

HAWE Cartridge Valves

Technical informationen



- Characteristic lines
- Installation, operation and maintenance information
- Guidelines for coils
- Mounting holes



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1**Installation, operation and maintenance information**

Observe the document B 5488 "General operating instructions for assembly, commissioning, and maintenance."

1.1 Intended use

This product is intended exclusively for hydraulic applications (fluid technology).

The user must observe the safety measures and warnings in this document.

Essential requirements for the product to function correctly and safely:

- ▶ All information in this documentation must be observed. This applies in particular to all safety measures and warnings.
- ▶ The product must only be assembled and put into operation by specialist personnel.
- ▶ The product must only be operated within the specified technical parameters described in detail in this document.
- ▶ All components must be suitable for the operating conditions when using an assembly.
- ▶ The operating instructions for the components, assemblies and the specific complete system must also always be observed.

If the product can no longer be operated safely:

1. Remove the product from operation and mark it accordingly.
 - ✓ It is then not permitted to continue using or operating the product.

1.2 Assembly information

The product must only be installed in the complete system with standard and compliant connection components (screw fittings, hoses, pipes, fixtures etc.).

The product must be shut down correctly prior to disassembly (in particular in combination with hydraulic accumulators).

**DANGER****Sudden movement of the hydraulic drives when disassembled incorrectly**

Risk of serious injury or death

- ▶ Depressurise the hydraulic system.
- ▶ Perform safety measures in preparation for maintenance.

1.2.1 Installing and removing valves**Installing valves**

When mounting valves in ductile control blocks, friction occurs between the seals and the block. It is recommended to lightly lubricate the external seals of the valves. This facilitates the correct positioning of the seals.

Removing valves

During the disassembly of valves, the seals inside the block may remain stuck and become damaged. Possible causes include tolerance deviations between valves and the block, differently treated surfaces, or existing pressure conditions. After disassembly, check the seals for damage and replace them with new seal kits if necessary.

**NOTICE**

Refer to the data sheets for torque specifications.

1.2.2 Guidelines for the use of solenoid coils

- Ensure the proper installation of the coil, including:
 - correct alignment of the coil,
 - selection of a suitable fastening nut,
 - appropriate tightening torque for the fastening nut.
- The input voltage must remain within the range of 90% to 110% of the nominal voltage.
- The choice of the appropriate coil type depends on the surrounding environment.
- Avoid use in chemical, flammable, or corrosive environments, as well as near strong magnetic fields.
- The coil connector must establish a secure connection to prevent excessive heating and potential damage to the coil.
- Do not touch the solenoid coil after switching it on, as it may reach high surface temperatures.
- The coil can be used continuously in an energized state. To extend its lifespan, it is recommended to operate it with a normally open or normally closed valve.
- Select the coil connector according to the operating conditions to ensure proper dust and water resistance, thereby preventing damage from short circuits and moisture exposure.

1.3 Operating instructions

Observe product configuration and pressure/flow rate.

The statements and technical parameters in this document must be strictly observed.

The instructions for the complete technical system must also always be followed.

NOTICE

- ▶ Read the documentation carefully before usage.
- ▶ The documentation must be accessible to the operating and maintenance staff at all times.
- ▶ Keep documentation up to date after every addition or update.

CAUTION

Overloading components due to incorrect pressure settings.

Risk of minor injury. Parts may burst or fly off, and uncontrolled leakage of hydraulic fluid.

- Pay attention to the maximum operating pressure of the pump, valves and fittings.
- Always monitor the pressure gauge when setting and changing the pressure.

Purity and filtering of the hydraulic fluid

Fine contamination can significantly impair the function of the product. Contamination can cause irreparable damage.

Examples of fine contamination include:

- Swarf
- Rubber particles from hoses and seals
- Dirt due to assembly and maintenance
- Mechanical debris
- Chemical ageing of the hydraulic fluid

NOTICE

New hydraulic fluid from the manufacturer may not have the required purity.

Damage to the product is possible.

- ▶ Filter new hydraulic fluid to a high quality when filling.
- ▶ Do not mix hydraulic fluids. Always use hydraulic fluid that is from the same manufacturer, of the same type, and with the same viscosity properties.

For smooth operation, pay attention to the cleanliness level of the hydraulic fluid.

Additionally applicable document: [D 5488/1](#) oil recommendations

1.4 Maintenance information

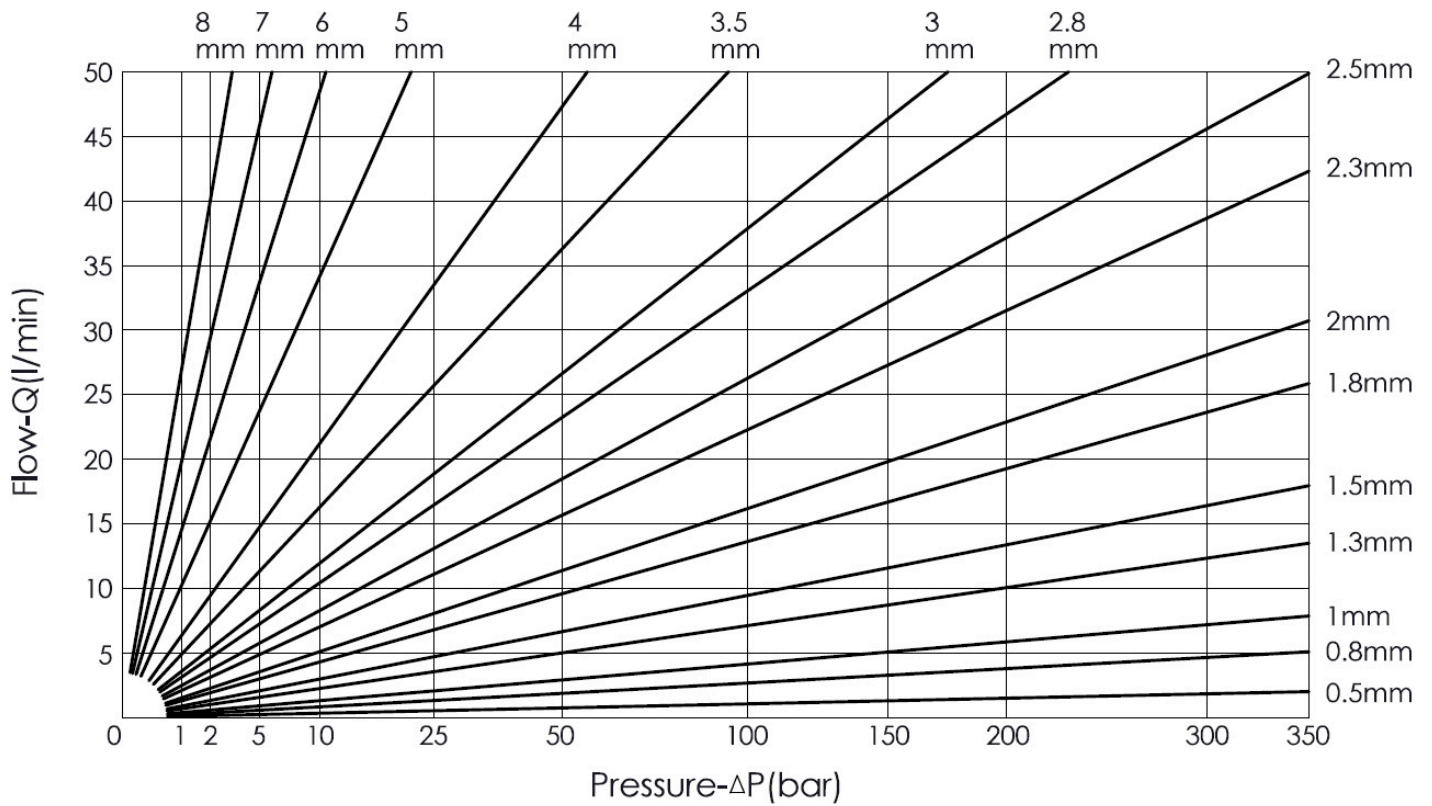
Check regularly (at least once a year) by visual inspection whether the hydraulic connections are damaged. If external leakages are found, shut down and repair the system.

Clean the surface of the device regularly (at least once a year) (dust deposits and dirt).

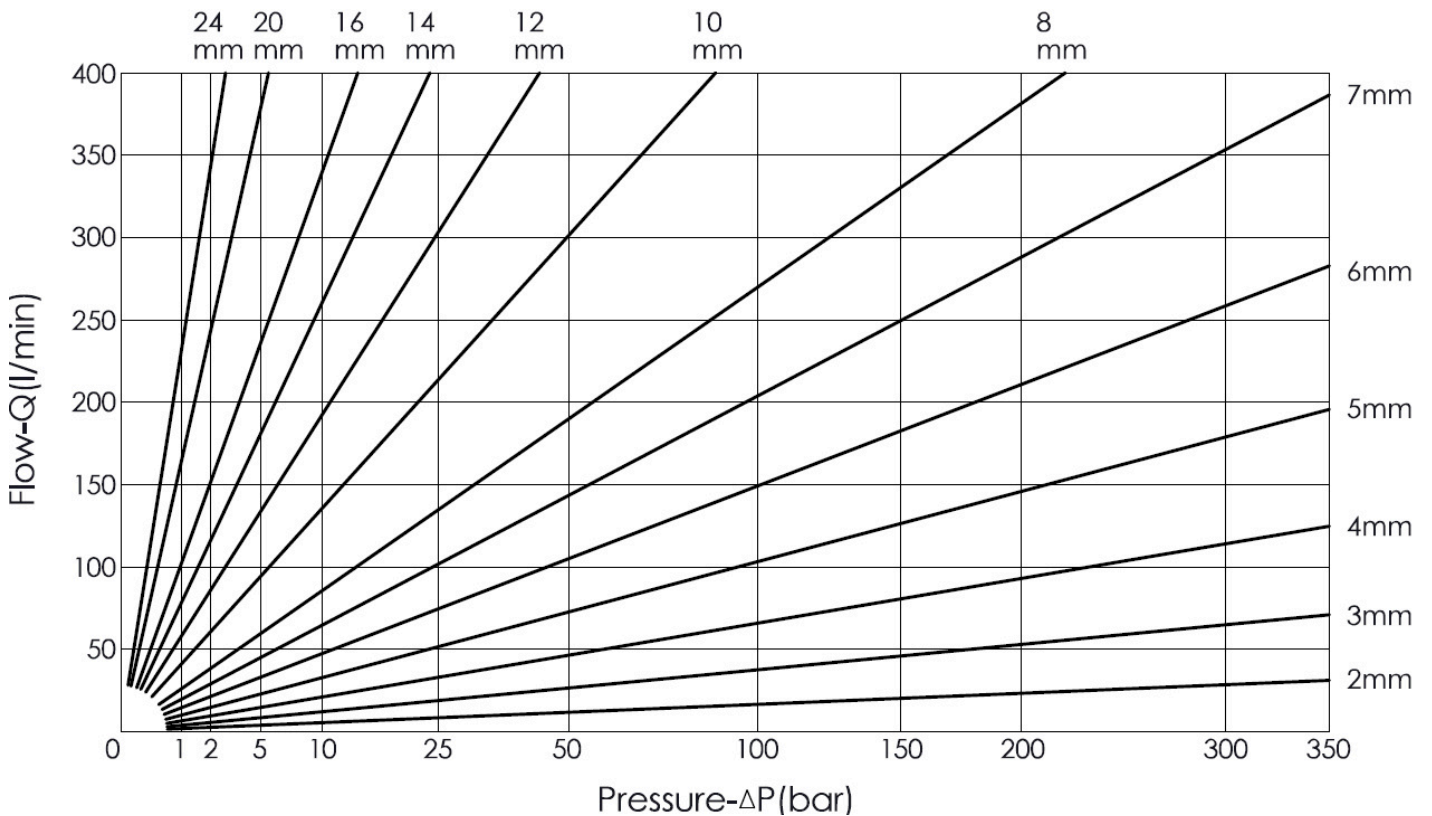
Check that the product is securely fastened in the mounting hole at regular intervals, but at least once per year.

2 Characteristic lines

Orifice diameter (mm)



Orifice diameter (mm)



The characteristic lines are based on the following formula:

$$Q = \alpha \cdot d^2 \cdot \sqrt{\Delta p}$$

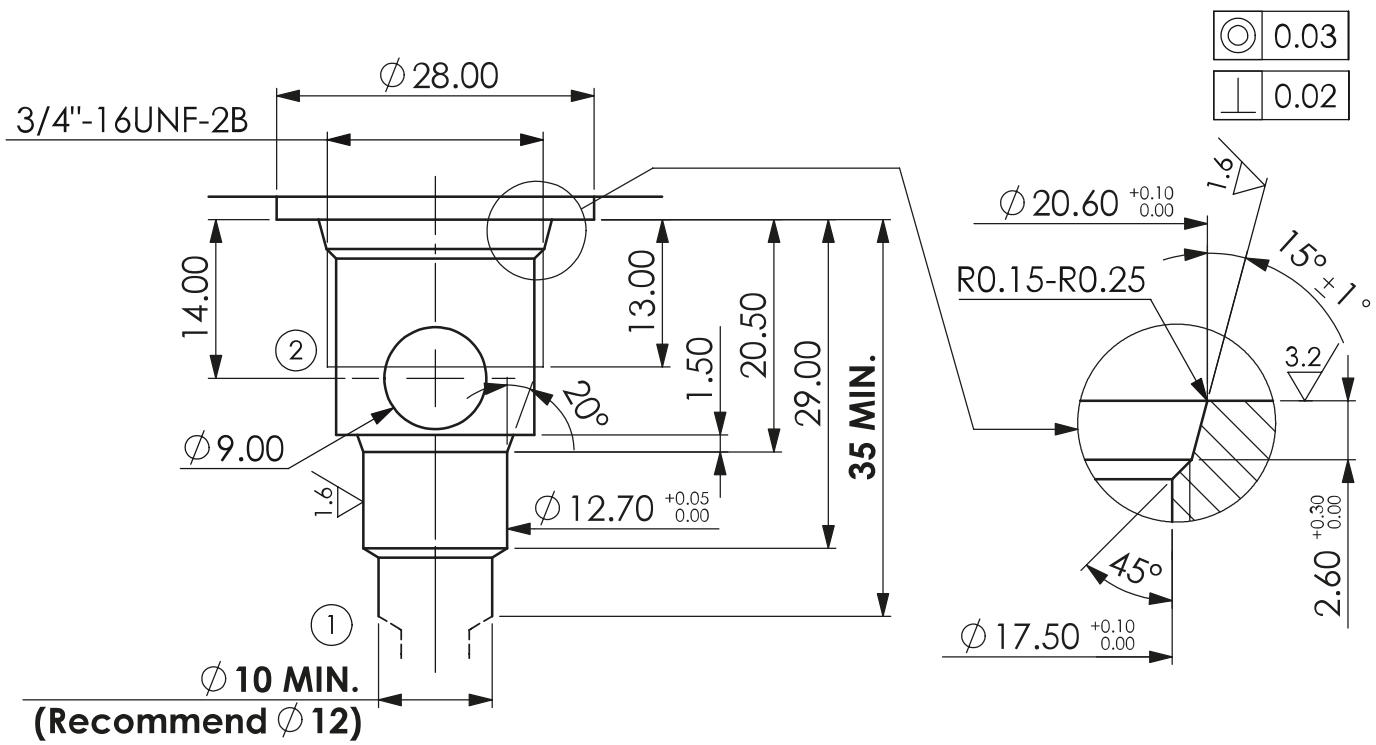
- Q Flow rate
- α Orifice coefficient
- d Orifice diameter
- Δp Pressure drop

3 Mounting hole

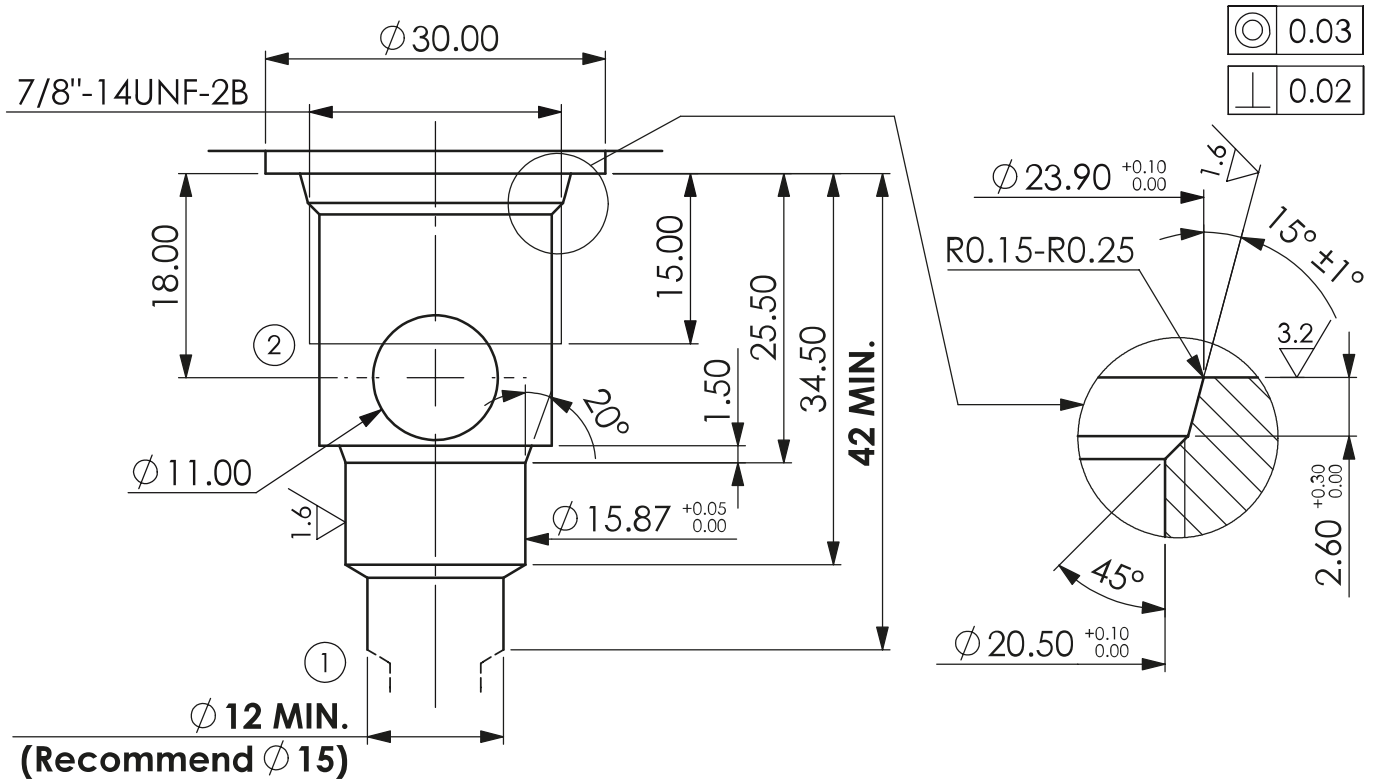
3.1 Mounting holes type W

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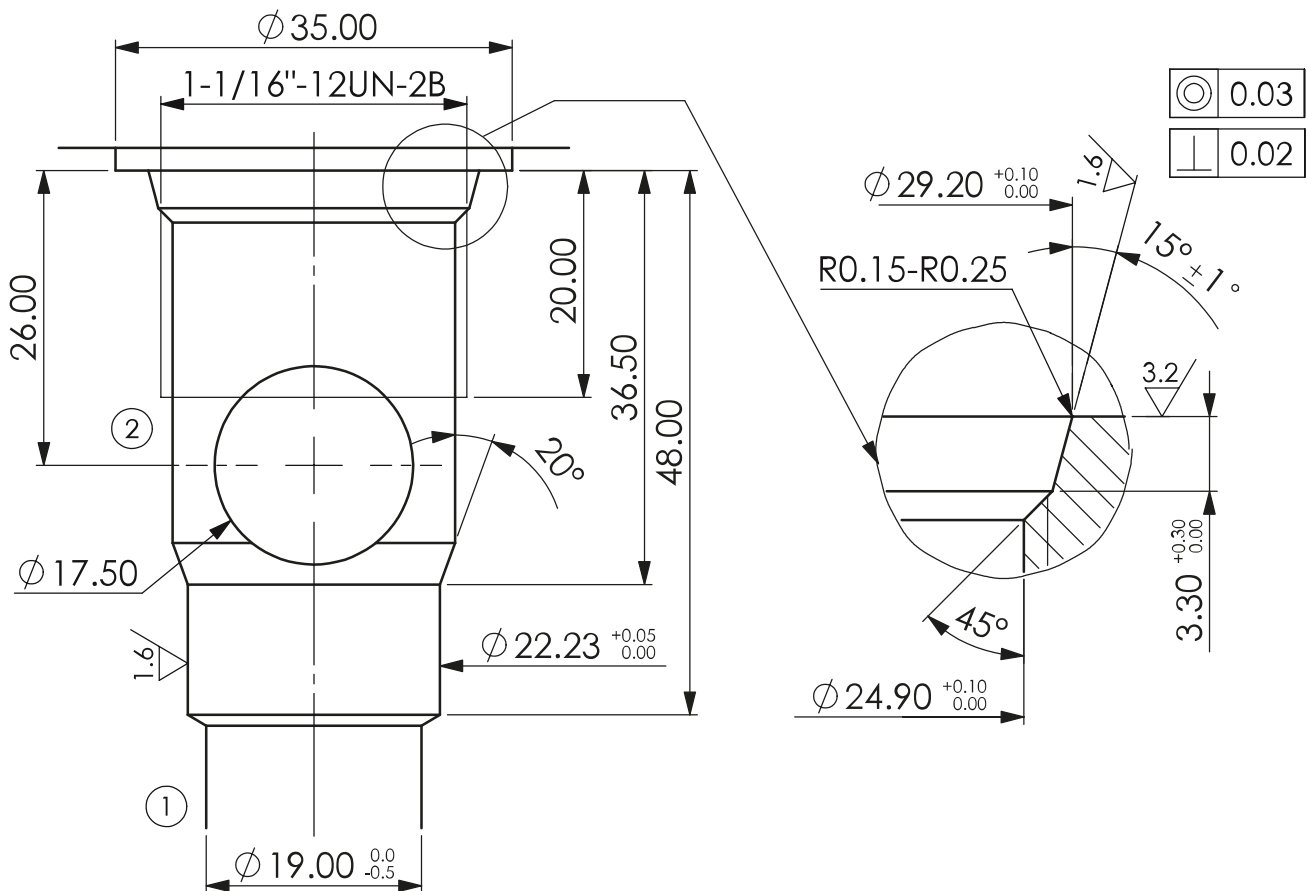
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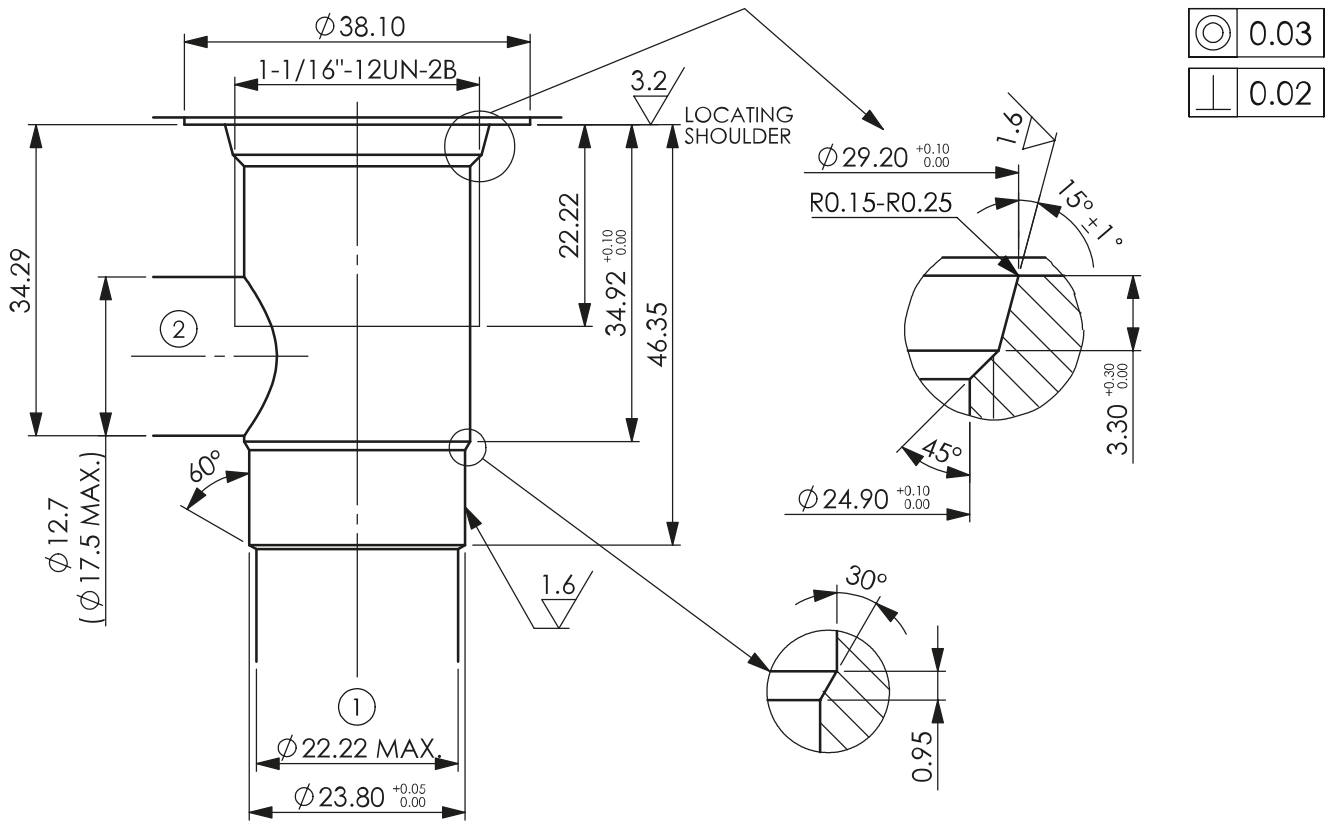
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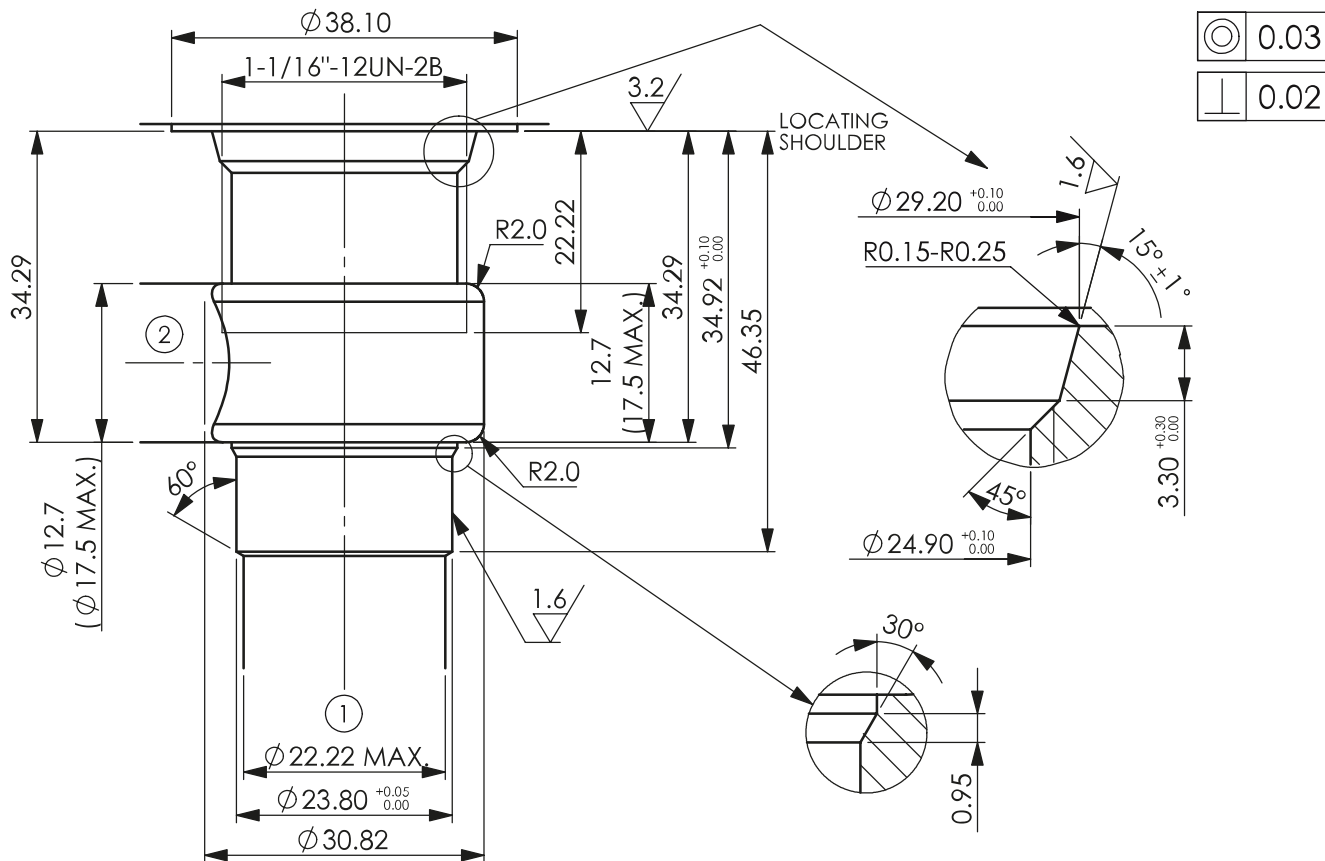
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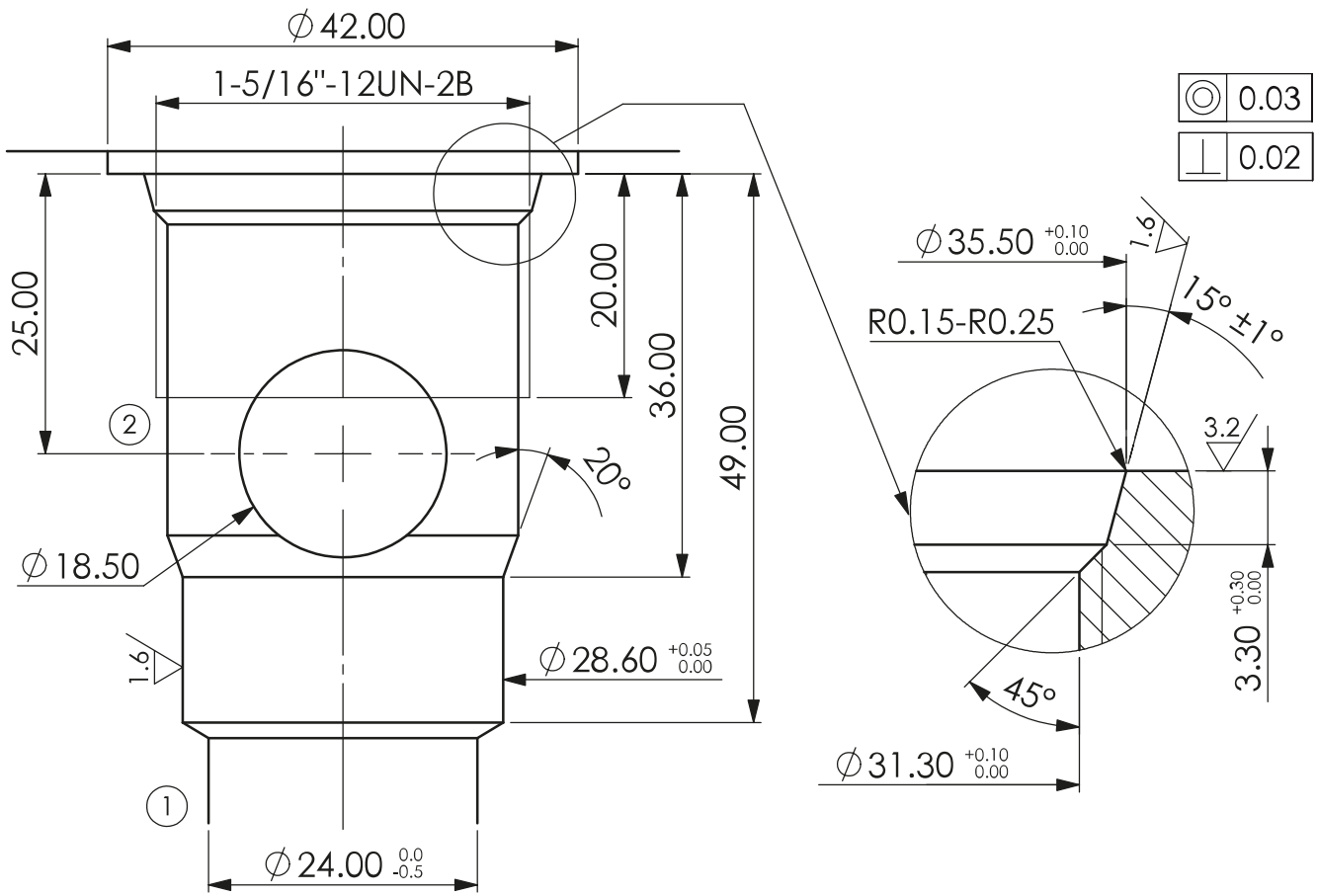


