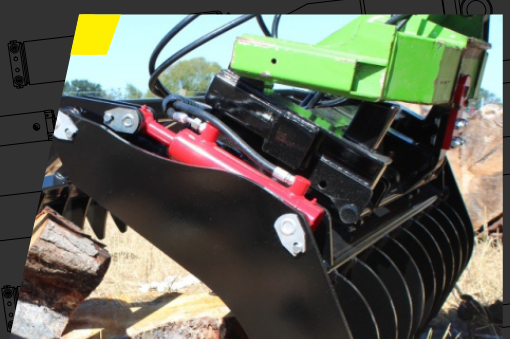
MOTUS®



KEEP YOU MOVING

60 YEARS

4 YEAR WARRANTY

PRODUCT GUIDE

Right now, all around the world, thousands of MOTUS hydraulic cylinders are driving machinery reliably and efficiently.

Driven by continual innovation our team has a deep understanding of hydraulic equipment. For over 60 years we have designed and built tens of thousands of hydraulic cylinders on-site at our state-of-the-art manufacturing facility in Hastings, New Zealand.

IN THE FAMILY SINCE ‘63

MOTUS is a family business, and with that comes a level of commitment, continuity and service that bigger corporates just can’t achieve. Integrity, both at a product and a service level are crucially important, to ensure our customers operations roll smoothly without fail.

GUARANTEED

MOTUS componentry and build quality is second-to-none and we back every hydraulic cylinder we sell with a full 4 year warranty. We can do this because we control every step of the process from order, through manufacturing to dispatch.

GLOBAL CUSTOMER BASE

You can find MOTUS cylinders working hard in all corners of the globe.

100% QUALITY GUARANTEED

UNIQUE NUMBERING

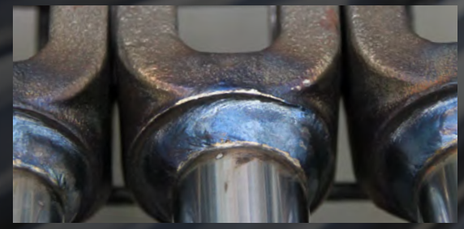
New MOTUS cylinders can be manufactured to match any of our cylinders sold during the last 30 years making re-ordering easy. Every MOTUS cylinder is stamped with its own unique 5-digit number, tracked right through the manufacturing process and linked to an exact specification on our database.

4-STAGE CLEANING PROCESS

At MOTUS Hydraulics cleanliness is a very high priority. Each cylinder is cleaned inside and out four times, ensuring no contamination will be found once it leaves our factory.

WELDING QUALITY

Weld quality is critical on a hydraulic cylinder. Purpose-built equipment and highly skilled operators combine to produce welds that will stand any scrutiny. Beautifully smooth and even welds come standard with every MOTUS cylinder.

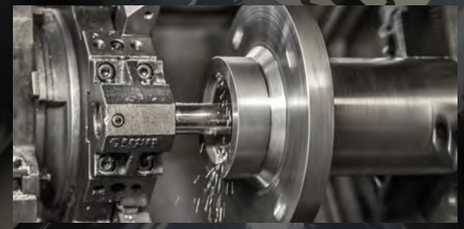


PRECISION EQUIPMENT

Our purpose-built machinery enables MOTUS to produce cylinders efficiently and precisely, whether a one-off cylinder or a large production run. OEMs no longer need to hold large stocks of cylinders, we will supply quickly, just-in-time.

INDIVIDUAL LEAK TESTING

Every MOTUS cylinder is individually tested for leaks in our custom designed assembly and testing facility, ensuring absolute peace of mind.



4 YEAR WARRANTY

NZ MADE SINCE 1963

CONTENTS

NZ MADE SINCE 1963

4 YEAR WARRANTY

WRC™ 01

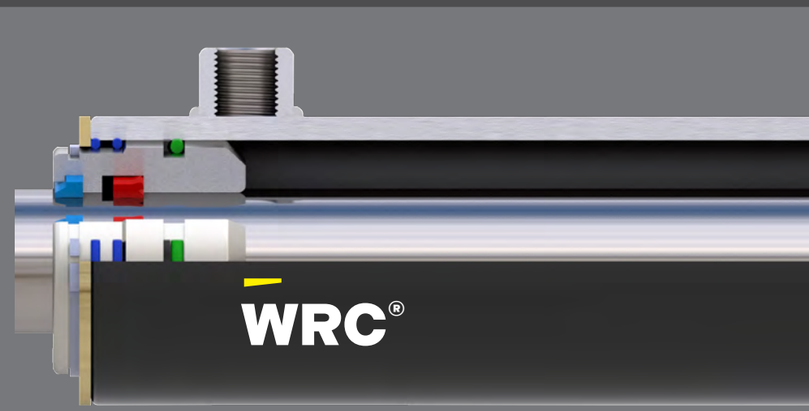
"They've become a partner of ours, and they produce a very good product, with an excellent backup."

Neil O'Fee
Neilo

PROVEN PERFORMER

Our **WRC** cylinders are proven performers. Serving primarily the agriculture sector among others for over 30 years, their simple, yet highly effective and robust threadless head design makes our WRC cylinders very quick to assemble and service.

The WRC head is fully floating and completely concentric, it won't unwind, rotate, loosen or seize up. The tube is full-thickness throughout giving it high mechanical strength.



COMMON APPLICATIONS

Transportation

Agriculture

TRIED AND TESTED OVER DECADES

WRC®

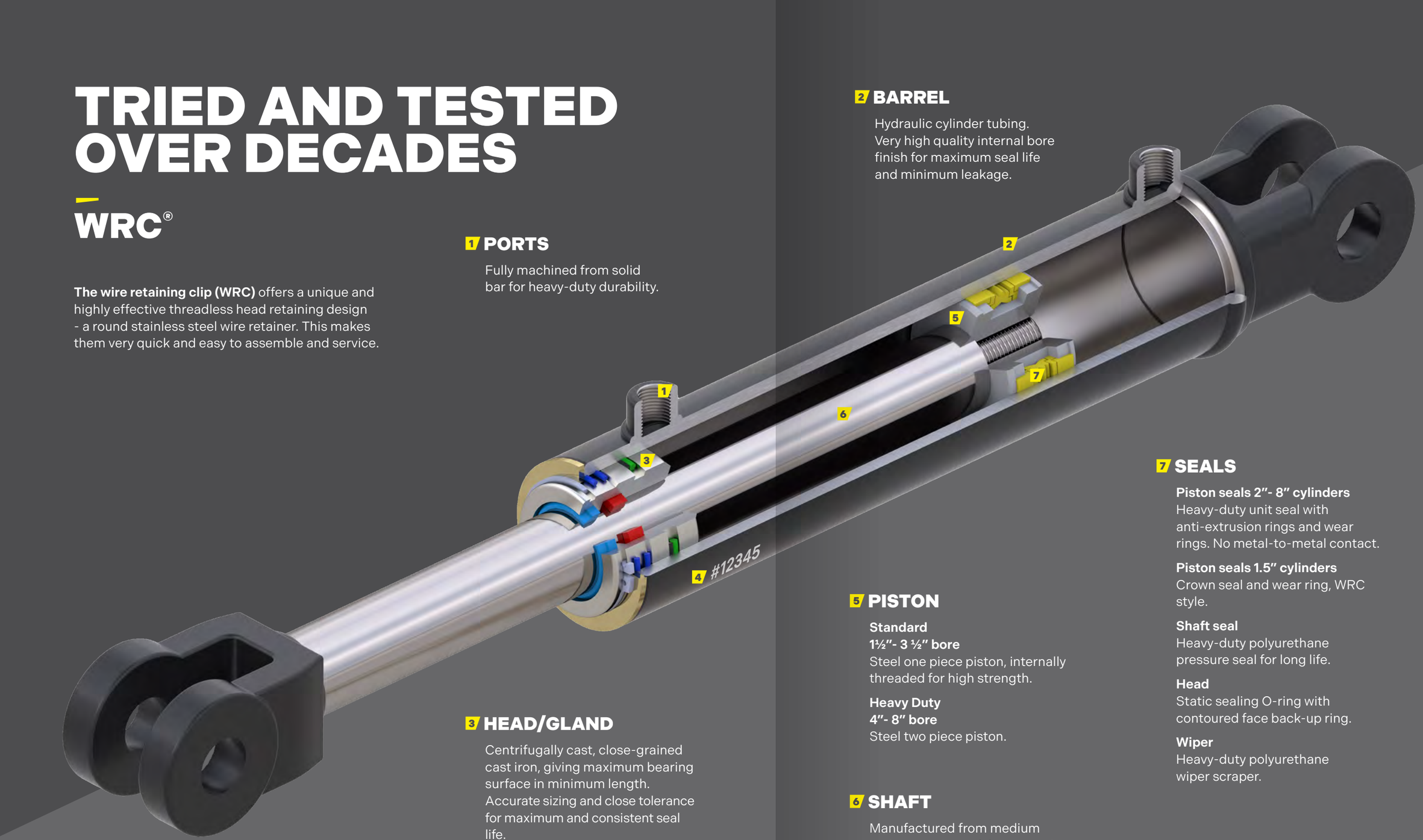
The wire retaining clip (WRC) offers a unique and highly effective threadless head retaining design - a round stainless steel wire retainer. This makes them very quick and easy to assemble and service.

1 PORTS

Fully machined from solid bar for heavy-duty durability.

2 BARREL

Hydraulic cylinder tubing. Very high quality internal bore finish for maximum seal life and minimum leakage.



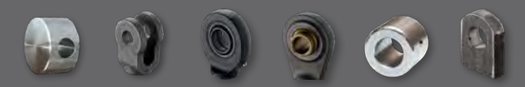
3 HEAD/GLAND

Centrifugally cast, close-grained cast iron, giving maximum bearing surface in minimum length. Accurate sizing and close tolerance for maximum and consistent seal life.

4 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

STANDARD MOUNTING OPTIONS



SOLID BASE | CLEVIS | ROD END | BALL END | COLLAR | TONGUE

5 PISTON

Standard
1½"- 3 ½" bore
Steel one piece piston, internally threaded for high strength.

Heavy Duty
4"- 8" bore
Steel two piece piston.

6 SHAFT

Manufactured from medium carbon steel, precision ground. Hard chrome plated and polished to give maximum seal life and good corrosion resistance.

7 SEALS

Piston seals 2"- 8" cylinders
Heavy-duty unit seal with anti-extrusion rings and wear rings. No metal-to-metal contact.

Piston seals 1.5" cylinders
Crown seal and wear ring, WRC style.

Shaft seal
Heavy-duty polyurethane pressure seal for long life.

Head
Static sealing O-ring with contoured face back-up ring.

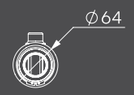
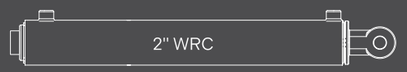
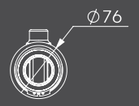
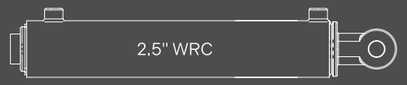
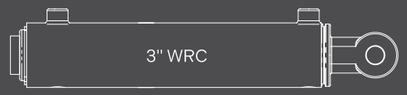
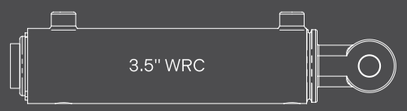
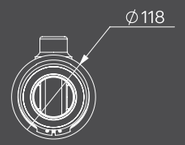
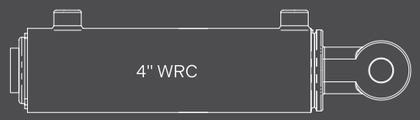
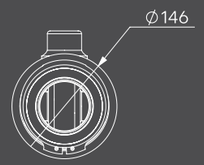
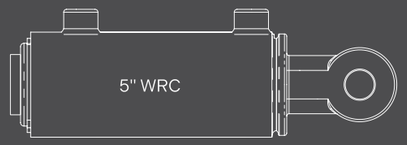
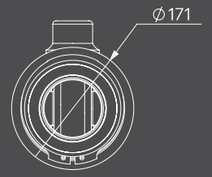
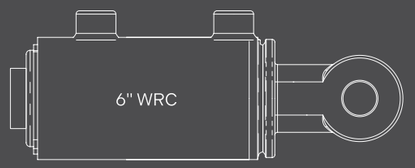
Wiper
Heavy-duty polyurethane wiper scraper.

NZ MADE SINCE 1963

4 YEAR WARRANTY

WRC CYLINDER SIZING

WRC®

Tube O.D	Cylinder Bore	Bore Options	Shaft Options	Tube OD	Bore Size [in]	Standard Base [A]	Spigot [B]	Standard Piston [C]	Compact Piston	Head [D]	Head Stickout [E]	Shaft Exterior [F]	Standard Port Size
		1.5″ BORE, 1/4″ WALL (TUBE O.D 50.8MM)	• 0.75″ SHAFT • 1.0″ SHAFT	51mm	38.1mm (1 ½″)	12mm	3mm	30mm		36mm	0mm	12mm	1/4″ F/M
		2″ BORE, 1/4″ WALL (TUBE O.D 63.5MM)	• X1.0″ SHAFT • X1.25″ SHAFT • (X1.5″ SHAFT)	64mm	50.8mm (2″)	12mm	3mm	38mm		51mm (60mm)	10mm (0mm)	12mm	1/4″ F/M
		2.5″ BORE, 1/4″ WALL (TUBE O.D 76.2MM)	• X1.0″ SHAFT • X1.25″ SHAFT • X1.5″ SHAFT • X1.75″ SHAFT	76mm	63.5mm (2 ½″)	12mm	3mm	38mm		51mm	10mm	12mm	3/8″ F/M
		3″ BORE, 1/4″ WALL (TUBE O.D 88.9MM)	• X1.25″ SHAFT • X1.5″ SHAFT • X1.75″ SHAFT • X2″ SHAFT • (X2.125″ SHAFT)	89mm	76.2mm (3″)	12mm	3mm	45mm		51mm (83mm)	10mm	12mm	3/8″ F/M 1/2″ F/M
		3.5″ BORE, 1/4″ WALL (TUBE O.D 101.9MM)	• X1.5″ SHAFT • X1.75″ SHAFT • X2″ SHAFT • (X2.75″ SHAFT)	102mm	88.9mm (3 ½″)	16mm	3mm	45mm		64mm	10mm	12mm	1/2″ F/M
		4″ BORE, 5/16″ WALL (TUBE O.D 118MM)	• X1.5″ SHAFT • X1.75″ SHAFT • X2″ SHAFT • X2.5″ SHAFT	118mm	101.6mm (4″)	25mm	3mm	76mm	45mm	64mm	10mm	20mm	1/2″ F/M
		5″ BORE, 3/8″ WALL (TUBE O.D 146MM)	• X2.5″ SHAFT • X3″ SHAFT • X3.5″ SHAFT	146mm	127mm (5″)	25mm	3mm	100mm	60mm	76mm	10mm	20mm	3/4″ F/M
		6″ BORE, 3/8″ WALL (TUBE 0.D 171MM)	• X3″ SHAFT • X3.5″ SHAFT	171mm	152mm (6″)	40mm	8mm	100mm	65mm	76mm	10mm	20mm	3/4″ F/M

ULTRA

02

"The key for us is reliability and backup service, in which we have found MOTUS Hydraulics to be excellent."

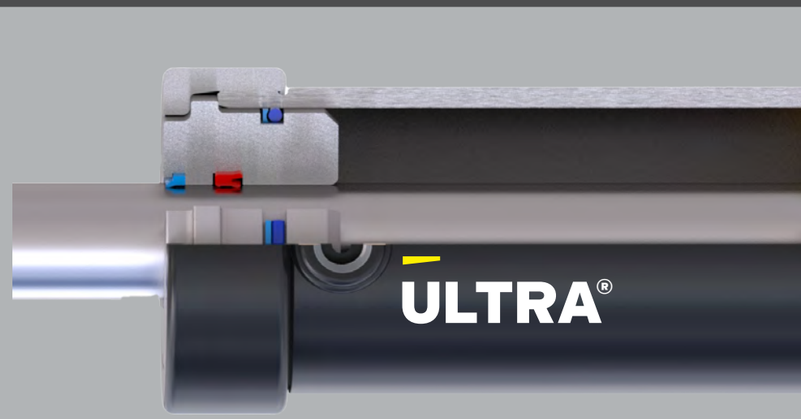
Karl Chirnside
Kerfab Australia

THE NEW STANDARD

Our ULTRA series of cylinders is a combination of quality componentry coupled with clever design.

A key factor in the development of our ULTRA range was reliability for customers operating in harsh working environments, our externally threaded cap design paired with a robust heavy-duty seal combination gives the ULTRA exceptional strength.

Rated to a continuous operating pressure of 4000psi and a safety rating of 3:1 the Motus ULTRA represents outstanding value for money.



COMMON APPLICATIONS

Construction

Waste Management

ADDED RIGIDITY FOR ULTIMATE PERFORMANCE

NZ MADE SINCE 1963

4 YEAR WARRANTY

Ultra®

ULTRA (Threaded Cap) Range - 4000psi

ULTRA threaded cap design cylinders were developed through customer demand.

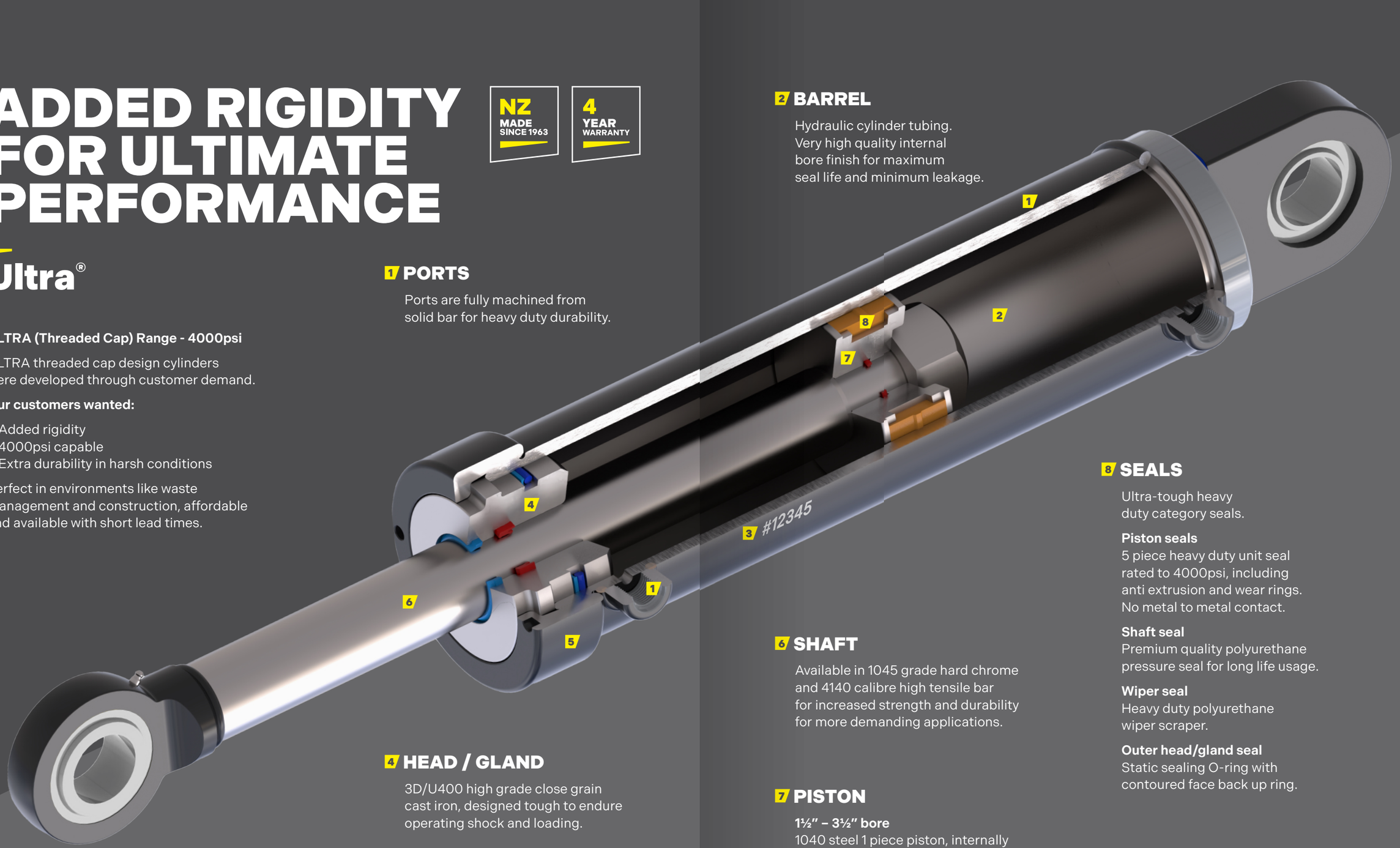
Our customers wanted:

- Added rigidity
- 4000psi capable
- Extra durability in harsh conditions

Perfect in environments like waste management and construction, affordable and available with short lead times.

