



BOSCH

ASSIGNMENT REPORT

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1. Introduction

In a world where the open source as been gaining more pace and where the interoperability is a big concern. Some systems like CAD are still totally closed, creating problems when the users need to communicate or change to other systems.

In other hand, communities like Dublin Core Metadata Initiative, Schema.org, Wikidata, among others, are putting efforts in metadata specifications, vocabularies and definitions of terms. These efforts supported by linked data method can change the way that we work and access to data.

In this work try to attain this concern. We choose one object of equipment in order to catalog manufacturing information about a Heavy Duty C-Washer (similar to DIN 6372 or GN 183). In section 2 is presented the object description, in section 3 the table of terms used described by Uniform Resource Identifier (URI) and in section 4 one Resource Description Framework (RDF) data model representing the properties of the resource.

2. Object description

Washer is a metal thin plate typically disk-shaped with a hole in the middle that is normally used to distribute the load of a threaded fastener, such as a bolt or nut. C-Washer is one type of washer, but in form of letter C, like represented in the Figure 1 below. This specific product is fabricated from a specific type of material: steel.



Figure 1 - C-Washer

To manufacture this type of object is necessary to consider some measures, such as their inner and out radius, width, height. The **Figure 4** represents the specification of those measures.

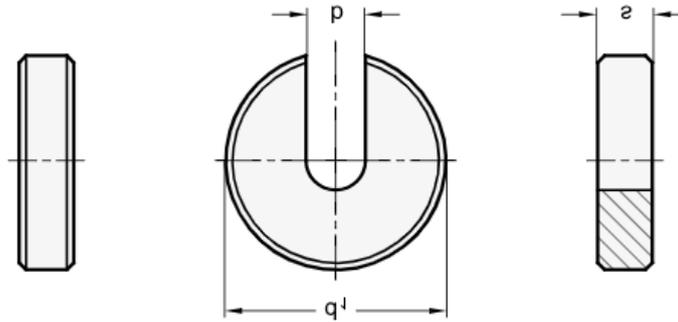


Figure 2 – Measures specification of C-Washer product

The Figure 3 represent the standards dimensions of the C-Washers fabricated by JW Winco company. Those dimensions in this table refers to the measures presented in the Figure 2.

Part Number	d_1	b	Fits	s
28ACW1	31.8	7.1	1/4	6.4
34ACW1	31.8	8.6	5/16	7.9
41ACW2	38.1	10.4	3/8	9.7
53ACW3	50.8	13.5	1/2	9.7
63ACW5	54.1	16.0	5/8	9.7
78ACW5	63.5	19.8	3/4	11.2
91ACW6	66.8	23.1	7/8	12.7
103ACW7	76.2	26.2	1,00	14.2

Figure 3 - Part Options

3. Table of Terms

In Table 1, is presented the information about the terms used to specify the object characteristics. For each attribute, we have information about the property used to describe it, the Wikidata equivalent property, the values allowed to fulfil that attribute and one small description about that property.

Table 1 - Table of terms

Attribute	Property URI	Wikidata eq. Property URI	Acceptable values	Description
Name	https://schema.org/name	https://www.wikidata.org/wiki/Q82799	varchar(15)	The name of the item.

Description	https://schema.org/description	https://www.wikidata.org/wiki/Q1780466	varchar(50)	A description of the item.
Identifier	https://schema.org/mpn	https://www.wikidata.org/wiki/Q853614	varchar(6)	The Manufacturer Part Number (MPN) of the product, or the product to which the offer refers.
Inner Radius	https://schema.org/geoRadius	https://www.wikidata.org/wiki/Q173817	Decimal - 0-360	Indicates the approximate radius of a GeoCircle (metres unless indicated otherwise via Distance notation).
Outer Radius	https://schema.org/geoRadius	https://www.wikidata.org/wiki/Q173817	Decimal - 0-360	Indicates the approximate radius of a GeoCircle (metres unless indicated otherwise via Distance notation).
Width	https://schema.org/width	https://www.wikidata.org/wiki/Q35059	Decimal	The width of the item.
Height	https://schema.org/height	https://www.wikidata.org/wiki/Q208826	Decimal	The height of the item.
Material	https://schema.org/material	https://www.wikidata.org/wiki/Q214609	varchar(30)	A material that something is made from, e.g. leather, wool, cotton, paper.
Condition	https://schema.org/itemCondition	https://www.wikidata.org/wiki/Q813912	varchar(50)	A predefined value from OfferItemCondition or a textual description of the condition of the product or service, or the products or

				services included in the offer.
Weight	https://schema.org/weight	https://www.wikidata.org/wiki/Q25288	Decimal	The weight of the product or person.
Owns	https://schema.org/owns	https://www.wikidata.org/wiki/Q16869121	varchar(20)	Products owned by the organization or person.

