

**MOTUS**  
HYDRAULICS



# CYLINDER 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, each year we design and build 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

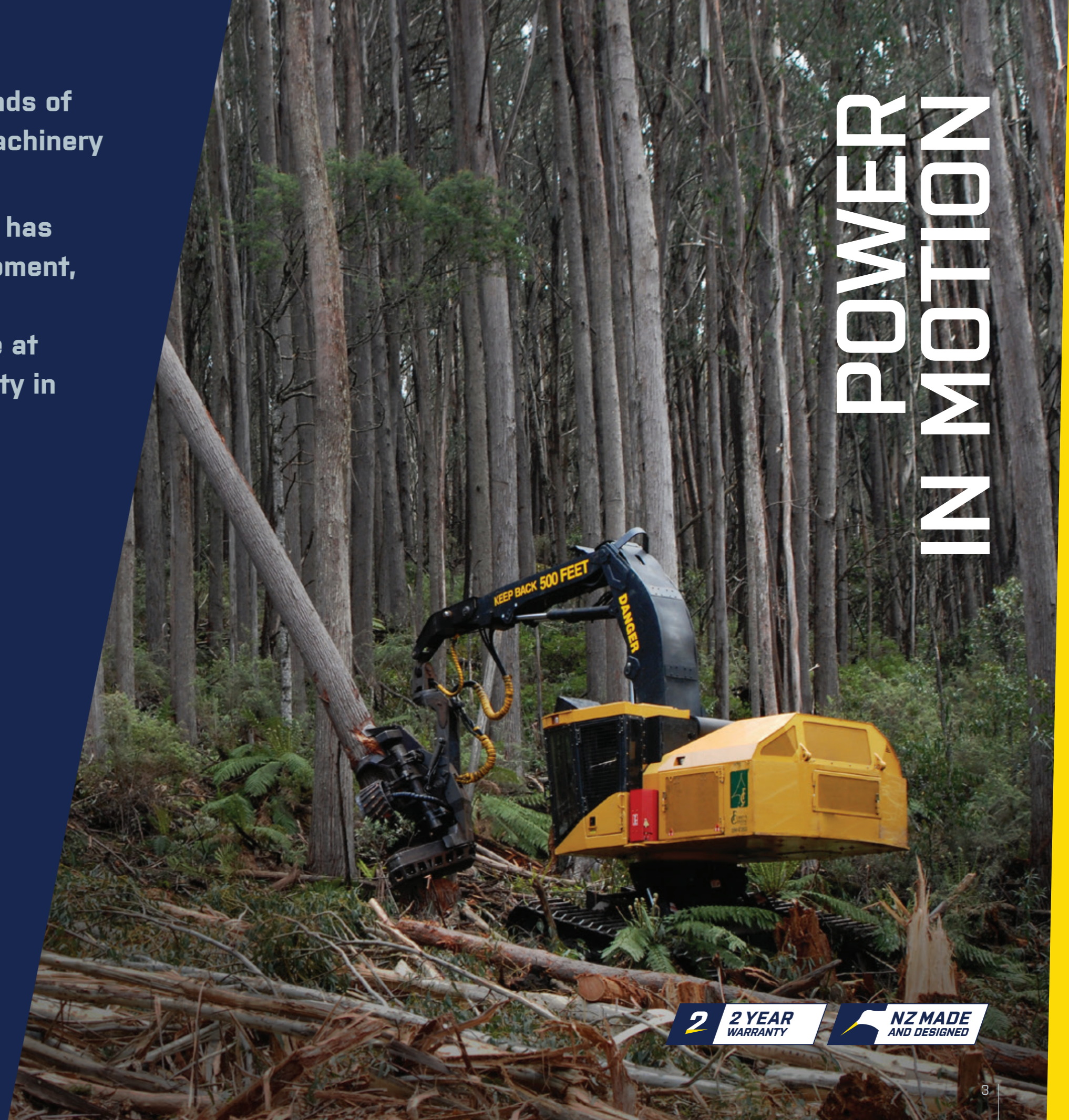
Motus componentry and build quality is second-to-none and we back every hydraulic cylinder we sell with a full 2 year warranty. We can do this because we control every step of the process from order to dispatch.

#### ■ GLOBAL CUSTOMER BASE

You can find Motus Cylinders working hard in all corners of the globe.



POWER  
IN MOTION



# 100% QUALITY, GUARANTEED.

## UNIQUE NUMBERING

Motus cylinders can be matched to any of our cylinders sold during the last 20 years. Making re-ordering easy. Every 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.



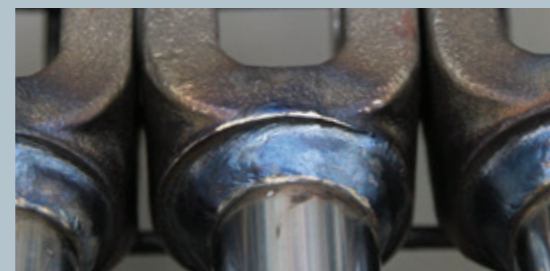
## 4-STAGE CLEANING PROCESS

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 the 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.



# CONTENTS

## CYLINDER TECHNOLOGIES 6

### 01 STOCK 8

#### READY TO DELIVER

Solid Base - Collar	10
Clevis - Clevis	12
Tongue - Collar	14
Premium Toplink	16
Box Leveller	17
Wood Splitter AG	18

## BUILT TO SPEC 21

### 02 WRC 22

#### PROVEN PERFORMER

Tried and tested	24
WRC Cylinder Sizing	26
Displacement Cylinders	28

### 03 ULTRA 30

#### THE NEW STANDARD

Added Rigidity	32
Ultra Cylinder Sizing	34

### 04 MAX 36

#### BUILT TO RESIST

Maximum Strength	38
Max Cylinder Sizing	40
OEM Cylinders	43
Technical Information	44

## GENUINE MOTUS PARTS 46

Parts	48
Custom Components	53

## MILESTONES - OUR STORY 54

## BUILD A CYLINDER ONLINE 56



# CYLINDER TECHNOLOGIES

## 01 WRC

- Unique wire clip head design for quick and easy servicing.
- Extremely compact componentry allowing for optimal stroke.
- Full thickness tube throughout for superior strength.
- Premium quality seals.
- Encompassing 100% of our stock 'off the shelf' range.
- Fully customisable using our cutting edge online configurator.
- Proven performer in agriculture and industrial standard duty applications.

## 02 ULTRA

- Robust external threaded cap design.
- Heavy duty grade seals.
- High mechanical strength.
- Well suited to heavy duty industrial and commercial applications.
- Compatible with our stock 'off the shelf' mountings selection.
- Full customisable cylinders and mounting options offered.

## 03 MAX

- Super heavy duty 4140 grade external threaded cap design.
- The pinnacle of our range integrating the best material available.
- Super heavy duty 10pc seal kit.
- Built tough to deal with the harshest applications and conditions.
- Cone lock positive piston locking system.
- Well suited to forestry, heavy industrial, mining and commercial applications.
- 100% fully customised cylinder to your requirements.

**WRC** TECHNOLOGY

UP TO  
**3000 PSI**



Customisable using standard mounting options (pg50-52)

OR

Fully customisable to your specifications

⊕ ONLINE CONFIGURATOR PG-56

**ULTRA** TECHNOLOGY

UP TO  
**4000 PSI**



Customisable using standard mounting options (pg50-52)

OR

Fully customisable to your specifications

**MAX** TECHNOLOGY

UP TO  
**5000 PSI**



Fully customisable to your specifications

**NZ MADE**  
AND DESIGNED

# STOCK 101



"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

**WRC** TECHNOLOGY



### SOLID BASE - COLLAR

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



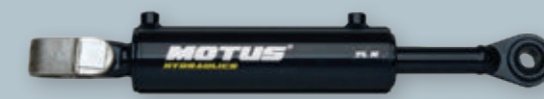
### CLEVIS - CLEVIS

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.



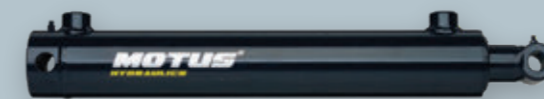
### PREMIUM TOP-LINK

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.



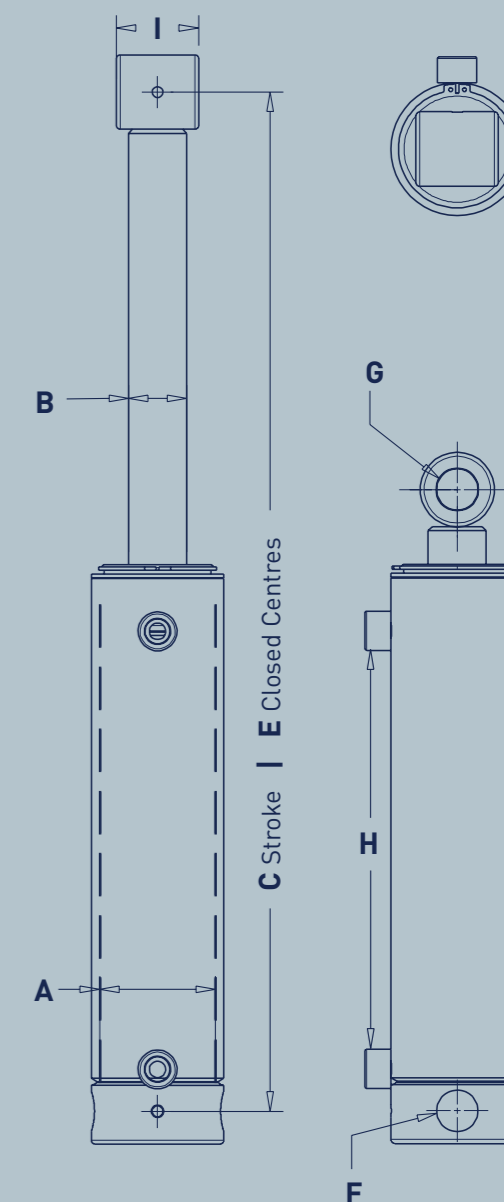
### WOOD SPLITTER / AG

Our standard range of Logsplitter, Crowding and Sprayboom cylinders.

