

110069



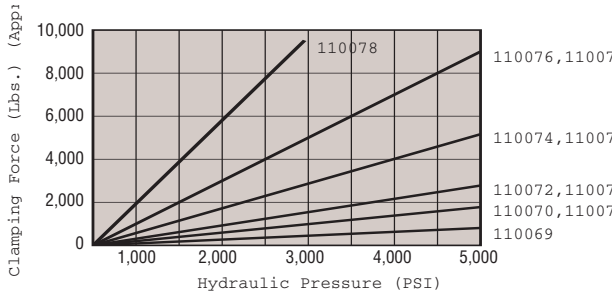
These cylinders retract when hydraulically pressurized to exert a pulling force on clamping elements or mechanisms. For straight pull applications only, they allow the user to design a cylinder into a fixture while maintaining the replaceability and long life of a heat treated, corrosion resistant cylinder body. Designed for single-acting systems only, the cylinder's return spring is built into the piston and requires no additional fixture space.

The pull cylinders are designed for cartridge mounting in a cavity supplied by the fixture builder. The required cavity is simply a cylindrical bore with a properly deburred pressure port intersecting it, providing the fluid connection. The depth of the bore matches nominal plate thickness so the cylinder can be easily "sandwiched" between two plates if desired. Where possible, pins inserted in the back of the piston are provided. These pins are

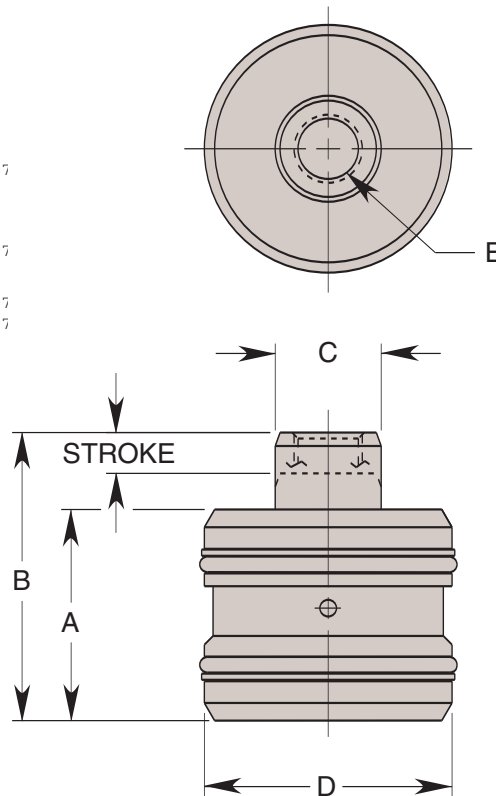
guided by holes drilled in the sub-plate and will prevent cylinder rotation when adjustments are made. A breather hole should always be provided and may be combined with the pin holes where appropriate.

Features:

- Minimal space requirements
- 5,000 psi max.
- Rod wiper excludes contaminants
- Manifold mounting eliminates exposed tubing
- Plating & Power-Tech™ processes resist corrosion
- Single-acting, spring-return
- Return spring included
- Power-Tech™ treated body for long wear and corrosion resistance



