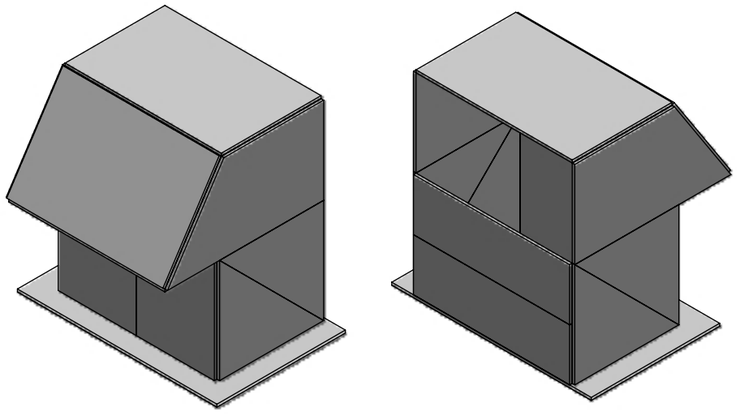
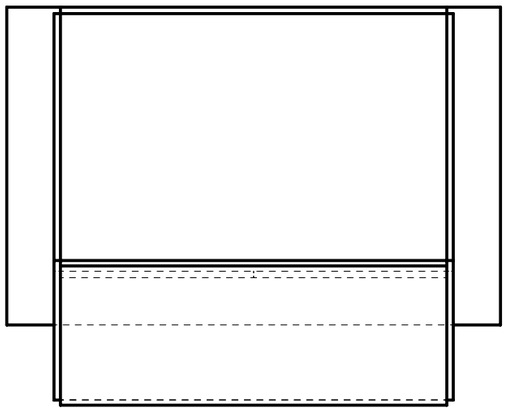
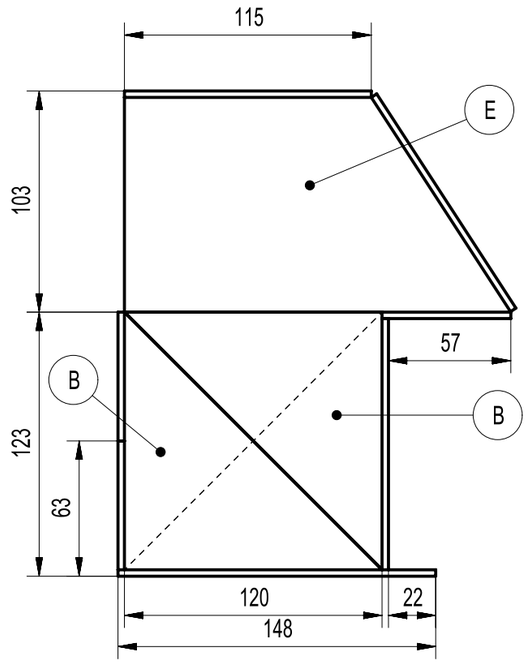


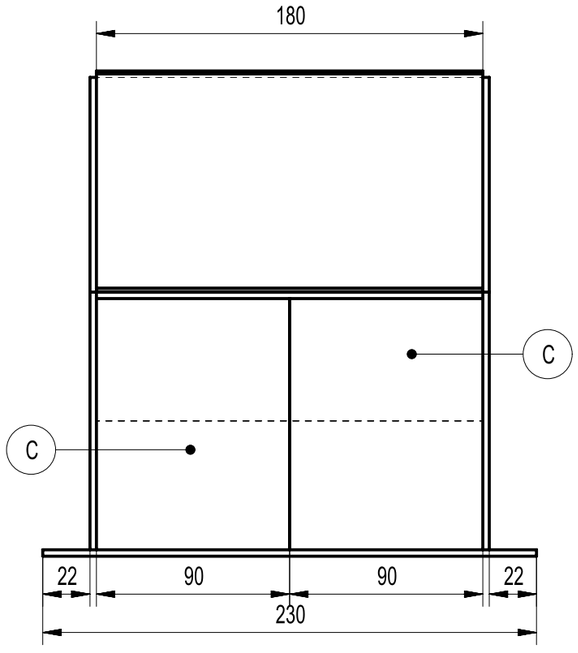


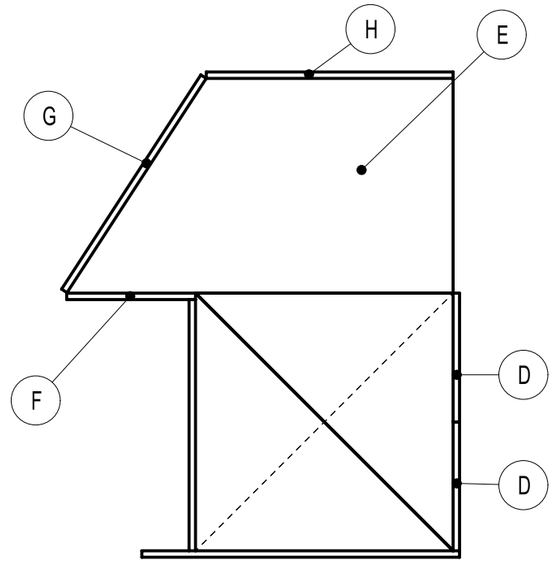
ITEM	QTY	MATERIAL	DESCRIPTION
H	1	AL 4042	180X115X3
G	1	AL 4042	180X119X3
F	1	AL 4042	180X60X3
E	2	AL 4042	180X100X3
D	2	AL 4042	180X60X3
C	2	AL 4042	180X90X3
B	4	AL 4042	120X120X3 Triangular Plate
A	1	AL 4042	230x148x3

PARTS LIST

NOTE
1. WELDING PROCESS:GTAW(TIG)141
2. WELDING POSITION: ALL EXCEPT VERTICAL DOWN
3. COMPLETE ALL WELDING WITH BASE A IN THE FLAT POSITION
4. ALL FILLET LEG LENGTH:3MM+2-0
5. OUTSIDE CORNER WELD RADII:3MM+2-0
6. TIME ALLOWANCE: 3 HRS.





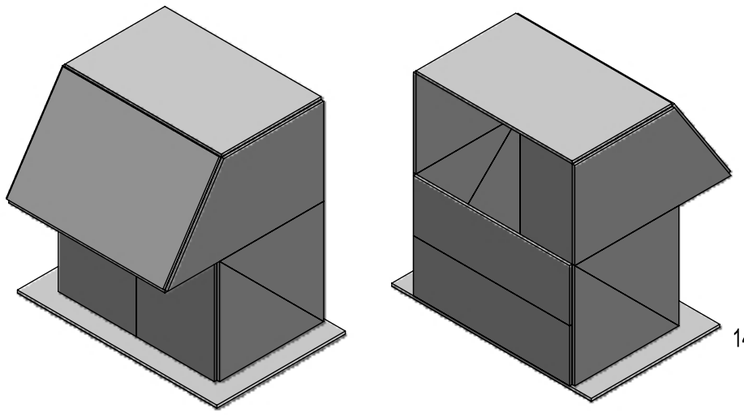


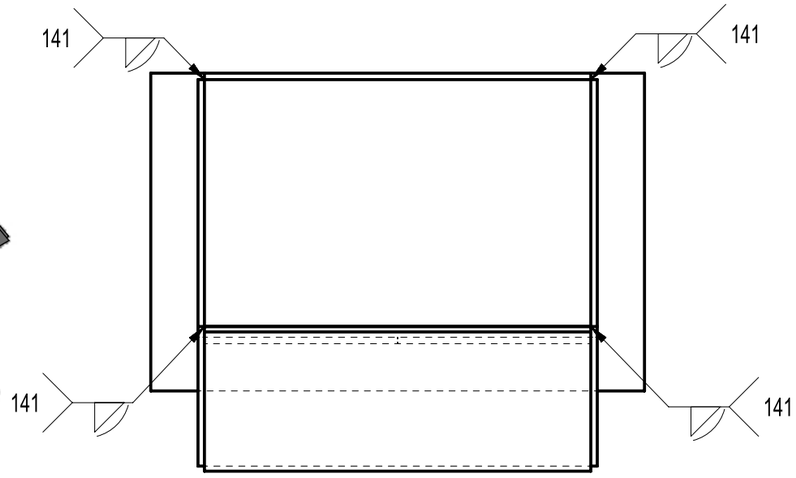
ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

worldskills ASEAN

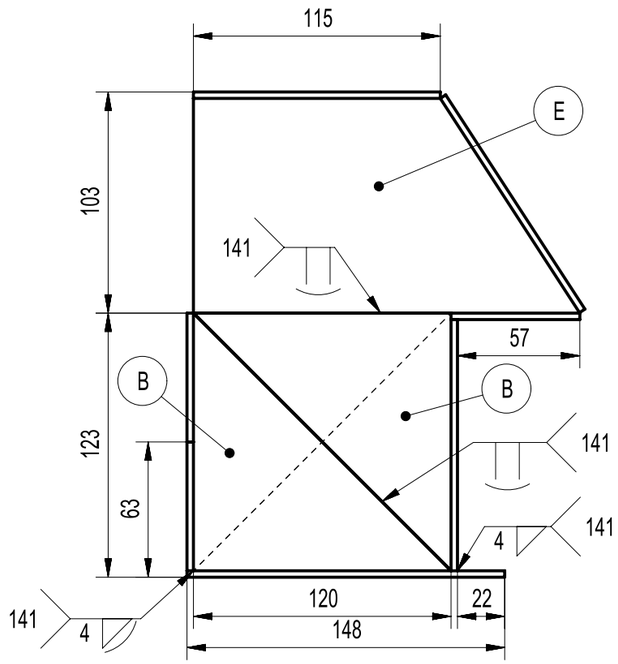
Skill:10, Welding			Projection ISO 5456-2
Scale: N.T.S.	Date :	Paper :A3	
Drawing by: P. Phanupong	Approve: W. Jirawat		Drawing No.TP10_28NSC DAY3_GENERIC
Description:Aluminium Structure - Assembly1			Rev:00 / Page:

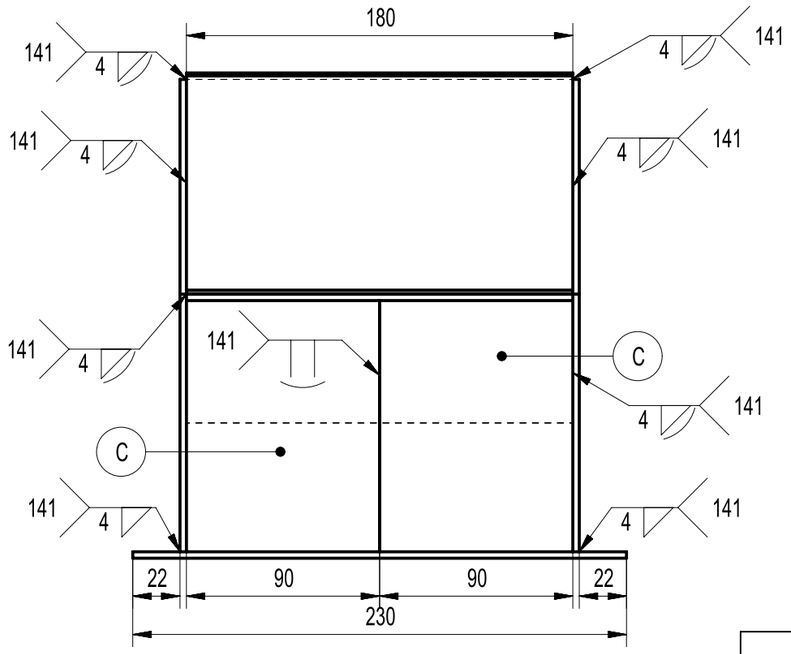


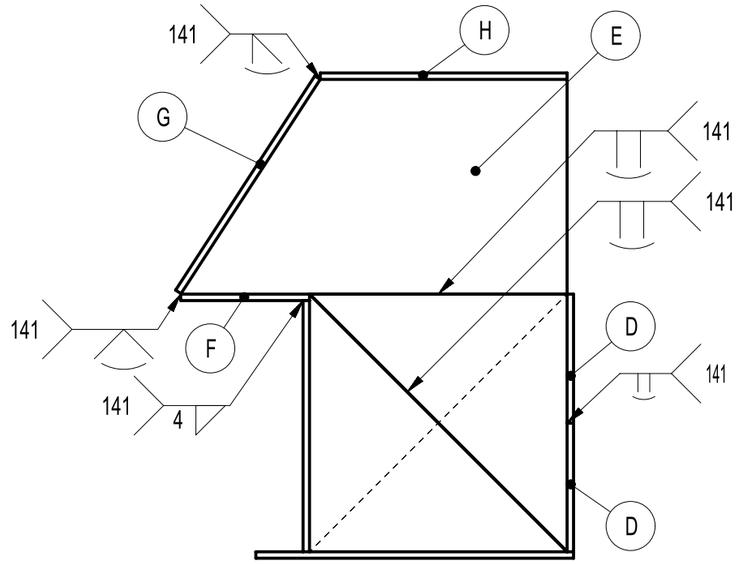


H	1	AL 4042	180X115X3
G	1	AL 4042	180X119X3
F	1	AL 4042	180X60X3
E	2	AL 4042	180X100X3
D	2	AL 4042	180X60X3
C	2	AL 4042	180X90X3
B	4	AL 4042	120X120X3 Triangular Plate
A	1	AL 4042	230x148x3
ITEM	QTY	MATERIAL	DESCRIPTION
PARTS LIST			

NOTE
1. WELDING PROCESS:GTAW(TIG)141
2. WELDING POSITION: ALL EXCEPT VERTICAL DOWN
3. COMPLETE ALL WELDING WITH BASE A IN THE FLAT POSITION
4. ALL FILLET LEG LENGTH:3MM+2-0
5. OUTSIDE CORNER WELD RADII:3MM+2-0
6. TIME ALLOWANCE: 3 HRS.







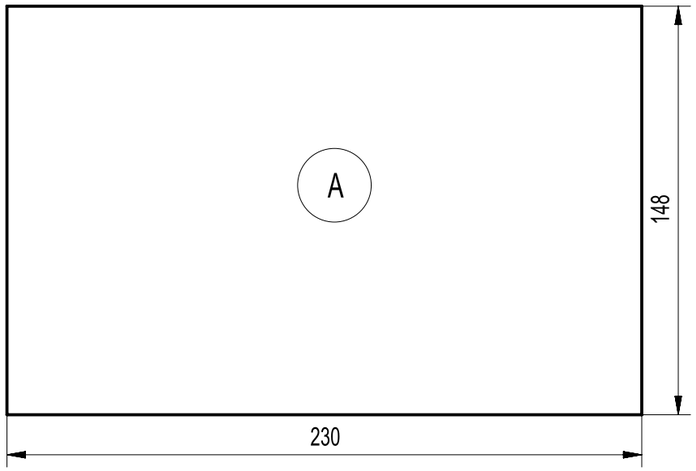
ALL DIMENSIONS IN MM

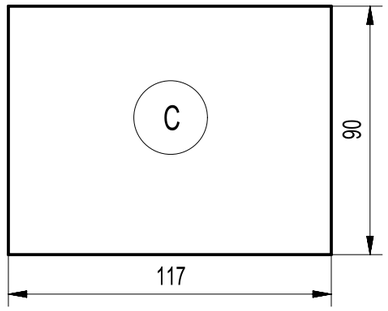
Test Project for the 28th NationSkills
Compertition in Thailand 2019

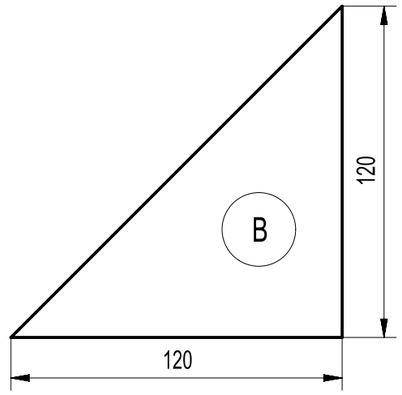
Skill:10, Welding			Projection ISO 5456-2
Scale: NTS	Date :	Paper :A3	
Drawing by: P. Phanupong	Approve: W. Jirawat		Drawing No.TP10_28NSC DAY3_GENERIC
Description:Aluminium Structure - SYMBOLS-Assembly2			Rev:00 / Page:

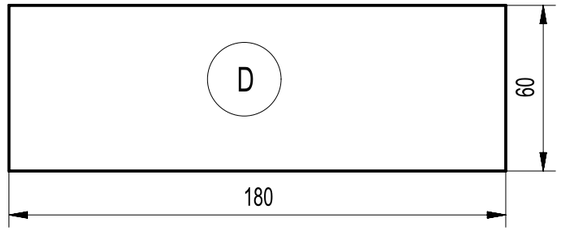
ITEM	QTY	MATERIAL	DESCRIPTION
H	1	AL 4042	180X115X3
G	1	AL 4042	180X119X3
F	1	AL 4042	180X60X3
E	2	AL 4042	180X100X3
D	2	AL 4042	180X60X3
C	2	AL 4042	180X90X3
B	4	AL 4042	120X120X3 Triangular Plate
A	1	AL 4042	230x148x3

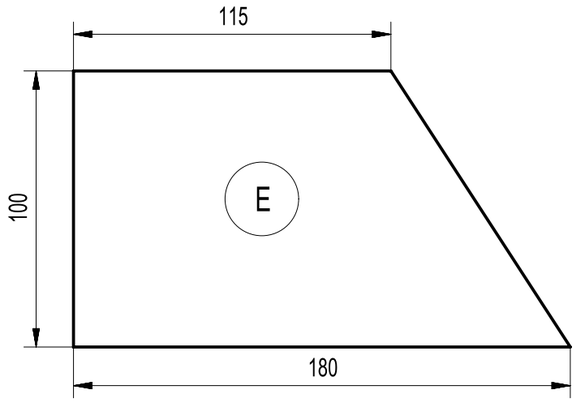
PARTS LIST

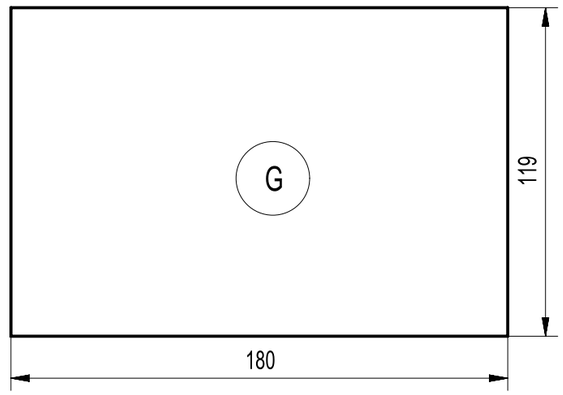


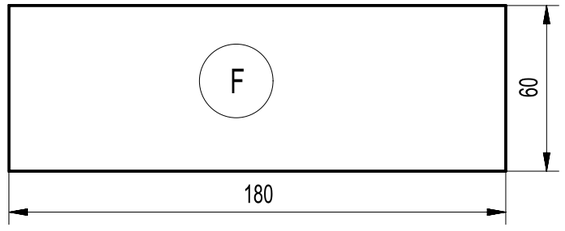


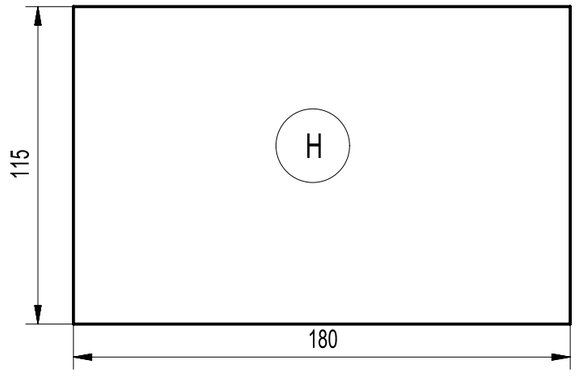












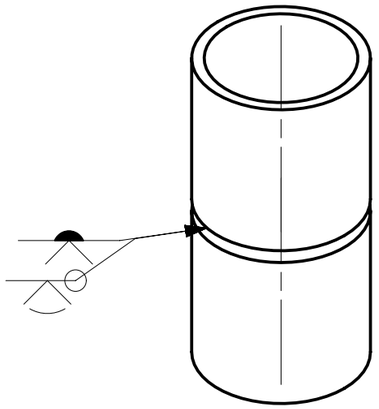
NOTE
ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

worldskills Thailand

Skill:10, Welding		Projection ISO 5456-2
Scale: N.T.S	Date : Paper :A3	
Drawing by: P. Phanupong	Approve: W. Jirawat	Drawing No.TP10_28NSC DAY3_GENERIC
Description: Detail plate-Part List		Rev:00 / Page:

TEST COUPON 1A (PIPE):
MATERIAL: CARBON STEEL PIPE
2PCS ∅168.28 X 7.1 WALL X 125 LONG

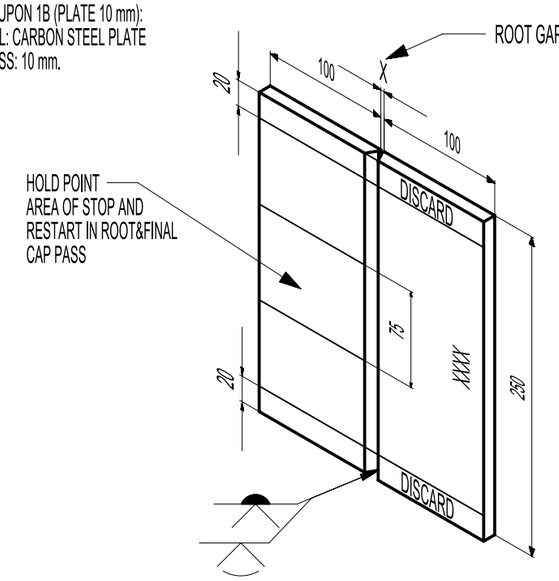


NOTE:
THE NUMBER OF TACKS IS TO BE LIMITED WITH A MAXIMUM 4 TACKS.