# 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



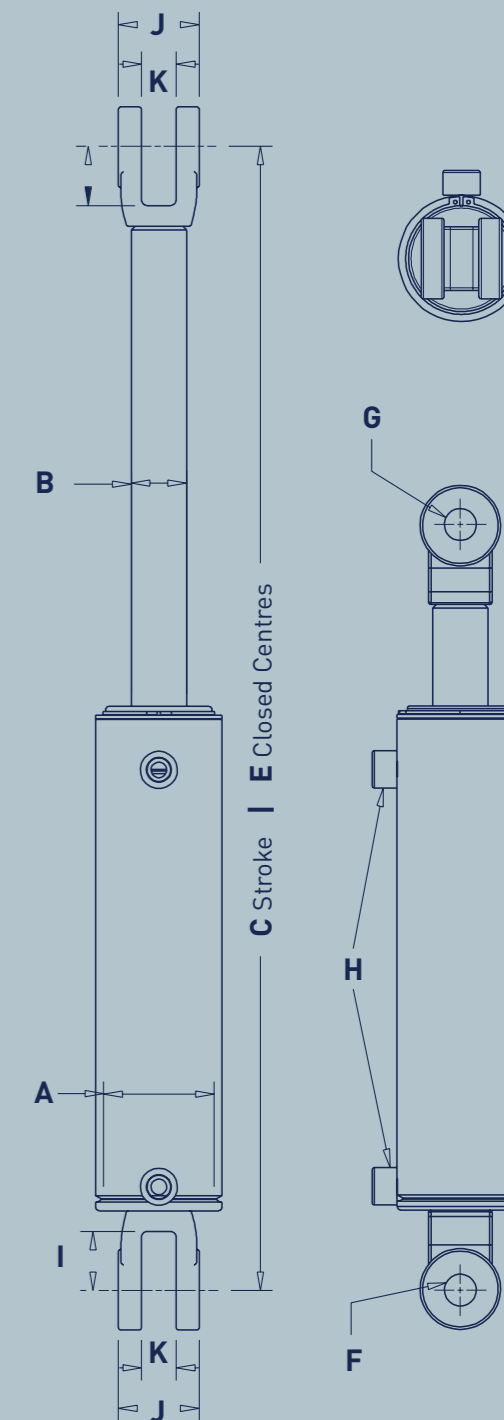
**PLEASE NOTE** We offer a complete blank range in all of the sizes above with short lead times.



# CLEVIS – CLEVIS CYLINDER (CL-CL)



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]	Shaft 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



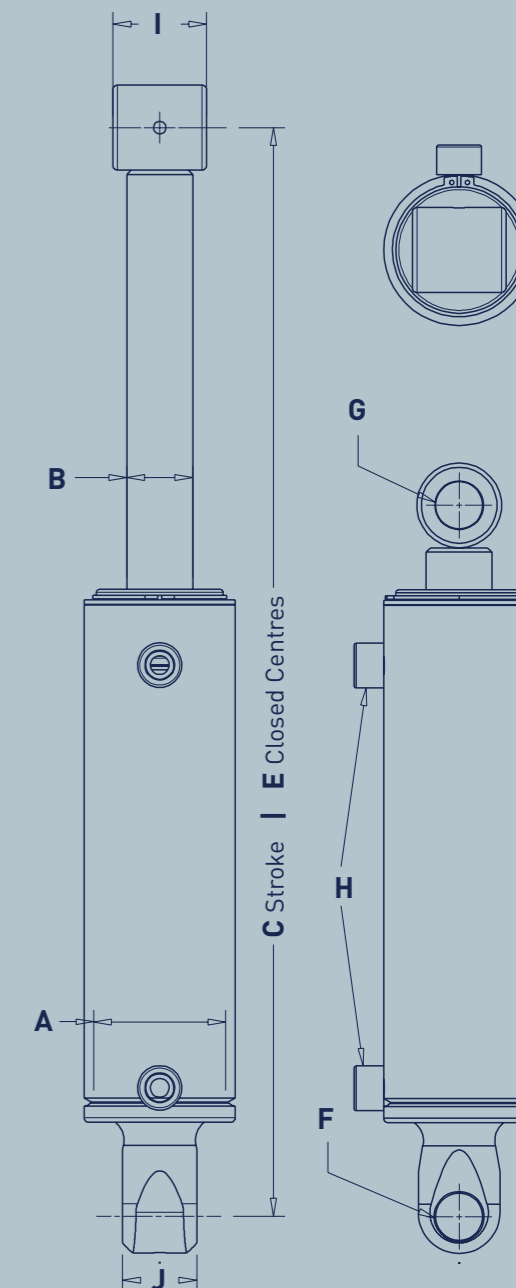
**PLEASE NOTE** We offer a complete blank range in all of the sizes above with short lead times.



# TONGUE – COLLAR CYLINDER (T-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]	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

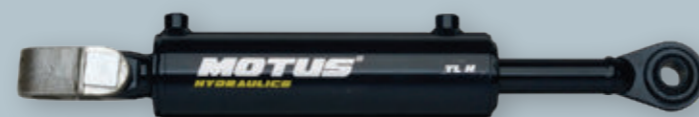


**PLEASE NOTE** We offer a complete blank range in all of the sizes above with short lead times.





# PREMIUM TOP LINK CYLINDERS (TL)

**WRC** TECHNOLOGY


	Power	Code	Bore x Shaft x Stroke	Closed	Open	Mounting Tractor	Mounting Spear	Tonnage Push	Tonnage Pull
<b>Most tractors</b>	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 1/2" x 1 1/4" x 250mm	535mm	785mm	CAT 1	CAT 2	4.90	3.68
	30-70hp	TL B2	2 1/2" x 1 1/4" x 200mm	459mm	659mm	CAT 1	CAT 2	4.90	3.68
	70-130hp	TL C	2 1/2" x 1 1/4" x 250mm	566mm	816mm	CAT 2	CAT 2	4.90	3.68
	110-150hp	TL D	3" x 1 1/2" x 250mm	566mm	816mm	CAT 2	CAT 2	7.06	5.30
<b>John Deere</b>	140-200hp	TL E	3 1/2" x 1 3/4" x 300mm	680mm	980mm	CAT 3	CAT 3	9.62	3.68
	60-120hp	TL F	2 1/2" x 1 1/4" x 250mm	538mm	788mm	20mm ball	CAT 2	4.90	3.68
	100-130hp	TL G	2 1/2" x 1 1/4" x 250mm	574mm	824mm	Knuckle	CAT 2	4.90	3.68
<b>Knuckle type end (suits most brands)*</b> <small>Knuckles available in 4 sizes: 20mm, 1", 28mm, 32mm (Cat 1, 2, 28mm, 3)</small>	130-170hp	TL H	3" x 1 1/2" x 250mm	574mm	824mm	Knuckle	CAT 2	7.06	5.30
	130-170hp	TL H1	3" x 1 1/2" x 250mm	654mm	904mm	Knuckle	CAT 2	7.06	5.30
	180-240hp	TL H2	3 1/2" x 1 3/4" 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
<b>Valtra, MF &amp; Kubota</b>	90-120hp	TL O	2 1/2" x 1 1/4" x 300mm	595mm	895mm	CAT 2	CAT 2	4.90	3.68
	110-150hp	TL P	3" x 1 1/2" x 300mm	595mm	895mm	CAT 2	CAT 2	7.60	5.30
<b>Case CX</b>	90-120hp	TL Q	2 1/2" x 1 1/4" x 250mm	537mm	787mm	Tongue	CAT 2	4.90	3.68
	110-150hp	TL Q2	3" x 1 1/2" x 250mm	537mm	787mm	Tongue	CAT 2	7.60	5.30
<b>jd5500 10 series, new holland</b>	70 - 130hp	TL R	2 1/2" x 1 1/4" x 200mm	500mm	700mm	CAT 2 (50w)	CAT 2	4.90	3.68
<b>jd5500 20 series</b>	70 - 130hp	TL R2	2 1/2" x 1 1/4" x 200mm	500mm	700mm	CAT 2 (44w)	CAT 2	4.90	3.68
<b>Ferrari</b>	70 - 130hp	TL S	2 1/2" x 1 1/4" 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 topline 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

