

# HOW TO USE CATALOG

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# HOW TO USE CATALOG

## —GUIDE TO MARKS—

Mark	Meaning	Notes · Description examples
	New Products	New products added in the Catalog.
	New Products	New products added in the Catalog. Added new products are printed in red.
	Additional Specifications	New additional specifications. Added specifications are printed in red.
<b>M</b>	Material	<b>M</b> SKH51
<b>H</b>	Hardness	<b>H</b> 58~60HRC
<b>S</b>	Surface Treatment	<b>S</b> Black Oxide (Fe <sub>3</sub> O <sub>4</sub> )
<b>A</b>	Accessories	<b>A</b> MS6—25
<b>T</b>	Tolerance	<b>T</b> $+0.005$ $0$
	Notes:	 P/2≤KC<H/2
	Not Available	Indicates that specific sizes or items are not available for alteration.  D3 to 8 (D3 to 8: Not available) Also used to indicate specifications that cannot be ordered.

Mark	Meaning	Notes · Description examples						
	Refer To Catalog Page	 P.232						
	Conditions and their results. A→B means	$L \begin{smallmatrix} +0.02 \\ 0 \end{smallmatrix}$ ( $L > 200 \cdots L \begin{smallmatrix} +0.05 \\ 0 \end{smallmatrix}$ ) When L is larger than 200, L will be $\begin{smallmatrix} +0.05 \\ 0 \end{smallmatrix}$						
①②③	Unit No.	Number applied to each part of the product that includes two parts or more.						
	RoHS Compliant	The product does not contain the six (6) Restricted Substances of RoHS Directive of EU more than the threshold value or the value of the applicable exemption. (Our RoHS mark does not show whether the product is 'CE compliant' or not.)						
	Example Of Order Code	 Order <table border="1" data-bbox="1087 826 1238 875"> <tr> <td>Part Number</td> <td>—</td> <td>L</td> </tr> <tr> <td>MS 6</td> <td>—</td> <td>50</td> </tr> </table>	Part Number	—	L	MS 6	—	50
Part Number	—	L						
MS 6	—	50						
	Days To Ship	 Days to Ship 						
<b>P</b>	Price	 Price						
	Example	 Example						
	Alteration	Alteration can be ordered without drawings.						
	Quotation	To be quoted at local MISUMI representative						

We employed marks for the universal use of the catalog.

# ALTERATION SERVICE

## Alterations

### Alterations can be ordered without drawings

- Our Alteration Service makes it possible for you to select some non-standard tolerance and /or dimensions, or non-standard processing. You can easily order alterations by specifying an appropriate code.

### Example of alterations (Shoulder punches)

Alterations  Catalog No. — L(LC·LCT·LMT) — P(PC) — W(WC) — R — (BC·HC, etc.)