1 PORTS

Ports are fully machined from solid bar for heavy duty durability.



2 BARREL

Hydraulic cylinder tubing. Very high quality internal bore finish for maximum seal life and minimum leakage.

3 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

4 HEAD / GLAND

3D/U400 high grade close grain cast iron, designed tough to endure operating shock and loading.

5 GLAND CAP

1045 grade threaded cap for added rigidity and strength.

6 SHAFT

Available in 1045 grade hard chrome and 4140 calibre high tensile bar for increased strength and durability for more demanding applications.

7 PISTON

1½" – 3½" bore
1040 steel 1 piece piston, internally threaded for high strength.

4" – 8" bore
Steel two-piece piston with positive locking nut creating optimum strength.

8 SEALS

Ultra-tough heavy duty category seals.

Piston seals
5 piece heavy duty unit seal rated to 4000psi, including anti extrusion and wear rings. No metal to metal contact.

Shaft seal
Premium quality polyurethane pressure seal for long life usage.

Wiper seal
Heavy duty polyurethane wiper scraper.

Outer head/gland seal
Static sealing O-ring with contoured face back up ring.

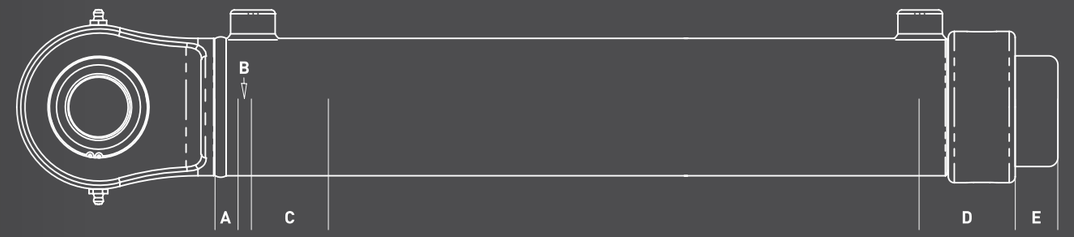
Up to 4000 psi
ULTRA 62

STANDARD MOUNTING OPTIONS

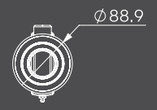
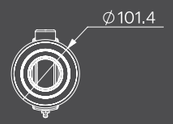
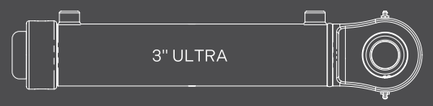
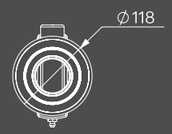
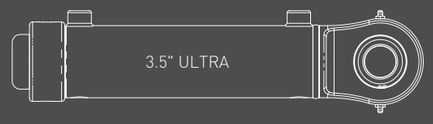
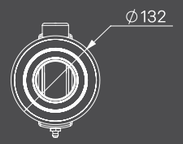
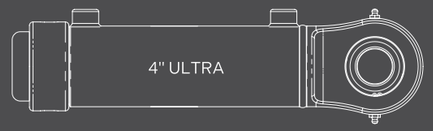
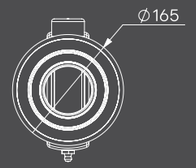
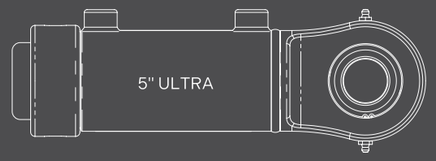
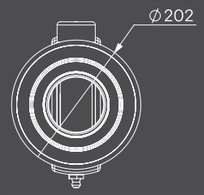
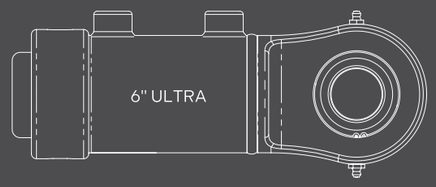
SOLID BASE | CLEVIS | ROD END | BALL END | COLLAR | TONGUE

ULTRA CYLINDER SIZING

ULTRA®



Up to 4000 psi
ULTRA 62

Cap (Outside Diameter)	Cylinder Bore	Bore Options	Shaft Options	TC Tube OD	TC Cap OD	Bore Size [in]	Standard Base [A]	Spigot [B]	Standard Piston [C]	Head [D]	Shaft Exterior [E]	Standard Port Size
		2.5" BORE, 1/4" WALL (TUBE O.D 76.2MM)	• 1.25" SHAFT • 1.5" SHAFT	76mm	89mm	63.5mm (2 1/2")	12mm	3mm	38mm	51mm	12mm	3/8" F/M
		3" BORE, 5/16" WALL (TUBE O.D 92.06MxM)	• X1.5" SHAFT • X1.75" SHAFT • X2" SHAFT	92mm	101.40mm	76.2mm (3")	16mm	3mm	45mm	64mm	12mm	3/8" F/M 1/2" F/M
		3.5" BORE, 5/16" WALL (TUBE O.D 104.76MM)	• X1.75" SHAFT • X2" SHAFT	104mm	118mm	88.9mm (3 1/2")	16mm	3mm	45mm	64mm	12mm	1/2" F/M
		4" BORE, 5/16" WALL (TUBE O.D 118MM)	• X2" SHAFT • X2.5" SHAFT	118mm	132mm	101.6mm (4")	25mm	3mm	76mm	64mm	12mm	1/2" F/M 3/4" F/M
		5" BORE, 3/8" WALL (TUBE O.D 146MM)	• X2.5" SHAFT • X3" SHAFT	146mm	165mm	127mm (5")	25mm	3mm	100mm	76mm	20mm	3/4" F/M
		6" BORE, 3/8" WALL (TUBE O.D 178MM)	• X3" SHAFT • X3.5" SHAFT • X4" SHAFT	178mm	202mm	152mm (6")	40mm	8mm	100mm	76mm	20mm	3/4" F/M

03 ELITE

"The Hydraulic cylinders used in our equipment is one of the most demanding parts of the machine. The reliability of Motus cylinders has been very, very good."

Jeremy Disher
Southstar Canada

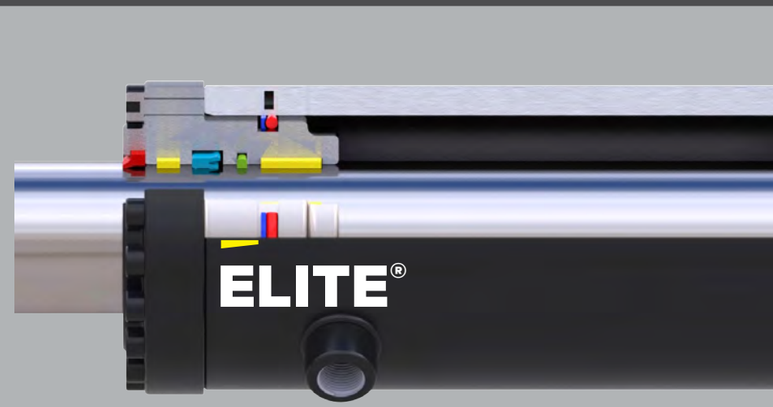
BUILT TO RESIST

Up to 5000 psi
ELITE 03

With many years of experience in heavy duty cylinders, MOTUS has designed the ultimate cylinder - the ELITE series.

A key component in the development of the range included exhaustive FEA and physical testing against the industry standard benchmark safety factor of 3:1. MOTUS ELITE series tests to a massive 25,000 psi for a 5000 psi rated cylinder.

Our exclusive bolted head and unique seal combination gives the ELITE superior strength to handle the high pressure and tough working environments it will be subjected to.



COMMON APPLICATIONS

Forestry

Mining

Construction

UNPARALLELED PERFORMANCE

Elite®

Our ELITE series heavy industrial cylinders have been expertly designed in conjunction with experienced day to day operators to produce the most durable cylinder on the market. Premium materials and componentry matched with exacting manufacturing standards culminate in a cylinder proven to go the distance in the harshest possible conditions with minimal maintenance required.

NZ MADE SINCE 1963

4 YEAR WARRANTY

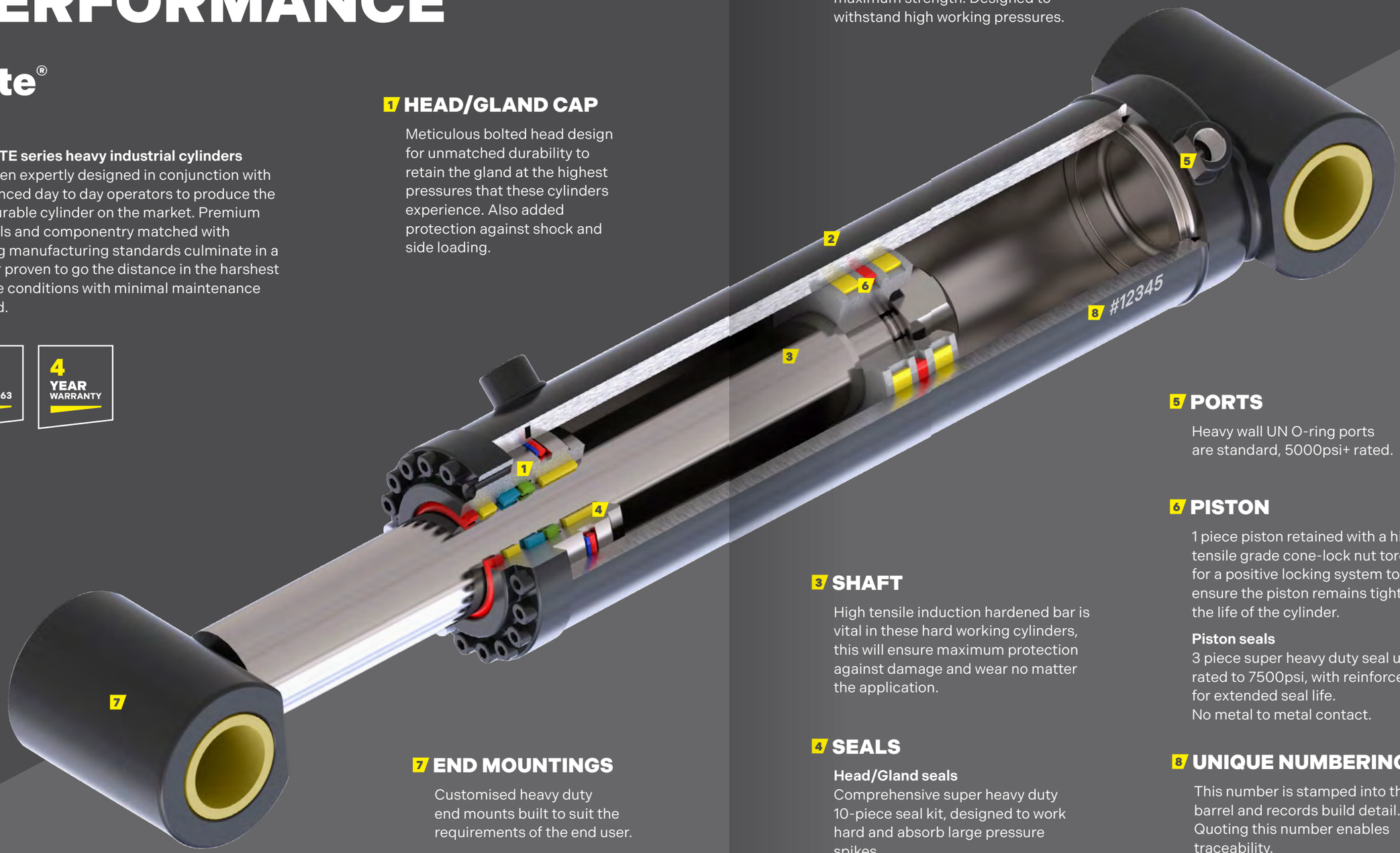
1 HEAD/GLAND CAP

Meticulous bolted head design for unmatched durability to retain the gland at the highest pressures that these cylinders experience. Also added protection against shock and side loading.

2 BARREL

Extra thick heavy wall tube for maximum strength. Designed to withstand high working pressures.

Up to 5000 psi
ELITE 63



3 SHAFT

High tensile induction hardened bar is vital in these hard working cylinders, this will ensure maximum protection against damage and wear no matter the application.

4 SEALS

Head/Gland seals
Comprehensive super heavy duty 10-piece seal kit, designed to work hard and absorb large pressure spikes.

5 PORTS

Heavy wall UN O-ring ports are standard, 5000psi+ rated.

6 PISTON

1 piece piston retained with a high tensile grade cone-lock nut torqued for a positive locking system to ensure the piston remains tight for the life of the cylinder.

Piston seals
3 piece super heavy duty seal unit rated to 7500psi, with reinforced cap for extended seal life.
No metal to metal contact.

7 END MOUNTINGS

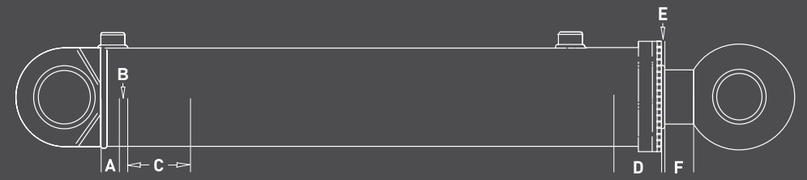
Customised heavy duty end mounts built to suit the requirements of the end user.

8 UNIQUE NUMBERING

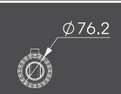
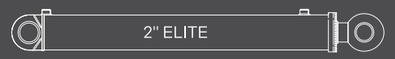
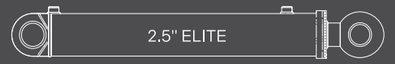
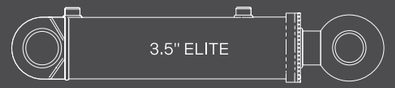
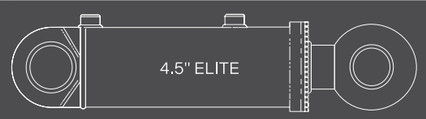
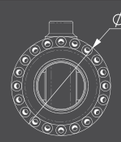
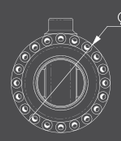
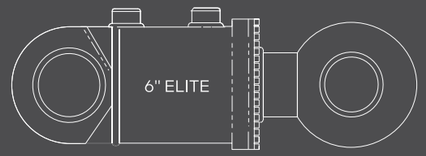
This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

ELITE CYLINDER SIZING

ELITE®



Up to 5000 psi
ELITE 63

Tube O.D	Cylinder Bore	Bore Options	Shaft Options	Tube OD	Bore Size [in]	Standard Base [A]	Spigot [B]	Standard Piston [C]	Compact Piston	Head [D]	Head Stickout [E]	Shaft Exterior [F]	Standard Port Size
		2″ BORE, 1/2″ WALL (TUBE O.D 76.2MM)	• X1.25″ SHAFT • (X1.5″ SHAFT)	76.2mm	50.8mm (2″)	12mm	3mm	42mm	38mm	48mm	26mm	12mm	-4″ UNO
		2.5″ BORE, 1/2″ WALL (TUBE O.D 88.9MM)	• X1.25″ SHAFT • X1.5″ SHAFT • X1.75″ SHAFT	88.9mm	63.5mm (2 ½″)	16mm	3mm	62mm	38mm	57mm	29mm	16mm	-6″ UNO
		3″ BORE, 1/2″ WALL (TUBE O.D 101.6MM)	• X1.5″ SHAFT • X1.75″ SHAFT • X2″ SHAFT	101.6mm	76.2mm (3″)	20mm	5mm	69mm	45mm	64mm	34mm	16mm	-6″ UNO
		3.5″ BORE, 1/2″ WALL (TUBE O.D 114.3MM)	• X1.75″ SHAFT • X2″ SHAFT • (X2.75″ SHAFT) • X2.5″ SHAFT	114.3mm	88.9mm (3 ½″)	20mm	5mm	75mm		76mm	34mm	16mm	-8″ UNO
		4″ BORE, 1/2″ WALL (TUBE O.D 127MM)	• X2″ SHAFT • X2.5″ SHAFT	127mm	101.6mm (4″)	25mm	5mm	75mm		76mm	34mm	20mm	-8″ UNO
		4.5″ BORE, 1/2″ WALL (TUBE O.D 139.7MM)	• X2.5″ SHAFT • X3″ SHAFT	139.7mm	114.3mm (4 1/2″)	30mm	5mm	80mm		90mm	34mm	20mm	-10″ UNO
		5″ BORE, 1/2″ WALL (TUBE 0.0 152.4MM)	• X2.5″ SHAFT • X3″ SHAFT • X3.5″ SHAFT	152.4mm	127mm (5″)	35mm	8mm	80mm		100mm	34mm	25mm	-10″ UNO
		5.5″ BORE, 1/2″ WALL (TUBE O.D 139.7MM)	• X3″ SHAFT • X3.5″ SHAFT	165.1mm	139.9mm (5 1/2″)	35mm	8mm	80mm		100mm	34mm	30mm	-10″ UNO
		6″ BORE, 3/4″ WALL (TUBE 0.D 152.4MM)	• X3″ SHAFT • X3.5″ SHAFT • X4″ SHAFT	190.5mm	1252.4mm (6″)	40mm	10mm	80mm		102mm	38mm	35mm	-12″ UNO

04 SINGLE ACTING

“Excellent service and consistency, top-quality rams! We use Motus rams on alot of our products and wouldn’t use anything else.”

Tom Fyfe
Landquip

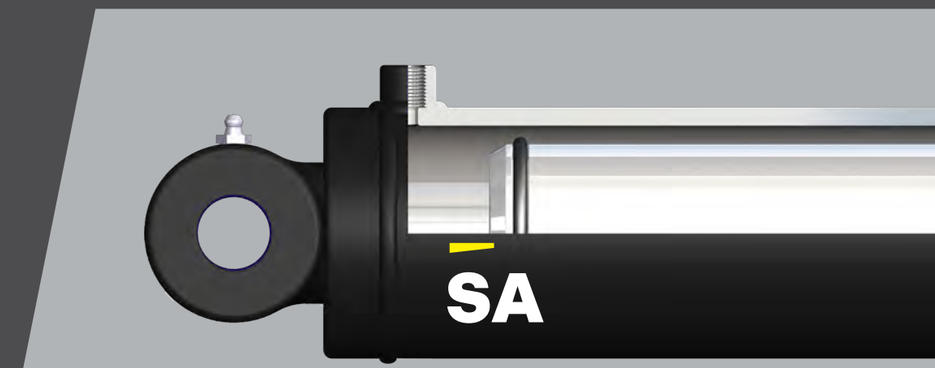
DISPLACEMENT CYLINDERS

Up to 3000 psi
DISP CY

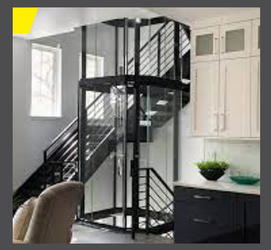
Single-acting displacement cylinders were among the first cylinders that MOTUS made way back in the 1960’s for Hustler’s forklift masts.

A unique gland design allowed for spear and bore combinations to be similar in diameter to maximise strength to withstand long extension lengths and side-load which is a common issue with lifting cylinders sometimes required to be several meters long, and fitted in restricted spaces.

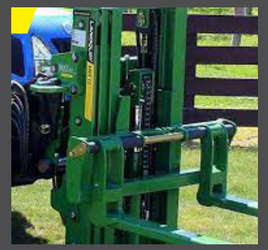
MOTUS have 3 main types of single-acting cylinders: the wire retained clip method, a guide piston and a solid body design for maximum strength and endurance.



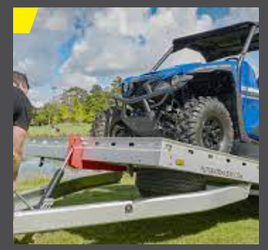
COMMON APPLICATIONS



Elevators



Forklifts



Tilt Trailers

GUIDED DISPLACEMENT

SA

Displacement Cylinders
Displacement cylinders have no piston. The effective diameter is the shaft diameter, so a 2″ displacement cylinder has the same power as a 2″x 1″ double-acting cylinder.

A displacement cylinder requires no breather, has head seals only and is typically used on simple designs: forklift cylinder, truck/ute deck tilt, post driver cylinders, or older front-end loader lift cylinders.

