



TEST REPORT

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Report Number: 1757-19024

Project Number: 33192

Report Issued: December 14th, 2019

Client: Schier Products
9500 Woodend Rd.
Edwardsville, KS 66111

Contact: Charlie Ismert

Source of Samples: Samples were manufactured at the client's facility in Edwardsville, KS. The sample was witnessed tested by Dale E. Holloway of IAPMO R&T Lab. Samples are manufactured in good condition.

Date of Testing: December 9th, 2019 through December 13th, 2019

Sample Description: HDPE Grease Interceptor.

Model: **GB-250 (100 gpm)**

Refer to the manufacturer's drawings and installation instructions for more detailed measurements and information.

Scope of Testing: The above grease interceptor was witnessed tested to meet the requirements of ASME A112.14.3-2018 "Hydromechanical Grease Interceptors", and CSA B481.0 and B481.1-12 "Grease Interceptors".

Conclusion: The **GB-250 (100 gpm) Grease Interceptor DID COMPLY** with the requirements of ASME A112.14.3-2018 "Hydromechanical Grease Interceptors" and CSA B481.0 and B481.1-12 "Grease Interceptors".

By the signature below, I certify that all the testing and preparation for this report was performed under direct supervision of IAPMO R&T Lab, unless otherwise stated.

Witness tested and reported by,

Dale E. Holloway, Regional Technical Manager
IAPMO R&T Lab

Primary Standards: ASME A112.14.3-2018

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Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

CSA B481.0 and B481.1-12

See IAPMO R&T Lab Test Report Number: 1757-18021-002

Test Results: All test and evaluations were conducted per the written procedures in the specific standards.

ASME A112.14.3-2018

2 General Requirements:

2.1 Rating: COMPLIES

The flow rate and grease retention capacity of each grease interceptor was determined by application of the parameter of this Standard.

The unit tested was a "Type D" - Units without an external flow control, indirectly connected.

2.2 Inlet and Outlet Connections: COMPLIES

Inlet and Outlet connections - Hubless coupling is compliant with ASTM A888

2.3 Flow Controls and/or Vents: NOT APPLICABLE

2.3.1 Flow control and Vents or air intakes were not used.

2.3.2 When a flow control and/or vent is used during testing for rating a grease interceptor, the rating of the unit did not exceed the maximum flow through the flow control.

The manufacturer's literature reflected that the rating was achieved with the flow control and vent attached, and that the flow control and vent was installed with the unit.

Testing

3.1 Construction of Test Equipment:

3.1.1 Test Sink: **COMPLIES**

Length - 8' (8 ft)
Width - 2' (2 ft)
Depth - 12.5" (12.5 inches)

Corrosion Resistant Material - stainless steel (yes)

Number of compartments - 2 (2)

Structurally reinforced - yes (yes)
Supported on legs - yes (yes)
Rim height with legs - 3' (3 ft)
Legs structurally supported - yes (yes)

3.1.1.1 Sink Waste Connections: **COMPLIES**

Each sink compartment was fitted with a 1-½" (up to 50 gpm) or 2" (greater than 50 gpm) standard sink waste connection with flange, crossbars, slip joint tailpiece, and locknut.

The waste connections were located on opposite sides of the center partition in the corner formed by the side of the sink and the center partition.

3.1.1.2 Water Level Gauges: **COMPLIES**

Each compartment was equipped with a gauge connection and a water level gauge with gauge glass.

Each gauge connection was fitted into the bottom of a sink compartment and in close proximity to the waste outlet.

Each gauge was mounted on the outside of the sink, adjacent to its respective gauge connection, and extended diagonally upward from the bottom center to the top outside corners.

The gauges were calibrated to read directly the number of inches of water in the sink compartments above the sink waste flange.

3.1.1.3 Movable Sink Partitions: **COMPLIES**

Each compartment of the sink was fitted with a movable partition, making it possible to regulate the size of the compartment to any desired capacity.

3.1.2 Skimming Tank: **COMPLIES**

The skimming tank was rectangular in shape and open at the top.

