



## Overview

The Vision Guided Robotic Workcell is a reference design that performs flexible pick and place operations using the VIM-303 camera. The workcell is comprised of off-the-shelf components, a VIM-303 camera, and VIM-303 accessories. Visual Robotics has curated the best off-the-shelf components to work together with our own components to provide a high performance solution. The system can be assembled by an end-user for a component cost of under \$75,000.

Component	Supplier
VIM-303 Camera	Visual Robotics
Camera Mount for UR3, UR5, UR10	Visual Robotics
5m High Flex M12-RJ45 Gigabit Ethernet Cable	Visual Robotics
Suction Gripper Kit	Visual Robotics
Robot Cart	Vention
Universal Robot UR5	Universal Robot distributor
Air Compressor	California Air Tools
Monitor Mount	CompuLocks
Magnetic Tablet Mount	MacLocks
Tablet	Samsung
Ruggedized Tablet Case	Otterbox
Right angle USB-C cable	Aniope
PoE network switch	Netgear
PoE to USB adapter	PoE Texas
Miscellaneous components	Various

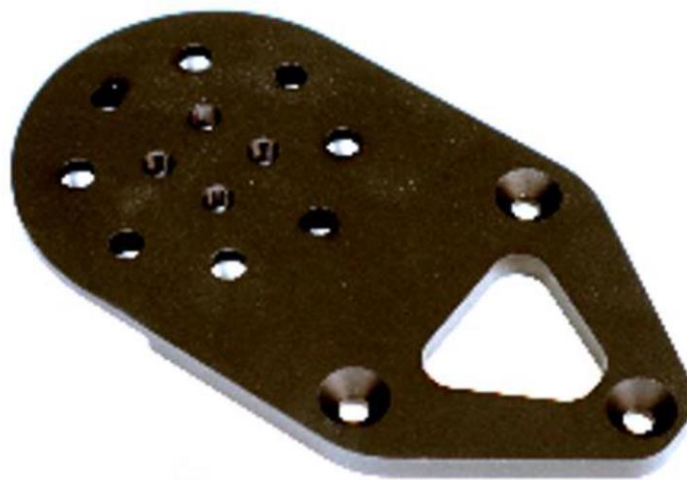
## VIM-303 Camera

The VIM-303 camera forms the heart of the workcell, providing vision guidance and program control to the robot for pick and place operations.



## Camera Mount

The camera mount attaches the VIM-303 camera to the Universal Robot wrist.



## 5m High Flex Ethernet Cable

The Ethernet cable connects the VIM-303 to the PoE network switch.



## Suction Gripper Kit

The Suction Gripper Kit provides a flexible and cost effective end effector for pick and place operations.



## Robot Cart

The robot cart was designed by Visual Robotics, made of components available from Vention. The cart is end-user assembled from aluminum extrusions, aluminum interconnect plates, plastic panels, locking caster wheels, handles, and fastening hardware. The cart provides mounting for a Universal Robot UR5, air compressor, monitor mount, and interface electronics.



## Universal Robot UR5 Robot Arm and Controller

The UR5 Robot Arm from Universal Robots is an ideal size for many pick and place operations. The robot controller is mounted on the bottom of the cart, while the robot arm is mounted on the top. Either the older CB series or newer e series can be used. The CB can be purchased on the used market.



UR5 CB



UR5e

## Air Compressor

The California Air Tools CAT-4610AC provides good air flow and quiet operation. It is mounted on the bottom of the robot cart.



## Monitor Arm

The Compulocks monitor arm bolts onto the robot cart and allows the tablet to slide under the cart for transport and to slide out and up for use.



## Magnetic Tablet Mount

The Maclocks magnetic mount allows the tablet to be removed from the monitor arm if desired.



## Tablet

The Samsung Galaxy Tab A8 provides a familiar user interface with a 10.5" touch screen.



## Ruggedized Tablet Case

The Otterbox Defender provides protection to the tablet.



## Right angle USBC cable

This cable connects the tablet to the PoE to USB adapter, which provides power and Ethernet communication.



## PoE Network Switch

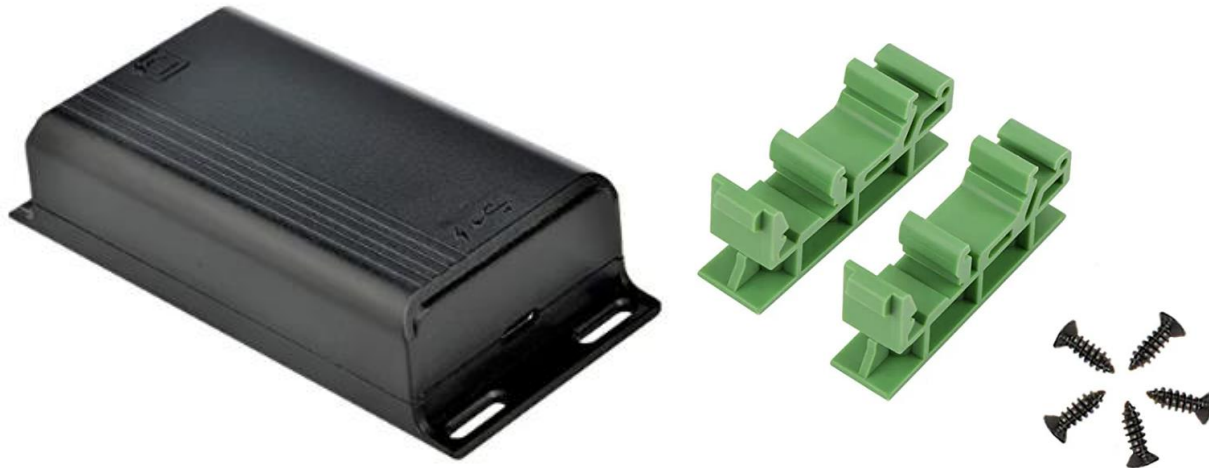
The Netgear GS305P has an AC adapter, while the Linovision switch is powered from 24V from the Universal Robots controller and comes with a DIN rail mount.





## PoE to USB Adapter

The GAT-USBC-PD-R2V2 from PoE Texas provides power and communication to the tablet from the PoE network switch. Optional DIN rail mounts can be used.



## Miscellaneous Components

Miscellaneous components, such as a power strip, Ethernet cables, and shock mounts are needed to complete the workcell.

## Bill of Materials

A Bill of Materials to construct the workcell may be provided upon request.

## Assembly Instructions

Assembly instructions for construction of the workcell may be provided upon request.