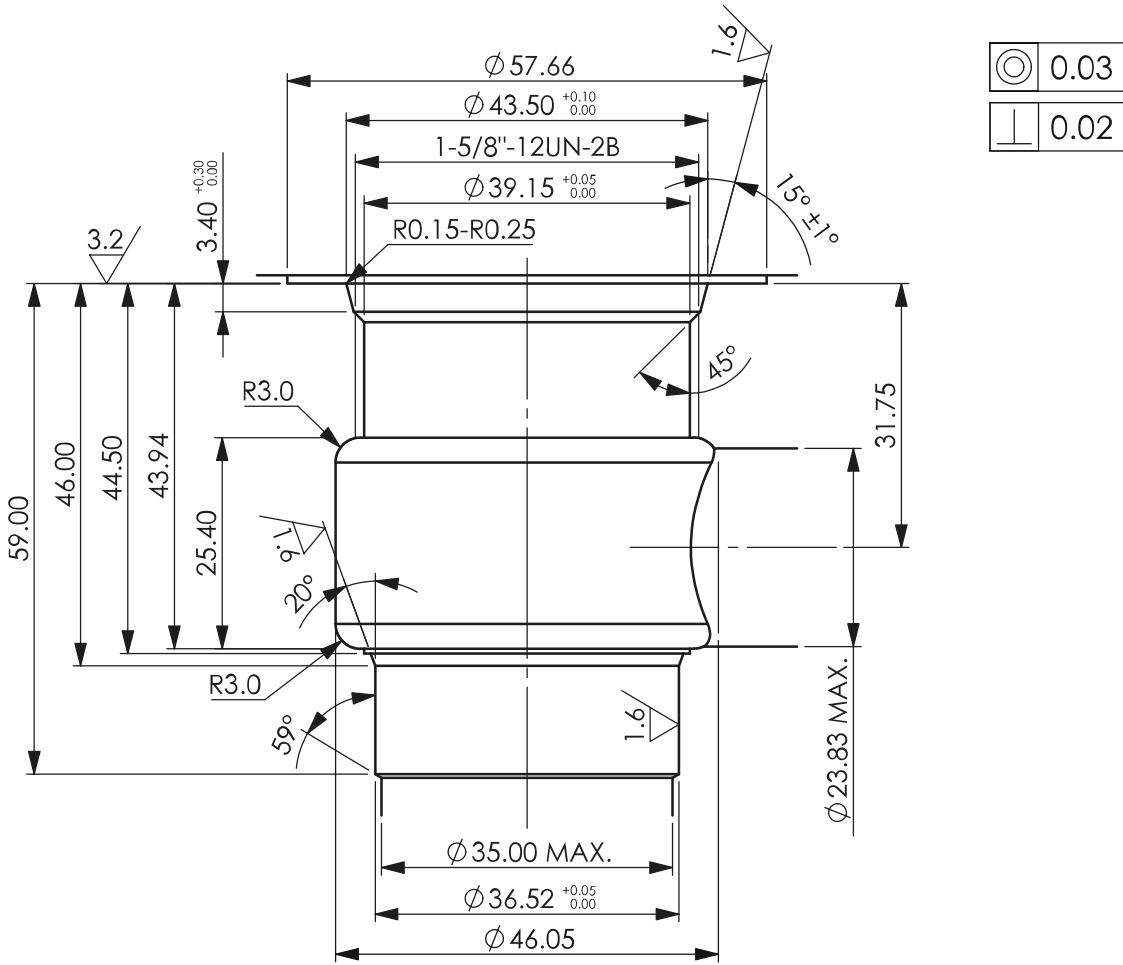
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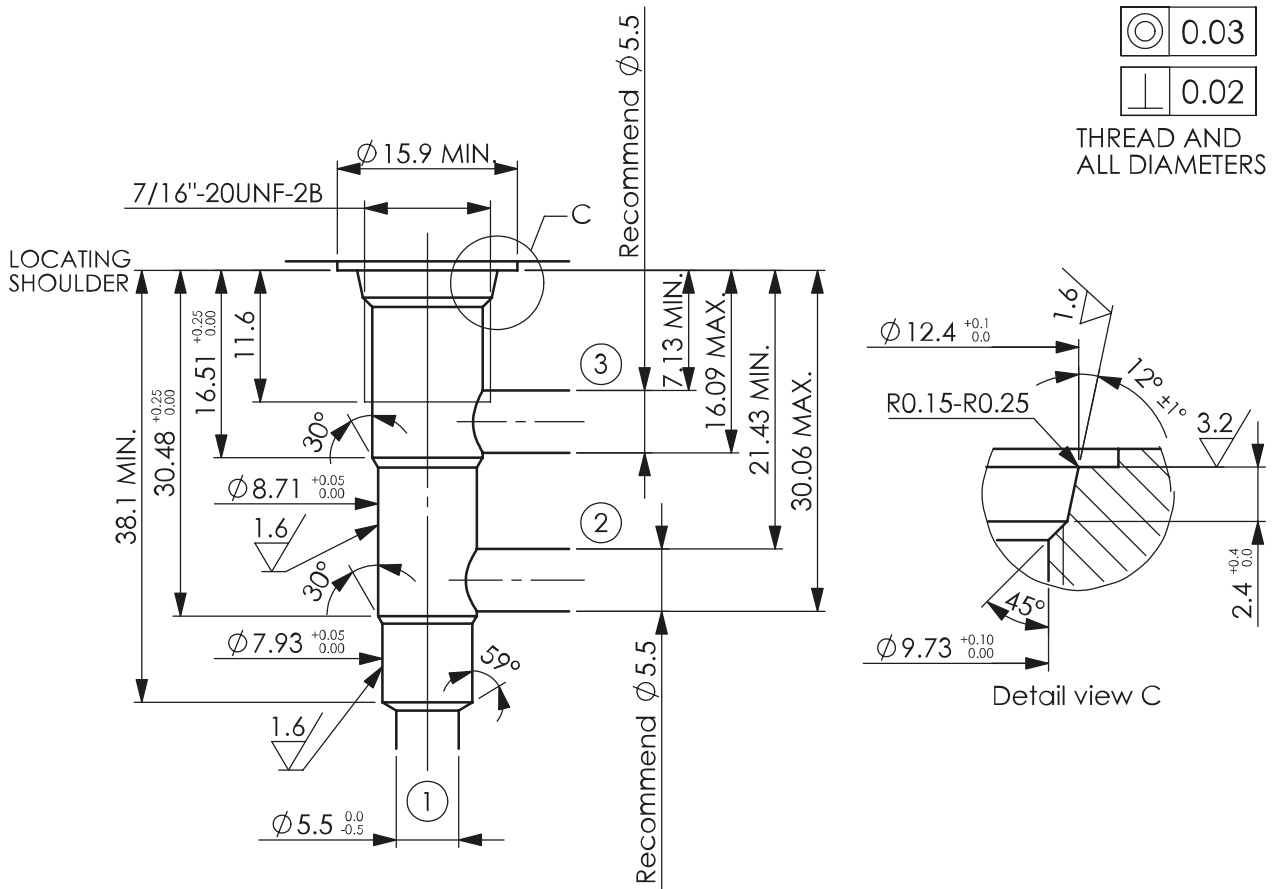


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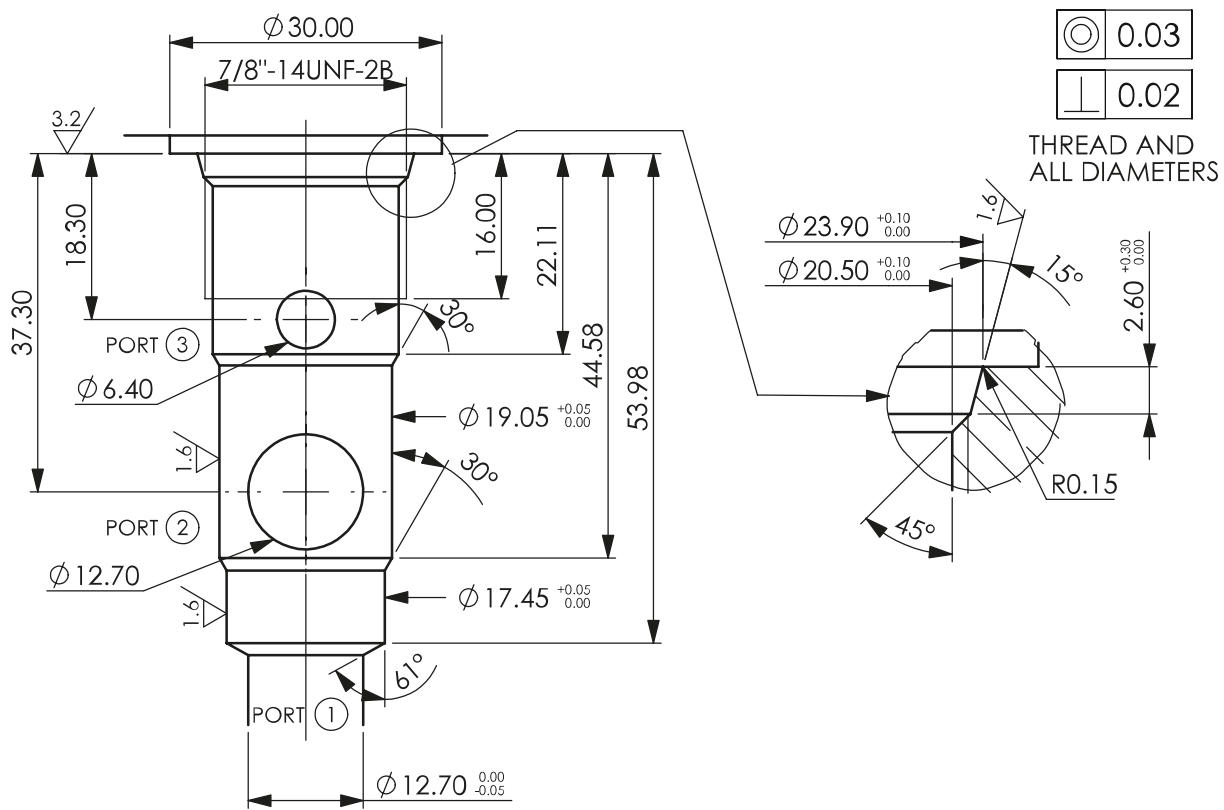




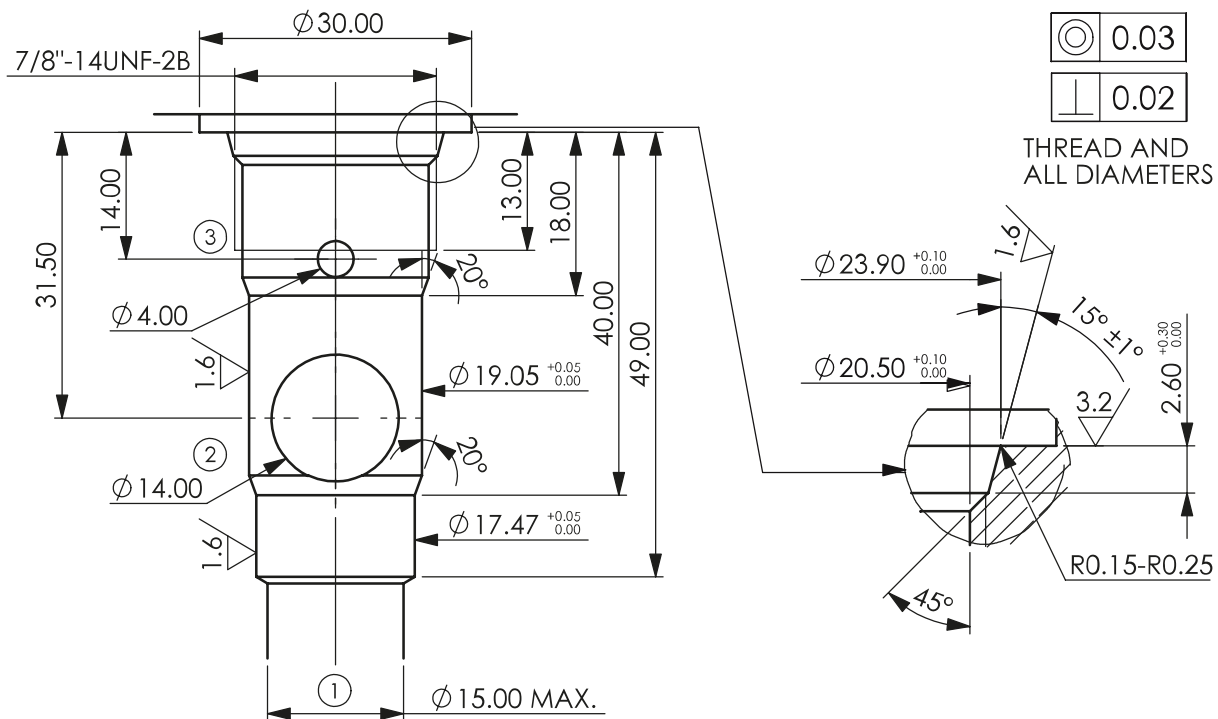




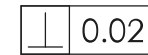
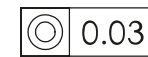
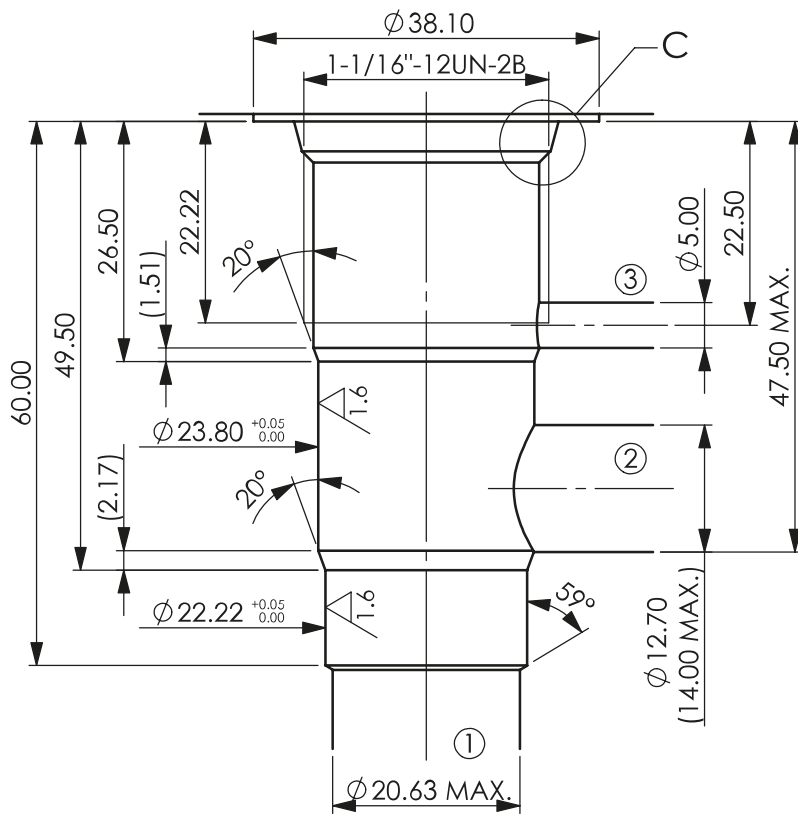
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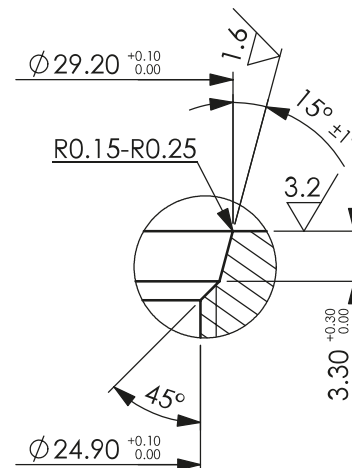
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12WC-3

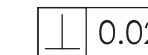
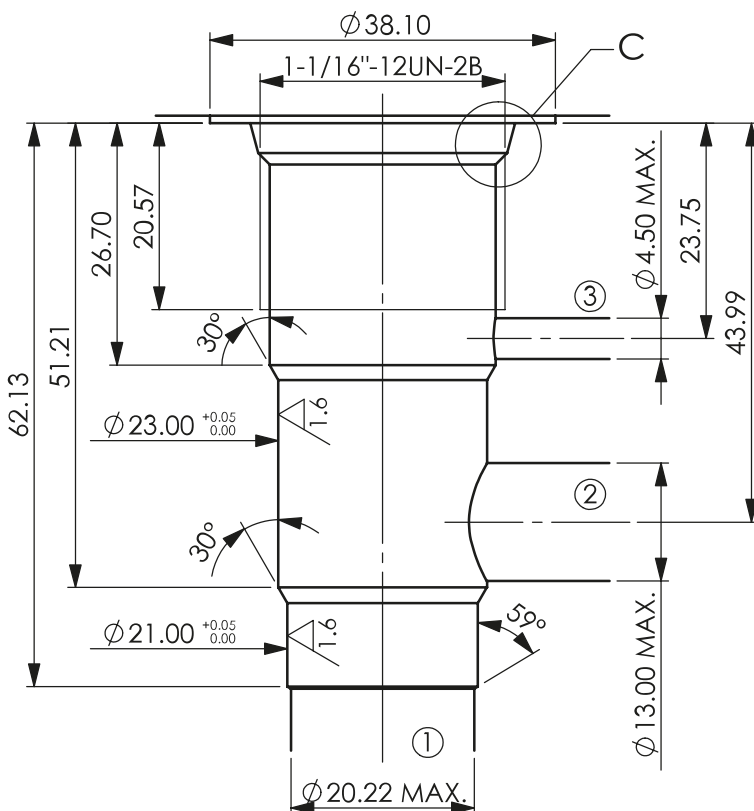


THREAD AND ALL DIAMETERS

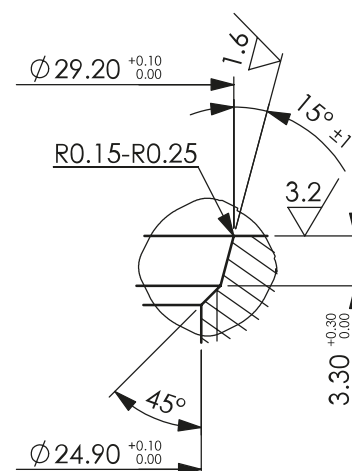


Detail view C

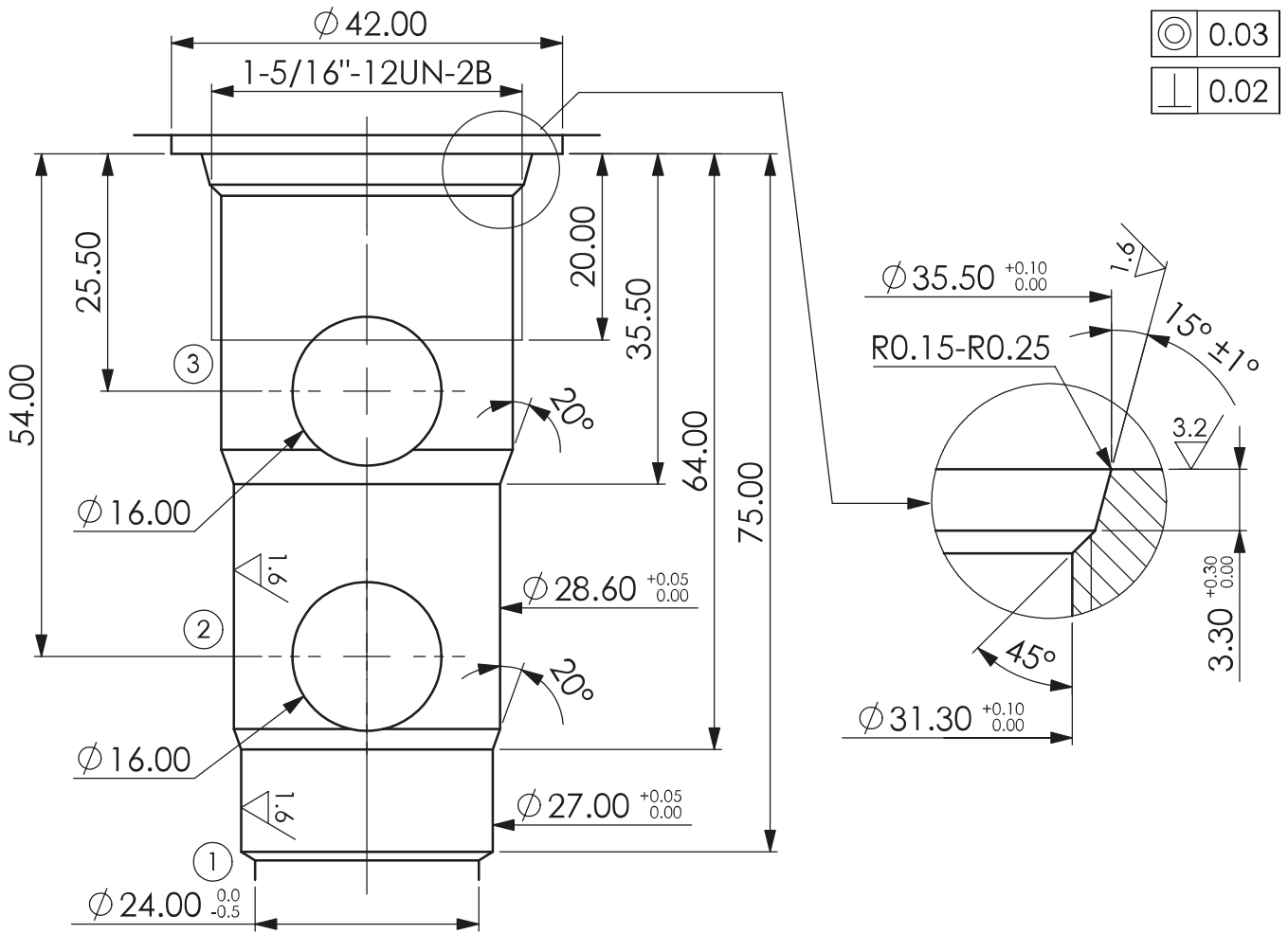
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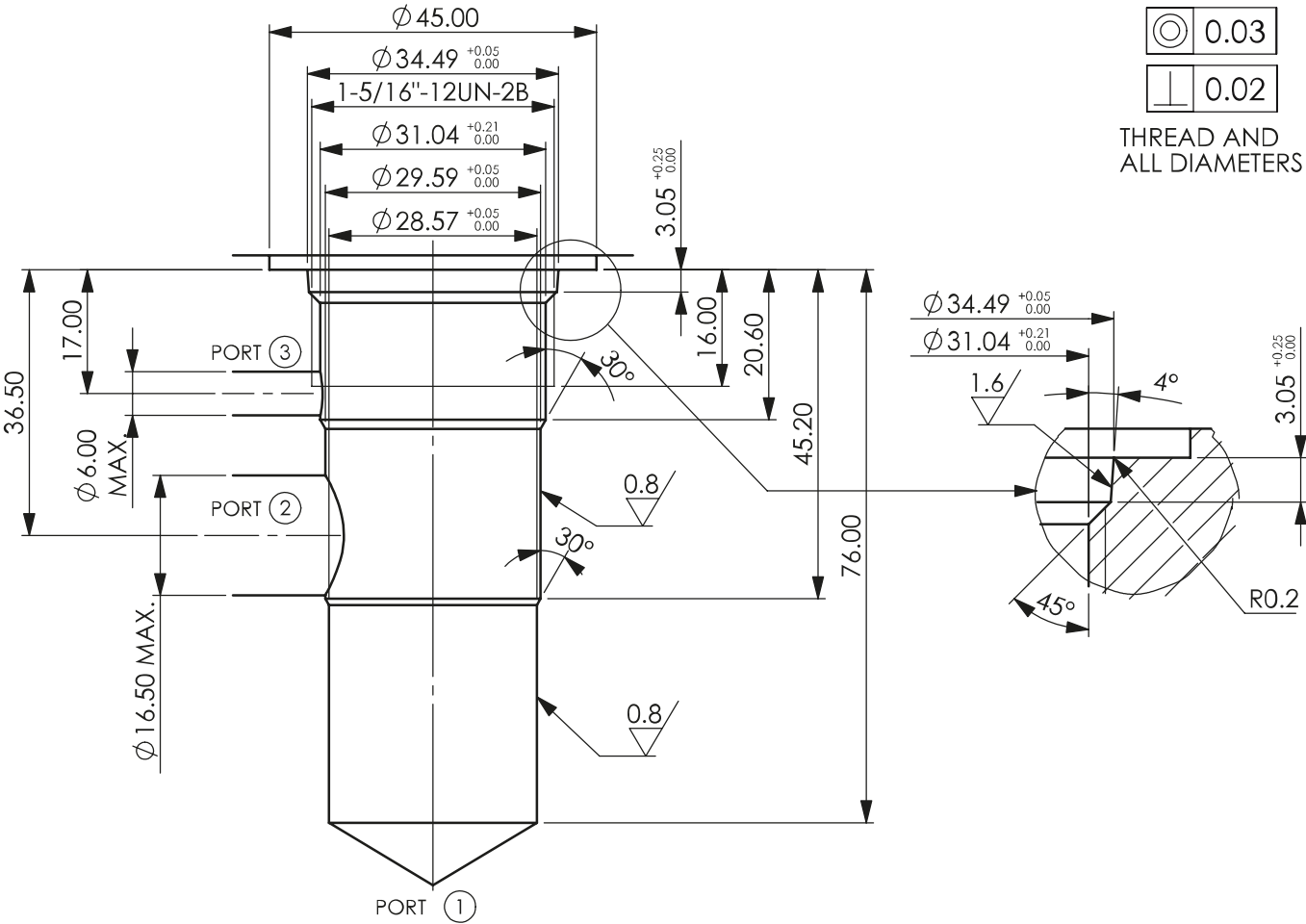
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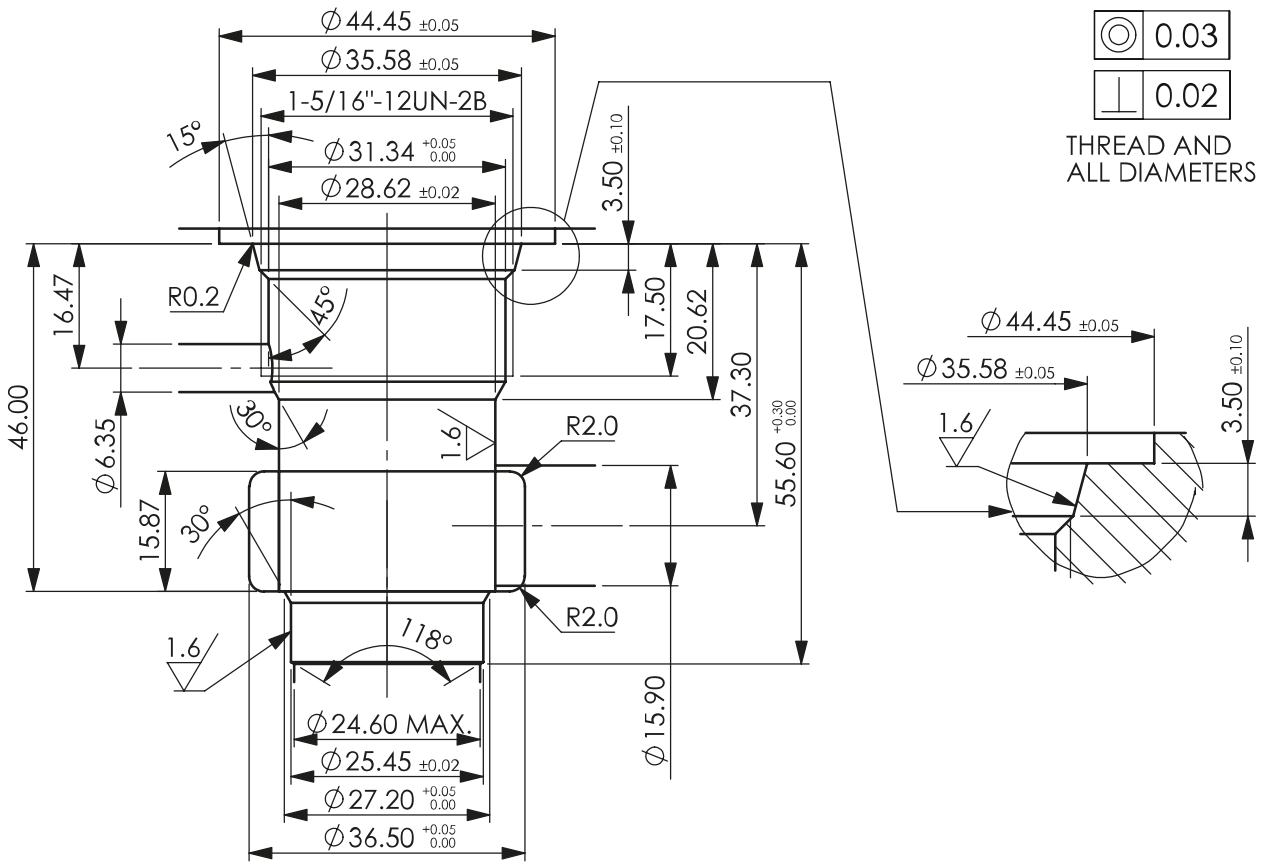


