

# ***NITHONS***

天津宁赛科技有限公司 TIANJIN NITHONS TECHNOLOGY CO., LTD.

中日合资 宁赛科技

SINO-JAPANESE JOINT VENTURE, NITHONS TECHNOLOGY



# CEMENTING

# NITHONS



## 公司简介

中日合资天津宁赛科技有限公司成立于2013年,专注于新一代石油固井检测仪器及相关配件的研发、制造、销售及售后服务,是具有自主知识产权的科技创新型企业,拥有高新技术企业证书。公司提供石油固井检测仪器整机的选型订购及个性化的仪器定制服务,为石油固井工程领域的材料测试与分析提供专业可靠的解决方案,令研发更简单、检测更智能、施工更安全。公司坐落于天津市恒通企业港工业园区,拥有2000平米的生产车间,严格的制造工艺、调试及品控流程,确保稳定可靠的品质。

公司主要产品有恒速搅拌器、强度养护箱、高温高压养护釜、常压稠化仪、高温高压稠化仪、便携式稠化仪、高温高压动态失水仪、高温高压失水仪、全自动旋转粘度计、压力试验机、超声波静胶凝强度分析仪、水泥气窜测定仪等一系列仪器,涵盖了固井水泥浆制备、养护、稠化及失水、流变、抗压强度、胶凝强度、防气窜等固井水泥施工全流程的检测仪器及配套零部件,既有旗舰型产品,也有标准型产品,兼顾功能与成本,满足多样化的需求。可以提供个性化定制和老旧仪器升级改造服务,同时还可为客户提供集成式固井移动实验室。作为新一代智能化固井检测仪器的先行者,公司产品注重自动化设计,既着力于提升用户操作体验,同时又兼顾与传统仪器和零部件的通用性,是石油固井检测仪器升级换代的选择。

公司拥有专业的中日团队,在机械和电气自动化方面具有很强的设计、创新和精密制造能力。秉承工匠精神、精益求精、不断创新。宁赛科技在严格遵从美国石油协会API规范标准10的基础上,不断为客户提供更加便捷智能、精良可靠的产品,为石油固井材料的检测提供准确数据,为固井工程的安全保驾护航。

以创新的设计、过硬的质量、完善的售后服务为宗旨,专注石油领域,服务客户。不断满足您的需求,是我们一直的目标!



# 中日合资 宁赛科技

Sino-Japanese Joint Venture,  
Nithons Technology

## About Us

NITHONS, a Sino-Japanese joint venture, has been specializing in the development, manufacturing, marketing and after-sales service for newly-designed oil well cementing testing instruments and related parts since its establishment in 2013. As an innovation-oriented company possessing proprietary intellectual property rights and high-tech enterprise certificate, NITHONS not only provides complete oil well cementing testing instruments and customized ones, but also offers professional and reliable solutions for the testing and analysis of materials regarding oil well cementing, aiming to ensure easier development, smarter testing as well as safer cementing projects. Located in Tianjin Universal Enterprise Park, NITHONS has a plant covering an area of 2,000m<sup>2</sup> with strict manufacturing technique, shakedown test and quality control process to guarantee product quality.

NITHONS mainly manufactures constant speed mixer, thermostat water bath, HTHP curing chamber, atmospheric consistometer, HTHP consistometer, portable HTHP consistometer, HTHP stirred fluid loss cell, HTHP fluid loss cell, fully automated rotational viscometer, compressive strength tester, ultrasonic static gel strength analyzer, gas migration tester, etc., covering all the instruments and parts applied to the entire cementing process, including its preparation, curing, consistency and fluid loss property, rheological property, compressive strength, gel strength and anti-channeling property. NITHONS supplies both high configuration products and basic ones, endeavoring to meet various customer needs. Besides, NITHONS is capable of providing service tailored to customer requirements as well as service for upgrading old instruments. What's more, integrated mobile cementing lab is also available. As a leader in the newly-designed smart cementing testing instruments, NITHONS emphasizes on automated design. With great dedication to improving users' experience and the instruments' universality with conventional ones, it offers customers the optimal solutions for instruments upgrading.

NITHONS has excellent team members from China and Japan. It also possesses strong ability in the design, innovation and precision manufacturing of mechanical engineering and electric automatization. With craftsman spirit in mind, NITHONS constantly strives for perfection and innovation. Our company, in strict accordance with API Standard-10, is always devoted to providing customers with smarter, superior and reliable products. Moreover, to keep on improving data accuracy for oil well cementing tests and to ensure safer cementing projects are also what NITHONS concerns about.

Focusing on oilfield, NITHONS aims to provide global customers with products of innovative design and superior quality as well as excellent after-sales service. For NITHONS, satisfying customers' demand unrelentingly is an everlasting goal.

# Deep Sea Series

## NZCQ HTHP Consistometer

### NZCQ 2120

HTHP Consistometer  
(Ultimate Version with Single Cell)



### NZCQ 2220

HTHP Consistometer  
(Ultimate Version with Dual Cell)



- The instrument adopts a large-size touch screen to display and record test data and curve graphs.
- Users can set parameters of temperature controller from EUROTHERM through the touch screen; with a concise user interface, it is easier for users to input or alter test parameters.
- Stable and reliable PLC can meet users' special demands and upgrade the instrument's functions in the future by programming.
- The change of oil level in the oil reservoir can be tracked and the progress of oil fill and oil return can be monitored in real time through the touch screen or an oil level indicator.
- Optimized potentiometer is much more accurate and durable and it is easier to be calibrated and cleaned.
- With connection to an external chiller, tests below ambient temperature can be conducted.
- Surface of the instrument is made of stainless steel, improving its durability.



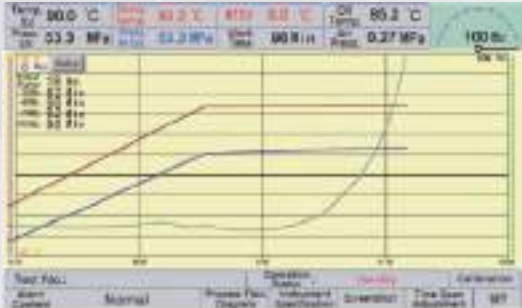
## » Features & Innovations

| No. | NZCQ HTHP Consistometer                                                                                                                                                                                                                        | Conventional HTHP Consistometer                                                                                                                                                                                                                                     |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Users may input test parameters through the touch screen directly.                                                                                                                                                                             | Temperature controller is adopted to set parameters; it is complex to operate and error-prone.                                                                                                                                                                      |
| 2   | Test parameters and curve graphs are displayed on the touch screen directly and clearly.                                                                                                                                                       | It is inconvenient to observe test data of temperature, pressure and consistency as they are displayed on three separate dials.                                                                                                                                     |
| 3   | The instrument can operate automatically with one-button operation after test parameters are set.                                                                                                                                              | Alternate operation between hand valves and switches is complex and confusing.                                                                                                                                                                                      |
| 4   | With a built-in coil pipe made of stainless steel, the cast-aluminum chiller has higher efficiency of cooling and longer service life.                                                                                                         | The chiller with stainless steel surface needs longer cool-down time.                                                                                                                                                                                               |
| 5   | Reasons for alarm are shown on the touch screen.                                                                                                                                                                                               | Users have to find out reasons for alarm by themselves because the instrument is only equipped with alarm indicators, resulting in low efficiency.                                                                                                                  |
| 6   | Oil level sensor is used to give a signal automatically when there is no sufficient oil in the oil reservoir or the oil reservoir is filled up with oil.                                                                                       | Users have to take notice of the oil level in oil reservoir from time to time as it is easily neglected.                                                                                                                                                            |
| 7   | Smart calibration system saves users from frequent adjustment of the spring as long as the zero point is corrected.                                                                                                                            | Frequent adjustment of the spring will be a must once the measurement of consistency is inaccurate, which is inefficient and unreliable.                                                                                                                            |
| 8   | Optimized potentiometer makes it easy to calibrate consistency to 0Bc; it can make good contact with contact pins in the test cell. Besides, the spring, installed at the bottom of the potentiometer, won't be affected by the cement slurry. | As for conventional potentiometer, it is difficult to calibrate consistency to 0Bc; loose contact between potentiometer and contact pins in the test cell affects the accuracy of measurement. Besides, cement slurry tends to accumulate around the spring easily. |

## » Satisfying API Certification Requirements on Oil Well Cement

| Results Comparison on Test Approaches for G-class Cement                                                                                                                    |                   |                     |                         |                   |                     |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------------|-------------------|---------------------|------------------------|
| Time (min)                                                                                                                                                                  | Pressure (MPa)    |                     | Data from NITHONS (MPa) | Temperature( °C)  |                     | Data from NITHONS (°C) |
|                                                                                                                                                                             | Theoretical Value | Allowable Deviation |                         | Theoretical Value | Allowable Deviation |                        |
| 0                                                                                                                                                                           | 6.9               | ±2 MPa              | 7                       | 27                | ±3 °C               | 27.5                   |
| 2                                                                                                                                                                           | 9.0               |                     | 8.9                     | 28                |                     | 27.9                   |
| 4                                                                                                                                                                           | 11.1              |                     | 11.2                    | 30                |                     | 29.8                   |
| 6                                                                                                                                                                           | 13.1              |                     | 13.2                    | 32                |                     | 32.2                   |
| 8                                                                                                                                                                           | 15.2              |                     | 15                      | 34                |                     | 33.8                   |
| 10                                                                                                                                                                          | 17.3              |                     | 17.4                    | 36                |                     | 35.4                   |
| 12                                                                                                                                                                          | 19.3              |                     | 19.1                    | 37                |                     | 37.3                   |
| 14                                                                                                                                                                          | 21.4              |                     | 20.9                    | 39                |                     | 39.1                   |
| 16                                                                                                                                                                          | 23.4              |                     | 23.5                    | 41                |                     | 40.8                   |
| 18                                                                                                                                                                          | 25.5              |                     | 25.5                    | 43                |                     | 42.5                   |
| 20                                                                                                                                                                          | 27.6              |                     | 27.5                    | 44                |                     | 44.3                   |
| 22                                                                                                                                                                          | 29.6              |                     | 29.2                    | 46                |                     | 46                     |
| 24                                                                                                                                                                          | 31.7              |                     | 31.8                    | 48                |                     | 47.9                   |
| 26                                                                                                                                                                          | 33.8              |                     | 33.8                    | 50                |                     | 49.5                   |
| 28                                                                                                                                                                          | 35.6              |                     | 35.5                    | 52                |                     | 51.3                   |
| 30                                                                                                                                                                          | 35.6              | ±0.7 MPa            | 35.2                    | 52                | ±1 °C               | 52.8                   |
| 32                                                                                                                                                                          | 35.6              |                     | 35.5                    | 52                |                     | 52.6                   |
| 34                                                                                                                                                                          | 35.6              |                     | 35.8                    | 52                |                     | 51.9                   |
| 36                                                                                                                                                                          | 35.6              |                     | 35.7                    | 52                |                     | 51.9                   |
| 38                                                                                                                                                                          | 35.6              |                     | 35.6                    | 52                |                     | 52.1                   |
| Conclusion: Test data from NITHONS's instruments are in conformance with standards of API 10A and GB/T 10238, satisfying API certification requirements on oil well cement. |                   |                     |                         |                   |                     |                        |

## NITHONS » Observe Test Data



It's convenient to observe test data and curve graphs; users can take screenshots and output and save these screenshots.

## NITHONS » Set Test Parameters

Single Temp. Stage & Single Pressure Stage

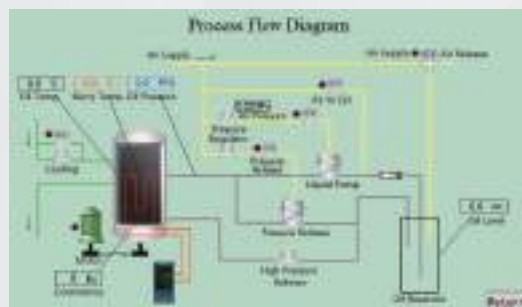
| Parameter          | Target Value | Confirm |
|--------------------|--------------|---------|
| Test No.           |              |         |
| Initial Pressure   | 0.0 MPa      | Set     |
| Target Pressure    | 0.0 MPa      | Set     |
| Target Temperature | 0.0 °C       | Set     |
| Working Time       | 0.0 Min      | Set     |

Notes: The value of Initial Temperature (0.0) is greater than 0.0, it is incorrect. The value of Initial Temperature is greater than 0.0, it is incorrect.

Back

Users can set parameters through the touch screen instead of complicated buttons, making the operation simple and straightforward.

## NITHONS » Track the Change of Oil Level



Users can look over the process flow diagram and track the change of oil level in oil reservoir and the switch status of electrically operated valves through the touch screen. Besides, users can also check oil level by an oil level indicator.

## ► Regulate Pressure Automatically

During the test, the instrument can regulate pressure automatically as required by API standards to simulate the high-temperature and high-pressure downhole well conditions accurately. Therefore, the accuracy of test can be ensured because errors caused by manual adjustment are reduced.

## ► Set Alarms for Multiple Parameters' Value Limits

When using the instrument, users can set alarms for multiple parameters' value limits as needed. Parameters include consistency, pressure, air supply pressure and oil level in the oil reservoir etc. It's simple and useful.

## ► Considerate Design of Valves

Both electrically operated valves and manually operated valves are available for cooling system, air exhaust system and air to cylinder system. Users can end the test by using manually operated valves only when emergencies occur (e.g., power failure).

## ► Shorter Cool-down Time

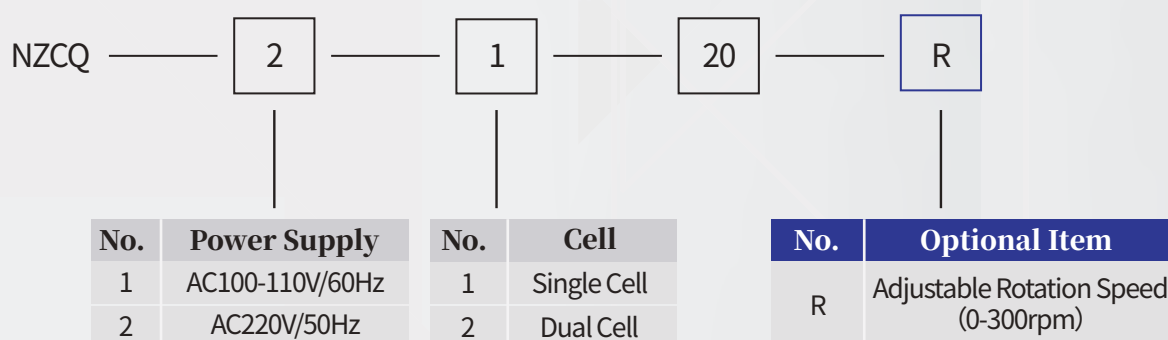
The built-in cast-aluminum chiller accelerates heat diffusion and enlarges contact surface, so it can effectively shorten the cool-down time.

## » Specifications

| NZCQ2120 HTHP Consistometer (Ultimate Version with Single Cell) |                            |                                      |                      |
|-----------------------------------------------------------------|----------------------------|--------------------------------------|----------------------|
| Max. Temperature                                                | 315°C                      | Max. Working Pressure                | 275MPa               |
| Input Voltage                                                   | AC 100-110V 60Hz/220V 50Hz | Rotation Speed                       | 150±15rpm            |
| Consistency Range                                               | 0-100Bc                    | Pressure of Cooling Water            | 0.2-0.5MPa           |
| Air Supply Pressure                                             | 0.4-0.7MPa                 | Connector Size of Cooling Water Pipe | Inner Diameter: 10mm |
| Dimensions (W*D*H)                                              | 64*80*177cm                | Weight                               | 500kg                |
| Heater Power                                                    | 4000W                      | Input Power                          | 4500W                |
| NZCQ2220 HTHP Consistometer (Ultimate Version with Duel Cell)   |                            |                                      |                      |
| Max. Temperature                                                | 315°C                      | Max. Working Pressure                | 275MPa               |
| Input Voltage                                                   | AC 100-110V 60Hz/220V 50Hz | Rotation Speed                       | 150±15rpm            |
| Consistency Range                                               | 0-100Bc                    | Pressure of Cooling Water            | 0.2-0.5MPa           |
| Air Supply Pressure                                             | 0.4-0.7MPa                 | Connector Size of Cooling Water Pipe | Inner Diameter: 10mm |
| Dimensions (W*D*H)                                              | 127*80*177cm               | Weight                               | 950kg                |
| Heater Power                                                    | 4000W*2                    | Input Power                          | 9000W                |

### NZCQ2220 HTHP Consistometer (Ultimate Version with Single Cell)

## » Available Models



- For instance, the model number NZCQ2120R refers to a single-cell HTHP consistometer which can run on 220V single phase power with adjustable rotation speed.

# Deep Sea Series

## **NZCJ** HTHP Consistometer

### **NZCJ 2120**

HTHP Consistometer  
(Standard Version with Single Cell)



### **NZCJ 2220**

HTHP Consistometer  
(Standard Version with Dual Cell)



- The instrument adopts a large-size touch screen to display and record test data and curve graphs.
- Users can set parameters of temperature controller from EURO THERM through the touch screen; with a concise user interface, it is easier for users to input or alter test parameters.
- Stable and reliable PLC can meet users' special demands and upgrade the instrument's functions in the future by programming.
- The change of oil level in the oil reservoir can be tracked and the progress of oil fill and oil return can be monitored in real time through the touch screen or an oil level indicator.
- Optimized potentiometer is much more accurate and durable and it is easier to be calibrated and cleaned.
- With connection to an external chiller, tests below ambient temperature can be conducted.
- Surface of the instrument is made of stainless steel, improving its durability.



