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# TALENT Clean Chute

Revolutionary waste disposal and management systems

## Chutes

Stainless Steel:

- Garbage
- Linen

High Density Plastics:

- Debris



# Centralized Waste/Linen Disposal

## The Concept:

High-rise residential towers and hotels need to have a fast and economical way of collecting and disposing garbage generated daily. It is highly impractical to have the building management staff collect trash door to door, nor do they prefer that the residents carry trash in the lifts. The simplest solution to this problem is a centralized collection system that enables users to dispose garbage at their convenience, at their individual floors and only manage the trolley room. Similarly in hotels, linen can be collected centrally via chute from individual floors of the hotel.

**TALENT Clean Chute** offers high quality & technologically advanced stainless steel chutes to assist in this centralized collection & disposal of waste or linen. Advanced features such as electronic interfaces, automatic cleaning systems, fire security alarm integration etc have made such chutes very safe to use and widely accepted worldwide. The basic sections of the chute are described in the adjoining diagram:

## Chute Sections:

### Ventilation Section:

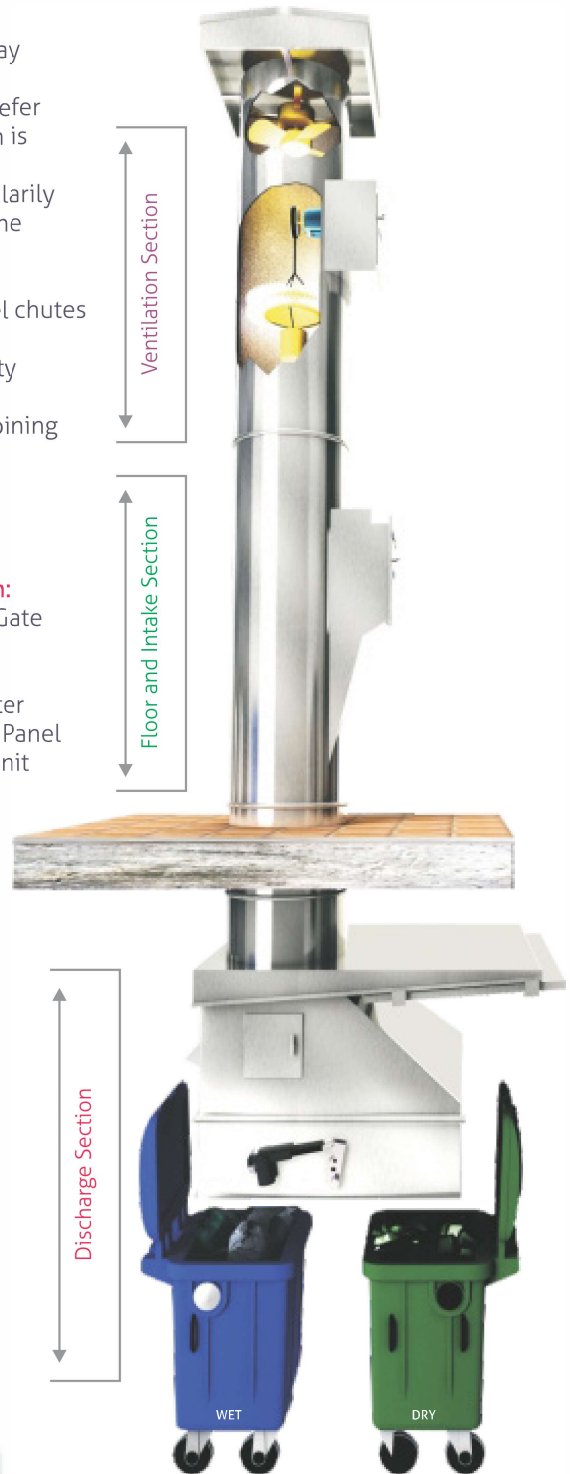
- Automatic Brush Unit
- Sanitizer & Disinfectant
- Exhaust Fan
- Weather Cowl
- Bird /Insect Screen
- Central Cleaning