WELDING POSITION SO 6947/AWS A3.0	H-LO4S6G	
WELDING PROCESSES ISO 4063 / AWS A3.0	ROOT PASS	GTAW(141)
	FILL& CAP	MMAW(111)

EVALUATION:
1. VISUAL
2. X-RAY ENTIRE WELD JOINT

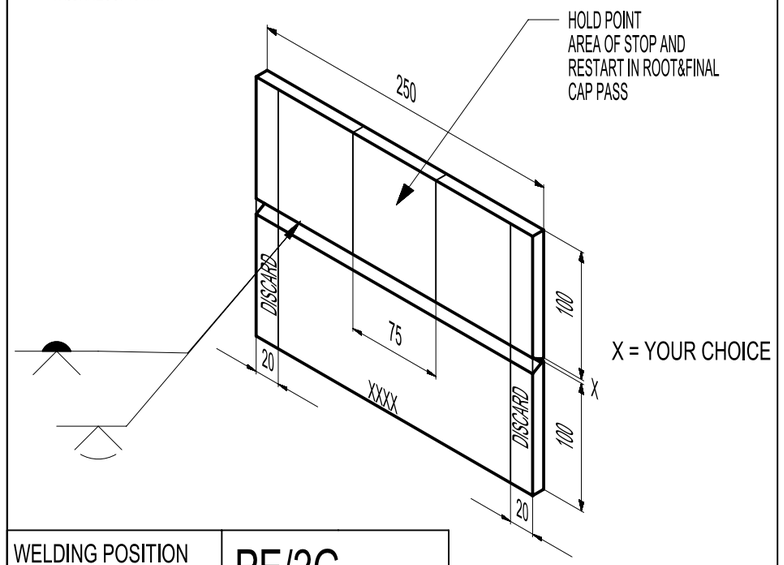
TEST COUPON 1B (PLATE 10 mm):
MATERIAL: CARBON STEEL PLATE
THICKNESS: 10 mm.



WELDING POSITION SO 6947/AWS A3.0	3G/PF	
WELDING PROCESSES ISO 4063 / AWS A3.0	ROOT PASS	GMAW(135)
	FILL& CAP	GMAW(135)

EVALUATION:
1. VISUAL
2. X-RAY ENTIRE WELD JOINT
3. BEND TEST

TEST COUPON 1B (PLATE 10 mm):
MATERIAL: CARBON STEEL PLATE
THICKNESS: 10 mm.

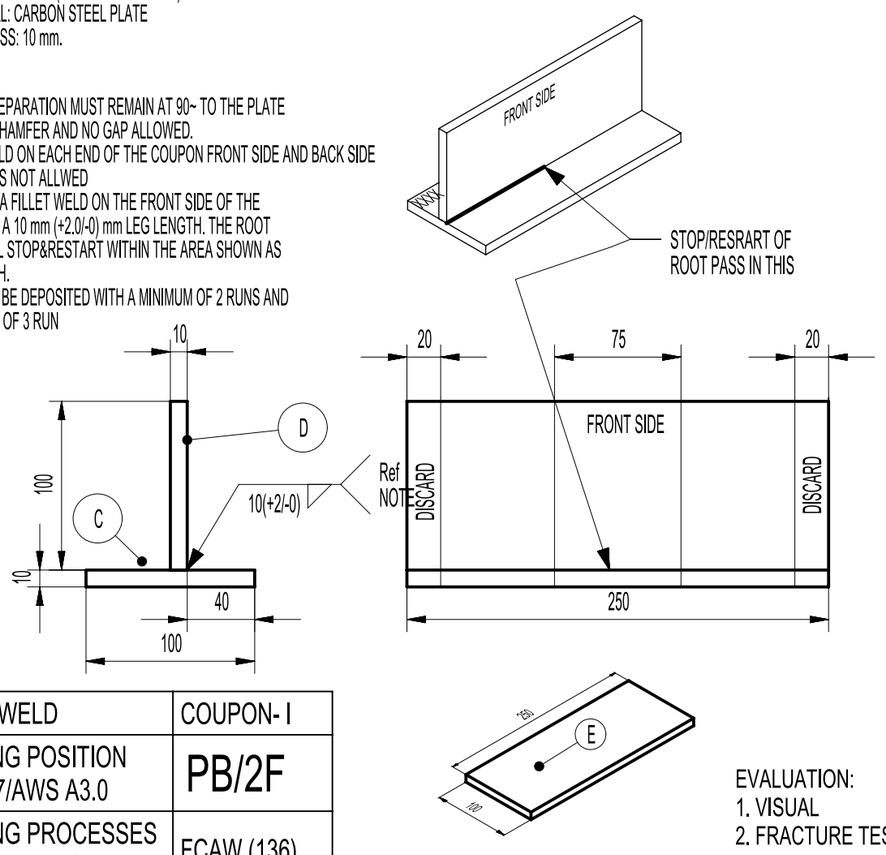


WELDING POSITION SO 6947/AWS A3.0	PE/2G	
WELDING PROCESSES ISO 4063 / AWS A3.0	ROOT PASS	MMAW(111)
	FILL& CAP	FCAW(136)

EVALUATION:
1. VISUAL
2. X-RAY ENTIRE WELD JOINT

TEST COUPON 1D (FILLET WELD 10 mm):
MATERIAL: CARBON STEEL PLATE
THICKNESS: 10 mm.

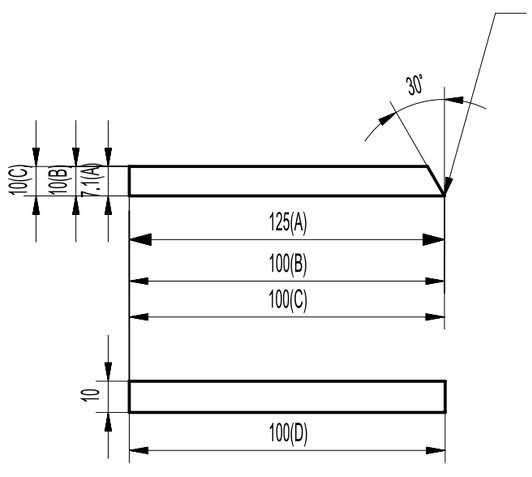
NOTE:
1. EDGE PREPARATION MUST REMAIN AT 90~ TO THE PLATE FACE. NO CHAMFER AND NO GAP ALLOWED.
2. TACK WELD ON EACH END OF THE COUPON FRONT SIDE AND BACK SIDE TRACKING IS NOT ALLWED
3. DEPOSIT A FILLET WELD ON THE FRONT SIDE OF THE JOINT WITH A 10 mm (+2.0/-0) mm LEG LENGTH. THE ROOT PASS SHALL STOP&RESTART WITHIN THE AREA SHOWN AS THE SKETCH.
4. WELD TO BE DEPOSITED WITH A MINIMUM OF 2 RUNS AND A MAXIMUM OF 3 RUN



FILLET WELD	COUPON- I
WELDING POSITION SO 6947/AWS A3.0	PB/2F
WELDING PROCESSES ISO 4063 / AWS A3.0	FCAW (136)

EVALUATION:
1. VISUAL
2. FRACTURE TEST.

NOTE:
1. ANY PROCESS AND ANY POSITION MAY BE USED FOR TACKWELDING.
2. ALL TACK WELDS EXCEPT TWO TACKS ON TEMPORARY BRACKET FOR FILLET COUPON ARE TO BE NOT LONGER THAN 15 mm.
3. ALL PLATE OR PIPE COUPONS ARE TO BE TACKWELDED BEFORE ANY WELDING COMMENCES.
4. PROCESS INDICATED FOR ROOT WELD TO BE USED ONLY FOR ONE RUN, NOT FOR SECOND AND/OR SUBSEQUENT PASSES.
5. ALL PLATE OR PIPE COUPONS MUST BE WELDED IN THE POSITION AS INDICATED FOR EACH TEST.
6. GRINDING IS NOT ALLOWED FOR THE CLEANING OF THE FINAL SURFACES OF BOTH CAP AND ROOT WELDS.
7. XXXX= COMPETITOR'S I.D.
8.TIME ALLOWANCE 6 HRS.