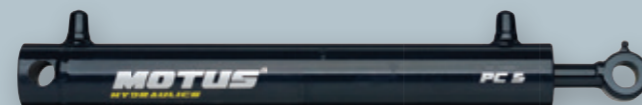
**2** 2 YEAR WARRANTY

**NZ MADE AND DESIGNED**

# AG / WOOD SPLITTER

**WRC** TECHNOLOGY

## SPRAYBOOM CYLINDER



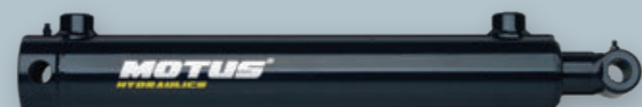
Part No.	Bore x Shaft x Stroke	Closed Centres	Open Centres	Base	Shaft mount	Ports
PC 5	1 ½ x ¾ x 305mm	445mm	750mm	SB 1	C 1	¼ M - restrict

## 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	¾ F/M
PC 20	3 x 1 ½ x 457mm	676mm	1133mm	T 12	C 10	¾ 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

**PLEASE NOTE** These agriculture 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.

**2** 2 YEAR  
WARRANTY

**NZ MADE  
AND DESIGNED**



"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

# BUILT TO SPEC

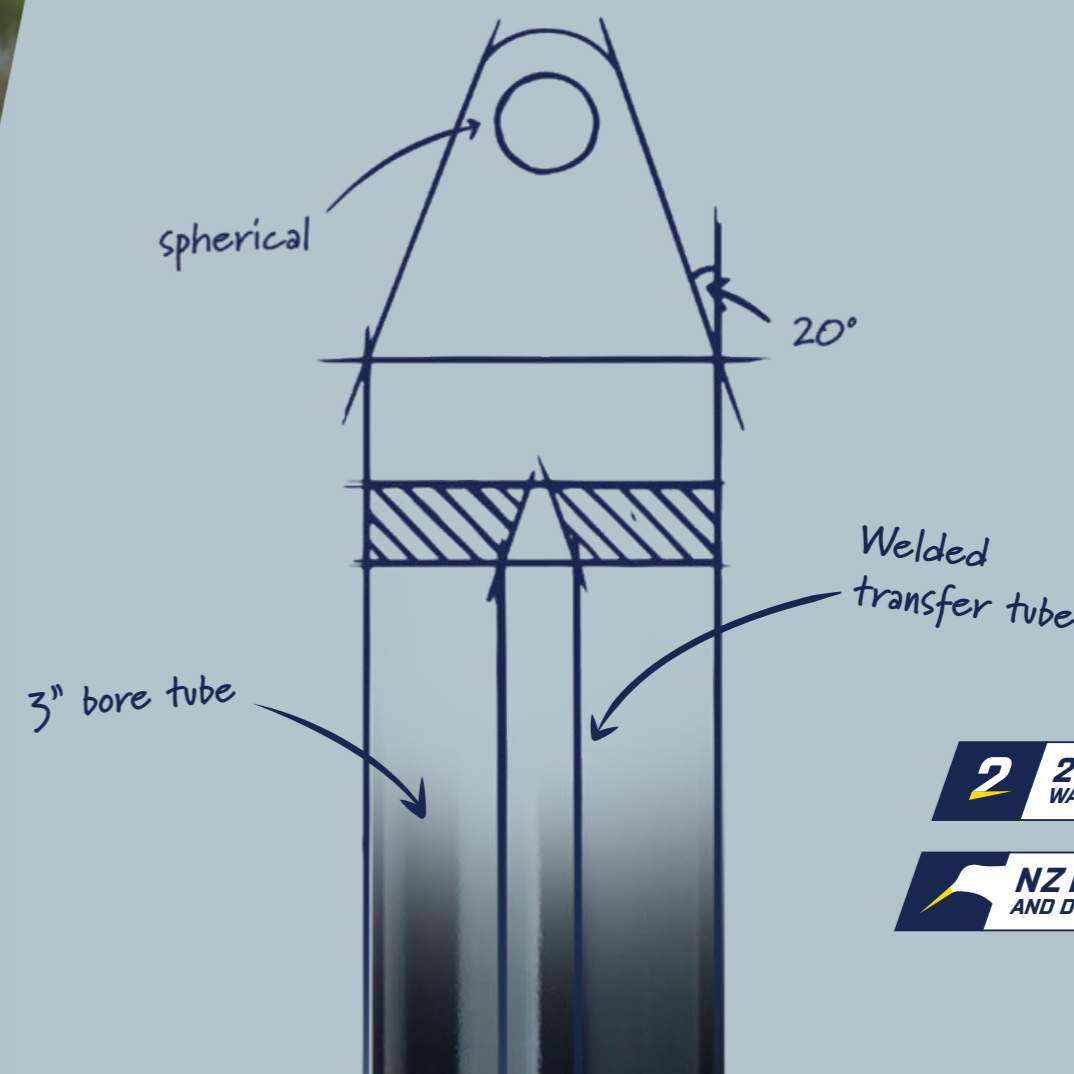
We understand hydraulic cylinders come in all different specifications, and standard cylinder options will not fit every application.

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 **0800 66 88 74**.



**2** 2 YEAR WARRANTY

**NZ MADE AND DESIGNED**

# WRC<sup>TM</sup> 02

NEILO  
Equipment

"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

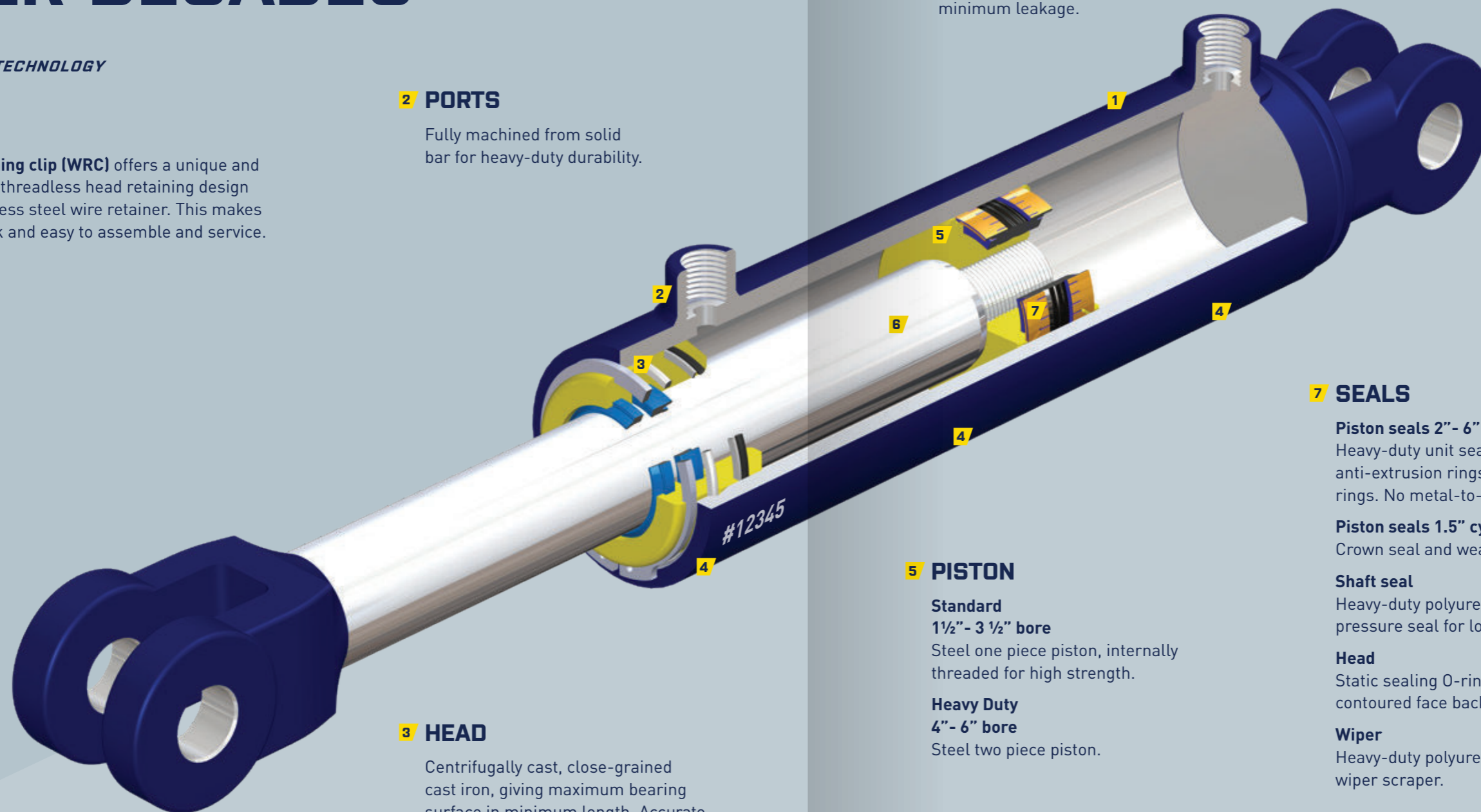


Agriculture

# TRIED AND TESTED OVER DECADES

**WRC** TECHNOLOGY

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.



## 2 PORTS

Fully machined from solid bar for heavy-duty durability.

## 3 HEAD

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 TRACE NUMBER

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

## 1 BARREL

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

## 5 PISTON

**Standard**  
1½" - 3 ½" bore

Steel one piece piston, internally threaded for high strength.

