

## **DISASSEMBLING OPERATION CREATION CONCEPT IN CAPP SYSTEM SYSKLASS**

*Ing .Marek KOČIŠKO,PHD., Ing. Peter BRÁZDA,  
Technická univerzita Košice, Fakulta výrobných  
technológií, SK-080 01 Prešov, Slovenská republika.  
Telefón: +421 51772379.  
E-mail: [kocisko.marek@fvt.sk](mailto:kocisko.marek@fvt.sk), [brazda.peter@fvt.sk](mailto:brazda.peter@fvt.sk)*

***Abstract:** The paper deals with the implementation of joints disassembling technology into the CAPP system Sysklass. It describes the ways of technological documentation creation in this system.*

***Key words:** Disassembly, Sysklass, Construct documentation.*

### **1. INTRODUCTION**

Disassembling technologies as a new component in machine technologies represent a new field of knowledge, which is to be elaborated recent time. Mainly abroad scientific and expert teams are getting to deal more seriously with examination of these problems.

On of the question of disassembling technologies integration to practices is its usage in the first stages of products creation, that means using it in design and production technology proposal. Creation of technological processes is the main function of pre-production stages, while new product is proposed. Because of limited elaboration of this problem, it is important to solve issues of disassembling technology in a field of technological preparation of production from the beginning. The first and the biggest area of disassembling is disassembling of variable demountable and disjoint connection. While at demountable connection this problem is solved easier, at disjoint connection proposal of disassembling

technology is more complicated, because proposed technology have to reflect with further usage of disassembled product.

That's why there was created a demonstration example of technological processes for variable connections in Sysklass system, which can be additionally used. Proposal of technological process with usage of example documentation was realized on pressure moderator. Pressure moderator consists approximately of 50 normalized and unnormalized parts.

## 2. PRESSURE MODERATOR'S COMPONENTS CLASSIFICATION IN SYSKLASS SYSTEM

The first step consists of moderator analysis, which main goal was dividing of normalized and unnormalized parts.

If we want to disassemble the whole design node, in our case pressure moderator, it is necessary to define exact position of each part in Sysklass system. All normalized parts were, according to piece list, saved in storage file of system as a present, because all these parts are obtained as a result of disassembling and there is no need of their ordering.

In case of unnormalized parts there is a requirement of their classification just like at newly manufactured product. For each unnormalized part was created shaped graphical representative and after this whole geometric and shape classification of all parts was made. Example of graphic representative is on picture 1 with highlighted functional dimensions.

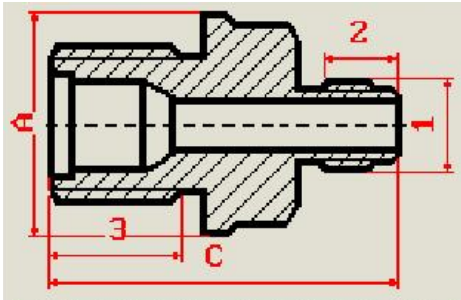


Fig. 1 Example of graphic representative of pressure moderator

At these representatives was their classification process made according to their maximum dimensions. All unnormalized parts were sorted in present maps of graphical classification system considering group technology fundamentals (Fig. 2).

