



CONTROLLED BOLTING SOLUTIONS

Mechanical Joint Integrity

- API, ASME & IChemE MJI Training
- Flange Management JIT Software
- Hydraulic Torque Wrenches
- Hydraulic Tensioning
- Portable Machines



Due to continuous product development all dimensions and specifications listed below may be subject to alteration without prior notice LAPP UK accepts no responsibility for any circumstance arising due to any changes that may result.
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EQUIPMENT UK

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LAPP Equipment UK Limited

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12 MONTH WARRANTY



THE LAPP "THREE T" PILLARS OF JOINT INTEGRITY ASSURANCE



CORRECTLY SELECTED, MAINTAINED AND CALIBRATED TOOLS

FLANGE MANAGEMENT SOFTWARE AND DATA COLLECTION DEVICES



Tooling



Training

APPROPRIATELY TRAINED AND CERTIFIED TECHNICIANS



Traceability

API-U (FMJIT) Accredited Training



SINGAPORE - MALAYSIA - BRUNEI - INDONESIA - SOUTH KOREA
- THAILAND - CHINA - AUSTRALIA - TRINIDAD - PHILIPPINES

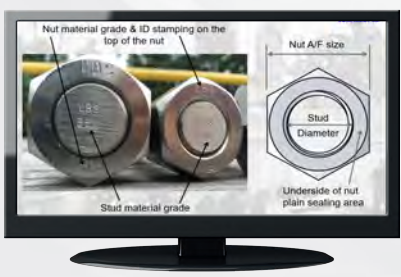
AMERICAN PETROLEUM INSTITUTE - APPROVED TRAINING

Courses



LAPP Equipment UK API-U Flange Management Joint Integrity (FMJIT) for the Assembly, Tightening and Disassembly of Bolted Connections.
 **With associated Knowledge for JIT10, JIT18 & JIT19 ** Contact LAPP Equipment UK to take this course >>>
enquiries@lappuk.co.uk

Buy Course



As an API-U approved training provider LAPP Equipment UK can offer a 2 day course with 8 students covering the assembly, tightening and disassembly of bolted connections. This course includes in depth practical instruction on the safe and effective use of both hand and hydraulic bolt tightening equipment.

This LAPP Equipment UK API-U approved training course can be delivered at:

- LAPP Equipment UK global training facilities.
- Client Site Global – subject to approval via LAPP Equipment Training UK.

API-U is dedicated to providing excellence in petroleum industry training, because only the API has access to the largest pool of subject experts in the industry, API-U programs are taught by the best trainers who utilize today's most innovative methods.

The practical knowledge gained from API-U training enables participants to maintain professional competency.

LAPP Equipment UK offers the following API-U Training Standard (Flange Management Joint Integrity (FMJIT) for the Assembly, Tightening and Disassembly of Bolted Connections) course:

- TS JIT-10 Hand Torqued Bolted Connections
- TS JIT-18 Hydraulically Tensioned Bolted Connections
- TS JIT-19 Hydraulically Torqued Bolted Connections

For a quotation to gain access to our API-U (FMJIT) Training course please send your enquirers to:
enquiries@lappuk.co.uk

Available at your local LAPP Equipment UK global training facilities



AMERICAN PETROLEUM INSTITUTE - APPROVED TRAINING

API-U is dedicated to providing excellence in petroleum industry training, because only the API has access to the largest pool of subject experts in the industry, API-U programs are taught by the best trainers who utilize today's most innovative methods. The practical knowledge gained from API-U training enables participants to maintain their professional competency.

The following are the API-U Training Standards "Flange Management Joint Integrity (FMJIT) for the Assembly, Tightening and Disassembly of Bolted Connections":

JIT10 Hand Torque Bolted Connection Techniques

This course covers specifications, methods, processes, techniques, and procedures for using hand torque wrenches. It will explain how to remove components from hand torque bolted connection systems, how to replace and reassemble securely and verify the integrity of assembled joints. The following are the Learning Outcomes (LO):

- Understand tightening and torquing sequences for flanged connections
- Prepare work areas, equipment and materials for bolted connection tasks
- Perform hand torqued bolted connections

JIT18 Hydraulically Tensioned Bolted Connection Techniques

This course covers specifications, methods, processes, techniques, and procedures for using hydraulic tensioning equipment. It will explain how to remove components from hydraulic tensioned bolted connection systems, how to replace and reassemble securely and verify the integrity of assembled joints. The following are the Learning Outcomes (LO):

- Understand tensioning and tightening sequences for flanged connections
- Prepare work areas, equipment and materials for bolted connection tasks
- Perform hydraulically tensioned bolted connection activities

JIT19 Hydraulic Torque Bolted Connection Techniques

This course covers specifications, methods, processes, techniques, and procedures for using hydraulic torque wrenches. It will explain how to remove components from hydraulic torque bolted connection systems, how to replace and reassemble securely and verify the integrity of assembled joints. The following are the Learning Outcomes (LO):

- Understand hydraulic tightening and torquing sequences for flanged connections
- Prepare work areas, equipment and materials for bolted connection tasks
- Perform hydraulically torqued bolted connection activities

JIT10



JIT18



JIT19



API-U (FMJIT) eLearning Accredited Training



LAPP Equipment UK API-U Flange Management Joint Integrity (FMJIT) for the Assembly, Tightening and Disassembly of Bolted Connections.

**With associated Knowledge for JIT10, JIT18 & JIT19 ** Contact LAPP Equipment UK to take this course >>> enquiries@lappuk.co.uk

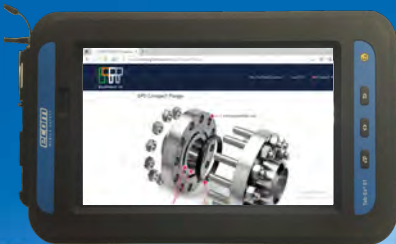
AMERICAN PETROLEUM INSTITUTE - UNIVERSITY APPROVED TRAINING

As an API-U approved training provider LAPP Equipment UK Ltd provide an on-line eLearning training platform covering the Assembly, Tightening and Disassembly of bolted connections.

API-U is dedicated to providing excellence in petroleum industry training because only the API has access to the largest pool of subject experts in the industry. API-U programs are taught by the best trainers who utilize today's most innovative methods.

The LAPP Equipment UK eLearning platform provides learners with:

- Comprehensive modules
- Online portal with FMJIT accreditation
- 24 hours a day, 7 days a week access
- Learn from the convenience of your work place or home
- Learning and Testing at your own pace



LAPP Equipment UK offers the following API-U Training Standard (Flange Management Joint Integrity (FMJIT) for the Assembly, Tightening and Disassembly of Bolted Connections):

- JIT10 Hand Torqued Bolted Connections
- JIT18 Hydraulically Tensioned Bolted Connections
- JIT19 Hydraulically Torqued Bolted Connections

For a quotation to gain access to our API-U (FMJIT) Training course please send your enquirers to: enquiries@lappuk.co.uk

Available on your PC, Lap-Top, iPad, Tablet, iPhone





About IChemE

The Institution of Chemical Engineers (IChemE) is the professional body for people involved in the chemical, process and biochemical industries.

We have over 37,000 members in almost 100 countries. In addition to membership, we deliver a range of services and activities including policy development, training, events, conferences, publications and careers support.

IChemE is licensed by the Engineering Council and Science Council in the UK to assess the competence of engineers, scientists and technicians, plus the approval of academic programmes and professional development schemes.

As a leading provider of training, our open and in-house training courses help around 1,700 delegates to improve their skills and knowledge each year.

IChemE approval can help you rise above the competition

You know that your training is the best but how do you show that? IChemE approval will give you an advantage over the companies in your field.

Our knowledge of professional standards; close involvement with industry, education and regulators and our own expertise as a leading global training provider, mean we are uniquely positioned to independently assess and approve training courses and professional development programmes across the world.



Overview of ASME Bolting Specialist Qualification Program

The ASME Bolting Specialist Qualification Program introduces you to the principles and practices of bolted joint assembly. It improves your ability to inspect, troubleshoot, assemble, disassemble, and tighten bolted joints safely.

Through training and testing, you will demonstrate your understanding of the principles and practices of bolted joint assembly, as outlined in Appendix A of ASME PCC-1: *Guidelines for Pressure Boundary Bolted Flange Joint Assembly*.

This program consists of two sections:

- 1. Online – Bolting Principles and Procedures:** This training and assessment is designed to improve your knowledge of the principles and procedures of bolting. It is delivered in four online courses with multiple-choice reviews and an online final examination. The four parts included in the online training are:
 - Part 1 – Principles of the Bolted Joint and ASME PCC-1
 - Part 2 – Flanges, Fasteners, and Gaskets
 - Part 3 – Putting It Together/Taking It Apart
 - Part 4 – Bolting Safety and Tool Handling
- 2. On-Site – Hands-On Tool Demonstration and Testing:** This training and assessment is delivered in a one-day session in which you will review, observe, and demonstrate actual tool handling and safety principles. During this training day, you will demonstrate that you can safely and effectively operate bolting tools and assemble functioning joints. It is designed to test and improve your skills. This training can only be taken after successful completion of all four online courses and the final examination. Initially, this training will be available at various locations around the U.S.

Successful candidates who submit verification of at least 6 months of bolted joint assembly experience, complete the online courses, pass the online examinations, and pass the on-site instructor’s evaluation will receive the ASME Certificate for the Qualified Bolting Specialist. Please note the following:

Individuals who successfully complete this program will be familiar with the general principles and best practices of bolted joint assembly as outlined in the current edition of ASME PCC-1, and shall have demonstrated their knowledge at the level required by Appendix A of the ASME PCC-1 Guidelines.

Here is the process for applying and completing the qualification program:

Bolting Specialist Customer Application Process

1. Complete the 4 online courses and pass each exam
2. Complete the ASME application form
3. Pass the online Bolting Principles and Procedures Final Exam, scoring 100%
4. Contact an Authorized Training Provider to take the On-Site – Hands-On Tool Demonstration and Testing training
5. Submit the completed evaluation from the On-Site training
6. Receive the ASME Bolting Specialist Qualification certificate and card



INTEGRITY-PRO

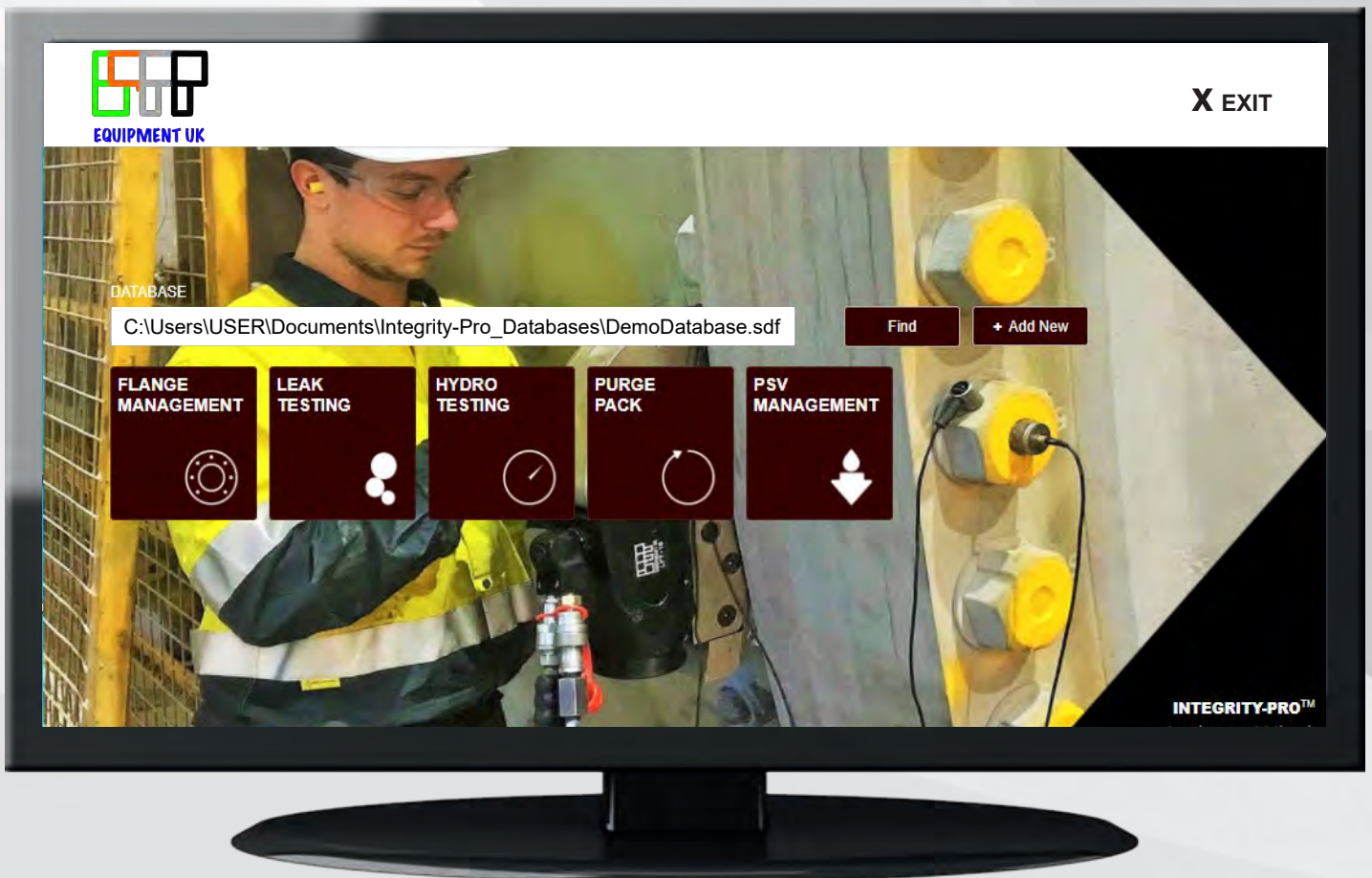
Flange Management Joint Integrity Software

INTEGRITY-PRO Joint Monitoring software is a bespoke database system specifically developed to plan, monitor, control and provide traceability of flanged joints and connections. The database calculation engine uses the Baseline Standard ASME PCC-1 2022 Appendix O Section O-4.1 and Appendix H Table H-1 to define the residual bolt load/stress, and is compared with tabled values in the SHELL ES/090 Rev 2 Specification. INTEGRITY-PRO runs on the standard Windows operating system and can be used as stand alone or networked. It has been adopted by major plant operators as an essential management system due to its simplicity and comprehensive covering of the plant and related maintenance.

Offering data gathered from years of industry experience, Integrity-Pro can provide bolt tightening data including bolting patterns, torque and tensioning figures, procedures, techniques and recommended controlled bolting equipment. Based on the information entered, the Integrity-Pro software will analyze all of the data and produce a complete calculation sheet along with the required torque or tension figures to ensure an accurate and correctly bolted joint is achieved.

Integrity-Pro can also create a specific tightening procedure for each bolted joint, which can include specific information such as any special remarks all of which can be easily entered into the software by the user. It also includes basic information for standard flanges, wafer check valves, spade and spacers, and swivel flange assemblies.

Integrity-Pro joint integrity database management system is used to support bolted joint inspection and maintenance and/or leak testing activities raising safety levels across the industry in which it applies.



MADE IN THE UK

INTEGRITY-PRO

Flange Management Joint Integrity Software

FUNCTIONALITY

Full traceability and control of all activities associated with the joint/connection including:

- Joint disassembly/breakout
- Machining/re-facing
- Joint assembly
- Bolt tightening
- Testing
(Hydrostatic, Pneumatic, Nitrogen or Helium)
- Leak history and incidents

Integrity-Pro Flange Management Joint Integrity Controlled Bolting software provides bolting calculations and data for :

- BS1560/ANSI B16.5 standard flanges
- MSS SP44 standard flanges
- API 6A and 17D standard flanges
- Clamp type connectors(Techlok, Grayloc, Galperti and Destec)
- Non-standard joints, i.e. pressure vessels, heat exchangers, compact flanges, etc..

- Project control and review by visual status display of each joint.
- Performs as a central source for documentation and records associated with each activity or task.
- Provides joint tightening procedures and methods.
- Generates tooling lists.
- Provides and maintains historical data for each joint.
- Search engine to find and display specific flanges/records.
- Embedded equipment database providing access to service records, tool calibration, etc.
- Embedded personnel database providing access to individual training, competence, qualifications, etc..
- Completed joint databases can be viewed and interrogated by a freeware viewer which can be freely distributed throughout the organization.

