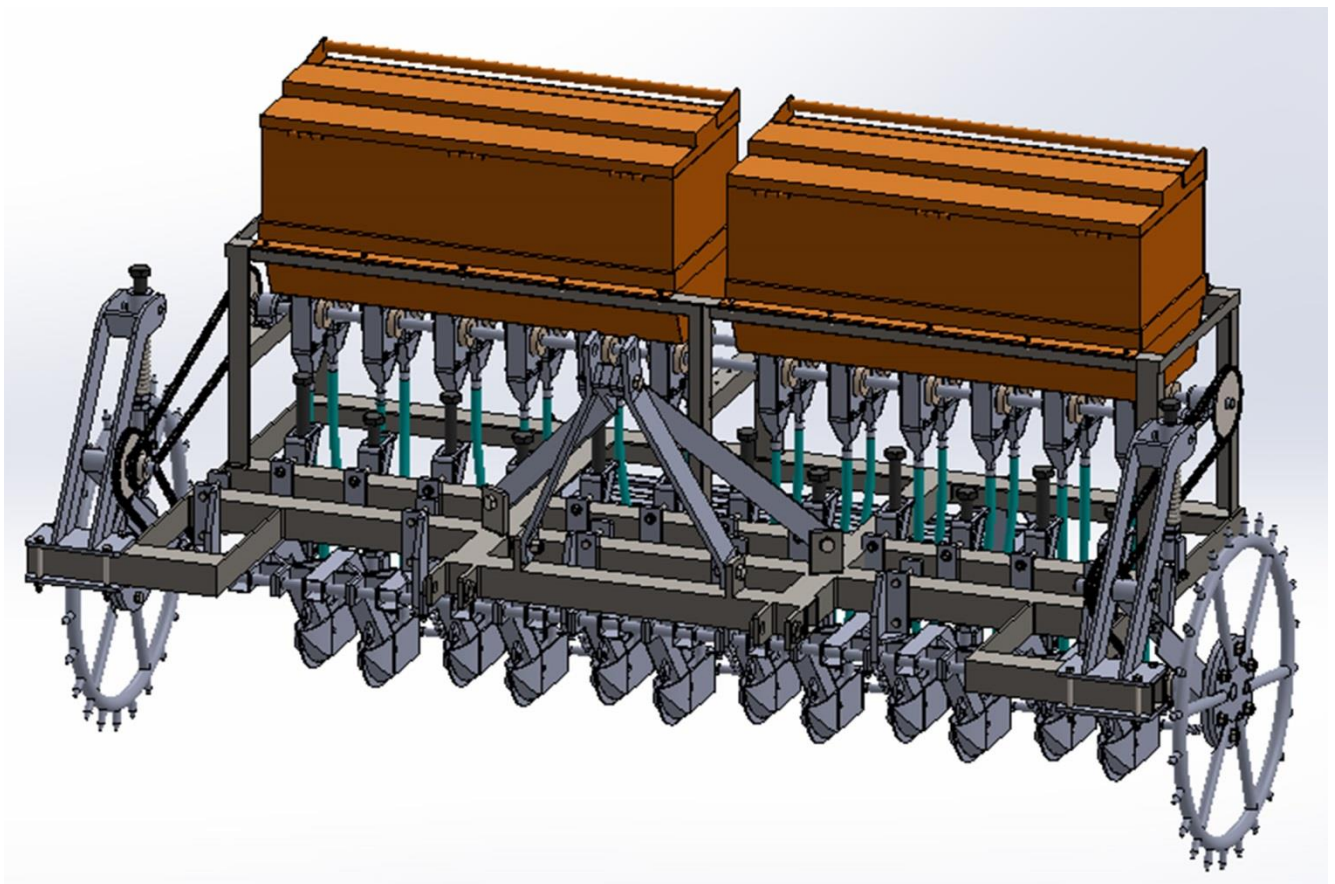


GENERAL DIRECTORATE OF AGRICULTURE  
DEPARTMENT OF AGRICULTURAL  
ENGINEERING

Multi Crop Seeder



- Dry land seeding
- Operated by 4 wheel tractor
- Multi Crop Seeding Rice, Maize, and Bean.

# GENERAL DIRECTORATE OF AGRICULTURE

## DEPARTMENT OF AGRICULTURAL ENGINEERING

### Technical Drawing of Multi Crop Seeder

Drawn by : Mr. Duch Sam On.....

Checked by : Mr. Pen Nov.....

Checked by : Mr. Seng Savath.....

Approved by : Dr. Chan Saruth.....

Phnom Penh, .....2018

# Content

## 1. FRAME OF EQUIPMENT

- 3D Drawing
- Detailed Table
- Exploded View
- 2D Drawing
- Part No.1, No.2,& No.3
- Part No.4, No.5, & No.6
- Part No.7, No.8,& No.9
- Part No.10, No.11, & No.12
- Part No.13, No.14 & No.15
- Part No.16, No.17 & No.18
- Part No.19, No.20 & No.21
- Part No.22, No.23 & No.24

## 2. SEED HOPPER

- 3D Drawing
- Detailed Table
- Exploded View
- 2D Drawing
- Part No.1
- Part No.2
- Part No.3
- Part No.4,& No.5
- Part No.6, & No.7

## 3. SEED HOPPER CAP

- 3D Drawing
- Detailed Table
- Exploded View
- 2D Drawing
- Part No.1
- Part No.2, No.3, & No.4

## 4. SEED HOPPER HINGE

- 3D Drawing
- Detailed Table
- Exploded View
- Part No.1, No.2,& No.3

## 5. METERRING DEVICE

- 3D Drawing
- Exploded View
- 2D Drawing
- Part No.1
- Part No.2
- Part No.3
- Part No.4

- Part No.5
- Part No.6
- Part No.7, & No.8

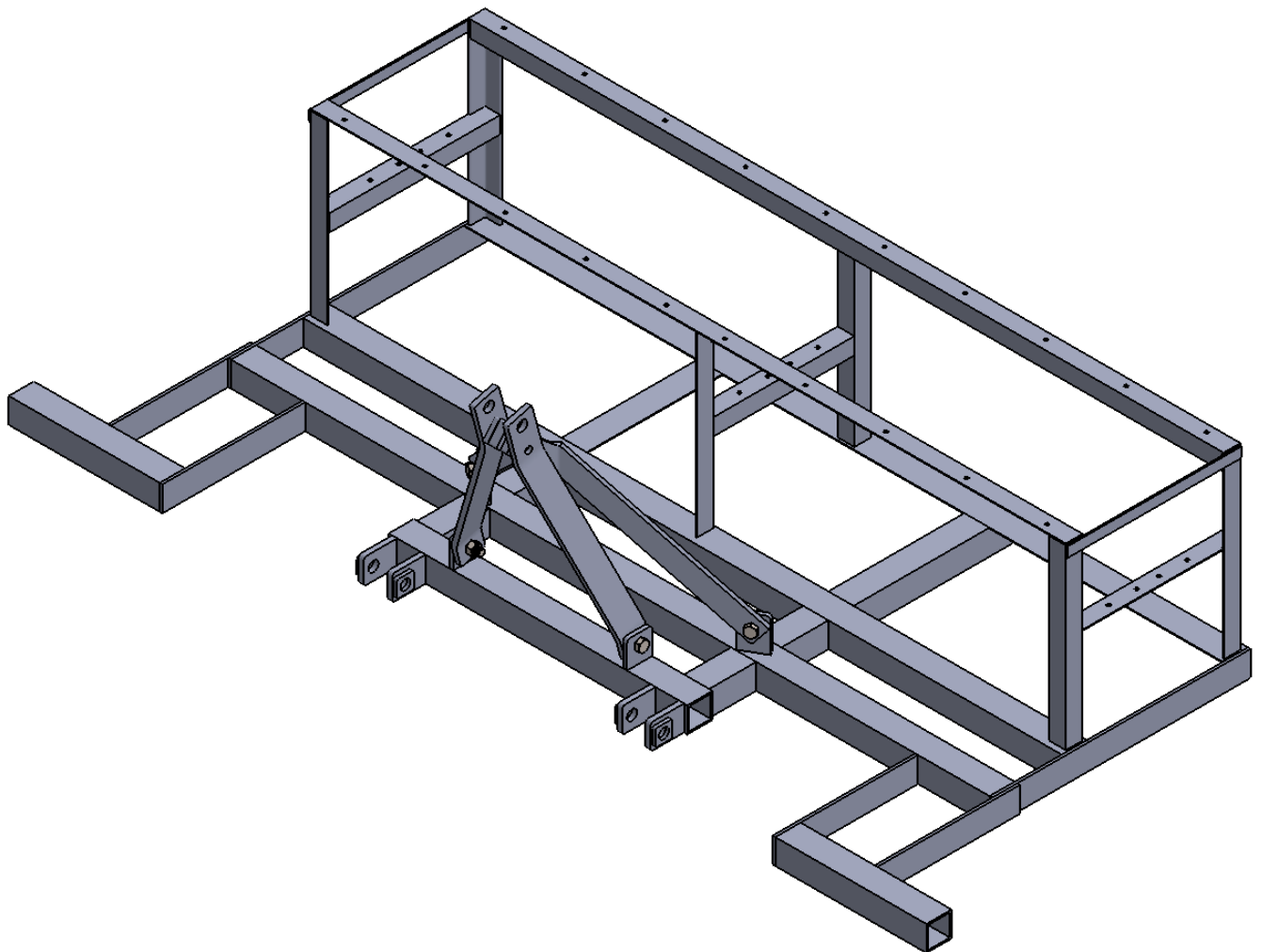
## 6. DRIVE WHEEL

- 3D Drawing
- Exploded View
- Detailed Table
- 2D Drawing
- Part No.1, No.2
- Part No.3, No.4
- Part No.8, No.9
- Assembly
  - Part No.1, No.2
  - Part No.3, No.5
  - Part No.4
- Assembly of Wheel
  - 2D drawing of wheel
  - Part No.1, No.2
  - Part No.3, No.4
  - Part No.5
  - Part No.11, No.25

## 7. FURROW OPENER SYSTEM

- 3D Drawing
- Top view and Front view
- Side view
- Exploded View
- I. Shaft part
- II. Furrow opener system (Short type)
  - 3D drawing
  - 2D drawing
  - Exploded view
  - II.1. Furrow opener assembly
    - 3D drawing
    - 2D drawing
    - Exploded view
    - Part No.1.1, No. 1.2
    - Part No.1.3, No.1.4
    - Part No.1.5, No.1.6, & No.1.8
  - II.7. Furrow opener handle
    - 3D drawing
    - 2D drawing
    - Exploded view
    - Part No.7.1
    - Part No.7.2, & No.7.3
    - Part No.7.4, & No.7.5
  - II.9.
    - 3D drawing
    - 2D drawing

- Exploded view
  - Part No.9.1 & No.9.2
- Part No. II.10
- Part No.II.11
- Part No.II.12
- III. Furrow Opener System (Long type)
  - 3D drawing
  - Exploded view
  - Part No.III.2
- IV. Assembly No. IV
  - 3D drawing
  - Exploded view
  - 2D drawing
  - Part No. IV.2
- V. Assembly No. V
  - 3D drawing
  - Exploded view
  - 2D drawing



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		9/20/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

DWG NO.

Assembly of Frame

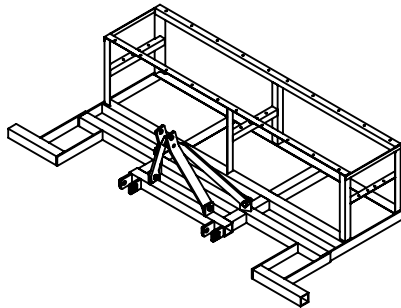
A4

WEIGHT:

SCALE:1:15

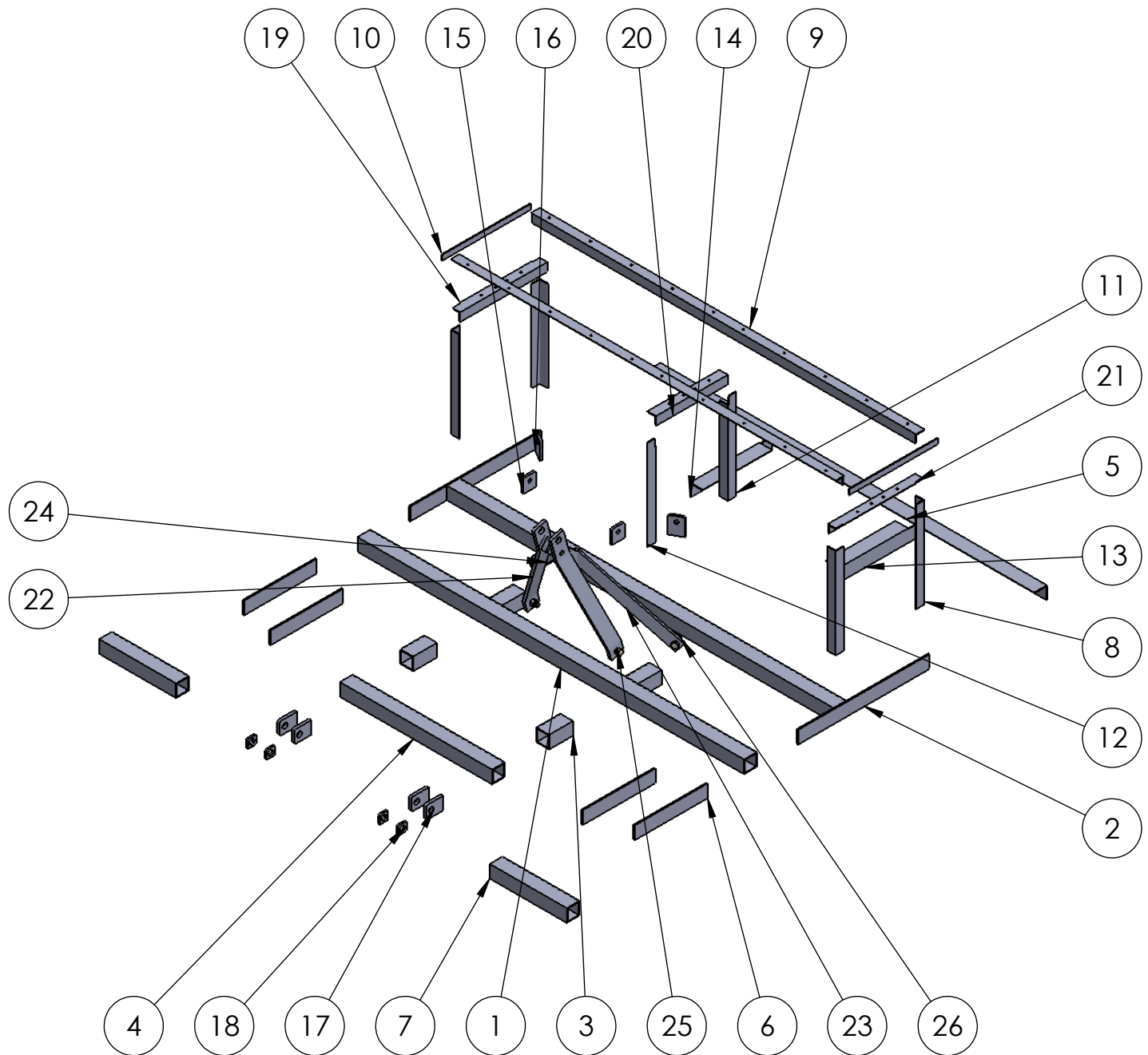
SHEET 1 OF 30

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Square Tube75x75x5_2260		2
2	Plate_75x8_770		2
3	Square Tube75x75x5_140		4
4	Square Tube75x75x5_890		1
5	V_Tube75x75x5_2260		1
6	Plate_75x8_425		4
7	Square Tube75x75x5_450		2
8	V_Tube50x50x5_530		4
9	V_Tube50x50x5_2250		2
10	Plate_30x5_520		2
11	V_Tube50x50x5_530 - Middle.LeftSLDPRT		1
12	V_Tube50x50x5_530 - Middle		1
13	V_Tube75x75x5_475		1
14	V_Tube75x75x5_475 -Left		1
15	Plate_75x12_80		2
16	Plate_75x12_100		2
17	Plate_75x15_100		4
18	Plate		4
19	V_Tube50x50x5_510_Left		1
20	V_Tube50x50x5_510_Middle		1
21	V_Tube50x50x5_510_Rigth		1
22	barcentral		2
23	Barcentral1		1
24	Barcentral2		1
25	ISO 4018 - M20 x 60-WS		4
26	Hexagon Nut ISO - 4032 - M20 - W - N		4



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						<h2 style="text-align: center;">Department of Agricultural Engineering</h2>			
						<h3 style="text-align: center;">Frame of Multi Crop Seeder</h3>			
						<h3 style="text-align: center;">Assembly of Frame</h3>			
						A4			
						SHEET 2 OF 30			

NAME	SIGNATURE	DATE				
DRAWN: Duch Sam On		9/20/2017				
CHK'D: Pen Nov						
CHK'D: Seng Savath						
APPV'D: Chan Saruth						
MFG:			MATERIAL: Mild Steel		DWG NO.	
Q.A:						
			WEIGHT:		SCALE:1:50	



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/20/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Frame of Multi Crop Seeder

DWG NO.

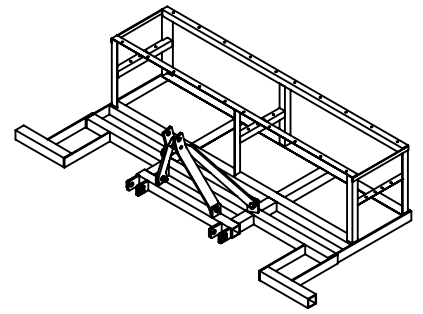
Exploded View of Frame

A4

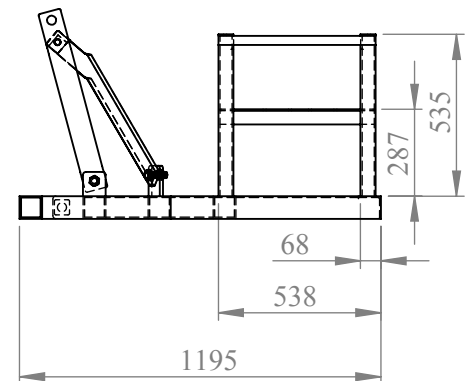
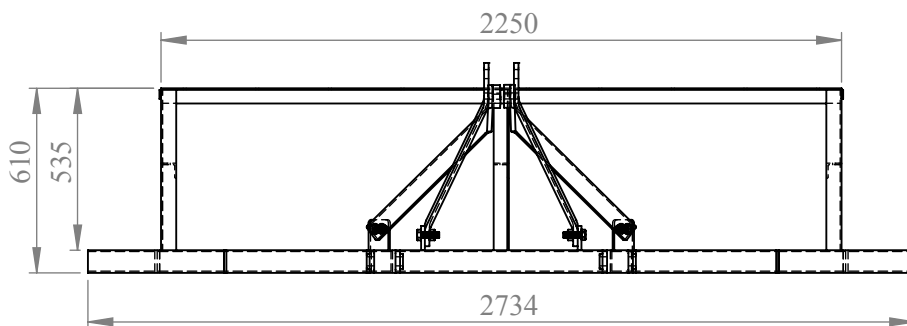
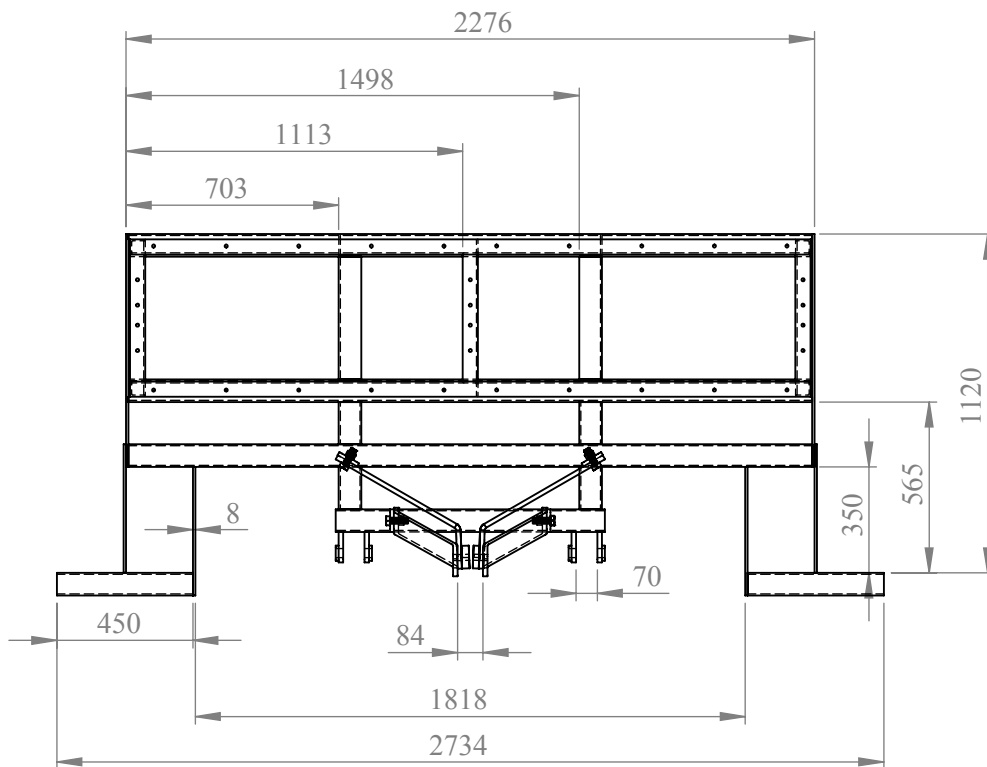
SCALE:1:25

SHEET 3 OF 30





SCALE 1 : 50



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

DWG NO.

View of Frame

A4

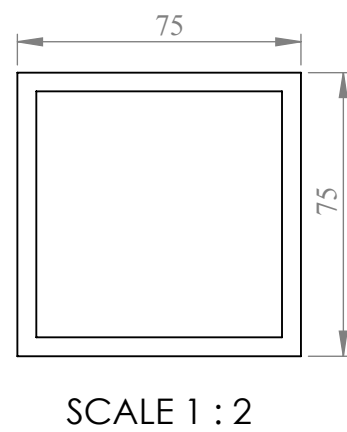
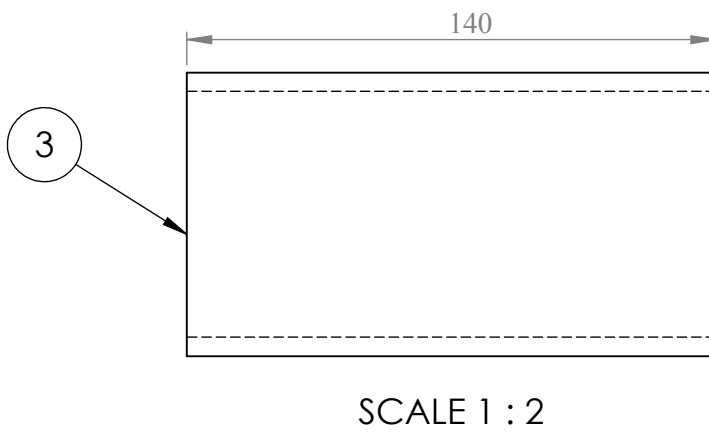
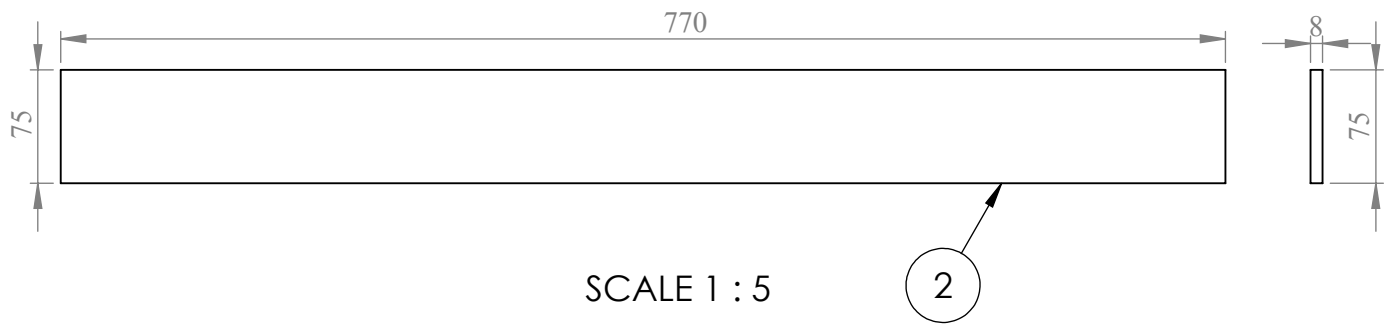
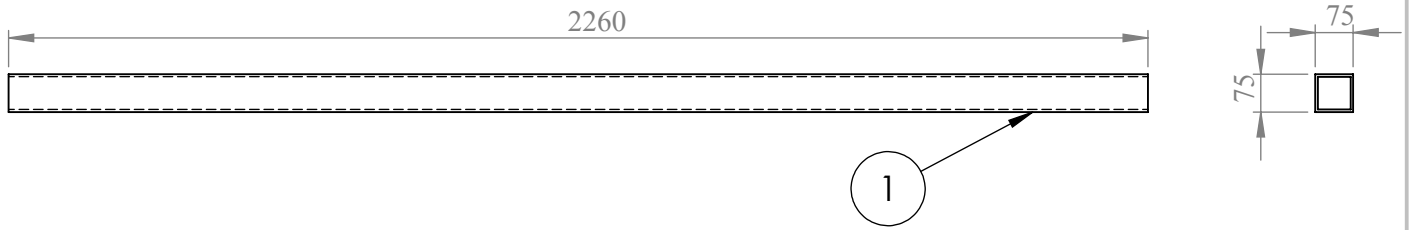
SCALE:1:25

SHEET 4 OF 30

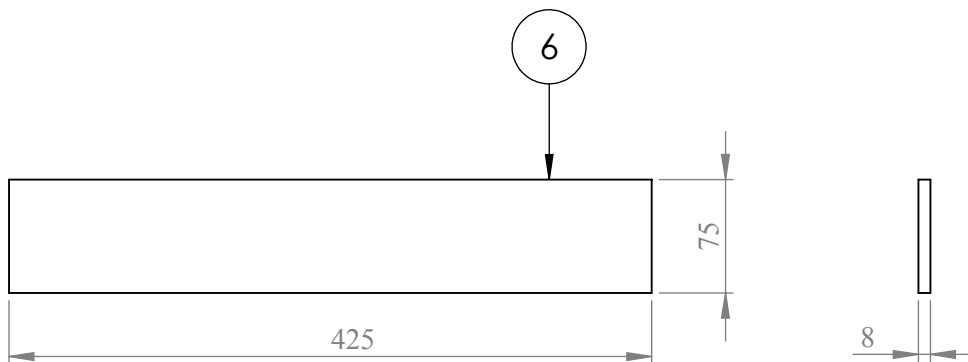
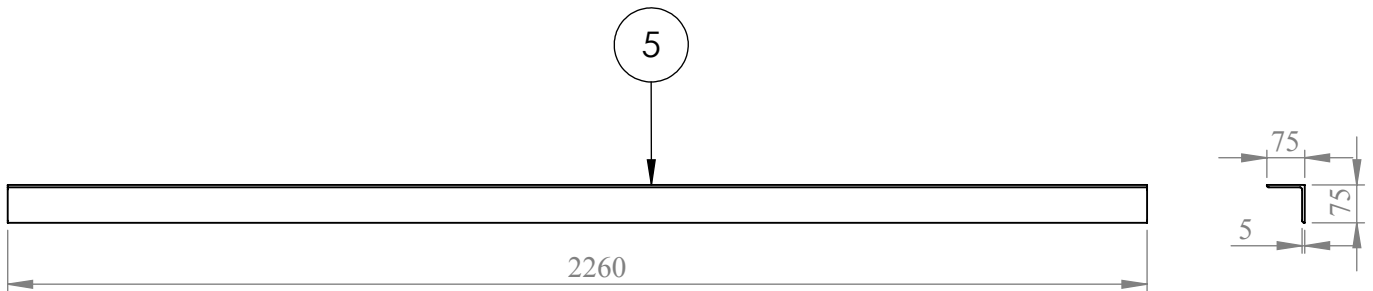
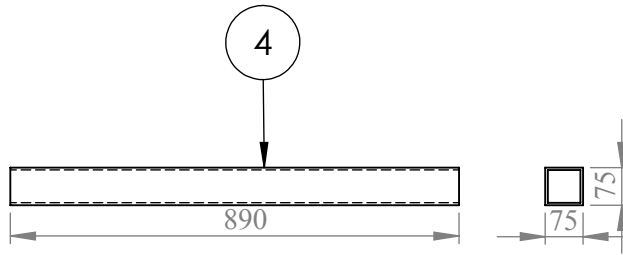
	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		9/20/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

WEIGHT:



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
SURFACE FINISH:						Department of Agricultural Engineering			
TOLERANCES:						TITLE:			
LINEAR:						Frame of Multi Crop Seeder			
ANGULAR:									
	NAME	SIGNATURE	DATE						
DRAWN	Duch Sam On		9/20/2017						
CHK'D	Pen Nov								
CHK'D	Seng Savath								
APPV'D	Chan Saruth								
MFG				MATERIAL: Mild Steel		DWG NO.		A4	
Q.A						Part No.1 , No. 2 & No.3			
						SCALE:1:15		SHEET 5 OF 30	
				WEIGHT:					



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

DWG NO.

Part No.4, No.5 &No.6

A4

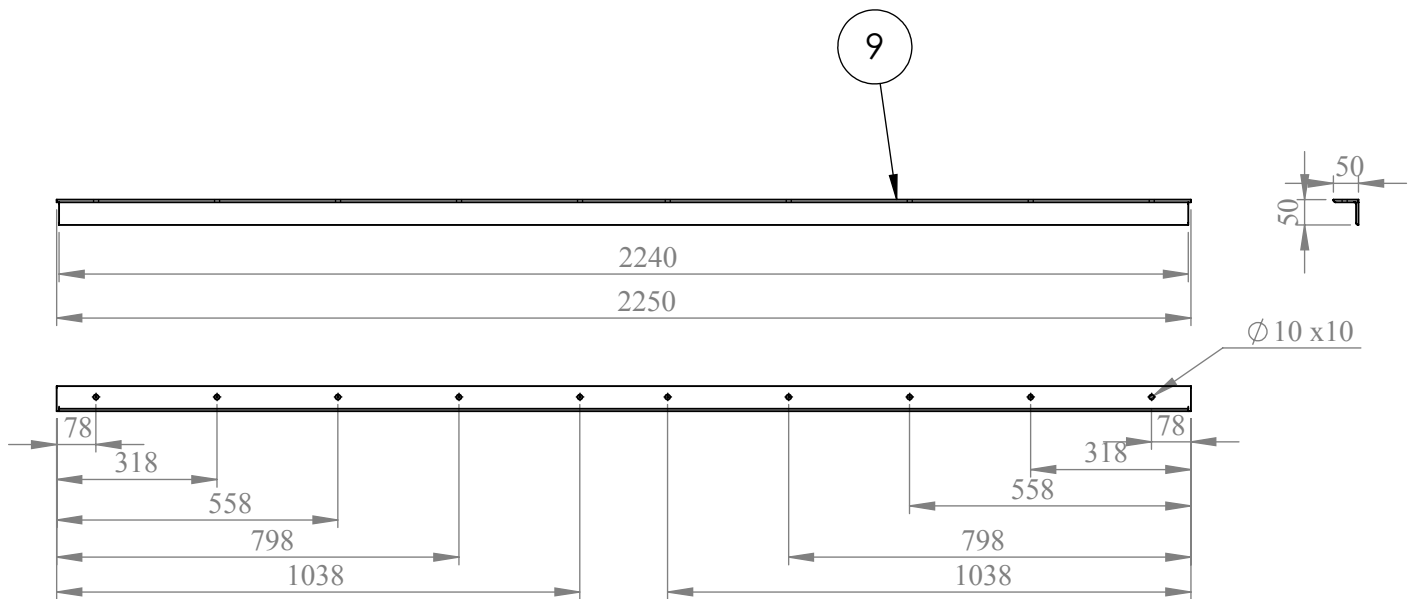
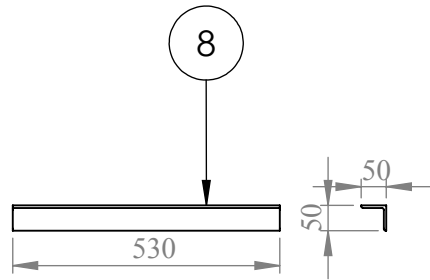
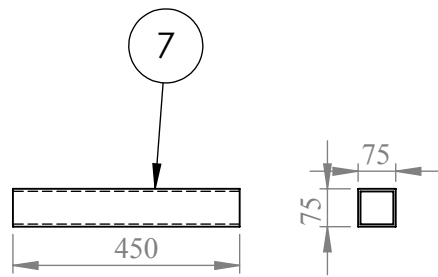
SCALE:1:15

SHEET 6 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/20/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/21/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Frame of Multi Crop Seeder

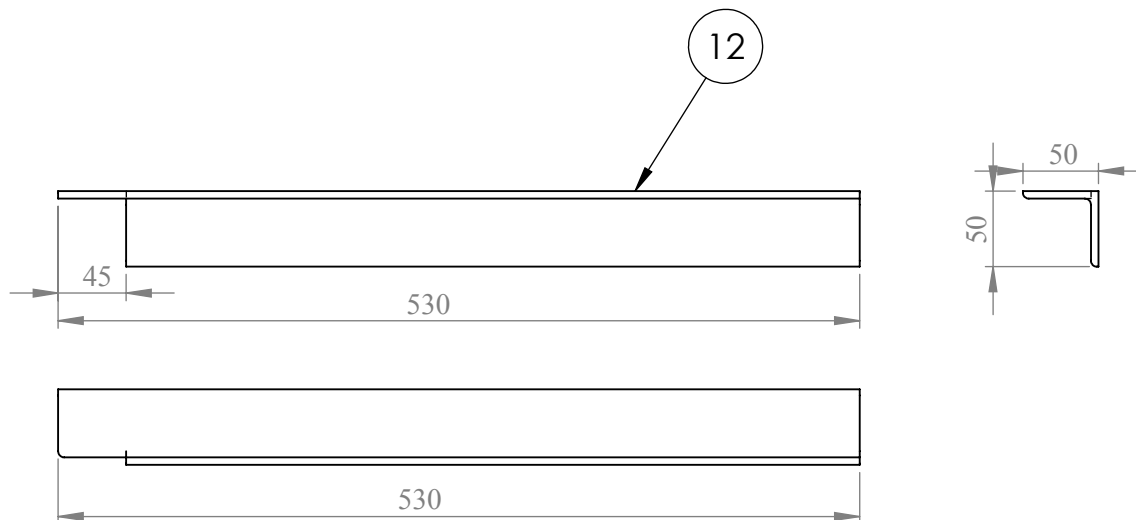
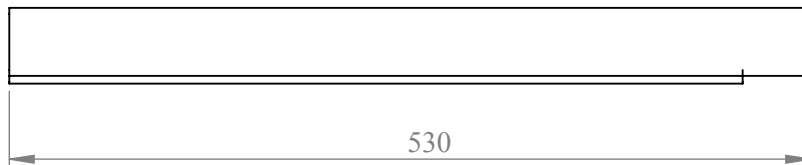
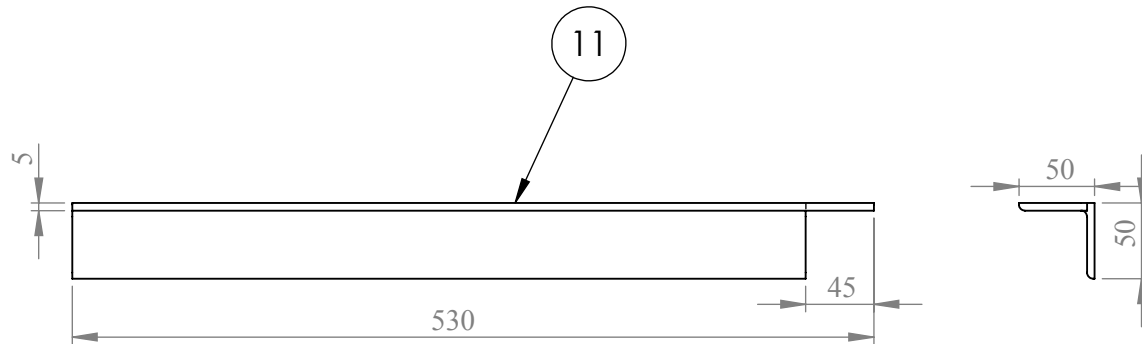
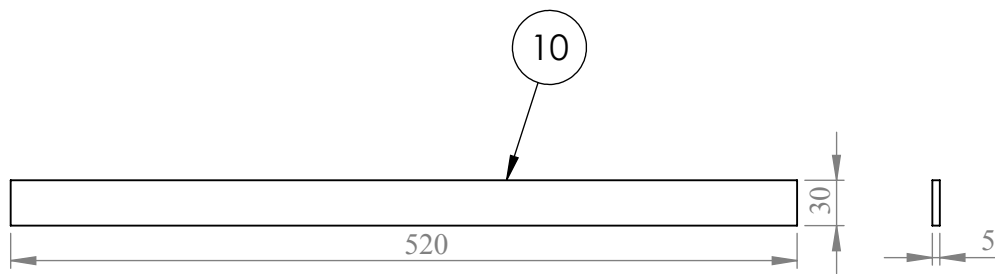
DWG NO.

Part No.7, No.8, &No.9

A4

SCALE:1:15

SHEET 7 OF 30



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

DWG NO.

Part No.10, No.11, & No.12

A4

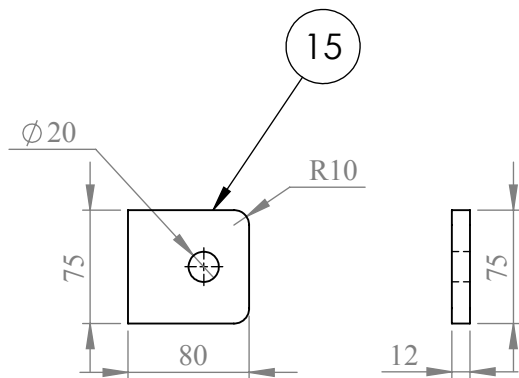
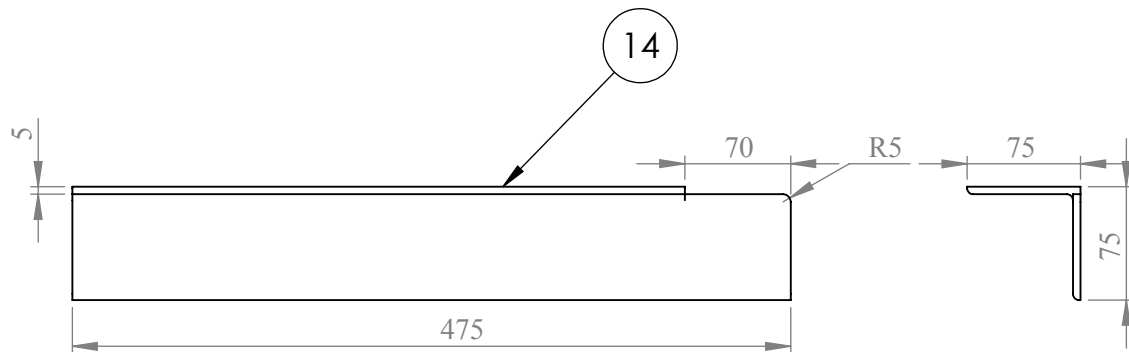
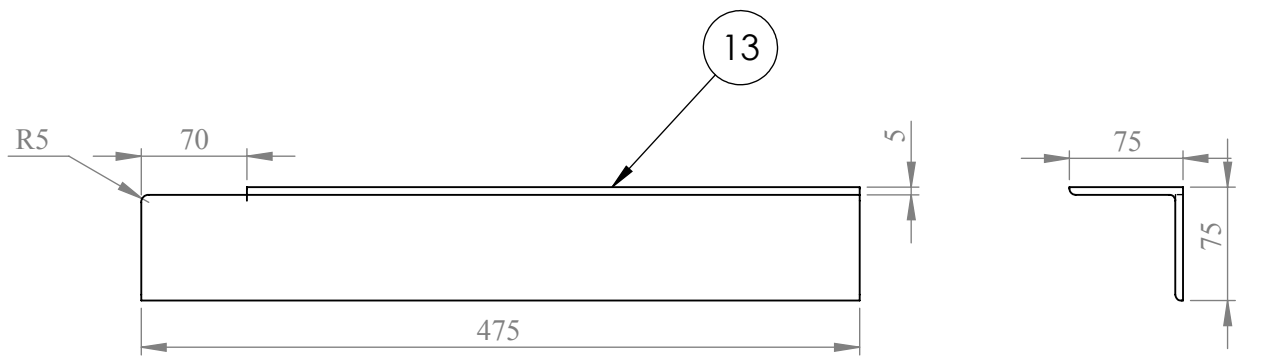
SCALE:1:5

SHEET 8 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/21/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APP'V'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

DWG NO.