DETAIL OF MILLED BEVEL & SIDE

ALL DIMENSIONS IN MILLIMETRES
BUT DO NOT SCALE DRAWING

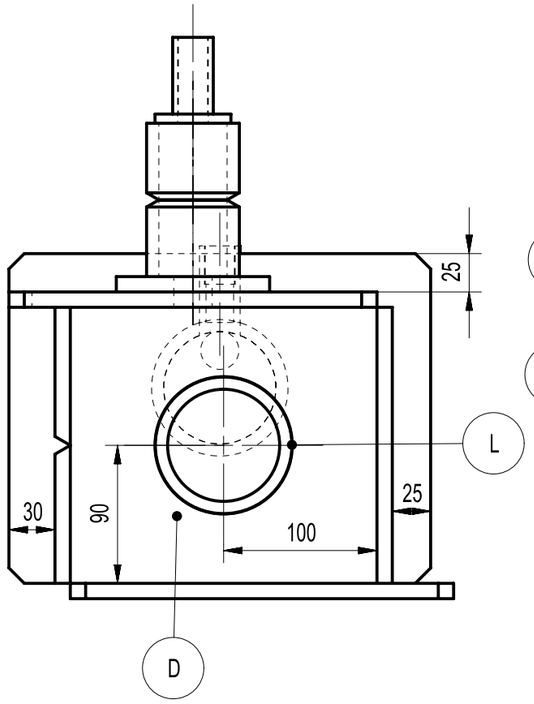
NTS = NOT TO SCALE

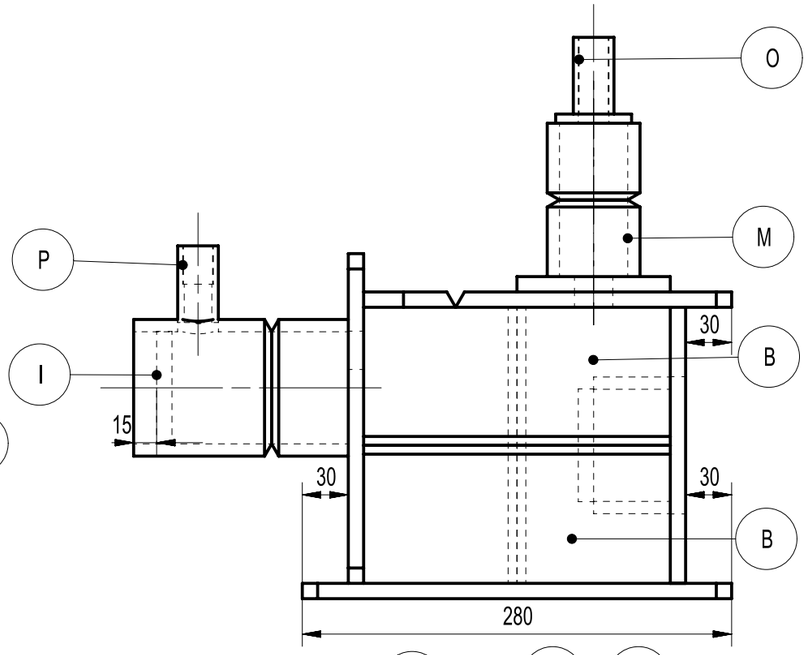
ITEM	QTY	MATERIAL	DESCRIPTION	REMARKS
E	2	CARBON STELL	PLATE 250X100X10	ONE 90 deg.MILLED EDGE AS PER
D	2	CARBON STELL	PLATE 250X100X10	ONE 90 deg.MILLED EDGE AS PER
C	2	CARBON STELL	PLATE 250X100X10	30 deg MILLED BEVEL
B	2	CARBON STELL	PLATE 250X100X10	30 deg MILLED BEVEL
A	2	CARBON STELL	PIPE ∅ 168.2X 7.1 WALL X 125 LONG	30 deg TURNED BEVEL

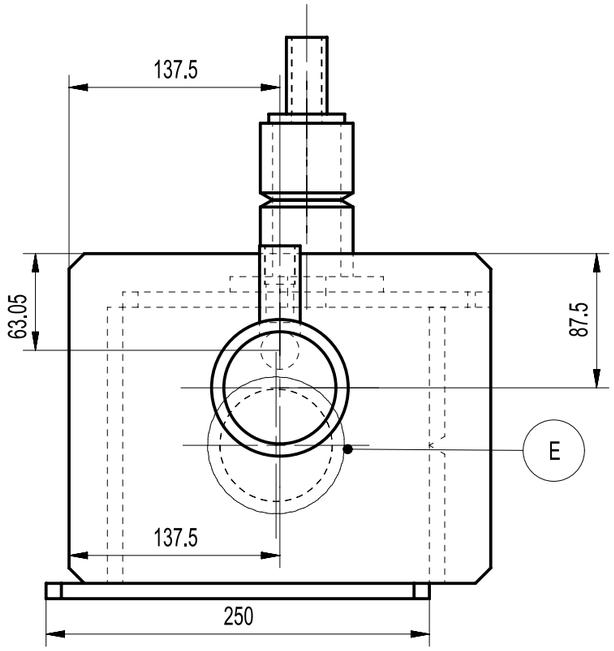
Test Project for the 28th NationSkills
Compertition in Thailand 2019

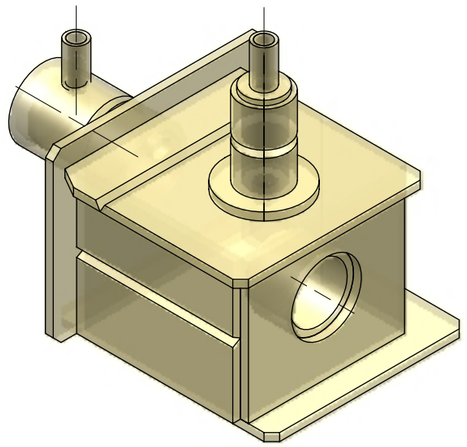
worldskills ASEAN

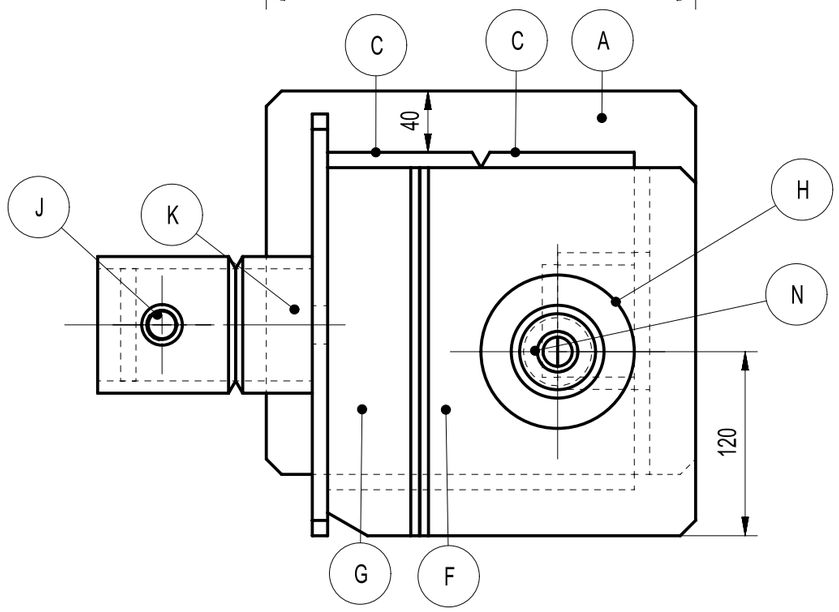
Skill:10, Welding			Projection ISO 5456-2
Scale: N.T.S.	Date :	Paper :A3	
Drawing by: P. Phanupong	Approve: W. Jirawat		Drawing No.TP10_28NSC DAY1_GENERIC
Description Module 1 Test Coupons (Plate//Pipe/Fillet):			Rev:00 / Page: 1 of 1

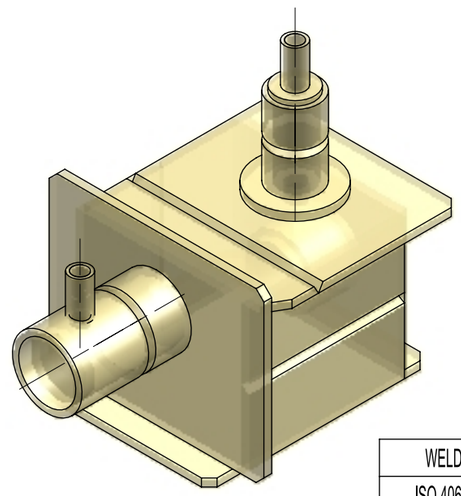












Note: When the I, L pre-assembled pipe fillet weldment and pressure vessel are combined, the surface bead must be left in its original state and must not be ground and repaired!

WELDING PROCESSES	
ISO 4063	AWS A3.0
111	MMAW
135	GMAW
136	FCAW-G
141	GTAW

Precautions:

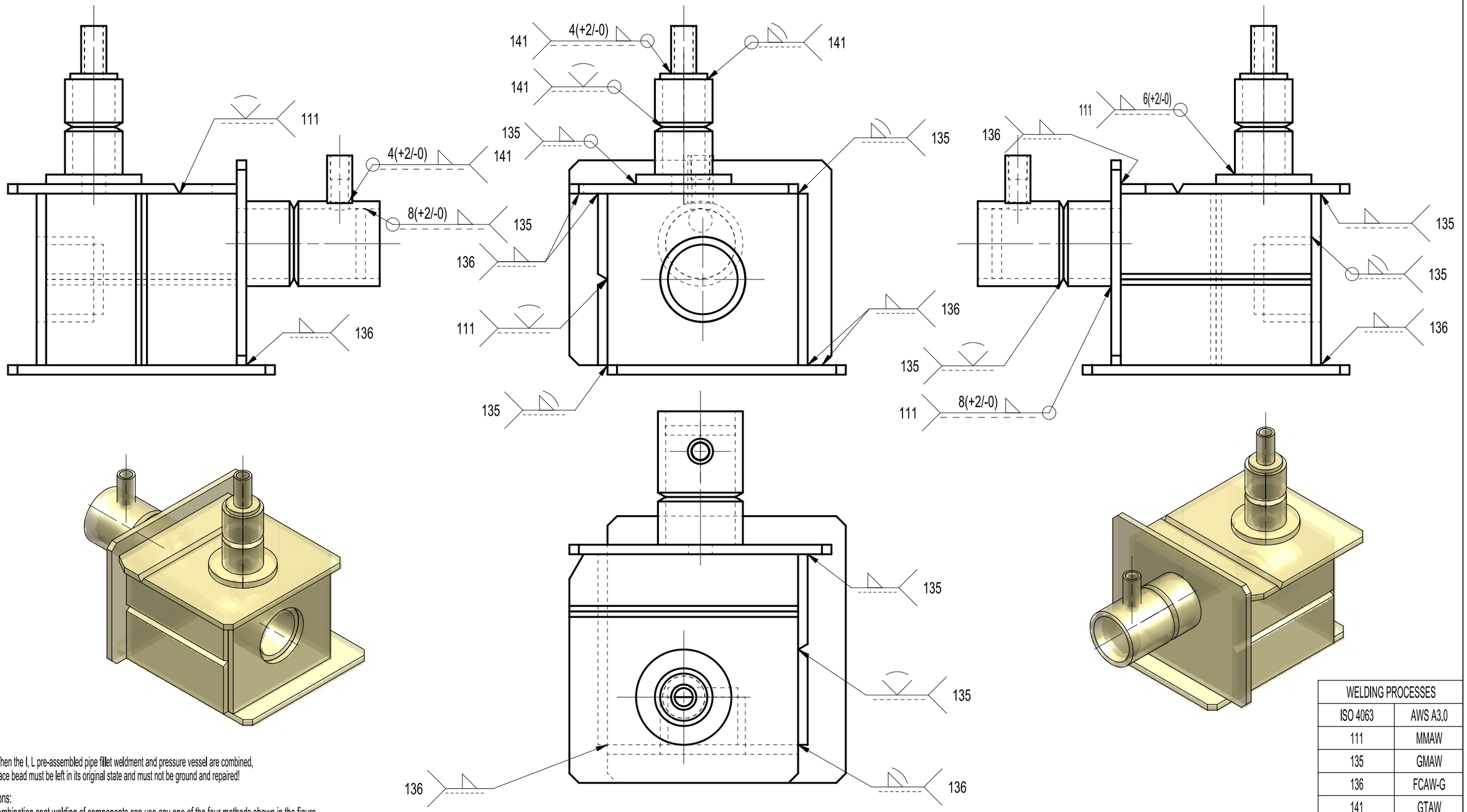
1. The combination spot welding of components can use any one of the four methods shown in the figure.
Corner intersections allow continuous spot welding.
2. Auxiliary tools such as C-clamps or magnetic blocks can be used in combination spot welding, but they should be removed before formal welding.
3. Spot welding can only be performed on the outside of the container. I, L two plates and tubes are individually spot-welded into a group and sent to the referee for inspection.
After stamping, they can be pre-welded in the specified welding position to complete the part scoring.
. Pieces F, G, H, M, N, O are combined to form the upper cover. Welding can only be carried out after confirming spot welding with the pressure vessel body under the supervision of a referee.
Offenders' water pressure test is counted as zero points.
4. While welding is in progress, the weldment can only rotate around the Z axis or move up and down to perform welding and grinding according to the illustrated welding method.
It must not be reversed. All PH tube welding termination points must be at 12 o'clock.
5. All fillets are 10mm (+ 2.0mm / -0 mm) in length unless otherwise specified.
6. Corner welds should be fillet welded (take a judgment score).
7. It is forbidden to use anti-spatter during the welding process. After the welding is completed, all bead surfaces and end surfaces shall not be cleaned with a grinding wheel, except with a steel brush. Abrasive paper, file, or other method sufficient to change the topography of the bead surface.
8. After the spot welding cap is inspected by the referee, no spot welding operation can be performed any more. The water pressure test of the offender is counted as zero.
9.Time allowance □ hrs.

ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

worldskills ASEAN

Skill:10, Welding			Projection ISO 5456-2
Scale N.T.S.	Date :	Paper :A3	
Drawing by: P.Phanupong	Approve: W. Jirawat		Drawing No.TP10_28NSC DAY2_GENERIC
Description:Pressure Vessel - Part List Assambly 2			Rev:00 / Page:



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Precautions:

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9.Time allowance □ hrs.

ALL DIMENSIONS IN MM

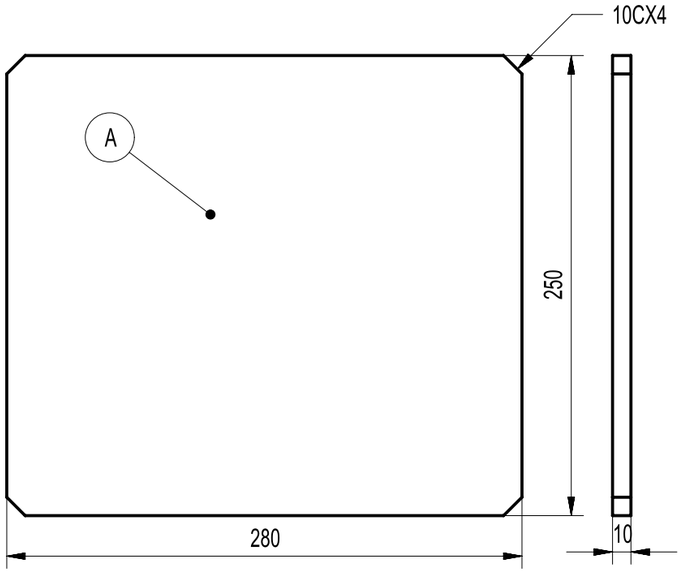
WELDING PROCESSES	
ISO 4063	AWS A3.0
111	MMAW
135	GMAW
136	FCAW-G
141	GTAW

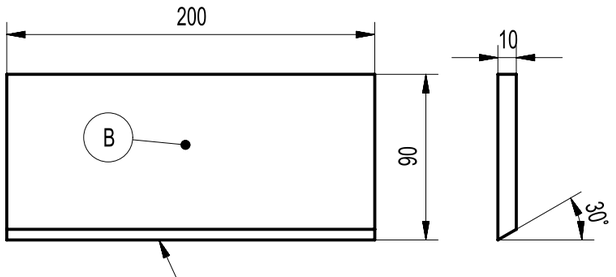
Test Project for the 28th NationSkills
Compertition in Thailand 2019

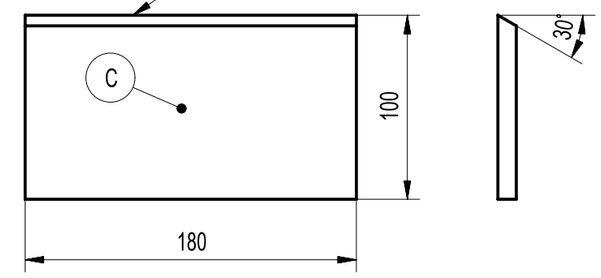
worldskills ASEAN

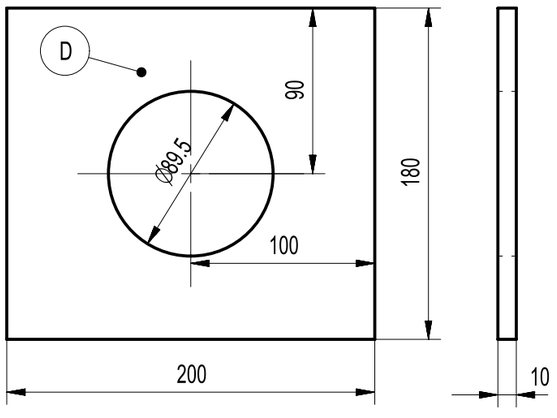
Skill:10, Welding		
Scale N.T.S.	Date :	Paper :A3
Drawing by: P. Phanupong	Approve: W. Jirawat	
Description:Pressure Vessel - SYMBOLS- Assambly 1		

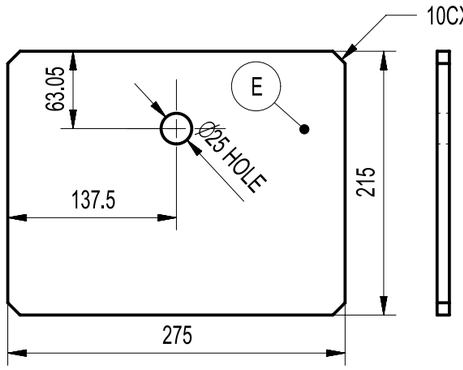
Projection ISO 5456-2	
Drawing No.TP10_28NSC DAY2_GENERIC	
Rev:00	Page:

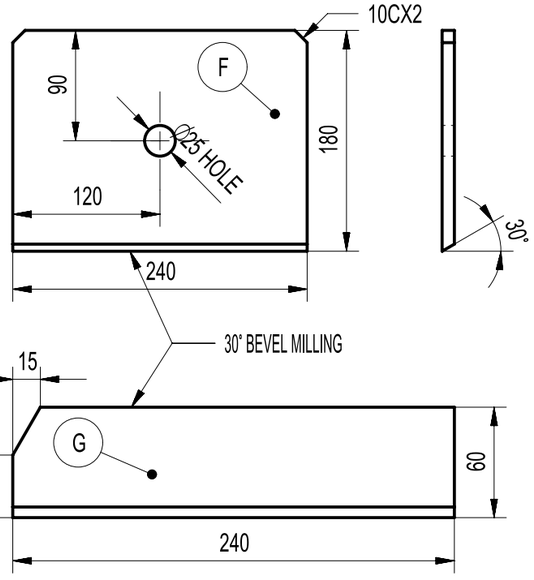


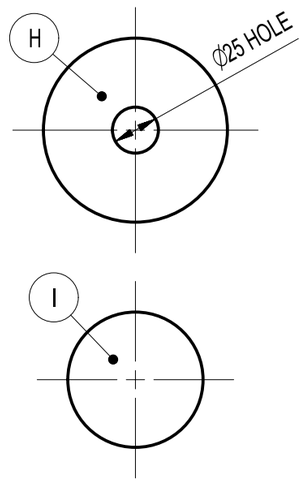


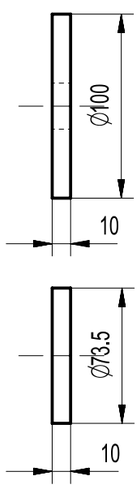


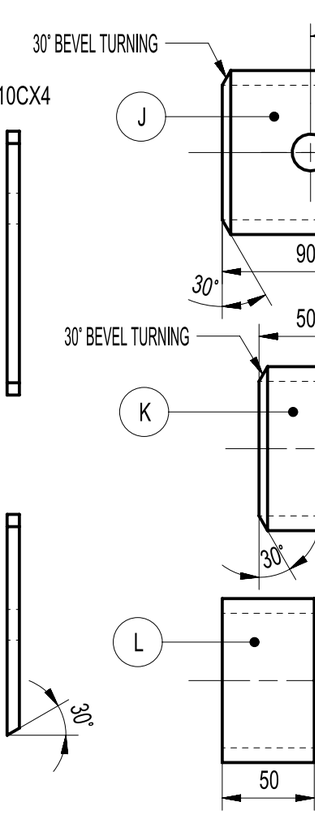


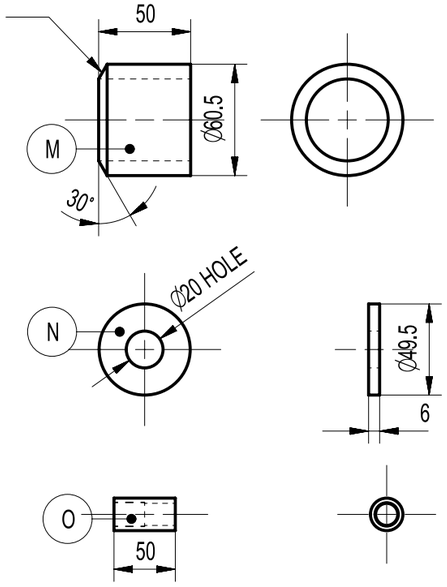












All MATERIAL THICKNESS ALLOWED ± 0.5

Item.	QTY	DESCRIPTION
P	1	NIPPLE TO FIT THE TESTING PUMP OF THE COMPETITION VENUE
O	1	NIPPLE TO FIT THE TESTING PUMP OF THE COMPETITION VENUE
N	1	Ø49.5x6.0 MILD STEEL BLANK PLATE, ONE Ø25mm HOLE AS PER SKETCH
M	2	Ø60.5x50, sch. 80 MILD STEEL PIPE, ONE END 30° BEVEL TURNED, AS PER SKETCH
L	1	Ø89.1x50, sch. 80 MILD STEEL PIPE ,AS PER SKETCH
K	1	Ø89.1x50, sch. 80 MILD STEEL PIPE, ONE END 30° BEVEL TURNED, AS PER SKETCH
J	1	Ø89.1x50, sch. 80 MILD STEEL PIPE, ONE END 30° BEVEL TURNED, ONE Ø20mm HOLE AS PER SKETCH
I	2	Ø73.5x10,MILD STEEL BLANK PLATE
H	1	Ø100x10 MILD STEEL BLANK PLATE, ONE Ø25mm HOLE AS PER SKETCH
G	1	215X75X10, MILD STEEL PLATE, AS PER SKETCH
F	1	240X180X10, MILD STEEL PLATE, ONE END 30° BEVEL MILLED, ONE Ø25mm HOLE AS PER SKETCH
E	1	275X215X10, MILD STEEL PLATE, Ø25mm HOLE, AS PER SKETCH
D	1	200X180X10, MILD STEEL PLATE, Ø89.5mm HOLE, AS PER SKETCH
C	2	180X100X10, MILD STEEL PLATE, ONE END 30° BEVEL MILLED AS PER SKETCH
B	2	200X90X10, MILD STEEL PLATE, ONE END 30° BEVEL MILLED AS PER SKETCH
A	1	280X250X10, MILD STEEL PLATE, AS PER SKETCH

PARTS LIST

Test Project for the 28th NationSkills
Compertition in Thailand 2019

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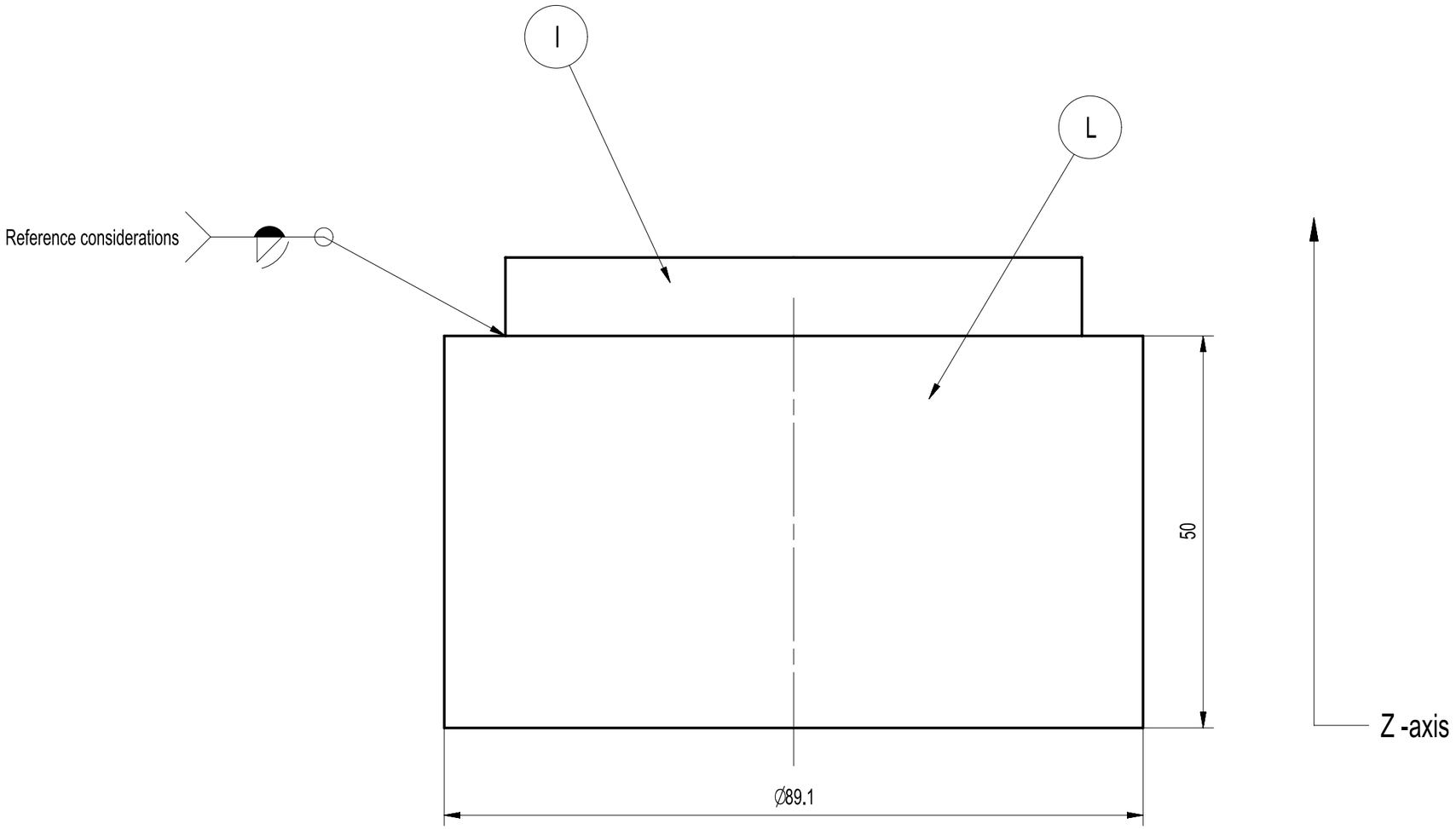
ALL DIMENSIONS IN MM

Skill:10, Welding			Projection ISO 5456-2
Scale N.T.S.	Date :	Paper :A3	
Drawing by: P.Phanupong		Approve: W. Jirawat	Drawing No.TP10_28NSC DAY2_GENERIC
Description:Pressure Vessel - Part List 1			Rev:00 / Page:

Precautions:

1. This pre-welded part drawing consists of two pieces, I and L. The maximum length of spot welding is 15mm, the maximum is 4 points, and the minimum is 3 points. It must be spot welded on the welding side.
2. Any four types of spot welding can be specified in the competition. The combined spot welding is sent to the referee for review and printing, and the welding is started according to the instructions.
3. Welding position: PB (corner weld), welding method: 135 (GMAW)
4. There must be back penetration welds.
5. Welding time limit: □ minutes.
6. After submitting the score, it is one of the parts of the pressure vessel.



ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

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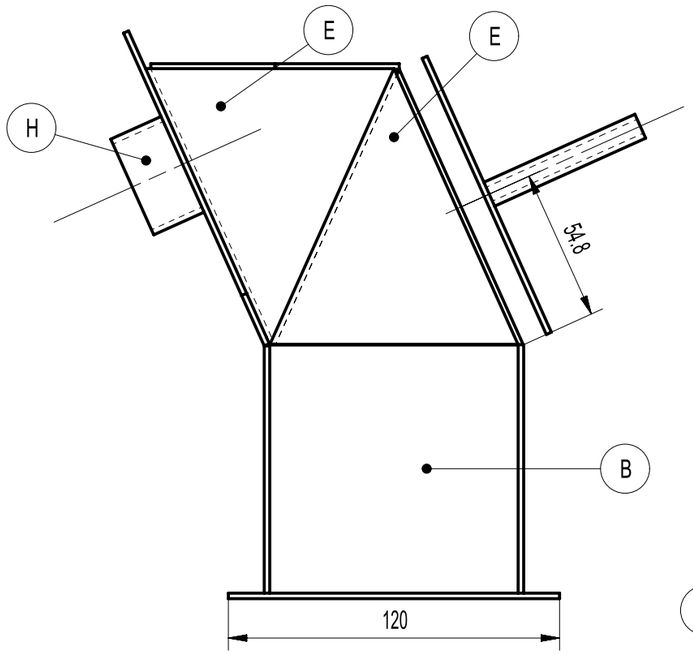
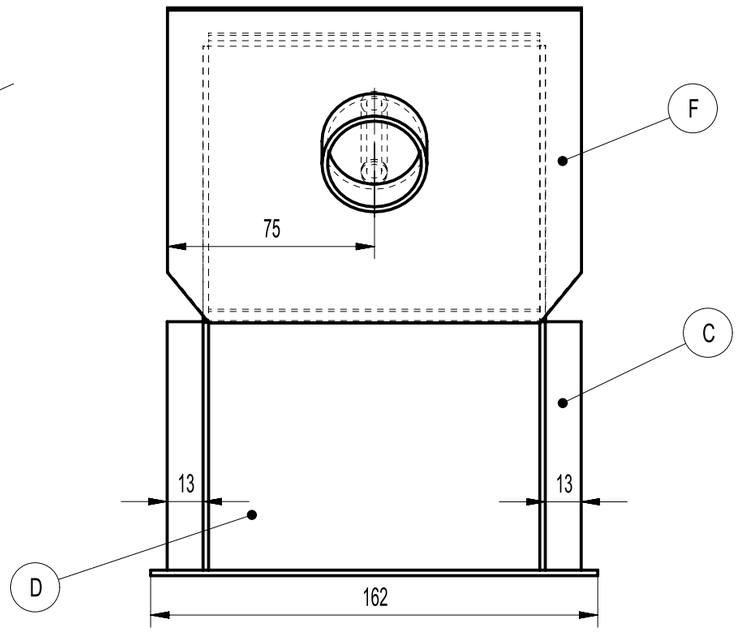
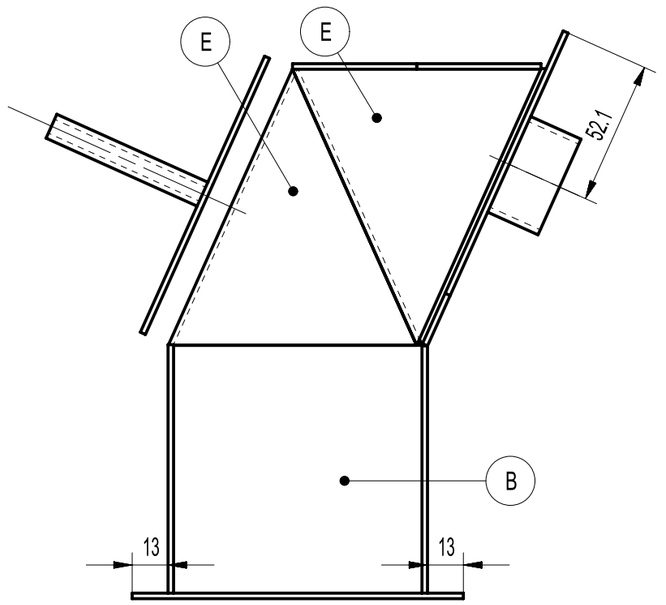
Skill:10, Welding			Projection ISO 5456-2
Scale: N.T.S	Date :	Paper :A3	
Drawing by:			Drawing No.TP10_28NSC DAY2_GENERIC
Description:Pressure Vessel - Part List			Rev:00 / Page:

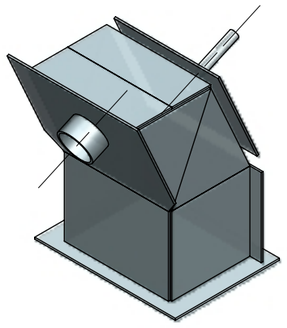


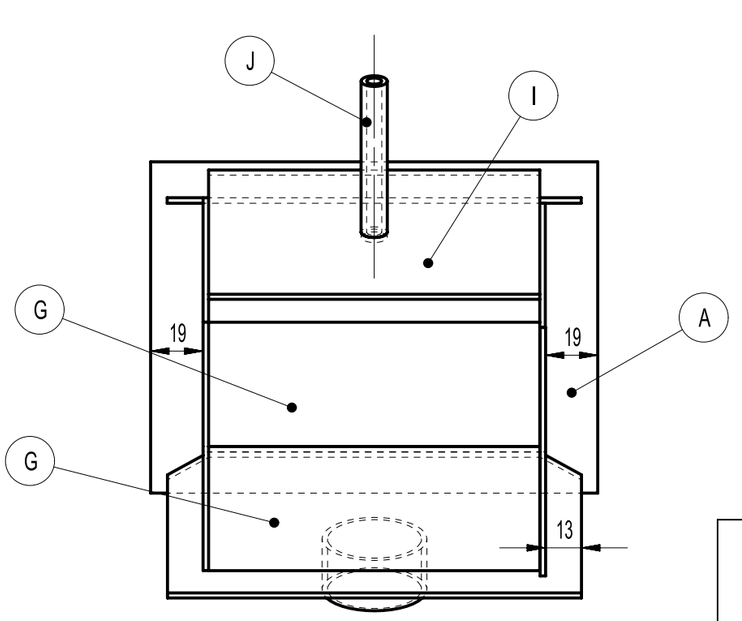


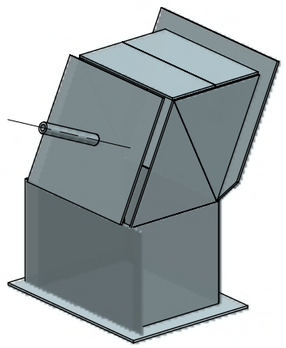


Note: I、J for purging only and to be removed after welding

Z-axis







Warning
1. After joining the welding point at any position as shown, use argon welding (141, GTAW) for welding.
2. Can be welded by A-plate as the bottom plate and rotated around the vertical axis (Z axis).
They must not be reversed. The vertical welding must be in the welding position PF / PH (pipe).
3. Butt and corner welding requires back drilling and does not need to penetrate the back.
4. Welding of parts by purging. Welding of pieces I, J will return to blow the first two spot welding equipment.
Take out with the components for inspection by the judges. You can use adhesive
tape or welding points and temporarily weld the welding parts when you actually do the welding.
However, a single solder joint cannot be greater than 10 mm.
5. Welding rod length 3 mm (tolerance 1 mm / -0 mm)
6. Welding angle (welding angle) must be a full angle. (Use points to decide)
7. Except that the sheet can be treated before welding first, after welding, the surface including beads and metal bases should be kept as welded.
Do not use any cloth and sandpaper to wipe and brush, iron wheel or file to cut.
8. After submitting the combined spot welding for inspection and printing, it must not be disassembled,
then the spot welding or spot welding is removed by grinding machine (except for the pieces I and J).
Only one welding bead must be used for every welding bead and will not allow secondary welding again. The offender is counted to zero.
9.Time allowance 3 hrs.

ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

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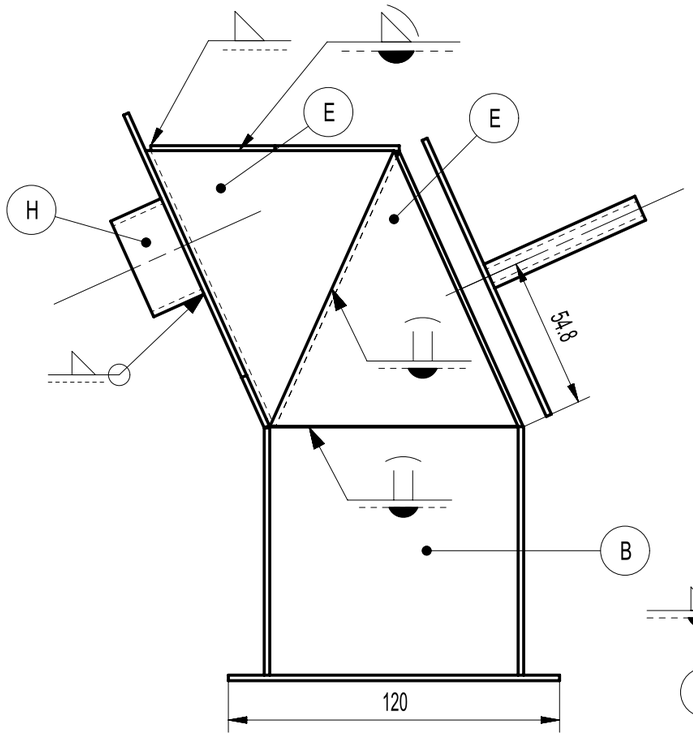
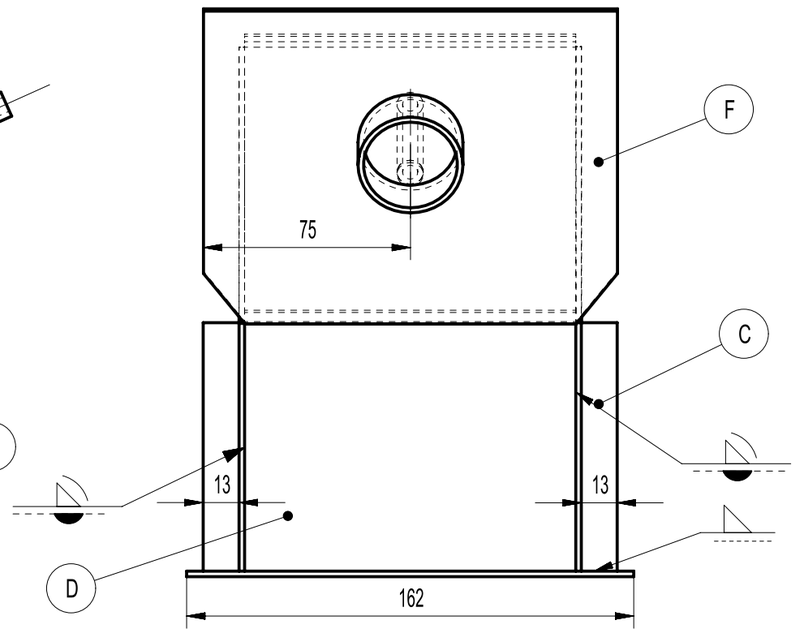
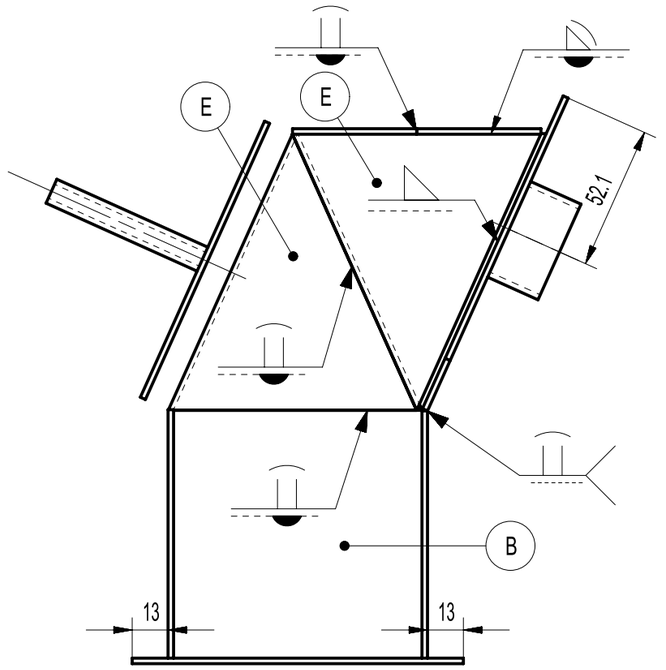
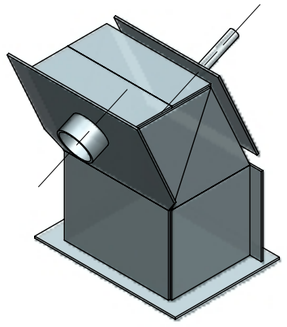
Skill:10, Welding			Projection ISO 5456-2
Scale .N.T.S.	Date :	Paper :A3	
Drawing by: P. Phanupong		Approve: W. Jirawat	Drawing No.TP10_28NSC DAY2_GENERIC
Description:Stainless steel Strue-Assembly			Rev:00 / Page:

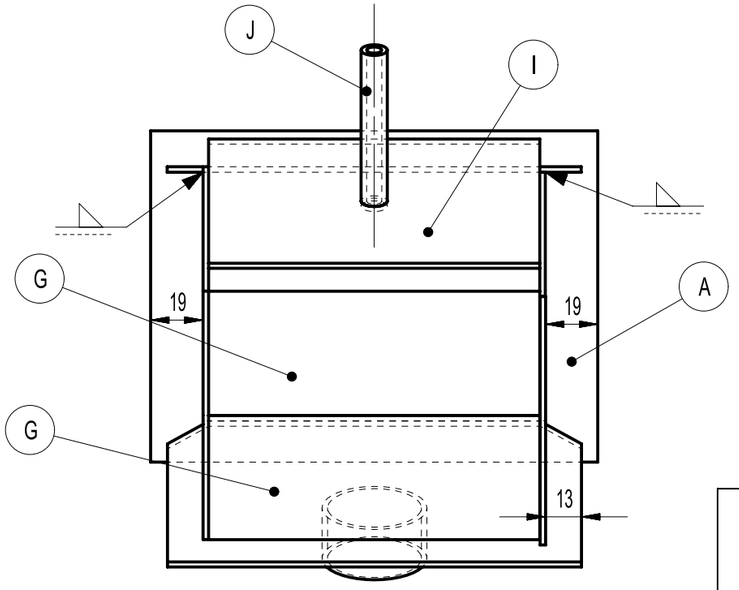


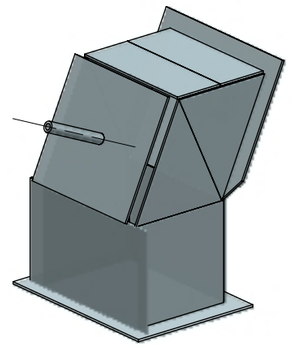




Note: I、J for purging only and to be removed after welding







Warning
1. After joining the welding point at any position as shown, use argon welding (141, GTAW) for welding.
2. Can be welded by A-plate as the bottom plate and rotated around the vertical axis (Z axis).
They must not be reversed. The vertical welding must be in the welding position PF / PH (pipe).
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then the spot welding or spot welding is removed by grinding machine (except for the pieces I and J).
Only one welding bead must be used for every welding bead and will not allow secondary welding again. The offender is counted to zero.
9.Time allowance 3 hrs.

ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

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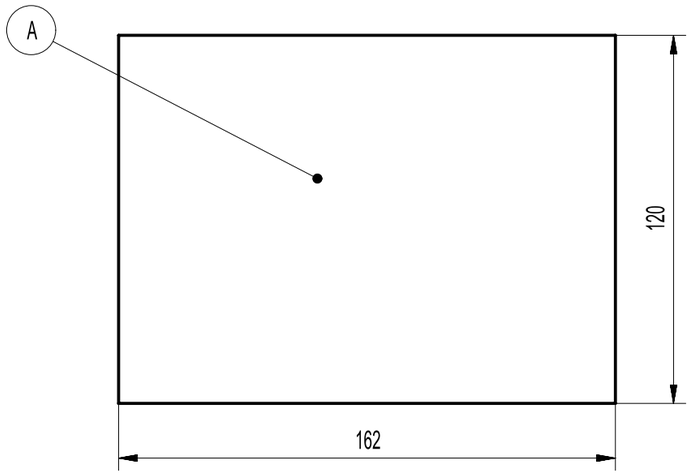
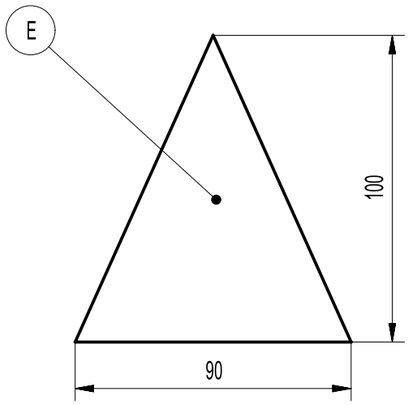
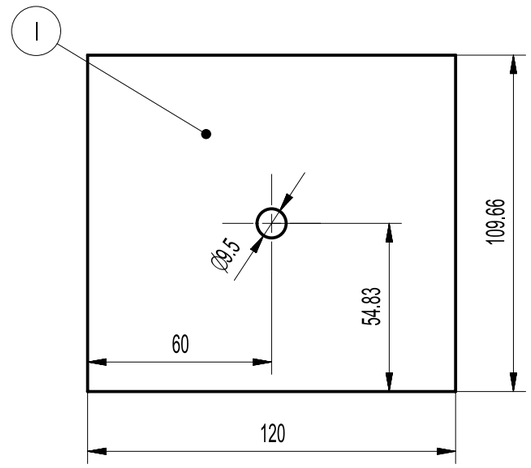
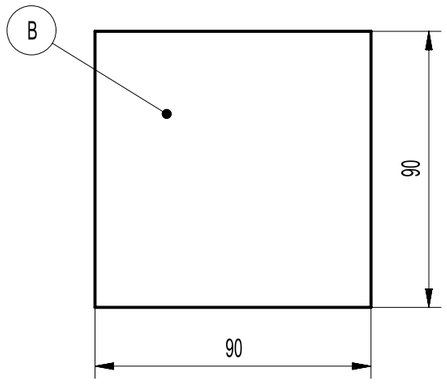
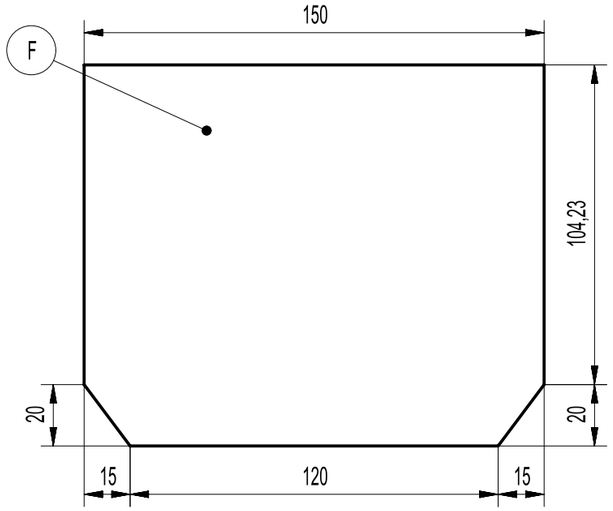
Skill:10, Welding			Projection ISO 5456-2
Scale .N.T.S.	Date :	Paper :A3	
Drawing by: P. Phanupong	Approve: W. Jirawat		Drawing No.TP10_28NSC DAY2_GENERIC
Description:Stainless steel Strue- SYMBOLS			Rev:00 / Page:

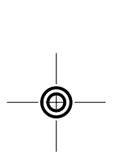


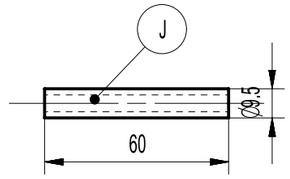


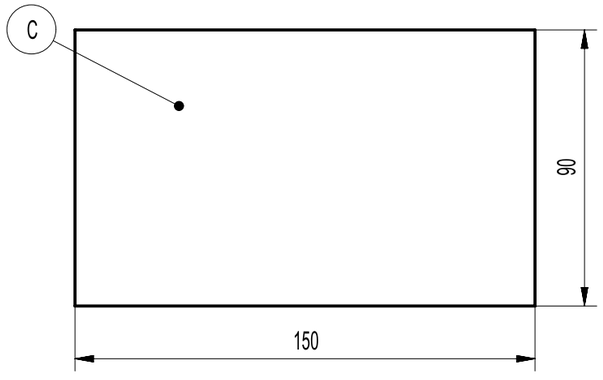


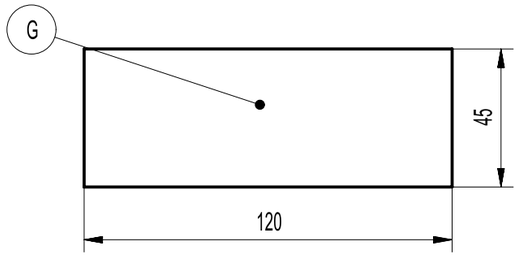


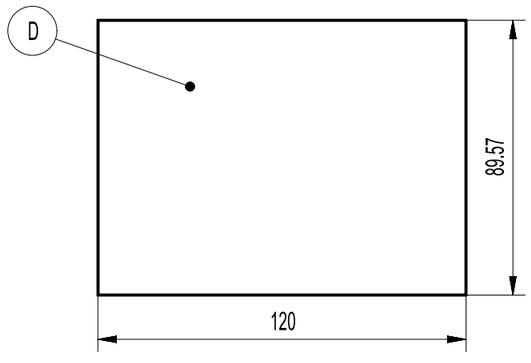


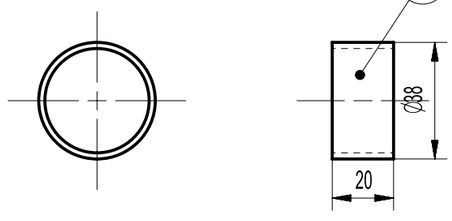












Item.	QTY	DESCRIPTION
J	1	Ø 9.5x60x0.6 AISI 304 STAINLESS STEEL TUBE (PURGING TUBE)
I	1	120X109.66X2.0 AISI 304 STAINLESS STEEL SHEET, Ø 9.5 CENTRE
H	1	Ø 38x20x2.0 AISI 304 STAINLESS STEEL TUBE
G	2	120X45X2.0 AISI 304 STAINLESS STEEL
F	1	150X124.23X2.0 AISI 304 STAINLESS STEEL SHEET CUT TO SHAPE
E	4	100X90X2.0 AISI 304 STAINLESS STEEL
D	1	120X89.57X2.0 AISI 304 STAINLESS STEEL SHEET
C	1	150X90X2.0 AISI 304 STAINLESS STEEL SHEET.
B	2	90X90X2.0 AISI 304 STAINLESS STEEL SHEET
A	1	162X120X2.0 AISI 304 STAINLESS STEEL SHEET.

ALL DIMENSIONS IN MM

Test Project for the 28th NationSkills
Compertition in Thailand 2019

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Skill:10, Welding			Projection ISO 5456-2
Scale N.T.S.	Date :	Paper :A3	
Drawing by: P. Phanupong		Approve: W. Jirawat	Drawing No.TP10_28NSC DAY2_GENERIC
Description:Stainless steel Strue-Assembly-Part List			Rev:00 / Page: