING THE WELL-X-TROL/ESP PRINCIPLE TO YOUR JOB

Selecting and matching the pump to a water supply system isn't easy. Simply because the designer has to take into account a number of different variables, including:

- usage patterns which may vary widely from the original plan;
- extensions and component additions which will affect system demand;
- supply pressure that will fluctuate;
- quick-acting valves that may cause surges and pressure depressions;
- surge effects that may result from pumps connected;
- building load load.



If you know the maximum and minimum operating pressure in a system, you can calculate the percentage of WELL-X-TROL volume to be filled with water. This percentage is called the acceptance factor. See chart on next page.

WELL-X-TROL QUICK SIZING FORM

CALCULATING ESP VOLUME

1. Pump delivery (average for pressure range)
2. Desired running time, in minutes and fractions of minutes (1.5 min. = 1 min. 30 sec.)
3. Multiply Line 1 by Line 2 and enter ESP Volume.

G.P.M.

Min.
ESP Vol.
Gallons

CALCULATING TANK SIZE

4. Minimum system pressure (pump cut in)
5. Maximum system pressure (pump cut out)
6. Refer to Table 1. Find Acceptance factor for Line 4 and Line 5 and enter
7. Divide Line 3 by Line 6 and enter minimum total WELL-X-TROL volume
8. Refer to Table 2 and select WELL-X-TROL model that is at least equal to Line 7 for "Total Volume" and Line 6 for "Acceptance Factor"

P_{min}
P_{max}

0 ——— Acc. Factor
Gals.

WELL No.

Table 1

ACCEPTANCE FACTORS

MAXIMUM SYSTEM PRESSURE (PSIG)	MINIMUM SYSTEM PRESSURE (PSIG)															
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
75	0.120															
80	0.232	0.182														
85	0.301	0.262	0.191													
90	0.360	0.274	0.183	0.091												
95	0.419	0.335	0.251	0.168	0.084											
100	0.464	0.380	0.309	0.232	0.155	0.076										
105	0.502	0.429	0.359	0.287	0.213	0.144	0.072									
110	0.536	0.469	0.402	0.335	0.268	0.201	0.134	0.067								
115	0.565	0.502	0.439	0.376	0.314	0.251	0.188	0.125	0.063							
120	0.588	0.531	0.472	0.413	0.354	0.295	0.236	0.177	0.118	0.059						
125	0.615	0.558	0.502	0.446	0.390	0.333	0.279	0.223	0.166	0.111	0.056					
130	0.634	0.581	0.528	0.475	0.422	0.373	0.317	0.264	0.211	0.158	0.106	0.053				
135	0.652	0.602	0.552	0.505	0.451	0.401	0.351	0.301	0.251	0.201	0.151	0.101	0.051			
140	0.669	0.621	0.573	0.525	0.478	0.433	0.387	0.339	0.291	0.243	0.193	0.143	0.093	0.048		
145	0.684	0.638	0.593	0.547	0.501	0.456	0.410	0.365	0.319	0.273	0.228	0.182	0.137	0.091	0.045	
150	0.698	0.654	0.610	0.567	0.523	0.479	0.436	0.392	0.347	0.305	0.261	0.218	0.174	0.131	0.087	0.043
155	0.710	0.668	0.626	0.585	0.543	0.501	0.459	0.418	0.377	0.334	0.293	0.250	0.208	0.167	0.125	0.083
160	0.723	0.682	0.642	0.601	0.561	0.521	0.481	0.441	0.401	0.361	0.321	0.281	0.241	0.200	0.160	0.120
165	0.734	0.694	0.655	0.617	0.578	0.540	0.501	0.462	0.424	0.385	0.347	0.309	0.270	0.232	0.192	0.155
170	0.742	0.705	0.668	0.631	0.594	0.557	0.520	0.483	0.446	0.408	0.371	0.334	0.297	0.260	0.223	0.186
175	0.752	0.716	0.680	0.644	0.608	0.573	0.537	0.501	0.467	0.429	0.394	0.358	0.322	0.286	0.250	0.215
180	0.760	0.726	0.691	0.657	0.622	0.588	0.553	0.519	0.485	0.450	0.415	0.381	0.346	0.312	0.277	0.243
185	0.768	0.735	0.701	0.668	0.635	0.601	0.568	0.534	0.501	0.468	0.435	0.401	0.367	0.334	0.301	0.267
190	0.776	0.743	0.711	0.679	0.647	0.614	0.582	0.550	0.518	0.485	0.453	0.420	0.388	0.356	0.324	0.291
195	0.783	0.751	0.720	0.689	0.658	0.626	0.595	0.563	0.532	0.501	0.470	0.438	0.407	0.376	0.344	0.313
200	0.790	0.759	0.729	0.699	0.669	0.638	0.608	0.577	0.547	0.517	0.486	0.456	0.426	0.396	0.365	0.335

EXAMPLE 1

A new manufacturing plant is being processed with well water, pump switch settings are from 40 to 120 psig with appropriate pressure reduction at machine. Storage pump delivery in this operating range is 75 gpm using a 15 HP submersible motor with a recommended 1% motor running time.

ESP VOLUME

1. Pump Delivery 75 gpm
2. Desired Run Time 1 1/2 m
3. ESP Volume = $75 \times 1 1/2$ 113 gallons

CALCULATING TANK SIZE

4. Minimum System Pressure 90 psig
5. Maximum System Pressure 120 psig
6. Acceptance factor (table 1) 0.223
7. Minimum WELL-X-TROL volume $\frac{113}{0.223}$ 506 gallons
8. WELL-X-TROL selection WX-457

EXAMPLE 2

The well of an adjacent plant became low yield, water was now available at 2 gpm. Storage was required. Rather than redrill the well, WELL-X-TROLS are to be installed to provide 10 gallons every 15 minutes at a pressure of 120 to 150 psig.

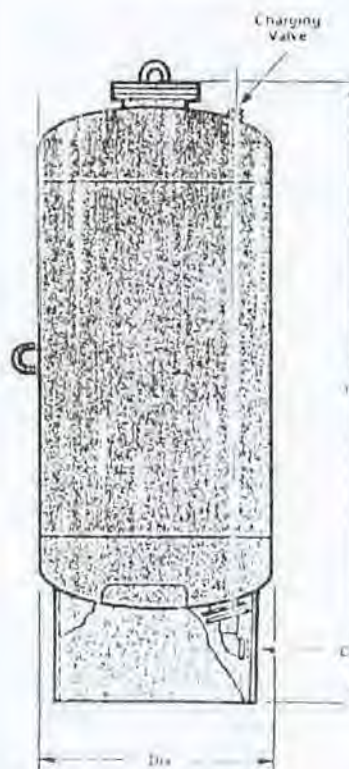
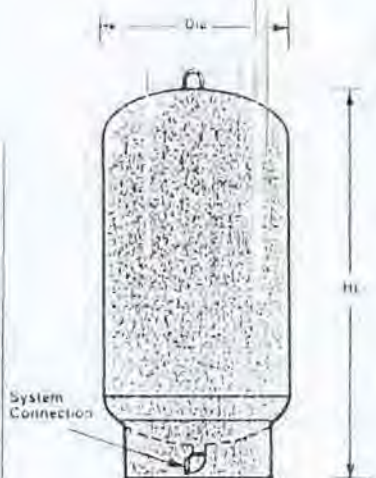
In this case, the ESP volume is given 10 gallons

3. ESP Volume 10 gallons

CALCULATING TANK SIZE

4. Minimum System Pressure 120 psi
5. Maximum System Pressure 150 psi
6. Acceptance Factor (table 1) 0.182
7. Minimum WELL-X-TROL Volume $\frac{10}{0.182}$ 55 gallons
8. WELL-X-TROL selection WX-404

NOTE: Actual water stored will be 65 gallons (volume of the WX-404) \times 0.182 = 12 gallons.



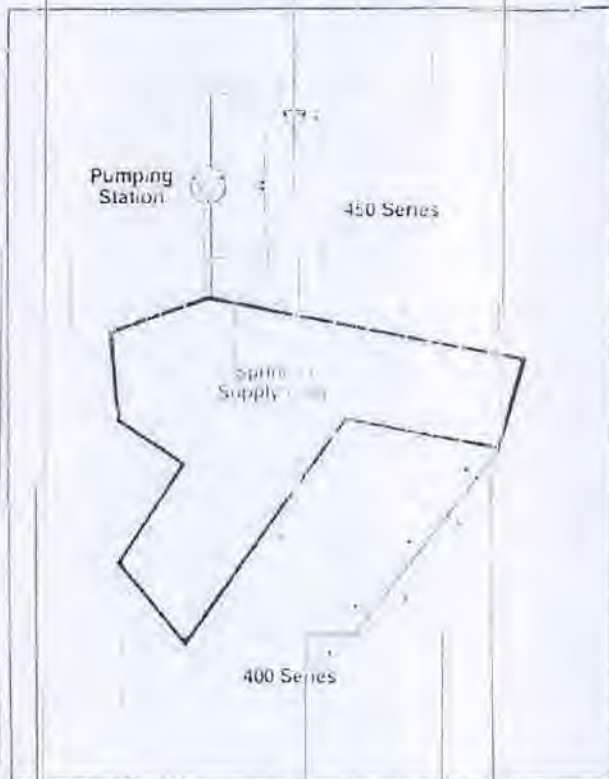
400 SERIES						
MODEL NO.	WELL-X-TROL VOL. GALS.	MAX. ACCEPT. FACTOR	DIMENSIONS (INCHES)		SYSTEM CONN.	SHIP WT. LBS.
			HT.	DIA.		
WX-401	17.5	0.40	26 3/4	10 1/4	1" FPT	95
WX-402	25	0.52	35	10 1/4	1" FPT	112
WX-403	34	0.332	45 1/4	16 1/4	1" FPT	123
WX-404	66	0.15	44 1/4	24	1 1/4" FPT	210
WX-405	88	0.66	56 1/2	24	1 1/4" FPT	230

450 SERIES						
MODEL NO.	WELL-X-TROL VOL. GALS.	NO LIMIT ON ACCEPTANCE	DIMENSIONS (INCHES)		SYSTEM CONN.	SHIP WT. LBS.
			HT.	DIA.		
WX-451	156		72 1/4	30	2" FPT	626
WX-452	211		90 1/4	30	2" FPT	760
WX-453	264		84 1/2	30	3" FPT	810
WX-454	317		97	30	3" FPT	914
WX-455	370		109 1/4	30	3" FPT	1018
WX-456	422		80 1/2	48	3" FPT	1542
WX-457	528		93 1/2	48	3" FPT	1775

