# 01-Garbage Chute & Laundry Chute

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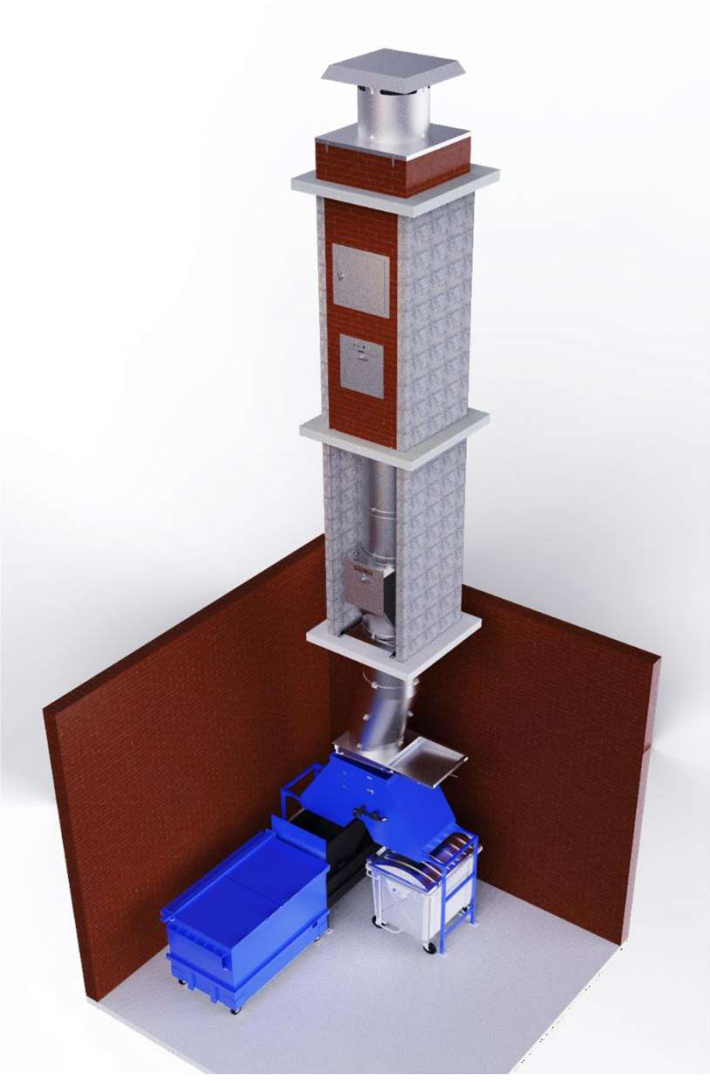
QDCE Trash, Linen and Recycling Chutes are designed to provide a clean and efficient method of removing waste and soiled linens from upper floors to a centrally located discharge area on a lower floor. It is a very convenient, simple and low cost method of controlling and disposing of refuse and linen in multi-storey buildings.

Our chutes meet the most stringent requirements of environmental health and safety.

The components of chute has interlocking system, cleaning system, sanitizing and disinfecting units, sound dampening and fire control equipment. Within the overall design of chutes have greatly increased their usage throughout the world.



### The components of chute includes:

- Ventilation System
- Brush Cleaning System
- Sanitizing and disinfecting units
- Straight Chute Section & Intake Chute Section
- Supporting Frame
- Sound Dampening System
- Intake Door(1.5 Hours UL Fire-Rated Certificated)
- Interlocking System
- Recycle chute system
- LCD Main Control Panel
- Sprinklers & Flushing System
- Fire Control System
- Offset Chute(Elbow Chute)
- Discharge Door(Fire Cutoff Door) or Electrical Automatic Cutoff Door
- Compactor
- Bi-Sorter/Tri-sorter(can be customized per your site)
- Other Parts

# 01-Garbage Chute & Laundry Chute

## Material Specification

We provides garbage chutes and laundry chutes to customer requirements from the following high quality materials: Stainless Steel 304, Stainless Steel 304, Galvanized Steel, Aluminum-coated steel, or per customer's request.

We strongly recommends the use of stainless steel 304, 316 for the manufacture of garbage chutes and linen chute. Stainless steel has the advantage of being resistant to the humidity, acid and alkalis contained within refuse. Stainless steel has no applied coating to wear off and most important has very high impact strength.

