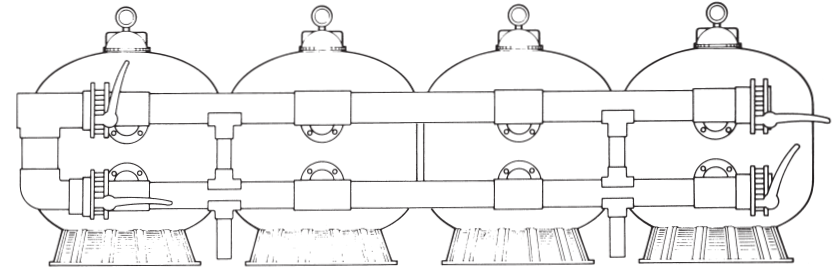


 **Pentair**
Pool Products® **TANDEM SYSTEM PLUMBING KIT**

INSTALLATION, OPERATION & SERVICE MANUAL



 **WARNING**

This manual contains important safety information which must be furnished to the end user. Failure to read and follow instructions could result in serious personal injury and/or major property damage.

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PENTAIR POOL PRODUCTS
CORPORATE OFFICE
Sanford, NC
(919) 566-8000

PENTAIR POOL PRODUCTS
Moorpark, CA
(805) 523-2400



Because *reliability* matters most

P/N 152992 REV. A

TANDEM SYSTEM PLUMBING KIT

This filter kit operates under pressure and if assembled improperly or operated with air in the water circulation system, the filter top closure can separate and result in an accident causing property damage or serious bodily injury. A warning label has been affixed to the top of the filter and should not be removed. Keep safety labels in good condition and replace if missing or illegible. (For free labels, call 1-919-566-8000).

A. HOW YOUR PLUMBING KIT WORKS

Your plumbing kit is designed to operate for years with a minimum of maintenance and when installed, operated and maintained in accordance with these instructions, it will provide years of trouble free operation.

The dirty water from the pump discharge is directed into the inlet manifold "T", the flow is then controlled by use of a set of manual butterfly valves. These valves are used to direct the flow into the filter inlet. The flow enters the filter inlet manifold.

The inlet manifold line has a manual operated butterfly control valve that is used to control the line function and open the waste line when the system is in the backwash mode. The line is properly sized to insure that there is no significant pressure variation within the system. The flow then enters the filter, collects dirt in the filter media and clean water enters the filter outlet.

The clean water entering the outlets is collected in the filter outlet manifold line. The flow is then directed by a manually operated butterfly valve back to the pool.

The pressure will rise and the flow to the pool will be lowered, as the dirt is collected in the filter. Eventually, the filter will become so plugged with dirt that it will be necessary to perform a backwash procedure. It is important to know when to backwash the filter. Backwashing is discussed further under subsequent sections of this booklet.

Please note that a filter removes suspended matter and does not sanitize the pool. The pool water must be sanitized and the water must be chemically balanced for sparkling clear water. Your filtration system should be designed to meet your local health codes. As a minimum, you must be sure that your system will turnover the total volume of water in your pool at least three to four times in a twenty-four hour period. Refer to Section B for System Sizing Guidelines.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

⚠ WARNING

Failure to operate your filter system or inadequate filtration, can cause poor water clarity, obstructing visibility in your pool and can allow diving into or on top of obscured objects which can cause serious personal injury or drowning.

Clear water is the result of proper filtration as well as proper water chemistry. Pool chemistry is a specialized area and you should consult your local pool service specialist for specific details. In general, proper pool sanitation requires a free chlorine level of 1 to 2 PPM and a PH range of 7.2 to 7.6.

B. SYSTEM SIZING GUIDELINES

Your local health codes should be consulted to determine specific requirements, relative to turnover rate and filter flow rate per square foot of filter area. ANSI NSPI-1 1991, "Standard for Public Swimming Pools" paragraph 6.1.1 recommends a minimum of an 8 hour turnover rate for public pools. NSF standard 50-1992, "Circulation System Components and Related Materials for Swimming Pools, Spas, Hot Tubs", paragraph 5.2.6, indicates a maximum flow rate for high rate sand filters of 20 GPM per square foot of filter area. Paragraph 5.1.8, of NSF standard 50-1992, indicates a maximum flow rate for pressure DE filters to be 2 GPM per square foot of filter area without slurry feed. The following information is simply a guideline for selecting a Tandem filtration system for a pool of a specific volume of water. This guideline is only good providing the plumbing arrangement on the suction side of the pump, the pump, the discharge plumbing from the system to both the pool and the backwash are properly sized to handle the necessary system flow. If the above parts of your system have not been sized properly, then these guidelines may not apply. Consult a Hydraulic designer or other Professional System Engineer to insure your system is properly sized. The following guidelines on selecting the proper size and number of filters and manifold size based on your systems total gallons, turnover rate and filter flow rate. You will find charts below on the Sand Filters TR 100C and TR 140C.



For more information on Pentair Pool Products, visit our website at www.pentairpool.com or contact our factories at 800-831-7133.

Pentair Pool Products
1620 Hawkins Ave.
Sanford, NC 27330
919-566-8000
Fax: 919-566-8910

Pentair Pool Products
10951 W. Los Angeles Ave.
Moorpark, CA 93021
805-523-2400
Fax: 805-530-0128

TANDEM TRITON II TR 100 C & TR 100 C3 FILTER INSTALLATION

FILTERS	FILTERS AREA SQ. FT.	MANIFOLD PIPE DIA.	FILTER RATE		TURNOVER CAPACITY	
			15 GPM/ SQ. FT.	20 GPM/ SQ. FT.	6 HRS.	8 HRS.
2 TR100 C or 2 TR100 C3	9.82	3"	147	---	52,920	70,560
		4"	---	196	70,560	94,080
3 TR100 C or 3 TR100 C3	14.73	4"	221	---	79,560	106,080
		4"	---	295	106,200	141,600
4 TR100 C or 4 TR100 C3	19.64	4"	295	---	106,200	141,600
		6"	---	393	141,480	188,640
5 TR100 C or 5 TR100 C3	24.55	6"	368	---	132,480	176,640
		6"	---	491	176,760	235,680