Integrity-Pro
Edit Flange

Use Metric: No | Type: SWG
Size: 2 1/4 | Material: Stainless
A/F: 3 1/2 | Description:
Qty: 28
Bolt Material: A193-B7

TENSIONER any Brand

Advanced

Calculation Options

Tightening Method: AquaJack Tensioner, BS3 Tensioner, BT Standard 1500 bar, BT Subsea, BT TSR Tensioner, BT Xtra, HF SBT Tensioner, HF Sub Sea Tensioner, HF Topside Tensioner, HL Tensioner, HTF Tensioner, LEVERLOK Tensioner, MRT Tensioner, PS Tensioner, **SRT Tensioner**, SSI Tensioner, SSIII Tensioner, SST Tensioner, SVR Tensioner, System 15 Tensioner

Use User Stress: SRT Tensioner

Tension Details

Procedure: SRT Tensioner
Supplier: SRT Tensioner
Model: SRT5
Max WP: 21750 psi
HPA: 15.5 in²
Grip Length: 12.630 in
Min Bolt Length: 19.880 in

Additional Information

Client Project Ref:
SAP Order Order:
Custom 3:
Custom 4:
Custom 5:
Work Instructions:
Comments:

Tension Outputs

Residual Stress: 45000 lbf/in² (310 N/mm²)
Residual Load: 155250 lbf (691 kN)
% of Yield (Residual): 42.9
Pressure A: 15447 psi (1065.1 bar)
Pressure B: 12358 psi (852 bar)
Min To Seal: 35475 lbf/in² (245 N/mm²)
Pass 1..N:
1: 15447 psi (1065.1 bar)
2: 14417 psi (994 bar)
3: 13388 psi (923 bar)

Integrity-Pro
Edit Flange

Use Metric: No | Type: SWG
Size: 2 1/4 | Material: Stainless
A/F: 3 1/2 | Description:
Qty: 28
Bolt Material: A193-B7

TORQUE WRENCH any Brand

Advanced

Calculation Options

Tightening Method: Tension Torque

Use User Stress: Atlas Copco, **ATW**, EnerPac, HiForce, Hydratight, Hytorc, Norwolf, RAD, SPX

Torque Details

Lubricant: Torc-Tech
COF: TorcTool, TorcUP, Wren
Supplier: ATW
Model: 8ATW/H
Drive Type: Hex Drive
Pump Pressure: 5451 psi (375.9 bar)
Min Bolt Length: 17.630 in

Additional Information

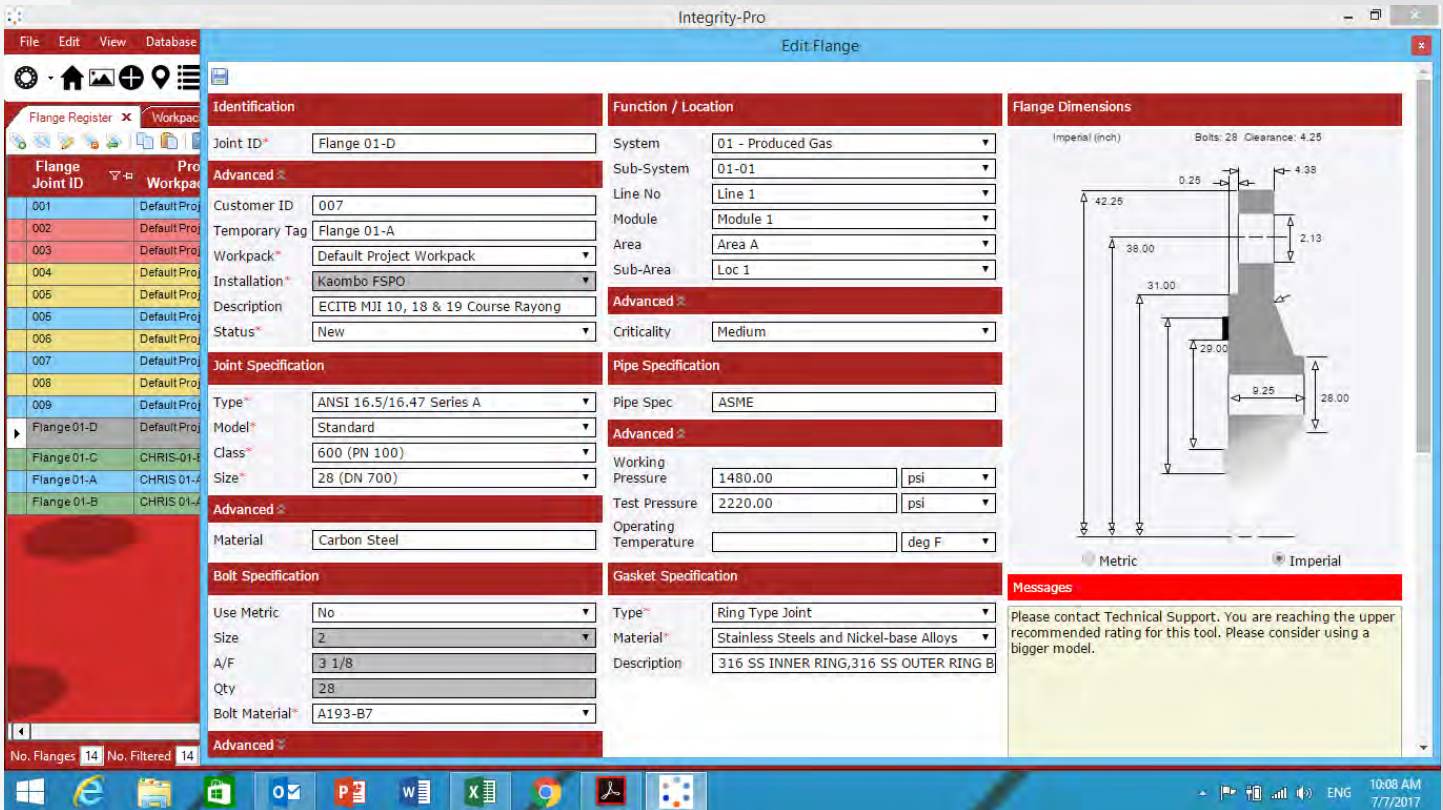
Client Project Ref:
SAP Order Order:
Custom 3:
Custom 4:
Custom 5:
Work Instructions:
Comments:

Torque Outputs

Residual Stress: 45000 lbf/in² (310 N/mm²)
Torque: 4133 lbf.ft (5604 Nm)
Bolt Load: 155250 lbf (691 kN)
Pump Pressure: 5451 psi (375.9 bar)
Min To Seal: 35475 lbf/in² (245 N/mm²)
Yield Stress: 105000 lbf/in² (724 N/mm²)
Allowable Stress: 89250 lbf/in² (616 N/mm²)

1. Key Feature – Rapid Flange Data Entry

- Import data from Excel (Data Migration) or Copy existing Flanges.
- Allows for Pre-Engineering project work to commence, saved as a .sdf file.



2. Key Feature – Completion & Work Instruction Certificate

- Once all drawings are in the system and all specifications are added, Work Instructions can be generated to support the field work.
- Completion certificates can be created as part of any documentation handover.

Joint Completion Certificate **PROFAB**

Client	Workpack Number	Tag No	
PRO FAB	WP-012345	TG_007	
Project Number	Project Name	Location	Client Tag No
IN 1176	Ichthys	Batam, Indonesia	TG_007_ab
Workpack Details			
Line No	L-80-790_FW347-JF-002	C2SA Propane Tank	C2SA-790_FW347-1GA3-K-N
Joint Details			
Joint Type	ANSI Standard	Gasket Type	SWG
Joint Size	20	Gasket Material	Stainless
Joint Class/Rating	300	Bolt Qty	24
Flange Material	ANSI B16.5	Nut A/F	2
Bolt Material	A320-L7	Grip Length	5.13 in
Bolt Size/Length	1 1/4" / 8.46 in	Bolt Coating	Black Oxide
Lubricant Name	MOLYKOTE 1000	Co-efficient of Friction (μ)	0.11
Residual Bolt Stress	40000 lbf/in ²	Bolt Load	37760 lbf
Recommended Equipment			
Tension		Torque	
Tool Recommended		Tool Recommended	3ATWS
Tool Cover	100% / 50% / 25%	Torque (Stages/Pass)	30% 60% 100%
1st Pass Pressure		Torque Value	177 lbf.ft 353 lbf.ft 589 lbf.ft
2nd Pass Pressure		Pump Pressure	547 psi 1094 psi 1824 psi
Check Pass			
Customer Specified Values?			
Equipment Information			
Tool Used	3ATWS	Serial No	W6005
Pump Type	R8P55-85	Serial No	0234577
Note: Record serial numbers for equipment used on final/check pass only			
Flange Checks			
Flange Face	Clean	<input checked="" type="checkbox"/> Aligned	<input checked="" type="checkbox"/> X
Bolts	Correct Length	<input checked="" type="checkbox"/> Correct Material	<input checked="" type="checkbox"/> X
Gasket	Correct Size	<input checked="" type="checkbox"/> Correct Material	<input checked="" type="checkbox"/> X
Comments: Passed 3,000psi integrity testing			
Assembled By	Johnny Prasitoye	Company	PT Advent Prakasa
Tightened By	John Smith	Company	PT Advent Prakasa
Date	06/10/2016	Date	07/10/2016
Print Name		Signature	
JOHN SMITH – EGTB TECHNICIAN CERT NO. 1988325		Firmans Wahyu Iatmiko	
Date		Date	
9 th FEBRUARY 2016		10 th FEBRUARY 2016	
Signature		Signature	
<i>J. Smith</i>		<i>F. Iatmiko</i>	
Date		Date	
9 th FEBRUARY 2016		10 th FEBRUARY 2016	

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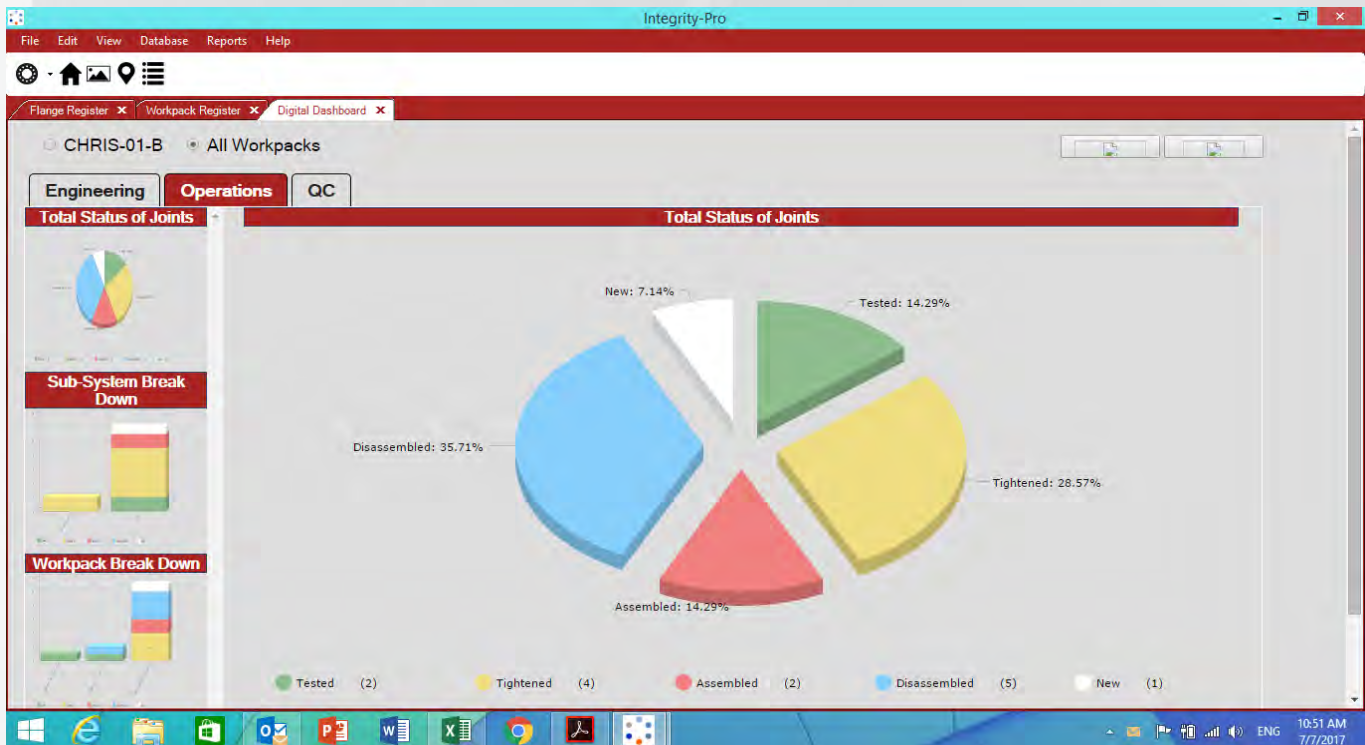
Work Instruction **BAKER HUGHES**

Client	Workpack Number	Tag No	
BP	WP-012345	TG_007	
Project Number	Project Name	Location	Client Tag No
IN 1176	Ichthys	Ulsan, South Korea	TG_007_ab
Workpack Details			
System	C2SA-790_FW347-1GA3-K-N	Sub-System	N/A
Line No	L-80-790_FW347-JF-002		
Instruction			
(xvii) Flange make up method shall be followed as per below for hydrocarbon / hydraulic oil / water injection systems:			
For all line classes below 1500# flange joints, manual wrench shall be used for bolt up to 1" dia. For over 1" to 1 1/2" bolt dia., manual torque wrench shall be used. For bolt over 1 1/2" to 2" bolt dia., hydraulic bolt torque shall be used. For over 2" bolt dia., bolt tensioning should be applied.			
For all line classes 1500# & above, manual torque wrench shall be used for bolts up to 1" bolt dia. For over 1" to 2" bolt dia., hydraulic bolt torque shall be applied.			
Joint Details			
Joint Type	ANSI Standard	Gasket Type	SWG
Joint Size	20	Gasket Material	Stainless
Joint Class/Rating	300	Bolt Qty	24
Flange Material	ANSI B16.5	Nut A/F	2
Bolt Material	A320-L7	Grip Length	5.13 in
Bolt Size/Length	1 1/4" / 8.46 in	Bolt Coating	Black Oxide
Lubricant Name	MOLYKOTE 1000	Co-efficient of Friction (μ)	0.11
Residual Bolt Stress	40000 lbf/in ²	Bolt Load	37760 lbf
Recommended Equipment			
Tension		Torque	
Tool Recommended		Tool Recommended	HTL-053
Tool Cover	100% / 50% / 25%	Torque (Stages/Pass)	30% 60% 100%
1st Pass Pressure		Torque Value	177 lbf.ft 353 lbf.ft 589 lbf.ft
2nd Pass Pressure		Pump Pressure	547 psi 1094 psi 1824 psi
Check Pass			
Equipment Information			
Tool Used	3ATW	Serial No	W6005
Pump Type	LAPP5	Serial No	123456
Note: Record serial numbers for equipment used on final/check pass only			
Flange Checks			
Flange Face	Clean	<input checked="" type="checkbox"/> Aligned	<input checked="" type="checkbox"/> X
Bolts	Correct Length	<input checked="" type="checkbox"/> Correct Material	<input checked="" type="checkbox"/> X
Gasket	Correct Size	<input checked="" type="checkbox"/> Correct Material	<input checked="" type="checkbox"/> X
Comments: All good in good condition!			
Print Name		Signature	
JOHN SMITH		<i>J. Smith</i>	
Date		Date	
9 th FEBRUARY 2016		9 th FEBRUARY 2016	
Supervisor		Signature	
JOHN SMITH		<i>J. Smith</i>	
Date		Date	
9 th FEBRUARY 2016		9 th FEBRUARY 2016	
Client Acceptance		Signature	
SEAN KIM		<i>보민사람</i>	
Date		Date	
9 th FEBRUARY 2016		9 th FEBRUARY 2016	

Baker Hughes | Process and Pipeline Services
Office Direct: +603 51234805
Cell: +6012 667 5424 |
http://www.bakerhughes.com

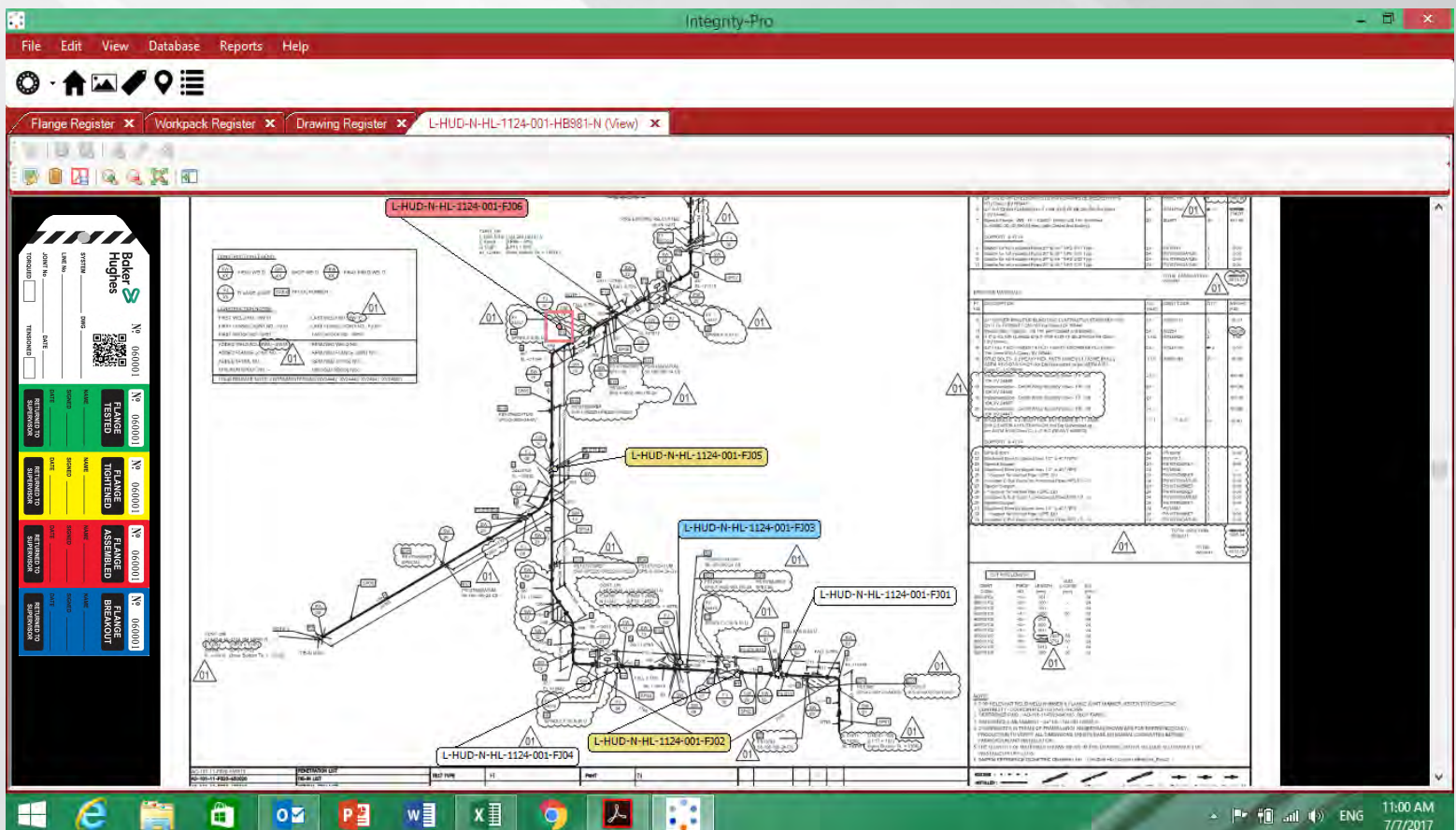
3. Key Feature – Digital Dashboard

- Dashboard for Engineering, QC and Operations.