### Floor & Intake Section:

- Intake Doors & hoppers
- User Electronic Control
- Intake Throat Section
- Connecting Pipes
- Fire Sprinklers

### Discharge Section:

- Fire Discharge Gate
- Trolleys
- Compactor
- Bisorter/Tri Sorter
- Central Control Panel
- Odor Control Unit



## Chute Sizes:

400mm to 900mm diameter.  
SS316/SS304/SS430/Gi/Pe

## Advantages of Chutes:



Buildings for timely waste collection



Waste Segregation at user level



Quick, simple and convenient disposal of waste



Safety & Security



Low cost method of controlling and disposing waste/linen

## Applicable Standards:

- NFPA 82: 2009
- BS1703:2005
- NBC 2005, BIS
- BIS 6924:2001
- UL 10 B for Fire Rating

# Technical Guidance

Specifying the right chute is extremely critical for ensuring a trouble free durable chute for the user community in the building. Engineers need to consider the best practices in use around the world, where experience in using chutes dates back to as much as 100 years. We lay down some basic things to consider when specifying a chute. The site conditions may require more stringent specifications but these are basic matters to consider :

**Where to Install?**

Chute may be indoor or outdoor, however fire regulations stipulate that when within the building they should be enclosed within a 2 hr. fire rated shaft. An indoor chute may pass through a floor slab or a vertical shaft.

**Material of Construction:**

**TALENT Clean Chute** strongly recommends the use of stainless steel for the manufacture of refuse chutes. Stainless steel has the advantage of being resistant to the humidity, acid and alkalis contained within refuse. SS has very high impact strength. For economy, **TALENT Clean Chute** also provides chutes from GI also, however only for inland usage. SS is the material of choice and is available in SS 304, SS 430, SS 202. We hot-dip galvanize our angle framework for superior life.

**Chute Thickness & Coatings:**

We strongly recommend a minimum thickness of 1.5 mm (16 gauge for any type of chute). As building height increases higher thickness for bottom floor. For sound dampening coats a minimum DFT of chute thickness is recommended.

**Intake Hopper Doors:**

Doors should be UL listed and carry 1.5 hours fire rating minimum. Doors should be self closing on release & latching should be positive.

**Shape of Chute**

To give an unimpeded free flow of refuse within a chute, the best shape has proved to be circular, **TALENT Clean Chute** chutes therefore have a circular cross section. We will make square section chutes to customers special requirements. Chute should be perfectly vertical and offsets are not recommended unless absolutely necessary, still no more than 15 deg and no more than one in two floors.

**Correct Size of Chute:**

Chute Size	Plastic bag Capacity (ltrs)	Apartments per chute
> 450 mm	12 ltrs	20+
> 500 mm	20 ltrs	30+
> 600 mm	40 ltrs	40+
> 750 mm	45 ltrs	60+
> 800 mm	50 ltrs	75+

NFPA prescribes that chutes should be a minimum 24" wide. However the following chute size are typically in use for clog free performance:

**Exhaust Fan:**

Ensure fresh intake air is available in Trolley Room. 20-30 air changes per hr recommended depending on use.

**General Disposal Guidance in various uses:**

Type of User	Formula	Volume per week
Household/Residential	2 person/1 house/1 flat	0.10m <sup>3</sup>
Offices	2 Per Person/10m	0.05m <sup>3</sup>
Hotels (Total hotel waste based on number of rooms)	4/5 star hotel-per bed 2/3 star hotel-per bed	0.35m <sup>3</sup> 0.25m <sup>3</sup>
Restaurants	per cover (dining space)	0.75m <sup>3</sup>
Fast Food Outlets	per sale	0.005m <sup>3</sup>
Canteens	per cover	0.10m <sup>3</sup>
Major Shopping Centers	2 per m of sales area	0.01m <sup>3</sup>
Major Supermarkets	2 per m of sales area	0.015m <sup>3</sup>
Secondary Supermarkets	2 per m of sales area	0.01m <sup>3</sup>
Department Stores	2 per m of sales area	0.01m <sup>3</sup>
Shops	2 per m of sales area	0.0075m <sup>3</sup>
Hospitals	per bed excl clinical	0.15m <sup>3</sup>
Industrial Units	2 per m of floor space	0.005m <sup>3</sup>

