

Double-Check

INSTALLATION & OPERATION MANUAL



P/N DCA100517



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SAFETY

Automation Peripherals is concerned with the safety and welfare of its customers and their employees. Careful consideration has been given to the design and safety hardware supplied in this product. The product described in this document contains safety equipment that is intended as a supplement to the customer's complete safety program for this installation. These safety precautions are not meant to replace any related Federal, State or Municipal laws, regulations, or guidelines pertaining to safety. Automation Peripherals believes that the appropriate levels of safety for an installation can best be determined by safety professionals most familiar with the intended application, and we consider it the responsibility of the customer to ensure this level of safety be accomplished. We recommend that each customer consult with such professionals in order to provide a work place that allows for the safe application, use and operation of this proposed product.

SPECIFICATIONS

Standard

Height3.25"

Width4.00"

Depth14.67"

Weight.....3 lbs.

Electrical Rating24 VDC/120 VAC/4 amp

Wire Gauge Sizes035/.045/.052

Cord Set Length6 ft./8 ft. optional

The Double-Check is designed to check welding torch wire alignment quickly and efficiently when positioned within the work envelope of a robot. The robot should be programmed to move the torch welding wire over the wire gauge assembly and through the specified wire gauge hole. If the wire does not pass through the wire gauge hole and the paddle assembly is depressed, this activates an isolated electrical contact, which may be set to put the robot in a hold status.

INSTALLATION

The Double-Check device must be mounted within the work envelope of a robot at a stationary location that is easily accessible by the robot. It should be installed on a flat, rigid, immovable surface, or a rectangular immovable post.



Figure 1 - Flat Surface Installation

Flat Surface Installation

1. Using 1/4 - 20 UNC hardware (not provided), mount the Double-Check using the two 5/16" diameter holes. Do not over tighten hardware. If the mounting surface is not flat, distortion of the aluminum base plate can occur and cause malfunctions.
2. To assure accurate positioning, two smaller 1/4" diameter diagonal holes on opposite corners have been reamed for dowel pins. These holes are designed slightly undersized for press-fit dowel pin installation.
3. To install the cord-set, match the female cord-set to the male plug located on the Double-Check. This pair has been keyed for proper electrical connection. Do not over tighten the female cord-set. This may cause twisting of the male plug.
4. Route the cord-set cable away from any possible obstacles (i.e., moving fixtures, positioners or mechanical devices).

****For wiring schematic, refer to page 11.***

OPERATION

NOTE: To accurately check the torch wire alignment, it is recommended to snip the wire before running the Double-Check program. If the wire is not snipped, a larger diameter wire gauge is needed for the ball-tipped wire to pass through the hole.

Initial Programming

1. Create a new robot program to move safely over and above the paddle of the Double-Check with an entry point one inch above the wire located on the paddle.
2. The wire stick-out from the end of the nozzle must be 1/2" - 5/8" long. If using a short-arc welding process, the wire must be 1/2" - 5/8" long from the contact tip (see Figure 2).
3. The robot must then move in linear interpolation so the welding wire moves down through the center of the wire gauge hole (see Figure 2).



The nozzle or contact tip must not come into contact with the wire gauge or paddle.



Figure 2 - Welding wire through wire gauge hole

4. To allow safe and accurate exiting, the point must be programmed again in linear interpolation and exit one inch above the wire gauge.

The robot can be programmed to return safely to the starting point of the program.

Automatic Operation

1. To ensure safety, before using the Double-Check in an automatic operation, walk through the program manually.
2. The purpose of this program is to “double-check” the accuracy of the welding torch wire. It can take place before or after the part program or in the automatic mainline program.
3. If the robot torch wire does not pass through the wire gauge assembly and depresses the paddle, the robot can be placed in a hold status. This is to be determined by the end user.

NOTE: The operator determines if torch alignment is needed to continue production or improve weld placement.

MAINTENANCE

There is virtually no maintenance required on the Double-Check device.

Maintenance Recommendation

Occasionally blow compressed shop air indirectly around the paddle slot for 1-2 seconds.

Change Wire Gauge

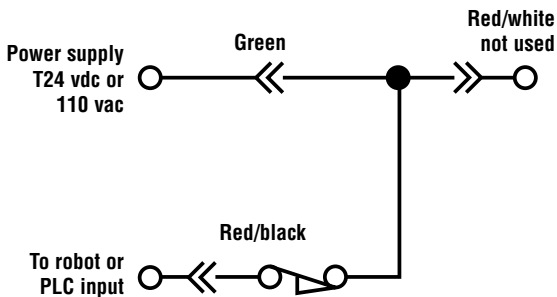
Use a snap ring pliers to remove the snap ring from the wire gauge underneath the Double-Check paddle.

