

Simple,
Market based,
Affordable,
Repairable
Technologies



Rope pump Model 2



www.smartcentregroup.com



The
SMART
Centre
Group

SHIPO Rope pump Model 2



Version 15-9-2014
www.SHIPO-TZ.org

Context

The SHIPO Rope pump Model 2 is a simplified version of the Model 1. For production details see Manual of the SHIPO model one. In this model a wheel cover is optional as well as a return PVC pipe. See pictures under.



Rope pump Model 2, with a return pipe, without wheel cover. Used for irrigation of a garden.



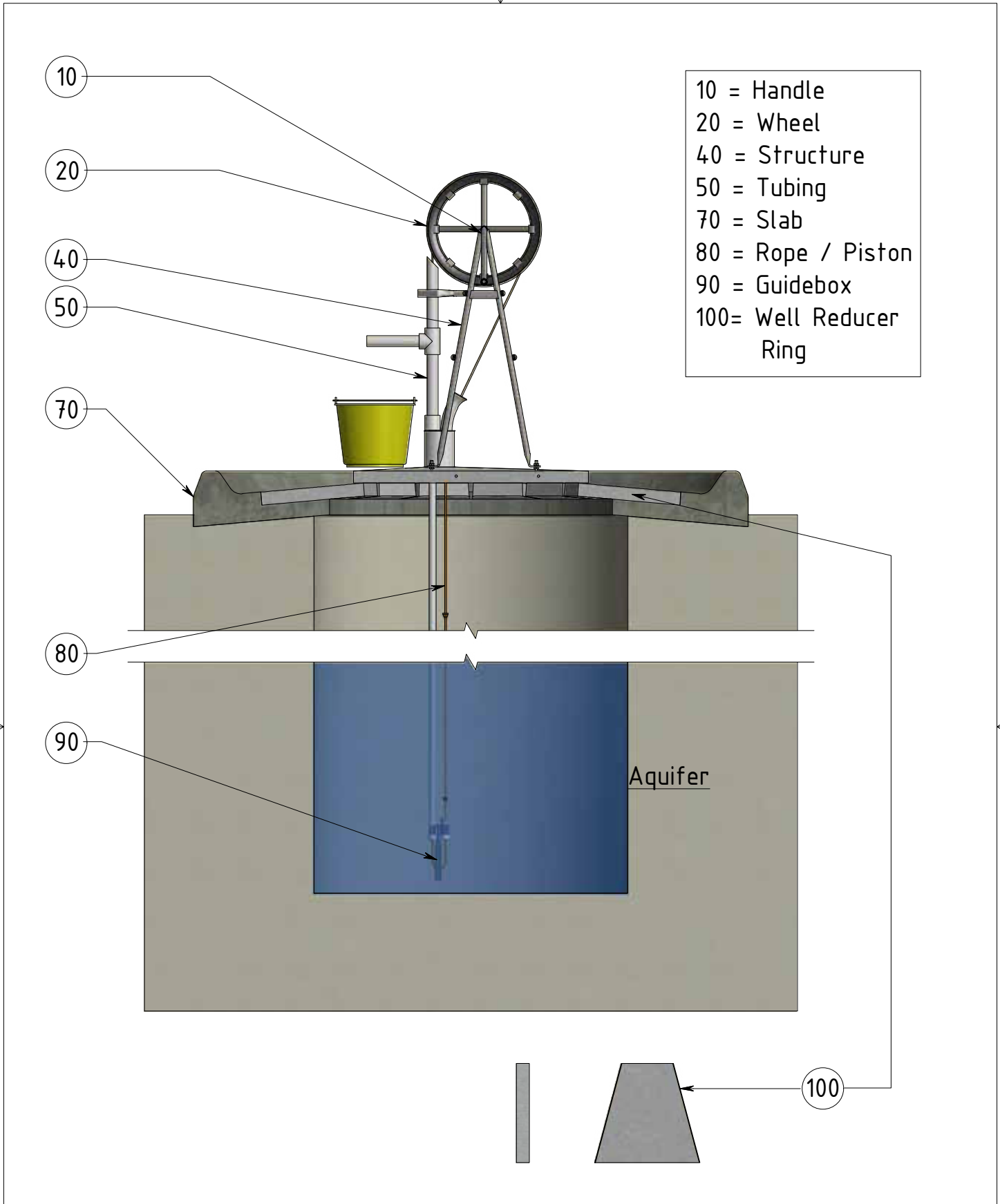
Rope pump Model 2 with Options of a Wheel cover



Separate Wheel cover





Mounting of wheel cover



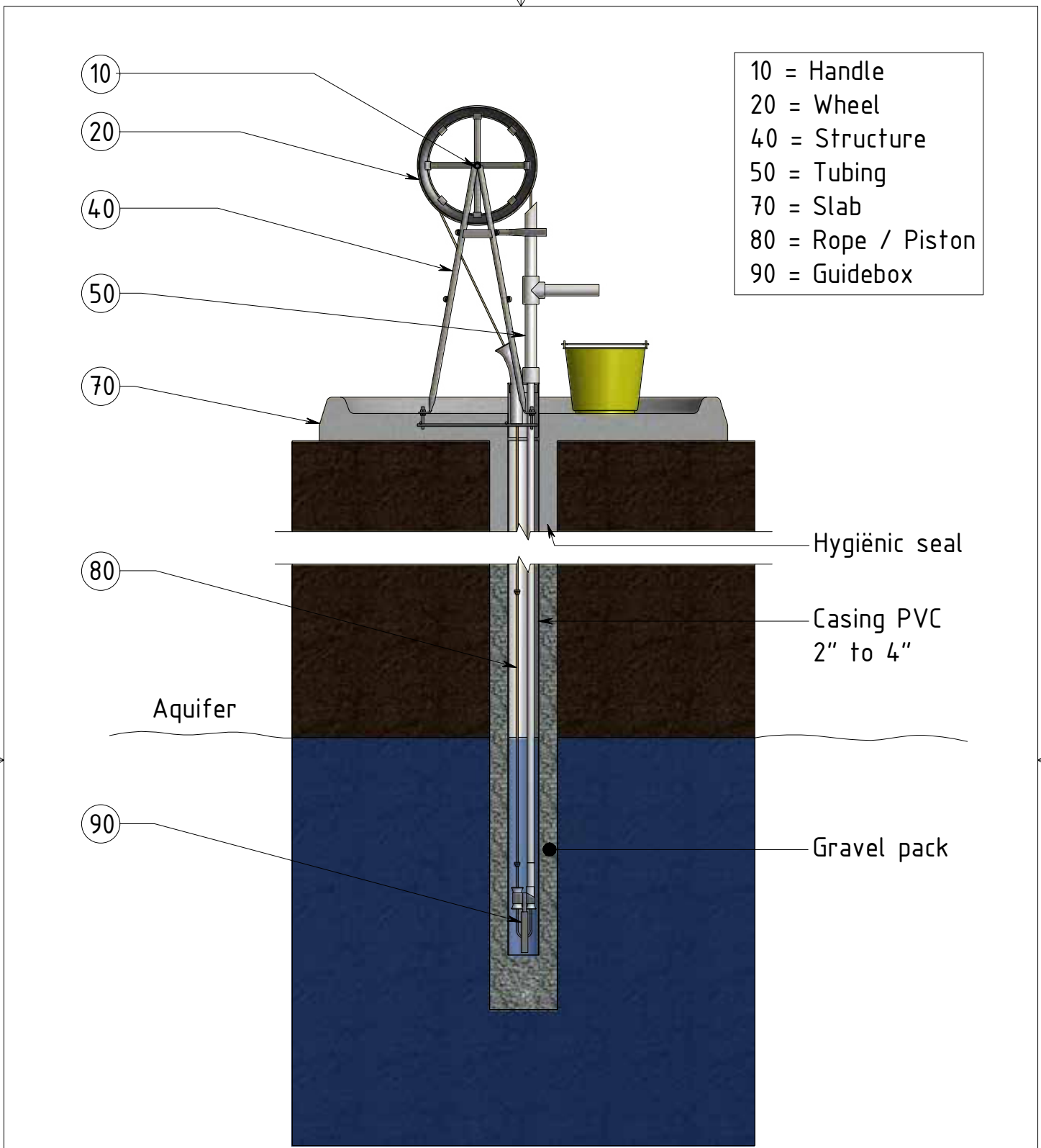
- 10 = Handle
- 20 = Wheel
- 40 = Structure
- 50 = Tubing
- 70 = Slab
- 80 = Rope / Piston
- 90 = Guidebox
- 100 = Well Reducer Ring

