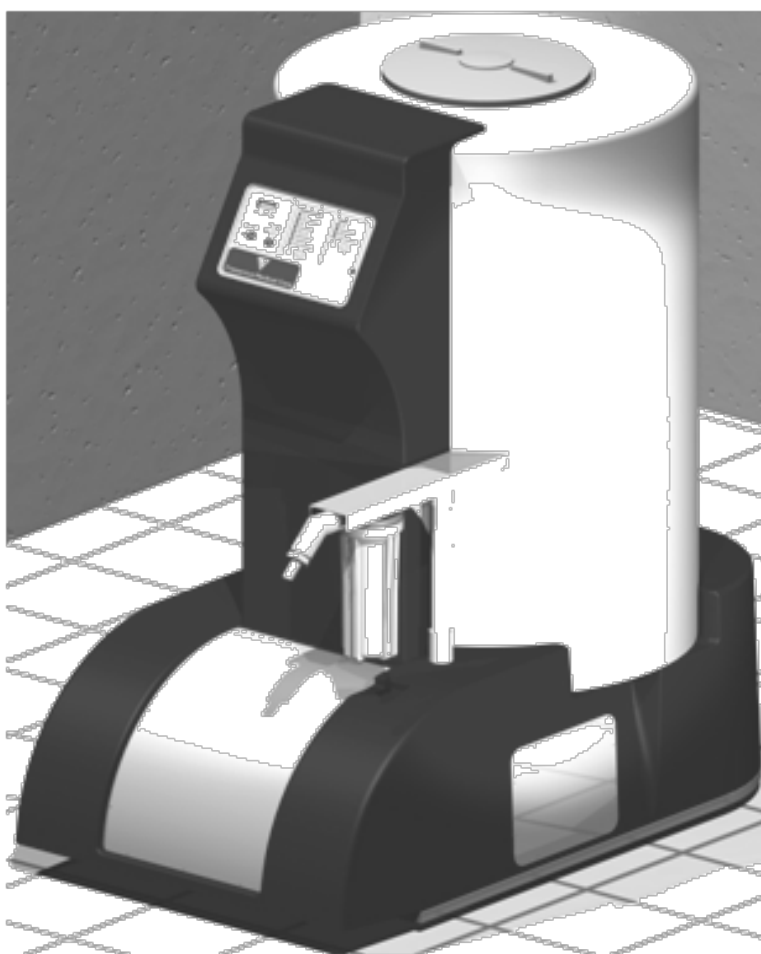




**FRESENIUS
MEDICAL CARE**

99 GALLON CONCENTRATE
DISSOLUTION UNIT
GranuFlo[®] II AND DRY ACID



SPARE PARTS MANUAL

P/N 460009 REV. D

99 Gallon Concentrate Dissolution Unit - GranuFlo® II and Dry Acid Spare Parts Manual

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Caution: US Federal Law restricts this device to sale by or on the order of a physician.

As part of the Conditions for Coverage, it is the Medical Director's responsibility that the Operators of the Fresenius Medical Care GranuFlo® II and Dry Acid Dissolution Unit must be trained in their respective operation and thoroughly familiar with the contents of this manual. Operators must be proficient and able to distinguish between normal and abnormal operation.

Assembly, installation, adjustment, or repair is to be performed only by persons authorized by the facility Medical Director or by Fresenius USA, Inc. Fresenius Medical Care 99 Gallon Dissolution Unit GranuFlo® II and Dry Acid spare parts manual, PN 460009, Field Service Bulletins, and other documentation are located on the internet at <http://www.fmcna.com>.

Only Original Equipment Manufacturer (*OEM*) Fresenius Medical Care parts should be used in the repair or upgrade of the Fresenius Medical Care GranuFlo® II or Dry Acid Dissolution Unit. Although, parts may look similar to parts in various vendor catalogs or brick and mortar stores the GranuFlo® II or Dry Acid Dissolution Unit uses parts that have been specified and tested in accordance to *ANSI/AAMI/ISO* guidelines. The use of non-*OEM* parts will void your warranty and may cause patient harm.

For further information regarding the operation, repair, parts, or maintenance of the Fresenius Medical Care 99 Gallon GranuFlo® II or Dry Acid Dissolution Unit, please contact:

Fresenius USA, Inc.
4040 Nelson Avenue
Concord, CA 94520

(800) 227-2572

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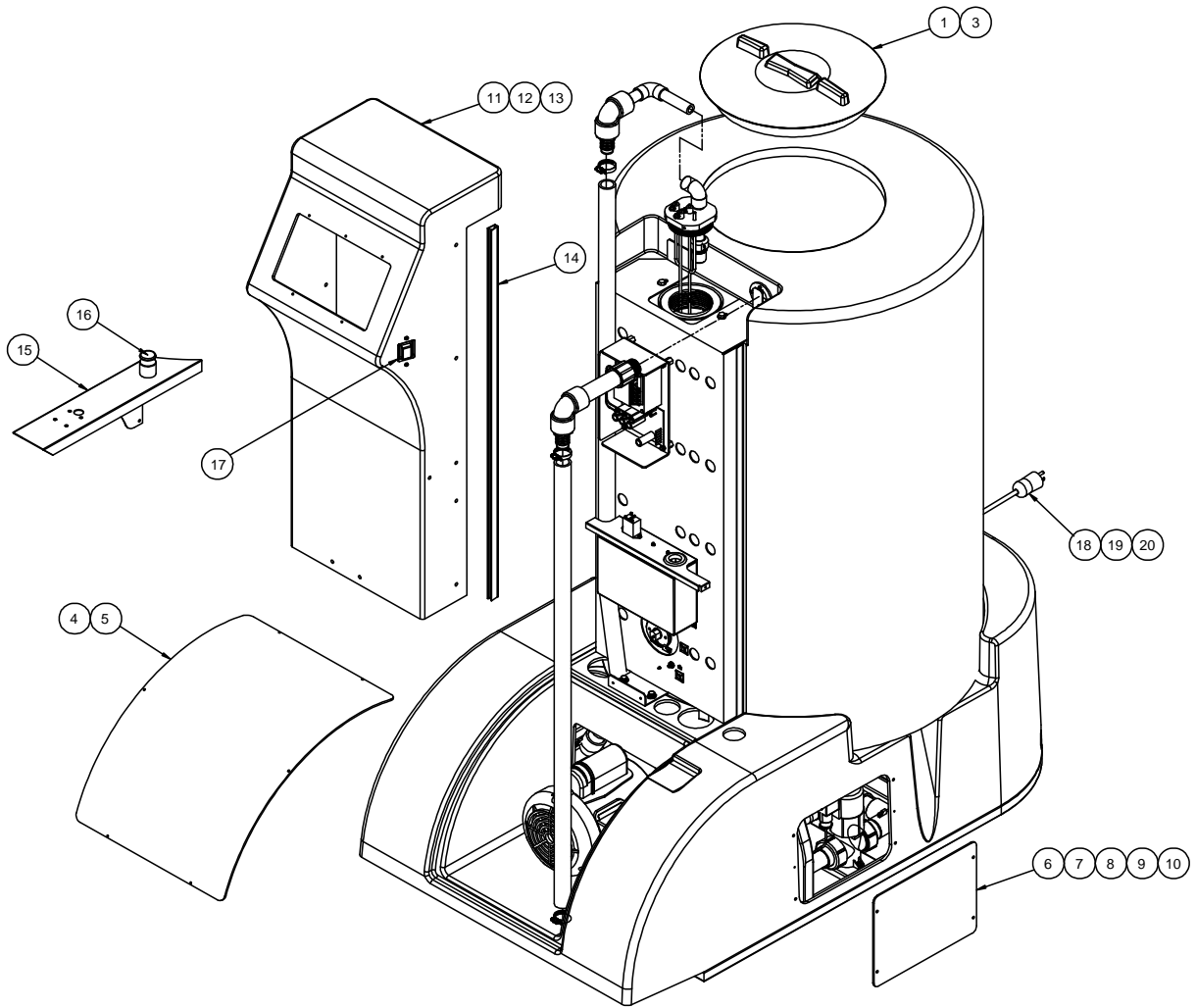
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STATEMENT: MINIMUM TESTABLE ASSEMBLIES

