nz hydraulik zylinder

NZ hydraulic cylinders set new standards

Individual. Efficient. Safe.

"You only come to value self-reliance when you have to rely on others."

Saying

As an innovative quality supplier of hydraulic cylinders from Austria, NZ Hydraulikzylinder is one of the leading developers of customer-specific individual solutions, from the design stages through to series production. We cater for the specific requirements of your area of application, such as precision positioning, resistance to corrosion, pressure peaks, weight reduction needs, critical lateral forces or adverse environmental conditions. NZ Hydraulikzylinder – focused technology from Austria.

More than 1 million

AUSTRIA

hydraulic cylinders **in use worldwide stand for functionality and reliable performance.**

Cylinder
applications

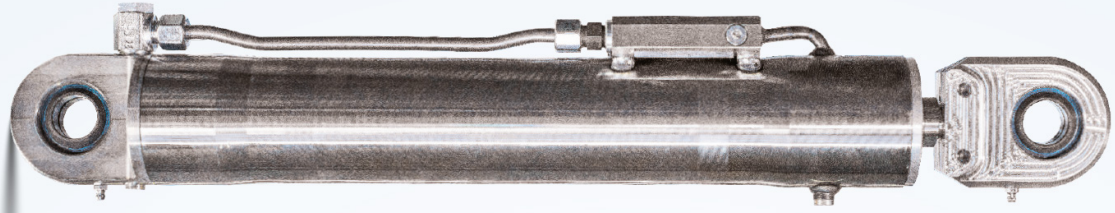
Supporting you with years of experience

Our knowledge based on years of experience in the most varied sectors guarantees optimised solutions for our customers.

"To know what one knows, and to know what one is doing, that is knowledge."

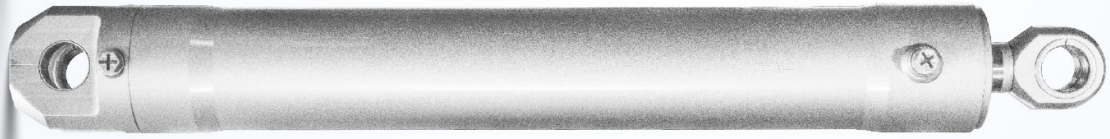
Confucius

- Timber industry & energy technology
- Plastics machines
- Construction machinery & commercial vehicles
- Transportation
- Work platforms
- Mining
- Mechanical engineering & environmental technology