Part No.13, No.14, & No. 15

A4

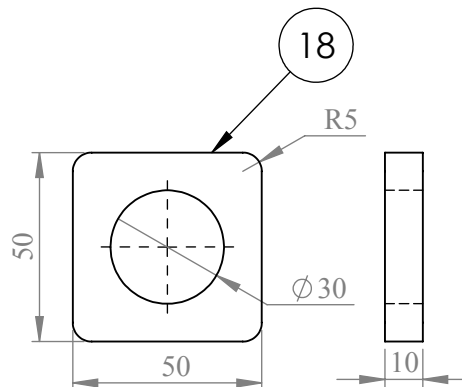
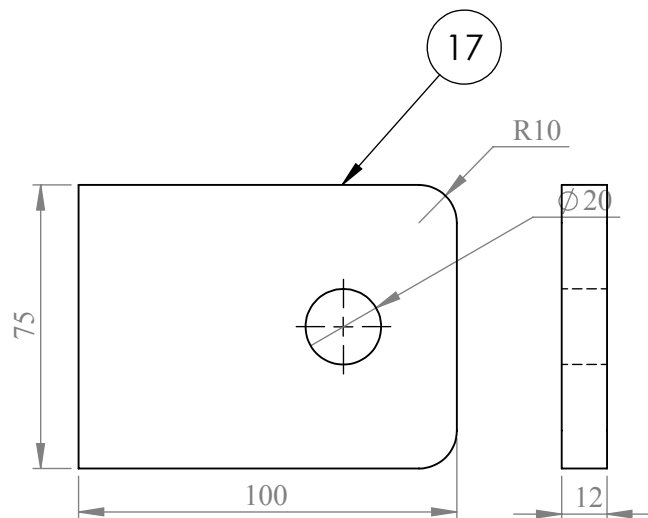
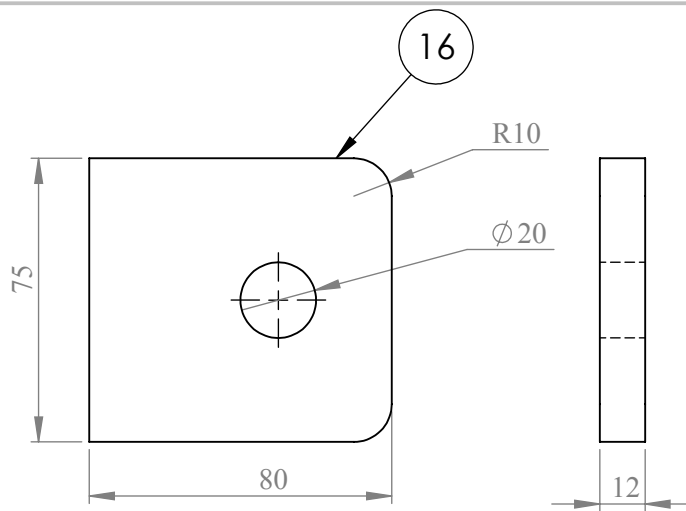
WEIGHT:

SCALE:1:5

SHEET 9 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/21/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/24/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Frame of Multi Crop Seeder

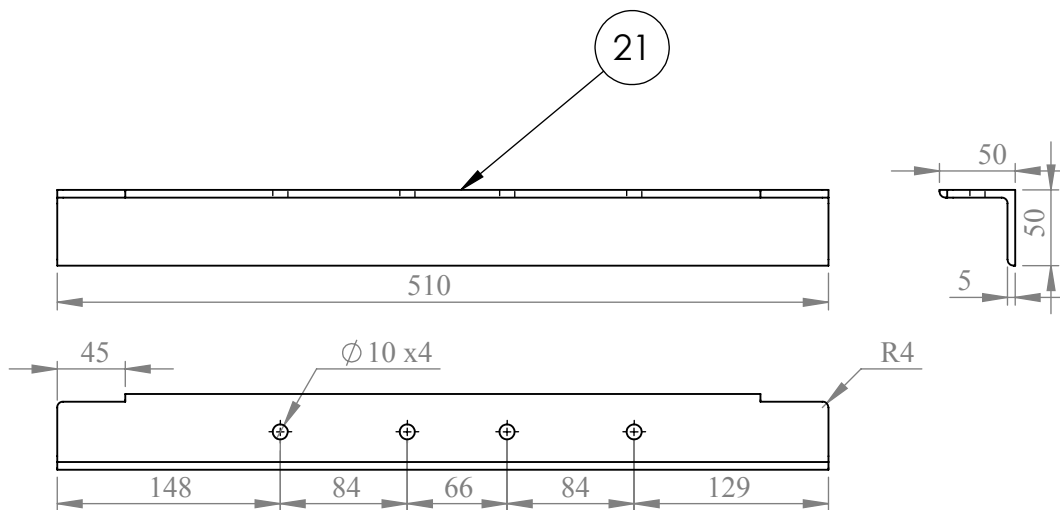
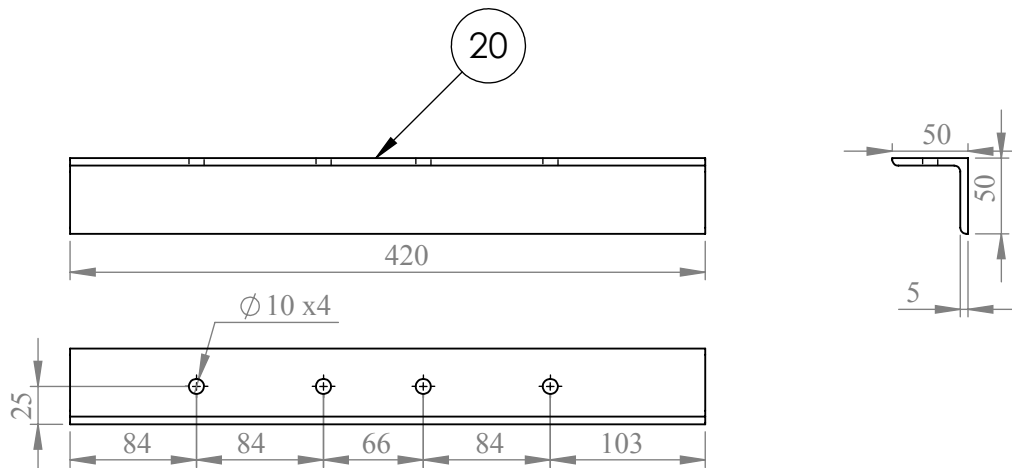
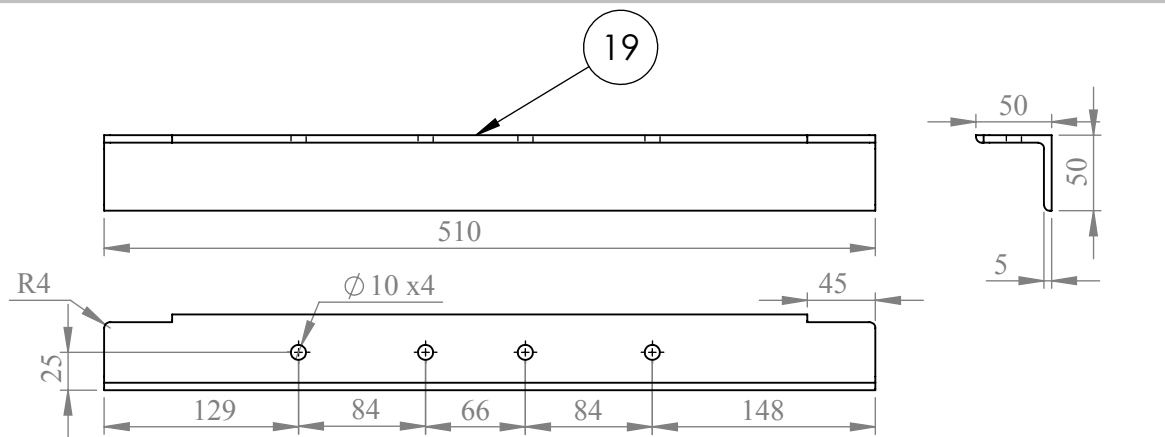
DWG NO.

Part No.16, No.17, & No.18

A4

SCALE:1:2

SHEET 10 OF 30



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

DWG NO.

Part No.19, No.20, & No.21

A4

WEIGHT:

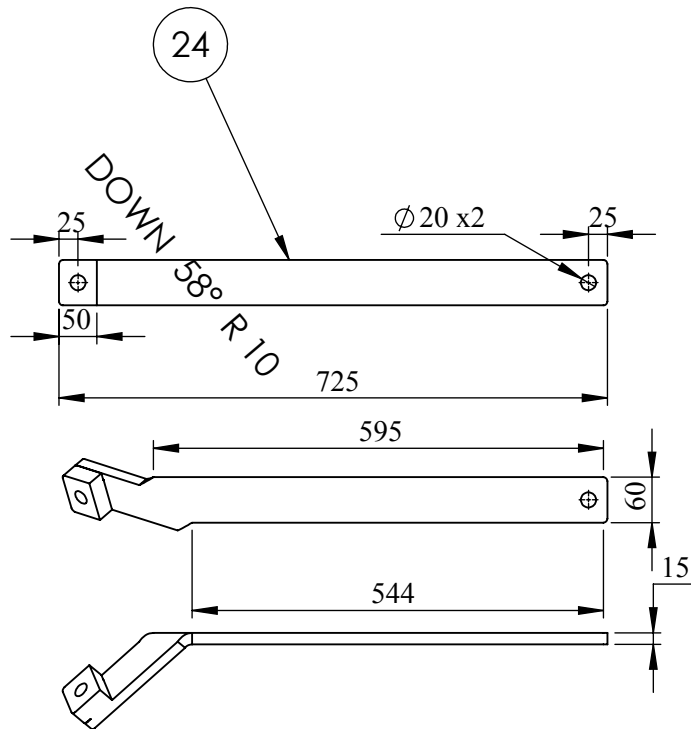
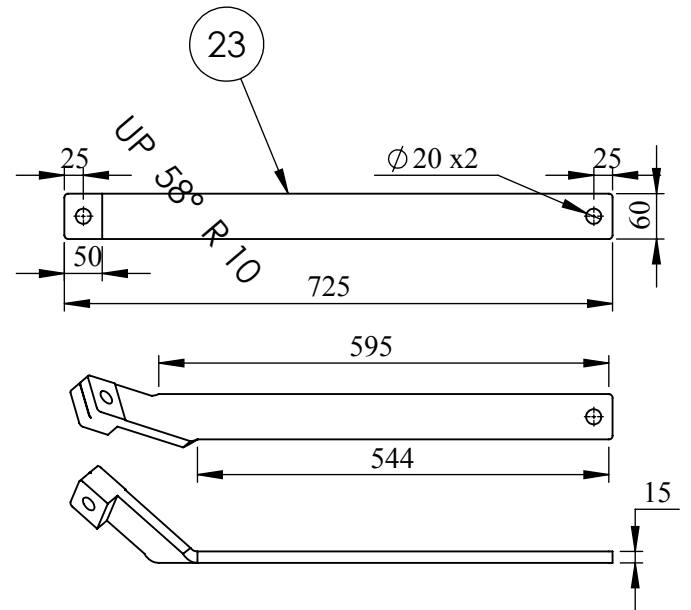
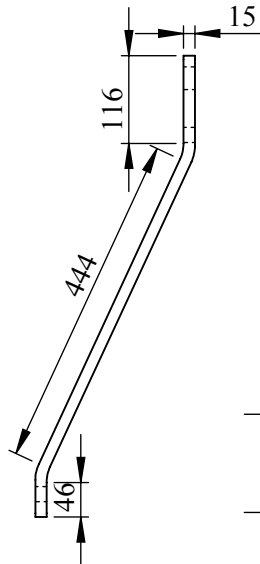
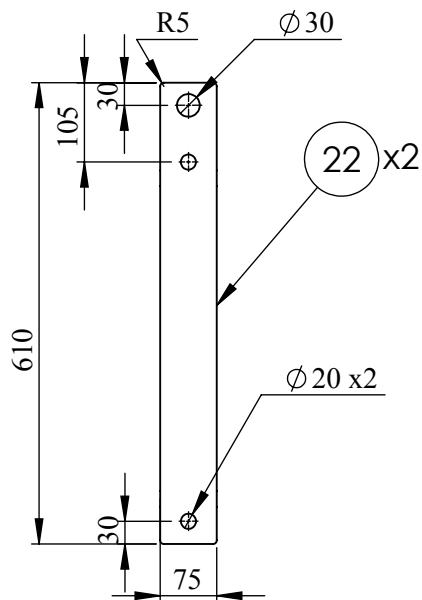
SCALE:1:5

SHEET 11 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/24/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel





UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Frame of Multi Crop Seeder

DWG NO.

Part No.22, No.23, &No.24

A4

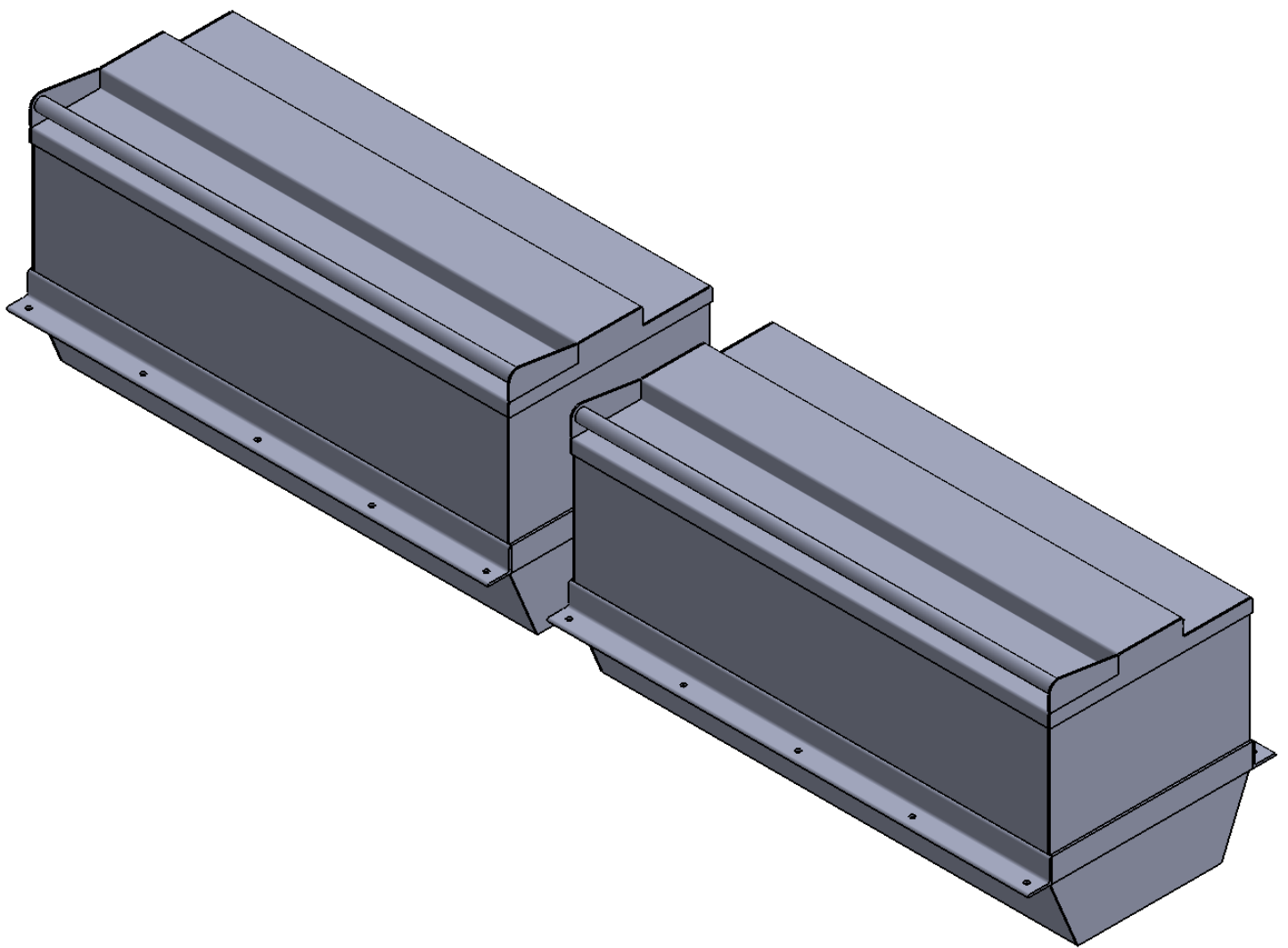
SCALE:1:10

SHEET 12 OF 30

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		9/25/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

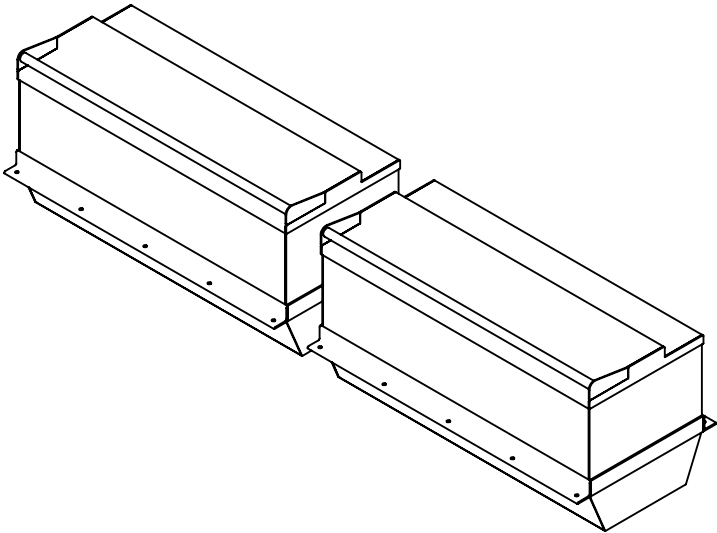
MATERIAL: Mild Steel

WEIGHT:



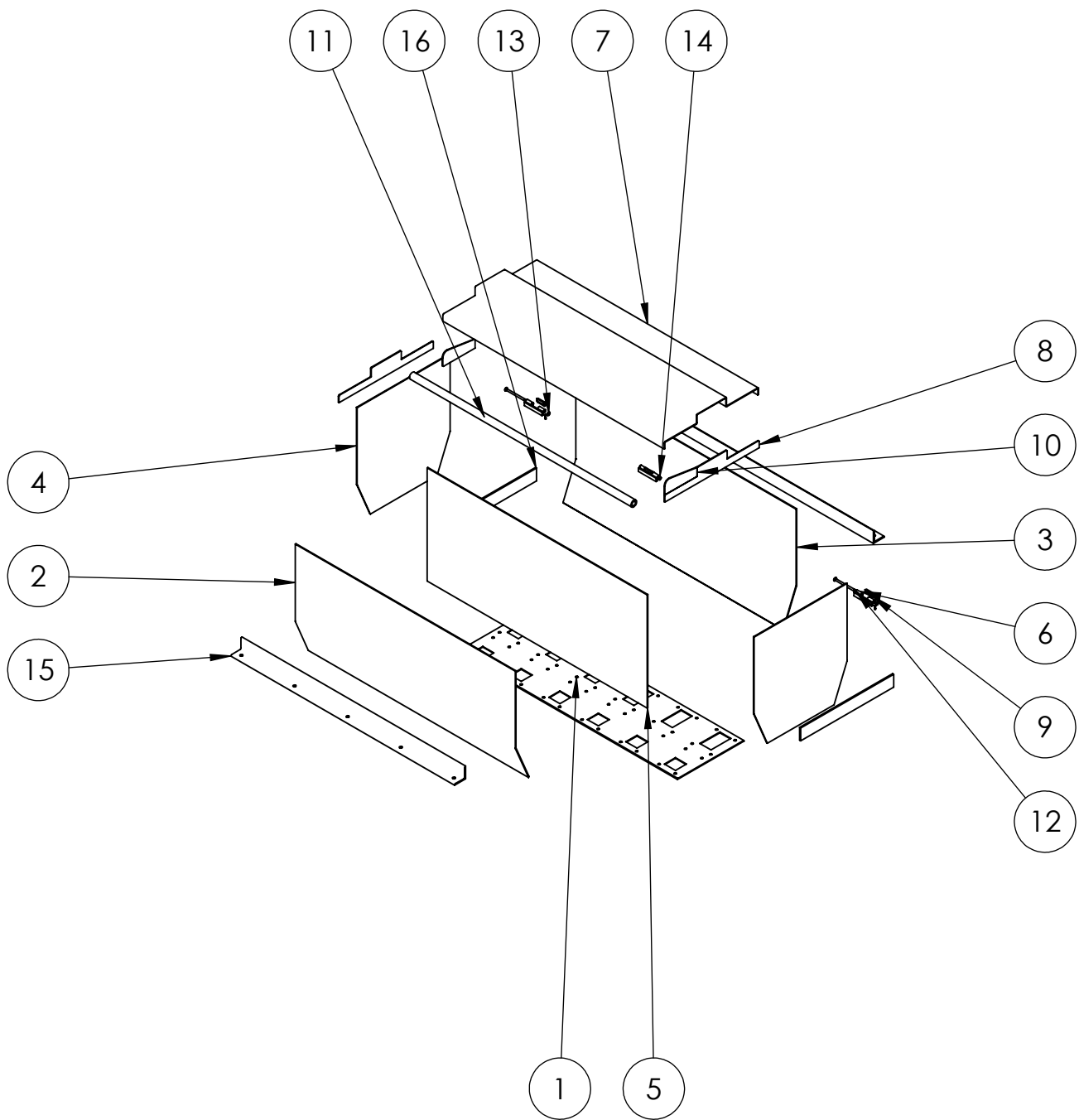
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Seed Box of Multi Crop Seeder			
								DWG NO.		A4	
								SCALE:1:10		SHEET 13 OF 30	
NAME		SIGNATURE		DATE							
DRAWN		Duch Sam On		9/25/2017							
CHK'D		Pen Nov									
CHK'D		Seng Savath									
APPV'D		Chan Saruth									
MFG						MATERIAL: Mild Steel					
Q.A											
						WEIGHT:					

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Pin_6x90		6
2	Washer ISO 7090 - 6		6
3	ISO 1234-2.5x12-C		6
4	Plate_t3x300x1000		2
5	Sheet Metal_t3_445x994.1SLDPRT		2
6	Sheet Metal_t3_445x994		2
7	Sheet Metal_t3_420x445		4
8	Plate_t3x994x445		2
9	Seed box_Hing_ID6xOD12		6
10	Plate_t3x516x1000		2
11	Plate_t3x426x63		4
12	Seed box_Hing_ID6xOD12x30		6
13	Plate_t3x57x145		4
14	Tube_OD26x1000		2
15	L50x50x1010		4
16	Plate_5x50x420		4



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						<div>Department of Agricultural Engineering</div>			
						<div>Seed Box of Multi Crop Seeder</div>			
						<div>Assembly of Seed Box</div>			
						A4			
						SHEET 14 OF 30			

	NAME	SIGNATURE	DATE						
DRAWN	Duch Sam On		9/25/2017						
CHK'D	Pen Nov								
CHK'D	Seng Savath								
APPV'D	Chan Saruth								
MFG				MATERIAL: Mild Steel					
Q.A									
				WEIGHT:					
				SCALE:1:20					



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/25/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Seed Box of Multi Crop Seeder

DWG NO.

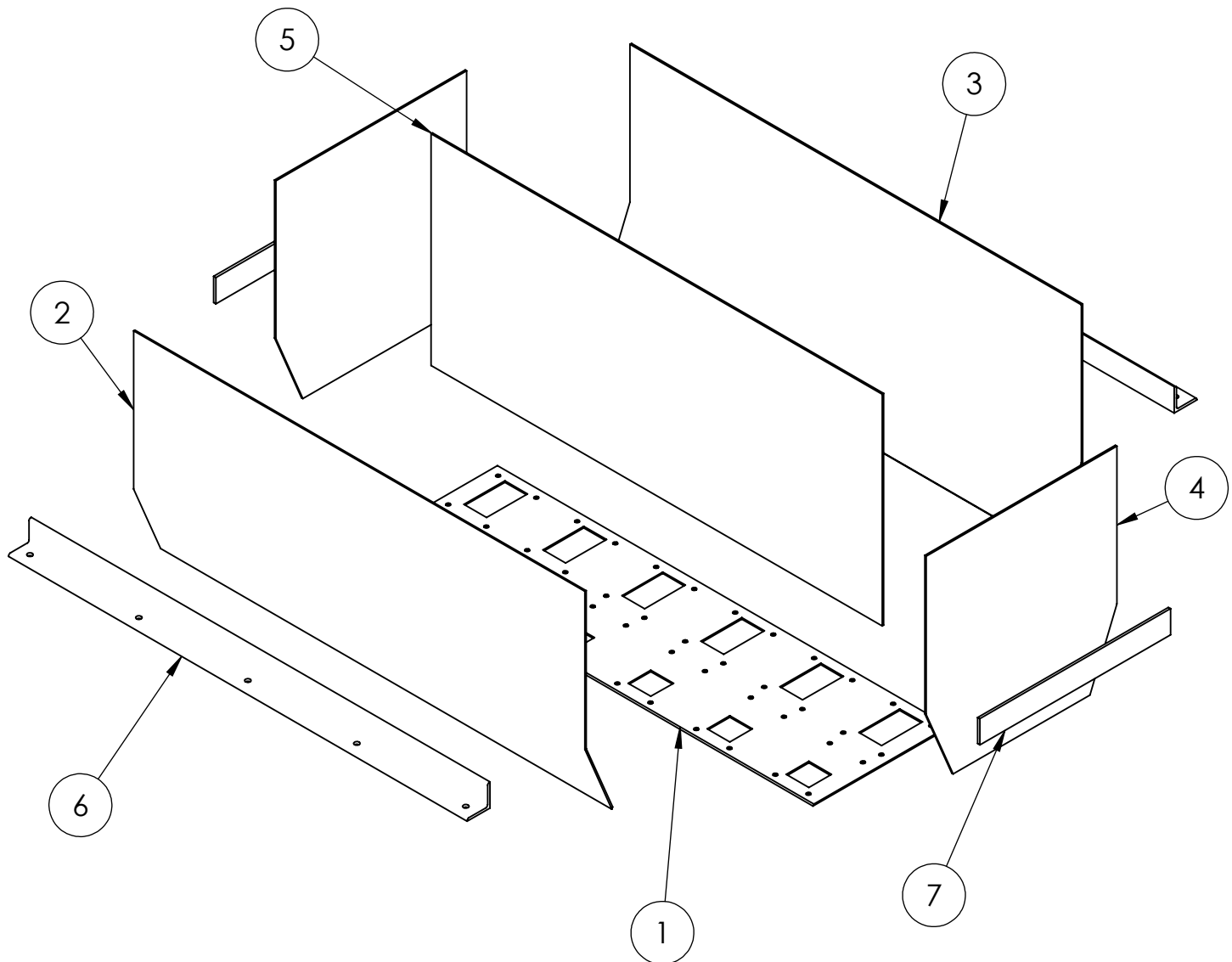
Exploded View of Seed Box

A4

SCALE:1:20

SHEET 15 OF 30

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Plate_t3x300x1000		2
2	Sheet Metal_t3_445x994.1SLDPRT		2
3	Sheet Metal_t3_445x994		2
4	Sheet Metal_t3_420x445		4
5	Plate_t3x994x445		2
6	L50x50x1010		4
7	Plate_5x50x420		4



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		9/25/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

DWG NO.

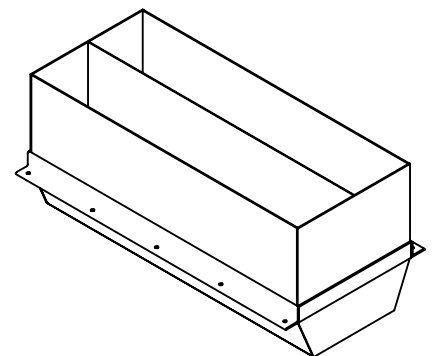
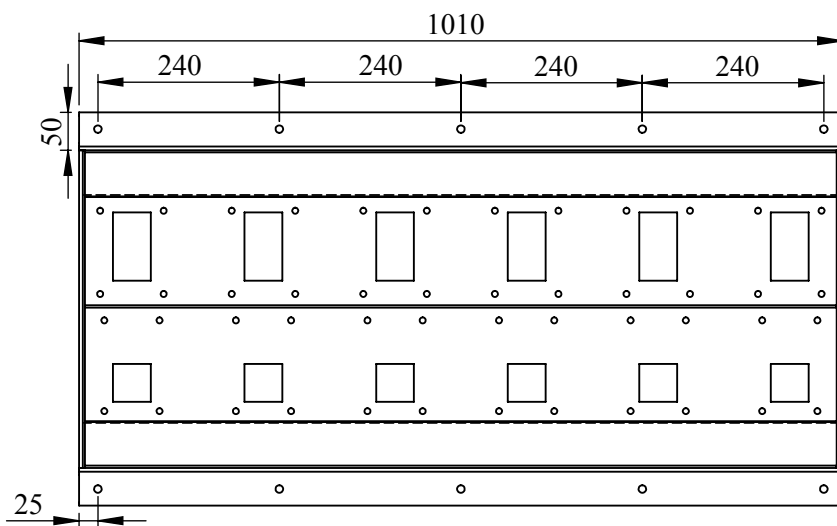
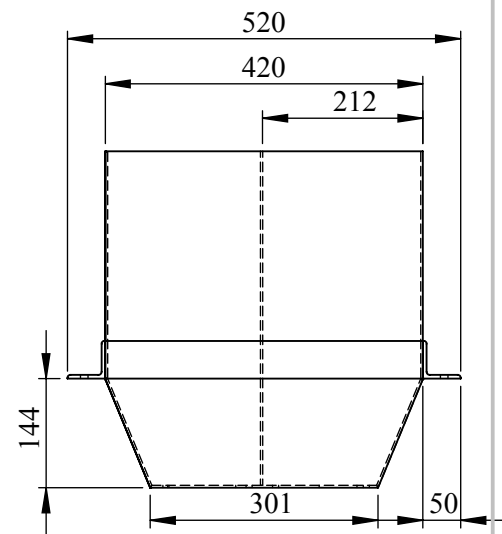
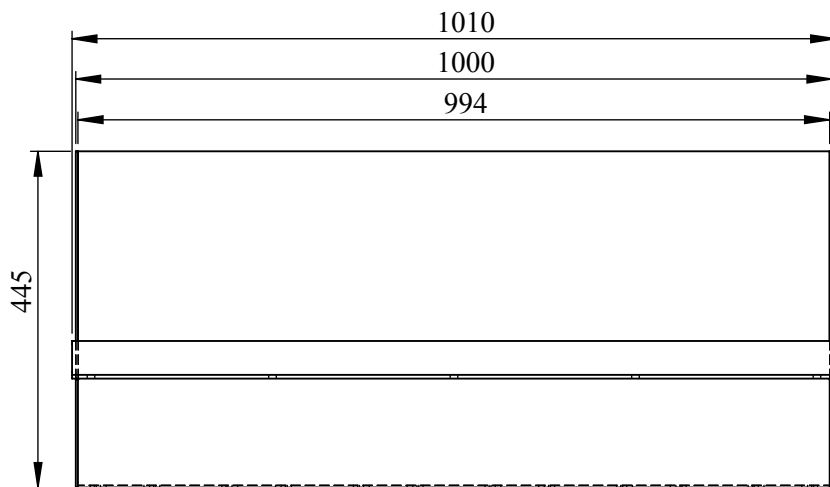
Hopper of Seed Box

A4

WEIGHT:

SCALE:1:10

SHEET 16 OF 30



SCALE 1 : 20

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
DRAWN		Duch Sam On		SIGNATURE		DATE		9/25/2017	
CHK'D		Pen Nov		SIGNATURE		DATE			
CHK'D		Seng Savath		SIGNATURE		DATE			
APPV'D		Chan Saruth		SIGNATURE		DATE			
MFG				MATERIAL: Mild Steel		DWG NO.		A4	
Q.A						Hopper of Seed box			
				WEIGHT:		SCALE:1:10		SHEET 17 OF 30	

Department of Agricultural Engineering

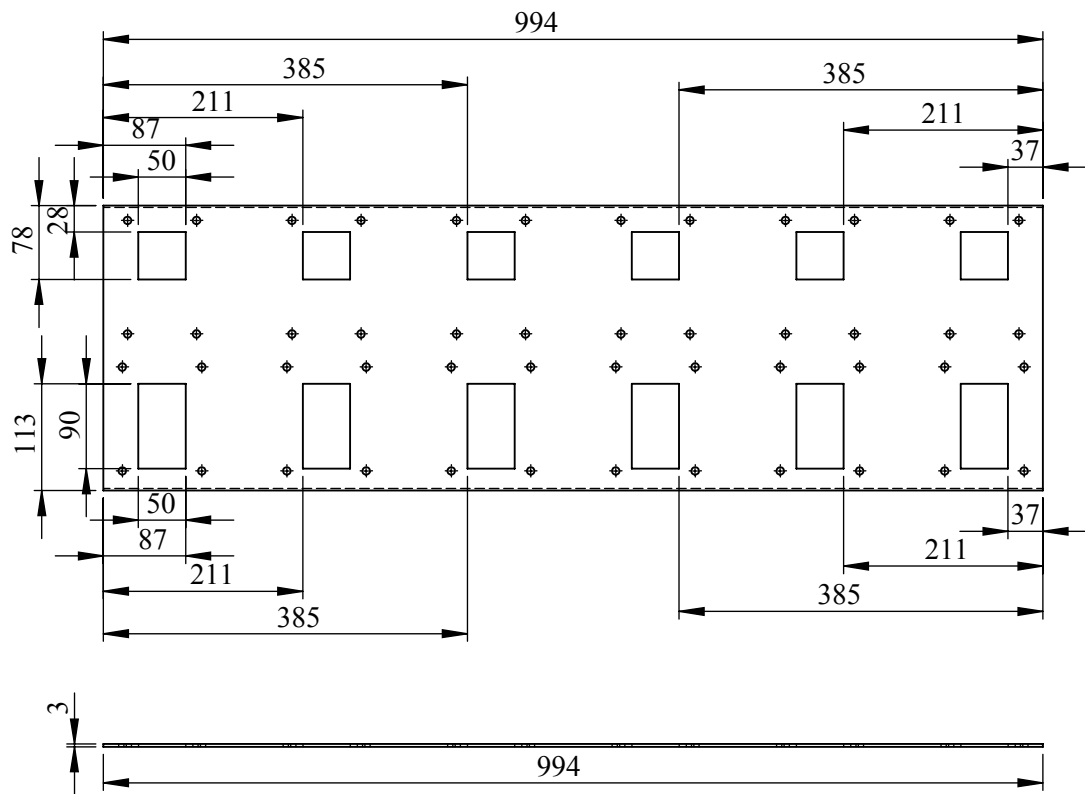
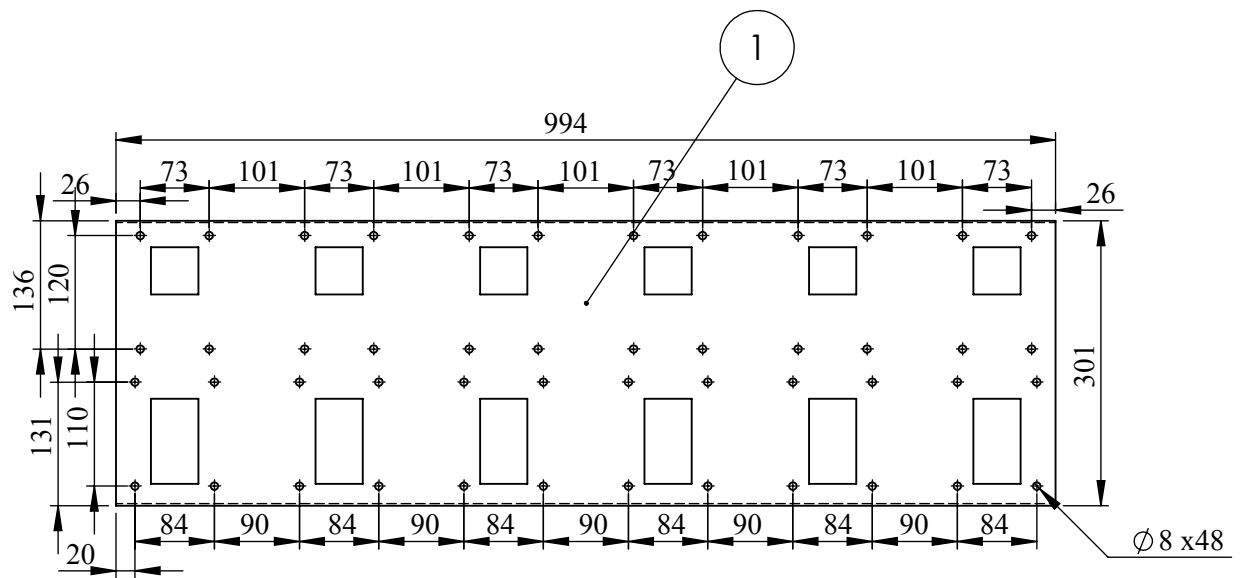
Seed Box of Multi Crop Seeder

Hopper of Seed box

A4

SCALE:1:10

SHEET 17 OF 30



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		9/27/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

DWG NO.

