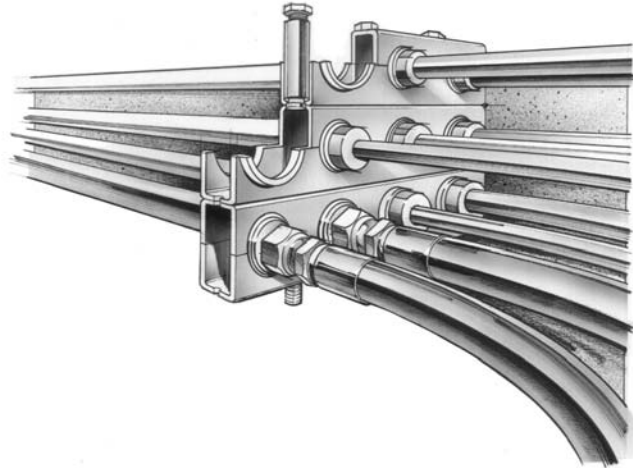


# The Multi-Clamp® System



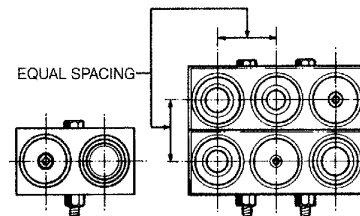
The MULTI-CLAMP SYSTEM enables you to route single line runs, multiple runs of the same line diameters, or multiple runs of various diameters. Multiple line runs can be stacked to conserve space and make installations more rigid. Center line dimensions between all lines remain the same, both horizontal and vertical, when MULTI-CLAMPS are stacked. Mount an additional CLAMPING UNIT upon the existing MULTI-CLAMP and attach it by threading a thread adapter into the stacking nut. MULTI-CLAMPS are progressively built up this way with the last being secured by a standard bolt threaded into the STACKING NUT.

The MULTI-CLAMP SYSTEM provides definite reference for measuring ... so important in laying out line runs. Quite an advantage over clamping devices that change center distance both vertically and horizontally with each change in line diameter. This advantage can be fully realized when stacking line runs, because with MULTI-CLAMP both vertical and horizontal center line distances remain specifically designed to give you exact spacing and ease of installation.

MULTI-CLAMP is available in steel, stainless steel and aluminum. The standard bushing material is Styrene Butadiene.

Using the following charts, determine the series of MULTI-CLAMP required and the number of clamps required. Then refer to the dimensional data and mounting instructions on the following pages.

LINE SIZE	MULTI-CLAMP SERIES
3/16- THRU 3/4-INCH O.D.	HC-10
1/4- THRU 1-INCH O.D.	HC-16
3/8- THRU 2-INCH O.D.	HC-32
1- THRU 2-1/2-INCH I.D.	HC-46
2- THRU 4-INCH I.D.	HC-72
5- THRU 6-INCH I.D.	HC-96



**RECOMMENDED SUPPORT CLAMP SPACING\***

TUBE O.D.	APPROX. SPACE BETWEEN SUPPORTS
1/4-, 5/16-, 3/8-, 1/2- INCH	3-FEET
5/8-, 3/4-, 7/8-INCH	4-FEET
1-INCH	5-FEET
1-1/4-, 1-1/2-INCH	7-FEET
2-INCH & UP	7- TO 10-FEET

\*From Fluid Power Handbook

**Clamps**

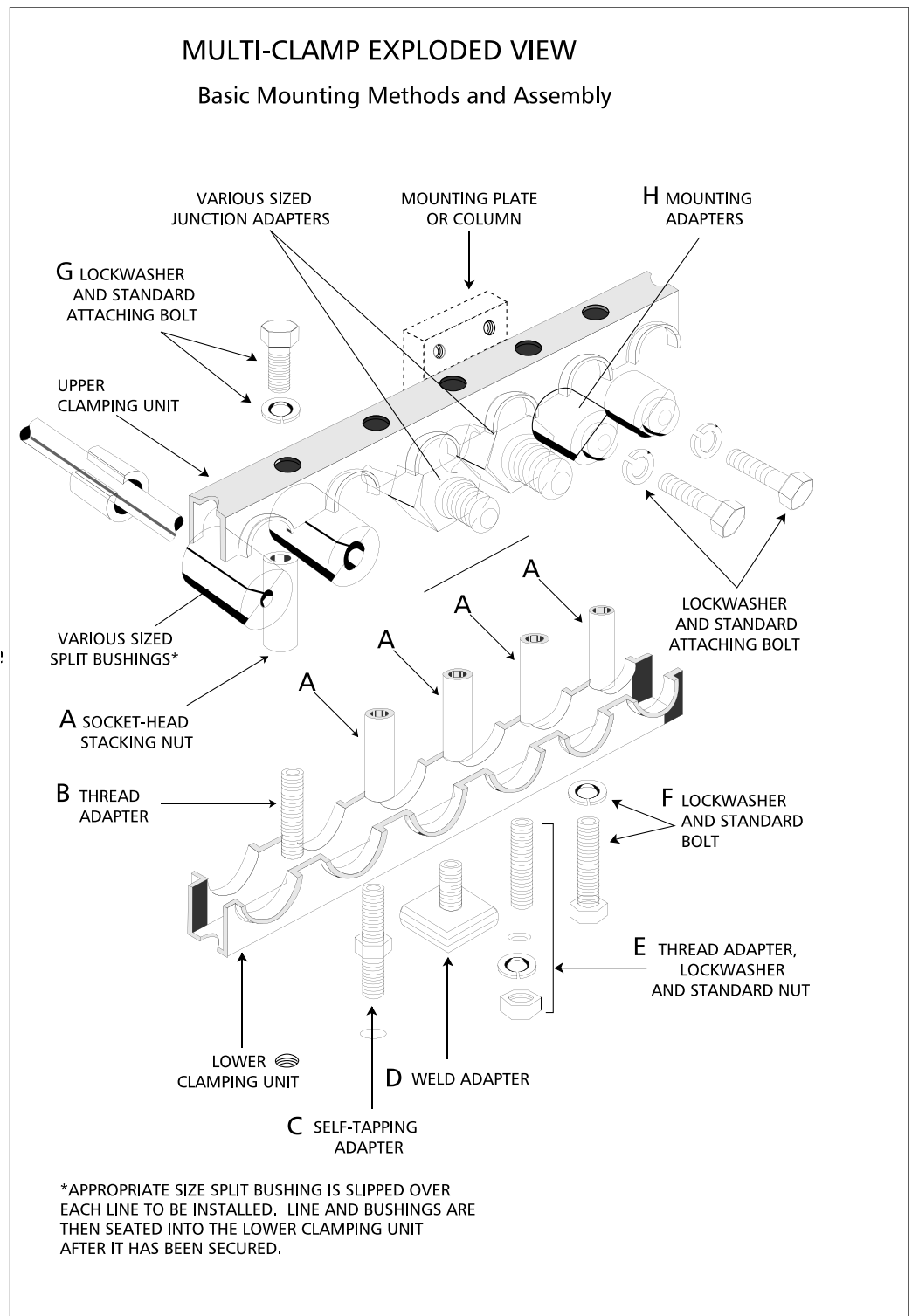


# The Multi-Clamp® System

A Socket-head Stacking Nut, shown at **A**, is used in combination with either **B**, a Thread Adapter, **C**, a Self-tapping Adapter, or **D**, a Weld Adapter, to secure the lower Clamping Unit directly to a mounting surface. The Stacking Nut is also used in combination with **E**, a Thread Adapter, lockwasher, and standard nut to attach the lower Clamping Unit through a drilled hole in mounting to a plate of 3/8 inch (or less) thickness.

After inserting Junction Adapters or Split Bushings and Lines into the lower Clamping Unit, the upper Clamping Unit is attached by positioning it over the Lower Clamping Unit and placing **G**, a standard bolt and lockwasher, through each mounting hole and threading the bolt securely into its corresponding Stacking Nut. This completes the assembly of a basic MULTI-CLAMP

In bridge mounting between two columns, or when a MULTI-CLAMP is suspended from a column, either the **E** combination or **F**, a standard bolt and lockwasher, can be used to secure the Stacking Nut to the lower Clamping Unit. **H** Mounting Adapters are placed into appropriate holes, the lines or Junction Adapters installed, the upper Clamping Unit attached, and the complete assembly then secured by the Mounting Adapters and standard bolts.



**Clamps**

**PLANNING GUIDE**

THE MULTI-CLAMP® SYSTEM PROVIDES FOR VISUAL PLANNING OF LINE INSTALLATIONS

This is a very important part of the total system. Line diameters and routes, bend angles, places and types of mounting, couplings, overhead suspension, and modulation of the installation with JUNCTION ADAPTERS can all be visually preplanned.

The first step in planning is visually determining the most desirable route. You would want to avoid obstructions, moving parts, service openings, and complex contours. Plan around them. Then follow this procedure:

**1. LINES AND DIRECTIONS**

Determine the number of lines required and the directions they must go. Determine the maximum O.D. of the lines. This will enable you to select the proper CLAMPING UNIT series.

**2. EXAMINE CHARACTERISTICS OF PRODUCT**

If the product to be piped consists of more than one component . . . such as a machine tool with hydraulic and coolant tanks . . . plan with the JUNCTION ADAPTER. Remember each unit of the machine tool can then be easily separated at one MULTI-CLAMP® and just as easily reconnected.

**3. ROUTING**

First, consider routing the line runs along the base of the product, being cautious of the obstructions, moving parts, service openings, and contours previously mentioned. If these are prohibitive, consider attaching upright spars to the product for overhead runs, or routing the runs overhead in suspension.

**4. INSTALLATION**

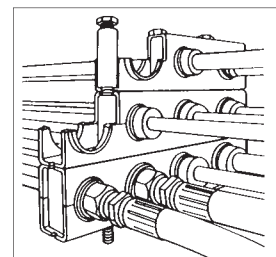
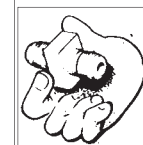
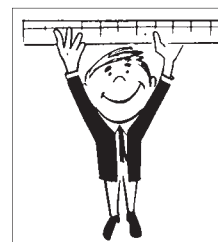
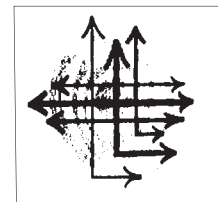
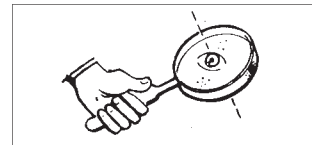
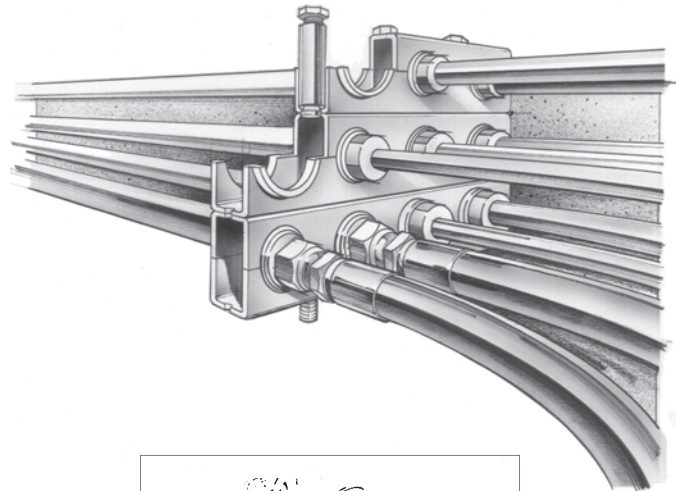
Having determined the route, select the proper CLAMPING UNIT for the maximum O.D. of the required lines. Then, cut lengths to provide sufficient line openings.

Mount the lower CLAMPING UNIT. (Refer to mounting methods shown on pages 6-7.) An excellent feature of this system is the mounted CLAMPING UNIT becomes a reference point for measuring line runs . . . eliminates trying to measure "in-the-air".

Now, position the first line and use this line as a basic guide for measurement; merely add the center distance to the next line opening for the next line, and so on.

Add JUNCTION ADAPTER, when applicable, or slip appropriate sized SPLIT BUSHING over each line and seat into lower CLAMPING UNIT.

Position the upper CLAMPING UNIT and secure it to the lower CLAMPING UNIT. (Refer to exploded view.)



NOTE: If a large number of lines are to be run, the following procedure is recommended: Cut lower CLAMPING UNIT in lengths for total number of lines to be installed. Next, cut upper CLAMPING UNIT in lengths for 2 lines only. Installation is then completed by securing only two lines at a time as the run progresses.



**SUGGESTED MOUNTING METHODS**

Actual installation of a line run, using the MULTI-CLAMP SYSTEM, begins with the mounting of the lower Clamping unit. Various methods are available to the installer for securing the lower Clamping Unit to the machine base, pillar, upright spar, mounting plate, etc.

