

**ASME B5.62M-2016**

# **Hollow Taper Tooling With Flange-Face Contact**

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**AN AMERICAN NATIONAL STANDARD**



**The American Society of  
Mechanical Engineers**

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**The American Society of  
Mechanical Engineers**

Two Park Avenue • New York, NY • 10016 USA

Date of Issuance: December 5, 2016

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# FOREWORD

ASME B5.62M establishes a new American National Standard based on the “Final Report on the Research Project Interface Machine/Tool: Testing and Optimization of Machine Tools,” also known as the “Aachen Reports,” published in March 1994 by the Laboratory for Machine Tools and Production Engineering of the Rheinisch-Westfaelische Technical College, Aachen University, Germany.

This Standard has been created to eliminate confusion caused by different versions and translations of standards for the hollow taper shank, or HSK shank.

The HSK machine tool interface offers an alternative to the standard “steep taper,” with greater stiffness, rigidity, and repeatability than provided by ASME B5.50, CAT-V, and other toolholders with 7/24 tapers.\* The ASME B5 Technical Committee 45 felt that, in contrast to existing versions and translations of standards for the HSK, this Standard should contain a more comprehensive interpretation of the Aachen findings, to eliminate confusion arising from the blend of existing HSK documentation. This Standard provides the user with a comprehensive selection of options and includes supplemental information.

ASME B5.62M-2016 was approved by the American National Standards Institute on August 22, 2016.

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\* Final Report on Research Project — Study on Design Possibilities for the Connection Machine/Tool, August 15, 1991, page 4

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NOTE: The Committee would like to thank C. Koehn, Air Gaging, LLC, for his contributions to this Standard.

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If the Inquirer is unable to use the online form, he/she may mail the request to the Secretary of the B5 Standards Committee at the above address. The request for an interpretation should be clear and unambiguous. It is further recommended that the Inquirer submit his/her request in the following format:

|                         |                                                                                                                                                                                                                                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Subject:                | Cite the applicable paragraph number(s) and the topic of the inquiry in one or two words.                                                                                                                                                                                                                             |
| Edition:                | Cite the applicable edition of the Standard for which the interpretation is being requested.                                                                                                                                                                                                                          |
| Question:               | Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. Please provide a condensed and precise question, composed in such a way that a "yes" or "no" reply is acceptable. |
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# Part 1

## HSK Shanks

### 1-1 GENERAL

#### 1-1.1 Scope

This Standard covers basic toolholder shanks with a hollow 1/9.98 taper, and simultaneous contact face and taper mating surfaces that are applicable to a range of machine tool applications. Hollow taper shank (HSK shank) Forms A, B, C, D, E, F, and T with nominal flange diameters of 25 mm to 160 mm are covered by this Standard.

#### 1-1.2 Interchangeability

Machine tool interfaces conforming to this Standard are interchangeable with machine tool interfaces conforming to DIN 69893-1:2003, DIN 69893-2:2003, DIN 69893-5:2004, DIN 69893-6:2003, ISO 12164-1:2001, ISO 12164-2:2001, ISO 12164-3:2008, and ISO 12164-4:2008.

#### 1-1.3 Forms

The HSK machine tool interfaces as manufactured in the seven basic shank forms (see [Figure 1-1.3-1](#)), and as customized by selection of several optional features, are suitable for use in a wide range of machine tool applications. The seven basic shank forms are as follows:

(a) *Form A.* Form A is the preferred design for use on machine tools with automatic tool changers. Keyways are located at the small end of the tool taper. Form A includes provision for through-tool coolant and manual tool change. See [Figure 1-1.3-1](#), illustration (a).

(b) *Form B.* Like Form A, Form B is for use on machine tools with automatic tool changers, but it has a reduced taper compared to Form A. Keyways are located on the flange. Form B includes provision for through-flange coolant and manual tool change. See [Figure 1-1.3-1](#), illustration (b).

(c) *Form C.* Form C is similar to Form A but is intended for use on machine tools requiring manual tool change. Tools with Form C shanks are typically used on transfer lines, or as part of a modular tooling system. See [Figure 1-1.3-1](#), illustration (c).

(d) *Form D.* Form D is similar to Form B but is intended for use on machine tools requiring manual tool change. See [Figure 1-1.3-1](#), illustration (d).

(e) *Form E.* Form E is similar to Form A, but it does not have keyways or orientation features. Form E is intended for high-speed machining. See [Figure 1-1.3-1](#), illustration (e).

(f) *Form F.* Form F is similar to Form E but has a reduced taper size. Form F is intended for high-speed machining. See [Figure 1-1.3-1](#), illustration (f).

(g) *Form T.* Form T is similar to Form A but has modifications to accommodate use with stationary tools. See [Figure 1-1.3-1](#), illustration (g).

#### 1-1.4 Definitions

*balance:* the condition in which the mass centerline and rotational centerline of a rotor are coincident.

*clamp set:* a mechanical device for securing a shank in the receiver.

*data chip:* a radio-frequency identification device.

*drive key:* a feature of a machine tool intended to orient the toolholder in the receiver and assist in delivery of the driving torque from the spindle nose to the tool.

*keyway:* the part of a machine tool that receives the drive key.

*receiver:* the spindle or nonrotating socket of a machine.

*shank:* a unit that fits directly into the spindle or nonrotating socket of a machine.

*spindle:* component assembly of the machine tool, the function of which is to accept the basic toolholder shank.

*spindle nose:* that part of a spindle into which the shank is accepted.

#### 1-1.5 Figure Interpretation

The [Part 1](#) figures are illustrated and labeled in accordance with ASME Y14.5.

### 1-2 FORMS A AND C

Form A includes provisions for automatic tool change, a data chip, an orientation notch, an access hole for manual clamping, drive keyways, and through-spindle coolant supply via coolant tube. Form C is intended for manual tool change and includes an access hole for manual clamping, drive keyways, and through-spindle coolant supply.

Figures 1-2-1 and 1-2-2 and Table 1-2-1 show the geometry and dimensions of HSK Forms A and C.

### 1-3 FORMS B AND D

Forms B and D include provisions for a data chip, an orientation notch, an access hole for manual clamping, drive keyways, and through-spindle coolant supply.

Figures 1-3-1 and 1-3-2 and Table 1-3-1 show the geometry and dimensions of HSK Forms B and D.

### 1-4 FORM E

Form E includes provisions for through-spindle coolant supply and automatic tool change. Form E does not include provisions for a data chip, an orientation notch, an access hole for manual clamping, or drive keyways.

Figure 1-4-1 and Table 1-4-1 show the geometry and dimensions of HSK Form E.

### 1-5 FORM F

Form F includes provisions for through-spindle coolant supply and automatic tool change. Form F does not include provisions for a data chip, an orientation notch, an access hole for manual clamping, or drive keyways.

Figure 1-5-1 and Table 1-5-1 show the geometry and dimensions of HSK Form F.

### 1-6 FORM T

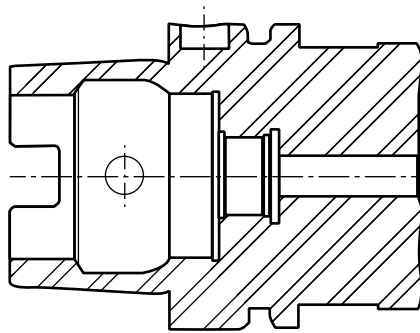
Form T includes provisions for automatic tool change, a data chip, an orientation notch, an access hole for manual clamping, drive keyways, and through-spindle coolant supply via coolant tube.

Figure 1-6-1 and Table 1-6-1 show the geometry and dimensions of HSK Form T.

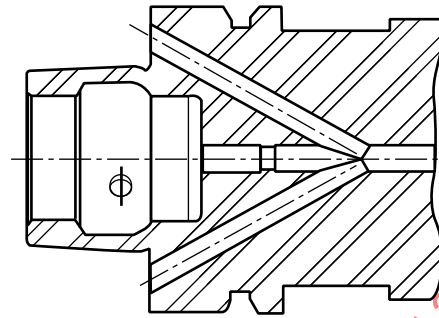
### 1-7 IDENTIFICATION CODING

Figure 1-7-1 shows the identification coding format for HSK shanks. As shown in Table 1-7-1, not all possible combinations of nominal size and feature are allowed per this Standard.