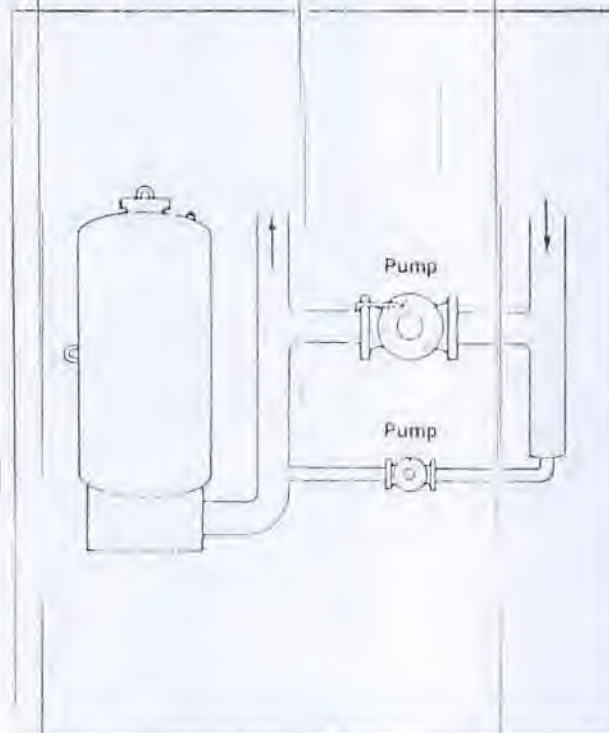
PRESSURE SWITCH CONTROLLING THE WELL PUMP SHALL COME ON @ 40 PSI & SHUT OFF @ 60 PSI IN ORDER TO USE THIS TANK. 5

TYPICAL APPLICATIONS

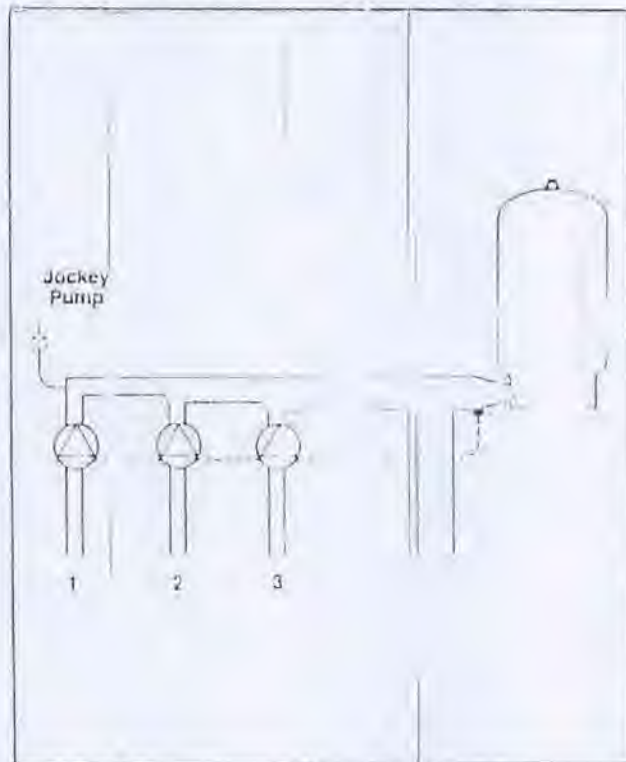
In the sprinkler system the 400 Series WELL-X-TROLs are used. The larger 450 Series protects and assures proper pump operation while the smaller 400 Series protects no. 3 and no. 4 mainline meter and meter.



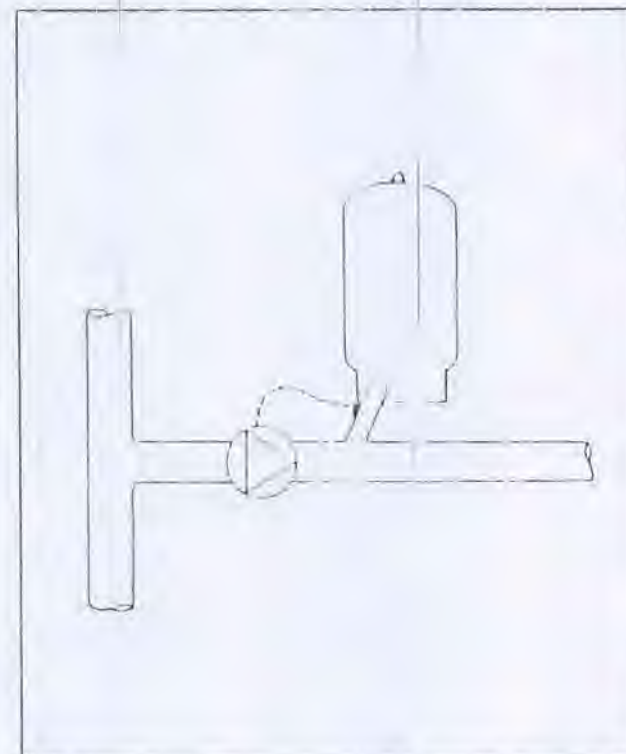
When a fire occurs, the water pressure in the system drops. The 400 Series WELL-X-TROL is designed to prevent the system from becoming damaged during high peak water demand, such as fire wheels, etc.



In a municipal well system or pressure boosting station, WELL-X-TROLs are used to control sequential start of the main pumps. At the same time, it reduces surge and provides the jockey pump with guaranteed minimum run times during low peak demand periods.



The 400 Series WELL-X-TROL is used to control the sequential start of the main pumps. It also reduces surge and provides the jockey pump with guaranteed minimum run times during low peak demand periods.



LOCATION

The WELL-X-TROL tank will operate anywhere in the system. Although where you put it will depend on its application and function.

1. **Adjacent to pumps.** This is the location chosen most often. The WELL-X-TROL can be used wherever pumps are above or below the surface. In either case, it protects the pump by reducing surge, dampening pressure spikes, offering a point of pressure control and providing minimum run time. This location also permits all equipment to be placed in an area that's both serviceable and secure.
2. **At the end of long pipe runs.** Sometimes, it's better to put the WELL-X-TROL at the end of a long run of pipe, so it can provide rapid system response and adequate protection. When this location is chosen, the pressure switch should either be relocated with the WELL-X-TROL or the setting should be adjusted to compensate for any line pressure drop.
3. **Adjacent to shock creating components.** If you want to use the WELL-X-TROL to control shock or pressure fluctuations, then you should locate the tank as close to the cause as possible. This should be done wherever you have back flow prevention, check valves, solenoid, mixing and meter valves, pumps and other system controls which can contribute to system shock. **Caution:** Do not use for shock with flow velocities greater than 10 FPS.

SYSTEM CONNECTION

The connecting pipe between WELL-X-TROL and the system should be as short as possible with a minimum of bends. It should also be as large in diameter as possible, consistent with system piping. You should never bush down from the WELL-X-TROL illustration.

SYSTEM SUPPORT

The surface which supports the WELL-X-TROL should be capable of supporting its operating weight (including the weight of water).

AIR PRESSURE

Check the air precharge pressure before any water enters the tank. The air valve is protected by a nipple and plug. You'll find it located on the side of the 400 Series and on the top of the 450 Series. This pressure should be the same as the minimum desired system pressure or pump cut-in pressure. In a surge or accumulator application, the charge should be 10-20% less than the line pressure.

Remember to replace and seal the plug after you've reached the correct air charge (it's a good way to tell if anyone has been tampering with the system).

PRESSURE SWITCH

For the best performance, you should put the pressure switch at or near the WELL-X-TROL where pressure variations will be dampened. When you tune the system, you should adjust switch controls instead of the WELL-X-TROL precharge. (See Form No. WS-12-115, "Fine Tuning Procedure.")

SAFETY PROTECTION

All installations should be according to prevailing codes and standards. In addition, you should protect the system by installing an adequately sized relief valve at or near the pump discharge. You should also provide facilities to drain the system.



As Noted

Approved

9-18-92

L. Alan Plain

Deputy Executive Director
Chief Engineer
Ohio Turnpike Commission

<input type="checkbox"/>	REVIEWED AND ACCEPTED	APPROVALS ARE FOR GENERAL DESIGN AND ARRANGEMENT ONLY. SUBJECT TO VERIFICATION OF ALL DIMENSIONS AND CONDITIONS, AND TO COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENT. QUANTITIES NOT CHECKED
<input checked="" type="checkbox"/>	REVIEWED AND ACCEPTED AS NOTED	
<input type="checkbox"/>	RETD. FOR CORRECTION	
<input type="checkbox"/>	RETD. NO ACTION	
<input type="checkbox"/>	REJECTED	
GREINER ENGINEERING, INC. - OHIO ONE BEREA COMMONS, SUITE 216 BEREA, OHIO 44017-2534		
DATE <u>9-15-92</u> BY <u>KIB</u>		