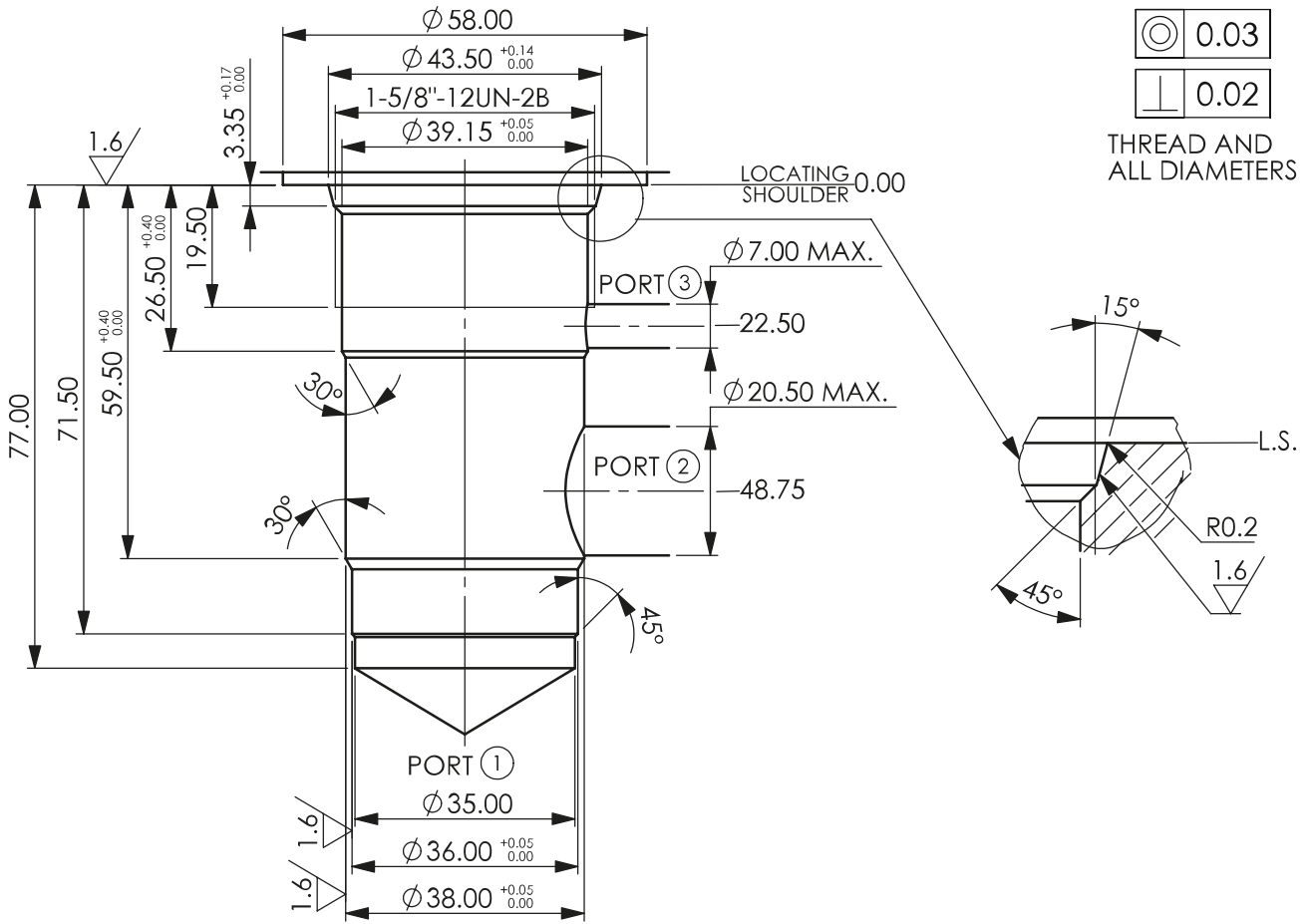
Detail view C



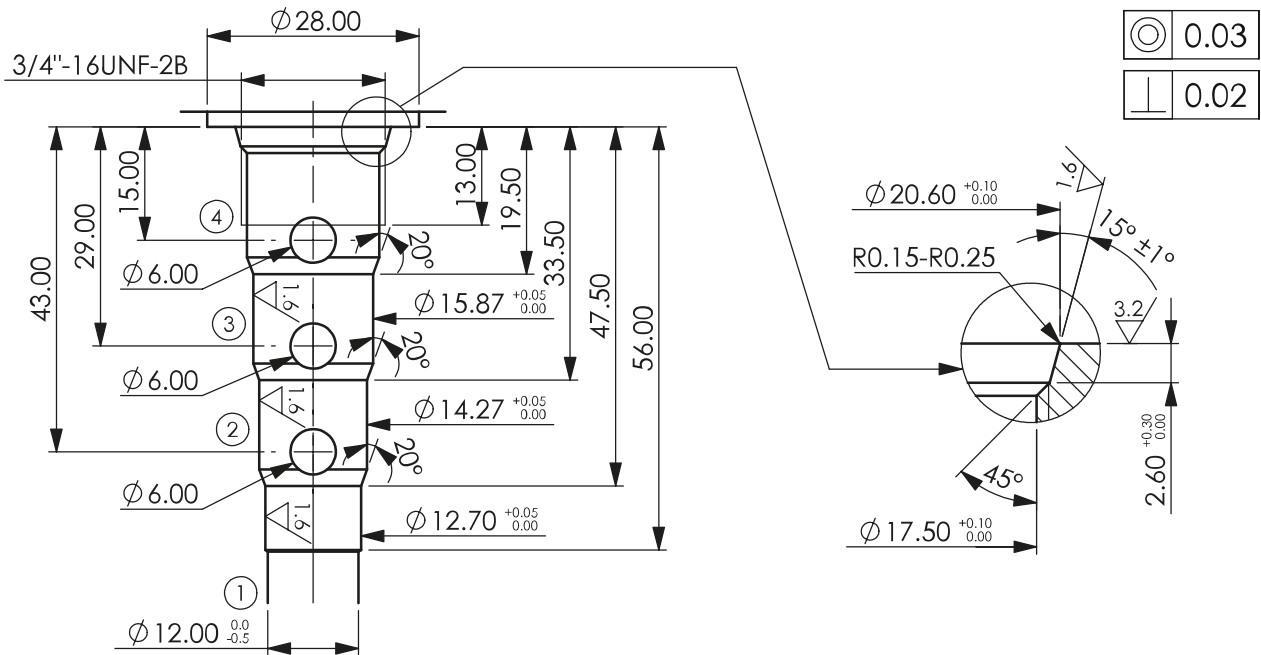
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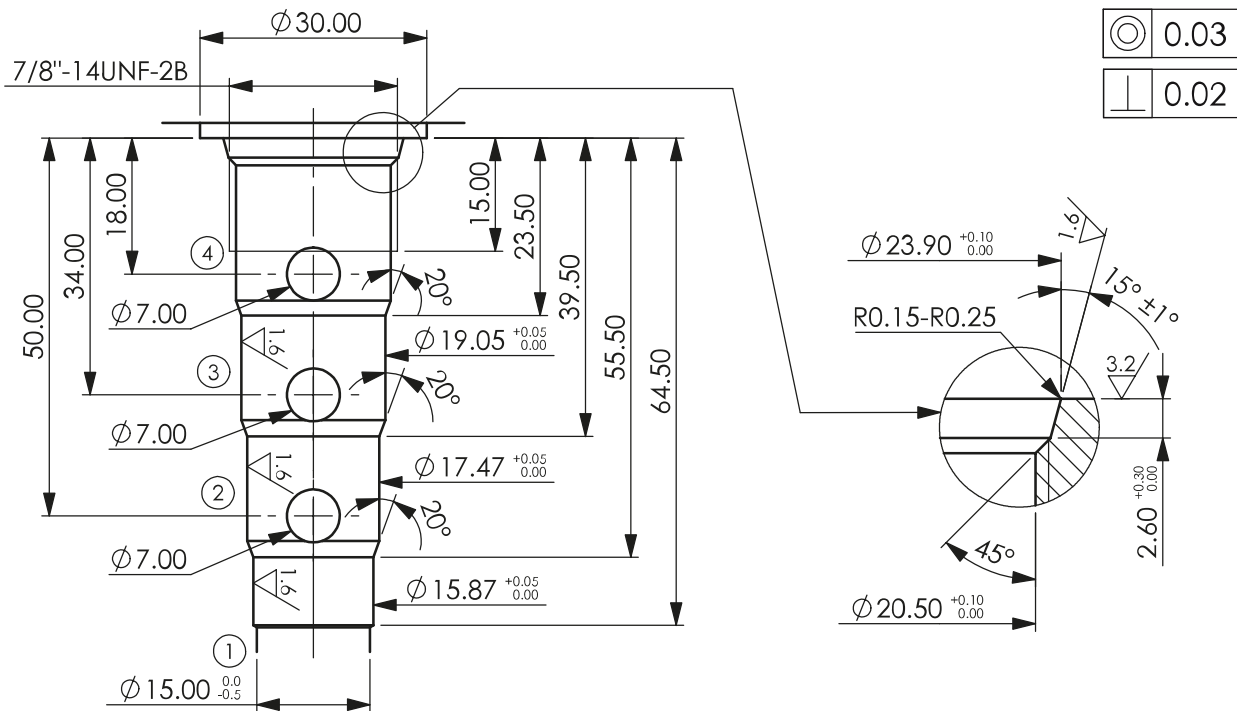




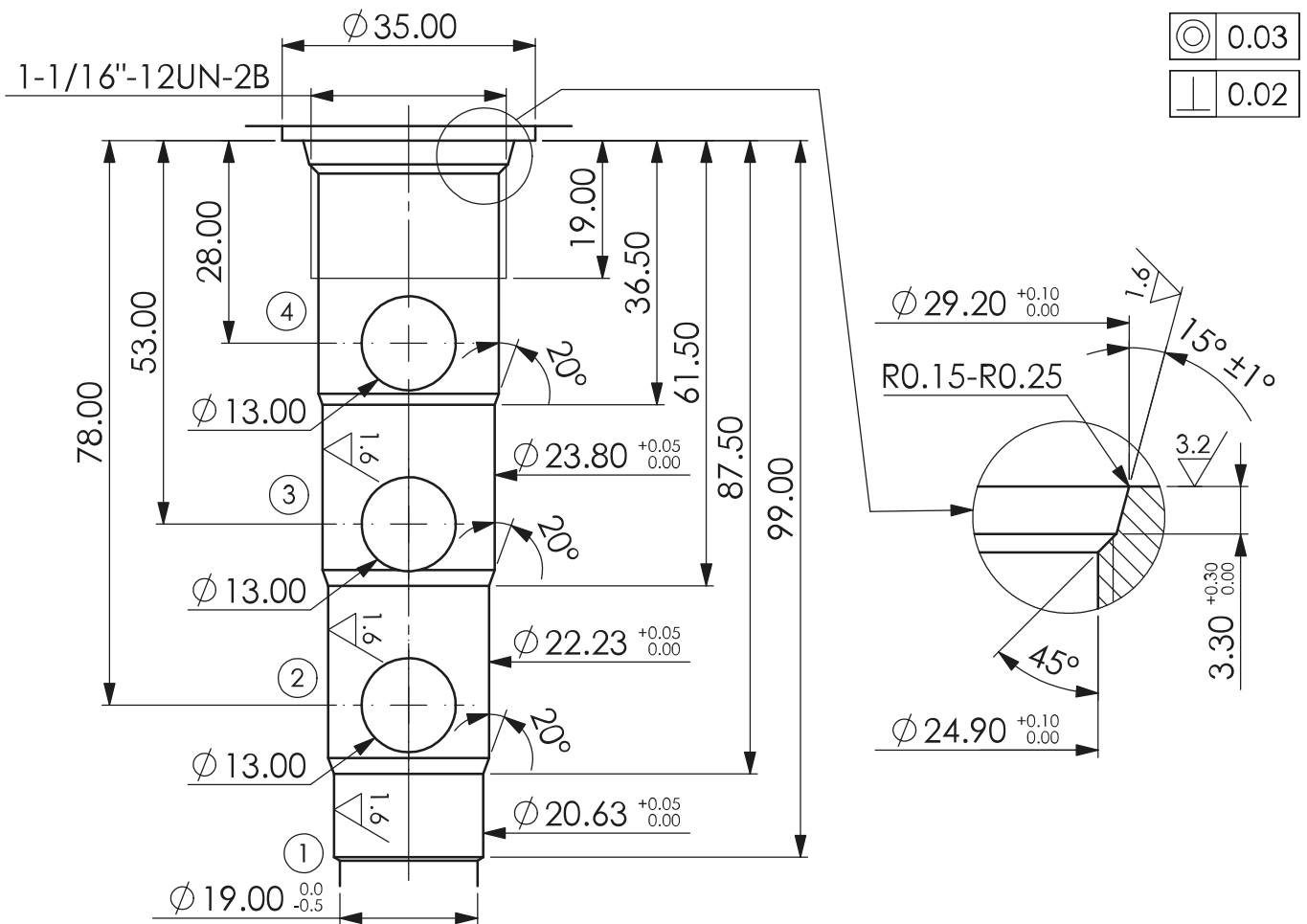
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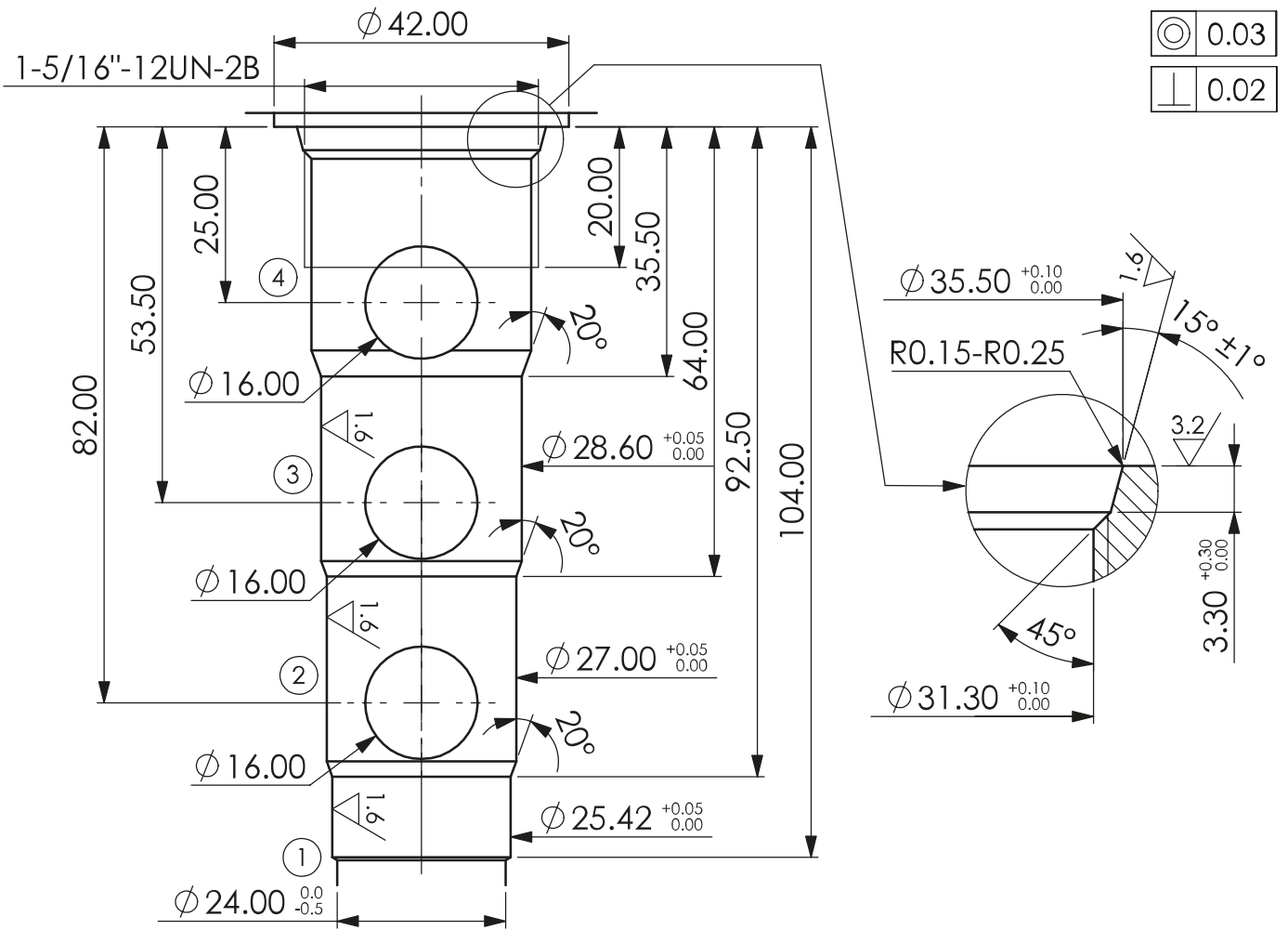


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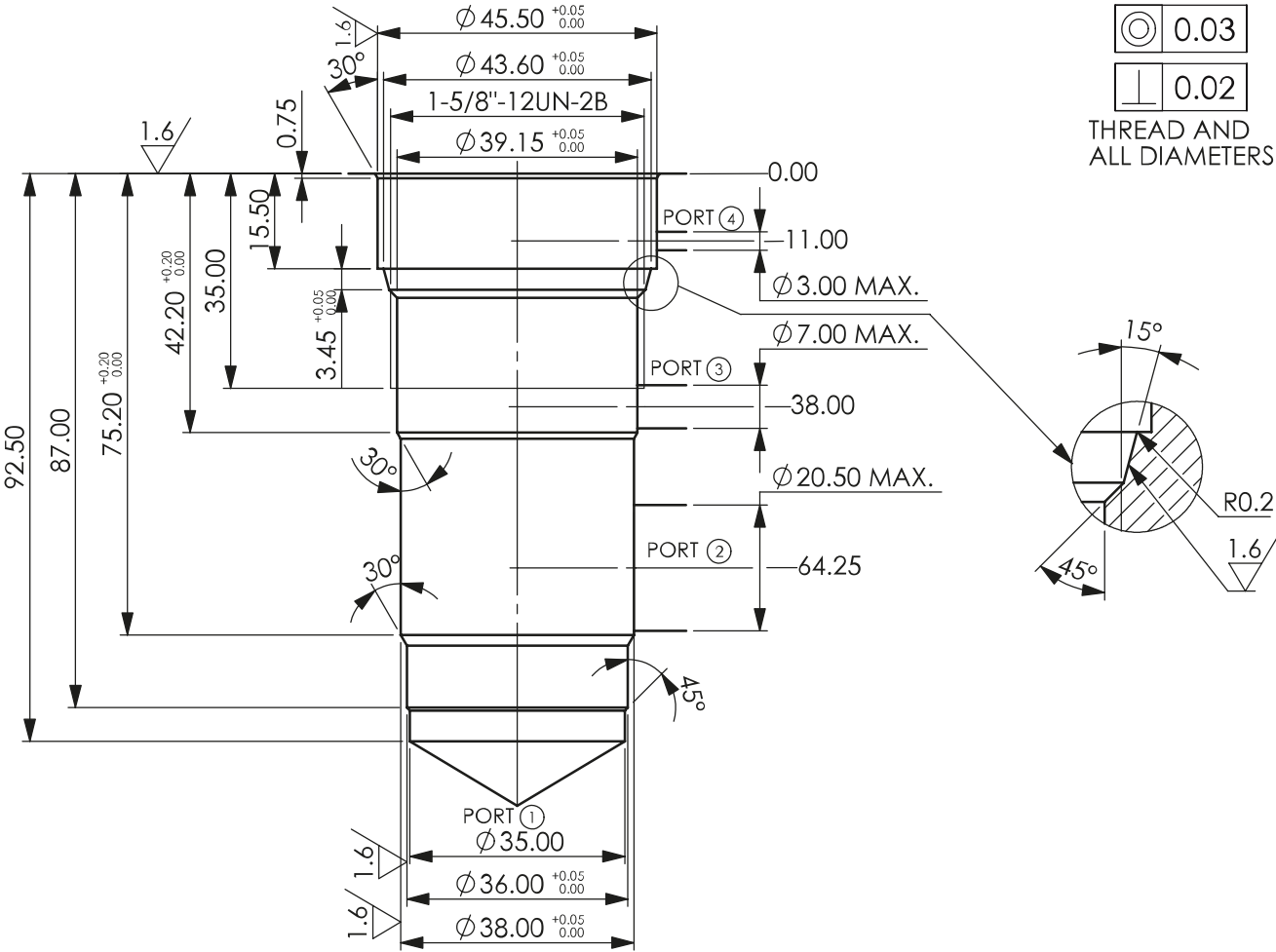


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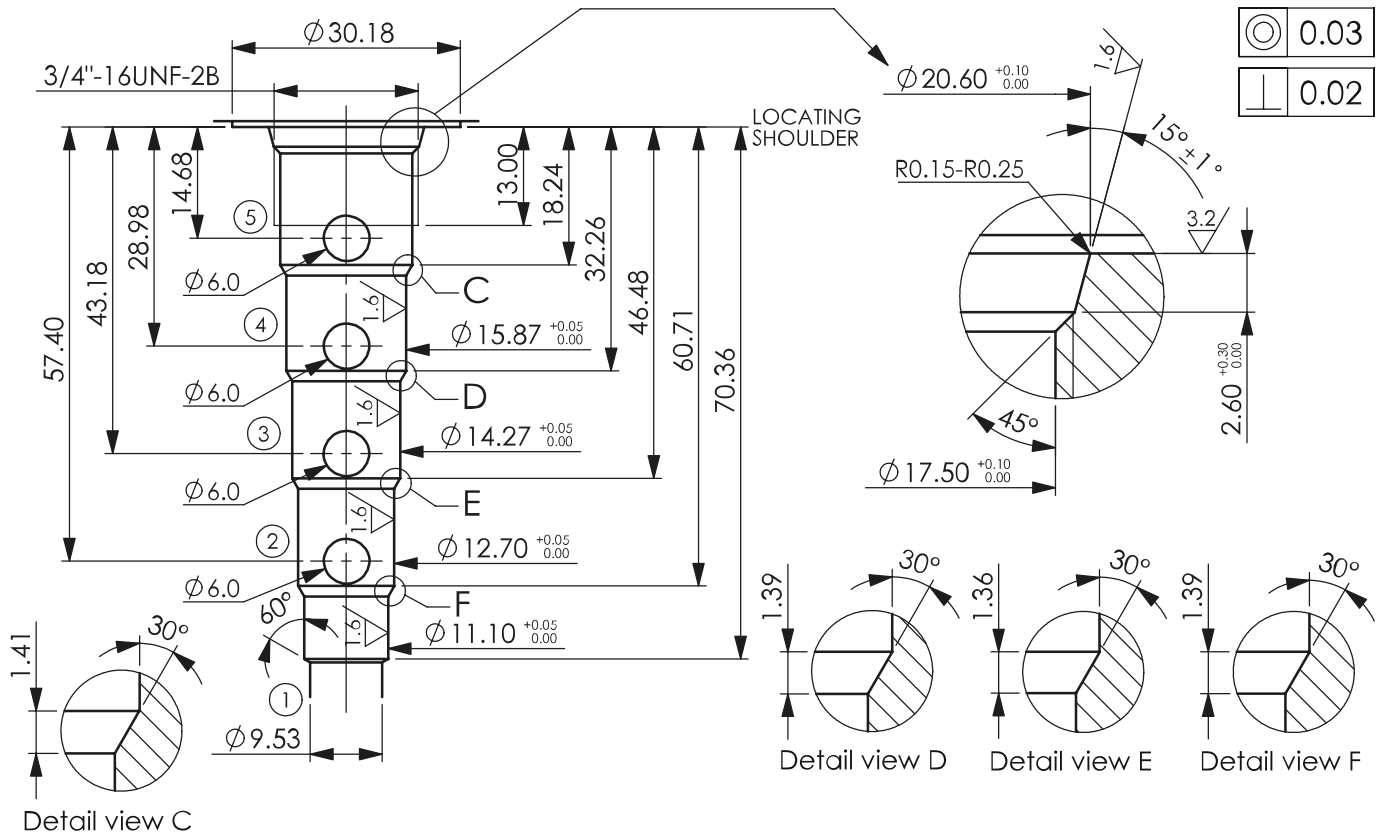




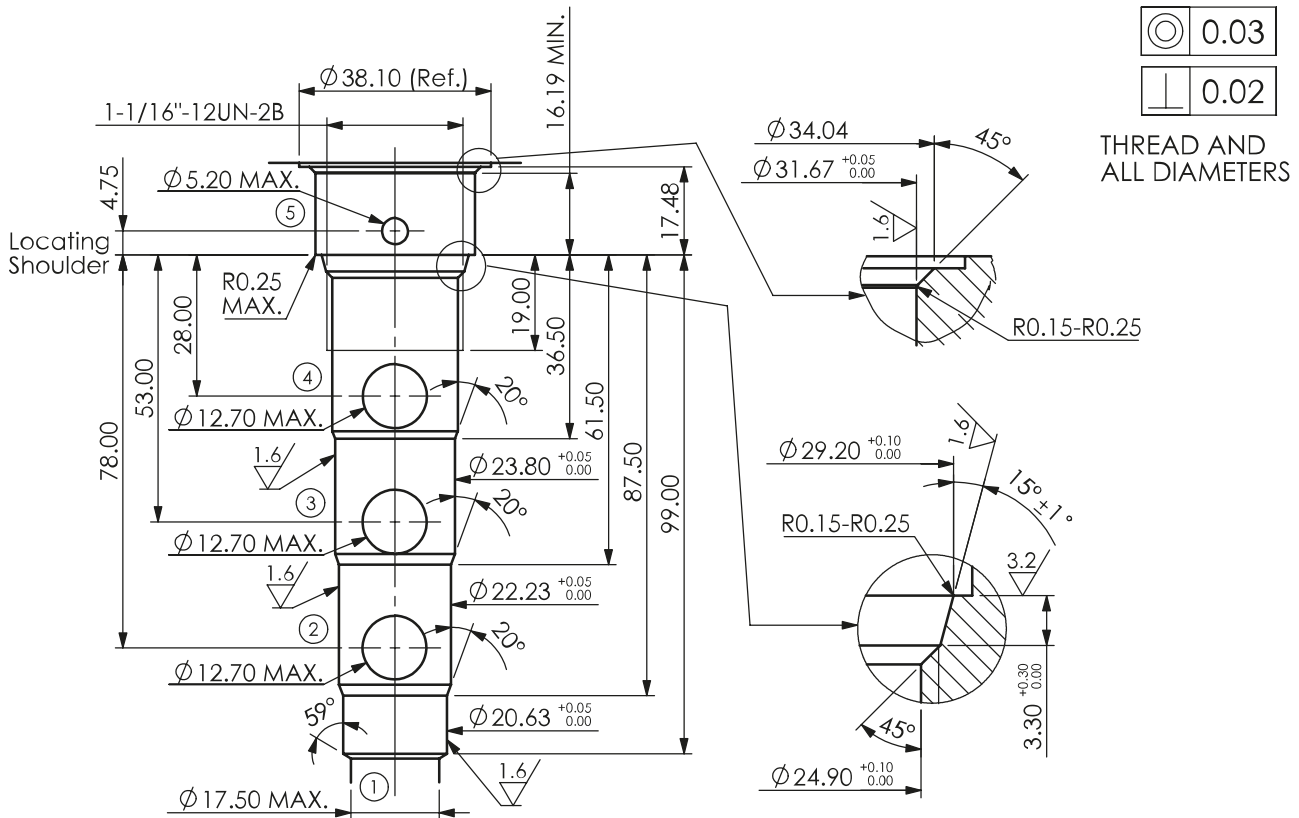
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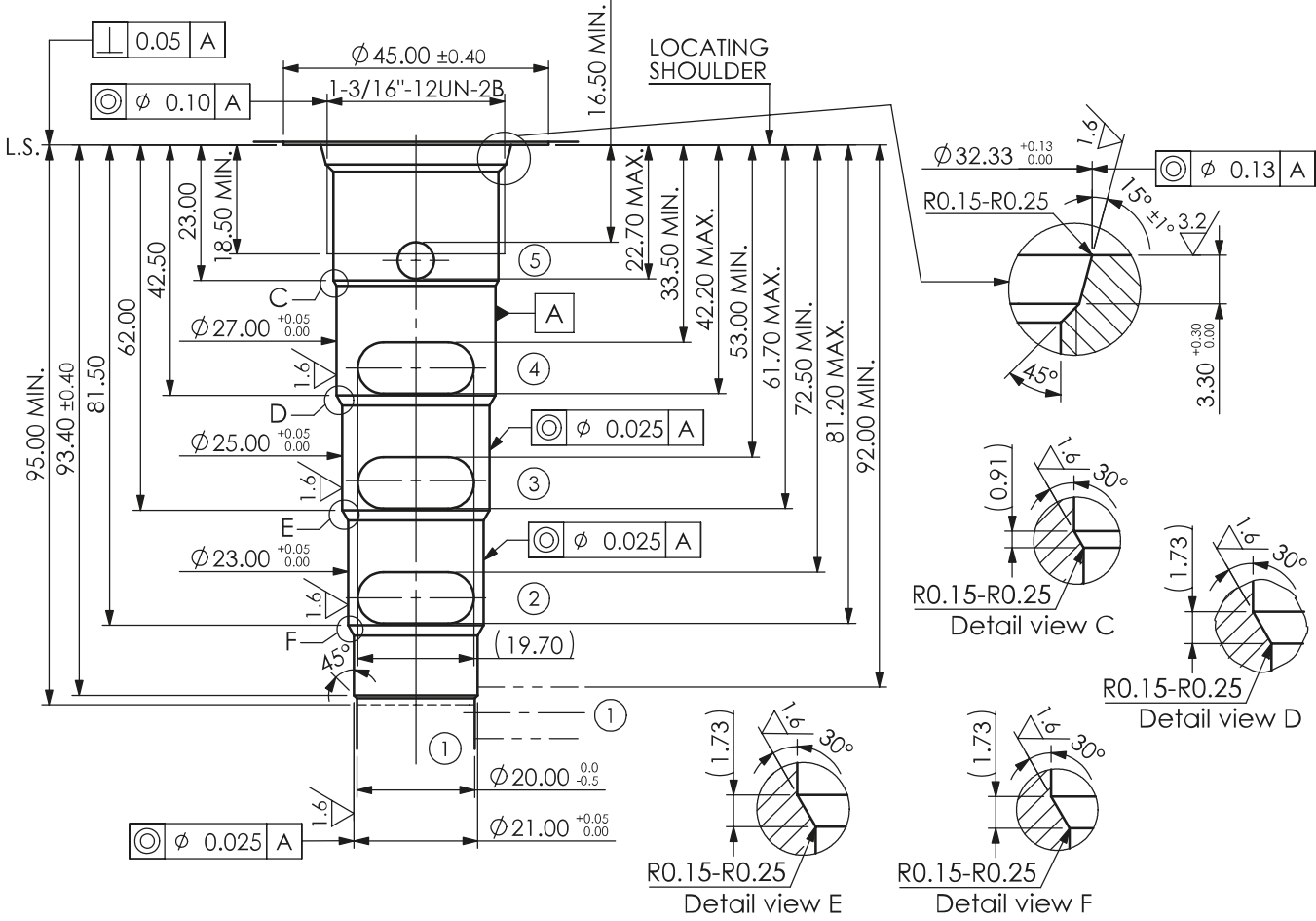
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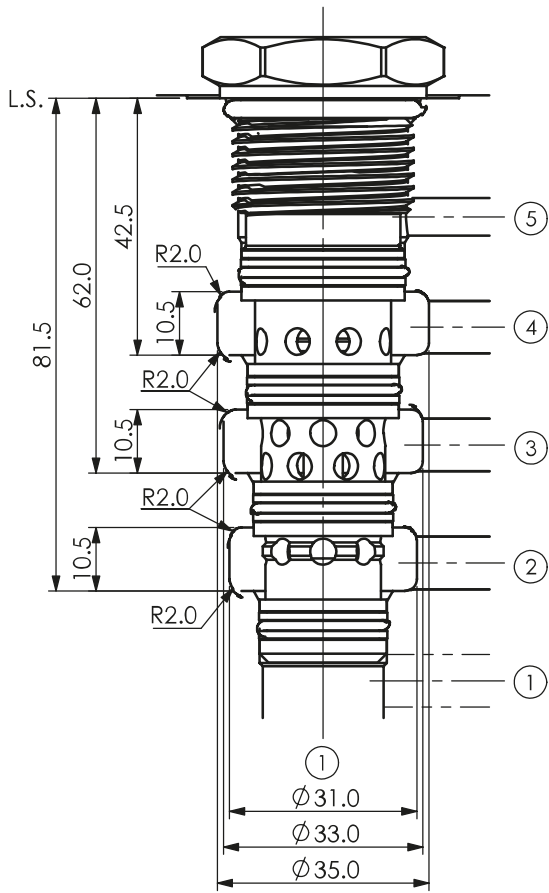
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14WA-5

