

E/One Station Sizing

Quick Reference Guide to Selecting a Grinder Pump Station



Residential & Commercial Applications

Sizing and selecting an appropriate grinder pump station is important for ensuring long life of the pump. Over-sizing a station can lead to issues with odor and/or corrosion, under-sizing a station can lead to nuisance alarms and possible overflows. The following are basic guidelines for station sizing. Contact E/One if you need further assistance. Refer to the charts on the following page or the Product Catalog section at eone.com/sewers to find a station rated for sufficient daily flows.

Selecting Pump Size for Residential Applications

D-Series Model	W-Series Model	Basin ID (in)	Rated GPD (LPD)	Ideal Number of Residences**	Maximum Residences
Single Family Residences* Most Common Models					
DH071	WH101	24	700 (2650)	1	1
Residences* with 6+ Bedrooms or Oversized Bathtubs Most Common Models					
	WH231	30 (avg)	850 (3200)	1	1
DH151		36	1500 (5678)	1	4

Selecting Pump Size for Commercial/Multi-Family Applications

1 Estimate the Total Daily Flow

- Use Table H 201.I (4) from 2021 UPC Appendix H. Other UPC versions are available at iapmo.org. Note: Previous versions of the UPC referred to this table as Appendix K.
- Base flows on occupancy, not fixture count
- No peaking factor needs to be applied

3 Calculate Peak Flow and Confirm Number of Pumps

- GPD or LPD divided by peak flow time. E/One uses 4 hours for peak flow time, but may vary.
- Confirm the number of pumps is suitable for peak flow:

GPD or LPD / 4 Hours / 60 minutes = Peak Flow Over 4 Hours in Gallons or Liters Per Minute (GPM/LPM)

1-15 GPM = Simplex station (1 pump)
(1-56 LPM) or Duplex station (2 pumps)

16-60 GPM = Quadplex station (4 pumps)
(57-227 LPM)

2 Select an E/One Station

- Station GPD/LPD flow rating should be greater than the flows in Step 1
- Refer to the Product Catalog at eone.com/sewers or the chart below

D-Series Model	W-Series Model	Basin ID (in)	Rated GPD (LPD)	Ideal Number of Residences**	Maximum Residences
Polyethylene Station Models					
DH152		36	3000 (11,356)	4	8
	WH472/WH482	42	3500 (13,249)	5	9
DH272		48	5000 (18,927)	6	13
DH502		60-72	6000 (22,712)	9	15
	WH483	42	5000 (18,927)	8	13
	WH484	42	7000 (26,498)	10	18
W-Series Fiberglass Station Models					
	Duplex	48	5000 (18,927)	6	13
	Triplex	48	6500 (24,605)	10	17
	Quad	48	8500 (32,176)	12	22
	Duplex	60	6000 (22,712)	9	15
	Triplex	60	7500 (28,391)	12	19
	Quad	60	9500 (35,961)	14	24
	Triplex	72	8500 (32,176)	14	22
	Quad	72	10,500 (39,747)	16	27

*Assume 200-300 GPD (757-1135 LPD) per residence per day. Refer to local regulations for daily flow.

**For applications with especially high flow or abnormally low daily flow, please contact E/One for guidance in choosing the appropriate station.

UPC Table H 201.I(4)

TYPE OF OCCUPANCY	GALLONS (LITERS) PER DAY
1. Airports	15 (56.8) per employee 5 (18.9) per passenger
2. Auto washers	Check with equipment manufacturer
3. Bowling alleys (snack bar only)	75 (283.9) per lane
4. Camps	
Campground with central comfort station.	35 (132.5) per person
Campground with flush toilets, no showers.....	25 (94.6) per person
Day camps (no meals served)	15 (56.8) per person
Summer and seasonal	50 (189.3) per person
5. Churches (Sanctuary)	5 (18.9) per seat
with kitchen waste.	7 (26.5) per seat
6. Dance halls	5 (18.9) per person
7. Factories	
No showers.	25 (94.6) per employee
With showers.....	35 (132.5) per employee
Cafeteria, add.....	5 (18.9) per employee
8. Hospitals	250 (946.4) per bed
Kitchen waste only.....	25 (94.6) per bed
Laundry waste only.....	40 (151.4) per bed
9. Hotels (no kitchen waste)	60 (227.1) per bed (2 person)
10. Institutions (Resident).....	75 (283.9) per person
Nursing home.....	125 (473.2) per person
Rest home.....	125 (473.2) per person
11. Laundries, self-service	
(minimum 10 hours per day).....	50 (189.3) per wash cycle
Commercial.....	Per manufacturer's specifications
12. Motel	50 (189.3) per bed space
with kitchen.	60 (227.1) per bed space
13. Offices	20 (75.7) per employee
14. Parks, mobile homes	250 (946.4) per space
picnic parks (toilets only)	20 (75.7) per parking space
recreational vehicles	
without water hook-up.	75 (283.9) per space
with water and sewer hook-up.....	100 (378.5) per space
15. Restaurants – cafeterias	20 (75.7) per employee
toilet	7 (26.5) per customer
kitchen waste	6 (22.7) per meal
add for garbage disposal	1 (3.8) per meal
add for cocktail lounge.....	2 (7.6) per customer
kitchen waste – Disposable service.....	2 (7.6) per meal
16. Schools – Staff and office	20 (75.7) per person
Elementary students	15 (56.8) per person
Intermediate and high.....	20 (75.7) per student
with gym and showers, add.....	5 (18.9) per student
with cafeteria, add.....	3 (11.4) per student
Boarding, total waste.....	100 (378.5) per person
17. Service station, toilets	1000 (3785) for 1st bay 500 (1892.7) for each additional bay
18. Stores	20 (75.7) per employee
public restrooms, add.....	1 per 10 sq. ft. (4.1/m ²) of floor space
19. Swimming pools, public	10 (37.9) per person
20. Theaters, auditoriums	5 (18.9) per seat
drive-in	10 (37.9) per space

UPC 2021 Appendix H. Table used with the permission of The IAPMO Group.

Disclaimer: This information is provided for reference only. The station size is ultimately the responsibility of the engineer of record. E/One's recommendations are based on demonstrated performance in a variety of applications and regions. Selecting the best station is important. Oversizing a station may lead to issues related to odor and corrosion. Undersizing a station may lead to nuisance alarms and possible overflows.