

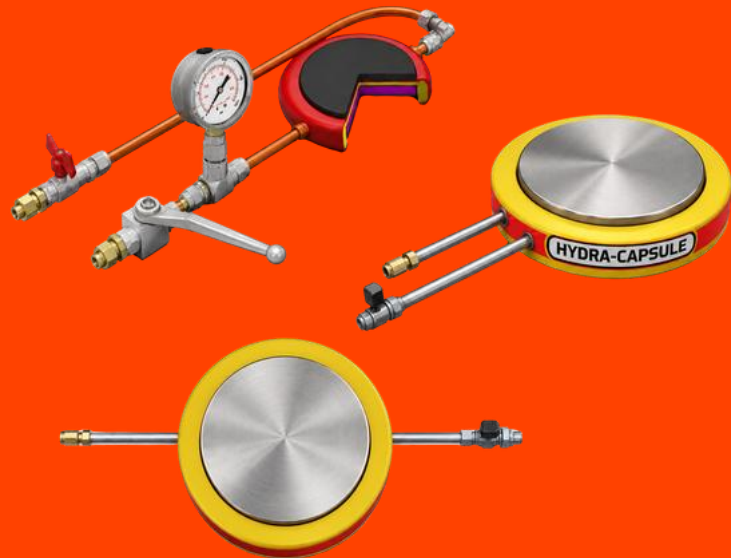


**HYDRA CAPSULE  
LIMITED**

# FLAT JACKING HYDRAULIC & GROUT INJECTION SERVICES

## OUR SERVICES

- Steelwork Pre-Loading
- Bridge and Bearings Jacking
- Heavy Lifting + Pre-Deflection
- Ground Settlement Control
- Weighing / Load Cells



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**HYDRA-CAPSULE LIMITED - GIVING CONSTRUCTION OUR SUPPORT**

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# 01 FLAT JACKING OVERVIEW



Hydra-Capsule Limited provides full design, in-house UK manufacturing and installation for flat jacking and pre-loading systems.

With over 40 years of operation, and testing facilities capable of up to 1,500 tonnes, stocking largest selection of flat jacks – we deliver proven solutions across the UK and internationally.

## KEY CAPABILITIES

**8-1,500**

TONNES  
CAPACITY

**35 mm**

MINIMUM  
INSTALLATION GAP

**75 %**

RECOMMENDED  
WORKING RANGE

**40+**

YEARS  
MANUFACTURING



## ADVANTAGES

- ✓ Known force measurement and low height for restricted access
- ✓ Largest stocks of all models – offering supply only or contract services
- ✓ Ideal for pre-loading, deflection & temporary or permanent applications
- ✓ Available in 3 pipe arrangement types (Type A, B & C) and bespoke options
- ✓ Fully tested in-house up to 1,500 tonnes test-press (UKAS traceable)
- ✓ UK manufactured with over 40 years, with proven track record



# 02 APPLICATIONS



Preloading of  
Steelwork  
& Load Transfer



Pre-loading &  
Hydraulic Jacking  
Excavation Struts,  
Propping & Shoring



Hydraulic Lifting &  
Weighing with  
Monitoring Systems



Real-time  
Settlement Control  
& Structural Jacking



Bridge Deck Lifting  
& Bridge Bearing  
Pre-loading



Temporary and  
Permanent Grout  
Transfusion Options

## CASE STUDY: CLARIDGES HOTEL, MAYFIAR

Over +100 permanent flat jacks (780 to 1,035 tonnes) are double-stacked to pre-load pile hammerheads. This arrangement aids in structural strengthening and allows for monitoring displacement/load to manage settlement and heave during major ground excavation works.



# 03 FLAT JACK MODELS PIPE ARRANGEMENT



Hydra-Capsule flat jacks are available in three pipe arrangement configurations. Each type is designed for specific installation requirements and fluid management needs. All models are manufactured in-house at our UK facility and fully tested up to 1,500 tonnes.

## TYPE A

Single pipe connection. Used for standard temporary jacking operations where fluid is injected and released through one port.



## TYPE B

Two-Pipe Connection System

This system features separate injection and return lines, enabling precise control over fluid circulation and pressure monitoring during operation.

Type B transfusions can also incorporate an internal transfusion pipe, which maintains the diameter and does not have a visible outlet, distinguishing it - identical to Type C model.