NOTES

TANDEM TRITON II TR 140 C & TR 140 C3 FILTER INSTALLATION

FILTERS	FILTERS AREA SQ. FT.	MANIFOLD PIPE DIA.	FILTER RATE		TURNOVER CAPACITY	
			15 GPM/ SQ. FT.	20 GPM/ SQ. FT.	6 HRS.	8 HRS.
2 TR140 C or 2 TR140 C3	14.12	4"	212	---	76,320	101,760
		4"	---	282	101,520	135,360
3 TR140 C or 3 TR140 C3	21.18	4"	318	---	114,480	152,640
		6"	---	424	152,640	203,520
4 TR140 C or 4 TR140 C3	28.24	6"	424	---	152,640	203,520
		6"	---	565	203,040	270,720
5 TR140 C or 5 TR140 C3	35.30	6"	530	---	190,800	254,400
		6"	---	706	254,160	338,880
6 TR140 C or 6 TR140 C3	42.36	6"	635	---	228,600	304,800
		---	---	---	-----	-----

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

TANDEM SYSTEM PLUMBING KIT

PAGE 4

After you have determined the number of filters needed and the manifold size requirements, use the following charts to select the filter kits you need for your system. Kits are offered in both schedule 40 fittings and schedule 80 fittings. Please note the filters will need to be ordered in addition to the filter kits.

NUMBER OF FILTERS	MANIFOLD SIZE SCH 40								
	3"			4"			6"		
	C	KIT # C-3"	QTY.	C	KIT # C-3"	QTY.	C	KIT # C-3"	QTY.
2 FILTERS	14-6400	14-7400	1	14-6402	14-7402	1			
3 FILTERS				14-6402	14-7402	1	14-6404	14-7404	1
				14-6406	14-7406	1	14-6408	14-7408	1
4 FILTERS				14-6402	14-7402	1	14-6404	14-7404	1
				14-6406	14-7406	2	14-6408	14-7408	2
5 FILTERS							14-6404	14-7404	1
							14-6408	14-7408	3
6 FILTERS							14-6404	14-7404	1
							14-6408	14-7408	4

NOTES

NUMBER OF FILTERS	MANIFOLD SIZE SCH 80								
	3"			4"			6"		
	C	KIT # C-3"	QTY.	C	KIT # C-3"	QTY.	C	KIT # C-3"	QTY.
2 FILTERS	14-6401	14-7401	1	14-6403	14-7403	1			
3 FILTERS				14-6403	14-7403	1	14-6405	14-7405	1
				14-6407	14-7407	1	14-6409	14-7409	1
4 FILTERS				14-6403	14-7403	1	14-6405	14-7405	1
				14-6407	14-7407	2	14-6409	14-7409	2
5 FILTERS							14-6405	14-7405	1
							14-6409	14-7409	3
6 FILTERS							14-6405	14-7405	1
							14-6409	14-7409	4

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

FILTER ADDER KIT

4" SINGLE FILTER KIT SCHEDULE 40 (14-7406)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
17	15-0078	10401-420	4 X 3	Socket Reducer Tee	40	2
19	15-0075	10427-020		3" Spigot x Soc 45, Str. Elbow	40	2
20	15-3010	10478-020	4 X 2	Socket Reducer Saddle	40	3
21	15-2989	15-2989		2" Fig. One-Piece Socket - 150 lb.	80	1
22	15-0056	10463-420		3" Fig. VS, Spigot - 150 lb.	80	2
23	15-0082	10851-020		3" Bolt Pack - Tank/Flg. Hdwr w/Gasket (#4)		1
				Includes 8-5/8 x 3-1/4" hex head bolts, 8-5/8" nuts, 16-5/8" washers and 2 - 3" Neoprene FF Fig. Gaskets		6
	15-2992	10870-030		Installation, Operation & Service Manual		1

4" SINGLE FILTER KIT SCHEDULE 80 (14-7407)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
17	15-0079	10801-422	4 X 3	Socket Reducer Tee	80	2
19	15-0077	1827-030		3" Spigot x Soc 45, Str. Elbow	80	2
20	15-3010	10463-420	4 X 2	Socket Reducer Saddle	40	3
21	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
22	15-0056	10856P-030		3" Fig. VS, Spigot - 150 lb.	80	2
23	15-0082	REQ.		3" Bolt Pack - Tank/Flg. Hdwr w/Gasket (#4)		1
				Includes 8-5/8 x 3-1/4" hex head bolts, 8-5/8" nuts, 16-5/8" washers and 2 - 3" Neoprene FF Fig. Gaskets		6
	15-2992	10870-030		Installation, Operation & Service Manual		1

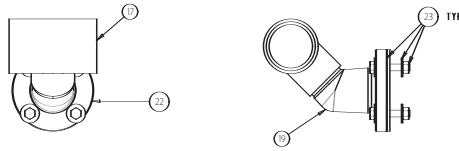
6" SINGLE FILTER KIT SCHEDULE 40 (14-7408)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
17	15-0080	10401-530	6 X 3	Socket Reducer Tee	40	2
19	15-0075	10427-030		3" Spigot x Soc 45, Str. Elbow	40	2
20	15-3014	10463-528	6 X 2	Socket Reducer Saddle	40	3
21	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
22	15-0056	10856P-030		3" Fig. VS, Spigot - 150 lb.	80	2
23	15-0082	REQ.		3" Bolt Pack - Tank/Flg. Hdwr w/Gasket (#4)		1
				Includes 8-5/8 x 3-1/4" hex head bolts, 8-5/8" nuts, 16-5/8" washers and 2 - 3" Neoprene FF Fig. Gaskets		6
	15-2992	10870-030		Installation, Operation & Service Manual		1

6" SINGLE FILTER KIT SCHEDULE 80 (14-7409)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
17	15-0081	10801-530	6 X 3	Socket Reducer Tee	80	2
19	15-0077	1827-030		3" Spigot x Soc 45, Str. Elbow	80	2
20	15-3014	10463-528	6 X 2	Socket Reducer Saddle	40	3
21	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
22	15-0056	10856P-030		3" Fig. VS, Spigot - 150 lb.	80	2
23	15-0082	REQ.		3" Bolt Pack - Tank/Flg. Hdwr w/Gasket (#4)		1
				Includes 8-5/8 x 3-1/4" hex head bolts, 8-5/8" nuts, 16-5/8" washers and 2 - 3" Neoprene FF Fig. Gaskets		6
	15-2992	10870-030		Installation, Operation & Service Manual		1

TWO FILTER SYSTEM	A	B	C	D	E	F	G	H	I	J	K	TOTAL WT.
3" - TR100C	82 3/8"	17 15/16"	48" MIN.	18" MIN	39 3/4"	15"	29 33/64"	8 5/8"	11 31/32"	51 13/16"	-----	2300 LBS.
3" - TR140C	88 3/8"	17 15/16"	54" MIN.	18" MIN	45 1/4"	18"	32 33/64"	8 5/8"	13 15/32"	57 13/16"	-----	3200 LBS.
4" - TR140C	95 3/4"	19 35/64"	54" MIN.	18" MIN	45 1/2"	18"	33 1/8"	9 15/16"	12 21/32"	59 11/64"	-----	3300 LBS.
6" - TR140C	111 3/4"	24 7/32"	54" MIN.	18" MIN	45 1/2"	18"	35 3/8"	12 13/16"	10 21/64"	64 13/32"	69 53/64"	3550 LBS.