# Chute Parts - Intake Section

## Intake Hopper, Doors

The most important user interfacing part of the chute is the Intake Hopper Door. **TALENT Clean Chute** offers UL® 10B - 90 Min Rated Doors in various sizes depending on the type of chute provided. Following common types of doors used in Garbage & Linen Chutes:



### Bottom Hinged Standard Door

- For Garbage Chute
- UL 10B Rated for 90 mins
- Full SS 304 Construction
- Self Closing & positive Latch
- Industrial Grade parts
- Full Length SS Hinge
- Key Lock available



### Bottom hinged door with Electronic interlocking option

- Has electronic interlocking
- Allows one user at a time.
- Chute shut down possible
- Can connect with Fire Alarm
- BMS configurable
- Power Efficient design, 24VDC

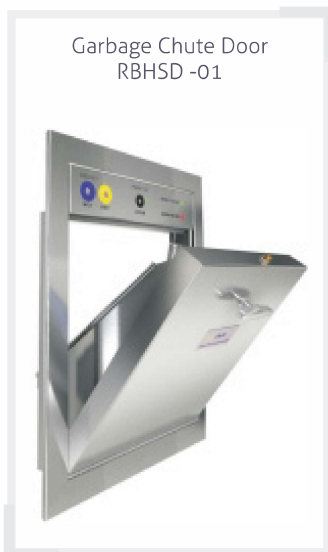


### Side Hinged door with Electronic Interlocking

- Side hinged for linen disposal
- 90Deg & 180 Deg opening
- Full SS Length Hinge
- Keyed Access
- Electronically Interlocked
- Power Efficient design, 24VDC

### Segregated Garbage Chute Doors - for Recycling Chutes

- 2 Way or 3 way selection
- User Panel in SS box in frame
- Intelligent & Efficient Design
- Remotely Controllable option
- Configuration with Exhaust,
- Compactor, Bi-sorter
- Beeper Alarm each floor
- Floor Communication
- Advanced signalling possible when trash container is full
- Set floor level usage times
- Emergency , Maintenance System



Chute Size	Height x Width (in inches)
16", 18", 20 "	12" x 15", 15" x 15"
20", 22", 24 "	15" x 18", 20"x 20", 16" x 24"
24", 26", 28"	16" x 24", 20"x 24"
larger sizes	16" x 24", 22"x 24"



90min fire rated,UL10b

# Chute Parts - Chute Body

## Chute Body, Coating Options, Floor Frames

The intake door hopper is affixed to the throat of the floor intake section that helps carry the trash or linen through the chute vertical duct. **TALENT Clean Chute** has a special double slope design for centering the trash within the chute. A distinct feature the design is also the swaging and mechanical crimping done on end of the the chute sections. This provides excellent circular dimensional stability to the chute and enhances long term leak proof performance.

For smaller thickness , a majority of the chute sections are mechanically seam locked, instead of seam welding. This assists in preventing corrosion to a great extent.

A variety of coating options are available.



