

BS ISO 5610-7:2014



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Tool holders with rectangular shank for indexable inserts

Part 7: Style J

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National foreword

This British Standard is the UK implementation of ISO 5610-7:2014. It supersedes BS ISO 5610-7:2010 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MTE/18, Tools tips and inserts for cutting applications.

A list of organizations represented on this committee can be obtained on request to its secretary.

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ISBN 978 0 580 83615 2

ICS 25.100.01

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 August 2014.

Amendments issued since publication

Date	Text affected
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INTERNATIONAL
STANDARD

ISO
5610-7

Second edition
2014-09-01

**Tool holders with rectangular shank
for indexable inserts —**

Part 7:
Style J

*Porte-plaquette à queue rectangulaire pour plaquettes amovibles —
Partie 7: Forme J*



Reference number
ISO 5610-7:2014(E)

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Published in Switzerland

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 9, *Tools with defined cutting edges, cutting items*.

This second edition cancels and replaces the first edition (ISO 5610-7:2010), of which it constitutes a minor revision.

ISO 5610 consists of the following parts, under the general title *Tool holders with rectangular shank for indexable inserts*:

- *Part 1: General survey, correlation and determination of dimensions*
- *Part 2: Style A*
- *Part 3: Style B*
- *Part 4: Style D*
- *Part 5: Style F*
- *Part 6: Style G*
- *Part 7: Style J*
- *Part 8: Style K*
- *Part 9: Style L*
- *Part 10: Style N*
- *Part 11: Style R*
- *Part 12: Style S*
- *Part 13: Style T*

- *Part 14: Style H*
- *Part 15: Style V*

Tool holders with rectangular shank for indexable inserts —

Part 7: Style J

1 Scope

This part of ISO 5610 specifies tool holders with rectangular shank, style J, i.e. with offset shank and cutting edge angle $\kappa_r = 93^\circ$ for side cutting.

These tool holders are primarily intended for indexable inserts made of hard metal or other cutting materials to be mounted by clamping and to be used for turning operations.

NOTE The symbols for the dimensions shown in the tables of this part of ISO 5610 and the corresponding preferred symbols of properties defined in ISO/TS 13399-2 and ISO/TS 13399-3 are given in ISO 5610-1:2014, Table A.1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5608:2012, *Turning and copying tool holders and cartridges for indexable inserts — Designation*

ISO 5610-1:2014, *Tool holders with rectangular shank for indexable inserts — Part 1: General survey, correlation and determination of dimensions*