6" PIPING NEEDS TO BE ROTATED UPWARD AS SHOWN AT 25° SO HANDLE WILL CLEAR THE FLOOR.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS



TYPICAL SAND FILTER
FIGURE 4A

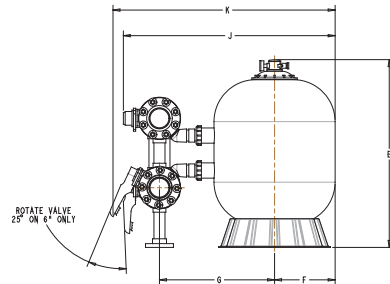
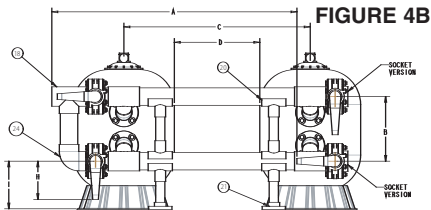


FIGURE 4B



C. INSTALLATION

1. Check carton for any evidence of damage due to rough handling in Shipment. If carton or any filter kit components are damaged, notify freight carrier immediately.
2. Refer to Filter Manual for details on filter installation.
3. The Tandem filter kits have been designed to provide the maximum flexibility for installation. The installer will supply all the piping to connect the complete system.
4. It is recommended that the filters be positioned in their final location and arranged to allow sufficient service access for each filter. Equal filter spacing is recommended since it simplifies the installation. Refer to filter tank label for minimum filter clearance between filters.
5. Once filters are in position, place about 5 gallons of water in the tanks. This will help stabilize the filter.
6. It is best to cut all piping and dry assemble the complete system prior to making any final glue joints. This helps to insure that no mistakes are made in the final system.

You should assemble the tank "T" fitting assemblies first. These are the assemblies that form the "T" connections that join directly to the inlet and outlet of the filters - two assemblies per tank. Follow the instructions for the assemblies that correspond to the size filter you are installing, either 2-inch or 3-inch.

2-inch Filter Unit "T" Assembly

You will need the following parts from your installation kit.

1. Socket Reducer Tee (either 3x2, 4x2 or 6x2)
2. 2" Spigot x Socket 45° Street Elbow
3. 2" Spigot Female Adapter, Spigot x Female Pipe Thread
4. 2" Valve Adapter (P/N 271092)

Use a plastic pipe sealant on the 2" valve adapter male thread and thread into the 2" spigot female adapter making sure to have the 3-1/2" plastic nut in place over the adapter before doing so. If individual shut off valves are desired, they can be placed in this location. Dry fit the female adapter/valve adapter assembly into the socket end of the 2" spigot x socket 45° elbow. Dry fit spigot end of this assembly into the reduced tee port of the reducer tee. These glue joints, which connects the "T" to the 45° to the valve adapter, are very important. Pre-assemble the joints dry and insure that the "T" is aligned. Mark timing marks on the female adapter, the 45° elbow and the "T" to insure proper re-alignment when making the final glue joint. Make the final glue joint only after you are confident that your alignment is proper.

3-inch Filter Unit "T" Assembly

You will need the following parts from your installation kit.

1. Socket Tee or Reducer Tee (either 3 tee, 4x3 or 6x3 reducer tee)
2. 3" Spigot x Socket 45° Street Elbow
3. 3" Flange, VS, Spigot

Dry fit the spigot end of the 3" Spigot x Socket 45° Street Elbow into the tee port of the standard or reducer tee. Dry fit this assembly onto the spigot nipple of the 3" spigot flange. These glue joints, which connects the "T" to the 45° to the flange, are very important. Pre-assemble the joints dry and insure that the "T" is aligned. Mark timing marks on the flange, the 45° elbow and the "T" to insure proper re-alignment when making the final glue joint. Make the final glue joint only after you are confident that your alignment is proper.

Build up all of these "T" fitting assemblies. There should be two "T" assemblies for each filter in your system. Let these assemblies dry completely before continuing.

7. For the 2-inch filter units connect one "T" assembly constructed above to each of the filter bulkhead fittings with the 3-1/2" plastic nut. For the 3-inch filter units connect the "T"

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

ADDENDUM TANDEM PLUMBING KIT PAGE 6

assembly to the inlet and outlet flanges with the 3" Bolt Pack w/gasket from the installation kit. You may need to use temporary supports under the "T" assemblies while making these connections.

- Inter connecting pipes between "T"s can now be added. Insure that the filters are in position and in a straight line and equal distance apart. Measure and cut "T" connector pipes for both top and bottom "T"s. These connector pipes should all be the same length unless a set of filters is unequally spaced. Do not make final glue joint until pipe supports are in place. See step 9.
- Dry assemble the connecting pipes between filter "T"s and place the saddle supports into position to measure for the support legs. One set of supports goes between the manifold pipes and directly under that support is the other support with flanged bottom. Measure both support legs and cut appropriate 2" pipes to fit. Dry assemble and mark timing marks on all joints so that they may be re-assembled properly when the final glue joints are made. Repeat for the second set of supports. Make the final glue joints only after you are confident that your piping is correct.
- The connecting pipes between filter "T"s may now be glued. Make the final glue joint only after you are confident that your piping is correct.
- The end filters on both the inlet side of the system and the return side of the system may now be flanged and valves installed. The kits are supplied with two different types of flanges: socket and spigot flanges. The flanges in the kit should arrive assembled but in shipping might have become disassembled. If so, install the flanges over the spigot/socket stub ends. Pre-assemble all 8 flange/ stub end assemblies. The flange has a recess on the ID, which allows two small protrusions on the stub end to slip thru the flange and the protrusion locks the flange and stub end together when rotated slightly. Use the spigot type flanges to connect to the open end of the four "T"s on the filter units. The spigot stub ends

will glue directly into the open ends of the "T"s. Make the final glue joints between the "T"s and flange/stub end assemblies, only when you are confident that your piping is correct.