Roughness: Dimensional tolerance: Title/Name: **ROPE PUMP Model 2**

Projection:  Scale: 1 : 20 Drawing by: AvdHeuvelSR Creation Date: 2-7-2014
 Unit : mm Approved by: H. Holtslag Approved Date: 7-7-2014

 **META** Parts: Installed on a Dug Well Part number: Sheet size: **A4**

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- 10 = Handle
- 20 = Wheel
- 40 = Structure
- 50 = Tubing
- 70 = Slab
- 80 = Rope / Piston
- 90 = Guidebox

Hygienic seal

Casing PVC
2" to 4"

Aquifer

Gravel pack

Roughness:		Dimensional tolerance:		Title/Name: ROPE PUMP Model 2	
Projection:		Scale: 1 : 20 Unit : mm		Drawing by: AvdHeuvelSR Approved by: H. Holtslag	
		Parts: Installed on a Borehole		Creation Date: 2-7-2014 Approved Date: 7-7-2014	
				Part number:	
				Sheet size: A4	

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DETAIL A

(1 : 2)

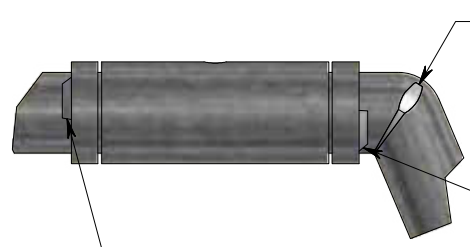
Part ③ and ⑤



DETAIL B

(1 : 2)

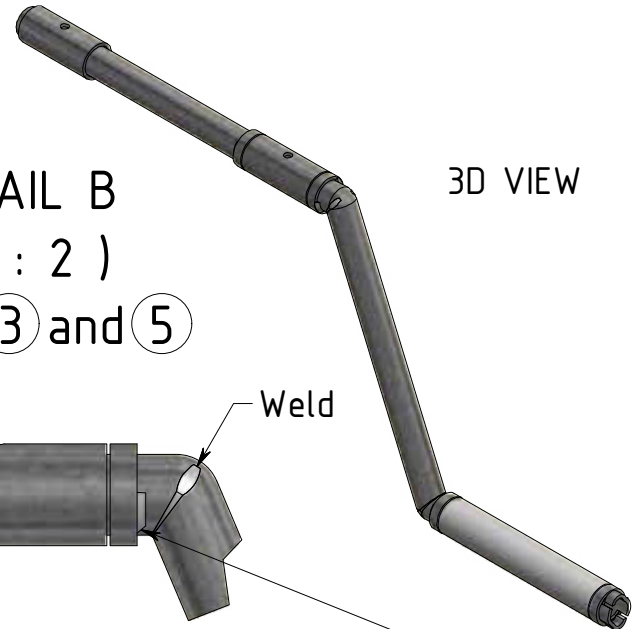
Part ③ and ⑤



Weld

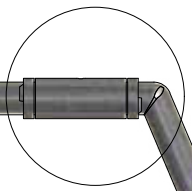
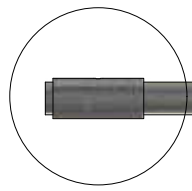
Spacer ring part 4 spotwelded at 2 sides (not at top)

3D VIEW



A

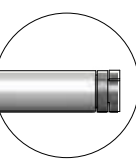
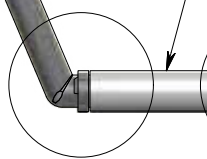
B



PVC pipe as long as possible (without friction)

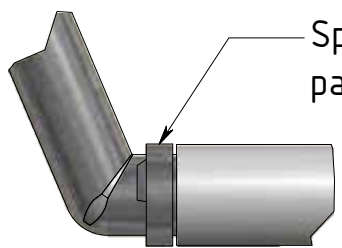
C

D



DETAIL C

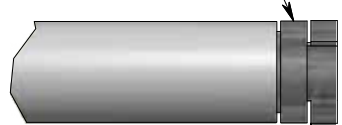
(1 : 2)



Spacer ring part ④

DETAIL D

(1 : 2)



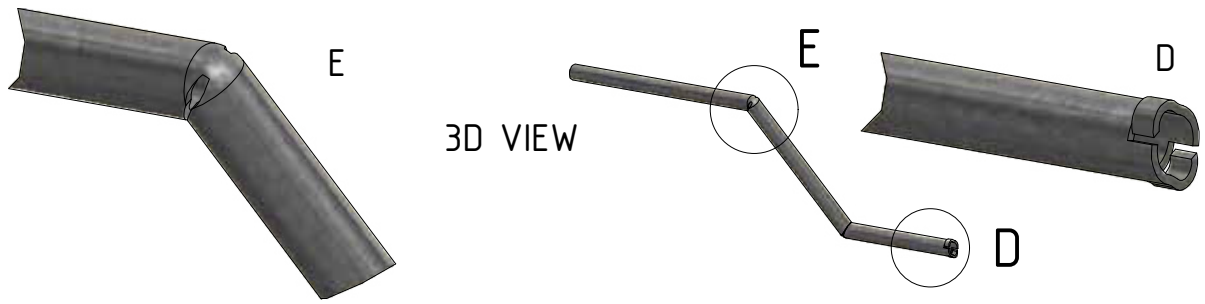
Cut and bend



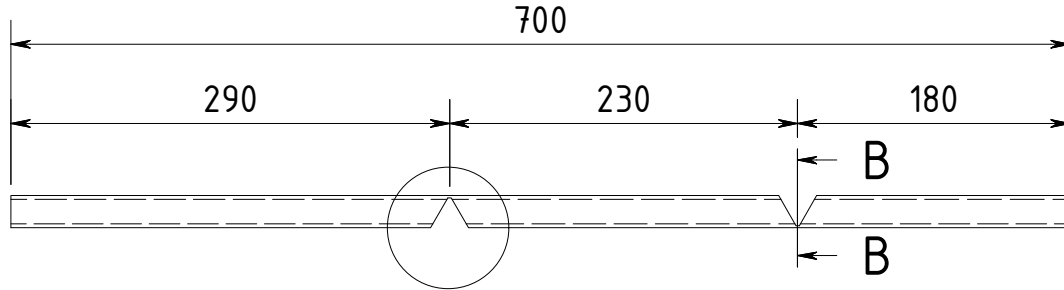
Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2		
Projection:	Scale: 1:2 1:5 Unit : mm	Drawing by: AvdHeuvelSR	Creation Date: 2-7-2014	
		Approved by: H. Holtslag	Approved Date: 7-7-2014	
		Parts: Handle - Assembly	Part number: 10	Sheet size: A4

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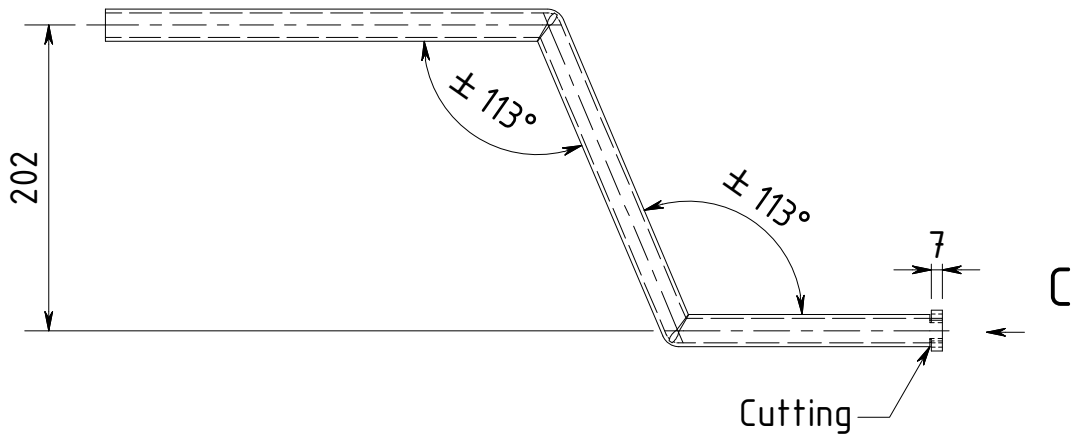
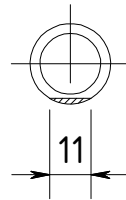
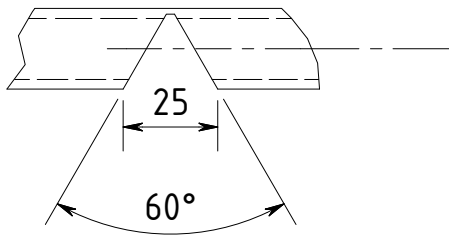
3D VIEW