## TYPE C

Two pipe arrangement with injection and grout lines. Designed for permanent installations where hydraulic fluid is replaced with grout or epoxy resin for long-term load transfer.



## BESPOKE

As Hydra-Capsule Limited manufacture, weld and test, in-house. We are able to fabricate bespoke configurations, pipe positioning, lengths and additional flexible hoses to pressure monitoring valves for all applications.



# 04 WHY CHOOSE HYDRA-CAPSULE?



For over 40 years, Hydra-Capsule Limited has been the UK's leading specialist in flat jack design, manufacture, and installation. Every product is built in-house at our dedicated UK facility, ensuring quality control from concept to completion.

## UK MANUFACTURED

All flat jacks designed, manufactured and built in-house at our specialist UK facilities

Full control over quality, materials, and lead times which comply with ISO 9001:2005 and UKAS traceable products; conforming to compliance procedures

## TESTED TO 1,500 TONNES

Offering one-stop solution for all LOLER, POWER and Calibration Certification

Every jack is fully tested within our purpose-built testing facilities & Test-Rig

We stock the UK largest availability of flat jacks, ready for immediate dispatch

## 40+ YEARS OPERATING

Proven track record on major projects worldwide including Highway, Network Rail to Engineering, Civil & Construction Industry projects

Cover all aspects of heavy-lifting, hydraulic & flat jacking to major temporary propping scheme

## FULL TECHNICAL SUPPORT

From initial design consultation, through to on-site installation - providing a full package to our clients

Our guidance, experience and on-going project monitoring and management allows for operations and contracts to be completed efficiently and safely



# 05 CIRCULAR FLAT JACK SPECIFICATIONS



| MODEL  | CAPACITY (kNs) | DIAMETER (mm) | CLOSED HT (mm) | STROKE (mm) | MAX. (Bar) |
|--------|----------------|---------------|----------------|-------------|------------|
| FJ-7   | 35             | 70            | 32             | 25          | 150        |
| FJ-12  | 80             | 120           | 32             | 25          | 150        |
| FJ-15  | 150            | 150           | 32             | 25          | 150        |
| FJ-17  | 200            | 170           | 32             | 25          | 150        |
| FJ-19  | 250            | 190           | 32             | 25          | 150        |
| FJ-22  | 400            | 220           | 32             | 20          | 150        |
| FJ-25  | 500            | 250           | 32             | 25          | 150        |
| FJ-27  | 600            | 270           | 32             | 25          | 150        |
| FJ-30  | 800            | 300           | 32             | 25          | 150        |
| FJ-35  | 1000           | 350           | 35             | 25          | 150        |
| FJ-38  | 1300           | 380           | 35             | 25          | 150        |
| FJ-42  | 1600           | 420           | 35             | 25          | 150        |
| FJ-45  | 1800           | 450           | 35             | 25          | 150        |
| FJ-48  | 2100           | 480           | 35             | 25          | 150        |
| FJ-52  | 2650           | 520           | 35             | 25          | 150        |
| FJ-56  | 3000           | 560           | 35             | 25          | 150        |
| FJ-60  | 3450           | 600           | 35             | 25          | 150        |
| FJ-67  | 4800           | 675           | 35             | 30          | 150        |
| FJ-69  | 4950           | 690           | 35             | 30          | 150        |
| FJ-75  | 6000           | 750           | 35             | 30          | 150        |
| FJ-75B | 6000           | 750           | 45             | 50          | 150        |
| FJ-87  | 7640           | 870           | 35             | 30          | 150        |
| FJ-92  | 8680           | 920           | 35             | 30          | 150        |
| FJ-102 | 10300          | 1020          | 40             | 35          | 150        |
| FJ-108 | 13800          | 1080          | 40             | 35          | 150        |

Note: Ideal working range 25-75% of jack capacity. All jacks fully tested in-house up to 1,500 tonnes.  
Custom sizes (FJ-07) and bespoke manufacturing, available on request.



# 06 RECTANGULAR FLAT JACK SPECIFICATIONS



Hydra-Capsule Limited rectangle hydraulic or grout filled flat jacks are precision-engineered, low-profile hydraulic units designed for permanent installation.