**WELD ADAPTER**

1. Insert Weld Adapter into mounting hole of lower Clamping Unit.

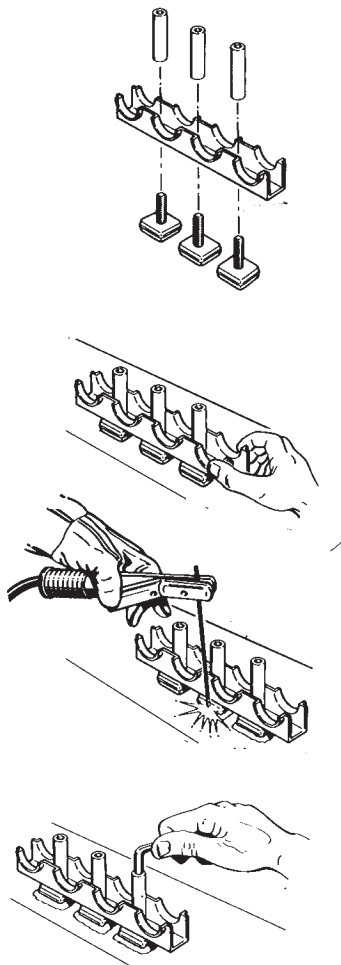
Secure Weld Adapter to lower Clamping Unit with socket head stacking nut (finger tight). Repeat Steps 1 and 2 for each hole of Clamping Unit.

Weld Adapter attached to lower clamping unit provides the basis of this method.

2. Position assembled unit onto mounting surface.

3. Weld base of each Weld Adapter to mounting surface.

4. Tighten all Stacking Nuts securely and proceed with remainder of installation.



**THREAD ADAPTER FOR TAPPED HOLE**

1. Using a scale, or the Clamping Unit itself, measure and mark location on mounting surface for each mounting hole on the lower Clamping Unit. Note that all mounting holes are spaced at even increments.

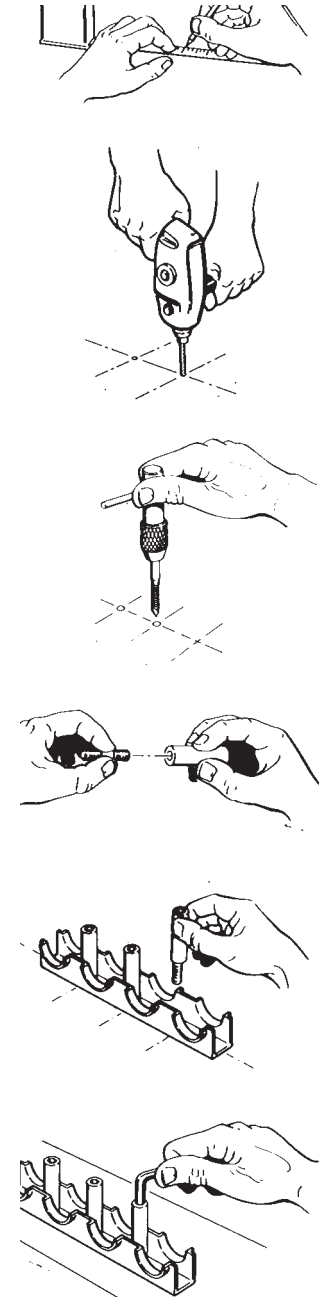
2. Drill appropriate size hole for the particular MULTI-CLAMP series being installed.

3. Using tapping tool, tap each hole with appropriate size thread for series being installed.

4. Assemble required number of Stacking Nuts and Thread Adapters for each mounting hole.

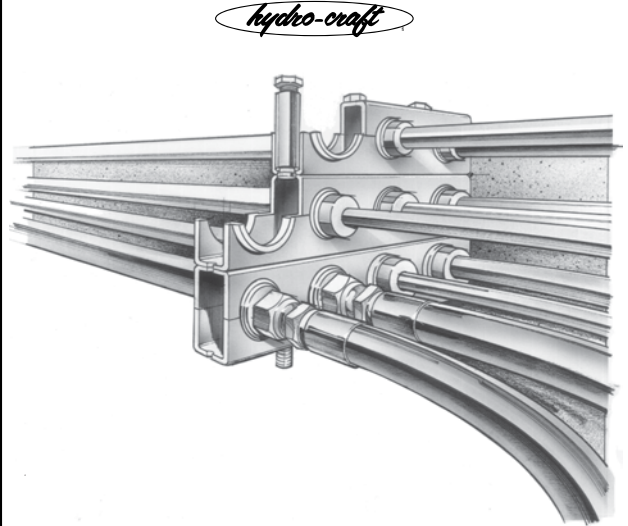
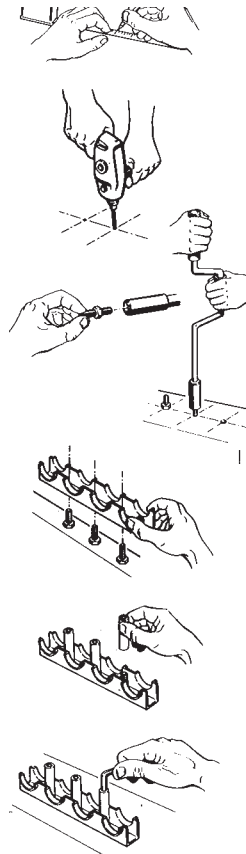
5. Position lower Clamping Unit over tapped holes and thread assembled Thread Adapter-Stacking Nut into each until finger tight.

6. Tighten all Stacking Nuts securely and proceed with remainder of installation.



### SELF-TAPPING ADAPTER

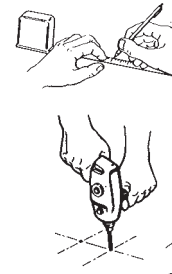
- Using a scale, or the Clamping Unit itself, measure and mark location on mounting surface for each mounting hole of the lower Clamping Unit. Note that all mounting holes are spaced at even increments.
- Drill appropriate size hole for particular MULTI-CLAMP® series being installed.
- Place Self-tapping Adapter into speed wrench and insert into each hole until seated securely.
- Align lower Clamping Unit over Self-tapping Adapters and position by placing the Adapters through mounting holes.
- Thread Stacking Nut onto each Self-tapping Adapter until finger tight.
- Tighten all Stacking Nuts securely and proceed with remainder of installation.



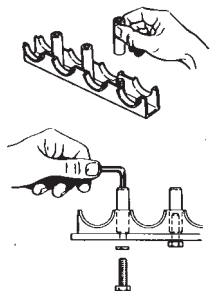
### STANDARD BOLT, LOCKWASHER AND STACKING NUT FOR DRILLED HOLE (A)

### THREAD ADAPTER FOR DRILLED HOLE (B)

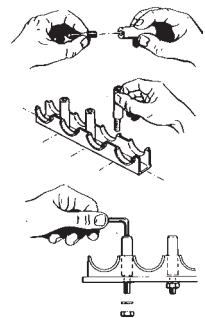
- (A & B) Using a scale, or the Clamping Unit itself, measure and mark location on mounting surface for each mounting hole of the lower Clamping Unit. Note that all mounting holes are spaced at even increments.
- (A & B) Drill appropriate size hole for particular MULTI-CLAMP series being installed.



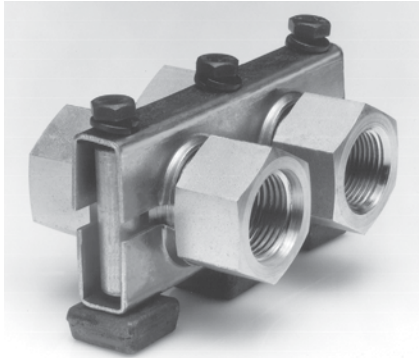
- (A) Position lower Clamping Unit over tapped holes. Place standard bolt and lockwasher through drilled hole and through lower Clamping Unit. Attach with stacking nut finger tight.
- (A) Tighten securely and proceed with remainder of installation.



- (B) Assemble required number of Stacking Nuts and Thread Adapters for each mounting hole.
- (B) Position lower Clamping Unit over drilled holes. Place threaded portion of assemble Thread Adapter-Stacking Nut through both lower clamping unit mounting hole and drilled hole.
- (B) Attach lockwasher and nut. Tighten to secure Clamping Unit and proceed with remainder of installation.

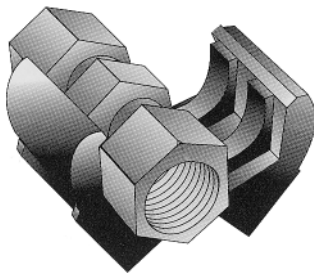


# Hydro-Craft® Junction Adapters - A Fitting Solution



The Hydro-Craft line of patented junction adapters are designed to eliminate traditional union problems. They are engineered to fit securely into the MULTI-CLAMP® and STRUT-ADAPTER® systems. Offered in a wide range of standard sizes in JIC, NPT SAE, and O-Ring Face Seal style, they are manufactured of 12L14 Leadloy and finished in a zinc plating.

They are a critical element in both junction clamping systems, and are available in sizes as listed in the chart below. (See page 13 for dimensions).



JIC MALE 37° FLARE	FEMALE NPT	FEMALE SAE	O-RING FACE SEAL
1/4"	3/8"	3/4-16	3/8"
3/8"	3/4"	1-1/6-12	1/2"
1/2"	1-1/4"	1-5/8-12	5/8"
5/8"			3/4"
3/4"			1"
7/8"			1-1/4"
1"			1-1/2"

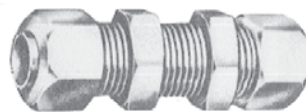
Call for information and quantity requirements on special junction adapters for Strut-Adapter and MULTI-CLAMP such as inverted flare, Japanese and BSP sizes. Fittings are available in a wide range of materials also, including stainless steel and brass.

**Clamps**

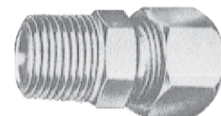
## UNION PROBLEMS THAT HYDRO-CRAFT SYSTEMS HELP PREVENT



When unions are in suspension and improperly secured, they can vibrate and cold-work, causing leaks.



A bulkhead fitting must be inserted into a drilled plate and locked in position from each side. There must be clearance in the plate to locate the fitting, and if the locknuts aren't 100% secure, vibration will cause the assembly to work loose, causing leaks.



With a pipe-tapped junction block, you have an additional connection point in your system. Another joint that can leak.



# Multi-Clamp® Bulkhead Spacer

The MULTI-CLAMP® Bulkhead Spacer is designed to allow adapters for the 2" HC-16 Series MULTI-CLAMP to be applied to the 3" HC-32 Series MULTI-CLAMP. The Bulkhead is a rugged molded thermoplastic elastomer that can withstand the effects of most oils, chemicals, and cleaning compounds from -48°F to 275°F.

The features and benefits of the MULTI-CLAMP Bulkhead Spacer:

All of the HC-16 Series Junction Adapters can be used in the HC-32 Series MULTI-CLAMPS.

The need for bulky and heavy adapters and bushing reducers is eliminated.

The cost to apply the junction adapters is reduced to approximately 1/6 of the previous cost to do the same job.

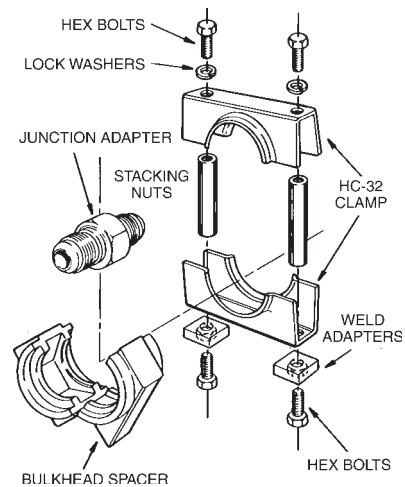
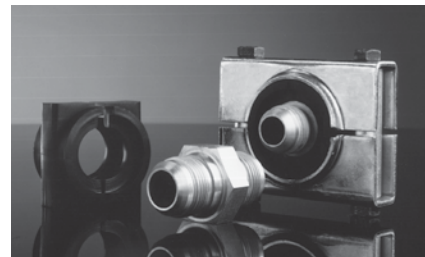
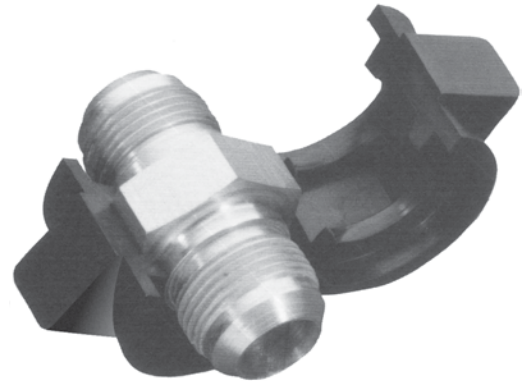
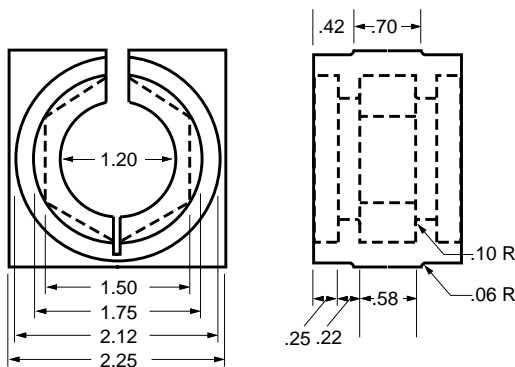
Metal to metal contact is replaced by an elastomer that is actually a cushion that will reduce noise while absorbing shock and vibration.

A Living Hinge allows the MULTI-CLAMP Bulkhead Spacer to be spread apart for quick and easy installation.