DETAIL A
(1 : 2)

SECTION B-B
(1 : 2)

VIEW C
(1 : 2)




ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER	MASS
1	1	Pipe 21,3 x 2,6mm Length 700mm	S 235 JRH	Part 10-1	0,809 kg

PARTS LIST

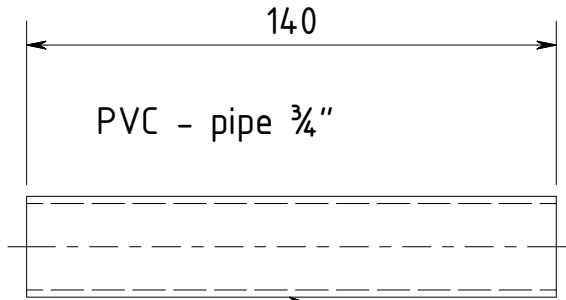
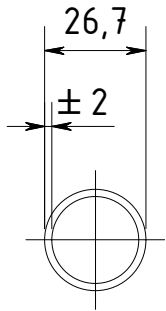
Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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Projection:	Scale: 1:2 1:5 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 7-7-2014
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	Parts: Handle - Galvanized	Part number: 10-1	Sheet size: A4
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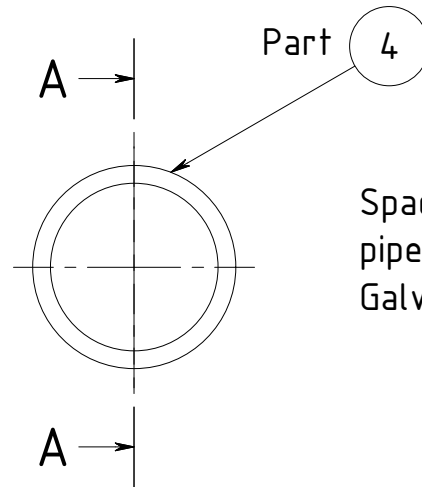
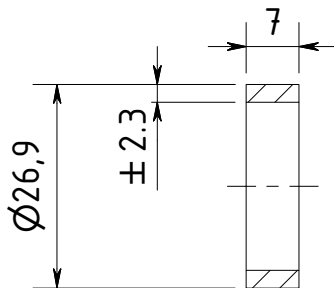


3D VIEW



Part 2

SECTION A-A
(1 : 1)



Part 4

Spacer ring
pipe 3/4"
Galvanized

ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER	MASS
4	4	Pipe 26,9 x 2,35mm Length 7mm	S 235 JRH	Part 4	
2	1	Pipe 26,7 x 1,9mm Length 140mm	PVC	Part 2	0,029 kg

PARTS LIST

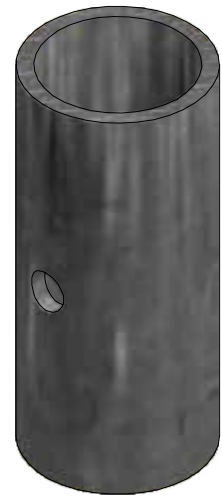
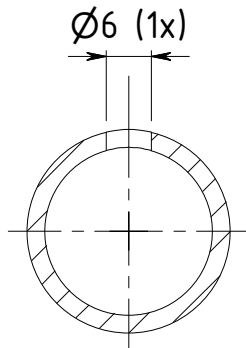
Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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Projection:	Scale: 1:1 1:2 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 7-7-2014
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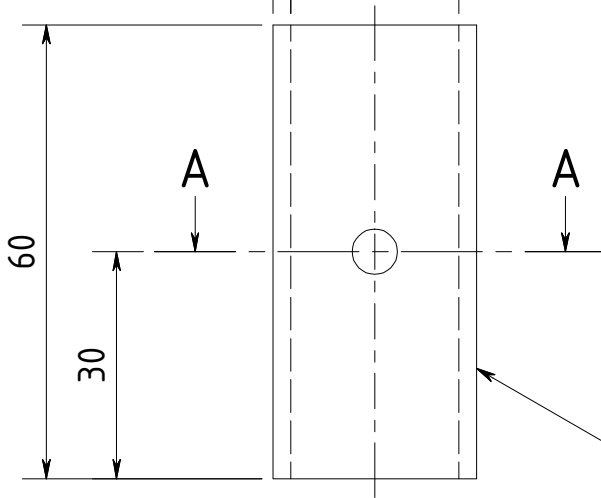
	Parts: Handle, PVC pipe and Spacer ring	Part number: 10-2 10-4	Sheet size: A4
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SECTION A-A
(1 : 1)

3D VIEW



Pipe 3/4" x ± 2,3 Galvanized * ± 22,2



* Inside diametre 0,5-0,8 mm more than outside diametre of handle.

Part 3

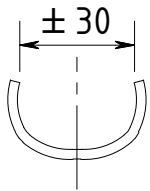
ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER	MASS
3	2	Pipe 3/4" x 2,35 mm Length 60 mm	S 235 JRH	Part 3	0,085 kg

PARTS LIST

Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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Projection:	Scale: 1 : 1	Drawing by: AvdHeuvelSR	Creation Date: 2-7-2014
	Unit : mm	Approved by: H. Holtslag	Approved Date: 7-7-2014

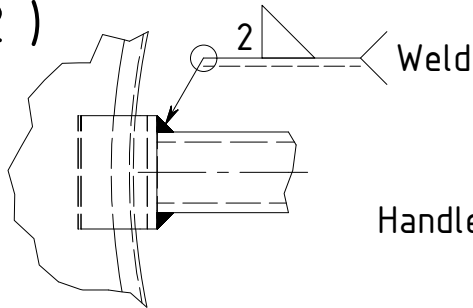
	Parts: Bushing	Part number: 10-3	Sheet size: A4
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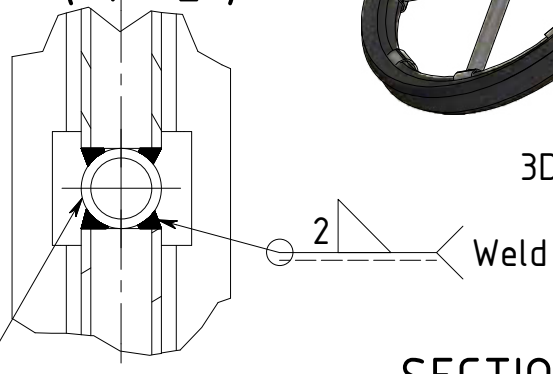
Clamps made off
3/4" Pipe-Galvanized

Depends on tire used
(should be tight fit)

DETAIL C
(1 : 2)