The following material thickness can be available:

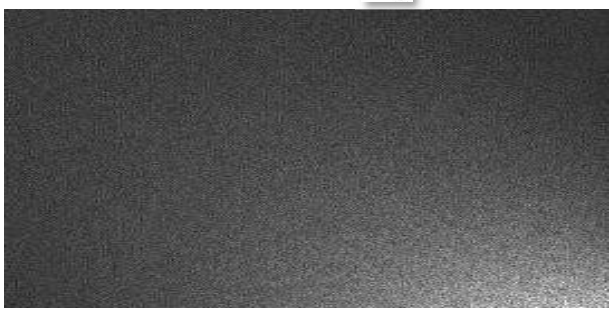
- 1.2mm (18 Gauge)
- 1.5mm (16 Gauge)
- 2.0mm (14 Gauge)
- 3.0mm (11 Gauge)

1.5 mm thickness material is recommended for your buildings. In addition, this thickness takes into account both cost and performance.

*Stainless Steel-2B finish (Chute Section)*

*Door Finish-Wire Drawing*

*Door Finish-Sand Blasting*



*Door Finish-Sand Blasting*

# 01-Garbage Chute & Laundry Chute

## Chute Specification

Our chutes are available with the following standard internal diameters:

- 14″=350mm
- 18″=450mm
- 20″=500mm
- 24″=600mm
- 28″=700mm
- 30″=750mm
- 32″=800mm
- 36″=900mm
- 40″=1000mm

Chutes are available in various diameters; We will also manufacture per customer's drawings and customers special requirements.

However, the NFPA (National Fire Protection Agency) requires a minimum diameter of 24 inches (600mm).

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## Chute System's Components

### ▼ REGULAR CHUTE SECTION

- Cut to shape from flat metal sheet, mechanical rolled into an accurate cylindrical.
- Vertical seams are welded to give smooth, watertight sealed joints.
- The entire inner surface area is smooth and free from any projections that will impede the free flow of refuse within the total vertical length of the chute.
- Beading Ribs will be shaped to strengthen it and improve the sealing.
- Sound dampening coating to reduce the sound transmission and vibration.

### ▼ INTAKE CHUTE SECTION

- Has an opening on each floor with throat for throwing the garbage. The opening of the throat shall be compatible to the chute door.
- The entire inner surface area is smooth and free from any projections that will impede the free flow of refuse within the total vertical length of the chute.
- Beading Ribs will be shaped to strengthen it and improve the sealing.
- Sound dampening coating to reduce the sound transmission and vibration.
- Throat are full welded and polished.

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## ▼ OFFSET CHUTE

- Double bends, 3.0mm thickness, more impact-resistant and wear-resistant.
- 4’ length centerline or longer lengths can be customized per work site.
- Sound dampening coating to reduce the sound transmission and vibration.
- 15 degree, 30 degree, 45 degree per work site.
- With four support clips on top, two on the middle and four at the bottom for connection to clip supports

## ▼ INTAKE DOOR

Bottom Hinged Door

Side Hinged Door

- Bottom Hinged or Left Hinged or Right Hinged.
- Hand-operated, self-closing, positive latching.
- UL fire rated 1-1/2 hour, 30 minute – 250 degree max temperature rise.
- Handle can be T-handle, L-handle (ADA compliant), Pulling handle, Thumb Trigger.
- Latch can be Tubular Latch or Square Latch.
- For Door panel surface, Wire Drawing, Mirror and Bronze can be choose.
- The whole door panel and the frame are made with 304 stainless steel, 1.5mm thickness. All the parts can be completely disassembled while mounted in the wall allowing every part to be cleaned, serviced or replaced with ease.
- Stainless Steel Frame is available blank or embossed with "Rubbish", "Soiled Linen", or "Recycle".
- Intumescent Strip to fire rated and sound dampening.
- Other accessories available include rubber baffle or steel baffle, electrical interlocks, key locks and more. Can be retrofitted to others chutes with sheet metal throat and wall modifications to fit chute door openings for doors of the same size.
- Complies with building codes, NFPA-82 and ASTM standards.

