



## SEPARATE STEERING COMPONENTS

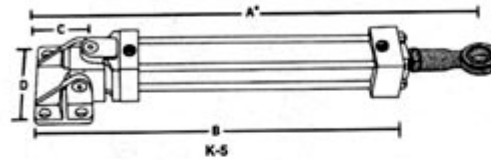
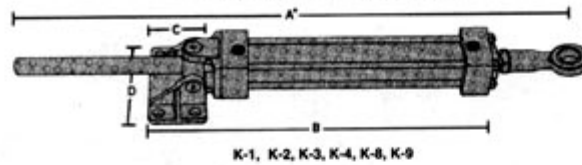
### Brass Cylinders

Brass cylinders are for use on larger boats up to approximately 70 ft. Tubes, ends, and external tie rods are brass; cylinder rods are 303 stainless steel; mounts are manganese bronze.

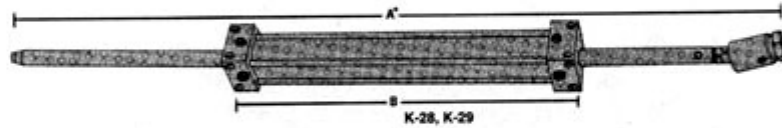
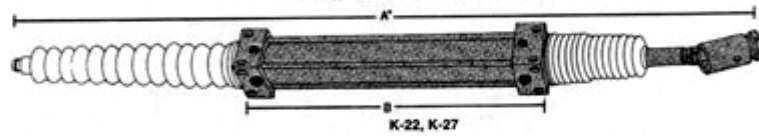
There are three types of mounting packages for brass cylinders: universal-mount, the most common and recommended; fixed-mount and pivot mount.

The K-5 cylinder is the only unbalanced brass cylinder and is nickel plated because it is most often used externally for large-performance I/O's.

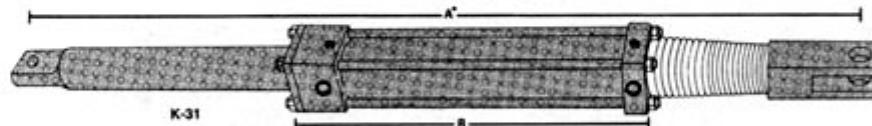
#### UNIVERSAL-MOUNT CYLINDERS



#### FIXED-MOUNT CYLINDERS



#### PIVOT-MOUNT CYLINDERS



#### Brass Cylinder Dimensions

Cylinder Model	Dimensions			
	a	b	c	d
<b>Universal-Mount Cylinders</b>				
K-1	25.9"	16.6	2.75	4.5
K-2	26.2"	18.25	4.0	5.75
K-3	26.2"	18.25	4.0	5.75
K-4	32.2"	21.25	4.0	5.75
K-5	20.75"	17.25	2.75	4.5
K-8	28.4"	23.9	4.5	7.8
K-9				
<b>Fixed-Mount Cylinders</b>				
K-22	34.12**	13.25	-	-
K-27	36.75**	13.25	-	-
K-28	36.75**	15.25	-	-
K-29	34.12**	15.25	-	-
<b>Pivot-Mount Cylinders</b>				
K-31	38.37**	14.12	-	-

\* with rod retracted. Add .12" for clevis.  
\*\* with rod centered.

#### Brass Cylinder Specifications

Model #	Type of Mount	Balanced or Unbalanced	Rod Attachment	Bore	Stroke	Rod Dia.	Pin Dia.	Displ. <sup>1</sup> (cu.in.)	Output Force <sup>2</sup> (lbs.)
K-1-B	UNIVERSAL	BALANCED	BALL JOINT	1-1/2"	9"	3/4"	3/4"	12.1	1250
K-1-C	UNIVERSAL	BALANCED	CLEVIS	1-1/2"	9"	3/4"	1/2"	12.1	1250
K-2-B	UNIVERSAL	BALANCED	BALL JOINT	1-3/4"	9"	3/4"	3/4"	17.6	1850
K-2-C	UNIVERSAL	BALANCED	CLEVIS	1-3/4"	9"	3/4"	5/8"	17.6	1850
K-3-B	UNIVERSAL	BALANCED	BALL JOINT	2"	9"	7/8"	3/4"	23.1	2400
K-3-C	UNIVERSAL	BALANCED	CLEVIS	2"	9"	7/8"	3/4"	23.1	2400
K-4-B	UNIVERSAL	BALANCED	BALL JOINT	1-1/2"	12"	7/8"	3/4"	30.5	2400
K-4-C	UNIVERSAL	BALANCED	CLEVIS	1-1/2"	12"	7/8"	3/4"	30.5	2400
K-5	UNIVERSAL	UNBALANCED	BALL JOINT	1-1/2"	9"	7/8"	3/4"	15.9	1100
K-8	UNIVERSAL	BALANCED	CLEVIS	2-1/2"	9-1/2"	1"	3/4"	39.2	3900
K-9	UNIVERSAL	BALANCED	CLEVIS	2-1/2"	14-1/2"	1"	3/4"	55.0	3900
K-22	FIXED	BALANCED	BALL JOINT <sup>3</sup>	1-1/2"	10"	3/4"	-	13.3	1250
K-27	FIXED	BALANCED	BALL JOINT <sup>4</sup>	1-1/2"	10"	3/4"	-	13.3	1250
K-28	FIXED	BALANCED	BALL JOINT <sup>4</sup>	1-1/2"	12"	3/4"	-	16.0	1250
K-29	FIXED	BALANCED	BALL JOINT <sup>3</sup>	1-1/2"	12"	3/4"	-	16.0	1250
K-31	PIVOT	BALANCED	CLEVIS	2"	10"	7/8"	3/4"	25.5	2400

Chart Notes: 1in. = 25.4mm 1cu.in. = 16.38 cu.cm. 1lb = .45kg

- Measured at the head end of the cylinder.
- Measured at the rod end of the cylinder.
- Located on one rod end.
- Located on both rod ends.