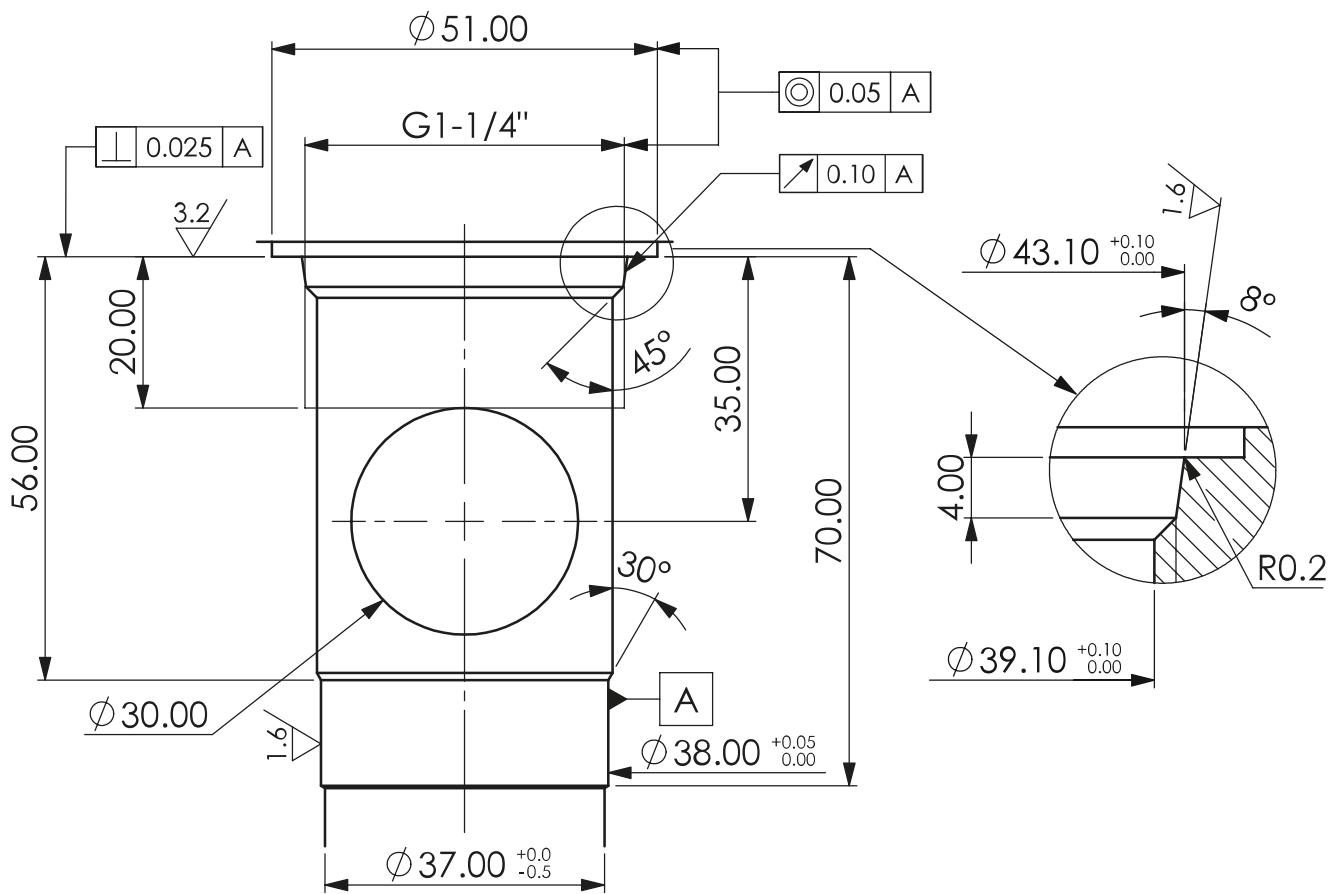


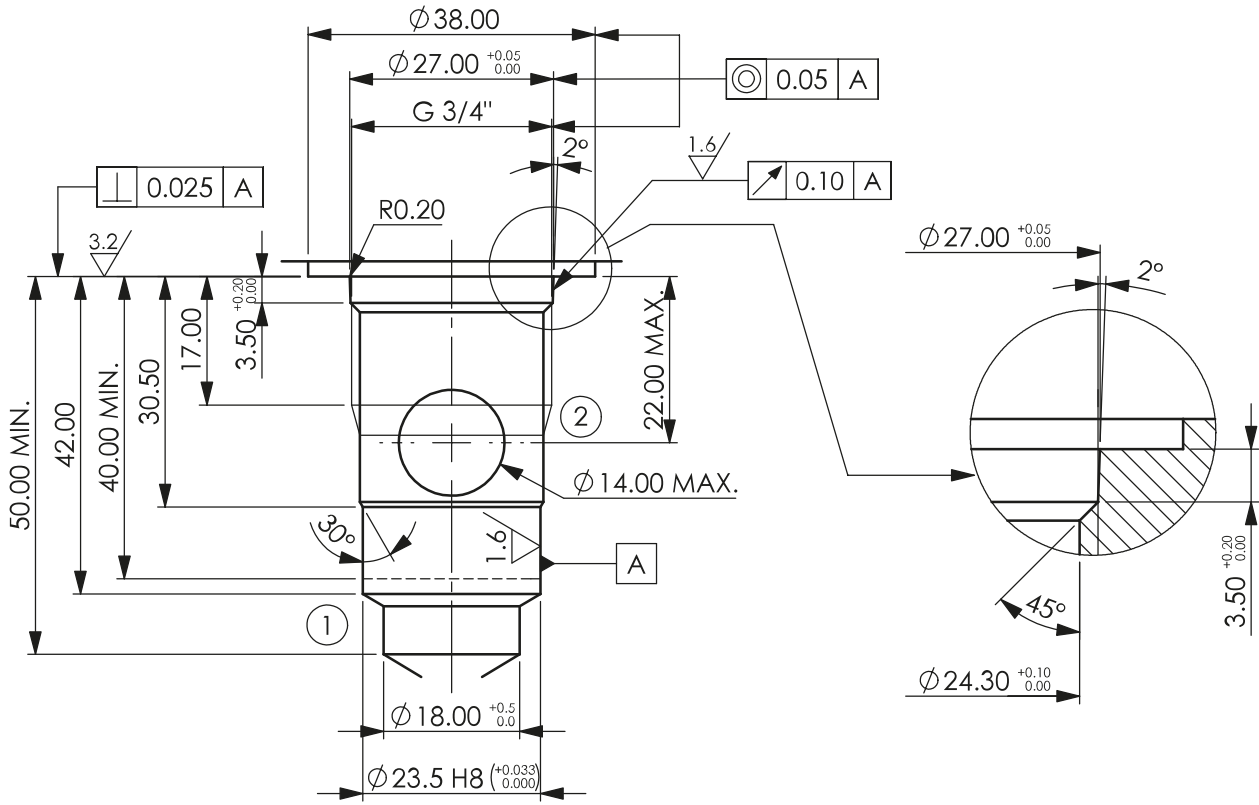
14WA-5 (with annular groove for high flow use)



3.2 Mounting holes type E

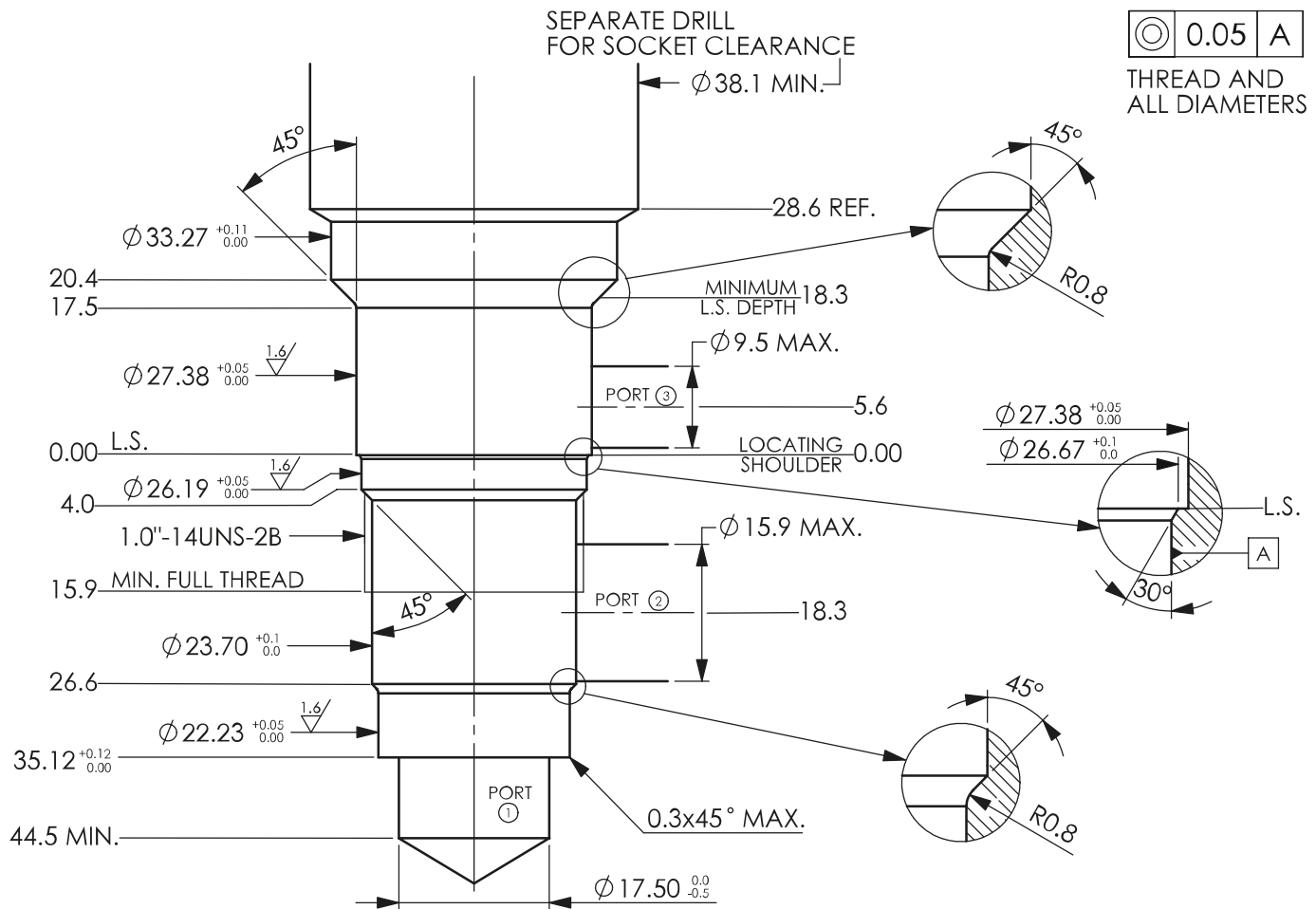
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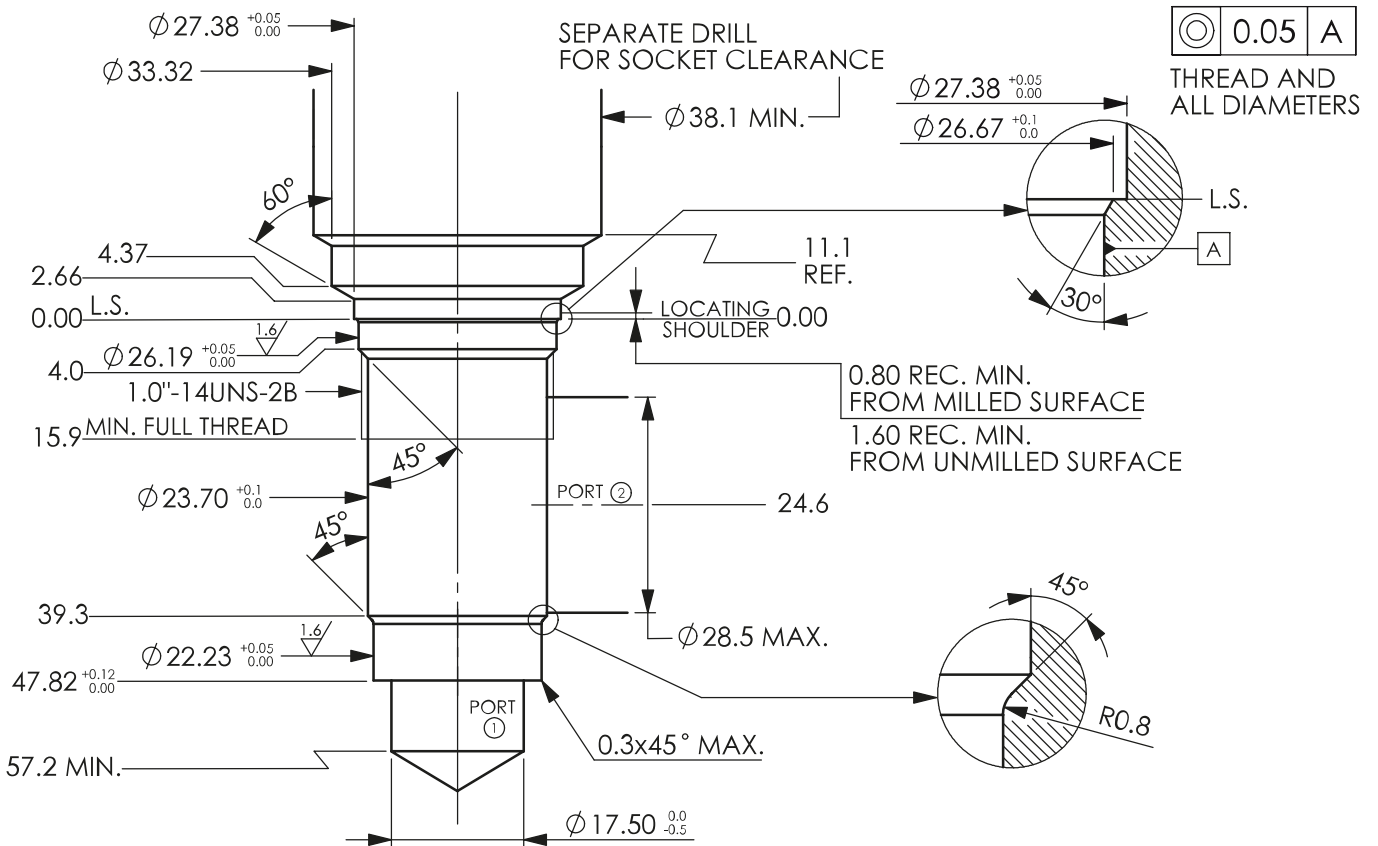


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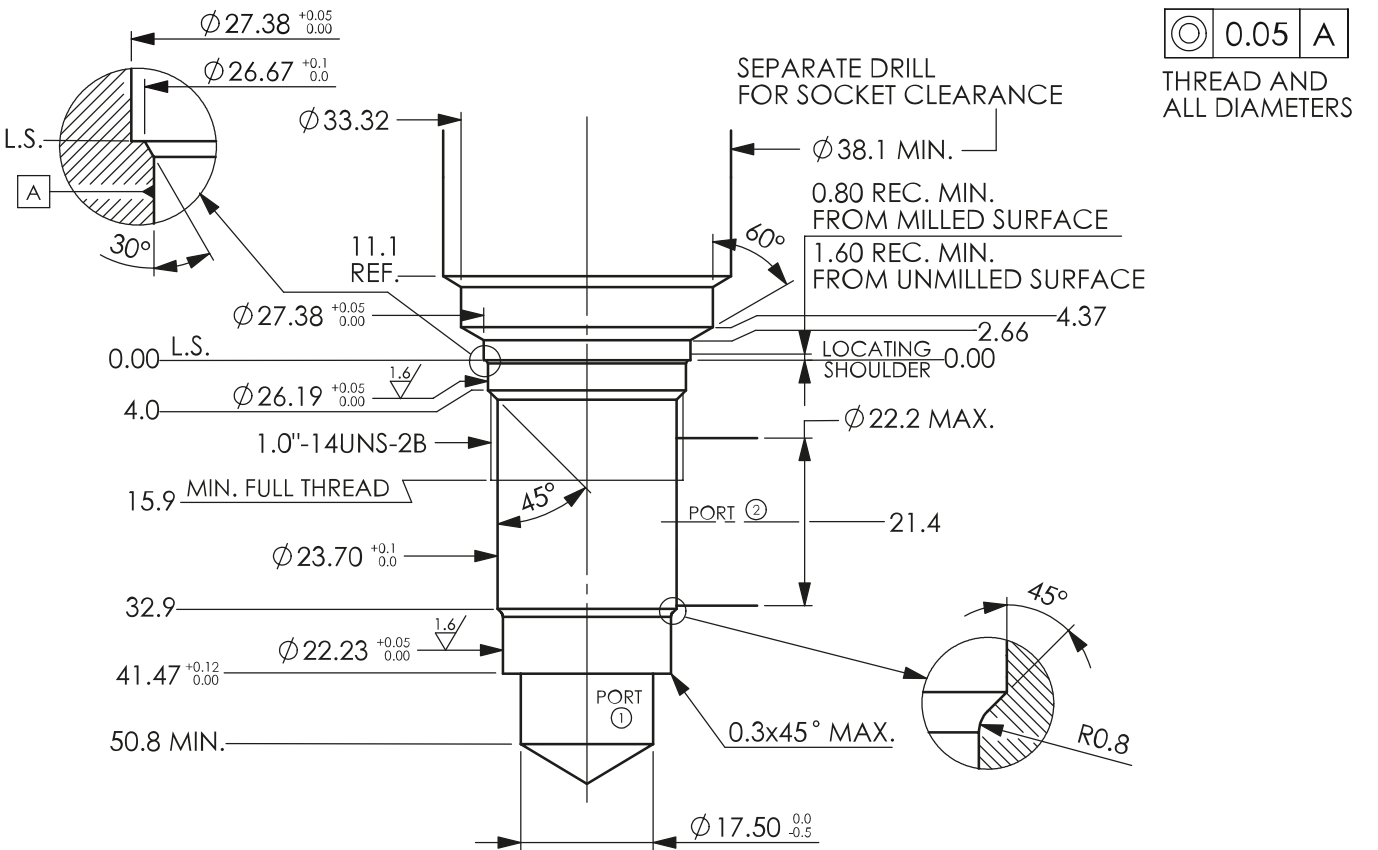
T-2A