# 01-Garbage Chute & Laundry Chute

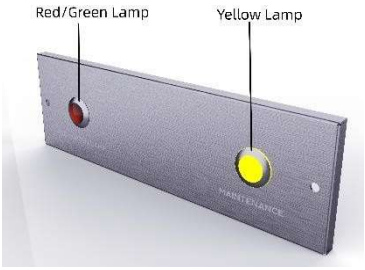
## ▼ INTAKE DOOR SIZE

Chute intake doors are available in different sizes but commonly used ones are:

| Intake Door Size | | |
|---|---|---|
| Chute Dia. | Garbage Chute | Linen Chute |
| | Bottom Hinged Doors(W*H) | Side Hinged Doors(W*H) |
| 18"(450mm) | 12"*15"(305mm*381mm) | 15"*15"(381mm*381mm) |
| 20"(500mm) | 12"*15"(305mm*381mm) | 18"*18"(457mm*457mm) |
| 24"(600MM) | 15"*18"(381mm*457mm)<br>18"*18"(457mm*457mm) | 18"*18"(457mm*457mm)<br>21"*21"(533mm*533mm) |
| 28"(700mm) | 18"*18"(457mm*457mm) | 21"*21"(533mm*533mm) |
| 30"(750mm) | 21"*18"(533mm*457mm) | 24"*24"(610mm*610mm) |
| 36"(900mm) | 24"*24"(610mm*610mm) | 24"*24"(610mm*610mm) |
| Available Door sizes | | |
| 400mm*500mm | 12"*12"(305mm*305mm) | 12"*15"(305mm*381mm) |
| 400mm*600mm | 15"*15"(381mm*381mm) | 15"*18"(381mm*457mm) |
| 450mm*450mm | 18"*18"(457mm*457mm) | 18"*18"(457mm*457mm) |
| 500mm*500mm | 21"*18"(533mm*457mm) | 21"*21"(533mm*533mm) |
| 600mm*600mm | 24"*24"(610mm*610mm) | 24"*24"(610mm*610mm) |

# 01-Garbage Chute & Laundry Chute

## ▼ INTERLOCKING SYSTEM & SORTER SYSTEM



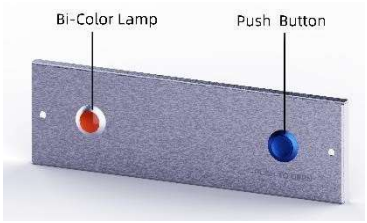

We have two kinds of interlocking system, one is safe-type, another is secure-type.

1. <u>Safe-type</u>

   **There is one red pilot lamp one green pilot lamp and one yellow pilot lamp on the door frame. Through the change of lamp color, to show the various states of the interlocking door.**

- When all floor door are ready for operating, all doors' green lamp will be lit.
- When someone want to open one door, **he can pull the door open directly**, then the interlocking is activated, the other doors will be locked, meanwhile, all doors' red lamp will be lit.
- We should make a cleaning, disinfection and maintenance work for the chute system periodically. The yellow lamp will be lit during these work.
- The below works will activate the interlocking function:
  -Cleaning process
  -Disinfection process
  -Maintenance
  -Emergency button
  -Fire Alarm
  -Brushing cleaning process (Optional)
  -Bin replacing and Bin full (Optional)
  -Smoke detector is activated (Optional)
- The interlock system is pre-wired and is designed to be plugged into a 120V or 220V receptacle and stepped down to 24VDC located in main control panel.

# 01-Garbage Chute & Laundry Chute




2. <u>Secure-type</u>

**There is one red pilot lamp one green pilot lamp and one push button on the door frame. Through the change of lamp color, to show the various states of the interlocking door.**

- When all floor door are ready for operating, all doors' green lamp will be lit.
- When someone want to open one door, **he should press the button firstly**, then the interlocking is activated, the other doors will be locked, then he can pull the door open, meanwhile, all doors' red lamp will be lit.
- We should make a cleaning, disinfection and maintenance work for the chute system periodically. The red lamp will be lit during these works.
- The below works will activate the interlocking function:

  -Cleaning process
  -Disinfection process
  -Maintenance
  -Emergency button
  -Fire Alarm
  -Brushing cleaning process (Optional)
  -Bin replacing and Bin full (Optional)
  -Smoke detector is activated (Optional)
- The interlock system is pre-wired and is designed to be plugged into a 120V or 220V receptacle and stepped down to 24VDC located in main control panel.

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## ▼SORTER SYSTEM

Sorter is designed to provide a clean and efficient method of automatically sorting materials from your waste chute into a chute-fed compactor or rubbish collection bin.

There are two types: Bi-Sorter & Tri-Sorter.