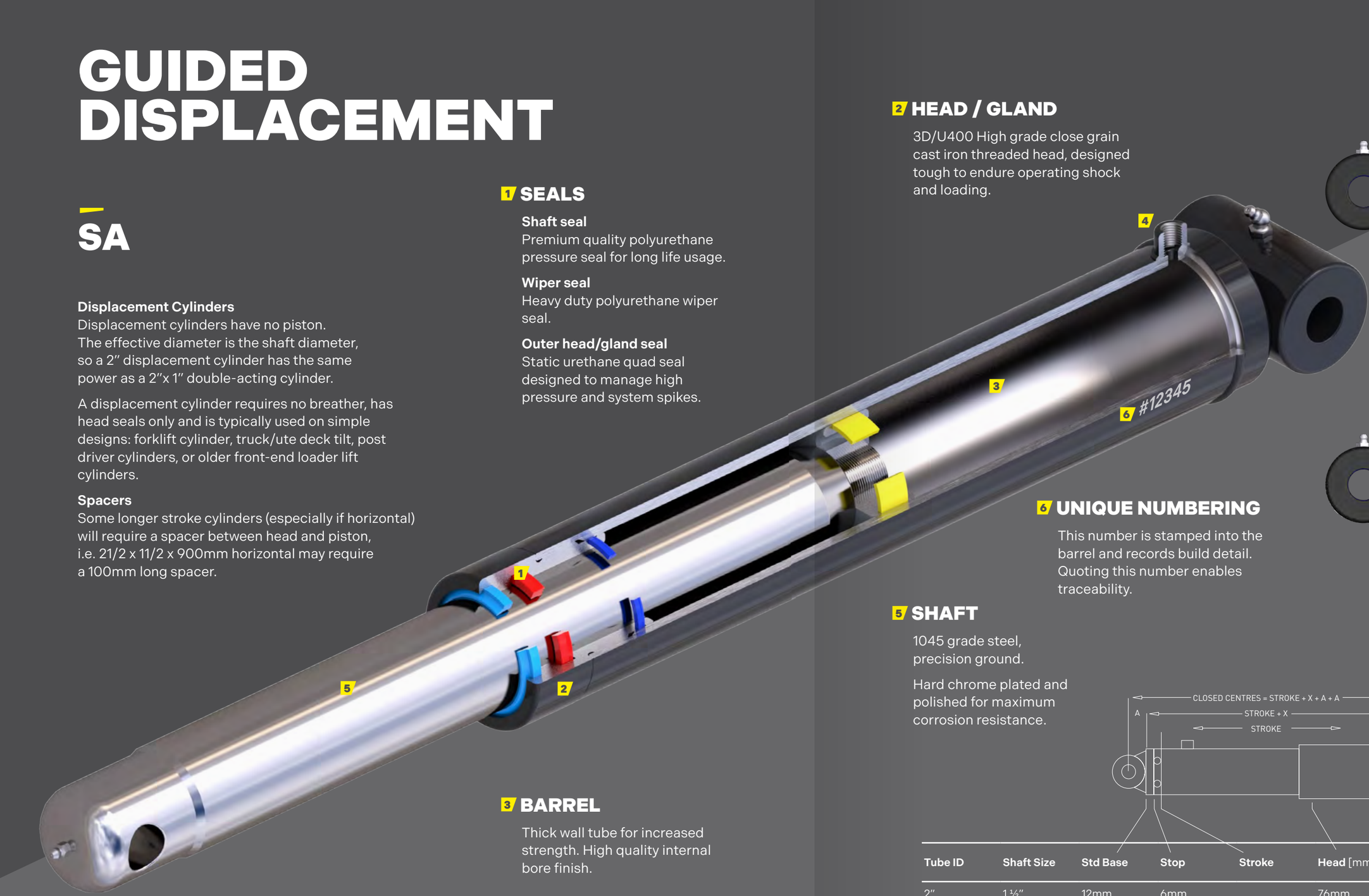
Spacers
Some longer stroke cylinders (especially if horizontal) will require a spacer between head and piston, i.e. 21/2 x 11/2 x 900mm horizontal may require a 100mm long spacer.

1 SEALS

Shaft seal
Premium quality polyurethane pressure seal for long life usage.

Wiper seal
Heavy duty polyurethane wiper seal.

Outer head/gland seal
Static urethane quad seal designed to manage high pressure and system spikes.



2 HEAD / GLAND

3D/U400 High grade close grain cast iron threaded head, designed tough to endure operating shock and loading.

3 BARREL

Thick wall tube for increased strength. High quality internal bore finish.

4 PORTS

Ports are fully machined from solid bar for durability.

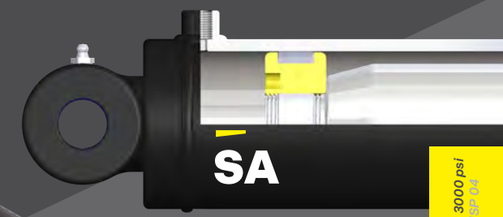
5 SHAFT

1045 grade steel, precision ground.

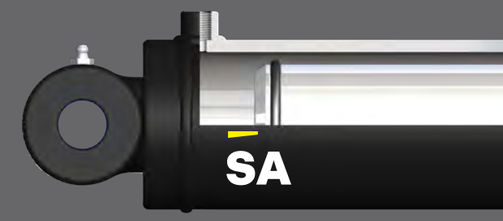
Hard chrome plated and polished for maximum corrosion resistance.

6 UNIQUE NUMBERING

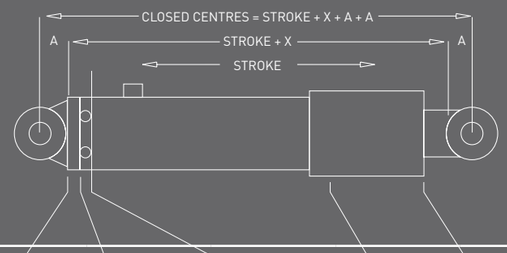
This number is stamped into the barrel and records build detail. Quoting this number enables traceability.



Guided displacement cylinder
1 piece 1045 grade steel guide including a heavy duty glass reinforced nylon wear ring.



Unguided displacement cylinder
Made from durable high quality spring steel, easily removable making servicing a breeze.



Tube ID	Shaft Size	Std Base	Stop	Stroke	Head [mm]	Shaft Extension	Standard Port Size [BSP]
2″	1 ½″	12mm	6mm		76mm	12mm	3/8″ FM
2 ½″	1 ¾″	12mm	6mm		76mm	12mm	3/8″ FM
2 ½″	2″	12mm	6mm		89mm	12mm	3/8″ FM
3″	2 ½″	12mm	10mm		102mm	12mm	1/2″ FM
3″	2 ¾″	12mm	10mm		102mm	12mm	1/2″ FM

NZ MADE SINCE 1963

4 YEAR WARRANTY

SOLID BODY PERFORMANCE

ENDURA®

Full Displacement cylinders designed for applications where positive constant pressure is required.

Common applications:

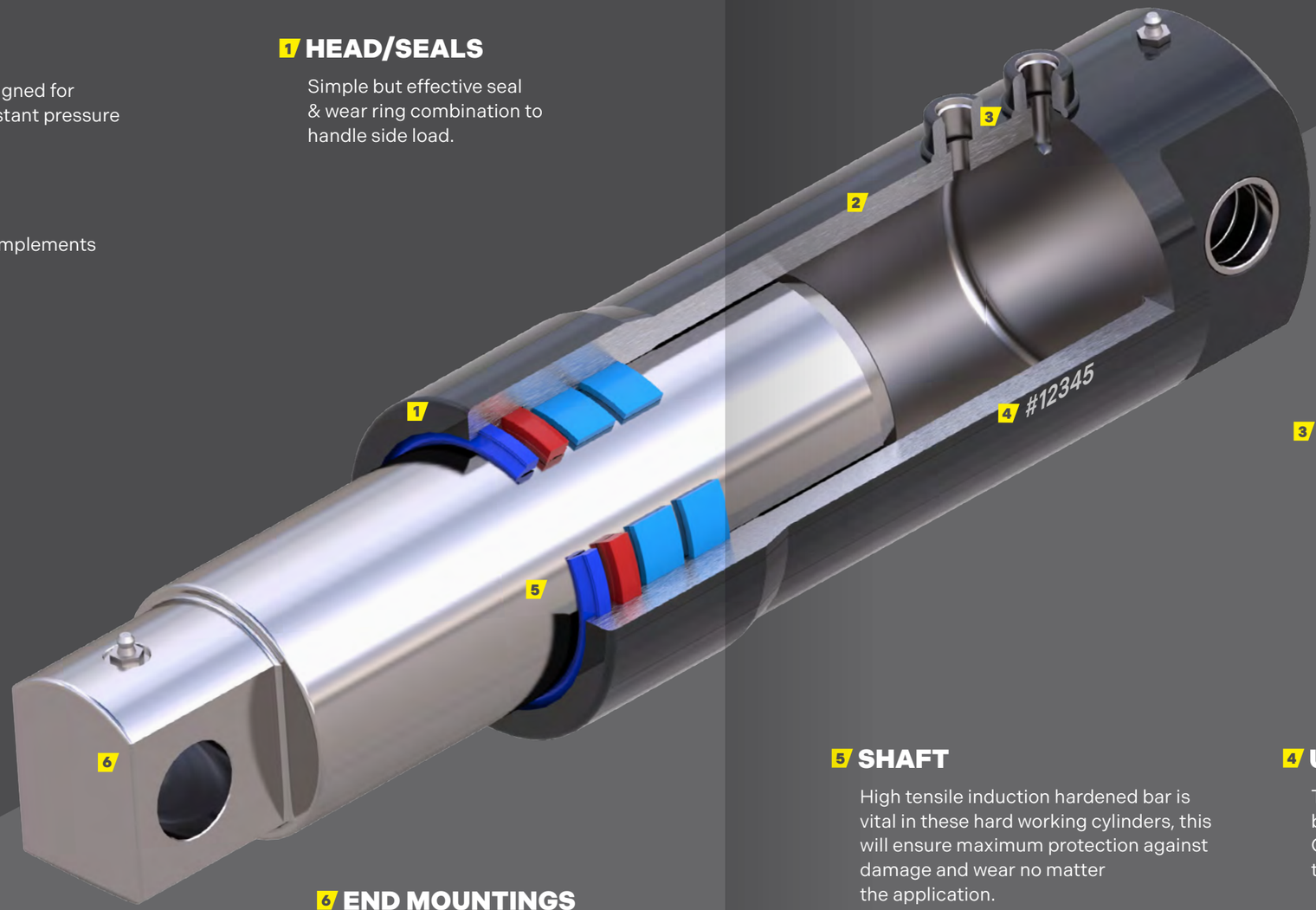
- Digger attachments
- Agricultural ground engaging implements

1 HEAD/SEALS

Simple but effective seal & wear ring combination to handle side load.

2 TUBE

Extra thick heavy 1-piece body for maximum strength. Designed to withstand high working pressures.



Up to 3000 psi
DISP. CX

3 PORTS

Heavy wall UN O-ring ports are standard, 5000psi+ rated.

4 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

5 SHAFT

High tensile induction hardened bar is vital in these hard working cylinders, this will ensure maximum protection against damage and wear no matter the application.

6 END MOUNTINGS

Customised heavy duty end mounts built to suit the requirements of the end user.

NZ MADE SINCE 1963

4 YEAR WARRANTY

05 TIE-ROD

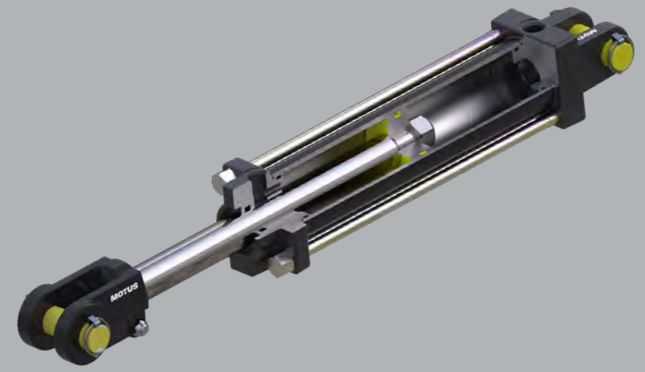
SAE STANDARD

TIE ROD style cylinders are prevalent in cylinder applications that conform to worldwide SAE (Society of Automotive Engineers) standards.

Benefits of TIE ROD cylinders include the ease of disassembly for repair due to no welding being required in the design.

MOTUS TIE ROD cylinders are made to SAE standards for interchangability and these cylinders are a great low-medium cost option for applications where cylinders operate with pressures 3500PSI and lower.

Up to 3500 psi
TIE ROD



COMMON APPLICATIONS

Transportation

Agriculture

TIE-ROD SAE DESIGN

TR

TIE ROD Range - up to 3500psi

MOTUS TIE ROD double-acting cylinders are manufactured to SAE standards for OEM and replacement parts for a wide variety of applications. They are available from 2" to 5" bore sizes with strokes up to 36".

They contain some subtle improvements from the regular sources in the market, including the 3500psi operating pressure rating, ORB ports as standard and custom colours for OEM supply.

1 HEAD / GLAND

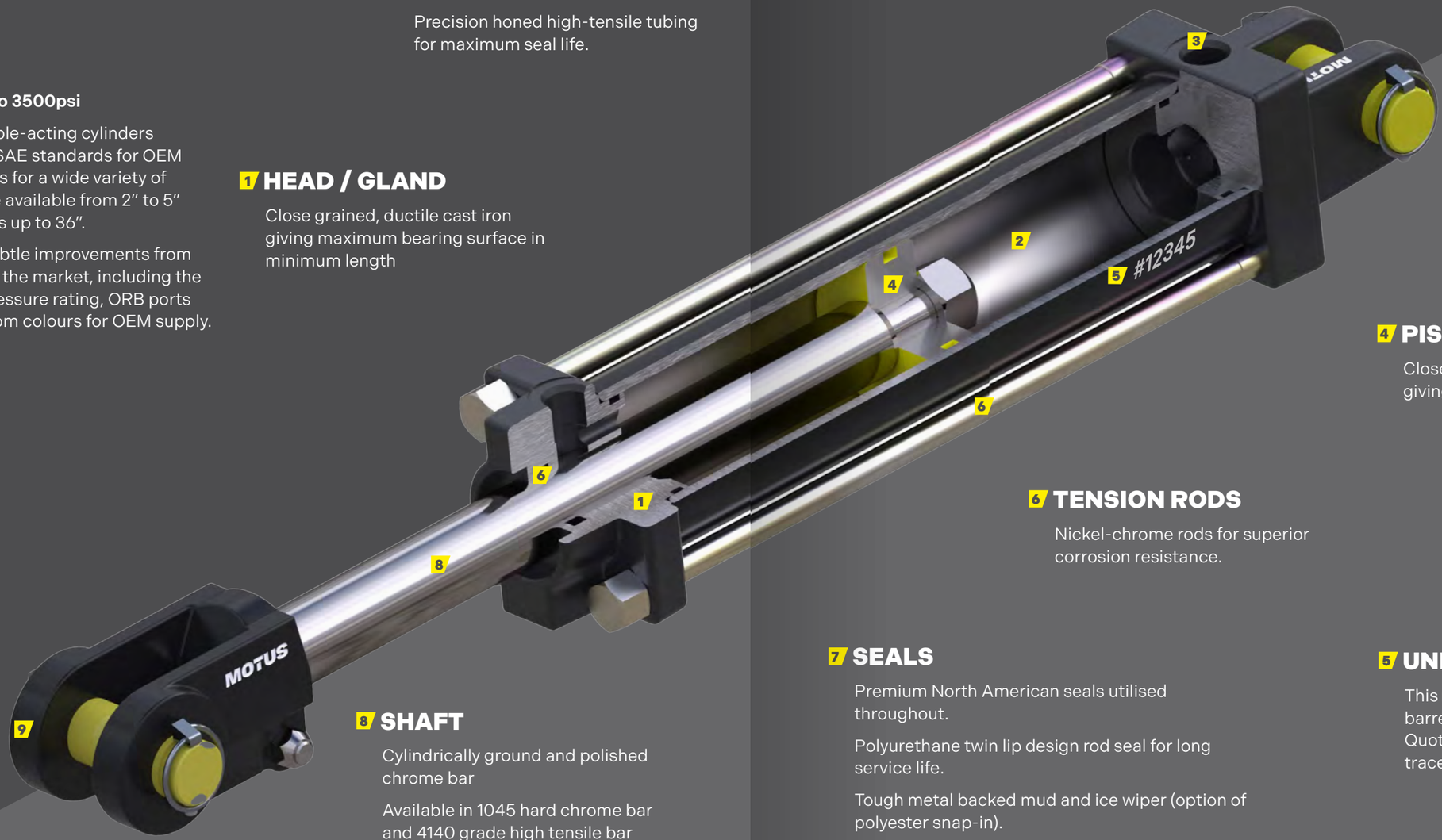
Close grained, ductile cast iron giving maximum bearing surface in minimum length

2 BARREL

Precision honed high-tensile tubing for maximum seal life.

3 PORTS

Internally ported to ORB (SAE) standards, including 2 ports in the base at both inline, and 90-degree positions for versatile mounting options.



4 PISTON

Close grained ductile cast iron, giving maximum bearing surface.

5 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

6 TENSION RODS

Nickel-chrome rods for superior corrosion resistance.

7 SEALS

Premium North American seals utilised throughout.

Polyurethane twin lip design rod seal for long service life.

Tough metal backed mud and ice wiper (option of polyester snap-in).

O-Ring and contoured face backups on tube connections.

Durable polyester cap seal has excellent load holding and wear resistance properties.

8 SHAFT

Cylindrically ground and polished chrome bar

Available in 1045 hard chrome bar and 4140 grade high tensile bar for increased strength and damage resistance in harsh environments.

9 CLEVIS ENDS

Ductile Iron clevises to SAE standards, supplied with zinc plated pins and clips

Larger diameter pins, case-hardened and austempered castings for improved wearing ability.

4 YEAR WARRANTY

06 REPHASING

ULTIMATE ACCURACY

REPHASING cylinders are used in applications where the synchronization of two or more cylinders are required to lift a load evenly, without the use of large interconnecting frames or rocker shafts.

By using REPHASING cylinders paired together in a ‘Master’ and ‘Slave’ configuration, this can be simply and accuratley achieved.

The concept is simple; by powering the piston side on the master cylinder, the displacement of the annular (head/gland side, which equals the full-bore volume, minus the shaft) into the equally matched piston side of the slave, creates equal movement. Using standard components, the theoretical accuracy is between 0-2%. Any discrepancy over the course of the stroke is rephased or reset to equalize all cylinders in the series.

MOTUS offers two ranges of REPHASING cylinders, the ACCURA PV, and the ACCURA BP which are detailed in the following pages.