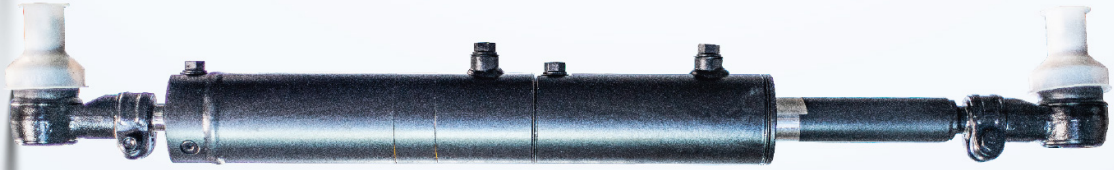


Safety-related cylinder
in line with DIN EN 280
with external valve block

Valve connection and position measuring system
in cylinder base



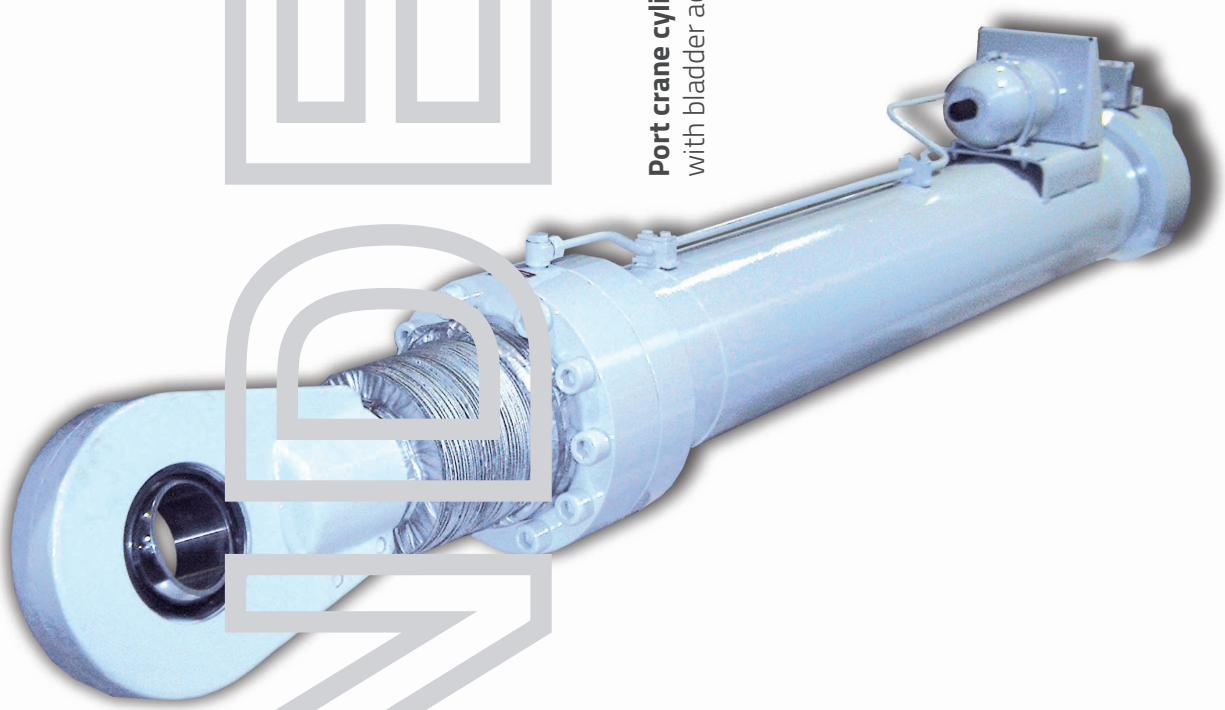
Lightweight cylinder



Steering cylinder for the automotive industry

CYLINDER

nz hydraulik zylinder



Port crane cylinder
with bladder accumulator

We stand out through individuality

and together, we can satisfy the most demanding requirements

Our cylinder designers develop individual solutions perfectly adapted to your function, medium, cycle and environmental influences.

- Piston diameters 32 mm to 700 mm
- Piston rod diameters 18 mm to 600 mm
- Stroke up to 7000 mm
- Pressures up to 530 bar

Customer-specific dynamics with

- Cushioning
- Valve technology
- Position measuring system
- Servo-proportional solution
- Lightweight technology
- Colour/shape design

Our personal approach gets things moving

We are right by your side from the very start – professional, individual, efficient.

Technical support:

- From prototype construction via commissioning through to series production
- We have been your perfect partner for specialist technical solutions for cylinder design since 1972

Processing:

- Short delivery times and consistently high cylinder quality through automated CNC production and storage processes, welding and assembly equipment and inspection systems

Special inspections for your hydraulic cylinders and components:

- Full high-pressure test for cylinders as standard – in part using fully automated testing
- Salt spray testing facility for long-term corrosion tests
- Non-destructive materials testing
- Component contour scanning using a 3D coordinate measuring machine with an accuracy of 1.9 µm

We would also be delighted to offer you specialised packaging, storage and spare parts concepts.

We perfectly match materials to requirements

At NZ Hydraulikzylinder, our cylinder standards lay the foundations for application-specific solutions and excellent functionality.

"To recognise the problem is more important than to recognise the solution, since the precise representation of the problem leads to the solution."

Albert Einstein

Piston rod materials and coating types
We offer piston rod coatings which are perfectly adapted to your function, cycle and environmental influences: Chromium-plated, double chromium-plated, chromium- and nickel-plated, ceramic-coated, plasma-nitrided, Tenifer-treated, hard-chromium plated, nitrohard-chromium plated or induction-hardened. Piston rod coatings are also specifically adjusted for the gliding, stripping and sealing technology of the hydraulic cylinders. For especially tough demands, short load changes and for heavy soiling, we use super-finishing to achieve Ra values of less than 0.1.

Coordinated sealing technology
Whether for HLP, HFA-E, HFC, HFD or HE hydraulic fluids, our technology ensures that cylinder solutions are durable and functional, using NBR, Viton or special seals. We design our hydraulic cylinders so that they work perfectly even in the most adverse environmental conditions and in extreme temperature ranges, from -35 °C to +200 °C on request.

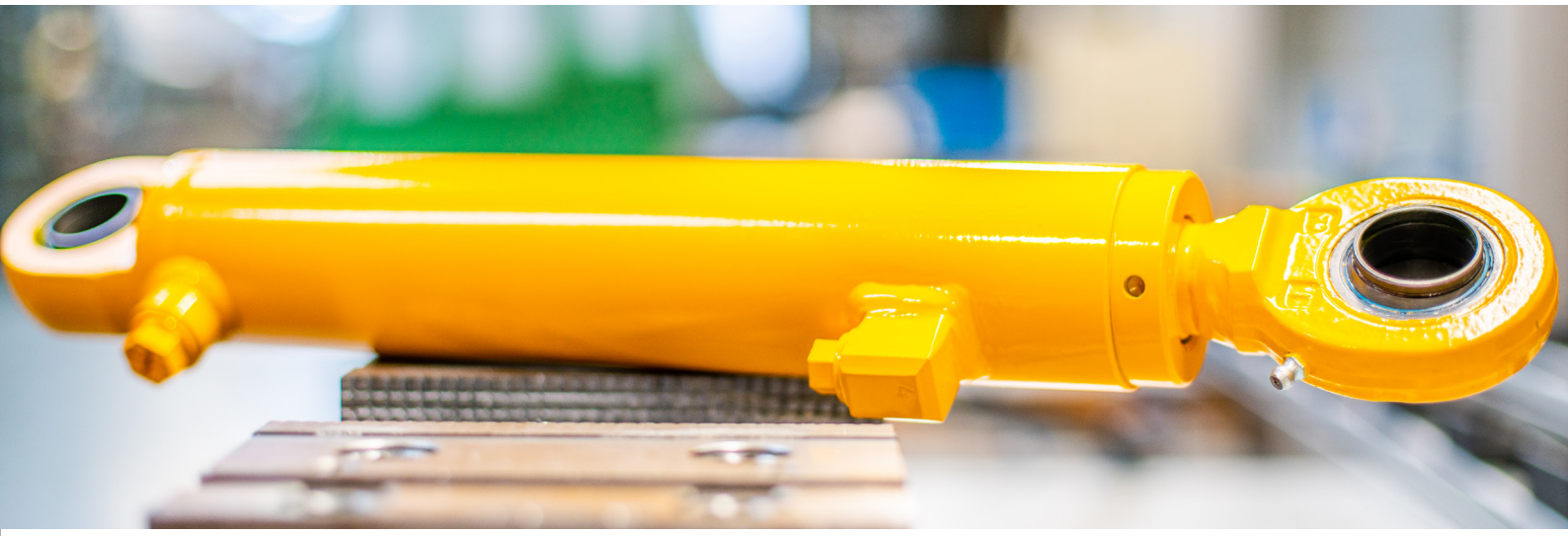
Ideal damping characteristics
Finely tuned to materials, force, position and speed, we guarantee the required run-out and run-in behaviour through fixed or adjustable cushioning.

