Glove Examination of Nitrile Coated Gloves

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1. Purpose

The purpose of this document and project is to evaluate the performance of UICO products with a specific nitrile coated work glove.

2. Introduction

UICO products are designed and tuned to perform based on each customer use case with environmental conditions taken into account accordingly: dry or wet conditions, moisture type and volume present, lighting conditions, glove usage with specific glove type(s), noise conditions with the integration and other conditions that may arise from the use case., UICO will test 2 UICO tuned products for touch performance with the MCR Safety Predator 9761 gloves that seem to be similar to the Pro fit 2409 Hercules Nitrile Coated gloves .

3. Proposed Test Plan

This section will serve as a guide to conduct glove testing as well as disseminate and discuss the results of said data collection upon completion. Two devices have been selected to compare. One that was specifically tuned for gloves, and one that was tuned for dry touch.

3.1. UICO Devices to Use for Testing

- Glove Tuning: duraTouch 10” T3
- Non-Glove Tuning: duraTouch 7” T3

3.2. Gloves to be Tested

- Nitrile Gloves
- Nitrile Dipped Gloves
- Gardening Gloves
- Winter Gloves

Images of the selected gloves can be found in Appendix A: Gloves Used for Testing

3.3. Testing Parameters

An exploratory testing methodology will be used for this project. As such the testing parameters, and in particular the Pass/Fail criteria will not be based on a strict numerical goal to pass. Instead, the results will be collated into a table to disseminate, and the results will be discussed by the UICO Engineering team to determine the efficacy of using the tuned products for use with these gloves. Next steps could include acceptance of use of the current product with these gloves as tuned or a recommendation for a new tuning configuration.

3.4 Tests and Criteria

3.4.1 Subjective Swipe/Tap (glove)

There are two major performance criteria that will be used for comparison: tap and swipe performance with each glove type identified above in addition to a bare finger for comparison.

TABLE 1: DURATOUCH DEVICE TESTING

DUT	Attempt	Glove	Touches (out of 10)	Swipes (out of 10)	Comments
10" T3	1	Bare Finger	10	10	
10" T3	2	Bare Finger	10	10	
10" T3	3	Bare Finger	10	10	
7" T3	1	Bare Finger	10	10	
7" T3	2	Bare Finger	10	10	
7" T3	3	Bare Finger	10	10	
10" T3	1	Nitrile	10	10	
10" T3	2	Nitrile	10	10	
10" T3	3	Nitrile	10	10	
7" T3	1	Nitrile	10	10	
7" T3	2	Nitrile	10	10	
7" T3	3	Nitrile	10	10	
10" T3	1	Nitrile Dipped	9	10	The Nitrile Dipped gloves gave me a little grief at first but ended up requiring very little pressure to work on either DUT after becoming accustomed to them. The gloves themselves are quite rigid
10" T3	2	Nitrile Dipped	9	9	
10" T3	3	Nitrile Dipped	10	10	
7" T3	1	Nitrile Dipped	9	10	

7” T3	2	Nitrile Dipped	10	10	
7” T3	3	Nitrile Dipped	10	9	
10” T3	1	Garden Glove	10	8	
10” T3	2	Garden Glove	10	9	
10” T3	3	Garden Glove	9	8	
7” T3	1	Garden Glove	10	9	
7” T3	2	Garden Glove	8	10	
7” T3	3	Garden Glove	8	9	
10” T3	1	Carhart Winter Glove	8	8	
10” T3	2	Carhart Winter Glove	9	8	
10” T3	3	Carhart Winter Glove	9	7	
7” T3	1	Carhart Winter Glove	10	6	
7” T3	2	Carhart Winter Glove	9	7	
7” T3	3	Carhart Winter Glove	9	6	

4.0 Discussion of Results/Executive Summary:

The purpose of this evaluation was to determine the efficacy of using knit gloves coated with nitrile with duraTouch devices. In addition to the specific glove selected for examination, other gloves were selected to provide context to the results. In order of glove thickness the tests were conduced with and the proportion of successful interactions :

1. Bare Finger:
    a. 120/120 or 100%
2. Nitrile:
    a. 120/120 or 100%
3. Nitrile Dipped
    a. 115/120 or 96%
4. Gardening Gloves

    a. 108/120 or 90%
5. Winter Gloves
    a. 96/120 or 80%

In general, as the gloves got thicker the recorded number of successful swipes and taps went down but not significantly. Because the performance was not significantly degraded when switching between test devices, and that neither device was tuned for these kinds of gloves specifically, the UICO Engineering team can confidently say that the nitrile coated knit gloves can be used with duraTouch products successfully. More tuning may be possible depending on the other conditions required for the customer use case(s).

Appendix A: Gloves Used for Testing

FIGURE 1: NITRILE GLOVES

FIGURE 2: NITRILE DIPPED GLOVES

Item#: MCR-9761 Description

The 9761 Predator gloves provide unparalleled protection in the workplace, thanks to their fully coated premium nitrile on a soft jersey liner. The gloves also feature a safety cuff and are treated with Actifresh to prevent odors.

MCR Safety 9761 Features:

- Fully Coated Premium Nitrile Coating
- Soft Jersey Lining
- Safety Cuff for additional protection
- Treated with Actifresh to reduce odors

ANSI Ratings:

- Cut - A3
- Contact Heat - 3 (Less than 392°F)

Applications: Agriculture, Carpentry, Construction, Farming, Forestry, Material Handling, Metal fabrication

FIGURE 3: GARDENING GLOVES

FIGURE 4: WINTER GLOVES