



HyperCyl HPX

## HPX SERIES HYDRA-PNEUMATIC ACTUATOR

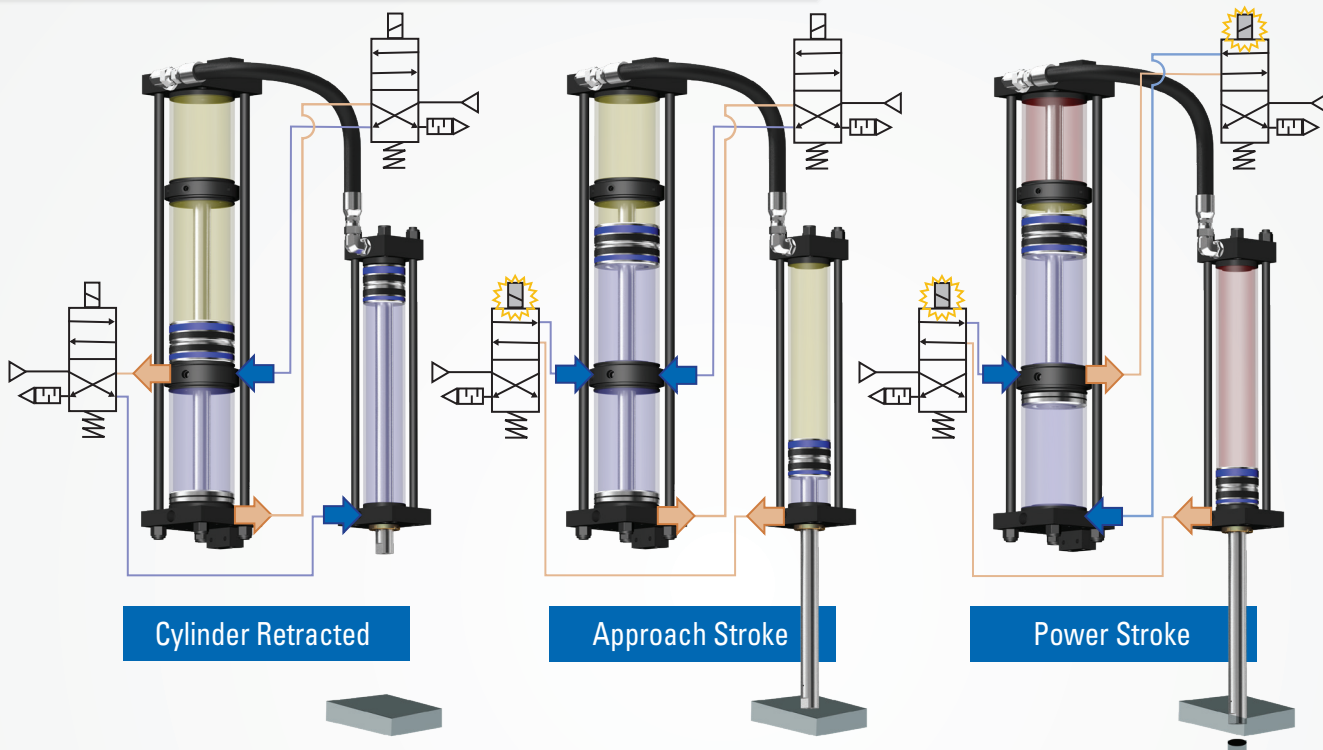
HyperCyl Compact Satellite (HPX) Unit.

Self-contained system without the need for external reservoirs. Fast-approach then high-pressure stroke permits a “soft-touch” with tooling contact and permits monitoring of stack-up height PRIOR to high-pressure stroke.

Two pneumatic valves for operation make this the ideal choice for an efficient, low cost yet long-life pressing & forming cylinder.

