

Water

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Basic Water Distribution System

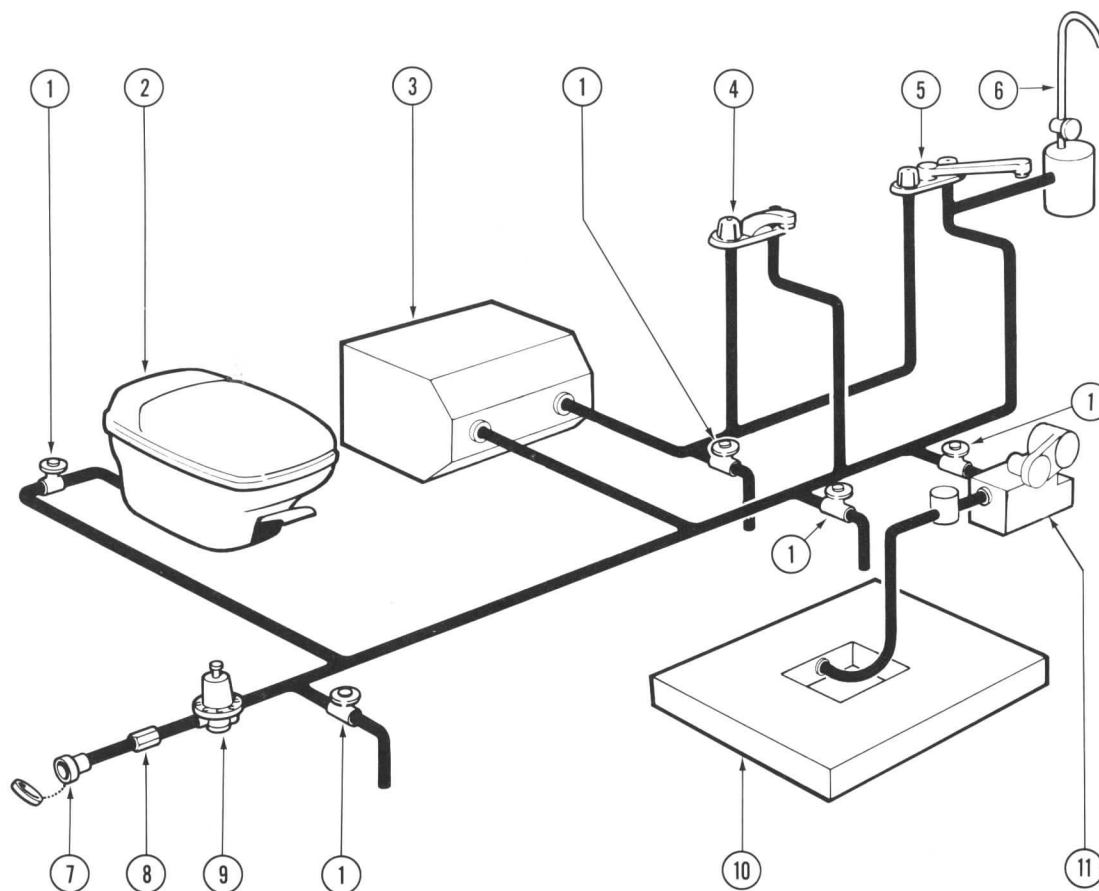


Fig. 1

No	Description
1	Drain valve
2	Toilet
3	Water heater
4	Lavatory or shower faucet
5	Galley faucet
6	Water purifier
7	Water inlet
8	Check valve
9	Pressure regulator
10	Water tank
11	Water pump

Water Distribution System Tubing & Fittings



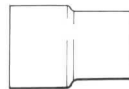
Elbow

600038 – 1/2 x 1/2
600039 – 3/8 x 3/8
600048 – 5/8 x 1/2



Coupling

600049 – 3/8 x 3/8
600261 – 1/2 x 1/2
600361 – 1/4 x 1/4

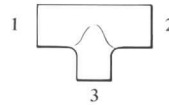


Reducer coupler

600233 – 3/8 x 1/4
600256 – 1/2 x 3/8



Female adapter



Tee

1 2 3
600044 – 1/2 x 3/8 x 3/8
600046 – 1/2 x 1/2 x 3/8
600047 – 1/2 x 1/2 x 1/2
600050 – 3/8 x 3/8 x 3/8
600067 – 3/8 x 1/4 x 1/4
600228 – 1/2 x 3/8 x 1/2
600360 – 1/2 x 1/4 x 3/8
600370 – 1/2 x 3/8 x 1/4
600397 – 3/8 x 1/4 x 1/4



Elbow

600270 – 3/8 x 3/8 Barb



Tee adapter

600257 – 1/2 x 1/2 x 1/2 FPT



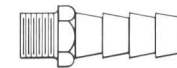
Male connector adapter

600254 – 1/2 x 1/2
600283 – 1/2 x 1/2



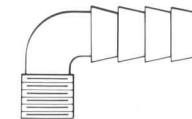
Hose connector

600362 – 3/4 x 1/2



Nipple

600274 – 3/8 x 5/8 Barb



Elbow

600284 – 1/2 Drop

City Water Inlet Check Valve Removal and Replacement

1. Unhook water supply.
2. Shut off pump switch.
3. Open faucet.
4. Open drain valve.
5. Use 2 wrenches. Hold 90° elbow with one and loosen flare nut with the other.
6. Remove screw from support clamp and remove clamp.
7. Thread check valve and 90° fitting from adaptor.
8. Separate check valve from 90° fitting
9. Reverse above to reinstall.
10. Use teflon thread tape on fitting and valve threads.

City Water Pressure Regulator Removal and Replacement

Start with above instructions for check valve removal, then proceed as follows:

1. Use back-up wrench on water feed line fitting and second wrench on regulator outlet casting. Thread valve out of fitting.

Reverse above to install. Use Teflon tape on threads.

NOTE: Pressure Regulator set at 32 to 38 PSI at 75 PSI line pressure.

Pressure Relief Valve Removal and Replacement

1. Use wrench on drain line flare nut with back-up wrench on pressure relief valve.
2. After line removal, place back-up wrench on water line sweat adapter and other wrench on pressure relief valve. Thread valve out of fitting.
3. Reverse for installation. Use Teflon tape on threads.

Sweat Joint Installation

1. Make sure lines to be soldered are clean, both inside and outside.

Cleaning can be done with a fine emery cloth, or by using a copper tubing brush. (Purchased at most plumbing shops.)

2. After the lines and fittings have been cleaned, apply "Wet-Oil", which is available at the factory parts department.
3. After flux has been applied to both lines and fittings, insert line into fitting, making sure line is inserted far enough to make a good connection. Apply heat, by means of a small torch, to female fitting. Using 50/50 solder, hold the solder against the fitting until the flame heats the fitting to the melting point of the solder. Allow it to flow into the fittings to make an airtight seal. When applying heat, be careful not to damage the surrounding area.
4. When attempting to stop a line which is leaking at a joint, first drain the line of all water. Then apply "Wet-Oil" to fitting and re-solder as in Step No. C. All joints must be clean and dry.

Water Fill Spout Removal and Replacement

1. Open sliding door under galley.
2. Loosen clamp and 1½" Tygon tubing. Remove tubing from spout by pulling straight back towards you.
3. Loosen clamp on ¼" ID plastic air vent hose and remove.
4. Move both to one side.
5. It will then be necessary to trim inside skin around fill spout to allow the removal and inserting of the new fill spout.
6. From the outside, drill out the 12 hard rivets with No. 30 drill. (Care should be taken not to enlarge holes.)
7. Remove fill spout and clean sealer off body.
8. Install new spout and rivet with hard bucking rivets.
9. Olympic rivets may be used if preferred.
10. Seal with Ten-X.
11. Using a section of vinyl covered aluminum approximately 10" square, pop rivet in place with white rivets.
12. Reinstall hose and water test.

