

J. SPECIFICATIONS: PADDOCK ASME A112.19.8-2007 / 8A.2008 COMPLIANT AND NSF CERTIFIED SWIMMING POOL SUCTION OUTLET FITTINGS

- J.01 The *Swimming Pool Suction Outlet Fittings* shall be a velocity, vacuum entrapment, hair entanglement **ANTI-VORTEX REDUCTION DEVICE (AVRD)** which has been submitted under ASME A112.19.8-2007 / 8A.2008 for testing by NSF and found to be in compliance with this standard.
- J.02 The **SUCTION OUTLET FITTING**, both cover/grate and sump, shall be fabricated from 304 stainless steel. The outlet and outlet piping assembly shall be fabricated with stainless steel piping and designed so that the top of the suction outlet is a minimum distance of 1 ½ times the size of the pipe diameter, below the cover/grate.
- J.03 The open area of the suction outlet assembly shall be equal to or exceeds the open area of the outlet pipe of the suction outlet fitting.
- J.04 All grating fasteners in the assembly shall be 316L stainless steel Pan Head Phillips fasteners. All exposed security fasteners shall be inserted or removed with #2 Phillips Screwdriver with a maximum torque of 19.8 inch pounds. All fasteners shall be engaged by a minimum of three (3) threads.
- J.05 The velocity of water entering any orifice on the cover/grate of the fitting during normal operation shall not exceed 1.5 feet per second. To prevent finger or toe entrapment, orifice openings in the cover/grate shall not be over ¼ inch in width.
- J.06 The sumps must be designed by a registered professional engineer in accordance with mandatory Appendix II of ASME A112.19.8-2007 / 8A.2008.
- J.07 Definition of registered design professional – registered design professional shall be a certified architect or professional engineer duly licensed in the state the drain cover is installed.

Patents: Paddock has patents pending on the product(s) which it manufactures depicted in this document.

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THIS SUCTION OUTLET FITTING IS DESIGNED FOR MULTIPLE USE ONLY

Installation Instructions for Paddock Pool Equipment Multiple Use *Suction Outlet Fittings*

Model # 2020PCDC, 2424PCDC, 2020PCGO (2040PCGO), 2424PCFC, 2448PCFC,
1414ESMD, 1818ESMD, 2040ESMD, 2448ESMD

WARNING! Install this equipment in accordance with the instructions provided. FAILURE TO FOLLOW INSTRUCTION AND/OR USE WITH COMPONENTS NOT PROVIDED BY PADDOCK AND INTENDED TO BE USED WITH THIS PRODUCT MAY RESULT IN IMPROPER POSITIONING OR FUNCTIONING OF SUCTION OUTLET AND MAY CAUSE SEVERE PERSONAL INJURY OR DEATH.

CAUTION LABEL: REMOVE AND INSTALL SCREWS WITH SCREWDRIVER. DO NOT USE POWER TOOLS WHICH WILL OVER TORQUE AND CAUSE THE SCREWS TO BREAK OR STRIP. REMOVE LABEL BEFORE INSTALLATION.

NOTE: PLATE ALIGNMENT IS CRUCIAL. IF NOT PROPERLY ALIGNED, HOLES WILL NOT MATCH. MARK PLATE LOCATION ON FRAME TO MATCH FOR REINSTALLATION LATER.

READ AND STORE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

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Paddock Suction Outlet Fittings are certified by NSF when used in conjunction with the certified Paddock stainless steel sumps when installed per ASME A112.19.8-2007 / 8A.2008.

Paddock Suction Outlet Fittings shall not be installed in seating or backrest areas. There shall be no less than a 3 foot separation between suction fittings installed on a common line.

Suction Outlet Fittings shall always be selected so that if one fitting is completely blocked the balance can be handled by remaining drain/drains within their approved maximum flow.

These fittings are only designed for multiple fitting applications. Using a single Paddock suction fitting is prohibited. It will be non-compliant per NSF certification and ASME A112.19.8-2007 / 8A.2008.

