

# Lightraulics® Composite Hydraulics

## Ultra-lightweight Tool Cylinders



## A Revolution in Lifting

Ultra-lightweight tool cylinders from Parker Hannifin use Lightraulics® materials technology to transform the way in which loads are managed on-site.

In place of traditional heavy steel lifting cylinders, which cannot be moved without assistance and are difficult to locate accurately, Lightraulics tool cylinders are built from corrosion-resistant light alloys and carbon fibre composite materials. Typically between 1/3 and 1/4 of the weight of a comparable steel cylinder, they can be positioned quickly and accurately – often by a single operator.

The benefits – higher productivity, a saving in time and manpower, and a reduced risk of injury.



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### Typical Masses of Comparable Cylinders

Load tonnes	Stroke mm	Steel kg	Aluminium kg	Composite kg
50	200	27	19	8.5
80	200	42	27	13
120	200	58	36	19
150	200	78	45	24
195	300	150	–	40
220	300	180	–	46
285	300	300	–	63
410	300	420	–	97



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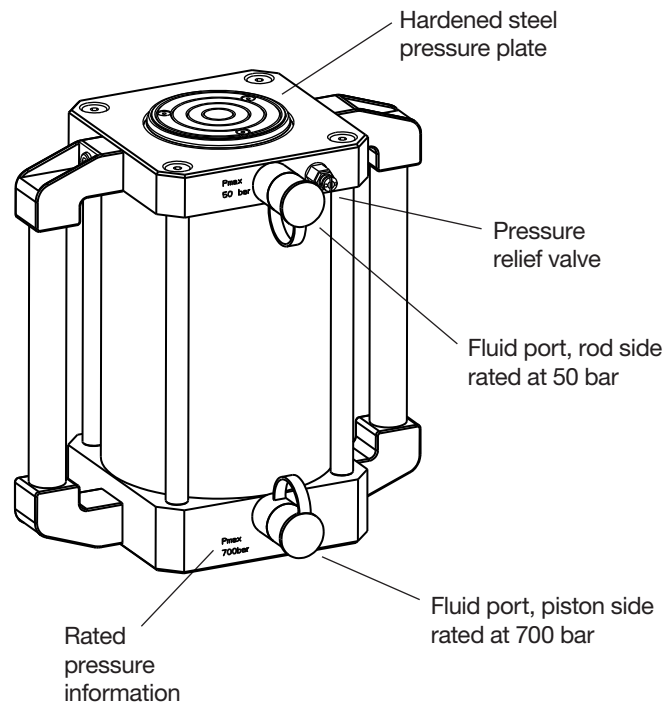
# Lightraulics® Technology – Making Light Work of Tough Conditions

The technology which makes Parker's ultra-lightweight tool cylinders possible has been proven in the tough environment of the Construction industry. Hollow piston cylinders constructed from composite materials and light alloys are used successfully in cable tensioning, eg: for ground anchors in concrete structures. In applications like this, their light weight makes lifting into position and precise location a simple task – even on the steep gradients and demanding working heights of retaining walls.

Ultra-lightweight tool cylinders are available in a range of sizes from 50 tonne lifting capacity up to the heaviest-duty cylinders capable of lifting loads of 500 tonnes up to 300 mm. A patented safety valve prevents over-pressurising of the cylinder, protecting both the operatives and the load being raised.

On-site, progress is rapid. Most sizes of ultra-lightweight tool cylinders can be lifted into place by one or two people, without mechanical assistance. Connecting to the hydraulic system is simple and fast; with quick connectors in place, the system can be bled of air and operational in minutes. With the structure raised to the desired height, permanent supporting members can be positioned and the cylinder retracted and withdrawn, ready for re-use.

**Lightraulics® ultra-light Composite Tool Cylinders cut time on site, boost productivity, reduce the need for mechanical handling and protect operator safety – a win-win lifting solution.**



## Specifications

<b>Load</b>	50-500 tonnes
<b>Working pressure</b>	to 700 bar
<b>Materials - tube</b>	carbon fibre reinforced plastic (CFRP) with aramid fibre outer protective layer
<b>- cap</b>	aluminium alloy
<b>- pressure plate</b>	hardened steel, user-replaceable
<b>Fluid type</b>	mineral oil

## Why use Composite Cylinders?

- Light weight – between 1/3 and 1/4 of the weight of steel
- Corrosion resistant – carbon fibre and light alloy outer construction
- Portable – two integral carrying handles
- Durable – replaceable hardened steel pressure plate