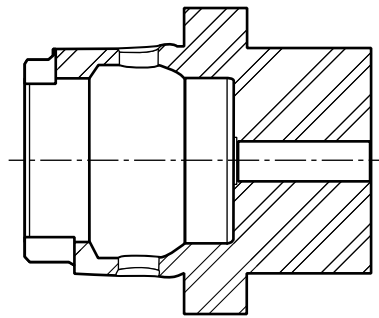
Figure 1-1.3-1 Basic HSK Shank Forms



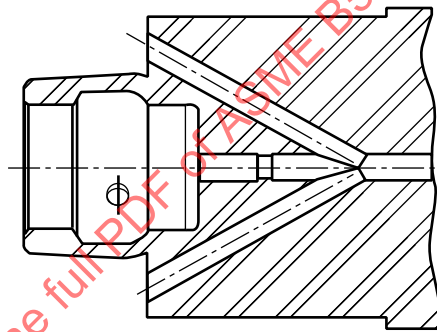
(a) Form A



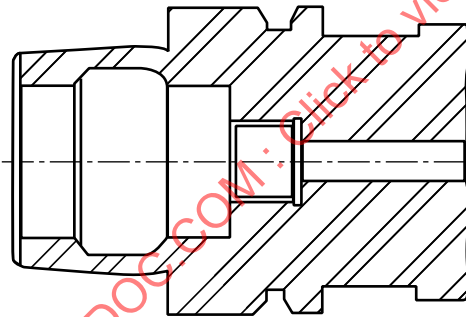
(b) Form B



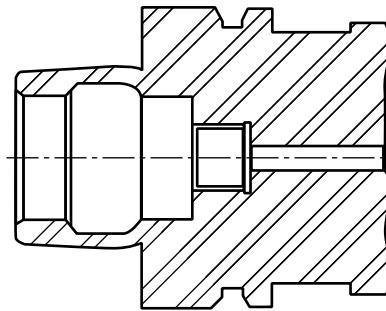
(c) Form C



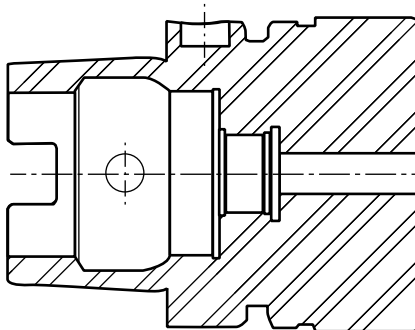
(d) Form D



(e) Form E



(f) Form F



(g) Form T

Figure 1-2-1 HSK Form A

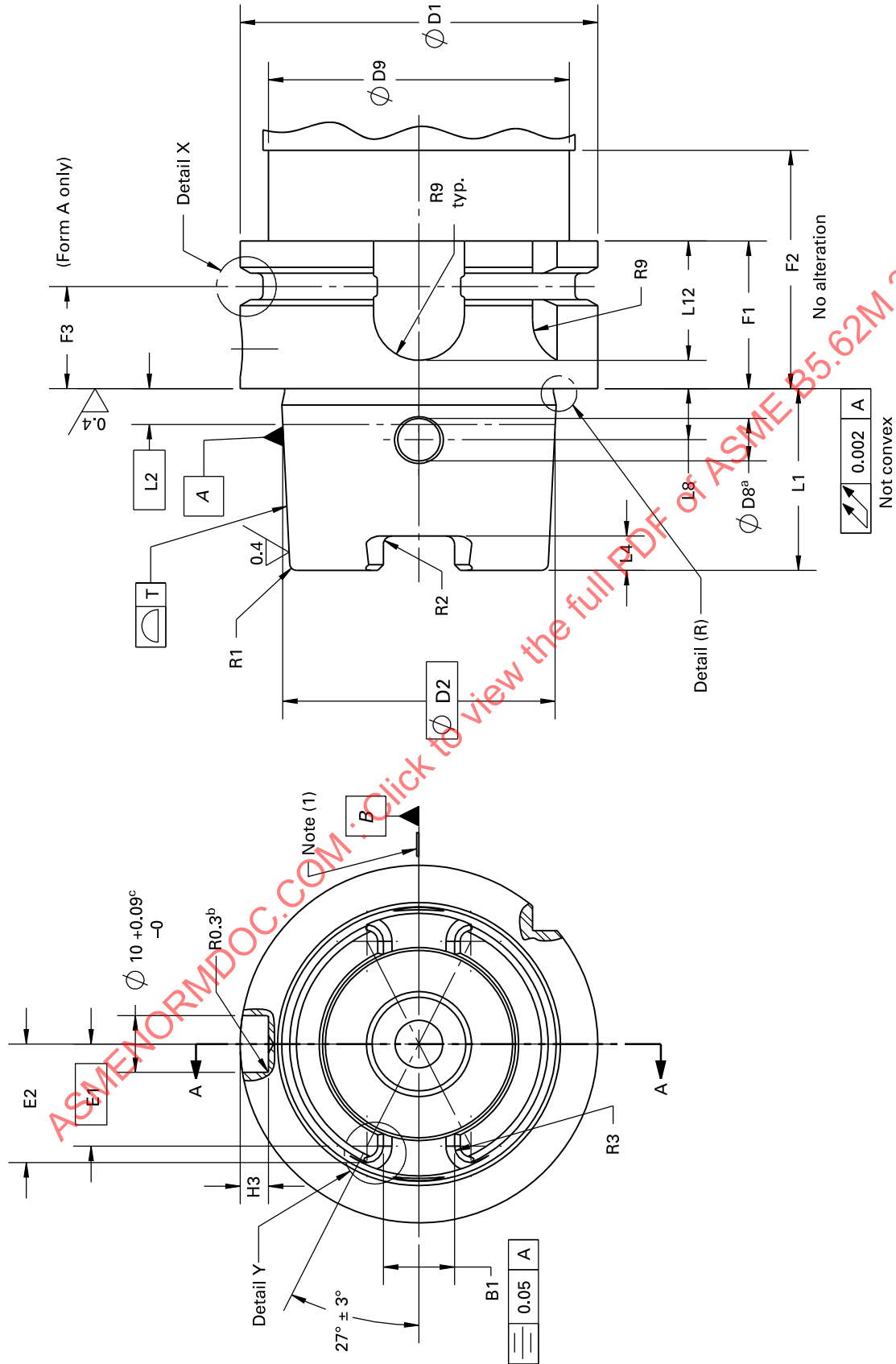
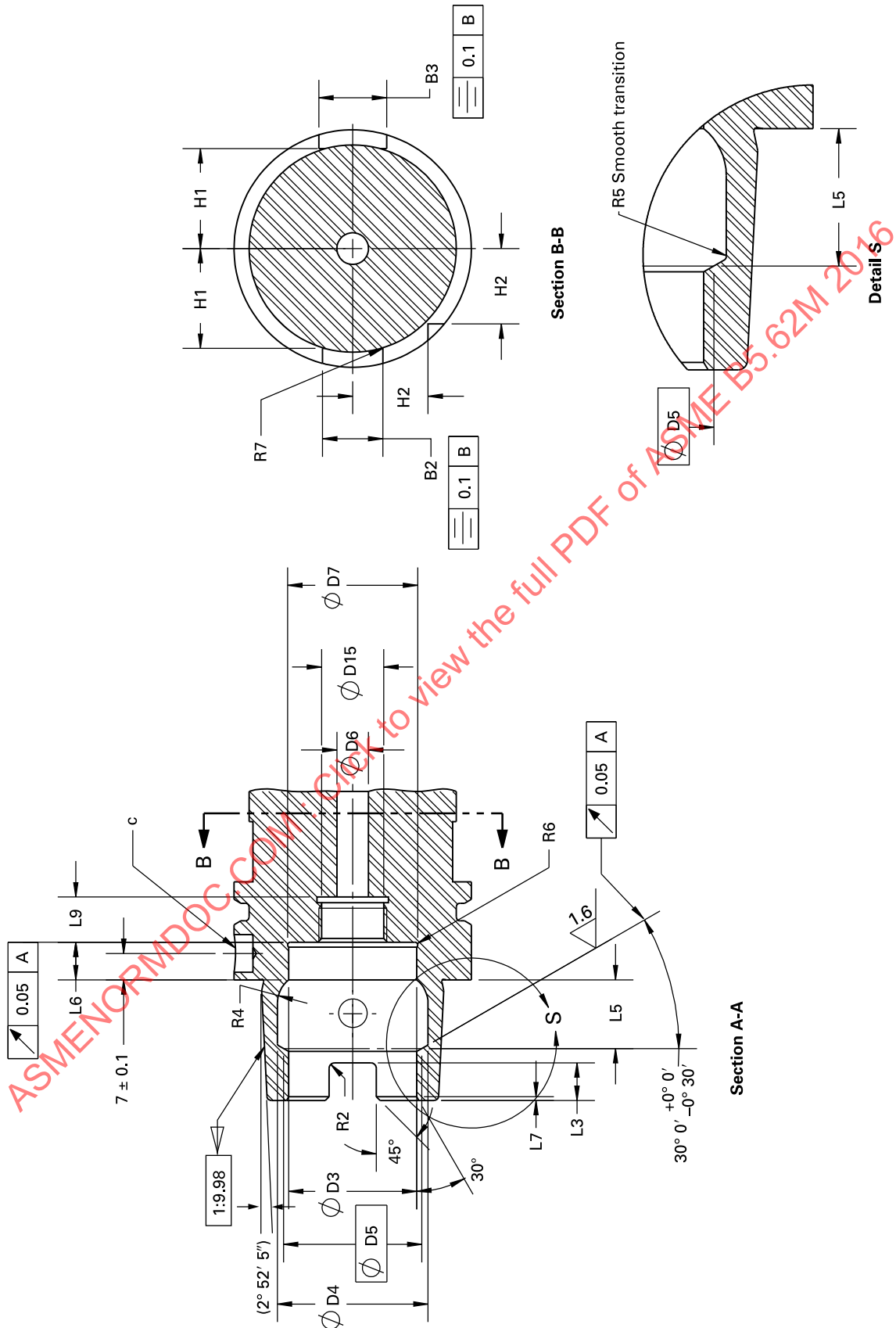


Figure 1-2-1 HSK Form A (Cont'd)



[illegible]

Figure 1-2-1 HSK Form A (Cont'd)

LEGEND:

a = corner break 0.2 mm to 0.5 mm

b = chamfer  $0.3 \times 45^\circ$  optional

c = provision for data chip (Form A only)

GENERAL NOTES:

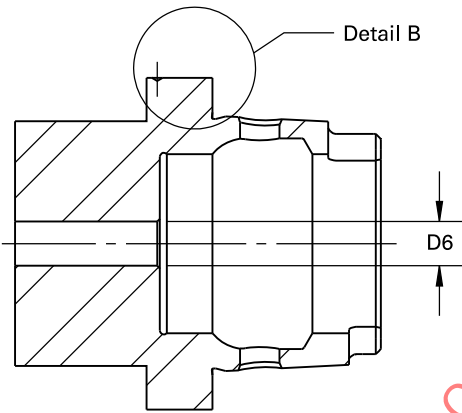
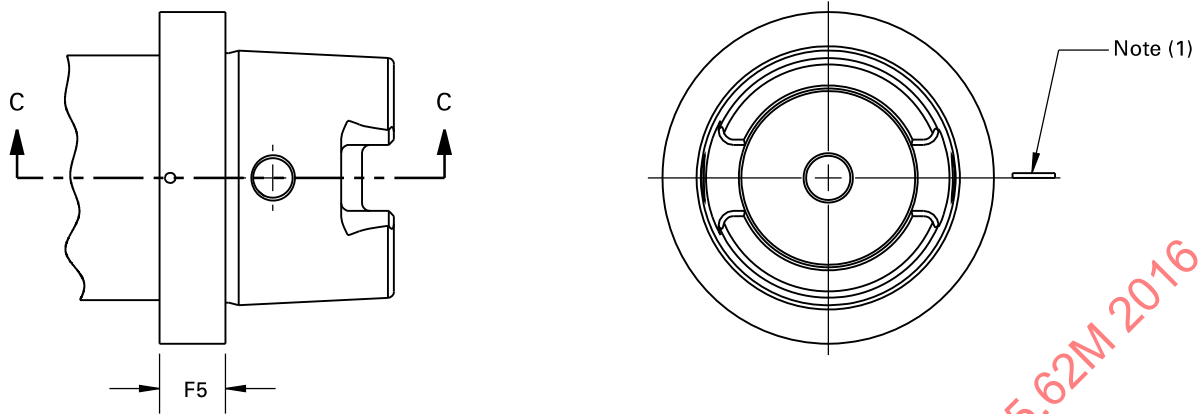
(a) See [Table 1-2-1](#) for dimension values.

(b) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is  $3.2 \mu\text{m}$ .

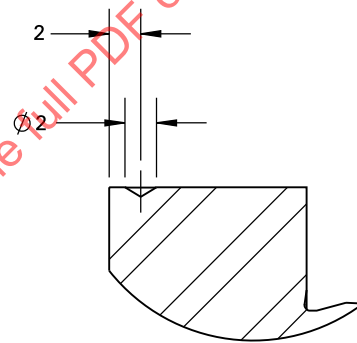
(c) Break all sharp edges.

NOTE: (1) Cutting-edge orientation (right-hand orientation) shown.

Figure 1-2-2 HSK Form C



Section C-C



Detail B [Note (2)]

GENERAL NOTES:

- (a) See Table 1-2-1 for dimension values.
- (b) For dimensions not indicated on the figure, refer to Figure 1-2-1.

NOTES:

- (1) Cutting-edge orientation (right-hand orientation) shown.
- (2) Drill spot as shown (Form C only).

Table 1-2-1 Dimensions for HSK Forms A and C

| Dimension     | Tolerance      | Nominal Size |         |         |         |           |           |           |           |
|---------------|----------------|--------------|---------|---------|---------|-----------|-----------|-----------|-----------|
|               |                | 32           | 40      | 50      | 63      | 80        | 100       | 125       | 160       |
| B1            | +0.04<br>-0.04 | 7.05         | 8.05    | 10.54   | 12.54   | 16.04     | 20.02     | 25.02     | 30.02     |
| B2            | H10 [Note (1)] | 7            | 9       | 12      | 16      | 18        | 20        | 25        | 32        |
| B3            | H10 [Note (1)] | 9            | 11      | 14      | 18      | 20        | 22        | 28        | 36        |
| D1            | H10 [Note (1)] | 32           | 40      | 50      | 63      | 80        | 100       | 125       | 160       |
| D2            | ...            | 24.007       | 30.007  | 38.009  | 48.010  | 60.012    | 75.013    | 95.016    | 120.016   |
| D3            | H10 [Note (1)] | 17           | 21      | 26      | 34      | 42        | 53        | 67        | 85        |
| D4            | H11 [Note (1)] | 20.5         | 25.5    | 32      | 40      | 50        | 63        | 80        | 100       |
| D5            | ...            | 19           | 23      | 29      | 37      | 46        | 58        | 73        | 92        |
| D6            | Max.           | 4.2          | 5       | 6.8     | 8.4     | 10.2      | 12        | 14        | 16        |
| D7 [Note (2)] | +0<br>-0.1     | 17.4         | 21.8    | 26.6    | 34.5    | 42.5      | 53.8      | ...       | ...       |
| D8            | ±0.1           | 4            | 4.6     | 6       | ...     | ...       | ...       | ...       | ...       |
|               | ±0.2           | ...          | ...     | ...     | 7.5     | 8.5       | 12        | ...       | ...       |
| D9            | Max.           | 26           | 34      | 42      | 53      | 68        | 88        | 111       | 144       |
| D10           | +0<br>-0.1     | 26.5         | 34.8    | 43      | 55      | 70        | 92        | 117       | 152       |
| D11           | +0<br>-0.1     | 37           | 45      | 59.3    | 72.3    | 88.8      | 109.75    | 134.75    | 169.75    |
| D12           | ...            | 4            | 4       | 7       | 7       | 7         | 7         | 7         | 7         |
| D15           | ...            | M10 × 1      | M12 × 1 | M16 × 1 | M18 × 1 | M20 × 1.5 | M24 × 1.5 | M30 × 1.5 | M35 × 1.5 |
| E1            | ...            | 8.82         | 11      | 13.88   | 17.99   | 21.94     | 27.37     | 35.37     | 44.32     |
| E2            | +0<br>-0.05    | 10.20        | 12.88   | 16.26   | 20.87   | 25.82     | 32.25     | 41.25     | 52.20     |
| F1            | +0<br>-0.1     | 20           | 20      | 26      | 26      | 26        | 29        | 29        | 31        |
| F2            | Min.           | 35           | 35      | 42      | 42      | 42        | 45        | 45        | 47        |
| F3            | +0.1<br>-0.1   | 16           | 16      | 18      | 18      | 18        | 20        | 20        | 22        |
| F4            | +0.15<br>-0    | 2            | 2       | 3.75    | 3.75    | 3.75      | 3.75      | 3.75      | 3.75      |
| F5            | ...            | 10           | 10      | 12.5    | 12.5    | 16        | 16        | ...       | ...       |
| F6            | +0.2<br>-0     | 1            | 2       | 2       | 2       | 2.5       | 2.5       | 4         | 4         |
| (G)           | ...            | 0.9          | 1.1     | 1.4     | 1.4     | 1.8       | 1.8       | 3.1       | 3.1       |
| H1            | +0<br>-0.2     | 13           | 17      | 21      | 26.5    | 34        | 44        | 55.5      | 72        |
| H2            | +0<br>-0.3     | 9.5          | 12      | 15.5    | 20      | 25        | 31.5      | 39.5      | 50        |
| H3            | +0.2<br>-0     | 5.4          | 5.2     | 5.1     | 5       | 4.9       | 4.9       | 4.8       | 4.8       |
| L1            | +0<br>-0.2     | 16           | 20      | 25      | 32      | 40        | 50        | 63        | 80        |
| L2            | ...            | 3.2          | 4       | 5       | 6.3     | 8         | 10        | 12.5      | 16        |
| L3            | +0.2<br>-0     | 5            | 6       | 7.5     | 10      | 12        | 15        | 19        | 23        |
| L4            | +0.2<br>-0     | 3            | 3.5     | 4.5     | 6       | 8         | 10        | 12        | 16        |
| L5            | JS10           | 8.92         | 11.42   | 14.13   | 18.13   | 22.85     | 28.56     | 36.27     | 45.98     |