PRODUCTS

Standard 200/201
Standard 180 and 250
Series W Series S
Light Line cylinder
Design cylinder
Long-stroke cylinder

Our products perform

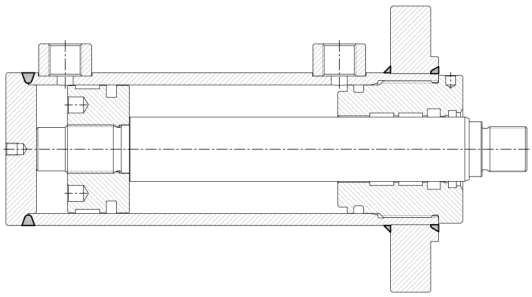
Our standard is simply excellent



Standard 200 and Standard 201 impress with their simplicity, sturdiness and attractive prices. The 201 version is an especially short cylinder type with welded rod ends – with spherical bearings in line with DIN 648.

The benefits for you:

- Simple, tough construction
- Pistons from 32 mm to 250 mm
- Various mounting types
- Excellent value for money
- Varied areas of application



SERIES 200/201

Engineering standard:	NZ Standard	**Cushioning:**	Without cushioning
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm	**Cylinder mounting components:**	Spherical eye, swivel eye, pivot, foot mounting, flange on the bottom, flange on the head, special mounting
Piston diameter [mm]:	32 to 250		
Rod diameter [mm]:	18 to 160	**Ambient temperature limit:**	-20 °C to +80 °C as standard
Nominal pressure [bar]:	200	**Maximum stroke [mm]:**	3000
Static test pressure [bar]:	300	**Maximum stroke velocity [m/s]:**	Up to max. 0.5

*) Other values and characteristics on request and following written approval

Products

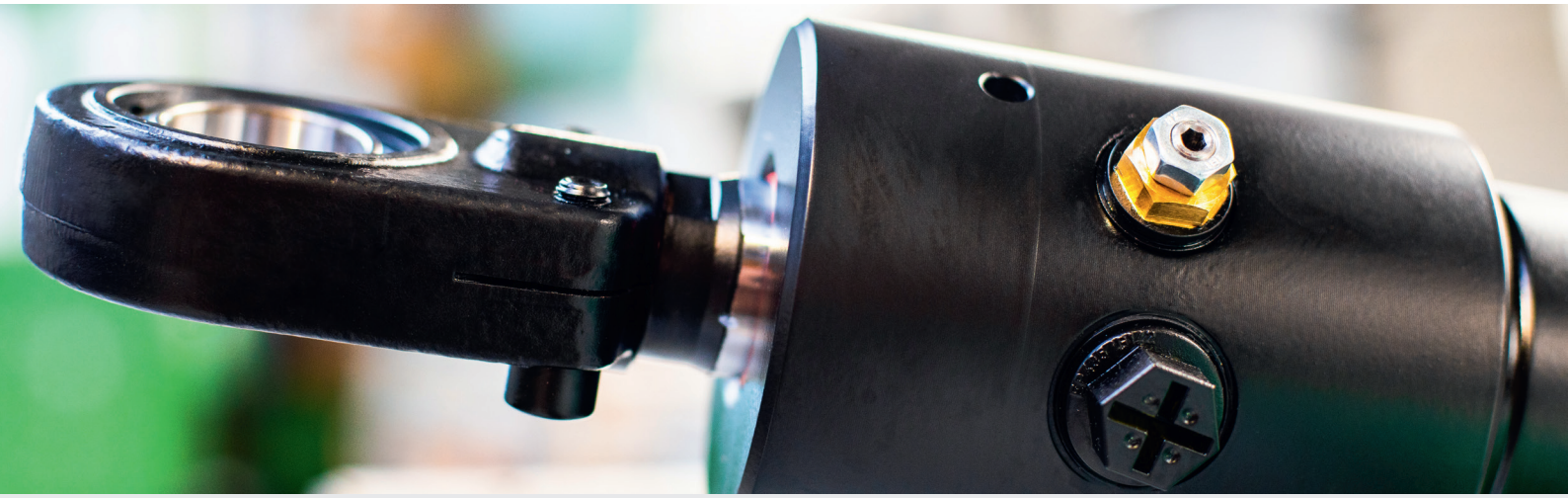
Standard 180 and 250

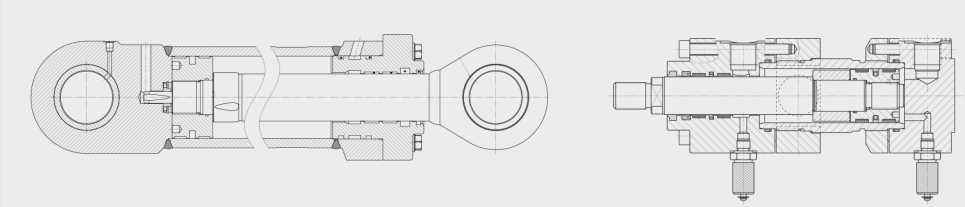
Dampened designs, heightened expectations

Our Standards 180 (up to 180 bar) and 250 (and 250 bar) are dampened designs which are mainly used in mechanical engineering and heavy engineering. Series 250 also caters for many industrial applications, with its standardised dimensions in line with DIN 24333, ISO 6022 and CETOP RP 73H.

