

Utility Distribution System

FlexConnect™



- Flexible
- Convenient
- Economical



Variable Volume

Grease Extraction

Zone Defense

FlexConnect

Design your kitchen with flexibility

Why buy a Greenheck FlexConnect™ UDS

FlexConnect™ Utility Distribution System

A pre-engineered delivery system for the cooking equipment's utilities. It eliminates custom designed contractor built walls to bring the utilities to the cooking appliances. To build a contractor wall:

- *Engineers and consultants have to work together to design the utilities into the wall dependent on the cooking line-up.*
- *Plumbing, electrical and general contractors all have to work together to install the utility wall.*

Custom built utility walls are built for a specific cooking line-up and require hours of coordination to be built in the field. If that line-up changes, the electrical and plumbing have to be changed to accommodate for the new line-up.

With FlexConnect™, just send Greenheck the cooking equipment utility information and you will receive the flexibility your kitchen deserves.

Flexibility - Plumbing

- With FlexConnect™, Greenheck provides 3/4 in. hot and cold water drops every 24 inches, and alternating 3/4 in. and 1 1/4 in. gas drops every 12 inches. The owner might not need all of these drops immediately, but if changes to the cooking line are made due to menu or staff preferences, FlexConnect™ has the extra utility drops designed into the system. This built in flexibility allows you to change equipment as needed throughout the restaurant's life; without costly repiping charges. Move equipment as needed, anytime, anywhere without the headache.

Since plumbing is difficult to do in the field and electrical comparatively easy, the Base UDS or Receptacle Only will be the most economical and functional. The majority of the plumbing will be factory installed and there is adequate room for the electrician to run wiring from receptacles to remote breakers to simplify control circuit wiring.

With a contractor built wall changes to the cooking line become cost prohibitive and difficult with wall penetrations and multiple trade involvement.



Drop Quantity

I do not need all of these drops?

Greenheck designed it's FlexConnect™ for the future. The extra drops are there in case you need more than enough water and or gas drops. The extra drops are factory installed at the factory labor thus reducing the end cost.

Convenience

- With FlexConnect™ disconnects and outlets allow the cooking equipment to be easily moved for cleanup and inspections. Convenience duplex outlets are placed in every riser, providing you with the flexibility to use other electrical equipment.

With a contractor built wall, outlets are often inaccessible, and utility outlets are difficult to clean around often trapping dirt and grease.

Clean

- FlexConnect™ is manufactured of 16 gauge 304 stainless steel to provide you with superior strength.

With a contractor built wall typically being built out of drywall and wood studs moisture can cause health risks in the kitchen.

Tax Benefit

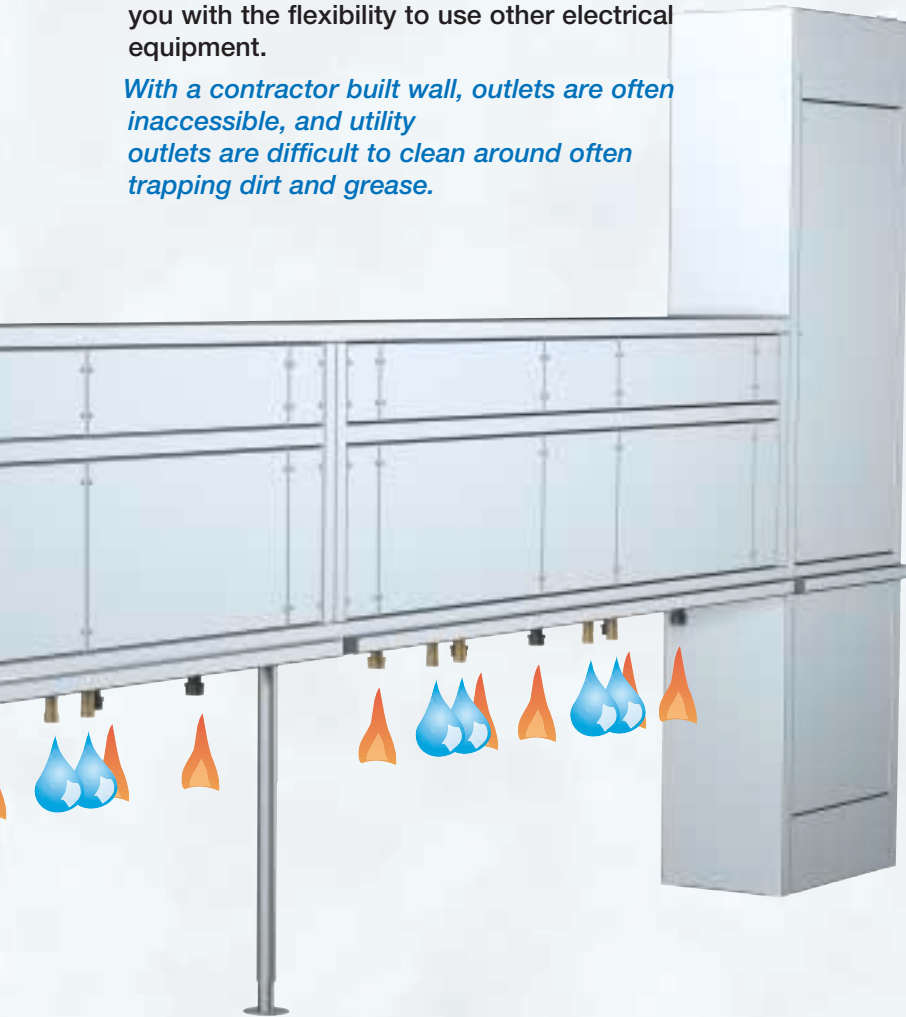
- A UDS is classified as a kitchen appliance with a 7 year depreciation life.