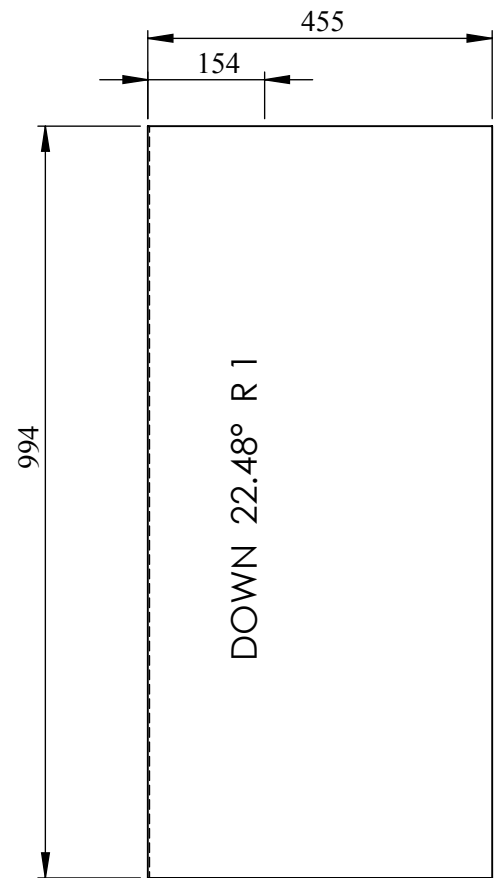
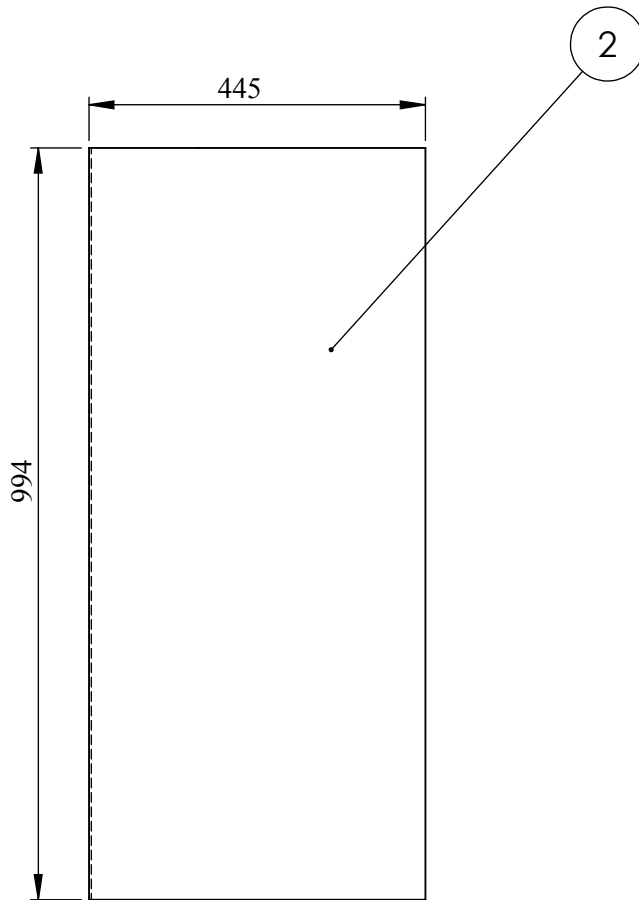
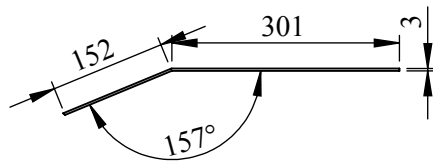
Part No.1

A4

WEIGHT:

SCALE:1:8

SHEET 18 OF 30

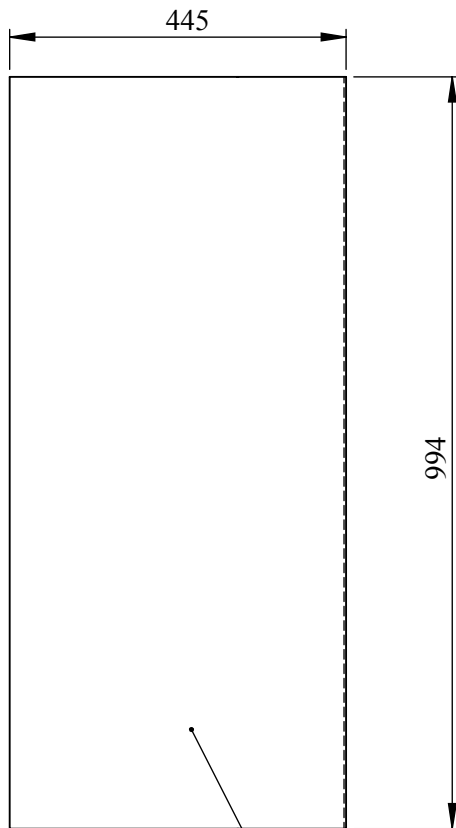
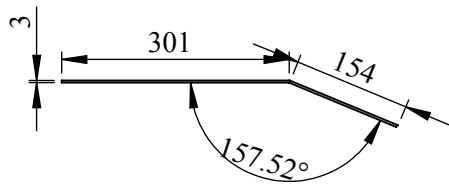


Development

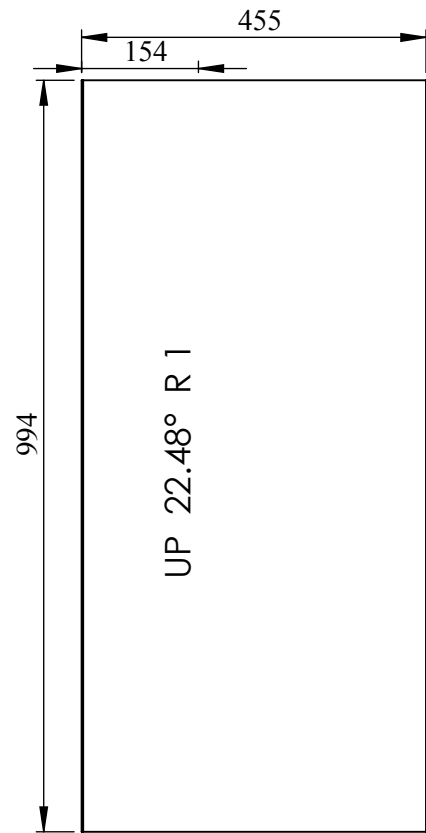
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Seed Box of Multi Crop Seeder			
								DWG NO.			
								Part No.2			
								A4			
								SHEET 19 OF 30			

	NAME	SIGNATURE	DATE			
DRAWN	Duch Sam On		9/27/2017			
CHK'D	Pen Nov					
CHK'D	Seng Savath					
APPV'D	Chan Saruth					
MFG				MATERIAL: Mild Steel		
Q.A						
				WEIGHT:		





3



Development

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/27/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

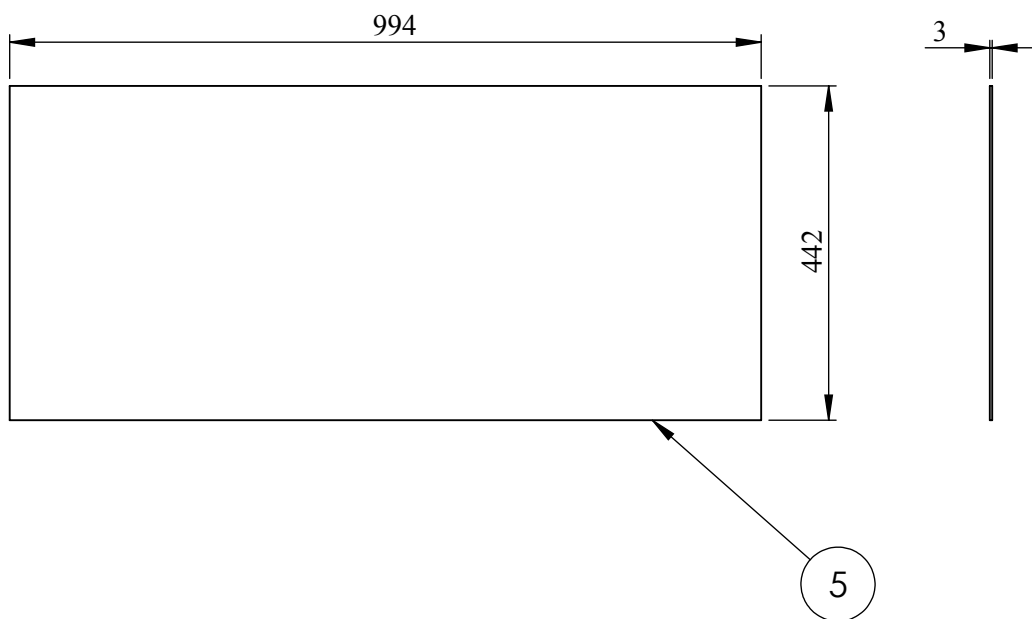
DWG NO.

Part No.3

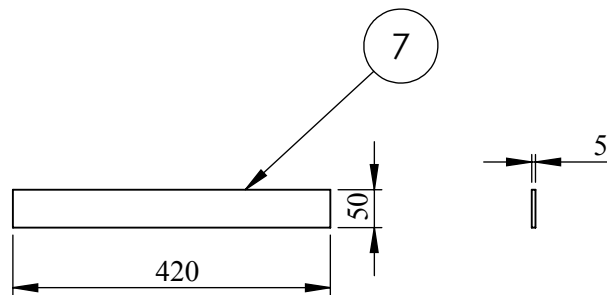
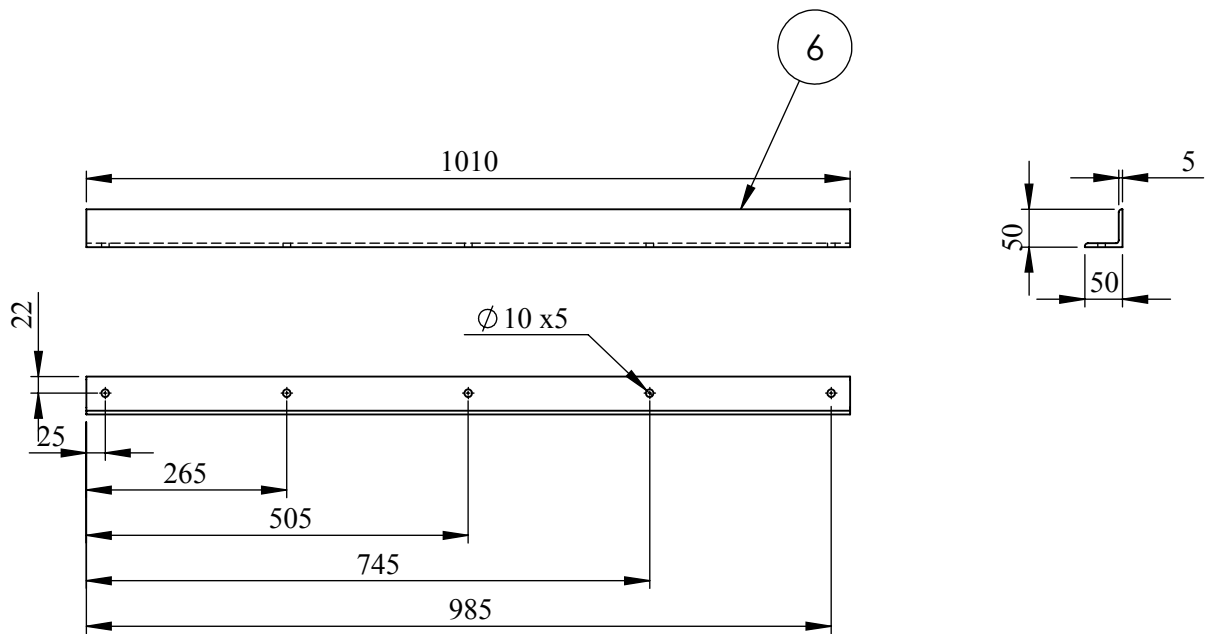
A4

SCALE:1:10

SHEET 20 OF 30



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:			FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION		
							Department of Agricultural Engineering				
	NAME	SIGNATURE	DATE				TITLE:  Seed Box of Multi Crop Seeder				
DRAWN	Duch Sam On		9/27/2017								
CHK'D	Pen Nov										
CHK'D	Seng Savath										
APPV'D	Chan Saruth										
MFG				MATERIAL: Mild Steel			DWG NO. Part No.4 & No.5				A4
Q.A											
				WEIGHT:			SCALE:1:10			SHEET 21 OF 30	



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

DWG NO.

Part No.6 & No.7

A4

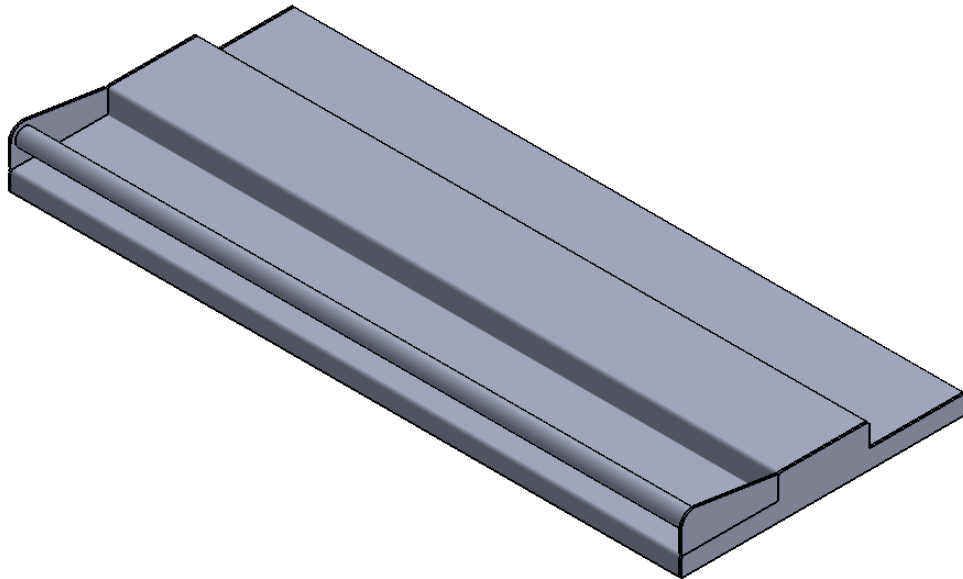
SCALE:1:10

SHEET 22 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/27/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

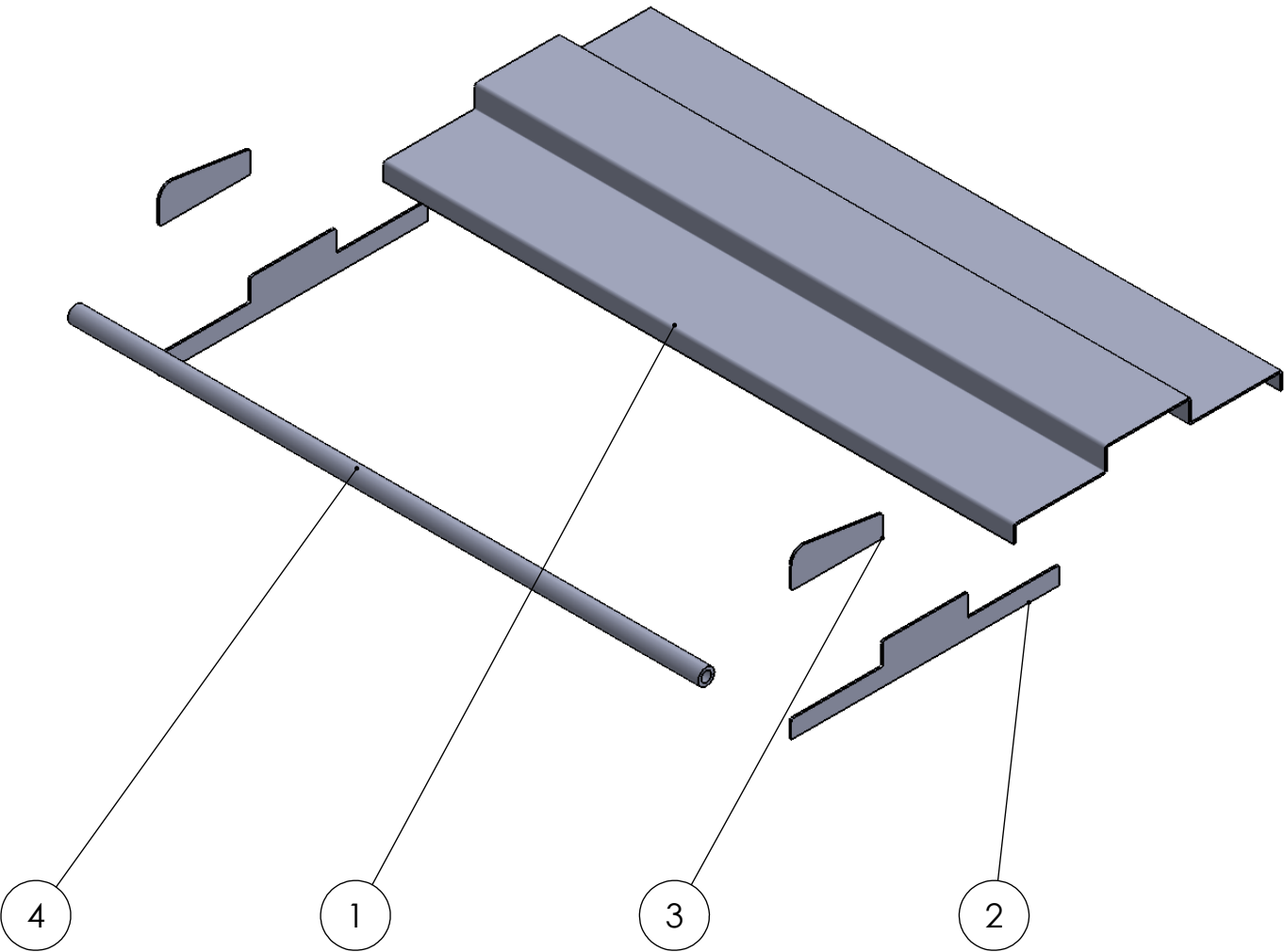
WEIGHT:



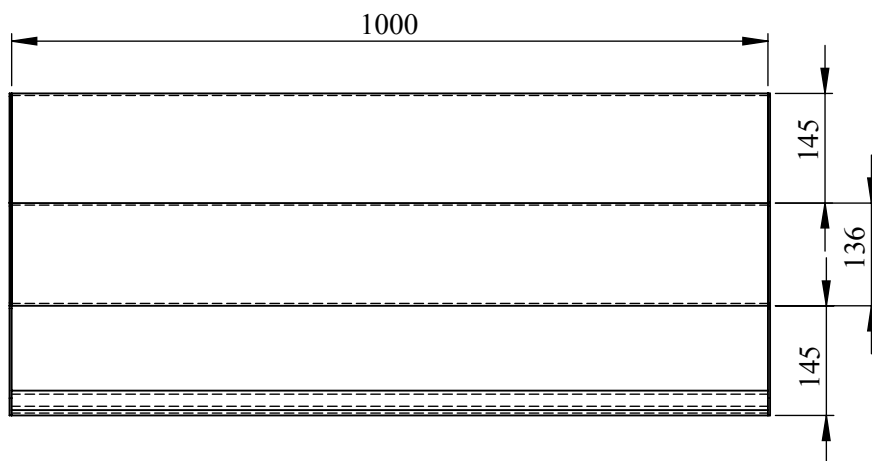
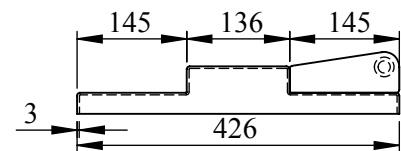
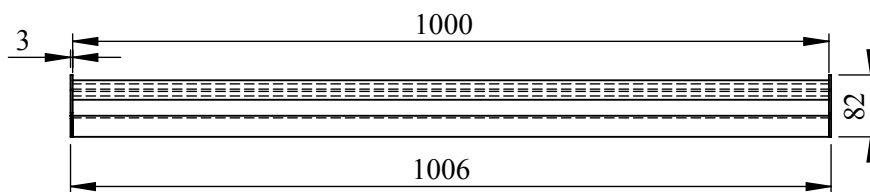
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Seed Box of Multi Crop Seeder			
								DWG. NO.			
								Assembly of Seed box Cover			
								A4			
								SHEET 23 OF 30			

	NAME	SIGNATURE	DATE			
DRAWN	Duch Sam On		9/29/2017			
CHK'D	Pen Nov					
CHK'D	Seng Savath					
APPV'D	Chan Saruth					
MFG				MATERIAL: Mild Steel		
Q.A						
				WEIGHT:		

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Plate_t3x516x1000		2
2	Plate_t3x426x63		4
3	Plate_t3x57x145		4
4	Tube_OD26x1000		2



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering  Seed Box of Multi Crop Seeder			
NAME		SIGNATURE		DATE				TITLE:			
DRAWN		Duch Sam On		9/29/2017				DWG NO. Exploded View of Seed box Cover			
CHK'D		Pen Nov									
CHK'D		Seng Savath									
APPV'D		Chan Saruth									
MFG											
Q.A								A4			
				MATERIAL: Mild Steel				SCALE:1:8			
				WEIGHT:				SHEET 24 OF 30			



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

DWG NO.

Assembly of Seed box Cover

A4

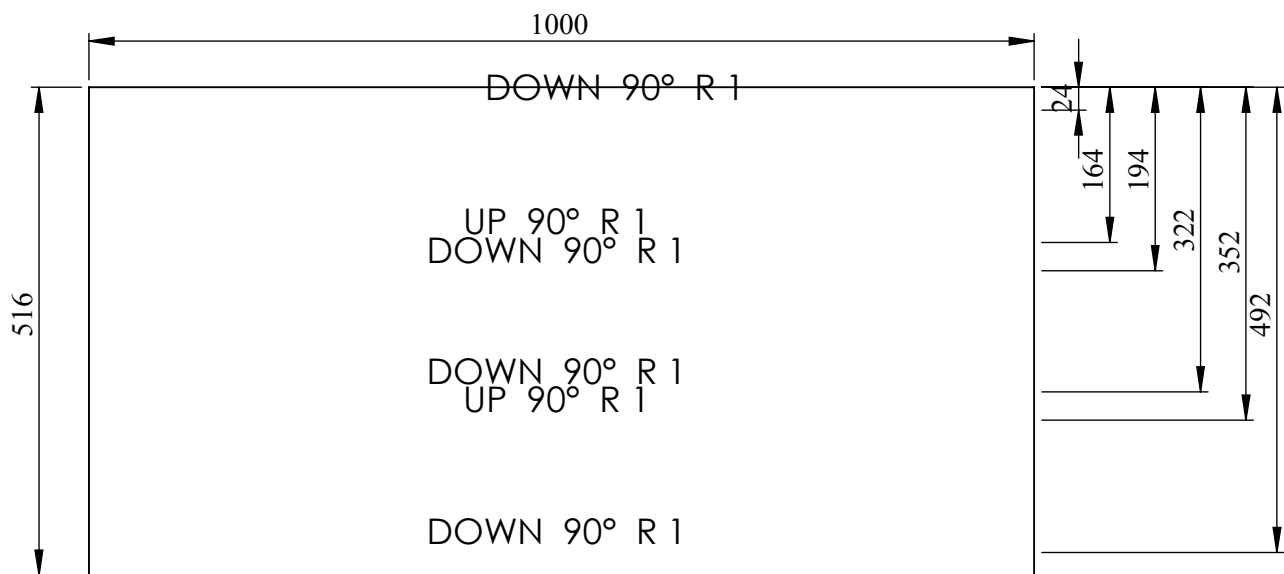
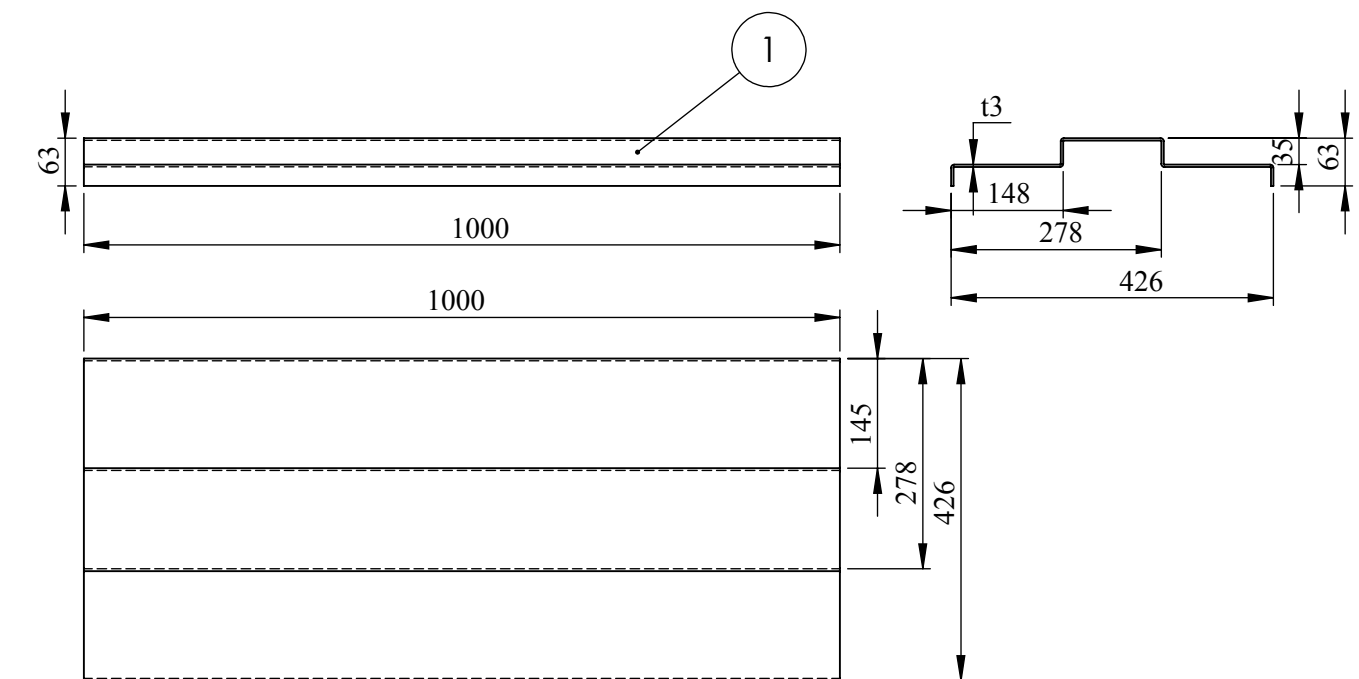
WEIGHT:

SCALE:1:10

SHEET 25 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/29/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

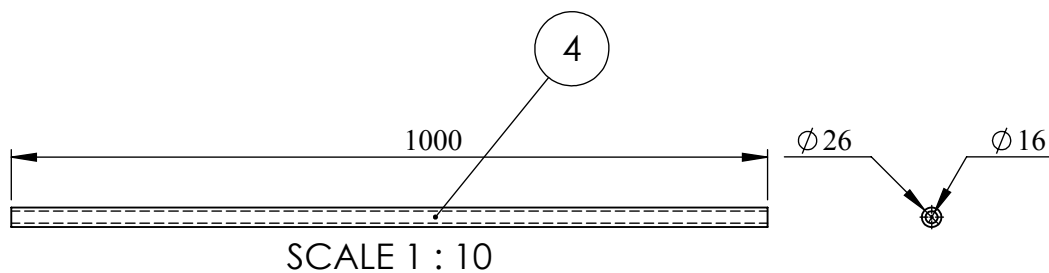
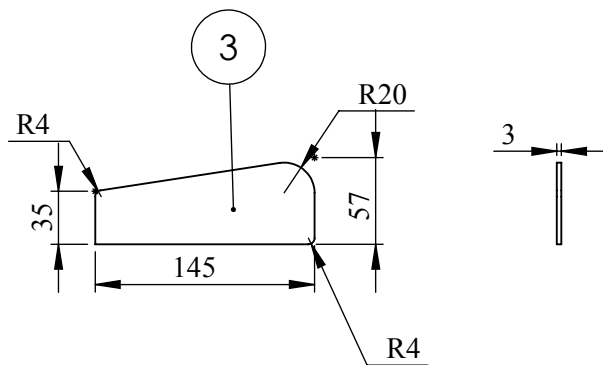
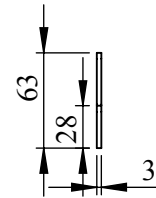
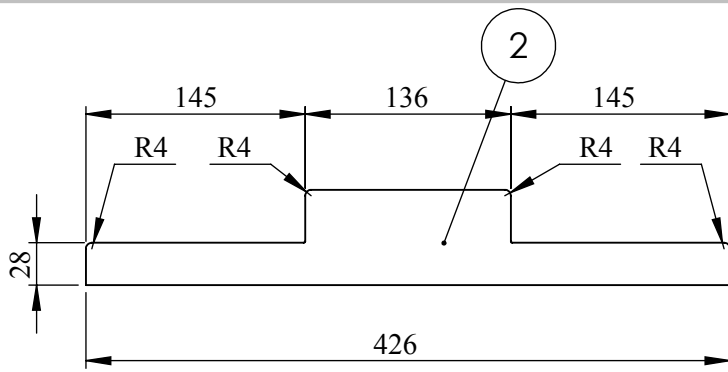
MATERIAL: Mild Steel



SCALE 1 : 8  
Development

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Seed Box of Multi Crop Seeder			
								DWG NO.			
								Part No. 1			
								A4			
								SHEET 26 OF 30			

NAME	SIGNATURE	DATE			
Duch Sam On		9/29/2017			
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG			MATERIAL: Mild Steel		
Q.A					
			WEIGHT:		



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

DWG NO.

Part No.2, No.3, & No.4

A4

WEIGHT:

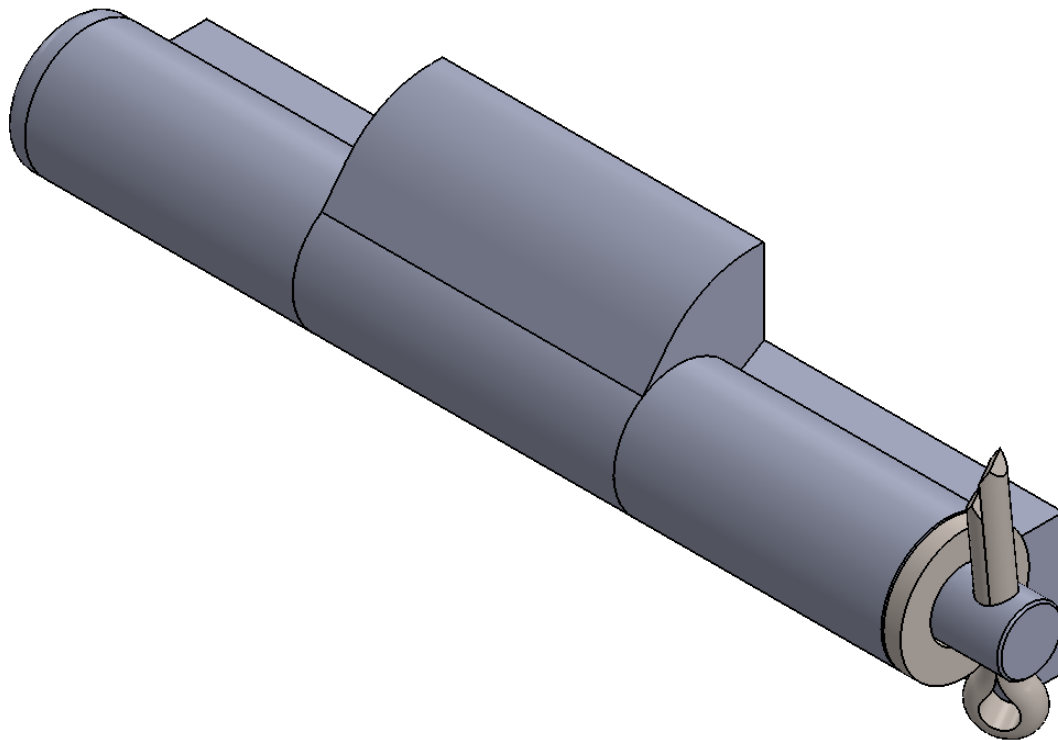
SCALE:1:5

SHEET 27 OF 30

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		9/29/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

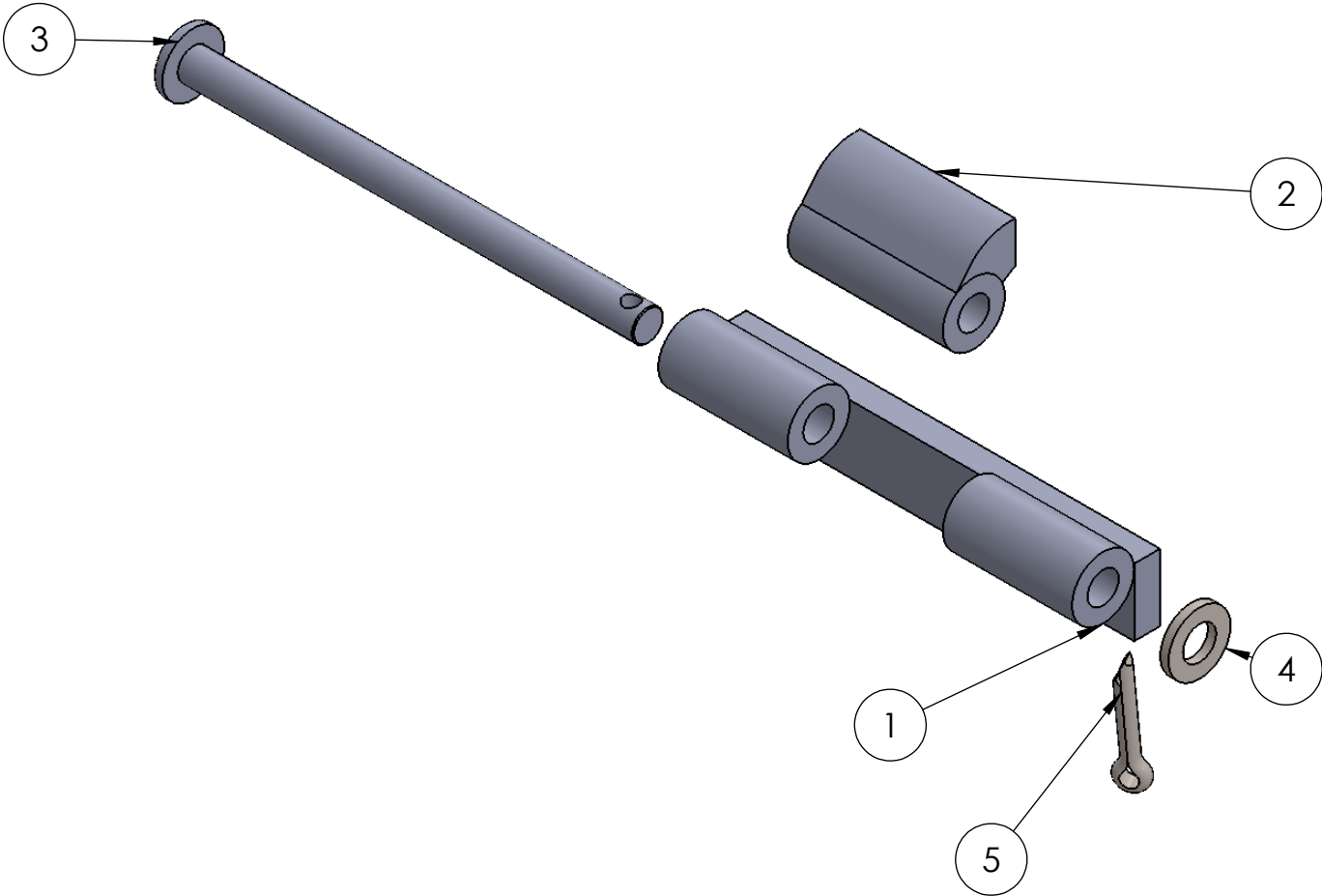
MATERIAL: Mild Steel



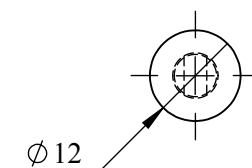
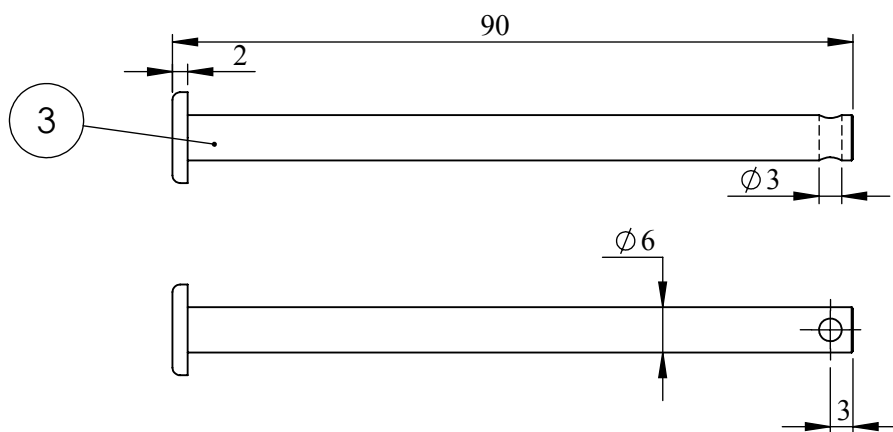
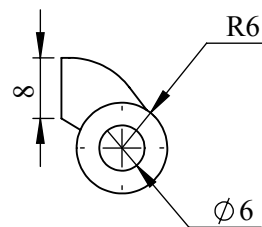
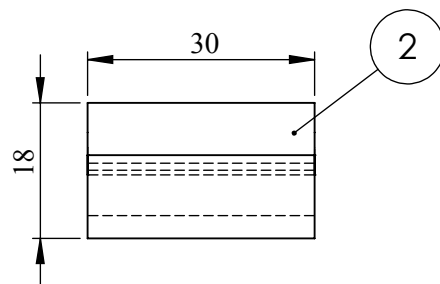
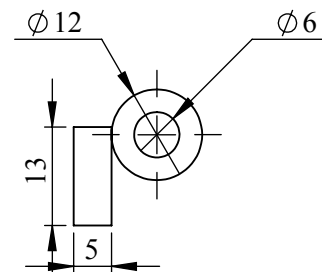
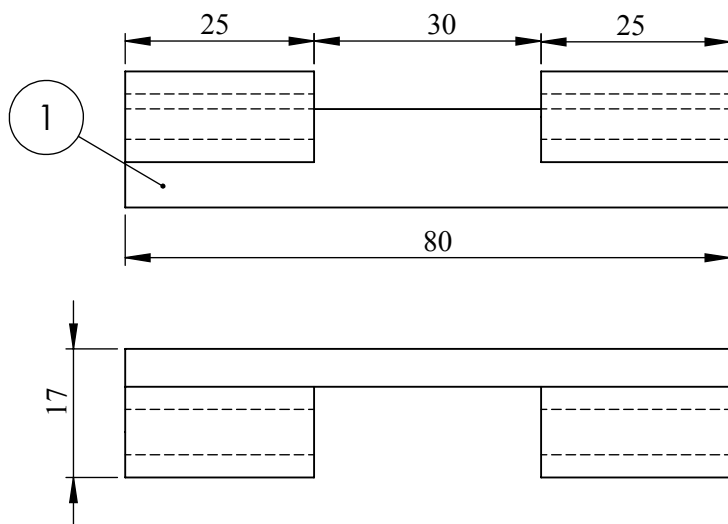


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Seed Box of Multi Crop Seeder			
						DWG NO.			
						Assembly of Seed Box Hinge			
						A4			
						SHEET 28 OF 30			
DRAWN		Duch Sam On		SIGNATURE		DATE		9/29/2017	
CHK'D		Pen Nov							
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel			
Q.A									
						WEIGHT:		SCALE:1:0.5	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Seed box_Hing_ID6xOD12		6
2	Seed box_Hing_ID6xOD12x30		6
3	Pin_6x90		6
4	Washer ISO 7089 - 6		6
5	ISO 1234-3.2x14-C		6



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
SURFACE FINISH:						<div>Department of Agricultural Engineering</div>			
TOLERANCES: LINEAR: ANGULAR:									
NAME	SIGNATURE	DATE				<div>TITLE:</div> <div>Seed Box of Multi Crop Seeder</div>			
DRAWN	Duch Sam On	9/29/2017							
CHK'D	Pen Nov								
CHK'D	Seng Savath								
APPV'D	Chan Saruth								
MFG			MATERIAL: Mild Steel			DWG NO.		A4	
Q.A						Exploded View of Seed Box Hinge			
				WEIGHT:		SCALE:1:1		SHEET 29 OF 30	



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Box of Multi Crop Seeder

DWG NO.