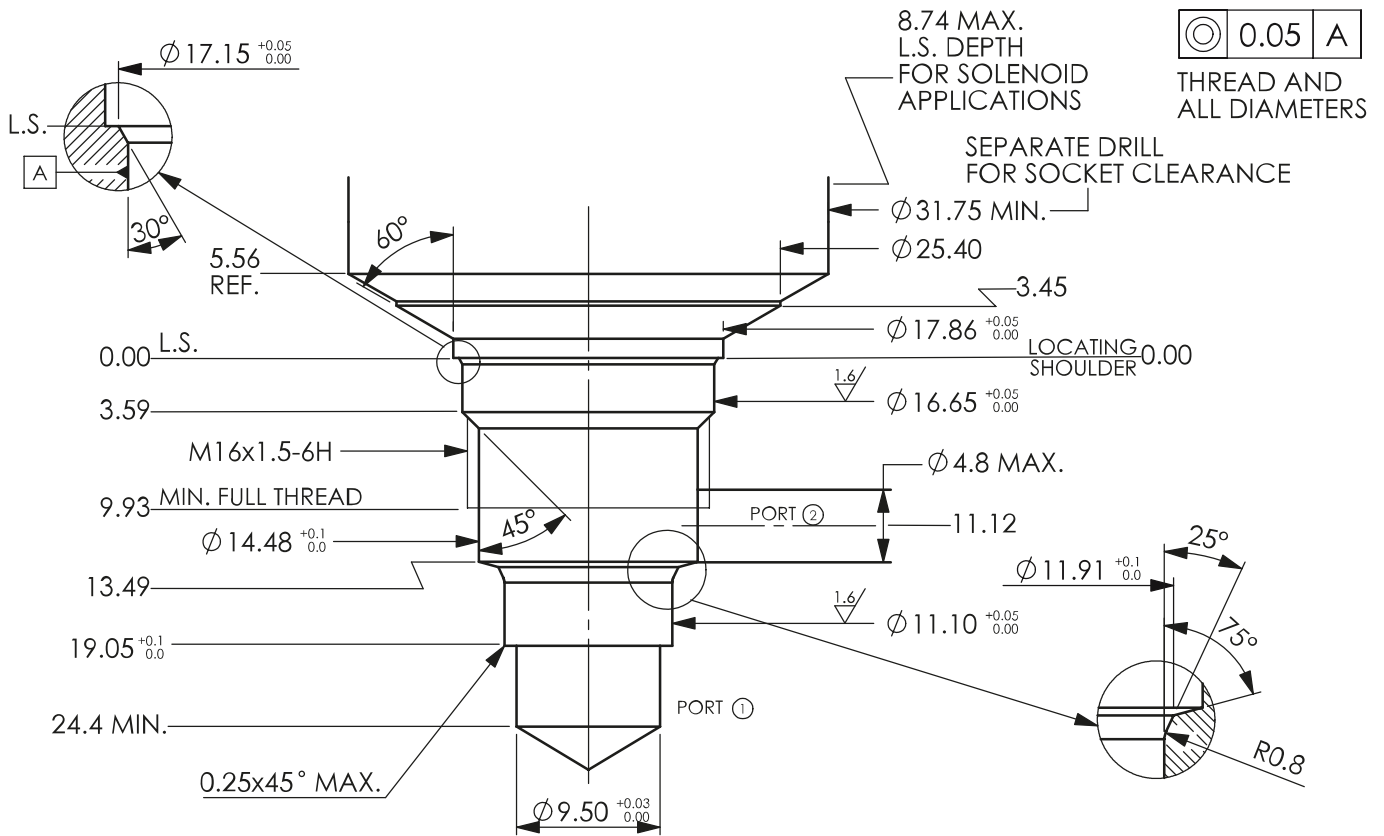
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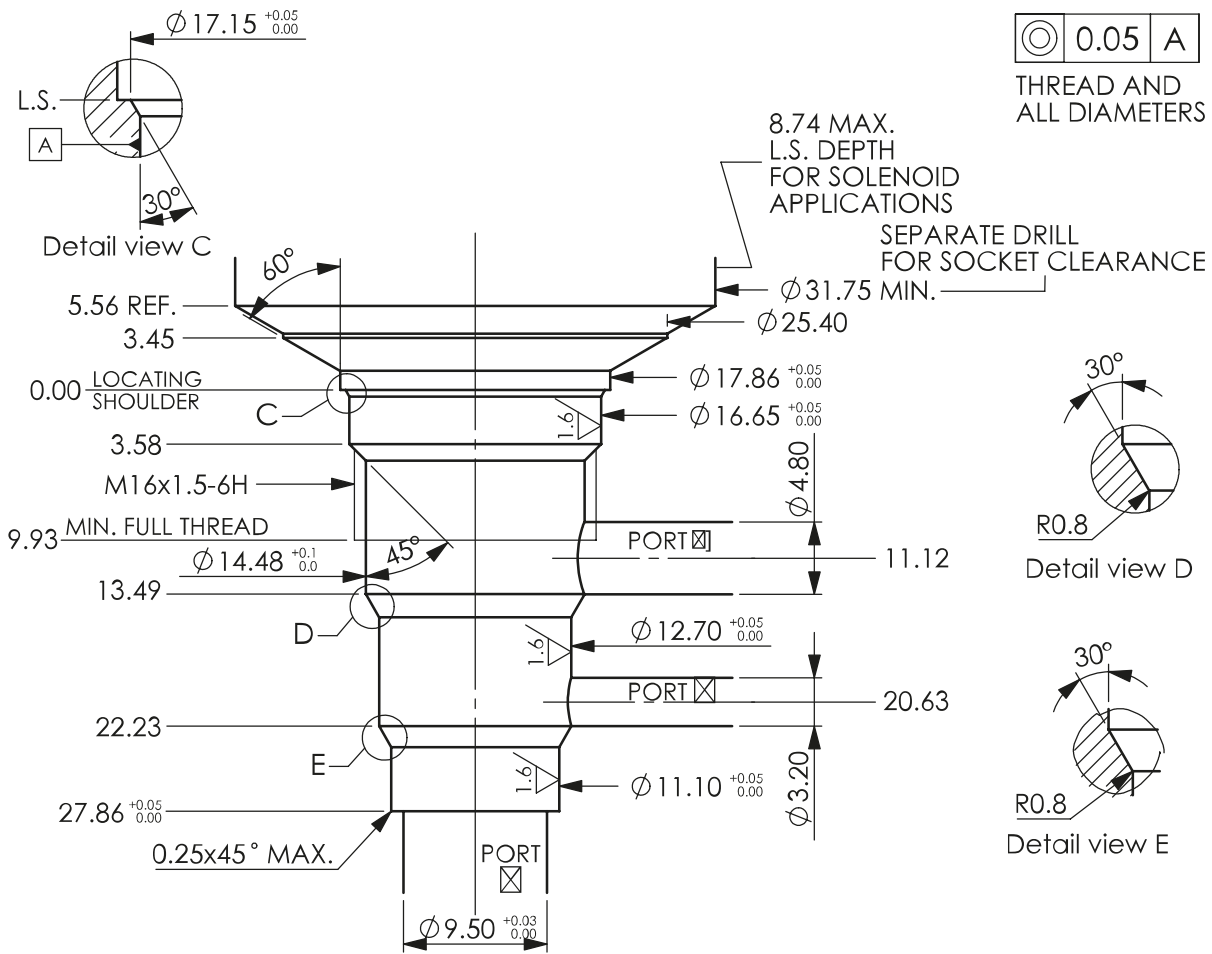
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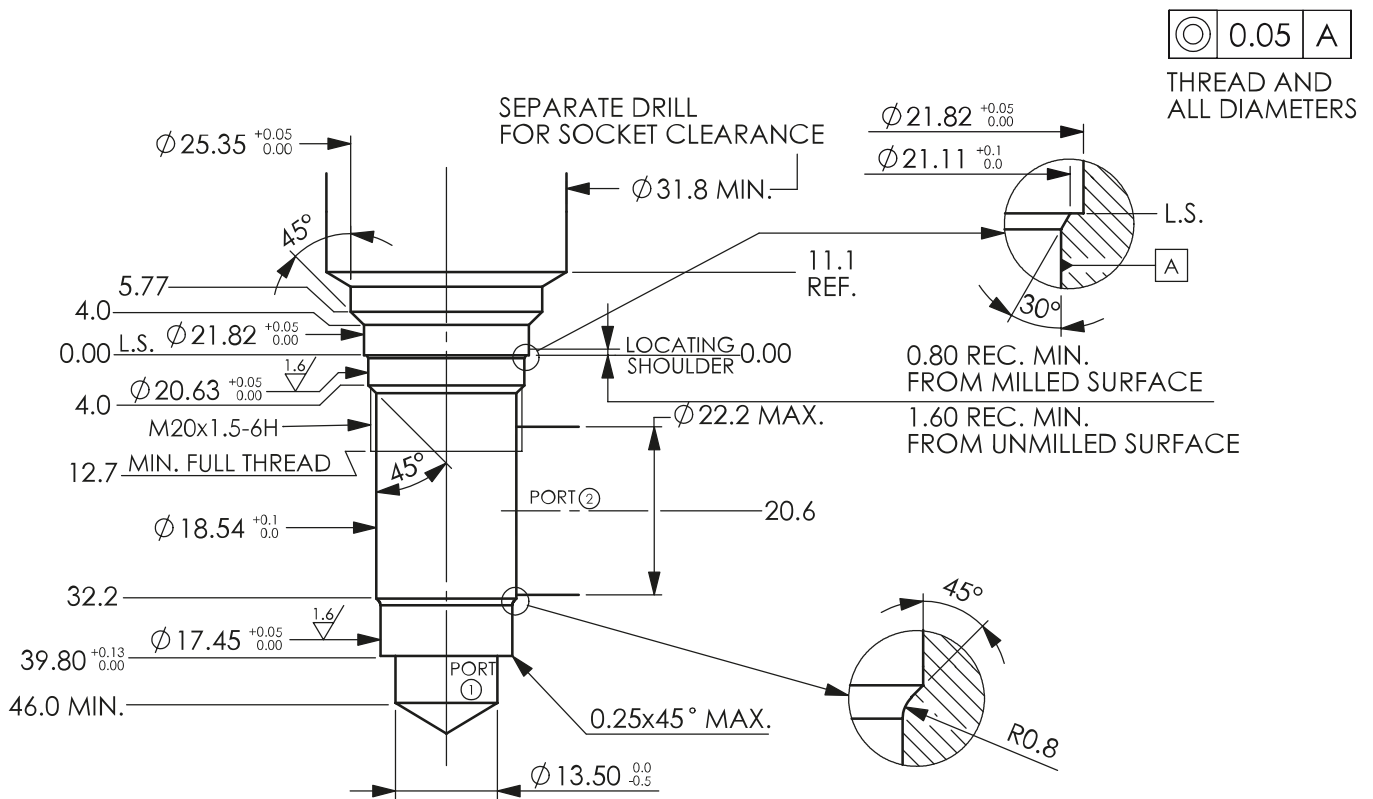
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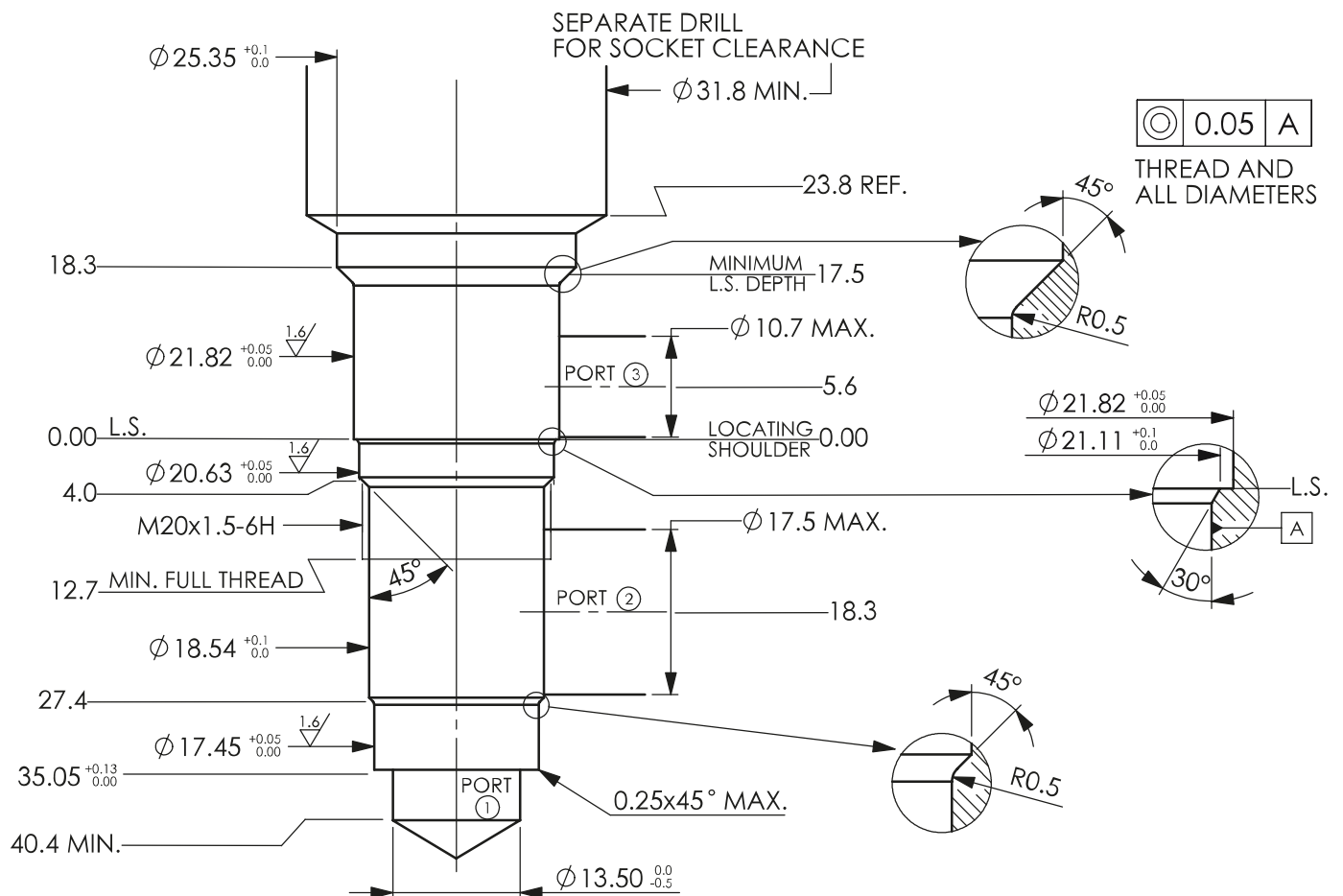
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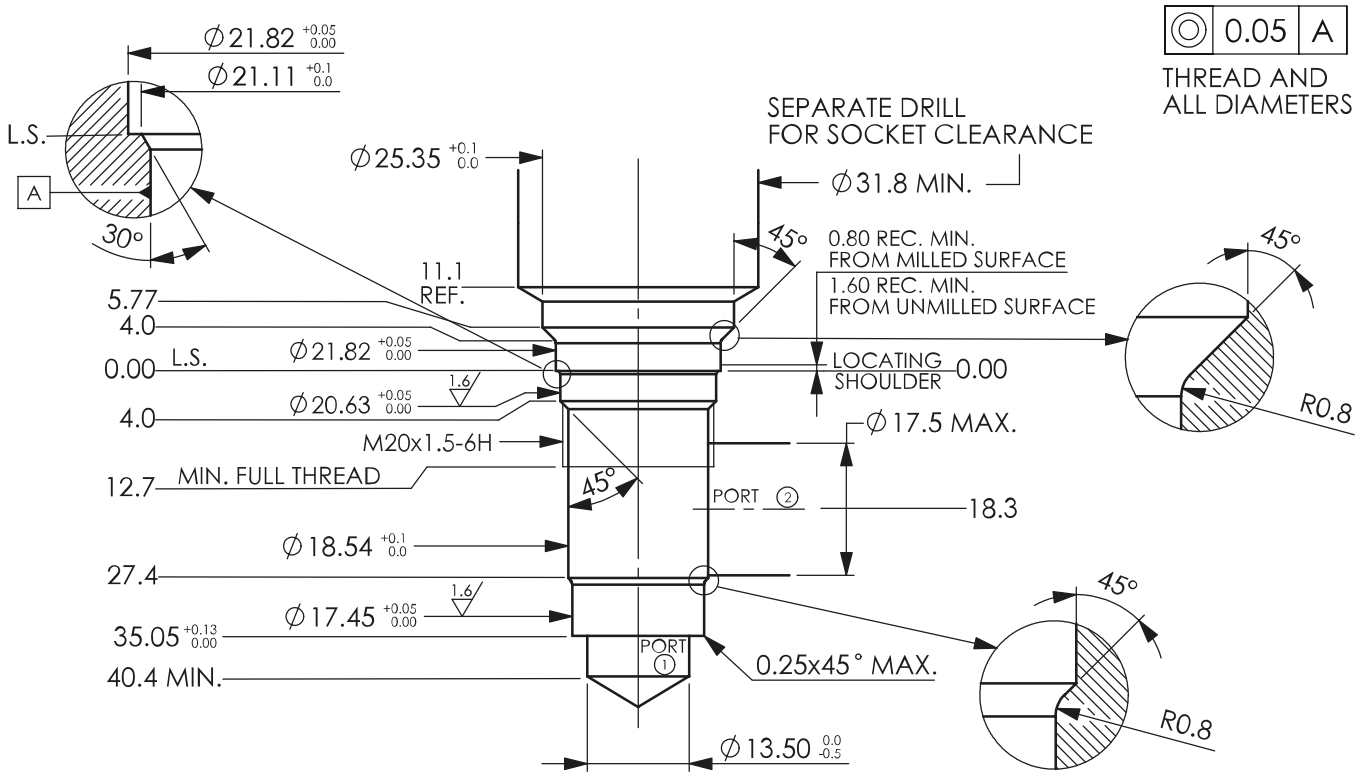
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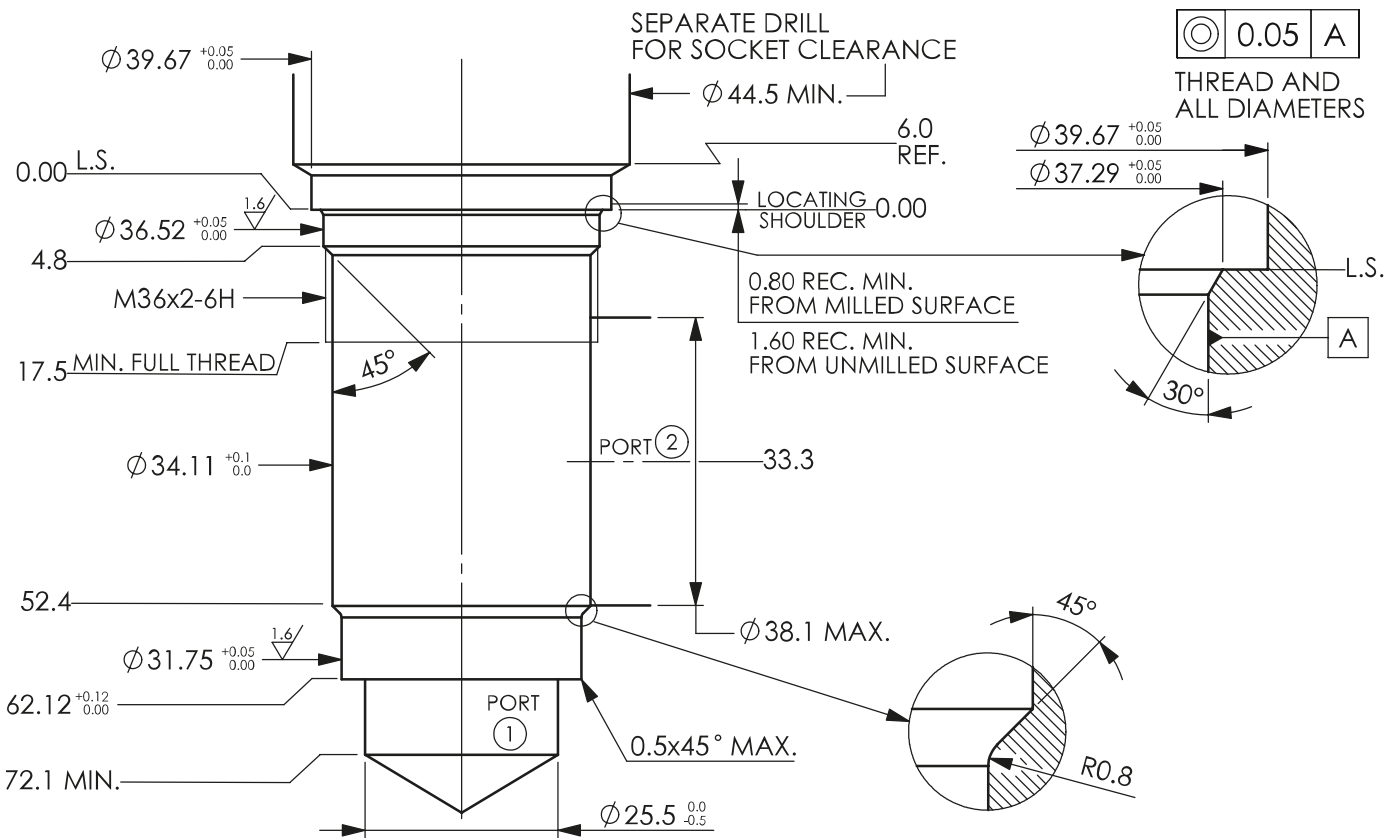
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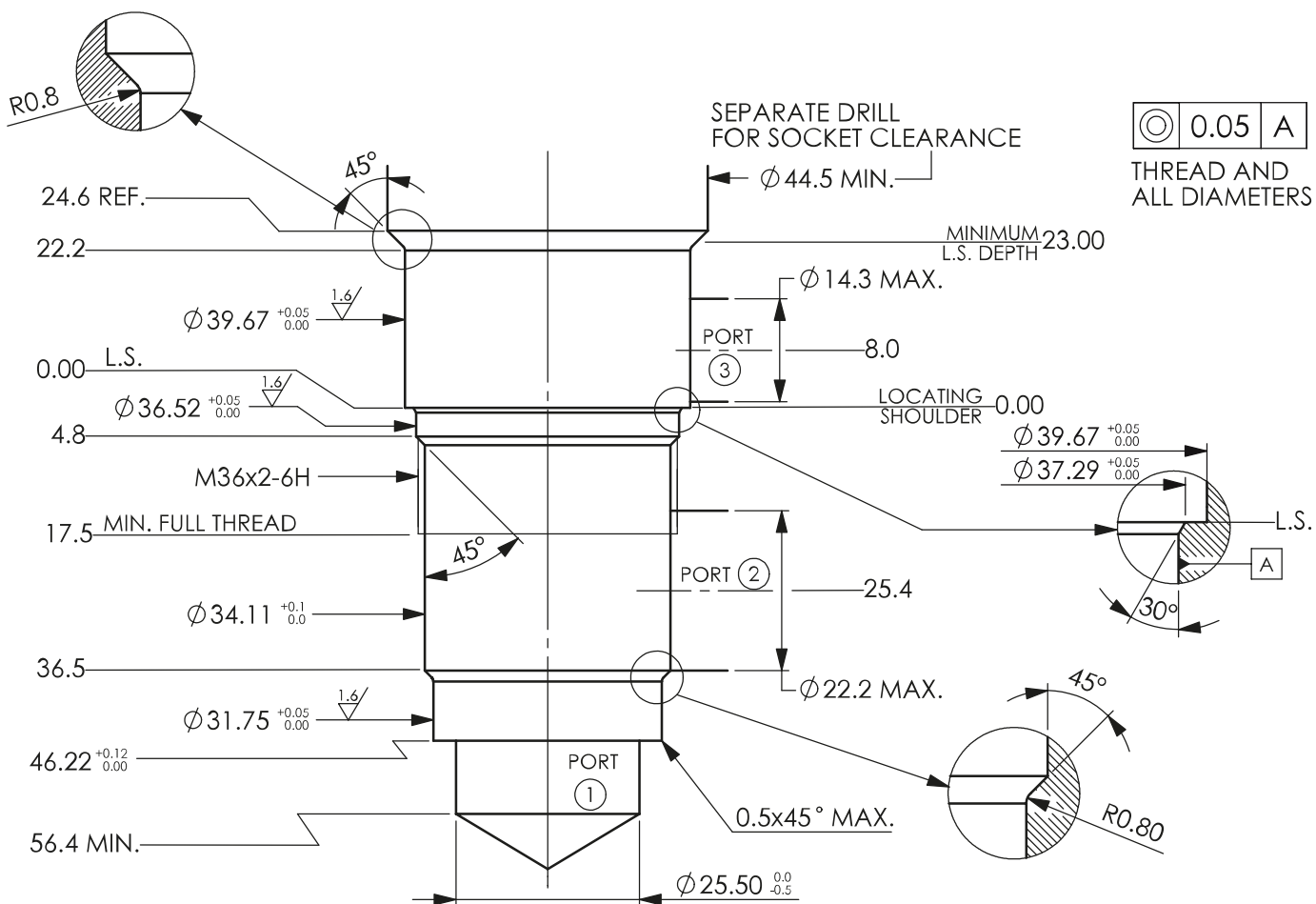
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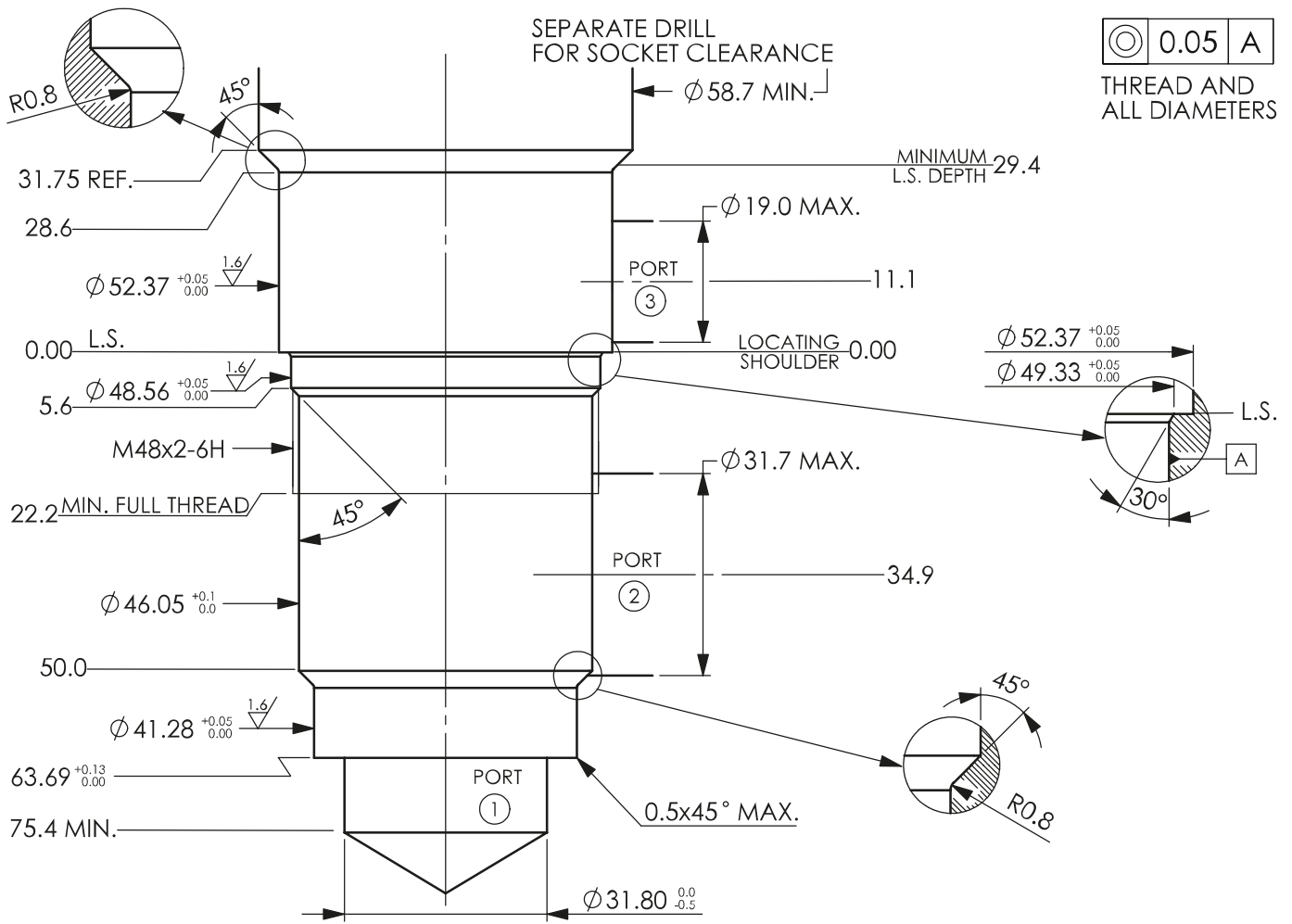
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T-17A

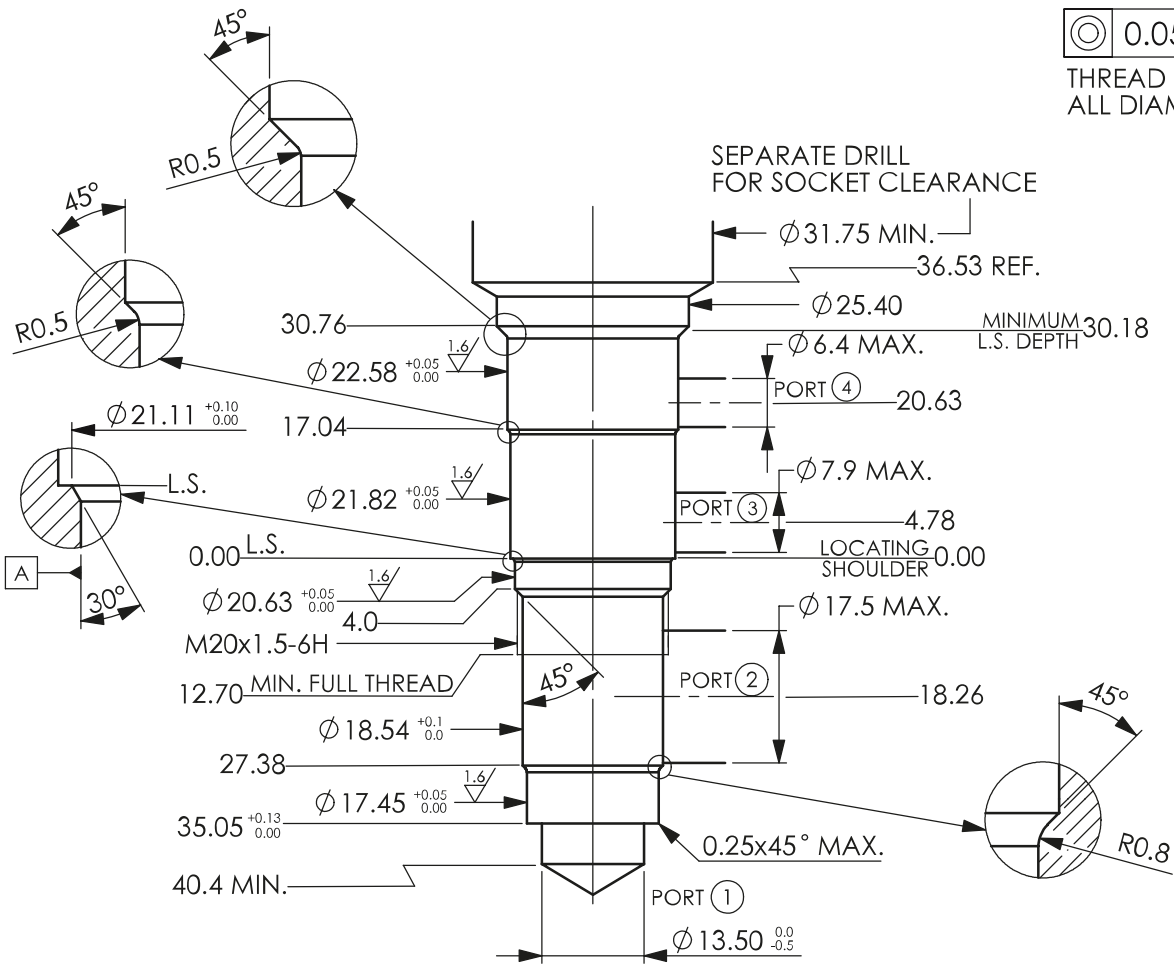


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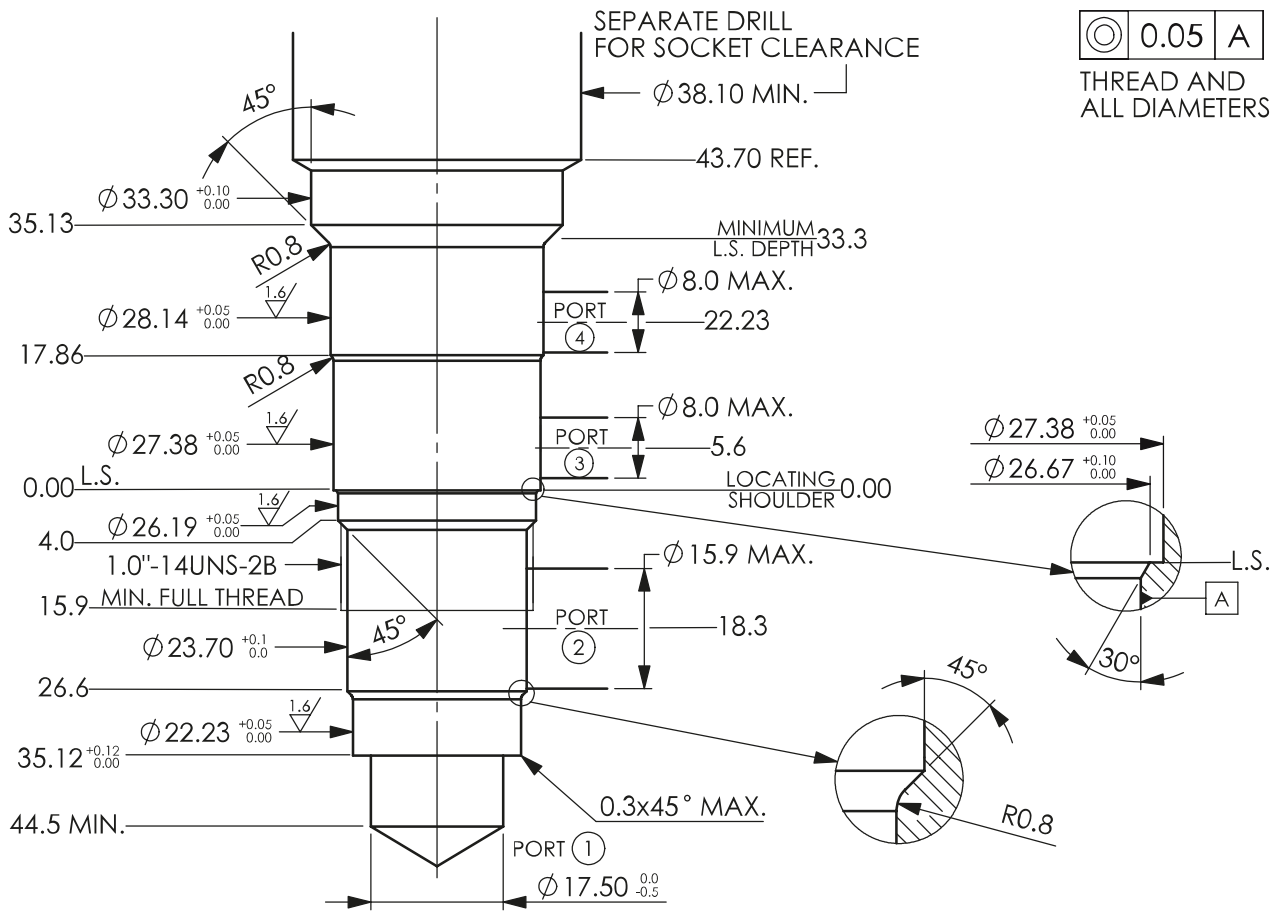


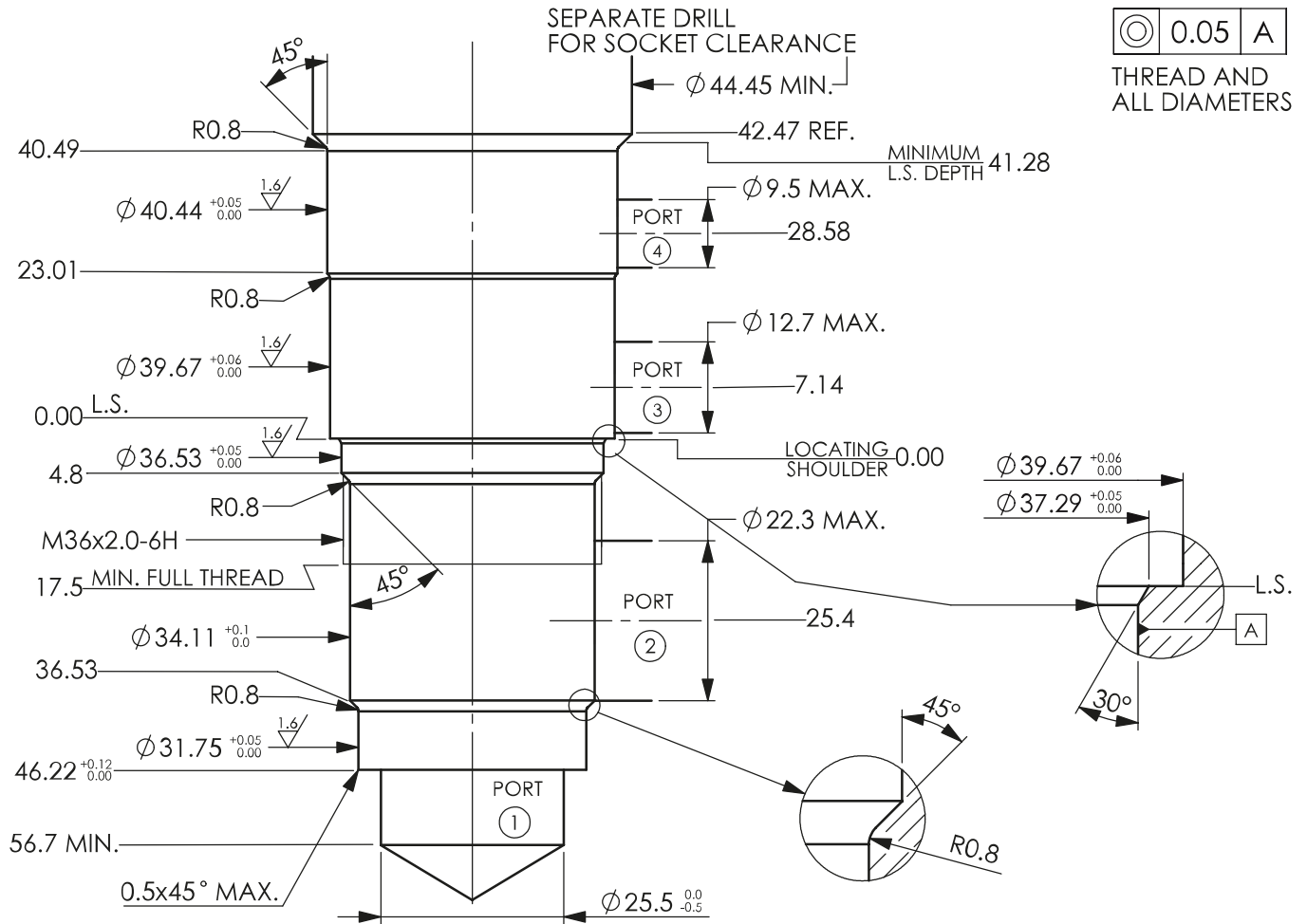
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THREAD AND ALL DIAMETERS

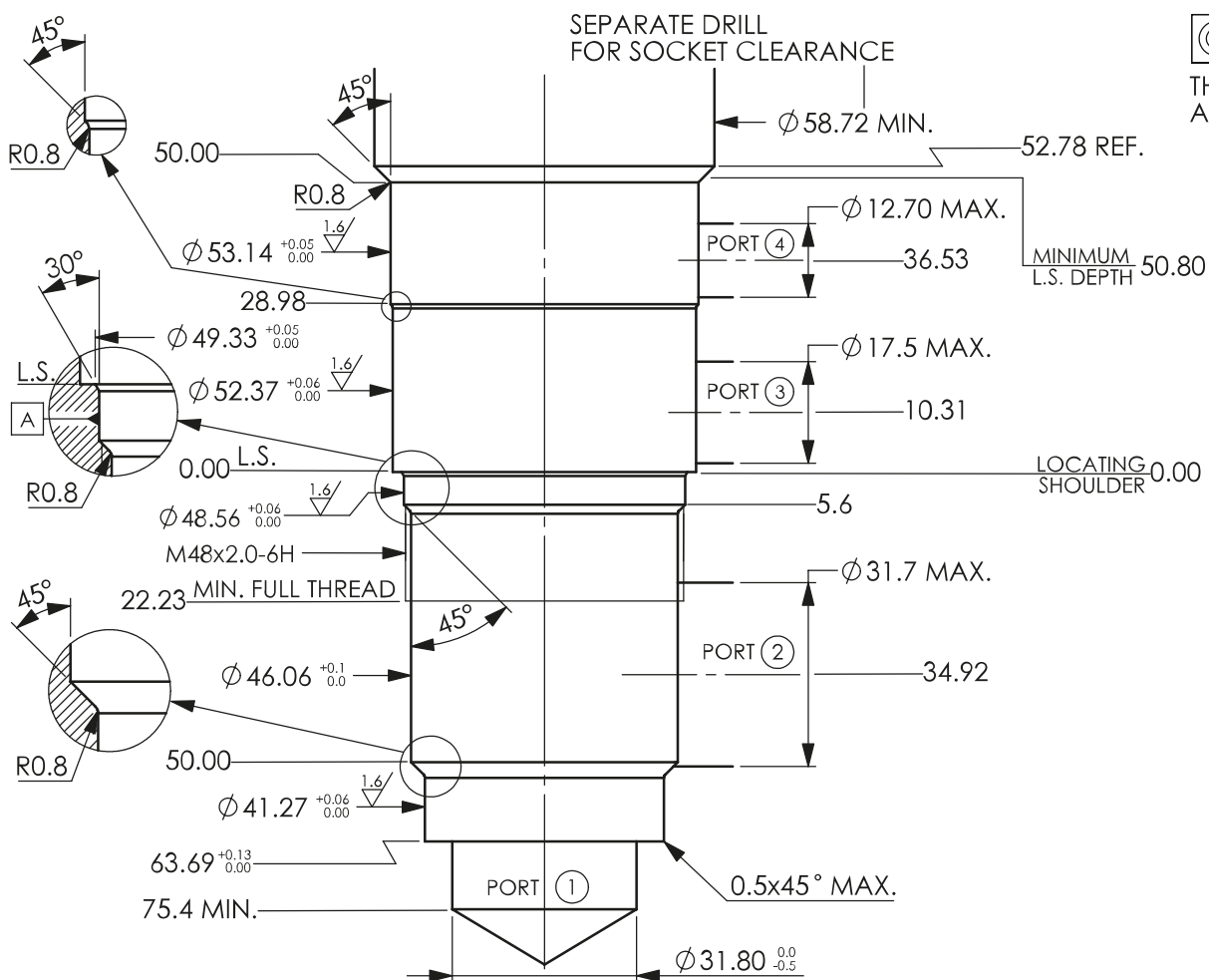


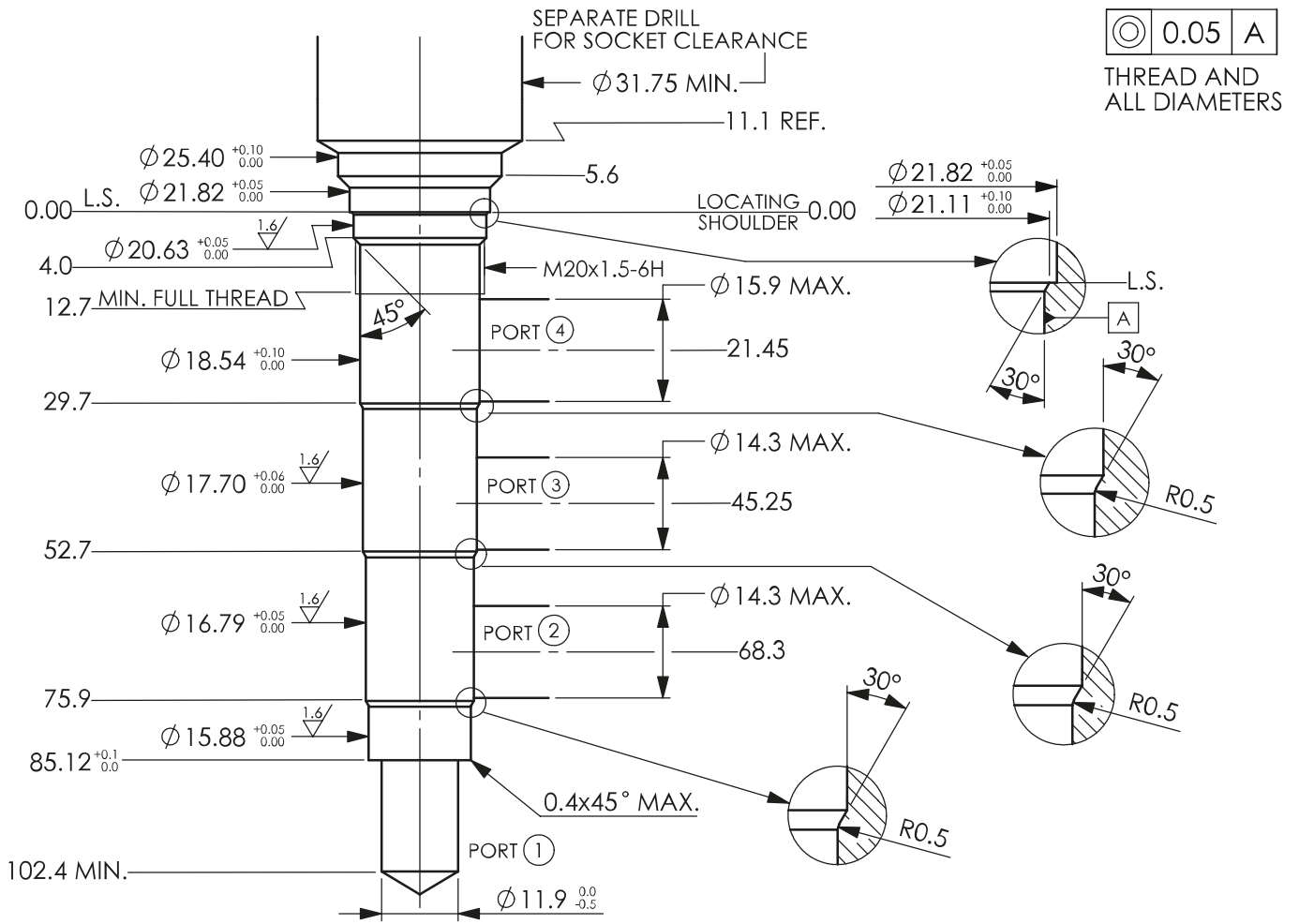
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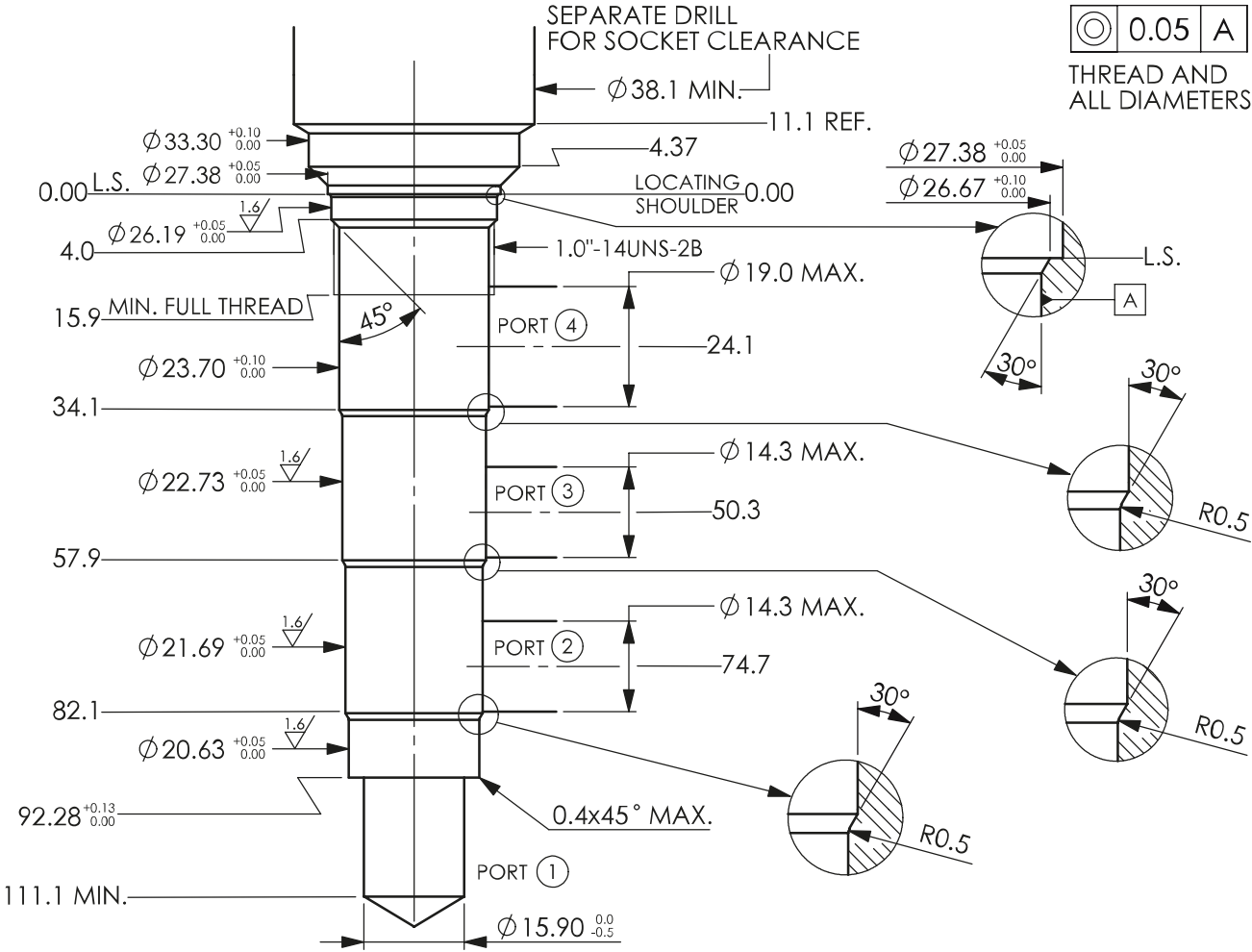


