The Rope pump Model 3 is a simple and low cost model. It can be installed on both tube wells and hand dug wells. It is recommended to combine it with a well cover and apron to avoid any contamination. Even without a well cover, the water quality will drastically improve since the recontamination by using a bucket, will be avoided. This pump model can be a 1st step in improving a well. If a family has limited funds they can start with a basic pump. If there is more a well cover and apron can be installed. The handle can be installed at any height for instance at 1.3 meters high to fill up a tank of 90 cm high. If the handle is higher than 90 cm, it is essential to make a platform so the handle is at the height of the belly button. See manual pump model 1. In this model a wheel cover is optional as well as a return PVC pipe. See pictures below.

Rope pump Model 3, with a return pipe, without wheel cover. Used for domestic use and irrigation of a garden. The length of the poles in the ground is 60 to 80 cm.

For mounting of the pump pipe and return pipe use galvanized wire. The yellow rope prevents that the handle turns back after pumping is stopped.

By mounting the handle higher a water tank can be filled up. The dimensions; length, distance of poles depend on the situation. To avoid termites poles have to be treated with Creosote and or oil. Also the part in the ground can be protected with plastic sheet around the poles.

The Model can be a 1st step pump.
Step 1. Install handle and PVC pipes
Step 2. Install well cover and apron
Even without a well cover, water quality will improve 60% or more.
ROPE PUMP Model 3

10 = Handle ½”
   Length = 1-1,2 mtr.
20 = Wheel (as in model 1
   - but with bus ¾”)
40 = Poles ± 2,2 mtr.
50 = Tubing
70 = Slab
80 = Rope / Piston
90 = Guidebox
100 = Well Reducer
      Ring

Aquifer

Pipe support
2x Bushing

Pump as model 1

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
ROPE PUMP Model 3

Installed on a Borehole

10 = Handle
20 = Wheel
40 = Poles ± 2.2 mtr.
50 = Tubing
70 = Slab
80 = Rope / Piston
90 = Guidebox

Hygiënic seal
Casing PVC 2” to 4”
Gravel pack

Aquifer

Parts: Part number: Sheet size:

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
Weld
Spacer ring part 4 spotwelded at 2 sides (not at top)

PVC pipe as long as possible (without friction)

Spacer ring part 4

Cut and bend

BOPE PUMP Model 3

Parts: Handle - Assembly

Part number: 10

Sheet size: A4
Length = 1 - 1.4 mtr.

DETAIL A

SECTION B-B

VIEW C

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>PART NUMBER</th>
<th>MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Pipe 21.3 x 2.6 mm Length 1 - 1.4 mtr.</td>
<td>S 235 JRH</td>
<td>Part 10-1</td>
<td>0.641 kg</td>
</tr>
</tbody>
</table>

Roughness: ISO 2768-1-f / -2-H

Dimensional tolerance: 1.2 / 1.5

Title/Name: ROPE PUMP Model 3

Projection: Drawing by: AvdHeuvelSR
Unit: mm

Part number: 10-1

Sheet size: A4

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
SECTION A-A  
( 1 : 1 )

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>PART NUMBER</th>
<th>MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4</td>
<td>Pipe 26,9 x 2,3 mm Length 7 mm</td>
<td>S 235 JRH</td>
<td>Part 4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Pipe 26,7 x 2 mm Length 140 mm</td>
<td>PVC</td>
<td>Part 2</td>
<td>0,029 kg</td>
</tr>
</tbody>
</table>

Parts: Handle, PVC pipe and Spacer ring
Part number: 10-2 10-4
Sheet size: A4

ROPE PUMP Model 3

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
### Parts List

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>PART NUMBER</th>
<th>MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
<td>Flat bar 25 x 3mm Length 100mm S 235 JR</td>
<td>Part 5</td>
<td>0.043 kg</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>Pipe ¾&quot; x 2.35mm Length 60mm S 235 JRH</td>
<td>Part 3</td>
<td>0.085 kg</td>
<td></td>
</tr>
</tbody>
</table>

**Pipe** ¾” x ± 2.3, *± 22.2*

* Inside diametre 0.5-0.8 mm more than outside diametre of handle.