Water Fill Spout

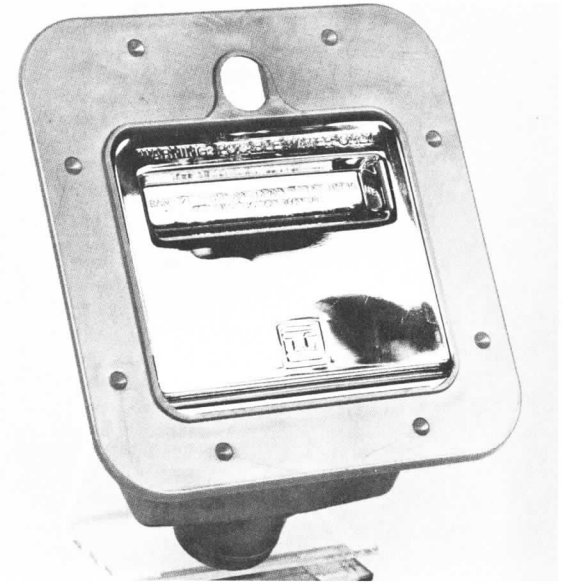


Fig. 2

Water Hose Reel Assembly – Excella

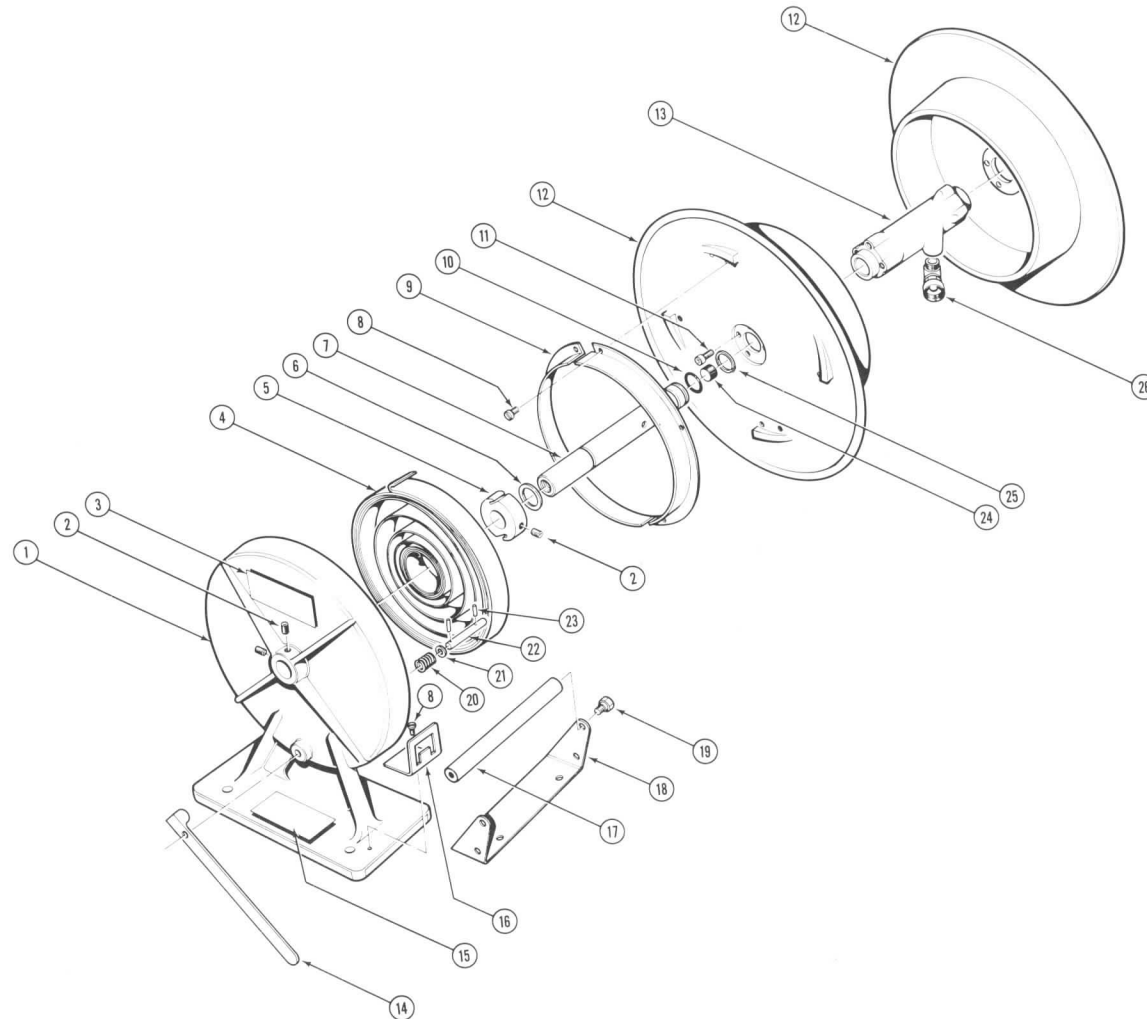


Fig. 3

No	Part No.	Description
1	1104-06	Base
2	—	Set screw 1/4" - 28 x 3/8" LG soc. H.D.
3	1104-26	Decal, warning - disassemble
4	1104-09	Spring
5	1104-20	Spring retainer - I.D.
6	1104-12	Washer wear
7	1104-08	Shaft
8	—	Screw 10-32 x 3/8" LG P.H.
9	1104-21	Spring retainer O.D.
10	2-310-N508-7	"O" ring
11	—	Cap screw 10-32 x 1/2" LG Soc. H.D.
12	1104-02	Reel segment
13	1104-03	Hub assembly
14	1104-23	Latch handle
15	1104-26	Decal, warning - release
16	1104-24	Latch retainer
17	1104-18	Roller
18	1104-15	Guide bracket
19	1104-25	Shoulder screw
20	1104-11	Spring - latch
21	—	Washer 5/16" I.D.
22	1104-10	Latch shaft
23	—	Pin - drive - lock 3/32 x 5/8" LG
24	—	Pipe plug 3/8"
25	5160-98-M	Snap ring - Tru-arc
26	—	Female hose connector

Water Hose Reel Removal and Replacement

1. Remove ABS cover. Accessible through roadside wardrobe or under roadside bed.
2. Remove bolts securing reel base to plywood platform.
3. Remove hose coupler, on reel, from trailer water system.
4. Remove complete assembly with hose coiled on reel. If hose must be removed prior to reel removal follow step 5 thru 7.
5. Uncoil hose with latch handle (Item #14) in ratchet position.
6. Remove hose from swivel connector.
7. Grasp reel casting (Item #12) with one hand and release latch handle (Item #14) with other hand, now slowly let reel recoil using hand on reel as brake. Once reel has completely recoiled, return latch handle to ratchet position (right hand notch).

Water Hose Reel Disassembly

After hose reel assembly has been removed from trailer, hose may be removed in the same manner as described in assembly removal section steps 5 thru 7. With reel spring (Item #4) in relaxed condition unit is now ready for disassembly.

1. Disassemble base (Item #1) and reel (Item #12) by loosening the two 1/4 x 28 socket set screws (Item #2) found in the hub of the base casting and slide reel assembly from base. This allows access to service the return spring (Item #4) or any related parts of the latch handle assembly.
2. Remove spring pin to disassemble latch assembly from base casting.
3. Disassemble the shaft (Item #7) and reel by removing the spring (Item #4). CAUTION. Be careful handling spring, lay on flat surface during service. DO NOT allow spring to start uncoiling as the tension and sharp edges may cause injury.
4. Remove snap ring (Item #25) from opposite end of shaft or set screws (Item #2) found in spring I.D. retainer (Item #5).
5. Slide shaft from reel. This allows access to the two "O" rings (Item #10) which seal against leakage.
6. Disassemble the reel and hub by removing four #10-32 x 1/2" socket head screws (Item #11) from each reel segment.
7. Slide off reel segments from each end of the hub assembly. This will allow closer inspection and/or replacement of reel segments or hub assembly.
8. For assembly reverse above procedure.

Galley Faucet Assembly (21 Ft.)

