



HyperCyl HPI unit
with Rod Lock

HPI SERIES HYDRA-PNEUMATIC ACTUATOR

Self-contained system without the need for hydraulic hoses or 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.

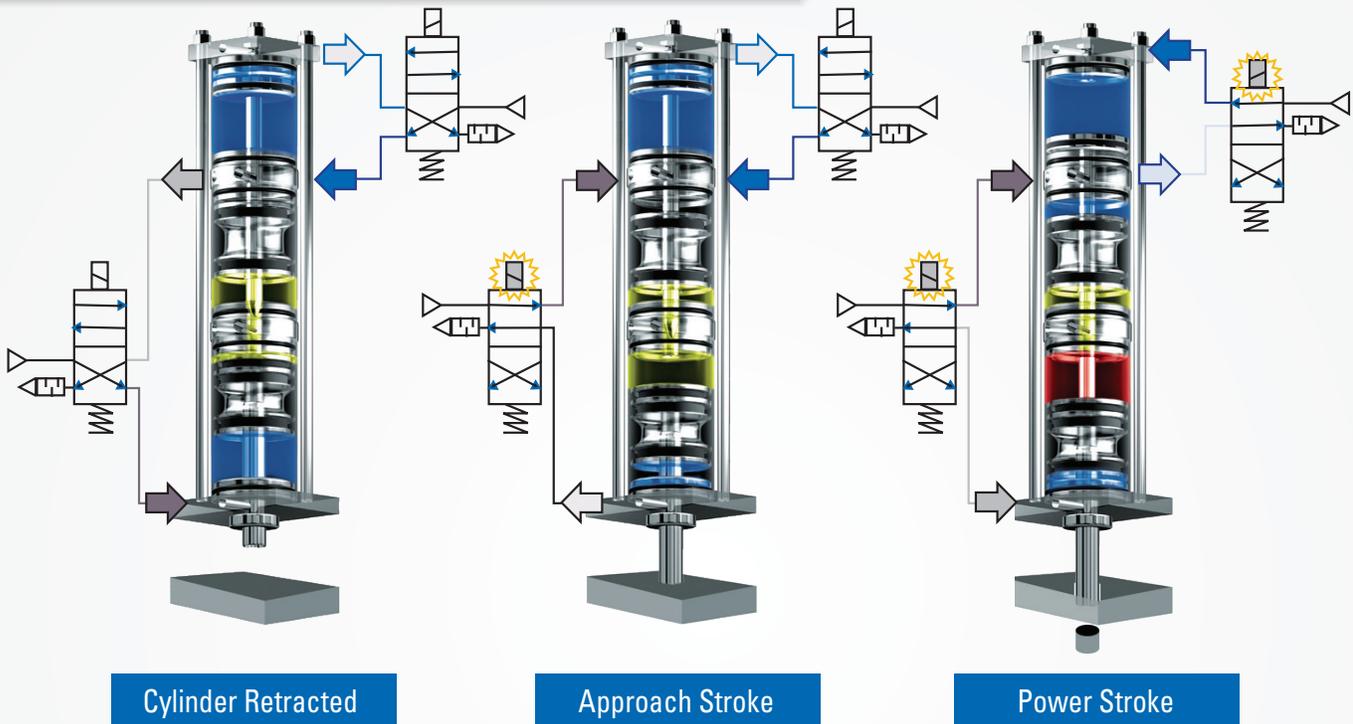
Two pneumatic valves for operation make this the ideal choice for an efficient, low cost yet long-life pressing & forming cylinder.

- Total strokes up to 16.00” [400mm] using 2.00” increments
- Power strokes up to 2.00” [50mm] using 0.25” increments
- Greatest force per dollar investment
- Single unit, no hydraulic lines.
- 670 lbs. – 400,000 lbs. [3kN – 1779kN] using 30 to 100 PSI shop air [2.1 - 6.9 bar].
- 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 available on request.