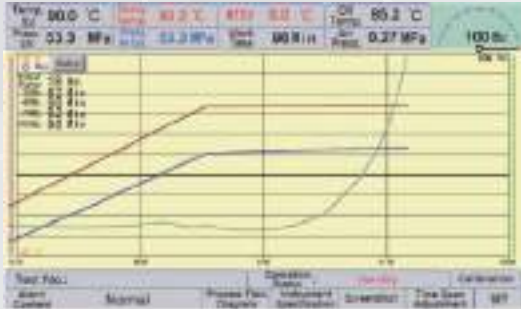
## » Features & Innovations

| No. | NZCQ HTHP Consistometer                                                                                                                                                                                                                             | Conventional HTHP Consistometer                                                                                                                                                                                                                                     |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Users may input test parameters through the touch screen directly.                                                                                                                                                                                  | Temperature controller is adopted to set parameters; it is complex to operate and error-prone.                                                                                                                                                                      |
| 2   | Test parameters and curve graphs are displayed on the touch screen directly and clearly.                                                                                                                                                            | It is inconvenient to observe test data of temperature, pressure and consistency as they are displayed on three separate dials.                                                                                                                                     |
| 3   | The instrument can operate automatically with one-button operation after test parameters are set.                                                                                                                                                   | Alternate operation between hand valves and switches is complex and confusing.                                                                                                                                                                                      |
| 4   | With a built-in coil-pipe copper chiller, this instrument has higher efficiency of cooling and longer service life.                                                                                                                                 | The chiller with stainless steel surface needs longer cool-down time.                                                                                                                                                                                               |
| 5   | Reasons for alarm are shown on the touch screen.                                                                                                                                                                                                    | Users have to find out reasons for alarm by themselves because the instrument is only equipped with alarm indicators, resulting in low efficiency.                                                                                                                  |
| 6   | Smart calibration system saves users from frequent adjustment of the spring as long as the zero point is corrected.                                                                                                                                 | Frequent adjustment of the spring will be a must once the measurement of consistency is inaccurate, which is inefficient and unreliable.                                                                                                                            |
| 7   | Newly-designed potentiometer makes it easy to calibrate consistency to 0Bc; it can make good contact with contact pins in the test cell. Besides, the spring, installed at the bottom of the potentiometer, won't be affected by the cement slurry. | As for conventional potentiometer, it is difficult to calibrate consistency to 0Bc; loose contact between potentiometer and contact pins in the test cell affects the accuracy of measurement. Besides, cement slurry tends to accumulate around the spring easily. |

## » Satisfying API Certification Requirements on Oil Well Cement

| Results Comparison on Test Approaches for G-class Cement                                                                                                                    |                   |                     |                   |                   |                     |                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|-------------------|-------------------|---------------------|-------------------|
| Time (min)                                                                                                                                                                  | Pressure (MPa)    |                     | Data from NITHONS | Temperature( °C)  |                     | Data from NITHONS |
|                                                                                                                                                                             | Theoretical Value | Allowable Deviation | (MPa)             | Theoretical Value | Allowable Deviation | (°C)              |
| 0                                                                                                                                                                           | 6.9               | ± 2 MPa             | 7                 | 27                | ± 3 °C              | 27.5              |
| 2                                                                                                                                                                           | 9.0               |                     | 8.9               | 28                |                     | 27.9              |
| 4                                                                                                                                                                           | 11.1              |                     | 11.2              | 30                |                     | 29.8              |
| 6                                                                                                                                                                           | 13.1              |                     | 13.2              | 32                |                     | 32.2              |
| 8                                                                                                                                                                           | 15.2              |                     | 15                | 34                |                     | 33.8              |
| 10                                                                                                                                                                          | 17.3              |                     | 17.4              | 36                |                     | 35.4              |
| 12                                                                                                                                                                          | 19.3              |                     | 19.1              | 37                |                     | 37.3              |
| 14                                                                                                                                                                          | 21.4              |                     | 20.9              | 39                |                     | 39.1              |
| 16                                                                                                                                                                          | 23.4              |                     | 23.5              | 41                |                     | 40.8              |
| 18                                                                                                                                                                          | 25.5              |                     | 25.5              | 43                |                     | 42.5              |
| 20                                                                                                                                                                          | 27.6              |                     | 27.5              | 44                |                     | 44.3              |
| 22                                                                                                                                                                          | 29.6              |                     | 29.2              | 46                |                     | 46                |
| 24                                                                                                                                                                          | 31.7              |                     | 31.8              | 48                |                     | 47.9              |
| 26                                                                                                                                                                          | 33.8              |                     | 33.8              | 50                |                     | 49.5              |
| 28                                                                                                                                                                          | 35.6              |                     | 35.5              | 52                |                     | 51.3              |
| 30                                                                                                                                                                          | 35.6              | ± 0.7 MPa           | 35.2              | 52                | ± 1 °C              | 52.8              |
| 32                                                                                                                                                                          | 35.6              |                     | 35.5              | 52                |                     | 52.6              |
| 34                                                                                                                                                                          | 35.6              |                     | 35.8              | 52                |                     | 51.9              |
| 36                                                                                                                                                                          | 35.6              |                     | 35.7              | 52                |                     | 51.9              |
| 38                                                                                                                                                                          | 35.6              |                     | 35.6              | 52                |                     | 52.1              |
| Conclusion: Test data from NITHONS's instruments are in conformance with standards of API 10A and GB/T 10238, satisfying API certification requirements on oil well cement. |                   |                     |                   |                   |                     |                   |

## NITHONS » Observe Test Data



It's convenient to observe test data and curve graphs; users can take screenshots and output and save these screenshots.

## NITHONS » Set Test Parameters

1 Temp. Stage & 1 Pressure Stage

| Parameter          | Target Value | Confirm |
|--------------------|--------------|---------|
| Test No.           |              | SET     |
| Initial Pressure   | 0.0 MPa      | SET     |
| Target Pressure    | 0.0 MPa      | SET     |
| Target Temperature | 0.0 °C       | SET     |
| Heating Time       | 0.0 min      | SET     |

Notes: The value of target temperature is 0.0 to 100.0 °C. The value of target pressure is 0.0 to 10.0 MPa.

Next

Users can set parameters through the touch screen instead of complicated buttons, making the operation simple and straightforward.

## NITHONS » Calibrate Consistency and Temperature

Consistency Calibration

50g Cal. 50g 100g Cal. 400g 1000g Cal. Cons. 0.0 g

Temperature Calibration

|                                 |        |           |               |        |
|---------------------------------|--------|-----------|---------------|--------|
| Modeling Value of Clarity Temp. | 0.0 °C | Calibrate | Clarity Temp. | 0.0 °C |
| Modeling Value of Oil Temp.     | 0.0 °C |           | Oil Temp.     | 0.0 °C |

Return

It's convenient to calibrate the consistency and temperature through touch screen and potentiometer.

## ► Regulate Pressure Automatically

During the test, the instrument can regulate pressure automatically as required by API standards to simulate the high-temperature and high-pressure downhole well conditions accurately. Therefore, the accuracy of test can be ensured because errors caused by manual adjustment are reduced.

## ► Set Alarms for Multiple Parameters' Value Limits

When using the instrument, users can set alarms for multiple parameters' value limits as needed. Parameters include consistency, temperature and pressure, etc. It's simple and useful.

## ► Considerate Design of Valves

Both electrically operated valves and manually operated valves are available for cooling system, air exhaust system and air to cylinder system. Users can end the test by using manually operated valves only when emergencies occur (e.g., power failure).

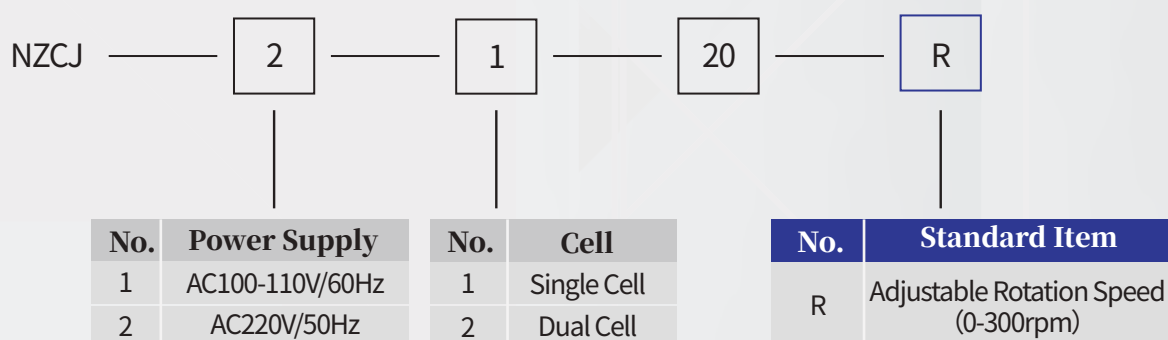
## ► Shorter Cool-down Time

The built-in coil-pipe copper chiller accelerates heat diffusion and enlarges contact surface, so it can effectively shorten the cool-down time.

## » Specifications

| NZCJ2120 HTHP Consistometer (Standard Version with Single Cell) |                            |                                      |                      |
|-----------------------------------------------------------------|----------------------------|--------------------------------------|----------------------|
| Max. Temperature                                                | 204°C                      | Max. Working Pressure                | 138MPa               |
| Input Voltage                                                   | AC 100-110V 60Hz/220V 50Hz | Rotation Speed                       | 0-300rpm             |
| Consistency Range                                               | 0-100Bc                    | Pressure of Cooling Water            | 0.2-0.5MPa           |
| Air Supply Pressure                                             | 0.4-0.7MPa                 | Connector Size of Cooling Water Pipe | Inner Diameter: 10mm |
| Dimensions (W*D*H)                                              | 60*87*171cm                | Weight                               | 240kg                |
| Heater Power                                                    | 3000W                      | Input Power                          | 3500W                |
| NZCJ2220 HTHP Consistometer (Standard Version with Duel Cell)   |                            |                                      |                      |
| Max. Temperature                                                | 204°C                      | Max. Working Pressure                | 138MPa               |
| Input Voltage                                                   | AC 100-110V 60Hz/220V 50Hz | Rotation Speed                       | 0-300rpm             |
| Consistency Range                                               | 0-100Bc                    | Pressure of Cooling Water            | 0.2-0.5MPa           |
| Air Supply Pressure                                             | 0.4-0.7MPa                 | Connector Size of Cooling Water Pipe | Inner Diameter:10mm  |
| Dimensions (W*D*H)                                              | 127*87*171cm               | Weight                               | 460kg                |
| Heater Power                                                    | 3000W*2                    | Input Power                          | 7000W                |

## » Available Models



- For instance, the model number NZCJ2120R refers to a single-cell HTHP consistometer which can run on 220V single phase power with adjustable rotation speed.

# Compact Cannon Series

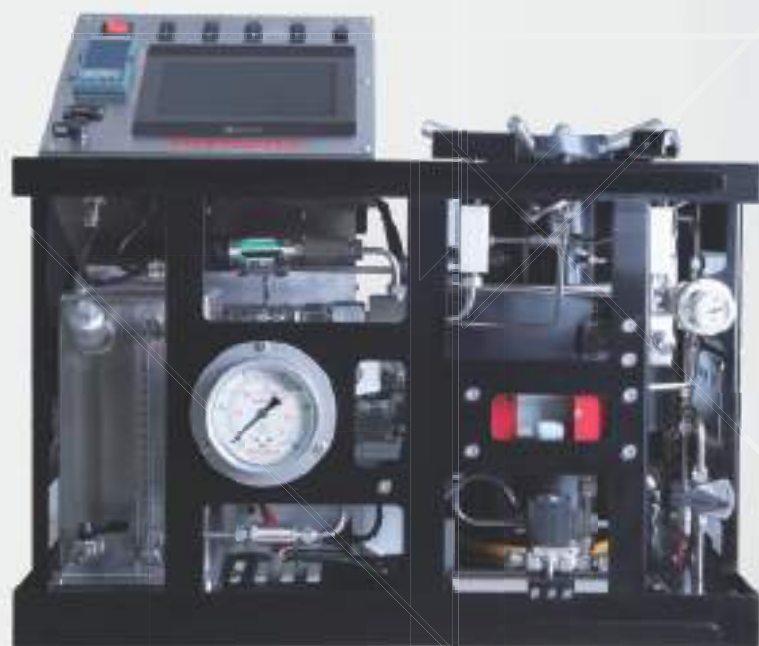
## **NBCQ** Portable HTHP Consistometer

- The large-size touch screen is used to display and record test data and curve graphs clearly.
- The instrument has a USB port and an Ethernet port for connection to a computer, making it easy to save and view test data and curve graphs.
- Cast-aluminum chiller can cool down the instrument more rapidly.
- With a tee-type high-pressure filter, assembly, disassembly and cleaning of the filter element is easier.
- Potentiometer with improved design is more accurate and durable; it is also easier to calibrate and clean.
- Users can set alarms for multiple parameters' value limits as needed.

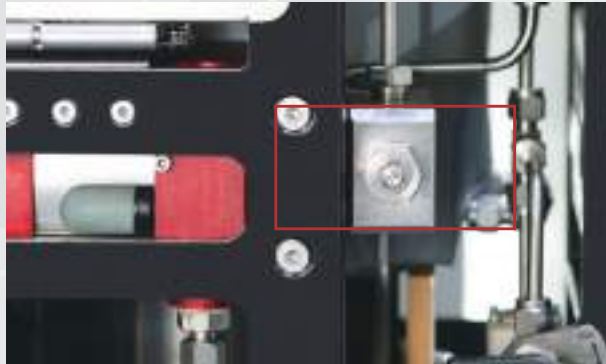


## » Features & Innovations

| No. | NBCQ Portable Consistometer                                                                                                                                                                                                   | Conventional Portable Consistometer                                                                                                                                                                                                                               |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | A stainless coil pipe is installed in the cast-aluminum chiller, improving cooling efficiency and prolonging the chiller's service life.                                                                                      | Copper coil pipe chiller with small contact area easily gets blocked internally and requires longer cooling time.                                                                                                                                                 |
| 2   | Tee-type high pressure filter can be disassembled with a small wrench one handed and is easy for cleaning.                                                                                                                    | Straight-through type filter requires a large wrench for disassembly and assembly with both hands, wasting time and energy.                                                                                                                                       |
| 3   | Potentiometer with improved design is easy for zero-point adjustment and has stable contact arm on the resistor. The spring is installed at the bottom side, preventing it from being adhered to cement slurry during a test. | It is complex to adjust zero-point for traditional potentiometer and its contact arm easily gets loose and thus affects the test accuracy. The bearing is not corrosion resistant and tends to get stuck. Besides, the spring is easily adhered to cement slurry. |
| 4   | Thermocouple has protection design and can be placed in a protective tube with safety.                                                                                                                                        | Thermocouple can only be placed on the work bench and tends to get damaged.                                                                                                                                                                                       |
| 5   | The large-size touch screen is designed to display and record test data and curve graphs clearly.                                                                                                                             | Temperature, pressure and consistency values are displayed through three different gauges, making it troublesome for users to read them.                                                                                                                          |
| 6   | Test parameters can be set through touch screen directly.                                                                                                                                                                     | Setting parameters through a temperature controller is complicated and error-prone.                                                                                                                                                                               |







## ► Considerate Design for High-pressure Filter

The instrument uses a tee-type high-pressure filter. Users can assemble and disassemble the filter element with a small wrench one-handed; users can also clean it more easily.

## ► Faster Cooling

The instrument uses a cast-aluminum chiller with larger contact area, making heat dissipation faster, so the chiller can cool down the instrument more rapidly.



## NITHONS » Industrial Grade Touch Screen



The large-size touch screen is designed to display and record test data and curve graphs clearly. Test parameters can be set through touch screen, saving users from frequent button operations and increasing operational simplicity and convenience.

## NITHONS » USB Port



With a USB port, A USB drive can be connected to save screenshots for test data.

## NITHONS » Ethernet Port

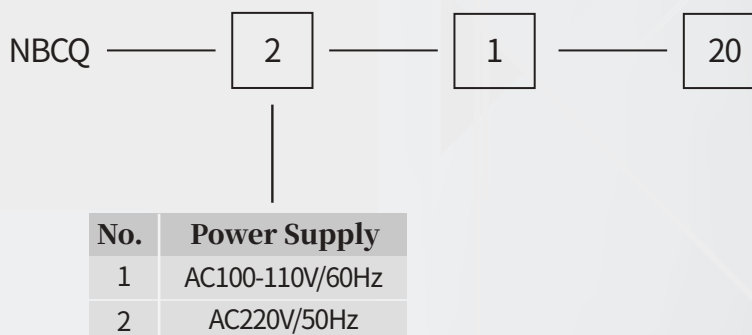


Test data can be set, viewed and saved through software in computer with connection to this Ethernet port.

