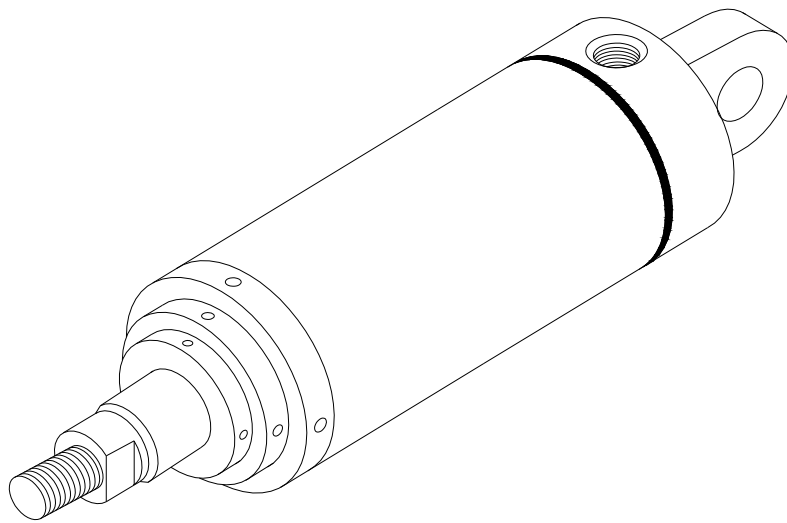


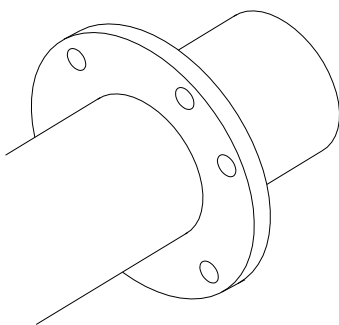
TELESCOPIC HYDRAULIC CYLINDER

SPECIFICATIONS

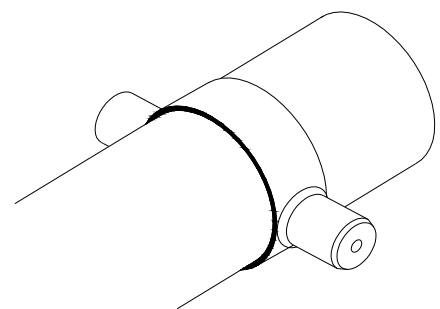
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|----|-------------------------|-----|--|
| 1. | MAX. OPERATING PRESSURE | --- | 210 BAR (standard) |
| 2. | TEMPRATURE | --- | -35°C to +120°C with standard nitrile/polyurethane seals.
Higher temperature with viton/teflon seals. |
| 3. | MEDIUM | --- | Mineral oil
Cylinders to oprate with water based fluids available on request. |



OPTIONAL BARREL MOUNT



FLANGE MOUNT



TRUNNION MOUNT

DESIGN FEATURES & MATERIALS

HYDRODYNE series Telescopic cylinders are designed for mobile / industrial application with long strokes but small profiles. Advantages of telescopic have over conventional rod-type cylinder is their ability to provide an exceptionally long stroke from a compact initial package. The collapsed length of typical telescopic cylinders varies between 20% and 40% of their extended length. Thus, when mounting space is limited and the application needs a long stroke, a telescopic cylinder is a natural solution.

As the name implies, telescopic cylinders are constructed like a telescope. In practice, the maximum number of moving stages is five.

HYDRODYNE INDUSTRIES manufacture telescopic cylinder upto five stages in single acting & double acting.

THE GLAND

Gland Nut can be externally removed without disassembly of the cylinder. Its long bearing surface is inboard of the seal assuring positive lubrication from within the cylinder. Leak Proof cartridge gland seals consists of :

- a) Polyurethane / low friction nitrile seal completely self compensating and self relieving to withstand all pressure variations and mechanical deflections that may occur.
- b) Secondary seal - Hydro dyne wiper seal performs a double service by wiping clean any oil film adhering to the rod on the advance stroke, and cleaning the dirt off the rod on return stroke

A static 'o'ring seal is interperet with tube and to serve as a prevailing torque lock .