Once positioned and pressurised, the void is filled with structural grout to lock the load in place — providing a long-term solution for levelling and load transfer.

| JACK CODE | CAPACITY (kNs) | CLOSED HT (mm) | OUTSIDE SIZE (mm) | THRUST SIZE (mm) | MAX STROKE | MAX PRESSURE |
|-----------|----------------|----------------|-------------------|------------------|------------|--------------|
| RFJ20-25  | 500            | 35             | 200 x 250         | 155 x 205        | 25         | 140 bar      |
| RFJ25-30  | 750            | 35             | 250 x 300         | 205 x 255        | 25         | 140 bar      |
| RFJ28-33  | 1000           | 35             | 280 x 330         | 235 x 285        | 25         | 140 bar      |
| RFJ33-38  | 1250           | 35             | 330 x 380         | 285 x 335        | 25         | 140 bar      |
| RFJ38-43  | 1600           | 35             | 380 x 430         | 335 x 385        | 25         | 140 bar      |
| RFJ43-48  | 2050           | 35             | 430 x 480         | 385 x 435        | 25         | 140 bar      |
| RFJ48-53  | 2550           | 35             | 480 x 530         | 435 x 485        | 25         | 140 bar      |
| RFJ53-58  | 3050           | 35             | 530 x 580         | 485 x 535        | 25         | 140 bar      |
| RFJ58-63  | 3650           | 35             | 580 x 630         | 535 x 585        | 25         | 140 bar      |
| RFJ63-68  | 4250           | 35             | 630 x 680         | 585 x 635        | 25         | 140 bar      |
| RFJ68-73  | 5000           | 35             | 680 x 730         | 635 x 685        | 25         | 140 bar      |

## LOAD CAPACITY (kNs)

|          |      |
|----------|------|
| RFJ20-25 | 500  |
| RFJ25-30 | 750  |
| RFJ28-33 | 1000 |
| RFJ33-38 | 1250 |
| RFJ38-43 | 1600 |
| RFJ43-48 | 2050 |
| RFJ48-53 | 2550 |
| RFJ53-58 | 3050 |
| RFJ58-63 | 3650 |
| RFJ63-68 | 4250 |
| RFJ68-73 | 5000 |



## KEY BENEFITS

- ✓ Largest rectangular flat jack range in the UK
- ✓ Custom sizes manufactured to order
- ✓ Fully tested in-house up to 1,500 tonnes
- ✓ Robust welded steel capsule for harsh conditions
- ✓ Low-profile design for confined spaces
- ✓ Compatible with standard hydraulic power units

## APPLICATION USES

- ✓ Structural load testing & proof loading
- ✓ Bridge bearing replacement & jacking
- ✓ Building re-levelling & underpinning
- ✓ Precast concrete stressing
- ✓ Heavy plant & machinery installation
- ✓ Temporary works & shoring systems



# 07 SQUARE FLAT JACK SPECIFICATIONS



Hydra-Capsule Limited rectangle hydraulic or grout filled flat jacks are precision-engineered, low-profile hydraulic units designed for permanent installation. Once positioned and pressurised, the void is filled with structural grout to lock the load in place — providing a long-term solution for levelling and load transfer.

| JACK CODE | CAPACITY (kNs) | CLOSED HT (mm) | OUTSIDE SIZE (mm) | THRUST SIZE (mm) | MAX STROKE (mm) | MAX PRESSURE |
|-----------|----------------|----------------|-------------------|------------------|-----------------|--------------|
| SFJ20-20  | 400            | 35             | 200 x 200         | 155 x 155        | 25              | 140 bar      |
| SFJ25-25  | 600            | 35             | 250 x 250         | 205 x 205        | 25              | 140 bar      |
| SFJ30-30  | 900            | 35             | 300 x 300         | 255 x 255        | 25              | 140 bar      |
| SFJ35-35  | 1200           | 35             | 350 x 350         | 305 x 305        | 25              | 140 bar      |
| SFJ40-40  | 1600           | 35             | 400 x 400         | 355 x 355        | 25              | 140 bar      |
| SFJ45-45  | 2000           | 35             | 450 x 450         | 405 x 405        | 25              | 140 bar      |
| SFJ50-50  | 2500           | 35             | 500 x 500         | 455 x 455        | 25              | 140 bar      |
| SFJ60-60  | 3600           | 35             | 600 x 600         | 555 x 555        | 25              | 140 bar      |



