

Since 1940

# LARZEP

HYDRAULIC

## SPECIAL PRODUCTS AND APPLICATIONS

With more than 70 years of experience in the hydraulic sector, LARZEP designs and manufactures high pressure hydraulic equipment for the movement of heavy loads. Cylinders up to 2.000 Tn lifting capacity, synchronous lifting systems for a precise control of the load.

Our engineers are continuously developing special products and producing the drawings to build special hydraulic tools that represent 30% of our sales in record beating times, no matter if it's a one off, or a big batch.

All our cylinders are designed according to ASME B30.1 and manufactured in our production facility located in Mallabia, in the North of Spain.

Our biggest advantage against our competitors is our flexibility and quick delivery time. Contact our Technical Department to discuss your requirements, indicating type of product, quantity, capacity, stroke, or any another additional feature you may require.

## KIEV OLYMPIC STADIUM



Larzep manufactured the whole lot of double acting hollow bore cylinders for the construction of the new roof of the Olympic Stadium in Kiev.

108 cylinders of 220 ton and 150 mm stroke and 60 cylinders of 120 ton and 150 mm stroke were supplied. Over 30.000 tons of pulling capacity in total.

The cylinders were used to tension all the cables of the roof simultaneously.



# Special Products & Applications

## OIL RIG RETRIEVAL



A hanger retrieval system developed with LARZEP products, for a major Oil & Gas operator in the North Sea.

The system consists in 4 Double acting 215 ton Hollow Bore Cylinders with 460 mm stroke, completely black nitrated to avoid rust in the North Sea environment and 2 pneumatic powered hydraulic pumps with safety double circuit each.



## CATERPILLAR PIN PUSHER



Double acting cylinders D35030, 350 ton and 300 mm stroke were used together with a HAM7645 110 volt 2.1 litre per minute power pack with remote control pendant for safety and ease operation.

The tool was used for the removal of caterpillars pins on Earth moving equipment.



The pin was pushed through; in this case it took 251 metric tonnes to break the grip of the pin which was very badly worn.

The system is strongly recommended by Health and Safety Authorities, as means of protection for the operators.

**CYLINDERS**



Double acting cylinder with lock nut and gear wheel.



Double acting cylinders, hollow piston with AZ5700 pilot operated check valve integrated.



Double acting cylinders with tilting saddle and ceramic coat.



Double acting cylinder with special saddle.



Double piston cylinder.



Double acting cylinder with lock nut. 1.500 Tn capacity and 500 mm stroke.



Double acting cylinders with lock nut and tilting saddle. Support a 10% side load.



Double acting cylinder with 1.250 mm stroke.



1.100 Tn single acting cylinder. With lock nut and base plate.



1.000 Tn single acting cylinder with lock nut and tilting saddle. Supports a 12% side load.

## STEP BY STEP

- Double acting
- Available in steel or aluminium
- Capacity: from 50 to 400 Tn
- Stroke: 155 mm
- Different step plate dimensions
- Optional tilting saddle



## STRAND JACKS

- Double acting + Single acting
- Available in steel or aluminium
- Capacity: up to 400 Tn
- Suitable for different wedge and cable manufacturers
- Several configurations available



## BOLT TENSIONERS

- Single acting
- Working pressure: 1.500 bar
- Capacity: from 23 to 265 Tn
- Bolt size: from M16 to M100



**PUMPS & POWERPACKS**



Synchronized Lifting system, 1.000 litres oil capacity. With 2 synchronized outlets + 2 manual outlets. Flow 25.5 l/min.



Hydraulic powerpack, 600 litres capacity, with 4 pumps and 4 exits each. Each pump is connected to the 4 solenoid valves.



Hydraulic powerpack, 600 litres capacity with 3 different pumps to work at different pressures and flows.



10 litres Petrol powerpack with manual pump, 2 valves and by-pass.



Powerpack with solenoid valve and by-pass, to work with 4 cylinders independently.



Petrol powerpacks for re-railing applications.



50 litres powerpacks with roll bar, wheels and heat exchanger.



50 litres hydraulic powerpack with 6 parallel ways.

## SYNCHRONIZED LIFTING SYSTEMS



Larzep supplied the seven 500 Tn lifting cylinders for the tub lift-and-split, twenty two 100 Tn cylinders along with an electric power pack incorporating valving controlled electronically via a PLC, all controlled by the laptop for work on the 6400 Tn Marion dragline.

Larzep lifting system contribute to successful maintenance lift on massive Queensland Dragline.

The job was to remove the Marion 8750 Series B's tub, which weights 942 Tn for maintenance. This is understood to be a world-first for the mining industry.

Two jacking frames, each with 1.000 Tn working load limit, were used for this procedure. Each jacking frame housed two 500 Tn Larzep cylinders.

The remaining three of the seven jacks of 500 Tn capacity were fitted in custom-built jacking haunches at 120 degrees around the circumference of the tub to allow for the lowering and raising of the tub for the removal and installation phases.



The control point for the jacking system was a laptop computer, easy to use, allowing jacking accuracies of multiple cylinders to within 1 mm.

The modular lifting system allows up to three-capacity hydraulic power packs to be connected to a programmable logic controller. This, in turn, was controlled from the laptop computer.



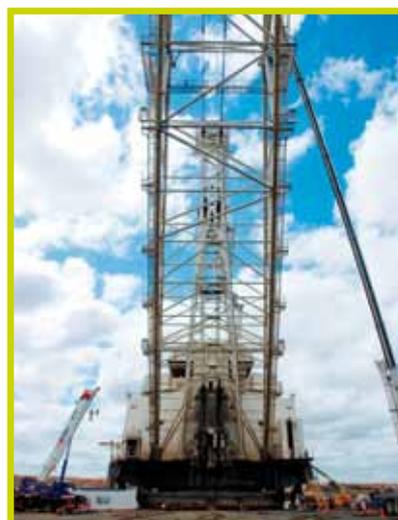
The laptop screen allows users to highlight which cylinder they want to be operating. You can move them individually or they can be synchronized for whatever task required.

Linear and pressure transducer on each cylinder let the operator see on the laptop screen the displacement of each jacking cylinder and the hydraulic pressure in each cylinder in real time.

Total mass and centre of gravity also can be shown on the screen.



Users even have enough control over the cylinder to tilt the load if necessary.



**PRESSES**



30 Tn capacity and 90 mm stroke press with 50 litres powerpack with 4 ways.



140 Tn capacity and 250 mm stroke press with special protection.



Double acting 50 Tn capacity and 370 mm stroke press with powerpack.



Precision press for production purposes with safety systems.



Wheel crusher. 23Tn capacity and 800 mm stroke.



Heavy duty press, 1.500 Tn capacity and 150 mm stroke press with 50 litres powerpack with solenoid control.



Moving column press, 200 Tn capacity.

APPLICATIONS