SPDS10 — LC72 — PC1.9 — WC1.9 — BC8—KC45

Alteration	Code	A	D R E G	1Code																																
Alterations to tip	PC WC	Tip dimension change $PC \geq \frac{P_{min.}}{2}$ 0.01 mm increments (If combined with PKC, 0.001 mm increments can be selected.)	Tip dimension change $PC \geq \frac{P \cdot W_{min.}}{2} \geq 0.80$ 0.01 mm increments ⊗ Cannot be used for tip X.	<table border="1"> <tr> <th>P(PC)</th> <th>Bmax</th> <th>P(PC)·W(WC)</th> <th>Bmax</th> </tr> <tr> <td>0.500~0.799</td> <td>10</td> <td>0.80~1.49</td> <td>8</td> </tr> <tr> <td>0.800~0.999</td> <td>13</td> <td>1.50~1.99</td> <td>13</td> </tr> <tr> <td>1.000~1.999</td> <td>20</td> <td>2.00~3.49</td> <td>19</td> </tr> <tr> <td>2.000~3.999</td> <td>35</td> <td>3.50~4.99</td> <td>25</td> </tr> <tr> <td>4.000~4.999</td> <td>45</td> <td>5.00~</td> <td>30</td> </tr> <tr> <td>5.000~5.999</td> <td>50</td> <td></td> <td></td> </tr> <tr> <td>6.000~</td> <td>60</td> <td></td> <td></td> </tr> </table>	P(PC)	Bmax	P(PC)·W(WC)	Bmax	0.500~0.799	10	0.80~1.49	8	0.800~0.999	13	1.50~1.99	13	1.000~1.999	20	2.00~3.49	19	2.000~3.999	35	3.50~4.99	25	4.000~4.999	45	5.00~	30	5.000~5.999	50			6.000~	60		
		P(PC)	Bmax		P(PC)·W(WC)	Bmax																														
	0.500~0.799	10	0.80~1.49	8																																
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6.000~	60																																			
BC	Tip length change $2 \leq BC \leq B_{max.}$ 0.1 mm increments ⊕ Full length L must be at least 25 mm longer than tip length BC.	Tip length change $2 \leq BC \leq B_{max.}$ 0.1 mm increments ⊕ Full length L must be at least 30 mm longer than tip length BC.																																		
PRC	Rounding of tip side edge $0.3 \leq PRC \leq 1$ 0.1 mm increments ⊕ $PRC \leq (P-0.2)/2$ ⊗ Cannot be combined with PCC·GC.	—																																		
PCC	Chamfering to tip side edge $0.3 \leq PCC \leq 1$ 0.1 mm increments ⊕ $PCC \leq (P-0.2)/2$ ⊗ Cannot be combined with PRC·GC.	—																																		
GC	$20^\circ \leq GC < 90^\circ$ 1° increments Tip length $B \geq f + 2$ $f = P/2 \times \tan(90^\circ - GC)$ ⊗ Cannot be used for $P < 1.0$ . ⊗ Cannot be combined with LKC·LKZ·LCT·LMT·PRC·PCC.	—	Quotation																																	
PKC	Tip tolerance change $P + 0.01 \rightarrow +0.005$ 0 ⊕ (P dimension can be selected in 0.001 mm increments.)	Tip tolerance change $P \cdot W \pm 0.01 \rightarrow +0.01$ 0																																		
Alterations to full length	LC	Full length change $25 + B(BC) \leq LC < L$ 0.1 mm increments ⊕ If difference between full length and tip length is 25 mm or less, tip length is adjusted to (Full length - 25 mm). (If combined with LKC·LKZ, 0.01mm increments can be selected.)	Full length change $30 + B(BC) \leq LC < L$ 0.1 mm increments ⊕ If difference between full length and tip length is 30 mm or less, tip length is adjusted to (Full length - 30 mm).																																	
	LCT	Changes to head thickness tolerance and full length are processed using a single code. The allowable range of change, increment, ordering process, and notes (⊕) are the same as for LC.	—																																	
	LMT	TKC	Head thickness tolerance change $T + 0.3 \rightarrow +0.02$ 0	Full length tolerance change $L + 0.3 \rightarrow +0.1$ 0																																
		LKZ	Head thickness tolerance change $T + 0.3 \rightarrow +0.02$ 0	Full length tolerance change $L + 0.3 \rightarrow +0.1$ 0																																
	LKC	Full length tolerance change $L + 0.3 \rightarrow +0.05$ 0	—																																	
LKZ	Full length tolerance change $L + 0.3 \rightarrow +0.01$ 0	—																																		