Some assemblies in the 99 Gallon Dissolution Unit - GranuFlo II and Dry Acid, can only be sold complete. These assemblies are 100% tested and are assigned an identification number by Fresenius Medical Care North America Quality Control. These "Minimum Testable Assemblies" are:

<u>PART NUMBER</u>	<u>DESCRIPTION</u>
160002	CONTROL BOARD ASSEMBLY
160018	DRAIN VALVE ASSEMBLY
160024	DIN CONNECTOR ASSEMBLY
160027	PUMP DRY SENSOR
160029	TANK OVERFLOW ASSEMBLY
160091	SPINNER ASSEMBLY
160034	25 GALLON SENSOR
160036	SPRAY NOZZLE ASSEMBLY
160037	TRANSFORMER ASSEMBLY
160039	POWER BOARD ASSEMBLY
160045	PUMP ASSEMBLY
160059	STANDPIPE ASSEMBLY
160060	SYSTEM CABLE HARNESS (GranuFlo II Unit)
160151	SYSTEM CABLE HARNESS (DRY ACID Unit)
160064	SOLENOID VALVE ASSEMBLY
160090	MID LEVEL SENSOR
160125	FILL VALVE ASSEMBLY



1.0 CABINET

SEQ.	PART NUMBER	DESCRIPTION
1	337002-10	TANK LID CAP/COVER & RING
3	G26-256	SCREW, PHILLIPS, #8 X 1/2", SS (FOR TANK LID RING)*
4	260029	FRONT ACCESS PANEL
5	330935-05-02	SCREW PAN HD PH 6 X 5/16 TYP B*
6	260046	SIDE ACCESS PANEL (LEFT & RIGHT)
7	330918-07-02	SCREW, 10-32X5/8", SS, THREAD FORMING*
8	330620-10-01	WASHER, OVERSIZED, NO. 10, S.S*
9	335136-01	DOUBLE SIDED TAPE*
10	260015	ACCESS PANEL MOUNTING PLATE*
11	260026	VERTICAL COVER
12	330918-07-02	SCREW, 10-32X5/8", SS, THREAD FORMING
13	330620-10-01	WASHER, OVERSIZED, NO. 10, S.S
14	368345-03	TRIM, 5/16" X 21/32", PVC VINYL
15	260030	FILTER SUPPORT
16	260059	TRANSFER HOSE SUPPORT
17A	363029-05	POWER SWITCH
17B	363029-09	DUAL BREAKER POWER SWITCH, UL (FOR DRY ACID)
18	160098	POWER CORD
19	368016-07	STRAIN RELIEF, HEYCO 3213, LTF 11*
20	260057	STRAIN RELIEF PLATE*
21	337019-10	LEVELER, 3/8-16, 2" LONG, NON-SKID, SS*

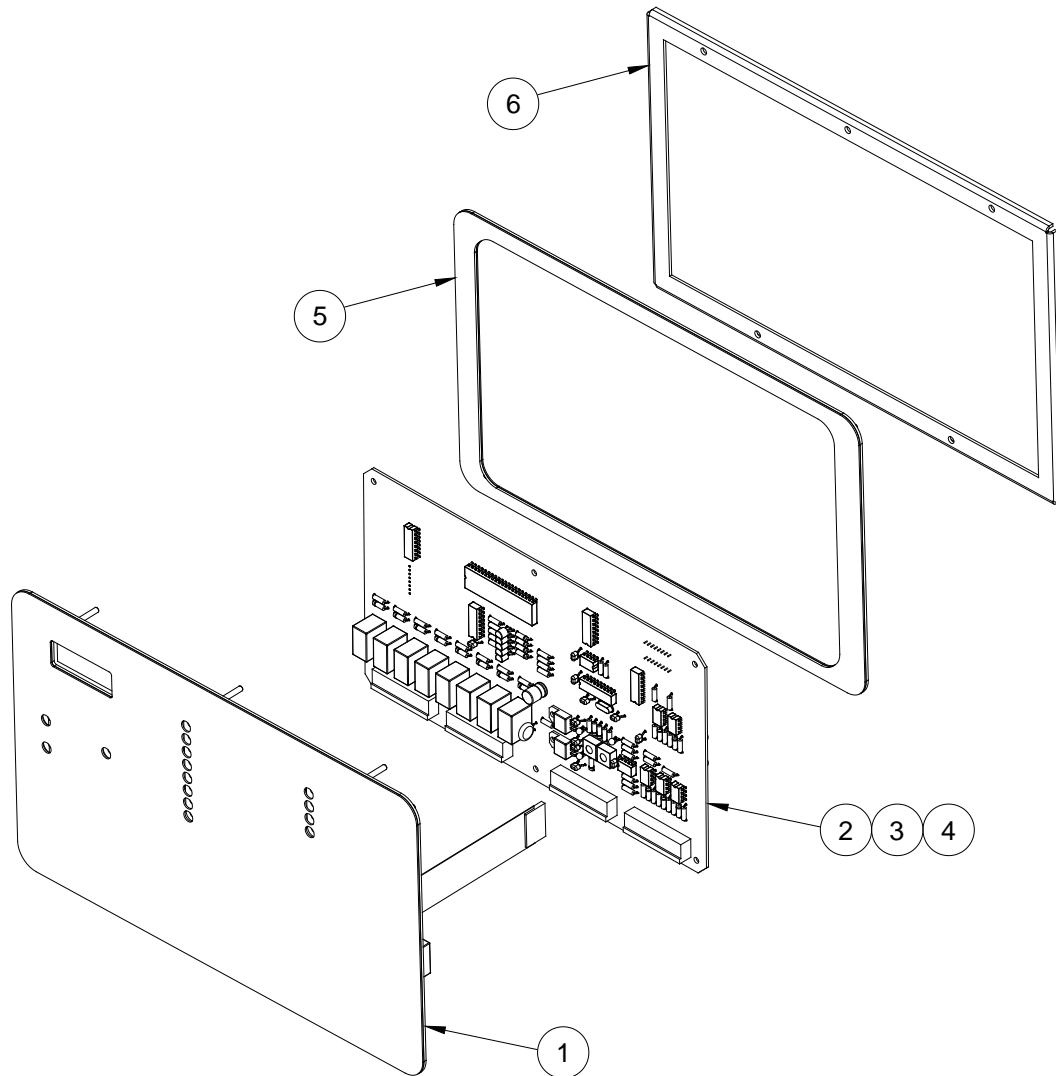
2.0 LABELS

SEQ.	PART NUMBER	DESCRIPTION
1	450014	MANUFACTURER LABEL, GranuFlo II DISSOLUTION UNIT*
2	460014	MANUFACTURER LABEL, DRY ACID DISSOLUTION UNIT*
3	450019	CAUTION LABEL *
4	450353	WARNING LABEL, GranuFlo II DISSOLUTION UNIT*
5	460016	WARNING LABEL, DRY ACID DISSOLUTION UNIT*
6	450354	FILTER LABEL, DISSOLUTION TANK*