Part No. 1, No. 2, & No. 3

A4

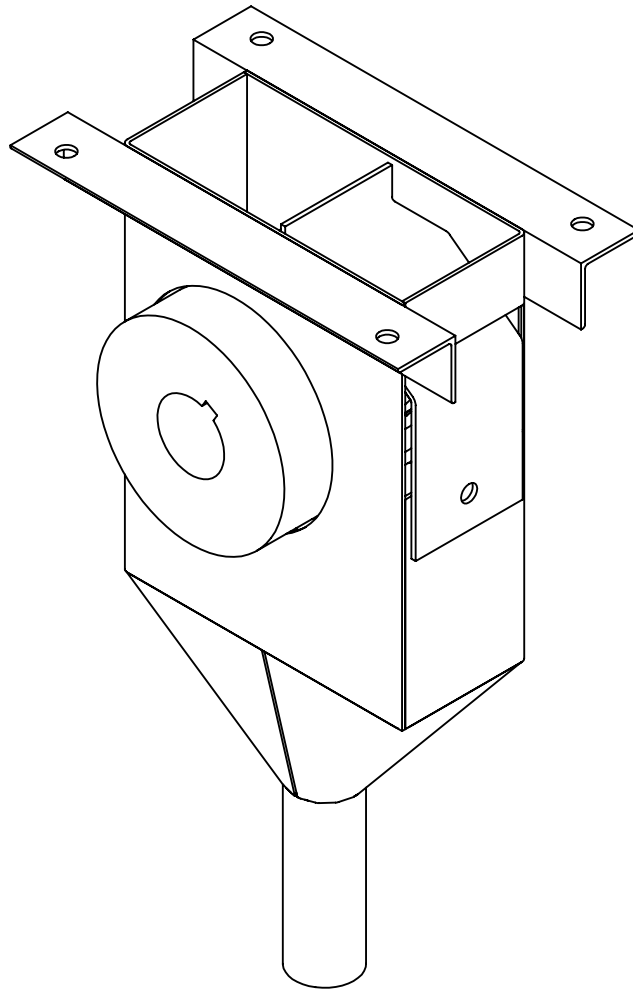
SCALE:1:1

SHEET 30 OF 30

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		9/29/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

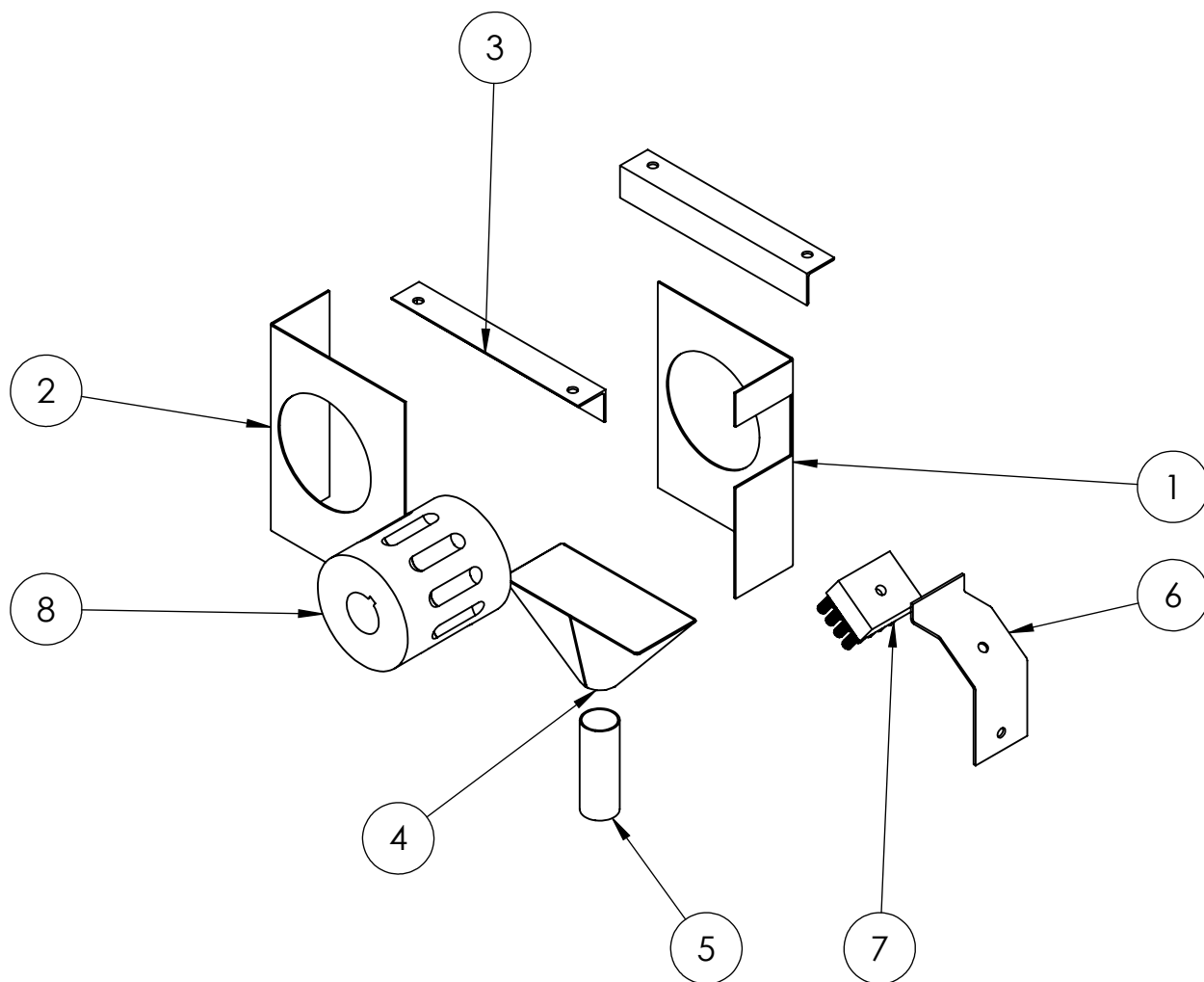
WEIGHT:



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Seed Metering Device			
								DWG NO.			
								Assembly of Seed Metering			
								A4			
								SHEET 1 OF 10			

	NAME	SIGNATURE	DATE			
DRAWN	Duch Sam On		10/8/2017			
CHK'D	Pen Nov					
CHK'D	Seng Savath					
APPV'D	Chan Saruth					
MFG				MATERIAL: Mild Steel		
Q.A						
				WEIGHT:		

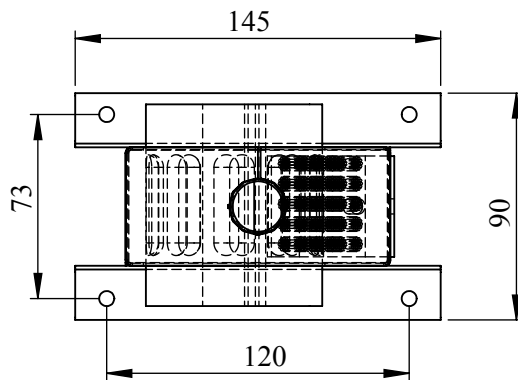
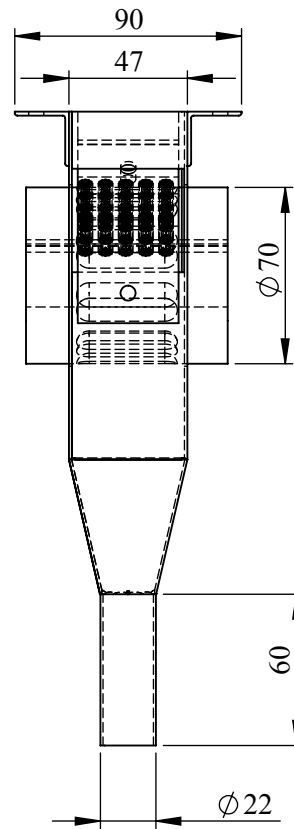
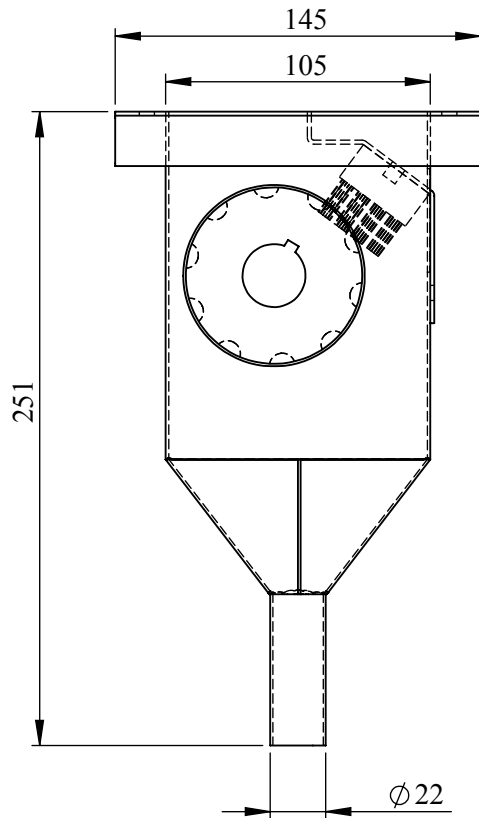
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Sheet Metal_†1.2xL138		1
2	Sheet Metal_†1.2xL138_R		1
3	L_†1.5x21x21_145		2
4	sheet metal		1
5	Pipe22_60		1
6	Brush_Plate		1
7	Brush -Revised		1
8	Metering device		1



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Seed Metering Device			
						DWG NO.			
						Exploded View of Seed Metering			
						A4			
						SCALE:1:4			
						SHEET 2 OF 10			

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/8/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel	
WEIGHT:	



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Seed Metering Device

DWG NO.

Assembly of Seed Metering

A4

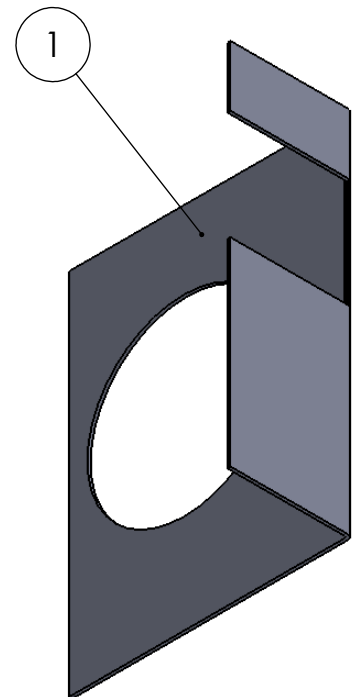
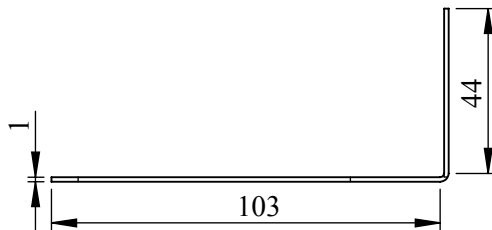
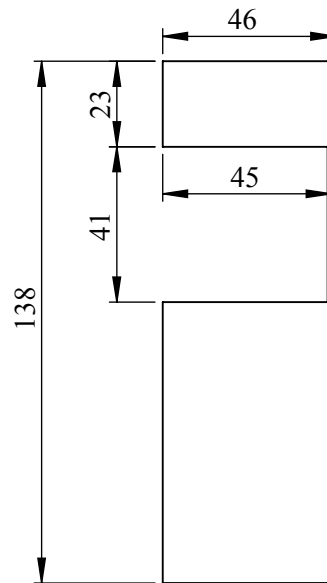
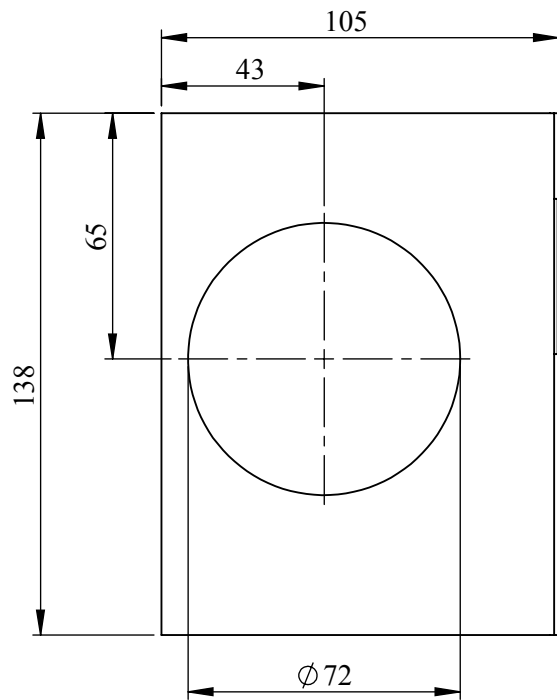
SCALE:1:3

SHEET 3 OF 10

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/8/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

WEIGHT:



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/8/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Seed Metering Device

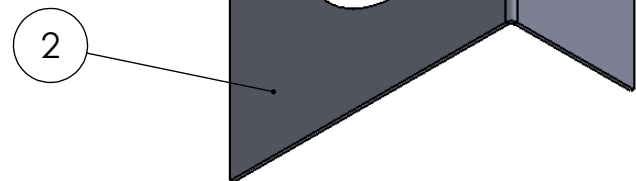
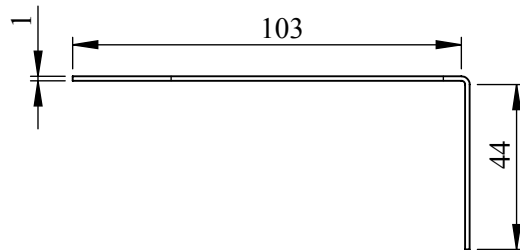
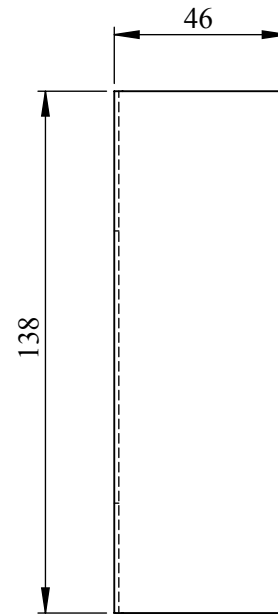
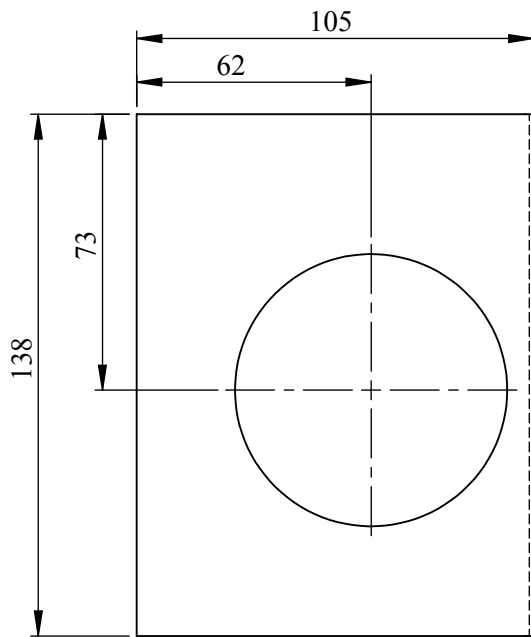
DWG NO.

Part No.1

A4

SCALE:1:2

SHEET 4 OF 10



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/8/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Seed Metering Device

DWG NO.

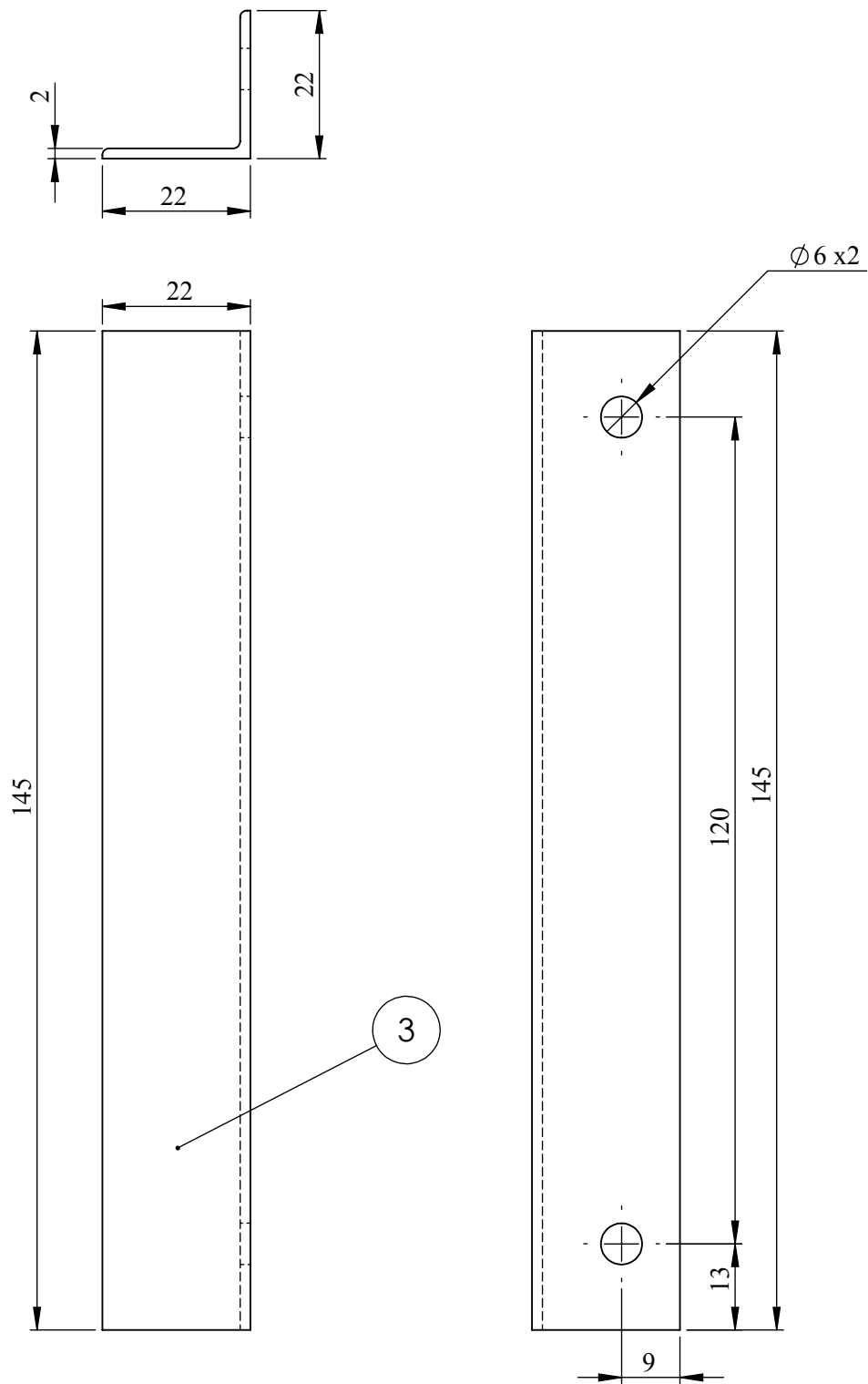
Part No.2

A4

SCALE:1:2

SHEET 5 OF 10





UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/8/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

TITLE:

Seed Metering Device

DWG NO.

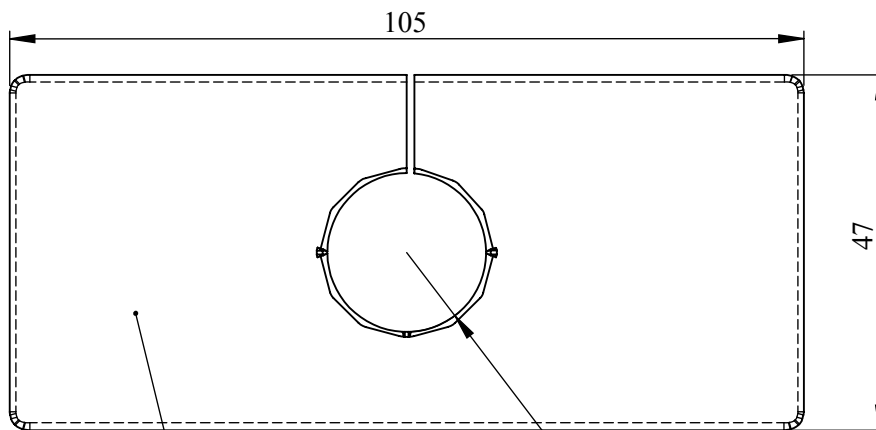
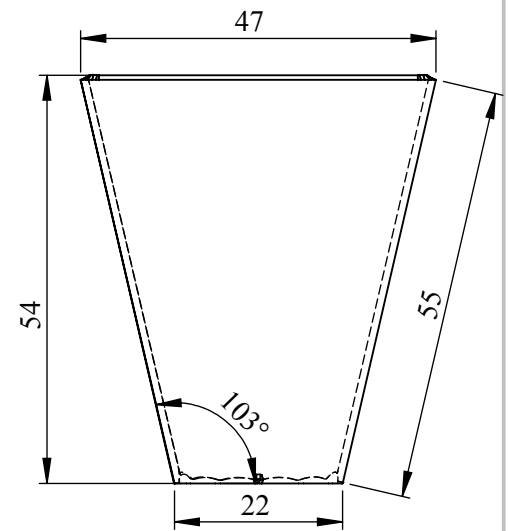
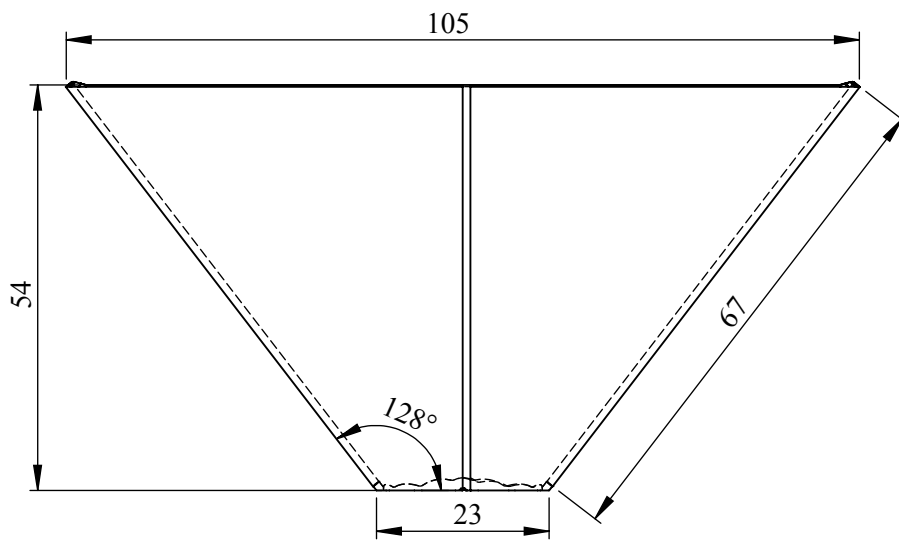
Part No.3

A4

WEIGHT:

SCALE:1:1

SHEET 6 OF 10



4

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/8/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Seed Metering Device

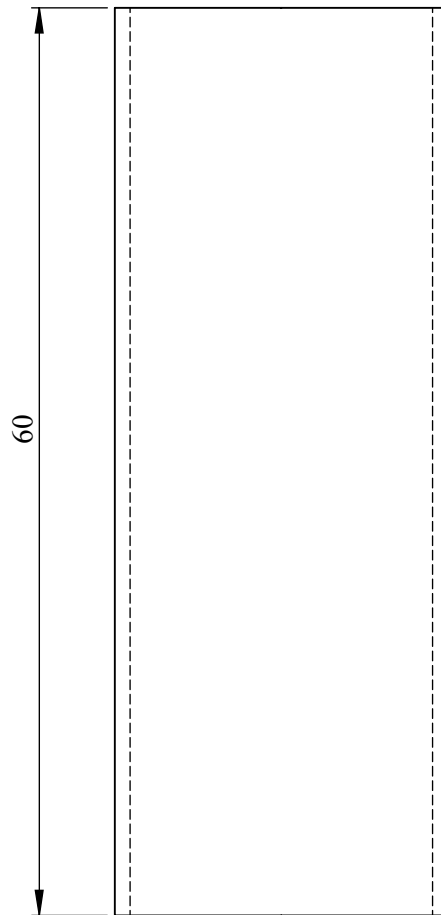
DWG NO.

Part No.4

A4

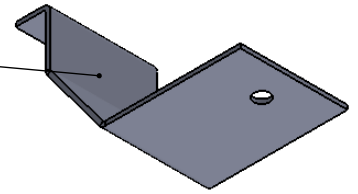
SCALE:1:1

SHEET 7 OF 10

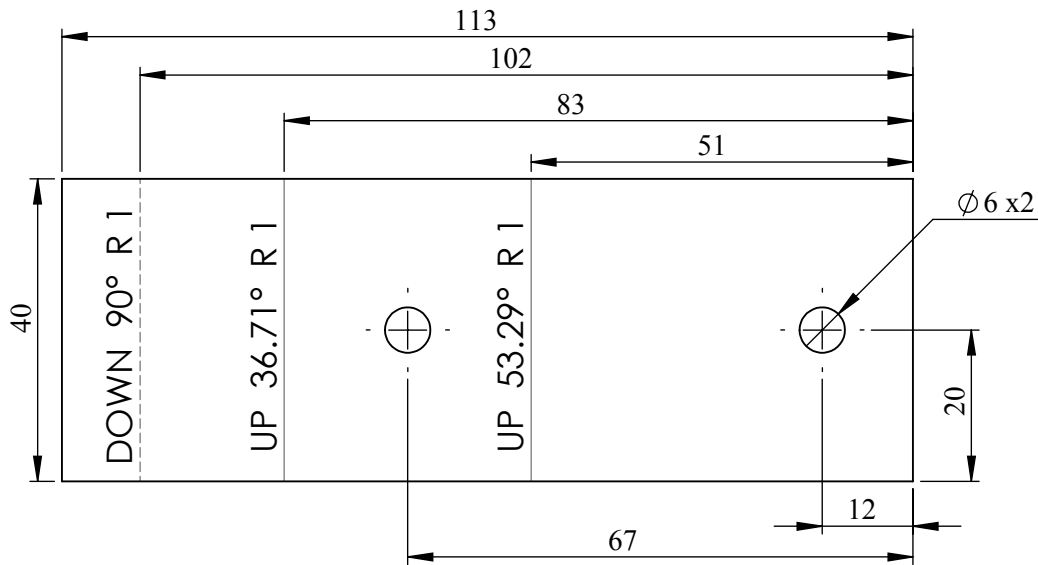


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION		
								Department of Agricultural Engineering				
	NAME		SIGNATURE		DATE				TITLE:  			

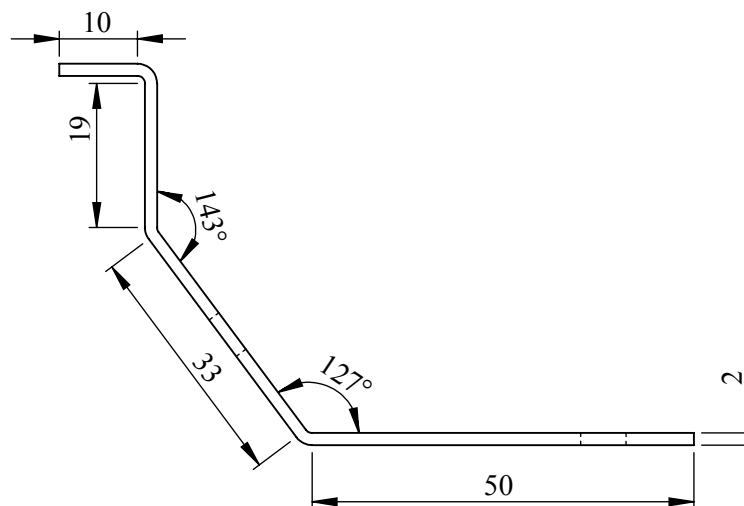
6



SCALE 1 : 2



DEVELOPMENT



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/8/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

TITLE:

Seed Metering Device

DWG NO.

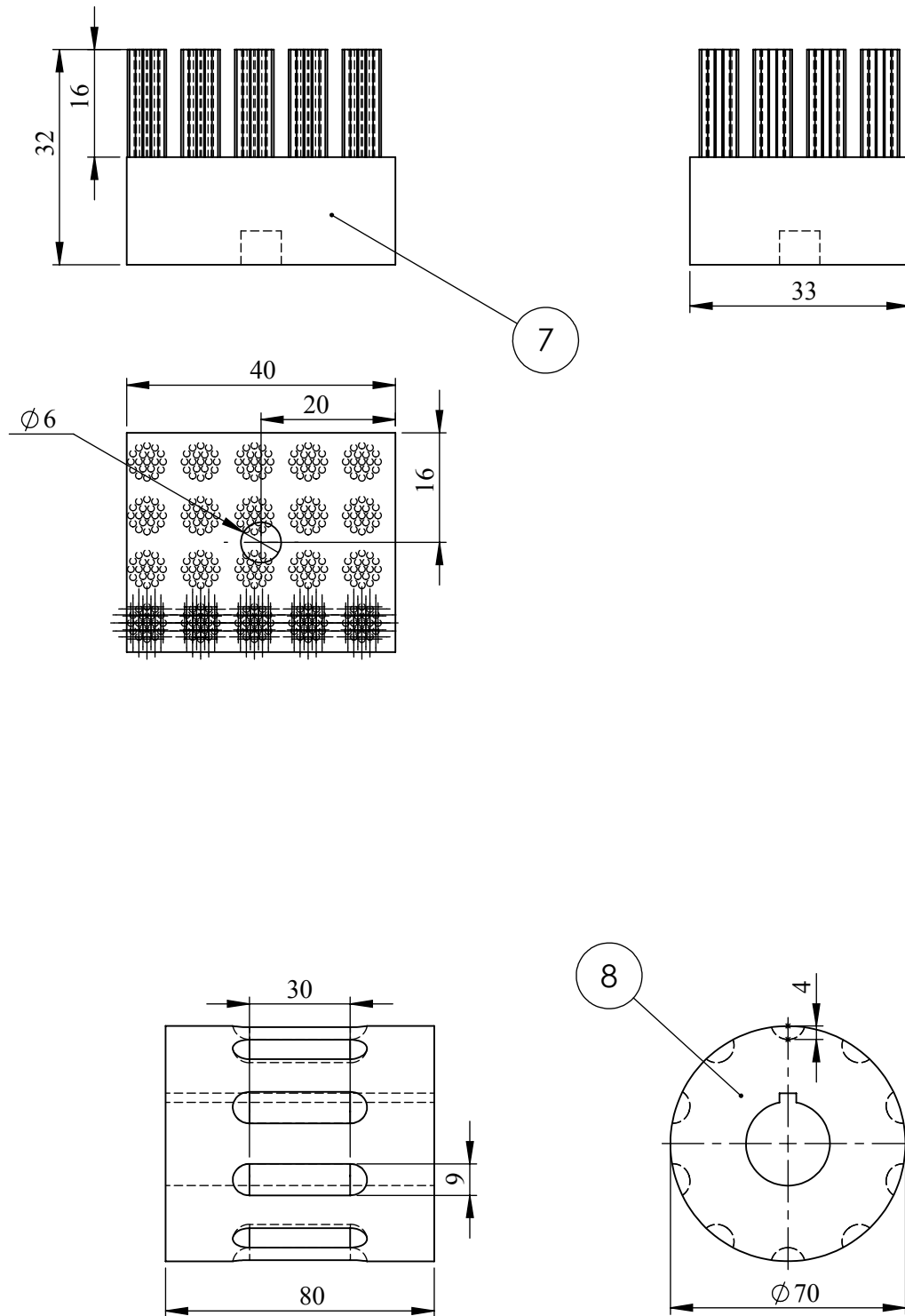
Part No.6

A4

WEIGHT:

SCALE:1:1

SHEET 9 OF 10



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/8/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Seed Metering Device

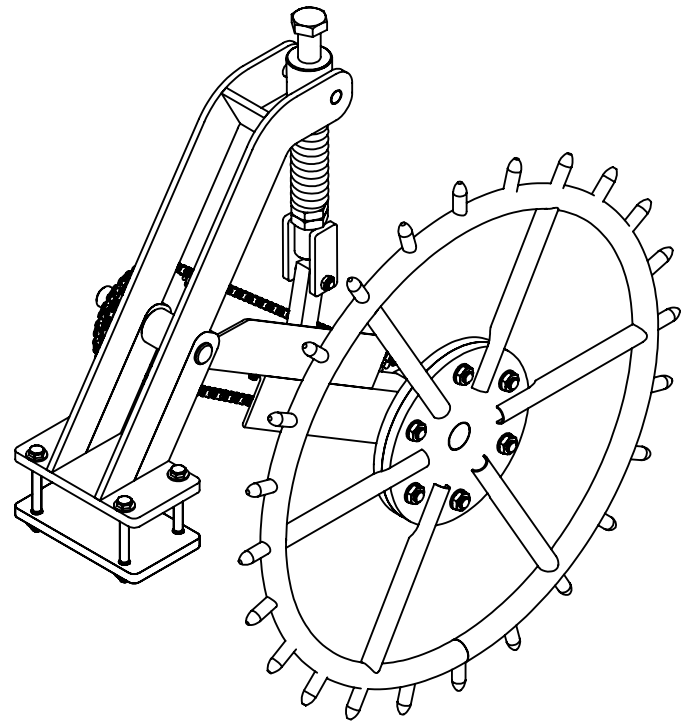
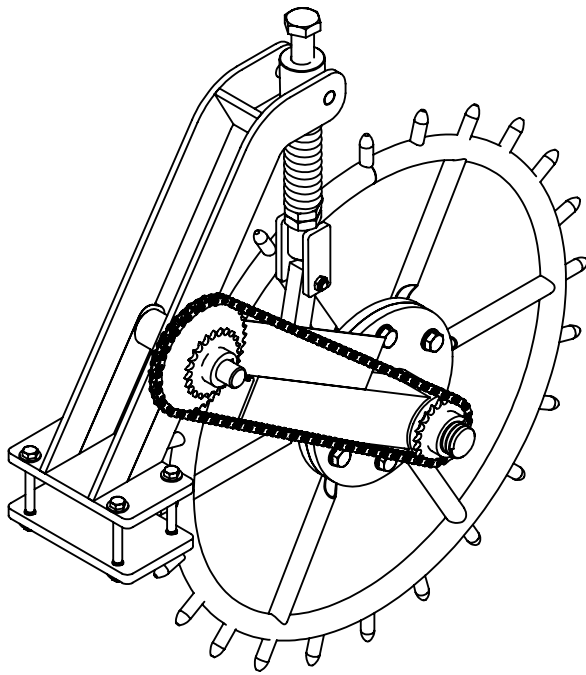
DWG NO.

Part No.7 & No.8

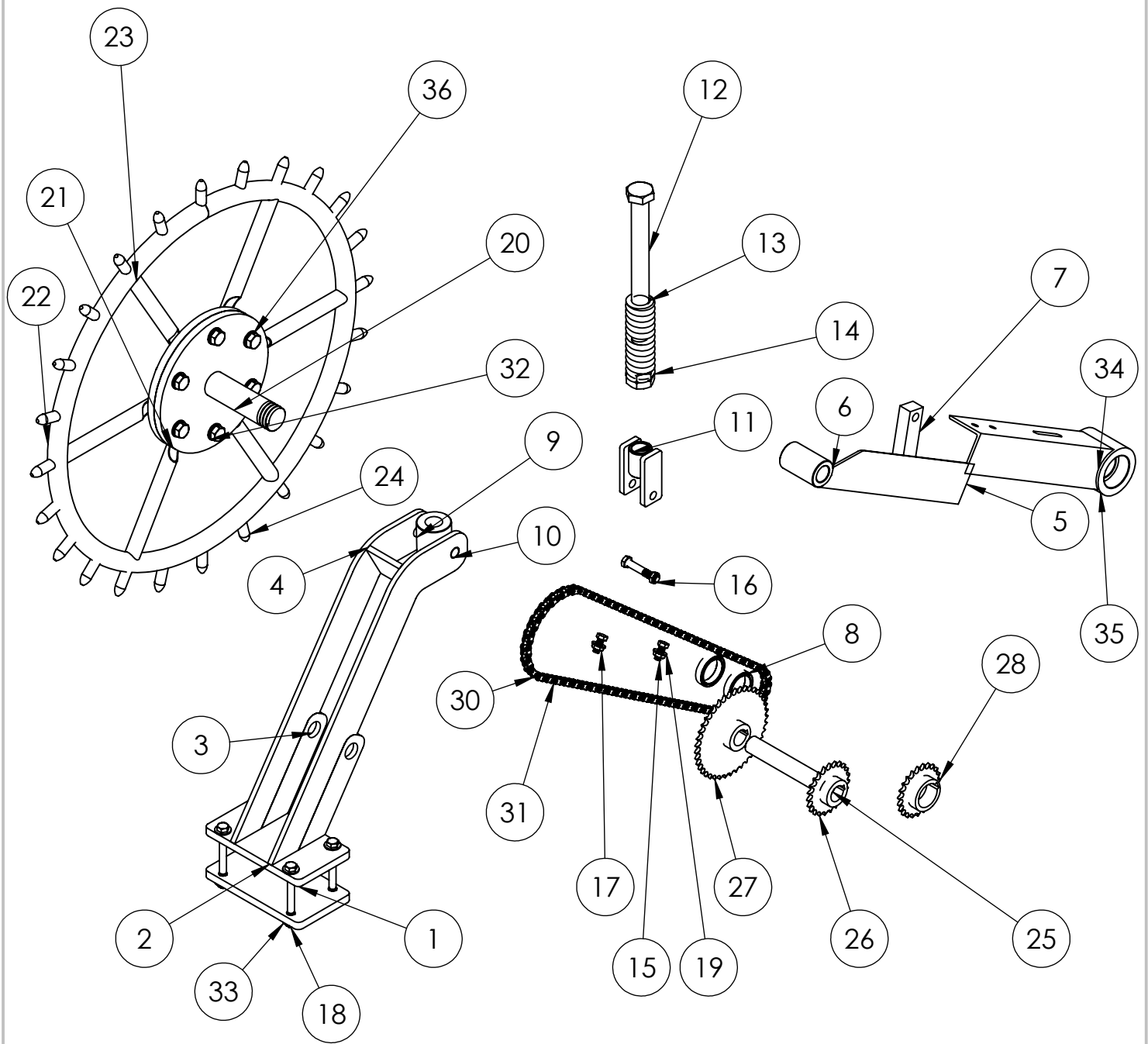
A4

SCALE:1:1

SHEET 10 OF 10



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:			FINISH:			DEBUR AND BREAK SHARP EDGES			DO NOT SCALE DRAWING			REVISION					
									Department of Agricultural Engineering								
	NAME		SIGNATURE		DATE				TITLE:  Driving Wheel								
DRAWN	Duch Sam On				10/8/2017												
CHK'D	Pen Nov																
CHK'D	Seng Savath																
APPV'D	Chan Saruth																
MFG							MATERIAL: Mild Steel			DWG NO.  Assembly of Driving Wheel					A4		
Q.A																	
							WEIGHT:			SCALE:1:10				SHEET 1 OF 21			



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/8/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Driving Wheel

DWG NO.

Assembly of Driving Wheel

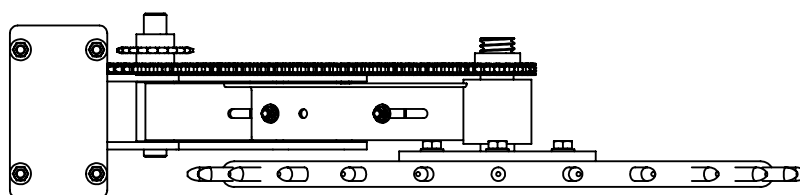
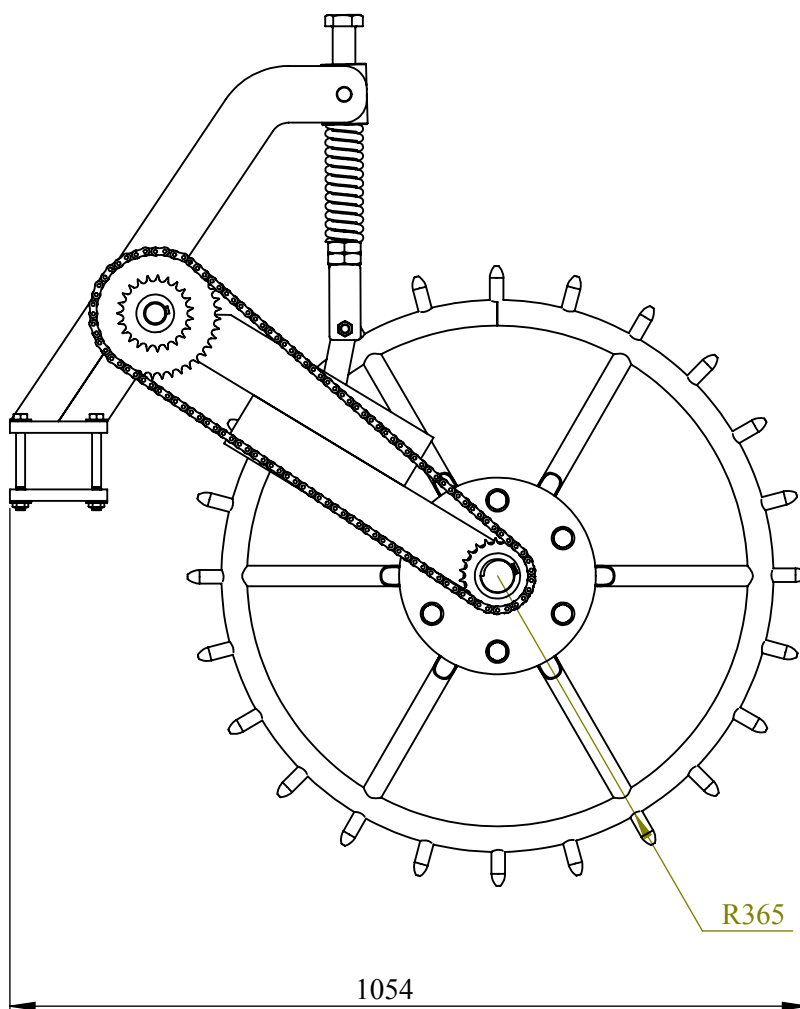
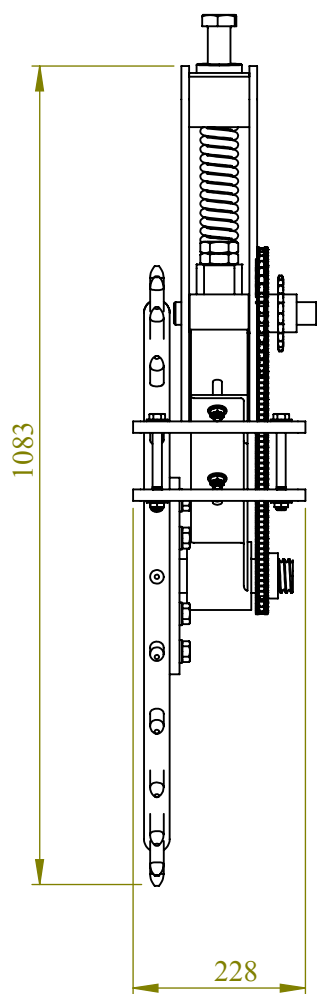
A4

SCALE:1:10

SHEET 2 OF 21







UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/8/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

TITLE:

Driving Wheel

DWG NO.