4. Key Feature – Drawing Overlay & Mark-up

- Drawing overlay feature allows Flange Management tags and visual status to be layered on top of leak test mark-up route.
- Mark-up drawings allow detailing information on valves within the test envelope.



5. Key Feature – AEGEX tablet

- Intrinsically safe Zone 1/21 & DIV. 1 AEGEX tablet running INTEGRITY-PRO (Flange Management) FM JIT software, & Windows 10 as standard.
- The AEGEX tablet can directly scan the Flange Tag Bar Code, thereby locating the Flange Joint ID immediately in the Flange Register where the Flange status can be updated in real time.



FLANGE REGISTER



DRAWING OVERLAY MARK-UP



FLANGE TAG BAR CODE SCANNING



ADD FLANGE ACTIVITIES



Data upload to local server/cloud hosted DB



ADD WORK INSTRUCTION

BOLT**PREP**

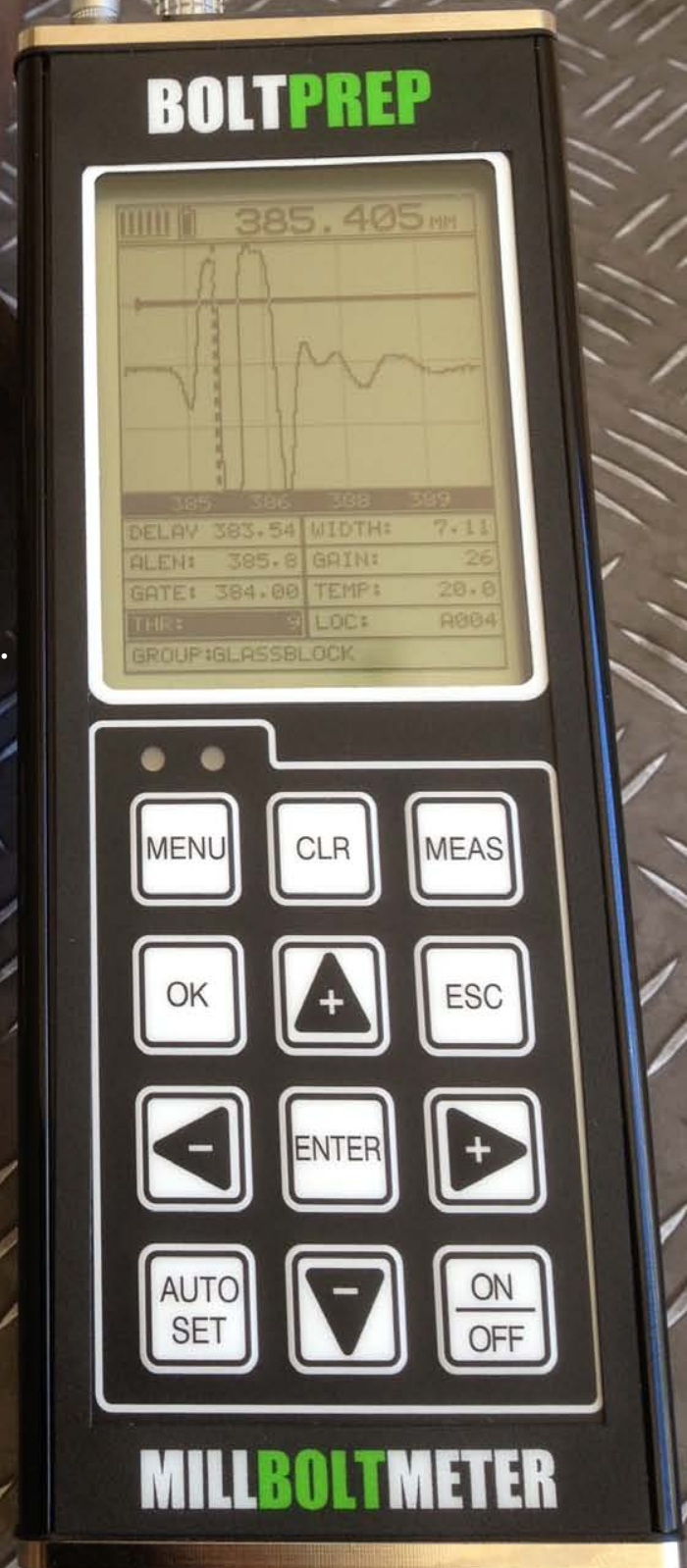
MILL**BOLT**METER

Bolt Tension Monitor

Ultrasonically measures the actual elongation produced by tightening a threaded fastener.

The most advanced ultrasonic solution available on the market.

- ▶ EFFECTIVELY monitor your bolts during periodic shutdowns over the service life of the fastener.
- ▶ VISUALLY compare the unloaded to the loaded waveform.
- ▶ MEASUREMENT QUANTITIES
Time (nanoseconds), Elongation, Load, Stress, and %Strain.
- ▶ DISPLAY OPTIONS — RF, Rectified, Large Digits with Limits Bar.
- ▶ DISPLAY RESOLUTION
1/8 inch VGA 240 x 160 pixels.
- ▶ STORES 8000 readings and waveforms in multiple groups.
- ▶ BUILT-IN linear regression or vector for optimizing load measurements.
- ▶ AUTO SET feature automatically optimizes detection and adjusts display.
- ▶ HI/LO ALARM tolerance limits work in conjunction with the data port and external pump shut-off device.



MILLBOLT METER SPECIFICATIONS

Physical

Weight:

13.5 ounces (with batteries).

Size:

Width (2.5 in/63.5 mm)

Height (6.5 in/165 mm)

Depth (1.24 in/31.5 mm)

Operating Temperature:

-14° to 140°F (-10° to 60°C).

Keyboard:

Membrane switch with twelve tactile keys.

Case:

Extruded aluminum body with nickel plated aluminum end caps (gasket sealed).

Data Output:

Bi-directional RS232 serial port; Windows® PC interface software.

Display:

1/8in VGA grayscale display (240 x 160 pixels); viewable area 2.4 x 1.8in (62 x 45.7mm); EL backlit (on/off/auto invert).

Ultrasonic Specifications

Measurement Modes:

Pulse-Echo (flaws, pits).

Pulse-Echo w/Gate (fine adjust).

Pulser:

Square wave pulser with adjustable pulse width (spike, thin, wide).

Receiver:

Manual or AGC gain control with 40dB range.

Timing:

10 bit 250 MHz digitizer.

Transducer

Transducer Types:

Dual Element (1 to 10 MHz).

Locking quick disconnect "00" LEMO connectors.

Standard 4 foot cable.

Custom transducers and cable lengths available for special applications.

& Thickness Gauge

Measuring

Range:

From 1 to 96 inches (25.4 to 244 cm).

Quantities:

Time - Nanoseconds.

Elongation - Change in length (inches/millimeters).

Load - Force load applied (pounds KIP or megapascals MPa).

Stress - Force for unit area stress applied (inches per inch or millimeters per millimeter).

%Strain - Ratio of elongation to effective length.

Resolution:

+/- 0.00001 inch (0.0001 mm).

Velocity Range:

0.0492 to .3937 inches/microsecond (in/μs) (1250 to 9,999 meters/sec).

Fixed, Single, and Two-point zero calibration options.

Select bolt material types from a preset or custom list.

Units:

English & Metric / Fahrenheit & Centigrade.

Display

A-Scan: Rectified +/- (half wave view), or RF (full waveform view).

Large Digits: Display and toggle between nanoseconds, elongation, load, stress, and strain; Digit Height: 0.400 inch (10mm).

Limits Bar (alarm limits): Set Hi & Lo alarm limits for displaying an acceptable tolerance range.

Repeatability Bar Graph: Bar graph indicates stability of measurement.

Data Logger

Total of 8,000 bolts in multiple bolt groups. Stores both waveform views, nanoseconds, elongation, load, stress, strain and all gauge settings for each reading.

Memory:

16 megabit non-volatile ram.

Transducer

Transducer types:

Single element (1 MHz to 10 MHz & 1/8 to 1 inch diameters). Magnetic & Non-Magnetic options.

Glue-on transducers available for short bolts with minimal elongations to eliminate transducer placement errors.

Locking quick disconnect "00" LEMO connectors. Standard 10 foot cable.

Custom transducers available for special applications.

Temperature probe for automatic temperature compensation.

Features

Setups:

64 custom user defined setups; Factory setups can also be edited by the user.

Gate:

Gate used to fine adjust where the detection point occurs.

Alarm Limits:

Set Hi and Lo tolerances with audible beeper, viewable scan bar, and visual LEDs.

Auto Set:

Locates the detection signal, optimizes the gain setting, and adjusts the overall display to show the waveform and detection point automatically.

Field Calibration:

Vector & linear regression.

Certification

Factory calibration traceable to NIST & MIL-STD-45662A.

Warranty

2 year limited



MADE IN THE USA

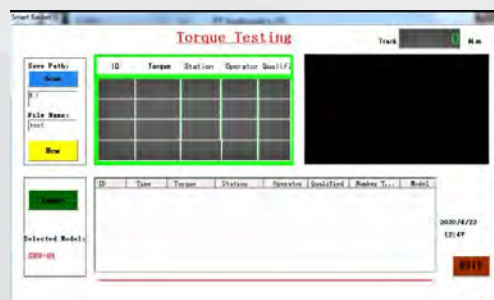
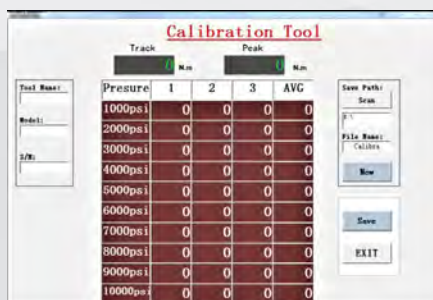


TS Transducer Socket

- TS Transducer Torque Socket with Blue tooth and software included
- Peak and Continuous Torque measurement option
- Can be used with a Hand Clicker Style or Hydraulic Torque Wrench
- Black anodizing coating for corrosion protection
- Comes as a Plug & Play system
- Accuracy $\pm 3\%$, Consistency $\pm 1\%$
- Comes complete with carry case
- Piezoelectric transducer torque control system with LCD display



Description	Torque (Nm)	SQD Size
TS-033mm	150~1,500 ft lbs	3/4"
TS-036mm	150~1,500 ft lbs	3/4"
TS-041mm	150~1,500 ft lbs	3/4"
TS-046mm	150~1,500 ft lbs	3/4"
TS-050mm	300~3,000 ft lbs	1"
TS-055mm	300~3,000 ft lbs	1"
TS-060mm	300~3,000 ft lbs	1"
TS-065mm	800~8,000 ft lbs,	1-1/2"
TS-070mm	800~8,000 ft lbs,	1-1/2"
TS-080mm	800~8,000 ft lbs,	1-1/2"
TS-090mm	1,200~12,000 ft lbs	1-1/2"
TS-100mm	1,200~12,000 ft lbs	1-1/2"





Bolt Sequential Numbering Magnetic Discs

- TorqTag® are durable strong Magnetic Numbering Discs available in three colours, Red, Yellow and Green.
- All are numbered from 1 to 28 or 1 to 56 to signify the correct bolting sequence.
- Designed to be attached anywhere around the flange or on top of the stud bolt itself on larger applications.
- All TorqTag's are 100% reusable and are used for ECITB UK & ASME MJI training.
- They include an individual bar code which can be read and used with data collection devices.
- Also available with heavy duty, long life adhesive backing for applications where they are required to remain.
- A Higher Powered Neodymium magnetic version is also available for applications with thick paint etc.



Durable Flange Tagging Solutions for Leak Testing

- Material Prism Polypropylene
- UV Protection additive
- Melting point approx. 140°C
- For use in extreme environments
- Both onshore and offshore use
- Proven in oil & gas environments
- Resistant to most chemicals & oils
- 100% Recyclable material

SYSTEM _____ DWG _____

LINE No _____

JOINT No _____ DATE _____

TORQUED TENSIONED

Nº 060001

Nº 060001	Nº 060001	Nº 060001	Nº 060001
FLANGE TESTED	FLANGE TIGHTENED	FLANGE ASSEMBLED	FLANGE BREAKOUT
NAME _____	NAME _____	NAME _____	NAME _____
SIGNED _____	SIGNED _____	SIGNED _____	SIGNED _____
DATE _____	DATE _____	DATE _____	DATE _____
RETURNED TO SUPERVISOR	RETURNED TO SUPERVISOR	RETURNED TO SUPERVISOR	RETURNED TO SUPERVISOR



AWS SERIES

Hydraulic Tool Calibration Stand



DESCRIPTION:

LAPP Equipment UK LTD have a fully equipped Laboratory to be able to calibrate all brands of Hydraulic torque wrenches to the International NIST Standard, but understand also that some clients have enough High Torque Wrenches in their fleet to warrant having their own equipment for service and calibration.

Being a specialist in all things torque LAPP UK are pleased to be able to offer a wide range of Torque Testing Equipment, that is certified to the NIST International Standard and enables users to be able to certify their own equipment, and ensure full traceability for themselves and their customers. **NIST** (National Institute of Standards and Technology USA).

LIST OF HYDRAULIC TOOL TEST STAND MODELS:

Part Number	Imperial	Intl System (SI)	Metric
AWS-QCF-750	75-750 Ft.lbs	101-1012 Nm	10-105 Kgf.m
41011-1K	100-1000 Ft.lbs	135-1350 Nm	14-138 Kgf.m
41012-2.5K	250-2500 Ft.lbs	340-3400 Nm	35-346 Kgf.m
41013-5K	500-5000 Ft.lbs	680-6800 Nm	69-961 Kgf.m
41015-10K	1000-10000 Ft.lbs	1350-13500 Nm	138-1383 Kgf.m
41025-25K	2500-25000 Ft.lbs	3400-34000 Nm	346-3456 Kgf.m
41016-50K	5000-50000 Ft.lbs	6800-68000 Nm	691-6913 Kgf.m



MADE IN THE USA

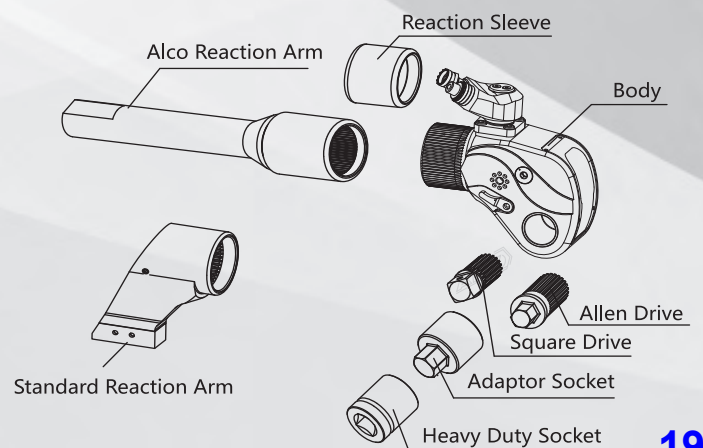
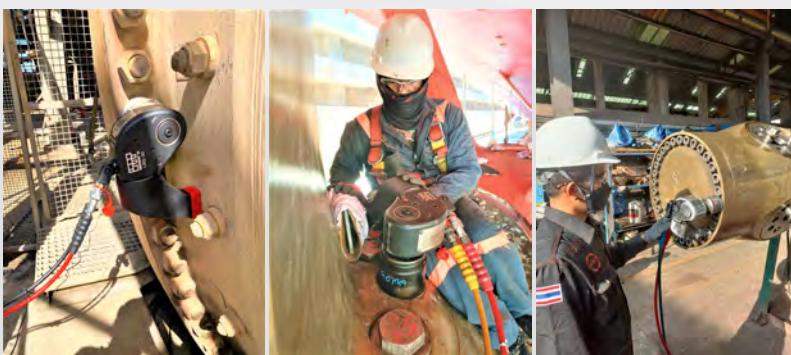
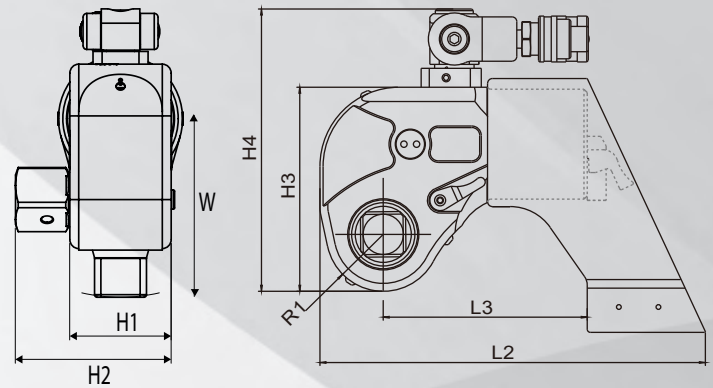
Square Drive Hydraulic Torque Wrench



- Easy replaceable square and hexagon drive adaptors
- Body shroud engraved with torque pressure chart
- Suitable for continuous operation at 85% of maximum pressure
- Heavy duty aluminum-titanium composite light body
- 360° adjustable reaction arm with safety lock feature