- The four valves and flange/stub end assemblies can now be mounted. NOTE: use the remaining two spigot end flanges on the inlet side of the filter units and use the two socket end flanges on the outlet side. This will allow the tee and elbow inlet fittings to be cemented directly to the spigot flanges and leave the socket flanges for the outlet pipe.

It is helpful to have two people to mount the valves. Locate the Hardware Kit - Valve/Flg. Hdwr. and pull 4 or 8 bolts, nuts and washer sets for use in mounting valves. A 3-inch valve will require 4 sets; the 4 and 6 inch will require 8 sets. Place 2 bolts and washers thru the mounted flange 180° apart. Place the valves into position as indicated on Figure 3 B in the installation manual. Be certain that the teeth of the latch-ing mechanism are oriented as depicted in Figure 3 B. Place the mating flange on the assembly and use washer and nuts on two bolts to snug the flanges and valve together. Do this on all four valves/flange combinations.

- The final tee and elbow inlet fittings may now be assembled. Place the tee on the top manifold spigot flange nipple and the elbow on the bottom manifold spigot flange nipple. Snug them in place and measure the length of the connecting pipe. Field cut the pipe and dry assemble. Once you are certain of your assembly, mark the tee, elbow and connector pipe to insure proper re-assembly. Glue all four joints.
- Install all remaining flange bolts with washers and nuts. Follow the recommended bolt torque and tightening sequence when making the final installation of the bolt, nut and washer sets.
- The manifold is now complete and remaining piping can now be connected.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

TANDEM SYSTEM PLUMBING KIT PAGE 11

E. PARTS LIST FOR TR 100C3 & 140C3 FILTERS

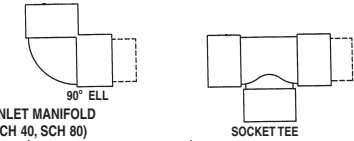
INLET MANIFOLD

3" INLET MANIFOLD (SCH 40, SCH 80)

ITEM	PART # SCH 40	PART # SCH 80	DESCRIPTION	QTY
5	15-3011	15-3056	3" SX/SX TEE	1
11	15-3006	15-3065	3"-90 ELL SXS	1

4" INLET MANIFOLD (SCH 40, SCH 80)

ITEM	PART # SCH 40	PART # SCH 80	DESCRIPTION	QTY
5	15-3012	15-3057	4" SX/SX TEE	1
12	15-3007	15-3066	4"-90 ELL SXS	1



ITEM	PART # SCH 40	PART # SCH 80	DESCRIPTION	QTY
6	15-3013	15-3059	6" SX/SX TEE	1
12	15-3008	15-3067	6"-90 ELL SXS	1

VALVED FILTER MANIFOLD

3" TWO FILTER KIT SCHEDULE 40 (14-7400)

Item	Part#	AP PN	Size	Description	Sch.	Qty
13	15-3062	1086P-030	3	Flg. VS. Socket - 150lb.	80	2
14	15-0056	1086P-030	3	Flg. VS. Spigot - 150lb.	80	4
15	15-0057	1728-040	3	Butterfly Valve, Asahi SP	80	4
16	15-0058	REQ.	3	Hardware Kit - Valve/Flg. Hardware (H)		1
17	15-3011	10401-030	3	Socket Tee	40	5
18	15-0075	10427-030	3	3" Spig. x Sec. 45. Str. Elbow	40	4
20	15-3009	10463-030	3 X 2	Socket Reducer Saddle	40	3
21	15-2889	10811-030	3	2" Flg. One-Piece Socket - 150 lb. Solid	80	1
22	15-0056	1086P-030	3	Flg. VS. Spigot - 150lb.	80	4
23	15-0076	REQ.	3	2 Bolt Pack - 1/2" Dia. Hex. Hd. w/ Washer (H)		1
24	15-3005	10470-030	3	Socket Elbow	40	1
24	15-3005	10406-030	3	Socket Elbow	80	1
15-2992				Installation, Operation & Service Manual		1

3" TWO FILTER KIT SCHEDULE 80 (14-7401)

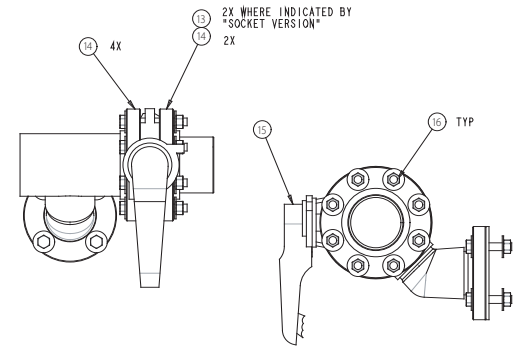
Item	Part#	AP PN	Size	Description	Sch.	Qty
13	15-3062	1086P-030	3	Flg. VS. Socket - 150lb.	80	2
14	15-0056	1086P-030	3	Flg. VS. Spigot - 150lb.	80	4
15	15-0057	1728-040	3	Butterfly Valve, Asahi SP	80	4
16	15-0058	REQ.	3	Hardware Kit - Valve/Flg. Hardware (H)		1
17	15-3056	10801-030	3	Socket Tee	40	5
18	15-0077	10827-030	3	3" Spig. x Sec. 45. Str. Elbow	40	4
20	15-3009	10463-030	3 X 2	Socket Reducer Saddle	40	3
21	15-2889	10811-030	3	2" Flg. One-Piece Socket - 150 lb. Solid	80	1
22	15-0056	1086P-030	3	Flg. VS. Spigot - 150lb.	80	4
23	15-0076	REQ.	3	2 Bolt Pack - 1/2" Dia. Hex. Hd. w/ Washer (H)		1
24	15-3005	10870-030	3	Socket Elbow	40	1
24	15-3005	10806-030	3	Socket Elbow	80	1
15-2992				Installation, Operation & Service Manual		1