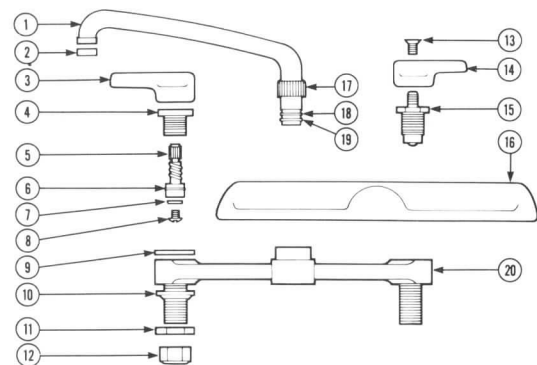


Fig. 4

Model 408 (Streamway)

No.	Part No.	Description
	04162	Complete assembly Model No. 438-18
1	108-5	Spout complete tubular 8"
2	108-18	End trim
3	100-3(H)	Lever with screw - H., C.
4	108-2	
5	108-1	
6	108-10	"O" ring - all stems
7	108-6	Washer-seat-all fittings
8	108-8	Screw-seat-all
9	108-7	Washer-fibre-bonnet-all shield fittings
10	108-16	Washer metal crimp - 1/2"
11	108-14	Nut-lock - 1/2"
12	108-17	Nut - tail piece - Zamak 1/2" (.560 hole)
13	108-9	Screw - handle - all 1/2" x 8 - 32 chrome
14	100-3(C)	Lever with screw - H., C.
15	108-0	Shield fitting H. or C. (lever handles)
16	108-4	Shield - ledge - 8"
17	108-13	Nut - spout - all swing spouts
18	108-12	Ring - stainless - lock - all swing spouts
19	108-11	"O" ring - all swing spouts
20	-	Body

Galley Faucet - Service (21 Ft.)

1. To remove faucet washer and "O" ring. (Fig. 8)
 - a. Disconnect city water pressure.
 - b. Shut off pump switch.
 - c. Open faucets and drain valves to relieve pressure.
 - d. Remove screws (Item No. 13).
 - e. Remove handle (Item No. 14).
 - f. Remove nut (Item No. 4).
 - g. Replace handle on stem (Item No. 5).
 - h. "O" ring (Item No. 6) and washer (Item No. 7) may now be replaced. (Remove screw (Item No. 8) in order to remove washer).
2. To replace swivel spout "O" ring. (Fig. 8)
 - a. Disconnect city water pressure.
 - b. Shut off pump switch.
 - c. Open faucet to relieve pressure.
 - d. Completely loosen swivel spout nut (Item No. 17).
 - e. Remove swivel spout.
 - f. Remove "O" ring.

Galley Filter Faucet Assembly

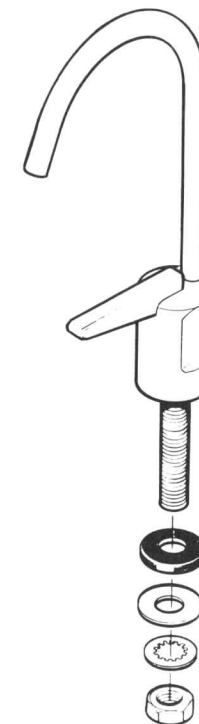
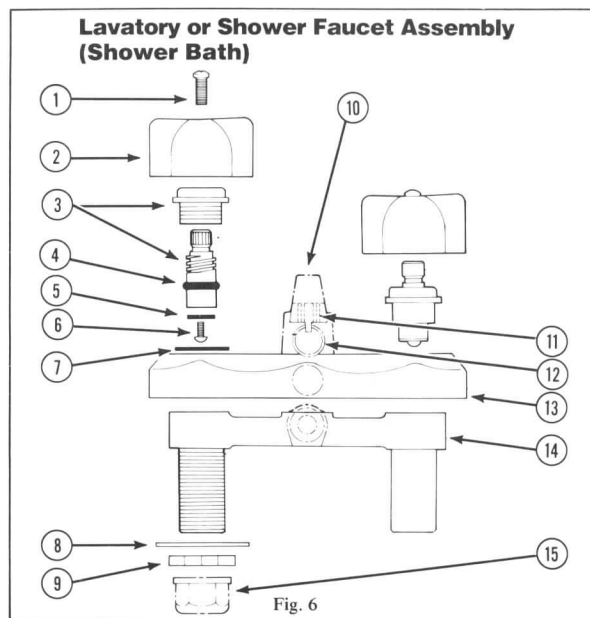


Fig. 5

No.	Part No.	Description
-	600333	Filter faucet assembly



No.	Part No.	Description
	600076	Streamway shower faucet assembly Model 0113DX-18
	600075	Streamway lavatory faucet assembly Model 134-18
1	108-9P	Screw
2	1800-3	Handle — Hot (H), Cold (C)
3	108-60	Stem and bonet assembly
4	108-10	"O" ring
5	108-6	Seat washer
6	108-8	Screw - seat washer
7	108-7	Fibre washer
8	103-16	Lock washer (shower faucet)
	108-16	Lock washer (lavatory faucet)
9	103-14	Lock nut (shower faucet)
	108-14	Lock nut (lavatory faucet)
10	104-5	Spout (lavatory faucet)
11	104-8	Stream guide (lavatory faucet)
12	104-7	Ring — chain stay
13	113-4D	Shield (shower faucet)
	104-4	Shield (lavatory faucet)
14	113	Underbody (shower faucet)
	104	Underbody (lavatory faucet)
15	108-34	Nut — tail piece 3/8" taper
	108-33	Plastic flair insert

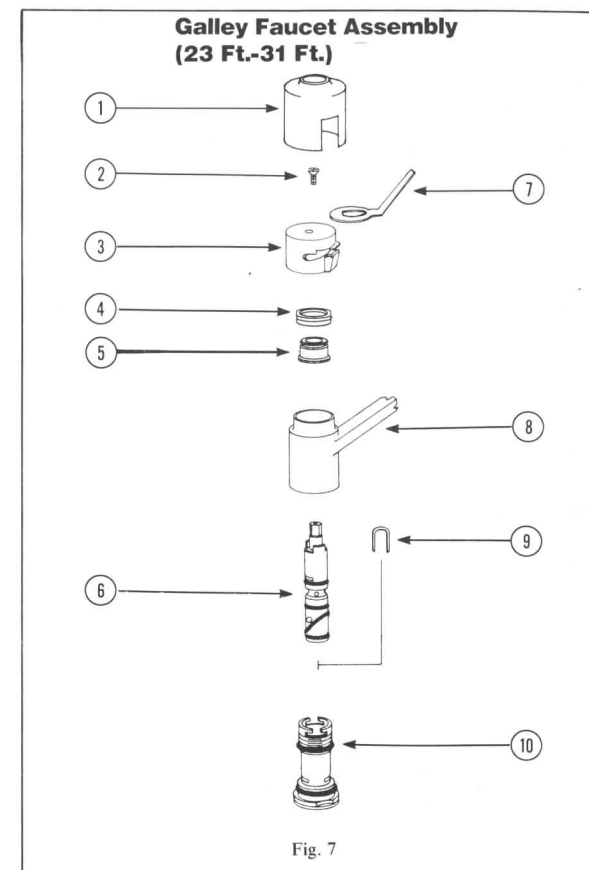
Shower Mixing Valve Removal and Replacement (Shower Bath)

1. Disconnect water supply line.
2. Shut off pump.
3. Open lavatory faucet.
4. Open drain valves.
5. Open door under lavatory cabinet and remove both nuts on the 3/8" lines attached to the shower mixing valve.
6. Remove mounting with securing valve in place.
7. Disconnect shower hose.
8. Remove shower mixing valve.
9. Reverse above for reinstallation.

NOTE: It will be necessary on occasion to unsweat feed lines to facilitate removal of lines.

Galley Faucet Removal and Replacement (27 Ft.-31 Ft.)