- Total strokes up to 28.00” [711mm] using 2.00” increments
- Power strokes up to 2.00” [50mm] using 0.25” increments (longer strokes available upon request)
- Most flexible and versatile line available with small profile work section for tight spaces and reduced footprint versus HPS
- 2-piece Unit with work section and booster connected via hydraulic hose – fittings available ;45, 90, live-swivel (robot-mounted applications). Individual components can be mounted in any position or attitude
- 2,000 lbs. – 60,000 lbs. [3kN – 266kN] force range using up to 100 PSI [6.9 bar] shop air.
- Add the IntelliCyl™ option for force & distance monitoring
- Other options – non-rotate, pneumatic port positions 1-4, rod extensions, rod thread pattern (male or female), ELT auto power stroke sensor, BSPP or “G” pneumatic porting, fill units, pressure switches, remote pressure block (PB-1), NFPA mounting.

# STROKE SEQUENCE



## ADVANTAGES

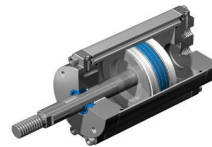
- ✓ **Total Air/Oil Separation** – Supply air is isolated from the internal reservoir, providing high speed operation and ability to function in any position.
- ✓ **Convenience of air with force of hydraulics.** Less maintenance, less mess and less noise pollution than hydraulics, higher forces than pneumatic. Can directly replace existing hydraulic systems with the HPX
- ✓ **Energy Efficient** – **HyperCyl** uses 1/4 of the air required for multi-piston air cylinders. **HyperCyl** uses approximately 1/2 the energy per hour versus hydraulics
- ✓ **No stored energy.** Many safety systems require no stored energy in a product during e-stop. **HyperCyl** has no internal springs, which can break.
- ✓ **HyperCyl Options** – Stroke limiter, pressure switches, gage kits, Rod Locks, P.O. Checks, LVDT and/or load cell (IntelliCyl™), force/distance monitoring with **HyperView-Press**
- ✓ **No External Adjustments** - Standard **HyperCyl** units require no external adjustments that can adversely affect unit performance.
- ✓ **Limited Lifetime Manufacturers Warranty.** Enough said.

## APPLICATIONS/USES



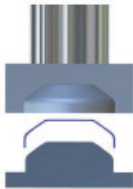
### Assembly

- Press to a position
- Press to sensor
- Press to force



### Insertion

- Seal, bearings
- Pistons, plugs
- Ball joints, rings



### Forming

- Press and hold a constant force
- Press to shape
- Press to position
- Press to thickness



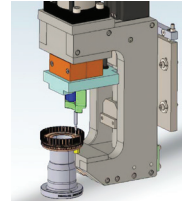
### Riveting

- Upset rivet to a force
- Upset rivet to a position
- Upset rivet to a relative dimension of the part
- Upset rivet to a functionality specification



### Press to Shoulder

- Press to Force
- Press to position
- Press to force/distance using signature analysis



### Piercing/Punching/Shearing

- Plastic
- Steel
- Aluminum
- Cast

Applications listed are but a sampling of what we can offer. There are numerous applications requiring medium to high forces NOT listed here to which a HyperCyl can be used including replacing hydraulic cylinders & pneumatic cylinders. Contact the factory for more details

Size/Tonnage	Working Ratio (Force per PSI)	Service Ratio (Hydraulic per PSI)	*Approach Force per PSI (Lbs.)	*Retract Force per PSI (Lbs.)	(1) Volume / CF (complete cycle)	Min Force Lbs. (@ 30 PSI)	Max Force Lbs. (@ 100 PSI)
HPX-1	33.18 : 1	10.5 : 1	3.14	2.35	81.74 / 0.047	995	3,318
HPX-3	62.05 : 1	12.6 : 1	4.90	4.11	148.62 / 0.086	1,861	6,205
HPX-5	109.69 : 1	13.2 : 1	8.29	6.81	258.50 / 0.149	3,290	10,969
HPX-8	166.16 : 1	13.2 : 1	12.56	11.08	360.56 / 0.209	4,984	16,616
HPX-15	314.16 : 1	16.0 : 1	19.62	16.49	622.59 / 0.360	9,424	31,416
HPX-30	590.87 : 1	20.8 : 1	28.27	23.37	1141.31 / 0.661	17,726	59,087

(1) Air consumption values for 4.00" Total and 0.50" power stroke. Multiply CF by cycles per minute for total CFM usage.