## » Specifications

|                     |                              |                                      |                     |
|---------------------|------------------------------|--------------------------------------|---------------------|
| Max. Temperature    | 204°C                        | Max. Working Pressure                | 138MPa              |
| Input Voltage       | AC 100-110V 60Hz / 220V 50Hz | Input Power                          | 3500W               |
| Heater Power        | 3000W                        | Rotation Speed                       | 150±15rpm           |
| Air Supply Pressure | 0.4-0.7MPa                   | Pressure of Cooling Water            | 0.2-0.5MPa          |
| Dimensions (W*D*H)  | 69*44*60cm                   | Weight                               | 124kg               |
| Consistency Range   | 0-100Bc                      | Connector Size of Cooling Water Pipe | Inner Diameter:10mm |

## » Available Models



- For instance, the model number NBCQ2120 refers to a portable HTHP consistometer which can run on 220V power supply.

# **PZC047** High Temperature Potentiometer

Conventional Potentiometer



PZC004

High Temperature Potentiometer



PZC047

## ■ Torsional Spring Used as Contact Arm

With the feature of automatic compensation, a torsional spring has better contact stability, so it is used as the contact arm of potentiometer to improve the accuracy of test data.



## ■ Easy Calibration to 0Bc

Users can easily calibrate the consistency to 0Bc only by unscrewing jackscrews.



← Calibration by Unscrewing Jackscrew

#### ■ Spring Free from Influence of Cement Slurry

The spring is installed at the bottom of potentiometer, so there is no cement slurry accumulating around it. Therefore, the spring is able to keep good performance.



#### ■ Better View and Easy Installation

No beam is installed between the two hooks, thus offering a better view for users to observe consistency when putting it into the test cylinder.

#### ■ Central Shaft with Limiting Hole Ensures Easier Installation

When installing the mixing paddle, users may just insert a copper wire or iron wire with length of 3mm into the limiting hole to set the limit and then tighten the drive block, which is easy to operate.



#### ■ Use of High Temperature Resistant Material

This potentiometer is made of a material that is high temperature resistant up to 350°C, which makes it unlikely to deform under high temperature, avoiding getting expanded and getting in touch with the cylinder.

#### ■ Ceramic Bearing Features Low Resistance, Long Service Life and is Rust-proof.



#### ■ PZC047 high temperature potentiometer is a perfect replacement for PZC004 conventional potentiometer.

# **PZC137** Cement Removal Device

- Both support plates have location slots for one-step and easy installation.



- Easy removal and more practical.

- Compact and lightweight design for high portability and easy storage.

- Jack with a fixed structure increases stability.





## ■ Features & Innovations

Jack and the bottom plate are secured together firmly to avoid any unnecessary movement.

Mounting holes for operation on the ground/working bench.

Handle Support

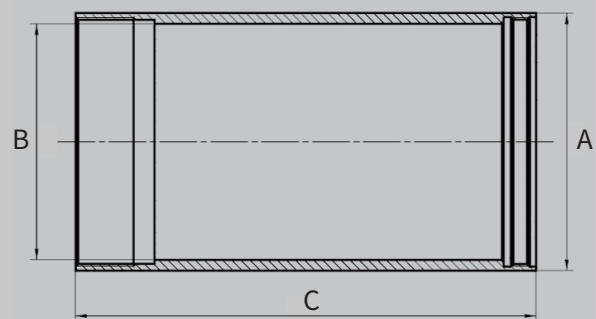


## ■ Steps for Installation



## » Available Size Specification of Slurry Cup

| Item | Size Range (mm)             |
|------|-----------------------------|
| A    | 78-81                       |
| B    | 71-74                       |
| C    | 140-143                     |
| D    | Other sizes are on request. |



# Flaming Mountains Series

## **NZYQ** HTHP Curing Chamber

### **NZYQ 2122**

HTHP Curing Chamber  
(Ultimate Version with Single Cell)



### **NZYQ 2222**

HTHP Curing Chamber  
(Ultimate Version with Dual Cell)



- The instrument adopts a touch screen to set parameters and display test data in real time.
- It can be connected to computer software to realized remote control.
- One nut can adequately secure a tightened test cell cap, so users needn't screw down multiple bolts repeatedly.
- Multiple filters can adequately protect valves.
- Alarm and pre-alarm functions are available.
- With multiple protection for thermal insulation, it is safe to operate.

## » Features & Innovations

| No. | NZYQ HTHP Curing Chamber                                                                                                                                                                                                                                                                                                                                                                | Conventional HTHP Curing Chamber                                                                                                              |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | One nut can adequately secure a tightened test cell cap, so users needn't screw down multiple bolts repeatedly.                                                                                                                                                                                                                                                                         | Users have to screw down bolts with a wrench again and again. It's too complicated and difficult to mount the test cell cap.                  |
| 2   | Multiple filters can adequately protect valves. It is equipped with a water filter at the inlet to ensure that the water entering the pipeline and the cylinder is clean. The high-pressure filter is installed in the piping before the needle valve and pressure relief valve to prevent impurities and cement from entering the valves and causing damage to the sealing components. | The instrument has only one filter, so impurities are easy to enter into pipes and damage valves.                                             |
| 3   | Test parameters and curve graphs are displayed on the touch screen directly and clearly.                                                                                                                                                                                                                                                                                                | It is inconvenient to observe test data of temperature and pressure as they are displayed by two separate dials.                              |
| 4   | With multiple protection for thermal insulation, it is safe to operate.                                                                                                                                                                                                                                                                                                                 | Without thermal insulation design, the instrument is easy to scald users.                                                                     |
| 5   | It can be connected to computer software to record and save test data.                                                                                                                                                                                                                                                                                                                  | No software available.                                                                                                                        |
| 6   | It has an Ethernet port and comes with data acquisition software, so users can set parameters, remotely turn on and/or off the heater and/or chiller and perform other operations, and monitor the real time running status through the software.                                                                                                                                       | This function is unavailable.                                                                                                                 |
| 7   | It adopts a PLC and a touch screen. Users can set test parameters directly through the screen. It can also realize automatic control for multi-stage temperature, alarm for multiple parameters' value limits, automatic cooling after tests and reliable overpressure protection, ensuring users' safety.                                                                              | Frequent button-based operations on temperature controller are required to realize temperature control, which is complicated and error-prone. |

► **Observe and Save Test Data**

It's convenient to observe test data and curve graphs through the touch screen; users can also connect it to computer software to view and save test data.



**Observe Test Data**



**Connect to Software**

► **Set Test Parameters**

Users can set parameters through the touch screen instead of complicated buttons, making the operation simple and straightforward.

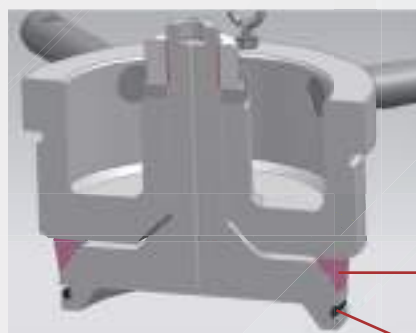
Single Temp. Stage & Single Pressure Stage

| Parameter          | Target Value | Confirm                            |
|--------------------|--------------|------------------------------------|
| Initial Pressure   | 0.0 MPa      | <input type="button" value="SET"/> |
| Target Pressure    | 0.0 MPa      | <input type="button" value="SET"/> |
| Target Temperature | 0.0 °C       | <input type="button" value="SET"/> |
| Heating Time       | 0.0 Min      | <input type="button" value="SET"/> |

Parameter Settings

| Parameter                        | Set Value                         | Confirm                            |
|----------------------------------|-----------------------------------|------------------------------------|
| Age Of Cement Sample.            | 0 Day                             | <input type="button" value="Set"/> |
|                                  | 0 Hr.                             | <input type="button" value="Set"/> |
|                                  | 0 Min.                            | <input type="button" value="Set"/> |
| Start of Cooling before the Age. | 0 Min.                            | <input type="button" value="Set"/> |
| Time of Cooling Progress         | 0 Min.                            | <input type="button" value="Set"/> |
| Automatic Cooling Mode<br>Yes/No | <input type="button" value="No"/> |                                    |

Sealing for Test Cell Cap



Metal Seal Ring

Rubber Seal Ring

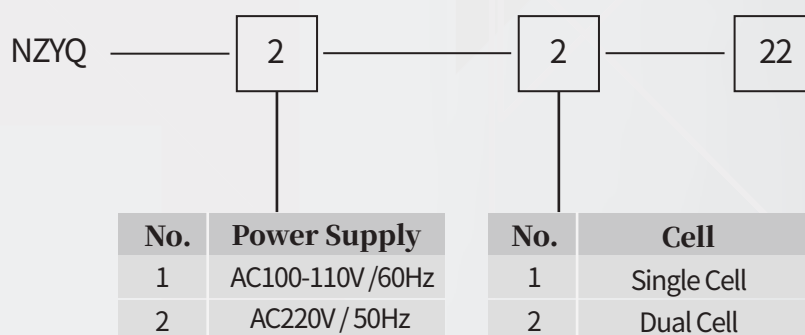
#### ► Optimized Sealing Structure

With double sealing structure, the sealing is more reliable and the installation is easier.

## » Specifications

| NZYQ2122 HTHP Curing Chamber (Ultimate Version with Single Cell) |                           |                           |         |
|------------------------------------------------------------------|---------------------------|---------------------------|---------|
| Max. Temperature                                                 | 370°C                     | Max. Working Pressure     | 40MPa   |
| Input Voltage                                                    | AC100-110V 60Hz/220V 50Hz | Heater Power              | 4500W   |
| Dimensions (W*D*H)                                               | 65*80*171cm               | Weight                    | 325kg   |
| Input Power                                                      | 4700W                     | Number of Cement Specimen | 8       |
| NZYQ2222 HTHP Curing Chamber (Ultimate Version with Dual Cell)   |                           |                           |         |
| Max. Temperature                                                 | 370°C                     | Max. Working Pressure     | 40MPa   |
| Input Voltage                                                    | AC100-110V 60Hz/220V 50Hz | Heater Power              | 4500W*2 |
| Dimensions (W*D*H)                                               | 120*80*171cm              | Weight                    | 565kg   |
| Input Power                                                      | 9500W                     | Number of Cement Specimen | 16      |

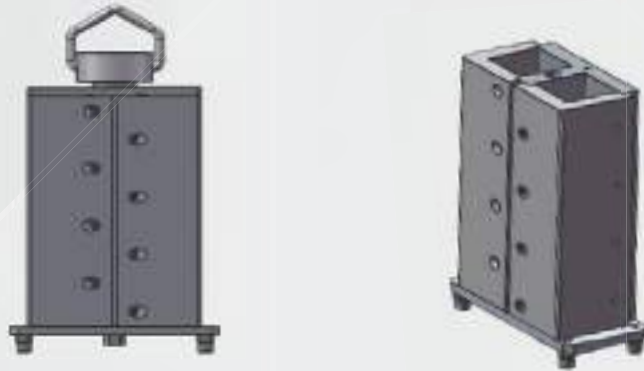
## » Available Models



- For instance, the model number NZYQ2222 refers to a dual-cell HTHP curing chamber which can run on 220V single phase power.

# Cement Specimen Curing Molds

— Molds for Bending Strength  $40 \times 40 \times 160 \text{ mm}$



— Molds for Compressive Strength  $50.8 \times 50.8 \times 50.8 \text{ mm}$



— Molds for Compressive Strength  $25.4 \times 25.4 \times 25.4 \text{ mm}$





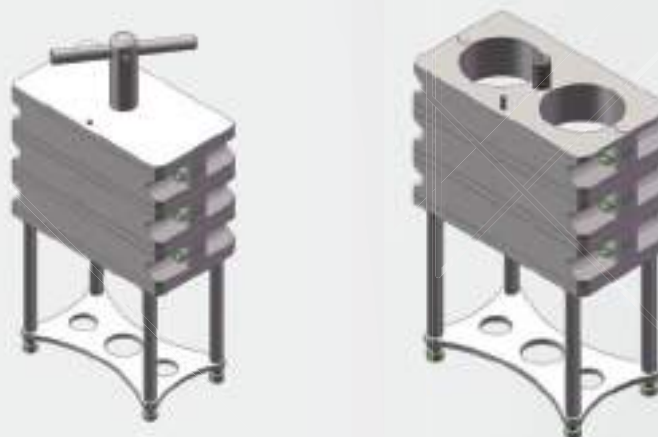
## — Molds for Permeability



## — Single Axis Molds for Deformation



## — Molds for Tensile Strength



Remarks:

- The above-listed cement specimen curing molds are used for cement curing and can be used with the water bath and HTHP curing chamber.
- Molds are available in two kinds of materials, brass and stainless steel.
- Molds in different shapes and dimensions are available on request.

# TwinStar Series

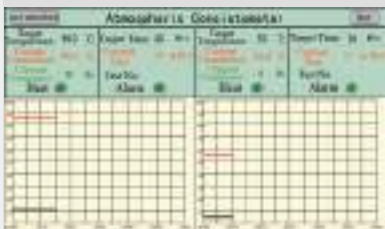
## NCCQ Atmospheric Consistometer

- With dual cell, dual temperature control system, dual motor and dual curve graph displayed on the touch screen, the instrument allows its two test cells to conduct simultaneous tests with each one operated independently.
- Test consistency by sensors, eliminating tedious work on wiring of potentiometer, so that the instrument features lower fault rate and easier operation.
- Test data can be saved either through a USB drive or the connection with computer software.
- Independent water baths are easy to disassemble and assemble.
- Touch screen ensures the real-time display of curve graphs.
- Surface of the instrument is made of stainless steel.
- It can raise the alarm and the pre-alarm.
- The cone point threaded rod of mixing paddle is replaceable.
- With cooling by circulating water, tests for cement slurry curing and thickening below room temperature can be realized.



(Optional)

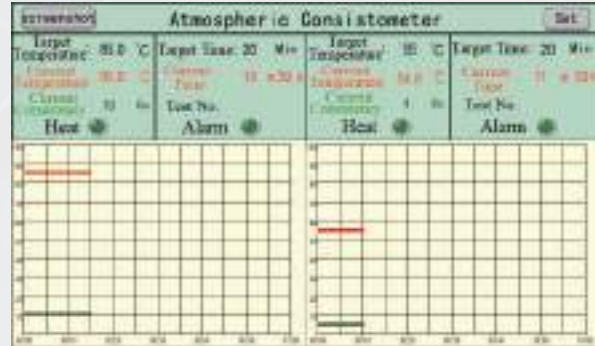
## » Features & Innovations

| No. | NCCQ Atmospheric Consistometer                                                                                                                                                                       | Conventional Atmospheric Consistometer                                                                                                   |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Thanks to the design of dual cell and dual temperature control system, it enables users to conduct two tests under different temperatures simultaneously.                                            | Two simultaneous tests have to be carried out at the same temperature as the instrument has one water bath only.                         |
| 2   | The instrument adopts sensors to test the consistency and shows its curve graphs on the screen, eliminating tedious work on connecting wires and increasing operational simplicity.                  | Testing consistency by conventional potentiometer is complex in wiring and operation.                                                    |
| 3   | Easy-to-disassemble water bath features convenience of cleaning and maintenance.                                                                                                                     | It is difficult to disassemble the water bath, leading to inconvenience of cleaning and maintenance.                                     |
| 4   |  Test parameters and curve graphs are displayed on the touch screen directly and clearly.                          | It is inconvenient to observe test data of temperature and consistency as they are displayed by two separate dials.                      |
| 5   |  Test parameters can be set through the touch screen directly and easily.                                         | Setting parameters through a temperature controller is complicated and error-prone.                                                      |
| 6   |  Smart calibration system enables calibration through touch screen instead of frequent adjustments on the spring. | Frequent adjustment on the spring will be a must once the measurement of consistency is inaccurate, which is inefficient and unreliable. |
| 7   | The instrument can give a pre-alarm one minute in advance to prevent users from missing preset parameters' value limits during the test.                                                             | Without pre-alarm function, preset value limits for parameters during a test are easily neglected.                                       |
| 8   | Users can view and save test data either through the USB port or the Ethernet port.                                                                                                                  | No output interface available.                                                                                                           |

## NITHONS

### » Ual Cell and Dual Temperature Control System

Two independent water baths can perform heating and/or cooling operations separately. In this way, two tests can be carried out under different temperatures (no lower than 50°C) simultaneously. One NCCQ atmospheric consistometer is equivalent to two conventional atmospheric consistometers.



## NITHONS

### » Independent Cooling Valve

With a cooling unit, tests for cement slurry curing below room temperature can be realized.

## NITHONS

### » Independent Drain Valve

With a ball valve of large diameter, fast drainage is realized.

## NITHONS

### » Est Consistency by Sensors

Sensors, connected with torque bars, are used to test consistency, so it's unnecessary to use potentiometers, saving users from tedious work on connecting wires and increasing convenience of cleaning and durability. Besides, the use of Mettler Toledo's sensors improves test accuracy.



NITHONS - Test Consistency by Sensors

## NITHONS

### » Test Consistency by Potentiometer

Troublesome work on connecting wires of potentiometers is a necessity for every test. Besides, it's neither easy to clean nor damage-resistant.

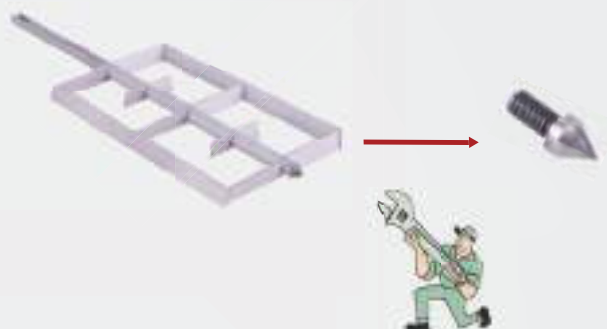


Conventional Instrument-Test Consistency by Potentiometers



### ► Mixing Paddle with Removable Cone Point Threaded Rod

The cone point threaded rod engages with the central shaft of mixing paddle by screw threads. Users may just replace a new cone point threaded rod instead of a mixing paddle when the old one wears out. Thus, the mixing paddle's service life is prolonged and is also cost-efficient.