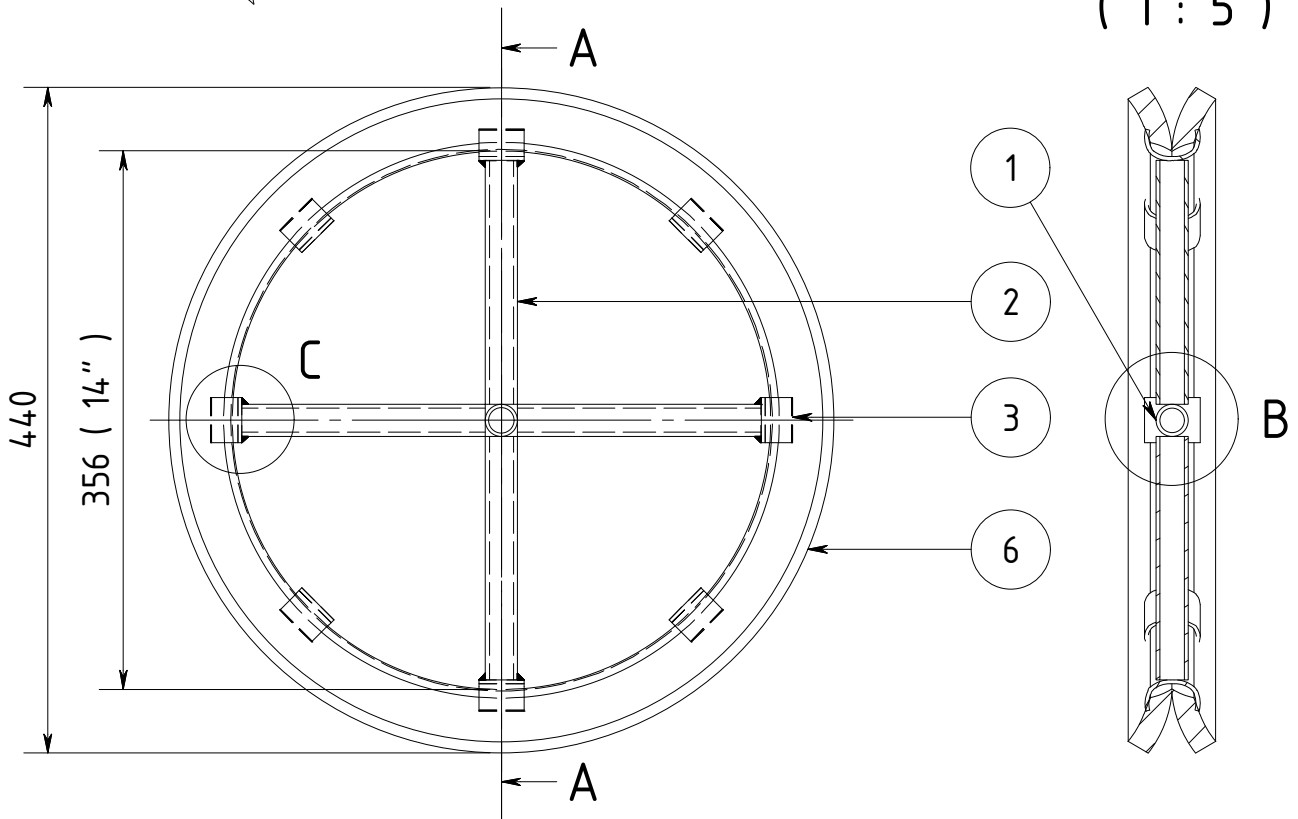


DETAIL B
(1 : 2)



3D VIEW

SECTION A-A
(1 : 5)



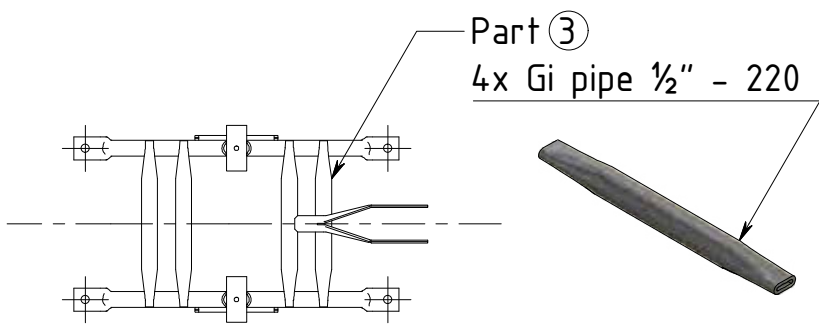
ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER	MASS
1	1	Pipe 1/2" x 2,6 mm Handle	S 235 JRH Galv.	Part 10-1	
3	8	Pipe 3/4" x 2,3 mm Length 30 mm	S 235 JRH Galv.	Part 3	0,037 kg
2	4	Pipe 1/2" x 2 mm Length 161mm	S 235 JRH Galv.	Part 2	0,193 kg
6	1	Wheel rim 14"	Car tire 14"	Part 6	1,320 kg

PARTS LIST

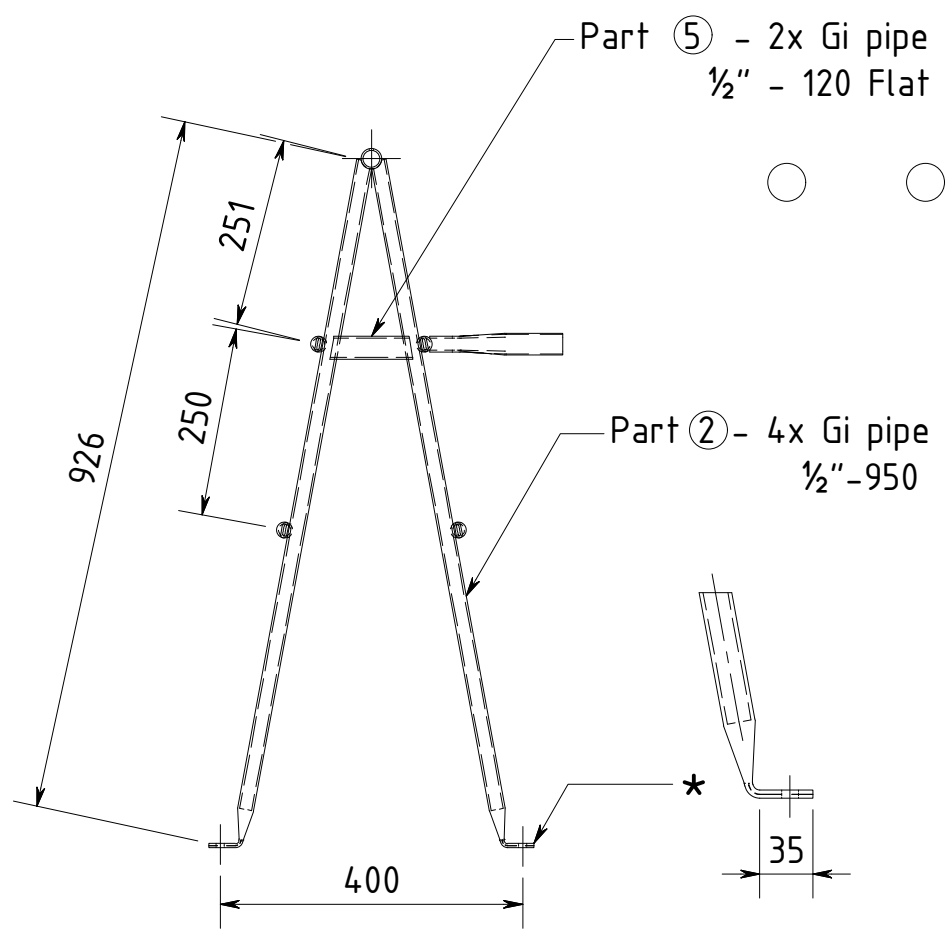
Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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Projection: 	Scale: 1:2 1:5 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 7-7-2014
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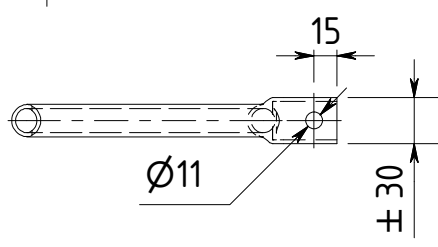
	Parts: Wheel - Assembly	Part number: 20 -2-3-6	Sheet size: A4
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3D VIEW



- * Steps production:
- 1) - Make pipe end flat
 - 2) - Drill hole $\varnothing 11$
 - 3) - Bend pipe