Table 1-2-1 Dimensions for HSK Forms A and C (Cont'd)

| Dimension         | Tolerance      | Nominal Size |              |              |              |              |             |       |       |
|-------------------|----------------|--------------|--------------|--------------|--------------|--------------|-------------|-------|-------|
|                   |                | 32           | 40           | 50           | 63           | 80           | 100         | 125   | 160   |
| L6                | +0<br>-0.1     | 8            | 8            | 10           | 10           | 12.5         | 12.5        | 16    | 16    |
| L7                | +0.3<br>-0     | 0.8          | 0.8          | 1            | 1            | 1.5          | 1.5         | 2     | 2     |
| L8                | +0.1<br>-0.1   | 5            | 6            | 7.5          | 9            | 12           | 15          | ...   | ...   |
| L9                | +0<br>-0.3     | 6            | 8            | 10           | 12           | 14           | 16          | 18    | 20    |
| L12               | ±0.2           | 12           | 12           | 19           | 21           | 22           | 24          | 24    | 24    |
| R1                | ±0.1           | 0.6          | 0.8          | 1            | 1.2          | 1.6          | 2           | 2.5   | 3.2   |
| R2                | +0<br>-0.2     | 1            | 1            | 1.5          | 1.5          | 2            | 2           | 2.5   | 2.5   |
| R3 [Note (3)]     | +0.05<br>-0.05 | 1.38         | 1.88         | 2.38         | 2.88         | 3.88         | 4.88        | 5.88  | 7.88  |
| R4                | ±0.1           | 4            | 5            | 6            | ...          | ...          | ...         | ...   | ...   |
|                   | ±0.2           | ...          | ...          | ...          | 8            | 10           | 12          | 16    | 20    |
| R5                | ±0.1           | 0.4          | 0.4          | 0.5          | 0.6          | 0.8          | 1           | 1.2   | 1.6   |
| R6 [Note (2)]     | ±0.1           | 0.5          | 1            | 1.5          | 1.5          | 2            | 2           | ...   | ...   |
| R7                | Max.           | 0.5          | 0.5          | 0.5          | 0.5          | 0.5          | 0.5         | 0.5   | 0.5   |
| R9 [Note (4)]     | ±0.1           | 3.5          | 4.5          | 6            | ...          | ...          | ...         | 5     | 5     |
|                   | ±0.2           | ...          | ...          | ...          | 8            | 9            | 10          | ...   | ...   |
| R10               | ±0.1           | 0.2          | 0.4          | 0.6          | 0.6          | 1            | 1           | 1.6   | 1.6   |
| T                 | ...            | 0.002        | 0.002        | 0.0025       | 0.003        | 0.004        | 0.004       | 0.005 | 0.005 |
| U1                | +0.1           | 0.1          | 0.2          | 0.2          | 0.2          | 0.2          | 0.2         | 0.3   | 0.3   |
|                   | -0             |              |              |              |              |              |             |       |       |
| U2                | +0.05          | 0.1          | 0.1          | 0.1          | 0.1          | 0.1          | 0.1         | 0.2   | 0.2   |
|                   | -0             |              |              |              |              |              |             |       |       |
| O-ring [Note (2)] | ...            | 16 × 1       | 18.77 × 1.78 | 21.89 × 2.62 | 29.82 × 2.62 | 36.09 × 3.53 | 47.6 × 3.53 | ...   | ...   |

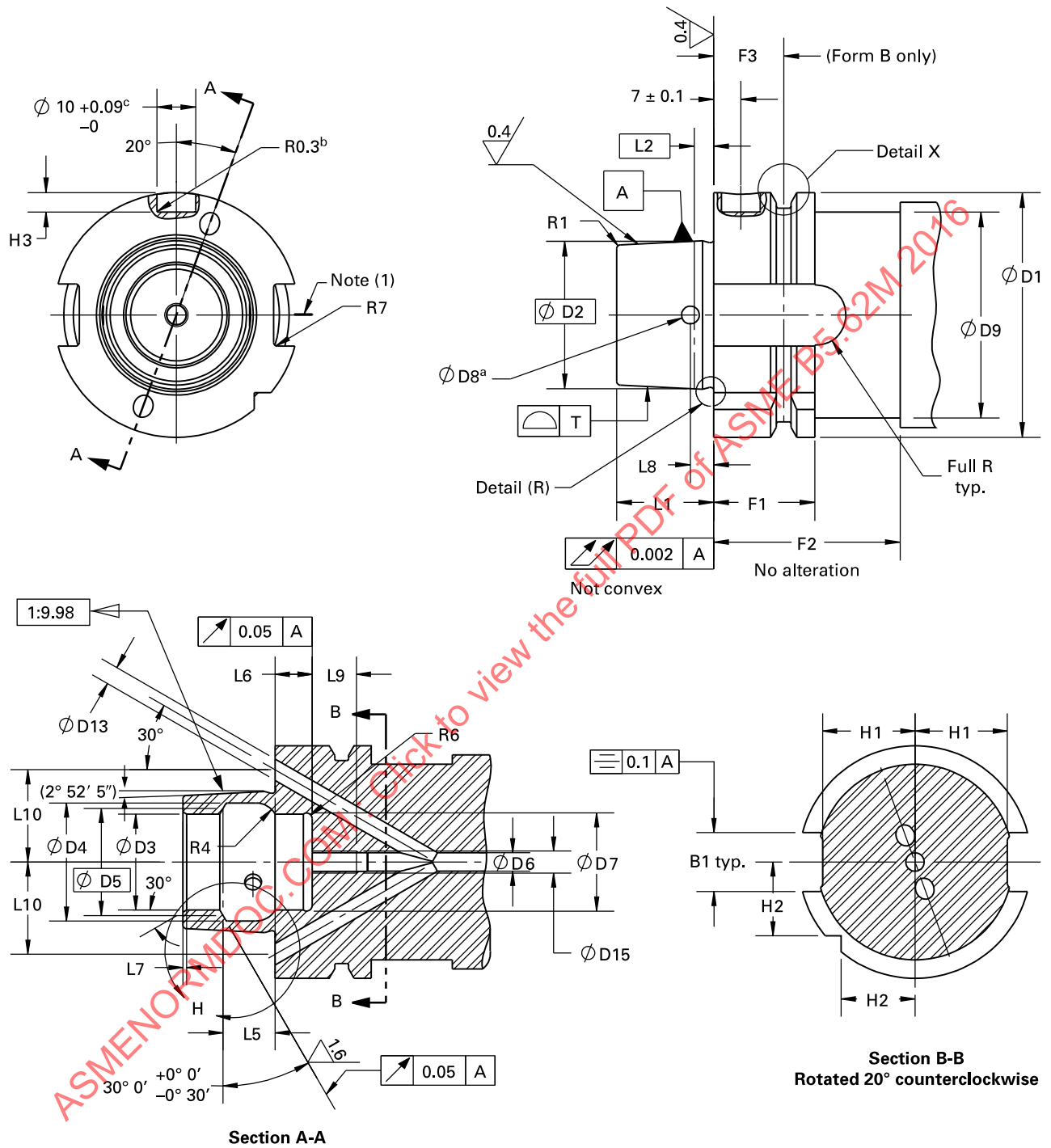
## GENERAL NOTES:

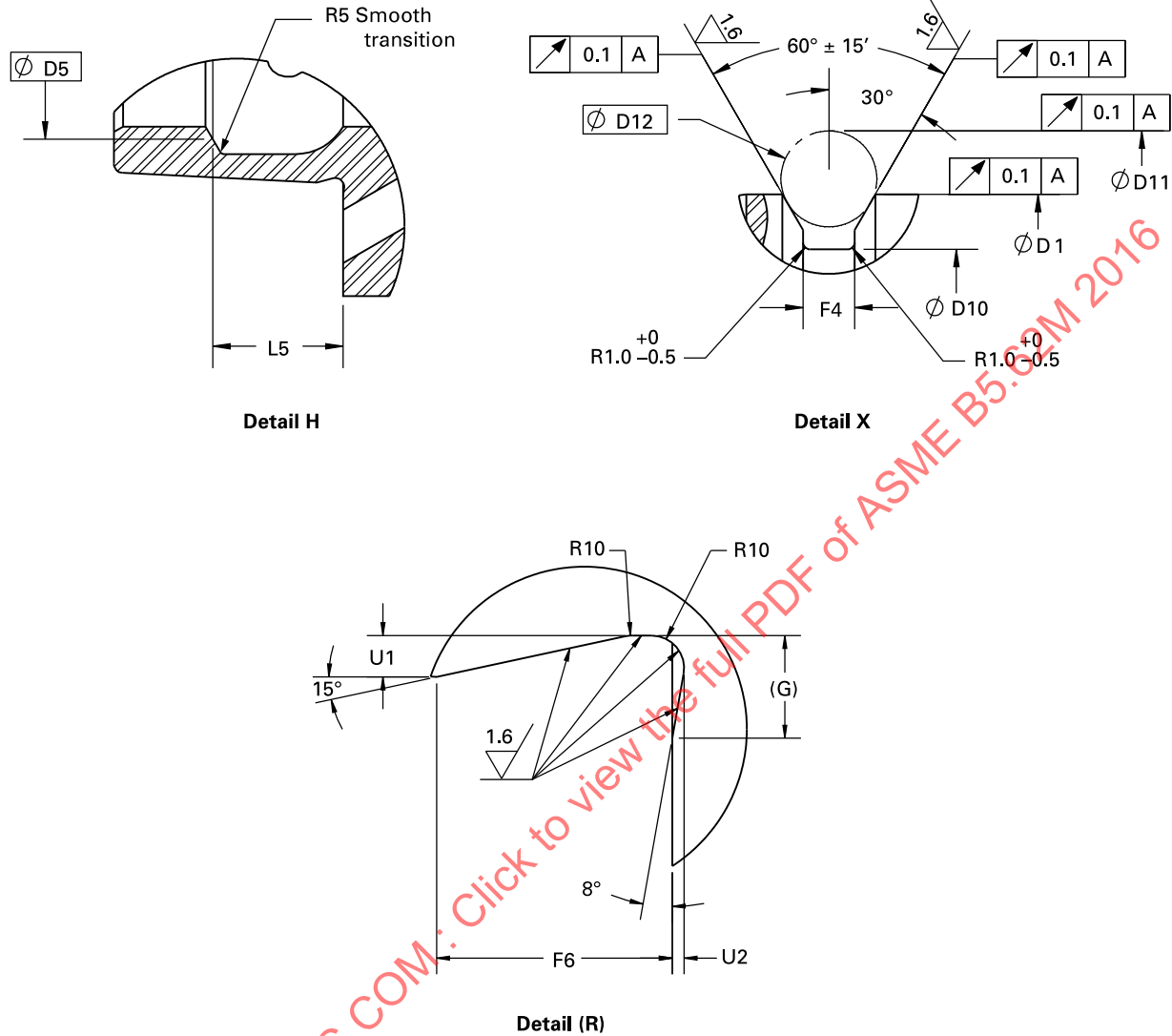
- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.

## NOTES:

- (1) Tolerance designations are per ASME B4.2.  
 (2) For use with certain proprietary clamp sets (not supplied with standard tooling).  
 (3) R3 is tangent to B1.  
 (4) R9 applies to B2 and B3.

Figure 1-3-1 HSK Form B



**Figure 1-3-1 HSK Form B (Cont'd)**

**LEGEND:**

a = corner break 0.2 mm to 0.5 mm

b = chamfer  $0.3 \times 45^\circ$  optional

c = provision for data chip

**GENERAL NOTES:**

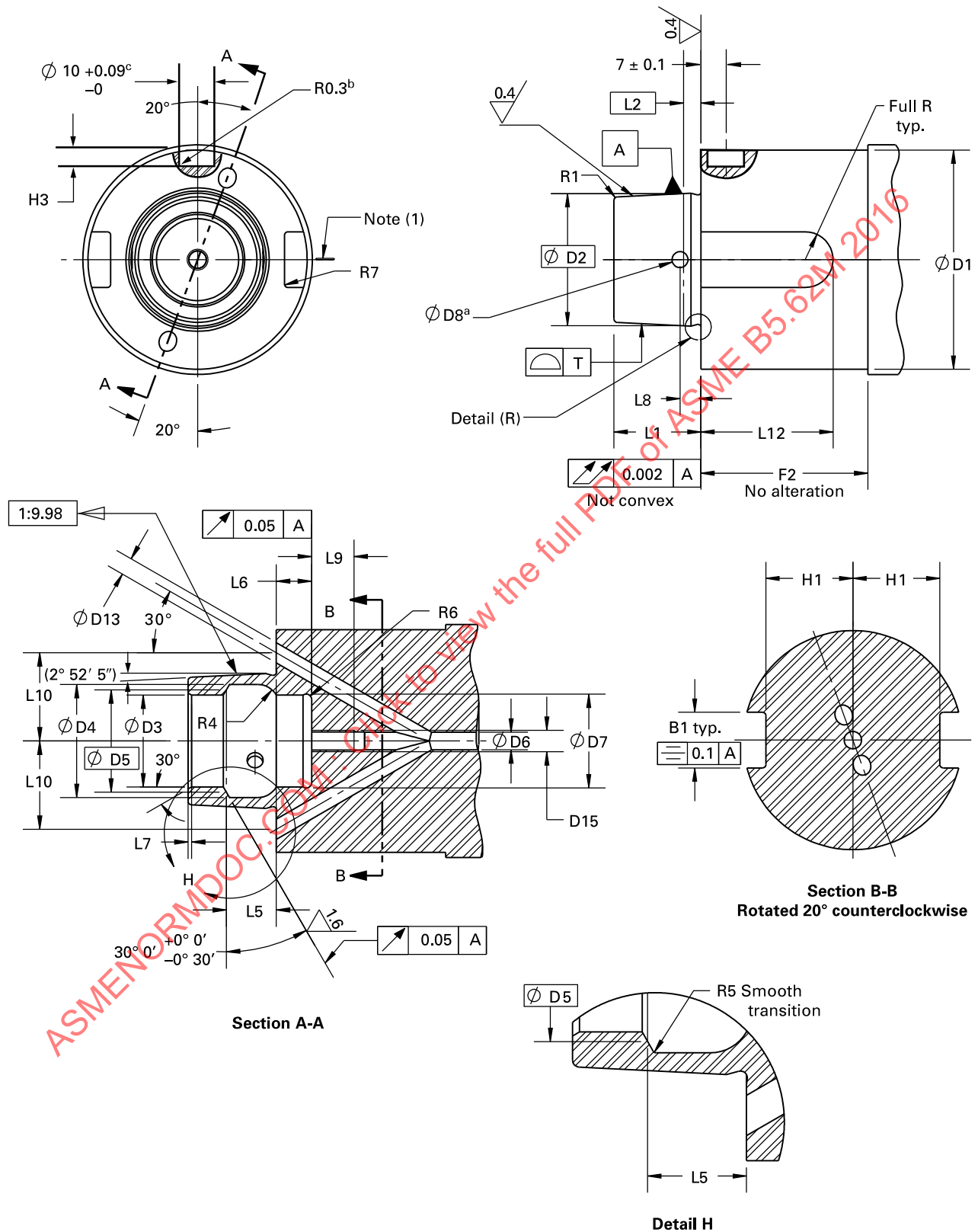
(a) See Table 1-3-1 for dimension values.

