



 TE DESIGN

SHOPPING CART **DISINFECTION** SYSTEM

THE MOST **EFFECTIVE** METHOD FOR **DESTROYING** VIRUSES AND BACTERIA.

TE DESIGN shopping cart disinfection systems work by atomizing disinfecting liquids under high pressure to reach every point of the shopping cart in cloud form.

CONTAMINATION WAS ALWAYS THERE..

WHAT ARE THE FACTS?

Supermarket carts are used extensively by people causing the transmission of viruses and bacteria from person to person before the Covid 19 outbreak. Since these viruses and bacteria were not deadly and did not spread rapidly, we did not care about this situation. However, since the Covid19 pandemic, we have seen that viral contamination and spread fatally threatens our health. A solution had to be devised to disinfect the shopping cart and prevent the spread of the virus from shopping carts. Many methods have begun to be applied for the cleaning of supermarket carts. Among these methods, the traditional washing method is a long and labour-intensive method. In addition, one or more personnel must work continuously. It is both an expensive and ineffective method for people to clean with personal disinfectant wipes or fluids. When using the disinfection method with UV light, unilluminated side of the carts are not disinfected, and UV light must be applied to the surface for a long time for complete cleaning. For this reason, in markets where hundreds of shopping carts are used in a short time, this method is slow and ineffective.

WHAT IS THE SOLUTION?

TE DESIGN engineers studied all disinfection systems and methods to design their system. They concluded the system required for disinfection must be quick, effective, and economical. After the atomized disinfectants are sprayed on the shopping cart, they would remain on the surface for a long time until the cart is used. The atomized spray from the nozzles allows the mist to reach every surface. For this reason, the effective method that enables the liquid disinfectant to be sprayed on the object has been applied in the design. It is also determined that this misting method is quick and economical. The TE DESIGN disinfection system is designed to operate without staff. Spraying high-pressure liquid disinfectant by atomizing reduces the liquid consumption and ensures that the liquid disinfectant reaches every surface., The Shopping Cart Disinfection System can be used economically and effectively through the photoelectric sensor. It enables rapid disinfection for multiple shopping carts at the same time.

QUICK, EFFECTIVE AND ECONOMICAL !!!

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The SAFETY

CHILD SAFETY BARRIER

When the shopping cart disinfection system is not in use, uncontrolled passage through the disinfection tunnel is prevented by using a barrier.



LOCKED MAIN SWITCH

The control unit main panel is designed with a lock to prevent unauthorized access.



EMERGENCY STOP BUTTON

Two emergency stop buttons are placed on the tunnel and control cabinet. It is easily accessible in case of an emergency.



” Safety First



LOCKED DISINFECTION TANK COVER

It prevents unauthorized access to the tank. Flammable and irritating disinfectant liquids should not be put into the tank.



PRESSURE RELIEF VALVE

Some disinfection fluids are noted to produce gas. The pressure release valve helps in reducing the pressure in the tank to avoid danger. Some disinfection fluids may lose their properties when constantly in contact with oxygen. The valve on the tank ensures the evacuation of the trapped gas and prevents oxygen ingress. When the disinfection liquid in the tank decreases, reverse pressure will also develop, resulting in reduced disinfectant flow to the pump. This reverse pressure is reduced regularly by opening the cover of the tank.



WARNING LABELS

Visible safety warning labels are placed on the disinfection system.





STAINLESS STEEL MATERIALS

The disinfection tunnel and control cabinet are made of AISI 304 quality Stainless Steel, whereas the disinfection tank is made of AISI 316 quality Stainless Steel. Welded plumbing and environmentally friendly materials are used in our production.

ANTIBACTERIAL TRANSPARENT CURTAIN

An anti-bacterial curtain prevents the disinfection liquid from escaping the tunnel. The length can be adjusted according to the size of the shopping cart.



DEVICE SECURITY



DISINFECTANT LEVEL SENSOR

Tank level sensor protects the pump from running without liquid. When the liquid level is low, the disinfectant level light on the control cabinet turns on.