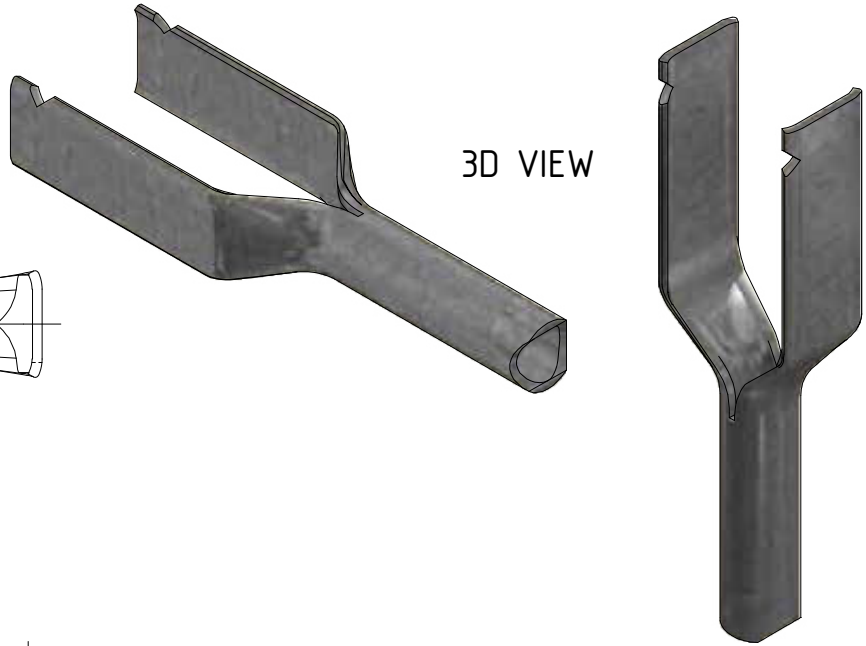
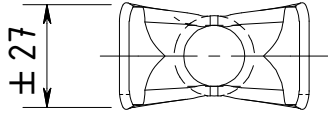
Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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Projection: 	Scale: 1:5 1:10 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 7-7-2014
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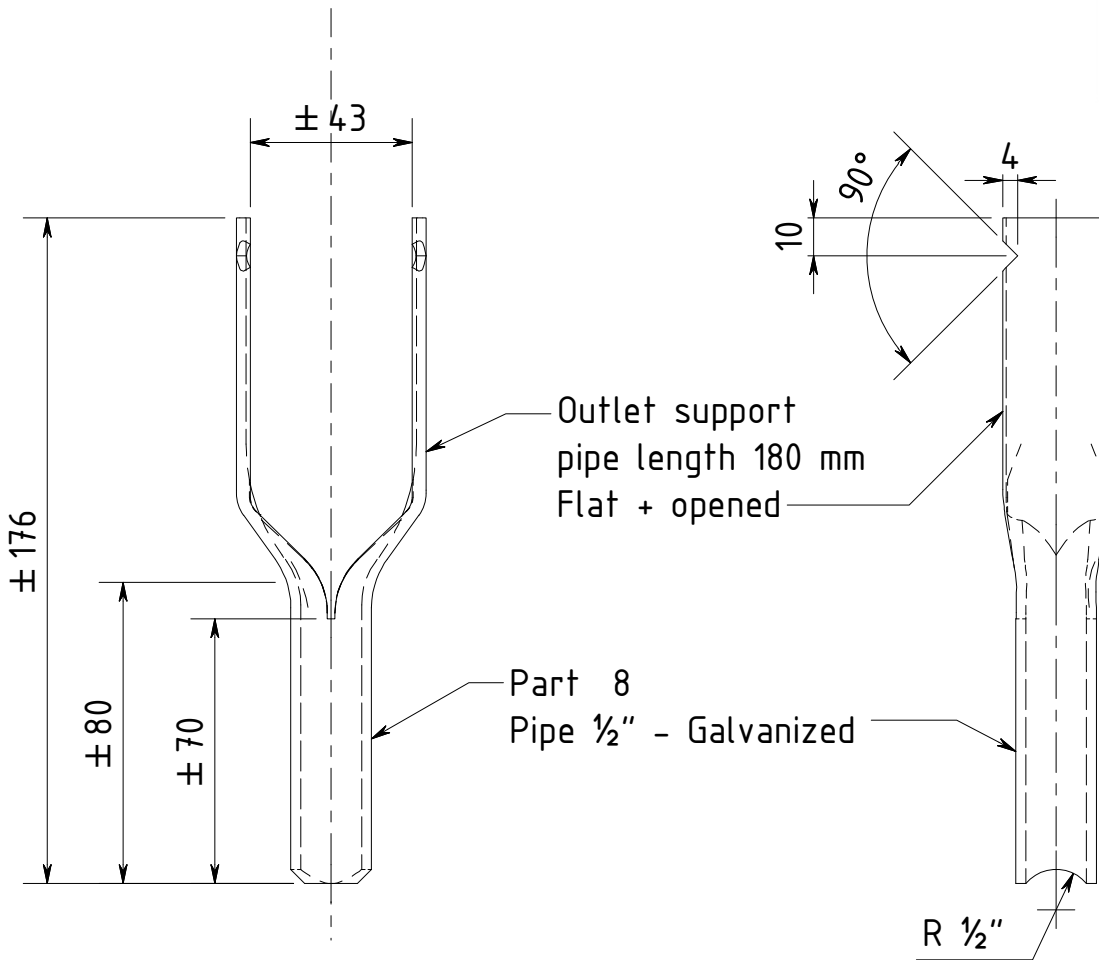
	Parts: Structure - Assembly	Part number: 40	Sheet size: A4
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3D VIEW



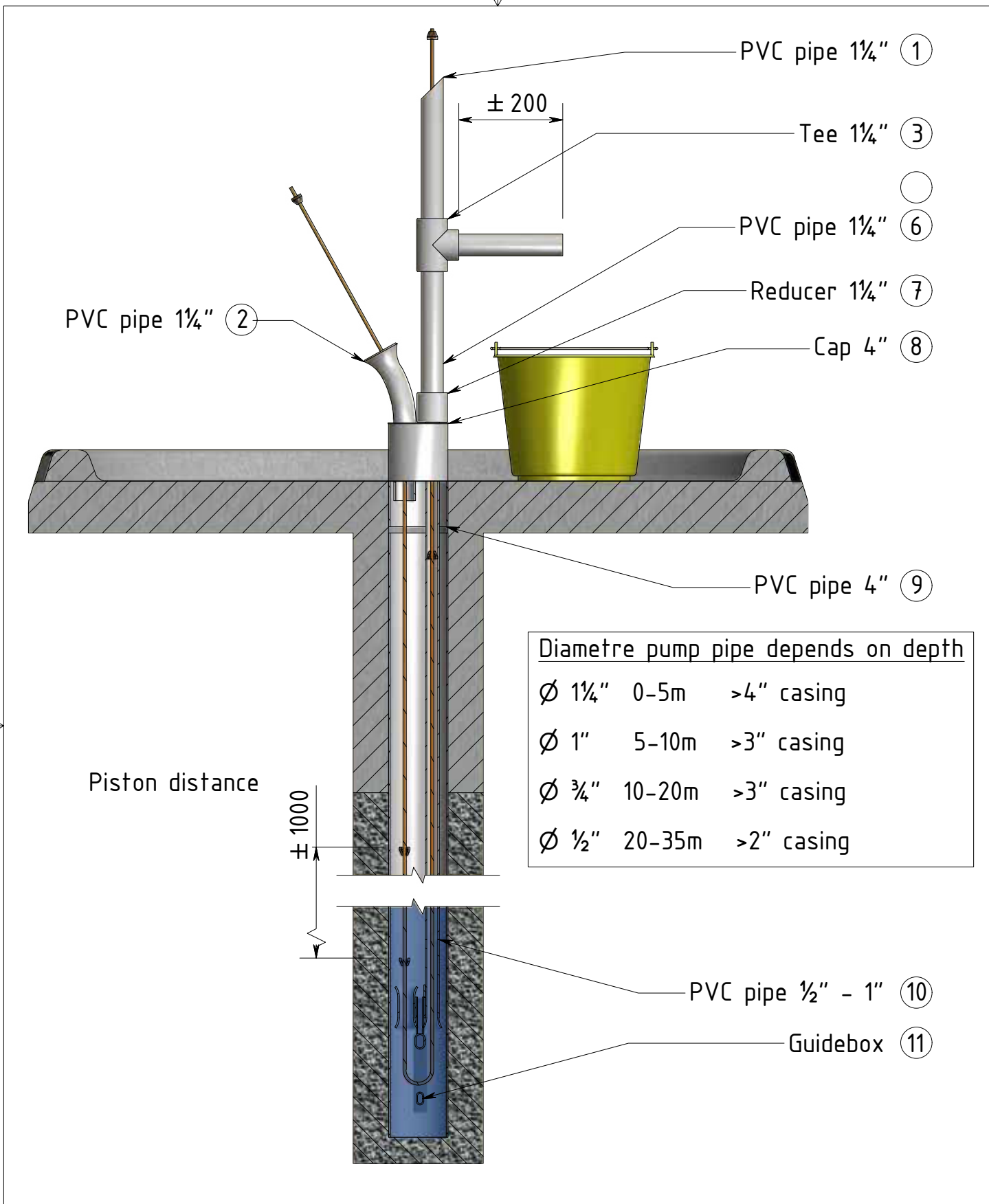
ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER	MASS
1	1	Pipe 21,3 x 2,3 mm Length 180 mm	S 235 JRH	40-8	0,212 kg