### ► Computer Conneciton Available

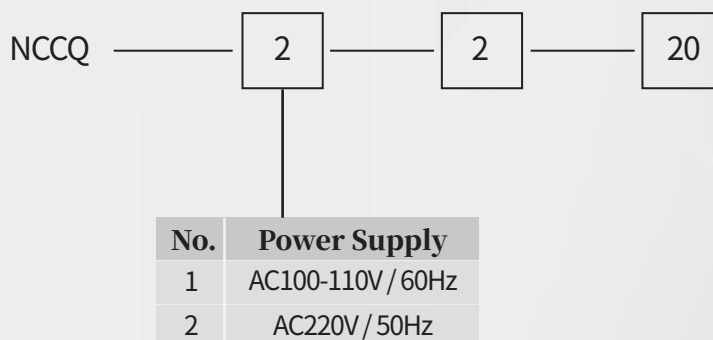
Users can view and save test data through software in computer with connection to the Ethernet port.



## » Specifications

|                           |                            |                                      |                      |
|---------------------------|----------------------------|--------------------------------------|----------------------|
| Max. Temperature          | 93°C                       | Max. Working Pressure                | Atmospheric          |
| Input Voltage             | AC 100-110V 60Hz/220V 50Hz | Heater Power                         | 1200W×2              |
| Consistency Range         | 0-100Bc                    | Rotation Speed                       | 150±15rpm            |
| Dimensions (W*D*H)        | 54*65*65cm                 | Mass                                 | 65kg                 |
| Pressure of Cooling Water | 0.2-0.5MPa                 | Connector Size of Cooling Water Pipe | Inner Diameter: 10mm |
| Input Power               | 2700W                      | Volume of Slurry Cup                 | 470ml                |

## » Available Models



- For instance, the model number NCCQ2220 refers to an atmospheric consistometer which can run on 220V single phase power.

# Tornado Series

## **NHJQ** Constant Speed Mixer

- Easy switch between automatic mode and manual mode.
- Dual-seal blending assembly reduces the frequency of cleaning and is more durable.
- The instrument features pulse cleaning function, anti-foam function and anti-splash function (via low-speed start-up by default), etc.
- Touch screen design makes it easy to set parameters and view data.
- Surface of the instrument is made of stainless steel.
- Motor control and mixing cup are made in the USA.



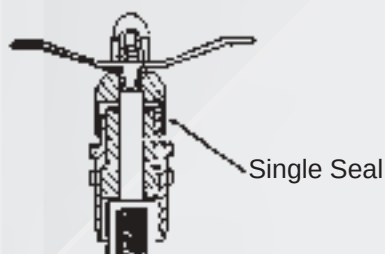


## » Features & Innovations

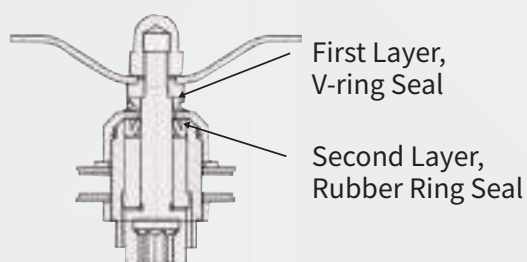
| No. | NHJQ Constant Speed Mixer                                                                                                                                                                                                                                                                                                                                             | Conventional Constant Speed Mixer                                                                                                                                               |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Intelligent control program enables the instrument to always start up at a low speed of no more than 4000rpm, preventing slurry from splashing even in the case of misoperation.                                                                                                                                                                                      | High-speed start-up will occur once users forget to switch off the high-speed mode. In this case, the cement slurry will splash and even worse, the instrument will be damaged. |
| 2   | Touch screen is adopted to set test parameters. Users may set mixing time and speed as needed.                                                                                                                                                                                                                                                                        | During a test, the speed has to be adjusted through manual operation instead of presetting. Users can only preset one mixing time with the timer.                               |
| 3   | <p>All test data is displayed on the touch screen directly and clearly.</p>                                                                                                                                                                                                        | It is inconvenient to observe test data of speed and time as they are shown on two separate digital display units.                                                              |
| 4   | Automatic anti-foam function is created to mix slurry uniformly and reduce amount of foam contained in the slurry by intermittent mixing after tests. Thus minimizing foam's impact on subsequent data measurement for consistency, compressive strength, density, etc. and improves data accuracy. Users can turn on and off the switch for this function as needed. | With no anti-foam function, the slurry inevitably contains much foam.                                                                                                           |
| 5   | It has start-up protection. When cement slurry adheres to mixing assembly and gets solidified, driving load of the motor will be increased. In this case, the mixer will be able to detect the overload situation and report an error to stop the start-up, preventing the motor from burning out for long-time connection to power supplies.                         | Motor tends to be burnt out for long-time connection to power supplies.                                                                                                         |

## ► Dual-seal Blending Assembly

The design of dual seal offers good sealing performance, so only a little cement slurry will enter into gaps. Therefore, users needn't disassemble and clean the blending assembly so frequently after preparation of cement slurry, improving efficiency of operations.



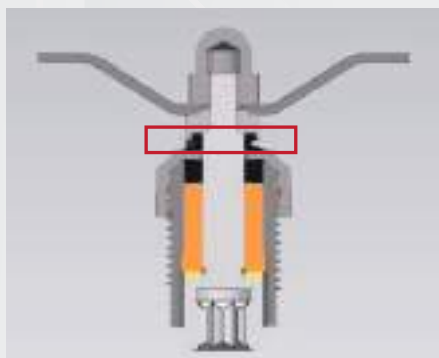
Conventional Blending Assembly



Dual-seal Blending Assembly

## ► V-ring Seal

A V-ring seal is adopted to replace a conventional ring seal, because it is of better sealing performance, reduces abrasion, prolongs service life of blending assembly and saves costs. Besides, it can improve efficiency of operations by saving users' time spent on disassembling, cleaning and replacing the blending assembly.



The first protection layer adopts a V-ring seal instead of a conventional ring seal.



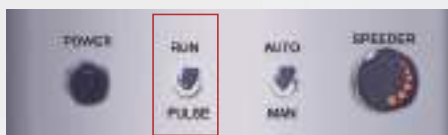
V-ring Seal

**NITHONS » Motor Control Made in the USA**

Accurate speed control and powerful drive

**NITHONS » Mixing Cup Made in the USA**

Made of stainless steel and durable in use

**NITHONS » Pulse Cleaning Function**

Unique pulse cleaning function improves convenience of cleaning. By adding small amount of water and holding the PULSE switch down after tests, users can make the mixer clean up the mixing assembly and cement slurry adheres to the bottom of the mixing cup.

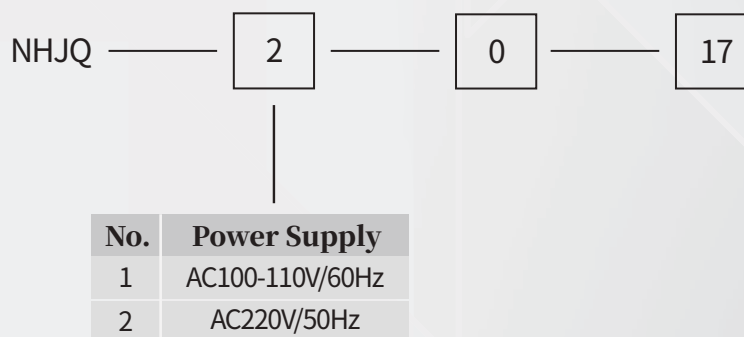
**NITHONS » Magnetic Plate**

Considerate design of a magnetic plate enables users to conveniently look up test data.

## » Specifications

|                      |                            |                   |       |
|----------------------|----------------------------|-------------------|-------|
| Rotation Speed Range | 1000-18000rpm              | Mixing Cup Volume | 1L    |
| Input Voltage        | AC 100-110V 60Hz/220V 50Hz | Input Power       | 1200W |
| Dimensions (W*D*H)   | 40*26*64cm                 | Mass              | 27kg  |

## » Available Models



- For instance, the model number NHJQ2017 refers to a constant speed mixer which can run on 220V single phase power.

# Tornado Series

## **NHJJ** Constant Speed Mixer

- Easy switch between automatic, manual and speed-adjustable modes.
- Surface of the instrument is made of stainless steel.
- Motor control and mixing cup are made in the USA.
- Dual-seal blending assembly reduces the frequency of cleaning and is more durable.



## » Features & Innovations

| No. | NHJJ Constant Speed Mixer                                                                                                                                                                                                                                                                           | Conventional Constant Speed Mixer                                                                                                                                                                              |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Automatic, manual and speed-adjustable modes are available. In automatic mode, the instrument always starts up at a low speed, improving the safety of operation and preventing slurry from splashing.                                                                                              | Only manual mode is available. High-speed start-up will occur once users forget to switch off the high-speed mode. In this case, the cement slurry will splash and even worse, the instrument will be damaged. |
| 2   | The mixing time of the instrument when it runs at a high speed and the mixing time of the instrument when it runs at a low speed are user-settable, allowing different combinations of mixing time and speed to be customized.                                                                      | During a test, the speed has to be adjusted through manual operation instead of presetting. Users can only preset one mixing time with the timer.                                                              |
| 3   | The dual-seal blending assembly is developed by our in-house team; it is convenient to clean up the assembly and it is more resistant to damage.                                                                                                                                                    | The blending assembly with a single ring seal allows more cement slurry to enter into gaps; it is not resistant to damage and it is inconvenient to clean up the assembly.                                     |
| 4   | <p>The instrument adopts a text display for users to observe rotation speed, test status and operating time. Also, users can set operating time, speed for automatic and manual modes through this display.</p>  | No display available.                                                                                                                                                                                          |

### ► Automatic Mode

In automatic mode, the instrument can run at different speeds for different periods of time automatically according to the user's settings; when the test is terminated, the instrument can also stop running automatically. In automatic mode, the instrument always starts up at a low speed, preventing slurry from splashing, improving the safety of operation and keeping it clean.

### ► Manual Mode

In manual mode, users can choose to make the instrument run at a high speed or at a low speed by pulling the HIGH/LOW switch upwards or downwards as needed.

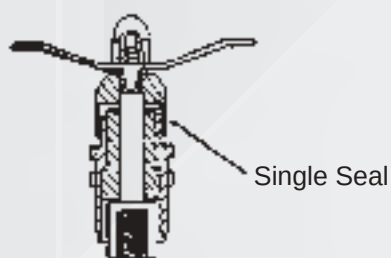
### ► Speed-adjustable Mode

In speed-adjustable mode, users can adjust the instrument's rotation speed manually by rotating the SPEEDER knob. The rotation speed is stable and the speed control is accurate.

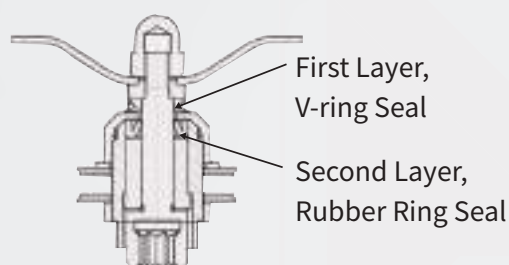


## ► Dual-seal Blending Assembly

The design of dual seal offers good sealing performance, so only a little cement slurry will enter into gaps. Therefore, users needn't disassemble and clean the blending assembly so frequently after preparation of cement slurry, improving efficiency of operations.



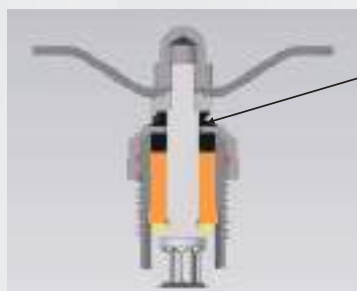
Conventional Blending Assembly



Dual-seal Blending Assembly

## ► Unique V-ring Seal

A V-ring seal is adopted to replace a conventional ring seal, because it is of better sealing performance, reduces abrasion, prolongs service life of blending assembly and saves costs. Besides, it can improve efficiency of operations by saving users' time spent on disassembling, cleaning and replacing the blending assembly.



The first protection layer adopts a V-ring seal instead of a conventional ring seal.







#### Dust-proof Switch

To keep the switch clean



#### Dust Shield

To prevent slurry from splashing onto the display during operation of the instrument

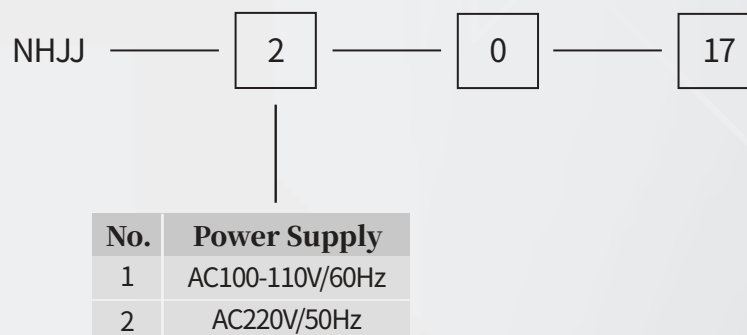


The instrument is designed to be compact with less demand for space, making it easy to move it.

## » Specifications

|                      |                               |                   |       |
|----------------------|-------------------------------|-------------------|-------|
| Rotation Speed Range | 1000-18000rpm                 | Mixing Cup Volume | 1L    |
| Input Voltage        | AC100-110V 60Hz/<br>220V 50Hz | Input Power       | 1200W |
| Dimensions (W*D*H)   | 23*28*40cm                    | Mass              | 12kg  |

## » Available Models



■ For instance, the model number NHJJ2017 refers to a constant speed mixer which can run on 220V single phase power.

# Hercules Series

## **NYSQ** Compressive Strength Tester

- The large-size touch screen is designed to display and record test data and curve graphs clearly.
- The instrument can apply compressive loads to a cement specimen automatically according to API standards, so manual control of loading is unnecessary; besides, it can improve the accuracy of test data and is easy to operate.
- Stable and reliable PLC can meet users' various demands and realize future upgrade.
- With the latest digital control technology, this instrument can realize fully automatic control, digital display, compressive loading at constant speed, automatic recording, automatic calculation and provide reliable data.
- Transparent safety shield can protect the pressure assembly, improving operational safety and making it easier to observe the test progress and clean the instrument.
- The instrument is compact in design with demand for less space; its four casters can help users to move the instrument conveniently.
- It can run on single-phase power supply, thus having no need for a three-phase one.



## » Features & Innovations

| No. | NYSQ Compressive Strength Tester                                                                                                                                                                                                                                                                   | Conventional Compressive Strength Tester                                                                                                                                                                                              |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   |  <p>The instrument can apply compressive loads to a cement specimen at desired loading rate automatically, so manual control of loads is unnecessary and users can control compressive loads more accurately.</p> |  <p>Users need to use the manual valve to control compressive loads. Manual operation is more complicated and test data is not accurate enough.</p> |
| 2   | <p>A touch screen is used to display test data and curve graphs clearly.</p>                                                                                                                                                                                                                       | <p>No curve graphs are available and test data can only be observed through a digital display.</p>                                                                                                                                    |
| 3   |  <p>Its design of casters and forklifting positions can help users to move and place the instrument conveniently.</p>                                                                                           | <p>Hoisting with overhead crane makes it inconvenient for users to move it.</p>                                                                                                                                                       |
| 4   | <p>It can save and calculate test data. Test data are saved in the data table and related calculation can be completed automatically.</p>                                                                                                                                                          | <p>Users have to record and calculate test data manually.</p>                                                                                                                                                                         |
| 5   | <p>It can conduct accredited third-party calibration. A calibration mechanism equipped with a high-precision sensor is installed internally, enabling calibration for fixed load tests and ensuring accurate test data and meeting requirements for certification.</p>                             | <p>Tests for fixed load are unavailable. Compressive loads value cannot be stabilized. Test observation and calibration are inconvenient and inaccurate.</p>                                                                          |
| 6   | <p>With a built-in PLC, it can satisfy different requirements from customers and realize future upgrade.</p>                                                                                                                                                                                       | <p>No upgrade available with limited functions.</p>                                                                                                                                                                                   |

## NITHONS » Automatic Recording and Calculation

| Order   | Maximum Pressure | Comp/Min Strength | Loading Rate |
|---------|------------------|-------------------|--------------|
| 1       | 41.2             | 15.9              | 21.7         |
| 2       | 18.9             | 15.9              | 21.7         |
| 3       | 39.8             | 15.6              | 21.7         |
| 4       | 40.5             | 15.5              | 21.7         |
| 5       |                  |                   |              |
| 6       |                  |                   |              |
| 7       |                  |                   |              |
| 8       |                  |                   |              |
| 9       |                  |                   |              |
| 10      |                  |                   |              |
| Average | 40.4             | 15.7              |              |

It can save and calculate test data. Test data are saved in the data table and related calculation can be completed automatically, easing users' workload.

## NITHONS » Parameter Settings as Needed

| Parameters Setting     |                      |
|------------------------|----------------------|
| Current Block Area:    | 25.8 cm <sup>2</sup> |
| Loading Rate:          | 10.0 kN/Min          |
| Speed Selection:       | 1200/Min             |
| Calibration:           | 15.0 kN/Min          |
| Fixed Load Test:       | Yes                  |
| Provision Calibration: | No                   |

Loading Rate and loading area can be set as needed to satisfy requirements on different loading rates. It can not only test compressive strength for standard cement specimens, but can also test specimens of other dimensions.