Benefits at a glance:

- With and without cushioning
- Excellent price-performance ratio
- Easy to service and available in many sizes
- Very short installation dimension
- Sturdy and reliable
- Durable with especially low internal friction
- Available with single- or double-sided adjustable cushioning
- Corresponding sealing concept





SERIES 180 AND 250

Series 180 engineering standard:	NZ Standard	**Series 250 engineering standard:**	DIN 24333, ISO 6022, CETOP RP 73H
Series 180 nominal pressure [bar]:	180	**Series 250 nominal pressure [bar]:**	250
Series 180 static test pressure [bar]:	270	**Series 250 static test pressure [bar]:**	375
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm	**Cylinder mounting components:**	Spherical eye, swivel eye, pivot, foot mounting, flange on the bottom, flange on the head, special mounting
Piston diameter [mm]:	25 to 320	**Ambient temperature limit:**	-20 °C to +80 °C as standard
Rod diameter [mm]:	16 to 220	**Maximum stroke [mm]:**	7000
Cushioning:	With or without cushioning	**Maximum stroke velocity [m/s]:**	Up to max. 0.5

*) Other values and characteristics on request and following written approval

Products

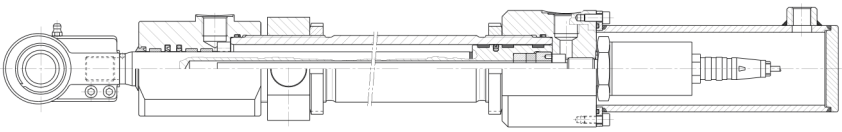
Series W

When it's the position that really matters

Our Series W stands for cylinders with analogue or digital position measuring system. These are available with a built-in absolute displacement measuring system and with integrated or external evaluation electronics.

Overview of benefits:

- Sturdy and durable position and position measurement
- Reliable and easy to service
- Perfectly technically coordinated system
- Outputs: Analogue/SSI/CAN bus/ PROFIBUS DP/EtherCAT
- May be used in the most adverse environmental conditions thanks to its integrated position sensors
- Monitoring of position, displacement and speed to 1/100 millimetre
- Inc. built-in pressure-resistant proximity switch for fixed end position monitoring, integrated load safety valves and pre-mounted pipe-break protection
- Corresponding measuring devices and the necessary peripherals for targeted usage



SERIES W – POSITION MEASURING SYSTEM

Engineering standard:	Customer-specific NZ special cylinder
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm
Piston diameter *) [mm]:	40 to 320
Rod diameter *) [mm]:	22 to 220
Nominal pressure [bar]:	Up to 530
Static test pressure [bar]:	Up to 800

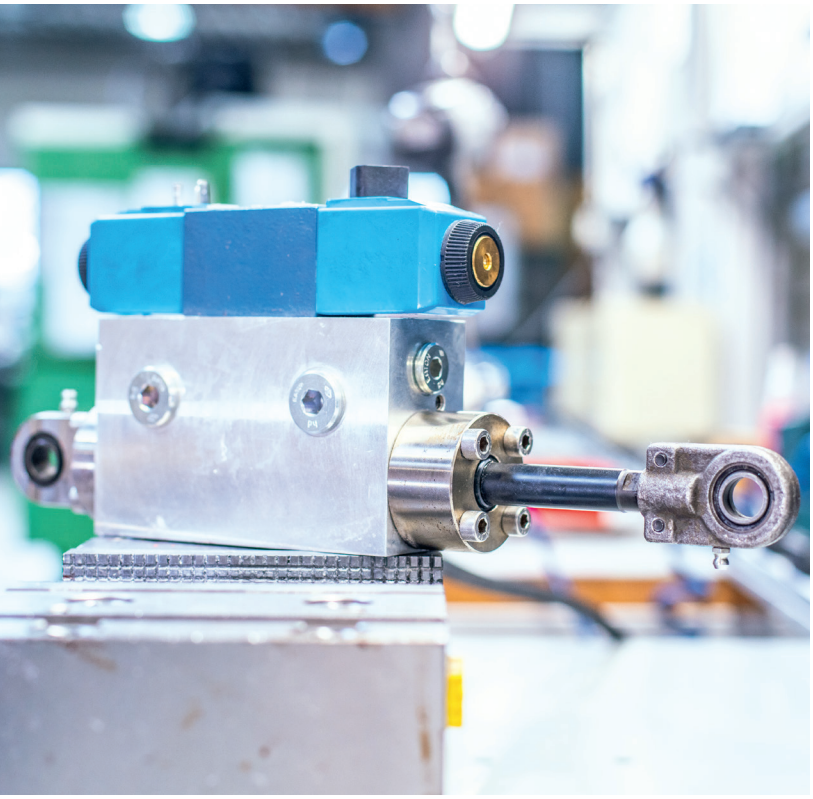
Cushioning:	With or without cushioning
Cylinder mounting components *):	Spherical eye, pivot, flange on the head, foot mounting, special mounting
Ambient temperature limit *):	-20 °C to +80 °C as standard
Maximum stroke [mm]:	6250
Maximum stroke velocity [m/s]:	Up to 2