4" TWO FILTER KIT SCHEDULE 40 (14-7402)

Item	Part#	AP PN	Size	Description	Sch.	Qty
13	15-3062	1086P-040	4	Flg. VS. Socket - 150lb.	80	2
14	15-0056	1086P-040	4	Flg. VS. Spigot - 150lb.	80	6
15	15-0059	1728-040	4	Butterfly Valve, Asahi SP	80	4
16	15-0058	REQ.	4	Hardware Kit - Valve/Flg. Hardware (H)		1
17	15-3078	10401-040	4 X 3	Socket Reducer Tee	40	4
18	15-3012	10401-040	4	Socket Tee	40	1
19	15-0075	10427-030	3	3" Spig. x Sec. 45. Str. Elbow	40	4
20	15-3010	10463-030	4 X 2	Socket Reducer Saddle	40	4
21	15-2889	10811-030	3	2" Flg. One-Piece Socket - 150 lb. Solid	80	1
22	15-0056	1086P-030	3	Flg. VS. Spigot - 150 lb.	80	4
23	15-0076	REQ.	3	2 Bolt Pack - 1/2" Dia. Hex. Hd. w/ Washer (H)		1
24	15-3007	10870-030	4	Socket Elbow	40	1
24	15-3007	10406-030	4	Socket Elbow	80	1
15-2992				Installation, Operation & Service Manual		1

4" TWO FILTER KIT SCHEDULE 80 (14-7403)

Item	Part#	AP PN	Size	Description	Sch.	Qty
13	15-3062	1086P-040	4	Flg. VS. Socket - 150lb.	80	2
14	15-0056	1086P-040	4	Flg. VS. Spigot - 150lb.	80	6
15	15-0059	1728-040	4	Butterfly Valve, Asahi SP	80	4
16	15-0058	REQ.	4	Hardware Kit - Valve/Flg. Hardware (H)		1
17	15-3078	10401-040	4 X 3	Socket Reducer Tee	40	4
18	15-3012	10401-040	4	Socket Tee	40	1
19	15-0077	10827-030	3	3" Spig. x Sec. 45. Str. Elbow	40	4
20	15-3010	10463-030	4 X 2	Socket Reducer Saddle	40	4
21	15-2889	10811-030	3	2" Flg. One-Piece Socket - 150 lb. Solid	80	1
22	15-0056	1086P-030	3	Flg. VS. Spigot - 150 lb.	80	4
23	15-0076	REQ.	3	2 Bolt Pack - 1/2" Dia. Hex. Hd. w/ Washer (H)		1
24	15-3007	10870-030	4	Socket Elbow	40	1
24	15-3007	10406-030	4	Socket Elbow	80	1
15-2992				Installation, Operation & Service Manual		1



6" TWO FILTER KIT SCHEDULE 40 (14-7404)

Item	Part#	AP PN	Size	Description	Sch.	Qty
13	15-3064	1086P-060	6	Flg. VS. Socket - 150lb.	80	2
14	15-0079	1086P-060	6	Flg. VS. Spigot - 150lb.	80	6
15	15-0071	1728-060	6	Butterfly Valve, Asahi SP	80	4
16	15-0078	REQ.	6	Hardware Kit - Valve/Flg. Hardware (H)		1
17	15-0080	10401-030	6 X 3	Socket Reducer Tee	40	4
18	15-3013	10401-060	6	Socket Tee	40	1
19	15-0075	10427-030	3	3" Spig. x Sec. 45. Str. Elbow	40	4
20	15-3011	10463-030	6 X 2	Socket Reducer Saddle	40	3
21	15-2889	10811-030	3	2" Flg. One-Piece Socket - 150 lb. Solid	80	1
22	15-0056	1086P-030	3	Flg. VS. Spigot - 150 lb.	80	4
23	15-0076	REQ.	3	2 Bolt Pack - 1/2" Dia. Hex. Hd. w/ Washer (H)		1
24	15-3008	10870-030	6	Socket Elbow	40	1
24	15-3008	10406-030	6	Socket Elbow	80	1
15-2992				Installation, Operation & Service Manual		1

6" TWO FILTER KIT SCHEDULE 80 (14-7405)

Item	Part#	AP PN	Size	Description	Sch.	Qty
13	15-3064	1086P-060	6	Flg. VS. Socket - 150lb.	80	2
14	15-0079	1086P-060	6	Flg. VS. Spigot - 150lb.	80	6
15	15-0071	1728-060	6	Butterfly Valve, Asahi SP	80	4
16	15-0078	REQ.	6	Hardware Kit - Valve/Flg. Hardware (H)		1
17	15-0080	10401-030	6 X 3	Socket Reducer Tee	40	4
18	15-3013	10401-060	6	Socket Tee	40	1
19	15-0077	10827-030	3	3" Spig. x Sec. 45. Str. Elbow	40	4
20	15-3011	10463-030	6 X 2	Socket Reducer Saddle	40	3
21	15-2889	10811-030	3	2" Flg. One-Piece Socket - 150 lb. Solid	80	1
22	15-0056	1086P-030	3	Flg. VS. Spigot - 150 lb.	80	4
23	15-0076	REQ.	3	2 Bolt Pack - 1/2" Dia. Hex. Hd. w/ Washer (H)		1
24	15-3008	10870-030	6	Socket Elbow	40	1
24	15-3008	10406-030	6	Socket Elbow	80	1
15-2992				Installation, Operation & Service Manual		1

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

4" SINGLE FILTER KIT SCHEDULE 40 (14-6406)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
5	15-0069	10401-420	4 X 2	Socket Reducer Tee	40	2
6	15-0069	10427-020		2" Spig x Soc 45 Str. Elbow	40	2
7	15-0061	10478-020		2" Spigot Female Adapter, Spig x Flt	40	2
8	27-1092	27-1092		2" Valve Adapter Kit		1
11	15-3010	10463-420	4 X 2	Socket Reducer Saddle	40	3
12	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
	15-2992			Installation, Operation & Service Manual	1	1

4" SINGLE FILTER KIT SCHEDULE 80 (14-6407)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
5	15-0069	10801-420	4 X 2	Socket Reducer Tee	80	2
6	15-0063	1827-020		2" Spig x Soc 45 Str. Elbow	80	2
7	15-0064	10878-020SR		2" Spigot Female Adapter, Spig x Flt	80	2
8	27-1092	27-1092		2" Valve Adapter Kit		1
11	15-3010	10463-420	4 X 2	Socket Reducer Saddle	40	3
12	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
	15-2992			Installation, Operation & Service Manual	1	1



