
HYTORC VIETNAM

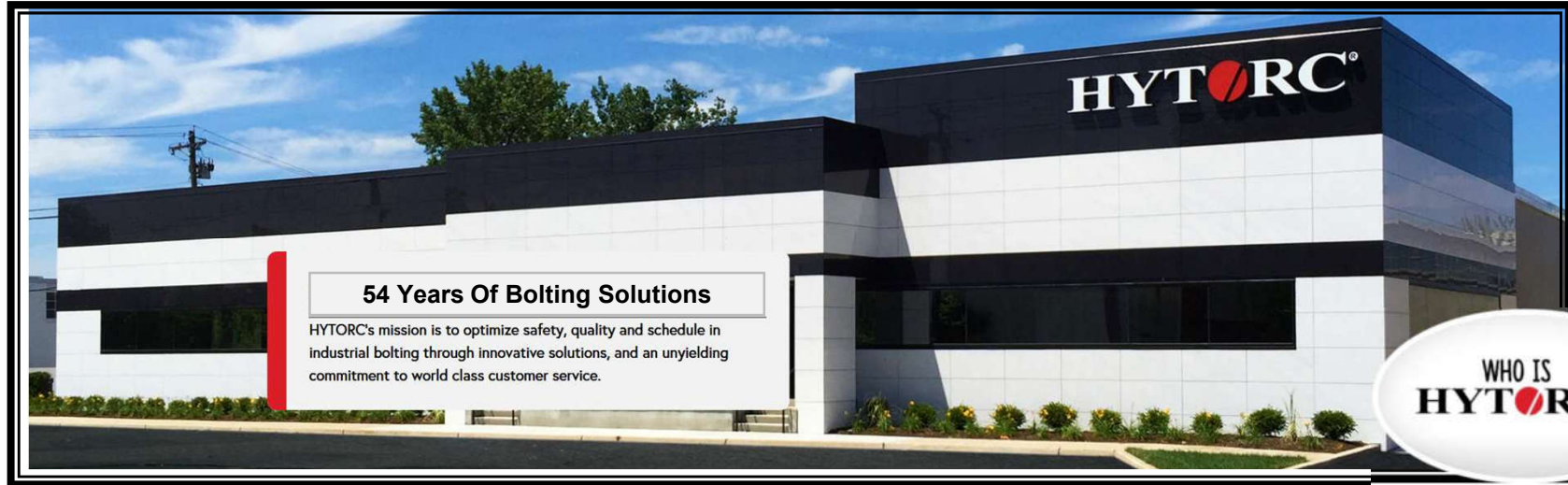
CALIBRATION SERVICE

HYTORC

The World's Most Trusted Industrial Bolting Systems

+84 2836 208 305 – hytorcvina.com

ABOUT HYTORC



1

*World leader
and pioneer
of industrial
bolting*

24/7

*Global
support*

54

*54 years of
experience*

100

*Operates in
over 100
countries*

125

*International
patents*

1968

*John Junkers
founded the
company*

❖ HYTORC HEADQUARTERS

Address: 333 RT 17 N. Mahwah, New Jersey, USA

ABOUT HYTORC

QUALITY STANDARDS

HYTORC reaches for the highest levels of quality in every area of our business. From product development to customer service we strive to raise quality expectations in our industry.

❖ **Quality People**

Employees and representatives of HYTORC embody the highest quality standards in every aspect of their work. From providing quick and helpful information to developing the latest safety improvements; our team is comprised of the highest quality people with equally high quality standards.

❖ **Quality Service**

We aim to provide the highest level of service to all HYTORC users. Our goal is to prevent downtime at your job by providing preventative maintenance, on-site service and fast turn around when repairs are necessary.

❖ **Quality Products**

Every product that carries the HYTORC name is a result of countless hours of quality inspections and testing throughout all phases of design, R&D, production, and assembly. When you receive your HYTORC equipment you can be sure that you have a system to rely on.

❖ **Quality Solutions**

HYTORC offers custom solutions for troublesome bolting jobs. Whether the goal is to increase safety, reduce job time, ensure joint integrity, or all of the above; HYTORC ensures the highest level of quality throughout the process - From knowledgeable on-site representatives to communication throughout the design process, you can rest assured that your project is in the best hands.

ABOUT HYTORC

HYTORC STANDARD:



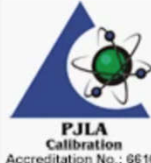
Lloyd's Register

Quality Assurance ISO 9001:2015

The Lloyd's Register Group is one of the world leaders in assessing business processes and products to internationally recognized standards.

The Lloyd's Register Group provides independent assurance to companies operating high-risk, capital-intensive assets in the energy and transportation sectors, to enhance the safety of life, property and the environment.

ISO 9001:2015 Certification



ISO 17025:2017

ISO 17025:2017 covers calibration performed using standard methods, non-standard methods, and laboratory-developed methods.

ISO 17025:2017 is applicable to all organizations performing tests and/or calibrations. These include, for example, first-, second- and third-party laboratories, and laboratories where testing and/or calibration forms part of inspection and product certification.

PJLA Certification



TUV Rheinland

Group

TÜV Rheinland Group is a globally recognized testing, inspection and certification organization offering the highest quality services for a wide range of industries worldwide.

AD 2000 Merkblatt W 0 Certificate
Annex to Certificate No.: 01 202 USA/Q-11
2032



The CE Mark on a product or machine identifies it as complying with all the of safety requirements established by the European Union.