A contractor built wall has a depreciation life of 31 years.

Codes

- UDS systems have been pretested and approved as a code compliant appliance. Installation and inspection are quickly completed.

A contractor built wall must be inspected and approved by the appropriate code authorities, often resulting in delays and changes.



Relocation

- The UDS is considered a piece of equipment; therefore when the customer's lease has ended, the UDS can be removed from the premises for use in another location.

A contractor built wall is a leasehold improvement. If a move is made to another location, another wall must be built.

at UDS with too many drops, knowing that there will be changes in the lease equipment is changed or moved. These drops will provide you with for any equipment line-up. These extra drops reduce the amount of cost to the customer.

Construction Features

Greenheck FlexConnect™ Utility Distribution Systems

Constructed 12 in. wide with a minimum length of 8 ft. and unlimited maximum length (in 1 ft. increments).

Units are built of 16 ga. type 304 stainless steel, and are available in wall or island style.

FlexConnect™ systems are thoroughly tested, UL Listed to Std. UL891, and comply with all other applicable codes and standards.

- 1 Utility Chase** - stainless steel housing for plumbing and electrical components. Chase is 25 in. tall, and 27 in. above the floor. Chase sections are available in 1 ft. increments 4 ft. thru 10 ft. (combine them to make longer lengths).
- 2 Utility Riser** - for incoming field connections to plumbing and electrical. Risers are 24 in. wide, riser height is 6 ft. 6 in. to 7 ft. tall with adjustable collar(s).
- 3 Removable Panels** - allows access to internal UDS components
- 4 Bumper Guards** - running the full length, protect the UDS and appliances from damage as appliances are moved for cleaning.
- 5 Riser Collar** - adjustable, fills in the space from the UDS to the hood.
- 6 Support Pedestal** - adjustable, is located at every chase field joint. Any unit over 16 feet will have a pedestal.