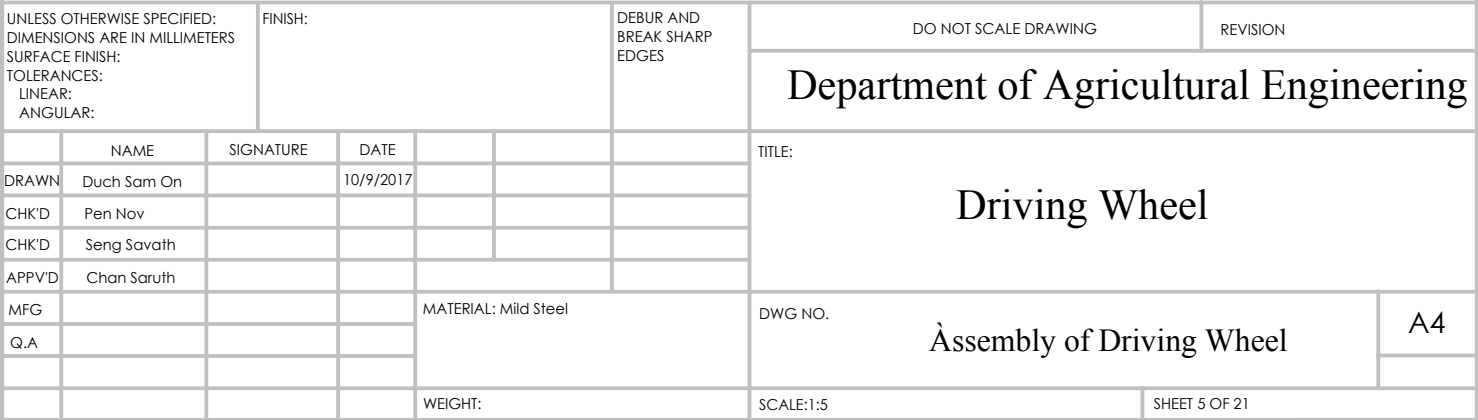
Assembly of Driving Wheel

A4

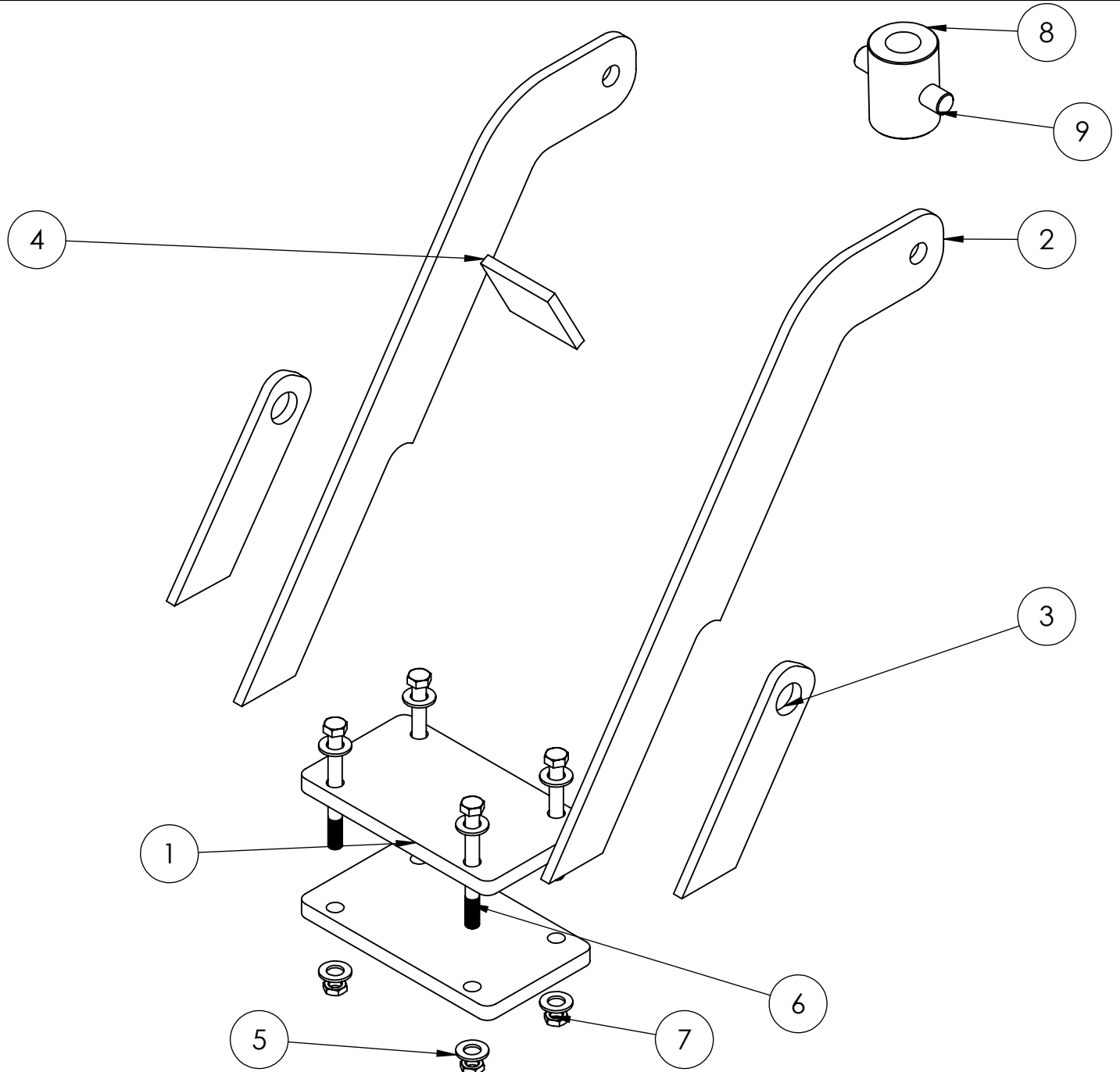
WEIGHT:

SCALE:1:10

SHEET 4 OF 21



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Plate_228x128		2
2	Plate_75x10xL		2
3	Plate219x53		2
4	Plate80x75		1
5	Washer ISO 7089 - 14		8
6	ISO 4015 - M12 x 120 x 30-S		4
7	Hexagon Thin Nut ISO - 4035 - M12 - N		4
8	Pipe_80x60		1
9	Pipe_20x25		2



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

TITLE:

Driving Wheel

DWG NO.

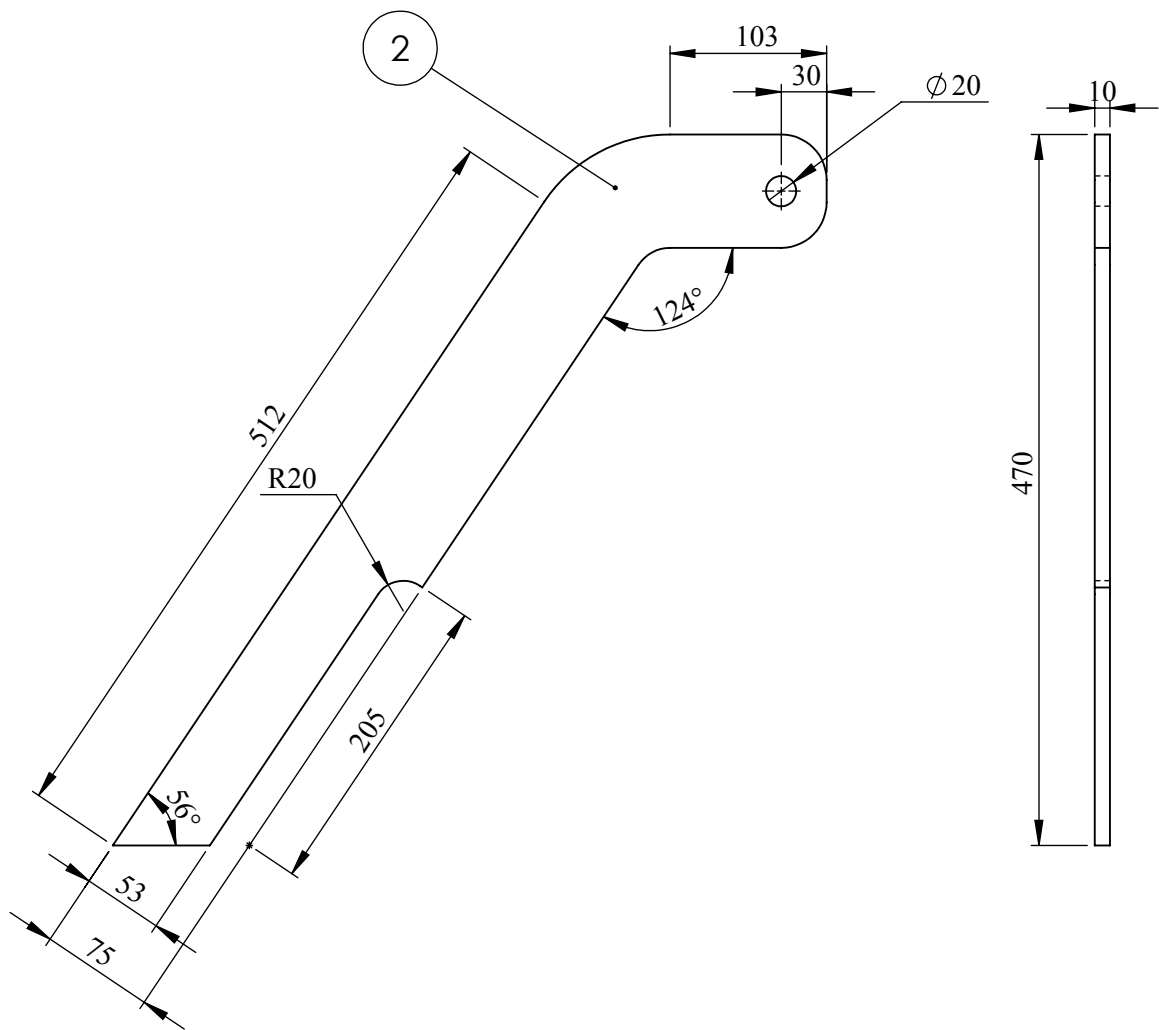
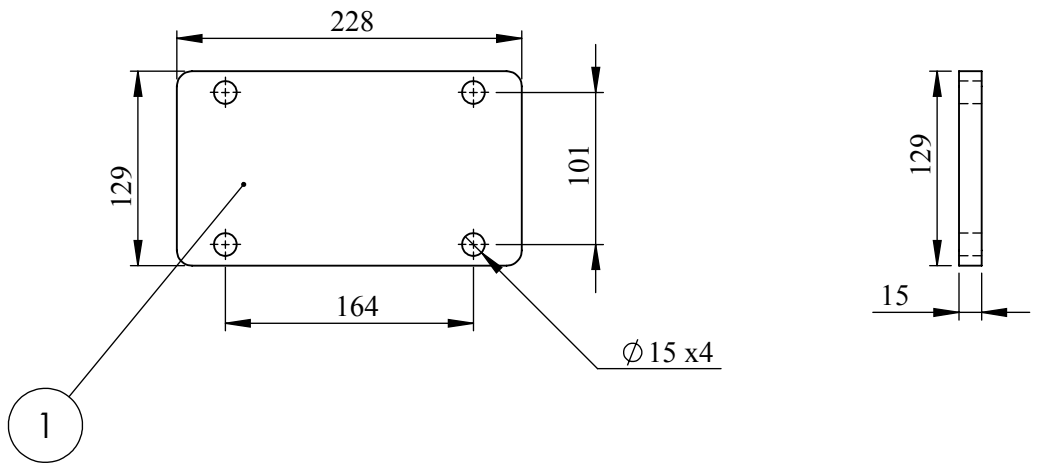
Exploded View of Driving Wheel

A4

WEIGHT:

SCALE:1:5

SHEET 6 OF 21



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

TITLE:

Driving Wheel

DWG NO.

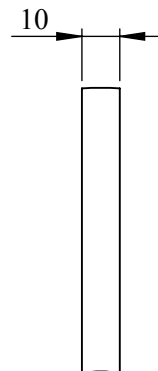
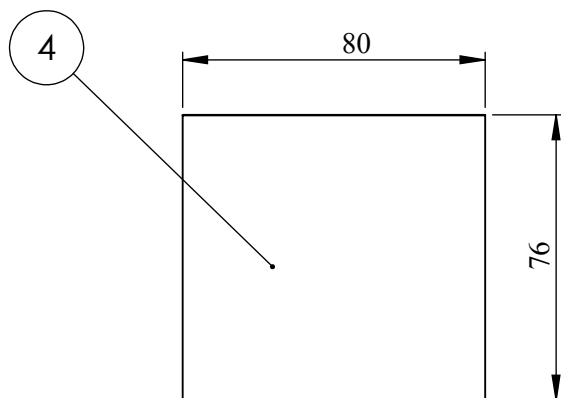
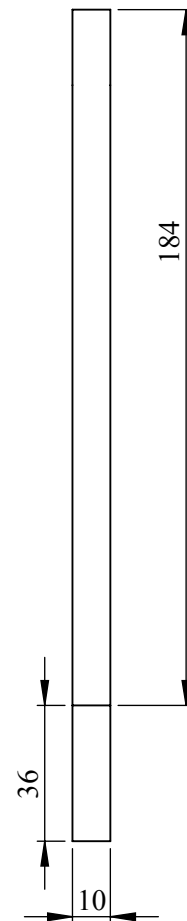
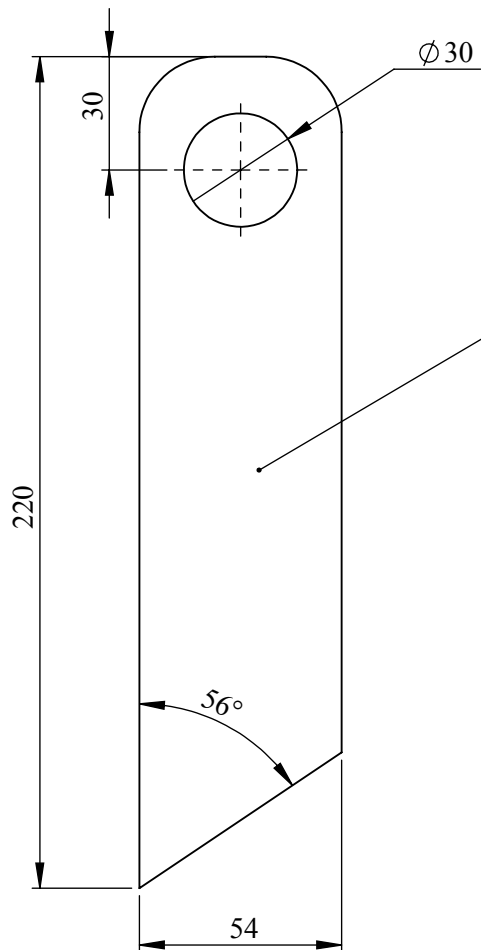
Part No.1 & No.2

A4

WEIGHT:

SCALE:1:5

SHEET 7 OF 21



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Driving Wheel

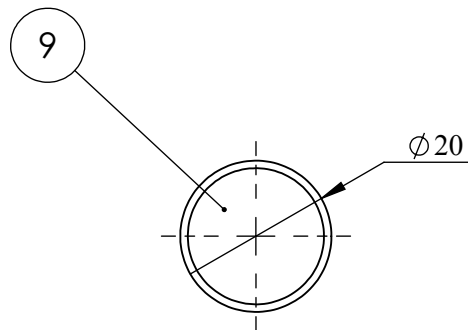
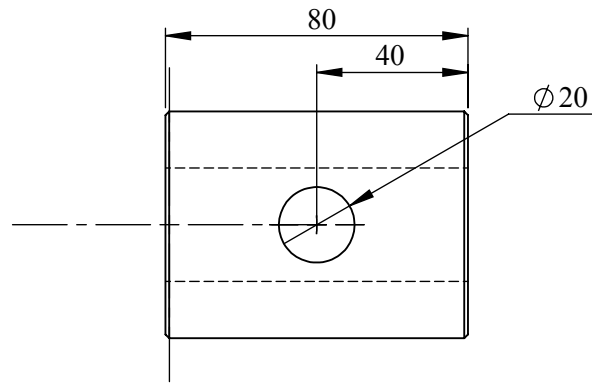
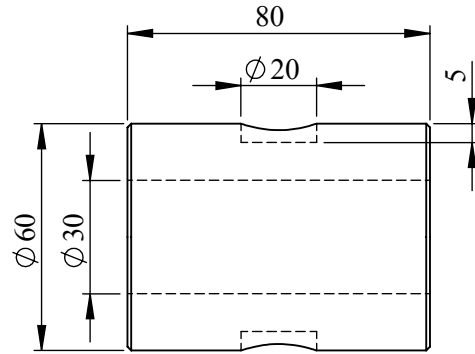
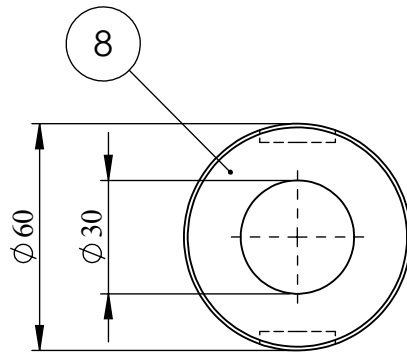
DWG NO.

Part No.3 & No.4

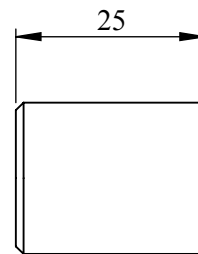
A4

SCALE:1:2

SHEET 8 OF 21



SCALE 1 : 1



SCALE 1 : 1

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Driving Wheel

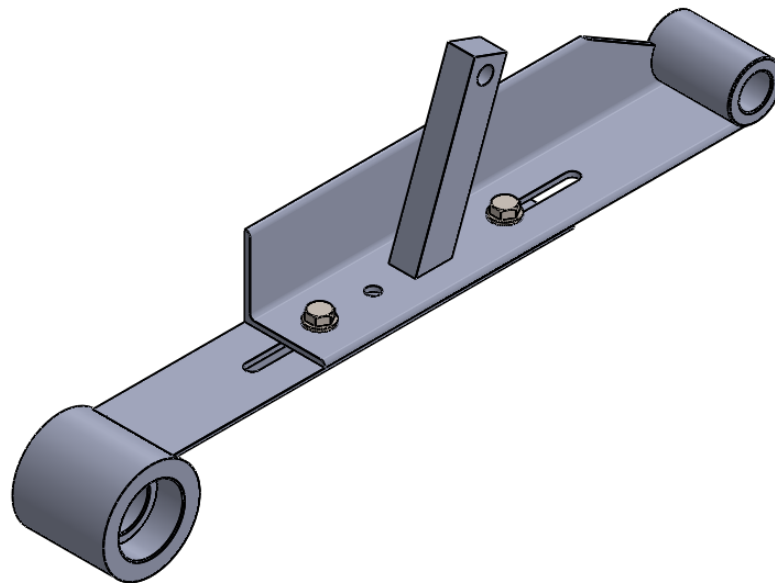
DWG NO.

Part No.8 & No.9

A4

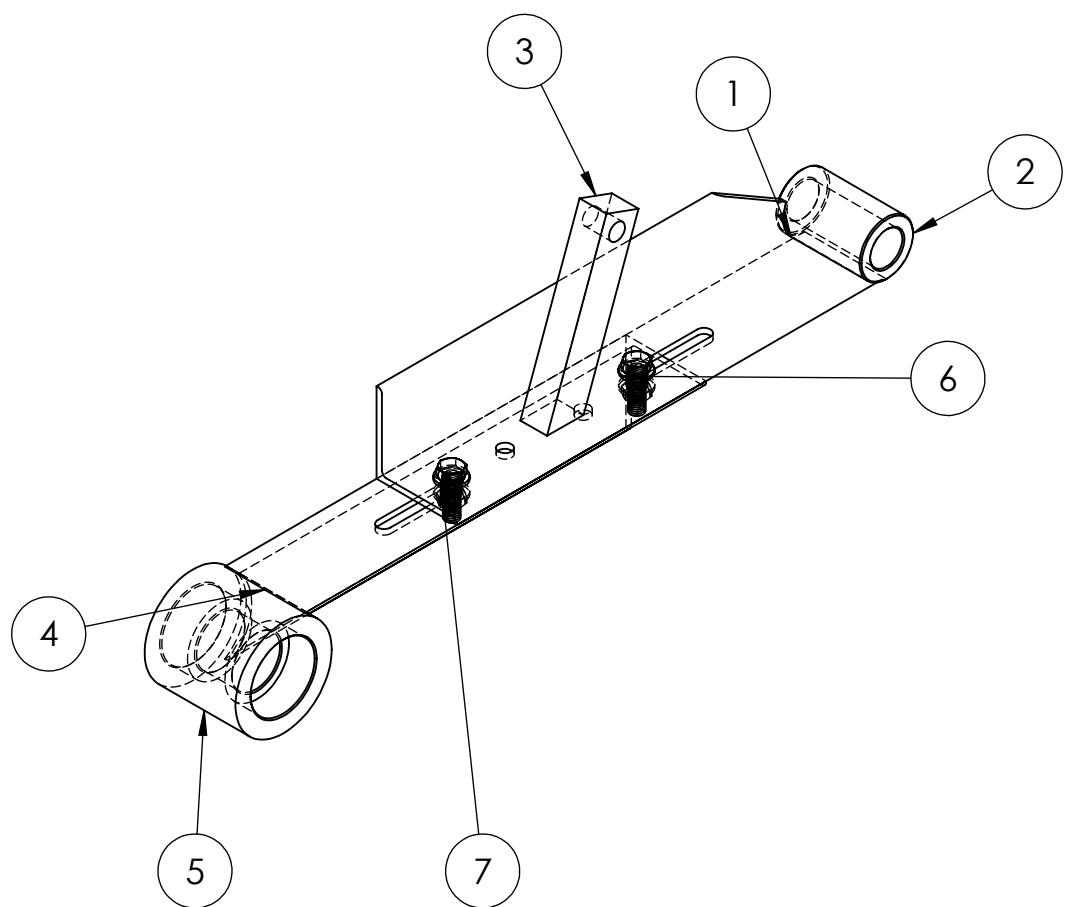
SCALE:1:2

SHEET 9 OF 21



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
	NAME	SIGNATURE	DATE					TITLE:  Driving Wheel			
DRAWN	Duch Sam On		10/9/2017								
CHK'D	Pen Nov										
CHK'D	Seng Savath										
APPV'D	Chan Saruth										
MFG				MATERIAL: Mild Steel				DWG NO.		A4	
Q.A								Assembly			
				WEIGHT:				SCALE:1:5		SHEET 10 OF 21	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	L75x75_400-2		2
2	Pipe50x80		2
3	Square_25x32		2
4	L75x75_400		2
5	Pipe_90x85		2
6	Washer ISO 7089 - 12		8
7	ISO 4018 - M12 x 35-WS		4
8	Hexagon Thin Nut ISO - 4035 - M12 - N		4



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

TITLE:

Driving Wheel

DWG NO.

Assembly

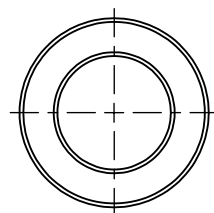
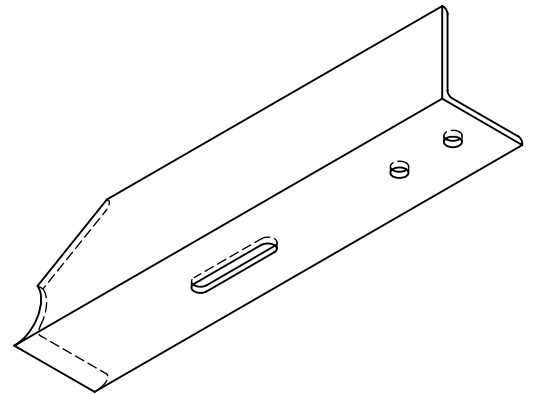
A4

WEIGHT:

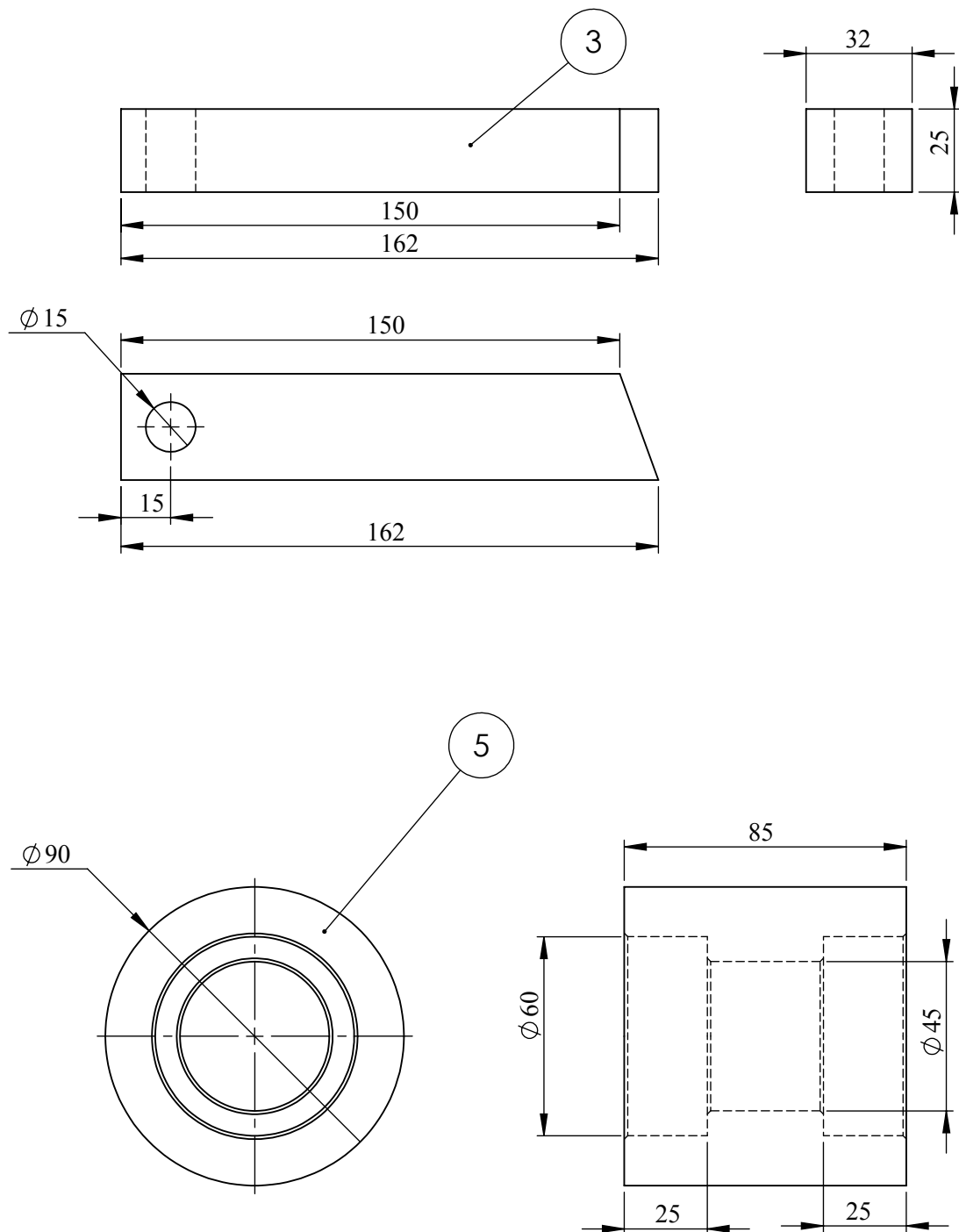
SCALE:1:5

SHEET 11 OF 21





SHEET 12 OF 21



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Driving Wheel

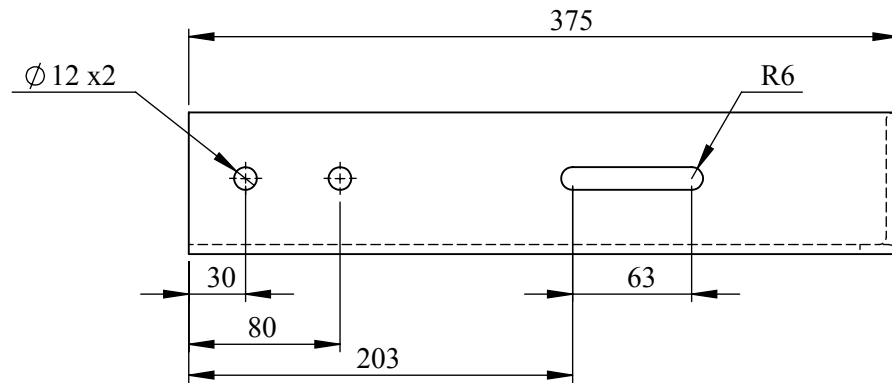
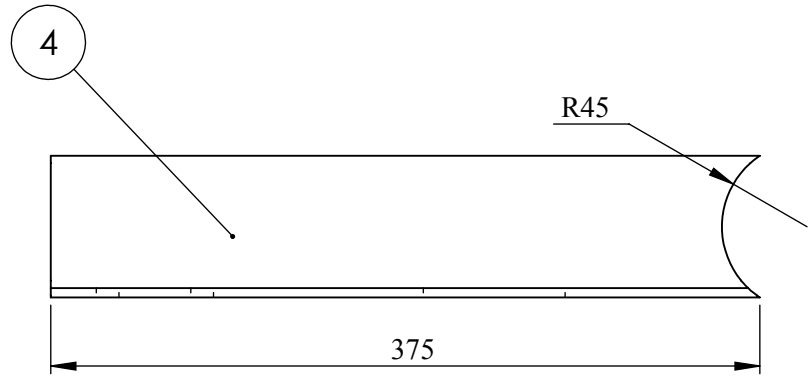
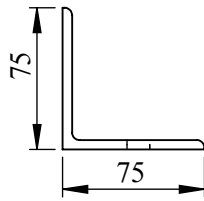
DWG NO.

Part No.3 & No.5

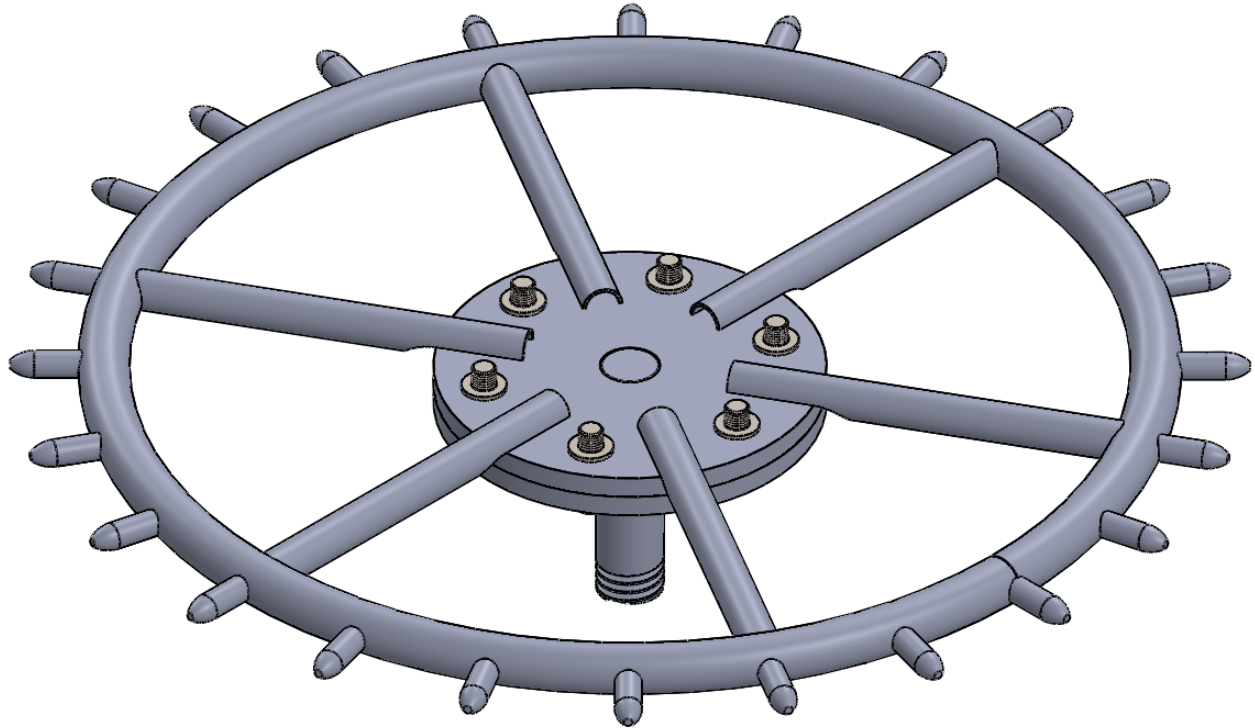
A4

SCALE:1:2

SHEET 13 OF 21

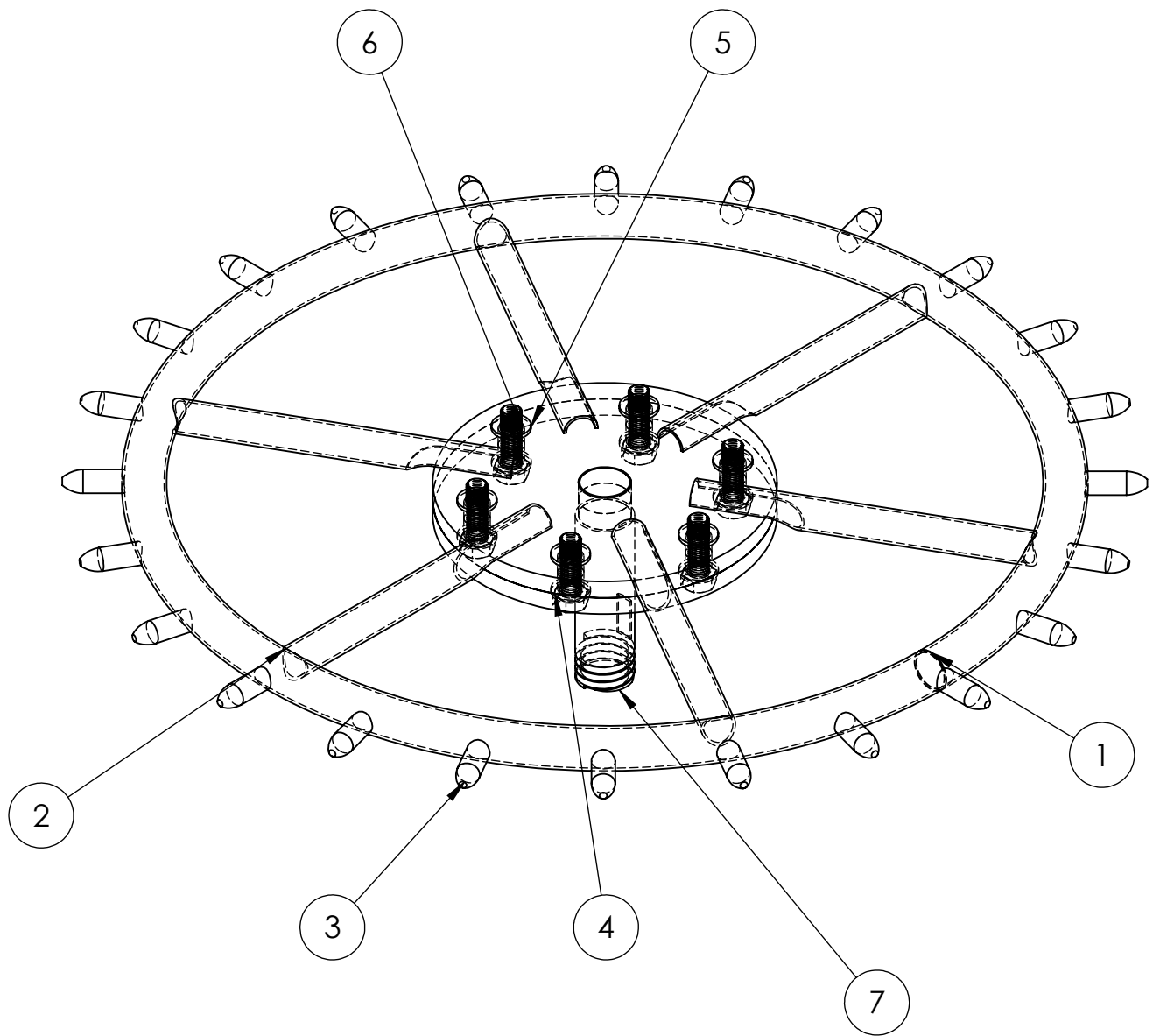


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Driving Wheel			
								DWG NO.			
								Part No.4			
								A4			
								WEIGHT:			
								SCALE:1:4			
								SHEET 14 OF 21			



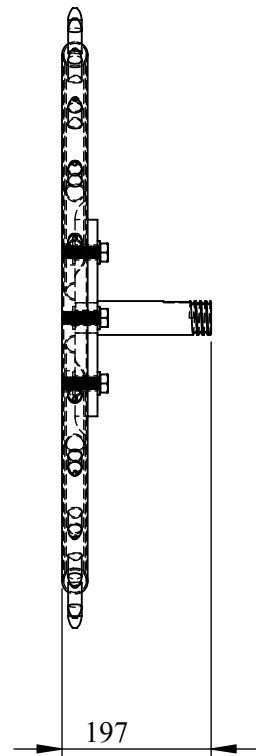
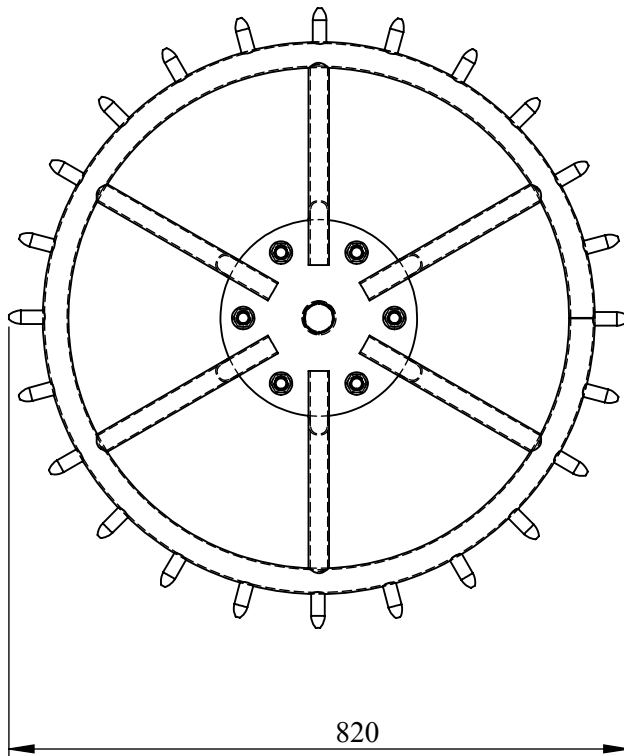
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
<div>Department of Agricultural Engineering</div> <div>Driving Wheel</div>											
NAME		SIGNATURE		DATE				TITLE:			
DRAWN	Duch Sam On			10/9/2017							
CHK'D	Pen Nov										
CHK'D	Seng Savath										
APPV'D	Chan Saruth										
MFG						MATERIAL: Mild Steel		DWG NO.		A4	
Q.A								Assembly of Driving Wheel			
						WEIGHT:		SCALE:1:5		SHEET 15 OF 21	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	O-tube_34		1
2	O_tube27		6
3	O_tube18		24
4	O_Plate260		1
5	Washer ISO 7089 - 16		12
6	ISO 4018 - M16 x 50-WS		6