The CE Mark identifies a product as complying with the health and safety requirements spelled out in European legislation (Directives) and is mandatory for equipment operating in the European Union (EU).

Declaration of Conformity
Declaration of Conformity - Lithium Gun
Declaration of Conformity - Lion Gun



Korea Hydro &

Nuclear Power Co. Ltd.

HYTORC is now an approved registered supplier to Korea Hydro & Nuclear Co.

Certificate of Registration



Mitsubishi Hitachi

Power Systems

HYTORC is now an approved registered supplier to Mitsubishi Heavy Industries.

Certificate of Registration



TA 1401 Nuclear

Standard

Confirmation on quality assurance according to nuclear standard KTA 1401.

KTA 1401 Certificate



ISO 9001:2015

ISO 9001:2015 Certificate of Registration HTYORC South East Asia Pte. Ltd.

Certificate of Registration

ABOUT HYTORC

AUTHORIZED LETTER:



HYTORC, Division UNEX Corporation
333 Route 17N, Mahwah, NJ 07430, USA
Tel: (201) 512-9500 Fax: (201) 512-9615
Email: info@hytorc.com

TO WHOM IT MAY CONCERN

This is to certify that we at HYTORC, an ISO 9001 certified USA manufacturer of high quality tools for professional use, do hereby confirm:

HYTORC VIET NAM COMPANY LIMITED

Address: D01, Tan Thuan Rd, Tan Thuan EPZ, Tan Thuan Dong Ward, Dist 7, HCMC

Tel/Fax: +028 36 208305/07

Website: <https://hytorc.com/hytorc-locations>

is our authorized branch company in VIETNAM, and only they can market and sell HYTORC tools in VIETNAM, as well as give HYTORC's global after-sales & service to customer.

Thank you,

Tom Evans

Customer Support Manager

HYTORC USA

HYTORC
333 Route 17 North
Mahwah, NJ 07430



ABOUT HYTORC

SERVICES:

Repair & Calibration



For improved productivity, inventory management and operator safety, HYTORC mobile service technicians provide repairs, calibrations and training at your location.

Flange Calculator



The calculator recommends the best torque values and bolt loads for your job as well the recommended bolting pattern based on the bolting system you are using and the number of tools on the job.

Equipment Rental



From individual tools to customized bolting systems, HYTORC has the largest stock of rental equipment in the industry, available worldwide.

HY-Care



Improve your productivity with HY-Care, the preventative maintenance solution for industrial bolting systems.

Custom Engineering



With 50 years of experience dedicated to industrial bolting, we have solved almost every bolting challenge imaginable. Let our engineering team show you the possibilities.

Training



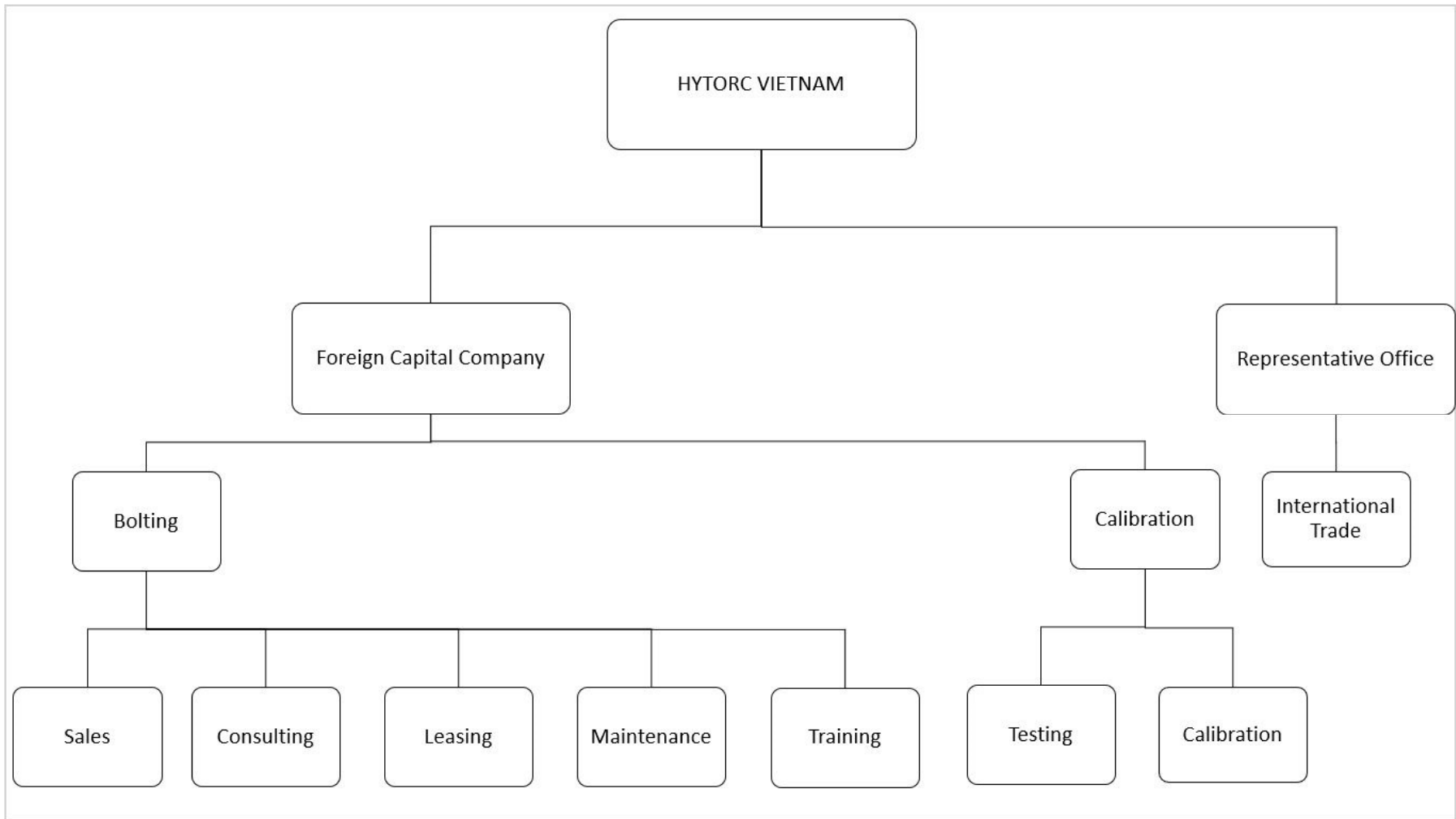
For improved productivity and incident reduction, HYTORC leads the industry in safety and operational training initiatives.