1. Shut off water supply and drain down system using drain valves in rear, both hot and cold.
2. Shut off pump switch.
3. Open galley faucet.
4. Open drain valve (at rear of trailer).
5. Open slide doors under galley and cover shelf with corrugated paper protection. Have towels and drip pan available for surplus water and clean up.
6. Using a torch, apply heat to cold water copper line on faucet side of coupler until line can be pulled out of coupler.
7. Repeat Step No. 6 to hot water line.
8. After lines cool, apply slight pressure to shape both lines together. (Parallel)
9. With basin wrench, remove 1 1/4" retaining nut on underside of galley top. Remove nut and washer plate from lines and lift faucet upward from galley.
10. Reverse above for installation after cleaning the last 1 inch of the copper line on the faucet and tinning with solder before resweating into coupler.

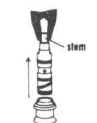


No.	Part No.	Description
	600140	Complete assembly Moen 67507
1	13093	Handle cap
2	13092	Handle screw
3	13094	Handle body
4	10688	Retainer nut
5	1304	Grooved sleeve
6	1200	Valve cartridge
7	0690	Handle lever
8	0739	Spout — 9 inch
9	1883	Retainer clip
10	0137	Spout seals
	3920	Swivel spray aerator (not shown)

Galley Faucet Disassembly and Assembly

To Disassemble: (Need Pliers and Screwdriver.)

1. Turn "Off" both hot and cold water supplies and remove handle screw.
2. Pull handle down. Place screwdriver in screw hole and press down on cartridge stem. Lift and tilt handle housing off.
3. Remove pivot nut with pliers.
4. Lift and twist spout off.
5. Pry out retainer clip with screwdriver.
6. Grasp cartridge stem with pliers. Lift cartridge out.
7. To flush supply lines, turn on both hot and cold water supplies slowly.



To Assemble

1. With cartridge stem UP, insert cartridge and push DOWN by its ears.
2. Turn cartridge ears to front and back as shown.
3. Turn red (notched) flat of cartridge stem toward sink. (Note: For cross piping installations where supply piping is reversed, red (notched) flat faces BACK of sink.)
4. Replace clip all the way.
5. Replace spout. Push down until it nearly touches the faucet escutcheon.
6. Screw on pivot nut. Do not cross thread. Tighten with pliers.
7. Press cartridge stem down. Holding handle UP, hook ring in handle housing into groove on sleeve.
8. Swing handle back and forth until it drops down into place.
9. Replace handle screw. Tighten securely.



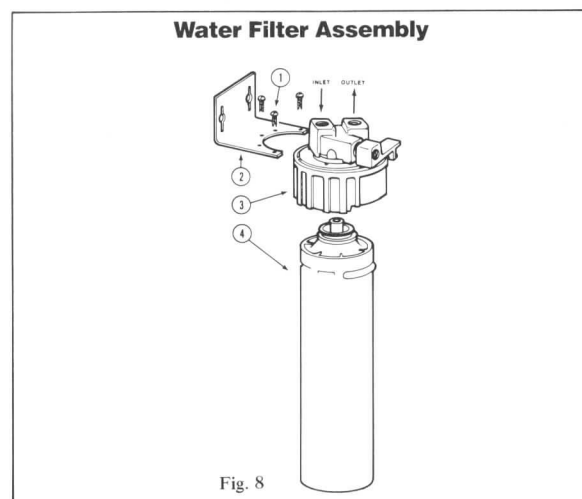
To Flush the Installation

1. Faucet body and supplies should be flushed under pressure to remove pipe chips or other foreign material that might clog faucet when in service. To do this, make sure the water supplies are

"Off". Follow the detailed instructions below and disassemble the faucet. Turn on both hot and cold water supplies slowly, and thoroughly flush the installation. Reassemble faucet as shown in the instructions.

NOTE:

- a. If handle won't operate properly, you have not hooked handle ring into sleeve groove. (See Step 7)
- b. If hot and cold reversed, red (notched) flat not toward sink. Remove handle assembly. Turn red (notched) edge of stem so it faces sink. (See Step c.)
- c. For proper water flow, aerator must be free of foreign particles. If flow is weak or irregular, unscrew aerator, clean and replace.



No.	Part No.	Description
	600471	Complete assembly QC2-AC
1	3017-00	Screw #10-32 (3)
2	3016-00	Bracket
3	5273-00	Head QC2
4	AC	Cartridge

Water Filter Cartridge Removal and Replacement

To remove used cartridge:

1. Shut off pump switch.
2. Place shallow pan under filter to catch surplus water.
3. Shut off water by lifting valve handle. Move counterclockwise as

far as possible.

3. Turn colored ring all the way to the left. Ring will drop about 1/2".
4. Lift cartridge slightly and turn it further to the left until it can be disengaged.
5. Lower cartridge to disengage it from ring. Discard used cartridge.

To install new cartridge:

1. With colored ring in lowered position (turned all the way to the left) orient lug on cartridge with cutout under label on ring.
2. Insert cartridge straight up into ring as far as it will go. Holding colored ring steady, turn cartridge as far to the right as possible.
3. Then turn colored ring far to right to drive cartridge up into head.
4. To lock ring in place and turn water on, move valve handle down. Be sure handle leg engages ring locking-lug.
5. Turn pump switch on.

NOTE: Cartridge should be changed when flow of water on cold side of galley faucet becomes too slow for your convenience, or at least once a year.

Water Filter Removal and Replacement

Before starting any of these procedures, be sure to cover surrounding floor areas with a protective plastic sheet. Have pan and towel available to catch surplus water.

1. Open galley roof locker door and shut off water pump switch. (Place a pan under the filter assembly.)
2. Open galley door and disconnect water supply line.
3. Open bathtub faucet and galley faucet. Allow surplus water to drain.
4. Disconnect flare nut on intake side.
5. Disconnect flare nut on exhaust side.
6. Remove four screws holding the bracket to the divider panel, and remove the filter assembly.
7. To install reverse the removal procedures.

Galley Soap Brush Assembly (Excella)