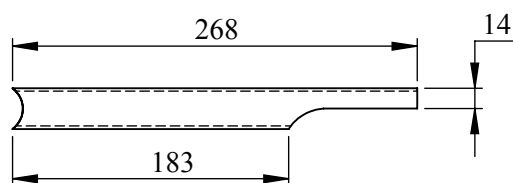
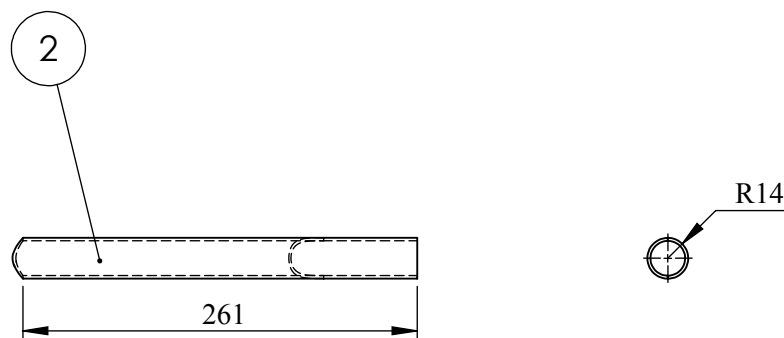
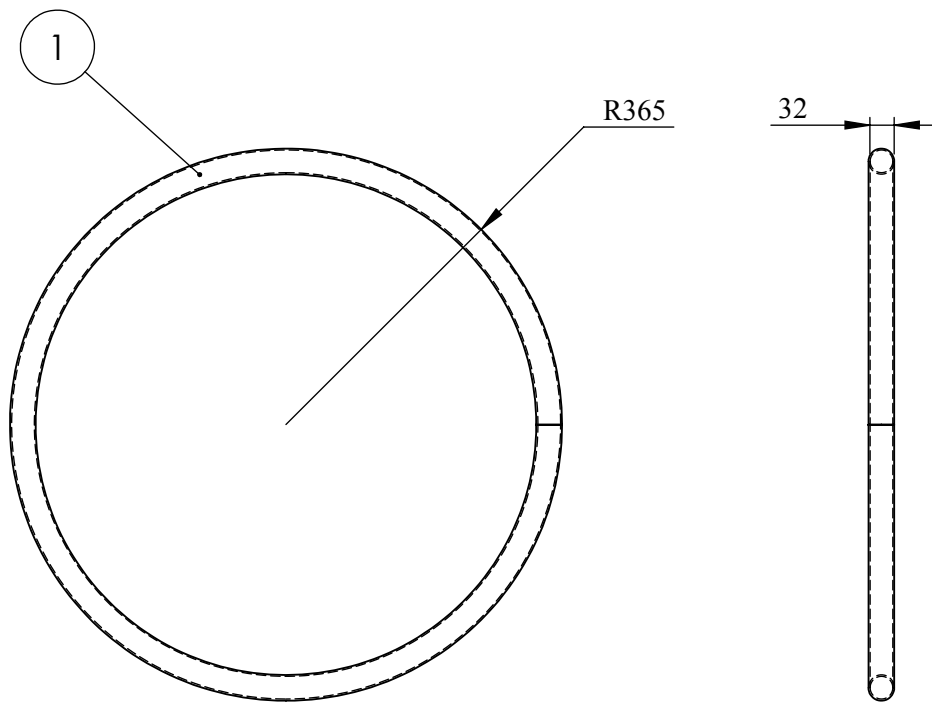
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Driving Wheel			
						DWG NO.			
						Assembly of Driving Wheel			
						A4			
						SHEET 16 OF 21			

NAME	SIGNATURE	DATE			
DRAWN: Duch Sam On		10/9/2017			
CHK'D: Pen Nov					
CHK'D: Seng Savath					
APPV'D: Chan Saruth					
MFG			MATERIAL: Mild Steel		
Q.A					
			WEIGHT:		
			SCALE:1:5		



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Driving Wheel			
								DWG NO.			
								Assembly of Driving Wheel			
								A4			
								SHEET 17 OF 21			

	NAME	SIGNATURE	DATE			
DRAWN	Duch Sam On		10/9/2017			
CHK'D	Pen Nov					
CHK'D	Seng Savath					
APPV'D	Chan Saruth					
MFG				MATERIAL: Mild Steel		
Q.A						
				WEIGHT:		

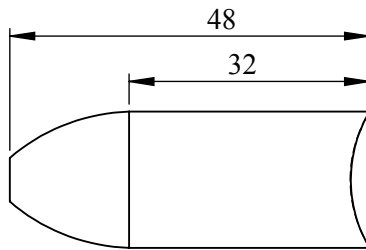
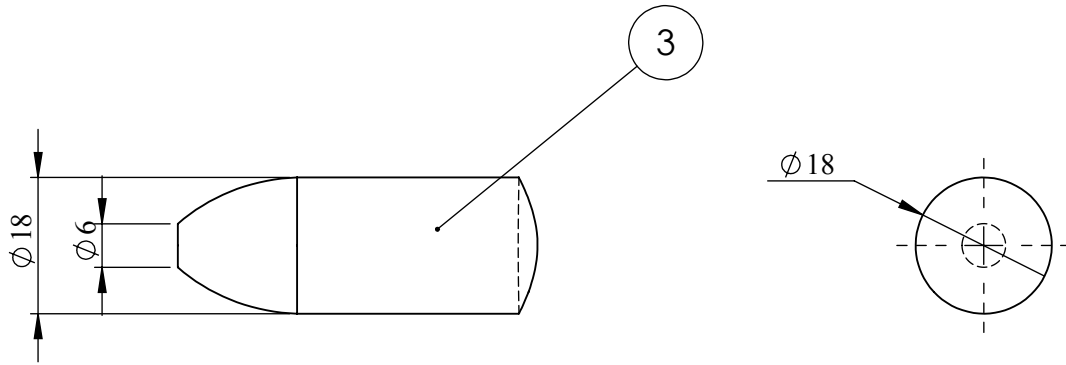


SCALE 1 : 5

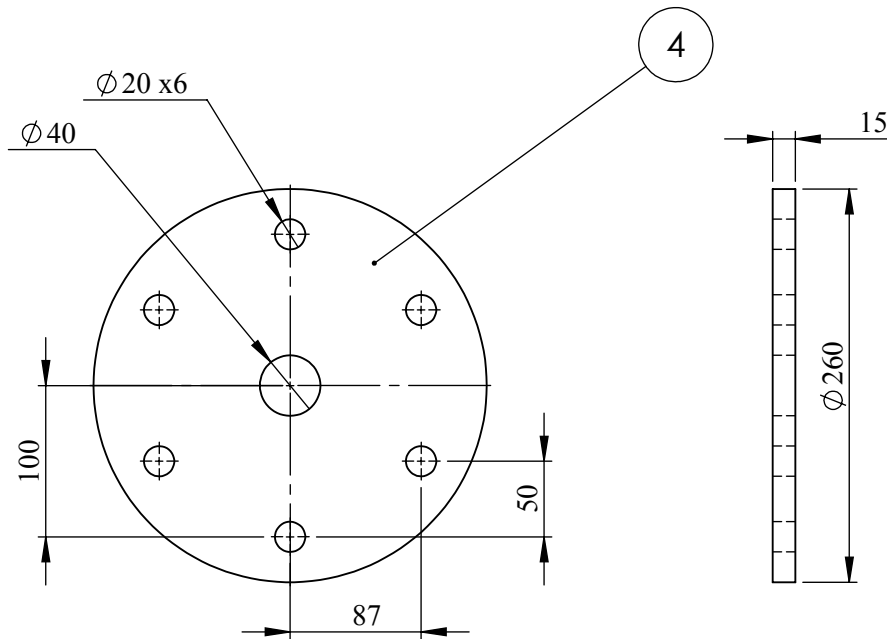
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Driving Wheel			
								DWG NO.			
								Part No.1 & No.2			
								A4			
								WEIGHT:			
								SCALE:1:10			
								SHEET 18 OF 21			

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/9/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel



SCALE 1 : 1



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Driving Wheel

DWG NO.

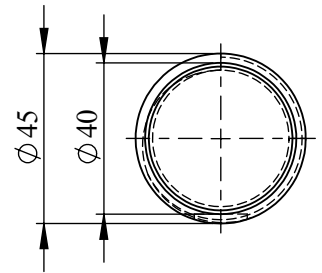
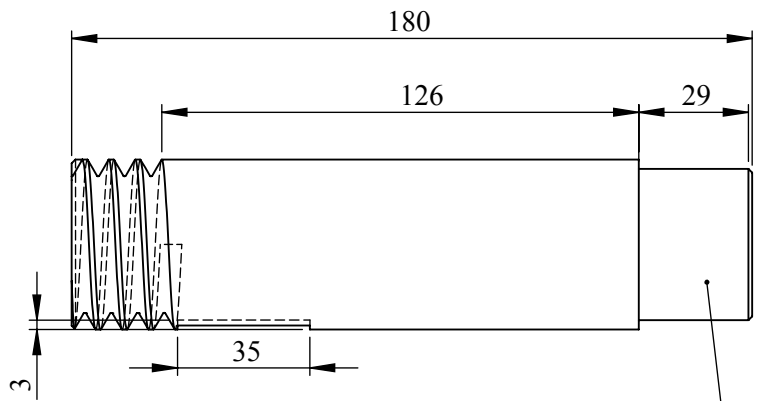
Part No.3 & No.4

A4

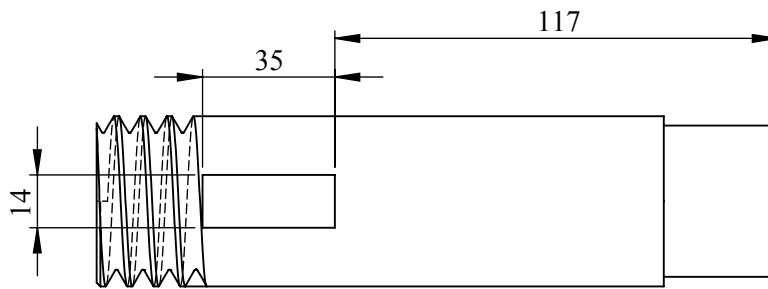
SCALE:1:5

SHEET 19 OF 21





5



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

TITLE:

Driving Wheel

DWG NO.

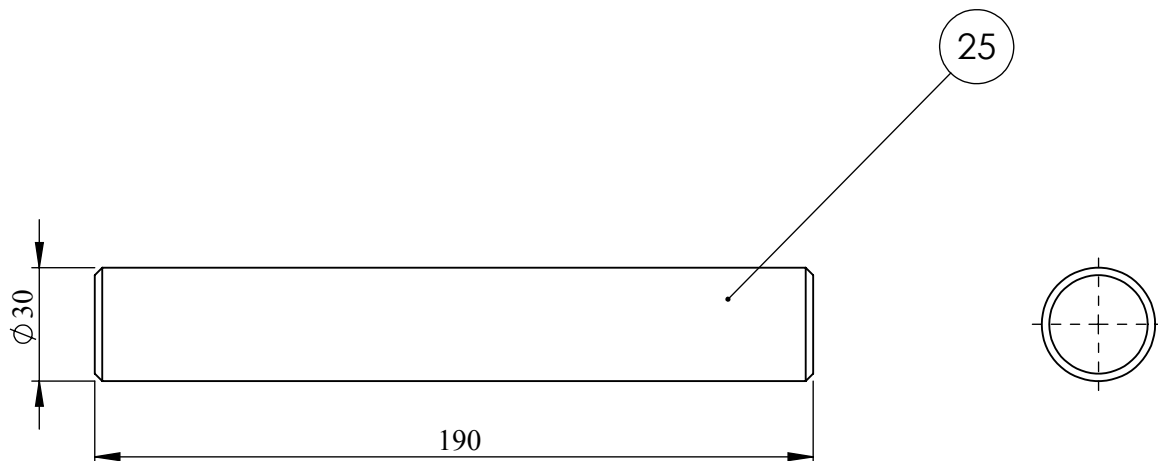
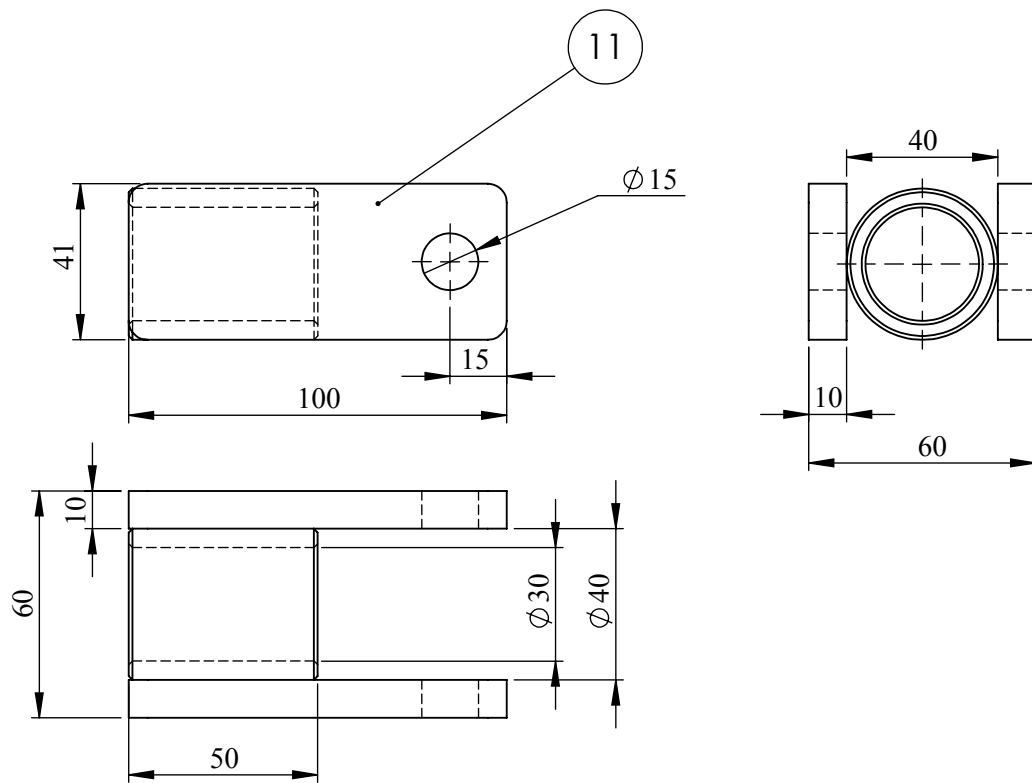
Part No.5

A4

WEIGHT:

SCALE:1:2

SHEET 20 OF 21



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/9/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Driving Wheel

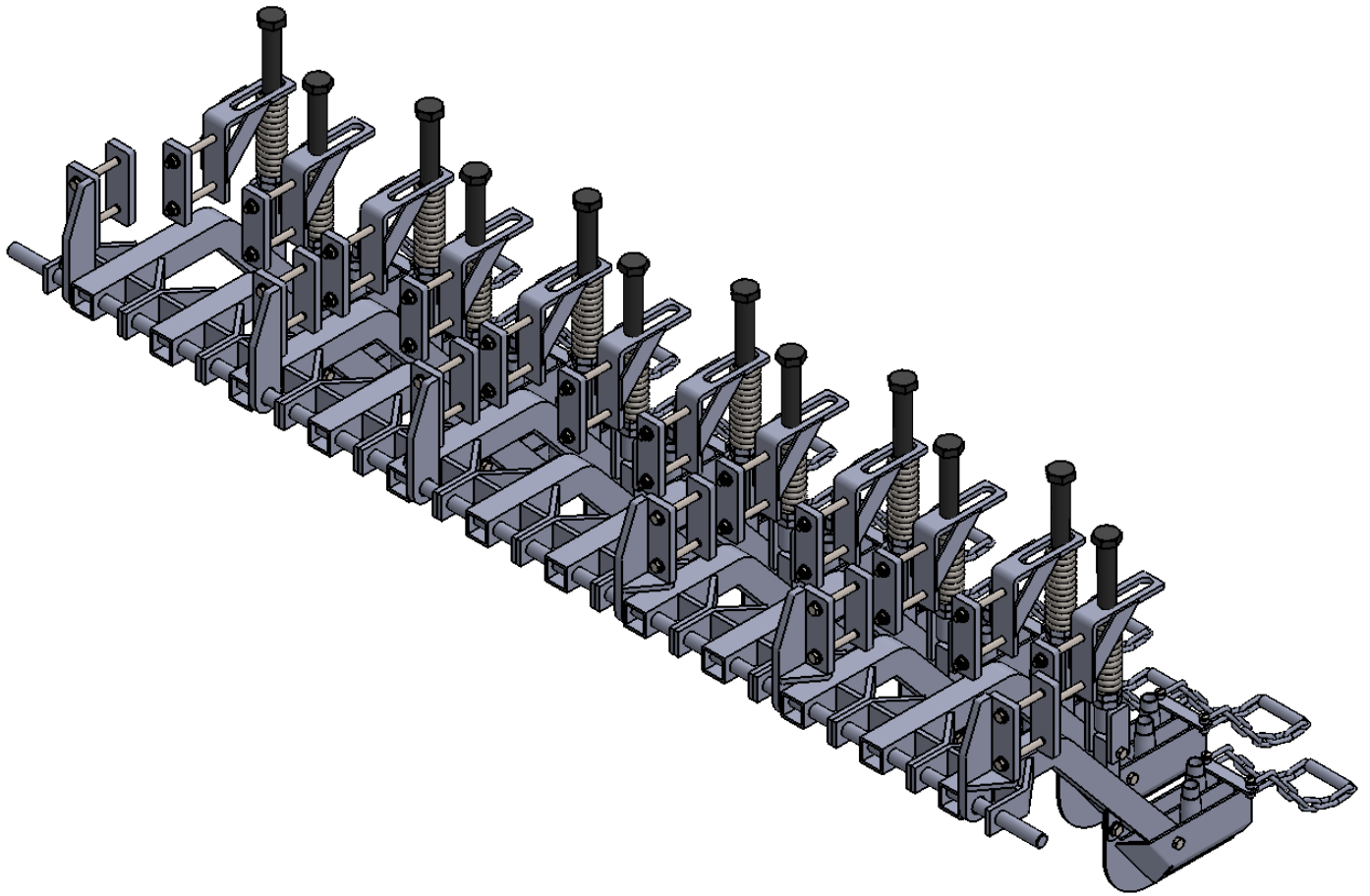
DWG NO.

Part No.11 & No.25

A4

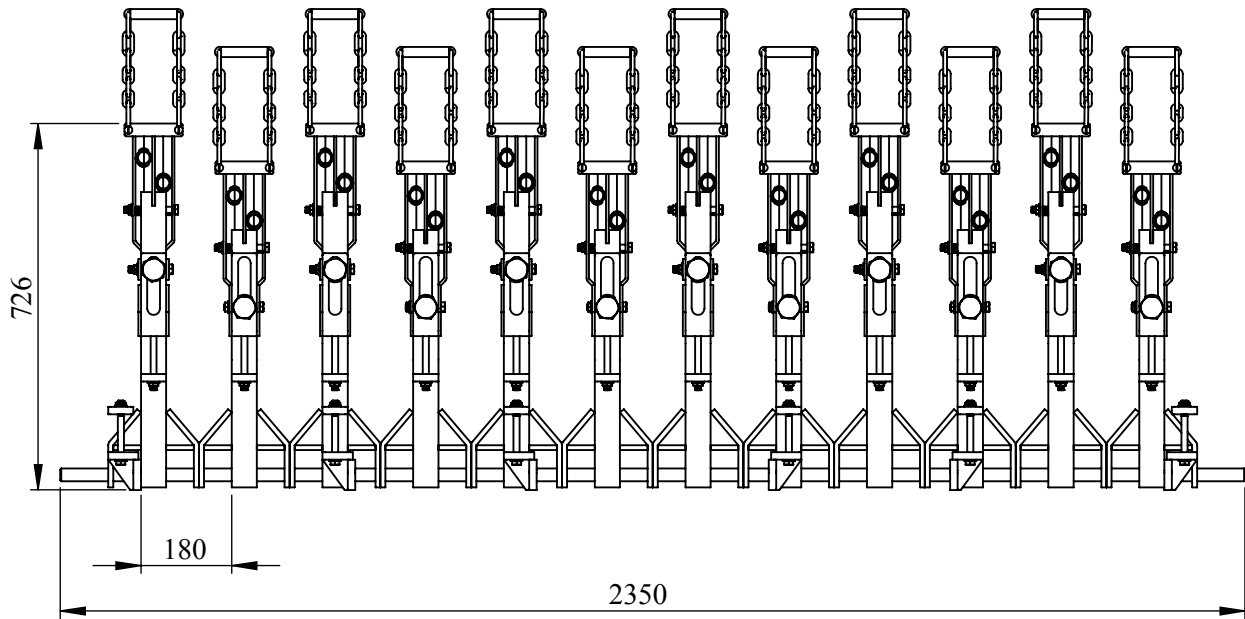
SCALE:1:2

SHEET 21 OF 21

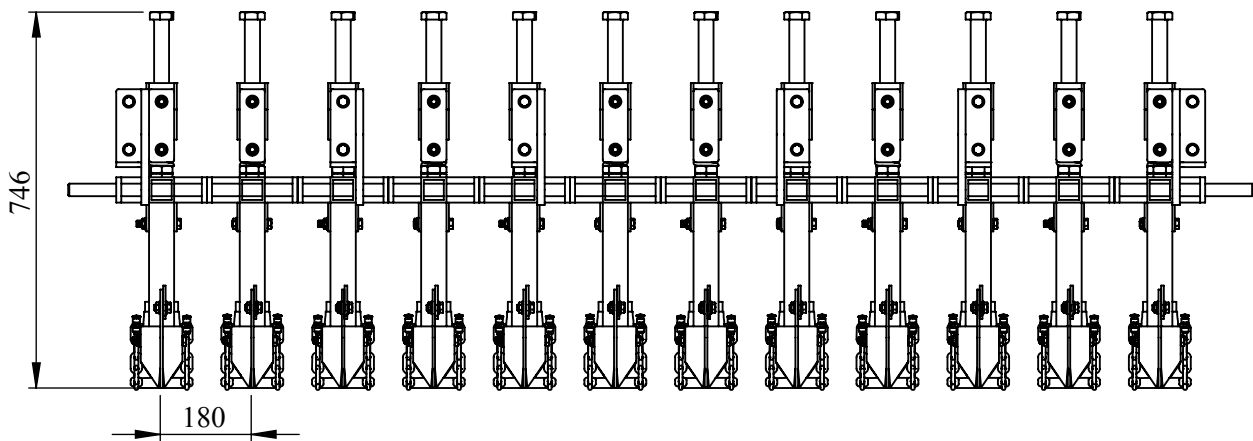


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Soil Opener System			
								DWG NO.		A4	
								SCALE:1:12		SHEET 1 OF 37	
DRAWN		Duch Sam On		SIGNATURE		DATE		10/17/2017			
CHK'D		Pen Nov									
CHK'D		Seng Savath									
APPV'D		Chan Saruth									
MFG								MATERIAL: Mild Steel			
Q.A											
								WEIGHT:			

Top View



Front View



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Soil Opener System

DWG NO.

Assembly of Soil Opener System

A4

SCALE:1:15

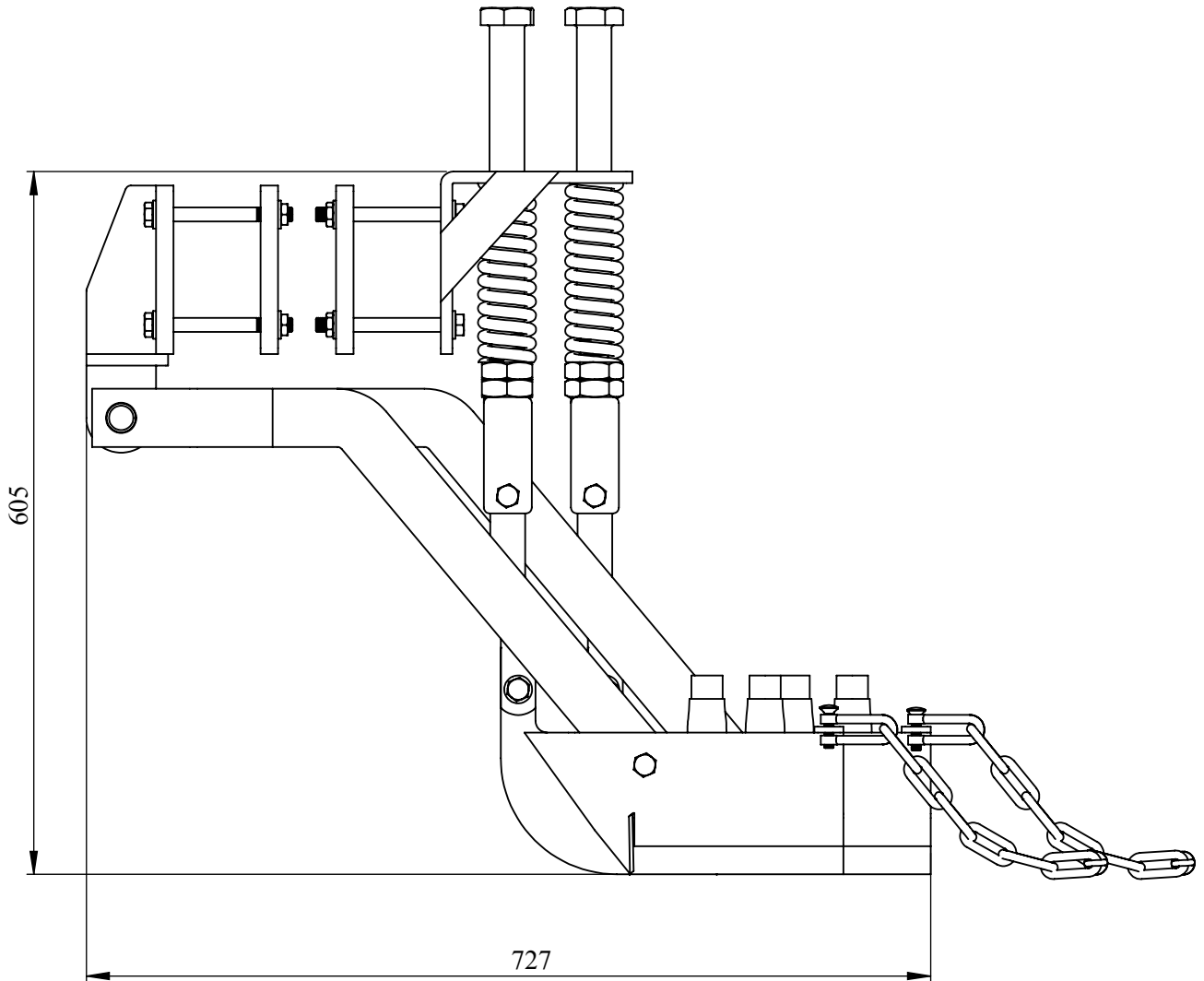
SHEET 2 OF 37

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/17/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

WEIGHT:

Side View



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Soil Opener System

DWG NO.

Assembly of Soil Opener System

A4

SCALE:1:6

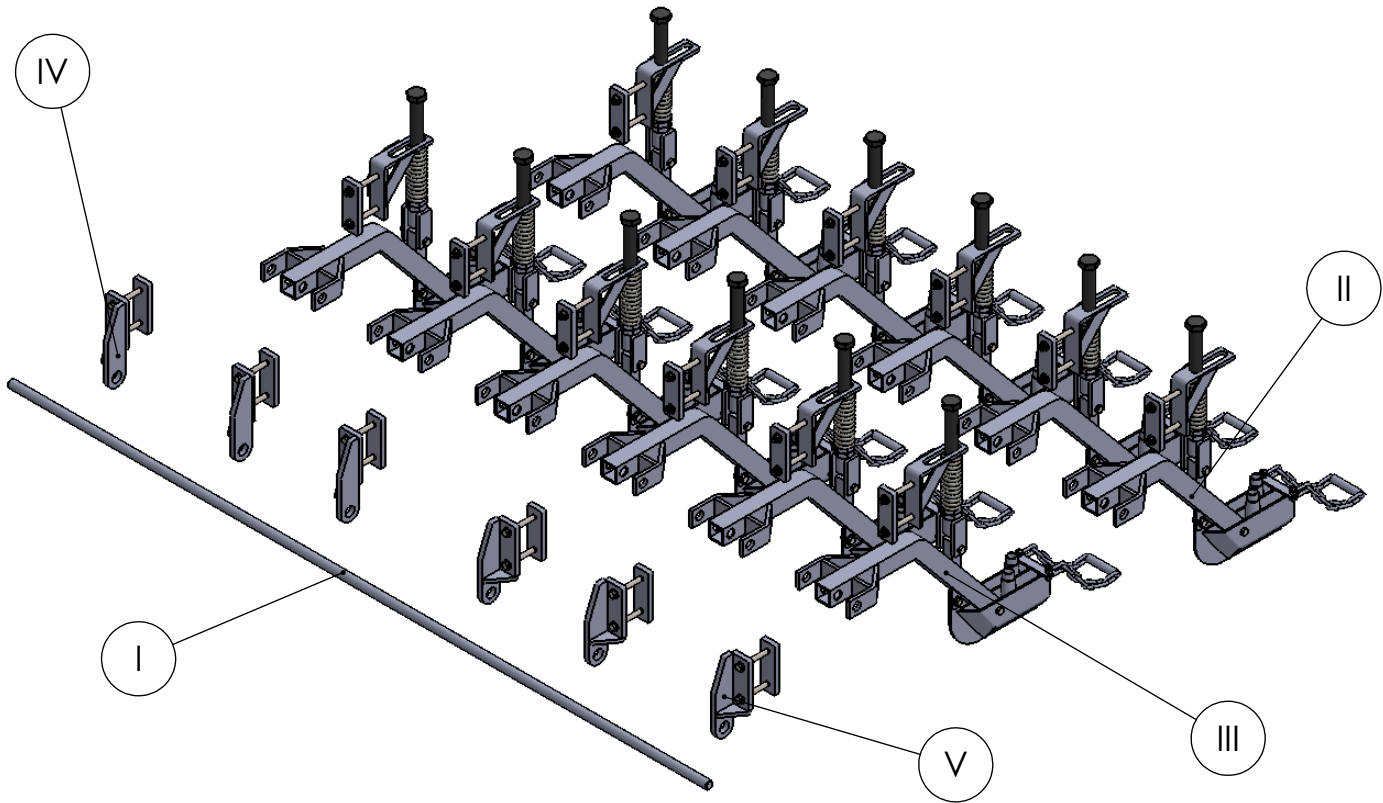
SHEET 3 OF 37

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/17/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

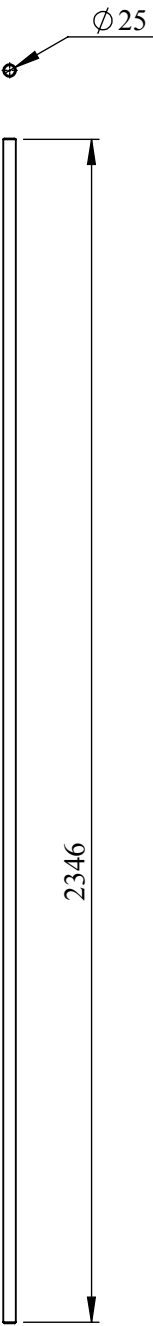
WEIGHT:

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
I	Shaft25		1
II	SOpenerAs(Short)		6
III	SOpenerAs(Long)		6
IV	ST003_LSide_FA1		3
V	ST003_RSide_FA1		3

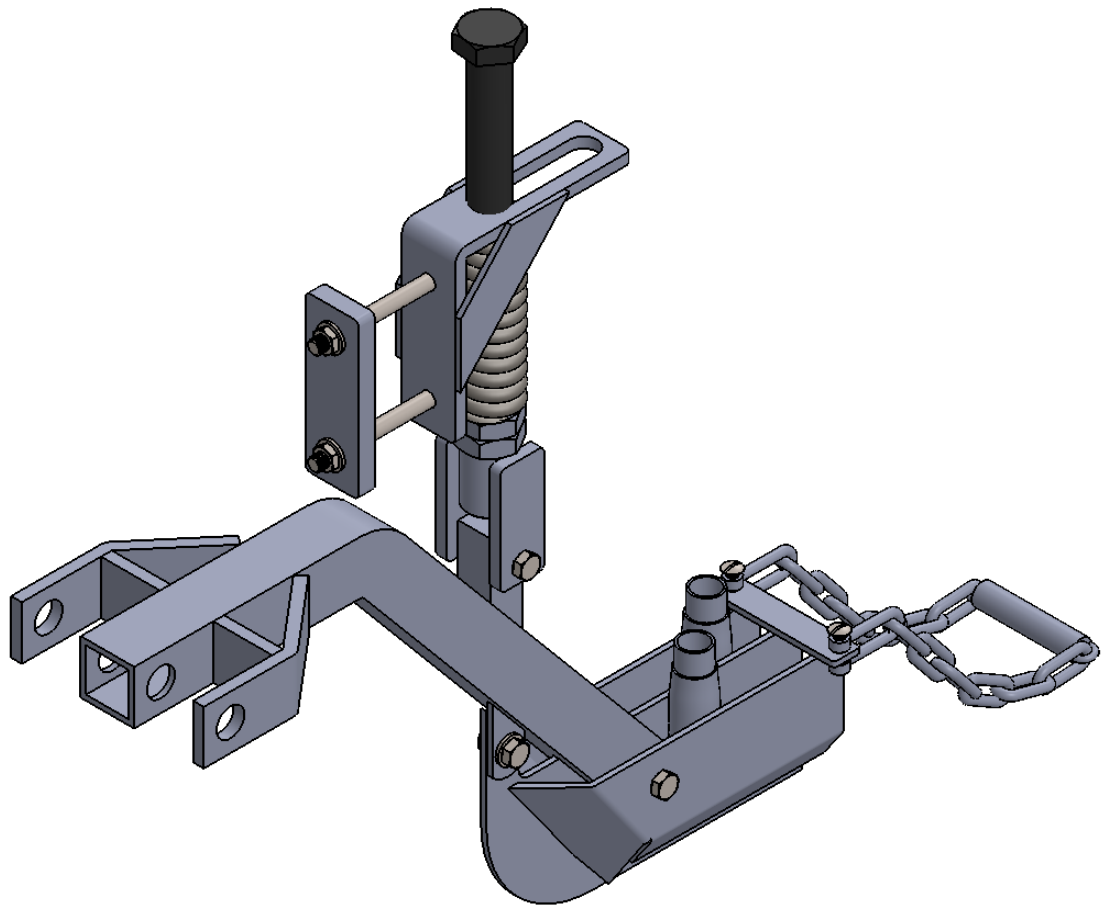


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering  TITLE:  <h2 style="text-align: center;">Soil Opener System</h2>			
DRAWN		Duch Sam On		SIGNATURE		DATE		10/17/2017	
CHK'D		Pen Nov							
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel		DWG NO.	
Q.A								Exploded View of Soil Opener System  SCALE:1:18	
						WEIGHT:		SHEET 4 OF 37	

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
I	Shaft25		1

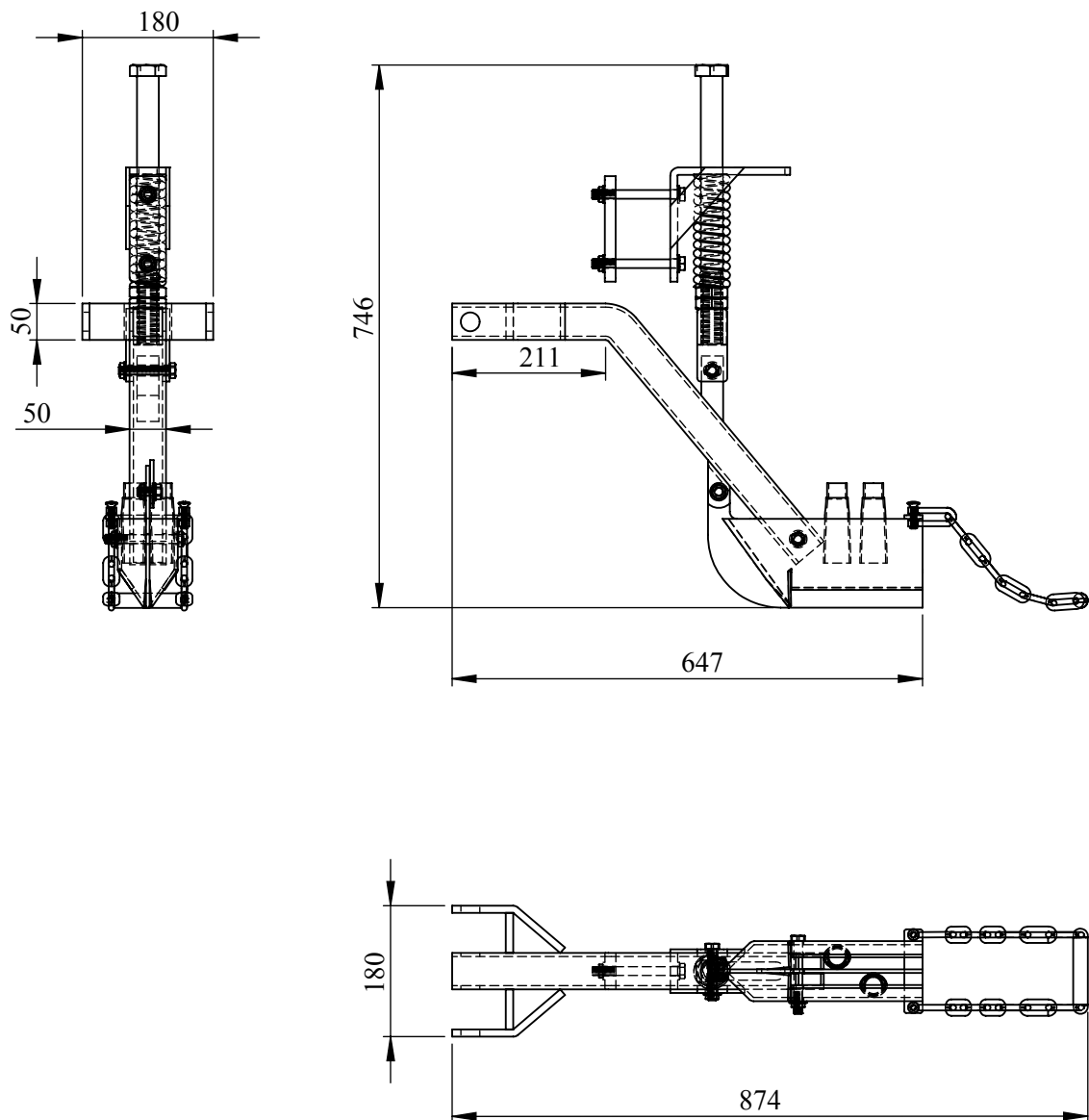


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION		
						Department of Agricultural Engineering				
	NAME	SIGNATURE	DATE			TITLE:  Soil Opener System				
DRAWN	Duch Sam On		10/21/2017							
CHK'D	Pen Nov									
CHK'D	Seng Savath									
APPV'D	Chan Saruth					DWG NO.  I.Shaft of Soil Opener System				A4
MFG				MATERIAL: Mild Steel						
Q.A										
				WEIGHT:		SCALE:1:15				SHEET 5 OF 37



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Soil Opener System			
						DWG NO.		A4	
						II.SOpenerAs(Short) of Soil Opener System			
						SCALE:1:5		SHEET 6 OF 37	
						WEIGHT:			
						MATERIAL: Mild Steel			
DRAWN		NAME		SIGNATURE		DATE			
CHK'D		Pen Nov				10/21/2017			
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG									
Q.A									





UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Soil Opener System

DWG NO.

II.SOpenerAs(Short) of Soil Opener System

A4

SCALE:1:10

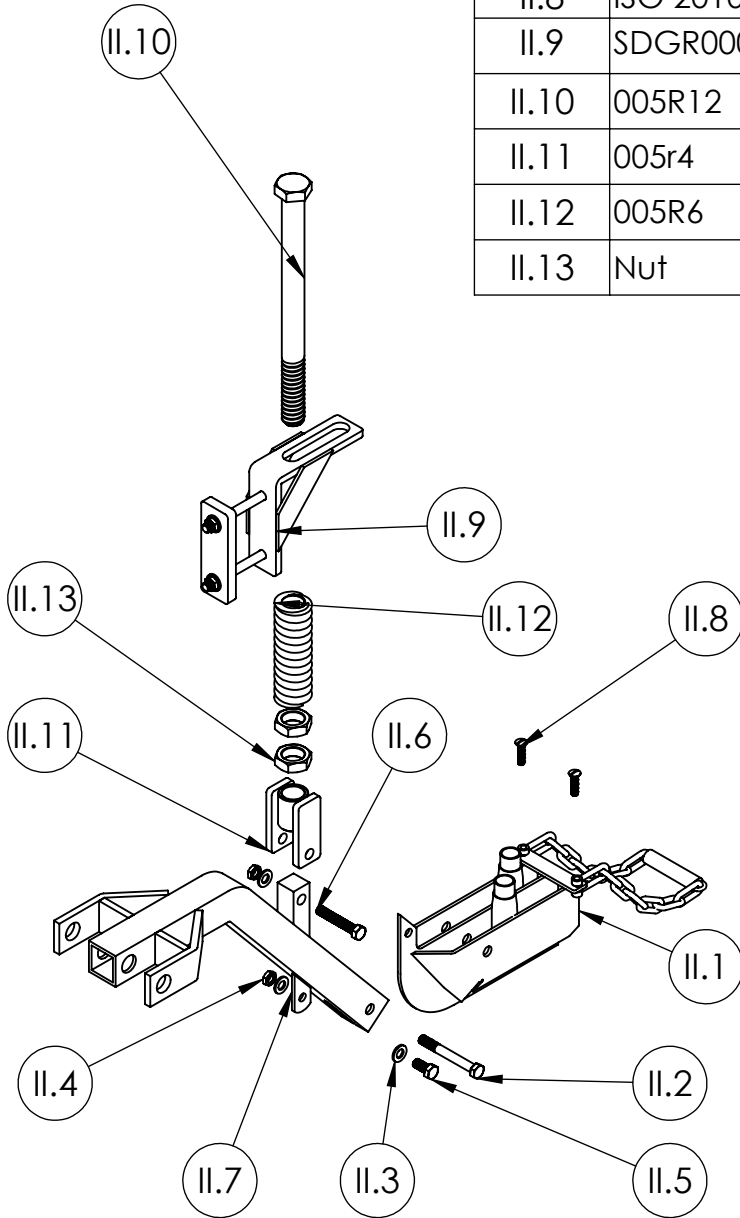
SHEET 7 OF 37

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/21/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

WEIGHT:

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
II.1	ASOpener		1
II.2	ISO 4014 - M12 x 100 x 30-S		1
II.3	Washer ISO 7089 - 12		4
II.4	Hexagon Thin Nut ISO - 4035 - M12 - N		3
II.5	ISO 4018 - M12 x 25-WS		1
II.6	ISO 4018 - M12 x 70-WS		1
II.7	ASOHandle_Short		1
II.8	ISO 2010 - M8 x 35 --- 35S		2
II.9	SDGR0004S_Assembly		1
II.10	005R12		1
II.11	005r4		1
II.12	005R6		1
II.13	Nut		2



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/21/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

TITLE:

Soil Opener System

DWG NO.