\* Approach and retract forces shown are theoretical, typical breakaway PSI is 20-25.



**Aries Engineering Company**

# STROKE CONFIGURATIONS AND SPECIFICATIONS

MODEL # = HPX - (TONNAGE) - (TOTAL STROKE) - (POWER STROKE)

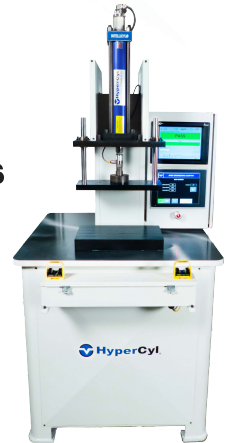
1 TON	3 TON	5 TON	8 TON	15 TON	30 TON
HPX-1-6.00-.50	HPX-3-6.00-.50	HPX-5-6.00-.50	HPX-8-6.00-.50	HPX-15-6.00-.50	HPX-30-6.00-.50
HPX-1-8.00-1.00	HPX-3-8.00-1.00	HPX-5-8.00-1.00	HPX-8-8.00-1.00	HPX-15-6.00-1.00	HPX-30-6.00-1.00
HPX-1-12.00-1.00	HPX-3-12.00-1.00	HPX-5-12.00-1.00	HPX-8-12.00-1.00	HPX-15-8.00-.50	HPX-30-8.00-.50
HPX-1-12.00-1.50	HPX-3-12.00-1.50	HPX-5-12.00-1.50	HPX-8-12.00-1.50	HPX-15-8.00-1.00	HPX-30-8.00-1.00
HPX-1-12.00-2.00	HPX-3-12.00-2.00	HPX-5-12.00-2.00	HPX-8-16.00-1.00	HPX-15-12.00-.50	HPX-30-12.00-.50
HPX-1-16.00-1.00	HPX-3-16.00-1.00	HPX-5-16.00-1.00	HPX-8-16.00-1.50	HPX-15-12.00-1.00	HPX-30-12.00-1.00
HPX-1-16.00-1.50	HPX-3-16.00-1.50	HPX-5-16.00-1.50	HPX-8-20.00-1.00	HPX-15-16.00-.50	HPX-30-16.00-.50
HPX-1-16.00-2.00	HPX-3-16.00-2.00	HPX-5-16.00-2.00	HPX-8-20.00-1.50	HPX-15-16.00-1.00	HPX-30-16.00-1.00
HPX-1-20.00-1.00	HPX-3-20.00-1.00	HPX-5-20.00-1.00	HPX-8-24.00-1.00	HPX-15-20.00-.50	HPX-30-20.00-.50
HPX-1-20.00-1.50	HPX-3-20.00-1.50	HPX-5-20.00-1.50	HPX-8-24.00-1.50	HPX-15-20.00-1.00	HPX-30-20.00-1.00
HPX-1-20.00-2.00	HPX-3-20.00-2.00	HPX-5-20.00-2.00			
HPX-1-24.00-1.00	HPX-3-24.00-1.00	HPX-5-24.00-1.00			
HPX-1-24.00-1.50	HPX-3-24.00-1.50	HPX-5-24.00-1.50			
HPX-1-24.00-2.00	HPX-3-24.00-2.00	HPX-5-24.00-2.00			
HPX-1-28.00-1.00	HPX-3-28.00-1.00	HPX-5-28.00-1.00			
HPX-1-28.00-1.50	HPX-3-28.00-1.50	HPX-5-28.00-1.50			
HPX-1-28.00-2.00	HPX-3-28.00-2.00	HPX-5-28.00-2.00			

## The Aries Engineering Company, Inc. Family of Products

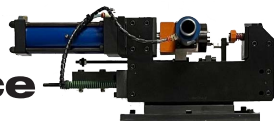


 **HyperCyl-EMA**  
Electro-Mechanical Actuators

 **HyperPress**



 **HyperPierce**



 **HyperView-Press**