**TYPICAL SAND FILTER
FIGURE 3 A**

6" SINGLE FILTER KIT SCHEDULE 40 (14-6408)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
5	15-0074	10801-528	6 X 2	Socket Reducer Tee	40	2
6	15-0069	10427-020		2" Spig x Soc 45 Str. Elbow	40	2
7	15-0061	10478-020		2" Spigot Female Adapter, Spig x Flt	40	2
8	27-1092	27-1092		2" Valve Adapter Kit		1
11	15-3014	10463-528	6 X 2	Socket Reducer Saddle	40	3
12	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
	15-2992			Installation, Operation & Service Manual	1	1

6" SINGLE FILTER KIT SCHEDULE 80 (14-6409)						
Item	Pentair Part#	AP PN	Size	Description	Sch.	Qty
5	15-0074	10801-528	6 X 2	Socket Reducer Tee	80	2
6	15-0063	1827-020		2" Spig x Soc 45 Str. Elbow	80	2
7	15-0064	10878-020SR		2" Spigot Female Adapter, Spig x Flt	80	2
8	27-1092	27-1092		2" Valve Adapter Kit		1
11	15-3014	10463-528	6 X 2	Socket Reducer Saddle	40	3
12	15-2989	10851-020		2" Fig. One-Piece Socket - 150 lb.	80	1
	15-2992			Installation, Operation & Service Manual	1	1

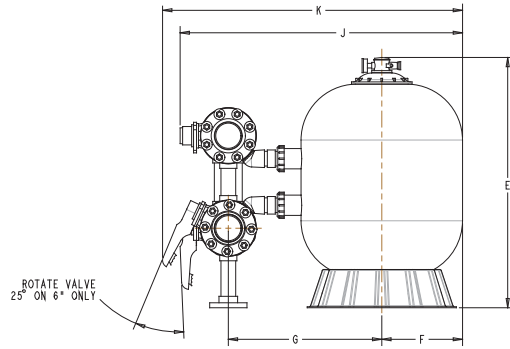
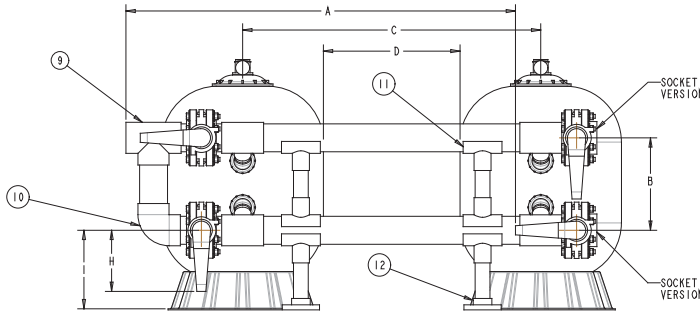


FIGURE 3 B



TWO FILTER SYSTEM	A	B	C	D	E	F	G	H	I	J	K	TOTAL WT.
3" - TR100C	82 3/8"	15 29/32"	48" MIN.	18" MIN.	39 3/4"	15"	24 27/32"	8 5/8"	11 31/32"	50 1/8"	—	2100 LBS.
3" - TR140C	88 3/8"	15 29/32"	54" MIN.	18" MIN.	45 1/4"	18"	27 27/32"	8 5/8"	14 15/32"	53 1/8"	—	3000 LBS.
4" - TR140C	95 3/4"	17 41/64"	54" MIN.	18" MIN.	45 1/2"	18"	28 43/64"	9 15/16"	13 39/64"	54 47/64"	—	3100 LBS.
6" - TR140C	111 3/4"	21 1/2"	54" MIN.	18" MIN.	45 1/2"	18"	30 51/64"	12 13/16"	11 21/32"	59 1/8"	64 9/16"	3350 LBS.

*6" PIPING NEEDS TO BE ROTATED UPWARD AS SHOWN AT 25° SO HANDLE WILL CLEAR THE FLOOR.

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

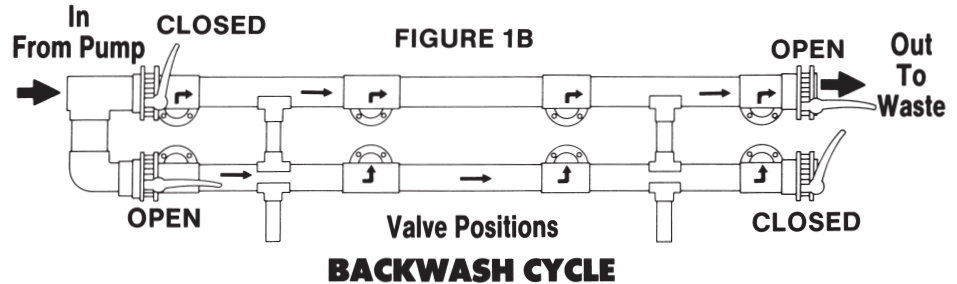
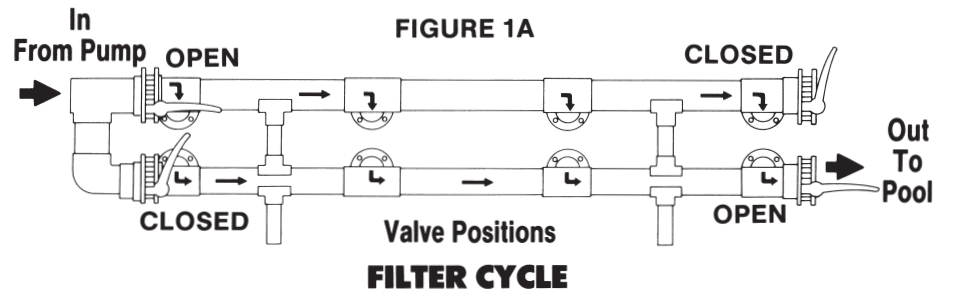
D. INITIAL START-UP AND OPERATION

1. Your system is a manually controlled system. Proper operation training. This manual as well as the filter manual, should be used as an aid in that training.
2. Read and understand the start up operation instructions for your specific filter type.