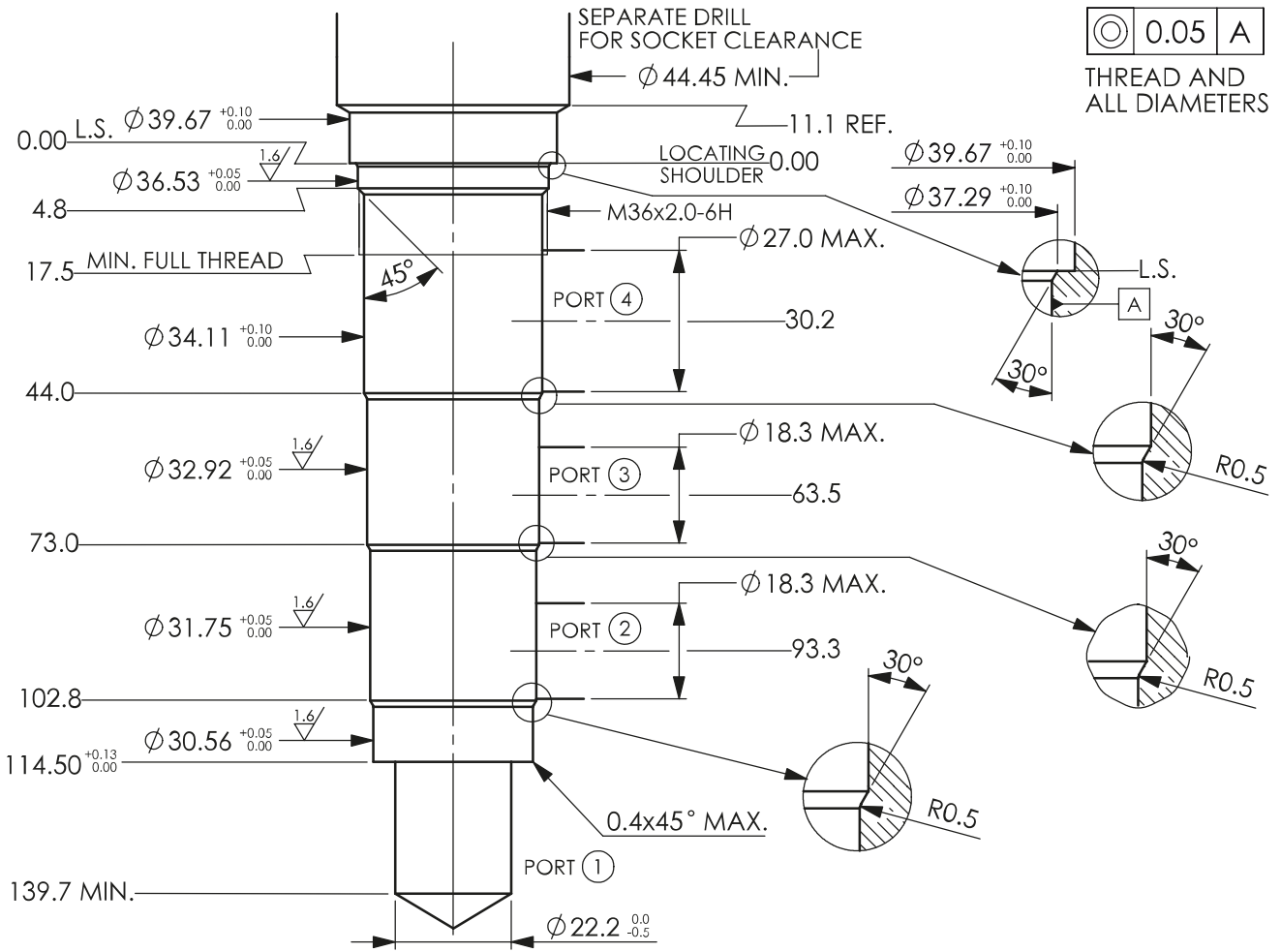
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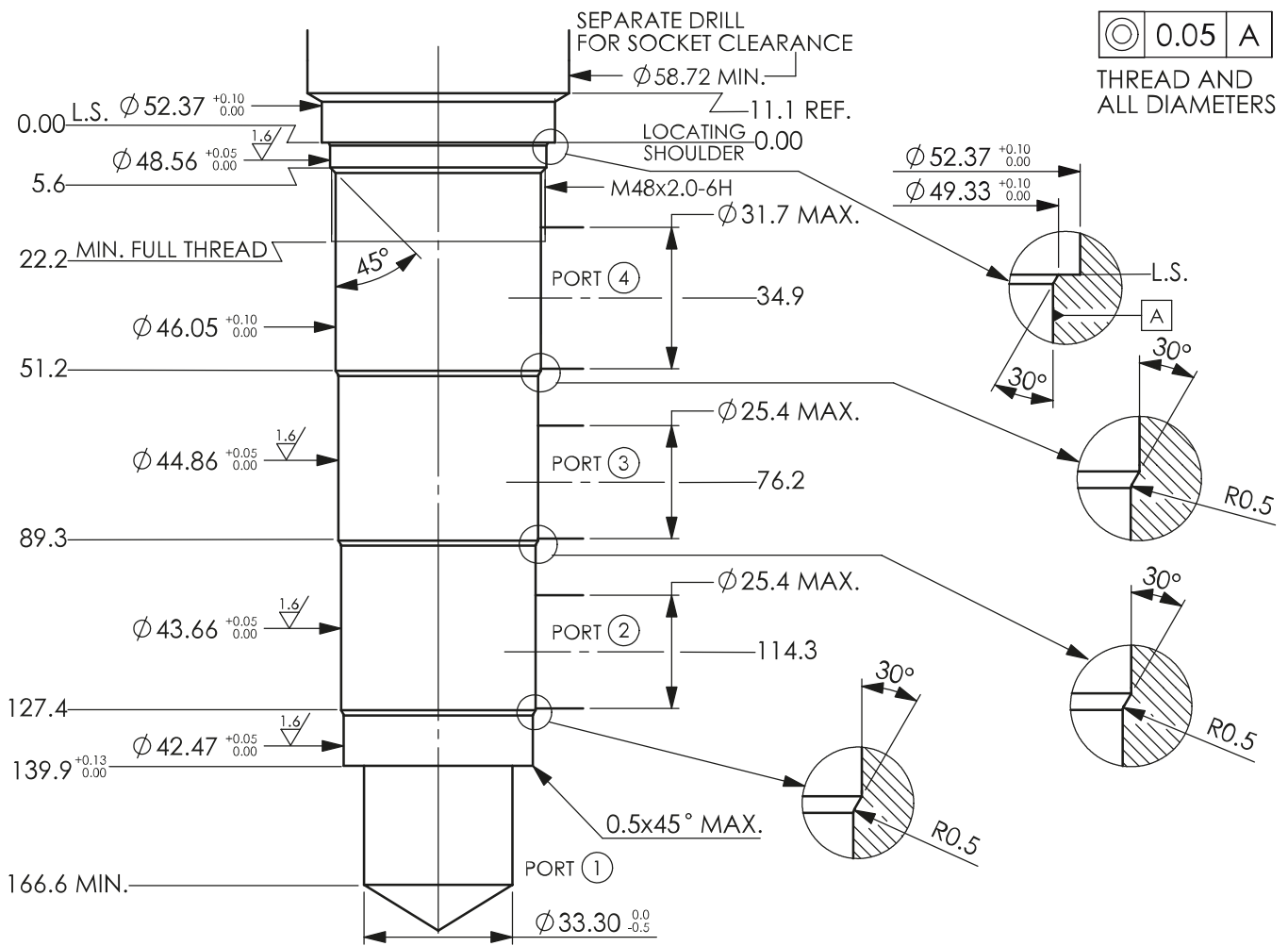


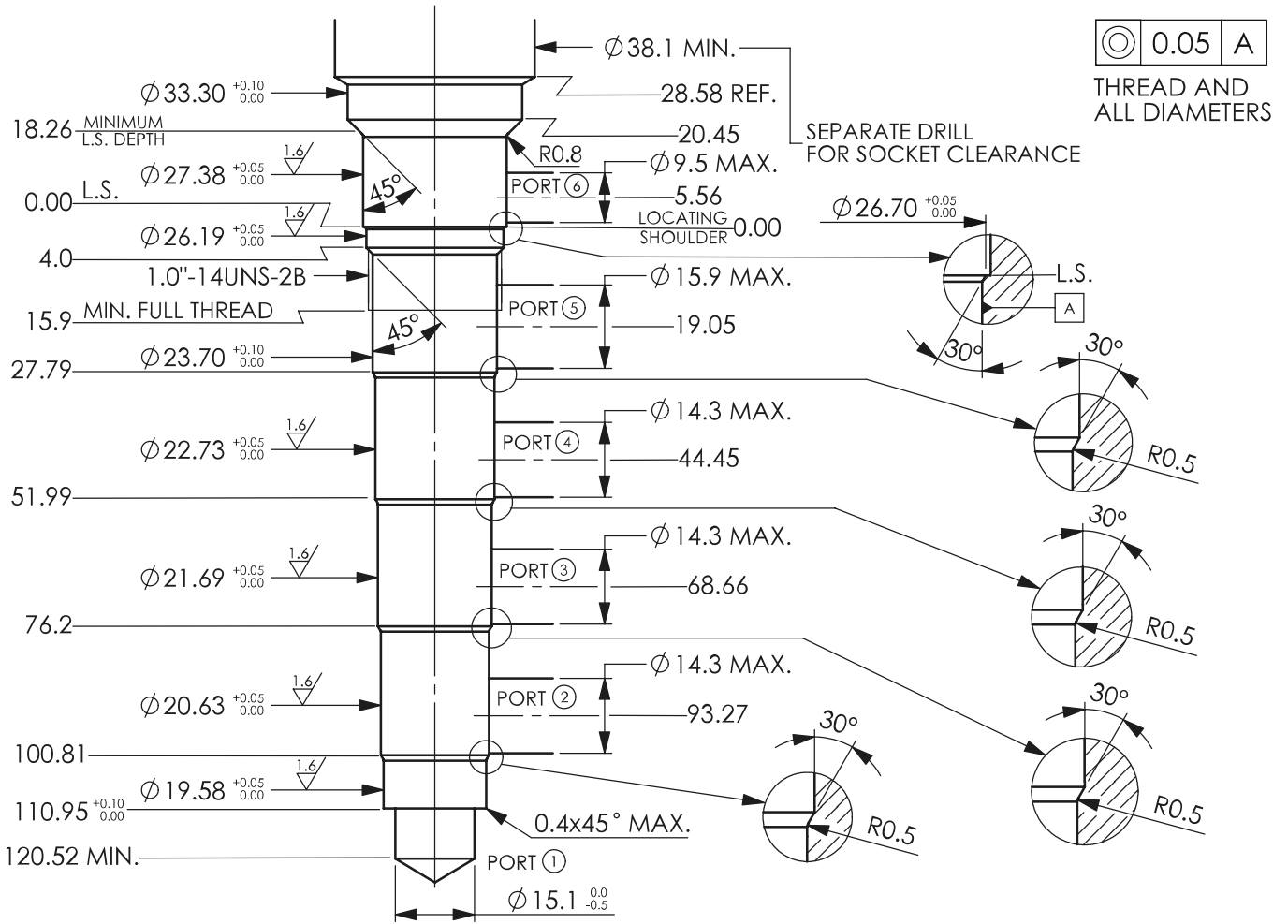
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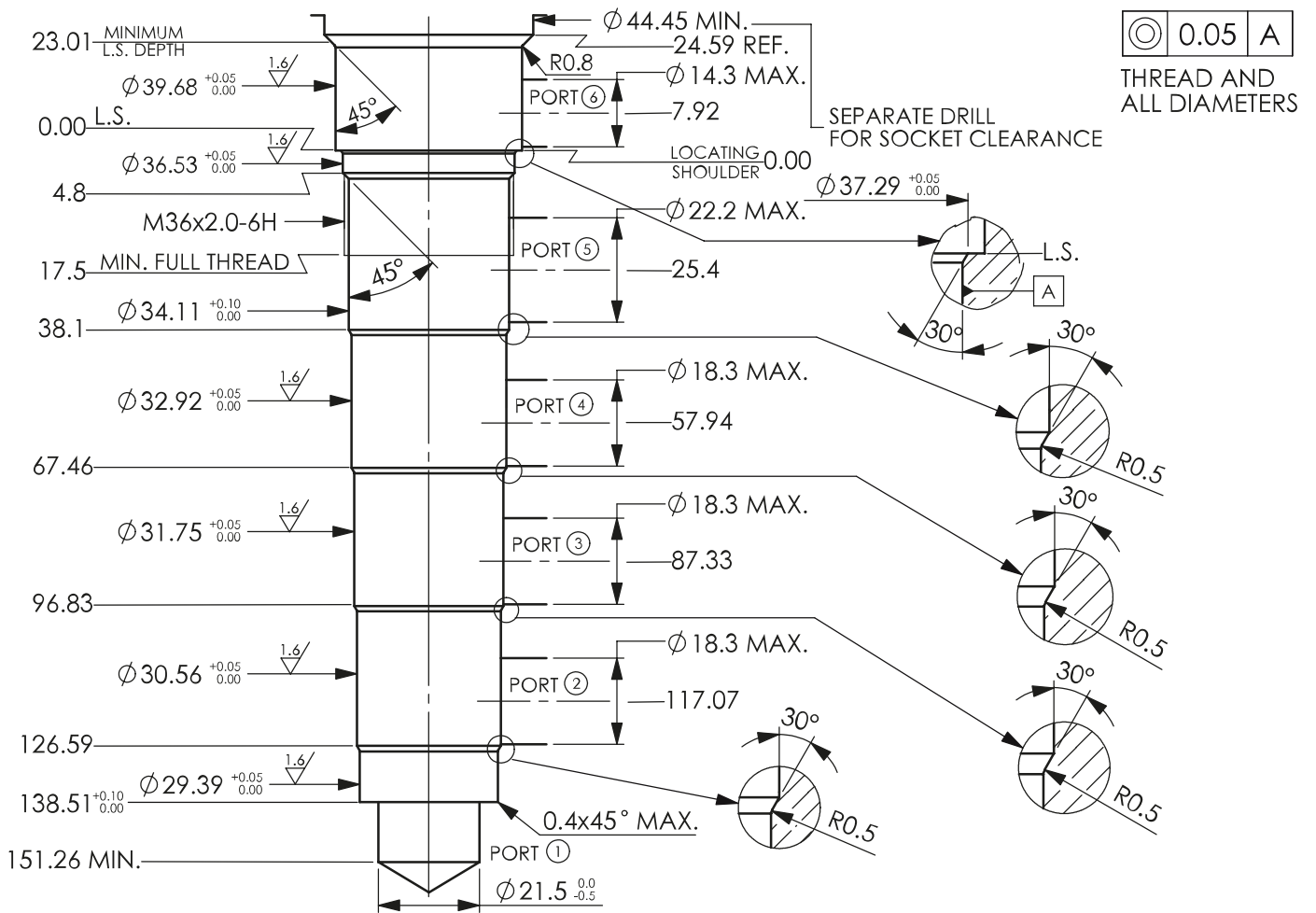


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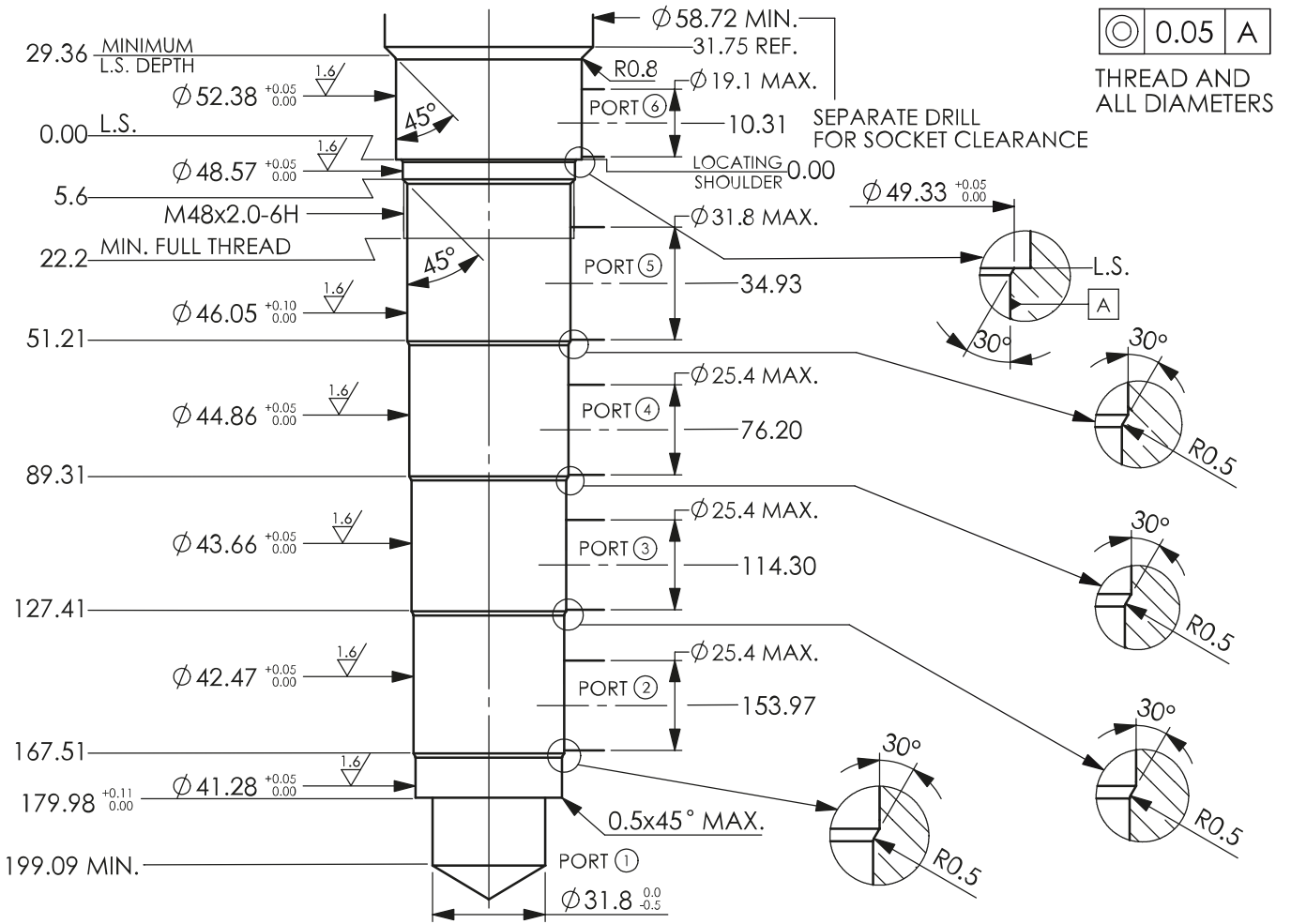




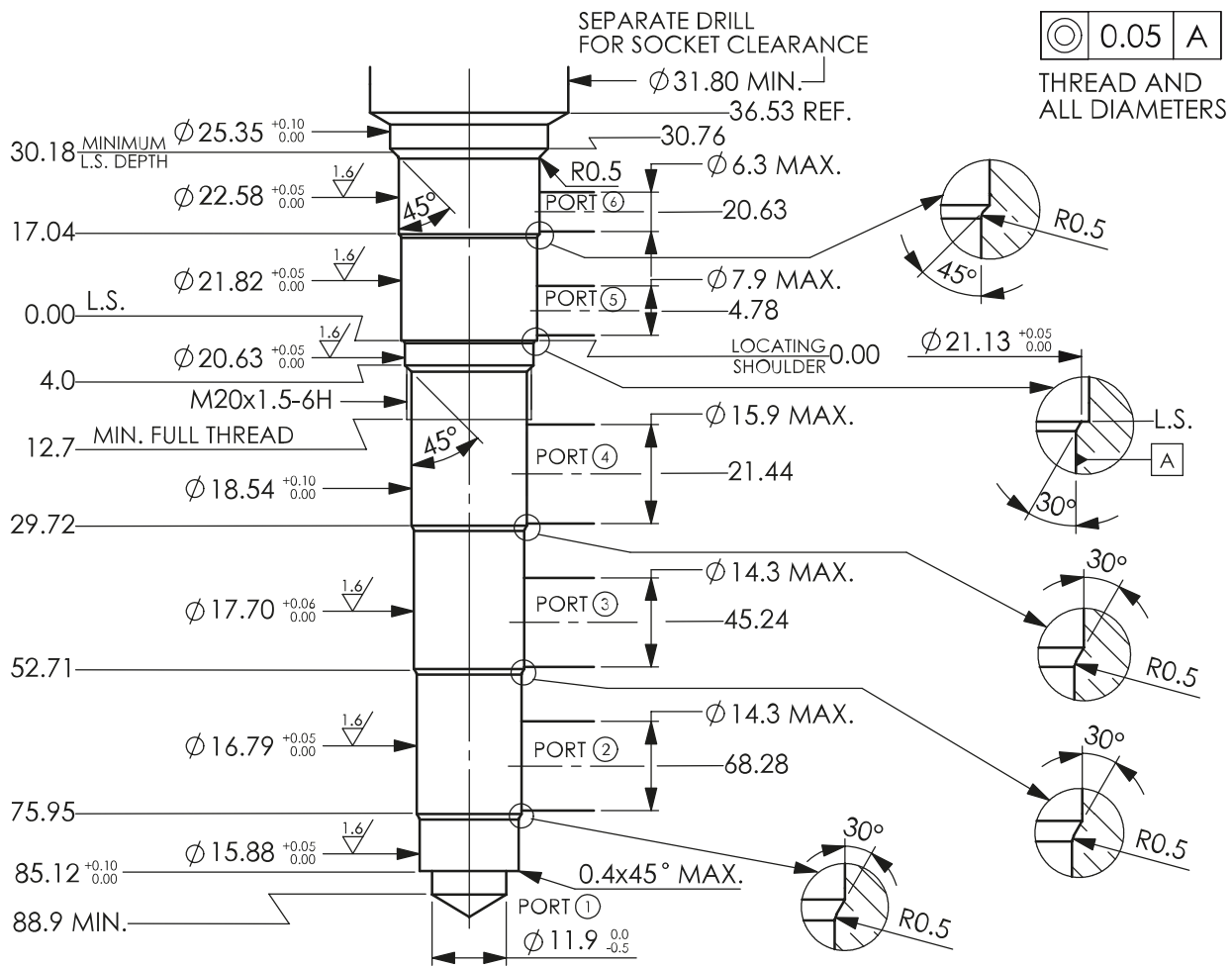
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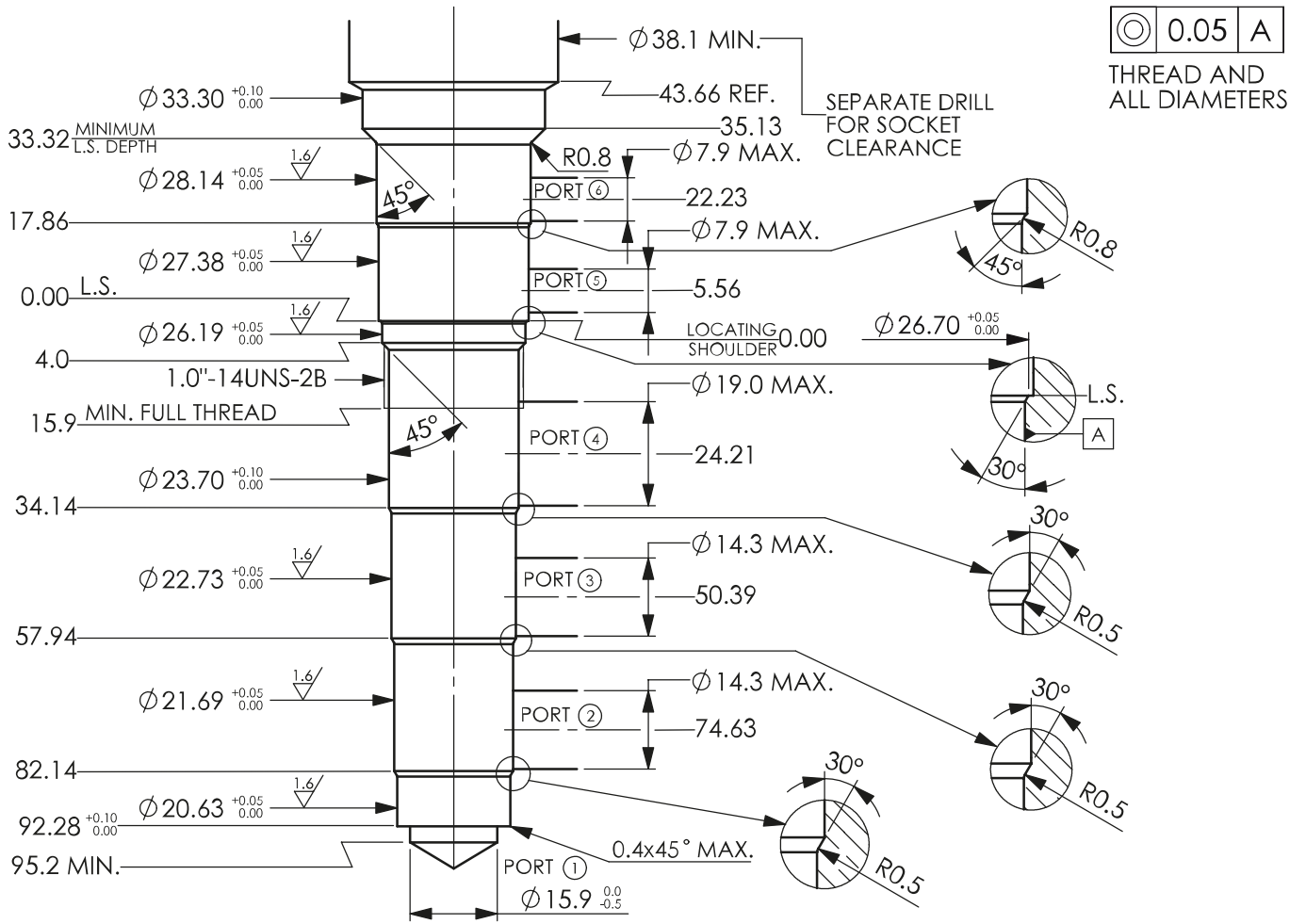