Now the junction adapters can be utilized in the HC-32 Series Clamps easier, quicker, at much less cost, and the clamping system is improved considerably. The elimination of the bushing reducers means less potential leak problems and the cushion effect will benefit any industrial clamping system.

## How To Order

Specify the Bulkhead Spacer by part number HC-32-BS-16



**Multi-Clamp®**

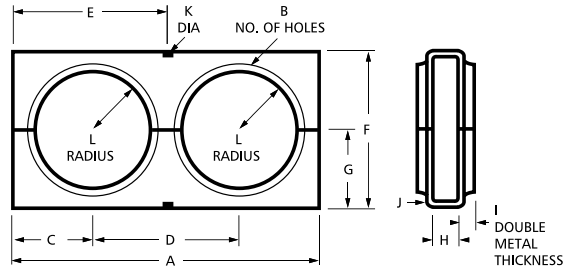
**How To Order**

Choose the part number, select no symbol for zinc-dichromate-plated steel, SS for stainless steel, or A for aluminum. Clamps and bushings can be ordered separately.

**Example: HC-16-3-4 - SS**

This example would provide you with a 2" clamping unit, with 4 mounting holes, in stainless steel.

Clamps can be ordered in special sizes, please call.

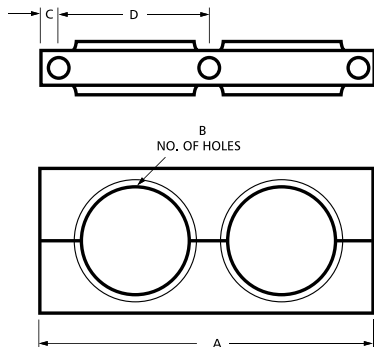


**CLAMPING UNIT**

PART NO.	A	B No. of Holes	C	D	E	F	G	H	I	J	K	L
<b>SERIES HC-10 1-1/2"</b>												
HC-10-1	2-15/16	2	23/32	1-1/2	1-15/32	1-1/2	3/4	47/64	5/32	14 GA.	11/32	27/64
HC-10-1	4-13/32	3	23/32		1-15/32							
HC-10-1	5-15/16	4	23/32		1-15/32							
HC-10-1	7-9/64	5	19/32		1-11/32							
HC-10-1	8-15/16	6	23/32		1-15/32							
HC-10-1	10-3/16	7	19/32		1-11/32							
HC-10-1	48	32										
<b>SERIES HC-16 2"</b>												
HC-16-1	3-7/8	2	15/16	2	1-15/16	2	1	3/4	5/32	14 GA.	11/32	19/32
HC-16-1	5-41/64	3	27/32		1-27/32							
HC-16-1	7-57/64	4	15/16		1-15/16							
HC-16-1	9-43/64	5	27/32		1-27/32							
HC-16-1	11-43/64	6	13/16		1-13/16							
HC-16-1	13-5/8	7	13/16		1-13/16							
HC-16-1	48	24										
<b>SERIES HC-32 3"</b>												
HC-32-1	6-49/64	2	1-7/8	3	3-3/8	3	1-1/2	1	1/4	11 GA.	13/32	1-1/16
HC-32-1	8-45/64	3	1-13/32		2-63/64							
HC-32-1	11-45/64	4	1-13/32		2-51/64							
HC-32-1	14-45/64	5	1-13/32		2-55/64							
HC-32-1	17-45/64	6	1-13/32		2-55/64							
HC-32-1	48	16										

**Clamps**

**CLAMPING UNIT WITH OUTSIDE MOUNTING HOLES**



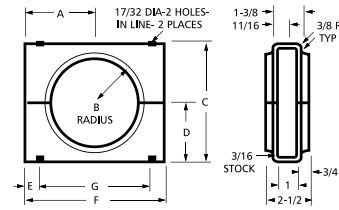
PART NO.	A	B No. of Holes	C	D
<b>SERIES HC-10 1-1/2"</b>				
HC-10-1-2	2-3/16	1	11/32	1-1/2
HC-10-2-3	3-51/64	2	25/64	1-1/2
HC-10-3-4	5-19/64	3	25/64	1-1/2
HC-10-4-5	6-51/64	4	25/64	1-1/2
HC-10-5--6	8-19/64	5	25/64	1-1/2
<b>SERIES HC-16 2"</b>				
HC-16-1-2	2-21/32	1	21/64	2
HC-16-2-3	4-49/64	2	25/64	2
HC-16-3-4	6-51/64	3	25/64	2
HC-16-4-5	8-51/64	4	25/64	2
<b>SERIES HC-32 3"</b>				
HC-32-1-2	4	1	1/2	3
HC-32-2-3	6-55/64	2	27/64	3
HC-32-3-4	9-55/64	3	27/64	3
HC-32-4-5	12-55/64	4	27/64	3





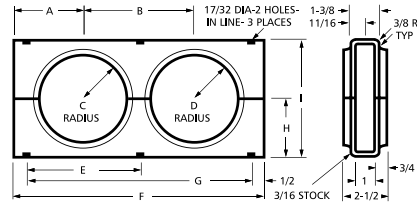
**SINGLE CLAMPING UNIT WITH OUTSIDE MOUNTING HOLES**

PART NO.	A	B	C	D	E	F	G
<b>SERIES HC-46</b>							
HC-46-1	3	1-3/4	5	2-1/2	1/2	6	5
<b>SERIES HC-72</b>							
HC-72-1	3-3/4	2-1/2	6-1/2	3-1/4	1/2	7-1/2	6-1/2
<b>SERIES HC-96</b>							
HC-96-1	5-1/2	3-3/4	9-3/16	4-9/16	3/4	11	9-1/2



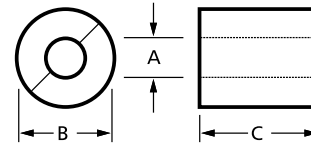
**DOUBLE CLAMPING UNIT**

PART NO.	A	B	C	D	E	F	G	H	I
<b>SERIES HC-46</b>									
HC-46-2	3	5	1-3/4	1-3/4	5	11	10	2-1/2	5
<b>SERIES HC-72</b>									
HC-72-2	3-3/4	6-1/2	2-1/2	2-1/2	6-1/2	14	13	3-1/4	6-1/2



**SPLIT BUSHING FOR TUBE AND PIPE APPLICATIONS**

PART NO.	TUBE SIZE	A INCHES	A-1 (mm)	B DIA.	C DIA.
<b>SERIES HC-10 1-1/2"</b>					
G-10-3	3/16	.172	4.4	7/8	1-5/16
G-10-4	1/4	.234	5.9		
G-10-5	5/16	.297	7.5		
G-10-6	3/8	.359	9.1		
G-10-8	1/2	.484	12.3		
G-10-10	5/8	.609	15.5		
G-10-12	3/4	.734	18.6		
<b>SERIES HC-16 2"</b>					
G-16-4	1/4	.234	5.9	1-1/4	1-5/16
G-16-5	5/16	.297	7.5		
G-16-6	3/8	.359	9.1		
G-16-8	1/2	.484	12.3		
G-16-10	5/8	.609	15.5		
G-16-12	3/4	.734	18.6		
G-16-14	7/8	.859	21.8		
G-16-16	1	.984	25.0		
<b>PIPE SIZE</b>					
G-16-4-P	1/4	.516	13.1	1-1/4	1-5/16
G-16-6-P	3/8	.656	16.7		
G-16-8-P	1/2	.813	20.7		
G-16-12-P	3/4	1.031	26.2		
<b>SERIES HC-32 3"</b>					
G-32-4	1/4	.234	5.9	2-3/16	1-3/4
G-32-6	3/8	.359	9.1		
G-32-8	1/2	.484	12.3		
G-32-10	5/8	.609	15.5		
G-32-12	3/4	.734	18.6		
G-32-14	7/8	.859	21.8		
G-32-16	1	.984	25.0		
G-32-20	1-1/4	1.234	31.3		
G-32-24	1-1/2	1.484	37.7		
G-32-28	1-3/4	1.734	44.0		
G-32-32	2	1.984	50.4		
<b>PIPE SIZE</b>					
G-32-4-P	1/4	.516	13.1	2-3/16	1-3/4
G-32-6-P	3/8	.656	16.7		
G-32-8-P	1/2	.813	20.7		
G-32-12-P	3/4	1.031	26.2		
G-32-16-P	1	1.297	32.9		
G-32-20-P	1-1/4	1.641	41.7		
G-32-24-P	1-1/2	1.875	47.6		



Clamps

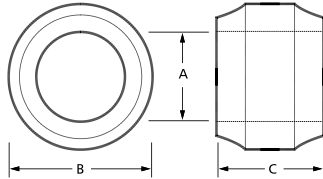
**How To Order**

select by part number. Silicone bushings are available for service up to 500°. Call for pricing and quantity requirements.

All dimensions are approximate in inches



**Multi-Clamp®**



**CLAMPING UNIT**

PART NO.	A INCHES	A-1 (mm)	B	C
<b>SERIES HC-10 1-1/2"</b>				
SG-10-6	.359	9.1	1	1-5/16
SG-10-4-P	.516	13.1		
SG-10-9	.562	14.3		
SG-10-11	.656	16.7		
SG-10-12	.734	18.6		
<b>SERIES HC-16 2"</b>				
SG-16-4	.234	5.9	1-1/2	1-5/16
SG-16-7	.400	10.2		
SG-16-8	.484	12.3		
SG-16-4-P	.516	13.1		
SG-16-9	.562	14.3		
SG-16-10	.609	15.5		
SG-16-6-P	.656	16.7		
SG-16-12	.734	18.6		
SG-16-8-P	.813	20.7		
SG-16-14	.859	21.8		
SG-16-15	.922	23.4		
SG-16-16	.984	25.0		
SG-16-12-P	1.031	26.2		
<b>SERIES HC-32 3"</b>				
G-32-17	1.125	28.6	2-23/64	1-3/4
G-32-19	1.200	30.5		
G-32-23	1.406	35.7		
G-32-25	1.453	36.9		
G-32-26	1.560	39.6		
G-32-27	1.703	43.3		
G-32-29	1.750	44.5		
G-32-31	1.906	48.4		
<b>SERIES HC-46 5"</b>				
G-46-25	1.453	36.9	3-7/8	2-53/64
G-46-27	1.703	43.3		
G-46-31	1.785	45.3		
G-46-32	2.00	50.8		
G-46-33	2.040	51.8		
G-46-34	2.169	55.1		
G-46-40	2.500	63.5		
G-46-43	2.688	68.3		
G-46-39	2.825	71.8		

**Clamps**

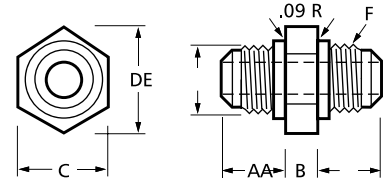
**SPLIT BUSHING FOR PIPE APPLICATIONS**

PART NO.	PIPE SIZE	A INCHES	A-1 (mm)	B	C
<b>SERIES HC-46</b>					
G-46-16-P	1	1.297	32.9	3-55/64	2-3/4
G-46-20-P	1-1/4	1.644	41.8		
G-46-24-P	1-1/2	1.884	47.9		
G-46-32-P	2	2.359	59.9		
G-46-40-P	2-1/2	2.859	72.6		
<b>SERIES HC-72</b>					
G-72-32-P	2	2.359	59.9	5-5/16	2-3/4
G-72-40-P	2-1/2	2.859	72.6		
G-72-48-P	3	3.484	88.5		
G-72-56-P	3-1/2	3.984	101.2		
G-72-64-P	4	4.484	113.9		
<b>SERIES HC-96</b>					
G-96-80-P	5	5.547	140.9	7-7/8	2-3/4
G-96-96-P	6	6.609	167.9		



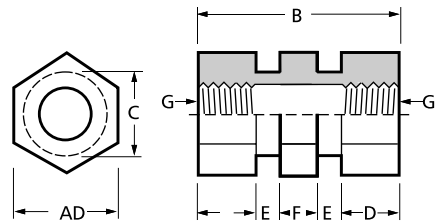
**37° FLARE MALE JUNCTION ADAPTER**

PART NO.	TUBE SIZE	A	B	C	D	E	F	THREAD
<b>SERIES 1-1/2"</b>								
B-10-4	1/4	.76	.56	1	1-9/64	27/32	7/16-20	
B-10-6	3/8	.76					9/16-18	
B-10-8	1/2	.87					3/4-16	
B-10-10	5/8	.96					7/8-14	
<b>SERIES 2"</b>								
B-16-4	1/4	.76	.56	1-1/2	1-23/32	1-13/64	7/16-20	
B-16-6	3/8	.76					9/16-18	
B-16-8	1/2	.87					3/4-16	
B-16-10	5/8	.96					7/8-14	
B-16-12	3/4	1.07					1-1/6-12	
B-16-14	7/8	1.10					1-3/16-12	
B-16-16	1	1.10					1-5/16-12	



**FEMALE JUNCTION ADAPTER**

PART NO.	A	B	C	D	E	F	G	THREAD
BSAE-10-8	1	2-13/16	.843	.84	.28	.56	3/4-16 SAE	
BSAE-16-12	1-1/2	3-1/8	1.20	.93	.34	.56	1-1/16-12 SAE	
BSAE-32-20	2-1/4	2-5/8	2.12	.56	.25	.68	1-5/8-12 SAE	



**FEMALE JUNCTION ADAPTER-PIPE**

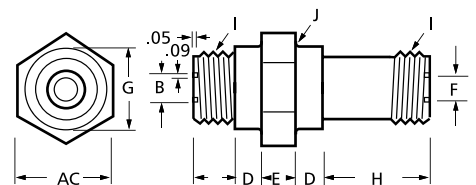
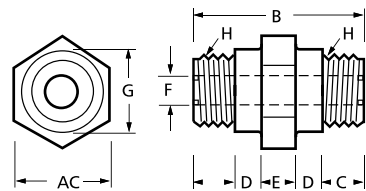
PART NO.	A	B	C	D	E	F	G	THREAD
BFM-10-6-P	1	2-13/16	.843	.84	.28	.56	3/8 N.P.T.	
BFM-16-12-P	1-1/2	3-1/8	1.20	.93	.34	.56	3/4 N.P.T.	
BFM-32-20-P	2-1/4	2-5/8	2.12	.56	.25	.68	1-1/4 N.P.T.	