PARTS LIST


Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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Projection:	Scale: 1 : 2 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 9-7-2014
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	Parts: Structure - Parts	Part number: 40-8	Sheet size: A4
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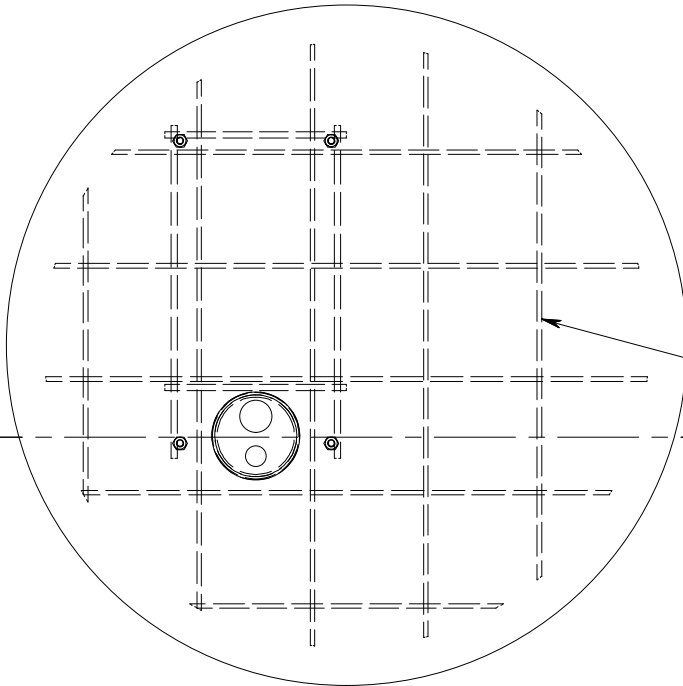
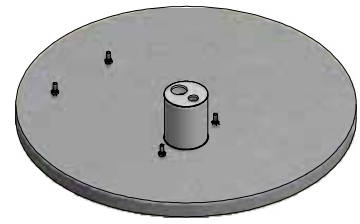
Roughness: Dimensional tolerance: Title/Name: **ROPE PUMP Model 2**

Projection:  Scale: 1 : 10 Drawing by: AvdHeuvelSR Creation Date: 2-7-2014
 Unit : mm Approved by: H. Holtslag Approved Date: 7-7-2014

	Parts:	Part number:	Sheet size:
	Tubing - Assembly	50	A4

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3D VIEW



Part ① - Cement slab-600 to 800

Part ② - Rebar $\varnothing 6 - 800$

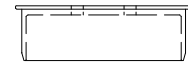
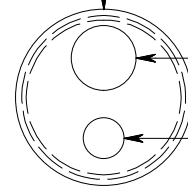
Part ③ - PVC cap 4"

Hole $\varnothing 1\frac{1}{4}$ "

Hole $\varnothing \frac{1}{2}$ "

- $\frac{3}{4}$ "

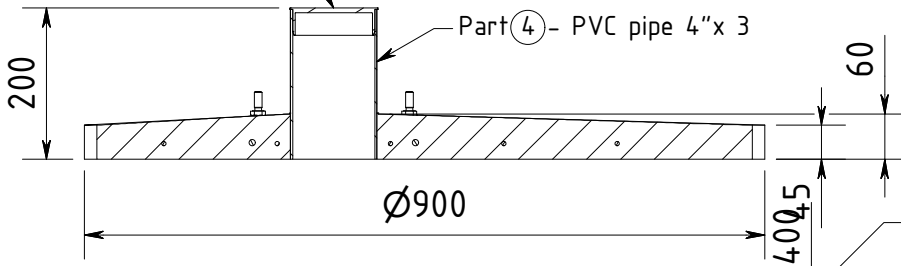
- 1"



SECTION A-A
(1 : 10)

Part ③ - PVC cap 4"

Part ④ - PVC pipe 4"x 3



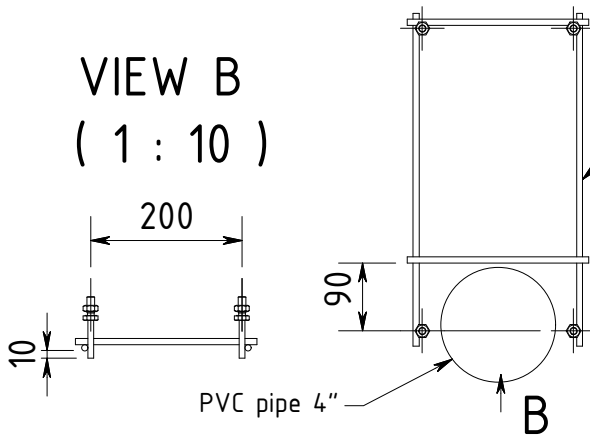
Part ⑧ - 2x Round bar 8mm-440

Part ⑤ - 4x Bolt M10x25 Galvanized

Part ⑥ - 2x Round bar 8mm-240

Part ⑦ - 4x Round bar 8mm-55

VIEW B
(1 : 10)



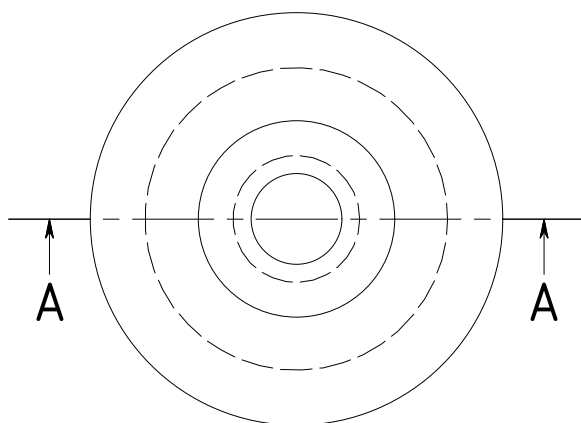
Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 1+2	
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Projection:	Scale: 1 : 10 Unit : mm	Drawing by: AvdHeuvelSR	Creation Date: 2-7-2014
		Approved by: H. Holtslag	Approved Date: 7-7-2014

	Parts: Slab / Wellcover - Assembly	Part number: 70-1 to 8	Sheet size: A4
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3D VIEW



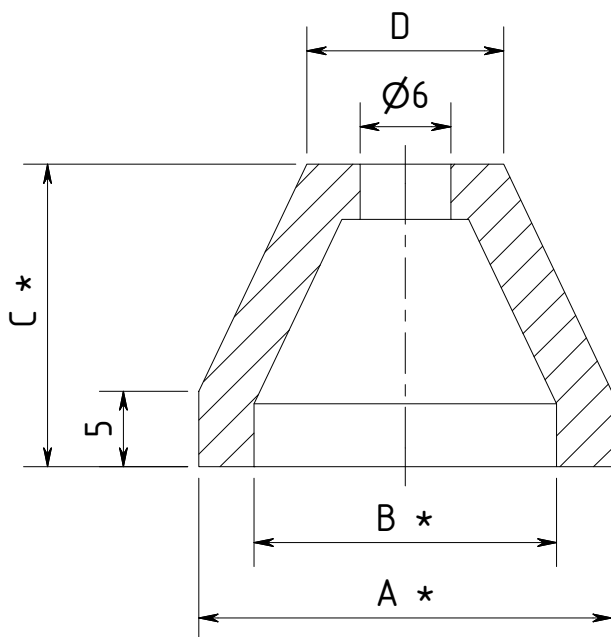
SECTION A-A
(2 : 1)

* Size depends on pump pipe diameter inside.