## NITHONS » Easy Calibration

| Fixed Load Test        |                      |
|------------------------|----------------------|
| Current Block Area:    | 25.8 cm <sup>2</sup> |
| Loading Rate:          | 10.0 kN/Min          |
| Speed Selection:       | 1200/Min             |
| Calibration:           | 15.0 kN/Min          |
| Fixed Load Test:       | Yes                  |
| Provision Calibration: | No                   |
| Test Status:           | Reset                |

Self-calibration is available with a built-in calibration mechanism equipped with a high-precision sensor after long time use or when a calibration is required. It can ensure accurate test data and meet requirements for certification.



**NITHONS** » **USB Port and Ethernet Port  
are All Available for Data Export**

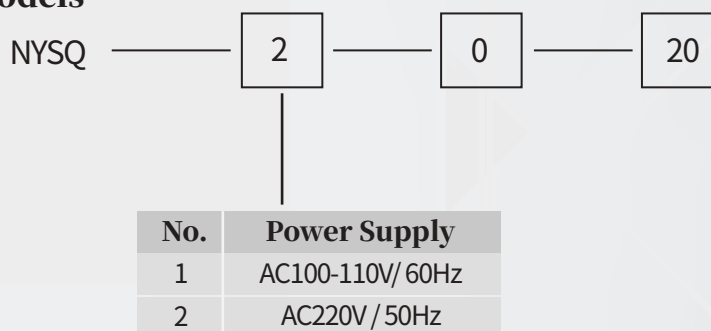


With a USB port and an Ethernet port, users can not only export data, but can also record and save test data through connection to data acquisition software coming with this instrument.

## » Specifications

|                                              |                           |                       |        |
|----------------------------------------------|---------------------------|-----------------------|--------|
| Input Voltage                                | AC100-110V 60Hz/220V 50Hz | Max. Working Pressure | 300 kN |
| Dimensions (W*D*H)                           | 72*45*126cm               | Input Power           | 1700W  |
| Inner Diameter of Oil Tank                   | 160mm                     | Max. Oil Pressure     | 16MPa  |
| Max. Compressive Strength of Cement Specimen | 100MPa                    | Mass                  | 225kg  |

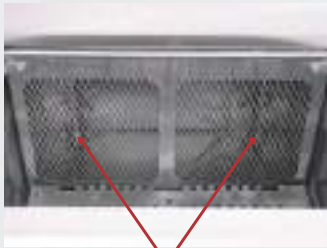
## » Available Models



- For instance, the model number NYSQ2020 refers to a compressive strength tester which can run on 220V single phase power.

# NHSQ Thermostatic Water Bath

- The water tank is detachable for easy cleaning and maintenance.
- The upper cover of the instrument and the surrounding of the water tank are equipped with heat preservation system, which can stabilize the temperature and save energy.
- The handle is installed at the front side of the upper cover, preventing hands from being hurt by the steam when users open the cover.
- Mixing assembly is installed internally to ensure even water temperature during tests.



Design of dual mixing shaft

- Surface of the instrument is made of stainless steel.
- A drain valve is installed at the front cover of the instrument, users may open it for drainage when it is necessary to change test water.





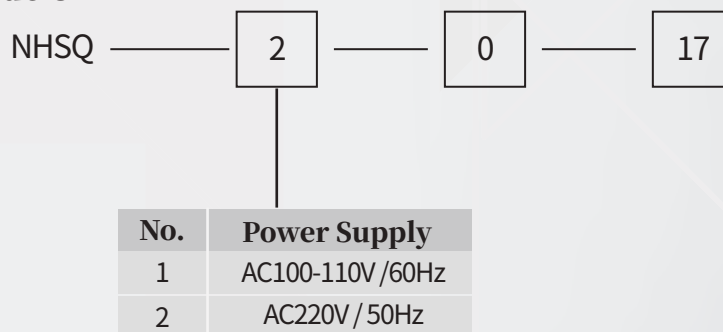
## » Features & Innovations

| No. | NHSQ Thermostatic Water Bath                                                                                                                                                                                                  | Conventional Thermostatic Water Bath                                                                                                        |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | The instrument adopts Japanese temperature controllers from OMRON with high control accuracy and long service life.                                                                                                           | It adopts ordinary temperature controllers with low control accuracy and poor durability.                                                   |
| 2   | A handle is installed at the right side of the bath cover. This user-friendly design avoids the user from being scalded by the steam when opening the cover.                                                                  | A handle is installed at the center front side of the bath cover, easily leading to hand scald caused by the steam when opening the cover.  |
| 3   | The upper cover of the instrument and the area around water bath are equipped with heat preservation system, which can not only save energy and preserve heat, but also can insulate against heat to avoid scalding the user. | The outer wall of the instrument is not equipped with heat preservation system, so it is easy to scald the operator and cannot save energy. |
| 4   | Mixing assembly is installed internally, thus with the mixing of the paddle, even water temperature during tests can be ensured.                                                                                              | With a magnetic circulating pump, the water bath easily gets blocked.                                                                       |

## » Specifications

|                          |                           |                                     |                  |
|--------------------------|---------------------------|-------------------------------------|------------------|
| Max. Temperature         | 93°C                      | Dimensions of Cube Specimen (W*D*H) | 50.8*50.8*50.8mm |
| Input Voltage            | AC100-110V 60Hz/220V 50Hz | Power                               | 3000W            |
| Outer Dimensions (W*D*H) | 46*54*59cm                | Mass                                | 37kg             |

## » Available Models



- For example, the model number NHSQ2017 refers to a thermostatic water bath which can run on 220V single phase power.

# **NHSJ** Thermostatic Water Bath

- Design of a sunken bath prevents outflow of the condensate water.
- A handle is installed at the side of the upper cover, preventing hands from hurting by the steam when users open the cover.
- With a large volume, this water bath enables user to cure test specimens' properties including compressive strength, bending strength and permeability as well as to cure sedimentation tubes.
- It can be operated either on the ground or on the working bench.
- It is designed to be compact and light in weight for easy movement.
- Surface of the instrument is made of stainless steel.



## » Features & Innovations

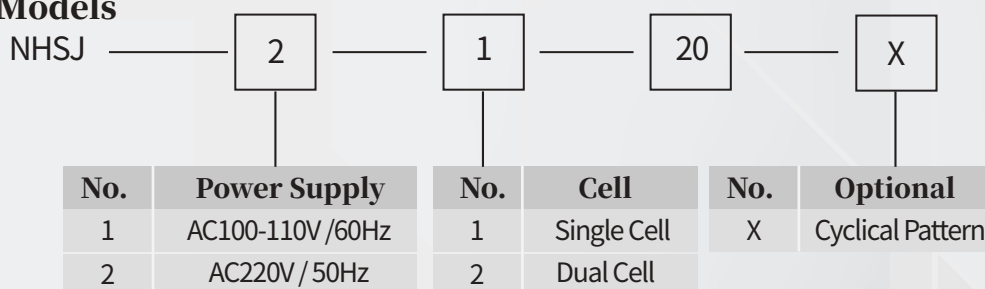
| No. | NHSJ Thermostatic Water Bath                                                                                                                                 | Conventional Thermostatic Water Bath                                                                                                       |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | The instrument adopts imported temperature controllers with high control accuracy and long service life.                                                     | It adopts ordinary temperature controllers with low control accuracy and poor durability.                                                  |
| 2   | A handle is installed at the right side of the bath cover. This user-friendly design avoids the user from being scalded by the steam when opening the cover. | A handle is installed at the center front side of the bath cover, easily leading to hand scald caused by the steam when opening the cover. |
| 3   | It is designed to be compact and light in weight for easy movement.                                                                                          | It is designed to be heavy and large in size, making it neither easy for users to move nor convenient for lab planning.                    |
| 4   | Surface of the instrument is all made of stainless steel, which is attractive and durable.                                                                   | Carbon steel material easily cracks and rusts after being used under high temperature for a long time.                                     |

## » Specifications

| NHSJ 2120 Thermostatic Water Bath (Single Cell) |             |                                     |                  |
|-------------------------------------------------|-------------|-------------------------------------|------------------|
| Max. Temperature                                | 93°C        | Dimensions of Cube Specimen (W*D*H) | 50.8*50.8*50.8mm |
| Inner Dimensions of Water Tank (W*D*H)          | 38*46*26cm  | Number of Cube Specimen             | 36               |
| Outer Dimensions (W*D*H)                        | 54*65*39cm  | Mass                                | 28kg             |
| Input Voltage                                   | AC220V 50Hz | Heater Power                        | 2000W            |

| NHSJ 2220 Thermostatic Water Bath (Dual Cell) |              |                                     |                  |
|-----------------------------------------------|--------------|-------------------------------------|------------------|
| Max. Temperature                              | 93°C         | Dimensions of Cube Specimen (W*D*H) | 50.8*50.8*50.8mm |
| Inner Dimensions of Water Tank (W*D*H)        | 38*46*26cm×2 | Number of Cube Specimen             | 72               |
| Outer Dimensions (W*D*H)                      | 111*65*39cm  | Mass                                | 56kg             |
| Input Voltage                                 | AC220V 50Hz  | Heater Power                        | 2000W×2          |

## » Available Models



- For example, the model number NHSJ2120 refers to a thermostatic water bath which can run on 220V single phase power.

# NDSQ Low Temperature Water Bath

- High-precision temperature controller from EURO THERM is used to control temperature more accurately.



- Detachable bath cover makes cleaning easier.
- A drain valve connected with a large diameter hose is installed at the lower part of the water tank, making it easier for users to change water used during a test and reducing the risk of blockages.
- The upper cover of the instrument and the surrounding of the water tank are equipped with heat preservation system, which can stabilize the temperature.
- The tank has a large capacity to hold 16 test specimens for curing simultaneously.
- Mixing assembly helps the bath to keep at an even water temperature, avoiding the issue of blocking the circulating pump which frequently found in a conventional water bath.



- Four leveling casters at the bottom of the bath allow users to level the instrument quickly and make it easier to move the water bath.



- Surface of this instrument is made of stainless steel.



### ► Detachable Bath Cover for Convenient Cleaning

By pulling the two embedded handles installed on the rear bath cover, users can take out the bath cover, motor, paddle and thermal resistance and then clean the interior of the water tank.



1.Remove hexagon socket head cap screws and take out specimen support.



3.By pulling the two embedded handles installed on the rear bath cover, users can remove the bath cover.



2.Turn and unplug the aviation connector. Then remove these two knobs.

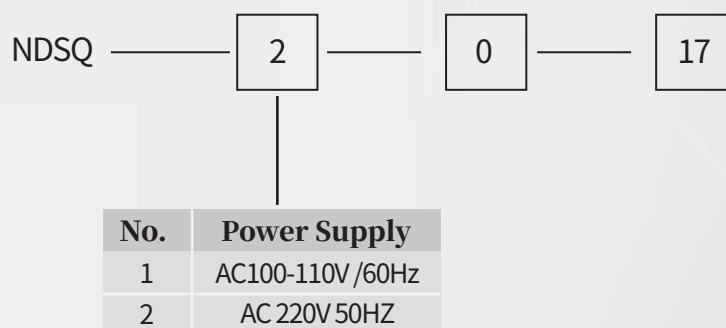


4.Water tank with cover removed.

### » Specifications

|                                 |                                   |                                |                  |
|---------------------------------|-----------------------------------|--------------------------------|------------------|
| Rated Voltage                   | AC 220V 50Hz /<br>AC100-110V 60Hz | Min. Temperature               | -10°C to Ambient |
| Dimensions (W*D*H)              | 67*83*86cm                        | Power                          | 300W             |
| Volume                          | 35 L                              | Mass                           | 140 kg           |
| Max. Number of<br>Cube Specimen | 16                                | Dimensions of<br>Cube Specimen | 50.8*50.8*50.8mm |

### » Available Models



- For instance, the model number NDSQ2017 refers to a low temperature water bath which can run on 220V power .

# **NHPQ** Circular Cement Expansion Mold

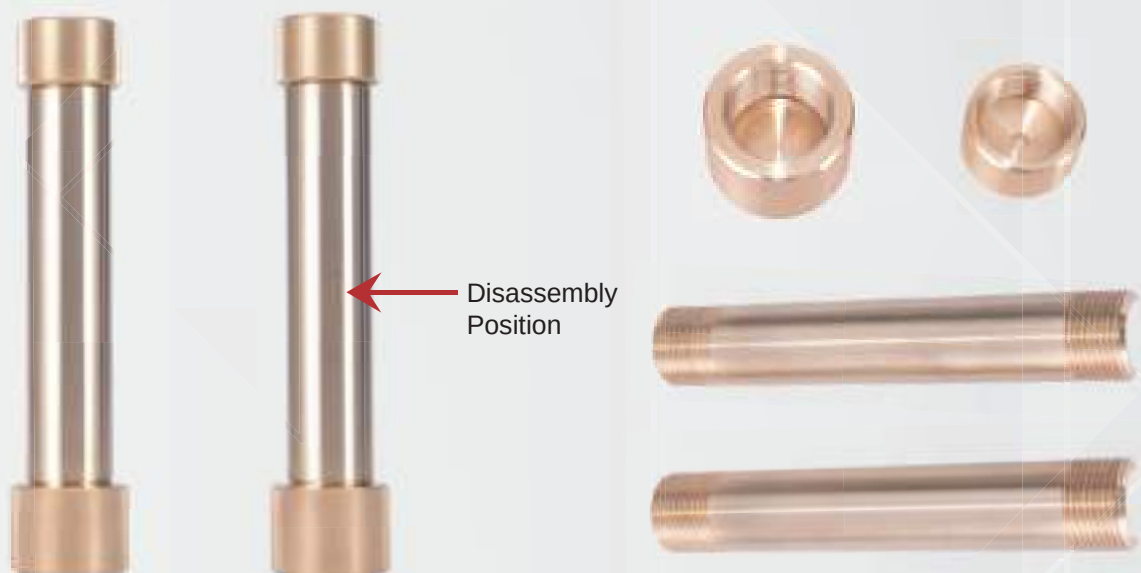
Model No.: NHPQ3020



- Made in conformance with standards of ISO 10426-5 and GB/T 33293 and designed to measure the shrinkage and expansion properties of oil well cement under atmospheric pressure.
- The entire mold is made of stainless steel, which is durable in use.
- The standard kit includes a micrometer and a micrometer stand, satisfying requirements on data measurement after tests.
- With good elasticity, the outer ring is able to resist permanent deformation with proper use.



# NCJQ Sedimentation Tube



- High machining precision ensures smooth and tight connection of the two halves and avoids slurry leakage.
- The tube is made of brass for fast heat conduction, enabling cement sample to get heated evenly.
- With the design of disassembly position, users can disassemble the tube with a screwdriver easily.
- Tube made of other materials and of other sizes are available on request to meet different requirements on tests.

## » Specifications

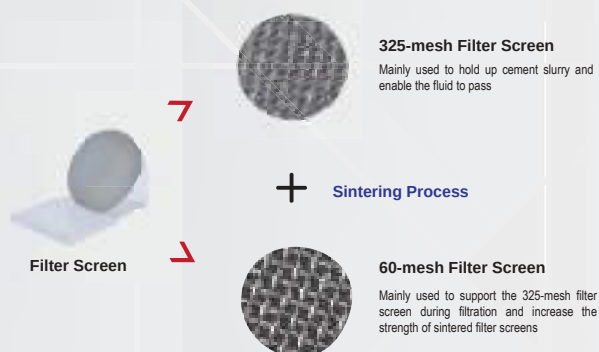
|            |            |                  |            |
|------------|------------|------------------|------------|
| Model No.  | NCJQ3020   | Inner Dimensions | Φ 25*200mm |
| Dimensions | Φ 45*210mm | Mass             | 1kg        |

# NJSJ HTHP Fluid Loss Cell

- Newly-designed fluid loss cylinder can avoid getting blocked frequently during fluid loss process and it is easy to clean.



- Quick-disconnect connector for high-pressure gas passage is used.
- With new technique, the filter screen is more durable.



- The instrument is equipped with a timer and an alarm; the alarm sound can be turned off easily.
- Surface of the instrument is made of stainless steel.



### ► Quick-disconnect Connector for High-pressure Gas Passage

The connector for high-pressure manifold and the connector for high-pressure gas passage are connected by a pin; users can connect these two connectors through three simple steps. Compared with threaded connections, this method makes the connection tighter and safer.



1.Preparation for connection. Connect and fasten the end cap, valve and connector for high-pressure gas passage.



2.Insert the connector for high-pressure gas passage into the connector for high-pressure manifold with no need to screw down them.

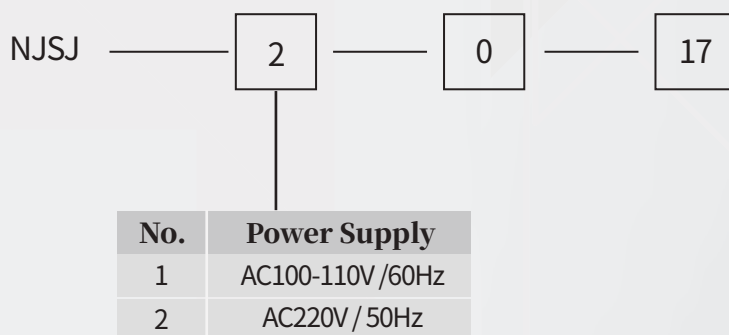


3.Insert the pin into the hole to complete the connection.

