



8th International Abilympics

Vocational Skills Contest

V6. CAD-Machinery

1. Task Assignment

Survey the LEVER STORAGE drawing to create a part (1) drawing and title block, and then complete the drawing.

2. Allocated Time

3 Hours 30 Minutes

3. Requirements

Contestants shall save their completed (or uncompleted) file on the USB, and submit with the printed drawing. Details are as below.

<Details>

The drawing shall accord with the below ISO standards.

ISO 15 : 2011 Rolling Bearings – Radial Bearings – Boundary Dimensions, General Plan

ISO 68-1 : 1998 ISO general purpose screw threads - Basic profile - Part 1: Metric screw thread
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ISO 128-20 : 1996 Technical drawings - General principles of presentation - Part 20: Basic conventions for lines

ISO 128-21 : 1997 Technical drawings - General principles of presentation - Part 21: Preparation of lines by CAD systems

ISO 128-22 : 1999 Technical drawings - General principles of presentation - Part 22: Basic conventions and applications for leader lines and reference lines.
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ISO 128-24 : 1999
Technical drawings - General principles of presentation - Part 24: Lines on mechanical engineering drawings

ISO 128-30 : 2001
Technical drawings - General principles of presentation - Part 30: Basic conventions for views

ISO 128-34 : 2001
Technical drawings -- General principles of presentation -- Part 34: Views on mechanical engineering drawings

ISO 128-40 : 2001
Technical drawings - General principles of presentation - Part 40: Basic conventions for cuts and sections

ISO 128-44 : 2001
Technical drawings - General principles of presentation - Part 44: Sections on mechanical engineering drawings

ISO 129-1 : 2004
Technical drawings - Indication of dimensions and tolerances - Part 1: General principles

ISO 286-1 : 2010
Geometrical Produce Specifications (GPS) – ISO code system for tolerances on linear sizes – Part 1: Basis of tolerances, deviations and fits

ISO 1101 : 2004
Geometrical Product Specifications (GPS) - Geometrical tolerancing - Tolerances of form, orientation, location and run-out

ISO 1660 : 1987
Technical drawings - Dimensioning and tolerancing of profiles

ISO 2203 : 1973
Technical drawings - Conventional representation of gears

ISO 3098-0 : 1997
Technical product documentation - Lettering - Part 0: General requirements

ISO 4762 : 2004
Hexagon socket head cap screws

ISO 5455 : 1979
Technical drawings - Scales

ISO 5456-1 : 1996
Technical drawings – Projection methods – Part 1: Synopsis

ISO 5462-2 : 1996
Technical drawings – Projection methods – Part 2 : Orthographic representations

ISO 5457 : 1999
Technical product documentation - Sizes and layout of drawing sheets

ISO 5459 : 1981
Technical drawings - Geometrical tolerancing - Datums and datum-systems for geometrical tolerances

ISO 6410-1 : 1993
Technical drawings - Screw threads and threaded parts - Part 1: General conventions

ISO 6410-3 : 1993
Technical drawings - Screw threads and threaded parts - Part 3: Simplified representation

ISO 8015 : 1985
Technical drawings - Fundamental tolerancing principle

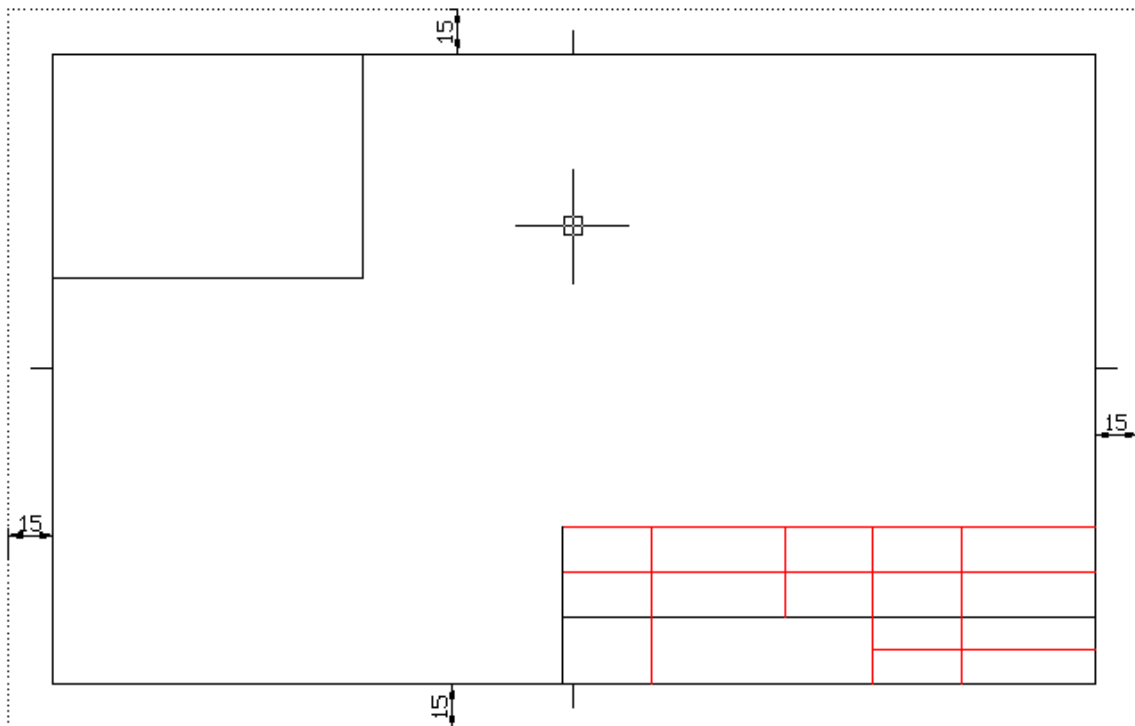
ISO 8826-1 : 1989
Technical drawings - Rolling bearings - Part 1: General simplified representation