3 Dimensions

3.1 General

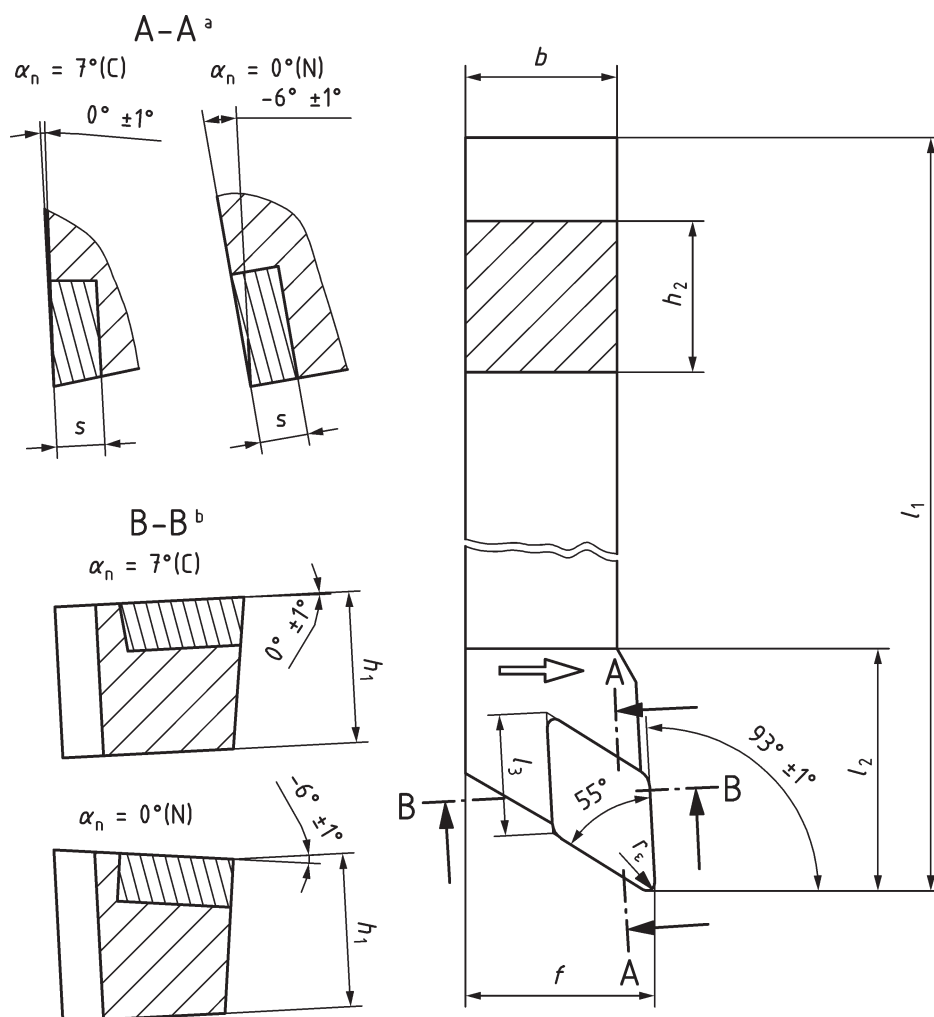
It is not necessary for tool holders to comply with the pictorial representation; only the dimensions given shall be observed.

For determination of dimensions h_1 , f , and l_1 , see ISO 5610-1.

For explanation of the designation code for tool holders, see ISO 5608.

NOTE The values of rake angles and inclination angles shown in the figures are recommended values; they can vary according to the application.

3.2 Tool holder style J for rhombic indexable insert shape D



Key

- a Inclination angle, λ_s .
- b Rake angle, γ_0 .

NOTE The figure shows a right-hand tool holder (R); left-hand tool holder (L) laterally reversed.

Figure 1 — Tool holder style J for rhombic indexable insert — D

Table 1

Dimensions in millimetres

Symbol ^a	h_1 js13	b h13	l_3 ≈	f +0,5 0	h_2 h13	l_1^a k16	l_2 max.	s^b
SDJCR 0808 — 07	8	8	7,75	10	8	—	25	2,38
SDJCL 0808 — 07								

^a For the selection of length, l_1 , the dash can be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

^b Insert thickness without shim, if applicable.