## » Specifications

|                    |                            |                       |        |
|--------------------|----------------------------|-----------------------|--------|
| Max. Temperature   | 260°C                      | Max. Working Pressure | 14MPa  |
| Input Voltage      | AC 100-110V 60Hz/220V 50Hz | Power                 | 1300W  |
| Dimensions (W*D*H) | 30*32*80cm                 | Mass                  | 36.5kg |
| Heater Power       | 1200W                      | Slurry Cup Volume     | 450ml  |

## » Available Models



- For instance, the model number NJSJ2017 refers to a HTHP fluid loss cell which can run on 220V single phase power.

# NFSQ HTHP Stirred Fluid Loss Cell

- Based on test temperature, the instrument can automatically adjust initial values of high pressure and low pressure to standard pressure range according to API standards and can ensure stable differential pressure; therefore, manual adjustment is unnecessary.
- The built-in oil-circulation cooling system can cool down the instrument at a faster speed, so there is no need to tap the instrument into a water source, improving operational simplicity.
- It uses a touch screen to display test data and curve graphs directly and clearly.
- Unique design of pressurization structure.
- The stirring structure is internally installed with a bearing and equipped with an electromagnetic lock for safe and easy operation.
- Newly-designed rotary sealing structure uses stainless-steel pipes to replace plastic hoses, making it more durable.
- It can raise alarms as per multiple preset parameters' value limits intelligently.
- Surface of the instrument is made of stainless steel.



## » Features & Innovations

| No. | NFSQ HTHP Stirred Fluid Loss Cell                                                                                                                                                                                      | Conventional HTHP Stirred Fluid Loss Cell                                                                                                                                         |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Based on test temperature, the instrument can automatically adjust initial values of high pressure and low pressure to standard pressure range according to API standards and can ensure stable differential pressure. | Users have to adjust the pressure manually, leading to low efficiency and poor accuracy.                                                                                          |
| 2   | Unique pressurization structure makes it unnecessary to use the hollow shaft of mixing paddle to pressurize the cell, so the paddle will not be damaged and the hollow shaft will not be blocked easily.               | Pressurize the cell through the hollow shaft of mixing paddle, making it easy to block the hollow shaft and damage the paddle.                                                    |
| 3   | Users may input test parameters through the touch screen directly.                                                                                                                                                     | Temperature controller is adopted to set parameters; it is complex to operate and error-prone.                                                                                    |
| 4   | Separated from the O-ring, the filter screen, which is made of two filter screens and integrated through sintering process, is damage-resistant and cost-saving with longer service life.                              | Two separate filter screens are welded together with the O-ring, making them easily damaged with shorter service life and higher cost.                                            |
| 5   | Unique rotary sealing structure and metal cooling pipes help to significantly prolong cooling pipes' service life.                                                                                                     | Rubber hose always ages easily, so it is unreliable.                                                                                                                              |
| 6   | The stirring structure is internally installed with a bearing and equipped with an electromagnetic lock, improving operational simplicity and safety.                                                                  | The stirring structure offers great resistance and users need to unlock the spring lock by drawing it outwards manually, so it is difficult and unsafe to operate the instrument. |
| 7   | With a built-in coil pipe made of stainless steel, the cast-aluminum chiller has higher efficiency of cooling and longer service life.                                                                                 | Copper cooling coil pipe is inefficient and the incrustation is easily formed to block up the pipe. Once the cooling coil pipe is damaged, it is troublesome to replace it.       |
| 8   | The built-in cooling oil tank and cooling pump make it unnecessary to tap the instrument into a water source, improving its efficiency and operational simplicity.                                                     | Users need to tap the instrument into a water source, so the water quality and pressure are uncontrollable, leading to poor cooling performance.                                  |
| 9   | A large-volume slurry cup helps to reduce the possibility of nitrogen blowing through, making test data more accurate and improving R&D efficiency.                                                                    | A small-volume slurry cup increases the possibility of nitrogen blowing through when the fluid loss volume is large, making test data inaccurate.                                 |
| 10  | Test parameters and curve graphs are displayed on the touch screen directly and clearly.                                                                                                                               | It is inconvenient to observe test data of temperature, pressure and time as they are displayed on three separate dials and no curve graph is available.                          |

## NITHONS » Observe Test Data



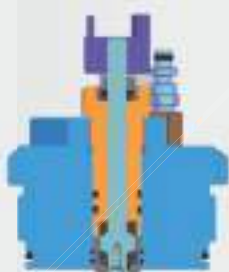
It's convenient to observe test data and curve graphs.

## NITHONS » Set Test Parameters

| Parameter Set |         |         |
|---------------|---------|---------|
| Parameter     | Value   | Confirm |
| Target temp.  | 0.0 °C  | SET     |
| Target time   | 0 min   | SET     |
| Low pressure  | 0.0 psi | SET     |
| High pressure | 0.0 psi | SET     |
| Cool temp.    | 0 °C    | SET     |

Users can set parameters through the touch screen instead of complicated buttons, making the operation simple and straightforward.

## NITHONS » Graphite Seals with Good Sealing Performance



With good sealing performance and long service life, graphite seals are used in the shaft coupling of cylinder cap for gas passage; therefore, users needn't disassemble and clean it frequently.

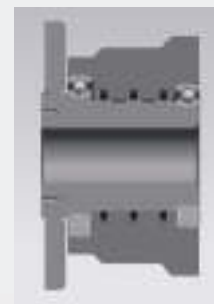
## NITHONS » Stirring Structure with a Bearing

The stirring structure is internally installed with a bearing and equipped with an electromagnetic lock to lock the stirring structure by one-button operation, improving operational simplicity and safety. Thanks to its considerate design, users can also unlock it manually in case of accidents.

## NITHONS » Cooling Pipes



**Rotary Sealing Structure**



**Vertical Section of Rotary Sealing Structure**

Rotary sealing structure enables cooling pipes to enter into the cast aluminum chiller built in a stirring mechanism through a rotary shaft. The chiller is installed internally with a steel pipe, which makes it more durable in use. Also, the unique oil-circulation cooling system shortens cool-down time and vastly increases its service life.



#### ► Regulate Pressure Automatically

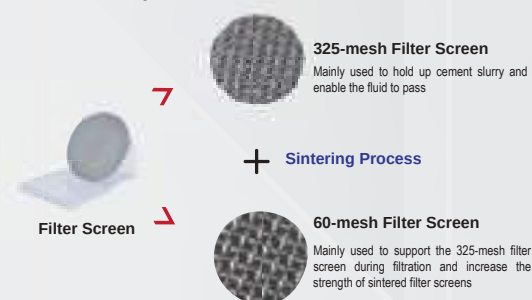
During a test, the instrument can regulate pressure to the target value automatically. Users can set target values of pressure through the touch screen. It's very easy and simple.

#### ► Set Multiple Value Limits of Parameters for Alarms

When using the instrument, users can set multiple test parameters' value limits for it to raise an alarm, parameters including temperature, time, etc. and users can set multiple alarm values for each test parameter as required by the test. Moreover, pre-alarm function is also available, making the instrument more useful.

#### ► Sintered Filter Screen

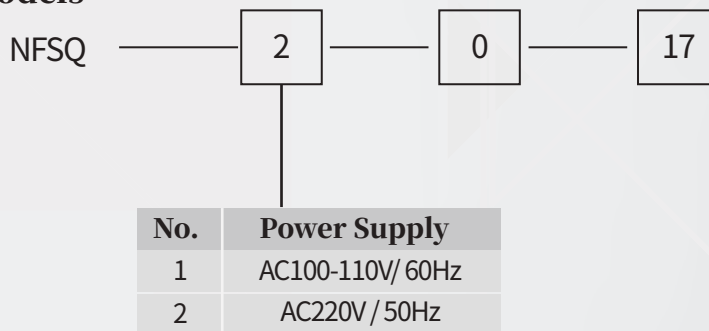
It is made of a 325-mesh filter screen and a 60-mesh filter screen through sintering process; the two filter screens are tightly integrated so there's no space for cement slurry to accumulate. Separated from the O-ring, the sintered filter screen is easy to clean and more cost-effective.



## » Specifications

|                    |                              |                       |         |
|--------------------|------------------------------|-----------------------|---------|
| Max. Temperature   | 260°C                        | Max. Working Pressure | 14MPa   |
| Input Voltage      | AC 100-110V 60Hz / 220V 50Hz | Input Power           | 2500W   |
| Stirring Speed     | 150±15rpm                    | Volume of Slurry Cup  | 450ml   |
| Dimensions (W*D*H) | 56*92*152cm                  | Mass                  | 180kg   |
| Heater Power       | 2000W                        | Nitrogen Pressure     | 7-14MPa |

## » Available Models



- For instance, the model number NFSQ2017 refers to a HTHP stirred fluid loss cell which can run on 220V single phase power.

# NDJQ Low Temperature Fluid Loss Cell

- This instrument can carry out fluid loss tests over a range of temperature from -10 °C to ambient temperature.
- Newly-designed fluid loss cell hardly gets blocked during fluid loss process and it is easy to clean.



- The instrument has a timer and an alarm; the alarm sound can be turned off easily.
- With new technique, the filter screen is more durable.



- With inner thermal insulation layer, the test cell is non-condensing.
- Quick-disconnect connector for high-pressure gas passage is used.
- Surface of the instrument is made of stainless steel



### ► Quick-disconnect Connector for High-pressure Gas Passage

The connector for high-pressure manifold and the connector for high-pressure gas passage are connected by a pin; users can connect these two connectors through three simple steps. Compared with threaded connections, this method makes the connection tighter and safer.



1.Preparation for connection. Connect and fasten the end cap, valve and connector for high-pressure gas passage.



2.Insert the connector for high-pressure gas passage into the connector for high-pressure manifold with no need to screw down them.



3.Insert the pin into the hole to complete the connection.

## » Specifications

|                    |                               |                       |        |
|--------------------|-------------------------------|-----------------------|--------|
| Test Temperature   | -10°C~Ambient                 | Max. Working Pressure | 14MPa  |
| Input Voltage      | AC100-110V 60Hz/<br>220V 50Hz | Power                 | 100W   |
| Dimensions (W*D*H) | 32*35*80cm                    | Mass                  | 36.5kg |

## » Available Models

NDJQ — [ 2 ] — [ 0 ] — [ 17 ]

| No. | Power Supply     |
|-----|------------------|
| 1   | AC100-110V /60Hz |
| 2   | AC220V / 50Hz    |

- For instance, the model number NDJQ2017 refers to a low temperature fluid loss cell which can run on 220V single phase power.

# Hummingbird Series

## **NXNQ** Rotational Viscometer

- Users may select different test modes flexibly (with easy switch between modes of automatic, manual and gel strength).
- In automatic mode, the instrument can measure the viscosity of cement slurry and record test data for different rotational speeds automatically in full accordance with API standards.
- Gel strength test can be completed by the instrument automatically.
- In manual mode, the instrument can satisfy users' specific requirements on the test.
- The outer cylinder can rotate automatically according to the standard requirements when the cup rises.
- The instrument can record and display test data on the touch screen automatically during the test.
- The instrument is equipped with LED lights for observing slurry level and test progress conveniently.
- The electrically operated lifting test platform can ascend or descend automatically.
- Surface of the instrument is made of stainless steel.



## » Features & Innovations

| No. | NXNQ Rotational Viscometer                                                                                                                                                                               | Conventional Rotational Viscometer                                                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | The touch screen makes it more convenient for users to view test data recorded on the screen and operate the instrument.                                                                                 | With a small screen (or even no screen) and complicated buttons, the conventional instrument provides poor user experience and is inconvenient for users to view test data. |
| 2   | Easy switch between automatic mode, manual mode and gel strength test mode satisfies various test requirements.                                                                                          | Users have to change rotational speed of the instrument manually.                                                                                                           |
| 3   | Smart calibration system saves users from frequent adjustment of the spring as long as the spring is fairly linear.                                                                                      | Frequent adjustment of the spring will be a must once the reading is inaccurate, which is inefficient and unreliable.                                                       |
| 4   | The platform can ascend and descend automatically and the function of fine adjustment can be used to place the slurry level to a desired position, making the instrument user-friendly and labor-saving. | Manual adjustment makes it troublesome to operate the instrument.                                                                                                           |
| 5   | Based on test requirements, the instrument can calculate related test data by performing regression analysis or using the two point method after the test is completed.                                  | Users have to calculate test data manually, wasting time and energy.                                                                                                        |
| 6   | With a USB port, the screenshots of test results can be saved for statistics.                                                                                                                            | The test results can only be saved through taking notes or photos, which is easy to lose.                                                                                   |
| 7   | With an Ethernet port, the instrument can get connected to computer software to record test data and realize remote upgrade.                                                                             | With no Ethernet port, the instrument is unable to get connected to computer software or realize remote upgrade.                                                            |

### Conduct Gel Strength Test

NITHONS » Automatically

| RPM | Ramp-up | Ramp-down | Value | Average |
|-----|---------|-----------|-------|---------|
| 1   | 0.5     | 1.0       | 0.50  | 0.7     |
| 2   | 1.0     | 1.7       | 0.58  | 1.3     |
| 3   | 1.9     | 3.4       | 0.79  | 2.1     |
| 6   | 3.9     | 3.9       | 1.00  | 3.9     |
| 10  | 6.4     | 6.5       | 1.01  | 6.3     |
| 20  | 12.5    | 12.6      | 0.99  | 12.5    |
| 30  | 16.8    | 18.9      | 0.99  | 18.8    |
| 60  | 37.7    | 38.3      | 0.98  | 38.0    |
| 100 | 63.3    | 63.8      | 0.99  | 63.5    |
| 200 | 125.4   | 125.0     | 0.99  | 125.7   |
| 300 | 188.4   | 188.6     | 0.99  | 188.5   |
| 600 | 368.0   |           |       |         |

Users can use the instrument to conduct the gel strength test. Once one of the buttons indicated with "GEL" on the home screen is tapped, the instrument will be going to complete a gel strength test and record data automatically. It is very easy to operate.

### Manual Operation—To Satisfy

NITHONS » Specific Test Requirements

| RPM | Reading | RPM | Reading |
|-----|---------|-----|---------|
| 1   | 0.5     |     |         |
| 5   | 1.5     |     |         |
| 10  | 6.3     |     |         |
| 100 | 63.0    |     |         |
| 300 | 187.3   |     |         |
| 600 | 365.9   |     |         |

There are 12 different rotational speeds. Users only need to tap speed buttons shown on the screen according to test requirements, and then test data will be recorded automatically. It's simple and applicable for special test requirements.

## NITHONS » Conduct Tests in Accordance with API Standards and Record Data Automatically

Stability: GEL 6 SPEEDS

| RPM      | Range-up | Range-down | Ratio | Average |
|----------|----------|------------|-------|---------|
| 3        | 3.7      | 3.7        | 0.00  | 0.00    |
| 6        | 3.1      | 3.7        | 0.00  | 0.00    |
| 100      | 60.2     | 60.2       | 1.00  | 60.00   |
| 200      | 118.4    | 118.4      | 1.01  | 118.00  |
| 300      | 171.5    | 168.4      | 1.01  | 168.40  |
| 600      | 341.1    |            |       |         |
| GELATORS |          | GELATORS   |       |         |

The instrument can automatically measure viscosity of slurry in strict accordance with API standards, calculate ratio and average reading, and record and display related data on the touch screen. Therefore, changing rotational speeds and recording test data manually will be unnecessary. All in all, this fully automated instrument achieves operational simplicity.

## NITHONS » Various Options for Test Modes and Rotation Speeds



The instrument can run in three test modes, including automatic mode, manual mode and gel strength test mode. Users can switch test modes flexibly by tapping corresponding buttons based on test requirements. The instrument also adopts automatic programs which can provide three speed options, including 6 speeds, 7 speeds and 12 speeds. More options, more convenience. Other speed options are also customizable.

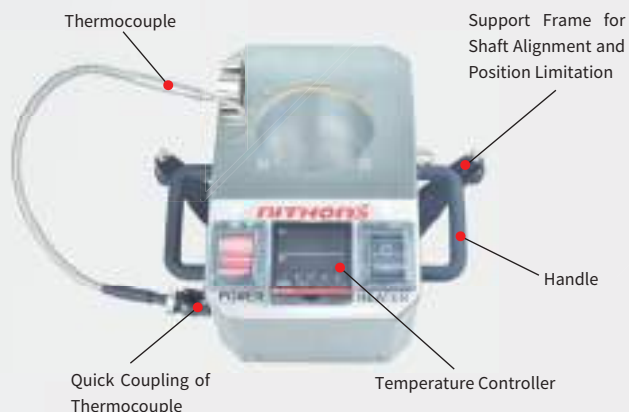
## NITHONS » Regression Analysis and Two Point Method



The instrument can calculate data using regression analysis or the two point method. In automatic mode or gel strength test mode, after the test is completed and test data is recorded automatically, tap Regression button or Two Point button, and then the calculated test data will be shown automatically. The function is useful for analyzing data and saving time.

## NITHONS » Heater (Part No.: PXN005, Optional)

The heater (Part No.: PXN005) is designed to be used together with this rotational viscometer. It measures temperature by a thermocouple, making data more accurate; the digital display makes it easier to observe test temperature; the thermocouple is connected by quick connectors for easier cleaning and maintenance of the instrument; the temperature controller is used to control temperature, ensuring the accuracy of test; the considerate design of handles improves its safety and practicality.





