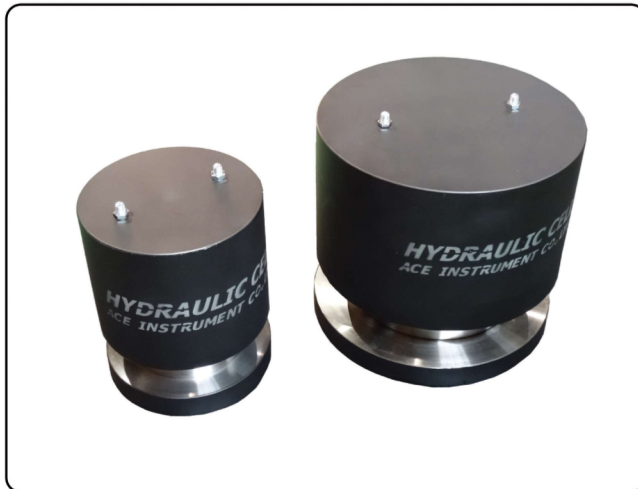


## Hydraulic cell for pile load test



### Description

We are providing model ACH-200, 300, 400, 600, 800, 1000, 1200, 1500 single acting hydraulic cells, model ACD-400, 600, 800, 1000, 1200, 1500 double acting hydraulic cells, and hydraulic pump unit for pile load test.

We provide customized service for single acting and double acting hydraulic cells that apply common pressure 1500bar. These hydraulic cells are made by our vertical CNC lathe, including CNC milling center. Hydraulic cells are including leak thghtness preventers and super high pressured airtight design. Also, we take 100% load test for each cell in order to prevent any fault.

### Specification

[Single acting hyd. cell]

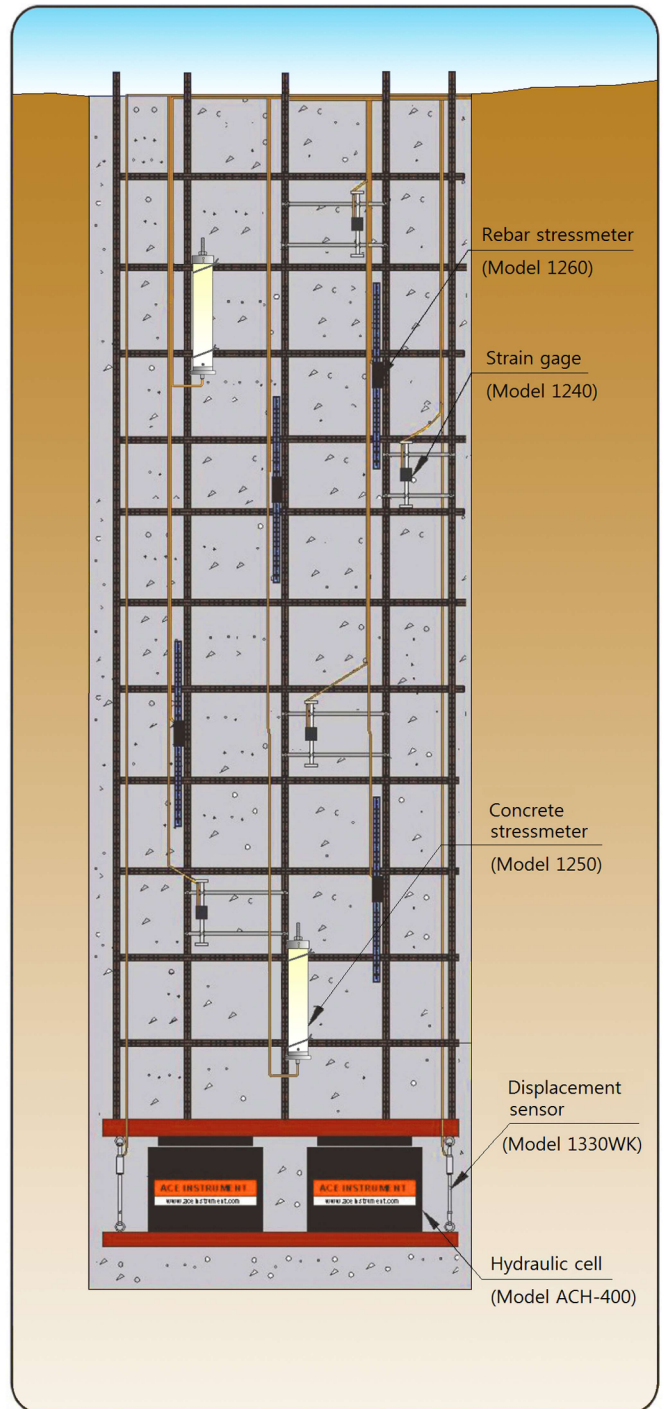
[Material: SCM steel]