Bolting Software



HYTORC Flange Calculator, HYTORC Flange Manager and the HYTORC App

ABOUT HYTORC



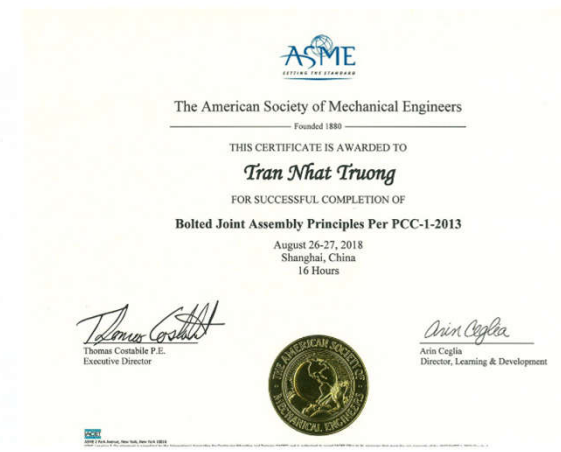
ABOUT HYTORC

HYTORC ENGINEERS QUALIFIED:

Lai Ming Yuan
ASME Bolting Specialist
General Manager



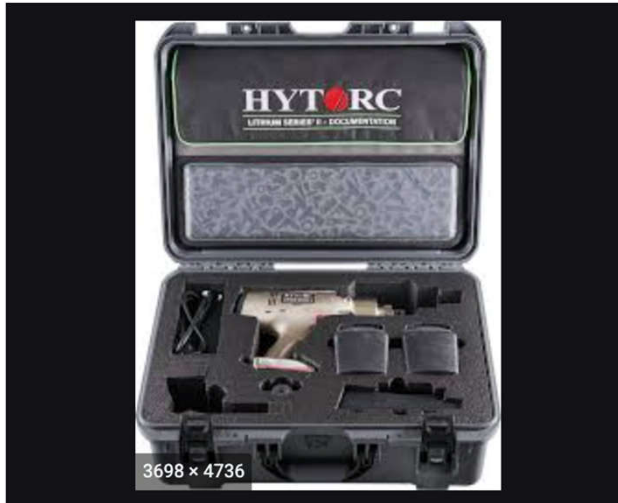
Tran Nhat Truong
ASME Bolting Specialist
Sales Manager



Cao Thanh Lap
ASME Bolting Specialist
Customer Service
Manager

HYTORC-CALIBRATION SERVICES

HYTORC WAREHOUSE & TOOLS:



HYTORC-CALIBRATION SERVICES

REGISTRATION CERTIFICATE

BỘ KHOA HỌC VÀ CÔNG NGHỆ CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
TỔNG CỤC TIÊU CHUẨN Độc lập - Tự do - Hạnh phúc
ĐO LƯỜNG CHẤT LƯỢNG

Số 3834 /TDC-DL Hà Nội, ngày 27 tháng 12 năm 2021

GIẤY CHỨNG NHẬN ĐĂNG KÝ CUNG CẤP DỊCH VỤ KIỂM ĐỊNH, HIỆU CHUẨN, THỬ NGHIỆM PHƯƠNG TIỆN ĐO, CHUẨN ĐO LƯỜNG

Căn cứ Luật Đo lường ngày 11 tháng 11 năm 2011;
Căn cứ Nghị định số 105/2016/NĐ-CP ngày 01 tháng 7 năm 2016 của Chính phủ quy định về điều kiện hoạt động của tổ chức kiểm định, hiệu chuẩn, thử nghiệm phương tiện đo, chuẩn đo lường;

Căn cứ Nghị định số 154/2018/NĐ-CP ngày 09 tháng 11 năm 2018 của Chính phủ sửa đổi, bổ sung, bãi bỏ một số quy định về điều kiện đầu tư, kinh doanh trong lĩnh vực quản lý nhà nước của Bộ Khoa học và Công nghệ và một số quy định về kiểm tra chuyên ngành;

Căn cứ Quyết định số 08/2019/QĐ-TTg ngày 15 tháng 02 năm 2019 của Thủ tướng Chính phủ Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Tổng cục Tiêu chuẩn Đo lường Chất lượng trực thuộc Bộ Khoa học và Công nghệ;

Xét đề nghị của Vụ trưởng Vụ Đo lường.