**O-RING FACE SEAL MALE JUNCTION ADAPTER**

PART NO.	TUBE SIZE	A	B	C	D	E	F	G	H	THREAD
FB-10-6	3/8	1	1.98	.43	.28	.56	.26	.84	11/16-16	
FB-10-8	1/2	1	2.12	.50	.28	.56	.38	.84	13/16-16	
FB-10-10	5/8	1	2.32	.60	.28	.56	.48	.84	1-14	
FB-16-6	3/8	1.5	1.98	.43	.34	.56	.26	1.20	11/16-16	
FB-16-8	1/2	1.5	2.12	.50	.34	.56	.38	1.20	13/16-16	
FB-16-10	5/8	1.5	2.32	.60	.34	.56	.48	1.20	1-14	
FB-16-12	3/4	1.5	2.42	.65	.34	.56	.61	1.20	1-3/16-12	
FB-16-16	1	1.5	2.48	.68	.34	.56	.81	1.20	1-7/16-12	
FB-32-20	1-1/4	2.25	2.98	.68	.437	.75	1.02	2.12	1-11/16-12	
FB-32-24	1-1/2	2.25	2.98	.68	.437	.75	1.26	2.12	2-12	

PART NO.	TUBE SIZE	A	B	C	D	E	F	G	H	I	J
										THREAD	RADIUS
LFB-10-8	1/2	1	.60	.50	.28	.56	.38	.84	1.50	13/16-16	.09
LFB-10-10	5/8	1	.74	.60	.28	.56	.48	.84	1.50	1-14	.09
LFB-16-12	3/4	1.5	.87	.65	.35	.56	.61	1.20	1.90	13/16-12	.10
LFB-16-16	1	1.5	1.05	.68	.35	.56	.81	1.20	1.93	1-7/16-12	.10

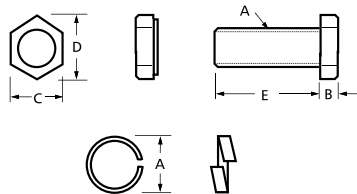
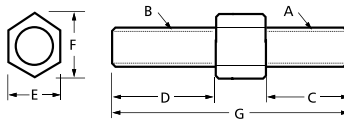
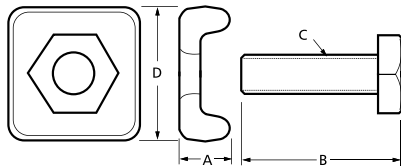
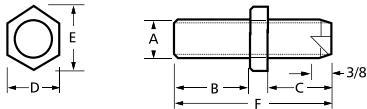
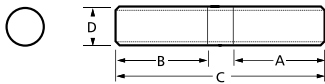
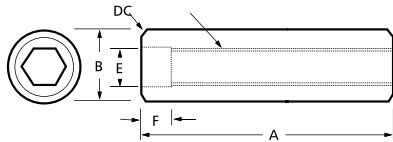
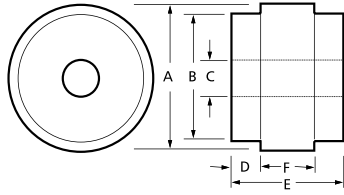


Clamps

All dimensions are approximate in inches



**Multi-Clamp®**



**MOUNTING ADAPTER (for pillar or spar mounting)**

MULTI-CLAMP SERIES	PART NO.	A DIA.	B DIA.	C DIA.	D	E	F (±.003)
HC-10-1-1/2"	B-10-MO	1	.8390 MAX .8350 MIN	11/32	9/32	1-1/16	.510
HC-16-2"	B-16-MO	1-3/8	1.193 MAX 1.187 MIN	11/32	9/32	1-1/16	.510
HC-32-3"	B-32-MO	2-1/4	2.128 MAX 2.122 MIN	13/32	27/64	1-9/16	.687

**SOCKET-HEAD STACKING NUT (one required for each mounting hole)\***

MULTI-CLAMP SERIES	PART NO.	A	B DIA.	C THREAD	D CHAMFER	E	F
HC-10	N-10	1.335	1/2	5/16-18	1/32x45°	5/16	7/32
HC-16	N-16	1.800	1/2	5/16-18	1/32x45°	5/16	7/32
HC-32	N-32	2.780	11/16	3/8-16	1/16x30°	3/8	9/32
HC-46	N-46	4.500	1	1/2-13	1/16x30°	1/2	
HC-72	N-72	6.00	1	1/2-13	1/16x30°	1/2	
HC-96	N-96	8.750	1	1/2-13	1/16x30°	1/2	

**THREAD ADAPTER (for installing or stacking)\***

MULTI CLAMP SERIES	PART NO.	A	B	C	D THREAD
HC-10 & HC-16	T-10	.62	.62	1.38	5/16-18
HC-32	T-32	.88	.88	2	3/8-16
HC-46,72 & 96	T-72	.50	.62	1.50	1/2-13

**SELF-TAPPING ADAPTER (for drilled hole mounting)**

MULTI CLAMP SERIES	PART NO.	A THREAD	B	C	D	E	F
HC-10 & HC-16	ST-10	5/16-18	3/4	5/8	1/2	.577	1.50

**WELD ADAPTER (for weld mounting)**

MULTI CLAMP SERIES	PART NO.	A	B	C THREAD	D
HC-10 & HC-16	W-10 W-16	.44	.75	5/16-18	1
HC-32	W-32	.47	1	3/8-16	1.25
HC-46,72 & 96	W-72	.53	1.5	1/2-13	1.375

**REDUCER ADAPTER (for stacking HC-10 on HC-32 series clamp)**

MULTI-CLAMP SERIES	PART NO.	A THREAD	B THREAD	C	D	E	F	G
HC-32	R-32	5/16-18	3/8-16	.75	1	.50	.575	2.25

**STANDARD PARTS\***

MULTI CLAMP SERIES	PART NO.	A THREAD	B	C	D	E
HC-10 & HC-16	HB-10	5/16-18	7/32	1/2	0.577	3/4
	HN-10	5/16-18	17/64	1/2	0.577	
HC-32	HB-32	3/8-16	1/4	9/16	0.650	1
	HN-32	3/8-16	21/64	9/16	0.650	
HC-46, 72 & 96	HB-72	1/2-13				1-1/2
	HN-72	1/2-13				
LOCKW ASHER		A				
HC-10 & HC-16	HW-10	5/16				
HC-32	HW-32	3/8				
HC-46, 72 & 96	HW-72	1/2				

**How To Order**

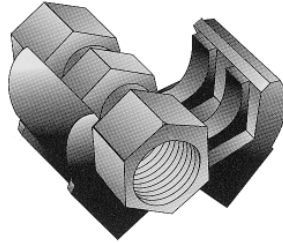
select by part number. \*Add SS to end of part number for stainless steel.

**Clamps**

### A Critical Junction . . .

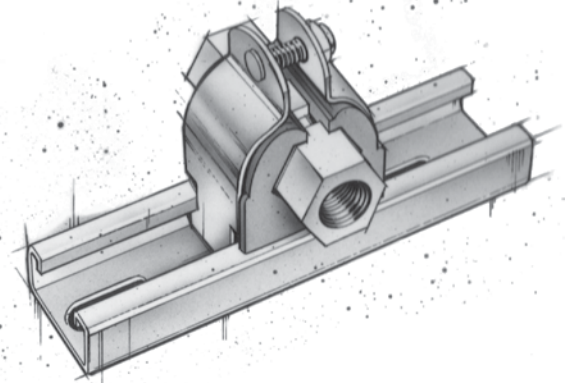
... in any hydraulic system is the connection point between tube and hose, hose and pipe, etc. Improperly secured, they will coldwork, loosen, and LEAK. The MULTI-CLAMP® SYSTEM'S exclusive ability to clamp the line AT THE FITTING is widely used and approved in thousands of plants worldwide. Now, this exclusive advantage is available with Strut-Adapter, the only rail mounted clamp in the world with this feature. The specially designed bushing (shown below), securely accommodates the following Hydro-Craft junction adapters: (see page 13 for dimensions)

- FEMALE S.A.E. straight thread sizes: 1-1/16"-12 and 3/4"-16.
- FEMALE NPT pipe thread sizes: 3/4" and 3/8".
- MALE 37° Flared Junction Adapters: 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", and 1".
- MALE O-RING FACE SEAL, Tube Junction Adapters: 3/8", 1/2", 5/8", 3/4", and 1".



Clamp available in steel and stainless steel.

*hydro-craft*



### How To Order

Select by part number.

**Example: WS-BFM-16-12P**

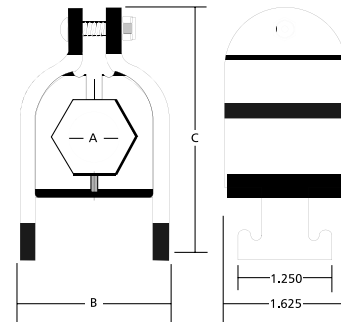
This example would provide you with our female NPT junction adapter with a 3/4" fitting size. Add SS to end of part number for stainless steel clamp.

### Strut-Adapter®

Installation is a snap - clamp, fitting, and cushion are all packaged together and clearly labeled.

Clamps

FITTING SIZE	PART NO.	A	B	C
<b>FEMALE NPT JUNCTION ADAPTERS, HC-10 &amp; HC-16 SERIES</b>				
3/8" FEMALE NPT	WS-BFM-10-6P	3/8	2.07	2.60
3/4" FEMALE NPT	WS-BFM-16-12P	3/4	2.32	2.86
<b>FEMALE SAE JUNCTION ADAPTERS, HC-10 &amp; HC-16 SERIES</b>				
3/4"-16 FEMALE SAE	WS-BSAE-10-8	3/4	2.07	2.60
1-1/16"-12 FEMALE SAE	WS-BSAE-16-12	1-1/16	2.32	2.86
<b>MALE 37° FLARED JUNCTION ADAPTERS, HC-10 SERIES</b>				
1/4" MALE 37° FLARE	WS-B-10-4	1/4	2.07	2.60
3/8" MALE 37° FLARE	WS-B-10-6	3/8	2.07	2.60
1/2" MALE 37° FLARE	WS-B-10-8	1/2	2.07	2.60
5/8" MALE 37° FLARE	WS-B-10-10	5/8	2.07	2.60
<b>MALE 37° FLARED JUNCTION ADAPTERS, HC-16 SERIES</b>				
1/4" MALE 37° FLARE	WS-B-16-4	1/4	2.32	2.86
3/8" MALE 37° FLARE	WS-B-16-6	3/8	2.32	2.86
1/2" MALE 37° FLARE	WS-B-16-8	1/2	2.32	2.86
5/8" MALE 37° FLARE	WS-B-16-10	5/8	2.32	2.86
3/4" MALE 37° FLARE	WS-B-16-12	3/4	2.32	2.86
7/8" MALE 37° FLARE	WS-B-16-14	7/8	2.32	2.86
1" MALE 37° FLARE	WS-B-16-16	1	2.32	2.86
<b>MALE O-RING FACE SEAL, TUBE JUNCTION ADAPTERS, HC-10 SERIES</b>				
3/8" MALE	WS-FB-10-6	3/8	2.07	2.60
1/2" MALE	WS-FB-10-8	1/2	2.07	2.60
5/8" MALE	WS-FB-10-10	5/8	2.07	2.60
3/4" MALE	WS-FB-10-12	3/4	2.07	2.60
<b>MALE O-RING FACE SEAL, TUBE JUNCTION ADAPTERS, HC-16 SERIES</b>				
3/8" MALE	WS-FB-16-6	3/8	2.32	2.86
1/2" MALE	WS-FB-16-8	1/2	2.32	2.86
5/8" MALE	WS-FB-16-10	5/8	2.32	2.86
3/4" MALE	WS-FB-16-12	3/4	2.32	2.86
1" MALE	WS-FB-16-16	1	2.32	2.86

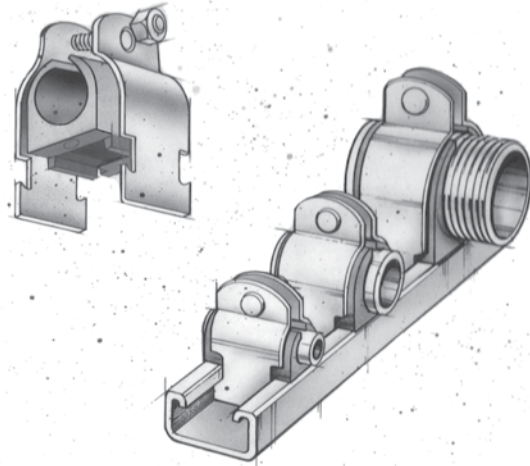


All dimensions are approximate in inches

# Walker-Strut®

The New Channel Mounted Clamp from Hydro-Craft® Reduces:

- Vibration
- Shock
- Surge
- Expansion and Contraction



The WALKER-STRUT® CLAMPING SYSTEM is ideal for line runs through 6" where space is at a premium, or where severe shock and vibration is not present. Used now for several years in the fluid power industry, it has been proven time and again as the most sensible, most economical, most trouble-free rail-mounted clamp available. The Walker-Strut is also widely used in the refrigeration and mobile industries.