CAUTION
TO PREVENT EQUIPMENT DAMAGE AND POSSIBLE INJURY, ALWAYS TURN THE PUMP OFF BEFORE CHANGING THE VALVE POSITION.

3. Follow the start-up procedures for your specific filter type outlined in your filter manual when the instructions refer to positioning valves for backwash, a filter refer to Figures 1A and 1B for sand filters.

SAND FILTER SYSTEM VALVE POSITION



READ AND FOLLOW ALL SAFETY INSTRUCTIONS

TANDEM SYSTEM PLUMBING KIT PAGE 8

⚠ WARNING

ALWAYS INSURE THAT THE VALVES ARE IN THE PROPER POSITION. IMPROPER VALVE POSITIONING CAN CAUSE EXCESSIVE PRESSURE WHICH CAN CAUSE COMPONENT FAILURE. FAILURE OF COMPONENTS COULD CAUSE SEVERE BODILY INJURY AND/OR PROPERTY DAMAGE.

4. Valve positioning is very important for your system. Refer to the above diagrams when changing valve positions. All four valves must be in the proper position before applying power to the system.

⚠ WARNING

ALWAYS ENGAGE VALVE LATCHING MECHANISM ON VALVES BEFORE APPLYING POWER TO SYSTEM PUMP. THE VALVE POSITION MAY CHANGE CAUSING EXCESSIVE PRESSURE. EXCESSIVE SYSTEM PRESSURE CAN CAUSE COMPONENT FAILURE, WHICH COULD CAUSE SEVERE BODILY INJURY AND/OR PROPERTY DAMAGE.

5. The butterfly valves used on your system has a positive locking latch. When changing valve position, you should insure that the locking latch is engaged before pressurizing the system.

E. WINTERIZING PROCEDURE

1. In areas that have freezing winter temperatures, protect the pool equipment by backwashing the filter.
2. After backwashing, shut the pump off, open the manual air bleeder on the closure.

⚠ CAUTION

IF BUTTERFLY VALVES ARE PLACED IN THE OPEN POSITION, BE AWARE THAT THIS CAN DRAIN THE POOL IN CERTAIN SITUATIONS. IF THE POOL IS NOT TO BE DRAINED FOR WINTERIZING, THEN LEAVE VALVES IN THE FILTER POSITION.

3. Adjust butterfly valves to the open position. This will unload the valve sealing seat. The valve has an arrow on the handle that shows the open position as an "O".
4. Refer to filter manual to drain filter.
 - A. TR 100C/C3 and TR 140C/C3, remove the 2" drain plug cap. The filter will drain very slowly, and therefore, it is recommended that the drain plug be left out.
5. Drain all appropriate system piping.
6. We recommend covering the equipment with a tarpaulin or plastic sheet to inhibit deterioration from weather. Do not wrap pump motor with plastic.

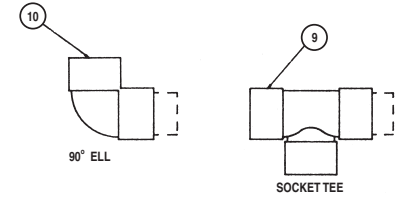
TANDEM SYSTEM PLUMBING KIT PAGE 9

E. PARTS LIST FOR TR 100C & 140C FILTERS

INLET MANIFOLD

3" INLET MANIFOLD (SCH 40, SCH 80)

ITEM	PART # SCH 40	PART # SCH 80	DESCRIPTION	QTY
9	15-3011	15-3056	3" SXSXS TEE	1
10	15-3006	15-3065	3"-90° ELL SxS	1



4" INLET MANIFOLD (SCH 40, SCH 80)

ITEM	PART # SCH 40	PART # SCH 80	DESCRIPTION	QTY
9	15-3012	15-3057	4" SXSXS TEE	1
10	15-3007	15-3066	4"-90° ELL SxS	1

6" INLET MANIFOLD (SCH 40, SCH 80)

ITEM	PART # SCH 40	PART # SCH 80	DESCRIPTION	QTY
9	15-3013	15-3059	6" SXSXS TEE	1
10	15-3008	15-3067	6"-90° ELL SxS	1

VALVED FILTER MANIFOLD

3" TWO FILTER KIT SCHEDULE 40 (14-6400)

Item	Part#	Part #	Size	Description	Sch.	Qty
1	15-3062	1086P-030	3"	Fig. VS, Socket - 150lb.	80	2
2	15-0056	1086P-030	3"	Fig. VS, Socket - 150lb.	80	4
3	15-0057	1728-030	3"	Butterfly Valve, Asahi SP	80	4
4	15-0058	REG.	3"	Hardware Kit - Valve/Fig. Hardware #11	80	1
Includes 1/2" (1" for TR 100C, 3/4" for TR 140C) valves						
5	15-0059	10801-338	3 X 2	Socket Reducer Tee	80	4
6	15-0060	10427-020	2"	Spigot x Soc. 45, Str. Elbow	80	4
7	15-0061	10478-020	2"	Spigot Female Adapter, Spig. x Fig.	80	4
8	27-1092	27-1092	2"	Valve Adapter Kit	80	2
9	15-3011	10801-030	3"	Socket Tee	80	1
10	15-3005	10406-030	3"	Socket Elbow	80	1
11	15-3009	10483-338	3 X 2	Socket Reducer Saddle	40	6
12	15-2989	10851-020	2"	Fig. One-Piece Socket - 150 lb.	80	2
15-2992				Installation, Operation & Service Manual		1

3" TWO FILTER KIT SCHEDULE 80 (14-6401)