* ITEM NOT ILLUSTRATED

3.0 KEYPAD AND CONTROLLER

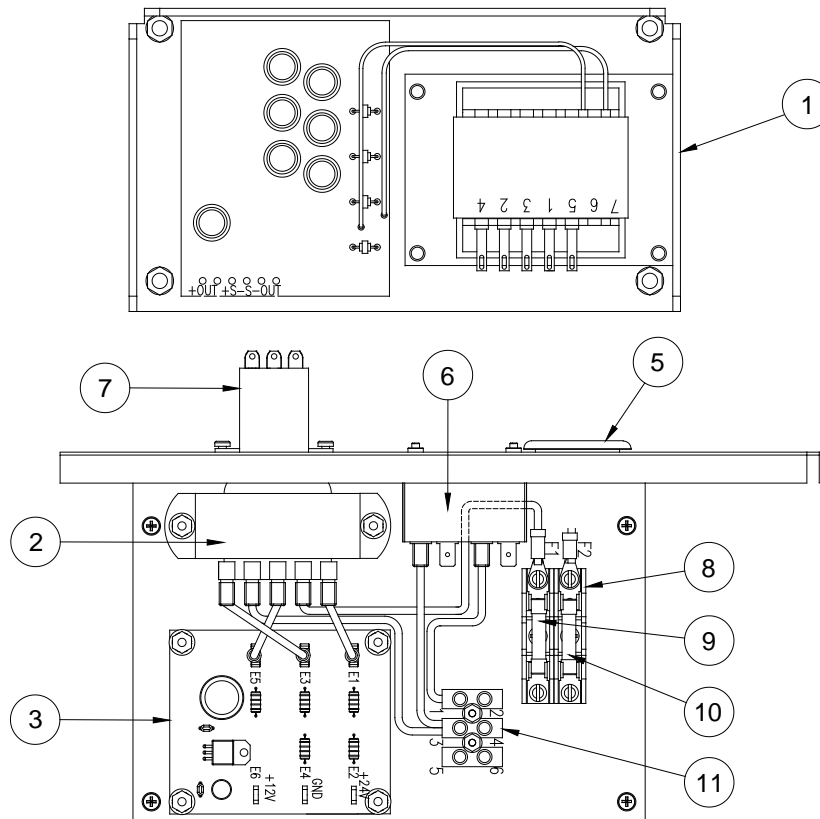
SEQ.	PART NUMBER	DESCRIPTION
1	160001	KEYPAD, SWITCH PANEL, GranuFlo® II
1B	160135	KEYPAD, SWITCH PANEL, DRY ACID 99 GALLONS
2	160002	CONTROL BOARD ASSEMBLY
3	336086-06	NYLON SPACER (USED BEHIND CONTROL BOARD)*
4	160010	CPU, PROGRAMMED*
5	260056	FRONT PANEL GASKET
6	260019	BACK BRACE



* ITEM NOT ILLUSTRATED

4.0 POWER

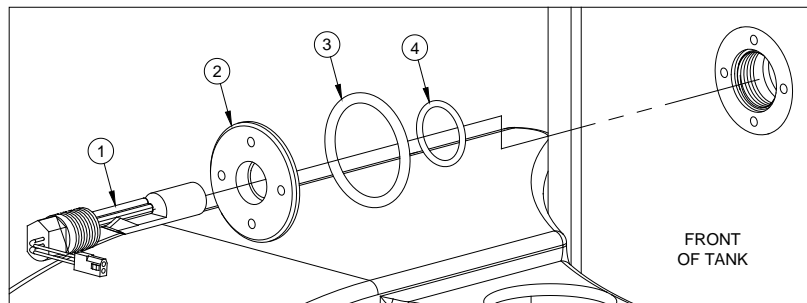
SEQ.	PART NUMBER	DESCRIPTION
1	365037-02	POWER SUPPLY, 24V, 4.8A
2	160037	TRANSFORMER ASSEMBLY
3	160039	POWER BOARD ASSEMBLY
4	260034	POWER COVER*
5	368046-05	GROMMET, 1" ID, 1-3/4" OD
6	361017-09	PUMP RELAY, 30 AMP, 24VDC
7	361017-03	DRAIN RELAY, 24VDC
8	G15-027	FUSE HOLDER, 30A, 250V
9	367020-02	FUSE,SLO BLO,3AG, 2A,1/4X1-1/4
10	367020-05	FUSE,SLO BLO,3AG, 3A,1/4X1-1/4
11	368167-01	BARRIER STRIP TYPE 10E/3DS
12	160024	DIN CONNECTOR ASSEMBLY*



* ITEM NOT ILLUSTRATED

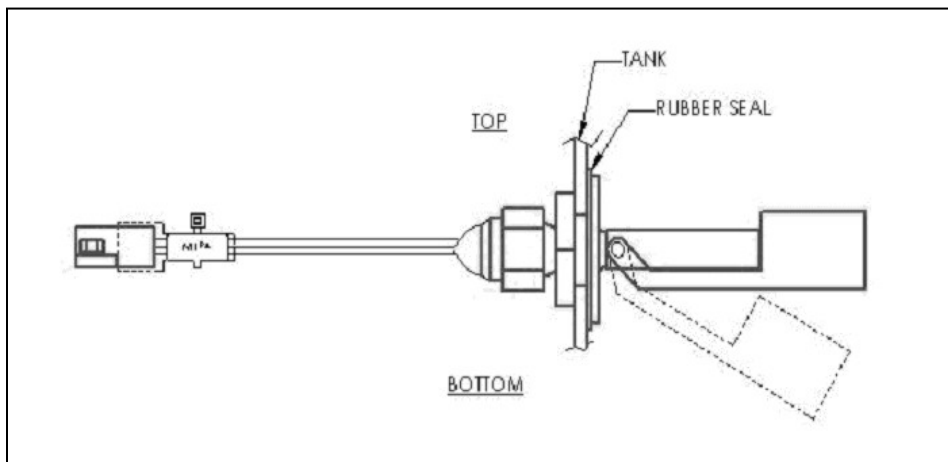
5.0 25 GALLON SENSOR

SEQ.	PART NUMBER	DESCRIPTION
1	160034	25 GALLON SENSOR
2	260001	REDUCER, BUSHING MALE THREAD
3	334021-03	O-RING, BUNA, 70 DURO, 1-3/8" OD
4	334021-06	O-RING, BUNA, 70 DURO, 2-3/8" OD