Up to 4000 psi
ACCURA PV

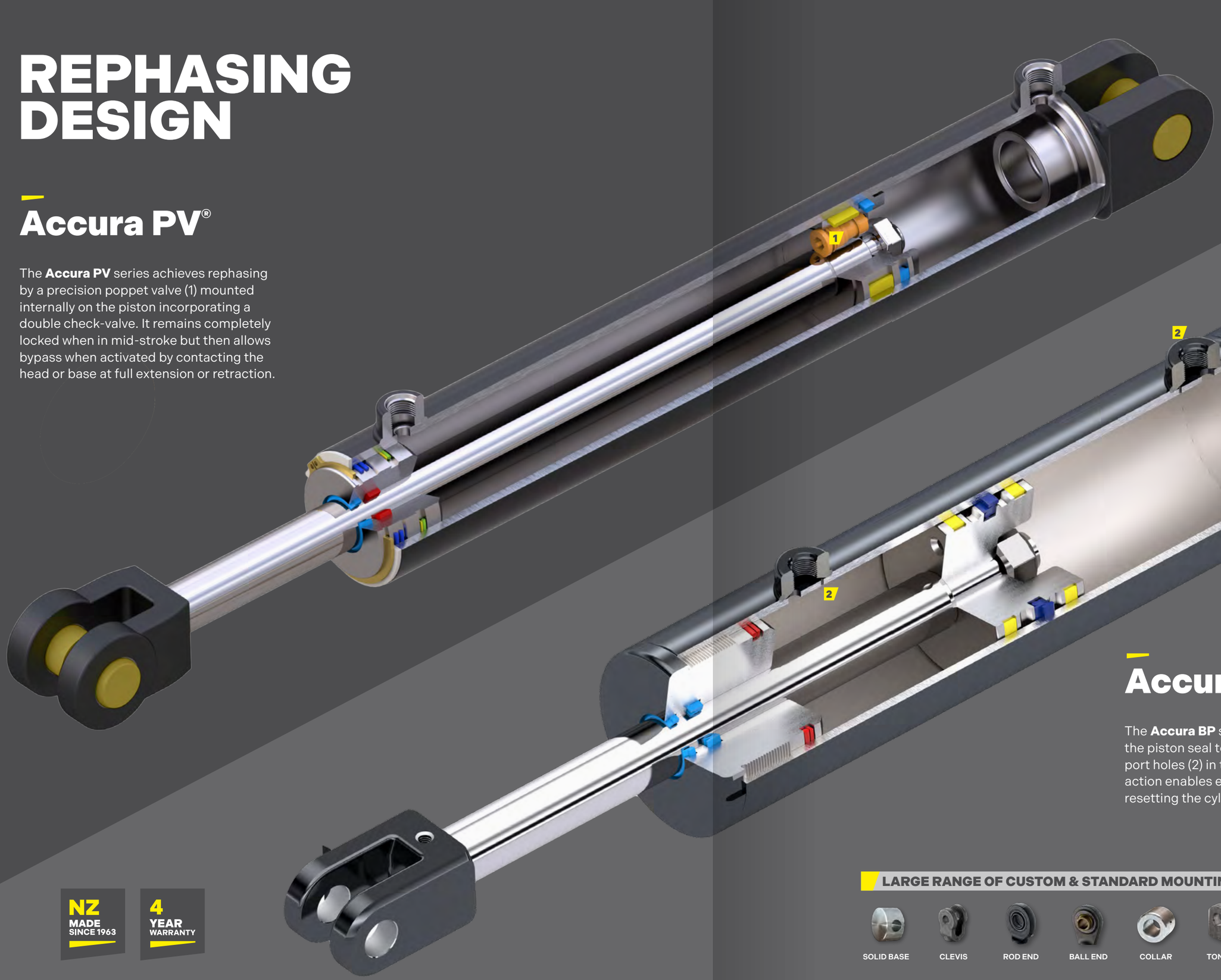
COMMON APPLICATIONS

Agriculture

REPHASING DESIGN

Accura PV®

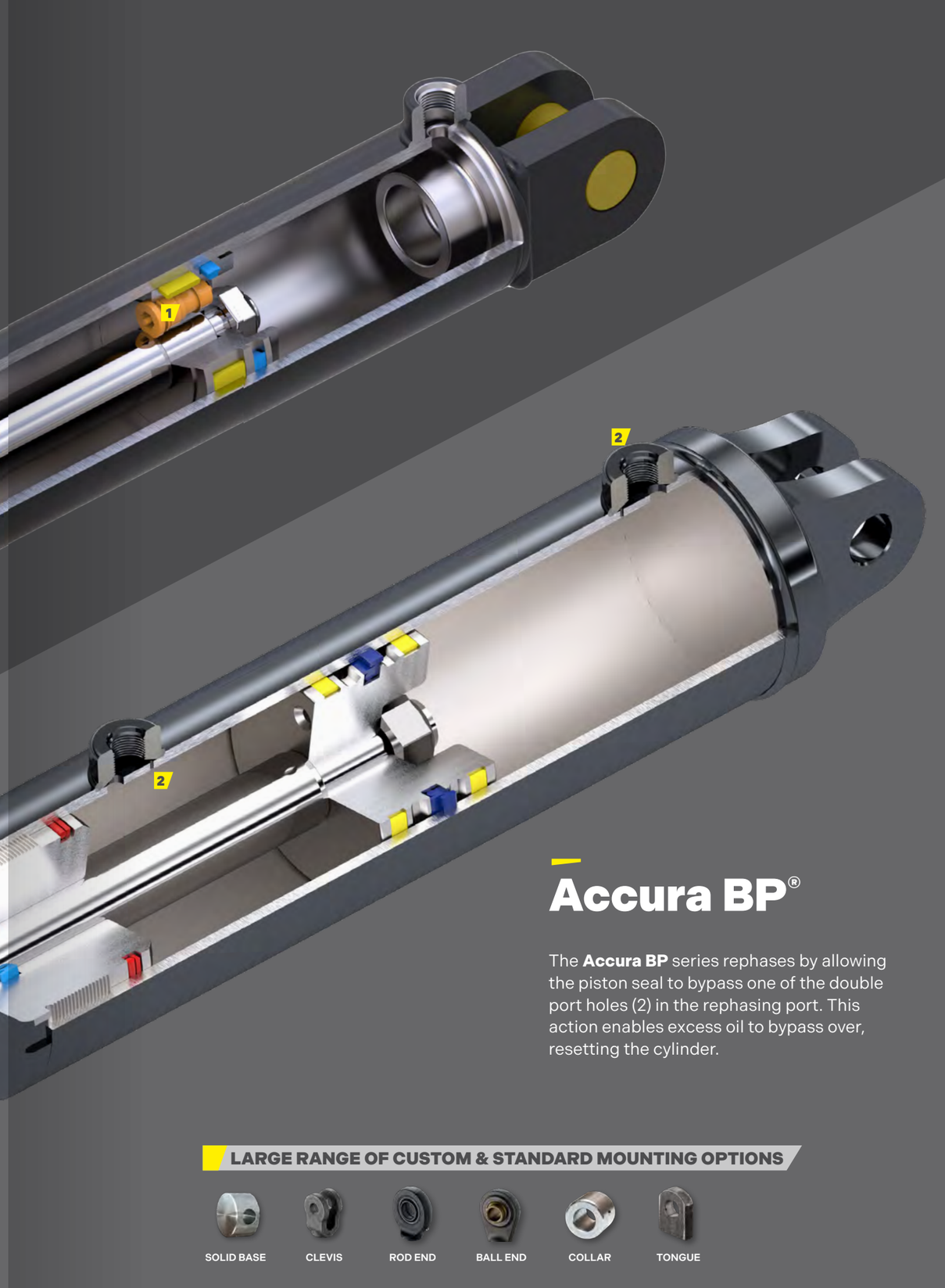
The **Accura PV** series achieves rephasing by a precision poppet valve (1) mounted internally on the piston incorporating a double check-valve. It remains completely locked when in mid-stroke but then allows bypass when activated by contacting the head or base at full extension or retraction.



NZ MADE SINCE 1963

4 YEAR WARRANTY

Up to 4000 psi
Accura XS

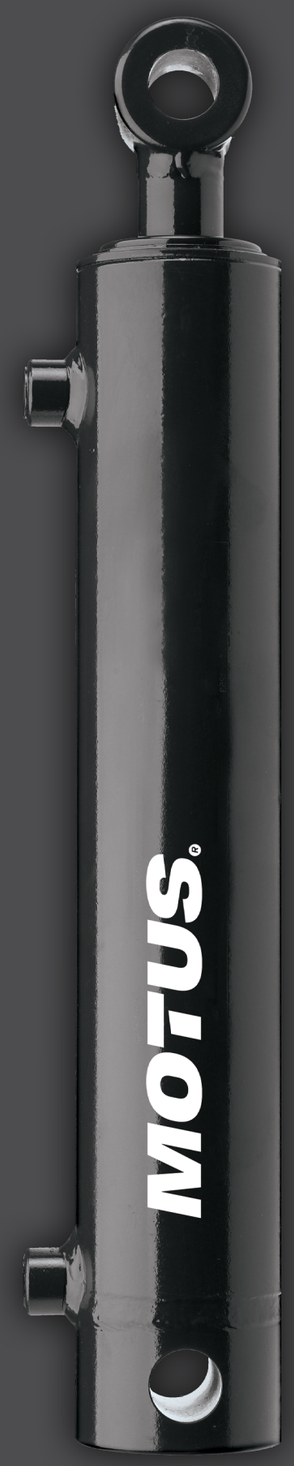


Accura BP®

The **Accura BP** series rephases by allowing the piston seal to bypass one of the double port holes (2) in the rephasing port. This action enables excess oil to bypass over, resetting the cylinder.

LARGE RANGE OF CUSTOM & STANDARD MOUNTING OPTIONS

SOLID BASE | CLEVIS | ROD END | BALL END | COLLAR | TONGUE



REPHASING CYLINDERS
DISPLACEMENT CALCULATOR

The table below shows the paired sets of slave and master cylinders, and the degree accuracy of which they match.

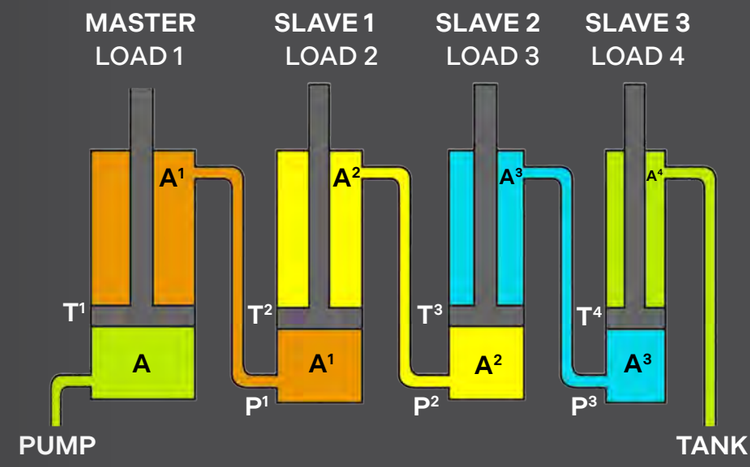
Any discrepancy in the percentage of the combination's match is then cancelled in the rephasing action.

Medium Duty Cylinders (1/4" Increment)

SLAVE Bore Inch	SLAVE Shaft Inch	MASTER Bore Inch	MASTER Shaft Inch	MATCH (100% is perfect)
5 3/4	1 5/8	6	1 3/4	99.62%
5 1/2	1 5/8	5 3/4	1 5/8	100.57%
5 1/4	1 5/8	5 1/2	5/8	100.17%
5	1 1/2	5 1/4	1 5/8	99.69%
4 3/4	1 1/2	5	1 1/2	100.83%
4 1/2	1 1/2	4 3/4	1 1/2	100.31%
4 1/4	1 3/8	4 1/2	1 1/2	99.65%
4	1 3/8	4 1/4	1 3/8	101.07%
3 3/4	1 3/8	4	1 3/8	100.33%
3 1/2	1 1/4	3 3/4	1 3/8	99.36%
3 1/4	1 1/4	3 1/2	1 1/4	101.18%
3	1 1/4	3 1/4	1 1/4	100.00%
2 3/4	1 1/8	3	1 1/4	98.35%
2 1/2	1 1/8	2 3/4	1 1/8	100.75%
2 1/4	1	2 1/2	1 1/8	98.46%
2	1	2 1/4	1	101.56%
1 3/4	7/8	2	1	97.96%
1 1/2	3/4	1 3/4	7/8	102.08%

Heavy Duty Cylinders (1/2" increment)

SLAVE Bore Inch	SLAVE Shaft Inch	MASTER Bore Inch	MASTER Shaft Inch	MATCH (100% is perfect)
6	3	7	3 1/2	102.08%
6	3	6 1/2	2 1/2	100.00%
5	55mm	5 1/2	2 1/4	100.75%
4 1/2	2	5	2.165	100.30%
4	2	4 1/2	2	101.56%
3 1/2	1 3/4	4	2	97.96%
3	1 5/8	3 1/2	1 3/4	102.08%
2 1/2	1 1/2	3	1 5/8	101.75%
2	1 1/2	2 1/2	1 1/2	100.00%



Accura®

MATCHING INTERNAL VOLUMES

The total internal volume (V Rod End) of the preceding cylinder is equal to the total internal volume (V Piston End) of the following cylinder.

Up to 4000 psi
ACCURA XS

REPHASING CYLINDER FORMULAE

Referring to the diagram above:

A = Area

L = Load

P = Pressure

T = Total Loading

Formulae: $P^1 = T^1/A^1$; $P^2 = T^2/A^2$ etc... where $T^1 = L^1+L^2+L^3+L^4$ etc...

STEP 1. Determine the effective area A for the largest (master) cylinder in the series by formula: $A^1 = L^1+L^2+L^3$ etc / P^1

STEP 2. Determine the pressure in each cylinder starting with the smallest cylinder using the formula: P = T/A

STEP 3. Ensure the pressure does not exceed system pressure. If P is excessive, select larger series of cylinder and recheck P.

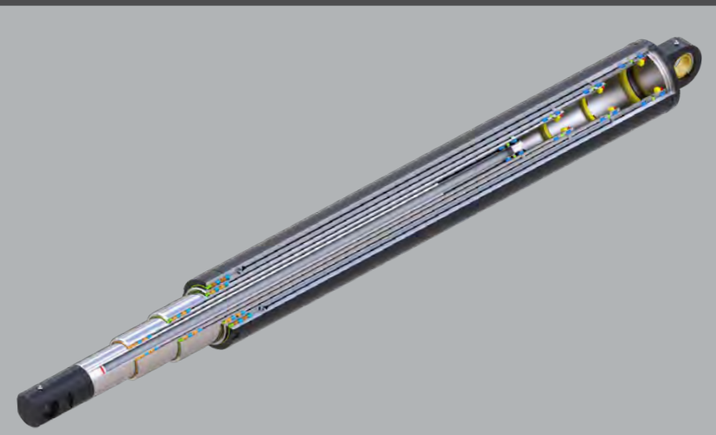
Contact your nearest Motus field office for more information or technical help.

07 TELESCOPIC

MULTI-STAGE INNOVATION

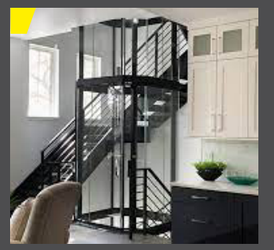
MULTI-STAGE or TELESCOPIC cylinders are used in applications where long strokes are required from short closed centre lengths.

MOTUS offer a standard stock range of these, and custom designed to OEM specifications. These are available in single-acting, double-acting and constant velocity (CVT) design.



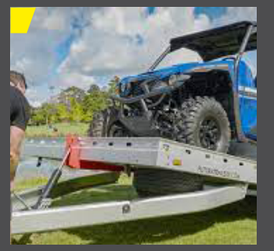
Up to 3000 psi
TELE 07

COMMON APPLICATIONS



Elevators

Waste Compactors



Transport Tippers

Crane Booms

TELESCOPIC DESIGN

NZ MADE SINCE 1963

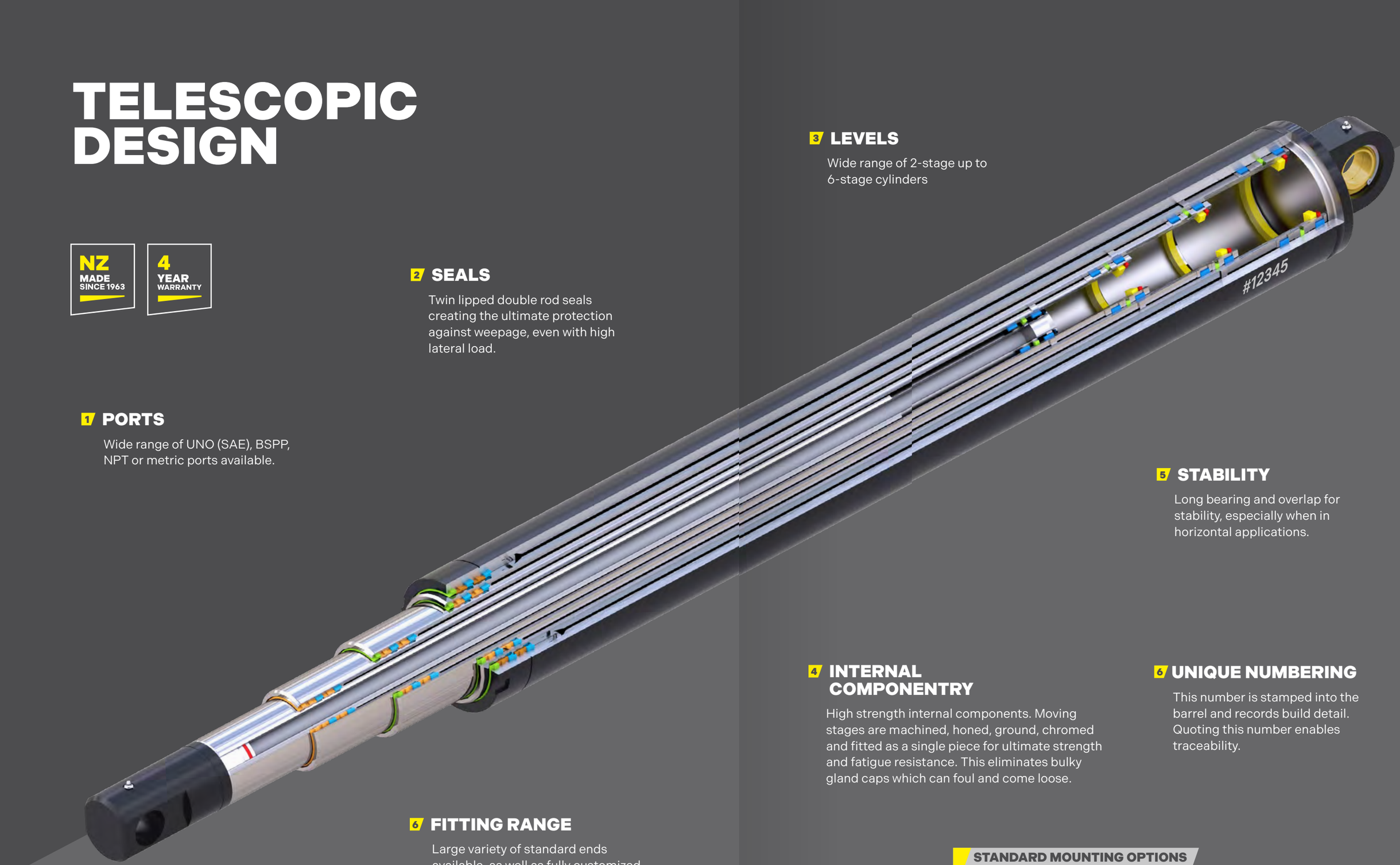
4 YEAR WARRANTY

1 PORTS

Wide range of UNO (SAE), BSPP, NPT or metric ports available.

2 SEALS

Twin lipped double rod seals creating the ultimate protection against weepage, even with high lateral load.



3 LEVELS

Wide range of 2-stage up to 6-stage cylinders

5 STABILITY

Long bearing and overlap for stability, especially when in horizontal applications.

4 INTERNAL COMPONENTRY

High strength internal components. Moving stages are machined, honed, ground, chromed and fitted as a single piece for ultimate strength and fatigue resistance. This eliminates bulky gland caps which can foul and come loose.

6 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

6 FITTING RANGE

Large variety of standard ends available, as well as fully customized, including mid mounted trunnions, cross tubes and sperical bearing eyes.

STANDARD MOUNTING OPTIONS

TRUNNION ROD END COLLAR TONGUE

Up to 3000 psi
TELE 67

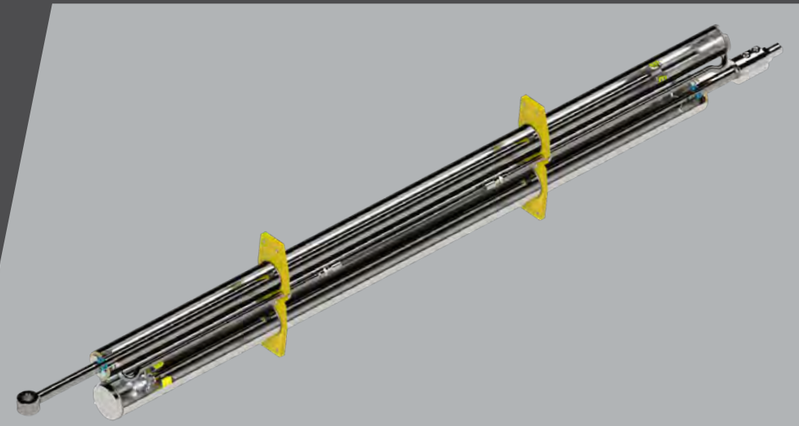
08 PIGGY-BACK

PIGGY-BACK

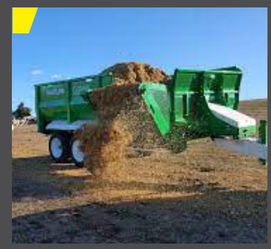
PIGGY-BACK cylinders are a design solution used in applications to maximise stroke length where space constraints or specific operational requirements exist.

This design involves the welding or yoking of two cylinders together in the opposite direction to each other allowing them to work in tandem.

A useful feature of PIGGY-BACK cylinders is the fact they can be plumbed to provide consistent force throughout the whole stroke movement, ensuring high retraction forces.