Pipe	A *	B **	C **	D
1/2"	15,3	11	13	11
3/4"	20,3	13	15	12
1"	27,3	20	20	13

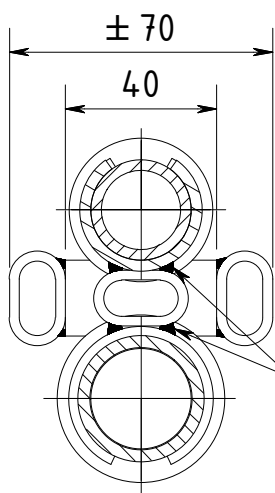
* Tolerance $\pm 0,2$ ** Tolerance $\pm 0,5$

Based on pipes 1/2" OD = 20 ID = 16
 3/4" OD = 25 ID = 21
 1" OD = 32 ID = 28



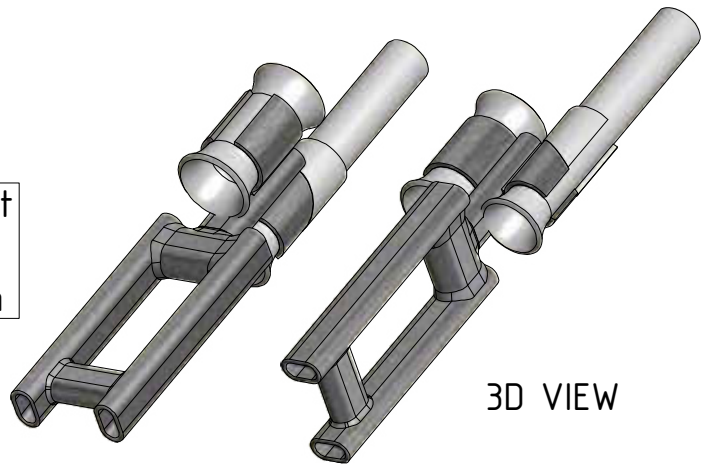
OD Outside diameter
 ID Inside diameter

Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP		
Projection:	Scale: 2 : 1 Unit : mm	Drawing by: AvdHeuvelSR	Creation Date: 23-6-2014	
	Parts: Piston	Approved by: H. Holtslag	Part number: 80	Approved Date: 7-7-2014 Sheet size: A4



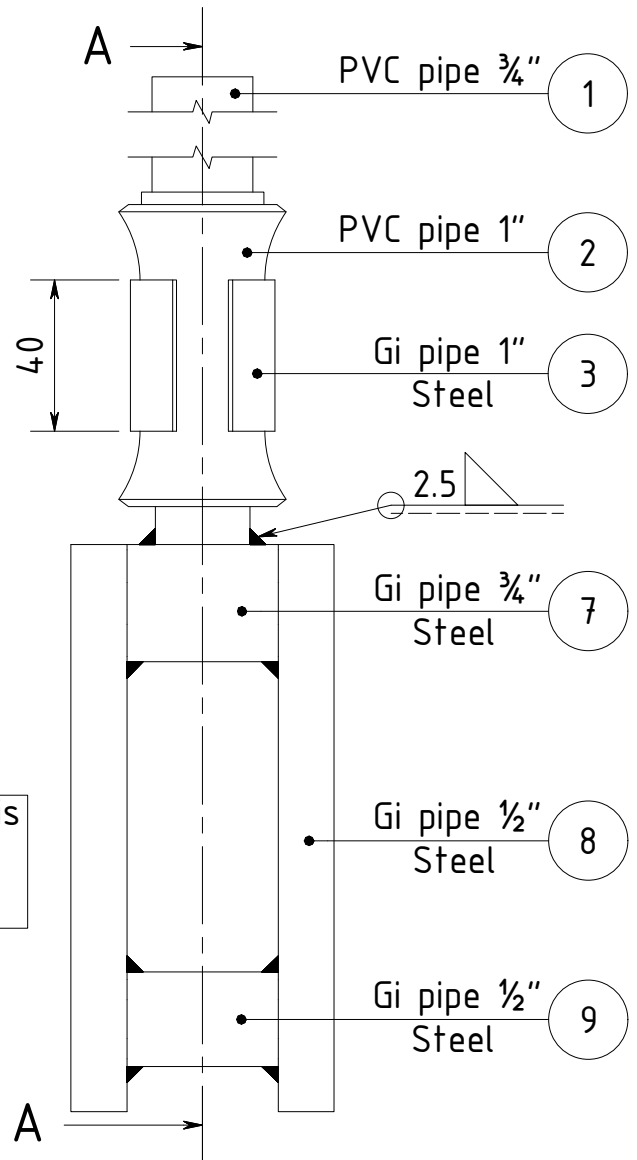
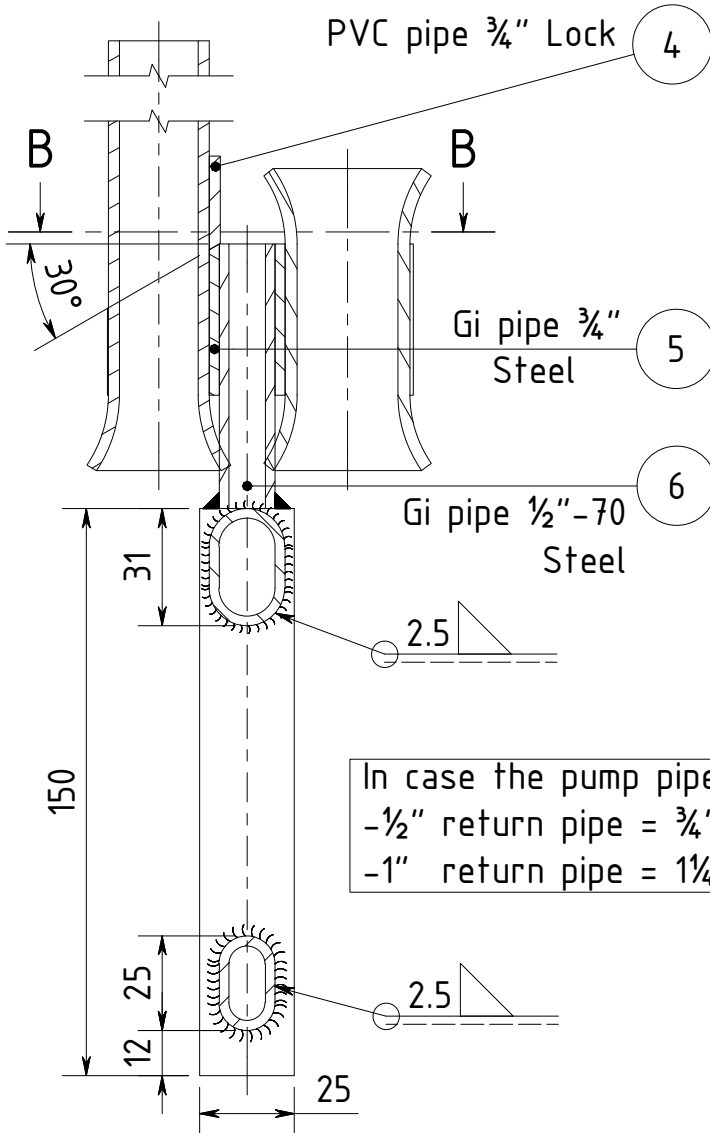
SECTION B-B
(1 : 2)

Guidebox has to fit
in casing.
min.tolerance 5 mm



3D VIEW

SECTION A-A
(1 : 2)



Roughness:	Dimensional tolerance: ISO 2768-1-f / -2-H	Title/Name: ROPE PUMP Model 2
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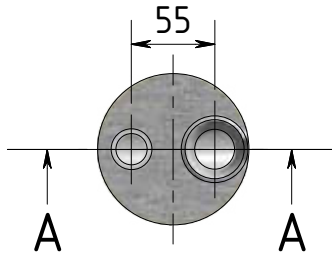
Projection:	Scale: 1 : 2 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 2-7-2014
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	Parts: Guidebox - Assembly	Part number: 90 - 1 to 9	Sheet size: A4
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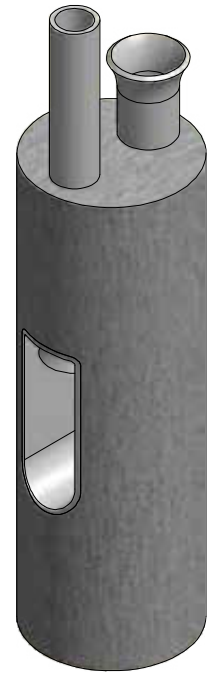
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* This guidebox is for $\frac{3}{4}$ "
 For pump pipes of 1" and $\frac{1}{2}$ "
 pump pipe + return pipe
 are different $\frac{1}{2}$ " - $\frac{3}{4}$ "
 1" - $1\frac{1}{4}$ "