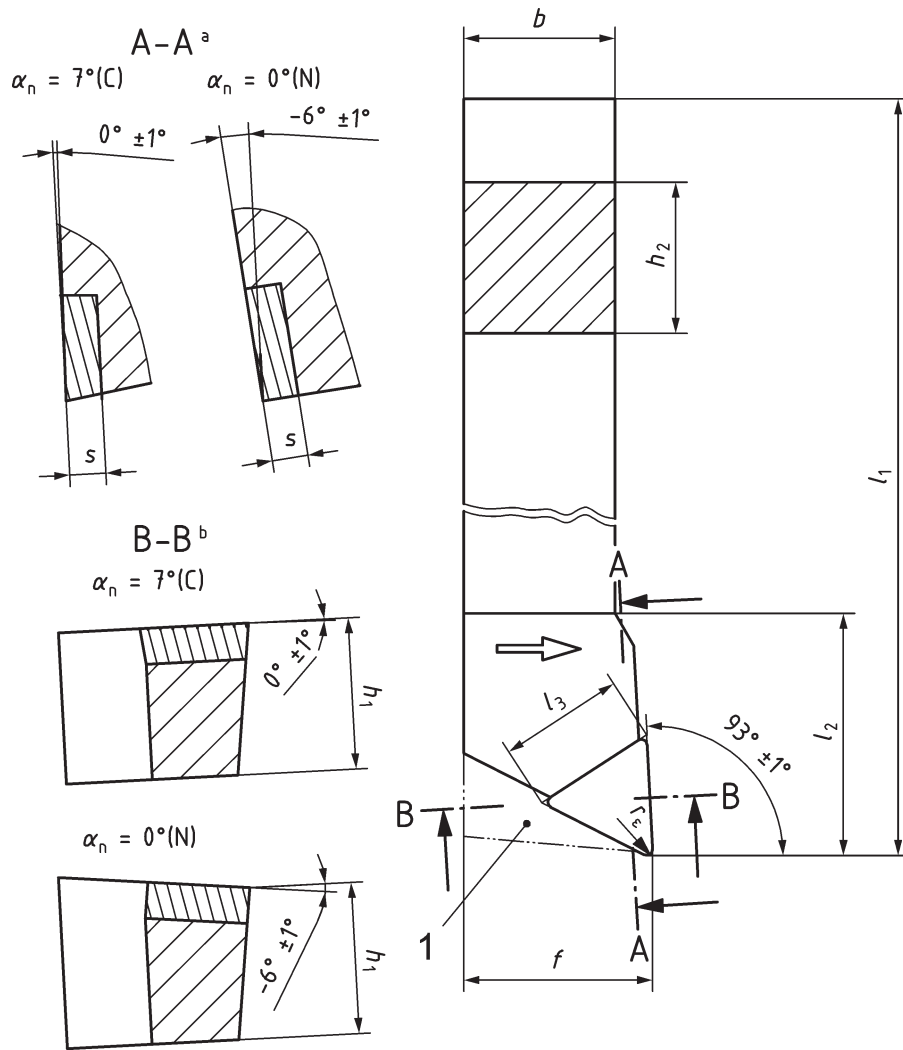
Table 1

Symbol ^a	h_1 js13	b h13	l_3 ≈	f +0,5 0	h_2 h13	l_1^a k16	l_2 max.	s^b
SDJCR 1010 — 07	10	10	7,75	12	10	—	25	2,38
SDJCL 1010 — 07								
SDJCR 1212 — 07	12	12	7,75	16	12	—	25	2,38
SDJCL 1212 — 07								
SDJCR 1616 — 11	16	16	11,6	20	16	—	32	3,97
SDJCL 1616 — 11								
SDJCR 2020 — 11	20	20	11,6	25	20	—	32	3,97
SDJCL 2020 — 11			15,5					
PDJNR 2020 — 15				15,5			40	6,35
PDJNL 2020 — 15								
CDJNR 2525 — 15	25	25	15,5	32	25	—	40	4,76 and 7,95
CDJNL 2525 — 15								
SDJCR 2525 — 15								4,76
SDJCL 2525 — 15								6,35
PDJNR 2525 — 15								6,35
PDJNL 2525 — 15								
CDJNR 3225 — 15	32	25	15,5	32	32	—	40	4,76 and 7,95
CDJNL 3225 — 15								
SDJCR 3225 — 15								4,76
SDJCL 3225 — 15								6,35
PDJNR 3225 — 15								6,35
PDJNL 3225 — 15								
SDJCR 4032 — 15	40	32	15,5	40	40	—	40	4,76
SDJCL 4032 — 15								6,35
PDJNR 4032 — 15								6,35
PDJNL 4032 — 15								

^a For the selection of length, l_1 , the dash can be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

^b Insert thickness without shim, if applicable.

3.3 Tool holder style J for triangular indexable insert shape T



Key

- 1 style of tool holder with indexable insert contact on both sides
- a Inclination angle, λ_s .
- b Rake angle, γ_0 .