COMMON APPLICATIONS



Ag Trailers

Waste Compactors

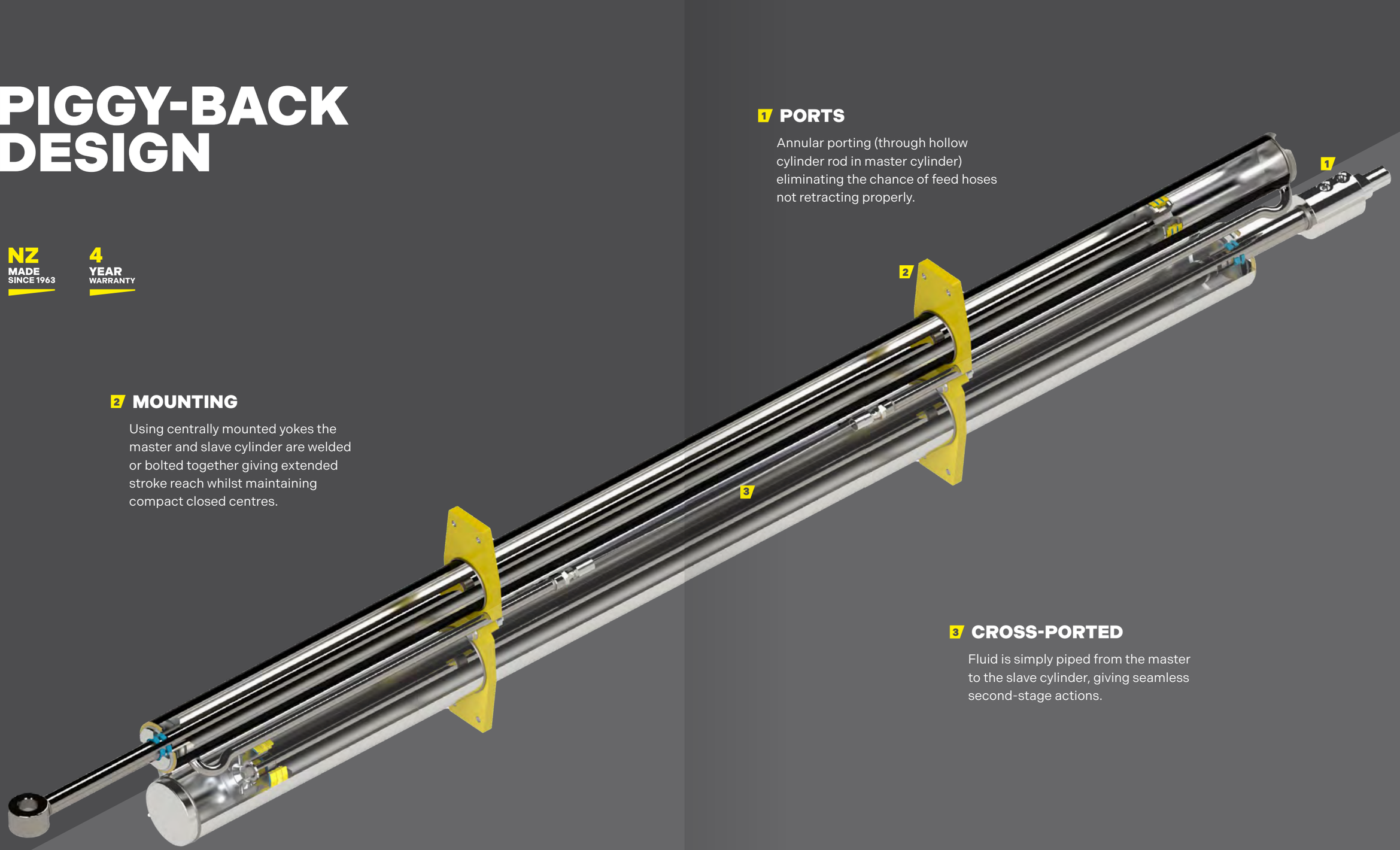
PIGGY-BACK DESIGN

NZ MADE SINCE 1963

4 YEAR WARRANTY

2 MOUNTING

Using centrally mounted yokes the master and slave cylinder are welded or bolted together giving extended stroke reach whilst maintaining compact closed centres.



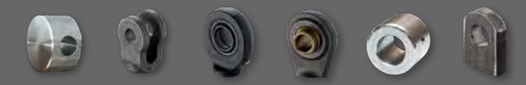
1 PORTS

Annular porting (through hollow cylinder rod in master cylinder) eliminating the chance of feed hoses not retracting properly.

3 CROSS-PORTED

Fluid is simply piped from the master to the slave cylinder, giving seamless second-stage actions.

STANDARD MOUNTING OPTIONS



SOLID BASE | CLEVIS | ROD END | BALL END | COLLAR | TONGUE

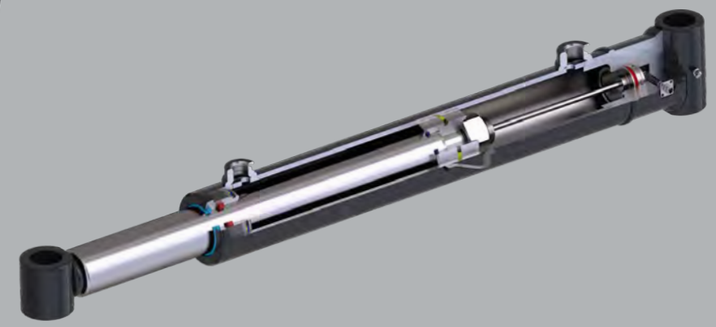
Up to 3000 psi
PIGGY BACK DB

09 SMART SENSOR

PERFECT POSITIONING

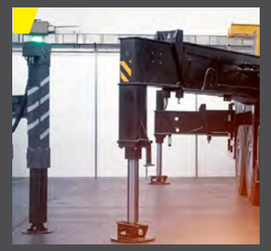
SMART SENSOR Cylinders are advanced hydraulic cylinders that incorporate position sensing technologies to enhance the performance and control of hydraulic systems. These cylinders are also known by various names, including electronic position-sensing cylinders, electro-hydraulic control cylinders, intelligent cylinders, or smart cylinders.

They utilize linear transducers or sensors to accurately measure and communicate the piston's position within the cylinder back to the overall hydraulic system.



Up to 3000 psi
SMART SY

COMMON APPLICATIONS



Stabilizing

Boom Lifts

GPS Steering

TRANSDUCER TECHNOLOGY

SMART SENSOR - up to 5000psi

Smart Sensors can be used in versatile mobile machines without any restriction and replace contact-based linear sensors like potentiometers. Highly dynamic systems are controlled safely by means of Smart Sensors, thus enhancing the productivity, availability and quality of the working process of the machine. Insensitive to vibration, shocks, dust and weathering influence and electro-magnetic disturbances. The sensors are successfully used in front axle and articulated frame steering cylinders, hydraulic jacks and in steering systems for hydraulic units on agricultural and construction machinery.

1 WORKING LENGTHS

Motus offers Smart Sensors in stroke lengths up to 2500mm

2 MOUNTING

Internally mounted to protect the sensor.

3 CONNECTIVITY

M12 connector or cable.

Various output signals available, 4-20mA, Voltage, CAN Bus; to suit your requirements

4 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

NZ MADE SINCE 1963

4 YEAR WARRANTY

Up to 3000 psi
SMART SP

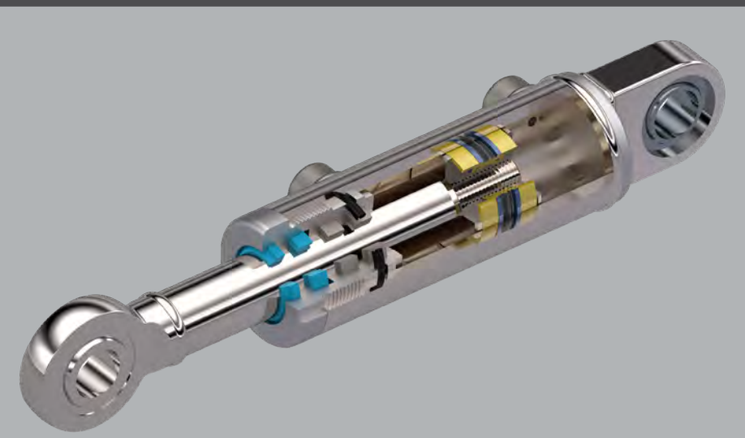
10 MARINE GRADE

CORROSION RESISTANCE

MOTUS Hydraulics stocks stainless steel material for building custom cylinders for applications where high corrosion resistance is required e.g. in Marine use and food processing plants where exposed particularly to salt spray.

Chrome, zinc and nickel plating options are also available to enhance surface protection and the integrity of the cylinder material when in use.

MOTUS ensures these cylinders are fitted with high quality seals and gland design to complement minimal maintenance and downtime.



Up to 3000 psi
MARINE 10

COMMON APPLICATIONS

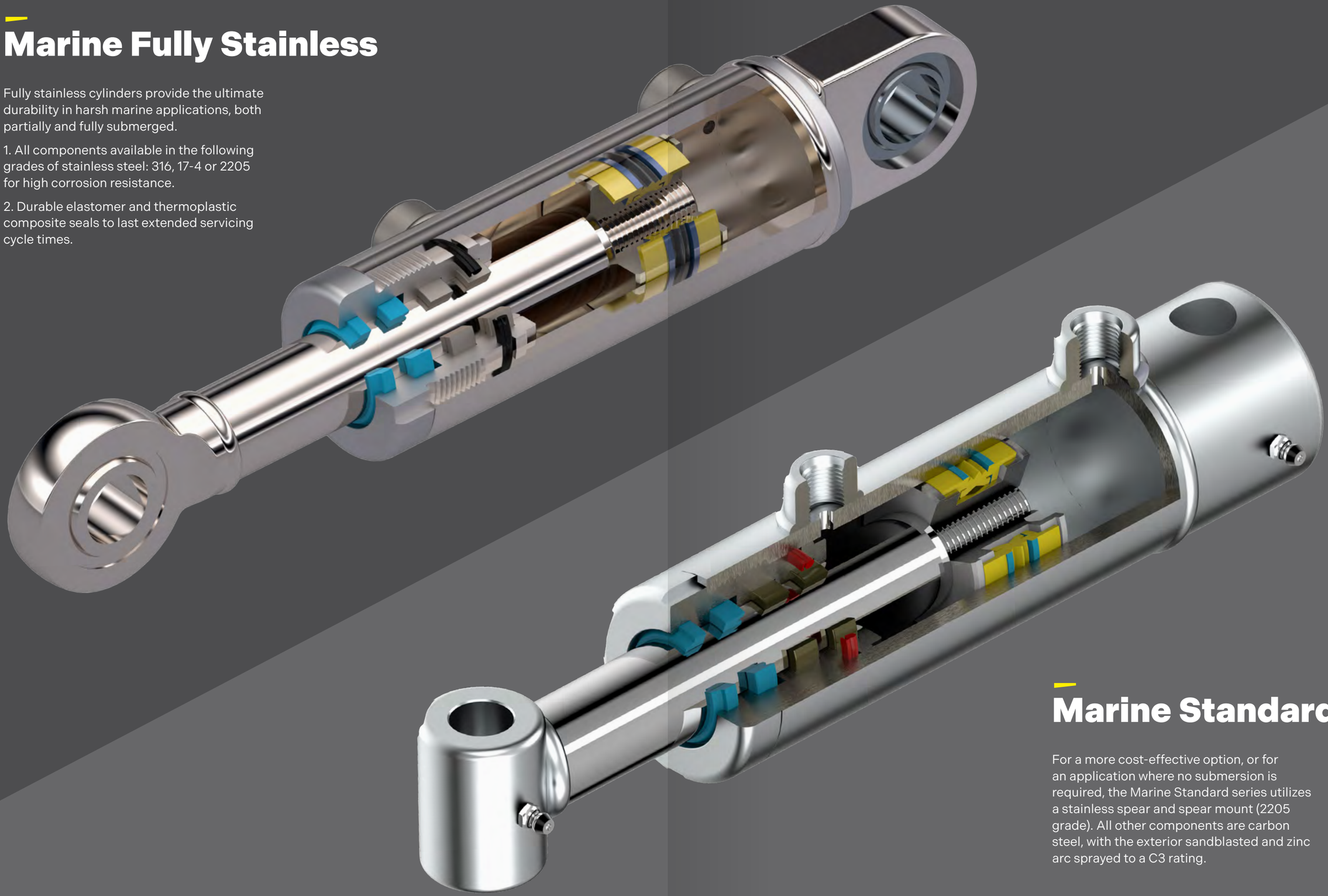
Marine

Marine Fully Stainless

Fully stainless cylinders provide the ultimate durability in harsh marine applications, both partially and fully submerged.

1. All components available in the following grades of stainless steel: 316, 17-4 or 2205 for high corrosion resistance.

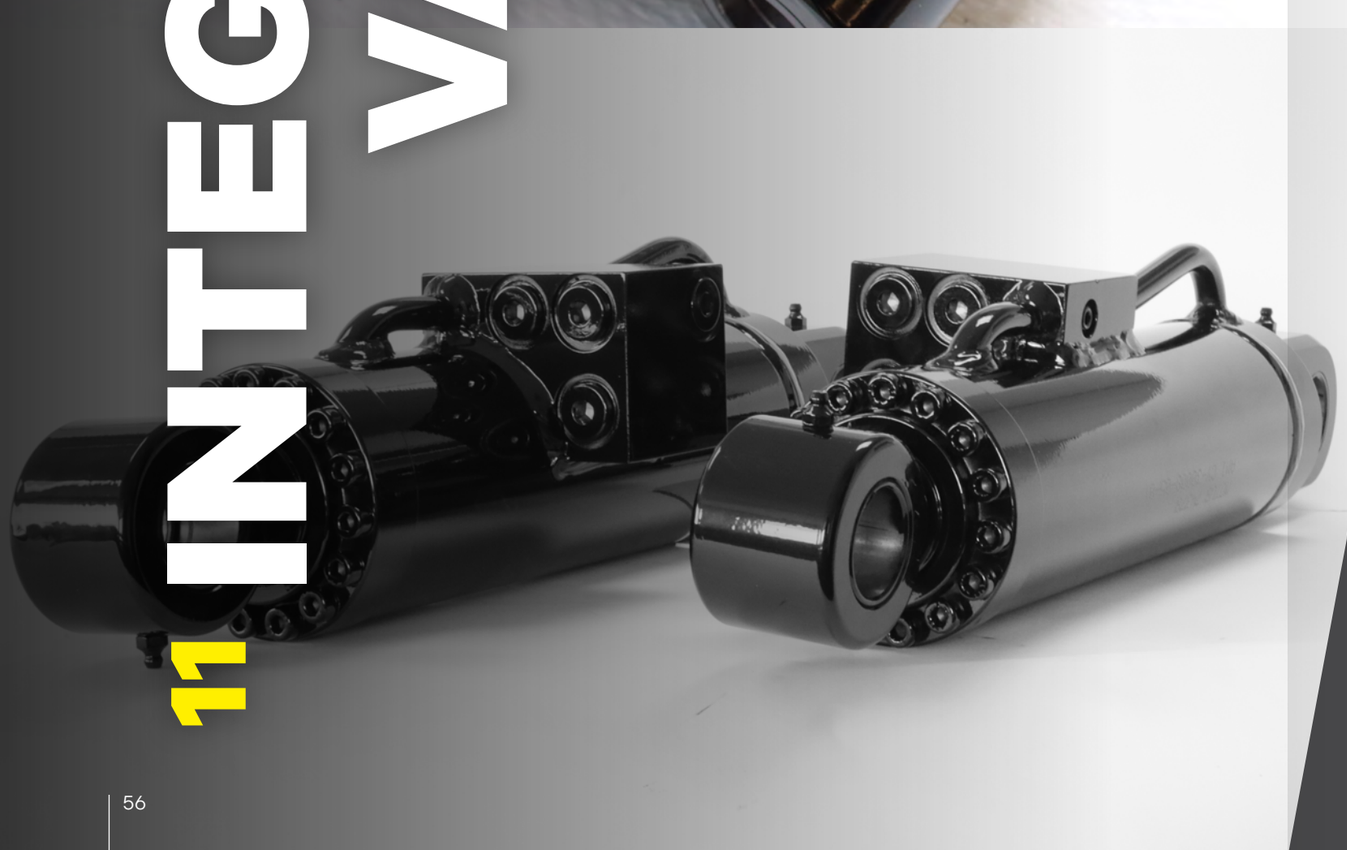
2. Durable elastomer and thermoplastic composite seals to last extended servicing cycle times.



Marine Standard

For a more cost-effective option, or for an application where no submersion is required, the Marine Standard series utilizes a stainless spear and spear mount (2205 grade). All other components are carbon steel, with the exterior sandblasted and zinc arc sprayed to a C3 rating.

11 INTEGRATED VALVING

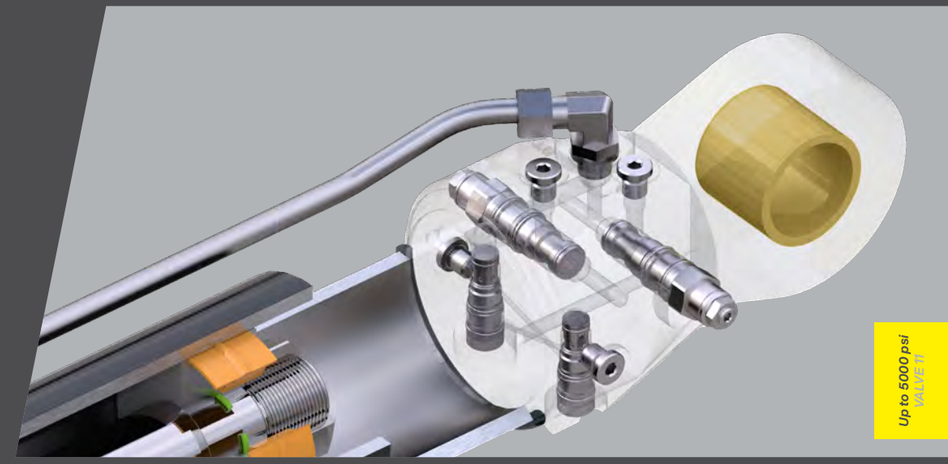


INTEGRATED VALVING

All hydraulic circuits require the need for valves. In many cases integrating these into the cylinder offers significant safety, space saving and design simplicity improvements.

There are multiple ways for this to be achieved, often by machining these directly into the base/gland end of the cylinder, or by pad-mounted manifold blocks.

MOTUS are specialists in the design and manufacture of these and can offer both short-run prototypes through to high volume production runs.



Up to 5000 psi
MILEY

COMMON APPLICATIONS

Forestry

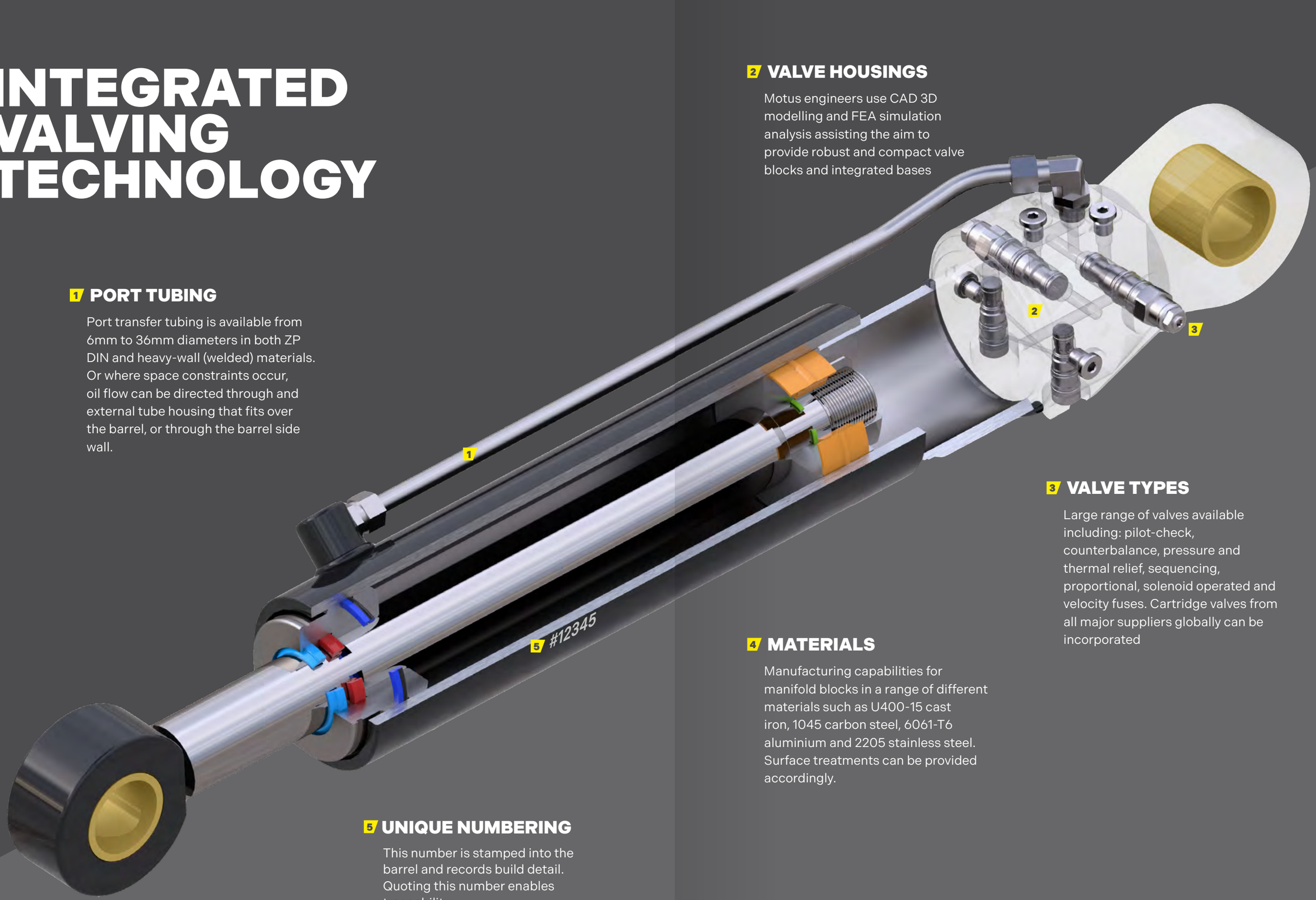
Mining

Construction

INTEGRATED VALVING TECHNOLOGY

1 PORT TUBING

Port transfer tubing is available from 6mm to 36mm diameters in both ZP DIN and heavy-wall (welded) materials. Or where space constraints occur, oil flow can be directed through and external tube housing that fits over the barrel, or through the barrel side wall.