(b) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is  $3.2 \mu\text{m}$ .

(c) Break all sharp edges.

NOTE: (1) Cutting-edge orientation (right-hand orientation) shown.

**Figure 1-3-2 HSK Form D**



**Figure 1-3-2 HSK Form D (Cont'd)**

LEGEND:

a = corner break 0.2 mm to 0.5 mm

b = chamfer  $0.3 \times 45^\circ$  optional

c = provision for data chip

GENERAL NOTES:

(a) See [Table 1-3-1](#) for dimension values.

(b) For dimensions not indicated on the figure and for Detail (R), refer to [Figure 1-3-1](#).

(c) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is  $3.2 \mu\text{m}$ .

(d) Break all sharp edges.

NOTE: (1) Cutting-edge orientation (right-hand orientation) shown.

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Table 1-3-1 Dimensions for HSK Forms B and D

| Dimension     | Tolerance      | Nominal Size |        |        |        |        |        |        |
|---------------|----------------|--------------|--------|--------|--------|--------|--------|--------|
|               |                | 40           | 50     | 63     | 80     | 100    | 125    | 160    |
| B1            | H8             | 10           | 12     | 16     | 18     | 20     | 25     | 32     |
| D1            | H10 [Note (1)] | 40           | 50     | 63     | 80     | 100    | 125    | 160    |
| D2            | ...            | 24.007       | 30.007 | 38.009 | 48.010 | 60.012 | 75.013 | 95.016 |
| D3            | H10 [Note (1)] | 17           | 21     | 26     | 34     | 42     | 53     | 67     |
| D4            | H11 [Note (1)] | 20.5         | 25.5   | 32     | 40     | 50     | 63     | 80     |
| D5            | ...            | 19           | 23     | 29     | 37     | 46     | 58     | 73     |
| D6            | Max.           | 4.2          | 5      | 6.8    | 8.4    | 10.2   | 12     | 14     |
| D7 [Note (2)] | -0.1           | 17.4         | 21.8   | 26.6   | 34.5   | 42.5   | 53.8   | ...    |
| D8            | ±0.1           | 4            | 4.6    | 6      | ...    | ...    | ...    | ...    |
|               | ±0.2           | ...          | ...    | ...    | 7.5    | 8.5    | 12     | ...    |
| D9            | Max.           | 34           | 42     | 53     | 68     | 88     | 111    | 144    |
| D10           | -0.1           | 34.8         | 43     | 55     | 70     | 92     | 117    | 152    |
| D11           | +0<br>-0.1     | 45           | 59.3   | 72.3   | 88.8   | 109.75 | 134.75 | 169.75 |
| D12           | ...            | 4            | 7      | 7      | 7      | 7      | 7      | 7      |
| D13           | ...            | 3            | 3.5    | 5      | 6      | 7      | 8.5    | 10     |
| D15           | ...            | M5           | M6     | M8     | M10    | M12    | M14    | M16    |
| F1            | +0<br>-0.1     | 20           | 26     | 26     | 26     | 29     | 29     | 31     |
| F2            | Min.           | 35           | 42     | 42     | 42     | 45     | 45     | 47     |
| F3            | +0.1<br>-0.1   | 16           | 18     | 18     | 18     | 20     | 20     | 22     |
| F4            | +0.15<br>-0    | 2            | 3.75   | 3.75   | 3.75   | 3.75   | 3.75   | 3.75   |
| F6            | +0.2<br>-0     | 2            | 2      | 2      | 2.5    | 2.5    | 4      | 4      |
| (G)           | ...            | 1.1          | 1.4    | 1.4    | 1.8    | 1.8    | 3.1    | 3.1    |
| H1            | +0<br>-0.4     | 16           | 20     | 25     | 31.5   | 40     | 50     | 62.5   |
| H2            | +0<br>-0.3     | 12           | 15.5   | 20     | 25     | 31.5   | 39.5   | 50     |
| H3            | +0.3<br>-0     | 5.2          | 5.1    | 5      | 4.9    | 4.9    | 4.8    | 4.8    |
| L1            | +0<br>-0.2     | 16           | 20     | 25     | 32     | 40     | 50     | 63     |
| L2            | ...            | 3.2          | 4      | 5      | 6.3    | 8      | 10     | 12.5   |
| L5            | JS10           | 8.92         | 11.42  | 14.13  | 18.13  | 22.85  | 28.56  | 36.27  |
| L6            | +0<br>-0.1     | 8            | 8      | 10     | 10     | 12.5   | 12.5   | 16     |
| L7            | +0.3<br>-0     | 0.8          | 0.8    | 1      | 1      | 1.5    | 1.5    | 2      |
| L8            | ±0.1           | 5            | 6      | 7.5    | 9      | 12     | 15     | ...    |
| L9            | Min.           | 8            | 9      | 12     | 15     | 18     | 18     | 18     |
| L10           | -0.1           | 16           | 20     | 25     | 32     | 40     | 50     | 63     |
| L12           | ±0.2           | 25           | 32     | 34     | 35     | 39     | 41.5   | 47     |
| R1            | ±0.1           | 0.6          | 0.8    | 1      | 1.2    | 1.6    | 2      | 2.5    |
| R2            | ±0.1           | 4            | 5      | 6      | ...    | ...    | ...    | ...    |
|               | ±0.2           | ...          | ...    | ...    | 8      | 10     | 12     | 16     |
| R3            | ±0.1           | 0.4          | 0.4    | 0.5    | 0.6    | 0.8    | 1      | 1.2    |
| R4            | ±0.1           | 5            | 6      | ...    | ...    | ...    | ...    | ...    |
|               | ±0.2           | ...          | ...    | 8      | 9      | 10     | 12.5   | 16     |
| R5            | ±0.1           | 1            | 1      | 1      | 1      | 2      | 2      | 2      |

**Table 1-3-1 Dimensions for HSK Forms B and D (Cont'd)**

| Dimension         | Tolerance   | Nominal Size |              |              |              |              |             |       |
|-------------------|-------------|--------------|--------------|--------------|--------------|--------------|-------------|-------|
|                   |             | 40           | 50           | 63           | 80           | 100          | 125         | 160   |
| R6 [Note (2)]     | ±0.1        | 0.5          | 1            | 1.5          | 1.5          | 2            | 2           | ...   |
| R10               | ±0.1        | 0.2          | 0.4          | 0.6          | 0.6          | 1            | 1           | 1.6   |
| T                 | ...         | 0.002        | 0.002        | 0.0025       | 0.003        | 0.004        | 0.004       | 0.005 |
| U1                | +0.1<br>-0  | 0.2          | 0.2          | 0.2          | 0.2          | 0.2          | 0.3         | 0.3   |
| U2                | +0.05<br>-0 | 0.1          | 0.1          | 0.1          | 0.1          | 0.1          | 0.2         | 0.2   |
| O-ring [Note (2)] | ...         | 16 × 1       | 18.77 × 1.78 | 21.89 × 2.62 | 29.82 × 2.62 | 36.09 × 3.53 | 47.6 × 3.53 | ...   |

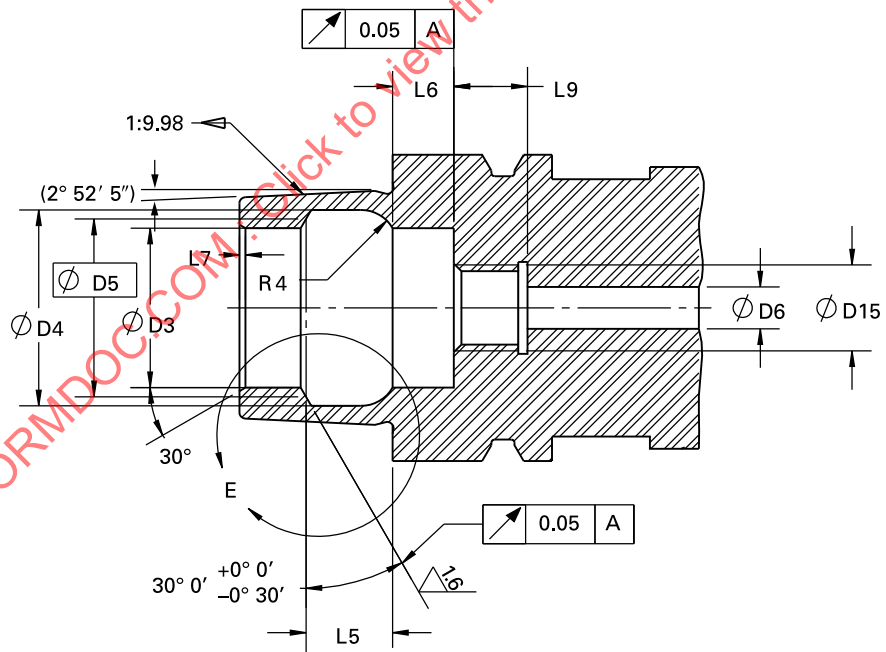
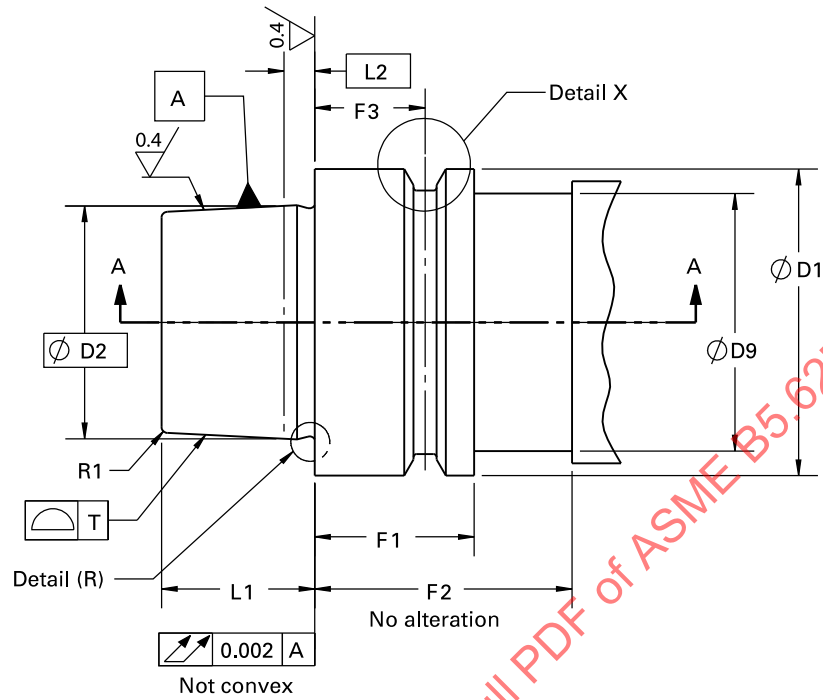
## GENERAL NOTES:

- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.

## NOTES:

- (1) Tolerance designations are per ASME B4.2.  
 (2) For use with certain proprietary clamp sets (not supplied with standard tooling).

Figure 1-4-1 HSK Form E



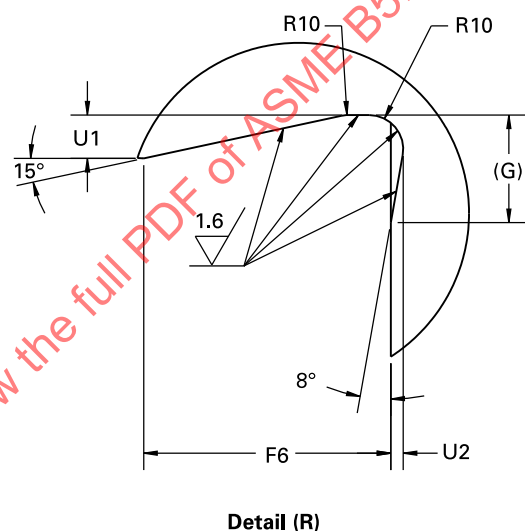
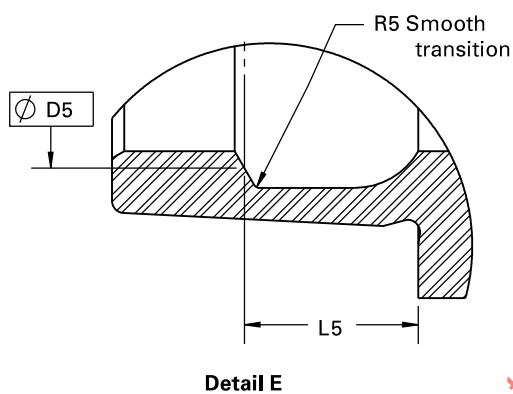
Section A-A

NOTES:

1. Refer to [Table 1-4-1](#) for dimension values.

2. The texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is 3.2  $\mu\text{m}$ .

3. All sharp edges.



(a) See Table 1-4-1 for dimension values.  
(b) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is 3.2  $\mu\text{m}$ .  
(c) Break all sharp edges.