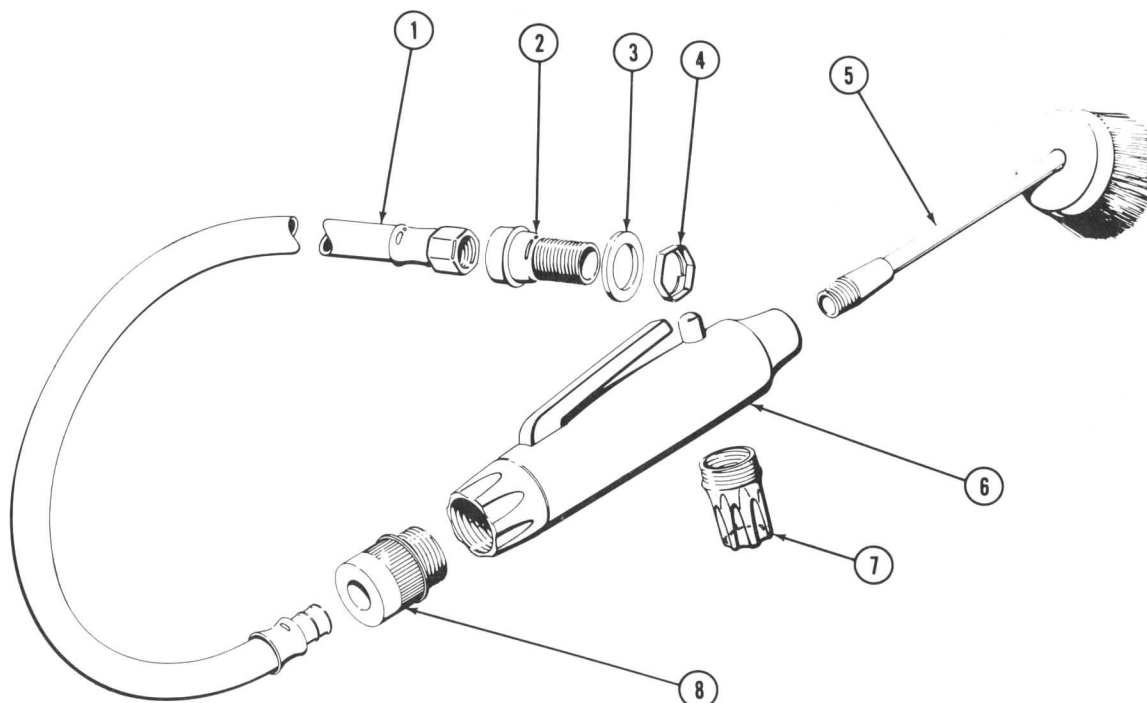
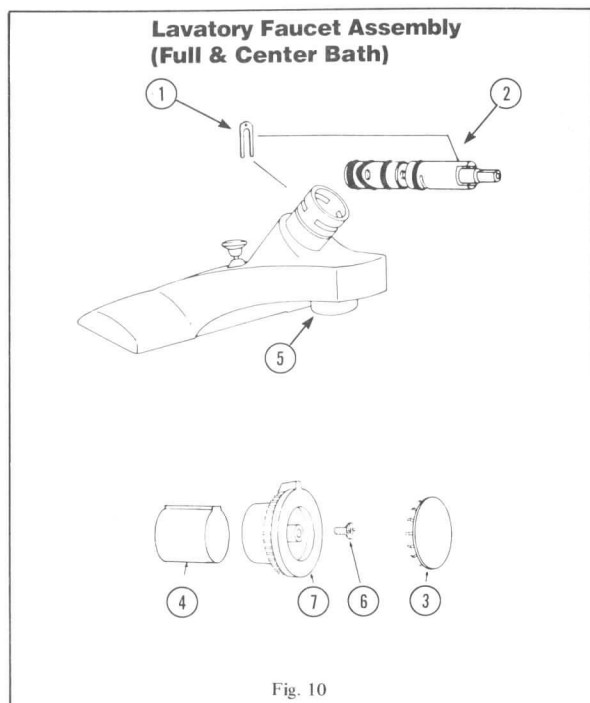


Fig. 9

No.	Part No.	Description
1	4-C	Hose with union nut
2	D-300	Hose guide
3	10047	Washer
4	—	Stamped nut
5	510-1	Extension tube & brush
6	510-4C	Body assembly
7	510-64	Detergent cup & gasket
8	511-82	Ferrile



Not Shown — Drinking fountain and attaching hardware

No.	Part No.	Description
	600335	Complete assembly Moen No. 4600
1	0883	Retainer clip (knob handles)
2	1200	Valve cartridge
3	1206	Handle cover (knob handles)
4	1207	Stop tube (knob handles)
5	1208	Aerator — male thread
6	1233	Handle screw (knob handles)
7	1245	Handle assembly (knob handles)
	10169	Attaching hardware
	20700	Drinking fountain

Lavatory Faucet Removal and Replacement (Full Bath)

1. Disconnect city water supply.
2. Shut off pump switch.
3. Open faucets.
4. Open drain valves (at rear of trailer).
5. Using torch, heat cold water line at faucet side of coupler (about 24" from faucet) until line can be separated.
6. Repeat Step 5 removing hot water line going to faucet.
7. After the lines from the faucet have cooled, form them so they are paralld with one another.
8. Remove 1/4" nuts and washers securing faucet in place.
9. Remove faucet by lifting it from its position.
10. To replace, reverse above procedure. (See sweat soldering instructions, page 5-4.)
11. Check for leaks.

Galley Faucet, Lavatory Faucet & Shower Mixing Valve Cartridge Removal (27 Ft.-31 Ft.)

(Fig. 7,10,11,12)

Shut off water pressure for entire system.

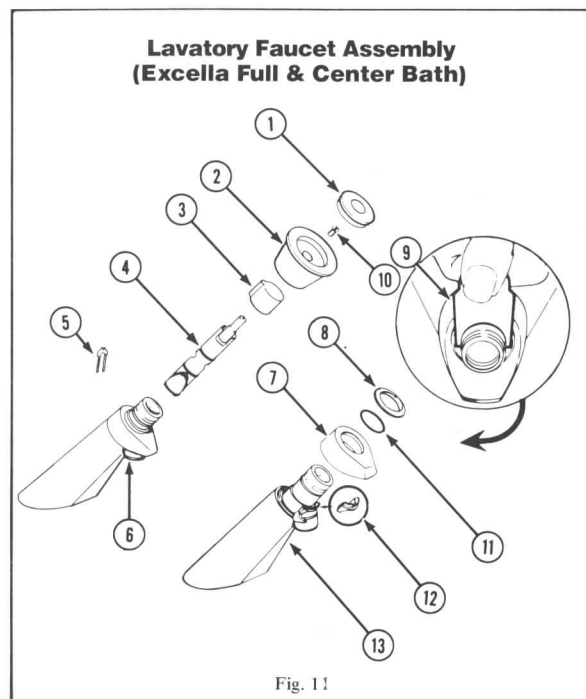
DISASSEMBLE: Remove handle cover. Take out handle screw and remove handle and stop tube. Lift out retaining clip and pull the cartridge out of the body by the stem.

CAUTION: Reinsert cartridge by pushing it all the way into the body and until the front of the ears on the cartridge shell are flush and aligned with the body. Replace the retainer clip so that the legs straddle the cartridge ears and slide down into the bottom slot in the body. This prevents the cartridge from rotating and locks it in the body. Reinstall stop tube and handle. Tighten handle screw securely, and replace the handle cover. The red flat on the stem must point UP when mounting the knob handle (down for lever handle).

If cold water is on left side and hot water is on right side (red flat pointed down), remove cartridge and reinstall 180°.

Lavatory Faucet Removal and Replacement (Center & Shower Bath)

1. Cover carpet with protective material.
2. Disconnect city water supply.
3. Turn off water pump.
4. Open faucet.
5. Open drain lines.
6. Using torch unsweat hot and cold water lines located above the lavatory drain trap.
7. Remove retaining nuts from bottom of faucet.
8. Remove faucet by lifting from its position.
9. To replace, reverse above procedure.
10. Check for leaks.



No.	Part No.	Description
	600295	Complete assembly Moen 4270
1	526	Handle cover
2	515	Handle assembly
3	524*	Stop tube
4	1200	Valve cartridge
5	883	Retainer clip
6	545	Aerator
7	11538*	Spout cap
8	11529*	Collar nut
9	11547*	Special wrench
10	1233	Handle screw
11	11559*	"O" ring cushion
12	—	Spout seal cap
13	—	Spout body

* Included in Service Kit No. 11576

Lavatory Faucet Removal and Replacement (Excella Full & Center Bath)

Shut off water pressure for entire system

DISASSEMBLE: Remove handle cover. Take out handle screw and remove handle and stop tube. Lift out retainer clip and pull the cartridge out of the body by the stem.

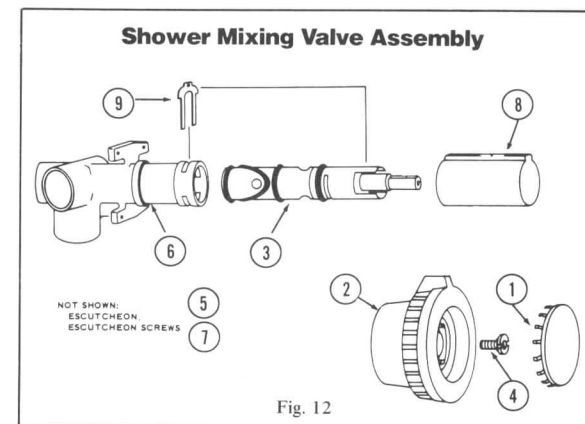
CAUTION: Reinsert cartridge by pushing it all the way into the body and until the front of the ears on the cartridge shell are flush and aligned with the body, (see illustration). Replace the retainer clip so that the legs straddle the cartridge ears and slide down into the bottom slot in the body. This prevents the cartridge from rotating and locks it in the body. Re-install stop tube and handle. Tighten handle screw securely and replace the handle cover. The red flat on the stem must point UP when mounting the handle. If hot and cold positions are reversed, remove handle, turn flat of stem of cartridge 180° and re-install handle.