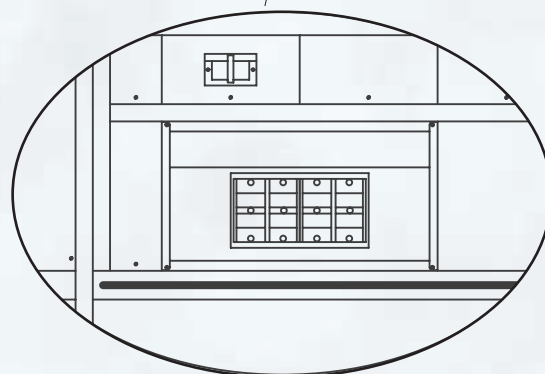
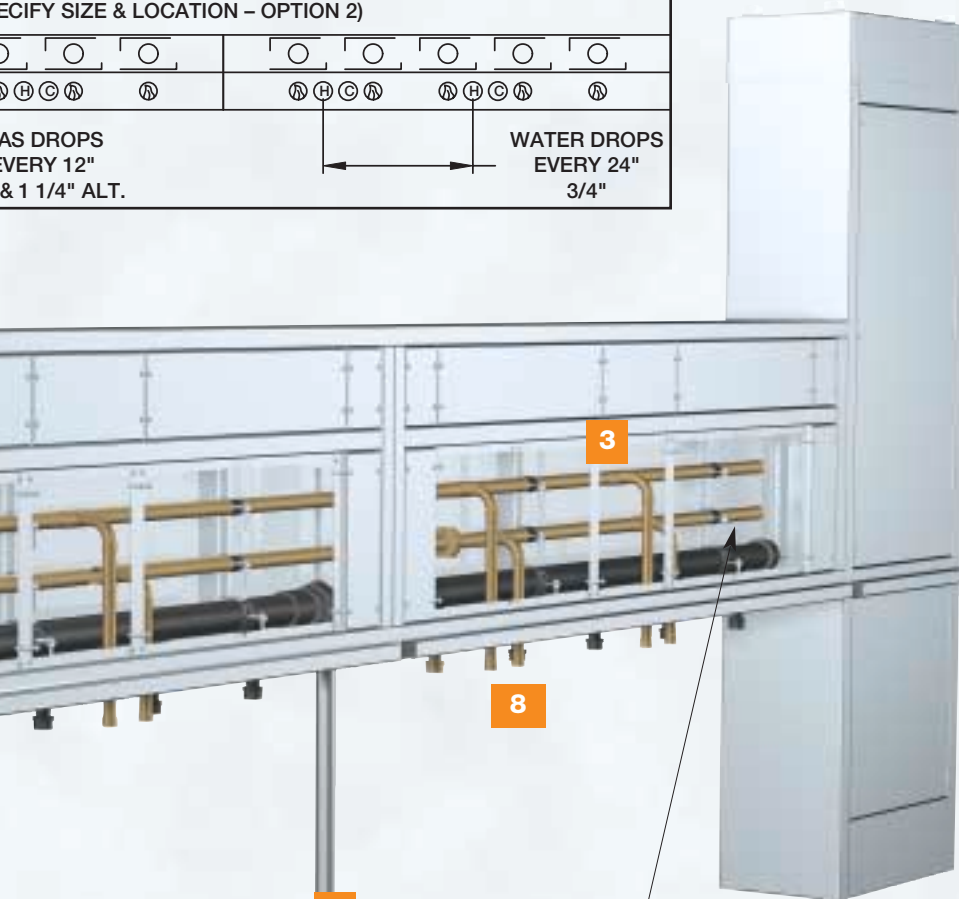
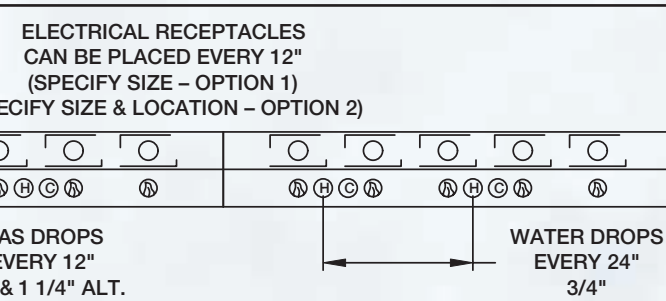
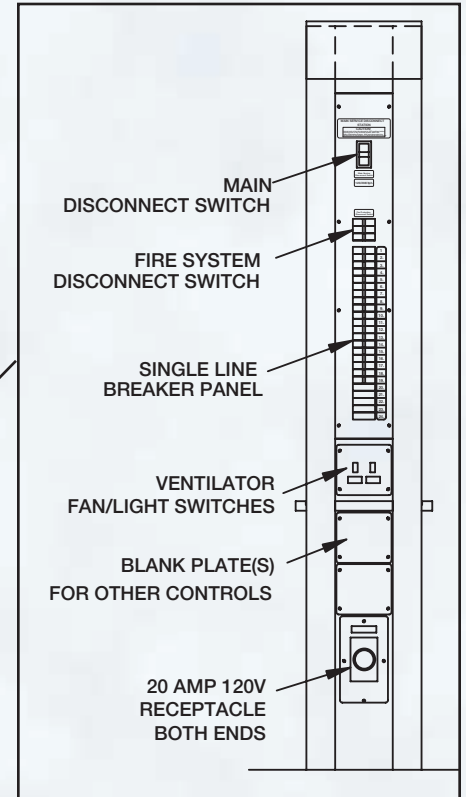


Code Information

Greenheck Utility Distribution System to be UL Listed, and built in compliance with all applicable codes and standards, including NSF, NFPA 96, NEC, NEMA, Uniform Plumbing Code, ASME, using only UL Listed or recognized components.