### Anti Corrosive Exterior Coat

- Thickness - approx 0.3 to 1mm
- Bitumen based or Special Anti corrosive
- Color Black or as per custom choice



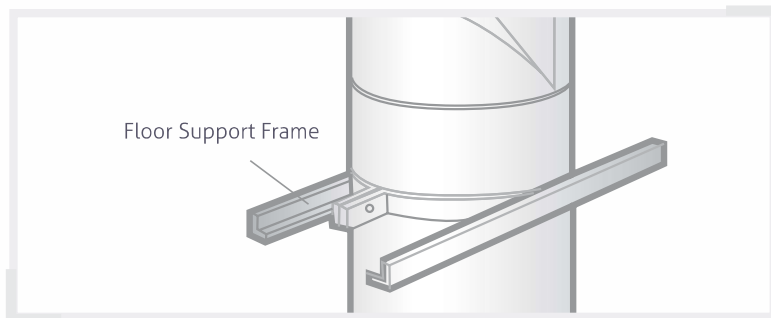
### Sound Dampening Coat

- Thickness = base chute body thickness
- Reduces Sound level upto 5-15 db
- Color - Black
- Daubert or Equivalent Paint



### Custom Coats, Fire Intumscent or Lacquer

- Thickness - approx 0.3 to 1mm
- Custom Colors & designs
- Used mostly for exterior



### Floor Frames

- Cut, shaped and drilled from 35x35x3mm or 50x40x5mm mild steel angle with a rigid, welded construction.
- The sections connect with the frame with J hooks
- The frame is rustproofed for internal use and hot dip galvanized for external use.



### Offsets

- NFPA regulates no more than 15 Deg offset should be used.
- Not recommended unless completely inevitable.
- Should return to plumb on same floor and maximum one offset in two floors.
- Sometimes offset provided at bottom section with high impact plate to cut the velocity of dropping garbage.

# Recycling Eco-friendly Chutes

## Segregated Waste Disposal System

Recycling waste is the need of the hour with the several challenges the planet is facing from depletion of natural resources & changing climatic conditions. With several countries committing to handle these issues, it has become mandatory in several building codes to segregate trash in way which promotes maximum recyclability. Towards this effort, KleanChute provides user friendly green solutions as a part of its product portfolio. These solutions are being accepted worldwide especially where building or hotels plan to get IGBC/ LEEDs certifications.

**TALENT Clean Chute** chutes are fitted with a special diversion equipment at the bottom of the chute which assists in diverting the falling trash into respective bins.

The process works as follows:

- I) User approaches chute at his floor and has to select from one of 2 or three switches available. (2 for Wet/Dry, 3 if more segregation required).
- II) The bisorter/trisorter at the bottom receives a signal and moves diversion flap to required position.
- III) Once done, it lights up a green light at user panel & releases door lock to let him open the door to dispose of his trash. Meanwhile at all other floors, doors get interlocked and any operation on is completely restricted.
- IV) Door closes & locks on all floors become active again.

The trolleys at the bottom now have respective trash ready to be sent for recycling, decomposition etc.

### Electrical requirements & Technical Specifications:

24 VDC, 5A

**Dimensions:** 2.25x Chute Dia L x 1.2x Chute Dia W

### Trash Compactor

In buildings where waste generation volumes are substantial depending on higher number of occupants, floors or waste intensive offices etc, a compactor is used. Compaction of dry waste can lower volumes of waste by as much as 80%. The chute directly terminates into a compactor. Falling waste automatically activates the compaction function and waste is pressed together by a high tonnage ram. Compacted waste takes lesser space to store and hence fewer trips by maintenance team to clear the rubbish.

### Electrical requirements & Technical Specifications:

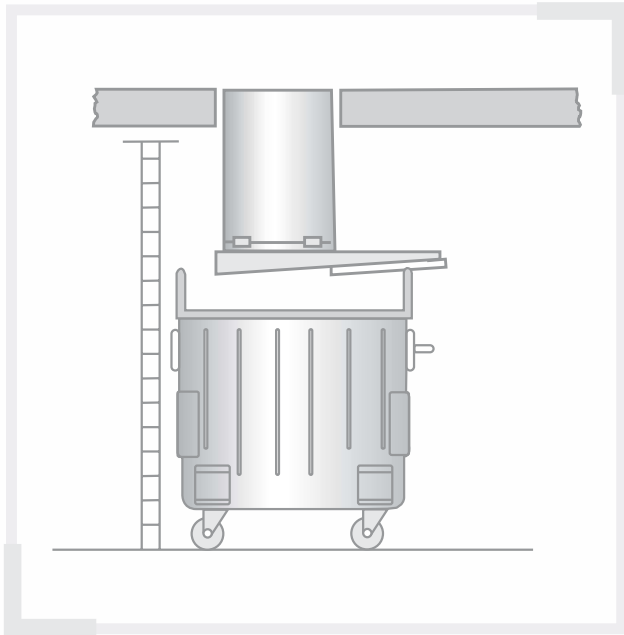
- 5 HP Microprocessor controlled
- Dimensions: 45" L x 70" H x 40" W 40000 psi