### The WALKER-STRUT Clamp

Clamps are available in steel (with electro-chromate finish) and stainless steel.

### The Bushing

Manufactured from a thermoplastic elastomer, it's built tough to withstand the effects of most oils, chemicals and industrial cleaning compounds, in temperatures from - 20°F to 275°F

### Installation

One man, one tool time savings. Retrofits can be added without disassembling your present system.

Despite its exclusive benefits, the Walker-Strut System from Hydro-Craft is priced competitively. Installation is a snap: simply mount the base channel, position the clamp, and tighten!

WALKER-STRUT assemblies are available 5 sets per bag. Larger quantities can be shipped in bulk.

## Hydro-Craft® WALKER-STRUT® Channel

Channel is used to mount Strut-Adapter, Hydro-Strut, Silent-Strut, and Walker-Strut Clamps. Steel Single-Anchor Channel, 14 ga. x 13/16 x 1-5/8" with green baked-on finish. Also available in 304 stainless steel.

Available in pre-cut lengths: 4", 8", 3', 4', 10', and 20'. Special cut sizes available.

PLEASE NOTE: Long channel shipped with a combined length and girth of 120" or more must ship by common carrier. Cut-to-size orders may therefore cost less due to shipping via U.P.S.

**How To Order**

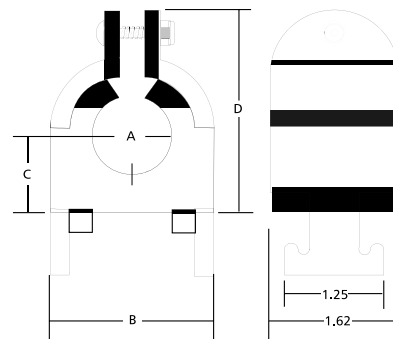
Simply choose the clamp size, select no symbol for zinc-dichromate-plated steel or SS for stainless steel, and the appropriate bushing size.

**Example: WS-06-P - SS**

This example would provide you with a stainless steel clamp, and a cushion for a 3/8" pipe.

**Clamps**

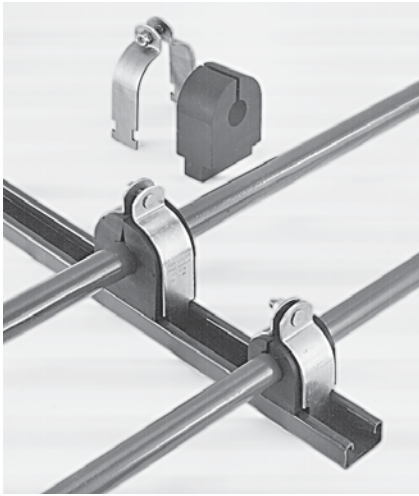
CLAMP NO.	TUBE SIZE		A INCHES	A-1 (mm)	B	C	D
	COPPER & STEEL TUBING	COPPER WATER PIPE(NOM)					
WS-04	1/4		.25	6.4	.62	.27	1.11
WS-06	3/8		.37	9.4	.82	.33	1.24
WS-08	1/2	3/8	.50	12.7	.94	.40	1.36
WS-10	5/8	1/2	.62	15.8	1.06	.46	1.50
WS-12	3/4	5/8	.75	19.1	1.20	.52	1.78
WS-14	7/8	3/4	.87	22.1	1.31	.58	1.91
WS-16	1		1	25.4	1.44	.65	2.03
WS-18	1-1/8	1	1.12	28.5	1.57	.70	2.16
WS-20	1-1/4		1.25	31.8	1.70	.77	2.30
WS-22	1-3/8	1-1/4	1.37	34.8	1.82	.83	2.75
WS-24	1-1/2		1.50	38.1	1.95	.90	2.75
WS-26	1-5/8	1-1/2	1.62	41.2	2.07	.96	3.03
WS-28	1-3/4		1.75	44.5	2.20	1.02	3.03
WS-30	1-7/8		1.87	47.5	2.32	1.09	3.28
WS-32	2		2	50.8	2.45	1.15	3.28
WS-34	2-1/8		2.12	53.9	2.57	1.27	3.53
WS-36	2-1/4		2.25	57.2	2.69	1.34	3.65
WS-38	2-3/8		2.37	60.2	2.82	1.41	3.78
WS-40	2-1/2		2.50	63.5	2.94	1.46	4.03
WS-42	2-5/8		2.62	66.6	3.07	1.53	4.03
WS-46	2-7/8		2.87	72.9	3.32	1.66	4.27
WS-48	3		3	76.2	3.44	1.72	4.52
WS-50	3-1/8		3.12	79.3	3.57	1.78	4.52
WS-56	3-1/2		3.50	88.9	3.95	1.97	4.91
WS-58	3-5/8		3.82	97.0	4.20	2.03	5.03
WS-64	4		4	101.6	4.45	2.28	5.53
WS-66	4-1/8		4.12	104.7	4.57	2.34	5.66
WS-72	4-1/2		4.50	114.3	4.95	2.53	6.03



CLAMP NO.	PIPE SIZE	A INCHES	A-1 (mm)	B	C	D
WS-04P	1/4	.54	13.7	.98	.43	1.41
WS-06P	3/8	.67	17.0	1.13	.49	1.59
WS-08P	1/2	.84	21.3	1.29	.58	1.91
WS-12P	3/4	1.05	26.7	1.50	.70	2.16
WS-16P	1	1.31	33.3	1.76	.81	2.75
WS-20P	1-1/4	1.66	42.2	2.17	.99	3.03
WS-24P	1-1/2	1.90	48.3	2.35	1.09	3.28
WS-32P	2	2.37	60.2	2.82	1.41	3.78
WS-40P	2-1/2	2.87	72.9	3.32	1.66	4.27
WS-48P	3	3.50	88.9	3.95	1.97	4.91
WS-56P	3-1/2	4	101.6	4.45	2.28	5.53
WS-64P	4	4.50	114.3	4.95	2.53	6.03
WS-80P	5	5.58	141.7	6.01	3.06	7.03
WS-96P	6	6.62	168.2	7.07	3.59	8.03



# Hydro-Strut® Clamping System



The Hydro-Strut clamping system is designed for hydraulic, pneumatic, electrical, and fuel line applications, where it retains, guides, protects, and spaces line runs uniformly. This design can easily maintain equal centers, even when the line size varies. Lines are rigid, have a neat appearance, and install easily through channel mounting.

Independent testing shows the Hydro-Strut clamping system, using Styrene Butadiene Rubber (SBR) bushings, to be 80 percent more efficient at reducing noise than conventional cushion clamping systems. The SBR bushing, which provides the cushion for the reduced line noise, is compression molded, and selected for its excellent compatibility with industrial solvents, fuels, and hydraulic fluids. The clamp is available in either stainless or zinc-dichromate-plated steel.

Available standard sizes for tube, hose and pipe range from 1/4-inch through 2-inch. Special sizes are available, please contact the factory for more information.

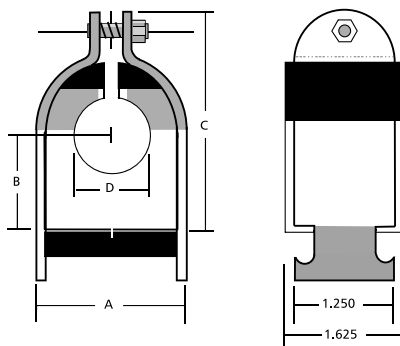
The New Hydro-Strut Clamping System is the most effective clamp available - greatly reducing noise due to line shock and vibration!

**Reduces line noise by as much as 80%**

**Available in wide range of line sizes from 1/4" to 2"**

**Easy installation through channel mounting**

**High-quality materials of construction**



## How To Order

Simply choose the clamp size, select no symbol for zinc- dichromate-plated steel or SS for stainless steel, and the appropriate bushing size. Clamps and bushings can be ordered separately.

**Example: HCS-32-M - SS - RSG-3Z-10**

This example would provide you with our larger, stainless steel clamp, and a bushing for 5/8" tube.

CLAMP NO.	A	B	C
HCS-16-M	1.95	1.20	2.80

CLAMP NO.	A	B	C
HCS-32-M	2.95	1.70	3.77

BUSHING No.	TUBE SIZE	D INCHES	D-1 (mm)
RSG-16-4	1/4	.234	5.9
RSG-16-6	3/8	.359	9.1
RSG-16-8	1/2	.484	12.3
RSG-16-10	5/8	.609	15.5
RSG-16-12	3/4	.734	18.6
RSG-16-14	7/8	.859	21.8
RSG-16-16	1	.984	25.0
RSG-16-20	1-1/4	1.234	31.3
<b>Pipe Size</b>			
RSG-16-4P	1/4	.516	13.1
RSG-16-6P	3/8	.656	16.7
RSG-16-8P	1/2	.813	20.7
RSG-16-12P	3/4	1.031	26.2
RSG-16-16P	1	1.297	32.9

BUSHING No.	TUBE SIZE	D INCHES	D-1 (mm)
RSG-32-6	3/8	.359	9.1
RSG-32-8	1/2	.484	12.3
RSG-32-10	5/8	.609	15.5
RSG-32-12	3/4	.734	18.6
RSG-32-14	7/8	.859	21.8
RSG-32-16	1	.984	25.0
RSG-32-20	1-1/4	1.234	31.3
RSG-32-24	1-1/2	1.484	37.7
RSG-32-32	2	1.984	50.4
<b>Pipe Size</b>			
RSG-32-4P	1/4	.516	13.1
RSG-32-6P	3/8	.656	16.7
RSG-32-8P	1/2	.813	20.7
RSG-32-12P	3/4	1.031	26.2
RSG-32-16P	1	1.297	32.9
RSG-32-20P	1-1/4	1.640	41.7
RSG-32-24P	1-1/2	1.870	47.5
RSG-32-32P	2	2.350	59.7



# Silent-Strut® Clamping System

The Silent-Strut clamping system is excellent for use in refrigeration, HVAC and electrical applications, but is also effective on hydraulic, pneumatic and fuel line applications. In addition to its low cost, it offers excellent noise reduction due to the materials of construction and design of the channel mounting system. This channel mounting makes for a quick and easy installation. The superior design will maintain equal centers, even when the line size varies. Lines remain rigid and have a neat appearance.

The clamp is made from Zytel® (glass-filled nylon) that is very resistant to corrosion, and much lower in cost than stainless steel. Two clamp sizes are available. All the bushings are made from Styrene Butadiene Rubber (SBR). The bushing is secured in the clamp using stainless steel nuts and bolts. The SBR bushing is compression molded, selected for its compatibility with most oils, chemicals, and cleaning compounds, and provides the cushion for the noise reduction.

Available standard sizes for tube and pipe range from 1/4-inch through 2-inch. Please contact the factory for more information.

## How To Order

Simply choose the clamp size and the appropriate bushing size. Clamps and bushings are ordered separately.

**Example: HC-SS-16 - G-16-10**

This example would provide you with our smaller Zytel® glass-filled nylon clamp and a bushing for 5/8" tube.