## LOAD CAPACITY (kNs)

|          |      |
|----------|------|
| SFJ20-20 | 400  |
| SFJ25-25 | 600  |
| SFJ30-30 | 900  |
| SFJ35-35 | 1200 |
| SFJ40-40 | 1600 |
| SFJ45-45 | 2000 |
| SFJ50-50 | 2500 |
| SFJ60-60 | 3600 |

## KEY BENEFITS

- ✓ UK's widest range of square flat jacks
- ✓ Bespoke dimensions manufactured to order
- ✓ Pressure-tested in-house to 1,500 tonnes
- ✓ Robust all-welded steel capsule design
- ✓ Ultra low-profile for tight access areas
- ✓ Compatible with all standard power packs

## APPLICATION USES

- ✓ Structural proof loading & load testing
- ✓ Bridge bearing replacement & deck jacking
- ✓ Building re-levelling & underpinning works
- ✓ Post-tensioning of precast concrete elements
- ✓ Heavy plant installation & repositioning
- ✓ Temporary works & shoring support systems

Note: Ideal working range 25-75% of jack capacity. All jacks fully tested in-house up to 1,500 tonnes. Custom sizes available on request.

# 08 HARJAK WEDGES TECHNICAL INFORMATION



Heavy-duty mechanical wedges used for safe, secure, and rapid load transfer in temporary works systems. Harjak Wedges are robust steel devices consisting of two interlocking wedges within a containment frame, providing precise load control and easy release.

Used for preloading, temporary support, and controlled jacking release operations.

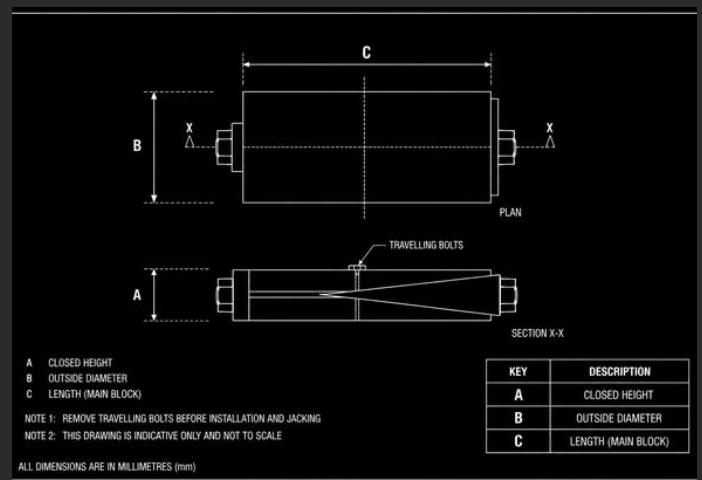
| MODEL  | CAPACITY<br>(LOAD) | STROKE<br>(mm) | SIZE<br>(L x W mm) | CLOSED/OPEN<br>(mm) | WEIGHT<br>(Kgs) |
|--------|--------------------|----------------|--------------------|---------------------|-----------------|
| 5/10   | 50 kNs             | 10 mm          | 75 x 75            | 30 / 40             | 2.1             |
| 15/10  | 150 kNs            | 10 mm          | 100 x 100          | 40 / 50             | 4.0             |
| 20/20  | 200 kNs            | 20 mm          | 135 x 100          | 50 / 70             | 4.5             |
| 35/20  | 350 kNs            | 20 mm          | 150 x 100          | 60 / 80             | 7.6             |
| 75/20  | 750 kNs            | 20 mm          | 200 x 152          | 80 / 100            | 17.2            |
| 120/20 | 1200 kNs           | 20 mm          | 250 x 190          | 100 / 120           | 38.5            |
| 200/20 | 2000 INs           | 20 mm          | 325 x 245          | 130 / 150           | 78.4            |

## KEY FEATURES

- ✓ High axial load capacity (up to 2000 kN)
- ✓ Precise load transfer and secure locking
- ✓ Compatible with Megashor & Titan Superprops
- ✓ Simple mechanical installation – no hydraulics
- ✓ Reusable and easy to reset
- ✓ Safe release without sudden load drop