Panel Board Breaker System Electrical Option

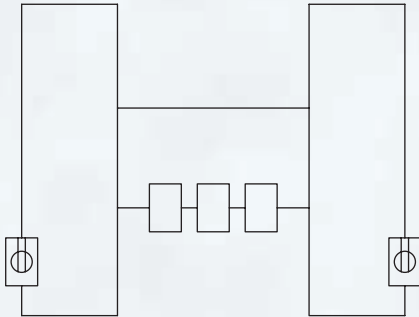


**Point of Use Breaker System
Electrical Option**

- 7 Pipe Manifolds** - to distribute gas, hot and cold water. Gas pipe is 2 in., hot and cold water pipe 1 in.
- 8 Pipe Stub Outs** - gas, hot and cold water equipment connection. Gas stub outs are placed every 12 in., hot and cold water every 24 in.
- 9 Hood Light / Fan Switches** to control hood light(s) and exhaust fan.
- 10 Covered Convenience Outlet** for miscellaneous electrical connections - one on each riser.
- 11 Receptacle Mounting Plate** for receptacle outlets, located under the chase.

Greenheck's FlexConnect™ utility distribution systems (UDS) are available in four different options; base, optional receptacles only (Remote breaker), optional complete wiring (Point-of-use breakers or Panel Board), and custom units. Our base and option packages allow for faster leadtimes and better pricing, while our custom program still allows us to meet any customer demand.

Base FlexConnect™ UDS



The **Base** FlexConnect™ UDS has the shortest leadtime and is the most flexible. Plumbing services are located in the chase and include gas, hot and cold water drops. With the base package appliance information is not needed.

The system has a main 2 in. gas line with appliance drops located every 12 in. These drops are capped on the bottom. Hot and cold water piping is 1 in. diameter and has appliance drops every 24 in. that are capped on the bottom. Light and fan switches and GFCI receptacles in both risers are also provided.

Blank receptacle plates are provided on the raceway. Receptacles and wiring must be provided by others. These plates can be used to mount the receptacles.

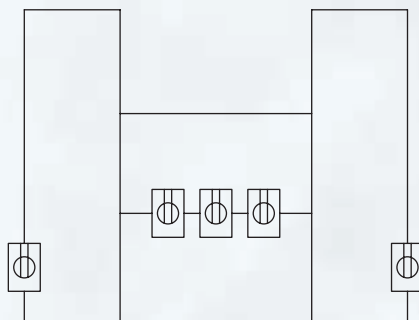
The **Base** FlexConnect™ UDS is a good unit for the owner that is looking for a clean, finished looking utility chase. However the **Base** unit does not have the electrical requirements of the kitchen. The electrical contractor must wire the unit according to the equipment's electrical needs.

If you chose a **Base** UDS we need to know the following to properly size the unit for your application: length of the unit, hood hanging height, and the type of unit (wall or island).

Optional equipment:

- Ball valves for the plumbing
- Gas restraining devices
- Hoses & quick disconnects
- Pressure or pressure / temperature gauges

Electrical Option: FlexConnect™ UDS



Receptacles Only

FlexConnect™ UDS systems with **Receptacles Only** has a main 2 in. gas line with appliance drops located every 12 in. These drops are capped on the bottom. Hot and cold water piping is 1 in. diameter and has appliance drops every 24 in. that are capped on the bottom. Electrical wiring is not included so the appliance information is not needed, though receptacle sizes are required. Light and fan switches and GFCI receptacles in both risers are also provided.

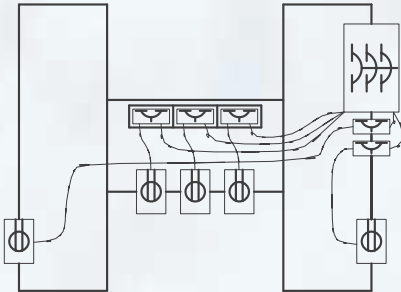
- Receptacles are installed in a relocatable plate on the bottom of the chase - wiring from the receptacles to the remote breaker panel (panel provided by others) must be installed by the electrical contractor.

If you chose a FlexConnect™ UDS with **Receptacles Only** we need to know the following to properly size the unit for your application: length of the unit, hood hanging height, type of unit (wall or island), and the equipment's receptacle sizes.