Tổng cục Tiêu chuẩn Đo lường Chất lượng chứng nhận:

1. Tên tổ chức: Công ty TNHH một thành viên Thương mại Hytorc Việt Nam.
Địa chỉ trụ sở chính: Lô D01, đường Tân Thuận, Khu chế xuất Tân Thuận, phường Tân Thuận Đông, Quận 7, Thành phố Hồ Chí Minh.

Điện thoại: 028. 36208305/028. 36208306 Fax: 028. 36208307

Email: info@hytorcvina.com

Đã đăng ký cung cấp dịch vụ kiểm định, hiệu chuẩn, thử nghiệm phương tiện đo, chuẩn đo lường đối với lĩnh vực hoạt động ghi trong Phụ lục kèm theo Giấy chứng nhận này.

Địa điểm hoạt động: Tại trụ sở chính của Công ty TNHH một thành viên Thương mại Hytorc Việt Nam và tại hiện trường.

2. Số đăng ký: ĐK 539.

3. Giấy chứng nhận đăng ký được cấp: Lần đầu./

Nơi nhận:

- Công ty TNHH MTV TM Hytorc Việt Nam;
- Chi cục TCĐLCL TP. Hồ Chí Minh;
- Lưu: VT, DL.

KT. TỔNG CỤC TRƯỞNG
PHÓ TỔNG CỤC TRƯỞNG



Hà Minh Hiệp

Phụ lục
LĨNH VỰC HOẠT ĐỘNG CUNG CẤP DỊCH VỤ KIỂM ĐỊNH,
HIỆU CHUẨN, THỬ NGHIỆM PHƯƠNG TIỆN ĐO, CHUẨN ĐO LƯỜNG
CỦA CÔNG TY TNHH MỘT THÀNH VIÊN THƯƠNG MẠI HYTORC
VIỆT NAM

(Ban hành kèm theo Giấy chứng nhận số 3834 /TDC-DL ngày 27 tháng 12 năm 2021 của Tổng cục trưởng Tổng cục Tiêu chuẩn Đo lường Chất lượng)

TT	Tên phương tiện đo, chuẩn đo lường	Phạm vi đo	Cấp/độ chính xác	Tên dịch vụ	Ghi chú
1	Phương tiện đo moment lực	(0 + 27 116) Nm [(0 + 20 000) lbf.ft]	± 3 %	Hiệu chuẩn	

8

HYTORC

HYTORC-CALIBRATION SERVICES

ISO/IEC 17025:2017 CERTIFICATION

BỘ KHOA HỌC VÀ CÔNG NGHỆ CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
VĂN PHÒNG CÔNG NHẬN CHẤT LƯỢNG
Độc lập - Tự do - Hạnh phúc

Số: 846 /QĐ-VPCNCL

Hà Nội, ngày 11 tháng 05 năm 2023.

QUYẾT ĐỊNH

Về việc công nhận phòng thí nghiệm

GIÁM ĐỐC
VĂN PHÒNG CÔNG NHẬN CHẤT LƯỢNG

- Căn cứ Luật Tiêu chuẩn và Quy chuẩn kỹ thuật ngày 30 tháng 6 năm 2006;
- Căn cứ Quyết định số 2058/QĐ-BKHCN ngày 23 tháng 07 năm 2018 về việc ban hành Điều lệ Tổ chức và Hoạt động Văn phòng Công nhận Chất lượng;
- Theo đề nghị của Đoàn chuyên gia đánh giá và Ban thẩm xét.

QUYẾT ĐỊNH

Điều 1: Công nhận Phòng thí nghiệm:

PHÒNG KIỂM ĐỊNH HIỆU CHUẨN ĐO LƯỜNG HYTORC
Thuộc CÔNG TY TNHH MTV THƯƠNG MẠI HYTORC VIỆT NAM

phù hợp theo ISO/IEC 17025:2017 với danh mục các phép hiệu chuẩn kèm theo Quyết định này.

Điều 2: Phòng thí nghiệm mang số hiệu: **VILAS 1494**

Điều 3: Phòng thí nghiệm được công nhận ở Điều 1 phải tuân thủ đầy đủ các yêu cầu về công nhận theo quy định hiện hành.

Điều 4: Quyết định này có hiệu lực 3 năm kể từ ngày ký và Phòng thí nghiệm sẽ chịu sự giám sát định kỳ mỗi năm một lần.

Nơi nhận:

- Đơn vị có tên tại Điều 1;
- HS đánh giá;
- Lưu VT.



TRẦN THỊ THU HÀ



HYTORC

HYTORC-CALIBRATION SERVICES

CALIBRATION SERVICE:

- Hydraulic Torque Wrench Calibration Services at Hytorc Vietnam office
- For improved productivity, inventory management and operator safety, HYTORC mobile service technicians provide repairs, test and training at your location.

AKO SYSTEM:



HYTORC-CALIBRATION SERVICES

CALIBRATION PROCEDURE-USING APPROPRIATE A.K.O CALIBRATION

TSD HT1002 HYD WRENCH PROCEDURE

PROCEDURE FOR TESTING AND CALIBRATING A HYDRAULIC TORQUE WRENCH USING A.K.O. Inc. TSD PRECISION TORQUE STANDARDS.