## TYPICAL APPLICATIONS

- ✓ Structural Lifting & Pre-loading / Load-Transfer
- ✓ Controlled Jacking Locking & Releasing Feature
- ✓ Deflection, Mechanical Locking and induced force
- ✓ Structural Needling and Facade Retention Loading
- ✓ Load Transfer for Propping, Falsework and Lifting



AVAILABLE FOR HIRE OR PURCHASE | Full technical support provided

# 09 PERMANENT AND TEMPORARY UNITS

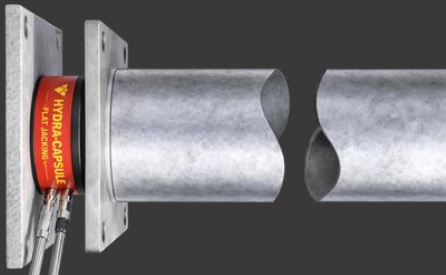


Hydra-Capsule flat jacks offer versatile lifting and leveling solutions for permanent and temporary needs. Permanent jacks provide long-term stability, while temporary ones allow flexibility for short-term projects, both ensuring reliability in applications.

## PERMANENT UNITS

Flat jacks installed permanently in-situ and inflated using a high-pressure injection system. Grout-filled units recommended for environmental and fire compliance.

- Pre-loading structural steelwork
- Structural alterations & pre-stressing
- Underpinning
- Bridge bearing pre-loading
- Suitable for resin or grout transfusion

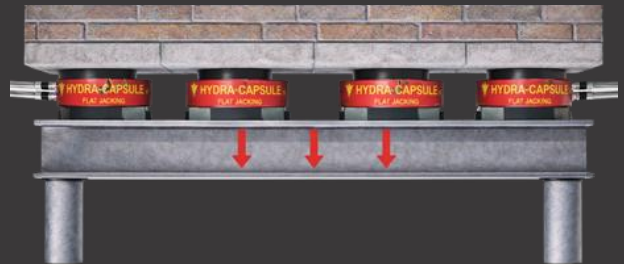


## TEMPORARY FLAT JACKS

Used where jacks are installed temporarily and removed afterwards.

Typically inflated using temporary fluid (ie. water or hydraulic oil).

- Functions as a load cell (pre-inflate)
- Continuous load monitoring & adjustment
- Multiple flat jack circuits
- Ability to transfuse from temporary to permanent



## TRANSFUSION FLAT JACKS

Special in-house Hydra-Capsule design enabling grout transfusion while the jack remains under load. Provides balanced load and displacement during transfusion.

- Transfer load - hydraulic to permanent grout
- Maintain balanced movement during transfusion
- Structural modification & load transfer



## DOUBLE-STACK FLAT JACKS

Two flat jacks stacked vertically. One jack inflates while the other deflates, maintaining balanced load throughout the transfusion cycle.

- Balanced loading during long transfusion ops
- Increased displacement capability
- Load transfer while maintaining equilibrium
- Piggyback arrangement - ideal for transfusion and when additional stroke facility required



# 10 RESIN/GROUT INJECTION CYLINDER



The Resin/Grout Injection Cylinder is designed for the inflation of Flat Jacks with resin, grout or water. The cylinder is connected to the hydraulic power pack and uses hydraulic pressure to inject the grout or resin into the flat jack system. to known required forces