| Model    | Load (ton · f) | Effective sectional area (cm <sup>2</sup> ) | Working pressure (kg/cm <sup>2</sup> ) | Max. pressure (kg/cm <sup>2</sup> ) | Stroke (mm) | Weight (kg) |
|----------|----------------|---|--|-------------------------------------|-------------|-------------|
| ACH-200  | 200            | 134   | 1500                                   | 2000                                | 150         | 71          |
| ACH-300  | 300            | 201   |  |                                     |             | 106         |
| ACH-400  | 400            | 267   |  |                                     |             | 142         |
| ACH-600  | 600            | 401   |  |                                     |             | 223         |
| ACH-800  | 800            | 535   |  |                                     |             | 304         |
| ACH-1000 | 1000           | 667   |  |                                     |             | 389         |
| ACH-1200 | 1200           | 802   |  |                                     |             | 477         |
| ACH-1500 | 1500           | 1001  |  |                                     |             | 613         |

[Double acting hyd. cell]

[Material: SCM steel]

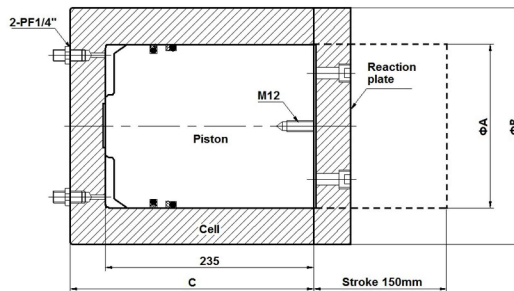
| Model    | Load (ton · f) | Effective sectional area (cm <sup>2</sup> ) | Working pressure (kg/cm <sup>2</sup> ) | Max. pressure (kg/cm <sup>2</sup> ) | Stroke (mm) | Weight (kg) |
|----------|----------------|---|--|-------------------------------------|-------------|-------------|
| ACD-400  | 400            | 267   | 1500                                   | 2000                                | 150         | 210         |
| ACD-600  | 600            | 401   |  |                                     |             | 319         |
| ACD-800  | 800            | 535   |  |                                     |             | 428         |
| ACD-1000 | 1000           | 667   |  |                                     |             | 549         |
| ACD-1200 | 1200           | 802   |  |                                     |             | 660         |
| ACD-1500 | 1500           | 1001  |  |                                     |             | 847         |



[Composition of pile load test]