Page 1

HYDRAULIC TORQUE WRENCH CALIBRATION PROCEDURE USING APPROPRIATE A.K.O. CALIBRATION EQUIPMENT

PROCEDURE NUMBER: HT 1002 Rev. B

DATE: 6/22/2011

RESPECTFULLY SUBMITTED BY:



NOTICE

While every precaution has been taken in the preparation of this procedure, Torque Specialties Div. A. K. O. Inc. assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the equipment or information contained herein.

A.K.O. Inc. TORQUE SPECIALTIES DIV.

TEL 1-800-462-1906

Web. akotorque.com e-mail os@akotorque.com

1. PRELIMINARY INSTRUCTIONS

This Procedure is meant to provide a step by step guide to test a Hydraulic Torque Wrench and should be read in its entirety before executing any steps. For the purpose of this procedure, it is assumed that A.K.O. Inc. Torque Specialties Division Torque and Pressure standards are used. There are three major components needed. One, an A.K.O. Inc. Torque Standard such as a TSD 10035-HT, TSD 20035-HT, TSD 40035-HT. Two, a regulated hydraulic supply capable of producing 10,000 PSI with a TSD 10KPT Pressure Standard. Three, a Controller/Computer with the Hydraulic version of Torq-Cal 2000 software.

1.1 IMPORTANT SAFETY NOTES

Prior to the Test & Calibration operation, ensure that the UUT (Unit Under Test) is correctly lubricated with all parts, and safety latches, locks, connections and fittings are all in good operating order. For best results always test the UUT with the PISTON fully retracted.

Always make sure Adapters and Drives are securely installed, and the hydraulic connections securely connected, with NO LEAKAGE. Verify that all hydraulic hoses are operating correctly and be sure not to kink them. Clean and dry all oil spills. Keep Calibration System clean and free of oil.

It is very important that the Swivel Connector Assembly on the UUT (the swivel block that the hydraulic hoses from the pump connect to) is directed UPWARDS to clear any obstructions from the Calibration Stand components. If the Swivel Assembly is drooping down, it may interfere with the Stand's structure causing it to break off. If the Swivel Assembly is damaged or ruptured it may result in catastrophic damage to the wrench and a substantial oil discharge.

When using a "Motorized Hydraulic Pressure System" make sure the Pressure Regulator is in the MINIMUM pressure setting prior to turning the Hydraulic Power Supply ON. With the A.K.O. Inc. TSD10K-RHYD the MINIMUM setting is when there is NO resistance while turning the Pressure Regulator. It will DAMAGE the Regulator if the handle is turned all the way CCW and tightened. Also it is very important that the pump be turned OFF when a load is not being supplied. Leaving the pump ON or in the NEUTRAL position will cause the oil inside the pump to cycle continuously and as a result heat the oil until it is too hot and will trip the Thermal Switch on the pump and possibly DAMAGE the pump.

Always make sure that ALL Calibration Equipment is within the Capacity of the UUT. This includes Torque Standard, Pressure Standard, and any adapters used in the test.

HYTORC-CALIBRATION SERVICES

CALIBRATION PROCEDURE-USING APPROPRIATE A.K.O CALIBRATION

PROCEDURE FOR TESTING AND CALIBRATING A HYDRAULIC TORQUE WRENCH USING A.K.O. Inc. TSD PRECISION TORQUE STANDARDS.

Page 2

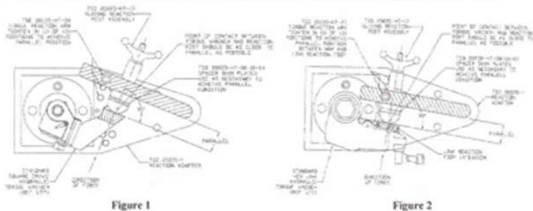
2. MECHANICAL & HYDRAULIC SETUP

2.1 INSTALL ADAPTERS

Before Installing the UUT onto the TSD Torque Standard identify the size of the drive on the UUT as well as the type and Capacity. Select the correct adapter(s) for the Capacity and size of the drive of the UUT and install it onto the Torque Standard.

2.2 INSTALL THE WRENCH

Install the wrench into the adapter and ratchet the wrench towards the post until the UUT Reaction Foot is PARALLEL with the TSD Reaction Arm assembly. It is imperative that the UUT Reaction Foot be parallel with the TSD 20035-HT-20 Reaction Arm assembly (see shaded areas in figures 1 and 2). Keep in mind there are three Reaction Arm adjustments to properly set the appropriate geometry for the "Unit Under Test". To adjust the Arm use the T Allen Wrench to remove the 1"-8 Bolt in the torque transducer end of the arm. Position the arm to one of the three positions to bring the torque wrench reaction foot as close to parallel with the TSD 20035-20 as possible while leaving enough space in between for the TSD 20035-13 Reaction Post. Re-install the 1"-8 Bolt into the Arm and tighten to 100 Lb.Ft. Torque. Bring the TSD 20035-13 Reaction Post to the center of the torque wrench reaction foot so that it is positioned in between the UUT foot and the Reaction Arm. If needed install the appropriate Shim Plates in between the Post and the Arm to create a Parallel condition. Tighten the post to the arm.



2.3 POSITION THE RATCHET

Once the PARALLEL condition has been satisfied, take into consideration the position of the ratchet. Always test the UUT with the ratchet position in the beginning of the stroke. The ratchet position can be adjusted by removing the UUT from the test Stand and rotating it 90 degrees CW. Re-install the UUT onto the Stand and ratchet the wrench towards the post. Repeat this step until the ratchet position is in the beginning of the stroke. If positioned correctly there should be $\frac{1}{8}$ " or less of play between the UUT foot and TSD 20035-13 Reaction Post.

PROCEDURE FOR TESTING AND CALIBRATING A HYDRAULIC TORQUE WRENCH USING A.K.O. Inc. TSD PRECISION TORQUE STANDARDS.

Page 3

2. MECHANICAL & HYDRAULIC SETUP (continued)

2.4 CONNECT THE HOSES

Now that the UUT is set up in the Torque Standard with the correct ratchet position and parallel condition, connect the hydraulic hoses from the Hydraulic Power Supply to the UUT. Connect the "SUPPLY" Hydraulic Hose from the Pump to the "A" (ADVANCE) fitting on the UUT. Connect the "RETURN" Hydraulic Hose to the "R" (RETURN) fitting. Never reverse these connections. Ensure the Quick Disconnect fittings are fully made-up and TIGHT. Position the Swivel Connection Assembly pointed UPWARD to keep hoses clear of the PINCH POINT.

2.5 ZERO THE INDICATOR

Assuming that both the Torque Standard and Pressure Standard are properly connected to the Indicator, turn on the Indicator. Observing the dual display, ensure that the Pressure Standard is selected as the TOP Display and the Torque Standard is selected as the BOTTOM Display. Press the "ZERO" button on the touchpad on the front of the indicator. Select each of the displays individually and verify that both are reading "0".

3. COMPUTER SETUP

The TSD 3000, which is the Computer Assembly mounted on the top of the Hydraulic Power Supply, is loaded with TORQ-CAL 2000 Hydraulic Torque Wrench Software and configured by A.K.O. Inc. prior to shipping. It is assumed that the two RS232 cables are connected to both the indicator and computer in these appropriate ports and operational.

3.1 OPEN TORQ-CAL 2000

Now that the Mechanical and Hydraulic setup is complete turn the Computer ON. Open the HYDRAULIC version of Torq-Cal 2000 using the shortcut on the Desktop. The program will default to the Main Test Activity Screen.

3.2 LOAD THE TEMPLATE FOR UUT

Locate the Template Window in the bottom right hand corner of the Main Test Activity Screen. This window contains templates that have already been created. If the Template associated with the UUT already exists Double-click on it and proceed to SECTION 3.4, otherwise continue to SECTION 3.3.

HYTORC-CALIBRATION SERVICES

CALIBRATION PROCEDURE-USING APPROPRIATE A.K.O CALIBRATION

PROCEDURE FOR TESTING AND CALIBRATING A HYDRAULIC TORQUE WRENCH USING A.K.O. Inc. TSD PRECISION TORQUE STANDARDS.

Page 4

3. COMPUTER SETUP (continued)

3.3 CREATE A TEMPLATE

A Hydraulic Torque Wrench (UUT) that does not have a template in the TORQ-CAL 2000 Software will need to have a template created for it. Templates are stored in the Template Window on the Main Test Activity Screen. To create a new template simply Right Mouse Click in the Template Window. The ADD, DELETE, EDIT window will appear. Click on ADD and the CREATE OR EDIT TEMPLATE Window will open.

Start from the top left and enter the Model Number, or Make and Model of the UUT in the TEMPLATE NAME dialogue box. Enter the same information into the MODEL NUMBER dialogue box. Almost all Hydraulic Wrenches have a capacity of 10,000 PSI. Therefore, in the WRENCH CAPACITY dialogue box enter "10000" without any commas or units specified. Do NOT enter anything in the RATIO dialogue box.

Now locate the SECONDARY READING Window. Click on the downward arrow under TRANSDUCER to reveal the drop down menu and select "TSD 20011". Select the radio button labeled TORQUE, select the radio button labeled METER 2, and select the radio button labeled "LB.Ft." as the STANDARD. In the PRIMARY READING Window click on the downward arrow under TRANSDUCER to reveal the drop down menu and select "TSD 10011". Select the radio button labeled PRESSURE, select the radio button labeled METER 1, and select the radio button labeled PSI as the STANDARD.

In the TOOL TYPE Window select the radio button labeled HYDRAULIC. Now click in the open window below the ADD button. This is the input window for the SETTINGS which refers to the test point settings. Enter "1500" in this window as this is the first pressure setting to be tested. Click the ADD button and observe how the value has transferred under SETTINGS. Continue to add all the desired test points which are typically 1500 and every thousand from 2000 – 10000 for a total of ten Settings. (NOTE: It is important to click the ADD button when entering SETTINGS with the mouse and NOT to use the "enter" button on the keyboard as this will exit the CREATE TEAMPLATE Window without saving.) Click the SAVE button and then the OK button. Now the new template will be in the list in the TEMPLATE Window. Double Click on the newly made Template to load the test.

3.4 ENTER CUSTOMER DATA

The CUTOMER DATA Window opens when a template is selected. All of these fields can be edited to provide information about the UUT. This information is specific to the wrench and is used when generating a certification. All of the fields, except for the NEXT CAL DATE field, can be edited by clicking in the

PROCEDURE FOR TESTING AND CALIBRATING A HYDRAULIC TORQUE WRENCH USING A.K.O. Inc. TSD PRECISION TORQUE STANDARDS.