**Roughness:**
- ISO 2768-1-f / -2-H

**Dimensional tolerance:**
- ISO 2768-1-f / -2-H

**Title/Name:**
**ROPE PUMP Model 3**

**Projection:**
- 1 : 1

**Drawing by:**
- AvdHeuvelSR
**Creation Date:**
- 3-7-2014

**Unit:**
- mm
**Approved by:**
- H. Holtslag
**Approved Date:**
- 4-7-2014

**Parts:**
- Bushing - Assembly

**Part number:**
- 10-3 10-5

**Sheet size:**
- A4
Cramps made off ¾" Pipe-Galvanized

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>PART NUMBER</th>
<th>MASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>Pipe ½&quot; x 2.6 mm Length 159 mm</td>
<td>S 235 JRH Galv.</td>
<td>Part 2</td>
<td>0.192 kg</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>Pipe ¾&quot; x 2.6 mm Length 30 mm</td>
<td>S 235 JRH Galv.</td>
<td>Part 3</td>
<td>0.037 kg</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>Bolt M10 x 20 mm</td>
<td>Steel 8.8 Galvanized</td>
<td>Part 5</td>
<td>0.024 kg</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>Wheel rim 14&quot;</td>
<td>Car tire 14&quot;</td>
<td>Part 6</td>
<td>1.320 kg</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Nut M10</td>
<td>Steel 8.8 Galvanized</td>
<td>Part 4</td>
<td>0.012 kg</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Pipe ¾&quot; x 2.6 mm Length 100 mm</td>
<td>S 235 JRH Galv.</td>
<td>Part 1</td>
<td>0.139 kg</td>
</tr>
</tbody>
</table>

ROPE PUMP Model 3

Wheel - Assembly

Part number: 20-1 to 20-6
Sheet size: A4
Piston distance

Diametre pump pipe depends on depth

- Ø 1¼” 0-5m >4” casing
- Ø 1” 5-10m >3” casing
- Ø ¾” 10-20m >3” casing
- Ø ½” 20-35m >2” casing

Roughness: Dimensional tolerance: Title/Name: ROPE PUMP Model 3

Projection: Scale: 1 : 10 Drawing by: AvdHeuvelSR
Unit: mm Approved by: H. Holtslag
Creation Date: 3-7-2014 Approved Date: 4-7-2014

Part number: 50 Sheet size: A4
**ROPE PUMP Model 3**

**Slab / Wellcover - Assembly**

**Part 1** - Cement slab

**Part 2** - Rebar Ø 6 - 800

**Part 3** - PVC cap 4"

**Part 4** - PVC pipe 4" x 3

---

**Dimensions:**
- Ø 900
- ± 180
- 200
- 60
- 3
- 4.5
- 6 - 800
- 114.3

**Projection:** 1:5, 1:10

**Scale:** 1:5, 1:10

**Roughness:** ISO 2768-1-f / -2-H

**Title/Name:** ROPE PUMP Model 3

**Approved:** H. Holtslag

**Creation Date:** 5-7-2014

**Approved Date:** 5-7-2014

---

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
ROPE PUMP

* Size depends on pump pipe diameter inside.

<table>
<thead>
<tr>
<th>Pipe</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>½&quot;</td>
<td>15.3</td>
<td>11</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>¾&quot;</td>
<td>20.3</td>
<td>13</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td>1&quot;</td>
<td>27.3</td>
<td>20</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

* Tolerance ± 0.2 ** Tolerance ± 0.5

Based on pipes ½" OD = 20 ID = 16
            ¾" OD = 25 ID = 21
            1" OD = 32 ID = 28

OD Outside diameter
ID Inside diameter

Parts:
Piston

Part number: 80
Sheet size: A4
** Use small glass bottle or Galv. pipe ¾”

* This guidebox is for ¾”
For pump pipes of 1” and ½” pump pipe + return pipe are different ½” – ¾”
1” – 1¼”

SECTION A-A ( 1 : 5 )

** Use small glass bottle or Galv. pipe ¾”

ROPE PUMP Model 3

PVC pipe ¾” – 215 *

PVC pipe 1” – 165 *

made off PVC pipe 3”

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
SECTION B-B
(1:2)

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

SECTION A-A
(1:2)

PVC pipe 3/4’’ Lock

In case the pump pipe is
-1/2” return pipe = 3/4”
-1” return pipe = 1 1/4”

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.
### ROPE PUMP Model 3

**Parts:**
- Well Reducer Ring

**Part number:** 100

**Sheet size:** A4

### Drawing Details

- **Drawing by:** AvdHeuvelSR
- **Approved by:** H. Holtslag
- **Creation Date:** 5-7-2014
- **Approved Date:** 5-7-2014

### Technical Specifications

**Dimensional Tolerance:**

<table>
<thead>
<tr>
<th>Part</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>397</td>
<td></td>
</tr>
<tr>
<td>402</td>
<td></td>
</tr>
<tr>
<td>195</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
<tr>
<td>380</td>
<td></td>
</tr>
</tbody>
</table>

**Roughness:**

- 3D VIEW

**Projection:**

- Scale: 1:10, 1:20

**Unit:** mm

### Instructions

- **Position pump**

- **Filled with cement**

- **Rim**
  - Angle to slab of two degrees, to soak pit
  - Close with cement 1:4

- **To soak pit**

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

- **Cement block**
  - Made in moulds

---

© All rights reserved. No parts of this drawing and/or sketch may be reproduced, stored in a database and/or published in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of the author.