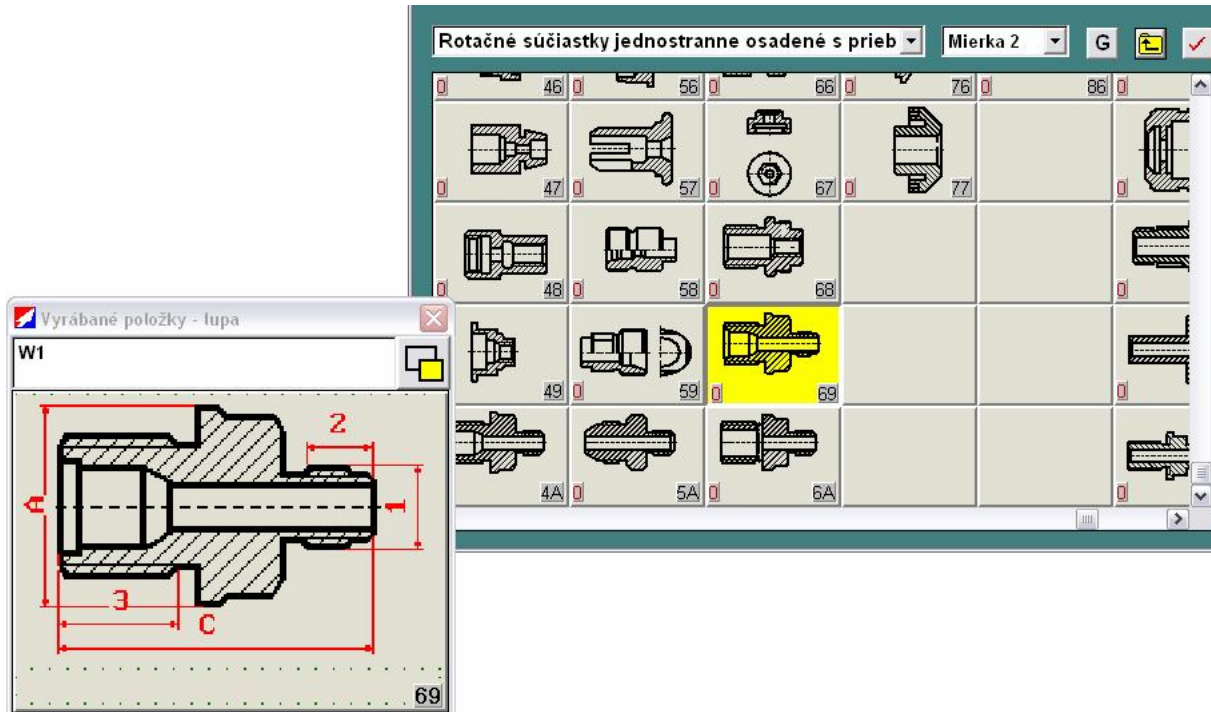


Fig. 2 Example of integration of newly created graphical representatives in present graphical map of classification system.

### 3. PROPOSAL OF DESIGN AND TECHNOLOGICAL DOCUMENTATION

After defining of graphical representatives and their classification in Sysklass system follows, analogous to implementation of disassembling connection technologies, creation of technological and design documentation of moderator. Because new parts are putted in system, there is need for making necessary documentation for them.

For moderator was created new variation in Sysklass system with name Ventil 1. All essential documentation was attached to this variation. In our case that means for each part of moderator was created design documentation. Considering that each component is a solitary

part, all informations that may be needed at disassembling were added including part's material. Detailed material standard was not elaborated.

For pressure moderator technological documentation was elaborated, which consist of design title and design bill of material. Our case is an assembly that why there is no need for filling out either information about material or material standard. Complete generating of design material bill. Example of created piece list is on Fig. 3.

V.poz	D.P.	Nížší celok	Názov	Množstvo	MJS
Var.	D.V.	ZP	Norma	Výkres	
001	N	2004-0328-0001	Tesniaci krúžok plochý	2	KS
	N		STN 029310		28.3.2005
002	V	V2	ŠRUBENIE	1	KS
	D				28.3.2005
003	N	2004-0328-0002	Tesniaci krúžok plochý	1	KS
	N		STN 029310		28.3.2005
004	V	V4	TELESO VENTILU	1	KS
	D				28.3.2005
005	V	V5	ZÁTKA	1	KS
	D				28.3.2005
006	V	V6	PRUŽINA	1	KS
	D				28.3.2005
007	V	V7	SKRUTKA REG. VENTILU	1	KS
	D				28.3.2005
008	V	V8	PÚZDRO	1	KS
	D				28.3.2005
009	N	2004-0328-0003	Matica presná 6HR	1	KS
	N		STN 021401		28.3.2005
010	N	2004-0328-0004	Tesniaci krúžok plochý	1	KS
	N		STN 029310		28.3.2005
011	V	V11	IHLOVÝ VENTIL	1	KS
	D				28.3.2005

Fig. 3 Design material bill of pressure moderator

Last step of moderator disassembling integration in Sysklass system is generating of technological documentation.

The first step comprise of creating of technological title, where were used present disassembling workstations. These were used by generating of technological documentation of disassembling joints.

The most important step is creating of disassembling technological proceedings. These were created following general rules of disassembling.

Before creation of solitary technological proceedings it is necessary to ad all unnormalized tools and fixtures used at disassembling to code list. For these tools classification in Sysklass system was realized analogous to classification of parts. Example of classified fixture is described on Fig. 4.

