


## IN-6024E

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## LIST OF REVISIONS

Date	Revision	Total of pages	Description	Author	Proof-reader	Approved by
2009-06-12	0	16	First release of French version (mechanical section).	YG	GP	
2009-10-13	1	15	First release of the English version with the addition of the List of Tables. Standard name changed. Electronics and software sections not included.	YG	GP	
2010-07-16	2	15	Sections 4.4 and 5.2 modified.	YG		GP
2010-11-16	3	15	Identification method « D1 » added. Reference documents AC-6013 and SQ-6013-007 added.	YG		GP

## **1. INTRODUCTION**

### **1.1 PURPOSE OF DOCUMENT**

This engineering document defines the identification methods of mechanical parts manufactured by or for TM4, to ensure traceability throughout their life cycles.

### **1.2 OVERVIEW**

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### **1.3 IMPLEMENTATION**

The implementation of this document is immediate.

### **1.4 REVISION**

The document could be revised to add information or correct erroneous information.

## 2. REFERENCE DOCUMENTS

### 2.1 TM4'S INTERNAL DOCUMENTS

Description	
TM4's business practices manual	
IN-6023	Numérotation des pièces mécaniques (prod)
IN-6025	Notes de dessin
AC-6013	All material Supplier Barcode & Label Requirements
SQ-6013-007	Quality specification

### 3. ABBREVIATIONS

H/C	Heat-Code
ID	Identification number
N/S	Numéro de série
PNI	Part Number Identification
P/N	Part Number
REV	Revision
SNI	Serial Number Identification
S/N	Serial Number

## **4. PARTS IDENTIFICATION**

### **4.1 DEFINITIONS**

#### **4.1.1 Production batch**

A production lot is composed of parts having the same configuration, all manufactured under the same conditions, with the same equipment and processes (including heat treatment) in a continuous production sequence.

#### **4.1.2 Casting and stamping lot**

A casting and stamping lot is composed of the same part number, the same alloy and a product using the same process parameters (including heat treatment) and containing the same number of homogeneous casting from the raw material base.

### **4.2 STANDARD REQUIREMENTS**

#### **4.2.1 Identification and deviation**

Any mechanical part manufactured or purchased by TM4 must be identified in accordance with this procedure, unless otherwise indicated on the drawing. If a part cannot be adequately identified, a deviation form must be approved in advance by TM4.

#### **4.2.2 Traceability**

If traceability cannot be established in TM4, the supplier will be notified and the lot will be returned to the supplier, at his expense, to make the necessary corrections, unless an emergency situation in TM4.

#### **4.2.3 Packaged products**

Small pieces (screws, accessories, etc.) joints or other perishable goods that cannot be identified, will be packed in a bag, a roll, or otherwise, and labeled with at least the following information :

- Part number and revision
- Lot number
- Expiration date (if applicable)



## 4.3 PART NUMBER

When identification must be noted on the drawing, all parts must be identified as in the following example. This requirement applies to all products and tools (part, sub-assembly or assembly) unless otherwise stated.

XXXX\*\*\*\*-Y

Where:

- XXXX\*\*\*\* is the part or assembly number (format may vary)
- Y is the alphabetical revision

### 4.3.1 For example

Part no. 3315-0080, revision C, with note added to drawing:

**PNI**: PART NUMBER AND REVISION MUST BE MARKED WHERE SHOWN, BY METHOD X0, Y0 or Z0<sup>1</sup>, AS PER IN-6024

Example of part identification:

Identification format		
Drawing no.	Dash	Drawing revision
3315-0080	-	C
3315-0080-C		

Table 1: Part no.

The followings are not allowed:

3315-0080 Rev C  
 33150080-C  
 3315 0080 C  
 3315-0080  
 3315\_0080\_C

<sup>1</sup> Identification methods, eg section 5

## 4.4 PRODUCTION NUMBER / LOT

All parts must be permanently identified with the lot number as the example below, unless otherwise indicated in the drawing or other instructions approved.

XXXX-YYY

Where:

- XXXX is the sole supplier number provided by TM4.
- YYY can be a lot number, a job number or an incremented number. This number should be controlled by its issuer (TM4 or supplier) to prevent the duplication on two batches of different parts for the same part number.

### 4.4.1 For example

Part no. 3315-0080, revision C, with note added to drawing:

**PNI** : PART NUMBER AND REVISION MUST BE MARKED WHERE SHOWN, USING METHOD X0, Y0 or Z0, AS PER IN-6024

**ID-LOT** : TM4 SUPPLIER ID AND LOT NUMBER MUST BE MARKED WHERE SHOWN, USING METHOD X0, Y0 or Z0, AS PER IN-6024

Example of part identification:

Identification format						
Drawing no.	Dash	Drawing rev. no.	Slash	Supplier no.	Dash	Lot
3315-0080	-	C	/	2034	-	123
3315-0080-C / 2034-123						
<i>or on 2 lines</i>						
3315-0080-C 2034-123						

Table 2 : Production / lot no.

## 4.5 SERIAL NUMBER

When parts require a serial number instead of a lot number, each part must be identified with a serial number.

Serial numbers must be unique (to prevent duplication) for each drawing / model and part number for any change in revision / configuration.