Optional equipment:

- Ball valves for the plumbing
- Gas restraining devices
- Cord & plug set
- Hoses & quick disconnects
- Pressure gauges

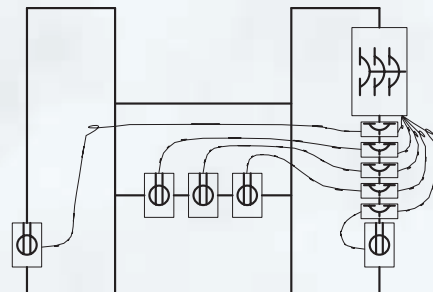
Electrical Option: FlexConnect™ UDS



Point-of-Use Breakers and Wiring

- Point-of-use electrical system has covered branch equipment breakers across the horizontal chase behind the cooking appliance.

Internal Service Panel for Appliance Receptacles



Panelboard and Wiring

- Panelboard electrical systems have branch breakers located on the end of the vertical riser. Both systems have the receptacles under the horizontal chase and the main breaker(s) located on the end of the vertical riser.

FlexConnect™ Utility Distribution Systems are available with **Optional Electrical** either with point-of-use or panelboard system.

All features of the base model are included: the unit has a main 2 in. gas line with capped appliance drops located every 12 inches. Hot and cold water piping is 1 in. diameter and has capped appliance drops every 24 inches. Light and fan switches and GFCI receptacles in both risers are also provided.

Services are located in separate risers, and all wiring is completed at the factory.

- Receptacles are installed and wired

If you choose a FlexConnect™ UDS with **point-of-use or panelboard** we need to know the following to properly size and position the unit for your application: the length of the unit, equipment layout and dimensions, equipment utilities, appliance loads & locations, hood hanging height and type of unit.

Optional equipment:

- | | |
|-------------------------------------|--------------------------------------|
| • Ball valves for the plumbing | • Hoses & quick disconnects |
| • Gas restraining devices | • Pressure gauges |
| • Cord & plug set | • Mechanical gas valve |
| • Main and fire disconnect breakers | • Branch breaker installed and wired |

Custom

Custom units are available at higher cost and longer leadtimes than the FlexConnect™ UDS. Greenheck will consider any construction feature that you may desire. The basis for all Custom Units will be the FlexConnect's Gas and Water plumbing. Please contact your local Greenheck Representative for more information on custom options.

Optional Equipment



- Flexible quick disconnect hoses - easily connects and disconnects the appliances to the UDS



- Pressure gauges for water lines - show PSI of water in the main line



- Quarter turn ball valves and fittings - shut off for gas and hot and cold water to each appliance
- Available Sizes
3/4 in, 1 in.
1 1/4 in. 2 in. (main valve)



- Cord and plug assemblies (electrical option point-of-use, panelboard or receptacle only) for quick disconnect of electric appliances



- Swivel fittings - keeps the hose from kinking and twisting



- Cable restraints on mobile gas appliances - safety feature that prevents the equipment from moving and disconnecting the gas line



- Fill faucet mounting bracket(s) - faucet provided by others - allows for pot filler to be mounted on the UDS

Emergency Shut-Off Valves



- Gas reset station (with electric gas valve on electrical option point-of-use or panelboard) - electrical reset for the gas valve



- Mechanical gas valves other than the specified size (2 in.), or additional valves

Other Available Options:

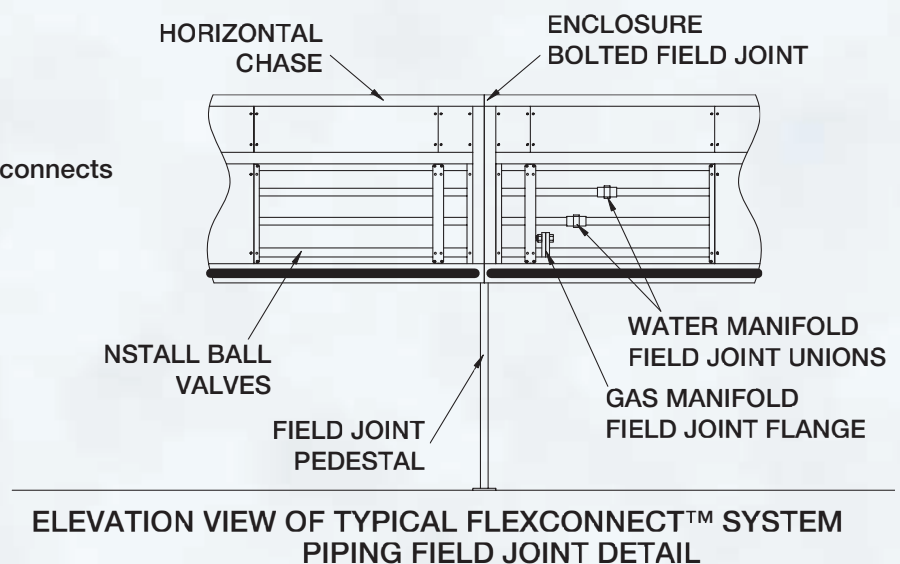
- Installed valves / gauges in riser (2 in. maximum gas valve)
- Installed valves and disconnects on plumbing drops
- Prison Package
- Door Latches in place of screws on main riser(s)