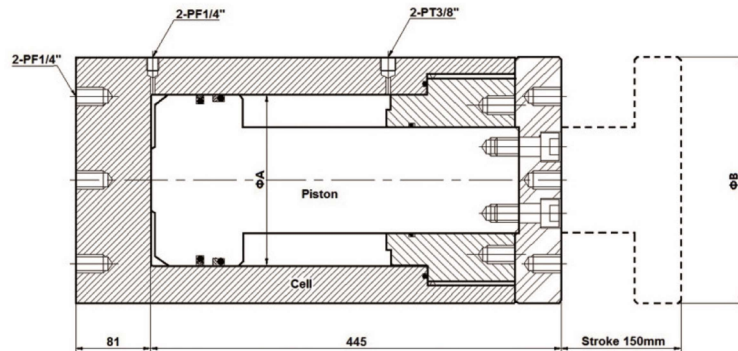
## Hydraulic cell for pile load test

### Dimensions



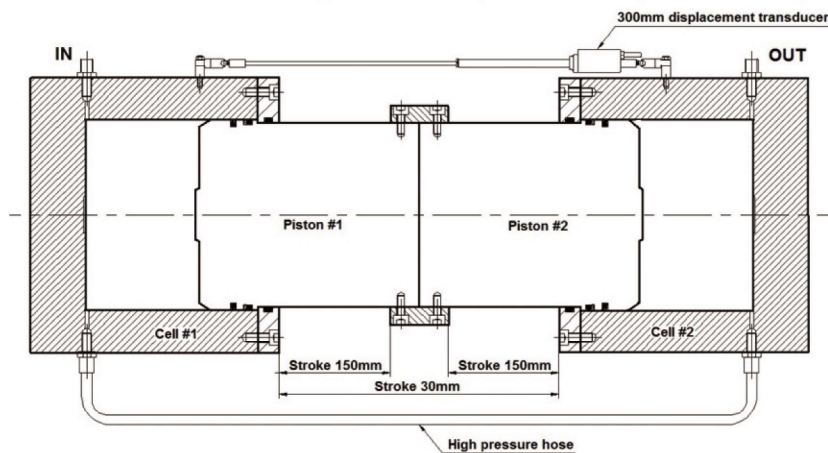
[Single acting hyd. cell]

| Model    | Working load (ton · f) | Efficiency area (cm <sup>2</sup> ) | Working pressure (kg/cm <sup>2</sup> ) | Max. pressure (kg/cm <sup>2</sup> ) | Dimension(mm) |     |     |
|----------|------------------------|------------------------------------|--|-------------------------------------|---------------|-----|-----|
|          |                        |                                    |  |                                     | ØA            | ØB  | C   |
| ACH-200  | 200                    | 134                                | 1500                                   | 2000                                | 131           | 190 | 270 |
| ACH-300  | 300                    | 201                                | 1500                                   | 2000                                | 160           | 232 | 278 |
| ACH-400  | 400                    | 268                                | 1500                                   | 2000                                | 185           | 268 | 285 |
| ACH-600  | 600                    | 601                                | 1500                                   | 2000                                | 226           | 328 | 296 |
| ACH-800  | 800                    | 535                                | 1500                                   | 2000                                | 261           | 378 | 305 |
| ACH-1000 | 1000                   | 667                                | 1500                                   | 2000                                | 292           | 423 | 314 |
| ACH-1200 | 1200                   | 802                                | 1500                                   | 2000                                | 320           | 464 | 321 |
| ACH-1500 | 1500                   | 1001                               | 1500                                   | 2000                                | 357           | 518 | 331 |



[Double acting hyd. cell]

| Model    | Working load (ton · f) | Efficiency area (cm <sup>2</sup> ) | Working pressure (kg/cm <sup>2</sup> ) | Max. pressure (kg/cm <sup>2</sup> ) | Dimension(mm) |     |
|----------|------------------------|------------------------------------|--|-------------------------------------|---------------|-----|
|          |                        |                                    |  |                                     | ØA            | ØB  |
| ACD-400  | 400                    | 268                                | 1500                                   | 2000                                | 185           | 268 |
| ACD-600  | 600                    | 601                                | 1500                                   | 2000                                | 226           | 328 |
| ACD-800  | 800                    | 535                                | 1500                                   | 2000                                | 261           | 378 |
| ACD-1000 | 1000                   | 667                                | 1500                                   | 2000                                | 292           | 423 |
| ACD-1200 | 1200                   | 802                                | 1500                                   | 2000                                | 320           | 464 |
| ACD-1500 | 1500                   | 1001                               | 1500                                   | 2000                                | 357           | 518 |