**Heavy Duty**  
4" - 6" 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" - 6" 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.

### STANDARD MOUNTING OPTIONS



SOLID BASE

CLEVIS

ROD END

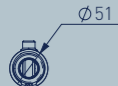










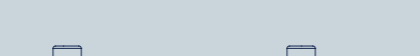




BALL END

COLLAR

TONGUE

# WRC CYLINDER SIZING



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\" WRC	1.5\" BORE, 1/4\" WALL (TUBE O.D 50.8MM)	<ul style="list-style-type: none"> <li>• 0.75\" SHAFT</li> <li>• 1.0\" SHAFT</li> </ul>	51mm	38.1mm (1 1/2\")	12mm	3mm	30mm		36mm	0mm	12mm	1/4\" F/M
	 2\" WRC	2\" BORE, 1/4\" WALL (TUBE O.D 63.5MM)	<ul style="list-style-type: none"> <li>• X1.0\" SHAFT</li> <li>• X1.25\" SHAFT</li> <li>• [X1.5\" SHAFT]</li> </ul>	64mm	50.8mm (2\")	12mm	3mm	38mm		51mm (60mm)	10mm (0mm)	12mm	1/4\" F/M
	 2.5\" WRC	2.5\" BORE, 1/4\" WALL (TUBE O.D 76.2MM)	<ul style="list-style-type: none"> <li>• X1.0\" SHAFT</li> <li>• X1.25\" SHAFT</li> <li>• X1.5\" SHAFT</li> <li>• X1.75\" SHAFT</li> </ul>	76mm	63.5mm (2 1/2\")	12mm	3mm	38mm		51mm	10mm	12mm	3/8\" F/M
	 3\" WRC	3\" BORE, 1/4\" WALL (TUBE O.D 88.9MM)	<ul style="list-style-type: none"> <li>• X1.25\" SHAFT</li> <li>• X1.5\" SHAFT</li> <li>• X1.75\" SHAFT</li> <li>• X2\" SHAFT</li> <li>• [X2.125\" SHAFT]</li> </ul>	89mm	76.2mm (3\")	12mm	3mm	45mm		51mm  (83mm)	10mm	12mm	3/8\" F/M 1/2\" F/M
	 3.5\" WRC	3.5\" BORE, 1/4\" WALL (TUBE O.D 101.9MM)	<ul style="list-style-type: none"> <li>• X1.5\" SHAFT</li> <li>• X1.75\" SHAFT</li> <li>• X2\" SHAFT</li> <li>• [X2.75\" SHAFT]</li> </ul>	102mm	88.9mm (3 1/2\")	16mm	3mm	45mm		64mm	10mm	12mm	1/2\" F/M
	 4\" WRC	4\" BORE, 5/16\" WALL (TUBE O.D 118MM)	<ul style="list-style-type: none"> <li>• X1.5\" SHAFT</li> <li>• X1.75\" SHAFT</li> <li>• X2\" SHAFT</li> <li>• X2.5\" SHAFT</li> </ul>	118mm	101.6mm (4\")	25mm	3mm	76mm	45mm	64mm	10mm	20mm	1/2\" F/M
	 5\" WRC	5\" BORE, 3/8\" WALL (TUBE O.D 146MM)	<ul style="list-style-type: none"> <li>• X2.5\" SHAFT</li> <li>• X3\" SHAFT</li> <li>• X3.5\" SHAFT</li> </ul>	146mm	127mm (5\")	25mm	3mm	100mm	60mm	76mm	10mm	20mm	3/4\" F/M
	 6\" WRC	6\" BORE, 3/8\" WALL (TUBE O.D 171MM)	<ul style="list-style-type: none"> <li>• X3\" SHAFT</li> <li>• X3.5\" SHAFT</li> </ul>	171mm	152mm (6\")	40mm	8mm	100mm	65mm	76mm	10mm	20mm	3/4\" F/M

# DISPLACEMENT CYLINDERS



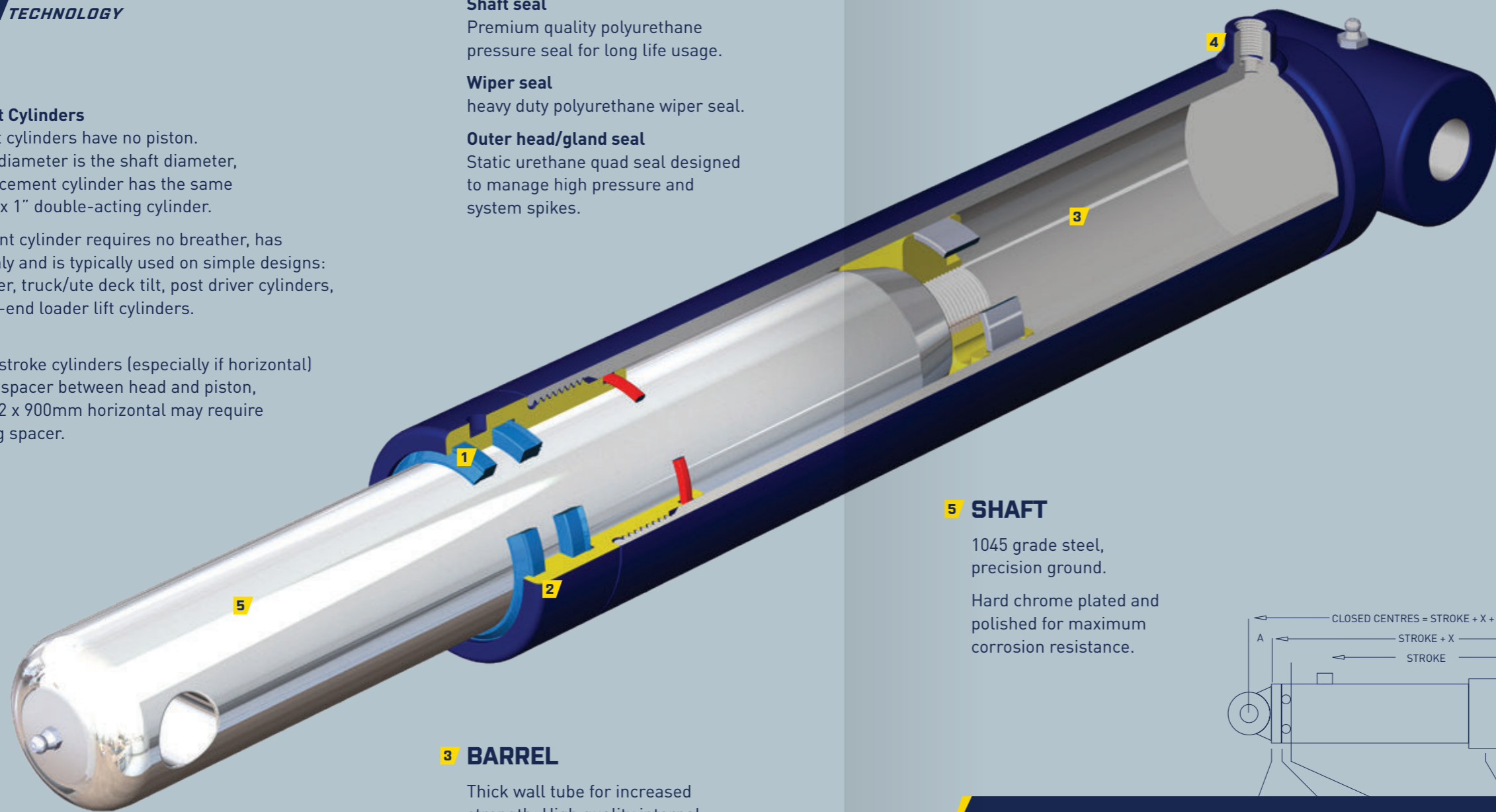
## Displacement Cylinders

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. 2 1/2 x 1 1/2 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.

### 3 BARREL

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

### 4 PORTS

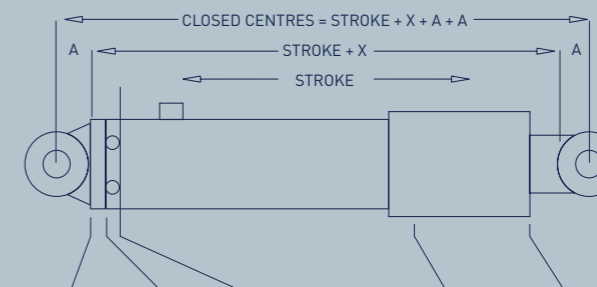
Ports are fully machined from solid bar for durability.

### 2 HEAD / GLAND

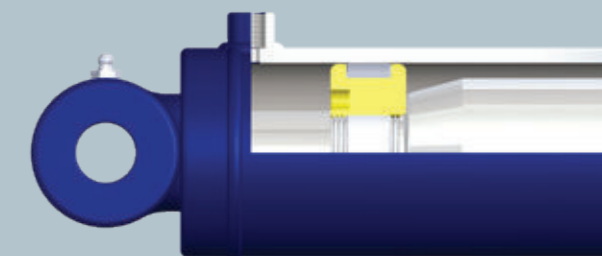
3D/U400 High grade close grain cast iron threaded head, designed tough to endure operating shock and loading.