*) Other values and characteristics on request and following written approval

Products

Series S

Greater speed for shorter reaction times

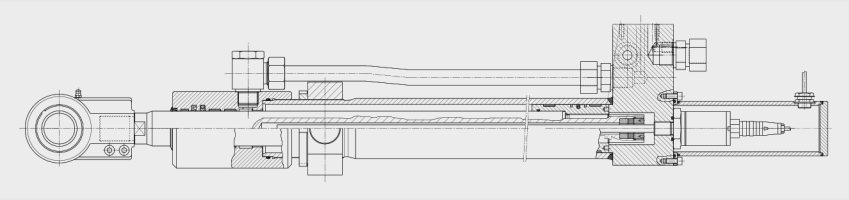


Under the designation Series S, we offer you rapid-reaction servo-proportional cylinders. In these, specially-developed valve controls are integrated into the NZ servo-axis cylinder or flange-mounted on the hydraulic cylinder as a valve block.

The benefits:

- Rapid reaction at up to 50 Hz
- Perfectly coordinated response behaviour
- 1/100 millimetre precision
- Customer-specific solutions systems
- Excellent references from industry
- Piped and with pre-equipped integrated position measuring system on request

Our applications specialists would be delighted to advise you on possible solutions and to support you in optimising new or existing plant systems.



SERIES S – SERVO-PROPORTIONAL CYLINDER

Engineering standard:	Customer-specific NZ special cylinder	**Cushioning:**	With or without adjustable cushioning
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm	**Cylinder mounting components:**	Spherical eye, swivel eye, pivot, flange on the bottom, flange on the head, foot mounting, special mounting
Piston diameter *) [mm]:	40 to 320	**Ambient temperature limit *):**	-20 °C to +80 °C as standard
Rod diameter *) [mm]:	22 to 220	**Maximum stroke [mm]:**	4500
Nominal pressure [bar]:	Up to 420	**Maximum stroke velocity [m/s]:**	Up to 2
Static test pressure [bar]:	Up to 600		

*) Other values and characteristics on request and following written approval

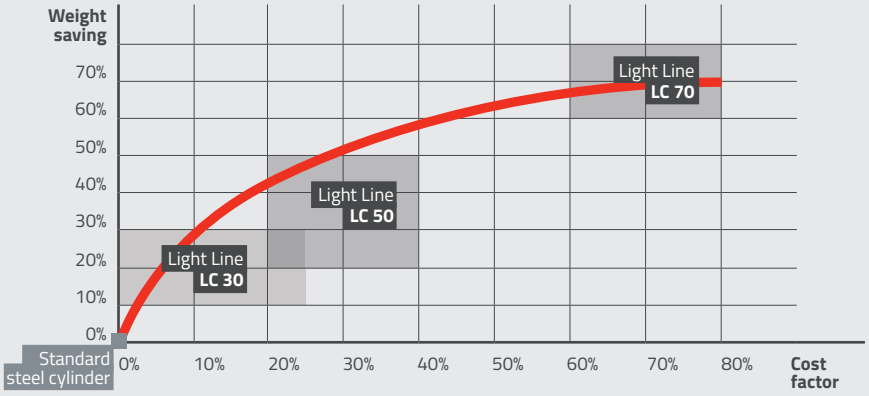
Products

Light Line Hydraulic® LC – lightweight cylinder

Reduced weight is hard to beat

The NZ Hydraulikzylinder Light Line Series consists of three different lightweight types, with which a weight saving of between 10% and up to 70%, adjusted to your applications, can be achieved.

WEIGHT/ COST RATIO



NZ HYDRAULIKZYLINDER LIGHT LINE TECHNOLOGY

Lightweight basis	LC 30	LC 50	LC 70
Topology optimisation	▪	▪	▪
Specialised joining technology	▪	▪	▪
Aluminium material	▪	▪	▪
High-strength materials		▪	▪
Modified piston rod		▪	▪
Enhanced topology optimisation		▪	▪
Optimised valve block		▪	▪
Carbon-fibre material			▪

NZ Hydraulikzylinder

LC30

Light Line Hydraulic®

Up to 30% reduction in weight

With the Light Line LC30, you can build on the topology optimisation of the cylinder components, on aluminium as a lightweight construction material and the NZ Hydraulikzylinder special joining technology.

NZ Hydraulikzylinder

LC50

Light Line Hydraulic®

Up to 50% reduction in weight

Based on the concept of the LC30, the topology of the lightweight cylinder is further optimised – including by the use of higher-strength materials and a modified piston rod.

NZ Hydraulikzylinder

LC70

Light Line Hydraulic®

Up to 70% reduction in weight thanks to high-end lightweight construction

In the Light Line LC70, the full lightweight potential of the LC30 and LC50 comes into play. Furthermore, a combination of aluminium and carbon-fibre materials is used. We achieve its optimum cylinder shape by winding a coil of carbon-fibre strips around the cylinder housing.

Products

Light Line Hydraulic® LC – lightweight cylinder

Light weight for greater safety

Our Light Line cylinders ensure safety, reduce costs, improve handling and are specially adapted to meet your requirements.

And our Light Line cylinders are:

- 100% customer-specific, ideally adaptable to the toughest conditions of use with pressure shocks of up to 1000 bar, critical lateral forces and stresses, the most adverse environmental conditions and a high cylinder traversing speed up to 1 m/s
- 100% compatible with your current system

"If you want to achieve something difficult, you need to take it lightly."

Bertolt Brecht

Safety As a specialist for safety-relevant lightweight cylinders in line with DIN 280, all detailed calculations and safety-relevant special cases are considered in the course of lightweight design. For example: ***Elevating work platforms*** improve your radius of action, your payload and your structural stability.