**NITHONS** » Automatic Lift Test Platform Increases Operational Simplicity

**► LED Lights**

LED lights over the test platform are convenient for users to observe test progress and to keep slurry level aligned with the scribed line on the rotor.

**► Automatic Lifting Test Platform**

The test platform can ascend and descend automatically once the switch is pulled. By virtue of in-built sensors, the test platform can stop at specific positions. Thanks to its considerate program design, the instrument has fine adjustment function. It's very easy to use the platform.


**» Specifications**

|                            |                                        |                   |       |
|----------------------------|----------------------------------------|-------------------|-------|
| Max. Temperature of Sample | 93°C                                   | Sample Cup Volume | 350ml |
| Input Voltage              | Applicable for AC100-230V              | Input Power       | 200W  |
| Dimensions (W*D*H)         | 21*35*53cm                             | Mass              | 25kg  |
| Shear Rate                 | 1.7-1022s <sup>-1</sup>                | Max. Reading      | 430   |
| Rotation Speed             | 1、2、3、6、10、20、30、60、100、200、300、600rpm |                   |       |

**» Available Models**

NXNQ0020

- NXNQ0020 rotational viscometer can run on both AC100-110V and AC220V power supply.

# Hummingbird Series

## **NXNJ** Rotational Viscometer

- Users may select different test modes flexibly (with easy switch between modes of automatic, manual and gel strength).
- In automatic mode, the instrument can measure the viscosity of cement slurry and record test data for different rotational speeds automatically in full accordance with API standards.
- Gel strength test can be completed by the instrument automatically.
- In manual mode, the instrument can satisfy users' specific requirements on the test.
- The outer cylinder can rotate automatically according to the standard requirements when the cup rises.
- The instrument can record and display test data on the touch screen automatically during the test.
- Surface of the instrument is made of stainless steel.
- USB port and Ethernet port are available, thus it can be connected to computer software.



## » Features & Innovations

| No. | NXNJ Rotational Viscometer                                                                                                                                              | Conventional Rotational Viscometer                                                                                                                                          |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | The touch screen makes it more convenient for users to view test data recorded on the screen and operate the instrument.                                                | With a small screen (or even no screen) and complicated buttons, the conventional instrument provides poor user experience and is inconvenient for users to view test data. |
| 2   | With a USB port, the screenshots of test results can be saved for statistics.                                                                                           | The test results can only be saved through taking notes or photos, which is easy to lose.                                                                                   |
| 3   | With an Ethernet port, the instrument can get connected to computer software to record test data and realize remote upgrade.                                            | With no Ethernet port, the instrument is unable to get connected to computer software or realize remote upgrade.                                                            |
| 4   | Smart calibration system saves users from frequent adjustment of the spring as long as the spring is fairly linear.                                                     | Frequent adjustment of the spring will be a must once the reading is inaccurate, which is inefficient and unreliable.                                                       |
| 5   | Based on test requirements, the instrument can calculate related test data by performing regression analysis or using the two point method after the test is completed. | Users have to calculate test data manually, wasting time and energy.                                                                                                        |
| 6   | Easy switch between automatic mode, manual mode and gel strength test mode satisfies various test requirements.                                                         | Users have to change rotation speed of the instrument manually.                                                                                                             |

### Conduct Gel Strength Test Automatically

Completed GEL 12 SPEEDS Completed Time: 00:00

| RPM | Start-up | Stop-down | Ratio | Average |
|-----|----------|-----------|-------|---------|
| 1   | 0.5      | 1.0       | 0.50  | 0.7     |
| 2   | 1.0      | 1.7       | 0.58  | 1.3     |
| 3   | 1.9      | 3.4       | 0.79  | 2.1     |
| 6   | 3.9      | 3.9       | 1.00  | 3.9     |
| 10  | 6.4      | 6.3       | 1.01  | 6.3     |
| 20  | 12.5     | 12.6      | 0.99  | 12.5    |
| 30  | 18.8     | 18.9      | 0.99  | 18.8    |
| 60  | 37.7     | 38.3      | 0.98  | 38.1    |
| 100 | 63.3     | 63.8      | 0.99  | 63.5    |
| 200 | 125.4    | 126.0     | 0.99  | 125.7   |
| 300 | 188.4    | 188.6     | 0.99  | 188.5   |
| 600 | 308.0    |           |       |         |

100 Starting 3.1 100 Stopping 1.9 Time 00:00:00 100 Starting 1.1 100 Stopping 1.8 Time 00:00:00

Users can use the instrument to conduct the gel strength test. Once one of the buttons indicated with "GEL" on the home screen is tapped, the instrument will be going to complete a gel strength test and record data automatically. It is very easy to operate.

### Manual Operation—To Satisfy Specific Test Requirements

Manual Time: 00:01:00 Completed

| RPM | Starting | RPM | Starting |
|-----|----------|-----|----------|
| 1   | 0.5      |     |          |
| 3   | 1.6      |     |          |
| 10  | 6.3      |     |          |
| 100 | 63.0     |     |          |
| 300 | 187.3    |     |          |
| 600 | 366.9    |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |
|     |          |     |          |

RPM Options

1 3 10 30 100 300 600 1000

There are 12 different rotational speeds. Users only need to tap speed buttons shown on the screen according to test requirements, and then test data will be recorded automatically. It's simple and applicable for special test requirements.

## NITHONS

### » Conduct Tests in Accordance with API Standards and Record Data Automatically

Standby AUTO 6 SPEEDS

| RPM | Temp (°C) | Temp (°F) | Ratio | Average |
|-----|-----------|-----------|-------|---------|
| 3   | 54.5      | 130.1     | 0.73  | 7.1     |
| 6   | 10.1      | 50.2      | 0.74  | 11.9    |
| 100 | 54.1      | 129.4     | 1.31  | 94.4    |
| 200 | 146.7     | 306.1     | 1.00  | 146.5   |
| 300 | 191.1     | 396.0     | 1.00  | 191.1   |
| 400 | 206.1     | 403.0     |       |         |

Cancel Home Stop

The instrument can automatically measure viscosity of slurry in strict accordance with API standards, calculate ratio and average reading, and record and display related data on the touch screen. Therefore, changing rotational speeds and recording test data manually will be unnecessary. All in all, this fully automated instrument achieves operational simplicity.

## NITHONS

### » Various Options for Test Modes and Rotation Speeds



The instrument can run in three test modes, including automatic mode, manual mode and gel strength test mode. Users can switch test modes flexibly by tapping corresponding buttons based on test requirements. The instrument also adopts automatic programs which can provide three speed options, including 6 speeds, 7 speeds and 12 speeds. More options, more convenience. Other speed options are also customizable.

## NITHONS

### » Regression Analysis and Two Point Method



The instrument can calculate data using regression analysis or the two point method. In automatic mode or gel strength test mode, after the test is completed and test data is recorded automatically, tap Regression button or Two Point button, and then the calculated test data will be shown automatically. The function is useful for analyzing data and saving time.

## NITHONS

### » Heater (Part No.: PXN011, Optional)

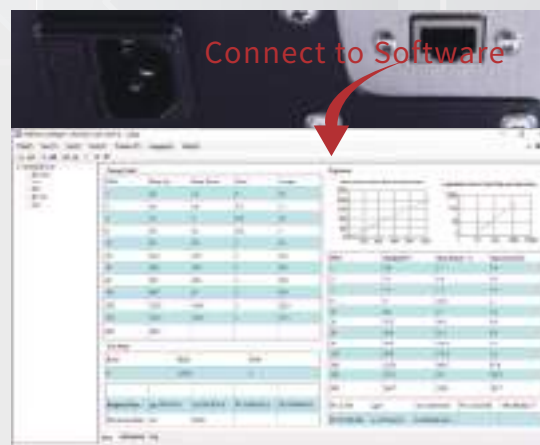
The heater (Part No.: PXN011) is designed to be used together with this rotational viscometer. It measures temperature by a thermometer, and users can easily read the temperature with its pointer. The thermometer is connected by a plug connector for easier cleaning and maintenance of the instrument. Temperature controller is used to control temperature, ensuring test accuracy.



NITHONS

» Data Export – Output through USB Port or  
Recorded by Software through Ethernet Port

With a USB port, the screenshots of test results can be saved for statistics.



With an Ethernet port, the instrument can get connected to computer software to record test data and realize remote upgrade.

## » Specifications

|                            |                                        |                   |       |
|----------------------------|----------------------------------------|-------------------|-------|
| Max. Temperature of Sample | 93°C                                   | Sample Cup Volume | 350ml |
| Input Voltage              | Applicable for AC100-230V              | Input Power       | 200W  |
| Dimensions (W*D*H)         | 23*33*49cm                             | Mass              | 9kg   |
| Shear Rate                 | 1.7-1022s <sup>-1</sup>                | Max. Reading      | 430   |
| Rotation Speed             | 1、2、3、6、10、20、30、60、100、200、300、600rpm |                   |       |

## » Available Models

NXNJ0020

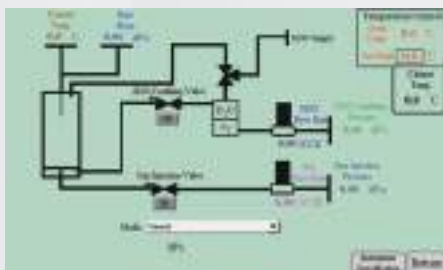
- NXNJ0020 rotational viscometer can run on AC100-230V power supply.

# NFQQ Gas Migration Tester

- The instrument adopts a large-size touch screen through which the test data and curve graphs can be displayed and recorded directly and clearly.



- Users can test the resistance performance on gas invasion or gas flow of the cement slurry formulation set as per test conditions.
- Easy and safe to operate with max working temperature up to 163 °C.
- This instrument can raise an alarm for malfunction and upon test completion.
- Users can set parameters through the touch screen instead of complicated buttons, making the operation simple and straightforward.





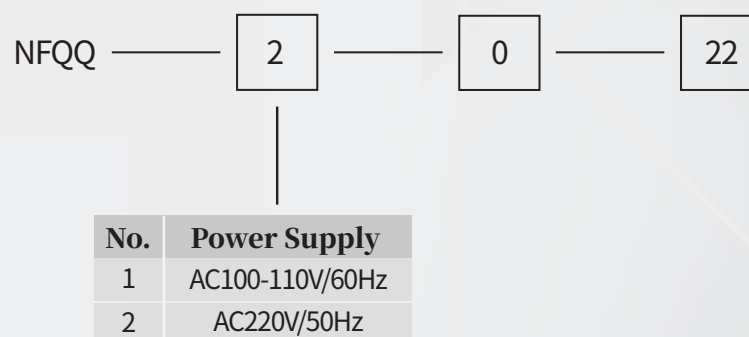
## » Features & Innovations

| No. | NFQQ Gas Migration Tester                                                                                | Conventional Gas Migration Tester                                                                                   |
|-----|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1   | Users can set parameters through the touch screen directly.                                              | Setting parameters through a temperature controller is complicated and error-prone.                                 |
| 2   | A touch screen is used to display test data and curve graphs.                                            | It is inconvenient to observe test data of temperature and consistency as they are displayed by two separate dials. |
| 3   | Precision pressure transducer ensures more accurate data.                                                | An ordinary pressure transducer may not test data accurately.                                                       |
| 4   | New design helps to avoid pipe blockages and makes cleaning easier after test.                           | Pipes get blocked easily, bringing inconvenience for cleaning.                                                      |
| 5   | This instrument can raise an alarm for malfunction and upon test completion.                             | Problems occurred during a test cannot be solved timely with no alarm.                                              |
| 6   | The instrument has an Ethernet port used to connect to a computer for data recording and remote upgrade. | No Ethernet port available.                                                                                         |

## » Specifications

|                       |                            |                                      |                      |
|-----------------------|----------------------------|--------------------------------------|----------------------|
| Max. Temperature      | 163°C                      | Max. Pressure                        | 6.9MPa               |
| Input Voltage         | AC 100-110V 60Hz/220V 50Hz | Input Power                          | 3500W                |
| Water Supply Pressure | 0.2-0.5MPa                 | Connector Size of Cooling Water Pipe | Inner Diameter: 10mm |
| Dimensions (W*D*H)    | 114*57*94mm                | Mass                                 | 145kg                |

## » Available Models



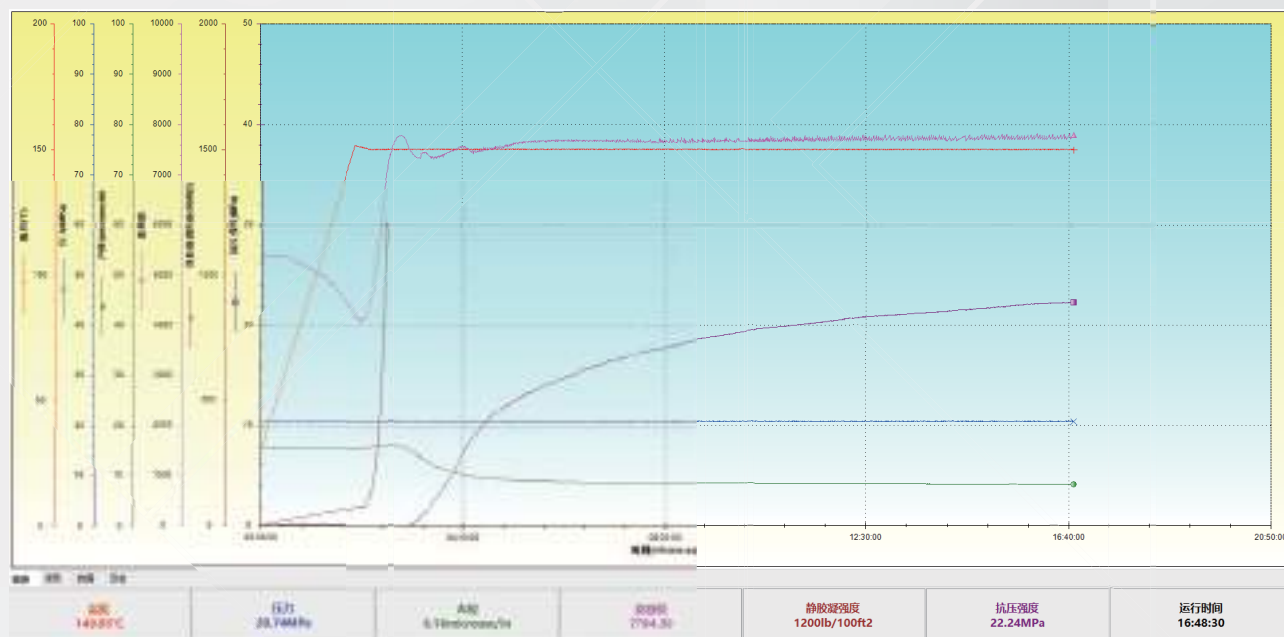
- For instance, the model number NFQQ2022 refers to a gas migration tester which can run on 220V power.

# Ultrasonic Series

## **NCKQ** Ultrasonic Static GelStrength Analyzer

- This instrument can perform nondestructive testing on compressive strength of cement specimen.
- Dual pump design can achieve full range of automatic pressure control and meet the requirements of automatic pressure control more than 69MPa.
- Test cell is made of high strength stainless steel which is also high temperature resistant.
- Parameters includes temperature, pressure, compressive strength, etc. are displayed in real time and curve graphs can be generated accordingly.
- Proportional valve is used to control the instrument's pressure, which is durable and reliable in use.
- It adopts protection mechanism for over temperature and over pressure.
- The set cement block can be removed by the equipped cement removal device.

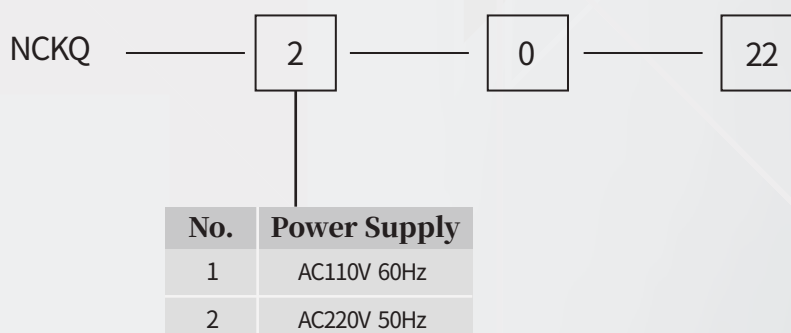




## » Specifications

|                     |                       |                     |            |
|---------------------|-----------------------|---------------------|------------|
| Working Temperature | 204°C                 | Working Pressure    | 138MPa     |
| Input Voltage       | AC220V 50Hz/110V 60Hz | Heater Power        | 2000W      |
| Input Power         | 2100W                 | Air Supply Pressure | 0.4-0.7MPa |
| Dimensions (W*D*H)  | 50*70*100cm           | Mass                | 150kg      |

## » Available Models



- For instance, the model number NCKQ2022 refers to an ultrasonic cement analyzer which can run on 220V power.

# **NSTJ3022** Permeability Tester

- Operates with a nitrogen source; no electricity required.
- Simple overall structure, compact and portable.
- Comes with dedicated curing molds.
- Pressure testing components are made of high-strength stainless steel, ensuring excellent sealing performance.
- Equipped with a 0.25-grade high-precision pressure gauge.
- Features dual high-precision flowmeters with a wide testing range.
- The nitrogen dryer is integrated into the instrument, providing convenient operation, clear functionality, and easy replacement.
- Adjustable leveling feet paired with a spirit level ensure enhanced measurement accuracy.
- Supplied with calibration blocks, allowing calibration of the annular pressure pipeline, upstream gas line, and downstream gas line in accordance with the SY/T6810 standard.