Page 5

3. COMPUTER SETUP (continued)

3.4 ENTER CUSTOMER DATA (continued)

dialogue box below each item and entering in the corresponding data. To set the NEXT CAL DATE click on the SET DATE button to the right. The DATEFORM Window opens. Use the Calendar to highlight the day the UUT is due for calibration and click the OK button. The ONLY field that MUST be filled out to continue is the TOOL ID/SN field. Once all the relevant fields are filled click the DONE button. The window will close and return to the MAIN TEST ACTIVITY screen.

3.5 ENTER OPERATOR ID AND START TEST

If the COMPUTER SETUP has been followed correctly the TOOL ID/SN dialogue box should be filled in with the Serial Number of the UUT. Also the graph under TEST ACTIVITY should have populated with the SETTINGS of the template selected earlier.

Enter the name or ID of the operator in the dialogue box below OPERATOR ID. This is a required entry.

4. TEST THE UUT

The TSD Calibration Equipment and the UUT are now set up and ready to begin the test. The next step will be to EXERCISE the wrench to its Capacity prior to taking readings to achieve the most accurate results.

4.1 EXERCISE THE UUT

Up to this point the TSD 10K-RHYD Regulated Hydraulic Power Supply should have been OFF. Make sure the Directional Pressure Lever is in the NUETRAL position, all hoses are properly connected, and the Pressure Regulator is at its lowest setting. Turn the Pump ON by flicking the jog switch up on the pump control box. Press the Green START button on the control box to energize the pump. The oil is now cycling through the pump. The UUT is now ready to be pressurized.

Pull the Directional Pressure Lever CCW to put the Lever in the ADVANCE position. Hydraulic Oil is now flowing through the wrench. Observe the UUT to ensure it is functioning properly. Observe the Indicator to ensure both of the displays are reading. Slowly turn the Regulator CW to increase the Pressure being supplied to the UUT. Turn the Regulator CW until the Top display is reading 10000 PSI and hold for 3 to 10 seconds. Turn the Regulator CCW to back-off the Pressure until there is no more resistance and the Regulator turns freely. Do not

HYTORC-CALIBRATION SERVICES

CALIBRATION PROCEDURE-USING APPROPRIATE A.K.O CALIBRATION

PROCEDURE FOR TESTING AND CALIBRATING A HYDRAULIC TORQUE WRENCH USING A.K.O. Inc. TSD PRECISION TORQUE STANDARDS.

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4. TEST THE UUT (continued)

4.1 EXERCISE THE UUT (continued)

tighten Regulator. Push the Directional Pressure Lever CW into the NUETRAL position, wait 2 to 3 seconds, push the Lever into the RETRACT position, wait 2 to 3 seconds for the piston in the wrench to retract, pull the Lever back into the NUETRAL position. Make sure the Torque display on the Indicator returns to 0, and that the Pressure display is less than 300 PSI. Press the Red STOP button on the pump control box. The Pressure Display should return to 0 and the pump should be off. The UUT is now "exercised".

4.2 TAKE READINGS

Click the START TEST button in the Torq-Cal 2000 software on the Main Test Activity Screen. The MANUAL CONTROL window will open and the software is ready to begin the test. Press the Green START button on the control box to energize the pump. Pull the Directional Pressure Lever CCW to put the Lever in the ADVANCE position. Observe the Indicator to ensure both of the displays are reading. Slowly turn the Regulator CW to increase the Pressure being supplied to the UUT. Turn the Regulator CW until the Top (Pressure) display is reading identical to the First Test Setting which is typically 1500 PSI. Once the Setting is reached, observe the Torq-Cal 2000 software to ensure the Pressure and Torque reading were captured in the graph under TEST ACTIVITY. Continue to increase the pressure until the next Setting is reached and make sure the readings were captured. If the Setting was NOT captured, the software will not collect any more data until the field for that Setting is filled. Stop increasing the pressure and back it off below the Setting. Increase the pressure slower to capture the data. Repeat if necessary. Increase the pressure to each Setting until all of the Data has been captured and the Capacity of the UUT has been reached. The TEST COMPLETE Window opens. Turn the Regulator CCW to back-off the Pressure until there is no more resistance and the Regulator turns freely. Push the Directional Pressure Lever CW into the NUETRAL position, wait 2 to 3 seconds, push the Lever into the RETRACT position, wait 2 to 3 seconds for the piston in the wrench to retract, pull the Lever CCW back into the NUETRAL position. Make sure the Torque display on the Indicator returns to 0, and that the Pressure display is less than 300 PSI. Press the Red STOP button on the pump control box. The Pressure Display should return to 0 and the pump should be off. Click the OK button in the TEST COMPLETE Window.

4.3 SAVE THE TEST

It is important to SAVE the test before generating a certification. To save select FILE from the Toolbar in the top left corner of the Torq-Cal 2000 Software. The drop down menu will appear. Select SAVE. The SAVE AS Window will open. Input the file name as the SN of the UUT which is the default. Click SAVE. Torq-Cal 2000 saves files using basic Windows convention.