PROTECTION AND ALIGNMENT BARRIER

The protection barrier and alignment bar are made of a robust stainless-steel tube. The supermarket carts can safely pass through the center of the disinfection tunnel using the alignment bar. The sidewalls of the tunnel are also protected against accidental shopping cart bumps.



IP 65 CONTROL CABINET

The control cabinet is designed in accordance to the IP 65 protection class.

SYSTEM EFFICIENCY

NOZZLE

High-pressure nozzles atomize the disinfection liquid and spray it in the form of a fog. This atomization ensures reduced use of disinfection liquid and helps the liquid reach the shopping cart's entire surface. A total of six nozzles, two of them are on the top, two on the right-side wall and two on the left sidewall. One nozzle spray's approximately 0.05 l/min of the disinfection liquid at maximum pressure.



SENSOR

An object-sensitive photoelectric sensor is used in our design. When it senses the shopping cart entering the tunnel, the disinfection system's pressure pump powers up, and disinfection spraying begins. This feature prevents unnecessary operation of the system and reduces the consumption of the disinfection liquid. The sensing distance is adjustable through switches in the Modular Control Unit, allowing it for use on all sizes of shopping carts. The photoelectric sensor works in all harsh environments.



MODULAR CONTROL UNIT

With its wheeled structure, the control unit can be positioned anywhere within five meters from the disinfection tunnel. It allows the installation of the disinfection system even in narrow spaces. Users can place the control cabinet in a sheltered area to prevent unauthorized access.



TANK

The tank is made of corrosion-resistant AISI 316 quality stainless steel. The tank comes with a liquid level indicator and a pressure relief valve with a lock and key to prevent unauthorized access. The tank has a capacity of 10 gallons, sufficient to keep the system running continuously for approximately 120 minutes. The disinfection system's operation is so quick that 15 shopping carts can be disinfected in 10 seconds. A user can disinfect more than 10,000 shopping carts in a tank full of disinfectant.



PUMP

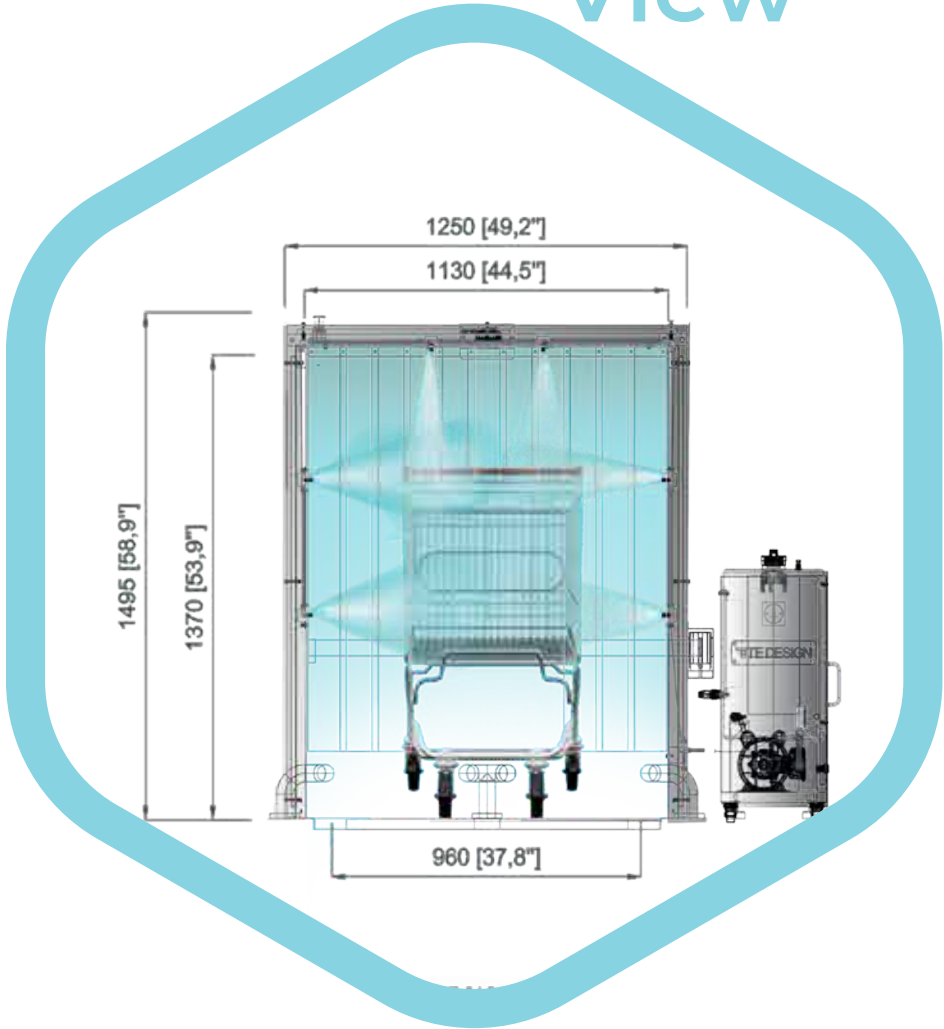
The pressure of the high pressure pump is adjustable by the pressure gauge on the pump helping technical staff. The bypass line on the pump protects the pump and the system.