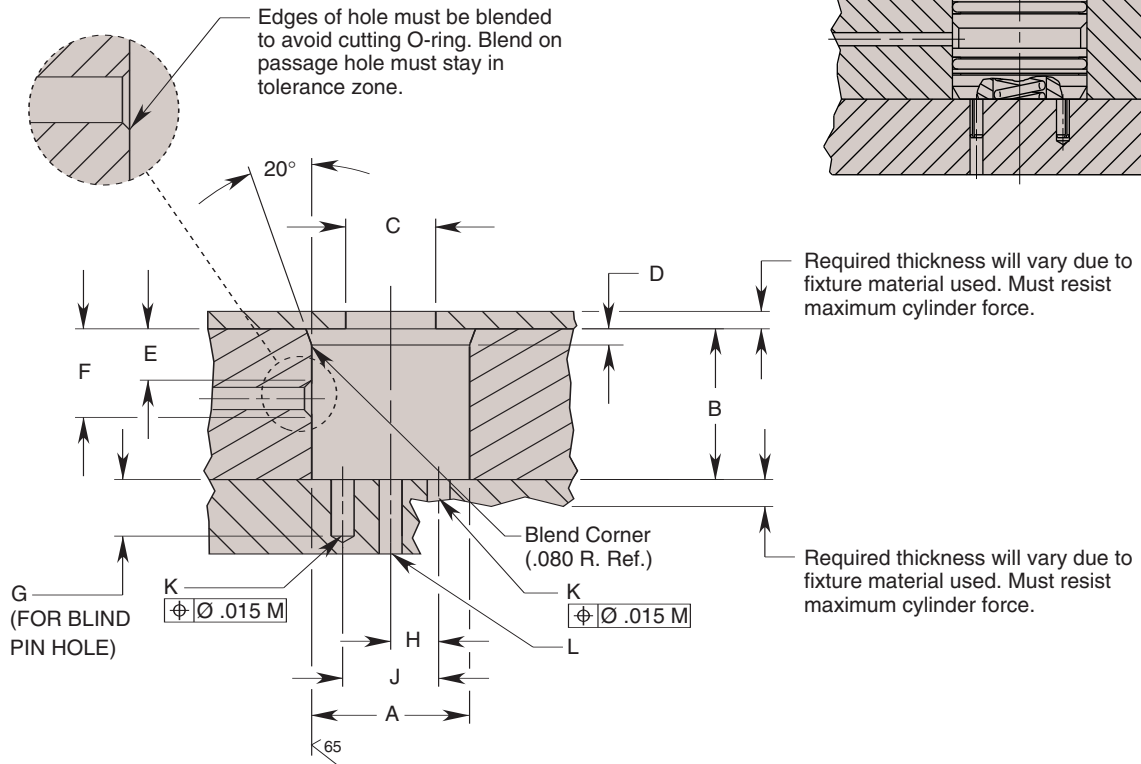
Performance
— 110069 — 110078



Cat. No.	Specifications				Dimensions (In Inches)						
	Force (Lbs.)	Stroke (In.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A	B	C	D	E Piston Thread		
									Size	Depth	
110069	685	.123	.137	.017	1.115	1.210	.373	.810	8-32 UNC	.320	
*110070	1,765		.353	.043							
110071	1,765	.178	.353	.063	1.240	1.325	.560	1.185	1/4-20 UNC	.375	
*110072	2,685		.537	.096							
110073	2,685		1.042	.185	1.365	1.470	.748	1.309	5/16-18 UNC	.470	
*110074	5,210		1.802	.519							
110075	5,210		.288	1.802	1.020	1.490	1.605	.873	2.123	1/2-13 UNC	.500
*110076	9,010			3.542	1.615		1.690				
110077	9,010	1.615		2.000	1.059	2.873	5/8-11 UNC	.625			
*110078	17,710										

* Intended for lower pressure applications. Operation above 2,500 psi may limit the cycle life of the cylinder and attaching fastener.

110069 — 110078 Cavity Dimensions



Cat. No.	Cavity Dimensions (In Inches)				Oil Passage Location (In Inches)		Cavity Dimensions (In Inches)								
	A Dia.	B Cyl. Body Cavity	C Dia.	†D	E Min.	F Max.	G Min.	H	J	K Dia.	*L Vent Dia. Min.				
110069	.812 .815	1.120 1.130	.387 .577	.125 .145	.475	.728	—	—	—	—	.125				
110070	1.187 1.190		.572 .911		.427	.710									
110071	1.312 1.315	1.245 1.255	.572 1.000		.437	.787									
110072	1.750 1.753	1.370 1.380	.760 1.437		.476	.734									
110073	2.125 2.128	1.495 1.505	.885 1.812		.531	.819						.510	.550	1.100	.270 .280
110074	2.875 2.878	1.620 1.630	1.074 2.500		.526	.943						.650	.785	1.570	
110075						1.001									
110076															
110077															
110078															

† Chamfer to be located at end of bore "A" from which the cylinder will be assembled.