2 VALVE HOUSINGS

Motus engineers use CAD 3D modelling and FEA simulation analysis assisting the aim to provide robust and compact valve blocks and integrated bases

3 VALVE TYPES

Large range of valves available including: pilot-check, counterbalance, pressure and thermal relief, sequencing, proportional, solenoid operated and velocity fuses. Cartridge valves from all major suppliers globally can be incorporated

4 MATERIALS

Manufacturing capabilities for manifold blocks in a range of different materials such as U400-15 cast iron, 1045 carbon steel, 6061-T6 aluminium and 2205 stainless steel. Surface treatments can be provided accordingly.

5 UNIQUE NUMBERING

This number is stamped into the barrel and records build detail. Quoting this number enables traceability.

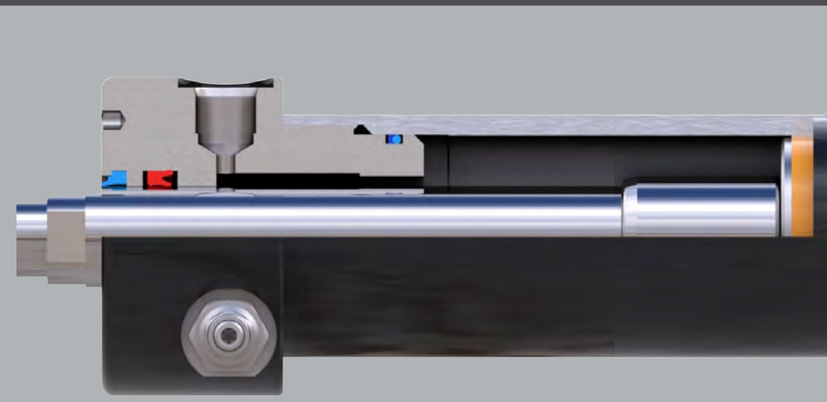
12 CUSHIONED CYLINDERS

CUSHIONED CYLINDERS

Component wear from shock at the end of stroke movement can be a major factor in shortening the working life of a hydraulic cylinder and its connected parts. Using a cushion to control this kinetic energy internally in the cylinder is an effective prevention method.

Cushions can be fitted to both ends of the stroke limits, and can be fixed or adjustable.

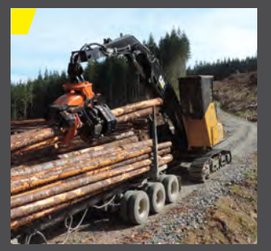
By using precision cushioning components these limit the oil flow which in turn decelerates movement



Up to 5000 psi
CUSHION 12

COMMON APPLICATIONS

Boom Applications



Forestry

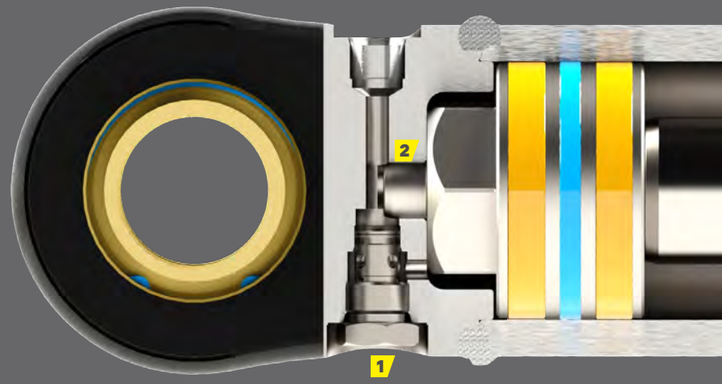
Gland Cushioned

1 VALVES

Gland cushioned valves adjustable for precise control to suit operator and application requirements. These incorporate full-flow in reverse stroke for effective cushioning and powerful push-off force.

2 CUSHIONS

Individually matched gland and cushion ID stamped to ensure lifelong tolerance match.



Base Cushioned

Up to 5000 psi
CLEVIS 2

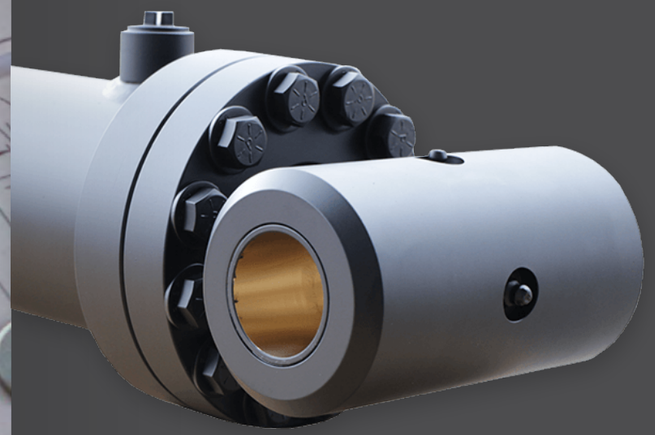
1 VALVES

Base Cushioned full flow reverse valve for effective cushioning and powerful push-off force.

2 CUSHIONS

Close-tolerance hardened and ground cushioning components are used on all motus cylinders for maximum consistency.

ORIGINAL EQUIPMENT MANUFACTURER CYLINDERS



OEMS

We collaborate with equipment manufacturers across multiple industries. Our goal is to add value by designing the simplest, strongest and most cost-effective cylinder solution to suit your requirements.

Involving the MOTUS design team as early as possible has proven to be more beneficial for our customers.

From standard cylinders right through to 100% customised options - our deep understanding and experience of hydraulic cylinders, paired with your industry knowledge of application will lead to the finest result possible.

We are more than happy to discuss duplicating your current design and offering helpful advice where needed.

PREMIUM PARTNER

We aim to be a vital part of your business through a collaborative business partnership with a range of exclusive Premium Partner benefits:

- Priority service and supply.
- Ongoing communication with your design team to keep us up to speed.
- Factory visits by our team to ensure we're consistently meeting your operational needs.
- Full access to MOTUS design and problem solving expertise developed during our 50+ years of hydraulic cylinder manufacturing.
- MOTUS Rewards Programme.

"MOTUS has always been willing to help us with solutions for past and present challenges and design input on our cylinder requirements."

Clarke Hoyle
HW Industries

NZ MADE SINCE 1963

4 YEAR WARRANTY

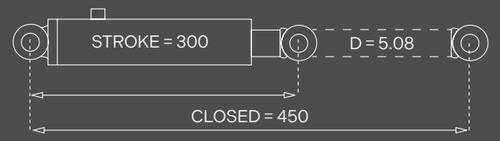
TECHNICAL INFORMATION

LONG STROKE CYLINDERS

Long stroke cylinders may require larger shafts to prevent buckling under compression. Euler's Formula (below) is often used to calculate the appropriate shaft diameter or maximum load with different mounting methods.

Based on material - En8 or AISI 1045
Safety factor 2.2, i.e. max permissible stress = 240 mPa

Example



L = Open centres in mm with pin-mounted cylinders (see MOTUS for rigid mounted cylinders)

D = Shaft diameter in mm

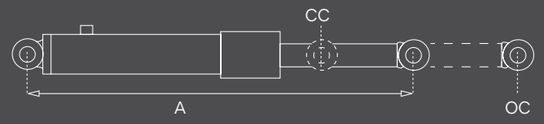
P = Load in tonnes

$$L = \frac{2.108\ d^2}{\sqrt{P}} \qquad P = \frac{2.108\ d^2}{L}$$

CHECK OUT OUR ONLINE CALCULATOR

PLEASE NOTE Long stroke cylinders laying in anything but the vertical position may require a spacer between the head and the piston. Call us on 0800 66 88 74 or for prices see page 13 under 'spacers'.

TO CALCULATE OPEN & CLOSED CENTRES GIVEN THE MID POSITION



A = MID POSITION A

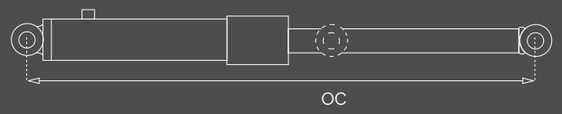
B = Dead length = eye + base + piston + head + min shaft extension + eye = (B) Dead length
☐ + ☐ + ☐ + ☐ + ☐ + ☐ = (B)

(A minus B) ÷ 1.5 = Stroke
(☐ - ☐) ÷ 1.5 = Stroke

Stroke + B = Closed centres
☐ + ☐ = Closed centres

Closed centre plus stroke = Open centre
☐ + ☐ = Open centre

TO CALCULATE STROKE & CLOSED CENTRES GIVEN THE OPEN CENTRES



1 = MID POSITION A

2. B = Dead length = eye + base + piston + head + min shaft extension + eye = (B) Dead length
☐ + ☐ + ☐ + ☐ + ☐ + ☐ = (B)

(OC minus B) ÷ 2 = Stroke
☐ - ☐ ÷ 2 = Stroke

Stroke + B = Closed centres
☐ + ☐ = Closed centres ☐ (minimum possible, can be more)

FORCE

Standard Cylinder Base Mount

Inch	Extend Area	Shaft Area	Retract
(lb) formula: area (inch2) x psi = ib force (lb) formula: ib force / 2.2 = Kg force			
1 1/2" x 3/4"	1.767 inch²	(.441) inch²	1.326 inch²
1 1/2" x 1"		(.441) inch²	1.326 inch²
2" x 1"	3.1416 inch²	(.441) inch²	1.326 inch²
2" x 1 1/4"		(.441) inch²	1.326 inch²
2" x 1 1/2"		(.441) inch²	1.326 inch²
2 1/2" x 1 1/4"	4.909 inch²	(.441) inch²	1.326 inch²
2 1/2" x 1 3/4"		(.441) inch²	1.326 inch²
2 1/2" x 1 3/4"		(.441) inch²	1.326 inch²
3" x 1 1/2"	7.069 inch²	(.441) inch²	1.326 inch²
3" x 1 3/4"		(.441) inch²	1.326 inch²
3" x 2"		(.441) inch²	1.326 inch²
3 1/2" x 1 1/2"	9.621 inch²	(.441) inch²	1.326 inch²
3 1/2" x 1 3/4"		(.441) inch²	1.326 inch²
3 1/2" x 2"		(.441) inch²	1.326 inch²
4" x 2"	12.56 inch²	(.441) inch²	1.326 inch²
4" x 2 1/4"		(.441) inch²	1.326 inch²
5" x 2 1/2"	19.63 inch²	(.441) inch²	1.326 inch²
6" x 3"	28.274 inch²	(.441) inch²	1.326 inch²

Extend Area	Shaft Area	Retract Area	Push Tonnage	Pull
(Kg) formula: area (cm2) x kg/cm² = kg force				
11.4 cm²	(2.85) cm²	8.55 cm²	1.76	1.32
	(5.07) cm²	6.33 cm²	1.76	0.98
20.27 cm²	(5.07) cm²	15.2 cm²	3.14	2.35
	(7.92) cm²	12.35 cm²	3.14	1.915
	(11.4) cm²	8.87 cm²	3.14	1.37
31.67 cm²	(7.92) cm²	23.75 cm²	4.90	3.68
	(11.4) cm²	20.27 cm²	4.90	3.14
	(15.52) cm²	16.15 cm²	4.90	2.50
45.6 cm²	(11.4) cm²	34.2 cm²	7.06	5.30
	(15.52) cm²	30.08 cm²	7.06	4.66
	(20.27) cm²	25.33 cm²	7.06	3.92
62.07 cm²	(11.4) cm²	50.67 cm²	9.62	7.85
	(15.52) cm²	46.55 cm²	9.62	7.21
	(20.27) cm²	41.8 cm²	9.62	6.48
81.07 cm²	(20.27) cm²	60.8 cm²	12.56	9.42
	(25.65) cm²	55.42 cm²	12.56	8.58
126.7 cm²	(31.67) cm²	95.03 cm²	19.63	14.72
182.4 cm²	(45.6) cm²	136.8 cm²	28.27	21.20

Displacement	Effective Area	Effective Area
1 1/2"	1.767 inch²	1.4 cm²
1 3/4"	2.405 inch²	15.52 cm²
2"	3.1416 inch²	20.27 cm²
2 1/4"	3.976 inch²	25.65 cm²
2 1/2"	4.909 inch²	31.67 cm²
2 3/4"	5.939 inch²	38.32 cm²

NZ MADE SINCE 1963

4 YEAR WARRANTY

OIL COMPRESSIBILITY

For every 1000psi (69bar), there is a reduction in oil volume of 0.5%

OIL TEMPERATURE

Should never be allowed to exceed (140°F) 60°C

PRESSURE

1 psi = 0.069 bar	1 bar = 14.5 psi
psi ÷ .145 = kilopascals (kPa)	kilopascals (kPa) x .145 = psi
psi ÷ 145 = megapascals (mPa)	Megapascals (mPa) x 145 = psi
psi ÷ 14.504 = bar	bar x 14.504 = psi
psi ÷ 14.22 = Kg/cm²	Kg/cm² x 14.22 = psi
psi ÷ 14.7 = 1 atmosphere	1 atmosphere x 14.7 = psi
bar ÷ .981 = Kg/cm²	Kg/cm² x .981 = bar
1 N/mm² = 1 mPa = 1000kPa = 10bar = 145 psi	

SPEED = 1ft/sec = 0.3048 m/sec

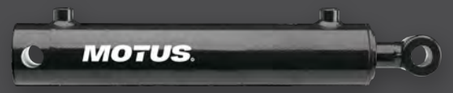
Length	1 inch = 25.4mm
	1000mm = 39.37 inches

STOCK

“When a breakdown occurs we can’t afford to be down for more than 12 hours, MOTUS were onsite immediately and provided the solution we needed to get moving again.”

Apatu Farms
Hawke’s Bay

READY TO DELIVER

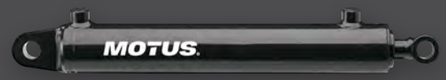


SOLID BASE – COLLAR

Very compact style, strong design, popular choice in agriculture.

CLEVIS – CLEVIS

SAE style female clevis cylinder, built to suit international standard sizing.



TONGUE – COLLAR

Single male tongue - base profile with collar boss on the shaft end. Industry standard cylinder.

PREMIUM TOP-LINK

Over 30 years of development has led to the ultimate in top-link cylinders.

BOX LEVELLER

Levelling Box cylinders to meet your OEM style requirements.

WOOD SPLITTER / AG

Our standard range of Logsplitter, Crowding and Sprayboom cylinders.

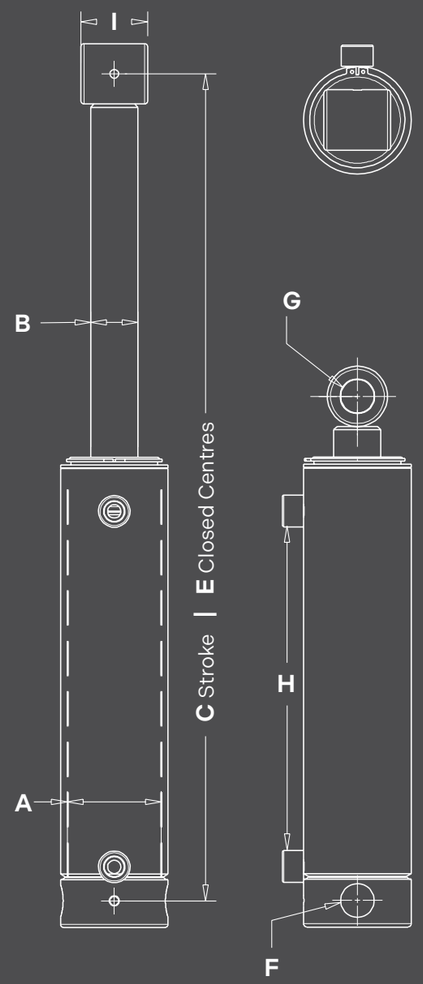
TELESCOPIC RAMS

Single-Acting lift/hoist cylinders in a variety of sizes and mounting styles.

Up to 3000 psi
STOCK

SOLID BASE – COLLAR CYLINDER (SB-C)

Description	Bore size (inch) [A]	Shaft size (inch) [B]	Stroke (inch) [C]	Stroke (mm) [D]	Closed Centre (mm) [E]	Open Centre (mm)	Base Pin Size (inch) [F]	Collar Pin Size (inch) [G]	Collar Size (inch x inch x mm)	Port Sizes [H]	Seal Kit Number	Force Extension @2250psi	Force Extract @2250psi	Dimension [I]
SB-C150075x102 (4″)	1.5	0.75	4	102	218	320	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25
SB-C150075x152 (6″)	1.5	0.75	6	152	268	420	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25
SB-C150075x203 (8″)	1.5	0.75	8	203	319	522	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25
SB-C150075x254 (10″)	1.5	0.75	10	254	370	624	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25
SB-C150075x305 (12″)	1.5	0.75	12	305	421	726	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25
SB-C200100x152 (6″)	2	1	6	152	291	443	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C200100x203 (8″)	2	1	8	203	342	545	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C200100x254 (10″)	2	1	10	254	393	647	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C200100x305 (12″)	2	1	12	305	444	749	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C200100x355 (14″)	2	1	14	355	494	849	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C200100x406 (16″)	2	1	16	406	545	951	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C200100x457 (18″)	2	1	18	457	596	1053	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25
SB-C250150x152 (6″)	2.5	1.5	6	152	303	455	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x203 (8″)	2.5	1.5	8	203	354	557	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x254 (10″)	2.5	1.5	10	254	405	659	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x305 (12″)	2.5	1.5	12	305	456	761	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x355 (14″)	2.5	1.5	14	355	506	861	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x406 (16″)	2.5	1.5	16	406	557	963	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x457 (18″)	2.5	1.5	18	457	608	1065	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x508 (20″)	2.5	1.5	20	508	659	1167	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C250150x610 (24″)	2.5	1.5	24	610	761	1371	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50
SB-C300150x152 (6″)	3	1.5	6	152	310	462	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x203 (8″)	3	1.5	8	203	361	564	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x254 (10″)	3	1.5	10	254	412	666	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x305 (12″)	3	1.5	12	305	463	768	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x355 (14″)	3	1.5	14	355	513	868	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x406 (16″)	3	1.5	16	406	564	970	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x457 (18″)	3	1.5	18	457	615	1072	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x508 (20″)	3	1.5	20	508	666	1174	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C300150x508 (20″)	3	1.5	24	610	768	1378	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50
SB-C350175x254 (10″)	3.5	1.75	10	254	435	689	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x305 (12″)	3.5	1.75	12	305	486	791	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x355 (14″)	3.5	1.75	14	355	536	891	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x406 (16″)	3.5	1.75	16	406	587	993	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x457 (18″)	3.5	1.75	18	457	638	1095	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x508 (20″)	3.5	1.75	20	508	689	1197	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x610 (24″)	3.5	1.75	24	610	791	1401	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x762 (30″)	3.5	1.75	30	762	943	1705	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63
SB-C350175x914 (36″)	3.5	1.75	36	914	1095	2009	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63



PLEASE NOTE We offer a complete blank range in all of the sizes above with short lead times.