NOTE The figure shows a right-hand tool holder (R); left-hand tool holder (L) laterally reversed.

Figure 2 — Tool holder style J for triangular indexable insert — T

Table 2

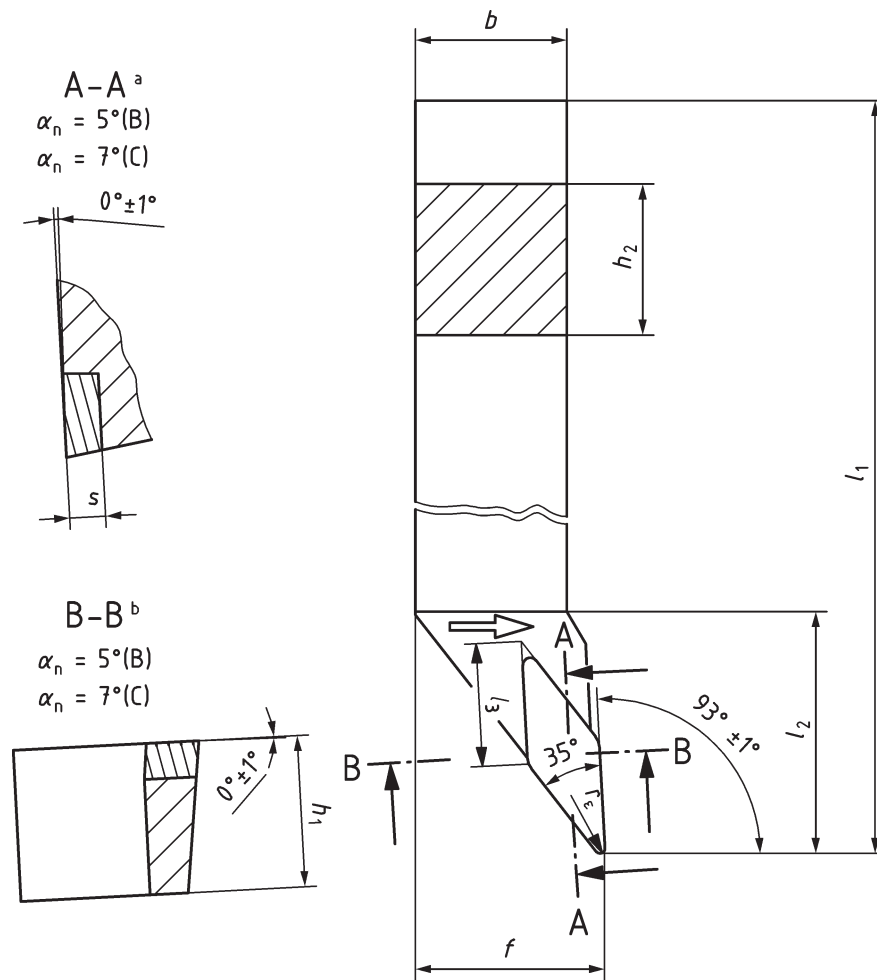
Dimensions in millimetres

Symbol ^a	h_1 js13	b h13	l_3 \approx	f $+0,5$ 0	h_2 h13	l_1^a k16	l_2 max.	s^b
STJCR 2020 — 16	20	20	16,5	25	20	—	32	3,97
STJCL 2020 — 16								4,76
PTJNR 2020 — 16								
PTJNL 2020 — 16								
CTJNR 2525 — 16	25	25	16,5	32	25	—	32	4,76 and 7,94
CTJNL 2525 — 16								
STJCR 2525 — 16								3,97
STJCL 2525 — 16								
PTJNR 2525 — 16								
PTJNL 2525 — 16	4,76							
STJCR 2525 — 22	25	25	22	32	25	—	36	4,76
STJCL 2525 — 22								
PTJNR 2525 — 22								
PTJNL 2525 — 22								
CTJNR 3225 — 16	32	25	16,5	32	32	—	32	4,76 and 7,94
CTJNL 3225 — 16								
STJCR 3225 — 16								3,97
STJCL 3225 — 16								
PTJNR 3225 — 16								
PTJNL 3225 — 16								4,76
STJCR 3225 — 22	32	25	22	32	32	—	36	4,76
STJCL 3225 — 22								
PTJNR 3225 — 22								
PTJNL 3225 — 22								
STJCR 4032 — 22	40	32	22	40	40	—	36	4,76
STJCL 4032 — 22								
PTJNR 4032 — 22								
PTJNL 4032 — 22								
PTJNR 4032 — 27	40	32	27,5	40	40	—	40	6,35
PTJNL 4032 — 27								