### 5 SHAFT

1045 grade steel, precision ground.  
Hard chrome plated and polished for maximum corrosion resistance.

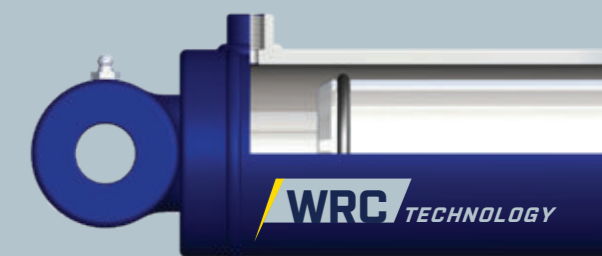


Tube ID	Shaft Size	Std Base	Stop	Stroke	Head [mm]	Shaft Extension	Standard Port Size [BSP]
2"	1 1/2"	12mm	6mm		76mm	12mm	3/8" FM
2 1/2"	1 3/4"	12mm	6mm		76mm	12mm	3/8" FM
2 1/2"	2"	12mm	6mm		89mm	12mm	3/8" FM
3"	2 1/2"	12mm	10mm		102mm	12mm	1/2" FM
3"	2 3/4"	12mm	10mm		102mm	12mm	1/2" FM



### 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.



# ULTRA 03

"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.

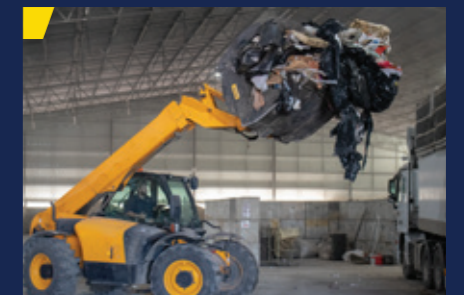
Rated to a continuous operating pressure of 4000psi and a safety rating of 3:1 the Motus ULTRA represents outstanding value for money.



### COMMON APPLICATIONS



Construction



Waste Management



# ADDED RIGIDITY FOR ULTIMATE PERFORMANCE

## ULTRA TECHNOLOGY

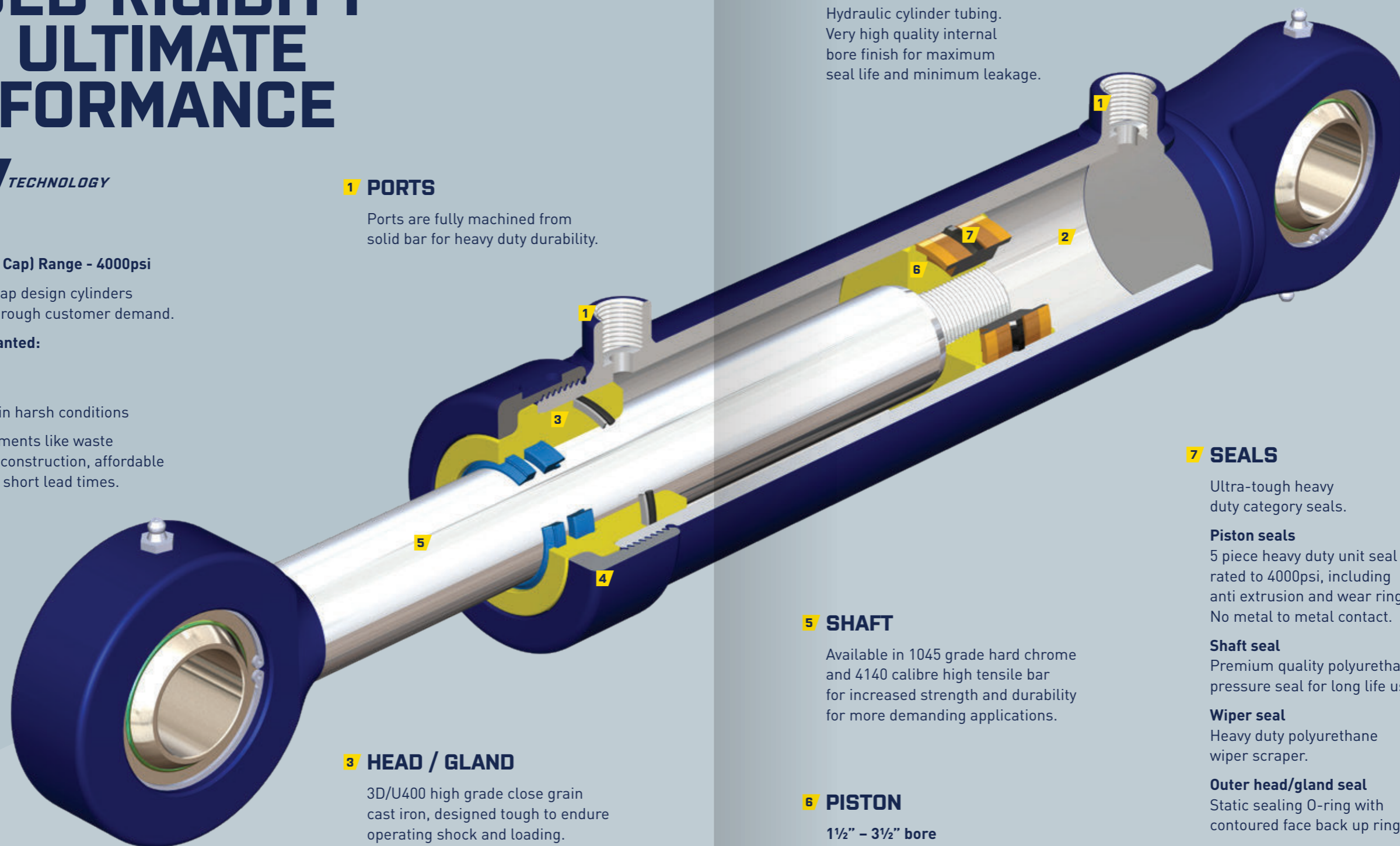
### ULTRA (Threaded Cap) Range - 4000psi

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.

### 3 HEAD / GLAND

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

### 4 GLAND CAP

1045 grade threaded cap for added rigidity and strength.

### 2 BARREL

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

### 5 SHAFT

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

### 6 PISTON

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

**4" – 6" bore**  
Steel two-piece piston with positive locking nut creating optimum strength.

### 7 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.

### STANDARD MOUNTING OPTIONS



SOLID BASE

CLEVIS

ROD END

BALL END

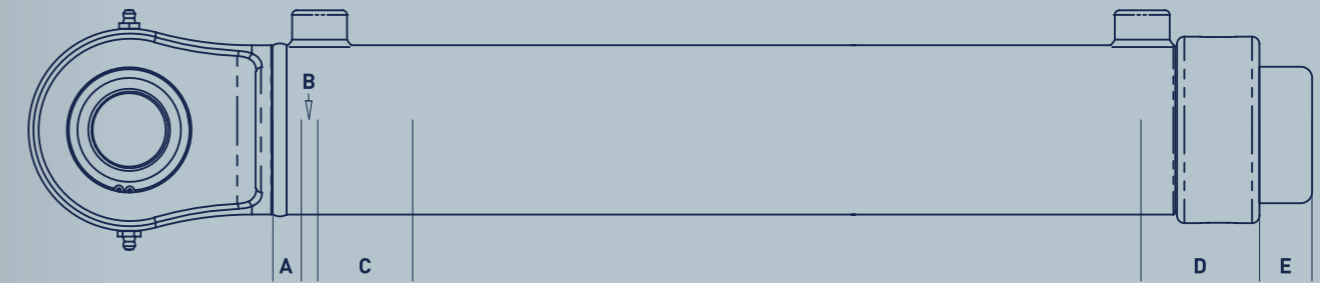
COLLAR

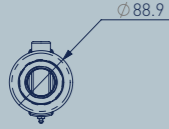

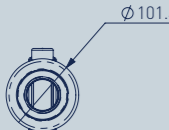

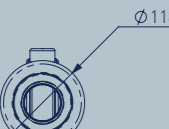

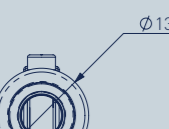
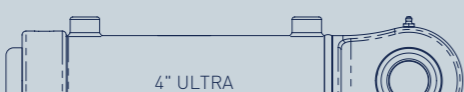
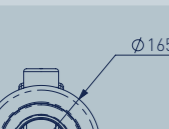
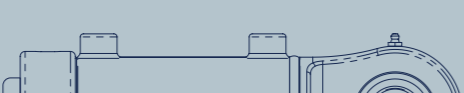


