

# Illustrated Parts Catalogue Library for Aftersales

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**Abstract:-** In aftersales, An Illustrated Parts Catalogue is a reference document with schematic drawings and part numbers used to identify and order for specific components for products. creating an illustrated parts catalogue for different assemblies can be a complex and time-consuming process every time when new parts change in part variants from suppliers. This paper proposes an automated solution that utilises 3D assembly to streamline the creation of illustrated parts catalogues. The creation of part library helps illustrator to retrieves the required part or the bill of material from the catalogue and creates the schematic drawings, which are necessary for the creation of part illustration. This improves part duplication, accuracy and consistency, and additionally, it improves customer satisfaction by allowing for quick and easy access to part information. By adopting this solution, aftersales can improve their operational efficiency and productivity, ultimately leading to a more streamlined and effective approach to managing the parts catalogue.

**Keywords:-** Parts Catalogue; Illustration; Aftersales; Library.

## I. INTRODUCTION

Aftersales service is an important part of any manufacturing industry as it ensures customer satisfaction, retention, and loyalty. One of the key aspects of aftersales service is the efficient and accurate management of parts catalogues, which enables quick and easy access to parts information for repairs and maintenance. However,

managing parts catalogues can be a time-consuming and error-prone process, leading to delays in providing replacement parts and ultimately impacting customer satisfaction. To address these issues, an Illustrated Parts Catalogue (IPC) library was developed using 3D software and Illustrated Tool. The IPC library contains detailed information about the components and assemblies for each product, which can be accessed by entering a unique part number.

This paper outlines the development process and benefits of the IPC library for the Aftersales Department. Also it will discuss about the challenges faced in after-sales parts catalogue management and how the proposed solution can address these challenges. It will also explore the benefits of adopting an automated approach to parts catalogue management, including improved customer satisfaction, increased productivity, and better service and support for customers. Finally, the paper will provide insights into the implementation and deployment of the solution and its potential impact on the after-sales department.

## II. METHODOLOGY

Every time there is change in existing part design or new variants with minor change in the bill of material part numbers will lead to illustrator creating an (IPC) is complex and more time. Common issues include maintaining accurate and up-to-date part information like quantity, price and hardware parts. In many manufacturing companies, the process of identifying and ordering parts for repair or maintenance can be complex.

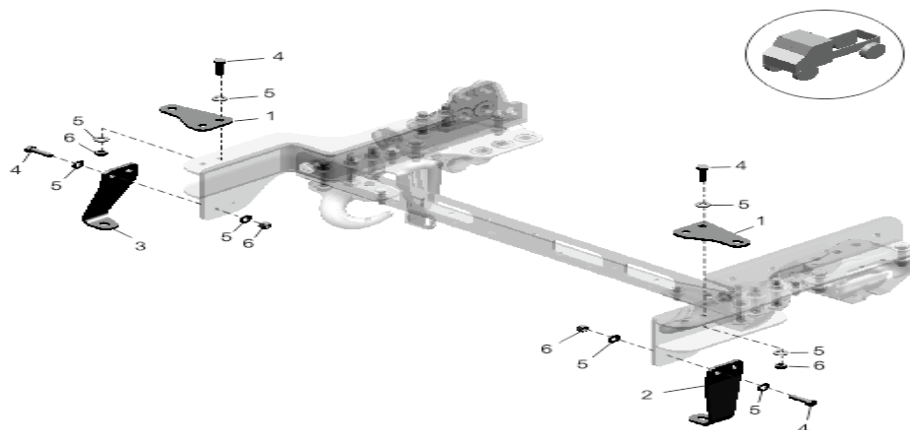


Fig. 1: Example To Show IPC Illustration of Brackets

An illustrated parts catalogue follows a systematic structure, encompassing various groups dedicated to distinct systems. These groups are further divided into sections, and

within each section, there are modules containing schematic drawings specifically illustrating the associated parts.

