

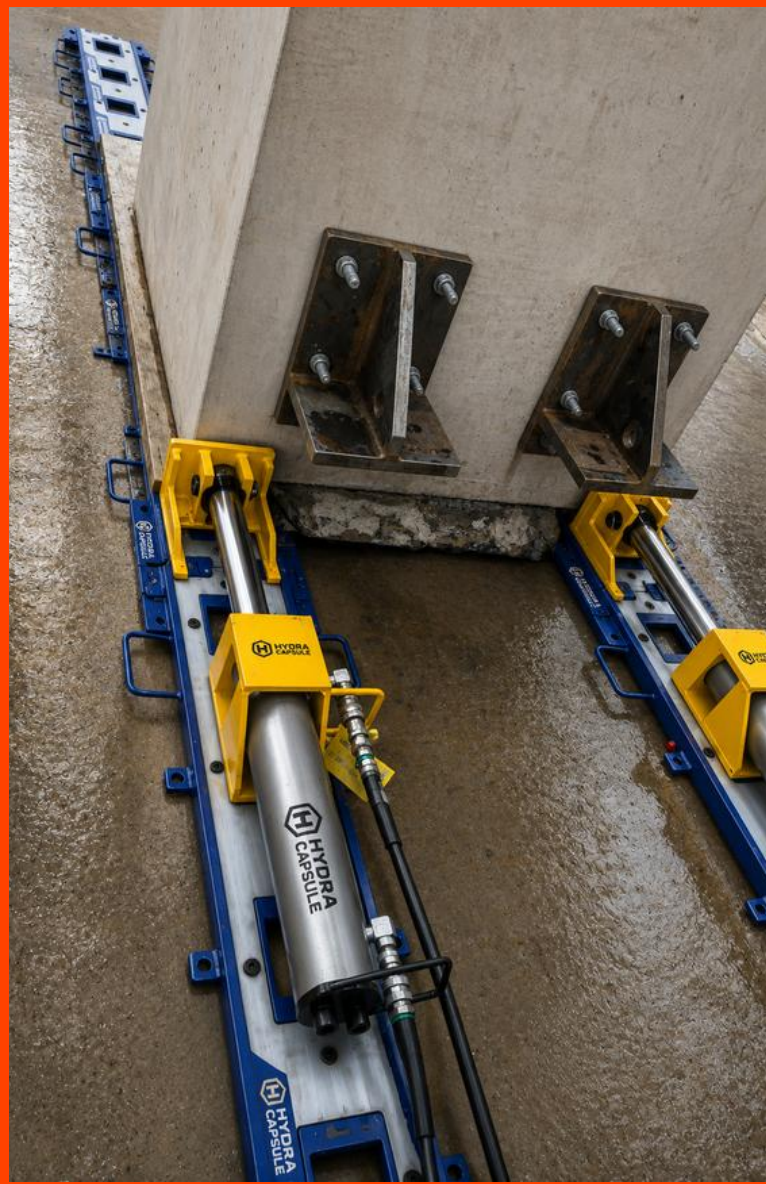


**HYDRA CAPSULE
LIMITED**

HYDRAULIC SLIDING, SKIDDING & LAUNCHING SYSTEMS

OUR SERVICES

- Hydraulic Sliding & Skidding
- Bridge Launching Systems
- Jacking Shoes & Sledges
- Mechanical Rollers and Skate
- Propping & Load Monitoring
- Re-Positioning and Re-Alignment



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HYDRA-CAPSULE LIMITED - GIVING CONSTRUCTION OUR SUPPORT

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01 SLIDING & SKIDDING OVERVIEW



Hydra-Capsule Limited as a leader in the field, Hydra-Capsule prides itself on its innovative approach to engineering challenges - providing full design, supply and installation and full 'one-stop solution' of heavy-lifting hydraulic sliding, skidding and launching systems, operating across the UK and internationally.

KEY CAPABILITIES

50,000+

TONNES
SLIDE CAPACITY

2-5%

FRICTION
COEFFICIENT

+/-1mm

POSITIONAL
ACCURACY



SYSTEM COMPONENTS

- ✓ Hydraulic push-pull cylinders (up to 1000T capacity)
- ✓ PTFE/stainless steel slide bearings & pads
- ✓ PLC synchronisation & real-time monitoring
- ✓ Steel skid tracks, guides, jacking frames/shoes & lateral restraints

ADVANTAGES

- ✓ Controlled horizontal movement of heavy structures up to 50,000 tonnes
- ✓ PTFE/stainless steel slide paths with ultra-low friction
- ✓ PLC-controlled synchronised hydraulic push-pull systems
- ✓ Suitable for bridge launches, module slides & building relocations
- ✓ Full design, supply, installation and commissioning service

01 HYDRAULIC SLIDING, SKIDDING & LAUNCHING



Hydraulic sliding, skidding and launching systems provide controlled, precise horizontal movement of heavy structures and components. These systems are essential for bridge launches, module installations, platform relocations, and heavy civil engineering projects where traditional crane lifts are impractical or impossible. Launching systems extend these capabilities to incremental bridge construction and large-span deck installations.