THE PISTON

The piston is of one piece construction manufactured from fine grain cast iron or steel ,dependent upon the piston seal requirements. The standard , piston seal is a double acting elastomeric seal with anti-extrusion rings .

The wide piston surface considerably reduces bearing loads and wear during mechanical deflection . long thread engagement with the with piston rod provides grater shock absorption ,and the piston is permanently locked with a pin .

THE CAP END

The cap end is manufactured from medium carbon steel and are welded to the the tube end.

THE PISTON ROD

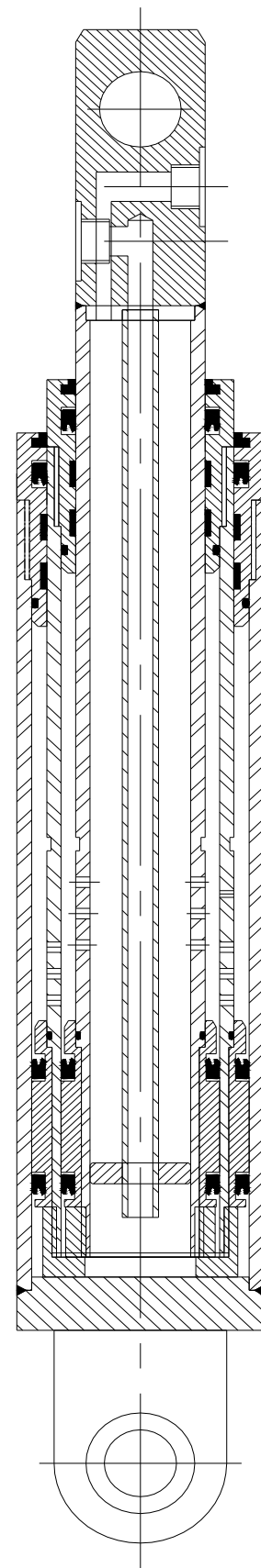
Piston rod are made from high tensile medium ,carbon steel ground and hard chrome plated to thickness of 20 to 25 microns and surface finish to 0.5um or better.

THE CYLINDER BODY

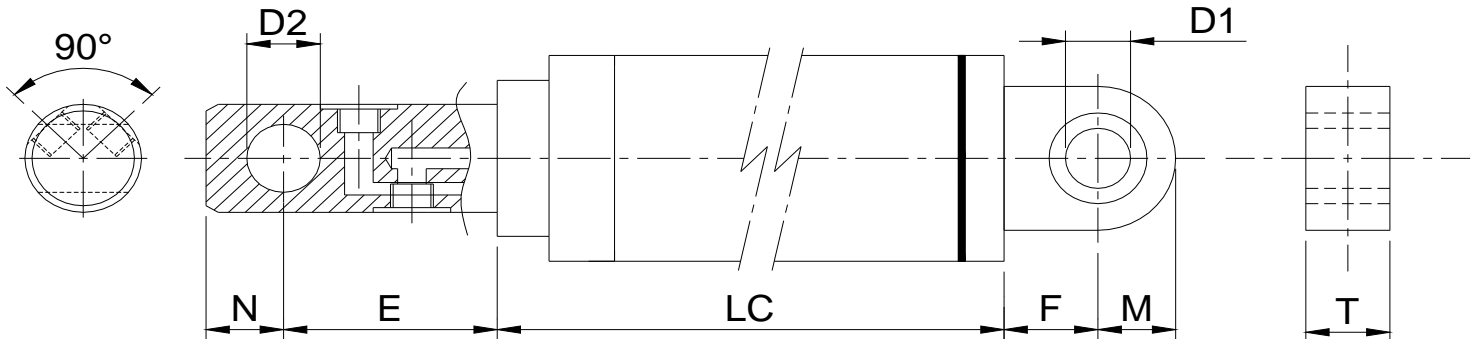
The cylinder is made from heavy wall steel tubing ,honed to a micro-finish bore . Normally, all major welding on the tube are done before the honing. The gland threads on the tube ID are machined after honing to ensure concentricity between the piston, rod, and the tube bore.