When using these fittings, a Registered Design Professional must be used to develop a design insuring proper application of this product. Design must comply with the NSF certification and all Health Department, Building, State and Federal codes. The recommended maximum velocity across the grate is 1.5 fps.

Paddock's Certified Drain Cover/Grates have passed all required tests for body entrapment and hair entanglement. They have been approved to the maximum flow as shown on the suction outlet fittings flow rate chart on the next page.

Paddock Suction Outlet Fittings Flow Rates

Qty	Suction Outlet P/N & Model #	Mounting Position	Total Open Area	Recommended Flow	Maximum Flow per NSF
_____	Model #1414ESMD-DC 1414ESMD (Sump) 6" connection with 2020PCDC (Raised Cover)	Floor Only	122.15 sq. inches	574 GPM @ 1.5 fps	1200 GPM
_____	Model #1818ESMD-DC 1818ESMD (Sump) 8" connection with 2424PCDC (Raised Cover)	Floor or Wall Use	186.60 sq. inches	874 GPM @ 1.5 fps	1420 GPM
_____	Model #1818ESMD-FC 1818ESMD (sump) 8" connection with 2424PCFC (Flat Cover)	Floor or Wall Use	212.89 sq. inches	915 GPM @ 1.37 fps	915 GPM
_____	Model #2040ESMD-FC 2040ESMD (Sump) 10" connection with 2040PCGO (Flat Cover)	Floor or Wall Use	244.28 sq. inches	1145 GPM @ 1.5 fps	1960 GPM
_____	Model #2448ESMD-FC 2448ESMD (Sump) 12" connection with 2448PCFC (Flat Cover)	Floor Use Wall Use	425.78 sq. inches 425.78 sq. inches	1996 GPM @ 1.5 fps 1996 GPM @ 1.5 fps	3500 GPM 3000 GPM

CAUTIONARY NOTE: Do not exceed maximum allowable flow rate as stated above.

CAUTIONARY NOTE: If pump needs to be changed, a replacement must be the same as the original pump. If a different pump is required, a Registered Design Professional must be contracted to assure original flow rate is not exceeded.

2020PCDC Head Loss Data

Flow Rate (GPM)	300	600	900	1200
Total Head Loss (PSI)	0.00	0.00	0.25	0.49

2424PCDC Head Loss Data

Flow Rate (GPM)	357	715	1072	1430
Total Head Loss (PSI)	0.00	0.00	0.15	0.20

2424PCFC Head Loss Data

Flow Rate (GPM)	229	458	686	915
Total Head Loss (PSI)	0.10	0.20	0.10	0.10

2 X 2020PCGO (2040ESMD) Head Loss Data

Flow Rate (GPM)	500	1000	1500	2000
Total Head Loss (PSI)	0.00	0.25	0.37	0.49

2 X 2424PCFC or 2448PCFC Head Loss Data

Flow Rate (GPM)	875	1750	2625	3500
Total Head Loss (PSI)	<0.10	<0.10	<0.10	0.10



The **winterization procedure** is to inspect drain(s) for cracks and damages. Replace grate if damaged. Also, inspect screws and make sure grate is secure. Replace any missing screws.

Life spans of parts are as follows:

- 1414ESMD, 1818ESMD, 2040ESMD and 2448ESMD Stainless Steel Sump Box and their components are permanently mounted in the pool shell and will not require replacement. This includes all integral parts, #1 thru #19 as listed on ESMD Parts List Breakdown. 20404ESMD Stainless Steel Sump Box and their components are permanently mounted in the pool shell and will not require replacement. This includes all integral parts, #1 thru #24 as listed on ESMD Parts List Breakdown.
- 2020PCDC, 2424PCDC, 2040PCGO, 2424PCFC and 2448PCFC assembly parts life are listed on PCDC / PCFC Parts List Breakdowns. Frames will be permanently mounted and grates will be removable with proper tools. The grate will have a 10 (ten) year life. Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.

Suction fitting including fasteners should be observed for damage or tampering before each use.

Missing, broken or cracked suction fittings shall be replaced before each use of the facility.