Field Installation Requirements:

A FlexConnect™ utility distribution system is much easier to deal with in the field than a contractor built wall. There is none of the time consuming mess of construction, or the delays involved in waiting for various trades to complete their portion. Trade responsibility is minimal, as shown below.

Equipment Contractor:

- Install Distribution system
- Bolt to floor
- Adjust collars and attach to hood
- Supply and/or install filler panels
- Caulk joints
- Provide gas shut-off valve(s)
- Provide ball valves, hoses, quick disconnects and cable restraints
- Provide cord and plug sets



Plumber:

- Make necessary field connections if chase is shipped in multiple sections
- Install mechanical gas valve
- Install ball valves, hoses, quick disconnects, and cable restraints
- Install 2 in. gas service(s) to manifold in chase
- Install 1 in. hot and cold water service to manifolds in chase

Electrician:

- Provide/Install any appliance receptacles
- Provide/Install appliance cord and plug sets
- Make necessary field connections if chase is shipped in multiple sections
- Provide/Install wiring from remote breakers to receptacles (base and receptacle only)
- Wire to and from light & fan switches (base and receptacle only)
- Wire hood lights and fans from UDS terminal strip (Point-of-use or Panelboard Option)
- Provide incoming electrical service to main breaker (Point-of-use or Panelboard Option)
- Provide electrical service from fire system micro-switch (Point-of-use or Panelboard Option)

1. What is a UDS?

UDS is a stainless steel enclosure that is pre-engineered and manufactured to provide plumbing and electrical to a kitchen lineup.

2. What information is needed to generate a UDS system quotation?

When quoting a UDS, the total length of the unit, the options desired, and the appropriate electrical information is needed.

3. What are the main features of a UDS system?

The UDS typically includes two vertical risers on each end of a horizontal chase. The enclosure is separated for plumbing and electrical. All equipment connections are located under the horizontal chase for easy access and connection for cooking equipment. The vertical risers include convenience outlets on each outside end and also can include controls for the UDS/hood system.

4. What is the difference between a Point-of-use and Panelboard electrical system?

Point-of-use electrical system has covered branch equipment breakers across the horizontal chase behind the cooking appliance. Panelboard electrical systems have branch breakers located on the end of the vertical riser. Both systems have the receptacles under the horizontal chase and the main breaker(s) located on the end of the vertical riser.

5. What type of gas valve does Greenheck recommend?

The mechanical gas valve is recommended by Greenheck as standard. It eliminates any complicated wiring and installation that comes with an electrical gas valve. Mechanical valves will not shut down during short power outages.

6. How do you know if you need single or looped gas service?

The gas system is dependent on the amount of cooking equipment and the required MBH needed. Each system is different however if future flexibility is desired a loop gas system gives more opportunity for expansion. Typically a UDS less than 10 ft. will be single service while those greater than 20 ft. will be looped. Sizes in between are determined by actual load. MBH is determined by type of service and length of unit.

7. How does the hood fire system tie into the UDS system?

The fire system micro switches connect up to "red" terminals 1, 2, and 3 in the UDS electrical riser.

8. How does the UDS system mount to the kitchen hood(s) and finished floor?

The UDS includes an internal flange with holes to bolt down to the floor and there is an adjustable riser collar that can be raised or lowered to the bottom of the hood. Hood must have 12 in. filler panel.

9. Which option is best?

Since plumbing is difficult to do in the field and electrical comparatively easy, the Base UDS or Receptacle Only will be the most economical and functional. The majority of the plumbing will be factory installed and there is adequate room for the electrician to run wiring from receptacles to remote breakers to simplify control circuit wiring.