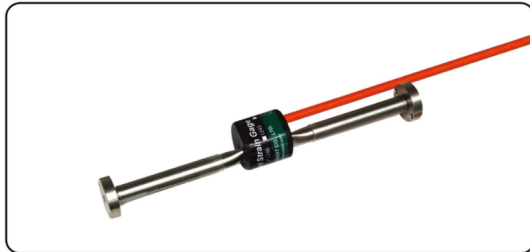
By using 2set of single acting hydraulic cell, the stroke can be extended from 150mm to 300mm as shown in the figure.



## Hydraulic cell for pile load test

### 1. Measurement of concrete displacement

To install 2~3 nos of VW embedment strain gages (model 1240) in each one section belong to drawing of installation.



#### Specification

| Model          | 1240              |
|----------------|-------------------|
| Applied sensor | VW type           |
| Range          | 3000 micro strain |
| Resolution     | 0.5 micro strain  |
| Accuracy       | ±0.1% FSR         |
| Non linearity  | ±0.5% FSR         |

### 2. Measurement of rebar stress

To install 2~3nos of VW rebar streemeters (model 1260 : D25) in each one section belong to drawing of installation.



#### Specification

| Model          | 1260               |
|----------------|--------------------|
| Applied sensor | VW type            |
| Range          | 3000 micro strain  |
| Resolution     | 0.025 micro strain |
| Accuracy       | ±0.1% FSR          |
| Non linearity  | ±0.5% FSR          |

### 3. Measurement of hyd. cell displacement

To attach VW crackmeters (model 1340WK : 25bar) on the cage which is an attachment for hyd. cell it is for measuring the displacement of cell's ram.



#### Specification

| Model          | 1340WK                     |
|----------------|----------------------------|
| Applied sensor | VW type                    |
| Range          | 100mm (150~200mm optional) |
| Resolution     | 0.025%FSR                  |
| Accuracy       | ±0.1% FSR                  |
| Non linearity  | ±0.5% FSR                  |
| Waterproof     | 25bar                      |

### 4. Measurement of concrete stress

Model 1250 VW concrete stressmeter is fixed at rebar to measure stress of concrete.

Concrete poured on site is directly applied to a load cell to measure stress under the same conditions as the surrounding concrete, including temperature changes and changes in elastic modulus.



#### Specification

| Model          | 1250       |
|----------------|------------|
| Applied sensor | VW type    |
| Range          | -2 ~ 25MPa |
| Resolution     | 0.025%FSR  |
| Accuracy       | ±0.1% FSR  |
| Non linearity  | ±0.5% FSR  |
| Waterproof     | 25bar      |

## Hydraulic cell for pile load test

### [Description of top and bottom cage]

The size of the top and bottom cage is determined by considering the overall external size of the pile, the size of the applied load, and the number of hydraulic cells installed, taking into account the size of the total applied load. By reflecting and designing the sensor cable discharge plan and the hydraulic hose discharge plan of the hydraulic cell, the reaction plate of the hydraulic cell is welded to the top cage and the exterior of the hydraulic cell is partially welded to the bottom cage to intergate it.

The cage is installed along with the wire mesh at the excavation depth and prevents concrete from entering the piston of the hydraulic cell when pouring concrete, and helps distribute the concrete load. The thickness of the cage is approximately 50mm in total, and unnecessary parts are cut to avoid interfering with the ongoing process and installation.

### [Hyd. pump unit]



### Specification

|                  |                     |
|------------------|---------------------|
| <b>Model</b>     | <b>KHB-300T</b>     |
| Manufacturer     | Korea hydraulic co. |
| Working pressure | 300~2100            |
| Max. flow        | 0.63L/min           |
| Driven air       | 1~10.3              |



[1200ton Material testing machine / 1500ton load tester]

### [Several type kit of installed the top and bottom cages]

