

Serospheres

Ordering Information

1S P

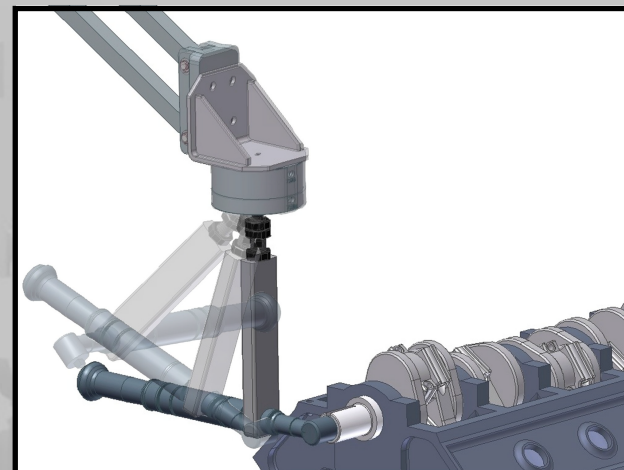
Series

1S - 1" Series
2S - 2" Series
3S - 3" Series

Clamping Options

1S & 2S Series:
P - Pneumatic
H - Hydraulic

3S Series:
H/P - May be clamped
either hydraulically
or pneumatically



What is a Serosphere?

Ser-o-sphere [noun] An invention created to aid in the support of an object while work is being performed on that object. May also be referred to as a locking ball joint. Locking feature may be achieved either hydraulically or pneumatically. Serospheres, like most cylinders, are double acting. Air or oil applied behind the internal piston will clamp the ball; air or oil applied to the opposite side will unclamp the ball.

Load Compensation*(Load Comp) is a standard feature. Load Comp will aid in supporting a load in the event of the loss of air or hydraulic pressure. This feature may be adjusted while the load is mounted to the Serosphere.

* Load Comp will not support all loads.

Engineering Data

Model	Product Weight	Dimensional Data Refer to Figure 1				Torque Calculation Refer to Figure 2 (approximate values)	Moment Arm Calculation Refer to Figure 3 12" from center of ball (approximate values)	Maximum Load Comp Holding Values Refer to Figure 3 12" from center of ball (approximate values)	Maximum Load Refer to Figure 4	Piston Area Clamp	Piston Area Unclamp	Maximum Pressure	Material
		"A"	"B"	"C"	"D"								
1SP	1.5 lbs.	4.37"	2.96 ∅	92°	46°	$\frac{\text{PSI}}{2.00} = \text{Torque (in/lbs)}$	PSI X .6 = oz.	2 lbs.	3 lbs.	2.06 sq. in	1.06 sq. in	120 PSI	Aluminum, Hard Coat Stainless Steel
2SP	6.0 lbs.	6.64"	4.97 ∅	92°	46°	$\frac{\text{PSI}}{4.00} = \text{Torque (ft/lbs)}$	PSI X .2 = lbs.	4 lbs.	6 lbs.	7.06 sq. in	3.53 sq. in	120 PSI	Aluminum, Hard Coat Stainless Steel
3S H/P Pneumatic Application	27.0 lbs.	8.32"	6.23 ∅	92°	46°	$\frac{\text{PSI}}{1.11} = \text{Torque (ft/lbs)}$	PSI X .82 = lbs.	150 lbs.	800 lbs.	12.56 sq. in	4.26 sq. in	2,000 PSI	Aluminum High Grade Tool Steel
1SH	1.8 lbs.	4.87"	2.96 ∅	92°	46°	$\frac{\text{PSI}}{32.25} = \text{Torque (ft/lbs)}$ <i>DO NOT EXCEED 70 ft/lbs</i>	PSI X .04 = lbs. <i>DO NOT EXCEED 100 lbs. of force</i>	8 lbs.	50 lbs.	2.06 sq. in	1.06 sq. in	2,000 PSI	Aluminum High Grade Tool Steel
2SH	7.0 lbs.	6.63"	4.97 ∅	92°	46°	$\frac{\text{PSI}}{2.94} = \text{Torque (ft/lbs)}$ <i>DO NOT EXCEED 400 ft/lbs</i>	PSI X .37 = lbs. <i>DO NOT EXCEED 425 lbs. of force</i>	12 lbs.	350 lbs.	7.06 sq. in	3.53 sq. in	2,000 PSI	Aluminum High Grade Tool Steel
3S H/P Hydraulic Application	27.0 lbs.	8.32"	6.23 ∅	92°	46°	$\frac{\text{PSI}}{1.66} = \text{Torque (ft/lbs)}$ <i>DO NOT EXCEED 1,000 ft/lbs</i>	PSI X 7.5 = lbs. <i>DO NOT EXCEED 1,200 lbs. of force</i>	150 lbs.	800 lbs.	12.56 sq. in	4.26 sq. in	2,000 PSI	Aluminum High Grade Tool Steel

1. N/A = Data not available.
2. All values are approximate. All testing performed in a controlled environment; results may vary in individual application.
3. Objects attached to this product can fall with the loss of air or hydraulic pressure, which could result in personal injury or death.
4. A load compensation feature has been provided to aid in the support of objects mounted to this product.
5. Do not attach any objects to this product that may create a danger to the operator. Care must be taken, sometimes through trial and error methods, to assure safety.
6. Consider using a safety cable, chain, or similar device to secure load, if necessary. Prevent dirt and debris from entering the ball area.
7. SAFETY IS ALWAYS FIRST. Please contact manufacturer with any questions.
8. Due to the unlimited applications of these products we can not assume any liability for misapplication. We encourage those who use our products to use good safety practices.
9. Patent pending (Load Comp)

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Dimensional Data
Figure 1

Torque
Figure 2 - Amount of torque required to move ball.

Moment Arm / Load Comp
Figure 3 - Amount of force required to move ball

Maximum Suggested Load
Figure 4 - Maximum suggested load with post in vertical position. See chart and read safety notes to left.