

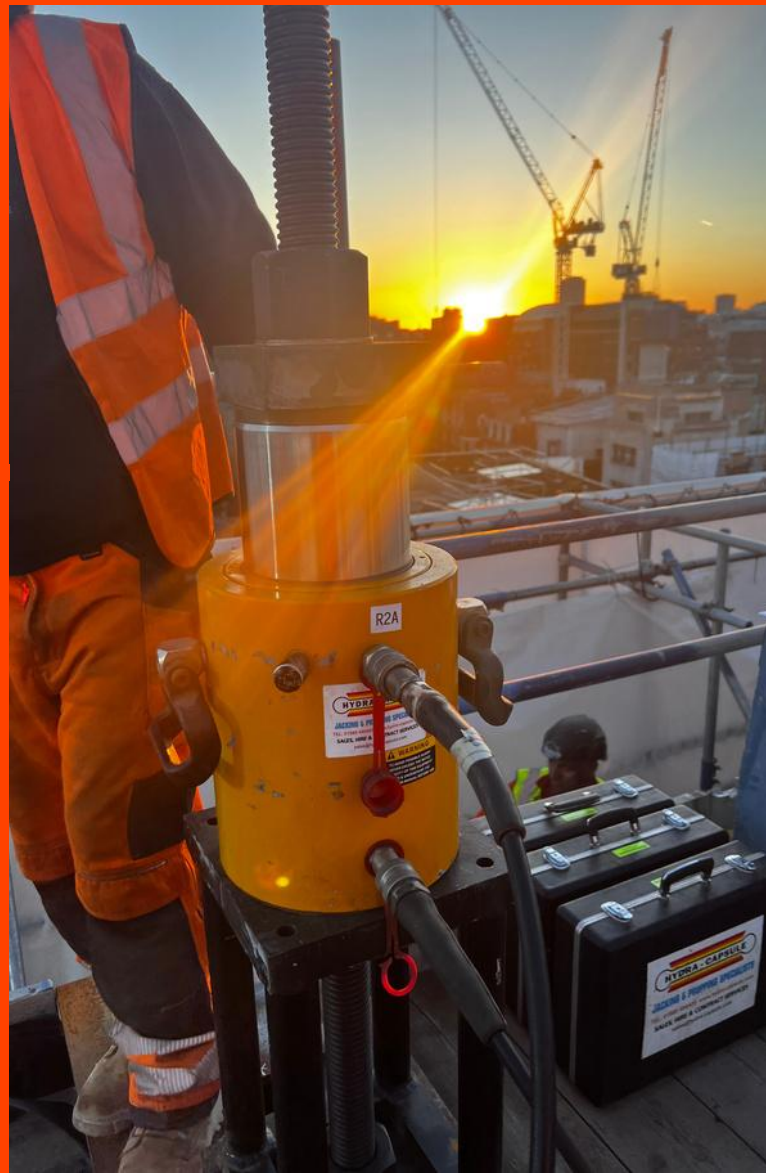


**HYDRA CAPSULE
LIMITED**

HYDRAULIC TENSIONING & TORQUING PRE-STRESSING & LOAD TESTING

OUR SERVICES

- Bolt Tensioning
- Hydraulic Torquing
- Pre-Stressing & Crane Grillages
- Anchor Pull-Testing
- Load Testing



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HYDRA-CAPSULE LIMITED – GIVING CONSTRUCTION OUR SUPPORT

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01 TENSIONING & TORQUING OVERVIEW



Hydra-Capsule Limited provides bolt tensioning, hydraulic torquing, pre-stressing, tension bar preloading and anchor pull-testing services.

Operating across the UK and internationally with equipment ranging from 1 Nm to 72,000 Nm torque and 25-410 tonne tensioning capacity.

KEY CAPABILITIES

72,000

Nm MAX
TORQUE

**700 TO
1500 bar**

WORKING
PRESSURE

410T

MAX TENSIONER
CAPACITY



SERVICES

- ✓ Bolt Tensioning (5 - 410 tonnes, 1500 bar)
- ✓ Hydraulic Torquing (50 Nm - 72,000 Nm)
- ✓ Bar Pre-loading, Testing and Stressing (All Types)
- ✓ Pre-Stressing & Post-Tensioning Systems
- ✓ Crane Base Grillages & Anchor Pull-Testing
- ✓ Flange Bolting and Stressing

+28 Models

**0-72,000 N/m
10-410 tonnes**

Capacity Range
Across Full Product Line

02 APPLICATIONS



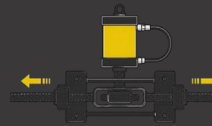
Preloading of
steelwork joints
& connections



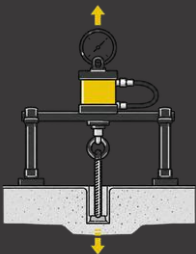
Crane base
grillages &
foundation bolts



Bolt tensioning
& torquing



Pre-stressing &
post-tensioning



Anchor pull-
testing &
proof-loading



Bridge stressing,
clamping and
pre-loading

CASE STUDY: WIND TURBINE FOUNDATION BOLTING

Multi-tensioner bolt stressing of wind turbine base anchors using synchronous hydraulic tensioning systems at 1500 bar working pressure for verified preload.



03 BOLT TENSIONING



Hydra-Capsule provides hydraulic bolt tensioning systems for preload and stressing of steelwork, crane bases, pipe flanges and wind turbine applications. Tensioners operate at 1500 bar safe working pressure with 10-50mm stroke and 1 - 4100 tonne (10 - 4,100 kNs) load capacity.