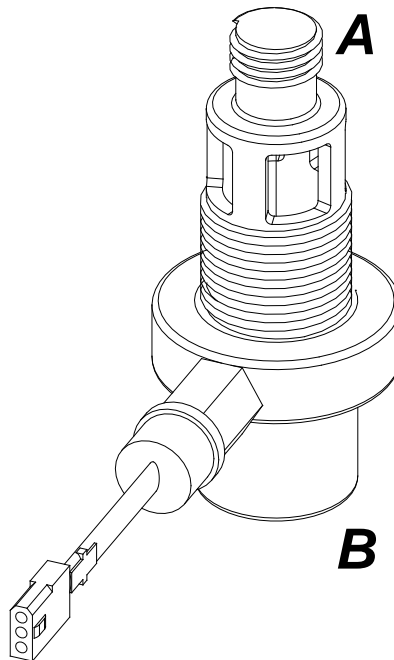
6.0 MID LEVEL SENSOR

SEQ.	PART NUMBER	DESCRIPTION
1	160090	MID LEVEL SENSOR



7.0 PUMP DRY SENSOR

SEQ.	PART NUMBER	DESCRIPTION
1	160027	PUMP DRY SENSOR – (SEE NOTE)
2	332062-09	ELBOW, 1", 90 DEG, SOC X FIPT, PVC*†
3	332107-05	ADAPTOR, 1" MIPT X 1" HOSE, PVC*††



NOTE: ITEMS 2/3 REQUIRED WHEN REPLACING SENSOR

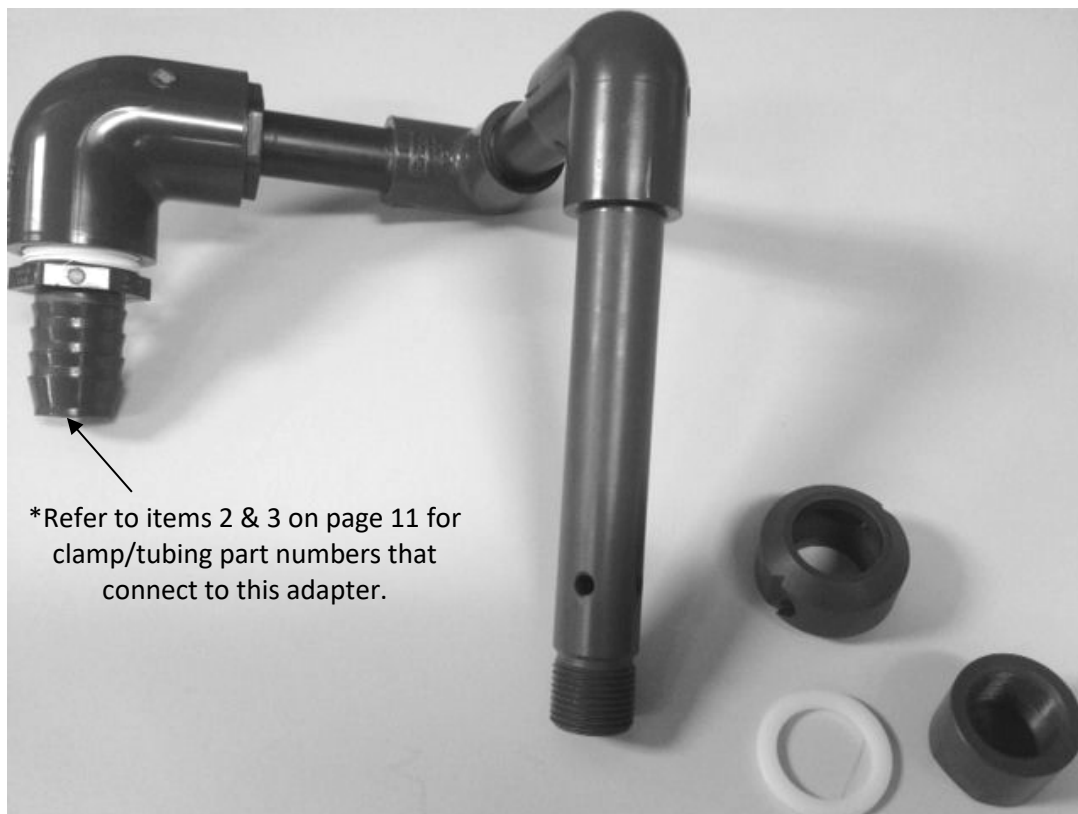
† CONNECTED TO TANK DRAIN SENSOR (PART B)

†† CONNECTED TO ELBOW (ITEM 2)

* ITEM NOT ILLUSTRATED

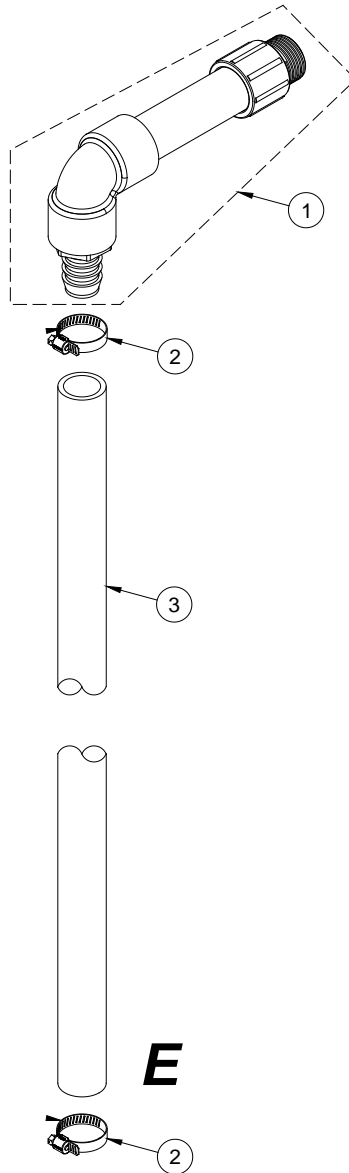
8.0 SPINNER ASSEMBLY

SEQ.	PART NUMBER	DESCRIPTION
	160091	SPINNER ASSEMBLY REPLACEMENT KIT



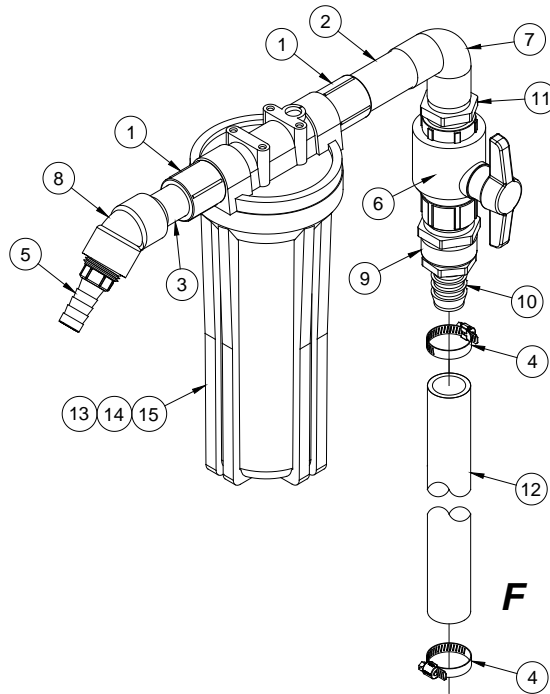
9.0 TANK OVERFLOW RISER

SEQ.	PART NUMBER	DESCRIPTION
1	160029	TANK OVERFLOW RISER ASSEMBLY
2	336124-04	HOSE CLAMP, SS, 1-1/4
3	336018-11	TUBING, 1" ID X 1.29" OD, REINFORCED (SPECIFY LENGTH)