CHECKED

Subject to Contract Requirements

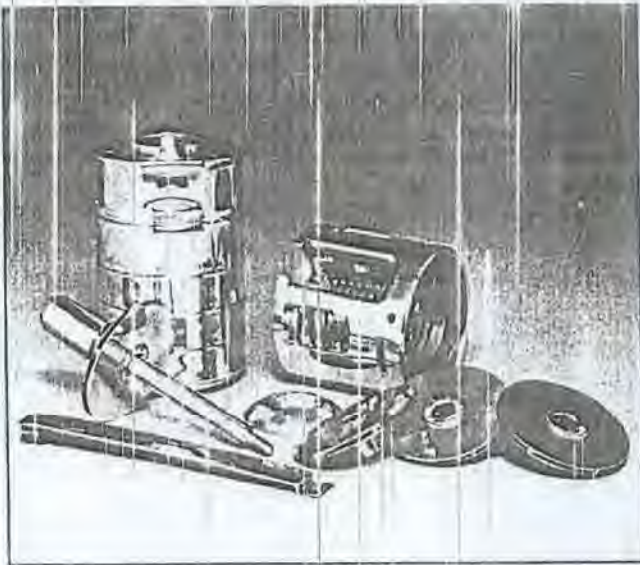
SEP 4 -

L. R. BABCOCK, INC.

By

Pump Selection Guide

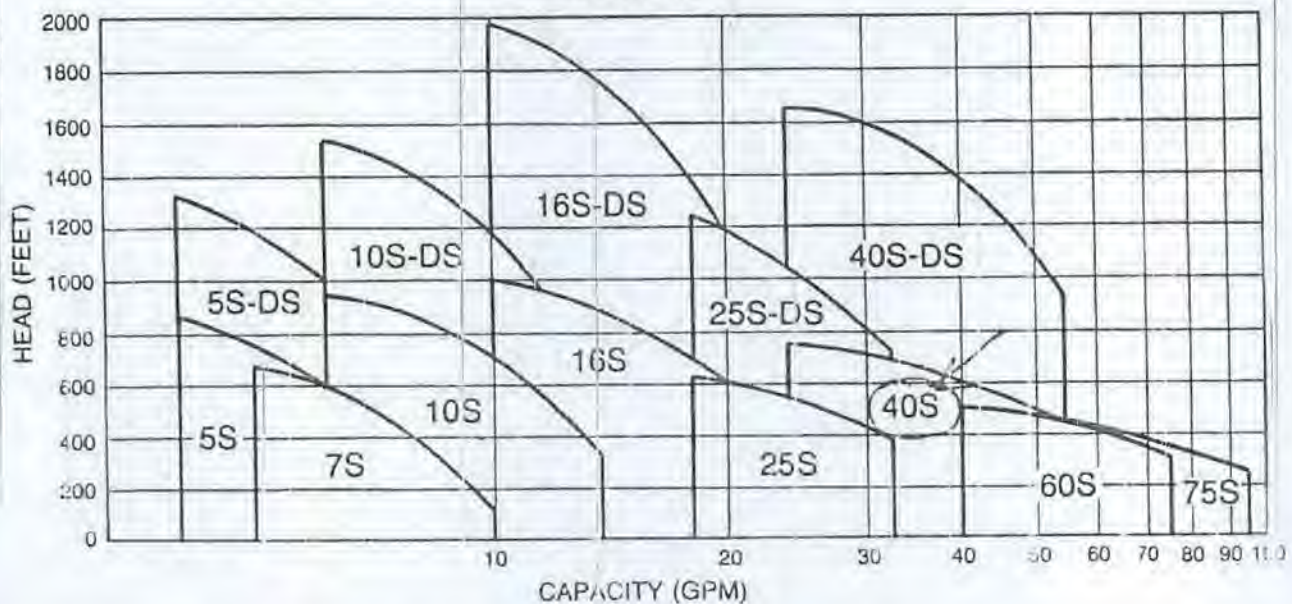
MODEL	MIN. WELL SIZE	FLOW RANGE (GPM)	MAX. WORKING HEAD (FEET)	MAX. WORKING HEAD (PSI)
5S	4"	1.2-7	870	377
7S	4"	3-10	680	294
10S	4"	5-14	950	411
16S	4"	10-20	990	429
25S	4"	18-32	630	273
40S	4"	24-55	755	327
60S	4"	40-75	505	219
75S	4"	45-95	460	199



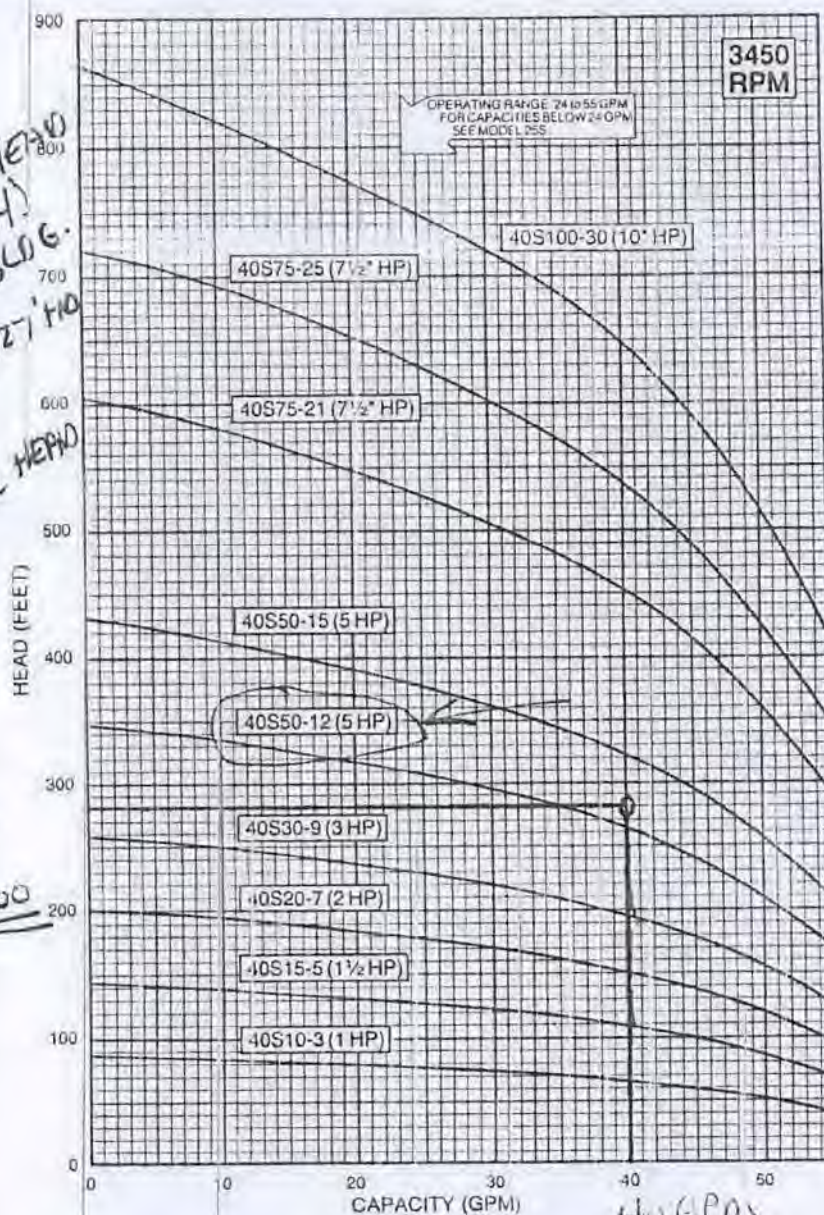
Features

- ✓ Smooth safety hook prevents frayed safety line.
- ✓ Built-in, jam-free check valves designed for failsafe operation.
- ✓ **SnapGuard™** cable guard is designed for easy installation and removal. Holds tight and provides maximum protection to motor leads.
- ✓ **PrecisionForm™** impellers are fabricated from stainless steel to provide long pump life, maximum hydraulic efficiency and top pump performance.
- ✓ Exclusive **PrimeInducer™** provides maximum pump protection from dry-run damage during low water situations.
- ✓ Pump inlet is totally screened to prevent damage from debris.
- ✓ All Grundfos submersibles are performance tested at the factory to verify specified performance.

4-Inch



NOTE: For Deep Set models see Section 4.

**MODEL
40S****40 GPM****GRUNDFOS**FLOW RANGE
24 to 55 GPMPUMP OUTLET
2" NPT**PERFORMANCE CURVES****DIMENSIONS AND WEIGHTS**

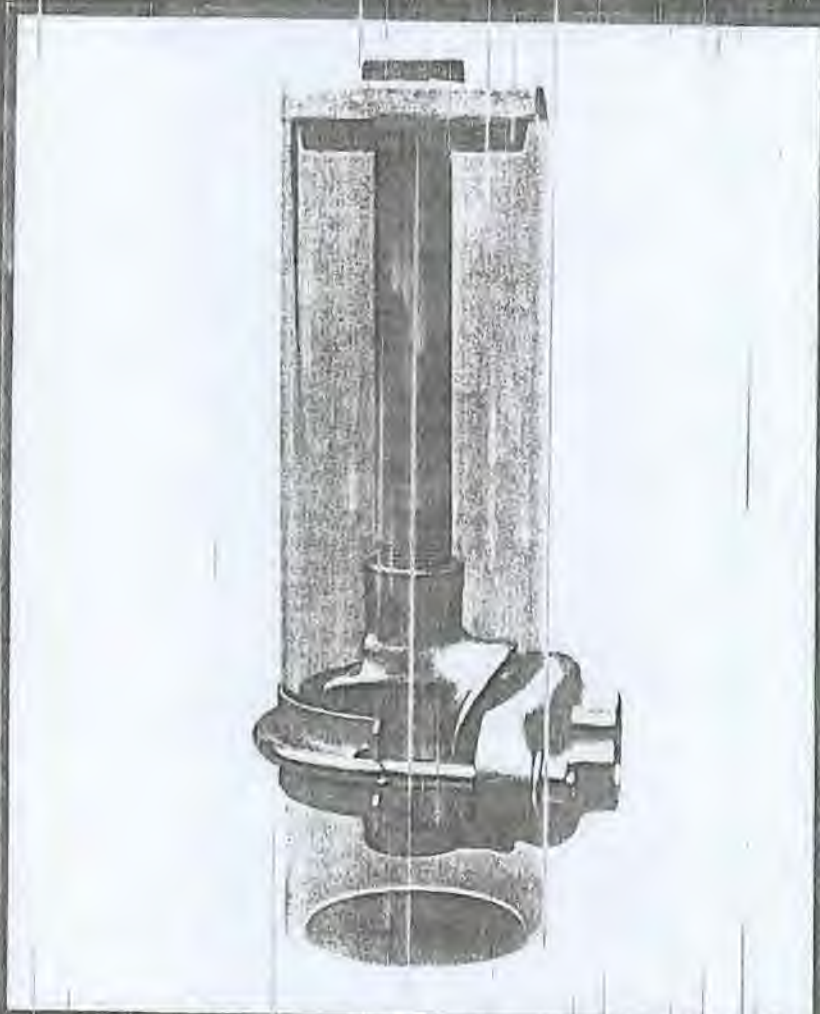
MODEL NO.	HP	LENGTH (INCHES)	WIDTH (INCHES)	APPROX. UNIT SHIPPING WT. (LBS.)
40S10-3	1	25 5/8	3 15/16	32
40S15-5	1 1/2	30 1/2	3 15/16	37
40S20-7	2	33	3 15/16	41
40S30-9	3	43 3/8	3 15/16	65
40S50-12	5	51 1/8	3 15/16	78
40S50-15	5	56 1/8	3 15/16	84
40S75-21	7 1/2	74 1/2	3 15/16	120
40S75-25	7 1/2	81 1/8	3 15/16	124
40S100-30	10	103 1/2	5 15/16	181

1-inch motor is provided as standard for these models.