NZ MADE SINCE 1963

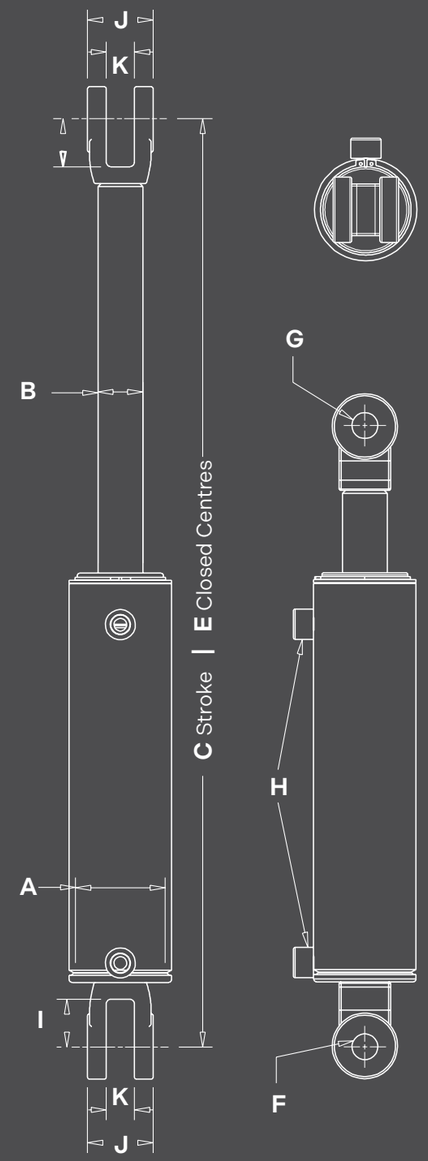
4 YEAR WARRANTY

Up to 3000 psi STOCK

CLEVIS – CLEVIS CYLINDER (CL-CL)

WRC®

Description	Bore size (inch) [A]	Shaft size (inch) [B]	Stroke (inch) [C]	Stroke (mm) [D]	Closed Centre (mm) [E]	Open Centre (mm)	Base Pin Size (inch) [F]	Clevis Pin Size (inch) [G]	Clevis Size (inch x inch x mm)	Port Sizes [H]	Seal Kit Number	Force Extension @2250psi	Force Extract @2250psi	Dimension [I]	Dimension [J]	Dimension [K]
CL-CL150075x102 (4″)	1.5	0.75	4	102	343	445	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	37	43	19
CL-CL150075x152 (6″)	1.5	0.75	6	152	393	545	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	37	43	19
CL-CL150075x203 (8″)	1.5	0.75	8	203	444	647	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	37	43	19
CL-CL150075x254 (10″)	1.5	0.75	10	254	495	749	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	37	43	19
CL-CL150075x305 (12″)	1.5	0.75	12	305	546	851	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	37	43	19
CL-CL200100x152 (6″)	2	1	6	152	393	545	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL200100x203 (8″)	2	1	8	203	444	647	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL200100x254 (10″)	2	1	10	254	495	749	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL200100x305 (12″)	2	1	12	305	546	851	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL200100x355 (14″)	2	1	14	355	596	951	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL200100x406 (16″)	2	1	16	406	647	1053	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL200100x457 (18″)	2	1	18	457	698	1155	0.75	0.75	CL-1 /CL-1	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	37	43	19
CL-CL250150x152 (6″)	2.5	1.5	6	152	463	615	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x203 (8″)	2.5	1.5	8	203	514	717	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x254 (10″)	2.5	1.5	10	254	565	819	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x305 (12″)	2.5	1.5	12	305	616	921	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x355 (14″)	2.5	1.5	14	355	666	1021	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x406 (16″)	2.5	1.5	16	406	717	1123	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x457 (18″)	2.5	1.5	18	457	768	1225	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x508 (20″)	2.5	1.5	20	508	819	1327	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL250150x610 (24″)	2.5	1.5	24	610	921	1531	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	47	64	28
CL-CL300150x152 (6″)	3	1.5	6	152	463	615	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x203 (8″)	3	1.5	8	203	514	717	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x254 (10″)	3	1.5	10	254	565	819	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x305 (12″)	3	1.5	12	305	616	921	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x355 (14″)	3	1.5	14	355	666	1021	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x406 (16″)	3	1.5	16	406	717	1123	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x457 (18″)	3	1.5	18	457	768	1225	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x508 (20″)	3	1.5	20	508	819	1327	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL300150x610 (24″)	3	1.5	24	610	921	1531	1	1	CL-10 / CL-10	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	47	64	28
CL-CL350175x254 (10″)	3.5	1.75	10	253	565	819	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x305 (12″)	3.5	1.75	12	305	616	921	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x355 (14″)	3.5	1.75	14	355	666	1021	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x406 (16″)	3.5	1.75	16	406	717	1123	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x457 (18″)	3.5	1.75	18	457	768	1225	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x508 (20″)	3.5	1.75	20	508	819	1327	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x610 (24″)	3.5	1.75	24	610	921	1531	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x762 (30″)	3.5	1.75	30	762	1073	1835	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28
CL-CL350175x914 (36″)	3.5	1.75	36	914	1225	2319	1	1	CL-10 / CL-10	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	47	64	28



PLEASE NOTE We offer a complete blank range in all of the sizes above with short lead times.

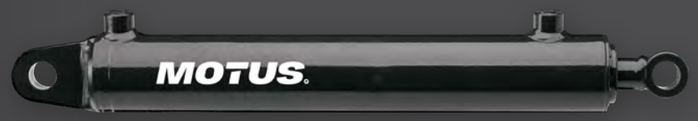
NZ MADE SINCE 1963

4 YEAR WARRANTY

Up to 3000 psi STOCK

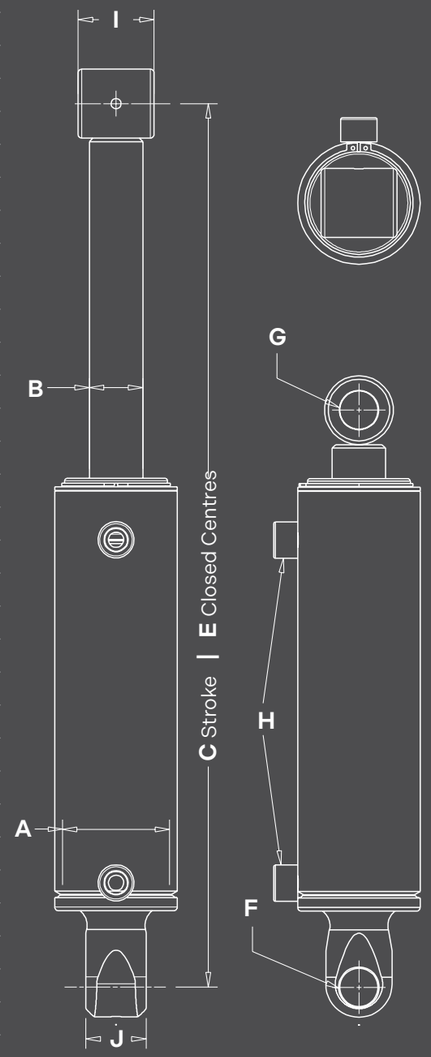
TONGUE – COLLAR CYLINDER (T-C)

WRC®



Description	Bore size (inch) [A]	Shaft size (inch) [B]	Stroke (inch) [C]	Stroke (mm) [D]	Closed Centre (mm) [E]	Open Centre (mm)	Base Pin Size (inch) [F]	Collar Pin Size (inch) [G]	Collar Size (inch x inch x mm)	Port Sizes [H]	Seal Kit Number	Force Extension @2250psi	Force Extract @2250psi	Dimension [I]	Dimension [J]
T-C150075x102 (4″)	1.5	0.75	4	102	251	353	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25	25
T-C150075x152 (6″)	1.5	0.75	6	152	301	453	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25	25
T-C150075x203 (8″)	1.5	0.75	8	203	352	555	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25	25
T-C150075x254 (10″)	1.5	0.75	10	254	403	657	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25	25
T-C150075x305 (12″)	1.5	0.75	12	305	454	759	0.75	0.75	1.5 x 0.75 x 25mm	1/4″ f/m BSPP	SK150075	1.76 ton	1.32 ton	25	25
T-C200100x152 (6″)	2	1	6	152	334	486	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C200100x203 (8″)	2	1	8	203	385	588	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C200100x254 (10″)	2	1	10	254	436	690	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C200100x305 (12″)	2	1	12	305	487	792	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C200100x355 (14″)	2	1	14	355	537	892	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C200100x406 (16″)	2	1	16	406	588	994	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C200100x457 (18″)	2	1	18	457	639	1096	0.75	0.75	1.5 x 0.75 x 32mm	1/4″ f/m BSPP	SK200100	3.14 ton	2.35 ton	25	25
T-C250150x152 (6″)	2.5	1.5	6	152	340	492	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x203 (8″)	2.5	1.5	8	203	391	594	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x254 (10″)	2.5	1.5	10	254	442	696	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x305 (12″)	2.5	1.5	12	305	493	798	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x355 (14″)	2.5	1.5	14	355	543	898	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x406 (16″)	2.5	1.5	16	406	594	1000	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x457 (18″)	2.5	1.5	18	457	645	1102	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x508 (20″)	2.5	1.5	20	508	696	1204	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C250150x610 (24″)	2.5	1.5	24	610	798	1408	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK250150	4.90 ton	3.14 ton	50	32
T-C300150x152 (6″)	3	1.5	6	152	347	499	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x203 (8″)	3	1.5	8	203	398	601	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x254 (10″)	3	1.5	10	254	449	703	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x305 (12″)	3	1.5	12	305	500	805	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x355 (14″)	3	1.5	14	355	550	905	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x406 (16″)	3	1.5	16	406	601	1007	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x457 (18″)	3	1.5	18	457	652	1109	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x508 (20″)	3	1.5	20	508	703	1211	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C300150x610 (24″)	3	1.5	24	610	805	1415	1	1	2 x 1 x 50mm	3/8″ f/m BSPP	SK300150	7.06 ton	5.30 ton	50	40
T-C350175x254 (10″)	3.5	1.75	10	254	479	733	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x305 (12″)	3.5	1.75	12	305	530	835	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x355 (14″)	3.5	1.75	14	355	580	935	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x406 (16″)	3.5	1.75	16	406	631	1037	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x457 (18″)	3.5	1.75	18	457	682	1139	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x508 (20″)	3.5	1.75	20	508	733	1241	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x610 (24″)	3.5	1.75	24	610	835	1445	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x762 (30″)	3.5	1.75	30	762	987	1749	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50
T-C350175x914 (36″)	3.5	1.75	36	914	1139	2053	1.25	1.25	2.25 x 1.25 x 63mm	1/2″ f/m BSPP	SK350175	9.62 ton	7.21 ton	63	50

PLEASE NOTE We offer a complete blank range in all of the sizes above with short lead times.



NZ MADE SINCE 1963

4 YEAR WARRANTY

Up to 3000 psi STOCK

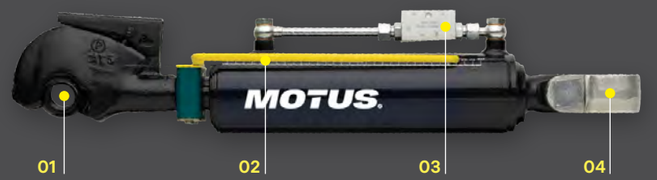
PREMIUM TOP LINK CYLINDERS (TL)

	Power	Code	Bore x Shaft x Stroke	Closed	Open	Mounting Tractor	Mounting Spear	Tonnage Push	Tonnage Pull
Most tractors	15-35hp	TL A	2″ x 1″ x 250mm	538mm	788mm	CAT 1	CAT 2	3.14	2.35
	15-35hp	TL A2	2″ x 1″ x 250mm	533mm	783mm	CAT 1	CAT 1	3.14	2.35
	30-70hp	TL B	2 ½″ x 1 ¼″ x 250mm	535mm	785mm	CAT 1	CAT 2	4.90	3.68
	30-70hp	TL B2	2 ½″ x 1 ¼″ x 200mm	459mm	659mm	CAT 1	CAT 2	4.90	3.68
	70-130hp	TL C	2 ½″ x 1 ¼″ x 250mm	566mm	816mm	CAT 2	CAT 2	4.90	3.68
	110-150hp	TL D	3″ x 1 ½″ x 250mm	566mm	816mm	CAT 2	CAT 2	7.06	5.30
	140-200hp	TL E	3 ½″ x 1 ¾″ x 300mm	680mm	980mm	CAT 3	CAT 3	9.62	3.68
John Deere	60-120hp	TL F	2 ½″ x 1 ¼″ x 250mm	538mm	788mm	20mm ball	CAT 2	4.90	3.68
Knuckle type end (suits most brands)* Knuckles available in 4 sizes: 20mm, 1″, 28mm, 32mm (Cat 1, 2, 28mm, 3)	100-130hp	TL G	2 ½″ x 1 ¼″ x 250mm	574mm	824mm	Knuckle	CAT 2	4.90	3.68
	130-170hp	TL H	3″ x 1 ½″ x 250mm	574mm	824mm	Knuckle	CAT 2	7.06	5.30
	130-170hp	TL H1	3″ x 1 ½″ x 250mm	654mm	904mm	Knuckle	CAT 2	7.06	5.30
	180-240hp	TL H2	3 ½″ x 1 ¾″ x 250mm	594mm	844mm	Knuckle	CAT 3	9.26	7.21
	200-300hp	TL H3	4″ x 2″ x 250mm	645mm	895mm	Knuckle	CAT 3	12.56	9.42
Valtra, MF & Kubota	90-120hp	TL O	2 ½″ x 1 ¼″ x 300mm	595mm	895mm	CAT 2	CAT 2	4.90	3.68
	110-150hp	TL P	3″ x 1 ½″ x 300mm	595mm	895mm	CAT 2	CAT 2	7.60	5.30
Case CX	90-120hp	TL Q	2 ½″ x 1 ¼″ x 250mm	537mm	787mm	Tongue	CAT 2	4.90	3.68
	110-150hp	TL Q2	3″ x 1 ½″ x 250mm	537mm	787mm	Tongue	CAT 2	7.60	5.30
jd5500 10 series, new holland	70 - 130hp	TL R	2 ½″ x 1 ¼″ x 200mm	500mm	700mm	CAT 2 (50w)	CAT 2	4.90	3.68
jd5500 20 series	70 - 130hp	TL R2	2 ½″ x 1 ¼″ x 200mm	500mm	700mm	CAT 2 (44w)	CAT 2	4.90	3.68
Ferrari	70 - 130hp	TL S	2 ½″ x 1 ¼″ x 155mm	425mm	580mm	CAT 1	CAT 2	4.90	3.68
	250HP+	TL-X	5″ x 2.5″ x 166mm	690mm	856mm	CAT 4	CAT 4	19.59	14.69

PLEASE NOTE These toplink cylinders are part of our standard range. Call us on 0800 66 88 74 for custom made cylinders and we'll make to your specification.

OPTIONS

01 Quick hook (CAT 2 / CAT 3)
02 Position Indicator
03 Hydraulic safe lock valve
04 Knuckle base end
(CAT 1 / 28 mm CAT 2 / CAT 3)



ACCESSORIES

Toplink hose kit

Weld-on TL tongue

Knuckles

Quick hook balls
CAT 2 / CAT 3

LEVELLING BOX CYLINDERS (LB)

Part No.	Approx. tractor HP	Cylinder Size	Linkage Capacity
LB 2.0	18 - 40 hp	2 x 1 x 150mm	1500kg
LB 2.5	40 - 80 hp	2.5 x 1.25 x 150mm	3000kg
LB 3.0	80 - 120 hp	3 x 1.5 x 150mm	5000kg
LB 3.5	120 - 180 hp	3.5 x 1.75 x 150mm	7000kg
LB 4.0	180 - 220 hp	4 x 2 x 150mm	8000kg
LB 5.0	220 - 280 hp	5 x 2.5 x 150mm	10,000kg
LB 6.0	280 - 350 hp	6 x 3 x 150mm	14,000kg

NZ MADE SINCE 1963

4 YEAR WARRANTY

Up to 3000 psi STOCK

WOOD SPLITTER / AG

WRC®

SPRAYBOOM CYLINDER

Part No.	Bore x Shaft x Stroke	Closed Centres	Open Centres	Base	Shaft mount	Ports
PC 5	1 ½ x ¾ x 305mm	445mm	750mm	SB 1	C 1	¼ M - restrict

FRONT END LOADER CROWD CYLINDER

Part No.	Bore x Shaft x Stroke	Closed Centres	Open Centres	Base	Shaft mount	Ports
PC 10	2 ½ x 1 ½ x 400mm	730mm	1130mm	50 sq tongue	C 20	½ F/M
PC 15 Standard	2 ½ x 1 ½ x 457mm	676mm	1133mm	T 12	C 10	⅜ F/M
PC 20	3 x 1 ½ x 457mm	676mm	1133mm	T 12	C 10	⅜ F/M
PC 40	3 ½ x 1 ¾ x 550mm	1120mm	1670mm	6471	30mm pin	M18 x 1.5 F/M

LOG SPLITTER CYLINDER

Part No.	Bore x Shaft x Stroke	Closed Centres	Open Centres	Base	Shaft mount	Ports	Tonnage
PC 25	3 x 2 x 457mm	640mm	1097mm	SB 11	C 12	¾ F/M	9.6 tonne
PC 30	3 ½ x 2 x 457mm	657mm	1114mm	SB 12	C 12	¾ F/M	13 tonne
PC 45	4 x 2 ½ x 508mm	728mm	1236mm	SB 20	C 32	¾ F/M	17 tonne

TELESCOPIC CYLINDERS

MOTUS stock single-acting lift/hoist cylinders in a variety of sizes, mounting styles and lengths (see table below). These are rated to 3000 PSI. Double-acting telescopic cylinders are available upon request.

Part No.	# of Stages	Stroke	Closed Centres	Base Mount	Spear Mount	Lifting Capacity (T)
73633	2	1081 mm	780mm	Collar Pin	Collar Pin	5
73634	2	1395 mm	937mm	Collar Pin	Collar Pin	6
73635	3	1283 mm	598mm	Mid Trunnion	Ball Joint	8
73636	4	1500 mm	557mm	Base Trunnion	Cross-hole	10
73637	4	1700 mm	507mm	Base Trunnion	Cross-hole	10
73638	5	2150 mm	560mm	Base Trunnion	Cross-hole	10
73639	5	2120 mm	578 mm	Mid Trunnion	Cross-hole	16

"We use MOTUS cylinders on all of our equipment. Their quality is second to none and we always receive our cylinders on time. As a company I would highly recommend them."

David Richards
Kyne Equipment

NZ MADE SINCE 1963

4 YEAR WARRANTY

Up to 3000 psi STOCK

BUILT TO SPEC

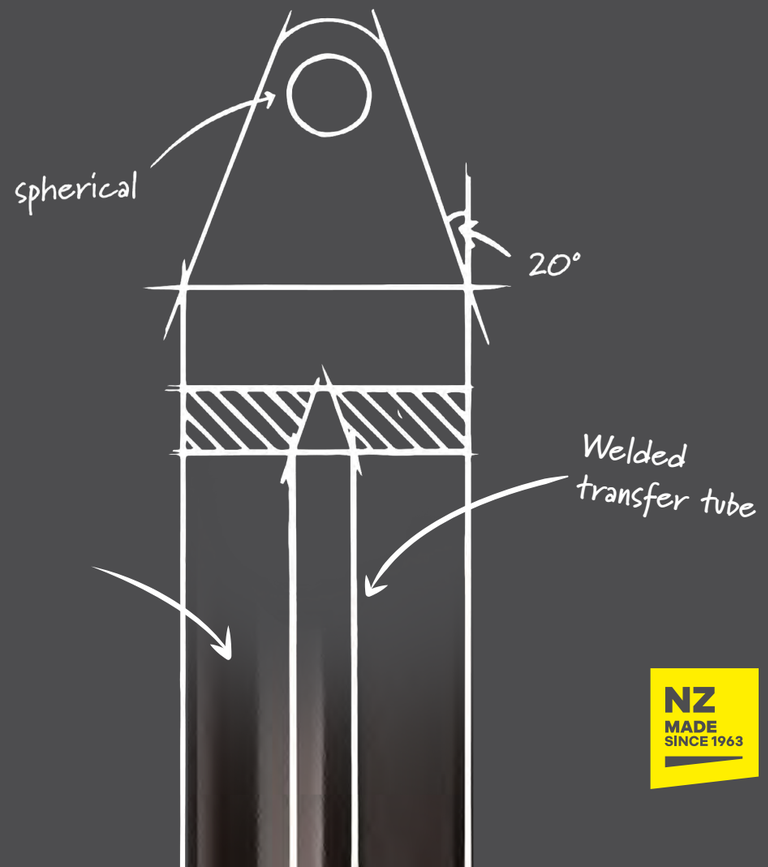
We understand hydraulic cylinders come in all different specifications, and standard cylinder options will not fit every application.

