

A Guide
to the Creation of Definitive References for Items Codified
to a Non-Definitive Standard or Specification

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REFERENCE STRUCTURE:

1. Introduction	<p>This publication gives guidance on formatting a definitive reference to uniquely identify items of supply where the source data is a non-definitive standard or specification identifying multiple parts, items, or bulk materials, which does not include definitive references for the parts covered.</p> <p>These references shall be uniform for all parts covered by the same specification. Uniformity is also preferred for all references within the same group of closely related items.</p> <p>References for common material shall be assigned in the same product increments as the items to be stocked, and shall specify the various commercially available sizes and other sizes.</p>
2. Scope	<p>This method can be applied to all items of supply, which are codified to a standard regardless of whether an existing manufacturers definitive (RNCC 3, RNVC 2) reference or non-definitive (3-1) reference is provided.</p> <p>The reference will be applied to records for</p> <ol style="list-style-type: none"> a. <i>A common mechanical item who's Basic Name is listed under Mechanical Items.</i> b. <i>A common electrical/electronic item who's Basic Name is listed under Electrical/Electronic Items.</i> c. <i>A specific quantity of a common material procured by a dimensional quantity e.g. steel bars and plates, rubber sheet, adhesives and lubricants, etc under Common Material.</i> <p>Items that conform to standards/specifications that already have a unique method of type designation, e.g. Aerospace Series/European Standards, and some general series Standards are excluded from this guide.</p> <p>Specification revisions that modify the requirements for items covered to the extent that they are not both physically and functionally interchangeable with those covered by the specification being superseded, shall assign new references to the items.</p>
3. Detail	<p>The reference will consist of two parts, part 1 is a description of the source documentation for the reference and the second is a descriptor for the item.</p>
4. Reference Number Codes	<p>The RNCC as defined in ACodP-1, Chapter V, Table 08 for Government Specifications and Standards will be 2, as it is definitive.</p> <p>RNVC as defined by ACodP-1, Chapter V, Table 12 will be 2, as the reference is definitive.</p> <p>The RNFC as defined by ACodP-1, Chapter V, Table 09 will be 1, as these are derived references.</p> <p>The DAC as defined by ACodP-1, Chapter V, Table 05 will be 9, as the reference number is of the type for which an indication of document availability is not required.</p>
5. NCAGE	<p>The NCAGE code of the organization responsible for the non-definitive standard should be used e.g. I9003 – Cenelec Electronic Components Committee (CECC), or K7766 - British Standards Institute (BSI).</p>
6. Document Name and Number	<p>The basic identity assigned to the source document excluding all dates, issues, amendment numbers and superfluous characters such as full stops and backslashes etc. E.g. CECC/30201/005 would be recorded as CECC30201005. This part of the reference will have a variable character length.</p>
7. Description	<p>The structure of the reference description will depend upon its Basic Name, but will generally be:</p> <p>For Mechanical Items, the reference will include Style, Dimensions, Material and Surface Treatment.</p> <p>For Electrical Items, the reference will include - Style, Type, Value and Tolerance.</p> <p>For Common Materials, the reference will include Type, Style, Dimensions and Material.</p> <p>Other criteria will be inserted as appropriate for the Basic Name.</p>

8. Formatting Procedures	<p>This procedure outlines the logic used to format the descriptive part of the reference, using information extracted from the source data pertaining to the items, e.g. dimensions, and of elements detailed in the following tables, entered in a rigidly disciplined manner.</p> <p>The number of elements in each reference is controlled by cross-reference to the Basic Name and the elements relevant to those particular items. This imposes a discipline upon the codifier, which ensures that the resulting reference will always be standard for the Basic Name and should limit it to a maximum of 32 characters.</p> <p>Spaces will not be permitted. If clarity is required between elements of the description, the semi-colon (;) will be used. To separate dimensional elements, the letter X will be used.</p> <p>Any additional information which is deemed necessary will be combined using a "-" (DASH) e.g. A12356-gradeT.</p> <p>Should the combined reference exceed 32 characters an informative reference (RC6, VC9) containing the extra information shall be created.</p> <p>Enter all measurements in decimal form. For SI (Metric) units a minimum of one and a maximum of three digits before and after the decimal point may be used. For other units a minimum of one digit must precede the decimal point and, unless otherwise instructed, measurements carried to the nearest three places of decimal are to be used.</p>
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MECHANICAL ITEM REFERENCES:

Typical Mechanical Items	<p>The following is a list of Basic Names of mechanical items that are considered applicable but it is not exhaustive: BOLT, SCREW, NUT, WASHER, O-Ring.</p>
Style	<p>This element will have a fixed length of two or four characters, depending on the Basic Name. Table 1a, Table1b and Table 2 refer.</p>
Thread Designator (if applicable)	<p>This element will have a fixed length of two characters. Table 3 refers.</p>
Outside / Bore Hole Diameter	<p>This element will have a minimum length of five characters (imperial x.xxx inches, metric xx.xx millimetres).</p> <p>Diameter will be recorded as NOMINAL, derived from the basic thread size or diameter of the fastener, or where no fastener size is quoted, the actual nominal size.</p> <div style="border: 2px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">NOTE:</p> <p>1: For BA screws, nuts and washers the BA Number should be quoted and not the thread diameter.</p> <p>2: For self-tapping screws the screw size number should be quoted and not the thread diameter.</p> <p>3: Where the hole of a washer is square the nominal bolt/screw size will be quoted, or if not available, the nominal width across the flats will be assumed to be a diameter.</p> </div>

Linear / Peripheral Dimensions	<p>(Fastener Lengths, Square Washers, Gaskets etc.) This element will have a fixed length of three characters. Enter all measurements in decimal form, recording in increments of 1/16in for imperial sizes and the actual dimension in millimetres to the nearest integer. Rounding should be performed according to the following instructions;</p> <ol style="list-style-type: none"> When the first digit discarded is less than 5, the last digit retained should not be changed. E.g. 3.4mm rounded to nearest integer as 003. When the first digit discarded is greater than 5, or it is 5 followed by at least one digit other than 0, the last figure retained should be increased by one. E.g. 8.51mm would be rounded as 009. When the first digit discarded is exactly 5, followed by zeros, the last digit retained should be rounded upward if it is an odd number, but no adjustment made if it is an even number. E.g. 9.50mm when rounded becomes 010, while 8.50mm becomes 008.
Material.	<p>This element will have a fixed length of four characters. Table 4 refers.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE:</p> <p>For Seal Plain and O-Ring: Material abbreviation will be taken from table 4 with the exception of Acrylonitrile-butadiene rubber (NBR), which shall have a suffix letter showing the level of nitrile content, i.e.:</p> <ul style="list-style-type: none"> - Low nitrile contents – “NBRL” - Medium nitrile content – “NBRM” - High nitrile content – “NBRH” - If the nitrile content cannot be established then the reply will be “NBR.” (NBR dot) </div>
Surface Treatment	<p>This element will have a fixed length of two characters from Table 5.</p>
Sample References	<p>Spaces shown in all the following examples are for clarification only:</p> <p>NUT 2291 K7766 BS 3692 PLHX MT 02.00 X 004 CRES</p> <p>WASHER 2291 K7766 BS 4463 SG 04.00 X 008 CRES</p> <p>SCREW 2291 K7766 BS 4183 PN SL MT 02.50 X 006 CRES</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE:</p> <p>For all categories, only one reference format is to be added to the record.</p> </div>

ELECTRICAL / ELECTRONIC ITEM REFERENCES:

	<div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE:</p> <p>Due to the wide variation of mandatory elements for different electrical/electronic components, it is not possible to have a single reference format. However for the areas of more common use uniformity is possible, but must take the following format</p> </div>
Typical Electrical / Electronic Items	<p>The following is a list of Basic Names of electrical/electronic items but is not exhaustive. RESISTOR, CAPACITOR, TRANSISTOR, DIODE, FUSE, LAMP.</p>
Style	<p>This is the basic item designation within the standard/specification. It may be referred to as Pattern Reference, Case Size etc. This element will have a variable length depending on the specification used. See Table 6a, Table 7a or Table 8a.</p>
Type	<p>This element will have a fixed length of two or three characters depending on the device type, Table 6b, Table 7b and Table 8b refer.</p>