- Easy channel mounting installation
- Wide range of line sizes from 1/4" to 2"
- High-quality materials of construction
- Greatly reduces line noise

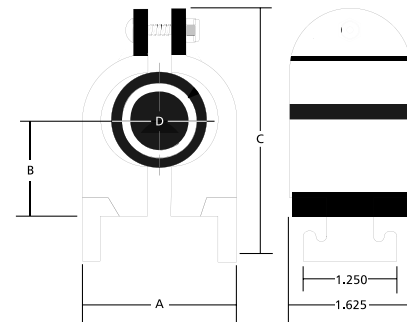
**Clamps**

CLAMP NO.	A	B	C
HC-SS-16	1.50	1.25	2.62

CLAMP NO.	A	B	C
HC-SS-32	2.82	1.87	3.68

Bushing No.	TUBE SIZE	D INCHES	D-1 (mm)
G-16-4	1/4	.234	5.9
G-16-5	5/16	.297	7.5
G-16-6	3/8	.359	9.1
G-16-8	1/2	.484	12.3
G-16-10	5/8	.609	15.5
G-16-12	3/4	.734	18.6
G-16-14	7/8	.859	21.8
G-16-16	1	.984	25.0
Pipe Size			
G-16-4-P	1/4	.516	13.1
G-16-6-P	3/8	.656	16.7
G-16-8-P	1/2	.813	20.7
G-16-12-P	3/4	1.031	26.2

Bushing No.	TUBE SIZE	D INCHES	D-1 (mm)
G-32-4	1/4	.234	5.9
G-32-6	3/8	.359	9.1
G-32-8	1/2	.484	12.3
G-32-10	5/8	.609	15.5
G-32-12	3/4	.734	18.6
G-32-14	7/8	.859	21.8
G-32-16	1	.984	25.0
G-32-20	1-1/4	1.234	31.3
G-32-24	1-1/2	1.484	37.7
G-32-28	1-3/4	1.734	44.0
G-32-32	2	1.984	50.4
Pipe Size			
G-32-4-P	1/4	.516	13.1
G-32-6-P	3/8	.656	16.7
G-32-8-P	1/2	.813	20.7
G-32-12-P	3/4	1.031	26.2
G-32-16-P	1	1.297	32.9
G-32-20-P	1-1/4	1.641	41.7
G-32-24-P	1-1/2	1.875	47.6



All dimensions are approximate in inches

# Econo-Isolator® Clamping System

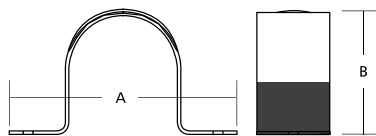
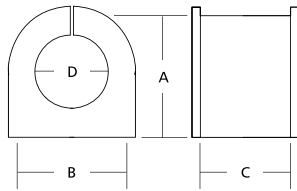


## Inexpensive Cushions To Fit Standard Pipe Straps

The Econo-Isolator clamping system offers a low-cost, high-quality solution for use in plumbing, mechanical, and HVAC/R applications.

Easy mounting using readily-available brackets

Made from high-quality Styrene Butadiene Rubber (SBR)



All dimensions are approximate in inches

The Econo-Isolator is the low-cost answer for your clamping needs. It not only meets the requirements for plumbing, mechanical, and HVAC/R applications, but performs well in hydraulic, pneumatic, fuel line, and electrical applications.

The Econo-Isolator, using standard pipe straps that are readily available, retains, guides, protects and spaces line runs uniformly. Lines are rigid, have a neat appearance, and install easily. The bushing is made from Styrene Butadiene Rubber. It is compression molded and selected for its excellent compatibility with industrial solvents, fuels, hydraulic fluids, other liquids and gases.

## How To Order

Simply choose the bushing number and appropriate strap number that corresponds to the tube or pipe size you need. Bushings and pipe straps are ordered separately.

### Example: EI-10-12 EIM-10

This example would provide you with the correct bushing and strap to fit a 3/4" tube.

Bushing No.	Tube Size	A	B	C	D INCHES	D-1 (mm)
EI-10-4	1/4	.870	.835	1.0	.235	5.9
EI-10-6	3/8				.360	9.1
EI-10-8	1/2				.485	12.3
EI-10-10	5/8				.610	15.5
EI-10-12	3/4				.735	19.6
<b>Pipe Size</b>						
EI-10-4P	1/4				.525	13.3
EI-10-6P	3/8				.660	16.7
<b>Tube Size</b>						
EI-16-14	7/8	1.30	1.24	1.0	.860	21.8
EI-16-16	1				.985	25.6
<b>Pipe Size</b>						
EI-16-8P	1/2				.825	21.0
EI-16-12P	3/4				1.035	26.2

Bushing No.	Tube Size	A	B	C	D INCHES	D-1 (mm)
EI-32-18	1-1/8	2.38	2.37	1.50	1.110	28.2
EI-32-20	1-1/4				1.235	31.3
EI-32-22	1-3/8				1.360	34.5
EI-32-24	1-1/2				1.485	37.7
EI-32-26	1-5/8				1.610	40.9
EI-32-28	1-3/4				1.735	44.0
EI-32-30	1-7/8				1.860	47.2
EI-32-32	2				1.985	50.4
EI-32-34	2-1/8				2.110	53.6
<b>Pipe Size</b>						
EI-32-16P	1				1.300	33.0
EI-32-20P	1-1/4				1.645	41.8
EI-32-24P	1-1/2				1.885	47.8

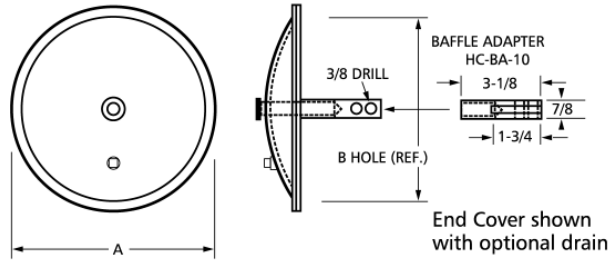
Strap No.	A	B
EIM-10	2-7/16	7/8
EIM-16	3-1/8	1-1/4
EIM-32	4-11/16	2-7/16

**Clamps**

# End Covers

Hydro-Craft® end covers for replacement or retrofit are available in 12- 14- and 18-inch diameters. Available in steel and stainless steel. Steel end covers are zinc plated for corrosion protection. All end covers are available with optional drain. All have a unique formed on Buna-N lip seal which has excellent resistance to cutting and abrasion, and is compatible with all standard hydraulic fluids. Replacement sea ls, if required, are readily available from stock.

The end cover is attached to the reservoir by the unique Hydro-Craft® baffle adapter. The design of the HC-BA-10 allows it to be attached to the baffle with press pins or standard bolts, assuring a tight, shockproof installation, and eliminating the need for welding and subsequent weld splatter, warping and stressing of the baffle. The Hydro-Craft® baffle adapter is also available in type 304 stainless steel.



### SPECIFICATIONS

PART NO.	A	B	C	D	WEIGHT
HC-EC-12	11-7/8	10	7 GA	1-5/8	6-1/4
HC-EC-14	14	12	7 GA	2	8
HC-EC-18	18	16	7 GA	2-5/8	14-1/2
HC-EC-12SS	12	10	12 GA	1-5/8	4
HC-EC-14SS	14-5/8	12	7 GA	2-1/8	9-3/4
HC-EC-18SS	18	16	.194	2-5/8	8

NOTE: Add E or V to End Cover part number for EP Seal or Viton. Add D at end of part number for drain. The Buna-N Lip Seal is the standard seal used on end covers. Maximum tightening torque recommended for end covers: 12" - 20-30 ft. lbs., 14" - 20-30 ft. lbs., 18" - 20-25 ft. lbs.

### END COVER REPLACEMENT SEALS

PART NO.	DESCRIPTION	COVER SIZE
HC-LIP-S-12-E	EP Seal Kit	12
HC-LIP-S-14-E	EP Seal Kit	14
HC-LIP-S-18-E	EP Seal Kit	18
HC-LIP-S-12	Buna-N Lip Seal	12
HC-LIP-S-14	Buna-N Lip Seal	14
HC-LIP-S-18	Buna-N Lip Seal	18
HC-LIP-S-12-V	Viton Lip Seal	12
HC-LIP-S-14-V	Viton Lip Seal	14
HC-LIP-S-18-V	Viton Lip Seal	18

Standard seals compatible with most fluids including phosphate esters.

Clamps

# Self Aligning Cover Bar

The Hydro-Craft® self aligning cover bar is available for 12- and 14-inch end covers. Installed by placing a bolt through the end cover and turning a few threads into the cover bar, it can then be angled through the reservoir access hole. Allowing the cover bar to rest on the bottom of the reservoir, it will automatically align itself to the proper height to be torqued firmly into place. This durable self aligning cover bar is fabricated from 3/8-inch hot rolled, pickled and oiled steel plate. More than ample torque can be applied to insure a perfect seal on the reservoir end cover.

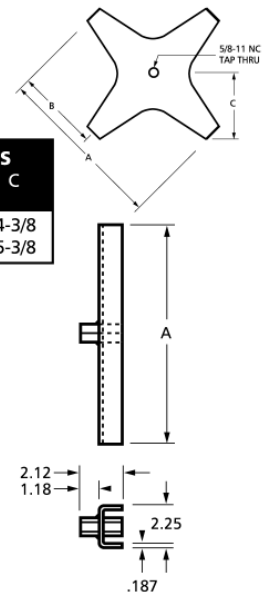
### SPECIFICATIONS

PART NO.	END COVER	ACCESS HOLE DIAMETER	DIMENSIONS		
			A	B	C
HC-X-BAR-12	12	10	12	6	4-3/8
HC-X-BAR-14	14	12	14-1/4	7-1/8	5-3/8

### OPTIONS

PART NO.	DESCRIPTION
HC-BA-10*	Baffle Adapter
HC-BA-P*	Baffle Adapter Pin
HC-EC-CW	Crush Washer
HC-EC-CB-*	End Cover Bolt
	DIMENSION A
HC-C-BAR-12	12
HC-C-BAR-14	14
HC-C-BAR-18	18

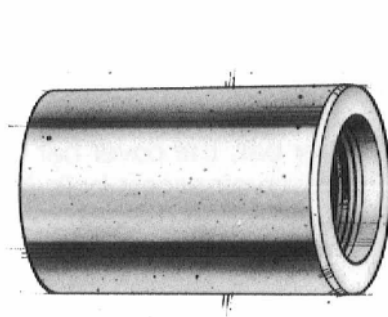
\*Available in stainless steel



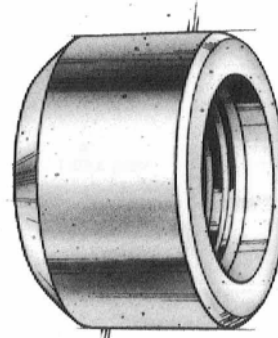
# S.A.E. Adapters

## 3/8 Inch to 2 Inch

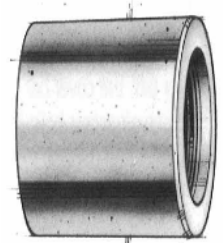
Hydro-Craft® S.A.E. Weld Boss Flanges and Weld Couplings are precision manufactured from 12L14 Leadloy steel. They will save time and labor when mounting S.A.E. components. Used as a downline couplings, they eliminate the need for expensive straight-thread downlines...simply attach the S.A.E. component to the topside, and thread an inexpensive pipe nipple to the NPT side in the reservoir. Adapters are shipped unplated but oiled to prevent corrosion.



**WELD COUPLING FEMALE  
S.A.E. TO FEMALE N.P.T.**



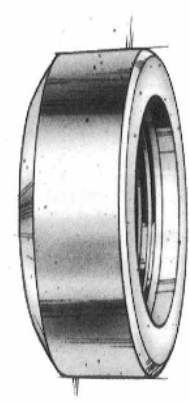
**WELD BOSS FEMALE S.A.E.**



**FEMALE S.A.E. TO N.P.T.**

PART NO.	FEMALE PIPE	FEMALE S.A.E.	L ±03	D DIA.	PSI
WCF-6-6	3/8	9/16-18	1.41	7/8	4000
WCF-8-8	1/2	3/4-16	1.72	1-1/8	3000
WCF-12-12	3/4	1-1/16-12	1.98	1-3/8	2500
WCF-16-16	1	1-5/16-12	2.17	1-5/8	2000
WCF-20-20	1-1/4	1-5/8-12	2.25	2-1/8	1150
WCF-24-24	1-1/2	1-7/8-12	2.26	2-1/2	1000
WCF-32-32	2	2-1/2-12	2.41	3	1000

Add "SS" to the end of part number for 316 stainless steel adapters.



**FEMALE S.A.E. BOSS**

PART NO.	FEMALE S.A.E.	X ±03	D DIA.	PSI
WBF-6	9/16-18	.70	7/8	5000
WBF-8	3/4-16	.85	1-1/8	4500
WBF-10	7/8-14	.95	1-3/8	3500
WBF-12	1-1/16-12	.95	1-3/8	3500
WBF-14	1-3/16-12	1.1	1-5/8	3000
WBF-16	1-5/16-12	1.1	1-5/8	3000
WBF-20	1-5/8-12	1.1	2-1/8	2500
WBF-24	1-7/8-12	1.1	2-1/2	2000
WBF-32	2-1/2-12	1.2	3	1500

Add "SS" to the end of part number for 316 stainless steel adapters.

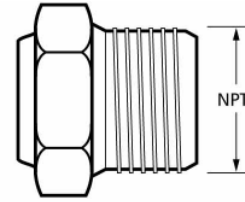
Clamps

# Oil Level Sight Plugs

HYDRO-CRAFT® SIGHT PLUGS ARE DESIGNED FOR QUICK VISUAL INSPECTION OF LIQUID LEVEL

HC-SP Series Plugs use a transparent window with synthetic rubber seal. Body is of zinc plated steel, reflecting surface behind glass is stainless steel.