EXAMPLE OF AN APPLICATION



Technical Drawings

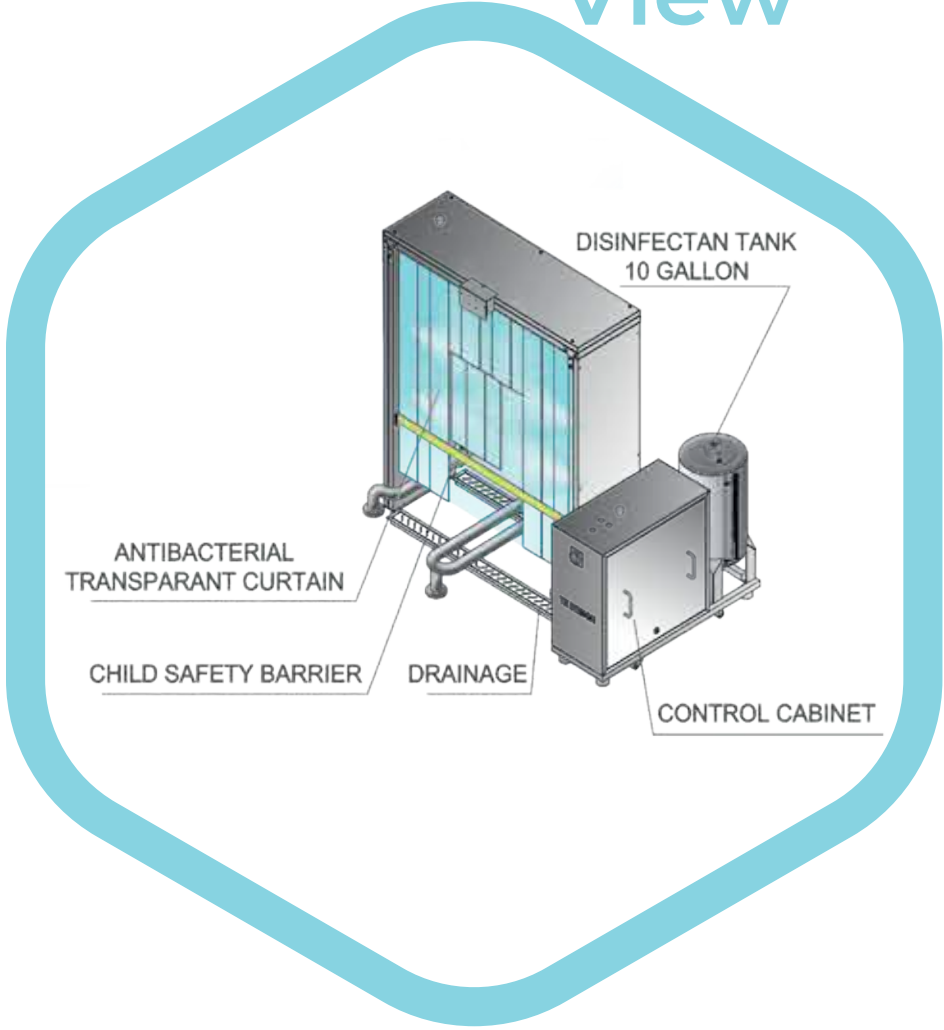
Front View



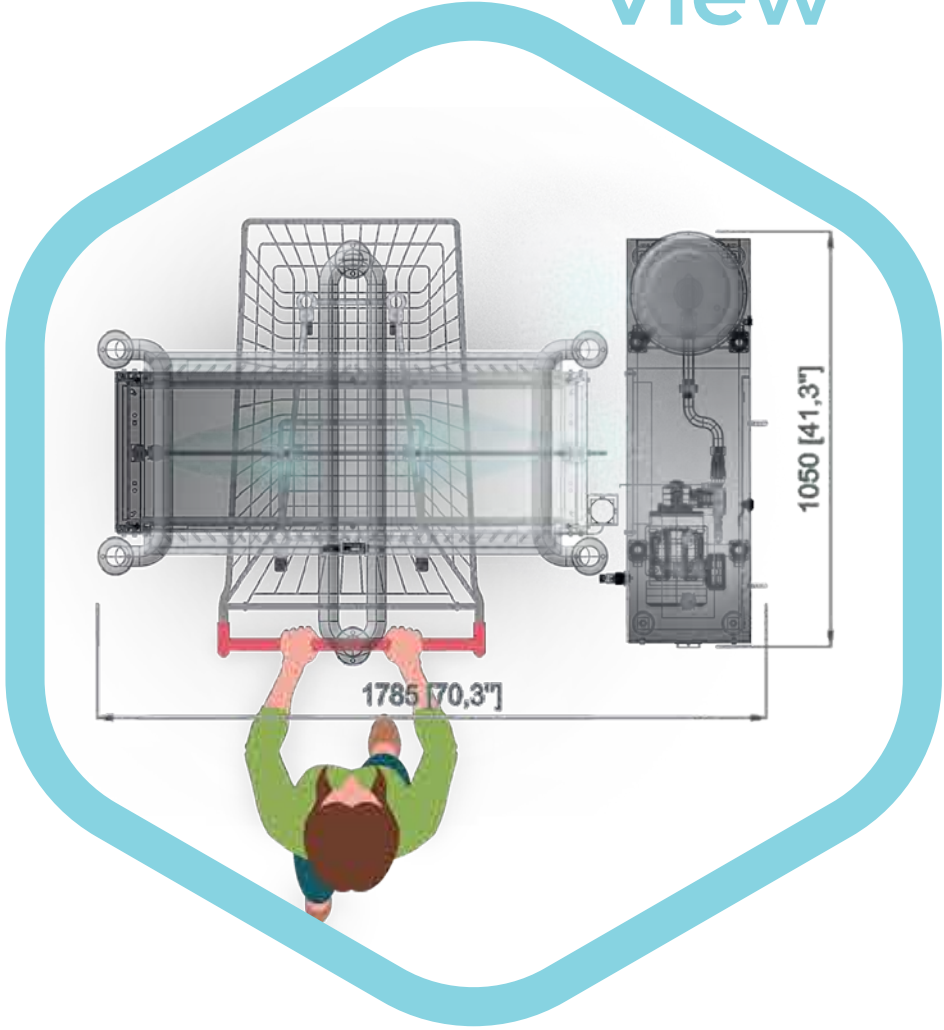
Side View



Perspective View



Top View




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UYGUNLUK SERTİFİKASI

CERTIFICATE OF CONFORMITY

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Referans Standart(lar) Reference Standard(s)	: EN ISO 12100:2010, EN 60204-1:2018, EN ISO 13850:2015, EN ISO 14120:2015
Test Raporu Test Report	: Benart Uluslararası Teknik Kontrol Ve Belgelendirme Ltd.Şti. : LVD-3595
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Genel Müdür/General Manager





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99,9% hygienic



Customer-friendly



Practical & easy to use



Cost-saving



OTHER DISINFECTION SYSTEMS

LUGGAGE DISINFECTION SYSTEM



CARGO DISINFECTION SYSTEM



STRETCHER DISINFECTION SYSTEM





**Quick, Effective
and Economical !!!**



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