Component Value	This is usually applicable to resistors, capacitors, fuses etc. and will be set down as per Table 13 , Table 14 or Table 15 as appropriate.
Tolerance	A single alpha character from Table 16 .
Working Voltage	(If necessary for differentiation).
Non- Standard Items	When considering non-standard items, no code currently exists for describing the style. Therefore before a fully definitive reference can be developed, a working table of styles/types will have to be drawn up for Basic Name as shown in Table 6a , Table 6b , Table 7a , Table 7b , Table 8a and Table 8b .
Examples	Examples shall be included once the guide has been used. <div style="border: 2px solid black; padding: 5px; text-align: center;"> <p>NOTE: For all categories, only one reference format is to be added to the record.</p> </div>

COMMON MATERIAL REFERENCES:

	This paragraph details the construction of the descriptive part of the reference (part following the name/document number) for common materials. <div style="border: 2px solid black; padding: 5px; text-align: center;"> <p>NOTE: This method is considered applicable only for materials with a solid cross section. Fluids, adhesives, greases and lubricants, etc. should be defined by the standard defining the item of supply then the packaging by unit of issue.</p> </div>
TYPE	This element will be of variable length and will consist of the identifying type designator of the material as given in the source document, standard or drawing.
Style	This element will have a fixed length of two characters. Table 1c refers. <div style="border: 2px solid black; padding: 5px; text-align: center;"> <p>NOTE: For plate, sheet and strip the style Flat (FT) should be used.</p> </div>
Dimensions	For common materials the order for listing dimensions will be as follows: For plates, sheets and strips, dimensions will be recorded in the order Thickness, Width and Length. For round bar, dimensions will be recorded in the order Diameter and Length. For square, hexagonal and octagonal bar, dimensions will be recorded in the order Across Flats (AF) and Length. It has been noted that in many existing records, the length value of the material is given as BULK SUPPLY. This should be recorded in the reference as BULK, although effort should be made to determine the procured length for new items.
Material	This element will have a fixed length of four characters. Table 4 refers.
Examples	Examples shall be included once the guide has been used <div style="border: 2px solid black; padding: 5px; text-align: center;"> <p>NOTE: For all categories, only one reference format is to be added to the record.</p> </div>

RESPONSE TABLES:**TABLE 1a - GENERAL STYLES Mechanical**

ABBREVIATION	STYLE
BL	Ball
BA	Barrel
BV	Bevel
BR	Blind Rivet
BT	Button
CP	Cap
CL	Clinch
CC	Concave
CX	Convex
DH	Double Hexagon
DO	Double Octagon
EW	Extended Washer
EY	Eye
FL	Fillister
FN	Fin Neck
FG	Flange (d)
FT	Flat
FC	Flat Countersunk
GC	Gang Channel
HX	Hexagon
HK	Hook
IW	Internal Wrench
KY	Key
KW	Keyway
KN	Knurled
LK	Lock
NO	None (e.g., no Head, Screw Grub and etc.)
OC	Octagon
PN	Pan
PA	Plate
RC	Raised Countersunk
RG	Rectangular
RD	Round
SD	Saddle
SK	Self Locking
SR	Shoulder and Recessed
SH	Shouldered
SV	Sleeve
SL	Slotted
SP	Spline
SI	Split
SG	Spring
SQ	Square
TE	Tee
TN	Tension
UO	U Bolt
WA	Washer
WG	Wing

TABLE 1b - SPECIFIC STYLES: NUTS

ABBREVIATION	STYLE
ANCH	Anchor
ASWA	Assembled Washer
CAHX	Castellated Hex
COHX	Cone Seat Hex
EWDH	Extended Washer Double Hex