## » Permeability Testing Mechanism



## » Special Curing Mold



## » Technical Parameters

| NSTJ3022 Permeability Tester |            |                    |             |
|------------------------------|------------|--------------------|-------------|
| Working Pressure             | 1Mpa       | Permeability Range | 0.01mD - 1D |
| External Dimensions (W*D*H)  | 43*36*63cm | Pressure Source    | Nitrogen    |

# Instruments Used for Tests below Ambient Temperature

Instruments with operating temperature range extended to below ambient include



**NZCQ 2120** HTHP Consistometer  
(Ultimate Version with Single Cell)



**NZCQ 2220** HTHP Consistometer  
(Ultimate Version with Dual Cell)



**NZCJ 2120** HTHP Consistometer  
(Standard Version with Single Cell)



**NZCJ 2220** HTHP Consistometer  
(Ultimate Version with Dual Cell)



**NZYQ 2122** HTHP Curing Chamber  
(Ultimate Version with Single Cell)



**NZYQ 2222** HTHP Curing Chamber  
(Ultimate Version with Dual Cell)





**NCCQ** Atmospheric Consistometer

The above-listed instruments, with original technical parameters, functions and features remained, can conduct tests below ambient temperature with connection to an external chiller.

Instruments Specially Designed for Tests below Ambient



**NDJQ** Low Temperature Fluid Loss Cell

Low temperature fluid loss cell can conduct tests below ambient temperature with connection to an external chiller.



**NDSQ** Low Temperature Water Bath

With a built-in chiller, the water bath can cure cement specimens below ambient temperature.

# Dragon Boat Series

## **NYDQ** Mobile Laboratory



- It's very easy to place this laboratory on site and move it. The living room is optional, which is useful for 24-hour operations.
- Users can select different testing devices and instruments to meet different test demands.
- There are two standard products: 20-foot laboratory (6058\*2438\*2591mm) and 40-foot laboratory (12192\*2438\*2591mm). Custom dimensions are also available.
- High-strength structural steel and thicker thermal insulation layer make it more suitable for harsh climate.
- Facilities such as ventilating system, emergency facilities and firefighting equipment are installed inside in it.

## ■ Optional Instruments



## ■ Interior Layout



## » Specifications

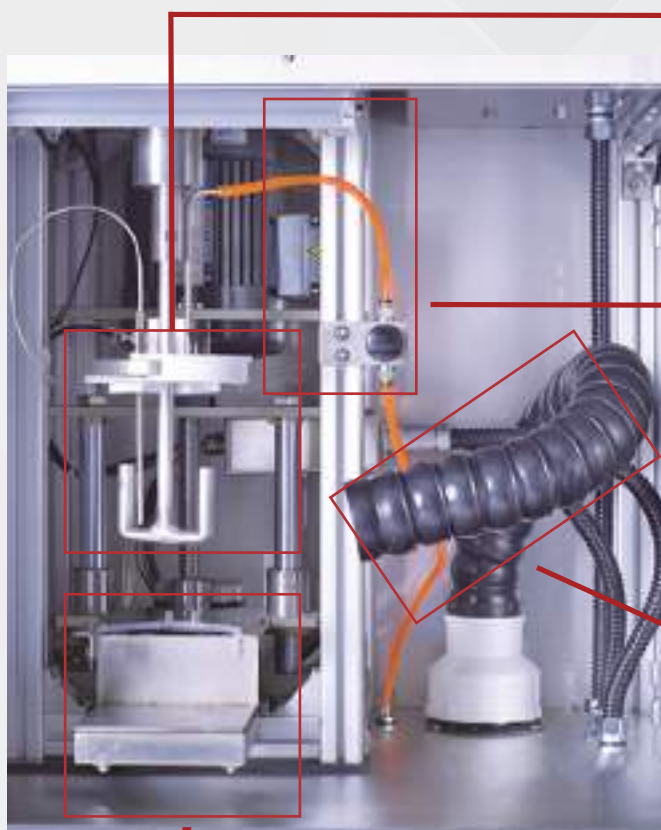
|               |                                                                 |                    |      |
|---------------|-----------------------------------------------------------------|--------------------|------|
| Input Voltage | AC380V                                                          | Input Power        | 30kW |
| Dimensions    | 20ft or 40ft<br>(Custom Dimensions are<br>Available on Request) | Max. Load Capacity | 10t  |
|               |                                                                 | Mass               | 5.5t |

# NHCQ Synthetic Testing Device

- Large-size touch screen is adopted to display and record test date in real time and allow easier parameter settings.
- This instrument has functions of heating, cooling and mixing. It is also equipped with a lifting platform and able to exhaust air via inletting of Nitrogen, etc.
- An intelligent sensor is used to detect whether the beaker is placed firmly or not.
- A beaker is used as the test container for easy observation and easy cleaning, which is also economical with easy availability.
- Users can set alarms for multiple parameters' value limits as needed.
- With an observation window, users can observe test condition conveniently
- Safe test situation is ensured with the design of an air outlet which can be connected to an external air exhaust system.
- High-quality components: SIEMENS PLC and switches from NKK SWITCHES.
- Surface of the instrument is made of stainless steel, increasing attractiveness and durability.



## ■ Operation Area



### NITHONS » Mixing Function

This instrument possesses the function of mixing and its speed can be set as needed.

### NITHONS » Function of Air Exhaust via Inletting of Nitrogen (Optional)

This instrument is able to exhaust air via inletting of Nitrogen, which means Nitrogen can be channeled to the beaker and thus air is exhausted, providing an oxygen-free test environment for users.

### NITHONS » Cooling Function

Air Cooling Function— Centrifugal Fan  
Ice Cooling Function— Wind of the centrifugal fan passes through the pipeline of ice water, accelerating the cooling rate (Optional).

*Instrument with either function can be ordered as required by the test.*

### NITHONS » Heating Function

Lifting platform is internally installed with a heating panel to heat the beaker.

### NITHONS » Lifting Platform

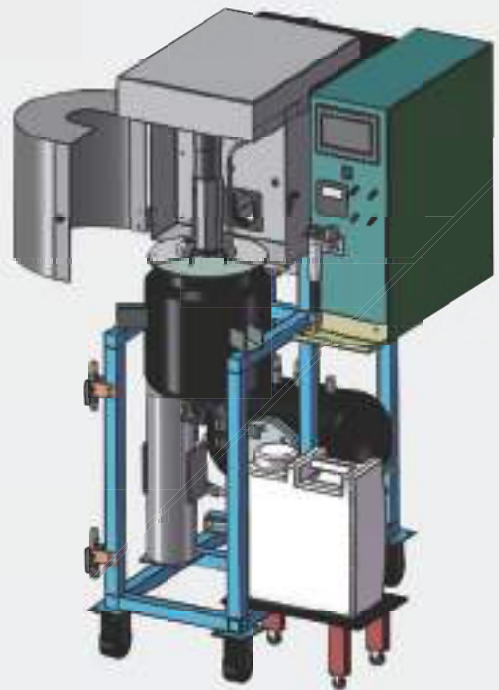
Lifting speed can be set as needed. A built-in sensor enables the platform to stop automatically when the beaker reaches the top.

## » Specifications

|                    |             |                  |                               |
|--------------------|-------------|------------------|-------------------------------|
| Speed Range        | 150-300rpm  | Beaker Volume    | Standard: 1L Optional: 2L, 3L |
| Input Voltage      | On Request  | Input Power      | 2000W                         |
| Dimensions (W*D*H) | 70*63*170cm | Mass             | 220kg                         |
| Heater Power       | 1000W       | Max. Temperature | 93°C                          |

# **NHCD** Synthetic Testing Device

- Touch screen is adopted to display and record test data in real time and allow easier parameter settings.
- Functions including heating, cooling, mixing and air exhaust via inletting of Nitrogen, etc. are available.
- Users can set alarms for multiple parameters' value limits as needed.
- With an observation window, users can observe test condition conveniently.
- Safe test situation is ensured with the design of an air outlet which can be connected to an external air exhaust system.
- High-quality components: SIEMENS PLC and switches from NKK SWITCHES
- Surface of the instrument is made of stainless steel, increasing attractiveness and durability.





## ■ Operation Area

### ► Operation through Touch Screen

With the design of touch screen, it is not only possible for users to observe test data directly and clearly, but also allows them to set parameters through the screen directly and look up the instruction manual through tapping MENU button, increasing operational simplicity.



### ► Set Alarms for Multiple Parameters' Value Limits as Needed

Users can set alarms for multiple parameters' value limits as needed, parameters including test temperature, test period, etc. Pre-alarm is also possible for a timely test operation.

### ► PH Meter

A PH meter is equipped for users to observe test materials and PH value conveniently.



### ► Air Outlet Interface

An air outlet interface is reserved for the connection to an air exhaust system so as to exhaust waste gas produced during tests, ensuring a safe and healthy test condition.

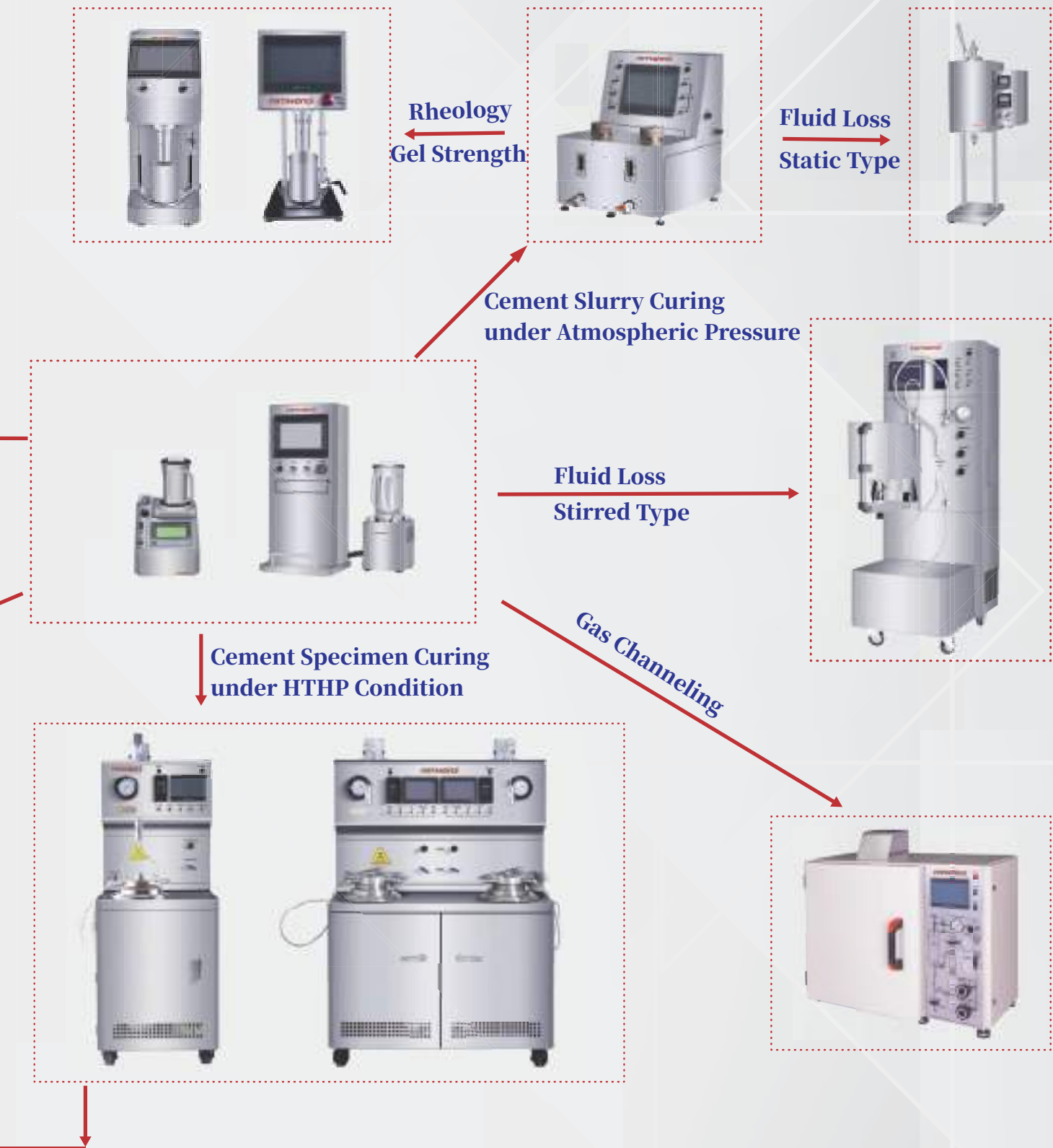
## » Specifications

|                    |              |                  |        |
|--------------------|--------------|------------------|--------|
| Speed Range        | 150-300rpm   | Cylinder Volume  | 15L(※) |
| Input Voltage      | On Request   | Max. Temperature | 93°C   |
| Dimensions (W*D*H) | 105*89*175cm | Heater Power     | 6000W  |

※ A cylinder with a volume of 30L is available on request.

# RELATION GRAPH OF OILFIELD TESTING INSTRUMENTS





# Model Selection Table

| Page | Instrument                                           | Version     |          | Power Supply                     |           |
|------|------------------------------------------------------|-------------|----------|----------------------------------|-----------|
|      |                                                      |             |          | 100-110V/60Hz                    | 220V/50Hz |
| 1    | Deep Sea Series<br>HTHP Consistometer                | Single Cell | Ultimate | NZCQ1120                         | NZCQ2120  |
|      |                                                      | Dual Cell   |          | NZCQ1220                         | NZCQ2220  |
| 5    |                                                      | Single Cell | Standard | NZCJ1120                         | NZCJ2120  |
|      |                                                      | Dual Cell   |          | NZCJ1220                         | NZCJ2220  |
| 9    | Compact Cannon Series<br>Portable HTHP Consistometer | Ultimate    |          | NBCQ1120                         | NBCQ2120  |
| 13   | High Temperature Potentiometer                       | /           |          | PZC047                           |           |
| 15   | Cement Removal Device                                | /           |          | PZC137                           |           |
| 17   | Flaming Mountains Series<br>HTHP Curing Chamber      | Single Cell | Ultimate | NZYQ1122                         | NZYQ2122  |
|      |                                                      | Dual Cell   |          | NZYQ1222                         | NZYQ2222  |
| 21   | Cement Specimen Curing Molds                         | /           |          | /                                |           |
| 23   | TwinStar Series<br>Atmospheric Consistometer         | Ultimate    |          | NCCQ1220                         | NCCQ2220  |
| 27   | Tornado Series<br>Constant Speed Mixer               | Ultimate    |          | NHJQ1017                         | NHJQ2017  |
|      |                                                      | Standard    |          | NHJJ1017                         | NHJJ2017  |
| 35   | Hercules Series<br>Compressive Strength Tester       | Ultimate    |          | NYSQ1020                         | NYSQ2020  |
| 39   | Thermostatic Water Bath                              | Ultimate    |          | NHSQ1017                         | NHSQ2017  |
|      |                                                      | Single Cell | Standard | NHSJ1120                         | NHSJ2120  |
|      |                                                      | Dual Cell   |          | NHSJ1220                         | NHSJ2220  |
| 43   | Low Temperature Water Bath                           | Ultimate    |          | NDSQ1017                         | NDSQ2017  |
| 45   | Circular Cement Expansion Mold                       | /           |          | NHPQ3020                         |           |
| 46   | Sedimentation Tube                                   | /           |          | NCJQ3020                         |           |
| 47   | HTHP Fluid Loss Cell                                 | Standard    |          | NJSJ1017                         | NJSJ2017  |
| 49   | HTHP Stirred Fluid Loss Cell                         | Ultimate    |          | NFSQ1017                         | NFSQ2017  |
| 53   | Low Temperature Fluid Loss Cell                      | Ultimate    |          | NDJQ1017                         | NDJQ2017  |
| 55   | Hummingbird Series<br>Rotational Viscometer          | Ultimate    |          | NXNQ0020 (Power Supply 100-230V) |           |
|      |                                                      | Standard    |          | NXNJ0020 (Power Supply 100-230V) |           |

| Page | Instrument                                                | Version  | Power Supply                 |           |
|------|-----------------------------------------------------------|----------|------------------------------|-----------|
|      |                                                           |          | 100-110V/60Hz                | 220V/50Hz |
| 63   | Gas Migration Tester                                      | Ultimate | NFQQ1022                     | NFQQ2022  |
| 65   | Ultrasonic Series ultrasonic static gel strength analyzer | Ultimate | NCKQ1022                     | NCKQ2022  |
| 67   | Permeability Tester                                       | Ultimate | NSTJ3022                     |           |
| 69   | Instruments Used for Tests below Ambient Temperature      | /        | /                            |           |
| 71   | Dragon Boat Series Mobile Laboratory                      | Ultimate | NYDQ2017 (Power Supply 380V) |           |
| 73   | Synthetic Testing Device                                  | Ultimate | NHCQ220503HT                 |           |
| 75   | Synthetic Testing Device                                  | /        | NHCD22050T                   |           |
| 77   | Relation Graph of Oilfield Testing Instruments            | /        | /                            |           |

***NITHONS***

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