WHAT IS HYDRAULIC SKIDDING?

Hydraulic skidding uses low-friction slide paths combined with hydraulic push-pull cylinders to move heavy loads horizontally. The system operates on PTFE (Teflon) coated slide plates running on polished stainless steel tracks, achieving friction coefficients as low as 2-5%. Loads from 50 tonnes to over 50,000 tonnes can be moved with millimetre precision.

WHAT IS HYDRAULIC SLIDING?

Hydraulic sliding systems utilise guided slide tracks with hydraulic actuators to translate structures along a predetermined path. The system incorporates lateral guides to maintain alignment and can operate on gradients. Sliding is typically used for bridge deck installations, building relocations, and offshore module placements.

KEY SYSTEM COMPONENTS

- ✓ Hydraulic push-pull cylinders (strand jacks or linear actuators)
- ✓ PTFE/stainless steel slide paths (low friction coefficient)
- ✓ Lateral guide systems for alignment control
- ✓ Synchronised hydraulic power packs (PLC controlled)
- ✓ Load monitoring via integrated load cells
- ✓ Temporary steelwork & slide beams



01 APPLICATIONS



Bridge Deck Sliding
& Pushing / Pulling



Transformer Skidding
& Installation



Building Relocation,
Pushing & Pulling



Platform & Vessel
Positioning



Incremental Bridge
Launching



Roof Frame Truss
Sliding

CASE STUDY: BRIDGE DECK LAUNCH

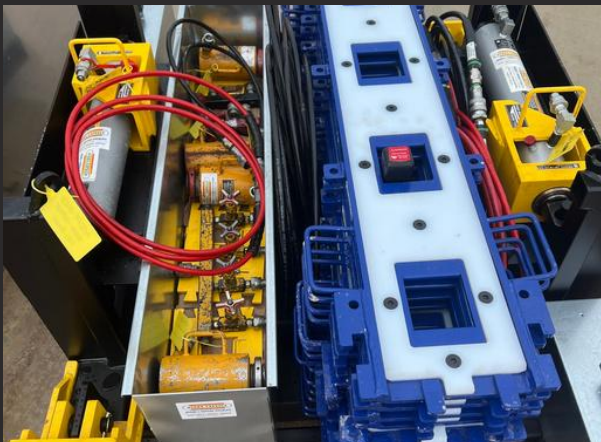
12,000T bridge deck launched over 120m using synchronised strand jacks and PTFE slide bearings. Completed in 72 hours with ± 2 mm positional accuracy.



02 HYDRAULIC PUSH-PULL CYLINDER SPECIFICATIONS



MODEL	CAPACITY (TONNES)	TYPE (APPLICATION)	STROKE (mm)	SPEED (mm/hr)	PRESSURE (BAR)
HPC-30	30	PTFE	300	350	700
HPC-150	150	PTFE	500	300	700
HPC-300	300	SKIDDING TRACK	500	250	700
HPC-400	400	SKIDDING TRACK	400	200	700
HPC-500	500	SKIDDING TRACK	500	150	700
HPC-500x2	1000	SKIDDING TRACK	500	150	700
HPJ-180	100	PULLING JACK, SLEDGE/SHOE	600	150	700
HPJ-360	360	JACKING SLEDGE/SHOE	50-150	150	700



All hydraulic push-pull cylinders operate at 350-700 bar working pressure.

Paired 500T units provide 1000T capacity for heavy bridge deck launches and module skidding operations.

Offering technical support - for hire, sales & contractual works

ADVANTAGES

- ✓ Precise horizontal movement of structures up to 50,000 tonnes
- ✓ Ultra-low friction PTFE/stainless steel sliding pad (2-5%)
- ✓ PLC-controlled synchronised push-pull for millimetre accuracy
- ✓ No crane requirement - ideal for confined or restricted sites
- ✓ Suitable for bridge launches, module slides & building relocations
- ✓ Paired 500T systems deliver 1000T capacity for heavy operations
- ✓ Reusable equipment reduces project costs across multiple moves
- ✓ Real-time load monitoring via integrated load cells

02B PTFE SLIDE PAD SPECIFICATIONS



PTFE slide pads provide ultra-low friction interfaces for controlled horizontal movement of heavy structures, delivering precise, repeatable sliding performance under extreme load conditions.