Weight specifications, reduced fuel costs & CO_2 environmental requirements fulfilled Through the use of our Light Line cylinders, you can reduce the weight of ***vehicle transporters***, for example, and thereby comply with weight restrictions, reduce your annual CO_2 emissions in a sustainable manner and make savings on fuel costs.

Additional payload and structural stability Thanks to the reduced weight of our Light Line Hydraulic®, drilling equipment is able to take along additional frames, significantly enhancing productivity. The lightweight structure also facilitates a reduction in the additional counterweight attachment, e.g. for ***drilling equipment***, without affecting structural stability.

Improved handling Assembly is simplified through the improved handling offered by a lighter cylinder.

Overview of benefits:

- CO_2 reduction
- Lower fuel consumption
- Achievable weight restrictions
- Simple overall construction
- Improved radius of action
- Shorter cycle time
- Heavier payload
- Easier handling, i.e. shorter assembly time
- Reduced ground pressure
- Reduced displacement
- Increased structural stability

SERIES LC – LIGHTWEIGHT CYLINDER

Engineering standard:	NZ Standard, DIN EN280	**Cushioning:**	With or without cushioning
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm	**Mounting to cylinders LC30, LC50**	Spherical eye, swivel eye, pivot, foot mounting, flange on the bottom, flange on the head, special mounting
Piston diameter *) [mm]:	40 to 320, LC70 to 160	**Mounting to cylinder LC70**	Spherical eye, swivel eye, simple thread design
Rod diameter *) [mm]:	16 to 200, LC70 to 120	**Ambient temperature limit *):**	-20 °C to +80 °C as standard
Nominal pressure [bar]:	Up to 350	**Maximum stroke *) [mm]:**	4500
Static test pressure [bar]:	Up to 525	**Maximum stroke velocity [m/s]**	Up to 1

*) Other values and characteristics on request and following written approval

Where functionality and elegance go hand in hand

Beauty depends on feeling right, and that feeling of rightness needs to be expressed in the best aesthetic."

Otl Aicher

Our Design cylinder combines impressive design with high performance and is used for example in the maritime sector. High-quality materials satisfy the most demanding requirements.

Materials/surfaces

- Stainless steel, aluminium, steel
- Polished, blasted, sanded, colour-anodised, painted or powder-coated

SERIES D – DESIGN CYLINDER

Engineering standard:	NZ Standard	**Cushioning:**	Without cushioning
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm		
Piston diameter **) [mm]:	Up to max. 300	**Cylinder mounting components *):**	Spherical eye, swivel eye, pivot
Rod diameter *) [mm]:	Up to max. 200	**Ambient temperatures *):**	-20 °C to +80 °C as standard
Nominal pressure **) [bar]:	200–300	**Maximum stroke [mm]:**	Up to 2500
Static test pressure **) [bar]:	300–450	**Maximum stroke velocity [m/s]:**	Up to 1

*) Other values and characteristics on request and following written approval
**) Aluminium, stainless steel, steel, depending on material

Products

Long-stroke cylinder

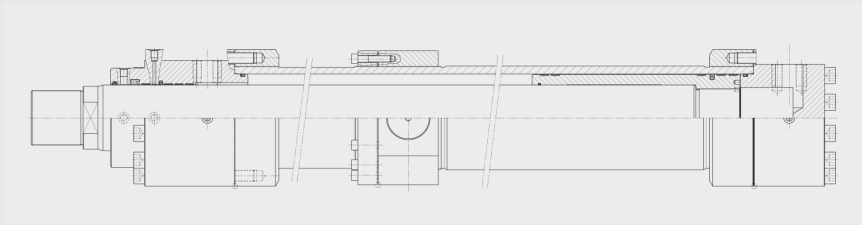
We take a long-term view on quality

Another high-quality product from NZ Hydraulikzylinder, which is deployed in the plastics industry, amongst other sectors, is the long-stroke cylinder with up to 7000 mm stroke and a maximum piston diameter of 700 mm. As a result of customer requirements such as high speeds, pressures or challenging environmental influences, we often supply hardened piston rods or make piston rods from special materials with special coatings.

In addition to modern machine tools, our long-stroke cylinder assembly section also possesses specially-adjusted automated joining devices.

Overview of benefits:

- Low friction for high pressures
- Easy to maintain
- For high stroke speeds



LONG-STROKE CYLINDER SERIES

Engineering standard:	Customer-specific NZ special cylinder	**Cushioning:**	Individually with or without cushioning
Piston rod material *):	20MnV6, C45E hard-chromium plated 20 ± 5 µm	**Cylinder mounting components:**	Spherical eye, swivel eye, pivot, flange on the bottom, flange on the head, foot mounting, special mounting
Piston diameter *) [mm]:	Up to 700		
Rod diameter *) [mm]:	Customer-specific	**Ambient temperatures *):**	-20 °C to +80 °C as standard
Nominal pressure *) [bar]:	Up to 350	**Maximum stroke [mm]:**	7000
Static test pressure *) [bar]:	Up to 525	**Maximum stroke velocity [m/s]:**	Up to 2

*) Other values and characteristics on request and following written approval

Our solutions offer great performance at a great price

NZ Hydraulikzylinder provides technical solutions specially made for your area of application*). We can always guarantee an attractive price-performance ratio thanks to our modern high-tech CNC machinery; this is also reflected in our annual output of around

40,000 cylinders

The benefits are clear:

- Fully-automated storage system with cantilever-arm heavy-duty shelving
- High degree of CNC production and high-quality manufacturing technologies
- Ergonomically-designed assembly lines for complex cylinder requirements
- New automatic joining equipment guarantees economical assembly of long piston rods with cylinder tubes
- Fully automatic robotic welding systems with welding inspection book in accordance with Austrian standard ÖNORM M7812
- Excellent international quality standards and a quality management system in accordance with Austrian standard ÖNORM ISO 9001:2015
- Computer-assisted batch-tracing systems

*) Further information is available on our website at **www.nz-hydraulikzylinder.com**

The right type is the key to success

Type key

250	GA	250	N	200	GN	A	3000	GA	N
1	2	3	4	5	6	7	8	9	10

Everything at a glance and everything you need.