THE SEALS

All dynamic ,elastomeric seals used with series Telescopic cylinders are design to seal with minimum friction under varying pressure .This together with fine finishes on the cylinder bore and piston rod,provide long seal life .



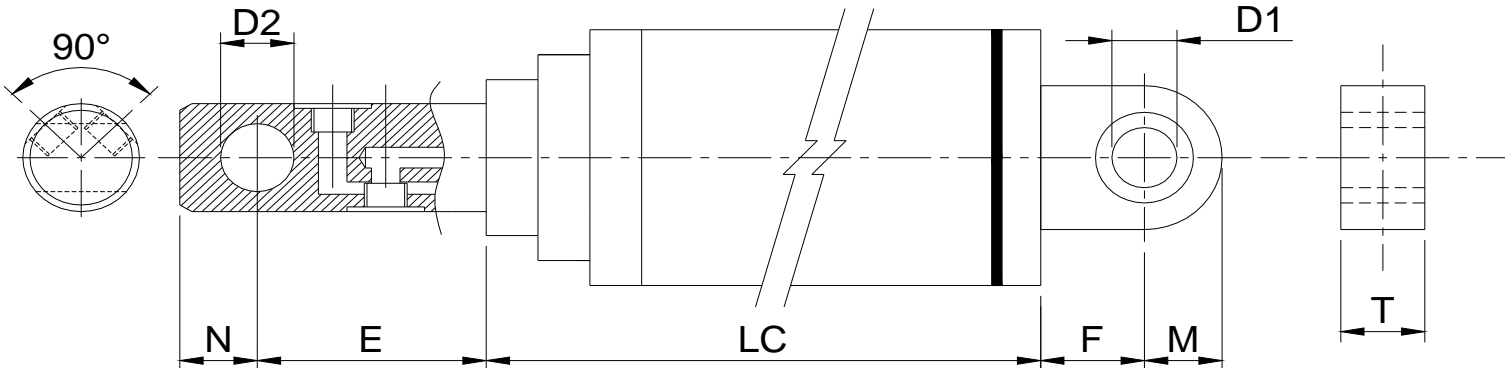
TWO STAGE DOUBLE ACTING CYLINDERS



MODEL NO. DESCRIPTION	26	25	24	23	22
Max OD	203.20	168.275	136.525	107.95	82.55
1st Bore	184.15	152.40	120.65	95.25	69.85
2nd Bore	152.40	120.65	95.25	69.85	44.45
Inner Rod Ø	136.52	107.95	82.55	57.15	31.75
E	95.25	90.47	90.47	90.47	76.2
F	110.0	80.0	65.0	50.0	40.0
M	70.0	50.0	40.0	32.0	25.0
N	70.0	50.0	40.0	32.0	25.0
Max Stroke	142"	117"	108"	100"	95"
X	14.5"	13.75"	13.5"	13.0"	13.0"
LC up to 66" stroke $\frac{\text{Stroke}}{2} + X$					
Extension Port	1.25"	1" BSP	1" BSP	3/4" BSP	1/2" BSP
Retraction Port	1" BSP	3/4" BSP	3/4" BSP	1/2" BSP	3/8" BSP
Pin Ø D1	60.0	50.0	40.0	32.0	20.0
Pin Ø D2	60.0	50.0	40.0	32.0	20.0
T	60.0	50.0	40.0	32.0	25.0

All dimensions are in millimetres unless otherwise stated.