- Working pressure 10,000 psi max.
- Designed to tighten and loosen fasteners requiring very high torque
- Models from 81 ft-lbs up to 53,064 ft-lbs
- Constantly repeatable accuracy of $\pm 3\%$
- 360°x185° uni-swivel with quick release couplings

Type	Torque (ft.lbs)		Square Drive (lbs)	Weight (lbs)	Dimension (inch)							
	Min	Max			L2	L3	H1	H2	H3	H4	W	R1
LSQ-0.7	81	~ 814	3/4"	3	4.37	4.47	1.65	2.60	2.99	4.25	2.83	0.88
LSQ-1	135	~ 1,357	3/4"	5	6.80	4.59	1.97	2.88	3.77	4.97	3.45	1.04
LSQ-3	318	~ 3,183	1"	11	8.16	5.34	2.63	3.72	4.88	6.46	4.49	1.31
LSQ-5	564	~ 5,639	1-1/2"	18	9.73	6.41	3.16	4.93	5.97	7.71	5.39	1.63
LSQ-8	775	~ 7,753	1-1/2"	24	10.74	7.54	3.54	5.28	6.57	8.54	6.05	1.82
LSQ-10	1,127	~ 11,272	1-1/2"	32	12.22	8.02	3.95	5.57	7.35	9.04	6.73	2.03
LSQ-15	1,570	~ 15,704	2-1/2"	42	12.66	8.52	4.12	5.80	8.16	10.03	7.02	2.95
LSQ-20	2,010	~ 20,101	2-1/2"	62	13.13	9.12	4.72	6.20	8.66	10.63	7.32	3.32
LSQ-25	2,548	~ 25,481	2-1/2"	77	14.72	10.79	5.39	7.87	9.72	11.69	8.60	4.83
LSQ-35	3,607	~ 36,076	2-1/2"	104	15.69	11.33	6.02	8.50	10.10	12.07	9.10	5.49
LSQ-50	5,306	~ 53,064	2-1/2"	192	16.75	12.31	7.30	9.78	11.46	13.43	10.2	6.20

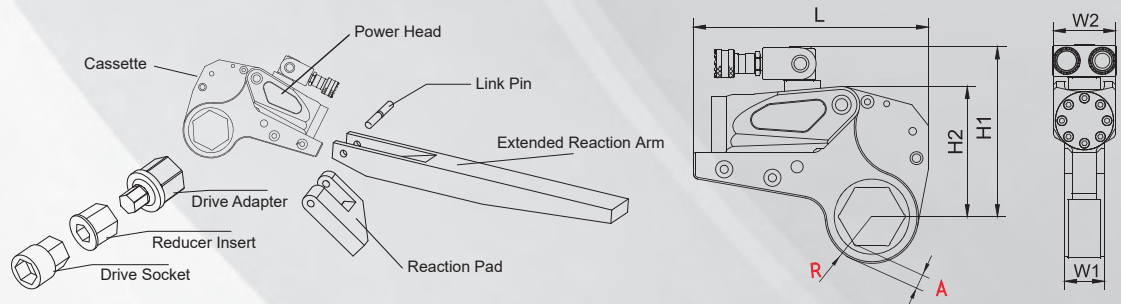


Low Profile Hexagon Hydraulic Torque Wrench



- Constantly repeatable accuracy of $\pm 3\%$
- 10 different models from 169 ft.lbs to 61,875 ft.lbs
- Designed to tighten & loosen nuts requiring high torque
- 10,000psi max with $360^\circ \times 185^\circ$ Uni-swivel assembly

- Maximum torque power with min cassette wall thickness
- Durable aluminum-titanium alloy drive cylinder
- Suitable for continuous operation at 85% max pressure
- Safety pressure relief valve stops over pressurisation

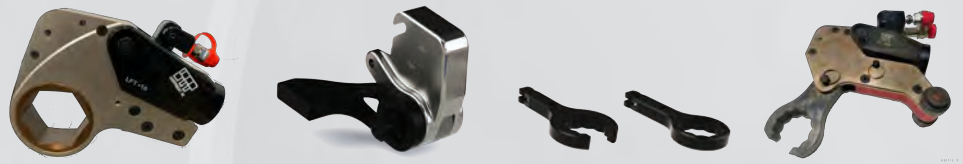


Type	A/F (inch)	Torque (ft.lbs)		Drive Cylinder (lbs)	Cassettes (lbs)	Dimension (inch)						
		Min	Max			L	H1	H2	W1	W2	A	R
LFT-2	7/8" ~ 2-3/16"	169	~ 1,691	2.20	3.52	7.69	4.96	4.03	1.26	2.01	0.39~0.63	1.06~1.69
	2-3/8"	177	~ 1,770	2.20	3.74	7.69	5.06	4.14	1.26	2.01	0.43	1.81
LFT-3	1-3/8" ~ 2-3/8"	250	~ 2,503	3.20	3.75	8.69	6.06	4.64	1.36	2.30	0.48	1.85
LFT-4	1-1/4" ~ 2-9/16"	470	~ 4,703	4.40	9.68	10.15	6.97	5.35	1.65	2.60	0.55~0.63	1.42~2.09
	2-3/4" ~ 3-1/8"	476	~ 4,775	4.40	10.12	10.35	7.37	5.74	1.65	2.60	0.59	2.2~2.4
LFT-8	1-7/16" ~ 3-11/16"	795	~ 7,948	7.26	17.60	11.96	8.16	6.66	2.09	3.27	0.63~0.87	1.81~2.36
	3-7/8" ~ 4-1/4"	867	~ 8,864	7.26	18.48	11.96	8.51	7.01	2.09	3.27	0.67	2.95~3.07
LFT-14	2" ~ 4-5/8"	1,346	~ 13,456	12.10	25.52	14.25	9.42	8.04	2.52	3.90	0.75~1.22	2.36~3.43
LFT-18	3-1/2" ~ 4-3/4"	1,804	~ 18,031	17.86	42.55	15.90	9.52	10.04	2.68	4.13	0.85~1.26	2.66~3.93
LFT-20	3-1/2" ~ 5"	2,139	~ 21,389	23.15	49.16	16.81	9.54	10.43	2.76	4.33	0.88~1.28	2.68~3.96
LFT-30	2-3/8" ~ 6-1/8"	3,043	~ 30,426	25.08	63.80	16.57	11.94	10.72	3.35	5.16	0.98~1.14	3.03~4.53
	6-1/2" ~ 6-7/8"	3,282	~ 32,819	25.08	66.00	17.05	12.41	11.23	3.35	5.16	1.06~1.42	4.8~5.04
LFT-45	5" ~ 6-1/8"	4,454	~ 44,534	35.94	129.41	19.13	12.24	13.86	4.13	6.30	1.16~1.52	4.9~5.14
LFT-60	5-3/8" ~ 6-7/8"	6,187	~ 61,875	50.71	165.35	20.24	13.23	14.76	4.60	6.98	1.26~1.62	5.1~5.24

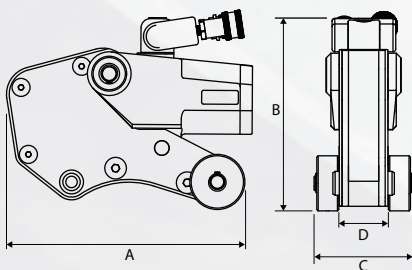
LFT-AB SERIES

Ring and Open End Hydraulic Torque Spanners - 3 in 1 Tool

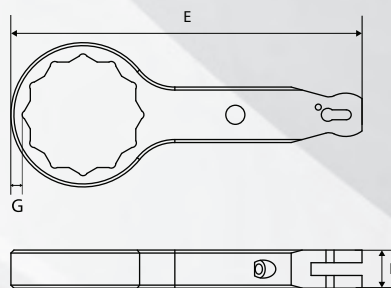
Technical Information



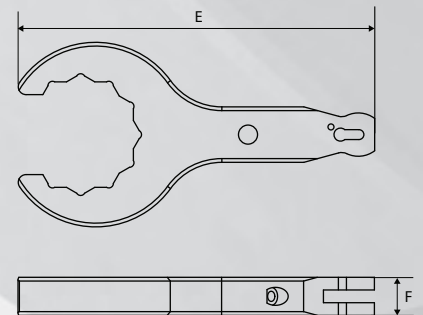
Model		LFT2-AB	LFT4-AB	LFT8-AB	LFT14-AB
Min Torque	lb.ft	170	431	808	1364
	Nm	230	584	1095	1848
Max Torque	lb.ft	1770	4775	8864	13644
	Nm	2398	6470	12010	18488
Weight	Kg	2.2	3	3.3	8.2
A	mm	155	208	260	349
B	mm	129	168	209	239
C	mm	66	87	108	132
D	mm	32	42	53	64
E	mm	Dependent on A/F	Dependent on A/F	Dependent	Dependent on A/F
F	mm	19	25.4	31.75	39
G	mm	7.5	7.5	13	17.5
A/F	mm	19 - 60	36 - 75	55 - 90	80
A	Inch	6.1	8.1	10.2	13.7
B	Inch	5.1	6.6	8.2	9.4
C	Inch	2.6	3.4	4.3	5.1
D	Inch	1.2	1.7	2.1	2.52
E	Inch	Dependent on A/F	Dependent	Dependent	Dependent on A/F
F	Inch	0.7	1	1.25	1.5
G	Inch	0.3	0.3	0.5	0.7



Tool Body



Ring End Spanner



Open End Spanner



LAPP SERIES

Hydraulic Torque Wrench Pumps

LAPP3 Electric Pump

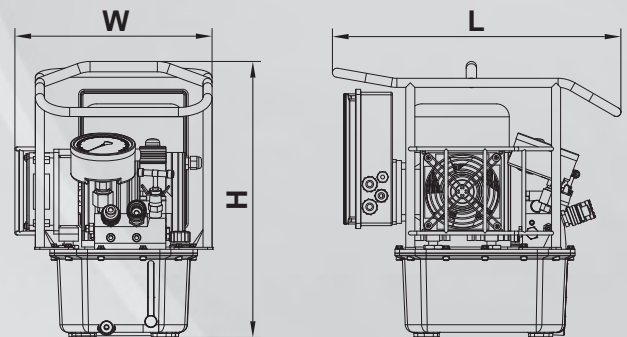
- Compact three-stage pump
- The Single valve block can be replaced by component FP-4, thereby allowing 4 Tools to be driven simultaneously
- Three stage induction motor driven so brush-less
- Oil cooler, supporting continuous operation with steel frame
- 4" diameter gauge, aluminum oil tank with oil level indicator
- Variable pressure adjustment between 1,000 to 10,000 psi
- Designed for continuous operation



FP-4



Model	LAPP3-2	LAPP3-4
Working pressure	10000 Psi	10000 Psi
Drive	Electric	Electric
Voltage	220~230 V / 50 Hz	220~230 V / 50 Hz
Power (HP)	1.5	1.5
Tank capacity (Gallon)	1.45	1.45
Flow rate (cu.in/min)	335.5/85.4/42.7	335.5/85.4/42.7
Oil cooler	Yes	Yes
Weight (lbs)	59	62
Oil outputs	4 x 1/4" NPT 17.52	8 x 1/4" NPT
LxWxH (inch)	X 11.97X 16.77	18.15 X 11.97 X 16.77

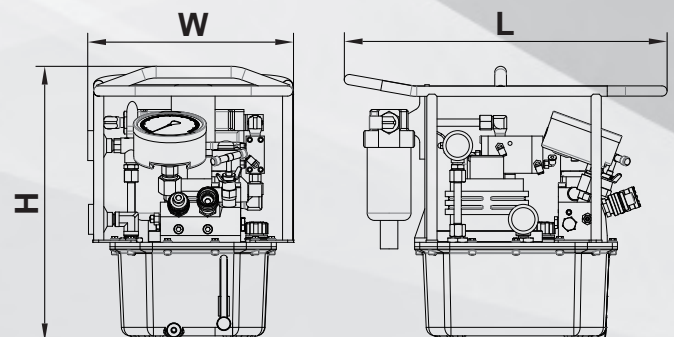


LAPP4 Pneumatic Pump

- Compact three-stage pump
- The Single valve block can be replaced by component FP-4, thereby allowing 4 Tools to be driven simultaneously
- Three stage air motor driven
- Oil cooler, supporting continuous operation with steel frame
- 4" diameter gauge, aluminum oil tank with oil level indicator
- Variable pressure adjustment between 1,000 to 10,000 psi
- Designed for continuous operation



Model	LAPP4-2	LAPP4-4
Working pressure	10000 Psi	10000 Psi
Drive	Air	Air
Air Pressure	58~116 Psi	58~116 Psi
Power (HP)	4.0	4.0
Tank capacity (Gallon)	1.45	1.45
Flow rate (cu.in/min)	610/134/67	610/134/67
Oil cooler	Yes	Yes
Weight (Kg)	28	30
Oil outputs	4 x 1/4" NPT	8 x 1/4" NPT
LxWxH (inch)	17.50 X 12.00 X 16.00	17.50 X 12.00 X 16.00



LAPP5-4 *Twin Pneumatic Heavy Duty Pump*

- Steel frame for ease of carrying & pump protection
- Three stage, compact design with 4" diameter pressure gauge
- Applicable for both one or four torque wrenches
- Aluminum oil tank with oil level gauge
- Variable pressure adjustment between 1,000 to 10,000 psi

Model	LAPP5-4
Supply	100psi air pressure
Power (HP)	4.0
Tank capacity (Gallon)	2.90
Max. Oil Flow:	1200 cu.in/min
Weight (lbs)	97
LxWxH (inch)	22.00 X 17.00 X 19.00



LAPP3-2-EX *ATEX Certified Electric Torque Wrench Pump*

- ATEX Certified to International Standards II 2G Ex h IIB T4 Gb
- Three stage induction motor driven so brush-less
- Light weight and compact design
- Large oil capacity tank for a wide range of Torque wrenches
- Fitted with a compact 4" pressure Gauge

Model	LAPP3-2-EX
Supply	220V, 50Hz, Single Phase or 380V, 50Hz, 3 Phase
Power	1.5kW (@ 2,800 rpm)
Tank capacity	8 liters Reservoir
Max. Oil Flow	8.6 L/min low pressure, 65 Bar
Weight (Kg)	45
LxWxH (mm)	330x460x540



LAPP-DP-2 *Gasoline Powered Hydraulic Torque Wrench Pump*

- Steel frame for ease of carrying & pump protection
- 2-Stage Double Acting with 4" diameter pressure gauge
- Light weight and compact design
- Aluminum oil tank with oil level gauge
- Variable pressure adjustment between 1,000 to 10,000 psi

Model	LAPP-DP-2
Supply	Gasoline
Power (HP)	4.0
Tank capacity (Litre)	28
Max. Oil Flow:	640 cu.in/min
Weight (Kg)	58
LxWxH (mm)	655x375x610



LBW SERIES

BackUp Wrenches



HANDS FREE



SPARK FREE



NO TRAPPED FINGERS



NO FLOGGING HAMMER REQUIRED



WON'T LOCK ON

THE LBW-SERIES MAGNETIC BACKUP WRENCH, THE SIMPLEST WAY TO STOP A NUT FROM ROTATING. EASY TO USE AND VERSATILE

MAGNETS EMBEDDED creates a magnetic field force that attracts it to other ferromagnetic materials.

BI-HEXAGONAL DESIGN provides the ultimate mixture of versatility and durability

HIGH STRENGTH
Heavy duty
Heat treated material



Model	Across Flat (mm)	Across Flat (in)	Load Limits (Ft.lbs)	Load Limits (Nm)
LBW104	30	1-1/4"	2400	3254
LBW107	36	1-7/16"	2500	3390
LBW110	41	1-5/8"	3500	4745
LBW113	46	1-13/16"	3500	4745
LBW200	50	2"	4100	5559
LBW203	55	2-3/16"	4200	5694
LBW204	57	2-1/4"	4300	5830
LBW206	60	2-3/8"	4300	5830
LBW209	65	2-9/16"	4550	6169
LBW212	70	2-3/4"	5600	7592
LBW215	75	2-15/16"	6300	8542
LBW302	80	3-1/8"	7000	9491
LBW308	85	3-1/2"	7200	9762
LBW311	90	3-11/16"	7300	9897
LBW314	95	3-7/8"	9000	12202
LBW400	100	4"	24000	32539
LBW402	105	4-1/8"	24000	32539
LBW404	110	4-1/4"	24000	32539
LBW408	115	4-1/2"	25000	33895
LBW410	120	4-5/8"	27000	36607
LBW500	130	5"	27000	36607
LBW506	135	5-3/8"	27000	36607
LBW512	145	5-3/4"	28000	37962

LSR SERIES

Spring Return Bolt Tensioner

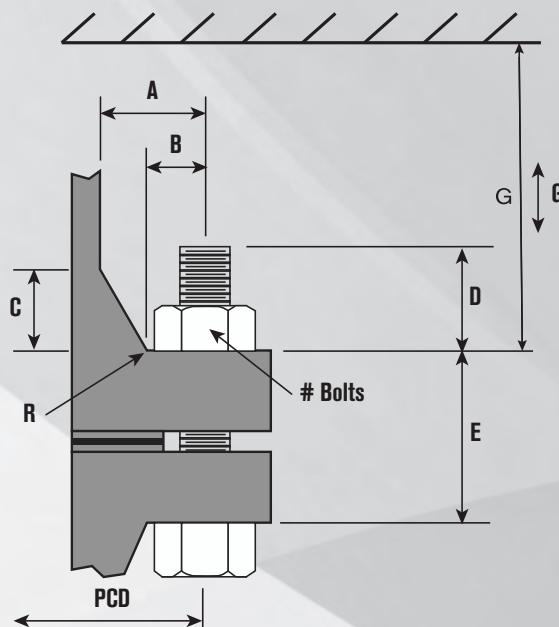
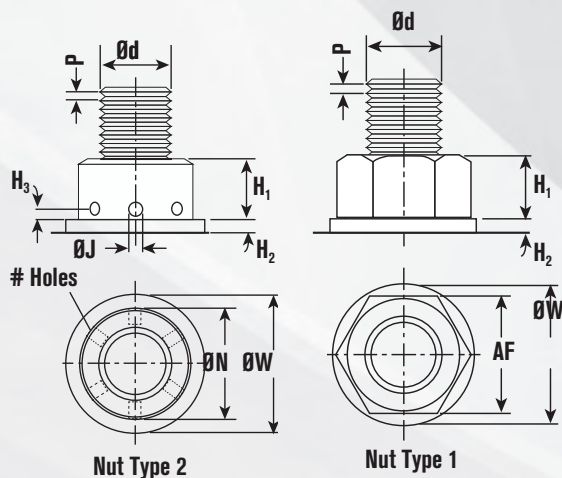


LSR BOLT TENSIONER Spring Return Bolt Tensioner

- Unique quick release bridge adaptation
- Piston over-stroke prevention
- Piston stroke indication
- Piston / cylinder misalignment compensation
- Bolt coverage from 1" to 3 1/2"
- Designed to fit BS1560 / ANSI B16.5 / API flanges
- Fully enclosed load cell design eliminates entry of debris into piston retraction mechanism

The Spring Return design dramatically increases productivity and safety on the job site when compared to older technology manual return tensioners.

topside.



LSR SPRING RETURN BOLT TENSIONER

Our spring return bolt tensioner reduces operator fatigue, saving time and improving safety and productivity.

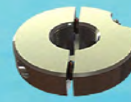


Order a load cell and an adaptor kit to make a complete tensioner, each are sold separately.

Specifications and Dimensional Data																
Load Cell	Stud Diameter		Tool Load		Hydraulic Area		A		B		C		D			
	Imp	Metric	lbs	kN	in ²	mm ²	in	mm	in	mm	in	mm	Imperial	Metric		
													in	mm		
LSR 0	3/4"	M20	35,971	160	1.65	1,067	2.6	66	3.7	93	2.5	63	5.4	136		
	7/8"	M22											5.6	142	5.6	144
LSR 1	1"	M24	62,950	280	2.89	1,867	3.4	87	4.6	117	2.7	68	6.9	175		
	1-1/8"	M27											7.1	181	7.0	178
LSR 2	1"	M24	101,100	450	4.65	3,001	4.1	103	4.6	117	3.0	75	6.9	175		
	M27	7.0											178			
	1-1/8"	M30											7.1	181	7.2	184
	1-1/4"	M33											7.4	188	7.5	190
LSR 3	1-3/8"	M36	148,381	660	6.82	4,401	4.7	118	4.8	123	3.5	88	7.7	195		
	1-1/2"	M39											7.8	197	7.8	192
	1-5/8"	M42											8.0	203	8.0	204
	1-3/4"	M45											8.2	209	8.3	211
LSR 4	1-7/8"	M48	224,820	1,000	10.34	6,668	5.5	140.5	5.2	132	4.4	112	8.3	211		
	2"	M52											8.5	217	8.6	218
	M56	8.8											223	8.9	225	
	2-1/4"	M60											9.1	230	9.1	231
LSR 5	2-1/2"	M64	337,230	1,500	15.50	10,003	6.9	175.5	5.3	135	4.5	114	9.3	236		
	2-3/4"	M68											9.7	246	9.8	248
	M72	10.2											259	10.2	258	
	3"	M76											10.2	259	10.3	262
LSR 6	3-1/4"	M80	562,050	2,500	25.84	16,671	8.6	219	6.3	161	5.4	138	10.7	272		
	3-1/2"	M85											10.8	273	10.8	273
	M90	11.2											284	11.1	283	
	3-1/2"	M90											11.6	294	11.7	297
LSR 7	4"	M100	719,424	3,200	33.06	21,339	9.9	252	6.6	167	6.2	157	12.1	307		
	M95	12.3											312	12.1	308	
	M99	12.6											320	12.7	323	
	M100	13.1											332	13.2	334	
													13.2	332		
													13.1	332		
													13.2	332		
													13.2	339		
													13.5	346		
													13.5	346		
													13.7	352		
													13.9	356		
													14.2	363		

LMS SERIES

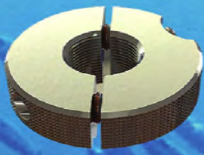
Sub-sea Hydraulic Tensioner



Subsea Only

Split Nut

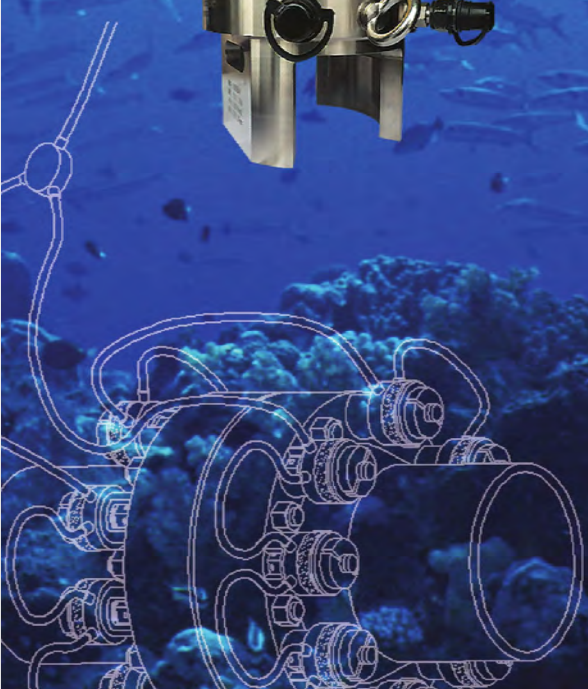
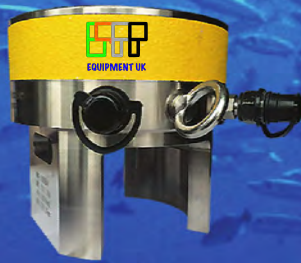
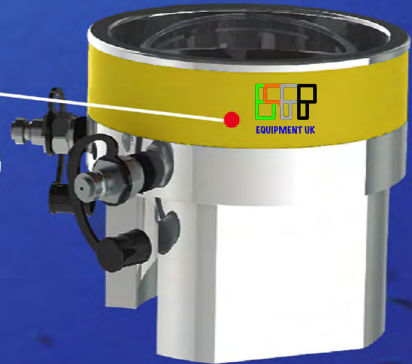
- Unique design
- Quick Installation
- Suit for long bolt,damage bolt
- Max piston stroke is 30mm
- Working Pressure:21750 psi (1500 bar)



Split Nut

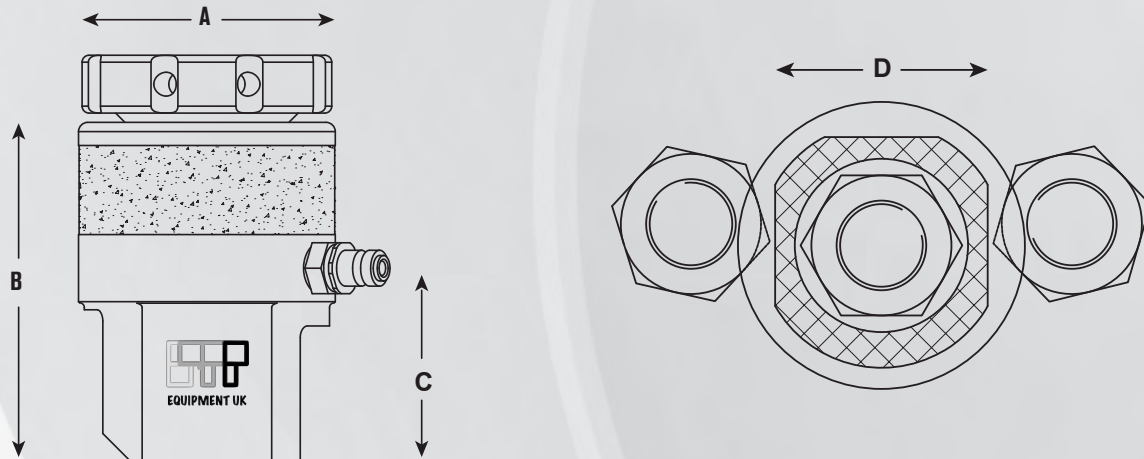
Piston

Cylinder

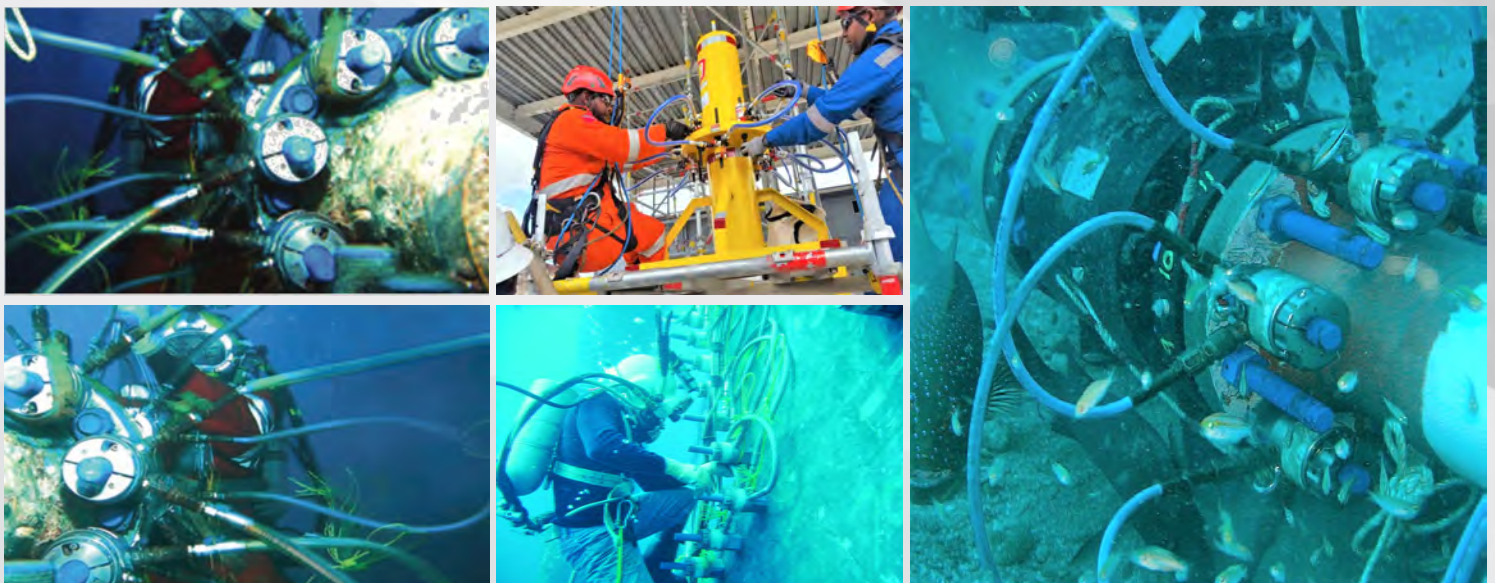


LMS SERIES

Sub-sea Hydraulic Tensioner



Type	Bolt Diameter		Load	Hydraulic Area		A in/mm	B in/mm	C in/mm	Minimum Bolt Height		D in/mm	Stroke in/mm	
	Imp	Metric		in ²	mm ²				in	mm			
LMS1	3/4"	M20	141	1.96	943	2.60/66	3.82/97	1.89/48	4.09	107	8.98/228	0.79/20	
	7/8"	M22							3.98	105			
LMS2	1"	M24	237	2.45	1585	3.23/82	5.02/127.5	2.36/60	5.24	139	11.65/296	1.82/30	
	1-1/8"	M27							5.12	136			
		M30								134			
LMS3	1-1/4"	M33	379	3.92	2532	3.82/97	5.39/137	3.03/77	5.35	142	12.17/309	1.82/30	
	1-3/8"	M36							5.24	139			
LMS4	1-1/2"	M39	551	5.69	3676	4.37/111	5.75/146	3.54/90	5.51	147	12.58/322	1.82/30	
	1-5/8"	M42							5.35	144			
LMS5	1-3/4"	M45	880	9.10	5868	5.35/136	6.22/158	4.49/114	5.94	160	13.46/342	1.82/30	
	1-7/8"	M48							5.83	158			
		2"							M52	5.71			154
LMS6	2-1/4"	M56	1564	16.17	10433	6.97/177	7.11/180.5	5.51/140	6.54	178	14.72/374	1.82/30	
	2-1/2"	M60							6.30	175			
	2-3/4"	M64							6.08	172			
		M68							6.08	169			
LMS7	3"	M76	2419	26.63	16128	8.54/217	7.95/202	7.09/180	7.13	195	15.10/409	1.82/30	
	3-1/4"	M80							6.89	192			
		3-1/2"							M85	6.65			188
									M90				184



HPB150-2 SERIES

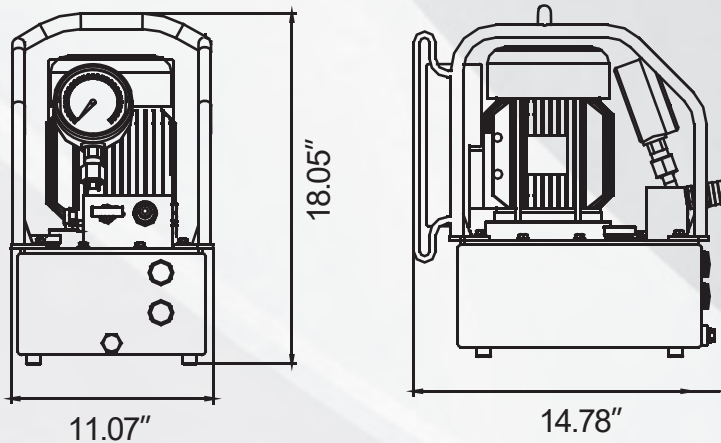
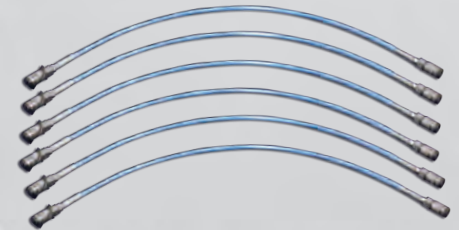
High Pressure Air/Electrical Tensioning Pump

Technical Data

SUPPLY Air/Electric	90 psi @ 45 cfm	220~230V/50Hz	220~230V/50Hz
Oil Capacity (Gallon)	2.11	2.11	2.11
Flow Rate (cu.in/min)	122/1.95	122/1.95	122/1.22
Output Pressure	22750 Psi	29000 Psi	36250 Psi
Output Port Size	1/4" BSP	1/4" BSP	1/4" BSP
Power (HP)	1.2	1.2	1.2
Weight (lbs)	38.30	58.30	58.30



- Single-Acting High performance
- Can be used for bolt tensioning and other HP equipment in the shipping vessel and wind power industry
- Convenient adjustable high pressure regulator with precision 4" gauge
- Easy to adjust the pressure in the range of 10,150 to 36,250 psi
- Simple & quick operation with high performance quick connect couplings
- Very user friendly for site work due to its light weight compact design



High Pressure Hand Tensioning Pump

16P80



Equipped with a pressure regulating valve, to adjust the output pressure for Max. 40,600 Psi)

Aluminum titanium alloy corrosion resistance, high strength, light weight, impact resistant, durable in a variety of harsh environments.

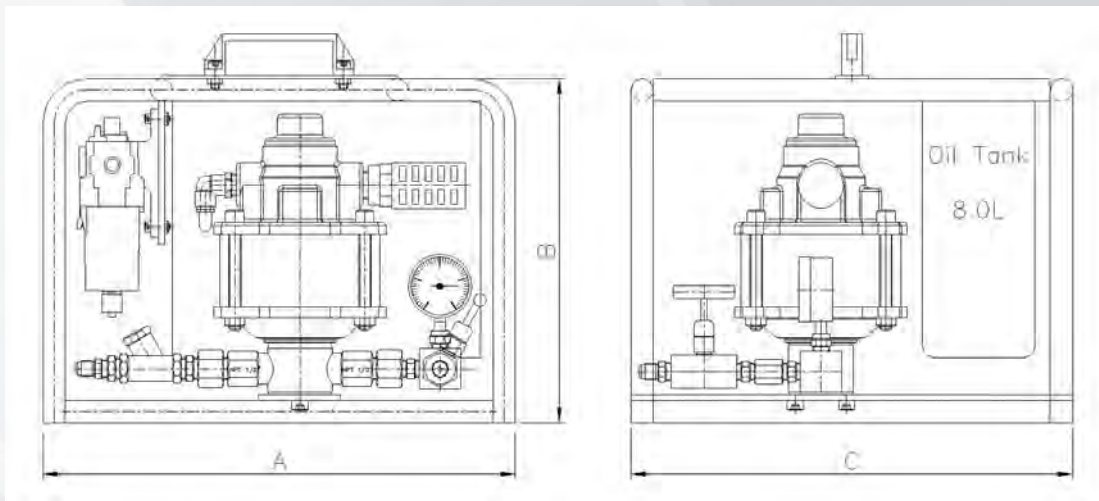
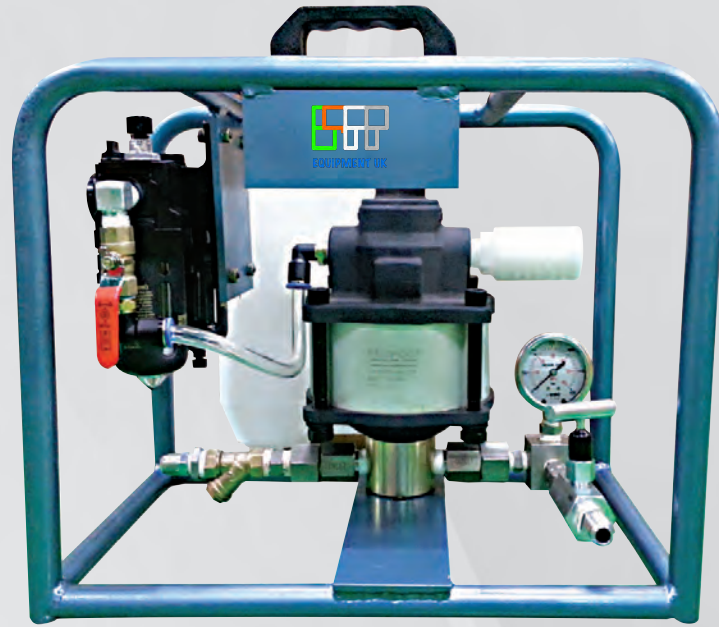
The built-in high and low pressure switching valve, allows for a low pressure high flow rate output.



These high pressure hydraulic hand pumps are designed for high pressure hydraulic equipment. Its pressure is adjustable up to 40,600 psi, and customers can order also different size oil tanks for different applications. LAPP UK provides a wide range of accessories for this series, and these products are designed for high accuracy applications, and so are fully TUV certified.

TLU SERIES

Air Driven Hydraulic / Water Leak Testing Pump



Model No.	Ratio	Maximum Pressure (bar) (at air 7bar)	Maximum flow rate (L/min)	A (mm)	B (mm)	C (mm)	Oil Tank (Liter)
TLU-0070	10:1	70	22	460	345	430	8.0
TLU-0280	40:1	280	4.2				
TLU-0420	60:1	420	3.0				
TLU-0700	100:1	700	2.2	480			
TLU-1190	170:1	1190	1.4	530			
TLU-1680	240:1	1680	0.9				
TLU-2100	300:1	2100	0.7				
TLU-2800	400:1	2800	0.6				

Single Speed Pneumatic Torque Gun

LPSW Series Pneumatic Torque Wrench

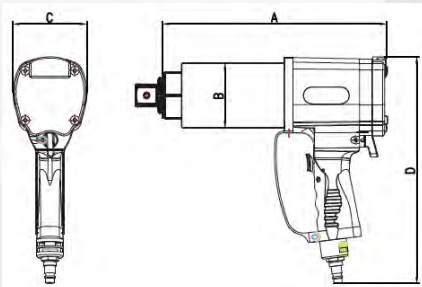
The pneumatic torque wrench is used in the working conditions that require precise and large-scale loading and unloading. The precise high-speed gearbox design can obtain stable and strong continuous output torque, which is suitable for high-efficiency occasions.

Maximized power-to-weight ratio

Wide torque range for a variety of applications and stations

Advanced gearbox design for unmatched reliability

Torque accuracy $\pm 4\%$, repeatability $\pm 4\%$



LPSW15 and LPSW21 series Pneumatic Torque Wrench



LPSW34 , LPSW40 and LPSW80 series Pneumatic Torque Wrench

LPSW tool includes a standard reaction arm. The special reaction arm can be custom-made.

Type	SQ Size	Torque(N.m)		Speed RPM	Weight kg	Size A mm	Size B mm	Size C mm	Size D mm	Noise db
		Min	Max							
LPSW-15	0.75"	275	1400	15	3.5	207	70	31.5	261	80
LPSW-21	1"	400	2000	10	3.9	201	70	34.5	261	80
LPSW-34	1"	700	3400	4.8	7.0	269	89	38.5	272	85
LPSW-40	1"	700	4000	4.8	7.5	289	81	38.5	272	85
LPSW-80	1.5"	2700	8000	4.2	12.2	317	93	51	293	85

Standard Accessories

- Standard Reaction Arm
- Circlip
- G1/2 Air Hose
- Air Gauge, FRL, Air Regulator
- Carry Basket
- Air - Torque Chart
- Operating Manual



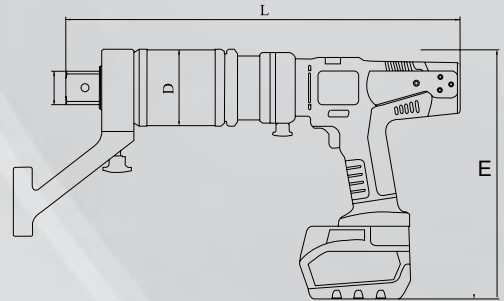


MK Series Lithium Battery Torque Gun



With a new torque display and buttons, this newly designed MK battery torque wrench offers unmatched power, versatility and reliability. MK Preferred Series allows users to choose the target torque more conveniently.

- Digital torque setting, adjustable every 1 Nm.
- Torque up to 8000 Nm with automatic release of reaction arm as standard.
- For applications with limited power sources or field service.
- Longer battery life, two batteries and one charge are standard



Torque Displaying



Customizable Reaction Arm



High Performance Lithium Battery



Soft Starting Trigger



Pistol Handle



Sliding Reaction Arm



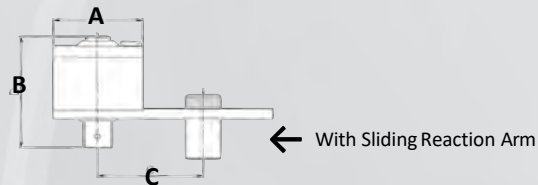
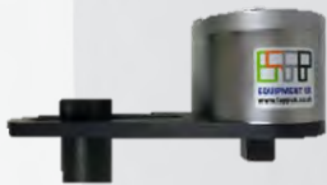
Extended Reaction Arm



Type	SQ Size	Torque (Nm)		Speed RPM	Weight kg	Size A mm	Size B mm	Size C mm	Size D mm
		Min	Max						
MK-700	0.75"	170	700	13	3.5	231	63	67	262
MK-1400	0.75"	300	1400	6	3.5	231	63	67	262
MK-2000	1"	400	2000	4	4.0	244	63	69	262
MK-4000	1"	800	4000	2	6.0	285	69	81	266
MK-7000	1.5"	1350	7000	2	8.8	295	95	95	272
MK-8000	1.5"	1500	8000	1.7	15	315	102	102	275

Accuracy ± 5%, Repeated Accuracy ± 2%

HM SERIES Mechanical Torque Multipliers



Part #	Ratio	Input Drive	Output Drive	Torque Range		A mm	B mm	C (min) mm	C (max) mm	Weight kg	React Arm kg
				N.m	lb. ft.						
HM1000	5:1	1/2"	3/4"	1000	750	118	98	82	196	7.0	1.2
HM1500	5:1	1/2"	1"	1500	1125	118	115	82	196	7.5	1.2
HM2500	25:1	1/2"	1"	2500	1875	118	150	82	196	8.9	1.2
HM3500	25:1	1/2"	1-1/2"	3500	2600	118	164	82	196	9.1	1.2
HM4000	25:1	1/2"	1-1/2"	4000	3000	118	176	82	196	10.0	1.2
HM6000	25:1	1/2"	1-1/2"	6000	4500	140	214	105	254	18.3	3.0
HM8000	25:1	1/2"	1-1/2"	8000	6000	182	228	125	294	28.0	3.0
HM10000	25:1	3/4"	1-1/2"	10000	7375	182	240	125	294	28.5	3.0

GMH & DH SERIES Adjustable Clicker Torque Wrenches

Torque Wrench Body

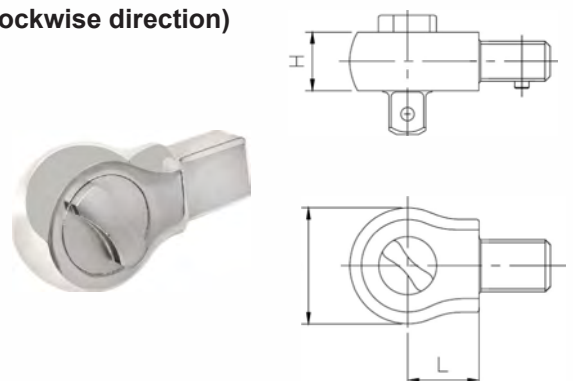
Part#	Shank Size	Torque Range		Length mm	Width mm	Weight kg
		N.m	Lb.ft			
GMH9125	9X12	25-125	20-90	427	38	0.94
GMH14200	14X18	40-200	30-150	460	38	1.06
GMH14335	14X18	65-335	50-250	520	38	1.20
GMH24500	24X32	100-500	80-400	855	56	5.00
GMH24800	24X32	160-800	120-600	1055	56	5.90
GMH241000	24X32	200-1000	150-750	1055	56	5.90
GMH271500	27X36	300-1500	200-1100	1249	64	9.00
GMH272000	27X36	400-2000	300-1500	1249	64	9.00
GMH273000	27X36	600-3000	400-2000	1249	64	10.30

- All-steel construction for extra Durability
- Permanently stamped major and minor scales for precision torque value settings.
- Minor scale with minimum 1/10th resolution.
- Convenient English major reference scale for Metric models and vice versa.
- Rectangular shank head holders: 9x12mm, 14x18mm, 24x32mm and 27x36mm accommodate different types and sizes of heads for varied applications.
- +/-4% Accuracy in clockwise direction from 20% to 100% Max. Torque.
- Pull to unlock lock ring keeps selected torque secure from accidental change.
- Grooved non-slip grip fits comfortably in your hand.



Square Drive Ratchet Head (can reverse for clockwise & counter-clockwise direction)

Part#	Drive	Shank Size	L mm	H mm	D mm	Weight g	Max. Torque N.m
DH9125	1/4"	9x12	17.5	20	37	135	25
DH92160	3/8"	9x12	17.5	20	38	160	160
DH93160	1/2"	9x12	17.5	20	38	160	160
DH143420	1/2"	14x18	25	20	40	265	420
DH144420	3/4" *	14x18	25	20	40	305	420
DH2441200	3/4"	24x32	35	32	60	1040	1200
DH2451200	1" *	24x32	35	32	60	1140	1200
DH2753000	1"	27x36	50	42	72	1720	3000



Electronic Adjustable Clicker Torque Wrenches



- Accuracy: $\pm 2\%$ from 20% to 100% of capacity.
- Display range: 2% to 110%.
- Units: Lbft, Lbin, Nm, Kgm.
- Modes: Peak Torque mode, Track mode.
- Target torque can be set.
- Led light and buzzer alarming when reaches target torque.
- Torque error percentage display function.
- Optional backlight, good for dark working condition.
- Continuous operate, automatic zero clearing.
- Battery level display.
- Automatically shuts off after 2 minutes of non use.
- Battery replaceable, LR03 AAA x 3 alkaline batteries, easy replacement.

Metric

Item No.	Square Drive	Torque Range		Length mm	Width mm	Weight kg
		N.m	Lb.ft			
LEJM250	3/8"	10-50	88.5-443*	452	38	0.93
LEJM2100	3/8"	20-100	14.8-73.8	482	38	1
LEJM3200	1/2"	40-200	29.5-148	522	40	1.12
LEJM3300	1/2"	60-300	44.3-221	590	40	1.52
LEJM4400	3/4"	80-400	59-295	700	57	3.3
LEJM4600	3/4"	120-600	88.5-443	1050	60	4.6
LEJM4800	3/4"	160-800	118-590	1250	60	5.2
LEJM41000	3/4"	200-1000	147.5-738	1250	60	5.2

*Unit is Lb.in

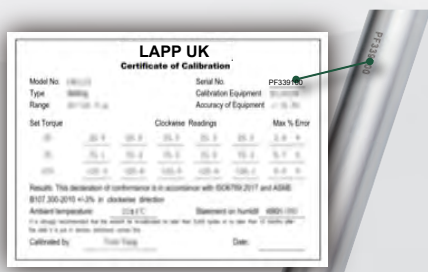
English

Item No.	Square Drive	Torque Range		Length mm	Width mm	Weight kg
		Lb.ft	N.m			
LEJ2250	3/8"	50-250*	5.6-28.2	427	38	0.88
LEJ280	3/8"	16-80	21.7-108	482	38	1
LEJ3150	1/2"	30-150	40.7-203	522	40	1.12
LEJ3250	1/2"	50-250	67.8-339	590	40	1.52

*Unit is Lb.in

100% Calibrated

Unique serial number for each torque wrench, corresponding to the certificate of calibration

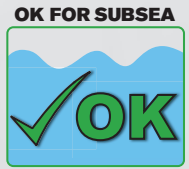


Shockproof packaging

Specially designed for all series of "LAPP Equipment UK" torque products

LFSM & LFSH SERIES

Hydraulic Flange Spreaders



Hydraulic Flange Spreaders

For maintenance, commissioning, shutdowns, testing and valve change outs. No need for hammers, chisels, slings or chain blocks. Integrated wedge concept friction-free, smooth and parallel wedge movement eliminates flange damage & risk of spreading arm failure. Unique interlocking wedge design No first step bending risk. Requires very small access gap of only 6mm. LFSH-14 is can be used with a bolting tool-pump or in a set including the spreader, hand pump, hose, gauge and adapter.



LFSH-14

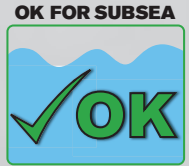
Model No.	Max. spreading force (ton)	Tip clearance (mm)	Max. spread (mm)	Type	Oil capacity (cm ³)	Weight (kg)
LFSM-8	8	6	81	Mechanical	N/A	6.5
LFSH-14	14	6	81	Hydraulic	78	9.3
LFSH-16	16	8	81	Hydraulic	89	10.8



LFSM-8

NC & LNS SERIES

Hydraulic Nut Splitters

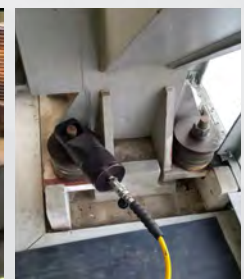


Separating Hydraulic Nut Splitter (Top Side and Sub-sea)

- For difficult Low Clearance applications
- Unique angled head design
- Heavy Duty cutting blade can be reground



Model Size	Hex Nut A/F	Capacity (T)	Stud Size	Weight (kg)
LNC-1019	10-19	5	M6-12	1.2
LNC-1924	19-24	10	M12-16	2.6
LNC-2432	24-32	15	M16-22	4
LNC-3241	32-41	20	M22 - 27	5.4
LNC-4150	41-50	35	M27-33	10
LNC-5060	50-60	50	M33-39	17
LNC-6075	60-75	90	M39-48	34
LNS-7080	70-80	100	M45-52	39
LNS-7085	70-85	110	M45- 56	44
LNS-7095	70-95	120	M45-64	49
LNS-70105	70-105	130	M45-72	54
LNS-110115	110-115	140	M76-80	59
LNS-110130	110-130	150	M76-90	64





LFA Flange Alignment Tooling

- Can be used on virtually all horizontal and vertical flanges including ANSI, API, BS, DIN & SPO
- Operates on most pipe configurations and suitable for offshore / onshore applications
- Robust and environmentally friendly
- The LFA can be used during: Commissioning, Construction, Routine maintenance, Shutdowns/ outages, Testing & valve change-outs
- Saves time, Saves cost and Safer operation than traditional methods
- Precise operation and Lightweight - ideal for remote locations
- Comes complete with Carry case, Ratchet Strap and Instruction Manual
- LFA1TM - A SIMPLE SOLUTION TO SMALL, LOW PRESSURE FLANGE MISALIGNMENT
- LFA4TM - DESIGNED FOR MID RANGE FLANGES
- LFA9TE - DESIGNED FOR HIGH-PRESSURE, LARGE DIAMETER FLANGES
- LMG7TM - MINI-GAP FLANGE SPREADER



Part Number	Aligning Force	Description	Gross Kit Weight
LFA1TM	1T (10kN)	1 Ton, Mechanical	2Kg (4.4 lbs)
LFA4TM	4T (40kN)	4 Ton, Mechanical	13.5 Kg (30 lbs)
LFA9TM	9T (90kN)	9 Ton, Mechanical	18.5Kg (40 lbs)
LFA9TE	9T (90kN)	9 Ton, Hydraulic	27.5Kg (60 lbs)

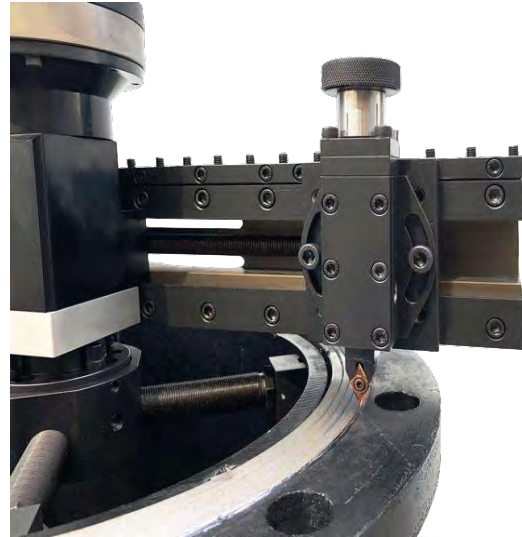


LAPP610i SERIES

Flange Facing Machine 2" - 24" (50 - 610mm)

High Performance Portable Machines

An internally mounted lightweight yet strong flange facing machine for all types of flange facing, seal groove machining, weld prep and counter boring.

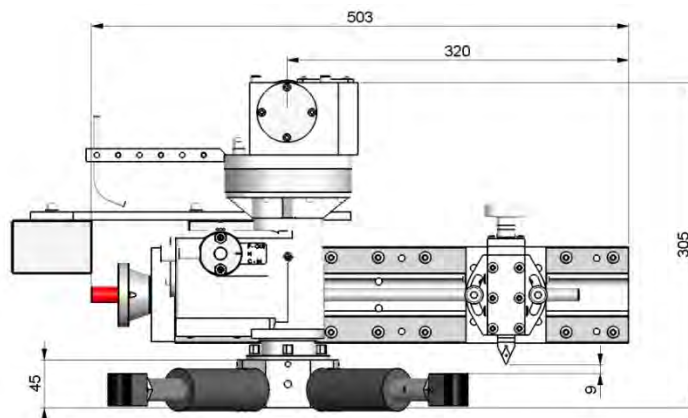


- Helical drive for a superior finish
- Swivel tool post – for a wider range of machining operations
- Geared continuous groove facing feeds, for gramophone finish (ASME Standard)
- Quick set independent base, minimising set up time

The LAPP610i machine is supplied complete with toolkit including tools and inserts, air filter lubricator and hose connection, all required mounting base and extensions, storage / shipping box, CE certificate, packing list and manual.