KEY CAPABILITIES

1500 bar

WORKING
PRESSURE

10-50mm

TENSIONER
STROKE

1 - 410T

LOAD
CAPACITY

BENEFITS

- ✓ Most accurate way to achieve designed bolt loads
- ✓ Reduced torsional load and load transfer force on components
- ✓ Eliminates issues with lubricant variance from torque-only methods
- ✓ Critical for crane base grillages, bridges, wind turbines, steel frames
- ✓ Can be grouped for synchronous stressing and multi-points loading



SPECIFICATIONS

Tensioner Pressure

1500 bar

Tensioner Stroke

10-50 mm

Tensioner Capacity

1 - 410 tonnes (10 - 4100 kNs)

Working System

Synchronous multi-tensioner configurations

04 HYDRAULIC BOLTING & TORQUING



Hydra-Capsule hydraulic torquing systems provide torque loads from 1 Nm to 72,000 Nm using manual, electric and hydraulic wrenches. Drive-shaft torquers range from 3/4" (10 Nm) to 2-1/2" (79,800 Nm) for heavy-duty bolting applications.

KEY CAPABILITIES

72,000

Nm MAX
TORQUE

**UPTO 700
BAR**

CALIBRATION
PRESSURE

2-1/2"

MAX DRIVE
SHAFT

BENEFITS

- ✓ Controlled, uniform bolt loading across all joints
- ✓ Accurate torque achieved, recorded and calibrated
- ✓ Suitable for pipe flanges, structural steel and wind turbines
- ✓ Reduced physical effort on large diameter bolts
- ✓ Essential for crane grillages and major steelworks + connection



SPECIFICATIONS

Torque Range

1 Nm – 79,000 Nm

Hydraulic Tools

1,785 – 38,100 Nm

Drive Sizes

3/4" to 2-1/2"

Calibration Rigs

Up to 2500 bar

05 PRE-STRESSING & BAR PRE-LOADING



Hydra-Capsule designs hydraulic jacks and pumps for pre-stressing and post-tensioning systems, suitable for strand, threaded bar and anchor bolts. The hydraulic jack applies direct tensile force to the tendon, with anchor nut/wedge seated under load to prevent relaxation.

KEY CAPABILITIES

STRAND

& THREADED
HIGH-STRENGTH BAR

DIGITAL

PRESSURISING
CONTROL CALIBRATION

LONG-TERM

LOAD RESISTANCE
& VERIFICATION

BENEFITS

- ✓ Most accurate method to achieve design tendon force
- ✓ Integrates with digital pressurising equipment
- ✓ Ensures correct anchor seating before load transfer
- ✓ Used in bridges, large foundations, retaining structures
- ✓ Prevents tendon relaxation under long-term loading



SPECIFICATIONS

Tendon Types

Strand, threaded bar, anchor bolts

Jack Assembly

Pull-rod coupled to tendon/anchor

Control System

Digital pressurising equipment

Applications

Bridges, foundations, retaining walls

06 CRANE BASE & STEELWORK GRILLAGES



Hydra-Capsule bolt tensioning and hydraulic torquing equipment is designed for preloading and stressing the bolting of crane base grillages. A high uniform preload guarantees the proper installation of bolts, fixings, and anchorage into concrete foundations and steelwork connections, thereby preventing loosening under dynamic crane loads.

KEY REQUIREMENTS

UNIFORM

ACCURATE PRELOAD
DISTRIBUTION

VERIFIED

BOLT STRETCH +
ELONGATION CONFIRMED

SYMMETRIC

LOAD ARRAYS
TO ELIMINATE TWISTING

BENEFITS

- ✓ Ensures correct anchorage into concrete foundations
- ✓ Prevents bolt loosening under dynamic crane loads
- ✓ Provides repeatable, measurable preload to design standards
- ✓ Symmetric load distribution using multi-tensioner arrays
- ✓ Prevention of settlement and rotation under cyclic loading

SPECIFICATIONS

Tower Crane Bases

Multi-tensioner bolt stressing

Mobile Crane Grillages

Hydraulic torquing to spec

Port Cranes

Synchronous tensioning

Wind Turbine Bases

Pre-stressed anchor bolts



07 ANCHOR PULL-TESTING

HYDRA-CAPSULE

Hydra-Capsule hydraulic jacking systems are used to apply axial load to anchor bolts or bars for proof-load, verification and creep testing. Load is monitored via digital gauge, load-cells or computerised control system to confirm anchor capacity before permanent loading.

KEY CAPABILITIES

1 to 500T

JACKING
CAPACITY

DIGITAL

LOAD
MONITORING

PROOF

& CREEP
LOADING / TESTING

BENEFITS

- ✓ Confirms anchor capacity before permanent loading
- ✓ Ensures compliance with structural and safety codes
- ✓ Suitable for new foundations, bridge and tie-back anchors
- ✓ Digital monitoring for accurate load
- ✓ verification
Proof-load, verification, destructive and creep testing



SPECIFICATIONS

Jacking Capacity

5 – 500 tonnes (larger in multiple sets)

Control System

Digital gauge, Calibration with Manual, Air and Electric Pumps

Test Types

Proof-Loading, Destructive, Pull - testing, and Bar tensioning to Pre-stressing

Applications

Crane Grillages, Column Bases
Foundations, Bridges to
Wind Turbines Andhorage

8 CONTACT US



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OUR SERVICES

- ✓ Bolting Tensioning (upto 500 tonnes per unit)
- ✓ Synchronised Lifting Systems ($\pm 1\text{mm}$ accuracy)
- ✓ Pre-loading and Pre-stressing Steelwork
- ✓ Crane Base Grillages
- ✓ Post-Tensioning and Torquing of Bolting Equipment
- ✓ Contractual Service + Equipment Hire & Sales