Table 1: Illustrated Text Page of The Brackets

BUMPER BRACKET				
Ref	Description	Part Number	Quantity	Price
1	BRKT-BMPR UPPER	Part Number-1	2	\$10
2	BRKT-BMPR LOWER, LH	Part Number-2	1	\$12
3	BRKT-BMPR LOWER, RH	Part Number-3	1	\$12
4	SCREW-CAP,HEX,1/2-13	Part Number-4	8	\$0.70
5	WASHER-HRDN,0.53X1.06	Part Number-5	16	\$0.08
6	NUT-BMPR BRKT,8"	Part Number-6	6	\$0.80
	INSTL-BMPR BRKT		R	

The parts in the assembly illustrated are given in tabular format on the right-hand side of the catalogue. The details entered in the tabular format are explained below.

- The Reference column shows the reference for the drawings.
- The Part number column gives the manufacturer’s part number (or standard number).

- The Description column gives the name of each part.
- The quantity per assembly column indicates the quantity of a part required for the illustrated assembly.
- The Price column indicates the cost for the each component.

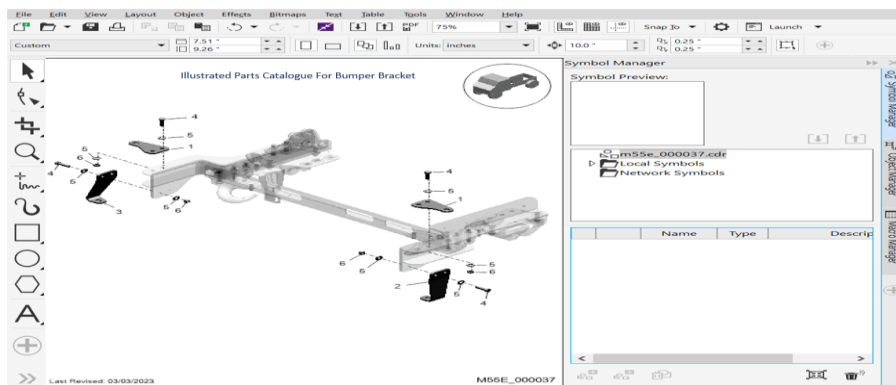


Fig. 2: Illustrated Tool without Library

The traditional process involves Illustrator gets request for IPC creation when there is new part or change in variant. An Illustrator will create each component manually and arrange it as per the customer's requirements. If in the data base the existing illustration is already available for the required parts which leads to duplications and also it is more time-consuming and leads to errors in identifying parts for

the required assembly. The optimised solutions to overcome this, an illustrated parts catalogue library was implemented the detailed explanation are given below in case 01 and case 02 scenarios . When the unique part number is entered, it will automatically retrieve the corresponding part from the illustrated part library and provide the particular part with technical data for the schematic drawings.

A. CASE 01

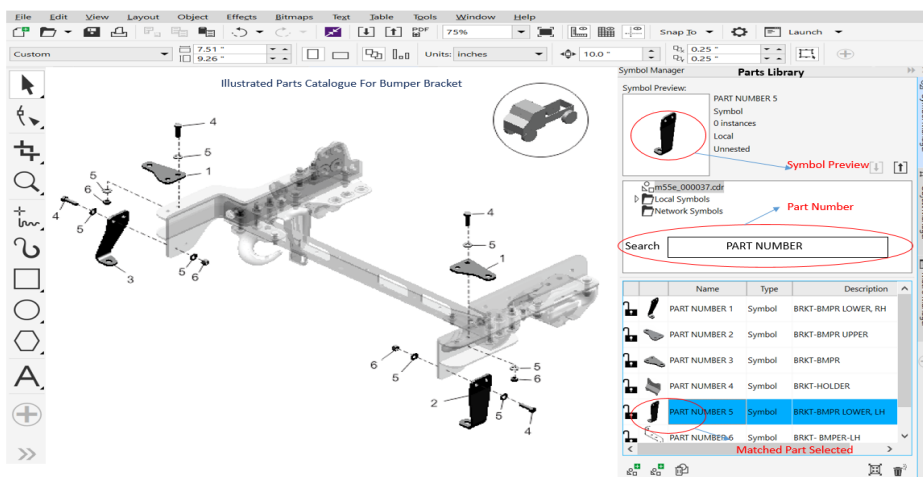


Fig. 3: Illustrated Tool Library Searching Part Number

Implementation of an illustrated parts catalogue library has yielded significant results in improving the efficiency and effectiveness of aftersales. The manual process of searching and referencing physical drawings is time-consuming and may lead to errors. So With the help of Illustration library the Analyst can get the existing part illustration/ required schematic drawings by entering the Part number into the Illustration tool. Then, it will compare the nomenclature and part numbers in the existing library and determines whether the illustrated parts catalogue will