4. Relation Between Terms

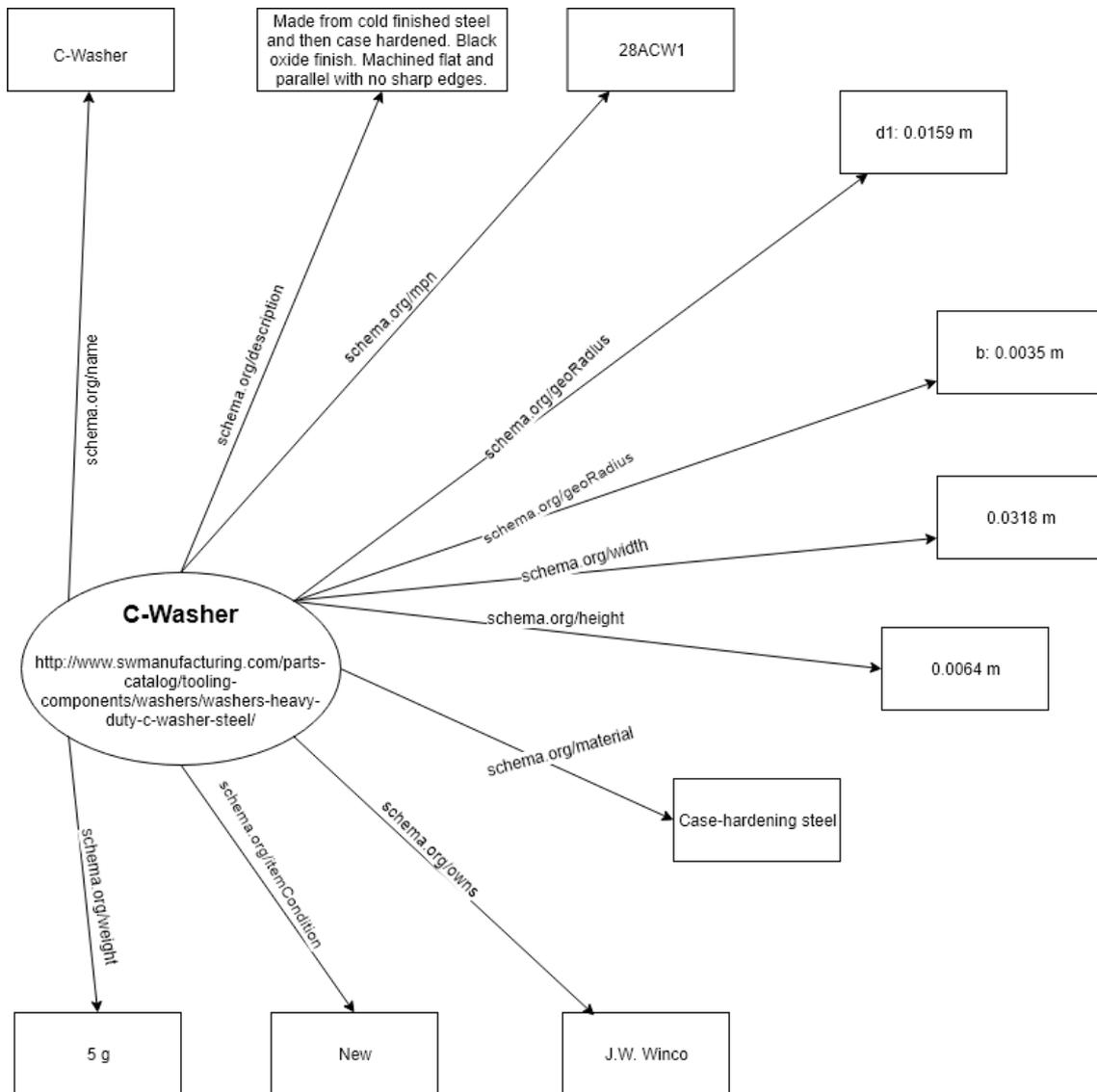


Figure 4 – RDF representation

5. Conclusions

The aim of this work was to describe a particular part or component by cataloguing their manufacturing information. Our effort was using encoded standards to create an RDF with URI for a certain object description in order to specify it against many competing descriptions. Ideally this should be able to interoperate with CAD. Further developments can collect this part description and combine them with necessary tools to produce it.