10.0 HYDRAULICS – FILTER ASSEMBLY

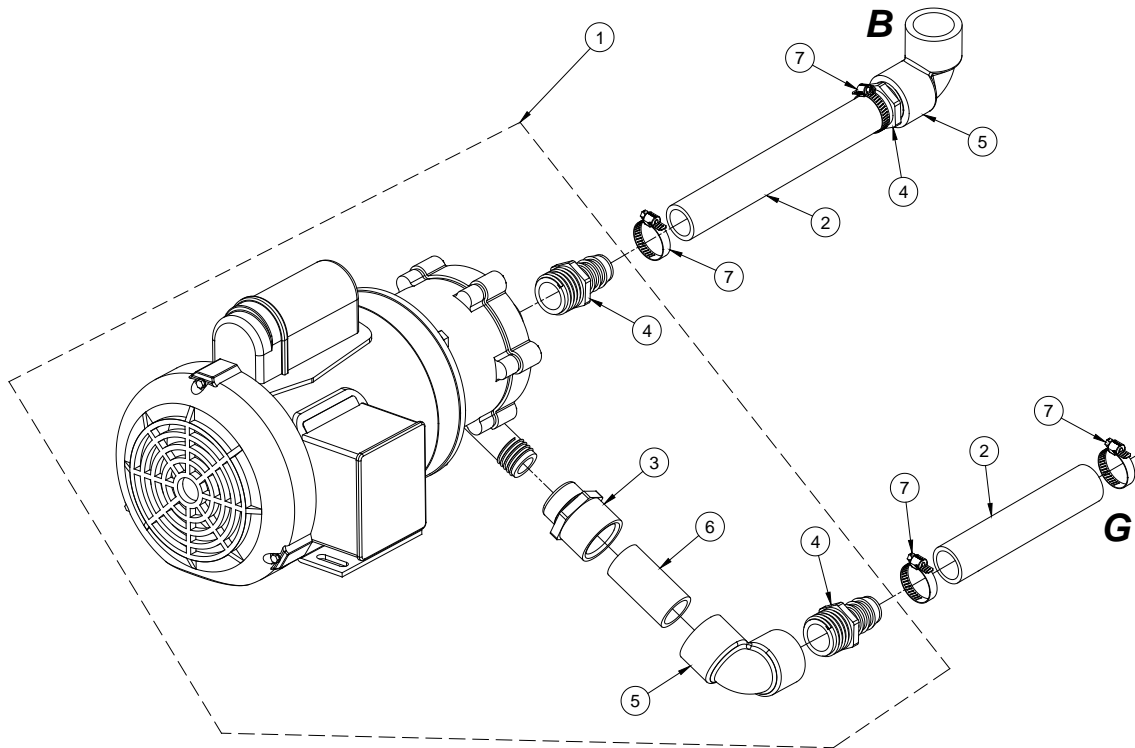
SEQ.	PART NUMBER	DESCRIPTION
1	G30-001	ADAPTER, MALE, 3/4"
2	G30-035	PIPE, PVC, 3/4" (SPECIFY LENGTH)
3	G30-045	NIPPLE, 3/4 X 6" (MUST BE CUT IN HALF)
4	336124-04	HOSE CLAMP, SS, 1-1/4
5	G84-001-64	NIPPLE, PLASTIC HOSE
6	332045-05	VALVE, BALL, 1" SOC, PVC
7	332062-02	ELBOW, 90 DEG. 3/4" SKT, PVC
8	332062-04	ELBOW, 45 DEG. 3/4" FIPT, PVC
9	332062-12	ADAPTOR, 1", SPIGXFIPT, PVC 80
10	332107-05	ADAPTOR, 1" MIPT X 1" HOSE,PVC
11	332142-02	BUSHING,REDUCING,1"X3/4",SxS
12	336018-11	TUBING, 1" ID X 1.29" OD, REINFORCED (SPECIFY LENGTH)
13	336104-02	FILTER HOUSING, 10", 3/4" NPT
14	336104-02-01	O-RING,FILTER HOUSING*
15	G84-202-12	FILTER CARTRIDGE, 1 MICRON*