Shipping Dimensions

Length		Width		Height	
mm	inches	mm	inches	mm	inches
650	25.5	450	17.7	430	16.9

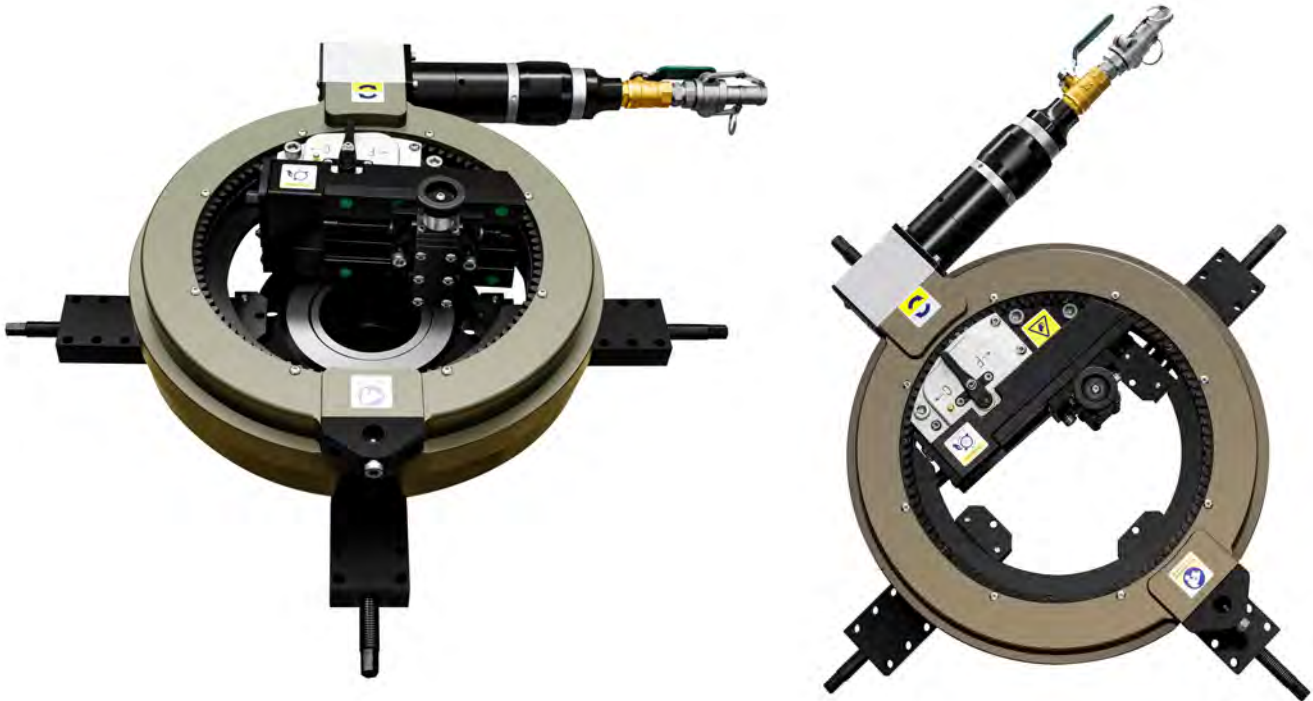


LAPP300e SERIES

Flange Facing Machine 0 – 12” (0 – 305mm)

High Performance Portable Machines

An externally mounted flange facing machine for all types of flange facings, seal groove machining, weld preparation and counter boring.

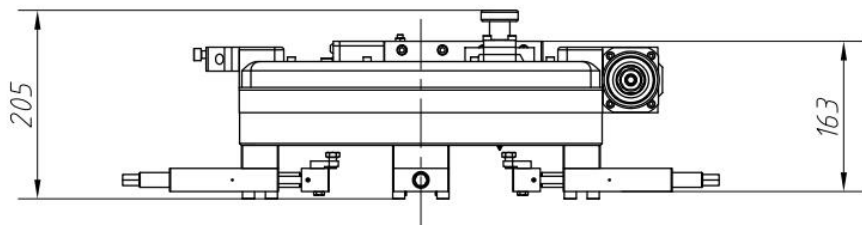
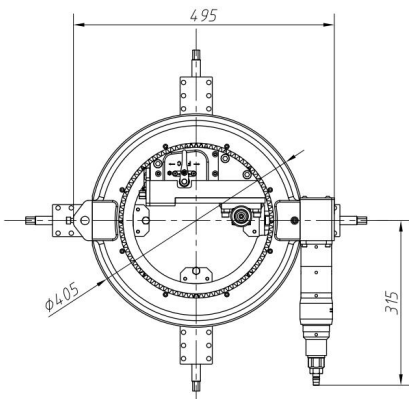


- Lightweight, precision construction to optimise on-site performance
- Preloaded cross roller drive, ensuring robust, repeatable machining
- Geared continuous groove facing feeds for gramophone finish (ASME Standard)
- Swivel tool post for groove details included; no separate accessories required

The LAPP300e machine is supplied complete with toolkit including tools and inserts, air filter lubricator and hose connection, all required mounting feet and extensions, storage / shipping box, CE certificate, packing list and manual.

Shipping Dimensions

Length		Width		Height	
mm	inches	mm	inches	mm	inches
640	25	600	24	450	18



MADE IN THE UK

SB&AB SERIES

Pipe Cold Cutting and Beveling Machines

- Clamshell -

Steel Body SB



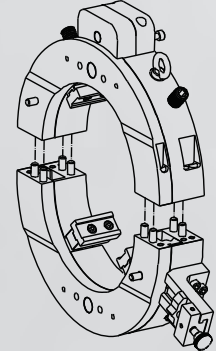
Both Rotary ring and Stationary ring made by steel. This is the traditional UK material. A little heavier for on-site machine.

Aluminum Body AB



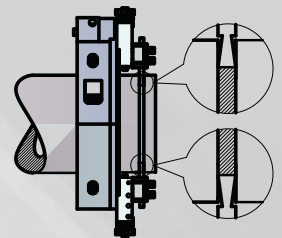
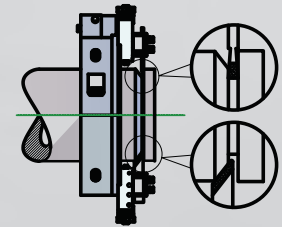
This is our new machine, stationary ring made by aluminum. Steel where strength is needed, aluminum where strength is less critical than weight. Lightweight makes more convenient for operator.

- Split frame -



OD-Mounted Pipe Cutting and Beveling Machine

The series machine is ideal for all types of pipe cutting, beveling and end preparation. The split frame design allows the machine to split in half at the frame and mount around the OD of the in-line pipe or fittings for strong, stable clamping. The equipment performs precision in-line cut or simultaneous cut/bevel, single point, counterbore and flange facing operations, as well as weld end preparation on open ended pipe, Ranging from 3/4 to 56 inches O.D. (DN20-1400), on most wall thicknesses and material.



Optional Accessories



Tracking Tool Slide

O.D. tracking slide compensate for out-of-round pipe

Features

Split frame

Machine quickly split to mount around outside diameter of in-line pipe

Cut or Cut/Bevel simultaneously

Cuts and bevels simultaneously leaving a clean precision prep ready for welding

Cold cut/Bevel

Hot torch cutting requires grinding and produces an undesirable heat affected zone
Cold cutting/beveling also improves safety

Low Axial & Radial Clearance

Tool feed automatically

Cut and bevel pipe of any wall thickness.

Materials include: Carbon steel, alloy, stainless steel as well as other material

Pneumatic, electric and hydraulic type for option

Machining OD of pipe from 3/4" up to 56"



Universal Counter Boring Tool Slide

The tool slide performs boring and inside beveling



Split installation

SB&AB SERIES

Pipe Cold Cutting and Beveling Machines

Specification

Drive Options: Pneumatic, Hydraulic, and Electric
 Air requirement: 1500L-3000L Per minute @0.6/0.7Mpa
 Hydraulic requirement: 2-60L per minute @12.5Mpa
 Electric requirement: 220-240V 1PH 50/60HZ
 Feed mode: Star wheel, automatically
 Feed rate: Fixed@0.08mm per circle
 Packaging: Plywood case



Air Type ODP Series

Power Supply: 1500-3000L/Min@0.6/0.7Mpa
Advantage
 Explosion Proof
 Stable Performance
 Simple structure makes easy to maintenance
 Occasionally overload no damage



Electric Type ODE Series

(METAOBO Motor is available)
 Power Supply: 220-240V 1PH 50/60HZ
Advantage
 Low Energy
 Power: 1600-2400W
 Self-made, easy to maintenance



Selection Guide

17 sizes machine for options.
 Consult with us for special size.
 For narrow working condition, pay attention to the axial and radial clearance.

Model	Working Range (OD)		Wall Thickness
	Inch	mm	
SB002006	2 - 6	50 - 168	≤30
SB003008	3 - 8	80 - 230	≤30
SB004010	4 - 10	100 - 275	≤30
SB006012	6 - 12	168 - 325	≤30
SB008014	8 - 14	219 - 377	≤30
SB010016	10 - 16	273 - 426	≤30
SB012018	12 - 18	300 - 457	≤30
SB014020	14 - 20	355 - 508	≤30
SB016022	16 - 22	400 - 560	≤30
SB018024	18 - 24	457 - 610	≤30
SB020026	20 - 26	508 - 660	≤30
SB022028	22 - 28	550 - 715	≤30
SB024030	24 - 30	600 - 762	≤30
SB026032	26 - 32	660 - 813	≤30
SB030036	30 - 36	762 - 914	≤30
SB036042	36 - 42	914 - 1066	≤30
SB042048	42 - 48	1066 - 1230	≤30

Tooling Chart

CUTTING TOOLS			
Description	Part Number	Application	Sketch
5x25x100mm M42 Cutting tool	42C-5100	Standard cutting, for most materials up to 30mm	
6x25x200mm M42 Cutting tool	42C-6200	Longer cutting tool, both ends have blade, for most materials up to 60mm	
8x25x200mm M42 Cutting tool	42C-8200	Longer cutting tool, both ends have blade, for most materials up to 60mm	

COUNTERBORING TOOL			
Description	Part Number	Application	Sketch
M42 Counterboring tool	42T	For pipe Counterboring install on the counter boring tool slide	

BEVELING TOOLS			
Description	Part Number	Application	Sketch
12x20x104mm M42 Beveling tool	42B-RH1220-30°	Right Hand Standard beveling tool for most materials up to 30mm	
	42B-RH1220-35°		
	42B-RH1220-37.5°		
12x20x104mm M42 Beveling tool	42B-LH1220-30°	Right Hand Standard beveling tool for most materials up to 30mm	
	42B-LH1220-37.5°		
12x20x150mm M42 Compound Beveling tool	42B-CB1220-10°X30°	Right Hand 10°X30°, for most materials up to 30mm	
	42B-CB1220-10°X37.5°	Right Hand 10°X37.5° as per ASME B(16). 25 for most materials up to 30mm	
25x25x150mm M42 Compound Beveling tool	42B-CB2525-10°X30°	Right Hand 10°X30°, for most materials up to 60mm	
	42B-CB2525-10°X37.5°	Right Hand 10°X37.5° as per ASME B(16). 25 for most materials up to 60mm	
25x25x200mm M42 Beveling tool	42B-2525-10°	Longer beveling tool, both ends have blade, for most materials up to 60mm. Fit the heavy wall tool slide	
	42B-2525-30°		
	42B-2525-37.5°		

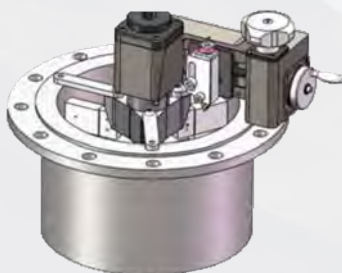
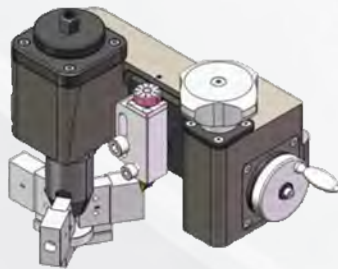
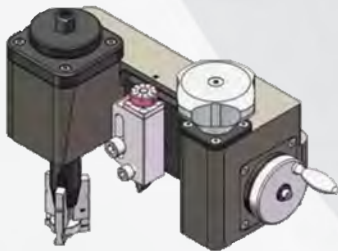
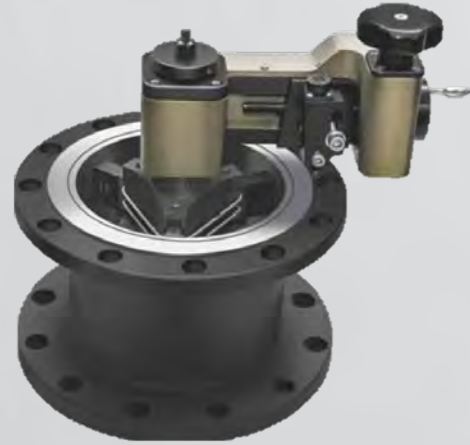
HF14I SERIES

Manual Flange Facing Machine

1.07"-14" (27.2-355.6mm)

Features

- Manual operated, No power source
- Explosion-proof
- Quick and easy set up
- Portable, durable trolley case



Three sizes of mounting chassis covering Dia. 27.2-270mm ensure stability during machining

Specifications

Min. Facing Dia.	27.2mm / 1.07"
Max. Facing Dia.	355.6mm / 14"
Min. Clamping Dia.	27.2mm / 1.07"
Max. Clamping Dia.	270mm / 10.63"
Fine Finish-Feed Screw	0.125mm/r / 0.005"
ASME B16.5-Feed Screw	0.5mm/r / 0.02"
Tool Post Travel-Vertical	40mm / 1.57"
Tool Post Travel-Horizontal	57mm / 2.24"
Driven	Manually
Working Weight	9 Kgs
Shipping Weight	29 kgs
Shipping Dimensions	680x510x250mm

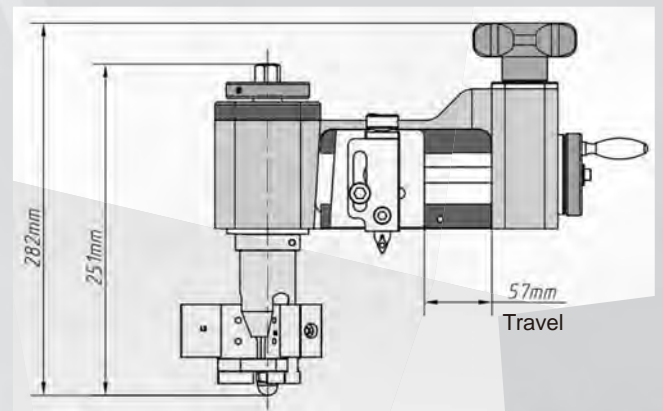
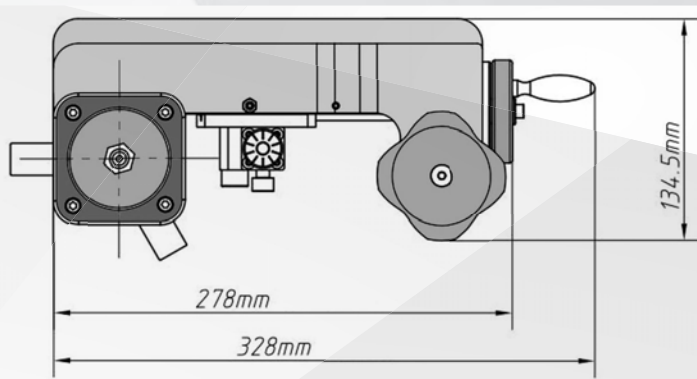
Standard Supply

Facer Body	Extention legs-N1, N2, N3, N4
ASME B16.5 Lead Screw	Extention legs-B1, B2, B3, B4
Straight Tool	Extention Legs-L1, L2, L3, L4
90° Tool (RH)	Spring- L 115mm
90° Tool (LH)	Spring- L 300mm
Cutting tips - 10 pcs	Allen keys, set
Pull Rod -3 Nos	Spanner 17mm
S-Base	Plastic Hammer
M-Base	Dia Gauge
L-Base	Manual

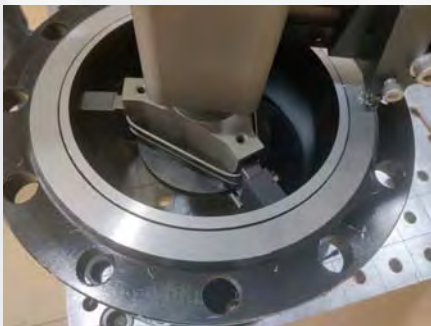
Package



Dimension Figure



Application



VICTORY SERIES

Pipe Beveling Machines

1. Cutter can hold 3 tool bits process in one time Automatic welding require the OD Beveling, facing and internal beveling. Only 3 side processing finish in one time can guarantee the precision of beveling. The cutter can install 3 pcs tool bits, meet the demands.
2. New expanding structure new designed expanding structure makes the fix more stable and low failure rate
3. New-design main shaft fixation there will be smaller gap of the machine. Performs beveling more smooth, less vibration.