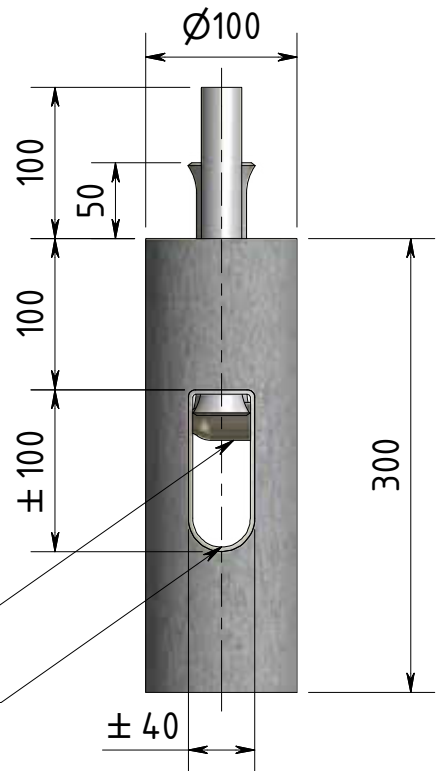
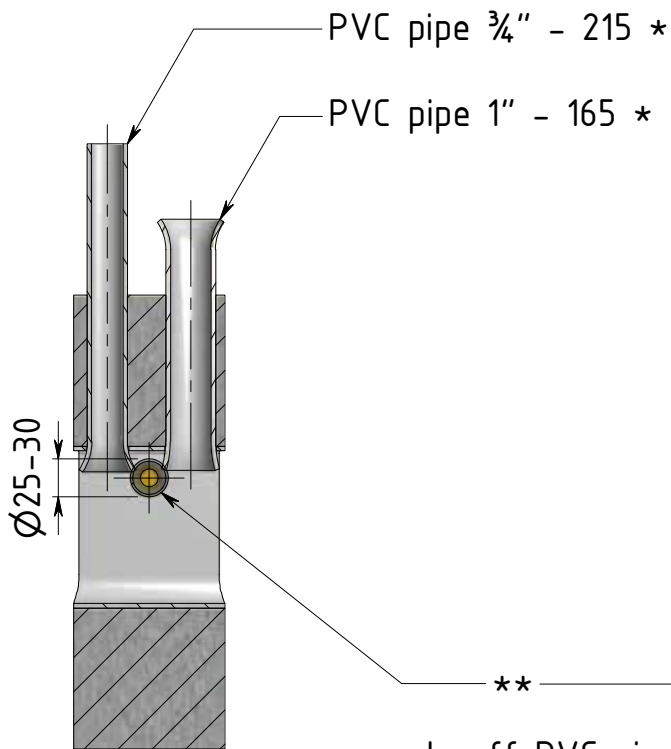
** Use small glass bottle
 or Galv. pipe $\frac{3}{4}$ "



SECTION A-A
 (1 : 5)



3D VIEW



** made off PVC pipe 3"

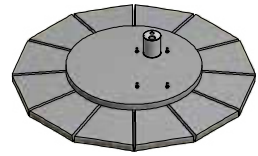
Roughness:	Dimensional tolerance:	Title/Name: ROPE PUMP Model 2
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Projection:	Scale: 1 : 5 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 25-6-2014 Approved Date: 7-7-2014
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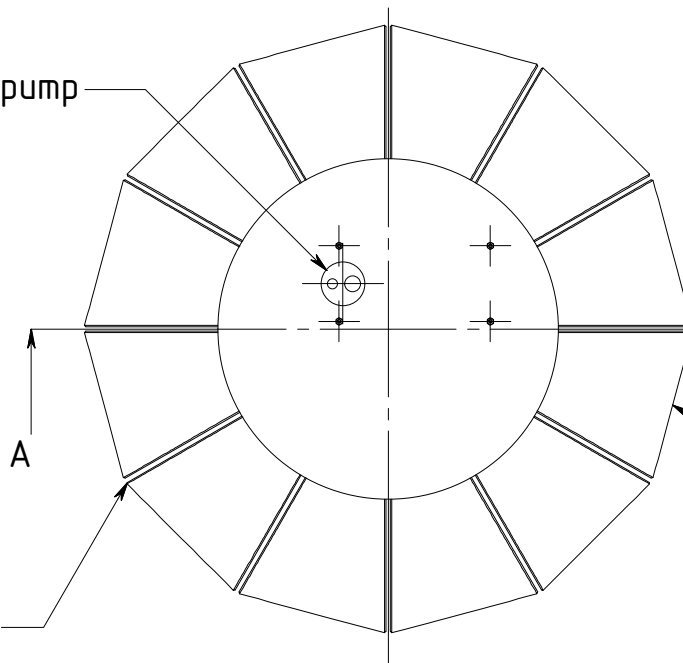
	Parts: Guidebox Cement $\frac{3}{4}$ "	Part number: 90	Sheet size: A4
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3D VIEW



Position pump



To soak pit

A

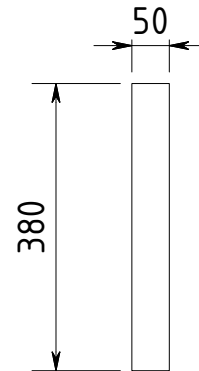
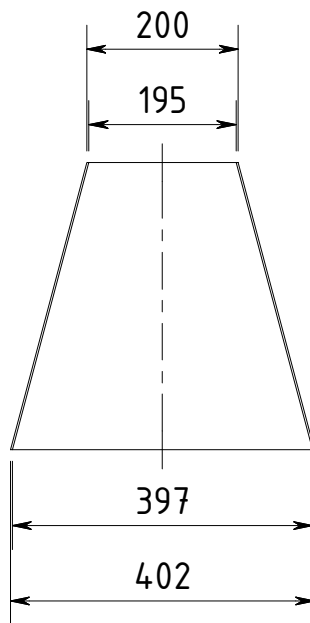
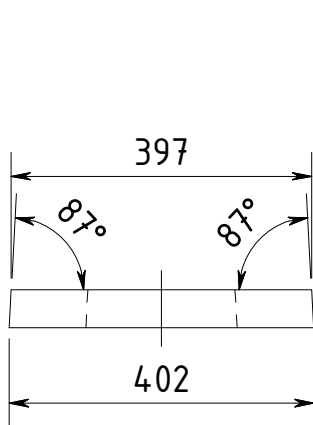
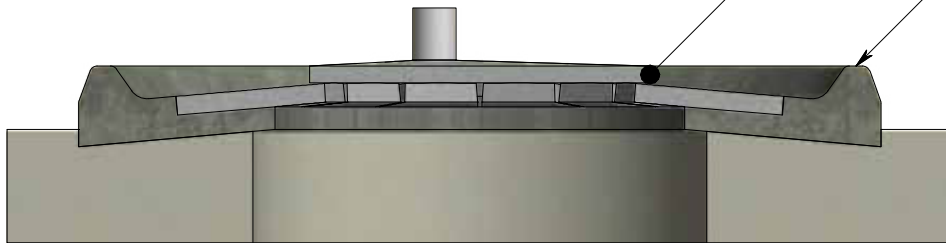
12 x cement block
(For wells rings of 80 to 110 cm-
wells diametre 110 to 140 cm
two rings, needed)

Filled with
cement

Close with cement 1 : 4

Rim

(Angle to slab of two
degrees, to soak pit)



Cement block
made in moulds

Roughness:	Dimensional tolerance:	Title/Name: ROPE PUMP Model 2
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Projection:	Scale: 1:10 1:20 Unit : mm	Drawing by: AvdHeuvelSR Approved by: H. Holtslag	Creation Date: 2-7-2014 Approved Date: 7-7-2014
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	Parts: Well Reducer Ring	Part number: 100	Sheet size: A4
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