# Chute Parts-Discharge Section

## Chute Termination And Fire Discharge Gate

A Trash/Garbage chute may differ from a Linen chute primarily in the way it terminates at the bottom, where the Garbage chute end into a trolley. Hotels and hospitals that use Linen chute install sorting tables at the bottom end of the chute to ensure that Linen can be sorted as it is recieved. In either cases, it is recommended to have a fire cut off door which will close the chute down in case there is a fire in the trolley room.

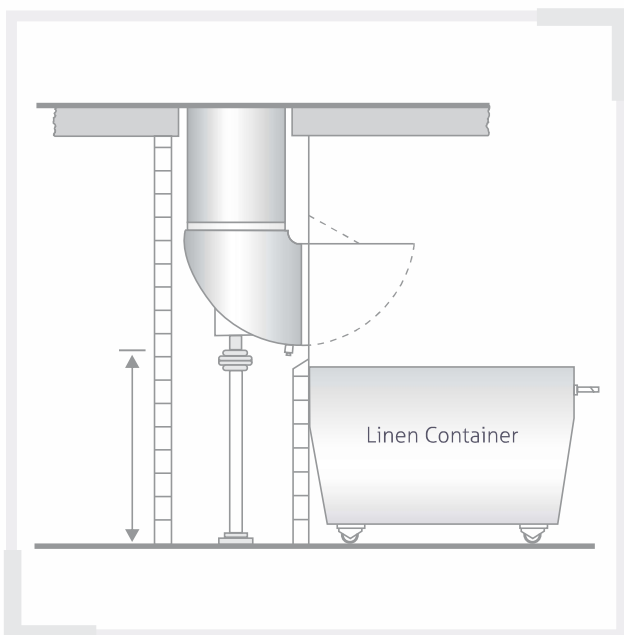


### Type 'C' Automatic Fire Shutter Door

An fusible link held sliding gate placed at an 15 Deg angle sweeps in even of fire and temperature rises to 68 Deg C. The gate is 1.5 Hr 250 Deg Fire Rating. Manual Cut off doors are also available

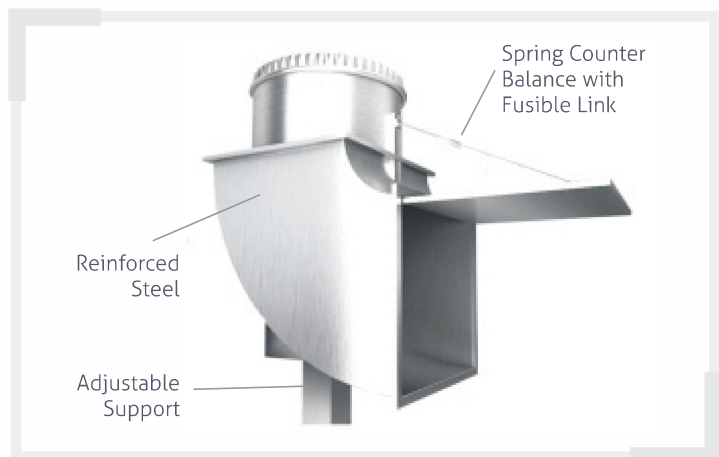


A Linen chute may terminate in a sliding decelerating track as a solidly packed bag of soiled linen achieves a reasonably high terminal velocity. For shorter buildings, An 45 Deg sliding bottom section consisting of a sloped outlet and top hinged door is available. The bottom section is held in place with use of a length adjustable support. It is still recommended to have a fire door for safety.