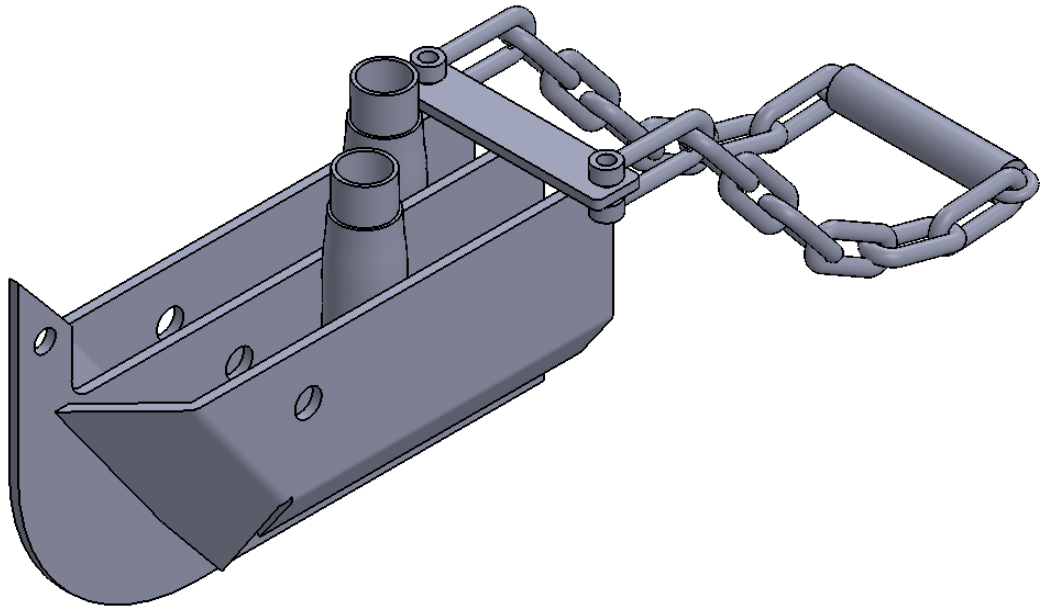
II.Exploded View of SOpenerAs(Short)

A4

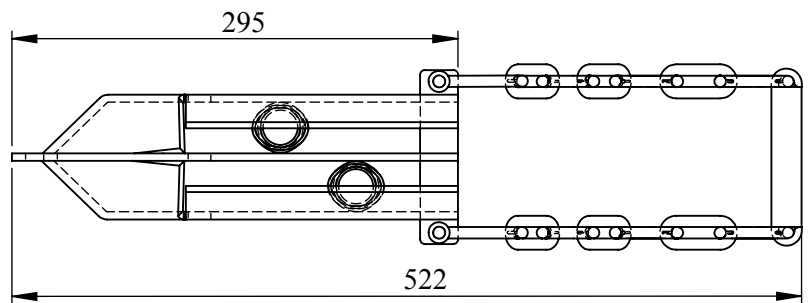
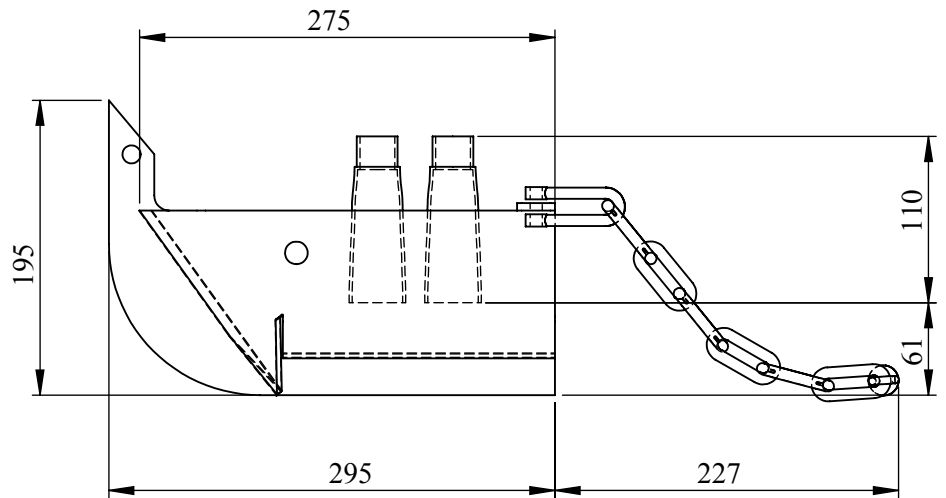
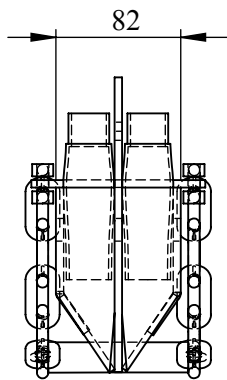
WEIGHT:

SCALE:1:10

SHEET 8 OF 37



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Soil Opener System			
						DWG NO.			
						II.1.Soil Opener Assembly			
						A4			
						SHEET 9 OF 37			
DRAWN		Duch Sam On		SIGNATURE		DATE		10/21/2017	
CHK'D		Pen Nov							
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel			
Q.A									
						WEIGHT:			



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/21/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Soil Opener System

DWG NO.

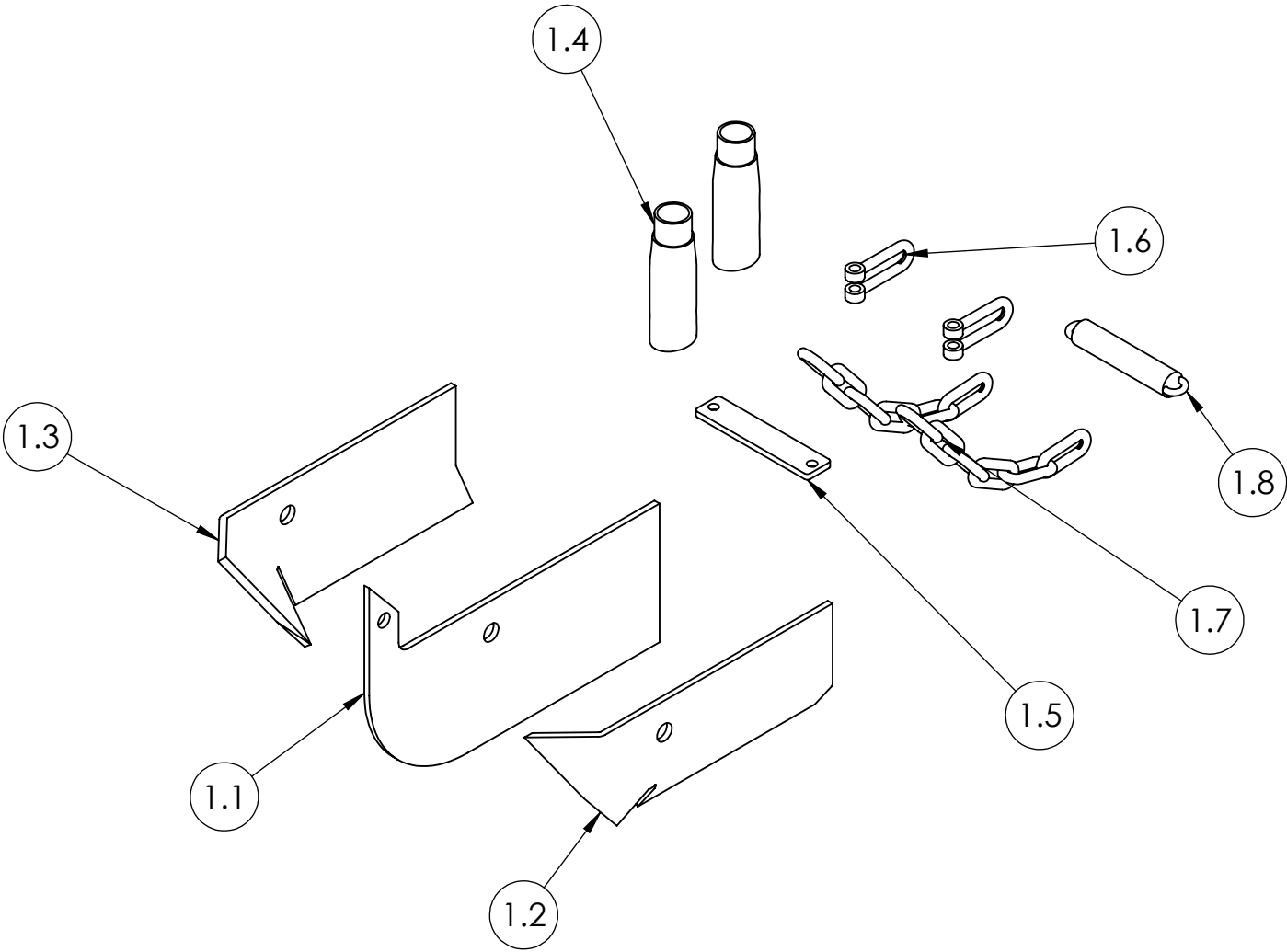
II.1.Soil Opener Assembly

A4

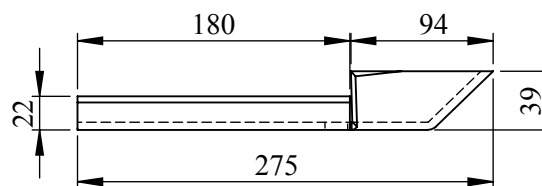
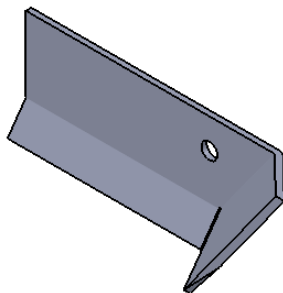
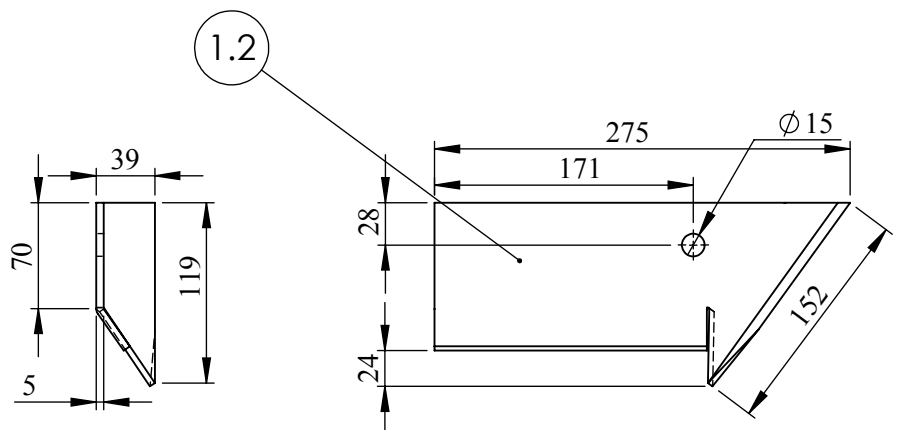
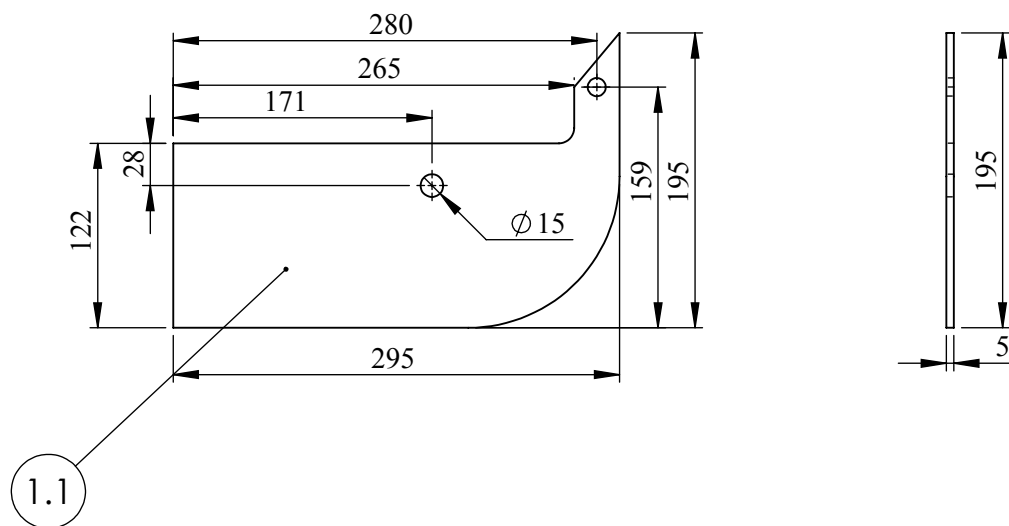
SCALE:1:5

SHEET 10 OF 37

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1.1	CSOpener		12
1.2	SOPlate_RS		12
1.3	SOPlate_LS		12
1.4	SeedOutlet_Pipe		24
1.5	Plate5x115		12
1.6	Ch11		24
1.7	Chain		12
1.8	Chain1121		12



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering  <h2 style="text-align: center;">Soil Opener System</h2>			
NAME		SIGNATURE		DATE		TITLE:  <h2 style="text-align: center;">Soil Opener System</h2>			
DRAWN		Duch Sam On		10/21/2017					
CHK'D		Pen Nov							
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel		DWG NO.	
Q.A								II.1.Exploded View of Soil Opener Assembly	
								A4	
						WEIGHT:		SCALE:1:5	
								SHEET 11 OF 37	



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/24/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

TITLE:

Soil Opener System

DWG NO.

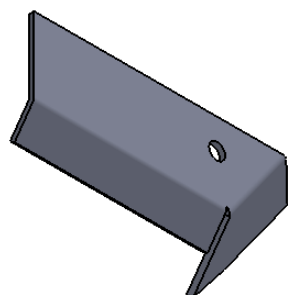
Part No.1.1 & No.1.2

A4

WEIGHT:

SCALE:1:5

SHEET 12 OF 37



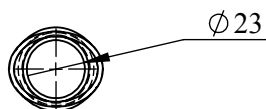
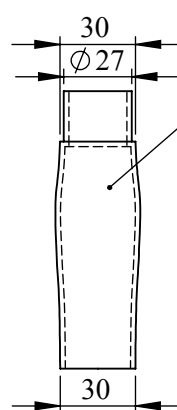
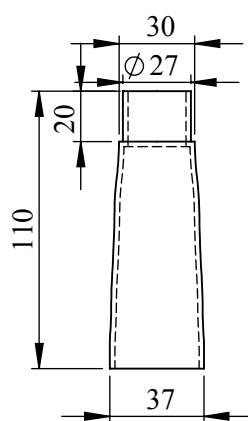
Technical drawing of a mechanical part, showing front and side views with dimensions.

**Front View (Top):**

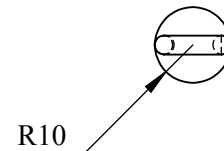
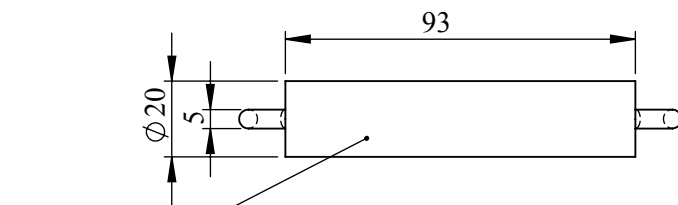
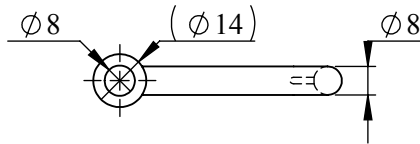
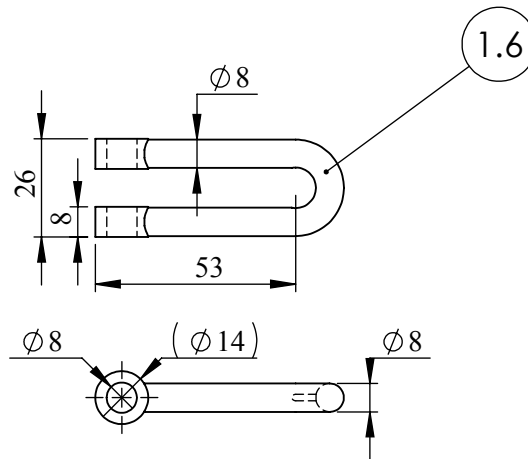
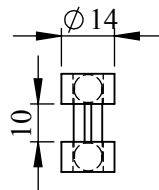
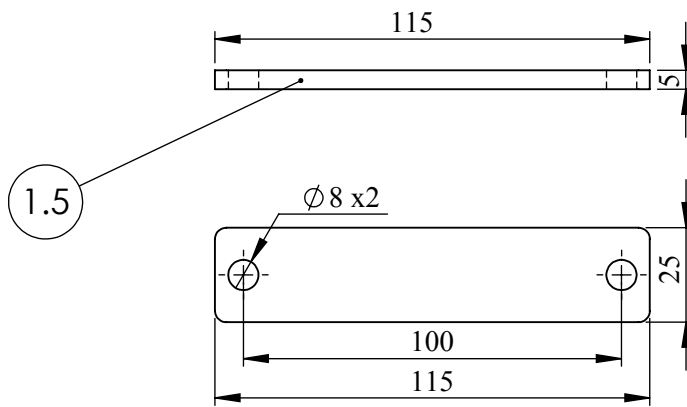
- Overall width: 275
- Distance from left edge to center of hole: 171
- Hole diameter:  $\varnothing 15$
- Overall height: 97
- Distance from top edge to center of hole: 28
- Distance from left edge to right edge of base: 180
- Slanted edge length: 153

**Side View (Bottom):**

- Overall width: 232
- Overall height: 22
- Distance from left edge to right edge of base: 180
- Distance from right edge of base to right edge of part: 94



SHEET 13 OF 37



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE
DRAWN	Duch Sam On		10/26/2017
CHK'D	Pen Nov		
CHK'D	Seng Savath		
APPV'D	Chan Saruth		
MFG			
Q.A			

MATERIAL: Mild Steel

TITLE:

Soil Opener System

DWG NO.

Part No.1.5, No.1.6, & No.1.8

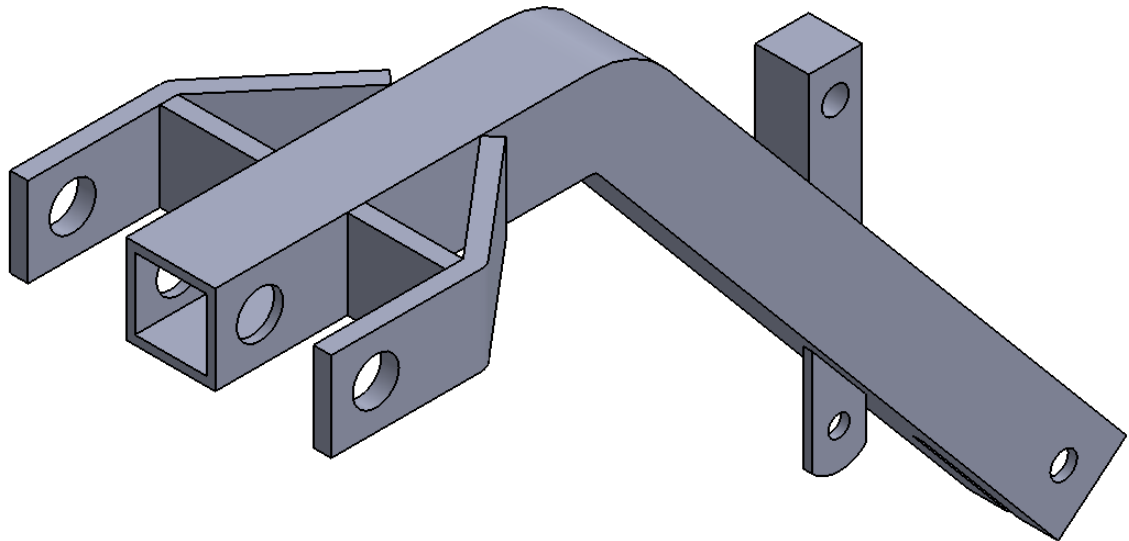
A4

WEIGHT:

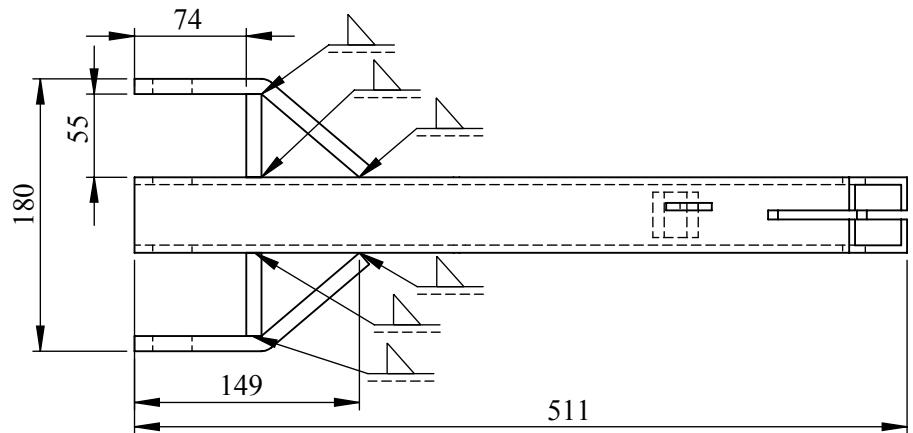
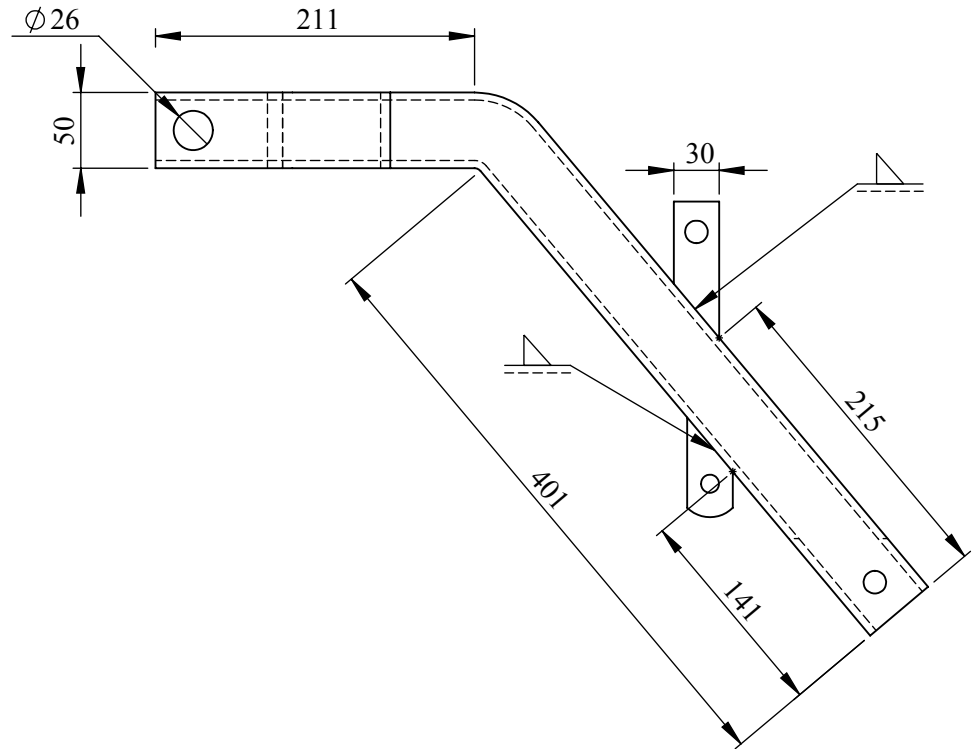
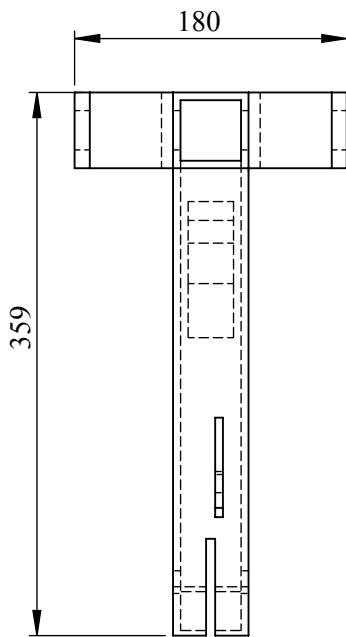
SCALE:1:2

SHEET 14 OF 37





UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
SURFACE FINISH:						Department of Agricultural Engineering			
TOLERANCES:						TITLE:  <h2 style="text-align: center;">Soil Opener System</h2>			
LINEAR:									
ANGULAR:									
	NAME	SIGNATURE	DATE			DWG NO.		A4	
DRAWN	Duch Sam On		10/26/2017			II.7. ASOHanddl_Short Assembly			
CHK'D	Pen Nov								
CHK'D	Seng Savath								
APPV'D	Chan Saruth								
MFG									
Q.A									
				MATERIAL: Mild Steel		SCALE:1:3		SHEET 15 OF 37	
				WEIGHT:					



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

TITLE:

Soil Opener System

DWG NO.

II.7. ASOHanddl\_Short Assembly

A4

WEIGHT:

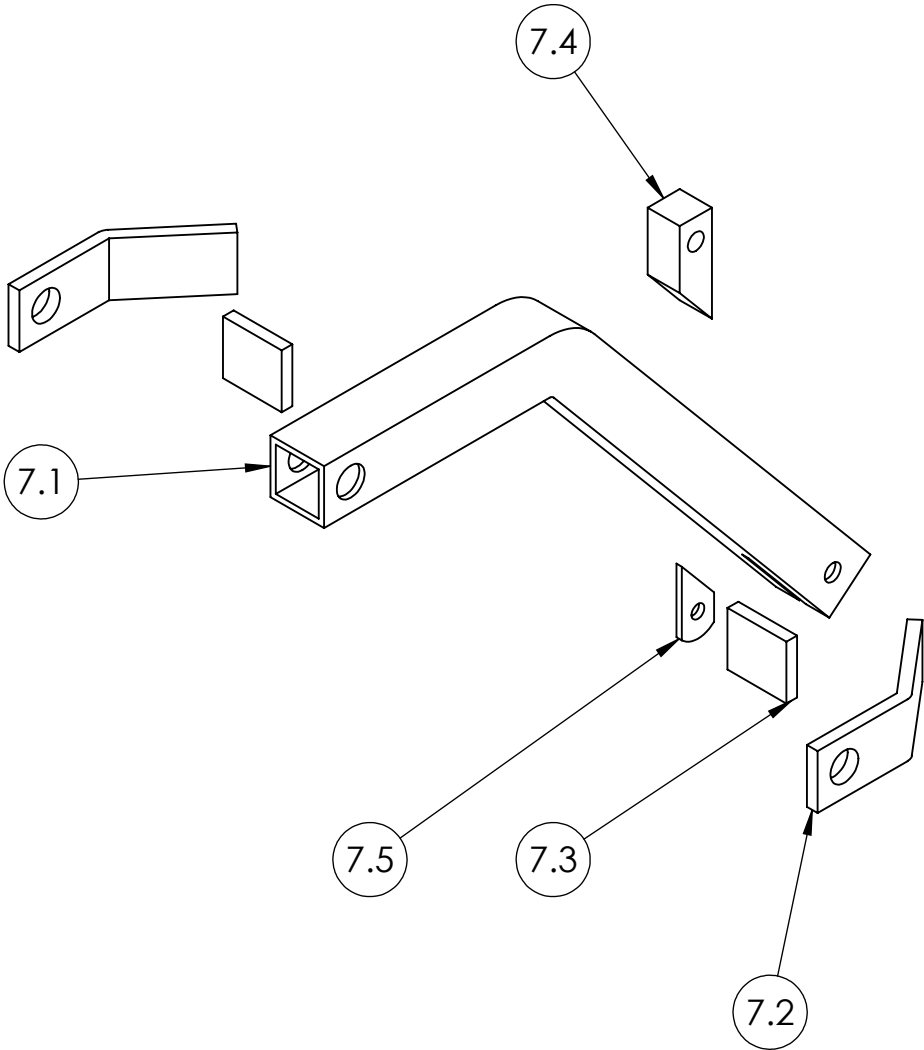
SCALE:1:5

SHEET 16 OF 37

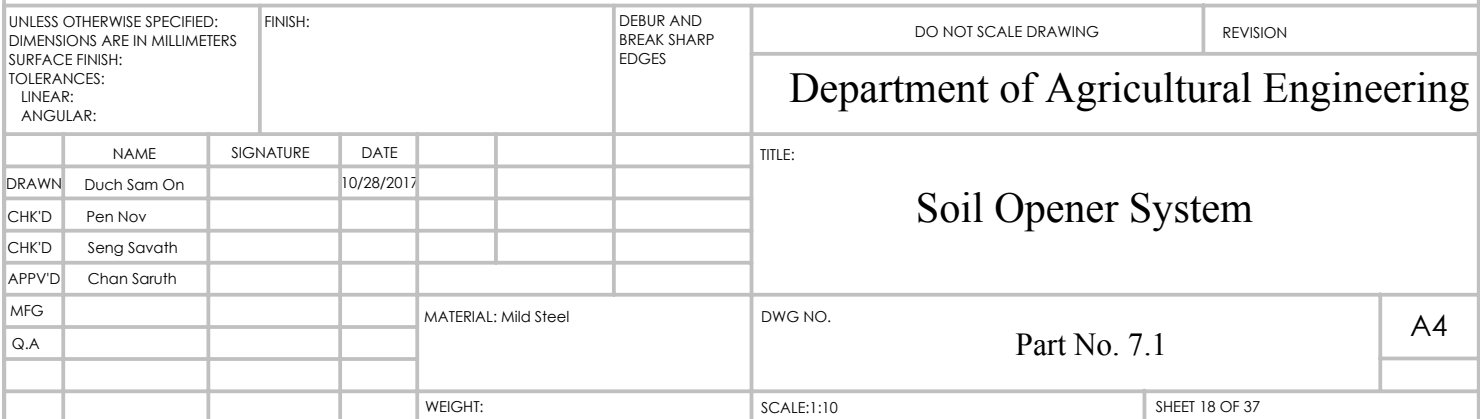
	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/26/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

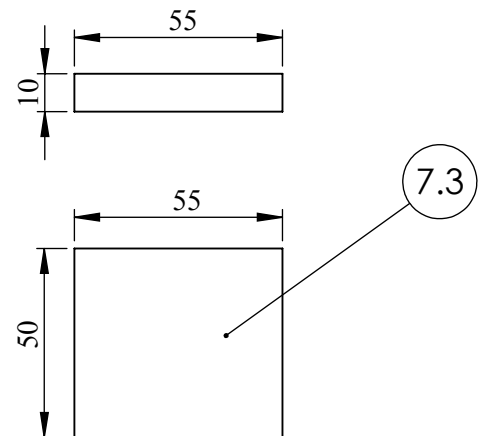
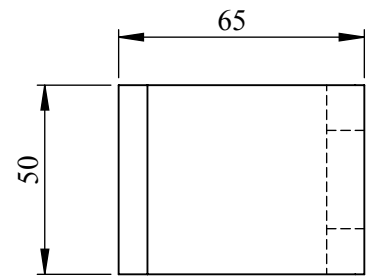
MATERIAL: Mild Steel

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
7.1	Shovel support (short)_F		6
7.2	SO1122		12
7.3	SP1233		12
7.4	SO30x30x90		6
7.5	12341		6

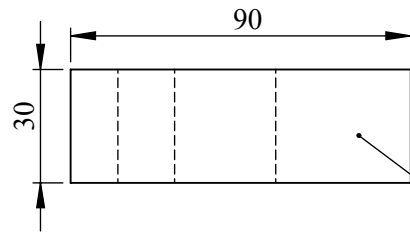


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Soil Opener System			
DRAWN		Duch Sam On		SIGNATURE		DATE		10/26/2017			
CHK'D		Pen Nov									
CHK'D		Seng Savath									
APPV'D		Chan Saruth									
MFG											
Q.A											
								MATERIAL: Mild Steel			
								DWG NO.		A4	
								II.7. Exploded View of ASOHanddl_Short			
								WEIGHT:		SCALE:1:5	
										SHEET 17 OF 37	

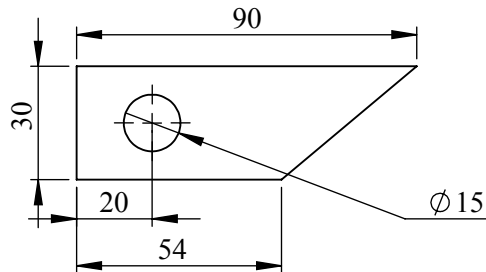




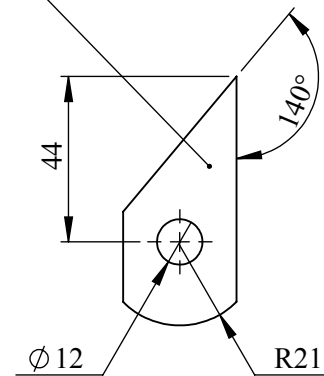
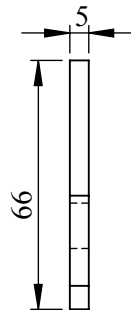
SHEET 19 OF 37



7.4



7.5



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/28/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Soil Opener System

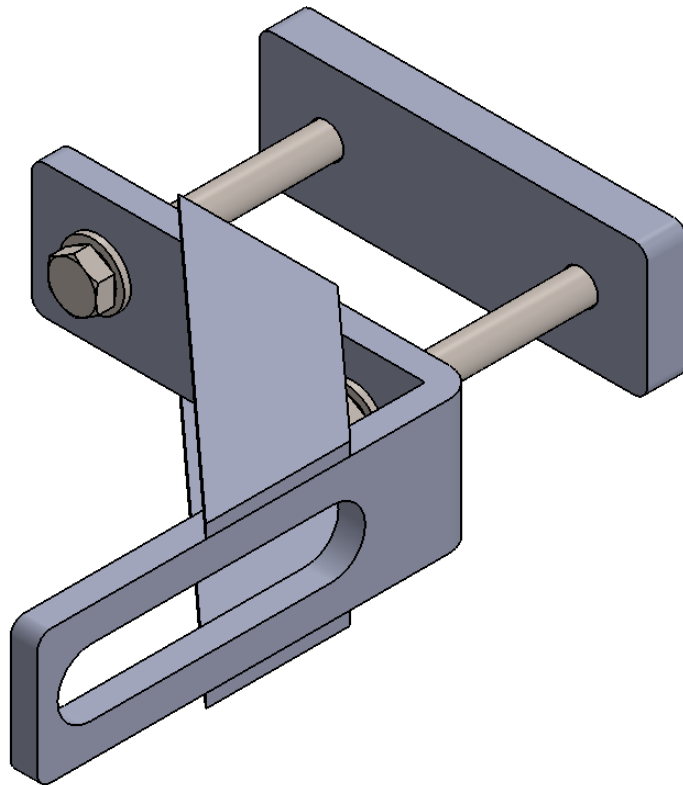
DWG NO.

Part No. 7.4 & & No. 7.5

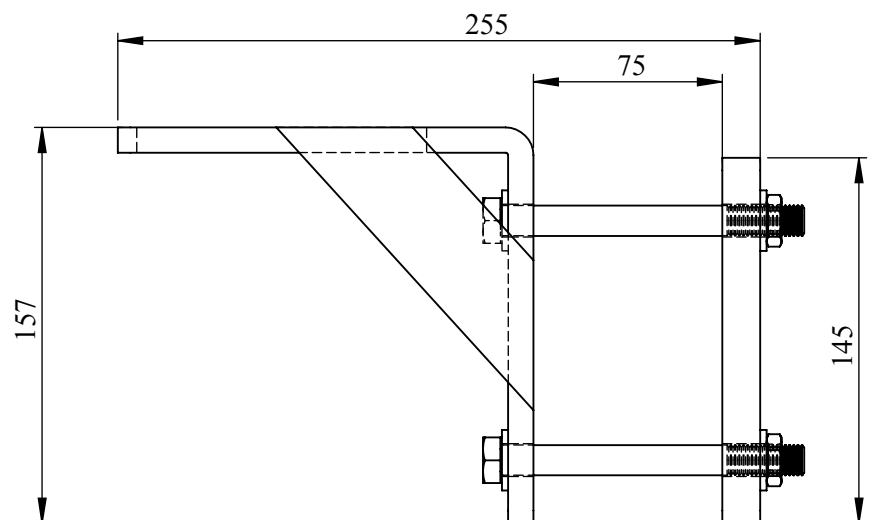
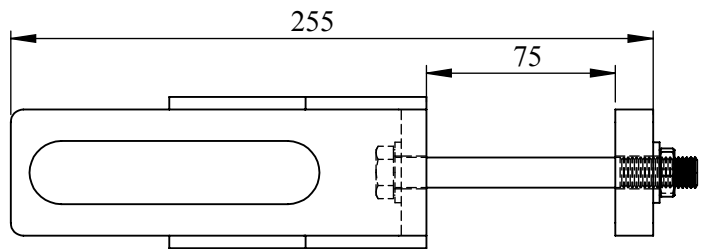
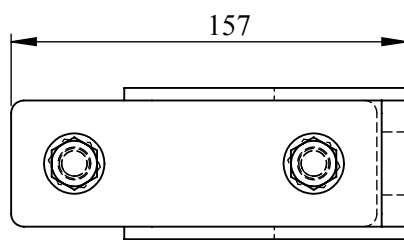
A4

SCALE:1:2

SHEET 20 OF 37



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Soil Opener System			
						DWG NO.			
						Assembly No.II.9			
						A4			
						SHEET 21 OF 37			
DRAWN		NAME		SIGNATURE		DATE			
CHK'D		Pen Nov				10/28/2017			
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel			
Q.A									
						WEIGHT:		SCALE:1:2	



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/28/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Soil Opener System

DWG NO.