Tank Length - 12'

Tank Width - 36"

Tank Depth - 28"

Tank was made of corrosion resistant material - yes (yes)

Tank was structurally reinforced - yes (yes)

Waste outlet diameter - 4" (4 inches)

The waste outlet was connected to the bottom of the tank at one end and trapped to retain approximately 18 inches of water in the tank.

The tank provided a stationary baffle located approximately 4 ft. from the end of the tank receiving the discharge from the interceptor. This baffle extended the width of the tank and to within 4" of the bottom of the tank.

3.2 Installation of Testing Equipment:

3.2.1 Direct Connection Test Types A, B, and C: **NOT APPLICABLE**

3.2.2 Indirect Connection Test Type D:

Findings- The "GB-250" was a Type D unit.

3.2.2.1 Sink and Interceptor Locations: **COMPLIES**

The sink was located on the floor with the sink rim 3 ft above the floor level and 13 feet above the outside bottom of the grease interceptor being tested.

3.2.2.2 Floor Sink and Location: **COMPLIED**

A 6 in. deep floor sink to receive the indirect waste discharge from the test sink shall be located in the floor supporting the test sink. The rim of the floor sink shall be located at floor level. The outlet of the floor sink shall be sized to handle the test flow rate, and shall not be less than 3 in.

3.2.2.3 Skimming Tank Location: **COMPLIES**

The skimming tank was located low enough, with respect to the interceptor, for the discharge piping from the interceptor to clear the tank rim by not less than 3 inches.

3.2.2.4 Installation of Waste Piping: **COMPLIES**

- (a) *Sink Connections*- The sink outlet waste connection from each sink compartment was 1-½ inches in size and fitted with a quarter-turn ball quick-opening valve.
- (b) *Combined Horizontal Waste Piping*- The combined horizontal waste piping into which the sink outlets connect shall be 3", installed with the center line 11 inches below the bottom of the sink and properly hung and braced from the sink reinforcement and supports. The waste pipe shall connect to a single 3" valve that shall serve to regulate the total discharge flow rate. The pipe connected to the valve outlet shall turn downward 90 deg and shall terminate 1" above the rim and at the centerline of the floor sink.
- (c) *Floor Sink to Interceptor Piping*- A trap fitting shall be connected to the outlet of the floor sink, of a size appropriate for the flow rate tested, but not less than 3". Horizontal piping of the same size and 3 ft in length with a vent shall be connected between the floor sink elbow and the vertical waste riser, which shall extend downward to connect to the grease interceptor inlet by means of an elbow and a short horizontal nipple.

- (d) *Interceptor Discharge*- The discharge pipe from the grease interceptor outlet to the skimming tank shall be the same size as the inlet pipe. It shall have a minimum pitch of 1/8"/ft and shall be provided with a 2" vent properly located to prevent siphoning of the interceptor.
- (e) *Interceptor Inlet Connection*- If the inlet and or outlet connections of the interceptor are larger than the inlet pipe necessary to provide the required flow rate, reducing couplings shall be permitted to be used.

3.3 Preliminary Test Procedure:

3.3.1 Media Analysis: **COMPLIES**

pH of water - 6.4 (6.0 to 8.0)

Specific Gravity of Lard - 0.875 at 150°F (0.875 ± 0.005 at 150°F)

Viscosity in Seconds Saybolt Universal @ 150°F

3.3.2 Establishing Sink Compartment Capacity: **COMPLIES**

Capacity of compartment 1- 120 gallons (1.2 x flow rate of interceptor)

Capacity of compartment 2- 120 gallons (1.2 x flow rate of interceptor)

3.3.3 Establishing Vol. of Incremental Discharge: (based on 10" water above sink outlet): **COMPLIES**

Compartment 1 Discharge - 100 gallons (equal to flow rate of interceptor)

Compartment 2 Discharge - 100 gallons (equal to flow rate of interceptor)

3.3.4 Computation of Flow Rate: **FOLLOWED**

The flow rate from the sink was computed by timing the rate of drainage of the first 9 1/2" of water from the sink compartment, measured from the 10" mark to the datum line 1/2" above the sink outlet flange.

3.3.4.1 Check Flow Rate Tests: **COMPLIES**

Test number	Compartment	Time (sec)	gpm	Based on Time
1	1	76	75.0	-
2	1	75	76.0	-
3	1	109	52.3	-
			Avg: 67.8	
1	2	75	76.0	-
2	2	77	74.0	-
3	2	76	75.0	-
			Avg: 75.0	
1	1 & 2 simultaneous	109	104.6	Compartment 1
2	1 & 2 simultaneous	114	100.0	Compartment 1
3	1 & 2 simultaneous	111	102.7	Compartment 1
			Avg: 102.4	
1	1 & 2 simultaneous	109	104.6	Compartment 2
2	1 & 2 simultaneous	109	104.6	Compartment 2
3	1 & 2 simultaneous	110	103.6	Compartment 2
			Avg: 104.3	

For the above simultaneous flow rates, the time for total discharge shall be between 108.6 seconds and 114 seconds.

3.3.4.2 Calibrated Drainage Flow Rates: **COMPLIES**

Proposed flow rate of Interceptor being tested - 100 gpm.

The average of the above calibrated flow rates for simultaneous discharge was equal and didn't exceed by not more than 5% the proposed flow rated of the interceptor being tested.

Findings - 103.4 gpm average (105 gpm max.)

3.4 Rating Test Procedure: **FOLLOWED**

See Table 1 of test report for Rating Testing.

3.4.1 Test Media: **FOLLOWED**

Certification tests were conducted with fresh, unused lard and water as defined and both within a temperature range from 150°F to 160°F.

3.4.2 Ratio of Lard to Water: **FOLLOWED**

The test lard was introduced into one compartment, during each incremental discharge, in the ratio of 1 lb. of lard for each 5 gallons of water in that compartment. Consequently, the proportion of lard to the total amount of water discharged from both sink compartments during each increment was 1 lb. for each 10 gallons respectively. The required amount of test lard, within the above temperature range, was weighed out and poured into the test compartment of the sink.

Findings- 20 lbs per increment used.

3.4.3 Test Increments: **FOLLOWED**

Each test increment consisted of the simultaneous discharge of water from both sink compartments and the lard from the test compartment.

During the first test increment, the lard was poured into compartment 1 while compartment 2 discharged clear water. During the second test increment the lard was poured into compartment 2 while the water in compartment 1 remained clear.

3.4.4 Flow Rates: **FOLLOWED**

The drainage period for each increment was gauged and timed on the basis of the flow from the compartment containing the clear water. The flow rate from the sink was computed and recorded for each increment. (See Table 1 of test report).

3.4.5 Efficiency Determinations (Minimum Grease Capacity): **NOT USED**

At the option of the manufacturer the efficiency determination was conducted at the interceptors minimum grease capacity per Table 1 or at the interceptor's maximum grease capacity by determining the break down point.

3.4.6 Efficiency Determinations (Maximum Grease Capacity): **FOLLOWED**

The grease was removed from the skimming tank and the efficiency of the interceptor was computed at intervals of five increments or less until the average efficiency reached 93% or less and/or the incremental efficiency reached 85% or less (See Table 1 of test report).

3.4.6.1 Duration of the Test: **FOLLOWED**

The testing was continued until the average efficiency reached 85% or less and/or the incremental efficiency reached 75% or less.

3.4.6.2 Determination of Test Breakdown Grease Capacity: **FOLLOWED**

Maximum grease retention capacity was established at the increment preceding two successive increments in which either the average efficiency is less than 90% or the incremental efficiency is less than 80 %.

3.4.7 Efficiency Determinations (Minimum Grease Capacity): **NOT USED**

3.4.8 Performance Requirements for Certification: **COMPLIES**

The interceptor did conform with or exceeded the following requirements at the breakdown point:

(a) Had an average efficiency of 90% or more.

Findings – 96.7 %

(b) Had an incremental efficiency of 80% or more.

Findings – 89.6 %

(c) Had retained not less than 2 lbs of grease for each 1 gpm average flow rate as determined during the testing.

Findings – 1895.27 lbs.

3.4.9 Rated Capacities: **COMPLIES**

Standard rating flow rate and grease retention capacities for grease interceptors were tested in accordance with the above test procedure and did conform with the requirement of ASME A112.14.3-2018.

Findings- Flow Rate 100 gpm

Grease Retention Capacity Rating - 200 lbs.

Actual Grease Retention Capacity - 1895.27 lbs.

3.5 Skimming Procedure: **FOLLOWED**

The skimming procedure was initiated 5 minutes after the increment to be skimmed has discharged into the tank. The baffles were used alternately until the amounts of grease collected in the procedure are less than 1% by visual observation. Upon completion of the skimming procedure, water shall be drained from the bottom of the pail by means of a spigot. The remainder of the water was collected as describe in the procedure until only a few drops are observed. The lard is then weighed to the nearest ½ gram.

4 Labeling, Installation, and Maintenance

4.1 Labeling: **COMPLIES**

Products were labeled with the following information:

(a) Manufacturer's name - Schier Products (yes)

(b) Model number - GB-250 (yes)

(c) Rated flow(s) - yes (yes)

(d) "Inlet" and "Outlet" - yes (yes)

(e) ASME A112.14.3 - yes (yes)

(f) Efficiency at the minimum grease capacity - yes (yes)

(g) If appropriate, flow control model number and or orifice size - NA

4.2 Installation Components: **COMPLIES**

The grease interceptor was provided with complete installation instructions, including but not limited to the following:

- (a) Flow control and/or vent requirements - yes (yes)
- (b) Separate trapping requirements - yes (yes)
- (c) Elevation and accessibility requirements - yes (yes)
- (d) Safety and health-related instructions - yes (yes)
- (e) Cleanout locations - yes (yes)
- (f) Instructions that show the clearances required for maintenance, cleaning, and hazard prevention - yes (yes)
- (g) Cautions against installation in any manner except as tested and rated- yes (yes)
- (h) Where a reducer is required on the outlet, it shall be eccentric with the flat on the bottom- NA

4.3 Maintenance and Cleaning Instructions: **COMPLIES**

Units were provided with complete maintenance instructions including but not limited to the following:

- (a) Maintenance Instructions - yes (yes)
- (b) Safety and health provisions - yes (yes)
- (c) Cleaning instructions - yes (yes)

Each grease interceptor was provided with service instructions and cleaning instructions which included a trouble-shooting guide as well as instructions for performing necessary servicing or for obtaining servicing.

Picture



GB-250 (100 gpm)

TABLE 1 – Test Results per ASME A112.14.3-2018

“GB-250” (100 gpm) Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
1	1	2	111	102.7	20	0.25	19.75	98.8	20	.25	19.75	98.8
2	2	1	113	100.9	20	0.46	19.54	97.7	40	.71	39.29	98.2
3	1	2	113	100.9	20	0.66	19.34	96.7	60	1.37	58.63	97.7
4	2	1	113	100.9	20	0.58	19.42	97.1	80	1.95	78.05	97.6
5	1	2	111	102.7	20	0.74	19.26	96.3	100	2.69	97.31	97.3
6	2	1	111	102.7	20	0.61	19.39	97.0	120	3.30	116.70	97.3
7	1	2	111	102.7	20	0.61	19.39	97.0	140	3.91	136.09	97.2
8	2	1	113	100.9	20	0.55	19.45	97.3	160	4.46	155.54	97.2
9	1	2	112	101.8	20	0.59	19.41	97.1	180	5.05	174.95	97.2
10	2	1	113	100.9	20	0.43	19.57	97.9	200	5.48	194.52	97.3
11	1	2	112	101.8	20	0.57	19.43	97.2	220	6.05	213.95	97.3
12	2	1	112	101.8	20	0.50	19.50	97.5	240	6.55	233.45	97.3
13	1	2	113	100.9	20	0.71	19.29	96.5	260	7.26	252.74	97.2
14	2	1	113	100.9	20	0.36	19.64	98.2	280	7.62	272.38	97.3
15	1	2	112	101.8	20	0.61	19.39	97.0	300	8.23	291.77	97.3
16	2	1	113	100.9	20	0.41	19.59	98.0	320	8.64	311.36	97.3
17	1	2	113	100.9	20	0.56	19.44	97.2	340	9.20	330.80	97.3
18	2	1	111	102.7	20	0.49	19.51	97.6	360	9.69	350.31	97.3
19	1	2	111	102.7	20	0.63	19.37	96.9	380	10.32	369.68	97.3
20	2	1	111	102.7	20	0.49	19.51	97.6	400	10.81	389.19	97.3
21	1	2	112	101.8	20	0.38	19.62	98.1	420	11.19	408.81	97.3
22	2	1	113	100.9	20	0.50	19.50	97.5	440	11.69	428.31	97.3
23	1	2	111	102.7	20	0.68	19.32	96.6	460	12.37	447.63	97.3
24	2	1	111	102.7	20	0.53	19.47	97.4	480	12.90	467.10	97.3
25	1	2	112	101.8	20	0.55	19.45	97.3	500	13.45	486.55	97.3
26	2	1	114	100.0	20	0.46	19.54	97.7	520	13.91	506.09	97.3
27	1	2	110	103.6	20	0.50	19.50	97.5	540	14.41	525.59	97.3
28	2	1	110	103.6	20	0.58	19.42	97.1	560	14.99	545.01	97.3

Performance Rating

“GB-250” (100 gpm) Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
29	1	2	110	103.6	20	0.53	19.47	97.4	580	15.52	564.48	97.3
30	2	1	110	103.6	20	0.46	19.54	97.7	600	15.98	584.02	97.3
31	1	2	110	103.6	20	0.54	19.46	97.3	620	16.52	603.48	97.3
32	2	1	112	101.8	20	0.54	19.46	97.3	640	17.06	622.94	97.3
33	1	2	113	100.9	20	0.54	19.46	97.3	660	17.60	642.40	97.3
34	2	1	112	101.8	20	0.47	19.53	97.7	680	18.07	661.93	97.3
35	1	2	110	103.6	20	0.56	19.44	97.2	700	18.63	681.37	97.3
36	2	1	110	103.6	20	0.55	19.45	97.3	720	19.18	700.82	97.3
37	1	2	110	103.6	20	0.64	19.36	96.8	740	19.82	720.18	97.3
38	2	1	112	101.8	20	0.37	19.63	98.2	760	20.19	739.81	97.3
39	1	2	111	102.7	20	0.58	19.42	97.1	780	20.77	759.23	97.3
40	2	1	111	102.7	20	0.51	19.49	97.5	800	21.28	778.72	97.3
41	1	2	113	100.9	20	0.51	19.49	97.5	820	21.79	798.21	97.3
42	2	1	112	101.8	20	0.44	19.56	97.8	840	22.23	817.77	97.4
43	1	2	112	101.8	20	0.54	19.46	97.3	860	22.77	837.23	97.4
44	2	1	113	100.9	20	0.44	19.56	97.8	880	23.21	856.79	97.4
45	1	2	113	100.9	20	0.51	19.49	97.5	900	23.72	876.28	97.4
46	2	1	113	100.9	20	0.41	19.59	98.0	920	24.13	895.87	97.4
47	1	2	111	102.7	20	0.54	19.46	97.3	940	24.67	915.33	97.4
48	2	1	110	103.6	20	0.44	19.56	97.8	960	25.11	934.89	97.4
49	1	2	113	100.9	20	0.52	19.48	97.4	980	25.63	954.37	97.4
50	2	1	112	101.8	20	0.45	19.55	97.8	1000	26.08	973.92	97.4
51	1	2	113	100.9	20	0.43	19.57	97.9	1020	26.51	993.49	97.4
52	2	1	113	100.9	20	0.55	19.45	97.3	1040	27.06	1012.94	97.4
53	1	2	111	102.7	20	0.61	19.39	97.0	1060	27.67	1032.33	97.4
54	2	1	111	102.7	20	0.53	19.47	97.4	1080	28.20	1051.80	97.4
55	1	2	112	101.8	20	0.59	19.41	97.1	1100	28.79	1071.21	97.4
56	2	1	112	101.8	20	0.55	19.45	97.3	1120	29.34	1090.66	97.4
57	1	2	111	102.7	20	0.75	19.25	96.3	1140	30.09	1109.91	97.4

Performance Rating

“GB-250” (100 gpm) Grease Interceptor					INCREMENTAL				ACCUMULATED			
Test No.	Grease Sink	Water Sink	Drop Time (sec)	Flow Rate (GPM)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)	Lbs added	Lbs skimmed	Lbs retained	Efficiency (%)
58	2	1	112	101.8	20	0.59	19.41	97.1	1160	30.68	1129.32	97.4
59	1	2	111	102.7	20	0.55	19.45	97.3	1180	31.23	1148.77	97.4
60	2	1	113	100.9	20	0.54	19.46	97.3	1200	31.77	1168.23	97.4
61	1	2	113	100.9	20	0.53	19.47	97.4	1220	32.30	1187.70	97.4
62	2	1	113	100.9	20	0.55	19.45	97.3	1240	32.85	1207.15	97.4
63	1	2	113	100.9	20	0.52	19.48	97.4	1260	33.37	1226.63	97.4
64	2	1	114	100.0	20	0.53	19.47	97.4	1280	33.90	1246.10	97.4
65	1	2	113	100.9	20	0.60	19.40	97.0	1300	34.50	1265.50	97.3
66	2	1	113	100.9	20	0.47	19.53	97.7	1320	34.97	1285.03	97.4
67	1	2	110	103.6	20	0.83	19.17	95.9	1340	35.80	1304.20	97.3
68	2	1	113	100.9	20	0.54	19.46	97.3	1360	36.34	1323.66	97.3
69	1	2	111	102.7	20	0.61	19.39	97.0	1380	36.95	1343.05	97.3
70	2	1	111	102.7	20	0.61	19.39	97.0	1400	37.56	1362.44	97.3
71	1	2	113	100.9	20	0.56	19.44	97.2	1420	38.12	1381.88	97.3
72	2	1	113	100.9	20	0.52	19.48	97.4	1440	38.64	1401.36	97.3
73	1	2	113	100.9	20	0.62	19.38	96.9	1460	39.26	1420.74	97.3
74	2	1	113	100.9	20	0.56	19.44	97.2	1480	39.82	1440.18	97.3
75	1	2	113	100.9	20	0.52	19.48	97.4	1500	40.34	1459.66	97.3
76	2	1	113	100.9	20	0.41	19.59	98.0	1520	40.75	1479.25	97.3
77	1	2	113	100.9	20	0.59	19.41	97.1	1540	41.34	1498.66	97.3
78	2	1	111	102.7	20	0.65	19.35	96.8	1560	41.99	1518.01	97.3
79	1	2	113	100.9	20	0.61	19.39	97.0	1580	42.60	1537.40	97.3
80	2	1	113	100.9	20	0.56	19.44	97.2	1600	43.16	1556.84	97.3
81	1	2	110	103.6	20	0.59	19.41	97.1	1620	43.75	1576.25	97.3
82	2	1	111	102.7	20	0.68	19.32	96.6	1640	44.43	1595.57	97.3
83	1	2	112	101.8	20	0.81	19.19	96.0	1660	45.24	1614.76	97.3
84	2	1	111	101.8	20	0.84	19.16	95.8	1680	46.08	1633.92	97.3
85	1	2	110	103.6	20	0.79	19.21	96.1	1700	46.87	1653.13	97.2

Performance Rating

96.9