MODEL	CAPACITY (TONNES)	PAD SIZE (mm)	THICKNESS (mm)	FRICTION (%)	PRESSURE (N/mm ²)
SP-30	30	200x200	12	2-3	45
SP-150	150	400x400	15	2-4	45
SP-300	300	500x500	18	2-4	45
SP-400	400	600x600	20	2-5	45
SP-500	500	700x700	22	2-5	45
SP-500x2	1000	700x700 x2	22	2-5	45

APPLICATIONS

- ✓ Bridge deck sliding & launching operations
- ✓ Module skidding on offshore platforms
- ✓ Heavy load transfer on temporary trackways
- ✓ Building relocation slide paths
- ✓ Permanent / temporary support expansion bearings



TECHNICAL NOTES

All PTFE slide pads are manufactured to BS EN 1337-2 and tested to 45 N/mm² contact pressure. Friction coefficients are measured under full design load at ambient temperature. Pads are supplied with polished stainless steel mating surfaces for optimum performance.

03 JACKING SHOES & SLEDGES



Hydraulic jacking shoes and skids/sledges are critical components in hydraulic sliding and skidding operations. They serve as the interface between the hydraulic system and the load, distributing forces evenly and enabling controlled movement along slide tracks.

JACKING SHOES

Jacking shoes are fabricated steel assemblies fitted with PTFE pads that sit beneath the load on the slide track. They incorporate hydraulic jacking points for vertical adjustment during transit, allowing precise levelling and load transfer. Shoes can be designed for single-direction or multi-directional movement.

SLEDGES

Sledges are heavy-duty sliding platforms designed to carry entire structures or modules along prepared trackways. They incorporate multiple PTFE slide pads, lateral restraint systems, and connection points for hydraulic push-pull units. Sledges are custom-engineered to match specific load configurations and track geometries.

TYPICAL SPECIFICATIONS

TYPE	CAPACITY	PTFE AREA	STROKE	WEIGHT
JS-100	100T	400x400mm	150mm	850kg
JS-250	250T	600x600mm	200mm	1,200kg
JS-500	500T	800x800mm	250mm	2,100kg
SL-500	500T	1200x600mm	300mm	3,500kg
SL-1000	1000T	1500x800mm	300mm	5,200kg
SL-2000	2000T	2000x1000mm	400mm	8,500kg

KEY BENEFITS

- ✓ Precise load positioning (mm accuracy)
- ✓ No crane requirement for horizontal moves
- ✓ Adaptable to varying load configurations
- ✓ Reusable for multiple operations
- ✓ Integrated jacking for vertical adjustment



04 MECHANICAL ROLLERS AND GUIDES



Mechanical Rollers are precision-engineered heavy transport systems used to move loads horizontally on steel trackways. They provide a cost-effective alternative to hydraulic skidding for lighter loads and shorter distances, using multiple steel rollers within a fabricated chassis.

HOW ROLLERS WORK

Mechanical rollers consist of multiple hardened steel rollers housed within a rigid frame. The load sits on top of the roller assembly which travels along prepared steel tracks. Movement is achieved by pushing or pulling with hydraulic rams, winches, or chain blocks. The rollers distribute the load evenly across the track surface.

APPLICATIONS

- ✓ Heavy machinery relocation within factories
- ✓ Transformer and generator movements
- ✓ Bridge beam positioning
- ✓ Vessel and tank installation
- ✓ Temporary works during construction phases
- ✓ Plant room equipment installation



ROLLER SPECIFICATIONS

MODEL	CAPACITY (TONNES)	ROLLERS	WIDTH (mm)	LENGTH (mm)	C/HEIGHT (mm)
SKATE-20	15 – 35	4	135 – 165	270	100
SKATE-100	100 – 150	6	200	575 – 695	165 – 170
SKATE-200	200	8	540	615	170
SKATE-350	300 – 350	12	530	865 – 1015	255
SKATE-500	450 – 750	16	530 – 600	1170	255 – 300

ADVANTAGES

- ✓ No power source required for short moves
- ✓ Simple setup and operation
- ✓ Cost-effective for moderate and heavy loads
- ✓ Re-usable across multiple projects
- ✓ Minimal track preparation needed



05 HYDRAULIC JACKING & LAUNCHING SYSTEMS



Hydraulic launching systems enable the incremental construction and positioning of bridge decks, building steelwork, and large-span structures. The system pushes or pulls completed sections forward in controlled stages, building the structure progressively from one abutment to the other without the need for temporary supports across the full span.

INCREMENTAL LAUNCH METHOD

Bridge decks are cast in segments behind the abutment and launched forward using hydraulic strand, hollow-ram jacks or push-pull cylinders. Building steelwork frames are assembled in conjunction with cast-in-situ concrete segments, then launched incrementally as composite units. A steel launch nose (typically 60% of span length) is attached to the leading edge to reduce cantilever moments during the launch. The deck or frame slides over temporary piers on PTFE bearings until it reaches the far abutment.