Alteration	Code	A	D R E G	1Code
Alterations to head	KC	Addition of single key flat to head		Key flat position change 1° increments
	WKC	Addition of double key flats in parallel		Double key flats in parallel Can be combined with KC.
	KFC	Double key flats at 0° and a selected angle 1° increments		Double key flats at 0° and a selected angle 1° increments
	NKC	—	No key flat	⊗ Cannot be combined with KC·WKC.
	HC	Head diameter change $D \leq HC < H$	0.1 mm increments	—
	TC	Head thickness change $2 \leq TC < 5$ 0.1 mm increments (If combined with TKC·TKM·LCT·LMT, 0.01 mm increments can be selected.) ⊕ Full length L is shortened by (5-TC). If combined with LC/LCT/LMT, full length remains as specified.	—	—
	TKC	Head thickness tolerance change $T + 0.3 \rightarrow +0.02$ 0	—	—
	TKM	Head thickness tolerance change $T + 0.3 \rightarrow 0$ -0.02	—	—
	TCC	Chamfering of head This improves the strength of the punch head.  P.1611 0.5 ≤ TCC ≤ (H-D)/2 ⊕ If H ≤ 5, then TCC is 0.5.	—	—
	RC	Head thickness is machined to a tolerance of -0.04~0 relative to the retainer surface. ⊗ Cannot be used for $D \pm 0.005$ types.	—	—
Alterations to shank	SKK	Single key flat on shank  $\frac{D}{2} - 0.5 - 0.01$ $\frac{D}{2} - 0.5 - 0.01$ ⊕ $D3 \sim 6$ $P \leq D - 1.2$ $W \leq D - 1.2$ (Machining width 0.5) ⊕ $D8 \sim$ $P \leq D - 2.2$ $W \leq D - 2.2$ (Machining width 1) ⊗ Cannot be combined with KC·WKC·KFC.	—	—
	UC	Modification for urethane stripper (USN) installation ⊕ For details  P.750. ⊕ Can be used for D10~25.	—	—
	NDC	No press-in lead $\ell \geq 3 \rightarrow \ell = 0$ $\frac{\ell}{2} - 0.01$ 0	—	—

# MISUMI'S ENVIRONMENTAL AWARENESS AND RoHS COMPLIANCE

## What is RoHS?

RoHS is the directive to speculate and restrict the use of certain hazardous substances in electrical and electronic equipments. It aims to minimize the hazards on environment and health through the life cycles of products from production to disposal.

## Restricted Substances of RoHS (substances restricted by RoHS Directive of EU of 8 June, 2011)

No.	Substances	Subject Items and Application	Threshold value <sup>*1</sup>
1	Cadmium and its compounds	Cadmium contained in alloys with zinc content (brass, zinc, die cast, lead-free solder, etc.), plating, plastic, rubber, coating, etc.	Less than 100 ppm
		Exemption Cadmium and its compounds in electrical contacts	—
2	Lead and its compounds	Lead contained in all types of alloys, solder, all items other than the following exemptions	Less than 1,000 ppm
		Exemption Lead which is alloyed with steel	0.35wt%(3,500ppm) or less
		Exemption Lead which is alloyed with aluminum	0.4wt%(4,000ppm) or less
		Exemption Lead which is alloyed with copper	4wt%(40,000ppm) or less
		Exemption Lead used in solders which contains more than or equal to 85% of lead	—
3	Mercury and its compounds	Mercury contained in all items aside from small fluorescent light bulbs and straight-tube fluorescent light bulbs	Less than 1,000 ppm
4	Hexavalent chromium and its compounds	All Hexavalent chromium in chromate treatment, plating, coating, etc.. Chromium metal and chrome in metal alloys are exempted	Less than 1,000 ppm
5	Polybrominated biphenyls (PBBs)	Flame retardant	Less than 1,000 ppm
6	Polybrominated diphenylethers (PBDEs)	Flame retardant	Less than 1,000 ppm

For packing materials, less than 100 ppm combined of cadmium, lead, mercury and hexavalent chromium

\*Threshold value is, whether consciously or not, the maximum concentration value set for each homogeneous material which cannot be mechanically disjoined into different materials.

## Green Procurement

MISUMI procures products, semi-finished products, parts, raw material, supplementary material, packing, packaging material, etc. from many suppliers.

In order to comply with environmental laws, regulations, and other requirements related to chemical substances and to achieve a sustainable society, MISUMI has prepared MISUMI Green Procurement Guidelines. Please refer to our website for details.

<http://www.MISUMI.co.jp/english/contribution/environment/green.html>