TONGUE

**2** 2 YEAR WARRANTY

**NZ MADE AND DESIGNED**

# ULTRA CYLINDER SIZING



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" ULTRA	2.5" BORE, 1/4" WALL (TUBE O.D 76.2MM)	<ul style="list-style-type: none"> <li>• 1.25" SHAFT</li> <li>• 1.5" SHAFT</li> </ul>	76mm	89mm	63.5mm (2 1/2")	12mm	3mm	38mm	51mm	12mm	3/8" F/M
	 3" ULTRA	3" BORE, 5/16" WALL (TUBE O.D 92.06MM)	<ul style="list-style-type: none"> <li>• X1.5" SHAFT</li> <li>• X1.75" SHAFT</li> <li>• X2" SHAFT</li> </ul>	92mm	101.40mm	76.2mm (3")	16mm	3mm	45mm	64mm	12mm	3/8" F/M 1/2" F/M
	 3.5" ULTRA	3.5" BORE, 5/16" WALL (TUBE O.D 104.76MM)	<ul style="list-style-type: none"> <li>• X1.75" SHAFT</li> <li>• X2" SHAFT</li> </ul>	104mm	118mm	88.9mm (3 1/2")	16mm	3mm	45mm	64mm	12mm	1/2" F/M
	 4" ULTRA	4" BORE, 5/16" WALL (TUBE O.D 118MM)	<ul style="list-style-type: none"> <li>• X2" SHAFT</li> <li>• X2.5" SHAFT</li> </ul>	118mm	132mm	101.6mm (4")	25mm	3mm	76mm	64mm	12mm	1/2" F/M 3/4" F/M
	 5" ULTRA	5" BORE, 3/8" WALL (TUBE O.D 146MM)	<ul style="list-style-type: none"> <li>• X2.5" SHAFT</li> <li>• X3" SHAFT</li> </ul>	146mm	165mm	127mm (5")	25mm	3mm	100mm	76mm	20mm	3/4" F/M
	 6" ULTRA	6" BORE, 3/8" WALL (TUBE O.D 178MM)	<ul style="list-style-type: none"> <li>• X3" SHAFT</li> <li>• X3.5" SHAFT</li> <li>• X4" SHAFT</li> </ul>	178mm	202mm	152mm (6")	40mm	8mm	100mm	76mm	20mm	3/4" F/M

# MAX 04



"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."

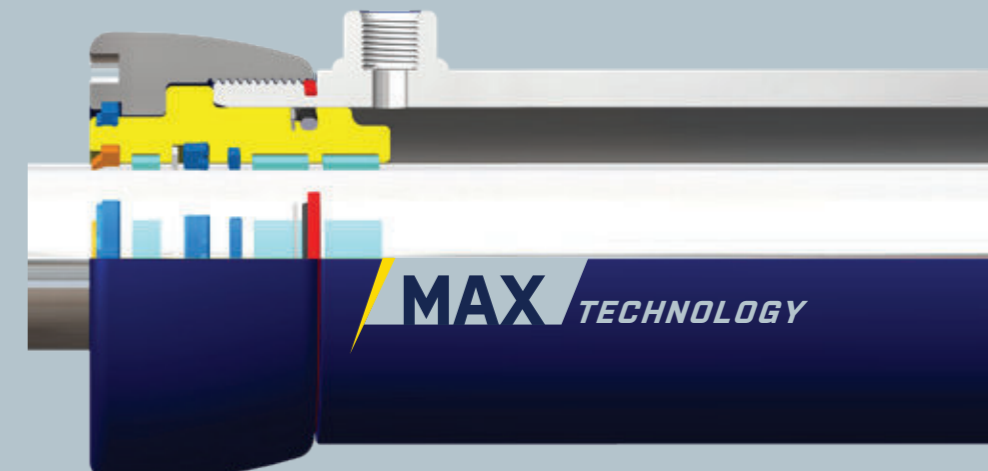
Jeremy Disher  
Southstar Canada

## BUILT TO RESIST

With many years of experience in heavy duty cylinders, we have designed the ultimate cylinder - the MAX 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 MAX series tests to a massive 25,000 psi for a 5000 psi rated cylinder.

Our exclusive 4140 high tensile cap design and unique seal combination gives the MAX superior strength to handle the high pressure and tough working environments it will be subjected to.



### COMMON APPLICATIONS



Forestry



Mining



Construction

# MAXIMUM STRENGTH AND PERFORMANCE

**MAX** TECHNOLOGY

Our MAX series heavy industrial cylinders are designed and engineered with a best-of-the-best approach. We use the toughest, most reliable materials and components matched with exacting manufacturing quality standards to deliver a range of hydraulic cylinders that will go the distance with minimum maintenance.

## 1 GLAND CAP

4140 grade high tensile threaded cap designed to retain the head at the highest pressures that these cylinders experience. Also added protection against shock and side loading.

## 3 HEAD/GLAND

1045 grade steel head, designed tough to withstand high operating shock and loading.

## 2 BARREL

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

## 4 SHAFT

4140 high tensile induction hardened bar is a must for these hard-working cylinders. This will ensure MAXimum rigidity, wear and damage protection for the most demanding of applications.

## 5 SEALS

### Head/Gland seals

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

## 6 PORTS

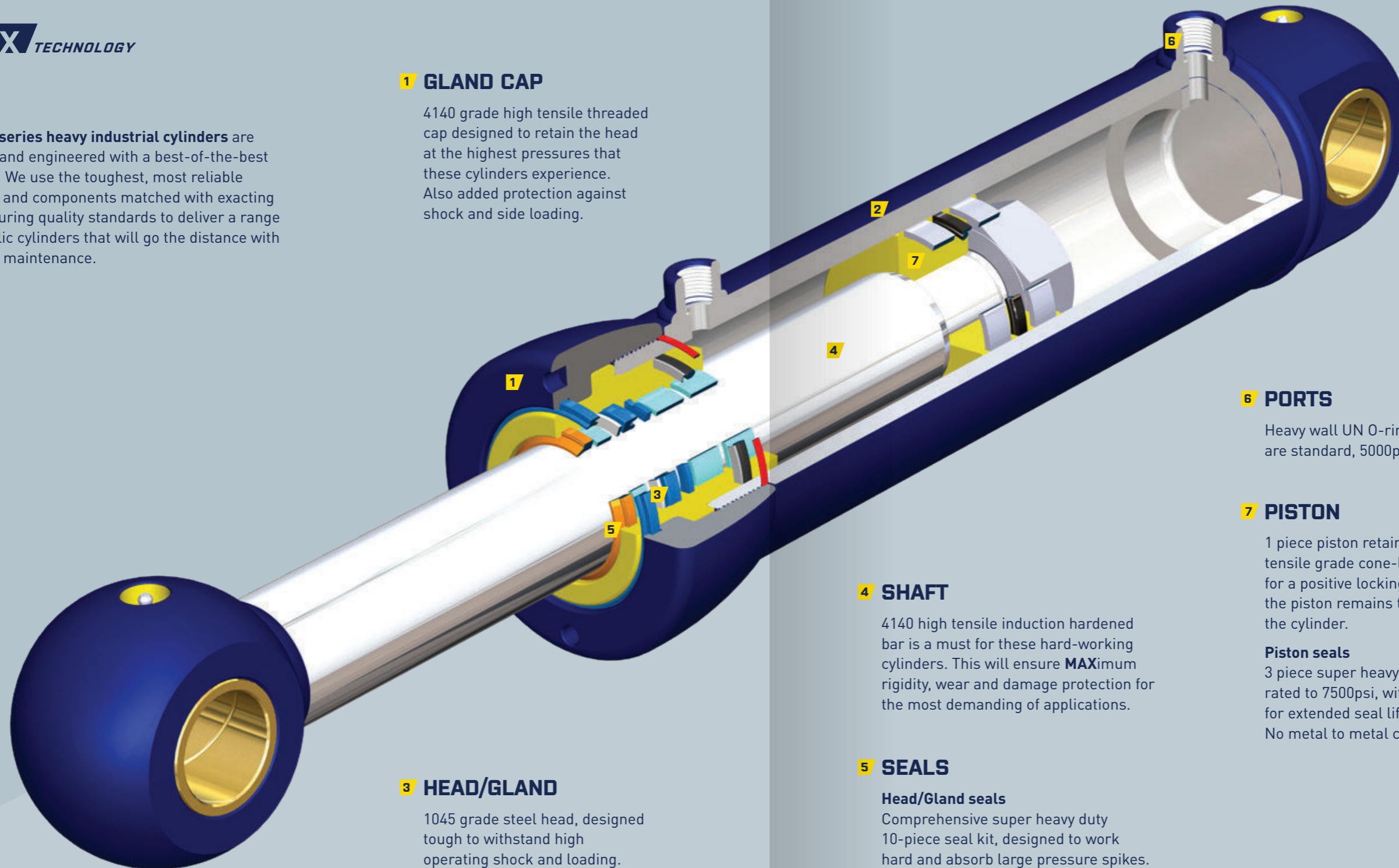
Heavy wall UN O-ring ports are standard, 5000psi+ rated.