THREE STAGE DOUBLE ACTING CYLINDERS



MODEL NO. DESCRIPTION	36	35	34	33
Max OD	203.20	168.27	136.52	107.95
1st Bore	184.15	152.4	120.65	95.25
2nd Bore	152.4	120.65	95.25	69.65
3rd Bore	120.65	95.25	69.85	44.45
Inner Rod Ø	107.95	82.55	57.15	31.75
E	90.47	90.47	90.47	76.2
F	110.0	80.0	65.0	50.0
M	70.0	50.0	40.0	32.0
N	50.0	40.0	32.0	25.0
Max Stroke	175"	150"	146"	142"
X	14 3/4"	14 3/4"	14"	14"

LC up to 95" stroke

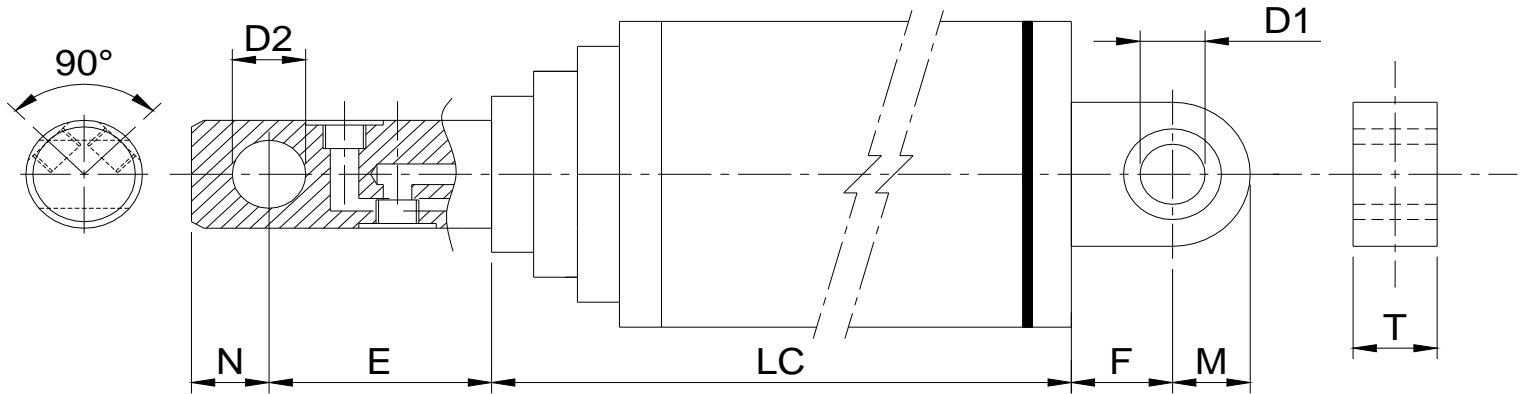
$$\frac{\text{Stroke}}{3} + X$$

Extension Port	1" BSP	1" BSP	3/4" BSP	1/2" BSP
Retraction Port	3/4" BSP	3/4" BSP	1/2" BSP	3/8" BSP
Pin Ø D1	60.0	50.0	40.0	32.0
Pin Ø D2	50.0	40.0	32.0	20.0
T	60.0	50.0	40.0	32.0

All dimensions are in millimetres unless otherwise stated.