Specifications are subject to change without notice.

MERRILL

MCK PITLESS KITS



"A brass pitless kit for
steel or plastic well casing."

MERRILL

MCK PITLESS KITS

Note: ORDER NO. BREAKDOWN

Product I.D.	Well Size	Drop/Discharge	Well Cap
MCK For Merrill Clear Well Kit	4 For 4" I.D. Casing	100 For 1" Drop and Discharge	WC Watertight Cap (Options Below)

Several Well Cap Models Available



VC SERIES VENT CAPS



WC SERIES WATERTIGHT CAP
w/1" CABLE TAP



WCA SERIES WATERTIGHT CAP
w/1 1/2" CABLE TAP



WCB SERIES WATERTIGHT CAP
w/1 1/2" CABLE TAP



WCI SERIES WATERTIGHT CAP
w/1" CABLE TAP



WCD SERIES WATERTIGHT CAP
w/1" CABLE TAP



WCP SERIES WATERTIGHT CAP
w/1" CABLE TAP

MCK Flipper Series with Support Bar

Well Size	Order No. No. Cap	Order No. Vent Cap	Order No. Watertight Cap
4"	MCK4100	MCK4100VC	MCK4100WC MCK4100WCA MCK4100WCB MCK4100WCD MCK4100WCP
4"	MCKS4100	MCKS4100VC	MCKS4100WC MCKS4100WCA MCKS4100WCB MCKS4100WCD MCKS4100WCP
4"	MCK4125	MCK4125VC	MCK4125WC MCK4125WCA MCK4125WCB MCK4125WCD MCK4125WCP
4"	MCKS4125	MCKS4125VC	MCKS4125WC MCKS4125WCA MCKS4125WCB MCKS4125WCD MCKS4125WCP
5"	MCK5100	MCK5100VC	MCK5100WC MCK5100WCA MCK5100WCB MCK5100WCD MCK5100WCP
5"	MCKS5100	MCKS5100VC	MCKS5100WC MCKS5100WCA MCKS5100WCB MCKS5100WCD MCKS5100WCP
5"	MCK5125	MCK5125VC	MCK5125WC MCK5125WCA MCK5125WCB MCK5125WCD MCK5125WCP
5"	MCKS5125	MCKS5125VC	MCKS5125WC MCKS5125WCA MCKS5125WCB MCKS5125WCD MCKS5125WCP



MCK Flipper
Series with
Support Bar

MCK Wedge
Series with
Wye Support



MCK Wedge Series with Wye Support

Well Size	Order No. No. Cap	Order No. Vent Cap	Order No. Watertight Cap
4"	MCKW4100	MCKW4100VC	MCKW4100WC MCKW4100WCA MCKW4100WCB MCKW4100WCD MCKW4100WCP
4"	MCKWS4100	MCKWS4100VC	MCKWS4100WC MCKWS4100WCA MCKWS4100WCB MCKWS4100WCD MCKWS4100WCP
4"	MCKW4125	MCKW4125VC	MCKW4125WC MCKW4125WCA MCKW4125WCB MCKW4125WCD MCKW4125WCP
4"	MCKWS4125	MCKWS4125VC	MCKWS4125WC MCKWS4125WCA MCKWS4125WCB MCKWS4125WCD MCKWS4125WCP
5"	MCKW5100	MCKW5100VC	MCKW5100WC MCKW5100WCA MCKW5100WCB MCKW5100WCD MCKW5100WCP
5"	MCKWS5100	MCKWS5100VC	MCKWS5100WC MCKWS5100WCA MCKWS5100WCB MCKWS5100WCD MCKWS5100WCP
5"	MCKW5125	MCKW5125VC	MCKW5125WC MCKW5125WCA MCKW5125WCB MCKW5125WCD MCKW5125WCP
5"	MCKWS5125	MCKWS5125VC	MCKWS5125WC MCKWS5125WCA MCKWS5125WCB MCKWS5125WCD MCKWS5125WCP
5"	MCK5200	MCK5200VC	MCK5200WC MCK5200WCA MCK5200WCB MCK5200WCD MCK5200WCP
5"	MCKS5200	MCKS5200VC	MCKS5200WC MCKS5200WCA MCKS5200WCB MCKS5200WCD MCKS5200WCP
6"	MCK6200	MCK6200VC	MCK6200WC MCK6200WCA MCK6200WCB MCK6200WCD MCK6200WCP
6"	MCKS6200	MCKS6200VC	MCKS6200WC MCKS6200WCA MCKS6200WCB MCKS6200WCD MCKS6200WCP

MCK Series Pitless Specification Information

Order No.	Wt. Lbs.	Order No.	Wt. Lbs.	Well Size I.D./O.D.	Drop Pipe & Discharge	Hole Size
MCK4100	8.5	MCKW4100	10.3	4.0"/4.5"	1"	1"
MCK4125	7.8	MCKW4125	10.3	4.0"/4.5"	1 1/4"	1 1/4"
MCK5100	8.4	MCKW5100	11.5	5.0"/5.6"	1"	1"
MCK5125	8.9	MCKW5125	11.5	5.0"/5.6"	1 1/4"	1 1/4"
		MCK5200	11.5	5.0"/5.6"	2"	2"
		MCK6200	12.3	6.0"/6.6"	2"	2"

6" MCKS6200 MCKS6200VC
w/Back Strap and U-Bolt.

MERRILL

MCK PITLESS KITS

CLEAR WELL PITLESS KITS

A quality pitless adapter kit made of quality red brass castings and stainless steel for years of service. MERRILL'S MCK Pitless Kit gives you a clear well with no obstructions when pulling pump. A True Quality Installation.

FEATURES/BENEFITS

- 1. CERTIFIED WATERTIGHT PITLESS KITS AND CAPS**—tested and approved by Pitless Adapter Standard No. 1 (PAS-1) and No. 2 (PAS-2), plus Illinois Code.
BENEFIT: Approved by most all state codes.
- 2. POSITIVE MECHANICAL SEAL** by simply turning the stainless steel screw.
BENEFIT: Positive operation after years of service.
- 3. FULL DIAMETER ACCESS TO WELL**—no obstruction inside well that may need to be removed before working on well—common problem with pitless adapters.
BENEFIT: Simple, fast installation plus no future digging to remove adapters.
- 4. LARGE THICK O-RING SEAL** assures watertight seal around hole cut in casing.
BENEFIT: Insures seal to inside of casing.
- 5. DISCHARGE HUB CLAMPS AROUND CASING** with U-Bolt and back strap to prevent distortion of plastic casing if overtightened.
BENEFIT: Protects from installation mistakes.
- 6. 3 PART KIT**—consists of discharge hub, internal parts, and ventilated or watertight cap.
BENEFIT: Complete—no cap to add—all in one box.
- 7. USE EXISTING CASING—PLASTIC OR STEEL**—low cost and most of the advantages of pitless units.
BENEFIT: No restriction on casing material.
- 8. SUPPORT BAR HOLDS WEIGHT**—more weight than pitless adapters and minimizes danger of losing pump or pipe down well. The weight of the pump, pipe, and water is supported by the bracket which uses the top of the casing, not just a small part of the side wall like pitless adapters.
BENEFIT: Safer and holds more weight.
- 9. WATER SYSTEM EASILY DRAINED** by turning the stainless steel screw inside pull pipe so entire water system outside well could drain without pulling the pump, not possible with most other pitless kits and pitless adapters.
BENEFIT: Simple answer to draining.
- 10. SEASONAL HOMES**—the perfect answer for a seasonal home, simply turn off pump and turn stainless steel screw inside pull pipe from top of well, to drain entire water system outside well.
BENEFIT: Extra-application to easily answer.



MCK4100



MCKW4100



MCK4125



MCKW4125



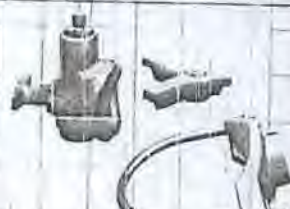
MCK5100



MCKW5100



MCK5125



MCKW5125

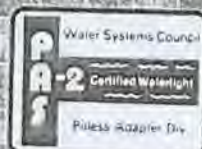
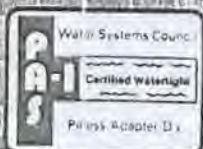


MCK5200



MCK6200

NOTE: ALL PITLESS KITS LISTED ABOVE HAVE PASSED THE WATER SYSTEMS COUNCIL PITLESS ADAPTER STANDARD NO. 1 (PAS-1)



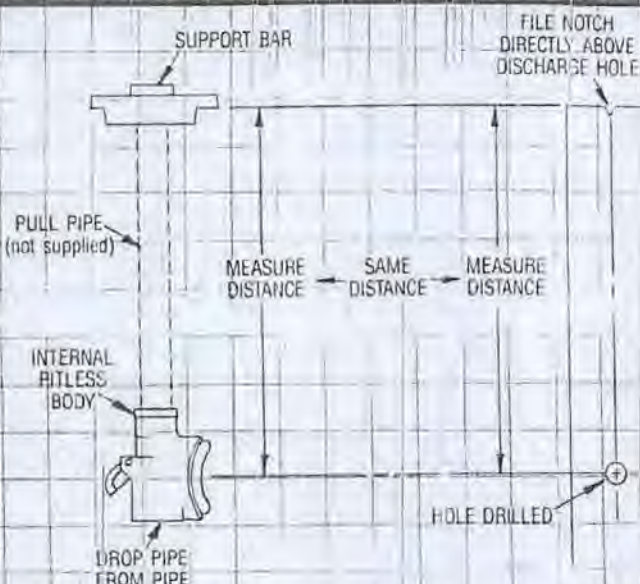
MERRILL

ONLY MERRILL HAS THE QUALITY AND SELECTION YOU NEED

INSTALLATION INSTRUCTIONS

1. Cut and thread 1" pull pipe. (See chart for length). Assemble support bar, pull pipe, and pitless body. Be sure that arrow on support bar and discharge hole on pitless body are in line with each other.
 2. Cut a piece of 1/2" pipe 3" longer than pull pipe and flatten one end to fit stainless steel screw.
 3. Measure distance from bottom of support bar to center of discharge hub, or use assembly as a measuring stick.
 4. Drill hole in casing, the same measured distance as above:
 - 4" casing - 1/4" hole or smaller
 - 5" casing - 1/4" hole or smaller
 - 6" casing - 1/4" hole or smaller
 5. Notch or mark top of casing directly above discharge hole.
 6. Clamp discharge hub around casing to assure watertight seal around discharge hole.
 7. Attach pump and drop pipe to pitless body, vaseline o-ring and lower into casing.
 8. Line up mark on support bar with notch cut in casing.
 9. Turn stainless steel screw clockwise until o-ring seals on inner wall of casing.
 10. Complete installation by installing watertight or vented cap on top of well casing depending on state well code.
- MCK Pitless Kit is now installed.