To Replace Spout Cap or Collar Nut:

Use Special Wrench furnished with Service Kit and unscrew collar nut as shown in inset drawing.

Remove "O"-ring cushion and spout cap. Replace parts. Spout cap seal must be in the position shown. Install "O"-ring cushion on collar nut as shown before threading nut onto valve body.

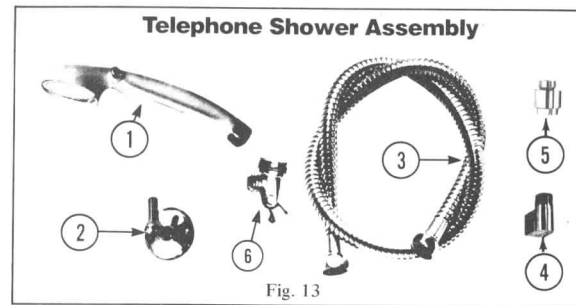
Make sure both the cap seal and "O"-ring cushion remain in place. Tighten collar nut with Special Wrench by hand only. Do not use any other tool as it is important not to overtighten and strain the body assembly.



No.	Part No.	Description
	600337	Complete assembly Moen No. 2620
1	966	Handle cover
2	1041	Handle
3	1200	Cartridge
4	1233	Handle screw
5	10097	Escutcheon
6	0007	Valve body
7	602	Escutcheon screw
8	10089	Stop tube
9	883	Retainer clip

Shower Mixing Valve and Telephone Shower Removal and Replacement

1. Disconnect city water supply.
2. Shut off pump switch.
3. Open rear compartment door.
4. Remove aluminum panel concealing plumbing in rear compartment.
5. Open 2 drain valves inside rear compartment lower left corner.
6. Cover carpet completely and cover bottom of bathtub to protect from damage.
7. Open all faucets.
8. Heat couplings on 3/8 copper water lines located at lower right hand corner of rear compartment opening until they can be separated.
9. Remove bottom shelf of medicine chest to gain access to mixing valve and elbow.
10. Pop out metal insert in control valve handle. Remove screw and pull knob off.
11. Remove 4 screws in escutcheon plate.
12. Disconnect shower hose.
13. Using wrench, hold adaptor fitting behind chrome 90° fitting.
14. Wrap masking tape on chrome fitting so as not to scratch chrome.
15. Remove fitting.
16. Tub valve, shower outlet, tube and hot and cold feed lines may then be removed from space behind skirt by pulling upward and outward.
17. Replace by reversing above procedure.
18. Clean all sealer off edge of top and fit back into space.
19. Pop rivet in original holes with one exception; the row that was sheared off cannot be replaced.
20. After installation has been completed, seal all seams with G.E. silicone sealer.

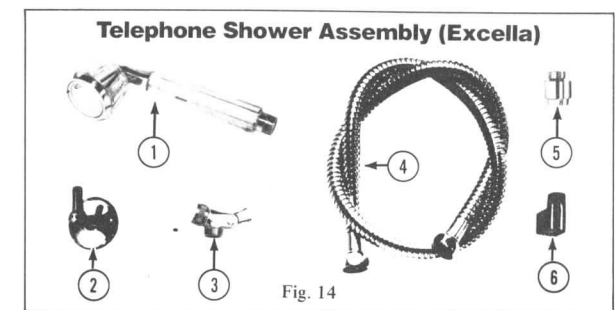


No.	Part No.	Description
1	600328	Hand shower w/push control
2	600725	Wall bracket
3	600330	Hose w/gasket 59"
4	600329	Elbow, 1/2 TPT x 1/2 SPT
5	600332	Vacuum breaker
6	600327	Swivel connector

Telephone Shower Service

The services required on shower head are few in number and minor in nature.

1. The slotted faceplate occasionally becomes stopped up with calcium deposits and it will need to be removed and cleaned. Remove center screw and plate. Clean slots with brush. (In severe cases use muriatic acid.)
2. Head is replaced as a unit.
3. The valve located just behind spray plate in handle is a flow control valve and not a shut off valve.
4. Hose is replaced as a unit.
5. Hose gaskets are replaced by removing chrome nuts at either end of hose and removing old gasket from inside nut.



No.	Part No.	Description
1	480	Hand shower with adjustable head
2	500-1	Wall bracket
3	50002	Swivel connector
4	495-59	Hose with gaskets
5	4900	Vacuum breaker
6	4990	Elbow, 1/2 TPT x 1/2 SPT

Telephone Shower Service (Excella)

The services required on shower head are few in number and minor in nature.

1. The slotted faceplate occasionally becomes stopped up with calcium deposits and it will need to be removed and cleaned. Remove center screw and plate. Clean slots with brush. (In severe cases use muriatic acid.)
2. Head is replaced as a unit.
3. The valve located just behind spray plate in handle is a flow control valve and not a shut off valve.
4. Hose is replaced as a unit.
5. Hose gaskets are replaced by removing chrome nuts at either end of hose and removing old gasket from inside nut.

Water Pump Assembly (23-31 Ft.) (Par 36800)

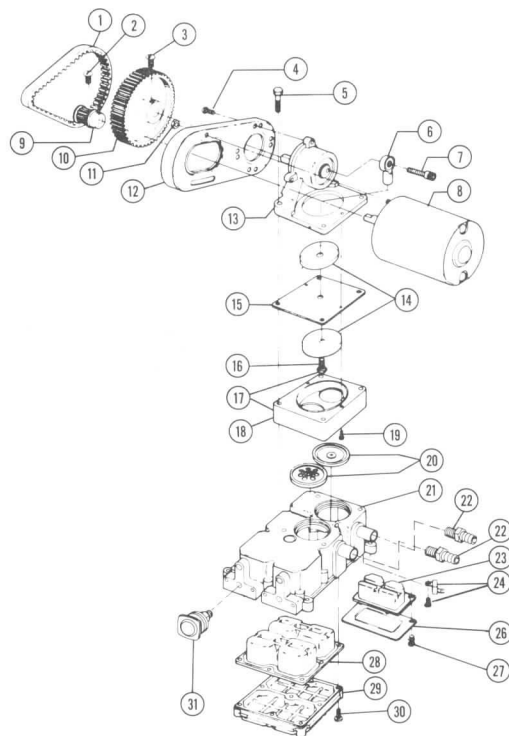


Fig. 15

Water Pump Assembly (23 Ft. - 31 Ft.)

No.	Part No.	Description
	600262	Complete assembly par 36800
1	30021-0000	Belt
2	*	Set screw
3	*	Set screw
4	*	Motor mount screw
5	*	Tie down screw
6	37173-0000	Connecting rod assembly

7	*	Eccentric screw
8	30200-0000	Motor 12 VDC (with two motor nuts)
9	37169-0000	Small pulley
10	37170-0000	Large pulley
11	*	Motor nut (includes star washer)
12	34628-0020	Motor mount
13	35506-0000	Jack shaft assembly
14	35503-0000	Diaphragm plate
15	30015-0000	Diaphragm
16	*	Diaphragm retainer
17	*	Washer - teflon
18	35497-0000	Diaphragm retainer
19	*	Diaphragm retainer screw
20	30004-0000	Valve set (intake and discharge)
21	35625-0100	Base assembly
22	37176-0000	Port, inlet & discharge
23	37177-0000	Small pulsation dampener
24	37180-0000	Vibration pad kit
25	35618-0000	Screw
26	35628-0000	Bottom plate
27	*	Screw
28	37178-0000	Large pulsation dampener (screw sleeve-guide inc.)
29	35623-0000	Bottom plate
30	*	Screw
31	37121-0010	Pressure switch (includes O-ring)
	30122-0000	Service kit
*	37165-0000	Hardware kit

Water Pump Assembly (21 Ft.)