Table 1-4-1 Dimensions for HSK Form E

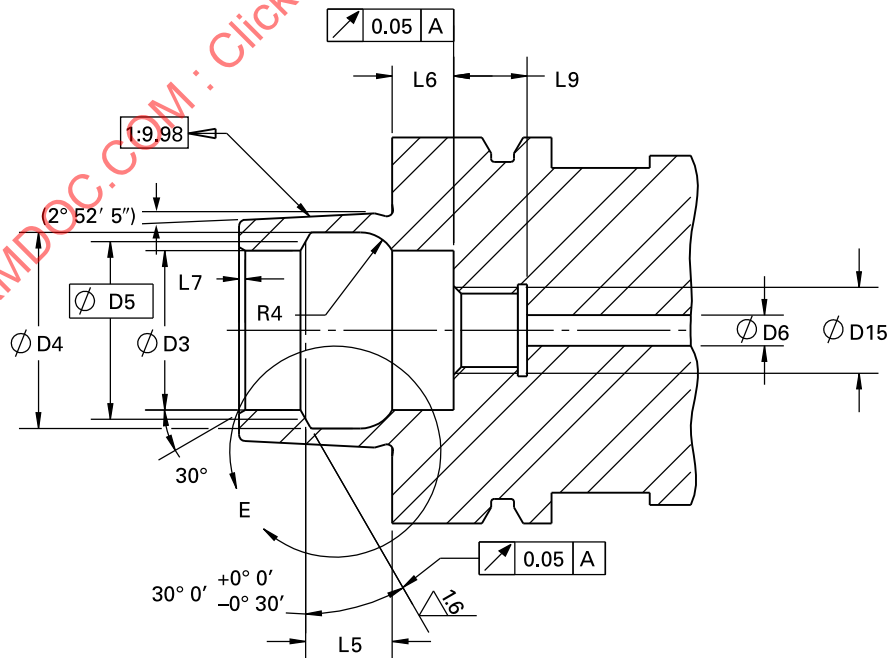
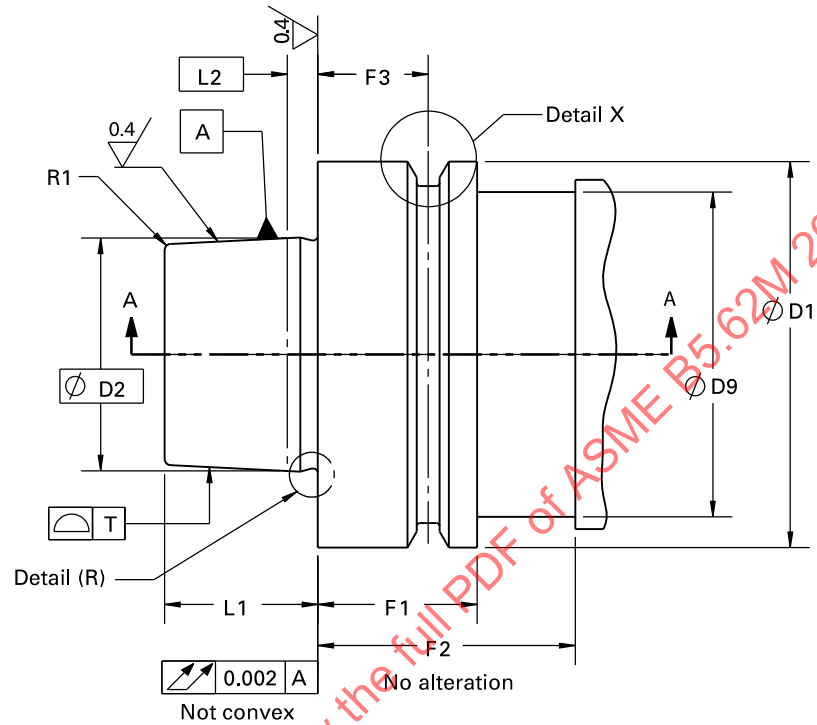
| Dimension | Tolerance      | Nominal Size |         |         |         |         |           |           |
|-----------|----------------|--------------|---------|---------|---------|---------|-----------|-----------|
|           |                | 25           | 32      | 40      | 50      | 63      | 80        | 100       |
| D1        | H10 [Note (1)] | 25           | 32      | 40      | 50      | 63      | 80        | 100       |
| D2        | ...            | 19.006       | 24.007  | 30.007  | 38.009  | 48.010  | 60.012    | 75.013    |
| D3        | H10 [Note (1)] | 14           | 17      | 21      | 26      | 34      | 42        | 53        |
| D4        | H11 [Note (1)] | 16.4         | 20.5    | 25.5    | 32      | 40      | 50        | 63        |
| D5        | ...            | 15           | 19      | 23      | 29      | 37      | 46        | 58        |
| D6        | Max.           | 3            | 4.2     | 5       | 6.8     | 8.4     | 10.2      | 12        |
| D9        | Max.           | 20           | 26      | 34      | 42      | 53      | 68        | 88        |
| D10       | +0<br>-0.1     | 22           | 26.5    | 34.8    | 43      | 55      | 70        | 92        |
| D11       | +0<br>-0.1     | 28.5         | 37      | 45      | 59.3    | 72.3    | 88.8      | 109.75    |
| D12       | ...            | 3            | 4       | 4       | 7       | 7       | 7         | 7         |
| D15       | ...            | M8 × 1       | M10 × 1 | M12 × 1 | M16 × 1 | M18 × 1 | M20 × 1.5 | M24 × 1.5 |
| F1        | -0.1           | 10           | 20      | 20      | 26      | 26      | 26        | 29        |
| F2        | Min.           | 20           | 35      | 35      | 42      | 42      | 42        | 45        |
| F3        | ±0.1           | 4.5          | 16      | 16      | 18      | 18      | 18        | 20        |
| F4        | +0.15          | 2            | 2       | 2       | 3.75    | 3.75    | 3.75      | 3.75      |
| F6        | +0.2<br>-0     | 1            | 1       | 2       | 2       | 2       | 2.5       | 2.5       |
| (G)       | ...            | 0.9          | 0.9     | 1.1     | 1.4     | 1.4     | 1.8       | 1.8       |
| L1        | -0.2           | 13           | 16      | 20      | 25      | 32      | 40        | 50        |
| L2        | ...            | 2.5          | 3.2     | 4       | 5       | 6.3     | 8         | 10        |
| L5        | JS10           | 7.21         | 8.92    | 11.42   | 14.13   | 18.13   | 22.85     | 28.56     |
| L6        | +0<br>-0.1     | 6            | 8       | 8       | 10      | 10      | 12.5      | 12.5      |
| L7        | +0.3           | 0.6          | 0.8     | 0.8     | 1       | 1       | 1.5       | 1.5       |
| L9        | -0.3           | 5            | 6       | 8       | 10      | 12      | 14        | 16        |
| R1        | ±0.1           | 0.5          | 0.6     | 0.8     | 1       | 1.2     | 1.6       | 2         |
| R4        | ±0.1           | 3            | 4       | 5       | 6       | ...     | ...       | ...       |
|           | ±0.2           | ...          | ...     | ...     | ...     | 8       | 10        | 12        |
| R5        | ±0.1           | 0.3          | 0.4     | 0.4     | 0.5     | 0.6     | 0.8       | 1         |
| R10       | ±0.1           | 0.2          | 0.2     | 0.4     | 0.6     | 0.6     | 1         | 1         |
| T         | ...            | 0.002        | 0.002   | 0.002   | 0.0025  | 0.003   | 0.004     | 0.004     |
| U1        | +0.1<br>-0     | 0.1          | 0.1     | 0.2     | 0.2     | 0.2     | 0.2       | 0.2       |
| U2        | +0.05<br>-0    | 0.1          | 0.1     | 0.1     | 0.1     | 0.1     | 0.1       | 0.1       |

## GENERAL NOTES:

- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.

NOTE: (1) Tolerance designations are per ASME B4.2.

Figure 1-5-1 HSK Form F



Section A-A

(a) See Table 1-5-1 for dimension values.  
(b) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is 3.2  $\mu\text{m}$ .  
(c) Break all sharp edges.

Table 1-5-1 Dimensions for HSK Form F

| Dimension | Tolerance       | Nominal Size |         |         |
|-----------|-----------------|--------------|---------|---------|
|           |                 | 50           | 63      | 80      |
| D1        | H10 [Note (1)]  | 50           | 63      | 80      |
| D2        | ...             | 30.007       | 38.009  | 48.010  |
| D3        | H10 [Note (1)]  | 21           | 26      | 34      |
| D4        | H11 [Note (1)]  | 25.5         | 32      | 40      |
| D5        | ...             | 23           | 29      | 37      |
| D6        | Max.            | 5            | 6.8     | 8.4     |
| D9        | Max.            | 42           | 53      | 68      |
| D10       | -0.1            | 43           | 55      | 70      |
| D11       | -0.1            | 59.3         | 72.3    | 88.8    |
| D12       | ...             | 7            | 7       | 7       |
| D15       | ...             | M12 × 1      | M16 × 1 | M18 × 1 |
| F1        | +0<br>-0.1      | 26           | 26      | 26      |
| F2        | Min.            | 42           | 42      | 42      |
| F3        | ±0.1            | 18           | 18      | 18      |
| F4        | +0.15<br>-0     | 3.75         | 3.75    | 3.75    |
| F6        | +0.2            | 2            | 2       | 2       |
| (G)       | ...             | 1.4          | 1.4     | 1.8     |
| L1        | +0<br>-0.2      | 20           | 25      | 32      |
| L2        | ...             | 4            | 5       | 6.3     |
| L5        | JS10 [Note (1)] | 11.42        | 14.13   | 18.13   |
| L6        | -0.1            | 8            | 10      | 10      |
| L7        | +0.3<br>-0      | 0.8          | 1       | 1       |
| L9        | -0.3            | 8            | 10      | 12      |
| R1        | ±0.1            | 0.8          | 1       | 1.2     |
| R4        | ±0.1            | 5            | 6       | ...     |
|           | ±0.2            | ...          | ...     | 8       |
| R5        | ±0.1            | 0.4          | 0.5     | 0.6     |
| R10       | ±0.1            | 0.4          | 0.6     | 0.6     |
| T         | ...             | 0.002        | 0.0025  | 0.003   |
| U1        | +0.1            | 0.2          | 0.2     | 0.2     |
| U2        | +0.05           | 0.1          | 0.1     | 0.1     |

## GENERAL NOTES:

- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.

NOTE: (1) Tolerance designations are per ASME B4.2.