XXXX-S/N YYY\*\*\*

Where:

- XXXX is the sole supplier number provided by TM4.
- YYY\*\*\* is composed of a minimum of 3 and a maximum of 6 alphanumeric characters

### 4.5.1 For example

Part no. 3315-0080, revision C, with notes added to drawing:

**[PNI]**: PART NUMBER AND REVISION MUST BE MARKED WHERE SHOWN, USING METHOD X0, Y0 or Z0, AS PER IN-6024

**[SNI]**: UNIQUE SERIAL NUMBER MUST BE MARKED WHERE SHOWN, USING METHOD X0, Y0 or Z0, AS PER IN-6024

Example of part identification:

Identification format							
Drawing no.	Dash	Drawing rev. no.	Slash	Supplier no.	Dash	S/N	Serial no.
3315-0080	-	C	/	2034	-	S/N	A3P23
3315-0080-C / 2034-S/N A3P23							
<i>or on 2 lines</i>							
3315-0080-C 2034-S/N A3P23							

*Table 3 : Serial no.*

## 4.6 CASTINGS AND FORGINGS IDENTIFICATION

All forgings or castings must be identified with the part number, revision, casting and batch numbers.

XXXX–ZZ H/C YYY\*\*

Where:

- XXXX is the sole supplier number provided by TM4.
- ZZ is the casting number.
- YYY\*\* is composed of a minimum of 3 alphanumeric characters.

### 4.6.1 For example

Part no. 3315–0080, revision C, with noted added to drawing:

**[PNI]**: PART NUMBER AND REVISION MUST BE MARKED WHERE SHOWN, USING METHOD X0, Y0 or Z0, AS PER IN-6024

**[ID–LOT–HC]**: TM4 SUPPLIER ID, LOT NUMBER AND HEAT-CODE MUST BE MARKED WHERE SHOWN, USING METHOD X0, Y0 OR Z0, AS PER IN-6024

Example for part identification:

Identification format								
Drawing no.	Dash	Drawing rev. no.	Slash	Supplier no.	Dash	Castin	H/C	Heat Code
3315–0080	–	C	/	2034-01	–	01	H/C	ABCBC
3315–0080–C / 2034–01 H/C ABCBC								
<i>or on 2 lines</i>								
3315–0080–C 2034–01 H/C ABCBC								

Table 4 : Castings and forgings identification

## 4.7 KIT IDENTIFICATION

Part kits must be identified with a practical and easy to read label.

- Each part in the kit must be identified according the applicable drawings.
- An identification label must be firmly attached to the kit.

## 5. IDENTIFICATION METHODS

### 5.1 MARKING METHODS

Method	Type	Description	Maximal typical depth allowed ( inch )
A1	Temporary	Attached label (Bag & Tag) (See AC-6013)	N/A
A2		Riveted nameplate (metal)	N/A
A3		Glued nameplate (laminated)	N/A
A4		Ink, varnish or permanent pencil	N/A
B1	Permanent	Punch	.010
B2		Vibropeen (note A)	.006
B3		Electro Etch Shallow	.0003
B4		Electro Etch Deep	.002
B5		Laser Etching	.002
B6		Dot Marking	.002-.005
C1	Permanent	Machine engraved characters (CNC)	.015
C2		Cast embossed characters	.030
C3		Cast engraved characters	.030
D1	Permanent	Barcode 2D (See SQ-6013-007)	N/A
Note A : material hardness must be less than 45 Rc			

*Table 5 : Marking methods*

In the case of parts undergoing plating, painting, anodizing and any other kind of treatment, marking should be done before treatment to ensure the permanence of marking. The marking must remain readable after these treatments.

In the case of molding with rough surfaces, polishing or surface machining can be done to obtain a surface allowing a clear identification. Any deviation as to the method of marking must be approved in advance by TM4.

## 5.2 MARKING LOCATION ON THE PART

When marking is specified in the general notes of a drawing, the location of the marking shall be specified on the drawing to ensure product functionality. It is recommended to position the marking to make it easily readable once assembling is completed.

The location on the drawing will be indicated in a box with the appropriate characters (PNI, SNI, ID-LOT, etc.) Any deviation as to the location of the marking must be approved in advance by TM4.

**When marking method A1 is allowed on the drawing and used, refer to instruction AC-6013 for the design and application of the labels.**

## 5.3 HEIGHT OF STYLE AND FONTS

If identification is made up of characters and is written by hand, the characters must reproduce printing characters in capitals.

In the case of serial numbers (S/N), if the identification method is manual (eg Vibropeen method B2), the following characters shall be excluded to eliminate any ambiguity between characters and numbers.

G – I – O – Q – S – U – V – X – Z

When the marking method up raises material around the character and that the total tolerance is smaller than 0.005 in., any excess of material must be sanded without affecting the dimensional requirements applicable to the surface or the readability of identification.

All types of identification must be readable without any magnification device; they can be placed on multiple lines but must remain grouped.

The font (style) is not imposed but it must be readable and constant on the whole part.

## 6. CHANGES TO THE IDENTIFICATION

If a change of identification (total or partial) must be done on an existing part, the obsolete characters will be strikeout with a permanent marker (or punched with a horizontal line, if possible). The new ID will be juxtaposed to it, according to the methods specified on the new drawing.

If multiple identifications are found on the piece and that there is ambiguity, the most recent identification (review) will be considered in force.

Any deviation to this rule shall be approved in advance by TM4.