Loose suction fittings shall be reattached or replaced before each use of the facility.

Paddock stainless steel cover/grates can be used on field fabricated outlets, new or retro fit, when designed by a Project Registered Design Professional according to mandatory Appendix II of ASME A112.19.8-2007 / 8A.2008. The specifications by a Registered Design Professional will fully address considerations of cover/grate loading, durability, hair, finger, limb and body entrapment issues, cover/grate secondary layer of protection, related to sump design, as well as features particular to the site including but not limited to sump size, sump depth, maximum flow rate, suction pipe size, number of drains, velocity across cover/grate, suction pipe velocity, water depth and distance between drains.

All exposed fasteners on Paddock Main Drain Cover/Grate require a Phillip #2 Screwdriver for insertion and removal. Maximum torque is 19.8 inch pounds. A Screwdriver is supplied with the unit.

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PARTS LIST BREAKDOWN FOR THE MAIN DRAINS

ESMD = Entrapment Safe Main Drain
 PCDC = Paddock Certified Drain Cover
 PCGO = Paddock Certified Grate Only
 PCFC = Paddock Certified Flat Cover

1414ESMD w/2020PCDC

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Sump 14" X 14" X 18" 12 Gauge 304 Low Carbon Stainless Steel	Permanent
2	No Leak Flange 1" X 14 3/16" 12 Gauge 304 Low Carbon SS	Permanent
3	No Leak Flange 1" X 16 3/16" 12 Gauge 304 Low Carbon SS	Permanent
4	No Leak Flange 2" X 14 3/16" 12 Gauge 304 Low Carbon SS	Permanent
5	No Leak Flange 2" X 18 3/16" 12 Gauge 304 Low Carbon SS	Permanent
6	Spool, 6" Sch 10 304 Low Carbon SS Pipe X 6 3/32" LG F/F	Permanent
7	AVRD, 6" Sch 10 304 Low Carbon SS Pipe X 11 15/16" LG F/E	Permanent
8	Flanges 6" X 11" X 1/2" 304 Low Carbon SS	Permanent
9	2" SA182F304 1000# SS Coupling	Permanent
10	2" PVC Hydrostatic Relief Valve Assembly	Permanent
11	SS 3/4-10 X 1" LG SS Hex Bolts	Permanent
12	6" X 11" X 1/8" Full Face Neoprene Gasket	Permanent
13	1/4-20 X 3/4" LG Bronze Round Head Slotted Grounding Screw	Permanent
14	1/4-20 Bronze Flatwasher	Permanent
16	Endplate 12 Gauge 304 Low Carbon SS	Permanent
17	#2020 PCDC Assembly	See 2020 Parts List
18	5/16" – 18 X 1/2" LG SS Hex Head Screw	Permanent
19	5/16"-18 SS Capnut	Permanent

PARTS LIST BREAKDOWN FOR THE MAIN DRAINS

1818ESMD w/ 2424PCDC or 2424PCFC

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Sump 18" X 18" X 18" 12 Gauge 304 Low Carbon Stainless Steel	Permanent
2	No Leak Flange 1" X 18 3/16" 12 Gauge 304 Low Carbon SS	Permanent
3	No Leak Flange 1" X 20 3/16" 12 Gauge 304 Low Carbon SS	Permanent
4	No Leak Flange 2" X 18 3/16" 12 Gauge 304 Low Carbon SS	Permanent
5	No Leak Flange 2" X 22 3/16" 12 Gauge 304 Low Carbon SS	Permanent
6	Spool, 8" Sch 10 304 Low Carbon SS Pipe X 9 1/8" LG F/F	Permanent
7	AVRD, 8" Sch 10 304 Low Carbon SS Pipe X 12 15/16" LG F/E	Permanent
8	Flanges 8" X 13 1/2" X 1/2" 304 Low Carbon SS	Permanent
9	2" SA182F304 1000# SS Coupling	Permanent
10	2" PVC Hydrostatic Relief Valve Assembly	Permanent
11	SS 3/4"-10 X 1" LG SS Hex Bolts	Permanent
12	8" X 13 1/2" X 1/8" Full Face Neoprene Gasket	Permanent
13	1/4"-20 X 3/4" LG Bronze Round Head Slotted Grounding Screw	Permanent
14	1/4"-20 Bronze Flatwasher	Permanent
16	Endplate 12 Gauge 304 Low Carbon SS	Permanent
17	#2424 PCDC or #2424 PCFC Assembly	See 2424 Parts List
18	5/16"-18 X 1/2" LG SS Hex Head Screw	Permanent
19	5/16"-18 SS Capnut	Permanent

PARTS LIST BREAKDOWN FOR THE MAIN DRAINS

2448ESMD w/2448PCFC

P/N	Part Description	Life Expectancy
1	Sump 20" X 44" X 26" 12 Gauge 304 Low Carbon Stainless Steel	Permanent
2	No Leak Flange 12 Gauge 304 Low Carbon SS	Permanent
3	No Leak Flange 12 Gauge 304 Low Carbon SS	Permanent
4	Spool, 12" Sch 10 304 Low Carbon Stainless Steel Pipe	Permanent
5	AVRD, 12" Sch 10 304 Low Carbon Stainless Steel Pipe	Permanent
6	Flanges 12" X 19" X ½" 304 Low Carbon Stainless Steel	Permanent
6A	Tapped Flange 12" X 19" X ½" 304 Low Carbon Stainless Steel	Permanent
7	2" SA182F304 1000# SS Coupling	Permanent
8	2" PVC Hydrostatic Relief Valve Assembly	Permanent
9	SS ⅞-9 X 1" LG SS Hex Bolts	Permanent
10	12" X 19" X ⅛" Full Face Neoprene Gasket	Permanent
11	¼-20 X ¾" LG Bronze Round Head Slotted Grounding Screw	Permanent
12	¼-20 Bronze Flatwasher	Permanent
13	Endplate 12 Gauge 304 Low Carbon Stainless Steel	Permanent
14	#2448PCFC Assembly	See 2448 Parts List
15	5/16"-18 X ½" LG SS Hex Head Screw	Permanent
16	5/16"-18 SS Capnut	Permanent

18 Extra Screws and #2 Phillip Screwdriver Included w/the Shipment

* Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.

PARTS LIST BREAKDOWN FOR THE MAIN DRAINS

2040ESMD w/SS Grate

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Sump 20" X 40" X 24" 12 Gauge 304 Low Carbon SS	Permanent
2	No Leak Flange 2" X 24 3/16" 12 Gauge 304 Low Carbon SS	Permanent
3	No Leak Flange 2" X 40 3/16" 12 Gauge 304 Low Carbon SS	Permanent
4	Spool 10" Sch 10 304 Low Carbon SS Pipe X 9 1/8" LG F/F	Permanent
5	AVRD 10" Sch 10 304 Low Carbon SS Pipe X 34 7/8" LG F/E	Permanent
6	Flanges 10" X 16" X 1/2" 304 Low Carbon SS	Permanent
7	Removable Channel 1" X 1 1/2" X 1" X 20" LG 304 Low Carbon SS	Permanent
8	Support Angle 7/8" X 7/8" X 1/8" X 19 29/32" LG 304 Low Carbon SS	Permanent
9	Support Angle 7/8" X 7/8" X 1/8" X 8 13/32" LG 304 Low Carbon SS	Permanent
10	Support Angle 7/8" X 7/8" X 1/8" 8 7/32" LG 304 Low Carbon SS	Permanent
11	Bracket 1" X 1" X 1/8" Bracket 304 Low Carbon SS	Permanent
12	1/4-20 X 1/2" Hex HD 316L SS	Permanent
13	1/4-20 Acorn Nut 316L SS	Permanent
14	1/4 Lock Washer 316L SS	Permanent
15	8-32 X 1/2" Pan Head Phillips #2 316L SS (Torque Rating 19.8 inch lbs.)	7 Years
16	2" SA182F304 1000# SS Coupling	Permanent
17	2" PVC Hydrostatic Relief Valve Assembly	Permanent
18	SS 7/8-9 X 1" LG SS Hex Bolts	Permanent
19	10" X 16" X 1/4" Full Face Neoprene Gasket	Permanent
20	1/4-20 X 3/4" LG Bronze Round Head Slotted Grounding Screw	Permanent
21	1/4-20 Bronze Flatwasher	Permanent
23	Endplate 12 Gauge 304 Low Carbon SS	Permanent
24	Grates 19 7/8" X 19 7/8" 12 Gauge 304 Low Carbon SS (2020PCGO)	10 Years *

18 Extra Screws and #2 Phillip Screwdriver Included w/the Shipment

* Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.

PARTS LIST BREAKDOWN FOR THE MAIN DRAINS

2020PCDC

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Frame 20 ¼" X 20 ¼" X 12 Gauge X 1 ⅞" High 304 Low Carbon SS	Permanent
2	Removable Channel 1" X 1 ½" X 1" X 16 1/16" LG 304 Low Carbon SS	Permanent
3	Grates 15 ¾" X 15 ¾" 12 Gauge 304 Low Carbon SS	10 Years *
4	8-32 X ½" Pan Head Phillips #2 316L SS (Torque Rating 19.8 inch lbs.)	7 Years

9 Extra Screws and #2 Phillip Screwdriver Included w/the Shipment

* Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.

2424PCDC

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Frame 24 ¼" X 24 ¼" X 12 Gauge X 1 ⅞" High 304 Low Carbon SS	Permanent
2	Removable Channel 1" X 1 ½" X 1" X 20 1/16" LG 304 Low Carbon SS	Permanent
3	Grates 19 ⅞" X 19 ⅞" 12 Gauge 304 Low Carbon SS	10 Years *
4	8-32 X ½" Pan Head Phillips #2 316L SS (Torque Rating 19.8 inch lbs.)	7 Years

9 Extra Screws and #2 Phillip Screwdriver Included w/the Shipment

* Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.

2424PCFC

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Frame 24 7/16" X 24 7/16" X 12 Gauge X 1 ½" High 304 Low Carbon SS	Permanent
2	Removable Cross Member 1 5/16" X 23 5/8" X 1/8" 304 Low Carbon SS	Permanent
3	Grates 23 ⅞" X 23 ⅞" X 12 Gauge 304 Low Carbon SS	10 Years *
4	Support Angle ⅝" X ⅝" X 24 X 12 Gauge 304 Low Carbon SS	Permanent
5	Support Angle ⅝" X ⅝" X 22 ¾" X 12 Gauge 304 Low Carbon SS	Permanent
6	Spacers 1" X 1 ¾" X 12 Gauge	Permanent
7	Spacers ½" X 1 ¾" X 12 Gauge	Permanent
8	8-32 X ½" Pan Head Phillips #2 316L SS (Torque Rating 19.8 inch lbs.)	7 Years

9 Extra Screws and #2 Phillip Screwdriver Included w/the Shipment

* Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.

PARTS LIST BREAKDOWN FOR THE MAIN DRAINS

2448PCFC

<u>P/N</u>	<u>Part Description</u>	<u>Life Expectancy</u>
1	Frame 24 11/16" X 48 3/4" X 1 1/2" X 12 Gauge 304 Low Carbon SS	Permanent
2	Removable Channel 1 5/32" X 2 1/4" X 23 5/8" X 1/8" 12GA 304 Low Carbon SS	Permanent
3	Fixed Channel 1 5/32" X 3 7/16" X 23 5/8" X 12 GA 304 Low Carbon SS	Permanent
4	Grates 23 7/8" X 23 7/8" X 12 GA 304 Low Carbon SS	10 Years *
5	8-32 X 1/2" Pan Head Phillips #2 316L SS (Torque Rating 19.8 inch lbs.)	7 Years

18 Extra Screws and #2 Phillip Screwdriver Included w/the Shipment

* Cover/Grate should be removed and inspected each year after 10 years. Replace if damages are found.