V1

Driven Option:

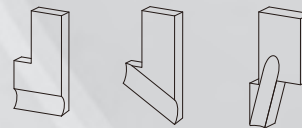
V1P Air Operated
V1E Electric Operated, China Motor
V1B Electric Operated, BOSCH Motor

Clamping Range (ID): 16-25mm
Working Range (OD): 1" (33.4mm)



Specification

Model	V1P	V1E	V1B
Driven	Pneumatic	Electric	Bosch Motor
Power Supply	900L/Min @ 0.6Mpa	220-240V 1PH 50/60HZ	220-240V 1PH 50/60HZ
Motor Power	1 HP	720W	850W
Clamping Range (ID)	16-25	16-25	16-25
Working Range (OD)	1"(33.4mm)	1"(33.4mm)	1"(33.4mm)
Wall Thickness	< 8mm	< 8mm	< 8mm
Rotation Speed	66r/min	52r/min	48r/min
Working Weight	7kg	8kg	8kg
Shipping Weight	14kg	16kg	16kg
Packing Size	540*410*170mm	540*410*170mm	540*410*170mm
Tool Number	2	2	2

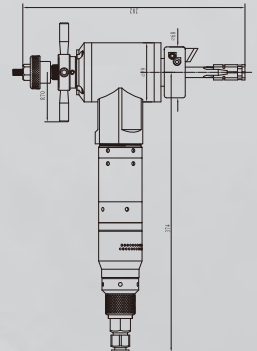


Tool Bits

Standard Tool, V Type Prep. U Type Prep.
Facing, Inside Beveling
*Consult with us for special demand

Standard Supply:

Machine. Driven motor, full set expanding blocks, 3 pcs tool bits.
(1 Facing tool, 1x30deg.
Beveling 1x37.5 deg Beveling)



V3

Driven Option:

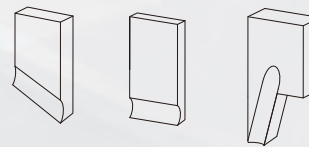
V3P Air Operated
V3E Electric Operated, China Motor
V3B Electric Operated, BOSCH Motor

Clamping Range (ID): 25-76mm
Working Range (OD): 3" (88.9mm)



Specification

Model	V3P	V3E	V3B
Driven	Pneumatic	Electric	Bosch Motor
Power Supply	900L/Min @ 0.6Mpa	220-240V 1PH 50/60HZ	220-240V 1PH 50/60HZ
Motor Power	1 HP	720W	850W
Clamping Range (ID)	25-76	25-76	25-76
Working Range (OD)	3"(88.9mm)	3"(88.9mm)	3"(88.9mm)
Wall Thickness	< 15mm	< 15mm	< 15mm
Rotation Speed	66r/min	52r/min	48r/min
Working Weight	8.5kg	9kg	9kg
Shipping Weight	15kg	16kg	16kg
Packing Size	540*410*170mm	540*410*170mm	540*410*170mm
Tool Number	3	3	3

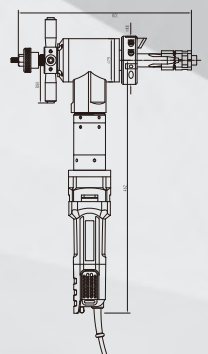


Tool Bits

Standard Tool, V Type Prep. U Type Prep.
Facing, Inside Beveling
*Consult with us for special demand

Standard Supply:

Machine. Driven motor, full set expanding blocks, 3 pcs tool bits.
(1 Facing tool, 1x30deg.
Beveling 1x37.5 deg Beveling)





Hydraulic Cylinders

LRSM-Series Flat Low Height Cylinder

Compact, flat design for use where other cylinders will not fit.
High capacity have handle for easy carrying.
Single acting with spring return.



Model No.	Capacity (T)	Lifting.H (mm)	Min.H (mm)	Cylinder Dia. (mm)	Oil capacity (cm ³)	Piston Dia. (mm)	Weight (kgs)
LRSM-50	5T	6	32	58 ' 41	4	25.4	
LRSM-100	10T	12	42	82 ' 55	18	38.1	1.5
LRSM-200	20T	11	51	101 ' 76	32	50.8	3.2
LRSM-300	30T	13	58	117 ' 95	55	63.4	5
LRSM-500	50T	16	66	140 ' 114	99	69.8	7.5
LRSM-750	75T	16	79	165 ' 139	164	82.6	11.3
LRSM-1000	100T	16	85	178 ' 153	203	92.2	18
LRSM-1500	150T	16	100	215 ' 190	317	114.3	36

LRCS-Series Short Cylinder

Light weight low profile design for use in confined spaces.
Grooved plunger end with threaded holes for mounting tilt saddles.



Model No.	Capacity (T)	Lifting.H (mm)	Min.H (mm)	Cylinder Dia. (mm)	Oil capacity (cm ³)	Piston Dia. (mm)	Weight (kgs)
LRCS-101	10T	38	88	70	55	38	4.1
LRCS-201	20T	45	98	92	127	50	5
LRCS-302	30T	62	117	101	255	65	6.8
LRCS-502	50T	60	112	124	381	70	10.9
LRCS-1002	100T	57	141	165	756	90	22.7
LRCS-1502	150T	51	162	205	1025	138	42.1



Single-Acting Cylinders

Single acting by a heavy duty spring return. Collar threads, plunger threads and base mounting holes enable easy fixturing (on most models). Designed for use in all positions (Horizontal and Vertical).



Model No.	Capacity (T)	Lifting.H (mm)	Min.H (mm)	Cylinder Dia. (mm)	Oil capacity (cm ³)	Piston Dia. (mm)	Weight (kgs)
LRC-50	5T	16	41	38	10	25.4	1.0
LRC-51	5T	25	110	38	16	25.4	1.0
LRC-53	5T	76	165	38	50	25.4	1.5
LRC-55	5T	127	215	38	83	25.4	1.9
LRC-57	5T	177	273	38	115	25.4	2.4
LRC-59	5T	232	323	38	151	25.4	2.8
LRC-101	10T	26	89	57	38	38.1	1.8
LRC-102	10T	54	121	57	78	38.1	2.3
LRC-104	10T	105	171	57	151	38.1	3.3
LRC-106	10T	156	247	57	225	38.1	4.4
LRC-108	10T	203	298	57	292	38.1	5.4
LRC-1010	10T	257	349	57	370	38.1	6.4
LRC-1012	10T	304	400	57	441	38.1	6.8
LRC-1014	10T	356	450	57	516	38.1	8.2
LRC-151L	15T	25	124	69	51	41.4	3.3
LRC-152	15T	51	149	69	104	41.4	4.1
LRC-154	15T	101	200	69	207	41.4	5.0
LRC-156	15T	152	271	69	309	41.4	6.8
LRC-158	15T	203	322	69	412	41.4	8.2
LRC-1510	15T	254	373	69	516	41.4	9.5
LRC-1512	15T	305	423	69	619	41.4	10.9
LRC-1514	15T	356	474	69	723	41.4	11.8
LRC-251	25T	26	139	85	83	57.2	5.9
LRC-252	25T	50	165	85	169	57.2	6.4
LRC-254	25T	102	215	85	339	57.2	8.2
LRC-256	25T	158	273	85	528	57.2	10.0
LRC-258	25T	210	323	85	697	57.2	12.2
LRC-2510	25T	261	374	85	863	57.2	14.1
LRC-2512	25T	311	425	85	1033	57.2	16.3
LRC-2514	25T	362	476	85	1202	57.2	17.7
LRC-308	30T	209	387	101	880	57.2	18.1
LRC-502	50T	51	176	127	384	79.5	15.0
LRC-504	50T	101	227	127	727	79.5	19.1
LRC-506	50T	159	282	127	1134	79.5	23.1
LRC-5013	50T	337	460	127	2403	79.5	37.6
LRC-756	75T	156	285	146	1601	95.2	29.5
LRC-7513	75T	333	492	146	3427	95.2	59.0
LRC-1006	95T	168	357	177	2239	104.9	59.0
LRC-10010	95T	260	449	177	3466	104.9	72.6



Single Acting Hollow Cylinders

LRCH-Series Single Acting Hollow Cylinder

Hollow plunger design allows for both pull and push forces, single acting spring return. Collar threads for easy fixturing.



Model No.	Capacity (T)	Lifting.H (mm)	Min.H (mm)	Cylinder Dia. (mm)	Oil capacity (cm ³)	Hollow Dia. (mm)	Weight (kgs)
LRCH-120	12T	8	55	69	14	19.6	1.5
LRCH-121	12T	42	120	69	75	19.6	2.8
LRCH-123	12T	76	184	69	136	19.6	4.4
LRCH-202	20T	49	162	98	150	26.9	7.7
LRCH-206	20T	155	306	98	476	26.9	14.1
LRCH-302	30T	64	178	114	298	33.3	10.9
LRCH-306	30T	155	330	114	722	33.3	21.8
LRCH-603	60T	76	247	159	626	53.8	28.1
LRCH-606	60T	153	323	159	1259	53.8	35.4
LRCH-1003	100T	76	254	212	1011	79	63

LCLP-Series Short Pancake Locknut Cylinder

Extremely low height for use in confined areas.

Safety lock nut for mechanical load holding.

Overflow port functions as a stroke limiter.



Model No.	Capacity (T)	Lifting.H (mm)	Min.H (mm)	Cylinder Dia. (mm)	Oil capacity (cm ³)	Weight (kgs)
LCLP-602	60T	50	125	140	432	15
LCLP-1002	100T	50	137	175	734	26
LCLP-1602	160T	45	148	220	1040	44
LCLP-2002	200T	45	155	245	1285	57
LCLP-2502	260T	45	159	275	1650	74
LCLP-4002	400T	45	178	350	2517	134
LCLP-5002	520T	45	192	400	3287	189

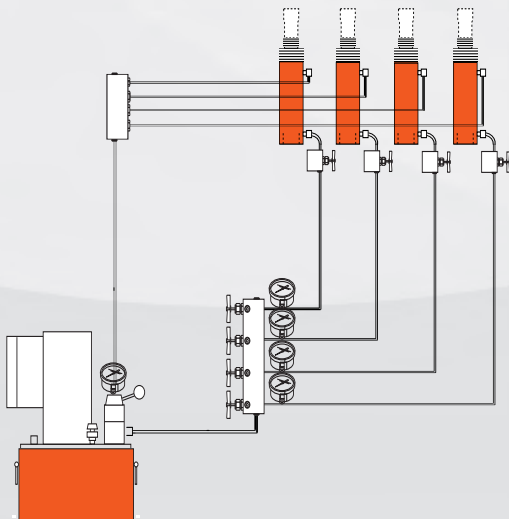


Double-Acting High Tonnage Cylinders

Double acting for push and pull. Safety valve in retract side of cylinder helps to prevent damage in case of accidental over-pressurization special bearing design withstands side load forces up to 10% of rated cylinder capacity without scoring.



Multi-Cylinder Lifting System



Model No.	Capacity (T)	Lifting.H (mm)	Min.H (mm)	Cylinder Dia. (mm)	Oil capacity (cm ³)	Piston Dia. (mm)	Weight (kgs)
LCLRG-502	50T	50	162	130	385	70	17
LCLRG-504	50T	100	212	130	770	70	20
LCLRG-506	50T	150	262	130	1155	70	25
LCLRG-508	50T	200	312	130	1540	70	36
LCLRG-5010	50T	250	362	130	1924	70	31
LCLRG-5012	50T	300	412	130	2309	70	34
LCLRG-1002	100T	50	182	165	664	95	19
LCLRG-1004	100T	100	232	165	1327	95	29
LCLRG-1006	100T	150	282	165	1991	95	40
LCLRG-1008	100T	200	332	165	2655	95	50
LCLRG-10010	100T	250	382	165	3318	95	61
LCLRG-10012	100T	300	432	165	3982	95	71
LCLRG-1502	150T	50	196	205	993	114	39
LCLRG-1504	150T	100	246	205	1986	114	52
LCLRG-1506	150T	150	296	205	2978	114	65
LCLRG-1508	150T	200	346	205	3971	114	78
LCLRG-15010	150T	250	396	205	4964	114	92
LCLRG-15012	150T	300	446	205	5957	114	105
LCLRG-2002	200T	50	216	235	1330	133	55
LCLRG-2006	200T	150	316	235	3989	133	91
LCLRG-2008	200T	200	366	235	5000	133	110
LCLRG-20012	200T	300	446	235	7977	133	146
LCLRG-2502	250T	50	235	275	1832	165	89
LCLRG-2506	250T	150	335	275	5497	165	136
LCLRG-2508	250T	200	385	275	7200	165	170
LCLRG-25012	250T	300	485	275	10993	165	207
LCLRG-3002	300T	50	312	310	2281	197	184
LCLRG-3006	300T	150	412	310	6843	197	232
LCLRG-3008	300T	200	462	310	8900	197	270
LCLRG-30012	300T	300	562	310	13685	197	303
LCLRG-4002	400T	50	375	350	2800	216	270
LCLRG-4006	400T	150	475	350	8399	216	330
LCLRG-4008	400T	200	525	350	11500	216	380
LCLRG-40012	400T	300	625	350	16797	216	421
LCLRG-5002	500T	50	419	400	3653	248	401
LCLRG-5006	500T	150	519	400	10959	248	480
LCLRG-5008	500T	200	569	400	15630	248	510
LCLRG-50012	500T	300	669	400	21918	248	599
LCLRG-6002	600T	50	429	430	4276	267	474
LCLRG-6006	600T	150	529	430	12829	267	565
LCLRG-6008	600T	200	579	430	18009	267	620
LCLRG-60012	600T	300	679	430	25659	267	701
LCLRG-8002	800T	50	474	505	5861	317	741
LCLRG-8006	800T	150	574	505	17644	317	868
LCLRG-8008	800T	200	624	505	25000	317	950
LCLRG-80012	800T	300	724	505	35286	317	1058
LCLRG-10002	1000T	50	564	560	7329	343	1062
LCLRG-10006	1000T	150	664	560	21986	343	1213
LCLRG-10008	1000T	200	714	560	32896	343	1300
LCLRG-100012	1000T	300	814	560	43972	343	1439

Hydraulic Cylinder Pumps

LPE-Series Portable Electric Pumps Single Acting



Model No.	Usable Oil Capacity (L)	Pump Type	Pressure Rating (bar)		Oil Flow (l/m)		Power	Power	Weight (kg)
			LP	HP	LP	HP	kw	v	
LPE4	5L	Two-Speed	40	700	3	0.25	0.4	220	13

LPE-Series Portable Electric Pumps Double Acting



Model No.	Usable Oil Capacity (L)	Pump Type	Pressure Rating (bar)		Oil Flow (l/m)		Power	Power	Weight (kg)
			LP	HP	LP	HP	kw	v	
LPE10	28L	Two-Speed	70	700	6.2	1	1.5	380/220	50
LPE15	55L	Two-Speed	70	700	8.4	1.6	2.2	380/220	70
LPE25	55L	Two-Speed	70	700	9	2.2	3.0	380/220	74

LP-Series Single / Double Acting Hand Pump

For operation of single & double-acting cylinders. Max. Pressure : 70Mpa.



LP77



LP80

Model No.	Usable Oil Capacity (cm³)	Pump Type	Pressure Rating (bar)		Oil Displacement Per Stroke (cm³)		Max. Handle Effort (kg)	Piston Stroke (mm)	Weight (kgs)
			LP	HP	LP	HP			
LP77	655	Two-Speed	14	700	16	2.41	43	25.4	6.8
LP80	3240	Two-Speed	25	700	16.22	2.46	47	25.4	15



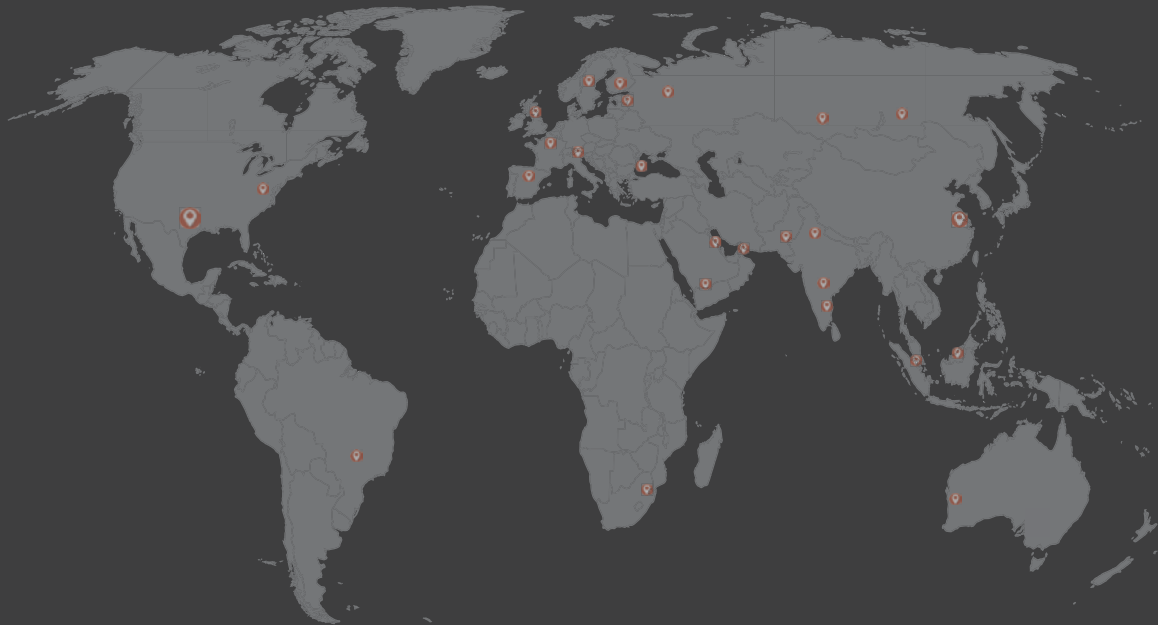
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