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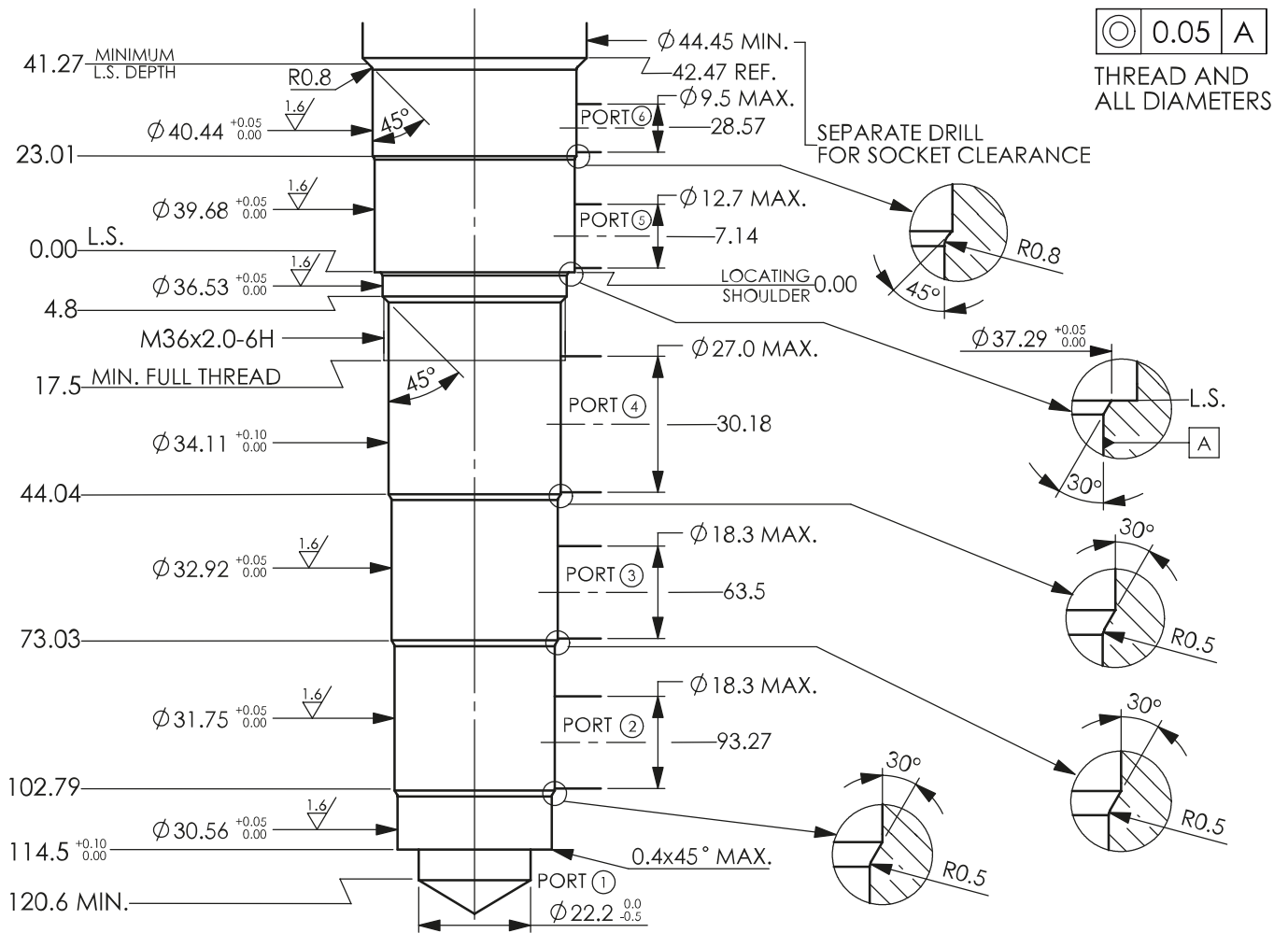


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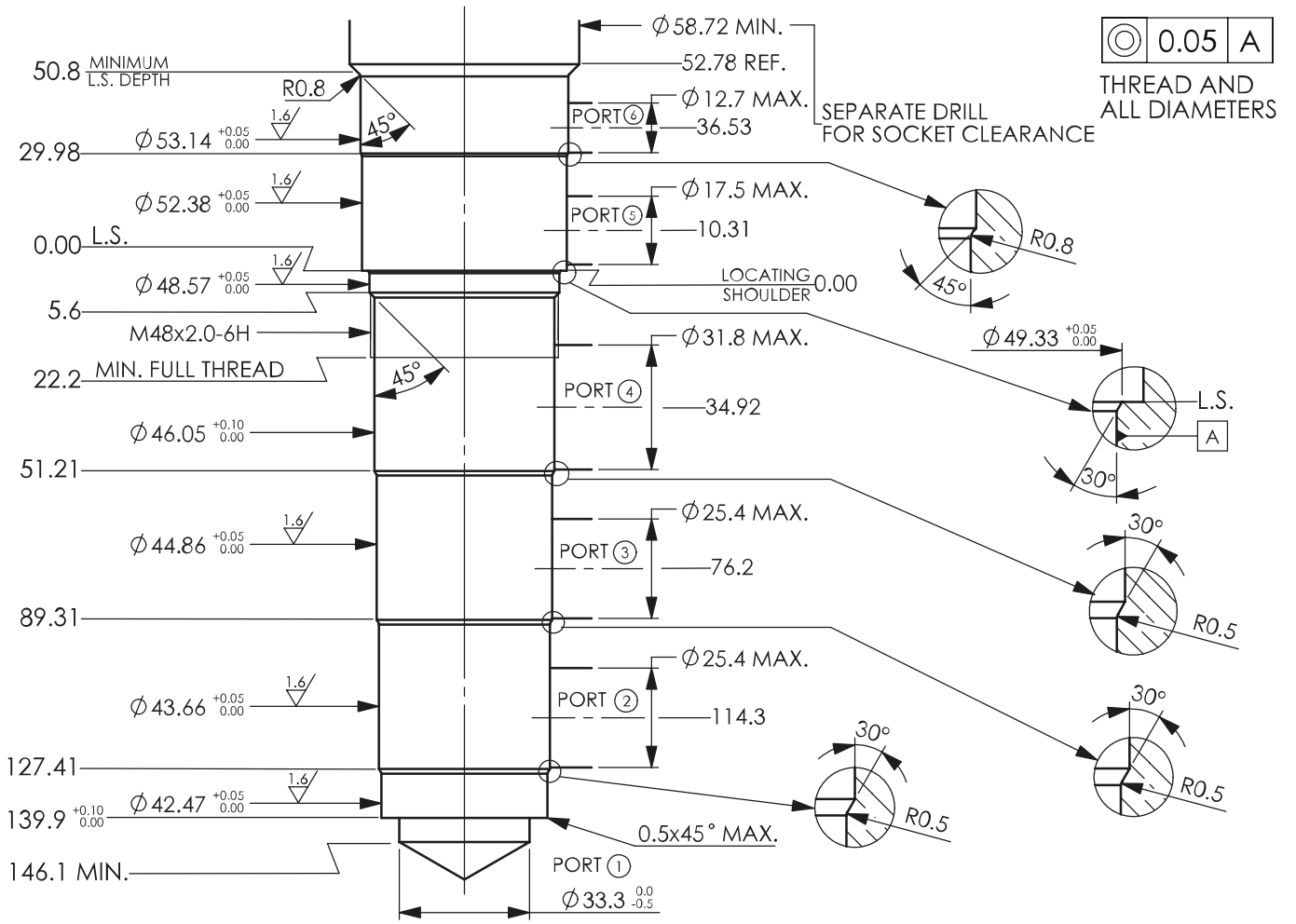




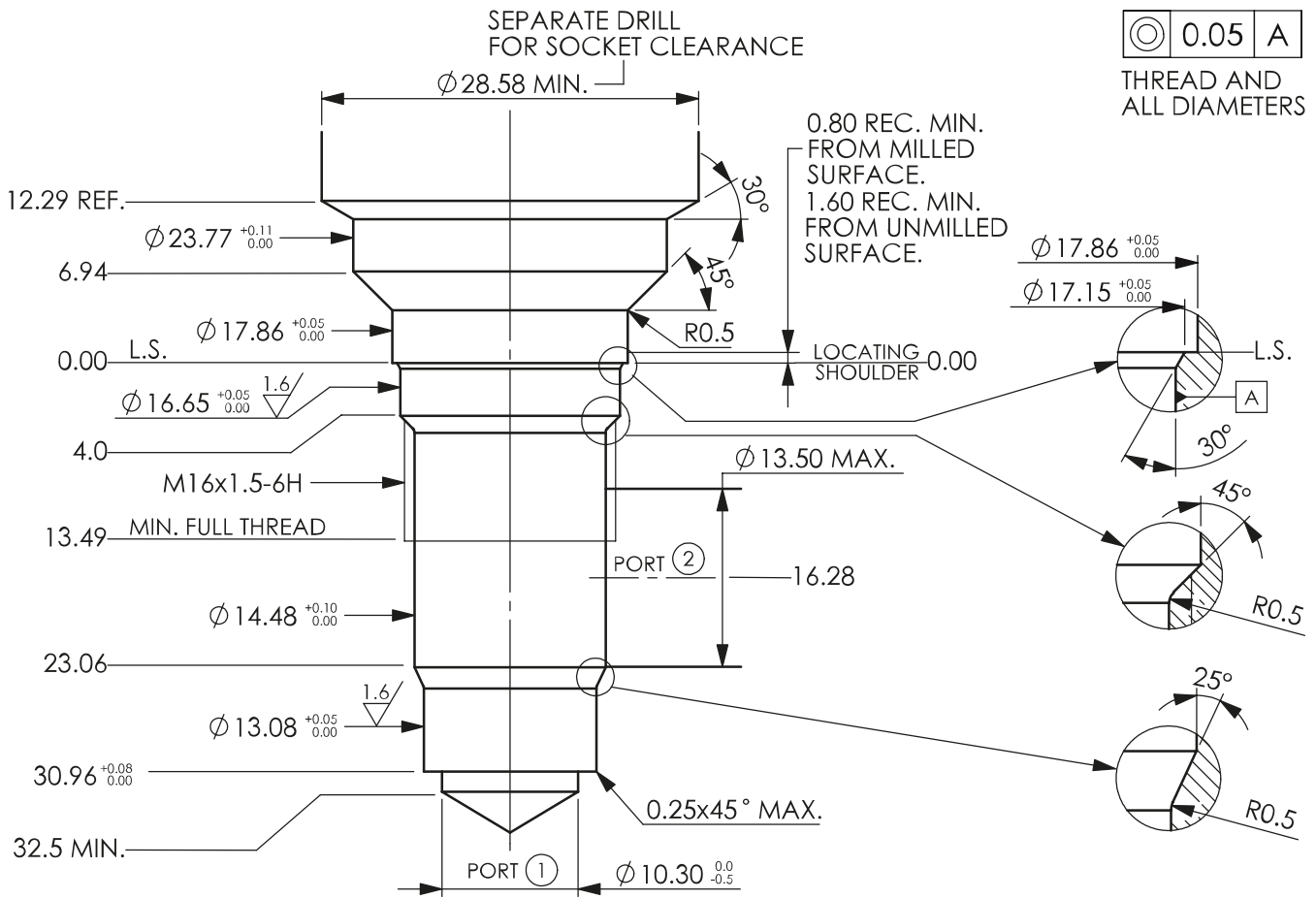
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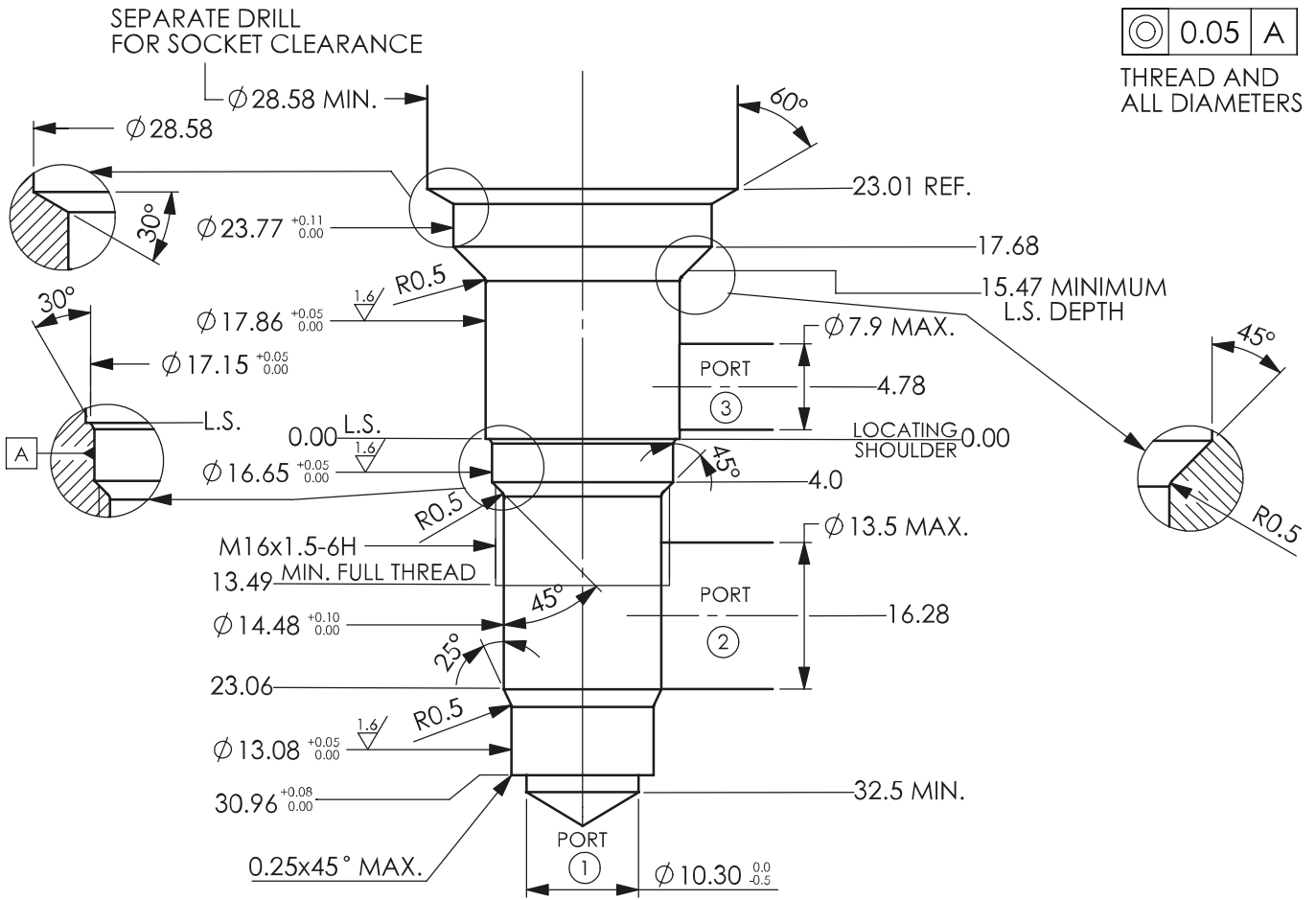


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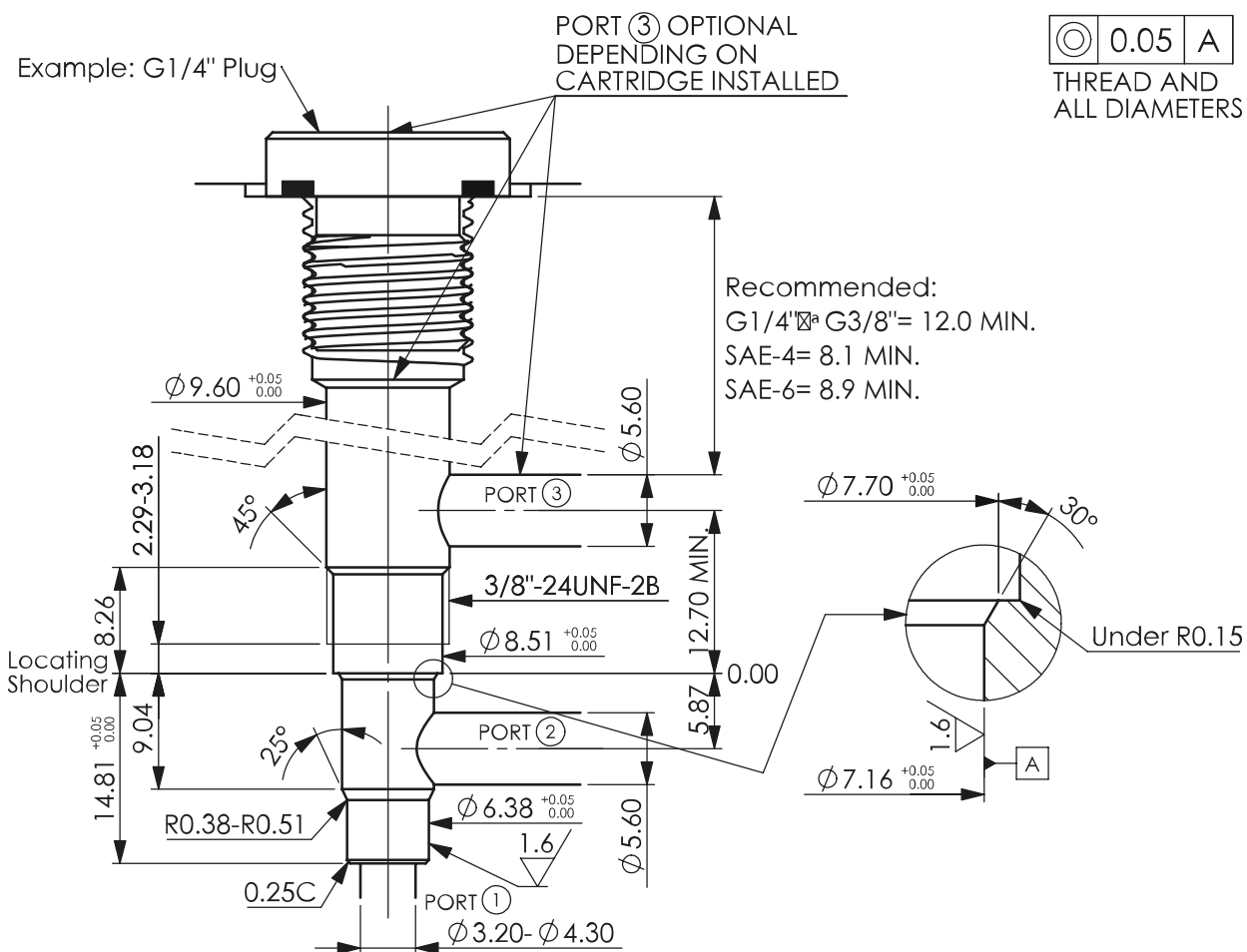


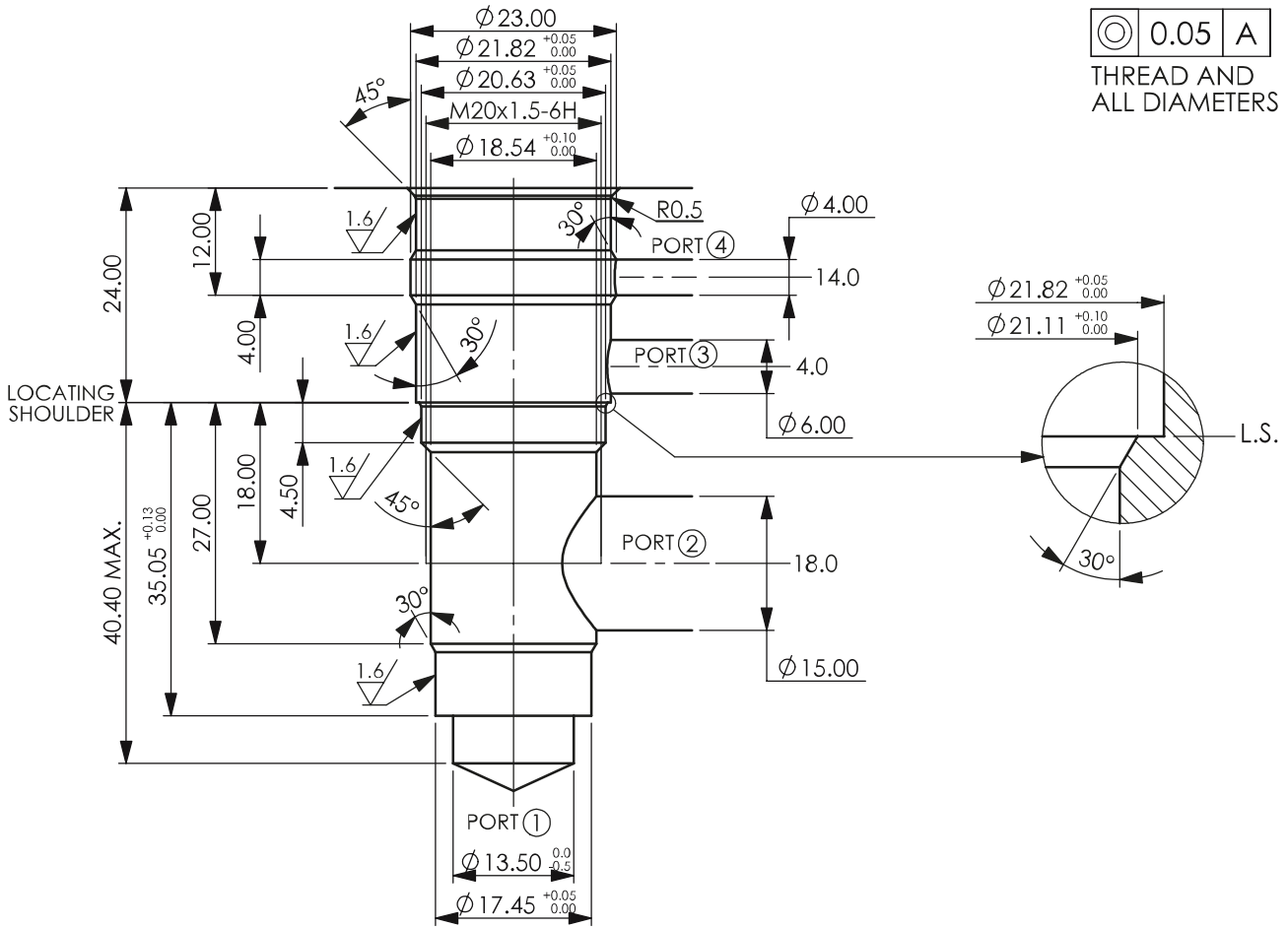
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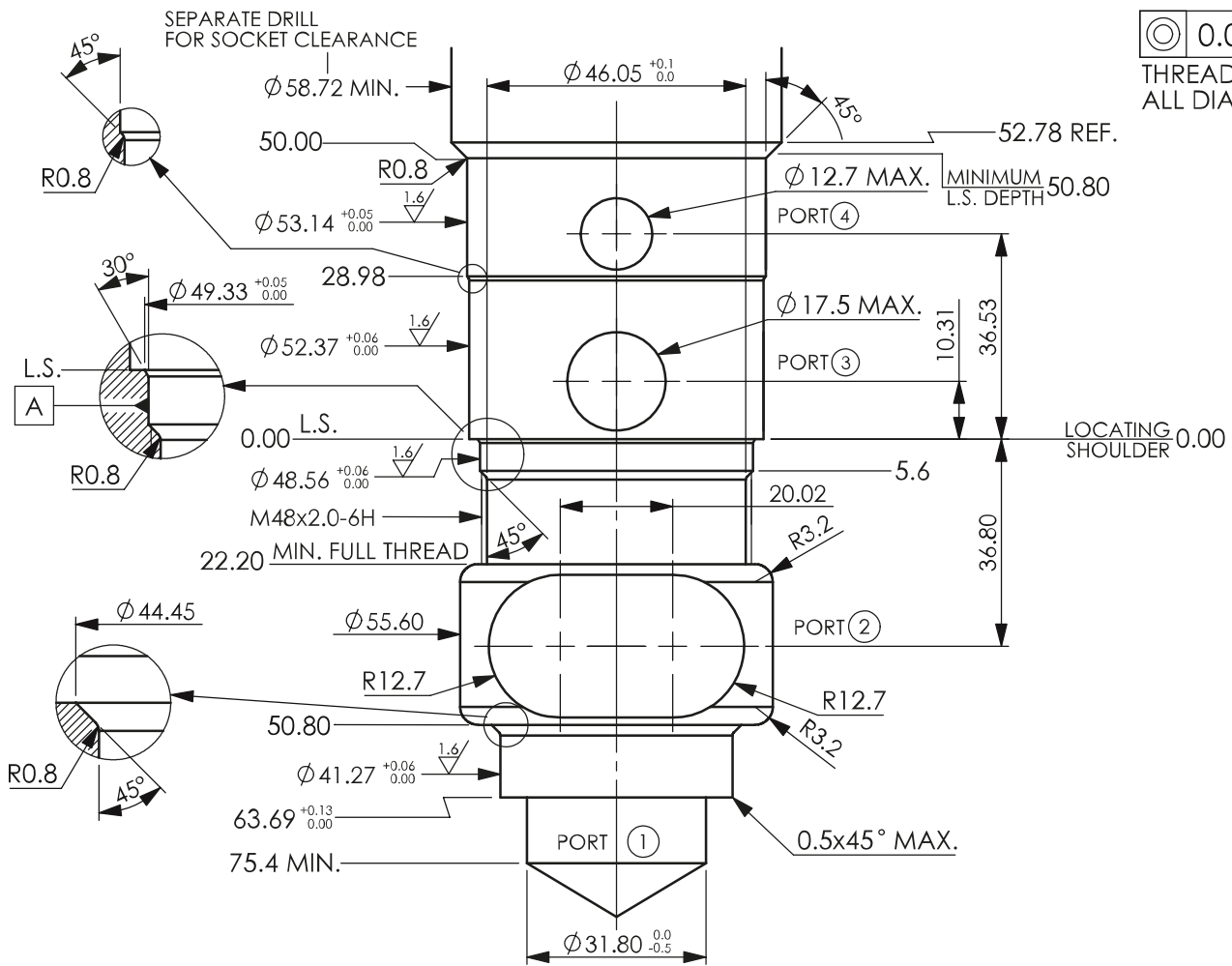