- Eliminate the need for dipsticks
- Presence of liquid is clearly shown in window
- Reflecting surface behind glass provides excellent visibility - even in dark locations
- Compatible with most fluids, including diesel fuel and phosphate esters



**OIL LEVEL SPECIFICATIONS**

PART NO.	NPT	MAX. TEMP	HEX SIZE	SIGHT AREA
HC-SP-8	1/2	500°F	1	9/16
HC-SP-12	3/4	500°F	1-1/4	3/4
HC-SP-16	1	500°F	1-5/8	1-1/8
HC-SP-24	1-1/2	500°F	2-1/4	1-7/16

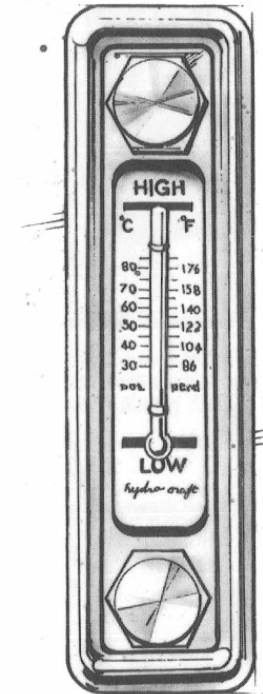
**Clamps**

# Sight Level Gauge\*

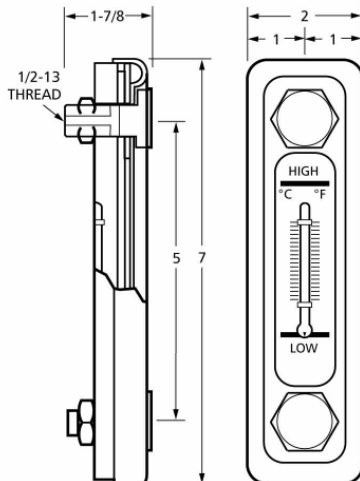
**PART NUMBER HSG-55**

The Hydro-Craft® Standard Sight Level Gauge is available only with temperature indicator. Complete with neoprene gaskets and attaching bolts - ready for immediate installation.

- Can be installed from either outside or inside reservoir unit. Requires only tow mounting holes
- Sturdy low profile outer case
- All external metal parts are plated
- Extra large sight area, nonbreakable 2X magnifier
- Thermometer standard with readings in centigrade and Fahrenheit
- Will withstand temperatures to 225°F
- Available in stainless steel



**TECHNICAL DATA FOR SIGHT LEVEL GAUGES**



Drill 9/16" Hole 2  
Places on 5" Center



\* Cannot be used for pressurized applications. Sight Level gauges are not designed for pressure applications.

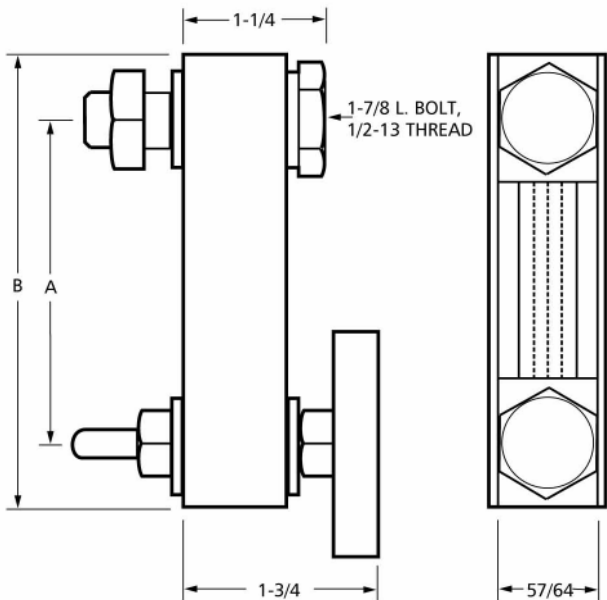
# Sight Level Gauge

**HSG-66 SERIES**

Hydro-Craft® fluid sight level gauges are available in 3- 5- and 10-inch sizes, with or without a dial type thermometer.

- Rugged construction
- Plated steel shell and end blocks
- Durable Lexan tube will not discolor
- Pyrex glass tube available at no additional cost
- Easy to read high visibility design
- Viton O-Ring tube seals
- Unique, easy mounting nylon seals
- Easy to read, precision dial type thermometer
- Will withstand temperatures from 0°-500°F (Pyrex), 0°-250°F (Lexan)

5- and 10-inch gauges are slotted for side viewing



**GAUGE SPECIFICATIONS**

PART NO.	PART NO./W TEMP IND.	MOUNTING CENTER (A)	OVERALL LENGTH (B)
HSG-66-3	HSG-66T-3	3	4-1/8
HSG-66-5	HSG-66T-5	5	6-1/8
HSG-66-10	HSG-66T-10	10	11-1/8

Add PL to end of part number for Pyrex, Lexan is standard.



**Clamps**

Sight level gauges are not designed for pressure applications.

# Filler Breather Assembly Kit



Filler Breather with 4" strainer



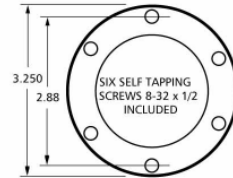
Filler Breather with optional metal filler screen and dipstick

**PART NO. HC-120**

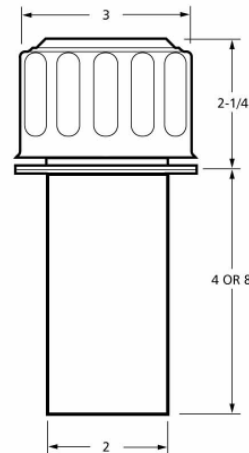
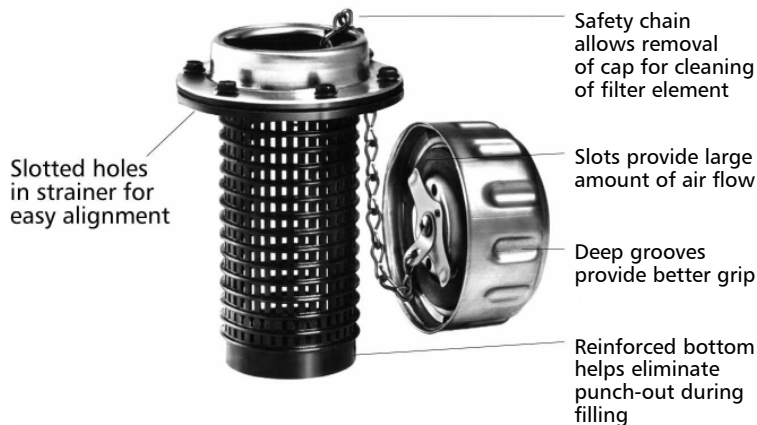
- Nylon strainer with guard...stronger than conventional materials. Will not corrode. Compatible with most fluids.
- Flange on strainer acts as gasket-no unnecessary parts to lose
- 4" or 8" strainer available
- Displaces 192 gallons per minute (25 CFM)
- Available in 10 or 40 micron
- Nylon strainer with openings equivalent to 30 mesh
- Plated cap with safety chain
- All parts included in one package-ready to install
- Locking provision available to accept standard 3/8" padlock
- Pressurized breather available

**OPTIONAL ADDERS**

Add To Part	Description
<b>AS</b>	Anti-Slosh Feature
<b>B</b>	Black Powder Coated Cap
<b>D</b>	6" Dip Stick
<b>L</b>	Stainless Steel Locking Tab
<b>M</b>	10 Micron Element
<b>PB-3</b>	3 P.S.I. Pressurized Breather
<b>PB-5</b>	5 P.S.I. Pressurized Breather
<b>PB-10</b>	10 P.S.I. Pressurized Breather
<b>S-3</b>	3" Stainless Steel Strainer
<b>S-4</b>	4" Nylon Strainer
<b>SS-8</b>	8" Stainless Steel Strainer



**FEATURES**



All dimensions are approximate in inches

**Clamps**

# Air Breathers

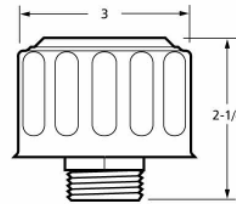
Breather filters are a must for hydraulic systems requiring clean air passing into the reservoir, ensuring long life of system components.

When used as a crankcase ventilator, it helps to prolong the life of the engine oil and the oil filter.

Pressurized breather available.

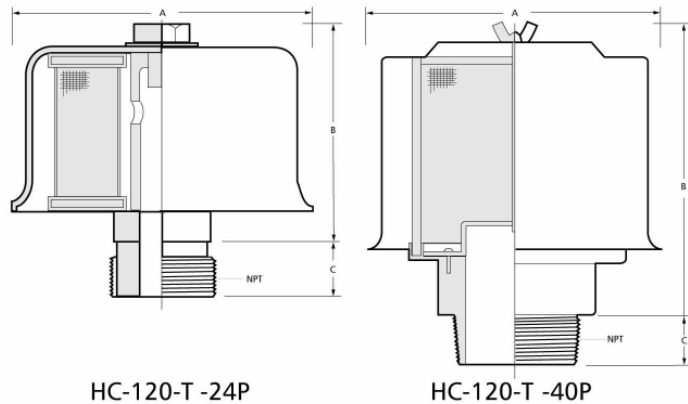
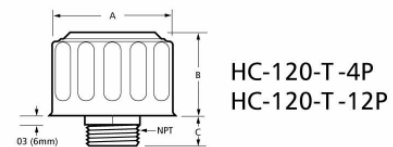
### SPECIFICATIONS-THREADED TYPE, PRESSURIZED

PART NO.	RATING MICRON	DISPLACEMENT GPM	AIR FLOW cfm	NPT
HC-120-P-T-12P-3	40	192	25	3/4
HC-120-P-T-12P-5	40	192	25	3/4
HC-120-P-T-12P-10	40	192	25	3/4



### SPECIFICATIONS-THREADED TYPE, NON PRESSURIZED

PART NO.	FLOW CFM	SIZE (NPT)	A	B	C	MICRON
HC-120-T-4P	10	1/4	1-13/16	2-1/8	3/4	40
HC-120-T-12-P	25	3/4	3	1-3/4	3/4	40
HC-120-T-24-P	75	1-1/2	5-5/32	4-1/4	1-1/4	40
HC-120-T-32-P	120	2	5-13/16	6-1/2	2-9/16	40
HC-120-T-40-P	190	2-1/2	7	8-1/4	2-3/4	40
HC-120-T-48-P	280	3	7	8-1/4	2-3/4	40
HC-120-T-64-P	500	4	7	8-1/4	3-7/8	40



**Clamps**

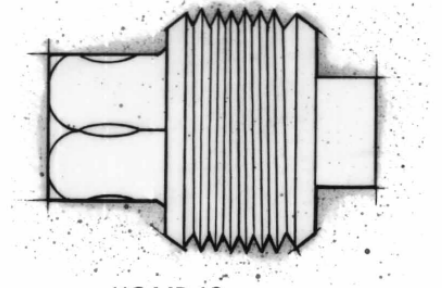


# Hydro-Craft® Magnetic Filtration

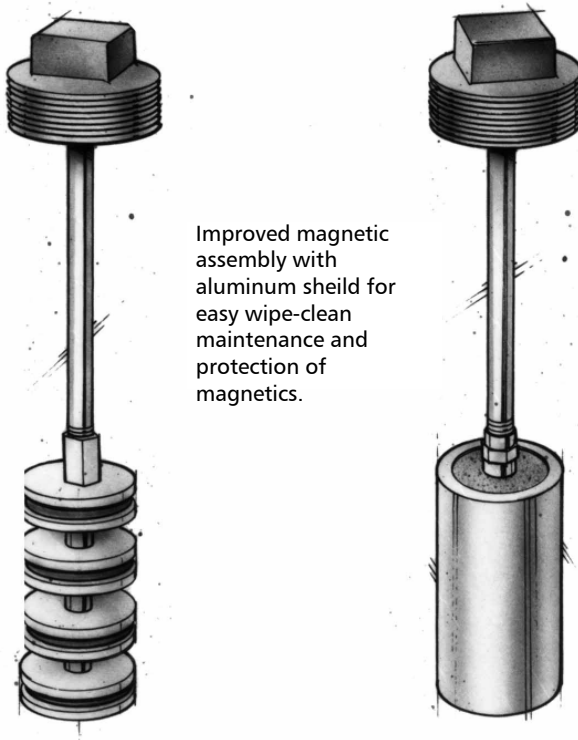
Hydro-Craft® magnetic tank traps and plugs are designed to maintain hydraulic systems by picking up ferrous particles that can clog ordinary filters. They are easily installed, and easily cleaned. The Hydro-Craft® AS series Mag Trap features a wipeclean the ferrous particles from the unit.

The magnetic plug is available in 3/4" NPT.

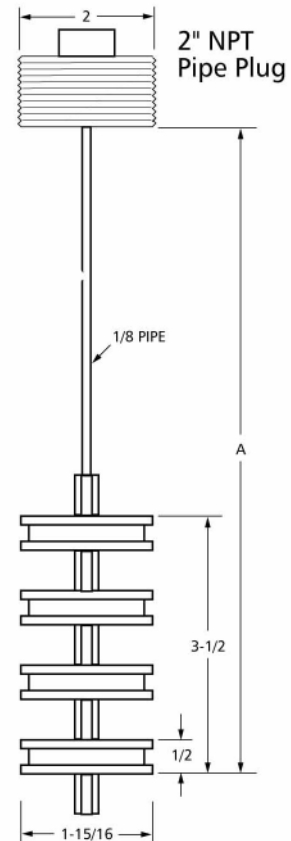
Valuable pump and component protection is provided by these low-cost, easily maintained units.