## 7 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.



**2** 2 YEAR WARRANTY

**NZ MADE AND DESIGNED**

# MAX CYLINDER SIZING



Cap (Outside Diameter)	Cylinder Bore	Bore Options	Shaft Options	MAX Tube OD	MAX Cap OD	Bore Size [in]	Standard Base [A]	Spigot [B]	Standard Piston [C]	Head [D]	Shaft Exterior [E]
		2.5" BORE, 5/16" WALL (TUBE O.D 79.4MM)	<ul style="list-style-type: none"> <li>• 1.25" SHAFT</li> <li>• 1.5" SHAFT</li> </ul>	79.4mm	95mm	63.5mm (2 1/2")	16mm	5mm	62mm (49mm)	62mm	12mm
		3" BORE, 3/8" WALL (TUBE O.D 96MM)	<ul style="list-style-type: none"> <li>• X1.5" SHAFT</li> <li>• X1.75" SHAFT</li> <li>• X2" SHAFT</li> </ul>	95.25	115mm	76.2mm (3")	20mm	5mm	69mm	82mm	15mm
		3.5" BORE, 3/8" WALL (TUBE O.D 108MM)	<ul style="list-style-type: none"> <li>• X1.75" SHAFT</li> <li>• X2" SHAFT</li> </ul>	107.9mm	130mm	88.9mm (3 1/2")	20mm	5mm	75mm	90mm	15mm
		4" BORE, 1/2" WALL (TUBE O.D 127MM)	<ul style="list-style-type: none"> <li>• (X2" SHAFT)</li> <li>• X2.5" SHAFT</li> </ul>	127mm	152.4mm	101.6mm (4")	25mm	5mm	(75mm) 94mm	102mm	20mm
		5" BORE, 5/8" WALL (TUBE O.D 159MM)	<ul style="list-style-type: none"> <li>• X2.5" SHAFT</li> <li>• X3" SHAFT</li> </ul>	158.75mm	188mm	127mm (5")	35mm	8mm	105mm	127mm	20mm
		6" BORE, 3/4" WALL (TUBE O.D 190MM)	<ul style="list-style-type: none"> <li>• 3" SHAFT</li> <li>• 3.5" SHAFT</li> <li>• 4" SHAFT</li> </ul>	190.5mm	215mm	152mm (6")	40mm	10mm	135mm	152mm	25mm

# 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.

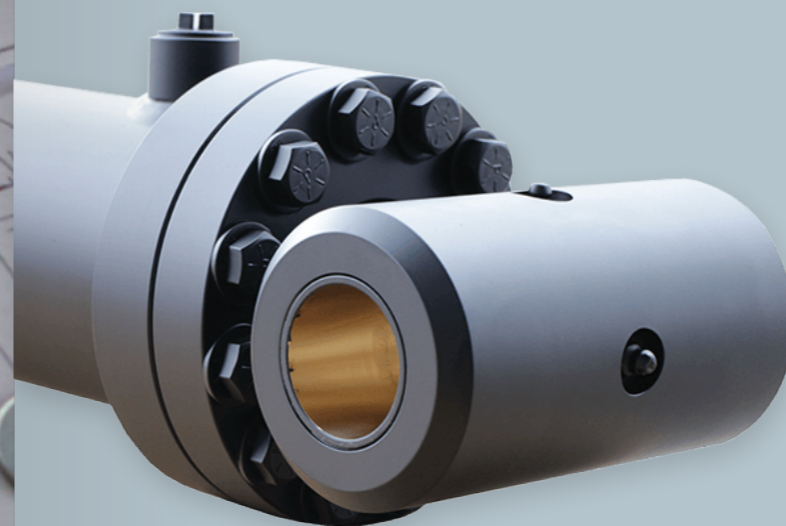
## PREMIUM PARTNER

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



# TECHNICAL INFORMATION

## LONG STROKE CYLINDERS

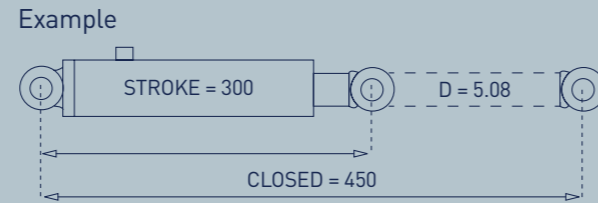
Long stroke cylinders may require larger shafts to prevent buckling under compression. Euler's Formula (below) is often used to calculate the appropriate shaft diameter or maximum load with different mounting methods.

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

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

D = Shaft diameter in mm

P = Load in tonnes

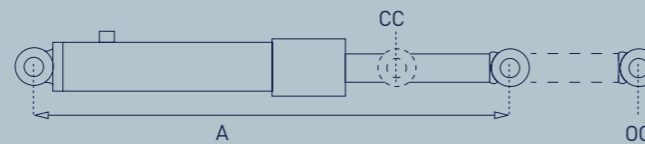


$$L = \frac{2.108 d^2}{\sqrt{P}} \quad P = \frac{2.108 d^2}{L}$$

**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

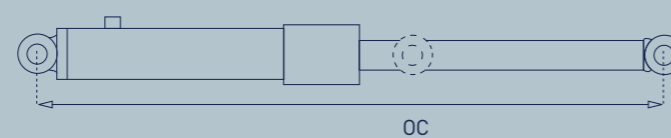
Stroke + B = Closed centres

+  = 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	Extend Area	Shaft Area	Retract Area	Push Tonnage	Pull
(lb) formula: area (inch <sup>2</sup> ) x psi = lb force (lb) formula: lb force / 2.2 = Kg force			(Kg) formula: area (cm <sup>2</sup> ) x kg/cm <sup>2</sup> = kg force					
1 1/2" x 3/4"	1.767 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	11.4 cm <sup>2</sup>	[2.85] cm <sup>2</sup>	8.55 cm <sup>2</sup>	1.76	1.32
1 1/2" x 1"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[5.07] cm <sup>2</sup>	6.33 cm <sup>2</sup>	1.76	0.98
2" x 1"	3.1416 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	20.27 cm <sup>2</sup>	[5.07] cm <sup>2</sup>	15.2 cm <sup>2</sup>	3.14	2.35
2" x 1 1/4"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[7.92] cm <sup>2</sup>	12.35 cm <sup>2</sup>	3.14	1.915
2" x 1 1/2"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[11.4] cm <sup>2</sup>	8.87 cm <sup>2</sup>	3.14	1.37
2 1/2" x 1 1/4"	4.909 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	31.67 cm <sup>2</sup>	[7.92] cm <sup>2</sup>	23.75 cm <sup>2</sup>	4.90	3.68
2 1/2" x 1 3/4"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[11.4] cm <sup>2</sup>	20.27 cm <sup>2</sup>	4.90	3.14
2 1/2" x 1 3/4"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[15.52] cm <sup>2</sup>	16.15 cm <sup>2</sup>	4.90	2.50
3" x 1 1/2"	7.069 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	45.6 cm <sup>2</sup>	[11.4] cm <sup>2</sup>	34.2 cm <sup>2</sup>	7.06	5.30
3" x 1 3/4"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[15.52] cm <sup>2</sup>	30.08 cm <sup>2</sup>	7.06	4.66
3" x 2"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[20.27] cm <sup>2</sup>	25.33 cm <sup>2</sup>	7.06	3.92
3 1/2" x 1 1/2"	9.621 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	62.07 cm <sup>2</sup>	[11.4] cm <sup>2</sup>	50.67 cm <sup>2</sup>	9.62	7.85
3 1/2" x 1 3/4"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[15.52] cm <sup>2</sup>	46.55 cm <sup>2</sup>	9.62	7.21
3 1/2" x 2"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[20.27] cm <sup>2</sup>	41.8 cm <sup>2</sup>	9.62	6.48
4" x 2"	12.56 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	81.07 cm <sup>2</sup>	[20.27] cm <sup>2</sup>	60.8 cm <sup>2</sup>	12.56	9.42
4" x 2 1/4"		.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>		[25.65] cm <sup>2</sup>	55.42 cm <sup>2</sup>	12.56	8.58
5" x 2 1/2"	19.63 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	126.7 cm <sup>2</sup>	[31.67] cm <sup>2</sup>	95.03 cm <sup>2</sup>	19.63	14.72
6" x 3"	28.274 inch <sup>2</sup>	.441 inch <sup>2</sup>	1.326 inch <sup>2</sup>	182.4 cm <sup>2</sup>	[45.6] cm <sup>2</sup>	136.8 cm <sup>2</sup>	28.27	21.20

Displacement	Effective Area	Effective Area
1 1/2"	1.767 inch <sup>2</sup>	1.4 cm <sup>2</sup>
1 3/4"	2.405 inch <sup>2</sup>	15.52 cm <sup>2</sup>
2"	3.1416 inch <sup>2</sup>	20.27 cm <sup>2</sup>
2 1/4"	3.976 inch <sup>2</sup>	25.65 cm <sup>2</sup>
2 1/2"	4.909 inch <sup>2</sup>	31.67 cm <sup>2</sup>
2 3/4"	5.939 inch <sup>2</sup>	38.32 cm <sup>2</sup>



## 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/cm <sup>2</sup>	Kg/cm <sup>2</sup> x 14.22 = psi
psi ÷ 14.7 = 1 atmosphere	1 atmosphere x 14.7 = psi
bar ÷ .981 = Kg/cm <sup>2</sup>	Kg/cm <sup>2</sup> x .981 = bar
1 N/mm <sup>2</sup> = 1 mPa = 1000kPa = 10bar = 145 psi	

## SPEED = 1ft/sec = 0.3048 m/sec

Length	1 inch = 25.4mm
	1000mm = 39.37 inches

# 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"	ULSK 250150	UH 250150	UC 250	WR 250P
3" x 1-3/4"	ULSK 300175	UH 300175	UC 300	WR 300P
3" x 2"	ULSK 300200	UH 300200	UC 300	WR 300P
3-1/2" x 2"	ULSK 350200	UH 350200	UC 350	WR 350P
4" x 2"	ULSK 400200	UH 400200	UC 400	WR 400PN
4" x 2-1/2"	ULSK 400250	UH 400250	UC 400	WR 400PN
5" x 2-1/2"	ULSK 500250	UH 500250	UC 500	WR 500PN