ISO 8826-2 : 1994
Technical drawings - Rolling bearings - Part 2: Detailed simplified representation

ISO 13567-1 : 1998
Technical product documentation - Organization and naming of layers for CAD - Part 1: Overview and principles

- ② Shape of the front view shall accord with the task assembly drawing, the top view of part(1) shall have a cross-sectional drawing along the line of X-Y-Z, and hatching is necessary on the cutting section.
- ③ The right side view shall have a cross-sectional drawing along the line X-X, but shall only be half drawn for balance.

- ④ All that is necessary for the work plan, such as the dimensions and tolerances, geometrical tolerances and surface texture shall be drawn in accordance with the standards of ISO.
- ⑤ Notes in the drawing shall be written in English. Parts, names, materials, symbols and others shall be written according to the given task drawing.
- ⑥ The final product shall be saved on USB as a file, then plotted in a scale of 1:1 on an ISO standard A3 paper and printed. The drawing may only be printed once during the completion of task. However, contestants are permitted to edit their submitted work if the judges agree that errors due to external factors exist.
- ⑦ Additional time shall not be provided, and time consumed due to printing shall not be included in the allocated time.
- ⑧ The size of the drawing shall be set according to ISO A3(420x297mm), page borders shall be 15mm wide from the edges of the page, and a center mark shall be drawn. (Refer to below drawing)



- ⑨ A hidden area, which will be covered during evaluation, shall be created in the upper left corner of the drawing. The following table shall be created to insert the contestant no. and contestant name in English.

-2011 SEOUL- 8th International Abilitympics Vocational Skills Contest		50
Contestant No.		
Contestant Name		
Judge Signing		
70		

- ⑩ Please refer to below for the size and form of the title block & part list, which shall be inserted in the bottom right hand corner of the drawing.

	20	30	20	20	30
25					
	NO	Part Name	Metal	Q'ty	Remarks
	Descri- -ption	LEVER STORAGE		Scale Project	1 : 1 3rd

- ⑪ Judges may specify the thickness of lines, size of letters and colors. However, if there are no specific indications, contestants shall refer to below.

Thickness of Line	Size of Letter	Color	Use
0.5 mm	5.0 mm	White Cyan	Contour line, Exterior line, individual notes etc.
0.35 mm	3.5 mm	Yellow	Hidden line, dimension symbols, notes etc.
0.25 mm	2.0 mm	Red Green	Hatching, dimension lines, dimension assistant lines, centre lines, tolerance symbols etc.

- ⑫ Patchwork that displays the cutting plane of the cross-sectional view is not necessary.
- ⑬ Symbols in front of each dimension represent the following supplementary symbols.
- Φ: Diameter
- R: Radius
- SR: Radius
- C: Chamfer
- ⑭ When inputting the dimensions, each size of the dimension (height of letter) shall be 3.5mm, and a 3mm-long arrow shall be used to mark the end of the dimension line.
- ⑮ Figures shall be drawn in actual size, according to the task drawing.





4. List of Materials to be Provided

No.	Material	Picture	Specification	Unit	Qty per person	Note
1	Plotter paper		A3 (297mm × 420mm), 65g	Sheet	2	
2	USB storage device		2GB	Each	1	
3	Writing supplies		Pencil, eraser, marker, etc.	Set	1	
4	Ruler		300mm	Each	1	
5	Protractor		180 degrees	Each	1	
6	Calculator		Portable	Each	1	

5. List of Tools to be Brought : N/A

6. List of Facilities Installed at Contest Site

No.	Equipment	Picture	Specification	Unit	Qty	Note
1	Table		1,200mm × 750mm	Each	1 per contestant	
2	Software		AutoCAD 2011	Each	1 per contestant	
3	Software		Windows7			
4	Static plotter (for A1)		Color ink jet	Each	1	Joint-use
5	Personal Computer		Core i5 3.2G, 2G RAM, 320G HDD	Each	1 per contestant	
6	Monitor		19" LCD	Each	1 per contestant	
7	Mouse		PS/2 or USB type (Wheel)	Each	1 per contestant	
8	Laser printer (for A3)		A3 (Black & White)	Each	1	Joint-use

No.	Equipment	Picture	Specification	Unit	Qty	Note
9	Vernier Calipers		M1 or digital attachable type	Each	2	For judge
10	Assisting worktable			Each	1	For judge
11	Transparent tape		Width 50mm	Each	1	Joint-use
12	Binding string		Black	Bundle	1	Joint-use

※ Contestants who wish to use a different type of CAD program, other than the one provided, are requested to prepare the program themselves. However, contestants are to receive approval from the judges in advance.

7. Evaluation Criteria

No.	Main Items to be Evaluated	Marks
1	Drawings	50
2	Dimensions, Tolerances, Geometrical Tolerances, Surface Texture	40
3	Title Block, Part List, Note, Visual quality, etc.	10
Total		100