NOTE: When pulling pump or installing pump, make sure that the stainless steel screw on pitless body is turned (counter-clockwise) so the brass lever can be pushed in as far as necessary.



Pull Pipe Length	Desired Bury Depth	Pull Pipe Length	Desired Bury Depth
22"	1'	70"	5'
34"	2'	82"	6'
46"	3'	94"	7'
58"	4'	106"	8'



PARTS LIST

Description	MCK Flipper Series w/Support Bar		MCK Wedge Series w/Wye Support		
	Part No.	Part No.	Part No.	Part No.	Part No.
Support Bar	MCK4SB	MCK5SB	MCK4Y	MCK5Y	MCK6Y
Wye Support			MCKSS	MCKSS	MCKSS
Screw - Stainless Steel	MCKSS	MCKSS			
Internal Pitless Body - 1"	MCKB410	MCKB510	MCKWB410	MCKWB510	
Internal Pitless Body - 1 1/4"	MCKB412	MCKB512	MCKWB412	MCKWB512	
Internal Pitless Body - 2"				MCKWB520	MCKWB620
Flipper	MCKF400	MCKF500			
Pin	MCKPP	MCKPP			
Wedge - 1" & 1 1/4"			MCKW400	MCKW500	
Wedge - 2"				MCKW520	MCKW620
Screw - Wedge			MCKWSW	MCKWSW	
Discharge Hub w/O-Ring - 1"	MCKH410	MCKH510	MCKH410	MCKH510	
Discharge Hub w/O-Ring - 1 1/4"	MCKH412	MCKH512	MCKH412	MCKH512	
Discharge Hub w/O-Ring - 2"				MCKH520	MCKH620
O-ring Seal	MCKOR	MCKOR	MCKOR	MCKOR	
U-Bolts w/Nuts	MCK4UB	MCK5UB	MCK4UB	MCK5UB	MCK6UB
Back Strap	424	524	424	524	624



Main / International No. (712) 732-2760
 U.S. and Iowa No. (800) 831-6962
 Canada No. (800) 888-7059
 Fax No. (712) 732-4401



Master Meter Magnetic Multi-Jet Water Meters $1\frac{1}{2}$ " - 2"

Master Meter Magnetic Multi-Jet dry dial meters are the most efficient and accurate meters available. The new MM series offers the time proven Multi-Jet concept with the center-sweep hand sealed register preferred by most water utilities.

The Multi-Jet design offers superior accuracy over a wide range of flows, with low head loss even at high flows. The magnetic-drive vacuum-sealed register protects the register assembly from rust, sand and other water impurities. The register face has a large sweep hand and large numerals for easy reading and testing.

MM BENEFITS • Most accurate of all meter designs • Easy and inexpensive to maintain • Low head loss • In-line serviceability • Long life for all parts

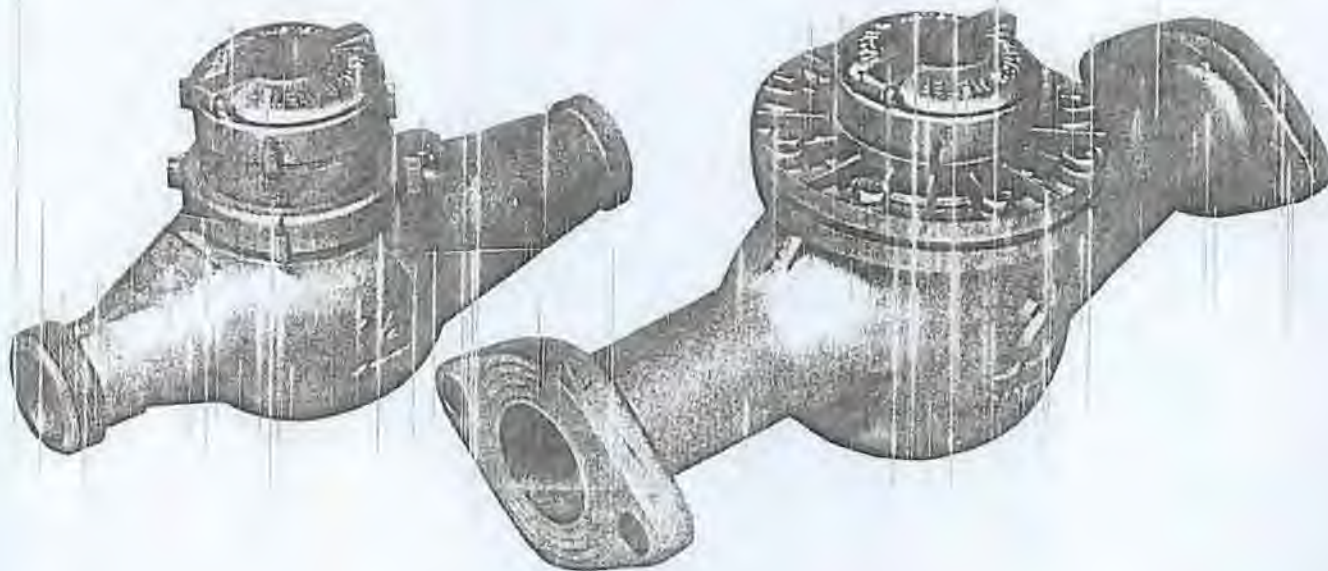
BRONZE METER HOUSING • 81 % Copper content exceeds AWWA • Brass case and lid • Sealed adjusting port

MOLDED CHAMBER • Molded port holes - not machined • Corrosion resistant • Extreme accuracy at all flows • Sapphire rotor bearing

SEALED REGISTER • Vacuum-sealed register in stainless steel housing with heat treated glass lens • Center sweep hand • Leak indicator • Easily adapts to metric • Damage resistant brass sealing ring • Eliminates discoloring of dial face



**MASTER METER® WATER METERS
MEET OR EXCEED AWWA C-708**



**CHECKED**

SUBJECT TO CONTRACT REQUIREMENTS

JUL 12 1992

RUDOLPH/LIBBE/INC.

BY *FEI*
NEW FEATURES ON MASTER METER 1 1/2" AND 2"**CHECKED**

Subject to Contract Requirements

JUL 16

L. R. BABCOCK, INC.

*FEI***DIMENSIONAL AND PERFORMANCE INFORMATION**

Model No.	Length	Weight	Loss of Head at Design Capacity	Minimum Flow Rate G.P.M.	Normal Flow Range	Maximum Working Temp.
1 1/2" MM6T Threaded Ends	12 5/8	10 lbs.	12	1.5	5-100	120° F
1 1/2" MM6F Flanged Ends	13	12 lbs.	12	1.5	5-100	120° F
2" MM7T Threaded Ends	15 1/4	20 lbs.	13	2.0	8-160	120° F
2" MM7F Flanged Ends	17	23 lbs.	13	2.0	8-160	120° F

MASTER METER MULTI-JETS OFFER:

• Extreme accuracy at low flows • Higher continuous flow capacity • Sand and material in suspension have little effect on meter accuracy • Factory pretested cartridge allows for in-line service and lower maintenance costs • Flanged or threaded end.

PERFORMANCE

The Multi-Jet design equally distributes load pressure on the impeller, causing less wear while maintaining accuracy even under constant use. The magnetic drive coupling consists of two noncorroding ceramic rings, one in the register and one in the measuring chamber. This coupling ensures perfect sealing. There is no drive shaft through the register box. Therefore, the register remains permanently clean, dry and protected.

THE MASTER METER GUARANTEE

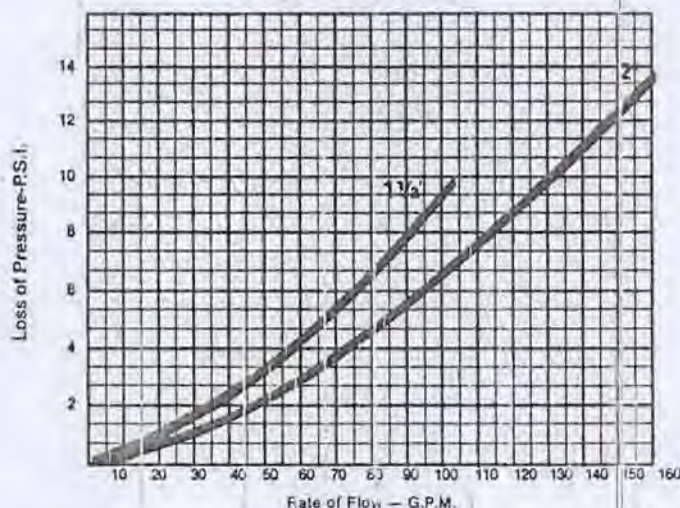
The Master Meter is guaranteed to perform to AWWA standards for new meter accuracy to be free from defects in materials or workmanship for a period of two (2) years from the date of shipment. Additionally, the meters will perform to at least AWWA standards for repaired meter accuracy for the time period or registration limits indicated:

- 3/8" - Fifteen (15) years or 1,500,000 gallons, whichever occurs first;
- 1" - Fifteen (15) years or 3,000,000 gallons, whichever occurs first;
- 1 1/2" - Fifteen (15) years or 5,500,000 gallons, whichever occurs first;
- 2" - Fifteen (15) years or 8,000,000 gallons, whichever occurs first;

The meter body of all sizes is guaranteed against manufacturing defects for 25 years.

Master Meter's liability under this performance guarantee is expressly limited to repair of the meter upon the customer's returning the meter to the factory or service center designated by a Master Meter representative and paying freight cost to such factory or service center.