Figure 1-6-1 HSK Form T

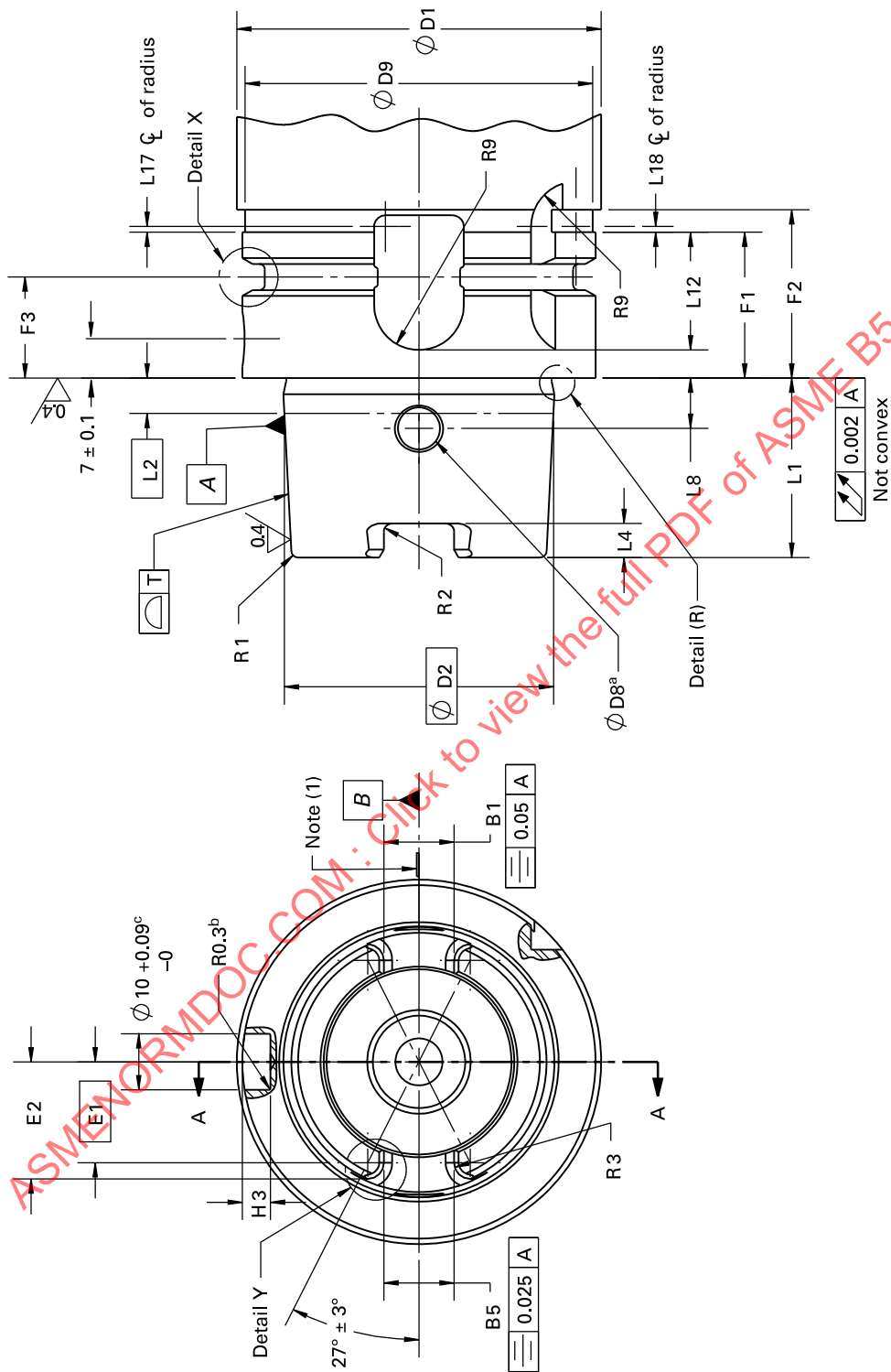
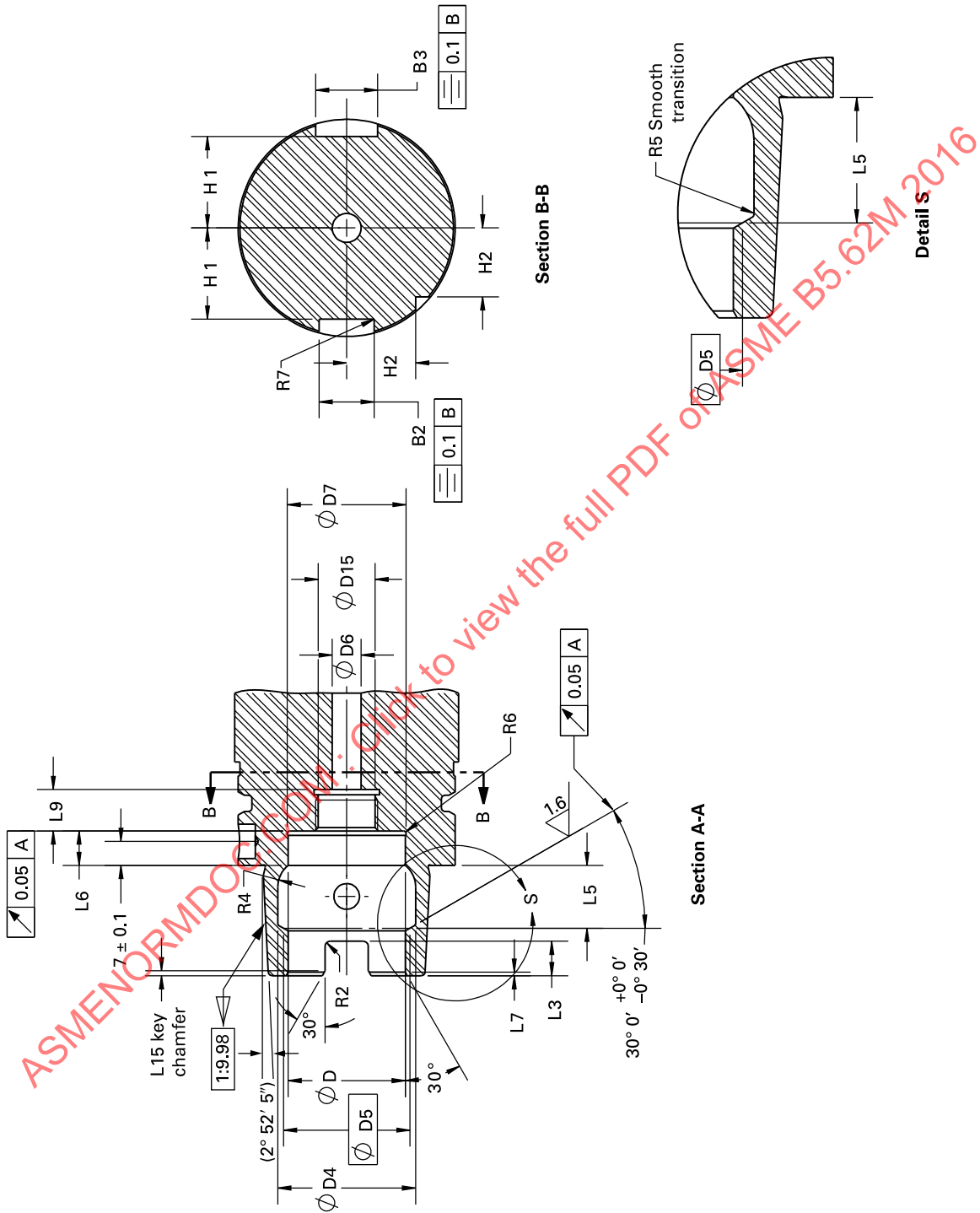


Figure 1-6-1 HSK Form T (Cont'd)



Technical drawing of a mechanical part, likely a flange or bracket, showing dimensions and tolerances. The drawing includes a main view and a detail view (Detail X).

**Main View Dimensions and Tolerances:**

- Top horizontal edge:  $60^\circ \pm 15'$  angle,  $1.6$  chamfer,  $0.1$  A surface texture.
- Left vertical edge:  $1.6$  chamfer,  $0.1$  A surface texture.
- Bottom horizontal edge:  $0.1$  A surface texture.
- Right vertical edge:  $0.1$  A surface texture.
- Internal features:  $\phi D11$ ,  $\phi D1$ ,  $\phi D10$ ,  $\phi D12$ .
- Radius:  $R1.0 - 0.5$  (two locations).
- Feature:  $F4$ .
- Angle:  $(30^\circ)$ .

**Detail X Dimensions and Tolerances:**

- Top horizontal edge:  $117^\circ \pm 3^\circ$  angle,  $1.6$  chamfer,  $0.1$  A surface texture.
- Right vertical edge:  $0.1$  A surface texture.
- Internal features:  $\phi D1$ ,  $\phi D10$ ,  $\phi D12$ .
- Radius:  $R1.0 - 0.5$  (two locations).
- Feature:  $F4$ .
- Angle:  $(30^\circ)$ .

**Other Dimensions and Tolerances:**

- Top horizontal edge:  $1.6$  chamfer,  $0.1$  A surface texture.
- Right vertical edge:  $0.1$  A surface texture.
- Internal features:  $\phi D11$ ,  $\phi D1$ ,  $\phi D10$ ,  $\phi D12$ .
- Radius:  $R1.0 - 0.5$  (two locations).
- Feature:  $F4$ .
- Angle:  $(30^\circ)$ .

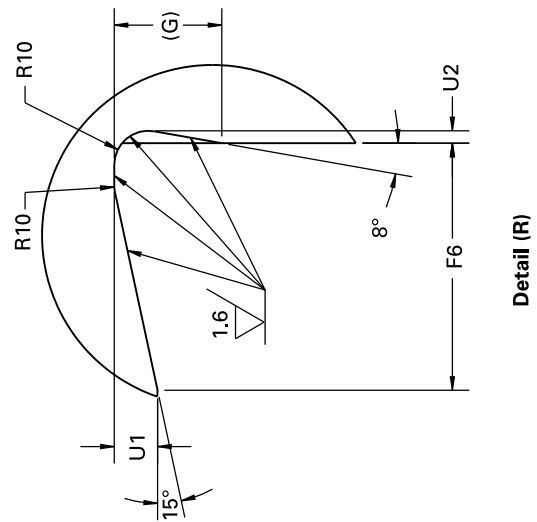


Figure 1-6-1 HSK Form T (Cont'd)

## LEGEND:

- a = corner break 0.2 mm to 0.5 mm  
b = chamfer  $0.3 \times 45^\circ$  optional  
c = provision for data chip

## GENERAL NOTES:

- (a) See Table 1-6-1 for dimension values.  
(b) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is 3.2  $\mu\text{m}$ .  
(c) Break all sharp edges.

NOTE: (1) Cutting-edge orientation (right-hand orientation) shown.

Table 1-6-1 Dimensions for HSK Form T

| Dimension | Tolerance       | Nominal Size |         |         |         |           |           |           |           |
|-----------|-----------------|--------------|---------|---------|---------|-----------|-----------|-----------|-----------|
|           |                 | 32           | 40      | 50      | 63      | 80        | 100       | 125       | 160       |
| B1        | +0.04<br>-0.04  | 7.05         | 8.05    | 10.54   | 12.54   | 16.04     | 20.02     | 25.02     | 30.02     |
| B2        | H10 [Note (1)]  | 7            | 9       | 12      | 16      | 18        | 20        | 25        | 32        |
| B3        | H10 [Note (1)]  | 9            | 11      | 14      | 18      | 20        | 22        | 28        | 36        |
| B5        | +0.03<br>-0     | 6.932        | 7.932   | ...     | ...     | ...       | ...       | ...       | ...       |
|           | +0.035<br>-0    | ...          | ...     | 10.425  | 12.425  | 15.93     | 19.91     | ...       | ...       |
|           | +0.04<br>-0     | ...          | ...     | ...     | ...     | ...       | ...       | 24.915    | 29.915    |
| D1        | H10 [Note (1)]  | 32           | 40      | 50      | 63      | 80        | 100       | 125       | 160       |
| D2        | ...             | 24.007       | 30.007  | 38.009  | 48.010  | 60.012    | 75.013    | 95.016    | 120.016   |
| D3        | H10 [Note (1)]  | 17           | 21      | 26      | 34      | 42        | 53        | 67        | 85        |
| D4        | H11 [Note (1)]  | 20.5         | 25.5    | 32      | 40      | 50        | 53        | 80        | 100       |
| D5        | ...             | 19           | 23      | 29      | 37      | 46        | 58        | 73        | 92        |
| D6        | Max.            | 4.2          | 5       | 6.8     | 8.4     | 10.2      | 12        | 14        | 16        |
| D7        | +0<br>-0.1      | 17.4         | 21.8    | 26.6    | 34.5    | 42.5      | 53.8      | ...       | ...       |
| D8        | ...             | 4            | 4.6     | 6       | 7.5     | 8.5       | 12        | ...       | ...       |
| D9        | Max.            | 31           | 39      | 49      | 62      | 79        | 99        | 124       | 159       |
| D10       | +0<br>-0.1      | 26.5         | 34.8    | 43      | 55      | 70        | 92        | 117       | 152       |
| D11       | +0<br>-0.1      | 37           | 45      | 59.3    | 72.3    | 88.8      | 109.75    | 134.75    | 169.75    |
| D12       | ...             | 4            | 4       | 7       | 7       | 7         | 7         | 7         | 7         |
| D13       | f8              | 6            | 8       | 10      | 12      | 14        | 16        | 18        | 20        |
| D14       | ...             | 3.5          | 5       | 6.4     | 8       | 10        | 12        | 14        | 16        |
| D15       | ...             | M10 × 1      | M12 × 1 | M16 × 1 | M18 × 1 | M20 × 1.5 | M24 × 1.5 | M30 × 1.5 | M35 × 1.5 |
| E1        | ...             | 8.82         | 11      | 13.88   | 17.99   | 21.94     | 27.37     | 35.37     | 44.32     |
| E2        | +0<br>-0.05     | 10.20        | 12.88   | 16.26   | 20.87   | 25.82     | 32.25     | 41.25     | 52.2      |
| F1        | +0<br>-0.1      | 20           | 20      | 26      | 26      | 26        | 29        | 29        | 31        |
| F2        | Min.            | 23           | 23      | 30      | 30      | 30        | 34        | 34        | 36        |
| F3        | ±0.1            | 16           | 16      | 18      | 18      | 18        | 20        | 20        | 22        |
| F4        | +0.15<br>-0     | 2            | 2       | 3.75    | 3.75    | 3.75      | 3.75      | 3.75      | 3.75      |
| F6        | +0.2<br>-0      | 1            | 2       | 2       | 2       | 2.5       | 2.5       | 4         | 4         |
| (G)       | ...             | 0.9          | 1.1     | 1.4     | 1.4     | 1.8       | 1.8       | 3.1       | 3.1       |
| H1        | +0<br>-0.2      | 13           | 17      | 21      | 26.5    | 34        | 44        | 55.5      | 72        |
| H2        | +0<br>-0.3      | 9.5          | 12      | 15.5    | 20      | 25        | 31.5      | 39.5      | 50        |
| H3        | +0.2<br>-0      | 5.4          | 5.2     | 5.1     | 5       | 4.9       | 4.9       | 4.8       | 4.8       |
| L1        | +0<br>-0.2      | 16           | 20      | 25      | 32      | 40        | 50        | 63        | 80        |
| L2        | ...             | 3.2          | 4       | 5       | 6.3     | 8         | 10        | 12.5      | 16        |
| L3        | +0.2<br>-0      | 5            | 6       | 7.5     | 10      | 12        | 15        | 19        | 23        |
| L4        | +0.2<br>-0      | 3            | 3.5     | 4.5     | 6       | 8         | 10        | 12        | 16        |
| L5        | JS10 [Note (1)] | 8.92         | 11.42   | 14.13   | 18.13   | 22.85     | 28.56     | 36.27     | 45.98     |
| L6        | +0<br>-0.1      | 8            | 8       | 10      | 10      | 12.5      | 12.5      | 16        | 16        |
| L7        | +0.3<br>-0      | 0.8          | 0.8     | 1       | 1       | 1.5       | 1.5       | 2         | 2         |
| L8        | ±0.1            | 5            | 6       | 7.5     | 9       | 12        | 15        | ...       | ...       |
| L9        | +0<br>-0.3      | 6            | 8       | 10      | 12      | 14        | 16        | 18        | 20        |
| L12       | ...             | 12           | 12      | 19      | 21      | 22        | 24        | 24        | 24        |
| L15       | +0.3<br>-0      | 1.5          | 1.5     | 2       | 2       | 2.5       | 2.5       | 3.5       | 3.5       |
| L17       | Min.            | 1            | 1       | 1       | 1       | 1         | 1         | 1         | 1         |
| L18       | Min.            | 1            | 1       | 1       | 1       | 1         | 1         | 1         | 1         |