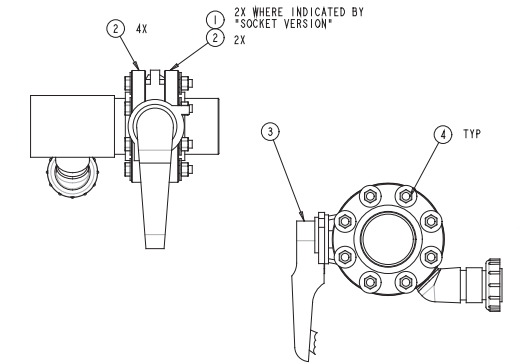
Item	Part#	Part #	Size	Description	Sch.	Qty
1	15-3064	1086P-030	3"	Fig. VS, Socket - 150lb.	80	2
2	15-0056	1086P-030	3"	Fig. VS, Socket - 150lb.	80	6
3	15-0057	1728-030	3"	Butterfly Valve, Asahi SP	80	4
4	15-0058	REG.	3"	Hardware Kit - Valve/Fig. Hardware #11	80	1
Includes 1/2" (1" for TR 100C, 3/4" for TR 140C) valves						
5	15-0062	10801-338	3 X 2	Socket Reducer Tee	80	4
6	15-0063	10427-020	2"	Spigot x Soc. 45, Str. Elbow	80	4
7	15-0064	10478-020SR	2"	Spigot Female Adapter, Spig. x Fig.	80	4
8	27-1092	27-1092	2"	Valve Adapter Kit	80	2
9	15-3011	10801-030	3"	Socket Tee	80	1
10	15-3005	10406-030	3"	Socket Elbow	80	1
11	15-3009	10483-338	3 X 2	Socket Reducer Saddle	40	6
12	15-2989	10851-020	2"	Fig. One-Piece Socket - 150 lb.	80	2
15-2992				Installation, Operation & Service Manual		1

4" TWO FILTER KIT SCHEDULE 40 (14-6402)

Item	Part#	Part #	Size	Description	Sch.	Qty
1	15-3063	1086P-040	4"	Fig. VS, Socket - 150lb.	80	2
2	15-0056	1086P-040	4"	Fig. VS, Socket - 150lb.	80	6
3	15-0057	1728-040	4"	Butterfly Valve, Asahi SP	80	4
4	15-0058	REG.	4"	Hardware Kit - Valve/Fig. Hardware #11	80	1
Includes 1/2" (1" for TR 100C, 3/4" for TR 140C) valves						
5	15-0068	10801-420	4 X 2	Socket Reducer Tee	80	4
6	15-0060	10427-020	2"	Spigot x Soc. 45, Str. Elbow	80	4
7	15-0061	10478-020	2"	Spigot Female Adapter, Spig. x Fig.	80	4
8	27-1092	27-1092	2"	Valve Adapter Kit	80	2
9	15-3012	10801-040	4"	Socket Tee	80	1
10	15-3007	10406-040	4"	Socket Elbow	80	1
11	15-3010	10483-420	4 X 2	Socket Reducer Saddle	40	6
12	15-2989	10851-020	2"	Fig. One-Piece Socket - 150 lb.	80	2
15-2992				Installation, Operation & Service Manual		1

4" TWO FILTER KIT SCHEDULE 80 (14-6403)

Item	Part#	Part #	Size	Description	Sch.	Qty
1	15-3063	1086P-040	4"	Fig. VS, Socket - 150lb.	80	2
2	15-0056	1086P-040	4"	Fig. VS, Socket - 150lb.	80	6
3	15-0057	1728-040	4"	Butterfly Valve, Asahi SP	80	4
4	15-0058	REG.	4"	Hardware Kit - Valve/Fig. Hardware #11	80	1
Includes 1/2" (1" for TR 100C, 3/4" for TR 140C) valves						
5	15-0069	10801-420	4 X 2	Socket Reducer Tee	80	4
6	15-0063	10427-020	2"	Spigot x Soc. 45, Str. Elbow	80	4
7	15-0064	10478-020SR	2"	Spigot Female Adapter, Spig. x Fig.	80	4
8	27-1092	27-1092	2"	Valve Adapter Kit	80	2
9	15-3012	10801-040	4"	Socket Tee	80	1
10	15-3007	10406-040	4"	Socket Elbow	80	1
11	15-3010	10483-420	4 X 2	Socket Reducer Saddle	40	6
12	15-2989	10851-020	2"	Fig. One-Piece Socket - 150 lb.	80	2
15-2992				Installation, Operation & Service Manual		1



6" TWO FILTER KIT SCHEDULE 40 (14-6404)

Item	Part#	Part #	Size	Description	Sch.	Qty
1	15-3064	1086P-060	6"	Fig. VS, Socket - 150lb.	80	2
2	15-0070	1086P-060	6"	Fig. VS, Socket - 150lb.	80	6
3	15-0071	1728-060	6"	Butterfly Valve, Asahi SP	80	4
4	15-0072	REG.	6"	Hardware Kit - Valve/Fig. Hardware #11	80	1
Includes 1/2" (1" for TR 100C, 3/4" for TR 140C) valves						
5	15-0072	10801-528	6 X 2	Socket Reducer Tee	40	4
6	15-0060	10427-020	2"	Spigot x Soc. 45, Str. Elbow	80	4
7	15-0061	10478-020	2"	Spigot Female Adapter, Spig. x Fig.	80	4
8	27-1092	27-1092	2"	Valve Adapter Kit	80	2
9	15-3013	10801-060	6"	Socket Tee	80	1
10	15-3008	10406-060	6"	Socket Elbow	80	1
11	15-3014	10483-528	6 X 2	Socket Reducer Saddle	40	6
12	15-2989	10851-020	2"	Fig. One-Piece Socket - 150 lb.	80	2
15-2992				Installation, Operation & Service Manual		1

6" TWO FILTER KIT SCHEDULE 80 (14-6405)

Item	Part#	Part #	Size	Description	Sch.	Qty
1	15-3064	1086P-060	6"	Fig. VS, Socket - 150lb.	80	2
2	15-0070	1086P-060	6"	Fig. VS, Socket - 150lb.	80	6
3	15-0071	1728-060	6"	Butterfly Valve, Asahi SP	80	4
4	15-0072	REG.	6"	Hardware Kit - Valve/Fig. Hardware #11	80	1
Includes 1/2" (1" for TR 100C, 3/4" for TR 140C) valves						
5	15-0074	10801-528	6 X 2	Socket Reducer Tee	80	4
6	15-0063	10427-020	2"	Spigot x Soc. 45, Str. Elbow	80	4
7	15-0064	10478-020SR	2"	Spigot Female Adapter, Spig. x Fig.	80	4
8	27-1092	27-1092	2"	Valve Adapter Kit	80	2
9	15-3009	10801-060	6"	Socket Tee	80	1
10	15-3007	10406-060	6"	Socket Elbow	80	1
11	15-3014	10483-528	6 X 2	Socket Reducer Saddle	40	6
12	15-2989	10851-020	2"	Fig. One-Piece Socket - 150 lb.	80	2
15-2992				Installation, Operation & Service Manual		1

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS