

GREASE INTERCEPTOR/TRAP SIZING AND INSTALLATION GUIDE

Grease protection is an essential element for restaurants, cafes, catering facilities, commissaries, hotels, cafeterias, convenience stores, full-service grocery stores, schools, hospitals, and food manufacturing plants. Grease interceptors are installed on “gray” water drain lines and are designed to remove fats, oils and grease (FOG) from wastewater. The retained FOG should be regularly removed or pumped out of the interceptor. The interceptor must be cleaned whenever 25 percent of any chamber becomes filled with FOG or solids.

Definitions

Hydromechanical Grease Interceptors (HGIs) can be located inside or outside the facility and are required to have an approved type of vented flow restrictor. Flow restrictors slow the flow of water entering the grease interceptor. The total capacity of the fixtures discharging into an HGI, in gallons, shall not exceed two and one-half ($2\frac{1}{2}$) times the certified gallons-per-minute flow rate of the interceptor.

Gravity Grease Interceptors (GGIs) are generally installed in the ground outside the facility, upstream from the “black” water (sanitary waste) drain line and are at least 500 gallons in capacity. In existing buildings like the downtown corridor, space for a GGI usually does not exist. Breaking down the fixtures into smaller groups and running them through an appropriately sized HGI is the best solution.

A **Drainage Fixture Unit (DFU)** is a unit of measure for the load-producing effects on a plumbing system from different kinds of plumbing fixtures. Things like produce prep sinks and hand washing sinks do not need to be connected to the grease device. If they are not plumbed into the device then they should not be included in the sizing calculation.

Examples of DFU Calculations

Table 1 on the next page (“Determining DFUs”) lists the number of DFUs per fixture. **Table 2** (“Fixture Equivalents”) lists the number of DFUs per pipe diameter. **Example 1:** Restaurant with 40 seats, serves 120 meals per hour*:

- 3-comp sink (9 DFUs)
- 2-comp food prep sink (6 DFUs)
- mop sink (3 DFUs)
- 3 hand washing sinks (3 DFUs)
- 2 floor drains (4 DFUs) ±
- dishwasher with 2” pipe to floor sink (2” drain line for 4 DFUs)

Total = 29 DFUs

Example 2:

Restaurant with 40 seats, serves 40 meals per hour* or less:

- 3-comp sink (9 DFUs)
- 2-comp food prep sink (not connected) mop sink (3 DFUs)
- hand wash sink (not connected), pre-rinse sink (3 DFU’s)
- + dishwasher (not connected)

Total = 15 DFUs

Table 4 on the next page (“HGI Sizing Chart”) is used to determine the size of HGI needed, if that is the type of grease interceptor being installed. In Example 1, based on 29 DFUs a 75 gallon per minute (gpm) unit would be required. In Example 2, a 50 gpm unit would be required.

Table 5 (“GGI” Sizing Chart”) is used to determine the size of GGI needed. Example 1 would require a 100-gallon unit. Example 2 would require a 750-gallon unit.

*Meals per peak hour is determined by multiplying the number of seats by 60 and dividing by the estimated time (minutes) it takes for a patron to eat.



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The flow chart on the next page can be used to determine what type of grease interceptor is allowed, whether or not a garbage disposal is allowed, and what the next steps of permitting might be.

Table 1		
Type of Fixture	# of DFUs	Comments
3-compartment sink	9	
2-compartment sink	Use floor sink criteria based upon drain size or number of sinks, whichever is larger	Each compartment is 3 DFUs.
Floor sinks	DFUs based upon sink drain size*	See table 2 below or section 702.1 in the UPC. *Floor sinks that receive only ice machine and cooler condensate are not counted.
Mop sink	3	If cooking meat, then new mop sinks must be connected to grease protection.
Wok sink	3	
Floor drains	2	
Trench drains	2 DFUs per lineal foot of drain	
Soup Kettle	2 DFUs per lineal foot of trench drain	
Braziers	2 DFUs per lineal foot of trench drain	
Steam tables	Use floor sink or trench drain criteria, whichever is appropriate.	
Dishwasher pre-rinse sink	3	
Dishwashers	Use floor sink criteria	
Food waste disposers, including pulpers	Use next larger size of GGI than would otherwise be required	FOG bearing food waste disposers can only discharge to properly sized GGIs

Table 2	
<i>Fixture unit equivalents from section 702.1 of the UPC</i>	
Drain Size in inches	DFU'S
1-1/4	1
1-1/2	3
2	4
3	6
4	8

Table 3		
Pipe Size, GPM, Maximum DFU Count		
Pipe Size, Inches	Max. Full Pipe Flow (gpm)	Max. DFU Count
2	20	8
2-1/2	38.2	14
3	60	35
4	125	216
5	230	428
6	375	720



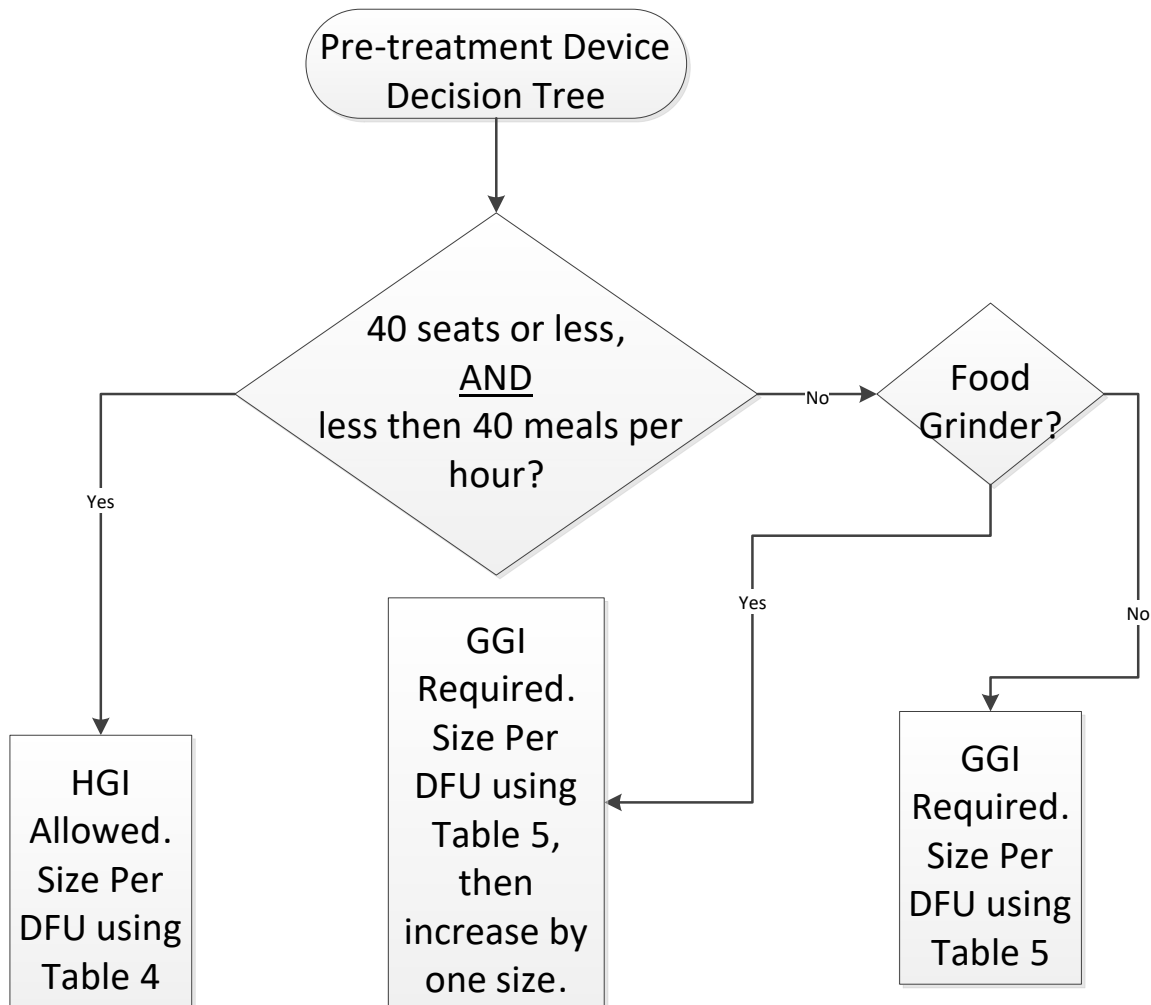
Table 4	
<i>Hydromechanical Grease Interceptor (HGI) Sizing Chart</i>	
DFU's*	HGI Flow (GPM)
8	20
10	25
13	35
20	50
35	75
172	100
216	150
342	200
428	250
576	350
720	500

Table 5	
<i>Gravity Grease Interceptor (GGI) Sizing Chart</i>	
DFU's*	GGI Volume (GAL)
8	500
21	750
35	1,000
90	1,250
172	1,500
216	2,000
307	2,500
342	3,000
428	4,000
576	5,000
720	7,500
2112	10,000
2640	15,000

* *The maximum allowable number of DFU's that can be connected to the grease interceptor.*

The information above is from section 702.0 and table 7-5, 10-2 and 10-3 of the Uniform Plumbing Code (UPC).

Pre-treatment Device Decision Tree
Fats Oils and Grease (FOG)



Key
HGI – Hydromechanical Grease Interceptor
GGI – Gravity Grease Interceptor
DFU – Drainage Fixture Unit