Our design team will work closely with you from creating a simple design right through to a 100% fully customised cylinder to suit your requirements.

Customers love our user friendly Online Cylinder Configurator.

The MOTUS Configurator allows customised cylinders to be designed from scratch less than 5 minutes.

See last page of this catalogue or call us on NZ: **0800 66 88 74** or AU: **1800 839 249**



NZ MADE SINCE 1963

4 YEAR WARRANTY

GENUINE MOTUS PARTS

We stock a large quantity of high quality internal and external cylinder componentry to suit our entire range of cylinders including head/glands, pistons, seal kits, optional extras plus a vast range of mounting options to meet the needs of customers requiring fast cylinder solutions or repairs, all parts are available overnight.

UNBEATABLE CUSTOMER SUPPORT

All you need is your serial number

Every cylinder we build has a unique five digit serial number. We keep a physical and digital copy of every job card made, with decades of records only a few mouse clicks away.

Please quote your distinctive 5 digit code like the one above when calling to make re-ordering parts a breeze.

“Anytime we need cylinder componentry for repairs we call MOTUS Hydraulics and they will have the parts we need in stock and ready to go.”

Adrian Stieller
KRS Hastings

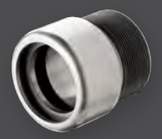
PARTS

WRC DOUBLE ACTING INTERNAL COMPONENTRY



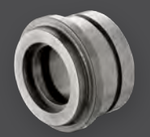

Size	Seal Kit Code	Head	Piston	Keeper Ring Set
1 1/2″ x 3/4″	SK 150075	WR 150075	WR 150PN	1 1/2″
1 1/2″ x 1″	SK 150100	WR 150100	WR 150PN	1 1/2″
2″ x 1″	SK 200100	WR 200100	WR 200P	2″
2″ x 1 1/4″	SK 200125	WRC 200125	WR 200P	2″
2″ x 1 1/2″	SK 200150	WRC 200150	WR 200P	2″
2 1/2″ x 1 1/4″	SK 250125	WRC 250150	WR 250P	2 1/2″
2 1/2″ x 1 1/2″	SK 250150	WRC 250150	WR 250P	2 1/2″
2 1/2″ x 1 3/4″	SK 250175	WRC 250175	WR 250P	2 3/4″
3″ x 1 1/4″	SK 300125	WRC 300125	WR 300P	3″
3″ x 1 1/2″	SK 300150	WRC 300150	WR 300P	3″
3″ x 1 3/4″	SK 300175	WRC 300175	WR 300P	3″
3″ x 2″	SK 300200	WRC 300200	WR 300P	3″
3″ x 2 1/4″	SK 300225	WRC 300225	WR 300P	3″
3″ x 2 1/4″ SS	SK 300225SS	WRC 300225SS	N/A	3″
3 1/2″ x 1 1/2″	SK 350150	WRC 350150	WR 350P	3 1/2″
3 1/2″ x 1 3/4″	SK 350175	WRC 350175	WR 350P	3 3/4″
3 1/2″ x 2″	SK 350200	WRC 350200	WR 350P	4″
4″ x 1 1/2″	SK 400150	WRC 400150	WR 400PN	4″
4″ x 2″	SK 400200	WRC 400200	WR 400PN	4″
4″ x 2 1/2″	SK 400250	WRC 400250	WR 400PN	4″
4″ x 2 3/4″	SK 400275	WRC 400275	WR 400PN	4″
5″ x 2 1/2″	SK 500250	WRC 500250	WR 500PN	5″
6″ x 3″	SK 600300	WRC 600300	WR 600PN	6″

DISPLACEMENT CYLINDER COMPONENTRY

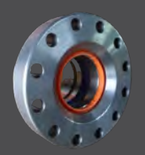
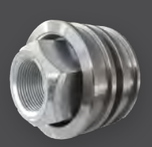
Displacement	Seal Kit	Head
1 1/2″	SKDIS 150	1 1/2″
1 3/4″	SKDIS 175	1 3/4″
2″	SKDIS 200	2″
2 1/4″	SKDIS 225	2 1/4″
2 1/2″	SKDIS 250	2 1/2″
2 3/4″	SKDIS 275	2 3/4″

ULTRA INTERNAL COMPONENTRY

Size	Seal Kit Code	Head / Gland	Cap	Piston
2-1/2″ x 1-1/2″	HD250150	UH 250150	UC 250	WR 250P
3″ x 1-3/4″	HD300175	UH 300175	UC 300	WR 300P
3″ x 2″	HD300200	UH 300200	UC 300	WR 300P
3-1/2″ x 2″	HD350200	UH 350200	UC 350	WR 350P
4″ x 2″	HD400200	UH 400200	UC 400	WR 400PN
4″ x 2-1/2″	HD400250	UH 400250	UC 400	WR 400PN
5″ x 2-1/2″	HD500250	UH 500250	UC 500	WR 500PN

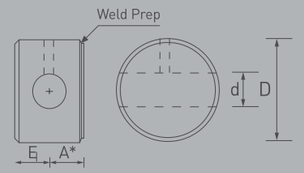
ELITE INTERNAL COMPONENTRY

Size	Seal Kit Code	Head / Gland	Piston
2″ x 1.25″	SKES200125	ES200125	ES200P
2″ x 1.5″	SKES200150	ES200150	ES200P
2.5″ x 1.25″	SKES250125	ES250125	ES250P
2.5″ x 1.5″	SKES250150	ES250150	ES250P
2.5″ x 1.75″	SKES250175	ES250175	ES250P
3″ x 1.5″	SKES300150	ES300150	ES300P
3″ x 1.75″	SKES300175	ES300175	ES300P
3″ x 2″	SKES300200	ES300200	ES300P
3.5″ x 1.75″	SKES350175	ES350175	ES350P
3.5″ x 2″	SKES350200	ES350200	ES350P
3.5″ x 2.5″	SKES350250	ES350250	ES350P
3.5″ x 2.75″	SKES350275	ES350275	ES350P
4″ x 2″	SKES400200	ES400200	ES400P
4″ x 2.5″	SKES400250	ES400250	ES400P
4.5″ x 2.5″	SKES450250	ES450250	ES450P
4.5″ x 3″	SKES450300	ES450300	ES450P
5″ x 2.5″	SKES500250	ES500250	ES500P
5″ x 3″	SKES500300	ES500300	ES500P
5″ x 3.5″	SKES500350	ES500350	ES500P
5.5″ x 3″	SKES550300	ES550300	ES550P
5.5″ x 3.5″	SKES550350	ES550350	ES550P
6″ x 3″	SKES600300	ES600300	ES600P
6″ x 3.5″	SKES600350	ES600350	ES600P
6″ x 4″	SKES600400	ES600400	ES600P

PARTS

SOLID BASES – STANDARD CYLINDER BASE MOUNT

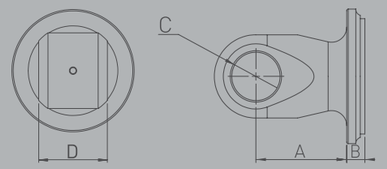


Code	Suits Cylinder with Bore Diameter	[D]	Hole Diameter	[A]	Standard Base Dimension	[E]
SB 1	1.5″	2″	3/4″	19mm	12mm	19mm
SB 2	2″	2.5″	3/4″	19mm	12mm	19mm
SB 4	2″	2.5″	1″	25mm	12mm	25mm
SB 9	2.5″	3″	3/4″	25mm	12mm	25mm
SB 10	2.5″	3″	1″	25mm	12mm	25mm
SB 11	3″	3.5″	1″	25mm	12mm	25mm
SB 12	3.5″	4″	1″	25mm	16mm	25mm
SB 20	4″	4.5″	1 1/4″	32mm	25mm	32mm

CLEVISES – FIT BASE & SHAFT

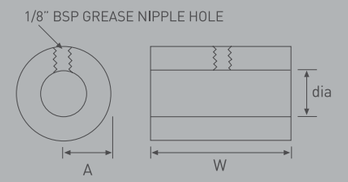
Code	Hole Diameter	[A]	[G]	[W]	[H]	Notes
CL 1	3/4″	50mm	19mm	38mm	50mm	FORMED
CL 7	7/8″	60mm	28mm	52mm	40mm	MACHINED
CL 10	1″	64mm	28mm	52mm	60mm	FORMED
CL 11	1″	64mm	51mm	90mm	50mm	CAST
CL 12	1″	80mm	34mm	60mm	50mm	CAST
CL 20	1 - 1 1/4″	64mm	51mm	90mm	60mm	CAST

TONGUE / BASE



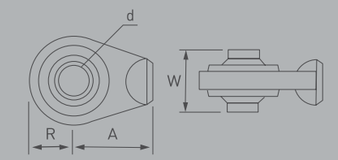
Code	Suits Cylinder with Bore Diameter	C′ (Hole Diameter)	[A] (mm)	[B]	D′ (Width of tongue)
6494	1.5″	16 or 5/8″	26	12	20
6495	1.5″	18	26	12	20
6438	1.5″	3/4″	40	12	25
6701-1	2″	3/4″	40	12	25
6354	2″	7/8″	28	12	25
6549	2″	7/8″	50	12	25
6690	2.5″	1″	50	12	32
6691	2.5″	1″	50	12	40
6692	2.5″	1″	50	12	50
6693	3″	1″	50	12	32
6694	3″	1″	50	12	40
6695	3″	1″	50	12	50
6696	3″	1.25″	60	12	40
6697	3″	1.25″	60	12	50
6702-1	3.5″	1.25″	60	16	50

COLLARS – STANDARD SHAFT MOUNT



Code	To suit Pin Diameter	[A]	[W]	DIA
6665	5/8″	19mm	20mm	38.1mm
C 02	5/8″	19mm	51mm	38.1mm
C 1	3/4″	19mm	25mm	
C 2	3/4″	19mm	32mm	
C 3	3/4″	19mm	40mm	
C 4	3/4″	19mm	51mm	
C 5	3/4″	19mm	63mm	
C 6	3/4″	19mm	76mm	38.1mm
C 10	1″	25mm	40mm	50.8mm
C 11	1″	25mm	50mm	
C 12	1″	25mm	63mm	
C 13	1″	25mm	76mm	
C 14	1″	25mm	89mm	
C 15	1″	25mm	100mm	
C 16	1″	25mm	115mm	
C 20	1 1/8″	25mm	50mm	50.8mm
C 30	1 1/4″	28mm	50mm	57mm
C 31	1 1/4″	28mm	63mm	
C 32	1 1/4″	28mm	76mm	
C 33	1 1/4″	28mm	89mm	
C 34	1 1/4″	28mm	102mm	
C 35	1 1/4″	28mm	115mm	57mm
C 41	1 1/2″	38mm	63mm	76.2mm
C 45	1 1/2″	38mm	76mm	
C 46	1 1/2″	38mm	100mm	
C 47	1 1/2″	38mm	120mm	76.2mm

BALL ENDS – BASE OR SHAFT MOUNT



Code	To suit Pin Size (mm)	Cat	[A]	[W]	[R]
BE 1	3/4″	1	60mm	44mm	32mm
BE 10	1″	2	65mm	51mm	38mm
BE 21	1 1/4″	3	65mm	51mm	46mm

NZ MADE SINCE 1963

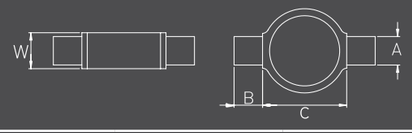
4 YEAR WARRANTY

PARTS

HD FLANGE [PN16]

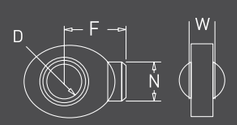
Nominal Tube	Slip on Bore ID	Outside DIA Flange	Thickness	Bolt Circle DIA	Number of Holes	DIA of holes
1 1/2″	49.5mm	150mm	16mm	110mm	4	14mm
2″	61.9mm	165mm	20mm	125mm	4	18mm
2 1/2″	74.6mm	185mm	20mm	145mm	4	18mm
3″	90.6mm	200mm	25mm	160mm	8	18mm
4″	116.0mm	220mm	32mm	180mm	8	18mm
5″	143.7mm	250mm	40mm	210mm	8	18mm
6″	170.6mm	285mm	40mm	240mm	8	22mm

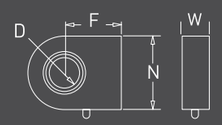
TRUNNIONS



Code	Pin Diameter	[B] (pin length)	[C]	Width	To suit DA cylinder bore size
TN-10	3/4″	19	75	25	2″
TN-11	1″	25	75	32	2″
TN-25	1.25″	32	90	40	2.5″
TN-31	1.25″	32	110	40	3″
TN-40	1.25″	32	120	40	3.5″
TN-41	1.5″	38	120	50	3.5″
TN-51	1.75″	44	150	60	4″

ROD ENDS





Code	[D] (Pin Diameter)	[F]	[W]	Neck Diameter [N]
Round End (SK)				
SK-20	20	38	16	27.5
SK-25	25	45	20	33.5
SK-30	30	51	22	40
SK-35	35	61	25	47
SK-40	40	69	28	52
SK-45	45	77	32	58
SK-50	50	88	35	62
Tongue End (SF)				
SF-20	20	38	19	50
SF-25	25	45	23	55
SF-30	30	51	28	65
SF-35	35	61	30	83
SF-40	40	69	35	100
SF-45	45	77	40	110
SF-50	50	88	40	123

CUSTOM COMPONENTS

CYLINDER TRANSFER TUBES

If you want both hose connections side by side, or haven't got enough room to fit a hose at the shaft end.

DOUBLE ENDED CYLINDERS

Equal displacement cylinders are perfect for steering, side shift or precision applications.

BUSHED ENDS

We can add bushes to your cylinder if it rotates a lot during travel. Press-fit and easy to replace. Variety of materials.

CNC CUSTOM BASE ENDS

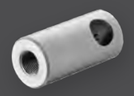
Machined from a billet of steel for consistency. Allows you to combine porting with mounting.

SPECIAL COLLAR

Designed to fit your own clearances.

QUICK HOOK

Quick snap toplink hooks connect to implements or other machinery much quicker than conventional systems.



THREADED SHAFT END

Add a thread to your ends for extra adjustment.

PORTS

1040 Grade material - Heavy wall.
Excellent for welding.

MILESTONES OF A NEW ZEALAND SUCCESS STORY

1960

RH Currie starts making orchard equipment and hydraulic cylinders from his shed in Hastings, New Zealand.

1972

Making two DA ram designs - the HD screwed head/ split piston & flat circlip/ aluminium piston design and found niche supplying external customers with a high quality, very compact cylinder with no wasted space.

1985

WRC Series Patent applied for. This was a simple, robust variation on the wire clip design which overcame any shortcomings. Still our most popular cylinder by far.

1988

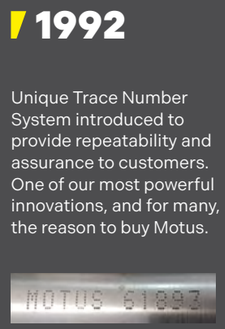
After creating a reputation for producing top quality, zero-creep Toplink cylinders to suit particular tractors, we introduced a standard Hydraulic Toplink Range. MOTUS cylinders can be seen at World Plowing championships.

1990

Introduction of the WRC hydraulic cylinder range to the market.

1992

Unique Trace Number System introduced to provide repeatability and assurance to customers. One of our most powerful innovations, and for many, the reason to buy Motus.



1995

First double acting telescopic cylinders produced.

2006

Due to the rapid increase in OEM sales a purpose built building is erected in Barnes Place, Hastings – quadruple the size.

2009

Purchased the Hydraulic Cylinder Division of Lyco Australia (est. 1971).

2012

Purchased Gorrie Engineering.

2013

100HR Delivery Promise on the Rambuilder Range.

2015

50 Year Anniversary

2D Online Configurator website launch.

2018

MOTUS 3D Online Configurator website launch.

MAX (now ELITE) series cylinder range launch.

2022

First branch in Australia started based in Yatala, Queensland.

2023

MOTUS celebrates 60 years in business.

Shift to new state-of-the-art manufacturing facility in Hastings,NZ.

READY FOR THE FUTURE

Systems development to enhance manufacturing capabilities for serving OEM customers.

BUILD YOUR CYLINDER ONLINE IN 5 MINUTES

Create and account and recieve quotes, drawings and 3D model STEP files of your configurations via email just minutes after submitting them.

Our simple Online Cylinder Configurator enables users to enjoy the experience of piecing together their own cylinder from scratch. It's fast, intuitive and very easy to use!
As soon as we receive your drawing and confirmation of order, you can expect the cylinder to be built, boxed and dispatched in 100 hours or less.

The MOTUS Configurator is based on using 100% standard parts off the shelf, from high grade tube and chrome bar to an abundant choice or popular mounting options, you can be assured that we will have what you require in stock and ready to go. We take pride in being the fastest and most consistent cylinder manufacturer in Australasia.

100 HOUR PROMISE

Our promise to you is to have any cylinder created from our online configurator built, painted, boxed and sent within 100 hours from confirmation of order or the cylinder is free.

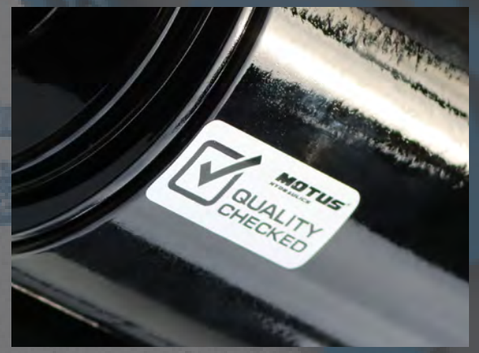
NZ MADE SINCE 1963

4 YEAR WARRANTY

ISO CERTIFICATION

At MOTUS Hydraulics we aim to provide products to high-quality end Original Equipment manufacturers and reputable dealers in many industries. MOTUS feels it extremely important to uphold the quality of every cylinder manufactured and to standardise each quality control procedure to an ISO (International Standard for Organisation) level.

MOTUS has officially been certified with 3 ISO standards: ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018.



QAS International
ISO 9001:2015
REGISTERED COMPANY
Certificate No. NZP1120CA

The number appearing after ISO classifies the standard. All standards within the ISO 9000 family refer to quality management. ISO 9001 is among ISO's best-known standards, and it defines the criteria for meeting a number of quality management principles. It helps businesses and organizations be more efficient and improve customer satisfaction.

QAS International
ISO 14001:2015
REGISTERED COMPANY
Certificate No. NZP1120EN

ISO 14001 is an internationally agreed standard that sets out the requirements for an environmental management system. It helps organizations improve their environmental performance through more efficient use of resources and reduction of waste, gaining a competitive advantage and the trust of stakeholders

QAS International
ISO 45001:2018
REGISTERED COMPANY
Certificate No. NZP1120HS

ISO 45001 is designed to prevent work-related injury and ill-health and to provide safe and healthy workplaces. As an international standard, ISO 45001 crosses geographic, political, economic, commercial and social boundaries. This sets a single benchmark for the management of occupational health and safety.

CHARITY SUPPORT

2023 Smarrt Supporter
RAPID RELIEF TEAM

MOTUS is humbled to be a Smarrt Supporter of the Rapid Relief Team (RRT) NZ. RRT delivers hope and relief to people across the globe. Whether it be fire, flood or humanitarian need, RRT expands their support services to meet the crisis at hand.

Established by the Plymouth Brethren Christian Church (PBCC) in 2013, RRT offers quality catering assistance and tangible support to charities, government and emergency services confronting some of humankind's greatest challenges.

HAWKE'S BAY RESCUE HELICOPTER TRUST
LOWE CORPORATION RESCUE HELICOPTER

The Hawke's Bay Rescue Helicopter Trust provide a vital service for thousands of New Zealanders in need each year, performing lifesaving missions from accidents to search and rescue work. The service operates 24 hours 7 days a week, and is free to everyone in our community.

MOTUS Hydraulics is proud to be a sponsor of this trust so they can continue to perform their valuable services and help those in need.