### Type 'D' Hung Doors

A fusible link holds the gate which is held top hinged connected with spring counter balance. As temperature rises to 68 Deg C, 1.5 hr rated gate drops and is held closed by two retaining catches.



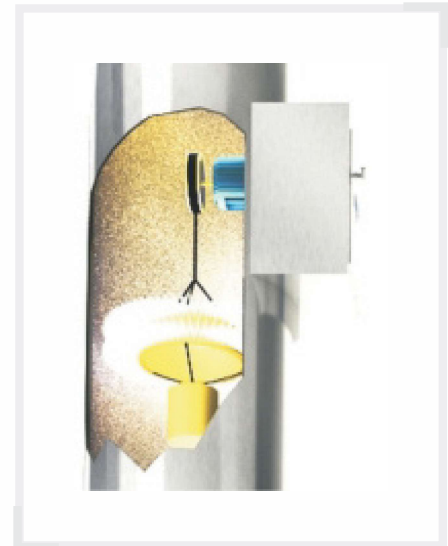
# Chute Parts - Ventilation Section

## Automatic Brush Cleaning System

A cylindrical housing with replaceable stiff nylon brushes is automatically lowered and raised by a geared electric motor. The nylon brushes scrape and clean the internal surface as they move down and up the chute. The water supply for flushing the chute, the electric motor and the built in safety overloads, are all individually controlled by a robust electric logic control. The bristles are replaceable easily.

## Electrical Requirements & Technical Specifications

1 HP, 3 Phase, 5A  
SS Wire Rope min. 6mm thick  
Bristles: Made from PA 66, Nylon  
Dead weight approx 15 to 20 kgs



## Central Cleaning Shower & Optional Disinfectant & Sanitizer System

Central 120 deg solid cone profile discharge sprinkler provided above the last intake level, placed strategically to provide full circular coverage. An optional disinfectant & sanitizer system is designed to give manual or automatic flushing, sanitizing and disinfection of the internal surface of the **TALENT Clean Chute**. It may be fitted at the top or chute room with electronic solenoid valve controls, as part of an automatic or manual cleaning system. A low maintenance proportioned valve system provides a auto flow of disinfectant into the cleaning water every cleaning cycle. Nozzles can be varied & easily replaced to suit volume of disinfectant to be provided in the water flow.

## Electrical Requirements & Technical Specifications

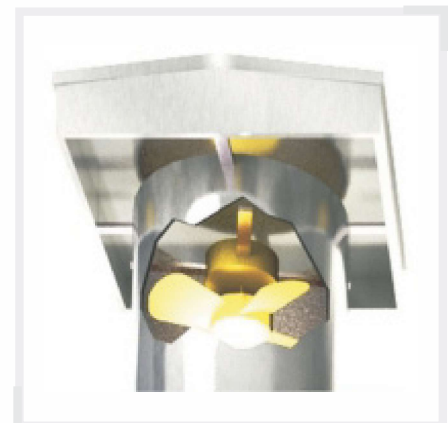
Cleaning Sprinkler 120 Deg Cone 1/2" IPS, 15 Lpm,  
Minimum 1/2 bar pressure at all levels water supply 1/2 bar header tank pressure, at least 1800 mm above spray head.  
Each Floor level sprinklers also need 1/2 bar water pressure.  
Solenoids Valve 1/2" - Electrical Single Phase  
Fire Sprinkler 1/2" IPS, 68°C (165°F).

## Weathering Cowl, Insect Screen, Ventilation with Exhaust Fan same diameter vent pipe with canopy

A reduced diameter ventilation section accommodating and exhaust fan at the chute reduction level of high RPM. The exhaust fan can be timed to operate only at fixed intervals to control noise as well as power wastage. A prime requirement for effective mechanical exhaust ventilation is the provision of fresh intake air at the bottom floor.