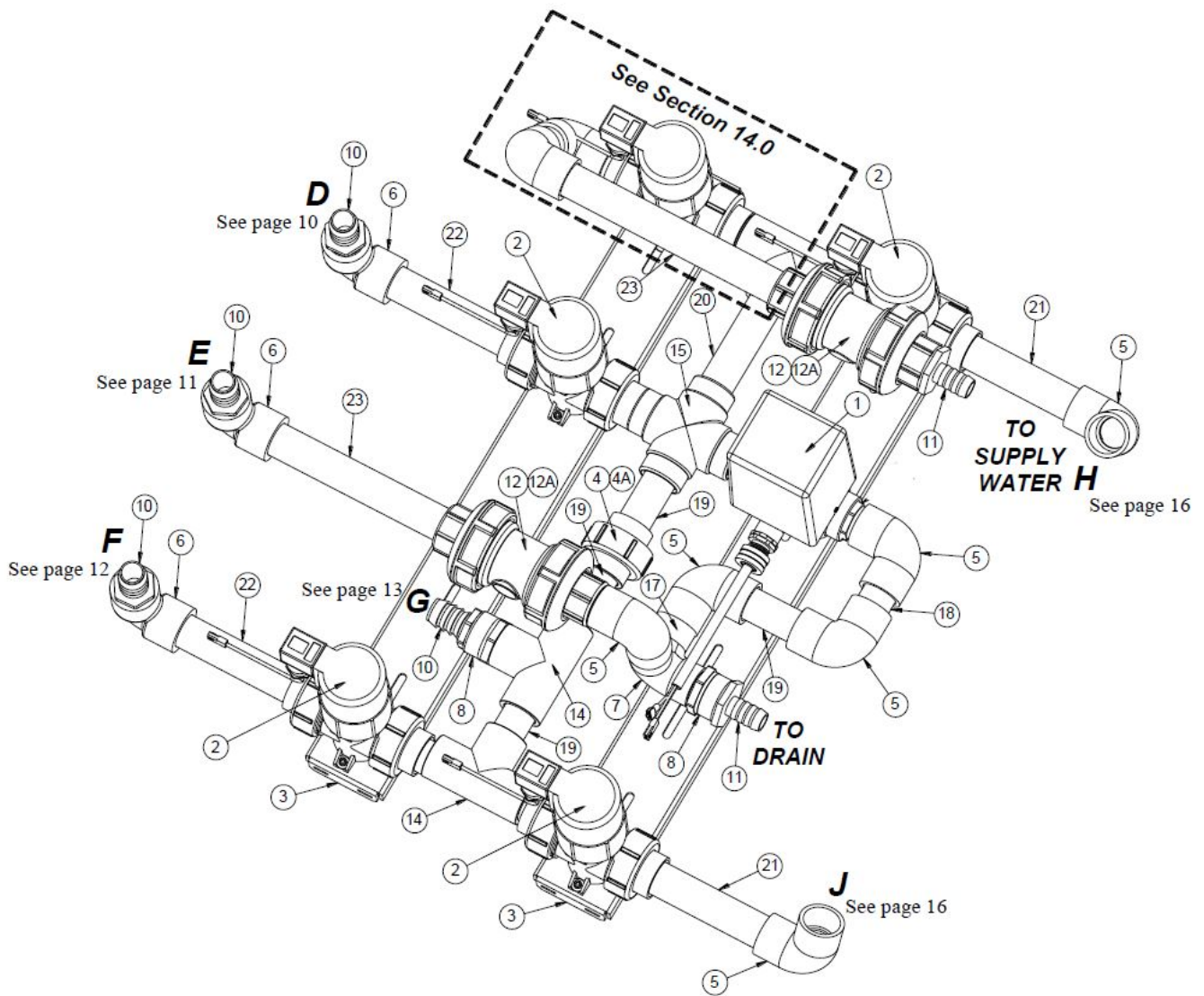


* ITEM NOT ILLUSTRATED

11.0 HYDRAULICS – PUMP ASSEMBLY

SEQ.	PART NUMBER	DESCRIPTION
1	160045	PUMP ASSEMBLY
2	336018-11	TUBING, 1" ID X 1.29" OD, REINFORCED (SPECIFY LENGTH)
3	332107-08	ADAPTOR, REDUCING PVC FEMALE, 1"X3/4"
4	332107-05	ADAPTOR, 1" MIPT X 1" HOSE,PVC
5	332062-09	ELBOW, 1", 90 DEG, SOC X FIPT, PVC
6	332018-025	PIPE, 1" X 2.5" LONG, PVC, SCH 80
7	336124-04	HOSE CLAMP, SS, 1-1/4





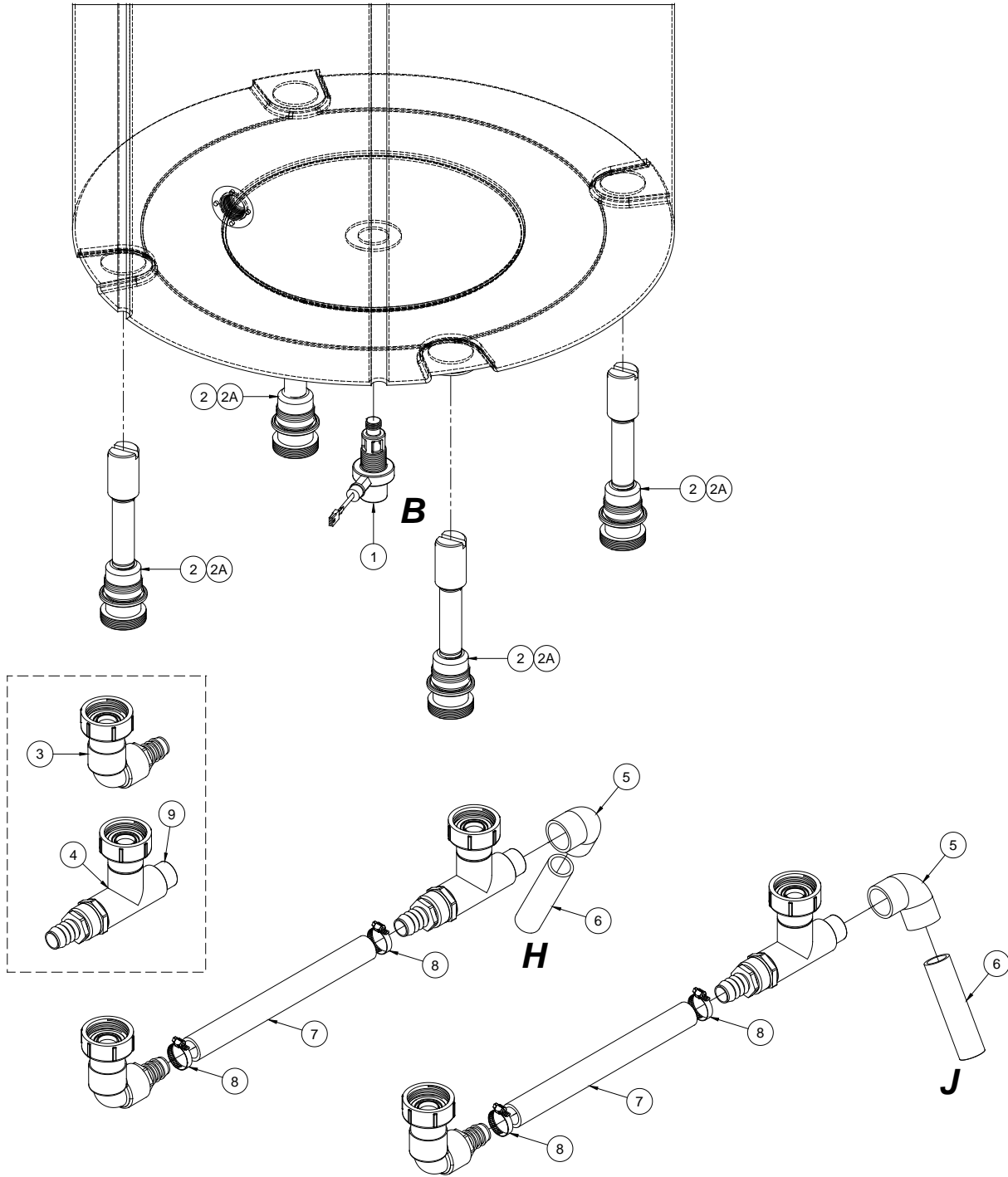
HYDRAULICS – VALVES, ELBOWS, PIPES AND FITTINGS

NOTE: USE ITEM 16 FOR ALL CONNECTING PIPES WHERE NO PIPE IS VISIBLE BETWEEN THE FITTINGS.

12.0 HYDRAULICS – VALVES, ELBOWS, PIPES AND FITTINGS

SEQ.	PART NUMBER	DESCRIPTION
1	160018	DRAIN VALVE ASSEMBLY
2	160064	SOLENOID VALVE ASSEMBLY (Cylindrical Shape)
3	260051	VALVE BRACKET
4	332007-02	UNION, 1" SOC, PVC 80
4A	334021-09	O-RING, UNION SLIP JOINT*
5	332062-03	ELBOW, 90 DEG. 1" SOCKET, PVC
6	332062-09	ELBOW, 1", 90 DEG, SOC X FIPT, PVC
7	332062-10	ELBOW, 1", SIDE SOC, PVC 40
8	332062-12	ADAPTOR, 1", SPIGXFIPT, PVC 80
10	332107-05	ADAPTOR, 1" MIPT X 1" HOSE,PVC
11	332107-07	ADAPTOR, 1" MIPT X 3/4" HOSE, PVC
12	332133-12	CHECK VALVE, TRUE UNION, 1" PVC
12A	334021-10	O-RING, CHECK VALVE SLIP JOINT*
13	G84-001-62	CHECK VALVE, TRUE UNION, 3/4"*
14	332136-04	TEE, 1" SOCKET, PVC-80
15	332163-01	CROSS, 1" SOC, PVC 80
16	332018-020	PIPE, 1" X 2" LONG, PVC-80*
17	332018-025	PIPE, 1" X 2.5" LONG, PVC-80
18	332018-030	PIPE, 1" X 3" LONG, PVC-80
19	332018-040	PIPE, 1" X 4" LONG, PVC-80
20	332018-050	PIPE, 1" X 5" LONG, PVC-80
21	332018-060	PIPE, 1" X 6" LONG, PVC-80
22	332018-080	PIPE, 1" X 8" LONG, PVC-80
23	332018-110	PIPE, 1" X 11" LONG, PVC-80