Assembly View No.II.9

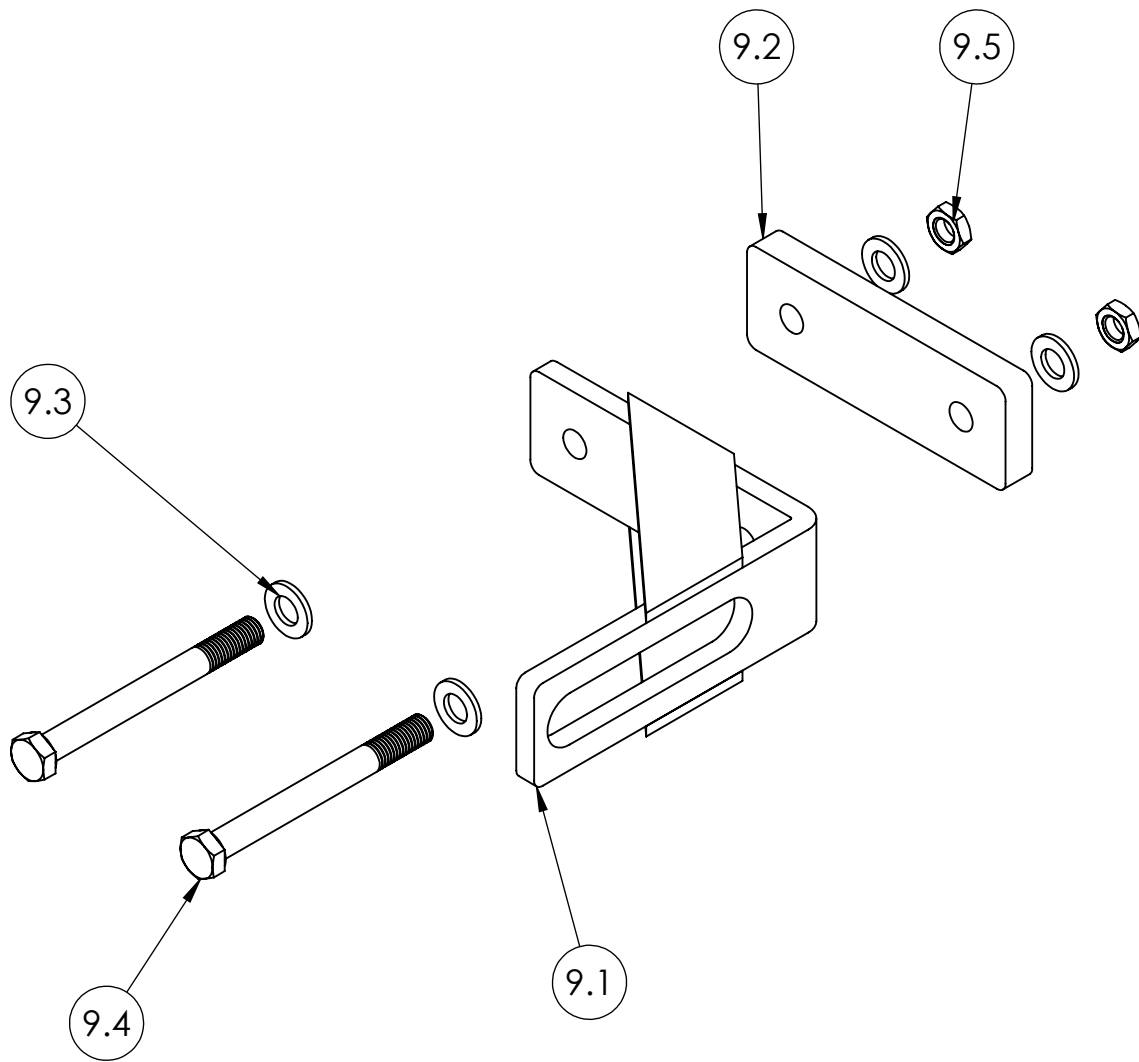
A4

SCALE:1:3

SHEET 22 OF 37



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
9.1	SDGR0004S		12
9.2	ST003_side		12
9.3	Washer ISO 7089 - 12		48
9.4	ISO 4014 - M12 x 120 x 30-S		24
9.5	Hexagon Thin Nut ISO - 4035 - M12 - N		24



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/28/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

MATERIAL: Mild Steel

WEIGHT:

TITLE:

Soil Opener System

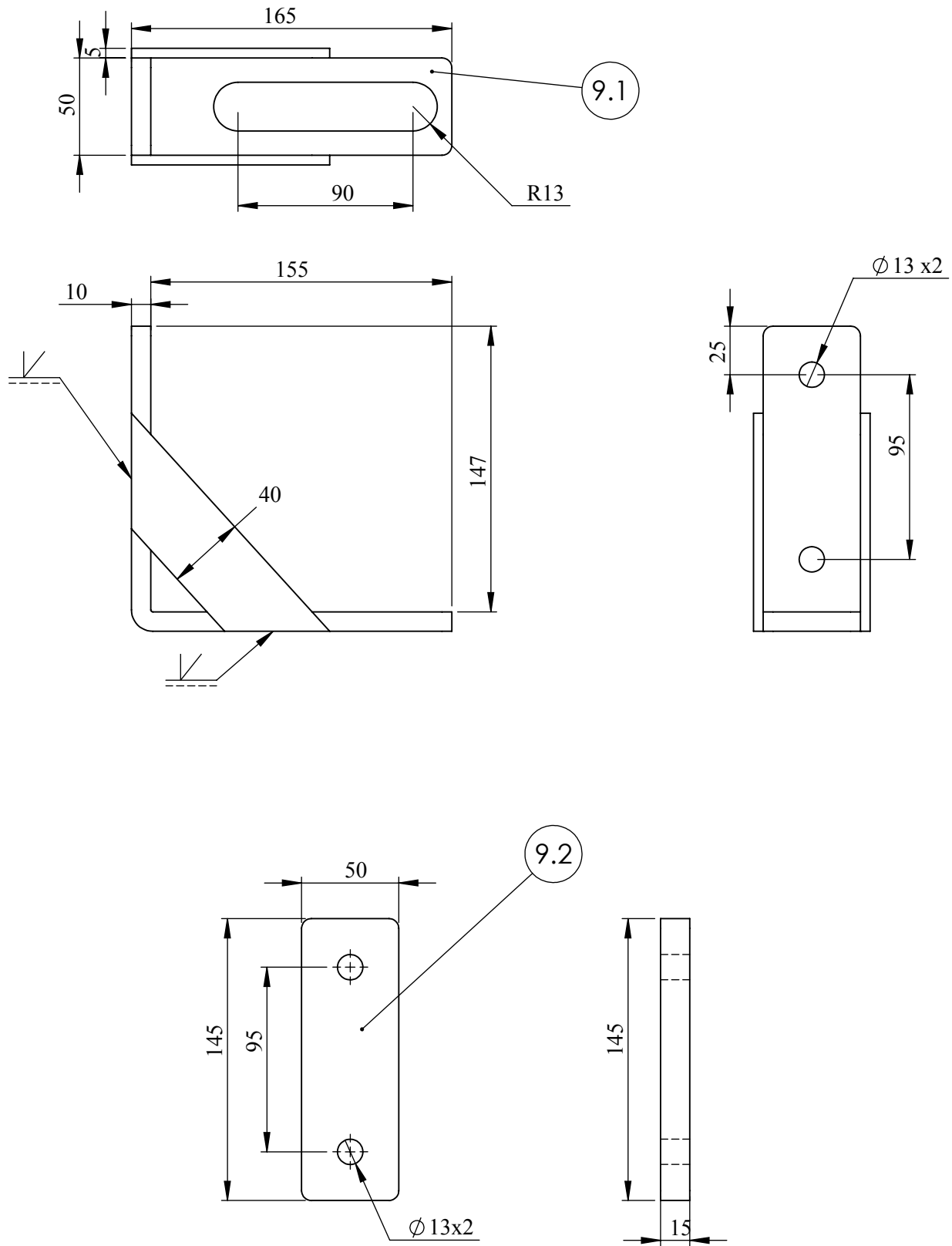
DWG NO.

Exploded View of Assembly No.II.9

A4

SCALE:1:3

SHEET 23 OF 37



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/28/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG				MATERIAL: Mild Steel	
Q.A					
				WEIGHT:	

TITLE:

Soil Opener System

DWG NO.

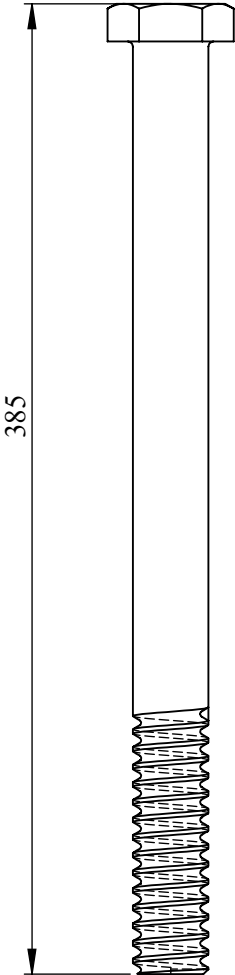
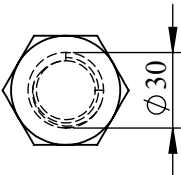
Part No 9.1 & No.9.2

A4

SCALE:1:3

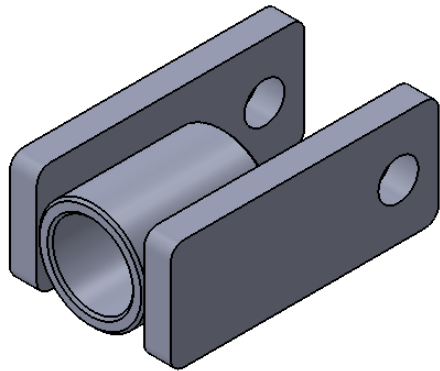
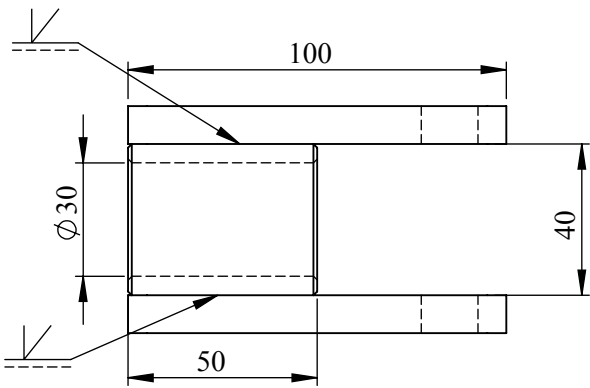
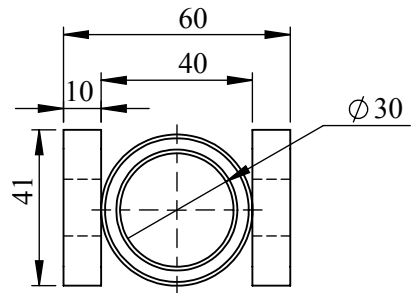
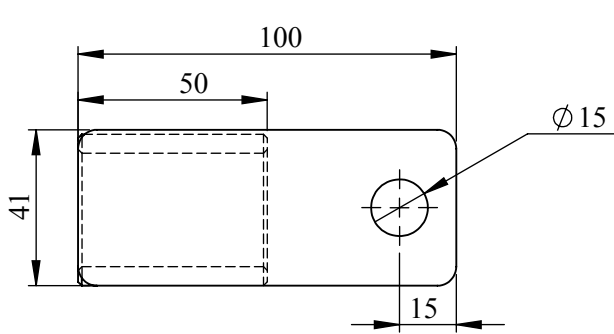
SHEET 24 OF 37

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
II.10	005R12		12



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
		NAME	SIGNATURE	DATE			TITLE:  <h2>Soil Opener System</h2>		
DRAWN	Duch Sam On		10/28/2017						
CHK'D	Pen Nov								
CHK'D	Seng Savath								
APPVD	Chan Saruth								
MFG				MATERIAL: Mild Steel		DWG NO.		Part No. II.10	
Q.A								A4	
						SCALE:1:3		SHEET 25 OF 37	
				WEIGHT:					

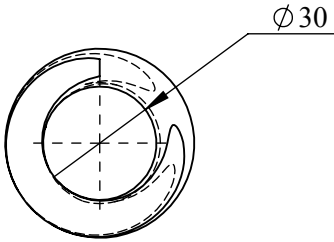
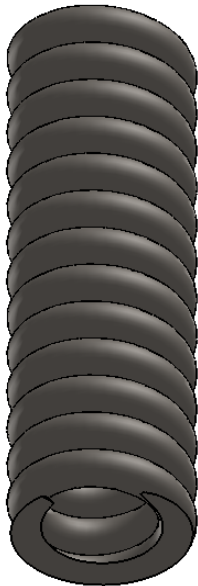
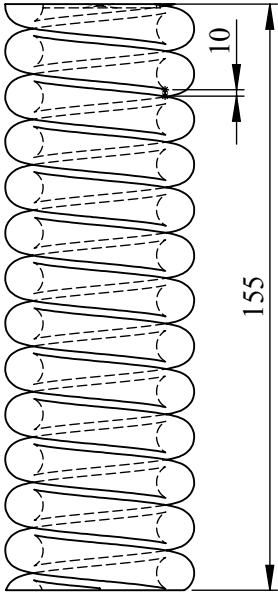
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
II.11	005r4		12



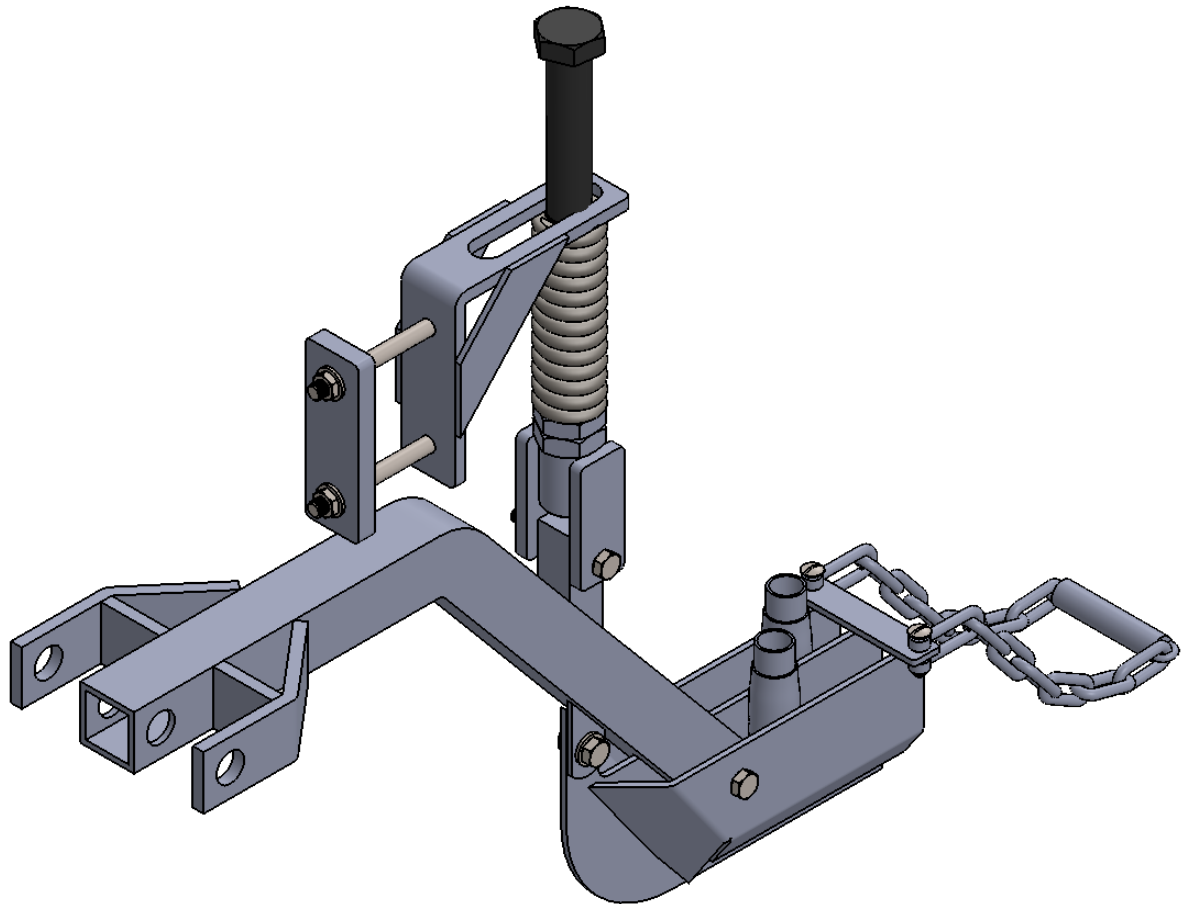
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Soil Opener System			
								DWG NO.			
								II.Exploded View of SOpenerAs(Short)			
								A4			
								SHEET 26 OF 37			

NAME	SIGNATURE	DATE			
Duch Sam On		10/21/2017			
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG			MATERIAL: Mild Steel		
Q.A					
			WEIGHT:		

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
II.12	005R6		12

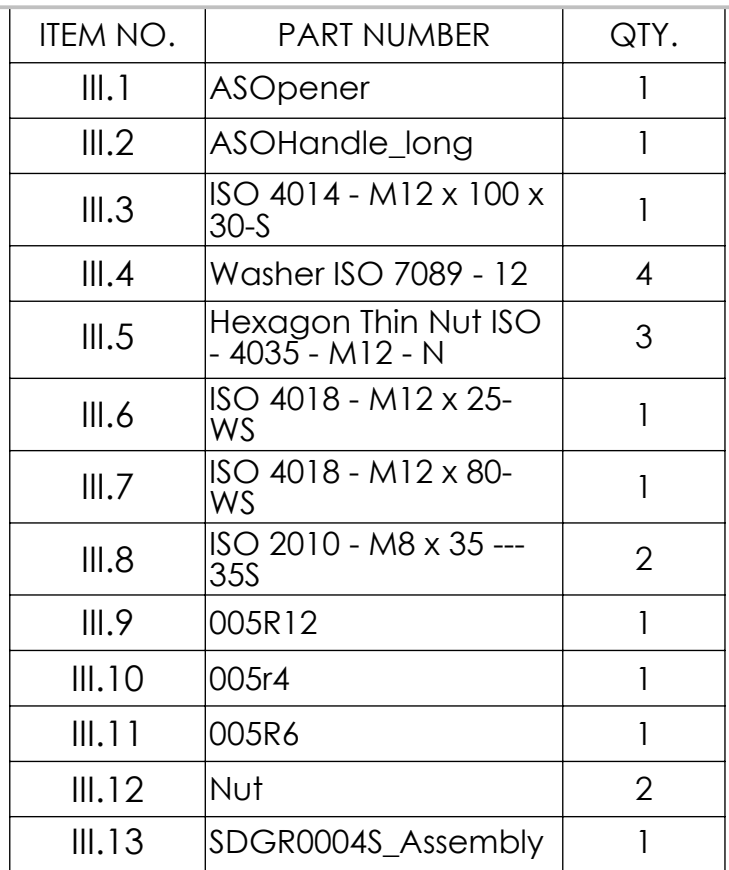


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Soil Opener System			
DRAWN		Duch Sam On		SIGNATURE		DATE		10/28/2017			
CHK'D		Pen Nov									
CHK'D		Seng Savath									
APPV'D		Chan Saruth									
MFG						MATERIAL: Mild Steel		DWG NO.		Part No.II.12	
Q.A										A4	
						WEIGHT:		SCALE:1:2		SHEET 27 OF 37	



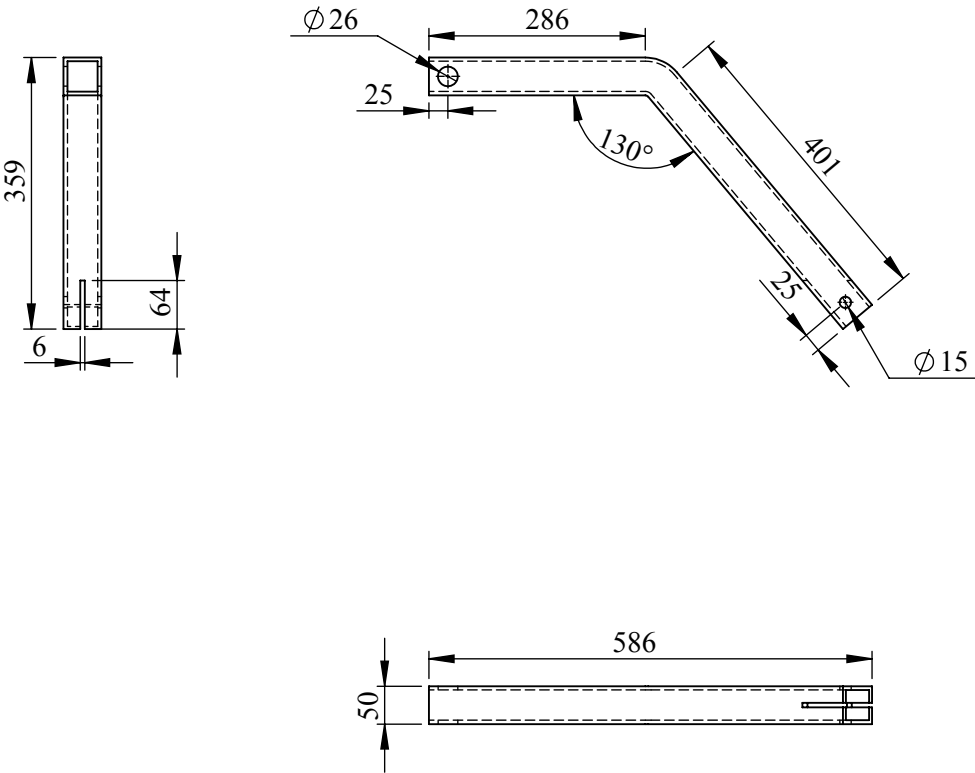
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Soil Opener System			
						DWG NO.			
						Assembly No. III			
						A4			
						SHEET 28 OF 37			

	NAME	SIGNATURE	DATE			
DRAWN	Duch Sam On		10/28/2017			
CHK'D	Pen Nov					
CHK'D	Seng Savath					
APPV'D	Chan Saruth					
MFG				MATERIAL: Mild Steel		
Q.A						
				WEIGHT:		
				SCALE:1:5		



SHEET 29 OF 37

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
III.2	Shovel support (long)_F		6



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
  LINEAR:  
  ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE			
DRAWN	Duch Sam On		10/28/2017			
CHK'D	Pen Nov					
CHK'D	Seng Savath					
APPV'D	Chan Saruth					
MFG				MATERIAL: Mild Steel		
Q.A						
				WEIGHT:		

TITLE:

Soil Opener System

DWG NO.

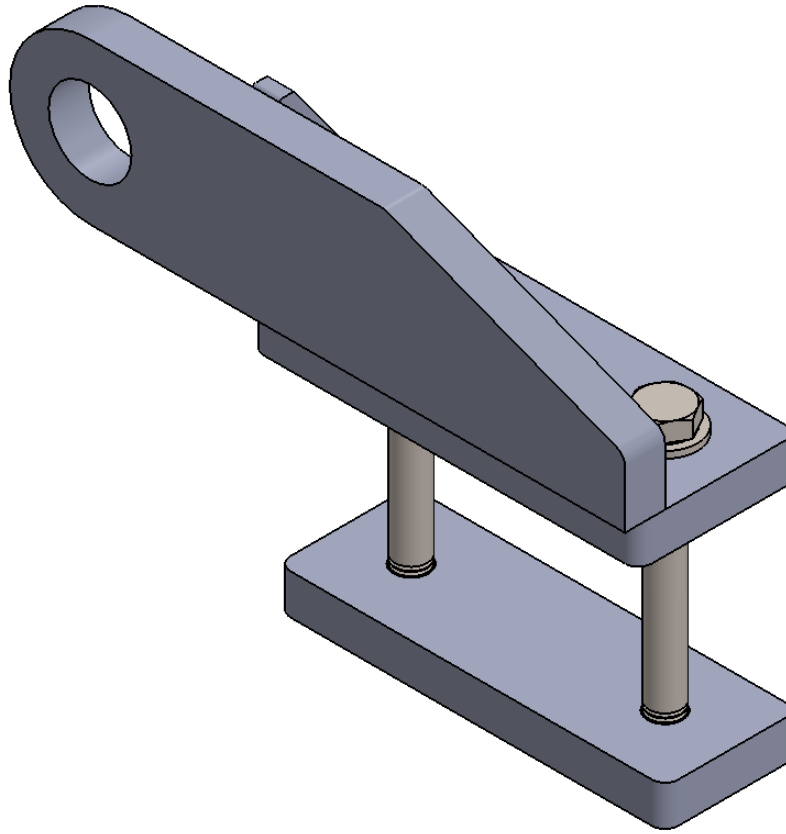
Part No. III.2

A4

SCALE:1:10

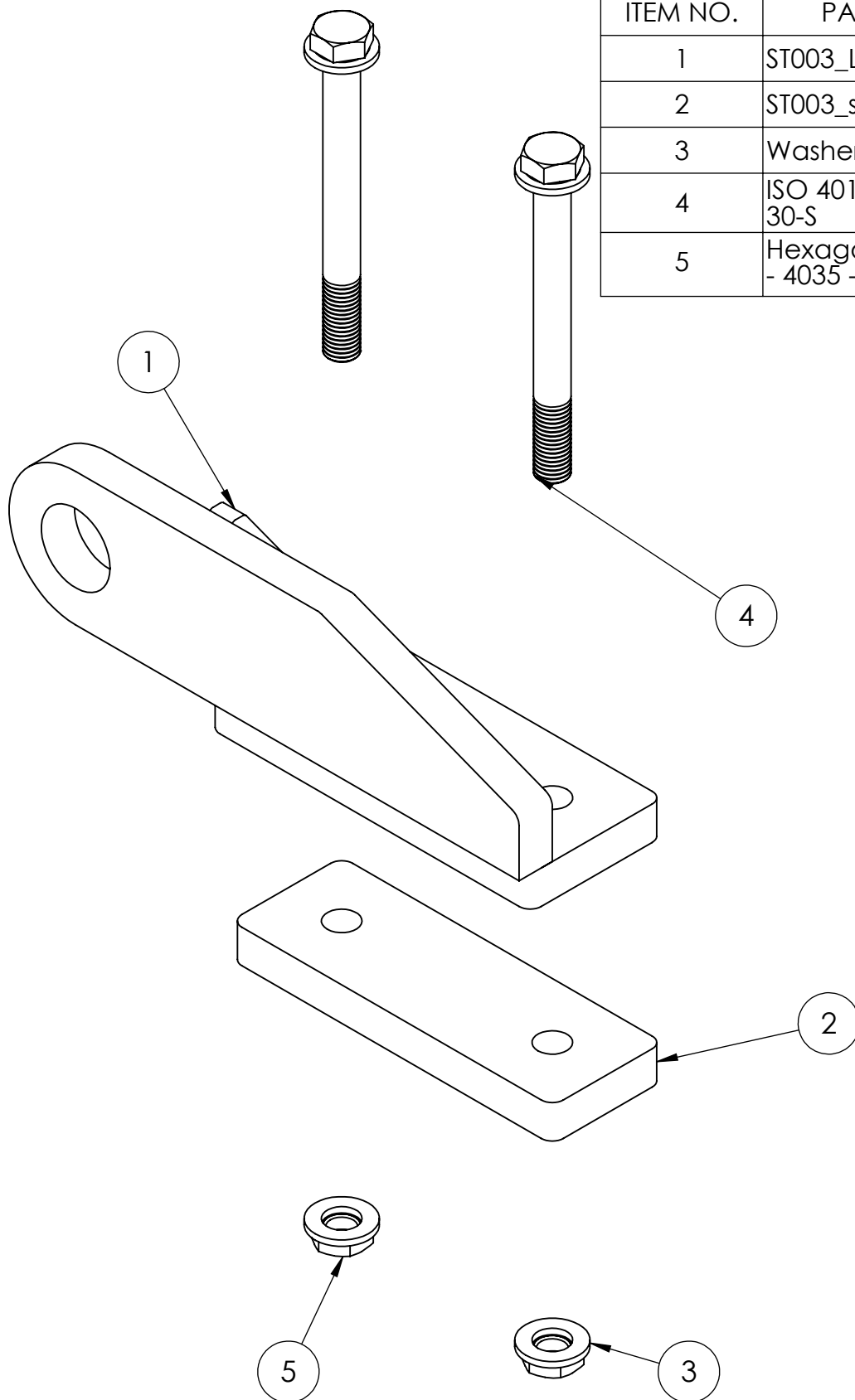
SHEET 30 OF 37





UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
SURFACE FINISH:						Department of Agricultural Engineering			
TOLERANCES:						TITLE:			
LINEAR:						Soil Opener System			
ANGULAR:									
	NAME	SIGNATURE	DATE						
DRAWN	Duch Sam On		10/29/2017						
CHK'D	Pen Nov								
CHK'D	Seng Savath								
APPV'D	Chan Saruth								
MFG				MATERIAL: Mild Steel		DWG NO.		Assembly No.IV	
Q.A								A4	
				WEIGHT:		SCALE:1:2		SHEET 31 OF 37	

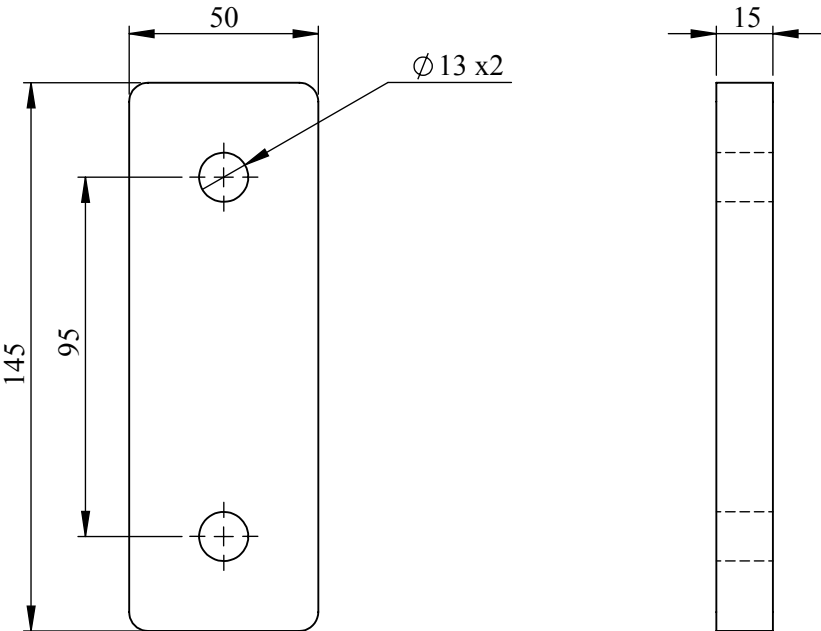
ITEM NO.	PART NUMBER	QTY.
1	ST003_LSide_FA	1
2	ST003_side	1
3	Washer ISO 7089 - 12	4
4	ISO 4014 - M12 x 120 x 30-S	2
5	Hexagon Thin Nut ISO - 4035 - M12 - N	2



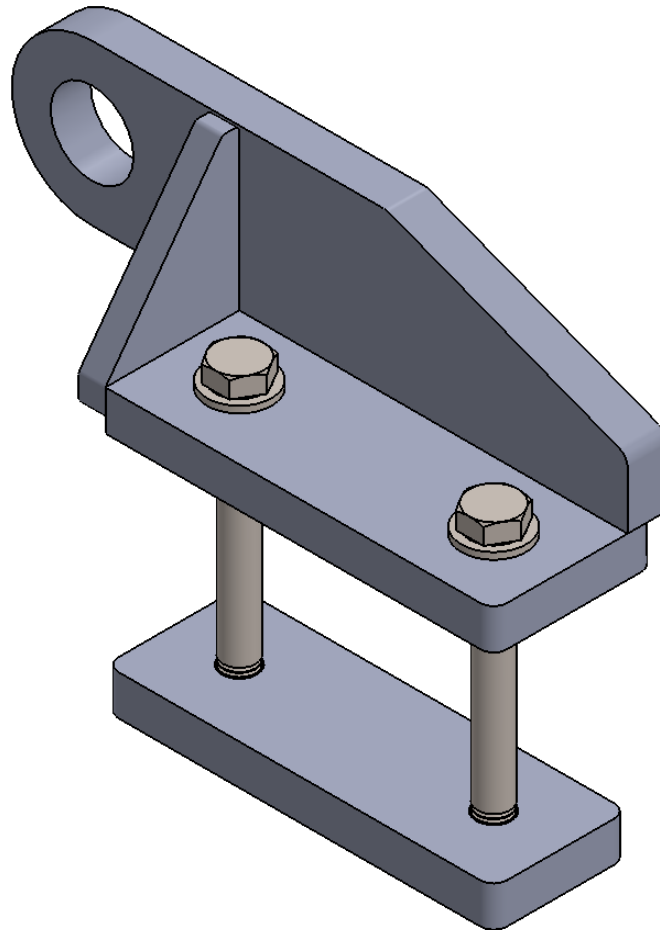
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Soil Opener System			
DRAWN		NAME		SIGNATURE		DATE		DWG NO.	
CHK'D		Pen Nov				10/29/2017		Exploded View of Assembly No.V	
CHK'D		Seng Savath						A4	
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel			
Q.A									
						WEIGHT:		SCALE:1:2	
								SHEET 32 OF 37	



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
IV.2	ST003_side		6

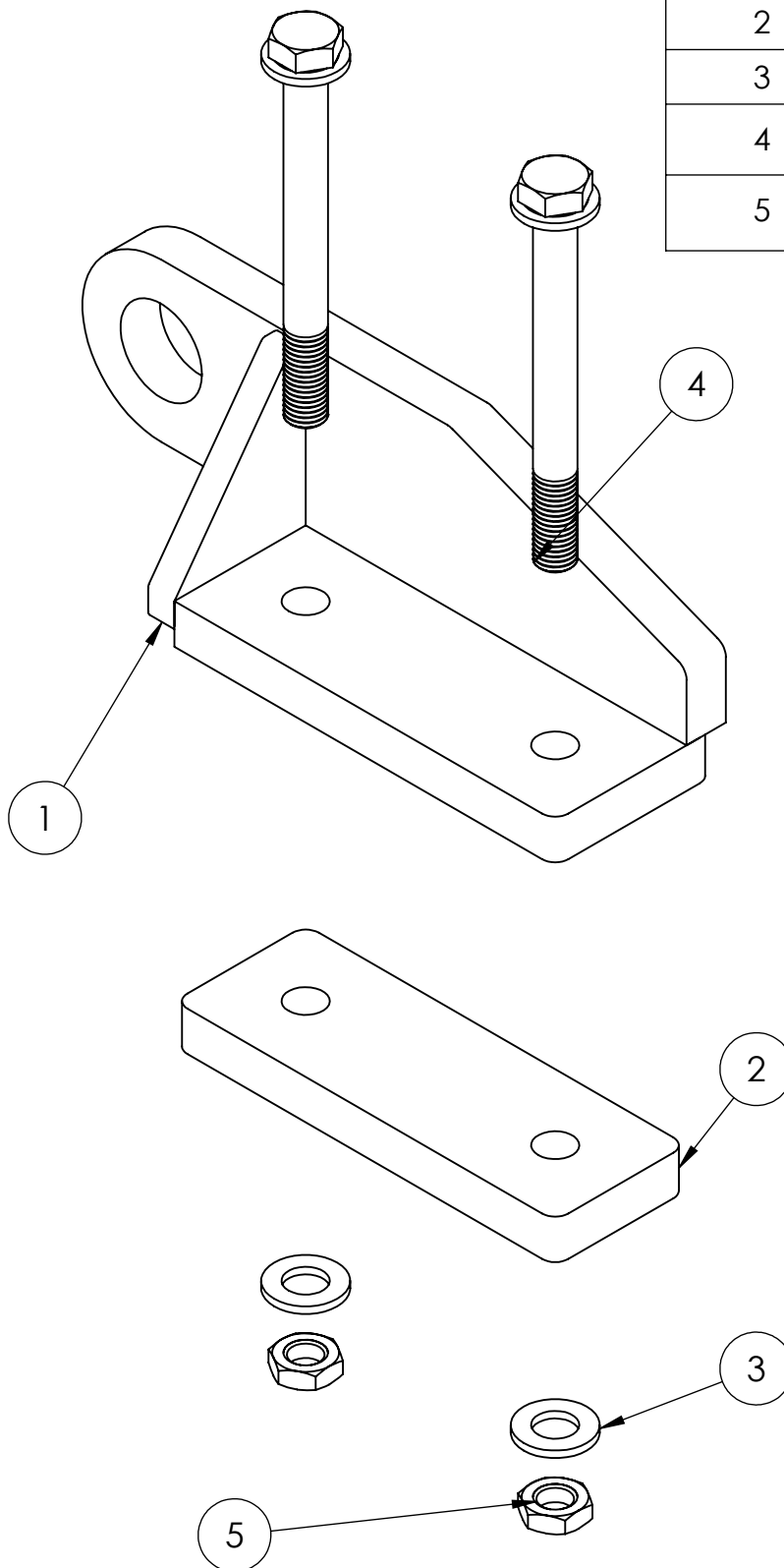


UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
<div>Department of Agricultural Engineering</div> <div>Soil Opener System</div>											
NAME		SIGNATURE		DATE				TITLE:			
DRAWN	Duch Sam On			10/29/2017							
CHK'D	Pen Nov										
CHK'D	Seng Savath										
APPV'D	Chan Saruth										
MFG						MATERIAL: Mild Steel		DWG NO.		A4	
Q.A								Part No.IV.2			
						WEIGHT:		SCALE:1:2		SHEET 34 OF 37	



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
						Department of Agricultural Engineering			
						TITLE:			
						Soil Opener System			
DRAWN		NAME		SIGNATURE		DATE			
		Duch Sam On				10/29/2017			
CHK'D		Pen Nov							
CHK'D		Seng Savath							
APPV'D		Chan Saruth							
MFG						MATERIAL: Mild Steel		DWG NO.	
Q.A								Assembly No.V	
								A4	
						WEIGHT:		SCALE:1:2	
								SHEET 35 OF 37	

ITEM NO.	PART NUMBER	QTY.
1	ST003_RSide_FA	1
2	ST003_side	1
3	Washer ISO 7089 - 12	4
4	ISO 4014 - M12 x 120 x 30-S	2
5	Hexagon Thin Nut ISO - 4035 - M12 - N	2



UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
SURFACE FINISH:  
TOLERANCES:  
LINEAR:  
ANGULAR:

FINISH:

DEBUR AND  
BREAK SHARP  
EDGES

DO NOT SCALE DRAWING

REVISION

Department of Agricultural Engineering

	NAME	SIGNATURE	DATE		
DRAWN	Duch Sam On		10/29/2017		
CHK'D	Pen Nov				
CHK'D	Seng Savath				
APPV'D	Chan Saruth				
MFG					
Q.A					

TITLE:

Soil Opener System

DWG NO.

Assembly No.V

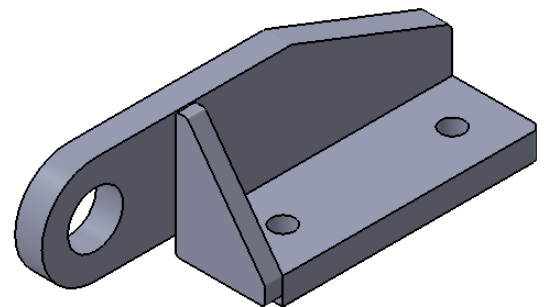
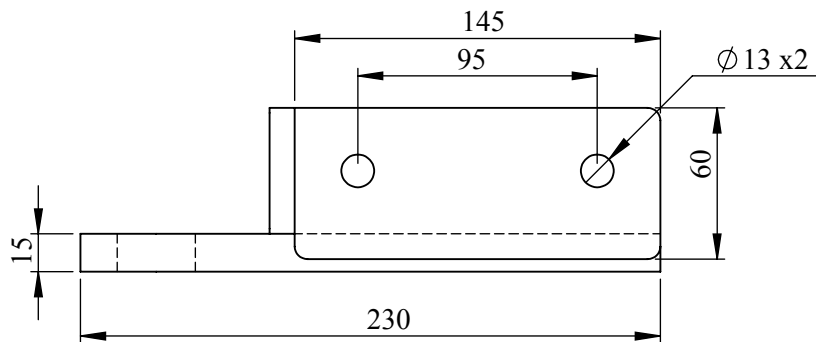
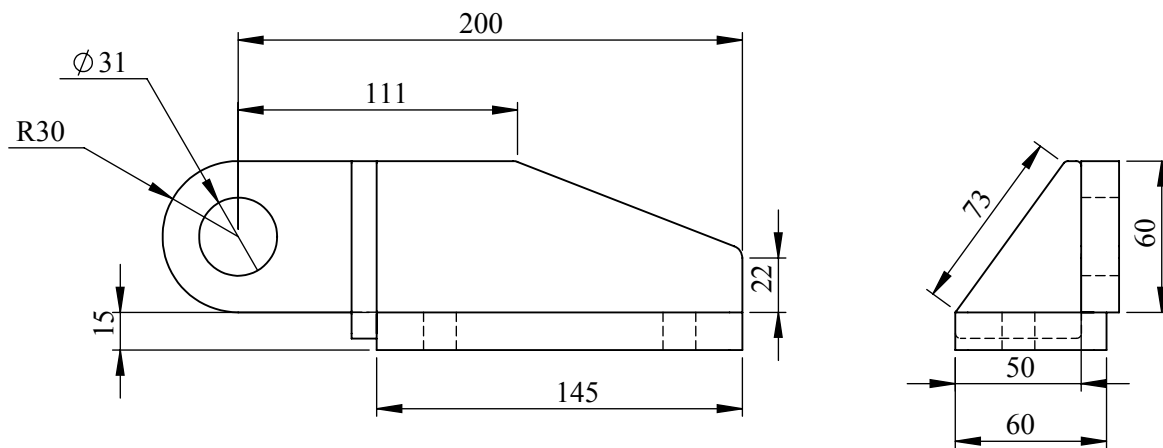
A4

WEIGHT:

SCALE:1:2

SHEET 36 OF 37

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ST003_L_FP		3
2	ST003_L1_FP		3
3	ST003_L2_FP		3



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:				FINISH:		DEBUR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING		REVISION	
								Department of Agricultural Engineering			
								TITLE:			
								Soil Opener System			
DRAWN: Duch Sam On				SIGNATURE:		DATE: 10/29/2017		DWG NO.			
CHK'D: Pen Nov								Assembly No.V			
CHK'D: Seng Savath								A4			
APPV'D: Chan Saruth											
MFG:						MATERIAL: Mild Steel					
Q.A:											
						WEIGHT:		SCALE:1:3			
								SHEET 37 OF 37			