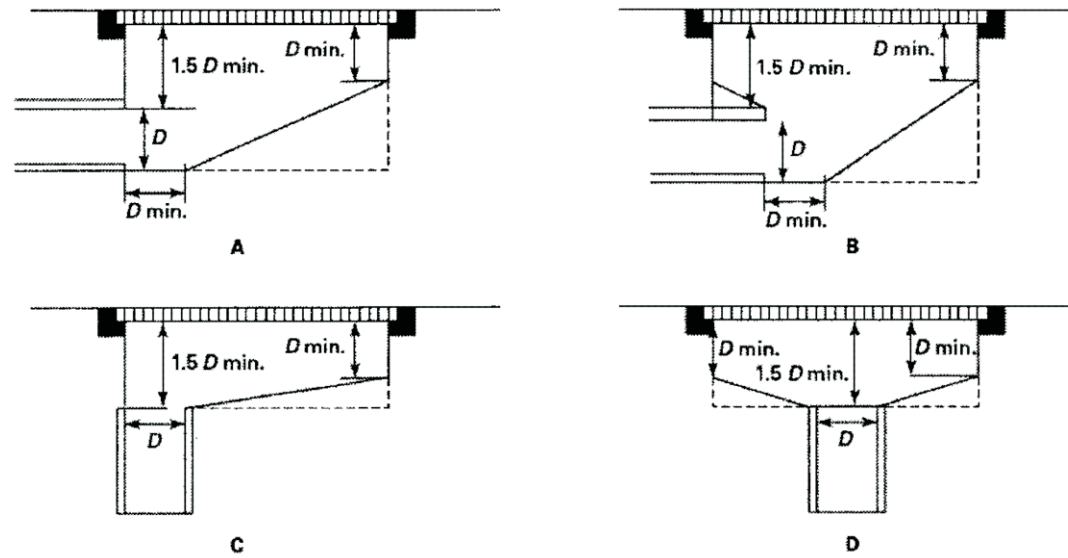


Field built sumps must be built in accordance with the following:



GENERAL NOTES:

- (a) D= inside pipe diameter.
- (b) All dimensions shown are minimums.
- (c) A broken line (-----) indicates suggested sump configuration.

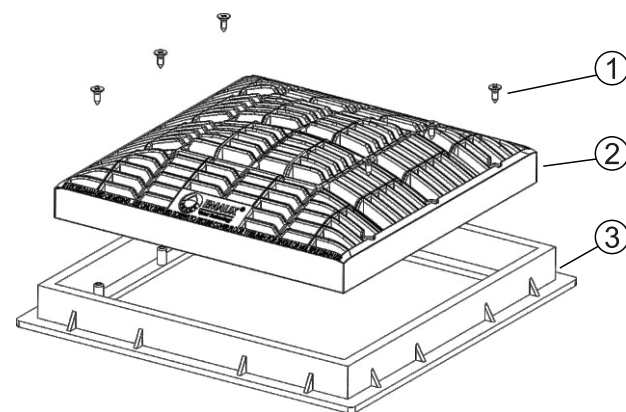
REPLACEMENT PARTS

EM2813

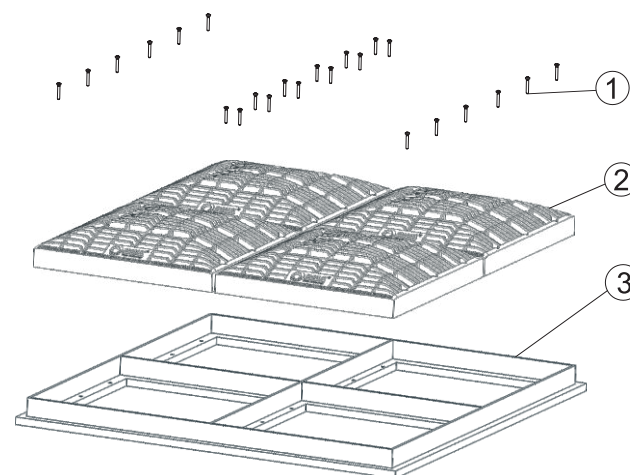
Item No.	Part No.	Description	Qty
1	03011341	M4X16 Screw	6
2	01050060	Lid	1
3	01051175	Base	1

EM2816

Item No.	Part No.	Description	Qty
1	03011161	M4X25 Screw	24
2	01050060	Lid	4
3	03018166	Component Frame	1



EM2813

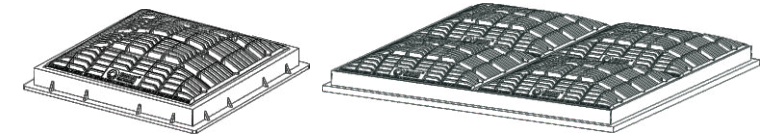


EM2816

MAIN DRAIN OPERATING MANUAL

Models: EM2813 / EM2816

DUAL SUBMERGED SUCTION OUTLET SET



Basic safety precautions should always be followed, including the following: Failure to follow instructions can cause severe injury and/or death. Read, then keep these instructions for future reference

⚠ This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ **WARNING** warns about hazards that could cause serious personal injury, death or major property damage and if ignored presents a potential hazard.

⚠ **CAUTION** warns about hazards that will or can cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.



⚠ **WARNING** Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death.

IMPORTANT SAFETY INSTRUCTIONS

⚠ **WARNING – Suction Entrapment Hazard**

Suction in suction outlets and/or suction outlet covers which are damaged, broken, cracked, missing, or unsecured can cause severe injury or death due to the following entrapment hazards:



Hair Entrapment - Hair becomes knotted or snagged in an outlet cover.



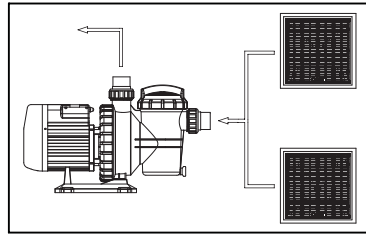
Limb Entrapment - A limb sucked or inserted into an opening of a circulation outlet with a broken or missing cover in the pool resulting in a mechanical bind or swelling



Body Suction Entrapment - Suction applied to a large portion of the body or limbs resulting in an entrapment.



Mechanical Entrapment - Potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of an outlet or cover.



- A minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of three feet (3') [0.91 meter] apart, as measured from one suction center to another suction center. (See Diagram 1. If suction outlets are to be located closer than three feet (3') [1.0 meter] apart, they shall be located in different planes (i.e., one on the bottom, and one on the vertical wall, or one on each of two separate vertical walls.) (See Diagram 2)

- Dual suction fittings shall be placed in such locations and distances to avoid "dual blockage" by a user.
- Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- The maximum system flow rate shall not exceed the maximum allowable flow rate stated on the suction fitting (per ANSI/APSP-16 2011)
- Keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material.
- Never use a Pool or Spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- Prior to each use of the swimming pool and/or spa, observe and replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- Remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets.
- Two or more suction outlets per pump should be installed in accordance with latest APSP Standards and CPSC guidelines. Follow all National, State, and Local codes applicable.
- Multiple layers of protection are available including installation of a vent pipe system, a gravity flow system, or a vacuum release system.
- Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every seven years or if found to be damaged, broken, cracked, missing, or not securely attached.
- Do not exceed maximum flow rate stated on suction fitting.
- Only replace a pump with one with a similar flow curve, avoid a pump with a higher horsepower rating.
- To reduce the risk of body entrapment, installation of the field fabricated sumps must be such that the top of the mounted EM2813 cover as Diagram 3.

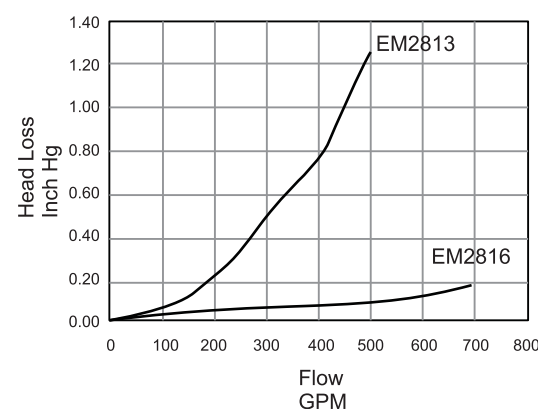
RECOMMENDED SYSTEM SPECIFICATIONS

ACCEPTABLE PIPE SIZE FOR MAXIMUM RECOMMENDED SYSTEM FLOW RATE PER APSP-7 (6 FT/SEC IN THE BRANCH LINE)

Pipe Size	Flow rate	Pipe Size	Flow rate
[mm]	GPM [Liter/Min]	[mm]	GPM [Liter/Min]
2 1/2"	90	4"	238
[75]	[340]	[100]	[900]
3"	138	6"	540
[90]	[522]	[90]	[2040]