No.	Part No.	Description
	600063	Complete assembly par 36970
1	30201-0000	Motor 12 VDC
2	*	Tie down screw
3	35452-0000	Motor mount
4	35479-0000	Diaphragm plate
5	37121-0010	Pressure switch
6	37180-0000	Vibration pads
7	*	Screw
8	*	Screw
9	35686-0000	Bottom plate
10	37178-0000	Pulsation dampener
11	37176-0000	Discharge port
12	37176-0000	Intake port
13	35620-1100	Complete base assy. including items 6 thru 14
14	30004-0000	Valve set
15	*	Diaphragm ring screw
16	35454-0000	Retainer
17	*	Diaphragm screw

Water Pump Assembly (21 Ft.)

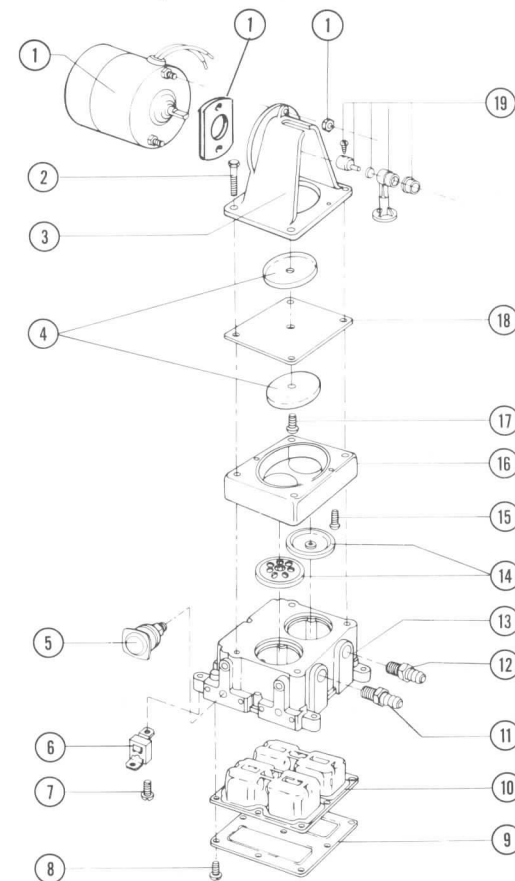


Fig. 16

18	30015-0000	Diaphragm
19	30033-0000	Connecting rod kit (contains rod, screw, cover and eccentric)
*	37167-0000	Hardware kit
	30123-0000	Service kit (contains pulsation dampener, valve set, diaphragm and connecting rod kit)

Water Pump Removal and Replacement

1. Shut off water supply.
2. Shut off pump switch.
3. Disconnect plug on 12 volt wires at pump.
4. With screwdriver, loosen clamps on intake and discharge hoses at pump and remove hose. (Note which hose goes on each port.)
5. Remove four screws attaching pump to platform
6. Remove pump by lifting clear of plumbing lines.
7. Replace by reversing above procedure.
8. Before water pump can be removed, it will be necessary to remove oven (center bath oven).

Operation

To start pump:

1. Check level of fresh water tank.
2. Be sure all valves and strainers are open.
3. Open all outlets and turn on power to pump.
4. Keep outlets open until all air is cleared from lines and then close outlets. Pump is ready for operation.

Troubleshooting

PROBLEMS

1. Pump operates but no water flows through faucet.

2. Pump cycles on and off although all faucets are closed.

3. Pump operates roughly and has excessive noise and vibration.

CAUSES

- Low water level in tank.
- Water lines are clogged.
- Kink in water hose
- Air leak in suction line.
- Dirty or hard-to-open in-line check valve.

- Defective pump check valve.
- Water leak in plumbing.
- Water leak in flush toilets.
- Internal leak in pump.
- Pump check valve not sealing.

- Flow through intake line is restricted, kink in hose.
- Pump mounted on flimsy board.

4. Pump fails to start when faucet is opened.

5. Pump fails to stop when faucets are closed.

- Deformed or ruptured pulsation dampener in pump.
- Worn connecting rod bearing.

- Ice in pressure switch chamber.
- Clogged piping.
- No voltage to pump.
- Defective pressure switch.

- Empty water tank.
- Insufficient voltage to pump motor.
- Defective pressure switch

Valve Assembly Replacement (21 Ft.)

1. Turn off power to pump.
2. If system is filled with water, open a faucet to relieve pressure and close intake and discharge lines near pump.
3. Remove four tie down screws.
4. Lift off motor and diaphragm assembly from the pump base.
5. Lift valve assemblies from pockets and clean all foreign materials from valve and seat.
6. Reinstall valve assemblies into same pockets, being sure rubber valve with small hole is UP on intake and rubber valve without the small hole is DOWN on discharge.
CAUTION: Do not use valve with small hole in rubber on discharge side of pump.

Valves Replacement (23 Ft.-31 Ft.)

1. Remove four tie down screws. Lift jack shaft to expose valves.
2. Lift valves from pockets. Clean all foreign materials from valves and seats. Inspect rubber flappers for cuts.
3. Reinstall valves into same pockets, being sure rubber valve with small hole is UP on intake and rubber valve without the small hole is DOWN on discharge.
CAUTION: Do not use valve with small hole in rubber on discharge side of pump.

Diaphragm and Connecting Rod Replacement (21 Ft.)

1. Turn off power to pump.
2. If system is filled with water, open a faucet to relieve pressure and close intake and discharge lines near pump.

3. Remove four tie down screws.
4. Lift off motor and diaphragm assembly from the pump base.
5. Remove two diaphragm ring screws and detach diaphragm ring.
6. Remove two motor nuts. Pull motor and eccentric from connecting rod.
7. Remove diaphragm screw to separate diaphragm from connecting rod assembly.
8. Inspect unsupported area of rubber diaphragm for cuts and cracks.
9. Check connecting rod assembly for breaks, cracks or excessive wear on eccentric rod and bearing. If connecting rod is to be reused, open cover and relubricate by packing built-in reservoir with automotive chassis lube. Original lubricant normally lasts the lifetime of the pump.
10. When reassembling connecting rod to diaphragm, be sure to align. Proper alignment is achieved when the rod slips straight onto motor shaft and the diaphragm rests squarely on the motor mount pad. Misalignment will create a strain on diaphragm and significantly shorten its life.

Diaphragm and Connecting Rod Replacement (23 Ft.-31 Ft.)

1. Remove four tie down screws, then lift jack shaft and attached diaphragm assembly from pump base.
2. Expose diaphragm by removing two diaphragm retainer screws and detaching retainer.
3. Remove diaphragm screw to separate diaphragm, plates and washer/spacer from connecting rod. Inspect diaphragm for cuts and ruptures.
4. Remove eccentric screw to separate connecting rod from jack shaft.
5. When reassembling, be sure to align diaphragm and connecting rod so that rod slips straight onto jack shaft and diaphragm rests squarely on diaphragm retainer.

Pulsation Dampener Replacement (21 Ft.)

1. Turn off power to pump.
2. If system is filled with water, open a faucet to relieve pressure and close intake and discharge lines near pump.
3. Remove pump from installation.
4. Remove nine screws from bottom of base and the bottom plate.

5. Pull out rubber pulsation dampener from base.
6. Inspect dampener for excessive deformation, ruptures and leaks.
7. When installing new pulsation dampener, make sure flange is correctly seated to effect a proper water and air seal.

Pulsation Dampener Replacement (23 Ft.-31 Ft.)

1. Remove nine screws from bottom plate and three screws from small bottom plate.
2. Pull out rubber pulsation dampeners from base. Inspect for excessive deformation, ruptures and cuts.
3. When installing new large pulsation dampener, check that its metal screw sleeve-guide is positioned between center hole and screw-way in the base. Make sure that flanges of both pulsation dampeners are well-seated to effect a proper water and air seal.

Pressure Switch Replacement (21 Ft.)