ABBREVIATION	STYLE
EWHX	Extended Washer Hex
EWSQ	Extended Washer Square
NUEY	Eye
PLBA	Plain Barrel
PLBR	Plain Blind Rivet
PLCP	Plain Cap
PLCL	Plain Clinch
PLDO	Plain Dodecagon
PLHX	Plain Hex
PLIW	Plain Internal Wrench
PLKN	Plain Knurled
PLOC	Plain Nut Octagon
PLPA	Plain Plate
PLRG	Plain Rectangular
PLRD	Plain Round
PLSP	Plain Splined
PLSQ	Plain Square
PLWD	Plain Welded
PLWG	Plain Wing
SKBA	Self Locking Barrel
SKBR	Self Locking Blind Rivet
SKCP	Self Locking Cap
SKCL	Self Locking Clinch
SKDH	Self Locking Double Hex
SKGC	Self Locking Gang Channel
SKHX	Self Locking Hex
SKIW	Self Locking Internal Wrenching
SKKN	Self Locking Knurled
SKPL	Self Locking Plate
SKSQ	Self Locking Square
SKWG	Self Locking Wing
STSG	Sheet Spring
BSHX	Single Ball Seat Hex
NUSV	Sleeve
NUSJ	Slip joint
SLHX	Slotted Hex
SLOC	Slotted Octagon
NUST	Stamped
UOHS	Union Hose
UOPP	Union Pipe

Table 1c - MATERIAL STYLE

ABBREVIATION	STYLE
FT	Flat
HX	Hexagon
OC	Octagon
RD	Round
SO	Square

TABLE 2 - DRIVE STYLES

ABBREVIATION	STYLE
CR	Cross Recess
EX	External
NO	No Drive Style (Drive Screw)
SL	Slot
SO	Socket

TABLE 3 – THREADS

ABBREVIATION	THREAD FORM
AC	Acme
BR	Brass
BA	British Association
CT	British Standard Cycle
BF	British Standard Fine
BT	Buttress
DR	Drive
EC	Electrical Conduit
MT	Metric
PT	Pipe
ST	Self Tapping
UN	Unified
WH	Whitworth
WD	Wood

TABLE 4 – MATERIALS

ABBREVIATION	MATERIAL
ALOO	Aluminium
ALLY	Aluminium Alloy
CUAL	Aluminium-Bronze*
ASBE	Asbestos
COOO	Carbon
CLTH	Cloth
CUOO	Copper
CUBE	Copper-Beryllium
CUCR	Copper-Chromium
CUNI	Copper-Nickel
CUSI	Copper-Silicon
CUSN	Copper-Tin (Bronze)
CUZN	Copper-Zinc (Brass)
CORK	Cork
CRES	Corrosion Resistant Steel
FELT	Felt
FIBR	Fibre
FEOO	Iron
PBOO	Lead
LEAT	Leather
NICU	Nickel-Copper (Monel)
PAPR	Paper
PLAS	Plastic
RUBB	Rubber (Not for use on O-Ring, see material note)
STOO	Steel
TIOO	Titanium

* Includes Nickel Alibronze and Aluminium Silicon Bronze.

TABLE 5 – FINISHES

ABBREVIATION	MATERIAL
AN	Anodised
BK	Black
CZ	Brass
CD	Cadmium
CR	Chromium
CB	Copper Beryllium
AU	Gold
NI	Nickel
NO	No Finish (includes passivation)
OX	Oxidised
PF	Phosphate
AG	Silver
SN	Tin
ZN	Zinc

TABLE 6a - CAPACITORS & RESISTOR STYLES

ABBREVIATION	STYLE
AD	Adjustable
CH	Chip
EL	Electrolytic
FX	Fixed
ML	Multiple (not Network)
NT	Network
NE	Non-electronic
VR	Variable

TABLE 6b - CAPACITOR & RESISTOR TYPES

ABBREVIATION	TYPE
AL	Aluminium
AA	Any Acceptable
CA	Carbon
CM	Ceramic
CE	Cermet
CO	Composition
FI	Film (Not otherwise specified)
ME	Metal Film
MC	Metallized Paper-Plastics
MO	Metal-oxide
MI	Mica
MP	Multi-turn, Pre-set
PR	Paper/Paper Plastic
PC	Polycarbonate/PETP
PP	Polypropylene
PS	Polystyrene
RT	Single Turn, Rotary
PN	Single-Turn, Pre-set
TA	Tantalum
TK	Thick Film
TN	Thin Film
WW	Wirewound