**Table 1-6-1 Dimensions for HSK Form T (Cont'd)**

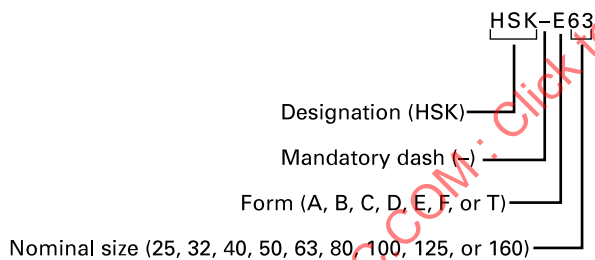
| Dimension         | Tolerance    | Nominal Size |              |              |              |              |             |          |          |
|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|----------|----------|
|                   |              | 32           | 40           | 50           | 63           | 80           | 100         | 125      | 160      |
| R1                | ...          | 1.5          | 0.8          | 1            | 1.2          | 1.6          | 2           | 2.5      | 3.2      |
| R2                | +0<br>-0.2   | 0.8          | 1            | 1.5          | 1.5          | 2            | 2           | 2.5      | 2.5      |
| R3 [Note (2)]     | ±0.05        | 1.38         | 1.88         | 2.38         | 2.88         | 3.88         | 4.88        | 5.88     | 7.88     |
| R4                | ...          | 4            | 5            | 6            | 8            | 10           | 12          | 16       | 20       |
| R5                | ...          | 0.4          | 0.4          | 0.5          | 0.6          | 0.8          | 1           | 1.2      | 1.6      |
| R6                | ...          | 0.5          | 1            | 1.5          | 1.5          | 2            | 2           | ...      | ...      |
| R7                | ...          | 1            | 1            | 1            | 1.5          | 1.5          | 1.5         | 1.5      | 1.5      |
| R9 [Note (3)]     | ±0.1<br>±0.2 | 3.5<br>...   | 4.5<br>...   | 6<br>...     | ...<br>8     | ...<br>9     | ...<br>10   | 5<br>... | 5<br>... |
| R10               | ±0.1         | 0.2          | 0.4          | 0.6          | 0.6          | 1            | 1           | 1.6      | 1.6      |
| T                 | ...          | 0.002        | 0.002        | 0.0025       | 0.003        | 0.004        | 0.004       | 0.005    | 0.005    |
| U1                | +0.1<br>-0   | 0.1          | 0.2          | 0.2          | 0.2          | 0.2          | 0.2         | 0.3      | 0.3      |
| U2                | +0.05<br>-0  | 0.1          | 0.1          | 0.1          | 0.1          | 0.1          | 0.1         | 0.2      | 0.2      |
| O-ring [Note (4)] | ...          | 16 × 1       | 18.77 × 1.78 | 21.89 × 2.62 | 29.82 × 2.62 | 36.09 × 3.53 | 47.6 × 3.53 | ...      | ...      |

## GENERAL NOTES:

- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.

## NOTES:

- (1) Tolerance designations are per ASME B4.2.  
 (2) R3 is tangent to B1 or B5.  
 (3) R9 applies to B2 and B3.  
 (4) For use with certain proprietary clamp sets (not supplied with standard tooling).

**Figure 1-7-1 Identification Coding for HSK Shanks****Table 1-7-1 Allowable Combinations of HSK Form, Nominal Size, and Features per ASME B5.62M**

| Form | Nominal Size |     |     |    |    |    |     |     |     | Feature   |             |       |              |
|------|--------------|-----|-----|----|----|----|-----|-----|-----|-----------|-------------|-------|--------------|
|      | 25           | 32  | 40  | 50 | 63 | 80 | 100 | 125 | 160 | Data Chip | Access Hole | Notch | Coolant Tube |
| A    | ...          | X   | X   | X  | X  | X  | X   | X   | X   | X         | X           | X     | X            |
| B    | ...          | ... | X   | X  | X  | X  | X   | X   | X   | X         | X           | X     | ...          |
| C    | ...          | X   | X   | X  | X  | X  | X   | ... | ... | ...       | X           | ...   | ...          |
| D    | ...          | ... | X   | X  | X  | X  | X   | X   | X   | X         | ...         | ...   | ...          |
| E    | X            | X   | X   | X  | X  | X  | X   | ... | ... | ...       | ...         | ...   | X            |
| F    | ...          | ... | ... | X  | X  | X  | ... | ... | ... | ...       | ...         | ...   | X            |
| T    | ...          | X   | X   | X  | X  | X  | X   | X   | X   | X         | X           | X     | X            |

GENERAL NOTE: X = allowable.

## Part 2

# HSK Receivers

### 2-1 GENERAL

#### 2-1.1 Scope

This Standard covers basic toolholder receivers with a 1/9.98 taper and simultaneous contact face and taper mating surfaces that are applicable to a range of machine tool applications. HSK receivers for Forms A and C, B and D, and E, F, and T with nominal flange diameters of 25 mm to 160 mm are covered by this Standard.

#### 2-1.2 Interchangeability

Machine tool interfaces conforming to this Standard are interchangeable with machine tool interfaces conforming to DIN 69063:2001, ISO 12164-1:2001, ISO 12164-2:2001, and ISO 12164-3:2008.

#### 2-1.3 Forms

The HSK machine tool interfaces as manufactured in the five basic receiver forms are suitable for use in a wide range of machine tool applications. See [para. 1-1.3](#) for corresponding form descriptions.

#### 2-1.4 Figure Interpretation

The [Part 2](#) figures are illustrated and labeled in accordance with ASME Y14.5.

### 2-2 FORMS A AND C

[Figures 2-2-1](#) and [2-2-2](#) and [Table 2-2-1](#) show the geometry and dimensions of HSK receivers for Forms A and C.

### 2-3 FORMS B AND D

[Figures 2-3-1](#) and [2-3-2](#) and [Table 2-3-1](#) show the geometry and dimensions of HSK receivers for Forms B and D.

### 2-4 FORM E

[Figure 2-4-1](#) and [Table 2-4-1](#) show the geometry and dimensions of HSK receivers for Form E.

### 2-5 FORM F

[Figure 2-5-1](#) and [Table 2-5-1](#) show the geometry and dimensions of HSK receivers for Form F.

### 2-6 FORM T

[Figure 2-6-1](#) and [Table 2-6-1](#) show the geometry and dimensions of HSK receivers for Form T.

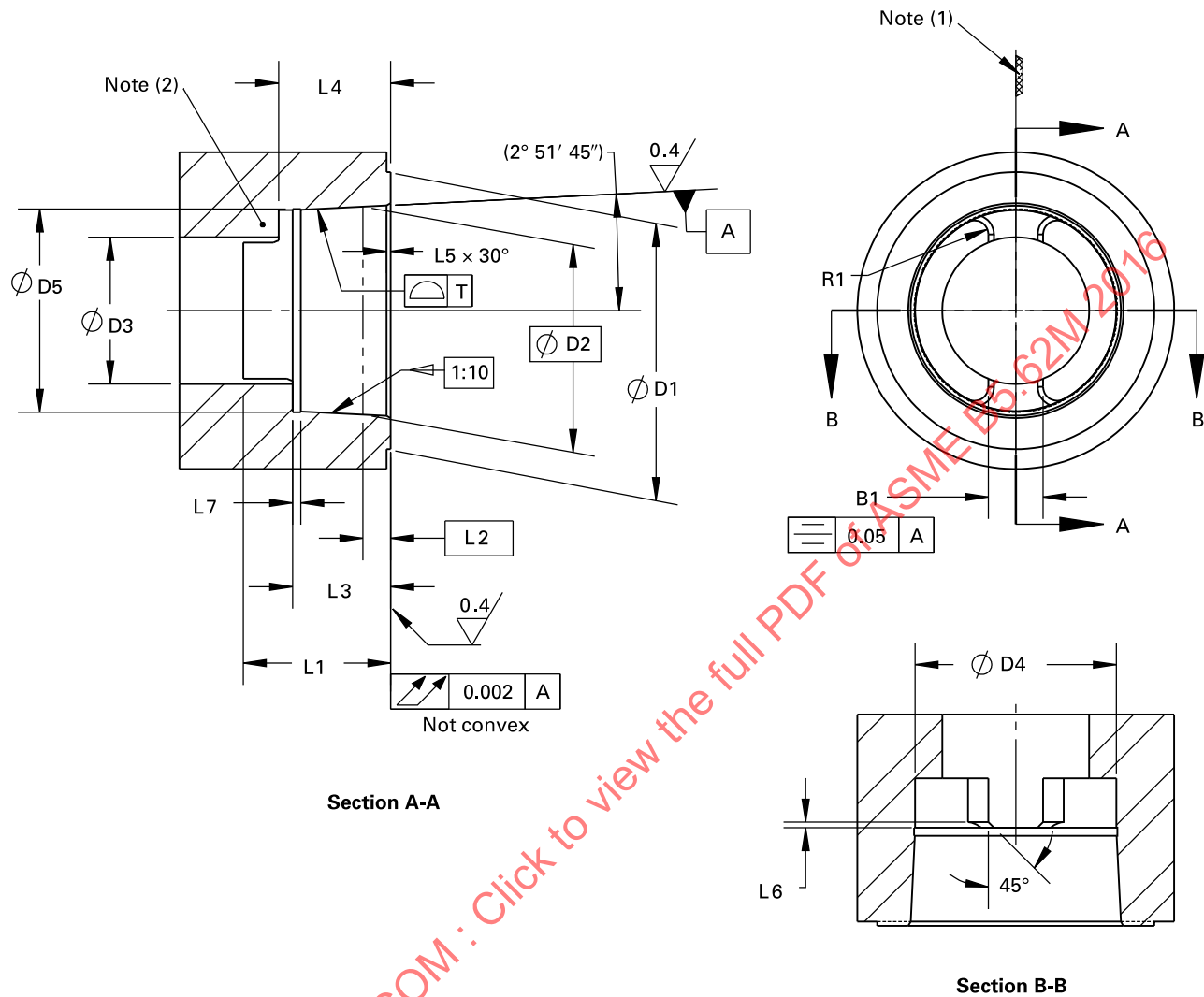
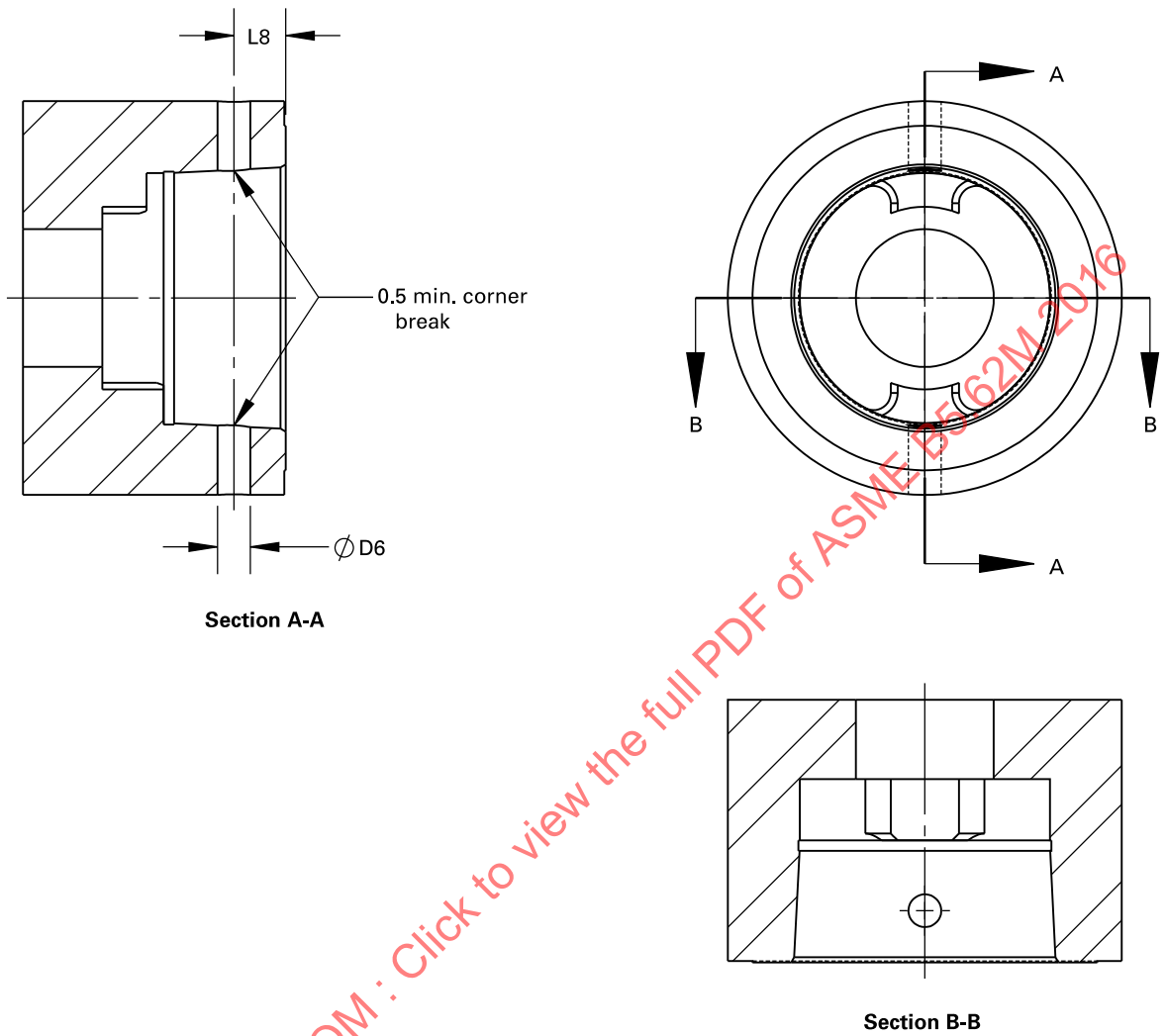
**Figure 2-2-1 HSK Receiver, Form A**


Figure 2-2-2 HSK Receiver, Form C



GENERAL NOTES:

- (a) For dimensions not indicated in this figure, see [Figure 2-2-1](#).
- (b) See [Table 2-2-1](#) for dimension values.
- (c) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is 3.2  $\mu\text{m}$ .
- (d) Break all sharp edges.