T-382A

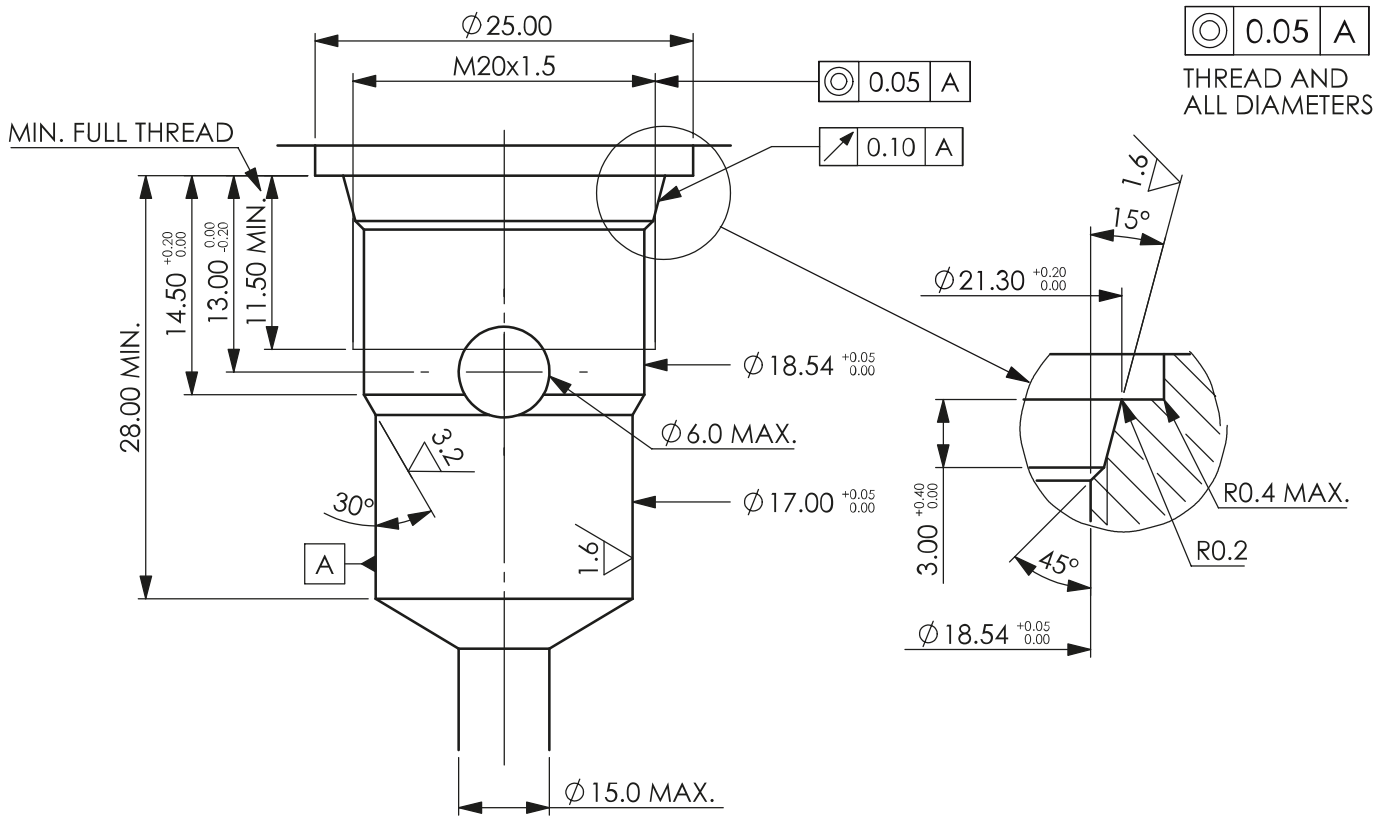




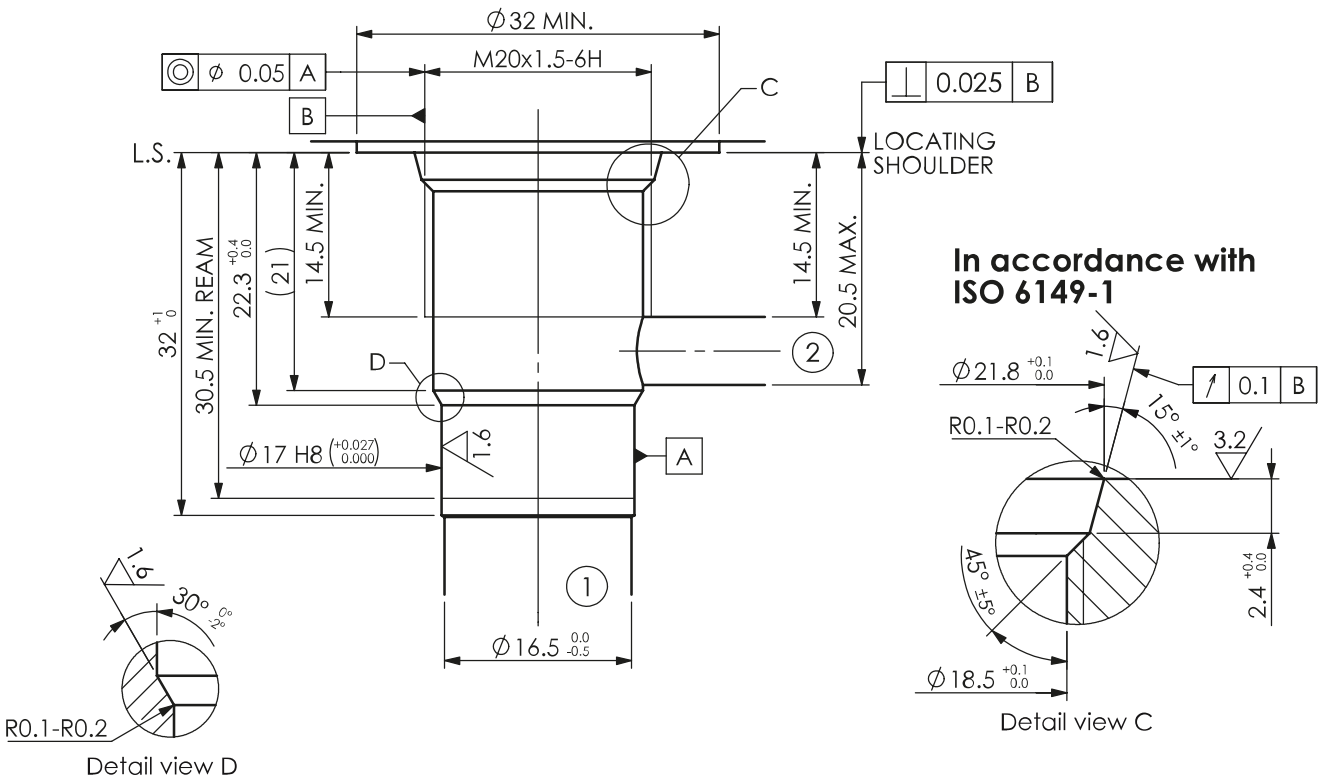
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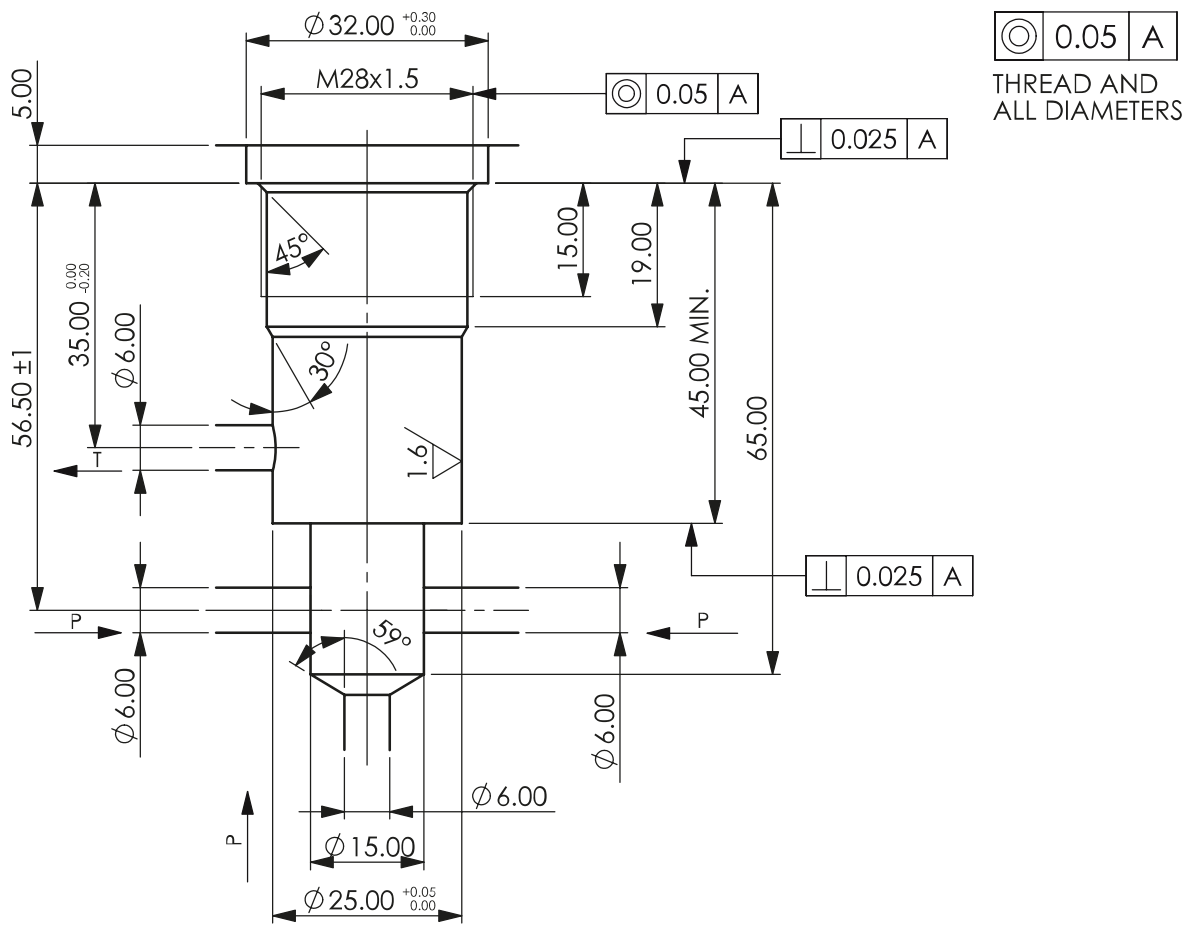
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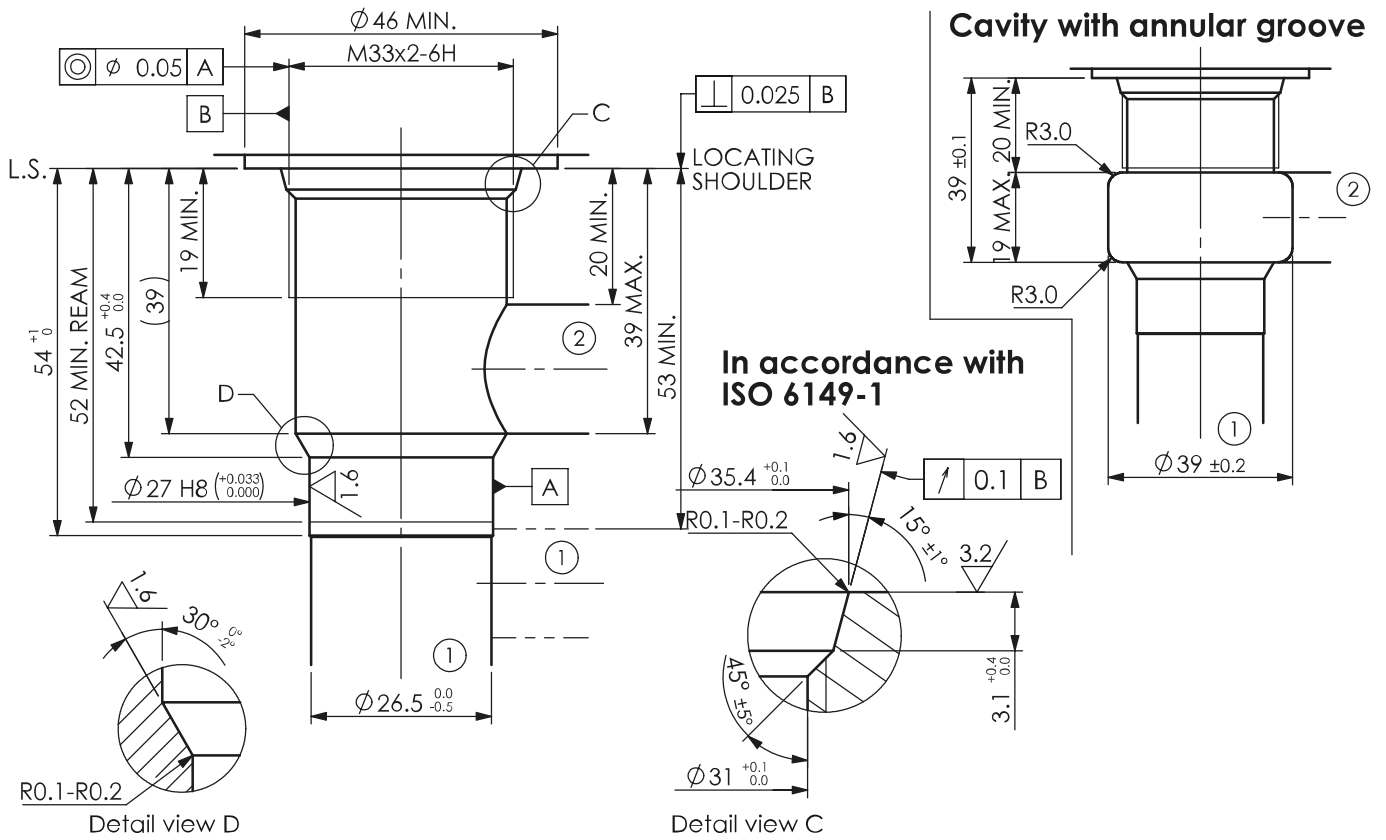


20MC-2

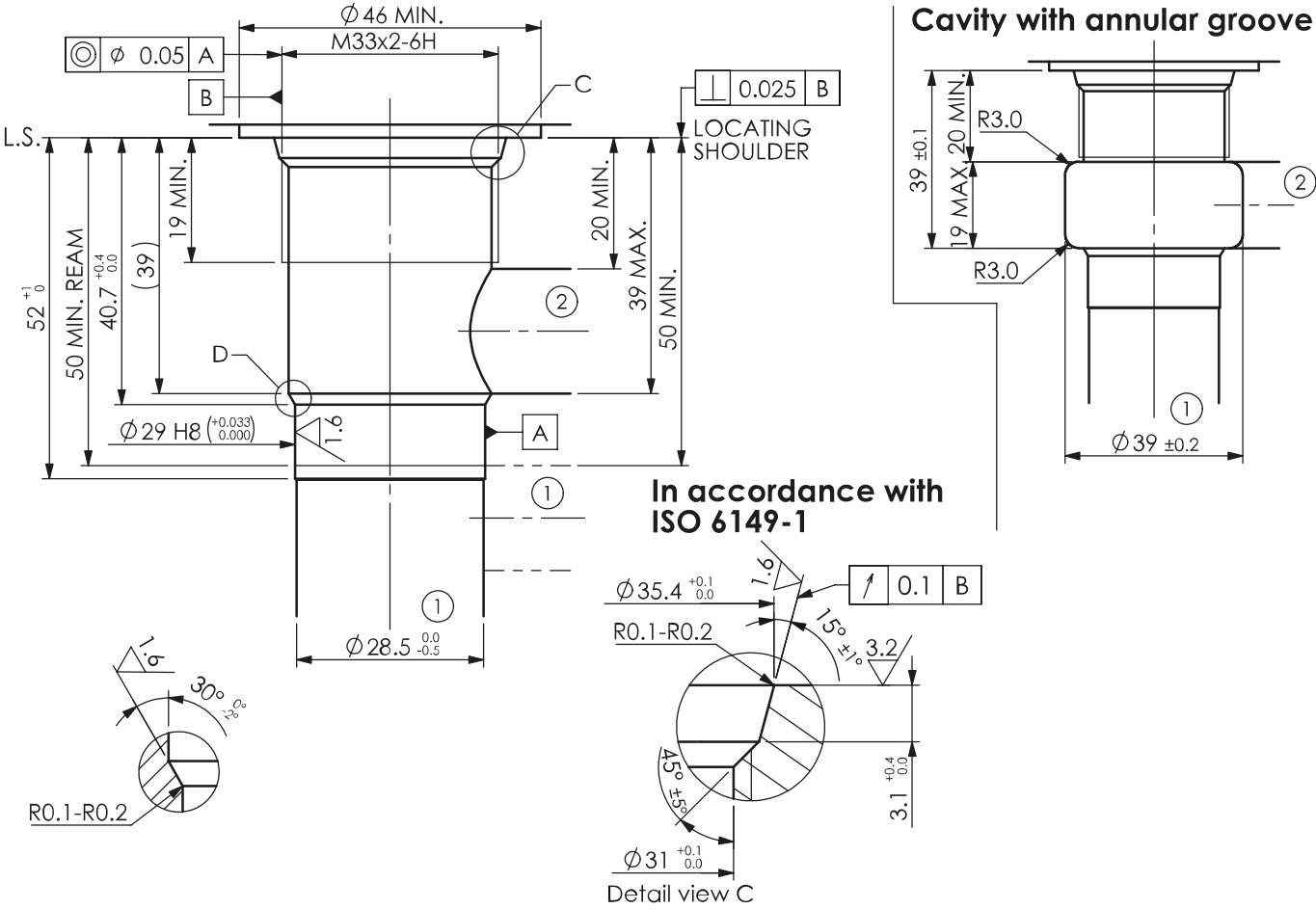


28M-2

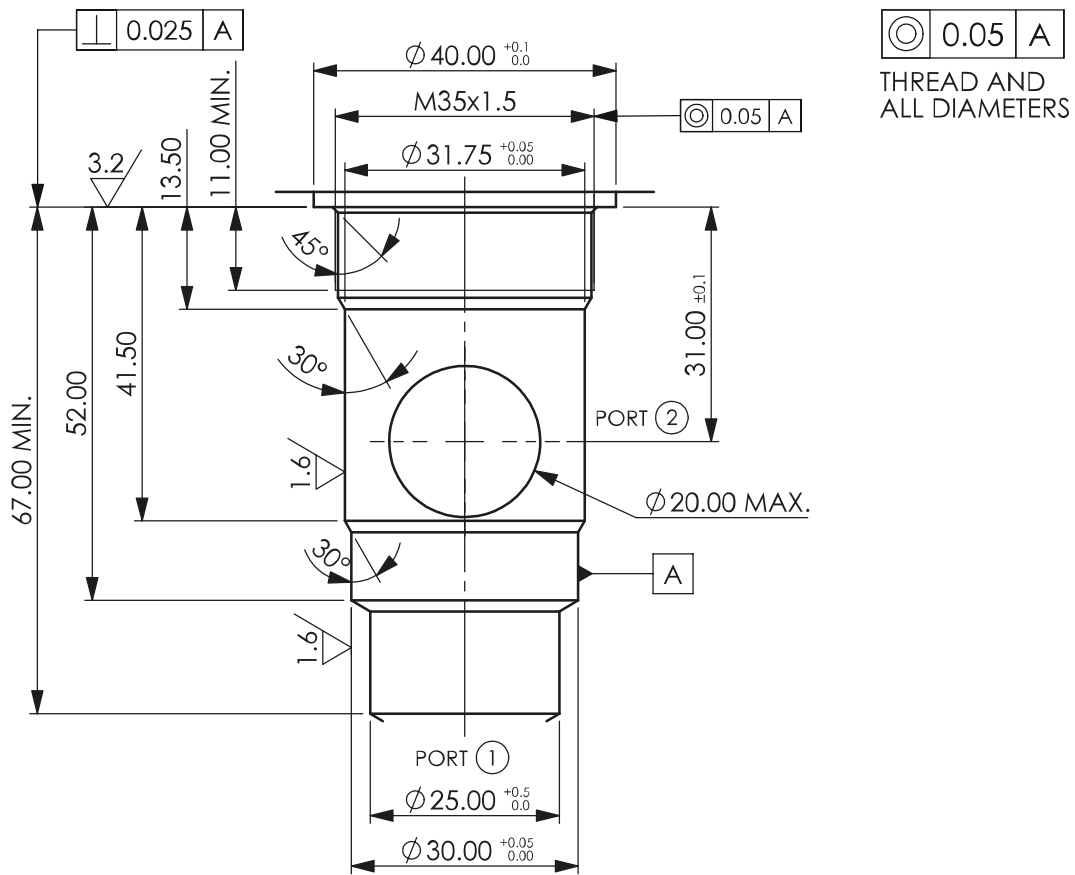


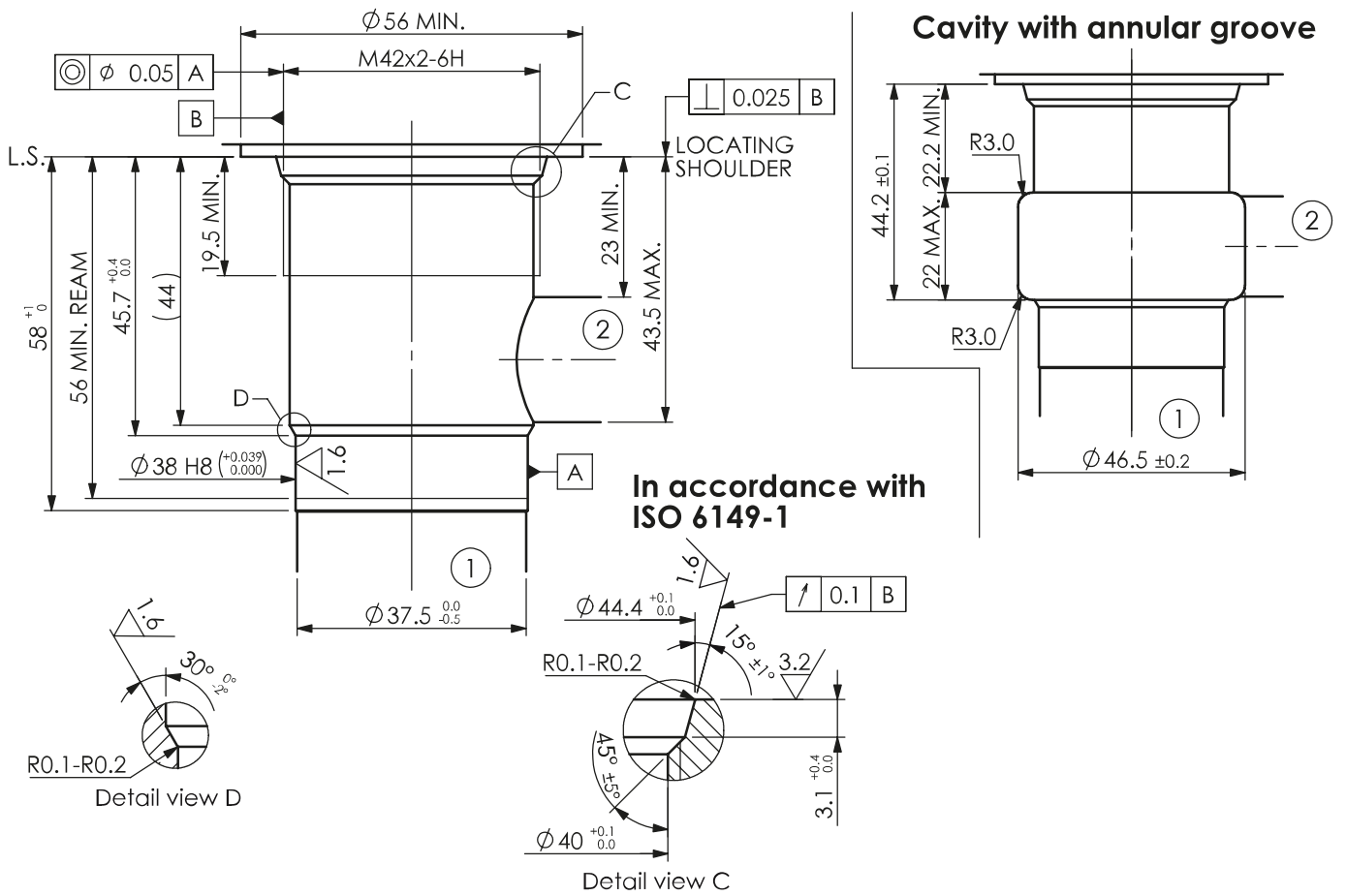


33MC-2



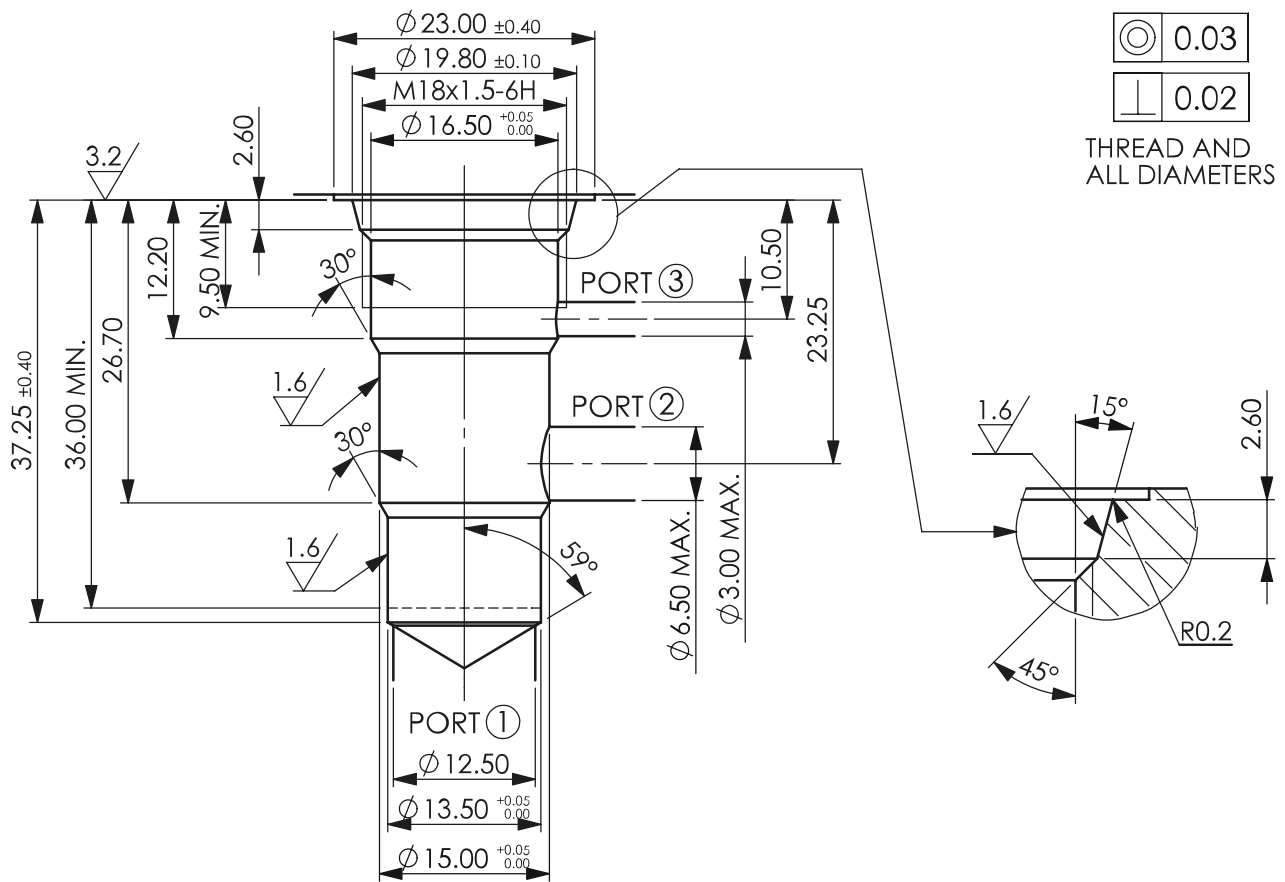
35MV-2

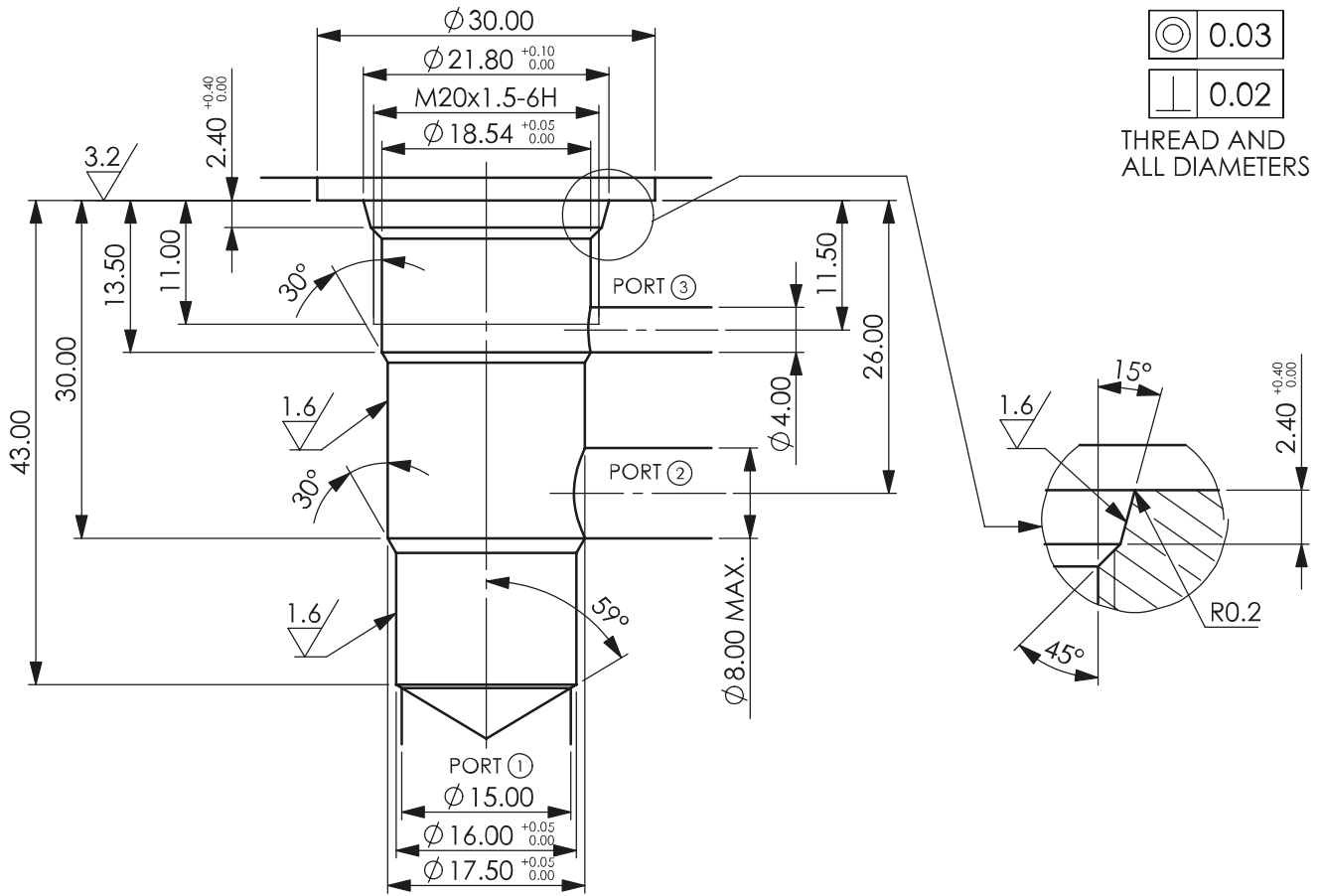




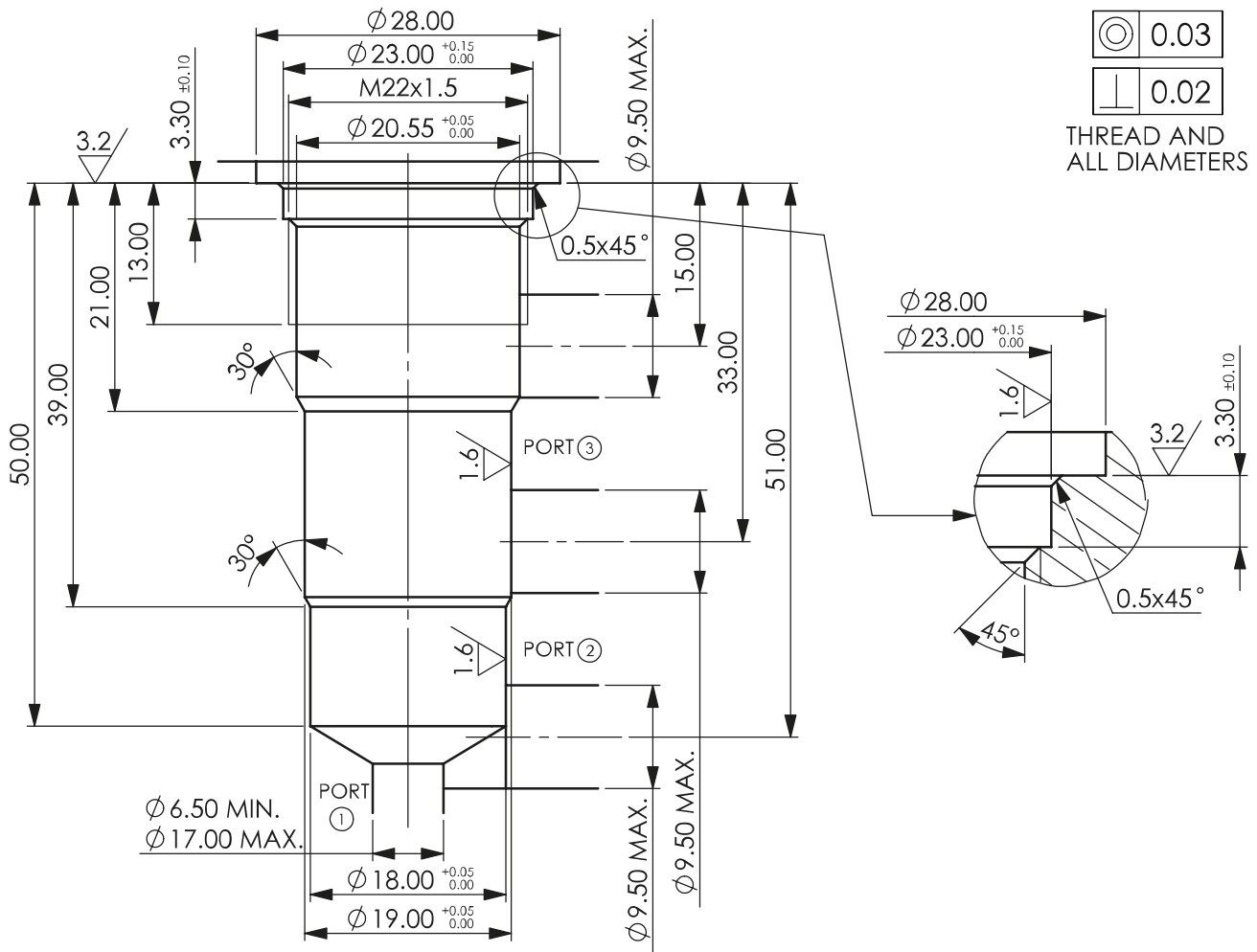
..-3

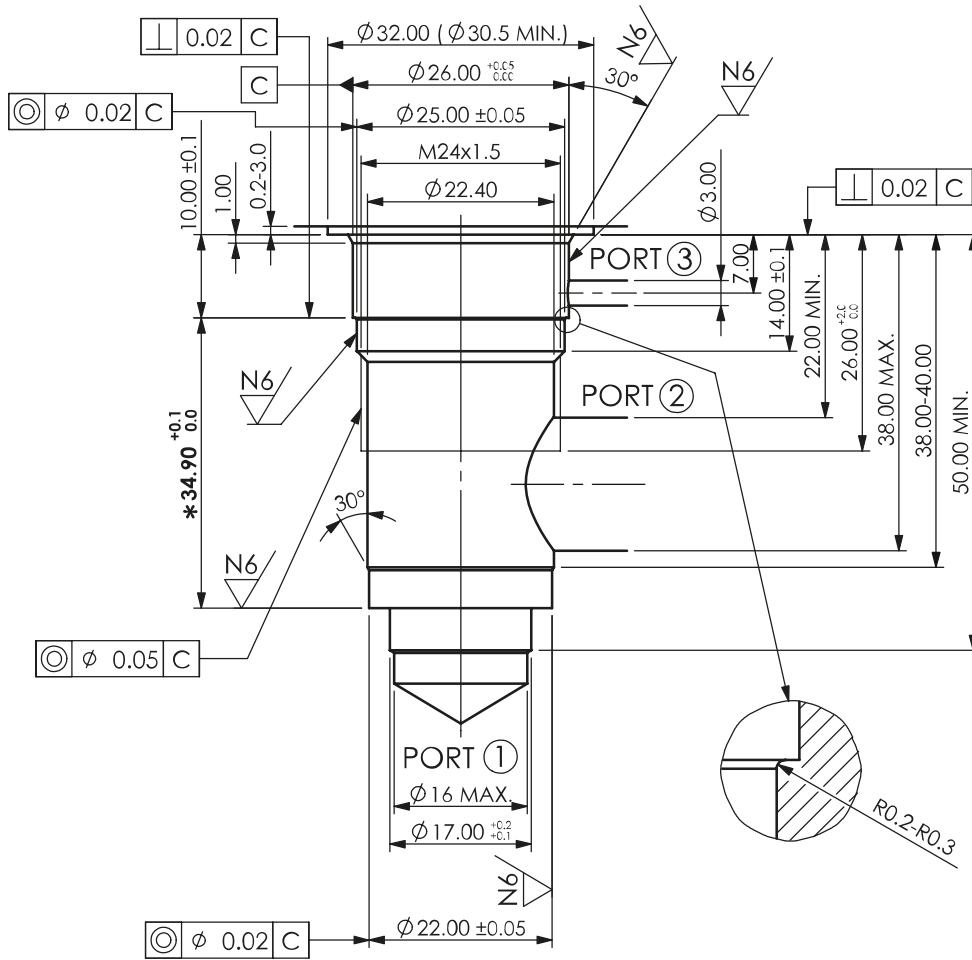
18MS-3





22M-3





N8/ (N6/)

	N8/	N6/
Ra (µm)	3.2	0.8
Rz (µm)	16	6.3
Rmax (µm)	25	10

27M-3