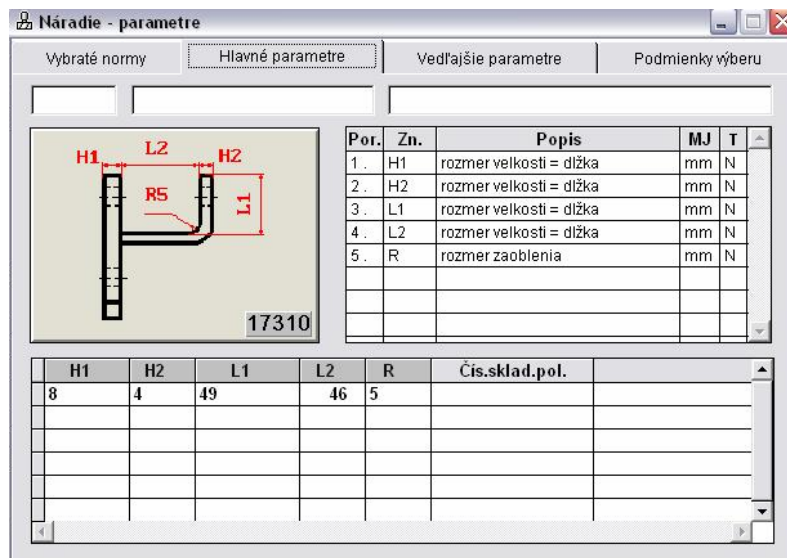


Fig. 4 Classification of tools and fixtures in Sysclass system.

After tools classification can be created disassembling proceeding. This proceeding was made by using group technology and present disassembling joint technologies fundamentals. Final proceeding is described on the Fig. 5.

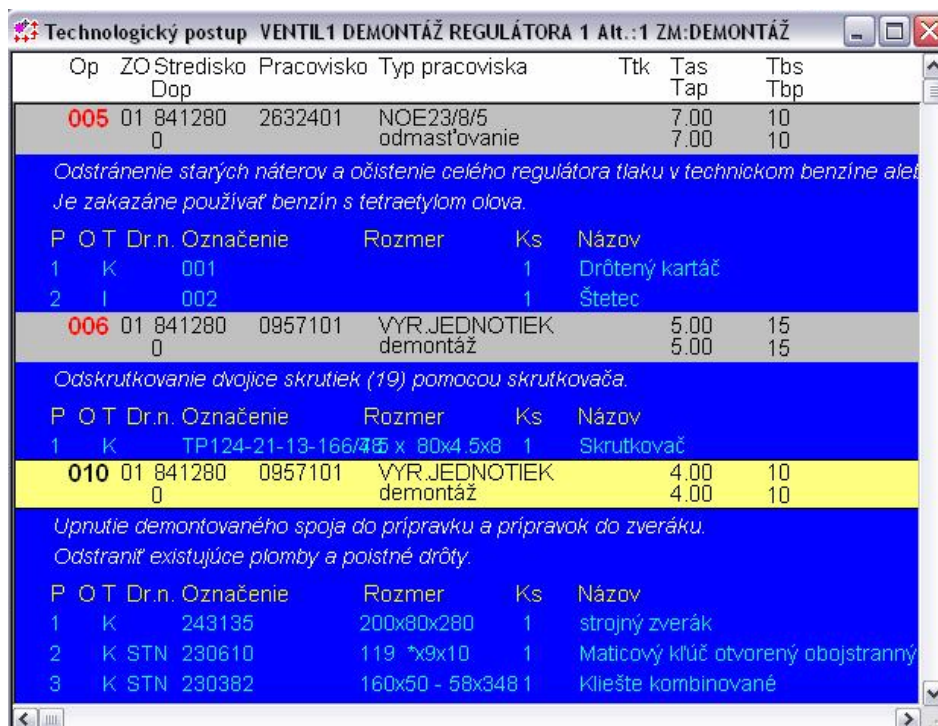


Fig. 5 Disassembling technological proceeding of pressure moderator

#### **4. CONCLUSION**

Generating of technological proceedings is one of the main functions of pre-production stages of product manufacturing. Usage of present technological documentation and its further appliance is one of the biggest advantages of Sysklass system.

This paper describes way of creating disassembling proceedings for any assembly with usage of existing documentation and its further database complementing as well as documentation acceptance at disassembling of single mountable and disjoint connections integrated in Sysklass system.

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