



HPS SERIES HYDRA-PNEUMATIC ACTUATOR

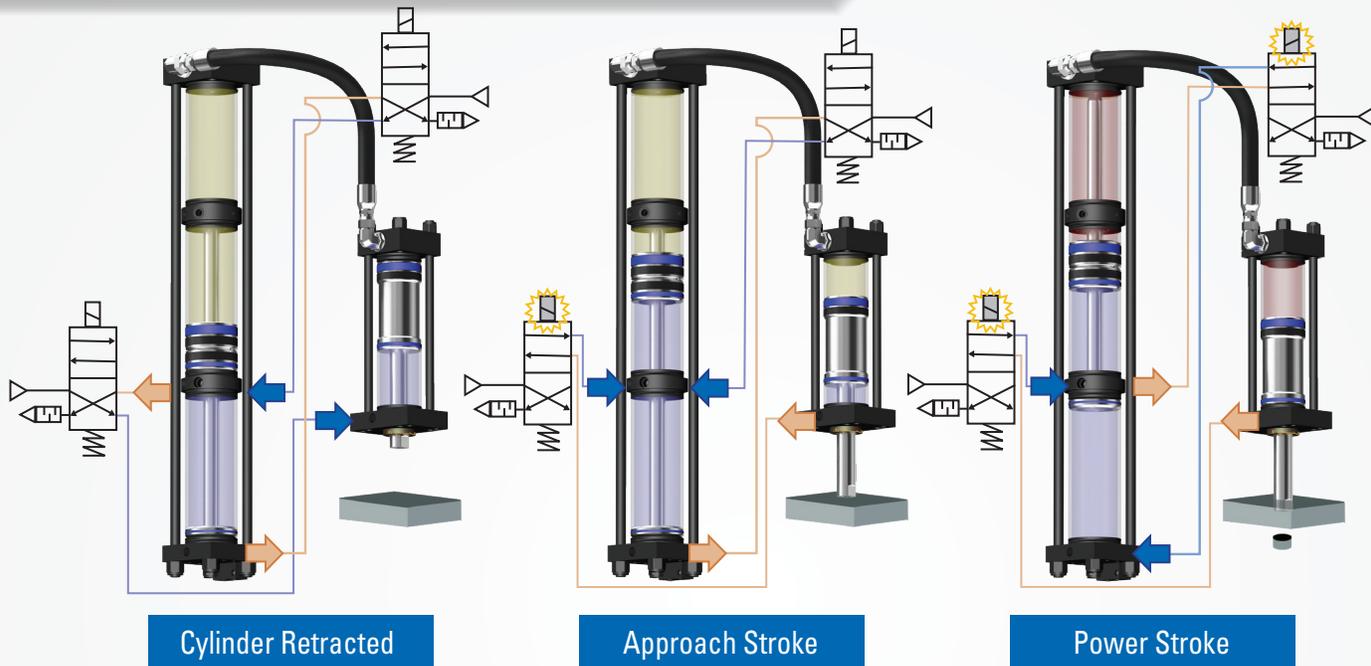
HyperCyl Remote Satellite (HPS) unit.

Self-contained system with the full flexibility of a small profile for machine mounting. 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 exceptionally versatile cylinder.

- Total Strokes up to 24.00" [711mm] using 2.00" increments is standard
- Power Strokes up to 6.00" [50mm] using 0.25" increments is standard
- 2-piece Unit with Work Section and Booster connected via hydraulic hose – multiple fittings available; 45, 90, live swivel (robot-mounted applications). Individual components can be mounted in any position or attitude
- 670 lbs. – 400,000 lbs. [2.9N – 1,779kN] force range using up to 100 PSI [6.9 bar] shop air.
- Add the IntelliCyl option for Force & Distance monitoring
- Power Retract option (-PR, pull instead of push), Total Stroke Limiter option (-TSL, adjustable mechanical stop for repeatable distance), Up to (4) Work Sections connected to (1) Booster (-FH/2, FH/3, FH/4), NFPA mounting options
- Other options – Non-Rotate (-NR), 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), Internal LVDT (-LT) or External LVDT(-LTI) and external Load Cell (-LC)
- **We design to your needs!**

STROKE SEQUENCE



ADVANTAGES

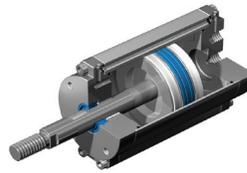
- ✔ **Total Air/Oil Separation** – Supply air is isolated from the internal reservoir, providing high speed operation and ability to function in any position.
- ✔ **Convenience of air with force of hydraulics.** Less maintenance, less mess and less noise pollution than hydraulics, higher forces than pneumatic. Can directly replace existing hydraulic systems with the HPS
- ✔ **Energy Efficient** – **HyperCyl** uses 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** – 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



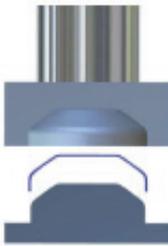
Assembly

- 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



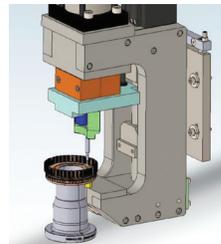
Riveting

- 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.



-LTI, -LT, -LC



PAF Coupling



PAQ Quick-Change Coupling



-AL Rod Lock



-TSL Stroke Limiter



-NR Non Rotate



FH/2, FH/3, FH/4 Multiple Work Sections Single Booster



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)
HPS-1	22.34 : 1	7.11 : 1	3.14	2.35	47.848 / 0.0277	670	2,234
HPS-2	54.54 : 1	11.11 : 1	4.90	4.11	96.024 / 0.0556	1,636	5,454
HPS-4	87.62 : 1	10.56 : 1	8.29	6.81	164.107 / 0.0949	2,628	8,762
HPS-8	158.86 : 1	12.64 : 1	12.56	10.81	285.234 / 0.165	4,765	15,886
HPS-10	259.63 : 1	13.22 : 1	19.63	16.49	460.482 / 0.2665	7,788	25,963
HPS-15	314.16 : 1	16.00 : 1	19.63	16.49	513.076 / 0.2969	9,424	31,416
HPS-20	387.85 : 1	19.75 : 1	19.63	16.49	578.941 / 0.335	11,636	38,785
HPS-30	651.44 : 1	23.04 : 1	28.27	23.37	942.495 / 0.5454	19,543	65,144
HPS-40	804.24 : 1	28.44 : 1	28.27	23.37	1084.44 / 0.6276	24,172	80,424
HPS-50	1050.44 : 1	20.90 : 1	50.26	43.20	1598.35 / 0.9249	31,503	105,044
HPS-60	1218.27 : 1	24.24 : 1	50.26	43.20	1781.49 / 1.0308	36,548	121,827
HPS-75	1551.41 : 1	19.75 : 1	78.54	65.97	2406.38 / 1.3926	46,542	155,141
HPS-100	1963.5 : 1	25.00 : 1	78.54	65.97	2840.95 / 1.6439	58,905	196,350
HPS-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



HPS-1-4.00-50-FH/2-S/4-AL

(2) 1-Ton Satellites each with Mechanical safety Rod Locks, operated by (1) 4-Ton Booster, Output Range of 995 Lbs. – 3,318 Lbs