be present for that part number or not. If the Illustrated Parts Catalogue already exists in the library, then it directly shows the matching or the standard parts and analyst can drag that part directly from the library and if any changes required analyst can change according to the customer's requirements in IPC. The Illustrated Part Catalogue Library was then created by storing this information in a centralized database separately with unique part numbers and description that could be accessed by the Aftersales Department.

**B. CASE 02**

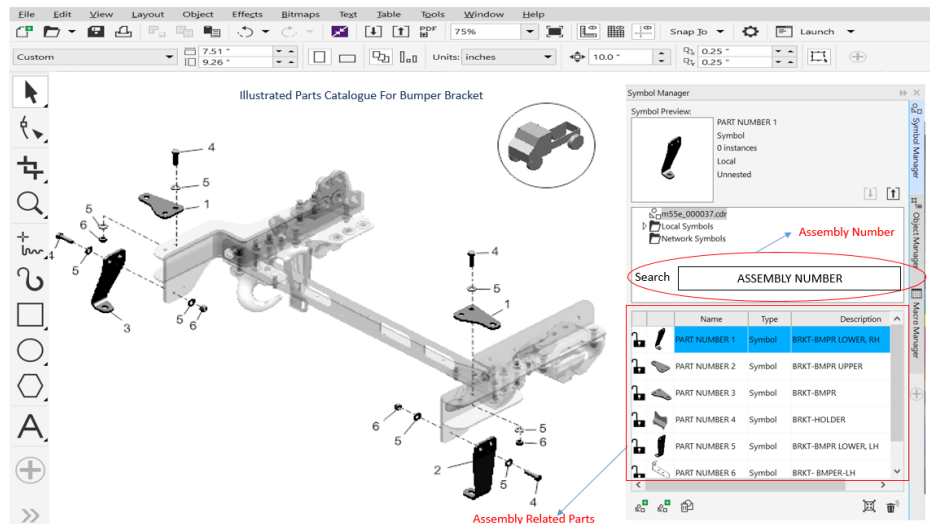


Fig. 4: Illustrated Tool Library Searching Assembly Number.

In the Case 02 scenario an analyst can retrieve existing part illustration data with respect to the assembly number or the part nomenclature. The Illustration tool interacts with a PLM (Product Lifecycle Management) tool and a database to search the existing available illustration. The illustration tool performs a thorough comparison of various parameters such as the assembly number, part number, nomenclature, and bill of materials. By conducting this analysis, the tool provides a list of matched parts that are associated with the specified assembly. Overall, the integration of this tool enhances the analyst's productivity, accuracy, and efficiency in the analysis of assemblies and standardized parts. This also highlights the importance of up-to-date information in parts catalogues, which can help ensure that the correct parts are ordered and installed, reducing the number of errors and increasing customer satisfaction.

Furthermore, the developed code for the extraction of the assembly components has greatly improved the accuracy of parts ordering. The risk of illustration part duplication and inconsistencies in existing part illustration identification has been minimized, resulting in suggesting similar illustration or alternate part availability for ordering by customer. These improvements have resulted in heightened customer satisfaction and positive feedback.

**III. SUMMARY/CONCLUSION**

The use of the illustrated parts catalogue library has resulted in a 30% reduction in the time taken to identify required parts for assembly. The implementation of the illustrated parts catalogue library has proven to be a valuable solution for aftersales in improving the effectiveness and accuracy of the parts identification and ordering processes.

The illustrated parts catalogue library has provided significant benefits to aftersales by improving the speed, accuracy, and efficiency of the parts identification and ordering process. This paper showcases the potential for digital solutions to revolutionize traditional aftersales operations, setting the stage for future advancements and innovations in the field.

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### DEFINITIONS/ABBREVIATIONS

3 D	3 Dimension
IPC	Illustrated parts Catalogue
REF	Reference
ITEM DESC	Item Description
PLM	Product Life cycle Management

### REFERENCES

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