^a For the selection of length, l_1 , the dash can be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

^b Insert thickness without shim, if applicable.

3.4 Tool holder style J for rhombic indexable insert shape V



Key

- a Inclination angle, λ_s .
- b Rake angle, γ_o .

NOTE The figure shows a right-hand tool holder (R); left-hand tool holder (L) laterally reversed.

Figure 3 — Tool holder style J for rhombic indexable insert — V

Table 3

Dimensions in millimetres

Symbol ^a	h_1 js13	b h13	l_3 ≈	f +0,5 0	h_2 h13	l_1^a k16	l_2 max.	s^b					
SVJBR 1212 — 11	12	12	11,1	16	12	—	25	3,18					
SVJBL 1212 — 11													
SVJCR 1212 — 11													
SVJCL 1212 — 11													
SVJBR 1616 — 11	16	16	11,1	20	16	—	25	3,18					
SVJBL 1616 — 11													
SVJCR 1616 — 11													
SVJCL 1616 — 11													
SVJCR 2020 — 11	20	20	11,1	25	20	—	25	3,18					
SVJCL 2020 — 11			16,6						40	4,76			
SVJBR 2020 — 16			25				25	11,1			32	25	—
SVJBL 2020 — 16									16,6				
SVJCR 2525 — 11	25	25	11,1	32	25	—	25	3,18					
SVJCL 2525 — 11			16,6						40	4,76			
SVJBR 2525 — 16			32				25	16,6			32	32	—
SVJBL 2525 — 16													
SVJBR 3225 — 16	32	25	16,6	32	32	—	40	4,76					
SVJBL 3225 — 16													

^a For the selection of length, l_1 , the dash can be replaced by the dimensions of ISO 5610-1:2014, Table 2. For letter symbols identifying the tool length, see ISO 5608:2012, Table 6.

^b Insert thickness without shim, if applicable.

4 Designation

A tool holder in accordance with this part of ISO 5610 shall be designated by the following:

- “Tool holder”;
- a reference to this part of ISO 5610 (i.e. ISO 5610-7);
- type of mounting, in accordance with ISO 5608;
- symbol for indexable insert shape, in accordance with ISO 5608;
- symbol for tool style, in accordance with ISO 5608;
- symbol for the indexable insert normal clearance, in accordance with ISO 5608;
- symbol for hand of tool, in accordance with ISO 5608;
- its height, h_1 , width, b , and length, l_1 (symbol for tool length in accordance with ISO 5608);
- its cutting edge length, l_3 .

EXAMPLE 1 Tool holder for a screw-clamped (S) rhombic indexable insert shape D (D), tool holder style J (J), for normal clearance of indexable insert $\alpha_n = 7^\circ$ (C), right-hand type (R), with height $h_1 = 10$ mm and width $b = 10$ mm (1010), length $l_1 = 70$ mm (E), for cutting edge length $l_3 = 7,75$ mm (07) is designated as follows:

Tool holder ISO 5610-7 - SDJCR 1010 E07

EXAMPLE 2 Tool holder for a horizontally mounted bore-clamped (P) triangular indexable insert shape T (T), tool holder style J (J), for normal clearance of indexable insert $\alpha_n = 0^\circ$ (N), right-hand type (R), with height $h_1 = 32$ mm and width $b = 25$ mm (3225), length $l_1 = 170$ mm (P), for cutting edge length $l_3 = 16,5$ mm (16) is designated as follows:

Tool holder ISO 5610-7 - PTJNR 3225 P16

EXAMPLE 3 Tool holder for a screw-clamped (S) rhombic indexable insert shape V (V), tool holder style J (J), for normal clearance of indexable insert $\alpha_n = 5^\circ$ (B), right-hand type (R), with height $h_1 = 20$ mm and width $b = 20$ mm (2020), length $l_1 = 125$ mm (K), for cutting edge length $l_3 = 16,6$ mm (16) is designated as follows:

Tool holder ISO 5610-7 - SVJBR 2020 K16

5 Material

The material should be steel with a tensile strength of at least 1 200 N/mm².

6 Design

6.1 Type of mounting

Standard design of tool holders with indexable insert shall be mounted in accordance with [Tables 1 to 3](#).

Other types of mounting are at the manufacturer's discretion or upon agreement. The letter symbol in the designation, symbol 1, shall then be replaced by the respective symbol for the chosen or agreed-upon type of mounting, in accordance with ISO 5608.

For the modified type of mounting deviating from [Tables 1 to 3](#), the relevant indexable insert thickness shall also be considered.

6.2 Corner radius, r_ϵ

Tool holders in accordance with this part of ISO 5610 can be equipped with indexable inserts with cutting edge length, l_3 , as specified in [Tables 1, 2](#) and 3, and any corner radius, r_ϵ .

The values for l_1 given in ISO 5610-1:2014, Table 2, apply to tool holders with indexable inserts having corner radii, r_ϵ , in accordance with [Table 4](#).

Table 4

Dimensions in millimetres

l_3	r_ϵ
7,75	0,4
11,0	
11,1	
11,6	0,8
15,5	
16,5	
16,6	
22	
27,5	1,2

NOTE The values given for r_ϵ are nominal values. The accurate values converted from the inch dimensions are 0,397 mm, 0,794 mm, and 1,191 mm.

For indexable inserts with corner radii, r_E , other than those specified in [Tables 1 to 3](#), the dimensions of f and l_1 shall be determined in accordance with ISO 5610-1.

The tolerances for h_1 , f , and l_1 refer to dimensions measured with master indexable insert and master shim, if applicable.

6.3 Thickness, s , of indexable insert

The values for thickness, s , given in [Tables 1 to 3](#), apply to indexable inserts without shim and for the standard design of tool holders.

For tool holders for indexable inserts with thicknesses deviating from the specified values, the thickness shall be indicated when ordering or upon delivery (in the handbook).

7 Extent of delivery

Tool holders shall be delivered complete with clamping device, but without indexable insert(s).

8 Marking

Tool holders shall be marked with the letter symbol and the name or trademark of the manufacturer.

Additional marking is at the manufacturer's discretion or upon agreement.

Deviations in marking may be by mutual agreement.

A reference to this part of ISO 5610, i.e. ISO 5610-7:2014, shall be given on the packaging.

Bibliography

- [1] ISO 883, *Indexable hardmetal (carbide) inserts with rounded corners, without fixing hole — Dimensions*
- [2] ISO 3002-1, *Basic quantities in cutting and grinding — Part 1: Geometry of the active part of cutting tools — General terms, reference systems, tool and working angles, chip breakers*
- [3] ISO 3364, *Indexable hardmetal (carbide) inserts with rounded corners, with cylindrical fixing hole — Dimensions*
- [4] ISO 6987, *Indexable hard material inserts with rounded corners, with partly cylindrical fixing hole — Dimensions*
- [5] ISO/TS 13399-2, *Cutting tool data representation and exchange — Part 2: Reference dictionary for the cutting items*
- [6] ISO/TS 13399-3, *Cutting tool data representation and exchange — Part 3: Reference dictionary for tool items*

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