## Electrical Requirements & Technical Specifications

Air displacement 200m<sup>3</sup>/hour.  
Exhaust Fan motor, Class H tropicalized continuously rated, 1300 RPM.  
Bird Insect Screen Mesh Size ?





# Controls & Optional Equipment

**TALENT Clean Chute** offers a broad range of options to customer to suit their individual requirements. In cases of offices where only few floors should have access during night time, or hotels where finger print access is required, **TALENT Clean Chute** is able to provide a adept solution. Depending on the chute criticality, hygiene requirements and location of the chute and kind of project, economical to high premium variants are available.

### Electrical Control Panel:

A rugged heavy duty control panel is available with a variety of control options as in the adjoining table. The systems uses latest electronic components for a long life



### Odor Control Unit:

Decomposing garbage often lets out foul gases in the collection point. An odor control unit is provided to neutralize these odors.



Model	Base	Base+	Com+	Max
Description of Features	PCB Based		PLC Based	
Maintenance Locking of all doors	Yes	Yes	Yes	Yes
Interlocking (1 User at time)	Yes	Yes	Yes	Yes
Fire or heat Alarm Integration	Yes	Yes	Yes	Yes
Recycling Bisorting/Trisorting	No	Yes	Yes	Yes
Floor in usage indication	No	No	Yes	Yes
Sanitizer Control *	Yes	Yes	Yes	Yes
Disinfectant Control	Yes	Yes	Yes	Yes
Automatic Brush Control*	No	Yes	Yes	Yes
Exhaust Fan Control *	No	Yes	Yes	Yes
Compactor Control	No	No	No	Yes
Selected door access control	No	No	No	Yes
Door Timed access control	No	No	No	Yes
BMS configuration, error relay	No	No	No	Yes
IP/ TCP Ethernet remote access	No	No	No	Yes

The fully programmable unit switches on and off at desired intervals and emits a vaporized liquid in ultrafine particles. The odor molecules bind with the neutralizer liquid molecules and the smell wears off. Neutralizer liquid can be easily replaced and a refill last for months

### Electrical Requirements & Technical Specifications:

99 On Off sequences available.  
1/2HP, Single phase compressor.

### Trolleys:

Available in Metal & Plastics  
120L, 240L, 330L, 660L, 1100L

Capacity Option of plastic/metal lids.



\* with User interface

# Debris Chute

**TALENT Clean Chute** Debris Chutes are made from High Molecular High Density Polyethylene (HMHDPE) and are offered in much higher thickness than other leading chutes. The hoppers are made with galvanized steel for extended life and use in cities where corrosion levels are normally higher. In tropical climates where humidity and therefore corrosion levels are high, HDPE provides a distinct advantage of being a high durable plastic. Further the abrasion levels of HDPE is several times superior to metal and cheap drums and therefore offers multiple use of the same chute at different projects.

## Features of the **TALENT Clean Chute** Debris Chutes

- Large 24" Inside Diameter
- Thicker, More Resilient HDPE
- High Abrasion Resistance
- Higher thickness for longer life.
- Safe, Easy, And Quick To Install
- Pays For Itself In 2 To 3 Uses
- Extremely Flexible System
- Hardware Is Galvanized
- Sections Are Telescopic For Ease Of Storage And Transport
- Intermediate Intakes Can Be Easily Placed Anywhere Along Chute

## Application areas:

- Roofing
- Renovation
- New Construction

## Complete System For Your Every Need:

- Window/Parapet Mountable
- Scaffold Mountable
- Flat Roof Mountable

## Standard Accessories include:

- Telescopic HMHDPE 24" chute body
- Floor Intake Hopper
- Holding Frame Bracket
- Galvanized Rods for floor connections

We also offer chutes constructed from HDPE pipes suitable for building upto 100 floors.



Mounting on Window Sill



Mounting on Floor Level



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