1. Turn off power to pump and open faucet to relieve the pressure.
2. Disconnect wires from pressure switch.
3. Unscrew switch from base.
4. Thread switch with washer into pump base, with metallic side of washer facing switch. Tighten securely.
5. Rewire according to wiring diagram.

Pressure Switch Replacement (23 Ft.-31 Ft.)

1. Turn off power to pump and open faucet to relieve pressure from system.
2. Disconnect all wires from pressure switch.
3. Unscrew switch from base.
4. Thread new switch with "O" ring into pump base. Do not overtighten.
5. Rewire per wiring diagram.

Base Replacement (21 Ft.)

1. Follow service instructions above to remove pressure switch and pulsation dampener.
2. To separate base from motor mount and diaphragm assembly remove four tie down screws.

3. When reassembling, do not overtighten screws.

Motor Replacement (21 Ft.)

1. Turn off power to pump.
2. Disconnect motor wires from pressure switch terminal.
3. Loosen eccentric/connecting rod screw holding motor shaft.
4. Remove two motor nuts and pull motor away from motor mount, while holding back eccentric/connecting rod assembly.
5. When installing new motor, make sure flat on shaft is well secured by the eccentric/connecting rod screw.
6. Rewire motor leads to center and right terminals on pressure switch.

Motor Replacement (23 Ft.-31 Ft.)

1. Remove two motor nuts to separate motor.
2. Loosen set screw to remove small pulley from motor shaft.
3. When reassembling, adjust belt tension so belt between pulleys can be depressed 1/4" after motor nuts are tightened.

SYMPTOM: DECREASE IN BELT LIFE. MODEL 36800

Remedy:

Belt has proper tension if it can be moved in and out on one side a total of 1/4" at a point halfway between pulleys.

ADJUST BELT AS FOLLOWS: Loosen No. 34681-0000 nuts on end of motor and slide motor up or down until desired tension is gained and retighten nuts.

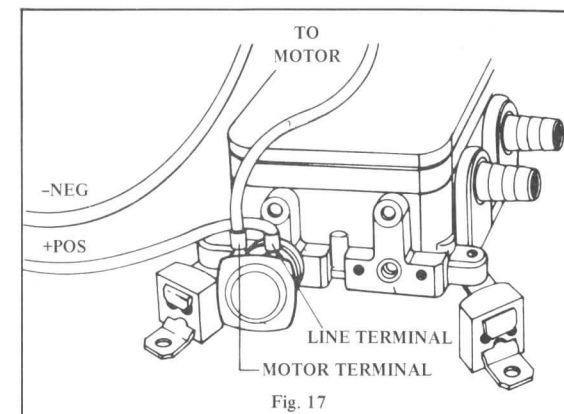
SYMPTOM: CONNECTING ROD NEEDS RE-OILING (Model 36970)

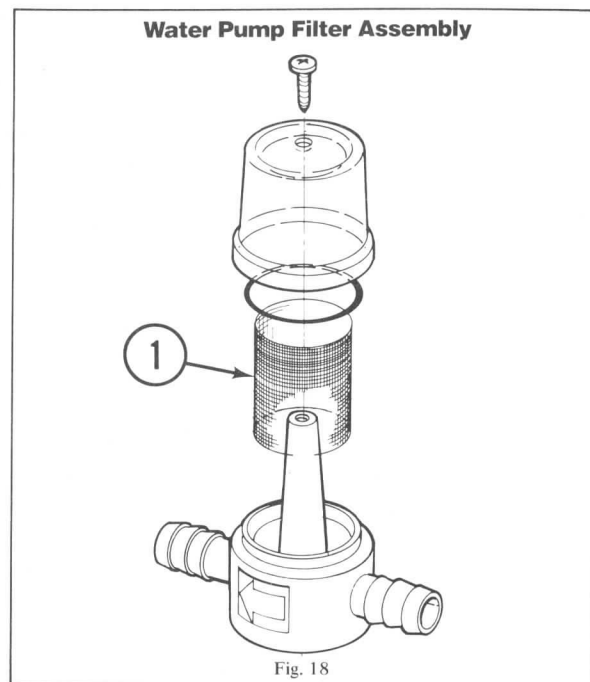
Remedy:

The connecting rod bearing is made of grease-impregnated iron and the cover is packed with enough lubricant to last approximately 500 hours. Relubricate by removing cover and packing built-in reservoir with black chassis lube (obtained at most automotive service stations).

Pressure Switch Replacement

1. Turn off power to pump and open faucet to relieve the pressure.
2. Disconnect wires from pressure switch.
3. Unscrew switch from base.
4. Thread switch with washer into pump base, with metallic side of washer facing switch. Tighten securely.
5. Rewire according to wiring diagram.





Water Pump Filter Assembly

No.	Part No.	Description
	600593	Complete assembly
1	36138-0000	Filter screen

Water Pump Filter Removal and Replacement

1. With screwdriver, loosen clamps on both hoses at filter.
2. Remove hoses.
3. Remove screws attaching filter to platform
4. Remove filter.
5. Replace by reversing above procedure. Note that arrow on side of filter points in direction of flow.

Disassemble Pump Filter

1. Remove screw through top.
2. Pull top from base. Do not damage "O" ring seal.
3. Remove screen to clean or replace.
4. Lift "O" ring from its cavity.
5. Assemble by reversing above procedure.

Winterizing Procedure

1. Level the trailer from side to side and front to rear. Open all faucets.
2. Turn the water pump switch to the ON position to expel water from the storage tank.
3. Open all drain valves. On rear bath models, two are located in the rear trunk (roadside). On center bath models, one is located under the bed on the roadside, and three are under the galley sink. On all models one is located on the water heater accessible through the exterior access panel.
4. While the water is draining from the system, open and flush the toilet flushing valve. Depress hand spray lever while holding the spray head down inside the bowl. Depress hand spray thumb button and hold the spray head down inside the tub and drain all water from telephone shower head flexible hose. Unscrew the heads on both spray units and store.
5. After pump has removed all water from the storage tank, turn the pump switch OFF.
6. Remove exhaust hose from water pump.
7. Disconnect the water pump inlet connection, and with check valve removed, turn the pump by hand until all the water is expelled.

8. Lower the front of the trailer as far as the jack will allow until water ceases to drain, then crank the jack up as high as it will go and let any remaining water drain out the rear drain valves.
9. After the water has stopped running from the drain lines, apply air pressure at the city water inlet, be sure all drain valves and faucets are open. This will force any remaining water from the water heater and remove any water which may be trapped in low areas.
10. Pour a cup of antifreeze (Glycol) into the lavatory, sink, and tub drains to prevent freezing of water in traps.
11. Be sure to open the waste-holding tank drain valves and drain and flush the tanks thoroughly. (This is very important as the sewage in the tanks, if frozen, could seriously damage the tanks.)
12. Remove the lower portion of the water purifier, if your trailer is so equipped, and drain the purifier.
13. It is very important for optimum life of your battery to check it periodically and to keep it fully charged. This is especially true in winter months when the temperature may drop below freezing. Please refer to the battery section for more information on battery maintenance.
14. Remove any items (food, cosmetics, etc.) from trailer interior that might be damaged by freezing — or might damage the trailer if containers break.

For additional winterizing protection add a nontoxic antifreeze (approved for drinking water systems) to the water lines using the following procedure:

1. Reconnect all lines except the hose to the pump inlet port. Close all drain valves (see step No. 3).
2. Attach a length of hose to the pump inlet port. This piece of hose should be long enough for the free end to be inserted into and reach the bottom of the antifreeze container.
3. Dilute the antifreeze solution in accordance with the manufacturer's instructions.
4. Open all water faucets.
5. Insert hose length into the antifreeze container, turn the pump switch on, and run the water pump until the antifreeze solution fills all water lines and the water heater. Flush toilet, work hand spray while holding down in bowl. Work hand shower spray while holding down in tub.
6. Shut off the pump and close all faucets.
7. Disconnect the hose length from pump inlet fitting and reconnect water system inlet line.