**Table 2-2-1 Dimensions for HSK Receivers, Forms A and C**

| Dimension     | Tolerance   | Nominal Size                                 |        |        |        |        |        |        |         |
|---------------|-------------|----------------------------------------------|--------|--------|--------|--------|--------|--------|---------|
|               |             | 32                                           | 40     | 50     | 63     | 80     | 100    | 125    | 160     |
| B1            | ±0.05       | 6.8                                          | 7.8    | 10.3   | 12.3   | 15.8   | 19.78  | 24.78  | 29.78   |
| D1            | Min.        | 32                                           | 40     | 50     | 63     | 80     | 100    | 125    | 160     |
| D2            | ...         | 23.998                                       | 29.998 | 37.998 | 47.998 | 59.997 | 74.997 | 94.996 | 119.995 |
| D3            | ...         | Diameter depends on the clamping system      |        |        |        |        |        |        |         |
| D4 [Note (1)] | +0.1<br>-0  | 23.28                                        | 29.06  | 36.85  | 46.53  | 58.1   | 72.6   | 92.05  | 116.1   |
| D5            | +0.2<br>-0  | 23.8                                         | 29.6   | 37.5   | 47.2   | 58.8   | 73.4   | 93     | 118     |
| D6            | ...         | Hole diameter determined by the manufacturer |        |        |        |        |        |        |         |
| L1 [Note (1)] | +0.2<br>-0  | 16.5                                         | 20.5   | 25.5   | 33     | 41     | 51     | 64     | 81      |
| L2            | ...         | 3.2                                          | 4      | 5      | 6.3    | 8      | 10     | 12.5   | 16      |
| L3            | +0.2<br>-0  | 11.4                                         | 14.4   | 17.9   | 22.4   | 28.4   | 35.4   | 44.4   | 57.4    |
| L4            | +0.2<br>-0  | 13.4                                         | 16.9   | 20.9   | 26.4   | 32.4   | 40.4   | 51.4   | 64.4    |
| L5            | ±0.1        | 0.8                                          | 0.8    | 1      | 1      | 1.5    | 1.5    | 2      | 2       |
| L6            | +0.1<br>-0  | 1                                            | 1      | 1.5    | 1.5    | 2      | 2      | 2.5    | 2.5     |
| L7            | ±0.1        | 2                                            | 2      | 2      | 2.5    | 3      | 3      | 4      | 4       |
| L8            | ±0.1        | 5                                            | 6      | 7.5    | 9      | 12     | 15     | ...    | ...     |
| R1 [Note (2)] | +0<br>-0.05 | 1.5                                          | 2      | 2.5    | 3      | 4      | 5      | 6      | 8       |
| T             | ...         | 0.0015                                       | 0.0015 | 0.002  | 0.002  | 0.0025 | 0.003  | 0.0035 | 0.0035  |

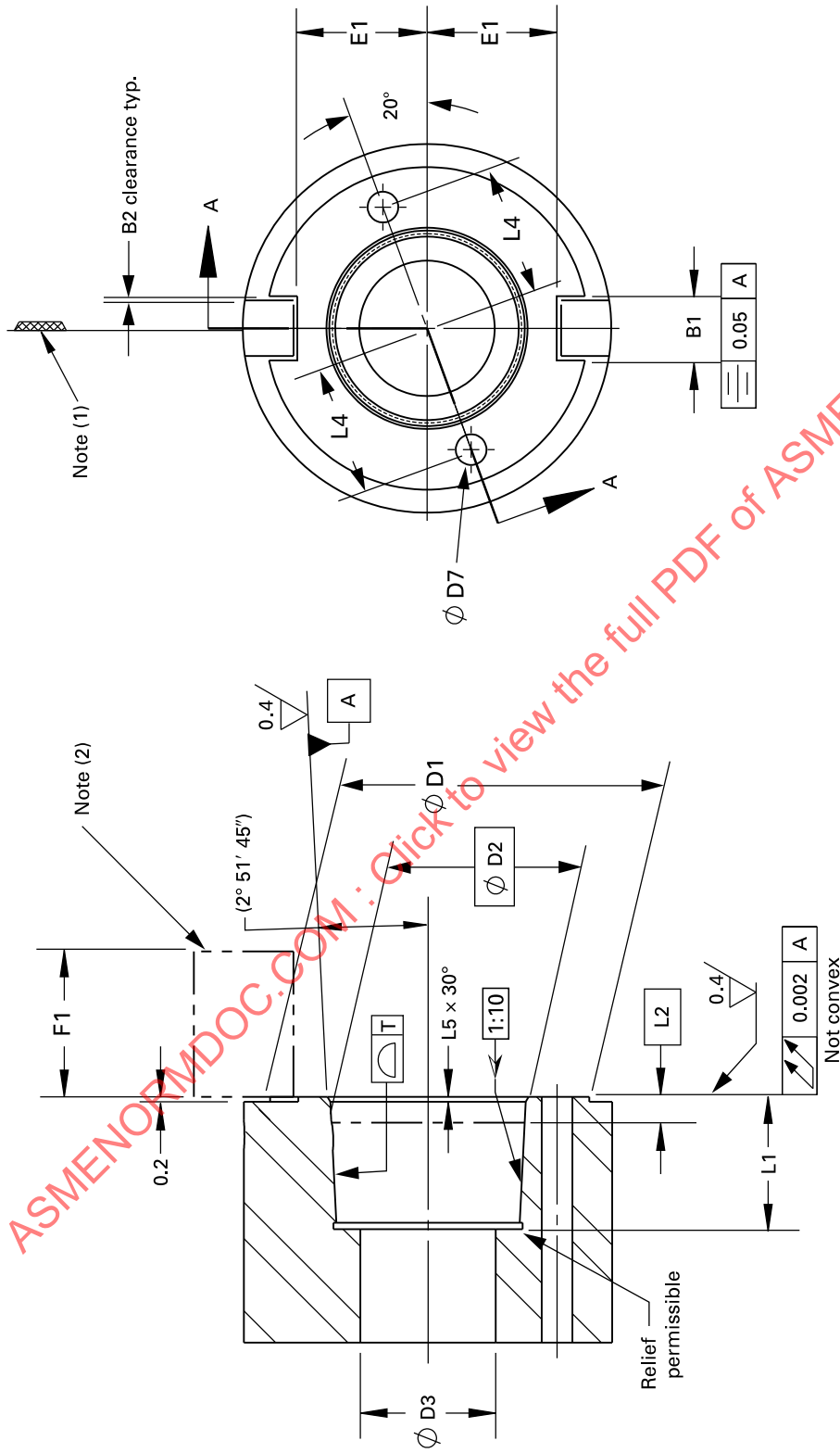
## GENERAL NOTES:

- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.  
 (d) Tolerance designations are per ASME B4.2.

## NOTES:

- (1) When using inserted drive keys, the bore (D4) may be tapered the full depth (L1).  
 (2) R1 is tangent to B1 and D4.

Figure 2-3-1 HSK Receiver, Form B



Section A-A

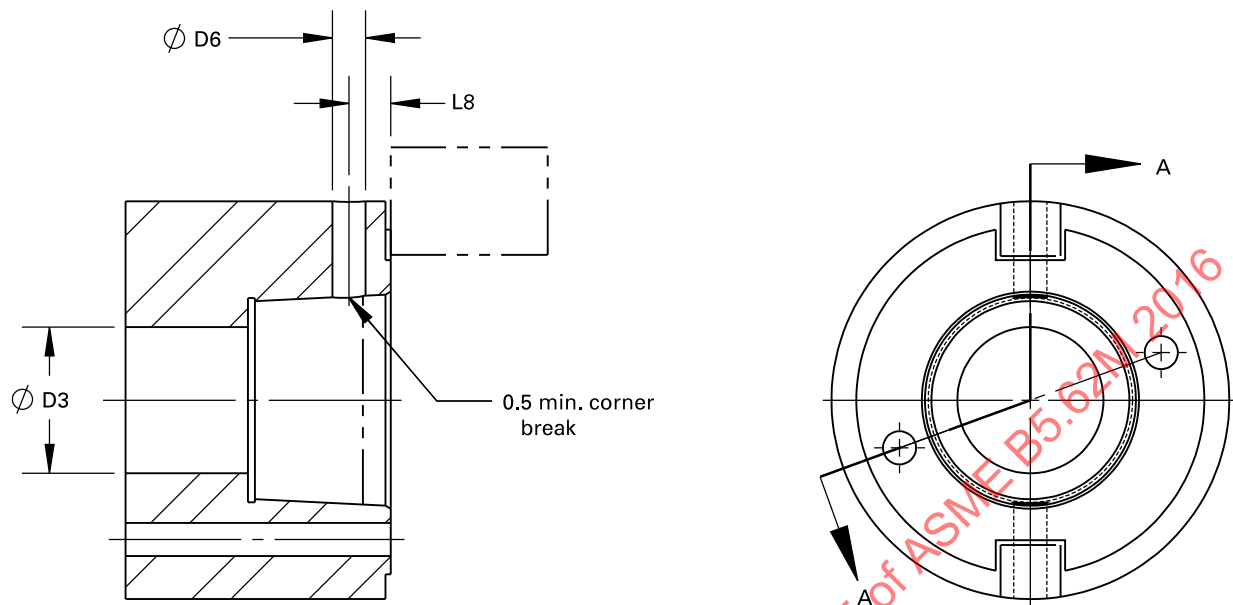
GENERAL NOTES:

- (a) See Table 2-3-1 for dimension values.
- (b) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is 3.2  $\mu\text{m}$ .
- (c) Break all sharp edges.

NOTES:

- (1) Cutting-edge orientation (right-hand orientation) shown.
- (2) Drive keys may be integral or inserted.

Figure 2-3-2 HSK Receiver, Form D



Section A-A

## GENERAL NOTES:

- (a) For dimensions not indicated on this figure, see Figure 2-3-1.
- (b) See Table 2-3-1 for dimension values.
- (c) Surface texture is per ASME B46.1. Unless otherwise specified, surface texture,  $R_a$ , is  $3.2 \mu\text{m}$ .
- (d) Break all sharp edges.

**Table 2-3-1 Dimensions for HSK Receivers, Forms B and D**

| Dimension | Tolerance     | Nominal Size                                 |        |        |        |        |        |        |
|-----------|---------------|----------------------------------------------|--------|--------|--------|--------|--------|--------|
|           |               | 40                                           | 50     | 63     | 80     | 100    | 125    | 160    |
| B1        | H5 [Note (1)] | 9.9                                          | 11.9   | 15.9   | 17.9   | 19.9   | 24.9   | 31.9   |
| B2        | ±0.1          | 1                                            | 1      | 1      | 1      | 2      | 2      | 2      |
| D1        | Min.          | 40                                           | 50     | 63     | 80     | 100    | 125    | 160    |
| D2        | ...           | 23.998                                       | 29.998 | 37.998 | 47.998 | 59.997 | 74.997 | 94.996 |
| D3        | ...           | Diameter depends on the clamping system      |        |        |        |        |        |        |
| D6        | ...           | Hole diameter determined by the manufacturer |        |        |        |        |        |        |
| D7        | ...           | 3                                            | 3.5    | 5      | 6      | 7      | 8.5    | 10     |
| E1        | +0.2<br>-0    | 16.2                                         | 20.2   | 25.2   | 31.7   | 40.2   | 50.2   | 62.7   |
| F1        | Max.          | 19.5                                         | 25.5   | 25.5   | 25.5   | 28.5   | 28.5   | 30.5   |
| L1        | +0.3<br>-0    | 16.5                                         | 20.5   | 25.5   | 33     | 41     | 51     | 64     |
| L2        | ...           | 3.2                                          | 4      | 5      | 6.3    | 8      | 10     | 12.5   |
| L5        | ±0.1          | 0.8                                          | 1      | 1      | 1.5    | 1.5    | 2      | 2      |
| L8        | ±0.1          | 6                                            | 7.5    | 9      | 12     | 15     | ...    | ...    |
| L9        | +0.1<br>-0    | 16                                           | 20     | 25     | 32     | 40     | 50     | 63     |
| T         | ...           | 0.0015                                       | 0.0015 | 0.002  | 0.002  | 0.0025 | 0.003  | 0.0035 |

## GENERAL NOTES:

- (a) All dimensions are in millimeters.  
 (b) Unless otherwise specified, angular dimensional tolerance shall be ±0.5 deg.  
 (c) Unless otherwise specified, linear dimensional tolerance shall be ±0.2 mm.

NOTE: (1) Tolerance designations are per ASME B4.2.