LAUNCH NOSE & STRAND/HOLLOW RAM JACKS

The launch nose is a tapered steel structure bolted to the leading edge of the deck. It reduces the hogging moment as the deck cantilevers between piers. Strand jacks grip high-tensile steel strands anchored ahead of the deck and pull the structure forward in 200-300mm strokes at forces up to 500 tonnes per jack.

LAUNCHING APPLICATIONS

APPLICATION	TYPICAL LOAD	SPAN
Bridge deck launch	300 – 20,000T	30 – 200m
Roof truss sliding	50 – 2,000T	20 – 80m
Platform module launch	1,000 – 50,000T	50 – 150m
Tunnel segment push	200 – 5,000T	10 – 50m
Building relocation	100 – 10,000T	5 – 100m
Steelwork & cast-in segment launch	500 – 15,000T	20 – 120m

KEY ADVANTAGES

- ✓ No temporary falsework required across the span
- ✓ Minimal disruption to traffic/waterways below
- ✓ Continuous construction cycle (cast & launch)
- ✓ PLC-controlled synchronised movement
- ✓ Suitable for curved and gradient alignments



06 HEAVY LIFTING, SKIDDING & LAUNCHING



HYDRAULIC SKIDDING & SLIDING

Hydraulic skidding and sliding systems move heavy structures horizontally using PTFE/stainless steel interfaces and synchronised push-pull cylinders. Ideal for bridge decks, modules, and building frames where crane access is restricted or loads exceed crane capacity.

- ✓ Bridge deck skidding & incremental launch
- ✓ Module slides for offshore & industrial plant
- ✓ Building relocation on PTFE slide paths
- ✓ Synchronised push-pull cylinder systems
- ✓ PLC-controlled with real-time load monitoring
- ✓ Capacities from 10T to 750T
- ✓ Lifting Capacities up to 25,000
- ✓ Fully stocked with multiple units available for immediate dispatch



HEAVY LIFTING & LAUNCHING

Hydraulic strand jacking and heavy lift systems provide controlled vertical and horizontal positioning of large structures. Combined with launching equipment, these systems enable incremental construction of bridge decks, steelwork frames, and cast-in-situ concrete segments.

- ✓ Strand jack heavy lifting to 35,000T
- ✓ Incremental launch of steelwork & bridges
- ✓ Synchronised multi-point lifting ($\pm 1\text{mm}$)
- ✓ Bridge bearing installation & preloading
- ✓ Hydraulic gantry & jack-up systems
- ✓ Full design, supply & installation service



COMBINED SYSTEMS: Heavy lifting and skidding operations are frequently combined for complex installations – structures are lifted into position vertically then skidded horizontally to their final location using integrated hydraulic control systems.

07 BENEFITS OF SKIDDING & SLIDING



Hydraulic skidding and sliding systems offer significant advantages over traditional crane-based methods for horizontal load movement. These systems provide precise, controlled positioning of heavy structures with minimal site disruption, reduced programme risk, and enhanced safety throughout the operation.

KEY BENEFITS

BENEFIT	DESCRIPTION
Precision	Millimetre-accurate positioning via PLC-controlled synchronised hydraulic systems
No Crane Required	Eliminates need for heavy lift cranes – ideal for confined, urban, or restricted access sites
Programme Certainty	Weather-independent operation with predictable cycle times reduces schedule risk
Cost Efficiency	Lower mobilisation costs than crane hire with reusable equipment across multiple projects
Safety	Controlled, incremental movement with real-time load monitoring at every stage
Versatility	Suitable for bridges, modules, buildings, vessels, and roof trusses from 10T to 50,000T
Minimal Disruption	No road closures for crane operations – reduced impact on live infrastructure and traffic
Scalability	Systems can be paired or multiplied to match any load requirement without redesign

SKIDDING vs SLIDING

Skidding uses steel tracks with roller or slide shoe systems for heavy loads over longer distances. Sliding uses PTFE/stainless steel interfaces for shorter, precision moves with ultra-low friction (2-5%). Both methods are hydraulically powered and PLC-controlled, with the choice depending on load weight, distance, and required accuracy. Systems can be combined for complex multi-stage operations.



08 CONTACT US



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OUR SERVICES

- ✓ Hydraulic Skidding and Sliding Solutions
- ✓ Synchronised Lifting & Monitoring Systems ($\pm 1\text{mm}$ accuracy)
- ✓ Bridge Launching and Rolling Systems
- ✓ Largest Selection Range from 10 – 30,000 tonnes capacities
- ✓ Integrated Hydraulic Jacking System with Jack-Up Unit (upto 12 metres lift)
- ✓ Contractual Service + Equipment Hire & Sales



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