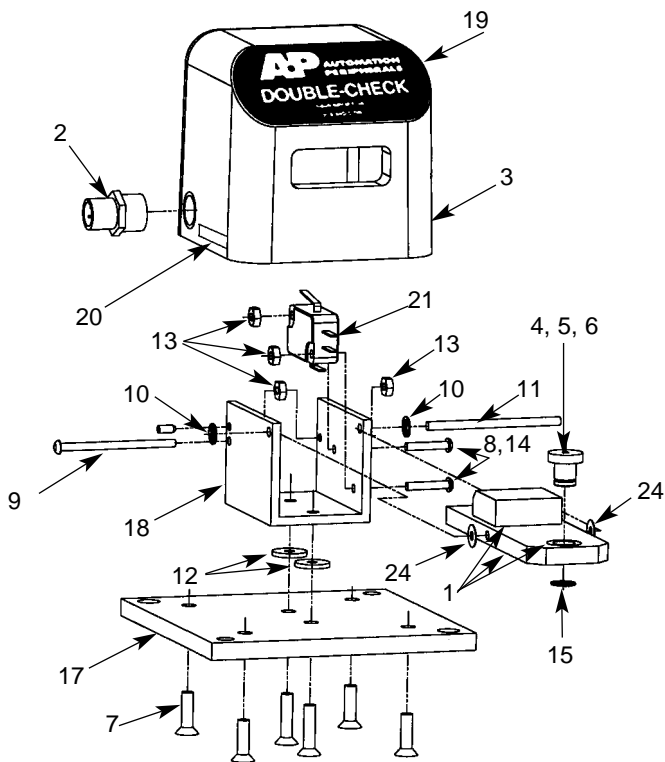
TROUBLESHOOTING

PROBLEM	SUGGESTED REMEDY
Double-Check not sensing paddle movement.	<ul style="list-style-type: none">• Check cord set cable for damage.• Check micro switch.• Check device onto which Double-Check is wired (i.e., PLC, Robot Input, etc.)
Paddle assembly not returning to starting position.	<ul style="list-style-type: none">• Check paddle assembly for damage.• Adjust paddle tension bolt assembly (Items 9 and 13)

WIRING DIAGRAM

Typical Application





DOUBLE-CHECK PARTS LIST

No.	Item No.	Part Description
1	DCA100	Paddle Assembly (consisting of: Paddle, Counter Balance, Liner)
2	DCA101	Wire Harness Assembly (consisting of: Receptical, Wire Spade Connector/Not Shown)
3	DCA102	Housing Assembly (consisting of: Cast Cover, Logo Label)
4	DCA103	Wire Gauge Assembly .032 (consisting of Wire Gauge, S-Ring)
5	DCA104	Wire Gauge Assembly .045 (consisting of: Wire Gauge, S-Ring)
6	DCA105	Wire Gauge Assembly .052 (consisting of: Wire Gauge, S-Ring)
7	DCA106	Hardware 8-32x1/2 SHFH Capscrew (6)
8		Hardware 4-40 Hex Nut (2)
9		Hardware 1/8x2 SS Dowel Pin (1)
10		Hardware MRW-10 Push Nut 1/8" Washer (2)

DOUBLE-CHECK PARTS LIST

Item No.	Part No.	Description
11		Hardware 4-40x2 Screw Spreader Bolt (1)
12		Hardware MRW-10 Mylar Washers (2)
13		Hardware 4-40 Lock Nut (4)
14		Hardware 4-40x5/8 Capscrew (2)
15		Hardware 98410A115 S-ring (1)
16		Hardware 8-32x1/2 Set Screw (1)
17	WCHK001	Base Plate
18	WCHK004	U-Channel
19	WCHK010	Nameplate - logo label
20	Serial #	Serial Number Label
21	23F1799	Micro Switch
22	WKB3T-6	6 Meter Cable (not shown)
23	WKB3T-8	8 Meter Cable (not shown)
24		Hardware Shim Washer (2)

AUTOMATION PERIPHERALS

Fifteen Month Limited Warranty

Automation Peripherals will repair or replace, at its expense and at its option, any Automation Peripheral machine, machine part, or machine accessory (excluding consumable components) which in normal use has proven to be defective in workmanship or material, provided that the customer returns the product or defective component to the Automation Peripherals service center within fifteen months from the product's original date of shipment from Automation Peripherals and provides Automation Peripherals with reasonable opportunity to verify the alleged defect by inspection. Automation Peripherals will not be responsible for any asserted defect which has resulted from normal wear, misuse, abuse or repair or alteration made by anyone other than an authorized Automation Peripherals facility or representative. UNDER NO CIRCUMSTANCES WILL AUTOMATION PERIPHERALS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM DEFECTIVE PRODUCTS. THIS WARRANTY IS AUTOMATION PERIPHERAL'S SOLE WARRANTY AND SETS FORTH THE CUSTOMER'S EXCLUSIVE REMEDY, WITH RESPECT TO DEFECTIVE PRODUCTS; ALL OTHER WARRANTIES, EXPRESS, OR IMPLIED, WHETHER OF MERCHANTABILITY, FITNESS FOR PURPOSE, OR OTHERWISE, ARE EXPRESSLY DISCLAIMED BY AUTOMATION PERIPHERALS.



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