## SPECIFICATIONS

**150 Bar**

MAXIMUM  
PRESSURE

**1, 2, 5 &  
Upto 150 L**

AVAILABLE  
CYLINDER SIZES

**Resin  
& Grout**

INJECTION  
SYSTEM OPTIONS

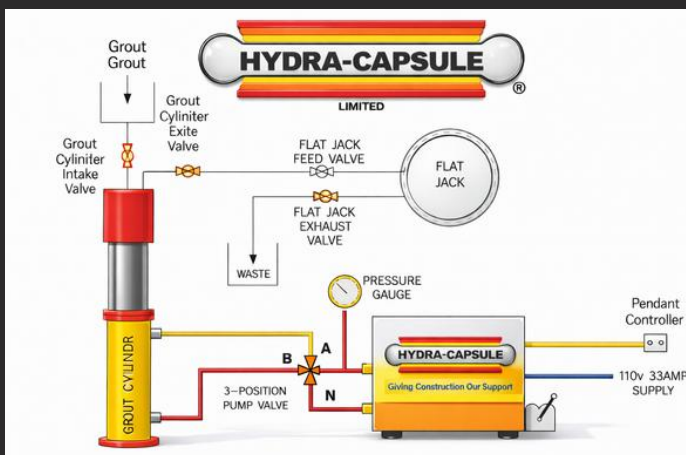
**Hydraulic**

POWER SUPPLY  
SOURCE

## KEY FEATURES

1. Injection system allows for pumping of resin or grout at pressures up to 160 bar
2. Available in 0.5, 1 litre, 2 litre, or 5 litre cylinders
3. Connected to hydraulic power pack for operation
4. Used for inflation of Flat Jacks with water, hydraulic or cementitious grout (for transfusion)
5. Robust manufacture – fully tested & accredited to UKAS/ISO standards for all site conditions

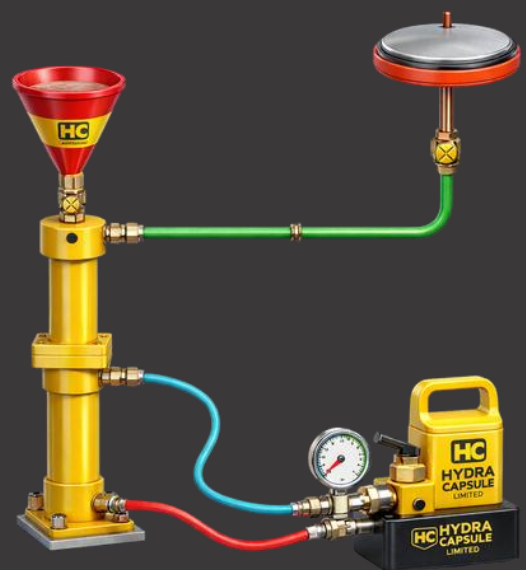
## INJECTION GROUT SCHEMATIC



## BENEFITS

- ✓ Largest Flat Jacks Range in the World
- ✓ 40+ Years Industry Experience
- ✓ Full UKAS/ISO Accreditation
- ✓ Bespoke Design & Manufacture

## INJECTION SYSTEM ARRANGEMENT





# 10 PE554 VANGUARD HYDRAULIC POWER PACK



The PE554 Vanguard is a hydraulic power unit designed for post-tensioning stressing operations. Custom-built for AHE Limited, this unit provides reliable high-pressure hydraulic power for flat jack inflation and stressing applications.

## SPECIFICATIONS

**UPTO 700  
Bar**

MAXIMUM  
PRESSURE

**4.1 - 40L**

OIL  
CAPACITY

**110/220V**

VOLTAGE  
OPTIONS

**2-Stage**

PUMP  
TYPE

- ✓ Custom-built to client specification & requirements
- ✓ Available in 110V and 220V configurations
- ✓ 700 bar hydraulic unit with 4.1 to 40 litre oil capacity
- ✓ Two-stage pump for efficient high-pressure delivery
- ✓ Hand pendant control for precise operation
- ✓ Integrated bleed valve for pressure release
- ✓ Robust steel construction for all site conditions



## HPU BENEFITS

- ✓ 700 Bar Max Pressure - Industry Leading
- ✓ 2-Stage Pump for Fast & Efficient Delivery
- ✓ 110V & 220V Dual Voltage Options
- ✓ 4.1 to 40 Litre Oil Capacity Range
- ✓ Hand Pendant for Precise Control
- ✓ Pre-Set Relief Valve for Safety

## HPU SPECIFICATIONS

Max Pressure: 100 - 700 Bar  
Oil Capacity: 4.1 - 40 Litres  
Voltage: 110V / 220V  
Pump Type: 2-Stage

# 11 CONTACT US



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## OUR SERVICES

- ✓ Flat Jacking Systems (Temporary & Permanent)
- ✓ Synchronised Lifting Systems ( $\pm 1\text{mm}$  accuracy)
- ✓ Bridge Jacking and Bearing Replacement Pre-loading
- ✓ Largest Selection Range of Flat Jacks upto 1,380 tonnes
- ✓ Heavy-Lifting Weighing, Steelwork Deflection
- ✓ Contractual Service + Equipment Hire & Sales