TABLE 7a - TRANSISTORS (TRA)

ABBREVIATION	STYLE
FET	Field Effect
NPN	NPN Type
PNP	PNP Type

TABLE 7b - TRANSISTOR TYPE

ABBREVIATION	TYPE
CHO	Chopper
HPA	High-Power Amplifier (case rated)
HPS	High-Power Switching (case rated)
LPA	Low-Power Amplifier (ambient rated)
LPS	Low-Power Switching (ambient rated)
MIC	Microwave
MUL	Multiple
NCH	N-Channel
PCH	P-Channel
SWI	Switching

TABLE 8a - DIODES (DIO)

ABBREVIATION	STYLE
LOF	Low-Frequency
MIC	Microwave
REC	Rectifier
REF	Reference and Regulator

TABLE 8b - DIODE TYPE

ABBREVIATION	TYPE
ASW	Active Switching
AVB	Avalanche-Breakdown
DET	Detector
GEN	General Purpose Signal
HIP	High Power (case rated)
LOP	Low Power (ambient rated)
MIX	Mixer
OSC	Oscillator
PAL	Passive Limiter
REF	Reference
REG	Regulator
SYB	Schottky Barrier
SWI	Switching
SUP	Transient Suppressor
VAR	Variable Capacitance

TABLE 9 - CODE TO INDICATE COLOUR Reference I.E.C 757

CODE	COLOUR
BL	BLACK
BU	BLUE
BR	BROWN
GR	GREEN
GY	GREY
VY	IVORY
OG	ORANGE
RE	RED
VL	VIOLET
WH	WHITE
YE	YELLOW

TABLE 10 - FUSES, CIRCUIT OVERCURRENT INTERRUPTION TYPE

ABBREVIATION	TYPE
DELA	DELAY TIME
NORM	NORMAL INSTANTANEOUS

TABLE 11 - FUSES, INTERRUPTION INDICATOR METHOD

ABBREVIATION	METHOD
BOVI	BODY-VISUAL OR ALARM
CESH	CERAMIC SHELL BREAKS
COBE	COLOURED BEAD SNAPS UP
DOCH	DOT CHANGES COLOUR
GRAS	GRASSHOPPER
HOBL	HOLE BLOWN IN LABEL
INNE	INTEGRAL NEON LAMP GLOWS
NOVI	NO VISUAL INDICATION
OPBO	OPAQUE BODY
POBL	POWDER BLOWS OUT
REFL	RED FLAG APPEARS IN SLOT IN FERRULE
TEVI	TERMINAL-VISUAL OR ALARM
VABL	VAPOUR BLOWS OUT
VIEL	VISIBLE ELEMENT

TABLE 12 - RESISTOR, VARIABLE ELEMENT MATERIAL

ABBREVIATION	MATERIAL
AA	Any Acceptable
CA	Carbon
CE	Compound Metal-Ceramic
CP	Conductive Plastics
ME	Metal
MO	Metal Oxide

TABLE 13 – CODE MARKING FOR RESISTANCE VALUES Reference I.E.C. 62

RESISTANCE VALUES		CODED MARKING	RESISTANCE VALUES		CODED MARKING
0.1	Ohm	R10	1	MOhm	1M0
0.15	Ohm	R15	1.5	MOhm	1M5
0.332	Ohm	R332	3.32	MOhm	3M32
0.590	Ohm	R59	5.90	MOhm	5M9
1	Ohm	1R0	10	MOhm	10M
1.5	Ohm	1R5	15	MOhm	15M
3.32	Ohm	3R32	33.2	MOhm	33M2
5.90	Ohm	5R9	59.0	MOhm	59M
10	Ohm	10R	100	MOhm	100M
15	Ohm	15R	150	MOhm	150M
33.2	Ohm	33R2	332	MOhm	150M
59.0	Ohm	59R	590	MOhm	590M
100	Ohm	100R	1	GOhm	1G0
150	Ohm	150R	1.5	GOhm	1G5
332	Ohm	332R	3.32	GOhm	33G2
590	Ohm	590R	5.90	GOhm	59G
1	KOhm	1K0	10	GOhm	10G
1.5	KOhm	1K5	15	GOhm	15G
3.32	KOhm	3K32	33.2	GOhm	33G2
5.90	KOhm	5K9	59.0	GOhm	59G
10	KOhm	10K	100	GQ	100G
15	KOhm	15K	150	GOhm	150G
33.2	KOhm	33K2	332	GOhm	332G
59.0	KOhm	59K	590	GOhm	590G
100	KOhm	100K	1	TOhm	1T0
150	KOhm	150K	1.5	TOhm	1T5
332	KOhm	332K	3.32	TOhm	3T32
590	KOhm	590K	5.90	TOhm	5T9
			10	TOhm	10T