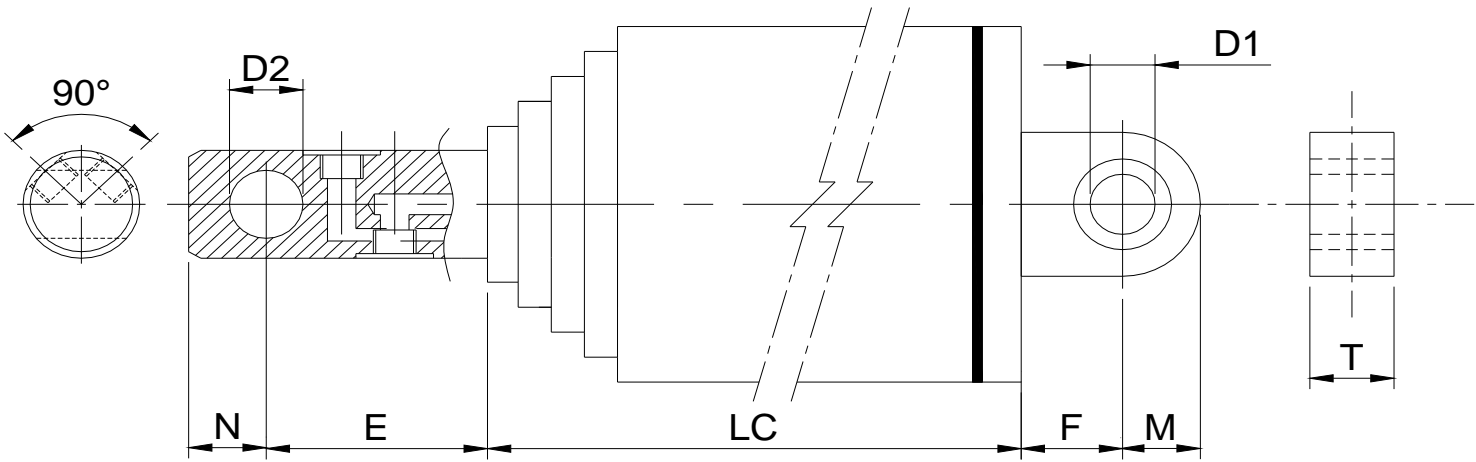
FOUR STAGE DOUBLE ACTING CYLINDERS



MODEL NO.		46	45	44
DESCRIPTION				
Max OD		203.20	168.27	136.52
1st Bore		184.15	152.4	120.65
2nd Bore		152.4	120.65	95.25
3rd Bore		120.65	95.25	69.85
4th Bore		95.25	69.85	44.45
Inner Rod Ø		82.55	57.15	31.75
E		90.5	90.5	90.5
F		110.0	80.0	65.0
M		70.0	50.0	40.0
N		40.0	32.0	25.0
Max Stroke		204"	191"	179"
X		15 3/4"	15 1/4"	15"
LC up to 126" stroke		$\frac{\text{Stroke}}{4} + X$		
Extension Port		1" BSP	3/4" BSP	1/2" BSP
Retraction Port		3/4" BSP	1/2" BSP	3/8" BSP
Pin Ø D1		60.0	50.0	40.0
Pin Ø D2		40.0	32.0	20.0
T		60.0	50.0	40.0

All dimensions are in millimetres unless otherwise stated.

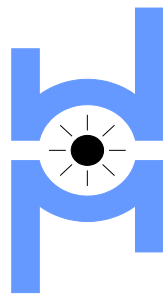
FIVE STAGE DOUBLE ACTING CYLINDERS



MODEL NO. DESCRIPTION	57	56	55
Max OD	235.9	203.20	168.27
1st Bore	215.9	184.15	152.40
2nd Bore	184.15	152.4	120.65
3rd Bore	152.4	120.65	95.25
4th Bore	120.65	95.25	69.85
5th Bore	95.25	69.85	44.45
Inner Rod Ø	82.55	57.15	31.75
E	90.47	90.47	76.2
F	110.0	80.0	65.0
M	70.0	50.0	40.0
N	40.0	32.0	25.0
Max Stroke	204"	191"	179"
X	16.3/4"	16.1/4"	16"
LC up to 157" stroke	$\frac{\text{Stroke}}{5} + X$		
Extension Port	1" BSP	3/4" BSP	1/2" BSP
Retraction Port	3/4" BSP	1/2" BSP	3/8" BSP
Pin Ø D1	70.0	60.0	50.0
Pin Ø D2	40.0	32.0	20.0
T	70.0	60.0	50.0

All dimensions are in millimetres unless otherwise stated.





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