HC-MP-12  
Magnetic Drain Plug



Improved magnetic assembly with aluminum shield for easy wipe-clean maintenance and protection of magnetics.



We suggest magnet assembly be located within 1" of reservoir bottom.

## SPECIFICATIONS

PART NO.	A
HC-MT-10	10
HC-MT-12	12
HC-MT-16	16
HC-MT-20	20
HC-MT-22	22
HC-MP-12 Drain Plug	

Add "AS" to end of part number when ordering with aluminum shield  
Example: HC-MT-22AS

All dimensions are approximate in inches

Clamps



# Return Line Filters

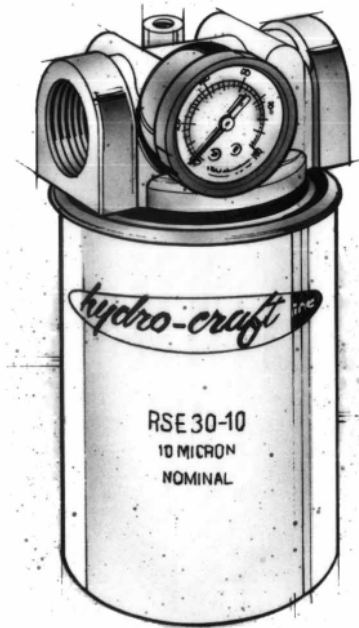
The Hydro-Craft® range of spin-on filters are designed for return line applications and have a nominal retention of 10 micron as standard. Optional 25 micron canisters are available on request.

Three basic models which give interchangeability with most suppliers of this filter type are available. The filters are rated at 200 PSI (13 bar) working pressure and have flow rates of 15 to 50 GPM at 10 micron.

Hydro-Craft® spin-on filters are designed for use with mineral-based oils as used in mobile, industrial, marine and agricultural applications.

**Design Features**

- Full flow 10 micron
- Optional 25 micron
- 200 PSI working pressure
- Interchangeable elements
- Visual indicator
- Disposable spin-on-canister
- With 15 PSI bypass (1 bar)
- Dual-thread design available on 50-series post allows use of replacement canisters from Gresen, Pall, Lenz, MDI, Parker, UCC, etc.



**SPECIFICATIONS**

PART NO.	PORT SIZE (NPT)	FLOW RATE (GPM)	MICRON RATING	DIAL INDICATOR
30 SERIES				
HCRS-30-12X	3/4"	15	10 Micron Std. 25 Micron Opt.	No
HCRS-30-12D	3/4"	15	10 Micron Std. 25 Micron Opt.	Yes
HCRS-30-16X	1"	20	10 Micron Std. 25 Micron Opt.	No
HCRS-30-16D	1"	20	10 Micron Std. 25 Micron Opt.	Yes
50 SERIES				
HCRS-50-20X	1-1/4"	55	10 Micron Std. 25 Micron Opt.	No
HCRS-50-20D	1-1/4"	55	10 Micron Std. 25 Micron Opt.	Yes
BA YONET FLANGE ADAPTOR				
HC-120-BF A				

Our Bayonet Flange Adapter HC-120-BFA, will replace the filler breather cap, allowing use of a spin on filter. The flange adaptor will accommodate all series RSE filters. Select the appropriate size and micron rating for your application.

**REPLACEMENT ELEMENTS**

PART NO.	MICRON RATING
30 SERIES	
RSE-30-10	10 Micron
RSE-30-25	25 Micron
50 SERIES	
RSE-50-10	10 Micron
RSE-50-25	25 Micron

Replacement dial gauge indicator HCRS-30-D fits 30 and 50 series filters



HC-120-BF A Bayonet Flange Adapter

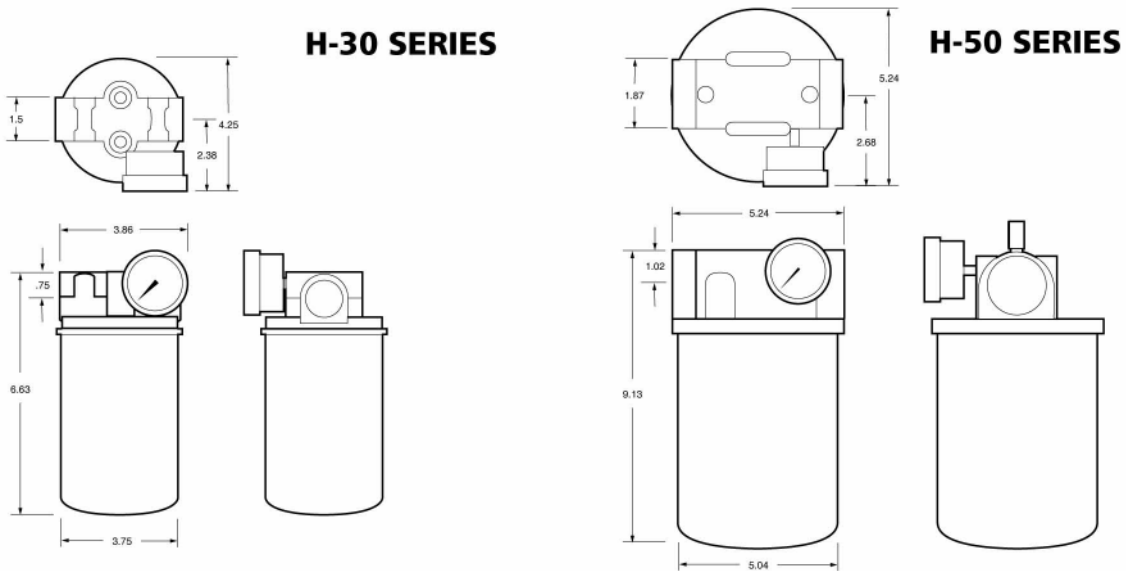
**Clamps**



All dimensions are approximate in inches

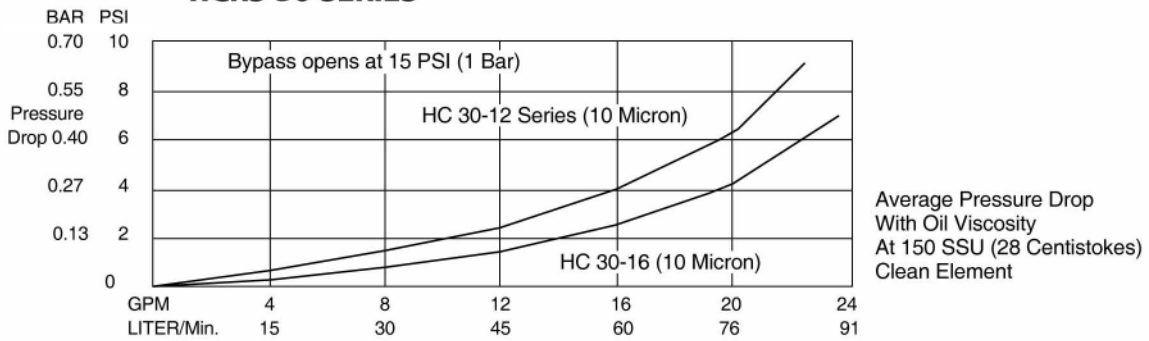
# Series HCRS 30 and 50

**TECHNICAL DATA**

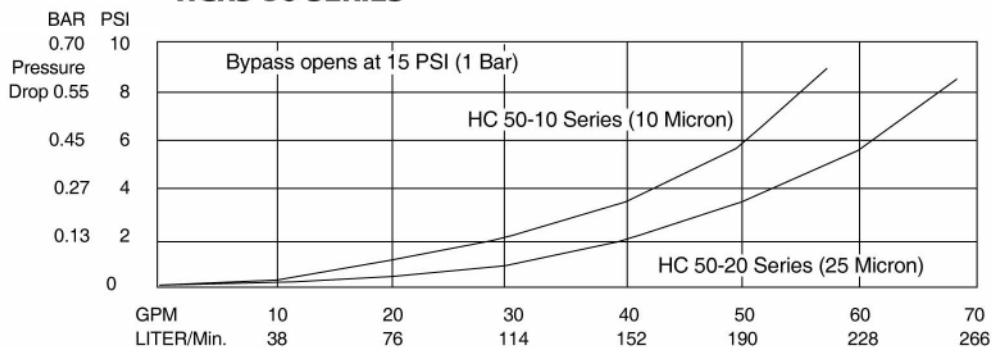


**Clamps**

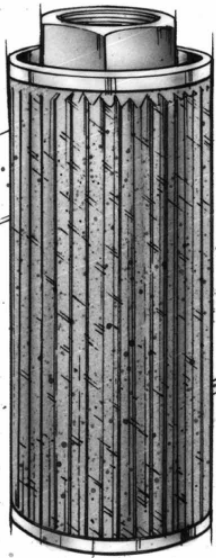
**HCRS-30 SERIES**



**HCRS-50 SERIES**



# Hydro-Craft® Magnetic Filtration



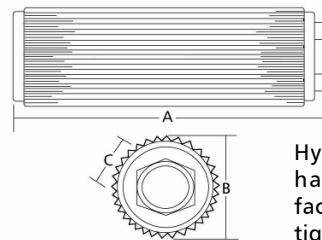
**IN-TANK SUBMERGED TYPE**

Hydro-Craft® offers a complete range of suction-line filters, for use with hydraulic fluids, lubricants, coolants, cutting oil, etc.

**Features**

- Meets or exceeds all J.I.C. standards
- 140 micron filtering
- 100 mesh stainless steel screen, aluminum nut and end caps
- Epoxied ends, hex connection
- Gallon rating and micron size stamped on each filter
- Extremely low pressure drops
- Minimum sizes - maximum flow rates

Pressure drop through a clean element will not exceed 0.2 PSI (0.4-in. Hg) at rated flow of 150 SSU viscosity fluid and 100 mesh.



Hydro-Craft® recommends hand-tightening only to facilitate servicing...wrench tighten is not necessary.

**SPECIFICATIONS**

ALL METAL PART NO.	VALVE OPTION	GPM RATING	FILTERING			A	B	C
			THREAD (NPTF)	AREA (SQ. IN.)				
HA-FS-5		5	3/4"	62	3-1/16"	3-3/16"	1-5/16"	
HA-FS-10	"ADD"	10	1"	125	5-5/16"	3-1/16"	1-5/8"	
HA-FS-20	RV-3	20	1-1/4"	162	7-1/8"	3-1/16"	1-15/16"	
HA-FS-30	3-PSI	30	1-1/2"	310	8-3/4"	4"	2-1/8"	
HA-FS-50	BY PASS	50	2"	340	9-5/8"	4"	2-3/4"	
HA-FS-75		75	2-1/2"	400	12-5/8"	5-1/16"	3-1/2"	
HA-FS-100		100	3"	500	12-5/8"	5-1/16"	4"	

NYLON CONNECT. PART NO.	VALVE OPTION	GPM RATING	FILTERING			A	B	C
			THREAD (NPTF)	AREA (SQ. IN.)				
HP-FS-5		5	3/4"	62	2-1/2"	3-3/16"	1-5/16"	
HP-FS-10	"ADD"	10	1"	125	5-3/8"	3-3/16"	1-5/8"	
HP-FS-20	RV-3	20	1-1/4"	162	7-3/8"	3-3/16"	1-15/16"	
HP-FS-30	3-PSI	30	1-1/2"	310	9-1/8"	4-3/16"	2-1/8"	
HP-FS-50	BY PASS	50	2"	340	9-3/4"	4-3/16"	2-3/4"	
HP-FS-75		75	2-1/2"	400	12-1/2"	5-1/16"	3-1/2"	
HP-FS-100		100	3"	500	12-1/2"	5-1/16"	4"	

**Clamps**



## Shock Mounts

### PART NO. HC-SM-32

The Hydro-Craft® Shock Mount is simple in design, engineered for rugged service and long life, having an inner cylinder attached to the stud, which is insulated from the outer shell by a wall of mechanically bonded rubber. They have an ample safety margin: **Overloaded to destruction they will allow a drop of less than 1/2"**.

- Cut down vibration
- Helps subdue shock and noise
- Easy to install
- Inexpensive
- No maintenance required
- Allows Precision leveling

### MOUNTING METHODS

Place plate through shock mount stud, lock both nuts into proper level position. Weld adapters can be inserted into shock mount base and welded into position. Shock mounts can easily be removed by removing nuts from weld pads.



Various other mounting configurations can be used; see illustrations below:

	Load Capacity of Each Mount	200#
	Shipping Weight Each	1lb. 6 oz.
	Maximum (Average) Deflection Under Rated Load	.0625"
A	Height Floor to Top of Lower Face (Min. Ht. Above Floor)	1-7/8"
B	Height Overall, Including Stud	3-7/8"
C	Height of Stud above Lower Face	2"
D	Diameter of Stud	1/2"
E	Diameter of Housing	1-3/4"
F	Bolt Hole Centers	2-3/4"
G	Diameter of Bolt Holes in Base	3/8"
H	Flange Height	11/64"

NOTE: Each mount is rated at 200# capacity (Ex.: If 2,000 lbs. are to be supported, use 10 shock mounts). Determine the mass to be supported and position mounts in a pattern which will best support load in a balanced condition. Bottom shock mount hex nut must be adjusted up from base to properly suspend mass

**Also 100 and 500 lb. Shock Mounts Available**