* ITEM NOT ILLUSTRATED



HYDRAULICS – SENSOR, NOZZLES, PIPES AND TUBING

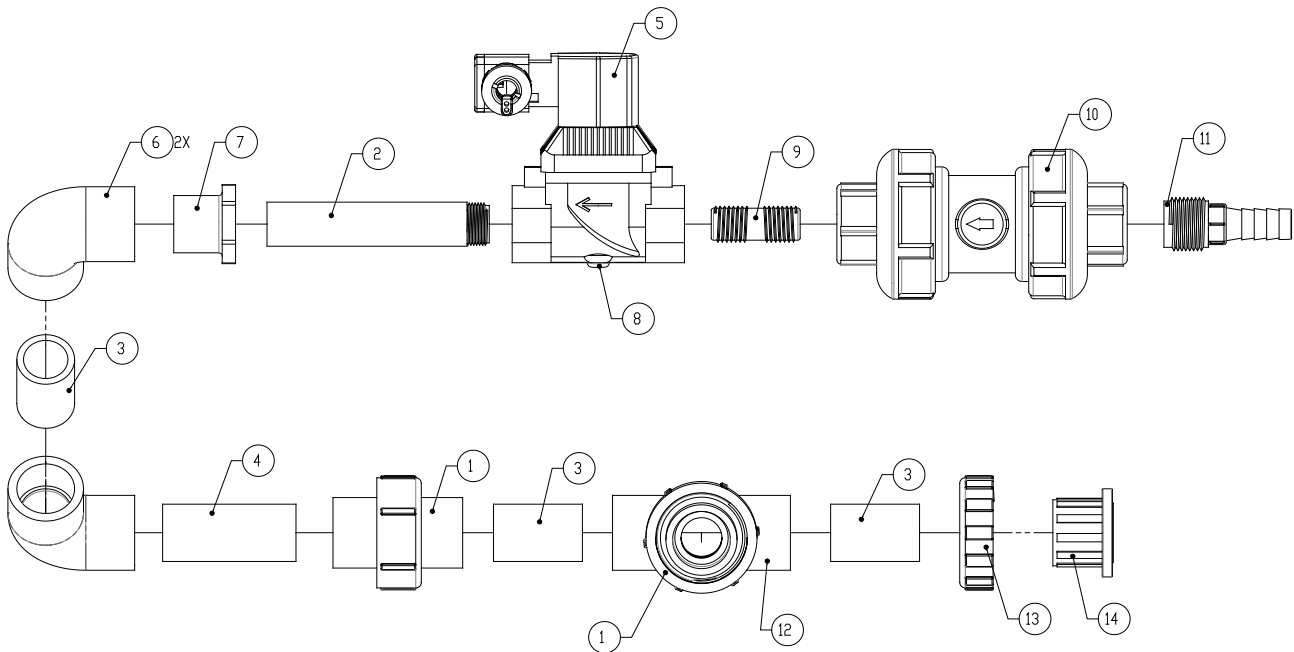
NOTE: USE ITEM 9 FOR ALL CONNECTING PIPES WHERE NO PIPE IS VISABLE BETWEEN THE FITTINGS.

13.0 HYDRAULICS – SENSOR, NOZZLES, PIPES AND TUBING

SEQ.	PART NUMBER	DESCRIPTION
1	160027	PUMP DRY SENSOR
2	160036	SPRAY NOZZLE ASSY
2A	334021-05	O-RING, BUNA, 70 DURO, 1-7/8" OD
3	160042	NOZZLE SUB ASSY-A
4	160063	NOZZLE SUB ASSY-B (INCLUDES ITEM 9)
5	332062-03	ELBOW, 90 DEG. 1" SOCKET, PVC
6	332018-040	PIPE, 1" X 4.0" LONG, PVC, SCH 80
7	336018-11	TUBING, 1" ID X 1.29" OD, REINFORCED (SPECIFY LENGTH)
8	336124-04	HOSE CLAMP, SS, 1-1/4
9	332018-020	PIPE, 1" X 2" LONG, PVC-80

14.0 HYDRAULICS - FILL VALVE ASSEMBLY

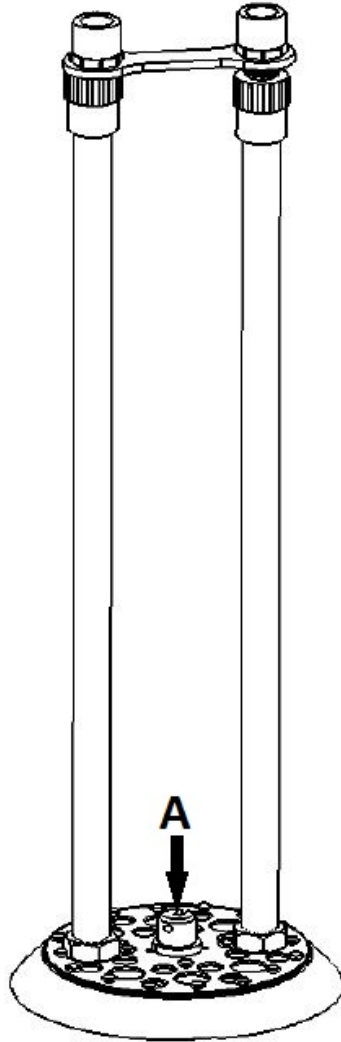
SEQ.	PART NUMBER	DESCRIPTION
	160125	GranuFlo II FILL VALVE UPGRADE KIT - (SEE NOTE) (INCLUDES ITEMS 1-14 AND INSTALLATION INSTRUCTIONS)
1	332007-02	UNION, 1" SOC, PVC 80
2	332011-050	TOE NIPPLE, 3/4", 5" LONG, PVC-80
3	332018-020	PIPE 1", 2" LG, PVC-80
4	332018-030	PIPE, 1" X 3" LONG, PVC, SCH 80
5	160064-01	FILL VALVE
6	332062-03	ELBOW, 90 DEGREE 1" SOCKET, PVC
7	332142-02	BUSHING, REDUCING, 1" X 3/4"
8	335038-04	BUMPER, ADHESIVE BACKED 0.5 DIAMETER
9	332137-13	NIPPLE, 3/4" X 2" LG, THREADED, PVC 80
10	G84-001-62	CHECK VALVE, TRUE UNION
11	G84-001-64	NIPPLE, PLASTIC HOSE
12	332136-04	TEE, 1" SOCKET, PVC-80
13	332045-06-02	VALVE UNION NUT, PVC 80
14	332045-06-01	VALVE, END CONNECTOR, 1", SOC, PVC 80



