



7th International Abilympics

Vocational Skills Contest

V17. Furniture Making - Advanced Course

1. Task

Fabricate the product (flower stand) specified in the drawing according to the following instructions and specifications.

2. Allocated Time

Maximum 6 hours

(Standard time: 5 hours 30 minutes)

3. Instructions

- a. Contestants should first confirm that the dimensions and quantities of the provided materials are those specified in 5.
- b. The tools and machinery to be used are limited to those specified in 6. and 7. Templates for marking materials, rulers and scales for positioning, etc., cannot be used for the competition.
- c. Contestants who find supplied materials with significant defects shall notify the judge before the start of the competition. If the judge agrees that the defects are significant, the supplied materials will be replaced. Contestants may also ask for materials to be replaced after the start of the competition, but this will incur a deduction.
- d. Contestants are not allowed to lend or borrow tools, etc., during the contest.
- e. Contestants must notify the judge when they finish the task.

4. Specifications

- a. A miter and through multiple dovetail shall be used for the joint between top 1 and top 2.
- b. A haunched tenon shall be used for the joint between the front and back legs and the batten.
 - A hollow chisel mortise may be used just for this mortising.
 - A tenoning attachment of a circular sawing machine press may be used for the longitudinal sawing of the haunched tenon, but the abutting joint sawing must be done by hand.
- c. A two-way abutting joint shall be used for the joint between the legs and the brace for both the front and back legs.
- d. A doweled joint ($\phi 10\text{mm}$) shall be used for the joint between the right and left legs and the batten.
- e. A doweled joint ($\phi 10\text{mm}$) shall be used for the joint between the leg rail and the connecting rail.
- f. Use wood screws to connect the top to the legs (Use a bench drill press or electric drill to make the tap drill holes for the wood screws).
- g. A plane finish shall be used. Sandpaper shall not be used.
- h. For scoring reasons, leg end bevel is not done. Other than legs, light-chamfering shall be done.
- i. The start of final assembly of the top 1 and top 2, leg hole areas, and tenon areas (Batten, leg rail) is to be done after each parts have been completed (trial assembly and adjustment) and inspected by judges.
- j. Adhesive is to be used for the final assembly.

5. Materials to be provided on site

Unit: mm

	Items	Dimensions			Qty	Remarks
		Length	Width	Thickness		
1	Top 1	610	302	20.5	1	Lauan
2	Top 2	120	302	20.5	1	Lauan
3	Front legs	500	47	28.5	2	Lauan, pre-tapered
4	Back legs	490	47	28.5	2	Lauan
5	Batten (side)	200	47	22.5	2	Lauan
6	Batten (front)	460	48	22.5	1	Lauan
7	Batten (back)	460	47	22.5	1	Lauan
8	Leg rail	250	32	22.5	2	Lauan
9	Connecting rail	465	47	20.5	1	Lauan
10	Wood screw	45	Nominal diameter: 4.5		8	Philips head (Philips flat head wood screws)
11	Adhesive				Small amount	Polyvinyl acetate emulsion
12	Writing tools				1 set	For marking

6. Items to be brought by each contestant (examples)

	Items	Dimension or Standard (mm)	Qty	Remarks
1	Double toothed saw	240 - 270	1	Replaceable blade type allowed
2	Backsaw	240 - 240	1	Same as above
3	Tenoning saw	210 - 240	1	Comparable tool allowed
4	Hand plane	Medium, finish	1 each	
5	Small plane	About 30	1	
6	Corner plane	About 36	1	
7	Jointing plane		1	
8	Mortice chisel	9 - 36	As needed	
9	Framing chisel	9	1	
10	Firmer chisel	9 / 24	1 each	
11	Paring chisel		1	Harpoon chisel is also allowed
12	Ruler	About 1000 - 600 (1mm increments)	1	A convex ruler is also allowed
13	Square	About 450 - 500	1	A large wooden one is also allowed
14	Calipers	200 1/20 accuracy	1	
15	Square	About 200	1	
16	Diagonal scale	About 200	1	
17	Guiding ruler for sawing	Perpendicular abutting joint	1	
18	Marking knife		1	
19	Line-marking gauge		1	
20	Line-marking gauge	9.5	1	

	for tenon (chisel)			
21	Long line-marking gauge	About 500	1	
22	Hammer	Medium	1	A nail hammer is also allowed.
23	Sash clamp	600 / 750	4 each	
24	Parallel jaw clamps	150 - 200	2 pairs	An F clamp is also allowed
25	Drill	For dowel holes	As needed	That match the dowel diameter
26	Drill	For wood screw pre-drilled holes	As needed	A counter boring drill is also allowed
27	Screwdriver	Philips head: For nominal diameter 45	1	An electric screwdriver is also allowed
28	Dowel	φ10mm	As needed	
29	Jig for hollow chisel mortising machine		1	For making mortises
30	Board to protect the material when hammering	Can also be used when clamping	As needed	
31	Putty knife		As needed	A brush can also used
32	Whetstone		1	
33	Oil	For preventing tool's rust	1	

Note 1: Contestants are requested to prepare a list of tools to bring by themselves and present it to the organizer for approval in advance. The organizer reserves the right not to allow the use of any tools that are considered to give the contestant an unfair advantage.

Note 2: If contestants consider unnecessary, they need not bring any tools among those listed in 6.

7. Equipment, tools, etc., to be prepared on site

	Items	Dimension or Standard (mm)	Quantity
1	Workbench for standing	About 1800x900x700	1 per contestant
2	Workbench for sitting	About 1000x300x100	1 per contestant
3	Planer table	About 1000x100x30	1 per contestant
4	Sawhorses	About 330×150 2 in one set	1 set per contestant
5	Hollow chisel mortising machine	For 9.5 with hollow chisel	1 (For making square leg mortise cut)
6	Circular sawing machine press	With tenoning attachment	1 (For leg rail tenon and for cutting lower edge of legs: circular saw φ355mm, 405mm, vertical sawing and horizontal sawing, 1 each)
7	Electric drill	Drill with 2.5 and 4.5	1 (Chuck diameter 6.5mm)
8	Bench-top drill press	Drill with 10.0	1 (Chuck diameter 13mm)
9	Side table	About 600x400x700	3

10	Magnet base	Square with about 60kg of suction force	2 (For fixing the bench-top drill press)
11	Hand-held light	100V, 27W, connected to the stand-up workbench	1 per contestant
12	Power outlet	AC100V, 2 plug-ins	1 per contestant (For hand-held light and electric tools)
13	Adhesive brush	Bamboo handle	1 per contestant
14	Bucket	About 10-liter capacity	1 per contestant
15	Plastic pallet		2 (For sharpening tools)
16	Twig broom	Short broomstick	1 per contestant
17	Portable dust collector	3-phase 200V, 2.2kw	1 (Flexible hose: Approx. 4m)

8. Evaluation criteria

The items to be evaluated and allotted marks are as follows.

Items to be evaluated	Maximum marks allotted
Working time	5
Preparation	5
Work accuracy	35
Quality of work	55
Total	100