The Bi-Sorter system allows trash (garbage) and recycling (cans/plastic/glass) to be collected in waste containers, or an optional QDCE trash compactor, respectively. The Tri-Sorter is the same but allows for one additional recycling separation, depending on the needs of the building. Both systems are comprised of a single trash chute with door panels that are interlocked, permitting only one door and one stream to be functional at a time. The Bi-Sorter/Tri-Sorter equipment and compactor/bins are located in the basement at the bottom of the chute.

**There is a membrane keypad button on each door. Through it, Users can select different buttons to choose different types of garbage, and the above pilot LED lamp can display various status.**

- The tenants select which type of material will be discarded and push the right button, and the Recycling System diverts the waste accordingly to the designated receptacle or compactor. Remaining chute intake doors on other floors shall be disabled during the operation.
- The below works will activate the interlocking function:
  -Cleaning process
  -Disinfection process
  -Maintenance
  -Emergency button
  -Fire Alarm
  -Brushing cleaning process (Optional)
  -Bin replacing and Bin full (Optional)
  -Smoke detector is activated (Optional)
- The sorter system is pre-wired and is designed to be plugged into a 120V or 220V receptacle and stepped down to 24VDC located in main control panel.

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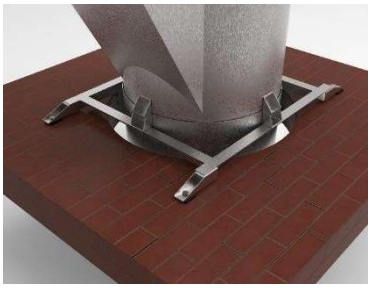
## ▼ SUPPORT FRAME



- 40mmx40mmx5mm angle steel.
- Hot dip galvanized and more rustproof.
- With holes to connect with chute section.
- Rigid and full welded construction.
- Customize different shape per building structure.
- Isolator Pad and Expansion Bolts should be attached.

## ▼ DISCHARGE DOOR

Installed on the bottom of the chute, and held open by a 165°F (74℃) fusible link (UL listed). It will cut off and close the chute once fire happened in the garbage collection room and the link is melted when the ambient temperature of a fire reaches 165 °F.

There are two types of discharge door:

1. <u>Rolling Incline Type Discharge Door</u>

- The door panel is made of 3.0mm SS steel with a 1.5mm frame.
- Door has an all welded door and frame with a collar to fit an 18”to 36” round chute.
- This discharge door is available for square or round chutes in the standard sizes of 18” to 36”.
- Fusible link, chain, wheels, and door panel are replaceable.
- Monthly inspections of the discharge should be made to ensure that the link is intact and that no waste has collected in the horizontal tracks of the discharge, which might interfere with its closing path.
- Discharge door is not designed to be used to shut off the chute.

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2. Hopper Type Discharge Door

- The hopper type discharge is typically used on laundry chutes.
- The discharge is top hinged and held open by chains with a 165°F fusible link(UL listed).
- The hopper type discharge can also extend into the discharge room from the ceiling and is supported on a pedestal(s).
- The door panel and frame is made of 3.0mm SS steel with a 1.5mm frame.
- Door has an all welded door and frame with a collar to fit an 18"to 36" round chute.
- This discharge door is available for square or round chutes in the standard sizes of 18" to 36".
- Include hopper body, doorframe, door panel, pedestals, fusible link, chains, shackle, expansion bolt, slam latch, night latch, etc.
- Monthly inspections of the discharge should be made to ensure that the link is intact , the hopper discharge is kept clean, free of damage caused from service impact, shall remain open at all times. It is not intended to be used as a 'shut off' door when carts are changed, etc.

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## ▼ MAIN CONTROL PANEL

- With necessary button and indicators:
  --D&S Unit,
  --Cleaning System,
  --Fan,
  --Maintenance,
  --Emergency,
  --Key Lock Switch,
  --Brushing System (Optional per request),
- With a Warning Alarm Light, and it will flash and alarm when some function is not working properly
- Fire alarm integration with BMS.
- With a display LCD(Optional per request), which can show each operation's status. Such as all status of each floor.
- Integrated with compactor system and sorter system (Optional per request).
- The main control panel is pre-wired and is designed to be plugged into a 120V or 220V receptacle and stepped down to 24VDC located in main control panel.