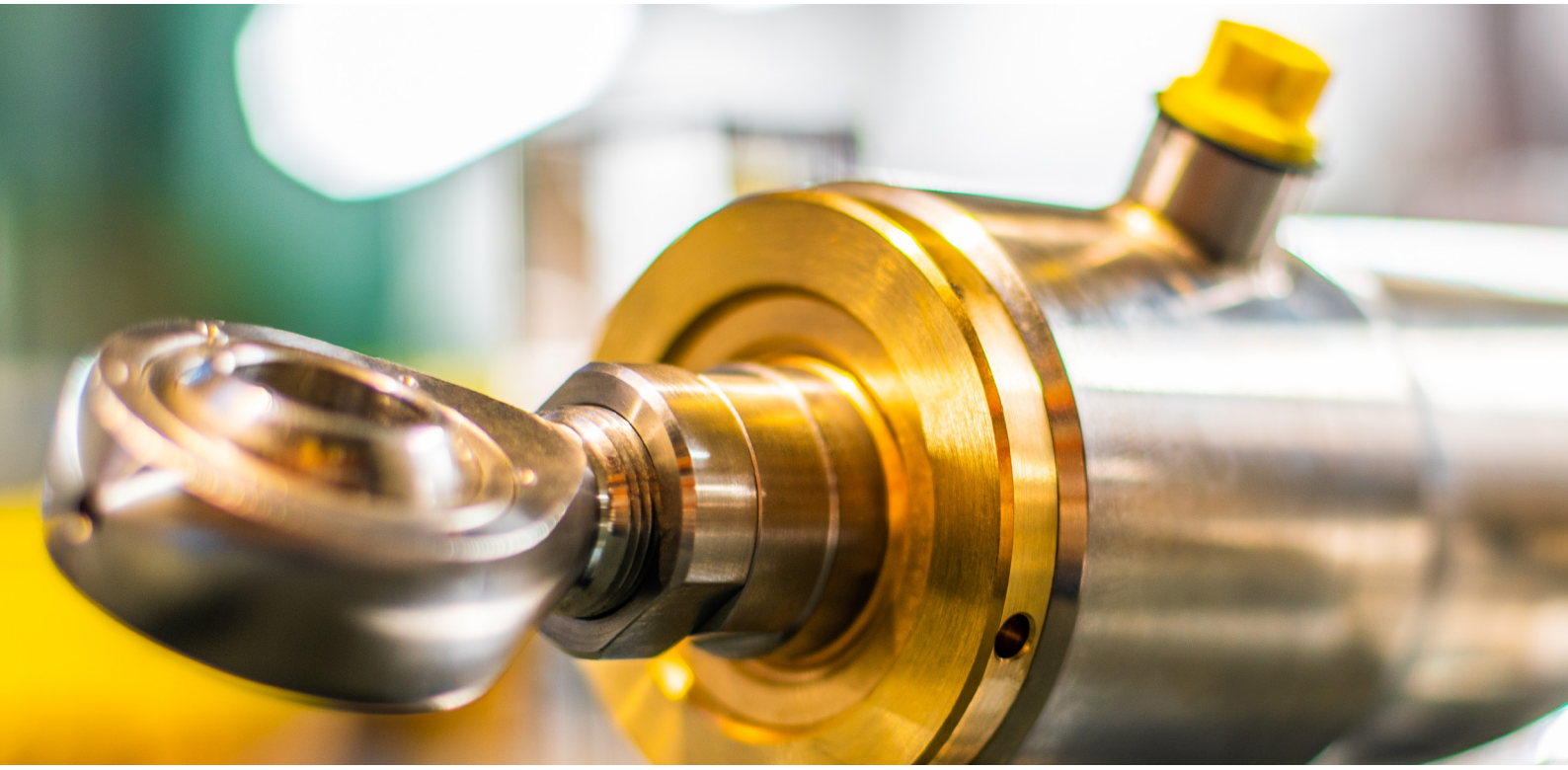
		NZ Standard			Position measuring system	Servo-proportional	Light Line Hydraulic®		Design cylinder	Special cylinder
1	**SERIES**	**200**	**180**	**250**	**W**	**S**	**LC30/LC50**	**LC70**	**D**	**A-Z**
	TYPE	**200**	**180**	**250**	**A-Z**	**A-Z**	**A-Z**	**A-Z**	**A-Z**	**A-Z**
	Design / Engineering standard	**NZ Standard**	**NZ Standard**	**DIN, ISO, CETOP **)**	**specific**	**specific**	**specific DIN EN 280**	**specific**	**specific**	**specific**
	Differential or synchronizing type	D	D	D	D/S	D/S	D/S	D/S	D/S	D/S
	Honed cylinder tube	▪	▪	▪	▪	▪	▪	▪	▪	▪
	Max. nominal pressure [bar]	200	180	250	530	420	350	350	200–300 **)	530
	Max. static test pressure [bar]	300	270	375	800	600	525	525	300–450 **)	800
2	**Fastening on the cylinder**									
	GA – Spherical eye	▪	▪	▪	–	▪	▪	▪	▪	▪
	SA – Swivel eye	▪	▪	▪	–	▪	▪	▪	▪	▪
	SZ – Pivot	▪	▪	▪	▪	▪	▪	–	▪	▪
	FK – Flange on the head	▪	▪	▪	▪	▪	▪	–	–	▪
	FB – Flange on the bottom	▪	▪	▪	–	▪	▪	–	–	▪
	FU – Foot mounting	▪	▪	▪	▪	▪	▪	–	–	▪
	SB – Special fastening on indication	▪	▪	▪	▪	▪	▪	–	–	▪
3	**Piston rod diameter [mm]**	**32–250**	**25–200**	**40–320**	**40–320**	**40–320**	**25–320**	**25–160**	**25–300 **)**	**18–700**
4	**Piston seal *)**									
	K – Compact seal	▪	▪	▪	▪	–	▪	▪	▪	▪
	G – Glydring seal	▪	▪	▪	▪	▪	▪	▪	▪	▪
	N – Packing ring	▪	▪	▪	▪	▪	▪	▪	▪	▪
	D – V-shaped seal	–	–	▪	▪	–	▪	▪	–	▪
	S – Special sealing system *)	▪	▪	▪	▪	▪	▪	▪	▪	▪
5	**Rod diameter [mm]**	**18–160**	**16–140**	**22–220**	**22–220**	**22–220**	**16–200**	**16–120**	**16–200 **)**	**16–600**
	Standard piston rod material	**20MnV6 or C45E hard-chromium plated *) Other options on request**								
6	**Piston rod seal**									
	N – Packing seal	▪	▪	–	▪	▪	▪	▪	▪	▪
	GN – Glydring + Packing seal	–	–	▪	▪	▪	▪	▪	▪	▪
	GG – Glydring + Glydring seal	–	▪	▪	▪	▪	▪	▪	▪	▪
	K – Compact seal	–	–	–	▪	▪	▪	▪	▪	▪
	D – V-shaped seal	–	–	▪	▪	▪	▪	▪	–	▪
	S – Special sealing system *)	▪	▪	▪	▪	▪	▪	▪	▪	▪