CGB-4 INCLUDING HPI-4 CYLINDER

STROKE SEQUENCE



ADVANTAGES

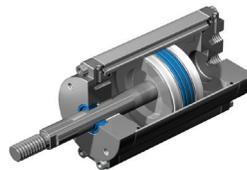
- ✓ **Total Air/Oil Separation** – Supply air is isolated from the internal reservoir, providing high speed operation and ability to function in any position.
- ✓ **Convenience of air with force of hydraulics.** Less maintenance, less mess and less noise pollution than hydraulics, higher forces than pneumatic
- ✓ **Energy Efficient** – **HyperCyl** uses 1 approximately 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** – Pressure switches, sequence sensors, gage kits, rod locks, P.O. checks, LVDT and/or load cell (IntelliCyl™), force/distance monitoring with **HyperView-Press**
- ✓ **Simplicity** - Adjustable output forces through regulated air. Simple. Clean. Efficient.
- ✓ **Limited Lifetime Manufacturers Warranty.** Enough said.

APPLICATIONS/USES



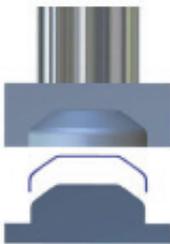
Assembly

- Press to a position
- Press to sensor
- Press to fForce



Insertion

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



Forming

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



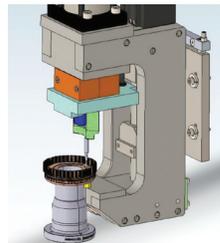
Riveting

- 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.



Aries Engineering Company

Size/Tonnage	Working Ratio (Force per PSI)	Service Ratio (Hydraulic per PSI)	*Approach Force per PSI (Lbs.)	*Retract Force per PSI (Lbs.)	(1) Volume / CFM (complete cycle)	Min Force Lbs. (@ 30 PSI)	Max Force Lbs. (@ 100 PSI)
HPI-1	22.34 : 1	7.11 : 1	3.14	2.35	47.848 / 0.0277	670	2,234
HPI-2	54.54 : 1	11.11 : 1	4.90	4.11	96.024 / 0.0556	1,636	5,454
HPI-4	87.62 : 1	10.56 : 1	8.29	6.81	164.107 / 0.0949	2,628	8,762
HPI-8	158.86 : 1	12.64 : 1	12.56	10.81	285.234 / 0.165	4,765	15,886
HPI-10	259.63 : 1	13.22 : 1	19.63	16.49	460.482 / 0.2665	7,788	25,963
HPI-15	314.16 : 1	16.00 : 1	19.63	16.49	513.076 / 0.2969	9,424	31,416
HPI-20	387.85 : 1	19.75 : 1	19.63	16.49	578.941 / 0.335	11,636	38,785
HPI-30	651.44 : 1	23.04 : 1	28.27	23.37	942.495 / 0.5454	19,543	65,144
HPI-40	804.24 : 1	28.44 : 1	28.27	23.37	1084.44 / 0.6276	24,172	80,424
HPI-50	1050.44 : 1	20.90 : 1	50.26	43.20	1598.35 / 0.9249	31,503	105,044
HPI-60	1218.27 : 1	24.24 : 1	50.26	43.20	1781.49 / 1.0308	36,548	121,827
HPI-75	1551.41 : 1	19.75 : 1	78.54	65.97	2406.38 / 1.3926	46,542	155,141
HPI-100	1963.5 : 1	25.00 : 1	78.54	65.97	2840.95 / 1.6439	58,905	196,350
HPI-200	4071.51 : 1	36.00 : 1	113.10	93.46	5398.84 / 3.124	122,145	407,151

Note: (1) Air consumption values for 4.00" total and 0.50" power stroke. Multiply CFM by cycles per minute for total SCFM usage.
 * Approach and retract forces shown calculate the 25PSI typical breakaway

The Aries Engineering Company, Inc. Family of Products

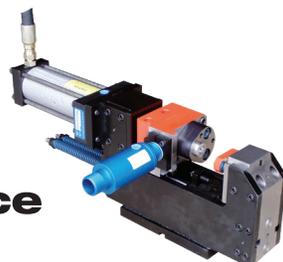


 **HyperCyl-EMA**
Electro-Mechanical Actuators

 **HyperPress**



 **HyperView-Press**



 **HyperPierce**