## MAX INTERNAL COMPONENTRY

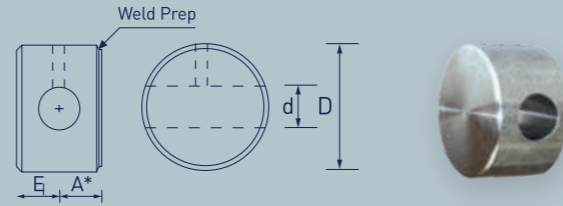


Size	Seal Kit Code	Head / Gland	Cap	Piston
2-1/2" x 1-1/2"	MXSK 250150	MH 250150	MC 250	MXPN 250
2-1/2" x 1-3/4"	MXSK 250175	MH 250175	MC 250	MXPN 250
3" x 1-1/2"	MXSK 300150	MH 300150	MC 300	MXPN 300
3" x 1-3/4"	MXSK 300175	MH 300175	MC 300	MXPN 300
3" x 2"	MXSK 300200	MH 300200	MC 300	MXPN 300
3-1/2" x 1-3/4"	MXSK 350175	MH 350175	MC 350	MXPN 350
3-1/2" x 2"	MXSK 350200	MH 350200	MC 350	MXPN 350
4" x 2"	MXSK 400200	MH 400200	MC 350	MXPN 350
4" x 2-1/2"	MXSK 400250	MH 400250	MC 400	MXPN 400
5" x 2-1/2"	MXSK 500250	MH 500250	MC 400	MXPN 400
5" x 3"	MXSK 500300	MH 500300	MC 500	MXPN 500
6" x 3"	MXSK 600300	MH 600300	MC 600	MXPN 600



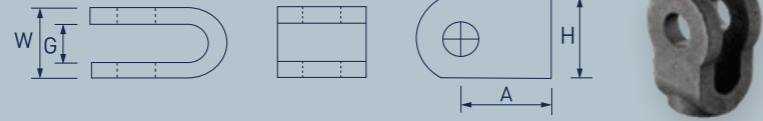
# PARTS

## SOLID BASES – STANDARD CYLINDER BASE MOUNT



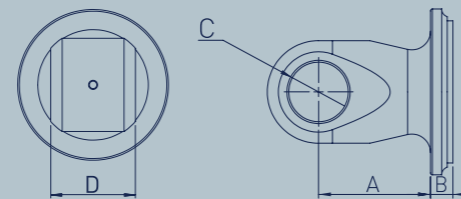
Code	Suits Cylinder with Bore Diameter	[D]	Hole Diameter	[A]	Standard Base Dimension	[E]
SB 1	1.5"	2"	3/4"	19mm	12mm	19mm
SB 2	2"	2.5"	3/4"	19mm	12mm	19mm
SB 4	2"	2.5"	1"	25mm	12mm	25mm
SB 9	2.5"	3"	3/4"	25mm	12mm	25mm
SB 10	2.5"	3"	1"	25mm	12mm	25mm
SB 11	3"	3.5"	1"	25mm	12mm	25mm
SB 12	3.5"	4"	1"	25mm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

## CLEVISES – FIT BASE & SHAFT



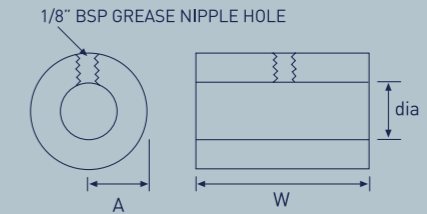
Code	Hole Diameter	[A]	[G]	[W]	[H]	Notes
CL 1	3/4"	50mm	19mm	38mm	50mm	FORMED
CL 7	7/8"	60mm	28mm	52mm	40mm	MACHINED
CL 10	1"	64mm	28mm	52mm	60mm	FORMED
CL 11	1"	64mm	51mm	90mm	50mm	CAST
CL 12	1"	80mm	34mm	60mm	50mm	CAST
CL 20	1 - 1 1/4"	64mm	51mm	90mm	60mm	CAST

## TONGUE / BASE



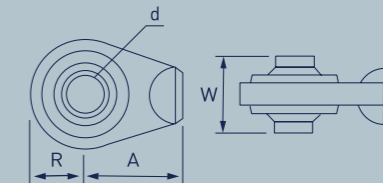
Code	Suits Cylinder with Bore Diameter	C' (Hole Diameter)	[A] (mm)	[B]	D' (Width of tongue)
6494	1.5"	16 or 5/8"	26	12	20
6495	1.5"	18	26	12	20
6438	1.5"	3/4"	40	12	25
6701-1	2"	3/4"	40	12	25
6354	2"	7/8"	28	12	25
6549	2"	7/8"	50	12	25
6690	2.5"	1"	50	12	32
6691	2.5"	1"	50	12	40
6692	2.5"	1"	50	12	50
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



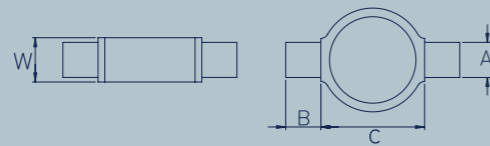
# PARTS

## HD FLANGE [PN16]



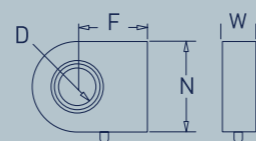
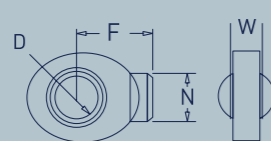
Nominal Tube	Slip on Bore ID	Outside DIA Flange	Thickness	Bolt Circle DIA	Number of Holes	DIA of holes
1 1/2"	49.5mm	150mm	16mm	110mm	4	14mm
2"	61.9mm	165mm	20mm	125mm	4	18mm
2 1/2"	74.6mm	185mm	20mm	145mm	4	18mm
3"	90.6mm	200mm	25mm	160mm	8	18mm
4"	116.0mm	220mm	32mm	180mm	8	18mm
5"	143.7mm	250mm	40mm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



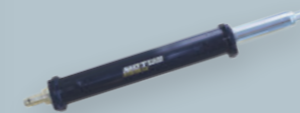
Code	[D] (Pin Diameter)	[F]	[W]	Neck Diameter [N]
<b>Round End (SK)</b>				
SK-20	20	38	16	27.5
SK-25	25	45	20	33.5
SK-30	30	51	22	40
SK-35	35	61	25	47
SK-40	40	69	28	52
SK-45	45	77	32	58
SK-50	50	88	35	62
<b>Tongue End (SF)</b>				
SF-20	20	38	19	50
SF-25	25	45	23	55
SF-30	30	51	28	65
SF-35	35	61	30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



### ■ STAINLESS STEEL SHAFTS

If you need extra protection for the shaft, use our hollow 2205 grade ground stainless steel shafts. Ideal for marine 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.



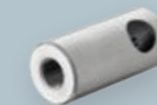
### ■ SPECIAL COLLAR

Designed to fit your own clearances.



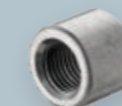
### ■ QUICK HOOK

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.



### ■ TUBE

Hydraulic tube is very handy for making bosses, collars, etc with a precision honed bore.



### ■ CHROME

Hard chrome bar is often very handy for manufacturing pins, shafts or other high wearing applications.

# MILESTONES OF A NEW ZEALAND SUCCESS STORY

## 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.

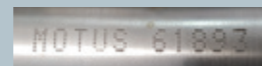
## 1988

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.



## 1992

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.



## 1960

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



## 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.



## 1990

Introduction of the WRC hydraulic cylinder range to the market.



## 1995

First double acting telescopic cylinders produced.

## 2012

Purchased Gorrie Engineering.

## 2015

50 Year Anniversary  
2D Online Configurator website launch.



## 2009

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

## 2006

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

## 2013

100HR Delivery Promise on the Rambuilder Range.

## 2018

Motus 3D Online Configurator website launch.

MAX series cylinder range launch.

## 2019

Workshop expansion - into two buildings to increase workflow.

ULTRA cylinder range launch.



## 2020

Motus Steels is born.

Importer and retailer of specialty high tensile, high value steels fills a long needed gap in the NZ market.

## READY FOR THE FUTURE

New Building  
2x current size

Telescopic multi stage cylinder range.



# BUILD YOUR CYLINDER ONLINE IN 5 MINUTES

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 of 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.

**MOTUS CONFIGURATOR**

Create New Item | Design History | Orders | Addresses | Account Details

## MOUNTS

**Base mount**

Solid | Collar | Ballend | Clevis | Tongue

Spherical End | Blank

**Shaft mount**

Collar | Ballend | Clevis | Spherical End | Blank

**Dimensions**

d: 3/4" | D: 1.5" | A: 19mm

**Dimensions**

Dia: 16mm | W: 20mm | A: 19mm

[buildyourmotus.co.nz](http://buildyourmotus.co.nz)



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.



**MOTUS**  
HYDRAULICS

■ **CALL**  
**0800 66 88 74**

[motushydraulics.co.nz](http://motushydraulics.co.nz)  
[sales@motushydraulics.co.nz](mailto:sales@motushydraulics.co.nz)  
Fax +64 6 879 8595

PO Box 2296  
Stortford Lodge 4153  
7 Barnes Place, Hastings  
New Zealand