FlexConnect™ Checklist

1. Total UDS Length _____

2. Calculate the chase length _____

Total UDS Length - Total Riser Length = Total Chase Length (Use chase sections to make total chase length)

3. In the charts below enter the required quantities for ball valves and hose assemblies. (see charts 1 and 2)

For Options Point-of-use or Panelboard only

4. Locate/select the correct receptacle positions. For option 1 select receptacles only. (See chart 3)

For Point-of-use or Panelboard only

5. Check the required electrical cord assemblies for provided receptacles. (See chart 4 example)

6. Contact Greenheck Fan for pricing.

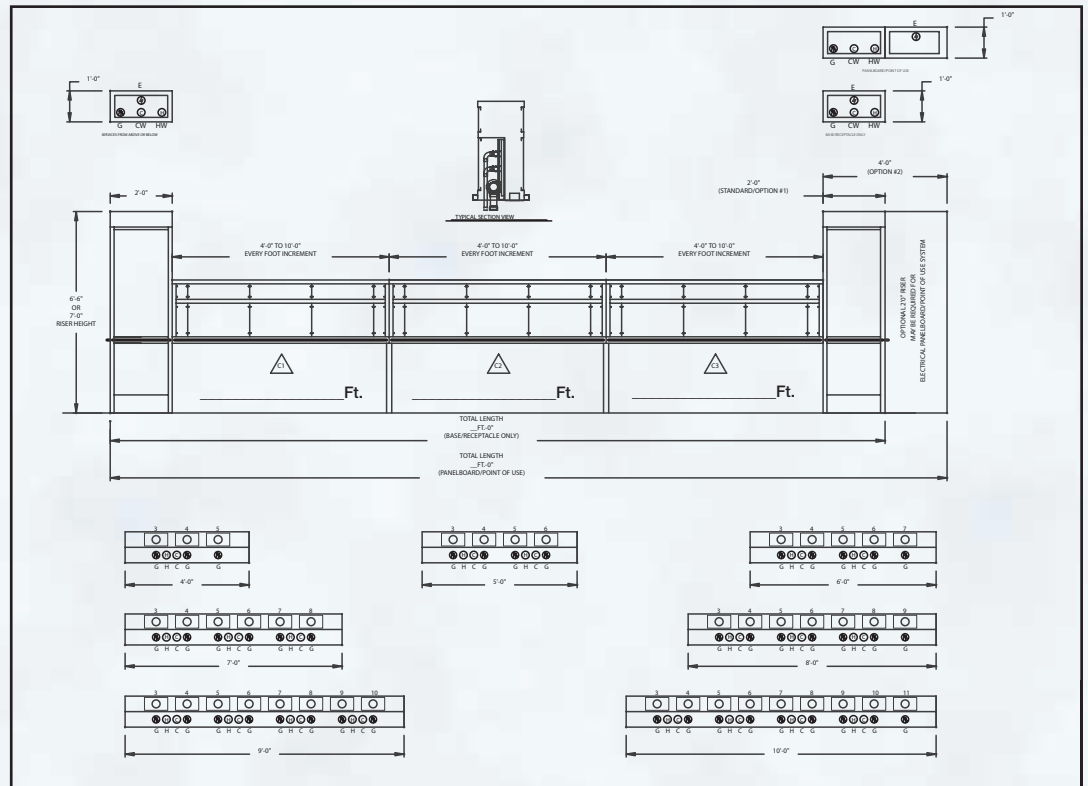


Chart 1

Ball Valves / Fittings (All)	
Description:	Qty.
Ball Valves	
Gas 2 in.	
Gas 1 1/4 in.	
Gas 3/4 in.	
Water 1 in.	
Water 3/4 in.	
Stainless Steel Reducer	
3/4 in. to 1/2 in.	
3/4 in. to 3/8 in.	
3/4 in. to 1/4 in.	