CHART 1

LOW VELOCITY SUCTION OUTLET COVERS



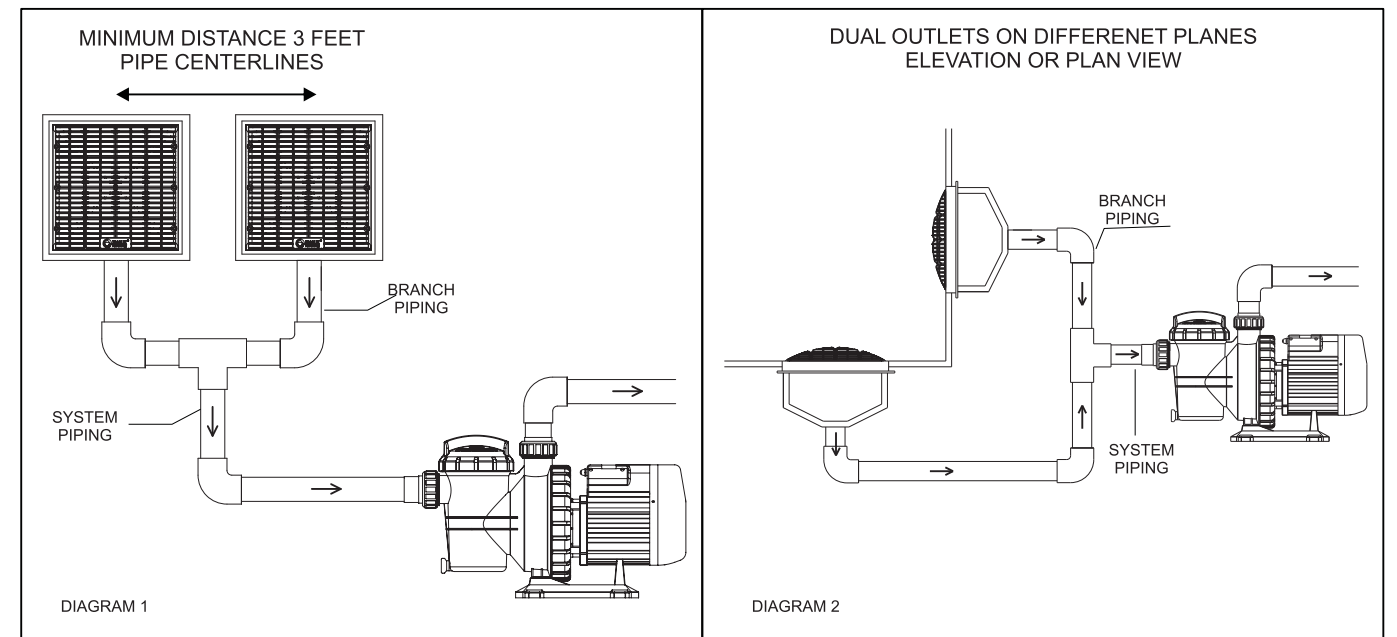
Cautionary: increasing flow by increasing pump size

EM2813 Suction Outlet Cover is rated for 150 GPM Wall Mounted or 238 GPM Floor Mounted for single or multiple suction outlet use. In the event of one suction outlet being blocked, the remaining suction outlets serving that system shall have a flow rating capable of the full flow of the pump(s) for the specific suction system.

Example: In the System shown in **Diagram 1**, two EM2813 suction outlet covers are selected and mounted on the floor. These covers

are individually rated for 238 GPM. For a desired flow rate through the pump of 120 GPM, a minimum pipe size from the **Chart 1** is selected at 3". At the desired flow of 120 GPM one cover could be partially blocked and the other suction outlet flow would be below the rated 238 GPM of the "Floor" mounted suction outlet cover. Since there are two outlets flowing in normal operation, and the allowable velocity in the interconnecting piping is only 3ft/sec, the same pipe size is required in the interconnecting piping.

Example: In the System shown in **Diagram 2**, one (1) EM2813 suction outlet cover mounted in the floor, rated at 238 GPM, and one (1) EM2813 suction outlet cover mounted on the wall, rated at 150 GPM. For a desired flow rate through the pump of 100 GPM, a minimum pipe size from the **Chart 1** is selected at 3". At the desired flow of 100 GPM either cover could be totally blocked and the other suction outlet flow would be below the rated 150 GPM of the wall mounted suction outlet cover. Note: Flow may be limited by entrapping force in dual suction systems.



DUAL SUCTION OUTLET SET

INSTALLATION INSTRUCTIONS: - Use a #2 Philips head Screwdriver.

NOTICE: When installing EM2813 refer to ANSI/APSP-16 2011 for the proper instructions on how to construct the field-fabricated sump. See Illustration on Page 3-4

Warning - Suction Entrapment Hazard.

Suction in suction outlets and/or suction outlet covers which are installed in a small area and/or below the surrounding surface can cause severe injury or death due to body entrapment hazard. To reduce the risk of body entrapment, installation of the field fabricated sumps must be such that the top of the mounted cover as Diagram 3. above the finished pool surface over an area larger than 40" on a diagonal.

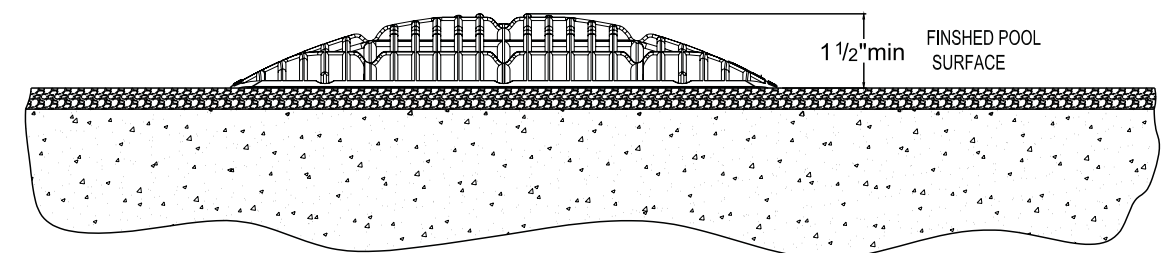


DIAGRAM 3