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## ▼ ACCESS DOOR

The Access Door is located above the top intake of the chute, allows access to the valves that operate the flushing spray head and/or sanitizing unit.

- The access door is 450mm*450mm, or 600mm*600mm.
- T-handle, Side Hinged, hand-operated, self-closing, positive latching.
- The whole door panel and the frame are made of 304 stainless steel, 1.5mm thickness.
- UL fire rated 1-1/2 hour, 30 minute – 250-degree max temperature rise.
- Intumescent strip to fire rated and sound dampening.

## ▼ VENT ASSEMBLY

The purpose of a vent is to dissipate odors, as well as to dissipate hot gases in the event of a fire within the chute.
NFPA codes require a full diameter vent, penetrating and extending 3' above the roof.

- Made of 304 stainless steel, 1.5mm thickness. To better resist the external elements
- Include Weather Cap, Riser, Bird & Inset Screen, Flashing Cover and Exhaust Fan and more.
- Glass wool filled into the curb.

# 02-Compactor

## 02-Compactor

The Apartment Compactor is the Ideal Solution For:

• Small Apartment Buildings

• Hospitals

• Nursing Homes

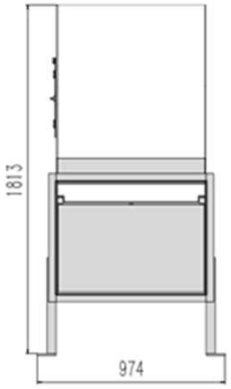
• High-Rise Chute Rooms

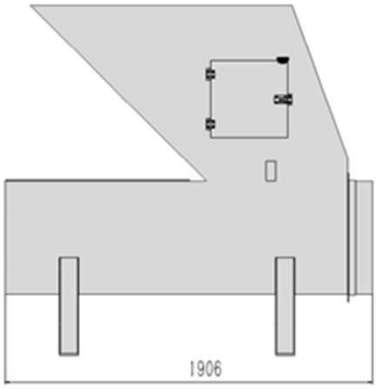
Solid waste in your building has been brought down to street level with a dedicated waste chute and the compactor.

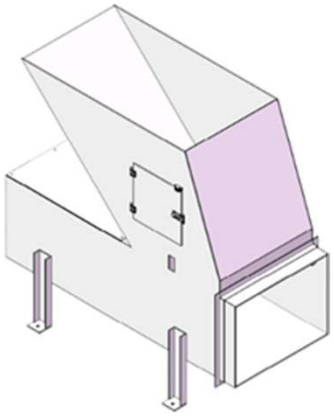
Standard Features and Benefits:

- 4:1 compaction ratio over un-compacted waste receptacles.
- Convenient single side ratchet.
- Push button controls mounted in the panel box face.
- Hopper with access door and interlock for hand feed or chute feed applications.
- Full container light.
- Limited Space Applications - Compactor and container system can be easily operated in a 16' x 8' room.
- Automatic photo-eye start system – compactor cycles automatically when the chamber is full.
- Large waste chute transition hopper standard. Allows for garbage to "hit" the spot with less mess around the compactor.
- Reduce hauling costs - compacted wastes means fewer pickups.

# 02-Compactor



## Charge Box Specifications

| | |
|---|---|
| Wastequip Rating | 0.33 cubic yards |
| Charge Box W | 30″ |
| Charge Box L | 22.5″ |

## Ram Specifications

| | | | |
|---|---|---|---|
| Height | 18″ | Floor Plate | 3/8″ |
| Ram Penetration | 5″ | Side Plate | 1/4″ |
| Face Plate | 3/8″ | Hopper Plate | 1/4″ |
| Base Plate | 3/8″ | | |
| Top Plate | 3/8″ | | |
| Side Plate | 1/4″ | | |

## Hydraulic Specifications

| | |
|---|---|
| Pump | 3 GPM |
| Cycle Time | 30 seconds |
| Oil Tank | 10 gal |
| Normal Pressure | 2100 PSI |
| Relief Pressure | 2200 PSI |
| Rated Pressure | 3000 PSI |
| Hydraulic Cylinders | 4″bore<br>2″rod<br>30″stroke |

## Electrical Specifications

| | |
|---|---|
| Motor | 5 HP, 1725 RPM |
| Motor Power | 208/220/416/440V, 3Ph, 60 Hz/50 Hz |
| Circuits | 115 VAC, 24VDC |
| Monitors | 80% & 100% full |