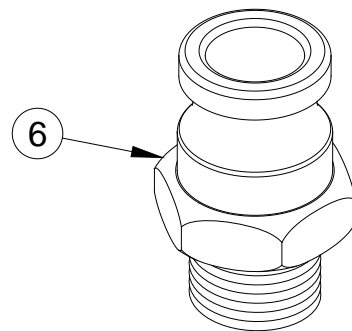
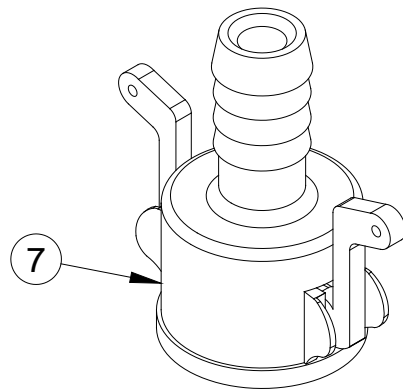
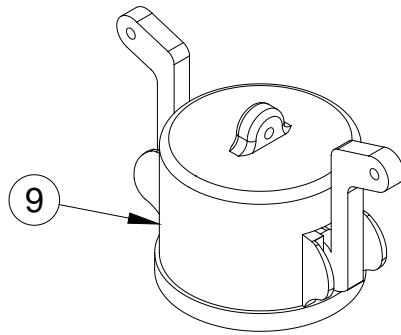
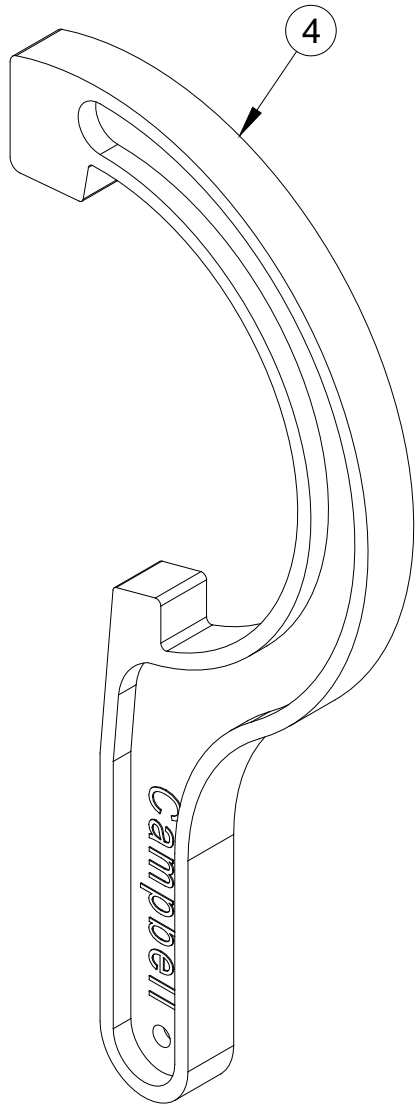
NOTE: CONSULT TECHNICAL SERVICES FOR ANY ADDITIONAL CLARIFICATION

15.0 STANDPIPE

SEQ.	PART NUMBER	DESCRIPTION
	160059	STANDPIPE ASSEMBLY
	260025	BASE FILTER ROD (FOR STANDPIPE ASSEMBLY)*



* ITEM NOT ILLUSTRATED



16.0 99 GALLON DISSOLUTION UNIT, SET UP KIT

SEQ.	PART NUMBER	DESCRIPTION
	160144	DRY ACID 99 DISSOLUTION UNIT, SET UP KIT‡

SETUP KIT INCLUDES THE FOLLOWING:

1	460017	DRY ACID DISSOLUTION UNIT OPERATOR'S MANUAL**
2	G79-000-26	JAR, HYDROMETER, 500 ML*
3	G83-535-02	BOTTLE, PRODUCT SAMPLE (qty 2)*
4	G84-001-43	WRENCH, FILTER HOUSING
5	G84-001-55	HOSE CLAMP, 9/16" TO 1-1/16" DIA. ALL SS (qty 6)*
6	332107-10	ADAPTER, MALE F, 3/4" (qty 2)
7	G84-001-57	COUPLER, 3/4" HOSE SHANK
8	G84-001-60	HYDROMETER - (RANGE 1.000 – 1.220) (qty 2)*
9	332107-10-01	CAP, DUST, 3/4" POLYPRO
10	G84-202-12	FILTER CARTRIDGE, 1 MICRON (qty 2)*
11	G97-283-08	DISSOLUTION TANK, NOZZLE ASSY.*
12	368171-02	RECEPTACLE, DUPLEX GFCI 120V 20A*
13	508754	DRY ACID BATCH ANALYSIS FORM*†
14	G84-001-58	HOSE, 3/4" FOOD GRADE (qty 420")*
15	260025	BASE FILTER ROD*
16	337019-10	LEVELER, 3/8-16, 2" LONG, NON-SKID, SS (qty 4)*

‡ USED FOR ALL 99 GALLON DISSOLUTION UNITS

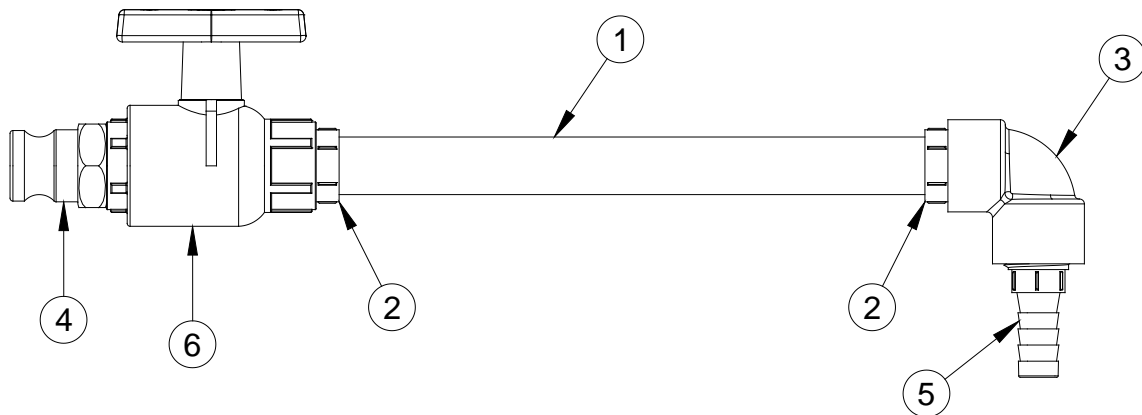
† CONTACT TECHNICAL SERVICES FOR AVAILABILITY

* ITEM NOT ILLUSTRATED

** AVAILABLE ONLINE AT WWW.FMCNA.COM

17.0 TRANSFER NOZZLE

SEQ.	PART NUMBER	DESCRIPTION
	G97-283-08	TRANSFER NOZZLE ASSEMBLY
1	G30-035	PIPE, PVC, 3/4" (SPECIFY LENGTH)
2	G30-001	ADAPTER, MALE, 3/4"
3	G30-044	ELBOW, 90 DEGREE, 3/4"
4	332107-10	ADAPTER, MALE F, 3/4"
5	G84-001-64	NIPPLE, PLASTIC HOSE
6	G84-001-69	BALL VALVE, STANDARD, 3/4"



Fresenius Medical Care North America

Manufactured by:
Fresenius USA, Inc.
4040 Nelson Avenue
Concord, CA 94520
800 227-2572

<http://www.fmcna.com>