This performance guarantee shall not be applicable to meters which have been damaged by willful misconduct, negligence, vandalism, act of God, exposure to adverse service conditions or improper installation.

Head Loss Curves

REVIEWED AND ACCEPTED	APPROVALS ARE FOR GENERAL DESIGN AND ARRANGEMENT ONLY; SUBJECT TO VERIFICATION OF ALL DIMENSIONS AND CONDITIONS, AND TO COMPLIANCE WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENT. QUANTITIES NOT CHECKED
DISAPPROVED AS NOTED	
RETD. FOR CORR.	
RETD. NO ACTION	
REJECTED	
GREINER ENGINEERING, INC. - OHIO ONE BEREA COMMONS, SUITE 216 BEREA, OHIO 44017-2534 DATE <u>9-18-92</u> BY <u>REF</u>	

AB Noted
Approved 9.22.92
A. Allen
Deputy Executive Director
Chief Engineer
Ohio Turnpike Commission

47806 TUBING, COPPER HARD 1/2"

PLUMBING SUPPLIES

Type L copper tubing, used for domestic water, fire protection, fuel and oil, HVAC, compressed air, natural gas, LPG gas, snow melting and vacuum-systems, shall have the following features:

- Type L
- 1/2"
- In 20' lengths
- Unit of measure: Feet



52500 SOLDER,LEAD FREE

LEAD-FREE SOLDER

Solder shall have the following features:

- Lead-free
- Approximate diameter: 1/8"
- In one pound (1 Lb.) rolls
- Unit of measure: Roll



The Ohio Turnpike Commission

Douglas F. Hedrick, P.E.P.S.
Chief Engineer

August 9, 2012

Jerry N. Hruby
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Vice Chairman

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Richard A. Hodges
*Secretary-Treasurer
Executive Director*

Ohio E.P.A.
Division of Drinking & Ground Waters Central Office
P.O. Box 1049
Columbus, Ohio 43216-1049

SUBJECT: Kunkle Maintenance Building
PWS I.D. No. 8640112
Lead and Copper Monitoring Report

To Whom It May Concern:

- * In accordance with EPA correspondence dated May 18, 2012 regarding Lead and Copper Tap Monitoring, lead and copper monitoring results for the 2012 period at the subject public water system are enclosed. Additionally, a copy of the Lead & Copper Result notification and the completed EPA 5105 form are attached.

As indicated on the attached forms, the 90th percentile lead and copper values are < 4.0 µg/L and 30.0 µg/L, respectively. The action levels for both lead and copper were not exceeded during this sampling period.

Should you have any questions concerning this matter, please contact me at this office.

Sincerely,

Douglas F. Hedrick, P.E., P.S.
Chief Engineer

cc: File:FAMAINDOC2012\EPA-CORR\MB1\WATER\POTABLEJUL '12 L&C_001.DOC

682 Prospect Street, Berea, Ohio 44017-2799 Phone: (440) 234-2081 Fax: (440) 234-4582
www.ohioturnpike.org

Serving the nation - The James W. Shocknessy Ohio Turnpike



DRINKING WATER LEAD AND COPPER MONITORING REPORT

PWS Name: OTC – Kunkle Maintenance Building	PWSID: OH8640112	County: Williams	Population: 26
PWS Address: 13643 County Road 17 Pioneer, OH 43554	Phone: 440-234-2081	Sampling begin date: July 3, 2012	Sampling end date: July 3, 2012
Monitoring Schedule: <input type="checkbox"/> "6 month" or "optional" <input checked="" type="checkbox"/> "annual" or "triennial"			

Return this completed form to Ohio EPA, DDAGW-Central Office, PO Box 1049, Columbus, OH 43216-1049 or Fax to (614) 644-2909 (receipt being no later than 10 days after the end of the monitoring period). Retain a copy of this report in your files with supporting documentation for a minimum of 12 years.

Lead and Copper Tap Monitoring (First-Draw Samples)

a.	Number of sampling sites required: 5	Number of samples analyzed: 5
If the number of samples analyzed is less than the standard number of sampling sites required for your water system, then explain why:		
b.	Were all sampling sites tier 1 sites? () Yes (X) No	If no, explain: The PWS serves one commercial building with plumbing material of copper pipe with lead-free connections.
c.	Were 50% of your lead samples from sites with Lead Service Lines? () Yes (X) No	If no, explain: There are no known lead service lines
d.	Have any of your sampling sites changed since the last monitoring period? (X) Yes () No	If yes, state which sites and explain: The Janitor's Sink Location was replaced with a sample from the building's Breakroom Sink. Previously, the Breakroom Sink had a mixing type valve, but was replaced with a non-mixing type valve in 2011. Additionally, water from this site is more likely to be used as a drinking water.
e.	90 th % Lead Level (mg/L): <0.04	90 th % Copper Level (mg/L): 0.030

When the 90th % Lead Level is 0.0155 mg/L (or higher) or the 90th % Copper Level is 1.350 mg/L (or higher), contact your Ohio EPA district office within three business days for additional requirements.

I certify that each first-draw lead and copper sample collected for our water system was one liter in volume, was taken from a kitchen or bathroom cold-water tap or a drinking fountain, and, to the best of my knowledge, had stood motionless in the service line and in the interior plumbing of the sampling site for at least six hours. I further certify that each tap sample collected by residents was taken after the water system informed them of proper sampling procedures.

Samuel P. Habel 8/9/12 Douglas F. Hedrick
Signature of Operator of Record Date Printed Name

For Ohio EPA use only:	Received Date:	Monitoring Period:	Approved: () Yes () No
------------------------	----------------	--------------------	--------------------------



DRINKING WATER LEAD AND COPPER MONITORING REPORT

Submit with Form EPA 5105

Page 1 of 1 pages

PWS Name: OTC – Kunkle Maintenance Building	PWSID: OH 8640112	Analytical Laboratory Name: Jones & Henry	Laboratory Certification No.: 4137
--	----------------------	--	---------------------------------------

List samples sequentially by Laboratory Sample Number

Date of Sample	Time Sample Taken	Laboratory Sample Number	Address of Sample Site	Tap Type* and Location	Structure Type	Interior Plumbing Material	Service Line Material	Tier	Lead Conc (ug/L)	Copper Conc (ug/L)
7/3/2012	12:02	AG24534	13643 County Road 17 Pioneer, OH 43554	Sect. Mech. Wash Station - O	BLDG	Other	Cu	Other	<4	22
7/3/2012	12:04	AG24535	13643 County Road 17 Pioneer, OH 43554	Breakroom Sink - K	BLDG	Other	Cu	Other	<4	23
7/3/2012	12:00	AG24533	13643 County Road 17 Pioneer, OH 43554	Women's Restroom Sink - R	BLDG	Other	Cu	Other	<4	25
7/3/2012	12:07	AG24536	13643 County Road 17 Pioneer, OH 43554	Mech. Room Sample Tap - O	BLDG	Other	Cu	Other	<4	27
7/3/2012	11:57	AG24532	13643 County Road 17 Pioneer, OH 43554	Men's Restroom Left Sink - R	BLDG	Other	Cu	Other	<4	32

*Tap type codes: B – bathroom cold water tap; D – drinking fountain; K – kitchen sink cold water tap; R – restroom sink cold water tap; O – other (with prior Ohio EPA acceptance)
Note: 1 mg/L = 1000 ug/L



JONES & HENRY LABORATORIES, INC. / 2567 TRACY ROAD, NORTHWOOD, OHIO 43619 / (419) 666-0411

July 09, 2012

RECEIVED

JUL 16 2012

MAINTENANCE
ENGINEER

Ohio Turnpike Commission
682 Prospect Street
Berea, OH 44017
ATTN: Mr. Chris Matta

Below are the results of analysis of the indicated sample(s) submitted to this laboratory:

Project:

Purchase order number: 20120195BO

Project account code: 716

Sample I.D. AG24532 Location Description: Men's Restroom Left Sink
Sample Collector: CLIENT Collection Date: 7/3/2012 Collection Time: 11:57
Lab Submittal Date: 7/03/2012 Submittal Time: 13:10 Received by: MLE
Location code: OTCDW Validated by: FD Validation date: 7/06/2012

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022] COPPER, FREE	32	ug/L	4	07/05/12	VPW	200.7
1030] LEAD	Not detected	ug/L	4.0	07/05/12	VPW	3113B

Sample I.D. AG24533 Location Description: Women's Restroom Sink
Sample Collector: CLIENT Collection Date: 7/3/2012 Collection Time: 12:00
Lab Submittal Date: 7/03/2012 Submittal Time: 13:10 Received by: MLE
Location code: OTCDW Validated by: FD Validation date: 7/06/2012

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022] COPPER, FREE	25	ug/L	4	07/05/12	VPW	200.7
1030] LEAD	Not detected	ug/L	4.0	07/05/12	VPW	3113B

Sample I.D. AG24534 Location Description: Section Mechanic Wash Station
Sample Collector: CLIENT Collection Date: 7/3/2012 Collection Time: 12:02
Lab Submittal Date: 7/03/2012 Submittal Time: 13:10 Received by: MLE
Location code: OTCDW Validated by: FD Validation date: 7/06/2012

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022] COPPER, FREE	22	ug/L	4	07/05/12	VPW	200.7
1030] LEAD	Not detected	ug/L	4.0	07/05/12	VPW	3113B

Sample I.D. AG24535 Location Description: Breakroom Sink
Sample Collector: CLIENT Collection Date: 7/3/2012 Collection Time: 12:04
Lab Submittal Date: 7/03/2012 Submittal Time: 13:10 Received by: MLE
Location code: OTCDW Validated by: FD Validation date: 7/06/2012

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022] COPPER, FREE	23	ug/L	4	07/05/12	VPW	200.7
1030] LEAD	Not detected	ug/L	4.0	07/05/12	VPW	3113B

Jones & Henry Laboratories, Inc

Sample I.D. AG24536 Location Description: Mechanical Room Sample Tap
Sample Collector: CLIENT Collection Date: 7/3/2012 Collection Time: 12:07
Lab Submittal Date: 7/03/2012 Submittal Time: 13:10 Received by: MLE
Location code: OTCDW Validated by: FD Validation date: 7/06/2012

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022 COPPER, FREE	27	ug/L	4	07/05/12	VPW	200.7
1030 LEAD	Not detected	ug/L	4.0	07/05/12	VPW	3113B

OH8640112
DS1
DS000
Routine-Compliance
4137

Please advise should you have questions concerning these data.

Respectfully submitted,


Fred W. Doering
President

Verification of Lead Consumer Notice Issuance

Public Water System Name: OTC – Kunkle Maintenance Building

Public Water System ID Number: OH8640112

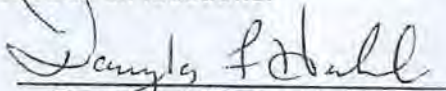
Monitoring Period: 2012

Return this completed form and a copy of a sent Lead Consumer Notice to Ohio EPA, DDAGW-Central Office, PO Box 1049, Columbus, OH 43216-1049 or Fax to (614) 644-2909 (receipt being no later than 90 days after the end of the monitoring period). Retain a copy of this report in your files with supporting documentation for a minimum of 12 years.

System Type	Method of Delivery	Date(s) of Delivery
Community Systems	Mail or hand delivery to location where samples were collected.	Date(s) of () mail () hand delivery: _____ _____
Nontransient Noncommunity (NTNC) or Certain Small Community Systems (e.g., Correctional Institutions or Nursing Homes)	Post near locations where samples were collected. (Post a minimum of 7 days.)	Date notice posted: <u>July 16, 2012</u>
Additional Requirements for Schools, Day Care Facilities, Nursing Homes, and Juvenile Correctional Institutions	Notify parents, legal guardians or power of attorney of postings. (e.g., by newsletter, e-mail, or other method accepted by Ohio EPA)	() Newsletter () e-mail () Other Method: _____ Date(s): _____

I hereby certify that the Lead Consumer Notice was issued to all locations that were sampled within 30 days of receiving sample results. Issuance was made by the method(s) indicated above in accordance with OAC Rule 3745-81-85.

Additionally, the attached copy of a Lead Consumer Notice is representative of what was issued to all locations.


Signature of Responsible Official

Douglas F. Hedrick
Printed Name

8/9/12
Date

Chief Engineer
Title of Responsible Official

For OEPA use only

Consumer Notice Verification Received Date: _____

Consumer Notice Acceptable: _____ Consumer Notice Not Acceptable: _____



The
Ohio
Turnpike
Commission

Inter-Office Communication

July 19, 2012

COPY

TO: Division West – Trades Supervisor

FROM: Assistant Chief Engineer – Structures & Facilities

SUBJECT: Kunkle Maintenance Building Notice of Tap Water Results

This correspondence is a Notice of Tap Water Results and is to be posted at the Kunkle Maintenance Building next to the Breakroom Sink. This notice is to inform Turnpike employees of the amount of lead identified in site's water supply.

NOTICE

The OTC – Kunkle Maintenance Building utilizes a public water system (PWS) responsible for providing drinking water that meets state and federal standards. A drinking water sample for lead was collected at this location and the result is:

Amount of Lead in Water: Less than 4 micrograms per liter

Action Level for Lead: 15 micrograms per liter

Location of sample: Breakroom Sink

Sample collection date: July 3, 2012

PWS's Lead 90th Percentile Value: Less than 4 micrograms per liter

What Is Being Done?

Our 90th percentile value for lead does not exceed the action level, therefore, there are no actions being implemented at this time other than sharing this consumer notice.

What Does This Mean?

Under the authority of the Safe Drinking Water Act, the U.S. Environmental Protection Agency (EPA) established the action level for lead in drinking water at 15 micrograms per liter. This means PWSs must ensure that water from taps used for human consumption do not exceed this level in at least 90 percent of the sites sampled (90th percentile value). The action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a PWS must follow. Because lead may pose serious health risks, the EPA established a Maximum Contaminant Level Goal (MCLG) of zero for lead. The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

What Are The Health Effects of Lead?

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

What Can I Do To Reduce Exposure to Lead if Found in My Drinking Water?

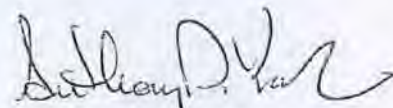
- **Run your water to flush out lead.** If water has not been used for several hours, run water for thirty seconds to two minutes before using it for drinking or cooking. This helps flush any lead in the water that may have been leached from the plumbing.
- **Use cold water for cooking and preparing baby formula.** Do not cook with, drink water, or make baby formula from the hot water tap. Lead dissolves more easily in hot water.
- **Do not boil water to remove lead.** Boiling water will not reduce lead.
- **You may wish to test your water for lead at additional locations in your home.**
- **Identify if your plumbing fixtures contain lead and consider replacing them when appropriate.**

What Are The Sources of Lead?

Lead is a common, natural, toxic, and often useful metal that was used for years in products found around the home. It can be found throughout the environment in lead-based paint, air, soil, household dust, and certain types of pottery, porcelain, and pewter. Although most lead exposure, especially in children, occurs when paint chips are ingested, dust inhaled, or absorbed from contaminated soil, the U.S. EPA estimates that 10 to 20 percent of human exposure of lead may come from lead in drinking water.

Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of corrosion, or wearing away, of materials containing lead in the plumbing. Buildings built prior to 1986 are more likely to have lead pipes, fixtures, and solder. New buildings can also be at risk, since even legally 'lead-free' plumbing may contain up to 8 percent lead. The most common problem is with brass or chrome-plated brass fixtures which can leach significant amounts of lead into water, especially hot water.

For More Information Please Contact: The OTC Administration Building, visit US EPA's Web site at www.epa.gov/lead, call the National Lead Information Center at 800-424-LEAD, or contact your health care provider.



Anthony D. Yacobucci
Assistant Chief Engineer



Turnpike and Infrastructure Commission

Chris A. Matta, P.E.
Maintenance Engineer

August 6, 2015

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Chairman

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Vice Chairman

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Gayle L. Manning
Ohio Senate Member

Michael D. Dovilla
Ohio House Member

Randy Cole
Executive Director

Ohio E.P.A.
Division of Drinking & Ground Waters Central Office
P.O. Box 1049
Columbus, Ohio 43216-1049

SUBJECT: Kunkle Maintenance Building
PWS I.D. No. 8640112
Lead and Copper Monitoring Report

To Whom It May Concern:

- * In accordance with the EPA issued monitoring schedule regarding Lead and Copper Tap Monitoring, lead and copper monitoring results for the 2015 period at the subject public water system are enclosed. Additionally, a copy of the Lead & Copper Result notification and the completed EPA 5105 form are attached.

As indicated on the attached forms, the 90th percentile lead and copper values are < 0.04 mg/L and 0.25 mg/L, respectively. The action levels for both lead and copper were not exceeded during this sampling period.

Should you have any questions concerning this matter, please contact me at this office.

Sincerely,

Chris A. Matta, P.E.
Maintenance Engineer

cc: File:F:\Maintenance\BEREA\MAINTDOC2015\EPA-CORR\MB1\WATER\POTABLE\JUL '15 L&C_001.docx



Environmental
Protection Agency
Division of Drinking and Ground Waters



EPA 5105

DRINKING WATER LEAD AND COPPER MONITORING REPORT

PWS Name: OTIC – Kunkle Maintenance Bldg	PWSID: OH8640112	County: Williams	Population: 26
PWS Address: 13643 County Road 17 Pioneer, OH 43554	Phone: 440-234-2081	Sampling begin date: July 16, 2015	Sampling end date: July 16, 2015
Monitoring Schedule: <input type="checkbox"/> "6 month" or "optional" <input checked="" type="checkbox"/> "annual" or "triennial"			

Return this completed form to Ohio EPA, DDAGW-Central Office, PO Box 1049, Columbus, OH 43216-1049 or Fax to (614) 644-2909 (receipt being no later than 10 days after the end of the monitoring period). Retain a copy of this report in your files with supporting documentation for a minimum of 12 years.

Lead and Copper Tap Monitoring (First-Draw Samples)

a.	Number of sampling sites required: 5	Number of samples analyzed: 5
	If the number of samples analyzed is less than the standard number of sampling sites required for your water system, then explain why:	
b.	Were all sampling sites tier 1 sites? () Yes (X) No	If no, explain: No lead pipes installed. All piping was installed after lead solder was banned
c.	Were 50% of your lead samples from sites with Lead Service Lines? () Yes (X) No	If no, explain: No lead pipes installed
d.	Have any of your sampling sites changed since the last monitoring period? () Yes (X) No	If yes, state which sites and explain:
e.	90 th % Lead Level (mg/L): <0.04	90 th % Copper Level (mg/L): 0.25

When the 90th % Lead Level is 0.0155 mg/L (or higher) or the 90th % Copper Level is 1.350 mg/L (or higher), contact your Ohio EPA district office within three business days for additional requirements.

I certify that each first-draw lead and copper sample collected for our water system was one liter in volume, was taken from a kitchen or bathroom cold-water tap or a drinking fountain, and, to the best of my knowledge, had stood motionless in the service line and in the interior plumbing of the sampling site for at least six hours. I further certify that each tap sample collected by residents was taken after the water system informed them of proper sampling procedures.


Signature of Operator of Record

Date

Chris A. Matta
Printed Name

For Ohio EPA use only:	Received Date:	Monitoring Period:	Approved: () Yes () No
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DRINKING WATER LEAD AND COPPER MONITORING REPORT

Submit with Form EPA 5105

Page 1 of 1 pages

PWS Name: OTIC – Kunkle Maintenance Building	PWSID: OH 8640112	Analytical Laboratory Name: Jones & Henry	Laboratory Certification No.: 4137
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List samples sequentially by Laboratory Sample Number

Date of Sample	Time Sample Taken	Laboratory Sample Number	Address of Sample Site Example: 234 S Main St Town OH 40000	Tap Type* and Location Example: B 2 nd floor	Structure Type SFR, MFR or BLDG	Interior Plumbing Material Pb, CuPb>82, CuPb<83, or other	Service Line Material Pb, Cu, or other	Tier 1, 2, 3, or other	Lead Conc'n (ug/L)	Copper Conc'n (ug/L)
7/16/15	8:40	AH01340	13643 County Road 17 Pioneer, OH 43554	Mech. Room Sample Tap - O	BLDG	Other	Cu	Other	<4	7
7/16/15	8:36	AH01338	13643 County Road 17 Pioneer, OH 43554	Sect. Mech. Wash Station - O	BLDG	Other	Cu	Other	<4	12
7/16/15	8:34	AH01337	13643 County Road 17 Pioneer, OH 43554	Women's Restroom – R	BLDG	Other	Cu	Other	<4	16
7/16/15	8:32	AH01336	13643 County Road 17 Pioneer, OH 43554	Men's Restroom Left Sink – R	BLDG	Other	Cu	Other	<4	41
7/16/15	8:38	AH01339	13643 County Road 17 Pioneer, OH 43554	Breakroom Sink – K	BLDG	Other	Cu	Other	<4	452

*Tap type codes: B – bathroom cold water tap; D – drinking fountain; K – kitchen sink cold water tap; R – restroom sink cold water tap; O – other (with prior Ohio EPA acceptance)

Note: 1 mg/L = 1000 ug/L

Worksheet for Calculating Lead or Copper 90th Percentile

<u>Sample Result</u>	Analyte:	<i>Copper</i>
7	Monitoring Period:	<i>June-September 2015</i>
12		
16	90th Percentile:	246.5000
41		
452		

INSTRUCTIONS

1. Type in which chemical the 90th percentile is being calculated for beside 'Analyte' above.
2. Type in monitoring period for which 90th percentile is being calculated above.
(e.g. Jun-Sep XX)
3. Enter sample results for all samples of the analyte chosen in step 1. Begin in cell A4 and enter one value per row in column A until all results have been entered. Note: If results are listed as Below Detection Limit (BDL) or < a value (e.g. <0.002), then enter 0 for that sample. This worksheet is limited to 300 samples (5 samples minimum).
4. Once all samples for that analyte are entered, click on the drop down box beside "Sample Result" above and click on "Sort Smallest to Largest".
5. Once sorted, the value displayed above is the 90th percentile. Print copy for your files.
6. Re open this spreadsheet and repeat above for the other analyte.
7. If the 90th Percentile is equal to or above 0.0155 mg/L (15.5 ug/L) for Lead or 1.350 mg/L (1350 ug/L) for Copper, contact your Ohio EPA District Inspector immediately to discuss what steps your water system needs to do.



JONES & HENRY LABORATORIES, INC. / 2567 TRACY ROAD, NORTHWOOD, OHIO 43619 / (419) 666-0411

RECEIVED

JUL 30 2015

ENGINEERING DEPT.

July 27, 2015

Ohio Turnpike Commission
682 Prospect Street
Berea, OH 44017
ATTN: Mr. Andrew Cooksey

Below are the results of analysis of the indicated sample(s) submitted to this laboratory:

Project:

Purchase order number: 20130161BO

Project account code: 716

Sample I D AH01335

Location Description: MB-1 Potable

Sample Collector: CLIENT

Collection Date: 7/16/2015

Collection Time: 06:20

Lab Submittal Date: 7/16/2015

Submittal Time: 08:32

Received by: MLE

Location code: OTCDW

Validated by: JR

Validation date: 7/20/2015

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1040 NITRATE	Not detected	mg/L	0.20	07/17/15	AJP	353.2
1041 NITRITE	Not detected	mg/L	0.10	07/17/15	AJP	353.2
1038 NITRATE-NITRITE	Not detected	mg/L	0.20	07/17/15	AJP	353.2

OH8640112

8659889

EP001

Routine-Compliance

4137

Please advise should you have questions concerning these data.

Respectfully submitted,

John W. Richards
President



JONES & HENRY LABORATORIES, INC / 2567 TRACY ROAD, NORTHWOOD, OHIO 43619 / (419) 666-0411

July 27, 2015

Ohio Turnpike Commission
682 Prospect Street
Berea, OH 44017
ATTN: Mr. Andrew Cooksey

Below are the results of analysis of the indicated sample(s) submitted to this laboratory:

Project:

Purchase order number: 20130161BO

Project account code: 716

Sample I.D. AH01336 Location Description: MB-1 Potable Mens RR Sink
Sample Collector: CLIENT Collection Date: 7/16/2015 Collection Time: 06:09
Lab Submittal Date: 7/16/2015 Submittal Time: 08:32 Received by: MLE
Location code: OTCDW Validated by: JR Validation date: 7/23/2015

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022 COPPER, FREE	41	ug/L	4	07/21/15	VPW	200.7
1030 LEAD	Not detected	ug/L	4.0	07/21/15	VPW	3113B

Sample I.D. AH01337 Location Description: MB-1 Potable Womens RR Sink
Sample Collector: CLIENT Collection Date: 7/16/2015 Collection Time: 06:11
Lab Submittal Date: 7/16/2015 Submittal Time: 08:32 Received by: MLE
Location code: OTCDW Validated by: JR Validation date: 7/23/2015

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022 COPPER, FREE	16	ug/L	4	07/21/15	VPW	200.7
1030 LEAD	Not detected	ug/L	4.0	07/21/15	VPW	3113B

Sample I.D. AH01338 Location Description: MB-1 Potable Mechanic Wash Sink
Sample Collector: CLIENT Collection Date: 7/16/2015 Collection Time: 06:46
Lab Submittal Date: 7/16/2015 Submittal Time: 08:32 Received by: MLE
Location code: OTCDW Validated by: JR Validation date: 7/23/2015

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022 COPPER, FREE	12	ug/L	4	07/21/15	VPW	200.7
1030 LEAD	Not detected	ug/L	4.0	07/21/15	VPW	3113B

Jones & Henry Laboratories, Inc

Sample I.D. AH01339 Location Description: MB-1 Potable Breakroom
Sample Collector: CLIENT Collection Date: 7/16/2015 Collection Time: 06:13
Lab Submittal Date: 7/16/2015 Submittal Time: 08:32 Received by: MLE
Location code: OTCDW Validated by: JR Validation date: 7/23/2015

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022 COPPER, FREE	452	ug/l	4	07/21/15	VPW	200.7
1030 LEAD	Not detected	ug/L	4.0	07/21/15	VPW	3113B

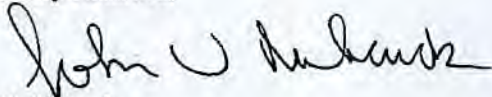
Sample I.D. AH01340 Location Description: MB-1 Potable Mechanical Room
Sample Collector: CLIENT Collection Date: 7/16/2015 Collection Time: 06:00
Lab Submittal Date: 7/16/2015 Submittal Time: 08:32 Received by: MLE
Location code: OTCDW Validated by: JR Validation date: 7/23/2015

TEST PARAMETER	RESULT	UNITS	PQL	AN DATE	AN	REF METHOD
1022 COPPER, FREE	7	ug/l	4	07/21/15	VPW	200.7
1030 LEAD	Not detected	ug/L	4.0	07/21/15	VPW	3113B

OH8640112
DS1
DS000
Routine-Compliance
4137

Please advise should you have questions concerning these data.

Respectfully submitted,



John W. Richards
President

JONES & HENRY LABORATORIES, INC.
SAMPLE RECEIPT FORM

AA01335
AH01336-40

Client: Ohio Turnpike Project: _____

Rec'd Date/time: 7/16/15 08:32 Rec'd by: me Delivery: Client

Time Opened: 08:32 Temperature: _____ (If required or temp. blank is present.)

Coolant: ☐ Not required ☐ Ice ☒ Gel pack ☐ None ☐ Prompt Delivery Other: _____

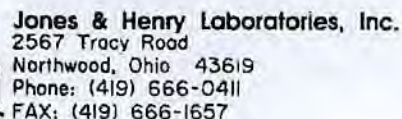
- | | | | | | |
|---|--|--|--|----------------------------------|-------------------------------|
| 1. Type of custody papers submitted with samples. | CofC <input checked="" type="checkbox"/> | RFA <input type="checkbox"/> | SSR <input type="checkbox"/> | FLD <input type="checkbox"/> | NONE <input type="checkbox"/> |
| 2. Custody papers signed in the appropriate place? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> | | |
| 3. Were custody seals present? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | | | |
| 4. Did all sample containers arrive in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | | |
| 5. JHL supplied containers? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | | |
| 6. Did all container labels agree with the custody papers? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> | | |
| 7. Received proper containers for the tests indicated? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | | |
| 8. Containers labeled with proper preservation for the tests indicated? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> | | |
| 9. Sufficient volume rec'd for requested tests? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | | |
| 10. Were air bubbles >6 mm (1/4") in any VOA vials? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> | | |
| 11. VOC preservative(s): | None <input type="checkbox"/> | HCl <input type="checkbox"/> | ASC <input type="checkbox"/> | Na2S2O2 <input type="checkbox"/> | |
| 12. VOC preservative recorded from: | CofC <input type="checkbox"/> | Vials <input type="checkbox"/> | (check both if applicable) | | |
| 13. Any parameters with expired holding times? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | | | |

Login Initials: me Date/Time: 7/17/15 08:36

Routing Initials: CF Date/Time: 7/17/15 919

CORRECTIVE ACTION

Police received in person



PH 01335-40

WHITE — ORIGINAL
PINK — LAB USE
YELLOW — LAB USE (MUST BE RETURNED W/REPORT)

(Please forward results to address at top left)

REPORT TO: Chris Matta

Client: Ohio Turnpike Site: Kunkle Maint. Bldg.
Project: _____ Project #: _____
Samplers: _____ *JK*

SAMPLE MATRIX	PRESERVATIVES	WET
1. WATER	A - Cool only, 4° C	F - F
2. SOIL	B - HNO ₃ pH<2	N - N
3. SLUDGE	C - H ₂ SO ₄ pH<2	B - B
4. OIL	D - NaOH pH>12	
5. TISSUE	E - ZnAcetate + NaOH, pH>9	
6. SEDIMENT	F - Na ₂ S ₂ O ₃ (0.008%)	
OTHER:	G - None	

With the exception of parameters not requiring preservation (G), all samples are kept at 4° C.

[illegible]

RELINQUISHED BY:	DATE: 7-16-15	RECEIVED BY:	DATE: 7-16-15
	TIME: 8:35	m. J. [unclear]	TIME: 08:33
RELINQUISHED BY:	DATE: - -	RECEIVED BY:	DATE: - -
	TIME: - -		TIME: - -
RELINQUISHED BY:	DATE: - -	RECEIVED BY:	DATE: - -
	TIME: - -		TIME: - -
RELINQUISHED BY:	DATE: - -	RECEIVED FOR LAB BY:	DATE: - -
	TIME: - -		TIME: - -

Deliver To: _____
Method of Delivery: _____
Airbill Number: _____

NOTES: 2x Daily DASH
088646112