NOTE:

Resistance values expressed by 4 significant digits shall have code markings as in the examples shown below:

<u>Value</u>	<u>Coded Marking</u>
59.04 Ohm	59R04
590.4 Ohm	590R4
5.904 kOhm	5K904
59.04 kOhm	59K04 etc

TABLE 14 – CODE MARKINGS FOR CAPACITANCE VALUES Reference I.E.C. 62

CAPACITANCE VALUES		CODE	CAPACITANCE VALUES		CODE
0.1	pF	P10	100	nF	100N
0.15	pF	P15	150	nF	150N
0.332	pF	P332	332	nF	332N
0.590	pF	P59	590	nF	590N
1	pF	1P0	1	uF	1U0
1.5	pF	1P5	1.5	uF	1U5
3.32	pF	3P32	3.32	uF	3U32
5.90	pF	5P9	5.9	uF	5U9
10	pF	10P	10	uF	10U
15	pF	15P	15	uF	15U
33.2	pF	33P2	33.2	uF	33U2
59.0	pF	59P	59	uF	59U
100	pF	100P	100	uF	100U
150	pF	150P	150	uF	150U
332	pF	332P	332	uF	332U
590	pF	590P	590	uF	590U
1	nF	1N0	1	mF	1M0
1.5	nF	1N5	1.5	mF	1M5
3.32	nF	3N32	3.32	mF	3M32
5.90	nF	5N9	5.90	mF	5M9
10	nF	10N	10	mF	10M
15	nF	15N	15	mF	15M
33.2	nF	33N2	33.2	mF	33M2
59.0	nF	59N	59.0	mF	59M

NOTES:

- (1) Capacitance values expressed by 4 significant digits shall have codes as in the examples shown below:

Coded Marking	Value
68P01	68.01 pF
680P1	680.1 pF
6N801	6.801 nF
68N01	68.01 nF

CAPACITANCE VALUES BELOW 10Pf

CODE LETTER	TOLERANCE pF
B	+0.1
C	+0.25
D	+0.5
F	+1

The following table is to be used for Current (A = Amps), Voltage (V = Volts) and Power (W = Watts). The appropriate code letter is to be substituted for the asterisk.

TABLE 15– OTHER SCALAR VALUES

CODE	SCALAR VALUE
005	0.005
06	0.06
063	0.063
20	0.2
23	0.23
234	0.234
1*0	1*
1*2	1.2*
1*24	1.24*
1*246	1.246*
10*	10*
10*1	10.1*
10*12	10.12*
10*123	10.123*
100*	100*
1000*	1000*

NOTE:

In Tables 13, 14 and 15, if the Code Letter is preceded by only ONE digit, it must also be followed by one digit, even if that digit has to be a zero.

TABLE 16 – LETTER CODE FOR TOLERANCE ON RESISTANCE AND CAPACITANCE VALUES 10pF AND ABOVE

CODE LETTER	TOLERANCE %
B	+0.1
C	+0.25
D	+0.5
F	+1
G	+2
J	+5
K	+10
M	+20
N	+30
Q	-10 +30
S	-20 +50
T	-10 +50
U	-15 +20
V	-15 +75
Z	-20 +80
Specify actual tolerance e.g. -10+40	NON STANDARD