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5. CREATE A CERTIFICATION

To Create a Certification Form click on the RESULTS button on the MAIN TEST ACTIVITY Screen. The OPEN Window will open. Select "HyTorcStd.xls" file. This will open a Microsoft EXCEL sheet. All of the data that was entered into the CUSTOMER DATA Window earlier will populate into the Certification. Select appropriate TAB from the bottom of the Excel sheet and fill in information specific to the UUT. Select Print to print out the Certification.


The Test is now complete and the UUT can be removed from the test stand. All Calibration Equipment should be cleaned stored and can be turned OFF if desired. NEVER leave the pump ON or RUNNING. Make sure to turn the switch on the Pump Control Box OFF. Check that the Data from the Certification is within the wrench or UUT's tolerance. If it is out of tolerance the UUT should be Greased and well Lubricated and Test Procedure repeated until the UUT is in tolerance.


A.K.O. Inc. TORQUE SPECIALTIES DIV.
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HYTORC-CALIBRATION SERVICES

CERTIFICATE FORM

		CÔNG TY TRÁCH NHIỆM HỮU HẠN MTV TM HYTORC VIỆT NAM PHÒNG KIỂM ĐỊNH HIỆU CHUẨN ĐO LƯỜNG HYTORC (ĐK 539) Địa chỉ / Add: Lô D01, Đ. Tân Thuận, KCC Tân Thuận, P. Tân Thuận Đông, Quận 7, HCM Điện thoại / Tel: (028) 36 208 305 Số Fax: (028) 36 208 307 Web: www.hytorcvina.com Email: info@hytorcvina.com	
GIẤY CHỨNG NHẬN HIỆU CHUẨN (Calibration Certificate) Số (N ^o):			
Tên phương tiện đo: <i>Object</i>	<i>Hydraulic torque wrench</i>		
Kiểu: <i>Type</i>	Số hiệu: <i>Serial No.</i>	Nơi sản xuất: <i>Manufacturer</i>	<i>USA</i>
Đặc trưng kỹ thuật đo lường: <i>Specification</i>			
Momen lực: <i>Torque</i>			
Khách hàng: <i>Customer</i>			
Địa điểm thực hiện: <i>Place of calibration</i>	PHÒNG KIỂM ĐỊNH HIỆU CHUẨN ĐO LƯỜNG HYTORC ĐK 539 Lô D01, Đ. Tân Thuận, KCC Tân Thuận, P. Tân Thuận Đông, Quận 7, HCM		
Phương pháp thực hiện: <i>Method of calibration</i>	THEO QUY TRÌNH HIỆU CHUẨN 01.HSVN.HCĐL.2021		
Chuẩn được sử dụng: <i>Standards used</i>	Hệ thống thiết bị kiểm tra và hiệu chuẩn đầu xiết thủy lực 20k Ft.-lb model TSD 20035-HT <i>20k Ft.-lb Hydraulic wrench test and calibration system model TSD 20035-HT</i>		
Số tem hiệu chuẩn: <i>Calibration stamp N^o</i>			
Kết quả: <i>Results</i>	Xem trang sau		
Ngày hiệu chuẩn đề nghị: <i>Recalibration recommended</i>			
Trưởng PTN (Head of calibration Laboratory)		<i>TP.Hồ Chí Minh, ngày tháng năm 20...</i> (Date of issue) GIÁM ĐỐC (Director)	
<small>Trang 1/2 Không được sao chép rời khi giấy chứng nhận có nhiều trang nếu không được sự đồng ý bằng văn bản của Hytorc Việt Nam (No of paper) (This certificate shall not be reproduced except in full, without written approval of Hytorc Vietnam)</small>			

		CÔNG TY TRÁCH NHIỆM HỮU HẠN MTV TM HYTORC VIỆT NAM PHÒNG KIỂM ĐỊNH HIỆU CHUẨN ĐO LƯỜNG HYTORC (ĐK 539) Địa chỉ / Add: Lô D01, Đ. Tân Thuận, KCC Tân Thuận, P. Tân Thuận Đông, Quận 7, HCM Điện thoại / Tel: (028) 36 208 305 Số Fax: (028) 36 208 307 Web: www.hytorcvina.com Email: info@hytorcvina.com		
KẾT QUẢ HIỆU CHUẨN (Calibration results) (Kèm theo Giấy chứng nhận hiệu chuẩn số:)				
Nhiệt độ: <i>Temperature</i>	(20± 5) °C	Độ ẩm: <i>Humidity</i>	65 % RH	
Điểm kiểm tra		Chỉ thị trên chuẩn	Sai số	Độ không đảm bảo đo
Áp suất <i>Pressure</i>	Moment xoắn <i>FT.LBS</i>	Moment xoắn <i>FT.LBS</i>	%	%
1500				
2000				
3000				
4000				
5000				
6000				
7000				
8000				
9000				
10000				
Chú ý: Độ không đảm bảo đo mở rộng được biểu thị ở các mức sử dụng hệ số phủ K = 2, độ tin cậy xấp xỉ P = 95% <i>Expanded uncertainties expressed at levels using a coverage factor K=2, confidence approximately P = 95%</i>				
Hiệu chuẩn viên (Calibrated by)				
<small>Trang 2/2 Không được sao chép rời khi giấy chứng nhận có nhiều trang nếu không được sự đồng ý bằng văn bản của Hytorc Việt Nam (No of paper) (This certificate shall not be reproduced except in full, without written approval of Hytorc Vietnam)</small>				

Thank you



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The World's Most Trusted Industrial Bolting Systems