Chart 2

Hose Assembly: Gas / Water (All)	
Description:	Qty.
Gas Hoses	
1/4 in. x 6 ft. w/quick disconnect	
1/2 in. x 6 ft. w/quick disconnect	
3/4 in. x 6 ft. w/quick disconnect	
1 in. x 6 ft w/quick disconnect	
1 1/4 in. x 6 ft. w/quick disconnect	
Stainless Steel Reducer	
1/4 in. x 6 ft. hot water hose	
3/8 in. x 6 ft. hot water hose	
1/2 in. x 6 ft. hot water hose	
3/4 in. x 6 ft. hot water hose	
1/4 in. x 6 ft. cold water hose	
3/8 in. x 6 ft. cold water hose	
1/2 in. x 6 ft. cold water hose	
3/4 in. x 6 ft. cold water hose	

**Hoses may be provided locally **

Chart 4 Example

	#3	Cord
C1	5-20R	X

Chart 3

Receptacle Amperage (Option 1 and 2)					
Receptacle Type		20 Amps	30 Amps	50 Amps	60 Amps
	120/1		5-20R	5-30R	5-50R
208/1		6-20R	6-30R	6-50R	
120/208/1		14-20R	14-30R	14-50R	14-60R
208/3		15-20R	15-30R	15-50R	15-60R
480/3		L16-20R	L16-30R		

**480/3 receptacle wiring to remote breakers by others **

Chart 4

		Receptacle Horizontal Chase Position (Option 2)																	
Chase Section		#1	Cord	#2	Cord	#3	Cord	#4	Cord	#5	Cord	#6	Cord	#7	Cord	#8	Cord	#9	Cord
		C1																	
	C2	#10	Cord	#11	Cord	#12	Cord	#13	Cord	#14	Cord	#15	Cord	#16	Cord	#17	Cord	#18	Cord
	C3	#19	Cord	#20	Cord	#21	Cord	#22	Cord	#23	Cord	#24	Cord	#25	Cord	#26	Cord	#27	Cord

Application and Specification

Provide Greenheck Model FlexConnect™ UDS as shown on plans and in accordance with the following specification:

The FlexConnect™ Utility Distribution System (UDS) shall be either island or wall type. Service risers and horizontal raceway with removable access panels to be constructed of 16 gauge type 304 stainless steel with a #4 finish. The service risers will be able to accommodate both electrical and/or plumbing. The horizontal raceway will be divided into separate compartments for plumbing and electrical. Flanged foot pedestals are provided at each field joint on the horizontal chase when the unit is 16 ft.-0 in. or longer.

Plumbing: The horizontal plumbing compartment is to include manifolds for gas, hot water, and cold water. The 2 in. gas manifold (single or looped) will include welded threadolet connections. The gas connections are spaced 12 in. apart and are alternately sized as 3/4 in. and 1 1/4 in. every other connection. The 1 in. hot and cold water manifolds will include 3/4 in. plumbing drops every 24 in. along the horizontal raceway. All plumbing drops are capped below the chase, ready for easy connection to any cooking appliance. Optional gas manifold is supplied with (1) 2 in. mechanical emergency shut off gas valve, shipped loose.

Electrical: The base electrical package shall include a covered 120/1ph. 20 Amp convenience outlet located on the end of each service riser. The unit will have light and fan toggle switches located on the end of one service riser. The standard horizontal chase electrical compartment includes space for wiring and equipment receptacles. All receptacles and wiring/conduit is provided by others.

Optional Electrical Package Receptacles Only: Remote Mounted Breaker Panel for Appliance Receptacles Shall include a covered 120/1ph. 20 Amp convenience outlet located on each service riser. The unit will have light and fan toggle switches located on one of the service towers. The horizontal chase electrical compartment includes equipment receptacles. All wiring / conduit is provided by others. Equipment receptacles to be placed in the specified location under the horizontal chase by others.

Optional Electrical Package - Point-of-use or Panelboard: Internal Service Panel for Appliance Receptacles Shall include an incoming electrical service riser on the right end with a 225 amp main shunt trip breaker. The unit will have individual branch breaker(s) for each equipment receptacle located either on the service riser or horizontal chase directly inline with the equipment receptacle. The unit will have light and fan toggle control switches located on the end of the electrical service riser and a covered 120/1ph. 20 Amp convenience outlet on both service riser ends. Equipment receptacles are fastened in the specified location under the horizontal chase.



Our Warranty

Greenheck warrants this equipment to be free from defects in material and workmanship for a period of one year from the purchase date. Any units or parts which prove defective during the warranty period will be replaced at our option when returned to our factory, transportation prepaid. Motors are warranted by the motor manufacturer for a period of one year. Should motors furnished by Greenheck prove defective during this period, they should be returned to the nearest authorized motor service station. Greenheck will not be responsible for any removal or installation costs.

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

