



A Rockwell Automation Company

## Captin - Canadian Autoparts Toyota Inc. Development of Plant Standards

### The Client:

Canadian Autoparts Toyota Inc, or 'Captin' as it is more commonly referred to, is an automotive wheel manufacturing plant located in Delta, British Columbia. Captin manufactures aluminum wheels exclusively for the Toyota automobile company for use on both their passenger cars and light trucks. Captin was incorporated in March of 1983 and

is the first manufacturing investment in Canada by a Japanese automobile company. The plant occupies 24 acres and has an annual production of over 1 million aluminum wheels using state of the art automated manufacturing facilities.

### The Requirement:

The plant is a complete manufacturing facility that takes in raw material and produces finished, ready for installation aluminum wheels. The Manufacturing process is comprised of casting machines, computerized lathes, robot controlled machine systems, painting robots, and many other highly automated processes. The manufacturing equipment throughout the plant is purchased from a variety of vendors from around the world and is supplied as complete stand alone units, including the Unit Control System.

The control systems used can vary widely depending on what part of the world the equipment comes from. This is

the cause of much grief for the maintenance group who has the responsibility of debugging and troubleshooting the program in the event of a malfunction. With the intent of providing more uniformity within the plant control/electrical equipment, the maintenance personnel at Captin elected to hire someone to develop plant standards for electrical and control equipment. Hinz was selected due to their prior experience in developing control design standards for new "Greenfield" industrial plants.

### The Design Solution:

Future control systems that will be used in the Captin wheel manufacturing plant will be supplied and programmed by several different vendors, each with their own programming methods and standards. Since these systems will be installed in the same plant, used by the same operators, and maintained by the same tradesmen, all control system suppliers must adopt to a single set of standards. A standard needed to be developed which would provide enough information to allow the perspective vendors to design a control system that fit in well with the existing plant supply.

The document created by Hinz is a "Control System Overview" and is a breakdown of the plant requirements for all control system equipment to be supplied with the new equipment and a description of the existing control system architecture within the plant. This was provided to give the respective supplier an indication of how their equipment would interface into the plant.

The overview provides the vendors with a list of currently acceptable control system vendors and the desired model types. It is expected that the successful vendors will supply one of these pre- approved systems while still providing the

flexibility of choice, as not all types of equipment are available at all corners of the world.

The overview then goes into more detail about the general structure of the PLC program as well as the standard for input/output tagging. These standards have been developed in order to deliver a uniform control system to the plant at the completion of the project. Each section outlines the mandatory requirements and provides examples in the form of drawings, lists, or printouts where needed for clarity

The majority of the PLCs used within the plant are the Allen-Bradley SLC 5/04, and there is presently an initiative within the plant to replace other brands of PLCs with the SLC 5/04s, as time and money permit. With the majority of the PLCs being, or about to be, of the same type, the use of a programming standard will provide a seamless look and feel between the different pieces of process equipment.



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Captin Autoparts Toyota Inc.  
Control System Overview

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### System Specifications:

- Control System Overview
- Development of Programming Standards

For further information or to contact a Hinz office near you, please check our website at:

[www.hinz.com](http://www.hinz.com)