7	**Cushioning**									
	A – Both sides	–	▪	▪	▪	▪	▪	▪	–	▪
	B – Piston side only	–	▪	▪	▪	▪	▪	▪	–	▪
	C – Piston-rod side only-	–	▪	▪	▪	▪	▪	▪	–	▪
	E – Without cushioning-	–	▪	▪	▪	▪	▪	▪	▪	▪
	Y/N Adjustable cushioning (Option)	–	Y	Y	Y	Y	Y	Y	–	Y
8	**Maximum stroke [mm]**	**3000**	**7000**	**7000**	**6250**	**4500**	**2500**	**2500**	**1000–2500 **)**	**7000**
	Maximum stroke velocity [m/s] *)	**0.5**	**0.5**	**1**	**2**	**2**	**1**	**1**	**1**	**10**
9	**Fastening on the piston rod**									
	GA – Spherical eye	▪	▪	▪	▪	▪	▪	▪	▪	▪
	SA – Swivel eye	▪	▪	▪	▪	▪	▪	▪	▪	▪
	GK – Clevis	▪	▪	▪	▪	▪	▪	–	▪	▪
	OB – External thread only	▪	▪	▪	▪	▪	▪	–	▪	▪
	SB – Special fastening on indication	▪	▪	▪	▪	▪	▪	–	▪	▪
10	**N – Standard type / S- Special type - Options**	**N**	**N**	**N**	**N**	**N**	**S**	**S**	**S**	**S**
	S1 – Special piston rod coating	Double chromium-plated, chromium- and nickel-plated, ceramic-coated, plasma-nitrided, Tenifer-treated, nitrohard-chromium plated or induction-hardened								
	S2 – Specific connectors	–	–	–	▪	▪	▪	▪	▪	▪
	S3 – Pipe-break protection	▪	▪	▪	▪	▪	▪	▪	–	▪
	S4 – Piped	–	–	–	▪	▪	▪	–	–	▪
	S5 – Lowering-break valves	–	–	–	▪	▪	▪	▪	–	▪
	S6 – Integrated valves	–	▪	▪	▪	▪	▪	–	–	▪
	S7 – Manifold block system	–	–	–	▪	▪	▪	–	–	▪
	S8 – Position measuring system	–	–	–	▪	▪	▪	▪	▪	▪
	S9 – Proximity switch	–	–	–	▪	▪	▪	▪	–	▪
	S10 – Special wiper	–	–		▪	▪	▪	▪	▪	▪
	S11 – Special piston ring to record shear force	–	–	–	▪	▪	▪	▪	▪	▪
	S12 – Special coat of varnish	▪	▪	▪	▪	▪	▪	▪	▪	▪
	S13 – Additional test certificate	▪	▪	▪	▪	▪	▪	▪	▪	▪
	Standard pressure fluids are HLP45 and HLP46 oils, in accordance with DIN 51525 and DIN 51524 for temperatures from -20 °C to +80 °C *)									

▪ **available**
– **not available**

*) Other values and characteristics on request and following written approval
**) Aluminium, stainless steel, steel, depending on material

We are here for you

To support you



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